QUICK INDEX

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

NAME: _____

CUSTOMER #: _____

TOLL-FREE ORDER LINE / CUSTOMER SERVICE

877-477-7823 • 800-861-3192

ORDER DESK HOURS (PST)

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

TOLL-FREE FAX LINE

800-329-3020

SHOP ON-LINE

www.aircraftspruce.com

info@aircraftspruce.com

AVIONICS SALES TEAM

800-826-3160

THREE REGIONAL WAREHOUSES

AIRCRAFT SPRUCE WEST

ADMINISTRATION & WESTERN DISTRIBUTION CENTER

225 Airport Circle, Corona, CA 92880-2527
Phone: (951) 372-9555 • Fax: (951) 372-0555

CUSTOMER SERVICE HOURS (Pacific Time)

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

AIRCRAFT SPRUCE EAST

EASTERN REGIONAL DISTRIBUTION CENTER

452 Dividend Drive, Peachtree City, GA 30269
Ph: (770) 487-2310 • Fax: (770) 487-2308

CUSTOMER SERVICE HOURS (Eastern Time)

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

AIRCRAFT SPRUCE CANADA

150 Aviation Ave., Brantford Municipal Airport,
Brantford, ON N3T 5L7
Ph: (519) 759-5017 • Fax: (519) 759-8964

STORE HOURS

Mon. thru Fri.: 8:00am–5:00pm • Saturday: 8:00am–3:00pm
www.aircraftspruce.ca • email: info@aircraftspruce.ca

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

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

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

WAIVER OF LIABILITY AND INDEMNIFICATION AGREEMENT

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

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Aircraft Spruce & Specialty Co. SINCE 1965

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ON THE COVER:
Photo Courtesy of EAA

AIRCRAFT SPRUCE & SPECIALTY CO.

A COMPANY HISTORY

Bob and Flo Irwin

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

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

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

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

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

Jim Irwin, Bob and Flo's older son, grew up in the business, working in jobs such as cutting metal and spruce, pulling and shipping orders, and managing kit programs such as the Vari-Eze back in 1975 while still in college. Graduating from California State University at Fullerton in 1978 with a degree in business administration (marketing), Jim acquired the company and became president in 1980. Jim's wife Nanci, who graduated with an accounting degree from the University of Southern California in 1977, is vice-president and works full time managing the company's accounting and data processing departments. Jim Irwin has logged over 4000 hours as a multi-engine, instrument rated pilot since 1976 and Nanci Irwin is a licensed private pilot as well. They fly the company Cessna 425 extensively on business throughout the Southwest. Jim and Nanci Irwin have four children (3 boys, 1 girl) who are in their 20's and 30's. The three boys, Mike, Jeff, and Rob, are all members of the Aircraft Spruce management team. Mike and Jeff are pilots and fly the company's Navion Rangemaster.

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

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

CELEBRATING 47 YEARS OF SERVICE TO AVIATION!
1965 – 2012

AIRCRAFT SPRUCE WEST **AIRCRAFT SPRUCE EAST**
CORONA, CA • (877) 4-SPRUCE **PEACHTREE CITY, GA • (877) 477-7823** *Prices Subject to Change Without Notice*

AIRCRAFT SPRUCE WEST
CORONA, CALIFORNIA

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

Phone: (951) 372-9555

email: info@aircraftspruce.com

AIRCRAFT SPRUCE EAST
PEACHTREE CITY, GEORGIA

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

Phone: (770) 487-2310

email: info@aircraftspruce.com

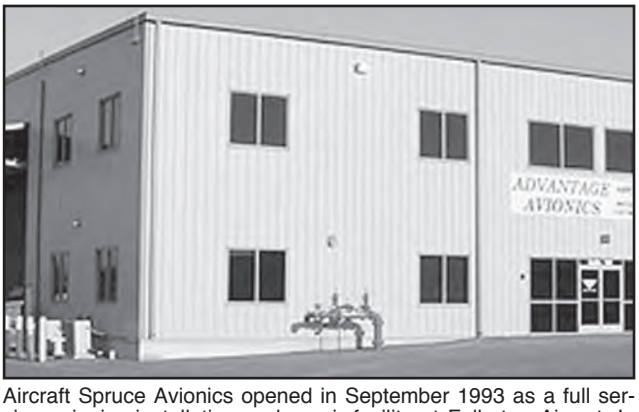
AIRCRAFT SPRUCE CANADA
BRANTFORD, ONTARIO

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

Phone: (519) 759-5017

email: info@aircraftspruce.ca

ADVANTAGE AVIONICS
CHINO AIRPORT, CHINO, CA



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

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

KCNO Chino Phone: (909) 606-0220

email: fly@AdvantageAvionics.com

AIRCRAFT SPRUCE INTERNATIONAL REPRESENTATIVES

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

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

THE AIRCRAFT SPRUCE MANAGEMENT STAFF

JIM IRWIN
President

NANCI IRWIN
Vice President

TOM MARRACCI
Director of Operations - West

DON ARRINGTON
Director of Operations - East

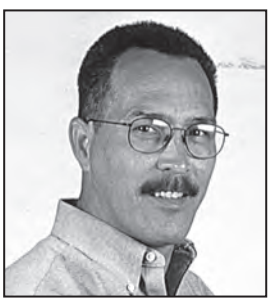
MIKE IRWIN
Purchasing Manager

JEFF IRWIN
Operations Manager

ROB IRWIN
Brand Development Manager

DESIREE CZAPLINSKI
Marketing Manager

MIKE NORBY
Int'l. Sales Manager



TOM GLAZE
Sales Manager—West

CAROLYN LEON
Customer Service Manager

DEBBIE MOSS
Accounting Manager

CHUCK JONES
Warehouse Manager—West

TIM KREIDER
Store Manager - East

TAMMY SHORT
Warehouse Manager—East

RYAN DECK
Avionics Sales Manager

JOSH SOLIS
Product Support Manager

SCOTT ADAMS
General Manager–Canada

AIRCRAFT SPRUCE TEAM...

COMMITTED TO CUSTOMER SATISFACTION

AIRCRAFT SPRUCE WEST STAFF - JUNE 2012

AIRCRAFT SPRUCE EAST STAFF - JUNE 2012

AIRCRAFT SPRUCE CANADA STAFF - JUNE 2012

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

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

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

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

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

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

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

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

AOPA & EAA

EAA CREDIT CARD DISCOUNT PROGRAM

Aircraft Spruce is a Preferred Partner of EAA. As a Preferred Partner, Aircraft Spruce provides discounts on orders placed by EAA members using the new EAA credit card.

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

AOPA CREDIT CARD POINTS PROGRAM

Aircraft Spruce & Specialty has been selected to participate in AOPA is new credit card program. AOPA, working closely with Bank of America, has developed a unique WorldPoints rewards program, which rewards one point for every net retail dollar spent with the card and doubles the points when used for purchases at one of the five participating aviation retailers, along with over 4,000 FBOs and select AOPA products and services.

Cardholders will receive two points for every net retail dollar spent at Aircraft Spruce, and they also further the cause of this country's most effective general aviation organization. We're pleased to have been asked to participate in this exciting new program and we look forward much interaction with the AOPA membership.

ORDERING INFORMATION

THE AIRCRAFT SPRUCE CATALOG FREE ON REQUEST

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

Free worldwide shipping!

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

VISIT THE AIRCRAFT SPRUCE STORES

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

SPRUCE ONLINE

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

www.aircraftspruce.com

CUSTOMER COMMENT CARDS

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

SHIPPING TIME

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

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

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

Note: Special Instructions may delay shipment of your order.

OUR BIODEGRADABLE PACKING PEANUTS

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

CLOSING THE TRANSACTION

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

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

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

WHEN YOU RECEIVE YOUR ORDER

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

BACKORDERS

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

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

RETURNED MERCHANDISE

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

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

DAMAGE OR SHORTAGE

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

AIRCRAFT SPRUCE WILL NOT BE UNDER SOLD!

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

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

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

Prices Subject to Change Without Notice

ORDERING INFORMATION

OPEN ACCOUNTS

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

DEALER/OEM DISCOUNTS

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

PRODUCT INFORMATION

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

SPECIAL ORDERS

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

PRODUCT WARRANTY

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

WAIVER OF LIABILITY AND INDEMNIFICATION AGREEMENT

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

INTERNATIONAL CUSTOMERS

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

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

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

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

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

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

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

A complete listing of Aircraft Spruce international representatives can be found on page 8. Always remember to furnish your complete communications information on your correspondence so that we may respond to your requests promptly. We welcome your orders and look forward to being part of your team during your entire project.

CERTIFICATE OF CONFORMANCE AND FORM 8130 (EXPORT)

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

AIRCRAFT SPRUCE GIFT CARDS

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

SHIPPING INFORMATION

UNITED PARCEL SERVICE (SURFACE)

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

Weights & Limits - Maximum weight per package for shipment to any destination served by UPS is 150 lbs. with no other weight restrictions applicable. If a shipment exceeds 80 lbs. a motor freight shipment is usually more economical. A UPS C.O.D. fee of $10.50 is charged for each C.O.D. parcel. Ground shipments larger than 1728 cubic inches and all air shipments will rate at the greater of actual or dimensional weight.

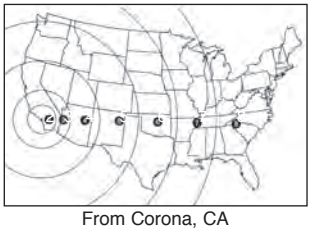
Maximum Size per Package - 130" in length and girth combined (once down and once around the parcel). Packages over 130" length & girth or over 108" long are rated at a minimum 90 lbs and assessed an additional charge of $50. Packages over 60" long are subject to an additional $8.00 handling fee. Charges subject to change by UPS and FedEx.

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

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

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

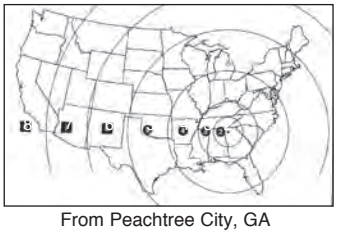
Shipment Of Hazardous Materials - Shipment of items such as dopes, primers, and many other liquid products require extensive, precise documentation and specially constructed cartons that comply with DOT regulations. Each flammable or hazardous product must be packed in a separate package and cannot be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



From Corona, CA

Method	Zone 2	Zone 4	Zone 6	Zone 8
UPS Red	$29.75	$69.15	$80.75	$87.60
UPS Next Day Air Saver	$26.45	$63.20	$76.65	$80.90
UPS Blue PM	$14.50	$21.35	$43.00	$48.15
Fed Ex Priority Overnight	$30.40	$68.60	$84.75	$89.50
Fed Ex Standard Overnight	$26.20	$60.95	$73.90	$78.05
Fed Ex Econo 2nd Day	$17.70	$21.60	$42.55	$47.65
USPS Priority Mail	$9.31	$10.32	$11.45	$13.73
UPS Ground	$9.80	$14.71	$22.48	$29.57

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



From Peachtree City, GA

UNITED PARCEL SERVICE (AIR)

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

FEDERAL EXPRESS

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

DHL COURIER SERVICE

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

MOTOR FREIGHT

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

US POSTAL SERVICE

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

CANADA

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

AIRCRAFT SPRUCE KITS

COZY MARK IV

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

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

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

FREE INSTRUCTIONAL DVD WITH PLANS

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

COZY MKIV MODEL

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

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

COZY MATERIALS KITS

SECTION 1 KITS

	Part #	Price
Foam Kit	01-01410	$2,653.18
Fiberglass Kit	01-01415	$2,953.35
Wood Kit	01-01420	$159.01
Hardware Kit	01-01430	$236.06
Metal Kit	01-01425	$263.18
Misc. Mats	01-01440	$4,223.13
Tools Kit	01-01435	$498.10
Fuel Fittings	01-01431	$71.00
Epoxy Kit	01-38201	$461.95

SECTION II KITS

	Part #	Price
Bolts	01-01505	$36.80
Screws	01-01510	$33.50
Washers	01-01515	$21.49
Nuts	01-01520	$85.43
Nutplates	01-01525	$48.20
Rivets	01-01540	$31.03
Fittings	01-01535	$131.82
Foam	01-00297	$405.60
Expoxy	01-01545	$315.95
Metal	01-01530	$183.65
Misc	01-01560	$1,866.62
Fiberglass	01-00298	$372.00

CHAPTER KITS

	Part #	Price
Chapter 4 Fuselage Bulkhead	01-00256	$525.00
Chapter 5 Fuselage Sides	01-00257	$379.49
Chapter 6 Fuselage Assy	01-00259	$272.56
Chapter 7 Fuselage Exterior	01-00260	$200.38
Chapter 8 Headrest, Heatduct, Seatbelt	01-00261	$554.06
Chapter 9 Main Gear-Brake	01-00263	$2,118.79
Chapter 10 Canard Construction	01-00264	$636.38
Chapter 11 Elevators	01-00266	$61.73
Chapter 12 Canard Installation	01-00267	$3.27
Chapter 13 Nose Gear	01-00268	$1,541.50
Chapter 14 Center section Spar	01-00271	$629.33
Chapter 15 Firewall Accessories	01-00272	$227.63
Chapter 16 Control System	01-00273	$486.91
Chapter 17 Pitch-Roll-Trim	01-00275	$91.98
Chapter 18 Canopy	01-00277	$743.45
Chapter 19 Wings & Ailerons	01-00280	$2,653.33
Chapter 20 Winglets & Rudders	01-00282	$168.88
Chapter 21 Strake-Fuel-Baggage	01-00283	$1,052.68
Chapter 22 Electrical	01-00285	$1,089.90
Chapter 23 Engine-Prop Installation	01-00286	$1,531.88
Chapter 24 Covers Fairing	01-00291	$249.17
Chapter 25 Finishing	01-00292	$548.35

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

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

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

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

CHRISTAVIA MK-1 KIT PRICE LIST

MK-1/MK-2 Info Pack	01-00662	**FREE**	Spruce Kit for MK-1	01-39810	**$865.00**
MK-1 Plans	01-00663	**$375.00**	Plywood Kit (MK-1)	01-39820	**$483.65**
MK-2 Supplement	01-00664	**$57.50**	MK-1 Alum. Sheet Kit	01-39830	**$641.05**
MK-2 Plans Complete	01-00692	**$289.95**	MK-1 4130 Tube Kit	01-39840	**$3,938.80**
MK-1 4130 Sheet Kit	01-39850	**$291.41**			
MK-1 Hardware Kit	01-39860	**$136.49**			
MISC Kit for MK-1	01-39870	**$5,649.75**			
MK-1 Spruce Kit	01-39880	**$865.00**			

CHRISTAVIA MK-4 KIT PRICE LIST

MK-4 Info Pack	01-00683	**FREE**	MK-4 Plans	01-00665	**$275.00**
MK-4 Misc. Kit	01-00675	**$9,177.80**	MK-4 4130 Sheet Kit	01-00676	**$601.60**
MK-4 Aluminum Kit	01-00678	**$3,960.70**	MK-4 Hardware Kit	01-00679	**$253.59**
MK-4 4130 Tube Kit	01-00674	**$4,346.87**			
MK-4 Plywood Kit	01-00677	**$569.30**			

AIRCRAFT SPRUCE KITS

STARDUSTER TOO SA 300

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

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

ACRODUSTER TOO SA 750

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

Plans ..... P/N 01-00427 .....**$78.50**
Info Pack..... P/N 01-00443..... **FREE**

STARLET SA 500

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

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

V-STAR SA 900

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

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

STARDUSTER ONE SA 100

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

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

STARDUSTER KITS & COMPONENTS

PART NO	DESCRIPTION	PRICE
01-00436	STARDUSTER TOO AILERON FILLETS	$298.00
01-00437	STARDUSTER TOO COCKPIT COWLING	$344.95
01-00438	STARDUSTER TOO SA300 NOSE BOWL	$88.75
01-00439	STARDUSTER TOO TDECK W/ HDREST	$317.50
01-00440	STARDUSTER TOO WHL PNTS 600X6	$197.95
01-00597	STARDUSTER / ACRODUSTER VIDEO	$5.00
01-00978	STARDUSTER / ACRODUSTER DVD	$14.95
01-00485	STARDUSTER TDECK SA300 & SA750	$250.00
01-00491	O-235-N2C ENGINE 4 STARDUSTER	$27,310.00
01-00494	O-320-D1A ENGINE 4 STARDUSTER	$21,874.00
01-00495	IO-320-D1B ENGINE 4 STARDUSTER	$27,163.00
01-00496	O-360-A1A ENGINE 4 STARDUSTER	$24,981.00
01-00502	STARDUSTER AILER FILLET LEFT	$74.50
01-00503	STARDUSTER AILER FILLET RIGHT	$74.50
01-00560	STARDUSTER TOO COBANE STRUTS	$454.02
01-00561	STARDUSTER TOO I STRUTS	$668.20
02-08200	STARDUSTER SINGLE PLACE SPAR	$591.90
02-08300	STARDUSTER TOOSPAR KIT	$890.00
03-15700	STARDUSTER TOO 4130 TUBING KIT	$3,330.52
05-01081	STARDUSTER CANOPY CLR 2-PLACE	$738.00
05-01084	STARDUSTER TOO SA300 TAILWHEEL	$317.95
05-01086	STARDUSTER TLWHL CONN. SPRG KT	$26.25
05-01087	STARDUSTER LNDG GEAR MATER. KT	$632.27
05-01090	STARDUSTER TOO HORIZ TAIL ASSY	$775.06
05-01091	STARDUSTER TORQUE TUBE ASSY	$1,428.00
05-01092	STARDUSTER TOO FUSEL. MAT. KIT	$810.02
05-01096	STARDUSTER TOO MAT. KIT WINGS	$3,555.00
05-01103	STARDUSTER AILERON HINGE ASSY.	$121.85
05-01104	STARDUSTER AILERN DRV HRN ASSY	$101.35
05-01112	STARDUSTER AILRN SLV STRT HRN	$140.65
05-01142	STARDUSTER TOO SA300 GRAY BUBL	$167.75
05-01211	STARDUSTER TOO TIE ROD SET W/T	$2,983.00
05-19700	FUEL TANK STARDUSTER I (MAIN)	$514.00
05-19710	FUEL TANK STARDUSTER I -INVERT	$613.00
05-19720	FUEL TANK STARDUSTER I (WING)	$437.95
05-19800	FUEL TANK STARDUSTER II (MAIN)	$$826.00
05-19810	FUEL TANK STARDUSTER II INVERT	$824.00
05-19820	FUEL TANK STARDUSTER II (WING TANK)	$870.00
06-00173	STARDUSTER TOO BUNGEE CORD	$21.50
06-00174	STARDUSTER TOO ALUM LNDGNG GR	$1,145.00
06-00177	STARDUSTER TOO STEEL LNDG GEAR	$1,996.00
06-00179	STARDUSTER 500X5 WELD-ON AXLE	$9.70
06-03935	STARDUSTER II LANDING GEAR*	$1,745.00
08-00897	STARDUSTER TOO STD ENG MOUNT	$2,368.00
08-00898	STARDUSTER TOO SA300 FRWL GALV	$631.00
08-00901	STARDUSTER EXHAUST SYSTEM 6CYL	$630.00
08-00966	STARDUSTER TOO FIREWALL SS	$629.00
08-00967	STARDUSTER TOO FIREWALL GALV	$606.00
13-02417	STARDUSTER TECHNICAL TIPS	$35.00
13-02434	1 STARDUSTER PIN	$10.50
13-02436	STARDUSTER PATCH SMALL	$8.75
13-02676	STARDUSTER DECAL	$14.95
01-00468	SUPERSTARDUSTER BLDG THE GOLD6	$25.00
05-03381	VITON 75 41 X 2 MM O-RING	$1.45

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

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

AIRCRAFT SPRUCE WEST
CORONA, CA • (877) 4-SPRUCE
AIRCRAFT SPRUCE EAST
PEACHTREE CITY, GA • (877) 477-7823

Prices Subject to Change Without Notice

AIRCRAFT SPRUCE KITS

WITTMAN TAILWIND

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

W-10 SPECIFICATIONS

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

Wittman Tailwind Info Pk/Kit Price List	P/N 01-10003	**FREE**
Wittman Tailwind Plans	P/N 01-10007	**$195.00***
Wittman Olds V-8 Eng. Conversion Plans	P/N 01-10002	**$29.95**
Wittman V-Witt Racer Plans	P/N 01-10009	**$95.00***
Wittman VW Prop Shaft extension	P/N 01-10006	**$19.95**

TAILWIND / V-WITT KITS

Tailwind 4130 Tube kit	P/N 03-15800	**$2,329.48**
Tailwind Complete Spruce Kit	P/N 02-06500	**$962.00**
Tailwind Spruce Spar Kit	P/N 02-08500	**$396.00**
Tailwind Ply Wood Kit	P/N 02-00122	**$932.00**
Tailwind Landing Gear	P/N 06-00139	**$859.00**
Tailwind Tailspring	P/N 06-00140	**$118.95**
V-Witt Spar Kit	P/N 02-08600	**$337.00**

Ask about prefabricated parts available for the Tailwind

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

BABY GREAT LAKES MATERIALS REQUIREMENTS

Kit #1	**Spruce and Plywood Kit**	P/N 02-03910	**$1,021.91**
	Complete Spruce Kit Only	P/N 02-03900	**$782.51**
	Spar Kit only	P/N 02-06700	**$541.50**
Kit #2	**Wing Metals Package** Includes finished parts requiring machining	P/N 01-10020	**$1,171.00**
Kit #3A	**Wing Hardware Kit (Baby Great Lakes)**	P/N 01-10030	**$68.64**
Kit #3B	**Wing Hardware Kit (Super & Buddy)**	P/N 01-10035	**$64.44**
Kit 4130	**Steel Tubing and Sheet Kit**		
	Baby Great Lakes Kit-4A	P/N 03-14300	**$1,315.46**
	Super Baby Lakes Kit-4B	P/N 03-14310	**$1,397.86**
	Buddy BabyLakes Kit-4C	P/N 03-14320	**$1,559.14**
Kit #5	**Landing Gear/Brakes Kit**	P/N 01-10040	**$2,998.39**
Kit #6	**Wing Alignment Materials Package.**	P/N 01-10050	**$9.10**
Kit #7	**Fuel Tank and Installation Package**	P/N 01-10060	**$67.09**
Kit #7A	**Fuel tank Installation Kit**	P/N 01-10070	**$67.09**
Kit #8	**Flying Controls Materials Package.**	P/N 01-10080	**$949.18**
Kit #9	**Fairings, Firewall, Instrument & Fuselage Panels w/Hardware**	P/N 01-10090	**$763.04**
Kit #10	**Poly - Fiber Materials Package**	P/N 01-10095	**$2,295.66**
Baby Great Lakes Top Nose Cowl		P/N 05-02883	**$223.95**
Baby Great Lakes Bottom Nose Cowl		P/N 05-02884	**$250.00**
Seat for Buddy Great Lakes		P/N 05-02885	**$250.00**
Baby Great Lakes Fuel Tank (Standard 10 Gal.)		P/N 05-03058	**$943.00**
Baby Great Lakes Feul Tank(3" Longer 11 Gal.)		P/N 05-03059	**$992.00**

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

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

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

ACROLITE

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

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

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

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

ACROLITE KITS

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

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

MATERIALS REQUIREMENTS

Kit #1	Aluminum Tube Kit,	P/N 01-20010	**$377.30**
Kit #2	4130 Tube Kit,	P/N 01-20015	**$914.08**
Kit #3	Aluminum Sheet and Bar Kit,	P/N 01-20020	**$447.64**
Kit #4	4130 Sheet and Bar Kit,	P/N 01-20025	**$537.55**
Kit #5	Aluminum Wing Kit,	P/N 01-20030	**$1,833.20**
Kit #6	Misc. Wood Kit,	P/N 01-20035	**$168.88**
Kit #7	Wood Wing Kit (Optional),	P/N 01-20040	**$2,212.81**
Kit #8	Fastener kit,	P/N 01-20045	**$201.95**
Kit #9	Control System Kit,	P/N 01-20050	**$995.68**
Kit #10	Fuel System Kit,	P/N 01-20055	**$457.22**
Kit #11	Misc Hardware Kit,	P/N 01-20060	**$93.26**
Kit #12	Wheels and Brakes ,	P/N 01-20065	**$255.10**
Kit #13	Misc. Accessories Kit,	P/N 01-20070	**$381.22**
Kit #14	Basic Instruments Kit,	P/N 01-20075	**$1,407.45**
Kit #15	Covering Kit,	P/N 01-20080	**$951.45**
Kit #16	Cowl Kit,	P/N 01-20085	**$167.45**

AIRCRAFT KITS

WITTMAN BUTTERCUP

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

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

Buttercup Retrack Lead Edge Kit	P/N 01-00474	**$344.31**
Buttercup Fuselage Sides Kit	P/N 01-00475	**$424.37**
Buttercup Fuselage Completion Kit	P/N 01-00476	**$319.41**
Eppenage Vert-Hort Stabilizer Kit	P/N 01-00477	**$317.52**
Buttercup Wing Wood Kit	P/N 01-00478	**$927.79**
Buttercup Wing Metal Kit	P/N 01-00479	**$768.77**
Buttercup Flaps & Ailerons Kit	P/N 01-00480	**$250.79**
Buttercup Lift Strut Kit	P/N 01-01055	**$838.85**
Buttercup Engine Mount-Land Gear	P/N 01-00482	**$130.50**
Buttercup Controls & Finishing	P/N 01-00483	**$213.58**
Buttercup Covering Kit	P/N 01-00571	**$2,281.75**

PAZMANY PL-9 STORK

Pazmany PL-2

Pazmany PL-4a Part of the LSA class.

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

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

PAZMANY PLANS

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

(Now part of the LSA class)

SONEX

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

SONEX KIT BUILDERS

Wing Hardware Kit	P/N 01-00005	**$217.83**
Sonex Tri-Gear Hardware Kit	P/N 01-00006	**$42.80**
Sonex Fuselage Hardware Kit	P/N 01-00008	**$393.28**
Sonex Tail Dragger Hardware Kit	P/N 01-00009	**$15.68**

SONEX SCRATCH BUILDERS

Wing Hardware Kit	P/N 01-00005	**$217.83**
Sonex Tri-Gear Hardware Kit	P/N 01-00006	**$42.80**
Sonex Fuselage Hardware Kit	P/N 01-00008	**$393.28**
Sonex Tail Dragger Hardware Kit	P/N 01-00009	**$15.68**
Sonex Metal Kit	P/N 01-00010	**$2,026.96**
Sonex Wheel & Brake Kit	P/N 01-00170	**$252.00**
Sonex Tri-Gear Nosewheel Kit	P/N 01-00171	**$70.90**
Sonex Controls Hardware Kit	P/N 01-01082	**$166.50**
Sonex Instrument Package		
Sonex 2-1/4" Instrument Kit	P/N 01-00014	**$539.90**
Sonex 3-1/8" Instrument Kit	P/N 01-00015	**$323.90**
Sonex/Waiex Standard Gear Hardware Kit	P/N 01-00922	**$39.25**
Sonex/Waiex Tri-Gear Hardware kit	P/N 01-00923	**$42.25**
Waiex Builders		
Waiex Fuselage Hardware Kit	P/N 01-01130	**$586.00**
Waiex Control Hardware Kit	P/N 01-01131	**$217.18**
Waiex Wing Hardware Kit	P/N 01-01132	**$194.95**
Waiex Taildragger Hardware Kit	P/N 01-01165	**$39.50**
Onex Hardware Kits		
Onex Airframe Hardware Kit	P/N 01-01192	**$863.00**
Onex Nosewheel Hardware Kit	P/N 01-01189	**$40.43**
Onex Solid Rivet Kit	P/N 01-01190	**$23.16**
Onex Tailwheel Hardware Kit	P/N 01-01191	**$30.00**

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

LONG-EZ

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

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

AIRCRAFT KITS

EVANS VP-1 VOLKSPLANE

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

Evans Aircraft
Box 744, La Jolla, CA 92037.

VP-1 Kits		Part No.	Price
Wood kit	(VPK-1)	01-00222	**$698.60**
Plywood kit	(VPK-2)	01-00223	**$737.55**
Metal kit	(VPK-5)	01-00224	**$279.98**
Hardware kit	(VPK-7)	01-00228	**$437.46**
Fabric kit	(VPK-8)	01-00221	**$598.16**
Fabric Coating kit	(VPK-9)	01-00226	**$515.75**
Cable Ass'y. kit	(VPK-10)	01-00227	**$933.92**
Wing Strut kit	(VPK-11)	01-00225	**$469.27**
Landing Gear 800 lb.	(VP-1 cable-braced)	06-00041	**$735.00**
Landing Gear 800 lb.	(VP-1 free standing)	06-04040	**$1,105.00**
Landing Gear 1100 lb.	(VP-2 free standing)	06-00043	**$1,275.00**
VP-1 Plans and Handbook		13-11560	**$59.00**

ONE DESIGN

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

ONE DESIGN RAW MATERIALS KITS

Kit Description	Part No.	Price
Aileron Kit	01-02305	**$238.64**
Engine Mount Kit	01-02310	**$121.65**
Elevator-Stabilizer Kit	01-02315	**$210.66**
Fin & Rudder Kit	01-02320	**$116.16**
Fuselage Kit	01-02325	**$635.65**
Wing Ribs Kit	01-02330	**$246.84**
Wing Spar & Skin Kit	01-02335	**$2,447.49**
One Piece Turtledeck	01-02349	**$185.00**
Matching Fairing for Turtledeck	01-02350	**$220.00**

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

POBER (CORBEN) JUNIOR ACE TWO-PLACE

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

NESMITH COUGAR - TWO-PLACE

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

VOLMER VJ-22 AMPHIBIAN

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

Volmer Club of America - Attn: Robert Albrecht
536 Oak Ave., Bridge City, LA. 70094 - Ph: 504-436-6248
rjaflys@aol.com • www.volmeraircraft.com

VJ-22 Spruce Wing Kit ..... P/N 02-06000 ..... **$1,634.43**
VJ-22 Sportsman Fuselage Kit ..... P/N 01-00984 ..... **$4,541.00**

AIRCRAFT KITS

ACRO SPORT

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

Order from: Acro Sport Inc., Box 462, Hales Corners, WI 53130.
Free kit list on request.**Tech support for Acro Sport: Steve Nanweiler, 4819 Farmstead Ct., Wichita, KS 67220, (316) 744-0234**
Note: Landing gear is NCNR, may not be cancelled or returned. Lead times are always 6-8 weeks.

ACRO SPORT KITS

Complete Spruce Kit	**$509.65**	Washer Kit	**$4.61**
Spar Kit	**$672.80**	Metal Kit	**$2,527.00**
Rivet Kit	**$4.32**	Plywood Kit	**$675.00**
Misc. Hardware Kit	**$1,893.00**	Bolt Kit	**$56.26**
Nut Kit	**$68.11**	Miscellaneous Kit	**$724.00**
Landing Gear	**$1,480.00**		

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

POBER PIXIE - SINGLE SEAT

Few light airplanes offer builders the simplicity and payoff in fun flying that comes with the Pixie. Another superb design by founding president of the Experimental Aircraft Association, Paul Poberezny. Similar in many respects to the Heath Parasol, the Pixie is a modernization of the helmet and goggle days of the 1930's. The large wing and full span ailerons make for easy flying. With minimal taildragger experience, the Pixie is a breeze to handle on the ground. Landings are gentle affairs, visibility in cruise is outstanding and using it with skis adds another dimension of fun. The fuselage is 4130 steel tube, wings are Sitka spruce, covering is with Stits Poly-fiber. This is a beginner's project for construction, with performance that will satisfy any level of proficiency ...up to ATP! Plans are highly detailed and the cost level is low. Can be powered with a VW conversion or Continental A-65. It cruises at 83 mph, stalls at 30, and climbs at 500 fpm. The Pixie has a no-reserve range of 290 miles with and empty weight of 543 pounds, gross is 900.
An info pack is $10.50, plans are $1255.00 and both can be ordered from **Acro Sport, Inc., Box 462, Hales Corners, WI 53130. Order your Pober Pixie materials kits form the approved supplier, Aircraft Spruce. Free kit list on request.**

POBER PIXIE KITS

Pober Pixie Metals Kit	P/N 01-01135	**$2,630.39**
Pober Pixie Spruce & Plywood Kit	P/N 01-01136	**$1,776.22**
Pober Pixie Bolt, Washer, and Nut Kit	P/N 01-01137	**$228.97**
Pober Pixie Cable and Cable Hardware Kit	P/N 01-01138	**$399.71**
Pober Pixie Hardware Kit	P/N 01-01139	**$1,119.67**

ACRO SPORT II

This versatile biplane offers the outstanding opportunity to experience open cockpit flying with a friend. Excellent aerobatic trainer with responsive controls and docile straight and level flight characteristics. Powerplants can range from 108 hp to 200 hp. Cruise at 123 mph (180 hp), stall at 53 and max out at 152. The wide gear, large wheels and outstanding roll rate make the Acro Sport a dream on the ground, nimble in the air and a cinch for smooth landings. Designed by EAA founding president Paul Poberezny, the Acro II will accommodate pilots up to 6' 6" and 240 pounds. As with all Acro Sport projects, the fuselage is welded steel tube, wings are spruce and Stits Poly-fiber is used for covering. Information packages are available for $10.50 and full sets of plans run $125.00 from Acro Sport, Inc., Box 462, Hales Corners, WI 53130. **Free kit list on request.Tech support for Acro Sport: Steve Nanweiler, 4819 Farmstead Ct., Wichita, KS 67220, (316) 744-0234**

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

ACRO SPORT II KITS

Metal Kit	**$4,043.98**	Clevis & Cotter Pin Kit	**$4.40**
Complete Spruce Kit	**$1,227.75**	Wood & Foam Kit	**$2,105.77**
Spar Kit	**$711.00**	Rod End Kit	**$1,120.20**
Bolt Kit	**$68.61**	Misc. Hardware Kit	**$151.70**
Nut & Nutplate Kit	**$78.22**	Miscellaneous Kit	**$1,493.00**
Washer & Rivet Kit	**$20.01**	Landing Gear	**$1,687.00**

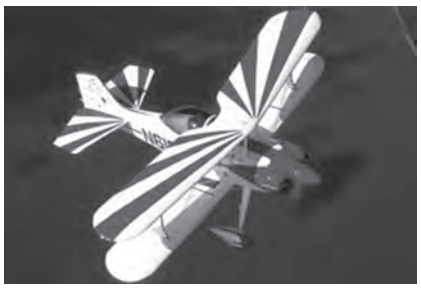
Note: Additional items such as tie rods,plumbing,instruments,avionics, etc. can be found throughout this catalog.

POBER SUPER ACE - SINGLE SEAT

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

For more information on the S-18 contact
Classic Sport Aircraft:
19426 Campbell Creek Dr., Springville, CA 93265
Phone/Fax: (559) 539-2755 • E-mail: s18mike@ocsnet.net

MEYER'S LITTLE TOOT



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

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

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

AIRCRAFT SPRUCE WEST **AIRCRAFT SPRUCE EAST**
CORONA, CA • (877) 4-SPRUCE **PEACHTREE CITY, GA • (877) 477-7823** *Prices Subject to Change Without Notice*

AIRCRAFT KITS

AQUAJET-X

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

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

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

Aquajet X Plans ..... P/N 01-00962 ..... **$95.00**
Aquajet X Materials Kit ..... P/N 01-00964 ..... **$1,037.90**

KR-1 AND KR-2

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

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

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

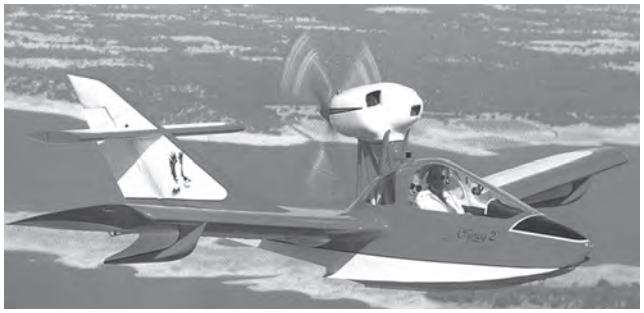
SKYBOLT

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

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

Complete Spruce Kit ..... P/N 02-05700 ..... **$1,259.84**
Spruce Spar Kit ..... P/N 02-07900 ..... **$1,021.80**
4130 Steel Kit ..... P/N 03-15500 ..... **$2,849.30**

OSPREY



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

Complete Spruce Kit ..... P/N 02-05100 ..... **$4,175.05**
Osprey Clear Canopy ..... P/N 05-01162 ..... **$513.00**
Osprey Tinted Canopy ..... P/N 05-01163 ..... **$425.00**
Picture Decal Left Black ..... P/N 09-43813 ..... **$17.95**

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

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

DAISY MAE

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

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

Daisy Mae Plans ..... P/N 01-01003 ..... **$165.00**
Daisy Mae Materials Kit ..... P/N 01-01160 ..... **$4,044.18**
The Making of the Daisy Mae Book ..... P/N 13-04086 ..... **$34.95**

GP-4

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

Complete Spruce Kit ..... P/N 02-25200 ..... **$4,284.40**
4130 Steel Kit ..... P/N 02-25210 ..... **$821.59**
Plywood Kit ..... P/N 02-00078 ..... **$3,211.40**

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

BREEZY

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

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

Misc Hdwe kit ..... P/N 01-30010 ..... **$599.17**
Breezy Steel Kit ..... P/N 01-30020 ..... **$3,107.24**
Breezy Aluminum Kit ..... P/N 01-30030 ..... **$183.67**

AIRCRAFT KITS

BARRACUDA

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

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

Plywood Kit..... P/N 01-00577 ..... **$2,582.75**
Spruce Spar Kit ..... P/N 01-00617 ..... **$868.75**

PIETENPOL AIRCAMPER

Pietenpol Aircamper is low in cost, durable and most of all, FUN!! Probably the biggest reason they are inexpensive to build is that almost no aircraft rated-materials are required by the design. They are durable because the designer B.H. Pietenpol went out of his way to make every part of the ship stronger than necessary.

Specifications: Wing Span 28' 2"ft., Length 17 ft. 8 in., Height Overall 6 ft. 6 in., Empty Weight 625 lb., Engine Ford A, 65-85 Cont.,Subaru,Jabaru, other, Useful Load 456 lb.(Psngr,Gas,Water Baggage), Take-Off Speed 60-75 mph, High Speed 90 mph, Landing Speed 35 mph, Fuel Capacity 10-18 gal., Take-off Run 150 ft., Landing Run 250 ft., Total Weight of Airplane with Water 625 lbs, Gross Load 1080 lbs

Pientenpol Wing Kit.....P/N 01-00582.....**$908.38**
Pientenpol Fuselage Kit .....P/N 01-00583.....**$515.26**
Pientenpol Stab. & Elevator Kit.....P/N 01-00584.....**$143.38**
Pientenpol Fin & Rudder Kit.....P/N 01-00585.....**$29.64**
Pientenpol Steel Sheet Kit .....P/N 01-01140.....**$388.20**
Pientenpol Plywood Kit.....P/N 01-01141 .....**$1,145.35**

BAKENG DEUCE

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

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

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

FLY BABY

This plane is a structurally simple and easy-to-fly airplane designed to the requirements of the Experimental aircraft Association for home construction and storage in a space 7' x 8' x 20', which is equivalent to the standard home garage. Great emphasis has been placed upon safe flight characteristics and good low speed performance for takeoff and landing at some sacrifice of high speed. The structure has been designed for standard airplane engines from 65 to 85 horsepower and the aerodynamic features are of sizes and proportions suited to obtaining the best all-around performance in this power range. Because of this, there is not enough advantage to be gained from using engines of significantly higher power to offset the cost and weight penalties. Increasing the power to increase the aerobatic capability is not recommended. FLY BABY will do simple recreational aerobatics very well but is not intended for rough air show or competition maneuvers.

Fly Baby Spruce Kit.....P/N 01-00977 ..... **$1,905.55**
Fly Baby Plywood Kit .....P/N 01-00974 ..... **$1,382.74**
Fly Baby Metals Kit .....P/N 01-00976 ..... **$955.64**
Fly Baby Hardware Kit .....P/N 01-00975 ..... **$2,146.22**

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

ZENITH STOL CH-750

The two-seat all-metal STOL CH 750 has been developed as an "off-airport" short take-off and landing kit aircraft to fulfill the demanding requirements of both sport pilots and first-time builders. Designer Chris Heintz has combined the capabilities and advantages of a bush-plane with the advantages of a modern design, such as tricycle gear configuration and all-metal aluminum alloy construction available in an advanced CNC-produced kit featuring match-hole technology. The light sport utility aircraft craft features fixed leading-edge slats for high lift, full-span flaperons (both ailerons and flaps), an all-flying rudder, and durable all-metal construction.

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

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

COMPOSITE MATERIALS

INTRODUCTION

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

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

ADVANCED COMPOSITE FABRICS

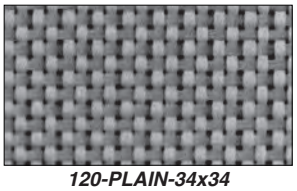
Advanced composite fabrics are those materials which have been used for a number of years in aerospace applications, replacing standard fiberglass fabrics. Today's materials - Kevlar, graphite, S glass and ceramics - are now making the transition from aerospace to homebuilt aircraft. Kevlar is an organic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

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

WHICH ONE DO YOU CHOOSE?

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

KEVLAR FABRIC STYLES



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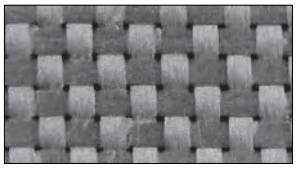

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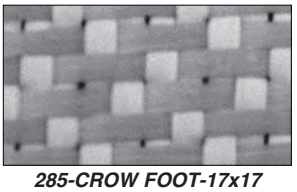
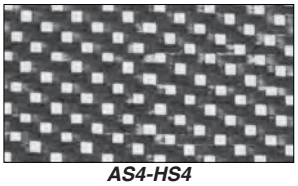
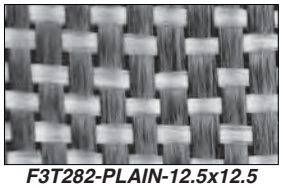


285-CROW FOOT-17x17

GRAPHITE FABRIC STYLES



AS4-HS4



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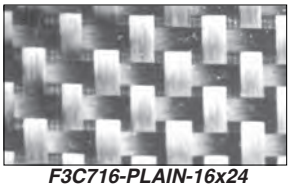

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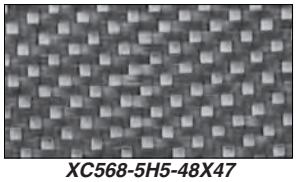
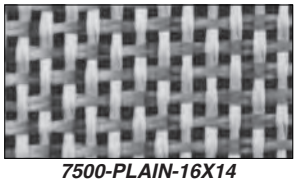
CERAMIC FABRIC



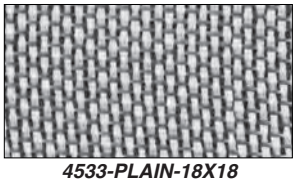
XC568-5H5-48X47

E-GLASS



7500-PLAIN-16X14

S-GLASS



4533-PLAIN-18X18

HELPFUL HINTS AND PRECAUTIONS

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

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

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

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

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

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

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

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

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

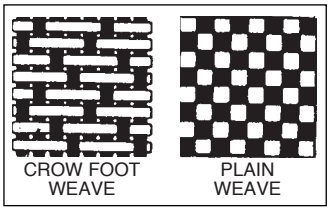
Hot wire cutting - A good method to use for judging wire temperatures is the appearance of the cut foam surface. A cratered or rutted surface indicates the wire is too hot. A very light "hair" of plastic strands on the surface is just right. Always adjust the temperature so that the wire will cut one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

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

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

QUALITY CONTROL

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



WEAVE PATTERNS

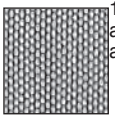
The weave pattern describes the manner in which the warp yarns and the filling yarns are interlaced in the fabric. Plain Weave consists of one warp end woven over and under one filling pick. Plain weave is generally characterized by fabric stability with minimum pliability except at low fabric counts.

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

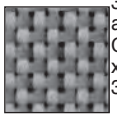
COMPOSITE MATERIALS

STANDARD E-GLASS FIBERGLASS CLOTH

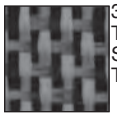
Fiberglass cloth is exactly what the name says - glass. Fine fibers are spun from molten glass marbles, gathered into yarn and woven into a strong, supple glass fabric. It can be folded, rolled or draped, like any other loosely woven fabric - but it can be chemically transformed into solid sheets of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



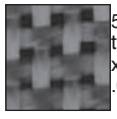
1.45 oz./sq. yd. Lightweight Industrial Cloth used in Osprey and other designs. Widely used by model builders, known as "Deck Cloth" , Thread Count 60 x 47.
#1080 (P/N 1080-50) 50" Width..... **$5.95 yd**



3.16 oz./sq. yd. Lightweight Industrial Cloth with aerospace applications. Excellent for model building. Only .004" thick. Crowfoot weave, which contours nicely. Thread Count 60 x 58. Breaking Strength 125 x 120 lb./in. Finished Weight 3.08 oz./sq. yd.
#120 (P/N 120-38) 38" Width..... **$6.50 yd**



3.74 oz./sq. yd. Light weight Boat or Tooling Cloth. Tight plain weave. Thread Count 24 x 22. Breaking Strength. 160 x 135 lb./in. Finished Weight 3.60 oz./sq. yd. Thickness .0055"
#1522 (P/N 1522-50) 50" Width..... **$5.75 yd**



5.79 oz./sq. yd. Lightweight Boat Cloth. Flat weave, not twisted. Thread Count 18 x 18. Breaking Strength 250 x 225 lb./in. Finished Weight 5.85 oz./sq. yd. Thickness .010".
#3733 (P/N 3733-60) 60" Width..... **$6.25 yd**

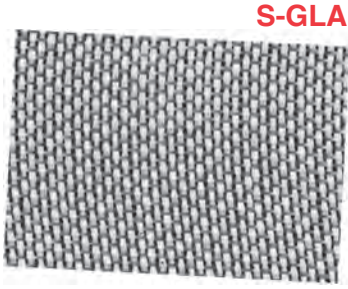
5.85 oz./sq. yd. Lightweight Boat or Tooling Cloth. Plain Weave. Thread Count 18 x 18. Breaking Strength 250 x 250 lb./in. Finished Weight 5.64 oz./sq. yd. Thickness .009" as used on KR Aircraft.
#7533 (P/N 7533-60) 60" /Width..... **$7.75 yd**

8.5 oz./sq. yd. Lightweight boat or tooling cloth. Threads per inch: 18L x 18W. Used in Osprey aircraft and other homebuilts.
#7520 (P/N 7520-50) 50" width ..... **$8.75 yd**

8.95 oz/yd² Medium Weight Standard Industrial Cloth. 8 Harness Satin. Thread Count 57 x 54. Breaking Strength 350 x 330 lb./in. Finished Weight 8.95 oz./yd² Thickness .009 mils. Sold by the yard.
#7781 50"" Width (P/N 7781-50) ..... **$8.35 yd**
#7781 60" Width (P/N 7781-60)..... **$9.75 yd**

9.66 oz./sq. yd. Heavy Weight Boat or Tooling Cloth. Plain Weave. Thread Count 16 x 14. Breaking Strength 450 x 410 lb./in. Finished Weight 9.40 oz./sq. yd. Thickness .014".
#7500 (P/N 7500-60) 60" Width..... **$9.25 yd**

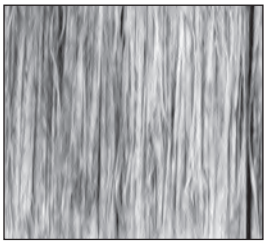
S-GLASS



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

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

S-2 UNIDIRECTIONAL FIBERGLASS TAPES

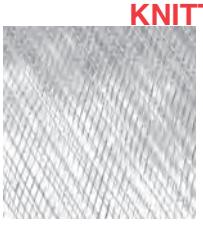


A unidirectional fabric constructed with Owens-Corning Fiberglass S-2 Glass offering outstanding strength-to-weight ratio, superb glass-resin ratio control to minimize probability of resin-rich and/or resin-dry areas, handleability without distortion and exceptionally high impact resistance. The integrity of the S-500 is maintained through very fine, adhesive coated fill yarns that are bonded to but not interwoven with the unidirectional fibers of the S-2 Glass. The fill yarns are spaced approximately 1.5 inches apart. The use of short-nap paint rollers is suggested, rolling under pressure, always parallel to the fibers. Use with epoxies, vinyl esters and polyesters. Weight of fabric - 0.56 Lbs. per Sq. Yd. Tensile Strength (hand layup in polyester, air cured) - 128,000 PSI. Thickness .016". Sold by the foot.
11" Wide..... P/N 01-00336..... **$3.25 Ft**

GLASS MAT

100% Fiberglass in a non-woven state. It is used for bulk "build-up" in molding and fabricating components. Also useful for filling holes and badly damaged parts. 1.5 Oz. Weight. 38" Width.
P/N 01-06500.....**$2.98/Yd**

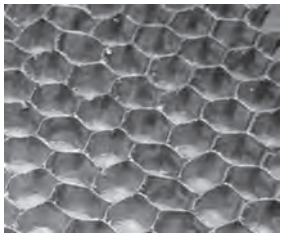
KNITTED E-GLASS FABRIC



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

Part No.	Weight/sq yd	Width	Ply Thickness	Price/yd
Biaxial - Double Bias +/-45°				
01-00640	17.6 oz	50"	17.0 mm	**$10.90**
Uni-Directional				
01-00650	13.4 oz.	50"	.021 mm	**$4.50**

NOMEX HONEYCOMB



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

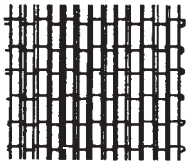
Description	Part No.	Price
Honeycomb 1/8" Thick, 1/8" Cell 4' x 8'	01-00487	**$189.95**
Honeycomb 1/8" Thick, 1/8" Cell 4' x 4'	01-00489	**$94.50**
Honeycomb 1/4" Thick, 1/8" Cell	01-01052	**$289.50**
Honeycomb 7/16" Thick, 4' x 8'	01-01181	**$98.00**

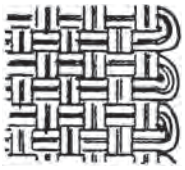
COMPOSITE MATERIALS

RUTAN FIBERGLASS CLOTHS

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

UNIDIRECTIONAL P/N RA7715
7 Oz. 38" Width Threads per inch:
80L x 18W **$8.25** Lineal Yd.

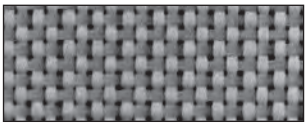


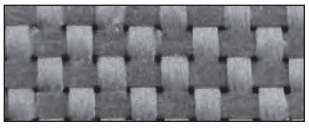


BIDIRECTIONAL P/N RA7725
8.8 Oz. 38" Width Threads/inch:
54L x 48W **$6.90** Lineal Yd.

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

BIDIRECTIONAL WOVEN KEVLAR


STYLE 120


STYLE 281

STYLE 285

"Kevlar" 49 aramid fiber was introduced commercially in 1972 and is the Du Pont registered trademark for its new high strength, high modulus organic fiber. It combines high tensile strength (43,000 PSI) and high modulus (19 million PSI) with light weight and toughness superior to other reinforcing fibers for plastics. It is available in yarns and rovings which meet all FAA requirements for flammability. It shows no degradation in jet fuel, lubricating oils, water, salt water or high humidity. At cryogenic temperatures (-320°F.) performance is excellent with essentially no embrittlement or degradation of fiber properties. Kevlar 49 can offer both a significant weight saving and improved stiffness versus glass in addition to superior vibration damping and good impact resistance. A kayak made with Kevlar 49, for example, weighs about 18 pounds while the weight of a comparable boat made with glass would be over 30 pounds. The advantages over glass in small aircraft are similar - weight savings and improved impact resistance. Kevlar 49 is used in a number of parts on the Lockheed L-1011 because of weight savings of up to 30% compared to similar parts made of glass. One unusual benefit of Kevlar is its "quietness". A cowling made of Kevlar will be quieter and less sensitive to engine vibrations than its glass or graphite counterpart.
Although all of the processes used in combining resins with glass fiber are adaptable to Kevlar 49 with little or no modification. The vinyl estertype system is compatible, but the use of polyesters is not recommended because of poor bonding with Kevlar. The epoxy resin systems featured in this catalog are compatible with Kevlar 49 and have good wetting characteristics.
Kevlar 49 is stocked in three different fabric styles. Kevlar #120 is a very lightweight fabric, while #281 and #285 are identical except for the weaving pattern. Other weights and weaves of Kevlar are available on a special order basis. Be sure to specify the Kevlar style when ordering.

Style	Part No.	Oz./ Sq.Yd	Weight Width	Thickness	W x F	Weave	Breaking Strength Lbs/Inch Warp	Breaking Strength Lbs/Inch Fill	Price Per Lineal Yd
120	01-38100	1.8	38"	.0035"	34 x 34	Plain	260	250	**$25.75**
281	281-38	5.0	38"	.010"	17 x 17	Plain	625	650	**$23.75**
285	285-38	5.0	38"	.010"	17 x 17	Crow	630	650	**$23.65**

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

ARAMID FABRIC - Aramid Fabric (Twaron, Style 285): 38", 5 ounces. Equivalent to 285 Kevlar Fabric. Sold by the yard.
P/N 01-01159.....**$13.95**

UNIDIRECTIONAL KEVLAR

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

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

PRECISION SCISSORS

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

INDUSTRIAL FABRIC SHEARS

Wiss No. 20W heavy-duty shears, ideal for cutting fiberglass cloth and all fabrics. Hot drop-forged steel.
Right Hand Shears.....P/N 01-00397 ..... **$32.95**
Left Hand Shears.....P/N 01-00398 ..... **$32.50**

OFFSET KEVLAR CUTTING SHEARS

Although Kevlar has many advantages over conventional fiberglass weaves, it is very difficult to cut. Special scissors have been developed to facilitate cutting. These scissors have a wear resistant coating which is metallurgically bonded to the steel substrate. The coating will not chip or peel off and can be sharpened. Model WR-10E-4 Shears. P/N 01-00341 .....**$72.50**

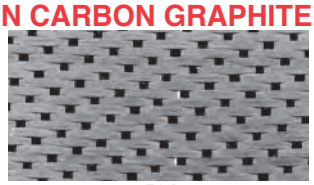
FEATHERWEIGHT SCISSORS - Lightweight, durable, and reliable GINGHER® Scissors are lightweight, extremely sharp and comfortable. These 2-1/2 oz. scissors are perfect for use during the lay-up for a variety of purposes and can be soaked in acetone for easy clean up. We recommend saving one pair for only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

AIRCRAFT SPRUCE WEST **AIRCRAFT SPRUCE EAST**
CORONA, CA • (877) 4-SPRUCE **PEACHTREE CITY, GA • (877) 477-7823** *Prices Subject to Change Without Notice*

CARBON GRAPHITE

BIDIRECTIONAL WOVEN CARBON GRAPHITE

282



584

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

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

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

CARBON FIBER

Style	Part No.	Weight Oz./Sq Yd.	Width	Thick-ness	W x F	Weave	Breaking Strength		Price /yd.
282	01-00970	5.8	39"	.007"	12.5x12.5	Plain	300	300	**$45.50**
282	01-00971	5.8	50"	.007"	12.5x12.5	Plain	300	300	**$31.65**
282	01-28260	5.8	60"	.007"	12.5x12.5	Plain	300	300	**$36.25**

TWILL 2 X 2 WEAVE

Style	Part No.	Weight Oz./Sq Yd.	Width	Thick-ness	W x F	Weave	Breaking Strength		Price /yd.
284	01-00602	5.7	50"	.007	12X12	2/2 Twill	n/a	n/a	**$31.65**

8HS WEAVE

Style	Part No.	Weight Oz./Sq Yd.	W	Thick-ness	W x F	Weave	Break-ing Strength		Price /yd.
584*	01-00626	11	42"	.013"	24x24	8HS	650	650	**$66.00**
584**	584-42	11	42"	.013"	24x24	8HS	650	650	**$66.50**

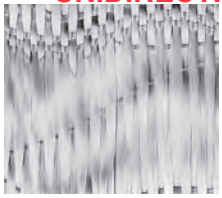
* Fiberglass tracers, which are clear when wet out.
** Fiberglass tracers, which are yellow when wet out.

STANDARD E-GLASS & FIBERGLASS TAPES

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

1" Width 26 Warp, 17 Fill ..... P/N 01-06610..... Roll **$13.75**
1-1/2" Width 32 Warp, 17 Fill ..... P/N 01-06615..... Roll **$17.25**
2" Width 40 Warp, 17 Fill ..... P/N 01-06600..... Roll **$22.50**
3" Width 58 Warp, 17 Fill ..... P/N 01-06700..... Roll **$28.50**
4" Width 76 Warp, 17 Fill ..... P/N 01-06705..... Roll **$29.90**
6" Width 106 Warp, 17 Fill ..... P/N 01-06710..... Roll **$54.65**
12" Width 218 Warp, 17 Fill ..... P/N 01-06720..... Roll **$105.95**

UNIDIRECTIONAL FIBERGLASS TAPE



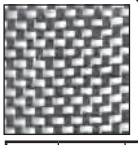
This is a fibrous glass reinforcement designed to furnish exceptionally high directional strength. Manufactured from parallel strands of glass roving which are held together by a fine woven cross thread. The placement of the cross thread is such that the parallel rovings do not wander or have a tendency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

3" Wide ..... P/N 01-06800..... **$1.75 Yd.**

UNIDIRECTIONAL CARBON GRAPHITE

Construction is such that the fibers are oriented in a straight or linear manner with no twist and are able to be maintained in that condition while being impregnated by hand. The fabric is formed from rovings or "tows" of fibers similar to that used in making woven fabric. These fibers are locked into position by very fine fill (or cross machine direction) fibers which are encapsulated with an adhesive which is compatible with common impregnating resins. These fill fibers and the encapsulating adhesive will be visible in any clear resin. The resulting "pattern" is normal and should not be interpreted as poor wet-out of the reinforcing fibers. For hand lay-ups, resin may be applied by spray, brush or by pouring action. A short napped paint roller is recommended for spreading the resin. Excess resin should always be rolled out in a direction parallel to the graphite fibers. The final or external layer should be applied with the fill yarns facing down (unexposed). Satisfactory for use with epoxies, polyesters, vinyl esters and other resins. The fabric is rolled with a polyethylene interliner to maintain cleanliness. Care and cleanliness should be practiced when working with Graphite materials. Unattached graphite fibers are easily airborne. A filter mask should be worn when cutting and fabricating. Itching & irritation caused by broken filaments becoming imbedded in the skin can result from filament breakage during handling.

This graphite fabric is similar to the bidirectional woven graphite described above but is a unidirectional weave using standard 3000 tow graphite warp and 75-1/0 fiberglass fill .



UNIDIRECTIONAL GRAPHITE FULL WIDTH ROLLS

Sold by the yard.

Style	Part No.	Weight Oz. Sq.Yd.	Width	Thick-ness	W x F	Weave	Tensile Strength Lbs./Inch Warp	Fill	Price per Lin. Yd.
716	716-38	4.7	38"	.006"	16 x 16	Plain	550	125	**$26.50**

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

GRAPHITE FIBER TAPES

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

5" Wide ..... P/N 01-06200..... **$1.78 /Foot**
25% Discount on full roll of 250 ft.
12" Wide ..... P/N 01-06300..... **$3.85 /Foot**
15% Discount on 12"W x 50' Roll & 25% Discount on 12"W x 300' Roll

UNIDIRECTIONAL CARBON TAPES

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

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

CARBON FIBER TUBING

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

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

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

GRAPHITE – LAMINATING EPOXIES

CARBON GRAPHITE YARN TOW

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

Actual Size	Part No.	Approx. Yield	Roll Size	Price/Spool
3K Tow	01-00343	2470 Yd./Lb.	4 Lb.	**$372.95**
6K Tow	01-00307	1229 Yd./Lb.	1 Lb.	**$79.65**
12K Tow	01-00004	621 Yd./Lb.	2 Lb.	**$99.50**
12K Tow	01-00345	621 Yd./Lb.	4 Lb.	**$199.00**

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

S-GLASS ROVING FILAMENTS

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

One 15 Lb. Roll P/N 01-06400 ..... **$286.00**

KEVLAR 49 ROVING

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

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

SYSTEM THREE QUIKFAIR EPOXY FAIRING PUTTY

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

24 oz. Kit .....P/N 01-00404 ..... **$27.80**
1-1/2 qt. Kit .....P/N 01-00405 ..... **$42.65**

EPOXY PREMIUM PIGMENTS

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

White - 1 oz.....P/N 01-45308 ..... **$4.45**
White - 8 oz.....P/N 01-45501 ..... **$20.50**
Black - 1 oz. .....P/N 01-45319 ..... **$4.50**
Black - 8 oz. .....P/N 01-45512 ..... **$20.25**

JEFFCO EPOXY LAMINATING SYSTEM

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

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

Low Viscosity Laminating Resin

1307 LV, Pail (40 lbs)..... P/N 01-07917.....**$324.00**
1307 LV, Gallon (8 lbs) ..... P/N 01-07914.....**$64.75**

Fast Hardener

3102, Pail (40 lbs) ..... P/N 01-07920 ...**$358.95**
3102, Gallon (8 lbs)..... P/N 01-07918 .....**$76.75**
3102, Quart (2 lbs) ..... P/N 01-07915 .....**$22.50**

Medium Hardener

3176, Pail (40 lbs) ..... P/N 01-07921 ...**$359.95**
3176, Gallon (8 lbs)..... P/N 01-07922 .....**$79.85**
3176, Quart (2 lbs) ..... P/N 01-07923 .....**$22.50**

KITS - Jeffco Epoxy, 1 gal. kit, fast..... P/N 01-07916 .....**$87.50**
Jeffco Epoxy, 5 gal. kit, fast..... P/N 01-07919 ...**$424.00**
Jeffco Epoxy, 1 gal. kit, medium.... P/N 01-07924 .....**$87.50**
Jeffco Epoxy, 5 gal. kit, medium.... P/N 01-07925 ...**$368.95**

AEROPOXY LIGHT PATCHING/FILLER COMPOUND

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

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

IMPACT RESISTANT LAMINATING EPOXY

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

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

AIRCRAFT SPRUCE WEST
CORONA, CA • (877) 4-SPRUCE
AIRCRAFT SPRUCE EAST
PEACHTREE CITY, GA • (877) 477-7823

Prices Subject to Change Without Notice

EPOXY LAMINATING SYSTEMS

POLY EPOXY
STRUCTURAL EPOXY SYSTEM

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

Poly Epoxy Kit, quart ..... P/N 01-07905 ..... **$41.50**
Poly Epoxy Kit, gallon..... P/N 01-07906 ..... **$119.95**

POLY EPOXY TECHNICAL DATA

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

Rheology: Mixing Ratio:3 parts Resin to 1 part Converter by Weight 10 parts Resin to 4 parts Converter by Volume

Kinetics:

Pot Life, 100 grams ..... 105 mins 1 quart ..... 75 mins
Mold Open Time..... 3-4 hrs Tack Free Time..... 5-6 hrs

AVAILABLE EXCLUSIVELY FROM AIRCRAFT SPRUCE

ALPHA POXY
NON-STRUCTURAL EPOXY SYSTEM

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

AlphaPoxy Kit, 1-1/4 gallon ..... P/N 01-07911 ..... **$79.90**
AlphaPoxy Hardener, gallon..... P/N 01-07909 ..... **$55.85**
AlphaPoxy Resin, 7/8 gallon ..... P/N 01-07912 ..... **$49.85**
AlphaPoxy Hardener, 5 gal. pail..... P/N 01-07910 ..... **$265.95**

AlphaPoxy Hardener, 3/8 gallon ..... P/N 01-07908 ..... **$28.50**
AlphaPoxy Resin, 5 gal. pail ..... P/N 01-07913 ..... **$239.00**
Rheology: Mixing Ratio:
2 parts Resin to 1 part Hardener by Weight

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E-Z POXY
EPOXY LAMINATING SYSTEMS

In early 1996, Composite Design Co. developed E-Z Poxy to provide a replacement epoxy system for Epolite (Safe-T-Poxy) which is no longer produced by Hexcel. The E-Z Poxy series of laminating systems utilizes one resin and your choice of three hardeners for varying pot life and viscosity requirements. The E-Z Poxy systems offer the same handling and physical properties as the discontinued Epolite systems including ease of use, long pot life, rapid cure for demold or process continuation, and superior room temperature curing properties. Excellent for use in sport aviation, marine, and industrial applications.

E-Z 83 hardener is equivalent to Safe-T-Poxy standard hardener, E-Z 84 is equivalent to Safe-T-Poxy II hardener, and E-Z 87 is equivalent to Safe-T-Poxy slow hardener. E-Z Poxy products should not be mixed with materials produced by other epoxy manufacturers.

E-Z POXY PRICE LIST

Description	Part No.	Price
E-Z Poxy 1-1/2 gal. kit* EZ 83 Hardner	01-07850	**$153.95**
E-Z Poxy 5 gal. kit** EZ 83 Hardner	01-07950	**$698.00**
E-Z Poxy 1-1/2 qt. kit EZ 83 Hardner	01-08050	**$45.50**
E-Z Poxy II 1-1/2 gal. kit* EZ 84 Hardner	01-08850	**$153.95**
E-Z Poxy II 5 gal. kit** EZ 84 Hardner	01-08950	**$692.00**
E-Z Poxy 1 gal. resin	01-00245	**$89.95**
E-Z Poxy 5 gal. resin	01-00246	**$388.95**
E-Z Poxy 1/2 gal. hardener	01-00247	**$74.85**
E-Z Poxy II 1/2 gal. hardener	01-00248	**$74.85**
E-Z Poxy 2-1/2 gal. hardener	01-00249	**$316.95**
E-Z Poxy II 2-1/2 gal. hardener	01-00250	**$316.95**
E-Z Poxy 5 gal. hardener	01-00251	**$570.00**
E-Z Poxy II 5 gal. hardener	01-00252	**$482.95**
E-Z Poxy slow 1/2 gal. hardener	01-00253	**$73.75**

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

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

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

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

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

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

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

POLYESTER GEL COATS

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

Color	Size	P/N	Price
Black	Pint	09-01668	**$20.85**
	Quart	09-01666	**$31.75**
	Gallon	09-01667	**$62.75**
White	Pint	09-01669	**$19.95**
	Quart	09-01664	**$34.50**
	Gallon	09-01665	**$68.50**

Color	Size	P/N	Price
Dark Blue	Pint	09-01670	**$35.50**
	Quart	09-01671	**$53.00**
	Gallon	09-01672	**$103.95**
Red	Pint	09-01673	**$39.60**
	Quart	09-01674	**$58.00**
	Gallon	09-01675	**$84.95**

Color	Size	P/N	Price
Clear	Pint	09-02159	**$20.85**
	Quart	09-02160	**$33.50**
	Gallon	09-02161	**$68.90**

EPOXY LAMINATING SYSTEMS

POLYESTER RESINS

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

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

Polyester Resin #692 Quart ..... P/N 01-00346 ..... **$22.90**
1 Gal. #1520-5 with 1 Oz. Catalyst ..... P/N 01-00347 ..... **$78.65**
5 Gal. #1520-5 with 4 Oz. Catalyst ..... P/N 01-00348 .... **$318.95**
Additional catalyst may be required. 1 Oz. .... P/N 01-06900 ..... **$3.55**

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

1 Gal. #L253T-20 with 1 Oz. Catalyst ..... P/N 01-00349 ..... **$45.50**
5 Gal. #L253T-20 with 4 Oz. Catalyst ..... P/N 01-00350 ... **$231.95**
Additional catalyst may be required.
Same catalyst used for #1520-5 and #L253T-20.
Note: Use #1520-5 finish coating over #L253T-20 but never use #L253T-20 over #1520-5.
Above resins are not for use in making fuel tanks. For fuel tanks (except those for gasohol) use #6060-5 Isophthalic Resin.*

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

4 Oz. in Polyethylene Dispenser Bottle ..... P/N 01-07100 ..... **$2.35**
Pint (16 Oz.) in Polyethylene Dispenser Bottle P/N 01-07200 ..... **$4.50**
Gallon (128 Oz.) ..... P/N 01-07300 ..... **$58.25**

MEKP NORAC CATALYST

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

MGS EPOXY RESINS

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

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

System 285 Prices

L285 Resin (1 Gal.) ..... P/N 01-41000 ... **$137.95**
H285F Hardener (.25 gal/1 qt.) ..... P/N 01-41005 ..... **$32.75**
H287S Hardener (.25 gal/1 qt.)* ..... P/N 01-41006 ..... **$38.50**

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

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

System 335 Prices

L335 Resin (Gal.) ..... P/N 01-41100 ..... **$96.75**
H335F Hardener (.225 gal/0.9 qt.) ..... P/N 01-41105 ..... **$32.50**
H340S Hardener (Slow) ..... P/N 01-41106 ..... **$31.75**

Two units of hardener are required for each gallon of resin

VINYL ESTER RESIN

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

MEDIUM PROMOTED: Includes CONAP, DMA and other additives. Add MEKP for complete cure:
Quart ..... P/N 01-01076 ..... **$37.50**
Gallon ..... P/N 01-07350 ..... **$69.75**

MEKP Clear Catalyst 1oz. ..... P/N 01-01110 ..... **$2.45**
MEKP NORAC Catalyst Only (4 oz.) ..... P/N 01-07325 ..... **$5.50**
Vinyl Ester Resin 411-350PA - Quart Kit.. ..... P/N 01-01109 ..... **$34.25**
Vinyl Ester 1-Gal. Kit (Resin & Catalyst) ..... P/N 01-07355 ..... **$75.25**

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

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

CATALYST LARGE QUANTITY CHART

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

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

CATALYST SMALL QUANTITY CHART

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

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

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EPOXY LAMINATING SYSTEMS

AEROPOXY FROM PTM&W INDUSTRIES

CORROSIVE

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

Part No.	Description	Wt. (lbs.)	Price
01-42125	1 quart PR2032 Resin	2.25	**$32.75**
01-42130	1 pint PH3660 Hardener	.66	**$13.75**
01-42135	Aeropoxy QUART KIT	2.91	**$47.50**
01-42140	3/4 gallon PR2032 Resin	7.5	**$89.75**
01-42145	1 quart PH3660 Hardener	2.0	**$37.75**
01-42150	Aeropoxy GALLON KIT	9.5	**$118.95**
01-42155	5 gallon PR2032 Resin	48	**$447.95**
01-42160	2 gallon PH3660 Hardener	13	**$179.95**
01-42165	Aeropoxy PAIL KIT	61	**$626.00**
01-00160	1 pint PH3630 Hardener (fast)	--	**$13.95**
01-00161	1 quart PH3630 Hardener (fast)	--	**$37.00**
01-00162	1 pint PH3665 Hardener (slow)	--	**$13.95**
01-00163	1 quart PH3665 Hardener (slow)	--	**$35.75**

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

WEST SYSTEM EPOXY

CORROSIVE

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

WEST EPOXY KITS

WEST COMPONENTS

Kit No.	Kit Size	Part No.	#105 Resin	Hardener		Kit Price	Resin		Fast Hardener		Slow Hardener	
				#205 Fast	#206 Slow		Part No.	Price	Part No.	Price	Part No.	Price
A-1	1.2 Qt	01-08100	32 Oz	7 Oz	------	**$48.75**	01-00353	**$38.93**	01-00356	**$20.10**	01-00359	**$20.10**
A-2	1.2 Qt	01-08200	32 Oz	------	7 Oz	**$48.25**	32 Oz	-----	7 Oz	------	7 Oz	-----
B-1	1.2 Gal	01-08300	126 Oz	27 Oz	------	**$123.95**	01-00354	**$98.26**	01-00357	**$44.29**	01-00360	**$44.29**
B-2	1.2 Gal	01-08400	126 Oz	------	27 Oz	**$124.85**	126 Oz	-----	27 Oz	------	27 Oz	------
C-1	5.25 Gal	01-08500	4.35 Gal	121 Oz	------	**$535.00**	01-00355	**$390.80**	01-00358	**$153.17**	01-00361	**$153.17**
C-2	5.25 Gal	01-08600	4.35 Gal	------	121 Oz	**$536.00**	4.35 Gal	-----	121 Oz	------	121Oz	------

ORDER 301/303 PUMP PACKS SEPERATELY.

207 SPECIAL COATING HARDENER

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

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

209 TROPICAL HARDENER

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

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

PRO-SET 125 RESIN & 229 HARDENER

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

For PROFESSIONAL use only.

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

GAL.#125 Resin ..... P/N 125-0..... **$119.50**
GAL.#229 Hardener ..... P/N 229-0..... **$73.50**

WEST SYSTEM ACCESSORY PRODUCTS

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

- West System 101 Handy Repair Pack - Contains 105 resin & 205 hardener plus accessories needed for small repairs
P/N 01-08760 ..... **$9.75**

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

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

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

423 GRAPHITE POWDER

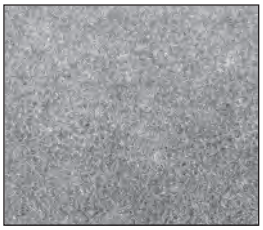
423 Graphite Powder can be mixed with WEST SYSTEM epoxy to produce a low friction coating with increased scuff resistance and durability. 423 is often used as a bearing surface, and as a coating on the bottoms of racing craft that are dry sailed. P/N 09-00315.....**$17.93**

301/303 PUMP PACK

Using Mini Pumps helps ensure accurate metering of resin/hardener mixture. Pumps mount directly on resin and hardener containers. One stroke from each pump delivers proper ratio of resin to hardener. Kit consists of 3 pumps for A, B, and C epoxy kits. P/N 01-00318.....**$14.52**

FOAM

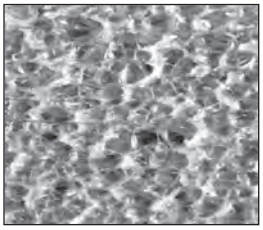
STYROFOAM – SMALL CELL



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

Foam Type	Density	Thickness	Sheet Size	Part No.	Price/Sheet
Styrofoam (Blue) Small Cell	2 Lb/Ft^3	5/8”	24” x 48”	01-09400	**$8.25**
		5/8”	24” x 96”	01-09500	**$17.25**
		3/4”	24” x 96”	01-09600	**$21.25**
		1”	24” x 48”	01-09700	**$13.75**
		1”	24” x 96”	01-09800	**$27.50**
		1-1/2”	24” x 96”	01-09900	**$42.25**
		2”	24” x 48”	01-10000	**$28.25**
		2”	24” x 96”	01-10100	**$57.25**
		4”	24” x 48”	01-10200	**$57.50**

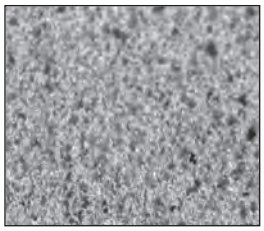
POLYSTYRENE – LARGE CELL



POLYSTYRENE – LARGE CELL This blue large cell expanded foam is 2 lb. density and cuts easily using a hot wire to airfoil shapes. Compatible with most adhesives, but should be used only with epoxies, not polyester resins. Will dissolve in fuels and solvents.

Foam Type	Density	Thickness	Sheet Size	Part No.	Price/Sheet
Styrofoam FB (Blue) Large Cell		8”	16” x 4”	01-37600	**$7.90**
		8”	16” x 25”	01-01166	**$44.50**
		8”	16” x 42”	01-10600	**$77.85**
		8”	16” x 67”	01-10800	**$119.95**
		8”	16” x 109”	01-10900	**$195.95**
Polystyrene (Round Corners)	2 Lb/Ft^3	10”	20” x 96”	01-11100	**$210.95**

POLYURETHANE FOAM



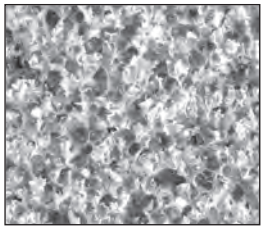
CAUTION

DO NOT USE HOT WIRE!

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

Foam Type	Density	Thickness	Sheet Size	Part No.	Price/Sheet
Urethane (Tan or Green)	2 Lb/Ft^3	1/2”	24” x 48”	01-11300	**$10.50**
		1/2”	48” x 48”	01-11400	**$19.50**
		3/4”	24” x 48”	01-12150	**$13.95**
		3/4”	24” x 96”	01-12160	**$29.85**
		1”	24” x 48”	01-11500	**$18.65**
		1”	24” x 96”	01-11600	**$33.75**
		1”	48” x 96”	01-11700	**$59.90**
		2”	24” x 48”	01-11900	**$37.75**
		2”	24” x 96”	01-12000	**$69.75**
		2”	48” x 96”	01-12100	**$117.95**

DIVINYCELL FOAM



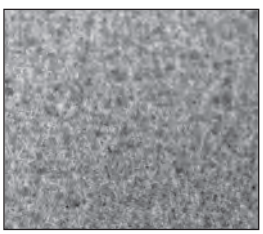
CAUTION

DO NOT USE HOT WIRE!

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

Foam Type	Density	Thickness	Sheet Size	Part No.	Price/Sheet
Divinycell PVC (Blue) Type H45	3 Lb/Ft^3	1/8”	32” x 48”	01-00158	**$15.80**
		1/4”	32” x 48”	01-12300	**$21.75**
		3/8”	32” x 48”	01-12400	**$27.75**
		5/8”	24” x 47”	01-12500	**$43.50**
		3/4”	15” x 26”	01-12600	**$12.75**
		3/4”	32” x 48”	01-12700	**$55.50**
		1”	32” x 48”	01-12800	**$86.65**
		1-3/4”	32” x 48”	01-12900	**$96.25**
Eracer		2”	48” x 96”	01-12920	**$348.50**
	Eracer	2”	24” x 48”	01-12910	**$68.75**
	Eracer	3”	48” x 96”	01-12940	**$487.50**
	Eracer	3”	24” x 48”	01-12930	**$123.95**
Divinycell PVC (Tan) Type H100	6 Lb/Ft^3	1/4”	37” x 37.5”	01-13000	**$46.85**
		1”	6” x 10”	01-13100	**$9.65**
		1”	10” x 12”	01-13200	**$18.75**
Divinycell PVC	15.6 Lb./Ft^3	1/4”	24.8” x 27.75”	01-13300	**$155.95**

LAST-A-FOAM



CAUTION

DO NOT USE HOT WIRE!

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

Foam Type	Density	Thickness	Sheet Size	Part No.	Price/Sheet
Last-A-Foam Urethane/Polyester (Yellow) 275° F	4.5 Lb/Cu. Ft.	10mm	24” x 96”	01-13400	**$52.50**
		1/4”	24” x 48”	01-13550	**$16.75**
		1/4”	24” x 96”	01-13500	**$36.90**
		3/8”	24” x 96”	01-13600	**$44.75**
		1/2”	24” x 96”	01-13700	**$55.50**
		3/4”	24” x 96”	01-14000	**$76.25**
Last-A-Foam Urethane/Polyester (Yellow) 275° F	6Lb/Cu. Ft.	1/4”	24” x 48”	01-14100	**$20.85**
		3/8”	24” x 48”	01-14200	**$28.75**
		3/4”	24” x 48”	01-14250	**$50.00**
Last-A-Foam Urethane/Polyester (Yellow) 275°F	8 Lb/Cu. Ft.	1”	16” x 24”	01-01048	**$32.75**
Last-A-Foam Urethane/Polyester (Yellow) 275° F	18 Lb/Cu. Ft.	0.200”	12” x 48”	01-14400	**$32.85**
		1/4”	12” x 48”	01-14500	**$34.50**

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

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

Kit Size	Part No.	Approx. Foamed Vol. (Cu.Ft.)	Weight Lbs.	Price/Kit
1 Quart Kit (1 Pt. ea component)	01-08800	1-1/4	3	**$38.50**
2 Quart Kit (1 Qt. ea component)	01-08900	2-1/2	6	**$58.50**
2 Gallon Kit (1 Gal. ea component)	01-09000	10	22	**$169.85**
10 Gallon Kit (5 Gal ea component)	01-09100	50	110	**$610.00**

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

POLYFIX COMPOSITE REPAIR KITS

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

Description	Size	Part No.	Price
Polyfix Plastic Repair Kit	Small	01-01045	**$22.45**
Polyfix Plastic Repair Kit	Medium	01-00235	**$34.75**
Polyfix Plastic Repair Kit	Large	01-00236	**$49.85**
Polyfix Plastic Repair Kit	X-Large	01-00237	**$292.95**
Non-Clog Cyanoacrylate Applicator reg. Tip	6" Long	01-01006	**$21.75**
Non-Clog Cyanoacrylate Applicator Fine Tip	6" Long	01-01007	**$21.75**
Polyfix Thin Cyanoacrylate	1/2 OZ	01-01008	**$3.95**
Polyfix Thin Cyanoacrylate	1 OZ	01-01009	**$6.95**
Polyfix Thin Cyanoacrylate	2 OZ	01-01010	**$12.75**
Polyfix Thin Cyanoacrylate	8 OZ	01-01011	**$39.90**
Polyfix 9000 Extra Thick	1/2 OZ	01-01012	**$4.45**
Polyfix 9000 Extra Thick	1 OZ	01-01013	**$7.45**
Polyfix 9000 Extra Thick	2 OZ	01-01014	**$12.45**
Polyfix 9000 Extra Thick	8 OZ	01-01015	**$34.95**
Polyfix 11000 Gap Fill	1/2 OZ	01-01016	**$4.75**
Polyfix 11000 Gap Fill	1 OZ	01-01017	**$8.75**
Polyfix 11000 Gap Fill	2 OZ	01-01018	**$12.75**
Polyfix 11000 Gap Fill	8 OZ	01-01019	**$36.75**
Polyfix Industrial 4000 Flexible Thin	1 OZ	01-01020	**$7.50**
Polyfix 3000 Rubber Fill	1 0Z	01-01021	**$6.75**
Polyfix 3000 Rubber Fill	2 OZ	01-01022	**$12.50**
Polyfix 17000 Industrial Odorless Gap Fill	1/2 OZ	01-01023	**$9.25**
Polyfix 17000 Industrial Odorless Gap Fill	1 OZ	01-01024	**$16.95**
Polyfix 17000 Industrial Odorless Gap Fill	2 OZ	01-01025	**$28.95**
Polyfix 17500 Industrial Odorless Gap Fill	1/2OZ	01-01026	**$9.95**
Polyfix 17500 Industrial Odorless Gap Fill	1 OZ	01-01027	**$17.95**
Polyfix 17500 Industrial Odorless Gap Fill	2 OZ.	01-01028	**$30.95**
Polyfix 64000 Carbon Gap	1/2OZ	01-01029	**$5.95**
Polyfix 64000 Carbon Gap	1 OZ	01-01030	**$11.50**
Polyfix 64000 Carbon Gap	16 OZ	01-01031	**$173.95**
Polyfix PLYDT Catalytic	10M/MG	01-01032	**$5.90**
Polyfix PLYDT Catalytic	1/2 PT	01-01033	**$39.95**
Polyfix PLYDT Catalytic	1 PT	01-01034	**$68.75**
Polyfix 10000 Accelerator	2 OZ	01-01035	**$11.75**
Polyfix 10000 Accel	8OZ	01-01036	**$18.50**
Polyfix 6000 Debonder	1 OZ	01-01037	**$4.50**

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

COMPOSITE MATERIALS PRACTICE KIT

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

Practice Kit with Manual ..... P/N 01-15000 ..... **$99.00**
Practice Kit without Manual ..... P/N 01-15100 ..... **$89.00**
International Practice Kit with Manual ..... P/N 01-15050 ..... **$57.00**

Same as Practice kit with the manual, but excludes the epoxy for International shipping.

BACKSAVER FOAM

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

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

CONFOR FOAM SEAT CUSHION

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

1" x 16" x 18" ..... P/N 01-09310 ..... **$21.85 ea.**
2" x 16" x 18" ..... P/N 01-09320 ..... **$45.75 ea.**
3" x 16" x 18" ..... P/N 01-09300 ..... **$74.75 ea.**

INFLATABLE LUMBAR SUPPORT

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

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

GE SPACE INVADER FOR WINDOWS AND DOORS

Space Invader Window & Door formula produces a dense cell structure that exerts minimal pressure on surrounding lumber, and the frames of windows and doors. When cured, most of the foam's cell cavities are quite small and closely spaced (70 percent of the foam's cell structure is in this form, known as closed-cell, according to GE). This closed-cell structure permits 90 percent less water to enter it than comparable products, says GE. 12-ounce can

P/N 01-09200 ..... **$15.90**

VACUUM BAGGING SUPPLIES

CM

VACUUM BAGGING TECHNIQUES BOOK - P/N 01-14803 ..... **$5.05/ea.**

VACUUM BAGGING FILM - #7400 film is a high grade nylon 6 film. It is transparent green in color and heat stabilized for long term, 350°F cures. Film is soft & pliable and ideal for high temperature composites, metalbond, and any function requiring heat & pressure. Width: 54".
P/N 01-14805 ..... **$1.66/Yd.**

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

STRETCHLON VACUUM BAG FILM 60" - Modified urethane film with incredibly high elongation, which allows anyone to vacuum bag easily. This film has memory and can be reused. .0015 x 60" x 200 ft (38μ x 1.52m x 62m) approx shipping weight 18lbs per roll (8.1 kg). 500% elongation with memory. Maximum temperature use 250°F (122°C). Available in 120" wide (3.04m). Elastomeric thin film, perfect for compaction. Not affected by low humidity, always stays soft with no cracking. Can be heat seamed to custom shapes reducing labor costs. Fewer pleats necessary, conforming to autoclave pressures
P/N 01-01080..... **$4.60/Lin.Yd.**

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

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

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

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

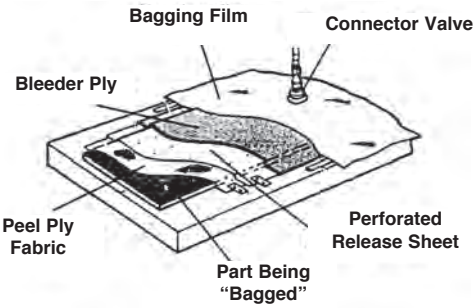
POROUS TEFLON COATED RELEASE FILM - #7025 is used where a medium weight porous release fabric is required on the surface of a part. During the cure of the assembly it will allow excess resin and all of the air and volatiles to pass into the bleed/breather ply (CFM Airflow 70). At completion of the cure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

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

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

400° F RESISTANT SEALANT TAPE - #4401 is a grey vacuum bag sealant tape that removes cleanly from the tool surface at the completion of the cure cycle. It can be used at any temperature up to 400° F. It can be used on any tool surface now in use and has been a standard of the industry for many years. It has high initial tack and is very easy to apply to prevent leaks between the bag and tool. It works well for composites, metalbond, or any function that requires temperature and/or pressure up to 400° F. Color: Grey. Size: 1/8" x 1/2" x 25 ft.
P/N 01-14850 ..... **$6.25/roll**

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



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

OVEN VACUUM HOSE - #8020 is a thick walled, flexible silicone hose. It is normally used for debulking and oven cures using vacuum only. Furnished in standard 10 foot lengths. Other lengths available on special order. Hose size: 1/4" ID. P/N 01-14860 ..... **$109.95/ea.**

HIGH TEMPERATURE QUICK DISCONNECT SET - #8432 is a two-piece quick disconnect both male and female for use to 500° F at pressures up to 200 psi (13.8 bars). Sold as a set of male & female components.
P/N 01-14865 ..... **$23.75/set**

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

GREENFLOW 75 - Greenflow 75 is designed to efficiently distribute resin with little waste due to the low profile, tight construction. Greenflow 75 can be used with polyester vinlyester and epoxy resins. Color: Green. Thickness: .035± .003 (.89mm±75μm). Melt Point (Method:DSC): 230°F (161°C). Configuration of Net: Rhombic
P/N 01-01081 ..... **$3.00/Lin. Yd.**

PORCUPINE ROLLER - #9060 is a steel roller with a wood handle designed to perforate films to allow air, volatiles, and some resin to flow through the film. The amount of resin flow can be controlled by the depth of the pin penetration. Also useful on foam to give the bonding adhesive a better grip on the foam surface. P/N 01-14880 ..... **$85.25/ea.**

VACUUM GAUGE - a dial faced vacuum gauge capable of displaying vacuum from 0" to 30" Hg. It is 2" in diameter and can be used on the vacuum pump line, holding tank, or with a vacuum valve to determine vacuum in specific areas of a bagged assembly. Fitting size: 1/4" NPT.
P/N 01-14885 ..... **$15.50/ea.**

VACUUM PUMP - Standard vacuum pump ideal for small shop vacuum bagging operations. P/N 01-14891 ..... **$374.00/ea.**

VACUUM PUMP KIT - Includes vacuum pump, gauge, valve, fittings, and hose. P/N 01-00164 ..... **$437.95**

VACUUM RELIEF VALVE - P/N 52763..... **$14.75**

BAGGING SUPPLIES STARTER KIT - Includes 10 yards of Vacuum Bagging Film #7400, 10 yards of 4.5oz. Breather Bleeder #3, 1 roll 400° resistant Sealant Tape (25 yards/roll), 10 yards Dacron Fabric 1.8oz.x 60", & 10 yards 60" x .001 Perforated Release Sheet.
P/N 01-14894 ..... **$123.95**

PERFORATED RELEASE SHEETS - 60" width, .001 thickness. Sold by the yard. P/N 01-14895 ..... **$4.40/yd.**

ECONOMY VACUUM GENERATOR - a low cost and reliable method of generating a vacuum for those who already own an air compressor. The generator will create 27" of Hg vacuum/pressure when coupled in-line to an air compressor capable of producing 2.2 cfm. Larger air compressors are advisable for continuous use applications. Suitable for parts up to 80 ft2. P/N 12-11148 ..... **$174.85**

VACUUM FORMING MACHINE CONSTRUCTION PLANS - Now only available on CD. You can take the disc to Kinko's and print the full set, or view it on your computer and print only what you need? 100 page illustrated assembly manual. About 30% of plans purchasers build a machine (based on oven kit sales), and almost no questions! Complete specifications are given for all parts. Easy to read construction manual uses a ring type binding so it lays flat and includes illustrations to make every step easy to understand. Here's what you get on disc: 106 page illustrated assembly manual with wiring diagrams in a ring binder. Separate parts lists, wood and steel cut lists and pump and tank sources. 3 full size cut-away drawings of an assembled machine 27 fully dimensioned assembly and parts drawings. 4 photo pages with 36 color pictures. P/N 01-14896 ..... **$59.95**

AIRCRAFT PLASTIC REPAIR

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

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

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

P/N 01-00533.....**$9.75**

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

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

P/N 01-00534.....**$20.75**

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

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

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

2100-1 SMALL INSTA-WELD KIT

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

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

2200-1 INSTA-WELD 1 (THIN)

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

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

2250-1 INSTA-WELD 2 (THICK)

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

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

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

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

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

PLASTIFIX REPAIR KITS

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

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

P/N 01-00545 ..... **$89.75**

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

Flex-Tex is a unique blend of materials designed to be used for re-texturing repaired areas on instrument panels, consoles, etc. A wide variety of pebble-grained textures can be achieved with this product by varying the air pressure, distance from work, and speed of pass. Apply with a regular spray gun or a PreVal sprayer. Dries flat black. Must be top-coated with color for durability and appearance. P/N 01-00546.....**$22.65**

MICRO-WELD 100

Micro Weld 100 is a versatile and economical tool for repairing many type of plastics. Airless welding provides the do-it-yourself-er and professional alike a way to economically repair many of the items that would normally be thrown away. Excellent for repair of plastic aircraft parts. **FEATURES:** • 100 Watt heating element with built in temperature control unit • 2045W Stainless Steel Reinforcing Mesh • 5027HT Welding Tip • Welder Stand • Carry Case • Instruction Booklet • 15ft of 6 different welding rods

P/N 01-00766 .....**No Match**

BUMPER & CLADDING COAT (PINT)

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

Black (pint) ..... P/N 01-00548 ..... **$35.00**
3601-4 Light Gray (quart)..... P/N 01-00552 ..... **$59.75**
3602-4 Dark Gray (quart)..... P/N 01-00553 ..... **$55.25**

CS100 CLEAN SHEETS

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

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

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

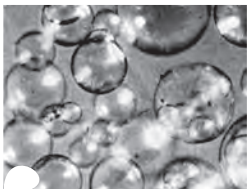
Uni-Cloth is a quality fiberglass cloth that is well suited for reinforcing plastic repairs as well as any other application requiring fiberglass reinforcement.

P/N 01-00535.....**$14.45**

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

FILLERS

GLASS BUBBLES



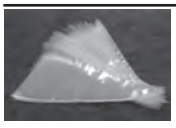
These bubbles are actually hollow glass spheres. Because the high-quality glass is very crush resistant, the foam is much stronger, stiffer and water-resistant than any foam made by chemical foaming. These foams displace 4-6 times their weight in most resins and improve the handling characteristics of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

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

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

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

DISPOSABLE ICING BAGS



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

CAB-O-SIL

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

1 gallon bag..... P/N 01-04711..... **$10.95**

FLOCKED COTTON FIBER

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

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

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

MILLED GLASS FIBERS

As the name implies, this material is made by milling fiberglass into a very thin consistency. This material is used in preparing a structural filler. This material is used in fillets that require structural integrity. Milled fiber fillers have higher strength than cotton flock but have fine particles of fiberglass that can penetrate the skin.1 Lb P/N 01-14780 ..... **$4.65**

PELOUZE DYMO DIGITAL SCALE

Ultra-compact design for super portability. Features an LCD screen with easy-to-read digital readout. Convenient "hold" feature locks weight display for ten seconds after item is removed. Digital postal rates. Rates update with Internet download. Operates on: 3 AAA Batteries (included)..... P/N 12-01580..... **$69.85**

3M™ #77 SPRAY ADHESIVE

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

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

PUTTY FLEX FILLER

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

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

ECONOMY DIGITAL SCALE

LCD display that shows ounces, pounds or grams. "Tare" feature lets you "zero-out" container's weight. Sealed buttons prevent damage from spills. Maximum capacity of 176 ounces (11 lbs. or 5000 grams) Automatic 40 second shutoff saves batteries. Not for commercial use. Uses four AA batteries, not included. Overall dimensions: 9-1/2" L x 6-3/4" W x 1-1/2" H P/N 12-02585..... **$32.85**

BONDO

Automotive body filler, used extensively in composite construction to hold jig blocks in place, and for other temporary fastening jobs. Hardens quickly and can be chipped off without damaging the fiberglass. The color of the mixture is used to judge how fast it will set. As more hardener is added, the brighter in color the mixture becomes and the faster it hardens.

#261 Pint (1-1/2 Lb.) ..... P/N 01-00365..... **$5.75**

#262 Quart (3 Lb.)..... P/N 01-00366..... **$7.95**

#265 Gallon (12 Lb.) ..... P/N 01-00367..... **$23.75**

DYNALITE

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

494 Gallon .....P/N 01-00368 ..... **$20.75**

492 Quart.....P/N 01-01072 ..... **$10.50**

FIX-IT

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

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

Fit-It 1 Lb kit..... P/N 01-14775..... **$21.70**

Fit-It Metal 1/4 Lb kit... P/N 01-14790..... **$10.95**

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

MEGUIAR'S MOLD RELEASE #8

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

P/N 01-09415 ..... **$12.60**

FILLERS – PRIMERS

SUPERFIL BY POLY-FIBER

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

1 Quart Kit (20oz. Resin/12oz Hdnr).....P/N 09-28250 .....**$22.90**
3 Gal Kit (2 gal.Resin/1 gal. Hdnr).....P/N 09-28260 .....**$204.00**

UV SMOOTH PRIME FILLER/PRIMER

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

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

FEATHER FILL

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

#401 (1 Qt.).....P/N 01-00369 .....**$41.75**
#391 (1 Gal.).....P/N 01-00370 .....**$127.95**

RUST DEFENDER SANDABLE FILLER

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

Quart.....P/N 01-00558 .....**$73.65**
Gallon.....P/N 01-00559 .....**$162.95**

FILL BOND PUTTY

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

Fill Bond Cartridge 750ML.....P/N 01-01124.....**$97.85**
Fill Bond Cartridge 375ML.....P/N 01-01125.....**$75.50**
Manual Dispensing Gun 370ML.....P/N 01-01126.....**$143.75**
Manual Dispensing Gun 750ML.....P/N 01-01127.....**$187.65**
Static Mixer Element.....P/N 01-01128.....**$4.85**

HI BUILD POLYESTER SANDING PRIMERS

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

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

Requires Catalyst P/N 01-01119.

AEROPOXY LIGHT FILLER

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

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

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

HYSOL EPOXY PATCH KITS

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

EPK0151 Kit, 3.35 oz. (fiberglass)
P/N 01-15875..... **$13.50**
EPK1C Kit 4.0 oz kit (aluminum)
P/N 01-15880..... **$11.50**

LITE WEIGHT FILLER

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

Quart..... P/N 01-00243..... **$23.50**
Gallon..... P/N 01-00244..... **$33.75**

WEST SYSTEM 410 MICROLIGHT

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

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

EPOXY SURFACE COAT

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

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

PRIME COAT PRIMER / FILLER

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

P/N 01-00305 ..... **$13.95**

PEEL PLY – PRIMERS – PAINTS

PEEL PLY

A layer of 2.7 oz. Dacron fabric strips or tape laminated into a layup as if it were an extra ply of glass. The peel coat wets out with epoxy like glass cloth and cures along with the rest of the layup. However, the Dacron does not adhere structurally to the glass and when peeled away it leaves a surface ready for glass-to-glass bonding without sanding.
Requirements for Small Aircraft:
• 3 Rolls of 1" x 50 Yds. Tape • 2 Rolls of 2" x 50 Yds. Tape • 1 Roll of 3" x 50 Yds. Tape • 1 Roll of 4" x 50 Yds. Tape

Width	Smooth Edge		Pinked	
50 Yd Roll	P/N 09-	Price/ Roll	P/N 09-	Price/ Roll
1"	15000	**$6.50**	15450	**$6.90**
2"	15100	**$14.25**	15500	**$13.75**
3"	15200	**$21.75**	15600	**$21.75**
4"	15300	**$28.75**	15700	**$29.00**
6"	15400	**$44.25**	15800	**$44.25**

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

FULL WIDTH PEEL PLY

Poly/Dacron blend is excellent as peel ply for composite lay-ups.
Full Width Peel Ply 2.7OZ, 64-66" #604
(Sold by the Yard).....P/N 09-00300 .....**$4.75**

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

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

MOLD RELEASE AGENTS

POL-EASE ® 2300 MOLD RELEASE

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

MAXIMUM MOLD RELEASE WAX

Meguiar's® Mold Release Wax is a blend of imported waxes specially formulated to provide a maximum number of releases per application.
P/N 01-09415 .....**$12.60**

MOLD RELEASE WAX

High-temperature paste wax. 14 oz.
P/N 01-00177 .....**$13.50**

FIBERGLASS MOLD RELEASE

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

LPS MRX SILICONE MOLD RELEASE

Excellent for releasing molded parts in high temperature and extreme pressure environments. MRX Silicone Spray Mold Release provides maximum releases and superior value for the end-user. This non-staining, non-corrosive mold release is heat stable up to 500°F. It is a nonflammable product and contains no class I or II ozone depleting chemicals. Like all LPS MR-series mold releases, MRX Silicone Spray Mold Release doesn't use Methylene Chloride.
16 oz. aerosol can .....P/N 09-00271 ..... **$12.50**

PVA RELEASE FILM

PVA (Polyvinyl Alcohol) should be used with #1016 Wax to aid in the release of parts form a mold. It should be applied in 3 thin mist coats over nonpourous, waxed mold surfaces.After the final wax coat has dried, begin by spraying a light tack coat of PVA. Typically, within 5 mins. the final heavier coats can be added. The PVA dries to form a smooth, glassy film. After part release, the residual film can be removed with water. We recommend using an inexpensive automotive siphon spray gun and 70-90 psi for application, although airbrushes will work on hobby size projects. PVA can also be sprayed over any polyester repair to provide an airless tack-free cure. For use with epoxies.
P/N 01-14813A **$24.75/qt**

ZOLATONE COCKPIT PAINT

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

Color	Use Primer	Part No.	Price
White/White	White	20-02	**$116.95**
Apollo Gray	-	20-11	**$137.95**
Hamlet Black	-	20-42	**$135.95**
Camille White	White	20-54	**$136.95**
Lilith Charcoal	Black	20-59	**$137.95**
Gray Stone	Gray	20-64	**$137.95**
Onyx Black	-	20-71	**$109.50**
Silver Gray	Gray	20-72	**$137.95**
Bright Blue	-	20-77	**$158.00**
Dark Red	-	20-78	**$58.60**
Desert Camo	Black	20-80	**$139.50**
Emerald Green	-	20-85	**$129.85**

ZOLATONE PRIMER

Order 1 Qt. Colored Primer and 1 Qt. Catalyst		
Color	**Part No.**	**Price**
Zolatone Epoxy Primer White Quart	01-00994	**$37.75**

HI GLOSS CLEAR POLYESTER TOP COAT

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

COMPOSITE TOOLS

AIRCRAFT DESIGNER APPROVED TOOLS

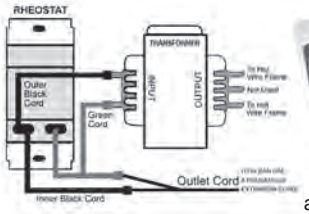
The tools offered in this section have been selected by professional aircraft designers and builders as being either necessary or highly desirable for working with composite structures.

KUT-MASTER FOAM CUTTING FRAME

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

2 Ft. Frame ..... P/N 01-15200 ..... **$162.95**
3 Ft Frame ..... P/N 01-15300 ..... **$178.95**
4 Ft Frame ..... P/N 01-15400 ..... **$211.95**

HOMEBUILDERS SPECIAL HOTWIRE KIT



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

P/N 01-15600 ..... **$41.95**

SAFETY WIRE

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

.032" Dia. Wire, 25 Ft. Coil..... P/N 01-15725..... **$1.25**
.041" Dia. Wire, 25 Ft. Coil..... P/N 01-15825..... **$1.25**
1 Lb. Spool ..... P/N 05-02687..... **$7.95**

INCONEL 600 HOT WIRE

Does not stretch. Excellent for hotwiring polystyrene foam.

.032" Dia. Wire ..... P/N 01-15805.....**$0.31 ft.**
.041" Dia. Wire ..... P/N 01-15810.....**$0.24 ft.**

MUSIC WIRE

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

.049" Dia. (1 lbs.)..... P/N 03-49500 ...**$3.97**
.090" Dia.(32Ga.,1lbs.) .... P/N 03-49600 ...**$3.15**
.062 Dia 302 Stainless..... P/N 03-49610 ...**$0.38**

TYPE 302 STAINLESS SPRING WIRE

062" Dia..... P/N 03-49610 ..... **$0.38 ft**

MICHAEL ENGINEERING EPOXY RATIO PUMPS

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

Adjustable Ratio Pump ..... P/N 01-16010 ..**$298.00**
Rebuild Kit for 45:100 pump ..... P/N 01-00504 ...**$75.00**
Small round replacement container (qt) ..... P/N 01-15920 ....**$10.75**
Large square replacement container (gal).. P/N 01-15910 ....**$17.75**
Stainless Steel Check Valve (Use with Jeffco epoxies)
P/N 01-00258 ....**$56.50**

CALRAD VARIABLE VOLTAGE CONTROL

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

Input: 117V AC 60Hz 3-Prong AC cord. Output: 0-130V AC Adj 60Hz; volt meter, power jack. Fuse Protection AGC: 5 Amp. Max: 500VA P/N 01-15500..... **$144.75**

COMPOSITE TOOL KIT

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

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

Kit - P/N 01-00166 ..... $232.95

COMPOSITE TOOLS

DISPOSABLE RESPIRATOR REPLACEMENT PARTS

Dusts, Mists, & Fumes Pre-Filter ..... P/N 01-00382..... **$1.85**
Fit/Check Filter Cover..... P/N 7500-27..... **$2.30**

GROOVED LAMINATING ROLLERS

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

1"x 3" ..... P/N 01-01054..... **$8.85**
1"x 6" ..... P/N 01-00396..... **$11.95**
1"x 9" ..... P/N 01-00383..... **$17.50**
2"x 3" ..... P/N 01-00384..... **$10.50**
2"x 6" ..... P/N 01-00385..... **$16.65**
2"x 9" ..... P/N 01-00386..... **$27.00**
1/4" Corner Roller..... P/N 01-00387..... **$10.60**
1/2" Corner Roller..... P/N 01-00388..... **$9.85**
1/2"x 3" Detail Roller..... P/N 01-00389..... **$7.65**
3/4"x 3" Detail Roller..... P/N 01-00390..... **$7.95**
3/4"x 6" Detail Roller..... P/N 01-00391..... **$16.85**

EPOXY LAYUP ROLLERS

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

Roller Frame Only..... P/N 01-24902..... **$6.75**
Cover Only ..... P/N 01-24903..... **$3.95**

PRECISE ACCU-KNIFE SET

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

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

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

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

DISPENSER FOR MEKP CATALYST

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

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

STAINLESS STEEL INSTAREAD THERMOMETER

Stainless Steel Instant Read 1: • Dial Thermometer • 0 Degree to 220 Degree F • Shatter-Proof Plastic Lends • Durable Stainless Steel • Plastic Case/Calibrating Tool

P/N 01-00394 ..... **$10.25**

POST CURE KIT

This kit consists of one post cure thermometer (P/N 01-00394) and 1 regulating thermostat (P/N 2E251) that allows control of electrical devices for heating. P/N 01-00393..... **$34.00**

JIFFY MIXER

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

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

X-ACTO TOOLS

NO. 5282 KNIFE SET -
Nos . 1, 2 and 5 knives plus 10 assorted extra blades Handy, fitted chest.

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

NO. 5083 KNIFE SET -
Nos . 1, 2 and 6 knives plus 14 assorted extra blades in beautiful wooden chest.

P/N 01-17400..... **$43.25**

X-ACTO BLADE NO. 11 - Classic fine point blade. A general purpose blade. Package of 5. P/N 01-16500 ..... **$4.35**

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

P/N 01-16600 ..... **$5.25**

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

COMPOSITE TOOLS

STANLEY TOOLS

STANLEY TAPE MEASURE

This 12 foot steel tape measure, with 1/2" blade, is graduated in tenths and hundredths of inches and also in fractions of inches (32nds). Very handy for all aircraft construction. A "must" for composite construction.
No. 33-272 ..... P/N 33-272 ..... **$17.90**

STANLEY UTILITY KNIFE

Aluminum, die-cast in two sections - provides blade storage. Has handy hang hole. Furnished with No. 11-921 blade and blade guard.
No. 10-099 ..... P/N 10-099 ..... **$7.80**

KNIFE BLADE

Heavy-duty pointed razor-type utility knife blade for No. 10-099 knife and most other makes of utility knives.
No. 11-921 (Pkg. of 5 Blades)
P/N 11-921 ..... **$2.45**

HOOK BLADE

For use with No. 10-099 knife and most other makes of utility knives to cut linoleum, roofing material, cartons, etc., without damage. The razor-sharp hooked ends cut to full thickness in one stroke.
No. 11-961Pkg. of 5 Blades .....P/N 11-961 ..... **$6.20**

SPRING CLAMPS

Heavy-gauge steel clamps with vinyl grips and tips to prevent marring work. Jaws specially formed to hold flat or round objects. Two sizes available:
No. 3201-HT – Jaw Opening 1", Length 4"
P/N 83-261.....**$2.50**
No. 3202-HT – Jaw Opening 2", Length 6"
P/N 83-262.....**$3.75**

SINGLE-EDGE RAZOR BLADES

Used for trimming rough edges of laminates.
P/N 01-24904 .....**$0.17/ea.**

Box of 100 30% Discount.

DOVETAIL SAW

Cuts a true, smooth and narrow kerf. Comfortable hardwood handle provides positive grip. Professional quality.
No. 15-022 ..... P/N 15-140 .....**$27.90**

STRAIGHT EDGE

A 6-ft. long kiln-dried spruce board, 7/8" to 1" thick and 3" to 4" wide, used for checking the straightness of flying surfaces during composite construction.
P/N 01-25900..... **$18.85**

6" STEEL RULER

Flexible stainless steel rule graduated in l0ths and l00ths on one side and in quick-reading 32nds and 64ths on the other side.
6 inch ..... P/N 616..... **$5.25**
12 inch ..... P/N 12-02062.. **$8.95**

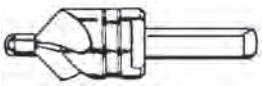
FELT TIP MARKERS

Used for marking locations on fiberglass throughout construction.
P/N 01-26000 ..... **$0.42**

12" LONG DRILL BITS

For use with standard electric drill for hard-to-reach jobs.
#10 (.1935" Dia.) ..... P/N 12-05500.....**$7.75**
1/4" Dia..... P/N 12-05600.....**$8.50**

COUNTERSINK



This assembly consists of a 1/2" dia. AT418E-4 100° cutter, a 1/4" dia. AT416- pilot and an AT409-1 adapter with 1/4" dia. shank for use with a hand drill. The adapter has a collet-like shaft to securely hold the replaceable pilot. Add pilot dash number to AT409. To complete part number see tool section for complete selection of pilots.
Complete Assemblies.....***See Page 680***

COUNTERBORE

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

5/8" diameter w/pilot..... P/N 12-00219 .....**$55.75**
3/4" diameter without pilot..... P/N 12-00220 .....**$39.50**

MINI GLUE TIP

Fits most Yorker top dispenser bottles. Just slip a Mini Glue Tip on spout and seal with a pin. Always ready for use-no fuss to fill, no mess to clean. Made of polypropylene - glues don't stick. For shallow tip bends, heat in water, shape with fingers until cool.
P/N 01-27000..... Pkg. of 4 Tips..... **$1.40**

RUBBER SEALANT

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

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

COMPOSITE TOOLS

ROTARY ("PIZZA") CUTTER

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

RTY-2 Cutter..... P/N 01-00299..... **$15.75**
Replacemnt Blade ..... P/N 01-00300..... **$6.95**
Blades (5 Pack) ..... P/N 01-00301..... **$27.75**

ALUMINUM ROTARY CUTTER FOR COMPOSITE WORK

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

Aluminum Rotary Cutter..... P/N 09-24906.....**$38.40**

90 DEGREE ALUMINUM ROTARY CUTTER FOR COMPOSITE WORK

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

PAINT BRUSHES

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

1" Wide Brush..... P/N 09-21200 ..... **$0.43**
2" Wide Brush..... P/N 09-21300 ..... **$0.56**

RUBBER SQUEEGEE

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

6" Squeegee.....P/N 01-24901 .....**$3.95 ea**
36" Squeegee.....P/N 01-00012 ..... **$26.75ea**

NOTCHED SPREADER

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

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

ORDER ONLINE!

www.aircraftspruce.com

• 60,000 Parts!
• 24 Hour Access!
• Fast, Easy Navigation!

GRADUATED TAPER-TIP APPLICATOR

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

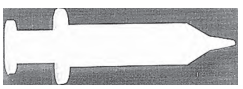
P/N 01-25635.....**$4.85**

DISPENSER BOTTLE

Polyethylene bottle with Yorker (applicator) cap.

4 Oz. Bottle ..... P/N 01-24905.....**$0.53**
16 Oz. (1 Pint) Bottle ..... P/N 01-24906.....**$1.20**

INDUSTRIAL SYRINGE



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

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

MIL GAUGES

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

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

MULTI-MEASURE PLASTIC CONTAINERS

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

1 Qt. mix cup ..... P/N 01-00915..... **$0.99**
1 Qt. lid..... P/N 01-00926..... **$0.51**
2.5 Qt. mixing cup ..... P/N 01-00330..... **$1.84**
2.5 Qt. lid..... P/N 01-00331..... **$0.83**

EPOXY MIXING CUPS

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

3 Oz..... (100 Cups)..... P/N 01-25600..... **$6.75**
8 Oz..... (50 Cups)..... P/N 01-00416..... **$9.50**
12 Oz... (60 Cups)..... P/N 01-25700.....**$13.75**
16 Oz... (24 Cups)..... P/N 01-00324..... **$7.75**

MIXING STICKS

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

Box of 500.....P/N 01-25800.....**$10.75**

TAPERED OFFSET SPATULA

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

P/N 01-24915 .....**$3.40 ea.**

COMPOSITE TOOLS

DREMEL TOOLS

DREMEL MOTO-TOOL -
A versatile, precision power tool with many uses in the construction of composite aircraft. Ideal for wood, plastics and metals. Sturdy, shatter-proof nylon housing.

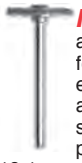
MODEL 100 MOTOTOOL - Constant Speed: 35,000 RPM. Lubricated bronze sleeve bearings. Amps: 0.8
P/N 01-18600 ..... **$46.95**

MODEL 395 MOTOTOOL - Variable Speed: 5,000-28,000 RPM with 100% ball bearing construction for long life, smooth operation. External caps allow for easy replacement of motor brushes. Amps: 0.75 (low speed), 0.9 (high speed) ..... P/N 01-18700 ..... **$79.25**

DREMEL TWO SPEED ROTARY TOOL KIT - The Dremel 200 Series rotary tool offers the precision and control required to complete a wide range of projects. Its two speed settings allow you to use the low speed setting for cleaning applications and using brush accessories and the high speed setting for routing, cutting and sanding applications. P/N 01-01145 ..... **$84.95**

DREMEL MOTO TOOL KIT #200-1/15
Low speed 15,000 RPM, high speed 28,000 RPM. 6ft. two-wire power cord does not require adapter plug. Keyless chuck for fast replacement of bits up to 1/8" shank size - also uses collets from 1/32" to 1/8" fine control (1/8" collets included) Kit contains Moto-Tool and 30 accessories, all in a deluxe Storage/Carrying Case. P/N 01-01129 ..... **$72.50**

NO. 402 MANDREL – The 402 mandrel is used primarily with cut-off wheels but is used with the following Dremel accessories: 409, 411, 412, 413, 420, 423, 425, 426, 456, 511, 512, 540 and 541. Shank Diameter 1/8″, 3,2 mm
P/N 01-22000 ..... **$2.45**



NO. 428 WIRE BRUSH – Ideal for cleaning and removing rust and corrosion from items made of brass, copper or other soft ferrous metals-such as tools, door knobs, automobile parts and electrical contacts. You can also use wire brushes to create an artistic effect on coarse-grained wood. Its shape makes it well suited for cleaning flat surfaces and getting into hard-to-reach places like slots. Bit Diameter Inch 3/4″. Bit Diameter mm 19,1 mm. Color Code Yellow. Description Carbon Steel Brush. Shank Diameter 1/8″, 3,2 mm. Model Number: 428 P/N 01-22100 ..... **$2.45**

REPLACEMENT MOTOR BRUSHES - (Specify Moto-Tool Model No.)
P/N 01-18701 ..... **per pair $3.25**

DREMEL 543 CUTTING / SHAPING WHEEL - For cutting and shaping on soft and hard woods, fiberglass, plastics and laminates (not metal.) This versatile wheel is coated with tungsten carbide grit for long life. It is coated on both sides, so it cuts and finishes in one operation.
P/N 01-01056 ..... **$15.75**

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

NO. 407 1/2" DRUM SANDER - Ideal for rough shaping of wood and smoothing of fiberglass. Sander bands are replaceable. Furnished w/ one band. 1/8" shank
P/N 01-19000 ..... **$3.30**

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

CARBON MOTOR BRUSH - One pair of motor brushes for use with Dremel rotary tool model(s): 100, 200, 275, 285, 300, 395 and 595 (Type 4, 5 and 6) and Dremel contour sander 6000 (Type 1 and 2). P/N 01-01180 ..... **$3.55**

ALUMINUM OXIDE GRINDING STONES

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

903 911 921 932 941 945 952 953

Cutter	Part No.	Price	Cutter	Part No.	Price
#911	01-00135	$2.45	#945	01-00138	$2.45
#932	01-00137	$2.45	#952	01-00139	$2.45
#941	01-00132	$0.78	#953	01-00140	$2.45

954 971 997 8153 8175 8193 8215

Cutter	Part No.	Price	Cutter	Part No.	Price
			#8175	01-00145	$2.45
#971	01-00142	$2.45	#8193	01-00146	$2.45
#997	01-00143	$2.45	#8215	01-00147	$2.45
#8153	01-00144	$2.45			

STRUCTURED TOOTH TUNGSTEN CARBIDE CUTTERS

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

9933 9931 9934 9935 9936

Cutter	Part No.	Price	Cutter	Part No.	Price
#9931	01-00148	$12.25	#9934	01-00152	$12.75
#9933	01-00151	$12.75	#9935	01-00153	$12.75
			#9936	01-00154	$12.75

HIGH SPEED CUTTERS

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

100 114 115 116 117 118 121 124 125 131

134 144 190 191 192 193 194 196 198 199

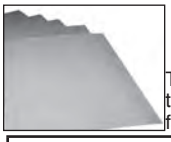
Cutter	Part No.	Price	Cutter	Part No.	Price
#100	01-19200	$4.90	#134	01-19800	$4.90
#114	01-19300	$4.90	#144	01-20000	$5.95
#115	01-20800	$4.90	#190	01-20200	$4.65
#116	01-20900	$4.90	#191	01-20300	$4.90
#117	01-21000	$4.90	#193	01-20500	$4.90
#118	01-21200	$4.90	#194	01-20600	$4.90
#121	01-19400	$4.90	#192	01-20400	$4.90
#124	01-19600	$4.90	#196	01-20700	$4.90
#125	01-21300	$4.90	#198	01-21600	$4.60
			#199	01-21700	$4.95

SANDING TOOLS

SANDING BLOCK

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

Model No. 100 ..... P/N 01-26400 ..... **$5.80**



SANDPAPER

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

Sandpaper Type		Part No.	Price /Sheet Less than 50 Sheets
Aluminum Oxide 36 Grit	Open Coat "D" Weight	01-26200	**$1.30**

SANDPAPER 3M™

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

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

Sandpaper Grit Size	Part No.	Price/ Sheet
120-A	09-20550	**$0.99**
220-A	09-20600	**$0.96**
280-A	09-20700	**$0.89**
320-A	09-20800	**$0.92**
400-A	09-20900	**$0.89**

CURVED TOOTH FILE

Milled files designed for smooth, fast work on annealed steels, hard plastics and composite materials. 14" length, 1-11/32x5/16 sections, 8 teeth per inch. P/N 01-00392 ..... **$39.50**

PREPPIN' WEAPON SANDING BLOCK

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

Yellow ..... P/N 12-00505 ..... **$16.75**
Red ..... P/N 12-00506 ..... **$16.75**
Green ..... P/N 12-00507 ..... **$16.75**

MINI-SANDER

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

Mini-Sander ..... P/N 01-26800 ..... **$5.75**
Wet or dry Mini-Strips, 3 - #500, 3 - #320, 3 - #220
Pkg. of 9 Strips ..... P/N 01-26900 ..... **$6.10**
New Continuous Belts (load free) Aluminum Oxide #120
Package of 3 ..... P/N 01-26910 ..... **$5.75**
New Continuous Belts (load free) Aluminum Oxide #220
Package of 3 ..... P/N 01-26915 ..... **$5.50**

PERMA-GRIT CONTOUR SANDING BLOCKS

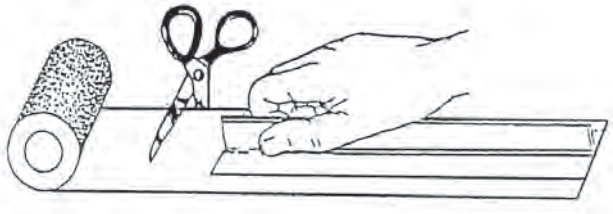
These user friendly sanding blocks are made from extruded, anodized aluminum. The 32mm (1.25") Radius Curve is covered on the external and internal radius with Tungsten Carbide abrasive sheets. The Contour Blocks come in either the Coarse (60US grit approx.) or Fine (120US grit approx.) Small block is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

Benefits:

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

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

TEE BAR ALUMINUM SANDING BLOCKS



These Tee Bar sanding blocks provide a large, straight, and flat sanding surface which won't wear out. Easy to hold, can be used over and over and are permanently anodized. These blocks can help provide straighter and truer surfaces. The self-adhesive sanding strips can be cut to any length, are clean and neat, do not need glue and do not peel. Furnished in handy 3" wide x 5 yard rolls and available in various grits.

11" Aluminum Tee Bar ..... P/N 01-25008 ..... **$3.75**
Silicone Carbide Fine Sanding Strip ..... P/N 01-25002 ..... **$9.50**

PERMA-GRIT HAND TOOLS

HAND TOOLS

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

Model No.	Part No.	Description	Price
F-101	12-00040	230mm x 38mm Flat Fine File	$10.75
F-102	12-00041	230mm x 38mm Flat Coarse	$10.75
R-200F	12-00042	230mm x 26mm / 36mm diameter Fine	$10.75
R-200C	12-00043	230mm x 26mm / 36mm diameter Coarse	$10.75
R-201C	12-00044	230mm x 38mm Tangent Coarse	$10.75
R-201F	12-00045	230mm x 38mm Tangent Fine	$10.50
R-202C	12-00046	18mm diameter tube Coarse	$10.85
R-202F	12-00047	18mm diameter tube Fine	$10.80
R-203C	12-00048	12mm diameter tube Coarse	$11.25
R-203F	12-00049	12mm diameter tube Fine	$11.25
R-204C	12-00050	6 mm round Coarse grit	$10.75
R-204F	12-00051	6 mm round Fine grit	$10.50
S-204C	12-00052	6 mm square Coarse grit	$10.75
S-204F	12-00053	6 mm square Fine grit	$10.75
R-101	12-00054	230mm x 38mm diameter Internal Fine grit	$10.30
R-102	12-00055	230mm x 38mm diameter Internal Coarse grit	$10.75
Set 8C	12-00056	contains: 8 popular shapes in Tool Roll F-101, F102, R-200C, R-201C, R-202C, R-203C, R-204C, S-204C	$66.85
Set 8F	12-00057	contains: 8 popular shapes in Tool Roll F-101, F102, R-200F, R-201F, R-202F, R-203F, R-204F, S-204F	$66.85
TR1	12-00058	Tool Roll - Holds 8 tools, red plastic w/velcro fastener	$6.25

ROTARY FILES

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

Model No.	Part No.	Description	Price
RF1C	12-00070	Narrow Cone coarse	$13.75
RF1F	12-00071	Narrow Cone fine	$13.10
RF2C	12-00072	Wide Cone Coarse	$13.75
RF2F	12-00073	Wide Cone Fine	$12.85
RF3C	12-00074	Drum Coarse	$13.75
RF3F	12-00075	Drum Fine	$13.75
RF4C	12-00076	Pancake Coarse	$13.75
RF4F	12-00077	Pancake Fine	$13.75
RF5C	12-00078	Domehead Coarse	$13.50
RF5F	12-00079	Domehead Fine	$13.75
RF6C	12-00080	1/8 diameter Rod Coarse	$13.50
RF6F	12-02247	1/8 diameter Rod Fine	$13.50

SANDING BLOCKS & FLEXI-STRIPS

P/N 12-00060

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

Model #	Part No.	Description	Price
SB140	12-00064	140mm x 51mm Coarse one side, fine opp.	$20.90
SB280	12-00065	280mm x 51mm Coarse one side, fine opp.	$31.25
SB560	12-00066	560mm x 51mm Coarse one side, fine opp.	$47.50
FXT-103	12-00060	51mm x 280mm Fine Grit Strip	$10.75
FXT-104	12-00061	51mm x 280mm Coarse Grit Strip	$10.75
FXT-106	12-00062	51mm x 140mm Fine Grit Strip	$8.75
FXT-107	12-00063	51mm x 140mm Coarse Grit Strip	$8.75

ROTARY CUTTING DISCS

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

Model No.	Part No.	Description	Price
RD1	12-00067	19mm diameter disc with arbor	$12.25
RD2	12-00068	32mm disc with arbor	$12.95
RD3	12-00069	19 & 32mm disc with arbor	$20.75

NEEDLE FILES

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

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

3/8" INCH NEEDLE FILE KIT WITH HANDLE

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

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

LARGE NEEDLE FILE HANDLE

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

PN 12-00166.....**$4.35**

COMPOSITE SAFETY EQUIPMENT

Adequate safety protection cannot be stressed too highly. Eyes, lungs, and skin are exposed to harmful chemicals and abrasive objects which can be discomforting or permanently disabling. Always wear glasses when working with the Dremel grinder to protect the eyes from flying particles. Sanding or grinding fiberglass and foams creates dust that can be harmful to the lungs. Use a dust respirator mask or a disposable type. Many individuals will develop an allergy when working with epoxy with bare hands. Skin protection measures should always be taken.

INVISIBLE GLOVES #1211

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

P/N 12-15800 ..... **$7.80/pint**

GLOVES IN A BOTTLE

Protect your hands with a protective skin lotion called Gloves in a Bottle. Perfect for homebuilders, particularly those who work with composite aircraft, it binds with skin, forming an invisible pair of gloves to help protect against machinery and chemicals. It also protects against cracking and drying due to cold weather. Conventional lotions try to replace natural moisture with artificial moisture, but they come off when you wash or touch something. Gloves in a bottle keeps moisture-robbing irritants out while helping to retain your skin's natural moisture, resulting in better-hydrated skin. When applied, the invisible gloves are undetectable once they dry and last four hours or more. they come off naturally with exfoliated skin cells. FEATURES: • Fragrance and colorant free, hypoallergenic, non-greasy, non-sticky • Turns the outer layer of skin into what works like an invisible pair of gloves • Will not wash off. Literally becomes part of the outer layer of skin itself and comes off naturally with the outer layer of skin • Used and recommended by many hundreds of dermatologists and many thousands of other health care professionals • Keeps out irritants that rob the skin of natural oils and moisture and helps retain skin's own natural oil and moisture • Conventional lotions only attempt to replace natural moisture with artificial moisture but they don't really work because every time you wash or touch something they come off.

8 oz. ..... P/N 01-00656 ..... **$15.65**

SERIES 8 WASH-OFF HAND PROTECTION

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

4 Oz. Plastic Cup ..... P/N 13-38302 ..... **$4.85**
32 Oz. (Qt.) Plastic Jar ..... P/N 13-38306 ..... **$14.60**

PLY NO. 9 PROTECTIVE HAND GEL

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

One-Lb. Jar ..... P/N 01-36100 ..... **$6.85**

DENATURED ALCOHOL

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

Gallon ..... P/N 01-00399 ..... **$12.75**

REPLACETONE

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

Quart ..... P/N 01-08823 ..... **$13.50**
Gallon ..... P/N 01-08834 ..... **$23.75**

LATEX GLOVES

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

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

COTTON GLOVES

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

P/N 01-36600 ..... **$1.25/Pair**

BUTYL GLOVES

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

P/N 01-36700 ..... **$22.85**

TYVEK SUITS

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

X-Large ..... P/N 01-36800 ..... **$7.75**
XX-Large ..... P/N 01-36805 ..... **$11.60**

MAXSHIELD DISPOSABLE PROTECTIVE CLOTHINGS

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

Size	PN	Price
Small	12-01827-S	**$6.50**
Medium	12-01827-M	**$6.50**
Large	12-01827-L	**$10.75**
XL	12-01827-XL	**$6.75**
XXL	12-01827-2XL	**$6.75**

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

Size	PN	Price
Small	12-01826-S	**$5.85**
Medium	12-01826-M	**$5.85**
Large	12-01826-L	**$6.00**
XL	12-01826-XL	**$6.75**
XXL	12-01826-2XL	**$6.75**

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

PN 12-01824 ..... **$2.10**

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

PN 12-01825 ..... **$1.65**

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

PN 12-01995 ..... **$0.98**

SPRUCE SPARS – CAPSTRIP – STRINGERS

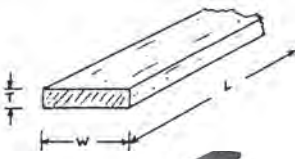
GENERAL ORDERING INFORMATION

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

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

For additional technical information refer to a complete reprint of spruce specification MIL-S-6073 and plywood specification MIL-P-6070.
P/N 13-14900 ..... **$3.95**

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



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

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

BARGAIN BAG OF SPRUCE

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

P/N 02-03600..... **Now Only $37.50**

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

PRICE PER LINEAL FOOT*

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

**** Prices shown are for lengths less than 12 feet. Add 15% per foot for lengths longer than 12 feet.*** Please order by part number and also state exact thickness, width and length to verify part number. Spruce part numbers begin with "02" and finish with thickness and width. Examples: 3/4"T x 5-1/4"W is P/N 02-34514; 1-1/4"T x 6"w is P/N 02-1146. Provide part number and footage required of each size. Specify any particular lengths required. Thicker & wider sizes subject to availability. Request quotation.

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

FINISHED CAPSTRIP, LONGERONS, STRINGERS

PRICE PER LINEAL FOOT*

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

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

SPRUCE KITS – BALSA – NAILS

WP

COMPLETE SPRUCE KITS

Acro Sport	02-03700	$509.65
Acro Sport II	02-03800	$1,227.75
Baby Great Lakes	02-03900	$782.51
Bobcat	02-25100	$715.00
Christavia MK 1	01-39880	$865.00
Christavia MK 4	01-39910	$1,660.17
Corby Starlet CJ-1 (less spars)	02-04300	$930.57
Cvjetkovic CA-65	02-04400	$2,337.00
Cygnet	02-04500	$853.00
EAA Bi-Plane (Original Wing)	02-00223	$1,225.00
EAA Bi-Plane (P-Wing)	02-04600	$1,216.00
Fly Baby Spruce Kit	01-00977	$1,905.55
GN-1 Aircamper **	02-04700	$1,717.99
GP-4	02-25200	$4,284.40
Hatz Bi-Plane	02-04800	$1,726.75
Kelly-D	02-04900	$804.00
Mitchell B-10	02-05000	$423.95
One Design		***See Page 15 for Kits***
Osprey II **	02-05100	$4,175.05
Pietenpol Aircamper Wing Kit	01-00582	$908.38
Pietenpol Aircamper Fuselage Kit	01-00583	$515.26
Pietenpol Aircamper Stabilizer & Elevator	01-00584	$143.38
Pietenpol Aircamper Rudder & Fin Kit	01-00585	$29.64
Pitts Special (Basic) M-6 or S-1D	02-05200	$1,143.13
Pober Pixie (spruce & plywood)	01-01136	$1,776.22
Rand KR-1 **	02-05400	$836.86
Rand KR-2 **	02-05500	$1,008.91
Rand KR-2S	02-05510	$1,079.72
Rutan VariViggen	02-05600	$435.00
Skybolt	02-05700	$1,259.84
Smith Miniplane	02-05800	$607.73
VP-1	01-00222	$698.60
VP-2	02-08800	$825.60
Volmer Sportsman VJ-22 (less wings)	02-06000	$1,634.43
War Aircraft Corsair	02-06100	$1,042.60
War Aircraft P-47	02-06200	$478.44
War Aircraft FW-190	02-06300	$1,083.00
War Aircraft Sea Fury	02-06400	$564.00
Wittman Tailwind**	02-06500	$962.00

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

SPAR KITS

Acro Sport	02-06600	$672.80
Acro Sport II	02-03810	$711.00
Baby Great Lakes	02-06700	$541.50
Bakeng Duce	02-06800	$496.00
Barracuda	02-06900	$868.75
Bowers Fly Baby (Spars)	02-07000	$585.00
Bowers Complete Wing Kit	02-07100	$1,143.28
Christavia MK 4	01-39980	$1,660.17
Corby Starlet (Two Piece Wing Spar Kit)	02-09000	$464.07
Cvjetkovic CA-65	02-07300	$1,651.00
EAA Bi-Plane (Original Wing)	02-07400	$796.00
EAA Bi-Plane (P- Wing)	02-00222	$811.00
Hatz Bi-Plane	02-07500	$1,149.00
Kelly-D	02-07600	$900.00
Marquart Charger	02-07700	$895.00
Pitts Special M-6 or S-1D	02-07800	$545.85
One Design		***See Page 15 for Kits***
Sauser P6E	02-02000	$1,052.60
Skybolt	02-07900	$1,021.80
Smith Miniplane	02-08000	$358.05
Stolp Starduster Single Place	02-08200	$591.90
Starduster "Too"	02-08300	$890.00
Starlet	02-08400	$230.00
Wittman Tailwind	02-08500	$396.00
Wittman "V"	02-08600	$337.00

SPRUCE KITS FOR UNLISTED DESIGNS CAN BE FURNISHED IF A MATERIALS LIST IS SUBMITTED.

TYPICAL WEIGHTS OF SPRUCE KITS

EAA Bi-Plane Complete Kit	99 Lbs.
Pitts Special Complete Kit	73 Lbs.
Pitts Special Spar Kit Only	35 Lbs.
Miniplane Complete Kit	49 Lbs.
Fly Baby Complete Kit	132 Lbs.
KR-1 Complete Kit	61 Lbs.

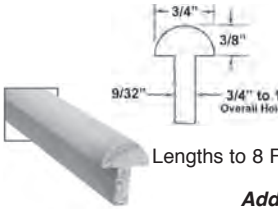
NOTE: Our spruce kits are produced from materials lists which are believed to be accurate. However, since designers may modify certain dimensions after the original plans are released, we urge the builder to verify sizes and current price before ordering.

WE CHARGE NO PACKING CHARGES ON SPRUCE

TRIANGULAR CORNER BLOCKING

90° Corner Blocking
Order by the foot.

Size	Price Part No.	Per Ft.	Size	Part No.	Price
1/4"	02-17600	$0.35	1/2"	02-18000	$0.66
5/16"	02-17700	$0.45	5/8"	02-18100	$0.68
3/8"	02-17800	$0.27	3/4"	02-18200	$1.27
7/16"	02-17900	$0.47	7/8"	02-18300	$1.36



"T" STRINGER STOCK

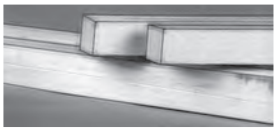
Standard Spruce stringer material finished to the dimensions illustrated. Lengths over 8 feet require truck shipment.

Lengths to 8 Ft. ..... P/N 02-18400 ..... **$1.45/ft.**

Add 20% for lengths over 8 feet.

AIRCRAFT SPRUCE AND PLYWOOD REFERENCE MANUAL

Reprint of Government Specifications MIL-S-6073 and MIL-P-6070.
P/N 13-14900 ..... **$3.95**



BALSA WOOD

Balsa is the lightest commercial wood in the world, weighing less than 10 lbs./cu.ft. Pound for pound, it is one of the strongest - both its stiffness and bending strength exceed White Spruce, Western Yellow Pine, Douglas Fir, White Oak and many other commercially used woods. It is easily cut, turned, carved, shaped, glued, sanded and finished, all with ordinary wood working tools and techniques. It can be shaped with abrasive wheels either wet or dry. It can be cut into extremely thin veneers. Almost any kind of coating will adhere to it. Meets specifications MIL-B-2747 and MIL-S-7998.
Furnished as 2" thick boards, 3 ft. long from 3"-6" wide. Material which may be glued together by the builder to make the required size pieces.
2" x 4" x 3 ft Pc..... P/N 02-03500 ..... **$17.85/ea.**
ACTUAL SIZES OF BOARDS CAN VARY

AIRCRAFT NAILS

Flat, bonderized steel nails, brass plated to prevent rusting and cement coated to improve holding power. Manufactured to Federal Specification FF-N-105 (formerly AN301). Order by part no.

Part No.	Size		Price		
	Length	Gauge	1/4 Lb.	1/2 Lb.	1 Lb
AN301-20-2	1/4"	20	$3.11	$6.23	$12.45
AN301-20-3	3/8"	20	$2.94	$5.88	$11.75
AN301-20-4	1/2"	20	$2.96	$5.93	$11.85
AN301-20-5	5/8"	20	$2.74	$5.48	$10.95
AN301-20-6	3/4"	20	$2.50	$5.00	$10.00
AN301-20-8	1"	20	$2.48	$4.95	$9.90

There are approximately 9,000 3/8" x 20 steel nails per pound.

AIRCRAFT SPRUCE WEST
CORONA, CA • (877) 4-SPRUCE
AIRCRAFT SPRUCE EAST
PEACHTREE CITY, GA • (877) 477-7823

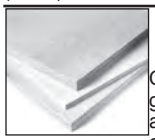
Prices Subject to Change Without Notice

DOMESTIC MIL-P-6070 AIRCRAFT PLYWOOD

American-made structural aircraft-grade plywood is made of imported African Mahogany or American Birch veneers laminated in a hot press to hardwood cores of Poplar or Bass wood with waterproof glue. Will meet all requirements of specification MIL-P-6070, which calls for shear testing after immersion in boiling water for 3 hours. Far superior to many plywoods in which all plies are 1/16" thick and laminated in a cold press to make up the total thickness. Tests should be made on cold-press plywoods before use in aerobatic aircraft.

Thickness In.		Approx. MM.	No. of Plies	90° Mahogany Approx. Wt. 4' x 8' Sheet	Part No.**	Price Per Sq. Ft.	4' x 8' Sheet	90° Birch Approx. Wt. 4' x 8' Sheet	Part No.**	Price Per Sq. Ft.	4' x 8' Sheet
1/16	(.070)	1.5	3	6 Lbs.	02-189--	$3.29	$110.80	7 Lbs.	02-243--	$3.04	$93.25
3/32	(.100)	2.5	3	10 Lbs.	02-191--	3.90	$132.70	12 Lbs.	02-244--	2.77	$95.25
1/8	(.125)	3.2	3	12 Lbs.	02-193--	4.00	$134.65	15 Lbs.	02-245--	2.82	$98.25
3/16	(.190)	4.8	3-5	20 Lbs.	02-195--	6.15	$207.95	24 Lbs.	02-246--	6.12	$199.50
1/4	(.250)	6.4	5	25 Lbs.	02-197--	6.99	$231.95	30 Lbs.	02-247--	7.46	$259.95
5/16	(.312)	7.9	5	Lbs.	02-198--	7.51	$243.95	30 Lbs.	02-251--	8.05	$269.95
3/8	(.375)	9.5	5	Lbs.	02-199--	7.80	$279.65	30 Lbs.	02-266--	8.30	$280.95
7/16	(.437)	11.1	7	Lbs.	02-120--	8.95	$267.90	30 Lbs.	02-267--	9.56	$355.95
1/2	(.500)	12.7	7	Lbs.	02-121--	9.27	$279.90	30 Lbs.	02-260--	9.74	$321.95
				45° Mahogany				45° Birch			
1/16	(.070)	1.5	3	6 Lbs.	02-188--	5.74	$214.80	7 Lbs.	02-248--	5.31	$167.60
3/32	(.100)	2.5	3	10 Lbs.	02-190--	6.09	$239.95	12 Lbs.	02-249--	4.74	$181.55
1/8	(.125)	3.2	3	12 Lbs.	02-192--	6.65	$234.60	15 Lbs.	02-250--	5.19	$190.40

*Domestic plywood is sold only in 2'x4' (8 Sq.Ft.), 4'x4' (16 Sq.Ft.), 2'x8' (16 Sq.Ft.), and full 4' x 8' sheets. If ordering less than full sheet, compute cost based on price/sq.ft. shown in above table.
** The part numbers of full 4' x 8' sheets end with "80". For less than full sheets, the last two digits will change according to the size ordered. Change the last two digits in the part number to "10" for 4' x 4', "20" for 2' x 8' and "30 for 2' x 4'. Example: 1/16" mahogany 90° is 02-18980 (4' x 8'), 02-18910 (4' x4'), 02-18920 (2' x 8') and 02-18930 (2' x4').

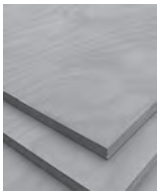


FINNISH BIRCH AIRCRAFT PLYWOOD (METRIC)

Quality Birch Aircraft grade plywood produced to AB/B grade on all thicknesses. German Lloyd GL-2 is available upon request; please contact us for details on how order GL-2.

Thickness Nom. Inch.	mm	Plies	Half Sheet 2'x4' Part No.	Price	Full Sheet 4'x4' Part No.	Price
1/64	0.4	3	02-20250	$26.50	02-20200	$53.75
1/32	0.8	3	02-20350	$14.50	02-20300	$29.75
3/64	1.0	3	02-50050	$18.25	02-50000	$37.25
1/16	1.5	3	02-20450	$18.00	02-20400	$35.70
3/32	2.5	5	02-20550	$29.25	02-20500	$58.50
1/8	3	5	02-20650	$31.25	02-20600	$62.50
3/16	5	10	02-20750	$42.50	02-20700	$84.75
1/4	6	12	02-20850	$49.90	02-20800	$101.95

Corby Starlet 2MM x 48" x 48".....P/N 02-28050..... **$46.80**
1/4 Birch/Poplar 5ply, 45°.....P/N 02-27180..... **$420.95**



OKOUME PLYWOOD

Okoume (o-KUE-me), also referred to as Gaboon, is an African hardwood widely used in Europe over the past century. Light pinkish brown in color, sometimes lustrous with variable interlocking grain, the rotary cut panel can be painted or finished bright. The natural durability of this species is extremely low and care must be taken to finish all surfaces, face and edges. Often recommended for use with epoxy saturation systems, the panel exhibits high strength to weight ratios. Face veneers are made from 1.3 mm thick A/B grade rotary cut veneer. Cores and crossbands are solid-joined and the panel glued with waterproof glue. Okoume panels are extensively used by race class boat builders, rowing shell builders and in various applications. Where its lighter weight, good bending properties and ease of finishing are a value, 5/32" thickness is used in the One Design Kit Aircraft and applicable to a wide variety of Homebuilt Aircraft, sold in 4'x8' sheets. Wt. of 5/32" sheet is 8.8 lb. Wt. of 1/4" sheet is 28 lbs. Thickness varies from 4mm to 6mm. Can be cut down for shipping. Certified bs1088

4mm thick x 4' x 8' sheet..... P/N 02-20100..... **$69.50**
6mm thick x 4' x 8' sheet..... P/N 02-00076..... **$99.85**

LITE PLY PLYWOOD

The beautiful, pliable answer to shaped and curved construction problems. Lite Ply ® is distinguished by its even grain, virtually snow white appearance and unusual resilience. It is a true "white wood, " poplar and finishes uniformly, whether stained or painted.

Supplied for over 50 years, Lite Ply ® has proven to be an excellent wood for industries where weight is a concern. Lite Ply ® has been proven to be a cost effective alternative to other light weight panels.

4' X 8' Sheet 1/8" 3MM..... P/N 02-00115..... **$36.50**
4' X 8' Sheet 1/4" 6MM..... P/N 02-00116..... **$56.50**

ROYAL MARINE A-A FIR PLYWOOD

First quality marine plywood that meets or exceeds requirements of specifications PSI-74. All are Douglas Fir. Insist on A-A grade for your aircraft!

Thickness	No. of Plies	Part No.*	Price 2'x2'	2'x4'	4'x4'	4'x8'
1/4"	3	02-210--	$8.00	$15.50	$31.50	$63.75
3/8"	4	02-211--	$10.85	$19.50	$39.50	$79.75
1/2"	5	02-212--	$11.25	$22.00	$44.75	$89.50
5/8"	7	02-213--	$11.00	$22.00	$44.00	$89.70
3/4"	7	02-214--	$12.50	$24.25	$48.75	$98.25
1"	7	02-215--	$16.75	$32.50	$65.50	$131.95

$4.00 packing charge for less than 3 sheets unless cut to 2'x4' pieces for UPS shipment.

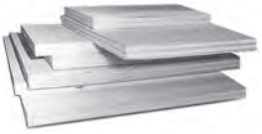
Please order by part number, note thickness & size for verification. The part numbers for full 4'x8' sheets end with "80". For less than full sheets, the last 2 digits of the part number. will change according to size ordered. Change last 2 digits of the part no to "20" for 2'x2', "40" for 2'x4' & "60" for 4'x4'. Example: 1/4" 2'x4' is 02-21040.

BASSWOOD MIL-P-6070 AIRCRAFT PLYWOOD

Basswood meets MIL-P-6070 but is lighter and has more flexibility than Mahogany & Birch plywood, but has slightly less structural strength.

Thickness	No. of Plies	Part No.*	Price 2'x2'	2'x4'	4'x4'	4'x8'
1/16"	3	02-253--	$15.75	$30.50	$61.50	$123.95
3/32"	3	02-254--	$15.50	$31.50	$63.50	$127.95
1/8"	3	02-255--	$16.75	$32.25	$65.00	$130.95
3/16"	3	02-256--	$18.00	$35.00	$70.50	$141.95
1/4"	5	02-257--	$30.75	$48.50	$97.50	$195.95
3/8"	5	02-261--	$27.75	$53.50	$106.95	$215.95
7/16"	7	02-262--	$32.75	$126.95	$126.95	$274.95
1/2"	7	02-263--	$38.25	$74.00	$147.95	$297.95
5/8"	9	02-265--	$42.00	$81.00	$192.95	$384.95
3/4"	9	02-264--	$57.50	$110.95	$221.95	$444.95

NOTE: All sheets 4'x8'. All plies are basswood. Grain is 90°. Part nos for full 4'x8' sheets end with "80". For less than full sheets, the last 2 digits will change according to the size ordered. Change the last 2 digits in the part no to "60" for 4'x4', "20" for 2'x2' and "40" for 2'x4'. See example in domestic plywood table.



5/16" 5 PLY BIRCH/ BASSWOOD PLYWOOD

2X2..... P/N 02-27220 ..... **$36.00**
2X4..... P/N 02-27240 ..... **$69.50**
4X4..... P/N 02-27260 ..... **$138.95**
4X8..... P/N 02-27280 ..... **$298.65**

INSTANT GLUES – POLYFIX™ GLUES

WP

INSTANT GLUES

These American made Instant Glue products were used extensively in construction of the "Around the World Non-stop" Voyager aircraft and are highly recommended for many homebuilt aircraft applications by Voyager Aircraft, Inc. and Rutan Aircraft Factory. They create a fast, permanent bond on many similar and dissimilar materials such as woods, metals and composite materials.

HOT STUFF™ - Odorless THIN have a consistency resembling that of water, used mainly for bonding parts which fit very well. 2oz
P/N 01-35500 .....**$10.75**

UFO™- "UFO" Odorless 'THIN' will not attack foam,making foam bonding possible. Fiberglass skins, right on the foam, are practical and easy with "UFO" Odorless 'THIN'. 2oz. P/N 01-01038 .....**$21.75**

SUPER 'T'™ - A consistency similar to that of syrup and has the ability to fill small gaps between parts which don't fit perfectly. SUPER 'T'™ cures at a slower rate than HOT STUFF™, (10-25 seconds depending on the material). 2oz. P/N 01-35600 .....**$10.75**

SPECIAL 'T'™ - Special 'T'™ and new UFO™ Odorless THICK are very thick cyanoacrylates with a consistency resembling cold honey. SPECIAL 'T'™ and UFO™ Odorless THICK have greater gap-filling ability than SUPER 'T'™ and more positioning time after contact of parts. The rate of cure is slow enough, (usually 50-60 seconds depending on the material), to allow precise alignment of parts, after assembly. 2oz.
P/N 01-01039 .....**$11.50**

UFO™ THICK - Odorless. Those who are sensitive to cyanoacrylate curing fumes will enjoy using the new UFO™ in the place of Special 'T'™. Will not attack foam, making foam bonding possible. NCF HOT or MILD should be used to speed the cure. For foam, use Spray n' Cure™ accelerator. 2oz. P/N 01-01040 .....**$22.25**

NCF QUICK™ - Used with HOT STUFF, UFO Odorless THIN, SUPER T, and UFO Odorless THICK., and with it you can do almost magical things. NCF Quick works in three ways to make HOT STUFF , SUPER 'T' and SPECIAL 'T' Easier, Faster, Stronger and able to bond some of the most unusual materials you can think of. P/N 01-00689 .....**$13.00**

NCFM™ - Mild Formula accelerator for use with HOT STUFF™, UFO™ Odorless THIN, SUPER T™, and UFO™ Odorless THICK., and with it you can do almost magical things. NCFM™ MAY MELT SOME EXPANDED FOAM PRODUCTS. 2oz. P/N 01-35700 .....**$7.50**

NCF™ - An extremely fast acting accelerator for all instant glues. "NCF" does everything NCFM" will do, in a fraction of the time. "NCF" has an extraordinary on-part life. P/N 01-01041 .....**$8.50**
SPRAY'N CURE™ - FREE of all chlorinated and fluorinated solvents. 2 minute on-part life after the area is completely dry. Special Note: User must allow 50 to 60 seconds (at room temperature) for complete drying before bonding, white foam friendly P/N 01-01042 .....**$5.25**

NCF-5M - The NCF Mild is a mild formula accelerator, capable of dramatically increasing cure time, but not quite as quickly as the NCF Hot. NCF Mild decreases the curing time of the glue and forces the glue to cure when it wouldn't otherwise. This accelerator is active for several minutes, so you can spray several pieces at once if you are making multiple bonds. NCF Mild and Hot are generally not suitable for use with white foam. NCF-5M is a 4.9oz bottle with a plastic spray pump.
P/N 01-35750 .....**$11.50**

SUPER SOLVENT™ - Ultra Solvent™ is a remarkable debonder and cleaner for any instant glue. Use it for hand clean-up, removes instant glue from most clothing and surfaces. Some fabric, colorings or materials may be affected, so test-patch on an inconspicuous place.
P/N 01-35800 .....**$9.75**

GORILLA GLUE
TOUGHEST GLUE ON EARTH

Gorilla Glue is known as the toughest glue on planet Earth. A high strength adhesive that quickly bonds wood, metals, stones, ceramics, and more. Gorilla Glue is a versatile, interior/exterior adhesive ideal for building projects. 8 oz. bottle.
Benefits: • 100% Waterproof • Incredibly Strong and Versatile • Stainable and Paintable • Easily Sanded • More Coverage • A Long Open Working Time • Dries Light Tan • Non-toxic • Acid-Free P/N 02-00101.....**$12.85**

QUIK FIX EPOXY PUTTY STICKS

Quikfix BC 101 is a hand mixable, fast curing, general purpose epoxy putty stick that mixes in just one minute to provide fast repairs to many surfaces including metals, wood, glass, concrete, ceramics and numerous plastics. One hour after mixing, QuikFix BC 101 can be drilled, sawed, sanded, filed, tapped, machined, or painted. It comes in a handy concentric putty stick with he curing agent encapsulated in the contrasting color base material. The putty-like consistency eliminates drips and runs, producing "no mess" applications with no tools required for use. In order to achieve optimum adhesion, surfaces should be clean, dry and free of grease or dirt. Scuffing or sanding the surface prior to cleaning helps insure a good bond. Color: Gray (after cure).
3.5" stick.....P/N 01-00333 ..... **$11.95**
7" stick.....P/N 01-00332 ..... **$13.95**

BOND-AIDE WOOD EPOXY PUTTY

Bond-Aide P-1500W is a wood epoxy putty compound that cures in minutes to form permanent repairs on woods, plaster, ceramics and many plastics with no shrinkage. For woodworking and hobby model use, Bond-Aide P-1500W is unique as it can be shaped to conform to the surface. After 30 minutes, it becomes part of the wood but is many times stronger. Like wood it is light in weight, can be drilled, sawed, nailed, carved, machined, sanded, stained and painted, all within 30 minutes. It is non-toxic and is quickly and safely readied for application without any mess. It will not drip or sag, and unlike conventional wood putties, P-1500W will not dry out, even after opening. Excellent for bonding wood to wood, wood to metal, and wood to glass or ceramics. P-1500W has a multitude of uses in aircraft restoration, rebuilding, and repair.
1 tube 2-part Bond-Aide P-1500W.....P/N 02-18650 .....**$14.75/ea**

POLYFIX™ 11000 GAP FILLING CYANOACRYLATE

This is a higher viscosity ca for loose fitting joints in which the adhesive must bridge gaps. Normally, the thicker ca is applied to one surface and then the parts are held tightly together for about 5 to 15 seconds. For large surface areas including those with close fitting joints such as lamination Polyfix™ 11000 gap filling should be used. To prevent premature curing, don't spread the glue into a thin film, lay down a serpentine bead with about 1" separation on one surface, then assemble the parts, letting the pressure spread the ca out. MIL SPEC-A-46050-C. (CAS NO. 7085-85-0)

Description	Part No.	Price
Polyfix™ 11000 Gap Fill 1/2 oz	01-01016	$4.75
Polyfix™ 11000 Gap Fill 1 oz	01-01017	$8.75
Polyfix™ 11000 Gap Fill 2 oz	01-01018	$12.75
Polyfix™ 11000 Gap Fill 8 oz	01-01019	$36.75

POLYFIX™ 4000 INDUSTRIAL FLEXIBLE THIN

This low odor flexible thin ca is ideal for many applications. Low odor flexible does not turn brittle and remains clear, even if Accelerator. With Polyfix™ 10000 Accelerator it has superior shock resistance and still has good penetrating qualities and its application can be easier to control for ca and has a different, less irritating odor compared to regular ca's, but still can proven to be superior when bonding anodized aluminum. 1 fl. oz. MIL SPEC-A-46050-C. (CAS NO. 6606-65-1) P/N 01-01020 .....**$7.50**

POLYFIX™ 3000 CLEAR FLEXIBLE RUBBER GAP FILLING

Flex gap clear rubber toughened can be used in applications where you do not want the adhesive to be seen it is still superior to standard ca.'s when esthetics's are important and a flexible bond is required this product is your best choice. It forms to soft urethane and vinyl plastic, and shock resistant bonds. MIL SPEC-A-46050-C. (CAS NO. 7085-85-0)

Description	Part No.	Price
Polyfix™ 3000 Rubber Fill 1 OZ	01-01021	$6.75
Polyfix™ 3000 Rubber Fill 2 OZ	01-01022	$12.50

POLYFIX NON-CLOG CYANOACRYLATE APPLICATOR

Reach in a small area where you need to do a repair. Can reach 5-1/2" or if you need to control small drops. Sold in boxes of 24.

Description	Part No.	Price
Non-Clog Applicator Regular Tip	01-01006	$21.75
Non-Clog Applicator Fine Tip	01-01007	$21.75

POLYFIX™ GLUES AND ADHESIVES

POLYFIX™ 17000 INDUSTRIAL ODORLESS THIN

This has a water thin viscosity that wicks deep into joints by capillary action and curses in a matter of a few seconds. Surface to be bonded must be tight fitting and should be bonded must be tight fitting and should be held together while applying the ca around the edges of the seams, at the moment ca's cure eliminates the irritating fumes from the evaporating monomer that makes repeated of ca's unpleasant at times. MIL SPEC-A-46050-C (CAS NO. 27816-23-5)

Description	Part No.	Price
Polyfix™ 17000 Industrial Thin 1/2 oz	01-01023	$9.25
Polyfix™ 17000 Industrial Thin 1 oz	01-01024	$16.95
Polyfix™ 17000 Industrial Thin 2 oz	01-01025	$28.95

POLYFIX™ 17500 PLUS INDUSTRIAL ODORLESS GAP FILLING

Apply a light fog of Polyfix™ 10000 accelerator and apply Polyfix™ 17500+ gap filling. Cures to a more flexible consistence for better shock absorption, when ever a larger amount of ca is to be used in such applications as saturating fiberglass or kevlar. Polyfix™ 17500+ gap filling eliminates the irritating fumes from the evaporation monomer that makes repeated use of ca unpleasant at times. MIL SPEC-A-46050-C. (CAS NO. 27816-23-5)

Description	Part No.	Price
Polyfix™ 17500 Industrial Gap Fill 1/2 oz	01-01026	$9.95
Polyfix™ 17500 Industrial Gap Fill 1 oz	01-01027	$17.95
Polyfix™ 17500 Industrial Gap Fill 2 oz.	01-01028	$30.95

POLYFIX™ 64000 INDUSTRIAL CARBON GAP CYANOACRYLATE

Polyfix™ 64000 carbon extra strength ca is a carbon toughened cynaoacrylate that forms superior shock resistant bonds on non-porus surface the black colored ca has added flexibility for the bonding carbonfiber and other advanced materials as graphite, polycarbon with honeycomb, normax aramid, graphite with aluminum honeycomb. MIL SPEC-A-46050-C (CAS NO. 7085-85-0)

Description	Part No.	Price
Polyfix™ 64000 Carbon Gap Cyanoacrylate 1/2 oz	01-01029	$5.95
Polyfix™ 64000 Carbon Gap Cyanoacrylate 1 oz	01-01030	$11.50
Polyfix™ 64000 Carbon Gap Cyanoacrylate 16 oz	01-01031	$173.95

POLYFIX™ POLYDUST CATALYTIC

The patented Thermal Process Catciyticaily (I.C. chemically) generates heat to 142 degrees fahrenheit and actualy thermal sets or fuses the repair to the Patent material. POLYFIX™ 10000 Accelerator POLYFIX™ 14000 Thin Cyanoacrylate (PJ 33) POLYDUST Catalytic filler By using these three products that was certified by Cessna Aircraft, U.S. Army Aviation Systems, Boeing Aircraft. (CAS NO. 601-35-4)

Warning: If you use any other products with the POLYFIX™ polydust catalytic, AIRCRAFT SPRUCE AND SPECIALTY INC. AND REDAM/ RB INC. WILL NOT BE RESPONSIBLE FOR ANY ACCIDENTS

Description	Part No.	Price
Polyfix™ Polydust Catalytic 10M/MG	01-01032	$5.90
Polyfix™ Polydust Catalytic 1/2 PT	01-01033	$39.95
Polyfix™ Polydust Catalytic 1 PT	01-01034	$68.75

POLYFIX™ 10000 ACCELERATOR IN PLASTIC BOTTLES

Non-flammable and less then 10% degrade when applied on ca's comparing to methanol and acetone accelerator that has 13/15% degrade. This accelerator allows ca's to quickly cure by enhancing the alkaline conditions during polymerization. POLYFIX™ 10000 in a spray bottle is normally used to cure the ca that flows from joints or cracks when parts are pressed together. Apply an additional bead of thick ca along seam and then curing with POLYFIX™ significantly in hances a crack's strength. For difficult to bond material, POLYFIX™ 10000 can be applied to one surface and ca to the opposite surface. When brought together, they will bond instantly. MIL SPEC-A-4605-C-TYPE II A OR III A. (CAS NO. 99-97-8). (CAS NO. 64742-48-9)

Description	Part No.	Price
Polyfix™ 10000 Accelerator 2 oz.	01-01035	$11.75
Polyfix™ 10000 Accelerator Refill 8 oz	01-01036	$18.50

POLYFIX™ 6000 DEBONDER

Will soften cured ca. If parts are bonded incorrectly or your fingers are stuck together a few drops of POLYFIX™ 6000 debonder. Will dissolve the ca in about a minute. Apply on bonded skin and roll apart fingers. Once unstuck, use Acetone to clean off softned ca then wash off with soap and water POLYFIX™ 6000 debonder will easily remove the adhesive residue. 1 fl. oz. (CAS NO. 68-12-2) P/N 01-01037 ..... **$4.50**

POLYFIX 14000 THIN CYANOACRYLATE

Polyfix™ 14000 Thin Cyanoacrylate has a super thin viscosity that penetrate deep into cracks by capillary action and cures in a matter of a few seconds. Surfaces to be bonded must be tight fitting and should be held together while you apply the ca around the edges of the seams at the moment ca's cure they give off a vapor that can irritate the nose and eyes, so be prepared. Thin ca's work very well on any type of material, form more than just a surface bond. MIL SPEC-A-46050-C. (CAS NO. 7085-85-0)

Description	Part No.	Price
Polyfix™ 14000 Thin Cyanoacrylate 1/2 oz	01-01008	$3.95
Polyfix™ 14000 Thin Cyanoacrylate 1 oz	01-01009	$6.95
Polyfix™ 14000 Thin Cyanoacrylate 2 oz	01-01010	$12.75
Polyfix™ 14000 Thin Cyanoacrylate 8 oz	01-01011	$39.90

POLYFIX 9000 EXTRA THICK

It's all a round ca for ceramics, glass, metal, rubber laminating, soft wood, hard wood. Water resistant. This ca is the best for most clear plastic including GE's Lexan when used with Polyfix™ 10000 Accelerator it will fill most voids it can be carved with a knife or razor blade and sanded to foam a finish indistinguishable from plastic its extra thick. Thickness makes it easy to work with most applications. MIL SPEC-A-46050-C (CAS NO. 7085-85-0)

Description	Part No.	Price
Polyfix™ 9000 Extra Thick 1/2 oz	01-01012	$4.45
Polyfix™ 9000 Extra Thick 1 oz	01-01013	$7.45
Polyfix™ 9000 Extra Thick 2 oz	01-01014	$12.45
Polyfix™ 9000 Extra Thick 8 oz	01-01015	$34.95

POLYFIX™ PLASTIC REPAIR KITS

Polyfix™ Thermal Fusion is a 3-part system that uses chemical reaction to heat the repair to 142°F, fusing it to the parent part. This system repairs ABS, royalite, graphite, lexan, polycarbon, Kevlar, plexiglass, fiberglass and many other materials. The system combines Industrial cyanoacrylate glue, a catalytic filler, and an accelerator. May be used on speed fairings, wing tips, cowlings, glare shields, and more. Kits include Polyfix™ Industrial chemical, polydust, gloves, finger cots, fiberglass mat, protection hand cream, no mixing tools, and an easy to follow instruction manual. Zero Shrinkage.

PLASTIC REPAIR KIT (SMALL)- Size: 1/4" x 1/8" x 30". 1/2oz. 14000 CA. Thin. 1/2oz 10000 Accelerator. 2 M/Grams Catalytic. 1-3" x 8" Fiberglass. 1/2oz Hand Cream. 1-Pair Latex Gloves. 6 Finger Cots. 1 Manual (33 Page w/words/Pictures) MIL SPEC-A-46050-C. (CAS NO. 7085-85-0). (CAS NO. 601-35-4). MIL-A-46050-C TYPE II A OR III A. (CAS NO. 90-97-8). (CAS NO. 64742-48-9) P/N 01-01045 ..... **$22.45**

PLASTIC REPAIR KIT (MEDIUM) - Size: 1/4" x 1/8" x 60". 1 Manual (33 Page w/words/Pictures). 1oz 14000 CA. Thin. 4 M/Grams Catalytic. 1/2oz. Hand Cream. 1oz 10000 Accelerator. 1-3 x 12" Fiberglass. 1 Pair Latex Gloves. 10 Fingercots. G.S.A NATIONAL STOCK NO. POLYFIX. 1-LB 1800 NUMBER 8040-01-364-799. MIL SPEC-A-46050-C. (CAS NO. 7085-85-0). (CAS NO. 601-35-4). MIL-A-46050-C TYPE II A OR III A. (CAS NO. 90-97-8). (CAS NO. 64742-48-9)
P/N 01-00235 ..... **$34.75**

PLASTIC REPAIR KIT (LARGE) - Size: 1/4" x 1/8" x 120". 1 Manual (33 Page w/words/Pictures). 2oz. 14000 CA THIN. 2oz 10000 Accelerator. 8 M/Grams Catalytic. 10" x 10" Fiberglass (mat). 1/2oz Hand Cream. 2 Pairs Latext Gloves. 20 Fingercots. MIL SPEC-A-46050-C. (CAS NO. 7085-85-0). (CAS NO. 601-35-4). MIL-A-46050-C TYPE II A OR III A. (CAS NO. 99-97-8). (CAS NO. 64742-48-9)
P/N 01-00236 ..... **$49.85**

PLASTIC REPAIR KIT (X-LARGE) - Size: 1/4" x 1/8" x 600". 1 Manual (33 Page w/words/Pictures). 10 oz. 14000 CA Thin. 50 M/Grams Catalytic. 1oz. Debonder. 12 Pair Latex Gloves. 10 Piece Assortment of Sandpaper. 1 Pair Scissors. 10oz 10000 Accelerator. 18" x 18" Fiberglass. 1oz. Hand Cream. 50 Fingercots. 1 Sanding Block. MIL SPEC-A-46050-C. (CAS NO. 7085-85-0). (CAS NO. 601-35-4). MIL-A-46050-C TYPE II A OR III A. (CAS NO. 99-97-8). (CAS NO. 64742-48-9). (CAS NO. 68-12-2). P/N 01-00237 ..... **$292.95**

CASCOPHEN

A Resorcinol Formaldehyde Adhesive capable of curing at room temperature and providing strong, durable, waterproof bonds. Comes in two parts, a liquid resin (part A) and a powered catalyst (part B). The liquid resin is an alcohol-water solution of a partially condensed resorcinol-formaldehyde resin containing a suitable reinforcing cellulosic filler. The hardener is a tan powder formulated from paraformaldehyde and a suitable cellulosic filler. Produces a cured glue line which is resistant to fresh water or salt water, most acids and organic solvents, and lubricating oils and greases. Being thermoset, the bond is resistant to elevated temps. and conversely, no loss in bond strength occurs at temperatures as low as 40°F. These features make it advantageous for use as a general marine and aircraft use. It provides strong bonds between many wood and non-wood surfaces. These include treated woods, many plastics, natural and synthetic rubber, primed metal, leather, textiles, paper and fiber boards.

Pint Kit (Pint A, 1/4lb B) .....P/N 02-00036 ..... **$23.50**
Quart Kit (Qt A, 1/2lb B).....P/N 02-00037 ..... **$33.85**
Gallon Kit (Gal A, 2lbs B).....P/N 02-00038 ..... **$119.50**

FPL-16A HUGHES GLUE

This is an exceptionally fine two-part white epoxy glue for homebuilt and experimental aircraft. It is based on a formula developed by Forest Products Laboratories. It is excellent not only for wood but for many other applications such as a metal to wood adhesive, metal to metal, just about anything with the exception of some plastics. It has been used by builders for many years with universal acceptance. Its low viscosity makes it very easy to work. Shelf life: Resin - more than 1 yr. Hardener - Indefinite.

Qt Kit (1 qt. resin, 4oz hardener, Wt 4 lbs) ..... P/N 02-23400 .... **$52.50**
Gal Kit (1 gal resin, 16oz hardener, Wt.13 lbs).... P/N 02-23500 .. **$114.95**

HYSOL EA-9430 GLUE

This new and improved Hysol glue replaces the old EA-9410-2 glue. EA-9430 has the same characteristics as the EA-9410, but has a 50 minute pot life instead of the 30 minute pot life of the EA-9410 at 77°F. Used extensively in the Strojnik S2A sailplane and many other homebuilts.

P/N 02-18600 ..... **$69.75**

WEST SYSTEM SIX10 THICKENED EPOXY ADHESIVE

Six10 Adhesive gives you the strength and reliability of a two-part WEST SYSTEM epoxy with the convenience of a single part product. Six10 is dispensed with a standard caulking gun. Non-sagging Six10 bonds tenaciously to wood, metals, fiberglass and concrete. It cures in temperatures as low as 50°F. Working time is 42 minutes at 72°F. Cures to a solid in 5–6 hours and will take high loads in 24 hours. Cure time is faster at warm temperatures and slower in cool temperatures. Cartridge holds 190 ml of resin and hardener. To use, replace the retaining nut and plug on the West System Six10 dispensing cartridge with the 600 Static Mixer that comes attached to the cartridge. Dispense mixed 2 part epoxy adhesive using a standard caulking gun. The efficient internal geometry of the 600 Mixer thoroughly blends resin and hardener in a short mixing length for good application control and a minimum of waste. Additional 600 StaticMixers are available in packages of two or twelve.

Part No.	Description	Unit Size	Price
01-01069	Epoxy Adhesive Cartridge	190 ml	**$19.85**
01-01071	Static Mixers	2 ea	**$3.79**

FASTWELD 10 A/B HIGH SETTING EPOXY

Fastweld 10 A/B epoxy adhesive is a rapid-setting, two-component paste offering a convenient one-to-one mixing ratio by volume or weight. Fastweld 10 A/B epoxy adhesive produces strong bonds in a very short period. It is especially suited for bonding small parts and for repair work. Pot life: 3-4 minutes at 77° F, Cure Time: 4 hours. Shelf life: 3 years.

P/N 09-03454..... **$8.95**

3M™ EPX Pneumatic Mix Nozzle 9742
P/N 09-01372..... **$2.25**

FASTWELD 10 A/B HIGH SETTING EXPOXY GUN

Dual cartridge dispenser gun designed for use with 50ml style adhesive cartridges.

P/N 09-03455.... **$44.50**

T-88 STRUCTURAL ADHESIVE

T-88 is a non-brittle structural adhesive which gives superior finished results even when used under adverse working conditions. T-88 will cure in temperatures as low as 35°F which makes it an excellent choice for homebuilders living in colder climates. It is recommended by the builders of many types of homebuilt aircraft and is excellent for bonding aluminum, steel or wood. When fully cured, it is not affected by water, oil, gasoline and most other chemicals.

1/2 Pt Kit.. P/N 02-00046 ....**$18.95** Pt. Kit..... P/N 02-00047 ....**$24.50**
Qt. Kit ..... P/N 02-00048 ....**$37.75** Gal. Kit.... P/N 02-00049 ..**$103.85**

T-88 UNIVERSAL CARTRIDGES

With the Universal Cartridge any medium to high quality caulking gun will work just fine. When you evaluate the Universal Cartridge notice that without a mixture tip it is perfect for accurately measuring small batches of adhesive. This is something that is very hard to do in a mixing cup without generating a lot of waste. Of course when the cartridge is used with the mixing tip you get both accurate measuring and thorough mixing making large, continuous gluing jobs much easier with flawless products performance. Note: Mixer tube and cartridge cap sold separately (not included with T-88).

P/N 02-00103 ..... **$20.85**

REDI-MIX MIXER TUBE

The static mixer tube attaches to the cartridge with a retaining nut which screws on securely to the REDIMIX gun. The mixer tip tapers to 1/8" but may be cut back to about 1/4". Very small quantities of epoxy may be prepared in this manner without any waste or added cost.

P/N 02-90030..... **$1.94**

WELDWOOD GLUE

A powdered, urea formaldehyde wood glue activated by mixing with water. Forms a bond stronger than the wood itself. Mets Fed. Spec. A-A-3052. Low VOC.

1 Lb ..... P/N 0203 ..... **$17.75**
4.5 Lb ..... P/N 0204 ..... **$61.50**

SCOTCH WELD 3M™ STRUCTURAL ADHESIVE

Commonly known as "Scotch Weld", this two part epoxy structural adhesive will bond wood, metal, plastics and rubber. It has a pot life of nearly 2 hours after mixing, and a 24 month shelf life. Forms flexible yet very strong bonds. Color:Gray.

2 oz. kit .....P/N 02-00045 ..... **$43.80**

G/FLEX EPOXY ADHESIVE

A toughened, versatile, liquid epoxy for permanent waterproof bonding of fiberglass, ceramics, metals, plastics, damp and difficult-to-bond woods. Modulus of elasticity of 150,000 PSI. Much stiffer than adhesive sealants. Makes structural bonds that can absorb the stress of expansion, contraction, shock and vibration. It is ideal for bonding dissimilar materials. It can be modified with West System fillers and additives, and used to wet-out fiberglass tapes and fabrics. Mixed at a 1:1 ratio, G/flex gives you 45 minutes of working time at room temperature. It reaches an initial cure in 7 to 10 hrs and full cure in 24 hrs.

Epoxy Adhesive.....P/N 01-01162..... **$20.19**
650-K Epoxy Kit **-** This kit contains 4 fl. oz. G/flex 650 resin, 4 fl. oz. G/flex 650 hardener (8 fl. oz. mixed epoxy), 2 reusable mixing stick/applicators, 2 12-cc syringes, 4 grams Adhesive Filler, 4 mixing cups, 1 pair disposable neoprene gloves, 4 alcohol cleaning pads and complete handling and repair instructions. .....P/N 01-01161..... **$29.98**
655-K Epoxy Repair Kit **-** This kit contains 4.5 fl. oz. G/flex 655 resin, 4.5 fl. oz. G/flex 655 hardener (9 fl. oz. of mixed epoxy), 2 reusable mixing stick/applicators, 4 alcohol cleaning pads, 1 pair disposable neoprene gloves, 10 mixing palettes and complete handling and repair instructions. .....P/N 01-01163..... **$29.98**

PTM&W ES6279 AEROPOXY EPOXY ADHESIVE

Manufactured by PTM & W Industries, Inc. ES6279 is a light grayish-tan two part adhesive that was developed specifically for difficult bonding problems involving similar or dissimilar materials. ES6279 provides excellent adhesion to a wide variety of materials such as aluminum, steel, brass, glass, ceramics, and wood. The mix ratio of 1 to 1 by weight or volume allows easy measuring, and the creamy, smooth viscosity allows easy, uniform application. The cured material has excellent strength as well as good resistance to weak acids, moisture, and weather. ES6279 has been used successfully for many years in a variety of general bonding uses as well as numerous production applications.

Part Number	Description	Wt. (lbs.)	Price
02-30015	1/2 quart part A only	3.0	**$39.65**
02-30020	1/2 quart part B only	3.0	**$36.75**
02-30025	ES6279 QUART KIT	6.0	**$76.90**
02-30030	1/2 gallon part A only	12.0	**$106.95**
02-30035	1/2 gallon part B only	12.0	**$114.95**
02-30040	ES6279 GALLON KIT	24.0	**$220.95**
02-30045	1/2 pail part A only	60.0	**$466.95**
02-30050	1/2 pail part B only	60.0	**$418.95**
02-30055	ES6279 PAIL KIT	120.0	**$884.00**

PTM&W ES6209 AEROPOXY STRUCTURAL ADHESIVE

ES6209 is a translucent, straw colored two component epoxy adhesive with a thick, liquid consistency. ES6209 is an excellent structural adhesive for use when good flow and surface wetting are required. Though pourable it has a controlled flow viscosity to minimize run-out from the adhesive joint. The 1 to 1 combining ratio by weight or volume makes it easy to measure and mix. The working time of over an hour provides plenty of time to coat and assemble the materials to be bonded. ES6209 has excellent adhesion to composite and metal parts typically used in kitplane construction. It bonds rigid foam, wood, ceramics, fiberglass and most metals with ease. When cured ES6209 provides tough, durable structural joints. Mix Ratio: 1 to 1 by weight or volume; Color: Translucent Amber, Mixed Viscosity: 45,000-55,000cps; Pot Life 4fl. oz. Mass: 60-90 min @ 77°F; Cure Time @ 77°F 18-24 hrs, @ 140°F 2-3 hrs. Quart Kit.....P/N 01-00295 ..... **$48.50**

METAL SET A4 ALUMINUM FILLED EPOXY ADHESIVE

Metalset A4® is a powerful epoxy adhesive that has been used for years by all branches of the U.S. Military as well as every major airline and auto manufacturer in the world. A4 is used for hundreds of industrial bonding applications and offers excellent adhesion to porous or non-porous surfaces. It can be applied to vertical surfaces without sagging and cures overnight with negligible shrinking. Once cured, A4 offers good machining qualities (sanding, drilling, tapping), and resists alkalies, dilute acids and solvents. Applications include stopping leaks in pipes, valves and tanks (i.e. car gas tanks), bonding like and unlike surfaces, filling metal joints, dents, etc., anchoring bolts in wood, concrete, and repairing metal surfaces. 6 oz tube - 16 hour cure time

P/N 02-00220..... **$13.75**

PTM&W ES6228 METAL BONDING ADHESIVE

ES6228 is a thin paste viscosity epoxy adhesive designed to provide good bonds to metal surfaces. A unique feature of ES6228 is its ability to bond to slightly oily metal surfaces. This is useful in situations where the complete removal of residual mill oil on metal surfaces is not possible. The thin paste consistency of ES6228 wets the metal surface well, for good adhesion. This viscosity also provides some gap filling capabilities, so "close-fitting" joints are adequate, and matched-metal joints are not required. ES6228 has a 1:1 mix ratio, by weight or volume, for easy measuring. The white resin and black hardener combine to a smooth gray system that is easy to mix and apply, The cured material has very good properties, with high bond strength and elongation, for tough durable assemblies.

Product Specifications	ES6228-A Resin	ES6228-B Hardener	Test Method
Color	White	Black	Visual
Viscosity,cps	Thin Paste	Thin Paste	ASTM D2393
Specific Gravity	1.32	1.30	ASTM D1475
Density Lb./cu.in.	.0477	.0470	ASTM D792
Mix ratio	100:100 by weight or volume		PTM & W

Quart Kit (4.5 lbs) ..... P/N 01-00415..... **$64.50**
Gallon Kit (18 lbs)..... P/N 01-00414..... **$203.95**

SYSTEM THREE ROTFIX

Rotfix is an easy-to-use, low viscosity epoxy wood restoration system for consolidation of rotted, deteriorated, dried out, or spongy wood. It creates a strong water-resistant base for repair and restoration. Penetrates deep into wood for maximum strength. Use with Sculpwood for permanent structural repair or severely damaged wood. Kit includes 16 oz measuring/application bottle.

1.5 pint (24 oz) Kit ..... P/N 02-90050..... **$35.75/ea**

SYSTEM THREE SCULPWOOD

Sculpwood is a moldable, carvable, sandable epoxy putty for replacement of damaged wood. It forms a strong, permanent bond to most rigid surfaces and can be sawed, nailed, carved, machined, sanded, stained, painted, and screwed. Porous, rotted, or deteriorate wood should first be treated with RotFix.

2 pint (32 oz) Kit.....P/N 02-90055 ..... **$33.75/ea**

SYSTEM THREE QUICK CURE EPOXY

Quick Cure is a 5 min. epoxy from System Three which bonds wood, metals, fiberglass, ceramics, plastics and glass. Excellent for making quick repairs, as it hardens in 5 minutes at room temperature. Mixing ratio: 1 to 1. Not recommended for applications in excess of 200°F.

Pint Kit .....P/N 02-30060 ..... **$28.85**
Quart Kit.....P/N 02-30065 ..... **$49.75**

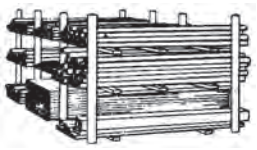
METLWELD EPOXY ADHESIVE

MetlWeld ia a 2-part, equal volume ratio, room temperature curing epoxy adhesive. MetlWeld develops strength earlier than other comparable 1:1 systems and may be used at temps. as low as 50˚F. Metal to be bonded should be freshly sanded and clean from grease, wax, oil and other contaminants. Allow 48 hours min. to cure and develop strength at 77˚F (longer at cooler temps.) before subjecting to stress. Bonds plain & anondized aluminum, glazed & unglazed ceramic; concrete; copper; glass; galvanized and stainless steel; neoprene rubber and most porous materials. Does not bond acrylic, polyethylene, polypropylene, polystyrene or vinyl plastics.

1/2 Pint Kit ..... P/N 01-00406..... **$21.00**
Pint Kit ..... P/N 01-00407..... **$31.50**
Quart Kit ..... P/N 01-00408..... **$44.85**

4130 STRUCTURAL TUBING

4130 ALLOY STEEL ROUND SEAMLESS TUBING MIL-T-6736 NORMALIZED /ANNEALED



4130 is a chromium-molybdenum general purpose alloy steel tubing that is weldable and is capable of developing good strength. It has been for years the standard of the aircraft industry. Tensile Strength: 90,000 PSI. The stock sizes listed below can be furnished in lengths from 1 foot to 12 feet. Large orders are filled in random lengths from 10 to 12 feet unless specific lengths are requested. No charge is made for cutting stock sizes of tubing to mailable length. Quotations furnished on unlisted sizes.

IF MFG TEST REPORTS ARE REQUIRED THERE IS A $15.00 CHARGE PER ORDER. PLEASE INDICATE AT TIME OF ORDER

ME

O.D. (In.)	Wall Thickness	I.D. (In.)	Wt. Per Ft.	Part No.	Price Per Ft.
3/16	.035	.131	.0478	03-00183	$4.45
1/4	.028	.194	.0672	03-00250	$8.50
	.035	.180	.0804	03-00300	$2.60
	.049	.152	.1052	03-00400	$4.85
	.058	.134	.1189	03-00500	$13.50
	.065	.120	.1284	03-00510	$4.95
5/16	.028	.256	.0852	03-00600	$7.75
	.035	.243	.1039	03-00700	$4.65
	.049	.215	.1382	03-00800	$5.25
	.058	.196	.1580	03-00810	$6.25
	.065	.182	.1722	03-00900	$8.38
	.095	.123	.2212	03-01000	$6.94
3/8	.028	.319	.1038	03-01100	$5.25
	.035	.305	.1271	03-01200	$2.50
	.049	.277	.1706	03-01300	$3.45
	.058	.259	.1964	03-01400	$2.95
	.065	.249	.2152	03-01500	$3.50
	.083	.209	.2588	03-01600	$5.25
	.095	.185	.2841	03-01610	$5.75
7/16	.035	.367	.1506	03-01700	$4.30
	.049	.340	.2036	03-01800	$6.50
	.065	.307	.2589	03-02000	$3.80
	.095	.247	.3480	03-02100	$7.25
	.120	.197	.4075	03-02200	$8.50
1/2	.028	.444	.1411	03-02300	$4.80
	.035	.430	.1738	03-02400	$2.60
	.049	.402	.2360	03-02500	$3.15
	.058	.384	.2738	03-02600	$3.50
	.065	.370	.3020	03-02700	$3.85
	.083	.334	.3696	03-02710	$4.00
	.095	.310	.4109	03-02800	$6.50
	.120	.260	.4870	03-02900	$5.97
9/16	.035	.492	.1974	03-03000	$8.25
	.049	.464	.2690	03-03100	$6.25
	.065	.432	.3457	03-03200	$9.25
	.120	.322	.5677	03-03400	$8.96
5/8	.028	.569	.1785	03-03500	$6.25
	.035	.555	.2205	03-03600	$1.69
	.049	.527	.3014	03-03700	$4.15
	.058	.509	.3512	03-03800	$3.95
	.065	.495	.3888	03-03900	$4.20
	.095	.435	.5377	03-04000	$4.60
	.120	.385	.6472	03-04100	$4.95
	.156	.313	.7814	03-04110	$6.94
3/4	.028	.694	.2159	03-04250	$5.75
	.035	.680	.2673	03-04300	$3.40
	.049	.652	.3668	03-04400	$3.95
	.058	.634	.4287	03-04500	$4.20
	.065	.620	.4755	03-04600	$4.70
	.095	.560	.6646	03-04700	$7.38
	.120	.510	.8074	03-04800	$5.95
	.156	.437	.9897	03-04900	$6.50
	.188	.375	1.128	03-05000	$9.50
7/8	.035	.805	.3140	03-05300	$4.35
	.049	.777	.4323	03-05400	$4.05
	.058	.759	.5061	03-05500	$4.50
	.065	.745	.5623	03-05600	$5.15
	.083	.709	.7021	03-05700	$5.75
	.095	.685	.7914	03-05800	$6.25
	.120	.635	.9676	03-05900	$6.50
	.188	.500	1.379	03-06000	$9.87

Please call for price on any unlisted size.
Discount of 10% for 100 ft. or more of the same part number.

O.D. (In.)	Wall Thickness	I.D. (In.)	Wt. Per Ft.	Part No.	Price Per Ft.
1	.028	.944	.2907	03-06110	$7.25
	.035	.930	.3607	03-06100	$2.60
	.049	.902	.4977	03-06200	$2.80
	.058	.884	.5835	03-06300	$2.80
	.065	.870	.6491	03-06400	$4.10
	.083	.834	1.0	03-06450	$5.75
	.095	.810	.9182	03-06500	$3.98
	.120	.760	1.128	03-06600	$6.50
	.156	.687	1.406	03-06700	$8.25
	.188	.625	1.630	03-06800	$12.75
1-1/8	.035	1.055	.4074	03-06900	$5.92
	.049	1.027	.5631	03-07000	$4.98
	.058	1.009	.6609	03-07100	$3.40
	.065	.995	.7359	03-07200	$4.30
	.095	.935	1.045	03-07300	$5.75
	.120	.885	1.288	03-07400	$6.97
1-1/4	.035	1.180	.4542	03-07500	$4.87
	.049	1.152	.6285	03-07600	$5.25
	.058	1.134	.7384	03-07700	$4.25
	.065	1.120	.8226	03-07800	$3.84
	.083	1.084	2.132	03-07810	$4.40
	.095	1.060	1.172	03-07900	$4.63
	.120	1.010	1.448	03-08000	$5.98
	.156	.938	1.823	03-08100	$9.50
1-3/8	.035	1.305	.5009	03-08210	$5.75
	.049	1.277	.6939	03-08200	$6.75
	.058	1.259	.8158	03-08300	$4.55
	.065	1.245	.9094	03-08400	$4.55
	.095	1.185	1.299	03-08500	$5.75
	.120	1.135	1.609	03-08600	$8.25
	.188	1.000	2.383	03-08700	$13.00
1-1/2	.035	1.430	.5476	03-08800	$6.00
	.049	1.402	.7593	03-08900	$8.75
	.058	1.384	.8932	03-09000	$4.95
	.065	1.370	.9962	03-09100	$4.95
	.083	1.334	1.256	03-09110	$4.95
	.095	1.310	1.426	03-09200	$6.75
	.120	1.260	1.769	03-09300	$9.94
	.188	1.125	2.634	03-09400	$11.25
1-5/8	.058	1.509	.9707	03-09600	$11.00
	.065	1.495	1.083	03-09700	$5.93
	.083	1.459	1.10	03-00042	$6.75
	.095	1.435	1.552	03-09800	$8.50
	.120	1.385	1.929	03-09900	$9.89
	.156	1.312	2.447	03-10000	$12.75
	.188	1.250	2.885	03-10100	$12.50
1-3/4	.049	1.652	.8902	03-10200	$7.50
	.058	1.634	1.048	03-10210	$8.98
	.065	1.620	1.170	03-10300	$8.00
	.095	1.560	1.679	03-10400	$6.75
	.120	1.510	2.089	03-10500	$8.75
	.188	1.375	3.136	03-10510	$13.95
1-7/8	.250	1.375	2.249	03-10600	$19.50
2	.049	1.902	1.021	03-10710	$10.00
	.065	1.870	1.343	03-10800	$7.36
	.095	1.810	1.933	03-10900	$9.75
	.120	1.760	2.409	03-11000	$11.82
	.188	1.625	3.638	03-00193	$18.75
2-1/4	.120	2.010	2.730	03-11100	$10.75
2-1/2	.095	1.81	1.933	03-11150	$14.50
	.250	2.000	6.008	03-11206	$23.87
	.120	2.260	3.050	03-11200	$11.97
2-3/4	.120	2.510	3.370	03-11210	$22.60

Ordering tubing/bar by the foot.
Add a dash number after part number to indicate length of tubing required.
Ex: 3 ft required add -3, 03-00100-3.

4130 TUBING KITS

We furnish complete 4130 tubing kits for a variety of aircraft designs including the Skybolt, Pitts Special, Acro Sport, Starduster, Osprey, and many more. The kits contain sufficient round, square, & streamline tubing to produce the pieces shown on our materials list for each design. We urge the builder to verify his own materials list against ours. Request kit list you require & current quotation. Enjoy big savings by purchasing a complete tubing kit for your aircraft at one time.

TUBE SEAL (LINE OIL)

Prevents rust and corrosion inside aircraft tubing structures. Will climb tubing wall and spread over entire surface. Will penetrate and reveal small pin holes in a weld and in time, due to exposure, will congeal and seal the hole. Directions on label. One quart will treat two light aircraft fuselages. Quart.....P/N 03-14000.....**$26.00**

BARGAIN BAG 4130 TUBING

Starter Kit - An assortment of 4130 tubing, rod and bar in short lengths to practice welding. At least 15 ft. of tubing in assorted sizes and wall thicknesses. Furnished subject to availability of cutoffs.

P/N 03-15900 .....**$27.85**

AIRCRAFT SPRUCE WEST CORONA, CA • (877) 4-SPRUCE
AIRCRAFT SPRUCE EAST PEACHTREE CITY, GA • (877) 477-7823

Prices Subject to Change Without Notice

STEEL TUBING & ROD

4130 STREAMLINE TUBING MIL-T6736 NORMALIZED

The prices for streamline tubing have increased sharply. The only manufacturer of streamline tubing, Columbia Summerill, have encountered problems with cracking on the trailing edge intermittently for many years and it has been a worrisome problem for builders. In an effort to control the situation, Columbia Summerill have installed sophisticated inspection equipment in their plant to assure that no cracked tubing gets into the field again. The cost of the equipment is reflected in the prices for the tubing which must be shared by all.

Major Axis	Minor Axis	Wall	Equivalent Round Tension	Equivalent Tubing Compr.	Wt./ Ft.	Part No.	Price Per Ft
1.180	.500	.035	7/8”	7/16”	.3140	03-11400	**$13.46**
1.349	.571	.049	1”	5/8”	.4977	03-11500	**$12.94**
1.685	.714	.049	1-1/4”	3/4”	.6285	03-11600	**$19.93**
2.023	.857	.049	1-1/2”	1”	.7593	03-11700	**$21.75**
2.360	1.000	.049	1-3/4”	1-1/8”	.8902	03-11800	**$23.75**
2.697	1.143	.065	2”	1-1/4”	1.021	03-00192	**$55.75**
3.372	1.429	.049	2-1/2”	1-1/2”	1.283	03-12000	**$48.65**

4130 AIRFRAME SQUARE & RECTANGULAR TUBING MIL-T-6736 NORMALIZED

O.D. (In.)	Wall (In.)	Weight Per Ft.	Part No.	Price Per Ft.
1/2 x 1/2	.035	.2213	03-12200	$7.97
1/2 x 1	.065	.6055	03-12350	$10.00
5/8 x 5/8	.035	.2808	03-12400	$7.93
	.049	.4234	03-12500	$8.97
	.065	.388	03-12600	$10.50
3/4 x 3/4	.035	.3403	03-12700	$8.75
	.049	.4671	03-12800	$8.50
	.065	.6055	03-13000	$12.25
	.049	.5504	03-13200	$17.90
	.065	.7160	03-13300	$11.96
1 x 1	.035	.4593	03-13400	$9.96
	.049	.6337	03-13500	$8.75
	.065	.8265	03-13700	$10.75
3/4 x 1-1/2	.049	.9057	03-13900	$9.94
1 x 1-3/4	.065	1.158	03-13950	$16.43

E-4340 ROUND STEEL ROD

SPEC. MIL-S-8503 COLD FINISHED ANNEALED

E4340 rod has high fatigue strength and maintains its hardness and strength qualities even at high temperatures. Excellent for use in highly stressed parts. Meets AMS2032 and is furnished normalized and tempered cold finished.

Dia. (In.)	Wt./Ft. (Lbs.)	Part No.	Price / Ft.
1	2.67	03-26700	**$16.95**
1-1/4	4.173	03-26850	**$37.25**
1-3/8	5.049	03-26900	**$17.95**
2	11.20	03-26950	**$69.80**

STAINLESS STEEL ROD TYPE 304 CD

3/16” Diameter type 304 CD stainless steel rod. Used in “new canard” for Long-EZ as specified by RAF.

P/N 03-26600 ..... **$2.70/ft.**

STAINLESS STEEL TUBING

Tubing Type	O D.	Wall	Part No.	Price/Ft.
304 Welded	3/8”	.028”	03-16100	**$6.75**
321 Welded	1-1/2”	.035”	03-16300	**$21.25**
321 Welded	1- 3/4”	.035”	03-16400	**$22.93**
321 Welded	2”	.035”	03-16500	**$24.85**
304 Seamless	1/8	.020”	03-00148	**$11.78**
304 Seamless	1/8”	.035”	03-16010	**$3.95**
304 Seamless	3/16”	.035”	03-16020	**$4.97**
304 Seamless	1/4”	.035”	03-16030	**$2.95**
304 Seamless	5/16”	.035”	03-16040	**$5.75**
304 Seamless	3/8”	.035”	03-16045	**$3.20**
304 Seamless	1/2”	.035”	03-16050	**$7.97**
304 Seamless	5/8”	.035”	03-16060	**$5.25**
321 Seamless	1-1/4”	.028”	03-16540	**$19.95**
321 Seamless	1-1/2”	.035”	03-16560	**$28.60**

BUSHING STOCK 1015/1020 STEEL

Seamless mechanical tubing may be used either statically or dynamically. Its close tolerance, good finish and dense structure make it ideal for parts such as shafts, bushings, bearings, etc. Tensile strength 80,000 PSI. Drill or ream for proper bolt fit.

SPECIFY CUTTING INSTRUCTIONS FOR SHIPMENT

O.D.	I.D.	Wall	Part No.	Price/Ft.
1/4”	1/8”	.065”	03-16550	**$4.50**
3/8”	1/4”	.065”	03-16700	**$2.60**
1/2”	3/8”	.065”	03-16900	**$1.88**
5/8”	1/2”	.065”	03-17100	**$1.69**

ROUND BRASS SEAMLESS TUBING

O.D.	I.D	Wall	Part No.	Price / Ft.
1 /4”	3/16”	.032”	03-17300	**$4.90**
5 /16”	3/16”	.065”	03-17400	**$5.25**
7 / 16”	5/16”	.065”	03-17600	**$17.50**
1/ 2”	3/8”	.065”	03-17800	**$14.65**
5 / 8”	3/8”	.125”	03-17900	**$12.95**

4130 ROUND STEEL ROD COLD FINISHED

SPEC. MLL-S-6758A-NORMALIZED

Dia (In.)	Wt./Ft.	Part No.	Price / Ft.
1/8	.042	03-20100	**$0.49**
3/16	.092	03-20200	**$0.89**
1/4	.167	03-20300	**$1.43**
5/16	.261	03-20400	**$1.26**
3/8	.376	03-20500	**$1.34**
7/16	.511	03-20600	**$1.71**
1/2	.668	03-20700	**$3.20**
9/16	.845	03-20800	**$3.15**
5/8	1.043	03-20900	**$2.59**
3/4	1.502	03-21000	**$7.75**
7/8	2.044	03-21100	**$7.75**
1	2.670	03-21200	**$9.50**
1-1/4	4.173	03-21300	**$11.63**
1-3/8	5.049	03-21400	**$26.50**
1-1/2	6.008	03-21500	**$18.89**
1-3/4	8.178	03-21600	**$30.75**

Ordering tubing/bar by the foot. Add a dash number after part number to indicate length of tubing required. Ex: 3 ft required add -3, 03-00100-3.

3/8” PIPER CHANNEL

Available in mild steel. 0.020” thick.
6-ft. length .....P/N 03-46600 ..... **$8.65**

IF MFG TEST REPORTS ARE REQUIRED THERE IS A $15.00 CHARGE PER ORDER. PLEASE INDICATE AT TIME OF ORDER

4130 SHEET

ME

4130 STEEL SHEETS & STRIPS MIL-S-6345A NORMALIZED

This chromium-molybdenum alloy is one of the most widely used aircraft steels because of its combination of weldability, ease of fabrication and mild hardenability. It will respond to heat treatment to high strength levels and yet, in the annealed condition, it has adequate strength for many applications. Used for the manufacture of parts and components. Tensile strength 75,000-85,000 PSI. Furnished cold-rolled and oiled in sheet thicknesses of .025-.125 inch. Sheets of .190-.250 inch and greater thickness are hot-rolled, pickled and oiled. Sheared to sheet and strip sizes listed below. Subject to availability of normalized sheet, annealed 4130 sheet may be substituted.

4130 STEEL SHEET

Thickness (In.)	Price per Piece												
	6" x 12'		9" x 9"		9" x 18"		18" x 18"		18" x 36"		18" x 72"		Wt.**
	Part No.	Price	Part No.	Price	Part No.	Price	Part No.	Price	Part No.	Price	Part No.	Price	(Lbs.)
.025	03-21800	$1.56	03-21850	$2.85	03-21900	$4.95	03-22000	$11.25	03-22100	$22.75	03-22150	$45.00	2.30
.032	03-22510	$4.75	03-22515	$5.50	03-22520	$10.75	03-22525	$21.25	03-22530	$42.25	03-22535	$83.75	---
.040	03-22600	$3.45	03-22650	$3.90	03-22700	$7.75	03-22800	$15.50	03-22900	$30.75	03-22950	$61.50	3.75
.050	03-23000	$1.97	03-23050	$4.45	03-23100	$8.96	03-23200	$17.50	03-23300	$35.75	03-23350	$71.00	4.80
.063	03-23400	$5.25	03-23450	$6.75	03-23500	$11.75	03-23600	$21.75	03-23700	$42.65	03-23750	$83.75	5.85
.071	03-23800	$6.75	03-23850	$7.75	03-23900	$14.85	03-24000	$29.85	03-24100	$59.60	03-24150	$119.95	6.55
.080	03-24200	$6.25	03-24250	$8.50	03-24300	$14.75	03-24400	$26.75	03-24500	$51.75	03-24550	$103.95	7.15
.090	03-24600	$8.75	03-55500	$9.25	03-24700	$18.25	03-24800	$36.25	03-24900	$72.25	03-24950	$144.95	8.15
.100	03-25000	$7.25	---	---	03-25100	$16.00	03-25200	$32.00	03-25300	$63.75	03-25350	$119.50	10.45
.125	03-55300	$9.95	03-25370	$13.25	03-25400	$22.75	03-25500	$42.50	03-25600	$82.00	---	---	11.25
.190	---	--	03-25660	$16.25	03-25700	$49.90	03-25750	$84.75	03-26025	$168.95	---	---	17.50
.250	---	---	03-25850	$23.75	03-25900	$63.75	03-25950	$98.75	03-26050	$320.95	03-00106	$374.00	94.00

***** Wt. per 18" x 18" sheet.***

Less 10% discount on 6 sheets 18" x 36" or 3 sheets of 18" x 72" per part number.

4130 STEEL STRIPS

Thickness	Size	Part No.	Price*
.025	5/8" x 72"	03-18000	$1.56
.025	1" x 72"	03-18100	$2.55
.032	5/8" x 72"	03-18110	$2.95
.032	1" x 72"	03-18120	$4.75
.032	2" x 72"	03-18130	$9.50
.032	3" x 72"	03-18140	$14.25
.040	5/8" x 72	03-18200	$2.10
.040	1" x 72"	03-18300	$3.45
.040	2" x 72"	03-18310	$6.93
.040	3" x 72"	03-18320	$10.50
.050	1" x 72"	03-18400	$4.20
.050	2" x 72"	03-18410	$8.75
.050	3" x 72"	03-18420	$12.25
.063	5/8" x 72"	03-18500	$3.35
.063	3/4" x 72"	03-18600	$3.35
.063	1" x 72"	03-18700	$5.25
.063	1-1/4" x 72"	03-18800	$6.75
.063	1-1/2" x 72"	03-18900	$6.75
.063	2" x 72"	03-19000	$10.25
.063	3" x 72"	03-19100	$13.50
.071	5/8" x 72"	03-19180	$4.20
.071	1" x 72"	03-19200	$6.75
.071	2" x 72"	03-19210	$13.50
.071	3" x 72"	03-19220	$19.92
.080	5/8" x 72"	03-19280	$4.20
.080	1" x 72"	03-19290	$6.25
.080	2" x 72"	03-19300	$11.75
.090	1" x 72"	03-19400	$8.75
.090	1-1/2" x 72"	03-19500	$12.25
.090	2" x 72"	03-19520	$17.50
.090	3" x 72"	03-19600	$24.25
.100	1" x 72"	03-19610	$7.25
.100	1-1/2" x 72"	03-19620	$10.75
.100	3" x 72"	03-19630	$21.50
.125	1" x 72"	03-19700	$9.93
.125	1-1/2" x 72"	03-19800	$13.25
.125	2" x 72"	03-19820	$19.50
.125	3" x 72''	03-19900	$26.00
.250	1-1/4" x 18"	03-20000	$11.00

**** 3-Ft. lengths available at the half price of 6' lengths.***

6 ft. lengths are subject to UPS oversize charges. Consider 3 ft. lengths which ship at cheaper rates

4130 STEEL SHEET

(As Used in Christavia Kits)

Thickness	Size	Part No.	Price
.040	8" x8"	03-56302	$3.05
.040	12" x 12"	03-56304	$6.92
.040	12" x 20"	03-56316	$11.50
.040	10" x 26'	03-56312	$11.75
.040	12" x 24"	03-56306	$13.75
.040	14" x 30"	03-56308	$19.00
.040	18" x30"	03-56310	$25.75
.040	24" x 24"	03-56314	---
.050	4" x 24"	03-56320	$5.25
.050	12" x 12"	03-56318	$8.00
.050	8" x 24"	03-56322	$10.25
.050	12" x 24"	03-56324	$15.50
.063	10" x 10"	03-56326	$6.75
.063	10" x 14"	03-56332	$8.50
.063	12" x 12"	03-56328	$10.25
.063	12" x 24"	03-56330	$18.50
.071	4" x 4"	03-56334	$1.44
.071	12" x 12"	03-56336	$13.50
.071	12" x 24"	03-56338	$19.93
.080	2" x 10"	03-56354	$2.10
.080	12" x 24"	03-56340	$22.50
.090	2" x 10"	03-56344	$2.25
.090	6" x 8"	03-56342	$9.97
.090	12" x 24"	03-56346	$32.25
.125	10" x 24"	03-56348	$29.25
.125	12" x 24"	03-56350	$35.70

E4340 RECTANGULAR FLAT STEEL

SPEC. MIL-S-5000 ANNEALED

This chromium-nickel-molybdenum alloy, "king" of the hardening grades of alloy steels, possesses much deeper hardenability than the 4100 series. The fatigue-tensile ratio makes it ideal for highly stressed parts such as landing gear legs, and is often referred to as "spring steel". Tensile strength is about 110,000 PSI. It is difficult to weld but can be welded by any of the common welding processes providing the section is preheated and stress relieved after welding.

Size (In.)	Wt./Ft (Lbs.)	Part No.	Price/Ft.
1/4 x 1-1/2	1.275	03-26100	$8.96
1/4 x 2	1.702	03-26150	$12.00
3/8 x 2	2.550	03-26200	$18.75
1/2 x 3	5.100	03-26300	$27.95
1/2 x 4	6.800	03-26400	$42.95

VACUUM MELTED LOW ALLOY 4130 STEEL WELDING WIRE

This high quality welding rod is produced from vacuum melted material. This material has ultra-low levels of oxygen, hydrogen, and nitrogen and is extremely low in trace elements. This rod is cleaner than standard rods and is the best available for 4130 welding. .062 dia. 36" long. Appro. 32 units per pound.

P/N 03-27600.....**$64.75/lb.**

BRASS BRAZING ROD

1/16" ..... P/N 03-27625 .....**$12.50/lb.**
3/32" ..... P/N 03-00118 .....**$9.90/lb.**

OXWELD WELDING ROD

For big-strength welds in steel plate, sheet, structural shapes, pipe and steel castings. Supplied in 36" lengths in sizes 1/16", 3/32" and 1/8".

NO. 32CMS – Recommended for 4130 steel structures for most satisfactory results. This rod is heat-treatable after welding.

1/16" Dia .....P/N 03-27000 ..... **$7.80/lb.**
3/32" Dia .....P/N 03-27100 ... **$11.85/lb.**
1/8" Dia. .....P/N 03-27200 ..... **$5.50/lb.**

NO. 7 – Used in general commercial welding and by many mechanics for non-heat-treated airframe repairs.

1/16" Dia.....P/N 03-27300.....**$9.45/lb.**
3/32" Dia.....P/N 03-27400.....**$8.25/lb.**
1/8" Dia.....P/N 03-27500....**$11.75/lb.**

WELD BRUSH

Stainless steel bristles set in curved wooden handle. Just right for cleaning welds. 1/2" Wide x 8" Long.

P/N 03-26500.....**$0.91**

For Alumium Welding Rod, see page 56.
For Welding Equipment, see pages 754-756.

IF MFG TEST REPORTS ARE REQUIRED THERE IS A $15.00 CHARGE PER ORDER.
PLEASE INDICATE AT TIME OF ORDER

ALUMINUM – STAINLESS-GALVANIZED SHEET

ALUMINUM SHEET

Aluminum alloy sheet is sold in the thicknesses and sheet sizes shown in the table. Order by part number. No guarantee against scratches is possible due to the handling required to cut sheets to sizes shown.

CUTTING CHARGES: We can cut standard sheet sizes shown in the table to special sizes, but special order cutting charges will apply. Cutting Charges range from $20 to $50 or more depending on sizes desired and number of cuts. Special shapes are not cut, only straight edges. Request quote on Cutting Charges prior to order, as special cut pieces are not returnable.

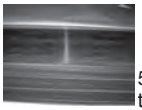
Alloy & Temper	Surface Finish	Thickness (In.)	Wt./ Sq.Ft. (Lbs.)	Price Per Sheet									
				4' x 12'		4' x 8'		4' x 6'		4' x 4'		2' x 4'	
				Part No.	Price	Part No.	Price	Part No.	Price	Part No.	Price	Part No.	Price
2024T3	Alclad	.016	.230	03-27710	$109.95	03-27720	$75.25	03-27730	$56.00	03-27740	$37.00	03-27750	$18.75
		.020	.288	03-27810	$131.95	03-27820	$88.00	03-27830	$65.50	03-27840	$43.25	03-27850	$22.00
		.025	.360	03-27910	$139.50	03-27920	$94.00	03-27930	$70.00	03-27940	$46.25	03-27950	$23.50
		.032	.461	03-28010	$163.95	03-28020	$108.95	03-28030	$81.50	03-28040	$53.75	03-28050	$27.50
		.040	.576	03-28110	$203.95	03-28120	$136.95	03-28130	$101.95	03-28140	$67.50	03-28150	$34.75
		.050	.720	03-28210	$253.95	03-28220	$169.95	03-28230	$125.95	03-28240	$83.50	03-28250	$42.75
		.063	.907	03-28310	$306.95	03-28320	$204.95	03-28330	$152.95	03-28340	$100.95	03-28350	$51.75
		.071	1.02	03-28410	$366.95	03-28420	$244.95	03-28430	$182.95	03-28440	$120.95	03-28450	$62.00
		.080	1.15	03-28510	$406.95	03-28520	$271.95	03-28530	$202.95	03-28540	$133.95	03-28550	$68.75
		.090	1.30	03-28610	$456.95	03-28620	$297.95	03-28630	$221.95	03-28640	$145.95	03-28650	$75.25
		.125	1.80	03-28710	$631.00	03-28720	$421.95	03-28730	$314.95	03-28740	$207.95	03-28750	$106.95
		.160	-	03-70010	$962.00	03-70020	$639.00	03-70030	$480.95	03-70040	$319.95	03-70050	$159.95
		.190	2.74	03-28810	$916.00	03-28820	$612.00	03-28830	$457.95	03-28840	$301.95	03-28850	$154.95
	Bare	.250	3.60	03-28910	$1,126.00	03-28920	$753.00	03-28930	$563.00	03-28940	$370.95	03-28950	$190.95
2024-0	Alclad	.032	.461	03-29010	$186.95	03-29020	$124.95	03-29030	$93.00	03-29040	$61.25	03-29050	$31.50
		.040	.576	03-29110	$189.95	03-29120	$126.95	03-29130	$94.50	03-29140	$62.25	03-29150	$32.00
6061T4	Bare	.025	.353	03-29210	$126.95	03-29220	$76.00	03-29230	$56.50	03-29240	$37.25	03-29250	$19.00
		.032	.452	03-29310	$96.25	03-29320	$64.00	03-29330	$47.75	03-29340	$31.50	03-29350	$16.00
		.040	.564	03-29410	$117.95	03-29420	$78.75	03-29430	$58.50	03-29440	$38.50	03-29450	$19.75
		.050	.706	03-29510	$149.50	03-29520	$100.95	03-29530	$75.00	03-29540	$49.50	03-29550	$25.25
		.063	.889	03-29610	$187.95	03-29620	$124.95	03-29630	$93.50	03-29640	$61.75	03-29650	$31.50
		.080	1.13	03-29710	$234.95	03-29720	$156.95	03-29730	$116.95	03-29740	$77.25	03-29750	$39.50
		.125	1.76	03-29810	$382.95	03-29820	$256.95	03-29830	$190.95	03-29840	$125.95	03-29850	$65.00
6061T6	Bare	.016	.228	03-08910	$91.75	03-08920	$60.25	03-08930	$45.50	03-08940	$30.00	03-08950	$15.25
		.020	.285	03-09910	$108.95	03-09920	$71.50	03-09930	$54.00	03-09940	$35.50	03-09950	$18.25
		.025	.353	03-29910	$114.95	03-29920	$76.75	03-29930	$57.00	03-29940	$37.50	03-29950	$19.25
		.032	.452	03-30010	$98.25	03-30020	$65.50	03-30030	$48.75	03-30040	$32.00	03-30050	$16.25
		.040	.570	03-31110	$121.95	03-31120	$81.25	03-31130	$60.50	03-31140	$39.75	03-31150	$19.75
		.050	.713	03-31210	$153.95	03-31220	$99.85	03-31230	$76.50	03-31240	$49.90	03-31250	$25.75
		.063	.889	03-30110	$193.95	03-30120	$128.95	03-30130	$96.50	03-30140	$63.75	03-30150	$32.50
		.090	1.27	03-30210	$265.95	03-30220	$177.95	03-30230	$131.95	03-30240	$87.50	03-30250	$44.75
		.125	1.76	03-30310	$382.95	03-30320	$255.95	03-30330	$190.95	03-30340	$125.95	03-30350	$64.75
		.190		03-10010	$578.00	03-10020	$398.95	03-10030	$298.95	03-10040	$196.95	0310050	$104.95
6061-0	Bare	.020	.282	03-30410	$82.00	03-30420	$54.50	03-30430	$41.00	03-30440	$26.75	03-30450	$13.50
		.040	.564	03-30510	$109.90	03-30520	$76.75	03-30530	$57.00	03-30540	$37.50	03-30550	$19.25
		.063	.889	03-30610	$169.95	03-30620	$112.95	03-30630	$84.50	03-30640	$55.75	03-30650	$28.50
		.080	1.13	03-30710	$212.95	03-30720	$141.95	03-30730	$105.95	03-30740	$70.00	03-30750	$35.75
7075T6	Alclad	.025	.364	03-60010	$149.50	03-60020	$101.95	03-60030	$76.00	03-60040	$50.50	03-60050	$25.75
		.032	.466	03-61010	$175.95	03-61020	$116.95	03-61030	$87.50	03-61040	$58.25	03-61050	$29.50
		.040	.582	03-62010	$207.95	03-62020	$137.95	03-62030	$102.95	03-62040	$68.75	03-62050	$35.00
		.050	.727	03-63010	$259.95	03-63020	$172.95	03-63030	$128.95	03-63040	$86.25	03-63050	$43.75
		.063	.916	03-64010	$326.95	03-64020	$217.95	03-64030	$162.95	03-64040	$107.95	03-64050	$55.25
		.125	1.82	03-65010	$639.00	03-65020	$439.95	03-65030	$329.95	03-65040	$219.95	03-65050	$111.95
7075-0	Alclad	.025	.364	03-66010	$128.95	03-66020	$80.25	03-66030	$60.00	03-66040	$40.00	03-66050	$20.25
		.032	.466	S10	$155.95	03-67020	$103.95	03-67030	$77.50	03-67040	$51.50	03-67050	$26.25
		.040	.582	03-68010	$189.95	03-68020	$125.95	03-68030	$94.50	03-68040	$63.00	03-68050	$32.00
		.063	.916	03-69010	$313.95	03-69020	$209.95	03-69030	$156.95	03-69040	$104.95	03-69050	$53.50

For 2'x2' piece of aluminum sheet, take 2'x4' price ÷ 2, and then add 15%. For 2'x2' piece, change last two digits of P/N to "60". Thicknesses of .016, .020, .025, .032, and .040 can be rolled and boxed for UPS shipment with insurance coverage, but we cannot guarantee rolled sheets will lay flat without creasing when unpacked. Full sheets of heavier gauges or cut sheets exceeding 108" length plus girth (once down and once around) must be shipped by truck. Maximum sheet size for UPS shipment is 2' x 4'. ***QUANTITY DISCOUNT SCHEDULE:*** 10% on 6-10 Full Sheets; 15% on 11-15 Full Sheets. May be assorted thicknesses and alloys. Write for quotation on larger orders. Heavy gauge 2024T4 aluminum plate available in .375, . 500 and .625 thickness. Indicate sheet size required.

3003H-14 SOFT ALUMINUM SHEET

Thick.	P/N #	4' x 12'	P/N #	4' x 8'	P/N #	4' x 6'	P/N #	4' x 4'
.020	03-31410	$54.50**	03-31420	$43.25	03-31430	$32.25	03-31440	$21.50
.025	03-32410	$65.50	03-32420	$42.75	03-32430	$32.75	03-32440	$21.25
.032	03-33410	$89.00	03-33420	$59.25	03-33430	$44.50	03-33440	$29.85
.040	03-34410	$98.25	03-34420	$64.50	03-34430	$48.75	03-34440	$32.00
.050	03-34510	$125.95	03-34520	$82.75	03-34530	$62.50	03-34540	$41.25
.063	03-34610	$156.95	03-34620	$102.95	03-34630	$78.00	03-34640	$51.50

***** Length of full sheet of .025 thickness is 10 ft.***
For 2'x4' pcs. of 3003H-14 use "45" as last 2 digits of P/N (Ex: 03-34645)



5052H-32 ALUMINUM SHEET FOR FUEL TANKS

5052H32 Aluminum alloy sheets for fabrication of fuel tanks. Available in full sheets (48"x144") & 1/2 sheets (48"x72") only, in .040 & .050 thicknesses. May be combined with other aluminum sheets for discount. See shipping specs above.

.032 Thickness	Full Sheet	P/N 03-30810	$82.25
	Half Sheet	P/N 03-30860	$40.75
.040 Thickness	Full Sheet	P/N 03-30900	$99.85
	Half Sheet	P/N 03-30950	$49.90
.050 Thickness	Full Sheet	P/N 03-31000	$125.95
	Half Sheet	P/N 03-31050	$62.50

016 ALUMINUM LEADING EDGE 2024T3

12" Wide X 12 ft. (rolled for mailing). Sold in 12 ft. lengths only. P/N 03-30800 .....**$39.85 Ea.**
18" Wide x 12 ft. (rolled for mailing). Sold in 12 ft. lengths only. P/N 03-30850 .....**$54.50 Ea.**

Other widths available at proportionate cost plus shearing charge.

STAINLESS STEEL & GALVANIZED FIREWALL SHEET

Material	Width	Thknes (In.)	Weight/ Lin. Ft.(Lbs)	Part No.	Price/ Lin.Ft.
301 Stainless, 1/2 Hard	36"	.016	2.016	03-31200	$17.25
304 Stainless	48"	.018	2.173	03-20010	$14.45
302/304 Stainless, Ann.*	48"	.035	4.38	03-31300	$24.50
Galvanized Sheet, 26 Ga.	48"	.022	2.718	03-31400	$4.75

**** 2B Finish***

Material	Size	Weight/Lin. Ft.(Lbs)	Part No.	Price ea.
301 SS 1/2 Hard	3' x .025"	26	03-00062	$31.75

For 03-00062 Add -1 thru -9 for desired length in feet.

IF MFG TEST REPORTS ARE REQUIRED THERE IS A $15.00 CHARGE PER ORDER.
PLEASE INDICATE AT TIME OF ORDER

ALUMINUM TUBING

ME

ROUND DRAWN ALUMINUM TUBING 2024T3

O.D. (In.)	I.D. (In.)	Wall Thickness	Wt./Ft. (Lb.)	Part No.	Price Per Ft.
1/4	.180	.035	.2081	03-31600	$4.45
5/16	.243	.035	.0366	03-31700	$6.75
	.215	.049	.0487	03-31800	$8.98
3/8	.305	.035	.0449	03-32000	$4.97
	.277	.049	.0602	03-32100	$8.25
	.245	.065	.0755	03-32200	$10.25
1/2	.430	.035	.0612	03-32500	$5.75
	.402	.049	.0829	03-32600	$8.00
	.384	.058	.0970	03-32700	$7.25
	.370	.065	.1061	03-32800	$6.50
5/8	.555	.035	.0775	03-32900	$8.50
	.527	.049	.1060	03-33000	$5.75
	.509	.058	.1234	03-33100	$6.93
	.495	.065	.1367	03-33200	$8.25
3/4	.680	.035	.0938	03-33300	$6.25
	.652	.049	.1288	03-33400	$6.75
	.620	.065	.1670	03-33600	$7.50
7/8	.805	.035	.1423	03-33650	$6.43
	.777	.049	.1530	03-33700	$7.25
	.759	.058	.1777	03-33800	$10.37
	.745	.065	.1979	03-33900	$5.86
	.635	.120	.3398	03-34000	$24.95
1	.930	.035	.1250	03-34100	$6.25
	.902	.049	.1754	03-34200	$6.92
	.884	.058	.2028	03-34250	$10.50
	.870	.065	.2295	03-34400	$7.75
	.834	.083	.2866	03-34500	$9.85
1-1/4	1.180	.035	.1601	03-34600	$6.20
	1.152	.049	.2213	03-34700	$8.25
	1.120	.065	.3000	03-00045	$8.92
1-3/8	1.277	.049	.2448	03-34800	$12.25
1-1/2	1.402	.049	.2683	03-34900	$12.00
	1.370	.065	.3519	03-35000	$11.92
1-3/4	1.250	.250	1.428	03-35075	$26.30
2	1.870	.065	.4743	03-35200	$19.93

ROUND ALUMINUM TUBING 6061-0

O.D. (In.)	I.D. (In.)	Wall Thickness	Wt./Ft. (Lb.)	Part No.	Price Per Ft.
1/2	.430	.035	.0612	03-38500	$1.72
3/4	.680	.035	.0920	03-38600	$3.75
1	.930	.035	.1250	03-38700	$4.65
1-1/4	1.180	.035	.1601	03-38800	$6.97

Sold in full 6-ft or 12ft lengths only. No charge for cutting to 8 ft or less for UPS shipment.

6061T6 SQUARE ALUMINUM TUBING

Size (In.)	Wall Thickness	Wt/Ft (Lb.)	Part No.	Price Per Ft.
1/2x1/2	.058	.156	03-00008	$4.70
3/4x3/4	.049	.217	03-00009	$4.47
1 X 1	.065	.300	03-38900	$5.50
2 X 2	.125	1.120	03-00141	$7.75
6061T6511 2 x2	.190	1.420	03-00205	$7.88
6063T52 2 x 2	.125	1.120	03-39000	$5.50

5052-0 ALUMINUM TUBING

Rigid 5052-0 aluminum alloy tubing is used for low and medium pressure hydraulic systems, fuel lines and oil lines. This tubing will withstand a higher pressure than 3003-0 tubing.

O.D. (In.)	I.D. (In.)	Thickness	Wt./Ft. (Lb.)	Part No.	Price Per Ft.
1/8	.069	.035	.0101	03-39100	$5.95
3/16	.132	.035	.0168	03-39200	$1.86
1/4	.152	.049	.0371	03-39250	$3.80
	.180	.035	.0281	03-39300	$1.35
5/16	.242	.035	.0360	03-39400	$1.60
3/8	.305	.035	.0449	03-39500	$1.79
	.277	.049	.0602	03-39550	$1.65
1/2	.436	.035	.0612	03-39600	$2.49
	.402	.049	.0829	03-39650	$2.60
5/8	.555	.035	.0760	03-39700	$2.50
	.527	.049	.1060	03-39750	$4.95
3/4	.680	.035	.0938	03-39800	$2.60
	.652	.049	.1288	03-39850	$3.60
1	.930	.035	.1256	03-39900	$4.70
	.902	.049	.1754	03-39950	$4.98

Sold in full 6-ft. or 12-ft. lengths only. No charge for cutting to 8 ft. or less for UPS shipment. Unlisted sizes of aluminum tubing available in full 12' lengths. No charge for cutting to 8' or less for UPS. Longer lengths shipped via truck. ***Ordering tubing/bar by the foot. Add a dash number after part number to indicate length of tubing required. Ex: 3 ft required add -3, 03-00100-3.***

ROUND ALUMINUM TUBING 6061T6

O.D. (In.)	I.D. (In.)	Wall Thickness	Wt./Ft. (Lb.)	Part No.	Price Per Ft.
3/16	.118	.035	---	03-00012	$4.35
1/4	.180	.035	.0281	03-35300	$1.26
	.152	.049	.036	03-00014	$2.95
5/16	.215	.049	.0423	03-35350	$2.25
	.197	.058	.0561	03-35400	$4.50
3/8	.305	.035	.0449	03-35500	$2.20
	.259	.058	.0694	03-35600	$2.10
	.245	.065	.0755	03-35700	$2.25
	.209	.083	.0895	03-35750	$2.70
7/16	.308	.065	.090	03-35775	$2.10
1/2	.444	.028	.0496	03-35795	$2.35
	.430	.035	.0612	03-35800	$1.50
	.402	.049	.0816	03-35850	$1.99
	.384	.058	.0962	03-35900	$2.25
	.370	.065	.1040	03-35950	$2.30
	.260	.120	.168	03-35975	$4.35
5/8	.555	.035	.0775	03-36000	$3.50
	.527	.049	.1060	03-36010	$2.80
	.509	.058	.1227	03-36050	$3.92
	.495	.065	.1367	03-36100	$3.45
3/4	.680	.035	.093	03-36150	$2.20
	.652	.049	.1288	03-36200	$2.40
	.634	.058	.1506	03-36300	$2.70
	.620	.065	.164	03-36350	$2.99
7/8	.805	.035	.109	03-36375	$3.20
	.777	.049	.150	03-36380	$5.25
	.759	.058	.1777	03-36400	$4.70
	.745	.065	.1983	03-36450	$4.40
	.635	.120	.3350	03-36500	$6.75
1	.930	.035	.1275	03-36600	$3.10
	.902	.049	.1754	03-36610	$2.95
	.884	.058	.2060	03-36700	$3.25
	.870	.065	.2295	03-36800	$4.15
	.830	.083	.281	03-36850	$4.45
	.810	.095	.3244	03-36900	$6.25
	.750	.125	.404	03-36950	$6.00
	.500	.250	.693	03-36975	$4.35
1-1/8	1.027	.049	.185	03-36980	$5.50
	1.009	.058	.2321	03-37000	$3.80
	.875	.125	.4712	03-37100	$9.98
1-1/4	1.180	.035	.1601	03-37200	$4.20
	1.152	.049	.2213	03-37210	$5.50
	1.134	.058	.2601	03-37300	$4.40
	1.120	.065	.2907	03-37400	$5.50
	1.010	.120	.510	03-37450*	$7.25
1-3/8	1.259	.058	.2865	03-37500	$4.95
1-1/2	1.430	.035	.1928	03-37550	$4.25
	1.402	.049	.2683	03-37610	$6.50
	1.384	.058	.3137	03-37710	$9.75
	1.370	.065	.3519	03-37800	$4.95
	1.260	.125	.635	03-37850	$9.87
1-5/8	1.509	.058	.3409	03-37900	$5.50
1-3/4	1.680	.035	.2264	03-37910	$5.25
	1.652	.049	.3142	03-37925	$13.50
	1.634	.058	.3703	03-37950	$7.50
	1.584	.083	.5202	03-37975	$9.25
1-7/8	1.759	.058	.3954	03-38000	$6.75
2	1.902	.049	.3601	03-38100	$5.37
	1.884	.058	.4225	03-38200	$6.25
	1.870	.065	.4743	03-38300	$7.93
2-1/4	2.152	.049	.406	03-38307	$12.50
	2.120	.065	.5328	03-38308	$8.25
	1.959	.083	.824	03-38309	$18.90
	2.000	.125	.999	03-38310	$7.96
2-1/2	2.430	.035	.3254	03-38315	$8.25
	2.402	.049	.444	03-38318	$8.50
	2.370	.065	.5803	03-38320	$8.75
3	2.930	.035	.3891	03-38330	$14.75
	2.870	.065	.7140	03-38340	$17.50
4	3.930	.035	.5205	03-38350	$42.60
	3.902	.049	.7153	03-38360	$28.50

* This item will be supplied as either .120 or .125.

3003-0 VERSATUBE

Soft aluminum tubing for instrument air and vacuum lines, fuel and oil lines, and primer lines.

***Safety factor of 2**
20% discount for full 50' coils of Versatube

O.D. (In.)	Wall Thickness	Max. Working Pressure* (PSI)	Part No.	Price Per Ft.
1/8	.025	1820	03-40200	$0.36
3/16	.028	880	03-40300	$0.43
1/4	.032	795	03-40400	$0.51
5/16	.035	630	03-40500	$0.68
3/8	.035	520	03-40600	$0.76
1/2	.035	390	03-40700	$0.88
5/8	.035	305	03-40800	$1.21

IF MFG TEST REPORTS ARE REQUIRED THERE IS A $15.00 CHARGE PER ORDER. PLEASE INDICATE AT TIME OF ORDER

ALUMINUM ROD – BAR – ANGLE

ROUND ALUMINUM ROD 2024T3/2024T4

Dia. (In.)	Wt./Ft. (Lb.)	Part No.	Price/Ft
1/8	.015	03-41300	**$0.93**
3/16	.033	03-41400	**$0.49**
1/4	.059	03-41500	**$0.78**
5/16	.092	03-41600	**$1.72**
3/8	.132	03-41700	**$1.06**
7/16	.1822	03-41750	**$1.83**
1/2	.235	03-41800	**$1.67**
5/8	.368	03-41900	**$2.40**
3/4	.529	03-42000	**$4.80**
7/8	.721	03-42100	**$5.98**
1	.941	03-42200	**$6.93**
1-1/8	1.205	03-42250	**$10.75**
1-1/4	1.47	03-42300	**$8.92**
1-3/8	1.800	03-42350	**$11.75**
1-1/2	2.12	03-42400	**$14.46**
2	3.76	03-42500	**$25.75**
2-1/2	5.88	03-42600	**$40.75**

No charge for cutting to 8 ft. or less for UPS shipment.
Over 8 ft. shipped via truck. Special sizes available (12 foot minimum)
If ordering only T3 or T4, please call 877-477-7823

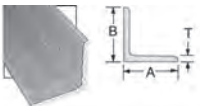
ALUMINUM SQUARE & RECTANGLE BAR 2024T3/2024T4

Size (In.)	Wt./Ft. (Lb.)	Part No.	Price/Ft.
1/8 x 1	.150	03-42700	**$2.45**
1/8 x 1-1/4	.187	03-42750	**$5.50**
1/8 x 1-1/2	.225	03-42800	**$3.35**
1/8 x 2	.300	03-42900	**$4.55**
3/16 x 3/4	.169	03-43100	**$6.88**
3/16 x 1	.2273	03-43150	**$5.85**
3/16 x 1-1/4	.281	03-43200	**$28.75**
3/16 x 1-1/2	.3420	03-43250	**$7.88**
1/4 x 1/2	.147	03-00104	**$1.98**
1/4 x 3/4	.150	03-00199	**$2.90**
1/4 x 1	.300	03-43400	**$4.20**
1/4 x 1-1/4	.375	03-43500	**$4.97**
1/4 x 1-1/2	.450	03-43600	**$5.97**
1/4 x 2	.599	03-43700	**$8.00**
1/4 x 3	.900	03-43800	**$11.93**
1/4 x4	1.99	03-43850	**$15.75**
3/8 x 1	.4545	03-43875	**$6.28**
3/8 x 1-1/4	.562	03-43900	**$16.25**
3/8 x 1-1/2	.6818	03-43950	**$24.75**
3/8 x 2	.674	03-44000	**$9.89**
3/8 x 3	1.35	03-44100	**$18.25**
3/8 x 6	2.7	03-44200	**$49.50**
1/2 x 1/2	.3030	03-44250	**$3.15**
1/2 x 5/8	.375	03-44300	**$15.75**
1/2 x 1	.599	03-44400	**$5.50**
1/2 x 1-1/4	.7575	03-44450	**$7.50**
1/2 x 2	1.20	03-44500	**$12.75**
1/2 x 2-1/2	1.50	03-44600	**$12.98**
5/8 x 5/8	.468	03-44700	**$4.35**
5/8 x 1	.7575	03-44850	**$11.50**
3/4 x 3/4	.674	03-44900	**$6.25**
3/4 x 1-1/2	1.35	03-45000	**$12.75**
3/4 x 1-3/4	1.59	03-45550	**$19.95**
3/4 x 2	1.80	03-45100	**$21.60**
3/4 x 2-1/2	2.25	03-45200	**$17.96**
1 x 1	1.20	03-45300	**$11.36**
1 x 2	2.424	03-45450	**$21.50**
1 x 2-1/2	3.030	03-45475	**$27.60**
1/2 x 6	4.002	03-56000	**$33.82**

Unlisted sizes of aluminum rod and bar available in full 12 ft. lengths.
No charge for cutting to 8 ft. or less for UPS. Longer lengths shipped via truck.
If ordering only T3 or T4, please call 877-477-7823
Ordering tubing/bar by the foot. Add a dash number after part no. to indicate length of tubing req.
Example: 3 ft required add -3, 03-00100-3.

ALUMINUM STREAMLINE STRUT TUBING

Aluminum streamline strut tubing, 6061T6, anodized. Used for struts in American Eaglet sailplane. Major axis 2.697", minor axis 1.143", .049" wall. Available in 6 ft. lengths only.
P/N 03-40000..... **$99.95**



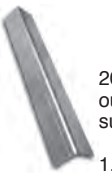
ALUMINUM ANGLE

Extruded aluminum angle is produced by forcing a heated aluminum billet through a die of the proper shape by means of a hydraulic press. Our 90° aluminum extrusions have fillet radius as illustrated.

Type	Size (In.) Wt./Ft. "A" x "B" x "T"	Part No.	Wt. Per Ft. (Lb.)	Price Per Ft
2024T3	1/2 x 1/2 x 1/16	03-46800	.070	**$3.55**
2024T3	5/8 x 5/8 x 1/16	03-46900	.095	**$4.90**
2024T3	3/4 x 3/4 x 1/16	03-47000	.109	**$2.75**
2024T3	7/8 x 7/8 x 1/8	03-47100	.238	**$6.90**
2024T3	1 x 1 x 1/16	03-47200	.154	**$3.75**
2024T3	1 x 1 x 1/8	03-47300	.282	**$4.15**
2024T3	1 x 1-1/2 x 1/8	03-47400	.354	**$7.65**
2024T3	1-1/2 x 1-1/2 x 1/16	03-47500	.229	**$5.35**
2024T3	1-1/2 x 1-1/2 x 1/8	03-47600	.432	**$6.25**
2024T3	2 x 2 x 1/8	03-47625	.581	**$9.90**
2024T3	3-1/2 x 3-1/2 x 1/4	03-47675	2.050	**$92.75**

Type	Size (In.) Wt./Ft. "A" x "B" x "T"	Part No.	Wt. Per Ft. (Lb.)	Price Per Ft
6061T6	3/4 x 3/4 x 1/16	03-00185	.106	**$2.46**
6061T6	3/4 x 3/4 x 1/8	03-47900	.200	**$0.87**
6061T6	1 x 1 x 1/16	03-00187	.150	**$3.65**
6061T6	1 x 1 x 1/8	03-48000	.270	**$2.10**
6061T6	1 x 3 x 1/8	03-48050	.581	**$28.25**
6061T6	1-1/4 x 1-1/4 x 1/8	03-00189	.350	**$5.50**
6061T6	1-1/2 x 1-1/4 x 1/8	03-48075	.390	**$35.50**
6061T6	1-1/2 x 1-1/2 x 1/8	03-48100	.430	**$1.92**
6061T6	1-1/2 x 1-1/2 x 3/16	03-48200	.625	**$2.90**
6061T6	1-1/2 x 1-1/2 x 1/4	03-48250	.831	**$3.55**
6061T6	1-1/2 x 2 x 1/8	03-48300	.506	**$1.86**
6061T6	1-3/4 x 1-3/4 x 1/8	03-48350	.490	**$4.75**
6061T6	2 x 2 x 1/8	03-48400	.470	**$2.25**
6061T6	2 x 2 x 3/16	03-48450	.850	**$3.63**
6061T6	2 x 2 x 1/4	03-48500	1.110	**$4.40**
6061T6	2 x 3 x 1/4	03-48550	1.400	**$28.95**
6061T6	2 x 2-1/2 x 1/4	03-48600	1.250	**$7.25**
6061T6	2-1/2 x 2-1/2 x 3/16	03-00007	.970	**$7.47**
6061T6	2-1/2 x 2-1/2 x 1/8	03-48650	.720	**$2.85**
6061T6	2-1/2 x 4 x 1/8	03-48675	.960	**$17.80**
6061T6	4 x 4 x 1/4	03-48680	2.28	**$8.90**

Standard lengths: 2024-12' and 20', 6061-25', 6063-16' (no fillet). No charge for cutting to 8 ft. or less for UPS. Many unlisted sizes available. Request quotation.



ALUMINUM PRE-FORMED ANGLES

2024T3 Aluminum angles, formed from .063" sheet. Generous radius at bend. Used as supports in composite aircraft such as the VariEze.

1.5" x 1.5" x 12" Angle..... P/N 03-48700 ... **$4.35 pc**

ALUMINUM ROUND, SQUARE AND RECTANGLE BARS, 6061T6

Size (In.)	Wt./Ft. (Lb.)	Part No.	Price/Ft.
3/16 Dia. Round	.032	03-45500	**$0.62**
1/4	.058	03-45600	**$0.69**
5/16	.090	03-45700	**$0.98**
3/8	.130	03-45800	**$1.14**
1/2	.231	03-45900	**$1.42**
5/8	.359	03-45920	**$1.27**
3/4	.519	03-46000	**$1.66**
7/8	.787	03-46010	**$3.44**
1	.923	03-46100	**$4.98**
1-1/4	1.436	03-45940	**$5.47**
1-1/2	2.068	03-45960	**$7.50**
1-5/8	2.44	03-46200	**$8.75**
1/4 x 1 Rect.	.294	03-46300	**$1.15**
3/4 x 3/4 Sq.	.660	03-46400	**$2.65**
3/16" x 1-1/4"	.275	03-46250	**$1.14**
1/4" x 1-1/2"	.441	03-46350	**$1.62**
1/4" x 2"	.675	03-00005	**$2.20**
1/4" x 3"	.881	03-46360	**$3.45**
1/2" x 3/4"	.441	03-46370	**$1.94**
1/2" x 1"	.587	03-46375	**$2.30**
1/2" x 1-1/4"	.734	03-46380	**$3.30**
1/2" x 2"	1.170	03-46390	**$4.85**
1" x 1"	1.170	03-46450	**$8.25**
1" x 1-1/4"	1.270	03-00006	**$5.96**
1" x 2-1/2"	1.790	03-00142	**$19.50**

IF MFG TEST REPORTS ARE REQUIRED THERE IS A $15.00 CHARGE PER ORDER. PLEASE INDICATE AT TIME OF ORDER

ME

ALUMINUM HINGE – STRINGERS

PIANO HINGE

MS20257P (supercedes AN257) hinge consists of two aluminum half hinges which mate and are held together by a hinge pin. Anodized finish. MS20257C is similar to MS20257P except made in stainless steel.

MS20001P aluminum hinge is extruded. The closed hinge loops cannot be pulled apart. Furnished with hinge pin. Anodized finish.

Part No.*	Open Width	Thickness	Price/Length	
			3 Ft.*	6 Ft.*
MS20257P1	3/4"	.032"	**$4.95**	**$9.90**
MS20257P2	1-1/16"	.040"	**$8.50**	**$17.75**
MS20257P3	1-1/4"	.040"	**$5.50**	**$10.25**
MS20257P4	1-1/2"	.040"	**$5.25**	**$10.50**
MS20257P5	2"	.051"	**$6.95**	**$14.00**
MS20001P3	1-1/4"	.040"	**$30.75**	**$61.50**
MS20001P4	1-1/2"	.040"	**$27.85**	**$56.75**
MS20001P5	1-3/4"	.051"	**$29.50**	**$56.75**
MS20001P6	2"	.051"	**$32.50**	**$65.00**
MS20257C1	3/4"	.031	**$7.65**	**$14.95**
MS20257C2	1-1/16"	.037	**$9.00**	**$18.75**
MS20257C3	1-1/4"	.050	**$11.75**	**$24.25**
MS20257C4	1-1/2"	.062	**$12.00**	**$24.75**
MS20257C5	2"	.062	**$16.75**	**$34.25**

* Add "-3" to part number for 3 ft. pc. and "-6" to part number for 6 ft. pc.
Example: MS20001P6-3 is 3 ft. pc. of MS20001P6 hinge.

HINGE PIN ONLY – Stainless Steel
089" Dia. x 6' .....P/N 03-49000 ..... **$3.95**

BARGAIN BAG OF ALUMINUM TUBING

Approximately 20 ft. Assorted sizes of 2024 and 6061 aluminum tubing, angle, rod, and bar
P/N 03-40100.....**$14.95**

6063T 52 U CHANNEL

3/4"x 3/4"x1/8".....P/N 03-38950 .....**$2.75/ft.**
1"x1"x1/8".....P/N 03-39050 .....**$3.58/ft.**
1-1/4"x1-1/4"x1/8".....P/N 03-39150 .....**$4.95/ft.**

TRAILING EDGE

Fabricated of .025 aluminum 3003H14 to size illustrated. Wt.12oz. per 10ft. length. Shipped via truck. ***No charge for cutting to 8 ft. or less for UPS shipment.***

10 Ft. Length.....P/N 03-48900 ..... **$14.25**

Less 20% on 12 or more lengths. Please add $2.00 carton charge for trailing edge - this box insures safe UPS shipment.

RECTANGULAR ALUMINUM STRINGERS

Rectangular stringers, 5/8" x 5/16" x .032" 3003H14 aluminum. Wt. 11 oz./12ft. length. Shipped via truck. ***No charge for cutting to 8ft. or less for UPS shipment.***
12 Ft. Length .....P/N 03-48800 ..... **$6.95**

"HAT" SECTION ALUMINUM STRINGERS

Fabricated from .020 2024T3 aluminum. Wt. 5 oz. per 8-ft. length. May be spliced to form longer stringers.
8-Ft. Length.....P/N 03-46500 ..... **$4.45**
Less 10% on orders for 12 or more.

2024T3511 2 X 1-3/4 T ALUMINUM

2024T3511 2" X 1-3/4" T extruded aluminum. Price per foot.
P/N 03-00093 .....**$39.75**

WELDING ROD FOR ALUMINUM

ALUMINUM

ER4043 – A versatile alloy well suited for welding 6061T-6, 5005, and 6063. Extremely ductile. 1/16" dia.....P/N 03-27520 .....**$13.90/lb.**
3/32" dia.....P/N 03-27525 .....**$11.85/lb.**

ER4145 – Welding alloy recommended for use with 2024T3. A high strength alloy. 1/16" dia.....P/N 03-27510 .....**$79.25lb.**

ER5356 – Combination of strength and ductility for welding 5083, 5086, and 7000 series. Deposit can be anodized after welding.
1/16" dia.....P/N 03-27530 .....**$12.50/lb.**
3/32" dia.....P/N 03-27535 .....**$8.95/lb.**

UTP4 – Pure aluminum for 1100 grade.
1/16" dia.....P/N 03-27540 .....**$19.99lb.**

ER347 – Popular aircraft type, stabilized austenitic stainless alloy for welding 302 and 304 base materials. Excellent for welding Ti stabilized grades such as 321 with high strength and elongation.
1/16" dia.....P/N 03-27545 .....**$17.50lb.**
3/32" dia.....P/N 03-27550 .....**$19.65/lb.**

UTP A-65 – A multi alloy wire for a wide range of base materials including stainless steel, low alloy high strength steel and especially outstanding for dissimilar metals with over 120,000 psi tensile strength and 25% elongation. Machinable. 1/16" dia.....P/N 03-27555 .....**$42.25/lb.**
3/32" dia.....P/N 03-27560 .....**$39.50/lb.**

BRAZING ALLOYS

UTP 306M – Cadmium free, low temperature silver brazing alloy for high strength joints on stainless or copper. Exceptional for thin gauge applications such as tubing. Flux coated for easy use.
1/16" dia.....P/N 03-27565 .....**$362.95/lb.**

UTP 1M – High strength, machinable torch rod for steel, brass, bronze and other copper alloys. Easy to apply, high strength, and versatile all purpose brazing rod. 1/8" dia.....P/N 03-27570 .....**$21.25/lb.**

MAINTENANCE

UTP 612 – An all position mild steel coated electrode for arc welding. Operates on AC or DC current and can be welded by even the most inexperienced welder. 72,000 psi tensile strength, moisture resistant and conveniently packaged in 10 lb containers.
3/32" dia.....P/N 03-27575 .....**$14.60/lb.**
1/16" dia.....P/N 03-27580 .....**$12.85/lb.**

UTP Unial – Self fluxing aluminum torch rod that can be applied with even a butane torch. Low temperature, color matching and ideal for repairs to tubing. P/N 03-27585 .....**$33.00/lb**.

For additional Welding Equipment see pages 754-756.

COPPER TUBING

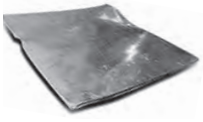
Seamless copper tubing for primer, fuel and oil pressure lines.

O.D. (In.)	Wall Thickness	Part No.	Price/Ft.
1/8	.030	03-40900	**$1.86**
1/4	.030	03-41000	**$2.45**
5/16	.032	03-41100	**$3.15**
3/8	.032	03-41200	**$3.75**
1/2	.032	03-41250	**$3.65**

20% discount for full soft coils of 50 ft. of Copper Tubing.

COPPER BUS BAR

.125 X 1/2" wide P/N 03-40890 ..... **$3.80/ft.**



LEAD SHEET

Lead sheet per specification QQ-L-201, Grade B. 1/8" thick. Wt. 8 lbs./sq.ft.
P/N 03-31500..... **$59.65/ft.**
Half Sheet (24"x 36", 48 Lbs.)
P/N 03-31520..... **$298.00**
Full Sheet (36" x48", 96 Lbs.) ..... P/N 03-31540..... **$543.00**

ACRYLIC SHEET

American made acrylic sheet Grade C to Specification LP-391 is unshrunk. When heated to forming temperature of 220-250°F, it will shrink about 2.2% in length and width and will increase about 4% in thickness. When heated to a pliable state it can be drilled, sawed and machined. It has excellent resistance to weathering. It is less than half as heavy as glass and has good impact resistance. .060" or .080" thickness is generally used for side windows and .125" for windshields. Both sides are paper covered for protection. Sheet size: 48"x96". Sold in 2'x2' increments only. Order by part number (see table)

Thickness Inch	Weight Lb./Sq.Ft.	Part No.***	Price Per Sq. Ft.
.060 Clear	.37	03-498—	**$2.50**
.080 Clear	.49	03-499—	**$2.75**
.125 Clear	.62	03-500—	**$2.80**
.125 Tinted*	.77	03-501—	**$4.06**
.125 Tinted**	.77	03-502—	**$4.58**

* *Smoke tint* ** *#2111 Green tint*

*** ***Order by basic part number and add last two digits according to dimensions of piece, as follows: 2'x2' (4 Sq.Ft.) add "02"; 2'x4' (8 Sq.Ft.) add "04"; 4'x4'; (16 Sq.Ft.), add "08"; 4'x8' (32 Sq.Ft.), add "10". Example: 2'x4 .080 Clear is P/N 03-49904.***

LEXAN

American made Kirex polycarbonate sheet (an equivalent to G.E. Lexan) is a very strong plastic which is guaranteed by manufacturer against breakage when used as a window for a 3 year period. It will scratch like Plexiglas, but will not break. Clear, masked both sides. Sheet size: 48"x96". Sold in 2'x2' increments only. Order by part number (see table)

Thickness Inch	Weight Lb./Sq.Ft.	Part No.*	Price Per Sq. Ft.
.060	.38	03-503—	**$2.28**
.080	.50	03-504—	**$3.15**
.093	.59	03-505—	**$3.48**
.125	.78	03-506—	**$3.88**

* ***Order by basic part number and add last two digits according to dimensions of piece, as follows: 2'x2' (4 Sq.Ft.), add "02"; 2'x4' (8 Sq.Ft.) add "04"; 4'x4' (16 Sq.Ft.), add "08"; 4'x8' (32 Sq.Ft.), add "10". Example: 4'x4' of .093 is P/N 03-50508.***

CLEAR CELLULOSE ACETATE SHEET

May be used to make inspection rings, grommets and shapes which will adhere to fabric with dope or fabric cement. Sheet size: 20" x 50". Thickness: .030". P/N 03-50700 ..... **$39.90/Sheet**

GRAPHLITE CARBON FIBER ROD

Prepreg tape has an inherent waviness which can reduce the strength and stiffness of a laminate. Graphlite rod eliminates fiber waviness and unlike tape, it can be placed along any curved surface and retain fiber alignment. Graphlite can be used in layers to form building blocks for stiffeners, spar caps, longerons and other axially loaded parts. Components made with Graphlite offer tension strength on the lower wing surface and compression strength on the upper surface that are almost equal. In addition, a single layer of rods is as thick as 10 layers of tape, meaning fewer passes and less effort. Graphlite rods increase compression strength, reduce fabrication costs by 50%, can be laid on compound curves, and require no special storage. Available in two rod types: standard module (SM) which is 33-34 MSI and intermediate module which is 42 msi. Sold by the roll. Typical light aircraft requires minimum of 1000 ft. Graphlite rod.

Rod Type	Rod Diameter	Tensile Strength	P/N	Price per roll
IM	0.067	503	03-50706	**$93.50 /100 ft.**
SM	0.125	503	03-50707	**$16.93 /12 ft.**
SM	0.158	503	03-50708	**$153.95 /100 ft.**
SM	0.063	785	03-50710	**$84.60 /100 ft.**

3M™ WINDOW SEALANTS

3M STRIP CAULK - This black, nonhardening compound in 12" strips is the most satisfactory product for sealing windshields and windows. 61 strips per box, more than enough for an average, leakproof windshield installation.

P/N 08578 ..... **$16.75/Box**

SILASTIC RTV SEALANTS

Dow Corning "SILASTIC" - These 1-part RTV silicone rubber adhesive/sealants adhere to metals, glass, paint, ceramics, wood and most plastics. Form a tack-free skin in one hour & cure to a firm silicone rubber in 24 hrs.

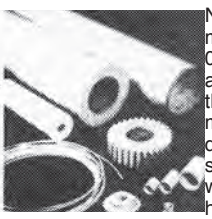
#732 RTV (Clear), 4.7 Oz. Tube ..... P/N 09-27800...**$7.95**
#732 RTV (White), 4.7 Oz. Tube ..... P/N 09-27810...**$6.95**
#732 RTV (Black), 4.7 Oz. Tube ..... P/N 09-27815...**$6.95**
#736 High temp. (to 500°F) Red RTV, 3oz.tube... P/N 09-27900.**$11.50**

DOW CORNING RTV-3145 ADHESIVE / SEALANT

Sealing openings in modules and housings; adding mechanical stability to individual components; assembly of components on PWBs; sealing in and around wires and electrical leads; yoke assembly.

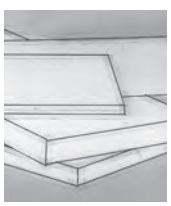
Clear..... P/N 09-02041 ..... **$35.75**
Gray..... P/N 09-02042 ..... **$35.50**

NYLON



Nylon, a polyimide resin, is a light yet tough thermoplastic material. Its density is approximately .041 lb./cu.in. It is a tough, resilient material with a low coefficient of frictionabrasion tests show that Nylon loses less material than do many metals, other plastics, and hard rubber. It can deform under load, then return to its original shape. Nylon retains its impact strength over a wide range of temperatures (-60° to 400°F). It has good resistance to most chemicals. It can be easily machined on most standard metal working machines, power hacksaws, band saws, or circular saws. It is desirable to use a saw with a coarse tooth blade.

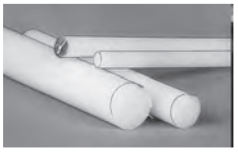
NYLON PLATE



Thickness (Inch) (Lbs.)	Wt. per Sq. Ft.	Part No.	Price/ Sq. Ft.*
1/16	.39	03-51000	**$6.70**
1/8	.77	03-51100	**$13.80**
1/4	1.54	03-51200	**$20.60**
1/2	3.07	03-51300	**$44.80**
3/4	4.61	03-51400	**$61.50**
1	6.15	03-51500	**$74.25**

**** SOLD BY THE SQUARE FOOT (12" X 12")***
Smaller pieces are available.
Order as follows:
6" x 6" = 0.25
6" x 12"= 0.50
12" x 12"= 1
12" x 24"= 2
12" x 36"=3

NYLON ROUND ROD



Less 10% for 4 ft. lengths. Less 20% for full 8 ft. lengths. Furnish cutting instructions for UPS shipment.

Diameter (In.)	Part No.	Price/ Ft.
1/8	03-51600	**$0.33**
1/4	03-51700	**$0.79**
1/2	03-51800	**$1.14**
3/4	03-51900	**$2.35**
1	03-52000	**$5.83**
1-1/4	03-52100	**$6.96**
1-1/2	03-52200	**$8.90**
2	03-52300	**$15.75**

HIGH PRESSURE LAMINATED PHENOLIC

Commonly called "Micarta", a trademark of Westinghouse. Laminated sheets, tube and rods are produced in many grades, sizes and colors. These laminates combine a base material - canvas, linen, paper, glass cloth or Nylon cloth, with a resin- phenolic, melamine, epoxy or silicone, under high heat and pressure to produce a new material with specific characteristics. These characteristics vary with the grade and its use.

GRADE L (LINEN BASE) PHENOLIC SHEET

Used for precision machining and high strength applications. Sheet Size: 36" x 48". Sold in 6" x 6", 6" x 12", 12" x 12", etc. pieces only.

Thickness (In.)	Wt. /Sq . Ft(Lbs.)	Part No.	Price. Per Sq. Ft.
1/16	.422	03-52400	**$4.80**
1/8	. 844	03-52500	**$8.95**
3/16	1.349	03-00111	**$13.45**
1/4	1.853	03-52600	**$18.60**
3/8	2.772	03-52700	**$26.50**
1/2	3.685	03-52800	**$35.65**
3/4	5.495	03-52900	**$53.75**
1	7.302	03-53000	**$235.95**

GRADE L (LINEN BASE) PHENOLIC ROD

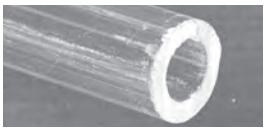
Used to provide high-strength close-tolerance bolt holes in wooden spars. Cut rod to spar thickness, drill and ream for proper bolt fit. Drill hole in spar for slip fit of rod, then bond in spar with epoxy cement. Produced in 4 ft. lengths.
5/8" dia. .....P/N 03-53100 ..... **$8.25 /ft.**
3/4" dia. .....P/N 03-53200 ..... **$9.95 /ft.**

GRADE XXX (PAPER BASE) PHENOLIC TUBING

Other sizes and wall thicknesses available at comparable prices .

O.D. (In.)	I.D. (In.)	Wall (In.)	Part No.	Price Per Ft.
3/8	1/4	1/16	03-53300	**$12.50**
1/2	3/8	1/16	03-53400	**$13.40**
5/8	1/2	1/16	03-53500	**$8.50**
3/4	5/8	1/16	03-53600	**$10.50**
7/8	3/4	1/16	03-53700	**$13.25**

CLEAR EXTRUDED ACRYLIC TUBING



O.D. (In.)	I.D. (In.)	Wall (In.)	Part No.	Price Per Ft.
3/8	1/8	.125	03-53800	**$0.59**
1/2	1/4	.125	03-53900	**$0.81**
5/8	3/8	.125	03-54000	**$0.95**

GLASS EPOXY ROD

G-10 Glass Epoxy Rod - 5/8" Dia.
P/N 03-50900 ..... **$34.50 Ft.**
Other sizes available in 4-ft. lengths.

CLEAR PVC PIPE

Clear, rigid Schedule 40 PVC pipe for sight gauges. Used in Quickie as fuel level gauge. Excellent resistance to gasoline. Nominal 1/4" pipe size (0.54" O.D., 0.33" I.D.) . P/N 03-54100 ....**$1.86 Ft.**

UNMASK

For easy removal of stubborn masking paper from plastic sheets. This worksaver also removes adhesive residue. Quantity Discount - 15% on 10 units on this page
Quart..... P/N 03-55100..... **$6.95**
Gal. ..... P/N 03-55105..... **$23.50**

DELRIN® ROD

Delrin® is a thermoplastic acetal resin. The most important attributes of Delrin® are high mechanical strength and rigidity, fatigue endurance and high resistance to moisture, gasoline and solvents. This product contains Delrin® resin. Delrin® is a registered trademark of E. I. du Pont de Nemours & Co. Color: Natural. Sold by the foot.

Diameter	Part No.	Price / Ft.	Diameter	Part No.	Price/Ft.
1/8"	02-52018	**$0.64**	3/4"	02-52034	**$2.90**
3/16"	02-52316	**$0.72**	7/8"	02-52078	**$4.30**
1/4"	02-52014	**$0.58**	1"	02-52001	**$5.50**
5/16"	02-52516	**$0.66**	1-1/8"	02-52118	**$7.25**
3/8"	02-52038	**$0.88**	1-1/4"	02-52114	**$7.00**
7/16"	02-52716	**$1.11**	1-3/8"	02-52138	**$11.25**
1/2"	02-52012	**$1.40**	1-1/2"	02-52112	**$11.50**
9/16"	02-52916	**$1.92**	1-3/4"	02-52134	**$12.50**
5/8"	02-52058	**$1.85**	2""	02-52002	**$16.50**

ACRYLIC CUTTING TOOL

Cut up to 1/4" thick acrylic by scribing and breaking with this cutting tool. Complete with instructions.
P/N 03-54200..... **$2.50**

ACRYLIC DRILL BITS

5/16" & 7/16" Acrylic Drill Bit.
5/16" ..... P/N 12-01075 ..... **$8.95**
7/16" ..... P/N 12-01076 ..... **$13.85**

ACRYLIC DRILL BITS

Specially ground point, 60° included tip angle, 0°rake angle, shoulder relieved, for drilling Acrylic to prevent fractures, chipping or cracking. With instructions.

Drill Size	Part No.	Price Ea.
1/8"	03-54300	**$3.95**
5/32"	03-54400	**$4.80**
3/16"	03-54500	**$5.25**
1/4"	03-54600	**$6.75**

Drill Size	Part No.	Price Ea.
5/16"	03-00114	**$9.50**
3/8"	03-54700	**$12.95**
7/16"	03-00115	**$14.50**
1/2"	03-00116	**$17.25**

DISCOAT 4220 PLEXIGLASS PROTECTOR

General Chemical's Disccoat 4220 is a CLEAR water resistant; water based peelable temporary protective coating for Aircraft windshields & windows which provides a long lasting durable protective layer tht protects form scratches and oxidation. Used for protecting canopies and windshields during construction. Discoat 4220 air dries quickly, leaving a tough, yet flexible coating that is easily removed and requires no other additional step. 4220 represents the ultimate in water-based removable coating technology. It is stabilized against brittleness and is not softened or penetrated by most water-based compounds.
4220 is impregnated with transparent blue dye for easy visual inspection as well as identification and is non-staining and stable to 100 degrees Celsius. Approximate coverage: 35 sq. ft. per quart. May be applied by spray or brush. Minimum of 4 coats recommended for best results.

Discoat 4220 Plexiglass Protector QT ..... P/N 03-00158..... **$23.75**
Discoat 4220 Plexiglass Protector GL..... P/N 03-00159..... **$96.50**

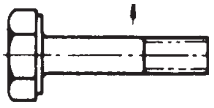
SPRAY LAT ACRYLIC SHEET PROTECTOR

Sprayable, clear compound specially formulated as a strippable, protective coating for acrylic sheet, flat and formed. Used for protecting canopies from scratches during construction. Coverage: Approx. 35 sq.ft. per quart. Caution: Spray Lat can be difficult to remove if left on for more than 1 year.
Spray Lat Plexiglas Protector - Quart ..... 03-54900..... **$23.95**
Spray Lat Plexiglas Protector - Gallon..... 03-55000..... **$79.95**

AN BOLTS

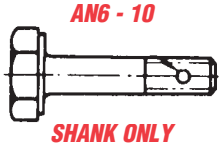
Hex head aircraft bolts are made of high-strength type 4037 or 8740 alloy steel (type 8740 is most commonly used). The bolts are threaded after heat treatment. Minimum tensile strength 125,000 PSI. Cadmium plated per specification QQ-P-416, Type II, Class 3. Available with shank drilled for cotter pin or undrilled for stop nut application, and with or without drilled head for safety wire. Specify bolts to have undrilled shank by adding letter "A" after dash number. For bolts with drilled head add letter "H" after AN number. See illustrated examples. The length of AN aircraft bolts is measured from under the head to the end of the shank. The "grip" is the unthreaded portion of the shank. See table for conversion of length and/or grip to proper AN callout.

FOR UNDRILLED ADD THE LETTER "A" EXAMPLE: AN6 - 10A



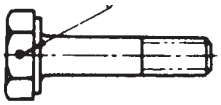
UNDRILLED

FOR DRILLED SHANK NO LETTER EXAMPLE! AN6 - 10



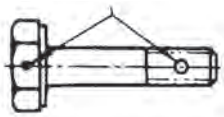
SHANK ONLY DRILLED

FOR DRILLED HEAD ADD "H" AND "A" EXAMPLE: AN6H-10A



HEAD ONLY DRILLED

FOR DRILLED HEAD AND SHANK ADD "H" ONLY EXAMPLE: AN6H-10



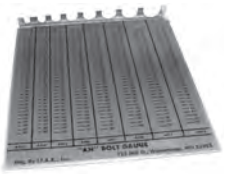
BOTH HEAD AND SHANK DRILLED

Bolts are sold "EACH" ALL BOLTS		AN3					AN4				
			Cadmium Plated AN3 (10-32)		Stainless AN3C (10-32)			Cadmium Plated AN4 (1/4-28)		Stainless AN4C (1/4-28)	
Dash No.	Nominal Length	Grip Length	Drilled Price	Undrilled "A" Price	Drilled Price	Undrilled "A' Price	Grip Length	Drilled Price	Undrilled "A" Price	Drilled Price	Undrilled "A" Price
-3	15/32	1/16	$0.51	$0.10	$0.82	$0.42	1/16	$0.63	$0.21	$3.25	$0.96
-4	17/32	1/8	$0.47	$0.10	$0.84	$0.38	1/16	$0.53	$0.15	$0.83	$0.49
-5	21/32	1/4	$0.49	$0.10	$1.17	$0.45	3/16	$0.59	$0.18	$1.06	$0.72
-6	25/32	3/8	$0.47	$0.12	$0.98	$0.47	5/16	$0.68	$0.14	$1.23	$0.57
-7	29/32	1/2	$0.52	$0.12	$0.99	$0.48	7/16	$0.59	$0.21	$0.95	$0.59
-10	1-1/32	5/8	$0.62	$0.14	$0.89	$0.57	9/16	$0.58	$0.23	$0.83	$0.84
-11	1-5/32	3/4	$0.49	$0.18	$0.98	$0.72	11/16	$0.68	$0.19	$1.34	$0.74
-12	1-9/32	7/8	$0.45	$0.16	$1.04	$0.98	13/16	$0.58	$0.23	$1.08	$0.94
-13	1-13/32	1	$0.58	$0.19	$0.89	$0.76	15/16	$0.45	$0.28	$0.99	$0.87
-14	1-17/32	1-1/8	$0.59	$0.18	$0.94	$0.85	1-1/16	$0.69	$0.29	$1.28	$0.94
-15	1-21/32	1-1/4	$0.57	$0.28	$1.14	$0.64	1-3/16	$0.42	$0.35	$1.18	$1.11
-16	1-25/32	1-3/8	$0.49	$0.22	-	$0.82	1-5/16	$0.52	$0.33	-	$0.97
-17	1-29/32	1-1/2	$0.62	$0.24	$1.16	$0.89	1-7/16	$0.67	$0.35	$2.90	$0.93
-20	2-1/32	1-5/8	$0.62	$0.35	$4.40	$1.08	1-9/16	$0.74	$0.38	$2.65	$1.10
-21	2-5/32	1-3/4	$0.62	$0.29	-	$0.93	1-11/16	$0.66	$0.39	-	$1.45
-22	2-9/32	1-7/8	$0.67	$0.37	-	$1.14	1-13/16	$0.54	$0.39	-	$0.99
-23	2-13/32	2	$0.64	$0.35	-	$1.40	1-15/16	$0.56	$0.46	-	$1.10
-24	2-17/32	2-1/8	$0.54	$0.52	-	$1.82	2-1/16	$0.72	$0.47	-	$1.38
-25	2-21/32	2-1/4	$0.75	$0.54	-	$1.08	2-3/16	$0.50	$0.54	-	$1.08
-26	2-25/32	2-3/8	$0.83	$0.43	-	$3.75	2-5/16	$0.80	$0.58	-	$2.75
-27	2-29/32	2-1/2	$0.71	$0.48	-	$7.25	2-7/16	$0.77	$0.44	-	$3.75
-30	3-1/32	2-5/8	$0.78	$0.43	-	$1.65	2-9/16	$0.98	$0.59	-	$3.76
-31	3-5/32	2-3/4	$0.63	$0.47	-	-	2-11/16	$0.99	$0.84	-	-
-32	3-9/32	2-7/8	$0.87	$0.59	-	-	2-13/16	$1.14	$0.69	-	-
-33	3-13/32	3	$1.12	$0.64	-	-	2-15/16	$1.08	$0.79	-	-
-34	3-17/32	3-1/8	$0.93	$0.70	-	-	3-1/16	$1.03	$0.90	-	-
-35	3-21/32	3-1/4	$0.70	$1.29	-	-	3-3/16	$1.18	$0.90	-	-
-36	3-25/32	3-3/8	$2.20	$0.73	-	-	3-5/16	$1.45	$0.87	-	-
-37	3-29/32	3-1/2	$1.77	$0.72	-	-	3-7/16	$1.30	$1.16	-	-
-40	4-1/32	3-5/8	$1.16	$0.69	-	-	3-9/16	$1.70	$1.25	-	-
-41	4-5/32	3-3/4	$1.42	$1.08	-	-	3-11/16	$1.72	$0.98	-	-
-42	4-9/32	3-7/8	$1.19	$1.10	-	-	3-13/16	$3.65	$1.31	-	-
-43	4-13/32	4	-	$1.24	-	-	3-15/16	$1.53	$1.17	-	-
-44	4-17/32	4-1/8	$2.50	$1.50	-	-	4-1/16	$1.83	$1.47	-	-
-45	4-21/32	4-1/4	$1.38	$1.49	-	-	4-3/16	$1.75	$1.37	-	-
-46	4-25/32	4-3/8	$1.86	$1.24	-	-	4-5/16	$1.95	$1.25	-	-
-47	4-29/32	4-1/2	$1.58	$1.46	-	-	4-7/16	$1.82	$1.51	-	-
-50	5-1/32	4-5/8	$12.95	-	-	-	4-9/16	$5.50	$2.93	-	-
-51	5-5/32	4-3/4	$10.50	$9.50	-	-	4-11/16	$7.90	$5.25	-	-
-52	5-9/32	4-7/8	-	$8.75	-	-	4-13/16	$9.67	$9.68	-	-
-53	5-13/32	5	-	-	-	-	4-15/16	-	$5.75	-	-
-54	5-17/32	5-1/8	$9.80	$10.75	-	-	5-1/16	-	$9.50	-	-
-55	5-21/32	5-1/4	-	$10.62	-	-	5-3/16	$9.74	$9.75	-	-
-56	5-25/32	5-3/8	$12.25	$11.75	-	-	5-5/16	$8.50	$9.74	-	-
-57	5-29/32	5-1/2	-	$11.95	-	-	5-7/16	$9.95	$9.94	-	-
-60	6-1/32	5-5/8	$10.90	$13.75	-	-	5-9/16	$9.68	$7.75	-	-

Quantity discount on AN4 bolts - 15% discount on qty of 50-99 • 20% discount on qty of 100+

HA

AN BOLTS



AN BOLT GAUGE

Automatically sizes all AN bolts up to 5/8" diameter and 5 inches long.

P/N 04-05400 ..... **$7.80**

POCKET BOLT GAUGE

This new aluminum gauge measures just 3-3/4" x 5-7/8" to fit easily in a shirt pocket. Determines exact part numbers for AN 3 thru AN 8 diameter bolts thru 5" in length. P/N 04-05300 ..... **$7.90**

APR AN BOLT GAUGE

AN bolt gauge deluxe heavy duty model measures diameter and length of AN bolts up to 8", 388 precision conversions. Fraction / decimal / millimeter equivalents, with 8" Inch and 20 cm metric rulers. 4 colors. Pocket size. PVC plastic 8-5/8" x 2-1/2" x .030"

P/N 11-07726 ..... **$7.50**

SAMPLE PART NUMBERS

AN3-4 ..... Cad-plated, drilled shank

AN3-4A ..... Cad-plated, undrilled

AN3C-4 ..... Stainless steel, drilled shank

AN3C-4A ..... Stainless steel, undrilled

AN BOLT KIT

CONTAINS: • AN6-16A (8 qty) • AN6-12A (2 qty) • AN4-15A (20 qty) • AN8-13A (8 qty) • AN6-10A (12 qty) • AN8-33A (24 qty) • AN7-33A (4 qty) • AN9-17 (4 qty)

P/N 04-01727 **$97.00**

HA

AN5 BOLTS AND AN6 BOLTS

Hex head aircraft bolts are made of high-strength type 4037 or 8740 alloy steel (type 8740 is most commonly used). The bolts are centerless ground and threaded after heat treatment. Minimum tensile strength 125,000 PSI. Cadmium plated per specification QQ-P-416A, Type II, Class 3.

Bolts are sold "EACH" ALL BOLTS		AN5					AN6				
			Cadmium Plated AN5 (5/16-24)		Stainless AN5C (5/16-24)			Cadmium Plated AN6 (3/8-24)		Stainless AN6C (3/8-24)	
Dash No.	Nominal Length	Grip Length	Drilled Price	Undrilled "A" Price	Drilled Price	Undrilled "A" Price	Grip Length	Drilled Price	Undrilled "A" Price	Drilled Price	Undrilled "A" Price
-4	19/32	1/16	$0.66	$0.39	$6.95	$1.98	1/16	-	$0.45	-	-
-5	23/32	3/16	$0.74	$0.28	$3.80	$2.35	1/16	$0.98	$0.53	$2.45	$3.45
-6	27/32	5/16	$0.46	$0.29	$8.75	$2.40	3/16	$0.80	$0.41	$4.40	$2.70
-7	31/32	7/16	$0.72	$0.31	$3.45	$2.15	5/16	$0.73	$0.46	$2.10	$3.05
-10	1-3/32	9/16	$0.77	$0.33	-	$2.40	7/16	$1.04	$0.56	-	$3.45
-11	1-7/32	11/16	$0.62	$0.37	-	$1.86	9/16	$0.79	$0.59	$7.50	$3.25
-12	1-11/32	13/16	$0.68	$0.34	$5.25	$2.45	11/16	$0.89	$0.56	$5.90	$3.85
-13	1-15/32	15/16	$0.63	$0.39	-	$2.43	13/16	$0.85	$0.61	$27.20	$3.60
-14	1-19/32	1-1/16	$0.77	$0.46	-	$2.25	15/16	$0.75	$0.69	$2.40	$4.20
-15	1-23/32	1-3/16	$0.71	$0.44	-	$4.95	1-1/16	$0.81	$0.72	$9.95	$4.98
-16	1-27/32	1-5/16	$0.79	$0.49	-	-	1-3/16	$1.25	$0.77	$21.25	$2.80
-17	1-31/32	1-7/16	$0.84	$0.46	-	-	1-5/16	$0.96	$0.74	-	$4.00
-20	2-3/32	1-9/16	$0.89	$0.42	-	$7.75	1-7/16	$0.87	$0.71	-	-
-21	2-7/32	1-11/16	$0.75	$0.54	-	$3.50	1-9/16	$1.12	$0.84	-	-
-22	2-11/32	1-13/16	$0.91	$0.75	-	-	1-11/16	$0.97	$0.83	-	-
-23	2-15/32	1-15/16	$0.79	$0.55	-	$5.00	1-13/16	$0.89	$0.84	-	-
-24	2-19/32	2-1/16	$0.87	$0.60	-	-	1-15/16	$1.09	$0.98	-	-
-25	2-23/32	2-4/16	$0.76	$0.78	-	$4.25	2-1/16	$1.12	$0.85	-	-
-26	2-27/32	2-5/16	$0.92	$0.61	-	$5.50	2-3/16	$0.88	$1.17	-	-
-27	2-31/32	2-7/16	$0.94	$0.68	-	$12.75	2-5/16	$1.13	$1.14	-	-
-30	3-3/32	2-9/16	$1.25	$1.04	-	-	2-7/16	$1.22	$0.93	-	-
-31	3-7/32	2-11/16	$1.37	$0.94	-	-	2-9/16	$1.61	$0.96	-	-
-32	3-11/32	2-13/16	$1.26	$1.29	-	-	2-11/16	$1.86	$1.53	-	-
-33	3-15/32	2-15/16	$1.48	$1.08	-	-	2-13/16	$1.99	$1.47	-	-
-34	3-19/32	3-1/16	$1.64	$0.80	-	-	2-15/16	$2.25	$1.70	-	-
-35	3-23/32	3-3/16	$1.66	$1.38	-	-	3-1/16	$2.65	$1.55	-	-
-36	3-27/32	3-5/16	$1.58	$1.70	-	-	3-3/16	$1.92	$1.91	-	-
-37	3-31/32	3-7/16	$2.25	$1.42	-	-	3-5/16	$2.55	$1.59	-	-
-40	4-3/32	3-9/16	$2.15	$1.91	-	-	3-7/16	$2.15	$1.73	-	-
-41	4-7/32	3-11/16	$1.95	$1.53	-	-	3-9/16	$2.40	$2.40	-	-
-42	4-11/32	3-13/16	-	$1.89	-	-	3-11/16	$2.58	$1.94	-	-
-43	4-15/32	3-15/16	$2.40	$2.50	-	-	3-13/16	$3.85	$2.35	-	-
-44	4-19/32	4-1/16	-	$1.75	-	-	3-15/16	$2.80	$2.60	-	-
-45	4-23/32	4-3/16	$1.97	$2.55	-	-	4-1/16	$3.00	$2.80	-	-
-46	4-27/32	4-5/16	$2.15	$2.20			4-3/16	$2.98	$2.90	-	-
-47	4-31/32	4-7/16	$2.50	$2.10	-	-	4-5/16	$3.39	$5.50	-	-
-50	5-3/32	4-9/16	$8.18	$5.92	-	-	4-7/16	$11.62	$10.73	-	-
-51	5-7/32	4-11/16	$9.75	$8.75	-	-	4-9/16	$11.75	$10.40	-	-
-52	5-11/32	4-13/16	$9.98	$9.97	-	-	4-11/16	$11.50	$12.75	-	-
-53	5-15/32	4-15/16	$9.88	$9.87	-	-	4-13/16	$10.90	$10.90	-	-
-54	5-19/32	5-1/16	$8.78	$10.75	-	-	4-15/16	$11.75	$11.50	-	-
-55	5-23/32	5-3/16	$9.75	$9.69	-	-	5-1/16	$10.75	$11.23	-	-
-56	5-27/32	5-5/16	$8.30	$9.80	-	-	5-3/16	$9.82	$9.89	-	-
-57	5-31/32	5-7/16	$12.75	$16.75	-	-	5-5/16	$10.93	$11.75	-	-
-60	6-3/32	5-9/16	$10.75	$9.90	-	-	5-7/16	$10.93	$11.25	-	-

AN BOLTS

USE REFERENCE CHART

Bolt Size	AN960 Flat Washer	AN970 Lg. Area Flat Washer	AN365 Nylon Insert Locknut	AN310 Castle Nut	AN380 Cotter Pin
AN3	-10	-3	-1032	-3	-2-2 or longer
AN4	-416	-4	-428	-4	-25-2 or longer
AN5	-516	-5	-524	-5	-25-3
AN6	-616	-6	-624	-6	-3-3 or longer
AN7	-716	-7	-720	-7	-3-3 or longer
AN8	-816	-8	-820	-8	-3-4 or longer

SAMPLE PART NUMBERS

AN3-4 .....Cad-plated, drilled shank

AN3-4A..... Cad-plated, undrilled

AN3C-4.....Stainless steel, drilled shank

AN3C-4A.....Stainless steel, undrilled

TOBACCO BAGS

Cloth bags for holding hardware as it is removed from the aircraft. Set of 25.

P/N 04-05310 .....**$8.75**

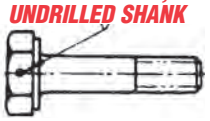
NOTICE - Aircraft Spruce & Specialty Company is committed to supplying only top quality aircraft grade hardware. In most cases we receive our hardware certified to applicable AN, MS, or NAS specifications from our suppliers, but on certain items, it is necessary for us to accept hardware without certifiable traceability in order to continue supplying that particular part number.

AN7 AND AN8BOLTS

Hex head aircraft bolts are made of high-strength type 4037 or 8740 alloy steel (type 8740 is most commonly used). The bolts are centerless ground and threaded after heat treatment. Minimum tensile strength 125,000 PSI. Cadmium plated per specification QQ-P-416A, Type II, Class 3.

Bolts are sold "EACH"		AN7					AN8		
ALL BOLTS			Cadmium Plated AN7 (7/16-20)		Stainless AN7C (7/16-20)			Cadmium Plated AN8 (1/2-20)	
Dash	Nominal No.	Grip Length	Drilled Price	Undrilled "A" Price	Drilled Price	Undrilled "A" Price	Grip Length	Drilled Price	Undrilled "A" Price
-5	23/32	1/16	$1.52	$1.43	-	-	-	-	-
-6	27/32	3/16	--	$9.98	-	-	1/16	-	$1.98
-7	31/32	5/16	--	$1.17	-	-	3/16	$3.98	$1.45
-10	1-3/32	7/16	$2.50	$1.06	-	-	5/16	--	$1.77
-11	1-7/32	9/16	--	$1.38	-	-	7/16	$2.00	$1.52
-12	1/11/32	11/16	$1.79	$1.68	-	-	9/16	$2.75	$1.55
-13	1-15/32	13/16	$2.00	$1.24	-	-	11/16	$3.30	$1.55
-14	1-19/32	15/16	$2.75	$1.22	-	-	13/16	$2.39	$1.93
-15	1-23/32	1-1/16	$2.55	$2.55	-	-	15/16	$2.80	$2.00
-16	1-27/32	1-3/16	$3.30	$1.62	-	-	1-1/16	$2.15	$1.62
-17	1-31/32	1-5/16	$2.20	$1.37	-	-	1-3/16	$2.15	$2.18
-20	2-3/32	1-7/16	$1.62	$1.18	-	-	1-5/16	$2.75	$1.74
-21	2-7/32	1-9/16	$1.98	$1.79	-	-	1-7/16	$2.90	$2.25
-22	2-11/32	1-11/16	$2.40	$1.37	-	-	1-9/16	$2.85	$2.60
-23	2-15/32	1-13/16	$2.50	$2.35	-	-	1-11/16	$3.10	$1.89
-24	2-19/32	1-15/16	$2.60	$2.15	-	-	1-13/16	$2.50	$2.10
-25	2-23/32	2-1/16	$2.85	$1.36	-	-	1-15/16	$3.50	$2.75
-26	2-27/32	2-3/16	$2.75	$2.40	-	-	2-1/16	$3.10	$2.50
-27	2-31/32	2-5/16	$2.55	$1.75	-	-	2-3/16	$2.85	$2.50
-30	3-3/32	2-7/16	--	$2.57	-	-	2-5/16	$4.55	$2.95
-31	3-7/32	2-9/16	$2.90	$2.80	-	-	2-7/16	$4.20	$2.50
-32	3-11/32	2-11/16	$2.90	$2.60	-	-	2-9/16	$3.55	$3.20
-33	3-15/32	2-13/16	$2.39	$2.65	-	-	2-11/16	$4.53	$2.75
-34	3-19/32	2-15/16	$3.15	$2.65	-	-	2-13/16	$3.30	$3.20
-35	3-23/32	3-1/16	$3.50	$2.90	-	-	2-15/16	--	$3.23
-36	3-27/32	3-3/16	$3.10	$2.86	-	-	3-1/16	$2.85	$2.60
-37	3-31/32	3-5/16	$3.85	$2.79	-	-	3-3/16	$3.98	$3.40
-40	4-3/32	3-7/16	$4.36	$3.95	-	-	3-5/16	--	$3.60
-41	4-7/32	3-9/16	--	--	-	-	3-7/16	$3.97	$3.97
-42	4-11/32	3-11/16	$4.21	$4.65	-	-	3-9/16	$4.39	--
-43	4-15/32	3-13/16	$4.85	$4.40	-	-	3-11/16	$4.75	$3.95
-44	4-19/32	3-15/16	$5.40	$4.55	-	-	3-13/16	$4.30	$5.75
-45	4-23/32	4-1/16	$4.95	$4.00	-	-	3-15/16	$5.36	$4.95
-46	4-27/32	4-3/16	$4.55	$4.75	-	-	4-1/16	--	--
-47	4-31/32	4-5/16	$4.93	$4.89	-	-	4-3/16	$6.50	--
-50	5-3/32	4-7/16	$12.95	$13.70	-	-	4-5/16	$17.86	$12.75
-51	5-7/32	4-9/16	--	--	-	-	4-7/16	--	$13.46
-52	5-11/32	4-11/16	$13.95	$13.87	-	-	4-9/16	$15.95	$16.70
-53	5-15/32	4-13/16	--	-	-	-	4-11/16	$12.88	--
-54	5-19/32	4-15/16	-	--	-	-	4-13/16	--	$17.62
-55	5-23/32	5-1/16	--	$13.75	-	-	4-15/16	$16.75	--
-56	5-27/32	5-3/16	--	$14.93	-	-	5-1/16	$12.60	$16.50
-57	5-31/32	5-5/16	--	$13.50	-	-	5-3/16	$12.90	--
-60	6-3/32	5-7/16	$14.96	$13.94	-	-	5-5/16	$14.90	--

DRILLED HEAD, UNDRILLED SHANK



AN3	Ea.
H4A	$0.59
H5A	$0.49
H6A	$0.47
H10A	$0.59
H12A	$0.48
H13A	$0.76
H15A	$0.59

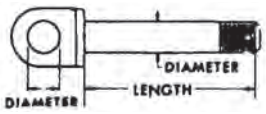
AN4	Ea.
H3A	$0.54
H4A	$0.56
H5A	$0.64
H6A	$0.69
H7A	$0.46
H12A	$0.56
H13A	$0.65
H14A	$0.71
H16A	$0.59
H21A	$0.67
H26A	$2.05
H30A	$0.73
H32A	$1.35

AN5	Ea.
H6A	$0.95
H12A	$0.69
H13A	$1.18
H16A	$1.73
H17A	$1.79
H20A	$2.00
H31A	$3.75
H33A	-------

AN6	Ea.
H11A	$0.93
H16A	-------
H20A	$1.59
H31A	-------
H32A	$3.75
H34A	$2.95
H37A	$3.85
H40A	$4.45
H41A	$4.75
H43A	$5.50
H45A	$3.85
H46A	$5.75
H50A	$10.90

AN8	Ea.
H7A	$3.35

EYE BOLTS



AN42 - AN46 EYE BOLTS

Eye bolts are special purpose bolts to be used where external tension loads are to be applied. The eye is designed for attachment of such devices as a turnbuckle fork, a clevis or a cable shackle. Manufactured and plated in same manner as AN3 - AN8 bolts . Minimum tensile strength 125, 000 PSI . Eye bolts will be furnished with either drilled or undrilled shank subject to stock on hand. Add letter "A" after dash number for undrilled shank.

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NOMINAL LENGTH	AN42B SHANK 3/16" HOLE 3/16" THREAD 10-32					AN43B SHANK 1/4" HOLE 3/16" THREAD 1/4-28				
	GRIP LENGTH	DRILLED PART NO.	PRICE EACH	UNDRILLED PART NO.	PRICE EACH	GRIP LENGTH	DRILLED PART NO.	PRICE EACH	UNDRILLED PART NO.	PRICE EACH
1/2	1/8	AN42B-4	$4.45	AN42B-4A	$3.10	1/16	AN43B-4	$5.75	AN43B-4A	$3.98
5/8	1/4	AN42B-5	$5.25	AN42B-5A	-	3/16	AN43B-5	$4.95	AN43B-5A	$4.55
3/4	3/8	AN42B-6	$6.00	AN42B-6A	$3.30	5/16	AN43B-6	$6.25	AN43B-6A	$6.50
7/8	1/2	AN42B-7	$6.50	AN42B-7A	$4.25	7/16	AN43B-7	$6.50	AN43B-7A	$4.95
1	5/8	AN42B-10	$6.50	AN42B-10A	$3.75		AN43B-10	$6.95	AN43B-10A	$5.50
1-1/8	3/4	AN42B-11	$5.10	AN42B-11A	$4.55	11/16	AN43B-11	$8.75	AN43B-11A	$5.50
1-1/4	7/8	AN42B-12	$7.50	AN42B-12A	$4.25	13/16	AN43B-12	$6.25	AN43B-12A	$6.25
1-3/8	1	AN42B-13	$6.75	AN42B-13A	$4.80	15/16	AN43B-13	$8.50	AN43B-13A	$6.25
1-1/2	1-1/8	AN42B-14	$6.75	AN42B-14A	$5.25	1-1/16	AN43B-14	$8.00	AN43B-14A	$5.95
1-5/8	1-1/4	AN42B-15	$9.78	AN42B-15A	$5.96	1-3/16	AN43B-15	$7.80	AN43B-15A	$6.25
1-3/4	1-3/8	AN42B-16	$6.60	AN42B-16A	$6.25	1-5/16	AN43B-16	$7.25	AN43B-16A	$6.75
1-7/8	1-1/2	AN42B-17	$7.50	AN42B-17A	$5.75	1-7/16	AN43B-17	$10.75	AN43B-17A	$5.80
2	1-5/8	AN42B-20	$7.75	AN42B-20A	$5.95	1-9/16	AN43B-20	$7.75	AN43B-20A	$7.94
2-1/8	1-3/4	AN42B-21	$7.70	AN42B-21A	$7.50	1-11/16	AN43B-21	$8.90	AN43B-21A	$8.75
2-1/4	1-7/8	AN42B-22	$8.00	AN42B-22A	$6.40	1-13/16	AN43B-22	$8.90	AN43B-22A	$8.28
2-3/8	2	AN42B-23	$8.95	AN42B-23A	$7.25	1-15/16	AN43B-23	$9.40	AN43B-23A	$8.75
2-1/2	2-1/8	AN42B-24	$12.60	AN42B-24A	$7.75	2-1/16	AN43B-24	$9.98	-	-
2-5/8	2-1/4	AN42B-25	$8.60	AN42B-25A	$7.50	2-3/16	AN43B-25	$9.40	AN43B-25A	$8.75
2-3/4	3-3/8	-	-	AN42B-26A	$8.75	2-5/16	AN43B-26	$9.95	AN43B-26A	$10.50
2-7/8	2-1/2	AN42B-27	$9.95	AN42B-27A	$7.95	2-7/16	AN43B-27	$10.40	-	-
3	2-5/8	AN42B-30	$9.25	AN42B-30A	$10.75	2-9/16	AN43B-30	$11.90	-	-

Nominal Length	AN44			AN44A (Undrilled)			AN45			AN45A (Undrilled)		
	Shank 5/16"	Hole 1/4"	Thread 5/16-24	Shank 5/16"	Hole 1/4"	Thread 5/16-24	Shank 5/16"	Hole 5/16"	Thread 5/16-24	Shank 5/16"	Hole 5/16"	Thread 5/16-24
	Grip Length	Drilled P/N	Price Each	Grip Length	Drilled P/N	Price Each	Grip Length	Drilled P/N	Price Each	Grip Length	Drilled P/N	Price Each
	3/16	AN44-5	$8.25	3/16	AN44-5A	$6.25	-	-	-	-	-	-
7/8	7/16	AN44-7	$7.50	7/16	AN44-7A	$6.75	7/16	AN45-7	$10.90	-	-	-
1	9/16	AN44-10	$49.87	9/16	AN44-10A	$10.50	9/16	AN45-10	$8.95	9/16	AN45-10A	$7.93
1-1/8	11/16	AN44-11	$8.60	11/16	AN44-11A	$7.28	11/16	AN45-11	-	-	-	-
1-1/4	13/16	AN44-12	$7.80	13/16	AN44-12A	$6.75	13/16	AN45-12	$9.50	13/16	AN45-12A	$10.75
1-3/8	15/16	AN44-13	$10.50	15/16	AN44-13A	$6.90	-	AN45-13	$9.97	-	-	-
1-1/2	1-1/16	AN44-14	$9.98	1-1/16	AN44-14A	$7.10	-	AN45-14	$9.90	-	AN45-14A	$9.25
1-5/8	1-3/16	AN44-15	$8.60	1-3/16	AN44-15A	$8.50	-	AN45-15	$10.60	-	-	-
1-3/4	1-5/16	AN44-16	$10.75	1-5/16	AN44-16A	$9.94	1-5/16	AN45-16	$10.90	-	-	-
1-7/8	1-7/16	AN44-17	$10.70	1-7/16	AN44-17A	$9.25	-	AN45-17	$11.50	-	AN45-17A	$10.60
2	1-9/16	AN44-20	$11.50	1-9/16	AN44-20A	$10.75	1-9/16	AN45-20	$12.75	1-9/16	AN45-20A	$11.00
2-1/8	-	AN44-21	$11.20	-	AN44-21A	$10.75	-	-	-	-	-	-
2-1/4	-	-	-	-	AN44-22A	$11.25	-	-	-	-	-	-
2-3/8	-	-	-	-	-	-	-	AN45-23	$12.75	-	-	-
2-1/2	-	-	-	-	AN44-23A	$10.00	-	-	-	-	-	-
2-5/8	-	AN44-24	$13.25	-	AN44-24A	$11.75	2-1/16	AN45-24	$14.50	2-1/16	AN45-24A	$11.90
2-3/4	-	-	-	-	AN44-25A	$11.25	-	-	-	-	AN45-25A	$13.47
2-7/8	-	AN44-26	$13.00	-	AN44-26A	$11.35	2-5/16	AN45-26	$13.90	-	-	-
3	-	-	-	-	AN44-27A	$12.60	-	AN45-27	$46.50	-	AN45-27A	$13.95

Nominal Length	AN46			AN46A (Undrilled)		
	Shank 3/8"	Hole 3/8"	Thread 3/8-24	Shank 3/8"	Hole 3/8"	Thread 3/8-24
	Grip Length	Drilled Part No.	Price Each	Grip Length	Drilled Part No.	Price Each
7/8	5/16	AN46-7	$8.20	-	-	-
1	-	-	-	-	-	-
1-1/8	-	-	-	-	-	-
1-1/4	-	-	-	-	-	-
1-3/8	-	-	-	-	-	-
1-1/2	-	AN46-14	$12.00	-	AN46-14A	$9.50
1-5/8	-	AN46-15	$12.50	-	AN46-15A	$11.60
1-3/4	-	AN46-16	$11.75	-	-	-
1-7/8	1-5/16	AN46-17	$13.80	1-5/16	AN46-17A	$11.92
2	1-7/16	AN46-20	$12.65	1-7/16	AN46-20A	$11.75
2-1/8	1-9/16	AN46-21	$14.50	-	-	-
2-1/4	-	-	-	-	AN46-22A	$11.95
2-3/8	-	-	-	-	AN46-23A	$12.60
2-1/2	-	-	-	-	-	-
2-5/8	2-1/16	AN46-25	$15.50	2-1/6	AN46-25A	$13.86
2-3/4	2-3/16	AN46-26	$16.30	2-3/16	AN46-26A	$13.90
2-7/8	2-1/16	AN46-27	$16.30	-	-	-
3	2-3/16	AN46-30	$18.25	-	-	-

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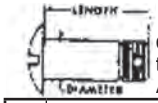
CLEVIS BOLTS



AN23 - AN27 CLEVIS BOLTS

Clevis bolts have a slotted brazier type head. They are special-purpose bolts for use where a large shearing stress occurs (never in tension). Manufactured and cadmium plated in same manner as AN3 - AN8 aircraft bolts. Minimum tensile strength 125,000 PSI. Available with drilled or undrilled shank. Add letter "A" after dash number for undrilled shank. Prices fluctuate on clevis bolts.

Dash No.	AN23				AN24				AN25				AN26				AN27			
	Grip	Length	Drilled	Un-Drilled	Grip	Length	Drilled	Un-Drilled	Grip	Length	Drilled	Un-Drilled	Grip	Length	Drilled	Un-Drilled	Grip	Length	Drilled	Un-Drilled
8	3/16	17/32	$1.08	$0.38	3/16	17/32	----	$1.93	----	----	----	----	----	----	----	----	----	----	----	----
9	1/4	19/32	$1.16	$0.47	1/4	19/32	$0.32	$2.00	1/4	39/64	$0.60	----	l/4	39/64	----	----	----	----	----	----
10	5/16	21/32	$0.93	$0.39	5/l6	21/32	$0.98	$0.59	5/16	43/64	$8.75	----	5/16	43/64	----	----	----	----	----	----
11	3/8	23/32	$0.98	$0.45	3/8	23/32	$1.21	$0.94	3/8	47/64	$2.60	----	3/8	47/64	----	----	----	----	----	----
12	7/l6	25/32	$0.97	$0.34	7/16	25/32	$1.09	$0.65	7/16	5l/64	----	$0.52	7/16	51/64	$3.40	----	3/8	51/64	----	----
13	1/2	27/32	$0.99	$0.52	1/2	27/32	$0.97	$0.46	1/2	55/64	$7.95	----	1/2	55/64	$12.50	----	7/16	55/64	----	----
14	9/l6	29/32	$1.38	$0.49	9/16	29/32	$1.24	$1.48	9/16	59/64	$5.50	$2.20	9/16	59/64	$6.75	----	1/2	59/64	----	----
15	5/8	31/32	$0.99	$0.59	5/8	31/32	$1.06	$3.55	5/8	63/64	$6.50	----	5/8	63/64	----	----	9/16	63/64	----	----
16	11/16	1-1/32	$0.97	$0.46	11/16	1-1/32	$1.14	$1.32	11/16	1-3/64	----	----	11/16	1-3/64	$7.50	----	5/8	1-3/64	----	----
l7	3/4	1-3/32	$0.99	$0.44	3/4	1-3/32	$1.15	$1.89	3/4	1-7/64	$2.95	----	3/4	1-7/64	----	----	11/16	1-7/64	----	----
l8	13/16	1-5/32	$0.72	$0.60	13/16	1-5/32	$1.43	$0.49	13/16	1-11/64	$4.55	----	13/16	1-11/64	$6.95	----	3/4	1-11/64	----	----
l9	7/8	1-7/32	$0.98	$0.76	7/8	1-7/32	$2.10	$1.35	7/8	1-15/64	$4.60	----	7/8	1-15/64	----	----	13/16	1-15/64	----	----
20	15/16	1-9/32	$1.00	$0.84	15/16	1-9/32	$1.25	$1.10	15/16	1-19/64	----	----	15/16	1-19/64	$9.50	$7.25	7/8	1-19/64	----	----
21	1	1-11/32	$1.80	$0.80	1	1-11/32	$0.54	$1.56	1	1-23/64	$7.25	----	1	1-23/64	$2.28	$1.93	15/16	1-23/64	----	----
22	1-1/16	1-13/32	$1.02	$0.40	1-1/16	1-13/32	$3.40	$0.85	1-1/16	1-27/64	$4.88	$7.90	1-1/16	1-27/64	$9.25	----	1	1-27/64	----	----
23	1-1/8	1-15/32	$2.45	$0.63	1-1/8	1-15/32	$3.55	$1.10	1-1/8	1-31/64	----	----	1-1/8	1-31/64	$10.75	----	1-1/16	1-31/64	----	----
24	1-3/16	1-17/32	$1.80	$3.40	1-3/16	1-17/32	$1.42	$0.98	1-3/16	1-35/64	$6.95	----	1-3/16	1-35/64	----	----	1-1/8	1-35/64	----	----
25	1-1/4	1-19/32	$2.40	$4.50	1-1/4	1-19/32	----	----	1-1/4	1-39/64	----	----	1-1/4	1-39/64	----	----	1-3/16	1-39/64	----	----
26	1-5/16	1-21/32	$2.45	---	1-5/16	1-21/32	$1.37	$2.80	1-5/16	1-43/64	----	----	1-5/16	1-43/64	$11.73	----	1-1/4	1-43/64	----	----
27	1-3/8	1-23/32	$6.25	$0.53	1-3/8	1-23/32	$4.45	$6.25	1-3/8	1-47/64	----	----	1-3/8	1-47/64	----	----	1-5/16	1-47/64	----	----
28	1-7/16	1-25/32	$5.25	$2.65	1-7/16	1-25/32	----	$2.80	1-7/16	1-51/64	----	----	1-7/16	1-51/64	----	----	1-3/8	1-51/64	----	----
29	1-1/2	1-27/32	$4.85	$2.55	1-1/2	1-27/32	$7.75	----	1-1/2	1-55/64	$9.50	----	1-1/2	1-55/64	----	----	1-7/16	1-55/64	----	----
30	1-9/16	1-29/32	$0.47	$1.16	1-9/16	1-29/32	----	----	1-9/16	1-59/64	----	----	1-9/16	1-59/64	----	----	1-1/2	1-59/64	----	----
31	1-5/8	1-31/32	----	$3.30	1-5/8	1-31/32	$2.20	$1.06	1-5/8	1-63/64	$13.75	----	1-5/8	1-63/64	----	----	1-9/16	1-63/64	----	----
32	1-11/16	2-1/32	$0.49	$2.45	1-11/16	2-1/32	$4.65	$2.03	1-11/16	2-3/64	$6.93	----	1-11/16	2-3/64	----	----	1-5/8	2-3/64	----	----
34	1-13/16	2-5/32	$5.90	$5.50	1-13/16	2-5/32	$4.45	$3.95	1-13/16	2-11/64	-----	----	1-13/16	2-11/64	----	----	1-3/4	2-11/64	----	----
36	1-15/16	2-9/32	----	----	1-15/16	2-9/32	$4.45	$4.80	1-15/16	2-19/64	----	----	1-15/16	2-19/64	----	----	1-7/8	2-19/64	----	----
38	2-1/16	2-13/32	$4.23	$4.95	2-1/16	2-13/32	$1.26	----	2-1/16	2-27/64	$23.80	----	2-1/16	2-27/64	$4.20	----	2	2-27/64	----	----
40	2-3/16	2-17/32	$1.18	$6.84	2-3/16	2-17/32	----	$7.95	2-3/16	2-35/64	----	----	2-3/16	2-35/64	----	----	2-1/8	2-35/64	----	----

AN173, AN174, & AN175 CLOSE TOLERANCE BOLTS

Non-corrosion-resistant cadmium-plated steel machine bolts. The appearance of these bolts can be of two types: on the more common type, the head and threads are cad but the grip appears silver due to being ground and greased. The second type is all cad and is manufactured to Revision 20 (April, 1990) of the military specification. Both are acceptable. Both are drilled.

Cat. #	Dia. (inches)	Threads/ inch	Length (inches)	Grip (inches)	Price
AN173-5	.1900	32 NF-3A	.656	.250	$0.72
AN173-6			.781	.375	$0.89
AN173-7			.906	.500	$0.86
AN173-10			1.031	.625	$0.96
AN173-11			1.156	.750	$0.76
AN173-12			1.281	.875	$1.12
AN173-13			1.406	1.000	$0.82
AN173-14			1.531	1.125	$0.87
AN173-15			1.656	1.250	$1.14
AN173-16			1.781	1.375	$0.97
AN174-3	.2500	28 UNF-3A	.469	.062	------
AN174-4			.531	.062	------
AN174-5			.656	.188	$1.25
AN174-6			.781	.312	$0.75
AN174-7			.906	.438	$1.06
AN174-10			1.031	.562	$0.93
AN174-11			1.156	.688	$0.91
AN174-12			1.281	.812	$0.90
AN174-13			1.406	.938	$0.98
AN174-14			1.531	1.062	$1.38
AN174-15			1.656	1.188	$1.18

Cat. #	Dia. (inches)	Threads/inch	Length (inches)	Grip (inches)	Price
AN174-16	.2500	28 UNF-3A	1.781	1.312	------
AN174-17			1.906	1.438	$0.99
AN174-20			2.031	1.562	$0.98
AN174-21			2.156	1.688	------
AN174-23			2.406	1.938	$1.36
AN174-24			2.531	2.062	------
AN175-14	.3125	24 UNF-3A	1.594	1.062	------
AN175-15			1.719	1.188	$1.07
AN175-16			1.844	1.312	$1.84
AN175-17			1.969	1.438	$1.88
AN175-20			2.094	1.562	$4.60
AN175-21			2.219	1.688	$8.75
AN175-22			2.344	1.812	$2.10
AN175-23			2.469	1.938	------
AN175-24			2.594	2.062	------
AN175-25			2.719	2.188	------
AN175-26			2.844	2.312	------
AN175-27			2.969	2.438	------
AN175-30			3.094	2.562	------
AN175-31			3.219	2.688	------
AN175-32			3.344	2.812	$2.40
AN175-33			3.469	2.938	$2.95

NAS SHEAR BOLTS

These bolts supercede NAS1103–NAS1106 high strength bolts. Made from alloy steel with a CAD II finish.

Part numbers with "D" are for shank drilled. All others are undrilled bolts.

HA

Part Number	Thread	Grip Length	Length	Price
NAS6203-10	10-32	0.625	0.948	**$0.22**
NAS6203-10D	10-32	0.625	0.948	**$0.98**
NAS6203-11	10-32	0.688	1.011	**$0.58**
NAS6203-11D	10-32	0.688	1.011	**$1.07**
NAS6203-12	10-32	0.750	1.073	**$0.25**
NAS6203-12D	10-32	0.750	1.073	**$0.96**
NAS6203-13	10-32	0.813	1.136	**$0.85**
NAS6203-13D	10-32	0.813	1.136	**$1.06**
NAS6203-14	10-32	0.875	1.198	**$0.36**
NAS6203-14D	10-32	0.875	1.198	**$1.07**
NAS6203-15	10-32	0.938	1.261	**$0.37**
NAS6203-15D	10-32	0.938	1.261	**$1.08**
NAS6203-16	10-32	1.000	1.323	**$0.35**
NAS6203-16D	10-32	1.000	1.323	**$1.12**
NAS6203-17	10-32	1.063	1.386	**$0.59**
NAS6203-17D	10-32	1.063	1.386	**$1.59**
NAS6203-18	10-32	1.125	1.448	**$0.56**
NAS6203-18D	10-32	1.125	1.448	**$1.36**
NAS6203-19	10-32	1.188	1.511	**$0.54**
NAS6203-19D	10-32	1.188	1.511	**$1.62**
NAS6203-2	10-32	0.125	0.448	**$0.19**
NAS6203-20	10-32	1.250	1.573	**$0.64**
NAS6203-20D	10-32	1.250	1.573	**$1.12**
NAS6203-21	10-32	1.313	1.636	**$0.65**
NAS6203-21D	10-32	1.313	1.636	**$1.67**
NAS6203-22	10-32	1.375	1.698	**$0.58**
NAS6203-22D	10-32	1.375	1.698	**$1.63**
NAS6203-23	10-32	1.438	1.761	**$0.68**
NAS6203-23D	10-32	1.438	1.761	**$1.69**
NAS6203-24	10-32	1.500	1.823	**$0.76**
NAS6203-24D	10-32	1.500	1.823	**$1.50**
NAS6203-2D	10-32	0.125	0.448	**$1.00**
NAS6203-3	10-32	0.188	0.511	**$0.17**
NAS6203-32	10-32	2.000	2.323	**$1.98**
NAS6203-38	10-32	2.375	2.698	**$3.15**
NAS6203-3D	10-32	0.188	0.511	**$0.65**
NAS6203-4	10-32	0.250	0.573	**$0.17**
NAS6203-4D	10-32	0.250	0.573	**$0.66**
NAS6203-5	10-32	0.313	0.636	**$0.21**
NAS6203-56	10-32	3.500	3.823	**$0.00**
NAS6203-5D	10-32	0.313	0.636	**$0.84**
NAS6203-6	10-32	0.375	0.698	**$0.21**
NAS6203-6D	10-32	0.375	0.698	**$0.85**
NAS6203-7	10-32	0.438	0.761	**$0.28**
NAS6203-7D	10-32	0.438	0.761	**$0.87**
NAS6203-8	10-32	0.500	0.823	**$0.25**
NAS6203-8D	10-32	0.500	0.823	**$0.88**
NAS6203-9	10-32	0.563	0.886	**$0.39**
NAS6203-9D	10-32	0.563	0.886	**$1.01**
NAS6204-10	1/4-28	0.625	0.995	**$0.42**
NAS6204-10D	1/4-28	0.625	0.995	**$0.99**

Part Number	Thread	Grip Length	Length	Price
NAS6204-11	1/4-28	0.688	1.058	**$0.49**
NAS6204-11D	1/4-28	0.688	1.058	**$0.92**
NAS6204-12	1/4-28	0.750	1.120	**$0.72**
NAS6204-12D	1/4-28	0.750	1.120	**$0.93**
NAS6204-13	1/4-28	0.813	1.183	**$0.72**
NAS6204-13D	1/4-28	0.813	1.183	**$1.08**
NAS6204-14	1/4-28	0.875	1.245	**$0.50**
NAS6204-14A	1/4-28	0.875	1.245	**$0.97**
NAS6204-14D	1/4-28	0.875	1.245	**$1.14**
NAS6204-15	1/4-28	0.938	1.308	**$0.56**
NAS6204-15D	1/4-28	0.938	1.308	**$1.12**
NAS6204-16	1/4-28	1.000	1.370	**$0.52**
NAS6204-16D	1/4-28	1.000	1.370	**$1.06**
NAS6204-17	1/4-28	1.063	1.433	**$0.84**
NAS6204-17D	1/4-28	1.063	1.433	**$1.56**
NAS6204-18	1/4-28	1.125	1.495	**$0.86**
NAS6204-18D	1/4-28	1.125	1.495	**$1.80**
NAS6204-19	1/4-28	1.188	1.558	**$0.93**
NAS6204-19D	1/4-28	1.188	1.558	**$1.64**
NAS6204-2	1/4-28	0.125	0.495	**$0.46**
NAS6204-20	1/4-28	1.250	1.620	**$0.94**
NAS6204-20D	1/4-28	1.250	1.620	**$1.65**
NAS6204-21	1/4-28	1.313	1.683	**$1.17**
NAS6204-21D	1/4-28	1.313	1.683	**$1.67**
NAS6204-22	1/4-28	1.375	1.745	**$1.01**
NAS6204-22D	1/4-28	1.375	1.745	**$2.10**
NAS6204-23	1/4-28	1.438	1.808	**$0.90**
NAS6204-23D	1/4-28	1.438	1.808	**$2.20**
NAS6204-24	1/4-28	1.500	1.870	**$1.19**
NAS6204-24D	1/4-28	1.500	1.870	**$2.30**
NAS6204-25	1/4-28	1.562	1.932	**$2.40**
NAS6204-27	1/4-28	1.688	2.058	**$2.15**
NAS6204-28	1/4-28	1.750	2.120	**$1.44**
NAS6204-3	1/4-28	0.188	0.558	**$0.38**
NAS6204-4	1/4-28	0.250	0.620	**$0.33**
NAS6204-4D	1/4-28	0.250	0.620	**$1.09**
NAS6204-5	1/4-28	0.313	0.683	**$0.35**
NAS6204-5D	1/4-28	0.313	0.683	**$2.15**
NAS6204-6	1/4-28	0.375	0.745	**$0.38**
NAS6204-6D	1/4-28	0.375	0.745	**$1.53**
NAS6204-7	1/4-28	0.438	0.808	**$0.58**
NAS6204-7D	1/4-28	0.438	0.808	**$0.88**
NAS6204-8	1/4-28	0.500	0.870	**$0.46**
NAS6204-8D	1/4-28	0.500	0.870	**$0.89**
NAS6204-9	1/4-28	0.563	0.933	**$0.47**
NAS6204-9D	1/4-28	0.563	0.933	**$0.90**
NAS6205-11	5/16-24	0.688	1.126	**$3.80**
NAS6205-11D	5/16-24	0.688	1.126	**$3.40**
NAS6205-12	5/16-24	0.750	1.188	**$1.31**
NAS6205-13D	5/16-24	0.812	1.250	**$4.25**
NAS6205-15	5/16-24	0.938	1.376	**$3.17**
NAS6205-19	5/16-24	1.188	1.626	**$2.10**
NAS6205-2	5/16-24	0.125	0.563	**$0.85**
NAS6205-20	5/16-24	1.250	1.688	**$4.80**
NAS6205-20D	5/16-24	1.250	1.688	**$2.57**
NAS6205-22	5/16-24	1.375	1.813	**$3.65**
NAS6205-24D	5/16-24	1.500	1.938	**$4.95**

NAS SHEAR BOLTS

Part Number	Thread	Grip Length	Length	Price
NAS6205-4	5/16-24	0.250	0.688	**$2.88**
NAS6205-5	5/16-24	0.312	0.750	**$0.89**
NAS6205-6	5/16-24	0.375	0.813	**$1.70**
NAS6205-6D	5/16-24	0.375	0.813	**$4.60**
NAS6205-8	5/16-24	0.500	0.938	**$1.58**
NAS6205-9	5/16-24	0.562	1.000	**$2.30**
NAS6206-13	3/8-24	0.812	1.266	**$5.50**
NAS6206-14D	3/8-24	0.875	1.329	**$7.50**
NAS6206-15	3/8-24	0.938	1.392	**$7.50**
NAS6206-17	3/8-24	1.062	1.516	**$8.75**
NAS6206-21	3/8-24	1.312	1.766	**$9.85**
NAS6206-22	3/8-24	1.375	1.829	**$10.25**
NAS6206-23	3/8-24	1.438	1.892	**$7.25**
NAS6206-23D	3/8-24	1.438	1.892	**$0.00**
NAS6206-25D	3/8-24	1.562	2.016	**$24.80**
NAS6206-32	3/8-24	0.002	2.454	**$20.95**
NAS6206-8	3/8-24	0.500	0.954	**$2.15**
NAS6206-9	3/8-24	0.562	1.016	**$3.20**
NAS6206H-4	3/8-24	0.250	0.704	**$0.00**
NAS6603-1	10-32	0.063	0.408	**$0.23**
NAS6603-10	10-32	0.625	0.970	**$0.33**
NAS6603-11	10-32	0.688	1.033	**$0.31**
NAS6603-12	10-32	0.750	1.095	**$0.31**
NAS6603-13	10-32	0.813	1.158	**$0.38**
NAS6603-14	10-32	0.875	1.220	**$0.38**
NAS6603-15	10-32	0.938	1.283	**$0.34**
NAS6603-16	10-32	1.000	1.345	**$3.35**
NAS6603-17	10-32	1.063	1.408	**$0.60**
NAS6603-18	10-32	1.125	1.470	**$0.66**
NAS6603-19	10-32	1.188	1.533	**$0.66**
NAS6603-2	10-32	0.063	0.408	**$0.21**
NAS6603-20	10-32	1.250	1.595	**$0.69**
NAS6603-21	10-32	1.313	1.658	**$0.70**
NAS6603-22	10-32	1.375	1.720	**$0.70**
NAS6603-23	10-32	1.438	1.783	**$0.72**
NAS6603-24	10-32	1.500	1.845	**$0.73**
NAS6603-3	10-32	0.188	0.533	**$0.24**
NAS6603-4	10-32	0.250	0.595	**$0.25**
NAS6603-5	10-32	0.313	0.658	**$0.28**
NAS6603-6	10-32	0.375	0.720	**$0.26**
NAS6603-8	10-32	0.500	0.845	**$0.26**
NAS6603-9	10-32	0.563	0.908	**$0.29**
NAS6604-10	1/4-28	0.625	1.050	**$0.46**
NAS6604-11	1/4-28	0.688	1.113	**$0.52**
NAS6604-12	1/4-28	0.750	1.175	**$0.45**
NAS6604-13	1/4-28	0.813	1.238	**$0.48**
NAS6604-14	1/4-28	0.875	1.300	**$0.48**
NAS6604-15	1/4-28	0.938	1.363	**$0.84**
NAS6604-16	1/4-28	1.000	1.425	**$0.66**
NAS6604-17	1/4-28	1.063	1.488	**$1.02**
NAS6604-18	1/4-28	1.125	1.550	**$0.97**
NAS6604-19	1/4-28	1.188	1.613	**$1.11**
NAS6604-20	1/4-28	1.250	1.675	**$1.07**
NAS6604-21	1/4-28	1.313	1.738	**$1.11**
NAS6604-22	1/4-28	1.375	1.800	**$1.17**
NAS6604-23	1/4-28	1.438	1.863	**$1.14**
NAS6604-24	1/4-28	1.500	1.925	**$1.19**

Part Number	Thread	Grip Length	Length	Price
NAS6604-3	1/4-28	0.188	0.613	**$0.37**
NAS6604-4	1/4-28	0.250	0.675	**$0.32**
NAS6604-42D	1/4-28	2.625	2.995	**$4.73**
NAS6604-5	1/4-28	0.313	0.738	**$0.30**
NAS6604-56D	1/4-28	3.625	3.870	**$0.00**
NAS6604-7	1/4-28	0.438	0.863	**$0.40**
NAS6604-8	1/4-28	0.500	0.925	**$0.42**
NAS6604-9	1/4-28	0.563	0.988	**$0.46**
NAS6605-10	5/16-24	0.625	1.094	**$0.94**
NAS6605-11	5/16-24	0.688	1.157	**$0.93**
NAS6605-12	5/16-24	0.750	1.219	**$0.98**
NAS6605-13	5/16-24	0.813	1.282	**$0.91**
NAS6605-14	5/16-24	0.875	1.344	**$1.08**
NAS6605-15	5/16-24	0.938	1.407	**$1.08**
NAS6605-16	5/16-24	1.000	1.469	**$1.11**
NAS6605-17	5/16-24	1.063	1.532	**$1.13**
NAS6605-18	5/16-24	1.125	1.594	**$1.16**
NAS6605-20	5/16-24	1.250	1.719	**$1.08**
NAS6605-21	5/16-24	1.313	1.782	**$1.25**
NAS6605-22	5/16-24	1.375	1.844	**$1.22**
NAS6605-23	5/16-24	1.438	1.907	**$1.22**
NAS6605-24	5/16-24	1.500	1.969	**$1.33**
NAS6605-3	5/16-24	0.188	0.657	**$0.65**
NAS6605-4	5/16-24	0.250	0.719	**$0.66**
NAS6605-5	5/16-24	0.313	0.782	**$0.75**
NAS6605-6	5/16-24	0.375	0.844	**$0.76**
NAS6605-7	5/16-24	0.438	0.907	**$0.80**
NAS6605-8	5/16-24	0.500	0.969	**$0.75**
NAS6605-9	5/16-24	0.563	1.032	**$0.88**
NAS6606-10	3/8-24	0.625	1.203	**$1.57**
NAS6606-11	3/8-24	0.688	1.266	**$1.85**
NAS6606-12	3/8-24	0.750	1.328	**$1.86**
NAS6606-13	3/8-24	0.813	1.391	**$2.20**
NAS6606-14	3/8-24	0.875	1.453	**$2.20**
NAS6606-15	3/8-24	0.938	1.516	**$2.20**
NAS6606-16	3/8-24	1.000	1.578	**$2.15**
NAS6606-17	3/8-24	1.063	1.641	**$2.30**
NAS6606-18	3/8-24	1.125	1.703	**$2.35**
NAS6606-19	3/8-24	1.188	1.766	**$2.35**
NAS6606-20	3/8-24	1.250	1.828	**$2.40**
NAS6606-21	3/8-24	1.313	1.891	**$2.40**
NAS6606-22	3/8-24	1.375	1.953	**$2.40**
NAS6606-23	3/8-24	1.438	2.016	**$2.56**
NAS6606-24	3/8-24	1.500	2.078	**$2.60**
NAS6606-3	3/8-24	0.188	0.766	**$1.55**
NAS6606-4	3/8-24	0.250	0.828	**$1.47**
NAS6606-5	3/8-24	0.313	0.891	**$1.44**
NAS6606-6	3/8-24	0.375	0.953	**$1.60**
NAS6606-7	3/8-24	0.438	1.016	**$1.65**
NAS6606-8	3/8-24	0.500	1.078	**$1.69**
NAS6606-9	3/8-24	0.563	1.141	**$1.53**

LOW PRICE GUARANTEE

WE WILL MATCH ANY COMPETITOR'S CURRENT PRICE. IF YOU FIND A LOWER PRICE, PLEASE TELL US.

HARDWARE KITS

BEGINNER'S BOLT KITS

UNDRILLED KIT
102 PIECES

AN3	QTY	AN4	QTY	AN5	QTY
-3A	4	-5A	6	-4A	6
-4A	6	-6A	6	-6A	6
-5A	6	-7A	6	-10A	6
-6A	6	-10A	6	-11A	6
-7A	6	-11A	6	-13A	4
-10A	6	-15A	4	-14A	6

P/N 04-00090 ..... **$23.00**

DRILLED KIT
102 PIECES

AN3	QTY	AN4	QTY	AN5	QTY
-4	6	-6	6	-6	6
-5	6	-7	6	-10	6
-6	6	-10	6	-14	6
-7	6	-12	6	-15	4
-10	6	-13	6	-16	6
-11	4	-14	4	-17	6

P/N 04-00100 ..... **$61.75**

HOMEBUILDER'S KIT

CADMIUM PLATED
629 PIECES
AN BOLTS CONTAINS 4 EACH

DRILLED		UNDRILLED	
AN3-4		AN3-4A	
AN3-5		AN3-5A	
AN3-6	AN4-6	AN3-6A	AN4-6A
AN3-7	AN4-7	AN3-7A	AN4-7A
AN3-10	AN4-10	AN3-10A	AN4-10A
AN3-11	AN4-11	AN3-11A	AN4-11A
AN3-12	AN4-12	AN3-12A	AN4-12A
AN3-13	AN4-13	AN3-13A	AN4-13A
AN3-14	AN4-14	AN3-14A	AN4-14A
AN3-15	AN4-15	AN3-15A	AN4-15A
AN3-16	AN4-16	AN3-16A	AN4-16A
AN3-17	AN4-17	AN3-17A	AN4-17A
AN3-20	AN4-20	AN3-20A	AN4-20A

Also Included:

NYLON INSERT LOCKNUTS	
ITEM #	QTY.
AN365-1032	52
AN365-428	44

FLAT WASHERS	
ITEM #	QTY.
AN960-10	30
AN960-10L	30
AN960-416	30
AN960-416L	30

CASTLE NUTS	
ITEM #	QTY.
AN310-3	52
AN310-4	44

COTTER PINS	
ITEM #	QTY.
AN380-2-2	125

P/N 04-00230 ..... **$149.95**

ADVANCED MECHANIC'S KIT

1,229 PIECES - CADMIUM PLATED

DRILLED	UNDRILLED	AN3	AN4	AN5	AN6
-4	-4A	3	3	3	3
-5	-5A	3	3	3	3
-6	-6A	3	3	3	3
-7	-7A	3	3	3	3
-10	-10A	3	3	3	3
-11	-11A	3	3	3	3
-12	-12A	3	3	3	3
-13	-13A	3	3	3	3
-15	-15A	3	3	3	3

Also Includes:

FLAT WASHERS	
ITEM #	QTY.
AN960-10	100
AN960-416	100
AN960-516	100
AN960-616	100

NYLON INSERT LOCKNUTS	
ITEM#	QTY.
AN365-1032	27
AN365-428	27
AN365-524	27
AN365-624	27

COTTER PINS	
ITEM #	QTY.
AN380-2-3	100
AN380-25-3	200
AN380-3-3	100

CASTLE NUTS	
ITEM#	QTY.
AN310-3	27
AN310-4	27
AN310-5	27
AN310-6	27

AN6-4 NOT INCLUDED

P/N 04-00240 ..... **$225.95**

DELUXE BOLT PACK

UNDRILLED KIT BOLTS
500 PIECES

AN3	QTY	AN4	QTY	AN5	QTY
-3A	10	-5A	10	-6A	10
-4A	10	-6A	10	-10A	10
-5A	10	-7A	10	-12A	10
-6A	10	-10A	10	-16A	10
-7A	10	-11A	10		
-10A	10	-12A	10		
-11A	10	-13A	10		
-12A	10	-14A	10		
-13A	10	-15A	10		
-14A	10	-16A	10		
-15A	10	-17A	10		
-16A	10	-22A	10		
-17A	10	-24A	10		
-20A	10	-26A	10		

DRILLED KIT BOLTS

AN3	QTY	AN4	QTY	AN5	QTY
-5	10	-6	10	-7	10
-6	10	-7	10	-14	10
-7	10	-10	10	-17	10
-10	10	-12	10	-24	10
-12	10	-16	10		
-15	10	-20	10		
-20	10				
-24	10				

P/N 04-00245 ..... **$192.95**

HARDWARE KITS

ECONOMY AN BOLT ASSORTMENTS

BOLT ASSORTMENT - UNDRILLED

Qty	P/N	Qty	P/N	Qty	P/N
10	AN3-3A	4	AN4-4A	4	AN5-5A
10	AN3-4A	4	AN4-5A	4	AN5-6A
10	AN3-5A	4	AN4-6A	4	AN5-7A
10	AN3-6A	4	AN4-7A	4	AN5-10A
10	AN3-7A	4	AN4-10A	4	AN5-11A
10	AN3-10A	4	AN4-11A	4	AN5-12A
4	AN3-11A	4	AN4-12A	4	AN5-13A
4	AN3-12A	4	AN4-13A	4	AN5-14A
4	AN3-13A	4	AN4-14A	4	AN5-15A
4	AN3-14A	4	AN4-15A	4	AN5-16A
4	AN3-15A	4	AN4-16A	4	AN5-17A
4	AN3-16A	4	AN4-17A	4	AN5-20A
4	AN3-17A	4	AN4-20A	4	AN5-24A
4	AN3-20A	4	AN4-24A		
4	AN3-24A				

204-piece Undrilled Assortment ..... P/N 04-00105 ..... **$51.00**
Above with 44-Drawer Cabinet ..... P/N 04-00110 ..... **$100.95**

BOLT ASSORTMENT - DRILLED

Qty	P/N	Qty	P/N	Qty	P/N
10	AN3-3	4	AN4-4	4	AN5-5
10	AN3-4	4	AN4-5	4	AN5-6
10	AN3-5	4	AN4-6	4	AN5-7
10	AN3-6	4	AN4-7	4	AN5-10
10	AN3-7	4	AN4-10	4	AN5-11
10	AN3-10	4	AN4-11	4	AN5-12
4	AN3-11	4	AN4-12	4	AN5-13
4	AN3-12	4	AN4-13	4	AN5-14
4	AN3-13	4	AN4-14	4	AN5-15
4	AN3-14	4	AN4-15	4	AN5-16
4	AN3-15	4	AN4-16	4	AN5-17
4	AN3-16	4	AN4-17	4	AN5-20
4	AN3-17	4	AN4-20	4	AN5-24
4	AN3-20	4	AN4-24	4	
1	AN3-24	4		4	

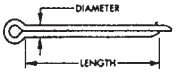
204-piece Drilled Assortment ..... P/N 04-00115 ..... **$120.95**
Above with 44-Drawer Cabinet ..... P/N 04-00120 ..... **$170.95**

ECONOMY COMBINED AN BOLT ASSORTMENT

Both drilled and undrilled assortments shown above
P/N 04-00125 ..... **$172.95**

Both assortments shown above with 16-Drawer & 64-Drawer storage cabinets
P/N 04-00130 ..... **$249.95**

ECONOMY WASHER & COTTER PIN ASSORTMENTS



To Accompany AN Bolt Assortments Shown Above

Washers For Undrilled Assortment	Washers & Cotter Pins For Drilled Bolt Assortment	Washers & Cotter Pins For Combined Assortment
P/N 04-00135 ..... **$5.50**	P/N 04-00140 ..... **$8.50**	P/N 04-00145 ..... **$13.75**

WASHER ASSORTMENTS
1,500 PIECES - STAINLESS

Contains 100 each of the following:

- 6, 8 & 10 AN960C & AN960CL
- 6, 8 & 10 Nylon
- 6, 8 & 10 MS35333
- 6, 8 & 10 MS35338

P/N 04-00220 ..... **$44.00**

WASHER ASSORTMENTS
1,500 PIECES - CAD-PLATED

Contains 100 each of the following:

- 6, 8 & 10 AN960 & AN960L
- 6, 8 & 10 Nylon Washer
- 6, 8 & 10 MS35333
- 6, 8 & 10 MS35338

P/N 04-00215 ..... **$24.50**

HARDWARE KITS

HA

ECONOMY SCREW PACKS

1/2" 100° 600-Piece Screw Pack

Flat Phillips - AN507C Machine Screws		Flat Phillips Sheet Metal Screws	
100	6-32 x 1/2	100	6 x 1/2B
100	8-32 x 1/2	100	8 x 1/2B
100	10-32 x 1/2	100	10 x 1/2B

Steel plated..... P/N 04-00180 ..... **$31.25**
Stainless ..... P/N 04-00185 ..... **$46.75**

1/2" 600-Piece Screw Pack

Truss Phillips - AN526C Machine Screws		Truss Phillips Sheet Metal Screws	
100	6-32 x 1/2	100	6 x 1/2A
100	8-32 x 1/2	100	8 x 1/2A
100	10-32 x 1/2	100	10 x 1/2A

Steel plated ..... P/N 04-00190 ..... **$24.00**
Stainless..... P/N 04-00195 ..... **$34.25**

1/2" 900-Piece Screw Pack

The entire contents of 600-piece pack shown above plus the following:

AN507C 100° CSK
Flat Phillips Machine Screws

100 6-32 x 1/2
100 8-32 x 1/2
100 10-32 x 1/2

Steel plated..... P/N 04-00205 ..... **$34.75**
Stainless ..... P/N 04-00210 ..... **$54.00**

SCREW KITS

LARGE ASSORTMENT 2,250 PIECES

AN526 Machine Screw, Truss Phillips

100..... 4-40 x 1/2
100..... 6-32 x 1/2
100..... 8-40 x 3/8
100..... 8-32 x 1/2
100..... 10-32 x 1/2
100..... 10-32 x 3/4

Sheet Metal Screw, Truss Phillips

100..... 4 x 1/2
100..... 6 x 1/2
100..... 8 x 1/2
100..... 8 x 1/2B
100..... 10 x 1/2

AN507 100° CSK Machine Screw, FP

100..... 6-32 x 1/2
100..... 8-32 x 1/2
100..... 10-32 x 1/2

Nylon Insert Locknuts

50..... 6-32
50..... 8-32
50..... 10-32

Flat Washer AN960

100 6
100 8
100 10

Nylon Washers

100 6
100 8
100 10

100° CSK Washers

50 8
50 10

Stainless Kit ..... P/N 04-00295 ..... **$117.95**
Steel Plated Kit..... P/N 04-00296 ..... **$107.95**

OLITE BRONZE STRAIGHT BUSHINGS

Oilite Impregnated Bronze. SAE 841.

Model No.	Part No.	Hole I.D.	Hole O.D.	Length	Price Ea.
AA304-20	05-01856	1/4	3/8	1	**$0.45**
AA309-5	05-01857	3/16	5/16	3/4	**$0.61**
B812-6	05-02098	1/2	3/4	3/4	**$1.14**
B812-7	05-02099	1/2	3/4	7/8	**$1.19**
B610-6	04-01944	3/8	5/8	3/4	**$0.78**
8363	05-04543	5/8	1	1-1/8	**$1.85**

PN 04-01646

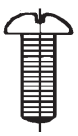
OLITE BRONZE FLANGED BUSHINGS

Oillite bronze bushings are highly heat resistant, ductile, conformable and corrosion resistant.

Model No.	Part No.	Hole I.D.	Hole O.D.	Length	Flange O.D.	Flange Thickness	Price Each
FB46-02	04-01646	1/4	3/8	1/4	1/2	3/64	**$0.25**
FB810-04	04-01647	1/2	5/8	1/2	7/8	1/8	**$0.63**
FB810-08	04-01648	1/2	5/8	1	7/8	1/8	**$1.26**
FB812-08	04-01649	1/2	3/4	1	1	1/8	**$1.62**
FB1012-04	04-01639	5/8	3/4	1/2	1	1/8	**$0.74**
FB1012-08	04-01640	5/8	3/4	1	1	1/8	**$0.95**
FB-1013-08	04-01641	.6270	.8150	1	1-1/16	5/32	**$2.15**
FB1214-06	04-01642	3/4	7/8	3/4	1-1/8	5/32	**$0.77**
FB-1620-06	04-01644	1	1-1/4	3/4	1-1/2	3/16	**$2.30**
FB1620-10	04-01645	1	1-1/4	1-1/4	1-1/2	3/16	**$4.15**
FF303-01	04-01650	3/16	5/16	3/16	7/16	1/16	**$0.23**
FF312-02	04-01651	.252	.3775	1/2	15/32	1/16	**$0.39**
FF435-1	04-01652	1/4	7/16	1/2	1/2	1/16	**$1.44**
FF512-03	04-01653	.3765	.5030	5/8	5/8	3/32	**$0.56**
FF520-10	05-02114	3/8	1/2	3/8	5/8	1/16	**$0.44**
FF520-15	FF520-15	3/8	1/2	1/4	5/8	1/16	**$0.32**
FF620-01	04-01654	.5020	.6270	1/2	7/8	1/16	**$0.59**
FF730-03	04-01655	5/8	3/4	5/8	1	3/32	**$1.40**

ECONOMY SCREW KIT

STAINLESS STEEL - 2,100 PIECES



AN526C Machine Truss Phillips

AN507C Machine 100° CSK, Flat Phillips

Sizes 6-32, 8-32, 10-32

Qty.	Length
100	1/2"
50	5/8"
25	3/4"
25	1"

Qty.	Length
100	1/2"
50	5/8"
25	3/4"
25	1"

Sheet Metal Truss Phillips

Sheet Metal 100° CSK, Flat Phillips

Sizes 6, 8, 10

Qty.	Length
100	1/2"
50	5/8"
25	3/4"
25	1"

Qty.	Length
100	1/2"

Stainless Kit ..... P/N 04-00290 ..... **$159.95**

HARDWARE KITS

NUT-COTTER PIN ASSORTMENTS

CAD-PLATED COTTER PIN KIT
400 PCS

100	1/16 x 1/2”	50	1/8 x 1”
100	5/64 x 1/2”	25	5/32 x 2”
100	3/32 x 1/2”	25	3/16 x 2”

P/N 04-00155 ..... **$11.50**

STAINLESS STEEL COTTER PIN KIT
400 PCS

100	1/16 x 1/2”	50	1/8 x 1”
100	5/64 x 1/2”	25	5/32 x 2”
100	3/32 x 1/2”	25	3/16 x 2”

P/N 04-00150 ..... **$33.25**

CAD-PLATED COTTER PIN KIT
500 PCS

100	1/16 x 1/2”	50	1/16 x 1-1/2”
100	5/64 x 3/4”	50	5A/32 x 2”
100	3/32 x 1”	25	A3/16 x 2”
50	1/8 x 3/4”	25	3/16 x 2-1/2”

P/N 04-00165 ..... **$18.75**

STAINLESS STEEL COTTER PIN KIT
500 PCS

100	1/16 x 1/2”	50	1/16 x 1-1/2”
100	5/64 x 3/4”	50	5/32 x 2”
100	3/32 x 1”	25	3/16 x 2”
50	1/8 x 3/4”	25	3/16 x 2-1/2”

P/N 04-00160 ..... **$57.00**

DELUXE COTTER PIN KITS
850 PCS

AN380 - Cad-Plated

Dash	Size	Qty.	Dash	Size	Qty.
-1-2	1/32 x 1/2”	50	-3-4	3/32 x 1”	75
-1-4	1/32 x 1”	50	-3-6	3/32 x 1-1/2”	25
-2-2	1/16 x 1/2”	100	-3-8	3/32 x 2”	25
-2-3	1/16 x 3/4”	100	-4-3	1/8 x 3/4”	25
-2-4	1/16 x 1”	100	-4-5	1/8 x 1-1/4”	75
-25-2	5/64 x 1/2”	25	-4-8	1/8 x 2”	50
-25-3	5/64 x 3/4”	25	-4-10	1/8 x 2-1/2”	50
-3-3	3/32 x 3/4”	75			

P/N 04-00375 ..... **$25.00**

AN381 - Stainless

Dash	Size	Qty.	Dash	Size	Qty.
-1-8	1/16 x 1/2”	100	-3-16	3/32 x 1”	75
-2-12	1/16 x 3/4”	100	-3-24	3/32 x 1-1/2”	25
-2-16	1/16 x 1”	100	-4-12	1/8 x 3/4”	25
-2-24	1/16 x 1-1/2”	50	-4-16	1/8 x 1”	50
-25-8	5/64 x 3/4”	50	-4-24	1/8 x 1-1/2”	25
-25-12	5/64 x 1/2”	75	-4-32	1/8 x 2”	25
-3-8	3/32 x 1/2”	75	-4-40	1/8 x 2-1/2”	25
-3-12	3/32 x 3/4”	50			

P/N 04-00380 ..... **$64.25**

ECONOMY AN365 NUT PACKS

AN365C NUT KIT
Stainless

Qty.	Part No.
25	4-40
50	6-32
50	8-32
50	10-32
25	1/4-28

AN365 NUT KIT
Cad-Plated

Qty.	Part No.
50	4-40
100	6-32
100	8-32
100	10-32
50	1/4-28

Stainless Kit ..... P/N 04-00170..... **$54.00**
Cad Plated Kit ..... P/N 04-00175..... **$52.50**

LOCKNUT KIT 208 PIECES
Cad-Plated. For undrilled bolt assortment.

100 ea AN365-1032
56 ea AN365-428
52 ea AN365-524

P/N 04-00330 ..... **$21.85**

CASTLE NUT KIT 208 PIECES
Cad-Plated.
For drilled bolt assortment

100 ea..... AN310-3
56 ea..... AN310-4
52 ea..... AN310-5

P/N 04-00335 ..... **$132.95**

AN365C NUT KIT
STAINLESS 200 PIECES

50 ea	632	25 ea	428
50 ea	832	25 ea	524
50 ea	1032		

P/N 04-00340..... **$79.50**

AN365 NUT KIT
CAD-PLATED - 400 PIECES

100 ea	632	50 ea	428
100 ea	832	50 ea	524
100 ea	1032		

P/N 04-00345 ..... **$44.50**

470 PIECE COMBO NUT ASSORTMENT

Nylon Insert Locknuts

Item #	Qty.
AN365-632	15
AN365-832	50
AN365-1032	50
AN365-428	50
AN365-524	15

Castle Nuts

Item #	Qty.
AN310-3	50
AN310-4	50
AN310-5	15
AN310-6	15

Plain Hex Nuts

Item #	Qty.
AN315-3	25
AN315-4	25
AN315-5	15
AN315-6	15

Shear Castle Nuts

Item #	Qty.
AN320-3	25
AN320-4	25
AN320-5	15
AN320-6	15

P/N 04-00350 ..... **$179.95**

HA

HARDWARE KITS

HA

DELUXE BOLT PACK

700 BOLTS - 50 Sizes, individually packaged. AN3, AN4 and AN5 bolts in lengths from 3/8" to 2-3/4" with drilled and undrilled shanks, in quantities selected to accommodate popular usage. Furnished with a 44-drawer storage cabinet. An exceptionally fine value. P/N 04-00200 .....**$277.95**

Part No.	Qty.	Length
3/16" Dia., Undrilled Shank		
AN3-3A	10	3/8"
AN3-4A	15	1/2"
AN3-5A	25	5/8"
AN3-6A	25	3/4"
AN3-7A	12	7/8"
AN3-10A	30	1"
AN3-11A	30	1-1/8"
AN3-12A	30	1-1/4"
AN3-13A	20	1-3/8"
AN3-14A	20	1-1/2"
AN3-15A	20	1-5/8"
AN3-16A	20	1-4/3"
AN3-17A	20	1-7/8"
AN3-20A	12	2"
3/16" Dia., Drilled Shank		
AN3-5	15	5/8"
AN3-6	20	3/4"
AN3-7	20	7/8"
AN3-10	20	1"
AN3-12	10	1-1/4"
AN3-15	10	1-5/8"
AN3-20	8	2"
AN3-24	8	2-1/2"
1/4" Dia., Undrilled Shank		
AN4-5A	24	5/8"
AN4-6A	24	3/4"
AN4-7A	24	7/8"

1/4" Dia., Undrilled Shank		
AN4-10A	24	1"
AN4-11A	12	1-1/8"
AN4-12A	12	1-1/4"
AN4-13A	12	1-3/8"
AN4-14A	12	1-1/2"
AN4-15A	12	1-5/8"
AN4-16A	12	1-3/4"
AN4-17A	12	1-7/8"
AN4-22A	6	2-1/4"
AN4-24A	6	2-1/2"
AN4-26A	6	2-3/4"
1/4" Dia., Drilled Shank		
AN4-6	10	3/4"
AN4-7	10	7/8"
AN4-10	10	1"
AN4-12	10	1-1/4"
AN4-16	6	1-3/4"
AN4-20	6	2"
5/16" Dia. Undrilled Shank		
AN5-6A	6	3/4"
AN5-10A	8	1"
AN5-12A	6	1-1/8"
AN5-16A	6	1-3/4"
5/16" Dia. Drilled Shank		
AN5-7	6	7/8"
AN5-14	6	1-1/2"
AN-17	6	1-7/8"
AN5-24	6	2-1/2"

DELUXE WASHER & COTTER PIN PACK

2000 WASHERS, 700 COTTER PINS - 31 Items, individually packaged.A combination of flat washers in steel and anodized aluminum, regular and light weight, large-area washers, internal locking type, Tinnerman countersunk washers and six useful sizes of cotter pins. 26 Drawer hardware cabinet included.

P/N 04-00300 .....**$139.95**

Part No.	Qty.	Size
Steel, Regular Flat		
AN960-6	100	#6
AN960-8	100	#8
AN960-10	250	3/16"
AN960-416	200	1/4"
AN960-516	100	5/16"
Steel, Light Flat		
AN960-6L	100	#6
AN960-8L	100	#8
AN960-10L	100	3/16"
AN960-416L	100	1/4"
AN960-516L	50	5/16"
Anod. Alum. Regular Flat		
AN960PD10	50	3/16"
AN960PD416	50	1/4"
Anod. Alum. Light Flat		
AN960PD10L	50	3/16"
AN960PD416L	50	1/4"
Steel, Large Flat		
AN970-3	25	3/16"

Steel, Large Flat		
AN970-4	14	1/4"
AN970-5	11	5/16"
Steel, Internal Lock		
MS35333-37	50	#6
MS35333-38	50	#8
MS35333-39	50	#10
MS35333-40	50	1/4"
MS35333-41	50	5/16"
Tinnerman Countersunk		
A3236-012-24A	100	#6
A3135-017-24A	100	#8
A3235-028-24A	100	#10
Cotter Pins		
Part No.	**Qty.**	**Size**
MS24665-132	225	1/16" x 1/2"L
MS24665-134	200	1/16" x 3/4"L
MS24665-136	200	1/16 x 1"L
MS24665-283	50	3/32" x 3/4"L
MS24665-285	13	3/32" x 1"L
MS24665-360	12	1/8" x 2"L

ASSORTED HARDWARE KITS

HOMEBUILDERS HARDWARE KIT

Contains: • 78 AN3 (10-32 size) Undrilled bolts in 13 consecutive sizes from AN3-4A through AN3-20A •66 AN4 (1/4" dia.) Undrilled Bolts in 11 consecutive sizes from AN4-6A through AN4-20A •100 AN365-1032 Stop Nuts •100 AN365-428 Stop Nuts •100 AN960-10 Washers •100 AN960-416 Washers •100 AN380-2-2 Cotter Pins

P/N 04-00400.....**$52.50**

With 26-Drawer Storage Cabinet..... P/N 04-00500.....**$89.25**

MECHANICS HARDWARE KIT

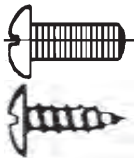
Contains: • 40 AN3 (10-32 size) Bolts from 1/2" to 3" long • 44 AN4 (1/4" dia.) Bolts from 1" to 4" long • 52 AN5 (5/16" dia.) Bolts from 1" to 4" long • 24 AN6 (3/8" dia.) Bolts from 1-3/4" to 4-1/2" long • 300 AN960 Washers •75 AN365 Stop Nuts • 100 AN380 Cotter Pins

Bolts are furnished in equal quantities with drilled and undrilled shanks. Lengths are spaced in 1/4" increments. The proper number, size and type of nuts, washers and cotter pins are furnished to mate with bolts. P/N 04-00600..... **$211.58**

With (1) 26 & (1) 64 -Drawer Storage Cabinets

P/N 04-00700.....**$297.95**

DELUXE SCREW PACK



3500 SCREWS - 55 Items, individually packaged.A good working assortment of standard screws including truss head, 100° flat head and structural type, washer head, 100° flat head sheet metal screws for use with Tinnerman countersunk washers, truss head sheet metal screws, both sharp and blunt point, & brass instrument screws. 44-Drawer cabinet Included.

P/N 04-00800 .....**$322.95**

PART NO.	QTY.	SIZE
AN 526 Truss Hd Screw, Phillips		
AN526-632R6	100	6-32 x 3/8"
AN526-632R8	100	x 1/2"
AN526-632R10	100	x 5/8"
AN526-632R12	100	x 3/4"
AN526-832R6	100	8-32 x 3/8"
AN526-832R8	100	x 1/2"
AN526-832R10	100	x 5/8"
AN526-832R12	100	x 3/4"
AN526-1032R8	100	10-32 x 1/2"
AN526-1032R10	100	x 5/8"
AN526-1032R12	100	x 3/4"
AN526-1032R16	50	x 1"
AN507 Screws 100° C snk Flat Head Phillips		
MS2469326	100	6-32 x 3/8"
MS24693S28	100	x 1/2"
MS24693S29	100	x 5/8"
MS24693S10	100	x 3/4"
MS24693S31	100	x 7/8"
MS24693S48	100	8-32 x 3/8"
MS24693S50	100	x 1/2"
MS24693S51	100	x 5/8"
MS24693S52	100	x 3/4"
MS24693S54	50	x 1"
MS24693S58	25	x 1-1/2"
MS24693S272	100	x 1/2"
MS24693S273	100	x 5/8"
MS24693S274	100	x 3/4"
MS24693S276	50	x 1"
MS24693S280	25	x 1-1/2"
Brass Instrument Screws Round Head Phillips		
AN515B6R12	25	6-32 x 3/4"

AN509 Structural Screws 100°C snk Flat Head Phillips		
MS24694S5	25	8-32 x 1/2"
MS24694S7	25	x 5/8"
MS24694S9	25	x 3/4"
MS24694S50	25	10-32 x 1/2"
MS24694S52	25	x 5/8"
MS24694S54	25	x 3/4"
Washer Head Structural Screws		
AN525-832R8	25	8-32 x 1/2"
AN525-832R10	25	x 5/8"
AN525-1032R8	25	10-32 x 1/2"
AN525-1032R10	25	x 5/8"
AN525-1032R12	25	x 3/4"
Sheet Metal Screws 100°C snk Flat Head Phillips		
NAS548P-6	100	#6 x 3/8"
NAS548P6-8	100	x 1/2"
NAS548P6-10	100	x 5/8"
NAS548P8-8	100	#8 x 1/2"
NAS548P8-10	100	x 5/8"
Sheet Metal Screws, Truss Hd "B"		
#4R x 1/4"	100	Phillips
#4R x 3/8"	100	Blunt Point
#4R x 1/2"	100	
#6R x 3/8"	100	
#6R x 1/2"	100	
#6R x 5/8	100	
#8R x 1/2"	100	
#8R x 3/4"	100	
Sheet Metal Screws, Truss Hd "A"		
#4R x 1/2"	200	Phillips
#6R x 1/2"	200	Sharp Point

DELUXE NUT PACK

1000 NUTS - 29 Items, individually packaged. Nuts have been carefully selected to include every commonly used type in aircraft assembly - Self-locking, castle, plain hex, Pal, Tinnerman and all-metal two-lug anchor nuts not found in other hardware assortments. 26-Drawer Cabinet Included

P/N 04-00900.....**$337.95**

PART NO.	QTY.	SIZE
Elastic Stop Nuts		
AN365-632A	25	6-32
AN365-832A	25	8-32
AN365-1032A	75	10-32
AN365-428A	50	1/4 x 28
AN365-524A	25	5/16 x 24
All Metal Stop Nuts		
MS21042-3	75	10-32
MS21042-4	25	1/4 x 28
Castle Nuts		
AN310-3	50	10-32
AN310-4	50	1/4 x 28
AN310-5	14	5/16 x 24
Shear Castle Nuts		
AN320-3	12	10-32
AN320-4	12	1/4 x 28
AN320-5	12	5/16 x 24
Plain Hex Nuts		
AN315-3	25	10-32

AN315-4	25	1/4 x 28
AN315 -5	25	5/16 x 24
Check Nuts		
AN315-3	25	10-32
AN316-4	25	1/4 x 28
Palnuts		
MS27151-7	25	10-32
MS27151-13	25	1/4 x 28
MS27151-16	25	5/16 x 24
Tinnerman Nuts, Flat Type		
#1777-6Z-1	50	#6
#1778-8Z-1	50	#8
#1779-10Z-1	25	#10
Tinnerman Nuts, U Type		
#1784-6Z-1	50	#6
#A1932-8Z-1	50	#8
Two Lug Anchor Nuts		
K1000-08	50	8-32
K1000-3	50	10-32
K1000-4	25	1/4 x 28

HARDWARE CABINETS

Heavy-duty small parts organizer cabinets. The "see-thru" clear plastic drawers measure 1-1/4" x 2-3/4" x 5-3/4". The plastic cabinets are black. Furnished with adjustable drawer dividers. 16 drawer is white plastic.

CABINETS	***PORTABLE ORGANIZERS***
16-Drawer..04-01464..**$25.85**	12-62 compartments..04-01468..**$23.50**
26-Drawer..04-01465..**$36.75**	11-46 compartments..04-01469..**$33.25**
44-Drawer..04-01466..**$49.75**	64-Drawer .....04-01467..**$51.85**
Lg Dividers (25)40-501..**$8.75**	Lg Dividers (6).....04-02039...**$6.25**
	Sm Dividers (16) .....04-02037..**$11.50**

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

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

Prices Subject to Change Without Notice

AN310 CASTLE, AN320 SHEAR NUTS

Fabricated from steel & cadmium plated per QQ-P-416, Type II, Class 2. AN310 castle nuts are used with drilled-shank bolts, clevis bolts, eye bolts and studs. The slots in the nut accommodate a cotter pin for safety purposes. The thinner AN320 castellated shear nut, with half tensile rating of the AN310 nut, used with clevis bolts & threaded taper pins which are subject to shearing stress only.

AN310, AN320 Dash No.	Thread Size	Cotter Pin Size	AN310 Cad Plated Nuts Price	AN310C Stainless Nuts	AN320 Cad Plated Each	AN320C Stain-less Nuts
-3	10-32	AN380-2-2	$0.51	$1.08	$0.47	$1.10
-4	1/4-28		$0.79	$1.50	$0.75	$0.97
-5	5/16-24		$0.94	$1.17	$0.87	$1.12
-6	3/8-24	AN380-3-3	$0.97	$1.70	$0.96	$1.17
-7	7/16-20		$1.62	$3.38	$1.35	$0.84
-8	1/2-20		$1.63	$4.45	$1.26	$2.70
-9	9/16-18	AN380-4-4	$3.65	---	$1.79	$6.45
-10	5/8-18		$4.95	---	$2.27	$4.70
-12	3/4-16	AN380-4-5	$4.43	---	$5.50	$6.25

AN315 FULL HEX, AN316 THIN CHECK NUTS

Fabricated from steel and cadmium plated per QQ-P-416, Type II, Class 2. The AN315 plain hex nut is of rugged construction and can carry the same high tension load as the AN310 castle nut. It requires an auxiliary locking device such as a check nut or lock washer. AN316 hex check nuts can carry half the tension load of the AN315 nut. They are used as a locking device for plain nuts, set screws, rod ends, etc. Order by AN number. Add R or L after dash number for right-hand or left-hand thread. ***Example:*** AN316-5L is a thin check nut with 5/16-24 left-hand thread.

AN315	Price Ea.		Thread Size	AN316	Price Ea.	
	R	L			R	L
-640	$0.38	$0.78	6-40	None	None	None
-3	$0.06	$0.45	10-32	None	None	None
-4	$0.09	$0.34	1/4-28	-4	$0.09	$0.36
-5	$0.11	$0.46	5/16-24	-5	$0.13	$0.49
-6	$0.17	$0.66	3/8-24	-6	$0.15	$0.53
-7	$0.62	$2.18	7/16-20	-7	$0.37	$0.63
-8	$0.46	---	1/2-20	-8	$0.44	$1.23
-9	$2.53	---	9/16-18	-9	$1.95	---

HEX NUT - LOW HEIGHT

Heat treated, cadmium plated steel with dry film lubricant applied. Self-locking. Standard temp. to 450°F.

Thread Size	NAS No.	Part No.	Price Ea.
6-32	679-A06	04-00143	$1.33
8-32	679-A08	04-00144	$0.69
10-32	679-A3	04-00146	$0.38
1/4-28	679-A4	04-00147	$1.37

Thread Size	NAS No.	Part No.	Price Ea.
5/16-24	679-A5	04-00148	$1.88
3/8-24	679-A6	04-00149	$3.40
7/16-20	679-A7	04-00154	

CAP NUTS ("ACORN NUTS")

Use these solid brass cap nuts to attach instrument panels to stud-type shock mounts. Give the panel an attractive, finished appearance and do not introduce magnetic interference.

Part No.	Thread Size	Price Ea
AC632	6-32	$0.26
AC832	8-32	$0.26

Part No.	Thread Size	Price Ea
AC1032	10-32	$0.45
AC1428	1/4-28	$1.37

Surplus SS 8-32 Acorn Nut Cap..... P/N 04-01479.....**$0.34**

AN345 PLAIN HEX MACHINE SCREW NUT

Fine Thread Thread	Cad-Plated Cat.#	Price	Stainless Cat.#	Price
10-32	AN345-10	$0.04	AN345C10	$0.29
1/4-28	AN345-428	$0.07	AN345C428	$0.59
5/16	AN345-524	$0.16		
3/8-24	AN345-624	$0.58		

ZINC TEE NUTS

Here's an easy way to put steel threads in wood, plastic, or particleboard. Just drill a hole to fit the barrel, insert tee nut, and hammer in the locking prongs until the base of the tee nut is flush with the surface. Right-hand thread.

8-32	1/4"	04-02056	$0.23
10-32	5/16"	04-02057	$0.28
1/4-20	7/16"	04-02058	$0.28

AN340 PLAIN HEX MACHINE SCREW NUT

Coarse Thread - Use brass type for instruments.

Thread	Dash#	AN340 Cad-Plated Price	AN340C Stainless Price	AN340B Brass Price
4-40	-4	$0.11	$0.23	$0.51
6-32	-6	$0.05	$0.22	$0.29
8-32	-8	$0.05	$0.28	$0.19
10-24	-10	$0.07	$1.65	$0.27

AN350 WING NUTS

AN350 WING NUTS Fabricated from carbon steel and cadmium plated per specification QQ-P416A, Type II, Class 3. Tensile strength 50,000 PSI. A .070" hole is drilled in one wing for safety wire.

Dash No.	Thread Size	Price Each	Dash No.	Thread Size	Price Each
-632	3-32	---	-4	1/4-28	$1.49
-832	8-32	---	-5	5/16-24	---
-1032	10-32	$1.82			

MS27151 PAL NUTS

MS27151 engine nuts replace AC356 Pal nuts. They are stamped from 1050 spring steel and cadmium plated per QQ-P-416A, Type II, Class 2.

Dash No.	Thread Size	Price Each	Dash No.	Thread Size	Price Each
-7	10-32	$0.49	-19	3/8-24	$0.13
-13	1/4-28	$0.18	-21	7/16-24	$0.35
-16	5/16-24	$0.11	-24	1/2-20	$0.25

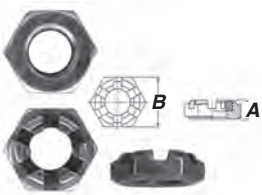
MS17825 SELF-LOCKING CASTLE NUTS

Manufactured to standard castle or shear nut specifications with a nylon insert added for positive safety. Use it throughout the control system. Should the cotter pin used with castle nuts be overlooked, the nut cannot work loose. The nylon insert will act as a stop nut.

Dash No.	Thread Size	Price Each
-3	10-32	$1.24
-4	1/4-28	$1.56
-5	5/16-24	$1.75

Dash No.	Thread Size	Price Each
-6	3/8-24	$1.87
-7	7/16-20	$2.65

MS17826 SELF LOCKING NUTS



MS17826 Nylon Hex Nut. Self-Locking Nut, Castellated, Hexagon, 250 Deg.F, Thin, Non-Metallic Insert Material- Alloy Steel, Finish - CAD Per QQ-P-416 Type II.

Model	Part No.	Steel Dash#	Thread Size	A Dim	B Dim	Price
MS17826-3	04-01367	3	10-32	.173-.203	.367-.376	$1.66
MS17826-4	04-01368	4	1/4-28		.430-.439	$1.62
MS17826-5	04-01369	5	5/16-24		.492-.502	$1.84
MS17826-6	04-01370	6	3/8-24	.204-.234	.553-.564	$2.25
MS17826-7	04-01371	7	7/16-20		.679-.690	$2.99
MS17826-8	04-01372	8	1/2-20	.235-.265	.741-.752	$3.20

EXHAUST MANIFOLD NUTS

Part No.	Thread Size	Type	Engine Application	Price Each
22022	5/16-24	Brass	Cont. A-65, (C-75 thru O-90, O-200, O-300)	$1.14
STD1410	5/16-18	Steel	Lycoming	$2.15
STD1411	1/4-20	Steel	Lycoming	$2.55

MS21042 HEX NUTS (LUBED)

These are the same as MS21042- but have a dry film lube (dark grey).

Dash No.	Thread Size	Price Each
-L04	4-40	$0.59
-L06	6-32	$0.29
-L08	8-32	$0.46

Dash No.	Thread Size	Price Each
-L3	10-32	$0.32
-L4	1/4-28	$0.35

Dash No.	Thread Size	Price Each
-L5	5/16-24	$0.64
-L6	3/8-24	$0.91

MS21043 HEX NUTS (STAINLESS STEEL)

These are the same as MS21042 but are made from A-286 stainless steel and are silver plated.

Dash No.	Thread Size	Price Each
-04	4-40	$0.87
-06	6-32	$1.15
-08	8-32	$1.22

Dash No.	Thread Size	Price Each
-3	10-32	$0.56
-4	1/4-28	$0.88

Dash No.	Thread Size	Price Each
-5	5/16-24	$1.73
-6	3/8-24	$2.85

STOP NUTS – ANCHOR NUTS

AN363
MS21045
NAS1021A

MS21042

AN363 & MS21042 ALL METAL STOP NUTS

The AN363 and MS21042 all-metal stop nuts are designed for use in high temperature installations (up to 450°F). The MS21042 nuts are shorter than the AN363 nut but develop the same tensile strength. Fabricated from carbon steel and cadmium plated per specification QQ-P-416C.

AN363 CAD Plated Dash No.	Price Each	AN363C Stainless Dash No.	Price Each	Thread Size	MS21042 Dash No.	Price Each
-632	**$0.28**	-632	**$1.47**	6-32	-06	**$0.35**
-832	**$0.31**	-832	**$1.20**	8-32	-08	**$0.39**
-1032	**$0.35**	-1032	**$1.12**	10-32	-3	**$0.29**
-428	**$0.41**	-428	**$1.37**	1/4-28	-4	**$0.37**
-524	**$0.41**	-524	**$2.40**	5/16-24	-5	**$0.92**
-624	**$0.52**	-624	**$2.55**	3/8-24	-6	**$0.88**
-720	**$1.39**	---	**---**	7/16-20	-7	**---**
-820	**$1.23**	---	**---**	1/2-20	-8	**---**
-918	**$3.40**	---	**---**	9/16-18	-9	**---**

AN364, AN365 ELASTIC STOP NUTS

AN364
MS21083
NAS1022N

AN365
MS21044
NAS1021N

These precision-made nuts are reliable and economical fastening devices. The nylon insert gives a friction grip on the threads of the bolt and holds securely. The AN364 (thin) stop nut is for use in structural applications where the bolt is loaded primarily in shear or in any application where the tensile strength of the regular height AN365 is not required. Cad stop nuts are furnished to military specifications. Insert color designates manufacturer only.

Dash No.	Thread Size	Price Ea. AN364	Price Ea. AN365	Dash No.	Thread Size	Price Ea. AN364	Price Ea. AN365
-440A	4-40	**$0.26**	-----	-524A	5/16-24	**$0.33**	**$0.15**
-440	4-40	-----	**$0.31**	-624A	3/8-24	**$0.67**	**$0.26**
-632A	6–32	**$0.32**	**$0.19**	-720A	7/16-20	**$1.22**	**$0.86**
-832A	8-32	**$0.11**	**$0.12**	-820A	1/2-20	**$1.09**	**$0.98**
-1024A	10-24	---	**$0.29**	-918A	9/16-18	**$1.42**	**$1.55**
-1032A	10-32	**$0.13**	**$0.09**	-1018A	5/8-18	**$1.50**	**$1.42**
-428A	1/4-28	**$0.13**	**$0.10**	-1216A	3/4-16	**$2.10**	**$2.50**

NSWC ELASTIC STOP NUT KIT

Contains: • AN364-428A (20 qty)• AN364-918A (4 qty) • AN364-624A(22 qty) • AN364-720A (4 qty) • AN364-820A (32 qty)

P/N 04-01729 ..... **$63.50**

MS21044 / MS21083 STAINLESS STOP NUTS

Part Number	Bolt Size	Price Ea.	Part Number	Bolt Size	Price Ea.
MS21044C04	#4	**$0.54**	MS21083C4	1/4	**$0.39**
MS21044C9	9/16	**$4.70**	MS21083C7	7/16	**$2.80**
MS21044C10	5/8	**$4.85**	MS21083C8	1/2	**$1.54**
MS21083C9	9/16	**$1.55**	MS21083C10	5/8	**$3.95**

COMMERCIAL GRADE STAINLESS STOP NUTS

Dash No.	Thread Size	Price Ea. Com364	Price Ea. Com365	Dash No.	Thread Size	Price Ea. Com364	Price Ea. Com365
-440	4-40	**$0.09**	**$0.06**	-624	3/8-24	---	**$0.23**
-632	6–32	**$0.07**	**$0.06**	-720	7/16-20	---	**$0.40**
-832	8-32	**$0.09**	**$0.06**	-820	1/2-20	---	**$0.74**
-1024	10-24	---	---	-918	9/16-18	---	---
-1032	10-32	**$0.16**	**$0.06**	-1018	5/8-18	---	**$1.26**
-428	1/4-28	**$0.15**	**$0.15**	-1216	3/4-16	---	---
-524	5/16-24	---	**$0.18**				

F5000
MS21059

ALL-METAL FLOATING ANCHOR NUTS

F2000
MS21061

Two-Lug Nut	Price Ea.	Thread Size	One-Lug Nut	Price Ea.
---	**---**	4-40	MS21061-04	**$2.15**
MS21059L06	**$0.94**	6-32	MS21061L06	**$1.38**
MS21059L08	**$0.78**	8-32	MS21061L08	**$0.79**
MS21059L3	**$0.72**	10-32	MS21061L3	**$0.83**
MS21059L4	**$1.08**	1/4-28	MS21061-04	**$1.81**

ANCHOR NUTS

Anchor nuts are designed for blind mounted applications where it is impractical to use hex nuts or where it is desirable to have an attached nut for ease of maintenance. Use 3/32" dia. rivets with nut sizes 632, 832, 1032 and 428. Use 1/8" dia. rivets with 524 and 624.

TWO LUG ANCHOR NUTS

AN366F
NA1, MS21078, NAS1023N

K1000
MS21047,NAS680S, NAS1023A

MK1000
MS21069, NAS697N

ELASTIC-INSERT ANCHOR NUT

Part No.	Thread Size	Price Each	Part No.	Thread Size	Price Each
MS21078-06	6-32	**$13.50**	AN366F-428A	1/4-28	**$1.64**
AN366F-832	8-32	-	AN366F-524	5/16-24	**$1.74**
AN366F-1032A	10-32	**$3.40**			

ALL METAL ANCHOR NUT

Dash No.	Thread Size	K1000 (Full Size) Price Ea.	MK1000 (Miniature) Price Ea.	Dash No.	Thread Size	K1000 (Full Size) Price Ea.	MK1000 (Miniature) Price Ea.
06	6-32	**$0.51**	**$0.60**	-4	1/4-28	**$0.59**	**$0.62**
08	8-32	**$0.52**	**$0.54**	-5	5/16-24	**$1.22**	**---**
3	10-32	**$0.58**	**$0.53**	-6	3/8-24	**$2.50**	**---**

ONE LUG ANCHOR NUTS

NA17
MS21080, NAS1025N

K2000
MS21051, NAS682A, NAS1025A

MK2000
MS21071, NAS696A

Elastic-Insert Anchor Nut Part No.	Elastic-Insert Anchor Nut Price Each	Thread Size	All-Metal Anchor Nut Dash No.	All-Metal Anchor Nut Price Each MS21051 (Full Size)	All-Metal Anchor Nut Price Each MS21071 (Miniature)
		6-32	L06	**$0.82**	**$0.78**
		8-32	L08	**$0.67**	**$0.57**
MS21080-3	**$5.95**	10-32	L3	**$0.58**	**$0.65**
		1/4-28	L4	**$0.99**	**$1.19**

ANCHOR NUT, DIMPLED, STANDARD SIZE

Anchor Nut, Dimpled Standard Size

K1100-0 ..... 6-32 Thread ..... P/N 04-01724 ..... **$1.95**
K1100-08 ..... 8-32 Thread ..... P/N 04-01725 ..... **$0.78**

Anchor Nut, One Leg, Dimpled, Standard size

MS21053-L08 ..... 8-32 Thread ..... P/N 04-01726 ..... **$0.98**

NA5
MS21081
NAS1027N

CORNER NUTS

K3000
MS21055
NAS684A
NAS1027A

All-Metal Anchor Nut	Price Ea.	Size	Anchor Nut	Price Ea.
MS21081-3	**$5.25**	8-32	MS21055L08	**$1.10**
		10-32	MS21055L3	**$0.65**
		1/4-28	MS21055L4	**$1.65**

NA27 (AN256F)

RIGHT ANGLE FLOATING NUTS

Part No.	Thread Size	Price Ea.
22NA27-22-62	6-32	**$14.90**
22NA27-22-82	8-32	**---**

TWO LUG MINI ANCHOR NUTS

Part Number	Thread Size	Price Each
MS21075L06	6-32	**$0.98**
MS21075L08	8-32	**$0.81**
MS21075L3	10-32	**$0.87**
MF500-3 (Surplus Material)	10-32	**$2.30**

TINNERMAN FASTENERS

TINNERMAN NUTS FOR SHEET METAL SCREWS

"B"-type Sheet Metal Screw

These speed nuts are self-locking steel fasteners. Locking action is derived from the force exerted by the two arched prongs against the root of the screw thread and by the spring tension of the prongs and base. The combined forces of the thread lock and spring tension provide a vibration proof fastening. Speed nuts retain their spring tension and may be used repeatedly without losing their self-locking effectiveness. Suitable for numerous non-structural applications.

Finish: Phosphate-coated with three coats of olive drab paint.

Important: Speed nuts for aircraft are designed to fit standard AN530-AN531 type B sheet metal screws only. Do not use pointed type A sheet metal screws with aircraft Speed nuts. There is a difference in root diameter and thread pitch. Screw lengths: B type sheet metal screws have a blunt taper at the end. To be certain the fastener prongs grip on the full root diameter, the screw should protrude two to three threads beyond the prongs. See the illustration.

FLAT TYPE (NAS 446)

Used to replace threaded nuts, lock washers, and spanner washers; weigh less than other types of self-locking aircraft fasteners. Can be applied faster, easier, and are vibration resistant. Provide maximum holding power at minimum cost per fastener. Turned-up ends prevent scoring of surfaces. Use with type B tapping screws.

"U" TYPE (NAS 395)

Part No.	Screw Size	Price ea.
A1776-4Z-1D	#4	**$0.21**
A1777-6Z-1D	#6	**$0.29**
A1778-8Z-1D	#8	**$0.19**
A1779-10Z-1D	#10	**$0.22**

ANCHOR NUTS (NAS 444)

Riveted or welded in position. Attach access plates, doors or any part that must be fastened securely, yet easily removed with fasteners retained in a blind location. Install with AN426AD-3 rivets.

Part No.	Screw Size	Price/Ea.
A6195-6Z-1D	#6	**$0.39**
A6195-8Z-1D	#8	**$0.37**

LHA 4972 FLOATING CLIPNUT

CADMIUM-PLATED STEEL

Part No.	Thread	Price Each
4972-5-62	6-32	**$1.31**
4972-6-82	8-32	**$0.89**
LHA4972-1032	10-32	**$0.85**

CLIP NUTS 10-32 THREAD SIZE

High strength Forged hex nuts suitable for structural and non-structural applications in metal, plastic and composite materials. Sold each. Specifications: Surplus, Thread: 10-32, Edge Distance: .375", Material Thickness: .020"-.090"

P/N 04-02052 ..... **$0.58**

INSTRUMENT MOUNTING NUTS

Cage type. Permit mounting of aircraft instruments from the front of the panel. No charge in panel or instrument design required. Non-magnetic (speed nut is brass; cage is phosphor bronze). Conform to MIL-N-3336. Cage is easily compressed with finger-pressure to allow insertion of legs into clearance holes. When fully inserted and pressure is released, legs spring apart; retain SPEED NUT in screw-receiving position. Turned-down corners hold firm against force of inserting screw and screw-tightening torque. All instrument mounting nuts listed below take a 6-32 machine screw.

Tinnerman Part No.	Our Part No.	NAS Part No.	Instrument Thickness	Price Ea.
A8938-632-493	MS33737-9C	487-13	.062	**$1.19**
A8939-632-493	MS33737-10C	487-14	.091	**$1.29**
A6939-632-493	MS33737-11C	487-15	.125	**$1.29**
A8940-632-493	MS33737-12C	487-16	.187	**$1.26**
A8941-632-493	MS33737-13C	487-17	.250	**$1.24**
A8942-632-493	MS33737-14C	487-18	.313	**$1.28**
A8943-632-493	MS33737-15C	487-20	.375	**$0.96**
A8944-632-493	MS33737-16C	487-21	over .375	**$1.53**

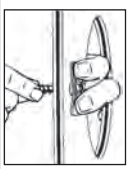
MONADNOCK CLIP NUTS

High strength Forged hex nuts suitable for structural and non-structural applications in metal, palstic and composite materials.

Size	Distance	Edge Tkns	Part Number	Price Ea.
6-32	.180-.120	.030-.051	04-00151	$1.76
8-32	.310-.500	.020-.090	04-00152	$0.92
10-32	.350-.500	.020-.090	04-00153	$0.79

HOW TO APPLY SPEED NUT FASTENERS

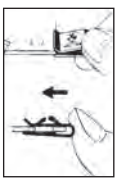
FLAT TYPE



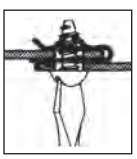
Fastener is positioned over screw clearance hole with screw-engaging prongs pointing up or outward. Screw is started into nut by hand from the underside.

Screw can be power-driven into locked position (when base arch of fastener is flat) or a hand screw driver can be used. No wrench is required, finger pressure will prevent it from turning

"U" TYPE



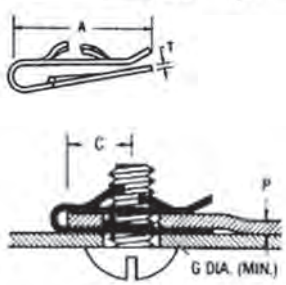
Push into position with thumb until extrusion on lower leg snaps into screw hole. The fastener "floats" in screw-receiving position to correct for normal misalignment in panel mounting holes.



Place second panel in position & drive screw. Access to opposite side is unnecessary. Flush mounting can be made by embossing either panel.

"U" TYPE (NAS 395)

Snaps over edge of panels or into center hole locations. Holds itself in place for blind assembly. "Floats" free for easy hole alignment.



Part Number	TypeB Scrw Size	Design Variation	P-panel Thickness Range	A Length	B Length	C-max. ctr. hole to edge	G-panel hole dia.	T-mat'l. Thkness	Price
A1784-6Z-1D	#6	E	.025-.051	0.61	0.44	0.281	0.250	0.025	**$0.33**
A1785-6Z-1D	#6	E	.025-.064	0.84	0.44	0.500	0.281	0.025	**$0.36**
A1789-8Z-1D	#8	E	.025-.051	0.61	0.44	0.281	0.250	0.028	**$0.27**
A1787-8Z-1D	#8	E	.025-.064	0.84	0.44	0.500	0.281	0.028	**$0.28**
A1788-8Z-1D	#8	A E	.025-.064	0.84	0.44	0.500	0.170	0.028	**$0.24**
A1348-8Z-1D	#8	A E	.025-.064	0.73	0.50	0.343	0.170	0.028	**$0.42**
A1786-8Z-1D	#8	C E H	.040-.051	0.53	0.50	0.218	0.250	0.028	**$0.21**
A178710Z-1D	#10	E	.025-.064	0.84	0.44	0.500	0.281	0.031	**$0.35**
A1758-10Z-1D	#10	E	.081-.094	0.62	0.44	0.281	0.281	0.031	**$0.30**

MS27039 & MS27039C MACHINE SCREWS

Pan head low alloy steel machine screws have 125,000 to 145,000 psi tensile strength with cadmium plate finish to QQ-P-416, Type 2, Class 3. MS27039C screws are stainless steel Manufactured to MIL-S-6050 or MIL-8695. Equivalent to NAS 220.

Part Number	Diam.-Thrd. Size	Length (In.)	MS27039 Price	MS27039C Price
MS27039-0804	8-32	9/32	$0.11	$0.38
MS27039-0805	8-32	11/32	$0.10	$0.48
MS27039-0806	8-32	13/32	$0.13	----
MS27039-0807	8-32	15/32	$0.13	----
MS27039-0808	8-32	17/32	$0.14	----
MS27039-0809	8-32	19/32	$0.15	----
MS27039-0810	8-32	21/32	$0.13	----
MS27039-0811	8-32	23/32	$0.15	$0.84
MS27039-0812	8-32	25/32	$0.18	----
MS27039-0813	8-32	27/32	$0.10	$0.65
MS27039-0814	8-32	29/32	$0.19	$0.73
MS27039-0815	8-32	31/32	$0.16	$0.59
MS27039-0816	8-32	1-1/32	$0.21	----
MS27039-0817	8-32	1-3/32	$0.19	$0.72
MS27039-0818	8-32	1-5/32	$0.26	----
MS27039-0819	8-32	1-7/32	$0.20	----
MS27039-0820	8-32	1-9/32	$0.26	----
MS27039-0821	8-32	1-11/32	$0.26	----
MS27039-0822	8-32	1-13/32	$0.22	----
MS27039-0823	8-32	1-15/32	$0.23	----
MS27039-0824	8-32	1-17/32	$0.23	----
MS27039-1-04	10-32	9/32	$0.15	$0.84
MS27039-1-05	10-32	11/32	$0.11	$0.34
MS27039-1-06	10-32	13/32	$0.10	$0.59
MS27039-1-07	10-32	15/32	$0.12	----
MS27039-1-08	10-32	17/32	$0.09	----
MS27039-1-09	10-32	19/32	$0.15	$0.57
MS27039-1-10	10-32	21/32	$0.13	$0.90
MS27039-1-11	10-32	23/32	$0.11	$0.79
MS27039-1-12	10-32	25/32	$0.13	----
MS27039-1-13	10-32	27/32	$0.15	$0.81
MS27039-1-14	10-32	29/32	$0.16	----
MS27039-1-15	10-32	31/32	$0.19	$0.98
MS27039-1-16	10-32	1-1/32	$0.17	----
MS27039-1-17	10-32	1-3/32	$0.19	$1.10
MS27039-1-18	10-32	1-5/32	$0.19	$1.31
MS27039-1-19	10-32	1-7/32	$0.21	$1.34
MS27039-1-20	10-32	19/32	$0.18	$1.36
MS27039-1-21	10-32	1-11/32	$0.21	$1.43
MS27039-1-22	10-32	1-13/32	$0.21	$1.50
MS27039-1-23	10-32	1-15/32	$0.39	$2.50
MS27039-1-24	10-32	1-17/32	$0.52	$1.90
MS27039-1-25	10-32	1-19/32	$0.53	----
MS27039-1-26	10-32	1-21/32	$0.42	----
MS27039-1-27	10-32	1-23/32	$0.43	----
MS27039-1-28	10-32	1-25/32	$0.43	----
MS27039-1-29	10-32	1-27/32	$0.78	----
MS27039-1-30	10-32	1-29/32	$0.44	----
MS27039-1-31	10-32	1-31/32	$0.48	----
MS27039-1-32	10-32	2-1/32	$0.53	----
MS27039-4-06	1/4-28	13/32	$0.17	$0.67
MS27039-4-07	1/4-28	15/32	$0.24	$1.20
MS27039-4-08	1/4-28	17/32	$0.21	$0.86
MS27039-4-09	1/4-28	19/32	$0.19	$1.39
MS27039-4-10	1/4-28	21/32	$0.19	$1.40
MS27039-4-11	1/4-28	23/32	$0.21	$0.88
MS27039-4-12	1/4-28	25/32	$0.27	$1.65
MS27039-4-13	1/4-28	27/32	$0.23	$1.10
MS27039-4-14	1/4-28	29/32	$0.26	$2.15
MS27039-4-15	1/4-28	31/32	$0.25	$1.50
MS27039-4-16	1/4-28	1-1/32	$0.27	$1.24
MS27039-4-17	1/4-28	1-3/32	$0.29	----
MS27039-4-18	1/4-28	1-5/32	$2.20	----
MS27039-4-19	1/4-28	1-7/32	$0.34	----
MS27039-4-20	1/4-28	1-9/32	$0.29	----
MS27039-4-21	1/4-28	1-11/32	$0.30	----
MS27039-4-22	1/4-28	1-13/32	$0.36	----
MS27039-4-23	1/4-28	1-15/32	$0.31	----
MS27039-4-24	1/4-28	1-17/32	$0.39	----

MS35190 MACHINE SCREWS *(CROSS RECESSED)*

82° flat head machine screws have 55,000psi minimum tensile strength and feature cadmium plate finish per QQ P-416, Type 2, Class 3. Manufactured from carbon steel to Federal Standard #66.

Part Number	Old AN505R	Diam.-Thrd. Size	Length (In.)	Price
MS35190-221	-4R4	4-40	1/4	$0.11
MS35190-222	-4R5	4-40	5/16	$0.19
MS35190-225	-4R8	4-40	1/2	$0.09
MS35190-226	-4R10	4-40	5/8	$0.08
MS35190-234	-6R4	6-32	1/4	$0.26
MS35190-236	-6R6	6-32	3/8	$0.07
MS35190-238	-6R8	6-32	1/2	$0.06
MS35190-239	-6R10	6-32	5/8	$0.08
MS35190-240	-6R12	6-32	3/4	$0.07
MS35190-250	-8R5	8-32	5/16	$0.09
MS35190-253	-8R8	8-32	1/2	$0.08
MS35190-254	-8R10	8-32	5/8	$0.09

MS35207 MACHINE SCREWS *(CROSS RECESSED)*

These pan head machine screws have 55,000 psi minimum tensile strength and are cadmium plated to Specification QQ-P-416, Type 2, Class 3. Manufactured from carbon steel per Federal Standard #66.

Part Number	Old AN520R	Diam.-Thrd. Size	Length (In.)	Price ea.
MS35207-260	-10R5	10-32	5/16	$0.08
MS35207-261	-10R6	10-32	3/8	$0.06
MS35207-262	-10R7	10-32	7/16	$0.06
MS35207-263	-10R8	10-32	1/2	$0.07
MS35207-264	-10R10	10-32	5/8	$0.06
MS35207-265	-10R12	10-32	3/4	$0.11
MS35207-266	-10R14	10-32	7/8	$0.09
MS35207-267	-10R16	10-32	1	$0.12
MS35207-268	-10R20	10-32	1-1/4	$0.09
MS35207-269	-10R24	10-32	1-1/2	$0.11
MS35207-270	-10R28	10-32	1-3/4	$0.11
MS35207-271	-10R32	10-32	2	$0.16

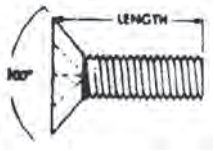
MS35206 MACHINE SCREWS *(CROSS RECESSED)*

These pan head machine screws feature 60,000 psi minimum tensile strength and are cadmium plated to specification QQ-P-416, Type 2, Class 3. Manufactured from carbon steel to Federal Standard #66, these screws can be used as replacements for AN526 machine screws. Phillips head.

Part Number	Old AN515R	Diam.-Thrd. Size	Length (In.)	Price ea.
MS35206-203	-2R2	2-56	1/4	$0.04
MS35206-204	-2R5	2-56	5/16	$0.06
MS35206-205	-2R6	2-56	3/8	$0.04
MS35206-206	-2R7	2-56	7/16	$0.05
MS35206-207	-2R8	2-56	1/2	$0.04
MS35206-208	-2R10	2-56	5/8	$0.05
MS35206-209	-2R12	2-56	3/4	$0.06
MS35206-212	-4R3	4-40	3/16	$0.03
MS35206-213	-4R4	4-40	1/4	--
MS35206-214	-4R5	4-40	5/16	$0.03
MS35206-215	-4R6	4-40	3/8	$0.04
MS35206-216	-4R7	4-40	7/16	$0.04
MS35206-217	-4R8	4-40	1/2	$0.04
MS35206-218	-4R10	4-40	5/8	$0.03
MS35206-219	-4R12	4-40	3/4	$0.04
MS35206-220	-4R14	4-40	7/8	$0.04
MS35206-221	-4R16	4-40	1	$0.06
MS35206-222	-4R20	4-40	1-1/4	$0.17
MS35206-223	-4R24	4-40	1-1/2	$0.09
MS35206-226	-6R4	6-32	1/4	$0.05
MS35206-227	-6R5	6-32	5/16	$0.05
MS35206-228	-6R6	6-32	3/8	$0.04
MS35206-229	-6R7	6-32	7/16	$0.05
MS35206-230	-6R8	6-32	1/2	$0.05
MS35206-231	-6R10	6-32	5/8	$0.06
MS35206-232	-6R12	6-32	3/4	$0.06
MS35206-233	-6R14	6-32	7/8	$0.06
MS35206-234	-6R16	6-32	1	$0.06
MS35206-235	-6R20	6-32	1-1/4	$0.07
MS35206-236	-6R24	6-32	1-1/2	$0.12
MS35206-238	-6R32	6-32	2	$0.19
MS35206-241	-8R4	8-32	1/4	$0.05
MS35206-242	-8R5	8-32	5/16	$0.04
MS35206-243	-8R6	8-32	3/8	$0.05
MS35206-244	-8R7	8-32	7/16	$0.06
MS35206-245	-8R8	8-32	1/2	$0.06
MS35206-246	-8R10	8-32	5/8	$0.05
MS35206-247	-8R12	8-32	3/4	$0.07
MS35206-248	-8R14	8-32	7/8	$0.08
MS35206-249	-8R16	8-32	1	$0.10
MS35206-250	-8R20	8-32	1-1/4	$0.13
MS35206-251	-8R24	8-32	1-1/2	$0.14
MS35206-252	-8R28	8-32	1-3/4	$0.13
MS35206-253	-8R32	8-32	2	$0.29
MS35206-261	-10R6	10-24	3/8	$0.06
MS35206-262	-10R7	10-24	7/16	$0.08
MS35206-263	-10R8	10-24	1/2	$0.06
MS35206-264	-10R10	10-24	5/8	$0.07
MS35206-265	-10R12	10-24	3/4	$0.07
MS35206-267	-10R16	10-24	1	$0.08

MACHINE SCREWS

MS24693 & MS24693C MACHINE SCREWS



(FORMERLY AN 507)

These non-structural screws have a 100° countersunk flat head. Cadmium plated, Type 2, Class 3. Tensile strength 55,000 PSI. For both CAD plated and Stainless MS24693C are stainless steel.

Thread	Length	MS24693 Cad Plated P/N	Price Each	MS24693C Stainless P/N	Price Each
4-40	3/8	MS24693S4	$0.04	MS24693C4	$0.04
	7/16	MS24693S5	$0.04	---	---
	1/2	MS24693S6	$0.05	MS24693C6	$0.04
	5/8	MS24693S7	---	MS24693C7	$0.06
	1	MS24693S10	$0.07	MS24693C10	$0.05
2-56	5/32	MS24693-S17	$0.56	---	---
6-32	1/4	MS24693S24	$0.04	MS24693C24	$0.04
	3/8	MS24693S26	$0.05	MS24693C26	$0.04
	7/16	MS24693S27	---	MS24693C27	$0.05
	1/2	MS24693S28	$0.04	MS24693C28	$0.06
	5/8	MS24693S29	$0.05	MS24693C29	---
	3/4	MS24693S30	$0.06	MS24693C30	$0.08
	1	MS24693S32	$0.06	MS24693C32	$0.06
8-32	1/4	MS24693S46	$0.04	MS24693C46	$0.09
	3/8	MS24693S48	$0.05	MS24693C48	$0.09
	7/16	MS24693S49	---	MS24693C49	$0.09
	1/2	MS24693S50	$0.05	MS24693C50	$0.09
	5/8	MS24693S51	$0.06	MS24693C51	$0.09
	3/4	MS24693S52	$0.05	MS24693C52	$0.10
	1	MS24693S54	$0.09	MS24693C54	$0.13
	1-1/4	MS24693S56	---	MS24693C56	$0.17
10-32	1/4	MS24693S268	$0.08	MS24693C268	$0.15
	3/8	MS24693S270	$0.05	MS24693C270	$0.09
	7/16	MS24693S271	---	MS24693C271	$0.10
	1/2	MS24693S272	$0.05	MS24693C272	$0.12
	5/8	MS24693S273	$0.09	MS24693C273	$0.15
	3/4	MS24693S274	$0.11	MS24693C274	$0.14
	1	MS24693S276	$0.14	MS24693C276	$0.18
	1-1/4	MS24693S278	---	MS24693C278	$0.15
1/4-28	7/16	-----	---	MS24693C293	$0.26
	1/2	MS24693S294	---	MS24693C294	$0.27
	5/8	MS24693S295	---	MS24693C295	$0.24
	1	-----	---	MS24693C298	$0.39

AN525 WASHER HEAD SCREWS

High-strength machine screws fabricated from alloy steel per specification AMS6300. Tensile strength 125,000 PSI. Cadmium plated per QQ-P-416, Type II, Class 3. Cross-recessed head.

Dash No.	Length In.	Grip In.	Thread Size	Price Each
-832R6	3/8	1/32	8-32	$0.10
-832R7	7/16	1/16		$0.12
-832R8	1/2	1/8		$0.13
-832R10	5/8	7/32		$0.16
-832R12	3/4	11/32		$0.13
-832R14	7/8	15/32		$0.20
-832R16	1	19/32		$0.14
-832R20	1-1/4	27/32		$0.24
-10R6	3/8	1/32	10-32	$0.12
-10R7	7/16	1/16		$0.12
-10R8	1/2	1/8		$0.12
-10R9	9/16	5/32		$0.15
-10R10	5/8	7/32		$0.16
-10R12	3/4	11/32		$0.15
-10R14	7/8	15/32		$0.23
-10R16	1	19/32		$0.19
-10R18	1-1/8	23/32		$0.34
-10R20	1-1/4	27/32		$0.23
-10R24	1-1/2	1-3/32		$0.29
-416R14	7/8	15/32	1/4-28	$0.76
-416R16	1	19/32		$0.63
-416R18	1-1/8	23/32		$1.52
-416R20	1-1/4	27/32		----

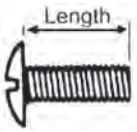
AN526 MACHINE SCREWS

Truss-head non-structural machine screws made of carbon steel, cadmium plated. Minimum tensile strength 55,000 PSI. Available in slot head or Phillips recessed head.

Thread	Length	Phillips Part No.	Price Ea.	Slotted Part No.	Price Ea.
4-40	1/2	AN526-440R8	$0.06	-----	---
	1	AN526-440R16	-----	-----	---
6-32	1/4	AN526-632R4	$0.04	-----	---
	5/16	AN526-632R5	$0.04	-----	---
	3/8	AN526-632R6	$0.04	AN526-632-6	$0.14
	7/16	AN526-632R7	$0.06	-----	---
	1/2	AN526-632R8	$0.06	AN526-632-8	$0.11
	9/16	AN526-632R9	$0.06	-----	---
	5/8	AN526-632R10	$0.06	AN526-632-10	$0.54
	3/4	AN526-632R12	$0.05	AN526-632-12	$0.10
	7/8	AN526-632R14	$0.05	-----	---
	1	AN526-632R16	$0.06	-----	---
8-32	1/4	AN526-832R4	$0.07	-----	---
	5/16	AN526-832R5	$0.05	-----	---
	3/8	AN526-832R6	$0.05	-----	---
	7/16	AN526-832R7	$0.06	-----	---
	1/2	AN526-832R8	$0.06	AN526-832-8	$0.46
	9/16	AN526-832R9	$0.09	-----	---
	5/8	AN526-832R10	$0.06	---	---
	3/4	AN526-832R12	$0.08	AN526-832-12	$0.24
	7/8	AN526-832R14	$0.09	-----	---
	1	AN526-832R16	$0.09	AN526-832-16	$0.19
10/32	1/4	AN526-1032R4	$0.11	-----	---
	5/16	AN526-1032R5	$0.07	-----	---
	3/8	AN526-1032R6	$0.08	-----	---
	7/16	AN526-1032R7	$0.07	-----	---
	1/2	AN526-1032R8	$0.09	-----	---
	9/16	AN526-1032R9	$0.09	-----	---
	5/8	AN526-1032R10	$0.09	AN526-1032-10	$0.16
	3/4	AN526-1032R12	$0.11	AN526-1032-12	$0.13
	7/8	AN526-1032R14	$0.12	AN526-1032-14	$0.29
	1	AN526-1032R16	$0.13	-----	-----
	1-1/8	AN526-1032R18	$0.13	-----	---
	1-1/4	AN526-1032R20	$0.10	-----	---
	1-1/2	AN526-1032R24	$0.19	-----	---
	1-3/4	AN526-1032R28	$0.28	-----	---
	2	AN526-1032R32	$0.52	-----	---

AN526C STAINLESS STEEL MACHINE SCREWS

Stainless steel Phillips and slotted, Use slotted screws for antiques.



Thread	Length	Phillips Part No.	Price Ea.	Slotted Part No.	Price Ea.
4-40	1/2	AN526C-440R8	$0.08	-----	---
6-32	1/4	AN526C-632R4	$0.07	AN526C-632-4	$0.26
	3/8	AN526C-632R6	$0.05	-----	---
	1/2	AN526C-632R8	$0.06	AN526C-632-8	$0.20
	5/8	AN526C-632R10	$0.08	AN526C-632-10	$0.21
	3/4	AN526C-632R12	$0.07		
	1	AN526C-632R16	$0.08	AN526C-632-16	$0.29
8-32	1/4	AN526C-832R4	$0.14	-----	---
	3/8	AN526C-832R6	$0.08	-----	---
	1/2	AN526C-832R8	$0.08	AN526C-832-8	$0.16
	5/8	AN526C-832R10	$0.09	AN526C-832-10	$0.30
	3/4	AN526C-832R12	$0.10	AN526C-832-12	$0.34
	1	AN526C-832R16	$0.14	AN526C-832-16	$0.20
10-32	1/4	AN526C-1032R4	$0.38	-----	---
	3/8	AN526C-1032R6	$0.11	AN526C-1032-6	$0.21
	1/2	AN526C-1032R8	$0.13	AN526C-1032-8	$0.24
	5/8	AN526C-1032R10	$0.15	AN526C-1032-10	$0.20
	3/4	AN526C-1032R12	$0.16	AN526C-1032-12	---
	1	AN526C-1032R16	$0.11	-----	---
	1-1/4	AN526C-1032R20	-----	-----	---
	1-1/2	AN526C-1032R24	$0.22	-----	---
1/4-20	1/2	AN526C-420R8	$1.19	-----	---
1/4-28	1/2	AN526C-428R8	$0.28	-----	---
	3/4	AN526C-428R12	$0.37	-----	---
	1-1/8	-----	---	AN526C-428-18	$0.69

Note: Some sizes of AN526C screws are furnished as commercial equipment as AN screws are no longer available.

HA

FILLISTER HEAD SCREWS – MACHINE SCREWS

MS24694 MACHINE SCREWS (FORMERLY AN509)

These structural screws have a 100° countersunk head. Cadmium plated per QQ-P-416, Type II, Class 3. Minimum tensile strength for steel is 125,000 PSI.

MS24694 Dash No.	AN509 Dash No.	Length In.	Grip In.	Thread Size	Price Each
-S1	-8R4	9/32	3/32	8-32	$0.09
-S2	-8R5	11/32		8-32	$0.13
-S3	-8R6	13/32		8-32	$0.12
-S4	-8R7	15/32		8-32	$0.12
-S5	-8R8	17/32		8-32	$0.11
-S7	-8R10	21/32	7/32	8-32	$0.09
-S8	-8R11	23/32	9/32	8-23	---
-S9	-8R12	25/32	11/32	8-32	$0.14
-S10	-8R13	27/32	13/32	8-32	---
-S11	-8R14	29/32	15/32	8-32	$0.14
-S12	-8R15	31/32	17/32	8-32	---
-S13	-8R16	1-1/32	19/32	8-32	$0.18
-S14	-8R17	1-1/32	21/32	8-32	---
-S15	-8R18	1-5/32	23/32	8-32	$0.21
-S16	-8R19	1-7/32	25/32	8-32	---
-S17	-8R20	1-9/32	27/32	8-32	$0.21
-S18	-8R21	1-11/32	29/32	8-32	$0.16
-S19	-8R22	1-13/32	31/32	8-32	$0.16
-S20	-8R23	1-15/32	1-1/32	8-32	---
-S21	-8R24	1-17/32	1-3/32	8-32	$0.20
-S28	-8R31	1-31/32	1-17/32	8-32	$1.95
-S29	-8R32	2-1/32	1-19/32	8-32	$0.82
-S31	-8R34	2-5/32	1-23/32	8-32	$1.36
-S46	-10R4	9/32	7/64	10-32	---
-S47	-10R5	11/32		10-32	---
-S48	-10R6	13/32		10-32	$0.10
-S49	-10R7	15/32		10-32	$0.12
-S50	-10R8	17/32		10-32	$0.12
-S51	-10R9	19/32		10-32	$0.13
-S52	-10R10	21/32	3/16	10-32	$0.12
-S53	-10R11	23/32	1/4	10-32	$0.16
-S54	-10R12	25/32	5/16	10-32	$0.15
-S55	-10R13	27/32	3/8	10-32	$0.13
-S56	-10R14	29/32	7/16	10-32	$0.16
-S57	-10R15	31/32	1/2	10-32	---
-S58	-10R16	1-1/32	9/16	10-32	$0.15
-S59	-10R17	1-3/32	5/8	10-32	$0.17
-S60	-10R18	1-5/32	11/16	10-32	$0.18
-S61	-10R19	1-7/32	3/4	10-32	---
-S62	-10R20	1-9/32	13/16	10-32	$0.21
-S63	-10R21	1-11/32	7/8	10-32	---
-S64	-10R22	1-13/32	15/16	10-32	$0.21

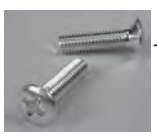
MS24694 Dash No.	AN509 Dash No.	Length In.	Grip In.	Thread Size	Price Each
-S65	-10R23	1-15/32	1	10-32	$0.10
-S66	-10R24	1-17/32	1-1/16	10-32	$0.23
-S67	-10R25	1-19/32	1-1/8	10-32	---
-S68	-10R26	1-21/32	1-3/16	10-32	---
-S69	-10R27	1-23/32	1-1/4	10-32	---
-S70	-10R28	1-25/32	1-5/16	10-32	$0.26
-S71	-10R29	1-27/32	1-3/8	10-32	---
-S72	-10R30	1-29/32	1-7/16	10-32	$0.44
-S74	-10R32	2-1/32	1-9/16	10-32	$0.34
-S75	-10R33	2-3/32	1-5/8	10-32	$1.12
-S76	-10R34	2-5/32	1-11/16	10-32	$0.74
-S77	-10R35	2-7/32	1-3/4	10-32	$0.94
-S79	-10R37	2-11/32	1-7/8	10-32	$0.72
-S82	-10R40	2-17/32	2-1/16	10-32	$0.63
-S84	-10R42	2-21/32	2-3/16	10-32	$0.30
-S88	-10R46	2-29/32	2-7/16	10-32	$2.55
-S90	-10R48	3-1/32	2-9/16	10-32	$0.54
-S93	-416R6	13/32	9/64	1/4-28	---
-S94	-416R7	15/32		1/4-28	---
-S95	-416R8	17/32		1/4-28	---
-S96	-416R9	19/32		1/4-28	---
-S97	-416R10	21/32		1/4-28	$0.19
-S98	-416R11	23/32	3-16	1/4-28	---
-S99	-416R12	25/32	1/4	1/4-28	$0.22
-S100	-416R13	27/32	5/16	1/4-28	$0.22
-S101	-416R14	29/32	3/8	1/4-28	$0.29
-S102	-416R15	31/32	7/16	1/4-28	$0.28
-S103	-416R16	1-1/32	1/2	1/4-28	$0.25
-S104	-416R17	1-3/32	9/16	1/4-28	$0.25
-S105	-416R18	1-5/32	5/8	1/4-28	$0.27
-S106	-416R19	1-7/32	11/16	1/4-28	$0.26
-S107	-416R20	1-9/32	3/4	1/4-28	---
-S108	-416R21	1-11/32	13/16	1/4-28	---
-S109	-416R22	1-13/32	7/8	1/4-28	$0.34
-S110	-416R23	1-15/32	15/16	1/4-28	$0.32
-S111	-416R24	1-17/32	1	1/4-28	$0.29
-S113	-416R26	1-21/32	1-1/8	1/4-28	$0.46
-S115	-416R28	1-25/32	1-1/4	1/4-28	$0.56
-S119	-416R32	2-1/32	1-1/2	1/4-28	$0.72
-S121	-416R34	2-5/32	1-5/8	1/4-28	$1.19
-S123	-416R36	2-9/32	1-3/4	1/4-28	$1.83
-S148	-516R16	1-1/32	15/32	5/16-24	---

MS24694C STAINLESS STEEL MACHINE SCREWS

Same style screws as MS24694, except stainless steel. Phillips head. (Formerly AN509C) Minimum tensile strength for stainless steel is 85,000 PSI.

MS Part No.	AN509C No.	Thread Size	Length Inches	Price ea.
MS24694C1	-8R4	8-32	9/32	$0.11
MS24694C2	-8R5	8-32	11/32	$0.12
MS24694C3	-8R6	8-32	13/32	$0.17
MS24694C4	-8R7	8-32	15/32	$0.14
MS24694C5	-8R8	8-32	17/32	$0.11
MS24694C6	-8R9	8-32	19/32	$0.12
MS24694C7	-8R10	8-32	21/32	$0.17
MS24694C8	-8R11	8-32	23/32	$0.19
MS24694C9	-8R12	8-32	25/32	$0.17
MS24694C10	-8R13	8-32	27/32	$0.19
MS24694C11	-8R14	8-32	29/32	$0.29
MS24694C13	-8R16	8-32	1-1/32	$0.32
MS24694C14	-8R17	8-32	1-3/32	$0.59
MS24694C15	-8R18	8-32	1-5/32	$1.70
MS24694C46	-10R4	10-32	9/32	$0.17
MS24694C47	-10R5	10-32	11/32	$0.14
MS24694C48	-10R6	10-32	13/32	$0.17

MS Part No.	AN509C No.	Thread Size	Length Inches	Price ea.
MS24694C49	-10R7	10-32	15/32	$0.16
MS24694C50	-10R8	10-32	17/32	$0.18
MS24694C51	-10R9	10-32	19/32	$0.17
MS24694C52	-10R10	10-32	21/32	$0.18
MS24694C53	-10R11	10-32	23/32	$0.22
MS24694C54	-10R12	10-32	25/32	$0.23
MS24694C55	-10R13	10-32	27/32	$0.23
MS24694C56	-10R14	10-32	29/32	$0.22
MS24694C57	-10R15	10-32	31/32	$0.41
MS24694C58	-10R16	10-32	1-1/32	$0.28
MS24694C59	-10R17	10-32	1-3/32	$0.36
MS24694C60	-10R18	10-32	1-5/32	$0.39
MS24694C61	-10R19	10-32	1-7/32	$0.39
MS24694C62	-10R20	10-32	1-9/32	$0.34
MS24694C92		1/4-28	3/8	$0.43



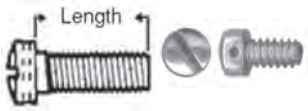
NAS387 SERIES MACHINE SCREWS

Type: NAS387. Material: Carbon Steel Type 1016 - 1024. Finish: Nickel Plate

Thread	Length	Part No.	Price
6-32	3/8	NAS387-632-6P	$0.16
	7/16	NAS387-632-7P	$0.10
	1/2	NAS387-632-8P	$0.10
	5/8	NAS387-632-10P	$0.16
	3/4	NAS387-632-12P	$0.16
8-32	1/2	NAS387-832-8P	$0.20
	5/8	NAS387-832-10P	$0.20
	3/4	NAS387-832-12P	$0.24
	7/8	NAS387-832-14P	$0.30

Thread	Length	Part No.	Price
10-32	1/2	NAS387-1032-8P	$0.30
	5/8	NAS387-1032-10P	$0.20
	3/4	NAS387-1032-12P	$0.26
	7/8	NAS387-1032-14P	$0.30
	1	NAS387-1032-16P	$0.30
	1-1/8	NAS387-1032-18P	$0.30
	1-1/4	NAS387-1032-20P	$0.29
	1/12	NAS387-1032-24P	$0.30

FILLISTER HEAD SCREWS - DRIVE SCREWS



AN500, AN501 DRILLED FILLISTER HEADSCREWS

AN500 (coarse thread) & AN501 (fine thread) slotted fillister head screws are fabricated from carbon steel. Tensile strength 60,000 PSI. Cadmium plated,Type II Class 3.
If there is an "A" after the dash, the part is cadmium plated, Type II, Class 3, with a drilled head. If there isn't an "A" after the dash, the part is Cadmium plated, Type I.

AN500 (Coarse Thread)

AN500 Dash No.*	MS35265 Dash No.	Length (In.)	Thread Size	Price Each
-A4-3	MS35265-12	3/16	4-40	**$0.20**
-A4-4	MS35265-13	1/4	4-40	**$0.39**
-A4-5	MS35265-14	5/16	4-40	**$0.27**
-A4-6	MS35265-15	1/4	4-40	**$0.49**
-A4-7	MS35265-16	5/16	4-40	**$0.23**
-A4-8	MS35265-17	1/4	4-40	**$0.26**
-A4-10	MS35265-18	5/16	4-40	**$0.24**
-A4-12	MS35265-19	1/4	4-40	**$0.24**
-A6-4	MS35265-26	1/4	6-32	**$0.43**
-A6-5	MS35265-27	5/16	6-32	**$0.53**
-A6-6	MS35265-28	3/8	6-32	**$0.17**
-A6-7	MS35265-29	7/16	6-32	**$0.24**
-A6-8	MS35265-30	1/2	6-32	**$0.20**
-A6-10	MS35265-31	5/8	6-32	**$0.24**
-A6-12	MS35265-32	3/4	6-32	**$0.22**
-A6-14	MS35265-33	7/8	6-32	**$0.28**
-A8-4	MS35265-41	1/4	8-32	**$0.31**
-A8-5	MS35265-42	5/16	8-32	**$0.44**
-A8-6	MS35265-43	3/8	8-32	**$0.19**
-A8-7	MS35265-44	7/16	8-32	**$0.24**
-A8-8	MS35265-45	1/2	8-32	**$0.19**
-A8-10	MS35265-46	5/8	8-32	**$0.18**
-A8-12	MS35265-47	3/4	8-32	**$0.18**
-A8-14	MS35265-48	7/8	8-32	**$0.23**
-A8-16	MS35265-49	1	8-32	**$0.60**
-A10-4	MS35265-59	1/4	10-24	**$0.53**
-A10-5	MS35265-60	5/16	10-24	**$0.26**
-A10-6	MS35265-61	3/8	10-24	**$0.31**
-A10-7	MS35265-62	7/16	10-24	**$0.27**
-A10-8	MS35265-63	1/2	10-24	**$0.29**
-A10-10	MS35265-64	5/8	10-24	**$0.27**
-A10-12	MS35265-65	3/4	10-24	**$0.25**
-A10-16	MS35265-66	1	10-24	**$1.28**
-A416-8	MS35265-79	1/2	1/4-20	**$0.96**
-A416-10	MS35265-80	5/8	1/4-20	**$0.66**
-416-12	MS35265-81	3/4	1/4-20	**$0.42**

AN501 (Fine Thread)

AN501 Dash No.*	MS35266 Dash No.	Length (In.)	Thread Size	Price Each
-8-12	-47	3/4	8-36	---
-A10-4	-59	1/4	10-32	**$0.40**
-A10-6	-61	3/8	10-32	**$0.65**
-A10-8	-63	1/2	10-32	**$0.28**
-A10-10	-64	5/8	10-32	**$0.25**
-A10-12	-65	3/4	10-32	**$0.25**
-A10-14	-66	7/8	10-32	**$0.27**
-A10-16	-67	1	10-32	**$0.29**
-A10-20	-68	1-1/4	10-32	**$0.33**

AN500AD (Coarse Thread/Stainless Steel)

AN500 Dash No.*	MS35275 Dash No.	Length (In.)	Thread Size	Price Each
-AD2-2	-201	1/8	2/56	**$0.60**
-AD2-3	-202	3/16	2/56	**$0.29**
-AD2-4	-203	1/4	2/56	**$0.29**
-AD2-5	-204	5/16	2/56	**$0.33**
-AD2-6	-205	3/8	2/56	**$0.34**
-AD2-7	-206	7/16	2/56	**$0.34**
-AD2-8	-207	1/2	2/56	**$0.35**
-AD2-10	-208	5/8	2/56	**$0.29**
-AD2-12	-209	3/4	2/56	**$0.38**
-AD4-2	-211	1/8	4-40	**$0.39**
-AD4-3	-212	3/16	4-40	**$0.30**
-AD4-4	-213	1/4	4-40	**$0.31**
-AD4-6	-215	3/8	4-40	**$0.28**
-AD4-7	-216	7/16	4-40	**$0.32**
-AD4-8	-217	1/2	4-40	**$0.26**
-AD4-10	-218	5/8	4-40	**$0.43**
-AD4-12	-219	3/4	4-40	**$0.33**
-AD4-14	-220	7/8	4-40	**$0.33**
-AD4-16	-221	1	4-40	**$0.35**
-AD6-4	-226	1/4	6-32	**$0.29**
-AD6-5	-227	5/16	6-32	**$0.25**
-AD6-6	-228	3/8	6-32	**$0.29**
-AD6-7	-229	7/16	6-32	**$0.30**
-AD6-8	-230	1/2	6-32	**$0.25**
-AD6-10	-231	5/8	6-32	**$0.32**
-AD6-12	-232	3/4	6-32	**$0.33**
-AD6-14	-233	7/8	6-32	**$0.39**
-AD6-16	-234	1	6-32	**$0.36**
-AD8-5	-242	5/16	8-32	**$0.33**
-AD8-6	-243	3/8	8-32	**$0.27**
-AD8-7	-244	7/16	8-32	**$0.34**
-AD8-8	-245	1/2	8-32	**$0.34**
-AD8-10	-246	5/8	8-32	**$0.34**
-AD8-12	-247	3/4	8-32	**$0.35**
-AD8-14	-248	7/8	8-32	**$0.35**
-AD8-16	-249	1	8-32	**$0.45**

AN501AD (Fine Thread/Stainless Steel)

AN501 Dash No.*	MS35276 Dash No.	Length (In.)	Thread Size	Price Each
-AD10-5	-260	5/16	10-32	**$0.48**
-AD10-6	-261	3/8	10-32	**$0.38**
-AD10-7	-262	7/16	10-32	**$0.33**
-AD10-8	-263	1/2	10-32	**$0.40**
-AD10-10	-264	5/8	10-32	**$0.42**
-AD10-12	-265	3/4	10-32	**$0.44**
-AD10-14	-266	7/8	10-32	**$0.55**
-AD10-16	-267	1	10-32	**$0.57**

AN502, AN503 FILLISTER HEAD SCREWS

AN502 (fine thread) and AN503 (coarse thread) drilled head, slotted fillister head screws are fabricated from steel meeting specification MIL-S-6050. Tensile strength 125,000 PSI. Cadmium plated, Type I, Class 3.

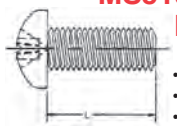
AN502 (FINE THREAD)

AN502 Dash No.*	Length (In.)	Thread Size	Price Each	AN502 Dash No.*	Length (In.)	Thread Size	Price Each
-10 -5	5/16	10-32	**$0.49**	-10 -12	3/4	10-32	**$0.40**
-10 -6	3/8	10-32	**$0.27**	-10 -16	1	10-32	**$0.46**
-10 -8	1/2	10-32	**$0.41**	-416 -12	3/4	1/4-28	**$0.70**
-10 -10	5/8	10-32	**$0.37**	-416 -16	1	1/4-28	**$1.61**

AN503 (COARSE THREAD)

AN503 Dash No.*	Length (In.)	Thread Size	Price Each	AN503 Dash No.*	Length (In.)	Thread Size	Price Each
-6 -4	1/4	6-32	**$0.44**	-10 -6	3/8	10-24	**$0.44**
-6 -6	3/8	6-32	**$0.26**	-10 -8	1/2	10-24	**$0.43**
-8 -4	1/4	8-32	**$0.26**	-10 -10	5/8	10-24	**$0.47**
-8 -6	3/8	8-32	**$0.26**	-10 -12	3/4	10-24	**$0.39**
-8 -8	1/2	8-32	**$0.39**	-10-16	1	10-24	**$0.66**
-8 -10	5/8	8-32	**$0.35**	-10 -24	1-1/2	10-24	**$0.61**
-8 -16	1	8-32	**$0.42**	-416 -8	1/2	1/4-20	**$0.63**
				-416 -10	5/8	1/4-20	**$0.77**
				-416 -12	3/4	1/4-20	**$0.92**

MS51957 / MS51958 STAINLESS MACHINE SCREWS



- Phillips Pan Head
- 300 Series Stainless Steel
- Finish - Passivate per QQ-P-35

Thread	Length	Phillips Part No.	Price Each
2-56	.188	MS51957-2	$0.03
	.250	MS51957-3	$0.03
	.312	MS51957-4	$0.04
	.375	MS51957-5	$0.04
	.438	MS51957-6	$0.04
	.500	MS51957-7	$0.04
	.750	MS51957-9	$0.04
	.875	MS51957-10	$0.04
4-40	.188	MS51957-12	$0.03
	.250	MS51957-13	$0.04
	.312	MS51957-14	$0.04
	.375	MS51957-15	$0.04
	.438	MS51957-16	$0.04
	.500	MS51957-17	$0.05
	.625	MS51957-18	$0.05
	.750	MS51957-19	$0.05
	.875	MS51957-20	$0.11
	1.00	MS51957-21	$0.07
6-32	.188	MS51957-25	$0.06
	.250	MS51957-26	$0.06
	.312	MS51957-27	$0.05
	.375	MS51957-28	$0.05
	.438	MS51957-29	$0.07

Thread	Length	Phillips Part No.	Price Each
6-32	.500	MS51957-30	$0.06
	.625	MS51957-31	$0.08
	.750	MS51957-32	$0.08
	.875	MS51957-33	$0.10
	1.00	MS51957-34	$0.10
8-32	.250	MS51957-41	$0.09
	.312	MS51957-42	$0.07
	.375	MS51957-43	$0.07
	.438	MS51957-44	$0.08
	.500	MS51957-45	$0.11
	.625	MS51957-46	$0.10
	.750	MS51957-47	$0.11
	.875	MS51957-48	$0.10
	1.00	MS51957-49	$0.14
10-32	.312	MS51958-60	$0.09
	.375	MS51958-61	$0.09
	.438	MS51958-62	$0.16
	.500	MS51958-63	$0.13
	.625	MS51958-64	$0.15
	.750	MS51958-65	$0.18
	.875	MS51958-66	$0.16
	1.00	MS51958-67	$0.11
	1.25	ms51958-68	$0.19

SNAP BUSHINGS

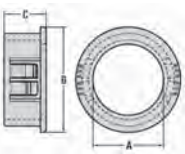
Fingertip Assembly

Ideal for abrasion and cutting protection of wiring, antenna leads, tubing, cables, etc. that are routed through bulkheads, ribs and other internal aircraft structures. Made of hard black nylon. Drill a hole about 1/8" larger than bushing I.D. and insert bushing. Spring-like fingers snap out to hold it in place. Special sizes on request with 100 piece minimum. *For .062" max. bulkhead thickness. All others for .125" max. bulkhead thickness.

Mounting Part No.	Hole Dia.	Bushing I.D.	Price Ea.	Mounting Part No.	Hole Dia.	Bushing I.D.	Price Ea.
04-05700*	.250	1/8"	$0.07	04-05753	.500	3/8	$0.12
04-05710*	.312	3/16"	$0.12	04-05775	.625	1/4"	$0.22
04-05730	.375	1/4"	$0.08	04-05773	.625	1/2"	$0.13
04-05738	.437	1/4"	$0.16	04-05790	.750	3/8"	$0.18
04-05758	.500	1/4"	$0.16	04-05793	.750	9/16"	$0.16

For .062" max. bulkhead thickness. All others for .125" max. bulkhead thickness. Less 15% Discount on 100 pieces per size.

SNAP BUSHINGS



Converts raw-edged holes to smooth, neat, insulated holes. Locking fingers "snap" into holes with fingertip pressure. Locking finger steps are designed at fractional increments to accommodate a range of panel thicknesses up to .250" (6,4 mm). Withstands a push back force of 35 pounds.

Panel Dimensions				P/N	UL/CSA Designation	Part Dimensions					
Maximum Thkness		Mounting Hole Dia.		Color		A Inside Diameter		B Head Diameter		C Overall Height	
in.	mm.	in.	mm.	Black		in.	mm.	in.	mm.	in.	mm.
.125	3,2	1.093 - 1.125	27, 8-28 ,6	2163	SB1093 - 14	.875	22,2	1.218	30,9	.453	11,5
.125	3,2	1.093 - 1.125	27, 8-28, 6	2166	SB1093 -15	.937	23,8	1.218	30,9	.453	11,5

Model 2163 ..... P/N 04-01985..... **$0.30**
Model 2166 ..... P/N 04-01986..... **$0.26**

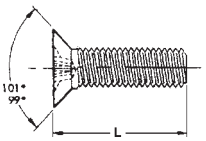
AN535 DRIVE SCREWS

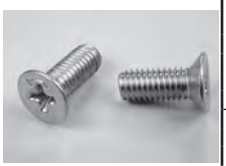
Hardened steel screws to make permanent fastenings to ferrous and non-ferrous castings, heavy gauge steel, plastics, etc. Cadmiumplated. Spec. MS21318

AN535 Dash #	MS21318 Dash #	Dia. In.	Length In.	Sugg. Drill Size	Price Each
-00-4	-3	.060	1/4	#55 (.052")	$0.23
-0-4	-9	.075	1/4	#51 (.067")	$0.06
-2-3	-14	.100	3/16	#44 (.086")	$0.06
-2-4	-15	.100	1/4	#44 (.086")	$0.06
-4-4	-21	.116	1/4	#37 (.104")	$0.05
-00-2	-1	.060	1/8	#55 (.052")	$0.05
-00-3	-2	.060	3/16	#55 (.052")	$0.06
-0-2	-7	.075	1/8	#51 (.067")	$0.06
-0-3	-8	.075	3/16	#51 (.067")	$0.06
-2-2	-13	.100	1/8	#44 (.086")	$0.06
-4-3	-20	.116	3/16	#37 (.104")	$0.07
-4-5	-22	.116	5/16	#37 (.104")	$0.07

NAS514 MACHINE SCREWS

- Phillips 100° Flat Head
- Fully Threaded
- Alloy Steel (8740)
- Finish - Cadmium per QQ-P-416 Type II
- Tensile -125,000 145,000 PSI

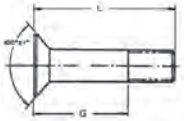




Thrd.	Length	Phillips Part No.	Price Ea.
4-40	.250	NAS514P440-4P	$0.07
	.312	NAS514P440-5P	$0.08
	.375	NAS514P440-6P	$0.08
	.438	NAS514P440-7P	$0.08
	.500	NAS514P440-8P	$0.08
	.625	NAS514P440-10P	$0.08
	.750	NAS514P440-12P	$0.08
6-32	.188	NAS514P632-3P	$0.13
	.250	NAS514P632-4P	$0.08
	.312	NAS514P632-5P	$0.08
	.375	NAS514P632-6P	$0.08
	.438	NAS514P632-7P	$0.08
	.500	NAS514P632-8P	$0.10
	.625	NAS514P632-10P	$0.09
	.750	NAS514P632-12P	$0.09
	.875	NAS514P632-14P	$0.09
	1.00	NAS514P632-16P	$0.09
8-32	.250	NAS514P832-4P	$0.08
	.312	NAS514P832-5P	$0.07
	.375	NAS514P832-6P	$0.13
	.438	NAS514P832-7P	$0.14
	.500	NAS514P832-8P	$0.14
	.625	NAS514P832-10P	$0.16
	.750	NAS514P832-12P	$0.12
	.875	NAS514P832-14P	$0.14
	1.00	NAS514P832-16P	$0.18
	1.25	NAS514P832-20P	$0.15
10-32	.250	NAS514P1032-4P	$0.07
	.312	NAS514P1032-5P	$0.11
	.375	NAS514P1032-6P	$0.13
	.438	NAS514P1032-7P	$0.16
	.500	NAS514P1032-8P	$0.13
	.625	NAS514P1032-10P	$0.16
	.750	NAS514P1032-12P	$0.14
	.875	NAS514P1032-14P	$0.15
	1.00	NAS514P1032-16P	$0.16
	1.25	NAS514P1032-20P	$0.19

NAS517 FLUSH HEAD SCREWS

- Phillips 100 Deg. Flat Head
- Alloy Steel Per Mil-S-6049
- Finish - Cad Plate per QQ-P-416 Type II



Thrd	Grip	Lgth	Phillips Part No.	Price Ea.
8-32	-	.469	NAS517-2-1	$0.08
	.125	.531	NAS517-2-2	$0.09
	.188	.594	NAS517-2-3	$0.15
	.250	.656	NAS517-2-4	$0.14
	.312	.719	NAS517-2-5	$0.09
	.375	.781	NAS517-2-6	$0.21
	.438	.844	NAS517-2-7	$0.17
	.500	.906	NAS517-2-8	$0.18
	.562	.969	NAS517-2-9	$0.12
	.625	1.031	NAS517-2-10	$0.19
10-32	.688	1.093	NAS517-2-11	$0.12
	.750	1.156	NAS517-2-12	$0.13
	-	.406	NAS517-3-0	$0.15
	-	.469	NAS517-3-1	$0.09
	.125	.531	NAS517-3-2	$0.11
	.188	.594	NAS517-3-3	$0.13
	.250	.656	NAS517-3-4	$0.14
	.312	.719	NAS517-3-5	$0.12
	.375	.781	NAS517-3-6	$0.16
	.438	.844	NAS517-3-7	$0.14
	.500	.906	NAS517-3-8	$0.19
	.562	.969	NAS517-3-9	$0.13
	.625	1.031	NAS517-3-10	$0.15
	.688	1.093	NAS517-3-11	$0.18
	.750	1.156	NAS517-3-12	$0.17
	.812	1.219	NAS517-3-13	$0.13
	.875	1.281	NAS517-3-14	$0.19
	1.00	1.406	NAS517-3-16	$0.19

SET SCREWS

Set screws are used to provide immediate, binding location of various parts on shafts. Maximum holding pressure is made by the cup point edge gripping the contact suface. Allen head wrenches are used to operate set screws.

Part No.	Thread	Length	Price
04-00182	8-32	3/16	$0.09
04-00183	8-32	1/4	$0.09

Part No.	Thread	Length	Price
04-00184	10-32	1/4	$0.10
04-00189	10-32	1/2	$0.09
04-00191	1/4-28	5/16	$0.12

10-32 X1/4 INCH ALLEN SET SCREW

Set Screw - Socket Products Type: Socket Set Screws Point Type: Cup Thread Size: 10-32 Overall Length: 1/4 Material: Alloy Steel - Grade 8 Finish/Coating: Black Oxide. Key Size (Inch): 3/32. Metalworking Book: 2085. Big Book: 1830 P/N 04-01032.....**$0.37**

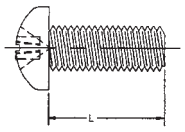
SHORTY BUSHING 2820

Material: 6/6 Nylon Certifications: File E15331 File LR8919 Flammability Rating: 94V-2 Material Temperature Index: 125°C (257°F)–Max. temperature on part not to exceed 105°C (221°F) Insulating feed-thru bushings for limited internal clearance applications.

P/ N 04-02026.....**$0.19**

ALLOY/STRUCTURAL — MACHINE SCREWS

NAS600 - NAS603 MACHINE SCREWS

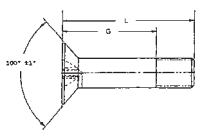


- Phillips Pan Head
- Alloy Steel (8740)
- Finish - Cadmium per QQ-P-416
- Tensile -160,000 - 180,000 PSI

Thread	Length	Part No.	Price Ea.
4-40	.188	NAS600-3P	$0.07
	.250	NAS600-4P	$0.06
	.312	NAS600-5P	$0.09
	.375	NAS600-6P	$0.07
	.438	NAS600-7P	$0.08
	.500	NAS600-8P	$0.07
6-32	.188	NAS601-3P	$0.12
	.250	NAS601-4P	$0.07
	.312	NAS601-5P	$0.08
	.375	NAS601-6P	$0.09
	.438	NAS601-7P	$0.08
	.500	NAS601-8P	$0.09
	.562	NAS601-9P	$0.09
	.625	NAS601-10P	$0.10
	.750	NAS601-12P	$0.14
8-32	.188	NAS602-3P	$0.15
	.250	NAS602-4P	$0.08
	.312	NAS602-5P	$0.11
	.375	NAS602-6P	$0.11
	.438	NAS602-7P	$0.11
	.500	NAS602-8P	$0.11
	.562	NAS602-9P	$0.14
	.625	NAS602-10P	$0.12
	.688	NAS602-11P	$0.13
	.750	NAS602-12P	$0.13
	.813	NAS602-13P	$0.14
	875	NAS602-14P	$0.15
	1.00	NAS602-16P	$0.15
10-32	.250	NAS603-4P	$0.17
	.312	NAS603-5P	$0.15
	.375	NAS603-6P	$0.16
	.438	NAS603-7P	$0.11
	.500	NAS603-8P	$0.14
	.562	NAS603-9P	$0.21
	.625	NAS603-10P	$0.16
	.688	NAS603-11P	$0.19
	.750	NAS603-12P	$0.18
	.813	NAS603-13P	$0.11
	.875	NAS603-14P	$0.28
	.938	NAS603-15P	$0.16
	1.00	NAS603-16P	$0.16
	1.125	NAS603-18P	$0.23
	1.25	NAS603-20P	$0.39

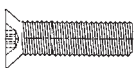
NAS1202 / NAS1203 FLUSH HEAD SCREWS

- Phillips 100° Flat Head
- Tensile – 160,000 – 180,000 PSI
- Alloy Steel Per MIL-S-6049
- Finish - Cadmium per QQ-P-416, Type II



Thrd.	Grip	Lgth.	Part No.	Price Ea.
8-32	.125	.401	NAS1202-2	$0.12
	.188	.464	NAS1202-3	$0.16
	.250	.526	NAS1202-4	$0.10
	.312	.588	NAS1202-5	$0.10
	.375	.651	NAS1202-6	$0.10
10-32	.125	.401	NAS1203-2	$0.09
	.188	.464	NAS1203-3	$0.14
	.250	.526	NAS1203-4	$0.15
	.312	.588	NAS1203-5	$0.17
	.375	.651	NAS1203-6	$0.18
	.438	.714	NAS1203-7	$0.15
	.500	.776	NAS1203-8	$0.18

MS51959 MACHINE SCREWS

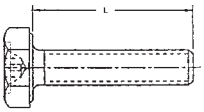


- Phillips 82° Flat Head
- Stainless Steel

Thrd.	Lgth.	Part No.	Each
2-56	.188	MS51959-2	$0.04
	.250	MS51959-3	$0.04
	.312	MS51959-4	$0.04
	.375	MS51959-5	$0.04
	.250	MS51959-13	$0.04
4-40	.312	MS51959-14	$0.05
	.375	MS51959-15	$0.05
	.438	MS51959-16	$0.05
	.500	MS51959-17	$0.06

Thrd.	Lgth.	Part No.	Each
6-32	.312	MS51959-27	$0.07
	.375	MS51959-28	$0.07
	.438	MS51959-29	$0.07
	.500	MS51959-30	$0.07
	.625	MS51959-31	$0.07
8-32	.375	MS51959-43	$0.09
	.438	MS51959-44	$0.09
	.500	MS51959-45	$0.09
	.625	MS51959-46	$0.09
	.750	MS51959-47	$0.11

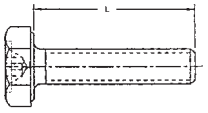
NAS1096 HEX HEAD SCREWS



- Phillips Hex Head
- Alloy Steel per MIL-S-6049
- Finish - Cadmium per QQ-P-416 Type II
- Tensile – 125,000-145,000 PSI

Thread	Length	Part No.	Price Ea.
6-32	.375	NAS1096-1-6	$0.14
	.438	NAS1096-1-7	$0.11
	.500	NAS1096-1-8	$0.19
	.562	NAS1096-1-9	$0.16
	.625	NAS1096-1-10	$0.15
	.750	NAS1096-1-12	$0.18
8-32	.312	NAS1096-2-5	$0.10
	.375	NAS1096-2-6	$0.13
	.438	NAS1096-2-7	$0.13
	.500	NAS1096-2-8	$0.13
	.562	NAS1096-2-9	$0.14
	.625	NAS1096-2-10	$0.17
	.750	NAS1096-2-12	$0.15
10-32	.312	NAS1096-3-5	$0.09
	.375	NAS1096-3-6	$0.11
	.438	NAS1096-3-7	$0.13
	.500	NAS1096-3-8	$0.17
	.562	NAS1096-3-9	$0.13
	.625	NAS1096-3-10	$0.18
	.750	NAS1096-3-12	$0.25
	.875	NAS1096-3-14	$0.26
	1.00	NAS1096-3-16	$0.17
	1.25	NAS1096-3-20	$0.20

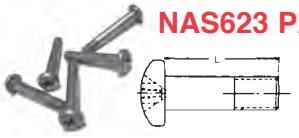
NAS1801 HEX HEAD SCREWS



- Phillips Hex Head
- Alloy Steel Per MIL-S-6049
- Finish - Cad Plate per QQ-P-416, Type II
- Tensile – 160,000-185,000 PSI

Thread	Length	Part No.	Price Ea.
8-32	.250	NAS1801-08-4	$0.09
	.312	NAS1801-08-5	$0.09
	.375	NAS1801-08-6	$0.16
	.438	NAS1801-08-7	$0.16
	.500	NAS1801-08-8	$0.19
	.562	NAS1801-08-9	$0.21
	.625	NAS1801-08-10	$0.18
	.750	NAS1801-08-12	$0.22
	.875	NAS1801-08-14	$0.17
	1.00	NAS1801-08-16	$0.21
	1.125	NAS1801-08-18	$0.21
	1.25	NAS1801-08-20	$0.21
	1.375	NAS1801-08-22	$0.32
10-32	.312	NAS1801-3-5	$0.10
	.375	NAS1801-3-6	$0.13
	.438	NAS1801-3-7	$0.14
	.500	NAS1801-3-8	$0.15
	.562	NAS1801-3-9	$0.21
	.625	NAS1801-3-10	$0.24
	.750	NAS1801-3-12	$0.26
	.875	NAS1801-3-14	$0.24
	1.00	NAS1801-3-16	$0.34
	1.125	NAS1801-3-18	$0.27
	1.25	NAS1801-3-20	$0.28
	1.375	NAS1801-3-22	$0.29
	1.50	NAS1801-3-24	$0.51

NAS623 PAN HEAD SCREWS



- Phillips Pan Head • Alloy Steel per MIL-S-6049 • Finish: Cadmium per QQ-P-416, Type II • Tensile: 160,000-180,000 PSI

Thrd.	Lgth.	Part No.	Each
8-32	.338	NAS623-2-1	$0.14
	.401	NAS623-2-2	$0.15
	.464	NAS623-2-3	$0.16
	.526	NAS623-2-4	$0.13
	.588	NAS623-2-5	$0.19
	.651	NAS623-2-6	$0.21
	.714	NAS623-2-7	$0.19
	.776	NAS623-2-8	$0.21
	.838	NAS623-2-9	$0.20
	.901	NAS623-2-10	$0.17
	.964	NAS623-2-11	$0.10
	1.026	NAS623-2-12	$0.13
10-32	.401	NAS623-3-2	$0.11
	.464	NAS623-3-3	$0.18
	.526	NAS623-3-4	$0.15

Thrd.	Lgth.	Part No.	Each
10-32	.588	NAS623-3-5	$0.17
	.651	NAS623-3-6	$0.18
	.714	NAS623-3-7	$0.16
	.776	NAS623-3-8	$0.17
	.838	NAS623-3-9	$0.16
	.901	NAS623-3-10	$0.17
	.964	NAS623-3-11	$0.19
	1.026	NAS623-3-12	$0.17
	1.088	NAS623-3-13	$0.18
	1.151	NAS623-3-14	$0.21
	1.214	NAS623-3-15	$0.16
	1.276	NAS623-3-16	$0.21
	1.338	NAS623-3-17	$0.24
	1.401	NAS623-3-18	$0.17

SHEET METAL SCREWS

HA

TRUSS HEAD TYPE A STAINLESS

Size	Length	Phillips		Slotted	
		Part No.	Price Each	Part No.	Price Each
4	1/4	T4X4	$0.03	TS4X4	$0.04
	3/8	T4X6	$0.04	TS4X6	$0.05
	1/2	T4X8	$0.04	TS4X8	$0.05
6	1/4	T6X4	$0.04	TS6X4	$0.17
	3/8	T6X6	$0.03	TS6X6	$0.03
	1/2	T6X8	$0.03	TS6X8	$0.03
	5/8	T6X10	$0.03	TS6X10	$0.06
	3/4	T6X12	$0.04	TS6X12	$0.07
	1	T6X16	$0.06	TS6X16	$0.09
8	3/8	T8X6	$0.05	TS8X6	---
	1/2	T8X8	$0.05	TS8X8	$0.06
	5/8	T8X10	$0.06	TS8X10	$0.07
	3/4	T8X12	$0.06	TS8X12	$0.08
	1	T8X16	$0.07	TS8X16	$0.10
	1-1/4	T8X20	$0.08	TS8X20	$1.58
10	3/8	T10X6	$0.06	TS10X6	$0.10
	1/2	T10X8	$0.06	TS10X8	$0.06
	5/8	T10X10	$0.08	TS10X10	$0.06
	3/4	T10X12	$0.07	TS10X12	$0.26
	1	T10X16	$0.11	TS10X16	$0.09
	1-1/4	T10X20	$0.12	TS10X20	$0.10

TRUSS HEAD TYPE B PHILLIPS STAINLESS

Size	Head Size	L (in)	P/N	Price
4	1/4"	1/4	04-00164	$0.09
		3/8	04-00166	$0.06
		1/2	04-00167	$0.17
6	5/16"	1/4	04-00168	$0.04
		3/8	04-00169	$0.06
		1/2	T6X8B	$0.06
		5/8	04-00171	$0.29
		3/4	04-00172	$0.19
		1	04-00173	$0.32

Size	Head Size	L (in)	P/N	Price
8	3/8"	3/8	04-00174	$0.17
		1/2	T8X8B	$0.06
		5/8	04-00007	$0.09
		3/4	04-00176	$0.14
		1	04-00177	$0.52
10	7/16"	3/8	04-00178	$0.06
		1/2	T10X8B	$0.11
		5/8	04-00008	$0.11
		3/4	04-00179	$0.11
		1	04-00181	$0.16

82° OVAL HEAD TYPE A, PHILLIPS (FOR UPHOLSTERY)

Size	Length	Stainless P/N	Price Ea	Zinc P/N	Price Ea
4	1/4	O4X4	$0.04	O4X4Z	---
	3/8	O4x6	$0.05	O4X6Z	$0.09
	1/2	O4X8	$0.03	O4X8Z	$0.04
	5/8	O4X10	$0.04	O4X10Z	$0.07
6	3/8	O6X6	$0.04	O6X6Z	$0.04
	1/2	O6X8	$0.04	O6X8Z	$0.04
	5/8	O6X10	$0.04	O6X10Z	---
	3/4	O6X12	$0.04	O6X12Z	---
	1	O6X16	$0.05	O6X16Z	---
8	3/8	O8X6	$0.06	O8X6Z	$0.07
	1/2	O8X8	$0.05	O8X8Z	$0.04
	5/8	O8X10	$0.05	O8X10Z	$0.13
	3/4	O8X12	$0.05	O8X12Z	$0.04
	1	O8X16	$0.07	O8X16Z	$0.05
10	1/2	O10X8	$0.06	O10X8Z	$0.09
	3/4	O10X12	$0.08	O10X12Z	$0.05

100°FLAT HEAD TYPE A, PHILLIPS, STAINLESS

Size	Length	Part No.	Price Ea.
6	1/2	C6X8	$0.07
8	1/2	C8X8	$0.08
10	1/2	C10X8	$0.12

AN530 ROUND HEAD

Use slotted type for antiques.

Size	SLOTTED		PHILLIPS	
	Price	P/N AN530 Dash#	Price	P/N AN530 Dash#
4X1/4	---	----	$0.07	4R4
4X3/8	$0.24	-4-6	---	N/A
4X1/2	---	---	$0.36	4R8
6X3/8	---	-6-6	$0.08	6R6
6X1/2	---	-6-8	$0.09	6R8
6X5/8	---	---	$0.48	6R10
6X3/4	---	-6-12	---	6R12
8X3/8	---	---	$0.06	8R6
8X1/2	---	---	$0.12	8R8
10X1/2	---	10-8	$0.11	10R8
10X1	---	---	$0.10	10R16

FLAT HEAD TYPE B, PHILLIPS, STAINLESS

Size	Length	Degree	Part No.	Price Ea
6	1/2	100°	MS21207-C6-8	$0.08
8	1/2	100°	MS21207-C8-8	$0.12
8	5/8	100°	MS21207-C8-10	$0.09
10	1/2	100°	MS21207-C10-8	$0.12
8	1/2	82°	04-00187	$0.10

A

ZINC-PLATED, TRUSS HEAD TYPE A & TYPE B

B

Size	Length	Phillips			Slotted	
		Part No. Type A	Part No. Type B	Price Each	Part No. Type A	Price Each
4	1/4	THA4X4	THB4X4	$0.06	THA4-4	---
4	3/8	THA4X6	THB4X6	$0.04	THA4-6	$0.15
4	1/2	THA4X8	THB4X8	$0.06	THA4-8	$0.06
4	5/8	THA4X10	THB4X10	$0.07	THA4-10	$0.06
4	3/4	THA4X12	THB4X12	$0.07	THA4-12	$0.20
4	7/8	THA4X14	------	----	-----	----
6	3/8	THA6X6	THB6X6	$0.03	THA6-6	$0.15
6	1/2	THA6X8	THB6X8	$0.02	THA6-8	$0.05
6	5/8	THA6X10	THB6X10	$0.03	THA6-10	$0.21
6	3/4	THA6X12	THB6X12	$0.02	THA6-12	$0.02
8	3/8	THA8X6	THB8X6	$0.03	THA8-6	$0.03
8	1/2	THA8X8	THB8X8	$0.03	THA8-8	$0.04
8	5/8	THA8X10	THB8X10	$0.03	THA8-10	---
8	3/4	THA8X12	THB8X12	$0.04	THA8-12	---
8	1	THA8X16	THB8X16	$0.03	THA8-16	$0.07
10	1/2	THA10X8	THB10X8	$0.04	THA10-8	$0.10
10	5/8	THA10X10	THB10X10	$0.04	THA10-10	---
10	3/4	THA10X12	THB10X12	$0.04	THA10-12	$0.04
10	1	THA10X16	THB10X16	$0.05	THA10-16	$0.11

A

ZINC-PLATED, 82° FLAT HEAD TYPE A ZINC-PLATED STEEL

(Use slotted screws for antiques)

B

Size	Length	Phillips			Slotted	
		Part No. Type A	Part No. Type B	Price Each	Part No. Type A	Price Each
4	1/4	FHA4X4	FHB4X4	$0.04	FHA4-4	---
4	3/8	FHA4X6	FHB4X6	$0.03	FHA4-6	---
4	1/2	FHA4X8	FHB4X8	$0.03	FHA4-8	---
4	5/8	FHA4X10	FHB4X10	---	FHA4-10	---
4	3/4	FHA4X12	FHB4X12	---	FHA4-12	---
6	3/8	FHA6X6	FHB6X6	$0.06	FHA6-6	$0.07
6	1/2	FHA6X8	FHB6X8	$0.03	FHA6-8	---
6	5/8	FHA6X10	FHB6X10	$0.05	FHA6-10	$0.36
6	3/4	FHA6X12	FHB6X12	$0.03	FHA6-12	---
8	3/8	FHA8X6	FHB8X6	$0.04	FHA8-6	---
8	1/2	FHA8X8	FHB8X8	$0.03	FHA8-8	---
8	5/8	FHA8X10	FHB8X10	$0.04	FHA8-10	---
8	3/4	FHA8X12	FHB8X12	$0.04	FHA8-12	---
8	1	FHA8X16	FHB8X16	$0.08	FHA8-16	$0.06
10	1/2	FHA10X8	FHB10X8	$0.04	FHA10-8	$0.05
10	5/8	FHA10X10	FHB10X10	$0.04	FHA10-10	$0.11
10	3/4	FHA10X12	FHB10X12	---	THA10-12	$0.04

MS51861 SERIES SCREWS

MS numbers without the C at the end - Material: Carbon Steel Type 1016 - 1024 Finish: CAD TYPE II
MS numbers with the C at the end - Material: Stainless Steel Type 410 Finish: Passivate

Size	Length	Part No.	Price each	Part No.	Price each
#4	1/4	MS51861-12	$0.10	MS51861-12C	$0.20
	3/8	MS51861-14	$0.11	MS51861-14C	$0.21
	1/2	MS51861-15	$0.12	MS51861-15C	$0.22
#6	1/4	MS51861-22	$0.12	MS51861-22C	$0.22
	3/8	MS51861-24	$0.13	MS51861-24C	$0.23
	1/2	MS51861-25	$0.13	MS51861-25C	$0.24
	5/8	MS51861-26	$0.14	MS51861-26C	$0.25
	3/4	MS51861-27	$0.15	MS51861-27C	$0.26
	1	MS51861-29	$0.16	MS51861-29C	---
#8	3/8	MS51861-34	$0.12	MS51861-34C	$0.24
	1/2	MS51861-35	$0.14	MS51861-35C	$0.15
	5/8	MS51861-36	$0.16	MS51861-36C	$0.28
	3/4	MS51861-37	$0.17	MS51861-37C	$0.30
	1	MS51861-39	$0.18	MS51861-39C	---
#10	1/2	MS51861-45	$0.17	MS51861-45C	$0.30
	5/8	MS51861-46	$0.18	MS51861-46C	$0.32
	3/4	MS51861-47	$0.19	MS51861-47C	---
	1	MS51861-49	$0.20	MS51861-49C	---

FUEL TANK STRUCTURAL STAINLESS SCREW KITS (PER TANK)

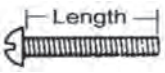
Aircraft Model	Part No.	Price
Cessna 150/152 (Standard)	04-01005	$27.25
Cessna 150/152 (Long Range)	04-01004	$39.85
Cessna 172	04-01003	$53.85
Cessna 172 (Long Range)	04-02068	$60.50
Piper PA28 Cherokee (Standard)	04-01002	$52.75
Piper PA28 Cherokee (Long Range)	04-01001	$61.75
Cessna 150 Aerobat	04-01006	$18.25
Cessna150/152 (67-77)	04-01008	$18.25
Cessna 170AF	04-01009	$22.00
Cessna 182F	04-01011	$20.25
Piper Cherokee 140/150/160/180/235 (Cad. Plated)	04-01015	$22.50

MACHINE SCREWS

BRASS INSTRUMENT SCREWS

Use brass screws for all panel installations to eliminate magnetic interference. All brass screws are coated inblack oxide.

AN515 & AN520 ROUND HEAD SCREWS



Part Number	Length (In.)	Thread Size	Price Each
AN515B6R8 (Recessed)	1/2	6-32	**$0.12**
AN515B6-12 (Slot)	3/4	6-32	**$0.17**
AN515B6R12 (Recessed)	3/4	6-32	**$0.10**
AN515B8-16 (Slot)	1	8-32	**$0.14**
AN515B10-16 (Slot)	1	10-24	**$0.72**

MS35214 & MS35215 PAN HEAD SCREWS

Part No.	Length	Thread	Price
MS35214-12	1/4"	4-40	**$0.08**
MS35214-13	5/16"	4-40	**$0.08**
MS35214-14	3/8"	4-40	**$0.08**
MS35214-15	7/16"	4-40	**$0.09**
MS35214-16	1/2"	4-40	**$0.08**
MS35214-18	3/4"	4-40	**$0.09**
MS35214-23	1/4"	6-32	**$0.10**
MS35214-24	5/16"	6-32	**$0.11**
MS35214-26	7/16"	6-32	**$0.13**
MS35214-27	1/2"	6-32	**$0.12**
MS35214-28	5/8"	6-32	**$0.12**
MS35214-29	3/4"	6-32	**$0.12**
MS35214-30	7/8"	6-32	**$0.17**
MS35214-31	1"	6-32	**$0.16**
MS35214-32	1-1/4"	6-32	**$0.15**
MS35214-33	1-1/2"	6-32	**$0.16**

Part No.	Length	Thread	Price
MS35214-40	3/8"	8-32	**$0.11**
MS35214-41	7/16"	8-32	**$0.15**
MS35214-42	1/2"	8-32	**$0.15**
MS35214-43	5/8"	8-32	**$0.17**
MS35214-44	3/4"	8-32	**$0.19**
MS35214-45	7/8"	8-32	**$0.27**
MS35214-46	1"	8-32	**$0.20**
MS35214-47	1-1/4"	8-32	**$0.24**
MS35214-48	1-1/2"	8-32	**$0.29**
MS35214-59	1"	10-24	**$0.79**
MS35215-53	3/8"	10-32	**$0.18**
MS35215-55	1/2"	10-32	**$0.25**
MS35215-56	5/8"	10-32	**$0.22**
MS35215-57	3/4"	10-32	**$0.23**
MS35215-59	1"	10-32	**$0.22**
MS35215-60	1-1/4"	10-32	-

MS24693 FLAT HEAD SCREWS (RECESSED)

Part Number	Length	Thread	Price
MS24693BB2	.250	4-40	**$0.06**
MS24693BB3	.312	4-40	**$0.09**
MS24693BB4	.375	4-40	**$0.07**
MS24693BB5	.438	4-40	**$0.07**
MS24693BB6	.500	4-40	**$0.09**
MS24693BB7	.625	4-40	**$0.09**
MS24693BB24	.250	6-32	**$0.14**
MS24693BB25	.312	6-32	**$0.10**
MS24693BB26	.375	6-32	**$0.09**
MS24693BB27	.438	6-32	**$0.11**
MS24693BB28	.500	6-32	**$0.12**
MS24693BB29	.625	6-32	**$0.08**
MS24693BB30	.750	6-32	**$0.09**
MS24693BB31	.875	6-32	**$0.10**

Part Number	Length	Thread	Price
MS24693BB32	1.00	6-32	**$0.17**
MS24693BB33	1.13	6-32	**$0.15**
MS24693BB34	1.25	6-32	**$0.16**
MS24693BB36	1.50	6-32	**$0.15**
MS24693BB48	.375	8-32	**$0.12**
MS24693BB50	.500	8-32	**$0.17**
MS24693BB51	.625	8-32	**$0.13**
MS24693BB54	1	8-32	**$0.17**
MS24693BB56	1.25	8-32	**$0.27**
MS24693BB272	.500	10-32	**$0.18**
MS24693BB273	.625	10-32	**$0.15**
MS24693BB274	.750	10-32	**$0.23**
MS24693BB276	1.00	10-32	**$0.26**
MS24693BB278	1.25	10-32	**$0.22**

STAINLESS STEEL SCREW, WASHER & STOP NUT ASSORTMENT

This 2400 piece assortment is ideal for aircraft homebuilders, owners, mechanics and FBO's. It is packaged in a handy divided storage kit and contains 2100 stainless steel screws and washers and 300 stop nuts. Kit contains 100 each of the following:

NON-STRUCTURAL MACHINE SCREWS

Countersunk Flat Head	Truss Head
AN507C632R8	AN526C632R8
AN507C832R8	AN526C832R8
AN507C832R10	AN526C832R10
AN507C1032R8	AN526C1032R8
AN507C1032R10	AN526C1032R10

ELASTIC STOP NUTS

AN365C632
AN365C832
AN365C1032

WASHERS

Tinnerman Countersunk

A3135- SS- 017 (#8)
A3235- SS- 020 (#10)
Flat: AN960C6
AN960C8 or AN960C10

SHEET METAL SCREWS

Truss Head Phillips, Type A (Sharp Point)

4R x 1/2	8R x 1/2
6R x 3/8	8R x 5/8
6R x 1/2	10R x 1/2

STAINLESS STEEL HARDWARE ASSORTMENT

P/N 04-05000 ..... **$224.95**

INDIVIDUAL AIRPLANE EXTERIOR STAINLESS TRIM SCREW AND WASHER KITS

These kits do not include any structural screws.

Aircraft Type	# of Pieces	P/N	Price
BEECHCRAFT			
Baron	1310	04-04400	**$62.85**
Bonanza	675	04-04300	**$45.95**
Musketeer/Sport	615	04-04350	**$34.25**
Sundowner	615	04-04350	**$34.25**
BELLANCA			
Citabria	248	04-00990	**$24.85**
Viking	-	04-00880	**$24.75**
CESSNA			
120/140	310	04-01200	**$25.00**
150/152	355	04-01000	**$29.50**
170	310	04-01200	**$25.00**
170-B	310	04-01200	**$25.00**
172/172 Skyhawk	410	04-01100	**$29.85**
172RG	330	04-01400	**$33.50**
172 XP	520	04-01300	**$34.75**
175	450	04-01500	**$29.95**
177/177RG Cardinal	600	04-01600	**$44.95**
180/185 Skywagon	530	04-01700	**$32.50**
182RG Skylane	580	04-01900	**$35.25**
188 Agwagon	775	04-02000	**$46.25**
190/195	370	04-02100	**$23.95**
205	510	04-02200	**$31.50**
206-208 Stationair	555	04-02300	**$34.25**
210 Centurion	630	04-02400	**$43.50**
310	1110	04-02410	**$75.25**
310/320	1110	04-02500	**$75.25**
335/340	1492	04-02510	**$104.95**
336/337	1347	04-02700	**$73.50**
337 Super Skymaster	-	04-02710	**$73.50**
401/402	1468	04-00401	**$128.95**
411/414	1342	04-02750	**$97.50**
421	1580	04-02800	**$115.95**
Commander - Lark/Darter	-	04-04510	**$31.50**
Ercoupe - 415C/Forney	525	04-04900	**$25.50**
GRUMMAN			
AA1A/AA1B	490	04-04600	**$31.50**
Ag Cat	515	04-04800	**$37.50**
Cheetah/Tiger	975	04-04700	**$51.50**
Lake - Amphibian	265	04-04710	**$25.75**
PIPER			
Aerostar	-	04-04720	**$95.50**
Apache	-	04-04730	**$65.75**
Arrow	615	04-03800	**$48.85**
Arrow III	590	04-03810	**$61.50**
Aztec	1050	04-03200	**$59.95**
Cherokee 140/150/160/180/235	570	04-03600	**$41.85**
Cherokee Six	455	04-04000	**$41.95**
Comanche (Single)	485	04-03300	**$29.50**
Comanche (Twin)	800	04-03900	**$59.50**
J-3 Cub	-	04-03910	**$46.25**
Navajo	2065	04-03920	**$174.95**
Pawnee	1965	04-03400	**$124.95**
PA28 Arrow (Fat Wing)	615	04-03800	**$48.85**
PA28 Challenger/Archer	670	04-03500	**$46.75**
PA28R Arrow (Tap. Wing)	590	04-03810	**$61.50**
PA32R Lance	685	04-04010	**$43.75**
Seneca I & II	1415	04-04100	**$76.50**
Super Cub	-	04-04110	**$48.25**
Tomahawk	440	04-04200	**$33.50**
Tripacer/Colt	360	04-03100	**$28.85**
Warrior/Archer	480	04-03700	**$31.50**
Pitts - S2A	640	04-03710	**$33.50**
Rockwell - 12/114	570	04-03720	**$28.25**
MOONEY			
68, 77, 78	1240	04-02900	**$52.75**
201/231	970	04-03050	**$47.85**
M20C	1022	04-02820	**$55.75**
M20-C 69, 76	-	04-03000	**$56.75**
M20E/G (up to 1976)	-	04-02830	**$69.75**
M20E/G (1977 & up)	-	04-02840	**$77.50**
M20F	-	04-02850	**$98.75**

NOTE: 10% DISCOUNT OFFERED IF CUSTOMER CAN PROVIDE US WITH TYPES AND SIZES FOR AIRCRAFT NOT LISTED.

HA

SOCKET HEAD CAP SCREWS

SOCKET HEAD CAP SCREW STAINLESS STEEL-DRILLED

COARSE THREADED

PART NO.	MS NO.	THREAD	LENGTH	PRICE
NAS1352C04H4		4-40	1/4”	$1.13
NAS1352C04H6		4-40	3/8”	$1.39
NAS1352C06H6	MS24674-2	6-32	3/8”	$1.22
NAS1352C06H8	MS24674-3	6-32	1/2”	$1.22
NAS1352C08H6	MS24674-7	8-32	3/8”	$1.51
NAS1352C08H8	MS24674-8	8-32	1/2”	$1.39
NAS1352C08H10	MS24674-9	8-32	5/8”	$1.58

FINE THREADED

PART NO.	MS NO.	THREAD	LENGTH	PRICE
NAS1351C3H6	MS24673-1	10-32	3/8”	$1.67
NAS1351C3H8	MS24673-2	10-32	1/2”	$1.40
NAS1351C3H10	MS24673-3	10-32	5/8”	$1.72
NAS1351C4H10	MS24673-10	1/4”-28	5/8”	$1.72
NAS1351C4H12	MS24673-11	1/4”-28	3/4”	$1.60
NAS1351C4H14	MS24673-12	1/4”-28	7/8”	$5.25
NAS1351C4H16	MS24673-13	1/4”-28	1	$2.60

SOCKET HEAD CAP SCREW STAINLESS STEEL-UNDRILLED

COARSE THREADED

PART NO.	MS NO.	THREAD	LENGTH	PRICE
NAS1352C04-4	MS16995-9	4-40	1/4”	$0.25
NAS1352C04-8	MS16995-11	4-40	1/2”	$0.28
NAS1352C06-4	MS16995-16	6-32	1/4”	$0.31
NAS1352C06-6	MS16995-17	6-32	3/8”	$0.27
NAS1352C06-8	MS16995-18	6-32	1/2”	$0.29
NAS1352C06-10	MS16995-19	6-32	5/8”	$0.29
NAS1352C08-6	MS16995-25	8-32	3/8”	$0.34
NAS1352C08-8	MS16995-26	8-32	1/2”	$0.32
NAS1352C08-10	MS16995-27	8-32	5/8”	$0.39
NAS1352C08-12	MS16995-28	8-32	3/4”	$0.42

FINE THREADED

PART NO.	MS NO.	THREAD	LENGTH	PRICE
NAS1351C3-6	MS16996-9	10-32	3/8”	$0.33
NAS1351C3-8	MS16996-10	10-32	1/2”	$0.31
NAS1351C3-10	MS16996-11	10-32	5/8”	$0.38
NAS1351C3-12	MS16996-12	10-32	3/4”	$0.46
NAS1351C4-10	MS16996-22	1/4-28	5/8”	$0.62
NAS1351C4-12	MS16996-23	1/4-28	3/4”	$0.65
NAS1351C4-16	MS16996-24	1/4-28	1”	$0.82

SOCKET HEAD CAP SCREW ALLOY STEEL-DRILLED

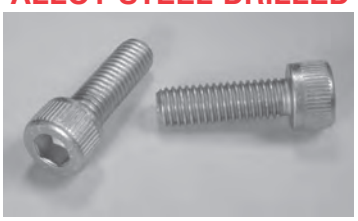
COARSE THREADED

PART NO.	MS NO.	THREAD	LENGTH	PRICE
NAS1352-04H4P	MS24677-1	4-40	1/4”	$1.10
NAS1352-04H6P	MS24677-2	4-40	3/8”	$0.85
NAS1352-06H6P	MS24677-7	6-32	3/8”	$1.04
NAS1352-06H8P	MS24677-8	6-32	1/2”	$0.99
NAS1352-06H10P	MS24677-9	6-32	5/8”	$1.04
NAS1352-08H6P	MS24677-14	8-32	3/8”	$0.99
NAS1352-08H8P	MS24677-15	8-32	1/2”	$1.02
NAS1352-08H10P	MS24677-16	8-32	5/8”	$1.09
NAS1352-08H12P	MS24677-17	8-32	3/4”	$1.14

FINE THREADED

PART NO.	MS NO.	THREAD	LENGTH	PRICE
NAS1351-3H6P	MS24678-9	10-32	3/8”	$1.09
NAS1351-3H8P	MS24678-10	10-32	1/2”	$0.94
NAS1351-3H10P	MS24678-11	10-32	5/8”	$0.96
NAS1351-3H12P	MS24678-12	10-32	3/4”	$1.12
NAS1351-4H10P	MS24678-21	1/4-28	5/8”	$1.42
NAS1351-4H12P	MS24678-22	1/4-28	3/4”	$1.24
NAS1351-4H14P	MS24678-23	1/4-28	4/8”	$1.46
NAS1351-4H16P	MS24678-24	1/4-28	1”	$1.38

SOCKET HEAD CAP SCREW ALLOY STEEL-DRILLED



COARSE THREADED

PART NO.	MS NO.	THREAD	LENGTH	PRICE
NAS1352-04-4P	MS16997-9	4-40	1/4”	$0.36
NAS1352-04-6P	MS16997-10	4-40	3/8”	$0.38
NAS1352-04-8P	MS16997-11	4-40	1/2”	$0.43
NAS1352-06-6P	MS16997-19	6-32	3/8”	$0.42
NAS1352-06-8P	MS16997-20	6-32	1/2”	$0.54
NAS1352-06-10P	MS16997-21	6-32	5/8”	$0.54
NAS1352-08-6P	MS16997-31	8-32	3/8”	$0.58
NAS1352-08-8P	MS16997-32	8-32	1/2”	$0.57
NAS1352-08-10P	MS16997-33	8-32	5/8”	$0.63
NAS1352-08-12P	MS16997-34	8-32	3/4”	$0.63

FINE THREADED

PART NO.	MS NO.	THREAD	LENGTH	PRICE
NAS1351-3-6P	MS16998-26	10-32	3/8”	$0.51
NAS1351-3-8P	MS16998-27	10-32	1/2”	$0.42
NAS1351-3-10P	MS16998-28	10-32	5/8”	$0.48
NAS1351-3-12P	MS16998-29	10-32	3/4”	$0.59
NAS1351-4-10P	MS16998-42	1/4-28	5/8”	$0.95
NAS1351-4-12P	MS16998-43	1/4-28	3/4”	$0.84
NAS1351-4-14P	MS16998-44	1/4-28	7/8”	$0.97
NAS1351-4-16P	MS16998-45	1/4-28	1”	$0.83

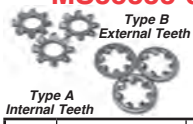
WASHERS

MS35338 LOCK WASHERS

MS35338 split, helical lock washers are made of carbon steel, cadmium plated per QQ-P-416A, Type II, Class 3. They replace AN935 medium-weight washers. Formerly AN935.

Size	Cad. Plated Part No.	Price	Stainless Part No.	Price
6	MS35338-41	$0.02	MS35338-136	$0.03
8	MS35338-42	$0.02	MS35338-137	$0.03
10	MS35338-43	$0.02	MS35338-138	$0.05
1/4	MS35338-44	$0.02	MS35338-139	$0.12
5/16	MS35338-45	$0.03	MS35338-140	$0.19
3/8	MS35338-46	$0.07	MS35338-141	$0.43
7/16	MS35338-47	$0.09	MS35338-142	$0.49
1/2	MS35338-48	$0.09	MS35338-143	$0.64

MS35333 & MS35335 LOCK WASHERS



Provide efficient locking action by spring tension and biting action of tapered twisted teeth. Made of 1050 spring steel and cadmium plated per specification QQ-P-416A, Type II, Class 3. Available with internal teeth (Type A) or external teeth (Type B).

Size	Cad. Plated Part No.	Price Each	Stainless Part No.	Price Each	Cad. Plated Part No.	Price Each
6	MS35333-37	$0.02	MS35333-71	$0.05	MS35335-30	$0.02
8	MS35333-38	$0.02	MS35333-72	$0.06	MS35335-31	$0.03
10	MS35333-39	$0.02	MS35333-73	$0.06	MS35335-32	$0.03
1/4	MS35333-40	$0.02	MS35333-74	$0.06	MS35335-33	$0.03
5/16	MS35333-41	$0.04	MS35333-75	$0.21	MS35335-34	$0.05
3/8	MS35333-42	$0.04	MS35333-76	$0.26	MS35335-35	$0.08
7/16	MS35333-43	$0.04	MS35333-77	$0.16	-----	---
1/2	MS35333-44	$0.11	MS35333-78	$0.26	-----	---

TOOTH LOCKWASHER

MIL-SPEC designations for tooth lockwashers include, but are not limited to MS35335. These are covered by military procurement specification FF-W-100

Nominal Screw Size	Inside Diameter		Outside Diameter		Material Thickness		MS 35335 Steel Plated	P/N	Price
	Min	Max	Min	Max	Min	Max			
9/16	0.576	0.596	0.960	0.985	0.037	0.045	-38	04-00099	$0.28
3/4	0.768	0.795	1.220	1.260	0.047	0.055	-40	04-00101	$0.76
7/8	0.897	0.927	1.380	1.410	0.052	0.060	-41	04-00103	$0.56

NAS549 PHENOLIC WASHERS

NAS549-10 Phenolic insulating washers for #10 screws. Size: 13/64" I.D. x 7/16" O.D. x 1/16 thick..... **$0.15 Ea.**

G-8 TINNERMAN WASHERS

A No. 8 'Tinnerman' style washer with the same O.D. as a No. 10 (0.75). Great for those oversize holes in fairings. Unlike the No. 10 washer with a No. 8 screw, these washers will tighten down on the fairing (not bottom out on the cone) thus providing the proper "clamp up" between the fastener and the fairing. The G-8 washers are Made in the USA from 304 (1/2 hard) Stainless Steel and are machine tumbled for a shiny finish.

P/N 04-01989 ..... **$0.29**

TINNERMAN COUNTERSUNK WASHERS

For use with 100° flat-head screws such as MS24693 and MS24694 machine screws and NAS548 sheet metal screws to provide reinforced, low-profile attachments. Made of spring steel, cadmium electroplated.

Part No.	Screw Size	I.D. In.	O.D. In.	Price Each	Price per 100
A3236-012-193	#6	.140	.50	$0.25	---
A3135-017-24A	#8	.171	.56	$0.20	$16.00
A3235-028-24A	#10	.196	.75	$0.10	$8.00

NYLON WASHERS

Part No.	Thread Size	Price Ea.
04-00219	#4	$0.02
04-00216	#6	$0.02

Part No.	Thread Size	Price Ea.
04-00217	#8	$0.02
04-00218	#10	$0.03

Less 20% Discount on 100 per size

100° CSK STAINLESS WASHERS

Use with 100° flathead screws to provide reinforced, low-profile attachments.

Size	Dimensions	Part No.	Price
6	.500 OD x .012 T	04-00397	$0.12
8	.562 OD x .017 T	04-00392	$0.08
10	.750 OD x .020 T	04-00398	$0.08

Less 20% Discount on 100 per size

AN975 TAPER PIN WASHERS

Taper pin washers are used with AN386 threaded taper pins. Manufactured of steel, cadmium plated per QQ-P-416, Type II, Class 2.

AN975 Dash #	Fits Taper Pin #	Price Ea.
-3	1, 2	$0.64
-4	3	$1.40
-5	4	$2.55
-6	5	$2.35

AN960 FLAT WASHERS

AN960 flat washers are used under hex nuts to provide a smooth bearing surface, as shims to obtain the correct grip length for a bolt and nut assembly, and to adjust the position of AN310 and AN320 castle nuts with respect to drilled cotter pin holes in bolts and clevis pins. Available in cadmium plated steel or anodized aluminum, and in regular and light thickness. Add the letter "L" to dash number to indicate light series. For anodized aluminum washers, add the letters "PD" after AN number.

Examples: AN960-416L is a light series cadmium plated steel washer for 1/4" dia. bolt. AN960PD-10 is an anodized alumsinum washer for a 3/16" dia. bolt. AN960PD-10L is a light series anodized aluminum washer for a 3/16" dia. bolt.

NSWC FLAT WASHER KIT - Contains: • Flat AN960-916 (12 qty)• Flat AN960-616L (4 qty) • Flat AN960-416 (40 qty) • Flat AN960-716L (8 qty) • Flat AN960-616 (40 qty) • Flat AN960-816 (32 qty) • Flat AN960-816L (32 qty) ..... P/N 04-01728 ..... **$6.95**

Dash #	Bolt or Screw Size	O.D. (In.)	I.D. (In.)	Thickness steel		Thickness Aluminum		Price	
				Light	Regular	Light	Regular	Steel each	Alum. each
-4	No. 4	.312	.125	.016	.032	.016	.032	$0.02	$0.03
-6	No. 6	.375	.149	.016	.032	.016	.032	$0.02	$0.03
-8	No. 8	.375	.174	.016	.032	.016	.032	$0.02	$0.03
-10	No. 10	.438	.203	.032	.063	.032	.063	$0.02	$0.05
-416	1/4"	.500	.265	.032	.063	.016	.063	$0.03	$0.06
-516	5/16"	.562	.328	.032	.063	.016	.063	$0.04	$0.08
-616	3/8"	.625	.390	.032	.063	.016	.063	$0.04	$0.09
-716	7/16"	.750	.453	.032	.063	.016	.063	$0.05	$0.12
-816	1/2"	.875	.515	.032	.063	.016	.063	$0.06	$0.15
-916	9/16"	1.062	.578	.032	.063	.016	.063	$0.09	$0.21
-1016	5/8"	1.118	.640	.032	.063	----	----	$0.12	----
-1216	3/4"	1.312	.765	.032	.090	----	----	$0.23	----

AN960C STAINLESS WASHERS

Size	Regular Part No.	Regular Price Ea.	Light Part No.	Light Price Ea.
4	AN960C4	$0.03	AN960C4L	$0.03
5	-----	---	-----	---
6	AN960C6	$0.03	AN960C6L	$0.03
8	AN960C8	$0.03	AN960C8L	$0.03
3/16	AN960C10	$0.04	AN960C10L	$0.04
1/4	AN960C416	$0.06	AN960C416L	$0.04
5/16	AN960C516	$0.09	AN960C516L	$0.03
3/8	AN960C616	$0.09	AN960C616L	$0.05
7/16	AN960C716	$0.10	AN960C716L	$0.09
1/2	AN960C816	$0.17	AN960C816L	$0.09
9/16	AN960C916	$0.23	AN960C916L	$0.14
5/8	AN960C1016	$0.66	AN960C1016L	$0.10
3/4	AN960C1216	$0.76	-----	----

AN970 FLAT WASHERS

Manufactured of carbon steel, cadmium plated per QQ-P-416C, Type II, Class 2. They provide a greater bearing area than AN960 washers. Used on wooden structures under both the head of the bolt & the nut to prevent crushing the surface.

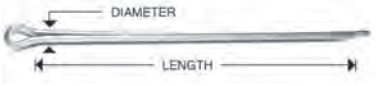
Dash No.	Bolt Size	O.D. (In.)	I.D. (In.)	Thk (In.)	Price Each	Price per 100
-3	3/16"	.875	.203	.063	$0.06	$4.80
-4	1/4"	1.125	.265	.063	$0.10	$8.00
-5	5/16"	1.375	.328	.063	$0.13	$10.40
-6	3/8"	1.625	.390	.063	$0.21	$16.80
-7	7/16"	1.812	.453	.109	$0.47	$37.60
-8	1/2"	2.000	.515	.109	$0.35	$28.00
-10	5/8"	2.375	.640	.125	$0.88	$70.40

FINISHING WASHERS

Finishing washers are used in non-structural interior and upholstery applications. The parts covered by NAS390 & NAS391 are getting harder to procure and do not necessarily conform exactly to all of the dimensions stated on the specs. Commercial equivalents can be supplied and are suggested. These are non-critical washers that are readily available and cost effective.

Screw or Bolt Size	Countersink Washer Part No.	Price Each	Price 100	Flush Washer Part No.	Price Each	Price 100
#4	NAS391B4P	$0.06	$4.80	NAS390B4P	--	--
#6	NAS391B6P	$0.05	$4.00	NAS390B6P	$0.04	$3.20
#8	NAS391B8P	$0.07	$5.60	NAS390B8P	$0.06	$4.80
#10	NAS391B10P	$0.07	$5.60	NAS390B10P	$0.08	$6.40

CLEVIS PINS - COTTER PINS



MS24665 COTTER PINS *(FORMERLY AN380)*

MS24665 cotter pins are stocked in cadmium plated steel (formerly AN380) and in passivated corrosion resisting steel (formerly AN381) in the priced sizes listed below. Other sizes available on special order. Write for quotation.

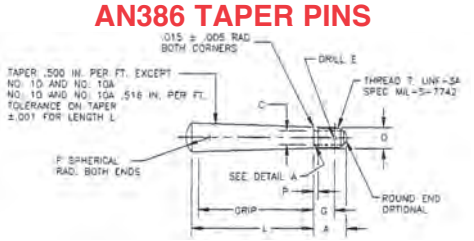
Assortment of 100 Cadmium Plated Cotter Pins
P/N 04-05050 ..... **$4.25**

CADMIUM PLATED			
Part No.	AN380 Dash No.	Dia. & Length	Price
MS24665-5	-1-2	1/32 X 1/2	**$0.02**
MS24665-7	-1-3	1/32 X 3/4	**$0.03**
MS24665-9	-1-4	1/32 X 1	**$0.03**
MS24665-132	-2-2	1/16 X 1/2	**$0.02**
MS24665-134	-2-3	1/16 X 3/4	**$0.02**
MS24665-136	-2-4	1/16 X 1	**$0.03**
MS24665-138	-2-5	1/16 X 1-1/4	**$0.04**
MS24665-140	-2-6	1/16 X 1-1/2	**$0.03**
MS24665-142	-2-7	1/16 X 1-3/4	**$0.03**
MS24665-143	-2-8	1/16 X 2	**$0.06**
MS24665-208	-	5/64 X 1/2	**$0.02**
MS24665-281	-3-2	3/32 X 1/2	**$0.02**
MS24665-283	-3-3	3/32 X 3/4	**$0.03**
MS24665-285	-3-4	3/32 X 1	**$0.02**
MS24665-287	-3-5	3/32 X 1-1/4	**$0.04**
MS24665-289	-3-6	3/32 X 1-1/2	**$0.26**
MS24665-292	-3-8	3/32 X 2	**$0.05**
MS24665-349	-4-2	1/8 X 1/2	**$0.02**
MS24665-351	-4-3	1/8 X 3/4	**$0.03**
MS24665-353	-4-4	1/8 X 1	**$0.04**
MS24665-355	-4-5	1/8 X 1-1/4	**$0.04**
MS24665-357	-4-6	1/8 X 1-1/2	**$0.05**
MS24665-359	-4-7	1/8 X 1 3/4	**$0.05**
MS24665-360	-4-8	1/8 X 2	**$0.06**
MS24665-362	-4-10	1/8 X 2-1/2	**$0.07**
MS24665-426	-5-9	5/32 X 2	**$0.08**
MS24665-498	-6-8	3/16 X 2	**$0.12**
MS24665-500	-6-10	3/16 X 2 1/2	**$0.15**

CORROSION RESISTANT STEEL			
Part No.	AN381 Dash No.	Dia. & Length	Price
MS24665-22	-1-8	1/32 X 1/2	**$0.04**
MS24665-24	-1-12	1/32 X 3/4	**$0.04**
MS24665-26	-1-16	1/32 X 1	**$0.05**
MS24665-151	-2-8	1/16 X 1/2	**$0.04**
MS24665-153	-2-12	1/16 X 3/4	**$0.05**
MS24665-155	-2-16	1/16 X 1	**$0.04**
MS24665-157	-2-20	1/16 X 1-1/4	**$0.06**
MS24665-159	-2-24	1/16 X 1-1/2	**$0.07**
MS24665-161	-2-28	1/16 X 1-3/4	**$0.09**
MS24665-162	-2-32	1/16 X 2	**$0.12**
MS24665-227	-25-8	5/64 X 1/2	**$0.06**
MS24665-229	-25-12	5/64 X 3/4	**$0.08**
MS24665-298	-3-8	3/32 X 1/2	**$0.06**
MS24665-300	-3-12	3/32 X 3/4	**$0.08**
MS24665-302	-3-16	3/32 X 1	**$0.09**
MS24665-304	-3-20	3/32 X 1-1/4	**$0.11**
MS24665-306	-3-24	3/32 X 1-1/2	**$0.12**
MS24665-309	-3-32	3/32 X 2	**$0.15**
MS24665-366	-4-8	1/8 X 1/2	**$0.09**
MS24665-368	-4-12	1/8 X 3/4	**$0.10**
MS24665-370	-4-16	1/8 X 1	**$0.12**
MS24665-372	-4-20	1/8 X 1-1/4	**$0.15**
MS24665-374	-4-24	1/8 X 1-1/2	**$0.19**
MS24665-377	-4-32	1/8 X 2	**$0.23**
MS24665-379	-4-40	1/8 X 2-1/2	**$0.25**
MS24665-444	-5-32	5/32 X 2	**$0.25**
MS24665-516	-6-32	3/16 X 2	**$0.36**
MS24665-518	-6-40	3/16 X 2 1/2	**$0.50**

Discount: 25% for quantities of 100 or more of the same Part No.

AN386 TAPER PINS



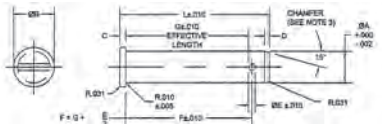
Manufactured from alloy steel, minimum tensile strength 125,000 PSI. Cadmium plated per spec. QQ-P-416, Type I, Class 3. Taper: 0.500"/ft. Use with AN975 taper pin washer, AN320 shear castle nut and cotter pin or with AN364 elastic stop nut. When installed, the small end of the tapered shank should protrude no more than 1/16" above the surface of the assembly. The first dash number is the Brown & Sharpe taper pin reamer number and the second dash number is the grip length in eighths of an inch. For undrilled threaded shank add the letter "A" after second dash number.

First Dash No.	1	2	3	4	5	6	7	8	9	10	10A
Thread T	10-32	10-32	1/4-28	5/16-24	3/8-24	7/16-20	1/2-20	9/16-18	3/4-16	7/8-14	7/8-14
A	7/16	7/16	29/64	33/64	35/64	35/64	19/32	21/32	47/64	51/64	51/64
C±.005	.141	.141	.196	.250	.313	.360	.422	.482	.660	.773	.773
D±.002	.205	.255	.317	.355	.455	.505	.605	.755	.905	1.050	1.153
E +.010, -.000	No.50 (.070)	No.50 (.070)	No.48 (.076)	No.48 (.076)	No.36 (.106)	No.36 (.106)	No.36 (.106)	No. 28 (.141)	No.28 (.141)	No.28 (.141)	No.28 (.141)
F	1/2	1/2	1/2	1/2	1/2	3/4	3/4	1	1	1-1/4	1-1/4
G	5/16	5/16	21/64	21/64	23/64	23/64	13/62	15/32	35/64	39/64	39/64
P	3/64	3/64	3/64	1/16	1/16	1/16	1/16	5/64	3/32	3/32	3/32

AN386-1-6 ..... **$5.90**
AN386-1-6A **$6.25**
AN386-1-7 ..... **$7.50**
AN386-1-7A **$6.95**
AN386-1-8 ..... **$6.92**
AN386-1-9 ..... **$8.30**
AN386-1-9A **$7.75**
AN386-1-10A **$5.80**
AN386-1-11 ..... **$7.75**
AN386-2-8 ..... **$14.90**
AN386-2-9A **$6.94**
AN386-2-10 ..... **$9.65**
AN386-2-12 ..... **$13.60**
AN386-2-13 ..... **$11.85**
AN386-2-14 ..... **$7.94**
AN386-3-12 ..... **$13.40**
AN386-3-12A **$9.25**
AN386-3-14 ..... **$9.80**
AN386-4-13 ..... **$19.50**

New Surplus AN386-3-12A Taper Pin..... P/N 04-02149..... **$9.97**

CLEVIS PINS



Made of alloy steel per specification MIL-P-5673 and cadmium plated per QQ-P-416, Type II, Class 3. Provided with drilled hole for cotter pin. Used with clevis forks and in secondary controls which are not subjected to continuous operation. Order by AN number and dash number. Example: AN395-41 is a 5/16"dia. pin with an effective length of 1-9/32". Equivalent MS number is MS20392-4C41. ***Less 20% in lots of 25 per size. Request quotation on unlisted sizes. NOTE: Clevis pin prices fluctuate with changes in cost/availability at suppliers.***

Dash No.	Effective Length (In.)	AN392 MS20392 -1C 1/8"	AN393 MS20392 - 2C 3/16"	AN394 MS20392 -3C 1/4"	AN395 MS20392 - 4C 5/16"	AN396 MS20392 -5C 3/8"
-7	7/32	**$0.42**	**$0.39**	--	--	--
-9	9/32	**$0.49**	**$0.48**	--	--	--
-11	11/32	**$0.29**	**$0.47**	**$0.28**	**$0.49**	--
-13	13/32	**$0.41**	**$0.33**	**$0.68**	--	--
-15	15/32	**$0.37**	**$0.61**	**$0.31**	**$0.82**	--
-17	17/32	**$0.41**	**$0.39**	**$0.48**	**$0.72**	**$0.64**
-19	19/32	**$0.32**	**$0.41**	**$0.56**	**$0.46**	**$0.88**
-21	21/32	**$0.54**	**$0.46**	**$0.36**	**$0.62**	--
-23	23/32	**$0.49**	**$0.48**	**$0.52**	**$0.59**	**$1.21**
-25	25/32	**$0.33**	**$0.36**	**$0.33**	**$0.74**	**$0.90**
-27	27/32	**$0.48**	**$0.45**	**$0.35**	**$0.62**	**$1.16**
-29	29/32	**$0.43**	**$0.39**	**$0.58**	**$0.80**	--
-31	31/32	**$0.40**	**$0.45**	**$0.57**	**$0.68**	--
-33	1-1/32	**$0.50**	**$0.47**	**$0.64**	**$0.81**	**$0.99**
-35	1-3/32	**$0.49**	**$0.62**	**$0.48**	**$0.92**	**$1.37**
-37	1-5/32	**$0.47**	**$0.62**	**$0.62**	**$0.70**	--
-39	1-7/32	**$0.76**	**$0.69**	**$0.68**	**$0.97**	--
-41	1-9/32	**$0.41**	**$0.34**	**$0.53**	**$0.70**	**$1.44**
-43	1-11/32	**$0.54**	**$0.56**	**$0.81**	**$1.16**	--
-45	1-13/32	**$0.92**	**$0.41**	**$0.60**	**$1.42**	**$0.73**
-47	1-15/32	**$0.67**	**$0.65**	**$0.67**	**$0.87**	**$1.54**
-49	1-17/32	**$1.10**	**$0.59**	**$0.46**	--	--
-51	1-19/32	--	**$0.68**	**$0.58**	**$0.82**	--
-53	1-21/32	**$0.56**	**$0.94**	**$0.67**	**$0.65**	**$0.88**
-55	1-23/32	**$0.72**	**$0.70**	**$0.74**	--	**$4.80**
-57	1-25/32	**$0.74**	**$1.28**	**$0.63**	**$1.17**	--
-59	1-27/32	**$0.74**	**$0.81**	**$1.65**	--	**$1.14**
-61	1-29/32	**$0.65**	**$1.37**	**$0.96**	--	--
-63	1-31/32	**$0.59**	**$0.49**	**$0.56**	**$6.75**	**$0.72**
-65	2-1/32	**$0.64**	**$0.68**	**$0.63**	--	**$1.16**
-67	2-3/32	**$1.83**	**$0.90**	**$0.95**	--	**$1.17**
-69	2-5/32	**$0.98**	**$0.97**	**$1.54**	**$1.37**	**$1.14**
-71	2-7/32	--	**$1.76**	--	**$6.75**	--
-73	2-9/32	--	**$3.45**	**$0.73**	--	**$1.19**
-75	2-11/32	--	--	**$0.82**	--	**CALL**
-79	2-15/32	--	**$0.49**	**$3.95**	--	**$1.25**
-81	2-17/32	--	**$0.52**	**$0.87**	--	**$9.50**
-83	2-19/32	--	**$1.17**	--	--	- -
-85	2-21/32	--	**$1.09**	**$1.09**	**$0.57**	**$0.81**
-87	2-23/32	--	**$0.57**	--	--	--
-89	2-25/32	--	**$2.50**	--	**$0.58**	--
-91	2-27/32	--	--	--	--	--
-93	2-29/32	--	**$0.64**	--	--	**$1.43**
-95	2-31/32	--	-	**$0.86**	--	--
-97	3-1/32	--	- -	**$0.96**	- -	**$1.98**
-99	3-3/32	--	- -	--	--	--
-101	3-5/32	.- -	- -	--	--	**$5.10**

LOCK PINS

AN415-2 corrosion resistant steel wire cowl lock pins 1-15/16" long, .080" dia. wire.
P/N AN415-2..... **$0.44 Ea.**
$35.20 for 100

Commercial steel cadmium plated wire lock pins 1-1/4" long, .062" dia. wire. P/N 04-05100..... **$0.07 Ea.**
$5.60 for 100

COWLING SAFETY PINS

Positive locking pins that can be readily used without aid of tools. Made of spring steel, cadmium plated, 1-1/16" long.

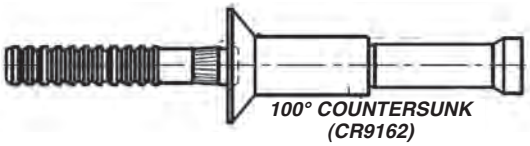
.051" Wire Dia. ..... .AN416-1..... **$0.18 Ea.**..... **$14.40/100**
.041" Wire Dia. ..... .AN416-2..... **$0.18 Ea.** **$14.40/100**

TUBULAR PIN MS16562

MS16562-200 PIN ..... 02-00096..... **$0.60**
TUBULAR PIN MS16562-224..... 04-01715..... **$0.79**

CHERRY COMMERCIAL RIVETS

CHERRY AEROSPACE RIVETS - SELF-PLUGGING CHERRY RIVETS



100° COUNTERSUNK (CR9162)

The self-plugging Cherry Blind Rivet is a 2-piece assembly - a hollow rivet and an inner member or stem, drawn into or through the hollow rivet. Cherry CR162 & CR163 series rivets are now replaced by CR9162 & CR9163 series rivets which are less expensive but do require the use of G-25B hand rivet gun with H-901-5-4C pulling head attached or G-29 which comes with the req. nosepiece.

P/N 04-01515 Pulling Head (required)..... **$549.00**
G-29.....P/N 12-00701 ..... **$114.95**

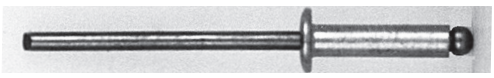
UNIVERSAL HEAD (CR 9163)

Part No.	Head Style	Nominal Dia.	Grip Range	Price		
				Each	100	1000
CR9162-4-2	Csk	1/8"	.063-.125	**$0.20**	**$18.00**	**$160.00**
CR9162-4-4			.188-.250	**$0.24**	**$21.60**	**$192.00**
CR9162-4-6			.313-.375	**$0.42**	**$37.80**	**$336.00**
CR9162-4-8			.438-.500	**$0.46**	**$41.40**	**$368.00**
CR9163-4-2	Univ.	1/8"	.063-.125	**$0.20**	**$18.00**	**$160.00**
CR9163-4-4			.188-.250	**$0.24**	**$21.60**	**$192.00**
CR9163-4-6			.313-.375	**$0.26**	**$23.40**	**$208.00**
CR9163-5-2	Univ.	5/32"	.063-.125	**$0.26**	**$23.40**	**$208.00**

HA

CHERRY N RIVETS

Break mandrel rivets Conform to MIL-R-24243 & IFI-114 Standards

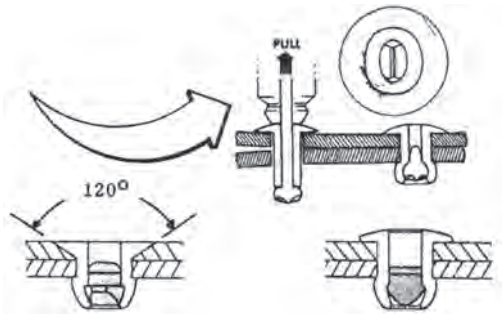


LOW COST
Substantial savings in installed costs can be realized when Cherry N Rivets are substituted for spotwelds, screws or bolts.

FAST INSTALLATION
Quick and easy to use with hand or power riveters, Cherry N Rivets have endless fastening applications in manufacturing, maintenance.

UNIQUE FEATURES
Unusual mandrel design of Cherry N Rivets holds rivet and mandrel firmly together prior to installation and insures positive mandrel retention in the installed rivet.

NO MANDREL POP OUTS—
As the mandrel is drawn into the rivet, the end of the rivet sleeve closes in an elliptical configuration... locking the mandrel firmly in place!



FLUSH HEAD **PROTRUDING HEAD**

CHERRY N RIVET IDENTIFICATION CODE

First letter is rivet material:
A = 5052 Aluminum B = 5056 Aluminum C = Stainless
M = Monel S= Steel U = Copper

Second letter is mandrel material:
A = 7178 Aluminum S = Steel C = Stainless

Third letter is head style:
P = Protruding L = Large C = Flush

First number is rivet diameter in 32nds of an inch:
For example,—4 is 4/32nds or 1/8" diameter

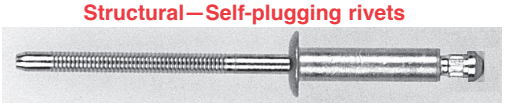
Second number is rivet maximum grip length in 16ths of an inch:
For example,—6 is 6/16ths or 3/8" grip length

MINIMUM RIVET SHEAR AND TENSILE STRENGTH (IBS.)
CHERRY N RIVETS

RIVET DIAM. MAND.	BS SERIES ALUM RIVET STEEL MAND. GRADE 19		MS SERIES MONEL RIVET STEEL MAND. GRADE 40		CC SERIES STAINLESS RIVET STAINLESS GRADE 51	
	Shear	Tens	Shear	Tens	Shear	Tens
3/32	125	175	200	300	230	280
1/8	200	325	350	525	450	600
5/32	325	450	600	900	750	1000
3/16	430	650	750	1100	1000	1300
1/4	750	1050	1450	2150	1700	2250

CHERRY Q RIVETS

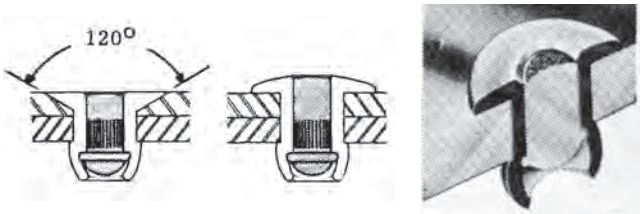
Structural—Self-plugging rivets



HIGH SHEAR STRENGTH
Cherry Q Rivet mandrel plugs the entire length of the rivet sleeve, providing full shear strength values for structural or load-bearing applications.

SEALING CAPABILITY
Specially designed mandrel of the Q Rivet is engineered to effect a seal, upon installation which offers resistance to leakage.

VIBRATION RESISTANT
Rivet sleeve curls over end of mandrel to insure its positive retention.



FLUSH HEAD **PROTRUDING HEAD**

CHERRY Q RIVET IDENTIFICATION CODE

First letter is rivet material:
A = 5052 Aluminum B = 5056 Aluminum C = Stainless
M = Monel S= Steel

Second letter is mandrel material:
A = 7178 Aluminum S = Steel C = Stainless

Third letter is head style:
P = Protruding L = Large C = Flush

Fourth letter is type of rivet:
Q = Cherry Q Rivet, structural, self-plugging

First number is rivet diameter in 32nds of an inch:
For example,—6 is 6/32nds or 3/16" diameter

Second number is rivet maximum grip length in 1/16 of an inch:
For example,—8 is 8/16ths or 1/2" grip length

MINIMUM RIVET SHEAR AND TENSILE STRENGTH (IBS.)
CHERRY Q RIVETS

RIVET DIAM.	BS SERIES ALUM RIVET STEEL MAND. GRADE 19		MS SERIES MONEL RIVET STEEL MAND. GRADE 40		CC SERIES STAINLESS RIVET STAINLESS MAND. GRADE 51	
	Shear	Tens	Shear	Tens	Shear	Tens
1/8	350	325	650	525	700	600
5/32	525	450	950	900	1050	1000
3/16	750	650	1450	1100	1650	1300
1/4	1250	1050	2350	2150	2450	2250

NOTE: SUBJECT TO PRICE AND AVAILABILITY OF CHERRY BRAND RIVETS. EQUIVALANT RIVETS MAY BE FURNISHED.

"POP" RIVETS – RIVNUTS

For conversion of the most frequently used "Pop" rivets to the corresponding CHERRY numbers, see the following table. ***NOTE: SUBJECT TO PRICE AND AVAILABILITY OF CHERRY BRAND RIVETS. EQUIVALANT RIVETS MAY BE FURNISHED.***

CHERRY COMMERCIAL RIVET PRICE TABLE

Grip is total of material thickness

CHERRY – Commercial rivets with maximum grip length greater than the material thickness may be substituted for a rivet of the required grip length.

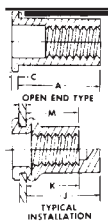
Cherry Rivet Type	Cherry Rivet Number	USM "POP" Rivet Equiv.*	Rivet Dia.	Drill Size	Cherry Max Rivet Grip Length	Price** Price Ea. 1-99	Price Per 100 10% Discount	Price for 600 12% Discount	Price for 1000 15% Discount	Price for 3000 18% Discount	Price for 10,000 20% Discount
"N"	BSP-41	AD41BS	1/8"	30	.062	$0.04	$3.60	$21.12	$34.00	$98.40	$320.00
	BSPS-42				.125	$0.03	$2.70	$15.84	$25.50	$73.80	$240.00
	BSPS-43				.185	$0.03	$2.70	$15.84	$25.50	$73.80	$240.00
	BSPS-44				.250	$0.04	$3.60	$21.12	$34.00	$98.40	$320.00
	BSP-46				.375	$0.05	$4.50	$26.40	$42.50	$123.00	$400.00
	BSP-48				.500	$0.05	$4.50	$26.40	$42.50	$123.00	$400.00
"N"	BSCS-34	BSC-34	1/8"		.250	$0.06	$5.40	$31.68	$51.00	$147.60	$480.00
	BSC-43	AK43BS	1/8"	30	.187	$0.05	$4.50	$26.40	$42.50	$123.00	$400.00
	BSC-44	44BS			.250	$0.03	$2.70	$15.84	$25.50	$73.80	$240.00
	BSC-46	A46SC	1/8"		.375	$0.10	$8.00	$45.00	$70.00	$195.00	$599.94
"N"	MSP-32	MD319BS	3/32"	41	.125	$0.12	$10.80	$63.36	$102.00	$295.20	$960.00
	-42	424BS	1/8"		.125	$0.17	$15.30	$89.76	$144.50	$418.20	$1,360.00
	-43	429BS			.187	$0.17	$15.30	$89.76	$144.50	$418.20	$1,360.00
	-44	435BS			.250	$0.17	$15.30	$89.76	$144.50	$418.20	$1,360.00
	-45	440BS			.312	$0.23	$20.70	$121.44	$195.50	$565.80	$1,840.00
	-54	530BS	5/32"	20	.250	$0.29	$26.10	$153.12	$246.50	$713.40	$2,320.00
"N"	CCC-32	MK319BS	3/32"	41	.125	$0.11	$9.90	$58.08	$93.50	$270.60	$880.00
	-42	424BS	1/8"	30	.125	$0.10	$9.00	$52.80	$85.00	$246.00	$800.00
"N"	CCP-32		3/32"		.125	$0.15	$13.50	$79.20	$127.50	$369.00	$1,200.00
	CCP-42	SSD42SSDS	1/8"	30	.125	$0.08	$7.20	$42.24	$68.00	$196.80	$640.00
	CCP-43		1/8"	30	.187	$0.13	$7.20	$42.24	$68.00	$196.80	$640.00
	-44				.250	$0.10	$9.00	$52.80	$85.00	$246.00	$800.00
	-46			30	.375	$0.12	$10.80	$63.36	$102.00	$295.20	$960.00
"N"	SSP-42		1/8"	30	.125	$0.03	$2.70	$15.84	$25.50	$73.80	$240.00
"N"	-44				.250	$0.04	$3.60	$21.12	$34.00	$98.40	$320.00
	-45		1/8"		.312	$0.05	$4.50	$26.40	$42.50	$123.00	$400.00
	04-01952	CSPS4-4	1/8"	30	.390	$0.32	$28.80	$168.96	$272.00	$787.20	$2,560.00
	04-01953	CSPS4-8	1/8"	30	.640	$0.80	$72.00	$422.40	$680.00	$1,968.00	$6,400.00
"N"	SSC-43		1/8"		.187	$0.05	$3.60	$42.24	$68.00	$196.80	$320.00
	SSC-44	S44SC	1/8"		.250	$0.04	$3.60	$21.12	$34.00	$98.40	$320.00
	04-01955	SSD32BS	3/32"		.217	$0.25	$22.50	$132.00	$212.50	$615.00	$2,000.00
"Q"	BSPQ-41	AD41H	1/8"	30	.062	$0.21	$18.90	$110.88	$178.50	$516.60	$1,680.00
	-42	AD42H		30	.125	$0.14	$12.60	$73.92	$119.00	$344.40	$1,120.00
	-43	AD43H			.187	$0.18	$16.20	$95.04	$153.00	$442.80	$1,440.00
	-44	AD44H			.250	$0.27	$24.30	$142.56	$229.50	$664.20	$2,160.00
	-46	AD46H			.375	$0.17	$15.30	$89.76	$144.50	$418.20	$1,360.00
"Q"	AAPQ-42	AD43H	1/8"	30	.125	$0.16	$14.40	$84.48	$136.00	$393.60	$1,280.00
	-44	AD44H		30	.250	$0.17	$15.30	$89.76	$144.50	$418.20	$1,360.00
	CCPQ-43	CCPQ-43	1/8"	30	.337	$0.31	$27.90	$163.68	$263.50	$762.60	$2,480.00
	CCPQ-44	CCPQ-44	1/8"	30	.400	$0.39	$31.20	$175.50	$273.00	$760.50	$2,339.77

All USM "Pop" rivets are 1/64" larger than nominal diameter. Presented here for cross reference purposes only. **Quotations on larger quantities.

AVEX NON-STRUCTURAL BLIND RIVETS

Avex non- structural blind rivets, with aluminum body and steel stem, are similar to the Cherry BSP and BSC commercial rivets. We stock the standard dome head, 120° countersunk head and the low-profile "Lo-Pro" dome head rivets in diameters up to 3/16".

Head Style	Part No.	Dia.	Grip Range	Price Each	Price 100	Price 1000
Dome	1601-0410	1/8"	To .187	$0.07	$6.30	$56.00
	1601-0414	1/8"	To .312	$0.06	$5.40	$48.00
	1601-0613	3/16"	To .250	$0.06	$5.40	$48.00
	1601-0619	3/16"	To .437	$0.07	$6.30	$56.00
	04-01949	5/32"	.046-.250	$0.11	$9.90	$88.00
Counter-sunk (120°)	1604-0412	1/8"	To .250	$0.04	$3.60	$32.00
	1604-0514	5/32"	To .312	$0.07	$6.30	$56.00
	1604-0615	3/16"	To .312	$0.12	$10.80	$96.00
Lo-Pro	1661-0613	3/16"	To .250	$0.15	$13.50	$120.00
	1661-0621	3/16"	To .500	$0.06	$5.40	$48.00



RIVET NUTS (OPEN END)

The Rivet nut is a one-piece internally threaded and counter-bored tubular aluminum rivet that can be pulled up or head-ed while working entirely from one side, forming a bulge or head on the blind side. This upset is large enough to resist being pulled through metal or plastic even under conditions of eccentric load. It overcomes the difficulty of installing brackets, handles or other attachments to tubular pieces.

FLAT HEAD

Part No.	Type	Grip Range	Length	Thread	Price/ea.
NAS1329A06K75	Keyed	.010-.075	.438	6-32	$0.16
NAS1329A06-75	Keyless	.010-.075	.438	6-32	$0.17
NAS1329A06K120	Keyed	.075-.120	.500	6-32	$0.26
NAS1329A06-120	Keyless	.075-.120	.500	6-32	$0.23
NAS1329A08K75	Keyed	.010-.075	.438	8-32	$0.22
NAS1329A08-75	Keyless	.010-.075	.438	8-32	$0.22
NAS1329A08K120	Keyless	.075-.120	.500	8-32	$0.36
NAS1329A08-120	Keyless	.075-.120	.500	8-32	$0.18
NAS1329A3K80	Keyed	.010-.075	.438	10-32	$0.23
NAS1329A3-80	Keyless	.010-.075	.438	10-32	$0.26
AEA10K140	Keyed	.075-.140	.500	10-32	$0.49
AEA10-140	Keyless	.075-.140	.500	10-32	$0.39

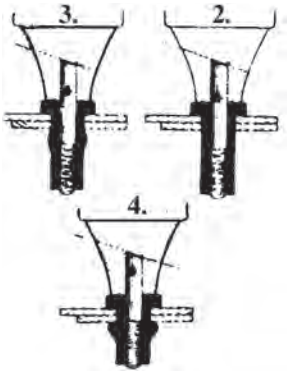
COUNTERSUNK HEAD

Part Number Keyed	Part Number Keyless	Grip Range	Length	Thread	Price Each
NAS1330A06K106	NAS1330A06-106	.065-.106	.500	6-32	$0.29
NAS1330A08K106	NAS1330A08-106	.065-.106	.500	8-32	$0.27

RIVET NUT INSTALLATION

Rivet Nut is threaded onto pull-up stud of a hand or power-heading tool.

SEE TOOLS SECTION (PAGE 686) FOR RIVET NUT TOOLS.



Rivet Nut on header tool mandrel, inserted in drilled hole ready for installation. Arrow indicates direction of mandrel movement as tool is operated Mandrel retracts pullingthreaded portion of Rivet Nut shank toward blind side of work, forming bulge around unthreaded shank area. Rivet Nut is clinched securely in place. Unthreading the tool mandrel leaves internal Rivet Nut threads intact, unharmed.

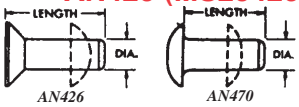
BLIND NUT PLATE - Installed Rivet Nut also serve as blind nut plates for simple screw attachments.

SPRING LOADED CENTER PUNCH

Spring loaded center punch works great with universal aluminum head rivets, oval head and round head rivets.

P/N 12-02464 .....**$34.95**

SOLID ALUMINUM RIVETS
AN426 (MS20426) AN470 (MS20470)



"A" rivets are "soft". They are fabricated from 1100-grade aluminum and have a tensile strength of 16,000 PSI. "AD" rivets are fabricated from 2117 aluminum and heat treated to the T4 condition. They have a shear strength of 26,000 PSI and a tensile strength of 38,000 PSI. All rivets sold in 1/4 lb. & 1/8 lb. packages.

Dash No.	Dia. x L	Price per 1/4 Lb. AN426A	AN426AD	Qty Lb.	Price per 1/4 Lb AN470A	AN470AD	Qty Lb.
3-2	3/32 x 1/8	$10.56	$11.56	6406	$10.81	$10.63	4107
3-3	3/32 x3/16	$9.69	$7.63	5003	$10.19	$11.21	3485
3-3.5	3/32 X 7/32	---	$36.50	5618	---	---	---
3-4	3/32 x 1/4	$9.44	$8.81	4103	$7.13	$8.33	3027
3-5	3/32 x 5/16	$7.99	$7.75	3478	$7.25	$7.48	2675
3-6	3/32 x 3/8	$7.94	$7.31	3018	$6.69	$7.44	2397
3-7	3/32 x 7/16	$7.31	$7.49	2666	$6.81	$6.73	2171
3-8	3/32 x 1/2	$7.13	$7.13	2161	$6.31	$6.06	1826
3-10	3/32 x 5/8	$7.24	$6.81	1817	$6.19	$6.94	1576
3-12	3/32 x 3/4	$6.24	$6.56	1640	$6.38	$5.81	1403
3-14	3/32 x 7/8	$7.68	$7.88	1567	$8.68	$5.44	1386
3-16	3/32 x 1	$6.13	--	1378	$3.44	$6.75	1237
4-3	1/8 x 3/16	$5.99	$5.94	2810	$5.13	$4.74	1734
4-4	1/8 x 1/4	$5.24	$5.31	2308	$4.63	$4.13	1529
4-4.5	1/8 x 9/32	---	---	---	---	$20.50	1925
4-5	1/8 x 5/16	$5.06	$4.94	1958	$4.94	$5.23	1367
4-5.5	1/8 X 11/32	---	---	---	---	$21.75	1674
4-6	1/8 x 3/8	$4.99	$4.81	1700	$4.69	$5.13	1236
4-7	1/8 x 7/16	$5.13	$5.49	1502	$5.06	$5.19	1128
4-8	1/8 x 1/2	$4.99	$5.06	1346	$4.49	$4.74	1037
4-9	1/8 x 9/16	$5.13	$5.31	1219	$4.74	$4.63	960
4-10	1/8 x 5/8	$4.56	$4.88	1025	$4.75	$4.23	836
4-12	1/8 x 3/4	$4.74	$4.73	885	$4.94	$4.25	740
4-13	1/8 x 13/16	$11.48	$5.23	797	$4.83	$5.19	715
4-14	1/8 x 7/8	$6.58	$4.99	631	$6.38	$5.41	689
4-16	1/8 x 1	$5.49	$5.19	592	$4.69	$5.44	594
4-20	1/8 x 1-1/4	$6.06	$5.69	467	$3.94	$5.06	521
4-22	1/8 x 1-3/8	---	$5.31	328	$4.99	$5.38	496
5-4	5/32 x 1/4	$4.81	$4.13	1440	$4.06	$4.30	888
5-5	5/32 x 5/16	$4.81	$4.63	1226	$3.74	$4.06	850
5-6	5/32 x 3/8	$3.88	$4.24	1079	$3.69	$4.13	802
5-7	5/32 x 7/16	$4.56	$4.06	946	$4.31	$4.44	672
5-8	5/32 x 1/2	$4.06	$4.13	849	$3.88	$4.06	621
5-9	5/32 x 9/16	$4.69	$4.44	770	$4.63	$4.19	578
5-10	5/32 x 5/8	$4.63	$4.19	649	$4.19	$3.94	507
5-12	5/32 x 3/4	$4.63	$4.44	494	$4.38	$3.88	407
5-13	5/32 x .812	---	---	---	---	$5.71	514
5-16	5/32 x 1	$4.94	$4.81	450	$4.06	$3.94	366
5-22	5/32 x 1-3/8	$5.99	$5.49	368	$4.69	$4.31	314
6-5	3/16 x 5/16	$4.13	$3.99	846	$3.74	$3.94	515
6-7	3/16 x 7/16	$4.24	$3.88	728	$3.48	$3.81	436
6-10	3/16 x 5/8	$4.19	$3.98	451	$3.56	$3.98	334
6-14	3/16 x 7/8	$4.69	$3.99	390	$4.38	$4.13	299

10% Discount for 5lbs. of rivets or more (per P/N)

SOLID RIVET ASSORTMENT

"AD" indicates Hard 2117 aluminum alloy. These rivets are heat treated and have a minimum tensile strength of 38,000 PSI. "A" indicates Soft 100 pure aluminum and have a minimum tensile strength of 16,000 PSI.

Each kit contains 1/8 lb each of the following 12 sizes:
3/32 (3-4, 3-6, 3-8); 5/32 (5-4, 5-5, 5-6, 5-8); 1/8 (4-4, 4-6, 4-8); 3/16 (6-6, 6-8)

Pack C ..... AN470AD, Universal Hard .....P/N 04-00357 ... **$31.00**
Pack D ..... AN470A, Universal Soft .....P/N 04-00358 ... **$29.00**
Pack E..... AN426AD, 100° CSK Hard .....P/N 04-00359 ... **$32.75**
Pack F..... AN426A, 100° CSK Soft .....P/N 04-00361 ... **$34.00**

OVERSIZE AND HALF SIZE RIVETS

HALF-SIZE LENGTH RIVETS - These flush head AN426 rivets are ideal for those situations where one length is just too short & the next length is too long.

Part No.	Dia.	Length	Price Per 1/8 lb.
AN426AD-3-3.5	3/32"	7/32"	**$36.50**
AN426AD-3-4.5	3/32"	9/32"	**$30.50**
AN426AD-3-5.5	3/32"	11/32"	**$33.75**

OVERSIZE SHANK RIVETS - These NAS1097 rivets feature a 1/8" diameter shank with a head size that of a 3/32" rivet. Perfect when rivet hole becomes enlarged requiring 1/8" shank but 3/32" head matches rest of your 3/32" rivets.

Part No.	Dia.	Length	Price Per 1/8 lb.
NAS1097AD-4-3.5	1/8"	7/32"	**$28.75**
NAS1097AD-4-4	1/8"	1/4"	**$25.95**
NAS1097AD-4-5	1/8"	5/16"	**$26.50**
NAS1097AD-4-6	1/8"	3/8"	**$25.50**

CHERRYMAX RIVETS

100° Countersunk Head (CR3242 & CR3212)

Universal Head (CR3243 & CR3213)

Due to the large bulbed blind head, similar to that of a solid rivet, the Cherrylock and CherryMax rivets are especially suited for double dimpled or high vibration applications. They can be used as replacements for some solid rivets and are excellent for use in fiberglass or composites as the rivet spreads in a way that prevents crazing or cracking of the material. NOTE: CR3212 & CR3213 are nominal diameters. CR3242 & CR3243 are oversized diameters and measure 1/64" more than listed diameter.
Install with P/N 12-03105 G-27 Hand Gun.

Dash #	Dia.	CR3212 Grip Range	CR3213 Grip Range	Each	Price 100
4-1	.126	-----	.025-.062	---	---
4-2		.063-.125	.063-.125	$0.59	$53.10
4-3		.126-.187	.126-.187	$0.64	$57.60
4-4		.188-.250	.188-.250	$0.61	$54.90
4-5		.251-.312	.251-.312	$0.56	$50.40
4-6		.313-.375	.313-.375	$0.80	$72.00
5-2	.157	.065-.125	.063-.125	$0.71	$63.90
5-3		.126-.187	.126-.187	$1.19	$107.10
5-4		.188-.250	.188-.250	$0.82	$73.80
5-5		.251-.312	.251-.312	$0.84	$75.60
5-6		.313-.375	.313-.375	$1.06	$95.40
6-10	.189	.563-.625	.563-.625	$2.75	$247.50

Dash #	Dia.	CR3242 Grip Range	CR3243 Grip Range	Each	Price 100
4-1	.140	.032-.063	.025-.062	$0.82	$73.80
4-2		.063-.125	.063-.125	$0.78	$70.20
4-3		.126-.187	.126-.187	$0.65	$58.50
4-4		.188-.250	.188-.250	$0.79	$71.10
4-5		.251-.312	.251-.312	$0.96	$86.40
4-6		.313-.375	.313-.375	$0.93	$83.70
5-2	.173	.063-.125	.063-.125	$0.79	$71.10
5-3		.126-187	.126-.187	$0.76	$68.40
5-4		.188-.250	.188-.250	$0.83	$74.70
5-5		.251-.312	.251-.312	$0.79	$71.10
5-6		.313-.375	.313-.375	$0.99	$89.10

NOTE: SUBJECT TO PRICE AND AVAILABILITY OF CHERRY BRAND RIVETS. EQUIVALANT RIVETS MAY BE FURNISHED.

CHERRYMAX GRIP GAUGE

Measures rivet diameter and length, P/N 12-00217 ..... **$8.75**

RIVET/RIVNUT BACK MARKERS

Used to locate pre-drilled holes in the wing ribs, fuel tank covers, panels, skin. Pre-drill the ribs, screw in the back markers, lay the skin sheet over the top, tap with a hammer, turn the sheet over, and drill the holes. This is especially useful for rivnut installation. Due to the large size of the hole required, small errors in location can lead to the "Oh darn, I missed the rib syndrome". Backmarkers can save you hours of frustration. Two sizes of threaded backmarkers are available. We recommend using the 04-00131 for wing ribs. Drilling the wing ribs with a 3/32" drill. Drop in the back markers. Mark the skin by taping with a soft hammer. Turn the skin over and drill the skin with a 3/32" drill. Cleco the skin into position enlarge the holes with #30 drill & cleco. Now you are ready to rivet.

Nut Plate	Marker Size	Drill Size	Part No.	Price Ea.
10-32*	—	—	04-00117	$0.98
8-32*	—	—	04-00119	$0.98
3/8-24	.327	5/8"	04-00121	$1.13
5/16-24	.265	1/2"	04-00122	$1.15
1/4-28	.209	1/2	04-00123	$1.15
10-32	.154	3/8"	04-00124	$0.98
8-32	.128	3/8"	04-00127	$0.98
6-32	.102	3/8"	04-00129	$0.98
3/32" hole	.093	3/8"	04-00131	$0.98

HA

NUTSERTS

The A-T Series Insert is unique in that it can be installed into most any material above .030/,76 mm in thickness. As the A-T Series is installed, the threaded portion is completely swaged 360° into the sleeve portion and the hole. This permits the A-T Series to be used with Grade 8/metric 12.9 mating screws.
The A-T Series Insert is installed using light-weight, hand held pneumatic tools that can be located at any position in your product's assembly sequence. The A-T Series Insert can be installed either prior to or after finish.

360°SWAGING HOW IT WORKS FOR YOU

As the A-T Series Insert is installed, the threaded nut portion is drawn into the upper sleeve portion.

As this occurs, a 360° swaging action takes place anchoring the A-T Series in the parent material.

HA

NUTSERT HOLE SIZE / MATERIAL THICKNESS CHART

Installation hole size for the A-T Series Insert is determined by the parent material's thickness and density. The thicker the material the larger the hole required to allow full 360° installation swaging. The application should be tested before hole size is specified.

THREAD SIZE	.030-.090 MAT. THICKNESS		.091-.124 MAT THICKNESS		.125-.186 MAT. THICKNESS		.187-OVER MAT. THICKNESS	
	DRILL SIZE	DECIMAL	DRILL SIZE	DECIMAL	DRILL SIZE	DECIMAL	DRILL SIZE	DECIMAL
4-40 UNC	3/16	.1875	#10	.1935	#10	.1935	#9	.1960
6-32 UNC	7/32	.2188	#2	.2210	#1	.2280	#1	.2280
8-32 UNC	1/4	.2500	"F"	.2570	17/64	.2656	17/64	.2656
10-24 UNC	9/32	.2812	"L"	.2900	"L"	.2900	19/64	.2969
10-32 UNF	9/32	.2812	"L"	.2900	"L"	.2900	19/64	.2969
1/4-20 UNC	3/8	.3750	3/8	.3750	"W"	.3860	25/64	.3906
1/4-28 UNC	3/8	.3750	3/8	.3750	"W"	.3860	25/64	.3906
5/16-18 UNC	1/2	.5000	1/2	.5000	33/64	.5156	33/64	.5156
5/16-24 UNC	1/2	.5000	1/2	.5000	33/64	.5156	33/64	.5156
3/8-16 UNC	9/16	.5625	9/16	.5625	37/64	.5781	37/64	.5781
1/2-13 UNC	3/4	.7500	49/64	.7656	25/32	.7810	51/64	.7970

THREAD SIZE	THREAD CALL OUT	HD ±.005	L ±.015	D MAX.	IL MAX.	LB ±.015	ILB MAX.	IATD** MAX.	HOLE DEPTH MIN.	PART NO.	PRICE EACH
4-40 UNC	440	.211	.370	.1875	.205	.660	.495	.395	.400	ATS2-440	**$0.29**
6-32 UNC	632	.240	.370	.2185	.205	.675	.505	.410	.400	ATS2-632	**$0.27**
8-32 UNC	832	.269	.370	.2495	.205	.675	.505	.410	.400	ATS2-832	**$0.26**
10-24 UNC	1024	.306	.370	.2805	.205	.685	.520	.385	.400	ATS2-1024	**$0.38**
10-32 UNF	1032	.306	.370	.2805	.205	.685	.520	.385	.400	ATS2-1032	**$0.21**
1/4-20 UNC	420	.400	.515	.3745	.275	1.005	.760	.615	.540	ATS2-420	**$0.38**
1/4-28 UNC	420	.400	.515	.3745	.275	1.005	.760	.615	.540	ATS2-428	**$0.52**
5/16-18 UNC	518	.528	.615	.4995	.325	1.065	.770	.630	.640	ATS2-518	**$0.87**
5/16-24 UNC	518	.528	.615	.4995	.325	1.065	.770	.630	.640	ATS2-524	**$1.76**
3/8-16 UNC	616	.588	.745	.5615	.390	1.450	1.095	.890	.770	ATS2-616	**$0.78**
1/2-13 UNC	813	.800	.935	.7485	.485	NA	NA	NA	.960	ATS2-813	**$4.20**

***Dimensions in minimum grip condition. Additional UNF thread sizes available.**

AA-112 HI-TORQUER NUTSERT TOOLS

The hi-torquer tool is ideal for field and maintenance applications. It features a patented Quick Change thread size nose assembly. Order one base tool plus appropriate conversion kit. No warranty on these tools.

THREAD SIZE	CONV. KIT PART NO.	PRICE EACH
4-40 UNC	AAT-202-440	**$29.75**
6-32 UNC	AAT-202-632	**$29.50**
8-32 UNC	AAT-202-832	**$29.50**
10-24 UNC	AAT-202-1024	**$29.50**
10-32 UNF	AAT-202-1032	**$29.75**
1/4-20 UNC	AAT-202-420	**$29.50**
1/4-28 UNC	AAT-202-428	**$31.75**
5/16-18 UNC	AAT-202-518	**$29.50**
5/16-24 UNC	AAT-202-524	**$29.50**
3/8-16 UNC	AAT-202-616	**$29.25**
Base tool, P/N AA-112		**$69.50**

AAT916 EXPENDABLE NUTSERT TOOLS

These expendable tools are ideal for applications such as field repair. They can also be packaged with instructions for use along with quantity of inserts for consumer assembly. Sizes 6-32, 8-32 include a hex key. Sizes 10-32,and larger require a wrench (not included). No warranty on these tools.

THREAD SIZE	TOOL PART NUMBER	PRICE EACH
4-40 UNC	AAT-916-440	**$9.50**
6-32 UNC	AAT-916-632	**$9.50**
8-32 UNC	AAT-916-832	**$9.50**
10-24 UNC	AAT-916-1024	**$9.50**
10-32 UNF	AAT-916-1032	**$9.50**
1/4-20 UNC	AAT-916-420	**$9.50**
1/4-28 UNC	AAT-916-428	**$9.50**
5/16-18 UNC	AAT-916-518	**$9.50**
5/16-24 UNC	AAT-916-524	**$9.50**
1/2-13 UNC	AAT-916-813	**$74.25**
3/8-16 UNC	AAt-916-616	

AAT312A MASTER NUTSERT ASSORTMENT KIT

The A-T Series master assortment kit is ideal for prototype and maintenance repair applications. The rugged hard shell plastic kit contains quantities of the A-T Series Inserts and the AA 112 Hi-torquer tool. It also contains a full compliment of thread size conversion kits and instruction label. No warranty on these tools.

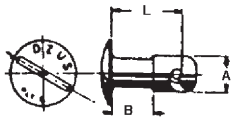
KIT CONTAINS:

THREAD SIZE	QTY	NUTSERT PART NO.	CONV. KIT
4-40 UNC	50	ATS2-440	AAT-202-440
6-32 UNC	50	ATS2-632	AAT-202-632
8-32 UNC	50	ATS2-832	AAT-202-832
10-32 UNF	50	ATS2-1032	AAT-202-1032
1/4-20 UNC	50	ATS2-420	AAT-202-420
5/16-18 UNC	50	ATS2-518	AAT-202-518
Kit, P/N AAT312A			**$219.95**

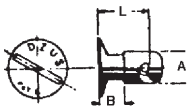
Nutsert available. Sold Each.

AIRCRAFT SPRUCE WEST CORONA, CA • (877) 4-SPRUCE
AIRCRAFT SPRUCE EAST PEACHTREE CITY, GA • (877) 477-7823
Prices Subject to Change Without Notice

DZUS FASTENERS



Oval Head Stud



Flush Head Stud

Wing Head Stud

OVAL HEAD STUD, LONG UNDERCUT

Model No.	Stud Dimensions A	B	L	Zinc Electroplated Cat. #	Price Each	Model No.	Stainless Cat. #	Price Each	GROMMETS & SNAP RINGS	SPRINGS
121J-325-Z3C	.1875	.075	.250	AJ3-25*	$0.93	-	-	-	GA3-175, 200, 250 GP3B, GH3 SR3SS SX-520SS	S3-150, 175 200,225
121J-330-Z3C	.1875	.100	.300	AJ3-30	$0.99	-	-	-		
121J-335-Z3C	.1875	.150	.350	AJ3-35*	$0.97	121J-335-SS	AJ3-35SS*	$3.05		
121J-340-Z3C	.1875	.200	.400	AJ3-40	$0.87	-	-	-		
121J-425-Z3C	.250	.100	.250	AJ4-25*	$1.13	121J-425-SS	AJ4-25SS*	$3.95	GA4-225, 250, 275, 300 GP4B, GH4 SB4SS SX-523SS	S4-200, 225
121J-430-Z3C	.250	.100	.300	AJ4-30	$0.97	121J-430-SS	AJ4-30SS	$1.55		
121J-435-Z3C	.250	.150	.350	AJ4-35*	$0.85	121J-435-SS	AJ4-35SS*	$2.15		
121J-440-Z3C	.250	.200	.400	AJ4-40	$1.04	121J-440-SS	AJ4-40SS	$2.25		
121J-445-Z3C	.250	.225	.450	AJ4-45*	$1.56	-	-	-		
121J-450-Z3C	.250	.250	.500	AJ4-50	$0.98	-	-	-		
121J-530-Z3C	.3125	.125	.300	AJ5-30	$1.18	121J-530-SS	AJ5-30SS	$1.10	GA5-312, 350, 375 GP5B, GH5 SR5SS SX-510SS	S5A200, 225 250, 275
121J-535-Z3C	.3125	.125	.350	AJ5-35*	$1.20	121J-535-SS	AJ5-35SS*	$1.17		
121J-540-Z3C	.3125	.190	.400	AJ5-40	$1.05	121J-540-SS	AJ5-40SS	$1.26		
121J-545-Z3C	.3125	.190	.450	AJ5-45*	$1.23	-	-	-		
121J-550-Z3C	.3125	.250	.500	AJ5-50	$1.25	-	-	-		
121J-560-Z3C	.3125	.300	.600	AJ5-60	$1.26	-	-	-		
121J-570-Z3C	.3125	.400	.700	AJ5-70	$1.98	-	-	-		
121J-635-Z3C	.375	.150	.350	AJ6-35*	$3.35	-	-	-	GA6-350, 375, 425 GP6B,GH6 SR6SS SX-518SS	S6-225, 250, 275 300
121J-640-Z3C	.375	.190	.400	AJ6-40	$2.50	-	-	-		
121J-650-Z3C	.375	.250	.500	AJ6-50	$1.21	-	-	-		
121J-660-Z3C	.375	.300	.600	AJ6-60	$3.15	-	-	-		
121J-670-Z3C	.375	.350	.700	AJ6-70	$4.50	-	-	-		
121J-740-Z3C	.4375	.190	.400	AJ7-40	$3.10	-	-	-	GA7-375, 475, 525 GH7 SR7SS SX-519SS	S7-225, 250, 275, 300
121J-750-Z3C	.4375	.250	.500	AJ7-50	$7.95	-	-	-		
121J-760-Z3C	.4375	.300	.600	AJ7-60	$3.40	-	-	-		
121J-770-Z3C	.4375	.350	.700	AJ7-70	$3.25	-	-	-		

FLUSH HEAD STUD, LONG UNDERCUT

Model No.	Stud Dimensions A	B	L	Zinc Electroplated Cat. #	Price Each	Model No.	Stainless Cat. #	Price Each	GROMMETS & SNAP RINGS	SPRINGS
126J-330-Z3C	.1875	.150	.300	FJ3-30	$1.33	-	-	-	GP3B-GH3 SR3SS SX-520SS	S3-150, 175, 200, 225
126J-335-Z3C	.1875	.175	.350	FJ3-35*	$1.24	-	-	-		
126J-340-Z3C	.1875	.200	.400	FJ3-40	$1.73	-	-	-		
-	.250	.150	.300	-	-	126J-430-SS	FJ4-30SS	$1.23	GF4-125, 150, 175, 200 GP4B, GH4 SR4SS SX-523SS	S4-200, 225
126J-435-Z3C	.250	.175	.350	FJ4-35*	$1.80	126J-435-SS	FJ4-35SS1	$2.45		
126J-440-Z3C	.250	.200	.400	FJ4-40	$2.85	126J-440-SS	FJ4-40SS	$2.75		
126J-445-Z3C	.250	.225	.450	FJ4-45*	$2.40	126J-445-SS	FJ4-45SS1	$2.90		
126J-450-Z3C	.250	.250	.500	FJ4-50	$2.50	-	-	-		
126J-540-Z3C	.3125	.225	.400	FJ5-40	$2.20	126J-540-SS	FJ5-40SS	$3.55	GF5-175, 225, 250 GP5B, GH5 SR5SS, SX-510SS	S5A200, 225 250, 275
126J-550-Z3C	.3125	.250	.500	FJ5-50	$2.60	-	-	-		
126J-560-Z3C	.3125	.300	.600	FJ5-60	$3.40	-	-	-		
126J-650-Z3C	.375	.250	.500	FJ6-50	$1.62	-	-	-	GF6-218, 250 GP6B,GH6 SR6SS, SX-518SS	S6-225, 250, 275 300
126J-660-Z3C	.375	.300	.600	FJ6-60	$2.97	-	-	-		
126J-670-Z3C	.375	.350	.700	FJ6-70	$5.25	-	-	-		
126J-750-Z3C	.4375	.250	.500	FJ7-50	$2.90	-	-	-	GF7-250, 325, 400 GH7, SR7SS, SX-519SS	S7-225, 250, 275, 300
126J-760-Z3C	.4375	.300	.600	FJ7-60	$3.30	-	-	-		
126J-770-Z3C	.4375	.350	.700	FJ7-70	$3.75	-	-	-		

WING HEAD STUD, LONG UNDERCUT

(A, B, L dimensions for AJW are same as for AJ; P, Q, R dimensions given are for wing head)

Model No.	Stud Dimensions A	B	L	Zinc Electroplated Cat. #	Price Each	Model No.	Stainless Cat. #	Price Each	GROMMETS & SNAP RINGS	SPRINGS
121J-W325-Z3C	.1875	.075	.250	AJW3-25*	$3.85	-	AJW3-25SS*	$3.00	GA3-175, 200, 250 GP3B, GH3 SR3SS SX-520SS	S3-150, 175 200, 225
121J-W330-Z3C	.1875	.100	.300	AJW3-30	$3.85	-	-	-		
121J-W335-Z3C	.1875	.150	.350	AJW3-35*	$3.97	-	-	-		
121J-W340-Z3C	.1875	.200	.400	AJW3-40	$4.10	-	-	-		
121J-W425-Z3C	.250	.100	.250	AJW4-25*	$3.70	-	-	-	GA4-225, 250, 275, 300 GP4B, GH4 SR4SS SX-523SS	S4-200, 225
121J-W430-Z3C	.250	.100	.300	AJW4-30	$1.91	-	-	-		
121J-W435-Z3C	.250	.150	.350	AJW4-35*	$2.15	-	-	-		
121J-W440-Z3C	.250	.200	.400	AJW4-40	$3.10	-	-	-		
121J-W530-Z3C	.3125	.125	.300	AJW5-30	$1.60	-	-	-	GA5-312, 350, 375 SR5SS SX-510SS	S5A200, 225
121J-W540-Z3C	.3125	.190	.400	AJW5-40	$1.55	-	-	-		
121J-W545-Z3C	.3125	.200	.450	AJW5-45*	$3.40	-	-	-		
121J-W550-Z3C	.3125	.250	.500	AJW5-50	$2.70	-	-	-		

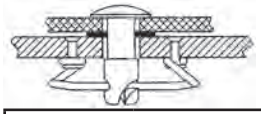
CAD PLATED FASTENERS ARE NO LONGER AVAILABLE DUE TO ENVIROMENTAL REASONS.

****No longer available after our current stock is depleted. Please order next longer size.***

DZUS FASTENERS

HA

STUD AND SPRING SELECTION TABLES



1. Find total thickness (distance) from underside of stud head to point of spring attachment).
2. Select stud "L" and spring "H" dims.

Size 3 Stud, S3 Spring			Size 4 Stud, S4 Spring		
	USE			USE	
Total Thickness	Stud Dim. L	Spring Dim. H	Total Thickness	Stud Dim. L	Spring Dim. H
.045 - .069	-25	-225	.050 - .074	-25	-225
.070 - .094	-25	-200	.075 - .099	-25	-200
.095 - .119	-30	-225	.100 - .124	-30	-225
.120 - .144	-30	-200	.125 - .149	-30	-200
.145 - .169	-30	-175	.150 - .174	-35	-225
.170 - .194	-30	-150	.175 - .199	-35	-200
.195 - .219	-35	-175	.200 - .224	-40	-225
.220 - .224	-35	-150	.225 - .249	-40	-200
.245 - .269	-40	-175	.250 - .274	-45	-225
.270 - .294	-40	-150	.275 - .299	-45	-200
			.300 - .324	-50	-225
			.325 - .344	-50	-200

Size 5 Stud, S5A Spring			Size 6 Stud, S6 Spring Size 7 Stud, S7 Spring		
	USE			USE	
Total Thickness	Stud Dim. L	Spring Dim. H	Total Thickness	Stud Dim. L	Spring Dim. H
.055 - .079	-30	-275	.090 - .114	-35	-300
.080 - .104	-30	-250	.115 - .139	-35	-275
.105 - .129	-30	-225	.140 - .164	-35	-300
.130 - .154	-30	-200	.165 - .189	-40	-275
.155 - .179	-40	-275	.190 - .214	-40	-250
.180 - .204	-40	-250	.215 - .239	-40	-225
.205 - .229	-40	-225	.240 - .264	-50	-300
.230 - .254	-40	-200	.225 - .249	-40	-200
.255 - .279	-50	-275	.265 - .289	-50	-275
.280 - .304	-50	-250	.290 - .314	-50	-250
.305 - .329	-50	-225	.315 - .339	-50	-225
.330 - .354	-50	-200	.340 - .364	-60	-300
.355 - .379	-60	-275	.365 - .389	-60	-275
.380 - .404	-60	-250	.390 - .414	-60	-250
.405 - .429	-60	-225	.415 - .439	-60	-225
.430 - .454	-60	-200	.440 - .464	-70	-300
.455 - .479	-70	-275	.465 - .489	-70	-275
.480 - .504	-70	-250	.490 - .514	-70	-250
.505 - .529	-70	-255	.515 - .539	-70	-225
.530 - .554	-70	-200			

INSTALLATION TOOLS

Part No.	Description (Installs:)	Price
04-01441	A, AJ3 Oval Head Studs & Grommets	$47.50
04-01410	A4,AJ4 Oval Head Studs & Grommets	$47.50
04-01409	A5,AJ5 Oval Head Studs & Grommets	$47.50
04-01442	A6.5,AJ6.5 Oval Head Studs&Grommets	$57.50
04-01413	A7, AJ7 Oval Head Studs & Grommets	$199.95
04-01447	F5, FJ5 Flush Head Studs & Grommets	$47.50
04-01637	F6.5,FA6.5,FJ6.5 Flush Head Studs & Grommets	$49.75

Note: A5 tool is specially designed to install grommets in Bonanza cowlings without removing cowling brackets. This will save you alot of time.

Description	Part No.	Price
Modified C-Clamp (Required and Accepts All Attachment Sets)	12-02272	$42.95

RETAINING SPRINGS

When there is a gap between the top and bottom panels, a retaining spring is used to hold the stud in locking position for alignment with receptacle.

Model No.	Part No.	Price ea
1219-24520-SS	SX-520SS	$0.34
1219-24523-SS	SX-523SS	$0.17
1219-24510-SS	SX-510SS	$0.18
1219-24518-SS	SX-518SS	$0.67
1219-24519-SS	SX-519SS	$0.55

SNAP RINGS

A snap ring is used when there is not a lot of pull-out load. This ring is expandable easily installed with pliers or screwdriver and takes little space.

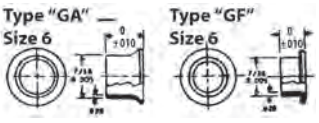
Model No.	Part No.	Price ea
1219-R3-SS	SR3SS	$0.08
1219-R4-SS	SR4SS	$0.09
1219-R5-SS	SR5SS	$0.10
1219-R6-SS	SR6SS	$0.08
1219-R7-SS	SR7SS	$0.12

SPRINGS

Model No.	Part No.	Price Ea.	Model No.	Part No.	Price Ea.
1219-3175-Z3Y	S3-175	$0.35	1219-5300-Z3Y	S5A-300	$1.24
1219-3200-Z3Y	S3-200	$0.42	1219-6225-Z3Y	S6A-225	$1.53
1219-3225-Z3Y	S3-225	$0.39	1219-6250-Z3Y	S6A-250	$0.97
1219-4220-Z3Y	S4-200	$0.36	1219-6275-Z3Y	S6A-275	$0.56
1219-4225-Z3Y	S4-225	$0.50	1219-6300-Z3Y	S6-300	$1.62
1219-4250-Z3Y	S4-250	$0.35	1219-6400-Z3Y	S6A-400	$1.54
1219-A4200-Z3Y	S4A-200	$0.36	1219-6425-Z3Y	S6A-425	$0.89
	S5-325-SURP	$7.50	1219-6325-Z3Y	S5A-325	$1.33
1219-A5200-Z3Y	S5A-200	$0.56	1219-7225-Z3Y	S7-225	$1.47
1219-A5225-Z3Y	S5A-225	$0.38	1219-7250-Z3Y	S7-250	$1.83
1219-A5250-Z3Y	S5A-250	$0.37	1219-7275-Z3Y	S7-275	$1.19
1219-A5275-Z3Y	S5A-275	$1.35	1219-7300-Z3Y	S7-300	$0.75

The dash number represents the height ("H" dimension) of the spring.

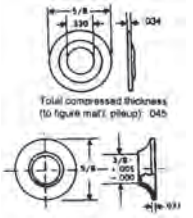
FULL GROMMETS



A full grommet is used when protection of the hole is a definite consideration. It protects panel finish and reduces stud play. A tool is required for installation. The "GA" type full grommet is used with a protruding head stud, and the "GF" type with a flush head stud.

ALUMINUM

Outer Panel Thickness	Type "GA" Model No.	Part No.	Price	Type "GF" Model No.	Part No.	Price
.015 - .025	1271-3175	GA3-175	$2.95	---	N/A	---
.026 - .050	1271-200	GA3-200	$3.30	---	N/A	---
.051 - .094	1271-250	GA3-250	$1.10	---	N/A	---
.015 - .025	---	GA4-225	--	1276-4125	GF4-125	$2.25
.026 - .050	1271-4250	GA4-250	$1.21	1276-4150	GF4-150	$1.73
.051 - .075	1271-4275	GA4-275	$2.75	1276-4175	GF4-175	$2.90
.076 - .100	1271-4300	GA4-300	$2.50	1276-4200	GF4-200	$2.20
.031 - .062	1271-5312	GA5-312	$1.40	1276-5175	GF5-175	$2.40
.063 - .094	1271-5350	GA5-350	$0.47	1276-5225	GF5-225	$2.45
.095 - .125	1271-5375	GA5-375	$1.34	1276-5250	GF5-250	$2.35
.040 - .065	1271-6350	GA6-350	$0.54	---	GF6-218	---
.066 - .100	1271-6375	GA6-375	$3.20	1276-6250	GF6-250	$0.49
.101 - .135	1271-6425	GA6-425	$3.15	---	---	---
.050 - .095	1271-7375	GA7-375	$3.60	1276-7250	GF7-250	$4.85
.096 - .156	---	GA7-475	---	---	GF7-325	---
.157 - .218	1271-7525	GA7-525	---	1276-7400	GF7-400	$5.95



HALF GROMMETS

A half grommet does not break easily, and it flattens but guarantees hold of the stud. It is used when protection of the hole is not a consideration, but protection of panel finish might be. The "GH" type half grommet is installed with a tool; the "GP" type is pushed on by hand.

Type "GP" Thermoplastic Model No.	Part No.	Price ea	Type "GH" Aluminum Model No.	Part No.	Price ea
127P-3B	GP3B	$0.10	127H-3	GH3	$0.10
127P-4B	GP4B	$0.10	127H-4	GH4	---
127P-5B	GP5B	$0.10	127H-5	GH5	$0.09
127P-6B	GP6B	$0.14	127H-6	GH6	$0.13
127P-7B	GP7B	---	127H-7	GH7	$0.25

DZUS FASTENER SPRING ADJUSTER

The MS-7301 tool easily adjusts Dzus fastener springs for a perfect fit every time. Great for Warbirds and vintage aircraft. Bend springs in or out with a few simple turns. P/N 04-00957..... **$43.00**

DZUS DRIVER

The MS-Driver is a great tool for locking and unlocking Dzus fasteners. The large handle gives you plenty of torque and is comfortable in the hand. The blade has a radius end to fit fastener slots better than a standard screwdriver and is heat treated steel with zinc plating for long life. P/N 04-00958.....**$18.95**

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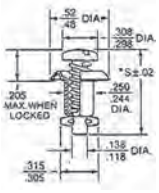
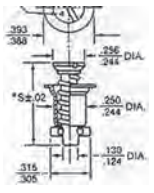
CAMLOC FASTENERS

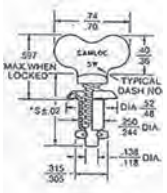
The 2600 and 2700 series Camloc fasteners exceed requirements for MIL-F-5591, Style 3, Size 2. Shear and tensile strength: 300 lbs. (ultimate), 200 lbs. (rated). Studs and washers listed are made of steel. The receptacles are made of copper base alloy. All components listed are rated to 450° F. The 4002 series fasteners are considerably stronger than the 2600 and 2700 series. Shear and tensile strength: 1050 lbs. (ultimate), 700 lbs. (rated). All studs and grommets listed are made of steel. Rated to 450° F.



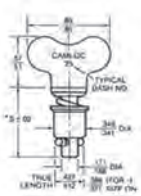
2600



2700



2600 WING



4002 WING

2600 STUDS

Dash No.	CAD Plated 2600 Slot Price Ea	CAD Plated 26S8 Phillips Price Ea	Stainless Dash No.	Stainless 2600 Slot Price Ea	CAD Plated Wing CAD Plated	CAD Plated Price Each
-1	$3.60	$2.60	-1S	$4.20	---	---
-2	$3.40	$2.35	-2S	$4.15	2600-2W	$7.70
-3	$3.05	$2.45	-3S	$4.15	2600-3W	$4.75
-4	$1.98	$2.35	-4S	$3.80	2600-4W	$6.25
-5	$2.20	$1.70	-5S	$3.90	2600-5W	$6.30
-6	$3.89	$2.35	-6S	$4.15	2600-6W	$7.75
-7	$3.50	$2.85	-7S	$3.80	2600-7W	$5.35
-8	$3.10	$3.70	-8S	$4.25	2600-8W	$11.75
-9	$2.65	$3.95	-9S	$3.45	2600-9W	$8.11
-10	$3.75	$2.20	-10S	$4.10	2600-10W	$5.75
-11	$4.20	---	---	---	2600-11W	$7.90
-12	$3.90	---	---	---	2600-12W	$6.75
-13	$3.40	---	---	---	---	---
-14	$4.20	$3.90	---	---	2600-14W	$7.75

2700 STUDS

Dash No.	CAD Plated 2700 Slot Price Ea	CAD Plated 27S3 Phillips Price Ea	Stainless Dash No.	Stainless 2700 Slot Price Ea
-1	$3.90	$2.98	-1S	$3.80
-2	$3.40	$4.05	-2S	$3.95
-3	$2.98	$3.35	-3S	$3.55
-4	$3.70	$3.25	-4S	$3.15
-5	$3.05	$2.60	-5S	$3.70
-6	$3.75	$3.10	-6S	$3.90
-7	$3.75	$3.40	-7S	$3.95
-8	$3.60	$4.10	-8S	$4.10
-9	$3.95	$2.95	-9S	$4.95
-10	$2.95	$2.65	-10S	$4.15
-11	$2.55	---	---	---
-13	$4.45	---	---	---
-14	$4.15	$4.10	---	---

4002 STUDS

Dash No.	CAD Plated / Stainless 4002 CAD Plated Slot Price Ea	40S5 CAD Plated Phillips Price Ea	SS Phillips 40S5	Price Each	Dash No.	4002 SS Slot Price Ea	Wing CAD Plated	Price Each
-2	$5.25	$3.40	40S5-2S	$3.60	-2S	$3.80	4002-2W	$9.50
-3	$3.45	$3.50	40S5-3S	$3.97	-3S	$3.85	4002-3W	$7.75
-4	$3.25	$2.95	40S5-4S	$3.80	-4S	$3.80	4002-4W	$7.75
-5	$3.05	$3.15	40S5-5S	$4.45	-5S	$3.40	4002-5W	$6.95
-6	$3.25	$3.50	40S5-6S	$4.20	-6S	$3.98	4002-6W	$7.25
-7	$3.70	$3.50	40S5-7S	$4.25	-7S	$3.95	---	---
-8	$3.75	$3.50	40S5-8S	$5.25	-8S	$3.97	4002-8W	$7.90
-9	$3.70	$3.70	40S5-9S	$5.25	-9S	$4.00	4002-9W	$10.00
-10	$3.70	---	40S5-10S	$5.25	---	---	4002-10W	$8.25
-11	$3.95	---	---	---	---	---	4002-11W	---
-12	$3.95	---	---	---	---	---	4002-12W	$7.95
-13	$3.70	---	---	---	---	---	---	---
-14	$3.60	---	---	---	---	---	---	---
-15	$3.97	---	---	---	---	---	---	---
-16	$4.45	---	---	---	---	---	---	---
-17	$4.60	---	---	---	---	---	---	---

RECEPTACLES

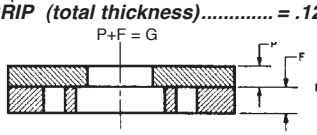
2600 Series - Small enough to fit in limited mounting space and light weight. All of these fasteners have a 600# ultimate tensile load capacity. 4200 Series - The Modern Standard in Quick Release Fastening Systems. They have an 800# working strength and 1050# Ultimate Tensile load capacity.

Rivet Holes	2600, 2700 Series Part No.	Price Each	4002 Series Part No.	Price Each
Plain	212-12N	$2.50	214-16N	$3.35
Cntersunk	212-12ND*	$3.10	214-16ND*	$4.35
Plain	Floating Bronze		244-16	$4.10

2600 / 2700 STUD LENGTH SELECTION

Total material thickness "G" consists of the thickness of all materials to be fastened. This must include the thickness of the material "P" to which the stud assembly is attached, the material "F" to which the receptacle is attached plus gaskets (if used) and allowance for paint or other protective finishes. If the total thickness is near the upper limit of the stud grip range, the next longer stud should be used. This will still maintain positive locking of the fastener under vibration.

P (panel thickness) ..... .062
F (frame thickness ..... + .062
GRIP (total thickness)..... = .124



STUD SELECTION TABLE Using 212-12 Receptacle Total Grip Thickness	Use 2600	Use 2700
.020 - .059	2600-1	2700-1
.060 - .089	2600-2	2700-2
.090 - .119	2600-3	2700-3
.120 - .149	2600-4	2700-4
.150 - .179	2600-5	2700-5
.180 - .209	2600-6	2700-6
.210 - .239	2600-7	2700-7
.240 - .269	2600-8	2700-8
.270 - .299	2600-9	2700-9
.300 - .329	2600-10	2700-10
.330 - .359	2600-11	2700-11
.360 - .389	2600-12	2700-12
.390 - .419	2600-13	2700-13
.420 - .449	2600-14	2700-14

4002 SERIES (LARGE HEAD) STUD SELECTION

To select the proper length stud, first select the grommet, for example 4002-G. Next, select the receptacle, such as 214-16. After determining the total grip thickness, use the grommet column under which the selected grommet and receptacle appear. Use the dash number which appears opposite the determined total grip thickness.

Example: If the total determined grip thickness "G" was. 144, the stud dash number for the above 4002-G grommet and 214-16 receptacle would be -4. The stud part number would be 4002-4.

Total Grip Thickness Range "G"	Stud Dash Number 4002-G Grommet & 214-16 Receptacle	4002-N, 4002-0 Grommet & 214-16 Receptacle
.021 - .050	--*	-1
.055 - .080	--*	-2
.081 - .110	-2*	-3
.111 - .140	-3	-4
.141 - .170	-4	-5
.171 - .200	-5	-6
.201 - .230	-6	-7
.231 - .260	-7	-8
.261 - .290	-8	-9
.291 - .320	-9	-10
.321 - .350	-10	-11
.351 - .380	-11	-12
.381 - .410	-12	-13
.411 - .440	-13	-14
.441 - .470	-14	-15
.471 - .500	-15	-16
.501 - .530	-16	-17
.531 - .560	-17	-

****4002-G grommet requires .090" minimum grip.***

2600, 2700 SERIES RETAINING WASHERS

Retaining washers are required for studs of -5 length or greater. Use split washer 2600-SW2 where it is desirable to have the stud fall away for minimum internal projection. Use internal tooth washer 2600-LW where it is desirable to retain the stud assembly rigidly.

P/N 2600-SW-2 ..... **$0.52** P/N 2600-LW..... **$0.23**

4002 SERIES GROMMETS & SNAP RINGS

Description	Part No.	Price ea.
CAD Plated		
Flush Grommet	4002-G	$1.18
Flush Grommet	4002-H	$2.20
Plus-Flush Grommet	4002-N	$1.60
Stud Retaining Grommet	4002-O	$1.35
High Shear Flush Grommet	40G1-5	$3.30
Wide Area Grommet	4002-N3	$2.20
Grommet Retaining Ring	R4G	$0.27
High Shear Grommet Retaining Ring	R4T	$0.77
Camloc Retaining Ring	4002-SW	$0.65
Stainless		
Flush Grommet	4002-GS	$1.63
Flush Grommet	4002-HS	$1.71
Plus Flush Grommet	4002-NS	$1.64
Flush Grommet	4002-OS	$1.63

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CAMLOC FASTENERS

COWLING KITS

Aircraft Make & Model	Stainless Slotted P/N	Stainless Slotted Price	Stainless Phillips P/N	Stainless Phillips Price	Cad-Plated Phillips P/N	Cad-Plated Phillips Price
Aerosport			04-00327 A	$30.75		
Aero Commander 690	04-00286 B	$1,290.00			04-00336 B	$1,045.00
Aerostar	04-00287 B	$773.00			04-00337 B	$665.00
Beech Baron B55 ('69 SN TC1230) A	04-00288 B	$325.95	04-00329 B	$359.95		
Beech Baron B58	04-00289 B	$240.95			04-00338 B	$192.95
Beech Baron P58	04-00291 B	$296.95				
Bellanca Scout 8GCBC	04-00292 A	$68.25				
Bellanca Viking	04-00293 B	$149.95			04-00339 B	$116.95
Cessna 150 (1967-77)	04-00294 A	$48.00	04-00331 A	$42.25		
Cessna 172 (1967-82)	04-00297 A	$52.50	04-00332 A	$52.85		
Cessna 172RG (1984)	04-00298 B	$255.95			04-00341 B	$196.95
Cessna 172XP	04-00299 B	$108.95			04-00342 B	$106.95
Cessna 177	04-00301 A	$52.00	04-00333 A	$53.00		
Cessna 182 (1961-69)	04-00303 B	$194.95				
Cessna 182 (1971 SN 60752)	04-00305 B	$194.95	04-00334 B	$196.95	04-00343 B	$172.95
Cessna 182 (1973 & up)	04-00307 B	$143.95			04-00344 B	$128.95
Cessna 182RG	04-00309 B	$250.95	04-01942 B	$275.95	04-01943 B	$242.95
Cessna 206	04-00310 B	$188.95			04-00347 B	$137.95
Cessna 210	04-00311 B	$197.95			04-00348 B	$156.95
Cessna 310K	04-00312 B	$939.00			04-00349 B	$807.00
Cessna 320	04-00313 B	$821.00			04-00351 B	$597.00
Cessna 337	04-00315 B	$600.00			04-00352 B	$466.95
Cessna 340	04-00317 B	$630.00			04-00353 B	$556.00
Cessna 414	04-00319 B	$534.00			04-00354 B	$456.95
Cessna 421	04-00320 B	$884.00			04-00355 B	$794.00
Mooney 20J	04-00321 B	$150.95	Kit contains Southco or Camloc studs, washers, and retainers. The retainer push on tool is only included in Southco Kits. Receptacles are not included. A is for Southco. B is for Camloc.			
Piper PA18	04-00322 A	$39.65				
Piper Cheyenne	04-00006 B	$425.95				
Piper Comanche Twin (Nose)	04-00324 A	$67.50	***The nose cowl components, if applicable, are not included in any cowling kit.***			
Piper Comanche Twin	04-00325 B	$634.00				

MS213 ADJUSTABLE DEPTH RECEPTACLE

- For 2600/2700/2800 Series C-Spec Fasteners.
- Any one stud length fits a wide range of panels.
- The MS213 is an exact replacement for 212-12 receptacles.
- Standard aluminum MS213A receptacles are lighter than 212 fixed depth receptacles with no sacrifice in strength ratings.
- Economical. Simply inventory one stud length for all applications.
- Fully compatible with existing C-Spec (Camloc®) designs.
- FAA approved for aircraft use under TSO-C-148.

Description	Part No.	Price
Receptacle, 2600/2700/2800, Rigid Receptacle, Adjustable Depth, Plain Rivet Holes, Aluminum	04-02069	$5.50
Receptacle, 2600/2700/2800, Rigid Receptacle, Adjustable Depth, Plain Rivet Holes, Aluminum, Dimpled	04-02070	$5.75
Receptacle, 2600/2700/2800, Adjustable Depth, Rigid Receptacle, Plain Rivet Holes, Stainless Steel	04-02071	$6.25
Receptacle, 2600/2700/2800, Adjustable Depth, Rigid Receptacle, Csk Rivet Holes, Aluminum, Dimpled	04-02072	$5.75
Receptacle, 2600/2700/2800, Adjustable Depth, Rigid Receptacle, Plain Rivet Holes, Steel	04-02073	$5.50
Receptacle, 2600/2700/2800, Adjustable Depth, Rigid Receptacle, Csk Rivet Holes, Stainless Steel, Dimpled	04-02074	$6.25

CAMLOC FASTENER TOOLS

PLIERS P/N 4P3 ..... **$16.95**

2600-LW LOCKWASHER TOOL
P/N T98-1 ..... **$26.85**

4002 SERIES SNAP RING TOOL
P/N 04-01529 ..... **$21.85**

RECEPTACLE DRILL JIG
For 4002 Series and 2600/2700 Series receptacles
P/N 01-00155 ..... **$41.70**

HOLE SAWS
Stock Sizes:
P/N 04-01516 (.471" dia.)..... **$248.95**
P/N 04-01517 (.687" dia.)..... **$239.95**
Other diameters available

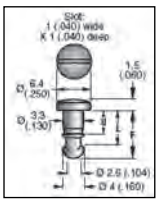
#2S200M & F 2700 SERIES DIMPLING TOOL
P/N 2S200M-1
1/4"x9/16"L **$399.75**
P/N 04-01636
1/4"x9/16"L **$344.95**
P/N 2S200M-2
5/16"x5/8"L **$624.00**

MEASURING TOOL
This handy tool is all stainless steel and engraved with Camloc fastener lengths from -2 to -11. Simple slide the Camloc fastener into the tool to determine the size (dash number) of the Camloc.
P/N 12-01598 ..... **$16.85**

SOUTHCO FASTENERS

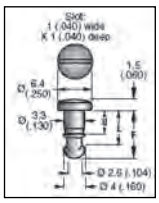
SOUTHCO STUDS

FLUSH SLOTTED



Flush Head #82 Dacrotized Slotted	
Part No.	Price
82-14-120-16	$0.96
82-28-160-16	$1.29
Flush Head #82 Stnls Phillips	
Part No.	Price
82-28-100-16	$0.78
82-28-120-16	$0.70
82-28-140-16	$0.78
82-28-160-16	$1.29
82-28-180-16	$0.78
82-28-200-16	$0.78
82-28-220-16	$0.75
82-28-240-16	$0.76
82-28-260-16	$0.78
82-28-280-16	$0.73
82-28-300-16	$0.73
82-28-320-16	$0.73
82-28-340-16	$0.73

OVAL SLOTTED

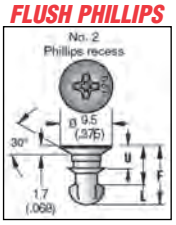


Oval Head #82 Stnls Slotted	
Part No.	Price
82-11-100-20	$1.14
82-11-120-20	$0.97
82-11-140-20	$1.81
82-11-160-20	$1.81
82-11-180-20	$1.85
82-11-200-20	$1.83
82-11-220-20	$1.14
82-11-240-20	$1.85
82-11-280-20	$0.92
Oval Head #82 Dacrotized Slotted	
Part No.	Price
82-11-100-16	$0.82
82-11-120-16	$1.30
82-11-140-16	$1.31
82-11-160-16	$1.38
82-11-180-16	$1.38
82-11-200-16	$1.28
82-11-220-16	$0.73
82-11-240-16	$1.31
82-11-260-16	$1.30

OVAL PHILLIPS

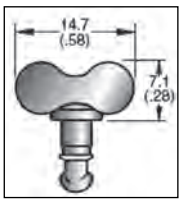
Oval Head #82 Stnls Phillips	
Part No.	Price
82-19-120-20	$1.01
82-19-140-20	$0.98
82-19-160-20	$0.83
82-19-180-20	$1.17
82-19-200-20	$1.84
82-19-220-20	$1.17
Oval Head #85 Stnls Slotted	
Part No.	Price
85-11-100-20	$0.63
85-11-140-20	$1.96
85-11-160-20	$1.96
85-11-180-20	$1.95
85-11-200-20	$1.21
85-11-220-20	$1.20
85-11-240-20	$1.13
85-11-260-20	$1.26
85-11-280-20	$1.95
85-11-300-20	$2.10

FLUSH PHILLIPS



Wing Head #85 Zinc plate, chromate plus sealer	
Part No.	Price
85-12-140-16	$1.00
85-12-160-16	$0.93
85-12-180-16	$0.98
85-12-200-16	$0.93
85-12-220-16	$1.64
85-12-240-16	$0.93
85-12-260-16	$0.93
85-12-280-16	$0.93
85-12-300-16	$0.93
85-12-320-16	$0.93
85-12-340-16	$0.93
85-12-360-16	$0.93
85-12-380-16	$0.93
85-12-400-16	$0.93

WING HEAD



Wing Head #82 Dacrotized	
Part No.	Price
82-12-100-16	$1.56
82-12-120-16	$1.71
82-12-140-16	$1.56
82-12-160-16	$1.55
82-12-180-16	$1.56
82-12-200-16	$0.86
82-12-220-16	$1.18
82-12-240-16	$1.57
82-12-300-16	$1.56
82-12-340-16	$0.97

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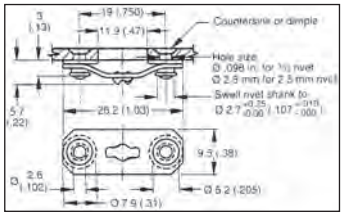
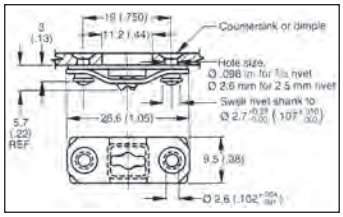
#82 SOUTHCO RECEPTACLES

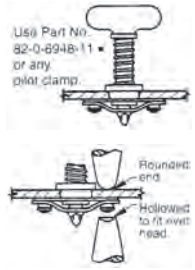




FLOATING FOR RIVETING W/O BASE - This space saving stainless steel receptacle offers optimum weight savings by eliminating base.
P/N 82-35-295-20 ..... **$1.01/ea**

FLOATING FOR RIVETING W/ BASE - Full-floating dacrotized steel receptacle is mounted to inside panel with two 3/32" rivets. Compact dimensions save space and weight.
P/N 82-35-302-15 ..... **$0.42/ea**

FIXED FOR WELDING WITH BASE - Exactly the same as the receptacle with base above except this receptacle features two welding studs for installation by welding rather than rivets.
P/N 82-35-303-15 ..... **$1.50/ea**



CLIP-ON RECEPTACLES - These versatile receptacles will fit material thickness from .020 to .190 by simply slipping over the hole and clipping in place. Easily removed as well, these receptacles do not require welding or riveting.
P/N 82-47-113-200 (Stainless Steel) **$1.25/ea**
P/N 82-47-113-150 (Steel) **$0.31/ea**

RUBBER VIBRATION ISOLATION RECEPTACLES - Use these receptacles where it is necessary to isolate vibration between panels.
P/N 82-35-306-10 ..... **$9.25**

#85 RECEPTACLES

RIVET TYPE - Receptacle Spring: 1064 steel, dacrotized
Base: 1010 steel, dacrotized. P/N 85-35-295-15 ..... **$1.13**

RECEPTACLE SPRING: 17-7 PH, stainless steel, passivated
BASE: 305 stainless steel, passivated. P/N 85-35-295-20 ..... **$3.10/ea**

WELD TYPE - Receptacle Spring: 1064 steel, dacrotized
Base: 1010 steel, dacrotized Rivet: steel, copper-plated.
P/N 85-35-296-15 ..... **$2.75/ea**

CLIP-ON TYPE - 17-7 PH stainless steel, passivated.
P/N 85-47-101-20 ..... **$1.49/ea**

DETERMINING SOUTHCO STUD PART NO.

Stud Length Material Thickness	Selection Chart Thickness Size
.090 - .109	100
.110 - .129	120
.130 - .149	140
.150 - .169	160
.170 - .189	180
.190 - .209	200
.210 - .229	220
.230 - .249	240
.250 - .269	260
.270 - .289	280

Southco studs are commonly used to secure Cessna cowlings, particularly on models 150, 172, and 177. We stock the popular Southco No. 82 1/4 turn fastener studs, receptacles, and accessories.

TO DETERMINE PART NO.

Select Stud part number using chart above. Example:

82 - 14 - 220 - 16

Southco Fastener Number	Head Type (Slotted)	Stud Length	Material Type (Dacrotized)

SOUTHCO SEALING WASHER – This black synthetic washer is used under head of Southco Studs.....P/N 82-43-201-38.....**$0.20/ea**

SOUTHCO EJECTOR SPRING – This stainless steel spring enables the stud head to stand away from the panel when the unit is not fastened. When using the ejector spring, add two grip lengths to stud length to allow for spring and wear washer. .....P/N 43-13-1-24.....**$0.12/ea**

SOUTHCO WEAR WASHER – A plastic washer to reduce wear around the Southco stud.When using wear washer add one grip length to stud length selection. P/N 82-46-101-39 .....**$0.14/ea.**

SOUTHCO SPLIT RING RETAINER – Can be installed by hand or tool, and is fabricated from stainless steel. P/N 82-32-101-20.....**$0.09/ea**

SOUTHCO SPLIT RING RETAINER TOOL - Designed to install Southco split ring retainers. P/N 82-0-7596-11 .....**$27.65/ea**

SOUTHCO PUSH-ON RETAINER – designed for installation using the retainer tool below. Stainless.....P/N 82-32-201-20.....**$0.08/ea**
Plastic.....P/N 82-32-301-12.....**$0.09/ea**

SOUTHCO PUSH-ON RETAINER TOOL – An easy-to-use tool quickly installs Southco push-on retainers P/N 82-0-22542-11 .....**$18.75/ea**

SOUTHCO PUSH-ON RETAINER TOOL - An easy-to-use tool quickly installs Southco 85 Series push-on retainers. P/N 85-0-22543-11 .....**$39.25**

#85 RETAINERS

Split Ring Hand or tool installation. Stainless steel.
P/N 85-34-101-20 .....**$0.13/ea**
Push-On Tool installation only. 302 Stainless Steel, Passivated
P/N 85-34-201-20 .....**$0.13/ea**
Nylon Black .P/N 85-34-301-12.....**$0.10/ea**

#85 THERMOPLASTIC (CUPPED NYLON) WEAR WASHER

Natural color. Order stud one size longer than size you would use without washer. Adjustment Formula: Add 0.51/.020 to your total material thickness. P/N 85-46-101-39 .....**$0.15/ea**

CLICK BOND FASTENERS

CLICK BOND FASTENERS

Click Bond Fasteners mount to surfaces with adhesive. They are assembled in a disposable, self-fixturing device of plastic that aligns and holds the fastener in position and under controlled pressure while the bonding material cures. After the installation is completed, the holding fixture is removed and the conventional attachment is made to the fastener. Bonded fasteners eliminate welding or drilling surfaces and result in reinforced substrate strength, leakproof and corrosion resistant attachments. Aircraft Spruce & Specialty Co. offers Click Bond Fasteners in convenient, pre-packaged kits as shown.

CABLE TIE MOUNT KIT

Each cable tie mount in this kit is pre-assembled in a temporary, easy-to-remove fixture that holds the cable tie mount in place and under pressure while the adhesive cures. No additional installation tools are needed. The kit includes four CB3019AA3N cable tie mounts with nylon ties (5" 40 lbs.), one adhesive packet, surface preparation materials, and installations.

P/N 04-06000 .....**$14.85**

FLOATING NUTPLATE KIT

The Click Bond adhesive bonded floating nutplate has a metal base and is installed using a disposable, elastomeric fixture that temporarily holds the nutplate in place and under pressure while the adhesive cures. The fixture prevents fouling of the clearance hole. No additional tools are needed for making the nutplate attachment. This fastener meets or exceeds the standards set by MIL-N-25027 for push-out, torque-out, and cycle life. Bonded nutplates eliminate composite damaging rivets, reinforce the structure, and reduce installation time. The kit includes four CB2009A3S floating nutplates (10-32) with aluminum baseplate, one adhesive packet, surface preparation materials, and instructions.

P/N 04-06005 .....**$24.85/ea.**

REPAIR PATCH KIT

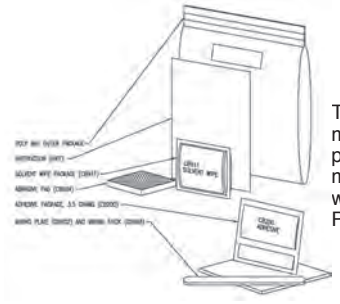
These self-fixturing surface mounted patches repair small holes and fastener leaks without access to the reverse side of the surface. The patches are adhesively bonded to flat or curved surfaces with the aid of an integral, disposable fixture. The high peel strength adhesive allows the patches to withstand supersonic flight, cleaning, de-icing, and paint stripping. Patches can be removed easily with heat application. The kit includes one CP125-000-005A1A1 aluminum repair patch (.005 thick and 1.25 inch diameter), one adhesive packet, surface preparation materials, and instructions.

P/N 04-06015 .....**$12.75**

CB 200 ACRYLIC ADHESIVE

A high strength, two part adhesive. 3.5 gram package. One package is usually sufficient to do five of any Click Bond fasteners.

P/N 04-06040 .....**$1.95**



CB92 ADHESIVE MIX KIT

The CB92 Acrylic adhesive & prep material kit includes adhesive package (3.5 grams) mixing plate, mixing stick, abrasive pad, solvent wipe package, and instructions.

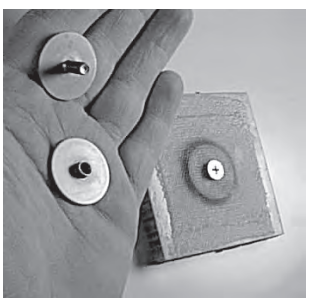
P/N 04-02059 ..... **$3.60**

STUD KITS

Click Bond studs are available in several sizes. The Metal Small Base Stud Kit includes six CS62-1032-12AX-CR aluminum small base stainless studs, six stainless nylocks/washers (10-32), one adhesive packet, surface preparation materials, and instructions. The Metal Large Base Stud Kit includes four CS125-1420-16AX-CR aluminum large base stainless studs, four stainless nylock/washers (1/4-20), one adhesive packet, surface preparation materials, and instructions. The Fiberglass Base Stud Kit includes two CS125-1032-12G-CR fiberglass large base stainless studs, two stainless nylocks/washers (10-32), one adhesive packet, surface preparation materials, and instructions.

Metal Small Base Stud Kit..... P/N 04-06020..... **$9.65**
Metal Large Base Stud Kit ..... P/N 04-06025..... **$11.85**
Fiberglass Base Stud Kit..... P/N 04-06030..... **$15.75**

EZ-POINT NUTS & STUDS FOR COMPOSITES



Creating a hard point in a composite laminated structure has never been easier. Simply drill a hole, prep the area, apply structural adhesive to the alodined, cleaned surface of the EZ-Point and snap into place. Simple and clean. For secondary structural applications, apply three plies of bid cloth to the area. Un-glassed samples were tested to failure in excess of 200 lbs. in shear. Glassed samples exceeded testing ability at over 500 lbs. Perfect for Adel clamps, trim and auto pilot servos, hydraulics, anything but primary structure. Available in 8-32, 10-32, 1/4 – 20, 1/4 – 28, your choice of locking, blind and studs. Used extensively in the installation of the Flesher 360 interior for the Lancair.

STUDS			BLIND NUTS			LOCKING NUTS		
THREAD	P/N	$ EA	THREAD	P/N	$ EA	THREAD	P/N	$ EA
8-32	04-06330	**$4.35**	8-32	04-06350	**$5.75**	8-32	04-06370	**$3.50**
10-32	04-06335	**$3.20**	10-32	04-06355	**$3.25**	10-32	04-06375	**$3.35**
1/4 - 20	04-06340	**$2.85**	1/4 - 20	04-06360	**$3.60**	1/4 - 28	04-06380	**$3.35**
						1/4 - 28	04-06385	**$3.35**

EZ-POINT STRIPS FOR COMPOSITES

Take the guesswork out of nut plate spacing with EZ-Point Strips. They maintain consistent spacing while remaining flexible enough to conform to curvature. Perfect for cowling attachments, Access doors, removable wingtips, anywhere you would use a standard 10/32 or 8/32 nut plate. Locking threads, available in one, two and three inch centers. Sold in one-foot sections.

8-32 thread, 1" centers ..... P/N 04-06450 ..... **$43.25 ea.**
8-32 thread, 2" centers ..... P/N 04-06455 ..... **$41.50 ea.**
8-32 thread, 3" centers ..... P/N 04-06460 ..... **$34.80 ea.**
10-32 thread, 1" centers ..... P/N 04-06465 ..... **$46.75ea.**
10-32 thread, 3" centers ..... P/N 04-06475 ..... **$38.00 ea.**

AIRLOC FASTENERS

A-LOCK (AIRLOC) FASTENERS

A-Lock fasteners are common to Beechcraft airplanes and latches on many cowlings. The design consists of a simple stud, with a pin pressed into the shank. The pin is installed after inserting the stud through the panel hole and removed prior to removing the stud. Some installations use a grommet in the fastener hole. Unlike other fasteners, the grommet does not usually require replacement when installing new studs. Base part numbers indicate stud diameter and head style. A-Lock studs are made in several blank lengths indicated by the first dash number in the charts. Each blank length can have up to 10 second dash numbers or grip sizes. The second dash number indicates the maximum grip range in .010" increments. Milspec primarily stocks sizes common to Beech aircraft in stainless steel for repacement purposes. To remove an A-Lock stud, simply clip or remove the pin enough to back the stud out of the hole. New pins are pressed in using special pliers, or by modifying standard vice grip pliers. Drill or cut one jaw of the vice grip to allow proper relief for the pin. If new grommets are required, a flaring tool is necessary (see below). For new installations, cross pins are required.

MS P/N	Our P/N	Size/Head Style	Grip	"A"	Total Length	Price
112060-1-060	04-00931	#2 Flush	.051-.060	.200	.359	**$3.65**
112060-1-080	04-00933	#2 Flush	.071-.080	.220	.359	**$3.60**
112060-1-090	04-00934	#2 Flush	.081-.090	.230	.359	**$3.75**
294186-1-080	04-00936	#5 Flush	.071-.080	.267	.500	**$4.60**
294186-1-100	04-00937	#5 Flush	.091-.100	.287	.500	**$3.55**
294186-2-180	04-00938	#5 Flush	.171-.180	.367	.609	**$3.70**
294186-2-190	04-00939	#5 Flush	.181-.190	.377	.609	**$3.55**
294186-2-200	04-00940	#5 Flush	.191-.200	.387	.609	**$3.65**
294186-2-210	04-00941	#5 Flush	.201-.210	.397	.609	**$4.20**
294186-2-230	04-00942	#5 Flush	.220-.230	.417	.609	**$3.55**
294186-2-240	04-00943	#5 Flush	.231-.240	.427	.609	**$3.60**
294186-2-250	04-00944	#5 Flush	.241-.250	.437	.609	**$3.60**
294290-1-080	04-00945	#5 Round	.071-.080	.267	.500	**$3.60**
294290-1-090	04-00946	#5 Round	.081-.090	.277	.500	**$3.60**
294290-2-170	04-00947	#5 Round	.161-.170	.357	.609	**$3.60**

AIRLOC CROSS PINS

Series	Description	Part No.	Price
#2	99785-2 Steel	04-01071	**$0.69**
#2	293274 Stainless	04-01072	**$0.82**
#5	294185 Stainless	04-01074	**$0.82**

A-LOCK RECEPTACLES
(SOLID RECEPTACLE)

Series	Rivet Spacing	Solid Rec. Plain	Price ea.	Solid Rec. Countersink	Our Part No.	Price ea.
#2	3/4"	99871-P098	**Call**	99871-C098	04-00951	**$5.50**
#5	1"	99833-P098	**Call**	99833-C098	---	**Call**
		99833-P130	**Call**	99833-C130	---	**Call**

A-LOCK RECEPTACLES
(FLOATING RECEPTACLE)

Series	Rivet Spacing	Float. Rec. Plain	Our Part No.	Price ea.	Float. Rec. Countersink	Our Part No.	Price ea.
#2	3/4"	--	--	**Call**	99967-C098	--	**Call**
#5	1"	99947-P098	04-00954	**$5.25**	99947-C098	04-00956	**$5.35**
		99947-P130	04-00955	**$2.80**	99947-C130	--	**Call**

A-LOCK GROMMETS

May not require replacement when installing new studs.

Series	Panel Thick.	Flush Head	Part No.	Price
#2	up to .040	295846-1	04-00962	**$3.55**
	.041-.080	295846-2	04-00963	**$3.80**
#5	.041-.121	295250-2	04-00964	**$3.70**
	.122-.201	295250-5	04-00965	**$2.40**

FLARING TOOLS FOR A-LOCK GROMMETS

These tools are required for replacing any A-Lock grommet.

MS P/N	Our P/N	Type	Price
MS29693/29695	04-00959	#2 Flush	**$33.50**
MS9529/29667	04-00960	#5 Flush	**$29.95**
MS9529/29770	04-00961	#5 Round	**$29.95**

BEECH BONANZA COWLING FASTENER CONVERSION KITS

STC approved cowling fastener upgrade kit for B33 and B35 aircraft. Kit is stainless steel and uses MilSpec's exclusive adjustable depth receptacles for an easy , yet very precise fit. The finish on this fastener is bright and shiny. Complete, easy to follow instructions and STC copy included with kit.
Note: Two tools are required for the 40 series kits (Camloc Pliers and 4002 Series Snap Ring Tool). One tool is required for the 28 series kits (2600-LW Lockwasher Tool).

Beech Kit No.	Model	Serial No.	Description	Price
04-00966	33	CD1-350	Gill conversion 2700 series	**$202.95**
	35	D1-6567	Slotted head (looks original)	
04-00967	33	CD1-350	Gill conversion 27S3 series	**$215.95**
	35	D1-6567	Phillips head	
04-00968	33	All	Main Cowling Conversion	**$98.50**
	35	D1-9068	4002 Series Slotted head	
04-00969	33	All	Main Cowling Conversion	**$127.95**
	35	D1-9068	40S5 Series Phillips head	
04-00971	33	CD351-on	Gill Conversion	**$228.95**
	35	D6562-on	4002 Series	
	36	E1 -on	Phillips head	
04-02080	33	CD351 On	Lower Grill Door (Check Panel)	**$228.95**
	35	D6568 On	Upgrade 4002 Series Slotted	
	36	E1 On	C-Spec	

CESSNA CAMLOC FASTENER COWLING KITS

Model	Year	Serial	Description	P/N	Price
CESSNA 150					
C150 A-M	67 On	ALL	4000/2600 Stainless Phillips Complete Conversion	04-01542	**$421.95**
			4000 Stainless Phillips Firewall Only Conversion	04-01543	**$327.95**
CESSNA 172					
C172H-P	67-81	54893-75034	4000 Stainless Phillips Complete Conversions	04-01548	**$579.00**
			4000 Stainless Phillips Fire-wall Only Conversions	04-01549	**$362.95**
			4000 Stainless Phillips Side Only Conversions	04-01550	**$197.95**
C172P-Q	82-86	75035 On	4000 Stainless Phillips Complete Conversions	04-01551	**$657.95**
			4000 Stainless Phillips Fire-wall Only Conversions	04-01552	**$362.95**
			4000 Stainless Phillips Side Only Conversions	04-01553	**$196.95**
C172XP-XPII	77-81	2000-3454	4000 Stainless Phillips Complete Conversions	04-01554	**$656.95**
			4000 Stainless Phillips Fire-wall Only Conversions	04-01555	**$421.95**
CESSNA 177					
C177A-B and C177 RG	71-78	00001 - 02752 and 00001 - 1366	4000 Stainless Phillips Complete Conversion	04-01562	**$570.95**
			4000 Stainless Phillips Firewall Only Conversion	04-01563	**$451.95**
			4000 Stainless Phillips Side Only Conversion	04-01564	**$120.95**
CESSNA 182					
C182	56-60	33000-53007 Screw Cowlings	2800 Stainless Phillips Complete Conversion	04-01566	**$466.95**
C182P-R	73-86	61426-68542	4000 Stainless Phillips Complete Conversion	04-01568	**$567.00**
			4000 Stainless Phillips Firewall Only Conversion	04-01569	**$478.95**

AN FITTINGS

The aircraft fittings shown on the following pages conform to current AN and MS specifications. We stock aluminum, brass and/or steel fittings. Fittings not regularly stocked can be special ordered. Order by Part Number. Example: AN840-8D.

AN804

TEE, FLARED TUBE WITH BULKHEAD ON RUN

Size No. Steel	Size No. Alum.	Tube O.D.	Thread Size	Price Each Steel	Price Each Alum.
2	2D	1/8	5/16-24	$12.75	- - -
3	3D	3/16	3/8-24	$12.93	$10.75
4	4D	1/4	7/16-20	$14.75	$8.37
5	5D	5/16	1/2-20	$32.50	$15.75
6	6D	3/8	9/16-18	$18.50	$11.25
8	8D	1/2	3/4-16	$18.95	$16.00
10	10D	5/8	7/8-14	- - -	$26.90
12	12D	3/4	1-1/16-12	- - -	- - -

AN815

UNION, FLARED TUBE

Size No. Steel	Size No. Alum.	Tube O.D.	Thread Size	Price Each Steel	Price Each Alum.
2	2D	1/8	5/16-24	$10.75	$3.10
3	3D	3/16	3/8-24	$7.50	$2.80
4	4D	1/4	7/16-20	$8.46	$2.20
5	5D	5/16	1/2-20	$5.25	$2.80
6	6D	3/8	9/16-18	$6.83	$2.80
8	8D	1/2	3/4-16	$3.40	$2.10
10	10D	5/8	7/8-14	$12.50	$4.30
12	12D	3/4	1-1/16-12	$13.75	$9.78

AN818

NUT, COUPLING

Size No. Steel	Size No. Alum.	Tube O.D.	Thread Size	Price Each Steel	Price Each Alum.
2	2D	1/8	5/16-24	$1.21	$0.99
3	3D	3/16	3/8-24	$1.18	$0.47
4	4D	1/4	7/16-20	$1.53	$0.66
5	5D	5/16	1/2-20	$1.72	$0.78
6	6D	3/8	9/16-18	$1.59	$0.89
8	8D	1/2	3/4-16	$2.40	$1.38
10	10D	5/8	7/8-14	$2.65	$1.84
12	12D	3/4	1-1/16-12	$4.15	$3.10

AN807

ADAPTER HOSE TO UNIVERSAL

Size No. Brass	Size No. Alum.	Hose I.D.	Thread Size	Price Each Brass	Price Each Alum.
4	4D	1/4	7/16-20	$23.00	$10.50
6	6D	3/8	9/16-18	---	$10.75
8	8D	1/2	3/4-16	- - -	$16.75

AN816

NIPPLE, FLARED TUBE AND PIPE THREAD

Size No. Steel	Size No. Alum.	Tube O.D.	Pipe Size	Price Each Steel	Price Each Alum.
2	2D	1/8	1/8	$7.25	$1.75
3	3D	3/16	1/8	$4.97	$1.67
4	4D	1/4	1/8	$5.75	$1.48
4-4	4-4D	1/4	1/4	$5.63	$1.63
5	5D	5/16	1/8	$7.25	$2.35
6	6D	3/8	1/4	$4.35	$2.85
6-2	6-2D	3/8	1/8	$8.00	$2.35
6-6	6-6D	3/8	3/8	$5.25	$2.20
7	7D	1/2	1/4	$6.95	$3.10
8	8D	1/2	3/8	$6.50	$3.35
10	10D	5/8	1/2	$13.75	$3.20
12	12D	3/4	3/4	$22.75	$6.75

AN819 (MS20819)

SLEEVE, COUPLING

Size No. Steel	Size No. Alum.	Tube O.D.	Price Each Steel	Price Each Alum.
2	2D	1/8	$0.80	$0.61
3	3D	3/16	$1.02	$0.48
4	4D	1/4	$0.74	$0.46
5	5D	5/16	$0.76	$0.76
6	6D	3/8	$1.35	$0.82
8	8D	1/2	$1.64	$0.85
10	10D	5/8	$2.50	$1.56
12	12D	3/4	$5.25	- - -

AN814

PLUG AND BLEEDER, SCREW THREAD

Size No. Steel	Size No. Alum.	Tube O.D.	Thread Size	Price Each Steel	Price Each Alum.
2	2D	1/8	5/16-24	- - -	$2.70
3	3D	3/16	3/8-24	$9.25	$1.59
4	4D	1/4	7/16-20	$9.50	$3.15
5	5D	5/16	1/2-20	$10.46	$2.70
6	6D	3/8	9/16-18	$7.50	$2.40
8	8D	1/2	3/4-16	$11.75	$4.45
10	10D	5/8	7/8-14	- - -	$6.95
12	12D	3/4	1-1/16-12	$19.90	$6.50

AN821

ELBOW, FLARED TUBE, 90°

Size No. Steel	Size No. Alum.	Tube O.D.	Thread Size	Price Each Steel	Price Each Alum.
2	2D	1/8	5/16-24	---	$12.37
3	3D	3/16	3/8-24	$14.25	$7.25
4	4D	1/4	7/16-20	$7.38	$6.50
5	5D	5/16	1/2-20	$16.00	$9.82
6	6D	3/8	9/16-18	$13.50	$6.64
8	8D	1/2	3/4-16	$19.93	$9.75
10	10D	5/8	7/8-14	$32.25	$10.50
12	12D	3/4	1-1/16-12	- - -	$15.50

AN806

FLARED TUBE PLUG

Size No. Steel	Size No. Alum.	Tube O.D.	Thread Size	Price Each Steel	Price Each Alum.
2	2D	1/8	5/16-24	$5.38	$1.86
3	3D	3/16	3/8-24	$3.95	$1.14
4	4D	1/4	7/16-20	$6.75	$0.99
5	5D	5/16	1/2-20	$3.45	$1.26
6	6D	3/8	9/16-18	$6.00	$1.08
8	8D	1/2	3/4-16	$5.50	$2.10

DEL 37° FITTING SEALS

DEL fitting seals are designed to eliminate leakage due to scratches on the sealing surface, improper torquing, or poor finishes on tube ends, in high or low pressure applications. For use with AN, MS, and JIC 37° flared fittings, DEL fitting seals also reduce tube flare cracking by reducing torque needed, eliminating nose damage to the fitting, and allow reuse of hardware. Approved by FAA, NASA, SAE, Air Force, Army, Navy, and major aerospace contractors.

Part Number	Tube Size OD	Fitting Dash Size	Price Each
04-05002	1/8	2	$1.68
04-05003	3/16	3	$1.88
04-05004	1/4	4	$1.73
04-05006	3/8	6	$1.78
04-05008	1/2	8	$1.88
04-05010	5/8	10	$1.83
04-05012	3/4	12	$1.88
04-05016	1	16	$1.88

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AN FITTINGS

AN822 (MS20822)

ELBOW, FLARED TUBE AND PIPE THREAD, 90°

Size No.		Tube	Pipe	Price Each	
Steel	Alum.	O.D.	Size	Steel	Alum.
2	2D	1/8	1/8	$18.95	$11.50
3	3D	3/16	1/8	$8.75	$5.94
4	4D	1/4	1/8	$12.25	$6.25
4-4	4-4D	1/4	1/4	$9.50	$7.50
-	5-4D	5/16	1/4	-	$13.50
5	5D	5/16	1/8	$8.25	$9.50
6	6D	3/8	1/4	$9.75	$7.50
6-2	6-2D	3/8	1/8	$15.25	$6.89
6-6	6-6D	3/8	3/8	$14.88	$9.25
8	8D	1/2	3/8	$13.50	$8.50
10	10D	5/8	1/2	$18.75	$10.50
12	12D	3/4	3/4	$22.95	$13.75

AN825 (MS20825)

TEE, FLARED TUBE WITH PIPE THREAD ON SIDE

Size No.		Tube	Pipe	Price Each	
Steel	Alum.	O.D.	Thread	Steel	Alum.
2	2D	1/8	1/8	---	$13.00
3	3D	3/16	1/8	$15.75	$8.50
4	4D	1/4	1/8	$18.75	$7.75
5	5D	5/16	1/8	$13.95	$12.75
6	6D	3/8	1/4	$14.75	$8.25
8	8D	1/2	3/8	---	$9.00
10	10D	5/8	1/2	---	$14.25
12	12D	3/4	3/4	---	---

AN832

UNION, FLARED TUBE, BULKHEAD AND UNIVERSAL

Size No.		Tube	Thread	Price Each	
Steel	Alum.	O.D.	Size	Steel	Alum.
2	2D	1/8	5/16-24	$9.96	$9.25
3	3D	3/16	3/8-24	$11.75	$4.60
4	4D	1/4	7/16-20	$7.50	$3.70
5	5D	5/16	1/2-20	$13.50	$4.40
6	6D	3/8	9/16-18	$7.75	$4.35
8	8D	1/2	3/4-16	$14.90	$5.25
10	10D	5/8	7/8-14	$15.95	$8.75
12	12D	3/4	1-1/16-12	$23.50	$10.75

AN823 (MS20823)

ELBOW, FLARED TUBE AND PIPE THREAD, 45°

Size No.		Tube	Pipe	Price Each	
Steel	Alum.	O.D.	Thread	Steel	Alum.
2	2D	1/8	1/8	$36.45	$9.95
3	3D	3/16	1/8	$10.50	$6.50
4	4D	1/4	1/8	$9.98	$6.50
5	5D	5/16	1/8	$12.70	$7.93
6	6D	3/8	1/4	$13.75	$6.50
8	8D	1/2	3/8	$17.50	$9.25
10	10D	5/8	1/2	- - -	$9.97
12	12D	3/4	3/4	$35.50	$11.86

AN826 (MS20826)

TEE TUBE WITH PIPE THREAD ON RUN

Size No.		Tube	Pipe	Price Each	
Steel	Alum.	O.D.	Thread	Steel	Alum.
2	2D	1/8	1/8	$23.50	$13.50
3	3D	3/16	1/8	$20.70	$9.75
4	4D	1/4	1/8	$11.50	$7.25
5	5D	5/16	1/8	$13.80	$10.65
6	6D	3/8	1/4	$26.75	$8.75
8	8D	1/2	3/8	$26.75	$6.96
10	10D	5/8	1/2	$18.50	$15.00
12	12D	3/4	3/4	- - -	$23.25

AN833

ELBOW, FLARED TUBE BULKHEAD AND UNIVERSAL, 90°

Size No.		Tube	Thread	Price Each	
Steel	Alum.	O.D.	Size	Steel	Alum.
2	2D	1/8	5/16-24	$28.00	$14.38
3	3D	3/16	3/8-24	$8.25	$7.25
4	4D	1/4	7/16-20	$9.95	$6.94
5	5D	5/16	1/2-20	$19.95	$10.25
6	6D	3/8	9/16-18	$9.87	$8.47
8	8D	1/2	3/4-16	$16.75	$10.63
10	10D	5/8	7/8-14	---	$15.50
12	12D	3/4	1-1/16-12	---	$15.85

AN824

TEE, FLARED TUBE

Size No.		Tube	Thread	Price Each	
Steel	Alum.	O.D.	Size	Steel	Alum.
2	2D	1/8	5/16-24	$22.80	$11.93
3	3D	3/16	3/8-24	$11.90	$6.50
4	4D	1/4	7/16-20	$5.93	$8.00
5	5D	5/16	1/2-20	$18.50	$7.95
6	6D	3/8	9/16-18	$19.97	$7.25
8	8D	1/2	3/4-16	$17.45	$10.50
10	10D	5/8	7/8-14	$26.50	$15.25
12	12D	3/4	1-1/16-12	- - -	$23.50

AN827

CROSS, FLARED TUBE

Size No.		Tube	Thread	Price Each	
Steel	Alum.	O.D.	Size	Steel	Alum.
2	2D	1/8	5/16-24	- - -	- - -
3	3D	3/16	3/8-24	- - -	$12.75
4	4D	1/4	7/16-20	$14.50	$14.50
5	5D	5/16	1/2-20	- - -	$23.45
6	6D	3/8	9/16-18	- - -	$13.75
8	8D	1/2	3/4-16	- - -	$33.85
10	10D	5/8	7/8-14	- - -	- - -
12	12D	3/4	1-1/16-12	- - -	$38.80

AN834

TEE, FLARED TUBE, BULKHEAD AND UNIVERSAL

Size No.		Tube	Thread	Price Each	
Steel	Alum.	O.D.	Size	Steel	Alum.
2	2D	1/8	5/16-24	- - -	$13.95
3	3D	3/16	3/8-24	- - -	$6.50
4	4D	1/4	7/16-20	$11.75	$9.75
5	5D	5/16	1/2-20	- - -	$12.75
6	6D	3/8	9/16-18	$25.75	$8.97
8	8D	1/2	3/4-16	$25.75	$17.50
10	10D	5/8	7/8-14	- - -	$11.95
12	12D	3/4	1-1/16-12	- - -	- - -

AN FITTINGS

HA

AN837 ELBOW,

FLARED TUBE, BULKHEAD AND UNIVERSAL 45°

Size No.		Tube	Thread	Price Each	
Steel	Alum.	O.D.	Size	Steel	Alum.
2	2D	1/8	5/16-24	---	$13.87
3	3D	3/16	3/8-24	$7.75	$8.25
4	4D	1/4	7/16-20	$10.50	$8.38
5	5D	5/16	1/2-20	$16.75	$8.90
6	6D	3/8	9/16-18	$11.75	$8.94
8	8D	1/2	3/4-16	$21.95	$10.38
10	10D	5/8	7/8-14	$27.50	$18.25
12	12D	3/4	1-1/16-12	---	---

AN838 ELBOW,

BULKHEAD & HOSE TO UNIVERSAL, 90°

Size No.		Hose	Thread	Price Each	
Brass	Alum.	O.D.	Size	Brass	Alum.
4	4D	1/4	7/16-20	---	$23.76
6	6D	3/8	9/16-18	---	$17.75

AN840 HOSE NIPPLE,

PIPE THREAD

Size No.		Hose	Pipe	Price Each	
Brass	Alum.	I.D.	Size	Brass	Alum.
4	4D	1/4	1/8	$8.75	$3.65
6	6D	3/8	1/4	$14.25	$3.94
8	8D	1/2	3/8	$6.94	$10.50
---	10D	5/8	1/2	---	$7.75
12	12D	3/4	3/4	$38.75	$13.93

AN844 HOSE ELBOW,

PIPE THREAD, 45°

Size No.		Hose	Pipe	Price Each	
Brass	Alum.	I.D.	Thread	Brass	Alum.
4	4D	1/4	1/8	$12.90	$9.63
6	6D	3/8	1/4	---	$12.75
8	8D	1/2	3/8	$15.75	$11.50
10	10D	5/8	1/2	$14.30	$19.50

AN848 ELBOW,

HOSE BULKHEAD, 90°

Size No.		Hose	Thread	Price Each	
Brass	Alum.	I.D.	Size	Brass	Alum.
---	4D	1/4	7/16-20	--	$21.87
---	6D	3/8	9/16-18	--	$23.50
---	8D	1/2	3/4-16	--	$49.75

AN842 HOSE ELBOW,

PIPE THREAD, 90°

Size No.		Hose	Pipe	Price Each	
Brass	Alum.	I.D.	Thread	Brass	Alum.
4	4D	1/4	1/8	$6.25	$14.75
6	6D	3/8	1/4	$9.50	$14.75
8	8D	1/2	3/8	---	$11.50
10	10D	5/8	1/2	$28.60	$20.75
12	12D	3/4	3/4	$20.75	$21.80

AN910 COUPLING

PIPE THREAD

Size No.		Thread	Price Each	
Brass	Alum.	Size	Brass	Alum.
1	1D	1/8	$5.95	$2.45
2	2D	1/4	$6.38	$2.75
3	3D	3/8	$6.95	$4.70
4	4D	1/2	$12.50	$8.25
6	6D	3/4	$25.60	$10.93

AN911 NIPPLE

PIPE THREAD

Size No.		Pipe	Price Each	
Brass	Alum.	Thread	Brass	Alum.
1	1D	1/8	$3.10	$2.35
2	2D	1/4	$5.50	$1.98
3	3D	3/8	$4.35	$2.90
4	4D	1/2	$6.95	$6.75
6	6D	3/4	$19.93	$6.87

AN912 BUSHING

PIPE THREAD REDUCER

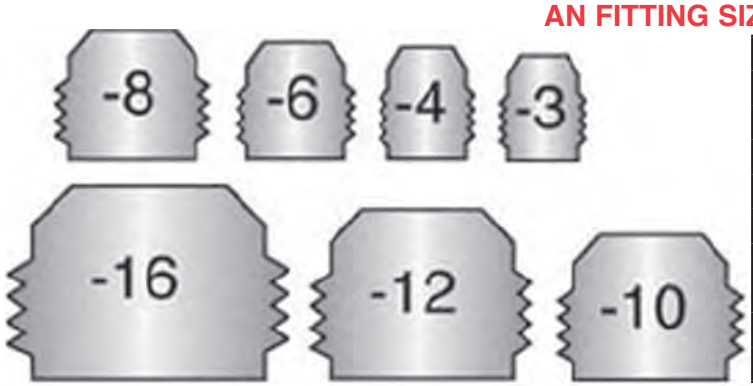
Size No. Alum.	Pipe Size	Price Ea.	Size No Alum	Pipe Size	Price Ea.
1D	1/4-1/8	$2.95	8D	3/4-3/8	$4.10
2D	3/8-1/4	$3.30	9D	3/4-1/4	$3.70
3D	3/8-1/8	$3.30	10D	1-3/4	$19.75
4D	1/2-3/8	$2.35	11D	1-1/2	$11.25
5D	1/2-1/4	$3.60	12D	1-3/8	$15.75
6D	1/2-1/8	$3.65	13D	11/4-3/4	$12.75
7D	3/4-1/2	$6.95			

AN913 (MS20913) PLUG

SQUARE HEAD, PIPE THREAD

Size No.			Pipe	Price Each		
Brass	Steel	Alum.	Thread	Brass	Steel	Alum.
1	1S	1D	1/8	$3.20	$4.50	$4.10
2	2S	2D	1/4	$10.50	$6.50	$3.20
3	3S	3D	3/8	$10.50	---	$5.25
4	4S	4D	1/2	$7.25	---	$7.50
6	6S	6D	3/4	$18.83	---	$10.50

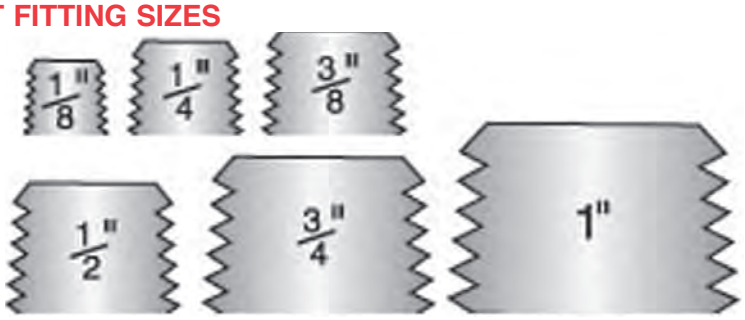
AN FITTING SIZES



AN Size	Metal Tube O.D.	Thread Size
2	1/8	5/16-24 SAE
3	3/16	3/8-24 SAE
4	1/4	7/16-20 SAE
5	5/16	1/2-20 SAE
6	3/8	9/16-18 SAE
8	1/2	3/4-16 SAE
10	5/8	7/8-14 SAE
12	3/4	1-1/16-12 SAE
16	1"	1-5/16-12 SAE

NPT FITTING SIZES

Pipe Thread Size	Threads per inch	Theoretical I.D. of Fitting	Closest AN FittingSize
1/16"	27	1/16"	
1/8"	27	1/8"	4
1/4"	18	1/4"	6
3/8"	18	3/8"	8
1/2"	14	1/2"	10
3/4"	14	3/4"	12
1"	11.5	1"	16
1-1/4"	11.5	1-1/4"	20
1-1/2"	11.5	1-1/2"	24
2"	11.5	2"	



DIAGRAMS MAY NOT BE ACCURATE AND SHOULD NOT BE USED FOR EXACT SIZING. FOR REFERENCE ONLY

AIRCRAFT SPRUCE WEST CORONA, CA • (877) 4-SPRUCE
AIRCRAFT SPRUCE EAST PEACHTREE CITY, GA • (877) 477-7823

Prices Subject to Change Without Notice

AN FITTINGS

AN914 ELBOW,

INTERNAL AND EXTERNAL PIPE THREAD, 90°

Size No.		Pipe	Price Each	
Brass	Alum.	Thread	Brass	Alum.
1	1D	1/8	$13.00	$7.75
2	2D	1/4	$7.75	$6.95
3	3D	3/8	$17.25	$8.50
4	4D	1/2	---	$13.75
6	6D	3/4	---	$12.75

AN915 ELBOW,

INTERNAL AND EXTERNAL PIPE THREAD, 45°

Size No.		Pipe	Price	
Brass	Alum.	Thread	Brass	Alum.
1	1D	1/8	$16.50	$10.50
2	2D	1/4	---	$9.37
3	3D	3/8	$10.25	$11.75
4	4D	1/2	$29.25	$13.25
6	6D	3/4	---	$12.95

AN916 ELBOW,

INTERNAL PIPE THREAD, 90°

Size No.		Pipe	Price	
Brass	Alum.	Thread	Brass	Alum.
1	1D	1/8	$7.95	$10.90
2	2D	1/4	$21.25	$9.98
3	3D	3/8	$9.30	$15.97
4	4D	1/2	--	$11.50
6	6D	3/4	--	$13.75

AN917 TEE,

INTERNAL, PIPE THREAD

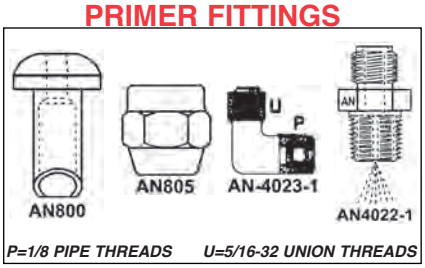
Size No.		Pipe	Price	
Brass	Alum.	Thread	Brass	Alum.
1	1D	1/8	$14.25	$7.86
2	2D	1/4	$14.50	$9.50
3	3D	3/8	$20.25	$14.75
4	4D	1/2	$31.85	$19.25
6	6D	3/4	---	$22.75

AN918

CROSS INTERNAL PIPE THREAD

Size #		Pipe	Price Ea
Alum.		Thread	Alum.
1D		1/8	$8.92
2D		1/4	$11.50
3D		3/8	---
4D		1/2	$27.45
6D		3/4	$18.75

PRIMER FITTINGS



P=1/8 PIPE THREADS *U=5/16-32 UNION THREADS*

AN No.	Description	Thread	Price
AN780-2	Union Nipple	1/8x5/16-32	$3.98
AN800-2	Union Cone	--	$1.21
AN805-2	Union Nut	5/16-32	$1.14
AN4022-1	Discharge Nipple	1/8x5/16-32	$11.75
AN4023-1	Discharge Elbow	1/8x5/16-32	$38.75

AN924 NUT,

FLARED TUBE, BULKHEAD AND UNIVERSAL FITTING

Size No.		Tube	Thread	Price	
Steel Black	Alum. Blue	O.D.	Size	Steel	Alum.
2	2D	1/8	5/16-24	$1.38	$0.62
3	3D	3/16	3/8-24	$2.98	$0.83
4	4D	1/4	7/16-20	$1.70	$0.63
5	5D	5/16	1/2-20	$2.90	$0.91
6	6D	3/8	9/16-18	$3.97	$0.79
8	8D	1/2	3/4-16	$3.15	$1.18
10	10D	5/8	7/8-14	$3.85	$1.87
12	12D	3/4	1-1/16-12	$11.75	$3.96

AN929 CAP,

FLARED TUBE FITTING

Size No.	Tube O.D.	Thread Size	Price Each
2D	1/8	5/16-24	$1.33
3D	3/16	3/8-24	$1.56
4D	1/4	7/16-20	$1.28
5D	5/16	1/2-20	$1.50
6D	3/8	9/16-18	$1.46
8D	1/2	3/4-16	$2.65
10D	5/8	7/8-14	$4.45
12D	3/4	1-1/16-12	$5.86

AN919 REDUCER,

EXTERNAL THREAD

Size No.		Tube	Price	
Steel	Alum.	O.D.	Steel	Alum.
0	0D	3/16-1/8	$9.50	$3.65
1	1D	1/4-1/8	$11.37	$4.30
2	2D	1/4-3/16	$6.50	$2.70
3	3D	5/16-1/4	$12.50	$2.85
4	4D	3/8-1/8	$14.50	$5.75
5	5D	3/8-3/16	---	$5.17
6	6D	3/8-1/4	$9.25	$3.15
7	7D	3/8-5/16	$7.95	$3.40
8	8D	1/2-1/8	---	$7.50
9	9D	1/2-3/16	---	$8.97
10	10D	1/2-1/4	$6.50	$4.50
11	11D	1/2-5/16	$15.75	$6.50
12	12D	1/2-3/8	$13.86	$5.75

ALUMINUM MANIFOLD FITTINGS

ORDERING INFORMATION

Basic part number on all fittings is 04-00XXX, complete the part number by filling in the last 3 digits after selecting the fitting you need according to the details below. Example: 04-00102.

First Code Number - Determines the style of the fitting.

- **-1:** One port in the end with two ports out, 90° cross drilled with one port per side. 3 ports total. Two Mounting Holes.
- **-2:** One port in the end with four ports out, 90° cross drilled with two ports per side. 5 ports total. Two Mounting Holes.
- **-3:** One port in the end with six ports out, 90° cross drilled with three ports per side. 7 ports total. Four Mounting Holes.
- **-4:** One port in the end with eight ports out, 90° cross drilled with four ports per side. 9 ports total. Four Mounting Holes.
- **-5:** One port in the end with four ports out, 90° drilling with four ports on one side only. 5 ports total. Two Mounting Holes.

Second Code Number - Determines the style of porting.

- **-0:** All the ports are the same.
- **-1:** Inlet port is one size larger than outlet ports.
- **-2:** Inlet port is two sizes larger than outlet ports.

Third Code Number - Determines the inlet port size.

- **-2:** 1/8-27 taper pipe thread (NPT)
- **-4:** 1/4-18 taper pipe thread (NPT)
- **-6:** 3/8-18 taper pipe thread (NPT)
- **-8:** 1/2-14 taper pipe thread (NPT)

In the example above - 04-00102, this would be a 1/8 NPT inlet with two outlets of the same size.

Ex.-04-00326, this would have a 3/8 NPT inlet w/six 1/8 NPT outlets.

Our aluminum manifold fittings are a bolt-on design with taper pipe threads. These fittings are designed to provide a convenient means of plumbing multiple hoses from and/or to one source with the fitting being bolted to a supporting structure. This design will eliminate Adel clamps at the juncture of the hoses and eliminate additional tee type fittings when more than two hoses are to be connected to one source. Applications include brake reservoir lines, static system, suction systems, fuel systems, air line pigs, smoke systems, and more. Not for use on oxygen systems or pressures over 150 psi.

Part No.	Price
04-00102	$9.75
04-00104	$12.95
04-00106	$13.95
04-00108	$17.60
04-00114	$10.40
04-00116	$13.20
04-00118	$15.65
04-00126	$11.90
04-00128	$11.88
04-00202	$12.90
04-00204	$17.50
04-00206	$21.40
04-00208	$28.75

Part No.	Price
04-00214	$14.50
04-21600	$19.40
04-21800	$24.60
04-00226	$16.90
04-00228	$17.17
04-00302	$17.40
04-00304	$23.40
04-00306	$29.90
04-00308	$28.64
04-00314	$18.70
04-00316	$25.85
04-00318	$25.56
04-00326	$19.29

Part No.	Price
04-00328	$29.85
04-00402	$21.80
04-00404	$29.20
04-00414	$21.70
04-00416	$32.50
04-00426	$23.33
04-00428	$27.99
04-00502	$14.90
04-00504	$19.65
04-00514	$17.30
04-00516	$22.90
04-00526	$19.85
04-00528	$26.90

PHENIX FITTINGS

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PHENIX FEMALE TO FLARE EXPANDERS AND REDUCERS (CLEAR)

Light weight aluminum adapters by Phenix Industries are designed for leak-proof sealing with any manufacturers hose ends. Made in USA.

Phenix Part No.	Female / Male	Part No.	Price
C46-5	-4 / -6	04-02102	$5.95
C68-5	-6 / -8	04-02101	$7.75
C810-5	-8 / 10	04-02103	$15.50
C1012-5	-10 / -12	04-02104	$14.95
C1216-5	-12 / -16	04-02105	$16.50

PHENIX FEMALE TO FLARE EXPANDERS AND REDUCERS - BLUE

Light weight aluminum adapters by Phenix Industries are designed for leak-proof sealing with any manufacturers hose ends. Made in USA.

Phenix Part No.	Female / Male	Part No.	Price
C43-4	-4 / -3	04-02094	$4.97
C64-4	-6 / -3	04-02095	$5.25
C86-4	-8 / -3	04-02096	$6.96
C106-4	-10 / -3	04-02097	$9.50
C108-4	-10 / -3	04-02098	$9.50
C1210-4	-12 / -3	04-02099	$12.95

PHENIX SWIVEL COUPLER STRAIGHT - BLUE

Light weight aluminum adapters by Phenix Industries are designed for leak-proof sealing with any manufacturers hose ends. Made in USA.

Phenix Part No.	AN	Part No.	Price
C6-4	-6	04-02145	$6.50
C8-4	-8	04-02146	$7.95
C10-4	-10	04-02147	$9.50
C12-4	-12	04-02148	$13.50

PHENIX STRAIGHT SWIVEL FEMALE TO MALE NPT - BLUE

Light weight aluminum adapters by Phenix Industries are designed for leak-proof sealing with any manufacturers hose ends. Made in USA.

Phenix Part No.	AN	NPT	Part No.	Price
C1451-4	-4	1/8"	04-02139	$8.95
C1651-4	-6	1/4"	04-02140	$9.95
C1652-4	-6	3/8"	04-02141	$9.95
C1851-4	-8	3/8"	04-02142	$11.95
C1852-4	-8	1/2"	04-02143	$11.95
C11051-4	-10	1/2"	04-02144	$12.95

PHENIX 90 DEGREE SWIVEL TO MALE NPT - BLUE

Light weight aluminum adapters by Phenix Industries are designed for leak-proof sealing with any manufacturers hose ends. Made in USA.

Phenix Part No.	AN	NPT	Part No.	Price
C0654-4	-6	1/4"	04-02106	$15.95
C0653-4	-6	3/8"	04-02107	$15.95
C0854-4	-8	3/8"	04-02108	$32.25
C0853-4	-8	1/2"	04-02109	$20.90

PHENIX 90 DEGREE SWIVEL FEMALE TO NPT LOW PROFILE - BLUE

Light weight aluminum adapters by Phenix Industries are designed for leak-proof sealing with any manufacturers hose ends. Made in USA.

Phenix Part No.	AN	NPT	Part No.	Price
C0671-4	-6	1/4"	04-02110	$17.95
C0871-4	-8	3/8"	04-02111	$19.95
C0872-4	-8	1/2"	04-02112	$22.25

PHENIX 90 DEGREE SWIVEL FEMALE TO MALE - BLUE

Light weight aluminum adapters by Phenix Industries are designed for leak-proof sealing with any manufacturers hose ends. Made in USA.

Phenix Part No.	Female AN	Male AN	Part No.	Price
C0647-4	-6	-6	04-02113	$13.25
C0847-4	-8	-8	04-02114	$19.75

PHENIX 90 DEGREE SWIVEL COUPLER - BLUE

Light weight aluminum adapters by Phenix Industries are designed for leak-proof sealing with any manufacturers hose ends. Made in USA.

Phenix Part No.	AN	AN	Part No.	Price
C690-4	-6	-6	04-02115	$11.25
C890-3	-8	-8	04-02116	$14.50
C1090-3	-10	-10	04-02117	$16.50
C1290-3	-12	-12	04-02118	$18.25

PHENIX 45 DEGREE SWIVEL COUPLER - BLUE

Light weight aluminum adapters by Phenix Industries are designed for leak-proof sealing with any manufacturers hose ends. Made in USA.

Phenix Part No.	AN	AN	Part No.	Price
C645-4	-6	-6	04-02135	$11.25
C845-4	-8	-8	04-02136	$22.25
C1045-4	-10	-10	04-02137	$2.65
C1245-4	-12	-12	04-02138	$17.95

PHENIX STRAIGHT AND 90 DEGREE PUSH-LOK SWIVEL RED/BLUE

Phenix Compression Swivel Hose Ends are constructed from lightweight 6061 aluminum and designed for smooth flow, easy assembly, and longer life. All elbow ends are built from one-piece billet tube construction, avoiding leakable braze joints. Viton O-Ring seal allows 360 degree rotation. 37 degree AN flare assures leak proof sealing surface eliminating the need for taping. Compatible with all AN adapter fittings. Made in the U.S.A. Compatible Hose Type: Push-On Hose.

STRAIGHT

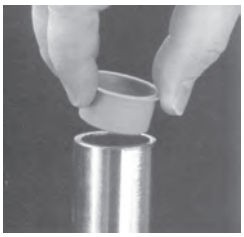
Phenix Part No.	AN	Part No.	Price
J2400-2	-4	04-02120	$3.97
J2600-2	-6	04-02121	$3.97
J2800-2	-8	04-02122	$4.95
J21000-2	-10	04-02123	$7.25
J21200-2	-12	04-02124	$9.25

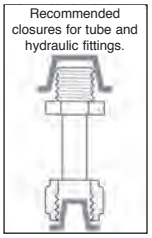
90 DEGREE

Phenix Part No.	AN	Part No.	Price
J2490-2	-4	04-02130	$14.50
J2690-2	-6	04-02131	$14.50
J2890-2	-8	04-02132	$17.95
J21090-2	-10	04-02133	$20.95
J21290-2	-12	04-02134	$24.50

CAPLUGS

T SERIES CAPLUGS (NON-THREADED)





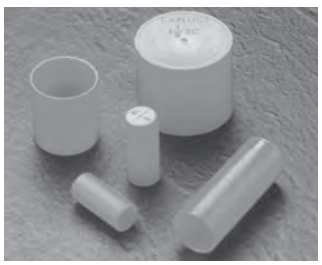
Tapered Caplugs can be used as either caps or plugs. Because they are tapered in design and made from highly pliable (or flexible) Polyethylene, they can be applied to fit snugly and are readily removable, whether used for capping or plugging. Especially recommended for use on MIL Std. and SAE-type tube and hydraulic fittings and for threaded external and internal NPT fittings.

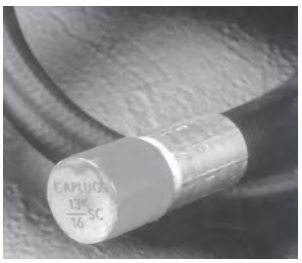
Part No.	Dash No.	Tubing O.D.	Thread	Caplugs As Plugs	Caplugs As Caps	Price Each
04-00045	-2	1/8	5/16-24	1	2	**$0.14**
04-00046	-3	3/16	3/8-24	2	3-X	**$0.12**
04-00047	-4	1/4	7/16-20	3	4-X	**$0.22**
04-00048	-5	5/16	1/2-20	4	5	**$0.13**
04-00049	-6	3/8	9/16-18	5	6-X	**$0.14**
04-00050	-8	1/2	3/4-16	8	9-X	**$0.23**
04-00051	-10	5/8	7/8-14	10	11-X	**$0.20**
04-00052	-12	3/4	1 1/16-12	12-X	13-X	**$0.22**
04-00053	-16	1	1 5/16-12	14-X	15-X	**$0.37**

Less 20% Discount on 50 Caplugs (Same P/N)

HA

SC SERIES CAPLUGS (NON-THREADED)



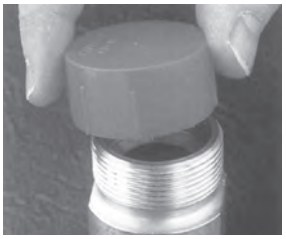


Series SC sleeve caps are designed to fit outside diameters of tubing sizes listed with a snug friction grip. Available in 57 different O.D.'s and lengths. Ideal for capping and protecting both threaded and non-threaded tubing or rod ends. The also make excellent masks, for painting, plating or grit-blasting operations.

Less 20% Discount on 50 Caplugs (Same P/N)

Part No.	Caplug No.	A To fit tube O.D. Inches	A To fit tube O.D. mm	B Inside Length Inches	B Inside Length mm	Price Ea.
04-00054	SC-1/8	1/8	3.18	.59	14.99	**$0.15**
04-00055	SC-3/16-5	3/16	4.76	.35	8.89	**$0.11**
04-00056	SC-3/16-16	3/16	4.76	1.00	25.40	**$0.11**
04-00057	SC-1/4-4	1/4	6.35	.22	5.59	**$0.18**
04-00058	SC-1/4-14	1/4	6.35	.88	22.35	**$0.12**
04-00059	SC-5/16	5/16	7.94	.88	22.35	**$0.16**
04-00060	SC-3/8	3/8	9.53	.88	22.35	**$0.12**
04-00061	SC-7/16-14	7/16	11.11	.88	22.35	**$0.14**
04-00062	SC-1/2-8	1/2	12.70	.50	12.70	**$0.12**
04-00063	SC-1/2-14	1/2	12.70	.88	22.35	**$0.09**
04-00064	SC-9/16-9	9/16	14.29	.56	14.22	**$0.14**
04-00065	SC-9/16-14	9/16	14.29	.88	22.35	**$0.28**
04-00066	SC-5/8	5/8	15.88	.88	22.35	**$0.19**
04-00067	SC-3/4	3/4	19.05	.88	22.35	**$0.15**
04-00068	SC-7/8	7/8	22.23	.88	22.35	**$0.18**
04-00069	SC-1	1	25.40	1.00	25.40	**$0.24**

CD SERIES CAPLUGS (THREADED)



Knurled for ease of application, Series CD caps seal flared JIC fittings exceptionally well against dirt and moisture, as well as for masking during dipping, painting and plating.

Part No.	Caplug No.	To Cap Normal Tubing Size Inches	To fit Thread	Dim A In	Dim A mm	No. of Knurls	Price Each
04-00032	CD-3	3/16	3/8-24	.47	11.94	4	**$0.19**
04-00033	CD-4	1/4	7/16-20	.47	11.94	4	**$0.18**
04-00034	CD-5	5/16	1/2-20	.47	11.94	6	**$0.19**
04-00035	CD-6	3/8	9/16-18	.53	13.46	6	**$0.22**
04-00036	CD-6A	3/8	5/8-18	.53	13.46	6	**$0.27**
04-00037	CD-8	1/2	3/4-16	.57	14.48	6	**$0.39**
04-00038	CD-10	5/8	7/8-14	.68	17.27	6	**$0.34**
04-00039	CD-11	-	1-14	.78	19.81	8	**$0.26**
04-00040	CD-12	3/4	1 1/16-12	.75	19.05	8	**$0.36**

Less 20% Discount on 50 Caplugs (Same P/N)

PD SERIES CAPLUGS (THREADED)

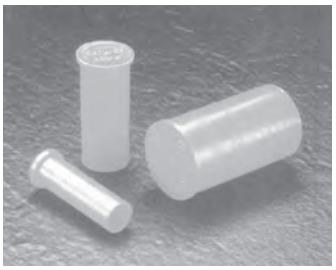
Series PD Plugs, designed for use on flared JIC fittings, air knurled for ease of application. They will seal low pressure requirements with light finger tightening. PD plugs can be used to seal 37° flare fittings without gaskets.

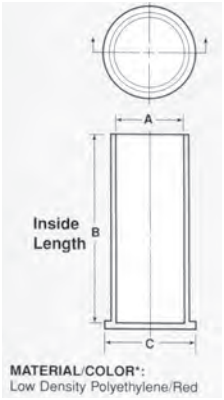
Part No.	Caplug No.	To Plug Nominal Tubing Size	To fit Thread	Dimensions B in	Dimensions B mm	Dimensions C in	Dimensions C mm	Dimensions D in	Dimensions D mm	Price Each
04-00023	PD-30	3/16	3/8-24	.46	11.68	.50	12.70	.18	4.57	**$0.23**
04-00024	PD-40	1/4	7/16-20	.53	13.46	.62	15.75	.19	4.83	**$0.25**
04-00025	PD-50	5/16	1/2-20	.53	13.46	.68	17.27	.25	6.35	**$0.27**
04-00026	PD-60	3/8	9/16-18	.50	12.70	.81	20.57	.25	6.35	**$0.29**
04-00027	PD-65	3/8	5/8-18	.59	14.99	.81	20.57	.25	6.35	**$0.47**
04-00028	PD-80	1/2	3/4-16	.75	19.05	.94	23.88	.25	6.35	**$0.29**
04-00029	PD-100	5/8	7/8-14	.87	22.10	1.06	26.93	.25	6.35	**$0.58**
04-00030	PD-121	3/4	1-1/16-14	1.12	28.45	1.31	33.28	.25	6.35	**$0.36**
04-00031	PD-160	1	1-5/16-12	.93	23.62	1.50	38.10	.25	6.35	**$0.47**

Less 20% Discount on 50 Caplugs (Same P/N)

CAPLUGS

RCL SERIES CAPLUGS (UNTHREADED)



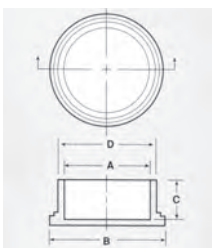


Series RCL caps are ideal for protecting threaded or smooth cylindrical surfaces. Originally designed for use on hydraulic double threaded bulkhead fittings, they are especially suitable where greater longitudinal protection is required.

Less 20% Discount on 50 Caplugs (Same P/N)

Part No.	Caplug No. (formerly) (series B-203)	A	B		C		Price Each
		To Cap Thread Size In.	Inside Length				
			In	mm	in	mm	
04-00079	RCL-2	5/16	1.24	31.50	.46	11.68	**$0.15**
04-00080	RCL-3	3/8	1.24	31.50	.52	13.21	**$0.29**
04-00009	RCL-4	7/16	1.33	33.78	.58	14.73	**$0.16**
04-00011	RCL-5	1/2	1.33	33.78	.64	16.26	**$0.18**
04-00012	RCL-6	9/16	1.41	35.82	.70	17.78	**$0.31**
04-00013	RCL-8	3/4	1.56	39.63	.88	22.35	**$0.26**
04-00014	RCL-9	M-20 (.787)	1.56	39.63	.91	23.11	**$0.37**
04-00015	RCL-10	7/8	1.70	43.18	1.01	25.66	**$0.23**
04-00016	RCL-12	11/16	1.89	48.01	1.19	30.23	**$0.30**

EC SERIES CAPLUGS (UNTHREADED)



Static dissipative EC Series Caplugs provide positive ESD and physical protection for all common sizes of threaded electrical and electronic connectors. Also suitable for protecting non-threaded bayonet-type connectors.

Less 20% Discount on 50 Caplugs (Same P/N)

Part No.	Caplug No.	A-Caps Nominal Thread Size In.	Dimensions				Price Each
			B		C		
			In	mm	in	mm	
04-00070	EC-4	1/4	.48	12.19	.50	12.70	**$0.27**
04-00071	EC-5	5/16	.55	13.97	.56	14.22	**$0.11**
04-00072	EC-6	3/8	.62	15.75	.50	12.70	**$0.14**
04-00073	EC-8	1/2	.74	18.79	.50	12.70	**$0.16**
04-00074	EC-9	9/16	.78	19.81	.44	11.18	**$0.15**
04-00075	EC-10	5/8	.84	21.34	.50	12.70	**$0.19**
04-00076	EC-12	3/4	.97	24.63	.50	12.70	**$0.14**
04-00077	EC-14	7/8	1.12	28.44	.50	12.70	**$0.30**
04-00078	EC-16	1	1.22	30.98	.50	12.70	**$0.25**

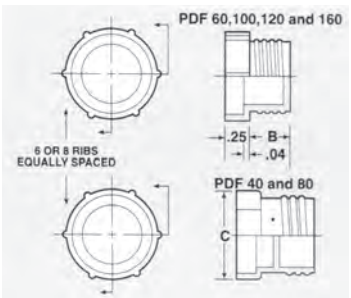
P SERIES CAPLUGS (THREADED)

Series P pipe pluge are square head. They are molded in high density polyethylene and are ideal for keeping moisture, dirt and other contaminants from NPT-threaded ports.

Part No.	Caplug No.	To Fit	Dimensions						Price Each
			A		B		C		
			in	mm	in	mm	in	mm	
04-00041	P-18	1/8" NPT	.44	11.18	.28	7.11	-	-	**$0.21**
04-00042	P-28	1/4" NPT	.50	12.70	.37	9.40	-	-	**$0.32**
04-00043	P-38	3/8" NPT	.56	14.22	.44	11.18	-	-	**$0.48**
04-00044	P-48	1/2" NPT	.59	14.99	.56	14.22	-	-	**$0.54**

Less 20% Discount on 50 Caplugs (Same P/N)

PDF SERIES CAPLUGS (THREADED)



Series PDF plugs are designed for easy mechanical or hand installation on flat-faced O-ring fittings.

Part No.	Caplug No.	To Plug Nominal Tubing Size	To Fit Thread Size	Dimensions				Price Each
				B		C		
				in	mm	in	mm	
04-00018	PDF-60	3/8"	11/16-16	.44	11.18	.87	22.10	**$0.27**
04-00019	PDF-80	1/2"	13/16-16	.50	12.70	.94	23.88	**$0.26**
04-00020	PDF-100	5/8"	1-14	.59	14.99	1.16	29.47	**$0.27**
04-00021	PDF-120	3/4"	13/16-12	.63	16.00	1.33	33.78	**$0.39**
04-00022	PDF-160	1"	17/16-12	.75	19.05	1.63	41.40	**$1.63**

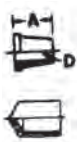
Less 20% Discount on 50 Caplugs (Same P/N)

NYLO-SEAL FITTINGS

Nylo-Seal tube fittings are exceptionally strong. The bodies, made of nylon, are stronger than machined fittings of similar composition. They are furnished complete with nut/sleeve assemblies, made of acetal copolymer. Since the sleeve snaps into and is retained by the nut there is no fumbling for a loose sleeve. Just insert tube into the fitting and tighten the nut 2 to 2-1/2 full turns.

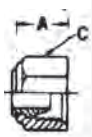
Note: The most frequently used combination of tube and pipe sizes are 1/4" Tube x 1/8" Pipe and 3/8" Tube x1/4" Pipe.

259-P CAP, 259-N INSERT (NYLON)



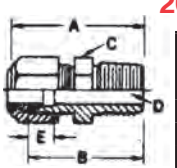
	Tube O.D.	A	D
259-N	1/4	3/8	1/8
259-P	3/8	7/16	13/64

261-N NUT AND SLEEVE ASSEMBLY



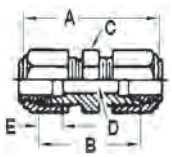
Tube O.D.	Thd.	A	C
1/4	7/16-20	15/32	9/16
3/8	5/8-20	37/64	3/4

268-N MALE CONNECTOR



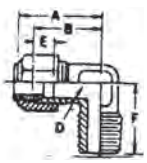
Tube O.D.	Pipe Thd.	A	B	C	D	E
1/4	1/8	1-13/64	1	5/8	15/64	15/32
1/4	1/4	1-25/64	1-3/16	5/8	15/64	11/16
3/8	1/4	1-17/32	1-21/64	13/16	5/16	19/32
3/8	3/8	1-19/32	1-25/64	13/16	11/32	19/32

262-N UNION



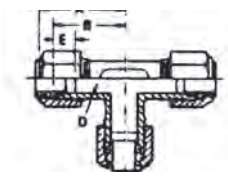
Tube O.D.	A	B	C	D	E
1/4	1-25/64	63/64	5/8	7/32	15/32
3/8	1-21/32	1-1/4	13/16	23/64	19/32

269-N MALE ELBOW



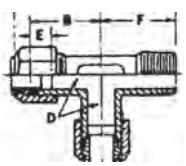
Tube O.D.	Pipe Thd.	A	B	D	E	F
1/4	1/8	1-1/64	13/16	7/32	3/8	27/32
1/4	1/4	1-1/64	13/16	13/32	3/8	1-1/32
3/8	1/4	1-9/64	15/16	5/16	7/16	1-1/32
3/8	3/8	1-9/64	15/16	11/32	7/16	1-3/32

264-N UNION TEE



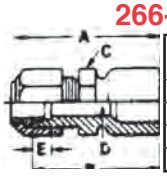
Tube O.D.	A	B	D	E
1/4	1-9/64	47/64	7/32	15/32
3/8	1-11/64	31/31	11/32	19/32

271-N MALE RUN TEE



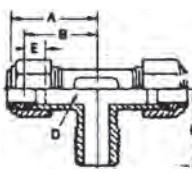
Tube O.D.	Pipe Thd.	A	B	D	E	F
1/4	1/8	59/64	21/32	7/32	15/32	3/4
1/4	1/4	59/64	13/32	7/32	15/32	29/32
3/8	1/4	1-5/32	61/64	5/16	19/32	1-1/16
3/8	3/8	1-3/16	61/64	23/64	19/32	1-7/64

266-N FEMALE CONNECTOR



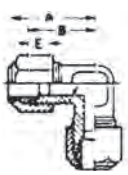
Tube O.D.	Pipe Thd.	A	B	C	D	E
1/4	1/8	1-9/64	15/16	9/16	7/32	9/16
1/4	1/4	1-5/16	1-7/64	11/16	7/32	47/64
3/8	1/4	1-27/64	1-7/32	11/16	11/32	3/4
3/8	3/8	1-27/64	1-7/32	13/16	11/32	3/4

272-N MALE BRANCH TEE



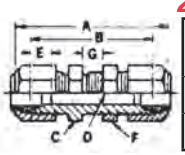
Tube O.D.	Pipe Thd.	A	B	D	E	F
1/4	1/8	15/16	47/64	7/32	15/32	3/4
1/4	1/4	15/16	47/64	7/32	15/32	13/16
3/8	1/4	1-11/64	31/32	5/16	19/32	1-1/16
3/8	3/8	1-11/64	31/32	23/64	19/32	1-7/64

265-N ELBOW UNION



Tube O.D.	A	B	D	E
1/4	1-1/64	13/16	7/32	3/8
3/8	1-5/32	15/16	11/32	7/16

282-N BULKHEAD UNION



Tube O.D.	Pipe Thd.	A	B	C	D	E	F	G
1/4	7/16-20	1-57/64	1-31/64	5/8	7/32	15/32	5/8	5/16
3/8	5/8-20	2-1/4	1-53/64	13/16	11/32	19/32	7/8	3/8

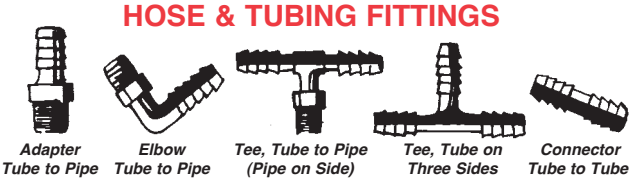
****Use 259-N inserts with all Poly-Flo tubing connections. Not needed with Nylo-Seal tubing.***

Part No.	Tube Size In.	Price Each	Part No.	Size (In) Tube Pipe	Price Each	Part No.	Size (In) Tube Pipe	Price Each
259-N 04	1/4	**$0.81**	266-N 04 x 02	1/4 x 1/8	**$6.50**	271-N 04 x 02	1/4 x 1/8	**$3.15**
259-N 06	3/8	**$0.91**	266-N 04 x 04	1/4 x 1/4	**$5.50**	271-N 04 x 04	1/4 x 1/4	**$4.15**
259-P 04	1/4	**$0.68**	266-N 06 x 04	3/8 x 1/4	**$6.75**	271-N 06 x 04	3/8 x 1/4	**$8.75**
259-P 06	3/8	**$1.06**	266-N 06 x 06	3/8 x 3/8	**$6.50**	271-N 06 x 06	3/8 x 3/8	**$5.75**
261-N 04	1/4	**$0.79**	268-N 04 x 02	1/4 x 1/8	**$2.30**	272-N 04 x 02	1/4 x 1/8	**$3.20**
261-N 06	3/8	**$1.15**	268-N 04 x 04	1/4 x 1/4	**$2.15**	272-N 04 x 04	1/4 x 1/4	**$4.10**
262-N 04	1/4	**$2.46**	268-N 06 x 04	3/8 x 1/4	**$2.50**	272-N 06 x 04	3/8 x 1/4	**$5.50**
262-N 06	3/8	**$3.20**	268-N 06 x 06	3/8 x 3/8	**$2.40**	272-N 06 x 06	3/8 x 3/8	**$5.85**
264-N 04	1/4	**$3.95**	269-N 04 x 02	1/4 x 1/8	**$2.25**	282-N 04	1/4	**$6.50**
264-N 06	3/8	**$5.85**	269-N 04 x 04	1/4 x 1/4	**$2.35**	282-N 06	3/8	**$6.98**
265-N 04	1/4	**$2.70**	269-N 06 x 04	3/8 x 1/4	**$3.20**	----	----	**----**
265-N 06	3/8	**$4.75**	269-N 06 x 06	3/8 x 3/8	**$3.20**	----	----	**----**

Less 10% on 50 pieces per size, Less 20% on 100 pieces per size

HOSE FITTINGS – PIPE FITTINGS

HOSE & TUBING FITTINGS



Adapter Tube to Pipe | *Elbow Tube to Pipe* | *Tee, Tube to Pipe (Pipe on Side)* | *Tee, Tube on Three Sides* | *Connector Tube to Tube*

Hose and tubing Insert Fittings are available in high density polyethylene or Nylon. Use polyethylene fittings with Tygon, nylon or soft rubber tubing to assemble low pressure instrument lines such as airspeed pitot and static lines. Use Nylon fittings in gravity-feed fuel lines and engine breather lines.

Fitting Type	Size	Polyethylene Part No.	Polyethylene Price Each	Nylon Part No.	Nylon Price Each
ADAPTER Tube to pipe	3/16Tx1/8P	0700-150	$0.46	0701-150	$0.61
	1/4Tx1/8P	0700-153	$0.73	0701-153	$0.59
	5/16Tx1/8P	0700-156	$0.68	0701T-15	$0.92
	3/8Tx1/8P	0700-158	$0.68	0701-158	$0.75
	1/4Tx1/4P	0700-110	$0.76	0701-110	$0.78
	3/8Tx1/4P	0700-162	$0.72	0701-162	$0.64
ELBOW Tube to Pipe	1/4Tx1/8P	0710-153	$0.98	0711-153	$1.05
	3/8Tx1/8P	0710-158	$0.97	0711-158	$1.07
	1/4Tx1/4P	0710-110	$1.15	0711-110	$1.09
	3/8Tx1/4P	0710-162	$0.82	0711-162	$1.07
Tube to Tube	1/4Tx1/4T	0710-015	$0.75	0711-015	$0.98
	3/8Tx3/8T	0710-020	$1.04	0711-020	$0.93
REDUCING CONNECTOR	1/4Px1/8P	0725-153	$0.72	0726-153	$0.86
	3/8Px1/8P	0725-161	$0.76	0726-161	$0.79
	3/8Px1/4P	0725-162	$0.75	0726-162	$0.98
TEE Tube to pipe	1/4Tx1/4Tx1/8P	0715-153	$1.04	0716-153	$1.14
	3/8Tx3/8Tx1/4P	0715-162	$1.04	0716-162	$0.92
	1/4Tx1/4Tx1/4P	0715-110	$0.99	0716-110	$1.07
TEE All Tube	3/16Tx3/16Tx3/16T	0715-011	$0.77	0716-011	$0.83
	1/4Tx1/4Tx1/4T	0715-015	$1.04	0716-015	$1.07
	3/8Tx3/8Tx3/8T	0715-020	$1.04	0716-020	$1.07
CONNECTOR Tube to Tube	1/4Tx1/4T	0705-015	$0.61	0706-015	$0.72
	3/8Tx3/8T	0705-020	$0.68	0706-020	$0.72

Fitting Type	Size	Part No.	$1.12
TEE Tube to pipe HDPE Natural	3/8x3/8x1/4	0782-162	$1.12

TEE CONNECTOR

For pressure switches with 1/8" male pipe threads. For 1/4" O.D oil pressure lines.P/N 10-04846 ..... **$9.85**

HERBIE CLIP HOSE CLAMPS

The Herbie Clip hose clamp is the original double toothed (double row of teeth) ratchet clamp. This makes the Herbie clip twice as strong (up to 200psi depending on hose work and spigot) as similar hose clamps with a single row of teeth.

The Herbie Clip hose clamp combines its high strength with other key features such as: non-corrosive and resistant to many chemicals, simple to install can be fitted before or after the hose is in place, minimum leak path, lightweight, easy to use (no sharp edges to cut the operators), fully compliant with ROHS, UL listed (nylon 6.6.)

CLIP SIZE	MIN. DIA. (in)	MAX DIA.(in)	PART NO.	PRICE
A	.22	.26	05-02698	$0.21
AA	.26	.31	05-02699	$0.24
B	.31	.36	05-02701	$0.25
C	.40	.47	05-02702	$0.26
CC	.44	.51	05-02695	$0.26
D	.47	.54	05-02703	$0.25
E	.52	.59	05-02704	$0.31
F	.59	.67	05-02705	$0.32
G	.67	.75	05-02706	$0.32
H	.71	.81	05-02696	$0.32
J	.80	.91	05-02707	$0.31
K	.87	.98	05-02708	$0.38

HERBIE CLIP HOSE CLAMP TOOLS

INSTALLATION TOOL

Recommended for medium volume use.
Fits sizes A to K. .....P/N 05-02709 ..... **$169.50**

REMOVAL TOOL

It is easy to install and remove using a choice of manual.
P/N 05-02710..... **$13.75**

BRASS POLY-FLO FITTINGS

Poly-Flo Flareless tube fittings consist of a brass body, nut and sleeves. Use with PolyFlo, PVC or Nylaflow pressure tubing. The Poly-Flo fittings have the same configuration as Nylo-Seal fittings of the same basic part number.

261UB - NUT WITH SLEEVE

Tube O.D.	Thread Size	Part Number	Price Each
1/8	5/16-24	261UB-02	$0.99
3/16	3/8-24	261UB-03	$0.85
1/4	3/8-24	261UB-04	$0.95

268P - MALE CONNECTOR

Tube O.D.	Pipe Thread	Part Number	Price Each
1/8	1/8	268P-02x02	$1.98
3/16	1/8	268P-03x02	$3.95
1/4	1/8	268P-04x02	$1.96

262P - UNION

Tube O.D.	Thread Size	Part Number	Price Each
1/8	--	262P -02	$5.40
3/16	--	262P-03	$4.50
1/4	--	262P-04	$3.95

269P - MALE ELBOW

Tube O.D.	Pipe Thread	Part Number	Price Each
3/16	1/8	269P-03x02	$4.90
1/4	1/8	269P-04x02	$2.50

264P - UNION TEE

Tube O.D.	Thread Size	Part Number	Price Each
3/16	--	264P-03	$7.93
1/4	--	264P-04	$5.60

270P - FEMALE ELBOW

Tube O.D.	Pipe Thread	Part Number	Price Each
3/16	1/8	270P-03x02	$4.80

266P - FEMALE CONNECTOR

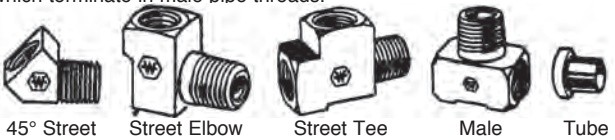
Tube O.D.	Pipe Thread	Part Number	Price Each
1/8	1/8	266P-02x02	$3.65
3/16	1/8	266P-03x02	$3.60

272P - MALE BRANCH TEE

Tube O.D.	Pipe Thread	Part Number	Price Each
3/16	1/8	272P-03x02	$6.50

WEATHERHEAD BRASS PIPE FITTINGS

These brass elbows and tees provide flexibility in the routing of lines which terminate in male pipe threads.



45° Street Elbow | Street Elbow | Street Tee | Male Branch Tee | Tube Insert

45° STREET ELBOW

Part Number	Pipe Thread	Price Each
3350x2	1/8	$2.55
3350x4	1/4	$3.15
3350x6	3/8	$2.80

90° STREET ELBOW

Part Number	Pipe Thread	Price Each
3400x2	1/8	$1.95
3400x4	1/4	$2.15
3400x6	3/8	$3.30

MALE BRANCH TEE

Part Number	Pipe Thread	Price Each
3600x2	1/8	$4.75
3600x4	1/4	$4.30
3600x6	3/8	$10.00

STREET TEE

Part Number	Pipe Thread	Price Each
3750x2	1/8	$3.92
3750x4	1/4	$7.25
3750x6	3/8	$7.75

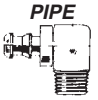
MISC. WEATHERHEAD BRASS FITTINGS

Part No.	Description	Size	Price Each
2030-4	Tube Insert*	1/8ODx3/32ID	$0.99
3220x4x2	Bushing	1/8FPx1/4MP	$0.90
6100x2	Nut	1/8T	$0.51
6200x2	Male Connector	1/8Txl/8P	$0.83
66x2	Fml Connector	1/8Txl/8P	$1.77

**** Used for Long-EZ brake fittings.***

WEATHERHEAD BARB-TITE REUSABLE HOSE ENDS

MALE PIPE



MALEPIPE RIGID - 90° ELBOW

Designed for use with hoses with maximum working pressure up to 250 PSI. Easy to assemble and disassemble.

Part No.	Description	Hose I.D.	Pipe Size	Cut-off Factor	Price Each
10006B-102	Straight Pipe	3/8"	1/8"	1-1/2	$6.85
10006B-104		3/8"	1/4"	1-1/2	$1.97
10008B-108	Straight Pipe	1/2"	1/2"	1.19	$4.75
10006B-106		3/8"	3/8"	1-11/16	$2.21
10006B-C02	90° Pipe	3/8"	1/8"	3/8	$8.90
10006B-C04		3/8"	1/4"	3/8	$6.97

BRASS TUBE FITTINGS

Description	Part No.	Price
Brass Tube Fitting 3/8 inch Pipe x 3/8 inch	04-00833	$6.50
Brass Tube Fitting 1/4 inch Pipe x 3/8 inch	04-00834	$4.90

CLAMPS

MS21919 DG & WDG CLAMPS

Loop-type cushioned aluminum alloy clamp. Cushion (non-fuel resistant) is bonded to inner surface and edges of clamp. WDG clamps are cushion wedge type. Cushion assures tight fit and eliminates vibration, thus preventing line abrasion.

Tube Dia.	Dash No.	Price Each	Dash No.	Price Each	Tube Dia.	Dash No.	Price Each	Dash No.	Price Each
1/8	DG2	$0.47	WDG2	$0.44	1-5/16	DG21	$1.17	WDG21	$1.35
3/16	DG3	$0.32	WDG3	$0.35	1-3/8	DG22	$1.39	WDG22	$1.20
1/4	DG4	$0.23	WDG4	$0.36	1-7/16	DG23	$1.77	WDG23	$1.37
5/16	DG5	$0.41	WDG5	$0.37	1-1/2	DG24	$1.06	WDG24	$1.21
3/8	DG6	$0.26	WDG6	$0.39	1-9/16	DG25	$2.23	WDG25	$1.38
7/16	DG7	$0.55	WDG7	$0.43	1-5/8	DG26	$1.46	WDG26	$1.18
1/2	DG8	$0.30	WDG8	$0.37	1-3/4	DG28	$1.47	WDG28	$1.33
9/16	DG9	$0.33	WDG9	$0.49	1-7/8	DG30	$1.63		
5/8	DG10	$0.30	WDG10	$0.43	1-15/16	DG31	$2.40		
11/16	DG11	$0.66	WDG11	$0.70	2	DG32	$1.06		
3/4	DG12	$0.38	WDG12	$0.60	2-1/16	DG33	$1.63		
13/16	DG13	$0.69	WDG13	$0.74	2-1/8	DG34	$1.59		
7/8	DG14	$0.64	WDG14	$0.66	2-1/4	DG36	$1.65		
15/16	DG15	$0.68	WDG15	$0.76	2-3/8	DG38	$1.63		
1	DG16	$0.49	WDG16	$0.66	2-1/2	DG40	$1.47		
1-1/16	DG17	$1.15	WDG17	$1.29	2-5/8	DG42	$1.77		
1-1/8	DG18	$0.99	WDG18	$0.88	2-3/4	DG44	$1.89		
1-3/16	DG19	$1.30	WDG19	$1.09	2-7/8	DG46	$2.40		
1-1/4	DG20	$1.11	WDG20	$0.87	3	DG48	$1.76		
					3-1/8	DG50	$2.95		

Less 15% in lots of 50. May be assorted.

QS 100 HOSE CLAMPS

Tangential worm-screw type for use on fuel, oil, air and coolant lines. Worm drive provides uniform clamping pressure without distorting hose. The QS100 series has stainless steel band with cadmium-plated carbon steel thumb screw. To attach, just push housing to the desired position on the band, snugly around hose, & the threads of the worm screw will drop into the slots. Tighten thumb screw with finger pressure - no tools required.

QS100 Dash No.	Dia. Range (In.) Min.	Dia. Range (In.) Max.	Price Each	QS100 Dash No.	Dia. Range (In) Min.	Dia. Range (In) Max.	Price Each
M6W	7/16	25/32	$1.71	M24W	1-1/16	2	$1.86
M8W	1/2	29/32	$1.83	M28W	1-1/16	2-1/4	$1.72
M10W	9/16	1-1/16	$1.84	M32W	1-9/16	2-1/2	$1.95
M12W	11/16	1-1/4	$1.84	M36W	1-13/16	2-3/4	$1.84
M16W	13/16	1-1/2	$1.88	M40W	2-1/16	3	$2.25

Less 15% in lots of 50. May be assorted.

STAINLESS STEEL CLAMPS FOR SILICONE VACUUM HOSE

Clamp for silicone hose will not cut into the hose like other clamps. 100 % S/S including wore gear.

I.D.	Part No.	Price
1/4"	05-04707	$1.25
3/8"	05-04708	$1.59
1/2" or 5/8"	05-04709	$1.66
3/4"	05-04711	$2.10

QS 200 HOSE CLAMPS

Aero-Seal stainless steel clamps are for industrial & aircraft applications. This tangential worm-screw type clamp is for use on fuel, oil, air & coolant lines. The worm drive provides uniform clamping pressure without distorting hose. Attach by pushing housing snugly around the hose to desired position on the band—the threads of the worm screw will drop into slots. Tighten slotted head with screwdriver.

QS200 Dash No.	Dia. Range (In.) Min.	Dia. Range (In.) Max.	Price Each	QS200 Dash No.	Dia. Range (In) Min.	Dia. Range (In) Max.	Price Each
-06H	7/16	25/32	$1.39	-44H	2-5/16	3-1/4	$1.88
-08H	1/2	29/32	$1.38	-48H	2-9/16	3-1/2	$1.98
-10H	9/16	1-1/16	$1.45	-52H	2-13/16	3-3/4	$2.15
-12H	11/16	1-1/4	$1.43	-56H	3-1/16	4	$2.05
-16H	13/16	1-1/2	$1.40	-60H	3-5/16	4-1/4	$2.10
-20H	13/16	1-3/4	$1.42	-64H	3-9/16	4-1/2	$2.10
-24H	1-1/16	2	$1.47	-72H	4-1/8	5	$2.30
-28H	1-5/16	2-1/4	$1.48	-80H	4-5/8	5-1/2	$2.75
-32H	1-9/16	2-1/2	$1.43	-88H	5-1/8	6	$2.60
-36H	1-13/16	2-3/4	$1.56	-96H	5-5/8	6-1/2	$2.65
-40H	2-1/16	3	$1.88	---	---	---	---

Less 15% in lots of 50. May be assorted.

DOUBLE EAR CLAMPS

•Robust, durable one-piece design offers positive, tamper resistant seal •For air and fluid media lines •One-piece design offers quick and easy installation •Smooth edges prevent damage to hose.

1/4"..... P/N 15-04628 ..... **$0.42**
5/16"..... P/N 15-04870 ..... **$0.49**
3/8"..... P/N 15-04816 ..... **$0.43**

BREEZE AERO-SEAL STAINLESS CLAMP KITS

Pack A : Contains 2 each QS200 -52H, -64H, -72H and -80H.
P/N 05-00942..... **$18.00**
Pack B : Contains 2 each QS200 -8H, -12H, -24H, -32H, -40H, & -64H.
P/N 05-01340..... **$19.00**

SNAPPER CLAMPS

A quick ratchet closure provides specific take-up, eliminating excessive tightening which may mutilate the hose.

3/8" for 1/4" fuel line
P/N 05-00940..... **$0.22**
1", for radiator hose
P/N 05-00941..... **$0.37**

AN742 PLAIN CLAMPS

Plain loop-type line support clamps, made of aluminum alloy meeting specification QQ-A-362, condition T. Heat-treated to a minimum tensile strength of 50,000 PSI.

Dash No.	For Tube O. D. (In.)	Price Each	Dash No.	For Tube O. D. (In.)	Price Each
-D3	3/16	$0.22	-D8	1/2	$0.37
-D4	1/4	$0.20	-D10	5/8	$0.47
-D5	5/16	$0.45	-D12	3/4	$0.40
-D6	3/8	$0.33	-D15	15/16	$0.67
-D7	7/16	$0.62	-D16	1	$0.64

Less 15% in lots of 50. May be assorted.

BREEZE MINIATURE CLAMPS

The best clamp for small diameter hose and tubing. Stainless steel band and housing with plated carbon steel screw. Applies an even circumferential pressure with less torque.

7/32" to 5/8" .....P/N 6504 ..... **$0.94 Ea.**
7/16" to 7/8" .....P/N 6506 ..... **$0.92 Ea.**

OETIKER STEPLESS SCREW CLAMPS

Oetiker Stepless Screw Clamps feature a unique tongue-in-groove design to provide a perfect 360° seal. Their narrow band width of 9 mm is designed to fit grooved objects. They are ideal where specialty clamping needs have to be met and the application calls for a smooth inner surface such as on flexible duct sleeves. The tongue-in-groove design provides that "stepless" complete seal. Manufactured using 300 AISI series stainless steel.

P/N	Clamping O.D. Range Inches	Price Each	P/N	Clamping O.D. Range Inches	Price Each
028-9	13/16" - 1-1/8"	$3.91	090-9	3-5/16" - 3-1/2"	$4.10
031-9	15/16" - 1-1/4"	$4.20	095-9	3-1/2" - 3-3/4"	$4.85
032-9	1-1/16" - 1-1/4"	$4.45	100-9	3-11/16" - 3-15/16"	$3.95
036-9	1-1/4" - 1-7/16"	$4.30	105-9	3-15/16" - 4-1/8"	$4.30
040-9	1-3/8" - 1-9/16"	$3.93	110-9	4-1/8" - 4-5/16"	$3.97
045-9	1-9/16" - 1-3/4"	$3.99	115-9	4-5/16" - 4-1/2"	$5.50
050-9	1-3/4" - 2"	$3.95	120-9	4-1/2" - 4-11/16"	$3.60
055-9	1-15/16" - 2-1/8"	$3.97	125-9	4-11/16" - 4-15/16"	$3.65
060-9	2-1/8" - 2-3/8"	$4.63	130-9	4-7/8" - 5-1/8"	$3.65
065-9	2-5/16" - 2-9/16"	$4.20	135-9	5-1/16" - 5-5/16"	$4.55
070-9	2-9/16" - 2-3/4"	$4.15	140-9	5-1/2" - 5-11/16"	$5.75
075-9	2-3/4" - 3"	$5.25	145-9	5-11/16" - 5-7/8"	$3.80
080-9	2-15/16" - 3-1/8"	$5.75	150-9	5-7/8" - 6-1/16"	$3.45
085-9	3-1/8" - 3-5/16"	$4.50	160-9	6-1/16" - 6-1/4"	$3.95
			165-9	6-1/4" - 6-1/2"	$4.83

LINE CLAMPS

These line clamps are lightweight but tough enough for the most rugged applications. Feature single piece .030" thick aluminum construction. No more messy bundles. Each clamp is shaped to hold braided line, tubing, or wiring securely, without pinching. Secured w/ standard tie wraps, these claps keep movement and wear to a minimum. Can be adjusted to mount on any tubing from 3/4".

Size	P/N	Price	Size	P/N	Price
1/4"	05-00004	$0.60	5/8"	05-00007	$0.76
3/8"	05-00005	$0.70	3/4"	05-00008	$0.80
1/2"	05-00006	$0.75	1"	05-00009	$0.90
30 piece assortment – includes 5 of each clamp P/N 05-02205..... $22.55					

AP

NYLO-SEAL TUBING - POLY-FLO TUBING

NYLO-SEAL NYLON TUBING

Nylo-Seal type "NNR" semi-rigid natural color tubing is made of Nylon-II and is far superior to other types of Nylon tubing. It does not depend on moisture for flexibility and does not become brittle. It has excellent resistance to flexural fatigue and can be used where there is vibration or tube movement. Self-extinguishing under A.S.T.M. Test D635-44. NNR Tubing is rated to 1500 lbs. and is excellent for instrument lines and other low pressure applications. Use NBR tubing (2500 lb. rating) for hydraulic brake lines after verifying it is appropriate tubing for your application.

NNR TUBING

Part No.	O.D. (In.)	Wall (In.)	Burst Pressure (PSI)	Min. Bend Radius	Wt. (Lb/Ft)	Price per Ft.
05-01009	1/8	.026	1500	3/8"	.004	**$0.32**
05-01010	3/16	.039	1500	5/8"	.008	**$0.28**
05-01011	1/4	.035	1500	7/8"	.015	**$0.71**
05-01012	3/8	.075	1500	1-1/2"	.032	**$0.66**

NBR TUBING

Part No.	O.D. (In.)	Wall (In.)	Burst Pressure (PSI)	Min. Bend Radius	Wt. (Lb/Ft)	Price per Ft.
05-01228	1/8	.026	2500	3/8"	.004	**$0.35**
05-01229	1/4	.050	2500	7/8"	.015	**$0.72**
05-01231	3/8	.075	2500	1-1/2"	.032	**$1.83**

NYLAFLOW NYLON TUBING

Nylon Polypenco. pressure tubing is a super tough, low friction, high flexibility tubing that can be used for cable protectors or in short pieces, as small bushings and washers. Suitable for use in oil, air, vacuum, fuel and low pressure hydraulic lines. It resists abrasion and wears better than aluminum or steel tubing. Has an extremely smooth inner surface with a very low coefficient of friction. Used for brake lines, and also as a conduit for the rudder cables in the Rutan VariEze and Long-EZ. Rated 1000 psi. Use Poly-Flo fittings. Sold by the foot.

Type	OD	ID	PSI	Part No.	Price
Standard Wall	1/8	.096	1000	05-00105	**$0.15**
Standard Wall	3/16	.138	1000	05-00110	**$0.26**
Standard Wall	1/4	.190	1000	05-00115	**$0.34**
High Bursting Pressure	1/4	.150	2500	05-04349	**$0.60**
High Bursting Pressure	3/16	.111 (appx.)	2500	05-04355	**$0.26**

NEOPRENE HOSE

Neoprene tubing is used in instrument hookups and for battery drains. Use AN hose fittings such as AN840 with Breeze Mini Clamps, nylon or polyethylene hose fittings such as 0710-153. Not for use as fuel or oil lines.

I.D.	Wall	Part No.	Price/Ft
3/16"	1/16"	05-00200	**$1.12**
1/4"	1/16"	05-00300	**$0.69**
3/8"	1/16"	05-00400	**$0.82**

TYGON TUBING

Tygon tubing is flexible, tough, abrasion-resistant and non-aging. Ideal or hookup of airspeed pitot and static lines (not recommended for pressurized applications). Use AN hose fittings such as AN840 with Breeze Mini Clamps, nylon or polyethylene hose fittings such as 0710-153.

3/8" O.D. X 1/4" I.D. .....P/N 05-00944 ..... **$1.46 Ft**

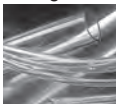
1/2" O.D. X 3/8" I.D. .....P/N 05-00945 ..... **$2.75 Ft**

BING ALCOHOL RESISTANT FUEL LINE

This fuel line is blue in color and does not rot or deteriorate from the inside, clogging the carburetor or fuel system. It withstands 50 PSI and tensile strength is 8000 PSI. It is resistant to temperatures of -65° to 220°F without deterioration, features exceptional resistance to gasoline, oil, oxygen, and ozone, and has high elastic memory allowing use of Delrin or nylon barbed fittings in low pressure applications without the need for external clamps.

Description	ID	OD	Part No.	Price
Bing Alcohol Resistant Fuel Line	1/4	3/8	05-00500	**$1.48**
Bing Alcohol Resistant Fuel Line	1/8	1/4	05-00560	**$1.13**

NYLON TUBING



Nylon tubing is a popular choice for low pressure pneumatic applications because of its combination of flexibility and toughness. Nylon retains its performance integrity in elevated temperatures and generally, because of it's higher pressure and temperature characteristics, Nylon will have a greater flow passage than composite tubing made from other material with the same outside diameter.

Part No.	OD	ID	Price
0500-165	7/8	5/8	**$1.64**
0500-180	1	3/4	**$2.30**

POLY-FLO POLYETHYLENE TUBING

Poly-Flo tubing is a flexible, economical thermoplastic tubing fabricated from high molecular weight polyethylene for improved strength. The base resin has the greatest resistance to environmental stress cracking of all the regular polyethylenes. It meets A.S.T.M. D-1248-60T, Type 1, Class A, Grade 4 and Federal Specification LP-590, Type 2, Grade 7. Used for instrument or pneumatic lines. Use Nylo-Seal fittings (259-N inserts are required), nylon or polyethylene hose fittings such as 0710-153. Color - natural.

Part No.	Tube OD	Wall	Bend Radius	PSI at 75 F	PSI at 150 F	Price
44-P	1/4	0.040	1.250	190	75	**$0.39**
66-P	3/8	0.062	2.00	205	80	**$0.32**
88-P	1/2	0.062	2.500	150	60	**$0.78**

PRESSURE RATINGS

Operating Temperature	Poly-Flo (Polyethylene) Burst Pressure* PSI	Poly-Flo (Polyethylene) Max. Work Pressure* PSI	Nylo-Seal NSR** (Nylon 11) Burst Pressure* PSI	Nylo-Seal NSR** (Nylon 11) Max. Work Pressure* PSI
Room Temp.	250-600	75-160	2500	625
140°F.	125-300	37-80	1800	425
230°F.	UNUSABLE		1400	350
280°F.	UNUSABLE		UNUSABLE	

Depends on tube size and wall thickness. Working pressure based on a safety factor of 4.

****Satisfactory for continuous operation up to 180° F. Becomes embrittled above this point.***

SUPER HEAVY PULSE LINE

Super heavy wall clear polyurethane pulse line has an extra thick 3/32" wall that will not dampen crankcase pulse even on longer runs. Clear one piece urethane construction is not affected by fuel. Will not harden, crack, or become brittle with age. Can also be used as clear fuel line. Sold by the foot. Outside Diameter: 7/16". Inside Diameter: 1/4". Wall Thickness: 3/32" P/N 15-06094 ..... **$0.99**

CLEAR BLUE FUEL LINE

Polyether-based Polyurethane Tubing offers excellent resistance to chemicals, kinking, abrasion, hydrolysis, oxidation, and ozone exposure. Generally stronger than Ether-based tubing, Ester-based Polyurethane Tubing features above average chemical resistance, a high level of resilience, and adequate energy absorption. Although Polyester-based Tubing is not recommended for applications that expose the tubing to water or moisture, it does enjoy a slight cost advantage over Ether-based tubing.

O.D.	Description	Part Number	Price
1/4"	Clear Blue Polyurethane Fuel Line	15-04632	**$0.89**
5/16"	Clear Blue Polyurethane Fuel Line	15-04874	**$0.59**
3/8"	Clear Blue Polyurethane Fuel Line	15-04818	**$0.89**

POLYURETHANE TUBING

Flexible polyurethane tubing has greater abrasion and tear resistance than any other type of plastic tubing. Won't age or oxidize. Excellent low temperature flexibility - avoids brittleness. Tensile strength 5900 PSI. Use AN hose fittings such as AN840 with Breeze Mini Clamps, nylon or polyethylene hose fittings such as 0710-153. Sold by the foot.

Mfg PN	OD	ID	Our PN	Price
0585-071	3/8	1/4	**0585-071**	**$1.53**
0585-107	1/2	3/8	**0585-107**	**$2.10**
0585-165	7/8	5/8	**0585-165**	**$5.93**
0585-180	3/4	1	**05-04246**	**$7.68**

PARKER SUPER-FLEX FL FUEL LINE HOSE

Parker's fuel line hose includes a new thermoplastic barrier that helps protect our atmosphere from harmful hydrocarbons that escape through the carcass of ordinary fuel hose. This new hose surpasses all of CARB's stringent permeation requirements and is similar to SAE30R7 specifications. The Super-Flex FL hose also features an abrasion and weather resistant cover to help protect from external application abuse. ***Approved for biodiesel fuels that meet ASTM D 6751 requirements per UL guidelines for Biodiesel compatibility.*** 4:1 Design factor

Tube:	NBR with a thermoplastic barrier
Cover:	Black Hypalon
Reinforcement:	Braided Polyester
Temperature Range:	-30°F to +257°F (-34°C to +125°C)

Part No.	ID (in.)	Reinf. Braids	OD(in.)	OD(mm)	Approx. wt. per 100 ft.	Min. Bend Rad.	Max Rec. WP	Price Per Ft.
05-03597	1/4	1	0.500	12.7	9.7	-	100	**$4.75**
05-03598	3/8	1	0.625	15.9	1.30	-	100	**$4.75**

MIL-DTL 6000D OIL AND COOLANT HOSE

Inside and out, MIL-DTL 6000D is designed to handle the effects of oil, alcohol, coolant, and water. The tube is oil resistant with a black cover reinforced with high strength mildew resistant yarns. It withstands extreme temperature conditions from -40°F to +250°F. Meets or exceeds U.S. military specs. Lightweight, flexible and easy-to-handle, making it the perfect hose for hard-to-get-to spots in tight engine compartments. Not recommended for fuel lines.

Part No.	Hose Dimensions I.D. (In.)	Hose Dimensions O.D. (In.)	Burst Pressure (PSI)	Wt./ Ft. (Lb.)	Price Per Ft.
6000-4	1/4	5/8	1,000	.14	**$4.95**
6000-5	5/16	11/16	1,000	.16	**$5.35**
6000-6	3/8	3/4	1,000	.18	**$5.50**
6000-8	1/2	7/8	1,000	.22	**$5.75**
6000-10	5/8	1	1,000	.26	**$6.75**
6000-12	3/4	1-1/8	1,000	.27	**$7.75**
6000-14	7/8	1-1/4	1,000	.32	**$8.25**
6000-16	1	1-3/8	1,000	.38	**$8.50**

MIL-DTL 6000D HOSE AVAILABLE IN 10 FT MAXIMUM LENGTHS
MIL-H-6000 IS SUPERCEDED BY MIL-DTL-6000C
*****NOT RECOMMENDED FOR FUEL LINES*****

AEROQUIP 306 HOSE (MIL-H-5593)

A low-pressure hose for instrument air & vacuum lines. Consists of an inner tube of seamless synthetic rubber, reinforced with a single layer of cotton braid and a synthetic rubber cover. Used with slip-over hose fittings such as the AN840 series, or with Aeroquip 471 hose fittings when connecting to AN type fittings. Conforms to Specification MIL-H-5593. Specify hose I.D. when ordering.

Part No.	Hose Dimensions I.D. (In.)	Hose Dimensions O.D. (In.)	Burst Pressure (PSI)	Wt./ Ft. (Lb.)	Price Per Ft.
306-2	1/8	11/32	1,000	.056	**$6.50**
306-4	1/4	15/32	1,000	.072	**$3.40**
306-6	3/8	19/32	1,000	.096	**$3.65**
306-8	1/2	3/4	750	.144	**$6.25**
306-10	5/8	7/8	700	.168	**$7.25**

AEROQUIP 471 HOSE FITTING
USED WITH AEROQUIP 306 HOSE

471-2D

Aeroquip 471 hose fittings consist of an AN818 nut, an externally threaded 37° nipple and an internally threaded hose socket. All components are anodized aluminum. Fittings conform to MS27404.

Part No.	Tube Size (In.)*	AN818 Nut Thread Size	Price Ea.
471-2D	1/8"	5/6-24	**$10.50**
471-4D	1/4	7/16-20	**$6.50**
471-6D	3/8	9/16-18	**$8.25**
471-8D	1/2	3/4-16	**$23.50**

****Corresponds to tube O.D. of AN-type flared tube fittings. Not an Aeroquip dimension.***

AEROQUIP ASSEMBLY MANDRELS FOR AIRCRAFT HOSE ASSEMBLIES

For use with Aeroquip 491 fittings. These tools are recommended to avoid damage to the sealing surface and to properly support the inner tube. ***Note:*** These are Aeroquip Factory Mandrels, which are highly recommended for best results.

Hose Size	#491 Fitting P/N	Mandrel P/N	Price	Hose Size	#491 Fitting P/N	Mandrel P/N	Price
3/16"	491-3	S-1051-3*	**$89.90**	1/2"	491-8	S-1051-8	**$73.75**
1/4"	491-4	S-1051-4*	**$74.75**	5/8"	491-10	S-1051-10	**$87.75**
5/16"	491-5	S-1051-5*	**$109.50**	3/4"	491-12	S-1051-12	**$150.95**
3/8"	491-6	S-1051-6*	**$71.65**				

****With Removable mandrel. Aeroquip Qty. Discount: 15% for 20 ft.; 20% for 50 ft.; 25% for 100 ft. or more (Per Item)***

AEROQUIP 303 HOSE

This standard hose is used in med-pressure a/c hydraulic fuel, oil and coolant systems. An inner tube of seamless synthetic rubber is reinforced with a synthetic-impregnated single-wire braid over a single cotton braid and an outer cover of synthetic-impregnated oil-resistant cotton braid. Operating temperature -65° to 250°F. Conforms to MILH-8794 (supersedes MIL-H-5511A). Used with Aeroquip 491 hose fittings.

Hose P/N*	For Tubing Size	Hose I.D.	Max. Oper. Pressure** (PSI)	Wt. per Ft. (Lb.)	Price Per Ft.
303-3	3/16	1/8	3,000	.120	**$6.25**
303-4	1/4	3/16	3,000	.132	**$6.90**
303-5	5/16	1/4	3,000	.156	**$7.75**
303-6	3/8	5/16	2,000	.228	**$7.95**
303-8	1/2	13/32	2,000	.264	**$8.50**
303-10	5/8	1/2	1,750	.372	**$9.68**
303-12	3/4	5/8	1,500	.456	**$11.75**

**** Corresponds to dash no. of Aeroquip 491 hose fittings.***
***** Safety factor of 4.***

P/N 491-3

AEROQUIP 491 HOSE FITTINGS
USED WITH AEROQUIP 303 HOSE

Aeroquip 491 hose fittings consist of an AN818 style nut, an externally threaded 37° nipple and an internally threaded hose socket. Fittings of sizes 3 through 6 have nuts and nipples of cadmium plated steel. Nuts and nipples for size 8 and larger are of anodized aluminum. Fittings conform to MS24587.

Part No.	Tube Size (In.)*	AN818 Nut Thread Size**	Price Each
491-3	3/16	3/8-24	**$11.50**
491-4	1/4	7/16-20	**$9.45**
491-5	5/16	1/2-20	**$11.75**
491-6	3/8	9/16-18	**$12.25**
491-8D	1/2	3/4-16	**$13.35**
491-10D	5/8	1-1/16-12	**$21.75**
491-12D	3/4	1-1/16-12	**$28.75**

**** Corresponds to dash no. of Aeroquip 816 hose fittings.***
***** Safety factor of 4.***

HOSE AND FITTING ASSEMBLY MANDRELS

These hose and fitting assembly mandrels are designed for all straight fittings in Aeroquip 303 and Stratoflex 111 series. These hose types are common to most hydraulic, pneumatic, coolant, fuel and oil systems specified in MS33620 for aircraft applications. These quality tools are made from premium tool steel and bright nickel plated for long life. Available individually in sizes -3 thru -12 or in an assortment kit including all 7 sizes.

MILSPEC MANDRELS			
	Hose	Fitting	Price
05-01885	3/16	MS-3M	**$18.50**
05-01886	1/4	MS-4M	**$14.75**
05-01887	5/16	MS-5M	**$14.70**
05-01888	3/8	MS-6M	**$19.90**
05-04241	1/2	MS-8M	**$21.75**
05-04242	5/8	MS-10M	**$30.85**
05-04243	3/4	MS-12M	**$38.50**
05-04544	Includes 1 each of the MilSpec Mandrels		**$158.95**

AEROQUIP 666 HOSE

Aeroquip 666 medium pressure Teflon hose is widely used in aircraft applications handling fuel, oils, and other fluids. It is unaffected by all fuels, oils, alcohols, coolants, or solvents commonly use in aircraft. Construction of Aeroquip 666 hose is of spiral extruded Teflon resin for the inner tube with a reinforcement and outer cover of Type 300 Series stainless steel wire braid. The result is a lightweight hose able to withstand prolonged flexing and vibration under all service conditions. Aeroquip 666 hose is also use in hydraulic and pneumatic applications at pressures up to 1500 psi.

Hose Part No.	Hose I.D. (inches)	Hose O.D. (inches)	Max. Oper. Pressure	Wt. Per Ft. (lbs.)	Price Per Ft.
666-4	.188	.312	1500	.08	**$7.90**
666-5	.250	.375	1500	.09	**$8.90**
666-6	.313	.466	1500	.11	**$11.75**
666-8	.406	.562	1500	.14	**$15.50**
666-10	.500	.656	1500	.19	**$18.60**
666-12	.625	.789	1000	.24	**$23.25**

REUSABLE 37° FITTINGS FOR #666 HOSE

Use with Hose Size	Part No.	Price ea.
666-4	05-01320	**$52.75**
666-5	05-01321	**$59.25**
666-6	05-01322	**$58.50**

Use with Hose Size	Part No.	Price ea.
666-8	05-01323	**$74.80**
666-10	05-01324	**$97.50**
666-12	05-01325	**$87.25**

STRAIGHT CRIMP FLARELESS FITTINGS FOR #666 HOSE

Part Number	Aeroquip Hose Size	Price ea.
AE21502-E	666-4	**$22.45**
AE21502-F	666-5	**$24.75**
AE21502-G	666-6	**$23.75**

Part Number	Aeroquip Hose Size	Price ea.
AE21502-H	666-8	**$26.25**
AE21502-J	666-10	**$35.50**
AE21502-K	666-12	**$43.25**

Crimping tool and sleeve required for assembly.

AP

HOSE - HOSE FITTINGS - ASSEMBLIES

AEROQUIP 816 & 8891 HOSE FITTINGS

USED WITH AEROQUIP 601 HOSE

816-4

Aeroquip 816 straight hose fittings and 8891 90° hose fittings consist of a pre-assembled nut/nipple assembly and an internally threaded hose socket. The size 4 fitting has a cadmium plated steel nut and nipple. Sizes 6, 8 and 10 nuts and nipples, and all sizes of sockets, are anodized aluminum. Note: Aeroquip 816 fittings are not the same as AN816 fittings. Include the word "Aeroquip" with Part number when ordering.

Aeroquip 816		Size*	Nut Thread Size**	Aeroquip 8891	
Part No.	Price Each			Part No.	Price Each
816-4	**$24.85**	1/4	7/16-20	8891-4	**$48.75**
816-6D	**$27.50**	3/8	9/16-18	8891-6D	**$63.50**
816-8D	**$26.90**	1/2	3/4-16	8891-8D	**$69.85**
816-10D	**$36.85**	5/8	7/8-14	8891-10D	**$78.25**

****Corresponds to tube O.D. of AN-type flared tube fittings. Not an Aeroquip dimension. ** Same thread size as AN818 nut of same dash no.***
Less 10%, 6 - 11 Aeroquip fittings; Less 15%, 12 - 24 Aeroquip fittings; Less 20%, 25 or more Aeroquip Fittings May be assorted sizes and types.

AEROQUIP FIRE SLEEVE

Aeroquip Firesleeve was specially developed to meet the fire resistance requirements of FAATSO - C53a OR TSO - C75. May be used for all fuel, oil, hydraulic, fire extinguisher & propeller feathering lines.

"Fire-proof" hose lines as defined by FAA must withstand a direct flame for fifteen minutes under specified flow conditions without failure. "Fire-resistant" lines must withstand a 5-minute exposure under these conditions. "Fire-proof" hose lines are obtained when the proper size Aeroquip Firesleeve is selected from the chart below and properly assembled.

900591B Clamps - used to secure firesleeve material on each end over the basic hose assembly. See chart for correct size.

900591B-1C ..... P/N 05-02653 ..... **$2.10**
900591B-2C ..... P/N 05-02652 ..... **$2.55**
900591B-3C ..... P/N 05-02654 ..... **$2.65**

Part No.	Use With Hose #		900591B Clamp Dash #	Price Per Ft.	Part No.	Use With Hose #		900591B Clamp Dash #	Price Per Ft.
	303	601				303	601		
AE102-8	-3	-4	-1C	**$8.75**	AE102-16	-10	-10	-3C	**$14.90**
AE102-9	-4	-5	-2C	**$9.25**	AE102-18	-12	-	-3C	**$17.50**
AE102-10	-5	-	-2C	**$9.25**	AE102-20	-	-12	-3C	**$16.25**
AE102-12	-6	-6	-2C	**$10.90**	AE102-22	-16	-16	-3C	**$21.65**
AE102-14	-8	-8	-2C	**$13.85**	AE102-24	-	-	$13.85	**$26.75**

Quantity Discounts Same As Aeroquip Hose

Firesleeve Clamp Installation Tool - Band Width: 1/4 in - 3/8 in
P/N 05-00447 ..... **$123.95**

Economy Firesleeve Clamp Tool - for 3/8" or 1/4" roll band.
P/N 12-00684 ..... **$23.85**

AEROQUIP AE466

Integral silicone firesleeves on Teflon 666 hose assemblies.

This hose/sleeve combination meets the test requirements of TSO-C53A Type D and TSO-C75 Type IIIA and IIIB. The Silicone sleeve is applied directly onto the metal braid an fittings to form a smooth, tight bond. Hose flexibility is not impaired. Non-age sensitive for extra-long service life. Eliminates the use of band clamps. Temperature range -65°F to +450°F. Specify hose size and length of assembly in inches and eighths of an inch from sealing surface to sealing surface. Available in blue, brown, orange, or purple. Purple is lightweight.

Call 877-4-SPRUCE (777823), or email info@aircraftspruce.com for pricing and availability.

Size	Aeroquip P/N
-3	AE3663161BXXXX
-4	AE3663161EXXXX
-5	AE3663161FXXXX
-6	AE3663161GXXXX

Size	Aeroquip P/N
-8	AE3663161HXXXX
-10	AE3663161JXXXX
-12	AE3663161KXXXX

SILICONE HOSE

Temp. range -65°F to +350°F. Color; Blue

ID	OD	Wt / Ft. (Lb.)	Part No.	Price / Ft
1/4"	0.45"	.064	05-00659	**$5.25**
3/8"	0.67"	.144	05-00660	**$6.65**
5/8"	0.95"	.220	05-00661	**$7.95**
3/4"	1.07"	.276	05-00671	**$8.75**

BLACK SILICONE FIRE SLEEVE

This black silicone fire sleeve has a temperature range of -65°F to +2000°F. The 5/8" I.D. Fits all E185, E225 & 0-300 engine breather tubes. The 3/4" I.D. fits O-470 I IO470 breather tubes. Sold by the foot.

1/4" ..... P/N 05-06832 ..... **$4.35**
5/8" ..... P/N 05-00672 ..... **$6.95**
3/4" ..... P/N 05-04549 ..... **$8.75**

AEROQUIP 601/AE701 HOSE

An inner tube of seamless, specially formulated synthetic rubber reinforced with a stainless steel partial inner braid and full-coverage stainless steel outer braid. Operating temperature -40° to 300°F. Aeroquip 601 hose is widely used for aircraft fuel and oil lines where flexibility and light weight are prime considerations. Because of its lighter weight and lower operating pressure than type 303 hose, it is not recommended for hydraulic lines. Use with Aeroquip 816 hose fittings. Aeroquip 601/AE701 is a direct replacement for old 601 hose. AE701 hose has no shelf life and is the upgraded version of 601 hose.

Hose Part Part No.*	For Tubing Size	Hose I.D.	Max. Oper. Pressure** (PSI)	Wt. per Ft. (Lb.)	Price Per Ft.
601-4	1/4	7/32	1,000	.120	**$13.75**
601-6	3/8	11/32	1,000	.156	**$13.25**
601-8	1/2	7/16	1,000	.168	**$15.90**
601-10	5/8	11/16	1,000	.204	**$19.75**

**** Corresponds to dash no. of Aeroquip 816 hose fittings. ** Safety factor of 4.***

CUSTOM AEROQUIP 666 TEFLON HOSE ASSEMBLIES

Aeroquip Teflon hose is constructed with a conductive, seamless smooth bore inner tube covered with a stainless steel braid. Unattracted by fuel, oil, coolants and solvents used in aircraft systems. Service and shelf life of Aeroquip Teflon hose is unlimited for all practical purposes. They can be used in fuel, hydraulic and pneumatic applications at working pressures to 1500psi. Minimum burst pressures are 8000 psi sizes -3 to -8. Temperature range is -65° to +450° F. Hose assemblies prices are straight to straight. Call for 45° and 90° elbow pricing.Measurements are taken as follows:

Fittings	Measurement
Straight to Straight	End to end (overall length)
Straight to 45°	End of straight fitting to top of b-nut on 45° fitting
Straight to 90°	End of straight fitting to center of 90° fitting
45° to 45°	Top of b-nut on 45° fitting to Top of b-nut on 45° fitting
45° to 90°	Top of b-nut on 45° fitting to center of 90° fitting
90° to 90°	Center of 90° fitting to Center of 90° fitting

Call 877-4-SPRUCE (777823), or email at info@aircraftspruce.com for pricing and availability.

Size	Aeroquip P/N
-3	AE3660000BXXXX
-4	AE3660000EXXXX
-5	AE3660000FXXXX
-6	AE3660000GXXXX

Size	Aeroquip P/N
-8	AE3660000HXXXX
-10	AE3660000JXXXX
-12	AE3660000KXXXX

SPEEDLOX LOCKING FITTINGS

Features: * No Wrenches Required * NHRA Approved * Retrofittable with existing hoses & hose ends * Eliminates the need for a wrench to seal the connection, Just hand tight * Eliminates cross-threading with the built in B-Nut guide * Prevents cavitation * Stays as a unit, no assembly required * Protects threads from F.O.D. (Foreign Object Damage) * Eliminates the need for safety wire * Reduces R & R time * Increased safety factor * Eliminates unscheduled maintenance * Eliminates hose twisting or binding * Greatly reduces contamination at the connection.

Size	Thread	Part No.	Price
SSA-3	Straight	04-01966	**CALL**
SSA-4	Straight	04-01967	**CALL**
SSA-6	Straight	04-01968	**$44.90**
SSA-8	Straight	04-01969	**$48.75**
SSA-10	Straight	04-01970	**$53.60**
SSA-12	Straight	04-01971	**$55.80**
SSA-16	Straight	04-01972	**CALL**
SSA-20	Straight	04-01973	**CALL**
SPA-3	Pipe	04-01974	**CALL**
SPA-4	Pipe	04-01975	**CALL**
SPA-6	Pipe	04-01976	**$44.90**
SPA-8	Pipe	04-01977	**$48.75**
SPA-10	Pipe	04-01978	**$53.60**
SPA-12	Pipe	04-01979	**$55.80**
SPA-16	Pipe	04-01980	**CALL**

FIRE SLEEVE BLUE

1/2 ID size for wires or other sizes for wire insulation or firesleeve for aircraft hose assembly. Colors: Blue

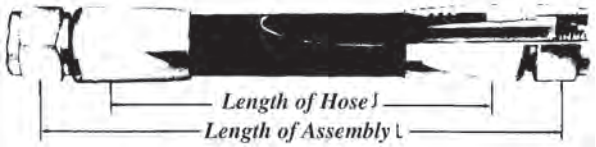
Size	Part No.	Price
1/2"	05-04712	**$6.90**
5/8"	05-04713	**$7.50**
3/4"	05-04714	**$7.90**
7/8"	05-04715	**$10.50**
1"	05-04716	**$11.85**

HOSE ASSEMBLY

ASSEMBLY INSTRUCTIONS

USING 303 HOSE AND 491 FITTINGS

To make hose assembly of length "L", cut hose to length "J". Obtain "J" length by subtracting proper fitting allowances.



Hose & Fitting Dash No.	-3	-4	-5	-6	-8	-10	-12
Fitting Allowance* (In.)	1.30	1.30	1.48	1.54	1.88	2.00	2.00

Allowance for 2 fittings.

step 1 Cut hose squarely to length. Use hose cut-off machine or fine tooth hacksaw. Do not remove cover.

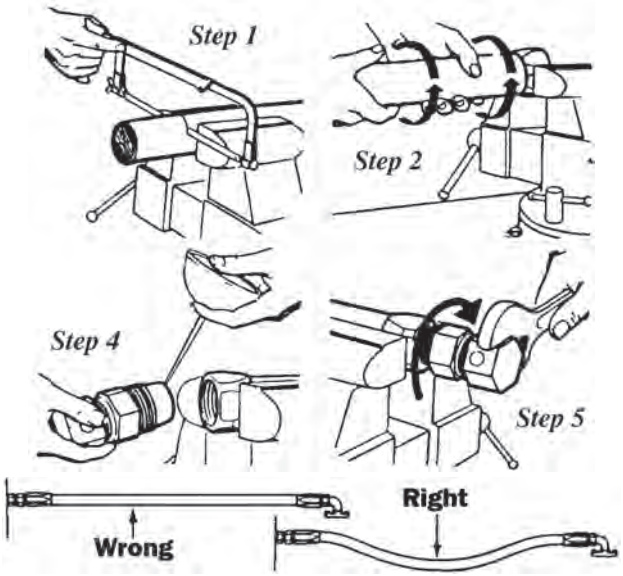
step 2 Place socket in vise. Do not overtighten vise on thin-walled sockets of lightweight fittings. Screw hose into socket until it bottoms. Back-off 1/4 turn.

step 3 Tighten nipple and nut on assembly mandrel.

step 4 Lubricate inside of hose and nipple threads liberally. Use lubricating oil, petrolatum or light grease.

step 5 Screw nipple into socket and hose using wrench on ass'y tool hex. Nut must swivel freely when assembly tool is removed. Maximum allowable gap is 1/16 inch. L.P.S.-1 is an excellent lubricant for use in hose assembly.

CLEAN, INSPECT, PROOF TEST



PLANNING HOSE LINE INSTALLATIONS

1. Provide slack or bend in the hose line to provide for changes in length that will occur when pressure is applied.

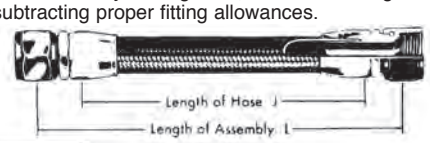
2. Observe linear stripe. Hose must not be twisted. High pressures applied to a twisted hose may cause failure or loosen the nut.

****10781-4 Clamp to be used to secure the Firesleeve material on each end over the basic hose assembly.***
Specify size. **$2.85 - $3.05**

End Dip for Firesleeve -
P/N 5027 ..... **$136.95**

USING 601 HOSE AND 816 FITTINGS

To make hose assembly of length "L", cut hose to length "J". Obtain "J" length by subtracting proper fitting allowances.



step 1 - Cut hose squarely to length. Use hose cut-off machine or fine tooth hacksaw. To minimize wire braid flare-out, wrap hose with masking tape and saw through tape. Remove tape before step 2.

step 2 - Insert hose in socket with a twisting, pushing motion until hose is in line with back of socket threads.

step 3 - Important-mark hose position around hose at rear of socket. Use a grease pencil, painted line or tape.

step 4 - Lubricate inside of hose & nipple threads liberally. Use SAE 30 lubricating oil. Avoid getting oil in the cutting spur of the nipple.

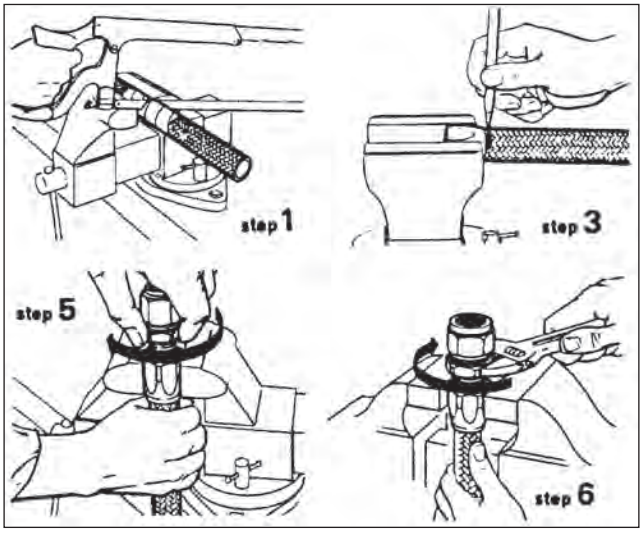
step 5 - Carefully insert nipple and engage nipple and socket threads while holding hose in position with other hand. Make sure that hose does not push out of socket by observing mark made in step 3.

step 6 - Complete assembly using wrench while continuing to hold in position. Maximum allowable gap is .041" in sizes 3, 4, & 5, and .031" in size 6 & up.

step 7 - IMPORTANT—check for hose push-out by observing hose position mark. None should be evident.

CLEAN, INSPECT, PROOF TEST

Note: Hose push out after proof test should not exceed 1/32" on sizes 12 and up. None is allowable on smaller sizes.



STRATOFLEX 2650 FIRESLEEVE

Part No.	Use With Hose No.				*10781-4 Clamp	Price Per Ft.
	124	193	111	156		
2650-6	-4	-	-	-	-	-
2650-8	-6	-3	-	-4	22CR	**$8.25**
2650-9	-	-4	-	-5	22CR	**$7.75**
2650-10	-8	-	-4	-6	22CR	**$9.90**
2650-11	-	-6	-	-	-	-
2650-12	-10	-	-5,-6	-8	22CR	**$10.50**
2650-13	-	-8	-8	-	-	-
2650-14	-12	-	-	-	22CR	**$12.25**
2650-16	-	-10	-10	-10	32CR	**$12.75**
2650-18	-	-	-	-12	32CR	**$13.75**
2650-20	-16	-	-12	-	32CR	**$18.85**
2650-22	-	-	-16	-16	32CR	**$23.75**

AP

STRATOFLEX HOSE & FITTINGS

STRATOFLEX 111 HOSE

Part No	Tube O.D.	Hose ID.	Max Press	Wt Per lb./In.	Price Per Ft.
111-4	.250	.188	3000	.0120	**$7.90**
111-5	.312	.250	3000	.0130	**$10.75**
111-6	.375	.312	2000	.0190	**$8.50**
111-8	.500	.406	2000	.0220	**$9.25**
111-10	.625	.500	1750	.0310	**$10.75**
111-12	.750	.625	1500	.0380	**$11.75**
111-16	1.00	.875	800	.0368	**$18.50**

STRATOFLEX 300 STRAIGHT FLARED FITTINGS FOR 111 HOSE

Part No.	Tube O.D.	Thread	Price Ea.
300-3S	.188	3/8-24	**$17.25**
300-4S	.200	7/16-20	**$14.85**
300-5S	.312	1/2-20	**$18.50**
300-6S	.375	9/16-18	**$18.95**
300-8D	.500	3/4-16	**$22.75**
300-10D	.625	7/8-14	**$29.85**
300-12D	.750	1-1/16-12	**$42.25**
300-16D	1.00	1-5/16-12	**$45.75**

STRATOFLEX 156 MEDIUM PRESSURE HOSE

Part No	Tube O.D.	Hose ID.	Max Press	Mini Blend	Price Per Ft.
156-3	.188	.156	1500	1.75	**$16.75**
156-4	.250	.219	1500	2.00	**$13.90**
156-5	.312	.281	1500	2.25	**$17.50**
156-6	.375	.344	1500	2.50	**$16.85**
156-8	.500	.438	1250	3.50	**$18.65**
156-10	.625	.562	1250	4.00	**$20.75**
156-12	.750	.688	1250	4.50	**$24.75**
156-16	1.000	.875	1000	5.50	**$33.50**

STRATOFLEX 678 45° ELBOW FLARED FITTINGS FOR 156 HOSE

Part No.	Tube O.D.	Thread	Price Ea.
678-3S	.188	3/8-24	**$97.25**
678-4S	.250	7/16-20	**$62.75**
678-6D	.375	9/16-18	**$64.25**
678-8D	.500	3/4-16	**$86.55**
678-10D	.625	7/8-14	**$106.95**
678-12D	.750	1-1/16-12	**$119.95**
678-16D	1.00	1-5/16-12	-

STRATOFLEX 193 HOSE

Specifications: Hose meets or exceeds the requirements of MIL-H-5593.
Construction:
Tube - Seamless Buna - N.
Reinforcement - One braid of high tensile fiber cord.
Cover - Synthetic rubber.
Identification: LP-MIL-H-5593-size, date of manufacture, manufacturer's code (CAGE) marked on one side of the hose. Stratoflex 193-size marked on other side of hose. Yellow markings are repeated every 12 inches.
Application: Low pressure air and vacuum instrument systems. Vacuum service 20"Hg sizes -2 thru -6; 10"Hg sizes -8and -10.
Temperature range: -65 to +165°F / (-54 to +74°C)

Part No	Tube O.D.	Hose ID.	Max Press	Weight per In. (l.b.)	Price Per Ft.
193-2	.35	.125	300	.0038	**$6.94**
193-3	.41	.188	250	.0050	**$3.50**
193-4	.48	.250	200	.0058	**$3.45**
193-6	.60	.375	150	.0079	**$3.95**
193-8	.75	.500	150	.0015	**$6.95**
193-10	.87	.625	150	.0138	**$9.25**

STRATOFLEX 646/640 45° ELBOW FLARED FITTINGS FOR 111 HOSE

Part No.	Tube O.D.	Thread	Price Ea.
646-4S	.250	7/16-20	**$63.50**
646-6S	.375	9/16-18	**$74.75**
646-8D	.500	3/4-16	**$116.95**
646-10D	.625	7/8-14	**$146.95**
640-12D	.750	1-1/16-12	**$189.95**
640-16D	1.00	1-5/16-12	**$391.95**

STRATOFLEX 649/643 90° ELBOW FLARED FITTINGS FOR 111 HOSE

Part No.	Tube O.D.	Thread	Price Ea.
649-4S	.250	7/16-20	**$62.50**
649-6S	.375	9/16-18	**$73.50**
649-8D	.500	3/4-16	**$92.60**
649-10D	.625	7/8-14	**$133.95**
649-12D	.750	1-1/16-12	**$183.95**

STRATOFLEX 676 STRAIGHT FLARED FITTINGS FOR 156 HOSE

Part No.	Tube O.D.	Thread	Price Ea.
676-3S	.188	3/8-24	**$36.60**
676-4S	.250	7/16-20	**$28.75**
676-5S	.312	1/2-20	**$71.75**
676-6D	.375	9/16-18	**$24.75**
676-8D	.500	3/4-16	**$28.75**
676-10D	.625	7/8-14	**$36.50**
676-12D	.750	1-1/16-12	**$46.75**
676-16D	1.000	1-5/16-12	**$56.75**

STRATOFLEX 680 90° ELBOW FLARED FITTINGS FOR 156 HOSE

Part No.	Tube O.D.	Thread	Price Ea.
680-3S	.188	3/8-24	**$215.95**
680-4S	.250	7/16-20	**$57.75**
680-5S	.312	1/2-20	**$143.95**
680-6D	.375	9/16-18	**$75.50**
680-8D	.500	3/4-16	**$74.60**
680-10D	.625	7/8-14	**$82.50**
680-12D	.750	1 1/16-12	**$99.95**
680-16D	1.000	1 5/16-12	**$149.70**

STRATOFLEX 311 STRAIGHT FLARED FITTING FOR 193 HOSE

Part No.	Tube O.D.	Thread	Price Ea.
311-2D	.125	5/16-24	**$17.65**
311-3D	.188	3/8-24	**$9.50**
311-4D	.250	7/16-20	**$11.50**
311-6D	.375	9/16-18	**$19.65**
311-8D	.500	3/4-16	**$38.75**
311-10D	.625	7/8-14	**$95.50**

STRATOFLEX FLARED HOSE ASSEMBLIES

Call for quote on Stratoflex 111, 156, 193 and 124 PTFE flared hose assemblies. Our hose assemblies are competitively priced and available for immediate shipment.

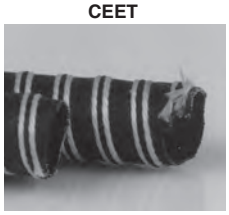
DUCTING

AIRCRAFT FLEXIBLE DUCTING

CAT

SCAT

CEET



SCEET

"CAT" - "CAT" type flexible hot or cold air ducting is extremely lightweight and highly flexible. Short lengths can be joined together to form a continuous length. Made of a single ply black neoprene-impregnated fiberglass with a spiral copper coated steel wire inside and wrapped with fiberglass cord on the outside. Suitable for conveying fumes and air a temperatures from -65° to over 350°F. Not reccomended for handling liquids or highly abrasive materials, or for negative pressure applications.

"SCAT" - "SCAT" type ducting has the same type construction as "CAT" except with red silicone rubber impregnation. For use in conducting extremely cold or hot air with temperatures from -65° to over 550°F. Not recommended for negative pressure applications.

"CEET" - "CEET" type ducting has two plies of neoprene-impregnated fiberglass, similar to CAT except wire between plies. For use in hot or cold air applications and for conveying fumes at temperatures ranging from -65° to over 350°F. Not reccomended for handling liquids or highly abrasive materials, or for negative pressure applications.

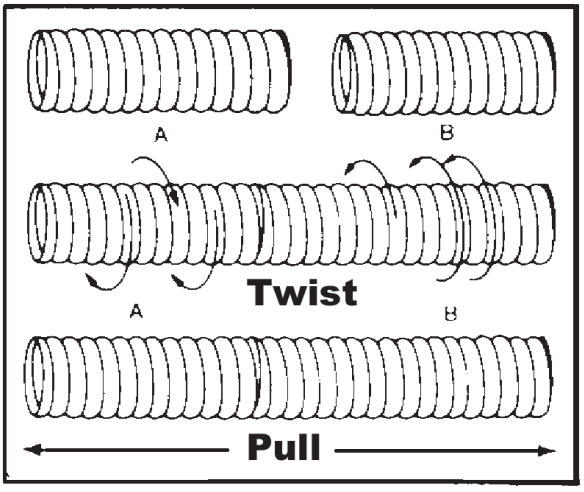
"SCEET" - "SCEET" type ducting has two plies of silicone rubber-impregnated fiberglass, similar to SCAT except wire between plies. Ideal for use in conducting extremely cold or hot air at temperatures from -80° to over 550°F, and for conveying fumes. Not reccomended for handling liquids or highly abrasive materials, or for negative pressure applications.

Dash No.	Inside Diameter	CAT		SCAT		CEET		SCEET	
		Part Number	Price Per Foot	Part Number	Price Per Foot	Part Number	Price Per Foot	Part Number	Price Per Foot
-2A	5/8"	05-29801	**$4.60**	05-29901	**$6.25**	05-30501	**$6.85**	05-30601	**$7.00**
-3	3/4"	05-29802	**$5.25**	05-29902	**$4.95**	05-30502	**$5.75**	05-30602	**$14.75**
-3A	7/8"	05-29803	**$5.50**	05-29903	**$5.25**	05-30503	**$6.25**	05-30603	**$6.00**
-4	1"	05-29804	**$5.90**	05-29904	**$5.85**	05-30504	**$6.75**	05-30604	**$6.00**
-5	1-1/4"	05-29805	**$6.50**	05-29905	**$6.50**	05-30505	**$7.50**	05-30605	**$6.75**
-6	1-1/2"	05-29806	**$5.75**	05-29906	**$6.50**	05-30506	**$7.50**	05-30606	**$7.25**
-7	1-3/4"	05-29807	**$6.25**	05-29907	**$9.50**	05-30507	**$7.75**	05-30607	**$14.75**
-8	2"	05-29808	**$6.25**	05-29908	**$6.95**	05-30508	**$7.90**	05-30608	**$8.85**
-9	2-1/4"	05-29809	**$6.75**	05-29909	**$7.90**	05-30509	**$8.00**	05-30609	**$9.90**
-10	2-1/2"	05-29810	**$7.50**	05-29910	**$8.45**	05-30510	**$8.50**	05-30610	**$9.95**
-11	2-3/4"	05-29811	**$7.65**	05-29911	**$8.95**	05-30511	**$8.75**	05-30611	**$11.50**
-12	3"	05-29812	**$8.75**	05-29912	**$9.75**	05-30512	**$9.85**	05-30612	**$11.90**
-13	3-1/4"	05-29813	**$9.50**	05-29913	**$10.75**	05-30513	**$10.50**	05-30613	**$11.90**
-14	3-1/2"	05-29814	**$9.75**	05-29914	**$9.95**	05-30514	**$11.25**	05-30614	**$13.25**
-15	3-3/4"	05-29815	**$9.45**	05-29915	**$10.85**	05-30515	**$10.50**	05-30615	**$14.00**
-16	4"	05-29816	**$10.50**	05-29916	**$11.00**	05-30516	**$11.90**	05-30616	**$14.85**
-18	4-1/2"	05-29818	**$10.75**	05-29918	**$12.95**	05-30518	**$12.85**	05-30618	**$15.95**
20	5"	05-29820	**$11.75**	05-29920	**$13.75**	05-30520	**$13.75**	05-30620	**$18.90**
24	6"	05-29824	**$12.50**	05-29924	**$16.75**	05-30524	**$16.75**	05-30624	**$20.50**

Diameters not listed are available as a special order in full lengths only. Order CAT 2-3/4" diameter for Whisperflow air vents. Full factory lengths are 10 ft to 13 ft pieces on CAT, CEET, SCAT, & SCEET, except 5/8" id (PN 05-30501 is only 9ft).

SCREWING DUCTING TOGETHER

Short lengths of ducting can be spliced to eliminate waste. For permanent splices, an adhesive should be applied to the ends before joining. To relieve wire tension when cut, bend end of wire in slightly.



ALUMINUM FLANGES FOR DUCTING

Simplify installation of cabin, carb. heat, cabin vent lines. Aluminum flange may be welded or riveted in place. Slip ducting over outlet and secure with clamp.

Made in the USA

Flange Size	Part No.	Price
1"	10350-4	**$6.95**
1-1/4"	10350-5	**$10.50**
1-1/2"	10350-6	**$7.50**
1-3/4"	10350-7	**$10.75**
2	10350-8	**$7.50**
2-1/4"	10350-9	**$11.60**
2-1/2"	10350-10	**$7.75**
2-3/4"	10350-11	**$11.75**
3"	10350-12	**$8.75**
Discount: 10% On 20; 15% On 50, 20% On 100 (Assorted)		

ANTIQUE PIPER WING ROOT FRAME COVERS

This cover is constructed of a light-weight stiffener panel, 1/2" foam padding and headliner fabric. A flap extends into the back side of the wing root frame and glues in place for a professional finish.

P/N 09-17345.....**$85.50**

AP

SOUNDPROOFING – INSULATION

AP

E-A-R-COMPOSITE DAMPING FOAM

ADC-224 is a mid-temperature skin damping composite of 0.25" thick damping foam fixed with 0.005" thick aluminum foil and backed with pressure sensitive adhesive. Used in aircraft for weight efficient damping and to reduce radiated noise. Meets FAR 25.853 (A) for fire resistance. Furnished in 27" x 48" sheets.

P/N 09-00181....**$148.95 / sheet**

Less 10% discount on 10 or more sheets

3M™ SOUND & VIBRATION DAMPING PANELS

Designed for damping resonant vibrations of thin sheet metal, these panels are pressure sensitive, specially compounded polyurethane damping foam with an aluminum foil backing. The adhesive on the foam is protected by a peel-off paper covering. It is an excellent insulator for conducted heat and is an excellent heat reflector. Fire-resistant and self-extinguishing per FAA test procedure. Excellent moisture resistance. Resistant to most solvents. Easily applied with only hand pressure for a permanent bond even on rough, irregular surfaces. Used extensively in commercial aircraft and highly recommended for metal home builts. Apply to firewall, fuselage — anywhere a vibration problem exists. Wt.4 oz./sq. ft., 1/4" thick. Meets FAR 25.853

3M Sound Damp Panel 6" x 48"..... P/N 09-30206 ..... **$29.75 ea.**
3M Sound Damp Panel 12" x 48"..... P/N 09-30212 ..... **$55.75 ea.**
3M Sound Damp Panel 18" x 48"..... P/N 09-30218 ..... **$72.85ea.**

Less 15% on 12 or more pieces

ALUMINUM FOIL TAPE

A 2 Mil. (50 micron) high strength aluminum foil coated with an aggressive, high temperature acrylic adhesive system. The foil conforms well to both fibrous and sheet metal ducts, providing an excellent vapor seal. The malleable foil also conforms well around corners and to irregular surfaces. Coated with a special cold weather acrylic pressure sensitive adhesive system which combines superior quick stick at normal temperature with superior low temperature performance below freezing - this is the ultimate in cold weather tapes. Recommended for use at normal and elevated temperatures also. **Applications**: Primarily used for vapor sealing fiberglass ductboard and sheet metal ducts; can also be used on FSK systems.tape described above.2" x 25 Yd. Roll.

Description	Part No.	Price	Description	Part No.	Price
1"X 25YD	09-01273	**$11.35**	4"X25 YD	09-01275	**$38.45**
2"X 25 YD	09-01274	**$24.50**	6"X50 YDS	09-01276	**$59.50**

TEFLON ANTI-CHAFE TAPE

ISD Chafe Tape is a durable Teflon material with a pressure sensitive adhesive which resists solvents, and oils. Designed specifically to prevent aluminum chafing between airframes and engine cowls. It helps prevent black streaking on aircraft exterior due to cowl chafing. Not FAA/PMA approved. Operable temperature range: -100°F to +500°F. Width: 1". Roll length: 6 yds. Tkns: .012" P/N 09-31805 ..... **$36.75/roll**

TEFLON COATED FIBERGLASS ANTI-CHAFE TAPE

These 1' wide rolls of Teflon on fiberglass anti-chafe tape are excellent for use on engine cowlings to keep cowl components from chafing. The tape is available in 5 mil thick and 10 mil thick and comes with a silicone adhesive on the tape. Just peel back liner and install. Rolls are 1" wide x 36 yds long.

5 Mil Anti-Chafe tape ..... P/N 05-01024 ..... **$42.90/roll**
10 Mil Anti-Chafe tape ..... P/N 05-01025 ..... **$56.85/roll**

UNI-WRAP SILICONE TAPE

RUBBER SELF-BONDING TAPE

UniWrap silicone rubber sealing tape bonds to itself permanently to protect, repair, join, or insulate virtually any type of part on which ordinary tape can be used. But the big difference between UniWrap and ordinary tape is that it fuses to itself permanently to form a homogenous mass and provides unprecedented protection and insulating characteristics. UniWrap uses no adhesives so it is non-tacky. It has a 12 month shelf life and after fusing is unaffected by moisture, cold, heat, ozone shock, or vibration. Meets MIL-I-46852 Type II as well as strict aerospace industry performance requirements. Available in red, black, gray, or white. Furnished in 10 yard rolls, UniWrap is 1" wide and 0.020" thick UniWrap (red) P/N 09-30450.....**$12.85**

COWLING CHAFE CLOTH

Off-white, 100% non-asbestos woven tape. Unaffected by most chemicals and temperatures. 1" x 15 ft. Roll P/N 09-31800 ..... **$16.75 rl**

NOXUDOL SOUNDPROOFING LIQUID

A paint-on soundproofing material that is applied to metal surfaces to reduce vibration and reverberant noise. Use to fill cracks and spaces where noise can enter. Buff color and can be painted. Paint engine mounts to increase fire resistance! Odorless and non-toxic when dry. Waterbased product. Non-Flammable. Shelf life: 1-year. Not FAA approved.

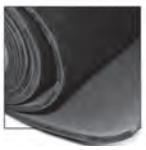
Quarts ..... P/N 09-42740 .....**$24.70**
Gallon..... P/N 09-00772 .....**$96.75**

SUPER SOUNDPROOFING TAPE

This is a 1/8" thick by 2" wide self adhesive tape that can be placed on metal panels and wrapped around ducts to reduce vibration and reverberant noise transfer. Not FAA approved. 30 ft. rolls.

2" wide P/N 09-42745.....**$23.75/ea.**
1" wide P/N 09-00381.....**$8.65/ea.**

SUPER SOUNDPROOFING FLOOR MAT



This heavy duty, wear resistant vinyl mat with foam backing can be placed on aircraft floors to reduce noise & vibration. 54" width.

P/N 09-42750..... **$16.75/lin.ft.**
Floormat 4" wide X 25' Roll.....P/N 09-00433..... **$41.75/roll**
Floormat without foam backing .....P/N 09-42751..... **$13.75/lin.ft.**

HOW TO SOUNDPROOF LIGHT AIRCRAFT

Sound measurement indicates that sometimes the noise levels are so high in some aircraft that damage to hearing over time can result. This "How-To" manual discusses the advanced techniques to sound proofing the light aircraft and drastically reducing such noise. Information presented is applicable to all types of planes from "puddle-jumpers" to jets.

P/N 09-42755 ..... **FREE**

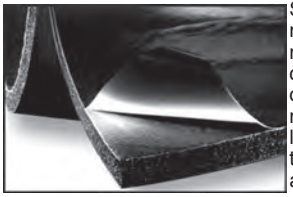
SUPER SOUNDPROOFING SHEET WITHOUT ADHESIVE

This material is excellent for reducing noise levels in all types of certificated and home-built aircraft. It is a closed cell vinyl insulating material which will not absorb water or oil. Has fire retardant qualities and meets FAR 25.853a Appendix F, Pt1. It is smooth on one side for easy attachment to the inside cabin skins, sides, top and front firewall. Excellent for helicopters as well. Furnished in bulk 48" wide sheet, it is easily cut by scissors and attached with contact cement. Available in black only.

The Flammability Report (Burn Certs) are available on request.

Thick-ness	Wt. / Lineal ft.	P/N 09-	Price Per. Lineal Ft.	Thick-ness	Wt. per Lineal ft.	P/N 09-	Price Per. Lineal Ft.
1/8"	.25 lbs.	42719	**$5.45**	3/4"	1.4 lbs.	42727	**$20.50**
1/4"	.60 lbs.	42720	**$13.50**	1"	2.0 lbs.	42730	**$22.25**
3/8"	.80 lbs.	42723	**$12.65**	1-1/2"	3.0 lbs.	72731	**$31.85**
1/2"	1.0 lbs.	42725	**$14.50**	2"	4.0 lbs.	42760	**$34.50**

SUPER SOUND PROOF WITH ADHESIVE



Super Soundproofing Foam Mat for noise control: A closed cell vinyl-nitride noise control FOAM suitable for application to cars, boats, planes, home and office, anywhere a noise control mat is needed. Won't absorb moisture or odor, long lasting and durable. An excellent thermal insulator! (FAA Approved for aircraft, too!) Just apply with vinyl or contact cement to reduce and absorb sound. There may be small variances in the width of this product.

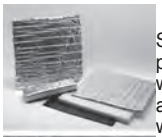
1/8" w/adhesive.....P/N 09-01243 .....**$8.75**
1/4" w/adhesive.....P/N 09-01244 .....**$12.95**
3/8" w/adhesive.....P/N 09-00443 .....**$16.65**
1/2" w/adhesive.....P/N 09-00444 .....**$20.75**
3/4" w/adhesive.....P/N 09-01245 .....**$27.50**
1" w/adhesive.....P/N 09-01246 .....**$27.50**
2" w/adhesive.....P/N 09-01247 .....**$59.00**

SEE THE ENGINE PARTS SECTION OF THE CATALOG FOR MORE INSULATION PRODUCTS!

AIRCRAFT SPRUCE WEST **AIRCRAFT SPRUCE EAST**
CORONA, CA • (877) 4-SPRUCE **PEACHTREE CITY, GA • (877) 477-7823**

Prices Subject to Change Without Notice

SOUNDEX SOUNDPROOF & INSULATION KITS



SOUNDEX PREMIUM AIRCRAFT SOUNDPROOF AND INSULATION KITS

SoundEx™ is a premium aircraft soundproofing / insulation that incorporates excellent vibration damping and noise absorption properties. SoundEx™ is a superior product compared to other products on the market because of it's thermal qualities, adds less weight to aircraft (4.5 oz. per sq. ft. for 1-1/8" thickness and 3 oz. per sq. ft. for 7/8" thickness), and affordability. Materials are available in bulk or soundproofing template kits. Stop the yelling and make flying fatigue a thing of the past. Improve your quality of flight with SoundEx™.

Decibel Reduction Data - Decibel reductions will vary depending upon how well your aircraft is currently insulated. Our latest data indicate that you should expect noise level reduction from 4-7 dB(a) and 10-15 dB(c). From singles and light twins to corporate jets, SoundEx™ is the noise reduction option of choice. Pilots and passengers can fly and communicate in comfort.

Flammability Requirements - All materials meet FAR 25:853 (a), Appendix F, Part 1 (a) (1) (ii) for flammability. Certificate provided with each kit or bulk order.

Soundproofing Template Kits - All pieces are clearly printed, numbered, and ready for cutting on the templates. Cutting time is estimated on an average of 1-1/2 to 2 hours. For example, the Basic kit for a V35 Bonanza should take an experienced cutter about 60 to 90 minutes to cut, adding another 20 to 30 minutes for a Deluxe kit. For a late model B58 Baron, cutting the templates should take about 2 hours for the Basic kit and 2-1/2 to 2-3/4 hours for the Deluxe kit. Kits are for originally configures cabins.

No.	Aircraft Model	Basic Kit (sidewall above floor/roof)		Deluxe Kit (basic + floor/belly)		SX-250 Footage (black mat for under carpet)
BEECHCRAFT						
SX-01	Bonanza 35-E35	05-04256	**$695.00**	05-04256-1	**$1,050.00**	N/A
SX-02	Bonanza F35-M35 and A33-B33 (and older with tiny 3rd window added)	05-04257	**$640.00**	05-04257-1	**$975.00**	N/A
SX-03	Bonanza N35-P35, C33-E33, and F33C (and older with long 3rd window added)	05-04312	**$640.00**	05-04312-1	**$1,127.00**	N/A
SX-04	Bonanza/Baron S35-V35/F33/A55-B55 (and older with large baggage and long 3rd window added)	05-04313	**$695.00**	05-04313-1	**$1,086.00**	N/A
SX-05	Bonanza/Baron F33-G33 and B55-E55 (with extended baggage)	05-04314	**$900.00**	05-04314-1	**$1,300.00**	N/A
SX-06	Bonanza/Baron 36-A36 and B58 (through 1978	05-04315	**$895.00**	05-04315-1	**$1,565.00**	N/A
SX-07	Bonanza/Baron A36-B36 and B58 (1978 and newer) (with extended baggage)	05-04316	**$1,170.00**	05-04316-1	**$1,570.00**	N/A
SX-08	Bonanza 33/35/36 Windsh/d set (without factory speedslope) Includes upper material forward of instrument panel	05-04317	**$165.95**	N/A	N/A	N/A
SX-09	Bonanza 33/35/36 Windsh/d set (with factory speedslope) Includes upper material forward of instrument panel	05-04318	**$125.95**	N/A	N/A	N/A
SX-10	Duke	05-04319	**$1,370.00**	N/A	N/A	**9 ft.**
King Air 90 Coming Soon!						
King Air 300 Coming Soon!						
*Ensure you order the correct Bonanza kit by checking the following modifications: • Bonanza 35-E35 with tiny 3rd window modification, order kit for F35-M35. • Bonanza 35-M35 (or A33-B33) with large third window and hat shelf modification, order kit for N35-P35. • Bonanza 35-P35 (or A33-E33) with large third window and expanded baggage modification, order kit for S35-V35B.						
PIPER						
SX-11	Comanche PA24/PA30 (through 1963) (*Floor not drilled for access)	05-04320	**$820.00**	05-04320-1	**$1,075.00**	N/A
SX-12	Comanche PA24/PA30 (1964 and 1965)	05-04321	**$820.00**	05-04321-1	**$1,170.00**	N/A
SX-13	Comanche PA24/PA30 (1966 and newer)	05-04322	**$820.00**	05-04322-1	**$1,170.00**	N/A
SX-14	Early Arrow, Cherokee, Warrior PA28-160, 180, 235	05-04323	**$748.00**	N/A	N/A	**9 ft.**
SX-15	Arrow, Cherokee, Warrior PA28-160, 180, 235	05-04324	**$750.00**	N/A	N/A	**9 ft.**
SX-16	Cherokee Six, Seneca, Lance, Saratoga PA32, PA34	05-04325	**$1,205.00**	N/A	N/A	**11 ft.**

No.	Aircraft Model	Basic Kit (sidewall above floor/roof)		Deluxe Kit (basic + floor/belly)		SX-250 Footage (black mat for under carpet)
PIPER CONT.						
SX-17	PA46 Malibu, Meridian	05-04326	**$1,495.00**	N/A	N/A	**10 ft.**
SX-18	Navajo	05-04327	**$2,100.00**	N/A	N/A	**12 ft.**
SX-34	Aztec	05-04329	**$1,275.00**	N/A	N/A	**13 ft.**
Tomahawk Coming Soon!						
CESSNA						
SX-35	150	05-04330	**$605.00**	N/A	N/A	**6 ft.**
SX-36	152	05-04331	**$605.00**	N/A	N/A	**6 ft.**
SX-24	170	05-04332	**$1,055.00**	N/A	N/A	**8 ft.**
SX-20	172	05-04333	**$745.00**	N/A	N/A	**8 ft.**
SX-32	177, 177 RG	05-04334	**$880.00**	N/A	N/A	**9 ft.**
SX-37	180/185	05-04335	**$745.00**	N/A	N/A	**8 ft.**
SX-21	182 (except earliest without rear window)	05-04336	**$745.00**	N/A	N/A	**8 ft.**
206	Coming Soon!					
SX-22	210 (except earliest without rear window)	05-04337	**$895.00**	N/A	N/A	**8 ft.**
SX-23	310 (without rear window)	05-04338	**$1,055.00**	N/A	N/A	**10 ft.**
SX-24	310	05-04339	**$1,055.00**	N/A	N/A	**10 ft.**
SX-26	337, 337P	05-04340	**$910.00**	N/A	N/A	**8 ft.**
SX-25	340	05-04341	**$1,650.00**	N/A	N/A	**12 ft.**
SX-33	414A	05-04342	**$2,105.00**	N/A	N/A	**13 ft.**
SX-38	500, 501 Citation	N/A	**N/A**	05-04343-1	**$4,244.00**	**N/A**
COMMANDER						
SX-43	112/114	05-06834	**$910.00**	N/A	N/A	**8 ft.**
MOONEY						
SX-27	M20 to M20E	05-04344	**$820.00**	N/A	N/A	**6 ft.**
SX-28	M20F to M20K	05-04345	**$900.00**	N/A	N/A	**7 ft.**
M20L to M20S Coming Soon!						
NAVION						
SX-31	A, B	05-04346	**$915.00**	N/A	N/A	N/A
VAN'S RV (EXPERIMENTAL)						
SX-41	RV-6 (Firewall, Sidewalls, Belly)	N/A	N/A	05-04347-1	**$895.00**	N/A
SX-39	RV-7 / RV-9 (Firewall, Sidewalls, Belly)	N/A	N/A	05-04348-1	**$891.00**	N/A
SX-30	RV-8 (Firewall, Sidewalls, Belly)	N/A	N/A	05-04349-1	**$895.00**	N/A
SX-40	RV-10 (Firewall, Sidewalls, Roof, Belly)	N/A	N/A	05-04350-1	**$1,130.00**	N/A
BULK MATERIAL						
SX-2000	2" x 36" x 48" SoundEx Sheet	05-04351	**$154.50**	**per sheet**		
SX-1250	1-1/4" x 36" x 48" SoundEx Sheet	05-04352	**$128.95**	**per sheet**		
SX-1125	1-1/8" x 36" x 48" SoundEx Sheet	05-04353	**$117.85**	**per sheet**		
SX-875	7/8" x 36" x 48" SoundEx Sheet	05-04354	**$109.75**	**per sheet**		
SXFW-750	3/4" x 48" Firewall Matt	05-04356	**$42.50**	**per roll ft.**		
SX-600	3/4" x 36" x 48" Black Mat (Flame certified for Firewall)	05-04357	**$89.95**	**per sheet**		
SX-500	1/2" x 48" Black Mat (Flame certified for Firewall)	05-04358	**$27.85**	**per roll ft.**		
SX-250	1/4" x 48" Black Mat	05-04359	**$17.75**	**per roll ft.**		
SX-125	1/8" x 36" x 48" Black Mat	05-04360	**$19.50**	**per sheet**		
SXB-500	1/2" x 48" Belly Mat	05-04361	**$33.85**	**per roll ft.**		
SXB-250	1/4" x 48" Double Bubble	05-04362	**$11.25**	**per roll ft.**		
SXB-250/36	1/4" x 36" Double Bubble	05-04363	**$6.50**	**per roll ft.**		
SXT-200	2" Aluminum Foil Tape	05-04364	**$14.95**	**per roll ft**		
SX-1357	SoundEx Glue	05-04365	**$15.50**	**per 6oz. tub**		

INSULATION MATERIALS

AP

THE INSULATOR
AIRCRAFT INSULATOR MATERIAL

The Insulator is one of the finest sound proofing and thermal insulation materials available, and will last the life of the aircraft. The dual sided Insulator panels are ideal for installation on interior skin, floor, engine covers, doors, headliners, and bulkheads. The Insulator uses multi - layered fiber plys bonded to reinforced high performance foil to provide optimum barrier to acoustics, radiant heat, thermal heat, and moisture. Insulator is available in 4'x 6' panels or by the lineal foot (4' wide). Install Insulator with Sticky Stuff spray adhesive (shown below) and Insul-Tape. Not FAA approved.

INSULATOR PANELS

Insulator – one ply 4' x 6' sheet. Single sided only.
3/8" thick.....P/N 09-27400 .. **$21.65 ea**

Discount: less 15% on orders for 20 sheets (assorted)

INSULATOR BY THE FOOT

Single side foil, single layer #6014; 4 ft. wide.
P/N 09-06014.....**$3.60 /ft.**
Double side foil, single layer #6016;
4 ft wide ..... P/N 09-06016.....**$3.95 /ft.**
Discount: less 15% for 100 ft. (per P/N)

STICKY STUFF ADHESIVE

Stick Stuff is one of the best performing spray adhesives available. It is ideal for installing the Insulator and has many other uses. One spray can will install two 4' x 6' panels.
P/N 09-27415.....**$11.75/ea.**

INSUL-TAPE
AIRCRAFT INSULATOR MATERIAL

This pressure sensitive aluminized foil tape conforms to irregular surfaces, seals seams and joints and provides a vapor barrier. Also mends damaged Insulator foil. Cuts easily with household scissors.
30' roll.....P/N 09-27420..... **$3.85/ea.**

BLANKET IN-A-BOX

Insulating your aircraft made easy! Blanket is ready to install as is or can be modified to fit special areas. Each box contains all the materials to insulate your aircraft including an Orcotek strip blanket, tape, cutting knife, instructions and built-in work surface with measuring grid.
Furnished as follows:
1" blanket-in-a-box contains 1 roll (1"x20"x100') Orcotek strip blanket, 2 rolls of Orcotape OT-16A (2"), utility knife, dispenser box-work platform P/N 09-45005..... **$2,079.00/box**
2" blanket-in-a-box contains 1 roll (2"x20"x50') Orcotek strip blanket 1 roll of Orcotape OT-16A (3"), utility knife, dispenser box/work platform P/N 09-45010..... **$1,065.00/box**

CONTEGO FIRE BARRIER LATEX PRIMER
-THE FIRE STOPS HERE-

Contego protects most building materials from the ravages of fire. Contego intumescent fire barrier products are all non-toxic, non-dermatic, and safe for pets. When exposed to fire, Contego fire retardant coatings expand to form a tough char barrier fire cannot penetrate. Deprived of fuel, the fire quickly dies. Contego not only helps prevent fires, it minimizes deadly smoke production, one of the leading causes of fatalities in residential and commercial fires. Intumescent fire barriers are nothing new, but Contego Passive Fire Barrier Latex represents a quantum leap forward in terms of quality, versatility, affordability and fire safety-all in one truly impressive fire proofing product. P/N 05-02615.....**$25.90**

3M™ CARPET TAPE 9377 2 INCH X 25 YARD

3M 9377 Tape has a differential adhesive system with a high-tack acrylic that bonds to the top-layer substrate and a rubber-based adhesive system that attaches to the flooring material. One side is black and attaches to the flooring material with an acrylic-based adhesive. The white side of the tape is a rubber-based adhesive that provides a bond to the floor surface. Firm application pressure helps develop better adhesive contact and improve bond strength. The bond strength will build over time reaching maximum strength at 72 hours. FAR-25-.853 P/N 09-02133..... **$35.85**

INSULATION REPAIR & FABRICATION TAPE

Orcotape OT-16A is a lightweight, pressure sensitive, reinforced, metallized polyvinyl fluoride tape which is designed to be used in the fabrication, repair & installation of thermal/acoustic blankets. It is the companion tape to be used with the Orcotek strip blanket to seal the edges. Furnished in 60yd rolls.
2" width..... P/N 09-45040.....**$131.95/ea.**
3" width..... P/N 09-45045.....**$209.95/ea.**
5" width..... P/N 09-02554.....**$119.00/ea.**

ORCOTEK STRIP BLANKET

Aircraft insulation by the foot. This durable, state-of-the-art, light weight blanket meets the thermal and acoustic requirements of the major aircraft manufacturers and is now available for your airplane. The blanket consists of fiberglass enclosed in moisture barrier. It can be used as is or cut in special shapes. Use Orcotape OT-16A 2" or 3" tape to seal the open edge(s) of the blanket. Strip blanket available in 1" thick x 20" wide or 2" thick x 20" wide.
1" thick x 20" wide.....P/N 09-45015.....**$22.85/linear ft.**
2" thick x 20" wide.....P/N 09-45020.....**$26.25/linear ft.**

3M™ INTERAM CERAMIC BLANKET 49 INCHES BY 25 FEET

3M Interam Mat I-10A, 49 inches by 25 feet (one roll): Ceramic fiber based material that expands into low-density insulation blankets when exposed to high temperatures or flames. Outer foil layer is aluminum.
P/N 03-00136.....**$682.00**

VALCO CINCINNATI MULTI-PURPOSE SEALANT

Valco Cincinnati multi-purpose sealant is a paste-like, one component material that cures to a tough, rubbery solid upon exposure to moisture in the air. Because it does not flow due to its own weight, this sealant can be applied overhead or on sidewall joints and surfaces without sagging, slumping or running off. It adheres to clean metal, glass, most types of wood, silicone resin, vulcanized silicone rubber, ceramic, natural and synthetic fiber, and painted and many plastic surfaces.
Valco mutli-purpose sealant has good resistance to weathering vibration, moisture, ozone and extreme temperatures. It may be applied in subzero weather without loss of extrusion or physical property characterisitics and is effective to -46°C (-50°F). Fully cured Valco multi-purpose sealant can be used for extended periods at temperatures up to 204°C (400°F), and for shorter periods as high as 218°C (425°F)
2 oz. tube..... P/N 09-00277.....**$6.95**
7 oz. tube..... P/N 09-00278.....**$14.85**

VHT FLAMEPROOF COATINGS

Originally designed for NASA's reentry spacecraft, VHT FlameProof is a scientifically formulated compound designed to withstand temps. up to 1500°F (816°C) VHT It survives where other paints can't, shields & protects, maintains the finish, prevents rust & corrosion, and resists oils & solvents. For aircraft applications the typical use is on high temperature steel components such as exhaust & turbocharging systems. Excellent for use as a heat resistant & anti-corrosion coating on exhaust manifolds and turbine casings. Both Flat Aluminum and Flat Black are non-facing colors.
Flat Aluminum 16 oz. aerosol spray.....P/N 08-00713 ..... **$11.95**
Flat Black 16 oz. aerosol spray.....P/N 08-00714 ..... **$11.95**

BAFFLING MATERIAL

FIBERFRAX

A new material made from washed ceramic fibers with binders added to form a lightweight, flexible asbestos-free insulation. Withstands temperatures to 2300° F. Excellent for aircraft firewalls. Available in 24" wide rolls in 1/16" and 1/8" thicknesses.

1/16" Thick..... P/N 05-02678 .....**$5.85 Lin ft.**
1/8" Thick..... P/N 05-02679 ....**$10.00 Lin ft.**
Discount Less 15% On 50Ft. Per Size

FIBERFRAX HI TEMP COATING

Used as a hi temp coating over Fiberfrax, or other pourus materials. Can also be used as an adhesive to bond Fiberfrax or other pourus material together. Coverage: 15 sq. ft. per pint & 120 sq. ft per gallon.

Fiberfrax Adhesive Pt..... P/N 05-00800..... **$21.50**
Fiberfrax Adhesive Gal..... P/N 05-00900.....**$173.95**

NEOPRENE BAR

Neoprene bar of proper Shore hardness for fabrication of shock absorber donuts. Used in Osprey II nose gear. Available in 2 sizes:

1/2" Th x 2" W..... P/N 05-02000..... **$10.50/ft.**
3/4" Th x 3" W..... P/N 05-02100..... **$16.50/ft.**

RUBBER SHEET PACKING

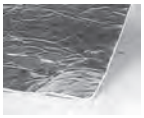
Will not deteriorate in petroleum products. Recommended for oil and solvent service. Wt. 6 oz. per sq. ft. 1 Size: 1/16" thick x 36" wide roll. Sold in 36" 1 width only. Price is per Lin. Ft. P/N 05-01000 .....**$3.30**

Discount: Less 15% On 20 Ft.

HEAT-PROOF TAPE

Heat-proof and fire resistant. Made of woven fiberglass. Non-metallic, commercial grade. Withstands up to 1000°F. 2" wide x 1/16" thick. Wt. 4-1/2 lbs. per 100 ft. roll. ..... P/N 09-31500..... **$0.87/ft.**

Less 15% On 100 ft.



FIREWALL 2000 CERAMIC BLANKET

This blanket is .250" thick, weighs only 9.5 oz/sq. ft. and is flexible enough to cover compound curves. The heat side of the blanket is covered with stainless steel, the other side is aluminum It is easy to rivet or can be glued into position. Sold by the running foot. Temp. range up to 1000°F.24" wide P/N 05-00948 .....**$24.75**

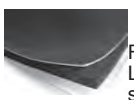
Less 15% on 25ft. roll

3M™ FIRE BARRIER 2000

A premium nonslump sealant bonds to most common construction material to form a flexible seal. Superior Adhesion. Remains elastomeric and is weather resistant. This product is great for through penetrations and may also be used for fire rated construction joints. P/N 05-00949 .....**$21.25**

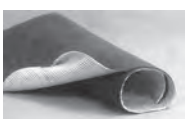
FIREWALL 2000 KIT

Contains 24"x48" sheet of Firewall 2000 and one tube of firewall caulk.. P/N 05-00950 .....**$119.95**



FIREWALL BLANKET

Firewall blanket is black in color and comes 48" wide. Looks best when in 3' sections, anything larger has seams and stitching lines do not match well. Note: This material is used for cosmetic purposes on the inside portion of a firewall to cover up an unsightly firewall. It is not fireproof and is not an actual firewall material. Sold by the foot. P/N 09-00276..**$42.25 /Linear ft.**



KOOLMAT HEAT BARRIER

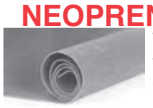
A .070 thick fiberglass textile cured to a 1/8" silicone substrate. The latter providing a good wear resistant surface. Can be used on steel, aluminum, fiberglass, wood and plastic surfaces. It is good to temperatures up to 1000° F and reduces cockpit heat up to 75%. Contains no asbestos. Can be used to insulate cowl and firewall forward area. (Not used on exhaust) Color: gray on top side (silicone) and white woven cloth (fiberglass). Wt: .72 lbs. per sq. ft. Sold in 30" width by the lineal foot. Gray..... P/N 09-24730..... .....**$32.75/lin ft.**

ENGINE BAFFLE TEXTURED FINISH

FAA approved replacement Engine Baffle. This material is easily identifiable by its textured finish. 32oz fiberglass reinforcement mat. Boasts a -60 to 550°F range.

Color	Size	Part No.	Price	Size	Part No.	Price
Black	1/8" x 3" x 9'	05-04656	**$73.50**	1/8" x 36" x 40"	05-04657	**$188.95**
Red	1/8" x 3" x 9'	05-04658	**$114.95**	1/8" x 36" x 40"	05-04659	**$199.75**
Blue	1/8" x 3" x 9	05-04660	**$104.95**	1/8" x 36" x 40"	05-04661	**$199.50**

NEOPRENE COATED PYROGLASS CLOTH



This neoprene coated cloth is designed for applications where its superb heat and flame resistance provide an extra margin of protection for people and equipment. Self-extinguishing, it is used as aircraft firewall barriers, protective sleeves and tadpole tape covers, flat seals, gaskets, mounts and door seals. It is ozone and weather resistant, and can be used against caustics, gasoline, oil, water and steam. It does not support combustion and will operate in continuous temperatures from -40°F to +200°F. Thickness .070". Sold in 60" Width only.

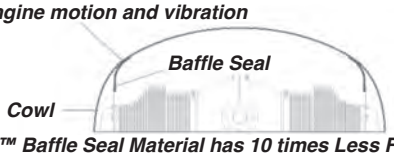
P/N 05-00600..... **$58.85 ft.**

PRE-CUT PYROGLASS CLOTH BAFFLE STRIP

Cut from Pyroglass cloth above. 3"x 84"..... P/N 05-00700..... **$29.95**

COWL SAVER BAFFLE SEAL MATERIAL

Friction between baffle seal and cowl transfers engine motion and vibration



Cowl Saver™ Baffle Seal Material has 10 times Less Friction! - One side is silicone and the other is the revolutionary friction free surface unique to the patent pending Cowl Saver™. Cowl Saver™ dramatically reduces the friction between your cowl and baffle seals.

Low Friction Saves You Money! - Reduces transfer of damaging engine vibration to the engine cowl Minimizes cowl chaffing and erosion from baffle seals. Extends baffle seal life. Reduces expensive cowl and cowl fastener repairs. Reduces fatigue and cracking in aluminum baffles and cowl skins.

The cowling even goes on easier! - Unbeatable Performance. Ideal balance of flexibility and stiffness to insure a proper seal. Fiberglass reinforced. Meets industry standard AMS3320G specification. McFarlane quality you can count on! Not FAA-PMA approved

Part Number	Thickness	Size	Color	Spruce	Price
CS085X36X36G	.085"	36" x 36"	Gray	05-03403	**$219.85**
CS085X18X36G	.085"	18" x 36"	Gray	05-03404	**$124.50**
CS085X3X108G	.085"	3" x 108 "	Gray	05-03405	**$65.50**

Accessories

6036 BAFFLE SEAL RETAINER STRIP - A baffle seal retainer strip used as a retainer for riveting baffle seals to baffles. 7/16 inch x 12 inch strips - Cut to desired length during installation.

P/N 05-03399 .....**$2.20**

RIVET KIT 2 - A baffle seal rivet kit containing soft Mil-Spec rivets that will not deform the baffles. Several sizes are included for various baffle thickness and hole sizes. P/N 05-03401 .....**$13.95**

BAFFLE-KIT-1 - A convenient kit that includes (1) CS085X3X108G Cowl Saver™ Baffle Seal Material, (1) RIVET-KIT-2 Soft Rivets, (5) 6036 Retainer Strip P/N 05-03402 .....**$79.85**

BAFFLE-KIT- 2 - This new baffle kit with more material. This kit is best for larger aircraft or curved baffle seals that cannot be cut from three inch strips. The new kit includes (1) 18x36 inch piece of Cowl Saver™ material, (2) Baffle Seal Rivet Kits and (10) Baffle Seal Retaining Strips. P/N 05-04108 .....**$148.75**

BAFFLE-KIT- 3 - Part number Baffle-Kit-3 is a convenient kit that includes (1) 3" x 156" (13ft) Cowl Saver™ Material, (1) Baffle Seal Rivet Kit, and (7) Baffle Seal Retainer Strips P/N 05-04557 .....**$99.85**

INSPECTA-SHIELD

FIRE RETARDANT PENETRANT

Inspecta-Shield is a durable, non-toxic, fire retardant chemical penetrant which when cured and dried, is odorless and colorless. Will retard flame in materials such as fabrics, poly foam, paper, and wood. Will generally last for the life of the product to which it has been applied. Inspecta-Shield is environmentally compatible and will protect surfaces up to 2,200°. These surfaces will retain their color and resist sun rot up to 50% longer. A Class A rated flame retardant that meets F.A.R. 25.853 (a & b). 1qt. spray bottle will treat an area of 150 sq. ft. Can be applied with most garden and household sprayers.

Note: Inspecta-Shield is corrosive to aluminum and other metals. If it comes in contact with metals be sure to wipe off metal and clean thoroughly Qt. ..... P/N 09-05760 .....**$16.75**
Gal. ..... P/N 09-00274 .....**$63.75**

SILICONE SEAL WITH ADHESIVE

A general use silicone with an acrylic sticky backing. Can be used as any silicone seal where a sticky backing is used, such as Battery Box Covers (top), and Baffle anti-chafe (prevent wear between metal baffles and cylinder head fins) Low temp use only: 0 to +300 Thickness is .050"

Size	Part No.	Price
6"x6"	05-04254	**$12.50**
12"X36"	05-04253	**$69.50**

SEE THE ENGINE PARTS SECTION OF THE CATALOG FOR MORE INSULATION PRODUCTS!

GAP SEAL – BAFFLE SEAL

AVTEK SQUEEZE-OUT DOOR SEAL KITS

Door Seal keeps water, cold, wind and noise out of your aircraft. The seal is designed for use on multiple aircraft make/model applications. The -02 is shipped with dual Air-Chambers.The installer can split the chambers using one near the hinges, where gaps are small, use two of three chambers in the rear where the gaps are larger. The -02 is very versatile, and works great on every aircraft, where as the -01 may not. Get the -01/-02 combination kit if you are unsure!
*While the -02 kit contains enough seal material to seal all General Aviation Doors, the purchase of the -02/-02 Kit will give you extra -02 in case something unexpected happens durring installation. Extra can also be used for the baggage door.

Description	Use	Features	Part No.	Price
AvTek Air Chamber Door Seal -02	Recommended for All Aircraft. Fwd-Aft Cabin Doors & Bag Door.	Flex, E/Z Conform Will Not Push Door-Out	05-02198	**$118.85**
AvTek Thin Seal (Window) -03	Recommended for Cessna & Beech. Use for Windows, Paper-Thin Door-Gaps	Seals When No Other Seal Will	05-02199	**$49.75**
AvTek Thin Seal (Door) -03	Recommended for All Aircraft. Use for Very Small Gaps in Doors	Seals When No Other Seal Will	05-02201	**$79.95**
AvTek Thicker Seal (Door)	Recommended for All Aircraft. Seal installed on the door.	Resist Mildew, Mold, & Tearing	05-02202	**$68.75**
Air Squeeze Kit (Combo Kit of the Two Best Seals) Squeeze-Out-01 & Air Seal-02	Recommended for All Aircraft Squeeze-Out: Top & Rear of the Door Air-Seal: Bottom and Forward Door Where the Hinges are Located.	Ear-Popping Tight, Flex, Ez Conform Will Not Push Door Out.	05-02217	**$152.95**
Door & Airframe Air-Seal Kit	The -02/-02 Air-Chambers on both the Door & on the Door-Way work together. Much like Car-Doors do. Compressing and expanding as your door does, for a "Water-Tight" fit.	N/A	05-04105	**$118.95**

AVTEK GAP SEAL

The “Spring-Steel” reinforcement channel has “Gripper” teeth to hold firmly in place. And when your door is closed the seal is pinched between the airframe. You can not pull the seal out when the door is closed...however applying adhesive into the channel is recommended. Length: 9ft.
P/N 05-02203 .....**$114.75**

GAP SEAL

Gap Seal for rudder and elevator of your aerobatic aircraft!Proven and continually tested since 1979.
Designed specially for Pitts S-1S, S-1T, S-2A, S-2S, S-2B , S-2C and Christen Eagle aerobatic aircraft. It can also be used on other aerobatic aircraft if the horizontal stabilizer, elevator, vertical fin and rudder spar is made from a 7/8 inch diameter tube with at least 1/8 inch gap and is equipped with strap hinges. Comes in 3 foot strips. It is cut and glued to the trailing edge of the horizontal stabilizer and vertical fin. Any good quality contact cement can be used to bond the Gap Seal.
NOTE: The Gap Seal is not designed for tail surfaces that are pin hinged however some homebuilt aircraft (Pitts S-1C) with pin hinges have been used successfully. Typically 3 strips for Pitts S-1, 4 strips for Pitts S-2 and Eagle, 5 strips for Pitts Model 12 P/N 05-04616.....**$36.75**

SILICONE BAFFLE SEAL

Silicone (reinforced) with fiberglass cloth. Mil spec: AMS3320 Rev. G; Material Thickness: .093 (3/32) O.E.M Spec; Temp Range: -65 to + 550
.093”X3” Scat Orange.....P/N 05-04717-1 ..... **$3.75**
.093”X3” Red .....P/N 05-04717-2..... **$3.75**
.093”X3” Black.....P/N 05-04717-3..... **$5.25**
.093”X3” Medium Blue.....P/N 05-04717-4..... **$3.75**

PA28 FUEL PUMP BAFFLE SEAL

PA-28 Fuel pump baffle seal. Models: PA28-140, 150, 160, 180 replacement seal for the fuel pump metal baffle that surrounds the fuel pump assembly.

Scat Orange .....P/N 05-04706-1..... **$35.75**
Red.....P/N 05-04706-2..... **$35.75**
Black.....P/N 05-04706-3..... **$35.75**
Medium Blue.....P/N 05-04706-4..... **$35.75**
Dark Blue.....P/N 05-04706-5..... **$35.75**

HOMEBUILDERS GAP SEAL KIT FOR EXPERIMENTAL AIRCRAFT

Designed for experimental aircraft that have been identified as needing gap seals to improve control response and effectiveness. Features transparent, UV stable film with a long aging, acrylic adhesive. Remains flexible down to -40 deg. F. Easy to install with the use of simple hands tools. Kit includes 3M 8674 Film (PN 09-01643}, 86A Adhesion Promoter to ensure maximum adhesion, Scotchbrite pad (PN 09-01753) and 3M Application Solution (PN 06-00604) P/N 05-03480 .....**$89.75**

RUBBER CHANNEL - COWL SEAL

HIGH QUALITY RUBBER CHANNEL

Good-grade neoprene. Soft, flexible, oil-resisting.

Style B: 1/2" high - right, 3/8" high-left, 1/16" Groove 05-00596..**$0.99/ft**
Style C: 3/8" high, 1/8" groove, 1/4" across bottom . 05-00597..**$1.86/ft**
Style D: 1/2" high - left, 3/16" - right 1/32" Groove... 05-00598..**$0.48/ft**
Style E: 1-1/8" high, 1/4" lip right side, 1/16" Groove.. 05-00599..**$0.95/ft**

SILICONE BAFFLE SEALS

Excellent for replacement of baffle seals. It exceeds asbestos type seals in durability and flexibility over its entire operating heat range of -80 F to +425 F..
Available in red, blue & black.

IRON OXIDE RED - Meets Mil Spec ZZR765B. ISR3 meets Mil Spec AMS3320 (PN 05-00770, 05-00771-3, 05-00771) AMS3303 for all others.

3/32" thick x 3" wide x 9' long ..... P/N 05-00775..... **$15.85**
3/32" thick x 36" wide ..... P/N 05-00781..... **$23.75 /ft**
3/32" thick x 3" wide ..... P/N 05-00781-3..... **$1.90 /ft**
1/8" thick x 2" wide x 9' long ..... P/N 05-00795..... **$11.95**
1/8" thick x 3" wide x 9' long ..... P/N 05-00755..... **$19.65**
1/8" thick x 4" wide x 9' long ..... P/N 05-00760..... **$27.75**
1/8" thick x 36"wide ..... P/N 05-00772..... **$24.35 /ft**
1/8" thick x 2" wide ..... P/N 05-00772-2..... **$1.40 /ft**
1/8" thick x 3" wide ..... P/N 05-00772-3..... **$2.30 /ft**
1/8" thick x 4" wide ..... P/N 05-00772-4..... **$3.15 /ft**
1/8" thick x 3"W x 9' w/ fiberglass insert. ..... P/N 05-00770..... **$38.75**
1/8" thick x 36"W w/ fiberglass insert ..... P/N 05-00771..... **$51.25 /ft**
1/8" thick x 3" wide w/ fiberglass insert ..... P/N 05-00771-3..... **$4.55 /ft**

LIPSTICK RED - Meets Mil Spec ZZR765B. ISR3 meets Mil Spec AMS3303.

3/32" thick x 36" wide ..... P/N 05-00786..... **$28.75 /ft**
3/32" thick x 3" wide ..... P/N 05-00786-3..... **$2.40 /ft**

DARK BLUE - Meets Mil Spec ZZR765B. ISR3 meets Mil Spec AMS3303.

3/32" think x 3" wide x 9' long ..... P/N 05-03055..... **$18.80**
3/32" thick x 3" wide ..... P/N 05-01831-3..... **$2.45 /ft**
3/32" thick x 36" wide ..... P/N 05-01831..... **$29.25 /ft**

BLUE - Meets Mil Spec ZZR765B. ISR3 meets Mil Spec AMS3303.

3/32" thick x 3" wide x 9' long ..... P/N 05-00790..... **$16.85**
3/32" thick x 36" wide ..... P/N 05-00806..... **$25.00 /ft**
3/32" thick x 3" wide ..... P/N 05-00806-3..... **$1.89 /ft**
1/8" thick x 3"W x 9' w/ fiberglass insert ..... P/N 05-00792..... **$44.80**
1/8" thick x 36"W w/ fiberglass insert ..... P/N 05-00791..... **$56.85 /ft**
1/8" thick x 3" wide w/ fiberglass insert ..... P/N 05-00791-3..... **$4.70 /ft**

BLACK - Meets Mil Spec ZZR765B. ISR3 meets Mil Spec AMS3303 (PN 05-00810, 05-00811, 05-00811-3) AMS3320 for all others.

3/32" thick x 3" wide x 9' long ..... P/N 05-00810..... **$17.65**
3/32" thick x 36" wide ..... P/N 05-00811..... **$22.75 /ft**
3/32" thick x 3" wide ..... P/N 05-00811-3..... **$1.95 /ft**
1/8" thick x 3"W x 9' w/ fiberglass insert ..... P/N 05-00826..... **$39.85**
1/8" thick x 36"W w/ fiberglass insert ..... P/N 05-00825..... **$53.50 /ft**
1/8" thick x 3" wide w/ fiberglass insert ..... P/N 05-00825-3..... **$4.55 /ft**

ASSORTED SILICONE 50 FEET - This is a 50 foot assortment of silicone lengths, thicknesses and colors. ..... P/N 05-04565..... **$37.25**

AIRCRAFT BAFFLE SEAL KITS

These pre-cut baffle seal kits are cut to original specifications. Please specify aircraft make, model, serial number, and color of seal. Kits are furnished with rivets, washers, drill bits, & silicone.

CALL FOR PRICE AND P/N OF KIT FOR YOUR AIRCRAFT or VISIT www.aircraftspruce.com FOR BAFFLE KIT INFORMATION.

BAFFLE FASTENER KIT

Makes attaching baffle material much easier. Includes 12 soft aluminum fasteners.

Pkg. of 12 Sets ..... P/N 05-01829 ....**$6.25**

COWL SEAL HARDWARE & TOOLS

GB4-4A: Baffle Seal Pop Rivet, Button Head. 1/8" Dia. x 3/16" Grip Requires a metal baffle strip or back-up washer to secure.
Pkg. of 100 ..... P/N 05-56100 ..... **$7.85**

GB-A4: Back-up Washers Pkg of 150 ..... P/N 05-56130 ..... **$4.25**

GB-SF- 3/16: Baffle Seal Fastener (Post Type) for joining sides or overlapping of baffle material. Includes one male and one female piece.
Each ..... P/N 05-56140 ..... **$0.56**

GB4-3AW: Baffle Seal Pop Rivet, Button Head, White. 1/8" Dia. x 3/16"Grip. Pkg. of 100 ..... P/N 05-00132 ..... **$6.90**

GB4-3AB: Baffle Seal Pop Rivet, Button Head, Black. 1/8" Dia. x 3/16"Grip Pkg. of 100 ..... P/N 05-00133 ..... **$5.60**

GBL4-4A: Baffle Seal Pop Rivet, Large Flange, Silver. 1/8" Dia. x 3/16"Grip Qty. 100..... P/N 05-00134 ..... **$6.75**

GBL4-4AW: Baffle Seal Pop Rivet, Large Flange, White. 1/8" Dia. x 1/4"Grip Qty. 100..... P/N 05-00135 ..... **$8.20**

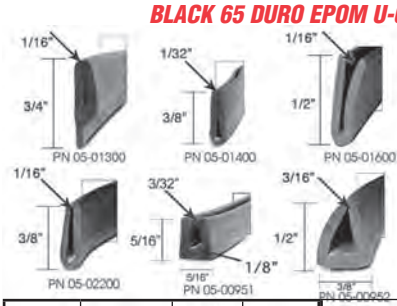
Silicone Revolving Punch Tool: Makes various size holes in baffle material. Each ..... P/N 72..... **$10.50**

CESSNA COWL CHAFE SEAL

This seal is riveted to the firewall on the Cessna 150, 152, 172, and 182. Meets MIL SPEC: AMS3320-.093 black. 1-1/2" wide x 84" long. P/N 05-04489 .....**$27.50**

U CHANNEL

BLACK 65 DURO EPOM U-CHANNEL.



Use CRL Glass and Acrylic Setting Rubber Channels if you have acrylic or glass panels you need to protect. Our Glass Setting Rubber Channels will provide you with the product you need. Available in multiple sizes for most applications.

Sold per foot

Groove	P/N	Height	Price	Groove	P/N	Height	Price
1/16"	05-01300	3/4"	**$0.99**	1/16"	05-02200	3/8"	**$1.39**
1/32"	05-01400	3/8"	**$0.42**	1/8"	05-00951	5/16"	**$0.76**
1/16"	05-01600	1/2"	**$0.94**	3/16"	05-00952	1/2"	**$1.68**

OPEN CENTER CHANNEL

1/2" Legs 3/4" Curve 3/8" Radius
Made in 12' Lengths -
#4.....P/N 05-01500 .....**$1.43 Ft.**

Neoprene sponge rubber 1/4-round door seal. Hollow core makes a better seal. Manufactured in 25 Ft. lengths. Sold per foot #7 ..... P/N 05-01700.....**$1.47 Ft**

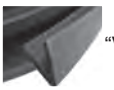
SILICONE P-SEAL 50 DURO

Silicone P-seal 50 duro for battery box application/lighter wall thickness 1-1/2 x 5/8 bulb. Sold by foot.
Use GBL4-4AB large flange (black) pop rivets to install (PN 05-00483). P/N 05-04704 ..... **$9.25**

ANTI-CHAFE MOLDING

Anti-Chafe Molding for fuel tank straps. Neoprene channel accommodates metal straps 1" wide.
#9..... P/N 05-01800 ..... **$1.33 ft**

"V" STRIP



"V" Strip Canopy Channel 20 Ft. required for Long-EZ.
#10 ..... P/N 05-01900 ..... **$0.68 ft**

QUARTER ROUND SOLID DOOR SEAL - Closed cell black neoprene with smooth outer surface. 1/2" Legs, 3/4" Curve, 1/2" Radius. 25 ft. Roll
P/N 05-00000 ..... **$28.75**

PIPER DOOR SEAL - Small cell sponge rubber. 25 foot rolls JM189139. P/N 05-00010 ..... **$62.50**

BAGGAGE DOOR SEAL - Flexible small cell sponge rubber seal used on many aircraft baggage doors. Packaged in 25 foot rolls. 25 ft. Roll
P/N 05-00020 ..... **$59.85**

PIPER WING ROOT SEAL - Black packaged in 12-foot lengths, adequate for one wing root. 12 ft. Roll
P/N 05-00030 ..... **$47.50**

BEECH WING ROOT SEAL - Black, packaged in 12-foot lengths, adequate for one wing root. 12 ft. Roll
P/N 05-00040 ..... **$59.75**

J-3, PA-18 DOOR GAP SEAL - 24" length Standard color, black. P/N 05-00953 ..... **$22.50**

Note: The above moldings are not FAA approved.

BAGGAGE DOOR SEAL BEECH 19, 23, 24

Revolutionary new seal design! Custom made from a special hybrid rubber compound, the new seal is superior to any seal on the market. The seal comes with pressure-sensitive adhesive to make the installation easier. The kit includes door seal, seal lube, installation instructions, engineering drawing, and Instructions for Continued Airworthiness (ICA). Seals, create an airtight and water tight closure.

P/N 05-04639.....**$54.95**

AP

CHAFE SEAL - DOOR SEALS

AP

EPDM WEATHERSTRIP

Self-adhesive rubber strip, made in Sweden of 100% EPDM rubber. Resistant to aging, weather, ozone, ultraviolet sun rays and many chemicals and solvents. Retains resilience at low temperatures (to - 45°F). Excellent for all types of weatherstripping and canopy installations. Furnished in three sizes

P-STRIP - Furnished in full rolls as a double-width strip which splits in the middle to give two single-width P-strips as illustrated. 17 Ft. Roll 1/4" thick x 3/8" wide. ***COLOR: WHITE*** P/N 05-01200 ..... **$8.50 Ea.**

D-STRIP WEATHERSEAL - 17' Roll 5/16" thick x 23/64" wide. (2) 8-1/2' strips. P/N 05-00897 ..... **$8.50**

ALL STRIP WEATHERSEAL - 10' Roll 5/16" thick x 19/64" wide. P/N 05-00898 ..... **$11.25 Ea.**

BEECHCRAFT COWL DOOR CHAFE SEAL

A Complete set of black silicone chafe seal for the upper cowl doors for Beech models 33, 35, 36. 3/8" wide X .020 thick. Kit includes silicone cement.
P/N 05-00665 ..... **$44.75**

BEECHCRAFT NOSE GEAR CHAFE SEAL

A Complete set of black silicone nose gear door seals designed to keep the nose gear doors from chafing against the airframe. Fits models 33, 35, 36. Kit includes silicone cement..... P/N 05-00666 .... **$38.75**

BEECHCRAFT MAIN LANDING GEAR DOOR CHAFE SEAL

A Complete set of black silicone chafe seals cut to the original design. These seals are cemented to the underside of the wing to reduce the chafing of the main landing gear doors when closed.
P/N 05-00667 ..... **$49.85**

BEECHCRAFT TAIL ROOT SEAL

A set of two tail root seals for models 33–36.
P/N 05-00669 ..... **$69.50**

BEECHCRAFT RUDDERVATOR SEAL

A set of two ruddervator seals for model 35.
P/N 05-00670 ..... **$49.75**

BEECHCRAFT UPPER WING SEAL

A set of two upper wing seals for models 33, 35, 36, 55, 58. Includes lower wing seals (2)..... P/N 05-00668 ..... **$166.95**

SILICONE AIRBOX & HEATER SEAL

This fiberglass reinforced silicone seal (1/16" thick) makes an excellent replacement for various airbox and heater box seals used in a variety of aircraft. Furnished as a 6" x 6" piece; Black. P/N 05-00662 ..... **$13.70**

BLACK SILICONE P SEAL WITH 5/8" BULB

This seal makes an excellent replacement for felt type seals or other neoprene P-seals found in various aircraft. Overall size is 1-3/8" with a 5/8" bulb. Similar to Cessna #S2729-1.Note: Use GBL4-4AB large flange (black) pop rivets to install (PN 05-00483).
P/N 05-00663 ..... **$8.25/ft.**

BLACK SILICONE P SEAL WITH 7/8" BULB

This seal makes an excellent replacement for felt type seals or other neoprene P-seals sound in various aircraft. Overall size is 1-3/8" with a 7/8" bulb. Sold by the foot. Note: Use GBL4-4AB large flange (black) pop rivets to install (PN 05-00483). P/N 05-02144 ..... **$9.50/ft.**

BEECHCRAFT T34 CANOPY SEALS

AMS 3303 silicone seal -65 to +350 for Beechcraft T34 Canopy Seals. Package includes: • 1 ea Canopy Seal 50.0 Long • 2 ea. Canopy Bumper Seal 21.0 Long • 2 ea Canopy Bumper Seal 48.0 Long P/N 05-04247 ..... **$119.50**

BEECHCRAFT STORM WINDOW SEAL

19/23/24/33/35/36/50/55/58/76/77/95 Series Window Seal, Storm Window.(Frameless) P/N 05-03613 ..... **$19.85**

GB56 SILICONE ANTI-CHAFE COWL SEAL

The kit includes: 15 Foot Roll with Adhesive, Anti-Chafe Seal and Catalyst.Sold in 15ft. rolls.
P/N 05-00664 ..... **$33.50**

SILICONE CEMENT FOR SILICONE SEALS

This silicone cement is the same cement that is included with some of the chafe seals and is excellent for attachment of any silicone seal.
2 oz. ..... P/N 05-00996 ..... **$20.25**
4 oz. ..... P/N 05-04555 ..... **$28.75**

SOLID 1/4 ROUND DOOR SEAL

As a standard door seal the RB-5022 has worked well in many different applications such as on piper and some cessna applications. This is a solid 1/4 round seal it is 5/8"x5/8".
It is manufactured to meet the MIL-R-6130C-type 2 neoprene spec. and the FAR.25.853-B burn spec. They recommend that you use their T-990 precleaner and 1100-2 glue to install it.
P/N 05-04753 ..... **$5.25/ft.**

BEECHCRAFT TAIL ROOT SILICONE SEAL

AMS3303 silicone seal temperature range -65 to +350. Beechcraft tail root seal. 15 foot length.
P/N 05-00669 ..... **$69.50**

PIPER DOOR SEALS

Developed from a special rubber compound that meets military specifications and FAA requirements for aircraft seals. Has a memory, compresses and conforms to the sealing surface providing a perfect seal. Comes with pressure sensitive adhesive that makes it easy to apply and bonds well with any metal surface painted or bare. Installs in the channel on the fuselage opening. Provides for an air- and water-tight seal. Detailed instructions, an engineering drawing for installation of the new seal, including instructions for adjustment of the door as well as removal of the old seal from the door(s). **Please call or visit our website for additional photos and models.**

Description	Part No.	Price
PA-28 Front Entry Door	05-01240	**$79.95**
PA-28 Rear Baggage Door	05-01241	**$49.50**
PA-32 Front Entry Door	05-01242	**$79.75**
PA-32 Front Baggage Door	05-01243	**$58.50**
PA-32 Rear Entry Door w/Cargo Door	05-01245	**$89.95**
PA-34 Front Entry Door	05-01240	**$79.95**
PA-34 Front Baggage Door	05-01247	**$51.75**
PA-34 Rear Entry Door w/Cargo Door	05-01248	**$89.95**
Mooney Aft Baggage Door	05-04859	**$49.95**
Mooney Storm Window Seal	05-02483	**$19.95**
Mooney Front Entry Door - Not Recommended for years 1998 - 2009.	05-03626	**$129.95**
Mooney All MK20 Series Front Entry Door	05-04858	**$79.95**

• Mooney Door Seals ***•Call for Quotation***
• Experimental ***• Provide Door Dimensions for Quotation***

CESSNA DOOR SEALS

The new seal installed on the fuselage enables the door to fully close and be air and water tight. The new seals are FAA-PMA certified for all Cessna single engine aircraft including the 336 and 337 twins.
Cessna Entry Door Seal
P/N 05-01610 ..... **$79.95**
Cessna Window Seal
P/N 05-01611 ..... **$49.95**
Cessna Baggage Door Seal ..... P/N 05-01612 ..... **$49.95**
Cessna AFT ENT/CARGO Door Seal ..... P/N 05-01613 ..... **$89.95**
Cessna 207 Front Bag Door Seal ..... P/N 05-01614 ..... **$49.95**

SILICONE GLUE - This pure silicone lubricant will greatly improve the life and sealing ability of door seals and rubber gaskets.
P/N 05-04641 ..... **$3.95**

BAGGAGE COMPARTMENTS

Our Baggage Compartments are custom designed and manufactured to provide your aircraft with a sturdy and attractive area for storing baggage, books, charts, etc. If your aircraft is not listed, please send us the old baggage compartment to use as a pattern for a new one. Available in two colors: off-white or olive drab canvas.

Note: Complete the part number with color choice. Use -1 for off-white, -2 for olive drab, -3 for tan, or -4 for grey. Baggage Compartments are special order & non-returnable

Aircraft	Part No.	Price
Aeronca 7AC	09-17265-	**$49.75**
Aeronca 11AC	09-17270-	**$155.95**
Cessna 120/140*	09-17275-	**$158.95**
Cessna 150*	09-17280-	**$147.95**
Cessna 172*	09-17285-	**$158.95**
Cessna 310*	09-17290-	**CALL**
Ercoupe	09-17295-	**$128.95**
Fairchild 24	09-17300-	**$159.95**

Aircraft	Part No.	Price
Luscombe 8A	09-17302-	**$90.75**
Piper J3	09-17305-	**$45.25**
Piper J4	09-17307-	**$94.00**
Piper J5	09-17310-	**$67.75**
Piper PA12	09-17312-	**$107.95**
Stearman	09-17315-	**$47.25**
Taylorcraft	09-17317-	**$47.25**

THE ULTIMATE DOOR SEAL

The Ultimate Door Seal compensates for ill-fitting doors and in-flight door movement, thus keeping a positive seal to reduce the high pitched sound which causes fatigue, anxiety, and progressive hearing loss in pilots and passengers. The Deluxe Electric model features a panel mounted air control valve which is fully automatic in flight with electric power supply module. The Deluxe model features a handheld manometer bulb mounted permanently coiled hose and mounting bracket and panel mounted air flow control valve. The Economy model is the same system as the Deluxe but features a self-contained thumb screw air flow valve mounted on a manometer bulb with storage bracket mounted on the door. Requires no hoses or wires to be run. All systems contain everything needed for installation. All components covered under F.A.A. STC's & PMA.

AVAILABLE FOR AIRCRAFT MODELS

- ***CESSNA, 310, 320***
- ***CESSNA,170,175,180,182, 185, 206,210***
- ***CESSNA P210, CABIN &***
  - •EMERGENCY EXIT
- ***BEECH 33,35,36,50,55,56,95,58***
- ***MOONEY ALL MODELS***
- ***PIPER PA23 SERIES***
- ***PIPER PA24, 30, 39, 40***
- ***PIPER PA28, 32, 34, 44***
- ***BELLANCA***
- ***PIPER AEROSTAR 601P,602P, 700P***
  - •CABIN DOOR
  - •EMERGENCY EXIT
- ***PIPER PA32, 34,***
  - •CABIN DOOR
  - •REAR DOOR
  - •CARGO DOORS
- ***PA32, 34***
  - •REAR DOOR
  - •CARGO DOORS

WHEN ADDED TO THE EXISTING SYSTEM

- ***PIPER PA31***
  - •CABIN DOOR
  - •CREW DOORS
  - •BOTH DOORS
- ***BEECH 36, 58***
  - •CABIN DOOR
  - •REAR DOORS
  - •ELECTRIC ONLY

REAR DOORS ADDED TO EXISTING SYSTEM

- ***BFA 3000 COMPRESSOR NEW***
- ***RH50 RESISTOR PAK***
- ***BEECH 58 P SERIES SEAL***
- ***CESSNA P337***

CALL FOR A QUOTE FOR YOUR AIRCRAFT

MAP POCKET

10' elastic mouth, square black vinyl pocket mounted on fiberboard. Includes hardware.....P/N 09-17415 ..... **$73.25**

TAIL WHEEL BOOTS

To keep your aircraft components clean from contamination by dust, grime and dirt, install these quality covers made from black vinyl. No mounting hardware included.

Cessna 195 .....P/N 09-17350 ..... **$39.50**
Staggerwing .....P/N 09-17352 ..... **$103.95**
Stearman.....P/N 09-17355 ..... **$73.50**

PIPER SHOCK BOOTS / COVERS

To keep your aircraft components clean from contamination by dust, grime and dirt, install these quality covers made from black vinyl. No mounting hardware included.

Aircraft	Description	Qty	Part No.	Price
PA-22	1 Pc. Control Column Boot	Each	09-17410	**$19.75**
PA-25	Gate Control Rod Boot	Each	09-17357	**$40.75**
J-3	Piper Shock Boots	Pair	09-17360	**$59.50**
PA-25	Gate Control Rod Boot	Each	09-17375	**$16.50**
PA-25, SN25-2000 to -4171	Shock Strut Boots, pair	Pair	09-17377	**$39.50**

MISCELLANEOUS BOOTS / COVERS

Aircraft	Description	Qty	Part No.	Price
Aeronca 7AC	Joy Stick Covers	Pair	09-17362	**$21.85**
Cessna172 (also fits 182)	Steering Linkage Covers	Pair	09-17365	**$16.50**
Citabria	Interior Boots	Each	09-17367	**$37.50**
Beech Bonanza	Gear Boots for Main Gear	Pair	09-17370	**$36.75**
Beech Bonanza	Dust Boot for Retractor Nose Gear	PAIR	09-17372	**$25.50**

SEAT SLINGS

These canvas slings are available in Off-White or Olive Drab. All seat slings include front and rear slings except:

Aeronca 65CA..... 1pc PA-12 ..... 3 pcs
Piper J-3..... 3 pcs Taylorcraft ..... 1 pc
PA-22 ..... 1 pc

Note: Complete Part Number with color. Use -1 for Off White or -2 for Olive Drab.

Aircraft	Part No.	Price
Aeronca 65CA	09-17320-	**$157.95**
Bellanca	09-17322-	**$84.00**
Citabria	09-17325-	**$83.50**
KR-1 & 2	09-17327-	**$73.00**

Aircraft	Part No.	Price
Piper J-3	09-17330-	**$97.00**
Piper J-5	09-17332-	**$127.95**
Piper PA-12	09-17335-	**$126.95**
Piper PA-22	09-17337-	**$117.95**
Taylorcraft	09-17340-	**$145.95**

WINDLACE INTERIOR DOOR SEAL WELT

1/2" diameter vinyl covered material that provides additional sealing and ornamental edging for the door opening. The windlace is mounted between door post structure and upholstery panels or trim. Install with sheet metal screws. Black color only.

P/N 09-00281 ..... **$9.90 / ft.**

ANTIQUE PIPER WING ROOT FRAME COVERS

This cover is constructed of a lightweight stiffener panel, 1/2" foam padding and headliner fabric. A flap extends into the back side of the wing root frame and glues in place for a professional finish. P/N 09-17345..... **$85.50**

3M™ SUPER WEATHERSTRIP ADHESIVE

For adhering all types of rubber weatherstripping to metal. Light colored adhesive, very fast drying, exceptional bonding strength. Can be used for adhering vinyl trim head liners and side panels.

5 oz. tube, #8001.....P/N 09-27200 ..... **$6.25**

3M™ WEATHERSTRIP ADHESIVE

Adheres firmly to metal and has quick tack necessary for holding pads and linings in place securely. Can also be used for sealing windshields between rubber and glass. 5 oz. tube, #8011..... P/N 09-27300 ..... **$7.85**

3M™ FAST TACK TRIM ADHESIVE

This general purpose adhesive is used for bonding trim fabrics, floor mats, and rugs. Features quick tacking quality, does not bleed through fabric, and remains rubbery and flexible. Doesn't dry hard. Excellent for upholstery repairs.

5 oz. tube, #8031.....P/N 09-27210 ..... **$9.50**

3M™ GENERAL TRIM SPRAY ADHESIVE

This convenient sprayable adhesive is used for bonding a variety of trim fabrics. It is non-misting, very strong, light colored, and has a controllable spray pattern.

19.75 oz. Aerosol Can..... P/N 09-28330 ..... **$17.75**

3M™ SCOTCH GRIP RUBBER ADHESIVE

This fast drying adhesive develops strength very quickly. It has excellent heat resistance; temperature performance is from -5 to 300°F. Meets specification requirements of MIL-A-1154C. Bonds neoprene, reclaim, SB-R, and butyl rubber to metal, wood, most plastics, and many other products. #1300L Qt Can. P/N 09-27220 ..... **$39.75**

AERO-SEAL CEMENT

Designed for door seals and moldings. Adheres rubber to wood, other rubber, fiberglass or metal. 4 oz. brush-top container. P/N 05-00955 ..... **$12.50**

AP

HEADLINERS - INTERIOR MATERIALS

AP

HEADLINERS

A sagging or torn headliner can make even the nicest airplane look unattractive and worn out. Headliners are actually quite inexpensive and easier to replace than many pilots realize. Our headliners are professionally manufactured and every headliner set comes with complete instructions. Available in Excell stretchable vinyl or wool. Specify fabric type and color as noted below the chart.Headliners are special order & non-returnable.

Aircraft	Part No.	Price
Aeronca		
7AC	09-17454	**$179.95**
11AC	09-17455	**$187.95**
15AC	09-17456	**$233.95**
Chief 65CA	09-17458	**$134.95**
Chief LA65	09-17460	**$134.95**
L-3 Defender	09-17462	**$143.95**
Bellanca Scout		
w/Greenhouse	09-17464	**$125.95**
Super Viking 1730	09-17466	**$181.95**
Cessna		
120/140	09-17468	**$234.95**
150 (59)	09-17470	**$111.95**
150 (60)	09-17472	**$125.95**
150 (61-63)	09-17474	**$125.95**
150 (64-65)	09-17475	**$94.75**
150 (66-68)	09-17476	**$111.95**
150 (69)	09-17478	**$111.95**
170A	09-17480	**$197.95**
170B	09-17481	**$270.95**
172 (56-58)	09-17482	**$189.95**
72 (59-60)	09-17484	**$161.95**
72 (61-62)	09-17485	**$161.95**
172 (63-70)	09-17486	**$120.95**
175	09-17488	**$147.95**
180	09-17490	**$161.95**

Aircraft	Part No.	Price
Cessna		
182 (56)	09-17492	**$189.95**
182 (57-59)	09-17494	**$189.95**
182 (60-61)	09-17495	**$161.95**
182 (62, Omnivision)	09-17496	**$125.95**
185 (75)	09-17498	**$161.95**
206/207	09-17510	**$152.95**
210 (75)	09-17512	**$179.95**
310	09-17514	**$359.95**
Citabria		
w/Greenhouse	09-17515	**$125.95**
w/o Greenhouse	09-17516	**$143.95**
Commonwealth		
Skyranger	09-17518	**$224.95**
Fairchild		
24	09-17520	**$171.95**
Maule		
M4	09-17522	**$206.95**
M5	09-17524	**$196.00**
Piper		
J-4 Coupe	09-17525	**$134.95**
PA-121/J-5*	09-17526	**$170.95**
PA-14	09-17528	**$152.95**
PA-15 Vagabond	09-17530	**$161.95**

Aircraft	Part No.	Price
Piper		
PA-16 Clipper	09-17532	**$129.95**
PA-18 Super Cub	09-17534	**$105.95**
PA-20/22 (51-52) 6 bows, 2 zippers	09-17535	**$143.95**
PA-20/22 (52-58) 8 bows, 3 zippers	09-17536	**$179.95**
Colt 108	09-17538	**$161.95**
PA-23/250 (early 1960)	09-17540	**$252.95**
PA-242 (thru 1965)	09-17542	**$287.95**
PA28/323	09-17544	**$230.95**
Stinson		
1084	09-17546	**$180.95**
10A	09-17548	**$189.95**
105-HW75	09-17550	**$189.95**
Taylorcraft		
BC12	09-17552	**$242.95**

* 1 Specify round or square windshield Round: S/N 12-01 thru 12-2903.-2907, -2914, -2915, -2917, -2925, -2950, -3028-S, -3901 -3902, -3903; Square: S/N 12-2904 and up except those listed above.

Note: Complete Part No. with Fabric & Color. Excell stretchable vinyl off white -1, wool off white -2, Tan -3, Gray -4.

HEADLINER FABRIC SWATCH SAMPLE

Wool Fabrics

Wool headlining fabrics are available in Off White, Tan or Grey. The fit is in the quality of the workmanship, therefore it can be made to conform to almost any curve.

Mellohide VFR

Mellohide VFR vinyl has a unique four-way stretch which easily eliminates tension wrinkles and produces a smooth, professional finish. Backing and facing aremildrew resistant.

All materials exceed FAR 23-853

P/N 09-02004 ..... **FREE**

FIREWALL SETS

Vinyl outside, backed with 1/4" closed-cell insulation. If your aircraft is not listed, please send us your current firewall set to use as a pattern.

1-Piece Bulkhead Firewall

Aircraft	Part No.	Price
Aeronca 11AC	09-35910	**$128.95**
Cessna 120/140	09-35915	**$128.95**
Piper PA20/22	09-35925	**$128.95**
Piper PA18	09-35930	**$128.95**
Piper PA28/140	09-35935	**$128.95**

CITABRIA

Bulkhead and wrap-around pad 3 piece set.

P/N 09-35950 ..... **$216.95**

LUSCOMBE 8A & 8E

Please specify model. Also specify if 8A is with or without dishpan. If "with dishpan", specify if round or oblong.

Standard ..... P/N 09-35940 ..... **$128.95**

With Dishpan ..... P/N 09-35945 ..... **$128.95**

UPHOLSTERY HARDWARE

82° CSK Washer

Size 4 ..... P/N 04-00393 ..... **$0.06** Size 6 ..... P/N 04-00394 ..... **$0.05**

82° Oval Head Screw

4x1/2 - A-OV.... P/N O4X8..... **$0.03** 6x1/2 - A-OV.... P/N O6X8... **$0.04**

6x3/3 -A-OV..... P/N O6X12... **$0.04** 6x1..... P/N O6X16..... **$0.05**

Snap Studs - Males snaps attached to self-tapping phillips head screws. For canopies

#7 x 3/8"..... P/N 04-01520..... **$0.30**

#7 x 5/8"..... P/N 13-03296..... **$0.09**

HEADLINER WOOL

This is a quality versatile wool headlining fabric. Wrinkles can be removed by applying water in a fine mist then using heat, such as a hair dryer, allowing wool to shrink. This gives a nice tight fit. Colors: Off-white, tan and gray. Complete P/N with color choice using (-2) for Off white, (-3) for tan, or (-4) for gray. 54 inches wide; sold by the yard.

P/N 09-17566-X..... **$29.25/yd.**

3M™ HEADLINER CEMENT

Headliner, rubber & gasket adhesive.

Quart ..... P/N 09-17570..... **$33.75**

SUPER TRIM ADHESIVE #1081

A high temp high strength contact type adhesive. Bonds metal, foam, decorative laminates, fabrics, headliners. Variable width spray pattern. Meets Fed. Spec. MMM-A-130B.

16.5 Oz. Can.....P/N 09-42652 ..... **$7.60 ea.**

HEADLINER EXCELL STRETCHABLE VINYL

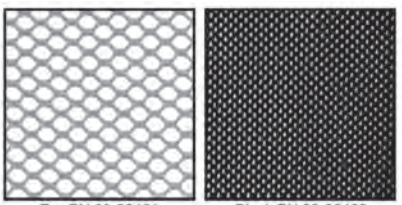
Unique four-way stretch that easily eliminates tension wrinkles, producing a smooth professional finish. Backing and facing are mildew resistant. 54" width. Color: Off white.

P/N 09-17564 ..... **$23.75/yd.**

FELT

All wool, 1/4" thick felt for paddings. Firm but resilient construction for many aircraft applications. Gray/ brown mix. NOTE: Sold in Full 36" Width only. Sold per foot.

P/N 09-31600 ..... **$13.75/Lineal Ft.**



Tan PN 09-00461 Black PN 09-00462

CARGO NETTING POCKET MESH - MSG mesh products are developed with customers to ensure the highest quality standard in both product design and longevity.

Black 50" wide.....P/N 09-00462 ..... **$19.95 / yd.**

3M™ LEADING EDGE TAPES - PROTECTIVE BOOTS

3M™ 8672 POLYURETHANE PROTECTIVE TAPES

3M™ Polyurethane Protective Tape 8672 is made from a tough abrasion resistant polyurethane elastomer that resists punctures, tearing, abrasion and erosion. It is formulated for resistance to ultraviolet light. Polyurethane Protective Tape 8672 provides a simple, easy method of protecting a surface from corrosion, abrasion and minor impact damage. It can be installed in a minimum amount of time with simple tools. It can be painted or applied over painted surfaces. Polyurethane Protective Tapes 8672 and 8672 GB are constructed with a long-aging, solvent resistant, pressure sensitive acrylic adhesive that is protected with an easy release paper liner. Polyurethane Protective Tape 8672 is a transparent tape with a paper liner on the adhesive side.
Please visit our website for application instructions.

W	L	Color	Description	Part No.	Price
1”	12yd	Gloss Black	3M™ 8672 Tape	09-01636	**$14.85**
1”	12yd	Clear	3M™ 8672 Tape	09-01632	**$19.75**
2”	12yd	Gloss Black	3M™ 8672 Tape	09-01637	**$29.75**
2:	12yd	Clear	3M™ 8672 Tape	09-01633	**$38.75**
3”	12yd	Gloss Black	3M™ 8672 Tape	09-01638	**$43.50**
4”	12yd	Gloss Black	3M™ 8672 Tape	09-01639	**$58.75**
4’	12yd	Clear	3M™ 8672 Tape	09-01635	**$74.75**
6”	18yd	Clear	3M™ 8672 Light A/C Kit	09-20110	**$193.50**
6”	18yd	Gloss Black	3M™ 8672 Tape	09-02104	**$189.50**
1”	36yd	Clear	3M™ 8672 Tape	09-00841	**$69.50**
2”	36yd	Clear	3M™ 8672 Tape	09-20140	**$133.95**
3”	36yd	Clear	3M™ 8672 Tape	09-00843	**$197.50**
4”	36yd	Clear	3M™ 8672 Tape	09-20145	**$268.95**
6”	36yd	Clear	3M™ 8672 Tape	09-00845	**$385.95**
1”	36yd	Gloss Black	3M™ 8672 Tape	09-00842	**$65.50**
2”	36yd	Gloss Black	3M™ 8672 Tape	09-00811	**$113.95**
3”	36yd	Gloss Black	3M™ 8672 Tape	09-00844	**$173.95**
4”	36yd	Gloss Black	3M™ 8672 Tape	09-00812	**$254.00**
6”	36yd	Gloss Black	3M™ 8672 Tape	09-00846	**$385.95**

3M™ 8674 POLYURETHANE PROTECTIVE TAPES

3M™ Polyurethane Protective Tape 8674 is made from a tough abrasion resistant polyurethane elastomer that resists punctures, tearing, abrasion and erosion. it is formulated for resistance to ultraviolet light. Polyurethane Protective Tape 8674 provides a simple, easy method of protecting a surface from corrosion, abrasion and minor impact damage. It can be installed in a minimum amount of time with simple tools. It can be painted or applied over painted surfaces. Polyurethane Protective Tape 8674 is constructed with a long-aging, solvent resistant, pressure sensitive acrylic adhesivethat is protected with an easy release poly liner. This tape is a transparent film and available in 2 liner configuration: Protective Tape 8674 has a single poly liner on the adhesive side. Protective Tape 8674DL has dual liners, one on each side of the tape. The adhesive side has a poly liner, and the liner on the top of the urethane tape is polyester.

W	L	Color	Description	Part No.	Price
1”	12yd	Clear	3M™ 8674 Lead Edge Tape	09-01642	**$19.50**
1”	36yd	Clear	3M™ 8674 Lead Edge Tape	09-00847	**$63.75**
2”	12yd	Clear	3M™ 8674 Lead Edge Tape	09-01643	**$37.75**
2”	36yd	Clear	3M™ 8674 Lead Edge Tape	09-00813	**$139.50**
3”	12yd	Clear	3M™ 8674 Lead Edge Tape	09-01644	**$55.60**
3”	36yd	Clear	3M™ 8674 Lead Edge Tape	09-00849	**$179.50**
4”	12yd	Clear	3M™ 8674 Lead Edge Tape	09-01645	**$74.75**
4”	36yd	Clear	3M™ 8674 Lead Edge Tape	09-00814	**$260.95**
6”	36yd	Clear	3M™ 8674 Lead Edge Tape	09-00850	**$364.95**

AP

3M™ POLYURETHANE PROTECTIVE BOOTS

3M™ Polyurethane Protective Boots SJ8665 are pre-formed and used extensively in private, commercial and military aircraft to fit the complex curvatures of a variety of applications. These boots are designed to help provide long lasting protection of randomes, wing and stabilizer tips, landing gear pods, composite parts, and other portions of aircraft from rain, moisture ingression, UV light, insects, sand, sleet, snow, and most other airborne particle erosion damage. The boots are part of a 3M family of high performance surface protection products available for various aerospace applications worldwide.

Boot Application	3M P/N	Our P/N	Price
Aero Commander			
500-1000, Radome	FP-20	09-00854	**$282.95**
Aerostar			
601 P Radome	FP-127	09-00856	**$338.95**
Beechcraft			
Baron Norton Radom (Honeycomb)	FP-55	09-00857	**$337.95**
Baron Non-Honeycomb (#58-410015-613)	FP-68	09-00858	**$303.95**
Baron Honeycomb Nose (#58-410017-603)	FP-69	09-00859	**$384.95**
Beech/Mitsubishi Diamond Radome	FP-84	09-00860	**$385.95**
Duchess Radome	FP-129	09-00861	**$195.95**
90,100,200,1300,1900,Most King Air, 65/A65,70,80, A80,B80,U-8F, U-21A	FP-5	09-00863	**$510.00**
99	FP-35	09-00864	**$201.95**
1900& King Air Series Vertical Fairing Dome	FP-173	09-00865	**$232.95**
Bombardier			
Learjet 23,24,25,Radome (PN2411241-1)	FP-7-1	09-00866	**$199.95**
Learjet 33, 36 Wing Tip	FP-13-1	09-00867	**$195.95**
Learjet M-45 Navigational Lens Ass’y	FP-195-1	09-00868	**$266.95**
Learjet M-45 Radome	FP-174-1	09-00869	**$266.95**
Learjet 50, 55, 60, (PN5411212-1)	FP-14-1	09-00870	**$298.95**

Boot Application	3M P/N	Our P/N	Price
Cessna			
208 Wing Mounted Radome	FP-34	09-00871	**$281.95**
208 Prop Spinner	FP-87	09-00872	**$439.95**
335,340,340A,401-421 Radome Long Nose	FP-25	09-00873	**$256.95**
310K-Q w/Norton Rad, 320, 310R (#4096)	FP-90	09-00875	**$263.95**
310q w/Norton Radome PN4131	FP-130	09-00876	**$299.95**
310R w/Norton Radome PN4096	FP-114	09-00877	**$299.95**
Citation S, I, II, IV, V	FP-29	09-00878	**$299.00**
Citation II, IV, VII	FP-70	09-00879	**$439.95**
210 Centurian,182,206,337 w/Wing Pod	FP-126	09-00880	**$248.95**
425-441 Series Radome	FP-41	09-00881	**$284.95**
Piper			
Aztec (Turbo) “C” non Coleman/Apache	FP-143	09-00882	**$201.95**
Aztec E-F Radome	FP-136	09-00884	**$420.95**
Cheyenne I, PA31P, Mojave, PA31T1/3, etc.	FP-12	09-00885	**$299.95**
Cheyenne II	FP-4	09-00886	**$383.95**
Cheyenne III, IV	FP-24	09-00887	**$199.95**
Navajo (except PA31P)	FP-23	09-00888	**$269.95**
Seneca	FP-54	09-00889	**$302.95**

3M™ POLYURETHANE PROTECTION TAPE APPLICATION SOLUTION.

A pre-mixed, water-based solution for applying 3M Polyurethane Protective Tape and Boots. Solution is provided pre-mixed in a ready to use squirt bottles. Allows wide width and contoured performed boots to be easily installed.

P/N 06-00604 ..... **$41.50**

3M™ TAPE ADHESION PROMOTER 86A & CLOTH

Tape Adhesion Promoter 86A is intended for use in enhancement of 3M Polyurethane Protective Tape adhesion levels to certain types of surfaces. It is most effective when used over polyurethane enamel surfaces. .....P/N 06-00605 ..... **$59.70**
Adhesion Promoter Cloth (Sold Each) .....P/N 05-03479 ..... **$16.75**

3M™ TAPE & RESIDUE REMOVE - Use for removal of polyurethane protective tapes, neoprene rubber and other tape residues; such as carpet tape from interior cabin composite surfaces. 16 Ounce..... P/N 05-02682.....**$27.80**
Gallon..... P/N 05-02683.....**$96.75**

LEADING EDGE TAPE - WINGWALK

LEADING EDGE TAPE

Clear plastic tape with adhesive backing for application to wing and tail leading edges for protection against nicks caused by stones and gravel. 100 Ft. Rolls.

Width	Color	P/N	Price/ roll
2”	Clear	09-31610	**$15.75**
3”	Clear	09-31615	**$19.95**
4”	Clear	09-31620	**$26.25**
6”	Clear	09-31625	**$37.50**

3M™ POLYURETHANE LEADING EDGE TAPE

Designed to help protect light aircraft from the damaging effects of rain, insects, sand, snow and sleet. A tough durable, protective tape for exposed surfaces. 3M #8672 Polyurethane Protective Tape is designed to help protect the leading edges of aircraft wings, struts, and horizontal and vertical stabilizers from airborne particle damage. Versions of this tape are used extensively for surface protection in both military and commercial aircraft applications. May be applied to clean metal or to commonly used aircraft paints over metal or fabric. Not to be used on props, helicopter rotors or balanced surfaces such as elevators or ailerons. Clear in color. Sold in full rolls only.

2” wide..... P/N 09-20140.....**$133.95**
4” wide..... P/N 09-20145.....**$268.95**
6” wide..... P/N 09-20110.....**$193.50**

MD FOAM TAPE

An excellent canopy seal which helps stop vibration. Recommended for use on Quickie. Size: 3/8” thick x 1/2” wide x 10 ft. P/N 05-01100.....**$2.25**

3M™ DUCT TAPE

A general-purpose gray cloth tape with good adhesive qualities.
2” x 60 Yd. Roll.....P/N 09-30900.....**$11.50**

MASKING TAPE

Armak general or 3M purpose crepe masking tape. Long shelf life.
1/4” x 60 yd. Roll..... P/N 09-20101.....**$1.53 ea.**
1” x 60 Yd. Roll ..... P/N 09-20100.....**$2.50 ea.**

CLOTH TAPE

Has many uses in aircraft maintenance work. Strip over sharp corners to protect fabric. Strips under doped fabric will prevent fabric from sticking to parts. Pressure-sensitive adhesive backing. Easily applied, easily removed.1” x 60 Yd. Roll ... P/N 09-17100.....**$9.75**

GLASS STRAPPING TAPE

A pressure-sensitive transparent acetate film tape reinforced with glass strands. Possesses high tensile strength (375 lbs./inch width) and good impact strength. Especially effective for carton sealing applications.
#RG-2A, 3/4” x 60 Yd. Roll..... P/N 09-31200.....**$2.95**

POLYPROPYLENE TAPE

A pressure-sensitive transparent polypropylene plastic tape for packaging & edging. Outstanding stretchiness/conformability. Waterproof, flame, abrasion and solvent resistant.
#371, 2” x 110 Yd. Roll..... P/N 09-31300.....**$1.93**

RESCUE TAPE

Rescue Tape is a self-fusing silicone repair product with infinite uses. Most versatile and easy to use emergency repair product available. You can repair leaks on plumbing and hoses in a flash, use for electrical wiring or as shrink wrap, wrap tool handles, and much, much more. Incredible 700 PSI Tensile Strength, Insulates 8,000 Volts per layer, Withstands 500° F Degrees of heat! (260° C) ~ Remains flexible to -85° F! (-60° C), Creates a Permanent Air-Tight, Water-Tight Seal in seconds, Resists Fuels, Oils, Acids, Solvents, Salt Water, Road Salt, UV Rays.

Description	Color	Part No.	Price
Rescue Tape Standard Roll 1”x12’x.020”	Red	01-00989	$9.95
Rescue Tape Standard Roll 1”x12’x.020”	Black	01-00990	$9.95
Rescue Tape Standard Roll 1”x12’x.020”	Clear	01-00991	$9.95
Rescue Tape Industrial Roll 2”x36’x.030”	Black	01-00992	$39.95
Rescue Tape Industrial Roll 2”x36’x.030”	Red	01-00993	$39.95

PLIOBOND

Pliobond #20 is a viscous, quick setting highly versatile adhesive. Bonds metal; wood, plastics, fabrics; ceramics, glass, vulcanized rubber, paper, leather and concrete. Thin with MEK. 1/2 Pt. Brush Top Can . P/N 09-28000....**$8.50**
Pt. Can..... P/N 09-28100..**$13.85**
Qt. Can..... P/N 09-28200..**$23.75**

Discount Less 15% on 12 (Assorted)

CLEAR SLIP RESISTANT WING WALK

This patented slip-resistant material is an excellent alternative to black Wing Walk which has been used on aircraft for many years. This material is nearly clear (slightly opaque) and has an adhesive backing that requires heat or 1500 lbs. of pull to remove it from the surface on which it is applied. Imagine how much better a newly painted aircraft can look with a clear material which does not alter the paint design. The material is impervious to chemicals, compounds, and water and will expand and contract with the metal or fabric. Surface roughness of the material is about the same as standard black Wing Walk. Furnished in 16” x 30” sheets. ..... P/N 09-31810..... **$32.85 Ea.**

NON-SKID WING WALK TAPE

The non-skid adhesive tape is excellent for wing walk applications. The clear is perfect for pilots wishing their step areas to blend in, not stand out. This tape meets all applicable Mil Specs and has superior adhesion qualities. Sold by linear foot.
24” Wide Clear.....P/N 09-31685 .....**$4.90**
6” Wide Clear.....P/N 09-31645 .....**$1.35**
24” Wide White.....P/N 09-31680 .....**$10.00**

ULTRA WING WALK COATING

Developed exclusively for Aircraft Door Seals by a major chemical company, this phenomenal new wing walk coating reduces the chance of slipping when climbing up on the wing. Unlike the mundane wing walk coating found on most aircraft, ULTRA WING WALK is a fast-drying polyurethane-based semi-gloss black coating with fine particles of rubber that adds class to any plane. .....P/N 05-04366 .....**$38.85**

RANDOLPH WING WALK COMPOUND

Black Wing Walk Compound is a special grit mixed into a tough black enamel material. Used to form non-slip surfaces on airplane wing walks. Apply with a coarse brush directly over regular finish after thoroughly cleaning the surface, and breaking the glaze if the surface is old. Thin with toluene as required. Conforms to MIL-W-5044. Randolph X-1567. Qt. .....P/N X-1567-QT **$22.00**

3M™ SAFETY WALK SHEET

A durable, mineral coated, non-slip fabric for wing walks. Waterproof, weatherproof and unaffected by vibrations, heat, cold, gasoline or oil. Assures safe footing. Pressure-sensitive backing should have additional coating of Pliobond to assure adhesion for aircraft Pliobond adhesive applications. Sold by lineal foot.

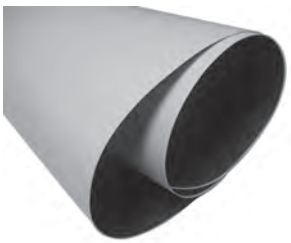
12” Width (3M) ..... P/N 09-32250.....**$4.95 /Ft.**
1/2 pt..... P/N 09-28000..... **$8.50**
1 pt..... P/N 09-28100..... **$13.85**
1 qt..... P/N 09-28200..... **$23.75**

3M ™ SAFETY-WALK™ TAPE

High-friction, fine-resilient textured, slip-resistant material. Reverse side coated with pressure-sensitive adhesive protected by a removable liner. Good for wet, barefoot traffic areas. Clear vinyl, light duty, 12 inches wide. Sold by the linear foot.

12” wide Clear .....P/N 09-31650 ..... **$5.25**
6” wide White.....P/N 09-31655 ..... **$2.75**
12” wide White.....P/N 09-31660 ..... **$5.25**
6” wide Black.....P/N 09-31665 ..... **$2.80**
24” wide Black .....P/N 09-31675 ..... **$9.95**

RAC WING WALK



RAC wing walks are not made from the usual, sandpaper-like material, which can decompose and scratch both the wing surface and your knees. Instead, they use a low profile, synthetic rubber, that combines a comfortable feel with good gripping power.The RAC wing walk comes pre-cut to 26 1/2” x 9 1/2”. Installation is easy with the aggressive, self-adhering backing. Each wing walk comes rolled in its own, 4”x4”x10” box and installation instructions are also provided with each box. Black
P/N 09-28210.....**$21.65 ea.**

GASKETS - O-RINGS - GROMMETS

AN900 GASKETS

AN900 (MS35769) annular copper-asbestos gaskets are suitable for temperatures up to 500° F. and pressures up to 200 PSI. Ring width is 1/8"; thickness is 3/32.

AN900 Dash No.	MS35769 Dash No.	I.D. (In.)	Price Each	AN900 Dash No.	MS35769 Dash No.	I.D. (In.)	Price Each
-3	-1	3/16	**$13.50**	-17	-24	1-1/16	**$0.88**
-4	-2	1/4	**$2.40**	-18	-26	1-1/8	**$0.77**
-5	-5	5/16	**$1.74**	-19	-29	1-3/16	**$1.31**
-6	-6	3/8	**$0.52**	-20	-31	1-1/4	**$0.65**
-7	-8	7/16	**$0.45**	-21	-33	1-5/16	**$8.35**
-8	-9	1/2	**$0.68**	-22	-35	1-3/8	**$1.98**
-9	-10	9/16	**$0.87**	-23	-38	1-7/16	**$11.50**
-10	-11	5/8	**$0.44**	-24	-39	1-1/2	**$0.78**
-11	-13	11/16	**$1.08**	-25	-41	1-9/16	**$1.45**
-12	-15	3/4	**$0.78**	-26	-42	1-5/8	**$1.64**
-13	-17	13/16	**$0.66**	-27	-46	1-11/16	**$7.50**
-14	-18	7/8	**$0.58**	-28	-48	1-3/4	**$0.56**
-15	-20	15/16	**$2.50**	-29	-51	1-13/16	**$1.58**
-16	-21	1	**$0.36**	-30	-52	1-7/8	**$2.75**

Discount Less 20% For 100 Per Size

AN900 GASKET KIT

144 piece kit of copper crush washers in common sizes. Complete with durable plastic case with dividers and size chart. P/N 05-02220.....**$203.95**

AN901 O-RINGS

AN901 tube connection seals are fabricated from type1100 alum., H14 temper.

AN901 Dash No.	Tube O.D.	Price Each	AN901 Dash No.	Tube O.D.	Price Each
-4A	1/4	**$0.98**	-8A	1/2	**$0.26**
-5A	5/16	**$0.35**	-10A	5/8	**$0.95**
-6A	3/8	**$0.31**	-12A	1-1/16	**$1.41**

Discount Less 20% For 100 Per Size

MS28778 TUBE FITTING BOSS GASKET

(FORMERLY AN6290)

Straight-thread tube fitting boss gaskets are used to provide a seal between straight-thread fittings, such as AN815, and ports of instruments with female straight threads instead of the more common female tapered pipe threads.

MS28778 Dash No.	Tube O.D.	Price Ea.	MS28778 Dash No.	Tube O.D.	Price Ea.
-2	1/8	**$0.63**	-5	5/16	**$0.50**
-3	3/16	**$0.61**	-6	3/8	**$0.68**
-4	1/4	**$0.49**			

AN931 ELASTIC GROMMETS

(MS35489)

Flexible grommets, made of black synthetic rubber to specification MIL-G-3036. Resistant to hot oil & coolant. Used to protect tubing, wiring and control cables where they pass through bulkheads & firewalls.

PN	MS35489	ID	OD	Hole Size	Thickness	Price
AN931-2-9	-2	1/8	3/4	9/16	3/16	**$0.21**
AN931-2-16	-3	1/8	1-1/4	1	1/4	**$0.94**
AN931-3-5	-4	3/16	7/16	5/16	3/16	**$0.11**
AN931-3-9	-134	3/16	3/4	9/16	3/16	**$0.48**
AN931-4-7	-6	1/4	5/8	7/16	3/16	**$0.11**
AN931-4-12	-7	1/4	1	3/4	1/4	**$0.58**
AN931-4-16	-8	1/4	1-1/4	1	1/4	**$0.44**
AN931-5-9	-9	5/16	13/16	9/16	5/16	**$0.21**
AN931-5-12	-10	5/16	1	3/4	5/16	**$0.98**
AN931-6-10	-11	3/8	7/8	5/8	5/16	**$0.31**
AN931-6-16	-12	3/8	1-1/4	1	1/4	**$0.38**
AN931-7-11	-13	7/16	15/16	11/16	5/16	**$0.28**
AN931-8-13	-14	1/2	1-1/16	13/16	5/16	**$0.25**
AN931-8-20	-15	1/2	1-1/2	1-1/4	1/4	**$0.34**
AN931-9-13	-16	9/16	1-1/16	13/16	5/16	**$0.31**
AN931-10-14	-17	5/8	1-1/8	7/8	5/16	**$0.41**
AN931-10-20	-18	5/8	1-1/2	1-1/4	1/4	**$1.04**
AN931-11-16	-19	11/16	1-5/16	1	3/8	**$0.38**
AN931-12-17	-20	3/4	1-3/8	1-1/16	3/8	**$0.38**
AN931-12-20	-135	3/4	1-5/8	1-1/4	1/4	**$1.12**
AN931-12-23	-21	3/4	1-13/16	1-7/16	3/8	**$1.74**
AN931-14-20	-22	7/8	1-5/8	1-1/4	7/16	**$0.80**
AN931-16-22	-23	1	1-3/4	1-3/8	7/16	**$0.86**
AN931-20-38	-25	1-1/4	2-3/4	2-3/8	7/16	**$6.95**

O-RINGS

O-rings give effective sealing over wide ranges of pressure, temperature, and movement, with the advantage of sealing pressure in both directions and reducing friction and wear on moving parts. The use of O-rings as gaskets or static seals permits metal-to-metal contact and allows almost unlimited pressures under extreme vibration. All 0-rings should be lubricated before installation and constant lubrication should be provided for running seals to avoid excessive wear. Avoid sharp edges, threads, and cross-drilled ports over or through which rings must be installed. AN6227B and AN6230B 0-rings are manufactured to Spec. MIL-P 25732 for use in hydraulic systems using MIL-0-5606 hydraulic oils. MS28778 O-rings meet Spec. MIL-P-5510A and are suitable for MIL-0-5606 hydraulic fluid at 160° F.

AN6227B	Dimensions (In.)			Price	AN6227B	Dimensions (In.)			Price
Dash#	W	I.D.	O.D.	Each	Dash#	W	I.D.	O.D.	Each
1	1/16	1/8	1/4	**$0.23**	24	1/8	1-5/16	1-9/16	**$0.38**
2	1/16	5/32	9/32	**$0.20**	25	1/8	1-3/8	1-5/8	**$0.38**
3	1/16	3/16	5/16	**$0.23**	26	1/8	1-7/16	1-11/16	**$0.40**
4	1/16	7/32	11/32	**$0.22**	27	1/8	1-1/2	1-3/4	**$0.55**
5	1/16	1/4	3/8	**$0.20**	28	3/16	1-1/2	1-7/8	**$0.56**
6	1/16	5/16	7/16	**$0.21**	29	3/16	1-5/8	2	**$0.62**
7	1/16	3/8	1/2	**$0.23**	30	3/16	1-3/4	2-1/8	**$0.86**
8	3/32	3/8	9/16	**$0.21**	31	3/16	1-7/8	2-1/4	**$0.87**
9	3/32	7/16	5/8	**$0.25**	32	3/16	2	2-3/8	**$1.07**
10	3/32	1/2	11/16	**$0.23**	33	3/16	2-1/8	2-1/2	**$0.99**
11	3/32	9/16	3/4	**$0.24**	34	3/16	2-1/4	2-5/8	**$1.02**
12	3/32	5/8	13/16	**$0.24**	35	3/16	2-3/8	2-3/4	**$0.89**
13	3/32	11/16	7/8	**$0.20**	36	3/16	2-1/2	2-7/8	**$1.13**
14	3/32	3/4	15/16	**$0.20**	37	3/16	2-5/8	3	---
15	1/8	3/4	1	**$0.38**	38	3/16	2-3/4	3-1/8	**$1.18**
16	1/8	13/16	1-1/16	**$0.29**	39	3/16	2-7/8	3-1/4	**$1.21**
17	1/8	7/8	1-1/8	**$0.30**	40	3/16	3	3-3/8	**$1.56**
18	1/8	15/16	1-3/16	**$0.39**	41	3/16	3-1/8	3-1/2	**$1.69**
19	1/8	1	1-1/4	**$0.38**	42	3/16	3-1/4	3-5/8	**$1.55**
20	1/8	1-1/16	1-5/16	**$0.35**	43	3/16	3-3/8	3-3/4	**$1.30**
21	1/8	1-1/8	1-3/8	**$0.35**	44	3/16	3-1/2	3-7/8	**$1.93**
22	1/8	1-3/16	1-7/16	**$0.43**	45	3/16	3-5/8	4	**$1.92**
23	1/8	1-1/4	1-1/2	**$0.53**	46	3/16	3-3/4	4-1/8	**$1.38**

See www.aircraftspruce.com for MS28775-026 thru MS28755-131 O-Rings.

AN6230B	Dimensions (In.)			Price	AN6230B	Dimensions (In.)			Price
Dash #	W	I.D.	O.D.	Each	Dash #	W	I.D.	O.D.	Each
1	1/8	1-5/8	1-7/8	**$0.64**	6	1/8	2-1/4	2-1/2	**$0.88**
2	1/8	1-3/4	2	**$0.70**	7	1/8	2-3/8	2-5/8	**$0.95**
3	1/8	1-7/8	2-1/8	**$0.73**	8	1/8	2-1/2	2-3/4	**$0.78**
4	1/8	2	2-1/4	**$0.59**	9	1/8	2-5/8	2-7/8	**$0.69**
5	1/8	2-1/8	2-3/8	**$0.85**	10	1/8	2-3/4	3	**$0.93**

See Page 911 for AN/MS O-Ring Equivalent Chart.

AN/MS O-RING KIT

This AN/MS O-Ring Kit includes over 382 O-rings made of Nitrile Buna N 70 duro material. These rings have a temperature range of -6 to 275°F and are for use with petroleum oils and fluids. Size range in kit is 0 through 30.(O-Ring Set An6227B-1, -30) P/N 05-02210... **$85.00**

AS568A O-RING KIT

- 70 Duro Nitrile
- 382 O rings
- Great kit for the homebuilder
- Sizes: -06 to -32 P/N 13-02804 .....**$24.95**

MS29513 FUEL RESISTANT O-RINGS

These MS29513 series O-rings are resistant to fuel and are ideal for applications such as fuel injection connections and primers. A small amount of fuel proof grease applied to these O-rings helps the installation and operation of primers. Not resistant to automotive fuels.

Part Number	Nominal Size			Price Each
	I.D.	O.D.	W	
MS29513-005	3/32	7/32	1/16	**$0.29**
MS29513-006	1/8"	1/4"	1/16"	**$0.24**
MS29513-007	5/32"	9/32"	1/16"	**$0.23**
MS29513-008	3/16"	5/16"	1/16"	**$0.24**
MS29513-009	7/32"	11/32"	1/16"	**$0.23**
MS29513-010	1/4"	3/8"	1/16"	**$0.20**
MS29513-011	5/16"	7/16"	1/16"	**$0.22**
MS29513-012	3/8"	1/2"	1/16"	**$0.26**
MS29513-110	3/8"	9/16"	3/32"	**$0.25**
MS29513-111	7/16"	5/8"	3/32"	**$0.25**
MS29513-112	1/2"	11/16"	3/32"	**$0.27**
MS29513-113	9/16"	3/4"	3/32"	**$0.29**
MS29513-114	5/8"	13/16"	3/32"	**$0.21**
MS29513-115	11/16"	7/8"	3/32"	**$0.29**
MS29513-116	3/4"	15/16"	3/32"	**$0.29**
MS29513-337	3"	3-3/8"	3/16"	**$0.97**

AP

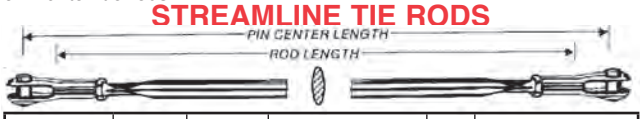
TIE RODS - GROMMET EDGING

BRUNTON TIE RODS

These high quality aircraft wires and terminals are manufactured in Scotland by Bruntons Aero Products who first originated streamline wires in 1909. They feature the stronger rolled threads and are available in high polish or satin finish. Material is 316 high tensile stainless steel. Wires are also available in BSF or metric threads. Special wires with combination streamline and round section commonly used for biplane roll wires or seaplane float installations are available. Wires are manufactured to AN specifications and are 100% proof loaded. Wires ordered with terminal assemblies are supplied assembled. Quality certifications are provided with all orders.
Aircraft tie rods carry tensile loads for bracing wings, tail assemblies as well as float installations. They may be ordered separately or with terminal assemblies (AN665 terminal, clevis pin, jam nut, cotter pin). AN specs define thread lengths as well as a fixed difference in length between rod length and pin center length (K). Order pin center lengths ONLY when AN665 terminals are used on both ends of the wire. All other installations must order rod length. Due to fluctuations in international exchange rates, the prices of Brunton tie rods are subject to change. We guarantee the lowest prices and fastest delivery on all Brunton tie rods. Request current pricing. Allow 8-10 weeks for delivery of Brunton tie rods.

AP

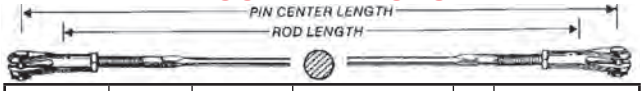
STREAMLINE TIE RODS



AN Number	Size & Thread	Diameter Inches	Thread Length (IN.) RH	Thread Length (IN.) LH	K	Minimum Strength Pounds
AN671AC-	6-40	.138	1 3/4	1 1/4	1 1/4	1,200
AN673AC-	10-32	.190	1 7/8	1 3/8	1 1/2	2,400
AN674AC-	1/4-28	.250	2 1/8	1 5/8	1 7/8	4,200
AN675AC-	5/16-24	.3125	2 1/4	1 3/4	2 1/8	6,900
AN676AC-	3/8-24	.375	2 3/8	1 5/8	2 1/4	10,000
AN677AC-	7/16-20	.4375	2 5/8	2 1/8	2 1/2	13,700
AN678AC-	1/2-20	.500	2 7/8	2 3/8	2 7/8	18,500
AN679AC-	9/16-18	.5625	3 1/8	2 5/8	3 1/4	24,000
AN680AC-	5/8-18	.625	3 3/8	2 7/8	3 1/2	29,500
AN682AC-	3/4-16	.750	3 3/4	3 1/4	4 3/8	42,000

CALL FOR CURRENT PRICING!

ROUND TIE RODS



AN Number	Size & Thread	Diameter Inches	Thread Length (IN.) RH	Thread Length (IN.) LH	K	Minimum Strength Pounds
AN701AC-	6-40	.138	1 3/4	1 1/4	1 1/4	1,000
AN703AC-	10-32	.190	1 7/8	1 3/8	1 1/2	2,100
AN704AC-	1/4-28	.250	2 1/8	1 5/8	1 7/8	3,400
AN705AC-	5/16-24	.3125	2 1/4	1 3/4	2 1/8	6,100
AN706AC-	3/8-24	.375	2 3/8	1 7/8	2 1/4	8,000
AN707AC-	7/16-20	.4375	2 5/8	2 1/8	2 1/2	11,500
AN708AC-	1/2-20	.500	2 7/8	2 3/8	2 7/8	15,500

CALL FOR CURRENT PRICING!

SEALS-IT GROMMET SEALS

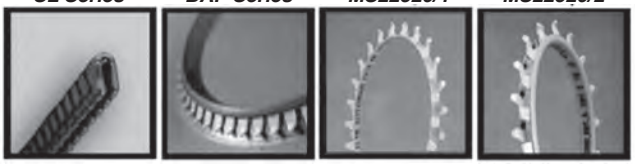
Grommet seals have many applications. In race cars they serve to keep unwanted smoke and fumes from entering the driver's area while protecting lines from chafing and abrading on rough surfaces. In hot rods and custom car applications, they provide the perfect "finishing touch" to all through panel installations. Wiring, fuel and oil lines, air and liquid hoses, and all other lines that make up your rod or custom, can make an otherwise detailed installation look unfinished. Seals-It grommet seals add the well-organized, professional appearance you want. Grommet seals also have many other applications including: marine, commercial equipment, motor homes, etc.

Grommet Seal 1 Hole Series			
Dia.	Hole	P/N	Price
1.5"	n/a	05-02493	**$12.70**
2.0"	n/a	05-02494	**$12.80**
3.0"	n/a	05-02495	**$15.90**
3.0"	.250	05-02496	**$15.95**
3.0"	.375	05-02497	**$15.95**
3.0"	.500	05-02498	**$15.95**
3.0"	.625	05-02499	**$15.95**
3.0"	.750	05-02501	**$15.90**
3.0"	.950	05-02502	**$15.90**
3.0"	1.180	05-02503	**$15.95**
4.0"	n/a	05-02504	**$26.20**
4.0"	1.00	05-02505	**$35.00**
4.0"	1.80	05-02506	**$26.20**
4.5"	1.50	05-02507	**$44.70**
4.5"	2.12	05-02508	**$51.60**
6.0"	n/a	05-02509	**$44.50**

Grommet Seal 2 Hole Series			
Dia.	Hole	P/N	Price
All Rubber Blank 5-1/4"		05-02510	**$42.50**
1-1/2"	2.125	05-02511	**$42.50**
2 Hole Blank 5-1/4"		05-02512	**$42.50**
2 Hole Blank 5-1/4"		05-2519	**$42.50**
1/4"	2.750	05-02520	**$42.50**
3/8"	2.750	05-02521	**$42.50**
1/2"	2.750	05-02522	**$42.50**
5/8"	2.750	05-02523	**$42.50**
3/4"	2.750	05-02524	**$42.50**
1"	2.750	05-02525	**$42.50**
.700	3.625	05-02526	**$43.10**

SPRING-FAST® GROMMET EDGING

SL Series *BAP Series* *MS22529/1* *MS22529/2*



Spring-Fast® Composite Grommet Edging covers sharp edges of panels that come in contact with witre and cables and mechanically lock on indefinitely with finger pressure in only seconds per foot. They provide a significant time reduction in assemblies. A long-term reliability solution that replaces nylon caterpillar plastic gromments and associated solvents, adhesives, and ancillary materials to protect critical equipment from failure due to wire chaffing.

Spring-Fast® Grommet Edging is approved by the FAA and U.S. Department of Defense per NASM 22529/a and NASM 22529/2 for all aircraft applications. Meets FAR 25.853 for flammability and MIL 1344 for shock and vibration. Spring-Fast® is available for 8 different sheet thickness ranges from 0.025 to 0.260 and can be purchased in either 10 piece packs of 12.75" long pieces, or 25 or 100-foot reels. Use Spring-Fast® BAP and SL series for flanged lightning hole and three-axis contours. The BAP Series Flexi-Grommet is perfect for roll formed edges and small lightening holes. Where wires are routed in the same plain as the sheet metal, the Spring-Fast® SL Series provides a trim characteristic for all edges with or without cabling nearby.

Spring-Fast is used in a wide variety of aviation and aerospace applications:

- Lightening Holes
- Seating
- Fuselage
- Tail Sections
- Ferrules
- Electrical Power Centers
- IFE (In-Flight Entertainment)
- Ground Control
- EAU (Electrical Avionic Units)
- APU (Auxiliary Power Units)
- Wing Sections
- Intercostals
- Avionics
- Tactical Satellite Emulators
- Navigation Systems
- Racks
- Bulkheads
- Air Traffic Control
- PSU (Personal Safety Units)

MFG Number	Sheet Thickness	Package Size	Our P/N	Price Ea.
M22529/2-1R	.025-.036	Per Foot	05-00673	**$5.50**
M22529/2-1C-10PK	.025-.036	10pcs/12.75"l	05-00674	**$59.85**
M22529/2-2R	.036-.063	Per Foot	05-00675	**$5.50**
M22529/2-2C-10PK	.036-.063	10pcs/12.75"l	05-00676	**$59.85**
M22529/2-3R	.059-.074	Per Foot	05-00677	**$5.50**
M22529/2-3C-10PK	.059-.074	10pcs/12.75"l	05-00678	**$59.85**
M22529/2-4R	.070-.093	Per Foot	05-00679	**$5.50**
M22529/2-4C-10PK	.070-.093	10pcs/12.75"l	05-00680	**$75.50**
M22529/2-5R	.090-.111	Per Foot	05-00681	**$5.75**
M22529/2-5C-10PK	.090-.111	10pcs/12.75"l	05-00682	**$75.50**
M22529/2-6R	.105-.134	Per Foot	05-00683	**$6.90**
M22529/2-6C-10PK	.105-.134	10pcs/12.75"l	05-00684	**$75.50**
M22529/2-7R	.178-.198	Per Foot	05-00685	**$6.50**
M22529/2-7C-10PK	.178-.198	10pcs/12.75"l	05-00687	**$86.75**
M22529/2-8R	.240-.260	Per Foot	05-00688	**$7.90**
M22529/2-8C-10PK	.240-.260	10pcs/12.75"l	05-00690	**$87.75**

See aircraftspruce.com for our complete selection of grommet edging
25ft. rolls are 20% discount off per foot prices

SPRING-FAST® INSTALLATION PRODUCTS

Description	Part No.	Price
DTI Shears 830 PS	05-04446	**$31.75**
Grommet Scale 860GSB	05-04448	**$17.50**
Roller Installation Tool 840R	05-04449	**$17.50**

SPECIAL SPRING-FAST FULL BYPASS CUT-OFF SHEARS
P/N 05-00689..... **$27.85**

AIRCRAFT SPRUCE WEST
CORONA, CA • (877) 4-SPRUCE
AIRCRAFT SPRUCE EAST
PEACHTREE CITY, GA • (877) 477-7823

Prices Subject to Change Without Notice

CONTROL SYSTEM SUPPLIES

AN100 CABLE THIMBLES

Made of cadmium plated steel or stainless steel per procurement specification MIL T-5677. Used to form sturdy eye end on control cable. Form cable around thimble and secure with Nicopress sleeve.

Cadmium Plated Steel Thimbles			Cable Size	Stainless Steel Thimbles		
AN Part No.	Price Each	Price Per 100		AN Part No.	Price Each	Price Per 100
AN100-3	$0.16	$12.80	1/16"	AN100C-3	$0.25	$20.00
AN100-4	$0.13	$10.40	3/32",1/8"	AN100C-4	$0.24	$19.20
AN100-5	$0.19	$15.20	5/32"	AN100C-5	$0.44	$35.20
AN100-6	$0.20	$16.00	3/16"	AN100C-6	$0.48	$38.40
AN100-7	---	---	7/32"	AN100C-7	---	---
AN100-8	$0.39	$31.20	1/4"	AN100C-8	$0.98	$78.40
AN100-12	$0.98	$78.40	3/8"	AN100C-12	$3.35	$268.00

AN111 CABLE BUSHINGS

Made of cadmium plated steel. Used in same manner as AN100 cable thimble.

Dash No.	Cable Size	Price Ea.
-3	1/16", 3/32"	$1.66
-4	1/8"	$1.98
-5	5/32"	$2.45
-6	3/16"	$2.90

Less 20% for 100

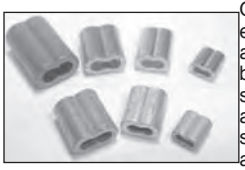
AN115 CABLE SHACKLES

Made of cadmium plated forged steel per specification MIL-S-5675.

AN 115 Dash No.	Shackle Strength Lbs.	Cable Size	Used With		Price Each
			Thimble	Clevis Pin	
-8	800	1/16"	AN100-3	AN393-9	$13.50
-21*	2100	3/32", 1/8"	AN100-4	AN393-11	$10.50
-32	3200	5/32"	AN100-5	AN394-15	$22.75
-46	4600	3/16"	AN100-6	AN395-17	$38.75
-61	6100	7/32"	AN100-7	AN396-19	$7.25

Replaces AN115 - 16.
DISCOUNT: Less 10% for 12, 15% for 25, 20% for 50 or more. May be assorted.

WIRE ROPE SLEEVES (MS51844)



Oval shaped copper sleeves used in making eye or lap splices in flexible cable. Sleeves are slipped over the two strands of cable to be fastened and are then compressed with special Nicopress hand squeezers. Provides a bond that is even stronger than a standard splice. "18" Series sleeves are plain copper and "28" Series sleeves are zinc plated.

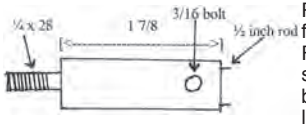
Part No	Nicopress Ref.	Cable Dia.	Matl./Finish	Price	
				Each	100
MS51844-42	18-1-C	1/16"	Copper/Plain	$0.13	$11.05
MS51844-43	18-2-G	3/32"	Copper/Plain	$0.19	$16.15
MS51844-44	18-3-M	1/8"	Copper/Plain	$0.38	$32.30
MS51844-45	18-4-P	5/32"	Copper/Plain	$0.59	$50.15
MS51844-46	18-6-X	3/16"	Copper/Plain	$1.14	$96.90
MS51844-22	28-1-C	1/16"	Copper/Zinc	$0.11	$8.80
MS51844-23	28-2-G	3/32"	Copper/Zinc	$0.19	$15.20
MS51844-24	28-3-M	1/8"	Copper/Zinc	$0.52	$41.60
MS51844-25	28-4-P	5/32"	Copper/Zinc	$0.58	$46.40
MS51844-26	28-6-X	3/16"	Copper/Zinc	$1.07	$85.60

STOP SLEEVES

These copper stop sleeves are used on the ends of bare cables.

Cable Dia.	Model No.	Part No.	Price Ea.
1/16"	ST2-2	04-00899	$0.24
3/32"	ST2-3	04-00901	$0.35
1/8"	ST2-4	04-00902	$0.37
5/32"	ST2-5	04-00903	$0.55
3/16"	ST2-6	04-02061	$0.47

ROD END SWIVEL BEARING



Permanently lubricated in-line swivel for rod end bearing or clevis fork. For applications where rod needs to swivel in a rotary motion to reduce binding while maintaining a straight line to control or stabilizer rod. For use on 1/2" rod and will fit 1/4" x 28 female rod end or clevis fork.

P/N 05-01021 ..... **$23.85**

NAS287 TERMINAL CHAIN

NAS287-25-3 3/32" cable size..... P/N 04-02064 ..... **$13.95**
NAS287-25-2 1/16" cable size..... P/N 04-02032 ..... **$11.75**
NAS287-35-4 1/8" cable size..... P/N 04-02065 ..... **$15.75**

AN481 CLEVIS FORK ROD ENDS (MS27976)

Manufactured of 1035 or 1042 carbon steel and cadmium plated. Minimum tensile strength 65,000 PSI. For welding to steel tubing or riveting to aluminum tubing. All sizes fit inside of 3/8" O.D. x .035 wall steel tubing.

Current Part No.	Old Part No.	Clevis Pin Hole Dia.	Fork Width		Price Each
			Overall	Inside	
MS27976-1	AN481-1P	1/4"	1/2"	17/64"	$18.70
MS27976-2	AN481-2P	1/4"	5/16"	9/64"	$17.75
MS27976-3	AN481-3P	3/16"	1/2"	17/64"	$19.30
MS27976-4	AN481-4P	3/16"	5/16"	9/64"	$15.70

AN486 THREADED CLEVIS FORK ROD ENDS (MS27975)

These rods ends are machined from 1035 or 1042 carbon steel and cadmium plated. Minimum tensile strength 65,000 PSI. They are internally threaded 1/4"-28 to fit threaded 1/4" dia. rod. Used for engine controls. For experimental aircraft only.

Current Part No.	Old Part No.	Clevis Pin Hole Dia.	Fork Width		Price Each
			Overall	Inside	
MS27975-1	AN486-1P	1/4"	1/2"	17/64"	$15.90
MS27975-2	AN486-2P	1/4"	5/16"	9/64"	$15.75
MS27975-3	AN486-3P	3/16"	1/2"	17/64"	$16.90
MS27975-4	AN486-4P	3/16"	5/16"	9/64"	$16.90
AN486-1032	Special	3/16"	7/16"	3/16"	$9.75

AN490 THREADED ROD ENDS

Manufactured of 4130 steel, heat-treated and cadmium plated. Minimum tensile strength 125,000 PSI. For welding to steel tubing or riveting to aluminum tubing.

PN AN490HT-16P

Part Number	Thread Size	Used With Tube Size	Price Each
AN490HT5P	1/4-28	5/16"x.035	$19.90
AN490HT6P	1/4-28	3/8"x.035	$13.75
AN490HT8P	1/4-28	1/2"x.035	$14.65
AN490HT10P	5/16-24	5.8"x.035	$17.25
AN490HT11P	5/16-24	3/4"x.035	$13.75
AN490HT14P	3/8-24	3/4" x .035	$16.90
AN490HT15P	5/16-24	1/2"x.058	$18.40
AN490HT16P	3/8-24	1/2"x.058	$22.50

AN665 THREADED CLEVIS TIE ROD TERMINALS

These Zinc plated steel terminals are manufactured to AN specifications, with either right-hand or left-hand threads. Example: P/N AN665-10L has a 6-40 lefthand thread. AN665-34R has a 1/4-28 right-hand thread. Order Terminal Assemblies if locknut, clevis pin, and cotter pin are required along with terminal. Otherwise, only terminals are supplied.

*Note - Cad Plated Terminals are no longer being manufactured due to enviromental reasons. Once the cad plated stock is depleted the zinc plated terminals will be shipped. Please note that we can not guarantee cad plated terminals will be received.

Dash No.		Thrd. Size	Fork Pin Hole Dia.	Inside Width	Sgth. (Lbs.)	AN665 Rt. only Price Ea.	AN665 Lt. only Price Ea.
Right Hand	Left Hand						
-10R	-10L	6-40	.190"	.109"	1200	$10.50	$10.50
-21R	-21L	10-32	.190"	.150"	2400	$11.75	$11.75
-34R	-34L	1/4-28	.250"	.203"	4200	$19.95	$18.85
-46R	-46L	5/16-24	.313"	.203"	4600	$27.50	$27.00
-61R	-61L	5/16-24	.375"	.203"	6900	$29.85	$29.85
-80R	-80L	3/8-24	.375"	.266"	10000	$39.90	$39.90

AN665 TERMINAL ASSEMBLIES

These terminal assemblies include the AN665 terminals plus the appropriate lock nut, clevis pin, and cotter pin.

Description	Part No.	Price	Description	Part No.	Price
AN665-10R	05-02300	$11.00	AN665-10L	05-02400	$11.50
AN665-21R	05-02500	$11.90	AN665-21L	05-02600	$12.25
AN665-34R	05-02700	$19.75	AN665-34L	05-02800	$19.25
AN665-46R	05-02900	$27.75	AN665-46L	05-03000	$27.75
AN665-61R	05-03100	$29.65	AN665-61L	05-03200	$29.65
AN665-80R	05-03300	$42.75	AN665-80L	05-03400	$42.50

AP

CABLE TERMINALS

The finest and best means of attaching fittings to cable. Properly swaged to the cable, these terminals will maintain the minimum rated breaking strength of that cable. These terminals are made of stainless steel alloy having the best swaging and corrosion resistant properties and have a polished finish.

SA110 PLAIN BALL

Meet all requirements for Boeing's BACT14B Plain Ball End Fittings and NAS494 series Plain Ball End Fittings. All balls are manufactured from stainless steel as specified in MIL-DTL 781 and are certified to the appropriate standard(s).

Dash No.	Cable Dia.	Sphere Dia.	Strength Lbs.	Price
2	1/16	.188	80	**$0.66**
3	3/32	.250	735	**$0.84**
4	1/8	.312	1200	**$1.16**
5	5/32	.375	1680	**$1.63**
6	3/16	.437	2520	**$1.88**

MS20664C BALL & SINGLE SHANK

Dash No.	Cable Dia.	Sphere Dia. after Swage	Breaking Strength Lbs.	Price
2	1/16	.190	480	**$0.55**
3	3/32	.253	920	**$0.78**
4	1/8	.315	2000	**$0.93**
5	5/32	.379	2800	**$1.34**
6	3/16	.442	4200	**$1.98**

MS20663C BALL & DOUBLE SHANK

Dash No.	Cable Dia.	Sphere Dia. after Swage	Breaking Strength Lbs.	Price
2	1/16	.190	480	**$0.89**
3	3/32	.253	920	**$1.35**
4	1/8	.315	2000	**$1.70**
5	5/32	.379	2800	**$3.00**
6	3/16	.442	4200	**$3.65**

MS20667 FORK END

PN-MS20667-2

Dash No.	Cable Dia.	Breaking Strength Lbs.	Pin Hole Dia.	Fork Width "G"	Price
2	1/16	480	.190	.093	**$7.75**
3	3/32	920	.190	.108	**$8.50**
4	1/8	2000	.190	.195	**$11.00**
5	5/32	2800	.250	.202	**$13.85**
6	3/16	4200	.313	.260	**$16.75**

MS20668 EYE END

Manufactured from stainless steel in accordance with the requirements of MIL-DTL-781 and are certified to those standards.

Dash No.	Cable Dia.	Breaking Strength Lbs.	Pin Hole Dia.	Eye End Width "J"	Price
2	1/16	480	.190	.088	**$4.10**
3	3/32	920	.190	.103	**$4.40**
4	1/8	2000	.190	.190	**$5.75**
5	5/32	2800	.250	.197	**$7.50**
6	3/16	4200	.313	.255	

MS21259 STUD END

Manufactured from stainless steel to the strict standards of MS21259. They are certified to the MS21259 standard.

Dash No.	Cable Dia.	Breaking Strength Lbs.	Thread Size NF-3	Price
2	1/16	480	6-40	**$4.15**
3	3/32	920	10-32	**$4.20**
4	1/8	2000	1/4-28	**$5.50**
5	5/32	2800	1/4-28	**$5.85**
6	3/16	4200	5/16-24	**$7.25**

Add "RH" or "LH" after dash numbers for right or left hand threads

MS21260 TURNBUCKLE END

S=Short
L=Long

Dash No. Short	Price Each	Dash No. Long	Price Each	Cable Dia.	Thread Size	Min. Breaking Strength (lbs)
-S2RH	**$4.60**	-L2RH	**$5.90**	1/16"	6-40	480
-S2LH	**$4.90**	-L2LH	**$6.45**			
-S3RH	**$5.45**	-L3RH	**$6.40**	3/32"	10-32	920
-S3LH	**$5.65**	-L3LH	**$5.75**			
-S4RH	**$5.98**	-L4RH	**$6.95**	1/8"	1/4-28	2000
-S4LH	**$5.90**	-L4LH	**$7.60**			
-S5RH	**$6.25**	-L5RH	**$6.95**	5/32"	1/4-28	2800
-S5LH	**$6.55**	-L5LH	**$7.25**			
-S6RH	**$6.80**	-L6RH	**$9.85**	3/16"	5/16-24	4200
-S6LH	**$7.50**	-L6LH	**$9.50**			

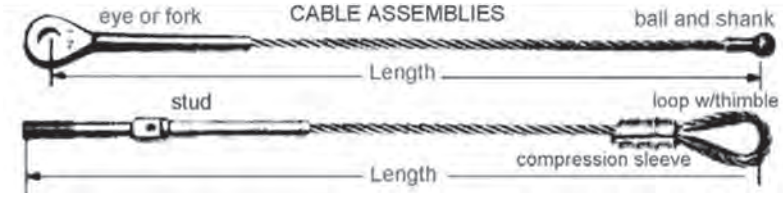
** Universally replaces the canceled AN669 & NAS650 parts identified by the same dash no.*
** AN100 thimble not included.*
*** For short barrels listed above. Use two per assembly.*

SA361 EYE END & SA362 FORK END

Part No.	Cable	Hole Dia	Width	Price
SA361-2	1/16	.188	.088	**$3.70**
SA361-3	3/32	.188	.103	**$4.20**
SA361-4	1/8	.188	.190	**$4.90**
SA361-5	5/32	.250	.197	**$9.75**
SA361-6	3/16	.313	.255	**$12.00**
SA362-2	1/16	.188	.093	**$2.60**
SA362-3	3/32	.188	.108	**$2.75**
SA362-4	1/8	.188	.195	**$3.75**
SA362-5	5/32	.250	.096	**$7.25**
SA362-6	3/16	.313	.125	**$9.25**

Discounts: All Items This Section:
Less 10% For 12 Ea. 15% On 50 Or More (Per Size)

CUSTOM-MADE CABLE ASSEMBLIES



Measure eye and fork terminals from center of pin holes. Measure ball fittings from center of ball. Measure stud terminals from end of terminal. Measure loop with thimble from surface of thimble.

SEE "TOOLS" SECTION FOR KEARNEY PORTABLE SWAGER.
CUSTOM-MADE CABLE ASSEMBLIES ARE SPECIAL ORDER AND NON-RETURNABLE

The terminals featured on this page must be installed with a rotary swaging tool, which is too costly for purchase by a homebuilder or small shop. We offer swaging service and custom-made cable assemblies in cable sizes of 1/16" to 5/32" diameter.

Select the cable fittings of your choice, specify cable size, cable construction, stainless steel or galvanized cable and length. Measure length of cable assembly as shown in the illustration. We will furnish complete cable assembly ready for installation. A simple drawing of the assembly required is appreciated and will expedite shipment.

The cost of custom-made cable assembly is base charge (up to 10 ft - **$10.00**, 10 to 20 ft. - **$15.00**, over 20 ft. - **$20.00**), plus the cost of selected fittings and cable plus swages at **$6.95** each. For cable assemblies requiring a third swage, such as an assembly with two end fittings plus a ball swaged at some point on the cable, add **$6.95** plus cost of the ball.

Example: The cost of a 10 ft. long cable assembly using 1/8" 7 x 19 galvanized cable, an MS20667-4 fork end and an MS21259-4RH stud end is 10 x **$0.64/ft.** for cable plus **$11.00** and **$5.50** for the fittings plus **$6.95** per swage + **$10.00** setup = **$41.15** total cost. For added MS20663C-4 ball add **$6.95** for swage plus **$1.70** for ball.

Swaging Service - For cable assemblies requiring swaged fitting on one end only. **$6.95**/swage plus cost of cable, fittings, and the base charges as described above.

Nicopress Swages - Performed for **$4.95**/Swage plus cost of Nicopress sleeve and the base charges described above.

TOLERANCE - ±1/8"

Custom Cable Assemblies are fabricated in House by Aircraft Spruce for Prompt Shipment.

AIRCRAFT SPRUCE WEST **AIRCRAFT SPRUCE EAST**
CORONA, CA • (877) 4-SPRUCE **PEACHTREE CITY, GA • (877) 477-7823**

Prices Subject to Change Without Notice

CABLE – FORKS – PUSHROD FITTINGS

CONTROL CABLE

Galvanized - MIL-DTL-83420 replaces MIL-2-83420

Stainless - MIL-DTL-83420 replaces both Galvanized & Stainless

Cable Dia. (In.)	Con-Struc-tion	Breaking Strength (Lbs.)		Part Number		Price/Ft.	
		Galva-nized	Stainless	Galva-nized	Stainless	Galva-nized	Stain-less
1/16	7x7	480	480	05-03600	05-03500	**$0.45**	**$0.44**
1/16	1x19	500	500	05-06835	---	**$0.39**	---
3/32	7x7	920	920	05-03800	05-03700	**$0.52**	**$0.56**
3/32	7x19	1000	920	05-04000	05-03900	**$0.92**	**$0.94**
1/8	1x19	2100	2100	05-04200	05-04100	**$0.64**	**$0.99**
1/8	7x19	2000	1760	05-04400	05-04300	**$0.64**	**$1.23**
5/32	1x19	3300	3300	05-04600	05-04500	**$0.70**	**$1.37**
5/32	7x19	2800	2400	05-04800	05-04700	**$1.13**	**$1.67**
3/16	7x19	4200	3700	05-05000	05-04900	**$1.32**	**$1.81**
1/4	7x19	7000	6400	05-05200	05-05100	**$1.93**	**$3.05**

CONTROL CABLE SPECIFICATIONS

• ***7 X 7 FLEXIBLE CONTROL CABLE*** **-** Has seven strands of seven wires each. Used for control purposes where extreme flexibility is not required but where abrasion is a factor.

• **7 X 19 FLEXIBLE CONTROL CABLE -** Has seven strands of 19 wires each. Its greater metallic area makes it stronger than 7 x 7 cable. Because of its fine wires the best service is obtained where abrasion is not too severe. These same wires, however, make it flexible to meet severe bending.

• ***1 X 19 NON-FLEXIBLE CABLE*** **-** Is one strand of 19 wires. It has more metallic area than 7 x 7 or 7 x 19 constructions which makes it the strongest but also the least flexible. 1 x 19 is generally used for bracing purposes, drag and anti-drag wires. It is often used with swage type terminals.

• The major difference between aircraft and commercial cable is the lubrication applied to aircraft cable, which provides substantially better fatigue life than non-lubricated commercial cable. Aircraft cable requires extensive extra testing, documentation, certification to meet military specifications. Aircraft Spruce obtains its aircraft cable from domestic sources and the cable is certified to MIL Spec MIL, W-83420 and QPL Certified.

CABLE FAIRLEADS

Less 15% for 12 or more.

Nylon construction for external use. Two halves with retaining clip.
3/4"O.D. x 3/4"L
P/N 05-05500 **$2.75 Set**

3/4"O.D. x 1" L
P/N 05-05600 **$2.45 Set**

Clips Only
P/N 05-05700 **$0.43 Ea.**

SEE TOOL SECTION FOR CABLE TENSIOMETERS

WING STRUT ADJUSTMENT FORK & BARREL SETS

Conforms to AD. 81-25-05. The heavy-duty, high tensile strength strut fork has rolled threads, an improved alloy with heartier design for added strength, and a permanent indentification mark to provide assurance of conformity for ease in field installation. Forks require a five year inspection per A.D. 93-10-06.

FAA/PMA. J-3 & PA-11. Replacement for 13770-00. Includes bolt, nut, cotter pin & jam nut. Measures 5/16" bolt hole. Measures 7/16" x 20 thread NF3. ..... P/N 05-06000 ..... **$82.75**

FAA/PMA. J-5 & PA-12, 14, 18, 20 & 22. Replacement for 4481-02. Includes bolt, nut, cotter pin & jam nut. 3/8" bolt hole. Measures 7/16" x 20 thread. ..... P/N 05-06100 ..... **$79.90**

Wing strut barrels. ..... P/N 05-05900 ..... **$15.90**

WIRE SWIVELS

OD	ID	Length	Cable Dia.	Part No.
1/4"	8-32	.240"	3/32 Max	2361

P/N 06-01282 ..... **$0.77**

CONDUIT RETAINER - STRAIGHT

OD	ID	Length	Conduit	Part No.
5/16-24	.260	2	7/32	2386

P/N 06-01281 ..... **$1.55**

ASSORTED SPRINGS

Spring	Part No.	Application	Spring Type	Length	Price ea.
Century Spring #186-C	01-27200	VariEze	Tension	2"	**$3.80**
Rudder Return Spring	01-27300	"	Tension	4 1/2"	**$4.75**
Landing Brake	01-27600	VE/Long-EZ	Tension	10"	**$14.75**
Tension Spring*	01-37500	"	Tension	30"	**$11.75**
Landing Brake	01-27900	Cozy	Tension	12 1/2"	**$9.50**

BOWDEN CABLE INNER WIRE

Stainless stainless steel wire .078" diameter. Sold by the foot. P/N 05-15510 ..... **$0.61**

FLIGHT CONTROL CABLES

These FAA-PMA approved cable assemblies are available in stainless or galvanized cable and are constructed of highest quality U.S. made materials. All components are fully traceable and each assembly is load tested and length stabilized. Over 2000 cable assemblies in stock. Custom cable assemblies can be fabricated to your specification.

- ***AS0510105 Series for Cessna 170, 172, 180, 182, and 185***
- ***AS0400107 Series for Cessna 150, and 152***
- ***AS1660300 Series for Cessna 188***
- ***AS62701 Series for Piper PA28, PA32, and PA34***
- ***ACA Series for Schweizer G-164***

Call the Cessna/Piper parts specialist at 1-877-4SPRUCE with your Cessna or Piper cable assembly part number for pricing or for assistance in determining the part number you require for your aircraft.

MCFARLANE FLIGHT CONTROL CABLES

McFarlane Beechcraft flight control cables and chains are coated with a corrosion inhibiting compound that meets Military Specification MIL-PRF-16173. This is the same compound used on all factory original Beechcraft flight control cables.FAA/PMA

MCNAS30327-0590 Tab Actuating ..... P/N 05-04625 ..... **$188.95**
MCNAS30434-1520 ..... P/N 05-04624 ..... **$225.95**

PUSHROD THREADED END FITTING

Fits 5/8" diameter pushrods. 1/4 - 28 threaded hole. Secure to aluminum pushrod with two cross riveted or bolted fasteners. Made from 6061-T6 5/8" diameter x 1-5/8" long rod. Two sizes available.

Fits: 5/8" x .049" tube ..... P/N 05-01140 ..... **$9.90**
Fits: 5/8" x .058" tube ..... P/N 05-01150 ..... **$9.90**

PUSHROD BALL ROLLER GUIDES

Provides almost frictionless push – pull and rotary movement of aileron and elevator push rods. Design is similar to that used in German sailplanes. Unit contains four nylon roller balls and provides 3.5" pushrod travel. Aluminum case size, 1.25" x 3.0" long. Fits 5/8" diameter pushrods.

P/N 05-01110 ..... **$10.85 ea.**

PUSHROD FORKED END FITTING

Fits 5/8" diameter pushrods. 3/16" pivot hole with .090" wide slot for bellcrank. Secure to aluminum pushrod with two cross riveted or bolted fasteners. Made from 6061-T6 5/8" diameter x 2-3/8" long rod. Two sizes available.

Fits: 5/8" x .049" tube..... P/N 05-01120..... **$9.90 ea.**
Fits: 5/8" x .058" tube..... P/N 05-01130..... **$9.90 ea.**

RUDDER CABLE FAIRING SETS FOR RV'S

Pre-formed .025" thick aluminum fairings for rudder cable exit on RV fuselages. (None are supplied with the RV kits). Set contains (2) identical fairings - 1 for use on cables and 1 spare (could be used on elevator trim). Each will require some trimming to fit before riveting. P/N 12-00635..... **$15.50**

MCFARLANE CABLE & CHAIN KITS

Complete flight control and trim chain kits for each of the 150 different cable groups required to service all single engine aircraft from the model 120 through model 185 airplanes. It is a tedious and time consuming job to research the part manuals for all of the cables required for a complete aircraft. McFarlane has done the research and has all of the part numbers required for your aircraft. We carry stock on all of the cables in either Galvanized-Carbon Steel or Stainless Steel. All components are fully traceable, high quality, and proof tested.

Cable & Chain Kit CCKT206H-01S ..... P/N 05-04605 ..... **$1,739.50**
Cable & Chain Kit CCKT182-13S ..... P/N 05-04603 ..... **$1,140.08**
Cable & Chain Kit CCKT172175-13 ..... P/N 05-04598 ..... **$1,503.13**
Cable & Chain Kit CCKT172175-13S ..... P/N 05-04599 ..... **$1,246.43**
Cable & Chain Kit CCKT206H-01G ..... P/N 05-04604 ..... **$1,669.17**
Cable & Chain Kit CCKT182-13G ..... P/N 05-04601 ..... **$1,650.51**

SADDLES - FITTINGS - TANGS - BRACKETS

SUPER-TOUGH STANDOFF SADDLES -TYPE II

P/N	Max Air #	Fits	O.D.	Hole	HT	Price
05-02052	S01-14	1.000	1.000	.266	.188	**$1.73**
05-02055	S01-24	1.500	1.000	.266	.188	**$1.83**
05-02056	S01-84	1.625	1.000	.266	.188	**$1.83**
04-00922	S01-44	1.750	1.000	.266	.188	**$1.68**
05-02060	S01-74	1.875	1.000	.266	.188	**$1.83**
05-02062	S01-94	2.000	1.000	.266	.188	**$1.83**
05-02064	S04-94	2.000	1.000	.266	.440	**$1.73**

ULTRALIGHT SADDLES

SUPER-TOUGH SADDLES - TYPE I

P/N	Max Air #	Fits	OD	Hole		HT	Price
S4436	---	.875	0.875	.260		.125	**$1.83**
S4352	---	1.00	1.00	.260		.125	**$1.65**
S4350	---	1.00	1.00	.340		.125	**$1.59**
S4353	---	1.00	1.00	.260		.250	**$1.83**
S4326	---	1.125	1.00	.260		.125	**$1.75**

SUPER-TOUGH SADDLES -TYPE II

P/N	Max Air #	Fits	OD	Hole	HT	Each
S4451	S-24	1.500	1.375	.266	.188	**$1.16**
S4453	S-84	1.625	1.375	.266	.188	**$1.83**
S4456	S-44	1.750	1.375	.266	.188	**$1.83**
S4459	S-74	1.875	1.375	.266	.188	**$1.83**
S4460	S-74	1.875	1.375	.320	.188	**$1.90**
S4462	S-94	2.000	1.375	.266	.188	**$1.83**
S4482	S-94	1.750	1.000	.320	.188	**$0.73**

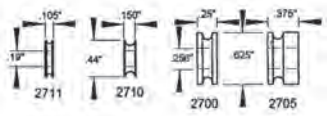
ALUMINUM SADDLES

P/N-Type	Our P/N	Fits	Base OD	Hole	Height	Price
4300/I	04-00923	1.00	1.00	.266	.125	**$4.20**
4327/I	04-00924	1.13	1.00	.266	.125	**$4.20**
4328/I	04-00925	1.25	1.00	.266	.125	**$4.20**
4310/II	04-00926	1.50	1.00	.266	.250	**$5.25**
4315/I	04-00927	1.63	1.00	.266	.125	**$4.20**
4325/I	04-00929	1.88	1.00	.266	.125	**$4.20**
4329/I	04-00930	2.00	1.00	.266	.125	**$4.20**

TUBE CONNECTORS - NYLON

Fits 1 x .049 Tube ..... P/N 05-02096 ... **$1.30**
Fits 1 x .049 (Maxair TC-1) .... P/N 05-02097 ... **$1.64**

CABLE FITTINGS



1/16" Cable, Steel, AN111-3
P/N CF2710 ..... **$2.50**
3/32" Cable, Aluminum
P/N CF2700 ..... **$2.45**
3/32" Cable, Aluminum
P/N CF2705 ..... **$2.25**
1/16" Cable, Stainless, AN111C-3 ... P/N CF2710S **$1.66**

REAR SPAR CONTOUR FITTING

Maxair#WT262, Contour
P/N 05-01936 ..... **$1.82**

POLY TIP RIB END FITTING

Maxair#PT-1
Poly Tip ..... P/N 05-01932 ..... **$0.63**

THREADED INSERTS

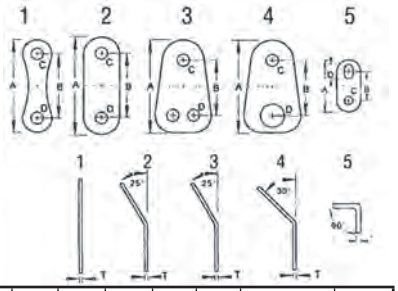
Inserts into tube connector (1" x .049 wall). 7/16" dia. Cross hole 3/16" Cad2 Type 2 Yellow Chromate. P/N 05-02071.... **$2.95**

NYLON WASHERS

Model	P/N	O.D.	I.D.	Tkns	Each
NW2061	05-01971	1.000	.256	.125	**$1.12**
NW2059	05-01970	.875	.256	.031	**$0.52**
NW2055	05-01969	.256	.500	.060	**$0.52**
NW2045	05-01968	.875	.256	.062	**$0.32**
NW1540	05-01967	.440	.190	.062	**$0.18**
NWPW-3	05-01972	.625	.190	.062	**$0.52**
NWPW-4	05-01973	.625	.250	.062	**$0.39**

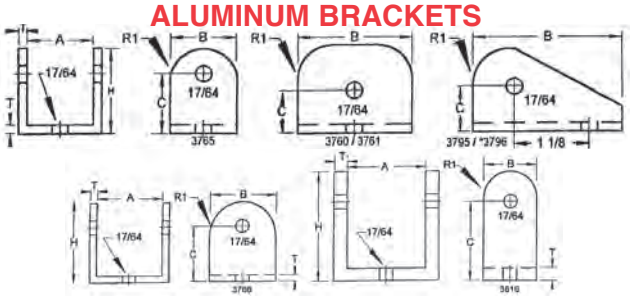
TANGS

Made of 304 stainless steel. All measurements are in inches.



No.	Maxair	Description	T	A	B	C	D	Part No.	Price
1	T12-HT4	Figure 8	14G	2.0	1.38	.26	.26	05-02076	**$1.13**
2	--	2-Hole Flat	16G	2.0	1.25	.26	.26	05-02072	**$1.31**
	T0-FT	2-Hole Flat	13G	2.0	1.25	.26	.26	05-02073	**$1.32**
	T2-FLAT	2-Hole Bent	13G	2.0	1.24	.26	.26	05-02074	**$1.56**
	--	2-Hole Bent	12G	2.0	1.24	.26	.26	05-02075	**$1.56**
3	T11-DFT	3-Hole Flat	14G	1.91	1.09	.26	.26	05-02077	**$2.60**
	T8-DFT	3-Hole Flat	12G	1.91	1.09	.32	.26	05-02078	**$3.75**
	T9-DAT	3-Hole Bent	14G	1.86	1.04	.26	.26	05-02079	**$2.60**
	T6-DAT	3-Hole Bent	12G	1.86	1.04	.32	.26	05-02080	**$3.75**
4	--	Anchor Tang	14G	1.91	1.19	.26	.50	05-02081	**$3.25**
5	--	SS EYE Bent	13G	1.13	.563	.188	--	05-04371	**$2.50**

ALUMINUM BRACKETS



Model	Part No.	A	B	C	H	T	R1	ALLOY	Each
B3772	05-01930	.500	.750	.500	.750	.125	---	6061-T6	**$4.20**
B3765	05-01928	1.000	1.000	.875	1.250	.125	.500	6063-T5	**$5.25**
B3760	05-01926	1.000	1.750	.625	1.250	.125	.500	6063-T5	**$5.90**
B3761	05-01927	1.000	1.750	.906	1.250	.125	.750	6063-T5	**$7.50**
B3795	---	1.000	2.250	.670	1.250	.125	.500	6063-T5	--
B3766	05-01929	1.250	1.250	1.062	1.500	.125	.750	6063-T5	**$6.30**
B3796	---	1.250	2.375	.875	1.500	.125	.500	6063-T5	--
B3810	05-01931	1.500	1.000	1.500	2.000	.250	.500	6061-T6	**$10.15**

STAINLESS STEEL BRACKETS

Fits	Model No.	Part No.	Price
1.000" Tub	B3740	05-01922	**$4.45**
1.125" Tube	B3742	05-01923	**$6.75**
Fits 1.250" Tube	B3744	05-01924	**$8.45**
Fits 1.375" Tube	B3746	05-01925	**$8.45**

PLASTIC ID TUBE CAPS

Model	Part No.	Fits Tube Size	Maxair	Each
TC4116	05-02093	1-1/2 x .083	---	**$1.66**
TC4115	05-02092	1-1/2 x .049	EC-6	**$0.96**
TC4100	05-02088	1-1/8 x .058	EC-4	**$0.96**
TC4080	04-00158	3/4" universal	14-209A	**$1.25**
TC4095	05-02084	1 x .083	EC-3	**$0.58**
TC4096	05-02085	1 x .058	EC-1	**$0.54**
TC4098	05-02087	1 x .049	EC-1	**$0.60**
TC4092	05-02083	7/8 x .049	EC-78	**$0.55**
TC4090	05-02082	5/8 x .058	---	**$0.44**
TC4097	05-02086	1 x .065	EC-2	**$0.60**
TC4106	05-02089	1-5/8 x .049	EC-7	**$1.10**
TC4110	05-02090	1-3/4 x .049	EC-8	**$1.90**
TC4112	05-02091	2 x .049	EC-10	**$1.20**

CONTROL CABLE FAIRINGS

Injection molded ABS plastic fairings used to cover hole in airframe where control cables emerge such as the rudder cables at the rear of the fuselage. May be installed on any airframe surface but is most normally used on fabric covered aircraft where they are bonded on with fabric cement and covered with a fabric patch. P/N 05-05750 ..... **$4.35 pair**

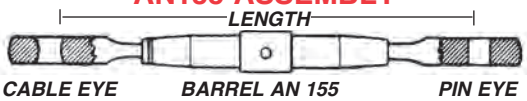
TURNBUCKLE COMPONENTS

TURNBUCKLES COMPLETE ASSEMBLIES

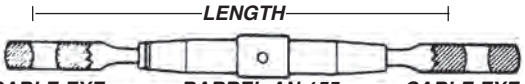
Complete turnbuckle assemblies consist of a brass barrel and two steel ends, one with right-hand thread and the other with left-hand thread. Order by proper AN number and add dash number and a letter to indicate length and strength required.

AN130 ASSEMBLY

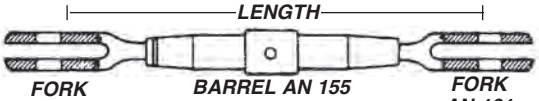
AN135 ASSEMBLY



AN140 ASSEMBLY



AN150 ASSEMBLY

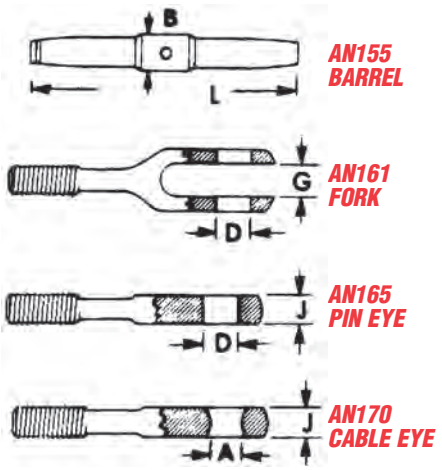


AN 146 Assembly consists of 1 - AN 155 barrel, 1-AN161 Fork and 1 MS21260 Turnbuckle End.

Dash No.	LENGTH (inches)*				Strength (pounds)	PRICE (complete assembly)**			
	AN130	AN135	AN140	AN150		AN130	AN135	AN140	AN150
-8S	4-1/2	4-1/2	4-1/2	4-1/2	800	$33.25	$32.25	$31.75	$34.85
-16S	4-1/2	4-1/2	4-1/2	4-1/2	1600	$29.00	$29.50	$29.50	$32.75
-16L	8	8	8	8	1600	$34.50	$28.50	$27.90	$39.90
-22S	4-17/32	4-17/32	4-1/2	4-17/32	2200	$31.75	$27.90	$27.90	$34.65
-22L	8-1/32	8-1/32	8	8-1/32	2200	$39.50	$34.75	$34.50	$43.60
-32S	4-19/32	4-19/32	4-1/2	4-19/32	3200	$33.75	$29.90	$30.25	$38.50
-32L	8-7/64	8-7/64	8	8-7/64	3200	$40.75	$33.50	$34.75	$46.25
-46S	4-21/32	4-21/32	4-1/2	4-21/32	4600	$42.90	$48.50	$49.75	$47.50
-46L	8-5/32	8-5/32	8	8-5/32	4600	$58.25	$53.75	$54.25	$59.00
-61L	8-9/32	8-9/32	8	8-9/32	6100	$102.95	$126.95	$96.75	$114.95
-80L	8-5/16	8-5/16	8	8-5/16	8000	---	---	---	$111.95

***Length measured with threads flush with ends of barrel.**
****Less 10% for 6 or more assemblies, 15% for 12 or more assemblies. May be assorted.**

AP



TURNBUCKLE PARTS DIMENSIONS

The "R" or "L" following the dash number designates "right" or "Left." The "S" or "L" (2nd letter following dash number) indicates "short" or "long." AN 161 Fork and AN 170 Cable Eye are available with either right or left-hand thread.

Dash No.	Thread Size	AN 155 Barrel		AN 161 Fork		AN 165 Pin Eye		AN170 Cable Eye	
		"L"	"B"	"G"	"D"	"J"	"D"	"J"	"A"
-8S	6-40	2-1/4	.250	.109	.188	.125	.188	.125	.188
-16S	10-32	2-1/4	.344	.156	.188	.1625	.188	.188	.219
-16L	10-32	4	.344	.156	.188	.1625	.188	.188	.219
-22S	1/4-28	---	---	.187	.188	.188	.188	.219	.281
-22L	1/4-28	---	---	.187	.188	.188	.188	.219	.281
-32S	1/4-28	2-1/4	.438	.218	.250	.219	.250	.219	.281
-32L	1/4-28	4	.438	.218	.250	.219	.250	.219	.281
-46S	5/16-24	2-1/4	.500	.250	.313	.281	.313	.281	.313
-46L	5/16-24	4	.500	.250	.313	.281	.313	.281	.313
-61L	3/8-24	---	---	.270	.375	.281	.375	.281	.344
-80L	3/8-24	4	.625	.312	.375	.328	.375	.328	.375

TURNBUCKLE PARTS PRICES

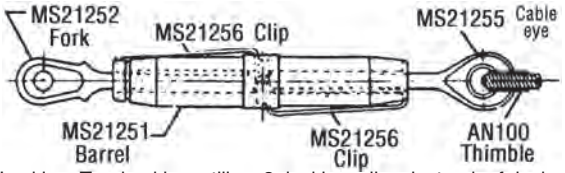
AN155 Dash No.	Barrel Price Each	TURNBUCKLE ENDS Dash No.	Price Each AN 161	AN 165	AN 170
-8S	$9.50	-8RS	$12.50	$11.50	$11.65
-8S	$9.50	-8LS	$12.90	$11.65	$11.75
-16S	$7.75	-16RS	$12.75	$8.75	$8.75
-16S	$7.75	-16LS	$12.65	$8.75	$8.90
-16L	$8.75	-16RL	$16.25	$9.90	$9.85
-16L	$8.75	16LL	$15.50	$10.50	$9.85
		-22RS	$13.50	$9.90	$9.85
		-22LS	$12.75	$9.97	$9.85
		-22RL	$16.75	$11.90	$15.70
		-22LL	$16.75	$12.85	$13.25

AN155 Dash No.	Barrel Price Each	TURNBUCKLE ENDS Dash No.	Price Each AN 161	AN 165	AN 170
-32S	$8.75	-32RS	$14.90	$10.75	$10.75
		-32LS	$15.25	$10.75	$10.75
-32L	$9.85	-32RL	$18.50	$10.85	$12.50
		-32LL	$18.25	$11.75	$12.85
-46S	$10.50	-46RS	$18.75	$19.30	$20.50
		-46LS	$18.90	$17.75	$19.75
-46L	$12.50	-46RL	$24.35	$19.90	---
		-46LL	$22.45	$20.50	$21.75
-61L 6.95	Use -80L	-61RL	$44.00	$68.00	$37.50
		-61LL	$49.80	$32.50	$37.50
-80L	$21.75	-80RL	$45.50	$37.50	---
		-80LL	$46.65	$35.70	---

MEETING OR BEATING ANY COMPETITOR'S PRICES SINCE 1965!

TURNBUCKLES – SAFETY WIRE

MS CLIP-LOCKING TURNBUCKLE ASSEMBLIES



Clip-Locking Turnbuckles utilize 2 locking clips instead of lock-wire for safety. The turnbuckle barrel and terminals are slotted lengthwise to accommodate the locking clips. After the proper cable tension is reached the barrel slots are aligned with the terminal slots and the clips are inserted. The curved ends of the locking clips expand and latch in the vertical slot in the center of the barrel. Build up MS turnbuckle assemblies, similar to the AN assemblies listed on the preceding page, by selecting a turnbuckle barrel, 2 end fittings and 2 clips from the components listed in the Table below. The price of the complete assembly is the sum of the prices shown for the components. Example: An MS turnbuckle assembly for 3/32" dia. cable, with fork end and pin eye consists of:

1 MS21251-B3S Barrel **$8.00**
1 MS21252-3LS Fork End **$12.65**
1 MS21254-3RS Pin Eye End **$9.75**
2 MS21256-1 Clips ..... **$0.28/ea.**

Less 10% for 6 or more complete assemblies.
Less 15% for 12 or more complete assemblies.

Turnbuckle Component	Part No.	Cable Dia.	Thread Size	Min. Breaking Strength(lbs)	Price Each
Barrel (Supercedes AN155)	MS21251-B2S	1/16"	6-40	800	**$7.95**
	-B3S	3/32"	10-32	1600	**$8.00**
	-B5S	5/32"	1/4-28	3200	**$8.96**
	-B5L	5/32"	1/4-28	3200	**$9.90**
Fork End (Supercedes AN161)	MS21252-2RS	1/16"	6-40	800	**$12.85**
	-2LS				**$12.90**
	-3RS	3/32"	10-32	1600	**$12.50**
	-3LS				**$12.65**
	-5RS	1/8", 5/32"	1/4-28	3200	**$14.75**
	-5LS				**$15.50**
Pin Eye End (Supercedes AN165)	MS21254-2RS	1/16"	6-40	800	**$9.50**
	-2LS				**$10.95**
	-3RS	3/32"	10-32	1600	**$9.75**
	-3LS				**$10.00**
	-5RS	1/8", 5/32"	1/4-28	3200	**$10.75**
	-5LS				**$10.90**
Cable Eye (Supercedes AN170)	MS21255-2RS	1/16"	6-40	800	**$11.50**
	-2LS				**$11.50**
	-3RS	3/32"	10-32	1600	**$9.75**
	-3LS				**$9.85**
	-5RS	1/8", 5/32"	1/4-28	3200	**$10.75**
	-5LS				**$10.85**
Cable Swage End (Supercedes AN669)	MS21260-S2RH	1/16"	6-40	480	**$4.60**
	-S2LH				**$4.90**
	-S3RH	3/32"	10-32	920	**$5.45**
	-S3LH				**$5.65**
	-S4RH	1/8"	1/4-28	2000	**$5.98**
	-S4LH				**$5.90**
	-S5RH	5/32"	1/4-28	2800	**$6.25**
	-S5LH				**$6.55**
Clip*-	MS21256-1	- -	- -	- -	**$0.28**
	MS21256-2	- -	- -	- -	**$0.42**

SAFETY WIRE

Available in Type 302/304 stainless steel (soft temper) per MS20995. Also, in soft annealed brass per specification QQ-W-321, Type A.Stainless steel safety wire furnished in convenient 1 lb. dispensing container. Annealed brass safety wire is furnished in a convenient 1 lb. dispensing container.

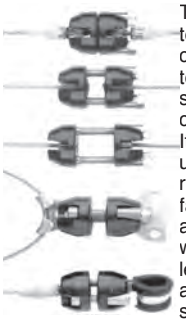
Wire Dia. In.	Wire Type	Part No.	Price Per lb.
.020	Stainless Steel	05-02684	**$9.95**
.025	Stainless Steel	05-06831	**$8.75**
.032	Stainless Steel	05-02685	**$7.95**
.032	Brass	05-02686	**$18.75**
.041	Stainless Steel	05-02687	**$7.95**
.041	Brass	05-06600	**$18.65**

Less 10% on orders for 10 spools, 15% on 25 spools, 20% on 50 spools or more. May be assorted.

25 FT. COIL OF STAINLESS STEEL SAFETY WIRE:

.032" Dia. .....P/N 01-15725 ..... **$1.25**
.041" Dia. .....P/N 01-15825 ..... **$1.25**

ADJUSTABLE CABLE CONNECTOR

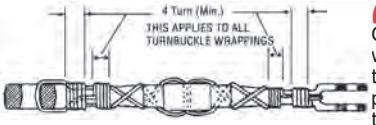


The ACC provides a strong positive connection with tensioning and maximum liner travel in a confined cable installation. Accommodates 3 standard cable terminals, (SA-110 plain ball, MS20664C ball & single shank, and AN111 cable bushing) including combinations of cable-to-cable & cable-to-bracket. It is light & compact without compromising safety. It utilizes an original design of overlapping walls and ridges to enhance the strength of each working surface. The ACC is precisioned CNC machined 7075 anodized aluminum. Stainless Steel Allen screws work in tandem to provide cable tensioning. 2 stainless tube-nuts provide additional structural security and prevent loosening with interlocking threads. 2 stainless steel pins are locked in place between the adjustment screws and provide an anchor for cable bushings or customized brackets. If necessary, longer adjustment screws can be used to accommodate insufficient cable lengths.

Avail. Sizes	Pin Dia.	Part No.	Price
ACC-3 – 1/6", 3/32"	.188	05-01341	**$38.00**
.032	.188	05-01342	**$39.30**
.032	1/4"	05-01343	**$45.80**

SAFETY METHODS FOR TURNBUCKLES

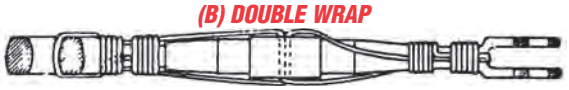
Safety all turnbuckles with .040 dia. annealed safety wire using either the double or single wrap as described and illustrated. Do not reuse safety wire. Adjust the turnbuckle to the correct cable tension so that no more than 3 threads are exposed on either side of the turnbuckle barrel. Do not lubricate turnbuckles.



(A) DOUBLE WRAP (SPIRAL)

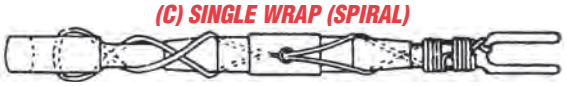
Of the methods using safety wire for safety turnbuckles, the method described here is preferred, although either of the other methods described are satisfactory. The method of double wrap safety is shown in figure (A). Use 2 separate lengths of the proper wire. Run one end of the wire through the hole in the barrel of the turnbuckle and bend the end of the wire towards opposite end of the turnbuckle. Then pass the second length of the wire into the hole in the barrel and bend the ends along the barrel on the opposite side first. Spiral the 2 wires in opposite directions around the barrel to cross each other twice between the center hole and the ends. Then pass the wires at the end of the turnbuckle in opposite directions through the holes in the turnbuckle eyes or between the jaws of the turnbuckle fork as applicable, laying one wire along the barrel and wrapping the other at least four times around shank of the turnbuckle and binding the laid wires in place before cutting the wrapped wire off. Wrap the remaining length of safety wire at least 4 turns around the shank and cut it off. Repeat the procedure at the opposite end of the turnbuckle.

(B) DOUBLE WRAP



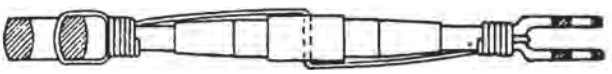
Another satisfactory double wrap method is similar to Method A. except that the spiraling of the wires is omitted as shown in figure (B).

(C) SINGLE WRAP (SPIRAL)



The single wrap methods described and illustrated are acceptable but are not the equal of the double wrap methods.
Pass a single length of wire through the cable eye or fork at either end of the turnbuckle assembly. Spiral each of the wire ends in opposite directions around the first half of the turnbuckle so as to cross each other twice. Thread both wire ends through the hole in the middle of the barrel so that the third crossing of the wire ends is in the hole. Again, spiral the two wire ends in opposite directions around the remaining half of the turnbuckle, crossing them twice. Then, pass one wire end through the cable eye or fork in the manner described above, wrap both wire ends around the shank for at least four turns each, cutting off excess wire.

(D) SINGLE WRAP



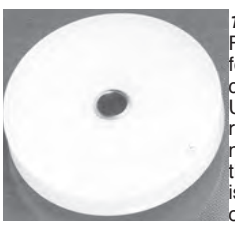
Pass one length of wire through the center hole of the turnbuckle and bend the wire ends toward opposite ends of the turnbuckle. Then pass each wire end through cable eye or fork and wrap each wire end around the shank for at least four times, cutting off excess wire. After safety, no more than 3 threads of the turnbuckle terminal should be exposed.

PULLEYS

PULLEYS

AN210A & AN210B (MS24566)
Anti-Friction Bearing Control Pulley with phenolic body and ball bearing with seal. The AN210A pulleys are dimensionally the same as the "B" pulleys but have metal-shielded bearings rather than removable composition-seal type bearings. The low allowable design load of the -3A and -3B pulleys-is based on cable fatigue. AN210-1A, AN210-3A, AN210-1B and AN210-3B shall not be installed on frequently used aircraft controls to bend the cable more than 15° from a straight line.
MS20220 (AN220) Flight Control Pulley with phenolic body and ball bearing with seal. Also available with aluminum body (MS20220A). The low allowable load limit of the -1 pulley is based on cable fatigue. When used on frequently used aircraft controls the cable wrap angle should not be more than 15° from a straight line.
MS20219 (AN219) Aircraft Secondary Control Pulley with phenolic body and ball bearing with seal. MS20219A (AN219A) Pulley with anodized aluminum body and ball bearing with seal. The aluminum body is recommended for -1 and -3 pulleys. The -1 pulley shall not be installed in flight control systems.
Examples of Part No.: Phenolic Body - MS20219-1
Aluminum Body - MS20219A1
NAS383 Series Pulley with phenolic body and graphite impregnated bronze sleeve. This is a low cost pulley widely used in aircraft, winches, cranes and remote mechanical actuation devices.
A-223 and A-224 Pulleys with plain phenolic bore are used as guide and secondary control pulleys in production aircraft.
BB-128-1 and BB-120-1 Pulleys have high pressure phenolic bodies and ball bearings with Teflon seals. Used in Christavia and many other aircraft.

SPECIAL PULLEYS



1-1/2 Inch Pulley
For smooth control operation. Manufactured for aircraft float rudder operation, the pulleys can be used in virtually any application. Solid UHMW plastic for use in tough, caustic environments. Bushing insert is stainless steel with minimum lubrication required. Used with 1/16" thru 1/8" - 7x7 or 7x19 control cable. Bushing is clamped in pulley bracket. Pulley rotates on bushing. Pulley: 1-1/2" dia. x .283" wide. Bushing: 1/4" O.D. x 3/16" I.D. x .328" long. Weight: .26 oz. (including stainless bushing). P/N 05-29725..... **$5.25 ea.**
2 Inch Pulley
Larger cables, bigger job? Wherever you need a tough, durable pulley, look no further.Replace your old worn out, sticky pulleys with NAP UHMW plastic for smooth control operation. Used with 3/32" thru 3/16" - 7x7 or 7x19 control cable. Bushing insert is stainless steel with minimum lubrication required. Bushing is clamped in pulley bracket. Pulley rotates on bushing. Fits DeHavilland Beaver floats Pulley: 2" dia. x .470" wide. Bushing: 5/16" O.D. x 1/4" I.D. x .487" long. Weight: .58 oz. (including stainless bushing). P/N 05-29730..... **$11.65 ea.**

PIPER PULLEYS

Fig.	Ref. #	Description	O.D.	I.D.	Part No.	Price
1	41171-000	Pulley, trimcrank with bushing (fiber)	2 3/4"	3/8"	05-02636	$52.50
1a	40991-000	Pulley (no slot)	2 3/4"	3/8"	05-02637	$13.50
2	41001-008	Pulley w/ bearing (fiber)(41001-010)	2 3/4"	5/16"	05-02638	$32.75
3	80421-000	Pulley (fiber)	1 3/4"	1/4"	05-02639	$8.75
4	481-609	Pulley (fiber)	1 1/2"	1/4"	05-02640	$7.90
5	11200-000	Pulley (fiber)	1 1/8"	1/4"	05-02641	$11.25
6	43001-000	Pulley (fiber)	1"	1/4"	05-02642	$13.75
7	43061-000	Pulley, Stablizer screw (aluminum)	2 3/4"	3/8"	05-02643	$84.75
8	12983-000	Pulley, double groove (aluminum)	2 3/4"	3/8"	05-02644	$46.85
9	10080-000	Pulley, trimcrank (aluminum)	2 3/4"	3/8"	05-02645	$104.95
10	11008-000	Pulley, adj. screw(alum.) single groove	4"	3/8"	05-02646	$118.85
11	12982-000	Pulley, adj. screw (alum.) dbl. groove	4"	3/8"	05-02647	$93.50

AIRCRAFT PULLEY OIL

Save the labor of re-oiling the control system every year! Aircraft pulley oil prevents pulley drag and stickiness.
Pully Oil Pint..... P/N 05-04178..... **$24.50**
Pully Oil Kit - Includes: 1 Pint of Pulley Oil, 1 Needle, 1 Each 4.5" Extension, and 1 Each 8" Extension
P/N 05-04179..... **$33.75**
Pully Oiler Kit - Includes: 1 Needle oiler with oil, 1 each 4.5" extension & 1 each 8" extension
P/N 05-04180..... **$12.90**

ALUMINUM PULLEYS

Dimensions of these aluminum pulleys are same as equivalent size of MS20219 and MS20220 Phenolic Pulleys in table.

Part No	Cable Size (in).	OD	Groove Dia	Hub Dia.	Bore Dia.	Width	Price ea
MS20219A1	1/16, 3/32	1.312	1.00	.423	.2500	.438	$21.85
MS20219A3	1/16, 3/32	1.750	1.438	.769	.6250	.438	$47.50
MS20220A1	1/8, 5/32, 3/16	1.755	1.255	.475	.3125	.625	$28.50
MS20220A2	1/8, 5/32, 3/16	3.005	2.505	.115	.3125	.625	$37.50
MS20220A3	1/8, 5/32, 3/16	4.255	3.755	.115	.3125	.625	$53.80
MS20220A4	1/8, 5/32, 3/16	5.505	5.005	.115	.3125	.625	$62.25

PHENOLIC PULLEYS

Part Number	Cable Size (In.)	OD	Groove Dia	Hub Dia.	Bore Dia.	Width	Load Limit (Lbs.)	Price Each
MS24566-1B	1/16,5/64,3/32	1.250	.972	.625	.1900	.297	300	$18.75
MS24566-2B	1/16,5/64,3/32	2.500	2.222	.777	.1900	.297	500	$22.00
MS24566-3B	1/8,5/32,3/16	2.000	1.510	.901	.2500	.484	600	$17.50
MS24566-4B	1/8,5/32,3/16	3.500	3.010	.901	.2500	.484	1200	$22.50
MS20219-1	1/16, 3/32	1.312	1.000	.423	.2500	.438	480	$21.50
MS20219-2	1/16,3/32	1.750	1.438	.423	.2500	.438	480	$19.50
MS20219-3	1/16, 3/32	1.750	1.438	.769	.6250	.438	480	$35.75
MS20219-4	1/16, 3/32	2.625	2.312	.423	.2500	.438	920	$18.50
MS20220-1	1/8,5/32,3/16	1.755	1.255	.475	.3125	.625	500	$19.90
MS20220-2	1/8,5/32,3/16	3.005	2.505	.475	.3125	.625	1680	$26.50
MS20220-3	1/8,5/32,3/16	4.255	3.755	.475	.3125	.625	2500	$28.50
MS20220-4	1/8,5/32,3/16	5.505	5.005	.475	.3125	.625	2500	$40.50
A-223	1/16,3/32,1/8	1.000	.688	---	.2500	.281	---	$7.25
A-224	1/16,3/32,1/8	1.750	1.375	---	.2500	.250	---	$6.97
A-138 (NAS)	1/16,3/32,1/8	1.250	.875	---	.2500	.265	---	$6.25
A-123 (NAS)	1/16,3/32,	2.000	1.500	---	.2500	.265	---	$10.50
A-124 (NAS)	1/16, 3/32	2.500	2.000	---	.2500	.265	---	$9.90
A-130 (NAS)	1/8, 5/32	2.000	1.375	---	.3750	.438	---	$7.95
A-120 (NAS)	5/32, 3/16	3.000	2.375	---	.3750	.438	---	$12.50
BB-128	3/16	2.500	1.875	---	.2500	.440	---	$21.85
BB-120	3/16	3.000	2.375	---	.2500	.440	---	$24.80

MCS378 SERIES PULLEYS FOR CESSNAS

MCS378-1

MCS378-2

MCS378-3

MCS378-4

MCS378-5

Aircraft Spruce stocks all pulleys required for Cessna single engine aircraft. Our MCS378 series pulleys replace the AN, NAS and S378 series pulleys commonly used on the Cessna aircraft. Pulley kits are available that contain all of the pulleys and cotter pins required for one aircraft.
Approved Replacements for Cessna Pulleys -Cessna Model/Series
120,140,140A,150,A150,A-A150,F150,FA150,FRA150,152,A152,F152,FA152,170,172,F172,FR172,172RG,FP172,P172,R172,175,177,177RG,F177RG,180,182,A182,F182,FR182,R182, TR182,T182,185,A185,188,A188, A A188,T188,205,206,P206,TU206,T206, TP206,U206,207,T207,208,210, P210, T210, T303, 310, T310, 320, 335, 336, 337, F337, P337, FP-337, T337, O-2, 340,401,402,404,411,414,421,425,441,500,501
*Replaces the listed Cessna part numbers in the specific aircraft illustrated parts catalogs. Installer must verify applicability prior to installation.

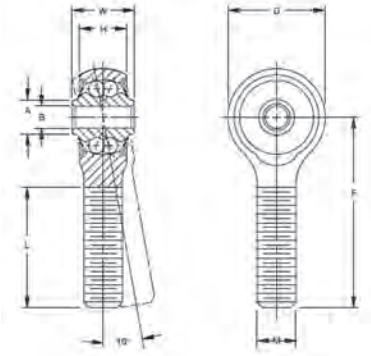
Model No.*	Replaces Cessna Part No.*	Part No.	Price
MCS378-1	S378-1 and S378-1L	05-03422	$23.50
MCS378-2	S378-2, A124, AN210-2B and NAS383-2	05-03423	$35.50
MCS378-3	S378-3, S378-3L, A130, AN210-3B, BB-208 and NAS383-3	05-03424	$26.75
MCS378-4	S378-4, A114, AN210-4B and NAS383-4	05-03425	$35.75
S378-5	S378-5	05-03426	$84.00

AP

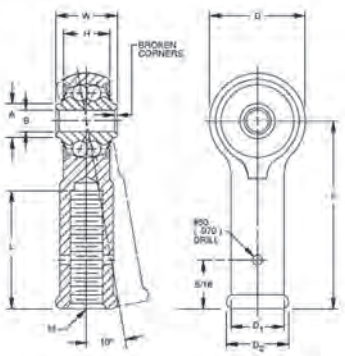
BEARINGS

AP

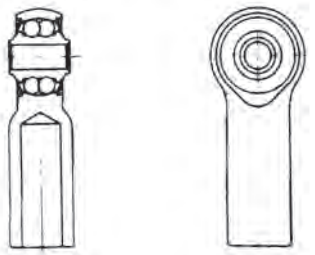
AN 946 MS 21151
MALE THREADED SHANK



AN 951 MS 21153
FEMALE THREADED SHANK



AN948 HOLLOW SHANK MS21152
SOLID SHANK MS21150



Bearing No.	MS Dash No.	B Bore +.0000 -.0005 In.	D Outside Diam. +.010 -.010 In.	W Width Inner Ring +.000 -.010 In.	H Width Outter Ring +.010 -.010 In.	A Shoulder Diam. Inner Ring (Approx.) In.	F Bore Center to end of Shank +.010 -.010 In.	G Overall Dimension +.010 -.010 In.	L Thread Length of Shank Hole Depth In.	J Bead or Hex Diam. Across Flats In.	K Shank Diam. +.010 -.010 In.	M Thread Or Drill Size Inches Size	M Thread Or Drill Size Inches Pitch Diam.	Balls No.	Balls Size	Lbs. Approx.	Weight Type Seal	Price Each
MALE THREAD - MS 21151																		
Precision series. Double row, ball, self-aligning. 10° permissible misalignment in either direction. These bearings are manufactured with an internal play of .0004 in. (.010mm) max. Inner and outer raceway surface finish = 8 micro in. AA max. Equipped with PTFE seals. Exposed surfaces except bore, cap, and seals arecadmium plated. Outer shank – 90,000 psi min. tensile strength. Prelubricated (refer to nomenclature page)																		
												10-32	.1697	20	1/8"	.04	Solid Seal	**$57.75**
RE3ML3	-1	.1900	.781	.437	.328	.281	1.375	1.766	.750			LH	.1667					
												10-32	.1697					
RE3MR3	-2	.1900	.781	.437	.328	.281	1.375	1.766	.750			RH	.1667	20	1/8"	.04	Solid Seal	**$55.75**
												3/8"-24	.3479					
RE3M6A	-3	.1900	.969	.500	.407	.304	2.031	2.516	1.313			RH	.3449	24	1/8"	.05	Solid Seal	**$82.50**
												3/8"-24	.3479					
RE3M6-2N	-4	.1900	.781	.437	.328	.281	1.375	1.766	.750			RH	.3449	20	1/8"	.05	Solid Seal	**$48.65**
												3/8"-24	.3479					
REP4M6	-8	.2500	.938	.593	.438	.345	1.875	2.344	1.125			RH	.3449	22	5/32"	.07	Plyo-Seal	**$49.65**
												3/8"-24	.3479					
REP4ML6	-9	.2500	.938	.593	.438	.345	1.875	2.344	1.125			LH	.3449	22	5/32"	.07	Plyo-Seal	**$61.75**
REP5M6	-10											3/8"-24	.4050					**$66.25**
RE5M10												5/8"-18	.5889				Solid Seal	
FEMALE THREAD - MS 21153																		
Precision series. Double row, ball, self-aligning. 10° permissible misalignment in either direction. These bearings are manufactured with an internal play of .0004 in. (.010mm) max. Inner and outer raceway surface finish = 8 micro in. AA max. Equipped with PTFE seals. Exposed surfaces except bore, cap, and seals arecadmium plated. Outer shank – 90,000 psi min. tensile strength. Prelubricated (refer to nomenclature page)																		
												1/4"-28	.2298					
REPB3N*	-1	.1900	.781	.437	.328	.281	1.375	1.766	.750	.438	.375	RH	.2268	20	1/8"	.05	Plyo-Seal	**$62.75**
												5/16"-24	.2884					
REPB3N2***	-2	.1900	.781	.437	.328	.281	1.375	1.766	.750	.438	.438	RH	.2854	20	1/8"	.06	Plyo-Seal	**$55.75**
RE3F4	-3	.1900	.781	.500	.328	.281	1.375	1.766	.750	.438	.375	RH	.2268	20	1/8"	.06	Solid Seal	**$62.50**
												1/4"-28	.2884					
REP4F5	-6	.2500	.938	.593	.438	.345	1.469	1.938	.750	.438	.438	RH	.2854	22	5/32"	.07	Plyo-Seal	**$53.95**
HOLLOW SHANK - MS 21152																		
REP3H5**	-1	.1900	.781	.437	.328	.281	1.375	1.766	.875		.435		.272	20	1/8"	.06	Plyo-Seal	**$63.70**
RE4H6																	Solid Seal	**$66.50**
REP4H6	-2	.2500	.938	.593	.438	.345	1.875	2.344	1.219		.625		.386	22	5/32"	.12	Plyo-Seal	**$66.50**
REP4H8	-3	.2500	.938	.593	.438	.345	1.625	2.093	.875		.625	33/64	.515	22	5/32"	.08	Plyo-Seal	---
SOLID SHANK MS21150																		
REP4S10	-2	.2500	.938	.593	.438	.345	1.875	2.344			.625		SOLID	22	5/32"	.16	Plyo-Seal	**$61.65**

***Dimensionally Same as Heim F34-14**
****Dimensionally Same as Heim F31-14**
*****Dimensionally Same as Heim F35-14**

Bearings with the letter "P" in part number are new manufacture, with Plyoseals.
Bearings without the letter "P" in part number are new surplus, with solid metal seals.

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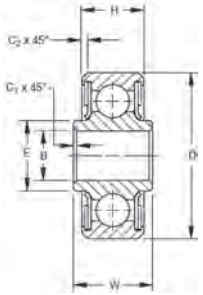
KP SERIES—AN200 / MS27640

Single row, ball, heavy duty. PTFE seals and CRES sealcaps. Exposed surfaces except bore, caps, and seals are cadmium plated. Prelubricated for life. Also offered with CRES 440C material and/or zinc nickel plating per OEM specifications

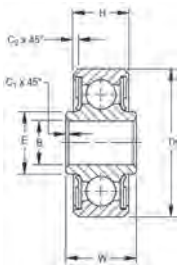


FAFNIR ANDMS AFBMA Bearing No.	Bore 27640	B Dia + .0000 - .0005 (in.)	D Outside Inner Ring +.0000 -.0005 (in.)	W Width Outer Ring +.000 -.005 (in.)	H Width Inner +.000 - .005 (in.)	A Shoulder Width Bore Ring (Approx.) (in.)	E Corner Chamfer x 45° Inner Ring O. D. + .015 - .000 (in.)	C Corner Chamfer x 45° Outer Ring +.015 - .000 (in.)	Balls No.	Balls Size	Pure Moment Rating Inch	Moment Constant 1 Lbs.	Weight Pounds Inch (Approx.)	Price Each
KP3L*	-3A	.1900	.6250	.245	.203	.280	.005	.010	10	5/32"	51.8	12.08	.01	**$16.60**
KP3	-3	.1900	.7774	.297	.270	.331	.005	.022	12	5/32"	93.7	10.13	.03	**$17.75**
KP4	-4	.2500	.9014	.484	.335	.390	.005	.032	11	1/4"	130	8.84	.04	**$15.75**
KP5	-5	.3125	1.2500	.558	.375	.469	.015	.032	9	5/16"	335	6.77	.09	**$21.50**
KP6	-6	.3750	1.4375	.620	.469	.591	.015	.032	10	11/32"	580	5.44	.15	**$24.25**
KP8	-8	.5000	1.6875	.620	.500	.768	.015	.044	10	11/32"	1060	4.46	.21	**$31.95**

**** Stainless steel shield (for "Plya-Seals" use KP3A which has same bore and O.D.) Equiv. Thrust Load = Thrust + .8 Radial Load + Moment Constant x Moment in Inch Lbs.***

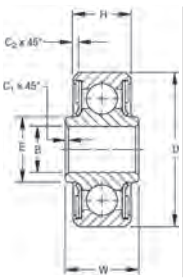
KP-A SERIES—AN201 / MS27641

Single row, ball, deep groove, medium duty. PTFE seals and CRES sealcaps. Exposed surfaces except bore, caps, and seals are cadmium plated. Prelubricated for life. Also offered with CRES 440C material and/or zinc nickel plating per OEM specifications



FAFNIR AND MS AFBMA Bearing No.	Bore 27641	B Dia + .0000 - .0005 (in.)	D Outside Inner Ring +.0000 -.0005 (in.)	W Width Outer Ring +.000 -.005 (in.)	H Width Inner +.000 - .005 (in.)	A Shoulder Dia. Bore Ring (Approx.) (in.)	E Corner Chamfer x 45° Inner Ring O. D. +.015 -.000 (in.)	C Corner Chamfer x 45° Outer Ring +.015 -.000 (in.)	Balls No.	Balls Size	Max Static Non-Brinell Rating Radial Lbs.	Max Static Non-Brinell Rating Thrust Lbs.	Pure Moment Rating Inch-Lbs.	Moment Constant 1 Inch	Weight Pounds (Approx.)	Price Each
KP3A	3	.1900	.6250	.297	.234	.297	.005	.016	10	1/8"	800	600	51.8	12.08	.01	**$12.90**
KP4A	4	.2500	.7500	.281	.219	.380	.005	.016	12	1/8"	1100	900	73.8	10.17	.02	**$12.75**
KP5A	5	.3125	.8125	.297	.234	.415	.015	.016	14	1/8"	1300	1000	100	8.76	.02	**$14.95**
KP6A	6	.3750	.8750	.313	.250	.495	.015	.016	16	1/8"	1400	1100	130	7.68	.03	**$13.95**
KP8A	8	.5000	1.1250	.375	.313	.616	.015	.016	16	5/32"	2200	1700	250	6.14	.05	**$16.70**
EW1/2	NORMA	.5040	.9690	.250	.250										.03	----

KS SERIES— MS27645

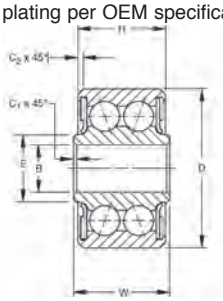


FAFNIR AND MS AFBMA Bearing No.	Bore 27645	B Diameter + .0000 - .0005 (in.)	D Outside Inner Ring +.0000 -.0005 (in.)	W Width Outer Ring +.000 -.005 (in.)	H Width Inner +.000 - .005 (in.)	A Shoulder Width Bore Ring (Approx.) (in.)	E Corner Chamfer x 45° Inner Ring O.D. +.015 -.000 (in.)	C Corner Chamfer x 45° Outer Ring +.015 -.000 (in.)	F (Approx.)	Balls No.	Balls Size	Maximum Static Rating Radial Lbs.	Maximum Static Rating Thrust Lbs.	Weight Pounds (Approx.)	Price Each
KSP3L	3A	.1900	.6250	.245	.203	.257	.005	.016		13	3/32"	400	100	.01	**$15.95**
KSP3	3	.1900	.7774	.297	.270	.342	.005	.022	.275	12	1/8"	800	200	.03	**$18.95**
KSP4	4	.2500	.9014	.484	.335	.400	.005	.032	.408	12	5/32"	1100	300	.04	**$21.70**
KSP5	5	.3125	1.2500	.558	.375	.562	.015	.032	.408	13	3/16"	1400	300	.10	**$22.95**
*KS6A	6A	.3750	.8750	.313	.250	.475	.016	.016	.277	15	1/8"	1000	200	.03	**$23.25**

**** NOTE: These bearings are self-aligning for 10° in either direction except for KS6A (not AN200) which is self-aligning for 8° in either direction.***

DP SERIES—AN207 / MS27644

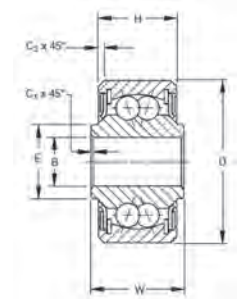
Double row, ball, light and heavy duty. PTFE seals and CRES sealcaps. Exposed surfaces except bore, caps and seals are cadmium plated. Prelubricated for life. For use where high moment rigidity is required, DPP-W series only. Also offered with CRES 440C material and/or zinc nickel plating per OEM specifications



FAFNIR Bearing No.	MS 27644	B Bore +.0000 -.0005 (in.)	D Dia. +.0000 -.005 (in.)	W Outside Inner Ring +.000 -.005 (in.)	H Width Outer Ring +.000 (Approx) (in.)	A Shoulder Width Inner Ring (Approx.) (in.)	E Corner Chamfer x 45° Diameter Bore +.015 -.000 (in.)	C Corner Chamfer x 45° Inner Ring O. D. +.015 -.000 (in.)	Balls No.	Balls Size	Maximum Static Non-Brinell Radial Lbs.	Maximum Static Non-Brinell Thrust Lbs.	Weight Pounds (Approx.)	Price Each
DPP3	-3	.1900	.7774	.495	.473	.302	.005	.02	20	5/32"	2500	1700	.04	**$25.00**
DPP4	-4	.2500	.9014	.620	.491	.410	.005	.032	22	5/32"	3000	1800	.06	**$27.75**
DPP5	-5	.3125	1.2500	.745	.687	.469	.015	.032	20	1/4"	6900	4200	.17	**$43.70**
DPP6	-6	.3750	1.4375	.870	.794	.551	.015	.032	18	5/16"	9700	5800	.26	---
DPP8	-8	.5000	1.6875	.932	.856	.735	.015	.044	20	11/32"	13000	7800	.38	**$71.25**

DSP SERIES—AN206 / MS27643

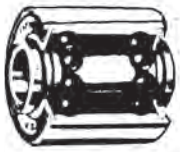
Double row, ball, self-aligning, heavy duty. PTFE seals and CRES sealcaps. Exposed surfaces except bore, caps, and seals are cadmium plated. Prelubricated for life. Also offered with CRES 440C material and/or zinc nickel plating per OEM specifications

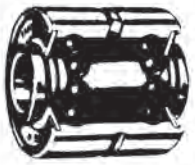


FAFNIR Bearing No.	MS 27643	B Bore +.0000 -.0005 (in.)	D Dia. +.0000 -.005 (in.)	W Outside Inner Ring +.000 -.005 (in.)	H Width Outer Ring +.000 (Approx.) (in.)	A Shoulder Width Inner Ring (Approx.) (in.)	E Corner Chamfer x 45° Dia. Bore +.015 -.000 In.	C Corner Chamfer x 45° Inner Ring O. D. +.015 -.000 In.	Balls No.	Balls Size	Maximum Static Non-Brinell Radial Lbs.	Maximum Static Non-Brinell Thrust Lbs.	Weight Pounds (Approx.)	Price Each
DSP3	-3	.1900	.7774	.500	.392	.304	.005	.022	24	1/8"	1000	200	.04	**$29.95**
DSP4	-4	.2500	.9014	.687	.464	.430	.005	.032	30	1/8"	13000	300	.06	**$32.60**
DSP5	-5	.3125	1.2500	.812	.656	.515	.015	.032	28	3/16"	2600	600	.16	**$32.75**
DSP6	-6	.3750	1.4375	.937	.750	.564	.015	.032	28	7/32"	3600	800	.24	**$79.60**
DSP8	-8	.5000	1.6875	1.000	.812	.775	.015	.044	30	1/4"	5000	1000	.36	**$178.65**

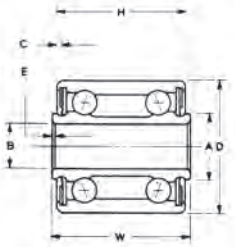
BEARINGS REGREASERS – GREASE FITTINGS

DW SERIES BEARINGS (MS 27647)





- Extra Wide, Double Row, Ball
- Equipped with removable Plya-Seals
- Dimensionally interchangeable with the DW series, the GDW series is lubricatable through holes and a groove in the outer ring.



FAFNIR AND MS AFB MA Bearing No.	Bore 27647	B Diameter +.0000 - .0005 Inches	D Outside Inner Ring +.0000 -.0005 Inches	W Width Outer Ring +.000 -.005 Inches	H Width Inner +.000 - .005 Inches	A Shoulder Width Bore Ring (Approx.) Inches	E Corner Chamfer x 45° Inner Ring O.D. +.015 -.000 Inches	C Corner Chamfer x 45° Outer Ring +.015 - .000 Inches	Balls No.	Balls Size	Pure Moment Rating Inch-Lbs.	Moment Constant 1 Inch	Weight Pounds (Approx.)	Price Each
† DW4K2*	-4A	.2500	.6250	.562	.500	.344	.016	.016	16	3/32"	121	3.49	.025	**$20.75**
DW4K*	-4	.2500	.7500	.875	.750	.435	.005	.016	14	9/64"	365	2.27	.04	**$31.85**
DW5	-5	.3125	.8750	.9375	.8125	.472	.005	.016	26	9/64"	830	1.85	.07	**$33.75**
DW6	-6	.3750	1.0625	1.1875	1.0625	.576	.005	.016	24	3/16"	1830	1.38	.12	**$56.50**
DW8	-8	.5000	1.4375	1.5000	1.3750	.715	.005	.032	22	17/64"	4330	1.07	.29	**$71.25**

EQUIVALENT THRUST LOAD = THRUST + .6 RADIAL LOAD + MOMENT CONSTANT x MOMENT IN INCH-LBS.
Bearing stamped DW4K. †Bearing stamped DW4K2.
These bearings are not to be used as track rollers, cam follower rolls and the like.
**** RETAINER TYPE***

AP

SINGLE ROW, BALL, DOUBLE SEATS

KP3AR11-2

K3L3

K3L2

FAFNIR AND AFBMA Bearing Number	B Bore +.0000 -.0005 Inches	D Outside Diameter +.000 -.002 Inches	W Width InnerRing +.000 -.005 Inches	H Width OuterRing +.000 -.005 Inches	A Shoulder Diameter Inner Ring (Approx.) Inches	E Corner Chamfer x 45° Inner Ring Bore +.015 -.000 Inches	C Corner Outer Ring O.D. Inches	R Radius Outside Diameter Contour	Balls No.	Balls Size	Maximum Safe Working Load Radial Lbs.	Weight Pounds (Approx)	Price Each
K3L3	.1900	.635	.245	.203	.280	.005	.020 Rad.	.550	10	1/8"	200	.01	**$38.75**
								.500					
K3LR48	.1900	.687	.245	.203	.280	.005	.020 Rad.	3.015	11	5/32"	200	.20	---
							.015 Rad.	2.985					
KP4R16	.2500	.901	.484	.335	.390	.005	.005 x 45°	1.000	11	5/32"	400	.04	**$71.75**
							.015 x 45°	1.000					
KP4R16-2	.2500	1.000	.390	.335	.390	.005	.015 x 45°	.990	11	5/32"	500	.06	**$49.90**

The maximum safe working load is that radial load to obtain 100,000 feet peripheral travel life.

ACS BEARING REGREASERS

The ACS bearing regreasers restore bearings, rod ends and pulleys to "like-new" condition. O-ring in base of regreaser provides positive seal when bearing is secured by the threaded center post. Grease, entering under pressure at the grease fitting, is forced to flow through the bearing, flushing out the old grease and dirt, and recharging the bearing with fresh grease. Anodized aluminum construction. Available in five sizes.

Bearing Regreaser Number	Part No.	Bearing Size O.D.	Bearing Size Bore	Price Each
3	10650-3	3/4"	3/16"	**$14.50**
4	10650-4	1"	1/4"	**$17.65**
5	10650-5	1-1/4"	5/16"	**$18.25**
6	10650-6	1-1/2"	3/8"	**$18.75**
8	10650-8	1-1/2"	1/2"	**$25.90**
Complete Set of Five - P/N 12-11500				**$89.50**

GREASE FITTINGS

Surface Check fittings of the MS15000 series have spring-loaded ball check in the tip. Conform to MIL-F-3541.

MS15001-1 MS15001-4 MS15003-5 MS15003-6 AS15002-1P AS15003-5P

MS No.	Thread	Shank Length	Eff. Thread Length	Overall Length	Tip Angle	Price Each
MS15001-1	1/4-28	3/16"	.109	1/2"	0°	**$0.87**
MS15001-4	Taper	3/16"	.109	1/2"	90°	**$1.69**
AS15002-1P	1/4-28	1/8"	.075	17/32"	0°	**$3.80**
AS15003-5P	1/8"-PTF	1/8"	.075	17/32"	0°	**$5.25**
MS15003-5	1/8" Pipe	9/32"	.188	31/32"	65°	**$1.73**
MS15003-6	1/8" Pipe	9/32"	.188	15/16"	90°	**$1.98**

LUBRICAPS

These bright red Lubricaps are made of molded rubber and are used as grease fitting covers. The internal lip holds the cap in place and keeps out dirt, sand, and fluids. M-24529 ***(20% discount for 100/ each)*** P/N 04-01940 .....**$0.48**

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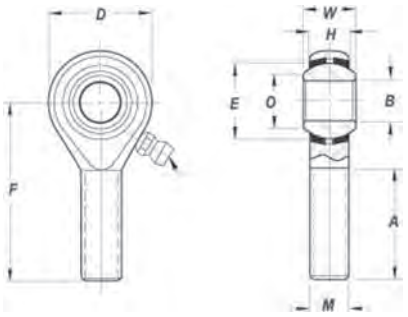
BEARINGS



HEIM ROD ENDS MALE THREADED
M AND HM SERIES

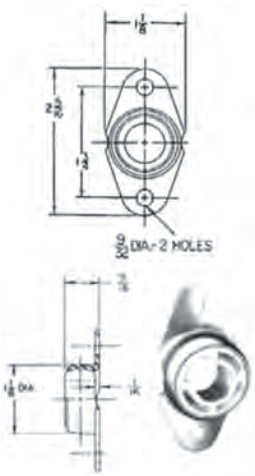
Rod Ends male threaded (HM M Series)
- Outer Member: Aircraft Quality Carbon Steel, Magnetic particle inspected, with protective coating for corrosion resistnce.
- Ball: 52100 Alloy Steel, heat treated, chrome plated.
- Inserts: Brass, 16 size has one piece carbon steel race.

Heim "M" and "MD" series bearings are now manufactured in magnafluxed version only. As old stock is depleted, magnafluxed equivalents will be furnished as substitutes at current (higher) prices unless otherwise requested on the order.

"L" in rod end number designates left hand thread. In this series, the "D" in rod end number (MD35 14) denotes drilled hole in the shank. Add suffix "G" to indicate lubricator is required. Example: HM-SG. Add suffix "FG" lo indicate flush type lubricator is required. Example: M34-14FG. Lubricator (G) (FG) available with minimum qty. required. Please Call for Pricing.

Rod End No.	Equiv. Spherco No.	DIMENSIONS											Max Static Radial Load in Pounds Aprox.	Approx. Weight in Pounds	Price Each
		Bore	ball Width	Housing Width	Ball Flat Diam.	Head Diam.	Length to center of ball	Overall Length	Other Dimensions						
		B	W	H	O	D	F	G	A	N	Ball Diam.	M			
		+.0015 -.0005	+.000 -.005	+.005 -.005		+.010 -.010	+.010 -.010	+.010 -.010	Min	Drill Diam.		Class 3A			
M34-14M	NONE	.1900	.437	.328	.273	.750	1.560	1.935	1.000		33/64	1/4"-28	1,695	.05	**$33.25**
MD35-14	NONE	.1900	.437	.328	.273	.875	1.375	1.812	.750	#33	33/64	5/16"-24	2,184	.07	**$31.20**
MDL35-14										.113		UNF			**$24.20**
MD36-14	NONE	.1900	.437	.328	.273	.750	1.375	1.750	.750	#33	33/64	3/8"-24	2,848	.07	**$102.95**
MDL36-14										.113		UNF			**$41.25**
MD36-16M	NONE	.1900	.500	.375	.321	.812	1.812	2.219	1.062	#29	19/32	3/8"-24	2,769	.08	**$51.95**
MDL36-16										.136		UNF			---
M44-14	NONE	.2500	.437	.304	.354	.812	1.562	1.968	1.000		9/16	1/4"-28	1,695	.06	**$39.95**
ML44-14												UNF			---
MD46-15	NONE	.2500	.484	.335	.395	.875	2.312	2.750	1.500	#29	5/8	3/8"-24	3,151	.10	**$37.70**
MDL46-16										.159		UNF			**$33.00**
HM-2M	NONE	.1250	.250	.187	.187	.469	.937	1.172	.500		5/16	6-32	452	.02	**$54.95**
HML-2M												UNC			**$19.40**
HM-2AM	NONE	.1562	.281	.219	.249	.562	1.125	1.406	.625		3/8	8-32	666	.02	---
HML-2AM												UNC			**$205.95**
HM-3M	TRE-3	.1900	.312	.250	.306	.625	1.250	1.563	.750		7/16	10-32	910	.03	**$27.50**
HML-3M	TREL-3											UNF			**$210.95**
HM-4M	TRE-4	.2500	.375	.281	.355	.750	1.562	1.937	1.000		33/64	1/4"-28	1,695	.05	**$27.85**
HML-4M	TREL-4											UNF			**$41.50**
HM-5M	TRE-5	.3125	.437	.344	.447	.875	1.875	2.312	1.250	#33	5/8	5/16"-24	2,205	.08	**$39.75**
HM-6M	TRE-6	.3750	.500	.406	.517	1.000	1.938	2.438	1.250	#21	23/32	3/8"-24	3,172	.11	**$24.95**
HML-6M	TREL-6									.159		UNF			**$99.85**
HM-7M	TRE-7	.4375	.562	.437	.586	1.125	2.125	2.688	1.375	#21	13/16	7/16"-20	4,633	.16	**$33.40**
HML-7M	TREL-7									.159		UNF			---
HM-8M	TRE-8	.5000	.625	.500	.698	1.312	2.438	3.094	1.500	#3	15/16	1/2"-20	5,876	.24	**$99.65**
HML-8M	TREL-8									.213		UNF			**$28.85**

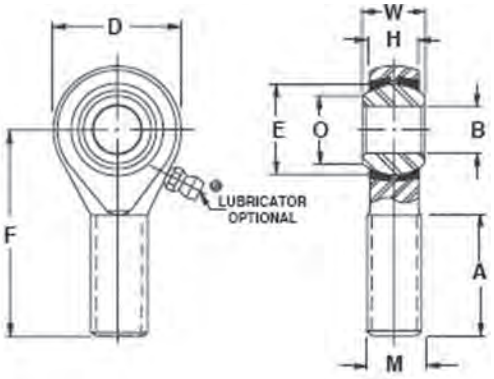
UNF= Universal Fine, UN=Universal Coarse



TRIANGLE MFG. BEARINGS

Manufactured by Triangle Mfg. Co., these bearings are spherical on the outside and are contained in a flanged, stamped metal cage, so they provide sliding, rotating, and pivoting motion. The bearings are available in nylon, bronze, or iron as shown in the table below. The FMN10 is used in the wing roots and on the torque tubes inside the fuselage of the Cozy Mark IV.

Part No.	I.D.	Bearing Material	Price Each	Part No.	I.D.	Bearing Material	Price Each
FMN4	1/4"	Nylon	**$1.26**	FM1508P	1/2"	Iron	**$1.10**
FMN5	5/16"	Nylon	**$1.60**	FM1408P	1/2"	Bronze	**$3.30**
FMN6	3/8"	Nylon	**$0.86**	FMN10	5/8"	Nylon	**$0.82**
FM1406P	3/8"	Bronze	**$3.97**	FM1510P	5/8"	Iron	**$1.67**
FMN7	7/16"	Nylon	**$1.61**	FM1410P	5/8"	Bronze	**$3.35**
FMN8	1/2"	Nylon	**$0.96**	FMN12	3/4"	Nylon	**$0.80**
				FM1512P	3/4"	Iron	**$1.26**



ROD END MALE THREADED

HMX EXTRA CAPACITY SERIES

SPECIFICATIONS:

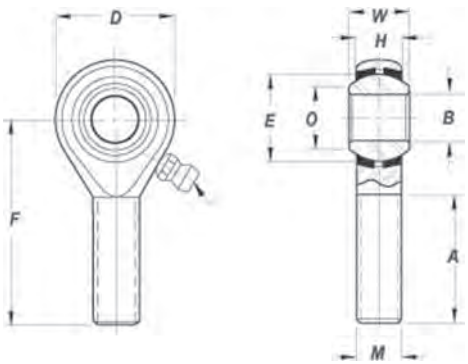
Outer Member: SAE 4130 steel heat treated to 175,000 PSI Cadium Plated.

Ball: SAE 52100 Steel, Heat Treated, Chrome Plated.

Inserts: Aluminum Bronze

"L" in rod end number designates left hand thread.
Add letter 'M' to dash number for magnafluxed rod ends.
This series is equipped with lubricators as shown.
Add suffix "FG" to indicate flush type lubricator is required.
Example: HMX-4FG. Additional costs will apply.
Note: See Pg 150 for Aurora Equivalents to Heim HM & HF Series.

Rod End Number	Equiv Spherco Number	DIMENSIONS											Maximum Static Load in Lbs. approx		Approx. Weight in Lbs.	Price Ea.
		Bore	Ball Width	Housing Width	Ball Flat Dia.	Head Dia.	Length to Cnte of Ball	Over-All Length	Other Dimensions							
		B	W	H	O	D	F	G	A	N		M				
		+.0015 -.0005	+.000 -.005	+.005 -.005		+.010 -.010	+.010 -.010	+.010 -.010	Min.	Drill Dia.	Ball Dia.	Class 3A	Radial	Axial		
HMX-4G	ARE 4-20	.2500	.375	.281	.355	.750	1.560	1.937	1.000	#33	33/64	5/16"-24	3,260	1,710	.06	**$68.85**
HMXL-4G	AREL-20									.113		UNF				**$160.95**
HMX-5G	ARE- 5-20	.3125	.437	.344	.447	.875	1.375	2.312	1.250	#21	5/8	3/8"-24	4,920	2,376	.09	**$39.70**
												UNF				
HMX-6G	ARE 6-20	.3750	.500	.406	.517	1.000	1.375	2.438	1.250	#21	23/32	7/16"-20	7,240	2,946	.13	**$43.50**
HMX-7G	ARE 7-20	.4375	.562	.437	.586	1.125	1.812	2.688	1.375	#21	13/16	1/2"-20	7,620	3,367	.18	**$214.95**
HMXL-7G	AREL 7-20									.159		UNF				**$219.95**
HMX-8G	ARE 8-20	.5000	.625	.500	.698	1.312	1.562	3.094	1.500	#3	15/16	5/8"-18	11,920	4,074	.30	**$43.80**
HMXL-8G	AREL 8-20									.213		UNF				**$35.70**



HME SERIES

SPECIFICATIONS:

Outer Member: Carbon steel-protective coated for corrosion resistance.

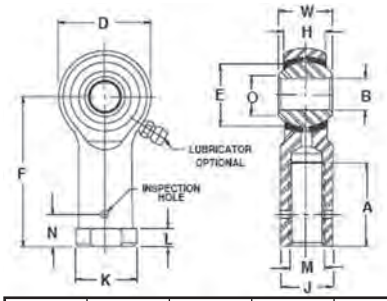
Ball: Carbon steel-heat treated, chrome plated.
Inserts: Aluminum.

Liner: Self lubricating UNIFLON.

"L" in rod end number designates left hand thread.
"R" in part number indicates woven uniflon. Example: HMR-3.
*Uniflon® — The Heim Universal Corporation's trademark for teflon® lined rod ends and spherical bearings.

Part No.	Thread Type	SEE DIAGRAM ABOVE									Price
		B	W	H	D	F	A	Thread Size	E	O	
HME-3M	Right Hand	.1900	.312	.250	.625	1.250	.750	.1900-32	.437	.306	-
HMLE-3M	Left Hand	.1900	.312	.250	.625	1.25	.750	.1900-32	.437	.306	-
HME-4M	Right Hand	.2500	.375	.281	.750	1.562	1.000	.2500-28	.515	.353	**$49.75**
HMLE-4M	Left Hand	.2500	.375	.281	.750	1.562	1.000	.2500-28	.515	.353	-
HME-5M	Right Hand	.3125	.437	.344	.875	1.875	1.250	.3125-24	.625	.447	-
HMLE-5M	Left Hand	.3125	.437	.344	.875	1.875	1.250	.3125-24	.625	.447	**$136.95**
HME-6M	Right Hand	.3750	.500	406	1.000	1.938	1.250	.3750-24	.718	.516	-
HMLE-6M	Left Hand	.3750	.500	406	1.000	1.938	1.250	.3750-24	.718	.516	-
HME-7M	Right Hand	.4375	.562	.437	1.125	2.125	1.375	.4375-20	.812	.586	-
HMLE-7M	Left Hand	.4375	.562	.437	1.125	2.125	1.375	.4375-20	.812	.586	-
HME-8M	Right Hand	.5000	.625	.500	1.312	2.438	1.500	.5000-20	.937	.698	-
HMLE-8M	Left Hand	.5000	.625	.500	1.312	2.438	1.500	.5000-20	.937	.698	-

ROD ENDS FEMALE THREADED (F & HF SERIES)



SPECIFICATIONS:

Outer Member: Aircraft Quality Steel, Cadmium Plated.

Ball: SAE 52100 Steel.

Inserts: Naval Bronze

"L" in rod end number designates left hand thread. Add suffix "G" to indicate lubricator is required. Example: F35-14G. Add suffix "FG" lo indicate flush type lubricator is required. Example: HF-4FG. Add $3.00 to price for lubricator (G) (FG).

Note: Standard Bearings Furnished Without Inspection Hole. If Hole Needed, Add "M" to P/N & At Higher Cost.

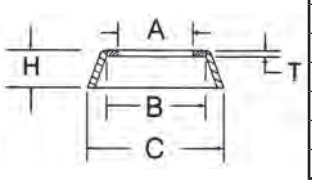
PN	Bore	Ball Width	Housing Width	Head Dia.	Length to ctr. of ball	Thread Length	Thread Size	Ball Diameter	Ball Flat Diameter	Other Dimensions			Max Rad. Load	Wgt.	Price
	B	W	H	D	F	A	M	E	O	K	N	L			
	+.0015 -.0005	+.000 -.005	+.005 -.005	+.010 -.010	+.010 -.010	+.062 -.031	UNF-3B	REF	REF	+.010 -.010	+.020 -.020	+.010 -.010			
FL34-14M	.1900	.437	.328	.750	1.375	.750	.2500-28	.515	.273	.468	.312	.187	2850	.06	**$104.95**
F34-14M	.1900	.437	.328	.750	1.375	.750	.2500-28	.515	.273	.468	.312	.187	2850	.06	**$39.75**
F347-14M	.1900	.437	.328	.750	1.062	.437	.2500-28	.515	.273	.375	-	-	2850	.05	**$38.90**
F34-16M	.1900	.500	.375	.812	1.375	.750	.2500-28	.593	.321	.468	.312	.187	2750	.08	**$76.50**
F35-14M	.1900	.437	.328	.750	1.375	.750	.3125-24	.515	.0273	.500	.406	.187	2850	.07	**---**
FL35-14M	.1900	.437	.328	.750	1.375	.750	.3125-24	.515	.273	.500	.406	.187	2850	.07	**$211.95**
F44-14M	.2500	.437	.304	.812	1.375	.750	.2500-28	.562	.354	.468	.312	.187	2850	.07	**$39.80**
FL44-14M	.2500	.437	.304	.812	1.375	.750	.2500-28	.562	.354	.468	.312	.187	2850	.07	**$48.75**
F45-19M	.250	.593	.438	.938	1.469	.750	.3125-24	.687	.347	.500	.406	.187	3700	.11	**$75.50**
HF-3M	.1900	.312	.250	.625	1.062	.562	.1900-32	.437	.306	.406	-	.187	1850	.03	**$24.80**
HFL-3M	.1900	.312	.250	.625	1.062	.562	.1900-32	.437	.306	.406	-	.187	1850	.03	**$41.75**
HF-4M	.2500	.375	.281	.750	1.312	.750	.2500-28	.515	.353	.468.	-	.187	2700	.05	**$32.75**
HFL-4M	.2500	.375	.281	.750	1.312	.750	.2500-28	.515	.353	.468.	-	.187	2700	.05	**$49.25**
HF-5M	.3125	.437	.344	.875	1.375	.750	.3125-24	.625	.447	.500	-	.187	3350	.08	**$28.60**
HFL-5M	.3125	.437	.344	.875	1.375	.750	.3125-24	.625	.447	.500	-	.187	3350	.08	**$39.75**

F34-14 Dimensionally the same as Fafnir REPB3N. **F35-14 Dimensionally the same as Fafnir REPB3N2

SEALS-IT ROD END SEALS

Protect the spherical bearing of rod ends. This patented design features a neoprene rubber seal bonded directly to an aircraft quality washer. The seal encapsulates the bearing and flexes accordingly with any change in angularity. This provides unprecedented protection from dirt and other types of contamination which may severely shorten the life of these important components.

The rubber is engineered for wide range of temperature variation and is impervious to gasoline, oils, and most other common fluids. The steel washer is plated for protection from corrosion.



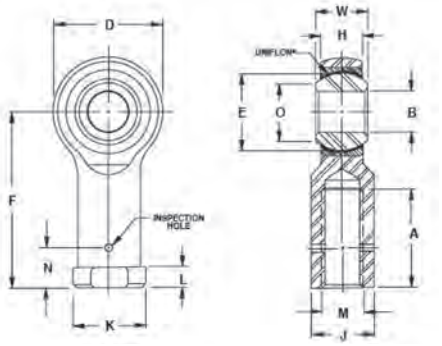
Size	A	B	C	H	T	Part No.	Price
3/16	.200	.326	.442	.096	.020	05-01434	---
1/4	.257	.375	.565	.125	.025	05-2500	**$2.45**
5/16	.325	.450	.710	.200	.047	05-3125	**$2.45**
3/8	.386	.525	.775	.220	.047	05-3750	**$2.45**
7/16	.445	.610	.910	.250	.047	05-4375	**$2.45**
1/2	.515	.710	1.125	.250	.047	05-5001	**$2.45**
5/8	.638	.900	1.250	.250	.047	05-6250	**$3.05**
3/4	.763	1.00	1.375	.375	.047	05-7500	**$3.15**

UNIFLON LINED

HFE M SERIES

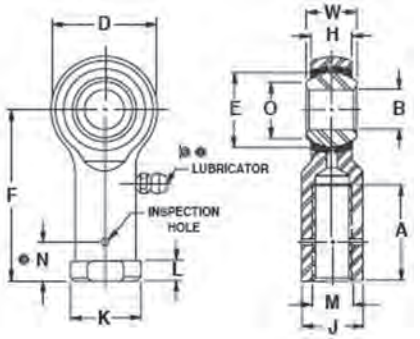
SPECIFICATIONS:
Outer Member: Carbon steel, magnetic particle inspected, with protective coating for corrosion resistance.
Ball: 52100 Alloy steel, heat treated, chrome plated.
Race: Aluminum.
Liner: Self lubricating UNIFLON.

The letter "L" indicates Left Hand thread.



Rod End No.	Dimensions														Max. Static Radial Load (lbs.)	Approx. Wt. (lbs.)	Price Each
	Bore	Ball Width	Housing Width	Ball Flat Dia.	Head Dia.	Length to ctr. of ball	Overall Length	Other Dimensions									
	B	W	H	O	D	F	G	A	K	J	N	L		M			
	+.0015 -.0005	+.000 -.005	+.005 -.005		+.010 -.010	+.010 -.010	+.010 -.010	Min	+.010 -.010	+.010 -.010	+.005 -.005	+.010 -.010	Ball Diam.	Class 3B			
HFE-3M														10-32 UNF			**$57.80**
HFLE-3M	.1900	.312	.250	.306	.625	1.062	1.375	.562	.406	.312	.312	.187	.437		865	.03	**$34.90**
HFE-4M			.											1/4"-28 UNF			**$45.65**
HFLE-4M	.2500	.375	.281	.355	.750	1.312	1.687	.750	.468	.375	.312	.187	.515		1,550	.05	**$99.50**
HFE-5M														5/16"-24 UNF			**$72.85**
HFLE-5M	.3125	.437	.344	.447	.875	1.375	1.812	.750	.500	.437	.406	.187	.625		2,080	.08	**---**
HFE-6M														3/8"-24 UNF			**$108.95**
HFLE-6M	.3750	.500	.406	.517	1.000	1.625	2.125	.937	.687	.562	.469	.250	.718		2,950	.12	**$26.30**
HFE-7M														7/16"-20 UNF			**---**
HFLE-7M	.4375	.562	.437	.586	1.125	1.812	2.375	1.062	.750	.625	.531	.250	.812		3,160	.17	**---**
HFE-8M														1/2"-20 UNF			**$87.75**
HFLE-8M	.5000	.625	.500	.698	1.312	2.125	2.781	1.187	.875	.750	.594	.250	.937		4,925	.26	**---**

ROD ENDS FEMALE THREADED



HFX EXTRA CAPACITY SERIES

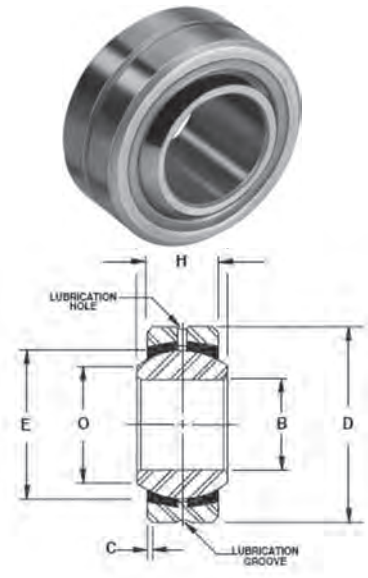
SPECIFICATIONS:
Outer Member: SAE 4130 steel heat treated to 175,000 PSI Cadium Plated.

Ball: SAE 52100 Steel, Heat Treated, Chrome Plated.
Inserts: Aluminum Bronze.
"L" in rod end number indicates left hand thread.
"G" in the rod end number indicates lubricator.
All rod ends in this series are magnafluxed, and are stamped with the letter "M".
This series is equipped with lubricators as shown.
Add suffix "FG" to indicate flush type lubricator is required. Example: HFX-4FG.

Lubricator (G) (FG) available with minimum qty. required. Please call for pricing.

Rod End No.	Dimensions														Max. Static Radial Load (lbs.)		Approx. Weight (Lbs.)	Price Each
	Bore	Ball Width	Housing Width	Ball Flat Dia.	Head Dia.	Length to ctr. of ball	Overall Length	Other Dimensions										
	B	W	H	O	D	F	G	A	K	J	N	L		M				
	+.0015 -.0005	+.000 -.005	+.005 -.005		+.010 -.010	+.010 -.010	+.010 -.010	Min	+.010 -.010	+.010 -.010	+.005 -.005	+.010 -.010	Ball Diam.	Class 3B	w/ lubi-cator	w/o lubri-cator		
HFX-4G	.2500	.375	.281	.355	.750	1.312	1.687	.750	.468	.375	.312	.187	.515	1/4"-28	3,260	6,680	.06	**$34.25**
HFX-5G	.3125	.437	.344	.447	.875	1.375	1.812	.750	.500	.437	.406	.187	5/8	5/16"-24 UNF	4,920	8,410	.08	**$36.31**
HFXL-5G																		**---**
HFXL-6G	.3750	.500	.406	.517	1.000	1.625	2.125	.937	.687	.562	.469	.250	23/32	3/8"-24	7,240	11,160	.14	**---**
													UNF					
HFX-7G	.4375	.562	.437	.586	1.125	1.812	2.375	1.062	.750	.625	.531	.250	13/16	7/16"-20	7,620	13,660	.18	**---**
HFXL-7G														UNF				**$53.00**
HFX-8G	.5000	.625	.500	.698	1.312	2.125	2.781	1.187	.875	.750	.594	.250	15/16	1/2"-20	11,920	19,340	.29	**$49.85**
HFXL-8G														UNC				**---**

Prices Subject to Change Without Notice



SPHERICAL BEARINGS
SERIES LS, LSS, LHA

SPECIFICATIONS:

LS SERIES
Outer Member: Carbon Steel, with protective coating for corrosion resistance on all surfaces exposed after installation.
Ball: SAE 52100 Steel, Heat Treated.
Inserts: Brass.

LSS SERIES
Outer Member: 4130 or 4340 Alloy steel, heat treated, with protective coating for corrosion resistance on all surfaces exposed after installation.
Ball: 52100 Alloy steel, heat treated, chrome plated.
Inserts: Copper alloy

LHA SERIES
Outer Member: 4130 or 4340 Alloy steel, heat treated, with protective coating for corrosion resistance on all surfaces exposed after installation.
Ball: 52100 Alloy steel, heat treated, chrome plated.

AP

Spherical Bearing No.	Dimensions							Max Static Radial load In Pounds Approx.	Approx. Weight in Pounds	Price Each
	Bore	Outside Diam.	Ball Width	Housing Width	Chamfer	Bsll Diameter	Ball Flat Diameter			
	B +.0000 -.0005	D +.0000 -.0005	W +.000 -.005	H +.000 -.005	C +.000 -.005	E REF	O REF			
LS-3	.1900	.6250	.281	.187	.016	.406	.293	2960	.02	**$17.45**
LS-4	.2500	.7500	.375	.281	.016	.515	.354	5245	.04	**$18.65**
LS-5	.3125	.8750	.437	.313	.016	.625	.447	6550	.05	**$29.80**
LS-6	.3750	1.0000	.500	.375	.016	.718	.517	8605	.08	**$27.75**
LS-8	.5000	1.3125	.687	.531	.044	.937	.637	15600	.18	**---**
LSS-2	.1650	.4687	.250	.187	.235	.020	11/32	2,000	.01	**---**
LSS-3	.1900	.5625	.281	.218	.020	.406	.293	2750	.02	**$25.85**
LSS-4	.2500	.6562	.343	.250	.022	.500	.364	4200	.02	**$30.75**
LSS-5	.3125	.7500	.375	.281	.022	.562	.419	5800	.03	**$38.50**
LSS-6	.3750	.8125	.406	.312	.032	.625	.475	7150	.04	**$31.65**
LSS-8	.5000	1.000	.500	.390	.032	.781	.600	11200	.07	**$36.30**
LHA-2	.1650	.4687	.250	.187	.020	.343	.235	4400	.01	**$25.90**
LHA-3	.1900	.5625	.281	.218	.020	.406	.293	6480	.02	**$15.25**
LHA-4	.2500	.6562	.343	.250	.022	.500	.364	10000	.02	**$49.60**
LHA-6	.3750	.8125	.406	.312	.032	.625	.475	18750	.04	**$32.60**
LHA-8	.5000	1.000	.500	.390	.600	.032	25/32	26,900	.07	**---**

The allowable static axial loads are one-fourth of radial loads given above.

LOW PRICE GUARANTEE
WE WILL MATCH ANY COMPETITOR'S CURRENT PRICE.
IF YOU FIND A LOWER PRICE, PLEASE TELL US.

AURORA BEARINGS

AURORA BEARINGS

In 1971 Aurora Bearing Company entered the rod end and spherical bearing market and soon became a major force in the rod end industry. Over the years, Aurora Bearing has retained its original business philosophy of furnishing a quality product at competitive prices and with service much faster than the competition. Aurora offers a complete line of standard and spherical bearings. In addition, special bearings can be designed and manufactured on request. Listed below are many of the most popular Heim bearing part numbers and the equivalent Aurora Bearing part number. On many of these items, the Aurora bearing offers substantial savings and faster delivery time. Unlisted Aurora bearings, quantity discounts and complete Aurora Bearing Company brochure available on request.

SPECIFICATIONS:

Body - Low carbon steel, cadmium or zinc plated at manufacturer's option, dichromate treated. No. 16 series standard body is 4130 steel, not heat treated.
Race - Low carbon steel, cadmium or zinc plated (manufacturer's option), chromate treated.
Ball - Allow steel, heat treated, hard chrome plated.

The above specifications apply to most but not all Aurora bearings.

Note: Bearings not furnished standard with grease fittings are available with grease fittings. Add suffix "Z" and $2.10 to price.
Note: There is a $25.00 certificate fee applied to any Aurora Bearing order under $250.00.

AP

AURORA EQUIVALENTS TO HEIM HM & HF SERIES

MALE		
Aurora P/N	Heim P/N	Price Each
MM-2	HM-2	$6.50
MB-2	HML-2	$6.40
MM-3	HM-3	$5.95
MB-3	HML-3	$6.25
MM-4	HM-4	$6.50
MB-4	HML-4	$6.50
MM-5	HM-5	$7.25
MB-5	HML-5	$7.50
MM-6	HM-6	$7.95
MB-6	HML-6	$8.25
MM-7	HM-7	$9.95
MB-7	HML-7	$9.95
MM-8	HM-8	$12.75
MB-8	HML-8	$12.95

FEMALE		
Aurora P/N	Heim P/N	Price Each
MW-2	HF-2	$5.95
MG-2	HFL-2	$5.90
MW-3	HF-3	$5.75
MG-3	-----	$6.25
MW-4	HF-4	$6.45
MG-4	HFL-4	$5.95
MW-5	HF-5	$6.75
MG-5	HFL-5	$6.75
MW-6	HF-6	$7.75
MG-6	HFL-6	$7.85
MW-7	HF-7	$9.50
MG-7	HFL-7	$9.20
MW-8	HF-8	$12.75
MG-8	HFL-8	$12.00

AURORA EQUIVALENTS TO HEIM HMX & HFX SERIES

MALE		
Aurora P/N	Heim P/N	Price Each
XAM-4Z	HMX-4G	$15.50
XAB-4Z	HMXL-4G	$15.75
XAM-5Z	HMX-5G	$17.75
XAB-5Z	-----	$15.70
XAM-6Z	HMX-6G	$21.75
XAB-6Z	HMXL-6G	$21.85
XAM-7Z	HMX-7G	$26.50
XAB-7Z	HMXL-7G	$23.10
XAM-8Z	HMX-8G	$33.50
XAB-8Z	HMXL-8G	$27.54

FEMALE		
Aurora P/N	Heim P/N	Price Each
AW-4Z	HFX-4G	$15.50
AG-4Z	HFXL-4G	$14.60
AW-5Z	HFX-5G	$15.75
AG-5Z	HFXL-5G	$15.00
AW-6Z	-----	$16.95
AG-6Z	HFXL-6G	$15.50
AW-7Z	HFX-7G	$21.70
AG-7Z	HFXL-7G	$21.90
AW-8Z	HFX-8G	$26.85
AG-8Z	HFXL-8G	$26.50

AURORA EQUIVALENTS TO HEIM HMR & HFR SERIES

MALE		
Aurora P/N	Heim P/N	Price Each
MM-3T	HMR-3	$9.75
MB-3T	HMRL-3	$9.75
MM-4T	HMR-4	$9.95
MB-4T	HMRL-4	$10.25
MM-5T	HMR-5	$10.95
MB-5T	HMRL-5	$10.95
MM-6T	HMR-6	$11.75
MB-6T	HMRL-6	$11.95
MM-7T	HMR-7	$12.90
MB-7T	HMRL-7	$11.60
MM-8T	HMR-8	$16.50
MB-8T	HMRL-8	$16.75

FEMALE		
Aurora P/N	Heim P/N	Price Each
MW-3T	HFR-3	$9.50
MG-3T	HFRL-3	$8.00
MW-4T	HFR-4	$9.75
MG-4T	HFRL-4	$8.90
MW-5T	HFR-5	$9.95
MW-6T	HFR-6	$11.50
MG-6T	HFRL-6	$11.10
MW-7T	HFR-7	$11.23
MG-7T	HFRL-7	$9.38
MW-8T	HFR-8	$16.50
MG-8T	HFRL-8	$14.70

Refer to HEIM Bearing Chart On Previous Pages for Dimensions on Aurora Bearings.

AIRCRAFT SPRUCE WEST CORONA, CA • (877) 4-SPRUCE
AIRCRAFT SPRUCE EAST PEACHTREE CITY, GA • (877) 477-7823

Prices Subject to Change Without Notice

AURORA BEARINGS

AURORA EQUIVALENTS TO HEIM M, ML, MD, F, & FL SERIES

MALE			FEMALE		
Aurora P/N	Aurora Price	Heim P/N	Aurora P/N	Aurora Price	Heim P/N
GMM-3M-470	**$10.50**	M34-14M	GMW-3M-470	**$13.75**	F34-14M
GMB-3M-470	**$11.95**	ML34-14M	GMG-3M-470	**$25.50**	FL34-14M
GMM-3M-570	**$12.50**	MD35-14M	GMW-3M-471	**$20.85**	F347-14M
GMB-3M-570	**$27.70**	MDL35-14M	GMG-3M-471	**$32.10**	FL347-14M
GMM-3M-670	**$13.50**	MD36-14M	GMW-3M-480	**$18.50**	F34-16M
GMB-3M-670	**$21.25**	MDL36-14M	GMG-3M-480	---	FL35-14M
GMM-3M-680	**$13.50**	MD36-16M	GMW-4M-470	**$24.80**	F44-14M
GMB-3M-680	**$28.30**	MDL36-16M	GMG-4M-470	---	FL44-14M
GMM-4M-470	**$15.75**	M44-14M	GMW-4M-595	**$15.75**	F45-19M
GMB-4M-470	**$32.25**	ML44-14M			
GMM-4M-675	**$18.25**	MD46-15M			
GMM-4M-680	**$39.75**	MD46-16M			
GMB-4M-680	**$61.75**	MDL46-16M			

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AURORA EQUIVALENTS TO HEIM HFE & HME SERIES

MALE			FEMALE		
Aurora P/N	Heim P/N	Aurora Price	Aurora P/N	Heim P/N	Aurora Price
MW-3TM-125	HFE-3	**$54.75**	MM-3TM-125	HME-3	**$55.00**
MG-3TM-125	HFLE-3	**$55.00**	MB-3TM-125	HMLE-3	**$55.25**
MW-4TM-125	HFE-4	**$56.00**	MM-4TM-125	HME-4	**$56.25**
MG-4TM-125	HFEL-4	**$56.25**	MB-4TM-125	HMLE-4	**$95.75**
MW-5TM-125	HFE-5	**$58.50**	MM-5TM-125	HME-5	**$64.75**
MG-5TM-125	HFLE-5	**$155.95**	MB-5TM-125	HMLE-5	**$59.50**

AURORA EQUIVALENTS TO HEIM LS, LHA, & LSS SERIES

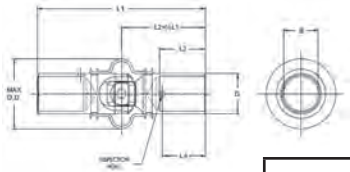
LCOM Series Large Size Spherical Bearings			COM Series Spherical Bearings			COM-KH Series Spherical Bearings		
Aurora P/N	Heim P/N	Price	Aurora P/N	Heim P/N	Price	Aurora P/N	Heim P/N	Price
LCOM-3	LS-3	**$21.25**	COM-3	LSS-3	**$8.25**	COM-3KH	LHA-3	---
LCOM-4	LS-4	**$14.95**	COM-5	LSS-5	**$8.75**	COM-4KH	LHA-4	**$11.35**
LCOM-5	LS-5	**$31.75**	COM-6	LSS-6	**$8.95**	COM-5KH	LHA-5	**$13.95**
LCOM-6	LS-6	**$21.50**	COM-7	LSS-7	---	COM-6KH	LHA-6	**$11.50**
LCOM-7	LS-7	**$39.75**	COM-9	LSS-9	**$9.50**	COM-7KH	LHA-7	**$22.75**
LCOM-8	LS-8	**$26.25**	COM-14	LSS-14	**$19.65**	COM-8KH	LHA-8	**$14.50**
			COM-16	LSS-16	**$23.25**	COM-9KH	LHA-9	**$14.70**
						COM-10KH	LHA-10	**$17.90**
						COM-12KH	LHA-12	**$26.95**
						COM-14KH	LHA-14	**$46.20**
						COM-16KH	LHA-16	**$51.50**

AURORA CM-S & CB-S MALE ROD ENDS WITH STUDS

Rod End no.		Dimension in inches									
Right Hand	Left Hand	H Ref.	A ± .015	D Ref.	C +.062 −.031	L ± .015	N ± .010	M Ref.	Thread UNF-3A	a° Misalign Angle	Price Each
CM-3S*	CB-3S*	.234	1.250	.625	.750	1.000	.500	.437	10-32	50	**$5.75**
CM-4S*	CB-4S*	.250	1.562	.750	1.000	1.031	.562	.500	1/4-28	50	**$5.75**
CM-5S*	CB-5S*	.312	1.875	.875	1.250	1.219	.687	.593	5/16-24	50	**$6.35**
CM-6S	CB-6S	.359	1.938	1.000	1.250	1.562	.906	.812	3/8-24	50	**$6.85**
CM-7S	CB-7S	.406	2.125	1.125	1.375	1.750	1.062	.937	7/16-20	50	**$8.30**
CM-8S	CB-8S	.453	2.438	1.312	1.500	2.000	1.125	1.000	1/2-20	50	**$10.75**
CM-10S	CB-10S	.484	2.625	1.500	1.625	2.500	1.500	1.375	5/8-18	50	**$15.80**
CM-12S	CB-12S	.593	2.875	1.750	1.750	3.000	1.812	1.625	3/4-16	50	**$23.70**

**** Grease fittings not available on these sizes. Units are supplied without grease fittings.***

BEARINGS – UNIVERSAL JOINTS



MS20271 UNIVERSAL JOINTS

Built to conform with and exceed all requirements stipulated in Spec. MIL-J-6193A. High axial and torsional strengths, high strength-weight ratio, no replacement during anticipated service life of aircraft on most installations, permanent lubrication.

Part No.	Nominal Size (In.)	Price Ea
MS20271-B6	3/8	$129.95
MS20271-B8	1/2	$94.85
MS20271-B10	5/8	$85.50
MS20271-B12	3/4	$85.50
MS20271-B14	7/8	$84.65

Dash #	+.000, -.002 (+.000, -.051) Outside Dia.		+/-.015 (+/-.381) Overall Length		+.031,-.000 (-.787,-.000) Bore Depth		+.004,-.025 (+.102, -.025) Bore Dia.		+/-.015 (+/-.381) Insp. Hole Loc.		Max Dia. (+.102,-.025) Cover Dia.		Weight Max	
	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	lbs.	kg.
B6	.372	9.45	2.0	50.80	.500	12.70	.250	6.35	.437	11.10	.781	19.84	.07	.032
B8	.495	12.57	2.625	66.67	.625	15.88	.375	9.52	.562	14.27	1.031	26.19	.09	.041
B10	.620	15.75	2.750	69.85	.750	19.05	.500	12.70	.687	17.45	1.156	29.36	.18	.082
B12	.745	18.92	3.187	80.95	.875	22.22	.625	15.88	.812	20.62	1.437	36.50	.24	.109
B14	.870	22.10	3.625	92.07	1.00	25.40	.750	19.05	.937	23.80	1.562	39.67	.35	.159

***Five hour test at 15° angle.**

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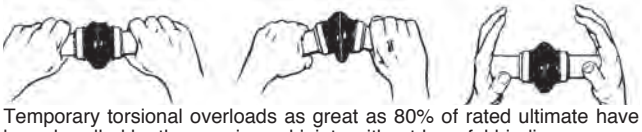
TORSIONAL OVERLOADS

AXIAL OVERLOADS



Temporary torsional overloads as great as 80% of rated ultimate have been handled by these universal joints without harmful binding.

Temporary axial overloads ranging up to 150% in excess of rated ultimates have been imposed without binding. These characteristics insure high safety factors under the most difficult operating conditions.

H-9426 BALL JOINT

* Hex: 1/2 Inch *Thread: 5/16-18 *Ball: 10 mm
P/N 06-00675.....$0.68

P/N 05-07400

BALL JOINT ASSEMBLIES

COMMERCIAL

Ball Joint Style	Female End	Male End	Part No.	Price
Is similar to AN276-6 but no longer tapered	1/4-28	1/4-28	05-07300	$11.45
Commercial	10-32	1/4-28	05-07400	$3.35
Commercial	10-32	10-32	05-07500	$2.90
Commercial	1/4-28	1/4-28	05-07600	$16.60

GEARS, CHAINS, SPROCKETS AND BEARINGS

BOSTON GEAR PRODUCTS

STEEL SPROCKETS - These sprockets have many applications in a control system. Hub type.

Sprocket Part No.	Chain Size	No. of Teeth	Price
05-03441	1/4"	12	$6.75
25B15	1/4"	15	$9.50
05-03442	1/4"	20	$15.90
35B14	3/8"	14	$8.50

BUSHINGS - As used on the Solitaire Sailplane.

Bushing Part No.	Price
FF520-10	$0.44
FF620	$2.95

ROLLER CHAIN - These chains fit above sprockets.

1/4" Chain - 10 Ft.	P/N 05-29325	$62.85
3/8" Chain - 10 Ft.	P/N 05-29335	$62.50
Extra Links - S25	P/N 05-29300	$2.65
Extra Links - S35	P/N 05-29350	$0.57

FB-35-1	Flange Bearing	$1.10	G-481-G Gear	$35.95
FB-35-2	Flange Bearing	$3.20	G-481Y-P Pinion	$20.50
FB-1012-4	Flange Bearing	$2.90	NF-14-6-8 Bearing	$1.20
FB-1013-8	Flange Bearing	$2.50	NF-16-8-9 Bearing	$1.20
FB-1620-10	Flange Bearing	$6.00		
FB-46-2	Flange Bearing	$0.18		

COMPLETE LINE OF BOSTON GEAR PRODUCTS AVAILABLE

BRONZE BUSHINGS SS-610-8

Cast Bronze bearings fit a wide range of applications.
Key Benefits:
High Strength, Excellent Machinability
P/N 04-01937..... $1.98

ASSORTED SPRINGS

Spring	Part No.	Application	Spring Type	Length	Price Each
Century Spring #186-C	01-27200	VariEze	Tension	2"	$3.80
Rudder Return Spring	01-27300	"	Tension	4 1/2"	$4.75
Landing Brake	01-27600	VE/Long-EZ	Tension	10"	$14.75
Tension Spring*	01-37500	"	Tension	30"	$11.75
Landing Brake	01-27900	Cozy	Tension	12 1/2"	$9.50

SINTERED BRONZE OIL IMPREGNATED BEARINGS

PLAIN BEARINGS

Part Number	Hole ID	Hole OD	Length	Price
05-01977	3/16	5/16	3/4"	$1.28
05-01976	1/4	3/8	1"	$0.59
05-01974	1/2	3/4	3/4"	$0.97
05-01975	1/2	3/4	1"	$1.87
05-01979	9/16	3/4	1"	$1.20
05-01978	5/8	3/4	1"	$0.98
05-01891	3/4	7/8	1"	$1.45

FLANGE BEARINGS

Part Number	Hole ID	Hole OD	Length	Flange OD	Flange Thickness	Price
05-01949	1/4	3/8	1/4"	15/32	1/16	$0.44
05-01947	1/2	5/8	1/2"	7/8	1/16	$0.72
05-01946	1/2	5/8	1"	7/8	1/16	$1.28
05-01948	1/2	3/4	1"	15/16	1/8	$3.25
05-01951	5/8	3/4	1/2"	1	3/32	$1.85
04-01638	5/8	3/4	1"	1	3/32	$1.59
05-01950	3/4	7/8	3/4	1-1/8	1/8	$1.40
05-01945	1	1-1/4	3/4	1-5/8	1/8	$2.90

SINGLE-ROW TAPPERED ROLLER BEARINGS

The most basic and widely used tapered bearing, the single-row type consists of the cone assembly and the cup. It is usually fitted as one of an opposing pair. During equipment assembly, single-row bearings can be set to the required clearance (endplay) or preload condition to optimize performance. Single-row tapered roller bearings have positive roller alignment that ensures true rolling motion and generates a "seating force" that pushes the roller against the cone large rib. This seating force prevents the rollers from skewing off apex, thereby keeping them positively aligned and located against the cone large rib. P/N 05-29749.....$16.90

BELLCRANK BEARINGS

Part No.	Bore	Flange Dia.	Race Width	Price Each
BC4W10(AN218-4) Experimental Only	1/4"	1-5/8"	5/8"	$19.75
BC5W11	5/16"	1-11/16"	5/8"	$24.50
BCP4W10*	1/4"	1-5/8"	5/8"	$94.65

***Military P/N AN218P4 / MS20218-1. Certs Available.**
***All bearings inspected per MIL-I45208A. 100% traceable. Currently installed on new and rebuilt certified aircraft.Prepacked with lubricant conforming to MIL-G-23827**
Quantity discount quoted on request

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THROTTLES – CONTROLS

ACS CONTROLS

The ACS line of controls was manufactured by Aircraft Spruce and Specialty Company from 1980 to 1985. As of June, 1985 the controls have been manufactured by ACS Products Company in Lake Havasu City, Arizona. The manufacturing and inspection procedures have been approved by the FAA and original equipment manufacturers. The following engineering data will aid in properly identifying the control most suited to each individual requirement. Also shown are some available options for the controls such as plastic protective covering and steel sleeves for clamping the control to the aircraft structure. Made in the U.S.A.

The A-790-12 vernier mixture control and the A-800-12 friction-lock throttle control are approved for Cessna 172, 172A thru Q; Cessna 150, 150A thru M, A150K, A150L, A150M; Cessna 152, A152.

Other approvals pending. Order by Part Number and state Cessna model and serial number. A790-12 is 53" long. A800-12 length is based on serial number provided.

ENGINEERING DATA

Control Model No.	Control Type	Stroke at 0 Routing	Decrease in Stroke per 360° of Bend	Control Model No.	Control Type	Stroke at 0° Routing	Decrease fStroke per 360° of Bend
A-700	Button Lock (Wire End)	4.00"*	0.50"	A810	Friction Lock (1/4-28)	3.50"	0.35"
A-730	Glide Free (Wire End)	4.00"*	0.50"	A920	Push-Pull (10-32)	3.37"	0.35"
A-740	Ratchet (Wire End)	4.00"*	0.50"	A930	Push-Pull (1/4-28)	3.37"	0.35"
A-750	Vernier (10-32)	3.37"*	0.35"	A970	Vernier (1/4-28)	3.50"	0.35"
A-790	Vernier (Wire End)	4.00"*	0.35"	A1550	Push-Pull (10-32) with	3.37"	0.35"
A-800	Friction Lock (10-32)	3.37"*	0.35"		Bulkhead Fittings		

Length of exposed wire. **Recommended minimum bending radius for all controls is 5" (never less than 3")

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PLASTIC COVERING ON CONTROL CASING

All ACS controls can be supplied with a black Polyolefin (PO) protective cover. Price of the PO cover carries a base price of $3.00 plus the length of control in ft. multiplied by 1.50 for lengths to 10 ft. For lengths over 10 ft., use $3.00 base price plus $1.90/ft. for PO cover plus a 425 set-up fee. Example: Cost of PO cover on 5 ft. control is $3.00 plus 5 x 1.40 = $10.00. Cost of PO cover on 15 ft. control is $3.00 plus 15 x 1.90 - $31.50.

STEEL SLEEVES ON CONTROL CASING

Cadmium plated 2" long steel sleeves can be added to the casing to provide clamping points for securing the control to the aircraft structure. Specify sleeve location (measurement taken from under the panel nut to mid-point of sleeve). Sleeves are normally swaged to the casing but will be left unswaged when specified. Add $7.50 for installation of sleeves on A730 & A740 controls. **Price/Sleeve $4.00**

THREADED STEEL SLEEVES ON CONTROL CASING

Threaded steel sleeves ("bulkhead" fittings) can be added to the casing to provide secure clamping of the control where it passes through a bulkhead. The cadmium plated sleeves are 2" long, with 1-1/2" length of 7/16-20 threads. Specify sleeve location (measurement taken from under the panel nut to mid-point of sleeve). Sleeves are normally swaged to the casing but will be left unswaged when specified. Add $7.50 for installation of sleeves on A730 & A740 controls. **Price/Sleeve $6.00**

HOW TO ORDER CONTROLS

STOCK CONTROLS - All stock controls are identified by a part number as shown in the descriptions of the controls. To order a stock control, specify control type, knob color, length to nearest 1/8" (measured as described in text), and any added features such as PO cover on flexible casing or steel sleeves centered at specified distances from panel nut (lengths of stock controls are in whole-foot increments and only lengths listed are stocked). Include 7-digit part number as shown in text.

SPECIAL-LENGTH CONTROLS - If you require a special-length control, specify control type, knob color, length to nearest 1/8" and any added features such as PO cover, etc. Special-length controls carry a set-up charge in addition to the cost of the control (calculated as described in the texts).

CUSTOM CONTROLS - If you do not find the type of control you require in this catalog, send a detailed sketch with dimensions, or the old control as a sample, to Aircraft Spruce & Specialty Co., 225 Airport Circle, Corona, CA 92880-2527 (1-800-824-1930). Custom controls are priced like similar stock controls but with a $35 set-up and engineering charge added, plus costs for any special parts which must be fabricated for the control.

VERNIER CONTROLS

Vernier controls assure smooth operation - cannot creep. For coarse adjustment, depress center button and push or pull. For fine adjustment, turn knob. Smooth acting at all temperatures. Casing is made of tightly wound galvanized steel wire Inner shaft is stainless steel cable (Models A-750 and A-970) or stainless steel wire (Model A-790). Low-friction operation is provided by an internal extruded Teflon liner. Controls have 1-1/4" dia. plastic knob with 3/4" dia. aluminum release button. A protective black PVC cover is available as an option on controls. Choice of knob color - black, red or blue (FAA Color Code: Black - Throttle, Red - Mixture, Blue - Prop), and knob design (see below).

Throttle Control (Black) (FAA Color) Or White

Mixture Control (Red)

Prop Control (Blue)

The FAA has recently adopted a standard configuration for cockpit control knobs in production aircraft type-certificated after August 11, 1986. The red mixture knob is to have six raised ridges whereas the blue prop control is to have the opposite profile with six grooves. The black throttle control knob is to have a smooth profile. The different knob contours assure positive identification by touch.

Aircraft Spruce is proud to offer the ACS line of vernier controls with the new style FAA knobs at no extra charge. The throttles will be furnished with the smooth black knob, the mixture controls with the contoured red knob and the prop controls with the contoured blue knob. Look to Aircraft Spruce & Specialty Company for a complete selection of original installation or replacement controls at tremendous savings.

REPLACEMENT PARTS FOR ACS CONTROLS

ACS large Control Cable Grommet made of black synthetic rubber. P/N 05-02633.....**$2.95**

ACS Rubber Grommets N-549-A (Small)
P/N 05-02634.....**$2.95**

ACS Large Black Knob A-663-A for the A-800 controls.
05-03416.....**$4.85**

Replacement ball bearings for A790 Controls
P/N 05-07700 .....**$2.00**

Replacement ball bearings for A700/A-1840 Controls
P/N 05-02618 .....**$2.00**

NOTE: The Grommets (rubber boots) fit all ACS 10-32 threaded end controls, such as: A-750, A-800, A-770, A-1860, A-920, A-1550, A-1750, A-950, and A-1760.

THROTTLES – CONTROLS

A-750 VERNIER CONTROL
(10-32 THREADED END)

The A-750 vernier control has 10-32 threaded shaft for use with ball point or threaded terminal. Unique ball-socket construction permits the threaded end to swivel 8° in any direction. Casing has Teflon inner liner for low friction and heat resistance in high-temperature areas such as engine compartments. Features stainless steel end fittings, swivel, and end rod. Furnished with FAA-style knobs (Black, Red & Blue). Travel: 3-3/8". Wt. 1 lb. (4'). Stocked in the following lengths (measurement taken from under panel nut to end of threaded shaft with knob pushed in). Order by Part No.

Knob Color	Length 3 Ft.	4 Ft.	5 Ft.	6 Ft.	7 Ft.	8 Ft.
Black	05-07736	05-07748	05-07760	05-07772	05-07784	05-07796
Red	05-07836	05-07848	05-07860	05-07872	05-07884	05-07896
Blue	05-07936	05-07948	05-07960	05-07972	05-07984	05-07996
Price	**$73.75**	**$74.75**	**$76.00**	**$77.50**	**$79.25**	**$80.75**

SPECIAL LENGTH CONTROLS **-** Use price of next longest control in chart (by foot) plus $20.00 set-up charge for controls under 10 feet, $40.00 for controls 10 feet and over. For controls longer than shown in chart, also add $1.45 per foot for each foot over the longest length. Measure length from under panel nut to end of control with knob pushed in. Allow 2-3 weeks for special length controls.

Glasair Prop Control A-750 Blue 80" long ..... P/N 05-07980 ..... **$88.65**

3/4 - 16 UNF-2A THD.

A-790 VERNIER CONTROL
(SOLID-WIRE END)

The A-790 vernier control has a .078" dia. stainless steel wire core. Both the wire and Teflon lined flexible casing may be shortened as required. The Teflon liner provides low friction with heat resistance in high temperature areas such as engine compartments. Furnished with FAA-style knobs (Black, Red & Blue). Max. travel: 3-3/8". Stocked in the following lengths (measurement taken from under the panel nut to end of wire with knob pushed in). Order by Part Number.

Knob Color	Length 3 Ft.	4 Ft.	5 Ft.	6 Ft.	7 Ft.	8 Ft.
Black	05-08036	05-08048	05-08060	05-08072	05-08084	05-08096
Red	05-08136	05-08148	05-08160	05-08172	05-08184	05-08196
Blue	05-08236	05-08248	05-08260	05-08272	05-08284	05-08296
Price	**$64.50**	**$65.25**	**$66.75**	**$68.50**	**$69.75**	**$71.50**

SPECIAL LENGTH CONTROLS **-** Use price of next longest control in chart (by foot) plus $20.00 set-up charge for controls under 10 feet, $40.00 for controls 10 feet and over. For controls longer than shown in chart, also add $1.45 per foot for each foot over the longest length. Measure length from under panel nut to end of control with knob pushed in. Allow 2-3 weeks for special length controls.

Replacement Ball Bearing for A-790 Controls ..... P/N 05-07700 ..... **$2.00**

A-970 VERNIER CONTROL
(1/4-28 THREADED END)

The A-970 vernier control is similar to the Model A-750 described above but with 1/4-28 threaded end (non-swiveling). Casing has Teflon inner liner for low friction and heat resistance in high-temperature areas such as engine compartments. Features stainless steel end fittings, swivel, and end rod. Furnished with FAA-style knobs (Black, Red & Blue). Travel: 3-3/8". Stocked in following lengths (measurement taken from under panel nut to end of threaded shaft with knob pushed in). Order by Part Number.

Knob Color	Length 3 Ft.	4 Ft.	5 Ft.	6 Ft.	7 Ft.	8 Ft.
Black	05-08336	05-08348	05-08360	05-08372	05-08384	05-08396
Red	05-08436	05-08448	05-08460	05-08472	05-08484	05-08496
Blue	05-08536	05-08548	05-08560	05-08572	05-08584	05-08596
Price	**$74.25**	**$75.75**	**$77.50**	**$78.75**	**$79.80**	**$81.50**

SPECIAL LENGTH CONTROLS **-** Use price of next longest control in chart (by foot) plus $20.00 set-up charge for controls under 10 feet, $40.00 for controls 10 feet and over. For controls longer than shown in chart, also add $1.45 per foot for each foot over the longest length. Measure length from under panel nut to end of control with knob pushed in. Allow 2-3 weeks for special length controls.

1/2 - 20 UNF-2A THD.

A-800 FRICTION LOCK CONTROL
(10-32 THREADED END)

The A-800 friction lock control provides positive locking at any power setting by turning the chrome collet locking nut. Unique ball-socket construction permits 10-32 threaded end to swivel 8° in any direction. Casing has Teflon liner for low friction and heat resistance in high-temperature areas such as engine compartments. Travel: 3-3/8". The 1-1/4" dia. solid knob is available in black or blue (blue knob has smooth profile, not FAA style). Stocked in following lengths (measurement taken from under panel nut to end of threaded shaft with knob pushed in). Order by Part No.

Knob Color	Length 3 Ft.	4 Ft.	5 Ft.	6 Ft.	7 Ft.	8 Ft.
Black	05-08636	05-08648	05-08660	05-08672	05-08684	05-08696
Blue	05-08836	05-08848	05-08860	05-08872	05-08884	05-08896
Price	**$67.50**	**$68.90**	**$69.95**	**$72.25**	**$72.75**	**$74.75**

SPECIAL LENGTH CONTROLS **-** Use price of next longest control in chart (by foot) plus $20.00 set-up charge for controls under 10 feet, $40.00 for controls 10 feet and over. For controls longer than shown in chart, also add $1.45 per foot for each foot over the longest length. Measure length from under panel nut to end of control with knob pushed in. Allow 2-3 weeks for special length controls.

A-800 VANS CONTROL CABLE FOR RV AIRCRAFT

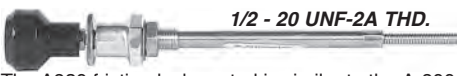
Specify knob color (black, blue, red), overall length of control (from under panel nut to end of control) and stroke (2-1/4", 2-1/2"). For controls over 72" long, add $1.50 per foot. For custom stroke (2-3/8", 2-3/4", 3-1/2") add $45 to cost of control. P/N 05-01436 ..... **$159.95**

A-810 FRICTION LOCK CONTROL
(1/4-28 THREADED END)

The A-810 friction lock control is similar to the A-800 control but with 1/4-28 threaded end (non-swiveling). With Teflon liner. Travel: 3-3/8". Knob styles and length measurement same as for A-800. Stocked in the following lengths. Order by Part Number.

Knob Color	Length 3 Ft.	4 Ft.	5 Ft.	6 Ft.	7 Ft.	8 Ft.
Black	05-09236	05-09248	05-09260	05-09272	05-09284	05-09296
Blue	05-09336	05-09348	05-09360	05-09372	05-09384	05-09396
Price	**$68.50**	**$69.85**	**$71.75**	**$63.00**	**$73.75**	**$75.50**

SPECIAL LENGTH CONTROLS **-** Use price of next longest control in chart (by foot) plus $20.00 set-up charge for controls under 10 feet, $40.00 for controls 10 feet and over. For controls longer than shown in chart, also add $1.45 per foot for each foot over the longest length. Measure length from under panel nut to end of control with knob pushed in. Allow 2-3 weeks for special length controls.



1/2 - 20 UNF-2A THD.

A-820 FRICTION LOCK CONTROL
(SOLID-WIRE END)

The A820 friction lock control is similar to the A-800 control but with a solid wire end like the A-790 control above. With Teflon liner. Travel: 3-3/8". Knob styles and measurements same as for A-800.

Knob Color	Length 3 Ft.	4 Ft.	5 Ft.	6 Ft.	7 Ft.	8 Ft.
Black	05-09436	05-09448	05-09460	05-09472	05-09484	05-09496
Blue	05-09536	05-09548	05-09560	05-09572	05-09584	05-09596
Price	**$67.75**	**$58.95**	**$61.75**	**$62.50**	**$64.25**	**$65.50**

SPECIAL LENGTH CONTROLS **-** Use price of next longest control in chart (by foot) plus $20.00 set-up charge for controls under 10 feet, $40.00 for controls 10 feet and over. For controls longer than shown in chart, also add $1.45 per foot for each foot over the longest length. Measure length from under panel nut to end of control with knob pushed in. Allow 2-3 weeks for special length controls.

FAA APPROVED A-790 & A-800 CONTROLS

The A-790-12 vernier mixture control amd the A-800-12 friction lock throttle control are approved for Cessna 172, 172A thru Q; Cessna 150, 150A thru M, A150K, A150L, A150M; Cessna 152, A152. Other approvals pending. Order by part number and state Cessna model and serial number. A790-12 is 53" long. A800-12 length is based on serial number provided. Note: For special length contros over 25ft. long, add extra $15.00 to the set-up fee.

P/N A-790-12 ..... **$142.95** P/N A-800-12 ..... **$141.95**

All ACS Products Controls are made in the U.S.A

A-700 BUTTON LOCK DASH CONTROL
(7/16-20 UNF-2A THREADS / SOLID WIRE END)

Provides a 10-lb. locking force for light and medium service applications. Black or Red anodized aluminum knob with aluminum release button. Has .062" dia. stainless steel wire core in flexible metal casing. May be shortened as req. Max. travel 3-1/2". Order by Part No.

Knob Color	Length			
	6 Ft.	7 Ft.	8 Ft.	10 Ft.
Black	05-13172	05-13184	05-13196	05-13120
Red	05-13272	05-13284	05-13296	05-13220
Price	**$53.95**	**$54.85**	**$55.50**	**$63.75**

Replacement Ball Bearing for A-700/A-1840 Controls
P/N 05-02618 ..... **$2.00**

A-770 BUTTON LOCK DASH CONTROL
(10-32 THREADED END)

Same as A-700 control above except has 10-32 threaded end, with .078' dia. stainless steel inner cable and Teflon-lined flexible casing. Order by part number.

Knob Color	Length			
	6 Ft.	7 Ft.	8 Ft.	10 Ft.
Black	05-16172	05-16184	05-16196	05-16120
Red	05-16272	05-16284	05-16296	05-16220
Price	**$63.85**	**$56.75**	**$67.75**	**$76.50**

A-780 BUTTON LOCK DASH CONTROL
(1/4-28 THREADED END)

Same as A-700 control above except has 1/4-28 threaded end, with .078' dia. stainless steel inner cable and Teflon-lined flexible casing. Order by part number.

Knob Color	Length			
	6 Ft.	7 Ft.	8 Ft.	10 Ft.
Black	05-16372	05-16384	05-16396	05-16320
Red	05-16472	05-16484	05-16496	05-16420
Price	**$67.50**	**$54.50**	**$55.75**	**$58.75**

A-1860 T-HANDLE BUTTON LOCK DASH CONTROL
(10-32 THREADED END)

Same as A-770 control above except has black powder-coated aluminum T-handle with aluminum release button. Order by part number.

Knob Color	Length			
	6 Ft.	7 Ft.	8 Ft.	10 Ft.
Black	05-16672	05-16684	05-16696	05-16620
Price	**$66.75**	**$67.75**	**$68.50**	**$79.75**

A-1840 T-HANDLE BUTTON LOCK DASH CONTROL
(SOLID WIRE END)

Same as A-700 control above except has black powder-coated aluminum T-handle with aluminum release button. Order by part number.

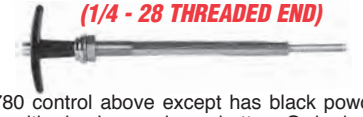
Knob Color	Length			
	6 Ft.	7 Ft.	8 Ft.	10 Ft.
Black	05-13572	05-13584	05-13596	05-13520
Price	**$55.85**	**$56.25**	**$56.25**	**$63.95**

EXTENSIONS FOR THREADED CONTROLS

Use these stainless steel extensions for moderate length adjustments to stock length controls. Stocked with 1 male & 1 female threaded end. The extensions provide the required increase in control length when threaded approximately half way onto the control. Furnished in 2", 3", 4", 5" and 6" lengths. All extensions have 10-32 threads. To order, add -2, -3, -4, or -5 to Dash number for length. P/N 10376..... **$12.65/ea**

All ACS Products Controls are made in the U.S.A

A-1870 T-HANDLE BUTTON LOCK DASH CONTROL
(1/4 - 28 THREADED END)



Same as A-780 control above except has black powder-coated aluminum T-handle with aluminum release button. Order by part number.

Knob Color	Length			
	6 Ft.	7 Ft.	8 Ft.	10 Ft.
Black	05-16872	05-16884	05-16896	05-16820
Price	**$67.75**	**$68.25**	**$69.90**	**$80.50**

A-730 GLIDE FREE CONTROL
(SOLID WIRE END)

Simple design for push-pull operation with low friction characteristics. Has .050" dia. stainless steel wire core in flexible metal casing with polyethylene liner. May be shortened as required. Max. travel 3-1/2". Available with black or red plastic knob. Order by Part No.

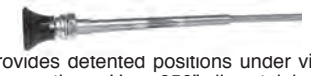
Knob Color	Length			
	6 Ft.	7 Ft.	8 Ft.	10 Ft.
Black	05-13672	05-13684	05-13696	05-13620
Red	05-13772	05-13784	05-13796	05-13720
Price	**$29.75**	**$30.50**	**$31.75**	**$36.65**

A-1770 T-HANDLE GLIDE FREE CONTROL
(SOLID WIRE END)

Same as A-730 above except with black powder coated aluminum T-handle. Order by part number.

Knob Color	Length			
	6 Ft.	7 Ft.	8 Ft.	10 Ft.
Black	05-13872	05-13884	05-13896	05-13820
Price	**$37.50**	**$37.75**	**$38.75**	**$43.75**

A-740 RATCHET CONTROL
(SOLID WIRE END)



Ratchet design provides detented positions under vibration conditions. Simple push-pull operation. Has .050" dia. stainless steel wire Core in flexible metal casing with polyethylene liner. May be shortened as required. Max. travel 3-1/2". Available with black or red plastic knob. Order by Part No.

Knob Color	Length			
	6 Ft.	7 Ft.	8 Ft.	10 Ft.
Black	05-14072	05-14084	05-14096	05-14020
Red	05-14172	05-14184	05-14196	05-14120
Price	**$31.50**	**$32.50**	**$34.75**	**$38.85**

A-1780 T-HANDLE RATCHET CONTROL
(SOLID WIRE END)

Same as A-740 above except with black powder coated aluminum T-handle. Order by part number.

Knob Color	Length			
	6 Ft.	7 Ft.	8 Ft.	10 Ft.
Black	05-14272	05-14284	05-14296	05-14220
Price	**$37.75**	**$39.50**	**$40.75**	**$45.75**

CONTROL END EXAMPLES

SOLID WIRE

SOLID WIRE SPEC END STYLE C

10-32 THREADED END

1/4"-28 THREADED END

AP

A-920 PUSH-PULL CONTROL
(10-32 THREADED END)

This control has 10-32 threaded ends with 8° swivel & 3-3/8" stroke. It has Teflon casing liner for use in high-temperature areas such as engine compartments, & .078" dia. stainless steel inner cable to minimize backlash. Stocked in the following lengths. Order by Part No.

Control Length	Part No.	Price	Control Length	Part No.	Price
36"	05-12736	$42.50	96"	05-12796	**$49.75**
48"	05-12748	$44.75	108"	05-127108	**$51.65**
60"	05-12760	$45.50	120"	05-127120	**$56.90**
72"	05-12772	$46.90	132"	05-127132	**$58.25**
84"	05-12784	$48.65	144"	05-127144	**$59.65**

A-930 PUSH-PULL CONTROL
(1/4-28 THREADED END)

This control has 1/4-28 threaded ends (nonswiveling) and 3-1/2" stroke. It has Teflon casing liner for use in high-temperature areas such as engine compartments, and .078" dia. stainless steel inner cable to minimize backlash. Stocked in the following lengths. Order by Part No.

Control Length	Part No.	Price	Control Length	Part No.	Price
36"	05-30036	**$60.90**	96"	05-30096	**$51.65**
48"	05-30048	**$45.25**	108"	05-30108	**$52.50**
60"	05-30060	**$46.50**	120"	05-30120	**$58.75**
72"	05-30072	**$47.95**	132"	05-30132	**$47.50**
84"	05-30084	**$49.95**	144"	05-30144	**$61.75**

SPECIAL LENGTH CONTROLS – Refer to chart for price of next longest control (by foot), and add a $20.00 set-up charge for controls up to 10 feet, $40.00 for controls over 10 feet. For lengths over 144" add $1.45 for each extra foot or fraction of a foot. Allow 2 - 3 weeks.

A-1550 PUSH-PULL CONTROL
(10-32 THREADED END)

This control has same design as A-920 control but with 7/16-20 threaded bulkhead fittings added at each end. Not stocked. Available at base price of $31.25 + $1.45 per ft. or fraction of a foot + $20 set-up charge

A-1750 VERNIER CONTROL
(10-32 THREADED END)

A-1750 Vernier Control: features - removable button and facenut and 2" of control panel threads for those difficult mounting applications. (10-32 threaded control rod like the A-750 control.)

Knob Color	Length					
	3 Ft.	4 Ft.	5 Ft.	6 Ft.	7 Ft.	8Ft.
Black	05-10236	05-10248	05-10260	05-10272	05-10284	05-10296
Red	05-10336	05-10348	05-10360	05-10372	05-10384	05-10396
Blue	05-10436	05-10448	05-10460	05-10472	05-10484	05-10496
Price	**$77.75**	**$79.85**	**$81.50**	**$71.50**	**$72.95**	**$73.85**

A-1970 VERNIER CONTROL
(1/4-28 THREADED END)

A-1970 Vernier Control same features as the A-1750 except it has the A-970 style (1/4 x 28 threaded rod)

Knob Color	Length					
	3 Ft.	4 Ft.	5 Ft.	6 Ft.	7 Ft.	8Ft.
Black	05-09636	05-09648	05-09660	05-09672	05-09684	05-09696
Red	05-09736	05-09748	05-09760	05-09772	05-09784	05-09796
Blue	05-09836	05-09848	05-09860	05-09872	05-09884	05-09896
Price	**$78.50**	**$79.90**	**$70.65**	**$66.00**	**$84.50**	**$68.50**

SPECIAL LENGTH CONTROLS – Use price of 10 ft. control plus $1.45 per ft. or fraction of a foot, plus $20.00 set-up charge for controls up to 10 feet, $40.00 for controls over 10 feet. Allow 2 - 3 weeks.

CONTROLS WITH COILED WIRE END – Add $7.50 to cost. To order, add "C" to part number. Controls with coiled end have only 3" stroke rather than 3-1/2" on standard end controls.

All ACS Products Controls are made in the U.S.A

A-950 PUSH-PULL CONTROL
(10-32 THREADS / SOLID WIRE END)

Same as A-920 control except one end is .078" dia. stainless steel wire. Special-length controls not required as the wire end can be cut off to desired length. Order by Part No.

Control Length	Part No.	Price	Control Length	Part No.	Price
36"	05-16936	**$31.50**	96"	05-16996	**$38.25**
48"	05-16948	**$32.90**	108"	05-169108	**$39.50**
60"	05-16960	**$33.90**	120"	05-169120	**$44.75**
72"	05-16972	**$35.50**	132"	05-169132	**$45.90**
84"	05-16984	**$37.25**	144"	05-169144	**$47.90**

A-960 PUSH-PULL CONTROL
(1/4-28 THREADS / SOLID WIRE END)

Same as A-930 control except one end is .078" dia. stainless steel wire. Special-length controls not required as the wire end can be cut off to desired length. Order by Part No.

Control Length	Part No.	Price	Control Length	Part No.	Price
36"	05-17036	**$36.00**	96"	05-17096	**$39.50**
48"	05-17048	**$36.00**	108"	05-170108	**$35.50**
60"	05-17060	**$34.90**	120"	05-170120	**$45.90**
72"	05-17072	**$36.50**	132"	05-170132	**$34.70**
84"	05-17084	**$38.25**	144"	05-170144	**$49.25**

A1600 SERIES
POSITIVE LOCK CONTROLS – SINGLE END

These positive-locking controls are available with white, black, or blue knob or T-handle style in black or aluminum. Complete part number with -W for white, -B for black knob, -BU for blue knob, -TB for t-handle black or -TA for T-handle aluminum. Special length controls are available at price for next longer control + $1.45 per foot + $20 set-up charge for controls up to 10 feet, $40.00 for controls over 10 feet.

Control	End	6 Ft.		7 Ft.		8 Ft.		10 Ft.	
		Part No.	Price	Part No.	Price	Part No.	Price	Part No.	Price
A-1610	.078 Wire	05-17172	**$94.75**	05-17184	**$95.75**	05-17196	**$97.00**	05-17120	**$115.95**
A-1620	10-32 Thread	05-17272	**$101.95**	05-17284	**$102.95**	05-17296	**$103.95**	05-172120	**$105.95**
A-1630	1-1/4-28 Thread	05-17372	**$102.95**	05-17384	**$103.95**	05-17396	**$104.95**	05-17320	**$106.95**

POSITIVE LOCK CONTROLS – DUAL END

These positive-locking dual controls are available with white, black, or blue knob or T-handle style in black or aluminum. Complete part number with -W for white, -B for black knob, -BU for blue knob, -TB for t-handle black or -TA for T-handle aluminum. Special length controls are available for price of next longer control (for longest of the two cables) + $1.45 per foot + $20.00 set-up charge for controls up to 10 feet, $40.00 for controls over 10 feet. Specify exact length of both cables when ordering.

Control	End	6 Ft.		7 Ft.		8 Ft.		10 Ft.	
		Part No.	Price	Part No.	Price	Part No.	Price	Part No.	Price
A-1640	.078 Wire	05-17472	**$118.95**	05-17484	**$121.95**	05-17496	**$135.95**	05-17420	**$127.95**
A-1650	10-32 Thread	05-17572	**$155.95**	05-17584	**$125.95**	05-17596	**$127.95**	05-17520	**$132.95**
A-1660	1-1/4-28 Thread	05-17672	**$125.95**	05-17684	**$127.95**	05-17696	**$129.95**	05-17620	**$134.95**

A-1760 VERNIER CONTROL
(10-32 THREADED END)

A-1760 Vernier Control like a A-750 control except it has a threaded bulkhead fitting in place of the grooved or notched fitting.

Knob Color	Length					
	3 Ft.	4 Ft.	5 Ft.	6 Ft.	7 Ft.	8Ft.
Black	05-09936	05-09948	05-09960	05-09972	05-09984	05-09996
Red	05-10036	05-10048	05-10060	05-10072	05-10084	05-10096
Blue	05-10136	05-10148	05-10160	05-10172	05-10184	05-10196
Price	**$73.25**	**$85.50**	**$86.75**	**$76.50**	**$89.85**	**$90.85**

A-1760 VANS RV CUSTOM CONTROL CABLE

Specify knob color (black, blue, red), overall length of control (from under panel nut to end of control) and stroke (2-1/4", 2-1/2"). For controls over 72" long, add $1.50 per foot. For custom stroke (2-3/8", 2-3/4", 3-1/2") add $45 to cost of control. P/N 05-01435 .....**$159.95**

THROTTLES – CONTROL ATTACHMENTS

FRICTION THROTTLE

Adjustable friction throttles with same construction as the ACS A-800 friction throttle but with a large (2" dia.) black solid plastic knob. Has 3/16" dia. 10-32 threaded end with 8° swivel. Stocked in the following lengths (measurement taken from under panel nut to end of threaded shaft with knob pushed in). Order by Part No. Made in the U.S.A.

Length	Part No.	Price	Length	Part No.	Price
3 Ft.	05-13700	**$74.50**	5 Ft.	05-13900	**$76.50**
4 Ft.	05-13800	**$75.50**	6Ft.	05-14000	**$77.90**

SPECIAL LENGTH CONTROLS - Use price of next longest stock length above plus $20 set-up charge. For lengths over 6 ft. also add $1.45 per foot. Allow 2-3 weeks. ***THROTTLE KNOB -*** Black solid plastic knob, 2" dia., with 1/4-28 internal threads. P/N05-29100 .....**$4.50**

BUTTON TYPE DASH CONTROL

Button Type Dash Control designed for use with many control system applications. Easily installed. Operates smoothly. All adjustable parts are metal. 7/8" Dural button on 3/16" diameter shaft. Maximum travel is 2". Furnished in 5 ft. and 8 ft. length. May be shortened. Order Inserts separately. 5 Ft. Dash Control .....P/N 05-14200 .....**$16.50**
8 Ft. Dash Control .....P/N 05-14300 .....**$20.40**

INSERTS ONLY - Round pressure-sensitive labels, 3/4" dia. White lettering on black background. Order by part number. Basic P/N is 05-144. Last two digits of P/N are as shown in above illustration. Example: 05-14460 is "Starter".....**$0.55 Ea**

MCFARLANE MC6160 UNIVERSAL PUSH TO UNLOCK CONTROL

Perfect for Alt Air and Carb Heat controls for the experimental/homebuilt market. Knobs can be engraved for $25.00 per knob. Custom laser marking of the knobs is available for $25.00 per knob. Receive a $15.00 discount for each additional knob with the same design.

Size	Color	Part No.	Price	Size	Color	Part No.	Price
6Ft	Black/Black	05-04607	**$73.80**	6Ft	Clear/Black	05-04610	**$73.80**
8Ft	Black/Black	05-04608	**$76.50**	8Ft	Clear/Black	05-04611	**$75.90**
12Ft	Black/Black	05-04609	**$79.95**	12Ft	Clear/Black	05-04612	**$79.95**

T-HANDLE DASH CONTROL

Manufactured of duralumin and brass. Locks positively, will not vibrate loose. One-fourth turn locks it in any position and will hold up to 100 lbs. Standard travel 2-1/2". T-handle is 1-3/4" wide. Can be mounted from front or rear of instrument panel. Complete with wire and casing which may be shortened. ***SINGLE WIRE***
5 Ft. Control..... P/N 05-15000 .....**$37.85**
8 Ft. Control..... P/N 05-15100 .....**$22.95**
12 Ft. Control..... P/N 05-15200 .....**$25.50**

TWO WIRES - 8 Ft. Control..... P/N 05-15300 .....**$54.95**

THROTTLE CONTROL

The phenolic knobs are hard and stable. Unlike the soft injection molded knobs, they resist scratching and the effects of sunlight and age. Meet the latest F.A.R. require ments for shape. and color. When ordering please provide: Make, Model, and Serial. P/N 05-02486.....**$384.95**

EYEBALL FIREWALL ASSEMBLY

Allows easy installation of cables with oblique entry/exit angles. Includes the eyeball swivel, cable pass through, and line clasper. The Eyeball swivels up to 50 degrees and is clamped in place to complete installation. The hole is easily enlarged for other sizes.

Ball Matl.						
	Aluminum		Steel		Aluminum	
Appx. Wt.	0.08 lb.		0.07 lb.		0.10 lb.	
Model No.	SE961-B		SE961-S		TTp	
Hole Size	Part No.	Price	Part No.	Price	Part No.	Price
.125"	05-03440	**$25.95**	05-00764	**$34.75**	05-00722	**$36.85**
.188"	05-00957	**$25.95**	05-00766	**$31.75**	05-00723	**$34.75**
.218"	05-01378	**$25.95**	05-01381	**$34.50**	05-01383	**$36.85**
.240"	05-01379	**$25.95**	05-01382	**$34.75**	05-01384	**$37.50**
.250"	05-00958	**$26.50**	05-00767	**$35.65**	05-00724	**$34.75**
.260"	05-00959	**$25.95**	05-00768	**$34.50**	05-00726	**$37.85**
.375"	05-01380	**$29.25**	----	----	----	----

ROTAX DUAL CARBURETOR THROTTLE CONTROLS

Allows a neat, clean throttle installation without a clunky splitter box. Supersmooth friction lock, heavy duty 0.062 inch stainless steel inner wires. Standard knob is egg shape and ball knob is sphere shape.

Description	Part No.	Price	Description	Part No.	Price
4' Std Knob	05-04385	**$147.95**	6' Std Knob	05-04386	**$145.95**
6' Std Knob	05-04387	**$156.85**	4' Ball Knob	05-04388	**$139.95**
6' Ball Knob	05-04389	**$147.95**	8' Ball Knob	05-04390	**$156.85**

ATTACHING HARDWARE FOR CONTROLS

WIRE GRIP - Is a unique fitting which securely attaches to solid wire end push-pull cables. Uses a "pin vice" gripping action to attach a cable. The 5/8" long 10-32 threaded end will attach a clevis, ball joint, or other hardware for use with mixture controls, carb heat box, cabin air, or other applications, resulting in a clean, professional installation.
For .050 - .060 dia cables .....P/N 05-16000 .....**$12.65**
For .078 dia cables .....P/N 05-16001 .....**$11.85**
(Use P/N 05-16001 on A790 ACS controls)

AN486 TERMINALS - With 1/4-28 female threads. Fork hole dia. 3/16". AN486-3P has 17/64" fork opening. AN486-4P has 9/64" fork opening. .....P/N AN486-3P **$16.90**
P/N AN486-4P.....**$16.90**

AN665-21R TERMINAL - Has 10-32 threads and 3/16" dia. fork hole. Furnished with clevis pin, cotter pin and locknut.
P/N 05-02500..... **$11.90**

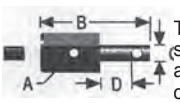
BOLT TYPE TERMINAL - Special 3/16" dia. bolt with drilled shank. With hex nuts and washers. Use instead of "bug" nut. .....P/N 05-16100 .....**$0.44**

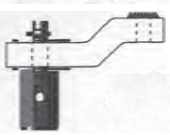
CONTROL HOUSING CLAMPS - AN742 plain loop type clamps to secure housing of throttles, dash controls, Bowden cable, etc. to airframe.
AN742-D3 for 3/16" O.D **$0.22**
AN742-D4 for 1/4" O.D **$0.20**

SLOTTED BRACKET CONTROL MOUNT- Notch of end fitting locks into slot of bracket to secure control. Steel Construction. P/N 10465 .....**$19.50**

CLAMP STYLE CONTROL MOUNT - Protruding "finger" in clamp holds control in position. Two-piece steel clamp and base.
P/N 10464..... **$11.65**

CABLE END "B" NUT



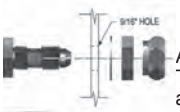


This universal NAP assembly will eliminate bent or smashed push-pull cable ends and get a strong hold at the same time. The cable end lays in a machined channel at the bottom of the screw hole. Tightening the compression screw snugs down on the cable end thus eliminating any potential crimping or smashing of the cable. Eliminates wear, possible cable breakage and enhances smooth push-pull operation. Complete with washers and cotter pin. All stainless steel, computer machined and easy to install.

Part No.	A	B	C	D
05-16210	.070	.825	.186	.241
05-16230	.086	.825	.249	.255
05-16240	.070	.645	.249	.093
05-16245	.070	.645	.186	.093

Throttle, Wt.,.26 oz..... P/N 05-16210....**$7.95/ea.**
Mixture, Wt,.29 oz ..... P/N 05-16230....**$7.95/ea.**
Cabin Heat, Wt,.26 oz... P/N 05-16240....**$7.95/ea.**
Carb Heat..... P/N 05-16245....**$7.95/ea.**
DISCOUNT: LESS 20% ON 25 OR MORE.

CABLE SAFE



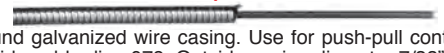
A Safe "No-Slip-Grip" for your thru bulkhead cables. This unit prevents your throttle, mixture, choke or any push-pull cable from slipping at the firewall/ bulkhead location. Machined from lightweight aluminum, and final blue anodizing. Installation is simple with a drill and wrench. Once installed, the cable is threaded and the end nut is snugged down on the cable casing for positive encapsulation. Designed specifically for the aircraft industry, these fittings can be installed on virtually any application that requires a solid hold on any cable assembly with a rigid outer case. Thousands of applications: auto, boat, race car, motorhome. Used with 1/4" thru 7/32" diameter cable.

Cable Safe, Wt.: .84 oz..... P/N 05-16250...**$9.85/ea.**
DISCOUNT: LESS 20% ON 25 OR MORE.

CABLE SAFE II - This Fitting is designed for use on coaxial type control cables. It has a two piece design to allow it to be placed over the cable inserted thru the firewall & tightened down, providing a positive lock.
For 1/4" cable housing ..... P/N 05-16252 ..... **$17.95/ea.**
For 3/8" cable housings..... P/N 05-16253 ..... **$18.95/ea.**

ADAPTOR - For the cable safe to adapt down to 3/16" diameter cable housings. ..... P/N 05-16251 .....**$3.20/ea.**

BOWDEN CABLE (SOLID WIRE ENDS)



Spiral-wound galvanized wire casing. Use for push-pull controls of any length. Inside cable dia. .078. Outside casing diameter 7/32".
P/N 05-15500.....**$2.40/ Ft.**

BOWDEN CABLE CLAMP

Designed to provide a simple method of anchoring a typical wire wound cable. Used in anchor hole of 7/16" diameter.
For 3/16" Bowden Cable ..... P/N 05-15705.....**$12.95/ea.**
For 7/32" Bowden Cable ..... P/N 05-03287.....**$12.95/ea.**

AP

THROTTLE QUADRANTS

THROTTLE QUADRANTS FOR RV'S

These quadrants are made from aircraft quality anodized aluminum for long life and corrosion resistance brass friction plates are adjustable to fit individual preferences. Black anodized top plates are machined and engraved on a CNC mill to exacting tolerances for an excellent finish. side plates are laser cut insuring a perfect fit and feel. All hardware used meets AN standards. Note: All throttle qaudrants require a AN665-21R clevis with an AN393-11 clevis pin.
The side mount style quadrants are intended for use in tandem airplanes such as the RV4, RV8, Sterdusters, Baby Great Lakes, One Design, Acro Sport & Sonerai. Center mount style is intended for use in side-by-side aircraft such as RV's, Sonex, Thorp T18 & Pulsars.

3 CONTROL LEVER
Side Mount Curved Top
Model: SMCT3L
Wt: 10 Oz.
7-3/4" H
x 4-3/4" W x 2" D
P/N 05-00698
$199.95

3 CONTROL LEVER
Center Mount
Curved Top
Model: CMCT3L
Wt: 12 Oz.
7-3/4" H x 7" W
x 2" D
P/N 05-00701
$218.95

3 CONTROL LEVER
Side Mount Flat Top
Model: CT83F
Wt: 10 Oz.
7-3/4" H
x 4-3/4" W x 2" D
P/N 05-00703
$198.50

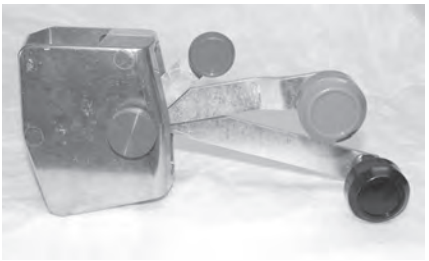
2 CONTROL LEVER
Side Mount Flat Top
Model: CT82F
Wt: 8 Oz.
7-3/4" H x 4-3/4" W
x 1-1/2" D
P/N 05-00702
$174.50

2 CONTROL LEVER
Center Mount
Curved Top Model:
CMCT2L
Wt: 10 Oz.
7-3/4" H x 7" W
x 2" D
P/N 05-00699
$199.50

2 CONTROL LEVER
Side Mount
Curved Top
Model: SMCT2L
Wt: 8 Oz.
7-3/4" H x 4-3/4" W
x 1-1/2" D
P/N 05-00697
$178.95

RV8 REAR QUADRANT
A single lever rear quadrant with an engraved top plate and a short handle for better clearance. 8" x 5-1/4" x 2"
P/N 05-04531 ..... **$108.75**

ACS THROTTLE QUADRANTS



Available in two lever designs. The 2-lever control has black plastic "Throttle" knob and red "Mixture" knob. The 3-lever control has blue "Prop" knob in addition to the throttle and mixture knobs. Built-in friction lock. Levers have 2-1/2" travel. Quadrants fit on left or right side of cockpit and can be used in tandem. Complete with aluminized Mylar knob inserts. Ends of throttle and prop levers have 3/16" dia. holes for attachment of push-pull controls with clevis terminals. End of mixture lever has .076" dia. hole to accept solid wire control such as Bowden cable. Made in the U.S.A.
Two-Lever Quadrant ..... P/N 05-00960..... **$39.85**
Three-Lever Quadrant (pictured)..... P/N 05-00961..... **$51.75**

CENTER CONSOLE TURBINE 4 LEVER QUADRANT

Three main levers are chromed with anodized black "Throttle" knob, blue "Prop" knob and red "Fuel" knob. Also, equipped with red "Emergency FCU" override knob with "Safety pin". Throttle and Fuel levers are designed with Beta stop. These 2 levers pull out and down for fuel idle and fuel cut off. Both of these levers are designed with Beta adjustable CAM Follower bearing movements. Stroke for Throttle, Prop and Fuel is 3-3/8" with 10-32 Rod Ends, Stroke for Emergency FCU override is 2-5/8", All 4 Levers are set up for A-950 push – pull control with 10-32 threads. Throttle, Prop, and Fuel have front facing independent friction locking knobs. Not FAA Approved and for Experimental Use Only.
P/N 05-03363 ..... **$2,654.00**

ANDAIR THROTTLE QUADRANTS

The Andair Throttle Quadrant has primarily been designed for the RV range of aircraft. Over several years of flying the RV6, Andair has designed some unique features that give this quadrant it's great looks and a solid feel. The handle of the throttle lever is angled to give the best ergonomic position and grip for the right hand, which will fall naturally to take up this position. On top of the handle is the optional flap control switch. This is a key safety feature which allows the pilot to deploy the flaps without taking his or her hand off of the throttle. This give much greater control on approaches and go arounds. The flap control switch consists of two color coded push to make buttons, one for flaps down and one for flaps up.
Each lever has a small ball race at the lower end and is guided by Teflon® pads at the top to give a feel that is both smooth and accurate. Along the base is a friction nut that can be used to lock all three levers, although this can be overridden with a gentle pressure.
The mixture lever has a detent arrangement to positively hold it in the 'cutoff' position.

Model	Quadrant Includes	Part No.	Price
TQX1	Flap Switches, Propeller Lever, Mixture Lever	05-04481	**$452.95**
TQX2	Propeller Lever, Mixture Lever	05-04482	**$415.95**
TQX3	Flap Switches, Mixture Lever	05-04483	**$295.95**
TQX4	Mixture Lever	05-04484	**$269.95**
TQX5	Flap Switches	05-04485	**$258.95**
TQX6	Quadrant Only	05-04486	**$240.95**
TQX7	Flap Switches, Propeller Lever	05-04487	**$295.95**
TQX8	Propeller Lever	05-04488	**$267.95**

THROTTLE QUADRANTS – CONTROL WHEELS

HOMEBUILDERS THROTTLE QUADRANTS

These quality quadrants have been in use in a wide variety of experimental and ultralight aircraft for over 25 years. Designed and manufactured to provide years of dependable, precise performance.

Model #1 – This external reversing hook-up quadrant can be used in tandem for dual control. Available with 1, 2, or 3 lever. Weight: 10 oz. Body size: 3.5" x 4".

Single lever quadrant ..... P/N 05-15905 ..... **$52.50**
Two Lever Quadrant..... P/N 05-15910 ..... **$54.75**
Three Lever Quadrant ..... P/N 05-15915 ..... **$63.25**

Add -F to P/N and $10 to price for adjustable friction.

Model #2 – This internal non-reversing hook up quadrant is often used on RV-4 and similar homebuilt aircraft. Available in 1, 2, or 3 lever models. Weight: 12 oz. Body Size: 3.5" x 4".

Single lever Quadrant ..... P/N 05-15920 ..... **$51.00**
Two Lever Quadrant ..... P/N 05-15925 ..... **$59.75**
Three Lever Quadrant ..... P/N 05-15930 ..... **$68.75**

Add -F to P/N and $10 to price for adjustable friction.

Model #3 – This internal reversing hook up quadrant is ideal for a variety of different aircraft models. Available with 1, 2, or 3 lever. Weight: 10 oz. Body size: 3.5" x 4".

Single lever Quadrant ..... P/N 05-15935 ..... **$54.95**
Two Lever Quadrant ..... P/N 05-15940 ..... **$59.25**
Three Lever Quadrant ..... P/N 05-15945 ..... **$68.75**

Add -F to P/N and $10 to price for adjustable friction.

Model #4 – This popular quadrant was specifically designed for use on RV-3 and RV-4 aircraft and is also applicable to many other homebuilt aircraft. Furnished in two lever model only and furnished with adjustable friction. Weight: 12 oz. Body size: 3.5" x 4".

Two lever Quadrant ..... P/N 05-15950 ..... **$67.75**

Model #5 – Panel mount quadrant can be an internal reversing or internal non-reversing. Available in S-series only. One, two or three levers. Friction or non-friction. Panel Mount Reversing listed below

Single lever Quadrant ..... P/N 05-02436 ..... **$54.00**
Two Lever Quadrant ..... P/N 05-02437 ..... **$85.70**
Three Lever Quadrant ..... P/N 05-02438 ..... **$68.50**

Model #6 – Twin-engine model: Non-reversing internal or reversing internal unit with a four-arm configuration. L-series only. Friction or non-friction. Twin Engine Reversing Internal listed below.

Four lever Quadrant ..... P/N 05-02364 .. **$81.75**
Four lever Quadrant w/ Friction.. P/N 05-02365 .. **$92.50**

T-BAR HANDLE FOR QUADRANTS

This handle is 3-1/2" long and 1-1/4" round and fits all of the Homebuilders Quadrants above. The arm slot is offset to one side. It is molded urethane and is very durable. Add -1 or -1F (as applicable) to the Part No. and $25.00 to the price (example: 05-15925-1)

ACS CONTROL WHEEL A-1310

Designed to be more user friendly than standard control wheels. Mounting position can be raised or lowered one inch by rotating the mounting flange. All parts machined from 6061-T6 billet. The A-1310 Control has cavities for wiring, but does not come prewired or with a mic switch. They can be ordered with a hole drilled for the mic or can be drilled later. Wt: 26 oz. Mounting flange hole sizes: 3/4" or 7/8".

Special smaller hole sizes: Add 10.00

3/4" Black Anodized ..... P/N 05-02248 ..... **$97.75**
3/4" Bare Aluminum..... P/N 05-02279 ..... **$96.25**
7/8" Black Anodized ..... P/N 05-02282 ..... **$96.50**
7/8" Bare Aluminum..... P/N 05-02284 ..... **$97.00**

BEECH BONANZA/BARON CONTROL WHEELS

These control wheels are identical in design to the new Beechcraft large ram's horn style wheels. They are powder coated with a highly durable material in the same color as current Raytheon control wheels. Peeling or yellowing that occurs on older Beech wheels has been eliminated by the powder coating process. This control wheel is a direct replacement for the Beech/Raytheon 60-524080-13, 14 (for F33A, F33C, V35B, A36, and B36TC) and , -17 (for F33A, F33C, A36, B36TC, and 58) control wheels. Can be installed on many other aircraft using FAA form 337 for field approval. FAA Form 8130-3. Hand crafted black leather wrapping is available for these control wheels. Each wheel is individually hand laced and custom fitted to the wheel. We can also hand wrap your existing Beech control wheel in leather. Send your control wheel to Aircraft Spruce in Corona, CA and allow 3 weeks for delivery. An installation kit is required for each control wheel, which includes two thumb plates, a blank face plate, and mounting hardware. A Davtron MB800 digital chronometer installed in the faceplate of the control wheel is also available.

The Basic Control Wheel (P/N 05-00545) now includes a white installation kit. If the black powder-coating option for this installation kit is desired it is an additional $50.00

Description	Part No.	Price
Basic Control Wheel & White Install Kit	05-00545	**$638.00**
Chronometer with custom faceplate	05-00549	**$328.95**

HOMEBUILDERS CONTROL WHEELS

New lightweight, low cost wheel designed with the homebuilder in mind. Approximately same dimensions as above ACS control wheel but weighs only 15 oz. made of cast magnesium. Coated with light gray epoxy paint which can be used as finished or repainted if preferred. Drill blank mounting post as required..... P/N 246-9 ..... **$187.95ea**

CONTROL YOKE UPGRADES

Grips

Center Cushion

Now flaking & peeling finish on worn control yokes can be remedied cost effectively by these pilot-installable, semi-flexible, molded grips which are available with push-to-talk button built-into the top of the yoke (not the side). The Model SX-100 grips (pilot & copilot set) and optional, built-in, Model SX-101 plug-in push-to-talk button simply slip-over the thin, "ram's horn" control yokes of Cessna 150, 152, 172, 177, Grumman-American AA-1, AA-5 and early Mooney aircraft. Their thick, padded feel and built-in push-to-talk button add comfort, convenience & value to vintage airplanes. The top-mounted, low profile, miniature push-to-talk button supplied completely wired with plug, jack and coiled cord, is less likely to be pressed by accident, get in the way or slip out of position than bulky, side-strapped, units. Complete your updated yoke configuration with a pair of new model SX-110 center cushions, richly finished in black. Cushions fit neatly over centers of any control yokes.

Description	Application	Part No.	Price
SX-100 Grips without Push-to-Talk switch (4ea)	Small Cessna Ram Horn - C150, C172, C177, prior to 1973	05-16600	**$52.95**
SX-101 Grips (set of 4) with Push-to-Talk switch (left side)	Cessna 150, 152, 172, 177, Grumman-American AA-1, AA-5, Pre 1964 Mooney Aircraft	05-16630	**$88.50**
SX-101 Grips (set of 4) with 2 Push-to-Talk switch (left & right)	Cessna 150, 152, 172, 177, Grumman-American AA-1, AA-5, Pre 1964 Mooney Aircraft	05-16635	**$122.80**
SX-110 center cushion Set (Black)	Small Cessna Ram Horn - C150, C172, C177, prior to 1973	05-16610	**$58.50**

AP

BEECHCRAFT ACCESSORIES

Designed & built by real-world pilots, manufactured to the highest standards. These products are built for those incomparable Beechcraft. Years of experience and the highest quality materials and construction result in the best products available for Bonanzas & Barons. All have FAA STC/PMA as applicable.

BONANZA/BARON CONTROL YOKE LOCK

Protect your investment with this heat treated lock. It installs quickly and simply (no modification is needed) but cannot be removed without being unlocked. It is a permanent, direct replacement for the original equipment. Complete with the highest quality lock, instructions, and all hardware. P/N 05-00649 ..... **$346.95**

Optional clipboard for clearances or notes makes a stable flight center. Spring-loaded, it snaps out of the way in seconds.

Standard.....P/N 05-00650 ..... **$145.95**
Deluxe (with Quick Release).....P/N 05-01335 ..... **$202.95**

BEECH THROTTLE, MIXTURE, PROP KNOB SET

These high-strength knobs for Bonanzas are a big improvement over old, cracked original equipment and likely the best replacement knobs on the market. Bright color-coded space-age material will not crack or fade and will not get hot like aluminum knobs. P/N 05-00652 ..... **$207.95**

Push buttons only, with new screws P/N 05-00653 ..... **$92.50**

WINDOW VENT HINGE & LATCH KIT

For new windows only on Mooney, Piper, Socata, Commander.
P/N 05-01336 ..... **$150.95**

BEECH STORM WINDOW HINGE/LATCH KIT

Every Bonanza or Baron pilot will appreciate the quality workmanship in every one of these storm window hinge/latch kits. Professional construction means they work smoothly, and they fit standard factory window holes with no modifications.

Complete hinge/latch kit..... P/N 05-00654 ... **$219.95**
Latch & Stiker only ..... P/N 05-00655 ... **$119.75**
Hinges Only..... P/N 05-00656 ... **$110.95**

BONANZA NOSE GEAR BRACE

These PMA approved replacements for the Nose Gear Brace are used in early Bonanzas. Most of these aircraft have severely corroded nose gear braces as a result of lightening holes that allow moisture to enter and collect in the bottom of the housing. Even dry country aircraft are found to have corrosion. This is because many of these aircraft have been repainted and paint remover has entered the housing and is reactivated when water enters the housing during aircraft washing. Applicability: Model 35 D-1 thru D6561 Model 33 CD-1 thru CD-370 Old unit (core) must be returned. FEATURES: FAA/PMA Approved direct replacement part. • One piece aluminum stronter than OEM part. • Durable corrosion resistant white powder coated finish. • Weight increase of 4.56 lbs. beneficial for aft CG aircraft. • Completely improved design eliminates potential for any corrosion. • Upper and lower bronze bushings included. • Grease fittings included. ..... P/N 05-02463 ..... **$3,895.00**

BEECHCRAFT BONANZA INTAKE DUCT

Beechcraft (Raytheon) Bonanza Intake Duct fits all 1964 on up:
I0520 / TSI0520 & I0550 Beech
Models: S35-V35-V35A-V35B-V35TC
C33A, F33A, A36, A36TC, B36TC
3 ply with Nomex reinforcement. Includes Clamps. Available in Gloss Black, Gloss Red, Gloss Blue, and Matte Black.

Gloss Black.....P/N 05-06562 ..... **$74.50**
Gloss Red.....P/N 05-06564 ..... **$74.50**
Gloss Blue .....P/N 05-06565 ..... **$74.50**
Matte Black.....P/N 05-06563 ..... **$74.50**

TOW PIN FOR BEECHCRAFT FAA/PMA APPROVED

Installation Eligibility:
Debonair: 35-A33, 35-B33, 35-33, E33, F33
Bonanza: G33, 35-C33A, E33A, F33A, F33C, N35, P35, S35, V35, V35A, V35B, 36, A36, A36TC, B36TC
Baron: 20-21-3 95-55, 95-55, 95-B55, 59-C55, D55, E55, 58, 56TC, A56TC, 58TC, 58P
RAPCO Tow Pin..... P/N 05-01625..... **$22.90**

TRIKESLIDE DUAL THROTTLE/CHOKE CONTROL

The DCT-01 has adjustable holding friction, that will keep the pull rod at the last set position. The DCT-01 has dual cable adjusters to syncronize the choke/throttle levers. The DCT-01 can be held to the airframe with the supplied clamp, or it can be bolted to the instrument panel.
P/N 05-02492..... **$69.95**

TRIKSLIDE DUAL THROTTLE MIXER

Trikslide is a dual throttle input-mixer/slider designed especially for trikes and ultralight aircraft. Trikslide eliminates the interaction between two throttle cables. It will mount on any round or square structural member and provides smooth slide action with a full 2" stroke. Features aluminum and delrin construction with universal mounting clamps and a universal control cable connector which will fit all cable terminations.
P/N 05-00782 ..... **$59.95**

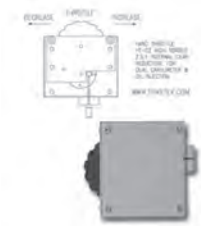
DUAL CARBURETOR SPLITTER

Splits a single throttle input into two outputs for dual carburetor installations. Clamp mounting.
P/N 05-01823 ..... **$29.95**

DUAL CARBURETOR SPLITTER WITH OIL INJECTION

Splits a single throttle input into three outputs for dual carburetor installations with oil injection. Clamp mounting.
P/N 05-01824 ..... **$31.95**

HAND THROTTLE



High torque, 2.5.1 internal gear reduction.For dual carburetors. 825 degree rotation for fine throttle adjustment. Adjustable friction drag. Clamp mounting - no holes required. Made from weatherproof materials.
P/N 05-01826..... **$69.95**

FOOTPEDAL CABLE CONNECTOR

Convenient foot pedal throttle control. Aluminum/delrin construction with mounting hardware. Universal cable connector--fits all cable terminations. Designed especially for trikes and ultralight aircraft.
P/N 05-01827 ..... **$12.95**

BEECHCRAFT MAIN GEAR BOLT

This is a replacement for discontinued Main Gear Bolt part number CA101-810089-1. The new part number is CA101-810089-1A. This part has been tested and is superior in tensile strength and fatigue and crack resistance. Eligible for Beechcraft 1900 series aircraft, this is a life limited part that meets all requirements for the full 5 year/10,000 cycle life. The part number and serial number are engraved on the bolt head.
P/N 05-04163 ..... **$255.95**

Prices Subject to Change Without Notice

FUEL TANKS

FUEL WARNING SYSTEM

Float-action sensor in tank activates panel warning light when fuel supply is low. All-PBT unit, impervious to aviation fuel. Use AN 867-4 flange for mounting.

Sensor.....P/N 6905-400 .....**$31.75**
Warning Light.....P/N 05-17660 .....**$18.75**
Bulb(GE-330).....P/N 11-04016 .....**$1.35**

DISCOUNTS: 10% ON 6, 15% ON 12, 20% ON 50

INVERTED PICKUP TUBES

"Flop" tubes for inverted flight are made from Aeroquip 701-6 flexible hose. End fitting swaged onto hose has a 1/4" male pipe thread attached to tank outlet. Available for any of the tanks listed, or others. Specify tank model and tube length. Minimum length available is 9"

9" ..... P/N 05-20509 .... **$64.85**
11" ..... P/N 05-20511 .... **$64.50**
13" ..... P/N 05-20513 .... **$64.50**
10".....P/N 05-20510.....**$64.50**
12".....P/N 05-20512.....**$64.50**

Add $1.80 to 13" price for each additional inch.

PICKUP TUBE ADAPTER

Specially machined AN912 fitting for connecting pickup tube to fuel tank.

For 12" tubes & longer .....P/N 10380 ..... **$5.80**
Specially machined AN912-12D for shorter than 12"
P/N 10380-1 ..... **$43.85**

FLOP TUBE ADAPTER WITH SIDE OUTLET

This fitting eliminates the need to put an angle fitting on standard adapter. 1/4" female pipe thread on side and bottom & 1" male pipe or 3/4" male pipe on bottom. Use with AN867-6 or 8.

1" Male Pipe .....P/N 05-20525 ..... **$47.65**
3/4" Male Pipe .....P/N 05-20526 ..... **$47.65**

ALUMINUM WELDING FLANGES

Part No.	Female Pipe Thread	Dia. "D" In	Height "H" In	Price Each
AN867-1	1/8"	1-1/2	7/16	**$6.75**
AN867-2	1/4"	1-3/4	5/8	**$7.25**
AN867-3	3/8"	1-7/8	5/8	**$7.25**
AN867-4	1/2"	2	3/4	**$8.75**
AN867-6	3/4"	2-1/4	13/16	**$11.50**
AN867-8	1"	2-11/16"	1"	**$15.75**

FINGER STRAINERS

Finger strainers are strainers for fuel tank outlets. Standard size features a brass fitting with 3/8" male pipe thread which fits AN867-3 welding flange, and 1/4" female pipe thread for valve or fuel line fitting. Screen is 16 mesh brass.

Large finger strainer has a 3/8"-NPT x 1/2"-M-NPT brass bushing with a T304 stainless steel screen.

Standard.... P/N 05-17700... **$6.75** Large .... P/N 05-04445 .....**$18.50**

RAVEN HEADER TANKS

Header tank used for any aerobatic aircraft such as Pitts Specials etc. Comes with mounts to attach to existing tank straps, clamps and weld-in fitting for main tank. 16" x 7" in diameter. Holds approximately 2-1/2 gallons. Weighs 3 lbs.

P/N 05-00913 ..... **$348.95**

RAVEN WING TANKS

Wing tank used to hold extra fuel or smoke oil in top wing of aerobatic biplanes.

S1-S Wing Tank .....P/N 05-00914 ..... **$361.95**
S1-C Wing Tank.....P/N 05-00915 ..... **$256.95**
Experimental S2, Eagle Wing Tank .....P/N 05-00916 ..... **$335.95**

FUEL TANK DRAIN FITTING

This specially designed fuel tank drain fitting minimizes drain flow vortexing that allows water and contaminants to remain in tank no matter how many times the drain cycle is repeated. Threads are 1/8" NPT - brass throughout P/N 05-28900 .....**$38.30**

MICROGRID LIGHTING STRIKE PROTECTION

MicroGrid precision expanded strike protection in composite aircraft structures. In fact, MicroGrid is used by Boeing, Embraer, and many other aircraft manufacturers. MicroGrid's single unit structure is superior because it can't unravel like woven wire. Nor is costly material removed as in etching or stamping.

The appropriate gauge and pattern of material is easily adhered to the composite for 200,000 amps of conductivity. Aircraft are easily repaired after a lightning strike by simply sanding away the surface to apply a patch of new MicroGrid. And fantastically flexible MicroGrid easily conforms to a variety of shapes and contours in both manufacture and repair. It can be bent, shaped and laminated with a variety of materials, including those which expand, contract and flex.

ALUMINUM OR COPPER MICROGRID

Aluminum MicroGrid is ideal for most composite aircraft structure applications and is nearly half the weight of the copper MicroGrid. Copper MicroGrid is recommended for use with carbon fiber structures. Two layers of MicroGrid are recommended over fuel tank applications.

Aluminum MicroGrid (37" wide).....P/N 05-02631 ..... **$17.25 ft.**
Copper MicroGrid (18" wide).....P/N 05-02632 ..... **$10.50 ft.**

	Aluminum	Copper
Weight - Lbs./SF	0.016	0.029
Base Metal Thickness	0.004 inch	0.003 inch
LWD	0.080 inch	0.125 inch
Overall Thickness	0.006 inch	0.005 inch
Open Area	68%	77%

ALUMINUM FUEL TANKS

PITTS SPECIAL FUEL TANK

Design	Capacity (Gallons)	Main Tank	Part No.	Tank for Inverted Flight	Part No.	Each Wing Tank	Part No.
Acro-Sport II	24			**$591.00**	05-18510		
Baby Greatlakes	10	**$943.00**	05-03058				
Cougar	23	**$582.00**	05-18600				
Cuby	12.5	**$498.00**	05-18700				
EAA Bi-Plane	16	**$526.00**	05-18800				
Fly Baby	14	**$516.00**	05-18900				
Hatz Bi-Plane	18					**$876.00**	05-19020
Mustang I	16	**$532.00**	05-19100				
Mustang II	27	**$808.00**	05-19200				
Pitts Special	19			**$572.00**	05-19310		
Pober Pixie	12	**(Send Drwg. 05-19400)**				**$949.00**	05-19420
Skybolt	29			**$529.00**	05-19510	**$414.95**	05-19520
Smith Miniplane	16	**$658.00**	05-19600				
Starduster I	18	**$514.00**	05-19700	**$613.00**	05-19710	**$437.95**	05-19720
Starduster II	26	**$826.00**	05-19800	**$824.00**	05-19810	**$870.00**	05-19820
Tailwind		**$807.00**	05-19950				

SEE PRO-SEAL TANK SEALANT AND SLOSHING COMPONENTS IN COVERING SUPPLIES SECTION

OPTIONAL TANK INSTALLATIONS

Sight Gauge (Fittings and Tubing) for Pitts or Skybolt Tanks - no installation charge.
P/N 05-29000.....**$33.75**

Flop Tube, Low Fuel Level Warning, Flush Filler Cap (specify type) - Add $5.00 installation charge and cost of unit to price of tank.

ELECTRIC SENDER - Add $15.00 installation charge and cost of unit to price of tank.

FUEL TANK HOLD DOWN STRAPS

Fabricated from.035 stainless steel. Straps are 1"wide x 36" long. For VariViggen Starduster & others. P/N 05-20400.....**$2.25**

ANTI-CHAFE CHANNEL FOR FUEL TANK STRAPS

Neoprene rubber extrusions to hold 1" wide metal fuel tank straps.
#9 Channel P/N 05-01800 ..... **$1.33 Ft.**

CAUTION: Electric sender should not be installed in a tank with flop tube to prevent possible entanglement. Tank should be free of everything but flop tube. Use sight gauge with flop tube.

Prices are based on tanks manufactured to the original plans as issued by the designer. Minor modifications such as changes in tank fitting sizes or locations can be made at additional charge. Please submit all pertinent data with respect to desired changes at time of order.

ALLOW 2-3 WEEKS DELIVERY TIME ON ALL TANKS.

CUSTOM TANKS AVAILABLE: SEND BLUEPRINT OR SKETCH FOR QUOTATION
ADD $15.00 BOX CHARGE FOR CRATING TANKS FOR SHIPMENT

CURTIS SUPERIOR VALVES

CURTIS DRAIN VALVES

Curtis Superior Valve Co., Inc. Fuel and Oil Drain Valves have been the standard in the industry for over 60 years. Curtis valves are used in OEM applications and in the military aircraft. Most valves are made of high quality brass for resistance to corrosion and rusting ,giving them long service life and extended seal life. Most Curtis Valves have a spiral to open and twist to lock for easy fuel sampling and oil draining.

05-01869 CCA-1550 *05-01872 CCA-1700* *05-03652 CCA-7450* *05-03659 CCB-36700*

05-03647 CCA-4300 *05-03657 CCB-4320* *05-03651 CCA-5800-1* *05-03648 CCA-4350*

05-01935 CCA-3400 *05-03658 CCB-36450*

***=TSO-C76, B= Brass, AA= Aluminum Alodine, A= Aluminum, BC= Brass/Cadmium Plated, SS= Stainless Steel**

Model Number	Thread Size	Installed Length	Material	Part No.	Price
CCA-1250	1/8" NPT	1.358"	B	05-04045	**$11.75**
CCA-1300	1/4" NPT	1.690"	B	05-04046	**$11.75**
CCA-1350	38" NPT	1.920"	B	05-04047	**$16.50**
CCA-1400 Valve*	1/2" NPT	1.685"	B	05-03060	**$24.50**
CCA-1550 Valve*	1/8" NPT	1.052"	B	05-01869	**$11.50**
CCA-1600 Valve*	1/4" NPT	1.340"	B	05-01870	**$11.75**
CCA-1650 Valve*	3/8" NPT	1.510"	B	05-01871	**$15.50**
CCA-1700 Valve*	1/2" NPT	1.685"	B	05-01872	**$24.50**
CCA-3400 Valve*	1/2" I.D. Hose	1.337"	B	05-01935	**$12.90**
CCA-3600	1/4" NPT	1.690"	BC	05-04048	**$16.00**
CCA-4300 Valve*	7/16" 20 NF3	.625"	BC	05-03647	**$17.75**
CCA-4350 Valve*	9/16" 18 UNF3	.635"	BC	05-03648	**$20.95**
CCA-4800	1/4" NPT	1.690"	BC	05-04049	**$18.75**
CCA-4850 Valve*	1/8" NPT	1.052"	BC	05-00686	**$15.95**
CCA-4950	3/8" NPT	1.920"	BC	05-04050	**$18.50**
CCA-5400 Lock Wire Drilled*	7/16" 20 NF3	1.205'	BC	05-04056	**$22.50**
CCA-5800-1 Valve Non-Locking*	7/16" 20 NF3	.620"	BC	05-03651	**$18.50**
CCA-5800-3 Valve Non-Locking*	1/8" NPT	1.205"	BC	05-03694	**$18.00**
CCA-6000	9/16" 18 NF3	1.234"	BC	05-04051	**$22.75**
CCA-7250	3/4" 16 NF3	1.483"	BC	05-04052	**$25.75**
CCA-7450 Valve*	1/8" NPT	1.052"	BC	05-03652	**$12.90**
CCA-7500-1 Flush Valve	3/4" 16 NF3	1.437"	A	05-03653	**$73.00**
CCA-31300	9/16" 18 NF3	1.234"	BC	05-04053	**$24.75**
CCB-36100	3/4" 16 NF3	1.342"	AA	05-04054	**$57.25**
CCA-36150 Valve*	1/8" NPT	1.054"	BC	05-03654	**$15.65**
CCA-36400	6/16" 18 NF3	1.234"	BC	05-04055	**$22.75**
CCA-39000 Valve*	1/4" NPT	1.340"	SS	05-03655	**$31.50**
CCA-39500 Valve*	9/16" 18 UNF3	1.084"	BC	05-03693	**$30.75**
CCA-39550 Valve*	5/8" 18 NF3	1.054"	B	05-01873	**$26.90**
CCA-39560 Valve	5/8" 18 NF3	2.000"	B	05-03656	**$34.50**
CCB-4320 Valve*	7/16" 20 NF3	.835"	BC	05-03657	**$16.75**
CCB-36450AF Flush Valve	3/4" 16 NF3	.755"	AA	05-03658	**$72.85**
CCB-36700 Valve*	1/8" NPT	1.058"	BC	05-03659	**$11.50**
CCB-36750 Valve*	1/8" NPT	1.058"	SS	05-03660	**$26.25**
CCB-37000 Valve*	1/2" NPT	1.685" (Body) .875" (Stem)	B	05-03061	**$31.50**

AP

FLUSH VALVES ADAPTER PLATE ASSEMBLY

P/N 05-04545

Overall Dia. 2.75 Depth: 640,000-650,000 (From mounting surface to bottom hole dia: 1-1/2")

Flush Valve Adapter Plate Away PLT-275V P/N 05-04545 ..... **$113.95**

P/N 05-04546

Flush Valve Adapter Plate Assembly.With 6 holes PLT-275AV P/N 05-04546 ..... **$126.95**

CURTIS SUPERIOR REMOVAL TOOLS

Helps with the installation and removal of Curtis flush mounted valves without damage. Eliminates the problem of damage as well as valve torque.

Name	Works with valve:	Part No.	Price
CST-18	CAA-1250, 1550, 4850, 7450, 9950, 36150, CCB-36750	12-02244	**$48.50**
CST-78	CCA-1400, 1700, 39550, 39560, CCB-3700	12-02245	**$48.75**
CST-916	CCA-1300, 1600, 3600, 4800, 4900, 5900, 39000	12-02246	**$48.50**
CST-1116	CCA-1350, 1650, 2440, 2450, 2460, 4320, 4950, 5400, 5800-1	12-02090	**$48.50**
CST-36450	CCB-36450, CCB-36450-5	12-02280	**$64.00**

QUICK DRAIN HOSES

A simple push and twist action locks the CCB-39600 Series Quick Drain Hose in place and opens the drain. Fuel / oil flows through 5' of high grade vinyl tubing preventing spillage.

Quick Drain Hose	Connector Color	Used with Valves	Part No.	Price
CCB- 39600-1	Black	CCA-1400, CCA-1700, CCA-39550	05-00138	**$16.25**
CCB- 39600-2	Blue	CCA-1350, CCA-1650, CCA-4950	05-00139	**$15.95**
CCB- 39600-3	Yellow	CCA-1300, CCA-1600, CCA-3400, CCA-3600, CCA-4800, CCA-4900, CCA-39000	05-00141	**$16.25**
CCB- 39600-4	Silver	CCA-4350, CCA-7250, CCA-36400, CCA-36650	05-00142	**$15.95**
CCB- 39600-5	Brass	CCA-1250, CCA-1550, CCA-4300, CCA-4850, CCA-9950, CCB-36750	05-00143	**$16.75**

OIL DRAIN VALVE ASSEMBLIES

Jabiru *Rotax*

05-03540

08-06258

08-06257

Curtis Oil Drain Valves for Jabiru and Rotax			
Description	**Application**	**Part No.**	**Prices**
Curtis Oil Drain Valve - 1/2" - 20 Brass Lockwire Drilled Action-Spiral, Lock Open	Jabiru 2200, 3300	05-03698	**$32.75**
Curtis Oil Drain Valve - 12mm - 1.75mm Brass, Length 1.45" Lock Wire Drilled Action-Spiral, Lock Open	Rotax 912F2, 912F3, 912F4, 914F2, 914F3, 914F4	05-03697	**$34.50**
Curtis 90 Degree Adapter for Jabiru and Rotax			
Jabiru 90 Degree Adapter CCA-2480	Jabiru 2200, 3300	08-06258	**$49.95**
Rotax Oil Drain Valve CCA-2450. For Experimental Use Only. 1/2" - 20. Brass. Lockwire Drilled. Action: Spiral, Lock Open.	For Rotax 912F2, 912F3, 912F4, 914F2, 914F3, 914F4	15-05942	**$34.50**
Jabiru Oil Drain Valve CCA-2460. For Experimental Use Only. 12 mm - 1.75 mm Brass, Length 1.45". Lock Wire Drilled. Action- Spiral Lock Open.	For Jabiru 2200, 3300	15-05444	**$34.50**
Rotax 90 Degree Adapter Thread Size: 12mm-1.75mm, Internal/External Brass CCA-2470	Rotax 912F2,912F3, 912F4, 914F2, 914F3,914F4	08-06257	**$49.95**
Oil Drain Valve Adapter Assembly			
Oil Drain Valve Adapter Assembly	Rotax	05-03539	**$85.50**
Oil Drain Valve Adapter Assembly	Jabiru	05-03540	**$85.50**

CURTIS FLUSH MOUNTED FUEL VALVES

05-04885 *05-04886* *05-04887* *05-04888* *05-06490*

Now FAA TSO-C76 Approved. Brass Fuel Valves, Push to Open, Non-Lock Open, Use Pin Type Cup. Use Curtis Drain Cup - CCA-39680.

Valve No.	Valve Thread	Auto Valve PN	Saf-Air PN	PN	Price
CCA- 2500	1/8 NPT	F391-18	SA-18	05-04885	**$17.75**
CCA- 2600	1/4 NPT	F391-14	SA-14	05-04886	**$17.75**
CCA- 2700	3/8-24 UNF	F391-32	SA-32	05-04887	**$17.75**
CCA- 2800	7/16-20 UNF	F391-72	SA-72	05-04888	**$17.75**
CCA- 2900	1/2-20 UNF	F391-82	SA-82	05-06490	**$18.65**

CURTIS QUICK DRAIN SECURITY SYSTEM

This Curtis Quick Drain Security System is designed to accept a locking device that will prevent tampering and the theft of fuel. FAA TXO-C76 approved. The dash number on the model numbers below indicates the number of valves and locks included. System Contains: CCA-39650 Quick Drain Valves, CCA-39660 Quick Drain Locks, CCA-39670 Master Keys, and CCA-39680 Sample Cup Opener

Part Number	Contains	Part No.	Price
CCA-39700-2	2 Tank Locking System	05-01239	**$38.00**
CCA-39700-4	4 Tank Locking System	05-01255	**$73.85**
CCA-39700-6	6 Tank Locking System	05-01256	**$105.95**

FUEL DRAIN VALVES

SAF-AIR DRAIN VALVES

SAF-AIR push type fuel drain valves are close tolerance valves of simple design. These valves provide the most trouble free operation of any other line of valves in the industry. SAF-AIR valves are manufactured with an o-ring placed on the stem to seal against a flat seat on the body. This design eliminates an area where dirt can gather, thus putting an end to the main cause of fuel drain valve drip. FAA & PMA APPROVED.

CAV-110H-4 CAV-160H-4 CAV-170H-4 CAV-180H-4
CAV-110 CAV-160 CAV-170 CAV-180

MODEL CAV-110 1/8" NPT - For Cessna 310 tip tanks; Mooney Mark 20 and 20A; all Ercoupe models; Bellanca, Taylorcraft model B; Stinson 108, 108-1, 108-2, 108-3; Voyager model 10 and 10A; Navion; Waco VK series and UPF; and Sea Bee. Fits all standard gascolators. ***MODEL CAV-160 1/4" NPT -*** For Piper models J-3, J-4, PA-11, -12, -14, -25, -16, -17, -18, -20, -22, -23, and -15 Tri-Pacer; Apache; Champion; Aeronca; Cessna T-50 and earlier 120 and 140 models; and Beechcraft AT-11 and C-18S. ***MODEL CAV-170 7/16-20 NF-3 -*** For all Cessna late 140A models, 150, 170, 170A, 170B, 172 and 175. ***MODEL CAV-180 3/8-24 NF-3 -*** For Cessna 180, 182, 185, 190, 195, 205, 210, 310, 310A, 310B, 310C and 336. ***CAV-100H-4, CAV-160H-4, CAV-170H-4, CAV-180H-4 -*** All four models come with 1/4" hose end.

Note: All aircraft applications are for general reference only. Verify correct valve for your aircraft before ordering.

Part No.	Thread	Price	Part No.	Thread	Price
CAV-110	1/8" NPT	**$12.90**	CAV-170	7/16-20 NF	**$14.50**
CAV-110H4	1/8" NPT	**$17.85**	CAV-170H-4	7/16-20 NF	**$17.90**
CAV-160	1/4" NPT	**$12.85**	CAV-180	3/8-24 NF	**$14.50**
CAV-160H-4	1/4" NPT	**$17.65**	CAV-180H-4	3/8-24 NF	**$17.90**

Replacement Seals	Price Each
MS29513-006 Tip (all models)	**$0.24**
MS29513-011 Seat (CAV-180)	**$0.26**
MS29513-012 Seat (CAV-170)	**$0.26**

SAF-AIR SPECIALTY FUEL DRAIN VALVES

4350-6L F75 P3750 C500
SA-60S SA5817-4C

The F75 is used on wing tip tanks or any application where a 3/4"-16 flush mounted fuel drain valve is needed. This aluminum valve is simple and clean to operate, using any standard sampling tube. Just push up on the center of the valve to sample fuel. Our new design allows all the fuel to enter the tube without leakage. This valve is designed for use on Cessna 310 through 441 model airplanes. • The C500 is used on the bladder style wing tanks with a 1/2" diameter nozzle. • The P3750 has a 3/8" NPT thread and is designed for use on those applications. Both valves provide push-to-test or push-and twist features for locking the valve open. Material is 360 brass. • The SA5817-4C is used with a 3/4"-16 bulkhead fitting to mount the valve flush with the outside skin of the plane. A hose is attached to the valve with a 7/16"-20 fitting at the low point of the fuel system.Material is anodized aluminum. • The SA-60S valve is the same as the CAV-160 except it is constructed of 304 stainless steel. Valve can be used in highly corrosive applications such as salt water. • 4350-6L has a 7/16"-20 thread and a long stem that can be cut to length for your application. Material is anodized aluminum.

Part No.	Thread	Price	Part No.	Thread	Price
C500	1/2" Tube	**$14.50**	SA-60S	1/4" NPT	**$35.75**
P3750	3/8" NPT	**$17.25**	4350-6L	7/16"-20	**$64.50**
F75	3/4-16	**$75.80**	SA5817-4C	3/4"-16	**$77.65**

PIPER FUEL DRAIN KIT

Developed in compliance with Airworthiness Directive 85-06-04 for Piper aircraft. Fits most popular Piper aircraft, including J-3, 4, 5; PA-12, 14, 15, 16, 17, 18, 20 & 22. Fuselage kit includes a bushing, elbow, elastic grommet, hose, clamp, drain valve, warning sign & instructions (AD 85- 06-04). Wing kit incl. bushing reducer, drain valve, warning sign & instructions (AD85-06-04).

Fuselage Tank Fuel Drain Kit ..... P/N 05-01892 ..... **$42.50**
Wing Tank Fuel Drain Kit ..... P/N 05-01893 ..... **$23.25**
Wing Tank Fuel Drain Kit/Flush Drain ..... P/N 05-01894 ..... **$21.75**

F391 FLUSH DRAIN VALVE

Valve mounts in the sump, the same as original plug, with no projection. Can't be knocked off or opened by particles thrown from propellers. Opens only when operated with sampler cup, rod or wire. Clear cup permits inspection for water or contaminants. FAA approved.

Part No.	Thread Size	Application	Price
F-391-14	1/4" NPT	Aeronca, Beech AT-11, D-18S, Piper PA-11, 12, 18, 20, 22, Apache, champion, Howard	**$23.75**
F-391-18	1/8" NPT	Stinson, Waco VK, UPF, Seabee, Bellanca, T-Craft "B", Navion	**$23.00**
F-391-32	3/8-24	Cessna 180, 182, 195	**$21.85**
F-391-72	7/16-20	Cessna 140, 150, 170, 172, 175	**$23.00**
F-391-82	1/2-20	Cessna Cardinal, 210	**$21.00**

Sampler Cup - Fits all F-391 Valves ..... P/N 05-17300..... **$3.90**

SAF-AIR FLUSH-MOUNTED DRAIN VALVES

SA14 SA18 SA32 SA72 SA82 SA187 SA53S

SAF-AIR designed its line of flush mounted fuel drain valves to be an exact replacement for the Auto Valve F391 line of flush fuel drain valves. Unlike the Auto Valve, SAF AIR valves can be rebuilt. These valves offer a dependable, low-cost solution when a flush mount is needed. ***FAA & TSO-C76 approved.***

P/N	Size	Equiv.	Price	P/N	Size	Equiv.	Price
SA14	1/4 NPT	F391-14	**$19.85**	SA72	7/16-20	F391-72	**$19.85**
SA18	1/8 NPT	F391-18	**$19.85**	SA82	1/2-20	F391-82	**$19.85**
SA32	3/8-24	F391-32	**$19.85**	SA187	1/8 NPT	F391-187	**$19.85**
				SA53S	7/16-20	F391-53	**$19.85**

LOCK OPEN SAF-AIR DRAIN VALVES

Similar to the drain valves above with including the capability of locking in the open position making pre-flight check for contamination and water in the fuel system very easy. Models 1250 & 1250H are popular choices to install on gascolators.

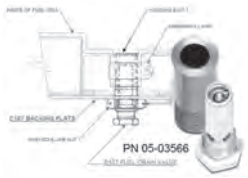
FAA & TSO-C76 APPROVED.

1250 1250H 2500 2500H 3750 3750H 4375 4375H

Part No.	Size	Price Ea.	Part No.	Size	Price Ea.
1250	1/8 NPT	**$15.75**	1250H	1/8 NPT*	**$19.75**
2500	1/4 NPT	**$15.75**	2500H	1/4 NPT*	**$19.75**
3750	3/8-24	**$14.50**	3750H	3/8-24*	**$19.75**
4375	7/16-20	**$15.75**	4375H	7/16-20*	**$17.90**

These valves come with 1/4" hose adapter

FUEL DRAIN VALVE KITS FOR CESSNA, PIPER, AND BEECHCRAFT



These high quality fuel drain valve kits are FAA-PMA approved for a wide range of Cessna, Piper, and Beechcraft aircraft. These drain valves prevent drain nipple slippage, require no O-rings, feature corrosion free construction, and use the industry standard 1/8" pipe thread valve. ***Features***: • The valve can be rebuilt • Fuel resistant o-ring - Fluorosilicone • Push to test against the wing surface ***Specifications***: • Material: Valve 360 Brass, Housing Stainless • Finish: Cadmium Plate • Temperature: -100° to +350°F (-73° to +177C) • O-Rings: M25988-005 • Pressure: 60 PSI max.

Description	Part No.	Price
Kit for Cessna	05-03566	**$136.95**
Kit Beech	05-03567	**$137.95**
Kit Piper	05-03568	**$137.95**

AP

GASCOLATORS – FUEL TESTERS

ACS GASCOLATOR

All-metal gascolator with S.S. screen, 1-7/8" dia. cadmium plated steel bowl w/quick drain. Top is CNC machined from 6061-T6 aluminum. Top casting has 1/4" pipe ports for 3/8" fuel line and one 1/8" pipe port for primer fitting. Wt: 8 oz. May be used with aviation and/ or auto fuel. Made in the U.S.A.

P/N 10580.....**$69.50**

Replacement Gaskets - For auto fuel 3/32" thick x 2-1/8" O.D. 10536-1 P/N 06-00441 .....**$5.85**

Replacement Screens -

120 Microns Stainless Steel..... P/N 10543-1 .....**$2.15**

74 Microns Stainless Steel..... P/N 05-03436 .....**$2.70**

ACS GASCOLATOR INSTALLATION BRACKET

Versatile bracket of .016 stainless steel accommodates gascolators with either metal or glass bowl. When mounted as illustrated, inlet and outlet connections are on sides. When bracket is inverted, one port of gascolator faces firewall for direct routing of fuel line through firewall. Fits gascolators sold after May 1, 1989. Made in the U.S.A.

P/N 10371.....**$17.90**

ACS HIGH PRESSURE GASCOLATOR

New ACS high pressure gascolator. Lighter weight and simpler design than the ACS "classic" gascolator. Bailwire and attaching hardware have been eliminated. Threaded collar secures bowl to top. Tested to 50lbs. Bowl is cadmium plated and top and collar are anodized for corrosion protection. Made in the U.S.A.

High Pressure Gascolator ..... P/N 05-04248.....**$99.65**

Replacement Gasket 10536-1..... P/N 06-00441.....**$5.85**

Replacement 120 Micron Screen 10543-1 ... P/N 10543-1.....**$2.15**

Replacement 74 Micron Screen ..... P/N 05-03436.....**$2.70**

FAA-APPROVED GASCOLATORS

CNC-machined out of 6061 aluminum for longer use. Anodized "O" ring seals for improved sealing capabilities, a bayonet tab locked bowl system. Direct replacement for factory parts. FAA-approved for many Piper, American Champion, Husky, Maule, Taylorcraft, Dynac and Cessna aircraft. Fits in existing Piper mounting brackets. Mounting brackets available for Cessna. Great for homebuilders also. All fittings and drain plugs are for display purposes only and are not included with Gascolator purchase. Aircraft Make and Model, Serial Number and N number required to make sure correct gascolator is ordered. Check the Aircraft Spruce website for aircraft cross-reference list or contact us for gascolator approved for your aircraft.

SA3-00

SA3-00B

SA3-10

SA3-10A

Model	Size	Part No.	Price
SA3-00	1/4 NPT - 3/8" Line - 3 oz.	05-00840	$218.00
SA3-00B*	1/4 NPT - 3/8" Line - 3 oz.	05-02674	$219.95
SA3-10	3/8 NPT - 1/2" Line - 4 oz.	05-02675	$285.95
SA3-10A*	3/8 NPT - 1/2" Line - 4 oz.	05-00894	$283.00

8130 Forms are not available for these gascolators.

**** Note: This unit does not require a bracket for installation.***

USHER GASCOLATOR 4

Can be used on fuel injection systems up to 50 psi .Anodized inside and out to prevent corrosion. Has two 1/4" NPT ports for 3/8" fuel line, a 1/8" primer port, and a 1/8" NPT drain valve port. Mounting bracket not included. Now comes ready to mount to firewall.

Gascolator .....P/N 05-00632 .....**$78.95**

Replacement Screen.....P/N 05-25972 .....**$2.50**

FUEL FILTERS

P/N 05-33031

P/N 05-33033

P/N 804

For homebuilts. Used on VariEze and various gyrocopters. Rated to 10 PSI. Not recommended for fuel injected systems.

Description	Part No.	Price
1/4" Fuel Filter (Metal)	05-33031	$6.25
3/8" Fuel Filter (Plastic)	05-04701	$6.75
1/4" Fuel Filter (Plastic)	05-33001	$5.95
1/4" Fuel Filter (Glass #804)	804	$14.75
3/8" Fuel Filter (Glass #806)	806	$14.75

MICRON 10 FUEL FILTER

Length: 4.25" Filter medium: 1.375" dia. 304 pleated SST disk Dia: 2.0" Filter Efficiency: 10 Micron Flow rate: 15.3 gpm Oper. Press: 8,000 PSIG Weight: 5 oz. Drop in pressure: 1.0% Fitting Size: AN6. This filter is washable and reuseable P/N 05-01699.....**$87.95**

GATS JAR FUEL SAMPLER

The incredible GATS Jar allows a pilot to pour the fuel used in the preflight check back into the fuel tank without fear of water contamination. The jar uses a special separator screen that, when coated with avgas, forms a barrier to water and debris, yet allows passage of avgas. The GATS Jar also detects jet fuel in the event of inadvertent fueling of your aircraft with jet fuel. By using the GATS Jar, pilots can help protect the environment by pouring sample fuel back into the tank instead of on the ground. 12 oz. ..... P/N 05-21250 ..... **$16.95**

16 oz. ..... P/N 05-04237 ..... **$18.95**

Replacement actuator ..... P/N 17-00043 ..... **$5.95**

SHORT FUEL TESTER

The unique snap-on probe fits all quick-drain valves, stores compactly, and reduces spillage, loss, and probe breakage. The 4" (10.16cm) transparent cylinder has the octane color-coding molded in the side for quick reference. Also includes a chrome-plated screwdriver blade with both a Phillips and a slotted head.

4"..... P/N 05-00448 ..... **$6.50**

6"..... P/N 05-03386 ..... **$7.50**

CURTIS FUEL SAMPLER CUP

This fuel sampler cup is designed for use with many popular fuel drain valves including the F391 drain valves used on many of today's productions aircraft. Wide bowl allows fuel sampling without fuel dripping onto the hands.

P/N 05-17300..... **$3.90**

ASA AIRCRAFT FUEL TESTING CUP

Protect yourself from fuel contamination by visually checking the fuel for water and debris. Clear cup with a reinforced steel pin that works with most aircraft. Measures 2-1/2" high x 1-3/4" diameter. Lifetime warranty. P/N 13-02353..... **$5.50**

JEPPESEN DELUXE AIRCRAFT FUEL CHECKER

This deluxe version of the popular screwdriver type fuel checker features some great improvements in the product. A removable bronze (3/32" brazing rod) replaces the flimsy plastic stick. Magnified viewing area allows close inspection of contaminates, and 100% of the sample can be seen. A removable splash guard prevents a fuel shower on the user, and the guard stows flat along side when not in use. This tester incorporates a stronger design to resist cracking and breakage.

P/N 05-17215..... **$17.23**

GASOHOL TESTER

This compact fuel tester / double tip screwdriver combo measures the presence and percentage of alcohol in gasoline, and tightens errant screws. P/N 05-03439..... **$5.75**

MULTISUMP AVIATION FUEL TESTER

Sump, Inspect, Collect, and Safely Pour Back fuel samples. The MultiSump+™ now includes a fuel strainer! A micro-mesh stainless steel screen keep impurities and water from entering the fuel tank during pour back. In addition the MultiSump+™ allows the pilot to sample and individually inspect fuel from each sump while a quick dump feature transfers fuel to the lower catch can thus eliminating emptying the tester after each sump. P/N 05-04653 .....**$24.95**

ACS FREE FLOW ONE-WAY CHECK VALVE

Prevents return fuel flow during normal operation but provides by-pass fuel feed in an emergency if the fuel pump fails. Wt. 1 oz., 2-7/8" long. Use with tube fittings for 3/8" dia. fuel line. Anodized for corrosion resistance.

P/N 10630 ..... **$27.50**

FUEL FILTER

In-line, high-capacity, translucent filter with screen. Has standard 1/4" barb inlet and outlet tubes.

P/N 05-01030.....**$3.85**

FUEL FILTER

In-tank type. Brass construction with fine-mesh screen. Has standard 1/4" barb inlet and outlet tubes. P/N 05-01031.....**$3.90**

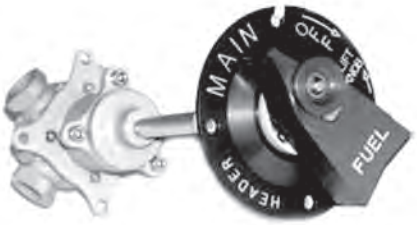
3/8 INCH PLASTIC FILTER

Plastic in-line fuel with 3/8" inlet & outlet - metal version is 33033 with hoses and camps. Style: Fuel Filter. Height: 3.543. Outer Diameter: 1.826. Nominal Micron Rating: 30

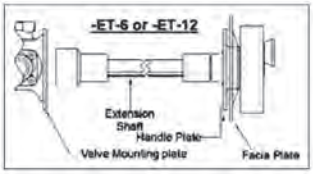
P/N 05-04701.....**$6.75**

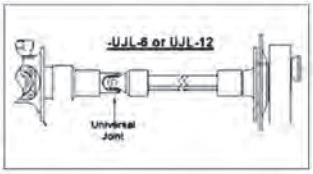
EXTENSION FUEL VALVES - GASCOLATORS

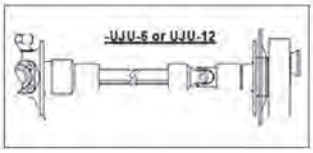
ANDAIR EXTENSION FUEL SELECTORS

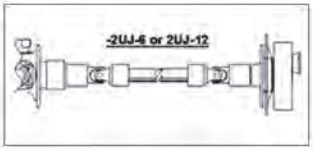


For use with any Andair valve. The kit includes everything needed to operate the valve remotely by way of a specially extruded tube. There is no riveting involved, just cut the tube down to length and fit together. To maintain the firm detent at each tank selection, there is a detent cap on the top of the valve. The special tube then fits into this. Then, so as to maintain the safety feature, where the valve cannot be inadvertently switched off, the button has been moved to the upper section. Like the standard valves, the button must be raised to switch the fuel of. The tube is available 6" or 12" long and 4 extension options are available. The extension must be ordered with the valve. (i.e. an extension cannot be retro fitted to a previously purchased valve).









Option	Size (In.)	Price
ET	6	Call or Email for price and availability
1JU	6	
2JU	6	

Option	Size (In.)	Price
ET	12	Call or Email for price and availability
1JU	12	
2JU	12	

E | Valve Part No. | ET / 1JU / 2UJ | 6 / 12

i.e. **FS25f5-M** or **FD20-20-D2-6M**

Length of extension tube:
6 = 6" long.
12 = 12" long.

ET: with one universal joint on lower part of valve
UJL: with one universal joint on the upper section of the valve
UJU: with 2 universal joints.

Example:
E-FS25f5-M-ET-6 = (6"long, 1/2"Left, Main, Right, Off, Straight Ext. Valve)
E-FS20-20-D2-6M-2UJ-12 = (12"long, 3/8"duplex fuel selector extension with 2 UJs and 12" tube).

SPECIAL ENGRAVING - Andair can offer special engraving for all of the available valves. Please contact the Aircraft Spruce technical department for more information. Here are some examples:

GASCOLATOR FIREWALL FITTING

Includes mounting flange and backing plate. Mount your gascolator solidly on the firewall with this special bulkhead fitting. Simply drill a 5/8" hole through the firewall and a backing plate on the cabin side and rivet the 1-1/2" x 1/8" flange to the firewall. Connect the incoming fuel line to the AN6 male tube fitting on the cabin side. Screw the gascolator onto the 1/4" male pipe (on the engine side). Machined from mild steel (303 stainless steel). P/N 05-00907 .....**$18.85**

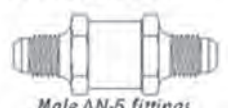
ANDAIR GASCOLATORS

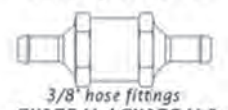
05-29551

Andair make Gascolators for both 3/8" and 1/2" lines. Both types have a screw locking ring that prevents the bowl from coming off, and a facility for this to be wirelocked. The bowl is internally sealed with an Viton (R) O-ring. A PTFE coated 70 micron Stainless Steel mesh is used as the filter screen. The PTFE coating helps prevent water from passing, by maintaining it as a droplet formation. A large filter area is present and wide passages have been incoropated so that the pressure loss through the Gascolators is kept to an absolute minimum. There is an 1/8 NPT hole on the bottom of the bowl so it can be drained and also one on the top of the body. This one can be used as a pressure tapping or a filtered supply to the primer pump. A selection of fittings can also be used with the GAS375 and the GAS500.

GAS375M with -6 Male Fittings ..... P/N 05-29551.....**$199.00**
GAS375F w/ 1/4" NPT Female Fittings ... P/N 05-29552.....**$199.00**
GAS375B w/ Banjo Fittings..... P/N 05-29553.....**$199.95**
GAS500F - 3/8" NPT Female Fittings..... P/N 05-00129.....**$394.95**
GAS500M -has -8 Male Flare Fittings ..... P/N 05-00136.....**$383.95**
Replacement o-ring for GAS375..... P/N 05-00704.....**$6.75**
Replacement o-ring for GAS500..... P/N 05-00706.....**$13.95**
Replacement screen for GAS375 ..... P/N 05-00707.....**$51.75**
Replacement screen for GAS500 ..... P/N 05-00708.....**$79.50**
Stainless Steel Drain Valve..... P/N 05-00709.....**$38.65**

ANDAIR CHECK VALVE

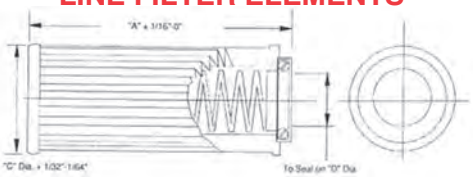




Built from aircraft grade Aluminum and anodized for corrosion protection this lightweight and compact unit is excellent. The check valve is ideal for tank vents and high pressure fuel pump bypass lines. Its extremely light weight internal shuttle operates with the slightest pressure yet the internal O-ring seals allow the unit to be used up to 50 PSI. Other qualities include break out pressure less than 1 PSI, great flow characteristics around shuttle, and bleed allows shuttle to weep off pressure in the event of a blocked line. Features AN-6 (3/8") fitting on bottom. Valve measures 5/16" dia. x 2.75" long.

Model No.	Bleed	End Fittings	Part No.	Price Ea.
CK250	No	7/16-20	05-00713	**$64.50**
CK250-B	Yes	7/16-20	05-00714	**$64.50**
CK375	No	9/16-18	05-00716	**$64.50**
CK375-B	Yes	9/16-18	05-29555	**$64.50**
CK250-H	No	1/4" hose	05-00717	**$64.50**
CK250-H-B	Yes	1/4" hose	05-00718	**$64.50**
CK375-H	No	3/8" hose	05-00719	**$64.50**
CK375-H-B	Yes	3/8" hose	05-00721	**$64.50**

PUROLATOR AN6235 SERIES LINE FILTER ELEMENTS



* MIL-F-5504 Qualified
* Qualified for use in MS28720 and AN6234 filter assemblies.
* Operating Temperatures: -65F TO + 275F
* Element Collapse:150PSID Minimum.
* Filtration:10 Micrometers.
* Hdraulic O-ring.
* Media: microleat(c) elements (resin impregnated cellulose)
* Bubble Test 100%

AN No.	A	C	D	Part No.	Price
AN6235-1A	1.937"/ 1.875"	.859"/ .813'	.375"/ .373"	08-07076	$7.75
AN6235-34	3.500"/ 3.438"	1.656"/ 1.610"	.875"/ .872"	08-07104	$14.50

AP

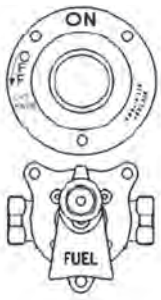
FUEL VALVES - DUPLEX VALVES

AP

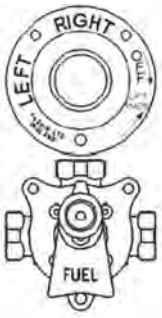
ANDAIR POSITIVE STOP FUEL VALVES

Andair Ltd. of England produce these superb Safety Fuel Selectors. Precision built from aircraft grade materials, with PTFE seals packed against a highly polished ball giving a very smooth action. Designed by an RV builder the Andair valve features a positive stop for the off position. A spring loaded button on the lever must be raised before the lever can be moved to the off position. This eliminates the possibility of turning the fuel off in flight, which is an inherent risk with some other designs. The lever has internal stops and detents on the left and right positions. The FS20 range has been designed for 3/8" fuel lines and the FS25 Range is for use with 1/2" lines. New to the range is the FS20-8 5-way selector valve.

FS20X1-F or FS25x1-F Model 1



FS20X2-F or FS25x2-F Model 2

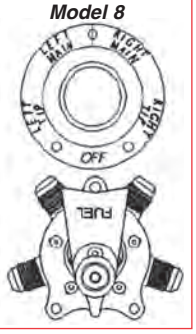


FS20X3-F or FS25x3-F Model 3

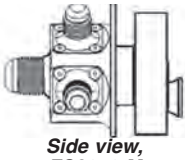
FS20X4-F or FS25x4-F Model 4

FS20X5-F or FS25x5-F Model 5

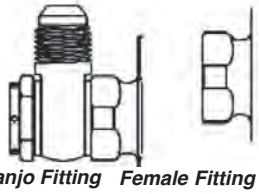
NEW 5-WAY VALVE
FS20x8-F Model 8



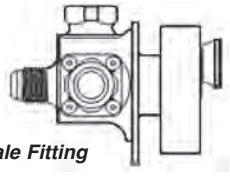
SIDE FITTINGS - The side fittings can either be -M (Male 9/16-18 for the 20 range or 3/4-16 for the 25 range) or -F (Female pipe 1/4 for the 20 range and 3/8 for the 25 range)



Side view, FS20x8-M



Banjo Fitting ***Female Fitting***



Male Fitting

LOWER FITTINGS ON MODELS 3, 4, 5 & 8 The Andair Range of fuel selectors is now available with choice of lower fittings for models 3,4,5 and 8. This fitting can either be -M (Male 9/16-18 for the 20 range or 3/4-16 for the 25 range) or -F (Female pipe 1/4 for the 20 range and 3/8 for the 25 rang e) or a Banjo fitting. The banjo fitting has a 360° adjustable Male 9/16-18 end for the 20 range or 3/4-16 for the 25 range.

Lower Fittings	Model	Side Fitting	Price Ea.
--	1, 2	Male or Female	CALL
Male or Female	3, 4, 5 8		CALL
Banjo	3, 4, 5 8		CALL

Lower Fittings	Model	Side Fitting	Price Ea.
--	1, 2	Male or Female	CALL
Male or Female	3, 4, 5 8		CALL
Banjo	3, 4, 5 8		CALL

FS20-20-D2 DUPLEX VALVES

Used to switch the fuel in an appliction where there is a fuel injected engine that needs flow return. It allows you to pipe surplus fuel to the same tank from which it was drawn. This avoids the worry of overfilling the return tank or having an overly complicated fuel system. Engines that can benefit from this valve are Surburu, Continental, Rotax, and Diesel engines. The FS20-20-D2 has two 3/8" sections where as the new FS25-20-D2 has one 1/2" feed section and on 3/8" return section. The valves can be supplied with either male or female fittings.

FS25-20-D2 DUPLEX VALVES - New to the range is the FS25-20-D2 which has a 1/2" feed ports and 3/8" return ports, for use in larger injected engines.

Model No.	Part No.	Description	Thread	Ports	Price
FS20-20-D2-6M	05-06926	3/8" Feed & Return	1/4" Pipe	Male	**$594.00**
FS20-20-D2-6F	05-06927	3/8" Feed & Return	9/16-18a	Female	**$594.00**
FS25-20-D2-6F	05-29562	1/2" Feed, 3/8"Return	1/4,3/8"pipe	Female	**$665.00**
FS25-20-D2-6M	05-29563	1/2" Feed, 3/8"Return	9/16-18, 3/4-16	Male	**$647.00**

FS22D2 DUPLEX VALVE

This new duplex valve from Andair has been designed for the use with low flow rate fuel and vapor return systems. An example being the Turbo charged Rotax 912S. Base on the popular FS20x2, the FS22 retains the key features of small size and light weight. The return line valve usesour a new style PTFE disc, operated via the main ball valve allowing the return fuel to flow back to the tank from whicn it ws drawn. The FS22 is availab le in two forms, the FS22-2PD with its 1/8" female pipe fittings pointing downward (see image) or the FS22-2PS (sideways pointing fittings). Both valves include all of the safety features that appear in he full range of Andair Fuel Selectors.

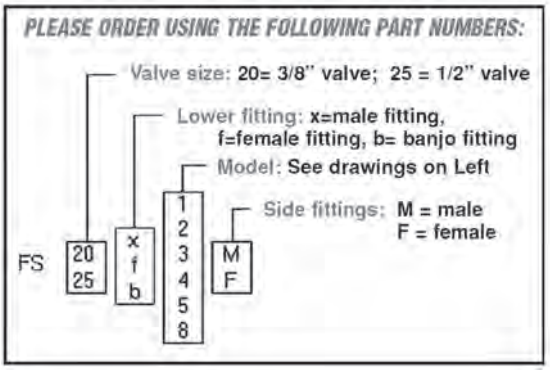
Model No.	Part No.	Description	Thread	Ports	Price
FS22-D2-6F-PS	05-29564	3/8"Feed,1/8"Return	1/4,1/8"Pipe	Female	**$376.95**
FS22-D2-6M-PS	05-29566	3/8"Feed,1/8"Return	9/16-18	Male	**$291.95**
FS22-D2-6F-PD	05-29567	3/8"Feed,1/8"Return	1/4,1/8"Pipe	Female	**$378.00**
FS22-D2-6M-PD	05-29568	3/8"Feed,1/8"Return	9/16-18	Male	**$247.95**

ANDAIR FUEL VALVES

The FS20x4 Fuel Selector is designed for high wing aircraft where it is possible to feed from both tanks simultaneously. Porting for the both position is done internally so there is no need to T the two tanks together. There is a 90 degree action between each tank selection, and the safety feature where the red button on the lever has to be raised to switch off the fuel. On the FS20x4 there are 3 ports. The lower port is the outlet to the engine and can be Male AN-6, Female 1/4NPT or a Banjo fitting which is a 360degree adjustable fitting with a male AN-6 end. Click here for more information on the fitting options. The inlet, side ports can be any of the 3/8" fittings that Andair supplies and are at the 9 O'clock and 12 O'clock positions when looking at the valve with the brass ball spindle pointing upwards (see image to left). At the 3 O'clock position there is a blanking plate that covers up a PTFE gland that opposises the forces of the other 2 PTFE glands. This cannot be removed. One of the great features of this unit is that when the selector is in the OFF position, there is no cross feed between each tank. So if you have your aeroplane parked on a slope, or if one tank is fuller than the other, no cross-feed will occur.

FS20X4 Male..... P/N 05-02635..... **$258.95**
FS20X2 Female ..... P/N 05-29505..... **$249.00**
FS20X1 Female ..... P/N 05-29506..... **$258.95**
FS20X3 Female ..... P/N 05-29507..... **$249.00**
FS20X5 Female ..... P/N 05-29509..... **$248.50**
FS20B4-M Banjo Male ..... P/N 05-01419..... **$298.95**
FS20F4 Female..... P/N 05-01432..... **$249.00**

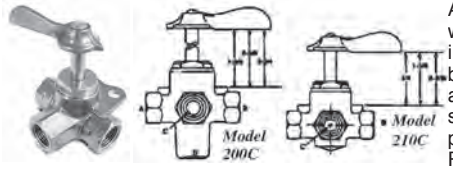
PLEASE ORDER USING THE FOLLOWING PART NUMBERS:



FS20 – 3/8" ***FS25 – 1/2"***

FUEL VALVES

HOMEBUILDERS SHUT-OFF VALVES



A full-flow plug valve with solid bottom and integral mounting bracket. Brass body and plug. Floating stem with O-ring prevents leakage. Packed with synthetic grease which resists gasoline and solvents. Indicating click on 3-port and 4-port valve (CN models) tells when handle is in full open or closed position. Tested to 30 PSI. Not FAA approved.

Part No.	Model No.	Imperial Equiv.	Valve Type	Pipe Thread	Price
6749	210-CL	108HD-04	3-Port*	1/4" Female x 1/4" Female	**$26.65**
05-01032	210-CN	108HD-06	3-Port*	3/8" Female x 3/8" Female	**$29.96**
05-01033	200-CL	114-HD-04	4-Port**	1/4" Female x 1/4" Female	**$29.90**
05-01034	200-CN	114HD-06	4-Port**	3/8" Female x 3/8" Female	**$33.50**

For 2 tanks. Flow is from either side to branch.
For 3 tanks. Flow is from any side to bottom outlet.
Note: Order valve with 1/4" pipe threads for 3/8" dia. fuel line. Order valve with 3/8" pipe threads for 1/2" dia. fuel line. These pipe thread sizes are the ones normally associated with the indicated tube sizes.

FUEL VALVE LEVER

This lever is a direct replacement for the lever that comes standard with the Home-built Shutoff Valve, part numbers 210-CN, 200-CL and 200 CN. It will also replace the lever that is shipped standard with nearly all of the Vans RV Series aircraft. The appearance is much nicer than the stock lever, it is red in color (the standard color relative to fuel) and needs no hardware other than what is sent with the valve. When mounted according to Van's plans the stock lever actually uses the handles as the pointer. P/N 05-03047 ..... **$39.50**

DOW CORNING 3452 VALVE LUBRICANT

Excellent for lubricating valves and slow moving components exposed to harsh chemicals and solvents. resists deterioration by chlorides, solvents, acids and condensate. Dow 3452 is a white, fluorocarbon thickened, fluorosilicone fluid based grease with a temp. range of -20 to 450°F. z2 oz. tube. P/N 09-00333 ..... **$49.75**

RV FUEL POSITION INDICATOR PLATE

This plate is designed to work with the Van's Series of Aircraft. The Vans kits do not provide the builder with a solution for determing what position the fuel selector is in, therefore leaving the builder to create his or her own solution for this situation. This plate used in combination with RV Fuel Lever clearly labels the valve as the fuel valve and gives the position of the valve. The aesthetics of the cockpit are improved and all labeling is chemically resistant. PN 05-03661 ..... **$42.95**

MINIATURE FUEL VALVES

The lightest (4 oz.) smallest (1.5" long), easiest to operate ball type (not plug) on-off fuel valve available. Light operating force makes it ideal for remote operation. Not FAA approved. Forged brass with 1/4", 3/8", or 1/2" female pipe ends.

1/4" NPT valve ..... P/N 05-23325..... **$13.65**
3/8" NPT valve ..... P/N 05-23330..... **$13.75**
1/2" NPT valve ..... P/N 05-01026..... **$25.50**

WEATHERHEAD FUEL SHUT-OFF VALVE

These 3-way Weatherhead valves, with 1/4' female pipe ports feature a Delrin-spool design for smooth operation. Handle mounted on 1-1/4" long shaft. Not FAA approved.

Model No. 6749 3-Port Valve - Flow is from either side to middle port. P/N 6749 ..... **$26.65**

Model No. 6747 4-Port Valve - Flow is from any horizontal port to bottom port. P/N 6747 ..... **$24.90**

TWIN COMANCHE STAINLESS STEEL FUEL SELECTORS

These stainless steel valves from Parker Hannifin are designed to resolve the corrosion problem, as well as age and wear issues. They are identical to the originals, and they use the same gaskets O-rings, and procedures. Installation is quick and easy. FAA Approved. The fuel selector valve is manufactured with new stainless-steel design for more durability and performance.

Right ..... P/N 05-04881 ..... **$3,865.00** Left ..... P/N 05-04883 .. **$3,865.00**

J-3 FUEL VALVE

This J-3 fuel valve includes a steel handle for use with the original pushpull shut off control. this valve is a significant improvement over the orig nal brass style fuel valve. The new valve has a stainless steel ball seated in an inert composite seat. This improved design eliminates the stiff operation and leaking around the shaft that the original design was prone to. PMA approved. P/N 05-00848..... **$141.95**

SPRL FUEL VALVES

After a long development process, here's a completely new family of Fuel Valves. Hi-Tech Seals give easy operation and are suitable for all current fuels. The simplicity promises a long reliable life. The SPRL-V1 is a three/four way fuel selector offering left-off-right and both if required. There are 90 degrees between selections and the absence of a lower fitting reduces the depth required.

These English fuel valves have some great features that make them better than the rest. Ceramic disks have no soft moving/rubbing seals to wear out, unlike other valves but also give an 'indefinite' life with a very smooth light action. The lift and turn selector is instinctive, secure, and easier to use than the complex 'lift button' type. The locking detents avoid accidental movements. The fixings match most installations, and the internal ports prevent cross feeds, unless 'selected to 'Both'. Male AN fittings enable you to plumb straight into the aeroplane system with no extra fittings to buy. The lightweight alloy construction is anodized for protection; the Viton 0 ring seals are suitable for all current fuels. For experimental aircraft only. Fittings must be purchased separately.

Please note that the accessories listed below are the the only compatible accessories; other standard accessories will not fit these valves.

SPRL V1 3 way valve ..... P/N 05-04450..... **$159.95**
SPRL V1 4 way valve ..... P/N 05-04451..... **$159.75**

ACCESSORIES

Must purchase these parts. Standard AN do not fit the valves.

AN6 Male Fittings (pk of 3) ..... P/N 05-04452..... **$11.65**
AN8 Male Fittings (pk of 3) ..... P/N 05-04453..... **$9.95**
NPT 1/4" Female Fittings(pk of 3) ..... P/N 05-04454..... **$10.95**
NPT 3/8" Female Fittings (pk of 3) ..... P/N 05-04455..... **$11.65**

SPRL On/Off V2 Male Valve ..... P/N 05-06468..... **$91.75**
SPRL V3-3P Duplex Valve ..... P/N 05-06469..... **$199.90**
SPRL V3-4P Duplex Valve ..... P/N 05-06470..... **$199.90**

REMOTE FUEL VALVE DRIVE

We offer a remote drive so as to have the selector conveniently to hand while the valve and pipes are on the bottom of the fuselage or even on the front of the firewall. We include a flexible universal drive joint to accept small errors in alignment. The standard drive is 12" long but drive shafts up to 6 feet are available. The universal joint is modestly priced as it is not new, but for this usage a 'mil spec' government surplus joint is ideal.

P/N 05-06501..... **$99.00**

RIGHT ANGLE FUEL VALVE DRIVE

We have sourced a high quality gear box to offer a right angle drive with obvious applications to rear engined aeroplanes like the Rutans and other installations where it is not convenient to drive the valve direct (eg. 'cubs' where the valve is easier installed away from the seats and pedals)..... P/N 05-06558..... **$114.65**

EXTENDED FUEL VALVE DRIVE

We include a flexible universal drive joint to accept small errors in alignment. The standard drive is 12" long but drive shafts up to 6 feet are available. The universal joint is modestly priced as it is not new, but for this usage, 'new, surplus' is ideal. The drive tubes can be cut to any required length and simply push together. We assume that the aeroplane structure will prevent the parts separating once they are installed. Price per foot. 6' shipping limit. Note: Special order lengths available upon request.

P/N 05-06557..... **$19.85**

NEWTON BANJO FITTING SETS

The fittings enabled you to plumb straight into the aeroplane system with no extra fittings to buy. The lightweight alloy construction is anodized for protection; the Viton 0 ring seals are suitable for all current fuels. For experimental aircraft only. Fittings must be purchased separately; if needed, 3 AN-6 fittings come with the valve.

Fittings:

AN8 Male NPT 1/4" OR 3/8" Female and banjo fittings are available, all seal to the valve with O ring system Standard AN fittings cannot mate directly to the valve.

1/4" Fitting Set ..... P/N 05-06471..... **$39.50**
5/16" Fitting Set ..... P/N 05-06472..... **$39.50**
3/8" Fitting Set ..... P/N 05-06473..... **$50.50**
1/4" Large Fitting Set ..... P/N 05-06474..... **$108.95**

AP

ALLEN PREMIUM FUEL SHUT-OFF VALVES

These premium fuel valves are recommended by Rutan Aircraft as the best fuel valves they have seen. They are a direct, bolt-in replacement for Weatherhead and other fuel valves. They turn smoothly and freely with a very positive spring loaded ball detent system which lets you feel the left right and off positions. Manufactured of anodized aluminum. Handle is not furnished with valve. Available in 3 models. Model GS122 valve originally recommended for Long-EZ. Not FAA approved. For experimental aircraft only.

	Model 6S122 P/N 05-29500	Model 6S1000 P/N 05-29515	Model 6S1001 P/N 05-29525
Handle	No	No	No
Ports	3	4	3
Ports Configuration	3 x 1/4-18 NPT	MS33649-06	MS33649-06
Handle Positions	4	4	4
Ports Open			
Position 1	All Closed	1 & 4	C & A
Position 2	A & C	2 & 4	C, A & B
Position 3	All Closed	3 & 4	C & B
Position 4	B & C	All Closed	All Closed
Price Each	**$157.95**	**$348.00**	**$527.00**

HANDLE FOR ALLEN FUEL VALVES

This aluminum handle is specially machined to fit the Allen fuel valves above. P/N 05-01915..... **$32.85**

EXTENDED HANDLE SHAFT FOR ALLEN FUEL VALVES

This set of fittings are used to make an extended handle shaft for the Allen fuel valves. One of the fittings fits on and clamps to the valve and the other one fits in the handle. The fittings are then welded in a piece of 3/8" x .035 4130 tube. The handle extension can be made as long as desired. P/N 05-01916 ..... **$94.50**

FUEL FLOW VALVE

Designed for tank installation, with built-in filter. 90° rotation for ON-OFF. Has standard 1/4" barb outlet tube.
P/N 05-01040 ..... **$14.80**

FUEL FLOW VALVE

Designed for tank installation. Similar to above but without built-in filter. 90° rotation for ON-OFF. Has standard 1/4" barb outlet tube. P/N 05-01041 ..... **$6.50**

FUEL FLOW VALVE

Twin-tank fuel selector valve. 3 positions: LEFT-OFF-RIGHT. LEFT and RIGHT positions are 90° either side of OFF. Panel mount.
P/N 05-01042 ..... **$7.50**

FUEL FLOW VALVE

Panel mounted fuel on-off.
P/N 05-01043 ..... **$8.75**

BANJO FITTING

This can be rotated through 360° then tightened and safety locked. Excellent for applications where space was limited. It can really be described as an adjustable 90° elbow fitting. P/N 05-29565 ..... **$58.50**

FUEL FLOW ELBOW

Bushed 90° tank fitting with standard 1/4" barb outlet. Requires Rubber Bushing FTB01.
P/N 05-01045 ..... **$1.71**

QUICK-DISCONNECT FUEL LINE FITTINGS

05-01035

05-01036

05-01037

05-01038

Complete sets are furnished with both male and female units. Available in both panel mount (left) and in-line (center) styles, with or without internal automatic fuel shut-off. (1/4" tubing). The O-rings may not be compatible with some alcohol based auto fuels.

In-line with shut-off
P/N 05-01035..... **$12.95**

In-line without shut-off
P/N 05-01036..... **$5.50**

Panel mount with shut-off
P/N 05-01037..... **$18.50**

Panel mount without shut-off
P/N 05-01038..... **$15.75**

PRIMER BULB

Install between fuel tank and engine. A few squeezes prime your engine for easy starting.
Primer Bulb 1/4" Tube Fit - Sm. (5" x 1-1/4") P/N 05-01046 ..... **$5.25**
Primer Bulb 1/4" Tube Fit - Lg. (7" x 2") ..... P/N 05-03690 ..... **$16.80**

PRIMER KIT

Everything you need to add a plunger-type primer system to your aircraft. The kit includes the plunger, a reducer "T" fitting, 1/8" barb "T" fitting, and 10 feet of 1/8" pink urethane fuel line.
P/N 05-01047 ..... **$22.75**

ACS PRIMER

Formerly manufactured by Gerdes Products, this primer has an anodized, all aluminum body and an engraved aluminum knob. The inlet and outlet ports are located on the back end of the pump and both are 1/8" pipe thread. Overall length is 4" and weight is 3.5 oz. New manufacture. .....P/N 05-19920 ..... **$122.95**

ESSEX PRIMER

This primer, originally produced by Kohler, is positively leak-proof. Its exceptional priming ability has made it popular with manufacturers of general aviation aircraft. Has 1/8" internal pipe thread inlet and outlet ports. Overall length 3-7/8". Wt. 2.3 oz. New manufacture. P/N 05-01048 ..... **$248.95**

ELECTRIC SOLENOID ENGINE PRIMER VALVE

These new electric solenoids are recommended by Co-Z Development Corp. as ideal electric engine primers for homebuilt aircraft. These normally closed 2-way valves are direct acting and have only two moving parts, a viton plunger and stainless steel spring. Can be installed in any position and are easy to inspect without removing from the line. Pipe size is 1/8" NPT. Orifice dia. 1/8". Wt. 5 oz. #1 port is out, #2 port is in. Will handle max. PSI of 60.

Mounting Bracket **-** A universal stainless steel mounting bracket for the 1/8" NPT valves may be ordered separately. The mounting bracket can be assembled to the valve body utilizing the body mounting holes

2V Solenoid VLV 20CC02PV4B2A ..... P/N 05-04368..... **$56.85**
24V Solenoid VLV 20CC02PV4B2B ..... P/N 05-04369..... **$59.50**
Solenoid Mounting Bracket 4K007..... P/N 05-04370..... **$12.25**

PRIMER OVERHAUL KIT

Restoring primer pump operation - The kit is replaces the worn O-rings (2) on the primer pump used on non-fuel injected engine installations. The primer seals frequently are not re-lubricated until someone complains the primer isn't working or the engine is hard starting. This is most evident by the pump being hard or stiff to operate. Generally speaking, by the time the pump stops performing, the seals are worn (to the point that lube is of little value) and must be replaced. The kit contains the two O-rings, a packet of Seal Lube, and detailed instructions.
P/N 05-03637..... **$7.95**

FUEL LINE

Polyurethane tubing, translucent blue in color. 1/4" ID. A superior, premium grade of urethane, the optimum material for ultralight fuel line. (Min. order, 4 ft.) P/N 05-01049 ..... **$1.25/ft.**

PRIMER LINE

Polyurethane tubing, translucent pink in color. 1/8" ID. For primer systems.
P/N 05-01050 ..... **$0.66/ft.**

PULSE LINE

Connects engine pulse outlet to fuel pump pulse inlet. Outside Diameter: 3/8". Inside Diameter: 1/4". Thickness of the Wall: 3/32"
P/N 05-01063 ..... **$0.99/ft.**

FUEL LINE SPLITTERS/JOINERS

Perfect for feeding from 2 tanks, or for feeding two carburetors from 1 tank. All have standard barbed ends. Made of Delrin.
"T" type, 1/4"..... P/N 05-01051..... **$1.15**
"Y" type, 1/4"..... P/N 05-01052..... **$1.10**
"T" type, 1/8"..... P/N 05-01053..... **$1.95**

RUBBER BUSHING

Required for installation of Fuel Flow Elbow described above. P/N 05-01039 ..... **$0.88**

FUEL TRANSFER PUMPS – FUNNELS

FUEL FILTER FUNNELS

P/N 05-00026 P/N 05-01054 P/N 05-01055 P/N 05-01371

Mr. Funnel® Fuel Filters are simply amazing. Dirty fuel in.... pure fuel out. It's that easy.
The specially designed filter removes water and dirt from gas, even 2-stroke mixtures. Ethanol attracts water more than regular gasoline. Never before has a fuel filter been more important.
Dirt and water are practically unavoidable in stored fuel, causing microbial growth, corrosive acids, electrolysis and rust. These contaminants can plug filters, corrode components, decrease efficient combustion and cause engine shutdown or system failure.
When fuel is poured through the Fuel Filter Funnel, water and debris will not pass through the filter's fluoropolymer-coated stainless steel filter. Only filtered fuel flows through to your engine, improving its efficiency, durability, and proper operation. The sump area collects the deflected water and debris for proper disposal. The Fuel Filter Funnel will filter gasoline, diesel, heating oil, kerosene and 2-cycle mixed gas.
The Fuel Filter Funnel is a heavy-duty, anti-static, and fast flow funnel with built-in filter technology.
Lawn mowers, tractors weed trimmer/blowers, dirt bikes/ATVs, boats, even airplanes... will have longer useful lives if owners filter their fuel!

Part No.	Height	Diameter	Flow Rate	Price
05-00026	6.00"	3.5"	2.5 gpm	**$14.95**
05-01054	8.75"	5.5"	3.5 gpm	**$19.90**
05-01055	10.00"	8.5"	5.as0 gpm	**$29.00**
05-01371	10.00"	8.5"	12-15 gpm	**$52.95**

AP

GOATTHROAT FUEL TRANSFER PUMP

P/N 05-02196

P/N 05-02197

GoatThroat Pumps have been in the industrial market for 15 years. Recently introduced to aviators, these pumps deliver fuel efficiently and directly to the filler downspout with a finger controlled discharge nozzle. Made of chemical grade polypropylene, GoatThroat Pumps can pressurize any container in seconds. Internal pressure relief valve opens at 7 psi, but 2 psi is all you need to deliver fuel safely to your plane. A drip-proof faucet dispenses small amount or gives steady flow. Containers remain upright, so there is no extra handing and little chance for accidental spills. Includes the fitting for a 55 gal. drum. 5 gal. can fitting sold separately.

Fuel Transfer Pump..... P/N 05-02196 .. **$173.65**
Adapter for Blitz 5 gal. can..... P/N 05-02197 .... **$39.90**
Adapter for Scepter 5 gal. can ..... P/N 05-03031 .... **$49.75**

FLO-N-GO SE PUMP

Scepter's Flo n' go Superflo fuel siphon pumps gas for easy, clean fill-ups in hard-to-reach fuel tanks. At-the-handle pump control allows for auto shut-off and restarts, as well as clean, hassle-free siphon control.
The Superflo model is ideal for smaller engines including lawnmowers, trimmers, chainsaws, generators, blowers, edgers, snow throwers, or any small engine that requires refueling.
The Superflo delivers a flow rate of 1 gallon (3.7 L) per minute when in siphon mode. Child safety lock included.

PN 05-04568 .....**$63.00**

CLEAN FUNNEL™

model 112

model 415

model 428

Clean Funnel™ is the funnel that keeps itself clean. Replacing the caps on each end after each use prevents left over fluid from dripping out, and keeps your work area or baggage compartment clean. No need to wipe your funnel out with a rag before reusing. Clean Funnel™ is ideal for use with fuel or oil as well as windshield washer fluid, detergents, antifreeze, hydraulic fluid, and more. Great for aircraft, automobiles, motorcycles, tractors, boats, ATV's snowmobiles, and more.

- Model 112 (turquoise) has a 1 pint fluid capacity and a 12" vinyl tube attached to its spout, making it very handy to reach into small or tight spaces.
- Model 415 (red) has a 1-1/2 quart capacity, 17" long with flexible spout, and spout I.D. is 9/16".
- Model 428 (black) has 1-1/2 quart & 13-1/4" long with a flexible spout and 1-1/8" O.D. spout.

Model #	Color	Part No.	Price
112	Turquoise	12-00374	**$6.75**
415	Red	12-00375	**$7.95**
428	Black	12-00376	**$7.95**

PORTABLE FUEL SYSTEM

Portable Fuel Systems are the easiest way to take the gas station where you need it! Portable Fuel Systems are designed to provide an easy method of dispensing all types of motor fuel through a "gas station" style hose and nozzle. Eliminating the need for conventional gas cans, the PFS takes the gas station to the machine. No more lifting heavy cans and spilling expensive gas on nicely painted surfaces!
The Portable Fuel Systems are designed for the transport, storage, and dispensing of a variety of fuels including aviation, automotive, and diesel. All appropriate safety features have been designed into the system making it suitable for all types of applications such as airports, marinas, landscapers and garages.
A major advantage the PFS systems have over typical airport fuel pumps, is the increased control during the fueling process. Airport fuel pumps are designed with thick, heavy hoses and large nozzles that pump fuel at a very high flow rate. For smaller aircraft, especially high wing aircraft where the fuel tank spout is hard to see, this frequently leads to fuel spills, and ruined paint. The PFS is designed to provide a high flow rate hose and nozzle that weighs less, is more flexible, and has much more flow control via the infinitely adjustable nozzle handle. The PFS does all of this while meeting all desired safety expectations!

Portable Fuel System with Air Tank.....P/N 05-04867 ..... **$886.85**
Portable Fuel System without Air Tank.....P/N 05-04868 ..... **$797.85**

FUEL CAPS

AP

FUEL SELECTOR PLATE FOR LATER CESSNA 170'S &172'S

This fuel selector plate is billet machined and anodized, with the text engraved on the plate. It is an efficient one piece design which is easy to install and factory guaranteed. FAA/PMA approved.

Cessna 172 - 37 Gals. ..... P/N 05-00227 .... **$52.95**
Cessna 170 - 37 Gals. ..... P/N 05-00899 .... **$61.95**
Cessna 172 - 36 Gals. ..... P/N 05-00901 .... **$59.95**
Cessna 180 - 55 Gals. ..... P/N 05-00902 .... **$52.95**
Cessna 180 - 60 Gals. ..... P/N 05-00903 .... **$52.95**
Cessna 180 - 79 Gals. ..... P/N 05-00904 .... **$52.95**
Cessna 172 - 84 Gals. ..... P/N 05-00905 .... **$52.95**
Cessna 182 - 55 Gals. ..... P/N 05-00906 .... **$59.95**

AVMAT AVGAS FUEL MATS

This fuel mat by Aviation Laboratories is made from heavy duty durable synthetic rubber. They are non-static and fuel resistant. Available with a center hole or a top offset hole. Size is 24" x 16", with a 4" diameter hole.

AVMAT-AVGAS1 (Top Hole)
P/N 13-03588 ..... **$83.50**
AVMAT-AVGAS2 (Center Hole)
P/N 13-03589 ..... **$83.50**
AVMAT-JET1 (Top Hole) ..... 13-04925 ..... **$83.50**
AVMAT-JET2 (Center Hole) ..... 13-04926 ..... **$89.75**

THERMOS STYLE PRESSURE FUEL CAPS

Pressure fuel caps are recommended for aerobatic installations. These caps are made with Buna-Nitrile gaskets for fuel resistance. These caps are non-vented for gravity fuel systems. It is highly recommended that a #40 (3/32") drill is used to drill a vent hole through the lower base plate and stud assembly using a drill press.

Part No.	Diameter (I.D.)	Height	Price Each
05-18399	1-3/4"	--	$115.95
05-18400	2"	1-3/16"	$48.50
05-18402	2-1/2"	1-3/16"	$41.40

FUELTAPE

While most FBOs do a great job of keeping fuel orders straight, mistakes can and do happen. As for pilots, sometimes it's not feasible to stand around waiting for the fuel truck to ensure the right fuel is being poured into the aircraft tanks. FuelTape is a highly durable, weatherproof masking tape that clearly indicates to the fueler which grade of fuel must be used. Simply tear off a piece and stick it over the fuel caps and you have a low-cost, reliable system to keep your tanks safe.

FuelTape is available in both 100LL or Jet A versions. The colors and design conform to FAA standards. FuelTape is a simple product that both eliminates mistakes and gives the pilot piece of mind that they can go off and handle other business. Sold by the roll.

Av-Gas ..... P/N 05-06416 ..... **$7.25**
Jet-A ..... P/N 05-06417 ..... **$7.25**

ACS TWIST-TO LOCK FLUSH FUEL CAP

The ACS Twist-To-Lock Flush Fuel Cap Assy is machined from 6061 aluminum billet. The cap is available in vented and non-vented configurations. The sealing element for the cap is an easily replaceable viton "O" ring. The bottom of the cap is secured to the bottom of the ring by a safety chain to prevent loss of the cap during flight. The mounting ring may be welded, riveted, bolted or molded onto the tank.

.....Complete Set (non-vented) P/N 10600 ..... **$53.75**
Complete Set (vented) ..... P/N 10610 ..... **$57.75**
Replacement "O"Ring ..... P/N 10609 ..... **$3.95**

ACS FLUSH FUEL CAPS

This latest modification of the ACS Flush Fuel Cap (unvented) utilizes a Viton O-Ring as the sealing element between the cap and mounting ring. The Viton O-Ring is compatible with aviation fuels and auto gas. The cap with Viton seal is interchangeable with the old-style cap with rubber gasket. Machined from solid aluminum. Ring may be welded, riveted, bolted or molded to the tank. The bottom of the cap is secured to the bottom of the ring by a safety chain to prevent loss of the cap in flight. Mounting ring flange is 1/8" thick. Ring opening is 2-5/8" dia. Overall dia. 4-3/8".

Complete Set (New-Style Cap w/Mounting Ring)
P/N 05-01390 ..... **$46.25**
New Style Cap Only ..... P/N 05-01391 ..... **$39.95**
Replacement VitonO-Ring (for New-Style Cap Only)
P/N 05-01392 ..... **$7.70**

2'' UNIVERSAL FUEL CAP

This is a 2 inch filler cap. Cap only.
P/N 428-2 ..... **$387.50**

PIPER PA23 FUEL CAP

Piper PA 23 fuel cap part number CA16097N is an improved version of part number CA16097. This new part uses an improved elastomer with superior fuel resistance. The fuel cap is eligible for PA23 aircraft.
P/N 05-04161 ..... **$89.95**

PIPER PA-23 FUEL CAP

The 2 inch Piper PA-23 fuel caps are back. PMA Products, Inc. announced the return of their CA17672N fuel caps that are manufactured with improved rubber specifically formulated to prevent swelling. This part number replaces Piper part numbers 454-084 and 17672-000. Specifications: FAA-PMA Approved. Eligible Aircraft: Piper PA-23 (Beginning S/N 23-1, Ending S/N 23-1182) Piper PA-23-160 (Beginning S/N 23-1177, Ending S/N 23-2046). ..... P/N 05-06466 ..... **$140.95**

FUEL CAP SEAL

Replacement fuel cap seal part number CA38241 has added eligibility for the Cessna Citation 525, 650, 680 and 750 aircraft. It is also approved for Beechcraft aircraft. This seal fits fuel caps with part number 9914106-13. Ideal and inexpensive! Don't pay $750.00 for a fuel cap when you only need to replace the seal!
P/N 05-04162 ..... **$49.75**

USHER FLUSH FUEL CAPS

The UD-3 flush fuel cap assembly is an unvented cap similar in design to the #5 style cap. The aluminum mounting ring has a 2" dia. opening and an overall dia. of 3-3/4". It may be riveted, bolted or molded to the tank. It is currently used on many popular homebuilts such as the RV's, Lancair, Velocity & White Lightning. Specify flat or contoured adapter.

UD-3 with Flat Adapter ..... P/N UD-3-F **$44.85**
UD-3 with Contoured Adapter ..... P/N UD-3-C **$43.50**
Usher O-Ring 2-325 Large ..... P/N 05-02146 ..... **$1.65**
Usher O-Ring 2-012 Small ..... P/N 05-02147 ..... **$0.95**

GAS TANK CAP GASKETS

Part No.	Description	Size	Price Ea.
05-18500	Piper	3" OD, 2" ID	$4.95
05-18505	Cessna	2-1/4" OD, 1-3/8" ID	$5.95

FUEL CAPS

AERO FUEL CAPS - ALUMINUM

A37

A36

A30-G/S

A512

These English fuel caps are used on most of the worlds 'super cars', bikes, and aeroplanes. They are beautifully made in forged and bright anodized aluminum. The high precision and easy to operate mechanism is very secure and non vented. They are designed to keep the fuel in and the water out. The lock is there to ensure that your tank is free from contaminants. Aero caps are used on Cirrus, Diamond, Cessna Corvallis, Lancair kits, Nemesis, Vans, Velocity and many more aircraft.

Cap assemblies come complete with cap, gasket, and flanges as ordered. Two keys come with the locking version. Fixing can be by rivet, bolt, weld or glass in as appropriate. These are flush caps of outstanding quality which are ideal for virtually any homebuilt aircraft. Order the attach ring separately as needed. The 300 Series is 3-3/4" OD opening 1-3/4", 6 hole 3" pcd. C37 fits 2" and 2.25" Hoses.

A512 & A508 CAPS – 3" entry/ 5.5" OD. Feature special surface seal to avoid water/ice ingress. For Avtur Jet and diesel fuels. Glass-in also avail.

Description	P/N	Price ea.
A36L Locking Cap Assy. 6-hole	05-28651	**$169.50**
A36LFF Locking Cap Assy. Glass in	05-28652	**$139.50**
A37L Locking Cap+ Hose Fitting 6 hole	05-28653	**$176.95**
A37LFF Locking Cap Flush Glass in	05-28654	**$158.95**
A36S Non-Locking Assy. 6-hole	05-28656	**$128.95**
A36SFF Non-Locking Flush Glass in	05-28658	**$159.50**
Cork Gasket for the A36S	05-04537	**$5.85**
A37S Non-Locking+ Hose Fitting 6-hole	05-28659	**$158.50**
A37SFF Non-Locking Flush Glass in + Hose Fitting	05-28657	**$141.95**
R36 Attach Ring + Screws	05-28661	**$35.75**
A512L 3" Cap, Locking - 12 hole	05-00045	**$212.95**
A508L 3" Cap, Locking - 8 hole	05-04538	**$217.95**
A512FF Locking (Glass-In) Cap	05-02650	**$199.50**

LIGHTWEIGHT DOOR LOCK SETS

Match above fuel cap locks.
P/N 05-28664 ..... **$17.65 ea.**

NEWTON FUEL CAP KEYS

604 Newton Fuel Cap Keys - Fits all Newton Fuel Caps with a 604 lock.
P/N 05-03437 ..... **$9.95**

605 -Newton Fuel Cap Keys - Fits all Newton Fuel Caps with a 605 lock
P/N 05-04540 ..... **$22.50**

606 Newton Fuel Cap Keys - Fits all Newton Fuel Caps with a 606 lock.
P/N 05-03388 ..... **$22.50**

607 Newton Fuel Cap Keys - Fits all Newton Fuel Caps with a 607 lock.
P/N 05-03389 ..... **$17.90**

608 Newton Fuel Cap Keys - Fits all Newton Fuel Caps with a 608 lock.
P/N 05-04541 ..... **$15.25**

609 Newton Fuel Cap Keys - Fits all Newton Fuel Caps with a 609 lock.
P/N 05-04542 ..... **$16.75**

A300 AND A500 FUEL CAP OVERHAUL KITS

Full set of O rings Replacement clip and ss stiffnut. Aero 300 and Aero 500 sizes. Pair of replacement keys fits Aero 300 or Aero 500. Made in the U.S.A.

Newton A300 Fuel Cap O/H Kit ..... P/N 05-02218 ..... **$13.50**
Newton A500 Fuel Cap O/H Kit ..... P/N 05-02219 ..... **$28.85**
Newton Spiral Cap O-Ring Kit ..... P/N 05-02611 ..... **$14.75**

Caps for Fuselage and Wing Tanks

For separate fuselage and wing tanks we offer a screw in flange to fit a 2.25" threaded bushing that can be welded or glassed into a tank. This gives a flush fitting outside the skin, avoiding doors and internal spillage. Ideal for all wooden airplanes (e.g. Falco). Good for smoke oil tanks.

A30S-G/S Non-Locking, Threaded	05-28705	**$165.95**
A30L-G/S Locking,Threaded	05-28700	**$166.95**
Aluminum Tank Flange	05-01056	**$12.25**

BAYONET FUEL CAPS AND FILLER NECKS

Locking bayonet type cap with gasket, fastens to filler neck with safety chain. Externally threaded to mate with tank flange. 1.5" dia. filler hole, 2.25" diameter at threaded base, 1-3/8" neck length. Complete with aluminum tank flange designed for welding to aluminum tanks. Inner surface threaded to receive filler neck. Not compatible with auto gas.

Complete Set with Unvented Cap ..... P/N 05-17800 ..... **$38.65**
Complete Set with Vented Cap ..... P/N 05-17900 ..... **$39.85**
Aluminum Tank Flange ..... P/N 05-01056 ..... **$12.25**
Cap Only (unvented) ..... P/N 05-01057 ..... **$9.50**
Cap Only (vented) ..... P/N 05-01058 ..... **$11.75**
Gasket for above Caps ..... P/N 05-01059 ..... **$1.95**
Filler Neck ..... P/N 05-01060 ..... **$15.90**

RETROFIT FUEL CAPS

Tired of hard to open gas caps and caps which leak? These retrofit gas caps offer easy fingertip action and secure sealing.

GLASAIR FLUSH FITTING CAP replaces the rubber seal Glasair cap (2.5-entry and 2" hole). Lockable. Epoxy/Flox in place. Based on aero 300 series. P/N 05-01004 ..... **$153.95**

VANS RETROFIT SPRL CAP is a screw action SPRL cap fits existing flange and leaves full aperture opening. Non-locking. The seal relies on existing flange being free of dents and dings.
P/N 05-01005 .... **$54.75**

VANS RETROFIT AERO 20L CAP - Flush fitting key action cap assembly fits inside existing Vans flange. Easy action and secure seal. P/N 05-01006 ..... **$104.95**

LIGHTWEIGHT SPRL FUEL CAPS

SPRL-S-GS

SPRL-S

This cap has secure sealing and easy finger tip operation. These caps are made from the highest quality modern engineering plastics with Viton 'o' ring seals (which can be easily replaced if you should ever need to do so.) The mounting ring is anodized aluminum with the flange recessed to give a perfect flush fit whether it is riveted under a metal skin, as in the RV series, or built into a composite structure. This cap is non vented and recommended to keep the fuel in, the water out and in the locking version, other unwanted items out of your tank. Size: 65 mm O.D.; Wt: 80 grams. SPRL caps are used on Europa, Compair, Glasair, lancair, Murphy, OMF, Rocket, velocity, Zenith and many more experimental aircraft.

Non-Locking cap W/ Flush Flange SPRL-S ..... P/N 05-28662 .... **$61.50**
Locking cap W/ Flush Flange SPRL-L ..... P/N 05-28663 .... **$78.85**
Cap with Threaded Flange SPRL-G/S ..... P/N 05-28666 .... **$64.75**
Locking cap with Threaded Flange ..... P/N 05-28667 .... **$89.50**
Backnut to secure threaded flanges to skin (for 2.25" hose)
P/N 05-00042 .... **$10.85**
Sprl Fuel Cap O-ring Kit ..... P/N 05-02611 .... **$14.75**

A-30 CIR THREADED FUEL CAP

A30-CIR is a screw threaded fuel cap the will fit almost flush to a skin, with the riveted flange on an adjacent tank or the back of a 'wet' skin. This was designed to be fitted after painting, reducing the likelyhood of dirt/dust in the cap and the cost of masking/finishing operations. It is available with a locking or non locking cap.

A30 L-CIR Locking ..... P/N 05-06838 ..... **$146.95**
A30 S-CIR Non-Locking ..... P/N 05-06837 ..... **$128.95**

Rivet Flange for threaded A30 fuel caps
P/N 05-06491 ..... **$69.85**

ACS 10700 FLUSH FUEL CAP

The unvented flush fuel cap operates with a lift and turn lever. This cap has a 3" opening for easy refueling. Cap & adapter ring are anodized "clear" for corrosion resistance. Cap is fastened to adapter ring with safety chain. Made in the U.S.A.

10700 Flush Fuel Cap .... P/N 05-04702 ..... **$349.50**
Replacement O-Ring 10700 CAP ..... P/N 05-04703 ..... **$4.85**

AP

FUEL TANK SEALANTS – FUEL ADDITIVES

PRIST® HI-FLASH® HI-FLO™ ANTI-ICING FUEL ADDITIVE

Prist® Hi-Flash® Hi-Flo™ Anti-Icing Fuel Additive: The Original Just Got Better Prist® Hi-Flash® Hi-Flo™ aerosol cans are now available with a redesigned trigger dispensing system that makes them easier and safer to use. The safety trigger gives the user control of additive flow with instant on and off dispensing. Now the trigger dispensing system comes pre-mounted on the can which eliminates leaks at the valve connection. This means less waste, no drips and no spills.

Prist® anti-icing fuel additive comes in a wide range of packaging, making it easy to choose the amount of product and dispensing method for your application. The sizes include: 55-gallon drums, 5-gallon pails, 20-once and 8-ounce aerosol cans.

20 oz. can ..... P/N 09-39555..... **$12.50**
Case (24 Cans)..... P/N 09-39554..... **$325.95**

PRIST® HI-FLASH® LO-FLO™ ANTI-ICING FUEL ADDITIVE -

Hi-Flash Hi-Flo™ vs. Hi-Flash Lo-Flo™ What's the Difference?

The two products are identical in chemical formula. Hi-Flo additive simply means the can delivers the product at a rate compatible with a 40 to 55 gall per minute fuel nozzle rate. Lo-Flo additive can deliver the product at a rate which is typical of avgas, which is 15 to 20 gallons per minute. Lo-Flo is also used in helicopters, which typically have to be fueled slowly.

8 oz. can ..... P/N 09-02048..... **$6.95**
Case (24 Cans)..... P/N 09-02048-1..... **$174.95**

ALCOR TCP FUEL TREATMENT CONCENTRATE

ELIMINATE SPARK PLUG LEAD FOULING!

Lead deposits can foul spark plugs and shorten the life of exhaust valves in your aircraft. "Get the lead out" by using Alcor TCP Fuel Treatment, the only FAA-approved product of its kind for non-turbocharged engines. For use in low-compression piston aircraft engines, Alcor TCP Fuel Treatment scavenges the lead from all low-lead fuel to keep your engine running clean. A simple treatment with every fill-up prevents that unwanted lead build-up, significantly reducing the fouling of your engine and the cost of flying. Only 1 ounce of TCP is required for every 10 gallons of fuel! The handy syringe dispenser allows precise measurement of the amount of TCP to put in your tank. Stop lead build-up before it starts with TCP! Sold in quarts. ***TCP Syringe sold separately: p/n 05-21500 Note: TCP is not to be carried aboard aircraft.***

Quart..... P/N 05-21300 ..... **$39.95**

Accessories

Funnel Adapter - For use on the former plastic bottles
P/N 05-01832..... **$4.35**

Dispenser - Calibrated for proper dosage of the number of gallons treated for 100LL grade of avgas. (For use on the QT. and Gallon bottles)
P/N 05-21500..... **$7.95**

DECALIN RUNUP FUEL ADDITIVE

Decalin Chemicals manufactures products for the experimental aircraft aviation community. Decalin Fuel RunUp Additive in a 16 ounce bottle, treats up to 320 gallons of fuel. Decalin is not approved for use in the engines of certified aircraft.

Note: There are no HAZMAT shipping charges on this product

Features: • Scavenges Lead in aviation fuel after combustion to prevent lead oxide buildup on valves but still allows the lead to perform the anti-knock function prior to combustion. • It is an excellent additive for auto conversions, where it reduces buildup on oxygen sensors and plugs. If you have to use 100LL, then this stuff is for you. • Prevents valve seat erosion from valve seat micro welding. It is equivalent to TCP (for experimental only). • Does not contain volatile solvents so it is safe to ship and safe in the cockpit. You can carry it with you for out-of-town airports. • Easy to use graduated measuring and dispensing resevoir built into the bottle. No messy syringes! • Tested and stable down to 0 degrees F.Decalin Runup Fuel Additive.

16OZ..... P/N 05-01406..... **$19.95**
Decalin Runup Fuel Additive Quart..... P/N 05-03412..... **$28.85**

FUEL FRESH

Aircraft sit - Fuel Fresh prevents gasoline from going stale. This process called Autoxidation occurs when oxygen reacts with fuel, thereby forming gum and varnish. Auto gas is particularly susceptible, losing octane performance and flammability, resulting in greater possibility for detonation. Add fuel Fresh and preserve fuel up to 24 months, maintain octane, prevent gum varnish, clean fuel system, and inhibit corrosion. Quick starts and clean burn are assured. Safe for 2 or 4 cycle engines. Handy measuring bottle. 32 fl.oz. Concentrate (Treats 96 Gal.)
P/N 09-38050 ..... **$9.95**

HAMMONDS BIOBOR JF® FUEL MICROBICIDE

For diesel and jet fuel. Recommended in many operating manuals as the preferred, industry standard fuel additive for eliminating Hydrocarbon Utilizing Micro-Organisms (HUM Bugs) in fuel tanks. US Coast Guard Certified and is the only diesel additive that has been given a military MIL Spec number.

4 oz. ..... P/N 05-06865 ..... **$16.95**
16 oz ..... P/N 05-04963 ..... **$18.85**
1 qt. ..... P/N 05-04962 ..... **$28.50**
1 gal ..... P/N 05-04961 ..... **$115.95**
5 gal ..... P/N 05-04960 ..... **$515.00**
55 Gallon ..... P/N 05-06866 ..... **$3,673.00**

HAMMONDS TURBOLINE FUEL STABILIZER

Turboline FS100 is a high-temperature fuel stabilizer and detergent additive designed to minimize carbon or coke deposits in turbine fuel combustion systems.

Turboline FS100 is readily soluble in jet fuel. Batch blending into the fuel is acceptable, but the best procedure is proportional injection. Turboline FS100 is completely compatible with other fuel system additives such as FSII and Biobor JF®. Turboline FS100 is fully approved for all operators using GE, Pratt & Whitney, Honeywell and all variants of the Turbomeca Arriel 1 & 2 engines. Operators with other Turbomeca engine models and Rolls-Royce can obtain approval on request. Please contact your local FAA authority, international authority, or OEM if you have specific questions concerning your equipment. Recommended Treatment Level for Turboline FS100 – The optimum treatment level in the fuel is 625 ppm (vol). This treatment level equates to about 80 oz. of product for every1,000 gallons of fuel. Gallons of Jet Fuel x .000625 = Gallons of Addtive Gallons of Additive x 128 = Ounces of Additive.

16 oz. ..... P/N 05-06870 ..... **$52.00**
5 Gallon ..... P/N 05-06871 ..... **$1,055.00**
55 Gallon ..... P/N 05-06872 ..... **$9,678.00**

HAMMONDS LUBRIBOR® HIGH TECH LUBRICITY AGENT

Designed to improve fuel lubricity and reduce fuel system wear. Applications– LubriBor® is specially formulated for use in lowsulfur diesel fuel, now required for all over-the-road vehicles, and may be used in other applications such as boating, industrial and construction equipment, mining and farm equipment.

16 oz ..... P/N 05-06867 ..... **$23.50**
5 Gallon ..... P/N 05-06868 ..... **$279.95**
55 Gallon ..... P/N 05-06869 ..... **$2,176.00**

HAMMONDS BIOBOR HUM-BUG DETECTOR KIT

The Hum-Bug Detector® Kit is a low-cost, easy-to-use early warning system that will effectively identify hydrocarbon utilizing micro-organism contamination in all hydrocarbon fuels and oils. P/N 05-04964 ..... **$21.75**

PRO-SEAL TYPE TANK SEALANTS

Pro-Seal and similar products are two-part polysulfide integral fuel tank and fuselage sealants. We offer a Pro-Seal equivalent which is a B-2 type material and meets specification MIL-S-8802E, Type II, Class B-2. These kits are packaged in poly bags with nozzle, plunger and instructions.

2oz. sealant..... P/N 09-38500..... **$16.85**
3-1/2 oz. sealant ..... P/N 09-38510..... **$17.95**

Accessories

Nozzle for Pro-Seal Kits ..... P/N 02-00099..... **$1.20**
Economy Sealant Mixer ..... P/N 12-01792..... **$16.85**

Discount Schedule: Less 10% on 12 kits, less 15% on 20 kits (may be assorted).

PRO-SEAL HAND-DISPENSING GUN

These hand-operated dispensing guns are ideal for applying Pro-Seal type sealants in small quantities normally used by the home builder Available in two sizes for the two sizes of Pro-Seal offered above.

2-1/2 oz. Dispensing Gun..... P/N 09-38520..... **$110.95/ea.**
6 oz. Dispensing Gun..... P/N 09-38530..... **$112.95/ea.**

PRO SEAL AIR POWERED TS950 2.5 OUNCE GUN KIT

The Pro Seal Air Powered Sealant kit includes: Techcon TS950 Sealant Gun with Pistol Grip Handle 2.5 oz. Versatile, pneumatic 2.5 ounce sealant applicator system with pistol grip handle. Techcon Extended Wiper Plunger (1 piece per kit) Techcon 2.5 Oz. Standard Density Disposable Cartridge (1 piece per kit) Opaque White

Air Powered 2.5 Ounce Gun Kit..... P/N 09-38540 ..... **$516.00**
Air Powered 2.5 Ounce Gun Only..... P/N 09-38542 ..... **$516.00**
Extended Wiper Plunger (Sold Each) ..... P/N 09-00758 ..... **$0.67**
2.5 oz. Std. Density Disposable Cartridge .. P/N 09-00759 ..... **$0.85**

FUEL TANK SEALANTS

PRO SEAL AIR POWERED TS950-60-HA 6.0 OZ GUN KIT

This 6.0 oz Pro Seal Gun Kit includes: Techcon Gun Pistol Grip Assembly TS950-60-HA 6oz. Techcon Extended Wiper Plunger (1 piece) Techcon 6 Oz. Standard Density Disposable Cartridge. Techcon TS950 10ft. Hose Assembly.

Air Powered 6.0 Ounce Gun Kit.....P/N 09-38550 .....**$667.00**
Air Powered 6.0 Ounce Gun Only.....P/N 09-38552 .....**$547.00**
Extended Wiper Plunger (Sold Each) .....P/N 09-00758 .....**$0.67**
2.5 oz. Std. Density Disposable Cartridge ..P/N 09-00759 .....**$0.85**
Techcon TS950 10Ft. Hose Assembly.....P/N 09-02416 .....**$119.95**

PRO-SEAL FUEL TANK SEALANT

P/S 890 CLASS B - A filleting compound for sealing integral fuel tanks and pressurized cabins. It was especially developed for use over a temperature range of -65°F to +275°F and provides outstanding resistance to aircraft fuels (aviation gasoline or jet fuel) and petroleum base lubricating oils. Cures at room temperature and without shrinkage to form a resilient sealant possessing excellent adhesion to aluminum, magnesium, titanium, steel and numerous other materials.

Pint.....P/N 09-38560 .....**$85.50**
Quart .....P/N 09-38565 .....**$168.95**

PROSEAL PR-1776M CLASS B LOW WEIGHT FUEL TANK SEALANT

PR-1776M Class B is a low density, high temperature aircraft integral fuel tank sealant. Service temperature range from -65°F (-54°C) to 250°F (121°C), with very limited excursions up to 360°F (182°C). Designed for fillet sealing of fuel tanks and other aircraft fuselage sealing applications. Cured sealant maintains excellent elastomeric properties after prolonged exposure to aircraft fuels both jet fuel and aviation gas, and will resist limited contact to diphosphate ester based hydraulic fluids. Two-part, manganese dioxide cured Permapol® P-5 modified polysulfide. Suitable for application by extrusion gun or spatula. It cures at room temperature to form a resilient sealant. Shelf Life: 9 months .....P/N 09-02003 .....**$312.95**

PR-1005-L BUNA-N SLOSH COATING

A aircraft integral fuel tank slosh coating designed as a topcoat or barrier coating, cured to resist prolonged exposure to both jet fuel and aviation gas. It has a service temperature range from -100°F (-73°C) to 250°F (121°C), with intermittent excursions up to 275°F (135°C). PR-1005-L is a one part, synthetic rubber solution.Suitable for application by brush, fill-and-drain, dip, or spray. It cures at room temp. Test results are in accordance with MIL-S-4383 specification test methods. Color: Red; Dry time(77°F): 20 mins.; non-toxic.

Pint ..... P/N 09-00323 ... **$107.95**
Quart ..... P/N 09-00324 ... **$207.50**

3M™ AC-236 CLASS A INTEGRAL FUEL TANK AND FUSELAGE SEALANT

C-236 Class A is a brushable, two-component, liquid polysulfide polymer system providing excellent fuel tank and fuselage seals. It has outstanding resistance to aviation gasoline and jet fuel, as well as resistance to chemicals and petroleum products common to the aircraft industry. Maintains its flexibility and bond strength on most metal substrates like aluminum, stainless steel, steel, and many coatings under extremes of temperature, weathering and stress. Pourable liquid easily applied by brush. It has excellent tooling properties.

Class	Size	Part No.	Price
A	Pint	09-02614	**$53.50**
A-2	Pint	09-02618	**$52.50**
A-2	6 oz.	09-02619	**$26.25**

3M™ AC-236 CLASS B FUEL TANK AND FUSELAGE SEALANT

A two-component, manganese dioxide cured, liquid polysulfide polymer system providing excellent fuel tank and fuselage seals. It has outstanding resistance to aviation gasoline and jet fuel, as well as resistance to chemicals and petroleum products common to the aircraft industry. Maintains its flexibility and bond strength on most metal substrates like aluminum, stainless steel, steel, and many coatings under extremes of temperature, weathering and stress. A thixotropic paste easily applied by extrusion, injection gun or spatula. It has excellent tooling properties.

Class	Size	Part No.	Price
B-1/2	6 oz.	09-02623	**$26.50**
B-1/2	25 grams	09-02625	**$27.75**
B-2	Pint	09-02626	**$52.50**
B-2	6 oz.	09-02627	**$27.25**
B-2	25 grams	09-02629	**$10.85**
B-4	Pint	09-02630	**$52.50**
B-4	6 oz.	09-02631	**$26.25**

3M™ AC-240 CLASS B FUEL TANK AND FUSELAGE SEALANT - FAST CURE

A two-part, polysulfide based product for use as a quick cure sealant for integral fuel tanks and fuselages. A thixotropic non-sag consistency and can be readily applied with a spatula or extrusion gun or vertical surfaces. It will cure to a fuel-resistant rubber at temperature above 20 degrees F and exhibits excellent tooling properties with very low shrinkage.

Class	Size	Part No.	Price
B-1/2	Pint	09-02634	**$57.75**
B-1/2	6 oz.	09-02635	**$29.00**
B-2	6 oz.	09-02638	**$29.75**

JEFFCO FUEL TANK SEALER

A 100% solids epoxy system. It contains no solvents and no corrosive or carcinogenic substances to assure low toxicity and ease of application. Provides superior low temp. curing, impact and abrasion resistance, and cures in the presence of moisture or humidity. Brushes on easily. One 3 gallon kit can coat tanks of average size homebuilt. Note: Jeffco Fuel Sealer 9700 FCR(Part Number:09-42226) is made up of 2 parts. Part A and Part B. They both can be sold seperately. Part A is Part number:01-01062 and Part B is part number: 01-01063.

3 Gal Kit.....P/N 09-42226 .....**$544.00**

AEROLIFE POLYPROTECH FUEL TANK SEALANT SINGLE COMPONENT

Fuel Tank Sealant "Single Phase" (one-part) A long lasting, permanently flexible "Single Phase" Polysulfide Sealant. Tack-free in 1 to 3 days, excellent resistance to oils, gasoline and diesel fuel Ideal for fuel tanks; cures to a firm flexible rubber seal with excellent adhesion qualities, can also be sanded and painted. ..... P/N 09-02544 ..... **$8.95**

AEROLIFE POLYPROTECH FUEL TANK SEALANT DUAL COMPONENT

A long lasting, permanently flexible "Dual Phase" Polysulfide Sealant. Fast curing two part system where time of completion is the criteria; cures to a firm flexible rubber seal with excellent adhesion qualities. Excellent resistance to oils, gasoline and diesel fuel; ideal for fuel tanks, cures to a firm flexible rubber seal, a product more for the professional than the home builder. Approximately 45 minute application time.

Sealant..... P/N 09-02543..... **$38.75**
Empty 5.5oz. Cartridge ... P/N 09-02545..... **$1.95**

AEROLIFE LIFE SEAL SEALANT ALUMINUM - 5.2 OZ

Formulated especially for fiberglass and composite Aircraft. LifeSeal® offers a fast-curing, low odor, high adhesion, non-sagging, non-corrosive, non-yellowing formula. Permanent watertight seal for joints subject to structural movement. Will adhere to metal, glass, wood, Lexan®, ABS and certain other products. Can be removed without damaging the aircraft finish is mildew resistant and "Acid Free". LifeSeal® packaged in half cartridges for convenience of working.

Aluminum..... P/N 09-02540..... **$8.35**
Clear ..... P/N 09-02541..... **$7.45**
Black..... P/N 09-02542..... **$8.95**

ALCOHOL RESISTANT GAS TANK SEALER

This is impervious to all fuel types. Over 2,000,000 sold to date. It is the best way to repair and restore your fuel tank. Simple application, includes extensive application information and product information sheet. Will seal pinhole leaks and prevent rusting. 1 Pint will seal a 10-12 gallon tank. Good for all fuel types. Works well with all metal and fiberglass tanks.

Note: For Experimental Aircraft Only!

Quart..... P/N 09-03477..... **$25.50**
Gallon ..... P/N 09-02566..... **$83.50**

The application life of each sealant is specified by the dash number in the part number.
Examples: AC-236 B-2 6oz. is 2 hour life. AC-250 B-1/6 2oz. is 1/6 hour life.

CORROSION TREATMENT

ACF-50 ANTI-CORROSION COMPOUND

ACF-50 is a state-of-the-art compound for controlling corrosion on aircraft electrical and avionics systems and airframes. ACF-50 is designed for owners of strut equipped Piper aircraft to comply with new Piper bulletin 5280C requiring lift strut inspection. ACF-50 kills the corrosion process with just one application and will last for 24 months. Microswitches, cannon plugs, and relays will remain corrosion free. Plus, ACF-50 will easily free seized nuts, screws and bolts. ACF-50 is qualified under Mil-PRF-8130F, and manufactured under ISO 9000 Certified Processes. Try ACF-50, you will be truly amazed at the results.

13 oz. Spray Can(HAZMAT) ..... P/N 09-44350 ..... **$11.95**
32 oz. Bottle ..... P/N 09-00364 ..... **$29.85**
4 Liter can ..... P/N 09-44345 ..... **$90.25**
20 Liter Pail ..... P/N 09-00437 ..... **$429.00**

CORROSION X

Corrosion X is an excellent penetrant, lubricant, and corrosion filter which confirms to Mil-C-81309E and is perfect for extended corrosion protection of airframes. It is also highly effective in protection of all components in the electrical / avionics systems. On existing corrosion, it penetrates oxidation, displaces lectrolyte and stops electrolysis. On corrosion free surfaces provides an ultra-thin barrier to guard against moisture intrusion and corrosion attack. Treatment lasts 2 years or more, and Corrosion X is non-toxic. Corrosion X is a highly recommend treatment for extending the life of airframes.

16 oz. Aerosol ..... P/N 09-42220 ..... **$15.26**
16 oz. Trigger spray (can be shipped anywhere non-hazardous, unrestricted) ..... P/N 09-00296 ..... **$15.25**
1 gal./3.8 ltr. ..... P/N 09-44225 ..... **$84.15**

CORROSION X PRESSURE SPRAYERS

These pressure sprayers are excellent for applying Corrosion X and require no special training to operate. compact, convenient and easy to use, these sprayers have no moving parts and operates at 80 PSI shop air. At such a low CFM even some inexpensive diaphram compressors can deliver adequate power. Furnished with instructional video. Available in 3 sizes.

2.5 GALLON TOTE - Required Air Pressure: 80 PSI @ 5 - 6 CFM Capacity: 2.5 gallons Weight: 22lbs **Hose**: 10' Color: Blue
Basic Unit Includes: 1" cricket wand, 3' x 1/4" 360° wand, 3' superflex wand ..... P/N 09-00373 ..... **$743.00**
Complete Unit Includes: 1" cricket wand, 3' x 1/4" 360° wand, 3' superflex wand, 8' x 1/4" 360° wand, 6' x 3/16" 45° fan wand, 5" x 1/8" hook wand ..... P/N 09-00374 ..... **$918.00**

5 GALLON HANDI-SPRAY™ - Required Air Pressure: 80 PSI @ 5 - 6 CFM Capacity: 5 gallons Weight: 28lbs Hose: 25' Color: Blue
Basic Unit Includes: 1" cricket wand, 3' x 1/4" 360° wand, 3' superflex wand ..... P/N 09-00371 ..... **$849.00**
Complete Unit Includes: 1" cricket wand, 3' x 1/4" 360° wand, 3' superflex wand, 8' x 1/4" 360° wand, 6' x 3/16" 45° fan wand, 5" x 1/8" hook wand ..... P/N 09-00372 ..... **$950.00**

BELT PACK - Required Air Pressure: 80 PSI @ 5 - 6 CFM Capacity: 1 quart Weight: 7lbs Hose: 3'
Basic Unit Includes: Pistol belt and holster, 1" cricket, 5" x 1/8" hook wand, 3' superflex ..... P/N 09-00375 ..... **$450.95**
Complete Unit Includes: Pistol belt and holster, 1" cricket wand, 3' x 1/4" 360° wand, 3' superflex wand, 8' x 1/4" 360° wand, 6' x 3/16" 45° fan wand, 5" x 1/8" hook wand. P/N 09-00376 ..... **$610.00**

PLIOBOND

Pliobond #20 is a viscous, quick setting highly versatile adhesive. Bonds metal; wood, plastics, fabrics; ceramics, glass, vulcanized rubber, paper, leather and concrete. Thin with MEK. Available in 1/2 pint, pint, and quart sized.

#PBC-20,1/2pt BrushTop Can
P/N 09-28000 ..... **$8.50**
#PC-220, Pint
P/N 09-28100 ..... **$13.85**
#PC-320, Qt.
P/N 09-28200 ..... **$23.75**

PAR-AL-KETONE

Black Bear Par-Al-Ketone is best known as one of the most rugged corrosion preventives available, performing successfully for over 40 years protecting aircraft components and machine parts in outdoor storage and for export.

Qt. ..... P/N 09-26800 ..... **$18.85**
Gal. ..... P/N 09-26900 ..... **$59.75**

BOESHIELD™ T-9 CORROSION PROTECTANT

Developed this formula for long term protection of aircraft components. Penetrates to fasteners and fixtures, where it displaces moisture, and will even loosen rusted parts. Boeing recommends it for fuselage, wing, and tail structures, engines and cowlings, landing gear and gear wells, control linkages, and avionics. Dries to a clean waxy film. Lubricates and protects all metals for months. Safe on most paints, plastics & vinyls.

12 oz. Aerosol can ..... P/N 09-01623 ..... **$15.75**
4 oz Drip Can ..... P/N 09-00378 ..... **$7.85**
4 oz Spray Can ..... P/N 09-00379 ..... **$7.45**
Gallon Can ..... P/N 09-01622 ..... **$99.00**

TUBE SEAL (LINE OIL)

Prevents rust and corrosion inside aircraft tubing structures. Tubeseal is a blend containing a very fine preservative oil (MIL-L-21260) which has a characteristic of climbing the tube wall and spreading over the entire surface to provide lasting protection. Penetrates and reveals very small pin holes in a weld and in time, due to exposure, congeal and seal the hole. 1 quart will treat 2 light aircraft fuselages. Complete instructions on label.

Qt. ..... P/N 03-14000 ..... **$26.00**
Pt. ..... P/N 03-14005 ..... **$14.00**

DOW CORNING DC-4 COMPOUND

A grease-like silicone material which provides a moisture proof seal for ignition and electrical systems. More water repellent than waxes. Effective from -70° to 400° F. A low-loss dielectric. Meets spec. MIL-I-8860.

5.3 Oz. Tube ..... P/N 09-27700 ..... **$14.85**

ECK CORROSION COATING

ECK® is a coating used to prevent dissimilar metal corrosion of all metals including stainless steel, aluminum, copper, brass, cold rolled steel and black oxide. ECK® prevents corrosion by providing a barrier between dissimilar metals, sealing out moisture and absorbing energy created by a dissimilar metal reaction. Product can be applied by aerosol or liquid on an unpainted or painted surface. Once applied the coating does not need to be reapplied during routine maintenance. ECK® is dielectric and can be used on electrical connections. Size is 3.75 oz. P/N 09-02138 ..... **$8.95**

DOW 730 SOLVENT RESISTANT SEALANT

A one part RTV paste which cures at room temp. to a tough rubbery white solid. Used for bonding, sealing and caulking where resistance to fuels, oils and solvents is required. Excellent on fuel line pipe threads, repairing fuel lines and tanks, bonding components exposed to fuels, oils & solvents. temp. range -85° to 400°F. Stores refrigerated for years.

3 oz. tube ..... P/N 09-00383 ..... **$93.75**

DOW SILASTIC RTV

General-purpose single-component silicone rubber. Adheres to metals, glass, paint, ceramics, most plastics, and wood. Cures to a firm silicone rubber in 24 hours at room temperature. Seals windshield glass, windows, repair worn rubber parts.

#732 RTV (Clear), 4.7 Oz. Tube ..... P/N 09-27800 ..... **$7.95**
#732 RTV (White), 4.7 Oz. Tube ..... P/N 09-27810 ..... **$6.95**
#732 RTV (Black), 4.7 Oz. Tube ..... P/N 09-27815 ..... **$6.95**
#736 Red Silicone, 3 Oz. Tube ..... P/N 09-27900 ..... **$11.50**

WHIRLWIND PROPELLERS — GOVERNORS

WHIRLWIND PROPS

Whirl Wind has made significant developments in the construction of the carbon composite propeller blades Insuring a strong, light and durable propeller system. The blade twist has been optimized for aerobatic performance, and the wide chord allows for more low-speed thrust and braking on those long down lines.

200C SERIES PROPELLERS

The 200C Series system consists of 2 carbon fiber blades with nickel leading edge erosion shields, aluminum hub and a composite spinner. This propeller is counter-weighted to prevent engine overspeed. This propeller can be flown in rain and off unapproved airstrips.

Performance & Quality. This 200C Series propeller has been designed to maximize the aerobatic performance of your airplane! The exceptional performance is derived from advanced engineering developments, including the use of our latest airfoils. The 200C Series is a two-blade hydraulic constant speed propeller system designed for aircraft using the Lycoming IO-360 engine (180 - 200 hp).

P/N 05-00568 ..... **$9,960.00**

SPECIFICATIONS

Prop Model#:	7755/C214	***System Wt:***	47 lbs (213 Kg)
Engine Type:	Lyc. O-360,IO-360	***Function:***	Aerobatic
Engine HP:	180 - 200 hp	***Control:***	Governor P-940
Max RPM:	2700 RPM	***Finish:***	Gray or White
# of Blades:	2	***Spinner:***	Composite 13",14"
Diameter:	77"		

200C SERIES BENEFITS

* Faster Acceleration
* Better climb
* More vertical performance
* Faster top speed
* More braking effect
* Lower polar moment of inertia

400C SERIES PROPELLERS

The new 400C Series system consists of three carbon fiber blades with nickel leading edge erosion shields, aluminum hub and a composite spinner. This propeller is also counter-weighted to prevent engine overspeed. This propeller can be flown in rain and off of unapproved airstrips.

Experience the exceptional performance of the 400C Series propeller system. Like the 200C Series, performance is derived from advanced engineering developments, including the use of our latest airfoils. The 400C Series is a three-blade hydraulic constant speed propeller designed for aircraft using the Lycoming IO-540 engine (260 - 300 hp).

P/N 05-00569 ..... **$13,040.00**

SPECIFICATIONS

Prop Model#:	7855/C415	***System Wt:***	65 lbs
Engine Type:	Lyc. IO-540	***Function:***	Aerobatic
Engine HP:	260 - 300 hp	***Control:***	Governor P-940
Max RPM:	2700 RPM	***Finish:***	Gray or White
# of Blades:	3	***Spinner:***	Composite 14"
Diameter:	78"		

400C SERIES BENEFITS

* Faster Acceleration
* Better climb
* More vertical performance
* Faster top speed
* More braking effect
* Lower polar moment of inertia

JIHOSTROJ HYDRAULIC GOVERNORS

Jihostroj Model	Engine Application	Part No.	Price
P-910	Rotax 912 & 914; Oil Pressure to increase pitch	05-00571	**$1,225.00**
P-920	Lycoming O-320, IO-360, IO-540 - Standard; Oil Pressure to increase pitch	05-00572	**$1,225.00**
P-940	Lycoming O-320, IO-360, IO-540 - Aerobatic; Oil Pressure to decrease pitch	05-00573	**$1,225.00**

WHIRLWIND ROTAX 912/914 PROPELLERS

The WhirlWind GA propeller series are ground pitch adjustable aircraft propellers featuring advanced aerodynamic and composite design. The high gloss urethane surface shows off the quality craftsmanship and attention to detail. The blade design is optimized for maximum efficiency and minimum noise. The blade structure is manufactured from theromoset epoxy/graphite composite matrix. This advanced composite structure ensures high strength and blade accuracy in all flight environments. Only WhirlWind propellers come standard with electroformed Nickel leading edge shields for superior fit and abrasion protection. The hub is CNC machined from aerospace aluminum and is dimensionally certified; all hubs are surface treated with shot peen for increased strength and cycle life and then Anodized for corrosion protection.

Specifications: Engines: Rotax 912/914, Diameter: 2 blade - 68-70 in. 3 blade - 64-70 in., Weight: 2 blade - 8 lbs.3 blade - 11 lbs., HP/RPM: 115@5800

Description	Part No.	Price
2 Blade Prop	05-06851	**$1,550.00**
3 Blade prop	05-06850	**$1,525.00**
Accessories		
9" Spinner For Prop	05-06852	**$335.00**
9.75" Spinner For Prop	05-06853	**$335.00**
11.3" Spinner For Prop	05-06854	**$335.00**

PROP & SPINNER POLISHING KIT

This kit was developed specifically to maintain the propeller and spinner on prop & spinner in pristine condition. P/N 09-23525 ..... **$26.95**

PROP PROTRACTOR

Perfect for precision setting of all ground-adjustable props, as well as precision alignment of control surfaces.

P/N 05-31970 ..... **$37.80**

THERM-X HOT PROP PROPELLER DE-ICING KIT

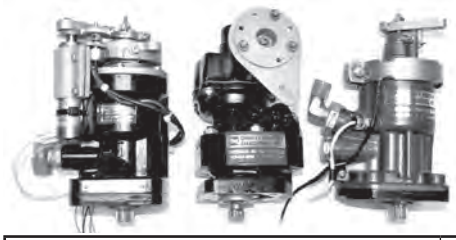
De-icing in under 90 seconds with the push of a button! No Fluids! No Mess! • Therm-X Hot Prop is a complete propeller deicing kit made up of Part 23 certified products (no more scrounging parts to build system) • Available for 2 blade and 3 blade props (currently Continental only, Lycoming to follow) 12V or 24V • 1 year Warranty • Installation documentation • Manufacturer provides support • Weight 4.9 lbs.

2 Blade ..... P/N 05-03383 ..... **$3,685.00**
3 Blade ..... P/N 05-03384 ..... **$3,895.00**

A1633-11 O-RING FOR HARTZELL COMPACT HUB PROPELLERS

The O-ring is A1633-11 or PRP909-6; commonly made by Parker Seal Company. Outside Diameter: .048 Length Under Flange: .096 Flange Diameter: .072 P/N 04-04566 ..... **$1.47**

PROPELLER GOVERNORS



A governor is defined as a mechanical device which is used to sense the speed of a motive device and maintain its speed using mechanical feedback. Quality Aircraft Accessories has been overhauling Prop Governors for over ten years. Whether your requirement is for a Woodward, McCauley or Hartzell, Quality Aircraft Accessories has most governor models available on an overhaul/exchange basis. Should you prefer to purchase the Prop Governor "outright", please add the core charge to the exchange price.

Overhaul work is preformed by Quality Aircraft Accessories at their facility in Tulsa, Oklahoma. All overhauled Prop Governors are warranted for material and workmanship for a period of 180 days.

Manufacturer	Part No.	Price	Core Charge
HARTZELL			
A-SERIES Prop Governor	05-04721	**$1,465.00**	**$1,000.00**
B-SERIES Prop Governor	05-04722	**$1,275.00**	**$600.00**
C-SERIES Prop Governor	05-04723	**$1,275.00**	**$600.00**
D-SERIES Prop Governor	05-04724	**$1,275.00**	**$600.00**
E-SERIES Prop Governor	05-04725	**$1,275.00**	**$600.00**
E8-SERIES Prop Governor	05-04726	**$1,275.00**	**$600.00**
F2-SERIES Prop Governor	05-04727	**$1,275.00**	**$600.00**
F3-SERIES Prop Governor	05-04728	**$1,275.00**	**$600.00**
F4-SERIES Prop Governor	05-04729	**$1,275.00**	**$600.00**
F6-SERIES Prop Governor	05-04730	**$1,275.00**	**$600.00**
F8-SERIES Prop Governor	05-04731	**$1,370.00**	**$600.00**
H-SERIES Prop Governor	05-04732	**$1,275.00**	**$600.00**
MCCAULEY			
Manufacturer	**Part No.**	**Price**	**Core Charge**
C290D2 Prop Governor	05-04735	**$1,175.00**	**$500.00**
C290D3 Prop Governor	05-04736	**$1,274.00**	**$500.00**
C290D4 Prop Governor	05-04737	**$1,175.00**	**$500.00**
C290D5 Prop Governor	05-04738	**$1,175.00**	**$500.00**
DC290D1 Prop Governor	05-04739	**$1,175.00**	**$500.00**
DCFS290D7 Prop Governor	05-04740	**$1,325.00**	**$600.00**
DCF290D7 Prop Governor	05-04741	**$1,275.00**	**$500.00**
DCFTS290D10 Prop Governor	05-04742	**$1,465.00**	**$600.00**
DCFTS290D15 Prop Governor	05-04743	**$1,465.00**	**$600.00**
DCF290D8 Prop Governor	05-04744	**$1,325.00**	**$600.00**
DCFS290D9 Prop Governor	05-04745	**$1,326.00**	**$600.00**
WOODWARD - Call for price and availability.			

PCU 5000 PROPELLER GOVERNORS

The PCU5000 is lightweight, compact & pumps 30 - 35% more oil which maintains a perfect constant-speed.

Features:
- Compact / Weighs 2 lbs. less than most conventional governors
- New units at a lower cost
- Easy installation - hardware included
- TBO - same as your engine
- 3 year limited warranty
- 4 year extended warranty available

PCU5000 - FAA-PMA Approved for single engine Cessna, Beechcraft /Raytheon, Remis, Mooney and Piper aircraft.
Certified models fit all: Lycoming, Continental and *Rotax engines *(applicable if mounting pad conforms to AND20010)
PCU5000X - Experimental - The PCU5000X is specially engineered for single engine experimental aircraft and can be customized to a specific application.
Experimental models fit all: Lycoming, Continental, Superior Air Parts, Engine Components and *Rotax engines *(applicable if mounting pad conforms to AND20010)

Complete engine number required for order on each model.

PCU5000X Experminental Prop Governor ..... P/N 05-04750 ..... **$1,450.00**
PCU5000 Certified Prop Governor for McCauley / Woodward ..... P/N 05-04751 ..... **$1,872.00**
PCU5000 Certified Prop Governor for Hartzell ..... P/N 05-04752 ..... **$1,787.00**

PROPELLERS

POWERFIN COMPOSITE PROPELLERS

Powerfin is the only composite propeller manufacturer in the U.S. to offer a true Clark-Y airfoil which optimizes surface airfoil for thrust. Powerfin also allows for infinite pitch range with any increment. The pitch alignment tool supplied with every Powerfin takes the guesswork out of pitching your prop. Simply set the stop screw, clamp the tool to the hub, and turn the blade to the stop. The process takes less than 10 minutes for a 3 bladed prop. Powerfin features include superior aerodynamics, noise reducing tips, superior composite construction, very strong low profile hub, durable finish, 2 and 3 blade configurations, fits Rotax 75MM bolt pattern, adapters for every bolt pattern, 32" to 72" diameter, leading edge protection, speed set hub and a two year factory warranty against defects. Weight is 6.5 lbs. for 2 bladed Powerfin and 9.0 lbs. for 3 bladed Powerfin. Complete brochure available on request.

MODEL B

General use propeller although specifically designed to run significantly smaller diameters than most other props. The B-Model runs very well on a 582/2.58 as a three blade 60" for example, and can out produce our competition even when running much smaller diameters. Maximum possible diameter with this model is 65".

MODEL C

Designed specifically for powered parachutes as a three blade 64" on a Rotax 582/2.58, this design works well on Rotax 447's through Rotax 618 as well as the Hirth engines that fall between 40 and 80 horsepower. This is the propeller being sold as standard equipment on 6 of the top 7 ppc's. Maximum possible diameter with this model is 69".

MODEL E

This is our smallest propeller - designed for engines between 15 and 30 horsepower. These narrow blades allow for a maximum possible diameter of 53". Backpack ppc's are the target of this design although the blade has been proven very efficient on many older, fixed wing airplanes with diameter restrictions. This is the ONLY pitch adjustable prop available to backpack units.

MODEL F

This is our largest propeller - designed for larger two-stroke engines that use the higher gear reduction ratios and horsepower up to 115. This prop runs beautifully on a Rotax 503/3.47 as a three blade 66"-70". A two place Kolb can't squeeze any more efficiency out of a 503/3.47 than with our F-model 68" prop. This prop is also the finest prop available for the Rotax 912, 912S, and 914 engines. Maximum possible diameter with this model is 75".

To calculate the cost of a full propeller assembly, take the price for a single blade times the number of blades you need. Then add the cost of the hub you need.

For example: A three blade C-model propeller assembly will include three C-model blades ($420) and a standard three blade Apex hub ($195). The total is $620. All hub assemblies* include mounting hardware, optional locknuts for Rotax engines, and a 1/4" dowel pin used for setting the pitch.

The cost of each type of blade is the same regardless of the diameter.

BLADES

Blade Model	Part No.	Single Blade Price
B-Model	05-06962	**$189.00**
C-Model	05-06963	**$179.00**
E-Model	05-06964	**$169.00**
F-Model	05-06965	**$229.95**

All propeller and hub assemblies include mounting hardware for the Rotax A, B, C, or E box or the Hirth gearbox.

*HUB ASSEMBLIES**

Hub Type	For Blade Models	Part No.	Price
Special Three Blade Apex	E	05-06973	**$289.95**
Standard Two Blade Apex	B, C, & F	05-06966	**$279.00**
Standard Three Blade Apex	B, C, & F	05-06967	**$299.95**
Standard Four Blade Apex	B, C, & F	05-06968	**$325.00**
Standard Five Blade Apex	B, C, & F	05-06969	**$350.00**
Rotax 912 Three Blade Apex	B, C, & F	05-06970	**$335.00**
Rotax 912 Four Blade Apex	B, C, & F	05-06971	**$350.00**
Rotax 912 Five Blade Apex	B, C, & F	05-06972	**$378.00**

Shipping a two or three blade propeller assembly is $20.00. These prices are for all U.S. customers excluding Alaska and Hawaii. Most international orders will ship U.P.S. International - Expedited Service. If you wish a quote on an international order, please supply an address with a postal code so we can quote shipping prices.

PROPS INC. PROPELLERS FOR HOMEBUILTS

Ground Adjustable Propellers by Props Inc. For those who have changes in mind or like the looks of a three blade prop. It has wood blades similar to the Homebuilt line, but with an aluminum hub. Key Benefits: Wide Adjustable Range• Replaceable Blades • Custom Designed

Description	Diameters	Price
VW, Jabiru, Suburu	46" - 58" dia.	**$1200.00**
Three Blade	Up to 90" dia.	**$1500.00**
Four Blade	Up to 90" dia.	**$1750.00**

Homebuilt Props by Props Inc. Homebuilt props come with urethane leading edge protection and fiberglassed wrapped tips. Key Benefits: Durable, yet can save tear down cost in the event of a ground strike. •Specifically designed for the use. • Can be modified for fine tuning.

Description	Diameters	Price
VW, Jabiru, Suburu	46" - 58" dia.	**$435.00**
Gyrocopter, Airboats Mac, VW, Suburu	48" - 56" dia.	**$435.00**
C-90, O-200, O-235 O-320, O-290, O-360	58" - 60" dia. 60" - 72" dia.	**$1148.00**

Specify aircraft type, prop diameter, pitch, bolt pattern, pusher or tractor configuration, and mahogany or birch when ordering any homebuilt propeller. Allow 2-3 weeks for shipment of our custom propellers. Add $30.00 for 3-blade and $50.00 for 3 and 4 blade props-packing and shipping. Maple may be substituted for Birch according to availability.

ULTRALIGHT PROPELLERS BY PROPS INC.

These high quality ultralight propellers are available in both birch and mahogany. The birch props are as split-resistant as mahogany but mahogany props with glass coating are 1/3 lighter than the birch. Mahogany props come with a glass coating - it is optional on birch props. Add $35.00 for leading edge protection on birch or mahogany props. Propeller reconditioning available on all ultralight props. Specify prop dia., pitch, bolt pattern, aircraft and engine type, birch or mahogany, and pusher or tractor configuration.

Allow 2-3 weeks for delivery. Prop drilling included in price. Additional $18.00 for packing and shipping.

Diameter (Specify)	Pitch (Specify)	Price for Plain Prop
36 thru 40	Any (to 36")	**Call for Quote**
41 thru 48	Any (to 46")	**Call for Quote**
49 thru 54	Any (to 46")	**Call for Quote**
55 thru 60	Any (to 46")	**Call for Quote**
61 thru 66	Any (to 46")	**Call for Quote**
67 thru 72	Any (to 46")	**Call for Quote**

Request quotation on prop pitch over 46"

DYNAVIBE PROP BALANCER

DynaVibe is an economical, state-of-the-art dynamic propeller balancer designed specifically for the aircraft industry. DynaVibe displays the magnitude and phase of propeller vibration allowing precise weight adjustments for balanced and smooth engine operation. * Economical - including: • Dynamic Balancer • Accelerometer with 30 ft cable • Optical Pickup and Reflective Tape (Tach) • Carrying Case • No hidden costs or additional items to buy! * Accurate - Reports RPM, Vibration Magnitude * Results - Reduce vibration for a smoother flight, and decrease mechanical wear of engine and instruments

DynaVibe Aircraft Prop Balancer .....P/N 05-04532 ..... **$1,495.00**
DynaVibe Aircraft Prop Balancer with NIST P/N 05-04533 ..... **$1,644.00**
DynaVibe Rotocraft Prop Balancer .....P/N 05-04534 ..... **$1,995.00**
DynaVibe Rotocraft Prop Balancer with NIST .P/N 05-04535 ..... **$2,190.00**

BUZZ MASTER PROP BALANCER

This extremely simple and sensitive tool uses the plum-bob and bevel principle to balance props both vertically and horizontally. It can be carried in a small tool box for easy use in the field and balances props accurately for smooth operation. The precision machined hub works with any prop designed with standard 1" center hole. Illustrated instructions included. P/N 13-17400 ..... **$29.50**

AP

PROPELLERS

AP

PRINCE AIRCRAFT COMPANY P-TIP PROPS

WOOD P-TIP PROPELLER - Before the "Carbon Fiber P-TIP Propeller", this had been considered one of the most efficient and lowest noise propellers available; the only wood/carbon fiber anti-vortex droop tipped propeller in the world. This propeller is a wood, fixed pitch propeller that relies on the forward pull of the propeller to automatically provide pitch change proportional to the amount of force being applied to the propeller disk. When a propeller operates at a slower airspeed than its maximum capabilities, it has a proportional pull in relation to the velocity of forward motion, so at takeoff and climbing condition the propeller will have its largest forward pull. Due to the scimitar shape, the tip of the propeller cones forward, as the coning angle changes the propeller will lessen pitch that provides shorter takeoffs and higher rates of climb. As the propeller increases in forward speed the disk pressure is reduced, this forces the propeller to increase pitch and top speed. This change in pitch is approximately four inches from takeoff to cruise. The droop P-TIP is to control the air spillage over the propeller tip that delays the tip vorticies which cause drag and turbulence within the propeller arc. A propeller, like a wing, works best when it has unturbulated air over the airfoil sections. The P-TIP delays the vorticies, the propeller then has smooth air to provide best thrust and a pronounced reduction in propeller noise.

Additional benefit of the P-TIP design is the volume of air the propeller produces. When air flows through a standard tip propeller design, the airflow at the tip will flow over the propeller tip. As soon as it passes the tip it will tuck down behind the propeller blade giving a cone of air from the propeller smaller than the propeller diameter. For example, a 72" diameter propeller without a P-TIP will give a volume of air from the propeller of approximately 68" of diameter; a P-TIP propeller will provide 72" of air volume. This means that a 68" P-TIP will give the same volume of air as a standard tip 72" propeller. By reducing propeller diameter there is less frontal area or flat plate drag of the aircraft. Higher top speeds are the result without sacrificing takeoff or climb. Your benefit is a lightweight, pitch changing propeller that will give you the best of short takeoff, maximum cruise, and more flying enjoyment in a quieter cockpit.

COMPOSITE P-TIP PROPELLER - Composite P-Tip Props retain the same qualities of the wood P-TIP but are more efficient and durable. Prince uses the reliable time proven wood core of hard maple, then completely encloses the blades in multiple layers of high tensile strength composites. The hardwood core absorbs the dangerous harmonic vibrations and benefits your airframe by smoothing the engine power pulses, and the composite wrapping allows the airfoils sections to be thinner, reducing drag while increasing durability and locks each blade into operating at precise angles. The best working propeller is one that is rigid enough to allow all blades to move alike, thin at the cord section to eliminate as much drag as possible, and strong enough to satisfy the large amounts of stress required during flight. Urea Formaldehyde adhesive meets Military Specifications to insure reliable operation and trouble free flying for the life of the propeller. Propellers are finished in a metal prop gray color, this shade will match nearly every paint scheme, the Durability and Ultrahigh Gloss finish is a two-part Urethane, machine buffed to achieve a propeller that reflects the quality of manufacturing like no other propeller available.

Note:Request Prince Propeller order form at time of order we will fax or mail form to you to complete to insure correct propeller is furnished for you application.

APPLICATION CHART

Aircraft	Engine	HP	Dia./Pitch	Hub Thickness	Price Schedule
Acro Sport	0-320	150	71/48	3.7	F
Avid Flyer	Rotax 503	52	68/34	2.1	B
	Rotax 532	64	71/35	2.1	B
Baby Great Lakes	C-80A	80	66/48	3.25	F
Cozy	0-320	150	68/72	3.7	F
	0-320	160	68/74	3.7	F
	0-360	180	68/76	3.7	F
Dragonfly	1834VW	60	52/45	2.75	D
	2100VW	82	52/48	2.75	D
Glasair	0-320	150	68/72	3.7	F
	0-320	160	68/74	3.7	F
	0-360	180	68/76	3.7	F
	0-540	270	69/113	3.7	F
Glass Goose	0-320	150	64/62	3.7	E
	0-320	160	64/64	3.7	E
Kitfox	Rotax 503	46	68/30	2.1	B
	Rotax 912	80	68/47	2.25	B
KR-2	1835 VW	55	52/48	2.75	D
	2100 VW	80	52/50	2.75	D
	Subaru	75	53/68	3.7	D
Lancair	0-200	100	58/68	3.7	E
	0-235	118	58/68	3.7	E
	0-290	140	60-72	3.7	E
	0-320	150	62/72	3.7	E
	0-320	160	62/74	3.7	E
	0-360	180	68/76	3.7	F

LOW HORSE POWER PROPS

(Ultralight Type) Schedule	Composite P-Tip	P-Tip
A.. Up to 54"	**$8.00**	**$12.20**
B... 55"-110"	**$8.50**	**$12.75**

Call for Quote on all Prince Aircraft Propellers.

HIGH HORSEPOWER PROPS

Composite Schedule	P-Tip	P-Tip
C.. Up to 45"	**$12.50**	**$18.65**
D.....46"-55"	**$13.00**	**$19.20**
E.....56"-65"	**$15.50**	**$23.10**
F..... 66"-110"	**$16.40**	**$24.40**

MCCAULEY MET-L-PROPS

Original equipment on most Cessna aircraft and popular with owners of many other designs. McCauley has earned an enviable reputation for producing high-performance propellers. Most popular numbers are available from local stock. The Met-L-Prop number designates the model, diameter and pitch. Example: CM7150 is a model CM propeller with a 71 inch diameter and 50 inch pitch. When ordering a new prop which requires a doweled spacer, both spacer and bolt kit are included. Spacers and bolt kits may also be ordered separately. When ordering, specify whether engine has a tapered or flanged crankshaft. Tapered crankshaft requires Kit No.B-4622-6. Flanged crankshaft requires Kit No.B-4622-9. Elliptical tip models 1A90/CF and square tip models 1B90/CM having the same diameter and pitch are directly interchangeable except for CF7538 on Cessna 150G, H, J and K model seaplanes.

Aircraft Model	Engine	Standrd Prop	Cruise Prop	Climb Prop	Our Price**
Beech A23-24	Lyc.I0-360-A2B,A2D	BFA7762+			Call
Bellanca 7ECA	Cont. 0-200A	ACM6948+			Call
Bellanca 7ECA	Lyc. 0-235-C2C	CLM7246+	CLM7250		Call
Bellanca 7GCA	Lyc. 0-320-A2B	GM7452	GM7455	GM7450	Call
Cessna120,140	Cont. C-85	CM7148	CM7150	CM7146	Call
Cessna120,140	Cont. C-90	CM7152	CM7154		Call
Cessna 150A-F	Cont. 0-200A	MCM6950			Call
Cessna150G-K	Cont. 0-200A	DCM6948	DCM6950		Call
Cessna 150L	Cont. 0-200A	OCM6948+			Call
Cessna 170A,B	Cont. C-145	MDM7655	MDM 7656	MDM7653	Call
Cessna 172	Cont. 0-300A,B	MDM 7653	MDM7655	MDM7652	Call
Cessna 172A-H	Cont. 0-300C,D	EM 7653	EM7655	EM7652	Call
Cessna172I,K,L	Lyc. 0-320E2D	DTM7553+			Call
Cessna 175	Cont. G0-300A,C	MFC8467			Call
Cessna 175A,B	Cont. G0-300C,D	MFC8467			Call
Cessna 177	Lyc. 0-320-E2D	TM7653+			Call
Cessna 177A	Lyc. 0-360-A2F	EFA7656+			Call
Great Lakes	Lyc. 0-320-E2A	EGM 7654			Call
Luscombe 8A	Cont. A-75	CM7447	CM7449		Call
Piper J3 Cub	Cont. C-85	CM7144	CM7146		Call
Piper PA-18,18A	Lyc 0-290-D2	GM8241`			Call
Piper PA-32	Lyc.0-540-F4B5	PFA8266+			Call

Applications and Prices for some Popular McCauley Props. All Models Available. Prices are the same for all props with the same letter prefix.

MCCAULEY DE-ICE BRUSH CLUSTERS

These McCauley De-Ice Brush Clusters from Rapco are FAA-PMA approved and are applicable to any aircraft using the McCauley style brush blocks. Two clusters per block are required. Brush clusters with dash numbers require one of each dash number per block.

Rapco Part No.	Block No.	Installation	Part No.	Price
RAB40012	C40010	Cessna: T182 TR182 340A 402C 404 414A 421C 425	05-01326	**$49.50**
RAB40189	C40179	Cessna: T182 TR182 340A 402C 404 414A 421C 425	05-01327	**$69.85**
RAB40046	C40055	Cessna: U206G TU206G 210N P210N T210N 210R T210R 310P T310P 310Q T310Q 310R T310R 441	05-01328	**$119.75**
RAB40193	C40187	Cessna: U206G TU206G 210N T210N 210R P210N T210R T303 441	05-01329	**$79.95**
RAC40256-1	C40257	Raytheon: F33A V35B A36 B36TC 58 58A 58P 58PA 58TC 58TCA B200 B200C B200CT B200T	05-01330	**$52.50**
RAC40256-2	C40257	Raytheon: F33A V35B A36 B36TC 58 58A 58P 58PA 58TC 58TCA B200 B200C B200CT B200T	05-01331	**$56.50**
RAC40371-1	C40363	Raytheon: B200 B200C, B200T, B200CT A200CT	05-01332	**$63.75**
RAC40371-2	C40363	Raytheon: B200 B200C, B200T, B200CT A200CT	05-01333	**$63.75**
RAB40332	C40331	Fairchild: SA227-AT SA227-AC SA227-BC SA227-CC SA227-DC	05-01334	**$78.25**

PRINCE AIRCRAFT PROPELLER ORDERING INFORMATION

HOW TO DETERMINE COST

1. Select style and price, P-TIP or Composite P-TIP propeller.
2. Multiply propeller diameter times price per inch, e.g.:
High Horsepower 68" dia. P-TIP propeller, 68 x 13.51 = **$918.68**,
Composite P-TIP 68 x 18.48 = **$1256.64**
3. Add Leading Edge Protectors, if required.

MULTI-BLADE PROPS

Three-Blade..... 2 Blade rate x 3 Four-Blade .....2 Blade rate x 4

LEADING EDGE PROTECTOR

Up to 48" diameter .....**$61.00** 49" - 110" **$83.00**

AIRCRAFT SPRUCE WEST
CORONA, CA • (877) 4-SPRUCE
AIRCRAFT SPRUCE EAST
PEACHTREE CITY, GA • (877) 477-7823
Prices Subject to Change Without Notice

SENSENICH PROPELLERS

SENSENICH METAL PROPS

Most popular models of Sensenich metal propellers are available in local stock for immediate shipment. Installation bolt kit is furnished with each propeller. Attaching kit for flange shaft will be packed for all Continental installations unless taper shaft installation is specified. Propellers may be shipped via UPS. Partial List - Request Prices on Unlisted Models. Approximate Shipping Weight 40 Lbs.

Aircraft Model*	Engine	Standard Prop	Climb Prop	Cruise Prop	Our Price
Aeronca 11AC	Cont. A-65	74CK-0-46			Please see our website or call for quote.
Beech Model 23	Lyc. O-320 (160 hp)	74DM6-0-60	74DM6-0-56		
Bellanca 7EC, 7FC, 7JC	Cont. C-90	76AK-2-46	76AK-2-44	76AK-2-48	
Cessna 120, 140	Cont. C-85	76AK-2-44	76AK-2-42		
Cessna 150 thru 150K	Cont. O-200	69CK-0-52			
Cessna 152	Lyc. O-235 (110 hp)	72CKS6-0-56	72CKS6-0-54		
Cessna 172 thru 172C	Cont. O-300C, D	74DC-0-56			
Cessna 170	Lyc. O-360 (180hp)	76EM8S5-0-56	76EM8S5-0-54	76EM8S5-0-60	
Cessna 172 Avcon Conv.	Lyc. O-360 (180hp)	76EM8S5-0-56			
Cessna 172, 172A	Lyc. O-360 (180hp)	76EM8 series			
Cessna 177	Lyc. O-360 (180hp)	76EM8 series			
Piper J3C65, L4, Cub	Cont. A-65	74CK-0-46	74CK-0-44		
Piper PA-11, Cub, J4A	Cont. A-65	74CK-0-46	74CK-0-44		
Piper PA-11, PA-18, Cub	Cont. C-90	76AK-2-42		76AK-2-46	
Piper PA-18 Super Cub	Lyc. O-235-C1	76AM6-2-44			
Piper PA-18 Super Cub	Lyc. O-320 (150 hp)	74DM6-0-56	74DM6-0-54	74DM6-0-58	
Piper PA-20 Pacer	Lyc. O-235-C1	76AM6-2-50	76AM6-2-48	76AM6-2-52	
Piper PA-22-108 Colt	Lyc. O-235-C1B	76AM6-2-48		76AM6-2-50	
Piper PA-20, PA-22	Lyc. O-290-D (125 hp)	74DM6-0-56	74DM6-0-54		
Piper PA-22	Lyc. O-320 (150 hp)	74DM6-0-60	74DM6-0-58		
Piper PA-28-140 Cherokee	Lyc. O-320 (150 hp)	74DM6-0-60	74DM6-0-58		
Piper PA-38 Tomahawk	Lyc. O-235 (112 hp)	72CK-0-56			
Piper PA-28 140, 4 Cherokee	Lyc. O-320 (150hp)	74DM6-0-58	74DM6-0-56		
Piper PA-28 150 Cherokee B	Lyc. O-320 (150hp)	74DM6-0-58	74DM6-0-56		
Piper PA-28 151 Warrior	Lyc. O-320 (150hp)	74DM6-0-58			
Piper PA-28 151 Warrior/160	Lyc. O-320 (160hp)	74DM6-0-60			
Piper PA-28 160 Cherokee B	Lyc. O-320 (160hp)	74DM6-0-60			
Piper PA-28 180 Archer	Lyc. O-320 (180hp)	76EM8S5-0-60			
Piper PA-28 180 Cherokee C	Lyc. O-320 (180hp)	76EM8S5-0-60			
Piper 181 Archer II ('78)	Lyc. O-320 (180hp)	76EM8S5-0-62			
Pitts Special S1S and S2	Lyc. I0-360	76EM8-0-56 to -61			
Taylorcraft BC65, BCD12D	Cont. A-65	74CK-0-48	74CK-0-46		
Taylorcraft BC12D85, 485, 19	Cont. C-85	74CK-2-46	74CK-2-44		
Stoddard Hamilton Glasair ITD, FT,RG	Lyc 0-320/160hp				
Stoddard Hamilton Glasair IITD, FT,RG	Lyc 0-320/160hp				
Stoddard Hamilton Glasair IIITD, FT,RG	Lyc 0-320/160hp				
Tri-R (KIS)/116	Lyc 0-235-L2C				
Van's RV-3/150, RV-4/150	Lyc 0-320/150hp				
Van's RV-3/160, RV-4/160	Lyc 0-320/160hp				
Van's RV-6/RV-6A150	Lyc 0-320/150hp				
Van's RV-6/RV-6A160	Lyc 0-320/160hp				
Zenith CH-2000/116	Lyc 0-235 (116hp)	72CK-0-46		72CK-0-48	
Zenith CH-2000A/150	Lyc. 0-320 (150hp)	74DM6S5-0-58			

*All models listed are land planes.

SENSENICH FLIGHT PERFORMANCE ALUMINUM PROPS FOR VANS AIRCRAFT

For the Lycoming 0-235 (125 HP): 72 CK Series Propeller.....72 CK Series Propeller.....P/N 05-01468.....**$3,171.00**
For the Lycoming 0-320 (150 or 160 HP): 70 CM Series Propeller.....70 CM Series Propeller.....P/N 05-01469.....**$3,438.00**
For the Lycoming 0-360 (180 HP): 72 FM Series Propeller .....72 FM Series Propeller .....P/N 05-01470.....**$3,447.00**

Both Systems Include:
- High Performance Fixed-Pitch Aluminum Propeller
- Aluminum Propeller Extension Included
- 2 yr or 200hr warranty (whichever comes first)
- Personalized service
- Attaching Hardware Included
- A full 2" dia. reduction allowed for repairs
- Propeller system that can be serviced anywhere.

Specify aircraft model, engine, & pitch (standard, climb, or cruise) when ordering. Also available for Murphy Rebel, Elite, Glasair, Thorp T-18, Tri-R, Midget Mustang, & many other homebuilts.

SENSENICH ALUMINUM PROP BOLT KITS

These propeller bolt kits for Sensenich aluminum propellers include the bolts and washers for propeller attachment.

Propeller Application	Bolt Kit Part No.	Price	Propeller Application	Bolt Kit Part No.	Price
69CK	AN6H-37AS	**$233.95**	76AK	AN6H-32AS	**$286.95**
72CK	AN6H-37AS	**$233.95**	76AM6	AN6H-33AS	**$306.95**
74CK	AN6H-32AS	**$286.95**	76EM8	AN8H-46AS	**$298.00**

PROPELLER BUSHINGS

SENSENICH A-437 For installations with Continental taper shaft. 5/8" O.D. x 3/8" I.D. x 1/2" Long.
Set of 6.....P/N 05-01127..... **$33.75**

MCCAULEY A-1170 5/8" O.D. x 3/8" I.D. x 11/16" Long.
Set of 6.....P/N 05-01128..... **$128.50**

SENSENICH PROPELLER FOR CESSNA 172'S

This propeller is STC's for Cessna 172's I thru P using Lycoming 0-320 series engines. It is available in pitches of 56 to 60 and no spinner change is required. Features a full 2 inch diameter reduction. Model 74DM7S14-0-56-60 (Specify pitch)..... **$2,562.95**

PROPELLERS

SENSENICH WOOD PROPS

Original equipment on Piper, Aeronca, Taylorcraft, Cessna, Ercoupe, Fairchild, and others. Metal tipping and high lacquer finish. Bolts and mounting plates not included. 18 lbs. each. FAA approved for certificated aircraft. Also excellent for experimental aircraft. Aircraft Spruce is an authorized Sensenich factory distributor. *Props w/asterisk are most commonly used props & are normally in stock for immediate shipment.

STANDARD PROP

Aircraft Models	Engine	Stnd. Prop	Part No.	Price	Climb Prop	Part No.	Price
Aeronca 7AC, 11AC, 11ACS	Cont. A65	W72CK-42	05-W72CK-42	**$1,365.00**	W72CK-40	05-00583	**$1,369.00**
Cessna 120, 140	Cont. C85	W74FK-45	05-01808	**$1,849.00**	W74FK-44	05-01809	**$1,829.00**
Commonwealth 185	Cont. C85	W74FK-44	05-01809	**$1,829.00**			
Luscombe 8A	Cont. A65/C65	W76CK-42	05-01810	**$1,962.00**	W76CK-40	05-01821	**$1,961.00**
Piper J-3, J-4A, PA-11, A-17	Cont. A65/C65	W72CK-42	05-W72CK-42	**$1,365.00**	W72CK-40	05-00583	**$1,369.00**
Piper J-3 (Duster)	Cont. A75	W70DK-40	05-01811	**$1,661.00**			
Piper J-4E	Cont. A75	W70DK-42	05-01812	**$1,661.00**			
Piper J-4F, PA-15	Lyc. O-145B	W70LY-36	05-01813	**$1,726.00**			
PA-14, PA16, PA-18, PA-20	Lyc. O-235C1	W74FM-49	05-01814	**$1,830.00**	W74FM-47	05-01819	**$1,829.00**
PA-20, PA-22 125,135	Lyc. O-290D/D2	W74FM-54	05-01815	**$1,729.00**			
PA-18, PA18A	Lyc. O-290D/D2	W74FM-49	05-01814	**$1,830.00**	W74FM-47	05-01819	**$1,829.00**
T-Craft BC65, BC1265	Cont. A65	W72CK-42*	05-W72CK-42	**$1,365.00**			
L2, D65, DC065							
T-craft BC12D	Cont. A65	W72CK-42	05-W72CK-42	**$1,365.00**	W72CK-40	05-00583	**$1,369.00**
BC12D1							
Stinson 10, HW75	Cont. A70	W70Dk-40	05-01811	**$1,661.00**			

AP

AIRBOAT AND LOW HORSEPOWER PROPELLERS

We carry the complete Arrowprop Propeller Co. line of props used on airboats, ice sleds, hovercraft, bowfishing, air drives, and wind machines. These props are for use with engines such as Briggs & Stratton, Rotax, Cuyuna, Tecumseh, Hirth, Yamaha, Kawasaki, Onan, wisconsin, Kohler, Honda, and others. The props are available in diameters from 26" to 48" and with 2, 3, 4, 5, 6, or 8 blades. All propellers have a 1-3/4" prop hub except for 48" prop which have 2" hubs.

CALL WITH YOUR REQUIREMENTS AND REQUEST QUOTATION.

TENNESSEE PROPELLERS

Each Tennessee propeller is solidly built by skilled craftsmen from the finest selection of hardwoods. The laminated propeller is carefully assembled, carved, balanced and finished. Standard Rotax hub bolt pattern (others available on request). When ordering, please tell us: 1. Engine type and displacement 2. Left hand or right hand drive 3. Pusher or tractor configuration 4. Gear or belt drive, and reduction ratio 5. Prop diameter and pitch Direction of prop rotation is determined by viewing rotation of prop from behind the aircraft. Left hand rotation is counter-clockwise, right hand rotation is clockwise. If you're not sure about prop size, give us a call.

Description	Part No.	Price	Description	Part No.	Price
36" Prop 1.5" Hub	TP36	**$254.95**	36" Prop 2" Hub	TP362	**$345.95**
42" Prop 1.5" Hub	TP42	**$309.95**	42" Prop 1.5" Hub	TP42	**$309.95**
44" Prop 1.5" Hub	TP44	**$296.00**	44" Prop 2" Hub	TP442	**$371.95**
48" Prop 1.5" Hub	TP48	**$340.95**	48" Prop 2" Hub	TP482	**$371.95**
50" Prop 1.5" Hub	TP50	**$357.95**	50" Prop 2" Hub	TP502	**$389.95**
52" Prop 1.5" Hub	TP52	**$357.95**	52" Prop 2" Hub	TP522	**$389.95**
54" Prop 1.5" Hub	TP54	**$357.95**	54" Prop 2" Hub	TP542	**$308.95**
58" Prop 1.5" Hub	TP58	**$296.00**	60" Prop 1.5" Hub	TP60	**$362.95**
60" Prop 2" Hub	TP602	**$327.50**	64" Prop 2" Hub	TP642	**$401.95**
66" Prop 2" Hub	TP662	**$342.95**	68" Prop 2" Hub	TP682	**$401.95**
70" Prop 2" Hub	TP702	**$449.95**	74" Prop 2" Hub	TP742	**$449.95**

ARROWPROP ULTRALIGHT PROPELLERS

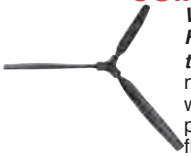
Propeller Diameter	Hub Thickness 1-3/4"	2"	2-1/4"
Stock No.	05-314--	05-315--	05-316- -
30"	---	---	---
36"	---	---	---
38"	---	---	---
40"	---	---	---
44"	---	**$185.95**	---
46"	---	**$198.95**	---
48"	---	**$202.95**	---
50"	---	**$211.95**	**$220.95**
52"	---	**$216.95**	**$243.95**
54"	---	**$220.95**	**$247.95**
56"	---	**$225.95**	**$233.95**
58"	**$225.95**	**$229.95**	**$238.95**
60"	**$229.95**	**$256.00**	**$275.00**
62"	**$238.95**	**$242.95**	**$251.95**
64"	**$255.95**	**$260.95**	**$277.95**

Order by P/N. Use basic P/N at top of column, and complete P/N with prop diameter.

When ordering please give the following:

1. Specify clockwise or counter-clockwise rotation
2. Specify pusher or tractor type.
3. Give center hole size.
4. Give bolt circle diameter
5. Give number of bolt holes and sizes.
6. Specify Aircraft model or prop pitch. For Vinyl Leading Edge Add **$20.00** Additional. For Polyester Leading Edge Add **$45.00** Additional.

WARP DRIVE ADVANCED COMPOSITE PROPELLERS



Warp Drive's Advanced Composite Carbon Fiber propeller has a structural strength near that of metal propellers. Because of the stiffness achieved by using carbon fibers, the prop will do very little coning (bending forward) under power. Proper fiber placement allows the prop to flex torsionally for maximum cruise efficiency. The strongly fixed position of the blades along with optimum torsional performance translates into more thrust than conventional propellers.

The interior structure of this new propeller is all carbon fiber - no fiberglass, no foam, no filler - an all carbon fiber matrix combined with top quality hybrid epoxies. Carbon fiber is one of the strongest building materials available. When properly engineered, carbon fiber can achieve the strength and stiffness of a metal part, as demonstrated by its wide range of industrial and aerospace uses.

WARP DRIVE PROPELLER BLADE TYPES

All propellers and blade types are available with Stainless Steel Leading Edge protection as an option at additional cost.

1. STANDARD ADVANCED COMPOSITE CARBON FIBER BLADES
   The Standard Carbon Fiber Blades can be used on Rotax, Arrow, VW and similar engines.
2. HIGH HORSE POWER ADVANCED COMPOSITE CARBON FIBER BLADES
   The Carbon Fiber HP Blades will be required for use on Lycoming, Continental and some auto conversion engines.

WARP DRIVE HUBS

Warp Drive offers two types of hubs of our propellers. First is our Standard Hub. This is an assembly of anodized aluminum plates and composite clamping blocks. It accommodates standard and custom hub bolt patterns of up to 3 1/8".

The second type of hub is the HP Hub. This hub consists of two halves machined from solid aluminum. It is the same weight as the standard hub assembly and can accommodate Rotax, Arrow, VW, SAE I Continental, SAE II Lycoming and custom bolt patterns.

STANDARD CARBON FIBER PROPELLER

2-Blade Std Carbon Fiber Propeller ..... 05-31920 ..... **$400.95**
3-Blade Std Carbon Fiber Propeller ..... 05-31925 ..... **$575.00**
4-Blade Std Carbon Fiber Propeller ..... 05-31930 ..... **$965.00**
Replacement Std Carbon Fiber Blade ..... 05-31935 ..... **$218.95**

WITH HP HUB

05-31940 ..... **$719.00**
05-31945 ..... **$924.00**

HIGH HORSE POWER CARBON FIBER PROP WITH HP HUB

2-Blade Carbon Fiber H/P w/HP Hub ..... 05-31950 ..... **$883.00**
3-Blade Carbon Fiber HP w/HP Hub ..... 05-31955 ..... **$1,171.00**
Replacement Carbon Fiber HP ..... 05-31960 ..... **$328.95**
Mounting Hardware (Rotax) ..... 05-31965 ..... **$13.75**
Protractor ..... 05-31970 ..... **$37.80**
Non-Standard Hub Pattern ..... 05-31975 ..... **$40.60**
Spinner (Rotax Pattern) ..... 05-31980 ..... **$113.95**
"HP" Hub (purchased separately) ..... 05-31985 ..... **$250.95**

ORDERING A PROPELLER

We request all applicable information below when you are ordering:

1. Name, Address, Phone Number(s)
2. Vehicle - type, make, model, cruise speed, tractor/pusher,
3. Engine - make, horse power,
4. Reduction Drive - type, ratio. If there is no reduction drive, (State Prop RPM)
5. Hub Requirements - A) Bolt circle dia, B) Number of bolts, C) Bolt dims, D) Center hole dims, E) Drive lug dimensions (if applicable),
6. Propeller Description-rotation, diameter, structural limitation of diameter manufacturer's suggested prop description, no. of blades, tractor or pusher.

QUICK ADJUST SYSTEM IVOPROPS

The Quick Adjust System Ivoprops allow you to adjust the pitch on the ground in a matter of seconds by turning the screw adjustor in the center of the prop. The supercams are welded on the end of the torsional rods. Each supercam fits into the groove in the screw adjustor. Turning the screw adjustor causes each cam to rotate and turn the torsional rod and thereby twist the blade therefore changing the pitch. Specify aircraft and engine make and model, and propeller diameter. * Ultralight Ivoprop (3.5" cord, 48" to 72" diameter) is for engines up to 100 hp. * Medium Ivoprop (4.5" cord, 52" to 74" diameter) is for engines around 100HP. * Magnum Ivoprop (5.5" cord, 58" to 76" diameter) is a high-horsepower version for engines up to 700 HP. * Magnum Paddle Ivoprop (5.5" constant cord, 58" to 84" diameter" is for high-horsepower air boats and bush planes.

Ultralight 2-Blade Ivoprop ..... P/N 05-33220 ..... **$425.95**
Ultralight 3-Blade Ivoprop ..... P/N 05-33225 ..... **$584.00**
Ultralight 6-Blade Ivoprop ..... P/N 05-33235 ..... **$1,167.00**
Medium 2-Blade Ivoprop ..... P/N 05-00692 ..... **$796.00**
Medium 3-Blade Ivoprop ..... P/N 05-00693 ..... **$1,045.00**
Magnum 2-Blade Ivoprop ..... P/N 05-33240 ..... **$1,025.00**
Magnum 3-Blade Ivoprop ..... P/N 05-33250 ..... **$1,342.00**
Magnum 6-Blade Ivoprop ..... P/N 05-33260 ..... **$2,420.00**

IN-FLIGHT ADJUSTABLE PITCH IVOPROPS

The In-Flight Adjustable Pitch Ivoprop allows the pilot to change the propeller pitch in flight through a toggle switch mounted in the cockpit. Pressing the toggle switch one way sends an electric current through the graphite brushes to the slip rings and finally to an electric motor. Torque from the electric motor is channeled to a planetary gear drive which turns the lead screw. Torsional rods transmit movement from the center of the prop to the outside section of the blades, causing the blade to twist therefore changing pitch. Total time for the full range of adjustment is about 5 seconds. Mounts directly to any Rotax gear box (B or C0 and can be adapted to VW, Subaru, Hirth, Arrow and smaller Lycoming and Continental engines. Older model Ivoprop ground adjustable props can be converted to the In Flight System with the Retrofit Kit. In Flight adjustable hub comes assembled with complete instructions. Weight of 3 blade 72" In Flight Adjustable Prop including all required parts (furnished) is 9 lbs. Specify aircraft and engine make and model, and propeller diameter (48" to 76"). Standard Ivoprop is for engines up to 100 hp. Medium Ivoprop is for engines around 100HP (52"-74" prop dia.). Magnum Ivoprops are a high-horsepower version with wider blades and a bigger hub for engines up to 700 HP (56"-76" prop. dia.).

Standard 2-Blade Ivoprop Kit ..... P/N 05-33205 ..... **$1,079.00**
Standard 3-Blade Ivoprop Kit ..... P/N 05-33210 ..... **$1,238.00**
Standard Retrofit Kit for Ground Adjustable Ivoprops
P/N 05-33215 ..... **$761.00**
Medium 2-Blade Ivoprop ..... P/N 05-00694 ..... **$2,174.00**
Medium 3-Blade Ivoprop ..... P/N 05-00695 ..... **$2,426.00**
Medium Retrofit Kit for Ground Adjustable Ivoprops
P/N 05-00696 ..... **$1,503.00**
Magnum 2-Blade Ivoprop Kit ..... P/N 05-33270 ..... **$2,451.00**
Magnum 3-Blade Ivoprop Kit ..... P/N 05-33280 ..... **$2,755.00**
Magnum 6-Blade Ivoprop Kit ..... P/N 05-33290 ..... **$3,849.00**
Magnum Retrofit Kit for Ground Adjustable Ivoprops
P/N 05-33295 ..... **$1,590.00**

CONSTANT SPEED ELECTRONIC GOVERNOR

• Converts In-Flight Adjustable Ivoprop into the constant speed propeller • Plugs into existing wiring harness • Size: 2" x 4" x 1" P/N 05-00601 ..... **$347.00**

ULTRA-PROP

Select 2, 3, or 4 blade props. Each blade is moulded from a high strength glass-reinforced composite. High efficiency airfoil design means high thrust from a 59" diameter prop. One set of pitch blocks included, additional blocks available in 1° increments. Universal hubs made from high strength composite. Accommodates most popular bolt-mounting patterns. Each prop comes complete with all assembly and mounting hardware, and complete instructions. Black blades and hub are beautifully complemented by high impact polyester spinner. Blades can be trimmed to length, allowing custom prop diameters as small as 48".

Description	Part No.	Price	Description	Part No.	Price
Kit 2 Blade LH	UP102L	**$235.00**	Kit 2 Blade RH	UP102R	**$235.00**
Kit 3 Blade LH	UP103L	**$285.00**	Kit 3 Blade RH	UP103R	**$285.00**
Kit 4 Blade LH	UP104L	**$339.00**	Kit 4 Blade RH	UP104R	**$340.00**
Kit 5 Blade LH	05-06456	**$440.00**	Kit 5 Blade RH	05-06455	**$440.00**
Kit 6 Blade LH	05-06458	**$495.00**	Kit 6 Blade RH	05-06457	**$495.00**

ACCESSORIES

Description	Part No.	Price	Description	Part No.	Price
Pitch Block Set 9 DG	UP9	**$8.50**	Pitch Block Set 10 DG	UP10	**$8.50**
Pitch Block Set 11 DG	UP11	**$8.50**	Pitch Block Set 12 DG	UP12	**$8.50**
Pitch Block Set 13 DG	UP13	**$9.50**	Pitch Block Set 14 DG	UP14	**$8.50**
Pitch Block Set 15 DG	UP15	**$8.50**	Pitch Block Set 16 DG	UP16	**$8.50**
Pitch Block Set 17 DG	UP17	**$8.50**	Pitch Block Set18 DG	UP18	**$8.50**
Bolt Sleeve Set	UPSLEEVE	**$4.00**	Hardware Pack	UPHDW	**$4.00**
Replace LH Blade	UP105P	**$73.50**	Replace Blade RH	UP105T	**$73.50**
Hub half 2 Blade	UP1072	**$35.00**	Hub Half 3 Blade	UP1073	**$35.00**
Hub Half 4 Blade	UP1074	**$35.00**			

ULTRA-PROP SPINNER - Kit includes white polyester spinner, mounting bracket, and all extra hardware for installation. Specify Quicksilver MX belt drive type with 1/4 inch mounting hardware or Rotax gear drive with 5/16 or 8 mm mounting hardware. Note: Designed for use on Ultra-Prop only.

1/4" MX ..... P/N 05-04958 ..... **$59.95**
5/16" Rotax ... P/N 05-04959 ..... **$59.95**

AP

BN-1 BULLET NOSE SPINNER KIT FAA-APPROVED

Designed specifically for fixed pitch wood or metal props installed on horizontal opposed engines with prop hub thickness not exceeding 3-5/8". Kit includes 8" diameter x 12" long spinner dome center hole is 2.68" diameter, two aluminum bulkheads, mounting hardware, templates for trimming dome to fit prop hub and complete installation instructions. Ideal spinner for homebuilts. Wt. 1-3/4 lbs. FAA approved for installation on many certificated aircraft such as Aeronca, Cessna, Luscombe, Piper, Stinson and Swift. FAA approval list on request.
Note: ACS Plates will only work with ACS Domes. Made in the U.S.A.

Complete Kit	P/N 10005	**$283.95**
Bulkheads Only: Front	P/N 05-02677	**$69.75**
Rear	P/N 10004-R	**$69.75**
Dome Only	P/N 10003	**$156.95**

SN-4 SPINNER KIT

Aluminum spinner, 9-7/8" diameter, 11-1/8" long. Center hole is 2-1/4" diameter Spinner dome fabricated from .080'' thick aluminum for durability. Wt. 2 lbs. Furnished with mounting hardware and trimming and installation instructions. Used on Q2, Q200 and other homebuilts. To order, see "How To Order Spinner Kits". Made in the U.S.A.
Note: ACS Plates will only work with ACS Domes.

Complete Kit	P/N 10303	**$176.95**
Rear Bulkhead Only	P/N 10302	**$53.00**
Dome Only	P/N 10301	**$113.95**
SN-4 Kit (undrilled bulkhead)	P/N 05-13200	**$198.50**
Optional Front Bulkhead (Not Incl.In Kit)	P/N 10304	**$59.75**

Front Plate available for hub thicknesses of 3-3/8", 3-1/2" and 2-3/4" only.

HOW TO ORDER SPINNER KITS

Please furnish the following information so that we may provide the proper spinner kit for your combination of prop hub thickness, prop bolt and prop bushing diameters, and bolt hole pattern.

- Spinner Model
- Prop Hub Thickness (T)
- Prop Bolt Dia. (d1)
- Prop Bolt Bushing Dia.(d2)
- Specify SAE #1 or SAE #2, SAE #3, or Rotax Pattern
  *Rotax & 4" Pattern are an additional **$25.00**
- Also Available in 6 hole, 4" Bolt circle Diameter.
- Forward Facing Flange Additional **$60.00** Fee
- ACS machine fee PN 05-04904 **$25.00**

**** Note: SAE #1 = 4-3/8" dia.; SAE #2 - 4-3/4" dia.; SAE #3 = 5-1/4" dia.***

SPINNER EXTRA HIGH POLISH "CHROME"

We now offer our complete line of aircraft spinners "high polished", which gives them a beautiful chrome-like appearance. If spinner is to be painted this is not necessary, but if it will be bare, add the High Polish option for a bright, shiny look. Add these prices to the price of the standard spinner and specify "high polish". Made in the U.S.A.
Note: ACS Plates will only work with ACS Domes.

BN-1	**$69.00**	SN-4	**$63.00**	AC-1	**$82.00**
BN-3	**$82.00**	SN-5	**$66.00**		

ALL SPINNERS MADE ON STEEL TOOLING

LIGHT SPORT AVIATION SPINNERS

These high quality 8" and 9" spinners and bulkheads are made in the USA from 6061 aluminum and heat treated to T6 condition using Nadcap approved heat treat process. Meets or exceeds all physical and mechanical properties required to meet AMS 2770H and AMS4027. These spinners are highly polished and include standard prop cut-outs for Warp Drive, IVO, GSC 3 blade propellers and can be modified to accept other propellers. The spinners come coated with a protective finish that is easily peeled off after installation. The bulkheads are furnished predrilled to fit a Rotax 912 or 914 and Viking HF110 and can be modified for other engine applications.

Spinner 8"	P/N 05-06846	**$279.00**
Bulkhead 8"	P/N 05-06847	**$189.00**
Spinner 9"	P/N 05-06848	**$293.00**
Bulkhead 9"	P/N 05-06849	**$188.00**

BN-3 SPINNER KIT FOR LYCOMINGS

Aluminum spinner, 12-1/16" diameter, 13-1/4" long. Center hole is 2-5/8" diameter. Designed for installation on homebuilts with Lycoming 0-290, 0-320 and 0-360 engines. Spinner dome and bulkheads fabricated from .080" thick aluminum for durability. BN-3 spinner kits available for props with hub thicknesses of 3-7/16", 3-9/16", 3-3/4", 4-1/4", 4-11/16", 5" and 5-3/8". Wt. 3 lbs. Furnished with predrilled front and rear bulkheads, mounting hardware and trimming and installation instructions. To order, see ***"How To Order Spinner Kits".*** Note: ACS Plates will only work with ACS Domes. Made in the U.S.A.

Complete Kit	P/N 10060	**$234.95**
Rear Bulkhead Only (Large)	P/N 10031	**$50.25**
Front Bulkhead Only (Small)	P/N 10051	**$57.75**
Dome Only	P/N 10022	**$121.95**

STANDARD BN-3 KITS

P/N	Specifications	Price
05-10000	HUB 3-7/16, SAE2, BOLT 3/8, BWII 5/8	**$233.95**
05-11000	HUB 3-9/16, SAE2, BOLT 3/8, BWII 5/8	**$172.95**
05-03431	HUB 3-9/16, SAE2, BOLT 1/2, RWII 3/4	**$234.95**
05-03432	HUB 3-3/8,SAE2, BOLT 3/8 BWII 5/8	**$234.95**
05-12000	HUB 3-3/4, SAE2, BOLT 3/8, BWII 5/8	**$233.95**
05-13000	HUB 4-1/4,SAE2, BOLT 3/8, BWII 5/8	**$238.00**

NOTE: SAE #1= 4 3/8", 2 = 4 3/4", 3 = 5 1/4"
ALL OTHER BN-3 SPINNERS ARE SPECIAL ORDER

PROP SPACERS

(6061 Aluminum with Prop Bolt Holes Drilled)

Thickness	P/N	Price	Thickness	P/N	Price
1/16"	10055-1	**$15.95**	1/4"	10055-4	**$22.95**
1/8"	10055-2	**$17.95**	3/8"*	10055-5	**$29.95**
3/16"	10055-3	**$21.95**			

Specify SAE and bolt size. All are special order.

****Furnished in two pieces: 1/4" and 1/8" thick***

BN-2 SPINNER KIT

The BN-2 aluminum spinner kit features a 10" long dome and is 10-3/4" in diameter. It is furnished complete with a rear bulkhead and hardware kit.Note: ACS Plates will only work with ACS Domes. Made in the U.S.A.

BN-2 Spinner kit w/drilled plate. .	P/N 10340	**$215.95**
BN-2 Dome Only	P/N 10341	**$139.95**
BN-2 Rear Bulkhead only	P/N 10342	**$53.25**
BN-2 Spinner kit w/undrilled plate.	P/N 05-13500	**$215.95**

AC-1 SPINNER KIT

Aluminum spinner 10-1/8" diameter. Length of dome varies from 13-1/2" to 15-1/2", depending on prop hub thickness. Heavy duty construction. Furnished with predrilled front and rear bulkheads and streamlined fairing for pusher installations. Kits available for hub thicknesses of 3" to 5". For Lycoming 0-235 engines specify SAE #1 (4-3/8" dia.) or SAE #2 (4-3/4" dia.) bolt circle. Wt. 2-3/4 lbs. Furnished with mounting hardware and trimming and installation instructions. To order, see "How To Order Spinner Kits". ACS Plates will only work with ACS Domes.Made in the U.S.A.

Complete Kit	P/N 10105	**$283.95**
Kit Less Fairing	P/N 10105-1	**$232.95**
Front (Large) Bulkhead Only	P/N 10102	**$55.50**
Front (Large Heavy Duty) Bulkhead Only	P/N 10102HD	**$83.50**
Rear (Small) Bulkhead Only	P/N 10103	**$59.75**
Dome Only	P/N 10101	**$128.95**
Fairing Only	P/N 10104	**$59.50**
LG Bulkhead 3/8"Bolt, 5/8" Bushing SAE1	P/N 05-03428	**$41.00**
LG Bulkhead 3/8" Bolt, 5/8" Bushing SAE2	P/N 05-03429	**$55.50**

ADVANCED COMPOSITE AC-I SPINNER DOME

This new super-light spinner dome weighs about 8oz. which drastically reduces the spinner assembly weight and the need for lead ballast in the nose of pusher-type aircraft. This weight savings, combined with the revolutionary new tapered spinner dome which reduces drag can increase the cruise speed of almost any pusher-type homebuilt. These spinners have been used on a modified VariEze to win several air races.
This composite dome uses the AC-1 10102HD aluminum bulkheads and the 10104 fairing. The spinner's bulkhead is spun from 6061 aluminum sheet. The premium bulkhead is turned from 6061 billet for more fatigue resistance and is grey anodized.

AC-1 Advanced Composite Dome	P/N 01-28000	**$289.50**
AC-1 10102HD Bulkhead (Standard)	P/N 10102HD	**$83.50**
AC-1 Bulkhead (Premium)	P/N 05-04906	**$269.00**
AC-1 Faring	P/N 10104	**$59.50**

SPINNERS

ACS SKULL CAP SPINNERS

5-inch diameter - For wood or metal props on Cont. A-65 to O-200 engines. Complete with mounting bracket and installation hardware. High-polish finish. Top quality. Made in the U.S.A.

Polished ..P/N 10210 .....**$56.50**
Unpolished .....P/N 10211 .....**$45.00**
5" Skull Spinner Dome (only) Polished .....P/N 05-21600 .....**$41.75**

6-inch diameter - For Lycoming O-235 to O-360 engines and Cessna 170's. With mounting bracket and installation hardware. High-polish finish. Top quality.

Polished.....P/N 10220 .....**$62.75**
Unpolished.....P/N 10221 .....**$52.75**
6" Skull Spinner Dome (only) Polished .....P/N 05-21700 .....**$49.50**

Bracket & Hardware Only (Fits Either Spinner)
P/N 05-21800 .....**$11.90**

CESSNA SKULL CAP SPINNER

Skull Cap Spinner Assembly (small) for Cessna, FAA/PMA Approved. For wood or metal propellers on A-65, A-75, C-85, and C-90 Continental Engines. Made in the U.S.A.

Spinner Assembly ..... P/N 05-06844.....**$68.50**
Dome Only ..... P/N 05-04829.....**$46.75**
Bracket Only ..... P/N 05-04830.....**$18.85**

COMPOSITE SPINNERS FOR PIPERS & CESSNAS

P/N 05-00744

These new composite materials spinners and bulkheads are FAA/PMA approved and STCs to replace aluminum spinners and bulkheads on the Piper aircraft models listed below. Bulkheads are constructed for maximum strength and resistance to fatigue due to vibration. Pipers metal versions often crack in 200-300 hours, whereas the composite assemblies have been tested over 4000 hours on a PA-28 with no failure. Spinners for twins & all bulkheads are warranted against vibration fatigue for the life of the aircraft by the factory. ***Includes hardware & O-rings.***

Description	Model	PN	Price
Spinner Kit	PA28-140/150/160	05-28350	**$868.00**
Spinner Dome	150A, 150F, 150FA	05-01257	**$398.00**
Spinner Dome	170B, 172, (1956-59)	05-01258	**$680.00**
Spinner Dome	172XP	05-01259	**$811.00**
Spinner Dome	172 Skyhawk (G-Q)	05-00744	**$389.00**
Spinner Dome	182 P, Q Skylane	05-00746	**$794.00**
Spinner Dome	177B, 177RG Cardinal	05-00747	**$791.00**
Spinner Dome	210 (all 3 blade McCauley	05-00748	**$799.00**
Spinner Dome	PA-140/150/160 Cherokee	05-00749	**$364.00**
Spinner Dome	PA-24-180/250, PA23-150/160	05-00752	**$736.00**
Spinner Dome	PA-24-180/250, PA23-235/250	05-00753	**$909.00**
Bulkhead	PA30, PA23-250 (Aztec)	05-02659	**$727.00**
Spinner Dome	PA30, PA23-350 (C model & up)	05-02660	**$977.00**
Spinner Dome	PA28-151/161 Warrior	05-02662	**$427.00**
Alt. Bulkhead	PA28-151/161 Warrior	05-02658	**$418.00**
Fwd. Bulkhead	PA28-151/161 Warrior	05-02655	**$411.95**
Spinner	310R, T310Q, T310R, T310P	05-00754	**$759.00**
Rear Bulkhead	PA28-161 Warrior	05-02663	**$369.00**
Spinner Dome	PA28-161 Warrior	05-02661	**$461.95**
Spinner LH	PA34-200T Seneca II	05-02665	**$1,486.00**
Spinner RH	PA34-200T Seneca II	05-02666	**$1,486.00**
Bulkhead	PA34-200T Seneca II	05-02664	**$1,055.00**
Bulkhead	PA31/-325/-350 Navajo	05-02667	**$949.00**
Bulkhead	PA31/-325/-350 Navajo	05-02668	**$950.00**
Spinner Dome	PA31/-325/-350 Navajo	05-02669	**$1,295.00**
Spinner Dome	PA31/-325/-350 Navajo	05-02670	**$1,295.00**
Bulkhead only	PA38-112 Tomahawk	05-02656	**$439.95**
Spinner Dome	PA28-235	05-00756	**$837.00**
Fwd. Bulkhead	PA28-180/181 Cherokee/Archer	05-00757	**$347.95**
Spinner Dome only	PA28-180/181 Cherokee/Archer	65805-00	**$961.00**
Spinner Dome	PA32R-300, PA32-260/300/301,	05-00758	**$614.00**
Fwd. Bulkhead	PA28R-180/200, PA-235	05-00759	**$373.95**
Spinner Dome	PA38-112 Tomahawk	05-00761	**$713.00**
Spinner Dome	PA34-200 Seneca I	05-00762	**$1,279.00**
Fwd. Bulkhead	PA28-161 Warrior	05-02671	**$425.95**
Spinner Dome	PA34-200 Seneca I	05-00763	**$1,545.00**

ROTAX PROPELLER SPINNERS

For all props with standard Rotax® 75mm bolt pattern. Spinner bulk head is predrilled and installs between prop and gearbox flange. Spinner installs with single bolt.

4" Diameter
P/N 05-01129 .....**$83.75**
5" Diameter
P/N 05-01131 .....**$97.50**
6-3/4" Diameter
P/N 05-01132.....**$123.95**
7" Diameter
P/N 05-04447 .....**$142.95**

SN-5 SPINNER KIT

12" diameter, 11-1/8" long. Similar to a Piper design and adaptable to many homebuilts. Fabricated from .080" aluminum for durability. Furnished with predrilled rear bulkhead. Wt. 2 lbs. Mounting hardware and trimming and installation instructions furnished. To order, see "How to Order Spinner Kits.Optional Front Bulkhead available for 2 1/16 Hub Thickness. ACS Plates will only work with ACS Domes. Made in the U.S.A.

Complete Kit (less Bulkhead).....P/N 10313 ..... **$182.95**
Bulkhead Only.....P/N 10312 ..... **$63.75**
Dome Only .....P/N 10311 ..... **$119.00**
Front Bulkhead.....P/N 10314 ..... **$73.00**
SN-5 Kit (Undrilled Plate).....P/N 05-13300 ..... **$185.95**
SN-5 Kit (Drilled Plate).....P/N 05-03433 ..... **$189.75**

SN-2 SPINNER KIT

The SN-2 aluminum spinner kit features an 11.5" long dome and 11-5/8" dia. Furnished complete with a rear bulkhead & hardware kit. Note: ACS Plates will only work with ACS Domes. Made in the U.S.A. SN-2 spinner kit with drilled plates.

P/N 10330 .....**$206.95**
SN-2 dome only .....P/N 10331 .....**$137.95**
SN-2 bulkhead only.....P/N 10332 .....**$53.25**
SN-2 spinner kit w/undrilled plates.....P/N 05-13400.....**$144.00**

For spinner kits with drilled plates, please furnish information required for spinners orders as noted on page 179.

UHS FIBERGLASS SPINNERS

UHS spinners are practical, attractive, and flight proven having enhanced the apperance of many different aircraft. The spinners are available in 8", 9", 10", 11", 12" & 14" diameters for various engine and propeller combinations. For GSC, Ivoprop, Warp Drive, and Power Fin propellers using Rotax, Lycoming, Cont. & Mosler engines, spinners are sent cut out and assembled.

For pre-drilled cut-outs we require the following information:

1. Make and size of engine.
2. Make of Propeller.
3. Number of Blades.
4. Size required.

Given adequate information, we can also fabricate spinners for many other propeller-engine combinations. Call with your requirements and we will assess your particular application.

Size	Description	P/N	Price	Size	Description	P/N	Price
8"	UHS Spinner	05-09000	**$161.95**	12"	UHS Spinner	05-09400	**$216.95**
9"	UHS Spinner	05-09100	**$192.95**	14"	UHS Spinner	05-09500	**$226.95**
10"	UHS Spinner	05-09200	**$201.95**	11.5"	Spinner Kit	05-09700	**$215.95**
11"	UHS Spinner	05-09300	**$216.95**	13.5"	Spinner Kit	05-09800	**$252.95**

PROP HUB FRONT PLATES

Required for wooden propellers. Flange equivalent to Cont. P/N 3991. For use with A-65, C-85 installations or Lyc. 0-235 with SAE1 (43/8") bolt pattern.

P/N 10351Cont..... List $256.00 ..... **$34.75**

Flange equivalent to Lyc. P/N 45688, for use with Lyc. 0-235 thru 0-360 engines with SAE2 Bolt Pattern engines.

P/N 10352 Lyc..... List $114.40 ..... **$36.75**

AP

PROP EXTENSIONS – DUC PROPELLERS

CRUSH PLATES FOR WOOD PROPS

OD	Thickness	Bolt Circle	Bolt Dia.	Part No.	Price
6”	3/8”	SAE 1 (4.375”)	3/8”	05-02464	**$64.00**
6”	3/8”	SAE 2 (4.75”)	3/8”	05-02465	**$64.85**
7”	3/8”	SAE 2	3/8”	05-02466	**$76.75**
7”	3/8”	SAE 2	7/16”	05-02467	**$73.80**
7”	3/8”	SAE 2	1/2”	05-02468	**$73.80**
7”	1/2”	SAE 2	3/8”	05-02469	**$84.00**
7”	1/2”	SAE 2	7/16	05-02470	**$84.00**
7”	1/2	SAE	1/2	05-02471	**$83.75**

PROP SPACERS

Solid Prop Spacers, 6 thru holes. The prop bolt goes thru the prop and spacer and threads into the engine.

Bolt Diameter	Part No.	Price
PRO SPACER 1.5”x5” ROTAX	05-02472	**$340.95**
PRO SPACER 2”x5” ROTAX	05-02473	**$340.95**
PRO SPACER 2.25”x5” ROTAX	05-02474	**$340.95**
PRO SPACER 3”x5” ROTAX (SPOOL)	05-02475	**$361.00**
PRO SPACER 4”X5” ROTARY (SPOOL)	05-04418	**$361.00**

DRIVE LUGS FOR EXTENSIONS

05-28310

05-28410

Part No.	Type	O.D.	I.D.	Thread	Price Ea.
05-28310	Threaded	5/8	- - -	3/8-24	**$29.40**
05-04417	Threaded	5/8”	- - -	7/16-20	**$30.75**
05-28410	Threaded	3/4	- - -	1/2-20	**$33.25**

PROP EXTENSIONS

Precision machined prop shaft extensions are available from Aircraft Spruce & Specialty Co. Don’t settle for lesser quality at advertised “savings”. Prop extensions are machined from solid 2024 T-351 aluminum bar, and are supplied with clear anodized finish and stainless steel drive lugs (installed). 7” diameter prop side is recommended for 0-320 engines running wood props, and is required for 0-360 engines (or larger) running wood props. For Cont. 0-200, you may choose 5.5” diam on engine side. If prop is metal, please measure depth of drilled counterbore at all 6 bolt hole positions.

Flange Engine	SAE No.	Bolt Circle	Lug Diameter	Eng. Bolt Dia.
Cont. A-65, A-75,	SAE 1	4-3/8	5/8”	3/8”
C-85, C-90, 0-200				
Lycoming 0-235	SAE 1 or 2		5/8”	3/8”
Lycoming 0-290	SAE 2	4-3/4”	5/8”	3/8”
Lycoming 0-320	SAE 2	4-3/4”	5/8”	3/8 or7/16
Lycoming 0-360	SAE 2	4-3/4”	3/4”	1/2”
Lycoming O-540	SAE 2	4-3/4”	3/4”	1/2”

PLEASE ORDER USING THE FOLLOWING PART NO.

___X____–_____E –____P_____ – SAE___ – ENGINE – PROP – PROP

length	diam prop side (6 or 7)	engine bolt 3/8 or 7/16 or 1/2	prop bolt 3/8 or 7/16 or 1/2	thr or non (threaded or non-threaded lugs installed in extension)	1 or 2	HUB (wood or composite or metal)	TYPE (Fixed Pitch or constant speed)

Example: 4 X 7 - 7/16 E - 3/8P thr - S2 - Lyc 0320 - wood - wood

12 HOLE SOLID PROP EXTENSION WITH THREADED DRIVE LUGS

Length x Dia.	Length x Dia.
1.25”x6”	1.25”x7”
2.25”x6”	2.25”x7”
3”x6”	4”x7”
4”x6”	6”x7”
6”x6”	8”x7”
8”x6”	

PRICES ON PROP EXTENSIONS CAN VARY PER APPLICATION PLEASE CALL AND REQUEST A QUOTE FOR YOUR APPLICATION.

DUC SWIRL PROPELLERS

The aerodynamic design of this propeller has been designed to have a "constant speed" effect.
The blades that are made from unidirectional layers of carbon fiber prepeg epoxy and their structure has been defined in order to obtain the maximum stresses in torsion and bending. Therefore the effect of "constant speed" is not related to the deformation of the blade but its geometry and its particular profile.
Because of the extra flat profile and low chord,excellent performance is obtained in both: Aerodynamic and acoustic performance, but also in fuel consumption.
Thanks to the "constant speed" effect, there is very small engine speed difference between the aircraft on ground and in flight.
This propeller allows for excellent performance throughout the flight envelope including:
• Improved efficiency at takeoff and climb rate due to higher engine speed
• Many cruise extension
• A high user comfort
Propeller is available in Two-Blade and Three-Blade.
For engines with high power, its structure can be reinforced (SWIRL-R).
The Inconel SWIRL blade is protected with Inconel metallic reinforcement. It increases the life of the propeller and also its performance due to a change in its inertial behavior.

DUC FC WINDSPOON PROPELLERS

The FC WINDSPOON propeller, with its revolutionary shape called WINDSPOON, offers unrivalled performance.
Its technical innovations have several consequences:
• Better performance.
• Lower fuel consumption
• Less Noise
The very special profile of the FC WINDSPOON blade has been calculated to optimize the airflow over the whole surface of the WINDSPOON.
The offset of the twisting results in better reduction of friction and a longer life.
The FC WINDSPOON propellers are produced in accordance with the strictest standards of the industry, with unique equipment specially made to ensure the highest quality.
Propeller is available in Two-Blade and Three-Blade.
For engines with high power, its structure can be reinforced (FC-R WINDSPOON).
The Inconel FC WINDSPOON blade is protected with Inconel metallic reinforcement. It increases the life of the propeller and also its performance due to a change in its inertial behavior.
Available Diameter: 068”

DUC SPINNERS

The DUC spinners are carried out in preimpregnated carbon fiber materials with on the surface woven carbon fabric.
The mounting plate, entirely out of carbon, thickness 0.12" (3mm), is produced with the Carbon Forge® process, also used for the manufacture of the DUC propeller hubs.
This patented process makes it possible to increase considerably the mechanical characterestics of the composite parts.

SEE WWW.AIRCRAFTSPRUCE.COM FOR COMPLETE DISCRIPTIONS & PRICING ON ALL DUC PROPELLERS, SPINNERS, AND ACCESSORIES.

SMOKE SYSTEMS

SMOKE SYSTEM KIT MODELS SA-100 SERIES

All of the SA-100 series smoke system oil tanks are the same size (demensions). Models Differ by oil suction tube design, oil pump mounting location and oil tank configuration. Note: ***All kits are available with 12 or 24 volt DC smoke oil pumps. Please specify 12 or 24 volt DC when ordering.***

SA-100 -

•For Level and Non-Continuous inverted, positive G flight.
•Top mounted oil pump.
•All hardware for complete installation.
•Step by step instructions.
•Height (To top of fill cap is) is 15”
•Width (End where oil pump is mounted) is 11”
•Depth (Pump to opposite end of tank) is 8.5”
•Oil tank capacity: 3.5 US Gallons
•Approx. oil used per minute: .8 Us Gallons
•Approx. total run time: 5+ minutes

P/N 05-01438 ..... **$830.00**

SA-101 -

•For continious inverted flight.
•Top mounted oil pump.
•All hardware for complete installation.
•Step by step instructions.
•Height (To top of fill cap is) is 15”
•Width (End where oil pump is mounted) is 11”
•Depth (Pump to opposite end of tank) is 8.5”
•Oil tank capacity: 3.5 US Gallons
•Approx. oil used per minute: .8 Us Gallons
•Approx. total run time: 5+ minutes

P/N 05-01439 ..... **$830.00**

NOTE: Add 1.5” to base on each side or end for bracket width.

SA-100H-

•For Level and Non-Continuous inverted, positive G flight.
•Side / End mounted oil pump.
•All hardware for complete installation.
•Step by step instructions.
•Height (To top of fill cap is) is 11”
•Width (End where oil pump is mounted) is 12”
•Depth (Pump to opposite end of tank) is 15”
•Oil tank capacity: 3.5 US Gallons
•Approx. oil used per minute: .8 Us Gallons
•Approx. total run time: 5+ minutes

P/N 05-02888 ..... **$830.00**

SA-101H-

•For continious inverted flight.
•Side / End mounted oil pump.
•All hardware for complete installation.
•Height (To top of fill cap is) is 11”
•Width (End where oil pump is mounted) is 12”
•Depth (Pump to opposite end of tank) is 15”
•Oil tank capacity: 3.5 US Gallons
•Approx. oil used per minute: .8 Us Gallons
•Approx. total run time: 5+ minutes

P/N 05-02889 ..... **$830.00**

NOTE: Add 1.5” to base on each side or end for bracket width.

SA-102-

•For Level and Non-Continuous inverted, positive G flight.
•Bracket mounted oil pump end or side.
•All hardware for complete installation.
•Step by step instructions.
•Height (To top of fill cap is) is 13”
•Width (End where oil pump is mounted) is 11”
•Depth (Pump to opposite end of tank) is 13”
•Oil tank capacity: 3.5 US Gallons
•Approx. oil used per minute: .8 Us Gallons
•Approx. total run time: 5+ minutes

P/N 05-01440 ..... **$830.00**

SA-103-

•For continious inverted flight.
•Bracket mounted oil pump end or side.
•All hardware for complete installation.
•Step by step instructions.
•Height (To top of fill cap is) is 13”
•Width (End where oil pump is mounted) is 11”
•Depth (Pump to opposite end of tank) is 13”
•Oil tank capacity: 3.5 US Gallons
•Approx. oil used per minute: .8 Us Gallons
•Approx. total run time: 5+ minutes

P/N 05-01441 ..... **$830.00**

NOTE: Add 1.5” to base on each side or end for bracket width.

AP

SMOKE SYSTEMS

SMOKE SYSTEM KIT MODELS SA-200 SERIES

Both of the SA-200 series smoke system oil tanks are the same size (dimensions). Models Differ by oil suction tube design.

SA-200-

- For Level and Non-Continuous inverted, positive G flight.
- Any Dimension top.
- Pump can be mounted on top or any side surface.
- Fill cap and any other fittings installed where you want them.
- All hardware included for complete installation.
- Height (To top of fill cap is) is 14”
- Width (End where oil pump is mounted) is 10”
- Depth (Pump to opposite end of tank) is 17.25”
- Oil tank capacity: 5.5 US Gallons
- Approx. oil used per minute: .8 Us Gallons
- Approx. total run time: 7+ minutes

P/N 05-02887 ..... **$930.00**

SA-201-

- For continuous inverted flight.
- Any Dimension top.
- Pump can be mounted on top or any side surface.
- Fill cap and any other fittings installed where you want them.
- All hardware included for complete installation.
- Height (To top of fill cap is) is 14”
- Width (End where oil pump is mounted) is 10”
- Depth (Pump to opposite end of tank) is 17.25”
- Oil tank capacity: 5.5 US Gallons
- Approx. oil used per minute: .8 Us Gallons
- Approx. total run time: 7+ minutes

P/N 05-02891 ..... **$930.00**

NOTE: Add 1.5” to base on each side or end for bracket width.

SA-201T SMOKE KIT OIL PUMP

This 5.5 Gallon smoke system kit is for continuous inverted flight with oil pump mounted on the top of the oil tank. This particular kit has been installed in the baggage area of a CJ6A, T34A and RV7 to date. Use this kit when height is not an issue. Dimensions: Height (to top of oil pump) 16-1/4”, Width (left to right) 13”, Depth (end with label) 10”

P/N 05-03398 ..... **$930.00**

SA-200T Non-Continuous Inverted flight ..... P/N 05-04479 ..... **$930.00**

Note: Add 1.5” at base of tank on sides and ends for bracket width.

AP

ACCESSORIES FOR THE SA-100 & SA-200 SERIES

Accessories	Description	Part No.	Price
All components less the oil tank	Virtually every part you will need to complete your smoke system except the oil tank	05-03366	**$630.00**
Second injector kit with initial order	Not Necessary for good smoke, but will make the smoke trail more dense.	05-02890	**$108.00**
Second injector kit post order	Not Necessary for good smoke, but will make the smoke trail more dense.	05-02892	**$108.00**
External Fill Kit	This kit has everything right down to the vinyl letter transfer “Smoke Oil Only” and detailed installation instructions.	05-03595	**$124.95**

INJECTOR ONLY KIT

The kit includes:
1 Injector
2 Injector Mounting Clamps
1 AN-4 90 degree fitting
1 AN-4 Straight Fitting
1 Piece of Safety Wire
1 Installation Instructions
Customer must provide: Engine Make , Engine Model and/or Exhaust Diameter at Injector Location (injector should be installed just after the Y in the header pipes on typical Lycoming O-360 / O-540 or similar and 15” or more before the end of the tail pipe on radial engines).
NOTE: This injector is intended for PISTON ENGINES.

P/N 05-06884 ..... **$68.00**

SMOKE OIL PUMP ONLY

The kit includes:
1 Smoke Oil Pump
1 Molex Quick Disconnect Wire Harness
1 Instructions
1 90 Degree AN-6 Fitting
2 Straight AN-6 Fittings
2 14 Gauge Wire Butt Connectors
Screws, Nuts Washers – Mounting Hardware
Customer Must Specify 12 Volt DC or 24 Volt DC.

P/N 05-04477 ..... **$249.00**

SMOKE OIL TRANSFER PUMP KIT

No more spills! Fill your smoke oil tank quickly and cleanly with this 8 gallon per minute smoke oil transfer pump kit. Made with high quality components including Goodyear rubber hose, heavy duty pump, dispensing nozzle with built in swivel and aluminum hose connection fittings with filter screen and clamps! All you will need to complete the kit is any automotive (or aircraft) type 12 Volt DC battery, and your container of smoke oil!
The step by step instruction manual makes set up and use safe and easy. This kit will work with any smoke oil supply container.
Included: Dispensing nozzle with built in swivel and ¾” barb fitting, Oil pump with built in on/off switch and 6 foot cable with clamps for connection to battery, 18 foot x ¾” id delivery hose and 13 foot x ¾” id suction hose, Suction screen barb fitting and oil pump barb fittings with clamps.

P/N 05-04971 ..... **$214.00**

SMOKING AIRPLANES.COM HAT

Your headset will fit great with these low profile, unstructed, deluxe, normal dyed cotton and stone washed hats! Features: Embroidered company name and logo Contrasting grey under bill & sweatband Self-fabric sweatband & strap with brass buckle ....

Khaki P/N 05-04480 ..... **$12.99**
Forest Green ..... P/N 05-06951 ..... **$12.99**
Brown ..... P/N 05-06952 ..... **$12.99**

SMOKING AIRPLANES PREMIUM BLEND SMOKE OIL

Smoking Airplanes Premium Blend Smoke Oil is recommended for use with all Smoking Airplanes brand smoke system kits. Features: • Brilliant white smoke • Persistent hang time • Equal or better than leading smoke oil brands.

5 Gallon ..... P/N 05-06949 ..... **$84.75**
55 Gallon ..... P/N 05-06950 ..... **$684.75**

TYPICAL PROPERTIES	
API Gravity	38.3
Viscosity, cSt @ 40° C.	4.3
Viscosity, SUS @ 100° C	40.2
Viscosity Index	95
Flash Point, (°F.)	240 (min)
Distillation, Vol%	
IBP	500F (min)
EP	625F (max)
Pounds Per Gallon	6.94
Color	Clear

SUPERDRI AVIATION SMOKE OIL

Super*Dri Aviation Smoke Oil is specially formulated for use in all aircraft. Whether it is a Full Scale or Model airplane Super*Dri is the cleanest burning oil you can purchase. Its pure paraffinic base creates big billowing, persistent smoke. Super*Dri is less messy. There is virtually no mess to clean off your plane, unlike the others. Super*Dri is environmentally safe and biodegradable.

Super-Dri Aviation Smoke Oil - 1 Gallon.....P/N 05-04972 ..... **$29.85**
Super-Dri Aviation Smoke Oil - 5 Gallon.....P/N 05-04975 ..... **$178.50**
Super-Dri Aviation Smoke Oil - 55 Gallon.....P/N 05-04976 ..... **$1,198.00**

55 GALLON IS DROP SHIP ONLY.

SEAT BELTS & SHOULDER HARNESSES

FAA CERTIFIED PERSONAL RESTRAINTS

These are top quality, new manufactured assemblies. They are designed, manufactured, and proof tested to rigid FAA standards. All belts use proven lift to release style Davis metal to metal buckles. Push-to-release buckles are not used due to difficulties in releasing under emergency conditions. Aircraft quality alloys and 2-inch nylon webbing are used throughout. Belts are certified to FAA TSO-C22f.

STYLE NO. 1A SEAT BELT

Most popular metal-to-metal seat belt. This 56" adjustable seat belt offers a heavy-duty combination of an all-nylon 2" wide herringbone webbing and a metal-to-metal "quick release" buckle. Buckle mates with harness adapters (Shoulder Harness Items 3B or 3C) for safety belt/harness set or use belt alone. The end fittings for each side of the lap belt have a .325 in. dia. hole which allows for a fastener/bolt to slide through, depending on the design of the aircraft/aircraft seat is where it attaches.

P/N	Color	Price
13-00201	Black	**$47.50**
13-00202	Brown	**$47.50**
13-00203	Tan	**$47.50**
13-00204	Navy Blue	**$47.50**

P/N	Color	Price
13-00205	Royal Blue	**$47.50**
13-00206	Gray	**$47.50**
13-00207	Red	**$47.50**
13-00210	Green	**$47.50**

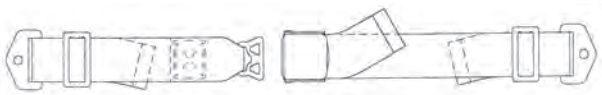
STYLE NO. 1B SEAT BELT

Same as style No. 1A above except with #442868 clip type end fittings. The end fitting hooks have spring loaded clips that allows each side of the lap belt to clip on to an existing fastener or rod. When the clip is closed the effective hole dia. for both these belts is .37 in.

P/N	Color	Price
13-00301	Black	**$56.75**
13-00302	Brown	**$56.75**
13-00303	Tan	**$56.75**
13-00304	Navy Blue	**$56.75**

P/N	Color	Price
13-00305	Royal Blue	**$56.75**
13-00306	Gray	**$56.75**
13-00307	Red	**$56.75**
13-00310	Green	**$56.75**

STYLE NO. 2A SEAT BELT

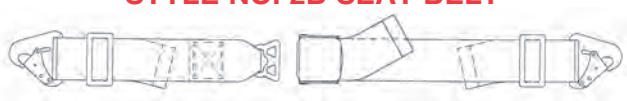


If belts are needed to replace worn ones in an aircraft in which the attachment fittings have been installed and approved, it is customary to install belts with a slide adjustment bar which permits weaving webbing through existing fitting and through bar for secure installation. Drawing shows correct method of lacing the webbing through bar. Belt is 56" long x 2" wide.The end fittings for each side of the lap belt have a .325 in. dia. hole which allows for a fastener/bolt to slide through, depending on the design of the aircraft/aircraft seat is where it attaches.

P/N	Color	Price
13-00401	Black	**$59.75**
13-00402	Brown	**$59.75**
13-00403	Tan	**$59.75**
13-00404	Navy Blue	**$59.75**

P/N	Color	Price
13-00405	Royal Blue	**$59.75**
13-00406	Gray	**$59.75**
13-00407	Red	**$59.75**
13-00410	Green	**$59.75**

STYLE NO. 2B SEAT BELT



Same as style No. 2A above except with #442868 clip type end fittings. Standard equipment in White Lightning aircraft. Black only.

P/N 13-19601 ..... **$59.75**

SEAT BELT HARDWARE

CLIP TYPE END FITTING
P/N 442868 (Steel)
$16.50 Ea.

SLIDE ADJUSTER
P/N 442663
$5.70 Ea.

TRIANGULAR END FITTING
P/N 13-04101
$11.00 Ea.

STYLE NO. 2C TWO PERSON SEAT BELT

Two Person Seat Belt - Although FAA requires that each person be provided an individual seat belt, some early aircraft were licensed using an extra-long belt in the rear seat to accommodate two people. If it is not possible to modify the aircraft to accept two belts, a two person belt is permissible. Same metal-to-metal belt as illustrated in Figure 1 but rated at 3000 lbs. test. Length 60". Advise if different length is required. Two-person belts with slide bars not acceptable by FAA. The 3" wide belt and 2" wide harness are of heavy-duty nylon webbing.

P/N	Color	Price
13-00501	Black	**$56.75**
13-00502	Brown	**$58.50**
13-00503	Tan	**$58.50**
13-00504	Navy Blue	**$58.50**
13-00505	Royal Blue	**$58.50**
13-00506	Gray	**$58.50**
13-00507	Red	**$58.50**
13-00510	Green	**$58.50**

STYLE NO. 4 – MILITARY STYLE SEAT BELT AND SHOULDER HARNESS COMBINATION

Harness has forged steel belt buckles permitting "one-stroke" release from both belt and harness. Stocked in Black.
Complete Set(Black) .....P/N 13-01000 ..... **$240.95**
Certified Belt Only .....P/N 13-01100 ..... **$169.95**
Harness Only(Black) .....P/N 13-01200 ..... **$73.50**

OTHER COLORS

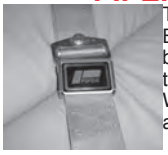
	Olive Green	Price	Royal Blue	Price	Neutral	Price
Set Kit	13-04105	**$240.95**	13-04124	**$236.95**	13-04118	**$251.95**
Belt	13-04106	**$167.95**	13-04125	**$167.95**	13-04119	**$181.95**
Harness	13-04107	**$73.50**	13-04126	**$69.85**	13-04120	**$70.00**
	Silver Grey	**Price**	**Brown**	**Price**	**Navy Blue**	**Price**
Set Kit	13-04108	**$229.95**	13-04127	**$240.95**	13-04130	**$240.95**
Belt	13-04109	**$167.95**	13-04128	**$167.95**	13-04131	**$167.95**
Harness	13-04110	**$63.00**	13-04129	**$73.75**	13-04132	**$79.95**
	Red	**Price**	**Tan**	**Price**		
Set Kit	13-04121	**$240.95**	13-04133	**$240.95**		
Belt	13-04122	**$167.95**	13-04134	**$167.95**		
Harness	13-04123	**$73.50**	13-04135	**$73.50**		

STYLE NO. 5 SEAT BELT/HARNESS SET FOR HOMEBUILTS

Specially designed for the VariEze, this popular combination is also used in the Long-EZ, Quickie, Q2, Cozy, Sea Hawk and several other homebuilts. The belts are made to fit snugly, and the aluminum end fittings save weight. Order two sets for all above aircraft except Quickie which uses one set. Not FAA approved for certificated aircraft.

P/N 13-01300 ..... **$106.85 Set**

PIPER SEAT BELT DECAL SETS



This is a beautiful decal set for all the Piper Seat Belt Buckles. The seat belt buckles on Piper's are always being dinged and pitted and nothing looks worse than to have a beautiful interior with ugly belt buckles. With our new decals, the ugly belt buckles become an attraction instead of an eyesore.

Four Place Piper Set ..... P/N 05-02448 ..... **$24.00 Set**
Six Place Piper Set ..... P/N 05-02449 ..... **$33.50 Set**

NOTE: SEE NEXT PAGE FOR SHOULDER HARNESSES COMPATIBLE WITH THESE SEAT BELTS.

AP

SEAT BELTS & SHOULDER HARNESSES

AP

STYLE NO. 3A "Y" SHOULDER HARNESS

Harness with stitched-in webbing loops for use with any 2" wide seat belt. Belt simply slides through loops and secures. Harness is "Y" type with one attachment fitting furnished.

Black Only..... P/N 13-00601 ..... **$54.50**

STYLE NO. 3B "Y" SHOULDER HARNESS

Harness with two chrome-plated steel adapters on front webbing extensions which mate with metal-to-metal buckle for safety belt/harness set. Harness is "Y" type with one attachment fitting furnished. Lift buckle to release belt and harness. Order belt separately.

P/N	Color	Price
13-00701	Black	**$82.50**
13-00702	Brown	**$87.50**
13-00703	Tan	**$82.50**
13-00704	Navy Blue	**$82.50**

P/N	Color	Price
13-00705	Royal Blue	**$82.50**
13-00706	Gray	**$82.50**
13-00707	Red	**$85.75**
13-00710	Green	**$82.50**

STYLE NO. 3C TWO STRAP SHOULDER HARNESS

Harness with two chrome-plated steel adapters on front webbing extensions which mate with metal-to-metal buckle for safety belt/harness set. Harness has two separate straps with two attachment fittings furnished. Lift buckle to release belt and harness. Order belt separately.

P/N	Color	Price
13-00801	Black	**$81.65**
13-00802	Brown	**$81.65**
13-00803	Tan	**$81.65**
13-00804	Navy Blue	**$81.65**

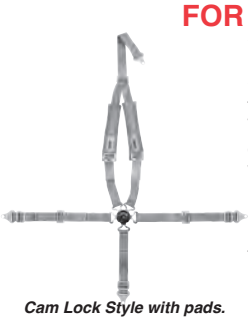
P/N	Color	Price
13-00805	Royal Blue	**$81.65**
13-00806	Gray	**$81.65**
13-00807	Red	**$81.65**
13-00810	Green	**$81.65**

CS-647 Fittings - Left & Right (As used on 3B & 3C harnesses)
P/N 13-03957..... **$32.75 /set**

PLEASE VISIT OUR WEBSITE FOR A DETAILED DRAWING OF THESE SHOULDER HARNESSES.

NOTE: These shoulder harnesses mate with #1 and #2 seat belts on the previous page but the harnesses are not FAA approved for certificated aircraft. Only the seat bellts carry FAA approval.

CROW RESTRAINT SYSTEMS FOR RV AIRCRAFT



Cam Lock Style with pads.

Crow restraint systems feature 5 attach points and are available in Latch & Link or Cam Lock versions. For RV series aircraft, the Cam Lock version is most popular. These restraint systems are available with or without 2 inch sewn-on shoulder pads, which are the same color as the rest of the belts and harness. Available in black, grey, blue, or red.

Specify aircraft model (RV-7, 7A, etc.) and tandem or side-by-side seating when ordering. Not FAA approved.

For experimental aircraft only.

Crow Cam Lock Restraint RV-6A with Shoulder Pads

Our Part #	Part #	Color	RV-6A RV-7A RV-9A	Seat Belt	Harness	Price
05-04951	40002P	Red	5-Way Restraint 50" Seat Belt Pull Up Adj. With Y-Type Harness & Anti Submarine belt	Bolt-in	Bolt-in	**$159.00**
05-04950	40003P	Blue		Bolt-in	Bolt-in	**$159.00**
05-04948	40004P	Black		Bolt-in	Bolt-in	**$159.00**
05-04949	40007P	Gray		Bolt-in	Bolt-in	**$159.00**

Crow Cam Lock Restraint RV-8A with Shoulder Pads

Our Part #	Part #	Color	RV-8A	Seat Belt	Harness	Price
05-06422	40012P	Red	5-Way Restraint 50" Seat Belt Pull Up Adj. Individual Harness & Anti-Submarine Belt Front Seat Harness Wrap Around Back Seat Harness Bolt-in	Bolt-in	Bolt-in	**$159.00**
05-06423	40013P	Blue		Bolt-in	Bolt-in	**$159.00**
05-06424	40014P	Black		Bolt-in	W/A	**$159.00**
05-06425	40017P	Gray		Bolt-in	Bolt-in	**$159.00**

Crow Cam Lock Restraint RV-10A with Shoulder Pads

Our Part #	Part #	Color	RV-10A	Seat Belt	Harness	Price
05-06430	40022P	Red	5-Way Restraint 50" Seat Belt Pull Up Adj. Individual Harness & Anti-Submarine Belt Front Seat Harness Mount on Canopy with bent 45 degree bolt in ends.	Bolt-in	Bolt-in	**$159.00**
05-06431	40023P	Blue		Bolt-in	Bolt-in	**$159.00**
05-06432	40024P	Black		Bolt-in	Bolt-in	**$159.00**
05-06433	40027P	Gray		Bolt-in	Bolt-in	**$159.00**

CHRISTEN 820 AEROBATIC SEAT BELT/HARNESS SYSTEM

The Christen 820 Seat Belt/Harness System was designed specifically for use in unlimited-class competition aerobatic flying. The System holds the pilot firmly in the aircraft seat during high negative-g maneuvers and supports the body laterally against side forces during tumbling, slipping or knife-edge flight. Although of extremely light-weight design, all components are of the highest aviation quality, and the system is manufactured in full compliance with the requirements of FAA TSO C22f. The basic Christen 820 System consists of a black shoulder harness, lap belt and crotch strap. Also available are a lap pad, a secondary seat belt for back-up safety, and accessory hardware to facilitate installation in a variety of aircraft. The lap belt, crotch strap, and shoulder harness are locked in a single buckle with flush latch which provides positive retention. All belts are released quickly and simultaneously by simply lifting the edge of the buckle latch. Standard end fittings attach to airframe brackets using 5/16 inch bolts (not included). All metal components bright chrome plated. All webbing 2 inches wide, black color. Includes detailed product manual. Meets FAA TSO C22f, 180 lb. Tensile. Maximum extended lengths of belt assemblies from end fitting to connector are: shoulder harness 50 inches, buckle lap belt 30 inches, connector lap belt 32 inches, crotch strap 26 inches. Weight 2.9 lb.

Seat Belt/Harness System..... P/N 05-01133.....**$918.00**
Lap Pad (Black)..... P/N 05-01134.....**$199.95**
Crotch Strap Connector for 7/8" Tubing ... P/N 05-01135.....**$73.75**
Crotch Strap Connector for 1" Tubing ..... P/N 05-01136.....**$75.25**
Seat Belt Brochure ..... P/N 05-01137.....**$0.95**

AIRCRAFT SPRUCE WEST CORONA, CA • (877) 4-SPRUCE
AIRCRAFT SPRUCE EAST PEACHTREE CITY, GA • (877) 477-7823
Prices Subject to Change Without Notice

SEAT BELTS & SHOULDER HARNESSES

AERO-TUFF BELT & HARNESSES

H Loop Style

Y Fit Style

Aero-Tuff lap belts and shoulder harnesses are made from certified two inch wide webbing, all steel hardware pieces are chrome or cadmium plated. The end fitting have 5/16" bolt holes. Aero-Tuff restraint systems comply with ASTM Light Sport Aircraft standards. The units are for use in Light Sport, experimental and ultralight aircraft. These restraint systems shall not be used in certified aircraft.

Description	Part No.	Price
H Loop Black	05-04694	**$89.95**
H Loop Grey	05-04695	**$88.00**
H Fit Black	05-04696	**$99.85**
H Fit Grey	05-04697	**$98.50**
Y Fit Black	05-04698	**$95.75**
Y Fit Grey	05-04699	**$92.00**

SPECIAL ORDER COLORS ARE AVAILABLE. Use the part numbers listed below and specify color choice of: Red, Tan, Brown, Dark Brown, Dark Blue, Military Green, Charcoal, or White.

Description	Part No.	Price
H Loop Special Color	05-04746	**$122.95**
H Fit Special Color	05-04747	**$129.95**
Y Fit Speical Color	05-04748	**$126.95**

SEAT BELTS FOR VANS RV AIRCRAFT

The Aero-Tuff restraint system for the RV 3, 4,6,7, 8, 9, 10 and 12 features adjustable web straps and a rotary buckle for one twist release. Each unit is custom fit for the specific model of RV aircraft. Each strap is adjustable with an end fitting. The strap permanently attached to the rotary buckle is on the crotch belt. The restraint units comply with ASTM light sport aircraft standards. The five-point restraint system is rated at 1800 lbs. The units are not for use in type certified aircraft.

Description	Part No.	Price
RV 4 8 Seat Belt Front Crotch Black	13-07029	**$249.95**
RV 3 Seat Belt Crotch Black	13-07030	**$250.95**
RV 3 Seat Belt Crotch Gray	13-07031	**$250.95**
RV 4 Rear Seat Belt Crotch Black	13-07032	**$250.95**
RV 4 Rear Seat Belt Crotch Gray	13-07033	**$250.95**
RV 8 Rear Seat Belt Crotch Black	13-07034	**$252.00**
RV 8 Rear Seat Belt Crotch Gray	13-07035	**$250.95**
RV-4 Front Seat Belt Crotch Black	13-07087	**$249.95**
RV-4 Front Seat Belt Crotch Gray	13-07088	**$249.95**
RV-8 Front Seat Belt Crotch Black	13-07089	**$257.95**
RV-8 Front Seat Belt Crotch Gray	13-07090	**$249.95**
RV-6 Seat Belt Crotch Gray	13-07091	**$269.95**
RV-6 Seat Belt Crotch Black	13-07092	**$269.95**
RV-7 Seat Belt Crotch Black	13-07093	**$266.95**
RV-7 Seat Belt Crotch Gray	13-07094	**$272.95**
RV-9 12 Seat Belt Crotch Gray	13-07095	**$299.00**
RV-9 12 Seat Belt Crotch Black	13-07096	**$269.95**
RV-10 Rear Seat Belt Crotch Black	13-07097	**$269.95**
RV-10 Rear Seat Belt Crotch Gray	13-07098	**$269.95**
RV-10 Front Seat Belt Crotch Gray	13-07099	**$269.95**
RV-10 Front Seat Belt Crotch Black	13-07101	**$269.95**

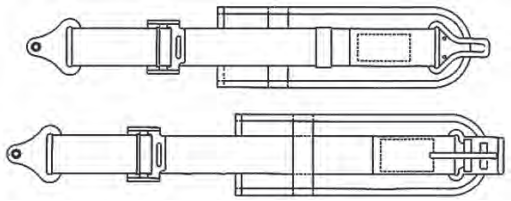
HOOKER CUSTOM HARNESSES

SPORT HARNESS SET (PER SEAT)

The popular Sport Harness kit from Hooker is ideal for a wide variety of experimental aircraft. The set includes one 1-3/4" military style seat belt, one 1-3/4" military style shoulder harness, one 1-3/4" crotch strap, one pad set and yoke assembly for front seat.

With pad set ..... P/N 13-00925 ..... **$273.95**
With pad rear ..... P/N 13-08054 ..... **$249.95**
Without crotch strap ..... P/N 13-00930 ..... **$224.95**

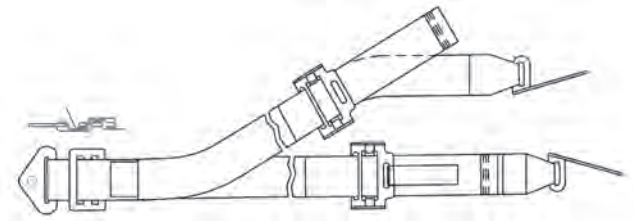
AEROBATIC HARNESS SET (PER SEAT)



The Hooker Aerobatic Harness kit is very popular with sport and competitive aerobatic pilots. The set includes two 1-3/4" military style seat belt, one 1-3/4" military style shoulder harness, one 1-3/4" crotch strap, one pad set and yoke assembly for front seat.

With one pad set..... P/N 13-00935 ..... **$332.95**
With stainless ratchet tightener ..... P/N 13-00950 ..... **$419.95**

HOOKER CESSNA FIXED SHOULDER HARNESS KIT (PER SEAT)



This set includes new double adjustable seat belt, shoulder harness, installation kit with necessary hardware, brackets and the STC paperwork. The STC currently covers installation in Cessna models 120, 140, 140A, 150, 152, 170, 172, 175, 180, 182 (except R182 and TR 182), 185, 205, 206, and 210 (through F model). Installation of this set does not require drilling holes in the external skin or the removal of the wings. The installation is accomplished from within the airplane and installation time usually runs 60-90 minutes with the headliner removed. Pads are not included. ..... P/N 13-00955 ..... **$237.95**

NOT AVAILABLE IN THE REAR. SPECIFY AIRCRAFT TYPE & COLORS OF WEBBING WHEN ORDERING.

COLORS AVAILABLE (HOOKER)

2" Webbing: Red, Dragon Red, Burgundy, Orange, Air Force Gold, Olive Drab, Sage Green, Baby Blue, Royal Blue, Navy Blue, Tan, Beige, Silver, Gray, Dark Gray, Black

1-3/4" Webbing: Red, Air Force Gold, Kelly Green, Olive Drab, Sage Green, Jade Green, Royal Blue, Navy Blue, Purple, Silver Gray, Dark Gray, Tan, Black

Pad Fabric: Red, Burgundy, Navy Blue, Royal Blue, Lemon Yellow, Air Force Gold, Dark Gray, Olive Drab, Sage Green, Silver Gray, **Pink,** Turquoise, Orange, Green, Jade, Lavender, Purple, Tan, Brown, Black

Trim: **Red,** Burgundy, Navy Blue, Royal Blue, Lemon Yellow, Air Force Gold, Dark Gray, Olive Drab, Sage Green, Silver Gray, Pink, Turquoise, Orange, Green, Jade, Brown, Lavender, Purple, Tan, Black

SPECIFY WEBBING,(PAD TRIM AND PAD COLORS WHERE APPLICABLE) WHEN ORDERING ALL HOOKER HARNESS PRODUCTS

PIPER SEATBELT BUCKLE PLACARD

This set of two beautiful seat belt placards installs on the buckle to add beauty and class to your seat belts. Each placard is silk-screened on chrome metallic Mylar and coated in a hard scratch-resistant clear epoxy that looks like crystal glass. They install quickly and easily with a special pressure-sensitive bonding adhesive.

Piper Seatbelt Buckle Placard (Qty. 2) ... P/N 05-03638..... **$8.95**
Piper Seatbelt Buckle Placard (Qty. 4) ... P/N 05-03639..... **$19.85**
Piper Seatbelt Buckle Placard (Qty. 6) ... P/N 05-03640..... **$27.75**

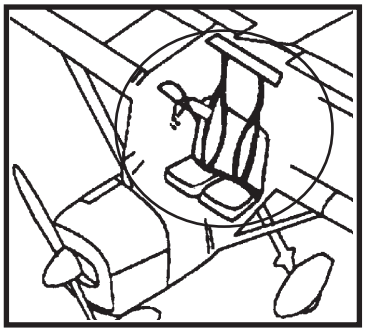
AP

CESSNA & PIPER SEAT BELTS & HARNESSES

BECAUSE WE KNOW SAFETY IS A PRIORITY IN YOUR AIRPLANE!

FAA Approved shoulder restraint systems in your aircraft provide the best possible safety for your crew and passengers. We developed these affordable systems for production aircraft in cooperation with the FAA, therefore each H-600 series comes with an FAA STC/PMA. Our high quality belts come in a full array of colors. The kits include one standard belt with a 3-bar slide (retain your present fitting), one "Y" style shoulder harness (with attaching hardware) and installation instructions.
Our line of seat belts and harnesses is constructed with the highest quality materials and with careful attention to workmanship. Each installation kit shown includes one belt, one harness, attaching hardware and installation instructions. The standard seat belt with 3-bar slide and the Y-style shoulder harness included is shown and described further on page 179.

CESSNA HARNESS KITS

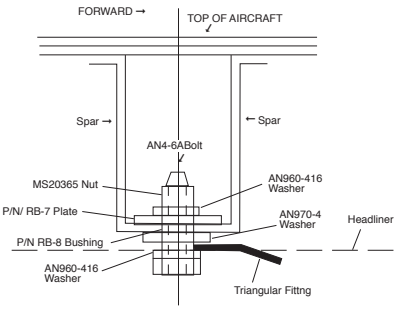


Harness/Seat Belt Installation Kits
***Only* $169.95 each**

FAA Approved

FAA Approved

Typical Installation for Cessna Aircraft



Choose from the following kits for your FAA/STC/PMA approved installation For Cessnas!

Color	CESSNA 120/140	CESSNA 150A-H, J-M A152/152	CESSNA 170A & B	CESSNA 172, A-I,K,L-N, P F172N, P	CESSNA 175A,B,C	CESSNA 180 A-H, J, K	182, A-H J-N, P-R T,TR182	CESSNA 185A-E A185E	CESSNA 206, U206A-F TU206A-F	CESSNA 207, 207A T207, T207A
Black	13-00901-1	13-00902-1	13-00903-1	13-00904-1	13-00905-1	13-00906-1	13-00907-1	13-00908-1	13-00909-1	13-00910-1
Brown	13-00901-3	13-00902-3	13-00903-3	13-00904-3	13-00905-3	13-00906-3	13-00907-3	13-00908-3	13-00909-3	13-00910-3
Red	13-00901-5	13-00902-5	13-00903-5	13-00904-5	13-00905-5	13-00906-5	13-00907-5	13-00908-5	13-00909-5	13-00910-5
Navy	13-00901-2	13-00902-2	13-00903-2	13-00904-2	13-00905-2	13-00906-2	13-00907-2	13-00908-2	13-00909-2	13-00910-2
Royal Blue	13-00901-4	13-00902-4	13-00903-4	13-00904-4	13-00905-4	13-00906-4	13-00907-4	13-00908-4	13-00909-4	13-00910-4
Tan	13-00901-6	13-00902-6	13-00903-6	13-00904-6	13-00905-6	13-00906-6	13-00907-6	13-00908-6	13-00909-6	13-00910-6
Silver Gray	13-00901-8	13-00902-8	13-00903-8	13-00904-8	13-00905-8	13-00906-8	13-00907-8	13-00908-8	13-00909-8	13-00910-8
Olive Green	13-00901-7	13-00902-7	13-00903-7	13-00904-7	13-00905-7	13-00906-7	13-00907-7	13-00908-7	13-00909-7	13-00910-7

PIPER HARNESS KITS

FAA Approved!

PA-11 Harness Kits

Front **$169.95** ea. Rear **$189.95** ea.

Black	13-00913-1	13-00914-1
Navy	13-00913-2	13-00914-2
Brown	13-00913-3	13-00914-3
Royal Blue	13-00913-4	13-00914-4
Red	13-00913-5	13-00914-5
Tan	13-00913-6	13-00914-6
Olive Green	13-00913-7	13-00914-7
Silver Gray	13-00913-8	13-00914-8

PA-18 Harness Kits

Front **$169.95** ea. Rear **$233.95** ea.

Black	13-00921-1	13-00922-1
Navy	13-00921-2	13-00922-2
Brown	13-00921-3	13-00922-3
Royal Blue	13-00921-4	13-00922-4
Red	13-00921-5	13-00922-5
Tan	13-00921-6	13-00922-6
Olive Green	13-00921-7	13-00922-7
Silver Gray	13-00921-8	13-00922-8

PA-20 Front Seat Harness Kits ea.$170.95

Black	13-00915-1
Brown	13-00915-3
Red	13-00915-5
Navy	13-00915-2
Royal Blue	13-00915-4
Tan	13-00915-6
Silver Gray	13-00915-8
Olive Green	13-00915-7

PA-22 S-150, 160, PA-22/22-108, 135, 150, 160,
Front Seat Harness Kits ea.$169.95

Black	13-00916-1
Brown	13-00916-3
Red	13-00916-5
Navy	13-00916-2
Royal Blue	13-00916-4
Tan	13-00916-6
Silver Gray	13-00916-8
Olive Green	13-00916-7

PA-28 Front Seat Harness Kits pr. $499.95
Includes seat belts, harnesses and hardware for front seats.

Black	*13-00917-1*
Navy	*13-00917-2*
Brown	*13-00917-3*
Royal Blue	*13-00917-4*
Red	*13-00917-5*
Tan	*13-00917-6*
Olive Green	*13-00917-7*
Silver Gray	*13-00917-8*

For ceiling vent system, modification may be needed to the existing system for our seat belt/shoulder harness installation. Drawings & instructions are unavailable for this modification.

AERONCA HARNESS KITS

Front **$221.95** ea.

Black	13-00918-1
Navy	13-00918-2
Brown	13-00918-3
Royal Blue	13-00918-4
Red	13-00918-5
Tan	13-00918-6
Olive Green	13-00918-7
Silver Gray	13-00918-8

FAA Approved!

Rear **$219.95** ea.

Black	13-00919-1
Navy	13-00919-2
Brown	13-00919-3
Royal Blue	13-00919-4
Red	13-00919-5
Tan	13-00919-6
Olive Green	13-00919-7
Silver Gray	13-00919-8

Note: Not approved for AC15 Aeronca

BEECH HARNESS KITS

35 Series A-G, R

Pilot **$199.95** ea.

Black	13-00911-1
Navy	13-00911-2
Brown	13-00911-3
Royal Blue	13-00911-4
Red	13-00911-5
Tan	13-00911-6
Olive Green	13-00911-7
Silver Gray	13-00911-8

FAA Approved!

Co - Pilot **$254.95** ea.

Black	13-00912-1
Navy	13-00912-2
Brown	13-00912-3
Royal Blue	13-00912-4
Red	13-00912-5
Tan	13-00912-6
Olive Green	13-00912-7
Silver Gray	13-00912-8

FAA Approved!

STINSON HARNESS KITS

Stinson 108-1, 2, 3 **$169.95** each

Black	13-00920-1
Navy	13-00920-2
Brown	13-00920-3
Royal Blue	13-00920-4
Red	13-00920-5
Tan	13-00920-6
Olive Green	13-00920-7
Silver Gray	13-00920-8

FAA Approved!

SEAT BELTS

FAA Approved!

Standard TSO'd. Standard metal to metal seat belt retrofits most popular production aircraft. High-strength nylon webbing, fully tested belt is rated at 1500 lbs. Belt features standard metal to metal type buckle and meets the latest FAA requirements. Adjusts from 13" to 62" in length.

Color	3-BAR SLIDE (Retain your present end fittings.) ea. $76.00	TRIANGULAR & 3-BAR SLIDE ea. $78.50	QUICK DISCONNECT & 3-BAR SLIDE ea. $93.75
Black	05-06227-2	05-06226-2	05-06227-2
Navy	05-06225-8	05-06226-8	05-06227-8
Brown	05-06225-7	05-06226-7	05-06227-7
Royal Blue	05-06225-6	05-06226-6	05-06227-6
Red	05-06225-5	05-06226-5	05-06227-5
Tan	05-06225-9	05-06226-9	05-06227-9
Olive Green	05-06225-3	05-06226-3	05-06227-3
Silver Gray	05-06225-4	05-06226-4	05-06227-4

Y-TYPE SHOULDER HARNESS

FAA Approved!

Hardware mates to buckle of model Cat. No. H-701 Series and most American Safety models. Retain your own aircraft fittings. Longest length, 79"; Shortest length, 29".1 lb. ea. ..... **$73.85 ea.**

Color	Part No.
Black	05-06228-2
Navy	05-06228-8
Brown	05-06228-7
Royal Blue	05-06228-6
Red	05-06228-5
Tan	05-06228-9
Olive Green	05-06228-3
Silver Gray	05-06228-4

TSO'd SEATBELTS PMA'd SHOULDER HARNESSES

SEAT BELTS & "Y" HARNESS COMBINATION

Set includes one Cat. No. H-701 series seat belt with 3 bar slide and one Cat. No. H-702 series "Y" type shoulder harness with metal to metal hardware. Hardware not included. Retain your own aircraft fittings. ..... **$113.95 each set**

Color	Part No.
Black	05-06236-2
Navy	05-06236-8
Brown	05-06236-7
Royal Blue	05-06236-6
Red	05-06236-5
Tan	05-06236-9
Olive Green	05-06236-3
Silver Gray	05-06236-4

END FITTINGS

Experimental Only.

P/N 05-06239 | *P/N 05-06237* | *P/N 05-06240* | *P/N 05-06241*

Description	Part No.	Price
3-Bar Slide	05-06239	$8.25
Quick Disconnect Fitting	05-06237	$10.50
Triangular End Fitting	05-06240	$12.25
2" Chrome Seat Belt Tip Ends	05-06241	$3.25

2" SEAT BELT EXTENSIONS

Mates with Wag-Aero's seat belts only. 24" long. Experimental Only.

$32.50 ea.	Part No.	$32.50 ea.	Part No.
Black	05-06230-2	Red	05-06230-5
Navy	05-06230-8	Tan	05-06230-9
Brown	05-06230-7	Olive Green	05-06230-3
Royal Blue	05-06230-6	Silver Gray	05-06230-4

Hardware Not Included

PIPER SEAT BELT DECAL

The placard is silk-screened on chrome metallic Mylar and coated in a hard, scratch-resistant clear epoxy that looks like crystal glass. Easy to install with a special pressure-sensitive bonding adhesive. Once installed, they will not come off.

P/N 05-06242 ..... **$11.00 pr.**

AEROBATIC/MILITARY

FULL RESTRAINT

The ultimate for aerobatic competition consists of 3" TSO'd lap belt with lap restraint pads, 2" shoulder harness with shoulder harness restraint pads, plus a fully adjustable crotch strap. Unique features allow for quick comfort adjustment. Positive lock buckle with quick release. Safety and comfort primary in design. Retain your own aircraft fittings. Black. 1500 lb. rating. Experimental Only.

Complete System

P/N 05-06238 ..... **$249.95**

FAA Approved!

MILITARY STYLE SEAT BELT

TSO'd. 3" metal to metal, heavy duty construction with military style quick release buckle for convenience. Extra strength webbing provides increased durability. Complete with triangle end fittings to accommodate most aircraft. Retain your own aircraft fittings. Adjusts from 33-1/2" to 49-1/2" in length..... **$167.95 ea.**

Color	Part No.
Black	13-04122
Olive Green	13-04106
Neutral	13-04119
Silver Gray	13-04109

Color	Part No.
Red	13-04122
Royal Blue	13-04125
Brown	13-04128
Navy	13-04131
Tan	13-04135

AEROBATIC SHOULDER HARNESSES

Metal fitting for attachment to seat belt buckle. Easily adjustable, harness combines with the 3" aerobatic seat belt for a matched set. Retain your own aircraft fittings. Experimental Only.

Divided Harnesses	Part No.	Y-Style Harnesses	Part No.
Black	05-06232-2	Black	13-01200
Olive Green	05-06232-3	Olive Green	13-04107
Neutral	05-06232-1	Neutral	05-06234-1
Silver Gray	05-06232-4	Silver Gray	13-04110
Red	05-06232-5	Red	13-04123
Royal Blue	05-06232-6	Royal Blue	05-06234-6
Brown	05-06232-7	Brown	13-04129
Navy	05-06232-8	Navy	13-04132
Tan	05-06232-9	Tan	13-04135

ADJUSTABLE CROTCH STRAP

Experimental Only

Color	Part No.	Price
Black	05-06233-2	$34.65
Navy	05-06233-8	$34.65
Brown	05-06233-7	$34.65
Royal Blue	05-06233-6	$34.65
Red	05-06233-8	$34.65
Tan	05-06233-9	$46.25
Silver Gray	05-06233-4	$46.25
Neutral	05-06233-1	$34.65
Lap Restraint Pads (Black)	13-10271	$26.75/pr.
Shoulder G-Restraint Pads (Black)	13-10272	$26.75/pr.

SEAT BELT WEBBING

Minimum order: 5 yards.

Meets AN, MS, NAS, or Mil. Spec.

	2" Webbing		3" Webbing	
Color	Part No.	Price/yd	Part No.	Price/yd
Black	05-06224-2	$7.75	05-06223-2	$9.70
Navy	05-06224-8	$8.50	05-06223-8	$9.70
Brown	05-06224-7	$5.75	05-06223-7	$9.70
Royal Blue	05-06224-6	$8.50	05-06223-6	$9.70
Red	05-06224-5	$5.75	05-06223-5	$9.70
Tan	05-06224-9	$8.45	05-06223-9	$9.70
Olive Green	05-06224-3	$5.75	05-06223-3	$9.70
Silver Gray	05-06224-4	$7.95	05-06223-4	$9.70
Neutral	---	---	05-06223-1	$9.70

AP

STC'D SEAT BELTS & SHOULDER HARNESSES

ALPHA AVIATION RESTRAINT SYSTEMS

Note: FAA/ STC/ PMA Installation kits include complete new TSO-C114 belt assemblies for each pilot position. FAA/ STC/ PMA Installation kits include all hardware to upgrade both pilot positions. OEM quality, AMSAFE Incorporated belt assemblies meeting TSO-C114. Standard colors are black, gray & fawn. For custom colors, please order the color swatches (P/N 05-03146). STC sets are for two seats; OEM sets are for one seat..

BEECHCRAFT STC SHOULDER HARNESS KITS

3 Point Diagonal Systems

* Complete New Belt Assemblies
* Shoulder and Lap Belts for 2 Seats-Pilot & Co-Pilot
* All Required Hardware
* Instruction Manual
* Supplemental Type Certificate

STC, 3RS-114FS Fixed Restraint, Kit..... P/N 05-03127.... **$769.00**
STC, 3RS-114IR Inertial Reel, Kit..... P/N 05-03128. **$1,069.00**
Beechcraft Replacement Rear Lap Belt ..... P/N 05-06886..... **$79.95**

BEECHCRAFT APPROVED MODEL GUIDE							
35	H35	36	35-33	95	B95	A56TC	58
35R	J35	A36	35-A33	95-5	B95A		58A
A35	K35		35-B33	95-A55	D95A		
B35	M35		35-C33	95-B55			
C35	N35		35-C33A	95-B55A	D55		
D35	P35			95-B55B	D55A		
E35	S35		E33	95-C55			
F35	V35		E33A	95-C55A	E55		
G35	V35A		E33C		E55A		
	V35B				E95		
			F33				
			F33A				
			F33C				
			G33				

CESSNA STC SHOULDER HARNESS KITS

Cessna Shoulder Harness Kits

* New Belt Assemblies -Shoulder & Lap Belts for Pilot & Co-Pilot
* All Required Hardware
* Instruction Manual
* Supplemental Type Certificate

STC, C100-114IR, Front Inertial Reel, Kit .... P/N 05-03131.... **$869.00**
Cessna STC, C100-114FS,
Front Fix Strap, Kit..... P/N 05-04193.... **$669.00**

Cessna 100 Model List						
Original Type Certificate #	Aircraft Models					
A-799	170	170A	170B			
3A12	172	172A	172B	172C	172D	172E
	172F	172G	172H*	172I	172K	
*172F (USAFT41A) *172H (USAFT41A)						
3A17	175	175A	175B	175C	P172D	
5A6	180	180S	180B	180C	180D	180E
	180F	180G	180H			
3A13	182	182A	182B	182C	182D	182E
	182F	182G	182H	185J	182K	182L
	182M	182N	182P			
3A24	185	185A	185B	185C	185D	185E
	A185E	A185F				

CESSNA OEM REPLACEMENT BELTS

* Replace Your Existing Shoulder Harnesses
* Complete New Belt Assemblies - Shoulder and Lap Belts

Cessna 100/200 OEM Replacement
Front, Fixed Strap ..... P/N 05-03132.... **$249.00**
Cessna 100/200 OEM
Replacement Inertial Reel, Upgrade..... P/N 05-03133.... **$349.00**
Cessna OEM Replacement (all models)
Rear Lap Belts ..... P/N 05-06887..... **$79.95**

177, 177A NEEDING SHOULDER HARNESS INSTALLATION KIT

177B Replacement Belt Assemblies OEM Replacement, 3-Point Restraint Systems

* Replace Your Existing Shoulder Harnesses
* Complete New Belt Assemblies - Shoulder and Lap Belts

Cessna 177/177A Minor Change Kit ..... P/N 05-03135..... **$20.00**

PA 23 STC APPROVED MODELS		
PA-23	PA-23-160	PA23-235
PA-23-250	PA-E23-250	
PA28/32 STC APPROVED MODELS		
PA28-140	PA28R-180	PA32-260
PA28-150	PA28R-200	PA-32-300
PA28-160		
PA28-180	PA28S-160	PA32S-300
PA28-235	PA28S-180	

MOONEY SHOULDER HARNESS INSTALLATION

3 Point Diagonal Systems

* M20, A, B, C, D, E, F, G 3 Point Diagonal Harness Installation
* M20J Replacement Seat Belts
* Complete New Belt Assemblies - Shoulder and Lap Belts

3-Point System "Minor Change Kit" M20 A-G (Includes the Required Hardware for Two Pilot Positions)..... P/N 05-03139..... **$35.00**
Mooney M20 Inertial Reel Upgrade
Front Inertial Reel 1..... P/N 05-06891.... **$349.00**
Mooney M20 Replacement
Front Fixed Strap ..... P/N 05-06890.... **$249.00**
Mooney Replacement Rear Lap Belt ..... P/N 05-06888..... **$79.95**

PIPER STC SHOULDER HARNESS KITS

3 Point Diagonal Systems

* Complete New Belt Assemblies
* Shoulder and Lap Belts for 2 Seats - Pilot & Co-Pilot
* All Required Hardware
* Instruction Manual
* Supplemental Type Certificate

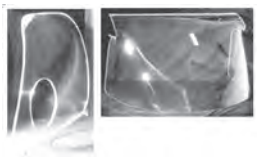
STC, PA23-114IR Front Inertial Reel, Kit..... P/N 05-03141.... **$869.00**
Piper STC, PA28-1141R Front
Inertial Reel, Kit ..... P/N 05-03143.... **$969.00**
Piper OEM Replacement Front Inertial Reel ..... P/N 05-04194.... **$349.00**
Piper Replacement All Model Rear Lap Belt ..... P/N 05-03134..... **$79.95**
Piper STC, PA23-114FS Front Fixed Strap, Kit ..... P/N 05-06892.... **$669.00**
Piper STC, PA24-114FS Front Fixed Strap, Kit ..... P/N 05-04928.... **$769.00**
Piper STC, PA24-114IR Front Inertial Reel, Kit..... P/N 05-04929.... **$969.00**
Piper STC, PA28-114FS Front Fixed Strap, Kit ..... P/N 05-04930.... **$769.00**

COLOR SWATCHES

Color swatches for your desired color group are available to be shipped to you via priority mail. When you have chosen your color, you can place your order by phone (1-877-4-SPRUCE) or order online. Then return the color swatches to Aircraft Spruce and we will credit you the $25.00 charge when you place your order for seatbelts/harnesses. For domestic orders only. International customers, please call for pricing. Custom color belts/ harnesses are special order and are non-returnable. Lead time is three weeks for a custom color order.

P/N 05-03146..... **$25.00**

L&P AERO WINDSHIELDS



L&P AERO WINDSHIELDS
COMPLETE WINDOW SETS - SKYLIGHTS -LANDING LIGHT LENSES

Replacement glass for over 350 different aircraft models from the oldest to the latest production - both domestic and foreign. Each can be confirmed with serial and model number, year of manufacture, thickness of material and cross-referenced with OEM part number. Manufactured of high optic quality acrylics. Available in clear, green and solar gray tints. For ease of installation, they are trimmed to OEM specifications with instructions furnished. Our manufacturer's quality control systems are approved by both the FAA and the Department of Defense. To assure quick delivery at minimum cost, orders are shipped directly from our manufacturer's warehouse in Pennsylvania or California. Extensive inventories on hand in both locations making shipment possible in 24 hours in most cases. Generally speaking, one-piece windshields require shipment by motor freight, two-piece windshields can be shipped by United Parcel Service. Windshields requiring motor freight shipment on the following list are marked with an asterisk. Attractive Air Freight rates All windshields/windows are special order, they are non-cancelable and non-returnable. Only a few models are listed - over 35 available. Advise complete aircraft model and serial number, Leave the rest to us!

VISIT WWW.AIRCRAFTSPRUCE.COM FOR MORE INFORMATION AND MODELS AVAILABLE.

FLY COOLER, HEALTHIER AND SMARTER

with UV-SG and UV-GT tint windshields and windows from LP Aero Plastics

Say so long to sun damage. Blocking the sun's damaging rays benefits you, your passengers and your aircraft. With far less UV and IR radiation entering the cabin, occupants are less likely to suffer sun-related skin and eye damage - and they'll enjoy cooler cabin temperatures to boot. **UV-SG Solar Gray and UV-GT Green tints can reduce interior temperatures by as much as 20 degrees.** While you and your passengers bask in greater comfort, you'll also reduce the workload on the air conditioning systems. UV and IR radiation can also wreak havoc on avionics and interior components, such as plastic panels and seat materials. That damage is significantly reduced with the UV-SG and UV-GT tints.

Aircraft	Clear PN	Clear Price	Smoke PN	Smoke Price	Green PN	Green Price
192 Aeronca Citabria 7ECA, 7GC4A, 7GCBC, 7KCAB	192C	$203.95	192SG	$203.95	192C	$203.95
Aeronca Chief 11AC, BC, CC	05-02177	$185.95	05-02229	$224.95	05-02228	$223.95
Bellanca Viking	05-02188	$293.95	05-02231	$351.95	05-02330	$351.95
Beech Bonanza Lft. 187 thru G-35	250C	$105.95	05-02227	$126.95	05-02226	$126.95
Beech Bonanza Rt. 187 thru G-35	251C	$105.95	05-02233	$138.95	05-02232	$138.95
Beech Bonanza Lft. 250 H-35-V-35, Baron 55	280C	$195.95	05-02235	$234.95	05-02234	$234.95
Beech Bonanza Rt. 250 H-35-V-35, Baron 55	281C	$195.95	05-02237	$234.95	05-02236	$243.95
Cessna 120-140 S/N 8001 to 8799	301C	$202.95	05-02239	$243.95	05-02238	$243.95
Cessna 120-140 S/N 8800 + up	300C	$202.95	300SG	$243.95	05-02240	$249.95
Cessna 140A, 150, 152	303C	$197.95	303SG	$238.95	303G	$238.95
Cessna 170 1948-49 to S/N 18728	310C	$200.95	05-02242	$240.95	--	--
Cessna 170A S/N 18729 to 20676	306C	$210.95	05-02243	$252.95	05-02244	$252.95
Cessna 172 S/N 47747 to 49544	05-02178	$269.95	05-02245	$323.95	05-02246	$322.95
Cessna 170B S/N 20267+up 1952 to 1955	312C	$218.95	05-02247	$259.95	312G	$259.95
Cessna 172 S/N 28000 to 47746	312C	$218.95	05-02247	$259.95	312G	$259.95
Cessna 172 S/N49545 to 50572	313C	$279.95	05-02250	$334.95	05-02249	$334.95
Cessna 172 S/N 50573 to 72884	345C	$279.95	345SG	$334.95	345G	$334.95
Cessna 172 S/N 72885 & up	337C	$259.95	05-02251	$313.95	337G	$312.95
Cessna R172K S/N R2000 to R3199	05-02179	$377.95	05-02252	$452.95	05-02179	$377.95
Cessna 177, 177RG	329C	$314.95	05-02253	$377.95	05-02254	$377.95
Cessna 180 S/N 30000 to 31260	309C	$257.95	05-02255	$308.95	05-02256	$309.95
Cessna 180 S/N 31261 to 50355	315C	$303.95	05-02257	$364.95	05-02258	$365.95
Cessna 180 S/N 50356 to 51183	316C	$303.95	316SG	$364.95	05-02259	$363.95
Cessna 182 S/N 33000-51556	315C	$303.95	05-02257	$364.95	05-02258	$365.95
Cessna 182 S/N 52556-53598	316C	$303.95	316SG	$364.95	05-02259	$363.95
Cessna 182 S/N 53599 to 55844	338C	$332.95	05-02262	$399.95	05-02261	$399.95
Cessna 182 S/N 55845 to 64296	339C	$356.95	339SG	$427.95	339G	$427.95
Cessna 205	325C	$300.95	05-02263	$361.95	05-02264	$361.95
Cessna 206 S/N U206-0001 thru U206-0437	325C	$300.95	05-02263	$361.95	05-02264	$361.95
Cessna P206 S/N 0001 thru 0160	325C	$300.95	05-02263	$361.95	05-02264	$361.95
Cessna U206 S/N 0438+up	326C	$357.95	05-02265	$427.95	326G	$427.95
Cessna P206 S/N 0161+up	326C	$357.95	05-02265	$427.95	326G	$427.95
Cessna 207	05-02180	$356.95	05-02269	$427.95	05-02268	$427.95
Cessna 210 S/N 57841 to 58220	325C	$300.95	05-02263	$361.95	05-02264	$361.95
Cessna 210 S/N 58221 to 58510	05-02182	$300.95	05-02266	$361.95	05-02267	$361.95
Cessna 210 S/N 58511 to 58715	325C	$300.95	05-02263	$361.95	05-02264	$361.95
Cessna 210 S/N 58716 to 58818	326C	$357.95	05-02265	$427.95	326G	$427.95
Cessna 210 S/N 58937 + up	05-02183	$331.95	05-02271	$398.95	05-02270	$397.95
Cessna 310 S/N 35000 to 35546	05-02184	$318.95	05-02272	$381.95	05-02273	$381.95
Cessna 310 S/N 35547 to 39299	05-02187	$310.95	05-02275	$372.95	05-02274	$372.95
Cessna 310 S/N 310-0001 to 310 K-0245	05-02187	$310.95	05-02275	$372.95	05-02274	$372.95
Cessna 310 S/N Looo1 to 310Q0400	05-02185	$463.95	05-02277	$556.00	05-02276	$557.00
Cessna 310 S/N Q0401+up	05-02186	$515.00	05-02280	$618.00	05-02281	$618.00

Aircraft	Clear PN	Clear Price	Smoke PN	Smoke Price	Green PN	Green Price
Ercoupe 415 or G-Bubble	351C	$303.95	05-02283	$285.95	05-02285	$284.95
Grumman AA1, AA1A, AA1B	657C	$255.95	05-02286	$306.95	05-02287	$306.95
Grumman AA1,AAA-1A, AA-1B Canopy	658C	$355.95	05-02288	$428.95	05-02289	$428.95
Grumman AA5, AA-5A, AA5B	05-02189	$424.95	05-02290	$509.00	05-02291	$510.00
Luscombe 8 Series	400C	$157.95	400SG	$189.95	--	--
Mooney MK20-21,1959-64 Lft.	100C	$113.95	05-02292	$119.95	05-02293	$119.95
Mooney MK 20-21,1959-64 Rt.	101C	$113.95	05-02294	$119.95	05-02295	$119.95
Mooney 1965-1969 (4 cabin Windows) Lft.	133C	$107.95	05-02296	$128.95	05-02297	$128.95
Mooney 1965-1969 (4 cabin Windows) Rt	134C	$107.95	05-02298	$128.95	05-02299	$128.95
Mooney 1967-1969 (6 cabin Windows 1 pc.)	05-02190	$140.95	05-02301	$167.95	05-02302	$168.95
Mooney M20J and M20K	05-02192	$228.95	05-02303	$286.95	05-02304	$286.95
Piper J-3	450C	$117.95	450SG	$138.95	05-02278	$138.95
Piper PA-12-Round Top	455C	$164.95	05-02305	$197.95	05-02306	$197.95
Piper PA-12 Square Top	456C	$187.95	456SG	$197.95	05-02352	$197.95
Piper PA-15, 16, 17	459C	$199.95	05-02308	$239.95	05-06842	$258.95
Piper PA-22 Tripacer, 108 Colt, Bubble	463C	$199.95	463SG	$239.95	463G	$239.95
Piper PA-23 Apache S/N 1502 + up Rt.	05-02193	$217.95	05-02310	$261.95	05-02311	$261.95
Piper PA-23-250 S/N 27-2000 +up Lft.	421C	$225.95	05-02312	$270.95	05-02313	$270.95
Piper PA-23-250 S/N 27-2000 + up Rt.	422C	$225.95	05-02314	$270.95	05-02315	$270.95
Piper PA-24 Comanche Lft.	05-02194	$138.95	05-02316	$165.95	05-02317	$165.95
Piper PA-24 Comanche Rt.	05-02195	$138.95	05-02320	$165.95	05-02321	$165.95
Piper PA-25 Pawnee S/N 1-655	485C	$110.95	05-02318	$130.95	05-02319	$131.95
Piper PA-25 Pawnee S/N 656 + up	486C	$109.95	05-02322	$130.95	05-02323	$131.95
Piper PA-28 Cherokee S/N 1 + up Lft. (.125)	490C	$111.95	490SG	$134.95	490G	$133.95
Piper 28 Cherokee S/N 1 + up Rt. (.125)	491C	$111.95	491SG	$133.95	491G	$133.95
Piper PA-28 Cherokee (.250) Lft.	905C	$131.95	905SG	$157.95	05-02324	$157.95
Piper PA-28 Cherokee (.250) Rt.	907C	$131.95	907SG	$157.95	05-02325	$157.95
Piper PA-32-260 S/N 1-7300076 Lft.	492C	$123.95	05-02326	$145.95	05-02327	$145.95
Piper PA-32-260 S/N 1-7300076 Rt.	493C	$122.95	05-02328	$145.95	05-02329	$145.95
Piper PA-38-112 Tomahawk S/N 78A0001 to 82A0122	795C	$383.95	05-02330	$459.95	05-02331	$459.95
Rockwell 112, 114	508C	$324.95	05-02332	$388.95	05-02333	$388.95
Stinson 108 Lft.	552C	$123.95	05-02334	$147.95	05-02335	$147.95
Stinson 108 Rt.	553C	$123.95	05-02336	$147.95	05-02337	$147.95
T/Craft BC-12d,1946+up	650C	$185.95	05-02338	$222.95	05-02339	$221.95
T/Craft BC-1940-41, Pre-war BC-65	651C	$188.95	05-02340	$225.95	05-02341	----
Piper PA-28 Cherokee A-28, -140, -150, -160, -180, -235	055C	$40.50	05-02346	$62.00	05-02347	$62.00
Cessna 152, A152, F152, FA152	303/302C	$221.95	303/302SG	$266.95	303/302G	$265.95
Cessna 152, A152, F152, FA152	312/CMB	$377.95	05-02353	$379.95	05-02354	$379.95
Cessna 170B S/N 20267+up 1952 to 1955	312/CON	$361.95	05-02359	$363.95	05-02360	$363.95
Cessna 150, A150, F150, FA150	360C	$156.95	05-02348	$186.95	05-02349	$186.95
PA-18,PA-19(L-18C)	464C	$162.95	05-02356	$194.95	05-02350	$194.95
PA-20,PA-22	05-02357	$199.95	462SG	$239.95	462G	$239.95
Cessna 172,P172,F172	05-02358	$146.95	05-02351	$175.95	389G	$175.95

WINDSHIELDS – CANOPIES

HEAVY THICKNESS WINDSHIELDS

STC Conversions

We now carry these STC Conversion extra thick windshields which are FAA approved for the following aircraft and which install as easily as the standard .250 thick windshields. Available in 3 thicknesses.

Available In Three Thicknesses

Part No.	Thickness	Price
269.312	.312	$869.00
269.375	.375	948.00
269.500	.500	1,098.00

Note: Verify that your serial number is eligible before ordering.

FAA APPROVAL LIST

Beech Bonanza F33
s/n CD-1235 – CD 1254
Beech Bonanza G33
s/n CD-1255 – CD 1304
Beech Bonanza F33A
s/n CE-290 and up
Beech Bonanza F33C
s/n CJ-26 and up
Beech Bonanza 33 thru E33A
s/n CD-1 – CD-1234,CE-1 - CE-289, CJ-1 – CJ-25
Beech Bonanza H35 thru V35A-TC
s/n D4866 – D9068
Beech Bonanza V35B thru V-35B-TC
s/n D9069 and up
Beech Bonanza 36 & A36
s/n E-1 and up
Beech Bonanza A36TC & B36TC
s/n EA-1 and up
Beech Baron 58 & 58A
s/n TH-1 and up
Beech Baron TC58 & 58TCA
s/n TK-1 and up
Beech Travelair 95 thru E95
s/n TD-1 – TD-721

AP

INDIVIDUAL WINDOWS

Window Model No.	Aircraft	Description	Each
231	Aeronca	Left front sliding-forward	**$32.95**
232	7AC	Left front sliding-rearward	**$27.95**
233		Left or Right rear	**$44.95**
234		Right front door	**$37.95**
225	Aeronca	Left or Right front door (sliding)	**$28.95**
226	11AC	Left or Right rear (Door) (sliding)	**$28.95**
227		Left or Right rear	**$31.95**
342	Cessna	Left or Right door	**$43.50**
343	120/140	Left or Right rear	**$31.50**
344		Left or Right skylight	**$33.50**
370	Cessna	Left or Right rear	**$38.00**
374	170	Left or Right door	**$52.00**
362	Cessna	Left or Right rear	**$31.50**
369	180	Left or Right door	**$62.50**
006	J-3	Skylight	**$34.95**
008		Left front triangle	**$23.95**
009		Left pilot sliding	**$34.95**
010		Left rear	**$33.95**
011		Right rear	**$27.95**
012		Right door	**$45.95**
436	PA-12	Left front (sliding)	**$28.00**
437		Left rear	**$29.00**
438		Door	**$28.00**
439		Right rear	**$24.50**
015	PA-16,20	Right door	**$31.95**
016	22	Right rear	**$17.95**
021		Left front stationary	**$27.95**
017		Left front sliding	**$27.00**
019		Left rear door	**$17.95**
465	PA-18	Right door	**$47.75**
466		Right or Left rear	**$24.50**
467		Rear sliding	**$36.50**
468		Front sliding (left)	**$36.50**
469		Left pilot	**$22.95**
020	Late PA-20	Left or Right square (rear)	**$22.95**
021		Left front pilot	**$26.95**
023		pilot-vented	**$13.00**

CESSNA 150/152/172/177/182/210 WINDOWS

Aircraft Spruce stocks replacement windows for Cessna single and twin engine aircraft as well as all windshields and windows manufactured by LP Aero Plastics. Call or email Aircraft Spruce for quotation and specify year, serial number of aircraft and windows required.

Call: 1-877-4SPRUCE • Email: info@aircraftspruce.com

WINDSHIELD INSTALLATION ACCESSORIES

Foam Sealing Tape – 1/4"x1/16" x 100' roll.... P/N 05-99100 . **$25.75/rl**
Foam Sealing Tape – 1-1/4" x 1/16" x 25" roll P/N 05-04864 . **$18.50/rl**
Foam Sealing Tape 1-1/4" X 1/16"..... P/N 05-02132 ... **$0.82/ft**
Felt – Adhesive-backed 3/32"x1-1/2" ..... P/N 05-99110 ... **$1.34/ft**

FOAM TAPE

An adhesive backed, closed cell foam tapel. Can be wrapped around the edges of the windows to both cushion and seal. Do not stretch during application, it will pull back and leave gaps. Piper used this extensively in their window installations. The 1/4" tape IS used mainly for vent window gaskets.

1/4" x 1/8" x 10' Roll ..... P/N 05-04754..... **$7.25**
1-1/4" x 1/16" x 100" Roll .... P/N 05-04865..... **$39.75**

CANOPIES FOR HOMEBUILTS

These canopies for homebuilt aircraft are made from the finest quality materials and are available in clear, green or smoke tint. All canopies are shipped via truck or UPS freight collect. Canopies are special order and are non-cancelable and non-returnable.

Specify Clear, Green or Smoke Tint.

Aircraft	Thickness	Price
Acroduster I (29" or 34" long)	1/8"	**$395.00**
Acroduster II	1/8"	**$795.00**
Acrosport (29" or 34" long)	1/8"	**$395.00**
Barracuda	3/16"	**$995.00**
Berkut	1/8"	**$895.00**
Cassutt Standard (flat wrap)	1/8"	**$275.00**
Cozy Mark IV Canopy	1/8"	**$537.00**
Cozy Mark IV Window Set	1/8"	**$244.00**
Cozy Canopy	1/8"	**$480.00**
Cozy Window Set	1/8"	**$244.00**
EAA Biplane (single seat) (29" or 34" long)	1/8"	**$395.00**
E-Racer	3/16"	**$795.00**
Emeraude	3/16"	**$1095.00**
GP-4	3/16"	**$995.00**
KR-1	.080	**$295.00**
KR-2	1/8"	**$395.00**
KR-2 (Super Canopy)	1/8"	**$650.00**
Long-EZ	1/8"	**$795.00**
Moni/monerai	.080	**$760.00**
Osprey II Standard Canopy w/o rear windows	1/8"	**$480.00**
Osprey II Bubble Canopy w/rear windows	1/8"	**$1150.00**
Osprey II Rear Window set	1/8"	**$195.00**
Pitts S-1 (bubble style, not factory Pitts)	1/8"	**$395.00**
Quickie (Q1)	.080	**$395.00**
Quickie 2 (Q2)	3/16"	**$675.00**
RV-3	1/8"	**$495.00**
RV-4	1/8"	**$795.00**
Skybolt (rear seat) (29" or 34" long)	1/8"	**$395.00**
Skybolt (full canopy)	1/8"	**$795.00**
Sonerai I	1/8"	**$295.00**
Sonerai II	1/8"	**$595.00**
Sonerai II (extra visibility "big" canopy)	1/8"	**$795.00**
Starduster I	1/8"	**$495.00**
Starduster II	1/8"	**$895.00**
Starduster II (rear seat only)	1/8"	**$495.00**
T-18 Windshield	3/16"	**$240.00**
VP-1	1/8"	**$795.00**
VP-2	1/8"	**$795.00**
Vari-Eze	1/8"	**$795.00**

Request quote on unlisted models. We can furnish CUSTOM CANOPIES from 3 view drawings. Send detailed sketch or print for quotation.

TODD'S CANOPIES

These optically perfect canopies are the very best quality available. They are superior in quality and less expensive than other sources. The Cozy and AeroCanard canopies include the windows, and the Berkut includes front and rear canopy. Prices include crating, and freight averages $70 to $100.

Aircraft	Clear P/N	Price	Tinted P/N	Price
AeroCanard	05-01145	**$400.00**	05-01146	**$450.00**
Berkut	05-01147	**$647.95**	05-01148	**$500.00**
Cozy III	05-01149	**$400.00**	05-01151	**$500.00**
Cozy Mark IV	05-00437	**$532.00**	05-00438	**$532.00**
ERacer	05-01152	**$375.00**	05-01153	**$425.00**
Long EZ	05-00439	**$532.00**	05-00440	**$580.95**
Varieze	05-01154	**$701.00**	05-01155	**$534.00**
Christian Eagle	05-01156	**$466.95**	05-01157	**$450.00**
Harmon Rocket	05-01158	**$425.00**	05-01159	**$475.00**
KR2S	05-01160	**$489.00**	05-01161	**$489.00**
Osprey	05-01162	**$513.00**	05-01163	**$425.00**
RV-3	05-01164	**$458.00**	05-01165	**$425.00**
RV-4	05-01166	**$455.95**	05-01167	**$499.95**
RV-8	05-01168	**$506.00**	05-01169	**$457.95**

ASHBY AIRCRAFT GLARESHIELDS

ASHBY AIRCRAFT GLARESHIELDS

Produced from 100% fiberglass that is hand-laminated to form a one-piece structure. They are manufactured out of fire retardant resin that meets Federal Aviation Regulations (FAR) parts 23 and 25. Prevent sun from reflecting in your instruments, allowing you to read them clearly. It will also protect sensitive instruments from heat and is impervious to damage from the sun's rays. Molded with a rich leather texture, which is pleasing to the eye, and has a semi-gloss black finish. On most models it fits flush with the windshield, and extending 3" past the front of the panel. A reinforced lip for mounting optional lights to illuminate the instrument panel, which also serves as hand-holds when entering and exiting the cockpit, or when adjusting your seats. There is also space for switches and annunciator lights. STC is pending for use on US type certificated aircraft. This part can be manufactured under contract with the owner operator under FAR 21.303b2. It is the owner operator's responsibility ti determine airworthiness and applicability.

CESSNA

For Model	Glareshield		w/ 12V Lights		w/24V Lights	
	Part No/	Price	Part No/	Price	Part No/	Price
120, **140**, **150** (thru F, 1959-1966),	05-03871	**$295.00**	05-03908	**$365.00**	05-03945	**$365.00**
150G thru L (1967-1977), **152** (1978-1986)	05-03872	**$295.00**	05-03909	**$365.00**	05-03946	**$365.00**
170, **170A** (1948-1951), **172** (1956-1958)	05-03873	**$295.00**	05-03910	**$396.95**	05-03947	**$396.95**
170B, 1952-1956	05-03874	**$295.00**	05-03911	**$396.95**	05-03948	**$396.95**
172A thru D(1960-1963), **175** (all)	05-03876	**$295.00**	05-03913	**$396.95**	05-03950	**$396.95**
172 1959 only	05-03875	**$295.00**	05-03912	**$396.95**	05-03949	**$396.95**
172E thru N, **172P**, **172Q**, **172XP**, **172RG** 1974-1986 (all)	05-03877 Stc'd	**$295.00**	05-03914	**$396.95**	05-03951	**$396.95**
180A thru H, **182** thru D, **185** thru E, F Models Prior to 1974	05-03878 Stc'd	**$295.00**	05-03915	**$396.95**	05-03952	**$396.95**
180J, **185** (1974-1986)	05-03879	**$295.00**	05-03916	**$396.95**	05-03953	**$396.95**
182 (1962-1963)	05-03880	**$295.00**	05-03917	**$396.95**	05-03954	**$396.95**
182 1964-1965 (Early Slight Radius on Top.)	05-03881	**$295.00**	05-03920	**$396.95**	05-03957	**$396.95**
182 (1969-1974)	05-03884	**$295.00**	05-03921	**$396.95**	05-03958	**$396.95**
182 (1975 only)	05-03885	**$295.00**	05-03922	**$396.95**	05-03959	**$396.95**
182 1976-1986, **182R**	05-03886	**$295.00**	05-03923	**$396.95**	05-03960	**$396.95**
205 (1963-1965 early)	05-03887	**$295.00**	05-03924	**$396.95**	05-03961	**$396.95**
206 1965 (Late) -1967 Not avail. for 1968-1969, **210** 1965 (Late) -1967 Not avail. for 1968-1969.	05-03888	**$295.00**	05-03925	**$396.95**	05-03962	**$396.95**
206 (1970-1986), **210** (1970-1986)	05-03889	**$295.00**	05-03926	**$396.95**	05-03963	**$396.95**
210 (1960-1961)	05-03890	**$295.00**	05-03927	**$396.95**	05-03964	**$396.95**
210 (1962 only)	05-03891	**$295.00**	05-03928	**$396.95**	05-03965	**$396.95**
XP210	05-04096	**$295.00**	05-04097	**$473.95**	05-04098	**$473.95**
336 (all), 337 (all)	05-03892	**$295.00**	05-03929	**$396.95**	05-03966	**$396.95**

PIPER

For Model	Glareshield		w/ 12V Lights		w/24V Lights	
	Part No/	Price	Part No/	Price	Part No/	Price
PA-23 (1956-1963)	05-03893	**$295.00**	05-03930	**$396.95**	05-03967	**$396.95**
PA-24, PA24-250, 260, 400, **PA-30** (all)	05-03894 Stc'd	**$295.00**	05-03931	**$496.95**	05-03969	**$497.95**
PA-28-140, 150, 151, 160, 161, 181, 201T, 235, 236, **PA-28S**-160, 180, **PA-28R**-180, 200, 201, 201T, **PA-28RT**-201, 201T, **PA-44**-180, 180T	05-03895 Stc'd	**$295.00**	05-03932	**$396.95**	05-03970	**$396.95**

PIPER CONT.

For Model	Glareshield		w/ 12V Lights		w/24V Lights	
	Part No/	Price	Part No/	Price	Part No/	Price
PA-28(1964-1967), **PA-28**-150, 160, 180, 235 (Large Hump over Radio Stack)	05-03896 Stc'd	**$295.00**	05-03933	**$396.95**	05-03971	**$396.95**
PA-32-260, 300, 301, 301T, 301FT, 301XTC, **PA-32S**-300, **PA-32R**-300, 301T, 301(SP), 301(HP), **PA-32RT**-300, 300T **PA-34**-200, 200T, 220T	05-03897 Stc'd	**$295.00**	05-03934	**$396.95**	05-03972	**$396.95**
PA-38 (all)	05-03898	**$295.00**	05-03935	**$396.95**	05-03973	**$396.95**

BEECHCRAFT

For Model	Glareshield		w/ 12V Lights		w/24V Lights	
	Part No/	Price	Part No/	Price	Part No/	Price
BE-23	05-04093	**$295.00**	05-04094	**$473.95**	05-04095	**$473.95**
BE-33 1947-1961, **BE-35** 1947-1961	05-03899	**$295.00**	05-03936	**$396.95**	05-03974	**$396.95**
BE-33 1962-1971, **BE-35** 1962-1971, **BE-55** 1962-1971, **BE-95** 1962-1971	05-03901	**$295.00**	---	**---**	---	**---**
BE-33 1962-1971, **BE-35** 1962-1971, **BE-55** 1962-1971, **BE-95** 1962-1971	05-03903 With Plenum	**$365.00**	05-03940	**$466.95**	05-03977	**$466.95**
BE-33 1972-1983, **BE-35** 1972-1983, **BE-36** 1971-1983, **BE-58** 1971-1983	05-03905 With Plenum	**$365.00**	05-03942	**$466.95**	05-03979	**$466.95**
BE-33 1962-1983, **BE-35** 1962-1983	05-03904	**$295.00**	---	**---**	---	**---**

MOONEY

For Model	Glareshield		w/ 12V Lights		w/24V Lights	
	Part No/	Price	Part No/	Price	Part No/	Price
201 (1977-1983)	05-03907	**$295.00**	05-03944	**$396.95**	05-03981	**$396.95**

LIGHTS

PMA Approved Panel Rope Lights, 12 or 24 Volts DC, 18" or 34" Long. Illuminates instruments with 8 or 12 2000+ hour bulbs, respectively.

Lights	Part No.	Price
12 Volts, 8 Bulbs, 18"	05-03998	**$63.00**
24 Volts, 8 Bulbs, 18"	05-03999	**$122.95**
12 Volts, 12 Bulbs, 34"	05-03994	**$102.95**
24 Volts, 12 Bulbs, 34"	05-03995	**$109.50**

GLARE SHIELD KIT

This Glare Shield kit provides the materials to produce a professional custom padded glare shield. The composite lay-up of material has passed the FAR 25.853 burn requirements and a burn certificate is provided with each kit. Kit includes 1.5 linear yards x 54" wide black SPT Leather-Like Vinyl, 1.5 linear yards x 48" wide 1/8" SPT open cell foam cushioning, two 1/16" x 8" x 50" ABS base material aluminum stiffener, bull nose material, template foam and cardboard template material. Complete easy to follow instruction sheet is provided to help you produce a professional looking padded glare shield that has the look and feel of leather. The electroluminescent Glow Strip Glare Shield Lighting (P/N 11-00848) fits nicely under this Glare Shield.

P/N 11-06324 ..... **$239.95**

AP

WINDSHIELDS – VORTEX GENERATOR KITS

CEE BAILEY AIRCRAFT WINDSHIELDS

Cee Bailey's Aircraft Plastics has been producing superior replacement windows and windshields for light aircraft since 1955. These windshields are custom built to fit your aircraft's serial number. This handcrafting insures a perfect, distortion-free windshield, trimmed and ground to fit your aircraft with little or no modification. Optical qualities, contour, shape and fit are exceptional. All windshields and windows are FAA/PMA approved. Cee Bailey warranties its products against defective materials and workmanship.
Most windows and windshields are available in clear, green, and solar grey. Prices are for clear. Add 15% to prices for green or grey tints. When ordering, specify model number, year, and serial number of the aircraft.

Make/Model	Price
Aero Commander 2pc w/s Left	$183.00
500, 520, 560, 680 Right	$183.00
Aero Commander 100 Darter-Lark Volaire 10 or Volaire 10A	$373.00
Aeronca Citabria	$260.00
Aeronca Chief	$299.00
Beechcraft Musketeer, Sundowner, Sierra, Sport (.125)	$338.00
Musketeer, Sundowner, Sierra, Sport (.187)	$391.00
Bonanza 33/35, 2pc w/s (per side)	$178.00
Bonanza 33/35/36/55/58/95 1pc w/s (must check s/n carefully)	$500.00
Bellanca Cruismaster models 14-19, 14-19-2, 14-19-3	$367.00
Viking, Super Viking 14-19-3A,17-30 17-30A, 17-31A, 17-31ATC	$296.00
Cessna 120-140 (S/N 8800 & up)	$251.00
140A, 150, 152	$251.00
152	$281.00

Make/Model	Price
172 (S/N50573 to 72884)	$365.00
180,182 (S/N52556 to 53598)	$393.00
182 (S/N 53599 to 55844)	$400.00
182 (S/N 55845 to 64296)	$450.00
205, 206, U206, P206	$400.00
207	$460.00
210 (S/N 58716 to 58818)	$454.00
Ercoupe - Fornair (bubble type w/s)	$245.00
Grumman - AA1, AA1A, AA1B	$302.00
GrummanCanopy-AA1,AA1A,AA1B	$328.00
Luscombe 8 series	$230.00
Mooney M20, M20a/b/c/d/e prior to 1965 (2pc w/s)	$176.00 per side
Mark21,M20c,Super21,M20e,Master M20d, Executive21 M20f, after 1965	$118.00 per side
Ranger M20c, Chaparral M20e, Executive M20f, Statesman M20g	$230.00
Navion A/B/D/E/F Std. or flush type (2pc w/s)	$137.00 per side
Navion Rangemaster G&H 2pc w/s	$137.00

Make/Model	Price
Piper J-3 Cub	$158.00
PA-12 square top (late model)	$261.00
PA-12 square top (early model)	$282.00
PA-15/16/17/22 108 colt bubble	$285.00*
Apache 23 (S/N 1502 & up) RorL	$250/side
Pawnee 25 (S/N 656 & up)	$130.00
Cherokee PA-28 (.125) RorL	$142./side
Cherokee PA-28 (.250) RorL	$172./side
Stinson HW-75 2pc	$176./side
Stinson Voyager108, 108-1/2/3 2pc w/s	$171./side
Taylorcraft BC-12D, 1946 & up	$229.00
Taylorcraft B 1940–41	$229.00
Yak 52 Windshield (4 sections) *all windows available canopy, side windows, center fixed, aft siding, rear fixed	$395.00
Yak CJ69 (*all windows available canopy, fwd sliding,center fixed,aft siding,rear fixed)	$360.00

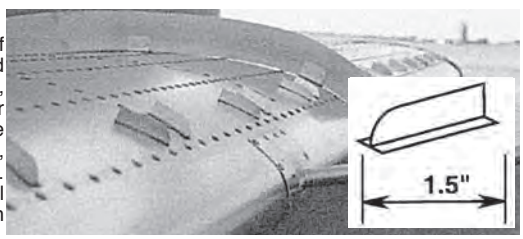
RV WINDSHIELD FAIRING

* A one-piece fiberglass fairing for Van's Aircraft RV6, RV7, RV9 series aircraft (Slider option)
* Designed with generous overlap areas to fit any installation
* Built from 4-layers of 8.8oz cloth and epoxy resin. Fully primed and ready for trimming/installation
* Save 25+ hours and lots of mess versus the traditional build-up method
* Large box is 30"x30"28", but just 8lbs.

P/N 05-03664 ..... **$513.00**

MICRO VORTEX GENERATOR KITS

Micro Vortex Generators from Micro Aerodynamics, Inc. are available for a wide range of aircraft and can reduce stall speed, improve aileron response, improve cross wind control, and reduce landing and takeoff roll. The kits consist of vortex generators mounted on the wings, the horizontal stabilizer, and the vertical stabilizer. The generators are manufactured under FAA/PMA from 6063T6 aluminum and are curved to fit the contour of the wing. Included in the kits are installation tools, detailed drawings and instructions, templates for positioning VG's, spares, Loctite Depend adhesive and all the materials needed for the easy one-day installation. When ordering, specify aircraft, serial number, N number, paint name and number (additional **$200.00** to match), make and model, and any modifications to aircraft. Generic VG kit used on LongEZ, RV-4/6/8, Rans, Murphy Rebel and others. Specify Aircraft make and model.

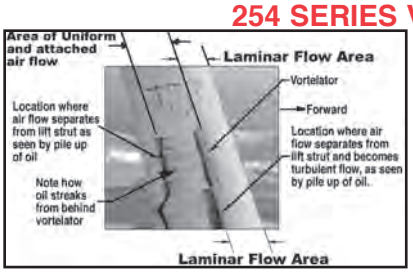


Make/Model	Part No.	Price
CESSNA TWINS 310G thru 310Q	05-00602	$1,950.00
310R & T310R (ZFW & GWI - 180 lbs)	05-00604	$2,450.00
320B/C/D/E/F	05-00605	$1,950.00
310I & 310J	05-04258	$1,950.00
336 & 337	05-04404	$1,950.00
340A, 340, 335 (GWI 300 lbs)	05-00606	$2,950.00
401, 401A, 401B	05-00607	$1,950.00
402, 402A, 402B	05-00608	$1,950.00
402C (ZFW & GWI - 360 lbs)	05-00609	$2,950.00
411, 411A	05-00610	$2,450.00
414	05-00611	$1,950.00
414A, 414AW (ZFW & GWI - 350 lbs)	05-00613	$2,950.00
421, 421A	05-00614	$1,950.00
421B & 421C (GWI - 129 lbs)	05-00615	$2,950.00
CESSNA SINGLES		
120, 140 Series	05-04393	$695.00
150, 152 (all models)	05-04394	$695.00
170 "Rag Wing"	05-04189	$950.00
170A, 170B	05-00616	$1,450.00
172, 175 Series	05-00618	$1,450.00
177, 177A, 177B, 177RG, F177RG	05-04397	$1,450.00
180, 185 Series	05-00617	$1,450.00
180, 185 Vertical Tail Upgrade	05-04396	$150.00
182 Series	05-04469	$1,450.00
205, 206, 207 Series	05-00619	$1,450.00
210 (all models)	05-04470	$1,450.00
BEECHCRAFT TWIN		
Baron 55 A/B/C/D/E	05-00621	$2,450.00
Baron 58, 58A	05-00623	$2,950.00
Hawker Beechcraft G58 Baron	05-04471	$2,950.00
Baron 58TC, 58P	05-00624	$2,450.00
Baron 55 Upgrade kit (w/older VG system)	05-00625	$950.00
Duke 60, A60, B60	05-00626	$2,450.00
Twin Bonanza	05-00627	$1,950.00
Travel Air	05-00628	$1,950.00
BEECH SINGLES		
Musketeer, Sierra, Sundowner	05-04391	$1,450.00
Bonanza 35 Series	05-00629	$1,450.00
Bonanza 33, 36, A36, A36TC, B36TC	05-00630	$1,450.00

Make/Model	Part No.	Price
Beechcraft Debonair 33	05-04392	$1,450.00
Hawker Beechcraft G36 Bonanza	05-04192	$1,450.00
PIPER TWINS		
Aztec PA-23-250	05-00633	$1,950.00
Geronimo PA-23-180	05-00634	$1,950.00
Twin Comanche PA-30, PA-39	05-00635	$1,950.00
Seneca II (ZFWI - 168 lbs)	05-04472	$1,950.00
Seneca I, III, IV, V	05-04398	$1,950.00
Seminole PA-44-180, PA-44-180T	05-00636	$1,950.00
PIPER SINGLE		
J-3, J-4, J-5, PA-11 (includes the horizontal stabilizer)	05-00640	$695.00
J-3 Upgrade Kit - Tail VGs on underside of stabilizer provide full-span elevator authority and improve controllability.	10-04227	$150.00
PA-12/PA-18	05-00639	$695.00
PA-15, PA-16, PA-17	05-04399	$695.00
PA-22, PA-20	05-00641	$695.00
PA-24 Comanche	05-04401	$1,450.00
PA-28 All Models	05-00642	$1,450.00
PA-32 Cherokee Six, Lance (except T-Tail)	05-00939	$1,658.00
PA-32 Saratoga	05-00938	$1,450.00
MOONEY		
M20, M20A, M20B, M20C, M20D, M20E, M20F, M20G, M20J, M20K, M20L, M20M, M20R, M20S	05-04402	$1,450.00
ROCKWELL COMMANDER		
112, 112TC, 112TCA, 114, 114A, 114B, 114TC, 115TC	05-00646	$1,450.00
LAKE		
LA-4, LA-4A, LA-4P LA-4-200, Model 250	05-00647	$1,950.00
AMERICAN CHAMPION		
Aeronca Champ, Scout Citabria: 7AC, 7ACA, 7BCM, 7CCM, 7DC, 7EC, 7ECA, 7FC, 7GC, 7GCA, 7GCAA, 7GCB, 7GCBA, 7GCBC, 7HC, 7JC, 7KC, 7KCAB, 8KCAB, 8GCBC	05-00644	$695.00
Aeronca Chief: 11AC, S11AC, 11BC, S11BC, 11CC, S11CC	05-04473	$695.00
Aeronca Sedan: 15AC, S15AC	05-04190	$950.00
AVIAT Husky A-1, A-1A, A-1B	05-00643	$695.00
MAULE M-4, M-5, M-6, M-7 MT-7, MX-7, MXT-7, M-8	05-00645	$695.00
STINSON 108, 108-1, 108-2, 108-3, 108-5	05-04403	$695.00
TAYLORCRAFT Taylorcraft Series	05-01208	$695.00
AGRICULTURAL Air Tractor, Ayres Thrush, Brave, Cessna 188, Dromader, Weatherly	05-00648	$1,450.00
KIT PLANES RV, Murphy Rebel, Long EZ	05-00001	$493.95

VORTELATOR KITS

254 SERIES VORTELATOR KITS FOR HOMEBUILT AIRCRAFT



Can increase your homebuilt aircraft speed by 4 to 7.5 mph. This is accomplished by placing vortelators at certain critical locations which will cause the boundary layer to stay attached to flying surfaces for a greater distance, and to keep the boundary layer thinner. The net result of these two actions is that it reduces both the profile drag and skin friction drag components of the parasite drag. Contains a 100 foot roll of vortelator, more than enough for most homebuilts, plus clear instructions with pictures on how to determine where to, and how to, place the vortelators to increase your aircraft's speed. Though it's not a requirement for homebuilt aircraft these vortelators are FAA STC'd and manufactured under a FAA PMA because they are also approved for certified aircraft. That means you get the benefit of FAA certified aircraft parts. The booklet 120-1 "Fly to use less fuel" (PN 08-00732) includes an adhesive backed aluminum placard to list the working airspeeds of your aircraft.

Kit Number	Description or Effect of Installing Vortelator Kit
254-AD	Delineates a procedure for determining where vortelators should be placed on an aircraft, for increased speed, by visualizing surface air flow through simple flight tests at straight and level flight at cruising speed. This kit is ideal for those aircraft models that do not have enough aircraft out in the field for Aircraft Development to economically warrant the time and expense of developing kits for.
254-RV3 254-RV4 254-RV6/6A 254-RV7/7A 254-RV8/8A	The vortelating of the airframes of these RV aircraft will give about a 4 to 5 MPH increase in speed and a decrease in the stalling of about 2 MPH. The vortelating of the propellers of these aircraft is more random in nature. From flight tests the increase in speed can be from 2 to 4 MPH depending on the propeller used. The vortelator kit for the RV6A takes about 8 hours to install on the aircraft. Between the decrease in stall speed and the increase in the aircraft's speed one gets about 7 MPH or more of additional MPH usage.
254-LANCAIR	The vortelating of the airframes of the Lancair 235, 320, 360 aircraft will give about a 4 to 5 MPH increase in speed. The vortelating of propellers of these aircraft is more random in nature. From flight tests the increase in speed can be from 2 to 4 MPH depending on the propeller used.
254-T18	The vortelating of the airframes of the T-18 aircraft will give about a 4 to 5 MPH increase in speed. The vortelating of propellers of the aircraft is more random in nature. From flight tests the increase in speed can be from 2 to 4 MPH depending on the propeller used.

Description	Part No.	Price
Vortelator Kit 254-AD	05-00851	**$250.00**
Vortelator RV3 Kit 254-RV3	05-00852	**$219.00**
Vortelator RV4 Kit 254-RV4	05-00853	**$219.00**
Vortelator RV6/6A Kit	05-00854	**$219.00**

Description	Part No.	Price
Vortelator RV7/7A kit	05-00855	**$219.00**
Vortelator RV8/8A kit	05-00856	**$219.00**
Vortelator Kit for Lancair	05-00857	**$219.00**
Vortelator kit for T18 254-T18	05-00858	**$219.00**

246-100 CESSNA VORTELATOR KIT - can increase Cessna speeds by up to 6 MPH. This is accomplished by placing vortelators at certain critical locations which cause the boundary layer to stay attached to flying surfaces for a greater distance, and to keep the boundary layer thinner. The basic procedure for installing the kit is to prepare the surface to which the vortelator is going to be applied by thoroughly cleaning the surface. Then simply peel the liner backing off the adhesive back vortelator and apply it to the cleaned surface. The vortelator is clear and therefore takes on the color of the surface to which it is applied. This vortelator kit is FAA STCd and manufactured under a FAA PMA approval. The kit comes with 200 feet of vortelator, more than enough for one airplane, and clear simple instructions on how to install the kit. The kit can easily be installed in one day and will add about 5 ounces of weight to the aircraft and not change the handling qualities of the aircraft. Please visit our website for a list of FAA approved Cessna models..... P/N 08-00731 ..... **$750.00**

FLY TO USE LESS FUEL - Explains the working speeds of the aircraft such as, steepest climb speed, best rate of climb speed from 0 to 5,000 ft., best rate of climb speed from 5,000 to 10,000 ft., speed of most flight time per gallon of fuel, speed of most miles per gallon of fuel, speed of slowest decent power off, speed of shallowest glide. It explains these working speeds of the aircraft in simple to understand graphics, no complicated mathematical formulas used. And what's even better there's no need to do a time consuming flight test program to determine the working speeds of your aircraft. Or for that matter any type certified aircraft. This booklet gives simple multiplication factors, based on cruising speed, to determine the working speeds for your homebuilt aircraft. Knowing the speed to fly at to go the greatest distance or stay up the greatest amount of time can be critical under certain conditions. Flying your aircraft using the techniques described in this booklet will save on the cost of gasoline an item that will only continue to escalate in cost as time goes by. This booklet comes with an adhesive backed aluminum placard to list the working airspeeds of your aircraft Fly To Use Less Fuel booklet.....P/N 08-00732 ..... **$19.95**

PROPELLER VORTELATOR KITS FOR ULTRALIGHT, HOMEBUILT AND CERTIFIED AIRCRAFT

Capable of increasing your aircraft speed and RPMs. This is accomplished by placing vortelators at certain critical locations on the propeller's most inefficient highest air drag areas. The vortelators will cause the boundary layer to stay attached to the propeller surface for a greater distance, and to keep the boundary layer thinner. Though it's not a requirement for ultralight or homebuilt aircraft these vortelators are FAA STC'd and manufactured under a FAA PMA because they are also approved for certified aircraft. Contains a three foot strip of vortelator, more than enough to vortelate up to a three bladed propeller. Plus clear instructions with pictures on where to place the vortelators on the propeller. The vortelator kit weighs less than .05 ounces and takes less than a half hour to install. The vortelators have a pressure sensitive adhesive backing so the installation process is simply to clean the area of the propeller where the vortelators will be placed and stick them on to the propeller. Can be used on virtually all propellers that are attached to engines of less than 500 HP be they metal, composite, or wood are approved for the installation of vortelator kits. This kit is not recommended for propellers that are equipped with anti-icing devices.

259-100 Propeller Vortelator Kit for Ultralight Aircraft - Capable of INCREASING Your ultralight aircraft speed by 2 to 5 mph and increasing your engine speed by up to 150 rpm. P/N 05-01465..... **$33.75**

259-200 Propeller Vortelator Kit for Homebuilt Aircraft - Capable of Increasing your homebuilt aircraft speed by 2 to 4 mph and your rpm by 20 to 50 rpm. That's if you have a fixed pitch propeller. If you have a constant speed propeller, for a given RPM and manifold pressure the propeller will be at a slightly larger pitch giving you more speed. P/N 05-01466..... **$33.75**

260-100 Propeller Vortelator Kit for Certified Aircraft - Of increasing your aircraft speed by 2 to 4 mph and your rpm by 20 to 50 rpm. That's if you have a fixed pitch propeller. If you have a constant speed propeller, for a given RPM and manifold pressure the propeller will be at a slightly larger pitch giving you more speed. Please visit our website for a list of FAA approved propeller models P/N 05-01467..... **$104.95**

VORTEX GENERATOR STOL KIT

The vortex generators are precision injected molded and made from UV stabilized clear polycarbonate material. This material is extremely strong and lightweight. 100 vortex generators will weigh approximately 1 ounce. The bottom of the vortex generator has a slight curve to match the wings airfoil. They have a full sweeping sail which wind tunnel testing has shown to be superior to those with a flat top. The vortex generator has a base of 1.0" X .40". There are many advantages to this kit: 1) increased lift, 2) slower stall speed by 4 to 6 MPH, 3) shorter landing distances, 4) shorter takeoff distances, 5) higher angle of climb, 6) tighter turns, 7) gentler stalls, 8) better aileron authority at slow speed, 9) aircraft is more controllable at slow speed, 10) in general increased total performance and safety. These kits come with clearly written installations instructions that allow you to determine where on the aircraft to install the vortex generators. also includes the number of vortex generators (VG's) listed in the table below for the kit selected. Plus a 3M very high bond adhesive tape.

Kit No.	Description of Vortex Generator Kit	No. of VG's	Part No.	Price
261-AD1	Deluxe generic vortex generator STOL kit for homebuilt aircraft	150	05-01776	**$375.00**
261-AD2	Generic Vortex Generator STOL Kit for Homebuilt Aircraft	65	05-01780	**$168.95**
261-RV1	Vortex Generator STOL Kit for the RV-3 Aircraft	65	05-01777	**$225.00**
261-RV1	Vortex Generator STOL Kit for the RV-4 Aircraft			
261-RV1	Vortex Generator STOL Kit for the RV-6/6A Aircraft			
261-RV1	Vortex Generator STOL Kit for the RV-7/7A Aircraft			
261-RV1	Vortex Generator STOL Kit for the RV-8/8A Aircraft			

VORTEX GENERATORS – AIR VENTS

HALL BROTHERS VORTEX GENERATORS FOR HOMEBUILTS

These Vortex Generators can be temporarily attached to the wing with tape for testing without harming the wing surface and then moved or attached permanently. This temporary attachment capability allows the pilot to prove out their effectiveness before permanent attachment. The design also gives a generous surface area for bonding.The Vortex Generators are made from .025" 6061-T6 aluminum for maximum durability. Hall Brothers Vortex Generators are not just used for lowering the stall speed. The stall characteristics are normally improved as well as aileron response. Some pilots have reported an increase in the rate of climb of their airplane. Many pilots say that the overall "feel" and handling of their airplane has improved throughout its speed range. The Hall Brothers Vortex Generator Kit includes enough Vortex Generators for a typical homebuilt wing (46 pairs) and stabilizer (16 pairs), tape for temporary attachment, adhesive for permanent attachment and instructions.

P/N 05-01480..... **$184.50**

VORTEX GENERATORS FOR CESSNA AIRCRAFT

Manufactured under our FAA PMA from aircraft grade aluminum and are alodined to a mil-spec, ready to accept paint before installation. Included in each kit are installation tools, computer cut templates, detailed illustrated drawings and instructions, and Loctite Depend ™Adhesive for installing the vortex generators on your airplane.

Description	Part No.	Price
Cessna 310I/310J	05-04258	**$1,950.00**
Cessna 402B	05-04259	**$1,950.00**
Cessna 421C	05-04261	**$2,950.00**
Cessna (T)210 SER	05-04264	**$1,450.00**
Cessna P210N	05-04265	**$1,450.00**
Cessna P210R	05-04266	**$1,450.00**

STOLSPEED VORTEX GENERATORS

Stolspeed VGs are streamlined for less drag and better appearance than other VGs. Stolspeed VGs have no sharp points and are flexible, so it's easier to wash or cover the wings. The special 3M adhesive is removable without damaging aircraft paint. Stolspeed VGs have a very slim rounded fin to give them good flexibility, and a rounded, tapered base that 'flows' into the wing surface. In clear material they're almost invisible.

80 (Enough for the tail)..... P/N 05-04458..... **$69.95**
120 (Enough for the main wing plus spares) .. P/N 05-04457..... **$99.95**

ALUMINUM EYEBALL AIR VENTS

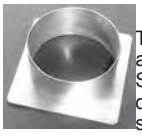
VIEW 1

VIEW 2

Aluminum airline style "eyeball" air vent swivels to direct air where needed.Knurled collar of outlet rotates to control air volume. Mounts in 1-7/8" dia. hole.

P/N 05-04065..... **$194.95**

EYEBALL AIR VENT ADAPTER



The extension on the back of these aluminum eyeball air vents is very narrow and allows little room to attach SCAT ducting. This adapter enables the user to attach 2" diameter SCAT ducting to the back of the vent using a stainless steep clamp. P/N 05-04067..... **$17.65**

EYEBALL SWIVEL VENT

Front *Back*
P/N 05-00779

This high quality, economical swivel air vent is made from 2024T351 aluminum and is available anodized black or grey. Diameter of the flange is 2.75" and the vent is designed to attach with a standard 2" air duct flange. The vent hole of this eyeball swivel vent is 7/8". The knurled collar on the vent swivels 60° to adjust air volume anddirect air flow as desired. The vent features 4 mounting holes (1/8" dia.) which are spaced 2-3/8" apart or a mounting plate with a thickness of .71". Made in USA Eyeball Swivel Vent - Black.....P/N 05-00779 ..... **$59.75**
Eyeball Swivel Vent - Grey.....P/N 05-00787 ..... **$59.75**

PLASTIC EYEBALL AIR VENTS

These ball and socket air vents are injection molded T grade ABS. The vent orifice is 1" dia., and the ball swivels 45°. The mounting flange is 2-1/8" square, and the distance between mounting hold centers is 1-11/16". Mounts in 1.75" dia. hole & uses 1-3/4" ducting. Wt: 1.25 oz. ea.

Gray.....P/N 05-04082 ..... **$17.95** White.... P/N 13-01943 . **$17.95**
Black.....P/N 05-04079 ..... **$17.95** Beige.... P/N 05-04081 . **$17.95**

VENTUBE FOR CESSNAS

The Ventube is a plastic unit that consists of an exterior tube and a lockable interior tube with a cap. Air flow control is accomplished by extending or retracting the interior tube. Ventube enhances pilot and passenger comfort, allows reliable closure of the air vent, controls vent direction and flow, and reduces air vent noise and leakage. FAA approved for Cessna 120, 140, 150, 152, 170, 172, 175, 180, 182, 185, 190, 195, 205, 206, 207, 210-210F, and 305. Detailed instructions, STC, FAA Form 337, etc. are enclosed with each pair. P/N 05-04091..... **$94.65/pr.**

AIRFLOW ENHANCEMENT KIT

Improves the cabin airflow in General Aviation aircraft, specifically Cessnas. Combined with Ventubes they enhance the pilot and passengers comfort (cooling & heating), allow reliable closure of the inlet air vents, control cabin air direction, increase cabin air flow, and reduce inlet air noise and leakage. The kit consists of two cabin exit vents, CEV, to allow the cabin air to exit into the aft fuselage and the fuselage exit vent, FEV in the modified inspection plate, to allow the cabin air to exit the fuselage of the aircraft. P/N 05-04080 ..... **$76.75**

THE COMPLETE AIRFLOW KIT

Ventubes™ (pair) - controls air flow into the cabin. Cabin Exit Vents - allows air to exit to fuselage. Fuselage Exit Vent - allows air to exit the aircraft.

P/N 13-03577 ..... **$151.95**

VISTA-VENTS

Knob adjustment permits complete control of cabin air. Mounts at four points in 2-1/2" dia. hole.

P/N 13-03500 ..... **$19.75**

CABIN AIR VENTILATOR

Aluminum 90° elbow type. Knurled collar rotates to control air volume. Mounts to a 2 1/2 in. Dia flange. For 11/4 Id scat ducting. Also good for cabin heat vents.

P/N 05-04075 ..... **$79.50**

"WHISPERFLO" VENTILATORS

Large molded plastic vent with 40° swivel. Thumb operated closure controls degree of opening. Mounts in 2-1/2" dia. hole. Large orifice (1-3/4") provides maximum cooling. Mounting in floor of aircraft assures full cabin ventilation. Use with SCAT-11 ducting. Black.....P/N 05-04073 ..... **$18.50**
Ivory.....P/N 05-04071 ..... **$18.50**

ULTIMATE VENTILATOR

The Ultimate Ventilator is machined from aluminum block and comes with holes tapped for 4-40 screws. 1.75" disk articulates out into airstream and does not leak when closed. Very popular with T-18 & RV builders. P/N 05-04090 **$93.50**

SNAPVENT™ AIR VENTS

Adjustable plastic ventilators for use as fresh air intakes or air exhausts. Easily installed in plastic windshield or metal cowling. Two sizes:

MODEL A-2-100 Mounts in a 2" dia. opening. Can be turned to provide any degree of ventilation. The "Off" position is with the opening downward. P/N 05-01178 .....**$15.25/pr.**

MODEL CC3251 Mounts in 31/4" dia. opening. Rotates to provide any degree of ventilation. Retracts to a closed position nearly flush with the mounting surface. P/N 05-01179 .....**$17.75/pr.**

MODEL F325A Large tabs on lower flange and tapered profile make this vent ideal for higher airspeeds. Mounts in 3-1/4" opening in plastic windshield or metal cowling. P/N 05-04088 .....**$13.75/pr.**

MODEL F318 Tapered in profile in back provides a more direct flow of air. Mounted in 3-3/16" opening in plastic windshields or metal cowling. P/N 05-04089 .....**$13.75pr.**

CESSNA 210 FRESH AIR VENT SYSTEM

Replaces the forward cabin vent. Features durable Wemac air vents, full/partial closure, directional control, and postive shut-off. All metal construction. Completely replaces the old style, plastic overhead fresh air vents in most Cessna 210 aircraft. Full system includes the forward center, and aft systems. STC approved.

Full system.....P/N 05-04092 .....**$1,538.00**
Pilot & Co-Pilot.....P/N 05-04083 .....**$958.00**
Center Vents (total of 2 units).....P/N 05-04085 .....**$297.95**
Rear Vents (total of 2 units).....P/N 05-04087 .....**$490.95**

ACTIVENT ACV-100 COCKPIT VENTILATOR

Solar Powered Cockpit ventilator installs in place of the normal can type vent while the aircraft is parked. An 8ft cord allows use with the panel on the glare shield or outside the aircraft when an outsidecover is used. The system provides a minimum of 7CFM airflow through the cabin per vent. The fan is a ball bearing design with a 10,000 hr design life. Made from aircraft grade aluminum. The Solar Panel is injection molded acrylic with an integral lens system.

Standard.....P/N 05-04072 ..... **$129.95**
For Cessnas with ventubes.....P/N 05-04074 ..... **$113.95**

NACA INLETS - AIR VENTS

DEFROSTER/AIR VENT

This one piece hard plastic air vent is totally self contained. A standard 1-1/2" scat duct easily slides onto the angled attach point and a simple squeeze of your fingers and it is locked on securely! A special locking feature allows variable adjustment of air flow with a simple sliding of the bar. No need to design an attaching air box for this unit - attach to the panel - slide on the hose -squeeze the attach hose clamp - and you are done! Furnished as a left hand and right hand unit set. P/N 05-02450 ..... **$134.95**

LARGE ROUND FLAGE EYEBALL VENT

This The round flange version of our large square-flange eyeball vent. Fits in a 2-3/4" hole, and has a 3" outside flange diameter.

w/ 2" Scat Adptr., Black ..... P/N 05-04064 .... **$163.50**
w/ 2" Scat Adptr., Clear ..... P/N 05-04066 .... **$163.50**
w/ Plenum Nut, Clear..... P/N 05-04414 .... **$161.95**
w/ Plenum Nut, Black..... P/N 05-04415 .... **$161.95**

STEINAIR AV125B EYEBALL VENT

These high quality vents have a nylon/delrin bushing encapsulated between the eyeball and the flange to protect the aluminum! With these vents you simply cut a hole, install the vent and tighten the plenum or retaining nut behind it and hook up the tubing! The vents include everything needed for install. On the small vents you can just directly attach a 2" scat tube to the vent - and on the large vents they have 2" plenums. These will come with a "BAC" part number on them, but that's because they are normally for the cockpits

Description	PN	Price
1 1/4" Aluminum Eyeball Vent - (Air outlet size). Anodized BLACK. OD is 2" and allows for direct connection of a 2" scat tube. AV125B	05-04061	**$117.85**
1 1/4" Aluminum Eyeball Vent - (Air outlet size). Anodized CLEAR. OD is 2" and allows for direct connection of a 2" scat tube. AV125C	05-04063	**$117.85**
1 3/4" Aluminum Eyeball Vent - (Air outlet size). Anodized BLACK. OD is 2 3/4" (hole size required for mounting). INCLUDES 2" Plenum Cup. AV1625B	05-04084	**$124.95**
1 3/4" Aluminum Eyeball Vent - (Air outlet size). Anodized CLEAR. OD is 2 3/4" (hole size required for mounting). INCLUDES 2" Plenum Cup. AV1625C	05-04086	**$124.95**

NACA INLETS

These are in two half pieces. Assembly is required.

Part No.	Model No.	0° Axes or air flow	Maximum width of aft opening at 90° to airflow.	Outlet Size Openings	Price
05-00859	904 MI	11.75"	8.25"	4"	**$74.50**
05-00862	001 HE	7.75"	4"	2.5"	**$46.50**
05-00863	903 DA-A	7.5"	3.125"	2.5"	**$36.45**
05-00864	903 DA-B	7.5"	4"	2.5"	**$38.60**
05-00865	007 JO	5.75"	2.75"	2"	**$34.50**
05-00866	902 MA-A	5.5"	2.5"	2"	**$34.50**
05-04250	009 MU-B	3"	2.75"	N/A	**$14.75**
05-04249	009 MU-A	6.5"	3.5"	N/A	**$15.85**

LARGE NACA SCOOP

This large NACA scoop is the largest inlet available anywhere. 0° axes of air flow 17", 90° axes total width, 10 inches with a 9" x 2" outlet or 18 square inches. A separate two-part duct can be purchased separately. This allows the user to take the air directly into a 2" or 4" hose connection. These parts are made with a high impact polycarbonate, formed at 375° F. They will remain stable and not delaminate at a high temperature, like the gel-coated fiberglass inlets.

Cameron NACA inlet 006-TR-A (Scoop Only).... P/N 05-01701 .... **$78.85**
Cameron NACA inlet 006-TR-B (2 Req. for ea.).... P/N 05-01702 .... **$44.50**

COWLING/HOOD SCOOPS INLET/EXIT SCOOPS

BLI-16.9A..... 05-04306..... **$69.85**

BLI-16.9B ..... 05-04308..... **$56.75**

BLI-24.1A ..... 05-04305 .... **$69.85**

BLI-24.1B ..... 05-04304..... **$56.75**

CARBON FIBER FARING

This light weight, infused aerospace carbon fiber fairing is perfect for finishing off those items that protrude from your airframe. Clean up the air flow and be pleasing to the eye. Perfect to clean up: cables; trim control rods; overflow hoses; general aerodynamic cover. This product is now supplied in a black carbon finish - NOT white gel coat as shown. Sizes: Width 1-1/2", 37mm plus flange. Length 7", 175mm plus flange. Depth 7/8" 22mm. P/N 05-04863 ..... **$18.75**

AVEOAIR™ - BALL VENTS

AveoAir™ Ball Vents are machined from 2024 aluminum alloy, and these lightweight vents are anodized in your choice of 5 color finishes. Installation is simple with the 2-piece design, no screws are required as they are simple thread together to hold securely. ONLY AVEO VENTS come with a choice of 3 rear standard SCAT tube coupler diameters so you can optimize your air flow. Choose from 1.5", 1.75" or 2.0" diameters (38 mm, 44 mm, 50 mm).

1.5 Inch			1.75 Inch			2.0 Inch		
Black	05-04198	**$89.95**	Black	05-04459	**$92.50**	Black	05-04464	**$89.95**
Silver	05-04199	**$92.50**	Silver	05-04460	**$92.50**	Silver	05-04465	**$89.85**
Green	05-04201	**$99.75**	Green	05-04461	**$99.75**	Green	05-04466	**$99.75**
Blue	05-04202	**$99.75**	Blue	05-04462	**$99.75**	Blue	05-04467	**$99.75**
Gold	05-04203	**$99.75**	Gold	05-04463	**$99.75**	Gold	05-04468	**$99.75**

AVEOAIR™ - MAXI VENTS

44% larger outlet diameter now you can get greater air flow in low speed aircraft and low-flow situations. Available with 1.5" or 2.0" diameter rear SCAT adapters and made to the same fine standards as the standard AveoAir™ vents. CNC machined from 2024 aluminum. Anodized in silver or black. Single-hand operation. Easy install. Fits all SCAT tubing. Adjustable air flow

Black 1.5" ..... P/N 05-04649 ..... **$114.75**
Black 1.75"..... P/N 05-04935 ..... **$114.75**
Black 2" ..... P/N 05-04650 ..... **$114.75**
Silver 1.5" ..... P/N 05-04651 ..... **$114.75**
Silver 1.75" ..... P/N 05-04936 ..... **$114.75**
Silver 2" ..... P/N 05-04652 ..... **$114.75**

ROUND ALUMINUM EYEBALL AIR VENT (SMALL)

Small round-flange eyeball vent. Made from aircraft-grade 6061-T6 aluminum and hard anodized, it weighs just 3 oz. and mounts in a 2" round hole. Outside flange diameter is 2-1/4", and has 25 degrees of freedom from the vent centerline. The vent is secured with a mounting ring that will accept a 1-1/2" or 2" scat hose OR a plenum mounting nut. This vent has an opening of 1.2" which is larger then competitive vents that mount in the same size hole.

w/ 1-1/2" Scat Adptr., Aluminum ..... P/N 05-04410 ..... **$151.95**
w/ 1-1/2" Scat Adptr., Black..... P/N 05-04411 ..... **$151.95**
w/ 2" Scat Adptr., Aluminum..... P/N 05-01903 ..... **$168.95**
w/ 2" Scat Adptr., Black..... P/N 05-01904 ..... **$168.95**
w/ Plenum Nut, Aluminum..... P/N 05-04412 ..... **$151.95**
w/ Plenum Nut, Black..... P/N 05-04413 ..... **$168.95**

3275 LARGE SQUARE EYEBALL AIR VENTS

Large square-flange eyeball vent. Made from aircraft-grade 6061-T6 aluminum and hard anodized, it weighs just 5 oz. and mounts in a 2-3/4" hole. The mounting flange is 3" square with a 2-1/2" mounting hole pattern, and has 25 degrees of freedom from the vent centerline (50% more than in our first generation vents.) This is a direct replacement for the "whisperflo" black plastic vents. Flows 30% more air and eliminates 99% of the leakage associated with the plastic vents when closed.

Aluminum...P/N 05-04068 .. **$168.95** Black... P/N 05-04070 ... **$153.95**

22167 SMALL SQUARE FLANGED EYEBALL VENT

Small square-flange eyeball vent. Made from aircraft-grade 6061-T6 aluminum and hard anodized, it weighs just 3 oz. Mounting flange is 2.20" square, with a hole mounting pattern of 1.70". Vent adjustment is 25 degrees of freedom from the vent centerline, amd has an opening of 1.2" which is much larger than vents typical of this size.

Aluminum..... P/N 05-01905 ..... **$168.95**
Black..... P/N 05-01906 ..... **$168.95**

DEFROST VENT ASSEMBLY

Defrost vents designed to fit in AA series Grumman airplanes and can also be used in Experimentals. They will fit the original hole pattern on the Grummans, but the area where the scat tube is attached has been changed to a full round 1 1⁄2 dia. These parts have passed FAA burn tests. A sliding piece can be adjusted to vary the amount of air being used to defrost. The mounting area is 2 1⁄4 x 3 3⁄4, with six 6-32 attaching screws, not provided. Comes as a pair.

P/N 05-04062 ..... **$60.00**

KOOL SCOOP VENTS

Very popular with Piper owners who need quick, high volume ventilation during ground operations on hot days. Kool Scoop is very easy to mount; simply peel off the adhesive backing sealer and stick it in place on the side window. It will fit any side window vent that does not have a thick frame. Made of top quality plexiglass. Really "scoops" the air from the outside to keep the pilot and passengers comfortable. Window frame not included.

Left hand (Pilot Side)..... P/N 05-04076 ..... **$28.75**
Right hand (Co-Pilot Side) ..... P/N 05-04078 ..... **$28.75**

AP

DOOR LATCHES - BALLISTIC PARACHUTES

UNIVERSAL SPRING LOADED LATCHES

These universal spring loaded latches are designed for aircraft canopies, cockpit doors, and baggage doors. They are available in right hand and left hand models with different striker angle lock pins on the two models. These latches work great on a wide variety of experimental aircraft.

Left hand latch (Lock Pin)
P/N 05-04520.....**$33.95**

Right hand latch (Lock Pin)
P/N 05-04521.....**$33.95**
Also available in retracted bolt lock type latch with blunt striker (left hand and right hand).
Left hand latch (Retracted Bolt Lock)
P/N 05-00895.....**$35.65**
Right hand latch (Retracted Bolt Lock)
P/N 05-00896.....**$35.65**

SLIDING CANOPY RAILS

2 heavy-duty channels of 2014T6 anodized aluminum provide smooth sliding tracks for canopy installations. Length 23" fully retracted, 45" fully extended. 22" travel. Wt:3.5 lbs./pair. Used on Pazmany 1 & 2, Skybolts & others. Instructions for installing these rails in the Pazmany PL-2 are available for $50 from Pazmany Aircraft Corp., P.O. Box 80051, San Diego, CA 92138. These instructions are a useful reference for installing channels in any homebuilt aircraft. P/N 03-49300 ..... **$694.00/ea.**

BALLISTIC PARACHUTES FOR ULTRALIGHTS AND KIT PLANES

CANISTER - The BRS Canister is waterproof when the original factory seal remains intact, making it the perfect design for exterior installations. With a six year repack schedule and versatile mounting hardware, it is one of the most popular systems.

SOFTPACK - The BRS Softpack is best suited for aircraft manufacturers that require a ballistic parachute mounted inside their aircraft. When mounted internally, this system also has a six year repack schedule..

VLS - Built specifically for aircraft with limited interior space, the VLS (Vertical Launch System) installs on top of the wing or fuselage. Upward firing works well with pusher designed aircraft.

BRS-6 System	Maximum Weight (lbs./kg)	System Weight (lbs./kg)	Dimension L x W x D	Part No.	Price
600 Canister	600/272	22/10	8 x 7 round	13-04071	**$3,245.00**
600 Softpack	600/272	18/9	10 x10 x5.5	13-04072	**$2,973.00**
600 VLS	600/272	23/11	18 x 11.5 x7.5	13-04073	**$3,660.00**
800 Canister	800/363	23/11	21.5 x 7 round	13-04075	**$3,718.00**
800 Softpack HD	800/363	19/10	10 x 11 x5.5	13-04076	**$3,481.00**
800 VLS	800/363	25/12	18 x 11.5 x 5.5	13-04077	**$3,954.00**
1050 Canister	1,050/475	28/13	21.5 x 7 round	13-32445	**$4,362.00**
1050 Softpack HD	1,050/475	24/11	10 x 11 x5.5	13-32446	**$4,132.00**
1050 VLS	1,050/475	29/13	18 x 11 x 5.5	13-32445-VLS	**$4,486.00**
1350 Softpack LSA	1,350/612	29/13	15 x 10.5 x 6	13-04079	**$5,077.00**
1350 VLS	1,350/612	34/15	18 x 11.5 x 5.5	13-04080	**$5,313.00**
1350 High Speed	1,350/612	33/15	-	13-04081	**$7,095.00**
1600 Softpack HD	1,600/726	35/16	20 x 8.5 x 9	13-04082	**$6,968.00**

EXPERIMENTAL AIRCRAFT DOOR LATCH

3D view Opening from Exterior Interior View Open Position This door latch was originally designed for a gull wing door with linkage rods extending both forward and aft, however it can be adapted to virtually any style door with appropriately designed linkage rods. The linkage rods are not included.
Features: • Identically keyed locks for set • Armrest flush mount interior handle • Spring loaded, flush mount exterior handle • Spring ball detent for positive open/ closed stop action
Specifications: • Made from 2024-T3 aluminum • Each latch weighs approx. 10 ounces • Dimensions for applicability pictured below • Driver travel approx. 1.25" forward and aft
For linkage rods the following aluminum is recommended: 1/4" x 1/2" 2024T3 ..... P/N 03-00104.....**$1.98**
Left Hand Door Latch..... P/N 05-01415.....**$265.00**
Right Hand Door Latch..... P/N 05-01416.....**$265.00**
Set of Left/Right Latches..... P/N 05-01420.....**$530.00**

RV SLIDING CANOPY LOCK

Lock your RV with confidence. Finally, a lock for your sliding canopy that installs in minutes. Tools required are one 1/4" drill bit and a drill. All you have to do is drill a hole, deburr and start using your lock. No more worries about having your avionics or your personables in someone elses aircraft. P/N 05-01414 ..... **$133.95**

THE GAS SPRING

The gas spring is a self-contained counterbalance unit consisting of a piston and piston rod in a hermetically closed cylinder. The cylinder is factory-loaded with an inert gas at a given pressure. The outward force generated is continuous and linear at 45 lbs. Ideal for a canopy closure on homebuilts, as designed for George Meads Adventure. Stroke 3.15".

P/N 05-01177 .....**$19.75**

DOOR STEWARD™

The Door Steward is an STC and FAA-PMA approved modification for aircraft doors. The modern gas spring greatly improves and replaces easily broken, malfunctioning mechanical type door stops and restraints that become ineffectual with repeated use and age. Pilots enjoy the fact that the Door Steward gently opens and firmly holds the door open. The Door Steward consists of a modern inert gas spring with all the necessary brackets and hardware. Detailed installation instructions are included and make it easy to install and requires virtually no maintenance. Model 200C10
Features: With the Door Steward the door will open and stay open when needed. No more door flopping around in wind gusts or prop wash from taxiing aircraft. The cost is usually much less than repairing or replacing existing OEM door stops. Great on float equipped aircraft when water taxiing.. FAA Approved on many single and light twins.

Application	Part No.	Price
Cessna 170,172, 175, 180, 182, 185, 205, 206, 207 and 210(nonpressurized)	05-00922	**$347.00**
Beech model Series 33, 35, 36, 55, 56, 58 and 95 Piper Model Series 23, 24, 28, 30, 32, 34, 39, 40 and 44	05-03574	**$210.00**
Fwd Utility Door Cessna 206, 206H, U206, TU206 and 207	05-03575	**$150.00**
Cessna 177, 177A, 177B and 177RG	05-04251	**$428.00**

FIBERGLASS PARTS – COWLING KITS

RAVEN FIBERGLASS PARTS

Raven Fiberglass parts are made to very high standards with reinforcing where necessary.

CAMLOC ACCESS DOORS FOR WHEEL PANTS

These 1" diameter spring loaded access doors can be riveted into your wheel pants. They open inward, so that using an appropriate tool, you can check pressure or inflate your tires easily without removing the wheel pants. Made of stainless steel which can be polished if desired.

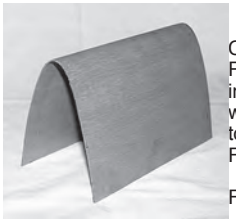
P/N 05-02124 .....**$22.75 ea.**

VANS RV COWLING MOUNT KITS

Vans RV 4,6,7,8,9, 10's, Lancairs, and other kit planes. The Skybolt design adds functionality and appearance to any cowling. The "Hinge" is the perfect design for a pop-rivet aircraft. A Skybolt Cloc™ Kit is the perfect design for a true investment in pride.

SkyBolt RV Tool Kit - Needed for installation. ...P/N 04-01990 ..**$42.50**

Part No.	Aircraft	Description	Price
04-00399	Vans RV4 - Complete Kit	Collared Slotted 33 Fasteners	$384.95
04-00403	Vans RV4 - Complete Kit	Phillips	$417.95
04-00405	Vans RV4 - Firewall Kit	Collared Slotted 15 Fasteners	$222.95
04-00406	Vans RV4 - Firewall Kit	Phillips	$194.95
04-00407	Vans RV4 - Side Kit	Collared Slotted 18 Fasteners	$215.95
04-00408	Vans RV4 - Side Kit	Phillips	$246.95
04-00409	Vans RV8 - Complete Kit	Collared Slotted 46 Fasteners	$512.00
04-00410	Vans RV8 - Complete Kit	Phillips	$545.00
04-00411	Vans RV8 - Firewall Kit	Collared Slotted 26 Fasteners	$307.95
04-00412	Vans RV8 - Firewall Kit	Phillips	$319.95
04-00413	Vans RV8 - Side Kit	Collared Slotted 20 Fasteners	$215.95
04-00415	Vans RV8 - Side Kit	Phillips	$251.95
04-00417	Vans RV6,7,9 - Complete Kit	Collard Slotted 48 Fasteners	$421.95
04-00418	Vans RV6,7,9 - Complete Kit	Phillips	$596.00
04-00419	Vans RV6,7,9 - Firewall Kit	Collard Slotted 26 Fasteners	$355.95
04-00420	Vans RV6,7,9 - Firewall Kit	Phillips	$377.95
04-00421	Vans RV6,7,9 - Side Kit	Collard Slotted 20 Fasteners	$215.95
04-00422	Vans RV6,7,9 - Side Kit	Phillips	$250.95
04-00423	Lancair - Complete Kit	Collared Slotted 57 Fasteners	$668.00
04-00424	Lancair - Complete Kit	Phillips	$608.00
04-00425	Lancair - Firewall Kit	Collared Slotted 37 Fasteners	$306.95
04-00427	Lancair - Firewall Kit	Phillips	$368.95
04-00429	Lancair - Side Kit	Collared Slotted 20 Fasteners	$268.95
04-00430	Lancair - Side Kit	Phillips	$272.95
04-02041	Vans RV4 Upper Fire wall/ Side Kit	1/4 Turn Fasteners	$415.95
04-02042	Vans RV4 Upper Fire Wall Kit	1/4 Turn Fasteners	$153.95
04-02043	Vans RV8 Upper Fire Wall Side Kit	1/4 Turn Fasteners	$445.95
04-02044	Vans RV8 Upper Fire Wall Kit	1/4 Turn Fasteners	$202.95
04-02045	Vans RV6,7,9 Upper Firewall/Side Kit	1/4 Turn Fasteners	$475.95
04-02046	Vans RV6,7,9 Upper Fire Wall Kit	1/4 Turn Fasteners	$233.95
04-02154	RV10J-C1P-U Vans RV-10 Upper (FW/Side) Kit	(45 Units) Phillips head	$355.95
04-02155	RV10J-C1P-UF Vans RV-10 Upper Firewall Kit	(19 Units) Philips head	$233.95
04-02156	RV-10 Complete Firewall Kit	Phillips Head	$377.95
04-02157	RV-10 Complete Kit	Phillips Head	$596.00
04-02158	RV-10 Upper Firewall/ Side Kit	Collard Slotted Fasteners	$421.95
04-02159	RV-10 Complete Kit	Collard Slotted 36 Fasteners	$355.95
04-02160	RV-10 Cowling Side Kit	Collard Slotted 26 Fasteners	$215.95
04-02161	RV-10 Cowling Side Kit	Phillips Head	$250.95
04-02047	Lancair Upper Cowl	1/4 Turn Fasteners	$477.95
04-02048	Lancair Firewall Kit	1/4 Turn Fasteners	$336.95
04-02049	Lancair Side Kit	1/4 Turn Fasteners	$295.95



WOODEN LEADING EDGES

Can be used on Pitts, Eagle, Skybolt etc. Preformed leading edge to replace metal leading egde. Adds strength to stock or modified wings. Set comes with all 5 pcs. to glue directly to the wings.

For S-1 .....P/N 05-00918 .....**$487.95**

For Experimental S-2, Eagle, Skybolt
P/N 05-00919 .....**$634.00**

SPADES

Spades used on aerobatic aircraft like Pitts Special. Comes with arm and plate
P/N 05-00917 .....**$199.75**

AP

CARBON FIBER REPLACEMENT COWLINGS FOR CESSNAS

This line of carbon fiber cowlings are a part for part replacement for Cessna cowlings. These cowlings install just like the original Cessna parts, however no hardware is provided. North Central Aircraft Products are made of the finest quality carbon fiber and resin and are STC'd and PMA'd. Complete cowls are available on request.

172 Series - Upper Nose Cap - 300

Year	Serial No.	Description	Part No.	Price
56-58	28000-36965	Std. Nose Cap	05-04664	$850.00
59-60	36966-47746	Elliptical Nose Cap	05-04665	$815.00
61-65	47747-53392	1/4 Nose Cap-Cont.	05-04666	$270.95
77-81	67585-75034	Std. Nose Cap - Lyc. Single Light	05-04667	$760.00
75-76	63459-67584	Std. Nose Cap - Lyc. Dual Light	05-04668	$760.00
82-86	75035-76673	Std. Nose Cap- Camloc-Lyc.	05-04669	$760.00
83-85Q	75869-76516	Std. Nose Cap- Camloc-Lyc.	05-04670	$760.00

172 Series - Lower Nose Cap - 600

Year	Serial No.	Description	Part No.	Price
56-58	28000-36965	Std. Center Piece Nose Cap	05-04671	$850.00
59-60	36966-477-46	Elliptical Nose Cap	05-04672	$815.00
61-65	47747-53392	Cont. 3/4 Nose Cap	05-04673	$730.00
66-67	53393-67584	Cont. Standard Nose Cap	05-04674	$730.00
68-81	56513-75034	Std. Nose Cap - Lyc. No Light	05-04675	$730.00
82-86	75035-76673	Std. Nose Cap - Lyc. No Light	05-04676	$730.00
71-74	59224-63458	Std. Nose Cap - Lyc. Single Light	05-04677	$730.00
75-81	63459-75034	Std. Nose Cap - Lyc. Single Light	05-04678	$730.00
74	61899-63458	Std. Nose Cap - Lyc. Dual Light	05-04679	$730.00
75-76	63459-67584	Std. Nose Cap - Lyc. Dual Light	05-04680	$730.00
83-85	75869-76516	Std. Nose Cap - Lyc. No Light	05-04681	$730.00

180/182 Series - Upper Nose Cap - 300

Year	Serial No.	Description	Part No.	Price
53-56	30000-32661	Upper Nose Cap- Ctr. Nose- Screws	05-04682	$790.00
57-59	32662-50661			
C182 56-58	33000-51556	Upper Nose Cap- Elliptical Nose- Screws	05-04683	$790.00
60	50662-50911			
C182 59-60	51557-53007	Upper Nose Cap - 185 Style - Screws	05-04684	$990.00
61-68	50912-51980	Upper Nose Cap - 185 Style - Camloc	05-04685	$990.00
68-81	51981-53203	Upper Nose Cap - Rev. CL Nose RH to Dzus	05-04686	$990.00

180/182 Series - Lower Nose Cap - 600

Year	Serial No.	Description	Part No.	Price
53-56	3000-32661	Lower Nose Cap- Ctr. Nose- Screws	05-04687	$930.00
57-59	62662-50661			
C182 56-58	33000-51556	Lower Nose Cap- Elliptical Nose- Screws	05-04688	$810.00
60	50662-50911			
C182 59-60	51557-53007	Lower Nose Cap - 185 Style - Screws	05-04689	$1,040.00
61-68	50912-51980	185 Style - Camloc	05-04690	$1,040.00
68-73	51981-52284	Lower Nose Cap - Rev. CL Nose RH to Dzus	05-04691	$1,040.00
73-81	52285-53203	Lower Nose Cap - Addes Landing Lights	05-04692	$1,350.00

Please provide aircraft N number and serial number when ordering.

FIBERGLASS COWLINGS

All parts are aircraft quality, hand layed for uniform thickness and light weight. Items are finished with grey primer gel coat which minimizes sanding and eliminates the need for primer paint.
Note: Light sanding is required to remove mold release wax residue from surface of all fiberglass items prior to painting.

MC-1A NOSE COWL

Styled after the Piper Comanche, this cowl can be used on just about any homebuilt powered by the Lycoming engine. It is made in two parts, allowing the easy removal of the cowl without having to remove the prop. Used on the following airplanes: Starduster I and II, Playboy, EAA Bipe, Jodel D-11, Tailwind, Tempete & the Skybolt. Measures 35" wide by 21" high. Will accommodate a spinner approx. 12" in dia. P/N 05-01180 ..... **$91.50**

MC-1B NOSE COWL

Similar in shape and dimensions as the MC-1A cowl except, it is manufactured as a one piece unit for those who prefer a cleaner front end. The MC-1B is a few inches larger than the MC-1A.
P/N 05-01181 ..... **$112.95**

MC-2 NOSE COWL

This design can be used with most any Continental or Lycoming engine. Used on the original Smith Miniplane but has been installed on the Pitts, EAA Bipe, Playboy, Flybaby & Baby Great Lakes. Measures 35"wide by 19.5" high.Face of center opening 8-1/2" O.D.
P/N 05-01182 ..... **$114.95**

MC-3A NOSE COWL

Suitable for just about any Lycoming powered aircraft, this cowl comes equipped with a bump that conceals the starter motor. It is the standard Pitts Special cowl but has been installed on these aircraft: Mong, Miniplane, Playboy, Emeraude, Playmate, Baby Ace, Junior Ace, EAA Bipe, Baby Great Lakes, Skyhopper and the Falconar F-11 & 12 series. Measures 35-1/2" wide and 22-1/2" high. Center opening 8-1/ 2" dia. P/N 05-01183 ..... **$113.95**

MC-3B NOSE COWL

Same shape and size as used on the Piper PA-14. Can be used on the same aircraft as listed for the MC-3A design. For builders not wishing to use an electrical system and is seen on most Pitts Specials built for competitive aerobatics. 35" wide x 21" high. Center opening 9-1/4" dia. P/N 05-01184 ..... **$114.95**

MC-10 NOSE COWL

For installation on Tailwind or Cougar. Used with 4" prop extension. Shape rounds out the boxy appearance of the standard design. Size: 35"w x 22.5"h. Has been installed on Starduster I and various Lycoming powered homebuilts. Face of center opening 11-3/4" O.D.
P/N 05-01185 ..... **$124.95**

QUICK RELEASE PINS

These pins of stainless steel, are made to exacting standards. Pushing the button on top, it contracts and releases two (or four) balls at the end of the shank. These balls lock onto and release from the part for fast removal. The following types and sizes are most commonly used for hang gliders and not for structural aircraft. Request quote on special sizes (25 piece minimum).
Less 10% for 12, Less 15% for 25, Less 20% for 50. May be assorted.

Part No.	Alternate Part No.	MS Part No.	Head Type	Shank Dia.	Leng.	Price
04-01486	LG4C-T-0.343	---	TEE	1/4"	0.343"	**$17.75**
04-01473	LG4C-T-1.40	MS17985-414	TEE	1/4"	1.400"	**$14.50**
04-01487	LG4C-T-2.10	MS17985-421	TEE	1/4"	2.080"	**$21.50**

MC-3C NOSE COWL

Identical to the MC-3B, but, has an opening for an oil cooler. Measures 35" wide by 21" high.
P/N 05-01186 ..... **$114.95**

MC-4 NOSE COWL

This nose cowl was designed for the T-18 pressure cowl system. A 4-inch prop extension is required and it is generally used with the MC-5 Bottom Cowl. Measures 36" wide by 20"high. Face of center opening 12-1/2" O.D.
P/N 05-00551 ..... **$114.95**

MC-7 NOSE COWL

Originally made for the Thorp T-18, this cowl has been used on several other types. The starter ring is enclosed when used with the Lycoming. Makes a nice front end on the CA-61 & CA-65. Measures 35"W by 19.5" high. Face of center opening 13-3/8" O.D.
P/N 05-01176 ..... **$114.95**

DZUS COWL LATCHES

These Dzus "over the center" type latches are used extensively on cowl doors and other applications on aircraft such as Cessna, Piper, Grumman, and many homebuilts. Available in 2 styles as shown.

MODEL #1

These Dzus over the center type latches are used extensively on cowl doors and other applications on aircraft such as Cessna, Piper, Grumman, and many homebuilts.
Model I latch: This latch provides 700 lbs. Ultimate strength and 100 lbs. Working strength. Pull up ability is 0.6 inch. Mounting holes will accept .156 in. diameter rivets or #6 round head screws. Order strikes separately.

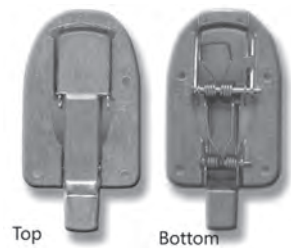
Part No.	Description Dimensions (closed)	Price Ea.
05-01187	Cowl Latch Model I	**$2.90**
05-01188	Latch Strike C8	**$0.63**
05-01189	Latch Strike C7	**$0.56**

MODEL #2

These Dzus over the center type latches are used extensively on cowl doors and other applications on aircraft such as Cessna, Piper, Grumman, and many homebuilts.
Model II latch: This latch provides 220 lbs. of ultimate strength and 45 lbs. of working strength. Pull up ability is .2 inch. Mounting holes will accept .156 in. diameter rivets or #6 round head screws. Order strikes separately.

Part No.	Description Dimensions (closed)	Price Ea.
05-01190	Cowl Latch Model II	**$2.95**
05-04183	Latch Strike C9	**$0.79**
05-04184	Latch Strike C2	**$0.54**

FLUSH LATCH



The Hartwell H-5000-2 is a unique spring-loaded, trigger action latch for cowling and access doors. Made of corrosion resistant steel. Rivet or spot weld to structure. Bolt Offset: .132. Trigger Offset: .102. Max. Depth: 1.23 P/N 05-01881 ..... **$158.95**

FIBERGLASS COMPONENTS

MC-6 NOSE CHEEKS

From the latest design of John Thorp, this is a 2 piece cowl used on the T-18. Can be adapted to most homebuilts where the builder wishes to use cheeks. They have been installed on the Midget Mustang as well as the Miniplane. Makes a fine nose section.

P/N 05-01213 ..... **$69.75**

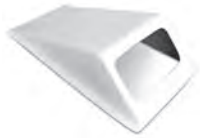
MT-1 WING TIPS

Manufactured from the original T-18 plans and come ready to slip over the ends of the wing. Nav. lights are normally installed by notching the leading edge corner of these fairings and installing Plexiglass.

P/N 05-01214 ..... **$175.95**

MC-5 BELLY PAN

Designed to work in conjunction with the MC4 Nose Cowl. This is the most popular combination being used today and it gives your T-18 all the compound curves and beauty it deserves. P/N 05-00025 ..... **$106.75**



CARBURETOR INTAKE SCOOP

Carburetor intake scoop with 4-1/4" x 8" rectangular opening. P/N 05-22500 ..... **$49.85**

HEAD REST

Originally designed for the Smith Miniplane but can be used on other bipes.

P/N 05-22100 ..... **$31.75**

BABY GREAT LAKES COWL

PN 05-02883

PN 05-02884

Fiberglass Cowl set fits Baby Great Lakes, Super Baby Great Lakes, and Buddy Great Lakes. Top and Bottom Cowl halves sold separately.

Dimensions:
33"x29"x9-1/2" (PN 05-02883)
33"x33"x19" (PN 05-02884)

Top Nose Cowl
P/N 05-02883..... **$223.95**

Bottom Nose Cowl
P/N 05-02884..... **$250.00**

BUDDY BABY GREAT LAKES SEAT

This fiberglass seat was designed to fit the Baby Great Lakes aircraft and is recommended by the designer. Dimension: 26"x30"x19"

P/N 05-02885 ..... **$250.00**

GEL-COATED FIBERGLASS WHEEL PANTS

Keep gravel, mud, dew and grass out of your prop, off your wings and off your face with these easy-to repair fiberglass reinforced polyester wheel pants. Supplied in gel-coated finish, they have a small seam along the top edge, easily removed by sanding, if desired. Sorry, no mounting hardware is included. Easy to cut and customize. White, red

Wheel Pant Dimensions					
Size	Width	Height	Length	Opening	Weight
4"	5	9	22	4.4X12	1
5"	7	9	23	5.5X13.75	1.3
6"	8	9	28	8X15.75	11.5

Description	Part No.	Price
Straight Wheel Pant 4" White	06-01298	**$109.95**
Straight Wheel Pant 4" Black Primer	06-01302	**$150.95**
Straight Wheel Pant 5" White	06-01293	**$116.95**
Straight Wheel Pant 5" Black Primer	06-01297	**$158.95**
Straight Wheel Pant 6" White	06-01294	**$125.95**
Straight Wheel Pant 6" Black Primer	06-01301	**$167.95**
Aero Wheel Pant 5" White	06-01296	**$116.95**

BUCKET SEATS

For Starduster or Skybolt. Flat Gray finish, 18" wide. Can be upholstered or used plain. Contoured bottom for parachute. These are not chopped glass seats. Hand layed up for extreme lightness. Wt. 3 lbs. 10 oz.
Note: This oversized item ships in a 21 x 21 x 21 box with a dimensional weight of 48 lbs. (56 lbs internationally)
P/N 05-22600 ..... **$73.25**

TURTLE DECK

Fits the Acroduster or Skybolt. With flat mounting pad to accommodate a VHF antenna. Approx. Height 19" at front, 13" at back. Overall length, approximately 57".

P/N 05-22200..... **$124.95**

HOERNER DESIGN WING TIPS

These wing tips are constructed of hand laid-up fiberglass which is extremely strong, has great impact strength, and is resistant to chemicals. The Hoerner design of these wing tips reduce the vortex that emanates from the trailing edge of the wing tip thereby reducing drag on the aircraft, leaving more energy available for lift and speed. Stall speed is decreased and lateral stability is improved. You will see increased cruise speed, more positive aileron control, increased rate of climb, decreased take-off distance, and improved appearance with these tips. All STC and approval data is furnished.

Cherokee Straight Wing Tips
PA-28 140 thru 200R models.
P/N 05-90000 ..... **$783.00 pr.**

Cherokee Taper Wing Tips
PA-28 151 thru 236 models
P/N 05-91000 ..... **$572.00 pr.**

Cessna Wing Tips
140A, 150, 170B, 172, 175, 180, 182,185,210 (pre 1974 models only)
P/N 05-94000 ..... **$617.00 pr.**

Comanche Wing Tips
All singles and PA-30 twins.
P/N 05-92000 ..... **$625.00 pr.**

Cherokee Stabilator Tips
PA-28 taper and straight wings
P/N 05-93000 ..... **$388.95 pr.**

Bonanza Wing Tips
35 series thru P models
P/N 05-95000 ..... **$821.00 pr.**

Other Products:		
DESCRIPTION	PART NO.	PRICE
Aztec & Apache Wing Tips (PA-23 all models)	05-96000	**$2,875.00**
Apache Dorsal Fin (PA-23 150&160)	05-97000	**$795.00**
Beech Wing Tips	05-00769	**$623.00**
Piper Tailcone (PA-28 & PA-32)	05-98000	**Call for Price**
Piper Dorsal Fin (PA-28 & PA-32)	05-99000	**Call for Price**
Cherokee Taper Wing Tips C/W Replacement	05-02599	**$573.00**
Cherokee Dorsal Fin Fwd.	05-02601	**$186.95**
Cherokee Dorsal Fin Aft.	05-02602	**$212.95**
Cherokee Tail Cone Upper	05-02603	**$214.95**
Cherokee Tail Cone Lower	05-02604	**$232.95**
Cessna Wing Tips	05-02605	**$514.00**
Aztec/Apache Tip Tanks Hoerner Style	05-02606	**$9,460.00**
Apache Windshied	05-02607	**$1,469.95**
Seneca Wing Tips	05-02608	**$703.00**
Seneca Stabilator Tips	05-02609	**$394.95**

AP

WHEEL FAIRINGS

All wheel fairings furnished with reinforcing bulkheads for added stability and cleanliness.

MF-1A - 5:00 X 5 fairing that is small and compact. The same shape and size as the early model Cessna 150 & measures 26" long by 7" wide. Has been used on the CA-61, Tailwind, T-18, Baby Ace, Cougar, or any homebuilt that requires this size.
P/N 05-01215 ..... **$198.50 Pair**

MF-2 - 5:00 X 5 teardrop style as used on the later model Cessna 150. Measuring 36" by 7", it has been installed on Tailwinds, Smyth Sidewinder, Cougar or any wheel this size.
Overall size: 35"L x 7-1/2"W
Opening Size:7.5"W x 151/2"L
P/N 05-01216..... **$204.95 Pair**

MF-3 - 5:00 X 5 with the long, narrow profile. A standard on Pitts Specials, Acro Sport, T-I 8, Cassutt & Midget Mustang. Truly a universal shape.
Overall size: 39"l x 7.5"w Opening Size:4-3/4"W x 101/2"L
P/N 05-01217 ..... **$198.50 Pair**

MF-4 - 5:00 X 5 Thorp T-18 fairing. This style was one of our original developments specifically for the T-18 and has proven to be very popular. Like all other listed pants, it will fit any wheel this size.
Overall size: 31.5"L x 7-1/2"w
Opening Size:14.75"wx 7"L
P/N 05-01218 ..... **$198.50 Pair**

MF-5 - 6:00 X 6 wheel fairing in the same shape as the J-3 Cub but, scaled down to fit this size wheel. Popular on the bi-planes, Spezio and the parasols. Gives a very classic look to your airplane.
Overall size: 30"L x 9-1/2"W
Opening Size: 7-1/2"W x 18-1/2"L
P/N 05-01219 ..... **$198.50 Pair**

MF-6 - 6:00 X 6 fairing styled after the late model Cessna 172 and is used on just about any designed aircraft. Measure 42" by 8" and are very pretty.
Overall size: 44"L x 8-1/4"W.
Opening Size: 8-1/4"W x 23-1/4"L
P/N 05-01220..... **$198.95 Pair**

MF-7 - 6:00 X 6. Same size and shape as the Piper Cherokee fairings. A standard on the Stardusters, Skybolt and used on m any other designs.
Overall size: 37"L x 8"W
Opening Size: 13-1/2"W x 7"L
P/N 05-01221 ..... **$198.50 Pair**

MF-8 - 5:00 X 5 pant. Almost the same dimension as the MF-3 however, has more of a point on the tip. Also popular on the Pitts, Cassutt, T-18 and Midget Mustang.
Overall size: 37-1/2"L x 8"W
Opening Size: 14-3/4"W x 6"L
P/N 05-01222..... **$198.50 Pair**

MF-9 - J-3 Cub design for any biplane or parasol using the larger size wheels.
Overall size: 29"L x101/2"W
Opening Size:8-1/4"Wx10"L
P/N 05-01223 ..... **$198.50 Pair**

MF-10 - 7:00 X 6. For aircraft using the larger wheels and also for the Stinson or Funk. Much lighter than the factory originals.
Overall size: 31"L x 11"W
Opening Size: 19"L x 10"W
P/N 05-01224 ..... **$198.50 Pair**

MF-11 - 6:00 X 6 wheel fairings. Same size and shape as used on the Tripacer, Pacer or Colt. More streamlined design than the MF-9. A nice installation on the Super Cub w/ 8.00 x 4 wheels.
Overall size: 43"L x 9-1/2"w
Opening Size: 9.5"w x 18.5"L
P/N 05-01225 ..... **$198.50 Pair**

MF-12 - 5:00 X 5 RACING FAIRINGS. Fits the V-Witt, Cassutt, Owl or any Formula One, Formula V or Bi-plane using this size wheel. Race proven.
Overall size: 40"L x 7-1/2"W
Opening Size: 4.5"W x10-3/4"L
P/N 05-01226..... **$198.50 Pair**

WHEEL PANT COVERS

Stop tow-bar wheel pant scuffing. & Avoid costly wheel pant repainting. Available in standard black, navy or burgundy. Fits models: Cessna 172 I 182 I 206 Cherokee

- Made from heavy-duty vinyl
- Padded backing
- Attaches quickly using Velcro(tm)
- Stores easily
- Personalization available

Cover Navy..... P/N 05-03048..... **$69.95**
Cover Black..... P/N 05-03049..... **$69.95**
Cover Burgundy ..... P/N 05-03050..... **$69.95**

PA28/PA32 REFINED SPEED PANTS

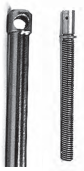
FAA approved Laminar Flow Speed Pants will add up to 10.5 mph over bare wheels and up to 8 mph over stock wheel pants for all Piper PA-28 and PA-32 aircraft models. A special pressure recovery design improves rate of climb with most installations.
At 10 pounds, these second generation Speed Pants are lighter and up to 5 times stronger than conventional Piper wheel pants. They are made of three layers of hand-laid, 10 ounce fiberglass which is oven cured with a high strength resin. Additional layers of cloth are applied to stress areas. A removable panel allows easy access to brakes. Wing to wheel fairing improve the aesthetics of the main gear.
P/N 05-03627..... **$2,995.00**

(FAA/PMA APPROVED)

CESSNA COWL FLAP RIGHT AND LEFT

These cowl flaps feature a replaceable stainless steel hinge that may be removed and replaced using screws. The specific model applicability for these cowl flaps are the C-180C, D, E, F, G, H, J and 180K; the 182B, C and D; 185, 185A, B,C,D, 185E, A185E and A185F. FAA Approved.

Left..... P/N 05-03393..... **$1,019.00**
Right ..... P/N 05-03394..... **$1,087.00**



HORIZONTAL STABILIZER ADJUSTING SCREW AND BARREL

FOR C-180, 185 AND C-182 THRU C-182D

Screw ..... P/N 05-07000..... **$273.95**
Barrel..... P/N 05-07005..... **$103.95**

HORIZONTAL STABILIZER ADJUSTING CAM

Cessna Adjusting Cam. - U0712502; Trim screw adjusting cam. FAA/PMA Approved.

P/N 05-07010..... **$33.50**

STABILIZER TRIM SCREW BOOT

FOR C-180, C-185, AND C-182 THRU C-182D

Boot..... P/N 05-07015..... **$52.65**

CESSNA 120/140 FUEL VALVE KIT

This valve has a very smooth action with positive detents. Like the original valve, it has positions for left-on, right-on and both-off. Unlike the original, it is not prone to sticking or binding. It does not require periodic seal replacement or lubrication. This PMA'd replacement valve will mount almost identically to the original OEM valve. It uses the same tank selector plate and the same mounting hardware as the original. This valve is sold in a kit that includes the handle and installation instructions. The handle has no "pointer." This is in compliance with AD47-43-02. ..... P/N 05-03407..... **$384.00**

C-120, C-140 LIFT STRUT ROD ENDS

Front Rod End.... P/N 05-07020..... **$88.75**
Rear Rod End..... P/N 05-07025..... **$68.50**

C-172 OIL DOOR

Applicable on the following models:
(172, 172A, B, C, D, E, F, G, H, I, J, K, L, M, N, P, Q)

P/N 05-07030..... **$229.00**

C-180, 182, & 185 SERIES COWL OIL DOOR

Applicable on the following models: For 180—180G, 182—182G & 185—185C

P/N 05-07035..... **$311.95**

CESSNA AILERON HINGE

For all C-150, 152, 170A, 170B, 172, 180, 182 & 185 .....P/N 05-07040 ..... **$59.25**

CESSNA STYLE TAIL SKID

This easy-to-install tail skid is designed to save the tail feathers on most single engine Cessna's. Made from 4130 aircraft steel, this tail skid fits Cessna 150, 152, 172, 177, and 182.

P/N 13-17010.....**$14.75**

EXHAUST CUFF FOR CESSNA 206, 210 AND 340

The problem * The exhaust pipe creates parasitic drag within the slip stream * Non-laminar flow conditions occur at the opening of the cowl * Aircraft esthetics are affected by the protrusion of the pipe. The exhaust cuff solution eliminates non-laminar airflow about the exhaust port * Reduces cylinder head temperatures * Cruise performance increased * Enhances the esthetics of the aircraft

Cessna Ehaust Cuff 206 & 210 .....P/N 05-04474 ..... **$195.00**
Cessna Ehaust Cuff 340.....P/N 05-04475 ..... **$395.00**

C-170 TAILWHEEL SPRINGS

Tailwheel Spring Assembly .....P/N 06-15000 ..... **$199.75**
Main Leaf Only .....P/N 06-15100 ..... **$88.65**

C-120/140 TAILWHEEL SPRING SETS

(LATER CESSNA SPRING SET SHOWN)

Early 120-140 (single bend, originally on SN 8001-14026)
P/N 05-07055 ..... **$138.95**
120-140 (SN 14027 and up) P/N 06-14800 ..... **$189.75**
120-140 main leaf only (SN 8001-14026) P/N 05-07065 ..... **$56.50**
120-140 main leaf only (SN 14072 & up) P/N 06-14900 ..... **$61.50**

AP

RUDDER BELLCRANK

FOR C-120, 140 & 170

P/N 05-07075 ..... **$292.95**

WING FABRIC CLIP

FOR C-120/140/170

P/N 09-19900 ..... **$0.78**

RUDDER & ELEVATOR SKINS

FOR C-180/185, & 182-182D / FAA-PMA
ELEVATOR KIT:
For C-180/185 and 182-182D / FAA-PMA.

Right & Left hand .....P/N 05-07090 ..... **$329.95**

SK152-24A CESSNA RUDDER STOP FOR SHEET METAL BULKHEAD

P/N 05-04655 ..... **$223.50**

ALL METAL COWLING PARTS

FOR 120-140

1946 Cowling Items
Lower Cowl Skin, Left P/N 05-07165 ..... **$897.00**
Lower Cowl Skin, Right P/N 05-07170 ..... **$994.00**
Nose Cowl Only P/N 05-07175 ..... **$716.00**

C-120/140 COWL GRILLS

FAA/PMA Approved. Also approved for 170, 170A, and 170B thru SN 25372.

Cessna 140/170 left hand grill (U0452207) P/N 05-07180 ..... **$189.50**
Cessna 40/170 right hand grill (U0452207-1) . P/N 05-07185 ..... **$189.50**

C-120/140 ENGINE MOUNT ASSEMBLY

120-140 ..... P/N 05-07190 ..... **$788.00**
140A..... P/N 05-07195 ..... **$1,158.00**

FLAP TRACK WEAR GAGE

McFarlane Aviation Products has developed a new tool to determine Flap track wear. McFarlane developed this tool to positively indicate when the flap track is worn beyond service limits. Flap Track Wear Gage Use to determine if a Cessna flap track is worn beyond service limits. Flap Track Wear Gage Instructions: Run the gage plug along each slot in each flap track while verifying that the gage will not enter the slot. Reposition the flaps as required to gage the entire length of each slot. If the gage enters a slot at any point the track is worn beyond service limits. The diameter of the gage is .6035 inches (diameter tolerance +.000/-.002)Periodically verify the gage diameter by measuring the age diameter with a calibrated micrometer.

P/N 05-02145.....**$41.50**

VENT TUBE ADAPTER BRACKET CESSNA

CW-172001 replacement for Cessna part #0700325-2 adapter assembly. Eligible for installation on Cessna 172, 172A, 172B, 172C, 172E, 172F, 172G, 172H, 172I, 172K, 172L, 172M, 172N, 172P, 172Q.

P/N 05-04645.....**$89.50**

(FAA/PMA APPROVED)

LEVER TYPE WINDOW LATCHES & COMPONENT PARTS

Latch Assembly Applicable on: 120, 140, 140A, 170, 170A, 170B, (SN 20267 thru 25372)
P/N 05-07100 ..... **$293.95**

Latch Assembly Applicable on: 170B (SN 25373 & on), 172, 175, 180 & 182
P/N 05-07105 ..... **$291.95**

COMPONENT PARTS

Arm (for -2 assy.)(U0413362-8)	P/N 05-07110	**$37.85**
Arm (for -3 assy.)(U0413362-9)	P/N 05-07115	**$33.25**
Bracket (U0413362-13)	P/N 05-07120	**$61.25**
Knob (U0413359)	P/N 05-07125	**$18.75**
Extension Arm (U0413362-12)	P/N 05-07130	**$58.25**
Angle (left side)(U0413362-10)	P/N 05-07135	**$7.25**
Angle (right side)(U0413362-11)	P/N 05-07140	**$6.90**
Pin (U0413362-14)	P/N 05-07145	**$16.50**
Pin (U0413362-16)	P/N 05-07150	**$16.50**
Pin (U0413362-15)	P/N 05-07155	**$16.50**
Spacer (U0413362-7)	P/N 05-07160	**$7.25**
Washer (2 req'd)	P/N AN960-10	**$0.02**
Washer (2 req'd)	P/N AN960-10L	**$0.02**
Screw	P/N THA4-6	**$0.15**

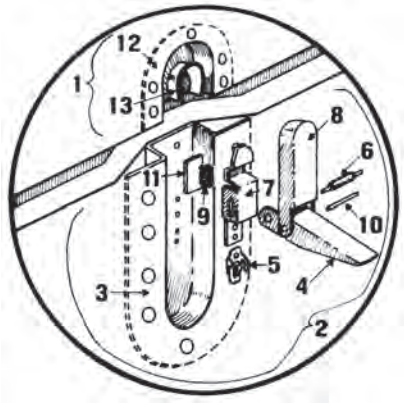
CABIN ENTRY STEP FOR CESSNA AIRCRAFT

Cabin Entry Step for Cessna Aircraft.
Applicable to:
170, 170A, B - 18000 thru 27169
180,180A, B, C, D, E, F - 30000 thru 18051312
185, 185A, B, C, D, E, A185E* - 1850001 thru 1851300
* Partial model eligibility

aLeft Cabin Access	P/N 05-04176	$360.95
Right Cabin Access	P/N 05-04177	$360.95

COWL LATCHES AND DETAILS

FOR 120-140 AND 170 SERIES



HOOK & LEVER ASSEMBLIES

1) Hook Assembly	P/N 05-07200	**$83.65**
2) Lever Assembly	P/N 05-07205	**$269.95**

DETAIL PARTS

3) Recess	P/N 05-07210	**$31.50**
4) Lever	P/N 05-07215	**$29.25**
5) Clip	P/N 05-07220	**$22.50**
6) Pin	P/N 05-07225	**$14.00**
7) Housing	P/N 05-07230	**$25.50**
8) Hook	P/N 05-07235	**$29.50**
9) Spring	P/N 05-07240	**$18.00**
10) Pin	P/N 05-07245	**$13.85**
11) Shim	P/N 05-07250	**$1.72**
12) Recess	P/N 05-07255	**$48.25**
13) Hook	P/N 05-07260	**$46.75**

AILERON HINGE FOR CESSNA

FAA – PMA APPROVED AS0523816-1
P/N 05-00048 ..... **$47.75 ea.**

CESSNA SPINNERS

NOTE:Cessna 172 Spinner Dome PN 05-09045 will not work for 1960 Cessna 172A.

Cessna spinner dome for - F, G, H, J, 150 K P/N 05-09030..**$314.00**
Cessna front plate for - 150 F, G, H, J, 150 K P/N 05-09035....**$74.85**
Cessna rear plate for - 150 F, G, H, J, 150 K P/N 05-09040..**$284.00**
Cessna spinner backplate for - early Cessna 170 & 172 for Contential 8 hole flanges....P/N 05-07265..**$299.75**
Cessna spinner dome for- early Cessna 170 & 172 for Contential 8 hole flanges....P/N 05-07270..**$661.00**
Cessna spinner kit - early Cessna 170 & 172 for Contential 8 hole flanges....P/N 05-07275..**$951.00**
Cessna dome for - 172 A-F....P/N 05-09045..**$522.00**
Cessna front plate for - 172 A-F....P/N 05-09050..**$432.95**
Cessna rear plate for - 172 A-F....P/N 05-09055..**$318.95**
Cessna dome for - 172 I, K, L, M, N, & P....P/N 05-07280..**$378.95**
Cessna front plate for - 172 I, K, L, M, N, & P....P/N 05-07285....**$87.50**
Cessna rear plate for - 172 I, K, L, M, N, & P....P/N 05-07290..**$259.00**

CESSNA 182 ALUMINUM SPINNERS

These aluminum spinners and spinner support spacers are FAA approved for installation on several models of Cessna 182 series aircraft using McCauley two blade constant speed propellers. The Spinner Dome replaces original Cessna p/n 0752637K200, 0752637-5 and 0752637-11. The Spinner Spacer replaces original Cessna p/n 0752620-1 and 0752620-3. The Spinner Dome is approved on the Cessna 182H, 182J, 182K, 182L, 182M, 182N, 182P, 182Q and the 182R. The Spinner Support Spacer is approved on Cessna Models 180H, 180J, 180K, A185E, A185F, 182E, 182F, 182G, 182H, 182J, 182K, 182L, 182M, 182N, 182P, 182Q, 182R, 210-5 (205), 210-5A (205A), 206, U206, P206 and the U206A.

Spinner Dome U0752637K200 . . . . . 05-01901..... **$673.00**
Spinner Sport Spacer U0752620-3. . . . 05-01902..... **$5.95**

CESSNA TRIM CONTROL CHAINS

We carry FAA-PMA approved replacement trim control chains for Cessna 120 through 210 series aircraft. Call the Cessna/Piper parts specialist at Aircraft Spruce (1-877-4-SPRUCE) for assistance in determining the correct chain for your aircraft.

Model No.	Part No.	Price Ea.
ASS2294-25	05-00289	**$6.25**
ASS2295-25-185	05-00291	**$91.25**
ASS2295-25-249	05-00292	**$145.95**
ASS2295-25-321	05-00293	**$135.95**
ASS2295-25-43	05-00294	**$43.25**
ASS2295-25-47	05-00295	**$46.25**
ASS2295-25-61	05-00296	**$45.00**
ASS2295-25-63	05-00297	**$62.25**
ASS2295-25-67	05-00298	**$69.25**
ASS2295-25-70	05-00299	**$68.75**
ASS2295-25-71	05-00301	**$79.00**
ASS2295A25-111	05-00302	**$74.25**
ASS2295P25-113	05-00303	**$83.25**
ASS2295P25-155	05-00304	**$134.95**
ASS2295P25-159	05-00305	**$122.95**
ASS2295P25-185	05-00306	**$115.95**
ASS2295P25-321	05-00307	**$139.95**
ASS2295P25-47	05-00308	**$43.75**
ASS2295P25-55	05-00309	**$67.00**
ASS2295P25-59	05-00311	**$50.75**
ASS2295P25-63	05-00312	**$67.00**
AS2295P25-67	05-00313	**$111.95**
ASS2295P25-69	05-00314	**$72.75**
ASS2295P25-71	05-00315	**$52.75**
AS0432138-2	05-00316	**$159.85**

CESSNA WHEEL PANT MOUNTING PLATES

These FAA-PMA approved mounting plates are annodized for improved corrosion resoistance and will save over $100 compared to factory mounting plates. Approved with artial eligibility for the Cessna 150, 152, and 172. Verify approval for your aircraft with Aircraft Spruce prior to ordering.

Cessna P/N	Our P/N	Price Each
0441225-1 (Left)	05-01497	**$107.95**
0441225-2 (Right)	05-01498	**$133.95**
0441220-1 (Left)	05-01499	**$73.25**
0441220-2 (Right)	05-01501	**$57.75**

CESSNA PARTS

Aircraft Spruce and Specialty stocks a large inventory of Cessna replacement parts. Some of the most commonly required parts are listed on this page. If you require Cessna parts not listed here, please provide us with the Cessna part numbers and we will provide you with a prompt quotation. All of the parts listed here are authentic Cessna factory parts and all carry our low price guarantee. Please verify that the parts are correct for your Cessna model/ year by referring to the applicable Cessna parts manual prior to ordering.

Call for Prices on Unlisted Cessna Parts

Part. No.	Description	Price
S1258-1	Sump	**$13.50**
SK172-1F	Strut Kit	**$25.85**
S1093-1	Flap Buttons	**$0.19**
NAS75-3-009	Bushing	**$5.25**
NAS77-3-23	Bushing	**$3.95**
NAS77-8-88	Bushing	**$6.60**
MS25171-1	Nipple	**$1.16**
MS25171-2	Nipple	**$1.18**
C156003-0101	Fuel Cap	**$52.85**
C592001-0201	Static Wick Certified	**$36.90**
11-10574	Static Wick Non Certified	**$12.95**
B100142-1	Fuel Cap Gasket	**$12.75**
S1991A1	Contactor	**$51.75**
S2020-2	Drain Valve	**$22.60**
S2106-2	Drain Valve	**$26.50**
S2160-1	Switch	**$6.75**
S2237-3	Seat Belt Bushing	**$1.72**
S2416-1-31.0	Alt Belt	**$32.80**
0400213-6	Compass Placards	**$1.44**
0413613-1-279	Panel Nut	**$1.76**
0511242-1	Seat Stop	**$76.50**
1220114-1	Spacer	**$0.64**
1243030-5	Shim	**$13.85**
1243030-6	Shim	**$10.95**
1243030-7	Shim	**$8.85**
1250860-29197	Clamp	**$110.95**
1298119-4	Exhaust Spring	**$5.40**
1414104-54	Bushing	**$17.75**
1513174-3	Grey Panel Nut	**$6.90**
1513174-5	Black Panel Nut	**$7.70**
1555014-2	Clamp Half	**$10.75**
0523919	Bushing	**$8.95**
0523920	Roller	**$59.90**
0523921	Roller	**$42.50**
0541139	Plug	**$28.85**
9910306-1	Westgate Gasket	**$32.75**
0711001-59	Hinge Pin	**$17.25**

Part. No.	Description	Price
0713348-1	Stall Horn	**$23.65**
S2488-1	Stall Horn Reed	**$0.85**
0756009-8	Gasket	**$26.85**
0851559-1	Washer	**$6.25**
0756010-6	Plunger	**$139.95**
0756011-1	Standpipe	**$205.95**
S1450-6B14-010	Washer	**$3.60**
S1597-1-37.5	Belt V	**$69.75**
B3-5-1	Filter Vac	**$2.95**
S1921-1	Clamp	**$108.95**
U10C062-262M	Clamp	**$51.00**
B40012	Brush	**$173.65**
A2748	Seal	**---**
A2749	Seal Wiper	**$15.75**
MS25253-1	Switch	**$11.75**
1234665-10	Tab	**$2,332.00**
S1906-1	Switch	**$21.50**
S1906-2	Switch	**$13.75**
S1230-17	Control	**$56.75**
S1230-19	Control	**$58.65**
RD0015H1600JBL	Rheostat	**$1,889.00**
0441139-6	Shim	**$52.25**
0541111-2	Shim	**$156.95**
0441157-2	Shim	**$658.00**
0441157-1	Shim	**$110.95**
1250405-1	Nut	**$304.95**
MS29513-338	O-Ring	**$1.45**
AN6235-2A	Filter Hyd	**$7.85**
AN6235-3A	Element	**$14.50**
1250922-200	Adapter	**$559.00**
1250922-201	Adapter	**$629.00**
1250922-202	Adapter	**---**
0750142-1	Gasket	**$32.25**
0756009-1	Fuel Filter	**$39.75**
0741623-4	Tread	**$17.25**
0441157-3	Shim	**$105.95**
0556010-200	Adapter Ass'y.	**$963.00**

Part. No.	Description	Price
1232040-5	Boot	**$68.85**
79C1	Drain Valve	**$135.95**
S2485-1	Drain Valve	**$87.25**
S1577A1	Contactor	**$88.75**
S1579A2	Contactor	**$56.90**
S1580A1	Contactor	**$81.75**
S1588-1	Gasket	**$37.25**
S1588-2	Gasket	**$29.90**
0750143-2	Deflector	**$20.85**
0750143-3	Bracket	**$10.60**
0851559-2	Washer	**$6.85**
S1915-1	Capacitor	**$106.95**
S1915-2	Capacitor	**$72.50**
S1994-1-1	Switch	**$29.70**
S2334-3	CHT Probe	**$271.95**
S1258-1	Sump	**$13.50**
S3010-1	Switch	**$40.75**
S1104-3	Rod End	**$24.50**
S1105-4	Rod End	**$16.50**
C592001-0201	Wick	**$36.90**
C592001-0203	Wick	**$67.75**
S1704-1	Roller	**$2.80**
1714000-22	Washer	**$3.30**
16165	Wick	**$49.50**
KM610-64	Latch	**$59.00**
B3-11-1	Gasket	**$31.75**
S1477-3	Nut	**$1.51**
S1477-08	Nut Clip	**$2.25**
NH1000897-30	Clamp	**$221.00**
NH1000897-40	Clamp	**$433.95**
NH1000897-50	Clamp	**$284.95**
NH1000897-60	Coupling	**$313.95**
DGR3	ACU	**$319.95**
DGR6	Regulator	**$169.95**
SK152-25A	Rudder Stop	**$90.50**

AP

CESSNA COWLING MOUNTS - FIREWALL

The Skybolt SK2003 is the FAA TSO-C148 approved direct replacement for the common CESSNA /LORD J7444 firewall platemounts. SK2003 -14 Southco™ Fasteners • SK2003-24 Camloc™ or CLoc™ 2000 Series Fasteners • SK2003-36 Camloc™ or CLoc™ 4000 Series Fasteners The newly improved SK2003 offers greater flex for cowlings with cumbersome alignment issues. Combined with the SK2003-AW alignment washer, the SK2003 can be easily positioned to align with the existing cowling holes. This allows the cowling fasteners to lock properly and effortlessly, removing the stress that is a common problem in original part failures. Fateners not included.

Orig. Mfg. Part No.	New Part No.	Aircraft	Part No.	Price
J7444-14	SK2003-14	67-On C150, 67-86 C172, 71-78 C177	08-00663	**$21.75**
J7444-24	SK2003-24	73-86 C182	08-00664	**$21.95**
J7444-36or-42	SK2003-14	96-On C172	08-00665	**$22.75**

15% discount on 10 or more

CONVERT OLDER SOUTHCO COWLINGS TO HEAVY DUTY SKYLOC SK40S5 FASTENERS

Now easier than ever to install. No drilling of airframe required. All kits utilize new SK2003 cushioned shock mounts complete instructions with photographs. All paperwork included for logbook entry.

Aircraft	Kit	Convert all fasteners to:	Part No.	Price
C150 (67-On)	SK203C150P4	Firewall to SK40S5 Stainless / Sides to SK26S51 Stainless	08-00666	**$470.95**
C172 (67–81)	SK203C172P4	Firewall to SK40S5 Stainless / Sides to SK40S5 Stainless	08-00667	**$598.00**
C172 (82–86)	SK203C172PQ4	Firewall to SK40S5 Stainless / Sides to SK40S5 Stainless	08-00671	**$654.00**
C177 (All)	SK203C177P4	Firewall to SK40S5 Stainless / Sides to SK40S5 Stainless	08-00668	**$634.00**
C182 (73–86)	SK203C182P4	Firewall to SK40S5 Stainless / Sides-replace 40S5 with SK40S5 Stainless	08-00669	**$593.00**

Partial Kit list – Call for early screw cowling conversion kit and non-listed aircraft. Special tooling required – #4P3/T26 tool set
Note: In addition to normal hand tools, Unibit 1 and Unibit 3 stepdrills required.

INTER-CYLINDER BAFFLE

Intercylinder Baffles for Teledyne Six Cylinder Engines. Replaces Cessna Part Number 0750135-1 and 0851833-1
P/N 05-02362 ..... **$69.25**

FLAP TRAILING EDGE BULB

PN 05-00046

Improved fit and appearance. Form fitting, Trailing Edge Bulb for Cessna Flaps. (Cut on bevel to avoid crimping Flap Trailing Edge.) STC/PMA Approved. For application please call or visit our website.
79.5" length..... P/N 05-00046..... **$56.75**

MC600 SERIES UNIVERSAL SOLID WIRE VERNIER MIXTURE CONTROL

FAA-PMA approved for use as a minor alteration part on the following aircraft:
• Cessna • Raytheon • Maule • Cessna/Reims • Mooney •Univair (Stinson) • Piper Call for Specific Models - Easily field approved for other applications
- Trim to exact length ..... P/N 05-01254..... **$149.95**

THROTTLE CONTROL

Fittings and components are made from anodized aluminum, stainless steel, and brass. All critical swage connections are metal to metal for continued dependability. Vernier locking devices are precision formed and heat treated in critical wear areas. ..... P/N 05-02209..... **$337.50**

6260 RETAINING NUT 7/16-20

The retaining nut threads onto the threaded section of the control on the back side of the instrument panel to secure the control. Replacement retaining nut p/n 6260 for all McFarlane MC6350 dual push-to-unlock controls. P/N 05-04581 ..... **$6.34**

CESSNA CONTROLS

FAA-PMA APPROVED CONTROLS FOR CESSNAS
THROTTLES – PROP – MIXTURE

Throttle, Propeller, Mixture, controls are available for most Cessna single engine aircraft from the Cessna 120 through the 210 series. These FAA-PMA controls are ultra-smooth, flexible with no stretch, arctic tested to -50°F, and tested to 250,000 cycles. They feature brass body assembly, teflon lined conduit, stainless steel ends, viton dust boots, aluminum friction lock, and a high quality phenolic knob (throttle, mixture, and prop).

AP

Throttle Controls

Model	Serial No.	Model No.	Part No.	Price
120	8000 thru 11846	MC0411091-7	05-00272	**$289.95**
140	11847 thru 15075	MC0411091-7	05-00272	**$289.95**
140A	15200 thru 15724	MC0411091-7	05-00272	**$289.95**
150	17001 thru 59018	MC0411091-7	05-00272	**$289.95**
150A,B,C, D,E,F	15059019 thru 15064532	MCS1222-11S	05-00197	**$203.95**
F150F	F1500001 thru F1500067	MCS1222-11S	05-00197	**$203.95**
150G	15064533 thru 15067198	MCS1222-14S	05-00199	**$223.95**
F150G	F1500068 thru F1500219	MCS1222-14S	05-00199	**$223.95**
150H,I,J, K,L,M	15067199 thru 15079405	MCC299505-0202S	05-00262	**$198.50**
A150K,L,M	A1500001 thru A1500734	MCC299505-0202S	05-00262	**$198.50**
F150H,J, K,L,M	F1500220 thru F1501428	MCC299505-0202S	05-00262	**$198.50**
FA150K,L	FA1500001 thru FA1500120	MCC299505-0202	05-00262	**$198.50**
152*	15279406 thru 15282031	MC9863053-20	05-00248	**$393.95**
A152*	A1520735 thru A1520808	MC9863053-20	05-00248	**$393.95**
F152*	F15201429 thru F15201528	MC9863053-20	05-00248	**$393.95**
FA152*	FA1520337 thru FA1520347	MC9863053-20	05-00248	**$393.95**
152*	15282032 thru 15286033	MC9863056-1	05-00251	**$189.75**
A152*	A1520809 thru A1521049	MC9863056-1	05-00251	**$189.75**
F152*	F15201529 thru F15201929	MC9863056-1	05-00251	**$189.75**
FA152*	FA1520348 thru FA1520425	MC9863056-1	05-00251	**$189.75**
170, 170A,B*	18000 thru 25372	MC0411091-2	05-00269	**$361.95**
170B*	25373 thru 27169	MCS1222-2S	05-00206	**$223.50**
172, 172A, B,C,D	28000 thru 17250572	MCS1222-2S	05-00206	**$223.50**
F172D	F1720001 thru F1720018	MCS1222-2S	05-00206	**$223.50**
172E,F,G,H	17250573 thru 17256512	MCS1222-15S	05-00201	**$202.95**
F172E,F,G,H*	F1720019 thru F1720559	MCS1222-15S	05-00201	**$202.95**
172I,K,L,M	17256513 thru 17267584	MCC299505-0102	05-00259	**$227.95**
F172M*	F17201035 thru F1720151	MCC299505-0102	05-00259	**$227.95**
172N*	17267585 thru 17271034	MC9863053-15	05-00246	**$382.95**
F172N*	F17201515 thru F17201749	MC9863053-15	05-00246	**$382.95**
172N*,P,Q	17271035 thru 17276673	MC9863056-3	05-00253	**$339.95**
F172N*,P	F17201750 thru F17202254	MC9863056-3	05-00253	**$339.95**
172R	17280001 and On	MC565-549-021	05-00988	**$374.95**
172S	172S8001 and On	MC565-549-021	05-00988	**$374.95**
175*	55001 thru 55703	MC0411091-27	05-00271	**$307.95**
177	17700001 thru 17701164	MCS1222-19	05-00203	**$449.95**
177A,B*	17701165 thru 17702539	MCC299505-030	05-00264	**$234.95**
180,A,B,C, D,E,F,G	30000 thru 18051445	MCS1222-1S	05-00204	**$179.85**
180H*	18051446 thru 18051875	MCS1222-13S	05-00198	**$169.95**
180H*,J	18051876 thru 18052770	MCC299505-0201S	05-00261	**$245.95**

Throttle Controls

Model	Serial No.	Model No.	Part No.	Price
180K*	18052771 thru 18053000	MC9863053-5	05-00249	**$346.95**
182,A,B,C,D	33000 thru 18253598	MCS1222-1S	05-00204	**$179.85**
182E,F,G	18253599 thru 18255844	MCS1222-6S	05-04606	**$231.95**
182H,J,K	thru 18258505	MCS1222-13S	05-00198	**$169.95**
182L,M,N,P*	18258506 thru 18261425	MCC299505-0201S	05-00261	**$245.95**
182P*	18261426 thru 18264835	MCC299505-0205	05-00263	**$226.95**
182P*,Q*	18264836 thru 18266590	MC9863053-5	--	--
F182P*,Q	F18200001 thru F18200094	MC9863053-5	--	--
182S	18280001 thru 18280944	MC565-549-031	05-00989	**$277.95**
182T	18280945 and On	MC565-549-031	05-00989	**$277.95**
T182T	T18208001 and On	MC565-549-031	05-00989	**$277.95**
T182	18267716 thru 18268615	MC9863056-7	05-00257	**$386.00**
R182*	R18200001 thru R18200583	MC9863053-11	05-00244	**$342.95**
FR182*	FR18200001 thru FR18200020	MC9863053-11	05-00244	**$342.95**
R182*	R18200584 thru R18202041	MC9863056-6	05-00256	**$380.95**
FR182*	FR18200021 thru FR18200070	MC9863056-6	05-00256	**$380.95**
TR182	R18200584 thru R18202041	MC9863056-7	05-00257	**$386.00**
A185E*	185-1301 thru 185-1599	MCC299505-0301	05-00264	**$234.95**
A185E*	18501600 thru 18502007	MCC299505-0301	05-00264	**$234.95**
A185E*	18502026 and 18502027	MCC299505-0301	05-00264	**$234.95**
A185E*,F*	18502008 thru 18502025	MCC299505-0501	05-00265	**$391.95**
A185E*,F*	18502028 thru 18503153	MCC299505-0501	05-00265	**$391.95**
188A, A188B*	18800833 thru 18802745	MCS2149-1	05-00226	**$507.00**
A188B*	18802746 thru 18803856	MCC299508-0301	05-00184	**$264.95**
205,205A	205-0001 thru 205-0577	MCS1219-1	05-00193	**$379.95**
206	206-0001 thru 206-0275	MCS1219-1	05-00193	**$379.95**
P206C,D,E	P206-0420 thru P20600647	MCC299505-0101	05-00258	**$234.95**
U206C,D,E,F	U206-0915 thru U20603521	MCC299505-0101	05-00258	**$234.95**
U206G*/ TU206G*	U20603522 thru U20604649	MC9863053-13	05-00245	**$396.95**
U206G*/ TU206G*	U20604650 thru U20606439	MC9863056-2	05-00252	**$327.95**
206H	20608001 and On	MC565-549-041	05-00990	**$376.95**
T206H	T20608001 and On	MC565-549-041	05-00990	**$376.95**
207, T207	20700007 thru 20700362	MCS1222-25A	05-00205	**$218.95**
207A*/ T207A*	20700363 thru 20700482	MC9863053-16	05-00247	**$337.95**
207A*/ T207A*	20700483 thru 20700788	MC9863056-4	05-00254	**$346.95**
210B,C,D	21057841 thru 21058510	MCS1219-1	05-00193	**$379.95**
210H,J,K,L	21058937 thru 21061573	MCC299505-0101	05-00258	**$234.95**
T210H,J,K,L	T210-0308 thru 21061573	MCC299505-0101	05-00258	**$234.95**
210M/ T210M	21061574 thru 21062954	MC9863053-13	05-00245	**$396.95**
210N*/ T210N*	21062955 thru 21064897	MC9863056-2	05-00252	**$327.95**
P210N*	P21000001 thru P21000150	MC9863053-13	05-00245	**$396.95**
P210N*	P21000151 thru P21000834	MC9863056-2	05-00252	**$327.95**

PARTIAL MODEL ELIGIBILITY

Accessories

Cessna Rod End S1104-3..... P/N 06-00684 ..... **$24.50**

Cessna ControlS1230-17 ..... P/N 06-00686..... **$56.75**

Propeller Controls

Model	Serial Number	P/N	Our P/N	Price
177B*	17701371 thru 17702539	C299506-0105	05-00177	**$310.95**
177RG*	177RG0001 thru 177RG1051	C299506-0105	05-00177	**$310.95**
F177RG*	F177RG0001 thru F177RG0160	C299506-0105	05-00177	**$310.95**
180A,B,C,D,E,F,G	30000 thru 18051445	S1223-4	05-00209	**$245.95**
180H*, J	18051876 thru 18052770	S1223-4	05-00209	**$258.95**
182,A,B,C,D	33000 thru 18253598	C299506-0103	05-00268	**$245.95**
182E,F,G	33000 thru 18253598	S1223-4	05-00209	**$245.95**
182E,F,G	18253599 thru 18255844	S1223-6S	05-00207	**$217.95**
182H,J,K	18255845 thru 18258505	S1223-3	05-00208	**$271.95**
182L,M,N,P	18258506 thru 18265175	S1223-6	05-00211	**$240.95**
FR182P	F18200001 thru F18200025	C299506-0102	05-00267	**$240.95**
182Q,R	18265176 thru 18268615	C299506-0102	05-00267	**$497.50**
A185E*	185-1301 thru 18502007	C299506-0103	05-00268	**$258.95**
A185E*	18502026 and 18502027	C299506-0103	05-00268	**$258.95**
A185E*,F	18502008 thru 18502025	C299506-0201	05-00178	**$394.95**
A185E*,F	18502028 thru 18503153	C299506-0201	05-00178	**$394.95**
A188B*	18800833 thru 18802745	S2149-2	05-00228	**$502.00**
A188B*	18802746 thru 18803856	C299508-0302	05-00187	**$309.95**
T188C	T18803297T thru T18803422T	C299508-0304	05-00191	**$511.00**
U206, U206A,B, TU206A,B	U206-0276 thru U206-0914	S1223-4	05-00209	**$245.95**
P206, P206A,B	P2060001 thru P2060419	S1223-4	05-00209	**$245.95**
U206C,D,E,F	U2060915 thru U20603521	C299506-0101	05-00266	**$221.95**
TU206C,D,E,F	U2060915 thru U20603521	C299506-0101	05-00266	**$221.95**
P206C,D,E	P206-0420 thru P20600647	C299506-0101	05-00266	**$221.95**
U206G, TU206G	U20603522 thru U20607020	9862067-1	05-00241	**$389.95**
207A, T207A	20700363 thru 20700788	9862067-12	05-00242	**$260.95**
210E,F,G	21058511 thru 21058936	S1223-4	05-00209	**$245.95**
T210F,G	T2100001 thru T2100307	S1223-4	05-00209	**$245.95**
210H,J,K,L	21058937 thru 21061573	C299506-0101	05-00266	**$221.95**
T210H,J,K,L	T2100308 thru T2100454	C299506-0101	05-00266	**$221.95**
210M,N,T210M,N	21061574 thru 21064897	9862067-1	05-00241	**$389.95**
P210N	P21000001 thru P21000834	9862067-1	05-00241	**$389.95**

Mixture Controls

Model	Serial Number	P/N	Our P/N	Price
R172E,F,G,H,J,K	R1722000 thru R1723454	9862066-6	05-00239	**$442.95**
185A,B,C,D,E	185-0238 thru 185-1599	C299507-0201	05-00181	**$268.95**
A185E,F*	18501600 thru 18502007	C299507-0201	05-00181	**$268.95**
A185E,F*	18502026 and 18502027	C299507-0201	05-00181	**$268.95**
A185F*	18502008 thru 18502025	C299507-0401	05-00183	**$476.00**
A185F*	18502028 thru 18503153	C299507-0401	05-00183	**$476.00**
188,188A	1880001 thru 1880572	S1220-13	05-00195	**$497.95**
A188	18800573 thru 18800832	S1220-13	05-00195	**$497.95**
188B, A188B*	1880833 thru 18802745	C299507-0301	05-00182	**$468.95**
A188B*	18802746 thru 18803856	C299508-0401	05-00189	**$522.00**
T188C	T18803297T thru T18803422T	C299508-0402	05-00191	**$511.00**
205, 205A	205-0001 thru 205-0577	S1220-3	05-00196	**$419.95**
206	206-0001 thru 206-0275	S1220-3	05-00196	**$419.95**
U206, U206A,B	U206-0276 thru U206-0914	S1220-3	05-00196	**$419.95**
P206, P206A,B	P206-0001 thru P206-0419	S1220-3	05-00196	**$419.95**
U206C,D,E,F	U206-0915 thru U20603521	C299507-0101	05-00179	**$215.95**
TU206C,D,E,F	U206-0915 thru U20603521	C299507-0101	05-00179	**$215.95**
P206C,D,E	P206-0420 thru P2060647	C299507-0101	05-00179	**$215.95**
U206G, TU206G	U20603522 thru U20607020	9862066-1	05-00237	**$328.95**
207, T207	20700001 thru 20700362	S1220-12A	05-00194	**$522.00**
207A, T207A	20700363 thru 20700788	9862066-5	05-00238	**$330.95**
210B,C,D,E,F,G	21057841 thru 21058936	S1220-3	05-00196	**$419.95**
T210F,G	T210-0001 thru T210-0307	S1220-3	05-00196	**$419.95**
210K,L, T210K,L	21059200 thru 21061573	C299507-0101	05-00179	**$215.95**
210M,N, T210M,N	21061574 thru 21064897	9862066-1	05-00239	**$442.95**
P210N	P21000001 thru P21000834	9862066-1	05-00239	**$442.95**
182S	18280001 - 18280944	C565-548-042	05-00994	**$294.95**
182T	18280945 - On	C565-548-042	05-00994	**$294.95**

FOR CARBURETOR HEAT CONTROLS FOR CESSNA 140-185, VISIT OUR WEBSITE AT WWW.AIRCRAFTSPRUCE.COM.

AIRCRAFT SPRUCE WEST CORONA, CA • (877) 4-SPRUCE
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Prices Subject to Change Without Notice

CESSNA CONTROLS

CESSNA COWL FLAP CONTROLS

Cowl Flap controls are available for most Cessna single engine aircraft from the Cessna 120 through the 210 series. These FAA-PMA controls are ultra-smooth, flexible with no stretch, arctic tested to -50°F, and tested to 250,000 cycles. They feature brass body assembly, teflon lined conduit, stainless steel ends, viton dust boots, aluminum friction lock, and a high quality phenolic knob (throttle, mixture, and prop). Our P/Ns are interchangeable with Cessnas P/Ns; "AS" prefix denotes Aircraft Spruce!

Model	Serial Number	Location	P/N	Our P/N	Price	Location	P/N	Our P/N	Price
R172K	R1722000 thru R1723454	1 per A/C	S1391-26	05-00222	**$118.95**	----	----------	-----	------
FR172K	FR17200591 thru FR17200675	1 per A/C	S1391-26	05-00222	**$118.95**	----	----------	-----	------
177B	17701371 thru 17702752	Left	S1391-25	05-00221	**$171.95**	Right	S1391-26	05-00221	**$171.95**
177RG	177RG0001 thru 177RG1366	Left	S1391-27	05-00223	**$129.95**	Right	S1391-27	05-00223	**$129.95**
180D,E	18050912 thru 18051183	Left	S1245-1	05-00217	**$211.95**	Right	S1245-1	05-00217	**$211.95**
180F	18051184 thru 18051312	Left	S1245-1	05-00217	**$211.95**	Right	S1245-2	05-00218	**$143.95**
180G	18051313 thru 18051445	Left	S1245-3	05-00219	**$202.95**	Right	S1245-2	05-00218	**$143.95**
180H,J	18051446 thru 18052770	Left	S1572-1	-----	-----	Right	S1245-2	05-00218	**$143.95**
180K	18052771 thru 18053203	Left	9860074-3	05-00232	**$268.95**	Right	9860074-4	05-00233	**$321.95**
182D	18253008 thru 18253598	Left	S1245-1	05-00217	**$211.95**	Right	S1245-1	05-00217	**$211.95**
182E,F,G,H,J,K,L,M,N,P,Q,R	18253599 thru 18268615	Left	9860058-3	05-00229	**$231.95**	Right	9860058-4	05-00231	**$214.95**
T182	18267716 thru 18268541	Left	9860075-3	05-00234	**$372.95**	Right	9860075-4	05-00235	**$361.95**
R182/TR182	R18200002 thru R18202041	Left	9860075-3	05-00234	**$372.95**	Right	9860075-4	05-00235	**$361.95**
182S, 182T	18280001 and On	Left	580-703-024	05-01736	**$223.95**	Right	580-703-025	05-01737	**$221.95**
T182T	T18208001 and On	Left	580-703-024	05-01736	**$223.95**	Right	580-703-025	05-01737	**$221.95**
185, 185A,B,C	185-0001 thru 185-0776	Left	S1245-3	05-00219	**$202.95**	Right	S1245-2	05-00218	**$143.95**
185D,E, A185E,A185F*	185-0777 thru 18503153	Left	S1572-1	-----	-----	Right	S1245-2	05-00218	**$143.95**
A185F*	185603154 thru 18504448	Left	9860074-3	05-00232	**$268.95**	Right	9860074-4	05-00233	**$321.95**
205, 205A	205-0001 thru 205-0577	Left	S1244-5	05-00216	**$191.95**	Right	S1244-31	05-00214	**$99.85**
206, U206	206-0001 thru 206-0275	Left	S1244-5	05-00216	**$191.95**	Right	S1244-31	05-00214	**$99.85**
U206A,B,C,D,E,F*	U206-0276 thru U20602199	Left	S1244-5	05-00216	**$191.95**	Right	S1244-31	05-00214	**$99.85**
P206, P206A,B,C,D,E	P206-0001 thru P20600647	Left	S1244-5	05-00216	**$191.95**	Right	S1244-31	05-00214	**$99.85**
TP206A*	P206-0161 thru P206-0274	Left	S1244-5	05-00216	**$191.95**	Right	S1244-31	05-00214	**$99.85**
TU206A*	U206-0438 thru U206-0617	Left	S1244-5	05-00216	**$191.95**	Right	S1244-31	05-00214	**$99.85**
TP206A*,B,C,D,E	P206-0275 thru P20600647	Left	S1244-32	05-00215	**$125.95**	Right	S1244-31	05-00214	**$99.85**
TU206A*,B,C,D,E,F,G	U206-0618 thru U20607020	Left	S1244-32	05-00215	**$125.95**	Right	S1244-31	05-00214	**$99.85**
U206F*,G	U20602200 thru U20607020	Left	S1244-32	05-00215	**$125.95**	Right	S1244-31	05-00214	**$99.85**
206H	20608001 and On	Left	580-703-026	05-01738	**$311.95**	Right	580-703-027	05-01739	**$424.95**
T206H	T20608001 and On	Left	580-703-026	05-01738	**$311.95**	Right	580-703-027	05-01739	**$424.95**
207, 207A,T207,T207A	20700001 thru 20700788	Left	S1244-29	05-00212	**$168.95**	Right	S1244-30	05-00213	**$131.95**
210, 210A	57001 thru 21057840	Left	1213040-1	05-00224	**$132.95**	Right	1213040-2	05-00225	**$376.95**
210B,C,D,E,F,G,H,J,K*	21057841 thru 21059240	Left	S1244-5	05-00216	**$191.95**	Right	S1244-31	05-00214	**$99.85**
T210F	T210-0001 thru T210-0197	Left	S1244-5	05-00216	**$191.95**	Right	S1244-31	05-00214	**$99.85**
210K*,L,M,N	21059241 thru 21064897	Left	S1244-32	05-00215	**$125.95**	Right	S1244-31	05-00214	**$99.85**
T210G,H,J,K,L,M,N	T210-0198 thru 21064897	Left	S1244-32	05-00215	**$125.95**	Right	S1244-31	05-00214	**$99.85**
P210N*	P21000001 thru P21000834	Left	S1244-32	05-00215	**$125.95**	Right	S1244-31	05-00214	**$99.85**

Denotes partial model eligibility

AP

UNIVERSAL PUSH TO UNLOCK CONTROLS

Universal Push to Unlock Controls MC6150/ MC6250 - Perfect for home built or custom projects! Quality stainless steel construction • Teflon lined for smooth operation • Heavy duty strength and long life • 3" maximum travel and 15lb. locking forcem • Anodized aluminum knobs in red, black, blue or clear • Custom laser marking available. **MC6150 Series: -** • Solid wire end • Available in 4, 6, 8, 10 and 12 foot lengths • Maybe cut to length. **MC6250 Series: -** • 10-32 threaded end • Available in 4, 6, 8, 10 and 12 foot lengths

MC6150 Controls (Solid Wire End)

Description	Part No.	Price
Black Knob, 4Ft.	05-04151	**$72.65**
Black Knob, 6Ft.	05-04152	**$75.75**
Black Knob, 8Ft.	05-04153	**$78.25**
Black Knob, 10Ft.	05-04154	**$81.00**
Black Knob, 12Ft.	05-04155	**$83.50**
Clear Knob, 4Ft.	05-04490	**$72.65**
Clear Knob, 6Ft.	05-04491	**$84.50**
Clear Knob, 8Ft.	05-04492	**$87.50**
Clear Knob, 10Ft.	05-04493	**$90.25**
Clear Knob, 12Ft.	05-04494	**$93.25**
Blue Knob, 4Ft.	05-04495	**$72.65**
Blue Knob, 6Ft.	05-04496	**$75.75**
Blue Knob, 8Ft.	05-04497	**$87.50**
Blue Knob, 10Ft.	05-04498	**$90.25**
Blue Knob, 12Ft.	05-04499	**$93.25**
Red Knob, 4Ft.	05-04156	**$73.00**
Red Knob, 6Ft.	05-04157	**$75.50**
Red Knob, 8Ft.	05-04158	**$78.85**
Red Knob, 10Ft.	05-04159	**$81.00**
Red Knob, 12Ft.	05-04160	**$83.50**

MC6250 Controls (Threaded End)

Description	Part No.	Price
Black Knob, 4Ft.	05-04501	**$83.50**
Black Knob, 5Ft.	05-04502	**$94.75**
Black Knob, 6Ft.	05-04503	**$85.75**
Black Knob, 7Ft.	05-04504	**$97.75**
Black Knob, 8Ft.	05-04505	**$99.25**
Black Knob, 9Ft.	05-04506	**$89.50**
Black Knob, 10Ft.	05-04507	**$101.95**
Clear Knob, 4Ft.	05-04508	**$93.25**
Clear Knob, 5Ft.	05-04509	**$94.75**
Clear Knob, 6Ft.	05-04510	**$73.00**
Clear Knob, 7Ft.	05-04511	**$97.75**
Clear Knob, 8Ft.	05-04512	**$99.25**
Clear Knob, 9Ft.	05-04513	**$89.50**
Clear Knob, 10Ft.	05-04514	**$101.95**
Blue Knob, 4Ft.	05-04515	**$83.50**
Blue Knob, 5ft	05-04516	**$94.75**
Blue Knob, 6ft.	05-04517	**$96.25**
Blue Knob, 7Ft.	05-04518	**$97.75**
Blue Knob, 8Ft.	05-04519	**$99.25**
Blue Knob, 9Ft.	05-04522	**$90.50**
Blue Knob, 10ft.	05-04523	**$101.95**
Red Knob, 4Ft.	05-04524	**$83.50**
Red Knob, 5Ft.	05-04525	**$94.75**
Red Knob, 6Ft.	05-04526	**$86.25**
Red Knob, 7Ft.	05-04527	**$87.50**
Red Knob, 8Ft.	05-04528	**$89.00**
Red Knob, 9Ft.	05-04529	**$101.95**
Red Knob, 10Ft.	05-04530	**$92.85**

WIRE CLAMP BOLTS FOR CESSNAS

Wire clamps for solid wire controls for Cessna Aircraft. Wire clamps are used on solid wire controls including cabin air, mixture control, strainer drain, cabin heat, defrost, flap and many others.

FAA-PMA approved for Cessna 120 through the 425 series aircraft. Unique design to reduce wire stress. Manufactured from heat treated stainless steel for better wear and corrosion resistance.

Please visit our website for part specifications and application information.

Manufacturer Part No.	Part No.	Price
MCS2323-1	05-04583	**$11.60**
MCS2323-2	05-04584	**$23.93**
MCS2323-3	05-04585	**$23.93**
MCS2323-4	05-04586	**$15.25**
MCS2323-5	05-04587	**$10.90**
MCS2323-6	05-04588	**$22.90**
MCS2323-7	05-04589	**$21.70**
MCS2323-8	05-04590	**$23.93**
MCS2323-9	05-04591	**$23.93**
MCS2323-10	05-04592	**$23.93**
MCS2323-11	05-04593	**$13.85**
MCS2323-12	05-04594	**$23.93**
MCS2323-13	05-04595	**$19.38**
MCS2323-14	05-04596	**$19.80**
MCS2323-19	05-04597	**$23.93**

MC1660300-30 AILERON DIRECT CABLE

This Aileron Direct cables eligible for installation in Cessna 188A and A188A aircraft, serial range 18800573 thru 18800707. This cable has also been added to the cable kit CCKT188-04 188A, A188A 1970-1971 Serial Number 18800573-18800707 P/N 05-04614.....**$122.50**

FLAP SKINS – AILERON SKINS

UPPER RIGHT-HAND AND LEFT-HAND FLAP AILERON

* Better and costs less!
* No pre-drilled holes to misalign
* Precisely formed and trimmed
* Plastic coated on both sides for better protection during handling (remove before installation)
* Direct replacement - No STC required

FLAP SKIN KIT COMPONENTS

Qty	MFG P/N	Description	P/N	Price
KIT	SKN-KT-FLP1	Flap skin kit	05-04164	**$281.95**
1 ea	MC0426901-10	Flap Upper RH	05-03371	**$76.50**
1 ea	MC0426901-11	Flap Upper LH	05-03372	**$61.00**
1 ea	MC0426901-6	Flap Lower LH	05-03369	**$49.50**
1 ea	MC0426901-7	Flap Lower RH	05-03370	**$60.25**

Qty	MFG P/N	Description	P/N	Price
KIT	SKN-KT-FLP2	Flap skin kit	05-04169	**$280.95**
1 ea	MC0523901-4	Flap Upper LH	05-04113	**$90.75**
1 ea	MC0523901-5	Flap Upper RH	05-04114	**$90.75**
1 ea	MC0523901-6	Flap Lower LH	05-04115	**$81.75**
1 ea	MC0523901-7	Flap Lower RH	05-04116	**$81.75**

Qty	MFG P/N	Description	P/N	Price
KIT	SKN-KT-FLP3	Flap skin kit	05-04170	**$282.95**
2 ea	MC0523901-201	Flap Upper LH RH	05-04125	**$92.25**
1 ea	MC0523901-6	Flap Upper LH	05-04115	**$81.75**
1 ea	MC0523901-7	Flap Lower RH	05-04116	**$81.75**

Qty	MFG P/N	Description	P/N	Price
KIT	SKN-KT-FLP4	Flap skin kit	05-04171	**$272.95**
1 ea	MC0523901-21	Flap Upper LH	05-04119	**$89.25**
1 ea	MC0523901-22	Flap Upper RH	05-04120	**$89.25**
1 ea	MC0523901-19	Flap Lower LH	05-04117	**$79.85**
1 ea	MC0523901-20	Flap Lower RH	05-04118	**$79.50**

Qty	MFG P/N	Description	P/N	Price
KIT	SKN-KT-FLP5	Flap skin kit	05-04172	**$355.95**
1 ea	MC0523901-25	Flap Upper LH	05-04121	**$113.95**
1 ea	MC0523901-26	Flap Upper RH	05-04122	**$113.95**
1 ea	MC0523901-27	Flap Lower LH	05-04123	**$105.95**
1 ea	MC0523901-28	Flap Lower RH	05-04124	**$105.95**

Qty	MFG P/N	Description	P/N	Price
KIT	SKN-KT-FLP6	Flap skin kit	05-04173	**$697.00**
1 ea	MC0523901-25	Flap Upper Inbd LH	05-04121	**$113.95**
1 ea	MC1220100-20	Flap Upper Inbd RH	05-04135	**$128.95**
1 ea	MC1220100-5	Flap Upper Otbd LH	05-04132	**$95.50**
1 ea	MC1220100-6	Flap Upper Otbd RH	05-04133	**$95.50**
1 ea	MC1220100-27	Flap Lower Inbd LH	05-04123	**$105.95**
1 ea	MC1220100-18	Flap Lower Otbd RH	05-04134	**$127.95**
1 ea	MC1220100-3	Flap Lower Otbd LH	05-04130	**$95.00**
1 ea	MC1220100-4	Flap Lower Otbd RH	05-04131	**$95.00**

Qty	MFG P/N	Description	P/N	Price
KIT	SKN-KT-FLP7	Flap skin kit	05-04173	**$697.00**
1 ea	MC0523901-25	Flap Upper Inbd LH	05-04121	**$113.95**
1 ea	MC1220100-26	Flap Upper Inbd RH	05-04122	**$113.95**
1 ea	MC1220100-5	Flap Upper Otbd LH	05-04132	**$95.50**
1 ea	MC1220100-6	Flap Upper Otbd RH	05-04133	**$95.50**
1 ea	MC1220100-27	Flap Lower Inbd LH	05-04123	**$105.95**
1 ea	MC1220100-28	Flap Lower Inbd RH	05-04124	**$105.95**

FLAP SKIN KIT COMPONENTS CONT.

Qty	MFG P/N	Description	P/N	Price
1 ea	MC1220100-3	Flap Lower Otbd LH	05-04130	**$95.00**
1 ea	MC1220100-4	Flap Lower Otbd RH	05-04131	**$95.00**

Qty	MFG P/N	Description	P/N	Price
KIT	SKN-KT-FLP8	Flap skin kit	05-04175	**$680.00**
1 ea	MC1220100-33	Flap Upper Inbd LH	05-04133	**$95.50**
1 ea	MC1220100-34	Flap Upper Inbd RH	05-04134	**$127.95**
1 ea	MC1220100-5	Flap Upper Otbd LH	05-04132	**$95.50**
1 ea	MC1220100-6	Flap Upper Otbd RH	05-04133	**$95.50**
1 ea	MC1220100-35	Flap Lower Inbd LH	05-04138	**$113.95**
1 ea	MC1220100-36	Flap Lower Inbd RH	05-04139	**$113.95**
1 ea	MC1220100-3	Flap Lower Otbd LH	05-04130	**$95.00**
1 ea	MC1220100-4	Flap Lower Otbd RH	05-04131	**$95.00**

AILERON SKIN KIT COMPONENTS

Qty	MFG P/N	Description	P/N	Price
KIT	SKN-KT-AIL1	Skin Kit	05-04140	**$494.95**
1 ea	MC0523800-6	Aileron Upper Inbd LH	05-03373	**$44.75**
1 ea	MC0523800-7	Aileron Upper Inbd RH	05-03374	**$46.25**
1 ea	MC0523800-8	Aileron Upper Otbd LH	05-03375	**$45.50**
1 ea	MC0523800-9	Aileron Upper Otbd RH	05-03376	**$62.75**
1 ea	MC0523800-10	Aileron Lower Inbd LH	05-03377	**$58.25**
1 ea	MC0523800-11	Aileron Lower Inbd RH	05-03378	**$53.50**
1 ea	MC0523800-12	Aileron Lower Otbd LH	05-03379	**$51.75**
1 ea	MC0523800-13	Aileron Lower Otbd RH	05-03380	**$53.85**

Qty	MFG P/N	Description	P/N	Price
KIT	SKN-KT-AIL2	Skin Kit	05-04141	**$1,498.00**
1 ea	MC1624001-5	Aileron Upper Inbd LH	05-04145	**$108.95**
1 ea	MC1624001-6	Aileron Upper Inbd RH	05-04146	**$108.95**
1 ea	MC1624001-9	Aileron Upper Otbd LH	05-04149	**$128.95**
1 ea	MC1624001-10	Aileron Upper Otbd RH	05-04150	**$128.95**
1 ea	MC1624001-3	Aileron Lower Inbd LH	05-04143	**$108.95**
1 ea	MC1624001-4	Aileron Lower Inbd RH	05-04144	**$108.95**
1 ea	MC1624001-7	Aileron Lower Otbd LH	05-04147	**$128.95**
1 ea	MC1624001-8	Aileron Lower Otbd R	05-04148	**$128.95**

Qty	MFG P/N	Description	P/N	Price
KIT	SKN-KT-AIL3	Skin Kit	05-04142	**$495.95**
1 ea	MC1220085-11	Aileron Upper LH	05-04126	**$133.95**
1 ea	MC1220085-12	Aileron Upper RH	05-04127	**$133.95**
1 ea	MC1220085-13	Aileron Upper LH	05-04128	**$128.95**
1 ea	MC1220085-14	Aileron Upper RH	05-04129	**$133.95**

24 HR. EASY ONLINE ORDERING

VISIT OUR WEBSITE AT

WW.AIRCRAFTSPRUCE.COM

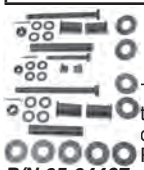
REPLACEMENT CESSNA PARTS

CESSNA STEERING RODS

These Cessna Steering Rods are better than the originals. Replace old, weak steering rods with these stainless steel, FAA-PMA approved steering rods and save up to $100 each.

Cessna Series	Serial Number	Part Number	Replaces Cessna P/N	Price Each
150	ALL	05-00273	0543022-3; L	$339.95
152	ALL	05-00274	0543022-4; R	$339.95
172,172A	28000 to 17247746	05-00275	0543022-1; L	$313.95
		05-00276	0543022-2; R	$314.95
172B,C	17247747 to 17249544	05-00589	0743008-1; L	$457.00
		05-00590	0743008-2; R	$457.00
172D, E, F, G, H, I, K, L, M, R172K	17247747 to 17249544 R1722000 to R1723454	05-00275	0543022-1; L	$313.95
F172D, E, F, G, H, K, L, M, N, P FP172 FR172E, F, G, H, J, K	F1720001 to F17202254 FP1720001 to FP1720003 FR17200001 to FP17200675	05-00276	0543022-2; R	$314.95
175,175A/B/C	55001 to 17557119	05-00589	0743008-1; L	$457.00
		05-00590	0743008-2; R	$457.00
182,182A/B/C/D	33000 to 53007 18253008 to 18253598	05-00589	0743008-1; L	$457.00
		05-00590	0743008-2; R	$457.00

CESSNA NOSE GEAR TORQUE LINK REPAIR KITS



This convenient kit includes all commonly replaced torque link parts. * FAA approved and certified standard hardware * Fits most single engine Cessna aircraft Please visit our website for kit components.

P/N 05-04427

TL-KT-1 ..P/N 05-04427....**$88.75** TL-KT-2 .. P/N 05-04619.. **$138.75**
TL-KT-4 ..P/N 05-04620..**$129.75** TL-KT-5 .. P/N 05-04621.. **$138.95**
TL-KT-6 ..P/N 05-04622..**$108.95** TL-KT-7 .. P/N 05-04623.. **$117.50**

CESSNA STEERING ROD BOOTS

Keep the exhaust and cold out of the cabin with these Kevlar/Fiberglass FAA/PMA approved Steering Rod Boots. These will last much longer & are less expensive than original Cessna boots.

FAA/PMA approved Steering Rod Boot application chart for Cessna Model Series 150, 152, 172, 175, and 182 Aircraft.

Model	Serial No.	Part No.	Price/
150 150A,B,C,D,E, F,G,H,J,K,L,M A150K, L, M F150F,G,H,J,K,L,M FA150K, L FRA150L,M	17001 – 59018 15059019 – 15079405 A1500001 – A1500734 F1500001 – F15001428 FA1500001 – F1500120 FRA1500121 – FRA1500336	05-00277	$59.80
152 A152 F152 FA152	15279406 – 15286033 A1520735 – A1521049 F15201429 – F15201980 FA1520337 – FA1520425	05-00277	$59.80
172 172A,B,C,D,E,F, G,H,I,K,L,M,N,P F172D,E,F,G,H, K,L,M,N,P FP172 FR172E,F,G,H,J,K	28000 – 46754 46755 – 17276673 F1720001 – F17202254 FP1720001 – FP1720003 FR17200001 – FR17200675	05-00279	$84.50
175 175A, B, C	55001 – 56238 56239 – 17557119	05-00279	$84.50
182 182A, B, C, D	33000 – 53007 18253008 – 18253598	05-00279	$84.50

INTAKE HEAT SHIELD DEFLECTOR

This part replaces Cessna part number 0750121. This intake Heat Shield Deflector is vibration dampened to prevent cracking! It is made of polished stainless steel for better heat control. FAA approved.

P/N 05-02361 ..... **$114.95**

Eligibility List	
Aircraft Models	**Serial Numbers**
175*, A,B,C	56083 thru 17557118
P172	P17257120 thru P17257188
180, A,B,C,D,E,F,G,H,J,K	30000 thru 18053203
182,A,B,C,D,E,F,G,H,J,K,L,M,N,P,Q,R	33000 thru 18268615
F182P,Q	F18200001 thru F18200169
A182J,K,L,M,N	A182-0001 thru A182-0148
T182	18267716 thru 18268615
185,A,B,C,D,E/A185E,F	185-0001 thru 18504448
185,A,B/A188,A,B	188-0001 thru 18803968T
T188C	T18803297T thru T18803968T
205,A	205-0001 thru 205-0577
206	206-0001thru 206-0275
U206,A,B,C,D,E,F,G	U206-0276 thru U20607020
P206,A,B,C,D,E,/TP206A,B,C,D,E	P206-0001 thru P20600647
TU206A,B,C,D,E,F,G	U206-0438 thru U20607020
207,A/T207,A	20700001 thru20700788
210,A,B,C,D,E,F,G,H,J,K,L,M,N,R/	57001 thru 21065009
T210K,LM,N,R	P21000001 thru P21000874
P210N,R	T210-0198 thru T210-0454
T210G,H,J	

CESSNA BRASS SHIM TORQUE LINK

FAA-PMA APPROVED - Eliminates undampened torque link motion to prevent shimmy.

Part No.	Cessna Part No.	Thickness	Price ea
05-00429	S1450-6B14-010	.010"	$2.35
05-00430	S1450-6B14-007	.007"	$2.20
05-00431	S1450-6B14-005	.005"	$2.20

CESSNA FUEL SCREEN STANDPIPE

This FAA-PMA approved stainless steel Cessna Fuel Screen Standpipe is the last one you will need to buy. Improved design eliminates corrosion pits and stripped threads. 1963 and on.

P/N AS0756011-1 .....**$114.95**

CESSNA FUEL QUANTITY TRANSMITTERS

A direct replacement for the fuel quantity transmitter installed by the manufacturer when the aircraft was new. Saves hundreds of dollars in labor and kits and eliminates replacement of fuel quantity gages and wiring when not required. Engineered to be compatible with the original fuel quantity gage and wiring which uses time proven technology and reliability. Made from dupont viton, offering flexibility and fuel resistance at all temperature extremes. Will not dry out or shrink like cork gaskets and do not harden with age like gaskets made from other elastomers. Hex drive head screws made from stainless steel eliminate the corrosion process. The hex drive promotes ease of installation and eliminates the necessity for destructive down pressure during transmitter screw removal and installation.

Part No.	Description	Price Ea.
AS0426517-1	Fuel Transmitter	$253.95
AS0523557-1	Fuel Transmitter	$268.95
AS0726110-1	Fuel Transmitter	$259.95
ASS1588-1	Gasket (Viton Fuel Trans.)	$26.75
ASS1588-2	Gasket (Viton Fuel Trans.)	$18.50
ASS35010R10	Screw (5 Needed) Sold each	$3.95
ASS35010R14	Screw/Seal Fuel Trans.	$4.40

FUEL SELECTOR PLATE FOR CESSNAS

Before

After

This new fuel selector plate is billet machined and anodized, with the text engraved on the plate. It is an efficient one piece design which is easy to install & factory guaranteed. FAA-PMA approved.

Cessna 172 - 37 Gals..... P/N 05-00227..... **$52.95**
Cessna 170 - 37 Gals..... P/N 05-00899..... **$61.95**
Cessna 172 - 36 Gals..... P/N 05-00901..... **$59.95**
Cessna 180 - 55 Gals..... P/N 05-00902..... **$52.95**
Cessna 180 - 60 Gals..... P/N 05-00903..... **$52.95**
Cessna 180 - 79 Gals..... P/N 05-00904..... **$52.95**
Cessna 172 - 84 Gals..... P/N 05-00905..... **$52.95**
Cessna 182 - 55 Gals..... P/N 05-00906..... **$59.95**

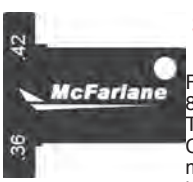
CESSNA FUEL SELECTOR VALVES

P/N 05-04298

P/N 05-04299

Description	Model	Part No.	Price
Left/Right/Off FAA PMA C120 AND C140	SHA200F202-120	05-04298	$462.95
Left/Right/Both/off FAA PMA C120 AND C140	SHA200F204-140	05-04299	$518.00

SEAT RAIL WEAR GAUGE FOR CESSNA AIRCRAFT



For checking seat rail wear limits as per FAA A.D. 87-20-03, Effective 09/24-/1990 Seat Rail Directive The gauge is to be used for inspection of the Cessna seat rail wear. This gauge is designed to measure the actual radius wear near the seat stop holes. Notice the different sized steps in each corner. P/N 05-04428 .....**$37.95**

AP

Our P/N's are interchangeable with Cessna's P/N's; "AS" prefix denotes Aircraft Spruce!
Call our parts specialists at Aircraft Spruce for part number assistance.

REPLACEMENT CESSNA PARTS

AP

CESSNA SEAT RAILS, ROLLERS, WASHERS, & BUSHINGS

These FAA-PMA replacement seat parts were developed to assist in complying with the parts replacement requirements of A.D. 87-20-03. This A.D. requires the periodic inspection and replacement of seat components of the entire Cessna light aircraft fleet. Our Parts are direct replacements for the wear related seat components. These seat parts are superior to the O.E.M. parts in many ways. Our rollers are fabricated from molydisulfide filled nylons for improved strength and self lubrication. All rollers are fully machined from extruded stock for finer surface finishes and higher strength. Our wear washers are tougher with far better wear and aging resistance. Seat rails were carefully engineered with small improvements for added strength, longer life, and easier installation without any sacrifice of full interchangeability with the O.E.M. parts.

SEAT RAILS

ROLLERS

Description	Part No.	Price Ea.	Description	Part No.	Price Ea.
AS0410219-1	05-00327	**$155.95**	AS0711693-4	05-00380	**$245.95**
AS0410219-2	05-00328	**$141.95**	AS0711693-6	05-00381	**$224.95**
AS0410230-2	05-00329	**$219.95**	AS0711693-7	05-00382	**$226.95**
AS0410230-3	05-00341	**$188.95**	AS0711693-8	05-00383	**$212.95**
AS0410235-1	05-00342	**$156.95**	AS0711693-9	05-00384	**$161.95**
AS0410235-2	05-00343	**$156.95**	AS1210025-2	05-00385	**$208.95**
AS0410235-6	05-00344	**$148.95**	AS1210025-3	05-00386	**$184.95**
AS0411545-1	05-00345	**$153.95**	AS1210408-1	05-00387	**$103.95**
AS0411545-2	05-00346	**$98.75**	AS1210408-12	05-00388	**$137.95**
AS0411545-3	05-00347	**$49.75**	AS1210408-14	05-00389	**$191.95**
AS0411545-4	05-00348	**$84.75**	AS1210408-15	05-00390	**$201.95**
AS0511000-14	05-00331	**$162.95**	AS1210408-16	05-00391	**$198.95**
AS0511000-15	05-00332	**$196.95**	AS1210408-17	05-00392	**$165.95**
AS0511000-64	05-00333	**$221.95**	AS1210408-18	05-00393	**$79.25**
AS0511000-68	05-00334	**$229.95**	AS1210408-21	05-00394	**$109.95**
AS0511000-69	05-00335	**$234.95**	AS1210408-22	05-00395	**$264.95**
AS0511000-70	05-00336	**$259.95**	AS1210408-23	05-00396	**$88.50**
AS0511240-10	05-00337	**$194.95**	AS1210408-24	05-00397	**$209.95**
AS0511240-11	05-00338	**$212.95**	AS1210408-4	05-00398	**$166.95**
AS0511240-12	05-00339	**$116.95**	AS1210408-5	05-00399	**$217.95**
AS0511240-14	05-00349	**$170.95**	AS1210408-6	05-00401	**$107.95**
AS0511240-15	05-00351	**$79.95**	AS1210408-8	05-00402	**$120.95**
AS0511240-2	05-00352	**$193.95**	AS1210408-9	05-00403	**$246.95**
AS0511240-3	05-00353	**$214.95**	AS1210520-11	05-00404	**$127.95**
AS0511240-4	05-00354	**$118.50**	AS1210520-12	05-00405	**$275.95**
AS0511240-5	05-00355	**$109.95**	AS1210520-15	05-00406	**$125.95**
AS0511240-6	05-00356	**$137.65**	AS1210520-16	05-00407	**$147.95**
AS0511240-7	05-00357	**$270.95**	AS1210520-2	05-00408	**$175.95**
AS0511240-8	05-00358	**$296.95**	AS1210520-3	05-00409	**$55.75**
AS0511240-9	05-00359	**$190.95**	AS1210520-4	05-00410	**$61.50**
AS0511243-4	05-00362	**$65.50**	AS1210520-9	05-00411	**$193.95**
AS0511243-5	05-00363	**$69.85**	AS1211514-1	05-00412	**$86.75**
AS0511243-6	05-00364	**$73.50**	AS1211514-2	05-00413	**$72.75**
AS0511293-1	05-00365	**$148.50**	AS2414002-1	05-00414	**$73.95**
AS0511293-2	05-00366	**$220.95**	AS2414002-2	05-00415	**$73.95**
AS0511293-3	05-00367	**$194.95**	ASS1551-1	05-00420	**$7.25**
AS0511293-4	05-00368	**$115.95**	ASS1554-1 Qty-4	05-00421	**$16.50**
AS0611134-2	05-00369	**$224.95**	ASS1704-1	05-00423	**$2.10**
AS0611134-3	05-00370	**$223.95**	AS1714000-22	05-00419	**$17.90**
AS0710618-1	05-00371	**$74.50**	AS1714000-41	05-00422	**$7.85**
AS0710618-4	05-00372	**$194.95**	AS0311310	05-00325	**$8.85**
AS0710618-5	05-00373	**$103.95**	AS0311586	05-00326	**$12.50**
AS0710618-6	05-00374	**$87.75**	AS0311715-3	05-00416	**$176.95**
AS0710658-2	05-00375	**$62.80**	AS0311715-4	05-00417	**$202.95**
AS0711693-1	05-00376	**$210.95**	AS43DD1-9	05-00432	**$2.90**
AS0711693-10	05-00377	**$251.95**	AS1613423-3	05-00418	**$163.95**
AS0711693-11	05-00378	**$178.95**	AS1414104-54	05-00424	**$11.50**
AS0711693-2	05-00379	**$199.95**			

SEAT KIT COMPONENTS (1 SEAT)

Kit No.	Description	Qty.	Part No.	Price
05-00425	Full articulating seat (2 crank handles).	Washers 8 Rollers 4 Bushings 4	AS1714000-22 ASS1704-1 AS1414104-54	**$68.50**
05-00427	Standard seat (1 or no crank handles).	Washers 8 Rollers 4 Bushings 4	ASS1554-1 ASS1551-1 AS1414104-54	**$73.65**
05-00428	1946-1962 and all 150-152	Rollers 4 Bushings 4	AS0311310 AS0311586	**$74.75**

For Cessna Roller Kit 141410-212 use:
- (1) Roller (P/N ASS155-1)
- (1) Bushing (P/N AS1414104-54)
- (2) Washers (P/N ASS1554-1)

These parts are generally used on the standard seats

For Cessna Roller Kit 1714000K200 use:
- (1) Roller (P/N ASS1704-1)
- (1) Bushing (P/N AS1414104-54)
- (2) Washers (P/N AS1714000-22)

These parts are generally used on the infinitely adjustable seats.

FAA-PMA Application chart for replacement parts for Cessna seats.

Description	Part No.	Model Series Eligible
AS0311310 roller	05-00325	150, 152, 170, 172, 175, 180, 182, 185, 195, 210
AS0311586 bushing	05-00326	
ASS1554-1 washer	05-00421	172, 180, 182, 185, 188, 205, 206, 207, 210
AS1714000-22 washer	05-00419	
AS1714000-41 washer	05-00422	
AS1414104-22 bushing	05-00323	
ASS1704-1 roller	05-00423	
ASS1551-1 roller	05-00420	

CESSNA FLAP ROLLER KITS

FLP-KT-1

FLP-KT-2

Flap attachment kits are available for Cessna aircraft from Cessna 150 thru T210. Each kit contains FAA-PMA replacement rollers, bushings, and spacers for the flap attachment of one airplane. Our ASS1450-5N12-050 shims are stainless steel for better corrosion resistance. Individual FAA-PMA components are available on request.

Model	Serial No.	Year	Kit No.	Part No.	Kit Price
150	17001-15071128	59-69	FLP-KT-1	05-00317	**$269.95**
150	15071129 & on	70-77	FLP-KT-2	05-00318	**$275.95**
152	15279406 - 15285564	78-80	FLP-KT-2	05-00318	**$275.95**
152	15285565 & on	81 & on	FLP-KT-3	05-00319	**$243.95**
F152	F15201429-F15201908	78-80	FLP-KT-2	05-00318	**$275.95**
F152	F15201909 & on	81 & on	FLP-KT-3	05-00319	**$243.95**
A152	A1520735-A1521014	78-80	FLP-KT-2	05-00318	**$275.95**
A152	A1521015 & on	81 & on	FLP-KT-3	05-00319	**$243.95**
FA152	FA1520337-FA1520387	78-80	FLP-KT-2	05-00318	**$275.95**
FA152	FA1520388 & on	81 & on	FLP-KT-3	05-00319	**$243.95**
170B	ALL	52-54	FLP-KT-1	05-00317	**$269.95**
172	28000-17249544	55-62	FLP-KT-1	05-00317	**$269.95**
172	17249545-17274009	63-80	FLP-KT-2	05-00318	**$275.95**
172	17274010 & on	81 & on	FLP-KT-3	05-00319	**$243.95**
177	ALL	68-78	FLP-KT-4	05-00321	**$404.95**
175	ALL	58-62	FLP-KT-1	05-00317	**$269.95**
180	ALL	53-82	FLP-KT-1	05-00317	**$269.95**
182	33000-18253598	56-62	FLP-KT-1	05-00317	**$269.95**
182	18253599 & on	63 & on	FLP-KT-3	05-00319	**$243.95**
185	ALL	61-82	FLP-KT-1	05-00317	**$269.95**
188	ALL	66-84	FLP-KT-3	05-00319	**$243.95**
205	ALL	63-64	FLP-KT-1	05-00317	**$269.95**
206	2060001-20601568	64-70	FLP-KT-4	05-00321	**$404.95**
207	ALL	69-84	FLP-KT-4	05-00321	**$404.95**
210	57001-21058220	60-63	FLP-KT-1	05-00317	**$269.95**
210	21058819 & on	80 & on	FLP-KT-7	05-00324	**$351.95**
T210	T2100001-T2100197	64-66	FLP-KT-6	05-00323	**$467.95**

ASS14503510-032 Wear washer kit (8 req/kit) .P/N 05-00587 ..**$2.80 ea.**

SEAT ROLLER HOUSING GAUGE

Aircraft Spruce now offers a seat roller housing measuring tool for Cessna aircraft. This gauge is designed to facilitate inspection of seat roller housings for wear as required by mandatory FAA AD 2011-10-09. This gauge simplifies determining whether the housing is in or out of tolerance by allowing the areas of concern to be gauged as opposed to measuring individual attributes of each housing with calipers. Results are positive and quick with this gauge. P/N 05-06819 .....**$120.95**

SEAT STOP KITS FOR CESSNAS

These seat stops and related hardware are available in convenient kits for your aircraft. Call for the correct kit part no. for your Cessna aircraft.
Seat stop kit #1 (1 ea. AS0713074-1, 1 ea. MS24665-132-1, 1 ea. MS20392-1C21) P/N 05-00580 .....**$14.50**
Seat stop kit #2 (1 ea. AS0511242-1, 1 ea. MS35265-41) P/N 05-00581 .....**$12.95**
Seat stop kit #3 (1 ea. AS0713074-1, 1 ea. MS24665-132, 1 ea. MS20392-1C21, 2 ea. NAS43DD1-9) P/N 05-00582 .....**$19.85**

SAF-T-STOP

Saf-T-Stop is an auxiliary seat stop mechanism approved by the FAA for use with Cessna seat track A. D. #87-20-03. Installs easily, sliding over seat track. Approved for: Cessna 150, 152, 172, R172, 175, 180, 182, 185, 190, 205, 206, 207, 210, 303, 337. Not a seat lock, Saf-T-Stop is designed to restrict rearward motion if the seat lock fails. P/N 13-18510 ....**$37.85**

CESSNA SEAT RAIL TEMPLATES

These template blanks are used to transfer holes from the old seat rail to the new seat rail when replacing Cessna seat rails. These templates are economical and convenient to use. One per seat rail is required. For seat rail series AS511240, AS511243, and AS24114002 use SRTEM2. All other seat rail series can use SRTEM1. NOTE: Models 150-152 do not require templates as the screw holes are predrilled. Model 177 cardinal seat rails require (2) SRTEM1 templates per rail. * Dimensions: * SRTEM1-1.5" x 38" x .025" * SRTEM2-2.25" x 30" x .025"
SRTEM1..... P/N 05-00449 .....**$5.25**
SRTEM2..... P/N 05-00450 .....**$5.70**

CESSNA SPACERS

Spacer sleeve: made of aluminum alloy 2024 overall
P/N 06-00639.....**$0.43**

AIRCRAFT SPRUCE WEST
CORONA, CA • (877) 4-SPRUCE
AIRCRAFT SPRUCE EAST
PEACHTREE CITY, GA • (877) 477-7823

Prices Subject to Change Without Notice

SEAT RAILS FOR CESSNA AIRCRAFT

These seat rails have only pilot holes drilled in the rail base allowing the installer to exactly match the aircraft floor rivet pattern. The manufacturer discovered while installing and developing our replacement seat rails that the seat rail attachment hole pattern was not consistant from aircraft to aircraft. Even small inconsistancies in the hole locations in the aircraft floor make installation of new seat rails very difficult. For this reason, all these seat rails have only a few smaller pilot attachment holes drilled at the factory. This allows the installer to precisely locate the attachment holes to match the holes in the aircraft floor. All special sized or machined attchment holes are factory machined to finish dimensions. It is necessary to install all required fasteners when seat rails are installed.

After studying countless worn and failed seat rails these rails were designed with 15% more metal in critical areas. The result is more crack resistant, durability, strength and longer life.

Installation Tip: The aircraft floor is subject to corrosion from moisture under the seat rails, be sure to remove and treat any corrosion before installing the new seat rails.

Description	Part No.	Price
AS0411545-2	05-00346	**$98.75**
AS0411545-1	05-00345	**$153.95**
AS0411545-3	05-00347	**$49.75**
AS0411545-4	05-00348	**$84.75**
AS0410219-2	05-00328	**$141.95**
AS0410219-1	05-00327	**$155.95**
AS0410230-2	05-00329	**$219.95**
AS0410230-3	05-00341	**$188.95**
AS0410235-6	05-00344	**$148.95**
AS0410235-1	05-00342	**$156.95**
AS0410235-2	05-00343	**$156.95**
AS0511000-14	05-00331	**$162.95**
AS0511000-15	05-00332	**$196.95**
AS0511293-1	05-00365	**$148.50**

Description	Part No.	Price
AS0511293-3	05-00367	**$194.95**
AS0511293-4	05-00368	**$115.95**
AS0511293-2	05-00366	**$220.95**
AS0511240-4	05-00354	**$118.50**
AS0511240-2	05-00352	**$193.95**
AS0511240-3	05-00353	**$214.95**
AS0511240-6	05-00356	**$137.65**
AS0511240-7	05-00357	**$270.95**
AS0511240-8	05-00358	**$296.95**
AS0511240-9	05-00359	**$190.95**
AS0511243-4	05-00362	**$65.50**
AS0511243-5	05-00363	**$69.85**
AS0511243-6	05-00364	**$73.50**
AS2414002-1	05-00414	**$73.95**
AS2414002-2	05-00415	**$73.95**

RUDDER PEDALS FOR CESSNA AIRCRAFT

COMPLETELY NEW RUDDER PEDAL -

* Less money and longer life!
* Bronze bushings at the pivot points resist wear and vibration for longer pedal life.
* Precision cast heat treated aluminum alloy
* Power coat finish for durability and corrosion protection.
* FAA-PMA direct replacement for Cessna (Part #1460320-1)

Model AP2000-01 ..... PN 05-04165.....**$121.95**

RE-BUSHED RUDDER PEDAL -

Model Numbers: 0760678-1, 0760678-2 and 1460320-1

* FAA approved repair for magnesium rudder pedals.
* Worn and elongated pedal holes are reamed and fitted with bush ings for a longer life
* Bronze bushings resist vibration and corrosion wear longer than the magnesium casting.
* Fits most single engine Cessnas from 1963-1981, except for model 188

Model 0760678-1-R.....PN 05-04166 .....**$97.25** .....***$40.00 Core***
Model 0760678-2-R.....PN 05-04167 .....**$70.75** .....***$40.00 Core***
Model 1460320-1-R.....PN 05-04168 .....**$83.25** .....***$30.00 Core***

Core Credit Eligibility:
Large Hole Dia. Max <0.490
Small Hole Dia. Max <0.275

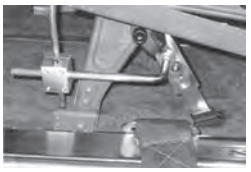
Pedals worn beyond these limits are not eligible for core credit. Re-bushed pedals may be returned for core credit but must follow the same criteria.

150/152 SEAT RAIL SCREW KIT SR150-SCREW-KIT

This is screw kit specifically for the Cessna 150/152 seat rails. This #10 Structural Screw Kit contains all screws and nuts required to install four seat rails.

Kit Contains:
40 MS27039-1-08 Screw 10-32 x .531
2 MS27039-1-09 Screw 10-32 x .594
2 MS27039-1-17 Screw 10-32 x 1.094
40 MS21044N3 Nut, Nylon Lock

P/N 05-04107..... **$21.65**



UNIVERSAL SAFETY-FOOT

The UNIVERSAL SAFETY FOOT is a secondary seat stop for both pilot and co-pilot seats for the 100 & 200 earlier Cessnas. Prevents the seat from sliding backwards when the pins are NOT engaged in the seat rails. Meets the requirements of the MANDATORY COMPLIANCE CESSNA ISSUED OWNER ADVISORY SEB07-5A dated 5-14-2007. This advisory requires all earlier 100 & 200 model Cessnas to have a secondary seat stop installed within 24 months from the date of the advisory. Issued as a NO HAZARD INSTALLATION APPROVAL by the FAA dated 4-27-2006, the Safety Foot can be installed by the owner/operator of the aircraft. Due to its simple design, the Safety Foot can be installed in about 45 minutes and in most cases, the seats do not have to be removed from the aircraft. Clamped to the seat frame and integral with the existing seat retention and operating mechanism of the aircraft. Three Allen wrenches and a Setting Gage are the only tools required for the installation. The Setting Gage is provided in the kit along with detailed instructions. The product is warranted for 12 months from the date of purchase.

P/N 05-04104.....**$175.00**

FUEL STRAINER KIT FOR CESSNA AIRCRAFT

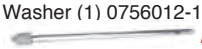
FUEL STRAINER SEAL KIT. - Kit contains: Gasket and 3 O- Rings Approved for Cessna models: 180H*, J, K

P/N 05-01705.....**$13.75**

FS-KT-2 FUEL BOWL KIT (FAA-PMA) - Kit contains: 1 MC0756009-8 Gasket 1 MC0756008-1 Fuel bowl 1 MCM83248/1-010 O-ring 1 MCM83248/1-111 O-ring 1 MCM83248/1-138 O-ring 1 MC0756015-1 Washer 1 MCS1573-3 Nut

P/N 05-04425..... **$135.95**

FS-KT-3 FUEL STRAINER REBUILD KITS - Kit contains: (1) FS-KT-1 Gasket kit (1) MC0756008-1 Fuel bowl (1) MC0756015-1 Washer (1) MCS1573-3 Nut (1) MC0756010-11 Plunger (1) MC0756011-1 Standpipe (2) MCS145027 A7-032 Washer (1) 0756012-1 Spring P/N 05-04426.....**$324.50**



FUEL STRAINER PLUNGER - MC0756010-11 .... * Special electro polished shaft for longer o-ring life.

* McFarlane's blue Viton rubber tip will outlast the original in any fuel!

P/N 05-04424.....**$89.50**

FUEL STRAINER ASSEMBLY - Kit contains: Gasket Kit, Fuel Bowl, 2Washers, Nut, Plunger, Standpipe, Spring, and Top Assembly. Approved for Cessna models: 182H*,J, K, L , M, N , P , Q, R

P/N 05-04111.....**$864.00**

FUEL STRAINER AND CABLE KIT - Kit contains: Gasket Kit, Fuel Bowl, 2 Washers, Nut, Plunger, Standpipe, Spring, Top Assembly, Filter, and Strainer Drain Cable Approved for Cessna models: F182P, Q

P/N 05-04112.....**$758.95**

FUEL STRAINER BOWL - Engineered to last! Manufactured using improved materials for added strength and gold anodized for corrosion resistance. Computer machined (not die cast).

P/N 05-01704..... **$110.95**

FUEL STRAINER STANDPIPE - The last one you will buy! Stainless steel, No more corrosion pits or stripped threads, Costs less! P/N 05-00281..... **$109.95**

CESSNA 177RG FUEL RESERVOIR DRAIN PLUNGER

For the Cessna Cardinal 177RG aircrarft. McFarlane's blue vulcanized Viton rubber tip will outlast the original in any fuel! All metal, one piece design eliminates the flimsy C-clip.

Model	Serial No.	Replaces
177RG	177RG0001 thru 177RG1366	2016021-4
F177RG	F177RG0001 thru F177RG0177	2016021-4

* 1 each required for aircraft serial numbers 177RG0001 thru 177RG0282 and F177RG0001 thru F177RG0062. * 2 each required for aircraft serial numbers 177RG0283 thru 177RG1366 and F177RG0063 thru F177RG0177.

P/N 05-04613..... **$249.85**

CESSNA MOTOR MOUNT BLOCK LOCK WASHER

One side is embossed with a surface texture for improved locking strength and to make sure the washer does not slip while tightening. Features: * Up to four times the locking power for less! * FAA approved using stronger material than the original, allowing the standard washer to be eliminated. * Designed with six tabs instead of two. * Easier to use! * Cessna 180, 182, 185, 188, 205, 206, 207, 210, 310, 320, 411, and 414 model aircraft P/N 05-01742..... **$6.50**

AP

RUDDER AND ELEVATOR BUSHING KITS FOR CESSNA

These kits include two bushing sizes for each hinge location. This allows a selective fit and solves the common Cessna fit and interference problems.• Hardened corrosion • resistant stainless steel. • Cessna models 120 thru 177 • Convenient kits include all bushings, sintered bronze bearings, and hardware for one aircraft. • All components are also available separately.

Model	Elevator Bushing Kit	Rudder Bushing Kit
120, 140, 140A (Bushing)	MC0422215	MC0431119K
120, 140, 140A (Bushing)	-	MCS1003-11A
150, 150A, B, C, D, E	EBC-KT-1	RBC-KT-1
150F, G, H, J	EBC-KT-1	RBC-KT-2
150K*, A150K* Eligibility Note 1 (150K S/N 15071129 THRU 15071621;		
A150K S/N A1500001 THRU A1500129)	EBC-KT-1	RBC-KT-3
150K*, L,M, A150K*, L,M Eligibility Note 2 (150K S/N 15071622 THRU 15072003; A150K S/N A1500130 THRU A1500226)	EBC-KT-2	RBC-KT-3
A-150L, A-A150L	EBC-KT-2	RBC-KT-3
F150F,G,H,J	EBC-KT-1	RBC-KT-2
F150K,L*, FA150K* Eligibility Note 3 (F150L S/N 15000659 THRU F15000699; FA150K S/N FA1500001 THRU FA1500039)	EBC-KT-1	RBC-KT-3
F150L*, M, FA150K*,L,M Eligibility Note 4 (F150L S/N 15000700 THRU F15001143; F150K S/N FA1500040 THRU FA1500081)	EBC-KT-2	RBC-KT-3
FRA150L, M	EBC-KT-2	RBC-KT-3
152*, A152* Eligibility Note 5 (152 S/N 15279406 THRU 15285833; A152 S/N A1520735 THRU A1521025)	EBC-KT-3	RBC-KT-3
152*, A152* Eligibility Note 6 (152 S/N 15285834 THRU 15286033; A152 S/N A1521026 THRU A1521049)	EBC-KT-4	RBC-KT-3
F152*, FA152* Note Eligibility Note 7 (F152 S/N 15201429 THRU F15201943; FA152 S/N FA1520337 THRU FA15203879)	EBC-KT-3	RBC-KT-3
F152*, FA152* Eligibility Note 8 (F152 S/N F1501944 THRU F15201980; FA152 S/N FA1520388 THRU FA1520425)	EBC-KT-4	RBC-KT-3
172, 175	EBC-KT-5	RBC-KT-4
172A,B,C* 175A,B,C* Eligibility Note 9 (172C S/N 17248735 THRU 17249085; 175C S/N 17557003 THRU17557064)	EBC-KT-5	RBC-KT-5
172C*,175C* Eligibility Note 10 (172C S/N 17249086 THRU 17249544; 175C S/N 17557065 THRU 17557119)	EBC-KT-5	RBC-KT-6
172D,E,F,G,H,I,K,L,M,N,P* Eligibility Note 11 (172P S/N 17274010 THRU 17275963)	EBC-KT-5	RBC-KT-6
172P*,Q,R,S Eligibility Note 12 (172P S/N 17275964 THRU 17276654)	EBC-KT-5	RBC-KT-7
172RG, ,P172D, R172K	EBC-KT-5	RBC-KT-6
F172D,E,F,G,H,K,L,M,N,P* Eligibility Note 13 (172P S/N F17202040 THRU F17202208)	EBC-KT-5	RBC-KT-6
F172P* Note Eligibility Note 14 (172P S/N F17202209 THRU F17202254)	EBC-KT-5	RBC-KT-7
F172, FR172E,F,G,H,J,K	EBC-KT-5	RBC-KT-6
177,177A,B,177RG,F177RG	-	MC0532104K

Unless otherwise noted, approval is for all serial numbers for each model listed. The eligibility for the kits also applies to the component bushings and bearings.

ELEVATOR BUSHING KIT COMPONENTS: 2 Bearings, 2 Bushings, 2 Bolts, 2 Washers, 2 Nuts, and 2 Pins.

EBC-KT-1.....P/N 05-04576 .....**$33.95**
EBC-KT-2.....P/N 05-04577 .....**$32.50**
EBC-KT-3.....P/N 05-04578 .....**$33.50**
EBC-KT-4.....P/N 05-04579 .....**$57.04**
EBC-KT-5.....P/N 05-04580 .....**$59.85**

RUDDER BUSHING KIT COMPONENTS: 2 Bearings, 2 Bushings, 2 Bolts, 2 Washers, 2 Nuts, and 2 Pins.

RBC-KT-1.....P/N 05-04569 .....**$16.90**
RBC-KT-2.....P/N 05-04570 .....**$59.90**
RBC-KT-3.....P/N 05-04571 .....**$46.25**
RBC-KT-4.....P/N 05-04572 .....**$42.50**
RBC-KT-5.....P/N 05-04573 .....**$49.71**
RBC-KT-6.....P/N 05-04574 .....**$44.75**
RBC-KT-7.....P/N 05-04575 .....**$49.27**

ELEVATOR & RUDDER HINGE BEARING TOOL

This unique tool is specifically designed to prevent damage when installing or removing sintered bronze elevator and rudder hinge bearings in Cessna aircraft. Seven piece kit for common bearing sizes. Heat treated stainless steel will last a lifetime. Kit comes in a convenient storage pouch. P/N 05-04869 .....**$65.50**

CESSNA YOKE UNIVERSAL JOINT AND PROTECTIVE SLEEVE

A universal joint attaches to each control yoke shaft behind the instrument panel. Slack or roughness in control yoke motion commonly indicates excess universal joint wear or corrosion that may necessitate replacement.

UNIVERSAL JOIN CONTROL YOKE FAA-PMA

MC0411257 - A universal joint attaches to each control yoke shaft behind the instrument panel. Slack or roughness in control yoke motion commonly indicates excess universal joint wear or corrosion that may necessitate replacement. Restores safe, responsive control. Cessna models 120 thru 185 P/N 05-04558 ..... **$224.75**

CESSNA UNIVERSAL JOINT KIT

UJC-KT-1 - A universal joint attaches to each control yoke shaft behind the instrument panel. Slack or roughness in control yoke motion commonly indicates excess universal joint wear or corrosion that may necessitate replacement.Replace worn or corroded joints. Cessna models 150 thru A185

Kit Contents		
Part Number	**Description**	**Qty**
AN3-10A	BOLT	2
AN3-11A	BOLT	2
MC0411257	UNIVERSAL JOINT, Control Yoke	1
MC6183	SLEEVE, Pin Retention	1
MS21044N3	NUT, Lock, Nylon, 10-32	2

P/N 05-04560 ..... **$232.75**

CESSNA UNIVERSAL JOINT KIT

UJC-KT-2 - A universal joint attaches to each control yoke shaft behind the instrument panel. Slack or roughness in control yoke motion commonly indicates excess universal joint wear or corrosion that may necessitate replacement.

Kit Contents		
Part Number	**Description**	**Qty**
AN3-10A	BOLT	2
AN3-11A	BOLT	2
MC0411257	UNIVERSAL JOINT, Control Yoke	1
MS21044N3	NUT, Lock, Nylon, 10-32	2

P/N 05-04561 ..... **$245.95**

SLEEVE, PIN RETENTION FAA-PMA

MC6183 - A universal joint attaches to each control yoke shaft behind the instrument panel. Slack or roughness in control yoke motion commonly indicates excess universal joint wear or corrosion that may necessitate replacement.

The universal joints and the sleeve are available separately or together in the kit UJC-KT-1 for Cessna models 150 thru A185. Each convenient kit also includes installation hardware.P/N 05-04559 ..... **$4.40**

BLUE SKY LATCH FOR CESSNAS

Install it right on the plane. Simply drill out the two rivets holding your old latch system on your door. You will use these two same holes to install the Blue Sky Latch. The latch is made from TPE (thermal plastic rubber), it has excellent weather ability, and stands up to extreme temperatures. Next use a hack saw blade and cut off that point on your door stem. Then use a small hammer and tap the strike on the end. Align your door using the phillips head adjustment on your door stem. Your done. The Thermal plastic rubber acts a bumper as well as a latch. You get all the hardware including structural AN screws and elastic stop nuts in the kit. Step by Step installation guide with photos showing how easy it is to install. C150 & 152.....P/N 05-04563 .....**$39.95**
C172 .....P/N 05-04973 .....**$39.95**

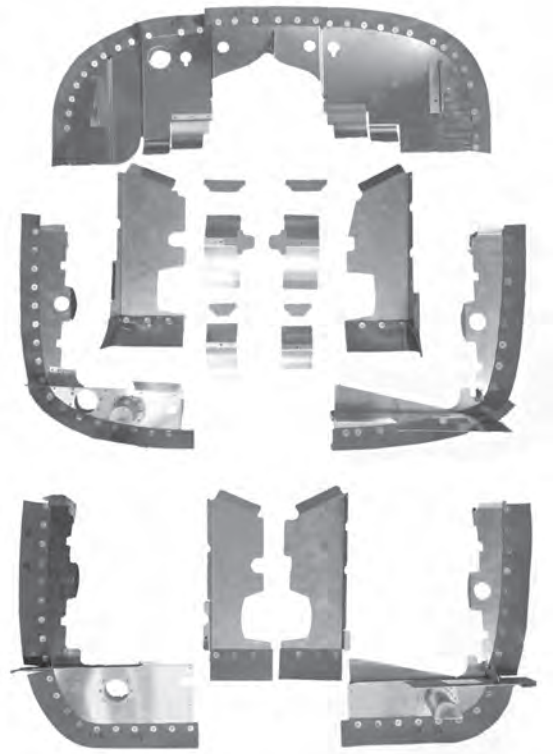
FLAP ROLLER INSTALL TOOL 970

Makes installation of the aft flap roller, bushing and washers easy. Holds parts in alignment while inserting the bolt. Long handle allows access through the small inspection openings. Cessna 150 thru 210. .....P/N 05-04764 .....**$31.85**

CESSNA 182 GROSS WEIGHT INCREASE STC

A Supplemental Type Certificate (STC) that will increase the useful load of a Cessna 182P or 182Q by 150 to 160 pounds, and the ramp weight (in most cases) by 160 pounds. This STC requires no parts, no modifications, and no installation labor costs. .....P/N 05-04889 .....**$750.00**

CESSNA ENGINE BAFFLES



150 BAFFLES

Baffle Number	Part No.	Price
AF0455000-4	05-03078	$28.00
AF0450502-22	05-03079	$28.00
AF0455000-11	05-03080	$28.00
AF0450502-23	05-03081	$28.00
AF0450502-42	05-01482	$345.95
AF0450502-16	05-01483	$173.95
AF0450322-2	05-01484	$37.80
AF0455001-2	05-01485	$173.95
AF0450210	05-01486	$8.00
AF0450209 Seal	05-01487	$7.25
AF0450171	05-01488	$29.90
AF0450502-19	05-01489	$173.95
AF0450322-3	05-01490	$37.75
AF5001-3	05-01491	$173.95
150 Baffle Set	**05-03270**	**$846.00**

152 BAFFLES

Baffle Number	Part No.	Price
AF0455012-7	05-03099	$23.00
AF0455012-10	05-03101	$30.00
AF0455012-11	05-03102	$20.00
AF0455006-5	05-03103	$20.00
AF0455018-21	05-03106	$163.95
AF0455013-171	05-03107	$70.00
AF0455018-27	05-03108	$100.95
AF0455018-25	05-03109	$100.95
AF0455018-19	05-03110	$65.00
AF0455018-22	05-03111	$189.95
AF0455021-1	05-03112	$36.00
AF0455007-1	05-03113	$23.00
AF0455015-1	05-03114	$41.50
AF0455015-2	05-03115	$41.50
AF0455013-23	05-03116	$30.00
AF0455013-17	05-03117	$103.95
AF0455013-19	05-03118	$23.00
AF0455013-14	05-03119	$110.95
AF0455012-1	05-03120	$85.00
152 Baffle Set	**05-03273**	**$875.00**

170B, 172 EARLY MODEL BAFFLES

Baffle Number	Part No.	Price
AF0550163	05-01492	$308.95
AF0550164-8	05-01493	$87.00
AF0450322-3	05-01494	$37.80
AF0550164-10	05-01495	$18.00

170B, 172 EARLY MODEL Baffles Cont.

AF0450209	05-01496	$7.25
AF0550165-2	05-01505	$91.00
AF0550111-7	05-01506	$95.00
AF0450210	05-01507	$9.20
AF0550164-7	05-01508	$87.00
AF0450322-2	05-01509	$37.80
AF0450171	05-01510	$33.25
AF0550164-11	05-01511	$18.00
AF0550165-6	05-01512	$89.00
AF0550117	05-01508	$87.00
AF0550111-4	05-03062	$5.00
170B, 172 Early Model Baffle Set	**05-03266**	**$838.00**

172 I, K, L BAFFLES

Baffle Number	Part No.	Price
AF0555206-1	05-03082	$200.95
AF0555204-1	05-03083	$85.75
AF0555203-1	05-03084	$85.75
AF0555199-2	05-03085	$201.95
AF0555199-1	05-03087	$201.95
AF0555205-1	05-03088	$85.75
AF0555202-1	05-03089	$85.75
AF0555207-1	05-03090	$200.95
172 I, K, L Baffle Set	**05-03271**	**$1,210.00**

172M BAFFLES

Baffle Number	Part No.	Price
AF0555206-12	05-03091	$200.95
AF0555204-5	05-03092	$96.00
AF0555211-7	05-03094	$200.95
AF0555216-202	05-03095	$225.95
AF0555212-1	05-03096	$25.00
AF0555217-1	05-03097	$225.95
AF0555213-5	05-03038	$105.95
AF0555214-7	05-03041	$105.95
172M Baffle Set	**05-03272**	**$980.00**

172N BAFFLES

Baffle Number	Part No.	Price
AF0555298-3	05-03121	$200.95
AF0555233-1	05-03122	$75.85
AF0555235-1	05-03123	$201.95
AF055524-1	05-03124	$105.95
AF0555259-1	05-03125	$25.00
AF0555213-5	05-03038	$105.95
AF0555250-9	05-03039	$225.95
AF0555214-7	05-03041	$105.95
AF0555259-14	05-03043	$225.95
172N Baffle Set	**05-03274**	**$995.00**

172P BAFFLES

Baffle Number	Part No.	Price
AF0555309-1	05-03035	$200.95
AF0555318-1	05-03037	$116.95
AF0555213-5	05-03038	$105.95
AF0555250-9	05-03039	$225.95
AF0555211-9	05-03040	$200.95
AF0555214-7	05-03041	$105.95
AF0555307-1	05-03042	$25.00
AF0555259-14	05-03043	$225.95
AF0555215-4	05-03126	$76.50
172P Baffle Set	**05-03275**	**$978.00**

177 BAFFLES

Baffle Number	Part No.	Price
AF1755004-1	05-03147	$218.95
AF1755007-1	05-03148	$100.95
AF1755009-1	05-03149	$100.95
AF1755005-2	05-03150	$201.95
AF1755010-1	05-03151	$100.95
AF1755005-1	05-03152	$201.95
AF1755008-1	05-03153	$100.95
AF1755003-1	05-03154	$218.95
177 Baffle Set	**05-03279**	**$1,335.00**

180-182 BAFFLES

Baffle Number	Part No.	Price
AF0750128-20	05-01528	$261.95
AF0750128-19	05-01530	$106.95
AF0750128-21	05-01531	$78.00
AF0750128-23	05-01532	$106.95
AF0750128-22	05-01533	$261.95
AF0750128	05-01550	$139.95
AF0750117-30	05-01552	$39.00
AF0750135-4	05-01561	$25.00

All baffles are bare 6061-T6 aluminum unless the powder coating option is chosen. The powder coating finish is a black and grey hammertone. Powder coating option available for an additional 15%. The silicone baffle seal material is available in orange, dark blue, and black. FOR DIAGRAMS AND ELIGIBILITY INFORMATION PLEASE VISIT OUR WEBSITE AT: www.aircraftspruce.com

CESSNA ENGINE BAFFLES

180-182 Baffles Cont.

AF0750135-1	05-01563	$51.65
AF0851700-96	05-01574	$23.00
AF0750135-3	05-01585	$25.00
180-182 Baffle Set	**05-03278**	**$1,399.00**

180 SERIES OIL COOLER BAFFLES

Baffle Number	Part No.	Price
AF075052-1	05-01541	$172.95
AF0755050-10	05-01542	$172.95
AF0755050-11	05-01543	$57.50
AF0750148-1	05-01544	$40.85
AF0755002-3	05-01546	$39.95
AF0755002-31	05-01547	$247.95
AF0750152-3	05-01590	$21.75
AF0750152-2	05-01592	$19.25

182 LATE MODEL BAFFLES

Baffle Number	Part No.	Price
AF0755001-39	05-03155	$288.95
AF0755004-6	05-03156	$161.95
AF07550404-4	05-03157	$211.95
AF0755040-2	05-03158	$226.95
AF0755004-9	05-03159	$29.00
AF0755004-2	05-03160	$82.00
AF0755004-3	05-03161	$91.00
AF0755040-3	05-03162	$229.95
AF0755007-1	05-03163	$49.25
AF0755040-1	05-03164	$191.95
AF1250961-5	05-03165	$29.00
AF1250961-6	05-03166	$29.00
AF1250961-7	05-03167	$29.00
AF0755005-9	05-03168	$172.95
AF0750135-4	05-01561	$25.00
AF0750135-1	05-01563	$51.65
AF0750135-3	05-01585	$25.00
182 Late Model Baffle Set	**05-03277**	**$2,344.00**

182 LATE MODEL OIL COOLER BAFFLES

Baffle Number	Part No.	Price
AF0755011-1	05-03169	$45.00
AF0755001-30	05-03170	$109.95
AF0755012-2	05-03171	$7.00
AF0750152-1	05-03172	$19.00
AF0755010-1	05-03173	$21.95
AF0755001-24	05-03174	$108.95
AF0755009-1	05-03175	$7.00
AF0750152-2	05-01592	$19.25

185 BAFFLES

Baffle Number	Part No.	Price
AF0750128-66	05-01427	$261.95
AF0750128-97	05-01529	$261.95
AF0750128-19	05-01530	$106.95
185 Baffles Cont.		
AF0750128-21	05-01531	$78.00
AF0750128-23	05-01532	$106.95
AF0851700-96	05-01574	$23.00
AF0750117-31	05-01582	$39.00
AF07501282-2	05-01592	$19.25
AF0750135-4	05-01561	$25.00
AF0750135-3	05-03177	$25.00
AF0750117-30	05-01552	$39.00
AF1250134-2	05-03179	$50.00
AF0755050-15	05-03180	$172.95
AF0755002-2	05-03181	$40.00
AF050128-76	05-03182	$139.95
185 Baffle Set	**05-03276**	**$1,445.00**

C-200 EARLY MODEL OIL COOLER BAFFLES

Baffle Number	Part No.	Price
AF0750152-3	05-01554	$21.75
AF0750152-2	05-01556	$19.25

206 EARLY MODEL BAFFLES

Baffle Number	Part No.	Price
AF0750135-4	05-01561	$25.00
AF0750135-1	05-01563	$51.65
AF0750117-31	05-01582	$39.00
AF1250105-1	05-03183	$40.00
AF1250100-18	05-03418	$267.95
AF1250100-8	05-03185	$139.95
AF0851700-96	05-01538	$23.00
AF1250135-3	05-03187	$41.00
AF1250137-1	05-03188	$244.95
AF1250927-1	05-03190	$244.95

206 EARLY MODEL Baffles Cont.

AF1250100-15	05-03191	$139.95
AF1250100-41	05-03192	$257.95
AF1250100-12	05-03193	$44.00
AF1250105-2	05-03194	$40.00
206 Early Model Baffle Set	**05-03280**	**$1,799.00**

206 LATE MODEL BAFFLES

Baffle Number	Part No.	Price
AF1255008-22	05-01560	$272.95
AF0750135-4	05-01561	$25.00
AF750135-1	05-01563	$51.65
AF1255032-4	05-01572	$318.95
AF0851700-96	05-01574	$23.00
AF1255032-2	05-01575	$290.95
AF1255025-1	05-01576	$40.00
AF1255010-10	05-01577	$71.00
AF1255028-1	05-01578	$194.95
AF1255011-5	05-01579	$28.00
AF1255008-12	05-01580	$99.00
AF1255008-20	05-01581	$472.00
AF0750117-31	05-01582	$39.00
AF1255032-3	05-01584	$328.95
AF0750135-3	05-01585	$25.00
AF1255032-1	05-01587	$219.95
AF1255009-8	05-01588	$96.00
AF1250966-1	05-01589	$69.00
AF0750152-3	05-01590	$21.75
AF1255011-51	05-03232	$30.00
AF1255020-1	05-03233	$31.00
AF1250134-2	05-03234	$50.00
AF1255026-1	05-03235	$19.00
AF1250966-3	05-03236	$16.00
AF1250961-5	05-03237	$29.00
206 Late Model Baffle Set	**05-03285**	**$2,778.00**

207 EARLY MODEL BAFFLES

Baffle Number	Part No.	Price
AF0750135-3	05-01540	$25.00
AF0750135-4	05-01561	$25.00
AF0750135-1	05-01563	$51.65
AF0851700-96	05-01574	$23.00
AF0750117-31	05-01582	$39.00
AF1250105-2	05-03195	$40.00
AF1250100-12	05-03196	$44.00
AF1250100-41	05-03197	$257.95
AF1250100-15	05-03198	$139.95
AF1250927-1	05-03199	$244.95
AF1250137-1	05-03201	$244.95
AF1250135-3	05-03202	$41.00
AF1250100-8	05-03203	$139.95
AF1250100-18	05-03418	$267.95
AF1250105-1	05-03205	$40.00
207 Early Model Baffle Set	**05-03281**	**$1,799.00**

210 EARLY MODEL BAFFLES

Baffle Number	Part No.	Price
AF0750135-4	05-01561	$25.00
AF0750135-1	05-01563	$51.65
AF0851700-96	05-01574	$23.00
AF0750117-31	05-01582	$39.00
AF0750135-3	05-01585	$25.00
AF1250105-1	05-03068	$40.00
AF1250719-1	05-03069	$50.00
AF1250100-23	05-03070	$311.95
AF1250100-8	05-03071	$139.95
AF1250135-3	05-03072	$41.00
AF1250100-15	05-03073	$139.95
AF1250100-41	05-03075	$257.95
AF1250100-12	05-03076	$44.00
AF1250105-2	05-03077	$40.00
210 Early Model Baffle Set	**05-03269**	**$1,972.00**

206, 207, 210 TURBO EARLY MODEL BAFFLES

Baffle Number	Part No.	Price
AF0851700-96	05-01538	$23.00
AF0750152-3	05-01590	$21.75
AF1250105-1	05-03206	$40.00
AF1250135-3	05-03209	$41.00
AF1250829-11	05-03210	$72.00
AF1250105-2	05-03211	$40.00

All baffles are bare 6061-T6 aluminum unless the powder coating option is chosen. The powder coating finish is a black and grey hammertone. Powder coating option available for an additional 15%. The silicone baffle seal material is available in orange, dark blue, and black. FOR DIAGRAMS AND ELIGIBILITY INFORMATION PLEASE VISIT OUR WEBSITE AT: www.aircraftspruce.com

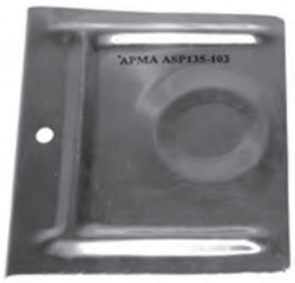
CESSNA INTERCYLINDER BAFFLES

INTERCYLINDER BAFFLES FOR TELEDYNE SIX CYLINDER ENGINES

Ref. No.	Replaces Cessna P/N	Model	Serial Number	Qty Per A/C
ASP135-103	**750135-3**	180,A,B,C,D,E	32151 thru 18051183	2
		180F,G,H,J,K,L	18051184 thru 18053203	3
		182E	33000 thru 18254423	2
		182F,G,H,J,K,L,M,N,P*	18254424 thru 18262465	1
		182P*,Q,R	18262466 thru 18268615	2
		188,A,B	188-0001 thru 18802348	2
		A188,A,B	188-0001 thru 18803968T	2
		T188C	T18803297T thru T18803968T	2
		205,A	205-0001 thru 205-0577	1
		206	206-0001 thru 206-0275	2
		U206A,B,C,D,E,F,G	U206-0276 thru U20607020	2
		P206,A,B,C,D,E	P206-0001 thru P20600647	2
		207,A	20700001 thru 20700788	2
		2IO,A,B,C,D,E,F,G,H,J,K,L,M,N,R	57001 thru 21065009	2
		3IO,B,C,D,E,F,G,H,I,J,K,L,N	35000 thru 310N0198	2
		320,A,B,C	320-0001 thru 320C0073	2
		P/N 05-02135		**$59.50**

AP

Ref. No.	Replaces Cessna P/N	Model	Serial Number	Qty Per A/C
ASP135-104	**0750135-4, 0750135-8**	180*	32151 thru 32661	2
		180A,B,C,D,E	32662 thru 18051183	1
		18OF,G,H,I,K	18051184 thru 18053203	2
		182	33060 thru 33482	2
		182A,B,C,D,E,F,G,H,J,K,L,M,N,P*	33483 thru 18262465	1
		182P*,Q,R	18262466 thru 18268615	2
		188,A,B	188-0001 thru 18802348	2
		A188,A,B	188-0001 thru 18803968T	2
		T188C	T18803297T thru T18803968T	2
		205,A	205-0001 thm 205-0577	2
		206	206-0001 thru 206-0275	2
		U206,A,B,C,D,E,F,G	U206-0276 thru U20607020	2
		P206,A,B,C,D,E	P206-0001 thru P20600647	2
		207,A	20700001 thru 20700788	2
		210,A,B,C,D,E,F,G,H,J,K,L,M,N,R	57001 thru 21065009	2
		310,B,C,D,E,F,G,H,I,J,K,L,N	35000 thru 310N0198	2
		P/N 05-02136		**$45.50**



Ref. No.	Replaces Cessna P/N	Model	Serial Number	Qty Per A/C
ASP834-101	**0851834-1**	310P,Q,R/T310,P,Q,R	310P0001 thru 310R2140	6
		320D,E,F	320D0001 thru 320F0045	6
		335	335-0001 thru 335-0065	6
		340,A	340-0001 thru 340A1817	6
		401,A,B	401-0001 thru 401B0300	6
		402,A,B,C	402-0001 and On	6
		414,A	414-0001 and On	6
		P/N 05-02137		**$44.25**

Ref. No.	Replaces Cessna P/N	Model	Serial Number	Qty Per A/C
ASP834-102	**0851834-2**	310P,Q,R/T310,P,Q,R	310P0001 thru 310R2140	2
		320D,E,F	320D0001 thru 320F0045	2
		335	335-0001 thru 335-0065	2
		340,A	340-0001 thru 340A1817	2
		401,A,B	401-0001 thru 401B0300	2
		402,A,B,C	402-0001 and On	2
		414,A	414-0001 and On	2
		P/N 05-02138		**$44.75**

CESSNA FIBERGLASS REPLACEMENT PARTS

CESSNA 150/152

What Makes These Composite Parts Such An Excellent Value?

* Stronger than factory originals with no weight increase.
* Easily repaired with locally available fiberglass kits if ever damaged.
* Exact replacements of original equipment means easy installation.
* Money back guarantee if not completely satisfied!

STRUT CUFFS

Here's an unbeatable item for renovating your Cessna; a set of replacement strut cuffs. Order just one cuff to replace a damaged original, or get a set of four for a complete replacement.

Photo	Description	Part No.	Price
	150/152 Strut Cuff Upper RH (SA-0522150-4)	05-03703	**$69.95**
	150/152 Strut Cuff Upper LH (SA-0522150-3)	05-03702	**$69.85**
	150/152 Strut Cuff Lower RH (SA-0421002-2)	05-03701	**$70.00**
----	150/152 Strut Cuff Lower LH (SA-0421002-1)	05-03699	**$70.00**
	150/152 Aerobat Strut Cuff Upper RH (SA-0421002-3)	05-03706	**$82.50**
	150/152 Aerobat Strut Cuff Upper LH (SA-0421002-4)	05-03707	**$82.50**
	150/152 Aerobat Strut Cuff Lower RH (SA-0522150-6)	05-03704	**$82.50**
	150/152 Aerobat Strut Cuff Lower LH (SA-0522150-7)	05-03705	**$82.50**

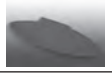
ELEVATORS & STABILIZERS

Here are some of our most popular items. These tips take a good deal of stress in just normal flying circumstances. They're also frequent victims of ramp rash. The original plastic simply can't stand up to the task as well as fiberglass replacements from Stene Aviation. Plus, if these parts ever do withstand damage, they're easily repaired with readily available fiberglass repair kits from your local automotive parts store.

Photo	Description	Part No.	Price
	150 Horizontal Stabilizer Tip 1959-'63 (SA-0430004-6)	05-03710	**$98.50**
	150/152 Horizontal Stabilizer Tip 1964&on (SA-0430004-11)	05-03711	**$69.95**
	150/152 Elevator Tips (left/right) 1964&on (SA-0430004-10)	05-03709	**$98.50**
----	150/152 Elevator Tips (left/right) 1959-'63 (SA-0430004-5)	05-03708	**$98.50**

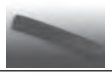
GEAR LEG AND BRAKE FAIRINGS

These are excellent items for replacing worn plastic originals. Your fiberglass replacements will be more durable with an improved finish over the original plastics.
Photo

Photo	Description	Part No.	Price
	150/152 Upper Gear Leg 1971&on RH (SA-0441217-14)	05-03731	**$105.95**
	150/152 Upper Gear Leg 1971&on LH (SA-0441217-15)	05-03732	**$105.95**
----	150/152 Right Brake Fairing 1974&on (SA-0441227-2)	05-03734	**$125.95**
----	150/152 Left Brake Fairing 1974&on (SA-0441227-1)	05-03733	**$125.95**

RUDDER & VERTICAL FIN CAPS

These parts are a snap to replace on most planes. Please note, indicate if you have a straight tail or a swept tail. It is also important to let us know if your fin cap needs to accommodate a strobe or beacon, and if so, if the light is front-mounted or center-mounted.

Photo	Description	Part No.	Price
	150 Vertical Fin Cap 1964-1965 (SA-0430004-9)	05-03713	**$72.50**
	150 Vertical Fin Cap (no beacon) 1966-'74 (SA-0431013-3)	05-03715	**$72.50**
----	150 Vertical Fin Cap (small beacon) 1966-'74 (SA-0431017-1)	05-03714	**$105.95**
	150/152 Vertical Fin Cap (small beacon) 1975&on (SA-0430011-1)	05-03716	**$105.95**
----	150 Rudder Top 1959-1963 (SA-0430004-2)	05-03717	**$98.75**
----	150 Rudder Top 1964-1965 (SA-0430004-8)	05-03718	**$98.50**
	150/152 Rudder Top 1966-1974 (SA-0431013-1)	05-03719	**$98.50**
	150 Rudder Top 1975&on (SA-0430011-2)	05-03720	**$99.50**
----	150 Rudder Bottom 1959-1965 (SA-0430004-1)	05-03721	**$99.75**
	150 Rudder Bottom 1966&on (SA-0431005-1)	05-03722	**$98.50**

WING & DORSAL TIPS

Wing tips are a common victim of hanger and ramp rash. Maybe you thought the plane was going to clear those doors as you wheeled it back into the hanger...the first indication that you were wrong was that grating sound as the wing-tip met metal. Here's the solution: replacement fiberglass wing-tips from Stene Aviation.

Photo	Description	Part No.	Price
	150/152 Wing-Tip (small droop) LH (SA-0523565-29)	05-03726	**$275.00**
	150/152 Wing-Tip (small droop) RH (SA-0523565-30)	05-03727	**$275.00**
----	150/152 Std. Small Wing Tip (SA-0430008-3)	05-03725	**$265.95**
	150 Dorsal Fin 1959-'65 (SA-0430004-4)	05-03723	**$265.95**
----	150/152 Dorsal Tip 1966&on (SA-0431024-1)	05-03724	**$32.50**

WHEEL PANTS

Replace your original plastic wheel pants with high quality and durable fiberglass replacements. All wheel pants come with a 2" access plug for checking tire pressure. Original hardware is required for mounting.

Photo	Description	Part No.	Price
	150/152 Wheel Pant 1971-'74 RH (SA-0541223-16)	05-03728	**$395.00**
	150/152 Wheel Pant 1971-'74 LH (SA-0541223-17)	05-03729	**$395.00**
	150/152 Nose Wheel Pant 1974&on (SA-0543079-3)	05-03730	**$395.00**

AP

CESSNA FIBERGLASS REPLACEMENT PARTS

CESSNA 170/172/175

ELEVATORS & STABILIZERS

Here are some of our most popular items. These tips take a good deal of stress in just normal flying circumstances. They're also frequent victims of ramp rash. The original high impact plastic simply can't stand up to the task as well as fiberglass replacements from Stene Aviation. Plus, if these parts ever do withstand damage, they're easily repaired with readily available fiberglass repair kits from you local automotive parts store.

Photo	Description	Part No.	Price
	172 Horizontal Tip 1963 & on (SA-0532001-93)	05-03744	**$82.50**
	172/175 Horizontal Tip Straight Tail (SA-0532001-61)	05-03743	**$82.50**
	172 Elevator Tip 1963&on LH (SA-0532001-94)	05-03742	**$114.95**
	172 Elevator Tip 1963&on RH (SA-0532001-100)	05-03741	**$114.75**
	172/175 Elevator Tip Straight Tail (SA-0532001-62)	05-03740	**$115.95**

STRUT CUFFS

Here's an unbeatable item for renovating your Cessna; a set of replacement strut cuffs. Order just one cuff to replace a damaged original, or get a set of four for a complete replacement.

Photo	Description	Part No.	Price
	172 Strut Cuff Upper 1973&on RH (SA-0523047-2)	05-03739	**$79.85**
	172 Strut Cuff Upper 1973&on LH (SA-0523047-1)	05-03738	**$79.95**
	172 Strut Cuff Lower (all models) RH (SA-0522150-2)	05-03736	**$74.85**
	172 Strut Cuff Lower (all models) LH (SA-0522150-1)	05-03735	**$75.00**

GEAR LEG AND BRAKE FAIRINGS

These are excellent items for replacing worn plastic originals. Your fiberglass replacements will be more durable with an improved finish over the original plastics.

Photo	Description	Part No.	Price
	172 Upper Gear Leg 1971&on RH (SA-1741005-240)	05-03767	**$119.95**
	172 Upper Gear Leg 1971&on LH (SA-1741005-239)	05-03766	**$119.95**
	172 Brake Fairing 1974& on LH (SA-0541224-1)	05-03768	**$125.95**
	172 Brake Fairing 1974&on RH (SA-0541224-2)	05-03769	**$124.95**

WHEEL PANTS

Replace your original plastic wheel pants with high quality and durable fiberglass replacements. All wheel pants come with a 2" access plug for checking tire pressure. Original hardware is required for mounting.

Photo	Description	Part No.	Price
	172 Wheel Pant 1974&on RH (SA-0541223-16)	05-03728	**$395.00**
	172 Wheel Pant 1974&on LH (SA-0541223-17)	05-03729	**$395.00**
	172 Nose Wheel Pant 1974 & on (SA-0543079-3)	05-03730	**$395.00**

RUDDER & VERTICAL FIN CAPS

These parts are a snap to replace on most planes. Please note, indicate if you have a straight tail or a swept tail. It is also important to let us know if your fin cap needs to accommodate a strobe or beacon, and if so, if the light is front-mounted or center-mounted.

Photo	Description	Part No.	Price
----	172 Vertical Fin (no beacon) 1956-'59 (SA-0531001-36)	05-03745	**$75.00**
----	172 Vertical Fin (large beacon) 1956-'59 (SA-0531004-3)	05-03746	**$120.95**
	172 Vertical Fin (no beacon) 1960-'68 (SA-0531006-33)	05-03747	**$95.00**
----	172 Vertical Fin (small beacon) 1960-'68 (SA-0533009-1)	05-03752	**$120.00**
	172 Vertical Fin (small beacon) 1960-'68 (SA-0531009-1)	05-03748	**$119.95**
----	172 Vertical Fin (small beacon) 1969-'75 (SA-0531013-1)	05-03749	**$120.95**
----	172 Rudder Top 1976-'85 (SA-0531006-112)	05-03753	**$119.95**
----	172 Rudder Top 1997&on (SA-0533155-2)	05-03754	**$98.50**
	172 Vertical Fin (small beacon) 1976&on (SA-0531003-1)	05-03750	**$119.95**
	172 Rudder Top 1960-'68 (SA-0531006-34)	05-03751	**$120.00**
	172 Rudder Bottom 1960-'68 (SA-0531006-35)	05-03756	**$107.95**
----	172/175 Rudder Bottom Straight Tail (SA-0531104)	05-03755	**$107.95**
----	172 Rudder Bottom 1969-'80 (SA-0531006-80)	05-03757	**$107.95**

WING & DORSAL TIPS

Wing tips are a common victim of hanger and ramp rash. Maybe you thought the plane was going to clear those doors as you wheeled it back into the hanger...the first indication that you were wrong was that grating sound as the wing tip met metal. Here's the solution: replacement fiberglass wing tips from Stene Aviation.

Photo	Description	Part No.	Price
	172 Wing Tip (small droop) 1968-'72 LH (SA-0523565-29)	05-03726	**$275.00**
	172 Wing Tip (small droop) 1968-'72 RH (SA-0523565-30)	05-03727	**$275.00**
	172 Wing Tip (small droop) 1973&on LH (SA-0723200-5)	05-03762	**$275.00**
	172 Wing Tip (small droop) 1973&on RH (SA-0723200-6)	05-03764	**$275.00**
	172 Mid-Dorsal (SA-0531012-2)	05-03759	**$75.00**
	172 Dorsal Tip 1972&on (SA-0531020-1)	05-03760	**$35.00**
	Cable Covers (SA-0530011-2)	05-03770	**$35.00**

AP

CESSNA FIBERGLASS REPLACEMENT PARTS

CESSNA 177/180/185/188

CESSNA FIBERGLASS REPLACEMENT PARTS FOR 177

What Makes These Composite Parts Such An Excellent Value?

* Stronger than factory originals with no weight increase.
* Easily repaired with locally available fiberglass kits if ever damaged.
* Exact replacements of original equipment means easy installation.
* Money back guarantee if not completely satisfied!

STABILATOR TIPS

Here are some of our most popular items. These tips take a good deal of stress in just normal flying circumstances. They're also frequent victims of ramp rash. The original plastic simply can't stand up to the task as well as fiberglass replacements from Stene Aviation. Plus, if these parts ever do withstand damage, they're easily repaired with readily available fiberglass repair kits from you local automotive parts store.

Photo	Description	Part No.	Price
	172 Horizontal Tip 1963 & on (SA-0532001-93)	05-03744	**$82.50**

RUDDER & VERTICAL TOPS

Photo	Description	Part No.	Price
----	177 Rudder Top (All) (SA-1733009-2)	05-03841	**$120.95**
----	177 Vertical Top (All) (SA-1731009-4)	05-03840	**$120.95**

GEAR LEG FAIRINGS

Photo	Description	Part No.	Price
	177 Upper Gear Leg (All) RH (SA-1741005-44)	05-03846	**$120.00**
	177 Upper Gear Leg (All) LH (SA-1741005-43)	05-03845	**$120.00**
	177 Brake Fairings 1972-'74 RH (SA-0741634-14)	05-03848	**$125.00**
	177 Brake Fairings 1972-'74 LH (SA-0741634-13)	05-03847	**$125.00**
	177 Brake Fairings 1975&on RH (SA-0741641-10)	05-03849	**$122.95**
	177 Brake Fairings 1975&on LH (SA-0741641-11)	05-03850	**$125.00**

WHEEL PANTS

Replace your original plastic wheel pants with high quality and durable fiberglass replacements. All wheel pants come with a 2" access plug for checking tire pressure. Original hardware is required for mounting.

Photo	Description	Part No.	Price
	177 Wheel Pant 1975&on RH (SA-0541223-16)	05-03728	**$395.00**
	177 Wheel Pant 1975&on LH (SA-0541223-17)	05-03729	**$395.00**
	177 Nose Wheel Pant 1975&on (SA-0543079-3)	05-03730	**$395.00**

CESSNA FIBERGLASS REPLACEMENT PARTS FOR 180/185

ELEVATORS & STABILIZERS

Here are some of our most popular items. These tips take a good deal of stress in just normal flying circumstances. They're also frequent victims of ramp rash. The original plastic simply can't stand up to the task as well as fiberglass replacements from Stene Aviation. Plus, if these parts ever do withstand damage, they're easily repaired with readily available fiberglass repair kits from you local automotive parts store.

Photo	Description	Part No.	Price
	180&185(all) Horizontal Tip (SA-0732613-1)	05-03779	**$85.00**

180/185 CONT.

STRUT CUFFS

Here's an unbeatable item for renovating your Cessna; a set of replacement strut cuffs. Order just one cuff to replace a damaged original, or get a set of four for a complete replacement.

Photo	Description	Part No.	Price
	180 Strut Cuff Upper RH (SA-0723605-4)	05-03774	**$82.50**
	180 Strut Cuff Upper LH (SA-0723605-3)	05-03773	**$82.50**
----	180 Strut Cuff Lower RH (SA-0723605-2)	05-03772	**$82.50**
----	180 Strut Cuff Lower LH (SA-0723605-1)	05-03771	**$82.50**

RUDDER & VERTICAL FIN CAPS

These parts are a snap to replace on most planes. Please note, indicate if you have a straight tail or a swept tail. It is also important to let us know if your fin cap needs to accommodate a strobe or beacon, and if so, if the light is front-mounted or center-mounted.

Photo	Description	Part No.	Price
----	180 (all) Vertical Fin (no beacon) (SA-0731000-200)	05-03781	**$119.95**
----	180 (all) Vertical Fin (small beacon)(SA-0731019-1)	05-03782	**$119.95**
----	180(large tail)/185(all) Vertical Fin (sm. beacon) (SA-0731019-2)	05-03787	**$155.00**
----	185 Vertical Fin (no beacon) (SA-0742025-1)	05-03788	**$119.95**
----	180(all) Vertical Fin (large beacon) (SA-0700031-2)	05-03789	**$155.00**
	185(all) Vertical Fin (large beacon) (SA-0731015-1)	05-03790	**$119.95**

GEAR LEG AND BRAKE FAIRINGS

These are excellent items for replacing worn plastic originals. Your fiberglass replacements will be more durable with an improved finish over the original plastics.

Photo	Description	Part No.	Price
	180/185 & oversize Brake Fairing RH(SA-0741059-2)	05-03804	**$170.00**
	180/185 & oversize Brake Fairing LH(SA-0741059-1)	05-03805	**$170.00**

WING & DORSAL TIPS

Wing tips are a common victim of hanger and ramp rash. Maybe you thought the plane was going to clear those doors as you wheeled it back into the hanger...the first indication that you were wrong was that grating sound as the wing tip met metal. Here's the solution: replacement fiberglass wing tips from Stene Aviation.

Photo	Description	Part No.	Price
----	180 Wing Tip (staight tip)- 1955-'67 (SA-0723615-200)	05-03797	**$265.00**
	180/185 Wing Tip (small droop) 1969-'72 LH(SA-0523565-29)	05-03726	**$275.00**
	180/185 Wing Tip (small droop) 1969-'72 RH(SA-0523565-30)	05-03727	**$275.00**
----	180/185 Large Wing Tip 1962-'69 LH(SA-1223000-7)	05-03795	**$375.00**
----	180/185 Large Wing Tip 1962-'69 RH(SA-1223000-8)	05-03796	**$375.00**
	180/185 Wing Tip (small droop) 1973&on LH(SA-0723200-5)	05-03762	**$275.00**
	180/185 Wing Tip (small droop) 1973&on RH(SA-0723200-6)	05-03761	**$265.00**

AP

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Prices Subject to Change Without Notice

CESSNA FIBERGLASS REPLACEMENT PARTS

CESSNA 182

What Makes These Composite Parts Such An Excellent Value?

* Stronger than factory originals with no weight increase.
* Easily repaired with locally available fiberglass kits if ever damaged.
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* Money back guarantee if not completely satisfied!

ELEVATORS & STABILIZERS

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Photo	Description	Part No.	Price
	182 Elevator Tip 1965&on LH (SA-1234608-3)	05-03777	**$102.50**
	182 Elevator Tip 1965&on RH (SA-1234608-4)	05-03778	**$102.50**
	182 Horizontal Tip 1956-'59 (SA-0732613-1)	05-03779	**$85.00**
	182 Horizontal Tip 1965&on (SA-1232604-1)	05-03780	**$85.75**

STRUT CUFFS

Here's an unbeatable item for renovating your Cessna; a set of replacement strut cuffs. Order just one cuff to replace a damaged original, or get a set of four for a complete replacement.

Photo	Description	Part No.	Price
	182 Strut Cuff Upper RH (SA-0723605-4)	05-03774	**$82.50**
	182 Strut Cuff Upper LH (SA-0723605-3)	05-03773	**$82.50**
	182 Strut Cuff Lower 1962&on RH (SA-0723612-4)	05-03776	**$82.50**
	182 Strut Cuff Lower 1962&on LH (SA-0723612-3)	05-03775	**$82.50**

RUDDER & VERTICAL FIN CAPS

These parts are a snap to replace on most planes. Please note, indicate if you have a straight tail or a swept tail. It is also important to let us know if your fin cap needs to accommodate a strobe or beacon, and if so, if the light is front-mounted or center-mounted.

Photo	Description	Part No.	Price
	182 Vertical Fin (small beacon) 1960-'66 and 1976&on (SA-1231064-1)	05-03784	**$119.95**
	182 Vertical Fin (small beacon) 1967-'75 (SA-0731606-3)	05-03785	**$119.95**
----	182 Rudder Top 1960-'66 and 1976&on (SA-0731606-9)	05-03793	**$120.00**
	182 Rudder Top 1967-'75 (SA-0731606-6)	05-03792	**$120.00**

TAILCONE

Replace your wore and cracked tailcone with a stronger than factory original fiberglass tailcone from Stene Aviation.

Photo	Description	Part No.	Price
	182 TailCone 1962&on (SA-1212010-15)	05-03794	**$275.95**

GEAR LEG AND BRAKE FAIRINGS

These are excellent items for replacing worn plastic originals. Your fiberglass replacements will be more durable with an improved finish over the original plastics.

Photo	Description	Part No.	Price
	182 Upper Gear Leg 1972-`75 RH (SA-1741005-200)	05-03799	**$120.00**
	182 Upper Gear Leg 1972-`75 LH (SA-1741005-201)	05-03801	**$120.00**
----	182 Upper Gear Leg 1976&on RH (SA-1741052-200)	05-03802	**$120.00**
	182 Upper Gear Leg 1976&on LH (SA-1741052-201)	05-03803	**$120.00**
	182 Brake Fairing 1972-`74 RH (SA-0741634-18)	05-03806	**$125.95**
	182 Brake Fairing 1972-`74 LH (SA-0741634-19)	05-03807	**$125.95**
----	182 Brake Fairing 1975-`78 RH (SA-0741634-10)	05-03808	**$125.95**
	182 Brake Fairing 1975-`78 LH (SA-0741634-11)	05-03809	**$126.95**

WING & DORSAL TIPS

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Photo	Description	Part No.	Price
	182 Wing Tip (small droop) 1969-'72 LH (SA-0523565-29)	05-03726	**$275.00**
	182 Wing Tip (small droop) 1969-'72 RH (SA-0523565-30)	05-03727	**$275.00**
	182 Wing Tip (small droop) 1973&on LH (SA-0723200-5)	05-03762	**$275.00**
	182 Wing Tip (small droop) 1973&on RH (SA-0723200-6)	05-03764	**$275.00**
----	182 Wing Tip (straight tip)-1955-'67 (SA-0723615-200)	05-03797	**$265.00**

WHEEL PANTS

Replace your original plastic wheel pants with high quality and durable fiberglass replacements. All wheel pants come with a 2" access plug for checking tire pressure. Original hardware is required for mounting.

Photo	Description	Part No.	Price
	182 Wheel Pant 1975&on RH (SA-0541223-16)	05-03728	**$395.00**
	182 Wheel Pant 1975&on LH (SA-0541223-17)	05-03729	**$395.00**
	182 Nose Wheel Pant 1975&on (SA-0543079-3)	05-03730	**$395.00**

AP

CESSNA FIBERGLASS REPLACEMENT PARTS

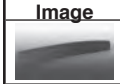
CESSNA 205/206/207/210

What Makes These Composite Parts Such An Excellent Value?

* Stronger than factory originals with no weight increase.
* Easily repaired with locally available fiberglass kits if ever damaged.
* Exact replacements of original equipment means easy installation.
* Money back guarantee if not completely satisfied!

ELEVATORS & STABILIZERS

Here are some of our most popular items. These tips take a good deal of stress in just normal flying circumstances. They're also frequent victims of ramp rash. The original plastic simply can't stand up to the task as well as fiberglass replacements from Stene Aviation. Plus, if these parts ever do withstand damage, they're easily repaired with readily available fiberglass repair kits from you local automotive parts store.

Image	Description	Part No.	Price
	206/207 Elevator Tips 1965-`67 LH (SA-1234608-3)	05-03777	**$102.50**
	206/207 Elevator Tips 1965-`67 RH (SA-1234608-4)	05-03778	**$102.50**
	206/207 Horizontal Tip 1967 & on (SA-1232012-1)	05-03833	**$65.00**
	206/207 Horizontal Tip 1965-1967 (SA-1232604-1)	05-03780	**$85.75**
	210 (1967 & on) Elevator Tips LH(SA-1234640-1 left hand)	05-03831	**$147.50**
	210 (1967 & on) Elevator Tips RH (SA-1234640-2 right hand)	05-03832	**$147.50**
	210 (1967 & on) Horizontal Tip (SA-1232012-1)	05-03833	**$65.00**

STRUT CUFFS

Here's an unbeatable item for renovating your Cessna; a set of replacement strut cuffs. Order just one cuff to replace a damaged original, or get a set of four for a complete replacement.

Image	Description	Part No.	Price
----	210 Strut Cuff Upper Right 1960-'63(SA-1227002-4)	05-03817	**$105.00**
----	210 Strut Cuff Upper Left 1960-'63(SA-1227002-5)	05-03818	**$105.00**
----	206/207 Strut Cuff Upper Right 1964-'71(SA-1227002-10)	05-03821	**$105.00**
----	206/207 Strut Cuff Upper Left 1964-'71(SA-1227002-11)	05-03822	**$105.00**
----	206/207 Strut Cuff Upper Right 1972&on(SA-1227005-6)	05-03826	**$165.00**
----	206/207 Strut Cuff Upper Left 1972&on(SA-1227005-5)	05-03825	**$165.00**
----	210 Strut Cuff Lower Right 1960&'61(SA-1227002-2)	05-03815	**$105.00**
----	210 Strut Cuff Lower Right 1962&'63(SA-1227402-6)	05-03820	**$105.00**
----	210 Strut Cuff Lower Left 1962&'63(SA-1227402-5)	05-03819	**$105.00**
----	205 Strut Cuff Lower Right 1963&'64(SA-1227401-4)	05-03829	**$120.00**
----	205 Strut Cuff Lower Left 1963&'64(SA-1227401-5)	05-03830	**$105.95**
	206 Strut Cuff Lower Right 1964-'71(SA-1227402-4)	05-03824	**$105.00**
----	206 Strut Cuff Lower Left 1964-'71(SA-1227402-3)	05-03823	**$105.00**
	206/207 Strut Cuff Lower Right 1972&on(SA-1227010-2)	05-03828	**$165.00**
	206/207 Strut Cuff Lower Left 1972&on(SA-1227010-1)	05-03827	**$165.00**
	210 Strut Cuff Upper 1960-'63 RH(SA-1227002-4)	05-03817	**$105.00**
	210 Strut Cuff Upper 1960-'63 LH(SA-1227002-5)	05-03818	**$105.00**
----	210 Strut Cuff Lower 1960&'61 RH(SA-1227002-2)	05-03815	**$105.00**

RUDDER & VERTICAL FIN CAPS

These parts are a snap to replace on most planes. Please note, indicate if you have a straight tail or a swept tail. It is also important to let us know if your fin cap needs to accommodate a strobe or beacon, and if so, if the light is front-mounted or center-mounted.

Image	Description	Part No.	Price
	205/206/207 Vertical Fin (small beacon) 1964-'67 and 1976&on (SA-1231064-3)	05-03786	**$119.95**
	206/207 Vertical Fin (small beacon) 1967-'75 (SA-0731606-3)	05-03785	**$119.95**
	206/207 Rudder Top 1967-'75 (SA-0731606-6)	05-03792	**$120.00**
	205/206/207 Rudder Top 1964-'66 and 1976&on (SA-0731606-9)	05-03793	**$120.00**

GEAR LEG AND BRAKE FAIRINGS

These are excellent items for replacing worn plastic originals. Your fiberglass replacements will be more durable with an improved finish over the original plastics.

Image	Description	Part No.	Price
----	207 Right Upper Gear Leg 1969&on(SA-1241217-2)	05-03813	**$125.00**
	207 Left Upper Gear Leg 1969&on(SA-1241217-1)	05-03812	**$125.00**
	206 Right Brake Fairing (Heavy Duty)(SA-1241232-2)	05-03837	**$145.95**
	206 Left Brake Fairing (Heavy Duty) (SA-1241232-1)	05-03836	**$145.95**

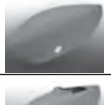
WING TIPS

Wing tips are a common victim of hanger and ramp rash. Maybe you thought the plane was going to clear those doors as you wheeled it back into the hanger...the first indication that you were wrong was that grating sound as the wing tip met metal. Here's the solution: replacement fiberglass wing tips from Stene Aviation.

Image	Description	Part No.	Price
	206 Wing Tip (small droop) 1969-'72 LH (SA-0523565-29)	05-03726	**$275.00**
	207 Wing Tip (small droop) 1969&on LH (SA-0523565-29)	05-03726	**$275.00**
	206 Wing Tip (small droop) 1973&on LH (SA-0723200-5)	05-03762	**$275.00**
	206 Wing Tip (small droop) 1973&on RH(SA-0723200-6)	05-03764	**$275.00**
----	210 Wing Tip 1971&on LH(SA-1221111-203)	05-03835	**$545.00**
----	210 Wing Tip 1971&on RH(SA-1221111-202)	05-03834	**$545.00**

WHEEL PANTS

Replace your original plastic wheel pants with high quality and durable fiberglass replacements. All wheel pants come with a 2" access plug for checking tire pressure. Original hardware is required for mounting.

Image	Description	Part No.	Price
	206 Wheel Pant 1975&on RH (SA-0541223-16)	05-03728	**$395.00**
	206 Wheel Pant 1975&on LH (SA-0541223-17)	05-03729	**$395.00**
	206 Nose Wheel Pant 1975&on (SA-0543079-3)	05-03730	**$395.00**

AP

CESSNA LIFT STRUT FAIRINGS

CESSNA LIFT STRUT FAIRINGS

These fairing kits consist of four wing strut fairings that slip over the lift struts, made of fiberglass rather than a royalite type material. Fiberglass has the following advantages over a royalite type material, it is approximately six times stronger and 12 times stiffer, it resists ultra violet light and weathers better, and it keeps its chemical composition intact much longer. With all these advantages these will probably be the last lift strut fairings that will ever have to be installed on the aircraft. And even should these fairings be damaged through some unforeseen circumstances, being made of fiberglass, they will be easily repairable. These fairings are all split so they slip over the lift strut thus eliminating the need to disconnect the lift strut to install the fairing. It is recommended, as with all plastics, they are painted for better UV protection. These kits have a FAA identically approval and are manufactured under a FAA PMA authority.

Top Number is Aircraft Spruce Part Number. Second number is the Cessna part number.

CESSNA MODELS	RH WING	LH WING	RH FUSELAGE	LH FUSELAGE	KIT
150 and 152	05-01557 0522150-4 **$139.00**	05-01558 0522150-3 **$139.00**	05-01564 0421002-2-791 **$140.00**	05-01565 0421002-1-791 **$140.00**	---
170A & B	05-01557 0522150-4 **$139.00**	05-01558 0522150-3 **$139.00**	05-01559 0522150-2 **$139.00**	05-01562 0522150-1 **$139.00**	05-01599 **$594.00**
172 to 172L	05-01557 0522150-4 **$139.00**	05-01558 0522150-3 **$139.00**	05-01559 0522150-2 **$139.00**	05-01562 0522150-1 **$139.00**	05-01599 **$594.00**
172M to 172S & SP P172D, 172RG, R172K (172XP)	05-01583 0523047-2 **$139.00**	05-01586 0523047-1 **$139.00**	05-01559 0522150-2 **$139.00**	05-01562 0522150-1 **$139.00**	---
175	05-01557 0522150-4 **$139.00**	05-01558 0522150-3 **$139.00**	05-01559 0522150-2 **$139.00**	05-01562 0522150-1 **$139.00**	05-01599 **$594.00**
180	05-01566 0723605-4-791 **$139.00**	05-01567 0723605-3-791 **$139.00**	05-01568 0723605-2-791 **$140.00**	05-02489 0723605-1-791 **$140.00**	---
182 to 182D	05-01566 0723605-4-791 **$139.00**	05-01567 0723605-3-791 **$139.00**	05-01568 0723605-2-791 **$140.00**	05-02489 0723605-1-791 **$140.00**	---
182E to 182S R182, T182, TR182	05-01566 0723605-4-791 **$139.00**	05-01567 0723605-3-791 **$139.00**	---	05-01570 0723612-3-791 **$139.00**	---
205 , 205A	05-01571 1227002-10-791 **$140.00**	05-01573 1227002-11-791 **$140.00**	Not Available	Not Available	Not Available
206, P206, TP206, U206, TU206, all to E	05-01571 1227002-10-791 **$140.00**	05-01573 1227002-11-791 **$140.00**	05-01594 1227402-4-791 **$140.00**	---	---
U206F, TU206F, SN 206-02200 to 1986	Not Available	Not Available	05-01596 1227010-2 **$199.50**	05-01597 1227010-1 **$199.50**	Not Available
U206, TU206, from SN U206-2576 to 1986	---	---	05-01596 1227010-2 **$199.50**	05-01597 1227010-1 **$199.50**	05-01605 **$798.00**
207, 207A, T207, T207A, From S/N 207-00255 to 1984	---	---	05-01596 1227010-2 **$199.50**	05-01597 1227010-1 **$199.50**	05-01605 **$798.00**
207, 207A, T207, T207A From S/N 207-00001 to 1984	Not Available	Not Available	05-01596 1227010-2 **$199.50**	05-01597 1227010-1 **$199.50**	Not Available
210F to K T210F to K	05-01571 1227002-10-791 **$140.00**	05-01573 1227002-11-791 **$140.00**	05-01594 1227402-4-791 **$140.00**	---	---

LIFT STRUT HARDWARE KIT

This kit 118H has the additional hardware and instructions necessary for a first time installation for any of the lift strut fairings listed above. For those individuals that are not replacing their lift strut fairings, but wish to install the lift strut fairings as an initial installation P/N 05-04582.....**$38.75**

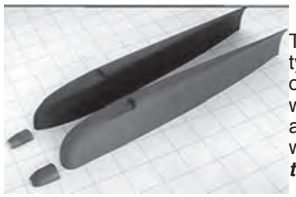
CESSNA LANDING GEAR STRUT FAIRINGS

Consist of two landing gear strut fairings that slip over the landing gear struts. These fairings are better than those manufactured by Cessna because they are made of fiberglass rather than a royalite type material, that bends and cracks after a short time on the aircraft. These fairings are all split so they slip over the landing gear strut. It is recommended, as with all plastics, they be painted for better UV protection. These kits are manufactured under a FAA PMA authority. Parts are listed with the Cessna number first, then Aircraft Spruce's part number and price.

Cessna Model	LH Fuselage	RH Fuselage
150L, 150M, A150L, A150M, 152, A152	0441217-215 PN 05-03495 **$140.00**	0441217-214 PN 05-03501 **$159.95**
172L thru 172R, R172K (172XP), 172SP	1741005-239 PN 05-03496 **$140.00**	1741005-240 PN 05-03502 **$130.00**
182P S/N 18260826 to 18263475 AND 182P S/N18263476 to 18264295	1741005-201 PN 05-03497 **$140.00**	---
182P From S/N18264296, 182Q, 182R, 182S, T182R	0741052-201 PN 05-03499 **$157.95**	---

AP

CESSNA WING TIPS - EMPENNAGE TIPS



CESSNA WING TIPS

These wing tip kits consist of a left and right hand drooped fiberglass wing tip. Made of fiberglass rather than a royalite type material, and the superior epoxy rather than polyester fiberglass. Epoxy fiberglass has the following advantages over a royalite type material, it is approximately six times stronger and 12 times stiffer, it resists ultra violet light and weathers better, and it keeps its chemical composition intact much longer. These kits have a FAA identicality approval and manufactured under a FAA PMA authority. The identically approval allows you to install these modern drooped wing tips, even if your aircraft was not originally manufactured with this newer style. ***Kits includes the left hand wing tip, right hand wing tip, hardware, and the plate lens***

Cessna Models	Kit No.**	Price Per Kit
All 150, A150, 152, A152, 170A & B, P172, 175, 205 & L19. Also 172, 180, 185 for model year up through 1972. 182, 206 for model year up through 1971. 207 from 1970 and up. Kit 219-100 covers all of the above model aircraft and includes the plate lens.	05-01526 (219-100)	**$795.00**
172, R172K (172XP), 172RG, 180,185 for model year 1973 and up, 182,206 for model year 1972 and up. Kit 219-200 covers all the above model aircraft and includes the plate lens.	05-01545 (219-200)	**$809.00**

EMPENNAGE TIPS

These empennage tips are made of fiberglass rather than the royalite type material that cracks after a short time on the aircraft. Fiberglass has the following advantages over royalite type material, it is approximately six times stronger and 12 times stiffer, it resists ultra violet light and weathers better, and it keeps it's chemical composition intact much longer. It is recommended, as with all plastics, they are painted for better UV protection. These kits are manufactured under a FAA PMA authorityTop line is Aircraft Spruce part number, middle line is Cessna part number. Bottom line is price.

Cessna Models	Tip Horizontal Fin L/H	Tip Horizontal Fin R/H	Tip Elev. L/H	Tip Elev. R/H
150D, and up, A150, 152, A152	05-01513 0430004-11-791 **$75.00**	05-01513 0430004-11-791 **$75.00**	05-01514 0430004-10-791 **$114.95**	05-01514 0430004-10-791 **$114.95**
172D and up, P172, R172K (172XP) 172RG	05-01515 0532001-93-791 **$88.75**	05-01515 0532001-93-791 **$88.75**	05-01517 0532001-94-791 **$116.95**	05-01516 0532001-100-791 **$116.95**

Cessna Models	Tip Verticl Fin	Tip Upper Rudder	Tip Lower Rudder
150F and up,A150, 152, A152	---	---	05-01518 0431005-1-791 **$106.95**
150Fto 150L, A150K, A150L No Beacon	05-01519 0431013-3-791 **$69.95**	---	---
150M and up A150M and up, 152, A152	05-01520 0430011-1 **$110.00**	05-01521 0430011-2 **$136.95**	---
172K and up, 172RG, R172K(172XP)	---	---	05-01522 0531006-80-791 **$125.00**
172 1976 and up, 172RG, R172K(172XP)	---	05-01523 0531006-112 **$111.95**	---
172A to 172I No Beacon	05-01524 0531006-33-791 **$65.00**	05-03508 053100634-791 **$117.95**	----

CESSNA FLAP GAP-SPEED KIT

Cessna flap gap speed kit consists of a gap seal on the lower flap gap that is an extension of the lower wing skin from the rear spar to the leading edge of the flap. The seal eliminate a high drag area plus reduce the amount of air leaking from the high pressure underside of the wing to the low pressure top side of the wing. The reduction in air leakage allows the wing to fly at a lower angle of attack for the same amount of lift, thus reducing drag. Please note it is NOT recommended to install a flap gap kit on those aircraft with wet wings because of the difficulty of resealing the wings to a gas leak free condition. This flap gap-kit is FAA STC'd and manufactured under a FAA PMA authority. Also available is a hardware kit 114H containing enough hardware to install the flap gap kit.

Kit No.	Applicable to Cessna Models	Part No.	Price
114-200	150, 150A, 150B, 150C, 150D, 150E, 150F, 150G, 150H, 150J, 150K, A150K, 150L, A150L, 150M, A150M	05-01622	**$384.95**
114-200	152, A152	05-01622	**$384.95**
114-100	170B	05-01620	**$435.00**
114-100	172, 172A, 172B, 172C, 172D, 172E, 172F, (USAF T-41A) 172G, 172H, (USAF T-41A), 172I, 172K, 172L, 172M, 172N, 172P, 172Q	05-01620	**$435.00**
114-100	175, 175A, 175B, 175C, P172D, R172E (USAF T-41B), (USAF T-41C &D), R172F (USAF T-41D), R172G (USAF T-41C or D), R172H (USAF T-41D), R172J, R172K Known as 172XP, 172RG	05-01620	**$435.00**
114-100	180, 180A, 180B, 180C, 180D, 180E, 180F, 180G, 180H, 180J, 180K	05-01620	**$435.00**
114-100	182, 182A, 182B, 182C, 182D, 182E, 182F, 182G, 182H, 182J, 182K, 182L, 182M, 182N, 182P, 182Q, 182R, R182, T182, T182R, TR182	05-01620	**$435.00**
114-100	185, 185A, 185B, 185C, 185D, 185E, A185E, A185F	05-01620	**$435.00**
114-100	210-5 (205), 210-5A (205A)	05-01620	**$435.00**
114-100	210, 210A, 210B, 210C	05-01620	**$435.00**

Hardware kit 114H - To install the Flap Gap-Speed Kits above..... P/N 05-01621..... **$60.00**

CESSNA AILERON GAP-SPEED KIT

Cessna aileron gap kit consists of gap seals on the lower and upper aileron gaps that is an extension of the lower and upper wing skin from the rear spar to the leading edge of the aileron. The seals eliminate a high drag area plus reduce the amount of air leaking from the high pressure underside of the wing to the low pressure top side of the wing. The reduction in air leakage allows the wing to fly at a lower angle of attack for the same amount of lift, thus reducing drag. This aileron gap-speed kit is FAA STC'd and manufactured under a FAA PMA authority. Also available is a hardware kit containing enough rivets to install the aileron gap kit.

Cessna Models	Aileron Gap Kit No.	Price	Hardware Kit	Price
150, A150, 152, A152, 170B, 172, 175, 180, 182, 185, 205 210 through 210C	05-01623	**$198.95**	05-01624	**$21.00**

PIPER – BELLANCA – GRUMMAN CONTROLS

Piper Throttle Controls

Model	Serial Number	P/N	Our P/N	Price
PA20,PA20S,PA20-115	20-1 thru 20-933	455-139	05-01743	**$296.95**
PA20S-115,PA20-135	20-934 thru 20-1121	455-139	05-01743	**$296.95**
PA20S-135	20-934 thru 20-1121	455-139	05-01743	**$296.95**
PA22 (125hp)	22-1 thru 22-533	455-139	05-01743	**$296.95**
PA22-135	22-534 thru 22-2377	455-139	05-01743	**$296.95**
PA22-135	22-2379 thru 22-2424	455-139	05-01743	**$296.95**
PA22-135,PA22S-135	22-2378, 22-2425 thru 22-3217	12693-04	05-02209	**$337.50**
PA22-135,PA22S-135	22-3219 thru 22-3386	12693-04	05-02209	**$337.50**
PA22-150,PA22S-150	22-2378, 22-2425 thru 22-7642	12693-04	05-02209	**$337.50**
PA22-160,PA22S-160	22-5139, 22-5603 thru 22-7642	12693-04	05-02209	**$337.50**
PA22-108	22-8000 and On	12693-04	05-02209	**$337.50**
PA28-140	28-20002 thru 28-24999	12693-04	05-02209	**$337.50**
PA28-140	28-25000 thru 28-26956	455-353	-	-
PA28-140	28-7125001 thru 28-7725290	455-353	-	-
PA28-150	28-1 thru 28-4377	12693-04	05-02209	**$337.50**
PA28-151	28-7415001 thru 28-7715314	455-350	05-01745	**$143.95**
PA28-160	28-1 thru 28-4377	12693-04	05-02209	**$337.50**
PA28-161	28-7716002 thru 28-8616057	455-350	05-01745	**$143.95**
PA28-161	2816001 thru 2816110 (Less 2816066)	455-350	05-01745	**$143.95**
PA28-161 Cadet	2841001 and On	455-350	05-01745	**$143.95**
PA28-180	28-671 thru 28-4377	12693-04	05-02209	**$337.50**
PA28-180	28-4378 thru 28-5152	455-333	05-01746	**$149.95**
PA28-180	28-5153 thru 28-5869	455-350	05-01745	**$143.95**
PA28-180	28-7105001 thru 28-7505261	455-350	05-01745	**$143.95**
PA28R-180	28R-30005 thru 28R-30481	455-322	05-01747	**$198.65**
PA28R-180	28R-30483 thru 28R-31279	455-322	05-01747	**$198.65**
PA28R-180	28R-7130001 thru 28R-7130019	455-322	05-01747	**$198.65**
PA28-181	28-7690001 thru 28-8290174	455-350	05-01745	**$143.95**
PA28-181	28-8390001 and On	455-350	05-01745	**$143.95**
PA28-201T	28-7921001 thru 28-7921095	455-322	05-01747	**$198.65**
PA28R-200	28R-30482,28R-35001 thru 28R-35830	455-322	05-01747	**$198.65**
PA28R-200	28R-7135001 thru 28R-7635545	455-322	05-01747	**$198.65**
PA28R-201	28R-7737002 thru 28R-7837317	455-322	05-01747	**$198.65**
PA28R-201	2837001 thru 2837061	455-322	05-01747	**$198.65**
PA28R-201T	28R-7703002 thru 28R-7803372	455-322	05-01747	**$198.65**
PA28R-201T	2803001 thru 2803015	455-322	05-01747	**$198.65**
PA28RT-201	28R-7918001 thru 28R-8018116	455-322	05-01747	**$198.65**
PA28RT-201	28R-8118001 and On	455-322	05-01747	**$198.65**
PA28RT-201T	28R-7931001 thru 28R-8031188	455-322	05-01747	**$198.65**
PA28RT-201T	28R-8131001 and On	455-322	05-01747	**$198.65**
PA28-235	28-10003 thru 28-11039	12693-04	05-02209	**$337.50**
PA28-235	28-11040 thru 28-11393	455-333	05-01746	**$149.95**
PA28-235	28-7110001 thru 28-7210033	455-333	05-01746	**$149.95**
PA28-235	28-7310001 thru 28-7710089	455-333	05-01746	**$149.95**
PA28-236	28-7911001 thru 28-8211060	455-333	05-01746	**$149.95**
PA28-236	28-8311001 and On	455-333	05-01746	**$149.95**
PA32-260	32-1111 thru 32-1320	455-360	05-01748	**$159.95**
PA32-260	32-7100001 thru 32-7800008	455-360	05-01748	**$159.95**
PA32-300	32-40000 thru 32-40565	69530-02	-	-
PA32-300	32-40566 thru 32-41018	455-358	05-01749	**$164.95**
PA32-300	32-7140001 thru 32-7940282	455-358	05-01749	**$164.95**
PA32-301	32-8006001 thru 32-8406020	455-358	05-01749	**$164.95**
PA32-301	32-8506001 and On	455-358	05-01749	**$164.95**
PA32-301T	32-8024001 thru 32-8424002	455-344	05-01750	**$122.95**
PA32-301T	32-8524001 and On	455-344	05-01750	**$122.95**
PA32R-301T	32R-8029001 thru 32R-8229078	455-360	05-01748	**$159.95**
PA32R-301T	32R-8329001 and On	455-360	05-01748	**$159.95**
PA32RT-300T	32R-7887001 thru 32R-7987146	455-360	05-01748	**$159.95**

Piper Mixture Controls

Model	Serial No.	P/N	Our P/N	Price
PA-18,PA-18S,PA-18"105"	All	600-72	05-01254	**$149.95**
PA18S"105",PA-18A,PA-18"125"	All	600-72	05-01254	**$149.95**
PA-18S"125",PA-18AS"125"	All	600-72	05-01254	**$149.95**
PA-18"135", PA-18S"135"	All	600-72	05-01254	**$149.95**
PA-18A"135", PA-18AS"135"	All	600-72	05-01254	**$149.95**
L-21A, L-21B, PA-18"150"	All	600-72	05-01254	**$149.95**
PA-18A"150", PA-18S"150"	All	600-72	05-01254	**$149.95**
PA-18AS"150"	All	600-72	05-01254	**$149.95**
PA-19, PA-19S, L-18C	All	600-72	05-01254	**$149.95**
PA-20, PA-20S, PA-20-115	All	600-72	05-01254	**$149.95**
PA-20S-115,PA-20-135,PA-20S-135	All	600-72	05-01254	**$149.95**
PA-22, PA-22-108, PA-22-135	All	600-72	05-01254	**$149.95**
PA-22S-135,PA-22-150,PA-22S-150	All	600-72	05-01254	**$149.95**
PA-22-160, PA-22S-160	All	600-72	05-01254	**$149.95**
PA-24-180	All	600-72	05-01254	**$149.95**
PA-24-250	All	600-72	05-01254	**$149.95**
PA-24-260	All with Carbureted Engine	600-72	05-01254	**$149.95**
PA24-400	26-2 thru 26-148	22633-04	05-01757	**$508.00**
PA-28-140	28-20002 thru 28-24999	600-72	05-01254	**$149.95**
PA-28-150, PA-28-160	28-1 thru 28-4377	600-72	05-01254	**$149.95**
PA-28S-160	28-1 thru 28-1760	600-72	05-01254	**$149.95**
PA-28-180, PA-28S-180	28-671 thru 28-4377	600-72	05-01254	**$149.95**
PA-28-235	28-10003 thru 28-11038	600-72	05-01254	**$149.95**
PA28-140	28-25000 thru 28-26956	455-352	05-01755	**$185.95**
PA28-140	28-7125001thru28-7725290	455-352	05-01755	**$185.95**
PA28-151	28-7415001thru28-7715314	455-352	05-01755	**$185.95**
PA28-161	28-7716002 thru 28-8616057	455-352	05-01755	**$185.95**
PA28-161	2816001 thru 2816110(Less2816066)	455-352	05-01755	**$185.95**
PA28-161 Cadet	2841001 and On	455-352	05-01755	**$185.95**
PA28-180	28-4378 thru 28-5152	455-332	05-02212	**$119.95**
PA28-180	28-5153 thru 28-5869	455-352	05-01755	**$185.95**
PA28-180	28-7105001 thru 28-7505261	455-352	05-01755	**$185.95**
PA28R-180	28R-30005 thru 28R-30481	455-322	05-01747	**$198.65**
PA28R-180	28R-30483 thru 28R-31279	455-322	05-01755	**$185.95**
PA28R-180	28R-7130001 thru 28R-7130019	455-322	05-01755	**$185.95**
PA28-181	28-7690001 thru 28-8290174	455-352	05-01755	**$185.95**
PA28-181	28-8390001 and On	455-352	05-01755	**$185.95**
PA28-201T	28-7921001 thru 28-7921095	455-361	05-02213	**$119.95**
PA28R-200	28R-30482,28R-35001thru28R-35830	455-322	05-01755	**$185.95**
PA28R-200	28R-7135001 thru 28R-7635545	455-322	05-01755	**$185.95**
PA28R-201	28R-7737002 thru 28R-7837317	455-322	05-01755	**$185.95**
PA28R-201	2837001 thru 2837061	455-322	05-01755	**$185.95**
PA28R-201T	28R-7703002 thru 28R-7803372	455-361	05-02213	**$119.95**
PA28R-201T	2803001 thru 2803015	455-361	05-02213	**$119.95**
PA28RT-201	28R-7918001 thru 28R-8018116	455-322	05-01757	**$508.00**
PA28RT-201	28R-8118001 and On	455-322	05-01757	**$508.00**
PA28RT-201T	28R-7931001 thru 28R-8031188	455-361	05-02213	**$119.95**
PA28RT-201T	28R-8131001 and On	455-361	05-02213	**$119.95**
PA28-235	28-11040 thru 28-11393	455-332	05-02212	**$119.95**
PA28-235	28-7110001 thru 28-7210033	455-332	05-02212	**$119.95**
PA28-235	28-7310001 thru 28-7710089	455-332	05-02212	**$119.95**
PA28-236	28-7911001 thru 28-8211060	455-332	05-02212	**$119.95**
PA28-236	28-8311001 and On	455-332	05-02212	**$119.95**
PA32-260	32-1111 thru 32-1320	455-361	05-02213	**$119.95**
PA32-260	32-7100001 thru 32-7800008	455-361	05-02213	**$119.95**
PA32-301T	32-8024001 thru 32-8424002	455-344	05-01750	**$122.95**
PA32-301T	32-8524001 and On	455-344	05-01750	**$122.95**
PA32R-301T	32R-8029001 thru 32R-8229078	455-360	05-01748	**$159.95**
PA32R-301T	32R-8329001 and On	455-360	05-01748	**$159.95**
PA32RT-300T	32R-7887001 thru 32R-7987146	455-360	05-01748	**$159.95**

Piper Prop Controls

Model	Serial Number	P/N	Our P/N	Price
PA24-250	24-105 thru 24-2174	455-184	05-02214	**$290.95**
PA24-250	24-2176 thru 24-2298	455-184	05-02214	**$290.95**
PA24-250	24-2175, 24-2299 thru 24-3687	455-252	05-02215	**$238.95**
PA24-260	24-3642, 24-4000 thru 24-4782	455-252	05-02215	**$238.95**
PA24-260	24-4784 thru 24-4803	455-252	05-02215	**$238.95**
PA28R-180	28R-30005 thru 28R-30481	455-322	05-01747	**$198.65**
PA28R-180	28R-30483 thru 28R-31279	455-322	05-01747	**$198.65**
PA28R-180	28R-7130001 thru 28R-7130019	455-322	05-01747	**$198.65**
PA28-201T	28-7921001 thru 28-7921095	455-322	05-01747	**$198.65**
PA28R-200	28R-30482	455-322	05-01747	**$198.65**
PA28R-200	28R-35001 thru 28R-35830	455-322	05-01747	**$198.65**
PA28R-200	28R-7135001 thru 28R-7635545	455-322	05-01747	**$198.65**
PA28R-201	28R-7737002 thru 28R-7837317	455-322	05-01747	**$198.65**
PA28R-201	2837001 thru 2837061	455-322	05-01747	**$198.65**
PA28R-201T	28R-7703002 thru 28R-7803372	455-322	05-01747	**$198.65**
PA28R-201T	2803001 thru 2803015	455-322	05-01747	**$198.65**
PA28RT-201	28R-7918001 thru 28R-8018116	455-322	05-01747	**$198.65**
PA28RT-201	28R-8118001 and On	455-322	05-01747	**$198.65**
PA28RT-201T	28R-7931001 thru 28R-8031188	455-322	05-01747	**$198.65**
PA28RT-201T	28R-8131001 and On	455-322	05-01747	**$198.65**
PA28-235	28-7310001 thru 28-7710089	455-344	05-01750	**$122.95**
PA28-236	28-7911001 thru 28-8211060	455-344	05-01750	**$122.95**
PA28-236	28-8311001 and On	455-344	05-01750	**$122.95**
PA32-300	32-40000 thru 32-40565	65451-04	05-02216	**$265.95**

Throttle Controls for Bellanca Viking Aircraft

P/N S191783-18

Model	Serial Number	Our P/N	Price
17-30A	30263 & On, and aircraft w/S/N prefix: "75-"	05-01763	**$416.95**
17-31A	73-32-128 & On, and aircraft w/ S/N prefix "75-"	05-01763	**$416.95**
17-31ATC	73-31067 & On, and aircraft w/S/N prefix "75-"	05-01763	**$416.95**

Throttle Controls for Grumman Aircraft

Model	Serial Number	P/N	Our P/N	Price
AA-1	AA1-0433 and On	507005-1	05-01760	**$363.95**
AA-1A	AA1A-0001 and On	507005-1	05-01760	**$363.95**
AA-1B	AA1B-0001 and On	507005-1	05-01760	**$363.95**
AA-1C	AA1B-0601	507005-1	05-01760	**$363.95**
AA-1C	AA1C-0001 and On	507005-1	05-01760	**$363.95**
AA-5	AA5-0001 and On	507005-2	05-01761	**$346.95**
AA-5A	AA5A-0283 and On	507005-2	05-01761	**$346.95**
AA-5B	AA5B-0001 and On	507005-3	05-01762	**$381.95**

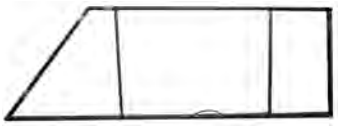
FAA-PMA Approved Throttle Controls for aircraft manufactured by Grumman American, Gulfstream Aerospace Corp. or Tiger Aircraft LLC. McFarlane Aviation has developed a longer conduit terminal that allows extra clearance between the swivel joint and the air filter box at the clamp location.

REPLACEMENT PIPER PARTS

J-3 LOWER DOOR

FAA/PMA'D. Uncovered, with pin. Includes handle and plunger. Does not include glass. Replaces Piper P/N 50173-00

P/N 05-05034 ..... **$487.95**



UPPER DOOR ASSEMBLY

FAA/PMA'D. Uncovered. Does not include glass. Replaces Piper P/N 51853-00. P/N 05-05035..... **$379.95**

J-3 BRAKE PEDAL

FAA/PMA'd

LH Replaces Piper 41602-02... P/N 05-04978... **$132.95 ea.**

RH Replaces Piper 41602-03 .. P/N 05-04979... **$132.95 ea.**

J-3 RUDDER PEDAL KIT

FAA/PMA'd. Consists of two rear and front pedal assemblies. Replaces Piper P/N 40842-04 & 40842-05 ..... P/N 05-04980... **$339.95 ea.**

J-3 STEP

FAA/PMA'd. Replaces Piper P/N 81903-02.

P/N 05-05003..... **$95.75**

J-3 EXHAUST COMPONENTS

FAA/PMA'd. J-3 Muffler only (no shroud). Replaces Piper P/N 71053-02.

P/N 05-04981..... **$452.95**

FAA/PMA'd. J-3 Tailpipe (This tailpipe will not fit J-4s) Replaces Piper P/N 74501-00.

P/N 05-04982..... **$195.95**

FAA/PMA'd. J-3 Tailpipe Shroud. Replaces Piper P/N 70912-00

P/N 05-04983..... **$129.95**

FAA/PMA'd. J-3 Muffler Shroud Replaces Piper P/N 70963-00

P/N 05-06460.....**$352.95**

J-3 MUFFLER CLAMP WITH PIN

FAA/PMA'd. J-3, 4, 5, & PA-15, 17, PA-22 Tri-Pacer & Colt Styles, PA-28-140 Cherokee Style. Also suitable for use on Lycoming powered homebuilts 108 hp thru 150 hp. 2 required for full system. Sold as each. Replaces Piper P/N 70591-02..... P/N 05-04985.....**$31.75**

J-3 TAILPIPE CLAMP

FAA/PMA'd. for full system-J-3, 4, 5, & PA-12, 14, 15, 16, 17, PA-18 Super Cub, PA-22 Tri-Pacer & Colt Styles, PA- 28-140 Cherokee Styles. Also suitable for use on Lycoming powered homebuilts 108 hp thru 150 hp. 1 required. Sold as each. Replaces Piper P/N 72691-00

P/N 05-05253.....**$23.95**

J-3 EXHAUST SUPPORT BRACKET

FAA/PMA'd Replaces Piper P/N 70581-00

P/N 05-04987.....**$32.85**

FULL EXHAUST SYSTEM J-3

FAAPMA'd. Includes all component parts listed below plus the PMA'd header stacks. Fits all J-3 and homebuilts using A-65, A75, C85-8 and C90-8 engines without accessories. Uses treated aluminized mild steel stacks, including clamps.

Complete System .....P/N 05-06461 ..... **$1,275.00**

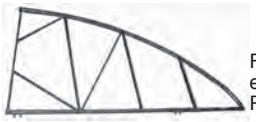
Replacement system includes:

Muffler.....Replaces Piper P/N 71053-02
Tailpipe.....Replaces Piper P/N 74501-00
Tailpipe Shroud .....Replaces Piper P/N 70912-00
Muffler Shroud.....Replaces Piper P/N 70963-00
Muffler Clamps, two.....Replaces Piper P/N 70591-02
Tail Pipe Clamp .....Replaces Piper P/N 72691-00
Bracket .....Replaces Piper P/N 70581-00
Stack, LH.....Replaces Piper P/N 71082-00
Stack, RH .....Replaces Piper P/N 70671-00

J-3, A-65 HEADER STACKS

FAA/PMA'd. Exhaust stacks built to exact dimensions of J-3 header pipes of mild steel with long-life hot aluminized finish.

Both Stacks ..... P/N 05-04993..... **$472.95**
LH Replaces Piper P/N 71082-00 .. P/N 05-04994..... **$248.95**
RH Replaces Piper P/N 70671-00.. P/N 05-04995..... **$248.95**



J-3 HORIZONTAL STABILIZER

FAA/PMA'd. Newly manufactured. Uncovered. Replaces Piper P/N 40643-00

P/N 05-05036..... **$506.00**

J-3 STABILIZER ATTACH LINK ASSEMBLY

FAA/PMA'd. Replaces Piper P/N43122-00.

P/N 05-05015..... **$128.95**

J-3 RUDER ASSEMBLY

FAA/PMA'd. Uncovered. Replaces Piper P/N 41313-00

P/N 05-05037 ..... **$476.95**

J-3 VERTICAL FIN

FAA/PMA'd. Uncovered. Replaces Piper P/N 40592-00.... P/N 05-04998..... **$297.95**

AIRCRAFT SPRUCE WEST
CORONA, CA • (877) 4-SPRUCE
AIRCRAFT SPRUCE EAST
PEACHTREE CITY, GA • (877) 477-7823

Prices Subject to Change Without Notice

REPLACEMENT PIPER PARTS

J-3C-65 COWLING ASSEMBLY - STC 'D #SA 158GL

FAA/PMA'd. Nose pieces on cowling are made of high strength fiberglass.
Complete Unit ..... P/N 05-04999.....**$879.00**

Top Half Cowl Replaces Piper P/N 72543-00
P/N 05-06462.....**$373.15**

Bottom Half Cowl Replaces Piper P/N 72473-00
P/N 05-05001.....**$522.00**

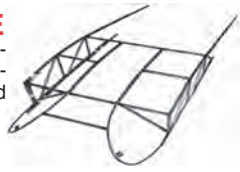
J-3 BOOT COWL

FAA/PMA'd. Includes fire wall and windshield frame. Replaces Piper P/N 23993-00
P/N 05-05013.....**$533.00**

J-3 WINDSHIELD FRAME

FAA/PMA'd. Replaces Piper P/N 23942-00 & 23952-00
P/N 05-05014 ..... **$105.95**

J-3 BIRDCAGE STRUCTURE



FAA/PMA'd. Used as replacement for damaged original. Fabricated of heavier material and completely heliarc welded for added strength. Replaces Piper P/N 00032-64
P/N 05-05063 ..... **$543.00**

J-3 FUSELAGE TAILPOST

FAA/PMA'd. Replaces Piper P/N 20012... P/N 05-05047.....**$89.85**

J-3 ELEVATOR BELL CRANK MOUNT

Bracket Assembly. FAA/PMA'd.
LH Replaces Piper P/N 21442-02 P/N 05-05045.....**$95.00**
RH Replaces Piper P/N 21442-03P/N 05-05046.....**$82.75**

J-3 WING SPAR-TO-FUSELAGE ATTACH FITTING KIT

FAA/PMA'd. For wood spar wing only. Front and rear. Replaces Piper P/N 12801-00 & 12791-00 ..... P/N 05-05076.....**$141.95**

J-3 WING STRUT ATTACH FITTING KIT

FAA/PMA'd. Consists of two each front and rear fittings, for one wing. Made of .063 MIL spec 4130 chromoly tubing. Usable on wood spar wings only. Kit is four pieces. Replaces Piper P/Ns 12512-02, 12512-03, 12502-02, 12502-03 ..... P/N 05-05077.....**$125.95**

J-3 PREFORMED AILERON GAPS

FAA/PMA'd. For use with metal ribs only. Replaces Piper P/N 15572-00 & 15572-01 ..
P/N 05-05079 ..... **$78.25**

J-3 METAL RIB WING REPAIR KIT

FAA/PMA'd. Kit consists of 6 pcs. of 3', 4 pcs. of 18" and 5pcs. of 20" long material to properly repair main and nose ribs and uprights for Piper style ribs. Replaces Many Piper P/Ns..... P/N 05-05043.....**$99.75**

J-3C-40, 50, 50S, 65, 65S WING TRAILING EDGES

FAA/PMA'd.
For metal spar
Replaces Piper P/N 15773-00..... P/N 05-05031.....**$65.25**
For wood spar
Replaces Piper P/N 15593-00..... P/N 05-05032.....**$67.50**
Aileron Trailing Edge Replaces Piper P/Ns 42922-00,42933-00, 40411-00..... P/N05-05033.....**$87.50**

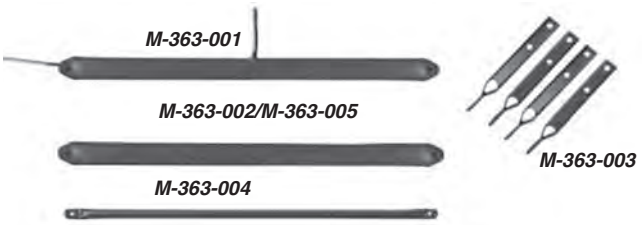
J-3 WING LEADING EDGE

FAA/PMA'd. Equipped with metal spar, LH or RH. Replaces Several Piper P/Ns
P/N 05-05041 ..... **$291.95**

SEALED J-3 LIFT STRUTS WITH CLAMPS

FAA/PMA'd. Includes jury strut clamps, original size 7/16" X 20 thread. J-3 Front and Rear Lift Struts are oiled and sealed and are manufactured to revision levels and installed per AD-93-10-06 are an FAA approved alternate means of compliance and is considered terminating actions for repetitive inspection requirement of AD-99-01-05. For lift struts, forks require a five year inspection per A.D. 93-10-06.
Front ..... P/N 05-05016.....**$679.00**
Rear..... P/N 05-05017.....**$556.00**

J-3 JURY STRUTS



FAA/PMA'd. Front with pitot tube
Replaces Piper P/N 12931-00..... P/N 05-05067.....**$141.95**
FAA/PMA'd. Front w/o pitot tube
Replaces Piper P/N 12571-02..... P/N 05-05068.....**$130.95**
FAA/PMA'd. Rear
Replaces Piper P/N 12571-03..... P/N 05-05071.....**$105.95**
FAA/PMA'd. Jury Strut Fittings (Set of 4)
Replaces Piper P/N 12581-00..... P/N 05-05069.....**$72.25**
FAA/PMA'd. Jury Strut Innerconnect
Replaces Piper P/N 12591-00..... P/N M-05-05070 .....**$59.75**

J-3 AND PA-11 LANDING GEAR

FAA/PMA'd. Completely fabricated. Ready to install landing gear with 1-1/4" axle.
LH - Replaces Piper P/N 10033-00
P/N 05-05005.....**$534.00**
RH - Replaces Piper P/N 10033-01
P/N 05-05006.....**$534.00**

J-3 BOOT COVERS

FAA/PMA'd. Sold as a pair. Replaces Piper P/N 31073-00 ..... P/N 05-05008.....**$34.75**

J-3 CABANE VEE ASSEMBLY

FAA/PMA'd. J-3 Series s/n 2315 to s/n 8277 except s/n 2316, 2332 & 2353. Uses 1/4" bolt. Replaces Piper P/N 21-09
P/N 05-05009.....**$215.95**
FAA/PMA'd. J-3 Series s/n 8278 & up, uses 5/16" bolt. Replaces Piper P/N 30602-00 ..... P/N 05-05010.....**$237.95**

J-3 SHORT SHOCK STRUT

FAA/PMA'd. Fits both J-3 s/n 8278 and up, and L4 series. 15" length. Replaces Piper P/N 31392-00..... P/N 05-05011.....**$210.95**

J-3 LONG SHOCK STRUT

FAA/PMA'd. Fits both J-3 s/n 8278 and up, and L4 series. 25" Length.
Replaces Piper P/N 31382-00..... P/N 05-05012.....**$193.95**

AP

REPLACEMENT PIPER PARTS

AP

J-3 ELEVATOR PUSH-PULL TUBE

FAA/PMA'd. Fits J-3 & PA-11 aircraft. Uses control cable. Replaces Piper P/N 40901-02 ..... P/N 05-05074.....**$283.95**

J-3 PIPER STABILIZER YOKE INSPECTION COVER

FAA/PMA'd Replaces Piper P/N 60571-00 & 60571-01
P/N 05-05078 ..... **$39.00**

J-3 CONTROL STICK TORQUE TUBE ASSEMBLIES

FAA/PMA'd. Replace your worn J-3 unit with a newly manufactured unit. Replaces Piper P/N 40223-00..... P/N 05-05004.....**$608.00**

J-3 CONTROL STICK CONNECTOR

FAA/PMA'd. Fits J-3 & PA-11 aircraft. Replaces Piper P/N 40261-00
..... P/N 05-05073.....**$133.95**

J-3 THROTTLE COVER PLATE

FAA/PMA'd. Exact reproduction of J-3 throttle plate with imprinted wording. High quality, unpainted. Ideal for most light aircraft. Replaces Piper P/N 41501-00
..... P/N 05-05081.....**$36.00**

J-3 STICK ASSEMBLY

FAA/PMA'd. Fits J-3 & PA-11 aircraft. Includes socket and removable stick. Replaces Piper P/N 42812-00..... P/N 05-05072.....**$226.95**

J-3 MAIN TANK

FAA/PMA'd. Exact replacement, aluminum. Ideal for most homebuilts.12 gal. tank, 17-1/2"L x 13"W x14-1/2"H. Uses a CAV-110-H-4 drain valve, not included. Replaces Piper P/N 70723-00
..... P/N 05-04984.....**$513.00**

STC'D J-3 WING TANKS

Kit includes mounting brackets, installation instructions and STC paperwork. Requires a gas cap, a 2-way shut-off valve and 3/8" x 1/4" brass fuel strainer which are not included.
11-1/2 Gallon Kit
LH Wood Spar..... P/N 05-04989.....**$624.00**
RH Wood Spar ..... P/N 05-04991.....**$623.00**
11-1/2 Gallon Kit
LH Metal Spar..... P/N 05-04990.....**$623.00**
RH Metal Spar..... P/N 05-06839.....**$612.00**

J-3 GAS TANK FUSELAGE STRAP KIT

FAA/PMA'd. For main fuel tank applications. Includes one each listed below and felt padding 180-150..... P/N 05-06463.....**$95.84**
Front Upper ..... Replaces Piper P/N 70462-00
Front Lower ..... Replaces Piper P/N 70451-03
Rear Upper..... Replaces Piper P/N 70472-00
Rear Lower..... Replaces Piper P/N 70451-02

J-3, PA-11 GAS CAP & FLOAT

FAA/PMA'd. 15" depth. Replaces Piper P/N 71041-00
P/N 05-05022.....**$78.00**

J-3 FIREWALL CABIN AIR BOX

FAA/PMA'd. Replaces Piper P/N 70422-00
P/N 05-05002 .....**$76.50**

J-3 NOSE COWL RAM AIR BOX

FAA/PMA'd. Provides a source of ram air for both cabin and carb heat shrouds. 2" diameter. Replaces Piper P/N 72522-00
P/N 05-05044.....**$148.95**

J-3 FRONT SEAT FRAME ASSEMBLY

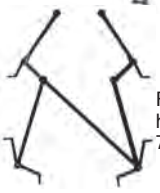
FAA/PMA'd. Replaces Piper P/N 51013-02
P/N 05-04997.....**$531.00**

J-3 REAR SEAT CROSS TUBE

FAA/PMA'd. Replaces Piper P/N 50381-02
P/N 05-05061.....**$88.25**

J-3 ARCTIC HEATER

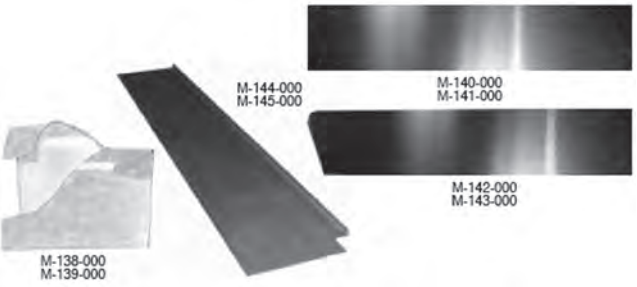
FAA/PMA'd. Exact copy of original J-3. Increase cabin heat by 70%. Now fly comfortably in the dead of winter. Attaches to LH heater manifold. Shipped complete with heater collector shroud, aeroduct tubing, and firewall airbox coupling. PMA'd as modification part. Three pieces.
P/N 05-04988.....**$221.95**



J-3 ENGINE MOUNT

FAA/PMA'd. Use with Cont. engines. Has 7/16" bolt hole and requires our bushings. Replaces Piper P/N 71163-00 P/N 05-05007.....**$566.00**

J-3 FAIRING SETS & FAIRINGS



FAA/PMA'd. LH Fairing Set
Includes one each LH Wing Root Fairing, LH Fairing Top, LH Rear Fairing Bottom and LH Front Fairing Bottom. See Replacement Piper P/Ns Below..... P/N 05-05020.....**$164.95**
FAA/PMA'd. RH Fairing Set
Includes one each RH Wing Root Fairing, RH Fairing Top, RH Rear Fairing Bottom and RH Front Fairing Bottom. See Replacement Piper P/Ns Below ..... P/N 05-05021.....**$164.95**
FAA/PMA'd. Wing Root Fairing
LH Replaces Piper P/N 60803-00 ..... P/N 05-05023.....**$41.25**
RH Replaces Piper P/N 60803-01..... P/N 05-05024.....**$41.25**
FAA/PMA'd. Fairing Top
LH Replaces Piper P/N 60772-00 ..... P/N 05-05025.....**$42.75**
RH Replaces Piper P/N 60702-01..... P/N 05-05026.....**$42.75**
FAA/PMA'd. Rear Fairing Bottom
LH Replaces Piper P/N 60782-00 ..... P/N 05-05027.....**$35.75**
RH Replaces Piper P/N 60782-01..... P/N 05-05028.....**$35.75**
FAA/PMA'd. Front Fairing Bottom
LH Replaces Piper P/N 60792-00 ..... P/N 05-05029.....**$38.75**
RH Replaces Piper P/N 60872-00..... P/N 05-05030.....**$38.75**

REPLACEMENT PIPER PARTS

J-3 REAR WINDOW CHANNEL

FAA/PMA'd. Replaces Piper P/N 10057-00 & 10058-00

P/N 05-05038.....**$40.00**

SLIDING WINDOW GUIDE ASSEMBLY KIT, LH

Consists of front and rear frames and slides. Includes opening stop. 2-3 ft. pieces Replaces Piper P/Ns 21671-00, 10059-00

P/N 05-05075.....**$100.95**

ELEVATOR HORN INSPECTION PLATES

FAA/PMA'd Metal, unpainted. Sold as a Set of 2 Replaces Piper P/N 60742-00 & 60742-01 ..... P/N 05-05039.....**$58.75**

FLEXIBLE HEAT TUBE ADAPTER

FAA/PMA'd. Replaces Piper P/N 72911-00

P/N 05-05059.....**$52.25**

ENGINE FRONT COWLING ATTACH BRACKET

FAA/PMA'd Sold as a set of 2. Replaces Piper P/N 72651-00 & 72571-00

P/N 05-05060.....**$148.95**

J-3 BOOT COWL NAMEPLATE

Exact reproduction of the original. Raised metal lettering requires painting. 6-1/8" x 1-1/2". Replaces Piper P/N 480 921

P/N 05-04996 ..... **$24.25**

TRIM TAB CONTROL COVER PLATE

Nose Up/Down markings need to be applied to plate. Replaces Piper P/N 41131-00

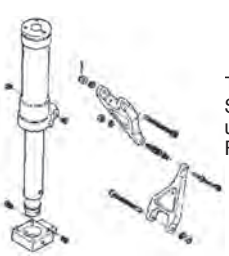
P/N 05-05040.....**$29.25**

INSTRUMENT PANEL WITH CUT OUTS

FAA/PMA'd. with Cutouts Five holes each of 3-1/8" dia. Replaces Piper P/N 00024-94

P/N 05-05018 .....**$61.00**

FAA/PMA'd. Blank instrument panel for Piper. Replaces Piper P/N 54703-00 .. P/N 05-05019.....**$50.25**



TORQUE LINK REPAIR KITS FOR PIPER AIRCRAFT

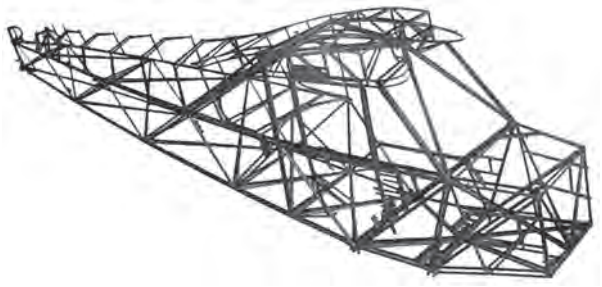
Torque Link Repair Kits for Piper Aircraft. Solves many wheel shimmy problems. Save up to 60%.

Features:

- Convenient kits replace all common wear torque link components.
- Fits most prop driven Piper aircraft.
- Contains all FAA approved parts and standard hardware.
- Save time and money! No more research and ordering of individual parts.

SEE WWW.AIRCRAFTSPRUCE.COM FOR APPLICATION CHART AND PRICING.

J-3 FUSELAGE



FAA/PMA'd. Replacement fuselage for the J-3 Piper Cub. Fully welded fuselage with 4130 steel tubes. Includes a finished welded birdcage and turtle deck formers. Allow 12-14 weeks lead time for completion of this fuselage Truck shipment and crating charges are quoted when fuselage is completed. Replaces Piper P/N 24096-00

P/N 05-05080.....**$12,000.00**

J-3 HARNESS KITS

	Front $169.95	**Rear $193.95**
Black	13-00913-1	13-00914-1
Navy	13-00913-2	13-00914-2
Brown	13-00913-3	13-00914-3
Royal Blue	13-00913-4	13-00914-4
Red	13-00913-5	13-00914-5
Tan	13-00913-6	13-00914-6
Olive Green	13-00913-7	13-00914-7
Silver Gray	13-00913-8	13-00914-8

PIPER FLIGHT CONTROL CABLE KITS

It is a tedious and time consuming job to research the part manuals for all of the cables required for a complete aircraft. You not only gain tremendous time savings with McFarlane cable kits, you receive substantial price discounts. All components are fully traceable, high quality, and proof tested.

See our website for a detailed list of kit components.

PCKT200-03 Flight Control Cable Kit	P/N 05-04629	**$1,880.34**
PCKT200-07 Flight Control Cable Kit	P/N 05-04630	**$1,896.07**
PCKT200-04 Flight Control Cable Kit	P/N 05-04631	**$1,896.07**
PCKT200-08 Flight Control Cable Kit	P/N 05-04632	**$1,911.77**
PCKT200T-01 Flight Control Cable Kit	P/N 05-04633	**$1,569.04**
PCKT200T-02 Flight Control Cable Kit	P/N 05-04634	**$1,584.76**
PCKT200T-03 Flight Control Cable Kit	P/N 05-04635	**$1,553.33**
PCKT200T-04 Flight Control Cable Kit	P/N 05-04636	**$1,569.04**
PCKT220T-01 Flight Control Cable Kit	P/N 05-04637	**$1,563.35**

FUEL STRAINER SEALS AND KITS FOR PIPER AIRCRAFT

FAA approved improved fuel strainer seals for Piper aircraft. Many of the new seals feature fuel proof fluorocarbon that won't swell or degrade like the origional Buna N seals. All seals may be purchased seperately, or in convenient kits containing both the upper and lower seal for one fuel strainer.

Model No.	Description	Spruce Part No.	Price
FSP-KT-1	Fuel Gasket Kit	05-06821	**$17.50**
FSP-KT-2	Fuel Gasket Kit	05-06822	**$12.50**
FSP-KT-3	Fuel Gasket Kit	05-06823	**$14.29**
FSP-KT-4	Fuel Gasket Kit	05-06824	**$9.50**
MC751-882	Gasket, Upper Seal	05-06825	**$6.50**
MC753-205	Gasket, Lower Seal	05-06826	**$11.25**
MC757-255	O-Ring, Upper Seal	05-06827	**$6.25**
MC751-898	Gasket, Lower Seal	05-06828	**$8.75**
CA751-871	Gasket, Fuel Strainer	05-06829	**$10.50**
MS29513-008	O-Ring	05-00126	**$0.24**
MS29513-043	O-Ring	05-06830	**$9.80**

AP

PIPER PARTS

(FAA/PMA APPROVED)

AP

PIPER NOSE COWLING
(ALL METAL)

PA 20-22

PA 18

J-3 & PA-11

Description	P/N	Price
PA-11, For cowls using screws	05-07295	$906.00
PA-11, For cowls using Lion fasteners	05-07305	$861.00
J-3 Eyebrow baffle LH	05-00061	$418.00
J-3 Eyebrow baffle RH	05-00062	$386.95
Front piece for Top cowl	05-00063	$307.75
Top cowl for J-3	05-00064	$485.89
Bottom cowl for Continental powered J-3	05-00065	$529.50
Front piece for bottom cowl	05-00066	$374.95
Fuselage cowl	05-00067	$435.63
Top cowl for PA-11	05-00068	$132.95
Bottom cowl for PA-11	05-00069	$230.95
Side cowl for PA-11LH	05-00071	$278.95
Side cowl for PA-11 RH	05-00072	$278.95

PA-12

Bottom cowl	05-00078	$223.26
Top cowl	05-00079	$133.96
Fuselage cowl	05-00081	$732.00
Left side cowl	05-00082	$302.95
Right side cowl	05-00083	$302.95

PA-12 & 14

Nose cowl for all serial numbers	05-07310	$890.33

PA-18 (95 HP)

PA-18, For cowls using screws	05-07295	$906.00
PA-18, For cowls using Lion fasteners	05-07305	$861.00
Left side cowl, used w/shielded ignition lead	05-00073	$238.95
Right side cowl, used w/shielded ignition lead	05-00074	$238.95
Top cowl	05-00075	$110.95
Bottom cowl	05-00076	$272.95
Bottom cowl, installed w/machine screws	05-00077	$211.95

PA-18 - 105, 125, 135, 150 HP

Fuselage cowl, S/N 2168-5938,105,125,135HP	05-00089	$1,024.91
Fuselage cowl, S/N 5939-8019, 135, 150 HP	05-00091	$1,039.00
Fuselage cowl, S/N 8020 and up, 150 HP	05-00092	$957.00
PA-18-105 thru 125 HP, no starter hole	05-07315	$886.96
PA-18-105 thru 125 HP, with starter hole	05-07320	$843.00
PA-18-135 & 150 HP, w/starter hole & oil scoop	05-07325	$936.95
PA-18-135 & 150 HP, w/oil scoop, no starter hole	05-07330	$898.00
Top cowl, 105 HP	05-00093	$201.95
Top cowl, 125, 135, 150 HP	05-00094	$212.95
Left side cowl, 105 HP	05-00095	$314.95
Right side cowl, 105 HP	05-00096	$314.95
Left side cowl, 125, 135, 150 HP	05-00097	$443.00
Right side cowl, 125, 135, 150 HP	05-00098	$443.00
Lower cowl ass'y, 135 HP, S/N 3014 thru 4617	05-00099	$783.00
Lower cowl ass'y, 150 HP, S/N 3771 thru 6963	05-00101	$897.00
Lower cowl ass'y, 150 HP, S/N 6964 and up	05-00102	$897.00

PA-20 & PA-22

PA-22-108, S/N 8000 & up, w/o oil scoop	05-07345	$1,035.00
PA-20 Nose cowl, 115 HP	05-07335	$974.00
PA-22 Nose cowl, S/N 1 thru 533	05-07335	$974.00
PA-20 Nose cowl, 135 HP	05-07340	$1,050.00
PA-20 Bottom cowl, 125 HP	05-00049	$893.00
PA-20 Bottom cowl, 135 HP	05-00051	$782.00
PA-22 Bottom cowl, 125 HP, S/N 1 – 353	05-00052	$1,077.00
PA-22 Bottom cowl, 125 HP, S/N 354 – 533	05-00053	$1,062.00
PA-22 Bottom cowl, 125 HP, S/N 534 – 1759	05-00054	$793.00
PA-22 Bottom cowl,135-160HP,S/N 1760–7630	05-00055	$1,739.00
PA-22(Colt) Bottom cowl, 108HP,S/N 8000 &up	05-00056	$1,743.09
PA-22 Left side cowl	05-00057	$256.95
PA-22 Right side cowl	05-00058	$256.95
PA-20/22 Top center cowl	05-00059	$234.95
PA-25 Pawnee Nose cowl, 150 HP	05-07340	$1,050.00

ONE PIECE STAMPED ALUMINUM RIBS
(STC APPROVED)

These durable ribs are direct replacements for the original style "Truss" type ribs originally used by Piper. These ribs are designed for the various modes of Piper including J-3 and PA-18 with metal spars. The ribs listed are the more commonly requested ribs for this series.

Description	Part No.	Replaces	Price
Nose Rib	05-07365	12662-002	$23.50
Nose Rib, Tip L/H	05-07370	16192-000	$24.85
Nose Rib, Tip R/H	05-07375	16192-001	$23.25
Full Rib	05-07380	13052-002	$94.50
Full Butt Rib, L/H	05-07385	10634-000	$109.95
Full Butt Rib, R/H	05-07390	10634-008	$105.95
Full Tank Bay Rib, L/H	05-07395	10653-000	$97.50
Full Tank Bay Rib, R/H	05-07405	10653-006	$100.00
Full I.B. Ail. Bay, L/H	05-07410	13042-000	$109.95
Full I.B. Ail. Bay, R/H	05-07415	13042-001	$99.75
Full O.B. Ail. Bay, L/H	05-07420	12902-000	$93.75
Full O.B. Ail. Bay, R/H	05-07425	12902-001	$90.75
3/4 Rib	05-07430	13022-002	$74.75
3/4 Butt Rib, L/H	05-07435	10634-005	$80.75
3/4 Butt Rib, R/H	05-07440	10634-007	$81.25
3/4 Tank Bay Rib	05-02397	10635-002	$79.00

STABILIZER LINER TUBE

Forward Link Assembly Liner Tube (U86062-080) ..... P/N 05-07450 ..... **$88.70**
Rear Liner Tube (U86062-079) ..... P/N 05-07455 ..... **$56.00**

STABILIZER YOKE & ADJUSTMENT SCREW

Yoke ..... P/N 05-07465 ..... **$198.50**
Adjustment Screw ..... P/N 05-07470 ..... **$82.00**

MCFARLANE CA452-538 PIPER STABILATOR BEARING

McFarlane CA452-538 Piper stabilator bearing
P/N 05-04626 ..... **$493.50**

WING NAVIGATION LIGHT BRACKET

For use with Grimes Model "E" Type Light or equivalent...
P/N 05-07460 ..... **$75.75**

ENGINE MOUNTS

J-3 Continental Mount..... P/N 05-00873..... **$550.00**
PA-11 Mount..... P/N 05-00874..... **$483.95**

J-3, PA-11, PA-18

Left Gear, uncovered..... P/N 05-07350 ....**$497.95**
Right Gear, uncovered ..... P/N 05-07355 ....**$501.00**

PIPER PA28/32/34 GLARESHIELDS

These beautiful new Glareshields are designed for the Piper models PA28, PA32 and PA34. The new Glareshield is made of FAA approved temperature stable Lexan covered with sound proofing foam and a new non-glare vinyl that looks like leather. With a 3 inch eyebrow over the instrument panel, it not only adds beauty to your plane but also improves forward visibility. The new Glareshield is easy to install and comes with all hardware and detailed instructions.

(Piper PA28) ..... P/N 05-02221 ..... **$269.95**
(Piper PA32 & 34) ..... P/N 05-02222 ..... **$299.50**
(Piper C Model) ..... P/N 05-02223 ..... **$329.95**

PIPER HEATER TEMPERATURE CONTROL LOCK

For years Piper PA28 and PA32 owners have been plagued with a Heater Temperature Control that will not stay positioned. This Heater Temperature Control Lock that can be installed in minutes and provides a positive adjustable lock for the Heater Control Lever.
P/N 08-04939 ..... **$75.75**

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PIPER PARTS

(FAA/PMA APPROVED)

SPINNER ASSEMBLIES & COMPONENTS

Short Spinner Assembly for Piper
Models PA-12, PA-16, PA-18, PA-20 & PA-22 with O-235 or O-290 engines with AM series Sensenich propellers.

Spinner Dome ..... P/N 05-07670 ..... **$246.95**
Front Plate ..... P/N 05-07675 ..... **$119.50**
Back Plate ..... P/N 05-07680 ..... **$93.75**
Complete Assembly ..... P/N 05-07685 ..... **$449.00**

PA-25 Spinner Components
Assembly for Fixed Pitch Propellers serial numbers 2986-3691

Back Plate ..... P/N 05-07695 ..... **$148.95**
Front Plate ..... P/N 05-07705 ..... **$118.75**
Complete Assembly ..... P/N 05-07710 ..... **$525.00**

Spinner Components for 235 hp. with FA8452 McCauley Propeller.

Dome Only ..... P/N 05-07715 ..... **$376.95**
Back Plate ..... P/N 05-07720 ..... **$202.95**
Front Plate ..... P/N 05-07725 ..... **$163.95**

Spinner Assembly for PA-18/18A, 150 hp.For Dm Series Propellers.

Spinner Dome ..... P/N 05-07730 ..... **$272.95**
Front Plate ..... P/N 05-07735 ..... **$109.95**
Back Plate ..... P/N 05-07740 ..... **$165.95**
Complete Assembly ..... P/N 05-07745 ..... **$484.00**

RIB KITS FOR PIPERS

Description	P/N	Price
J3 RIB KIT (LH)	05-02373	**$1,150.00**
J3 RIB KIT (RH)	05-02374	**$1,087.00**
PA18-150 RIB KIT (LH)	05-02375	**$1,426.00**
PA18-150 RIB KIT (RH)	05-02376	**$1,426.00**

INDIVIDUAL RIBS FOR PIPERS

J-3

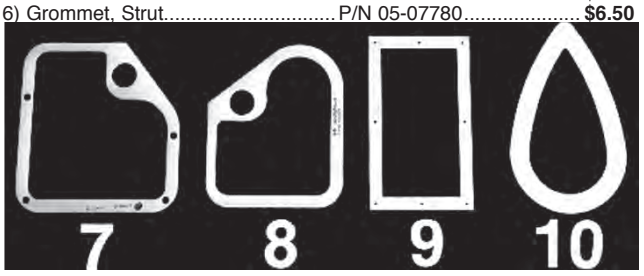
Piper#	Our P/N	Description	Price	# Per Wing
10742-002	05-02407	Tip Rib, LH #13	**$84.75**	1
10742-003	05-02394	Tip Rib, RH #13	**$76.91**	1
12662-002	05-02389	Nose Rib	**$22.75**	10
12902-000	05-02387	Outboard Aileron Bay Rib, LH #12	**$89.75**	1
12902-001	05-02393	Outboard Aileron Bay Rib, RH #12	**$99.90**	1
13022-002	05-02386	3/4 Rib, #10 and #11	**$66.75**	2
13022-002	05-02383	3/4 Rib, LH or RH #7	**$75.90**	1
13022-002	05-02384	3/4 Rib, LH or RH #8	**$69.75**	1
13022-005	05-02382	3/4 Rib. LH or RH #6	**$83.00**	1
13022-006	05-02385	3/4 Rib, #9 at strut point	**$66.50**	1
13042-000	05-02381	Inborad Aileron Bay Rib, LH #5	**$103.95**	1
13042-001	05-02392	Inboard Aileron Bay Rib, RH #5	**$99.75**	1
13052-002	05-02379	Full Rib, LH or RH #2	**$85.25**	1
13052-002	05-02380	Full Rib, #3 and #4	**$93.75**	2
13052-004	05-02378	Butt Rib, LH #1	**$96.25**	1
13052-004	05-02391	Butt Rib, RH #1	**$98.75**	1
15712-000	05-02390	Nose Rib at strut point	**$25.95**	1
16192-000	05-02377	Tip Nose Rib, LH	**$25.90**	1
16192-001	05-02395	Tip Nose Rib, RH	**$23.75**	1

PA-18 150 HP.

Piper#	Our P/N	Description	Price	# Per Wing
10634-005	05-02396	Butt Rib, LH #1	**$78.25**	1
10634-007	05-02404	Butt Rib, RH #1	**$79.95**	1
10635-002	05-02397	Tank Bay Rib, #2 and #3	**$88.50**	2
10653-002	05-02398	3/4 Rib, LH #4	**$88.50**	1
10653-005	05-02405	3/4 Rib, RH #4	**$78.50**	1
10742-002	05-02407	Tip Rib, LH #16	**$84.75**	1
10742-003	05-02394	Tip Rip, RH #16	**$69.75**	1
12662-002	05-02389	Nose Rib	**$22.75**	10
12902-000	05-02387	Outboard Aileron Bay Rib, LH #15	**$89.75**	1
12902-001	05-02393	Outboard Aileron Bay Rib, RH #15	**$75.90**	1
13022-002	05-02386	3/4 Rib, #10, #13 and #14	**$66.75**	3
13022-009	05-02385	3/4 Rib, LH or RH, #11	**$66.50**	1
13022-010	05-02403	3/4 Rib, LH or RH, #8	**$62.25**	1
13022-011	05-02386	3/4 Rib, LH or RH, #9 and #12	**$66.75**	2
13042-002	05-02402	3/4 Rib, LH #7	**$78.85**	1
13042-003	05-04857	3/4 Rib RH #7	**$87.75**	1
13042-003	05-04587	3/4 Rib, RH #7	**$10.90**	1
13052-007	05-02399	3/4 Rib, LH or RH, #5	**$69.50**	1
13052-009	05-02406	3/4 Rib, RH #6	**$78.50**	1
13052-010	05-02401	3/4 Rib, LH #6	**$82.95**	1
15712-000	05-02390	Nose Rib at strut point	**$25.95**	1
16192-000	05-02377	Tip Nose Rib, LH	**$25.90**	1
6192-001	05-02393	Tip Nose Rib, RH	**$99.90**	1

COMMON PIPER GROMMETS

1) Grommet, Tail ..... P/N 05-07750 ..... **$9.90**
2) Grommet ..... P/N 05-07755 ..... **$14.75**
3) Grommet ..... P/N 05-07765 ..... **$3.80**
4) Grommet ..... P/N 05-07770 ..... **$4.85**
5) Grommet, Inspection Plate (original Piper type: 80122-49)
P/N 05-07775 ..... **$6.75**
6) Grommet, Strut ..... P/N 05-07780 ..... **$6.50**



7) Grommet, Tail (used on PA-25 and later PA-18's)
P/N 05-07785 ..... **$24.45**
8) Grommet, Tail ..... P/N 05-07790 ..... **$7.95**
9) Grommet, Cover ..... P/N 05-07795 ..... **$9.75**
10) Grommet, Pulley Cover ..... P/N 05-07800 ..... **$8.75**

PIPER FABRIC REINFORCEMENTS

Model	Deminsion	Part No.	Price
U60863-005	2"W x 4-1/2"L	05-07625	**$6.25**
U60863-003	2"W x 4-1/2"L	05-07635	**$2.40**
U60863-002	2"W x 4-1/2"L	05-07630	**$2.75**
U60481-000	2"W x 4-1/2"L	05-07620	**$4.55**
U60863-009	2"W x 2-1/2"L	05-07640	**$5.50**

J-3 FUEL VALVE

This J-3 fuel valve includes a steel handle for use with the original pushpull shut off control. this valve is a significant improvement over the original brass style fuel valve. The new valve has a stainless steel ball seated in an inert composite seat. This improved design eliminates the stiff operation and leaking around the shaft that the original design was prone to. PMA approved. P/N 05-00848 ..... **$141.95**

J-3/PA-11 THROTTLE CONTROL

FAA approved replacement throttle control.
P/N 05-03397 ..... **$372.95**

FLEXIBLE RUBBER BRAKE LINE

From brake master cylinder to copper lines on gear vee.
P/N 05-07530 ..... **$120.95**

OIL PRESSURE HOSE

P/N 05-07360 ..... **$102.95**

WING TIP BOWS

Preformed wooden wing tip bows for use in all Piper Aircraft Models J-3 to PA-22. It is recommended to soak the wing tip bows in water before installation to avoid breakage. P/N 02-18500 ..... **$35.50/ea.**
Note: Wing tip bows can be shipped via UPS with an oversized package rate equal to the 30 Lb. rate.

AP

PIPER PARTS

AP

HEAVY DUTY MUFFLER

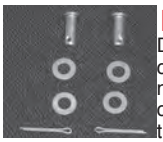
Heavy Duty Muffler STC/PMA
P/N 05-03475 ..... **$666.00**

PRE-HEAT SHROUD PA-18

Pre-heat shroud PA-18 STC/PMA
P/N 05-03457 ..... **$238.95**

HEADER TANKS

Front: 05-03468 Rear: 05-03469 PA-18, PA-19 STC
Heater Tanks - Front ...05-03468 ... **$315.95**
Heater tanks - Rear .....05-03469 ... **$290.95**



PIPER DOOR HINGE CLEVIS PINS

Due to normal wear and lack of lube, the door hinge clevis pins should be replaced from time to time to maintain the proper operation of the doors. The set includes 2 clevis pins, 6 washers, and 2 cotter keys. All the hardware is FAA approved for all Piper aircraft.
P/N 05-03633 ..... **$9.90**

PIPER DOOR HINGE EYEBOLT SET

The eyebolts are probably the most neglected parts on the plane. They hardly ever get lubricated and due to their exposure to the elements, rust in the pivot point can prevent the door from closing properly and should be replaced from time to time as they wear. The set contains two of the proper eyebolts and detailed installation instructions. The hardware is FAA approved for all Piper aircraft.
Rear Door ..... P/N 05-03636 ..... **$26.95**
Front Door ..... P/N 05-03635 ..... **$35.70**

FOLDING JUMP SEATS

Folding Jump Seats - 170, 172, 172S, 175, 180, 180K, 182, 182R, 185, A185F STC/PMA

Description	Part No.	Price
Folding Jump Seats - right hand pair	05-03470	**$2,218.95**
Folding Jump Seats left & right hand pair	05-03472	**$2,161.00**

FOLDING FRONT SEAT KIT

Folding Front Seat Kit STC
P/N 05-03474 ..... **$352.95**

SEAT TRACK TIE DOWN

Seat Track Tie Downs - Aircraft equipped with Cessna or McFarlane Seat rails.
P/N 05-03467 ..... **$73.85**

05-01764

05-04476

BUSHING WITH RETAINING RING FOR PIPER AIRCRAFT

COWL BUSHING R-RING MC69790-00 - Material that outlasts the original nylon or glass filled teflon materials. Used on most Piper Cherokee models. Includes the retaining ring (snap ring) . P/N 05-01764 ..... **$16.50**
COWL PLATE ASSEMBLY MC69791-000 - Stainless steel mounting plate with MC69790-00 teflon glass bushing and MC484-840 retaining ring. Upper cowl retaining part for most Piper Cherokee models.
P/N 05-04476 ..... **$32.75**

PIPER DOOR LATCH CLEVIS PIN

Restore solid latching of the doors to the fuselage Due to normal wear and lack of lube, the door latch clevis pin should be replaced from time to time to maintain the proper operation of the door. The set includes 1 clevis pin and 1 cotter key. All the hardware is FAA approved for all Piper aircraft. P/N 05-04644 ..... **$5.50**

PIPER ENGINE BAFFLES
See www.aircraftspruce.com for part numbers and prices.

PIPER CABIN DOOR AND OVERHEAD TRIM REPLACEMENT HANDLES

Door Replacement Handles

Overhead Trim Replacement Handles

Piper no longer produces the trim handle, and an estimated 10% of 31,000 Pipers on the registry which utilize their handles. The OEM handles are a very weak link in the entire door assembly. Everything downstream of the handle is pretty secure. Therefore, they have improved the handle and are STC'd and PMA'd for certified aircraft. Please call or visit our website for model eligibility. Each replacement handle is sold as a complete assembly and everything required to complete the installation.
Piper Cabin Door Replacement Handle ..... P/N 05-04550 ..... **$208.00**
Piper overhead Trim Replacement Handle ..... P/N 05-04551 ..... **$208.00**

VENTED FUEL CAPS

Vented Fuel Caps J3 thru PA-22 STC .
P/N 05-03459 ..... **$58.85**

180HP FUEL CAP

180 Fuel Cap PA-12 thru PA-18 with 180HP Engine.
P/N 05-03458 ..... **$98.75**

UNDER SEAT BATTERY RACK

Under Seat Battery Rack PA 18 STC
P/N 05-03460 .... **$325.95**

REFUELING STEP

Refueling Step J3 thru PA-22 STC P/N 05-03462 .... **$113.95**

MAIN LANDING GEAR LONG STEP

Main landing gear Long Step J3 thru PA-19 STC
P/N 05-03461 ..... **$216.95**

WELD ON AIRCRAFT FLOAT FITTINGS

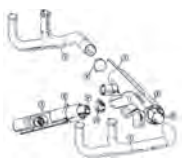
Weld on aircrat float fittings PA-12, -14, PN 05-03476 PA-18 PN 05-03477 STC
Float Fittings PA-12/14
P/N 05-03476 ..... **$715.00**
Float Fittings PA-18
P/N 05-03477 ..... **$556.00**

MAIN LANDING GEAR SAFETY CABLES

Main Landing Gear Safety Cables (All STC) Standard Gear J-3, PA-11, PA-18, PA-19..... PN 05-03463 ..... **$187.95**
3" Extension Gear..... PN 05-03464 ..... **$220.95**
Standard Gear PA-12, PA-14..... PN 05-03465 ..... **$189.95**
3" Extended Gear PA-12, PA-14 ..... PN 05-03466 ..... **$220.95**

AILERON HINGE FOR PIPER

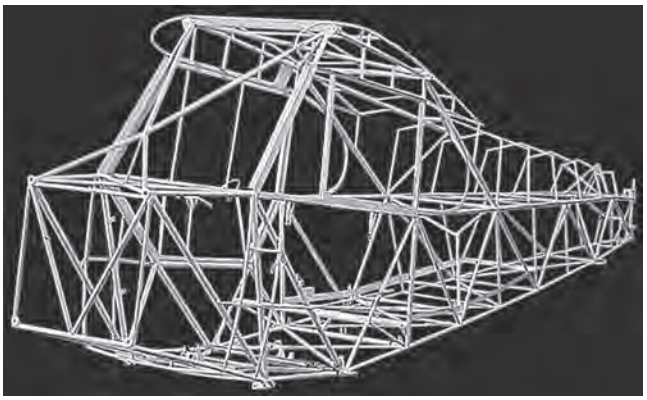
Piper Eligibility PA-28-140,-150, -160, -180, -235; PA-28R-180,-200,-201,-201T; PA-28-181, -236, -201T; PA-28-181,-236, -201T; PA-32-260, -300; PA-32R-300; PA-32-RT-300, -300T; PA-34-200 P/N 05-04197 ..... **$89.75 ea.**



PIPER J3 EXHAUST SYSTEM

New Manufactured, FAA/PMA Approved, Stainless Steel Original Design, Exhaust Headers and Muffler with Safety Bail already installed.
1-Left exhaust stack..... P/N 05-07475 .. **$497.95**
2- Right exhaust stack ..... P/N 05-07480 .. **$543.00**
3- Muffler assy, less shroud..... P/N 05-07485 .. **$573.49**
4- Tailpipe..... P/N 05-07490 .. **$187.95**
5- Tailpipe Shroud ..... P/N 05-07495 .. **$165.95**
6- Muffler Shroud..... P/N 05-07505 .. **$352.95**
7- Slide Clip ..... P/N 05-07510 .... **$38.90**
8- Muffler stack connecting clamp (2 req.) ..... P/N 05-07515 .... **$26.25**
9- Tailpipe brace clamp ..... P/N 05-07520 .... **$29.75**
10- Muffler clamp..... P/N 05-07525 .... **$19.85**

PIPER SUPERCUB PARTS



COMPLETE SUPERCUB FUSELAGE

Replacement fuselage for the PA 18 Supercub incorporating the latest improvements and mods. The fuselage tubes and fittings are all 4130 steel and the standard mods are: "X" reinforcement in the top deck, extended baggage with "dog leg" bulkhead reversed, standard baggage area increased to 180 lbs. capacity, removable rear seat bar, reinforcement sleeves under stabilizer attach bracket, modernized tabs and attach brackets. Completely FAA approved under PMA and STC. Excellent workmanship.

P/N 05-00466 ..... **$13,592.46**

Shipped freight collect from factory in Alaska.
Add $500 crate fee.

PA18 UPPER DOOR

Constructed using all square tubing. FAA approved.
P/N 05-00459 ..... **$546.00**

PA18 LOWER DOOR

Latching mechanism greatly improved over original. Utilizes push rods instead of wires. Powder coated.
P/N 05-00460 ..... **$527.00**

PA18 STABILIZER

Bushings installed, powder coated and ready to cover. FAA-PMA approved.
P/N 05-00461 ..... **$408.95**

PA18 ELEVATOR

Bushings installed, powder coated and ready to cover. FAA-PMA approved.
P/N 05-00462 ..... **$429.00**

PA18 RUDDER

Bushings installed, powder coated and ready to cover. FAA-PMA approved.
P/N 05-00463 ..... **$409.00**

PA18 VERTICAL FIN

Bushings installed, powder coated and ready to cover. FAA-PMA approved.
P/N 05-00464 ..... **$347.95**

$10 crate charge for all items above

PA18 TAILPOST

Bushings installed, powder coated and ready to cover. FAA-PMA approved.
P/N 05-00465 ..... **$70.50**

FLAP HINGE-OUTBOARD

For fabric wing piper models, powder coated. FAA-PMA approved.
P/N 05-00480 ..... **$54.25**

PA 18 FUSELAGE HANDLE

Oversized lifting handle can be used with winter gloves, 8" long with 2" clearance. Weld on, FAA-PMA approved.
P/N 05-00477 ..... **$31.75**

AILERON HINGE

For fabric wing piper models. Powder coated. FAA-PMA approved.
P/N 05-00478 ..... **$51.25**

PA-18 8.5' SPAR BLANK

P/N 05-03596 ..... **$43.25**

SEALED LIFETIME STRUTS
WITH HEAVY DUTY FORKS

FAA-PMA - complies with all A.D.'s - high strength struts will not fail under wind or snow loads. $20 CRATE CHARGE FOR LIFT STRUTS

Description	Part Number	Price
PA 18 Front Lift Strut	05-00485	**$499.00**
PA 18 Heavy Duty Rear Lift Strut	05-00486	**$546.00**
PA 12-14 Front Lift Strut	05-00487	**$497.00**
PA 12-14 High Strength Rear Lift Strut	05-00488	**$497.00**
PA18 Rear Lift Strut	05-03868	**$516.00**
J-3 Front Strut	05-04931	**$525.00**
J-3 Rear Strut	05-04932	**$525.00**

PA18 ARCHES FOR FABRIC FORMERS

Complete set of 6 "turtle deck" arches precut to correct size, weld on as is. FAA-PMA
P/N 04-00469 ..... **per set $252.95**

PA 18 WING FITTINGS

Weld on, FAA-PMA approved.
Front left side ..... P/N 05-00470 ..... **$69.00**
Front right side ..... P/N 05-00471 ..... **$66.25**
Rear left side ..... P/N 05-00472 ..... **$29.52**
Rear right side ..... P/N 05-00473 ..... **$28.25**

PA 18 REAR GEAR FITTING

Weld on, FAA-PMA approved.
Left side ..... P/N 05-00474 ..... **$145.95**
Right side ..... P/N 05-00475 ..... **$268.95**

PA 18 FRONT GEAR FITTING

Weld on, FAA-PMA approved. Fits right or left side.
P/N 05-00476 ..... **$122.95**

WELD-ON FLOAT FITTING

Weld-on float fitting for all models Piper Supercub, PA18. FAA approved by STC. Weighs less than similar fittings. $486.95 for a pair.
P/N 05-02529 ..... **$486.95**

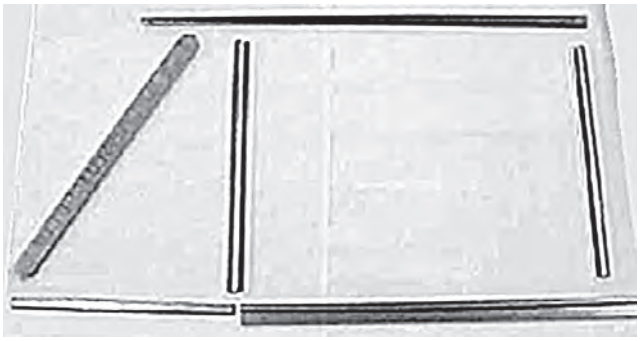
PA-18 125 135 150 EXHAUST SYSTEM

PA-18 Exhaust Systems - FAA/PMA Approved
PA-18 125, 135, 150 hp. Exhaust System

Description	Part No.	Price
Muffler and Shroud Assy. (Pictured)	05-07560	**$1,159.00**
Muffler Clamp, SN 1-3013 (2 Req.)	05-07515	**$26.25**
Muffler Clamp, SN 3014 and up (2 Req.)	05-07570	**$26.95**
Muffler Shroud 150HP.	05-07585	**$335.95**
Front Shroud Assy.	05-07590	**$186.95**
Front Cylinders Stack Assy.	05-07595	**$615.00**
Rear Cylinders Stack Assy.	05-07605	**$614.50**
Clip (for 12436-000/-010)	05-07610	**$33.50**
Clip (for 14239-000)	05-07615	**$34.25**

AP

PIPER SUPERCUB PARTS



FRONT LOWER WINDOW CHANNEL
Left Side ..... FAA-PMA..... P/N 05-00491..... **$17.25**

AFT LOWER WINDOW CHANNEL
Left Side ..... FAA-PMA..... P/N 05-00492..... **$25.75**

FRONT WINDOW CHANNEL
Left Side ..... FAA-PMA..... P/N 05-00493..... **$40.75**

UPPER WINDOW FORMER
Left Side ..... FAA-PMA..... P/N 05-00494..... **$47.00**

FORWARD VERTICAL WINDOW CHANNEL
Left Side ..... FAA-PMA..... P/N 05-00495..... **$27.25**

AFT VERTICAL WINDOW CHANNEL
Left Side ..... FAA-PMA..... P/N 05-00496..... **$14.95**

ADDITIONAL FAA-PMA PARTS FOR PA18 SUPERCUB

Description	Part No.	Price
Piper hinge - half	05-00510	**$15.94**
Interior tab	05-00511	**$9.00**
Pulley bracket	05-00512	**$12.75**
Pulley bracket	05-00513	**$12.75**
Forward elevator pulley half	05-00514	**$19.00**
Flap lever hinge - weld on fuselage or seat	05-00516	**$28.75**
Shock strut	05-00518	**$111.95**
fuel selector bracket	05-00520	**$21.75**
Tailspring bracket	05-00521	**$30.50**
Tailspring mount pad - forward	05-00522	**$29.75**
Aileron pulley bracket	05-00523	**$7.95**
Floorboard tabs	05-00524	**$8.60**
Floorboard tabs	05-00525	**$9.60**
Cabane Vee	05-00526	**$206.95**
Elevator horn	05-00530	**$28.50**
Rudder horn	05-00531	**$41.75**
RH rudder pedal assy.	05-00532	**$134.95**
LH rudder pedal assy.	05-00533	**$137.95**
RH brake pedal assy.	05-00534	**$147.95**
LH brake pedal assy.	05-00535	**$151.95**
3/8" U Channel - 6' Lengths	05-04564	**$8.50**
Exhaust stack rear - PA18 150 hp	05-00543	**$629.86**
Muffler assy. - PA18 150 hp	05-00544	**$522.00**

PA18 LANDING GEAR

Specify right or left side.
11/4 axle, heavy duty; FAA-PMA
P/N 05-00489 ..... **$517.95**
11/2 axle, heavy duty; FAA-PMA
P/N 05-00490 ..... **$517.95**
EXTENDED LANDING GEAR AVAILABLE – CALL FOR QUOTE!

REAR TORQUE TUBE SUPPORT & BEARING

Weld on; FAA-PMA ..... P/N 05-00497..... **$123.95**

FRONT TORQUE TUBE SUPPORT & BEARING

Weld on; FAA-PMA.....P/N 05-00498 ..... **$165.95**

HEAVY DUTY 5/8 LIFT STRUT FORK

Rolled threads, stainless, heat treated.
P/N 05-00501 ..... **$106.95**

TOP DECK SUPERSTRUCTURE

P/N 05-00502 ..... **$482.65**
Add $30 crate charge

JACK SCREW TOWER

P/N 05-00503 ..... **$158.95**
$20 CRATE FEE

MUFFLER BAIL U452-093

Muffler Bail Welded inside muffler out let to guard against Flame Tube failure and obstruction of exhaust outlet.
P/N 05-02150 ..... **$35.50**

TAIL REPAIR SECTION - 4'

Without Jack screw tower.
P/N 05-00504 ..... **$1,724.00**
With Jack screw tower
P/N 05-00505 ..... **$1,040.91**
$20 CRATE FEE

FUEL QUANTITY TRANSMITTER FOR PIPER AIRCRAFT

New Stewart Warner fuel quantity transmitters have not been available for over 20 years, but we now have new FAA-PMA approved direct replacements for originally installed Stewart Warner type transmitters. They eliminate the need for expensive transmitter conversion kits that require replacement of fuel gauges and wiring. These fuel quantity transmitters are engineered to be compatible with the original fuel quantity gauge and wiring which uses reliable time proven technology.
Convenient Kits
FAA-PMA approved kits include one transmitter, one no leak Viton gaskets and five screw/seal assemblies.

MC68101-02.....P/N 05-04870 ..... **$244.00**
Accessories
GASKET MC461-931 .....P/N 05-04871 ..... **$10.85**
GASKET MC462-021 .....P/N 05-04872 ..... **$7.35**
SCREW SEAL ASSY MC1802.....P/N 05-04873 ..... **$3.80**

AIRCRAFT SPRUCE WEST **AIRCRAFT SPRUCE EAST**
CORONA, CA • (877) 4-SPRUCE **PEACHTREE CITY, GA • (877) 477-7823** *Prices Subject to Change Without Notice*

LUSCOMBE PARTS

(FAA/PMA APPROVED)

LUSCOMBE 8E & 8F EXHAUST STACKS

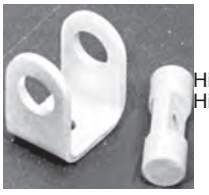
Left Hand Exhaust Stack.....P/N 05-07805 ..... **$323.95**
Right Hand Exhaust Stack .....P/N 05-07810 ..... **$286.95**

LUSCOMBE CABIN HEAT SHROUD

8E & 8F AND 8A-2pc Stacks ..... P/N 05-07820.....**$255.95**

CARBURETOR & CABIN HEAT SHROUD

For Luscombe 8A..... P/N 05-08115..... **$329.00**



RUDDER & ELEVATOR HINGE PIN & BRACKET

Hinge Pin.....P/N 05-07825 ..... **$25.75**
Hinge Pin Bracket .....P/N 05-07830 ..... **$19.75**

GAS CAP & LANDING LIGHT LENS

Luscombe Gas Cap .....P/N 05-07835 ..... **$112.95**
Landing Light Lens.....P/N 05-07840 ..... **$32.95**
Landing Light Lens.....P/N 05-07845 ..... **$35.50**

VERTICAL FIN FRONT ATTACH

Fitting P/N 05-07985 ..... **$171.40**

Note: This fitting is welded 4130 steel and complies with all provisions of A.D. 79-25-05. This fitting is required only on those Luscombes with the "round tip" vertical stabilizer.

TAILWHEEL LEAF SPRINGS

Complete Assembly .....P/N 06-14600 ..... **$139.95**
Main Leaf Only .....P/N 06-14700 ..... **$46.85**

ALL-ALUMINUM LANDING GEAR FAIRING

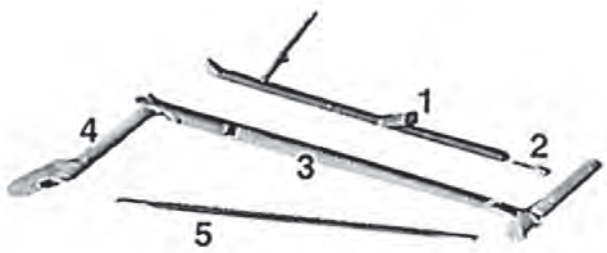
FOR STANDARD GEAR

Left .....P/N 05-07865..... **$166.95**
Right.....P/N 05-07870..... **$153.95**

For Silflex Gear
Left .....P/N 05-07875..... **$229.95**
Right.....P/N 05-07880..... **$229.95**

FAA/PMA LANDING GEAR PARTS

(FOR STANDARD GEARS)



Left Hand Jack Strut (1) ..... P/N 05-07885 ..... **$429.00**
Right Hand Jack Strut (1)..... P/N 05-07890 ..... **$425.95**
Fork End (S-9) (2) ..... P/N 05-07895 ..... **$54.75**
Left Hand Lower Leg (3) ..... P/N 05-07900 ..... **$814.00**
Right Hand Lower Leg (3)..... P/N 05-07905 ..... **$808.00**
Left Hand Upper Arm (4)..... P/N 05-07910 ..... **$995.00**
Right Hand Upper Arm (4) ..... P/N 05-07915 ..... **$1,075.86**
Tie Rod without fittings, 361/4" long (5) P/N 05-07920 ..... **$94.50**
Left Hand Jack Strut (Silflex)..... P/N 05-07930 ..... **$418.95**
Right Hand Gear Fairing ..... P/N 05-07935 ..... **$299.75**

FAA/PMA WING PARTS

Left hand aileron..... P/N 05-00452 ..... **$2,337.00**
Right hand aileron ..... P/N 05-00453 ..... **$2,576.44**
Left hand lift strut (metal wing)..... P/N 05-00454 ..... **$1,577.00**
Right hand lift strut (metal wing) ..... P/N 05-00455 ..... **$1,590.00**
Carry-thru spar (front or rear)..... P/N 05-00456 ..... **$304.95**

FAA/PMA TAIL SECTION PARTS

Fin, square tip..... P/N 05-07940 ..... **$1,693.00**
Rudder, square tip..... P/N 05-07945 ..... **$1,078.00**
Rudder Horn for square tip rudder..... P/N 05-07950 ..... **$75.90**
Tailwheel Leaf Spring Assembly..... P/N 06-14600 ..... **$139.95**
Main Leaf only..... P/N 06-14700 ..... **$46.85**
Rudder & Elevator Hinge Pin ..... P/N 05-07970 ..... **$25.75**
Rudder & Elevator Hinge Pin Bracket P/N 05-07975 ..... **$15.50**

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LUSCOMBE PARTS

(FAA/PMA APPROVED)

AP

ALL ALUMINUM COWLING

Nose Cowl	P/N 05-07990	**$1,117.00**
Bottom Cowl	P/N 05-07995	**$599.50**
Top Cowl	P/N 05-08000	**$258.60**
L/H Cowl	P/N 05-08005	**$124.75**
R/H Cowl	P/N 05-08010	**$124.75**

Note: Cowling is trimmed oversize requiring a finish trim for each individual airplane.

FIREWALL DISHPAN

Used on Luscombe with an electrical system.

P/N 05-08015 ..... **$406.95**

FIREWALL TO ENGINE MOUNT RUBBER BUSHING

6 ea. required per aircraft.

P/N 05-08020 ..... **$31.90**

LUSCOMBE ENGINE MOUNT

For all Continental powered Luscombe, A-65 thru C-90

P/N 05-08025 ..... **$1,171.00**

MANUALS

8A Owner's Manual
P/N 13-00230 ..... **$4.65**

8E Owner's Manual
P/N 13-00235 ..... **$4.40**

8 Series Master Parts List, illustrated
P/N 13-00240 ..... **$18.50**

Service Manual, early fabric wings
P/N 13-00245 ..... **$8.95**

BLANK INSTRUMENT PANEL

P/N 05-08030 ..... **$408.95**

CONTROL CABLES

(GALVANIZED)

Brake Cable Assembly	P/N 05-08035	**$61.95**
Elevator Cable, SN 1-4199	P/N 05-08040	**$106.32**
Elevator Cable, SN 4200 and up	P/N 05-08045	**$111.95**
Left Hand Rudder Cable	P/N 05-08050	**$103.49**
Right Hand Rudder Cable	P/N 05-08055	**$103.49**
Stick to Aileron Cable	P/N 05-08065	**$120.82**
Left Hand or Right Hand Aileron Balance Cable. 16 ft., 7/8 in.	P/N 05-08070	**$97.32**
Left Hand or Right Hand Aileron Balance Cable. 15 ft., 10-3/4 in.	P/N 05-08075	**$91.25**
Forward Trim Cable	P/N 05-08080	**$101.95**
Aft Trim Cable Assembly (2 req'd)	P/N 05-08085	**$81.01**

8A EXHAUST COMPONENTS

FITS ALL A-65 CONTINENTAL ENGINES

Rear Crossover	P/N 05-08090	**$217.95**
Left Hand Stack	P/N 05-08095	**$193.95**
Right Hand Stack	P/N 05-08100	**$194.95**
Exhaust Clamp	P/N 05-08105	**$41.50**
Complete Assembly (includes 2 exhaust clamps)	P/N 05-08110	**$569.00**

LUSCOMBE 8A CARBURETOR & CABIN HEAT SHROUD

Fits on U8627-5 Stack ..... P/N 05-08115 ..... **$329.00**

STINSON PARTS

(TYPE CERTIFICATE APPROVED)

EXHAUST SYSTEM

Muffler
SN 1-3109 ..... P/N 05-08120 ..... **$747.00**
SN 3110 and up ..... P/N 05-08125 ..... **$747.00**

Perforated Tube
SN 1-3109 ..... P/N 05-08130 ..... **$202.95**

Perforated Tube
SN 3110 and up ..... P/N 05-08135 ..... **$200.06**

Tailpipe, Left Hand
SN 112-3109 ..... P/N 05-08140 ..... **$271.95**
SN 3110 and up ..... P/N 05-08145 ..... **$266.95**

Tailpipe, Right Hand
SN 112-3109 ..... P/N 05-08150 ..... **$288.95**
SN 3110 and up ..... P/N 05-08155 ..... **$252.95**

HEAT SHROUDS

Carb. Heat Shroud ..... P/N 05-08165 ... **$313.95**
Cabin Heat Shroud, For SN 744 & up ..... P/N 05-08170 .... **$232.95**
Shroud Clip ..... P/N 05-08175 ..... **$48.50**

COMPLETE SPINNER ASSEMBLIES

READY FOR INSTALLATION FOR STINSON WITH WOOD OR METAL PROPELLERS.

Wood Propeller Spinner Assembly ..... P/N 05-08180 ..... **$499.00**
Metal Propeller Spinner Assembly ..... P/N 05-08185 ..... **$556.59**

CUFF AIR INDUCT

For 108, 108-1, 108-2, 150 hp. (SN 1-2249)
P/N 05-08190 ..... **$118.95**
For 108-2, 108-3, 165 hp. (SN 1-2249)
P/N 05-08195 ..... **$119.95**

FUEL GAUGE & SENDER

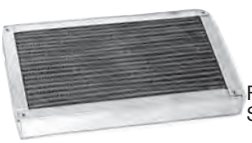
DIRECT REPLACEMENT FOR ORIGINAL AC GAUGE AND SENDER

Gauge ..... P/N 05-08200 ..... **$148.95**
Sender ..... P/N 05-08205 ..... **$265.95**

AP

RUDDER ARM

P/N 05-08210 ..... **$106.95**



CARBURETOR AIR FILTER

For Franklin 150-165 hp. Stinson 108 Series ..... P/N 05-08215 ..... **$77.85**

Leading Edge Slat for all 108 Series ..... P/N 05-08220 ..... **$352.95**
Leading Light Lens ..... P/N 05-08225 ..... **$44.75**

STINSON MANUALS

108 Series Parts Catalog
P/N 05-08230 ..... **$19.75**
General Service Manual
P/N 05-08235 ..... **$38.50**
Service Bulletins and Letters
P/N 05-08240 ..... **$19.50**
Stinson Specs, ADs and STCs
P/N 05-08245 ..... **$8.75**
108 CAA Operating Limits
P/N 05-08250 ..... **$4.85**
108-1 CAA Operating Limits
P/N 05-08255 ..... **$6.85**
108-2 CAA Operating Limits
P/N 05-08265 ..... **$4.90**
108-3 CAA Operating Limits ..... P/N 05-08270 ..... **$5.25**
108-1 Owner's Manual ..... P/N 05-08275 ..... **$11.95**
108-2 Owner's Manual ..... P/N 05-08280 ..... **$12.50**
108-3 Owner's Manual ..... P/N 05-08285 ..... **$11.85**
108-1 Seaplane Operating Limits ..... P/N 05-08290 ..... **$4.85**
108-2 Seaplane Operating Limits ..... P/N 05-08295 ..... **$4.85**
108-3 Seaplane Operating Limits ..... P/N 05-08300 ..... **$5.50**
108 Ski-Plane Supplement ..... P/N 05-08305 ..... **$1.63**
108-1 Ski-Plane Supplement ..... P/N 05-08310 ..... **$1.66**
Appendix A Supplement ..... P/N 05-08315 ..... **$1.51**
Stinson Story of Aircraft Progress ..... P/N 05-08320 ..... **$17.50**
Stinson Time-Speed-Distance Computer ..... P/N 05-08325 ..... **$9.85**
Stinson Computer Instructions ..... P/N 05-08330 ..... **$5.50**

STINSON PARTS

(TYPE CERTIFICATE APPROVED)

AP

ALUMINUM NOSE COWL

Applicable to 108 through 108-3 series Stinsons.

Nose Cowl	P/N 05-08335	**$939.00**
Bottom Cowl	P/N 05-00086	**$1,639.00**
Left side Cowl	P/N 05-00087	**$739.00**
Right side Cowl	P/N 05-00088	**$740.00**

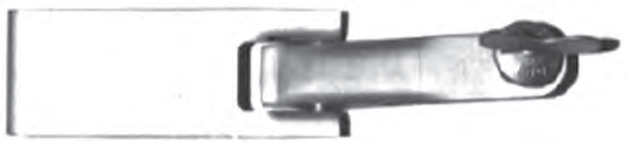
LANDING GEAR FAIRINGS

Left Fairing	P/N 05-08340	**$225.61**
Right Fairing	P/N 05-08345	**$225.61**

FUSELAGE TO LANDING GEAR FILLETS

Left	P/N 05-08350	**$367.48**
Right	P/N 05-08355	**$367.48**

ENGINE COWL LEVER ASSEMBLY



Cowl Fastener Assembly	P/N 05-08365	**$69.75**
Cowl Fastener Pin	P/N 05-08370	**$0.96**
Cowl Fastener Receptacle	P/N 05-08375	**$3.70**
Receptacle Cup	P/N 05-08380	**$23.25**

WING LIFT STRUTS

Front Strut	P/N 05-08385	**$1,037.00**
Rear Strut	P/N 05-08390	**$979.00**

LANDING LIGHT LENS

P/N 05-08225 ..... **$44.75**

PITOT TUBE

P/N 05-08395 ..... **$188.95**

CONTROL SURFACE BEARING

P/N 05-08400 ..... **$21.50**

CONTROL CABLES

Description	*No. Req'd*	*P/N*	*Price*
Aileron Idler Cable	2	P/N 05-08405	**$85.75**
Aileron Control Cable	2	P/N 05-08410	**$79.50**
Flap Control Cable	2	P/N 05-08415	**$73.25**
Rudder Cable—1946, 1947	2	P/N 05-08420	**$95.00**
Rudder Cable, 1948	2	P/N 05-08425	**$121.95**
Aileron Idler Cable (in fuselage)	1	P/N 05-08430	**$51.85**
Control Column Cable, Left Half	1	P/N 05-08435	**$102.95**
Control Column Cable, Right Half	1	P/N 05-08440	**$102.95**
"Up" Elevator Cable	1	P/N 05-08445	**$76.50**
"Down" Elevator Cable	1	P/N 05-08450	**$76.50**
Upper Flap Control Cable (in fuselage)	1	P/N 05-08455	**$71.75**
Elevator Tab Control Cable, SN 1 thru 2249	1	P/N 05-08465	**$65.75**
Elevator Tab Control Cable, SN 2250 and up	1	P/N 05-08470	**$75.00**
Rudder Trim Cable, SN 2250 and up	2	P/N 05-08475	**$46.75**
Rudder Trim Driver Cable, SN 2250 and up	1	P/N 05-08480	**$65.75**

STRUT FILLETS

Rear Lift Strut Upper Fillet
- Left P/N 05-08485 ..... **$142.95 ea.**
- Right P/N 05-08490 ..... **$128.95 ea.**

Forward Lift Strut Upper Fillet
- Left P/N 05-08495 ..... **$66.75 ea.**
- Right P/N 05-08500 ..... **$63.25 ea.**

Lift Strut, Lower Fillet, left.
P/N 05-08505 ..... **$147.95 ea.**

Lift Strut, Lower Fillet, right
P/N 05-08510 ..... **$130.95 ea.**

AERONCA/BELLANCA REPLACEMENT PARTS

RIBS

FAA/PMA'd

Description	Models	OEM P/Ns	Part No.	Price
Main Wing Rib	Most 7 &11 Series	5-142	05-06069	**$109.95**
Main Wing Rib	8gcbc	5-376	05-06123	**$105.95**
Main Wing Rib	8kcab	5-357L (left)	05-06118	**$78.75**
		5-357R (right)	05-06117	**$59.00**
Wing Tip Rib	Most 7 &11 Series	5-143	05-06070	**$96.00**
Aileron Bay Rib	Most 7 &11 Series	5-181	05-06097	**$119.75**
Aileron Bay Rib	8kcab	2-1978L (left)	05-06253	**$20.95**
		2-1978R (right)	05-05254	**$467.75**
Aileron Rib Inboard	8gcbc	5-377R (right)	05-06255	**$79.00**
Aileron Bay Rib	8GCBC	5-374	05-06122	**$129.95**
		5-375	05-06256	**$69.00**
Aileron Flap Rib - Inside	Most 7, 8 & 11 Series	3-445	05-06257	**$19.50**
Aileron Flap Rib - End	Most 7, 8 & 11 Series	3-446	05-06258	**$33.25**
Flap Bay Rib	8GCbc	5-373	05-06259	**$69.00**
Flap Bay Support Rib	8GCbc	5-378 (left)	05-06260	**$79.00**
		5-378 (right)	05-06261	**$79.00**
Rib Tank Trailing Edge	7EC, 7FC, 7KC, 7ECA, 7GC, 7HC, 7KC, 7GCA, 7ECA, 7GCAA, 7KCAB	3-1183	05-05769	**$43.50**
Nose Rib, Tank Area	7ECA, 7GCBC, 7GCAA, 7KCAB, 8GCBC	3-1516	05-05802	**$46.75**
Wing Tip Ribs w/Strip	7EC thru 7KCAB	4-1030 (left)	05-05876	**$249.95**
		4-1030 (right)	05-05877	**$249.95**
Aileron and Flap Rib	Most 7, 8 & 11 Series	3-445	05-06257	**$19.50**
Rib - Trailing Tank Area	8KCAB	4-1527	05-06262	**$26.55**
Butt Rib	8KCAB	5-365 (left)	05-06119	**$240.95**
		5-365 (right)	05-06120	**$240.95**
Butt Rib	Most 7 & 11 Series	7-445L (left)	05-06169	**$145.95**
		7-445R (right)	05-06170	**$145.95**
Rib Assy. Butt Rib (wing with wing tank)	Most 7 & 11 Series	7-791L (left)	05-06220	**$212.95**
		7-791R (right)	05-06221	**$212.95**
Rib Replacement Sections for 5-142				
Rear Section	Most 7 &11 Series	5-185-1	05-06098	**$35.50**
Nose Section	Most 7 &11 Series	5-185-2	05-06099	**$50.00**
Rear Section, w/support, same as 5-185-1, includes 1-8875 support	Most 7 &11 Series	5-185-5	05-06101	**$86.75**

Other Aeronca ribs are available. Please call for availability and price for your specific needs!

RIB COMPONENTS

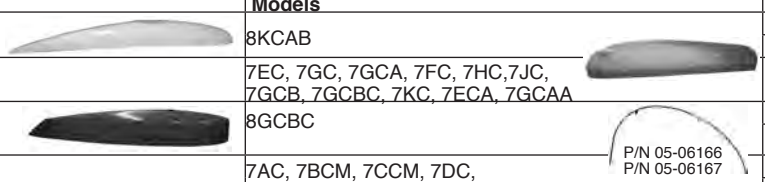
FAA/PMA'd

Description	Models	OEM P/Ns	Part No.	Price
Rib Reinforcement - Flap Bay	7gcb, 7gcba, 7gcbc	2-1590 (left)	05-06263	**$15.80**
		2-1590 (right)	05-06264	**$15.80**
		2-1591 (left)	05-06265	**$15.80**
		2-1591 (right)	05-06266	**$15.80**
Rib Reinforcement - Flap Inboard Forward	7gcb, 7gcba, 7gcbc	2-1598	05-06267	**$16.90**
Rib Reinforcement - Flap Inboard Aft	7gcb, 7gcba, 7gcbc	2-1599	05-06268	**$15.40**
Rib Stiffener	Most 7 & 11 Series	2-699	05-05691	**$32.75**
Wing Tip Rib Strip	Most 7EC & up Series	4-1030-1	05-05874	**$10.50**
Wing Tip Rib Angle	Most 7EC & up Series	4-1030-2	05-05875	**$5.00**

WING TIPS

FAA/PMA'd

Description	Models	OEM P/Ns	Part No.	Price
Wing Tips - Fiberglass	8KCAB	7-1506L (left)	05-06269	**$129.00**
		7-1506R (right)	05-06165	**$133.95**
Wing Tips - Fiberglass	7EC, 7GC, 7GCA, 7FC, 7HC,7JC, 7GCB, 7GCBC, 7KC, 7ECA, 7GCAA	5-267L (left)	05-06270	**$215.00**
Wing Tips - Fiberglass	8GCBC	7-1480L (left)	05-06271	**$199.00**
		7-1480R (right)	05-06164	**$295.95**
Wing Tip Bow - Metal	7AC, 7BCM, 7CCM, 7DC, 7EC, 7FC, 11AC, 11B, 11C	7-440L (left)	05-06166	**$299.95**
		7-440R (right)	05-06167	**$299.95**



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AERONCA/BELLANCA REPLACEMENT PARTS

WOOD WING SPARS, FITTINGS & COMPONENTS ALL FAA/PMA'D

For wood spar A.D. inspection use our 18" or 36" ProVision Fiber Optic Scopes.

Description	Models	OEM P/Ns	Part No.	Price
Front Spar L/R Rear Spar L/R	7AC, 7B, 7BCM, 7CCM, 7DC, 7EC, 7FC, 7ACA, 11AC, 11B, 11C (Spars are used with metal wingtip bow only)	5-146L (left front)	05-06071	$992.00
		5-146R (right front)	05-06072	$992.00
		5-147L (left rear)	05-06073	$964.00
		5-147R (right rear)	05-06074	$964.00
Front Spar L/R Rear Spar L/R	7EC, 7FC, 7GC, 7GCA, 7HC, 7KCAB 7ECA, 7KC, 7GCAA (Spars are used with fiberglass wingtip only)	5-262L (left front)	05-06105	$992.00
		5-262R (right front)	05-06106	$992.00
		5-263L (left rear)	05-06107	$964.00
		5-263R (right rear)	05-06108	$964.00
Rear Spar L/R Front Spar L/R	7HC, 7GCB, 7GCBC	5-270L (left rear)	05-06111	$964.00
		5-270R (right rear)	05-06112	$964.00
		5-271L (left front)	05-06113	$992.00
		5-271R (right front)	05-06114	$992.00
Front Spar Strut Attach Fitting	All Models Except 8KCAB	2-892	05-05741	$37.50
Front Spar Attach Fitting	8KCAB	2-1969	05-06272	$44.95
Front Spar Root Fitting	8KCAB	1-9878	05-06273	$17.70
Rear Spar Root Fitting	All Models	2-703	05-05695	$124.95
Wing Root Drag Wire Lug	Most 7, 8, & 11 Series	1-2299	05-05389	$26.75
Wood Spar Nails	All Models	114	05-06274	$22.85 /lb.

**** Pricing and availability of spars is highly dependent upon price and availability of Sitka Spruce. Please call for current prices and delivery lead time.***

AP

LIFT STRUTS AND FITTINGS FAA/PMA'D

P/N 05-06128

P/N 05-06109

Lift Struts	7A, 7ACA, 7B, 7BCM, 7CCM, 7DC, 7EC, 7ECA, 7FC, 7GC, 7GCA, 7GCAA, 7GCB, 7GCBA, 7GCBC, 7HC, 7JC, 7KC, 7KCAB	5-392 (front)	05-06128	$728.00
		5-268 (rear)	05-06109	$517.00
Lift Struts	11A, 11B, 11C	5-162 (front)	05-06083	$849.00
		5-160 (rear)	05-06082	$603.00
Strut Fork	All Models	1-2543	05-06275	$60.85
Rear Strut Upper Fitting	All Models Except 8KCAB	1-2335-1	05-05402	$29.50
Front Strut Attach Fitting	All Models Except 8KCAB	2-892	05-05741	$37.50
Strut Attach Fitting	8KCAB	2-1976	05-06276	$337.37
Strut Attach Fitting	All Models Except 8KCAB	2-893	05-05742	$163.95

JURY STRUTS & COMPONENTS FAA/PMA'D

Jury Strut Spreader	All 7 Series	1-2286 (spreader)	05-05386	$61.50
Jury Strut Spreader	8GCBC	1-10359 (spreader)	05-06277	$32.60
Jury Strut Spreader	8KCAB	1-10106 (spreader)	05-06278	$43.37
Jury Struts	8GCBC	1-10372 (front)	05-06279	$69.95
		1-10358 (rear)	05-06280	$43.89
Jury Strut Spreader	11A, 11AC	1-2461 (spreader)	05-05449	$57.75
Jam Nut (Code 5)		AN316-8R	AN316-8R	$0.44

LEADING EDGES ALL FAA/PMA'D

Leading Edges *P/N 05-05984*	7AC, 7BCM, 7CCM, 7DC, 7EC, 7FC, 7GC, 7GCA, 7HC, 7GCB, 7GCAA, 7GCBC, 7ECA, 7GCAA, 7KCAB, 8GCBC, 7ACA, 7KC, 11AC, 11B, 11C	4-548-1 (inside)	05-05974	$48.85
		4-548-2 (inside middle)	05-05975	$50.50
		4-548-3 (outside middle)	05-05976	$44.25
		4-548-4 (outside)	05-05977	$36.75
		7-556L (tip)	05-06212	$60.75
		7-556R (tip)	05-06213	$60.75
Leading Edge Skin - Wing	7GCBC S/N 899-76 & UP, 8GCBC S/N 191-76 & UP	4-548-17R	05-05984	$42.00
Leading Edge Stiffener	7AC, 7BCM, 7CCM, 7DC, 7EC, 7FC, 7GC, 7GCA, 7GCBC, 7HC, 7KC	1-10000-2	05-05334	$33.25
Leading Edge Stiffener	7GCBC, 7ECA, 7GCAA, 7KCAB, 8GCBC	4-1678-1	05-05961	$65.50
		4-1678-2	05-06281	$23.99
		4-1678-3	05-06282	$32.45
Leading Edge Stiffener	8KCAB	4-1519-1	05-06283	$18.74
		4-1519-2	05-06284	$24.25
Leading Edge Skin - Stall Warning	7GCBC 7ECA, 7GCAA, 7KCAB 8GCBC	4-1679-1	05-06285	$54.50
		4-1679-2	05-06286	$39.64
		4-1679-3	05-05962	$66.75
Leading Edge Skin - Tip	7EC, 7FC, 7GC, 7GCA, 7HC, 7GCB, 7GCBA	4-1123L	05-05882	$42.00
		4-1123R	05-05883	$42.25
Leading Edge Skin - Outboard	8KCAB	4-1517-1	05-05934	$61.25
Leading Edge Skin - Middle	8KCAB	4-1517-2 (right)	05-05935	$66.25
		4-1517-5 (left)	05-05936	$53.50
Leading Edge - Inboard	8KCAB	4-1737L (left)	05-05968	$89.50
		4-1737R (right)	05-05969	$89.50

TRAILING EDGES ALL FAA/PMA'D

Wing Trailing Edge	8KCAB	2-1977	05-06287	$21.84
Wing Trailing Edge	7ACA, 7ECA, 7GCAA, 7KCAB, 7GCBC, 8KCAB	2-1915	05-05651	$43.50
Wing Trailing Edge	7ACA, 7BCM, 7CCM, 7DC, 7EC, 7FC 7GC, 7HC, 7GCBA, 7ECA, 7GCAA	3-515	05-05836	$52.00
Wing Trailing Edge	7AC, 11AC	3-515-1	05-05837	$52.00
Wing Trailing Edge	8GCBC	2-2085	05-05669	$22.25
Flap Bay - Trailing Edge	7GCB, 7GCBA, 7GCBC, 8GCBC	4-1092 (right)	05-06288	$120.95
		4-1092 (left)	05-06289	$120.95
Aileron Trailing Edge	All Models	3-542	05-05851	$37.00
Channel Aileron Bay Trailing Edge	8KCAB	2-1979	05-06290	$17.75
Aileron Bay Trailing Edge	All Models Except 8KCAB	5-175R (right)	05-06093	$100.95
		5-175L (left)	05-06092	$100.95
Trailing Edge Flap Bay Cover	7GCB, 7GCBA, 7GCBC (41-1/8")	2-1594-1 (right)	05-05625	$53.00
		2-1594-1 (left)	05-05626	$53.00
Trailing Edge Flap Bay Cover	7GCB, 7GCBA, 7GCBC (41.88")	2-1594-2 (right)	05-05627	$53.00
		2-1594-2 (left)	05-05628	$53.00
1" Trailing Edge Material(longest length available is 7 feet)		1870	05-06291	$2.44 / ft.

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OTHER WING COMPONENTS - ALL FAA/PMA'D

Description	Models	OEM P/Ns	Part No.	Price
Drag Wire	Most 7, 8 and 11 Series	1-2527-1	05-05459	**$38.00**
Drag Wire	Most 7, 8 and 11 Series	1-2527-2	05-06292	**$25.36**
Drag Wire	Most 7, 8 and 11 Series	1-2595-1	05-05480	**$83.50**
Drag Wire	Most 7, 8 and 11 Series	1-2595-2	05-05481	**$83.50**
Wing Root Drag Wire Lug	Most 7, 8 and 11 Series	1-2299	05-05389	**$26.75**
Wing Compression Strut	All Models except 8KCAB	2-694	05-05688	**$111.95**
Flap Hinge Inboard-Left	7GCB, 7GCBA, 7GCBC, 8GCBC	1-9015L (left)	05-06293	**$97.28**
Flap Hinge Inboard-Right	7GCB, 7GCBA, 7GCBC, 8GCBC	1-9015R (right)	05-06294	**$97.28**
Flap Fairing-Lower	7GCBC, 8GCBC	1-9803	05-06295	**$14.25**
Gap Cover	8KCAB	3-1448R (right)	05-05798	**$56.75**
		3-1448L (left)	05-05797	**$56.75**
Gap Cover	8KCAB	4-1553R (right)	05-05945	**$60.75**
		4-1553L (left)	05-05944	**$60.75**
Front Wing Gap Cover	Most 7 Series	3-451L (left)	05-05820	**$34.75**
Front Wing Gap Cover	Most 7 Series	3-451R (right)	05-05821	**$34.75**
Top Rear Wing Gap Cover	Most 7 Series	3-453L (left)	05-05823	**$26.00**
Top Rear Wing Gap Cover	Most 7 Series	3-453 R (right)	05-05824	**$26.00**
Top Center Wing Gap Cover	Most 7 Series	3-452	05-05822	**$23.75**
Bottom Rear Wing Gap Cover	Most 7 Series	3-454L (left)	05-05825	**$21.85**
Bottom Rear Wing Gap Cover	Most 7 Series	3-454R (right)	05-05826	**$24.75**
Bottom Center Wing Gap Cover	Most 7 Series	3-455	05-05827	**$20.00**
Inspection Cover Assy.	Most 7, 8 & 11Series	3-639	05-05868	**$40.00**
Airspeed Pitot Head	Most 7 & 11 Series	3-535	05-05845	**$189.50**
Spacer Aileron Sector and Hinge	7A, 7ACA, 7B, 7BCM, 7CCM, 7DC, 7EC, 7ECA, 7FC, 7GC, 7GCA, 7GCAA, 7GCB, 7GCBA, 7GCBC, 7HC, 7KC, 7KCAB, 8KCAB, 8GCBC, 11A, 11B, 11C	1-2576	05-05470	**$7.85**
Aileron Spar	Most 7 Series	5-157	05-06079	**$71.50**
Aileron Control and Balance Cable	7AC, 7EC, 7FC, 7GC, 7GCA, 7GCB, 7HC, 7ECA, 7GCAA, 7GCBC, 7KCAB, 8GCBC, 8KCAB	1-2339	05-05404	**$59.50**
Cabin Aileron Control Cable	Same as 1-2339	1-2397	05-05728	**$50.50**
Aileron Balance	Most 7, 8 & 11 Series	5-179R (right)	05-06096	**$93.50**
		5-179L (left)	05-06095	**$93.50**
Fairlead-Aileron Balance Cable	All Models	1-2396	05-05427	**$24.75**
Pulley - Aileron Control	7ACA, 7ECA, 7GCAA, 7GCBC, 7KCAB	1-10309	05-05348	**$51.25**
Spacer - Aileron Sector & Hinge Bracket	Most 7, 8, & 11 Series	1-2576	05-05470	**$7.85**
Bearing - Aileron Sector	7ECA, 7GCAA, 7GCBC, 7KCAB, 8KCAB, 8GCBC	B65PS	05-06296	**$6.65**

P/N 05-05688

P/N 05-05820
P/N 05-05821

P/N 05-05868

P/N 05-05348

P/N 05-05845

INSTRUMENT PANELS - ALL FAA/PMA'D

P/N 05-05914

P/N 05-06007

P/N 05-06075

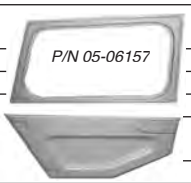
P/N 05-06127

Description	Models	OEM P/Ns	Part No.	Price
Instrument Panel blank no holes	7AC, 7BCM, 7CCM, 7DC	5-150	05-06075	**$89.75**
Instrument Panel	7ECA, 7GCAA, 7GCBC, 7KCAB, 8KCAB, 8GCBC	4-1428	05-05914	**$99.75**
Interior Panel Left Front	7A, 7BCM, 7B, 7CCM, 7DC	4-608	05-06007	**$97.25**
Instrument Panel	7ECA, 7GCAA, 7GCBC, 8KCAB, 8GCBC	5-390	05-06127	**$114.95**
Lower Instrument Control Panel	7ECA, 7GCAA, 7GCBC, 8KCAB, 8GCBC	4-1734	05-05967	**$66.75**
Radio Panel	7ECA, 7GCAA, 7GCBC, 7KCAB, 8KCAB, 8GCBC	2-1919-1	05-05652	**$66.00**
Cabin Speaker Cover	7ECA, 7GCAA, 7GCBC, 7KCAB	3-1387	05-06297	**$25.00**
Electrical Panel Blank	7ECA, 7GCAA, 7GCBC, 7KCAB, 8GCBC, 8KCAB	4-1363	05-05885	**$34.00**

DOOR COMPONENTS - ALL FAA/PMA'D

Description	Models	OEM P/Ns	Part No.	Price
Fiberglass Door	7EC, 7FC, 7GC, 7HC, 7GCA, 7GCB, 7GCBA, 7KC	7-1084-1	05-06298	**$496.13**
Fiberglass Door	7ECA, 7GCAA, 7GCBC, 7KCAB, 8KCAB	7-1265	05-06144	**$604.00**
Upper Door or Window Handle Assy. *Meets AN, MS, NAS, or MIL-Spec	7ECA, 7GCAA, 7GCBC, 7KCAB, 8GCBC, 8KCAB,	C602-6222916A	05-06299	**$19.75**
Photo Door Frame	8GCBC	7-1457-1 (window)	05-06157	**$299.95**
		7-1457-2 (lower)	05-06158	**$342.95**
Door Hinge	7A, 7BCM, 7CCM, 7DC, 7EC	1-2423	05-05439	**$22.65**
Cabin Door Latch	7AC, 7BCM, 7CCM, 7DC, 7EC, 15AC	1-2594	05-05479	**$99.75**
Cabin Door Stop Assy.	All models except 8KCAB	1-3514	05-05529	**$39.25**
Clamp	All models except 8KCAB	1-3514-1	05-05530	**$7.50**
Tube	All models except 8KCAB	1-3514-2	05-05531	**$8.00**
Brace Assembly Door Latch	All 7 Series & 8KCAB	2-1451	05-05615	**$69.50**
Wood Spacer	7ECA, 7GCAA, 7GCBC, 7KCAB, 8KCAB	7-1265-6	05-06145	**$9.75**
Door Moulding	7ECA, 7GCBC, 7GCAA, 7KCAB, 8KCAB	1-9927	05-05597	**$32.00**
Door Seal 3/8" round (Code 5)	7ECA, 7GCAA, 7GCBC, 7KCAB, 8GCBC, 8KCAB	4-655	05-06300	**$1.20 / ft.**

P/N 05-06144


P/N 05-06157

P/N 05-06158

Note on Model Eligibility: We have made every effort possible to detail installation eligibility for Aeronca parts based upon the best information we have available. If you are uncertain as to whether a specific OEM part number may be installed on your aircraft, you must consult either your aircraft owner or service manuals, or check with your mechanic. We do not warrant that models listed in the catalog are accurate in all instances. Please call us if you have questions about specific part numbers and model eligibility and we can research your question prior to your order.

WINDOWS, WINDOW SETS & SKYLIGHTS - ALL FAA/PMA'D

FAA/PMA'd. Factory fresh, free from distortion. Manufacturer guarantees their windows and skylights to be optically perfect and free from defects. Please specify year, model and serial number of your aircraft when ordering. Many out-of-date aircraft have been modified and measurements included with the order will help alleviate any problems if your aircraft is not standard. Check or charge card number must accompany order. Orders are noncancellable and nonreturnable. All windows and skylights available in green or grey tint at additional 20% charge. Windows and skylights requiring a Certificate of Authenticity for export have an additional $80.00 charge. Windows and skylights. Shipped FOB factory. Prepayment required.

Description	Models	LP Aero P/N	OEM P/Ns	Cat. No.	Price
Left Front Sliding Window Forward (clear)	Most 7 Series	231	3-572 (replaces 3-469, window only)	05-02783	$33.50
Left Front Sliding Window Rearward (clear)	Most 7 Series	232	3-573 (replaces 3-470, window only)	05-02784	$31.00
Rear Window (Left or Right) (clear)	Most 7 Series	233	7-463	05-02785	$46.50
Right Front Door Window (clear)	Most 7 Series	234	7-538	05-06406	$92.00
Right Door Window Bubbled	7ECA, 7GCAA, 7GCBC, 7KCAB, 8GCBC	291	4-1446	05-02821 (clear)	$94.50
				05-06409 (green)	$113.95
Left Rear Bubbled Window	7ECA, 7GCAA, 7GCBC, 7KCAB, 8GCBC	290	7-1256-L	05-06411 (clear)	$99.75
Right Rear Bubbled Window	7ECA, 7GCAA, 7GCBC, 7KCAB, 8GCBC	289	7-1256-R	05-02820 (clear)	$99.75
Left Front Swinging Bubbled Window	7ECA, 7GCAA, 7GCBC, 7KCAB, 8GCBC	297	4-1487	05-06438 (clear)	$93.25
				05-06439 (green)	$111.95
				05-06440 (gray)	$111.95
Left or Right Door - Front Sliding Window (clear)	11AC, 11BC, 11CC, S11AC, S11BA, S11CC	225	4-715	05-06441	$45.00
Left or Right Door - Rear Sliding Window (clear)	11AC, 11BC, 11CC, S11AC, S11BA, S11CC	226	4-714	05-06444	$30.25
Left or Right Rear Window (clear)	11AC, 11BC, 11CC, S11AC, S11BA, S11CC	227	4-594	05-06447	$34.75
Left Front Pilot Window (clear)	14-19-3A, 17-30, 17-30A, 17-31A, 17-31ATC (Viking)	816	196940-1	05-06450	$144.95

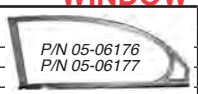
SKYLIGHT

Skylight	7ACA, 7GCBC, 7ECA, 7GCAA, 7KCAB, 8GCBC, 8KCAB	288	7-1286	05-02818 (clear)	$124.95
				05-02819 (green)	$124.95

WINDOW SETS

Window Set - Includes one each right and left rear bubble windows, right door bubble window, left front swinging bubble window	289, 290, 291 & 297	05-06464	$361.25
Window Set - Includes one each left front sliding window fwd., left front sliding window rwd. right and left rear bubble window and right door bubble	231, 232, 289, 290 & 291	05-06465	$344.95

WINDOW & WINDSHIELD FRAMES & COMPONENTS



Rear Window Frame	7AC, 7CCM, 7DC, 7EC, 7FC, 7GC, 7GCB, 7HC	7-461 (right)	05-06176	$247.95
		7-461 (left)	05-06177	$247.95
Rear Window Sill Strip (wood)	7AC, 7DC, 7EC, 7FC, 7GC, 7GCA, 7HC, 7GCB	2-786	05-05723	$19.50
Transom Window Frame	All 7 Series Models	2-822	05-05731	$19.50
Retainer - Left Side Windshield	7AC, 7BCM, 7CCM, 7DC, 7EC, 7ECA, 7FC, 7GCAA, 7GCBA, 7GCBC, 7KCAB	3-473	05-05831	$34.75
Retainer - Right Side Windshield	7AC, 7BCM, 7CCM, 7DC, 7EC, 7ECA, 7FC, 7GCAA, 7GCBA, 7GCBC, 7KCAB	3-474R (right)	05-05832	$22.50
Retainer - Right Side Windshield	7GCAA, 7GCBC	3-474-1R (right)	05-06301	$11.29
Retainer Windshield - Top	7AC, 7DC, 7EC, 7FC, 7GC, 7GCA, 7HC, 7GCB, 7GCBA	3-549	05-05854	$17.50
Retainer Windshield -Pair - Windshield to Wraparound	7AC, 7BCM, 7CCM, 7DC, 7EC, 7FC, 7GC, 7GCA, 7GCB, 7GCBA, 7HC	7-487	05-06194	$85.50/pr.
Rear Window Channel - Bottom	7ACA, 7ECA, 7GCAA, 7GCBA, 7GCBC, 7KCAB, 8GCBC, 8KCAB	2-1875R (right)	05-05635	$42.00
		2-1875L (left)	05-05634	$42.00
Rear Window Channel - Top	7ACA, 7ECA, 7GCAA, 7GCBA, 7GCBC, 7KCAB, 8GCBC, 8KCAB	2-1876R (right)	05-05637	$47.75
		2-1876L (left)	05-05636	$47.75
Rear Window Channel - Aft	7ACA, 7ECA, 7GCAA, 7GCBA, 7GCBC, 7KCAB, 8GCBC, 8KCAB	1-9919R (right)	05-06302	$14.07
		1-9919L (left)	05-06303	$14.07
Top Window Aft Edge Strip	7BCM, 7CCM, 7EC, 7FC, 7GC, 7GCA, 7GCB, 9GCBA, 7HC	4-656	05-06018	$21.00
Moulding - Rear Window Upper	7ACA, 7ECA, 7GCAA, 7GCBA, 7GCBC, 7KCAB, 8GCBC, 8KCAB	2-1877R (right)	05-06304	$19.48
		2-1877L (left)	05-06305	$19.48
		2-1877-1R (right)	05-06306	$19.48
		2-1877-1L (left)	05-06307	$19.48
Retainer Windshield -Side - Windshield to Wraparound	7ECA, 7GCAC, 7GCAA, 8KCAB	3-474-2R	05-06308	$23.25
		3-474-2L	05-06309	$14.06
Retainer - Right Side Windshield to Wraparound (bottom)	7ACA, 7GCBC, 7ECA, 7GCAA, 7KCAB, 8KCAB, 8GCBC	4-1369R (right)	05-05887	$67.75
		4-1369L (left)	05-05886	$67.75
Left Front Window Frame	7ECA, 7GCAA, 7GCBC, 7KCAB, 8KCAB, 8GCBC	7-1318	05-06310	$183.75
Retainer Windshield -Top - Windshield to Greenhouse	7ACA, 7ECA, 7GCAA, 7GCBA, 7GCBC, 7KCAB, 8GCBC, 8KCAB	2-1880	05-05638	$26.00
		2-1880-1	05-05639	$26.50
Top Window Support Assy.	7ECA, 7GCAA, 7KCAB, 7GCBC, 8GCBC	3-1396	05-05787	$131.95
Top Window Support Assy.	7BCM, 7CCM, 7EC, 7FC, 7GC, 7GCA, 7HC, 7GCB, 7GCBA	3-585	05-05859	$177.95
U Rubber Channel	Meets AN, MS, NAS, or MIL-Spec	CH-35	05-02200	$1.39
Hinge for Left Side Window	7ECA, 7GCAA, 7GCBC, 7KCAB, 8KCAB, 8GCBC	1-9872	05-05595	$22.00
Sliding Window Center Stiffener	Most 7 & 11 Series	1-2417-1	05-05436	$24.75
End Stiffener Left Rear Sliding Window	Most 7 Series	1-2418-1	05-05437	$29.50
End Stiffener Left Front Sliding Window	Most 7 Series	1-2418-2	05-05438	$29.50
Sliding Window Track Moulding Upper (31.37")	Most 7 Series	2-853-1	05-05736	$53.50
Sliding Window Track Moulding Lower (37.43")	Most 7 Series	2-853-2	05-05737	$45.75

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AERONCA/BELLANCA REPLACEMENT PARTS

BRAKE COMPONENTS & TOE BRAKE KITS - ALL FAA/PMA'D

Description	Models	OEM P/Ns	Part No.	Price
Toe Brake Kit -Gerdes System. Wheels & brakes not included.	7AC, 7ACA, 7BCM, 7CCM, 7EC, 7ECA, 7FC, 7GCBC, 7GC, 7GCA, 7GCAA, 7GCB, 7GCBA, 7KCAB	4-1624K	05-06311	**$1,805.00**
Toe Brake Conversion Kit - Converts VanSickle or Goodyear brakes systems to Cleveland wheels and brakes for aircraft with oleo gear only! Includes parts list, three installation drawings and two brake line drawings and two STCs (SA34CH &5A507CH)	7AC, 7BCM, 7CCM, 7EC, 7ECA, 7FC, 7GCBC, 7GC, 7GCA, 7GCAA, 7GCB, 7GCBA, 7HC, 7KCAB	4-1624OG	05-06312	**$4,327.00**
Toe Brake Conversion Kit - Converts Gerdes brake system to Cleveland wheels and brakes for aircraft with spring steel gear only! Includes parts list three installation drawing and one STC (SA334CH)	7ACA, 7ECA, 7GCBC, 7GCAA, 7KCAB, 8KCAB, 8GCBC	4-1624SG	05-06313	**$4,231.00**
Brake Sys. Cleveland Conv. Kit. Converts mechanical brakes to hydraulic heel brakes with oleo gear only. Includes parts list and installation drawing.	7ACA, 7GCBC, 7ECA, 7GCAA, 7KCAB, 8GCBC, 8KCAB	4-1557K	05-06314	**$3,772.75**
Heel Brake Conversion Kit - Converts existsing hydraulic heel brakes to hydraulic toe brakes. Does not include new wheels, brake discs, calipers or spacers. Can be used on aircraft with spring steel gear	7ACA, 7ECA, 7GCBC, 7GCAA, 7KCAB 8KCAB, 8GCBC	4-1624K	05-06311	**$1,805.00**
Master Cylinder Extension	For the above Part No. 4-1557K brake kit.	2-1887	05-05641	**$66.75**
Rudder Pedals, Toe Brake *P/N 05-05809*	7ECA, 7GCAA, 7GCBC, 7KCAB, 7ACA, 8KCAB	3-1537-1 (front)	05-05809	**$86.50**
		3-1537-2L (left rear)	05-05810	**$90.00**
		3-1537-2R (right rear)	05-05811	**$90.00**
Brake Torque Plate	7AC, 7BCM, 7CCM, 7EC, 7FC, 7GC, 7HC, 11A, 11BC	1-2258	05-06315	**$20.00**
Brake Cable *P/N 05-05409*	7AC, 7BCM, 7DC, 7EC	1-2358-2	05-05409	**$35.90**
Eyebolt Brake Cable	11AC	1-2499	05-05457	**$34.00**
Brake Rod	7ECA, 7GCAA, 7GCBC, 7KCAB, 8KCAB	1-9850	05-06316	**$27.83**
Parking Brake Cable Assembly	7ECA, 7GCAA, 7GCBC, 7KCAB, 8KCAB	1-9945-1	05-05592	**$10.00**
Parking Brake Cable	7ECA, 7GCAA, 7GCBC, 7KCAB, 8KCAB	1-9945-2	05-05599	**$16.75**
Cable Brake Assembly, LH	11A, 11B, 11C	2-7762	05-06317	**$64.75**
Cable Brake Assembly, RH	11A, 11B, 11C	2-7763	05-06318	**$49.50**
Parking Brake Balance Beam	7AC, 7BCM, 7CCM, 7DC, 7EC, 7FC, 7GC, 7GCA, 7GCBA, 7HC, 7JC	2-796	05-05726	**$119.95**
Tube, Parking Brake Beam	7Ac, 7BCM, 7CCM, 7DC	2-796-1	05-05727	**$13.25**
Parking Brake Lever Release Plate	All 7 & 11 Series Models	1-2325	05-05396	**$25.50**
Parking Brake Lever Spring	All 7 & 11 Series Models	1-2519	05-05458	**$16.75**
Brake Pedal Connecting Rod	7ACA, 7ECA, 7GCAA, 7GCBC, 7KCAB, 8GCBC, 8KCAB	1-9911	05-05596	**$40.25**
Hydraulic Brake Line Assembly	7EC, 7FC, 7GC, 7GCA, 7HC, 7GCB, 7GCBA, 7ECA, 7GCBC, 7GCAA, 7KCAB, 7KC	1-8966	05-05579	**$38.00**
Brake Pedal	7A, 7ACA, 7BCM, 7CCM, 7DC, 7EC, 7FC, 7GC, 7GCA, 7GCB, 7GCBA, 7GCBC, 7HC, 7KCAB, 8GCBC, 8KCAB	1-2613L	05-06319 (left)	**$29.50**
		1-2613R	05-06320 (right)	**$29.50**
Brake Link	7A, 7BCM, 7CCM, 7DC, 7EC, 7FC, 7GC, 7GCA, 7JC	2-718	05-05703	**$74.50**
Toe Brake Rudder Pedal *P/N 05-05807* *P/N 05-05806*	7ACA, 7ECA, 7GCAA, 7GCBC, 7KCAB, 8GCBC, 8KCAB	3-1534	05-05803	**$117.95**
Bracket Toe Brake Master Cylinder	All 7 & 8 Series Models	3-1536 (right)	05-05807	**$87.00**
		3-1536 (left)	05-05806	**$87.00**

OLEO STRUT & COMPONENTS - FAA/PMA'D

Description	Models	OEM P/Ns	Part No.	Price
Repair, Oleo Strut Assembly (no bounce) One year Warranty. Allow four to six weeks turnaround.	7AC, 7BCM, 7CCM, 7DC, 7EC, 7FC, 7GC, 7GCA, 7HC, 7GCB, 7ECA	3-665	05-06321	**$710.00**
Repair, Oleo Strut Assembly (standard) One year Warranty. Allow four to six weeks turnaround.	7AC, 7BCM, 7CCM, 7DC, 7EC, 7FC, 7GC, 7GCA, 7HC, 7GCB, 7ECA	3-433	05-06322	**$460.88**
Oleo Strut Frame *P/N 05-06133*	Most 7 & 11 Series	7-1004	05-06133	**$495.95**
Landing Gear Oleo Frame Cover	7AC, 7BCM, 7CCM, 7DC	4-10000	05-05872	**$61.00**
Landing Gear Oleo Fairing *P/N 05-05872*	7DC, 7EC, 7FC, 7GC, 7GCA, 7HC, 7GCBC, 7GCBA,	4-701L	05-06027	**$38.75**
	7GCBC, 7ECA, 7GCAA, 7KCAB, 7KC, 11A, 11B & 11C	4-701R	05-06028	**$38.75**
Channel - Strut Frame	All 7 & 11 Series *P/N 05-06027 & 05-06028*	2-673	05-05680	**$21.50**
Landing Gear Frame Tube	Most 7 & 11 Series	7-1004-1	05-06134	**$53.50**
Oleo Bushing, Shock Strut	Most 7 & 11 Series	1-2565	05-06323	**$53.75**
Piston Rod Assembly	7AC, 7BCM, 7CCM, 7DC, 11A, 11B, 11C	1-2255	05-05375	**$129.95**
Piston Rod	7AC, 7BCM, 7CCM, 7DC, 11A, 11B, 11C	1-2255-1	05-05376	**$53.50**
Piston Rod Assembly *P/N 05-05376*	Most 7 & 11 Series	2-952	05-05758	**$221.95**
Piston Rod	Most 7 Series	2-952-1	05-05759	**$89.50**
Oleo Spring for no bounce oleo assembly	7AC,7BCM, 7CCM, 7DC, 7EC, 7FC, 7GC, 7GCA, 7HC, 7GCB, 7GCAA, 7GCBC, 7ECA, 7GCAA, 7GCAB, 7KC	3-666	05-06324	**$46.85**
Oleo Spring	7KC, TA, O-58A, O-58B	1-320	05-05522	**$73.50**
Landing Gear Oleo Strut, Lower Tube	7AC, 7BCM, 7CCM, 7DC, 11AC, 11B, 11C	1-2253	05-05374	**$117.95**
Oleo Spring	7AC, 7BCM, 7CCM, 7DC, 11AC, 11B, 11C	1-2256	05-05378	**$53.75**
Aeronca Tube - Cylinder Assembly *P/N 05-05378*	Most 7 & 11 Series	3-668	05-05870	**$352.95**
Taxi Spring	Most 7 & 11 Series	2-953	05-05760	**$68.25**
Oleo Packing 12"	Most 7 & 11 Series (need one per strut)	1-2119	05-05373	**$25.75**
Retainer Oleo Shock Strut Spring	7AC-7DC & 11 Series	1-316	05-06325	**$30.40**

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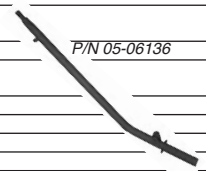
AERONCA/BELLANCA REPLACEMENT PARTS

FIBERGLASS WHEEL FENDERS & BRACKETS ALL FAA/PMA'D

Description	Model		LH	RH	LH	RH	Price
Fender, LH/RH	7EC, 7ECA, 7FC, 7GC, 7GCA, 7GCB, 7GCAA, 7GCBC,7HC, 7KCAB	P/N 05-06141	7-1141LH	7-1141RH	-	05-06141	**$466.95**
Plate Cover for 7-1141 LH/RH			2-1640LH	2-1640RH	-	05-06142	**$466.95**
Fender, LH/RH	7GCBC, 7ECA, 7GCAA, 7KCAB, 8KCAB		7-1301LH	7-1301RH	05-06326	05-06327	**$188.00**
Wheel Pant Cover for 7-1301 LH/RH			2-1945LH	2-1945RH	05-05654	05-05655	**$41.75**
Wheel Pant Support Bracket	7EC, 7ECA, 7FC, 7GCA, 7GCB, 7GCBA, 7GCBC, 7GCAA, 7HC, 7KCAB			2-100081	05-05613		**$33.50**
Wheel Pant Support Tube	7EC, 7ECA, 7FC, 7GC, 7GCA, 7GCAA, 7GCB, 7GCBA, 7GCBC, 7KCAB	P/N 05-06327		1-8790	05-05546		**$70.25**

LANDING GEAR, FAIRINGS & COMPONENTS ALL FAA/PMA'D

Description	Models	OEM #	Part No.	Price
Landing Gear Axle Strut	7AC, 7BCM, 7DC, 11A, 11C	7-807	05-06222	**$567.00**
Scout Axle	8GCBC	3-1549	05-06328	**$154.00**
Scout Landing Gear - Left	8GCBC	7-1461L	05-06329	**$750.00**
Spring Gear Axle	7ECA, 7GCAA, 7GCBC, 7KCAB, 8KCAB	3-1600	05-06330	**$318.95**
Landing Gear Axle Fitting	Most 7 & 11 Series	1-2260	05-05379	**$28.75**
Axle Upper End Fitting (4" long)	7AC, 7BCM, 7CCM, 7DC, 7EC, 7ECA, 7GC, 7GCA, 7GCB, 7GCAA, 7GCBA, 7GCBC, 7HC, 7KC, 7KCAB	1-9997-1	05-06331	**$39.95**
Axle Upper End Fitting (6-1/4" long)	7AC, 7BCM, 7CCM, 7DC, 7EC, 7ECA, 7GC, 7GCA, 7GCB, 7GCAA, 7GCBA, 7GCBC, 7HC, 7KC, 7KCAB	1-9997-2	05-06332	**$39.95**
Landing Gear Axle Strut	7EC w/Mechanical Brakes	7-1062	05-06136	**$730.00**
Landing Gear Axle Strut	7EC w/Hydraulic Brakes, also 7FC, 7GC, 7GCA, 7GCB, 7GCBA, 7KC	7-1080	05-06139	**$744.00**
Landing Gear Yoke Plate	Most 7 Series	1-2326	05-06333	**$29.00**
Landing Gear Wheel Retaining Nut	Most 7, 8 & 11 Series	1-706	05-06334	**$29.50**
Landing Gear Axle Spring	7ECA, 7GCAA, 7GGCBC, 7KCAB, 8KCAB	2-1917	05-06335	**$181.65**
Axle Tube	7ECA, 7GCAA, 7GGCBC, 7KCAB, 8KCAB	2-1917-1	05-06336	**$90.93**
Axle Strut Tube	7EC, 7ECA, 7GCAA, 7GCBC, 7HC, 7KCAB	4-1138	05-06337	**$429.00**
Landing Gear Axle Assembly	7ECA, 7GCAA, 7GCBC, 7FC, 7HC, 7KCAB	4-1139	05-05884	**$650.00**
Wheel Pant Axle Nuts	7ECA, 7GCAA, 7GCBC, 7KCAB, 8KCAB	2-2145	05-06338	**$52.50**
Tail Wheel Spring	7ACA, 7EC, 7GC, 7GCA, 7GCB, 7GCBA, 7GCBC, 7ECA, 7GCAA, 7KC, 7KCAB, 8KCAB, 8GCBC	2-1525	05-06339	**$17.00**
Fitting Assembly	7ACA, 7EC, 7FC, 7GCA, 7GCB, 7GCBA, 7GCBC, 7GC, 7HC, 7KC, 7ECA, 7GCAA, 7KCAB, 8KCAB	18854	05-05555	**$70.75**
Stud Tail Leaf Spring	7ACA, 7EC, 7FC, 7GC, 7GCA, 7GCA, 7HC, 7GCB, 7GBA, 7GCBC, 7ECA, 7GCAA, 7KC, 7KCAB, 8KCAB	18854-1	05-05556	**$9.50**
Fitting	7A, 7ACA, 7B, 7BCM, 7CCM, 7DC, 7EC, 7FC, 7GC, 7GCA, 7HC, 7GCB, 7GCBA, 7GCBC, 7ECA, 7GCAA, 7KC, 7KCAB, 8KCAB, 11A, 11B, 11C	1555-1	05-05536	**$13.50**
Fairing Clip (narrow)	Most 7, 8, & 11 Series	1-2273	05-05381	**$7.25**
Oleo Packing		1-2119	05-05373	**$25.75**
Landing Gear Wheel Retaining Nut	7ECA, 7GCBC, 7GCAA, 7KCAB, 8KCAB, 8GCBC	1-10538	05-06340	**$28.61**
Landing Gear Oleo Strut Piston	7AC, 7BCM, 7CCM, 7DC, 11AC, 11BC	1-318	05-06341	**$30.00**
Spring Retainer		1-316	05-06342	**$13.75**


P/N 05-06136

P/N 05-05555

P/N 05-05556

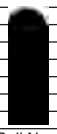
P/N 05-05536

P/N 05-06340

STRINGERS ALL FAA/PMA'D

Requirements for the 7AC Models	# per Aircraft	Style	Length in Inches	OEM P/Ns	Part No.	Price
Stringer	1	Mushroom	84-11/16"	1-2376-1	05-05421	**$36.75**
Stringer	1	Mushroom	92-3/16"	1-2376-2	05-05422	**$36.75**
Stringer	3	Bull Nose	80"	1-2367-1	05-05415	**$26.75**
Stringer	2	Bull Nose	101"	1-2367-2	05-05416	**$22.90**
Stringer	2	Mushroom	103-1/8"	1-2366	05-05414	**$38.75**
Stringer	2	Bull Nose	144-1/2"	1-2679-1	05-05486	**$32.50**
Requirements for the 7ec - 7fc Models						
Stringer	1	Mushroom	84-11/16"	1-2376-1	05-05421	**$36.75**
Stringer	1	Mushroom	92-3/16"	1-2376-2	05-05422	**$36.75**
Stringer	3	Bull Nose	80"	1-2367-1	05-05415	**$26.75**
Stringer	2	Mushroom	101"	1-2367-2	05-05416	**$22.90**
Stringer	2	Mushroom	103-1/8"	1-2366	05-05414	**$38.75**
Stringer	2	Mushroom	125"	1-2679-6	05-05489	**$20.00**
Requirements for the 7gc, 7gca, 7gcb, 7hc Models						
Stringer	1	Mushroom	84-11/16"	1-2376-1	05-05421	**$36.75**
Stringer	1	Mushroom	92-3/16"	1-2376-2	05-05422	**$36.75**
Stringer	3	Bull Nose	80"	1-2367-1	05-05415	**$26.75**
Stringer	2	Mushroom	103-1/8"	1-2366	05-05414	**$38.75**
Stringer	2	Mushroom	125"	1-2679-6	05-05486	**$32.50**
Requirements for the 7eca, 7gcbc, 7gcaa, 7kcab Models						
Stringer	3	Bull Nose	80"	1-2367-1	05-05421	**$36.75**
Stringer	2	Bull Nose	101"	1-2367-2	05-05415	**$26.75**
Stringer	1	Mushroom	84-11/16"	1-2376-1	05-05421	**$36.75**
Stringer	1	Mushroom	92-3/16"	1-2376-2	05-05422	**$36.75**
Stringer	2	Bull Nose	144-1/2"	1-2679-1	05-05486	**$32.50**
Stringer	2	Mushroom	103-1/8"	1-2366	05-05414	**$38.75**
Requirements for the 8gcbc Model						
Stringer	2	Mushroom	103-1/8"	1-2366	05-05414	**$38.75**
Stringer	2	Bull Nose	80"	1-2367-1	05-05415	**$26.75**
Stringer	2	Bull Nose	101"	1-2367-2	05-05416	**$22.90**
Stringer	2	Bull Nose	144-1/2"	1-2679-1	05-05486	**$32.50**
Add if greenhouse is used	2	Mushroom	111"	1-9992	05-05608	**$33.00**
Requirements for the 8KCAB Model						
Stringer	2	Mushroom	111"	1-9992	05-05608	**$33.00**
Stringer	2	Mushroom	103-1/8"	1-2366	05-05414	**$38.75**
Stringer	3	Bull Nose	80"	1-2367-1	05-05415	**$26.75**
Stringer	2	Bull Nose	101"	1-2367-2	05-05416	**$22.90**
Stringer	1	Mushroom	84-11/16"	1-2376-1	05-05421	**$36.75**
Stringer	1	Mushroom	92-3/16"	1-2376-2	05-05422	**$36.75**
Requirements for the 11AC Model						
Stringer	2	Mushroom	120"	1-2679-2	05-05486	**$32.50**
Stringer	1	Bull Nose	132"	1-2367-6	05-05418	**$27.00**
Stringer	4	Bull Nose	117-1/2"	1-2367-3	05-05417	**$29.50**
Stringer	2	Bull Nose	103"	2-771	05-05719	**$28.00**
Stringer	2	Mushroom	113-1/2"	2-772	05-05720	**$39.50**

Mushroom
P/N 05-05421
P/N 05-05414
P/N 05-05608


Bull Nose
P/N 05-05421
P/N 05-05486

NOTE: Some parts on this page are primed or varnished in accordance to FAA Approved Drawings.

Note on Model Eligibility: We have made every effort possible to detail installation eligibility for Aeronca parts based upon the best information we have available. If you are uncertain as to whether a specific OEM part number may be installed on your aircraft, you must consult either your aircraft owner or service manuals, or check with your mechanic. We do not warrant that models listed in the catalog are accurate in all instances. Please call us if you have questions about specific part numbers and model eligibility and we can research your question prior to your order.

AERONCA/BELLANCA REPLACEMENT PARTS

BULKHEADS ALL FAA/PMA'D

Requirements for the 7AC Models	# per Aircraft	OEM P/Ns	Part No.	Price
Bulkhead	2	4-555	05-05986	**$49.50**
Bulkhead	2	4-556	05-05987	**$38.75**
Bulkhead	2	4-557	05-05988	**$38.75**
Bulkhead	2	7-455	05-06175	**$55.50**
Requirements for the 7EC & 7FC Models				
Bulkhead	2	4-555	05-05986	**$49.50**
Bulkhead	2	4-556	05-05987	**$38.75**
Bulkhead	2	4-557	05-05988	**$38.75**
Bulkhead	2	7-455	05-06175	**$55.50**
Bulkhead	2	5-393	05-06130	**$43.75**
Requirements for the 7GC, 7GCA, 7GCB, 7HC Models				
Bulkhead	2	4-556	05-05987	**$38.75**
Bulkhead	2	4-555	05-05986	**$49.50**
Bulkhead	2	5-393	05-06130	**$43.75**
Bulkhead	2	7-455	05-06175	**$55.50**
Bulkhead	2	4-557	05-05988	**$38.75**
Requirements for the 7ECA, 7GCAA, 7GCBC, 7KCAB Models				
Bulkhead	2	7-1259	05-06143	**$58.75**
Bulkhead	2	5-393	05-06130	**$43.75**
Bulkhead	2	4-555	05-05986	**$49.50**
Bulkhead	2	4-556	05-05987	**$38.75**
Bulkhead	2	4-557	05-05988	**$38.75**
Bulkhead	1	2-2046	05-05665	**$29.00**
Requirements for the 8GCBC Models				
Bulkhead	2	7-1259	05-06143	**$58.75**
Bulkhead	2	5-393	05-06130	**$43.75**
Bulkhead	2	4-555	05-05986	**$49.50**
Bulkhead	2	4-556	05-05987	**$38.75**
Bulkhead	2	4-1541	05-06342	**$13.75**
Bulkhead	1	2-2046	05-05665	**$29.00**
Requirements for the 8KCAB Models				
Bulkhead	2	7-1259	05-06143	**$58.75**
Bulkhead	2	5-10000	05-06066	**$43.75**
Bulkhead	2	4-555	05-05986	**$49.50**
Bulkhead	2	4-556	05-05987	**$38.75**
Bulkhead	2	4-1541	05-06342	**$13.75**
Bulkhead	1	2-2046	05-05665	**$29.00**
Requirements for the 11AC Models				
Bulkhead	2	4-586	05-05999	**$56.00**
Bulkhead	2	4-587	05-06001	**$31.50**
Bulkhead	2	4-589	05-06002	**$33.00**
Bulkhead	2	7-510	05-06209	**$44.00**
Bulkhead	2	7-512	05-06210	**$56.00**

P/N 05-05986

P/N 05-06175

P/N 05-06209

P/N 05-05988

P/N 05-06066

P/N 05-06210

P/N 05-05665

Description	Aircraft Application	OEM #	Part No.	Price
Control Stick Torque Tube	7A, 7ACA, 7BCM, 7CCM, 7DC, 7EC, 7ECA, 7FC, 7GC, 7GCAA, 7GCB, 7GCBC, 7KC, 7KCAB, 8KCAB, 11C	2-816	05-05729	**$133.95**

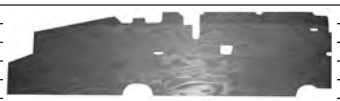
FLOORBOARDS ALL FAA/PMA'D

Requirements for the 7AC Models	# per Aircraft	OEM P/Ns	Part No.	Price
Floorboard	1	5-158L	05-06080	**$84.75**
Floorboard	1	5-158R	05-06081	**$84.75**
Floorboard	1	3-484	05-05833	**$49.25**
Requirements for the 7EC Models				
Floorboard	1	5-158L	05-06080	**$84.75**
Floorboard	1	5-158R	05-06081	**$84.75**
Floorboard	1	4-878	05-06343	**$80.00**
Requirements for the 7FC Models				
Floorboard	1	5-261L	05-06344	**$69.95**
Floorboard	1	5-261R	05-06345	**$69.95**
Floorboard	1	3-484	05-05833	**$49.25**
Requirements for the 7GC, 7GCA, 7GCB, 7HC Models				
Floorboard, All models	1	4-1032	05-05878	**$35.75**
Floorboard, 7GC, 7GCA, 7GCB only	1	5-158L	05-06080	**$84.75**
Floorboard, 7HC only	1	5-261R	05-06345	**$69.95**
Floorboard, 7GC, 7GCA, 7GCB only	1	5-158R	05-06081	**$84.75**
Floorboard, 7HC only	1	5-261L	05-06344	**$69.95**
Requirements for the 7ECa Models				
Floorboard	1	5-296L	05-06115	**$79.50**
Floorboard	1	5-296R	05-06116	**$79.50**
Floorboard	1	4-1032	05-05878	**$35.75**
Floorboard	1	4-1378	05-05891	**$48.75**
Requirements for the 8GCBC & 8KCAB Models				
Floorboard	1	5-296L	05-06115	**$79.50**
Floorboard	1	5-296R	05-06116	**$79.50**
Floorboard	1	4-1032	05-05878	**$35.75**
Floorboard	1	4-1378	05-05891	**$48.75**
Floorboard	1	4-1600	05-05946	**$71.00**
Requirements for the 11AC Models				
Floorboard	1	3-510	05-05835	**$57.50**
Floorboard	1	3-511	05-06346	**$49.25**
Floorboard Clamp for all Models EXCEPT 11 Series	-	1-2575	05-05469	**$8.75**

P/N 05-06080

P/N 05-06081

P/N 05-06116


P/N 05-06115

TOP CABIN ASSEMBLY & COMPONENTS ALL FAA/PMA'D

Requirements for the 7AC, 7ACA, 7EC, 7FC, 7GC, 7GCA, 7GCB, 7GCBC, 7ECA, 7GCAA, 7HC, 7KC, 7KCAB, 8GCBC Models	OEM P/Ns	Part No.	Price
Top Cabin Assembly	3-525	05-05842	**$217.95**
Requirements for the 7BCM & 7CCM			
Top Window Support Assembly	3-585	05-05859	**$177.95**
Requirements for the 11AC Models			
Top Cabin Components, Sides	5-170	05-06090	**$63.50**
Top Cabin Components, Front	5-171	05-06091	**$63.50**
Top Cabin Components, Rear	5-163	05-06084	**$46.75**
Top Cabin Components, Middle	5-178	05-06094	**$27.25**
Requirements for the 8GCBC w/greenhouse Models			
Top Cabin Assembly	3-1396	05-05787	**$131.95**
Requirements for the 8KCAB Models			
Top Cabin Assembly	3-1439	05-06347	**$110.25**

P/N 05-05842

P/N 05-05859

AP

AERONCA/BELLANCA REPLACEMENT PARTS

FUEL TANKS & COMPONENTS ALL FAA/PMA'D

P/N 05-06349

P/N 05-06131
P/N 05-06132

P/N 05-06215

Description	Models	Strap Length	OEM P/Ns	Part No.	Price
13 Gallon Wing Tank Kit LH/RH	7AC, 7BCM, 7CCM, 7DC, 7EC, 7ECA, 7KC		7-10001K (includes 2 tanks, hardware and plumbing)	05-06348	$2,199.00
			7-10001L (left tank only)	05-06131	$957.00
			7-10001R (right tank only)	05-06132	$957.00
18 Gallon Fuel Tank LH/RH	7GCBC, 7ECA, 7GCAA, 7KCAB, 8GCBC, (8GCBC 35 gal. only)		7-1449L	05-06349	$1,274.00
			7-1449R	05-06155	$1,274.00
6 Gallon Aux. Fuel Kit LH/RH	7BCM		7-1001LK	05-06350	$583.35
			7-1001RK	05-06351	$583.35
Fuel Tank Strap (inboard & outboard) for tank 7-10001	7ECA, 7GCAA, 7GCBC, 7KCAB	28.938"	2-942-8	05-05854	$17.50
20 Gallon Fuel Tank LH/RH	8KCAB		7-1403L	05-06151	$1,653.00
			7-1403R	05-06153	$1,272.00
Fuel Tank Strap	8KCAB	30.00"	2-761-9	05-05716	$33.00
		23.38"	2-761-10	05-06352	$17.50
		9.68"	2-761-1	05-05709	$30.50
6 Gallon Fuel Tank LH/RH	7CCM, 7DC, 7EC		7-772L	05-06215	$637.00
			7-772R	05-06216	$637.00
Fuel Tank Strap (inboard) for tank 7-772	7CCM, 7DC, 7EC	28.375"	2-942-2	05-05752	$19.50
Fuel Tank Strap (outboard) for tank 7-772	7CCM, 7DC, 7EC	27.75"	2-942-5	05-05758	$221.95
Fuel Tank Strap for tank 7-511	11AC	77.875"	2-761-1	05-05709	$30.50
		39.50"	2-761-2	05-05710	$30.50
		11.00"	2-761-3	05-05711	$30.50
Fuel Tank Strap for tank 7-460	7AC, 7CCM, 7DC, 7E	67.50"	2-761-5	05-05712	$33.00
Fuel Tank Strap for tank 7-460	7AC	45.50"	2-761-6	05-05713	$33.00
Fuel Tank Strap	7KCAB	21.00"	2-761-7	05-06560	$22.75
Fuel Tank Strap	7ECA, 7GCAA, 7GCBC, 7KCAB	29.63"	2-761-8	05-06561	$28.75
Fuel Tank Channel Support	8KCAB		4-1496	05-06353	$39.95
Wing Tank Channel Support	7ECA, 7GCAA, 7GCBC, 7KCAB, 8GCBC		4-1498	05-06354	$45.30
Fuel Manifold, front	7ec, 7GCA, 7GCAA, 7GCB, 7GCBA, 7GCBC, 7HC, 7KC		1-8880-1	05-06355	$43.70
Fuel Manifold, front	7EC, 7ECA, 7FC, 7JC		1-8880-2	05-05567	$40.00
Fuel Manifold, rear	7EC, 7FC, 7GC, 7GCA, 7HC, 7GCB, 7GCBA, 7GCBC, 7ECA, 7GCAA, 7KC, 7KCAB, 8GCBC, 8KCAB		1-10037	05-06356	$37.50
Fuel Manifold Assembly, rear	7EC, 7ECA, 7GC, 7GCA, 7GCAA, 7GCB, 7GCBA, 7GCBC, 7JC, 7KC, 7KCAB, 8GCBC, 8KCAB		2-1577-2	05-05623	$109.95
Fuel Shut Off Tube	7A, 7BCM, 7CCM, 7DC, 7EC, 7FC, 7GC, 7GCA, 7GCB, 7GCBA, 7HC		1-2456-1	05-05445	$34.25
Non-Vented Fuel Cap	Most 7 & 11 Series		1-2593-2	05-05478	$15.75
Vented Fuel Cap	Most 7 & 11 Series		1-2593-1	05-06357	$8.85
Fuel Tank Vent Fitting	8GCBC		1-10522	05-06358	$19.95
Fuel Shut Off Universal Joint	Most 7 Series		1-2458	05-05448	$29.75
Spacer	7ECA, 7GC, 7GCA, 7GCB, 7GCBA, 7HC		1-8871-8	05-05565	$9.00

P/N 05-05623

P/N 05-05478

P/N 05-05445

P/N 05-05448

AERONCA WING TANK KIT - For models 7AC, 7BCM, 7CCM, 7EC, 11AC, 11BC. Simple installation. Kit comes complete with left and right hand tanks, fittings, fuel line, mounting brackets, installation instructions and drawings. Fuel capacity is 5 gallons for each tank. Includes two Cat. No. E-482-000 fuel caps. FAA/PMA'd.

P/N 05-06359..... **$795.95 / set**

COWLING PARTS ALL FAA/PMA'D

Description	Models	OEM P/Ns	Part No.	Price
Top Cowl	7AC & 11AC	7-473	05-06185	$395.95
Bottom Cowl	7AC, 7B, 7BCM, 7CCM, 7DC, 11AC, 11B	7-472	05-06184	$371.95
Bottom Cowl Scoop Deflector	7AC, 7B, 7BCM, 7CCM, 7DC, 11AC, 11B, 11C	4-730	05-06029	$61.50
Windshield Retainer	Most 7 Series	7-487	05-06194	$85.50
Engine Cowling Assemblies	7EC, 7FC	7-1068 (upper)	05-06137	$339.50
		7-1069 (lower)	05-06138	$332.95
Lower Cowling	7ECA, 7GCAA, 7GCBC, 7KCAB, 1965 to Early 1973	7-1282-2	05-06147	$494.95
Complete Upper Cowling	7ECA, 7GCAA, 7GCBC, 7KCAB, 1965 to Early 1973	7-1282-1	05-06146	$494.95
Complete Upper Cowling	7ECA, 7GCAA, 7GCBC, 7KCAB, 8KCAB	7-1282-3	05-06360	$499.00
Angle Support Cowl Upper	7ECA, 7GCAA, 7GCBC, 7KCAB, 8KCAB	2-1890-1	05-06361	$6.46
Cowling	7ECA, 7GCAA, 7GCBC, 7KCAB 1973, 8KCAB w/150 hp	7-1455-1 (upper)	05-06156	$566.00
		7-1455-2 (lower)	05-06362	$405.62
Cowling	8KCAB w/180 hp, 1973	7-1455-3 (lower)	05-06363	$399.00
Cowling	7ECA, 7GCAA, 7GCBC, 7KCAB, 1974 to 1980, 8KCAB w/150 hp only	7-1469-1 (upper)	05-06364	$581.86
		7-1469-2 (lower)	05-06159	$537.00
Cowling	8KCAB w/180 hp, 1973	7-1482-1 (upper)	05-06365	$395.95
		7-1482-2 (lower)	05-06366	$323.95
Bracket Landing Light		2-1912	05-05648	$31.75
Nose Bowl Fiberglass	7AC, 7BCM, 7CCM, 7DC, 7EC, 7FC, 11AC	4-576	05-06367	$281.14
Nose Bowl Fiberglass	7EC, 7FC	7-1081	05-06140	$368.95

P/N 05-06185

Cat. No. 714691

P/N 05-06159

P/N 05-06140

Note on Model Eligibility: We have made every effort possible to detail installation eligibility for Aeronca parts based upon the best information we have available. If you are uncertain as to whether a specific OEM part number may be installed on your aircraft, you must consult either your aircraft owner or service manuals, or check with your mechanic. We do not warrant that models listed in the catalog are accurate in all instances. Please call us if you have questions about specific part numbers and model eligibility and we can research your question prior to your order.

AERONCA/BELLANCA REPLACEMENT PARTS

FIREWALLS ALL FAA/PMA'D

P/N 05-06043

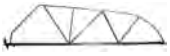
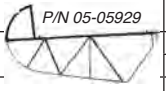
P/N 05-06368

P/N 05-05950

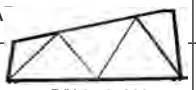
Description	Models	OEM P/Ns	Part No.	Price
Firewall (no large holes)	7AC, 7BC, 7CC, 7EC, 7FC, 7GC, 7GCB, 7HC, 7JC, 7KC, 7GCA, 7GCBA, 7GCAA, 7GCBC, 7KCAB, 7ECA, 8KCAB, 11AC, 11BC, 11CC	4-860-2	05-06043	**$247.95**
Firewall (2 large holes)	Same as 4-860-2 (but two holes like 4-1640)	4-860-1	05-06368	**$59.00**
Firewall (2 large holes, w/bottom cut out, Scout)	7ECA, 7GCAA, 7GCBC, 7KCAB, 8GCBC, 8KCAB. w/cutout	4-1640	05-05950	**$98.75**
Service Kit - Frame Reinforcement Kit	7AC, 7BCM	(Required for 85 hp Conversion)	05-06375	**$99.95**
Fitting, Belly Skin	7GCAA, 7ECA, 7GCBC, 7KCAB, 8GCBC	1-10246	05-06369	**$5.62**

ELEVATORS & COMPONENTS ALL FAA/PMA'D

AP

Description	Models	OEM P/Ns	Cat. No.	Price
Elevators	8KCAB	4-1701 (left)	05-06370	**$601.65**
		4-1703 (right)	05-06371	**$601.65**
Elevators P/N 05-06045  P/N 05-06046	7AC, 7ACA,7BCM, 7CCM, 7DC, 7EC, 7ECA, 7FC, 7GC, 7GCA, 7HC, 7GCB, 7GCBA, 7JC, 11AC, 11BC, 11CC *4-864 replaces 4-544 per service bulletin #19 *4-865 replaces 4-543 per service bulletin #19  P/N 05-05929	4-544 (left)*	05-06045	**$606.00**
		4-543 (right)*	05-06046	**$606.00**
Elevators	7ECA, 7GCAA, 7KCAB, 7GCBC	4-1699 (left)		**$527.15**
		4-1669 (right)	05-05960	**$494.95**
Elevator Frame Assembly, RH	7ECA, 7GCAA, 7GCBC, 7KCAB, 8KCAB	4-1479	05-05929	**$566.00**
Guard Tab Cable Pulley	7A, 7ACA, 7BCM, 7CCM, 7DC, 7EC, 7ECA, 7FC, 7GC, 7GCA, 7GCAA, 7GCB, 7GCBA, 7GCBC, 7HC. 7KC. 7KCAB. 8KCAB. 11A, 11B, 11C	1-2399	05-05430	**$6.85**
Elevator Trim Tab	All Models P/N 05-05990	4-562	05-05990	**$50.00**
Elevator Trim Cable	7ECA, 7GCAA, 7GCBC, 7KCAB, 8GCBC, 8KCAB	2-1905	05-05646	**$79.85**
Elevator Trim Control Cable	7AC, 7EC, 7FC, 7GC, 7GCA, 7HC	2-698	05-05690	**$92.50**
Up Elevator Control Cable	7A, 7B, 7BCM, 7CCM, 7DC, 7EC, 7FC	3-471	05-05830	**$157.95**
Up Elevator Cable	7ECA, 7GC, 7GCA, 7HC, 7KC, 8KCAB, 8GCBC	3-1072	05-05764	**$186.95**
Down Elevator Control Cable	7AC, 7EC, 7FC	2-686	05-05686	**$150.95**
Down Elevator Cable	7ECA, 7GC, 7GCA, 7GCAA, 7GCB, 7GCBC, 7HC, 7KC, 7KCAB, 8GCBC, 8KCAB	2-1534	05-05619	**$105.95**
Elevator Stop Bolt	7AC, 7BCM, 7CCM, 7DC, 7EC, 7FC, 7GC, 7GCA, 7GCB, 7GCBA, 7KC, 11AC, 11BC, 11C	1-2540	05-05461	**$21.00**

STABILIZER FRAME & COMPONENTS ALL

Description	Models	OEM P/Ns	Cat. No.	Price
Stabilizer Frame	7EAC, 7GCAA, 7GCBC, 7KCA 8GCBC, 8KCAB  P/N 05-05928	4-1478	05-05928	**$596.00**
Stabilizer Frame	7AC, 7ACA, 7BCM, 7CCM, 7EC, 7ECA, 7FC, 7GC, 7GCA, 7HC, 7GCB, 7GCBA, 7JC, 11AC, 11BC, 11CCM	4-863	05-06044	**$566.00**
Stabilizer Frame *4-863 replaces 4-542 per service bulletin #19	7AC, 7BCM, 7CCM, 7DC, 11AC, 11B	4-542*	05-05971	**$352.95**
Stabilizer Drag Wire Assy., Lower	7ECA, 7GCAA, 7KCAB, 8KCAB, 8GCBC	3-1107-2	05-05766	**$169.95**
Stabilizer Drag Wire Assy., Upper	7ECA, 7GCAA, 7KCAB, 8KCAB, 8GCBC	2-1746-4	05-05632	**$126.95**
Stabilizer Brace Wire	Most 7, 8, and 11 Series	1-2340	05-05405	**$37.75**
Stabilizer Brace Wire Lug	Most 7, 8, and 11 Series	1-2357	05-05408	**$8.75**

WRAPAROUNDS ALL FAA/PMA'D

Description	Models	OEM P/Ns	Part No.	Price
Wraparounds (includes LH & RH)	7AC, 7BCM	7-509	*05-06202*	**$1,028.00**
Wraparounds (includes LH & RH)	7ECA, 7GCAA, 7GCBC (1965-1966) P/N 05-06374	7-509-6	05-06205	**$848.00**
Wraparounds (includes LH & RH)	7ECA, 7GCAA, 7GCBC, 7KCAB, (1967-1973)	7-509-7	05-06208	**$552.00**
Wraparounds (includes LH & RH)	7GCBC, 7ECAA, 7GCAA, 7KCAB, 8KCAB, 8GCBC	7-1472	05-06374	**$354.80**

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AERONCA/BELLANCA REPLACEMENT PARTS

ENGINE BAFFLE ASSEMBLY & COMPONENTS ALL FAA/PMA'D

P/N 05-05371

P/N 05-05544

P/N 05-06376

P/N 05-06180

P/N 05-06186

P/N 05-05955

P/N 05-05814
P/N 05-05816

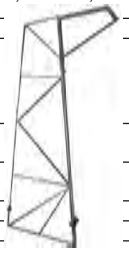
P/N 05-06059

Description	Models	OEM P/Ns	Part No.	Price
Inter-Cylinder Baffle - Cylinder Head	7AC, 7BC, 7CC, 7DC, 7EC, 7FC, 7JC, 11AC, 11B, 11C	1-1737	05-05371	$17.75
Inter-Cylinder Baffle	7AC, 7BC, 7CC, 7DC, 7EC, 7FC, 11AC, 11B, 11C	1-873	05-05544	$9.00
Stiffener R.F. Cylinder Baffle	7AC, 11AC	2-726	05-05706	$24.75
Baffle Cylinder - Right Rear	7BCM, 7CCM, 7DC, 7EC, 7ECA, 7FC, 7JC, 11B, 11C	3-631	05-05867	$34.75
Cylinder Head Baffle Spring Rod	7AC, 7BC, 7BCM, 7CCM, 7dc7ec, 7fc, 11a, 11b, 11c	1-2424	05-05440	$5.00
Cylinder Head Baffle Spring	7AC, 7BC, 7BCM, 7CCM, 7dc7ec, 7fc, 11a, 11b, 11c	1-1776	05-06376	$10.50
Baffle, Crankcase	7AC, 11AC	7-470 (right)	05-06180	$111.95
		7-469 (left)	05-06178	$96.75
		7-471 (upper)	05-06182	$66.75
Cylinder Baffles	7AC, 11AC	7-475 (right rear)	05-06186	$82.50
		7-476 (left rear)	05-06188	$73.25
		7-477 (right front)	05-06190	$184.95
		7-478 (left front)	05-06191	$172.95
Bracket Front Cylinder Baffle (Component to 7-477 & 7-478)	7AC, 7CCM, 7DC, 11AC	1-2414R	05-05434	$10.25
		1-2414L	05-05433	$10.25
Engine Baffle Assembly	7GCBC, 7KCAB, 7GCAA, 8KCAB w/150 hp only	3-1395R (right side)	05-05785	$98.50
		3-1395L (left side)	05-05783	$108.95
Engine Baffle Assembly	7GCAA, 7GCBC, 7KCAB, 8KCAB	4-1421 (left front)	05-05908	$108.95
		4-1422 (right front)	05-05910	$123.95
		4-1427 (right rear)	05-05912	$196.95
		4-1430 (left rear)	05-05915	$211.95
Engine Baffle Assembly	7BCM, 7CCM, 7DC, 7EC, 7FC, 7ECA, 7JC, 11B, 11C	3-629 (left)	05-05863	$92.75
		3-630 (right)	05-05865	$90.75
Engine Baffle Assembly	8GCBC, 8KCAB	3-1563R (right side)	05-05816	$36.00
		3-1563L (left side)	05-05814	$43.00
		4-1654 (right front)	05-05955	$112.50
		4-1653 (left front)	05-05954	$129.50
		4-1656 (right rear)	05-05957	$97.50
		4-1658 (left rear)	05-05959	$169.95
Engine Baffle Assembly	7CCM, 7DC, 11C	4-674 (left rear)	05-06024	$225.95
		4-673 (right rear)	05-06022	$111.95
Engine Baffle Assembly	7CCM	4-684 (left front)	05-06026	$108.95
Engine Baffle Assembly	7BCM, 11BC	4-736 (right rear)	05-06030	$109.95
		4-738 (left rear)	05-06034	$148.95
Engine Baffle Assembly	7ECA - LYCOMING O-235	4-1749 (left rear)	05-05970	$118.95
Engine Baffle Assembly	7DC, 11B, 11C	4-737-3 (left front)	05-06033	$105.95
Engine Baffle Assembly	7BCM, 7CCM	4-737-4 (left front)	05-06032	$105.95
Engine Baffle Assembly	7BCM, 7CCM, 7DC, 11B, 11C	4-739 (right front)	05-06035	$208.95
Crankcase Baffle Assembly	7DC, 7EC, 7FC, 7JC, 7KC, 11B, 11C	4-740 (upper)	05-06037	$92.75
		4-741 (lower left)	05-06039	$73.00
		4-742 (lower right)	05-06041	$53.50
Engine Baffle Assembly	7EC, 7FC	4-879 (left front)	05-06057	$132.95
		4-880 (right front)	05-06059	$144.95
		4-881 (left rear)	05-06061	$106.95
		4-882 (right rear)	05-06063	$132.95
Flange Air Heater Inlet	7A, 7BCM, 7CCM, 7DC, 7EC, 7FC, 7JC, 7KC, 11AC, 11BC, 11CC	1-2442	05-05442	$44.75
Engine Baffle w/1" holes	8GCBC	4-1657	05-05958	$73.50
Engine Baffle Seal Material *Meets AN, MS, or Mil-Dpec	**Sold per square foot.**	T8071-1	05-06377	$26.00

If the baffle you need is not listed, please call and inquire. We have many more Aeronca, Bellanca and Champion baffles. Too many to list here.

TAIL FEATHER COMPONENTS & HARDWARE ALL FAA/PMA'D

Description	Models	OEM P/Ns	Part No.	Price
Rudder	7AC, 7B, 7BCM, 7CCM, 7DC, 11A, 11B, 11C * 4-866 replaces 4-545 by Service Bulletin #19	4-545*	05-06047	$608.00
Rudder	7ECA, 7GCAA, 7GCBC, 7KCAB, 8KCAB	4-1376	05-05890	$920.00
Rudder	7AC, 7ACA, 7BCM, 7CCM, 7DC, 7EC, 7FC, 7GC, 7GCA, 7GCB, 7GCBA,7HC, 7KC, 11CC, 11BC	4-866	05-06047	$608.00
Rudder	7ECA, 7GCAA, 7GCBC, 7KCAB, 8KCAB	4-1697	05-06378	$699.83
Guard - Rudder Cable Pulley	Most 7 and 11 Series	1-2398-1 (painted)	05-05429	$6.75
		1-2398-2 (unpainted)	05-06379	$5.45
Hinge Bushing	Most 7EC and up Series, 8GCBC & 8KCAB (.25 ream)	1-3737	05-06380	$5.25
Hinge Bushing	7ECA, 7GCAA, 7GCBC, 7KCAB, 8KCAB, 8GCBC	1-3737-1	05-06381	$5.50
Bolt (Code 5)	7ECA, 7GCAA, 7GCBC, 7KCAB, 8KCAB, 8GCBC	AN23-40	AN23-40	$1.18
Pin (Code 5)	7, 8 & 11 Series	AN394-71	05-06382	$0.82
Rudder Pedal Control Bearing Block	11B, 11C	1-2892-2	05-06383	$50.68
Cable - Front to rear rudder pedal	7AC, 7BCM, 7CCM, 7DC, 7EC, 7GC, 7GCBC, 7CCA, 7GCBA, 7ECA, 7GCAA, 7GCBC, 7KCAB, 8KCAB, 8GCBC	1-2280	05-05384	$80.00
Rudder Control Cables, Left & Right	11AC, 11B , 11C	1-2496-2 (left)	05-05455	$60.25
		1-2496-3 (right)	05-05456	$60.25
Rear Rudder Pedal Spring	Most 7 Series	1-2568	05-06384	$14.90
Rudder Pedal Spring	Most 7 Series	1-769	05-06385	$12.75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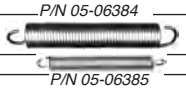
P/N 05-06384

P/N 05-06385

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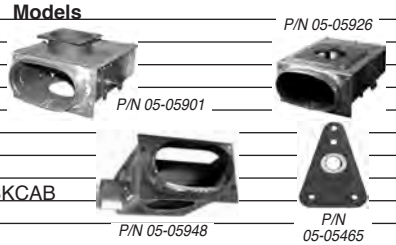
AERONCA/BELLANCA REPLACEMENT PARTS

CARB AIR SCOOP AND HEATER BOX ASSEMBLIES FAA/PMA'D



Description	Models	OEM P/Ns	Part No.	Price
Carb Air Box Assy. with filter	7AC, 7CCM, 11AC, 11B, 11C	4-601	05-06005	$736.00
Carb Air Scoop Box Housing only	7AC, 7BCM, 7CCM, 7DC, 11AC	4-602	05-06006	$93.00
Carb Air Box Assy.	7GCAA, 7KCAB, 7GCBC	4-1407	05-05901	$561.00
Carb Air Box Assy.(LYC 0-235)	7ECA	4-1435	05-05918	$423.95
Carb Air Box Assy. (Scout)	8GCBC	4-1637-1	05-05949	$376.95
Carb Air Box Assy. with filter	7EC, 7FC, 7JC	4-877-3	05-06056	$680.00
Carb Air Box Assy.	7KCAB	4-1454	05-05926	$395.00
Carb Air Box Assy.	7ECA, 7GCAA, 7GCBC, 7KCAB, 8KCAB	4-1637	05-05948	$314.95
Carb Air Scoop Bearing Plate Assy.	Most 7 & 11 Series	1-2563	05-05465	$34.75
Carb Air Scoop Valve Shaft Arm	Most 7 Series	1-8950	05-05573	$70.00
Carb Air Scoop Flap	7ECA, 7GC, 7GCA, 7GCAA, 7GCB, 7GCBA, 7GCBC, 7HC, 7KC, 7KCAB	1-9155	05-05590	$16.75
Carb Air Scoop Valve Assy.	7GCBC, 7ECA, 7GCAA, 7KCAB	2-2141	05-05670	$33.50
Carb Air Scoop Valve Assy.	8KCAB	2-2142	05-06386	$30.95
Carb Air Scoop Valve	7AC, 7FC, 7GC, 11AC	2-787	05-05724	$50.25
Carb Air Scoop Lid	7AC, 7CCM, 7DC, 7EC, 7FC, 11AC	2-835	05-05732	$37.75
Carb Air Scoop Box Housing only	7ECA, 7GCAA, 7GCBC, 7KCAB	3-1385	05-05778	$89.75
Carb Air Scoop Box Housing only	7AC, 7BCM, 7CCM, 7DC, 7EC, 7FC, 7JC	4-1011	05-05873	$267.95
Air Box Outer Housing	7ECA, 7GCAA, 7GCBC, 7KCAB, 8KCAB	3-1546	05-05812	$223.95
Carb Air Scoop Flange	7GCBC, 7ECA, 7GCAA, 7KCAB, 8KCAB, 8GCBC	2-2083	05-05667	$62.00
Heater Carburetor Elbow	7AC,7BCM, 7CCM, 7DC, 7EC, 7FC, 11AC	2-738	05-05708	$52.75
Flange - Carb Heat Inlet	7AC, 7BCM, 7CCM, 11AC	1-2492	05-05454	$20.50
Rear Seat Heater Box Assy.	7ECA, 7GCBC, 7GCAA, 7KCAB, 8GCBC, 8KCAB	2-2122	05-05674	$78.75
Air Filter	7ECA, 7GCAA, 7GCBC, 7KCAB, 8KCAB	CA121pl	05-06387	$22.50
NAPA Air Filter - Direct replacement of FRAM	7GCA, 7GCB, 7GC, 7HC ***EXPERIMENTAL ONLY**	CA161pl	05-06388	$20.75

HARDWARE PARTS ALL FAA/PMA'D

Description	Models	OEM P/Ns	Part No.	Price
Aileron Control Sector Bushing	7GCBC, 7ECA, 7GCAA, 7KCAB, 8GCBC	1-10369	05-06389	$25.67
Socket-Control Stick Bushing	Most 7 & 8 Series	1-2550	05-06390	$17.65
Oleo Shock Strut Bushing	Most 7 & 11 Series	1-2565	05-06323	$53.75
Fairlead Pulley Bushing	Most Models. Except 8GCBC	1-2636	05-06391	$4.50
Oleo Strut Bushing	Most 7 & 11 Series. Except 7AC, 11AC	1-2788	05-05505	$14.00
Hinge Bushing	Most 7EC and up Series, 8GCBC & 8KCAB (.25 ream)	1-3737	05-06380	$5.25
Hinge Bushing	Most 7EC and up Series, 8GCBC & 8KCAB (.187 ream)	1-3737-1	05-06381	$5.50
Cable - Front to rear rudder pedal	7AC, 7BCM, 7CCM, 7DC, 7EC, 7GC, 7GCBC, 77CCA, 7GCBA,7ECA, 7GCAA, 7GCBC, 7KCAB, 8KCAB, 8GCBC.	1-2280	05-05384	$80.00
Stabilizer Cable Wire Brace	Most 7, 8, & 11 Series	1-2340	05-05405	$37.75
Rudder Control Cables, Left & Right	11AC, 11B , 11C	1-2496-2 (left) 1-2496-3 (right)	05-05455 05-05456	$60.25 $60.25
Air Duct Flange	Most 7EC-7KCAB, 8 Series	1-3670	05-06392	$9.65
Rectangular Gasket	Most 7 & 8 Series	1-10019	05-06393	$3.60
Large Light Bracket Retainer	7EC, 7FC, 7GC, 7GCA, 7HC, 7GCB, 7GCBA, 7KC	1-8745	05-06394	$16.85
Cleveland O-Ring*		101-50353	05-06395	$5.15
Cable Drain Gascolator Seal Kit*	7ECA, 7GCBC, 7GCAA, 7KCAB, 8KCAB, 8GCBC	2-2091	05-06396	No Match
Cushioned Clamps - Loop-type, Cushioned, line support clamps, made of alluminum alloy. Cushion is non-fuel resistant.				
5/8" Clamp*		MS21919-DG10	MS21919-DG10	$0.30
1/8" Clamp*		MS21919-DG2	MS21919-DG2	$0.47
3/16" Clamp*		MS21919-DG3	MS21919-DG3	$0.32
1/4" Clamp AN742-4*		MS21919-DG4	MS21919-DG4	$0.23
7/16" Clamp*		MS21919-DG7	MS21919-DG7	$0.55
Pulley - Aileron Control	7ACA, 7ECA, 7GCAA, 7GCBC, 7KCAB	1-10309	05-05348	$51.25
Pulley - Fairlead (aluminum)	Most 7, 8 & 11 Series	1-2395	05-06397	$15.50
Pulley Guard (rudder cable)	Most 7, 8 & 11 Series	1-2398-1	05-05429	$6.75
Pulley*		(AN210) MS24566-4B	MS24566-4B	$22.50
Anti Friction Bearing Pulley (Non-Metallic)*	MS24566-3B	MS24566-3B	MS24566-3B	$17.50
Pulley - Aileron Control Cable	7GCBC, 7ECA, 7GCAA, 7KCAB, 8GCBC	1-10365	05-06398	$32.00
Cylinder Head Baffle Spring	Most 7AC-7FC, & 11Series	1-1776	05-06376	$10.50
Rear Rudder Pedal Spring	Most 7 & 8 Series	1-2568	05-06384	$14.90
Rudder Pedal Spring	Most 7 & 8 Series	1-769	05-06385	$12.75
Torque Tube Bearing Block (phenolic)	Most 7 Series and 8KCAB	1-2599	05-06399	$56.47
Torque Tube Bearing Block (aluminum)	7ECA, 7GCAA, 7GCBC, 7KCAB, 8GCBC, 8KCAB	1-10370	05-06400	$59.95
Fabric Hold Down Washer	Most 7 & 11 Series	1-2331	05-06401	$0.21
Clamp -1-1/2" Diameter Tube	7CCM, 7EC, 7FC, 7HC, 7GCBC, 7ECA, 7GCAA, 7KCAB, 7KC	1-2939	05-05515	$14.75
Clamp Assembly 1-1/2" Diameter Tube	7CCM, 7EC, 7FC, 7GC, 7GCA, 7HC, 7GCB, 7ECA, 7GCAA, 7KCAB, 7KC	1-2941	05-05516	$38.00
Bowden Cables - (solid wire ends). Spiral wound galvanized wire casing. Used for push-pull controls of any length. I.D. .078 and O.D. 7/32" dia.				
Bowden Cable Casing, 38-1/8" long	7ECA	1-2578-11	05-06402	$17.15
Bowden Cable Casing, 56" long	7ECA	1-2578-12	05-06403	$21.00
Bowden Cable Casing, 56" long	7AC, 7CCM, 7DC, 7EC, 7FC, 7GC, 7GCB, 7JC	1-2578-3	05-05472	$37.25
Bowden Cable Casing, 24-3/4" long	7EC, 7BCM, 11AC, 11B	1-2578-4	05-05473	$42.00
Bowden Cable Casing, 16" long	11AC, 11B	1-2578-5	05-06404	$10.00
Bowden Cable Casing, 21" long	11AC, 11B	1-2578-6	05-05474	$42.00
Bowden Cable Casing, 23" long	11AC, 11B	1-2578-7	05-05475	$42.00
Bowden Cable Casing, 52-3/4"" long	7GCBA	1-2578-8	05-06405	$23.99

**** Meets AN, MS, or Mil-Spec***

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(FAA/PMA APPROVED)

WING LIFT STRUTS

NEW, IMPROVED STEEL STRUTS—SEALED AND OILED TO PREVENT INTERNAL CORROSION.

(Except Decathlon aluminum front struts)

7AC Front Strut	P/N 05-08515	**$536.00**
7AC Rear Strut	P/N 05-08520	**$423.95**
11AC Front Strut	P/N 05-08525	**$478.95**
11AC Rear Strut	P/N 05-08530	**$424.95**
Citabria Front Strut	P/N 05-08535	**$535.00**
Decathlon Front Strut, Left	P/N 05-08545	**$744.00**
Decathlon Front Strut, Right	P/N 05-08550	**$768.00**
Decathlon Rear Strut	P/N 05-08555	**$432.95**
Scout Front Strut	P/N 05-08565	**$449.50**
Scout Rear Strut	P/N 05-08570	**$289.95**

WING LIFT STRUT FORK

P/N 05-08575 ..... **$64.70**

7AC CONTROL CABLES

(GALVANIZED STEEL)

Short Aileron Cable (2 req'd)	P/N 05-08580	**$28.00**
Rudder Cable, Long (2 req'd)	P/N 05-08585	**$77.65**
Rudder Cable, Short (2 req'd)	P/N 05-08590	**$60.75**
Aileron Control Cable (4 req'd)	P/N 05-08595	**$45.50**
Brake Cable and Housing Assembly (2 req'd), (PMA App.)	P/N 05-08600	**$92.25**
Brake Cable Only (2 req'd)	P/N 05-08605	**$25.90**
Down Elevator Cable (1 req'd)	P/N 05-08610	**$106.95**
Aeronca Cown Elevator Cable	P/N 05-08615	**$97.50**
Trim Cable (2 req'd)	P/N 05-08620	**$69.75**
Up Elevator Cable (1 req'd)	P/N 05-08625	**$111.95**

CITABRIA AIR INDUCTION TUBE

P/N 05-08630 ..... **$17.50**

CITABRIA FUEL GAUGE COVER

P/N 05-08635 ..... **$69.85**

TAILBRACE WIRE LUG

P/N 05-08640 ..... **$7.75**

EXHAUST SYSTEM FOR 7AC / 11AC

LH Stack	P/N 05-08705	**$240.95**
RH Stack	P/N 05-08710	**$240.95**
Heat Muff	P/N 05-08715	**$209.95**

CITABRIA FUEL VENT DEFLECTOR

P/N 05-08655 ..... **$59.75**

STAINLESS STEEL TAILBRACE WIRE

7AC, 7EC, 7FC—UPPER & LOWER

Citabria, Decathlon, Scout—Lower

1. Wire Only	P/N 05-08665	**$32.75**
3. Assembly	P/N 05-08670	**$56.50**

Citabria, Decathlon, Scout—Upper

2. Wire Only	P/N 05-08675	**$32.75**
4. Assembly	P/N 05-08680	**$56.50**

ALL ALUMINUM COWLING

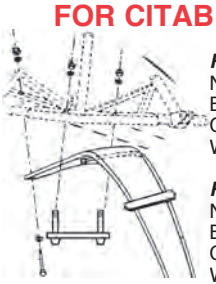
Nose Cowl	P/N 05-08685	**$990.89**
Fuselage Cowl (7AC only)	P/N 05-08690	**$654.00**
Top Cowl	P/N 05-08695	**$346.95**
Bottom Cowl	P/N 05-08700	**$263.95**

LANDING GEAR U-BOLTS

Citabria/Decathlon.	P/N 05-08645	**$126.50**
Scout (new style)	P/N 05-08650	**$119.95**

(Hardware required—see below)

LANDING GEAR ATTACH HARDWARE FOR CITABRIA, DECATHLON, SCOUT



For Citabria and Decathlon

Nut (6 required)	P/N 05-08720	**$17.65**
Bolt (2 required)	P/N 05-08725	**$28.75**
Cupped Washer (2 req.)	P/N 05-08730	**$0.71**
Washer (6 required)	P/N 05-08735	**$0.45**

For Scout

Nut (6 required)	P/N 05-08720	**$17.65**
Bolt (2 required)	P/N 05-08745	**$10.50**
Cupped Washer (2 req.)	P/N 05-08730	**$0.71**
Washer (6 required)	P/N 05-08735	**$0.45**

OLEO SHOCK STRUT

Fits 7ECA, 7GCAA and 7GCBC:

with High Energy Taxi Spring	P/N 05-08740	**$829.00**
with Standard Spring	P/N 05-08750	**$698.00**
Fits 7AC and 11AC	P/N 05-08755	**$782.50**
7AC and 11AC Spring Only	P/N 05-08760	**$51.50**

LANDING GEAR OLEO CASE FRAME

Oleo Case Frame (Uncovered)

7AC & 11AC Series	P/N 05-08765	**$579.24**
Early Citabria	P/N 05-08770	**$486.00**

TAILWHEEL LEAF SPRINGS – COMPLETE SETS

Citabria/Decathlon (short)	P/N 05-08780	**$115.95**
Scout (long)	P/N 05-08785	**$176.95**

LANDING GEAR AXLE ASS'Y. FOR AERONCA & CITABRIA

Early Citabria Axle Strut	P/N 05-08790	**$600.00**
Aeronca Axle Strut	P/N 05-08795	**$707.50**

ERCOUPE – FORNEY – ALON PARTS

(TYPE CERTIFICATE APPROVED)

ALL ALUMINUM COWLING

NOSE COWL ASSEMBLIES

With no cold air intake hole
P/N 05-08800 .....**$971.00**

With cold air intake hole
P/N 05-08805 .....**$990.00**

SIDE COWL ASSEMBLIES

DZUS Fasteners..... P/N 05-08810 .....**$492.95**
CAMLOC Fasteners ..... P/N 05-08815 .....**$510.00**

BOTTOM COWLS

P/N 05-08820 .....**$585.00**

SPARK PLUG FAIRINGS

Mooney Fairing (top in photo, approx. 17 inches long)
P/N 05-08825 .....**$83.75**
Ercoupe Fairing (bottom in photo, approx. 14-3/4 inches long).....
P/N 05-08830 .....**$76.75**

ERCOUPE ENGINE MOUNT

P/N 05-08835 .....**$2,028.00**

FILLER NECK GROMMET

P/N 05-08840 .....**$18.00**

NOSE GEAR STEERING BALL

This is the original type steering ball as used on Ercoupe, Forney and Alon.

P/N 05-08845 .....**$10.50**

IMPROVED STEERING JOINT BALL KIT

This kit consists of rod-end bearing and all necessary hardware. It is FAA approved for all Ercoupe, Forney, Alon and M-10. For use with the part number 52035 push-rod that has the male threaded stud. (Steering Collar not included)

.....P/N 05-08905 .....**$113.75**
Push Rod.....P/N 05-08910 .....**$156.84**

EXHAUST SYSTEM FOR ERCOUPE 415 SERIES & EARLY FORNEY

Left Hand Stack (stainless)
P/N 05-08920 .....**$591.00**
Right Hand Stack (Stainless)
P/N 05-08930 .....**$611.00**
Muffler.....P/N 05-08935...**$683.00**
Carburetor Heat Shroud
P/N 05-08940 .....**$147.95**
Cabin Heat Shroud
P/N 05-08945 .....**$225.95**

CABIN HEAT SHROUD ASSEMBLY FOR ALL ERCOUPE MODELS AFTER 1945

P/N 05-08945 ..... **$225.95**

ERCOUPE WINDOW WELTS

Ercoupe Window Welt 53169
(2 are required per plane, sold each)
P/N 05-08950 .....**$41.90**

LANDING GEAR SHOCK PADS

This material has superior weathering qualities. This unaffected by hydraulic fluid and has greater resistance to static load.
Pads (8 required per plane)
P/N 05-08850.....**$6.75**

Washer (SN 813 and up) (14 required per plane)
P/N 05-08855.....**$15.25**

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6 GALLON FUSELAGE TANKS

For Ercoupe, welded alum., SN 2623 &up
P/N 05-08865.....**$1,745.00**

For Forney, Alon
P/N 05-08870.....**$1,637.00**

For M-10
P/N 05-08875.....**$1,276.00**

WELDED 9-GALLON WING TANK

For Forney, Alon and M-10 Models with gauge in left hand tank.

Left Hand Tank (48147)
P/N 05-08885 .....**$1,562.00**

Right Hand Tank
P/N 05-08890 .....**$1,562.00**

CARBURETOR HEAT SHROUD FOR ALL ERCOUPE MODELS

P/N 05-08895.....**$138.95**

BLANK INSTRUMENT PANEL

Lay out your instrument and radio arrangement using this blank Ercoupe Panel which has locating holes only for the two control columns. FAA field approval required.....P/N 05-08900.....**$291.95**

NAVION – TAYLORCRAFT PARTS

(FAA/PMA APPROVED)

NAVION PARTS

Aircraft Spruce is a factory authorized distributor for these Navion parts manufactured under FAA/PMA approval. These parts are eligible for installation on all Navion models unless otherwise noted.

Description	Navion P/N	Part No.	Price
Fuel Selector Valve Main-off	147-30013-201	05-04271	**$934.00**
Fuel Selector Valve Main-Auxoff	147-30013-202	05-04272	**$1,054.00**
Fuel Selector Valve Left-Main-RGT-O	147-30013-203	05-04273	**$962.00**
Digital fuel qty gauge Main	147-40002-1001	05-04274	**$635.00**
Digital fuel qty gauge MN/AUX	147-40002-1002	05-04275	**$641.00**
Digital fuel qty gauge L/R	147-40002-1003	05-04276	**$641.00**
Fuel level Transmitter 5 hole	173-70010-20	05-04277	**$291.95**
Fuel level Transmitter 6 hole	173-70010-10	05-04278	**$304.95**
Fuel level Transmitter AUX TNK	145-51071-4	05-04279	**$291.95**
Fuel level Transmitter TIP TNK	161.30015.67	05-04280	**$304.95**
Flush Fuel Cap	147-30012-150	05-04281	**$668.00**
Gear Switches Main - Nose	147-40002-10	05-04282	**$84.50**
Mixture Cable-Vernier	205-30001-1002	05-04283	**$365.95**
Propeller Cable-Vernier	205-30001-1003	05-04284	**$365.95**
Baggage Door	--	05-04285	**$1,855.00**
Overhead Panel	147-40002-136-1	05-04286	**$346.95**
Cable Roller Assembly Set of 4	145-52301-3	05-04287	**$88.75**
Primary Monitor - CHT, EGT, and more	147-40002-1007	05-04288	**$2,099.00**
Pilot & Co-Pilot Sholder Restraints	173-53001	05-04289	**$1,159.00**
Nose Gear Seal Kits	145-S145-34102-900	05-04290	**$121.95**
Main Gear Seal Kit	145S33102-900	05-04291	**$25.75**
Aft. Equipment rack	147-40005	05-04292	**$1,566.00**
Texas Patch LH	161-31023-1	05-04293	**$112.95**
Texas Patch RH	161-31023-2	05-04294	**$112.95**
Canopy Felt with Inst Letter 28	--	05-04295	**$49.25**
Heated Pitot Tube Mast	161-51002-11	05-04296	**$130.95**
Sloped Windshield	162-31801	05-04297	**$1,020.00**

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(FAA/PMA APPROVED)

TAYLORCRAFT ENGINE MOUNT

For 65 hp. Continental ..... P/N 05-08955..... **$758.00**
For 85 hp. Continental ..... P/N 05-08960..... **$943.00**

TAYLORCRAFT EXHAUST SYSTEM

For all 65 hp. Continental engines in B series through BC 12 series.
P/N 05-08965.....**$946.00**

TAYLORCRAFT B, BC, & LIFT STRUTS
(OILED AND SEALED)

TaylorCraft Front Lift Strut..... P/N 05-08970..... **$575.78**
TaylorCraft Rear strut..... P/N 05-08975..... **$543.15**

Note: all post WWII will not work on a Taylor A/C F/L2M

TAYLORCRAFT LEADING EDGE SKINS

Outboard Leading Edge (54 1/4") ..... P/N 05-08980..... **$79.50**
Center Leading Edge (57 1/4")..... P/N 05-08985..... **$88.75**
Inboard Leading Edge (64") ..... P/N 05-08990..... **$97.25**

Note: all post WWII will not work on a Taylor A/C F/L2M

TAYLORCRAFT HEAT SHROUD

P/N 05-08995 .....**$870.00**

TAYLORCRAFT ALUMINUM NOSE COWL

Applicable to B series and BC12D Continental powered Taylorcraft (cowl grills not included)

P/N 05-09005.....**$840.00**

TAYLORCRAFT NOSE COWL GRILLS

Stamped aluminum grills with natural aluminum finish. For all standard Taylorcraft nose cowls.
Left Grill ..... P/N 05-09010.....**$52.25**
Right Grill..... P/N 05-09015.....**$52.25**

TAYLORCRAFT TAILWHEEL SPRING SET

P/N 05-09020.....**$119.95**

TAYLORCRAFT PARTS

SEALED TAYLORCRAFT LIFT STRUT ASSEMBLIES

Front Clamp

Rear Clamp

Aero Fabricators, the manufacturing division of The Wag-Aero Group, now has FAA approval to manufacture NEW sealed lift strut assemblies as well as approval to REPAIR and seal existing lift strut assemblies (as long as there is no corrosion) for Taylorcraft Models a, bc, bcs, bc-65, bcs-65, bc12-65, bcs12-65, bc12-d, bcs12-d, bc12-d1, bcs12-d1, bc12d-85, bcs12d-85, bc12d-85, bcs12d-4-85, bf, bfs, bf-60, bfs-60, bf-65, bf12-65, bl, bls, bl-65, bls-65, bl12-65, bls12-65, fa-iii, 19, f19, f21, f21a, f21b, f22, f22a, f22b, f22a. These sealed lift struts satisfy the requirements of AD 2007-16-14. For pricing please call our friendly and knowledgeable customer service Associates at 1-800-558-6868 or if you have any questions ask for Tom (ext. 124). All FAA/PMA'D.

Description	Major	Minor	Wall Thickness	Cat. No.	Price ea.
Rear Lift Strut w/clamp	1.78	1.06	.049	05-05172	**$520.00**
Rear Jury Strut clamp only				05-05173	**$15.00**
Front Lift Strut w/clamp	2.76	1.44	.049	05-05174	**$625.00**
Front Jury Strut clamp only				05-05175	**$14.75**
Remanufactured Front Sealed Lift Strut with out clamp				05-06243	**$333.95**
Remanufactured Rear Sealed Lift Strut with out clamp				05-06244	**$400.95**

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TAYLORCRAFT PARTS

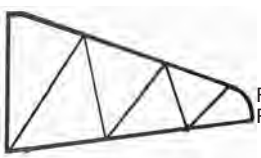
P/N 05-05176

P/N 05-05178

P/N 05-05177

P/N 05-05179

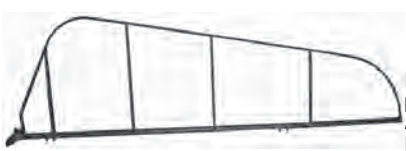
Description	OEM Part No.	Part No.	Price
Taylorcraft Trim Tab Frame For L24A, B and M models. Made of wood. FAA/PMA'D	D-4026	05-05176	**$62.00**
Taylorcraft Trim Tab For L2, L2A and TG6. FAA/PMA'D	B-410	05-05177	**$11.60**
Taylorcraft Bungee Tool	---	05-05178	**$213.95**
Taylorcraft Rudder For BC12D. Direct replacemnt for OEM P/ND-A410. FAA/PMA'D	---	05-05179	**$399.50**



TAYLORCRAFT STABILIZER

For BC12D. Direct replacemnt for OEM P/ND-A419. FAA/PMA'd

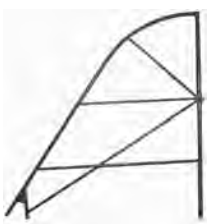
P/N 05-05180 ..... **$475.00**



TAYLORCRAFT ELEVATOR, RH

For BC12D. Direct replacemnt for OEM P/ND-A420. FAA/PMA'd

P/N 05-05181 ..... **$375.00**



TAYLORCRAFT VERTICAL FIN

For BC12-D aircraft and it is a direct replacement for OEM P/N D-A40. Fabricated to current aviation material standards using new rigid fixturing to maintain drawing specifications. These are manufactured uncovered. FAA/PMA'd

P/N 05-05191 ..... **$39.85**

P/N 05-05185
P/N 05-05186

P/N 05-05187

TAYLORCRAFT WING FUEL TANKS

6 gallon Wing Fuel Tanks, For Models B, B12, BC, BC12D, BCS, BCS12D, 19, F19, F21. OEM P/N 1546. FAA/PMA'd

LH ..... P/N 05-05185 ..... **$459.95**
RH ..... P/N 05-05186 ..... **$459.95**

TAYLORCRAFT FUSELAGE FUEL TANK

12 gallon Fuselage Fuel Tanks, For Models B12, BC12D, 19, F19. OEM P/N 0797. FAA/PMA'd ..... P/N 05-05187 ..... **$645.00**

TAYLORCRAFT TAIL FLYING WIRES - STAINLESS STEEL, FAA/PMA'D

Size	OEM Part No.	Part No.	Price ea.
38-1/2"	A-460	05-05188	**$24.50**
40-5/8"	A-461	05-05189	**$43.50**
36-1/2"	A-4029	05-05190	**$32.00**
44"'	D-40	05-05191	**$39.85**

Description	OEM Part No.	Part No.	Price ea.
Nipple for #8-36 tie rods. FAA/PMA'd	A-986	05-05193	**$9.50**
Tie Rod End Insert. FAA/PMA'd	A-4002	05-05194	**$16.50**
Tie Rod Fuselage Strap. FAA/PMA'd	A-4001	05-05195	**$15.00**
Tie Rod Fin Strap. FAA/PMA'd	A-4008	05-05196	**$20.00**
Tie Rod Stabilizer Strap. FAA/PMA'd	A-4009	05-05197	**$20.00**

CLEVELAND WHEELS & BRAKES

CLEVELAND WHEELS & BRAKES FOR HOMEBUILTS

Wheels with matching hydraulic disc brakes are made from magnesium alloy castings to give a lightweight, durable unit. Wheels complete with bearings and wheel covers. Brake assembly has linings installed. Sold in pairs only.

500 x 5, Wt. 5.75 Lbs. Each (Wheel P/N 40-78B, Brake P/N 30-9)
Kit P/N 199-102 (Std. Disc)..... **$1,239.00 /Pr**
Kit P/N 199-102C (Chrome Disc)..... **$1,095.00 /Pr**
Use Lining P/N 66-106. Fits 1-1/4" dia. axles.

600 x 6, Wt. 7-3/4 Lbs. Each (Wheel P/N 40-59A, Brake P/N 30-59A)
Kit P/N 199-104 (Std. Disc)..... **$2,238.00 /Pr**
Kit P/N 199-104C (Chrome Disc)..... **$2,952.00 /Pr**
Use Lining P/N 66-112. Fits 1-1/2" dia. axles.

600 x 6, with Master Cylinders for Defiant
Special set consists of (2) P/N 40-75B wheels, (2) P/N 30-52 brake assemblies and (2) P/N 10-34 master cylinders.
P/N 199-133X **$1,729.00**

500 x 5 NOSE WHEEL - Magnesium, with bearings.
For 1-1/4" dia. axle..... P/N 40-77C **$495.00**

600 x 6 NOSE WHEEL - Anodized aluminum, with bearings.
For 1-1/2" dia. axle..... P/N 40-56..... **$1,244.00**

HEAVY-DUTY CLEVELAND WHEELS & BRAKES FOR HOMEBUILTS

The heavier-duty brake discs, linings and hardware in these kits will increase braking capacity for the heavier, faster-landing aircraft now being designed & built.

#199-93 UPGRADE KIT - For #199-102 standard wheels and brakes. Upgrades current 40-78B/ 30-9 to new 40-230/30-181 specs. Consists of #66-106 linings, discs, shims, bolts, rivets and nameplates for 2 wheels & brakes. P/N 199-93 ..... **$469.95**

#199-156 KIT (AIRCRAFT TO 1500 LBS) - Kit consists of two 40-230 wheel assemblies and two 30-181 brake assemblies. Uses #66-106 linings. Fits 1-1/4" dia. axles. Used on Vari-eze.
P/N 199-156 ..... **$1,401.00**

#199-152 KIT FOR LONG-EZ & COZY (AIRCRAFT TO 2200 LBS) - Kit contains two 40-151 wheel assemblies and two 30-133 brake assemblies. Uses #66-55 linings. Fits 1-1/4" dia. axles.
P/N 199-152 ..... **$1,366.00**

CLEVELAND WHEELS & BRAKES FOR AMPHIBIANS

Although magnesium wheels and brakes are considerably lighter, magnesium is subject to corrosion and should not be used for amphibious operation. Only organic linings should be used on all brakes. All parts of the 500 x 5 size wheels and brakes for amphibians are constructed of anodized aluminum for water resistance. Although a special 40-74 series of 600 x 6 wheels and brakes are manufactured for amphibious use, with chrome plated bearings and brake disc and water drainage holes, they are too costly for use on homebuilt aircraft.

The use of standard Cleveland aluminum wheels with standard bearings on amphibian aircraft is suggested. If bearings are kept well greased, reasonable service can be expected, but earlier bearing replacement should be anticipated.

500 x 5 (Anodized Aluminum)
Kit P/N 199-103 (Std. Disc) ..... **$1,453.00 Pr**
Kit P/N 199-103C (Chrome Disc) ..... **$1,689.00 Pr**

600 x 6 (Anodized Aluminum)
Kit P/N 199-105 (Std. Disc) ..... **$1,564.00 Pr**
Kit P/N 199-105C (Chrome Disc) ..... **$1,738.00 Pr**

500 X 5 ALUMINUM NOSE WHEEL, P/N 40-87C..... **$818.00**

AEROSHELL GREASE FOR WHEEL BEARINGS

Aeroshell #22 grease is recommended for lubrication of Cleveland wheel bearings and is also applicable to other similar wheel bearings. Meets Mil-G-81322. 14 oz. tube .....P/N 08-05490 ..... **$14.65**

CLEVELAND HOMEBUILDERS SPECIAL WHEEL & BRAKE SET PACKAGES

PACKAGE NO. 1 -
Includes 2 Cleveland 5.00-5 magnesium wheels & brakes plus (2) 6 ply tires & tubes. (Wt. approx. 28 lbs.)

A w/McCreary Air Trac Tires & Tubes
P/N 06-00100 ..... **$1,483.00**
B w/Goodyear Flight Custom II Tires (Goodyear's latest design)
P/N 06-00200 ..... **$1,678.00**
C w/Lamb Tires & Tubes (11.400 x 5)
P/N 06-00300 ..... **$1,326.00**

PACKAGE NO. 2 -
Package No. 1 plus 2 Cleveland #10-35 master cylinders. (Wt. approx. 30 lbs.)
A w/McCreary Air Trac Tires & Tubes
P/N 06-00400 ..... **$2,552.00**
B w/G.Year Flight CustomII Tires & Tubes
P/N 06-00500 ..... **$2,730.00**
C w/Lamb Tires & Tubes (11.400x5)
P/N 06-00600 ..... **$2,378.00**

PACKAGE NO. 3 -
Includes 2 Cleveland 6.00-6 magnesium wheels and brakes plus two 4 ply tires and tubes. (Wt. approx. 32 lbs.)
A w/McCreary Air Trac Tires & Tubes
P/N 06-00700 ..... **$2,488.00**
B w/G.Year Flight CustomII Tires & Tubes
P/N 06-00800 ..... **$2,743.00**

PACKAGE NO. 4 -
Package No. 3 plus 2 Cleveland #10-35 master cylinders. (Wt. approx. 34 lbs.)
A w/McCreary Air Trac Tires & Tubes
P/N 06-00900 ..... **$3,540.00**
B w/G.Year Flight Custom II Tires & Tubes
P/N 06-01000 ..... **$3,795.00**

PACKAGE NO. 5 -
Includes 2 Cleveland 6.00-6 magnesium wheels & brakes plus two low-profile lightweight 6-ply 15x6.00-6 tires & tubes. (Wt. approx. 32 lbs.)
A w/McCreary Air Trac Tires & Tubes
P/N 06-01100 ..... **$2,557.00**
B w/G.Year Flight Custom II Tires & Tubes
P/N 06-01200 ..... **$2,676.00**

PACKAGE NO. 6 - Package No. 5 plus 2 Cleveland #10-35 master cylinders. (Wt. approx. 34 lbs.)
A w/McCreary Air Trac Tires & Tubes
P/N 06-01300 ..... **$3,609.00**
B w/G.Year Flight Custom II Tires & Tubes
P/N 06-01400 ..... **$3,728.00**

PACKAGE NO. 7 FOR DEFIANT -
Includes 2 Cleveland 6.00-6 magnesium wheels & brakes (P/N 199-133X) plus (2) 6.00-6 McCreary 6 ply tires & tubes plus 2 master cylinders. P/N 06-01500 ..... **$1,987.00**

MATCO WHEELS & BRAKES

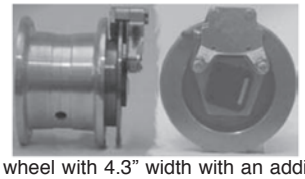
NOTE: Our prices include 2 wheels and 2 brakes (set), unless noted.

W51LT/LXT

The W51LT/LXT is a 5” wheel with a 4.775” width with an additional 1.23 inch caliper spacing. Bearing spacing is 3.084” and axle spacing is 1.00”. The total weight of this wheel and brake assembly is 9.2 Lbs. The bearing axle diameter is 1.25”. Torque rating is 4266 in-lb for the W51LT and is 6143 in-lb for the W51LXT. W51LT is recommended for Cozy Mark IV and the W51LXT is used on the Glasair.

W51LT ..... P/N 06-00079 ..... **$556.00**
W51LT w/axles ..... P/N 06-00568 ..... **$696.50**
W51LXT ..... P/N 06-00412 ..... **$664.00**
W51LXT w/axles ..... P/N 06-00569 ..... **$769.50**

WE51



The WE51 is a 5” wheel with 4.3” width with an additional 1.39” caliper spacing. Bearing spacing is 3.27” and axle spacing is 0.945”. The total weight of this wheel and brake assembly is 7.5 lbs. The bearing axle diameter is 1.25”. Torque Rating (@450 PSI): 2085 inlb. Any 500X5 tire and tube combination can be used with this tire.

WE51 ..... P/N 06-00445 ..... **$513.00**
WE51 w/axles ..... P/N 06-00570 ..... **$661.00**

W51L

MATCO mfg produces a superior 5” wheel and brake assembly for use with aircraft requiring less than 1420 lbs per wheel. This model uses 1.25“ TAPER/ROLL bearings. The W51L is a 5” wheel with 4.6” width with an additional 1.23” caliper spacing. Bearing spacing is 3.084” and axle spacing is 1.285”. The total weight of this wheel and brake assembly is 6.6 lbs. The bearing axle diameter is 1.25“.

W51L..... P/N 06-01710 ..... **$434.00**

W50CC

The W50CC is a 5“ wheel with a 3.7“ width with an additional 1.75“ caliper spacing. Bearing Spacing is 3.0“ and axle spacing is 2.5”. The total weight of this wheel and brake assembly is 4.5 lbs. excluding the axle assembly. This wheel uses a “Lamb” type tire which is 11x400x5 and requires a tube with a 90 degree valve stem. Torque Rating (@450 PSI): 1540 in-lb.

W50CC ..... P/N 06-00470 ..... **$469.95**

W60CC .625

Matco mfg produces a superior inch wheel and brake assembly for use with aircraft requiring less than lbs per wheel. This model uses inch bearings.
This is a W60CCD .625 is a 6” inch wheel. The bearing axle diameter is .625 inches.
P/N 06-00938..... **$219.95**

MMHE6B

MHE6B-SC MHE6B

The MHE6B E SERIES is a 6” wheel with 5.375” width with an additional 1.39 inch caliper spacing. Bearing spacing is 2.71” and axle spacing is 0.68”. The total weight of this wheel and brake assembly is 5.8 lbs. The bearing axle diameter is 1.25“. Use on various light support aircraft. Torque Rating (@450 PSI): 2085 in-lb. Order axles separately.

MHE6B..... P/N 06-00444 ..... **$543.00**
MHE6BSC..... P/N 06-00443 ..... **$543.00**

W600XT

The W600XT is a 6” wheel with 6.3125” width with an additional 1.37” caliper spacing. Bearing spacing is 3.42“ and axle spacing is 1.78“. The total weight of this wheel and brake assembly is 11.9 lbs. The bearing axle diameter is 1.50“. Torque Rating (@450 PSI): 6441 inlb. Static Capacity: 1860 lbs. Load Limit: 5580 lbs. Order axles separately.

W600XT ..... P/N 06-00413 ..... **$673.00**

MH6B

The MH6B is a 6” wheel with 5.375“ width with an additional 1.24“ caliper spacing. Bearing spacing is 2” and axle spacing is 2“. The total weight of this wheel and brake assembly is 4.4 lbs. The bearing axle diameter is 0.625“. The NEW MH6B is now produced as a CNC spun wheel with a Tenzalloy hub center and a NEW higher torque caliper. Torque Rating (@450 PSI):1540 in-lb. StaticCapacity:660 lbs.

MH6B..... P/N 06-16810 ..... **$459.00**
MH6B-S ..... P/N 06-00447 ..... **$438.95**

W60

MATCO mfg produces a superior 6” wheel and brake assembly for use with aircraft requiring less than 1420 lbs per wheel. This model uses 1.25“ TAPER/ROLL bearings. The W60 is a 6” wheel with 4.375“ width with an additional 1.23“ caliper spacing. Bearing spacing is 2.5“ and axle spacing is 1.25“. The total weight of this wheel and brake assembly is 7.1 lbs. The bearing axle diameter is 1.25“.

W60..... P/N 06-02160 ..... **$439.00**

W60CC .75

Matco mfg produces a superior 6” inch wheel and brake assembly for use with aircraft requiring less than 660 lbs per wheel. This model uses 0.75 inch BALL bearings. (Check the product comparison table for other bearing and caliper configurations). The W60CCD.75 is a 6” inch wheel with 4.38 inch width with an additional 1.75 inch caliper spacing. Bearing spacing is 3 inches and axle spacing is 1 inches. The total weight of this wheel and brake assembly is 5.55 pounds. The bearing axle diameter is 0.75 inches. This is a set of one wheel and one brake. P/N 06-00939 ..... **$219.95**

LG

MATCO WHEELS & BRAKES

P/N 06-00448

P/N 06-00456

P/N 06-00462

P/N 06-01660

NOTE: Our prices include 2 wheels and 2 brakes (set)

Matco Part No	Aircraft Spruce	Bearing Axle Dia. BB=Ball TRB=Taper Roll	Load Limit (lbs.)	Static Capacity (lbs.)	Brake Reline Kit	Weight (lbs.)	Tire Size	Tire Type	Price
CNC SPUN WHEELS: INTERNAL CALIPER									
MH6B	06-16810	0.625BB	2000	660	BRL-2	4.4	6”	any 6”	**$459.00**
MH6B-S	06-00447	0.625BB	2000	660	BRL-2	4.4	6”	any 6”	**$438.95**
MH6B.62D	06-00448	0.625BB	2000	660	BRL-3	4.65	6”	any 6”	**$538.00**
MH6B.62D-S	06-00449	0.625BB	2000	660	BRL-3	4.65	6”	any 6”	**$538.00**
MH6B.75	06-00450	0.75BB	2000	660	BRL-2	4.4	6”	any 6”	**$433.95**
MH6B.75-S	06-00453	0.75BB	2000	660	BRL-2	4.4	6”	any 6”	**$433.95**
MH6B.75D	06-00451	0.75BB	2000	660	BRL-3	4.65	6”	any 6”	**$539.00**
MH6B.75D-S	06-00452	0.75BB	2000	660	BRL-3	4.65	6”	any 6”	**$539.00**
MH6BD.62	06-00454	0.625BB	2000	660	2BRL-2	5.18	6”	any 6”	**$595.00**
MH6BD.62-S	06-00455	0.625BB	2000	660	2BRL-2	5.18	6”	any 6”	**$595.00**
MH6BD.75	06-00456	0.75BB	2000	660	2BRL-2	5.18	6”	any 6”	**$564.00**
MH6BD.75-S	06-00457	0.75BB	2000	660	2BRL-2	5.18	6”	any 6”	**$595.00**
CNC SPUN WHEELS: EXTERNAL CALIPER									
MHE6B1.25	06-00444	1.25TRB	2700	900	BRL-1	5.8	6”	up to 6.00-6	**$543.00**
MHE6B1.25-C	06-00443	1.25TRB	2700	900	BRL-1	5.8	6”	up to 6.00-6	**$543.00**
CENTRIFUGALLY CAST WHEELS: INTERNAL CALIPER									
W40B	06-00458	0.625BB	2000	660	BRL-2	4.05	4”	any 4”	**$450.80**
W40-BDXT	06-00459	0.75BB	3560	1185	BRL-2	3.8	4”	2.80/2.50x4	**$496.95**
W40R	06-02210	0.75BB	3560	1185	BRL-2	4.05	4”	any 4”	**$506.00**
W50L	06-01860	0.625BB	2000	660	BRL-1	6.6	5”	11.0x4.05	**$456.95**
W50L.75	06-00833	0.75BB	2000	660	BRL-1	6.6	5”	11.0x4.05	**$478.95**
W50LD	06-00411	1.25BB	4260	1420	2BRL-1	8.9	5”	11.0x4.05	**$545.00**
W50LT	06-00461	1.25BB	4260	1420	BRL-6	9.2	5”	11.0x4.05	**$594.00**
W50LXT	06-00462	1.25BB	1420	4260	BRL-6	9.2	5”	11.0x4.05	**$709.00**
W50S1.25	06-01660	1.25BB	4260	1420	BRL-1	6.6	5”	11.0x4.05	**$456.95**
W50S.75	06-00463	0.75BB	4260	1185	BRL-1	6.6	5”	11.0x4.05	**$475.95**
W51L	06-01710	1.25BB	4260	1420	BRL-1	6.6	5”	5.00x5	**$434.00**
W51LD	06-00464	1.25BB	4260	1420	2BRL-1	8.9	5”	5.00x5	**$516.00**
W51LT	06-00079	1.25BB	4260	1420	BRL-6	9.2	5”	5.00x5	**$556.00**
W51LXT	06-00412	1.25BB	4260	1420	BRL-6	9.2	5’	5.00x5	**$664.00**
W51S1.25	06-01960	1.25BB	4260	1420	BRL-1	6.6	5”	5.00x5	**$456.95**
W62	06-02110	0.75BB	3560	1185	BRL-1	7	6”	any 6”	**$432.00**
F602	06-00465	0.75BB	3560	1185	BRL-1	7.8	6”	any 6”	**$529.00**
W60	06-02160	1.25BB	4260	1420	BRL-1	7.1	6”	any 6”	**$439.00**
F600	06-00466	1.25BB	4260	1420	BRL-1	7.8	6”	any 6”	**$528.00**
W600	06-00467	1.5TRB	5580	1860	BRL-6	11.9	6”	any 6”	**$592.50**
W600XT	06-00413	1.5TRB	5580	1860	BRL-6	11.9	6”	any 6”	**$673.00**
W600XLT	06-00468	1.5TRB	5580	1860	BRL-6	10.2	6”	any 6”	**$705.00**
W323A	06-00469	1.5TRB	5580	1860	BRL-323	13.75	6”	any 6”	**$1,459.00**
CENTRIFUGALLY CAST WEELS: EXTERNAL CALIPER									
WE51	06-00445	1.25TRB	4260	1420	BRL-1	7.5	6”	5.00x5	**$513.00**

MATCO WHEELS & BRAKES

MATCO DIECAST WHEELS

NOTE: Our prices include 2 wheels and 2 brakes (set); Bearing Axle: BB=Ball TRB=Taper Roll

P/N 06-00471 *P/N 06-00485* *P/N 06-00486* *P/N 06-00489*

Matco P/N	Our P/N	Bearing Axle Dia.	Load Limit (lbs.)	Static Cap.(lbs.)	Brake Reline Kit	Weight (lbs.)	Tire Size	Tire Type	Price
W50CC	06-00470	0.625BB	2000	660	BRL-2	4.57	5”	11.0 x 4.05	**$469.95**
W50CC.62D	06-00471	0.625BB	2000	660	BRL-3	4.82	5”	11.0 x 4.05	**$539.00**
W50CC.75	06-00472	0.75BB	2000	660	BRL-2	4.57	5”	11.0 x 4.05	**$469.95**
W50CC.75D	06-00473	0.75BB	2000	660	BRL-3	4.82	5”	11.0 x 4.05	**$539.00**
W50CCD.75	06-00474	0.75BB	2000	660	2 BRL-2	5.35	5”	11.0 x 4.05	**$595.00**
W50DCC.62	06-00475	0.625BB	2000	660	2 BRL-2	5.35	5”	11.0 x 4.05	**$595.00**
W51CC	06-00476	0.625BB	2000	660	BRL-2	4.57	5”	5.00-5	**$469.95**
W51CC.62D	06-00477	0.625BB	2000	660	2 BRL-3	4.82	5”	5.00-5	**$539.00**
W51CC.75	06-00478	0.75BB	2000	660	2 BRL-2	4.57	5”	5.00-5	**$539.00**
W51CC.75D	06-00479	0.75BB	2000	660	2 BRL-3	4.82	5”	5.00-5	**$539.00**
W51CCD.75	06-00480	0.75BB	2000	660	2 BRL-2	5.35	5”	5.00-5	**$595.00**
W51DCC.62	06-00481	0.625BB	2000	660	2 BRL-2	5.35	5”	5.00-5	**$595.00**
W60CC	06-00482	0.625BB	2000	660	BRL-2	5.55	6”	up to 6.00-6	**$469.95**
W60CC.75	06-00483	0.75BB	2000	660	BRL-2	5.55	6”	up to 6.00-6	**$469.95**
W600CC	06-00484	0.625BB	2000	660	BRL-2	5.85	6”	any 6 “	**$489.95**
W600CC.75	06-00485	0.75BB	2000	660	BRL-2	5.85	6”	any 6 “	**$489.95**
W60CCD.62	06-00486	0.625BB	2000	660	2 BRL-2	5.55	6”	up to 6.00-6	**$595.00**
W60CCD.75	06-00487	0.75BB	2000	660	2 BRL-2	5.55	6”	up to 6.00-6	**$595.00**
W600CCD.62	06-00488	0.625BB	2000	660	2 BRL-2	5.85	6”	any 6 “	**$595.00**
W600CCD.75	06-00489	0.75BB	2000	660	2 BRL-2	5.85	6”	any 6 “	**$595.00**
W60CC.75R	06-00490	0.75TRB	2000	1185	BRL-2	5.85	6”	up to 6.00-6	**$489.95**
W600CC.75R	06-00491	0.75TRB	2000	1185	BRL-2	6.15	6”	any 6 “	**$565.00**
W60CCD.75R	06-00492	0.75TRB	2000	1185	2 BRL-2	6.25	6”	up to 6.00-6	**$616.00**
W600CCD.75R	06-00493	0.75TRB	2000	1185	2 BRL-2	6.55	6”	any 6 “	**$623.00**
W80CC-Z	06-00494	0.625BB	2000	660	BRL-1	8.75	6”	4.80-8	**$485.95**

MATCO AXLE CHART

Matco P/N	Aircraft Spruce P/N	Dia. (In.)	Used on Models	Axle Assy	Comment	Axle Price	Assy Price
A1	06-00495	1.25	W50, W51, WE51L	AXLE1	AL Flange Mount	**$56.95**	**$74.75**
A1A	06-00496	1.25	W50LD,W51LD,W50LT, W50LXT,W51LT,W51LXT	AXLE1A	AL Flange Mount	**$58.25**	**$74.75**
A1B	06-00497	1.25	WE51	AXLE1B	AL Flange Mount	**$58.00**	**$74.75**
A2	06-00498	1.25	W50S,W51S	AXLE2	AL Flange Mount	**$57.25**	**$74.75**
A3	06-00499	1.25	W60, WI60, WI60L	AXLE3	AL Flange Mount	**$54.85**	**$76.75**
A3A	06-00501	1.25	MHE51, MHE6B, MHE8B, MHE10B, MHE12B	AXLE3A	AL Flange Mount 5” Cessna bolt pattern	**$62.25**	**$73.75**
A3C	06-00502	1.25	MHE51-SC, MHE6B-SC, MHE8B-SC, MHE10B-SC, MHE12B-SC	AXLE3C	AL Flange Mount 6” Cessna bolt pattern	**$62.25**	**$73.75**
A4	06-16830	0.625	MHE6B,W50CC,W60CC,W40B	AXLE4	Steel Tube	**$43.90**	**$45.75**
A5	06-00503	0.75	W40BD	AXLE5	AL Flange Mount	**$64.25**	**$66.50**
A5G	06-00504	20mm	W40M	AXLE5G	Steel Flange Mount	**$66.00**	**$71.75**
A6	06-00505	1.5	W600,W600XT,WW600XLT	AXLE6	AL Flange Mount	**$77.00**	**$89.00**
A6M	06-00506	1.5	W600,W600XT,WW600XLT	AXLE6M	A6 Alternate Mount Ver.	**$77.00**	**$93.75**
A7	06-00507	0.75	MH6B,W50CC,W60CC,W40B	AXLE7	Steel Tube Mount	**$54.50**	**$65.85**
A8	06-00508	0.75	W62,MH6B.75,W50CC.7 MH6B5,260CC.75	AXLE8	Steel Tube	**$52.75**	**$56.85**
A13	06-00509	0.625	W80CC-Z	AXLE13	Steel Tube for Fork Mount	**$51.75**	**$58.00**
A15	06-00510	1.5	W323A	AXLE15	For W323A Compound W&B	**$77.00**	**$95.75**
A15M	06-00511	1.5	W323SA	AXLE15M	For W3238A Compound W&B	**$103.95**	**$125.95**
A16	06-00512	0.75	F602	AXLE16	Steel Tube for W62 w/F602 Spacer	**$52.75**	**$57.00**
A17	06-00513	0.75	W600CC.75	AXLE17	Steel Tube	**$55.50**	**$56.85**
A19	06-00514	0.75	W50CC.75, W51CC.75, W51CC.75R ONLY	AXLE19	Steel Tube	**$56.85**	**$59.75**
A20	06-00515	0.75	NW50.75R,NW51.75R	AXLE20	Steel Tube w/Spacers for Zenith 601	**$48.40**	**$54.75**

HEGAR WHEEL KITS

Spun aluminum wheel kit includes aluminum wheel halves, hubs,5/8 bearings, valve, tubeless kit and all necessary hardware, Compatible with Hegar brakes.

Note: Order tires separately.

4X6 Offset rim ..... P/N 06-00318 .. **$92.65**
4X6 Symmetrical(Quicksilver®) P/N 06-00319 .. **$96.50**
5X6 Offset rim P/N 06-00320 .. **$97.25**
5X6 Symmetrical (Quicksilver®) P/N 06-00321 .. **$97.25**
6X6 Offset rim ..... P/N 06-00322 .. **$97.25**
6X6 Symmetrical (Quicksilver®)..... P/N 06-00323 .. **$89.75**

The following Hegar wheels are designed to fit Quicksilver® nose gear allowing clearance for the steering fork.

3.5X5 MX(L) Nose Wheel ..... P/N 06-00324 **$111.95**
3.5X6 MX(L) Nose Wheel ..... P/N 06-00325 .. **$97.25**

HEGAR SPUN AND BILLET ALUMINUM WHEELS WITH BRAKES

6" SPUN ALUMINUM WHEEL - Includes. 2 - 6" spun aluminum wheels. 2 - 5" calipers and 4-1/2" rotors. all lines and fittings. axles included 5/8" or 3/4". 5/8" precision ball bearings are 800 GVW. 3/4" precision ball bearings are 1100 GVW. Note: To be run tubeless, but tubes may be used. 3-3/4 lbs. per side wheel and brake.

6S X 5 - 5" Wide Wheel X 6" Diameter..... P/N 06-01269 ..... **$588.00**
6S X 6 - 6" Wide Wheel X 6" Diameter..... P/N 06-01270 ..... **$588.00**

5" BILLET ALUMINUM WHEEL - 5B X 5 W/ 6-3/8" Brake Assembly. kit includes. 2 - 5" billet aluminum wheels. 2 - calipers and 6-3/8" rotors. all lines and fittings. 1-1/4" precision ball bearings 1800 GVW per set. 3/4" precision ball bearings 1500 GVW per set. Note: Retro fits Cleveland brakes. Uses a tube with 90` valve stem ..... P/N 06-01273 ..... **$675.00**

HEGAR EXTERNAL DISC BRAKES

Heavy duty hydraulic external disk brakes for use with all Hegar wheels. Black anodized billet aluminum, 1/8" thick steel disk. Set includes 15 feet of high pressure nylon brake line, fluid with bleeder kit, and fittings. Axles and master cylinders must be ordered separately. Specify 5/8" or 3/4" bearings. P/N 06-00326 ..... **$442.95**

HEGAR BRAKE ACCESSORIES

Order the type of master cylinder(s) & actuator best suited to your aircraft. Standard keyed axles for all aircraft, except Quicksilver®.

Heel-Operated Master Cylinder..... P/N 06-00328 ..... **$67.75**
Joystick-Mounted Master Cylinder ..... P/N 06-00329 ..... **$86.75**
Foot Linkage..... P/N 06-00330 ..... **$99.95**
Hand Linkage ..... P/N 06-00331 ..... **$90.25**
Axles, 5/8" Standard, Set Of 2 ..... P/N 06-00332 ..... **$36.85**
Axles, 5/8" Quicksilver® Set Of 2..... P/N 06-00333 ..... **$63.25**
Axles, 3/4" Standard, Set Of 2 ..... P/N 06-00334 ..... **$36.10**
Dual 7" T-Lever Master Cylinder Assy. 1/2".... P/N 06-01280 .... **$136.95**
Dual 7" T-Lever Master Cylinder Assy. 5/8".... P/N 06-01597 .... **$136.95**
Dual 7" T-Lever Master Cylinder Assy. 3/4".... P/N 06-01598 .... **$136.95**

JDM WHEELS, BRAKES AND AXLES

A quality built 6" wheel & brake designed for the homebuilt and ultralight flyer. Rated up to 2500 lbs. gross weight, these wheels easily accommodate 800 series tires for off-field landings and 600 series tires for low profile and an increase in speed. The brake disks made of cast iron provide for longevity and superior heat dissipation, while using Rapco brake pads to finish the system. The axles are 1-1/4" aluminum and use a 1-3/8" square bolt pattern. The kit does not include master cylinders, brake fluid line or axles and nuts. Each JDM brake and wheel including the axle weigh only 10.3 lbs. Kit includes 1 wheel and 1 brake.

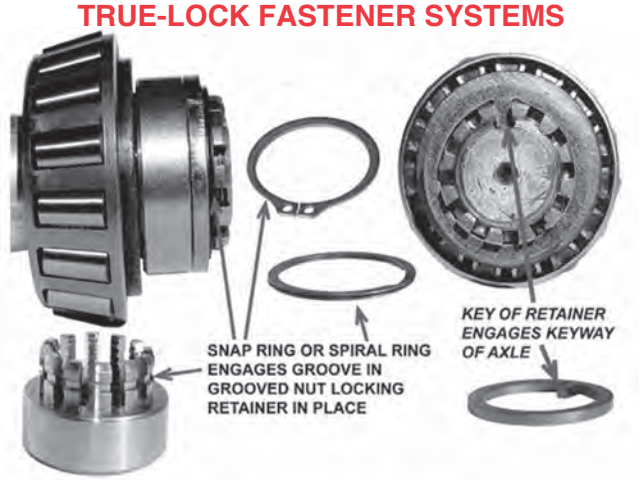
6" wheel & Brake Assembly* (1-1/4" Tapered Roller Bearing) P/N 06-03475 ..... **$505.95 ea**
1-1/4" Axle & Castle Nut..... P/N 06-03480 ..... **$96.00 ea**

BERINGER 5.00-5 INCH WHEEL & BRAKE SET PACKAGES

Upgrade your experimental aircraft and save 6 to 10 Lbs with high performances BERINGER wheels and brakes. This complete wheels and brake set is designed to mount directly, replacing original equipment. Wheels are aluminum red anodized, machined from billet on CNC, with O-rings for Tubeless mounting. Brake calipers use sintered metallic pads and stainless steel pistons for increased life time. The kit includes: 2 main wheels with brake and stainless steel discs, tires (mounted on rims and pressure tested), axles, master cylinders, fluid reservoirs, parking brake valve, anti-lock regulator, stainless steel brake lines and detailed mounting procedure.

Aircraft Model	Description	Part No.	Price
Van's RV6, 7, 9	Complete package as described above, with Michelin Aviator Tires 5,00-5", 10ply Tubeless and 4 master cylinders	06-01089	**$3,875.00**
Van's RV6A, 7A, 9A	Complete package as described above, with Michelin Aviator Tires 5,00-5", 10ply Tubeless and 4 master cylinders	06-01090	**$3,875.00**
Van's RV8	Complete package as described above, with Michelin Aviator Tires 5,00-5", 10ply Tubeless and 2 master cylinders	06-01091	**$3,249.00**
Visit our website for additional models.			

TRUE-LOCK FASTENER SYSTEMS



True-Lock aviation fastener systems reduce premature wear on your wheel-end assembly parts (brakes, bearings, axles, including tires and wheels). The True-Lock system eliminates the conventional axle nut system's inherent inferior torque setting characteristics imposed by the castle nut and cotter pin (end-play).

True-Lock is the only patented aviation wheel fastener system in the world that has been awarded an STC (Supplemental Type Certificate) by the FAA for axle nut technology. True-Lock LLC holds over 1,000 FAA certifications for aviation fastener design. All True-Lock fastener systems are guaranteed for the life of your aircraft and pay for themselves over time by reducing downtime and fewer replacement parts. So, If you want a wheel fastener system for your aircraft that sets the industry standard for vibration mitigation and cost reduction, then True-Lock is what you need.

The True-Lock fastener system is the next generation of fastener technology:

- FAA Certification on over 1,000 aircrafts.
- Significantly increases safety and reliability.
- Reuseable & cost effective.
- Maintenance Free - requires no cotter pins or safety wire!

SEE WWW.AIRCRAFTSPRUCE.COM FOR COMPLETE PRICE LIST OF TRUE-LOCK FASTENER SYSTEMS.

MATCO HUB CAP KIT
FOR MH SERIES WHEELS

Responding to customer inquiries for a kit to allow installation of the current WHLWC wheel cover on MH series wheels, MATCO mfg has introduced the MHWC hub cap kit. The kit includes wheel covers and mounting hardware for 2 wheels. The WHLWC wheel covers are made from durable ABS polymer. The wheel covers can be painted to match customer requirements. Installation can be accomplished without removing the wheel. Installation on MH wheels using the CNC spun wheel halves (introduced in early 2001) can be accomplished in about 10 minutes, On earlier MH series wheels using stamped wheel halves, some trimming of the wheel cover may be required and installation may require about 30 minutes. Furnished unpainted. 2 wheel kit. P/N 06-00446.....**$16.85**

MATCO BRAKE RELINE KITS

BRL-1 BRL-2 BRL-3 BRL-6 BRL-323

Matco Part No.	Our Part No.	Lining Model Used	Price each
BRL-1*	06-00571	4 of M66-106	**$29.50**
BRL-2*	06-00572	4 oF M66-103	**$28.50**
BRL-3*	06-00573	4 of M66-1052	**$33.70**
BRL-6*	06-00574	4 of M66-1052	**$59.85**
BRL-323	06-00575	4 of DR323	**$242.00**

*Reline kits include linings and rivets for 2 calipers.

MATCO TUBING & FITTINGS

Matco Part No.	Our Part No.	Description	Price
MSCNNR4/035	06-01133	Nylon II Tube .25	**$1.15**
MSC261P	06-01134	Ferrule and Nut	**$1.78**
MSC262P	06-01135	Union, Brass Fitting	**$2.53**
MSC264P	06-01136	T-Fitting, 1/8" NPT - 1/4" Compression Parker #X164p-4	**$5.90**
MSC268P	06-01137	Straight fitting, 1/8" NPT - 1/4" Compression	**$2.10**
MSC268P-04X01	06-01138	Straight Fitting 1/16"	**$8.24**
MSC269P	06-01139	Brass Elbow, 90° 1/8" NPT - 1/4" Compression	**$2.50**
MSCNNR2/026	06-01140	Nylon II Tube, .125	**$0.63**
MSC161P	06-01141	1/8" Ferrule and Nut	
MSC164P	06-01142	T-Fitting, 1/8" NPT - 1/8" Compression	**$9.85**
MSC168P	06-01143	Straight Fitting, 1/8" NPT - 1/8" Compression	**$3.85**
MSC169P	06-01144	Brass Elbow, 90°, 1/8" NPT - 1/8" Compression	**$4.84**

MATCO 6" WHEELS & BRAKES FOR ULTRALIGHTS

This top quality wheel and brake set is excellent for use on high-performance ultralights. Set incl.: 2 aluminum wheels & brakes with 5/8" bearings, 2 axles, 2 spacers, 2 brake bleeder seats & valves, 4 brake line fittings, 12 ft. of 1/4" dia. x .035 wall brake line & 1 vertical master cylinder.
P/N 06-16800 .....**$598.00**

Same as set #06-16800 except with 2 vertical master cylinders
P/N 06-16840 .....**$697.00**

Same as set #06-16800 except with 1 laydown style master cylinder
P/N 06-16850 .....**$648.00**

Same as set #06-16800 except with 2 laydown style master cylinders
P/N 06-16860 .....**$697.00**

AVAILABLE SEPARATELY:
6" Wheel & Brake .....P/N 06-16810 .....**$459.00**
5" Nose wheel with 5/8" Bearings .....P/N 06-16820 .....**$79.50**
A-4 Axle, 9.75" Long, 5/8" Dia.....P/N 06-16830 .....**$43.90**

BERINGER 5 INCH NOSE WHEEL KIT

Nose Wheels are aluminum red anodized, machined from billet on CNC, with O-rings for Tubeless mounting. Static capacity: 1440 Lbs (with appropriate tire). Aluminum axle for 5/16 bolt diameter. The kit includes: 1 nose wheel with tire (mounted on rim, pressure tested) and 1 aluminum axle.

See www.aircraftspruce.com for more information and available models.

Aircraft Model	Description	PN	Price
Van's RV6A, 7A, 9A	Nose wheel 5" with tire 11x4.00-5" 8ply and aluminum axle	06-01482	**$730.00**
	Nose wheel kit as described above, with Michelin Aviator Tire 5.00-5" 10ply Tubeless Weight: 8.9 Lbs	06-01097	**$720.00**
Lancair 320, 360 (retractable LG)	Nose wheel kit as described above, with Lamb Tire 11x4.00-5", 8ply Weight: 5.9 Lbs	06-01098	**$558.00**
Lancair legacy (retractable LG)	Nose wheel kit as described above, with Lamb Tire 11x4.00-5", 8ply Weight: 5.9 Lbs	06-01099	**$558.00**
Glasair III (retractable LG)	Nose wheel kit as described above, with Lamb Tire 11x4.00-5", 8ply Weight: 5.9 Lbs	06-01101	**$558.00**
Zenair CH601	Nose wheel kit as described above, with Michelin Aviator Tire 5.00-5" 10ply Tubeless Weight: 9 Lbs	06-01102	**$720.00**

AZUSA LITE NYLON WHEELS
4, 5 AND 6 INCH MODELS

Azusalite wheels are made from engineering grade Nylon which combines high tensile and compressive strengths and good impact resistance. Excellent for many homebuilt and ultralight aircraft applications since they weigh 60-70% less than aluminum wheels. Azusalite wheels are offered in 4", 5" and 6" models. Replacement parts and unlisted accessories available on request.

AZUSALITE 5" WHEEL – Used as the main wheels on the Mohawk ultralight, this 5 inch wheel features 5/8" I.D. sealed ball bearings and uses a 4.10 / 3.50 x 5 or 5.00 x 5 tire and tube.
P/N 06-02500 ..... **$21.85**

AZUSALITE 4" WHEEL – A 4 inch Azusalite wheel featuring 5/8" sealed ball bearings. Uses a 4.10 / 3.50 x 4 tire and tube.
P/N 06-02600 ..... **$16.75**

AZUSALITE 6" WHEEL – A 6 inch Azusalite wheel which comes complete with 5/8" sealed ball bearings. Uses a 4.10 / 3.50-6 or a 6.00-6 tire and tube. ..... P/N 06-02700 ..... **$27.50**

AZUSA TIRES & TUBES (SAWTOOTH TREAD)
4 .10 / 3.50 x 4 Tire & Tube
P/N 06-02800 .....**$19.75 Ea**
4 .10 / 3.50 x 5 Tire & Tube
P/N 06-02900 .....**$24.25 Ea**
4.10 / 3.50 x 6 Tire & Tube
P/N 06-03000 .....**$24.25 Ea**

AZUSA RIBBED TIRE ROUND PROFILE RIBBED ROUND PROFILE
4.80 x 4.00 x 8 Tire & Tube ..... P/N 06-03010 .....**$26.50 Ea**

AZUSA ALUMINUM WHEELS

5" AZUSA ALUMINUM WHEEL – Complete with 5/8" I.D. sealed bearing.
P/N 1144 ..... **$26.50**

5" AZUSA ALUMINUM WHEEL & BRAKE KIT – Kit consists of (2) #1144 wheels with 5/8" sealed bearings, (2) #2270 aluminum Azusa brakes, (2) #2211 brake drums (2) 11.400-5, 6-ply Lamb tires and Azusa #7131 (2) 340/300 x 5 tubes.
P/N 06-03100 ..... **$192.95**

5" AZUSA ALUMINUM WHEEL – Complete with 3/4" bearing.
P/N 06-00376 ..... **$32.50**

6" AZUSA ALUMINUM WHEEL – Complete with 5/8" I.D. sealed bearings. Wt. 3.9 lbs.
P/N 06-03200 ..... **$39.95**

6" AZUSA ALUMINUM WHEEL – Complete with 5/8" I.D. Timken bearings. Wt. 4.1 lbs.
P/N 06-03300 ..... **$54.75**

6" AZUSA ALUMINUM WHEEL – Complete with 3/4" I.D. Timken bearings. Wt. 4.2 lbs.
P/N 06-03400 ..... **$45.75**

8" AZUSA ALUMINUM WHEEL & BRAKE KIT – Kit consists of (2) #1175 wheels, (2)#2530 brakes, (2)#2542 drums, (2)4.80 x 4.00 tires and tubes, & hardware.
P/N 06-03410 ..... **$257.95**

AZUSA BRAKES FOR AZUSA 5" & 6" WHEELS

These 4.5" brakes have a long actuating arm, 5/8" mounting hole, and bonded lining. Available in anchor style w/ built-in anchor & 2 cable mounting ears, or round style which features a round aluminum backing plate. Platform required w/ 5" Azusalite.

P/N	Description	Price
06-03415	Anchor Style Brake #2208	**$36.90**
06-03420	Round Style Brake #2270A	**$29.85**
01-00169	Brake Assy. 2272A (Right)	**$34.75**
01-00306	Brake Assy. 2272A (Left)	**$37.75**
06-03425	Brake Arm #2263	**$1.29**
06-03430	Spring #2264	**$0.62**
06-03435	Cam #8235	**$4.80**
06-03440	Platform #2259A	**$6.25**
06-03445	Lined Shoes (1/side) #2260	**$18.50**

AZUSA BRAKES FOR AZUSA 8" WHEELS

These 5" brakes are used on Azusa #1175 wheels only. Features a round aluminum backing plate and actuating arm which allows for 8 positions.

P/N	Description	Price
06-03450	Round Style Brake #2530	**$35.75**
06-03455	Brake Arm #2537	**$4.75**
06-03460	Spring #2539	**$0.65**
06-03465	Cam #2533	**$8.85**
06-03470	Lined Shoes (1/side) #2538	**$18.25**

LG

GROVE MASTER BRAKE CYLINDERS

Clevis End—3/16" hole, 1/4" wide slot

These master cylinders are the perfect choice for all Grove brake systems as well as use with other major brands that require a high pressure master cylinder. Consider the following when selecting the proper master cylinder for your aircraft:

Eye Bolt End—3/16" hole, 1/2" head diameter

1.The style (with or without integral reservoir, etc.)

2.The pin-to-pin length—this is the length between the upper and lower attach holes.

Eye Bolt End - 3/16" hole, 3/8" head diameter

3.The attach type for the upper end (clevis, or eye bolt)

4.The attach type for the lower end (cross drilled, slotted, etc.)

REMOTE BRAKE FLUID RESERVOIRS

Quality machined from 6061 billet. Top is retained by snap ring with O-ring seal. Supplied with vented 1/8" NPT cap plug. Anodized for corrosion resistance.

2.75" high 1.75" diameter Holds 2.42 fluid ozs. Weighs 3.6 ounces.

Designed to attach to firewall or other remote location. Adequate capacity to serve both master cylinders. Outlet has 1/8" female NPT thread at bottom of reservoir.

067-054 ..... P/N 06-00819..... **$39.95**

Normal installation requires two (one for each master cylinder.) Supplied with 1/8" NPT fitting. Attaches directly to your master cylinder. 1.98" high; 1.38" diameter Holds 1.10 fluid ounces Weighs 1.5 ounces.

067-050 P/N 06-00818 ....**$26.75**

Cross Drilled - 3/16" holes inline with fitting and also 90° to fitting

Grove P/N	Our P/N	Pin-to-Pin Length	Upper Attachment	Lower Attachment	Weight	Price
670-1	06-00594	7.5"	Clevis	Inline	5.9 oz.	**$158.85**
670-2	06-00866	8.0"	Clevis	Inline	6.2 oz.	**$158.50**
670-3	06-00104	7.5"	Clevis	90° Offset	5.9 oz.	**$159.50**
670-4	06-00869	8.0"	Clevis	90° Offset	6.2 oz.	**$159.50**
670-8	06-01286	7.25"	Clevis	90° Offset	5.9 oz.	**$168.75**
670-13	06-00871	8.0"	3/8" Eye Bolt	90° Offset	6.2 oz.	**$168.75**
670-14	06-00872	8.0"	3/8" Eye Bolt	Inline	6.2 oz.	**$168.75**
670-15	06-00596	8.0"	1/2" Eye Bolt	90° Offset	6.2 oz.	**$168.75**
670-16	06-00873	7.5"	1/2" Eye Bolt	90° Offset	5.9 oz.	**$168.75**
670-17	06-00597	8.0"	1/2" Eye Bolt	Inline	6.2 oz.	**$168.75**
670-18	06-00875	7.5"	1/2" Eye Bolt	Inline	5.9 oz.	**$168.75**
670-19	06-00877	7.5"	3/8" Eye Bolt	90° Offset	5.9 oz.	**$169.95**
670-20	06-00878	7.5"	3/8" Eye Bolt	Inline	5.9 oz.	**$168.75**

Displacement = 0.429 cu-in Stroke = 1.4"

P/N 670-1

90° Offset - 3/16" hole drilled 90° to fitting. Tab is inline with fitting.

Grove P/N	Our P/N	Pin-to-Pin Length	Upper Attachment	Lower Attachment	Weight	Price
671-20	06-00880	7.5"	1/2" Eye Bolt	Cross Drilled	5.9 oz.	**$168.75**
671-21	06-00882	7.5"	3/8" Eye Bolt	Cross Drilled	5.9 oz.	**$168.75**
671-22	06-00884	8.0"	1/2" Eye Bolt	Cross Drilled	6.2 oz.	**$168.75**
671-23	06-00887	8.0"	3/8" Eye Bolt	Cross Drilled	6.2 oz.	**$168.75**

Displacement = 0.429 cu-in Stroke = 1.4"

P/N 671-21

Inline -3/16" hole drilled inline with fitting Tab is offset 90° to fitting

Grove P/N	P/N	Pin-to-Pin Length	Upper Attachment	LowerAttachment	Weight	Price
672-1	06-00889	5.0"	Clevis	Cross Drilled	4.0 oz.	**$159.75**
672-2	06-00891	5.5"	Clevis	Cross Drilled	4.2 oz.	**$159.50**
672-3	06-00893	6.0"	Clevis	Cross Drilled	4.5 oz.	**$159.95**

Displacement = 0.236 cu-in Stroke = .77"

P/N 672-1

Slotted -0.090" slot inline with fitting. 3/16" hole drilled 90° to fitting.

Grove P/N	Our P/N	Pin-to-Pin Length	Upper Attachment	Lower Attachment	Weight	Price
673-9	06-00895	7.5"	Clevis	Cross Drilled	5.9 oz.	**$158.95**
673-10	06-00896	8.0"	Clevis	Cross Drilled	6.2 oz.	**$158.50**
673-11	06-00897	7.5"	1/2" Eye Bolt	Left Offset	5.9 oz.	**$168.75**
673-12	06-00898	7.5"	1/2" Eye Bolt	Right Offset	5.9 oz.	**$168.75**
673-13	06-00899	7.5"	1/2" Eye Bolt	Slotted 90°	5.9 oz.	**$168.75**
673-14	06-00901	7.5"	1/2" Eye Bolt	Slotted Inline	5.9 oz.	**$159.95**

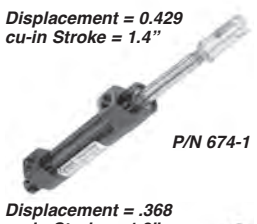
Displacement = 0.429 cu-in Stroke = 1.4"

P/N 673-9

Right Offset Tab 3/16" hole drilled 90° to fitting

Grove P/N	Our P/N	Pin-to-Pin Length	Upper Attachment	Lower Attachment	Weight	Price
674-1	06-00902	7.5"	Clevis	Cross Drilled	4.8 oz.	**$159.50**
674-2	06-00903	8.0"	Clevis	Cross Drilled	5.0 oz.	**$159.75**
674-3	06-00904	7.0"	Clevis	Cross Drilled	4.6 oz.	**$159.50**

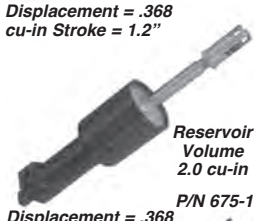
Displacement = 0.429 cu-in Stroke = 1.4"



P/N 674-1

Grove P/N	Our P/N	Pin-to-Pin Length	Upper Attachment	Lower Attachment	Weight	Price
675-1	06-00097	8.0"	Clevis	Inline	8.1 oz.	**$177.85**
675-2	06-00905	7.5"	Clevis	Inline	7.9 oz.	**$179.50**
675-3	06-00593	8.0"	Clevis	90° Offset	8.1 oz.	**$178.50**
675-4	06-00906	7.5"	Clevis	90° Offset	7.9 oz.	**$179.50**

Displacement = .368 cu-in Stroke = 1.2"



Reservoir Volume 2.0 cu-in

P/N 675-1

Left Offset Tab 3/16" hole drilled 90° to fitting

Grove P/N	Our P/N	Pin-to-Pin Length	Upper Attachment	Lower Attachment	Weight	Price
676-1	06-00907	8.0"	Clevis	Inline	9.3 oz.	**$198.50**
676-2	06-00908	7.5"	Clevis	Inline	9.0 oz.	**$196.00**
676-3	06-00909	8.0"	Clevis	90° Offset	9.3 oz.	**$197.50**
676-4	06-00910	7.5"	Clevis	90° Offset	9.0 oz.	**$197.50**

Displacement = .368 cu-in Stroke = 1.2"

Reservoir Volume 3.05 cu-in

P/N 676-1

All master cylinders have a 5/8" bore, 1/8" NPT outlets, are rated at 1,000 psi for use with MIL-H-5606 hydraulic fluid.

LG

AIRCRAFT SPRUCE WEST CORONA, CA • (877) 4-SPRUCE
AIRCRAFT SPRUCE EAST PEACHTREE CITY, GA • (877) 477-7823

Prices Subject to Change Without Notice

GROVE WHEEL & BRAKES

4 INCH WHEELS & BRAKES

P/N 40-101 Shown

Manufactured from aerospace grade aluminum

These 4" wheels are manufactured to the same exacting standards as the Grove 5" & 6" wheels.

They feature genuine Timken tapered roller bearings with felt grease seals.

40-1 wheel has 2-3/4" tire bead width.

40-3 wheel has 2-1/4" tire bead width.

GROVE WHEELS & BRAKES FEATURE:

- Aerospace grade materials
- Precision CNC machined
- Timken tapered roller bearings
- Felt grease seals
- Tubeless Option

From the chart below, select the proper static load rating, kinetic energy rating and brake torque for your aircraft.

Choose from Aluminum or Magnesium — Magnesium wheels weigh less than aluminum, but aluminum is more corrosion resistant. Both metals have similar strengths.

5 INCH WHEELS & BRAKES

P/N 57-124 Shown

Available in Aluminum or Magnesium

50 SERIES — Grove's basic 5" wheel.

51 SERIES — Lighter weight version of the 50 series.

55, 56 & 57 SERIES — Same wheel as the 50 series, but with heavier discs for greater kinetic energy and larger calipers for greater braking torque

6 INCH WHEELS & BRAKES

P/N 66-152 Shown

Available in Aluminum or Magnesium

60 SERIES — Grove's basic 6" wheel for 1-1/2" axles.

61 SERIES — Lighter weight version of the 60 series.

65 SERIES — Same as the 61 series, but for use with 1-1/4" axles.

66 SERIES — Same as the 60 series but with heavier discs for greater kinetic energy and larger calipers for greater braking torque.

LG

GROVE KIT NO.	OUR PART NO.	WHEEL NO.	STATIC LOAD RATING POUNDS	KINETIC ENERGY FT-LBS.	DISC THICK-NESS (INCHES)	BRAKING TORQUE INCH-LBS.	CALIPER NO.	PISTON DIA. (INCHES)	BRAKE PAD NO.	AXLE DIA. (INCHES)	WEIGHT LBS. (SEE REF. 1)	PRICE/ SET (SEE REF. 2)
FOUR INCH WHEELS AND BRAKES												
40-101	06-00858	40-3A	700	72,000	0.160	1,384	39-1A	1x1.250	66-106	0.75	4.05	**$508.00**
40-102	06-00859	40-1A	700	72,000	0.160	1,832	39-2A	1x1.438	66-106	0.75	4.16	**$497.95**
FIVE INCH WHEELS AND BRAKES												
50-101	06-00094	50-1A	1,285	118,164	0.190	2,364	30-1A	1x1.500	66-106	1.25	7.10	**$633.00**
50-201	06-00860	50-1M	1,285	118,164	0.190	2,364	30-1M	1x1.500	66-106	1.25	6.10	**$671.00**
51-101	06-00589	51-1A	800	118,164	0.190	2,364	30-1A	1x1.500	66-106	1.25	6.60	**$853.00**
51-201	06-00862	51-1M	800	118,164	0.190	2,364	30-1M	1x1.500	66-106	1.25	5.60	**$664.00**
55-112	06-00863	55-1A	1,285	162,315	0.250	3,283	31-2A	2x1.250	66-111	1.25	7.60	**$705.00**
55-212	06-00864	55-1M	1,285	162,315	0.250	3,283	31-2M	2x1.250	66-111	1.25	6.45	**$689.00**
56-113	06-00095	56-1A	1,285	205,146	0.313	3,283	31-3A	2x1.250	66-111	1.25	7.90	**$713.00**
56-213	06-00867	56-1M	1,285	205,146	0.313	3,283	31-3M	2x1.250	66-111	1.25	6.80	**$743.00**
57-124	06-00096	57-1A	1,285	246,175	0.375	4,345	32-4A	2x1.438	66-111	1.25	8.30	**$767.00**
57-224	06-00870	57-1M	1,285	246,175	0.375	4,345	32-4M	2x1.438	66-111	1.25	7.20	**$822.00**
SIX INCH WHEELS AND BRAKES												
60-162	06-00101	60-1A	1,750	186,792	0.250	5,052	36-2A	1x2.000	66-105	1.50	10.50	**$846.00**
60-262	06-00798	60-1M	1,750	186,792	0.250	5,052	36-2M	1x2.000	66-105	1.50	9.20	**$898.00**
61-111	06-00590	61-1A	1,200	168,934	0.190	3,947	31-1A	2x1.250	66-111	1.50	9.20	**$853.00**
61-211	06-00799	61-1M	1,200	168,934	0.190	3,947	31-1M	2x1.250	66-111	1.50	8.10	**$889.00**
65-207	06-00879	65-1M	1,250	168,935	0.190	3,868	30-7M	1x1.750	66-106	1.25	7.43	**$857.00**
65-211	06-00881	65-1M	1,250	168,934	0.190	3,947	31-1M	2x1.250	66-111	1.25	7.64	**$857.00**
65-222	06-00883	65-5M	1,250	186,792	0.250	5,219	32-2M	2x1.438	66-111	1.25	7.90	**$885.00**
66-152	06-00885	60-1A	1,750	186,792	0.250	7,735	35-2A	2x1.750	66-106	1.50	11.15	**$954.00**
66-154	06-00886	60-5A	1,750	280,188	0.375	7,735	35-4A	2x1.750	66-106	1.50	11.82	**$998.00**
66-252	06-00888	60-1M	1,750	186,792	0.250	7,735	35-2A	2x1.750	66-106	1.50	9.90	**$1,065.00**
66-254	06-00890	60-5M	1,750	280,188	0.375	7,735	35-4A	2x1.750	66-106	1.50	11.82	**$1,002.00**
67-174	06-00892	67-1A	2,200	280,188	0.375	7,735	37-4A	2x1.750	66-105	1.50	14.25	**$1,361.00**
67-274	06-00894	67-1M	2,200	280,188	0.375	7,735	37-4M	2x1.750	66-105	1.50	12.25	**$1,484.00**

NOTE: Braking torque calculated at 600 psi brake line pressure. Ref 1: Weight for one wheel, disc and caliper assy. Ref 2: Set includes two wheel assys.

GROVE WHEELS & BRAKES

NOSE WHEELS

Genuine Aircraft Quality!

- Cast from aerospace grade materials
- Precision CNC Machined
- Timken Tapered Roller Bearings
- Felt Grease Seals

"GROVE P/N"	"OUR P/N"	WHEEL SIZE	STATIC LOAD RATING	AXLE DIA.	WEIGHT	PRICE
49-1A	06-00843	4 Inch	700 lbs	0.75"	1.98 lbs	**$184.95**
49-3A	06-00842	4 Inch	700 lbs	0.75"	1.87 lbs	**$176.50**
59-1A	06-00102	5 Inch	1,285 lbs	1.25"	3.90 lbs	**$257.00**
59-1M	06-00911	5 Inch	1,285 lbs	1.25"	2.90 lbs	**$308.95**
59-2A	06-00912	5 Inch	800 lbs	1.25"	3.40 lbs	**$258.95**
59-2M	06-00913	5 Inch	800 lbs	1.25"	2.40 lbs	**$306.95**
69-1A	06-00103	6 Inch	1,750 lbs	1.50"	6.00 lbs	**$307.95**
69-1M	06-00915	6 Inch	1,750 lbs	1.50"	4.80 lbs	**$352.95**

TUBELESS WHEELS

Perfect for oversized tires such as the 26" Goodyear tire. Durable all metal valve stem. O-Ring seal between wheel halves.

Axle Diameter 1-1/4"
Static Load Rating 1,250lbs

P/N 06-00916.....**$938.00**

800X4 DISC BRAKE CONVERSION

STC Approved FAA-PMA

APPROVED MODELS INCLUDE:

J-3, J-4, J-5, PA-11, PA-12 PA-14, PA-15 PA-16, PA-17PA-18, PA-19 PA-20

Good news for owners of early Piper aircraft. Say good-bye to brake expander tube problems forever!

- No more soft brake pedal
- Easy Installation
- Improved braking and ground handling

Maintain the classic cub look by installing modern disc brakes on your existing 800x4 wheels and tires. Use your existing wheels, tires, tubes, master cylinders and brake lines.

STC Kit comes complete with all parts, special tools and STC documentation. Installation requires only standard hand and rivet tools. No modifications are required to be made on the gear leg, or any other part of the aircraft.

P/N 06-00837 ..... **$799.95**

AXLE SHIMS

Reduce Tire Wear
Improve Ground Handling

TOE-IN/OUT REALIGNMENT SHIMS

Install these axle shims between your landing gear and axles to insure that your tires track true. Correct any misalignment of toe-in or out in 1/4° increments. Precision machined from 6061-T6 aluminum.

Price $23.50 each.

Correction	500X5	600X6
1/4°	06-00925	06-00928
1/2°	06-00926	06-00929
3/4°	06-00927	06-00930

CAMBER ADJUSTMENT SHIMS

Adjust the vertical alignment of your wheels with these camber adjustment shims. Precision machined from 6061-T6 aluminum.

Price: $23.50 each.

Correction	500X5	600X6
1/2°	06-00931	06-00934
1°	06-00932	06-00935
2°	06-00933	06-00936

500X5 STANDARD AXLE

Precision CNC machined from 2024-T3 aluminum with clear anodized protective finish Weight 0.92 lbs. 1.25" diameter Static Load Rating 1,285 lbs.

Use with Grove 50, 51, 52, 55, 56, 57, & 58 and Cleveland 500x5 P/N 06-00917 ....**$52.50**

500X5 STANDARD AXLE WITH WHEEL PANT STUB

Same as the 500x5 standard axle but with 1" extension to attach wheel pant. End tapped for 1/4-28 screw Weight 0.95lb.

Use with Grove 50, 51, 52, 55, 56, 57, & 58 and Cleveland 500x5 wheels.

P/N 06-00601 .....**$59.50**

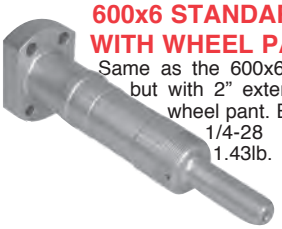
600X6 STANDARD AXLE

Precision CNC machined from 2024-T3 aluminum with clear anodized protective finish Weight 1.28 lbs. 1.50" diameter Static Load Rating 1,750lbs

Use with Grove 60, 61, & 66 and Cleveland 600x6 wheels

P/N 06-00919 ..... **$76.50**

600x6 STANDARD AXLE WITH WHEEL PANT STUB



Same as the 600x6 standard axle but with 2" extension to attach wheel pant. End tapped for 1/4-28 screw Weight 1.43lb.

Use with Grove 60, 61, & 66, and Cleveland 600x6 wheels. P/N 06-00602 ..... **$82.75**

400X4 AXLES

Use with Grove 40-1A Wheel Weight 0.40lbswheels.
P/N 06-00921 .....**$54.75**
Use with Grove 40-3A Wheel Weight 0.38lbs
P/N 06-00922 ...**$56.85**

Solid 7075-T6 aluminum with clear anodized finish. Diameter 0.75" Static Load Rating 700 lbs.

1-1/4" DIAMETER 600X6 AXLES

Same construction as the above axles, but with 1.25" diameter Use with Grove 65 Series Wheels.

With wheel pant stub.... P/N 06-00923 .. **$77.00**
Without stub ..... P/N 06-00924 .. **$73.85**

Prices Subject to Change Without Notice

CLEVELAND BRAKE DISCS

CLEVELAND BRAKE DISCS

If your aircraft is flown a lot (more than 200 hours a year) and is not exposed to exceptionally corrosive atmospheres, Cleveland Standard discs are the ideal replacement when normal brake wear requires it.

Cleveland Chrome brake discs are the answer for owners of aircraft that are exposed to the elements (moisture, salt, industrial chemicals) and are not flown frequently enough to rub off corrosion. If you fly less than 200 hours a year, your aircraft spends more than 8,500 idle hours exposed to the elements. Standard and Chrome Cleveland brake discs are fully FAA approved as replacements on virtually all popular single engine aircraft.

Aircraft Model	Main Wheel Ass'y	Standard Disc	Price Each	Chrome Disc	Price Each
Homebuilts	500x5 40-78B	164-17	$164.95	164-117	$285.95
Homebuilts	600x6 40-59A	164-75	$163.95	164-175	$198.95
General (High Energy)	40-151A	164-08500	$169.85	---	---
General (Increased Energy)	40-230	164-09900	$159.95	---	---
Aerotek (Pitts) S-1 Series, S-2A	500x5 40-78B	164-17	$164.95	164-117	$285.95
Bonanza 33, 35, 36	600x6 40-83	164-02505	$168.50	164-125B	$797.00
Bellanca Citabria,Decathlon	600x6 40-28D	164-5	$145.95	164-105	$430.95
Bellanca Champ	600x6 40-78B	164-17	$164.95	164-117	$285.95
Viking 300A	600x6 40-75E	164-15A	$173.95	164-115A	$398.50
Cessna 150C	600x6 40-57	164-5	$145.95	164-105	$430.95
Cessna 150D,E	500x5 40-78	164-17	$164.95	164-117	$285.95
Cessna 150F,G,H,J	600x6 40-97A	164-26A	$127.95	164-126A	$232.95
Cessna 150K	600x6 40-97A	164-26A	$127.95	164-126A	$232.95
Cessna A150K, F150, FA150	600x6 40-113	164-40	$149.50	164-140	$235.95
Cessna 152, F152, FA152	600x6 40-113	164-40	$149.50	164-140	$235.95
Cessna 172	600x6 40-97A	164-26A	$127.95	164-126A	$232.95
	600x6 40-113	164-40	$127.95	164-140	$235.95
Cessna 177,177RG, F177RG	600x6 40-113	164-40	$149.50	164-140	$235.95
Cessna 177A, B	600x6 40-97A	164-26A	$127.95	164-126A	$232.95
Cessna 180	600x6 40-75B	164-15A	$173.95	164-115A	$398.50
	600x6 40-75D	164-63	---	164-163	---
	600x6 40-66	164-7	$159.95	164-107	$285.95
Cessna 182H, J, K, L, M, N	600x6 40-97A	164-26A	$127.95	164-126A	$232.95
Cessna 182N	600x6 40-113	164-40	$149.50	164-140	$235.95
Cessna 182J, K, L, N,	600x6 40-97A	164-26A	$127.95	164-126A	$232.95
Cessna 185, A, B	600x6 40-32	164-7	$159.95	164-107	$285.95
	600x6 40-66	164-7	$159.95	164-107	$285.95
Cessna 185C, D, E	600x6 40-75B	164-15A	$173.95	164-115A	$398.50
Cessna A185E 1966 & Up	600x6 40-75B	164-15A	$173.95	164-115A	$398.50
1969 & Up	600x6 40-75D	164-36	$174.00	164-136	$285.95
1967, 1968	600x6 40-66	164-7	$159.95	164-107	$285.95
Cessna 188, A188	600x6 40-75B	164-15A	$173.95	164-115A	$398.50
Cessna 205, 205A	600x6 40-67	164-7	$159.95	164-107	$285.95
	600x6 40-75B	164-15A	$173.95	164-115A	$398.50
Cessna 206, U206A, TU206A & Turbo	600x6 40-75	164-15A	$173.95	164-115A	$398.50
Cessna U206D, D & Turbo	600x6 40-75D	164-36	$174.00	164-136	$285.95
Cessna P206, A, TP206A	600x6 40-75	164-15A	$173.95	164-115A	$398.50
Cessna P206, A,B,C,D,& Turbo	600x6 40-75B	164-15A	$173.95	164-115A	$398.50
Cessna P206D,E,Turbo & Super Skylane	600x6 40-75D	164-36	$174.00	164-136	$285.95

Aircraft Model	Main Wheel Ass'y	Standard Disc	Price Each	Chrome Disc	Price Each
Cessna 207, T207	660x6 40-75B	164-15A	$173.95	164-115A	$398.50
	600x6 40-75D	164-36	$174.00	164-136	$285.95
Cessna Caravan 1, & 208B	40-179	164-22201	$268.00	---	---
Cessna 210C	600x6 40-21	164-9	$149.90	164-109	$269.95
Cessna 210 series P210, T210	600x6 40-75B	164-15A	$173.95	164-115A	$398.50
Cessna 210N, P210N	600x6 40-75B	164-15A	$173.95	164-115A	$398.50
Cessna 336 Series	600x6 40-67	164-7	$159.95	164-107	$285.95
1963-1965	600x6 40-75B	164-15A	$173.95	164-115A	$398.50
Gulfstream AA-1, A, B, AA-5,	600x6 40-86A	164-20	$127.95	164-120	$196.95
Gulfstream AA-1,A,B,AA-5, AA-5B, TR2	600x6 40-88C	164-20	$127.95	164-120	$196.95
Helio H-295, 395,	600x6 40-75E	164-15A	$173.95	164-115A	$398.50
391	600x6 40-75D	164-36	$174.00	164-136	$285.95
Maule M4, M5 Series	600x6 40-97D	164-26A	$127.95	164-126A	$232.95
Mooney M20A, M20B	600x6 40-24	164-9	$149.90	164-109	$269.95
Mooney 20C	600x6 40-86	164-20	$127.95	164-120	$196.95
Mooney 20D, E	600x6 40-24	164-9	$149.90	164-109	$269.95
Mooney 20D, F,G,J,K	600x6 40-86	164-20	$127.95	164-120	$196.95
Piper PA22-108	600x6 40-28	164-5	$145.95	164-105	$430.95
Piper PA24-180,250	600x6 40-58	164-9	$149.90	164-109	$269.95
Piper PA24-260	600x6 40-84	164-19	$149.90	164-119	$386.95
Piper PA25	600x6 40-84A	164-33	$176.95	164-133	$911.00
Piper PA28 Series Cherokee/Warrior	600x6 40-28	164-20	$127.95	164-120	$51.85
Piper PA32 Series	600x6 40-120C (1)	164-21600	$173.95	---	---
(1) Heavy duty	600x6 40-120(1)	164-21600	$173.95	---	---
Archer	600x6 40-86	164-20	$127.95	164-120	$196.95
Pathfinder	600x6 40-86B	164-20	$127.95	164-120	$196.95
Cherokee	600x6 40-58	164-9	$149.90	164-109	$269.95
Cherokee/Arrow	600x6 40-84	164-19	$149.90	164-119	$386.95
Dakota	600x6 40-86	164-20	$127.95	164-120	$196.95
	600x6 40-86B	164-20	$127.95	164-120	$196.95
Piper PA32 Series	600x6 40-90A	164-23	$168.95	164-123	$272.95
Piper P34 Series	600x6 40-90A	164-23	$168.95	164-123	$272.95
Piper PA38-112	500x5 40-78B	164-17	$164.95	164-117	$285.95
Piper PA44	600x6 40-90A	164-23	$168.95	164-123	$272.95
Rockwell Int. 112, 112A, B	600x6 40-113A	164-43	$157.95	164-143	$269.95
112B, TC, TCA114	600x6 40-75H	164-15A	$173.95	164-115A	$398.50
Schweizer SGS1-34	500x5 40-78B	164-17	$164.95	164-117	$285.95
Spencer Amph. S12E	600x6 40-74	164-7	$159.95	164-107	$285.95
Taylorcraft F-19	600x6 40-86	164-20	$127.95	164-120	$196.95
Varga 2150A	600x6 40-97E	164-26A	$127.95	164-126A	$232.95
Waco	600x6 40-97A	164-26A	$127.95	164-126A	$232.95
Wing Derringer	600x6 40-84	164-19	$149.90	164-119	$386.95

REPLACEMENT DISCS & LININGS FOR CESSNA/MCCAULEY WHEELS & BRAKES

Cessna Aircraft Model	Cessna/McCauley Wheel Assembly	Cessna/McCauley Brake Disc Assy.	Cleveland Brake Disc Assy.	Price
150, 150A	C163004-0104 C163003-0101 or C163001-0102 C163002-0101	B-30440	164-09200	$136.95
		B-30195	164-09300	$125.95
		B-30007	164-09400	---
152, A152, F152, FA152	C163005-0101 or C163006-0101	---	---	---
		C30615-1	164-08800	$127.95
172, F172, R172, FR172	C163004-0104 C163003-0101 or C163003-0102 or C163004-0104 C163002-0101	B-30440	164-09200	$136.95
		---	---	---
		B-30195	164-09300	$125.95
		---	---	---
		B-30007	164-09400	---
172, F172, 172RG	C163006-0101	C30615-1	164-08800	$127.95
177	C163005-0101	C30615-1	164-08800	$127.95
177RG	C163005-0101 or C163006-0101	---	---	---
		C30615-1	164-08800	$127.95
180, 185	C163004-0103	C30414	164-09500	$225.00
	C163004-0101	C30388	164-09700	$147.95
	C163006-0103 Std.	C30615-3	164-9	$149.90
	C163006-0102 HD	C30615-2	164-08900	$141.95
182, F182	C163006-0101	---	---	---
	or C163006-0103	C30615-1	164-08800	$127.95
R182, FR182, TR 182	C163006-0103	C30615-3	164-9	$149.90
U206-TU206	C163004-0102	C30398	164-09600	$133.95
	C163004-0101	C30388	164-09700	$147.95
	C163006-0103 Std.	C30615-3	164-9	$149.90
	C163006-0102 HD	C30615-2	164-08900	$141.95
210, T210, P210	C163006-0103	C30398	164-09600	$133.95
	C163006-0103	C30615-3	164-9	$149.90

RAPCO BRAKE DISCS

Rapco brake disc are FAA PMA approved replacements for Cleveland and McCauley. They are precision machined from forged steel, heat treated and nickel plated for long life. IMPORTANT: This is only a partial listing, to assure the correct part number, please contact the sales department, or download the complete Rapco brake guide from our web site to verify the correct part number for your aircraft.

RAPCO BRAKE DISCS

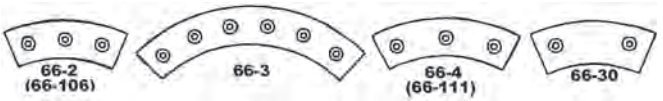
Aircraft Model	Standard Rapco Disc	Part No.	Price
Aerotek (Pitts) S-1, S-2A	RA164-01700	06-00618	**$79.85**
Air Tractor AT-300, AT-301, AT-302, AT-400A	RA164-03006	06-00414	**$191.90**
Air Tractor AT602	RA-164-22202	06-01566	**$234.90**
American Citabria, Decathlon	RA164-00500	06-00612	**$87.90**
American Champ	RA164-01700	06-00618	**$79.85**
Bellanca Viking 300A	RA164-01501	06-00616	**$79.90**
Beech 77 Skipper	RA164-06900	06-00631	**$104.95**
Beech G33 CD-1272 thru CD-1304	RA164-02504	06-00622	**$83.50**
Beech 35, A35 Thru S35	RA164-02706	06-01496	**$119.75**
Bonanza (Heavy Duty Opt.) V35, V35B, V35BTC	RA164-02706	06-01496	**$119.75**
Bonanza 35R	RA164-02706	06-01496	**$119.75**
45 (TY-34)	RA164-02706	06-01496	**$119.75**
Baron 95-55, 95-A55 95-B55-95-B55A, 95-B55B, 95-C55, 95-C55A	RA164-02706	06-01496	**$119.75**
C55 (TE-1 & UP)	RA164-02706	06-01496	**$119.75**
Baron D55	RA164-02706	06-01496	**$119.75**
Baron D55A	RA164-02706	06-01496	**$119.75**
E55 (1979 and on)	RA164-02706	06-01496	**$119.75**
56TC (TG-1 thru TG-83)	RA164-02706	06-01496	**$119.75**
95 (Travel Air)	RA164-02706	06-01496	**$119.75**
Bonanza 35-33, 35-A33, 35-B33, 35-C33, 35-C33A E33A F33, F33A, F33C 35, A35 Thru S35, 35R V35, V35B, V35BTC	RA164-02504	06-00622	**$83.50**
Bonanza 36	RA164-02505	10-03106	**$88.25**
Britten Norman BN-2	RA164-02201	06-00621	**$79.00**
Cessna 150A,B,C	RA164-00400	06-00118	**$81.90**
Cessna 150C 1963	RA164-00500	06-00612	**$87.90**
Cessna 150D,E Note: Not for 500X5 wheels	RA164-01600	06-00617	**$79.90**
Cessna 150F,G,H,J,K	RA164-02601	06-00623	**$81.90**
Cessna A150, 150K, F150, FA150	RA164-04000	06-00628	**$87.90**
Cessna F152, FA152	RA164-04000	06-00628	**$87.90**
Cessna 172 F,G,H,I,K	RA164-02601	06-00623	**$81.90**
Cessna 172 McCauley	RA164-30440	06-00578	**$79.90**
	RA164-30195	06-00579	**$87.75**
Cessna 172, F172	RA164-04000	06-00628	**$87.90**
Cessna 177, 177RG, F177RG	RA164-04000	06-00628	**$87.90**
	RA164-30440	06-00578	**$79.90**
Cessna 177A, B	RA164-02601	06-00623	**$81.90**
	RA164-04000	06-00628	**$87.90**
Cessna 177RG McCauley	RA164-30195	06-00579	**$87.75**
	RA164-30440	06-00578	**$79.90**
	RA164-30615-1	06-00580	**$79.90**
Cessna 180	RA164-01501	06-00616	**$79.90**
	RA164-00700	06-00613	**$103.95**
Cessna 182, F182	RA164-30651-1	06-00580	**$79.90**
Cessna R182, FR182, TR182	RA164-30615-3	06-00585	**$87.75**
Cessna 182	RA164-30440	06-00578	**$79.90**
Cessna 182, A182	RA164-04000	06-00628	**$87.90**
Cessna T182, TR182	RA164-30615-3	06-00585	**$87.75**
Cessna 182G, H, J, K, L, M, N	RA164-02601	06-00623	**$81.90**
Cessna 185 McCauley	RA164-30388	06-00584	**$88.75**
	RA164-30615-2	06-00586	**$79.90**
Cessna 185, A, B	RA164-00700	06-00613	**$103.95**
Cessna 185C, D, E	RA164-01501	06-00616	**$79.90**
Cessna A185E 1969 & Up	RA164-03601	06-00627	**$87.75**
Cessna A185E 1967, 1968	RA164-00700	06-00613	**$103.95**
Cessna 188, A188	RA164-03106	06-01129	**$249.95**
Cessna 190, 195, T310P, 310R, T310R, Q T310R, 335, 340A, 401, 401A, 401B, 411, 411A, 414	RA164-00806	06-01520	**$174.90**
Cessna 205, 205A	RA164-00700	06-00613	**$103.95**
	RA164-01501	06-00616	**$79.90**
Cessna U206, TU206 McCauley	RA164-30398	06-00588	**$79.90**
	RA164-30615-3	06-00585	**$87.75**
Cessna 206,Turbo U206A,TU206A	RA164-01501	06-00616	**$79.90**
Cessna U206D, Turbo	RA164-03601	06-00627	**$87.75**
Cessna P206, A,TP206A	RA164-01501	06-00616	**$79.90**
Cessna P206, A,B,C,D,Turbo	RA164-01501	06-00616	**$79.90**
Cessna P206D,E,Turbo,Super Skylane	RA164-03601	06-00627	**$87.75**
Cessna 207, T207	RA164-01501	06-00616	**$79.90**
	RA164-03601	06-00627	**$87.75**
Cessna 210, P210,T210 McCauley	RA164-30615-3	06-00585	**$87.75**
	RA164-30398	06-00588	**$79.90**
Cessna 210C	RA164-00900	06-00614	**$97.90**
Cessna P210	RA164-07800	06-00633	**$115.95**
Cessna 210 series P210, T210	RA164-01501	06-00616	**$79.90**
Cessna 336 Series	RA164-00700	06-00613	**$103.95**
Cessna 336 Series, 1963-1965	RA164-01501	06-00616	**$79.90**
Cessna 337 S/N337-0001 Thru 337-01193 T337 S/N 337-05260 & up	RA164-02504	06-00622	**$83.50**
T337E (S/N: 337-01194 & up)	RA164-02706	06-01496	**$119.75**
D.L.F. Holdings Tango	RA164-09900	06-01311	**$84.90**
International Aviation BN-2A MK111, -2,-3 (Trislander)	RA164-02706	06-01496	**$119.75**
General Avia F1300	RA164-05700	06-00630	**$199.50**
Gulfstream AA-1,A,B,AA-5,AA-5B,TR2	RA164-02000	06-00620	**$79.85**
Helio H-750, H-295, 391, 395	RA164-01501	06-00616	**$79.90**
	RA164-03601	06-00627	**$87.75**
Homebuilts	RA164-07500	06-00632	**$109.95**
Industria Unidas A-9B	RA164-02800	06-00624	**$102.95**
Maule M4, M5, M6 Series	RA164-02601	06-00623	**$81.90**
Mooney M20A, thru Super 21	RA164-00900	06-00614	**$97.90**
Mooney M20C,E,F,G,J,K	RA164-02000	06-00620	**$79.85**
Mooney 201	RA164-02300	10-03107	**$83.50**
Pilatus Britten-Norman Ltd. BN-2A MK111 (Trislander) BN-2A MK111-2 (Trislander) BN-2A MK111-3 (Trislander)	RA164-02706	06-01496	**$119.75**
Piper PA22-108	RA164-00500	06-00612	**$87.90**
Piper PA23-235	RA164-00206	06-00610	**$188.95**
Piper PA23-250	RA164-03206	06-00625	**$169.95**
	RA164-05700	06-00630	**$199.50**
Piper PA24-180, 250	RA164-00900	06-00614	**$97.90**
Piper PA24-260	RA164-01900	06-00619	**$79.50**
Piper PA25	RA164-03300	06-00626	**$93.75**
Piper PA28 Early	RA164-00500	06-00612	**$87.90**
Piper PA28R-180 Early	RA164-01900	06-00619	**$79.50**
Piper PA28 Series Comman	RA164-02000	06-00620	**$79.85**
Piper PA28-236, PA32-300, PA32-301	RA164-02300	10-03107	**$83.50**
Piper PA30	RA164-01000	06-00615	**$111.95**
Piper PA32, -760, -300	RA164-02201	06-00621	**$79.00**
Piper PA32, -660, -300	RA164-21600	06-00634	**$99.85**
Piper PA32-300, 32R, -32RT	RA164-21600	06-00634	**$99.85**
Piper PA34-200, PA34-220T	RA164-02300	10-03107	**$83.50**
Piper PA38-112	RA164-01700	06-00618	**$79.85**
Rockwell 112, 112A,112B	RA164-04300	06-00629	**$87.90**
Rockwell Int. 112TC, TCA114	RA164-01501	06-00616	**$79.90**
Schweizer G-164A, 450	RA164-03006	06-00414	**$191.90**
Schweizer 6164-B, -C, -D, 450	RA164-05806	06-01128	**$204.95**
Taylorcraft F-19	RA164-02000	06-00620	**$79.85**
Siai-Marchetti 260SW	RA164-02300	10-03107	**$83.50**
Varga 2150A	RA164-02601	06-00623	**$81.90**
Waco	RA164-02601	06-00623	**$81.90**
Wing Derringer	RA164-01900	06-00619	**$79.50**

LG

CLEVELAND BRAKE LININGS

CLEVELAND STANDARD ORGANIC BRAKE LININGS

Order by NEW Cleveland part number.
All Linings Include Rivets



Aircraft Make & Model	Old Cleveland P/N	# Req.	New Cleveland P/N	Price
AEROTEK - Pitts S-1, S-2A	66-2	2	66-106	**$13.50**
BEECH - Musketeer	66-55	2	66-105	**$13.50**
Sierra Sport Sundowner B-19; C-23, 24R	66-55	2	66-105	**$13.50**
Debonair CD-1 thru CD-387	66-4	2	66-111	**$18.75**
4 Pack of 66-111	66-4	2	66-11	**$3.95**
Debonair B-33	66-2	2	66-106	**$11.75**
Skipper	66-71	2	66-112	**$21.75**
BELLANCA - Citabria, Champ	66-2	2	66-106	**$11.75**
Scout	66-3	1	66-106	**$11.75**
Decathalon, Scout 8GCBC	66-2	2	66-106	**$11.75**
Viking, Aries 250	66-55	2	66-105	**$13.50**
CESSNA - 150A, B, C, D, E	66-2	2	66-106	**$11.75**
	66-56	2	66-106	**$11.75**
150F, G, H, J, K, 152, F-152, FA-152	66-55	2	66-105	**$13.50**
All Cessnas using Cessna/McCauley Brakes	B-30026	2	66-109	**$18.75**
Skyhawk 172, Cardinal 177 All	66-55	2	66-105	**$13.50**
Skywagon 180	66-55	4	66-105	**$13.50**
Skylane 182 H, J, K, L, M, N	66-55	2	66-105	**$13.50**
185A, B	66-2	2	66-106	**$11.75**
185C, D, E	66-55	2	66-105	**$13.50**
185 with crosswind gear	66-2	2	66-106	**$11.75**
AGWagon	66-55	4	66-105	**$13.50**
Stationair-6 205, 205A	66-2	2	66-106	**$11.75**
Stationair-6 205, 205A (s/n 205-0481 & up)	66-55	4	66-105	**$13.50**
206, U206A, D, E & Turbo models	66-55	4	66-105	**$13.50**
207, T207	66-55	4	66-105	**$13.50**
210C	66-4	2	66-111	**$18.75**
210, P210, T210, 210N, P210N	66-55	4	66-105	**$13.50**
303, T303	66-44	4	66-44	**$15.50**
305A, B, C, D, E, F	66-55	4	66-105	**$13.50**
310, 335	66-33	6	66-33	**$13.50**
Skymaster 336	66-2	2	66-106	**$11.75**
337, T337, 337B,C,D,E, T337B,C,D,E	66-55	4	66-105	**$13.50**
All Cessnas using Cessna/McCauley Brakes	B-30026	2		
CIRRUS				
SR-20	066-14100	4	66-141	**$25.50**
GRUMMAN				
AA-1,A,B,AA-5,AA-5A,AA-5B,Tiger,TR-2	66-55	2	66-105	**$13.50**
AG-CAT	66-3	1	66-106	**$11.75**
	66-56	2	66-106	**$11.75**
G-154	66-2	2	66-106	**$11.75**
Widgeon G44, G44A, Scan Type 30	66-11700	2	66-11700	**$33.85**
MAULE - Jetasen/Rocket, Lunar/Rocket	66-55	2	66-105	**$13.50**
MOONEY - Most M20, A, B, D, E	66-4	2	66-111	**$18.75**
PIPER - Colt PA22-108	66-2	2	66-106	**$11.75**
	66-56	2	66-106	**$11.75**
Apache PA-23-150, 160	66-2	2	66-106	**$11.75**
	66-56	2	66-106	**$11.75**
Apache/Aztec PA-23-235, 250 Series	66-2	4	66-106	**$11.75**
	66-3	4	66-106	**$11.75**
Comanche PA-24-180, 250, 260	66-2	2	66-106	**$11.75**
Pawnee C PA-25	66-2	2	66-106	**$11.75**
Cherokee/Cruiser PA-28-140	66-2	2	66-106	**$11.75**
PA-28-140 s/n 28-20521 & up	66-55	2	66-105	**$13.50**
Cherokee PA-28-150	66-2	2	66-106	**$11.75**
Cherokee PA-28-160 s/n 28-1761 & up	66-55	2	66-105	**$13.50**
Cherokee Warrier PA-28-151	66-55	2	66-105	**$13.50**
Cherokee PA-28-160	66-2	2	66-106	**$11.75**
Cherokee/Warrier II PA-28-161	66-55	2	66-105	**$13.50**
Cherokee/Archer PA-28-180 to 28-1760	66-2	2	66-106	**$11.75**
Cherokee/Archer PA-28-180 28-1761 & up	66-55	2	66-105	**$13.50**
Cherokee/Pathfinder PA-28-181, PA-28-236	66-55	2	66-105	**$13.50**
PA-28R-180, PA-28-200	66-2	2	66-106	**$11.75**
PA-28R-180 s/n 28R-7130006 & up	66-55	2	66-105	**$13.50**
PA-28-200 s/n 28R-7135110 & up	66-55	2	66-105	**$13.50**
PA-28R-201T, 201, PA-28RT-201, 201T	66-55	2	66-105	**$13.50**
Early PA-28-235	66-56	2	66-105	**$13.50**
Early PA-28R-180, 200	66-56	2	66-105	**$13.50**
Twin Comanche PA-30 Serial # 30-845 and on	66-19	2	66-62	**$22.95**
Twin Comanche PA-30 Serial # 30-2 thru 30-845	66-19	2	66-65	**$27.00**
Navajo B, PA31-300, 310, Turbo Navajo	66-33	6	66-33	**$13.50**
Chieftain, PA-31-350	66-33	6	66-33	**$13.50**
Cherokee/Six-260 PA-32-260	66-55	4	66-105	**$13.50**
PA-32-300 s/n 32-40000 thru 7200029	66-55	4	66-105	**$13.50**
PA-32R-300, 32RT-300	66-55	4	66-105	**$13.50**
PA-38-112 (6" wheel)	66-71	2	66-112	**$21.75**
PA-38-112 (5" wheel)	66-56	2	66-106	**$11.75**
PA-39	66-19	1	66-62	**$22.95**
PA-39, PA-39-1 & up	66-3	1	66-106	**$11.75**
PA-44-180	66-55	4	66-105	**$13.50**
TAYLORCRAFT				
Sportsman 100	66-55	2	66-105	**$13.50**

Advise aircraft make, model and serial number to assure that correct brake lining part number is furnished Extra rivets, P/N 105-2, for all models listed in table .05 each

CLEVELAND BRAKE LINING KITS

Pack of 4 linings

66-105 ..... P/N 06-01309 ..... **$46.25**
66-106 ..... P/N 06-01310 ..... **$41.75**
66-11 ..... P/N 06-01564 ..... **$3.95**

BRAKE LINING TOOLS

Designed especially to economically reline brakes, this riveting set is a handy tool for many other jobs where rivets are used to fasten leather, canvas, plastic and metal parts. Deluxe tool is screw-down type.

Dlxe. Brake Lining Tool ..... P/N 12-20810 ..... **$19.50**
Brake Lining Tool ..... P/N 824 ..... **$14.50**
Brake Lining Rivets 4-4 ..... P/N 105-2 ..... **$0.03**
Brake Lining Rivets 4-6 ..... P/N 06-02300 ..... **$0.03**

LG

RAPCO BRAKE LININGS

RAPCO REPLACEMENT BRAKE LININGS

As a RAPCO factory authorized distributor, Aircraft Spruce offers these FAA-PMA approved brake lining replacements for Cleveland & McCauley brakes as an economical alternative to Cleveland factory linings. All are substantially discounted, with even further savings on quantity orders.

Our P/N 06-	Old Cleveland P/N	New Cleveland P/N	RAPCO P/N	Our Price Each
16956	66-2	66-106	RA66-106†	**$6.85**
16956	66-3	66-106	RA66-106*†	**$6.85**
16958	66-4	66-111	RA66-111	**$6.90**
16915	66-15	66-15	RA66-15	**$19.90**
16919	66-19	66-19	RA66-19	**$10.85**
16922	66-22	66-22	RA66-22	**$10.50**
16955	66-30	66-105	RA66-105†	**$6.85**
16933	66-33	66-33	RA66-33	**$10.50**
16959	66-35	66-108	RA66-108†	**$7.95**
16944	66-44	66-44	RA66-44	**$11.85**
16955	66-55	66-105	RA66-105†	**$6.85**
16956	66-56	66-106	RA66-106†	**$6.85**
16956	66-57	66-106	RA66-106*†	**$6.85**
16958	66-58	66-111	RA66-111†	**$6.90**

Our P/N 06-	Old Cleveland P/N	New Cleveland P/N	RAPCO P/N	Our Price Each
16959	66-59	66-108	RA66-108=	**$7.95**
16962	66-62	66-62	RA66-62	**$10.85**
16965	66-65	66-65	RA66-65	**$11.65**
16966	66-66	66-66	RA66-66	**$10.55**
16968	66-68	66-68	RA66-68	**$15.75**
16987	66-87	66-109	RA66-109=	**$8.35**
16987	66-88	66-109	RA66-109=	**$8.35**
01556	---	066-09000	RA066-09000	**$24.00**
01557	---	066-10000	RA066-10000	**$21.50**
01558	---	066-07300	RA066-07300	**$26.75**
01559	---	066-09100	RA066-09100	**$99.50**
01560	---	066-09200	RA066-09200	**$179.00**
01561	---	066-09700	RA066-09700	**$11.75**
01562	---	066-06700	RA066-06700	**$15.75**
01563	---	066-06400	RA066-06400	**$15.75**

RAPCO BRAKE LINING KITS

All Rapco Brake Lining kits come complete with correct number of brake linings and rivets needed for each aircraft.
As a RAPCO factory authorized distributor, Aircraft Spruce offers these FAA-PMA approved brake lining replacements for Cleveland and McCauley brakes as an economical alternative to Cleveland factory linings. All are substantially discounted, with even further savings on quantity orders.
Note: Cessnas with with McCauley Brakes required RA66-109 lining.
Use 2 each 66-106 linings to replace 1 each 66-3/66-57.

Kit P/N	No. of linings	Part No.	Kit Price
RA66-105-4K	4	06-00643	**$23.95**
RA66-105-8K	8	06-00650	**$49.85**
RA66-106-4K	4	06-00651	**$23.95**
RA66-106-8K	8	06-00652	**$49.85**
RA66-108-8K	8	06-00681	**$59.95**
RA66-109-4K	4	06-00653	**$29.95**
RA66-109-8K	8	06-00682	**$61.75**
RA66-111-4K	4	06-00683	**$24.85**

**** Use 2 each 66-106 linings to replace 1 each 66-3/66-57.*** ***ALL LININGS INCLUDE RIVETS***
† Not for use on Stainless Steel Discs
NOTE: Cessna Aircraft with Cessna / McCauley brakes use only RA66-109 linings.

RIVETS

RAPCO P/N	Size	$/ea.
RA105-00200-Cleveland	9/32" Long	**$0.14**
RA105-00700-McCauley	1/4" Long	**$0.16**

RAPCO BRAKE RIVET TOOL REPLACEMENT PUNCH/ANVIL

Complete with: Rivet Punch, Set and Anvil for setting rivets. More Convenient and easier to use than most punch style tools.Will not crack or distort brake linings. Can be used in vise or hand held.

Brake Rivet tool RA825 ..... P/N 10-02065 ..... **$26.50**
Replacement Punch/Anvil RA825AP ..... P/N 10-02066 ..... **$5.75**

RAPCO ROTOR BRAKE RA5009212

This lining is a direct replacement for the 5009212 Rotor Brake Puck. This puck fi ts on Bell 206, Bell 206L1, 206L2, 206L3 Helicopters. It is the main rotor brake puck used to stop in emergancy conditions or heavy winds

P/N 06-01306 ..... **$157.95**

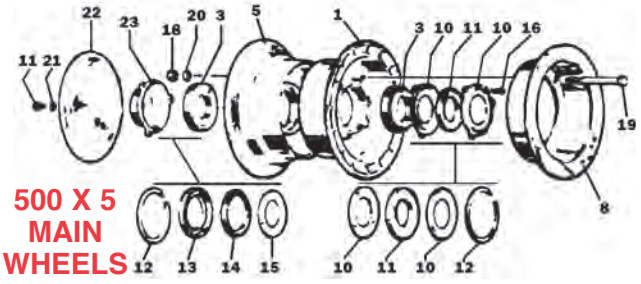
RAPCO RA177-SERIES BRAKE PINS

All these brake pins are widely used in conjunction with the "Sintered" style brake linings. They are staked into place on the back plate and pressure plate assemblies in accordance with the brake maintenance manual. The RA177-00300 is a 5/16" pin designed for the back/pressure plates with 5/32" holes. The RA177-00400 is a 5/16" pin designed for the back/pressure plates with 3/16" holes. The RA177-01600 is a 3/8" pin designed for the back/pressure plates with 3/16" holes.

RA177-00300 ..... P/N 06-01215 ..... **$2.20**
RA177-00400 ..... P/N 06-01499 ..... **$1.89**
RA177-01600 ..... P/N 06-01501 ..... **$1.90**

LG

FAA-APPROVED CLEVELAND WHEELS & BRAKES

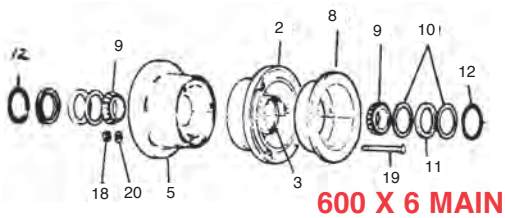


500 X 5 MAIN WHEELS

FIG	Cleveland P/N	Part No.	Description	Assembly Number	Qty. Per Assembly 40-12	40-12A	40-12B	40-19	40-19A	40-19B	40-78	40-78A	Price Each
1	161-5	161-00500	Inner Wheel Half Assy.		1	1	1						$427.95
	161-03100	161-03100	Inner Wheel Half Assy.								1		$327.50
	161-04100	161-04100	Inner Wheel Half Assy.									1	$329.95
3	08231	214-00300	Cup-Bearing		1	1	1	1	1	1	1	1	$15.50
5	162-00500	162-00500	Outer Wheel Half Assy.		1	1	1						$405.95
	162-01400	162-01400	Outer Wheel Half Assy.					1	1	1			$161.95
	162-02800	162-02800	Outer Wheel Half Assy.								1		$313.85
	162-03900	162-03900	Outer Wheel Half Assy.									1	$389.50
3	08231	214-00300	Cup-Bearing		1	1	1	1	1	1	1	1	$15.50
*	217-00100	217-00100	Grommet								1	1	$5.75
*	101-07200	101-07200	"O" Ring		1	1	1						$0.80
8	164-00400	164-00400	Brake Disc Assy.		1	1	1	1	1	1			$187.95
	164-17	164-01700	Brake Disc Assy.								1	1	$164.95
*	08125	214-00400	Cone-Bearing		2	2	2	2	2	2	2	2	$36.85
19	AN4-31A	103-10800	Bolt		3	3	3	3	3	3			$0.84
	AN4-22A	103-10500	Bolt								3	3	$0.39
20	AN960-416	095-10400	Washer			6	6	6	6	6	3	3	$0.03
18	AN365-428A	094-10300	Nut		3	3	3	3	3	3	3	3	$0.10
10	153-00800	153-00800	Ring-Grease Seal		2	2	4	2	2	4	4	4	$11.50
12	155-00200	155-00200	Ring-Snap		2	2	2	2	2	2	2	2	$13.85
11	154-00600	154-00600	Felt-Grease Seal		1	1	2	1	1	2	2	2	$7.90
23	158-00500	158-00500	Cap-Hub		1	1		1	1				$287.95
17	102-25100	102-25100	Screw		1	1		1	1				$10.75
21	095-15400	095-15400	Washer-Lock		1	1		1	1				$5.50
22	157-00500	157-00500	Shield-Dust		1			1					$30.00

MODEL NO. 40-78 wheel with brake disc and 1-1/4" dia. bearings as used on Cessna 150. P/N 40-78.....**$966.00**

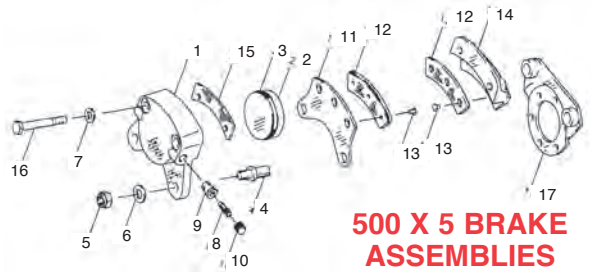
MODEL NO. 40-78B..... P/N 40-78B **$921.00**



600 X 6 MAIN WHEELS

FIG	Cleveland P/N	Part Number	Description	Assembly Number	Qty. Per Assembly 40-97	40-97A	40-97B	40-97C	40-97D	40-99	Price Ea.
2	161-03000	161-03000	Inner Wheel Half Assy.		1	1	1	1	1	1	$288.95
	161-02100	161-02100	Inner Wheel Half Assy.							1	$543.00
3	13836	214-00100	Cup-Bearing		1	1	1	1	1	1	$27.25
5	162-02700	162-02700	Outer Wheel Half Assy.		1	1	1	1	1		$283.95
	162-01900	162-01900	Outer Wheel Half Assy.							1	$635.00
	13836	214-00100	Cup-Bearing		1	1	1	1	1	1	$27.25
8	164-26A	164-02601	Brake Disc Assy.		1	1	1	1	1	1	$127.95
	164-02800	164-02800	Brake Disc Assy.							1	$159.95
9	214-00200	214-00200	Cone-Bearing		2	2	2	2	2	2	$42.75
19	AN5-35A	103-20400	Bolt		3	3	3	3	3		$1.38
	AN4-37A	103-11200	Bolt							6	$1.16
20	AN960-516	095-10500	Washer		3	3	3	3	3		$0.04
	AN960-416L	095-10200	Washer							6	$0.02
18	AN365-524A	094-10400	Nut		3	3	3	3	3		$0.15
	AN365-428A	094-10300	Nut							6	$0.10
10	153-00400	153-00400	Ring-Grease Seal		2	2		2	2	2	$9.90
	153-00300	153-00300	Ring-Grease Seal		1	1	2	1	1		$9.90
	153-01500	153-01500	Ring-Grease Seal		1	1	2	1	1		$13.75
	158-00300	158-00300	Cap-Hub							1	$42.75
11	154-00300	154-00300	Felt-Grease Seal		1	1		1	1	1	$6.38
	154-01300	154-01300	Felt-Grease Seal		1	1	2	1	1		$6.90
12	155-00100	155-00100	Ring Snap		2	2	2	2	2	2	$8.75

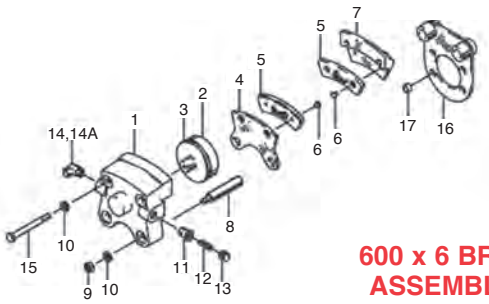
MODEL NO. 40-97A wheel with brake disc and 1.5" dia. bearings fits Cessna 172, 182 P/N 40-97A.....**$699.00**



500 X 5 BRAKE ASSEMBLIES

FIG	Cleveland P/N	Part No.	Description	Assembly Number	Qty. Per Assembly 30-9	30-9A(2)	30-9C	30-9D	30181A	Price Each
	91-00702	06-01203	Cylinder Assy.		1			1		$664.00
	91-04800	06-01204	Cylinder Assy.			1	1			$503.00
	91-17401	06-01205	Cylinder Assy.						1	$556.00
1	61-00601	061-00601	Cylinder		1			1	1	$292.95
	61-03901	061-03901	Cylinder			1	1			----
	92-00200	06-01206	Piston		1	1	1	1	1	$36.45
2	79-00300	062-00300	Piston		1	1	1	1	1	$71.50
3	101-02300	AN6227B-23	O-ring (MS28775-218)		1	1	1	1	1	$0.53
4		069-00400	Anchor bolt		2	2	2	2	2	$23.90
5	94-10300	AN365-428A	Nut (MS21044-N4)		2	2	2	2	2	$0.10
6	95-10400	095-10400	Washer (AN960-4-16)		2	2	2	2	2	$0.03
7	95-10200	095-10200	Washer (AN960-416L)		2	2	2	2	2	$0.02
8	079-00300	079-00300	Screw-Bleeder		1	1	1	1	1	$10.65
9	081-00100	081-00100	Seat-Bleeder		1	1	1	1	1	$16.25
10	183-00100	183-00100	Cap-Bleeder		1	1	1	1	1	$3.55
	073-00300	073-00300	Pressure Plate Assy.		1	1	1	1	1	$119.95
11	063-00500	063-00500	Pressure Plate		1	1	1	1	1	$96.75
12	066-10600	066-10600	Lining		1	1	1	1	1	$11.75
13	15-00200	105-00200	Rivet		3	3	3	3	3	----
	074-00200	074-00200	Back Plate Assy.		1	1	1	1	1	$172.95
14	064-00500	064-00500	Back Plate		1	1	1	1	1	$79.90
12	66-106	066-10600	Lining		1	1	1	1	1	$11.75
13	15-00200	105-00200	Rivet		3	3	3	3	3	----
15	68-00401	06-01196	Shim						1	$171.95
16	06-00011	103-12100	Bolt		2	2	2	2		$0.75
		103-11500	Bolt						2	----
17	075-00800	075-00800	Torque Plate Assy.		1	1	1		1	$173.95
	75-19300	06-01201	Torque Plate Assy.					1		$370.95

MODEL NO. 30-9 used with wheel 40-78..... P/N 30-9 .....**$419.00**



600 x 6 BRAKE ASSEMBLIES

FIG	Cleveland P/N	Part Number	Description	Assembly Number	Qty. Per Assembly 30-56	30-56A	30-63	30-63A	30-63D	Price Ea.
	091-02200	091-02200	Cylinder Assy.				1	1	1	$464.95
1	061-01900	061-01900	Cylinder		1	1	1	1	1	$219.95
2	062-01600	062-01600	Piston		1	1	1	1	1	$59.75
3	101-05200	101-05200	"O" Ring		1	1	1	1	1	$0.70
	073-01100	073-01100	Press. Plate Assy.		1	1	1	1	1	$79.80
4	063-01200	063-01200	Plate-Press.		1	1	1	1	1	$61.25
5	66-105	66-155	Lining		1	1	1	1	1	$13.50
6	RA105-00200	RA105-00200	RIVET		2	2	2	2	2	$0.14
	074-01000	074-01000	Back Plate Assy.		1	1	1	1	1	$139.95
7	064-01500	064-01500	Plate-Back		1	1	1	1	1	$79.90
5	66-105	66-105	Lining		1	1	1	1	1	$13.50
6	RA105-00200	RA105-00200	Rivet		2	2	2	2	2	$0.14
8	069-00400	069-00400	Bolt-Anchor		2	2	2	2	2	$23.90
9	AN365-428A	094-10300	Nut		2	2	2	2	2	$0.10
10	AN960-416L	095-10200	Washer		4	4	4	4	4	$0.02
11	081-00100	081-00100	Seat-Bleeder		1	1	1	1	1	$16.25
12	079-00300	079-00300	Screw Bleeder		1	1	1	1	1	$10.65
13	183-00100	183-00100	Cap-Bleeder		1	1	1	1	1	$3.55
14	AN823-4D	104-00500	Fitting Tube		1	1				$6.50
15	AN4H-17A	103-11600	Bolt-Lock			2				$0.72
16	075-01600	075-01600	Torque Plate Assy.			1				$235.95
16	075-03700	075-03700	Torque Plate Assy.				1	1	1	$187.95
17	145-01000	145-01000	Bushing		2		2	2	2	$18.00

MODEL NO. 30-63A used with wheel 40-97A P/N 30-63A.....**$519.00**

LG

BRAKE PARTS - SHIMMY DAMPERS

GOODYEAR BRAKE PARTS

Most replacement parts are available for aircraft still equipped with Goodyear wheels and brakes. We provide prompt shipment on replacement parts such as brake linings, brake discs, clips, etc. Request quotation on any unlisted Goodyear part numbers.

Brake 5.00 x 5, Cessna 150, Assy. No. 9532302
9524161-1 ..... Piston Lining ..... **$62.50 ea.**

Brake 6.00 x 6, Cessna 120, 140, Aeronca 7AC, 11AC, Swift, Lusc., Assy. No. 9520517
9511261-1 ..... Anvil/Piston Lining ..... **$66.75 ea.**
9523482..... Disc Clips..... **$209.95 ea.**

Brake 6.00 x 6, Cessna 120, 140, Swift, Luscombe, Sedan, Aeronca 11AC, Assy. No. 9520298
9520435..... Disc Clips, 4 required ..... **$47.95 ea.**

Brake 6.00 x 6, Cessna 172, 175, 180, 182, 210, Lake, Assy. No. 9532181
9511271-2 ..... Anvil Lining ..... **$325.95 ea.**
9511269-2 ..... Piston Lining ..... **$148.85 ea.**

Brake 6.00 x 6, Cessna 170, 172, 175, 180, 182, 210 Assy. No. 9530839 Aeronca 7AC, 11AC, 15AC, Stinson 150, 165, Assy No. 951239 & 9532181
9511271-2 ..... Anvil Lining ..... **$325.95 ea.**
9511269-2 ..... Piston Lining ..... **$148.85 ea.**
9523482..... Disc Clip ..... **$209.95 ea.**

Brake 6.00 x 6, Aeronca 7AC, 11AC, Funk, Schweizer Glider, Luscombe 8,8A, Assy No. 9530131, Assy. No. 511254
9520435..... Disc Clips, 4 required ..... **$47.95 ea.**

Brake 6.00 x 6, Ercoupe Forney, Assy. No. 9520285
9523482..... Disc Clip ..... **$209.95 ea.**

Brake 6.50 x 8, Beech T34, 35, Camair, Assy. No. 511731
9510714-2 ..... Anvil Lining ..... **$98.75 ea.**
9510713-1 ..... Piston Lining ..... **$62.50 ea.**
9523937..... Disc Clip ..... **$27.75ea.**

Brake 6.50 x 10, Cessna 190, 195, 310, 320 Assy. No. 951731
5009853..... Piston Lining ..... **$195.95 ea.**
95-10375 ..... Disc Clip, 5 required ..... **$19.50ea.**

PIPER SHIMMY DAMPER SERVICING KIT

Finally, a shimmy damper servicing kit. One of the most neglected components on Piper aircraft is the shimmy dampener. The shimmy damper aids nose wheel steering by reducing the shimmy of the nose wheel during takeoff and landing, and during high-speed taxiing. Even minor shimmying can lead to serious damage to the nose gear and engine mount and affect the airworthiness of the aircraft. The shimmy damper is a sealed unit that, until now, could not be serviced and required costly replacement. The STC and accompanying servicing kit allows the MAECO shimmy damper to be modified and serviced, restoring the shimmy damper to like-new condition and enabling it to perform as originally designed! The servicing kit installs in less than an hour by any A&P mechanic. Once modified, if the shimmy damper ever needs servicing again, the owner can service it with hydraulic fluid.

Important: Enter Piper Aircraft Model, Serial number, and "N" number at time of order. P/N 06-00846..... **$162.95**

FOR COMPLETE INSTALLATION ELIGIBILITY LIST SEE www.aircraftspruce.com

LORD SHIMMY DAMPER FOR BEECH AIRCRAFT

This nose gear shimmy damper from LORD Corporation is FAA approved for many models of Beech Aircraft. The patented technology provides consistent damping without maintenance. Instead of using fluids to resist motion, the shimmy damper features a unique rubber formulation with a high-tech lubricant to absorb nose wheel vibration. Length: 5-1/2". Long life - Demonstrated performance in excess of 5,000 ground-air-ground duty cycles, expecting a product life of more than 10 years of usage on typical, high-use, single-engine piston airplanes. Consistent damping - From -30 degrees to +150 degrees F. FAA Approved.

P/N 05-03421 ..... **$648.00**

Beech Aircraft Eligibility List			
A36TC	B36TC	Bonanza 36	A36
G36	Bonanza 35	A35	B35
C35	D35	E35	F35
G35	H35	J35	K35
M35	N35	P35	S35
V35	V35-TC	V35A	V35A-TC
V35B	V35B-TC	E33	E33A
E33C	F33	F33A	G33A
Barron 55	A55	B55	C55
D55	E55	56TC	A56TC
58 Barron	58TC	58P	

LORD SHIMMY DAMPERS FOR CESSNAS

This high performance shimmy damper is designed to last at least 10 yrs without maintenance and contains no hydraulic fluid, so it cannot leak. Priced at about half the cost of equivalent Cessna factory dampers. 5-yr warranty. All dampers are STC'd and PMA approved.

Features

No Hydraulic Fluid: No periodic leaks or loss of damping. No servicing required. Reduced wear of nose gear linkages. Lower operating costs.

Consistent damping from -30° to 150°F: No loss of damping at temperature extremes. Reduced wear of nose gear linkages. Lower operating costs.

No performance degradation over time and use: Reduced wear of nose gear linkages. Lower operating costs.

Large diameter shaft: Increased durability. Lower operating costs.

Simple Design: High reliability. Lower operating costs.

Form, fit and function compatible: Simplicity of use (one-for-one replacement). Compatibility with existing installation.

PN	Lord #	Installation Eligibility	Price
05-00443	SE-1051-2 Approved Replacement For Cessna # 0442612-1	150G, H, J, K , L , M F150G, H, J, K, L, M, A150K, L, M FA150K, L FFRA150L, FRA150M 152 (ALL) 1978 thru 1985 (no letter designators) A152 (ALL) 1978 thru 1985 (no letter designators) FA152 (ALL) 1978 thru 1984 (no letter designators) 172, 172 A, B, C, D, E, F, G, H, I, K, L, M, N, P, Q, R, S F172D, E, F, G, H, K, L, M, N, P, P172D, FR172E, F, G, H, J(REIMS ROCKET) R172K, FR172K 175, 175A, B, C 182B, C, D Note: The Lord Shimmy Damper PN 05-00443 will not work on Cessna 172 Years: 1956-1959	**$719.00**
05-00444	SE1051-3 Approved Replacement for Cessna # 0542119-2	150A - F NOTE: Not for retractable gears.	**$1,298.00**
05-02610	SE-1068-5 Approved Cessna Replacement	182K-N 182P-T T282T	**$796.00**
05-00446	SE-1069-3 Approved Replacement for Cessna # 0743624-2	206H, P206B-E, T206H, TU206B-G, U206B-G 207, 207A, T207, T207A, 210G-H, 210J-N, 210R, P210N, P210R, T210K-N	**$760.00**
05-03382	SE-1070-7 Approved Replacement for Cessna # SE-1070-4 SE-2070-6	208, 208A, 208B	**$2,238.00**
05-04185	SE-1090-1	310, 310B, 310C, 310D, 310F, 310G, 310H, 3101, 310J, 310K, 310L, 310N, 310P, T310P, 3100, '1'3100, 310R, T310R,320, 320A, 320B, 320C, 320D, 320E, 320F, 340, 340A, 401, 401A, 401B, 402, 402A, 402B, 402C, 411, 411A, 414, 414A, 421, 421A, 421B, 421C, 425, 404, 406, 441	**$1,222.00**

LG

HUB CAPS – BLACK MAX – GOODRICH

METAL HUB CAPS

These FAA approved metal hub caps are designed for older Pipers using the 800x4 Goodrich (Hayes) brakes such as the J-3 and PA-18. A larger cap for 600 x 6 conversions are also available below. The caps are available with "CUB" stamped in raised letters or plain.

Cub 800x4 Goodrich hub cap ..... P/N 06-00010 ..... **$29.25 ea.**
(Identical in size and appearance to Cleveland #157-9)
Cub 600x6 Cleveland hub cap..... P/N 06-00020 ..... **$26.50 ea.**
Plain 800x4 Goodrich hub cap..... P/N 06-00030 ..... **$25.75 ea.**
Plain 600x6 Cleveland hub cap ..... P/N 06-00040 ..... **$26.25 ea.**

WHEEL COVERS

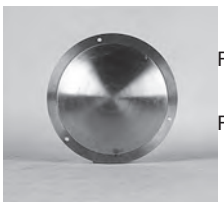
For Gerdes, McCauley, Cleveland, Hayes, Goodyear, Rosenhan and Matco wheels as listed. Furnished with mounting screws and lock washers.

P/N	Wheel Size	Application	Price ea.
157-8 ***Pictured***	5.00-5*	Cleveland, McCauley, Gerdes	**$69.50**
157-9	6.00-6**	Cleveland, McCauley, Gerdes	**$66.50**
06-03705	6.00-6	All Goodyear Wheels	**$32.75**
06-03900	5" Dia.	Rosenhan Matco Wheels	**$7.50**

GROVE HUB CAPS

GROVE HUB CAP 5"
For Grove, Cleveland and Gerdes wheels.
Includes mounting screws. 011-012
P/N 06-01363..... **$17.75**

GROVE HUB CAP 6"
For Grove, Cleveland and Gerdes 600x6 wheels.
Includes mounting screws. 011-013
P/N 06-00845..... **$19.85**



ECONOMY WHEEL COVER

For 600-6 Cleveland wheels
P/N 06-03710.... **$16.95 ea.**

For 500-5 Cleveland wheels
P/N 06-00073.... **$19.95 ea.**

Furnished with screws for installation

BX-1000 BLACK MAX HYDRAULIC BRAKE SYSTEM

(Everything you need in one package)

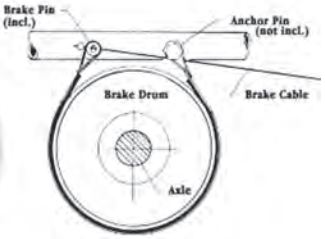
This system has a full floating rotor which compensates for alignment giving you a smooth feeling brake action. The master cylinder has a built in reservoir which allows you to add oil and bleed from the top down. Maximum holding pressure to allow for a good run up. Uses standard brake fluid. Gross rating 1000 lbs.

Features:

- Master Cylinder w/reservoir and brake handle
- 2 6" polished aluminum wheels
- 2 Hubs w/bearings
- 2 Tires
- 2 Rotors
- 2 Calipers
- 5/8" axle with keyway
- Brake Pads
- 14' of Hydraulic Brake Line
- Fittings and Hardware.

Part#	Model	Rim Type	Rims Included	Rim Size	Gross Weight	Includes tires	Axle Size	PN	Price
BX44708	BX1000	WELDED	YES	6"W X 6" D	1000LBS	YES	5/8" X 8"	06-00707	**$436.95**
BX44708-4	BX1000	WELDED	YES	4"W X 6" D	1000LBS	YES	5/8" X 8"	06-00963	**$423.00**
BX44798	BX-AZUSA	Azusa	NO	4"W X 4" D	1000LBS	NO	5/8" X 7.5"	06-00964	**$439.95**
BX44799	BX-AZUSA	Azusa	NO	4"W X 6" D	1000LBS	NO	5/8" X 7.5"	06-01191	**$439.95**
BX44800	BX-AZUSA	Azusa	NO	4"W X 8" D	1000LBS	NO	5/8" X 7.5"	06-00966	**$439.95**
BX44785	BX1320	SPLIT RIM	YES	6"W X 6" D	1320LBS	NO	5/8" X 8"	06-00967	**$489.00**
BX44785-4	BX1320	SPLIT RIM	YES	4"W X 6" D	1320LBS	NO	5/8" X 8"	06-00968	**$521.00**
BX44863	BX1500	SPLIT RIM	YES	6"W X 6" D	1500LBS	NO	3/4" X 8"	06-00969	**$559.00**
BX44863-4	BX1500	SPLIT RIM	YES	4"W X 6" D	1500LBS	NO	3/4" X 8"	06-00970	**$575.00**

4-1/2 INCH BRAKE BANDS WITH PINS



Band Brakes are simple, effective and economical for a variety of small, light-duty small vehicles, or as parking brakes. They were designed to work with either 4" or 4-1/2" diameter drums, but may work well with drums ranging in size from 3-7/8" through 4-5/8" O.D.

- 2 Piece Bonded Lining
- Comes with 1 band and 1 pin.
- Riveted End/Mounting Brackets
- Steel Brake Pin with Cable Hole Included
- Band Brake for 4.5" drum - Packaged PN 2555

P/N 06-00662 ..... **$13.50**

DIAPHRAGM FOR BRAKE CYLINDER

Master cylinder diaphragm for Piper J-3/PA-11
P/N 06-00759..... **$35.50**

GOODRICH 800X4 WHEEL PARTS

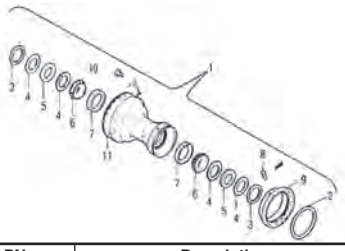


Figure No.	PN	Description	Price
5	B227-52	Felt, Grease Retaining	**$0.46**
6	08125	Cone, Bearing	**$36.85**
7	08231	Cup, Bearing	**$15.50**
9	B11-5	Casting, Side	**$43.25**
10	AN441-6-6P	Rivet, Brake Drum	**$0.50**
11	B13-4	Drum, Brake (I.D. Must be turned after installation.)	**$179.95**

GOODRICH BRAKE ASSEMBLY PARTS

FOR ALL PIPERS WITH 8.00 X 4 WHEELS

Brake Block (750-033)..... P/N 06-00013 ..... **$56.75**
Spring (750-029)..... P/N 06-00430 ..... **$7.60**
Shield (750-093) ..... P/N 06-01042 ..... **$22.70**

AIRCRAFT TIRE APPLICATION CHART

Tires/Tubes Certified Aircraft Application Chart - Tires are low speed unless designated. Tires are tube-type unless otherwise indicated. Consult aircraft manual for individual tire pressure. ***– IMPORTANT: READ THIS LEGEND FIRST –***

Code: TL = Tubeless; SC = Smooth Contour; DT = Deflector Type; DDT = Dual Deflector Type

APPLICATION CHARTS - The application information presented within this manual is based on the most current information available and is intended for use as a ***GENERAL REFERENCE ONLY.*** Any inquiries regarding specific model aircraft should be directed to the applicable airframe manufacturer. Your requirements may vary depending on the actual configuration of your aircraft. All Goodyear aircraft tires are manufactured in accordance with TSO-C62, MIL-T-5041 or AIR8505A and/or applicable airframe manufacturer specifications. Additionally, all tire sizes included in this manual may not necessarily be available from Goodyear. Contact your Goodyear Representative for specific tire information and availability. ***Failure to make this verification and to install unapproved tires on an aircraft may result in tire failure causing property damage, serious injury, or loss of life.***

**** Please visit our website for the "Select by Aircraft" shopping tool.***

CESSNA

Model	Name	Main Tire		Auxiliary Tire	
		Tire Size	Ply	Tire Size	Ply
120, 140	—	6.00-6	4	5.00-5	4
150, 152	Commuter,Aerobat	6.00-6	4	5.00-5	4
172	Skyhawk	6.00-6	4	5.00-5	4
R172	Hawk XP	6.00-6	4	5.00-5	4
172 Q	Cutlass	6.00-6	6	5.00-5	4
172 RG	Cutlass RG	15x6.00-6	6	5.00-5	4
175	Skylark	6.00-6	4	5.00-5	4
177	Cardinal	6.00-6	6	5.00-5	4
177 RG	Cardinal RG	15x6.00-6	6	5.00-5	4
180	Skywagon	6.00-6	6	8.00"SC	6
182, T182	Skylane	6.00-6	6	5.00-5	6
182RG,T182RG	Skylane	15x6.00-6		5.00-5	4
185	Skywagon	6.00-6	6	8.00 SC	
188	AG Wagon	22x8.00-8		10.00 SC	6
188	AG Wagon(optional)	8.50-10	6	10.00"SC	
205	—	6.00-6	6	5.00-5	6
206	Station Air	6.00-6	6	5.00-5	6
206, 207	Optional	8.00-6	6	6.00-6	4
207	Skywagon	6.00-6	8	6.00-6	8
208 (FLO)	Caravan	8.50-10	8	22x8.00-8	
208 (STA)	Caravan	6.50-10	8	6.50-8	8
210	Centurion	6.00-6	8	5.00-5	6
T210, P210	Turbo, Centurion	6.00-6	8	5.00-5	10
T303	Crusader	6.00-6	8	6.00-6	6
T303	Optional	6.50-8	8	6.00-6	6
310, T310	—	6.50-10	6	6.00-6	4
320, 340	—	6.50-10	6	6.00-6	4
336	—	6.00-6	6	15x6.00-6	
337	Super Skymaster	18x5.5	8	15x6.00-6	
401, 402	—	6.50-10	8	6.00-6	6
404	Titan	22x7.75-10	10TL	6.00-6	6
411	—	6.50-10	8	6.00-6	6
414	Chancellor	6.50-10	8	6.00-6	6
421	Golden Eagle	6.50-10	8	6.00-6	6
425	Conquest I	6.50-10	10	6.00-6	6

BELLANCA

Model	Name	Main Tire		Auxiliary Tire	
		Tire Size	Ply	Tire Size	Ply
260A	Bellanca	6.00-6	6	6.00-6	4
17-30A	Viking	6.00-6	6	15x6.00-6	6/8
17-31A	Super Viking	6.00-6	6	15x6.00-6	6/8
17-31ATC	Turbo Viking	6.00-6	6	15x6.00-6	6/8
7GCAA	Citabria	6.00-6	4	5.00-5	4
7KCAB	Citabria	7.00-6	4	5.00-5	4
8KCAB	Decathlon	8.00-6	4	5.00-5	4
8GCBC	Scout	8.50-6	4/6	5.00-5	4

MOONEY

Model	Name	Main Tire		Auxiliary Tire	
		Tire Size	Ply	Tire Size	Ply
MO-20	Ranger	6.00-6	6	5.00-5	4/6
MO-21C	Super	6.00-6	6	5.00-5	4/6
MO-22	Mustang	6.00-6	6	15x6.00-6	6
MO-20E	Chapparal	6.00-6	6	5.00-5	4
MO-20F	Executive	6.00-6	6	5.00-5	6
MO-20J	201	6.00-6	6	5.00-5	6
MO-20K	Turbo 231	6.00-6	6	5.00-5	6
M-20K	TSE	6.00-6	6	5.00-5	4
M-20M	Bravo	6.00-6	6	5.00-5	6
M-20S	Eagle	6.00-6	6	5.00-5	6
M-20R	Ovation	6.00-6	6	5.00-5	6

COMMANDER AIRCRAFT

Model	Name	Main Tire		Auxiliary Tire	
		Tire Size	Ply	Tire Size	Ply
112	Commander	6.00-6	6	5.00-5	4
112B	—	7.00-6	6	5.00-5	4
112TC, TCA	—	7.00-6	6	5.00-5	6
114	—	7.00-6	6	5.00-5	6
114A, B	—	6.00-6	6	5.00-5	6

BEECH

Model	Name	Main Tire		Auxiliary Tire	
		Tire Size	Ply	Tire Size	Ply
C-17R	Staggerwing	7.50-10	6	10.00SC	—
BE 18	Twin Beech	11.00-12	8 TL	14.50SC	8TL
BE 18H	Twin Beech	8.50-10	8 TL	8.50-10	8TL
BE 19	Musketeer Sport	6.00-6	4	6.00-6	4
BE 23	Musketeer	6.00-6	4	6.00-6	4
BE23C,BE-A24	Sundowner	6.00-6	4	6.00-6	4
BE 24-R	Super Sierra	6.00-6	4	5.00-5	4
BE 33A	Bonanza	7.00-6	6	5.00-5	4
BE 35	Bonanza	7.00-6	6	5.00-5	4
BE 36	Bonanza	7.00-6	6	5.00-5	4
BE 50	Twin Bonanza	8.50-10	6	6.50-10	4
BE B55	Baron	6.50-8	8	5.00-5	6
BE C55	Baron	6.50-8	8	5.00-5	6
BE E55	Baron	6.50-8	8	5.00-5	6
BE 58	Baron	6.50-8	8	5.00-5	4
BE 60	Duke	19.5x6.75-8	10TL	15x6.00-6	4
BE 65	Queen Air	8.50x10	8TL	6.50-10	6TL
BE-80	Queen Air	8.50-10	8TL	6.50-10	6TL
BE-C90B	King Air	8.50-10	8TL	6.50-10	6TL
BE-B200	Super King Air	18x5.5	10TL	22x6.75-10	8TL
BE-200T	Super King Air	22x6.75-10	8TL	22x6.75-10	8TL
BE-99	—	18x5.5	8 TL	6.50-10	6TL
BE-300/350	Super King Air	22x6.75-10	8TL	19.5x6.75-8	10TL
BE-2000	Starship 1	H19.5x6.75-10	8 TL	19x6.75-8	10TL

PIPER

Model	Name	Main Tire		Auxiliary Tire	
		Tire Size	Ply	Tire Size	Ply
J3	Cub	8.00-4	4	8.00"SC	Solid
PA18-135	Super Cub	6.00-6	4	8.00"SC	Solid
PA18-150	Super Cub	6.00-6	4	6x2.00	Solid
PA22	Tri Pacer	6.00-6	6	6.00-6	6
PA23,160-235	Apache	7.00-6	6	6.00-6	4
PA23-250	Aztec	7.00-6	8	6.00-6	4
PA24-180	Commanche	6.00-6	4	6.00-6	4
PA24,250,260,400	Commanche	6.00-6	6	6.00-6	4/6
PA25-150	Pawnee	7.00-6	4	8x3.00-4	4
PA25,236,260	Pawnee	8.00-6	4	8x3.00-4	4
PA28R-201	Arrow	6.00-6	6	5.00-5	4
PA28-140	Cherokee	6.00-6	4	6.00-6	4
PA28-150	Cherokee	6.00-6	4	6.00-6	4
PA28-151,161	Warrior	6.00-6	4	5.00-5	4
PA28-160	Cherokee	6.00-6	4	6.00-6	4
PA28-180	Cherokee	6.00-6	4	6.00-6	4
PA28-181	Archer	6.00-6	4	5.00-5	4
PA28-235	Cherokee	6.00-6	4	6.00-6	4
PA30	Twin Commanche	6.00-6	4	6.00-6	6
PA31	Navajo	6.50-10	8	6.00-	6
PA31	Chieftain	6.50-10	8	6.00-6	6
PA31T	Navajo	6.50-10	10	6.00-6	6
PA31P	Pressurized Navajo	6.50-10	8	6.00-6	8
PA31T-500	Cheyenne 1A	6.50-10	10	6.00-6	6
PA32	6-300	6.00-6	6	6.00-6	6
PA32RT300	Lance	6.00-6	8	6.00-6	4
PA31P-350	Mojave	6.50-10	8	17.5x6.25-6	10
PA34-220	Seneca	6.00-6	8	6.00-6	6
PA36	Brave	8.50-10	6	10x3.5-4	6
PA38	Tomahawk	6.00-6	6	5.00-5	6
PA42	Cheyenne IIIA	6.50-10	12 TL	17.5x6.25-6	10
PA44-180	Seminole	6.00-6	6	6.00-6	6
600/601B (PA60)	Aerostar	6.50-8	8TL	6.00-6	6
601P(PA60-601P)	Aerostar	6.50-8	8 TL	6.00-6	6
602P(PA60-602P)	Aerostar	6.50-8	8 TL	6.00-6	6
700P(PA60-700P)	Aerostar	6.50-8	8 TL	6.00-6	6
PA46-350P	Malibu Mirage	6.00-6	8	5.00-5	6
PA34-270T	Seneca V	6.00-6	8	6.00-6	8
PA44-180	Seminole	6.00-6	8	5.00-5	6
PA32R-301	Saratoga II HP	6.00-6	8	5.00-5	6
PA32R-301T	Saratoga II TC	6.00-6	8	5.00-5	6
PA28-181	Archer III	6.00-6	4/6	6.00-6	4
PA28-161	Warrior III	6.00-6	4	5.00-5	4

MAULE

Model	Name	Main Tire		Auxiliary Tire	
		Tire Size	Ply	Tire Size	Ply
MX-7-160	—	7.00-6	4/6	280/250-4	4
MXT-7-160	—	7.00-6	4/6	280/250-4	4
M-8-235	—	7.00-6	4/6	280/250-4	4
MX7-420	—	7.00-6	4/6	280/250-4	4

GOODYEAR TIRES & TUBES

GOODYEAR AVIATION

Flight Custom III™

Goodyear Flight Custom III™ Tires are the ONLY General Aviation tires with Kevlar®:

- Antioxidant formulation to help reduce cracking.
- Deeper Tread Depth.
- Wide Aquachannels®.
- Kevlar® belt package.
- Premium Wingstay® formulation.
- Dual polymer tread compound.
- Get up to 20% more landings.
- Superior wet traction, enhanced treadwear.
- The Goodyear® Flight Custom III® offers up to 20% more landings to removal than its predecessor. Dupont tm and Kevlar (circleR) are trademarks or registered trademarks or E.I. du Pont de Nemours and Company. Results may vary based on proper maintenance, runway and operating conditions.

Flight Special II™

A popular replacement tire for light aircraft, the Flight Special is an unsurpassed combination of value and performance. Designed for long treadlife, this tire is built to last. Every strand of nylon cord in the casing has been triple tempered with time, tension and temperature to provide the ultimate in tire construction, uniformity and strength.

FEATURES:

- Wide rib tread design and large footprint
- Enhanced tread compound for uniform wear and extended service life
- Triple-tempered nylon casing cord.

BENEFITS:

- Enhanced traction
- Uniform wear and extended

SERVICE LIFE:

- Excellent Treadwear.

TIRE TALC

Eases installation of tubes in tires. Size: 13oz. DISCOUNT: LESS 15% ON 12
P/N 17-250..... **$8.50**

A "B" at the end of a description means BENT valve stem. An "S" at the end of a description means STRAIGHT valve stem.
(1) For use in both 5.00-5 and G380x150-5 (15x6.00-5).
(2) For use in both 6.00-6 and 15x6.00-6 tires.
(3) For use in both 7.00-6 and 8.00-6 tires.
(4) For use in 6.50-8, 19.5x6.75-8 & 22x8.00-8 tires.
(5) Discontinued, call for Special Pricing.

-Natural rubber aircraft tubes comply with the requirements of Goodyear QAI 2525, which the U.S. Military has accepted in lieu of MIL-I-5014.
-Flight Mate (Butyl) tubes comply with the requirements of SAE document AS 50141.

GOODYEAR TIRES – TUBE TYPE

Tire Size	PR	Description	Speed (MPH)	Avg. Weight (lbs.)	Part No.	Price Each
5.00-4	6	RIB	120	4	06-04700	**$282.95**
15X6.00-5 / G380-150-5	6	RIB	120	7	06-01078	**$139.00**
5.00-5	4	Flight Custom III	160	7	06-04900-3	**$145.95**
5.00-5	4	Flight Special II	120	5	06-07110	**$89.00**
5.00-5	6	Flight Custom III	160	7	06-05100-3	**$139.00**
5.00-5	6	Flight Special II	120	5	06-07100	**$84.95**
5.00-5	10	Flight Special II	120	6	06-00208	**$117.95**
15X6.00-6	6	Flight Custom III	160	9	06-05500-3	**$158.00**
15x6.00-6	6	Flight Special II	160	8	06-07340	**$116.95**
6.00-6	4	Flight Custom III	160	11	06-05200-3	**$163.00**
6.00-6	4	Flight Special II	120	9	06-07200	**$109.00**
6.00-6	6	Flight Custom III	160	11	06-05400-3	**$186.00**
6.00-6	6	Flight Special II	120	9	06-07300	**$109.50**
6.00-6	8	Flight Custom III	160	11	06-05410-3	**$189.00**
6.00-6	8	Flight Special II	120	9	06-07310	**$108.00**
6.50-8	6	Flight Custom III	160	14	06-05600-3	**$231.95**
6.50-8	8	Flight Custom III	160	14	06-05800-3	**$249.95**
6.50-8	8	Flight Special II	120	12	06-07320	**$177.95**
6.50-10	8	Flight Custom III	160	16	06-06100-3	**$284.00**
6.50-10	8	Flight Special II	120	14	06-00209	**$218.95**
6.50-10	10	Flight Custom III	160	17	06-06110-3	**$326.00**
7.00-6	6	Flight Custom III	160	13	06-06200-3	**$224.00**
7.00-6	6	Flight Special II	120	10	06-07330	**$155.95**
7.00-6	8	Flight Custom III	160	13	06-06210-3	**$226.00**
8.00-4	4	RIB	120	9	06-06600	**$259.00**
8.00-6	6	Flight Special II	120	13	06-01145	**$176.95**
8.00-6	8	Flight Special II	120	12	06-00212	**$188.95**
8.50-6	6	RIB	120	12	06-06820	**$252.95**
8.50-10	8	Flight Custom III	160	24	06-06900-3	**$359.00**
6.00-6.5 / 420X150	4	RIB	120	6	06-01088	**$278.95**
18X5.5	8	Flight Special II	120	11	06-00203	**$181.95**
22X8.00-8	6	Flight Special II	120	14	06-00205	**$194.00**

GOODYEAR TIRES – TUBELESS

Tire Size	PR	Description	Speed (MPH)	Avg. Weight (lbs.)	Part No.	Price Each
5.00-4	14	RIB	120	7	06-01057	**$280.95**
6.00-6	8	Flight Custom III	160	12	06-01058	**$242.00**
17.5X6.25-6	10	Flight Special II	160	11	06-00202	**$247.00**
6.50-8	8	Flight Custom III	160	15	06-01060	**$259.95**
6.50-10	6	Flight Custom III	160	17	06-05900-3	**$268.00**
6.50-10	12	Flight Special II	160	21	06-00210	**$299.95**
7.00-6	10	Flight Custom II	120	12	06-01061	**$263.95**
7.00-8	10	RIB, All Weather	120	15	06-01062	**$329.00**
7.50-14	12	RIB	160	36	06-01063	**$573.00**
8.50-10	8	Flight Custom III	160	27	06-01064	**$369.00**
8.50-10	10	Flight Custom III	160	28	06-01065	**$475.00**
8.90-12.50	6	RIB	160	29	06-01066	**$437.95**
8.90-12.50	6	RIB, All Weather	160	24	06-01067	**$547.00**
9.00-6	10	RIB	120	22	06-01068	**$587.00**
9.25-12 / 28X9.0-12	12	RIB	160	38	06-01069	**$538.00**
11.00-12	10	RIB	160	45	06-01070	**$657.00**
13X5.0-5	8	Smooth	120	7	06-01071	**$245.95**
14.5X5.5-6	14	RIB	120	10	06-01072	**$581.00**
15X6.0-6	10	Flight Custom II	160	9	06-01073	**$271.95**
22X6.75-10	8	Flight Custom III	160	20	06-01074	**$348.95**
26X10.5-6	6	Smooth	120	23	06-01075	**$569.00**
29X11.00-10	10	RIB	120	36	06-00206	**$665.00**
15.00-12	14	RIB	160	59	06-01076	**$1,094.00**
15.00-16	16	RIB	120	95	06-01077	**$1,773.00**

GOODYEAR TUBES

Tube Size	Description	Avg. Weight (lbs.)	Part No.	Price Each
5.00-4 Flight Mate	Butyl Tube TR 67, B	1	06-04800	**$87.95**
5.00-5 Flight Mate	Butyl Tube TR 67A (1), B	1	06-05000	**$64.50**
6.50-10 Flight Mate	Butyl Tube TR 25, S	2	06-06000	**$54.75**
7.00/8.00-6 Flight Mate	Butyl Tube TR 20, (3), S	2	06-06300	**$54.25**
7.50/8.50-10 Flight Mate	Butyl Tube TR 25, S	3	06-07000	**$76.85**
8.50-6 Flight Mate	Butyl Tube TR 20, S	3	06-01050	**$122.95**
8.90-12.50 Flight Mate	Butyl Tube TR 15, S	6	06-01051	**$93.75**
11.00-12	Reg. Tube TR 13, S	7	06-01052	**$92.50**
G15/6.00-6 Flight Mate *	Butyl Tube TR 67A, B	1	06-05305	**$96.50**
G15/6.00-6 Flight Mate *	Butyl Tube TR 20, (2), S	1	06-05300-1	**$49.75**
17.00-16	Reg. Tube TR 91G, B (5)	14	06-01054	**$352.95**
18X5.5	Reg. Tube TR 67A, B (5)	2	06-01055	**$143.95**
G19.5X6.75-8 Flight Mate	Butyl Tube TR 15, (4), S	2	06-05700	**$55.85**

**** ALSO FOR 600 X 6 TIRES.***

LG

GOODYEAR FLIGHT EAGLE TIRES

GOODYEAR FLIGHT EAGLE TIRES

With over 100 years of brighter ideas about lighter flight, it's only natural that Goodyear lights the way with LJs and VLJs.

Goodyear Flight Eagle LT is a new tire, but it's already been chosen for the Embraer Phenom 100 and Phenom 300 aircraft. The LT stands for Light Turbine... a new generation of aircraft tires for demanding high speed take-offs and landings.

Features:

- Computer-aided design
- Special inner-liners
- Enhanced bead compounds and construction
- Sidewalls with a reservoir of antioxidants
- Benefits:
- Maximum number of landings
- Enhanced air retention
- Great serviceability and resistance to wheel damage
- Special wear-resistant tread compounds Low cost-per-landing
- Excellent resistance to weather effect of sunlight and ozone

BUSINESS BIAS AIRCRAFT TIRES

Tire Size	PR	Description	Speed (MPH)	Avg. Weight (lbs.)	Aircraft	Part No.	Price
18X4.25-10	6	Flight Eagle, DT	210	12	Hawker 125	06-01316	**$339.95**
16X4.4	4	Flight Eagle	210	8	Westwind 1124	06-01317	**$392.95**
16X4.4	6	Flight Eagle	210	10	Westwind 1125	06-01318	**$436.95**
16X4.4	6	Flight Eagle, DT	210	10	Westwind 1125, SJ30-2, AstraSPG100	06-01319	**$496.00**
16X4.4	10	Flight Eagle	210	11	Citation X	06-01320	**$513.00**
16X4.4	12	Flight Eagle	190	9	SJ-30-2	06-01321	**$519.00**
18X4.4	6	RIB,DDT	190	11	Cit 525, CJ,CJ-1,CJ-2	06-01322	**$356.95**
18X4.4	10	Flight Eagle, DT	210	12	Dash8, CL-600	06-01323	**$362.95**
18X4.4	10	RIB, DDT	210	13	Cessna CIT I/II, Lear	06-01324	**$359.95**
18X4.4	10	RIB, DDT	190	13	Cessna CIT II, CJ-3	06-01325	**$359.95**
18X4.4	10	RIB, DDT	210	14	Diamond I/II, Beech Jet, CIT II, III, V, VI, VII	06-01358	**$359.95**
18X4.4	12	Flight Eagle, DT	210	13	Jetstar II, CL600/601	06-01326	**$377.95**
14.5X5.5-6	LR2800	Flight Eagle, DT	210	11	Falcon 20	06-01327	**$657.00**
18X5.5	8	Flight Eagle	190	13	Lear23, KingAir, CE-337	06-01328	**$348.00**
18X5.5	10	Flight Eagle	210	14	Lear23/24/25, EMB120	06-01329	**$389.95**
18X5.5	10	Flight Leader	210	15	Challenger 300	06-01330	**$469.95**
17.5X5.75-8	12	Flight Eagle	210	15	Learjet 30 Series	06-01331	**$356.95**
17.5X5.75-8	17	Flight Eagle	210	17	Learjet 55, 60	06-01332	**$497.95**
18X5.75-8	8	Flight Eagle, DDT	190	13	Falcon 10	06-01333	**$511.00**
22X5.75-12	10	Flight Eagle	190	20	CITII,VI,VII,F-10, Lear 45	06-01334	**$567.00**
22X5.75	12	Flight Eagle	210	24	Sabre80	06-01335	**$663.00**
15X6.00-6	10	Flight Eagle LT DDT	160	11	EMB Phenom	06-01336	**$279.95**
17.5X6.25-6	8	RIB, DDT, TT	190	II	Corvette	06-01337	**$469.95**
21X6.50-10	12	Flight Eagle LT	160	18	EMB Phenom 100	06-01338	**$363.95**
26X6.6	14	Flight Eagle	210	31	CL-600/601, Jetstar I/II, Corvette, Falcon 20, 50, 200	06-01339	**$794.00**
26X6.6	14	Flight Eagle	210	31	CL-600/601, Jetstar I/II, Corvette, Falcon 20, 50, 200	06-01334	**$567.00**
25.75X6.75-14	14	RIB	210	33	CL-600/601	06-01340	**$783.00**
26.6.75-14	16	Flight Eagle	190	38	Sabre 60, 65	06-01341	**$916.00**
23X7.00-12	12	Flight Eagle	210	28	Hawker 125 Astra SP G100	06-01342	**$555.00**
21X7.25-10	12	Flight Eagle, DT	225	20	GII,III,IV,V,G300, 350, 400, 450, 550, Global Express	06-01343	**$442.95**
24X7.7	16	Flight Leader	210	32	Beechjet 400	06-01344	**$656.00**
22X7.75-10	10	RIB	190	20	1, CJ1+	06-01345	**$428.95**
22X7.75-10	12	RIB	190	25	CIT C-2, CJ-2+	06-01346	**$846.00**
22X8.00-10	10	Flight Eagle	190	24	CIT I/II	06-01347	**$430.95**
22X8.00-10	12	Flight Eagle	190	28	CIT II, V	06-01348	**$526.00**
H26.5X8.0-14	14	Flight Leader	210	32	Challenger 300	06-01349	**$742.00**
H22X8.25-10	12	Flight Eagle	190	22	CJ-3	06-01350	**$609.00**
H22X8.25-10	14	Flight Eagle	190	31	Citation 550/560	06-01351	**$628.00**
34X9.25-16	18	Flight Eagle	210	68	GII, III, IV	06-01352	**$1,126.00**
H34X9.25-18	18	Flight Eagle	225	58	GIV-SP, G300,350, 400,450	06-01353	**$1,367.00**
B24X9.5-10.5	18	RS700	210	40	Westwind 1124	06-01354	**$922.00**
H35X11.0-18	20	Flight Eagle	335	82	GV, G500, 550	06-01355	**$1,575.00**
H38X12.0-19	20	Flight Eagle	210	87	Global Express	06-01356	**$1,579.00**
BUSINESS RADIAL AIRCRAFT TIRES							
26X6.6R14	14	Flight Radial	225	26	Falcon 20/50/200	06-01357	**$864.00**

SPECIALTY TIRES & TUBES

Mfg. by Specialty Tires of America (Formerly McCreary)

These fine nylon cord tires with rib tread design are rigidly tested to meet FAA Standard TSO-C62. Air Trac tires are original equipment on many of today's aircraft and offer great performance in an economical tire. Air Hawk are premium grade tires, cost more but provide longer service life. Performance, construction, and safety you can count on from Specialty Tires tires and tubes. Compare prices and get the best savings and faster service from Aircraft Spruce.

AIR TRAC TIRES & TUBES

Tube-Type Tire Size	Ply Rating	Wt./Lbs.	Tire Pressure PSI (a)	Max. Load Rating Lbs.(a)	Tire		Tube	
					Part No.	Price	Part No.	Price
5.00-5	4	4.4	31	800	06-08210	**$59.75**	06-08300	**$68.50**
5.00-5	6	4.3	50	1285	06-08200	**$62.00**	06-08300	**$68.50**
6.00-6	4	6.8	29	1150	06-08400	**$69.50**	06-08700	**$55.50**
6.00-6	6	7.0	42	1750	06-08500	**$73.50**	06-08700	**$55.50**
6.00-6	8	7.3	55	2350	06-08600	**$78.50**	06-08700	**$55.50**
15x6.00-6	4	6.3	45	1250	06-08800	**$104.95**	06-08901	**$54.25**
15x6.00-6	6	6.6	68	1950	06-08900	**$103.50**	06-08901	**$54.25**
6.50-8	6	9.5	51	2300	06-09000	**$156.95**	06-09200	**$59.75**
6.50-8	8	10.0	75	3150	06-09100	**$157.95**	06-09200	**$59.75**
6.50-10	6	10.7	60	2770	---	---	06-09500	**$60.75**
6.50-10	8	12.0	80	3750	06-09400	**$176.95**	06-09500	**$60.75**
6.50-10	10	15.2	100	4750	06-09410	**$218.95**	06-09500	**$60.75**
7.00-6	6	9.0	38	1900	06-09600	**$136.95**	06-09800	**$58.75**
7.00-6	8	9.4	54	2550	06-09700	**$138.95**	06-09800	**$58.75**
7.50-10	6	14.3	46	3000	06-09710	**$255.95**	06-09810	**$83.25**
8.00-6	4	10.0	23	1350	06-09900	**$156.95**	06-09800	**$58.75**
8.00-6	6	10.3	35	2050	06-10000	**$164.95**	06-09800	**$58.75**
8.50-6	6	16.5	30	2275	06-10100	**$229.95**	06-10200	**$107.95**
8.50-10	6	16.5	41	3250	06-10300	**$277.00**	06-10500	**$86.95**
8.50-10	8	19.5	55	4400	06-10400	**$283.50**	06-10500	**$86.95**

The 7.00/8.00-6 tube can be utilized in both 7.00-6 and 8.00-6 tires.

AIR HAWK TIRES

Tube-Type Tire Size	Ply Rating	Wt./Lbs.	Part No.	Price
5.00-5	4	3.8	06-07710	**$63.50**
5.00-5	6	4.3	06-07700	**$62.50**
5.005-5	10	6.2	06-07720	**$75.50**
6.00-6	4	6.8	06-07800	**$72.00**
6.00-6	6	7.0	06-07900	**$79.00**
6.00-6	8	7.8	06-07910	**$83.50**
6.50-8	6	10.5	06-07912	**$158.75**
6.50-8	8	10.5	06-07914	**$161.95**
6.50-10	6	11.5	06-07916	**$179.95**
6.50-10	8	11.8	06-07918	**$185.95**
6.50-10 Special	8	14.5	06-00416	**$213.95**
6.50-10	10	16.2	06-07920	**$223.00**
7.00-6	6	9.5	06-07922	**$142.95**
7.00-6	8	9.4	06-07924	**$146.95**
8.00-6	4	10.4	06-07926	**$157.95**
8.00-6	6	10.7	06-07928	**$159.95**
800x6	8	11.8	06-07929	**$177.50**
8.50-10	6	19.9	06-07932	**$308.95**
8.50-10	8	23.3	06-07934	**$311.95**
17.5/625-6	10	--	06-00309	**$198.00**
18-5.5	8	--	06-00310	**$157.95**
22/800-8	6	--	06-00311	**$231.95**
29/1100-10	10	--	06-00312	**$531.00**

SUPER HAWK TIRES

These are premium light aircraft tires which provide a stiffer, heavier sidewall and more cut resistant thread. Nylon belted for flexibility and even wear with wide center rib for best runway contact.

Call for pricing on other sizes of Hawk Tires.

Part No.	Tire Size	Ply Rating	Price.Ea.
06-17000	5.00-5	6	**$136.95**
06-18000	6.00-6	6	**$173.00**
06-17500	6.50-10	8	**$234.00**
06-17505	6.00-6	8	**$177.00**
06-17510	6.50-10	10	**$254.95**
06-17515	7.00-6	6	**$192.00**
06-17520	7.00-6	8	**$197.95**
06-17525	6.50-8	6	**$160.95**

AERO TRAINER TIRES

Tube Type Tire Size	Ply	Part No.	Price Each
5.00-5	6	06-01700	**$58.75**
6.00-6	6	06-01800	**$69.75**

Aero Trainer Tires use standard Specialty Tires tubes listed above

SPECIALTY TIRE & TUBE PACKAGES

600 X 6, 4 PLY KIT - Consists of three 600 x 6 4 ply tires and tubes. Fits PA-24-180 Comanche, PA-28 Cherokee, Beech Musketeer, Musketeer Sport, and Sundowner.
W/Air Trac tires..... P/N 06-21200 .... **$374.95**
W/Air Hawk tires..... P/N 06-21205 .... **$372.95**

600 X 6, 6 PLY KIT - Consists of three Specialty Tires 600 x 6 6 ply Air Trac tires and tubes. Fits Piper PA-44 Seminole, PA-30 Twin Comanche, and Cessna 337.
W/Air Trac tires..... P/N 06-21300 .... **$386.95**
W/Air Hawk tires..... P/N 06-21305 .... **$398.95**

6.00 X 6, 6 PLY / 5.00 X 5, 6 PLY KIT - Two Specialty Tires 6.00 x 6, 6 ply tires and tubes and one 5.00 x 5, 6 ply tire and tube. Fits Cessna 182, 182N; all 206 Skylane, Skywagon, and Station Air 207; Mooney 201, 220; Waco 250 260, PA-32 6-300 Lance.
W/Air Trac tires..... P/N 06-21100 .... **$387.95**
W/Air Hawk tires..... P/N 06-21105 .... **$404.95**

6.00 X 6, 4 PLY KIT - Two Specialty Tires 6.00 x 6, 4 ply tires and tubes. Fits Bellanca Citabria 7ECA, 7GCA-A, 7GCBC and 7KCA-B.
W/Air Trac tires..... P/N 06-21110 .... **$249.95**
W/Air Hawk tires..... P/N 06-21115 .... **$248.95**

6.00 X 6, 4 PLY / 5.00 X 5, 4 PLY KIT - Two Specialty Tires 6.00 x 6, 4 ply tires and tubes and one 5.00 x 5, 4 ply tire and tube. Fits Beech Super/Musketeer Sierra; Cessna 150, 172, 175, 177; Grumman AA1B, AA5; PA-28, 151, 180R, 200R.
W/Air Trac tires..... P/N 06-21120 .... **$376.95**
W/Air Hawk tires..... P/N 06-21125 .... **$386.95**

6.00 X 6, 6 PLY / 5.00 X 5, 4 PLY KIT - Two Specialty Tires 6.00 x 6, 6 ply tires and tubes and one 5.00 x 5, 4 ply tire and tube. Fits Beech Debonair 33, 33A; Bonanza 33; Mooney 200, Mark 21C; Rockwell Commander.
W/Air Trac tires..... P/N 06-21130 .... **$384.95**
W/Air Hawk tires..... P/N 06-21135 .... **$391.95**

6.00 X 6, 6 PLY / 6.00 X 6, 4 PLY KIT - Two Specialty Tires 6.00 x 6, 6 ply tires and tubes and one 6.00 x 6, 4 ply tire and tube. Fits Bellanca 206, Viking; PA-24-250, 260, PA-32-260, 300.
W/Air Trac tires..... P/N 06-21140 .... **$382.95**
W/Air Hawk tires..... P/N 06-21145 .... **$393.95**

6.50 X 10, 8 PLY / 6.00 X 6, 6 PLY KIT - Two Specialty Tires 6.50 x 10, 8 ply tires & tubes & one 6.00 x 6, 6 ply tire and tube. Fits Cessna 340, 401, 402, 411, 414, 421; PA-31-300, 310, 350, PA-31P-425.
W/Air Trac tires..... P/N 06-21155 .... **$603.00**
W/Air Hawk tires..... P/N 06-21160 .... **$625.00**

7.00 X 6, 6 PLY / 6.00 X 6, 4 PLY KIT - Two Specialty Tires 7.00 x 6, 6 ply tires and tubes and one 6.00 x 6, 4 ply tire and tube. Fits PA-23, 160, 235, 250.
W/Air Trac tires..... P/N 06-21165 .... **$515.00**
W/Air Hawk tires..... P/N 06-21170 .... **$526.00**

8.50 X 6, 6 PLY KIT - Two Air Trac 8.50 x 6, 6 ply tires and tubes. Fits Bellanca Decathlon 8KCA-B and Scout 8GCBC.
W/Air Trac tires..... P/N 06-21175 .... **$674.00**

MICHELIN® TIRES

MICHELIN® AIR® & AVIATOR® GENERAL AVIATION TIRES

Michelin® AIR®: The tire for demanding pilots. The sidewall compound is optimized to provide maximum ozone and ultraviolet light protection, while the MX2000 tread compound is Michelin's toughest. In addition, the new Air Cushion Inner Liner provides a protective cushion over the casing plies which guards against inner tube chafing. And the "Posi-Fit" bead construction reduces movement between the tire and the wheel for improved lateral stability.
Michelin® Aviator®: A Michelin quality tire at a great price. Like the Michelin AIR, the Aviator offers exceptional balance, a new sidewall confi guration and an extra strong nylon casing. It also features the tough MX1000 tread compound for long life, and a specialized sidewall compound to protect against ultraviolet light.

Size	Ply	Speed (MPH)	Brand	Avg W (lbs)	Applications	Part No.	Price
11.00-12	10	160	Michelin Aviator	46	"IAI 201, Bombardier DHC6, Casa 212, 235 (MLG)"	06-01397	**$682.00**
15x6.0-6	6	160	Michelin Aviator	7	"Beech 17, 24, Baron 58, 60, 77 - Bellanca 1730, 1731 - Cessna 172, 177, 182RG (MLG) - Cessna 336, 337 - Rockwell Int'l 695, 700, 840 (NLG)"	06-00308	**$126.95**
15x6.0-6	6	160	Michelin Air	7	"Cessna 172, 177, 182 - Cirrus SR20, SR22 (MLG) - Cessna 336, 337 (NLG)"	06-01398	**$164.95**
16x4.4	8	160	Michelin Aviator	9	Raytheon T6A Texan - Pilatus PC9 - Embraer Xingu - Fairchild SA226 (NLG)	06-01399	**$225.95**
16x4.4	8	160	Michelin Air	9	Cessna Mustang (NLG)	06-01401	**$287.95**
17.5x5.75-8	12	210	Michelin Aviator	14	"Learjet 20, 31, 35, 36 (MLG)"	06-01402	**$449.95**
17.5x6.25-6	10	120	Michelin Air	11	"Piper PA31, 42 (NLG)"	06-01403	**$247.95**
17.5x6.25-6	8	160	Michelin Air	11	Pilatus PC-12 (NLG)	06-01404	**$247.95**
18x4.4	10	210	Michelin Air	12	"Learjet 31, 35, 36, 55, (NLG)"	06-01410	**$410.95**
18x4.4	6	190	Michelin Air	13	"Cessna CJ, CJ1, CJ1+, CJ2 (NLG)"	06-01411	**$426.95**
18x4.4	6	160	Michelin Aviator	8	"Fairchild SA226, 227, Piper PA31 (NLG)"	06-01414	**$370.95**
18x5.5	10	210	Michelin Air	14	"Beech King Air 200, 55 (MLG) - Socata TBM 700, 850 (MLG)"	06-01415	**$378.95**
18x5.5	8	190	Michelin Aviator	12	"Beech King Air 200, 99, 100 - Cessna 337 -Socata TBM700 (MLG) - Bombardier DHC8 - Embraer EMB120, Fairchild SA226 (NLG)"	06-01416	**$363.95**
19.5x6.75-8	10	160	Michelin Aviator	14	"Beech King Air 300, Baron 58, 60 - Fairchild SA226, 227 (MLG)"	06-01417	**$255.95**
22x6.75-10	10	190	Michelin Air	18	"Beech King Air 200 (NLG), Beech 1900D (MLG), IJT36 (MLG)"	06-01422	**$343.95**
22x6.75-10	8	160	Michelin Aviator	16	"Beech 1900C (MLG), King Air 300 & 200 (NLG) - Tucano S312 (MLG) - Cessna Mustang (MLG)"	06-01423	**$327.95**
22x7.75-10	12	190	Michelin Air	20	"Cessna CJ, CJ1, CJ1+, CJ2, CJ2+ (MLG)"	06-01424	**$455.95**
22x7.75-10	10	160	Michelin Air	19	"Cessna 404 Titan, 441 Conquest II (MLG)"	06-01425	**$423.95**
22x8.0-10	12	190	Michelin Aviator	27	"Cessna Citation SII, V, Ultra (MLG)"	06-01426	**$565.00**
22x8.0-10	10	190	Michelin Aviator	24	Cessna Citation I (MLG)	06-01427	**$515.00**
22x8.0-8	8	120	Michelin Air	14	Cessna 208 (NLG)	06-01428	**$195.95**
29x11.0-10	10	160	Michelin Air	35	Cessna 208 (MLG)	06-01432	**$623.00**
380x150-5	6	120	Michelin Air	7	Robin	06-01434	**$164.95**
15x6.00-5	6	120	Michelin Air	7	Robin	06-01435	**$152.95**
5.00-5	8	160	Michelin Air	6	Eclipse 500 (NLG)	06-01436	**$212.95**
5.00-5	6	120	Michelin Aviator	6		06-00016	**$105.95**
5.00-5	6	120	Michelin Air	6	"Cirrus SR20, SR22 (NLG)"	06-08052	**$162.95**
5.00-5	10	120	Michelin Aviator	6		06-01437	**$139.95**
5.00-5	8	160	Michelin Aviator	7	Eurocopter Tigre (TLG)	06-01438	**$157.95**
5.00-5	4	120	Michelin Air	6		06-01439	**$153.95**
6.00-6	6	120	Michelin Air	9		08-08080	**$197.95**
6.00-6	6	120	Michelin Aviator	9		06-00018	**$133.95**
6.00-6	8	120	Michelin Air	9		06-08058	**$188.25**
6.00-6	8	120	Michelin Aviator	9		06-00314	**$153.95**
6.00-6	4	120	Michelin Air	9		06-01441	**$178.95**
6.00-6	6	160	Michelin Aviator	9		06-01442	**$142.95**
6.00-6	4	120	Michelin Aviator	9		06-00017	**$129.00**
6.00-6	8	160	Michelin Air	9		06-01443	**$209.95**
6.50-10	12	190	Michelin Aviator	18	"Piaggio P180, Piper PA-31 (MLG)"	06-01444	**$302.95**
6.50-10	8	120	Michelin Air	16	"Cessna 208, 310, 335, 401, 402, 414, 421, 425, Piper PA-30, 31 (MLG)"	06-08065	**$265.95**
6.50-10	8	120	Michelin Aviator	16	"Cessna 208, 310, 335, 401, 402, 414, 421, 425, Piper PA-30, 31 (MLG)"	06-01445	**$258.95**
6.50-10	10	120	Michelin Aviator	16	Cessna 425 Conquest I (MLG)	06-01446	**$277.95**
6.50-10	6	120	Michelin Air	16	Beech King Air 90 (NLG)	06-01447	**$301.95**
6.50-10	12	160	Michelin Aviator	17	Piper PA-42 (MLG)	06-01448	**$313.95**
6.50-10	6	120	Michelin Aviator	16	Beech King Air C90 (NLG)	06-01449	**$241.95**
6.50-10	10	120	Michelin Air	16	Cessna 425 Conquest I (MLG)	06-01450	**$359.00**
6.50-10	10	160	Michelin Aviator	16	"Bombardier CL215, 415 (NLG), Cessna 208 (MLG)"	06-01451	**$311.95**
6.50-10	10	160	Michelin Air	16		06-01452	**$296.95**
6.50-8	8	160	Michelin Air	13	"Beech Baron 55,56 (MLG)"	06-08070	**$263.95**
6.50-8	8	160	Michelin Aviator	13	Pilatus PC7 (MLG)	06-00315	**$193.95**
7.00-6	6	120	Michelin Air	11	"Beech 33, 35, 36 (MLG)"	06-08059	**$229.00**
7.00-6	8	120	Michelin Aviator	11	Piper PA23 (MLG)	06-01453	**$201.95**
7.00-6	6	120	Michelin Aviator	11	"Beech 33, 35, 36 (MLG)"	06-00316	**$173.95**
7.00-6	8	120	Michelin Air	11	Piper PA23 (MLG)	08-08075	**$229.95**
8.00-6	6	120	Michelin Aviator	13	"Cessna 140, 185, 206, 207, 305, 01E, Socata Rallye"	06-01456	**$189.00**
8.50-10	10	160	Michelin Aviator	25	"Gulfstream 690, 680T - Rockwell Int'l 685, 690, 695, 700, 840 (MLG) -Pilatus PC12 (MLG)"	06-01457	**$483.95**
8.50-10	8	160	Michelin Air	25	"Beech 18, 50, 65, 70, 80, 88, King Air 90 - Cessna 188, 208, 308, 406 - Gulfstream 500, 560, 680, 681, 685, 720 - Mitsubishi MU2 - Piaggio 149, 166, 136 - Rockwell Int'l 500, 560, 680, 520 (MLG)"	06-01458	**$369.95**
8.50-10	10	160	Michelin Air	25	"Gulfstream 690, 680T - Rockwell Int'l 685, 690, 695, 700, 840 (MLG)"	06-01459	**$507.00**
8.50-10	8	160	Michelin Aviator	25	"Beech 18, 50, 65, 70, 80, 88, King Air 90 - Cessna 188, 208, 308, 406 - Gulfstream 500, 560, 680, 681, 685, 720 - MItsubishi MU2 - Piaggio 149, 166, 136 - Rockwell Int'l 500, 560, 680, 520 (MLG)"	06-01460	**$379.95**
8.50-6	6	120	Michelin Air	14	"High flotation, fixed gear"	06-01461	**$264.00**
H22x8.25-10	12	190	Michelin Air	20	Cessna CJ3 (MLG) - Hawker Premier 1 (MLG)	06-01463	**$683.00**
H22x8.25-10	14	190	Michelin Air	22	"Cessna Citation Encore, Encore+, 560 (MLG)"	06-01464	**$742.00**

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MICHELIN® TIRES & TUBES

MICHELIN® AIR X® GENERAL AVIATION RADIAL TIRES

Michelin® AIR X® radials typically weigh 20–30% less than comparable bias tires, and they operate at cooler temperatures. Helps provide measurable fuel savings, more landings per tread, longer wear characteristics and a more stable contact patch than bias tires, as well as shorter turnaround times and reduced carcass fatigue. Extra Strong Carcass Michelin's carcass design helps restrict tire growth and the stretching of rubber. Durable cut-resistant tread includes deep skid depth and specially-designed circumferential grooves. Sidewall is optimized for both ozone and ultraviolet light protection which helps reduce ozone cracking in key areas of the tire. The Michelin® AIR X® casing is more flexible than casings used in bias tires.

Size	Ply	Speed (MPH)	Brand	Avg W (lbs)	Applications	Part No.	Price
14.5x5.5R6		225	Michelin Air X	8	"Falcon 20, 50, 200, 2000 (NLG)"	06-01382	**$906.00**
14.5x5.5R6		225	Michelin Air X	8	Falcon 2000EX (NLG)	06-01383	**$1,133.00**
16x4.4R8	10	210	Michelin Air X	10	"Cessna Sovereign, Citation X (NLG) - Gulfstream G150 (NLG)"	06-01384	**$876.00**
16x4.4R8	12	190	Michelin Air X	10	Pilatus PC21 (NLG)	06-01385	**$1,094.00**
16x6.0R6	12	225	Michelin Air X	11	Falcon F7X (NLG)	06-01387	**$1,187.00**
17.5x5.75R8		225	Michelin Air X	11	Falcon 900 (NLG)	06-01388	**$1,347.00**
20x4.4R12	14	190	Michelin Air X	14	Pilatus PC21 (MLG)	06-01390	**$1,244.00**
23.5x8.0R12	14	190	Michelin Air X	24	"Cessna Citation Excel, XLS (MLG)"	06-01391	**$1,620.00**
26x6.6R14	14	225	Michelin Air X	22	"Falcon 20, 50, 200, 2000, 2000EX, Gulfstream G200 (MLG)"	06-01392	**$1,208.00**
26x6.6R14	12	210	Michelin Air X	24	"Cessna Sovereign, Citation X (MLG)"	06-01393	**$1,169.00**
26x6.6R14	14	225	Michelin Air X	22	Hawker 4000 (MLG)	06-01394	**$1,154.00**
29x7.7R15		225	Michelin Air X	31	Falcon 900 (MLG)	06-01395	**$2,018.00**
H32x10.5R16.5	16	225	Michelin Air X	44	Falcon F7X (MLG)	06-01396	**$2,090.00**

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MICHELIN REGIONAL RADIAL AIRCRAFT TIRES AIR X

Size	Ply Rating	Speed (MPH)	Avg W (lbs)	Application	Part No.	Price
24X7.7R10	16	225	24	Embraer 190 (NLG)	06-01522	**$848.00**
32X8.8R16	12	90	41	ATR 42 (MLG)	06-01523	**$1,727.00**
H34X10.0R16	14	190	55	ATR 72 (MLG)	06-01524	**$1,985.00**
H38X13.0R18	20	225	84	Embraer 170, 175, 175AR (MLG)	06-01525	**$3,031.00**
H41X16.0R20	22	225	129	Embraer 190 (MLG)	06-01526	**$3,716.00**

MICHELIN REGIONAL BIAS AIRCRAFT TIRES

Size	Ply Rating	Speed (MPH)	Special	Avg W (lbs)	Application	Part No.	Price
17.5x6.25-6	8	190	-	11	Saab 340	06-01530	**$233.95**
18x4.4	12	210	CH	13	Bombardier CRJ100/200	06-01406	**$513.00**
18x4.4	10	210	CH	13	Fairchild Metro	06-01409	**$462.95**
18x5.5	10	210	-	14	Embraer EMB120ER	06-01415	**$378.95**
18x5.5	8	210	-	12	Saab 2000	06-01538	**$394.95**
19.5x6.75-8	8	210	CH	15	Embraer ERJ135, 140, 145ER/LR	06-01539	**$406.95**
19.5x6.75-8	10	190	-	15	Fairchild Metro	06-01540	**$266.95**
20.5x6.75-10	12	225	CH	19	bombardier CRJ700/900	06-01541	**$942.00**
24x7.25-12	12	190	-	26	Embraer EMB120	06-01542	**$797.00**
24x7.7	14	190	-	25	Saab 340	06-01543	**$568.00**
24x7.7	14	190	-	26	Saab 340 - Dornier Do328	06-01544	**$624.00**
28x9.0-12	12	160	-	35	Jetstream 31	06-01547	**$769.00**
30x9.5-14	16	210	0	49	Embraer ERJ135, 145ER	06-01548	**$1,059.00**
32x8.8	14	210	-	46	Saab 2000	06-01549	**$1,017.00**
450x190-5	10	190	-	14	ATR 42, 72	06-01550	**$534.00**
670x210-12	10	160	-	30	Embraer EMB110, 121, Xingu	06-01551	**$637.00**
H29x9.0-15	16	210	-	45	Bombardier CRJ100/200	06-01552	**$968.00**
H30x9.5-16	16	225	0	55	Embraer ERJ140, 145LR	06-01553	**$1,183.00**
H31x9.75-13	12	190	-	39	Bombardier DHC8 - 100/200	06-01554	**$921.00**
H36x12.0-18	18	225	0	89	Bombardier CRJ700/900	06-01555	**$1,937.00**

MICHELIN® TIRES – RETREAD TIRES

CONDOR AIRCRAFT TIRES

Strong sidewalls for exceptional durability, even after frequent hard landings. Tough treads compounded for high abrasion resistance, low heat generation and extra long life. Smooth liners to help prevent tube chafing. Full FAA qualification based on thorough static and dynamic testing. Each production tire is subject to final inspection and a check for weight and balance. Limited warranty guarantees that each Condor tire is free from any manufacturing defects. Condor tires are available in a variety of sizes for light to medium general aviation aircraft.

Size	Ply	Speed (MPH)	Brand	Avg W (lbs)	Part No.	Price
15x6.0-6	6	120	Condor	7	06-08040	**$121.95**
29x11.0-10	10	160	Condor	31	06-01379	**$488.95**
5.00-5	6	120	Condor	6	06-08010	**$78.50**
5.00-5	4	120	Condor	6	06-08005	**$68.00**
5.00-5	10	120	Condor	6	06-00195	**$120.95**
6.00-6	6	120	Condor	9	06-08020	**$103.95**
6.00-6	8	120	Condor	9	06-08025	**$104.95**
6.00-6	4	120	Condor	9	06-08015	**$99.00**
6.50-10	8	120	Condor	16	06-00197	**$260.95**
6.50-10	10	120	Condor	16	06-00198	**$254.95**
6.50-8	8	120	Condor	13	06-00199	**$164.95**
6.50-8	6	120	Condor	13	06-01380	**$196.95**
7.00-6	8	120	Condor	11	06-08035	**$185.95**
7.00-6	6	120	Condor	11	06-08030	**$168.95**
8.00-6	8	120	Condor	13	06-08050	**$184.95**
8.00-6	6	120	Condor	13	06-08045	**$207.95**
8.50-10	8	120	Condor	24	06-00201	**$378.95**
8.50-10	10	120	Condor	24	06-01381	**$442.95**

MICHELIN® AIRSTOP® AIRCRAFT INNER TUBES

MICHELIN® AIRSTOP® Aircraft Tubes provide long-lasting, dependable performance you can rely on in just about any operating condition. Because they're made with advanced materials, MICHELIN® AIRSTOP Aircraft Tubes offer extended air retention and can sustain temperatures as low as minus 50°C. So when you fly with MICHELIN® AIRSTOP Aircraft Tubes, you fly with confidence.

Size	Brand	Avg W (lbs)	Part No.	Price
15x6.0-6	TR-20 / Straight	1	06-01373	**$65.75**
15x6.0-6 (H60 TW)	TR-67 / Bent 90 degrees	1	06-00853	**$99.00**
17.5x6.25-6	TR-20 / Straight	1	06-01386	**$59.85**
22x8.0-8	TR-15 / Straight	3	06-01374	**$99.00**
5.00-4	TR-67 / Bent 90 degrees	1	06-01375	**$119.95**
5.00-5	TR-67A / Bent 90 degrees	1	06-00019	**$69.00**
6.00-6	TR-20 / Straight	1	06-00021	**$54.85**
6.50-10	TR-25 / Straight	2	06-00849	**$65.75**
6.50-8	TR-15 / Straight	2	06-00851	**$62.50**
7.00-6	TR-20 / Straight	2	06-00848	**$59.85**
7.00-8	TR-15 / Straight	2	06-00851	**$62.50**
7.50-10	TR-25 / Straight	3	06-01376	**$105.95**
7.50-14	TR-176A / Bent 60 degrees	4	06-01377	**$195.95**
8.00-6	TR-20 / Straight	2	06-00847	**$64.50**
8.50-10	TR-25 / Straight	3	06-00850	**$97.75**
8.90-12.50	TR-15 / Straight	5	06-01378	**$111.95**

RETREAD TIRES

500-5 10 ply high performance retreaded tires *Subject To Limted Core Availability*
Their premium retreads are produced by: Aero Wheel & Brake Service Corp. Aero WBS holds FAA certification to retread high speed aircraft tires up to 225 MPH.
Their sizes range from small piston engine aircraft through Regional Jet aircraft. 95% of the worlds airlines depend on retreads not only for cost control, but for the extended life they provide over most new tires.

Size	Ply	Part No.	Price
500-5 Standard	6	06-01468	**$48.75**
500-5 Monster retread - 9/32nds tread depth	6	06-01469	**$69.95**
500-5 Elite - 2 wide hydro-grooves. With 9/32nds tread depth.	6	06-01470	**$68.90**
600-6 Standard	6	06-01472	**$59.95**
600-6 - Monster retread. Almost 12/32nds tread Depth	6	06-01473	**$69.95**
600-6 - Elite Premium 2 Groove Top of the line. 2 Wide Hydro-Grooves	6	06-01474	**$79.95**
15/600-6 Standard	6	06-01471	**$69.00**
700-6 Standard	6	06-01475	**$97.65**

Subject To Limted Core Availability

AERO CLASSIC TIRES & TUBES

AERO CLASSIC TIRES

Aero Classic is a proprietary line of over 50 aircraft tires and tubes made to meet or exceed the original specifications.

Size	Ply	Description	Part No.	Price
10/350-4	4	Aero Classic Premium	06-01238	$39.25
10/350-4	6	Aero Classic Premium - HD	06-01239	$52.75
11/400-5	8	Aero Classic Wide Channel	06-01240	$52.50
11/12TL	8	Aero Classic Tubless	06-01467	$582.00
12.5-4.5	10	Aero Classic Channel	06-01241	$236.95
15/600-5	6	Aero Classic Rib	06-01242	$140.95
200-50	6	Aero Classic Rib	06-01243	$32.75
280/250-4	4	Aero Classic Premium	06-01244	$39.50
280/250-4	6	Aero Classic Premium - HD	06-01245	$52.75
380/150-5	6	Aero Classic Rib	06-01249	$117.95
400-6	6	Aero Classic Rib	06-00944	$55.50
400-4	8	Aero Classic Rib	06-00844	$54.00
420-150	4	Aero Classic Rib	06-01250	$188.50
500-5	4	Aero Classic All Weather	06-01251	$89.85
500-5	6	Aero Classic All Weather	06-01252	$102.95
500-5	10	Aero Classic All Weather	06-01253	$148.95
6 x 2		Aero Classic Solid Tailwheel	06-01044	$59.85
600-6	4	Aero Classic All Weather	06-01254	$124.95
600-6	6	Aero Classic All Weather	06-01255	$132.95
600-6	8	Aero Classic All Weather	06-01256	$148.95
600-6.5	4	Aero Classic Rib	06-01257	$197.95
700-7.5	6	Aero Classic All Weather	06-01258	$379.00
700-8	6	Aero Classic All Weather	06-01259	$314.95
700-8	6	Aero Classic Vintage	06-01126	$267.95
8.9 x 12.5	6	Aero Classic Diamond (Stearman)	06-01518	$597.00

AERO CLASSIC RIB / SAWTOOTH TIRES

Size	Ply	Description	Part No.	Price
11/400-5	2	Rib Tire	06-00715	$14.85
11/400-5	8	Rib Tire	06-07500	$34.50
300-4	4	Rib Tire	06-00361	$31.50
13/500-6	2	Rib Tire	06-00364	$33.25
400-6	2	Rib Tire	06-00363	$15.85
410/350-5	2	Sawtooth Tire	06-00713	$21.75
800-6	4	Sawtooth Tire	06-00366	$77.65

LEAKGUARD TUBES

Size	Valve	Model	Part No.	Price
10/350-4	TR-87	Tube, Leakguard Butyl	06-00761	$11.95
11/400-5	TR-87	Tube, Leakguard Butyl	06-00357	$12.65
1100-12	TR-13	Tube, Low Temp. Natural	06-01218	$137.95
12.5-4.5	TR-67	Tube, Leakguard Butyl	06-00762	$63.95
15/600-6	TR-20	Tube, Leakguard Butyl	06-00770	$47.95
15/600-6	TR-67	Tube, Low Temp. Natural	06-01220	$115.95
18-5.5	TR-15	Tube, Leakguard Butyl	06-01221	$139.95
19.5/675-8	TR-15	Tube, Leakguard Butyl	06-01222	$59.95
22/800-8	TR-15	Tube, Leakguard Butyl	06-01223	$77.75
280/250-4	TR-87	Tube, Leakguard Butyl	06-00760	$12.25
29/1100-10	TR-150	Tube, Leakguard Butyl	06-01224	$149.95
420-150	TR-67	Tube, Low Temp. Natural	06-01226	$102.95
500-4	TR-67	Tube, Low Temp. Natural	06-01227	$86.75
500-5	TR-67	Tube, Leakguard Butyl	06-00755	$56.00
600-6	TR-20	Tube, Leakguard Butyl	06-00754	$47.25
600-6.5	TR-20	Tube, Low Temp Natural	06-01229	$102.95
600-6.5	TR-67	Tube, Low Temp Natural	06-01230	$104.95
650/700-8	TR-15	Tube, Leakguard Butyl	06-00766	$52.50
650-10	TR-25	Tube, Leakguard Butyl	06-01232	$93.50
700/800-6	TR-20	Tube,Leakguard Butyl	06-00764	$51.50
750-10	TR-25	Tube, Leakguard Butyl	06-00768	$71.95
800-4	TR-12	Tube, Low Temp. Natural	06-00821	$159.50
850-10	TR-25	Tube, Leakguard Butyl	06-00769	$64.50
890-12.50	TR-15	Tube, Low Temp. Natural	06-01237	$138.75

AERO CLASSIC TUBES

Size	Valve	Part No.	Price
11/400-5	TR-13	06-00357	$12.65
11 x 4.50 x 6	TR-87	06-00716	$12.50
10/350-4	TR-87	06-00354	$10.95
400-6	TR-87	06-00945	$14.95
200-50	TR-87	06-01368	$18.75
410/350-5	TR-87	06-00714	$8.25
480/400-8	TR-87	06-00720	$8.95
700/800-6	TR-87	06-00358	$24.00
800-4	TR-12	06-00821	$159.50
*850-6	TR-20	06-00765	$86.50
*850-10	TR-20	06-01236	$130.95

Can be used with Tundra Tires.

HOMEBUILT TIRES & TUBES

These industrial tires & tube assemblies from Goodyear and Shin are used on a unique variety of homebuilt & ultralight aircraft airplanes. Sold as set of tire & tube only.

Dimensions	Ply	Part No.	Price
4.10 x 3.50 x 4	4 PLY	06-10830	$25.50
3.40 x 3.00 x 5	4 PLY	06-10840	$37.50
4.10 x 3.50 x 5	2 PLY	06-10850	$29.75
11 x 4.00 x 5	2 PLY	06-10860	$27.90
13.5 x 6.00 x 6	2 PLY	06-10870	$37.00
4.80 x 4.00 x 8	4 PLY	06-10880	$24.00
3.40 x 3.00 x 5*	4 PLY	06-00711	$29.90
400x6	--	06-01503	$7.85
4.10 x 3.50 x 5	2 PLY	06-00713	$21.75
4.10 x 3.50 x 5	--	06-00714	$8.25
11 x 4.00 x 5	2 PLY	06-00715	$14.85
11 x 4.50 x 6	--	06-00716	$12.50
4.80 x 4.00 x 8	--	06-00720	$8.95
20 x 7.00 x 8	2 PLY	06-01596	$119.85

2008 Shin tire superceded by Carlisle.

11.400 X 5 TIRES & TUBES

This tire fills the size gap between the 5.00-5 aircraft tire and the 3.40-5 industrial tire. Looks like a scaled-down 5.00-5. Fits VariEze, KR's and most experimentals using 5" wheels. These tires require tubes. (tube-type). Formerly known as Lamb tires, these are superceded by Cheng-Shin.

11.400-5 (6 Ply) Tire..... P/N 06-07400 .....**$34.65**
11.400-5 (8 Ply) Tire..... P/N 06-07500 .....**$34.50**
11.400-5 Tube..... P/N 06-07600 .....**$9.75**

TIRES & TUBES FOR ULTRALIGHTS

TIRES

Part No.	Nom. Size	W	Dia.	Price
06-00361	300 x 4	3.2"	10.0"	$31.50
06-00362	400 x 5	3.9"	10.5"	$13.50
06-00363	400 x 6	4.1"	13.0"	$15.85
06-00364	500 x 6	4.8"	12.6"	$33.25
06-00366	800 x 6	6.0"	16.3	$77.65

TUBES

Part No.	Size	Price
06-00354	300x4	$10.95
06-00355	3.50x5	$8.85
06-00356	600x6	$11.95
06-00357	400x5	$12.65
06-00358	800x6	$24.00

AZUSA RIBBED / FLAT PROFILE TIRES

Azusa Ribbed/Flat Profile Tires. Price per tire. Note: These are not automotive tires, extra inflation precautions are required.

Size / Tire	Ply / Width	OD* / Innertube	Part No.	Price
11-400 X 5 / 7164	2 / 3.2"	10.5" / 7131	06-01571	$20.75
11-400 X 5 / 7046	4 / 3.9"	10.5" / 7131	06-00362	$13.50
11-400 X 5 / 7046-8	8 / 3.2"	10.8" / 7131	06-01573	$29.95
13-500 X 6 / 7168	2 / 4.8"	12.6" / 7133	06-01568	$28.75
410/350 x 6	4 / 4.0"	12.5 / 7039	06-00074	$17.50
13-500 X 6 / 7018	4 / 4.8"	12.6" / 7133	06-01572	$22.75
13-500 X 6C / 7087	4 / 4.8"	12.6" / 7133	06-01574	$32.50
13-650 X 6 / 7031	4 / 6.0"	12.5" / 7141	06-01575	$38.75
15-600 X 6 / 7169	2 / 5.9"	14.8" / 7125	06-01576	$31.75
15-600 X 6C / 7088	4 / 6.0"	15.0" / 7125	06-01577	$54.85
800 X 6 / 7007	4 / 8.0"	16.0" / 7138	06-01578	$92.50
16-650 x 8 /7024-2	2 / 6.4"	16.4" / 7118	06-01609	$43.75
16-650 X 8 / 7024-2	2 / 6.4"	16.4" / 7118	06-01579	$43.75
18-850 X 8 / 7002	4 / 8.0"	16.5" / 7120	06-01580	$58.50
18-950 X 8 / 7027	4 / 8.0"	17.4" / 7120	06-01581	$65.50
13-500 x 6 / 7018	2 / 4.8"	12.6" / 7133	15-04692	$24.75
15-600 x 6 / 7050-2	2 / 5.9"	14.8" / 7125	15-06910	$31.75

Tubes	Part No.	Price
AZUSA TUBE #7133 410/350X6	06-00075	$7.95
AZUSA TUBE #7131 340/300 X 5	06-00822	$7.90
AZUSA TUBE#7120 18-950 X 8	15-04731	$27.50
AZUSA TUBE #7116 11-600 X 5	15-06300	$12.50
AZUSA TUBE #7141 410/350X6	06-01590	$11.75
AZUSA TUBE #7125 15-600 X 6	15-04869	$11.95
AZUSA TUBE #7138 800 X 6	06-01592	$20.50
AZUSA TUBE #7118 16-650/750 X8	06-01593	$15.50

LG

NOSE WHEELS

MATCO NOSE WHEELS

Matco Part No.	Our Part No.	Dia. (in.)	Bearing Axle dia.	Bearing Type Sealed	Width	Static Capacity (lbs.)	Load Limit (lbs.)	Weight (lbs.)	Price
MATERIAL: SPUN ALUMINUM									
MH6N	06-00537	6	0.625	Ball	5.325	660	2000	2.6	**$78.50**
MH6N-S	06-00539	6	0.625	Ball	5.325	660	2000	2.6	**$78.00**
MH6N.75	06-00538	6	0.75	Ball	5.325	660	2000	2.6	**$78.65**
MH6N-S.75	06-00540	6	0.75	Ball	5.325	60	2000	2.6	**$79.00**
MATERIAL: CNC CAST ALUMINUM									
NW40B	06-00541	4	6.25	Ball	3	660	2000	2.25	**$82.25**
NW40B.75	06-00542	4	0.75	Ball	3	660	2000	2.25	**$82.25**
NW40R	06-00543	4	0.75	Taper/Roll	3	1185	3560	2.25	**$117.95**
NW50	06-00544	5	0.75	Taper/Roll	3.88	1185	3560	3.24	**$134.95**
NW51	06-00545	5	0.75	Taper/Roll	3.88	1185	3560	3.24	**$134.95**
NW501.25	06-00546	5	1.25	Taper/Roll	3.88	1420	4260	3.24	**$134.95**
NW511.25	06-00547	5	1.25	Taper/Roll	3.88	1420	4260	3.6	**$134.95**
NW60	06-00548	6	1.25	Taper/Roll	3.5	1420	4260	3.24	**$137.95**
NW600	06-00549	6	1.25	Taper/Roll	4.5	1420	4260	3.24	**$129.85**
MATERIAL: DIE CAST ALUMINUM									
NW40EE	06-00550	4	0.625	Ball	3.25	660	2000	1.8	**$45.30**
NW50CC	06-00551	5	0.625	Ball	4.38	660	2000	2.7	**$78.85**
NW50CC.75	06-00552	5	0.75	Ball	4.38	660	2000	2.7	**$77.95**
NW51CC	06-00553	5	0.625	Ball	4.38	660	2000	2.7	**$77.50**
NW51CC.75	06-00554	5	0.75	Ball	4.38	660	2000	2.7	**$74.00**
NW50CC.75R	06-00555	5	0.75	Taper/Roll	4.38	1185	3560	2.8	**$124.95**
NW51CC75R	06-00556	5	0.75	Taper/Roll	4.38	1185	3560	2.8	**$124.95**
NW60CC	06-00557	6	0.625	Ball	4.38	660	2000	3.22	**$78.65**
NW60CC.75	06-00558	6	0.75	Ball	4.38	660	2000	3.22	**$80.00**
NW60CC.75R	06-00559	6	0.75	Taper/Roll	4.38	1185	3560	3.52	**$124.00**
NW600CC	06-00560	6	0.625	Ball	5.38	660	2000	3.47	**$80.00**
NW600CC.75	06-00561	6	0.75	Ball	5.38	660	2000	3.47	**$80.00**
NW600CC.75R	06-00562	6	0.75	Taper/Roll	5.38	1185	3560	3.52	**$135.95**
NW80CC-Z	06-00563	8	0.625	Ball	3	660	2000	5.02	**$93.75**

LG

BERINGER 5 INCH NOSE WHEEL KIT

Lightweight Nose Wheels are aluminum red anodized, machined from billet on CNC, with O-rings for Tubeless mounting. Static capacity: 1440 Lbs (with appropriate tire). Aluminum axle for 5/16 bolt diameter. Kit includes: 1 nose wheel with tire (mounted on rim, pressure tested) and 1 aluminum axle

A/C Model	Description	PN	Price
-	Nose wheel kit as described above, with Michelin Aviator Tire 5.00-5" 10ply Tubeless Weight: 8.9 Lbs	06-01097	**$720.00**
Lancair 320, 360 (retractable LG)	Nose wheel kit as described above, with Lamb Tire 11x4.00-5", 8ply Weight: 5.9 Lbs	06-01098	**$558.00**
Lancair legacy (retractable LG)	Nose wheel kit as described above, with Lamb Tire 11x4.00-5", 8ply Weight: 5.9 Lbs	06-01099	**$633.00**
Glasair III (retractable LG)	Nose wheel kit as described above, with Lamb Tire 11x4.00-5", 8ply Weight: 5.9 Lbs	06-01101	**$558.00**
Zenair CH601	Nose wheel kit as described above, with Michelin Aviator Tire 5.00-5" 10ply Tubeless Weight: 9 Lbs	06-01102	**$720.00**

GROVE 4" NOSE WHEEL

Direct replacement for Brock and Gerdes 4" nose wheel. Use with 2.80-4 8" diameter tire on VE, LE, Cozy, etc. or with 4.10-4 10" diameter tire on Cozy Mark IV • Genuine Timkin • Felt Seals • CNC precision Machined to exact tolerances • Weight 1.87 lbs. • Corrosion resistant finish • Static Load Rating 900 pounds. Model 49-3A P/N 06-00842.. **$176.50**

TIRE: Uses 2.80/2.50; 4 ply tire..... PN 06-08000..... **$46.50**

GROVE 400X4 NOSE WHEEL

The perfect nose wheel for light sport aircraft such as the KR and Soneri. • Static Load Rating 900lbs • Genuine Timkin Bearings • Uses 3/4" Axle • Felt Seals • Weight 1.98 lbs Model 49-1A .....P/N 06-00843 ..... **$184.95**

TIRE: Uses 400 x 8 ply tire .....PN 06-00844 ..... **$54.00**

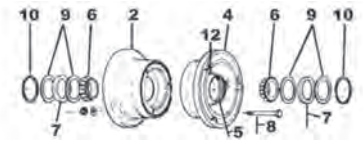
Uses 4.10 x 3.50 x 4 ply tire ...PN 06-08102 ..... **$22.50**

GO-CART WHEELS

Cast aluminum wheels with 4" hub, for homebuilts and sailplanes. Used on Tri-Q conversion as nosewheel. 3-1/4" wide. Complete with 5/8" dia. ball bearings. Wt. 1-1/2 Lbs.

P/N 06-16540 ..... **$47.90 Ea.**

CLEVELAND NOSE WHEELS 500X5



#	OLD PART NO.	PART NUMBER	DESCRIPTION	Qty Per Assy. 40-77	40-77A	40-85	40-87	40-87A	PRICE EACH
2	162-28	162-02800	Outer Wheel	1	1	-	1	-	**$340.95**
	162-36	162-03600	Outer Wheel	-	-	-	-	1	**$365.95**
	08231	214-00300	Cup Bearing	1	1	1	1	1	**$15.75**
12	217-1	217-00100	Grommet	1	1	1	1	1	**$5.96**
4	161-31	161-03100	Inner Wheel Half Assy.	1	1	-	1	-	**$355.95**
	161-38	161-03800	Inner Wheel Half Assy.	-	-	-	-	1	**$416.95**
5	08231	214-00300	Inner Cup Bearing	1	1	1	1	1	**$15.75**
8	103-1050	AN4-22A	Bolt	3	3	3	3	3	**$0.39**
*	095-10400	AN960-416	Washer	6	6	6	6	6	**$0.03**
*	094-10300	AN365-428A	Nut	3	3	3	3	3	**$0.10**
9	153-1	153-00100	Ring-Grease Seal	-	-	-	4	4	**$9.75**
	153-8	153-00800	Ring-Grease Seal	4	4	-	-	-	**$11.35**
	21-104	153-00200	Ring-Grease Seal	-	-	4	-	-	**$9.80**
10	155-2	155-00200	Ring-Snap	2	2	2	2	2	**$15.25**
7	154-1	154-00100	Felt-Grease Seal	-	-	-	2	2	**$11.00**
	154-6	154-00600	Felt-Grease Seal	2	2	-	-	-	**$8.50**
6	08125	214-00400	Cone-Bearing	2	2	2	2	2	**$43.60**

500 X 5 NOSE WHEEL with 1-1/4" dia. bearings. Model No. 40-77A, used on some models of Cessna 150, is typical of nose wheels used on general aviation aircraft. FAA-approved.

P/N 40-77A..... **$595.00**

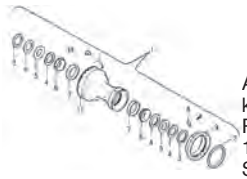
600 X 6 NOSE WHEEL with 1-1/2" dia. bearings. Model No. 40-76A (not illustrated) is used on some models of Cessna 172 and 182. FAA approved. P/N 40-76A **$564.00**

HEGAR NOSE WHEELS

6" SPUN ALUMINUM NOSE WHEEL - The 6" Spun Aluminum nose wheel with 5/8 bearings. Comes centered when using the MX o-ring standard wheel hub but can also be purchased with the MX offset hub (no o-ring with offset hub. Requires the use of a tube. .Comes complete with nuts, bolts, washers, valve stem, o-rings if required and the MX hub. May also be used as main wheels. P/N 06-01274 ..... **$89.75**

6" BILLET ALUMINUM NOSE WHEEL - 1-1/4" OR 3/4" Precision ball bearing. matches with the 6.375" Hegar Billet aluminum brake kit. P/N 06-01275 ..... **$89.75**

CLEVELAND WHEEL & BRAKE CONVERSION KITS



REPLACE 800 x 4 WHEELS ON PIPER AIRCRAFT

A bolt-on 600 x 6 wheel and brake conversion kit for Piper models: J3, J5C, PA11, PA12, PA14, PA15, PA16, PA17, PA18 & PA20 PA18-150 & PA18A-150 with Form 337. The 199-71-STC kit comes complete with STC paperwork so form 337 is not required. Accommodates tire sizes 600 x 6, 700 x 6, 800 x 6. No landing gear modifications required. Minor modification of hydraulic line required. Uses double puck brakes. Fits 1-1/4" diameter axle size only. Fits Piper J4/J5 but STC does not cover these aircraft.

Magnesium Model for general use

P/N 199-71 ..... **$2,068.00**
P/N 199-71-STC (w/full STC paperwork) **$1,999.00**

Aluminum Model for "AG" Service

P/N 199-71A **$2,019.00**

Part No.	Description	Qty
O40-09804	Wheel Assy.	2
030-06602	Brake Assy.	2
067-02900	Spacer	2
0 67-03200	Spacer	2
040-07602	Nose Wheel Assy.	1
067-03100	Spacer	2
157-01000	Dust Shield	2
102-00600	Screws	6
095-15100	Washers	6
207-00300	Hydraulic Line	2
50-29	Installation Drawing NLG	1
50-30	Installation Drawing MLG	1
	Supplemental type cert.	1

#199-52 NAVION CONVERSION KIT

Complete kit for co version to Cleveland 700 x 8 main gear and 600 x 6 nose wheel on Navion Models – A, B, C, D, E, F, G & H.
P/N 199-52 ..... **$4,215.00**

#199-52A NAVION CONVERSION KIT

Kit for conversion of maingear only.
P/N 199-52A..... **$3,779.00**

REQUEST QUOTATION ON UNLISTED MODELS

PIPER AZTEC – BRAKE

P/N 199-63 ..... **$3,189.00**

Description	Part No.	Qty.
Brake Assembly	30-96	2
Brake Disc	164-57	2
Nameplate	166-74	2
Installation Instructions	E.S.B. 7000-4	1

CESSNA – WHEEL & BRAKE

P/N 199-46 ..... **$1,498.00**
P/N 199-46C(Chrome) **$1,709.00**

(6.00x6) FOR CESSNA MODELS: 120, 140, (SN 8004 thru 13399), 140A (SN 13400 and up), 170, 170A, 170B, 172, 172A thru 172E, 175, 175A, 175B, 175C, P172D, 180, 180A thru 180E, 182, 182A thru 182G.

Description	Part Number	Qty.
Wheel Assy.	040-09701	2
Brake Assy.	030-06301	2
Bushing	145-02200	8
Bushing	145-01000	4
W & B Assembly Dwg.	20-134	1
Installation Instructions	50-24	1
Installation Instructions	50-25	1
Installation Instructions	50-26	1
Supplemental Type Certificate		1

GLOBE SWIFT

P/N 199-48 ..... **$2,792.00**
P/N 199-48C (Chrome) **$2,924.00**

Wheel and Brake Conversion Kit (6 00 X 6) for Globe Swift Models GC-IA, GC-IB.

NOTE: It will be necessary to change master cylinders and obtain the necessary axle hardware for conversion, Ref. dwg. 50-28. These parts can be obtained through Beech aircraft.

Description	Part Number	Qty.
Brake Assembly	030-07902	2
Wheel Assembly	040-11303	2
Spacer	067-02400	2
W & B Assembly Dwg.	20-130	1
Installation Drawing	50-23	1
Supplemental Type Certificate		1

BEECH – WHEEL & BRAKE

P/N 199-49 ..... **$2,273.00**
P/N 199-49C (Chrome) **$2,881.00**

(6.00x6) FOR BEECH AIRCRAFT MODELS: 35, A35 thru G35, 35R 35-33, 35-A33. 35-B33, 35-C33, 35-C33A, E33, E33A E33C, F33, F33A, F33C, G33, H35, J35, K35, M35, N35, P35, S35, V35, V35A, V35B, 36, A36.

Description	Part Number	Qty.
Brake Assembly	030-05400	2
Wheel Assembly	040-08300	2
Spacer	067-02600	2
W & B Assembly Dwg.	20-69	1
Installation Drawing	50-28	1
Supplemental Type Certificate		1

BEECH – WHEEL & BRAKE

P/N 199-50 ..... **$3,097.00**

(7,00x8) FOR BEECH AIRCRAFT MODELS: 35, A35 thru G35, 35R, H35, J35, K35, M35, N35, P35, S35, D55, D55A, E55, E55A 95, B95, B95A, D95A, E95, 95-55, 95-A55, 95-B55A, 95-B55B, 95-C55, 95-C55A.

Description	Part Number	Qty.
Brake Assembly	030-06600	2
Wheel Assembly	040-09800	2
Spacer	067-02500	2
Spacer	067-02700	2
W & B Assembly Dwg.	20-135	1
Installation Drawing	50-27	1
Supplemental Type Certificate		1

***NOTE:** It will be necessary to change master cylinders and obtain the necessary axle hardware for conversion, Ref. dwg. 50-27. These parts can be obtained through Beech aircraft.*

CESSNA – WHEEL & BRAKE

P/N 199-60 ..... **$1,649.00**
P/N 199-60C (Chrome) **$1,889.00**

(6.00x6) FOR CESSNA MODELS: 180, 180A, B, C, D, E, F, H, J. 185, 185A, B, A185E, A185F, 206E, 206F, TU206E, TU206F, 210, 210A, B, C. 210K, L, T210K, T210L.

Description	Part Number	Qty.
Wheel Assembly	040-07502	2
Brake Assembly	030-05200	2
Installation Drawing (210 series)	50-34	1
Installation Drawing (180,185,206 Series)	50-35	1
Supplemental Type Certificate (210 series)		1
Supplemental Type Certificate (180,185,206 Series)	20-64	1

NOTE: Kit to be used only on aircraft with 6.00 x 6 tires.

CESSNA – WHEEL & BRAKE

P/N 199-62 ..... **$1,677.00**
P/N 199-62C (Chrome) **$1,896.00**

(8.00x6) FOR CESSNA MODELS: 180, 180A, B, C, D, E, F, H & J. 185, 185A, B, A185E, A185E, A185F, 206E, F, TU206E, TU206F.

Description	Part Number	Qty.
Wheel Assembly	040-07504	2
Brake Assembly	030-05213	2
Installation Drawing	50-36	1
Supplemental Type Certificate		1

NOTE: Kit to be used only on aircraft with 6.00 x 6 tires.

CESSNA – WHEEL & BRAKE

P/N 199-84 ..... **$1,745.00**
P/N 199-84C (Chrome) **$2,050.00**

CESSNA APPROVED RETROFIT FOR THE FOLLOWING AIRCRAFT: 150, F150, A150, FA150, 152, A152, F152, FA152, 177, 177RG, F177RG, 182, A182, F182

Description	Part Number	Qty.
Wheel Assembly	030-07500(1)	2
Brake Assembly	040-11300(2)	2
Installation Drawing	50-36	1

NOTE CESSNA CROSS REFERENCE NUMBERS
(1) C-163030-113(LH) C-163030-114(RH) (2) C-163001-0104

CESSNA – WHEEL & BRAKE

P/N 199-84A **$1,744.00**
P/N 199-84AC (chrome) **$2,025.00**

CESSNA APPROVED RETROFIT FOR THE FOLLOWING AIRCRAFT: 172, F172, R172, FR172

Description	Part Number	Qty.
Wheel Assembly	030-07501(1)	2
Brake Assembly	040-11300(2)	2
Installation Drawing	50-37	1

NOTE CESSNA CROSS REFERENCE NUMBERS
(1) C-163030-011(LH) C-163030-112(RH) (2) C-163001-0104

WE CARRY ALL CLEVELAND CONVERSION KITS

Cessna P210N	P/N 199-60A	**$1,772.00**
Cessna 310, 320	P/N 199-64	**$4,164.00**
Cessna 421, 340, 401, 402, 414	P/N 199-76	**$3,947.00**
Ercoupe	P/N 199-69	**$1,708.00**
Beech Duke	P/N 199-73	**$3,387.00**
Beech Musketeer	P/N 199-124	**$2,138.00**
Stinson	P/N 199-87	**$1,828.00**
Raytheon	P/N 199-123	**$7,243.00**
Raytheon	P/N 199-124C	**$2,782.00**
Raytheon	P/N 199-90	**$7,242.00**

PLEASE REQUEST QUOTE ON ANY UNLISTED KITS.

LG

MASTER BRAKE CYLINDERS

BERINGER BRAKE PADS

Friction material: sintered metal. High coefficient of friction, very long life time, no fading till very high temperatures: 1100° F
Includes: 2 brake pads (for 1 brake caliper), bolts and procedure

ZEA01 OEM Brake pads for Beringer 2 pistons caliper P/N 06-01103 ...**$69.90**
ZEA02 OEM Brake pads for Beringer 2 pistons caliper P/N 06-01484....**$79.85**
Parking Brake ValveMineral-Based Fluid..... P/N 06-01108..**$298.00**

BERINGER BRAKE LINES FOR RV'S

Brake hose is stainless steel braided with PTFE inner tube and stainless steel fittings.It provides consistent brake pedal pressure without spongy feeling. The flexibility allows landing gear leg movements and avoids leakage that appears with hardline tube. These brake lines connect brake calipers to fuselage connectors. Each brake line is pressure tested and delivered with certificate. Includes: set of 2 brake lines, certificate

Set of 2 Brake lines for RV6, 7, 9 ..... P/N 06-01122 .....**$198.00**
Set of 2 Brake lines for RV6A, 7A, 9A..... P/N 06-01123 .....**$213.95**

BERINGER REPAIR / OVERHAUL KITS

Repair kits are available for the following BERINGER® parts: Hand master cylinder, Rudder pedal master cylinder, 2 and 3 piston brake caliper.

Includes all wear parts: pistons, seals, screws, grease, repair procedure.

Description	Part No.	Price
Repair kit for rudder pedal master cylinder HBA01: all piston seals, specific grease, ball bearings, copper seals, instructions	06-01114	**$137.95**
Repair kit for 2 piston caliper : piston seals, pistons, specific grease, copper washer	06-01115	**$92.50**
Repair kit for 3 piston caliper : piston seals, pistons, specific grease, copper washer	06-01116	**$108.00**

BERINGER HAND MASTER BRAKE CYLINDER FOR DOT4

Brings exceptional brake feeling, using the AERO-TEC® three ball bearing patented system, aluminum red anodized, fully CNC machined. Available ONLY for DOT4 brake fluid. Weight: 10oz. Works in all postion. To mount on 0.86" (22mm) axle or directly on flat surface with 2 screws. DO NOT USE MINERAL 5606 FLUID

Hand master brake cylinder for DOT4 built-in reservoir (red anodizing color) P/N 06-01485.....**$387.95**
Hand master brake cylinder for DOT4 built-in reservoir (red anodizing color) with parking brake pin P/N 06-01486.....**$416.95**

CLEVELAND MASTER BRAKE CYLINDERS

MODEL 10-35 - This model has a built-in reservoir and is used in production aircraft. Cast aluminum construction. 5/8" bore, 1.2" stroke, 0.36 cu. in. displacement. Outlet 1/8" NPT. Pin center length 8". Designed to mount on rudder pedal. Formerly Gerdes Model A-049. .....P/N 10-35 .....**$526.00**
Model 10-35 O-Ring Kit.....P/N 199-513 .....**$17.85**

MODEL 10-20 - Spring-loaded piston type assembly without reservoir. Simple design assures long troublefree service. Pin center length 7-1/2". Bore 9/16". Stroke 1.25". Weight: 10 oz. Used on Pitts Special, Acro-Sport and other homebuilts..... P/N 10-20 .....**$263.95**
Model 10-20 & 10-19 O-ring kit..... P/N 06-10600 ....**$12.75**

MODEL 10-19 - Used on Pitts and other homebuilts. Similar to Model 10-20 except with ports aligned differently.....P/N 10-19 .....**$549.00**
Model 10-20 & 10-19 O-ring kit.....P/N 06-10600 .....**$12.75**

MODEL 10-5 -
Same type construction as Model 10-20. Model 10-5 has parking brake feature, Model 10-5B does not. 1/8" NPT ports, on opposite sides of cylinder, have AN823-4D fittings for use with 1/4" brake line. Pin center length 8". Wt. 9.5 oz. Bore 0.562". Stroke 1.25". Used on Piper PA25 & homebuilts.

Master Cylinder Number 10-5 .....P/N 10-5 .....**$2,370.00**
Master Cylinder Number 10-5B.....P/N 10-5B.....**$937.00**
Model 10-5B O-Ring kit (199-503) .....P/N 06-00708 .....**$31.75**
Model 10-5 O-Ring kit (199-502).....P/N 06-10700 .....**$32.50**

MATCO MCMC-4 MASTER CYLINDER

MC-4 EXTERNAL RESERVOIR

MATCO mfg's MCMC-4 master cylinder uses a REMOTE reservoir. The MCMC-4 can be used in individual or dual brake applications. Buna-n orings are used in this assembly. Mil-H-5606 aircraft hydraulic fluid or compatible fluids are reccomended. DOT5 may be used but not DOT5.1 which contains glycol. DOT3 and DOT4 may not be used and will cause immediate damage to the seals. The MCMC-4 master cylinder measures 8.05 +-0.25 inches from end to end and 7.5 +-0.25 inches from mounting hole to mounting hole. A 0.625 inch diameter piston is used. Available stroke is approximately 1.388 inches and displacement is 0.43 cubic inches. The ports on all MATCO mfg master cylinders are 1/8 inch NPT (except the MC-4E). The MC-4 has an adjustable clevis.

UNIVERSAL - Vertical or horizontal mounting with exterior reservoir.
MC-4..... P/N 06-11150.....**$86.50**
MC-4A (0.50" shorter than the MC-4) ..... P/N 06-11100.....**$89.95**
Replacement O-Rings for Master cylinders ... P/N 06-11200...**$0.55/ ea**

MATCO MCMC-5 MASTER CYLINDER

MC-5 VERTICAL

MATCO mfg's MCMC-5 master cylinder uses a INTERNAL reservoir. The MCMC-5 can be used in individual or dual brake applications. Buna-n orings are used in this assembly. Mil-H-5606 aircraft hydraulic fluid or compatible fluids are reccomended. DOT5 may be used but not DOT5.1 which contains glycol. DOT3 and DOT4 may not be used and will cause immediate damage to the seals. The MCMC-5 master cylinder measures 8.25 inches from end to end and 7.7 inches from mounting hole to mounting hole. A 0.625 inch diameter piston is used. Available stroke is approximately 1.388 inches and displacement is 0.43 cubic inches. The ports on all MATCO mfg master cylinders are 1/8 inch NPT (except the MC-4E). The MC-5 has an adjustable clevis. The MC-5 can not be used in series with a second MC-5 or MC-5A

VERTICAL STYLE - Cylinder for vertical mounting, with steel housing and reservoir. MC-5..... P/N 06-11000.....**$91.50**
MC-5A (0.50" shorter than the MC-5) ..... P/N 06-00375.....**$99.85**

MC-7 MASTER CYLINDER - The black anodized MC-6 is designed to attach to a 1" diameter control stick and function similar to a motorcycle brake. Designed for ultralight aircraft, it is completely self-adjustable as the lining wears and draws additional fluid from the cylinder. The 6:1 mechanical leverage allows the average pilot to generate 1,500 psi in the system.

MC-7 .....P/N 06-00014.....**$159.85**

HEGAR MASTER CYLINDERS

5" SINGLE LEVER MASTER CYLINDER - 5" single lever, foot operated. Designed for single braking. Stock unit has 1/2" bore. 5/8" and 3/4" bore are available as a special order.
P/N 06-01277 ..... **$89.75**

5" DUAL LEVER MASTER CYLINDER - 5" dual lever, foot operated. Designed for differential braking. Comes in your choice of 1/2", 5/8" and 3/4" bore sizes.
1/2".....P/N 06-01278 ..... **$136.95**
5/8".....P/N 06-01611 ..... **$189.50**
3/4".....P/N 06-01612 ..... **$189.50**

7" SINGLE LEVER MASTER CYLINDER - 7" single lever, hand operated. Designed for single braking. Comes in your choice of 1/2", and 5/8" bore sizes.
P/N 06-01279 ..... **$89.75**

7" DUAL LEVER MASTER CYLINDER - 7" dual lever, hand operated. Designed for differential braking. Comes in your choice of 1/2", 5/8" and 3/4" bore sizes.
P/N 06-01280 ..... **$136.95**

BRAKE RESERVOIRS - BRAKE FLUID

CLEVELAND BRAKE LINE BLEEDER 87-5

A unique tool which simplifies the brake bleeding job. This brake line bleeder can be used to service all brake assemblies utilizing the bleeder screw assembly pictured above.

P/N 06-01202 ..... **$113.95**

ACS BRAKE BLEEDER ASSEMBLY

Universal brake bleeder fitting. Fits all standard brake systems. 1/8" male NPT Seat is brass. Bleeder screw is stainless steel. P/N 11225 ..... **$6.95 Ea.**

HYDRAULIC BRAKE BLEEDER TANK

Our Brake Bleeder Tank features a hand operated pressurizing pump for field use. It fills and bleeds in one operation. The high-impact plastic reservoir great for petroleum and water-based hydraulic fluid. NOT for use with Skydrol. You get everything needed including a universal adapter which will fit onto all brake receptacles. **Note**: On Cleveland brake assemblies using a 79-3 bleeder screw the additional adapter 06-11414 is required.

225DX Economy Bleeder Tank ..... P/N 06-11413-1 ..... **$84.50**
Option Adapter for Brake Bleeder ..... P/N 06-11414 ..... **$19.75**

HOMEBUILDERS BRAKE BLEEDER

This easy to use system allows you to quickly and easily bleed and flush your brakes without the aid of another person. By using a reverse flow system, combined with slow fluid flow, one person can fill an empty brake system in less tahn 15 minutes without having air in the brakes. Works on most high wing aircraft and does not require compressed air. This system is so easy that once you atrt the process you can walk away; come back in 15 minutes later and the job is done. Not FAA approved.

P/N 06-00120 ..... **$85.35**

ACS MODEL A-315 RESERVOIR

Machined from 6061-T6 billet and anodized for improved corrosion resistance. Available with choice of filler port location for firewall or floor mounting. Capacity 5 oz. Size: 2-1/4" dia. x 2-1/2" long. Wt: 7oz. Specify style.

P/N A-315 (firewall mounting) **$39.85**
P/N A-315-1 (floor mounting) **$43.50**

ACS MODEL A-600 RESERVOIR

Machined from 6061T6 billet. Cap is threaded into body and sealed with a Viton o-ring for easy filling and cleaning. Cap and body have 1/8" female threads. 1-3/8" dia. x 2-3/8" high. Capacity 1.8 oz. Can be threaded directly into master cylinder port. Two units required on most installations (one per master cylinder). Supplied with vented plug in cap and 1/8" NPT male fitting in body.

P/N 06-00391 ..... **$22.85 ea.**

ACS MODEL A-650 RESERVOIR

Machined from 6061T6 billet and anodized for improved corrosion resistance. Attaching bracket is included for firewall or other installation. Extra capacity of 70 ml. Supplied with vented plug in cap and outlet has a female 1/8 NPT thread."

P/N 06-01480 ..... **$39.65**

ADVANCED AERO BRAKE RESERVOIR

This quality brake reservoir is manufactured from 6061 T6 aluminium and tig welded, finished in an anodized red. P/N 06-01494 ..... **$175.00**

MATCO BRAKE FLUID RESERVOIR

This brake fluid reservoir from Matco features a clear plastic bowl for easy inspection of reservoir fluid. Furnished with pre-drilled aluminum flange for easy mounting.Small and compact, this reservoir mounts almost anywhere. Temperature limit is 250°F Reservoir only

P/N 06-11225 ..... **$27.80**

Reservoir Kit (includes reservoir, tubing, & fittings for installation) ..... P/N 06-11230 ..... **$44.50**

MATCO REMOTE BRAKE FLUID RESERVOIRS

MODEL 067-050 - Attaches directly to your master cylinder. Normal installation requires two (one for each master cylinder.) Supplied with 1/8" NPT fitting 1.98" high; 1.38" diameter Holds 1.10 fluid ounces. Weighs 1.5 ounces.

P/N 06-00818 ..... **$26.75**

MODEL 067-054 - Designed to attach to firewall or other remote location. Adequate capacity to serve both master cylinders. Outlet has 1/8" female NPT thread at bottom of reservoir. 2.75" high; 1.75" diameter. Holds 2.42 fluid ounces. Weighs 3.6 ounces.

P/N 06-00819 ..... **$39.95**

BERINGER FLUID RESERVOIR

Lightweight translucent plastic reservoir with aluminum anodized cover and brake fluid level indication. No leakage of fluid with flexible gasket. Use only DOT4 brake fluid in this reservoir. Working capacity: 0.3 cu in, total capacity: 0.67 cu in. Includes: 1 reservoir, EPDM hose 1.5 ft, stainless steel clamp. ..... P/N 06-01105 ... **$69.75**

MIL-PRF-5606H BRAKE FLUID

Petroleum-base hydraulic fluid for use with brake and hydraulic systems with synthetic rubber seals. Meets specification MIL-PRF-5606H. Colored red.

P/N 09-27110 ..... Pint **$5.75**
P/N 09-27000 ..... Qt. **$9.85**
P/N 09-27100 ..... Gal. **$33.75**

PHILLIPS 66 X/C MIL-PRF-5606H HYDRAULIC FLUID

A mineral-based hydraulic oil with low temperature characteristics capable of operating over a wide range of temperatures. Oxidation inhibited, and contains a special antiwear additive. Dyed red for identification and leak detection purposes. Can be used in both aviation and non-aviation systems with synthetic rubber components, but should not be used in systems that incorporate natural rubber.Quart .... P/N 09-00774 ..... **$7.95**
Case ..... P/N 09-00773 ..... **$173.00**

DOT4 BRAKE FLUID

Maxima Brake Fluid is now available in SYN DOT 4 Hi-Temp, DOT 4 and DOT 5 Silicone. The racing grade has a minimum boiling point of 600°F which assures fade-free operation under the most severe use. All three Maxima Brake Fluids are advanced glycol blends with the latest additives to maintain your hydraulic brake and clutch system in top condition and prevent vapor lock. SYN DOT 4 Hi-Temp and DOT 4 are compatible with other DOT 3 and DOT 4 brake fluids.

Features

- Exceeds current SAE J1703, J1S K2233 and U.S. and FMVSS116 DOT 3 & 4 specifications.
- Recommended for all U.S., U.K., Japanese and European motor cycles.
- Anti-vapor lock formula
- Mixes with other DOT 3 and DOT 4 brake fluids

P/N 06-01497 ..... **$7.95**

LG

SHIMS - BRAKE VALVES

TAPER SHIMS

For wheel alignment. Ideal setting is zero toe-in and zero camber at normal operating weight. Shims may be rotated to any one of four positions to obtain desired result.

0441157-1

Axle Size	Shim Part No.	Approx. correction value		Price Each
		Camber	Toe-In	
500x5	0441157-1	1/2°	0.06"	**$110.95**
	0441157-3	1°	0.12"	**$105.95**
	0441157-2	2°	0.006"	**$658.00**
600x6	0441139-5	1/2°	0.12"	**$79.65**
	0441139-6	1°	0.20-0.25"	**$52.25**
	0541111-2	2-1/2°	0.10-0.25"	**$156.95**

DIAL-A-DEGREE SHIM

For builders using a 600x6/500x5/GAC/Azusa bolt-on axle, The solution to most minor alignment issues (0 to 3° adjustment). This simple solution uses a pair of specially tapered discs that are mated and rotated in any combination needed to orient each axle to its correct alignment. Each 3" dia. disc is machined and laser-cut from aircraft grade 6061 T6 aluminum. A pair of discs is used on each side. FAA-PMA approved (BDS-101) Sold as a set of 4 discs.

P/N 06-00415 .....**$118.50**

CLEVELAND PARKING BRAKE VALVE

Aluminum valve as used in production aircraft with Model A-110 master cylinders for dual brake installations. Complete w/AN flare fittings. P/N 60-5 **$439.00**

MATCO PARKING BRAKE VALVE

This versatile parking brake valve is ideal for installation in a wide variety of homebuilt aircraft applications. The arm actuates the valve in approximately a 45 degree arc allowing for ease of installation. In-line installation can be used in conjunction with either a single or dual parking brake system setup. Its uniquely simple design allows for easy maintenance and replacement of parts. The parking brake valve body is made from 6061 anodized aluminum for lasting durability. P/N 06-17200 .....**$113.95**

MATCO SINGLE SIDED PARKING BRAKE VALVE

Light weight, and easy in-line installation The overall dimensions of this product are a slim 2.3" X 0.75" X 0.75".

P/N 06-01267 .....**$96.95**

SCOTT PARKING 4500-A1 BRAKE VALVES

A fine quality valve for applications in parking brake systems, helicopter rotor braking systems, pneumatic pressure controls and other hydraulic uses. Molded rubber valve seat designed for use with MIL-H-5606BB petroleum base hydraulic fluid. Maximum working pressure. Mounting holes extend through entire body. 1/8" NPT ports. Valve assembly for Piper and Stinson. Visit our website for a complete application guide.

Model No.	Port A / Port B	Part No.	Price
4500-A1	1/8 ANPT	06-00393	**$273.95**
4500S-A1	7/16-20 NF	06-00949	**$253.95**

MANUAL PARKING BRAKE VALVE

Miniature inline hydraulic manually operated ball valve. Fits in the bottom of the Master cylinder. Just pull the brake handle and hold the pressure and turn the lever on the ball valve. Let go of the handle and the ball valve holds the pressure until you release the lever back. 1/8"NPT Female x 1/8/"NPT Male Chrome Plated Brass Valve 1.7" overall length.

P/N 06-00971 .....**$18.75**

GROVE INLINE PARKING BRAKE VALVE

06-01261

Innovative design allows control lever to be attached in any of four positions as well as on either side of valve body. Internal poppet valves insure easy, secure operation. Body is drilled for mounting with two 3/16" bolts. Valve body dimensions: 1.5"x2.0"x0.75". Control arm has 45° of travel. Max operating pressure: 1,200 psi. For use with MIL-H-5606 Hydraulic Fliud. Weight: 0.32 lbs. Side or top inlet ports: 1/8"NPT * Outlet ports: 1/8" Female NPT or -4 Flare.

Part No.	Inlet	Outlet	Price
06-01260	Top	1/8" NPT	**$169.95**
06-01261	Side	1/8" NPT	**$169.95**
06-01262	Top	-4 Flare	**$168.75**
06-01263	Side	-4 Flare	**$169.95**

BERINGER PARKING BRAKE VALVE

Lightweight parking brake valve, aluminum anodized, fully CNC machined, for dual brake installations. Available for mineral-based fluid type MIL-H-5606 or DOT4 brake fluid.
Complete with fittings, Wt. 6oz
Max. operating pressure: 1450 PSI
Features: • Lightweight parking brake valve, Aluminum anodized. • Available for mineral-based fluid like MIL-5606 or synthetic DOT4 fluid. • Machined from billet on CNC. • Max. input pressure: 1450 PSI

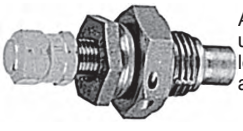
Description	Part No.	Price
Beringer parking brake valve for DOT4 brake fluid, dash-3 fittings (3/8X24), red anodizing color.	06-01107	**$298.00**
Beringer parking brake valve for mineral-based fluid MIL-H-5606, dash-4 fittings (7/16x20), blue anodizing color.	06-01108	**$298.00**

GOOSENECK HOSE COUPLING

Used on high pressure strut pump hose. High pressure connection with a swivel nut and female 1/8" NPT port on other end.

P/N 06-11700 .....**$15.95**
Replacement Seal ...P/N SK2043-5 ..... **$0.32**

STRUT VALVE



AN6287-1 strut valve for operating pressures up to 3000 PSI. Consists of a 3-piece stainless steel body, high-pressure valve core and MS20813-1B cap.

P/N 06-00395 ..... **$24.85**

HIGH PRESSURE VALVE CORES

#2300HV (Long Type, Length 1-3/16") Operating pressure range 70-2000 PSI from -10° to 165°F. Conforms to AN809-1. P/N 06-00397.....**$3.95**

#9914A (Short Type, Length 7/8") Same operating range as #2300HV, but doesn't conform to AN809-1.

P/N 06-00396.....**$1.80**

2525 VALVE CAP (MS20813-1B)

A heat-resisting cap designed to withstand high pressure conditions. Has special rubber sealing washer. P/N 2525..... **$2.95 Ea.**

LG

AXLES

HOMEBUILDERS MAIN GEAR AXLES

ACS AXLES - BOLT-ON TYPE

500X5 AXLE - Machined from 2024T3 aluminum. Gold anodized per specification MIL-A-8625C, Type II for improved corrosion resistance. Length 5-3/4". Mounting bolt pattern is four equally spaced 1/4" dia. holes on 1-15/16" dia. bolt circle. Thread size: 1-1/4 x 16.
P/N 11701 ..... **$42.50 Ea.**

500X5 AXLE - For 199-152 heavy duty discs (as used in Cozy). Same as #11701 axles above except 6" long and without undercut between bearings. P/N 11701-2..... **$44.75**

SPACERS FOR 500 X 5 AXLE - 2 required per axle when used with Cleveland wheels. Not required on 600x6 size.
P/N 11716 ..... **$4.95 Ea.**

EXTRA WIDE SPACER FOR 500X5 AXLE - 7/16" wide as used on 199-152 heavy duty discs. 1 required per axle with P/N 11716 (Use Axle # 11701-2) P/N 11716-2..... **$6.25 Ea.**

600X6 AXLE - Similar to 500 x 5 size but 1-1/2" dia. x 6-1/4" long. Two 5/16" dia. and two 3/8" dia. mounting holes on 2-1/4" dia. bolt circle. Thread size: 1-1/2 x 16. P/N 11702 ..... **$65.25 Ea.**

ACS AXLES - WELD-ON TYPE

500 X 5 AXLE - For use on welded type gear. Fabricated from 1-1/4" O.D. x .120 wall 4130N steel tubing. Precision ground for proper bearing fit. One end threaded 1-1/4 x 12 for round axle nut. 12" long.
P/N 11703-1 ..... **$31.75 Ea.**

600 X 6 AXLE - For use on welded type gear. Fabricated from 1-1/2" O.D. x .120 wall 4130N steel tubing. Precision ground for proper bearing fit. One end threaded 1-1/2 x 16 for round axle nut. 12" long.
P/N 11704-1 ..... **$34.75 Ea.**

AXLE NUTS

Castle type nuts manufactured to MIL Specification MS21025 using 4140 steel. Mild steel nuts are not acceptable for use on certificated aircraft. 1-1/4" dia. nuts for 500 x 5 axles, 1-1/2" dia. nuts for 600 x 6 axles.

Nut Type		Thread	Axle Type	Part No.	Price
Matco	Castle	5/8-18	Matco	06-11815	**$2.35**
---	Castle	1-1/4-16	Cessna	06-11800	**$11.75**
---	Castle	1-1/2-16	Cessna	06-11900	**$12.90**
ACS	Round	1-1/4-12	Piper	11725	**$8.90**
ACS	Round	1-1/2-16	Piper	11726	**$8.95**
Grove	Round	1-1/4-12	Piper	06-00937	**$15.50**

HOMEBUILDERS AXLE NUTS

These 1-1/4" - 16 Castle axle nuts are similar in size & design to pn 06-11800 and are for homebuilts only. Used on Cozy and many other designs
PN 01-00814..... **$9.50**

PIPER COMANCHE LANDING GEAR BUNGEE CORD INSTALLATION / REMOVAL TOOL

This tools allows for safe, simple, & quick bungee replacements on all Piper Comanches. Requires no dangerous levers, jacks, or vices, & does not subject the bungee cord to damage. Detailed instructions included.
Open End Ratchet for use w/Bungee Tool .....P/N 12-00913..... **$31.50**

AIRCRAFT TIRE VALVE CORE

#6035 (38-830)(Short Type) Operating pressure range 0-400 PSI from -65° to 350°F. P/N 6035..... **$0.55**

GROVE AXLES

For 500X5 Wheels w/Wheel Pant Stub - • Diameter: 1.25" • Material: Solid 2024-T3 aluminum w/anodized finish • Hole Pattern: 1-15/16" bolt circle; 1/4"dia. holes. Requires (2) P/N5710 spacers per axle.
P/N 06-00601.....**$59.50**

For 600X6 Wheels w/Wheel Pant Stub - • Diameter: 1.5" • Material: Solid 2024-T3 aluminum w/anodized finish • Hole Pattern: 2.25" bolt circle; (2) 2-15/16" dia. bolt holes & (2) 2-3/8" dia. bolt holes. P/N 06-00602..... **$82.75**

GROVE AXLE SPACER 5712

I.D.: 1.25", O.D.: 1.438", Thickness: 0.360", Used with 5015 axle, 1 (one) required per axle.
P/N 06-01504..... **$5.95**

GROVE AXLE SPACER 5710

I.D: 1-1/4" • O.D. 1-3/4", Thickness: 1/4", Used with 500x5 axle, 2 required per axle. P/N 06-00852..... **$5.90**

STEEL CESSNA AXLES

For use on flat spring landing gear, Cessna models 170, 172, 180, 182, 185 and 206. It is highly recommended to replace aluminum axles with these much stronger steel axles when operating on rough conditions, with larger wheels or on skis. FAA-PMA approved.
P/N 05-00481..... **$369.85**

COZY LANDING GEAR STUD

A custom fabricated 4140 steel heat treated shaft with rolled 1/2-20 threads on both ends Used a gear attachment on Cozy Mark IV. 10.75"L. 2 required. P/N 01-00254 ..... **$38.50**

LG

SHOCK CORDS - RINGS

MILL FRESH SHOCK RINGS

An endless elastic ring composed of multiple strands of natural rubber, wound into a circular skein. Braided cover is high grade yarn. Manufactured to meet specification MIL-C-5651B, Type II. Shock cord is used in landing gear to reduce shock transmitted to fuselage while landing and taxiing and on other shock mounting applications. Color coded to insure fresh stock.

Ring No.	Ring Size* (In.)	Test (Lb.)	Aircraft	# Req.	Part No.	Price Ea.
9044	9/16x4-1/2	400	Hatz Bi-Plane	4	9044	$19.95
9090	9/16x9	425	Taylorcraft B	4	9090	$24.75
9010HD	9/16x10	475	Taylorcraft BC	4	06-00829	$19.75
9010HDX	9/16" X 10"		Taylorcraft F-19/F-21	4	06-01132	$25.90
1080	5/8x8	750	Stolp Starduster,Rans S4/5	4	1080	$22.85
1080HD	5/8x8	900	PA-16, PA-18	4	06-00823	$23.85
			PA-20, PA-22, PA-25	4		
1174	11/16x7-1/2	730	Piper J-2, Early J-3, J-5	4	06-00756	$29.90
1192	11/16x9-1/4	750	Taylorcraft D	4	1192	$44.50
11104	11/16x10-1/2	750	Taylorcraft L-2	4	11104	$47.75
1280	3/4x8	750	Stolp Starduster Too	4	1280	$28.65
1280-HD	3/4x8	950	Piper J-3 (S/N8277 up),	4	06-00826	$21.50
			PA-11, PA-12, PA-14	4		
			PA-18 (thru S/N18-3013)Rans	4		
			S10 Acrosport, Pitts S-2			
8097	1-1/2 x 9-7/8	400	PA-24, PA-30	2	8097	$16.85
1286	3/4x8-3/4	750	Aeronca (S/N330 up)	4	1286	$31.75
1286HD	3/4x8-3/4	950	Skybolt	6	06-00827	$43.75
1380	13/16x8	1160	PA-20 (before 1952) Pitts (S-1, S-1C, S-1S) Husky,Acrosport 2, Rans S9	2 4	1380	$24.75

1st dimension is cross section; 2nd dimension is inside dia. of ring.
HD - Heavy Duty, higher test rings. ***6 Rings for J-5.
HDX - Extra Heavy Duty.

CW (Cold Weather) shock rings available on Special Order basis. Prices are approx. twice that of standard shock rings. Add "-CW" to standard part number when ordering.

SHOCK CORD

MIL-C-5651D TYPE I SHOCK CORD: This cord has a double cover of glazed cotton over natural cotton. It has 3 markers: 2 for the year and 1 for the quarter.

The certifiable cord sizes of Type I are: 1/4", 3/8", 1/2", 5/8"

TYPE 1

Dia. (In.)	Part No.	Price/Ft. Less Than 100 Ft.	100 Ft.	Dia. (In.)	Part No.	Price/Ft. Less Than 100 Ft.	100 Ft
1/8	06-12100	$0.42	$37.80	1/2	06-12500	$1.98	$178.20
1/4	06-12200	$0.67	$60.30	5/8	06-12600	$4.60	$414.00
5/16	06-12300	$0.74	$66.60				
3/8	06-12400	$1.22	$109.80				

SHOCK CORD FASTENERS

These cone spring hooks and locking rings are used as terminal fasteners. Insert cord through small end of cone. Apply and crimp locking ring about 1/2" from end of cord, pull cord back until locking ring contacts inside of fastener. Cut ends of cord may be sealed by dipping in rubber cement. Set includes cord and locking ring.

Shock Cord Size	Fastener P/N	Price/Set
1/4"	06-12800	$0.85
3/8"	06-12900	$1.26
1/2"	06-13000	$2.25

SHOCK CORD INSTALLATION TOOL

This handy new tool installs standard shock rings on most aircraft without the great effort required in the past. This tool is designed for use with the shock cords shown above. Our price is the best anywhere.

P/N 06-16600 ..... **$237.95**

BOGERT COMANCHE BUNGEE TOOL

• Lower damage risk with the right tool • Complete control of bungee shock cords coming off • Complete control of bungee shock cords going on. • E-Z instructions with detailed drawings • Safe landings depend on new cords every few years.

P/N 06-00419 ..... **$79.85**

BOGERT COMANCHE GEAR RETRACTION TOOLS

Straight - Fits: PA-24, SN 24-1 through 24-4782 & 24-4784 through 24-4803 P/N 12-02095 ..... **$59.50**

Angled - Fits: All PA-30's, PA24, Serial number 24-4783, 24-4804 & up P/N 12-02094 ..... **$89.50**

SHOCK ABSORBER COIL RINGS

High pressure springs fabricated from alloy steel for top performance and long spring life. The Claude Gray shock absorber design has been service-proven on the EAA Biplane, Miniplane, Pitts and others. Over 1,000 pair in use. Length 6", 2" O.D., 1" I.D.. Wt. 4-1/2 lbs. per pair. Spring deflection 0.7" per 1,000 lb. force. Set of two springs. ..... P/N 06-13200 ..... **$95.75**

Discount 10% on 6, 15% on 12

GRANVILLE'S STRUT SEAL

Landing gear strut packing seals shrink due to fluctuating weather conditions and age. This specially engineered hydraulic chemical additive leaves a protective coating on the strut shaft and allows the seal to expand to its normal size. It will stop strut leaks and is an excellent lubricant and corrosion preventative. Application is fast and easy - any owner or pilot can do the job in minutes. FAA approved.

Single-Strut Kit ..... P/N 06-13300 ..... **$29.75**
3-Strut Kit (Single Engine) ..... P/N 06-13400 ..... **$44.85**
3-Strut Kit (Medium Twins) ..... P/N 06-13500 ..... **$55.75**
Large Twin kit (16 oz0 ..... P/N 06-00110 ..... **$97.50**
Granville Strut Additive (Pt.) ..... P/N 06-00111 ..... **$73.50**

STRUT REBUILD KITS

FOR CESSNA NOSE STRUTS

For Cessna models 150, 152, 172, 175, 182, R182, 205, 206, 210, T210, P210, 310-310Q, 320, 336, & 337. Includes 5 O-Rings, 2 Back-Up Rings, Scraper Ring,. ..... P/N 06-03960 ..... **$16.75**

FOR PIPER NOSE STRUTS

For Piper PA28-140, 150, 151, 160, 161, 180, 181, & 235, PA32-260 & 300. Includes O-Rings, Back-Up Ring, Seal, Wiper & Aluminum Gasket. ..... P/N 06-03965 ..... **$16.85**

For Piper PA28R & PA32R series retractable nose struts. Includes Seals, O-Rings & Gasket. ..... P/N 06-03970 ..... **$19.75**

FOR PIPER MAIN STRUTS

For Piper PA28-140, 150, 151, 160, 161, 180, 181 & 235, PA32-260 & 300. Includes O-Rings, Scraper, Seal & Aluminum Gasket. P/N 06-03975 ..... **$24.95**

For Piper PA28R & PA32R series retractable main struts, Includes Seals, O-Rings & Gasket. ..... P/N 06-03980 ..... **$18.95**

STRUT SEAL KITS FOR PIPER

Kits contain Mil-Spec & Industry Standard Seals and Components required for various Piper Strut application

Seal kit for nose or main strut for Piper Apache/ Aztec ..... 06-00126 ..... **$17.50**
Strut seal kit for Piper PA-24 main gear 06-00127 ..... **$13.85**
Strut seal kit for Piper PA24 nose gear 06-00128 ..... **$15.95**
Strut seal kit for Piper PA30 main gear..... P/N 06-00129 ..... **$15.95**
Strut seal kit for Piper PA30 nose gear..... P/N 06-00130 ..... **$15.95**
Main Strut seal kit for Piper PA28 140, 150, 151, 160, 161, 180, 181, 235, & PA32-260, 300 ..... P/N 06-03975 ..... **$24.95**
Nose strut seal kit for PA28-140, 150, 151, 160, 161,180, 181, 235, & PA32-260, 300 ..... P/N 06-03965 ..... **$16.85**
Main strut seal kit for PA28R & PA32R-300, 301, 301T, & PA32RT-300, 300T ..... P/N 06-03980 ..... **$18.95**
Nose strut seal kit for PA28R & PA32R-300, 301, 301T, & PA32RT-300..... P/N 06-03970 ..... **$19.75**
Nose strut seal kit for PA PA22 Series ..... P/N 06-01370 ..... **$15.95**

GROVE HOMEBUILT AIRCRAFT LANDING GEAR

These custom landing gear are fabricated from aircraft grade 2024T3 aluminum. After cutting and milling, they are annealed to "O" condition for bending, and then heat-treated to "T6" condition for exceptional strength and durability. Top quality landing gear at exceptional pricing.

NOTE:Request landing gear layout sheet when placing order or quotation Request for custom landing gear to verify correct gear for application.

Aircraft Type	Part No.	Price
KITFOX - Mod 3&4 TD	06-04025	$1,693.00
PITTS - S1	06-03915	$1,300.00
S1-11B SuperStinker	06-04035	$1,575.00
Baby Lakes	06-04070	$1,125.00
VP1 - 1100B Free Standing No Cables	06-04040	$1,105.00
Zenair CH701	06-00058	$1,129.00

NOTE:
ALL GROVE AIRCRAFT LANDING GEAR IS NON-CANCELLABLE / NON-RETURNABLE.

RUDDER PEDALS

ACS RUDDER PEDALS

Professionally made black powder coated aluminum pedals as used in production aircraft. Approved by Rutan Aircraft Factory for use on the Defiant. 5"W x 6"L. Wt. 3/4 lb. ea.

P/N 06-00392 ..... **$68.75 Pr.**

Discount Less 10% on 6 Pr., 15% on 12 Pr., 20% on 20 Pr.

ACS RUDDER PEDAL/ TOE BRAKE ASS'Y

For use with any standard master brake cylinders. 2-piece design. Completely finished, assembled, ready for installation. Wt. 2 lbs. each.

P/N 11350 **Set of 2 $93.65**

Discount Less 10% on 6 Pr.
15% on 12 Pr., 20% on 20 Pr.

AZUSA STEEL PEDAL SET

This rugged pedal set (left & right) features built-in stops, (4) 1/4" pre-drilled holes to allow adjustable rod connections and a 5/16"-18 x 1-3/4" long mounting bolt. Wt 7oz. ea. length 6.5'

P/N 06-00107.....**$11.50 /set**

RUDDER PEDAL RETURN SPRINGS

4-1/2" Long. P/N 01-27300 ..... **$4.75 ea.**

STARFLIGHT RUDDER PEDAL

These rudder pedals have been designed and optimized for the Lancair Legacy -- though they are easily integrated into other aircraft. They are overhead mounted, pilot adjustable and provide very precise, smooth rudder and brake control. Overhead mounting. Easily adjust for leg length by turning a small crank just behind the instrument panel. Brake master cylinders not included.* Weight: 8 lbs * Width: 14.4 in * Height: 10 in * Depth: 18 in * Rudder cables not included.

Lancair..... P/N 05-04406.....**$1,259.00**

DELUXE HOMEBUILDERS \ RUDDER PEDAL KITS

Designed for single or two place tandem seating experimental aircraft. The pedals are aluminum castings and the hinge bracket and pedal pivot pin are constructed from 4130 steel tubing. The pedals have an attachment point (1/4" hole) at the top to link the toe brake from the rear cockpit to the front cockpit only 2 master cylinders required). To mount the pedals the builder will need 2 steel bushings 3/4" long to weld through the fuselage and a tube to put through the bushings and the bottom tube of the hinge bracket. Will work well in almost any homebuilt aircraft.

Single Place Kit..... P/N 06-17015..... **$229.95**
Two Place Tandem Kit..... P/N 06-17025..... **$357.95**

CESSNA RUDDER PEDAL EXTENSIONS

P/N 06-00838 ***P/N 06-00839*** ***P/N 06-00641***

The Saircorp/Flight Boss Ltd S-RPE Series Rudder Pedal Extensions fit most high wing Cessna aircraft from 1953 to 2008. Refer to Application Chart or AML for proper selection by visiting our website.

These are constructed from high quality cast aluminum, have a durable Powder Coat finish and use Stainless Steel fasteners. They are strong, durable and built to last.

Installation and removal is quick and easy, the extensions lock in place over your existing rudder pedals giving you that extra needed reach. Your existing rudder pedals do not need to be removed or altered for installation or removal of the extensions.

No more struggling or submarining to get that extra needed rudder deflection. Even "robust" and taller pilots can benefit from the S-RPE Series Rudder Pedal Extensions, they allow you to set back and get the yoke out of your chest. They can be installed and used right seat, left seat or both.

EXT S-RPE-C - fits most 1960's to 1980's ..... P/N 06-00838 ... **$437.00**
EXT S-RPE-CN - fits most 1980's to 2000 and up P/N 06-00839 ... **$459.00**
EXT S-RPE-CO - fits most 1950's to 1960's .. P/N 06-00841 ... **$437.00**

LG

UNIVERSAL AIRCRAFT HEEL PLATES

These Universal Heel Plates can be installed in any aircraft without fasteners or hardware. Velcro secures them to the floor or carpeting. The Heel Plates are available in 22 gauge stainless steel and are furnished with a clear finish. The stainless plates are available in brush finish only. Plates are 8" wide x 12" long with Velcro strips supplied, but not mounted, Sold in sets of two plates. Not FAA Approved.

Stainless steel brush finish heel plates .....05-00839 .... **$69.95**

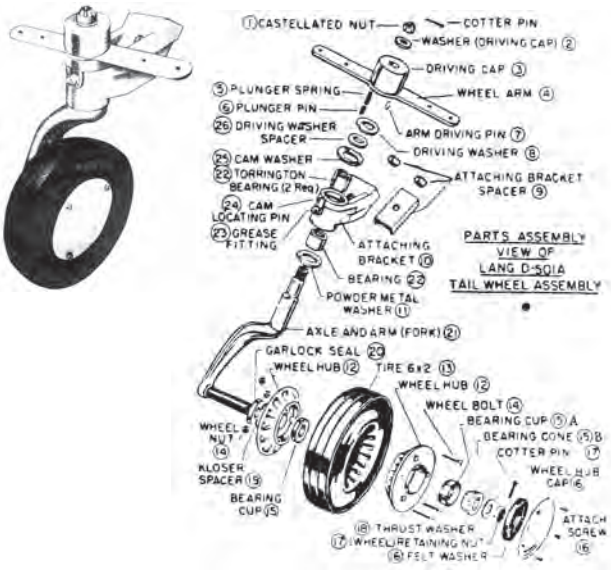
SPECIAL ORDER COLORS AVAILABLE

RUDDER PEDALS FOR EXPERIMENTAL AIRCRAFT

Designed for the Loehle 5151 Mustang/P-40 these rudder pedals can easily be adapted to many light sport planes and ultralights. Made from spaceage polycarbonate, a material that is used when strength, light weight and durability are a necessity. Sample rudder pedals were shot with a .22 long rifle at a range of 10 yds, bullets failed to penetrate the 1/8" inch thick polycarbonate. Builder will have to fabricate simple back plates from either 1/8" thick birch plywood or 1/8" thick aluminum. An easy to understand detailed drawing is furnished with each set of rudder pedals. Specifications: Wt: 5.2 oz., Width: 4-1/8", Height: 9".

P/N 06-00001 ..... **$68.50**

TAILWHEELS



LANG TAILWHEEL PARTS

Ref No.	Lang No.	Part No.	Qty	Price Each	Ref No.	Lang No.	Part No.	Qty	Price Each
1&2	A-501, A521	06-13601	1	**$4.95**	16	A-522, A-523 & A-524	--	--	--
3&7	A503, A507	06-01570	1	**$18.90**			06-13600	1	**$19.75**
5&6	A-505, A506		1						
4	A-504	06-13604	1	**$15.90**	17	A-521	06-13617	1	**$1.34**
					18	A-531	06-13618	1	**$0.05**
8	A-509	06-13608	1	**$5.90**	19	A-546	06-13619	1	**$3.20**
9	A-512, A560-1 A560-2	06-13609	1	**$11.50**	20	A-547	06-13620	1	**$18.80**
10	C-501	06-13610	1	**$57.50**	21	C-503	06-13621	1	**$158.95**
11	A-516	06-13611	1	**$6.00**	22	A-554	06-13622	2	**$13.60**
12	A-544, A545	06-13800	2	**$127.95**	23	A-525	06-13623	1	**$2.35**
13	A-590	06-15800	1	**$78.95**	24	A-508	06-13624	1	**$2.85**
14	A-548, A549	06-13614	3	**$12.50**	25	A-511	06-13625	1	**$5.95**
15A	A-518	13287	2	**$46.50**	26	A-510	06-13626	1	**$1.42**
15B	A-519	13286	2	**$28.65**					

HUB ASS'Y (2 #12 Hub Halves, 3 #14Bolts & Nuts).. P/N 06-13800 .**$127.95**
HUB ASS'Y W/ BEARING CUPS..... P/N 06-13900 .**$152.95**
WHEEL ASS'Y (Hub Ass'y & 2 Bearing Cups & Cones). P/N 06-14000 .**$264.95**
WHEEL & TIRE ASS'Y (Wheel Ass'y & 6 x 2 Tire) .... P/N 06-14100 .**$379.95**

THE LANG TAILWHEEL – FAA APPROVED STEERABLE – FULL SWIVEL

THE ONLY TAILWHEEL TO MEET THE EXACTING REQUIREMENTS OF THE CHRISTEN EAGLES - The Lang Model D-501-A Tailwheel is full swivel, fully automatic and steerable. It is impossible to throw the Lang tailwheel into full swivel unintentionally regardless of rough field conditions or cross winds. This tailwheel will not lock in any position except steerable, but releases easily when plane is pushed sideways or backwards by hand or when maneuvering plane on ground using brakes. The Lang tailwheel fits both 1-1/4" and 1-1/2" leaf springs. Drop forged, heat-treated 4130 chromoly steel fork of single arm type. The cast aluminum wheel is grease packed for 100 hours service. The 6 x 2.00 solid rubber tire has interior wire reinforcement for added strength. Manufactured by ACS Products Co. under FAA-PMA. All replacement parts available. The Lang tailwheel is FAA-approved for installation on many light aircraft including Aeronca 7AC, Piper J-3 and PA-12, Cessna 140, Luscombe and Taylorcraft. Comparable to Scott Model 2000. Wt. 6 Lbs. ***OEM & DISTRIBUTOR PRICING AVAILABLE*** P/N 06-00398 ..... **$965.00**

HOMEBUILDERS SPECIAL TAILWHEELS

FULL SWIVEL AND STEERABLE 4 INCH DIAMETER FULL SWIVEL/STEERABLE

P/N 06-00399 Standard 45° spring angle, for 1-1/4" or 1-1/2" flat spring.
P/N 06-00401 Optional 20° spring angle, for 1-1/4" or 1-1/2" flat spring.
P/N 06-00402 10° Angle, for 5/8" round spring.
Any Model (Wt. 3 Lbs.) **$289.00**
Note: Requires spacer P/N 06-13609 for use w/ 1.25" spring

HEAVY DUTY DOUBLE FORK 6 INCH DIA. FULL SWIVEL / STEERABLE

Locks in steerable mode when aircraft is moved forward. Releases to full swivel when pushed sideways or backwards, or when maneuvering on the ground using brakes. Tire is solid soft rubber, with sealed ball bearings.
P/N 06-06131 - Std. - 45° Angle for 1-1/4 or 1-1/2 flat spring.
P/N 06-06133 - Optional-20° Angle for 1-1/4 or 1-1/2 flat spring.
P/N 06-06135 - 10° Angle for 5/8 round spring.
Any Model (wt. 6lbs.).....**$318.95**
Note: Requires spacer P/N 06-13609 for use with 1-1/4" spring.

6 INCH DIAMETER FULL SWIVEL/STEERABLE

P/N 06-00403 Standard 45° spring angle, for 1-1/4" or 1-1/2" flat spring.
P/N 06-00404 Optional 20° spring angle, for 1-1/4" or 1-1/2" flat spring.
P/N 06-00405 10° Angle, for 5/8" round spring.
Any Model (Wt. 5 Lbs.)..... **$289.00**
Note: Requires spacer P/N 06-13609 for use w/ 1.25" spring.

REPLACEMENT WHEELS FOR HOMEBUILDER'S SPECIAL TAILWHEELS

Replacement wheels with tires & bearings for the Homebuilder's tailwheels shown above.
4X1.5X5/8 BB Natural..... P/N 06-03500..**$23.85**
4X1.5X3/8 BB Natural..... P/N 06-00067..**$23.85**
6X2.125X5/8 Balloon* ..... P/N 06-03600..**$34.50**
*This is a solid Tire

LONGLIFE SEALED BALL BEARINGS

These high quality bearings are superior to standard bearings furnished with homebuilder tailwheels ..... P/N 06-00060....**$9.75**

RAVEN LOCKING TAILWHEELS

We have 5 versions of Raven locking tailwheel assemblies. They come with polished stainless springs plus any and all brackets and tubing to mount the tailwheel. 4" models are for aircraft like the Pitts S-1 etc. and are good up to 1250 lbs gross weight. The tailwheel assembly is 21" long and weighs 5lbs. 6" models are for aircraft like the Christen Eagle Pitss S-2 etc. and are good up to 1900 lbs gross weight. The tailwheel assembly is 24" long and weighs 7lbs.
4" weld in tube model, straight spring with tube to weld into fuse
P/N 06-00121 .....**$417.00**
4" bolt on model, angled spring with 3/8" hole and bracket for tail post
P/N 06-00122 .....**$542.00**
6" weld in tube model, straight spring with tube to weld into fuse
P/N 06-00123 .....**$514.00**
6" bolt on model, angled spring with 3/8" hole and bracket for tail post
P/N 06-00124 .....**$684.00**

BERINGER TAILWHEEL

Tail wheel, fully CNC machined, static load: 330Lbs, for tyre 200x50 • Aluminum anodized Tailwheel • for 200x50 or 200x65 tube type tyre • In 2 parts easily removable, with ball bearings • Alloy: 2017 (AU4G) machined from billet on CNC • For axis 08 mm (0.32") • Weight: 9oz. P/N 06-00957..... **$211.95**

REPLACEMENT TAILWHEEL FOR VAN'S TAILWHEEL ASSEMBLY

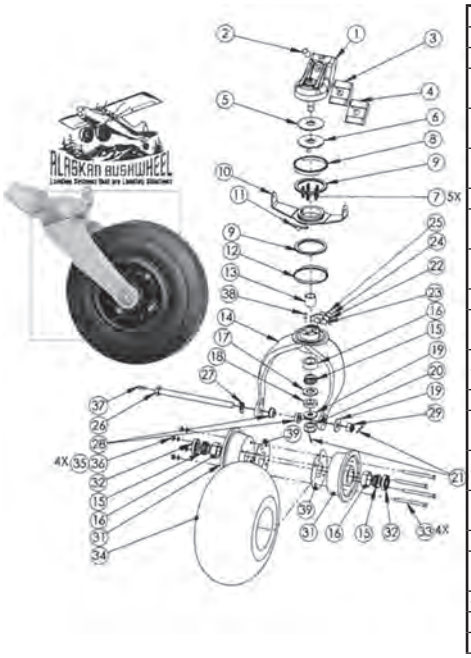
This is a replacement tail wheel for the Van's tail wheel assembly. The hub is made from 6061-t6 aircraft aluminum with a tire molded from 65 durometer SBR rubber. The design includes precision sealed bearings.5-1/2" Diameter X 1-1/2" Thick
P/N 06-01284..... **$129.85**

TAILWHEELS

ALASKAN BUSHWHEEL INC. 3200 TAILWHEEL ASSEMBLY

The Alaskan Bushwheel Tailwheel Assembly is an FAA-PMA (PMA # PQ1557NM, Supplement 9) eplacement part for the Scott 3200 assembly and parts contained therein, includes Heavy Duty Steering Arm. One Year Warranty.

ABI-3200 Standard Tailwheel Assembly(3214 Standard Arm) ..... P/N 06-00836 ..... **$1,025.00**
ABI-3200-3 direct replacement for the Scott 3200-3..... P/N 06-01313 ..... **$1,161.00**
ABI-3224A Standard Tailwheel Assembly(3214T Heavy Duty Arm)..... P/N 06-00722 ..... **$1,025.00**
ABI-3200B Tailwheel Tundra Assembly..... P/N 06-00723 ..... **$1,890.00**
ABI-800613-00 Pawnee 2-bolt Tailwheel Head ..... P/N 06-00820 ..... **$294.85**
ABI-2600A 4" wheel halves with 2.80x2:50x4 tire & tube mounted and ready to go..... P/N 06-01190 ..... **$431.95**



#	Part No.	Description	Part No.	Price
1	ABI-3216-00	Brackett Assy.	06-00724	$208.50
2	ABI-3241-3S****	Spacer	06-00725	$9.65
3	ABI-3243-02****	Leaf Spring Adapter 1-3/4" to 1-1/4"	06-00810	$48.65
4	ABI-3243-01****	Leaf Spring Adapter 1-3/4" to 1-1/2"	06-00811	$49.85
5	ABI-3207-00	Fiber Thrust Washer	06-00726	$6.35
6	ABI-3235-00	Thrust Plate Assy.	06-00727	$42.50
7	ABI-3233-00	Compression Spring	06-00728	$3.25
8	ABI-3256-02	Hvy-Dty Dust Cap, Upper	06-00729	$22.90
9	ABI-3206-00	Thrust Washer	06-00730	$14.60
10	ABI-3214T	Hvy-Dty Standard steering arm assy	06-00731	$208.95
10A	ABI-3214-00	Standard Standard steering arm assy	06-00812	$208.95
11	ABI-3219-00	PAWL	06-00732	$33.85
12	ABI-3256-1	Hevt-Duty Dust Cap, Lower	06-01264	$29.75
12A	ABI-3235-1	Std. Duty Dust Cap, Lower	06-00733	$28.75
8A	ABI-3235-02	Std. Duty Dust Cap, upper	06-00813	$21.50
13	ABI-3205-00	Bushing	06-00734	$15.60
14	ABI-F1*	Tailwheel Fork (Heavy Duty)	06-00735	CALL
14A	ABI-3224**	Tailwheel fork Std.	06-00736	$258.95
15	A4050	Cone Bearing	13286	$28.65
16	A4138	Bearing Race	13287	$46.50

#	Part No.	Description	Part No.	Price
17	ABI-1863	Grease Retainer	06-00746	$8.45
18	ABI-2504-1	Spacer	06-00752	$13.95
19	AN960-816	Washer	AN960-816	$0.06
20	AN320-8	Shear Nut	AN320-8	$1.19
21	MS24665-283	Cotter Pin	MS24665-283	$0.03
22	ABI-3222-00	Compression Spring	06-00737	$11.50
23	ABI-3258-00	Spacer	06-00738	$2.30
24	ABI-3258-01	Spacer	06-00739	$2.30
25	ABI-3257-00	Pin	06-00740	$7.75
26	ABI-872*	Axle (Heavy Duty)	06-00741	$34.75
27	ABI-3225-00	Tab Lock Washer	06-00742	$5.50
28	ABI-3227-00	Spacer	06-00743	$19.75
29	33475-008	Castle Nut	AN310-8	$1.63
30	ABI-S2*	Rim Spacer (Heavy Duty)	06-00744	$62.75
31	ABI-3244-00	Wheel Half (Heavy Duty)	06-00745	$114.95
32	ABI-7024	Bearng Race Seal	06-00746	$8.45
33	AN4-34A*	Wheel Bolt	AN4-34A	$0.90
33A	AN4-7A**	Wheel Bolt	AN4-7A	$0.21
34A	280 x 2.50 x 4**	Tire	06-00748	$46.75
35	33478-202	Self Locking Nut	33478-202	$0.10
36	1/4" Washer	Flat Washer	AN960-416	$0.03
37	T7201	Zerk Fitting	06-00753	$0.72
38	ABI-232-046	Dowel Pin	06-00749	$11.75
39	ABI-2602**	Gasket	06-00750	$3.25

** Parts not included in ABI-3200/ABI-3224A Assembly*

*** Parts not included in ABI-3200B Assembly*

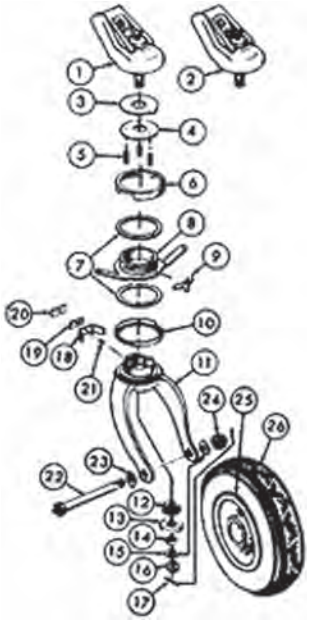
Parts in red are not sold individually.

***** Parts not included in assemblies.*

LG

REPLACEMENT PARTS FOR SCOTT 3200 TAILWHEEL

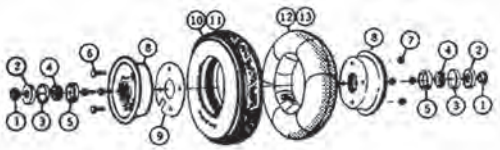
The Scott Model 3200 tailwheel, with 8" pneumatic tire, is designed to give years of trouble-free service. The swivel mechanism is sealed to keep out water, sand and mud. Grease fittings are provided for lubrication. Bracket fits 1-3/4" wide tailwheel leaf spring. Wt. 7-1/2 lbs. Attaching hardware not furnished.



Item No.	Part No.	Description	No. Req'd	Price Ea.
1	3216	Bracket Ass'y	1	--
2	06-01291	Bracket Ass'y 2-hole equiv. to 800613	1	$296.50
3	3207	Washer, Thrust	1	$4.70
4	3234	Thrust Plate Ass'y	1	$41.85
5	3233	Spring, Compression	5	$3.45
6	3235-2	Dust Cap	1	$24.50
7	3206	Washer, Thrust	2	$12.50
8	3214	Arm Assembly	1	$234.95
9	3219	Pawl	1	$28.50
10	3235-1	Dust Cap	1	$25.90
11	3224	Fork Ass'y	1	--
12	13286	Cone Bearing	1	$28.65
13	1863	Retainer, Grease	1	$8.25
14	2504-1	Spacer	1	$14.25
15	18107	Washer, AN960-816	2	$0.02
16	18450	Nut, Shear AN320-8	1	$1.19
17	18482	Pin, Cotter	2	$0.02
18	3222	Spring	1	$8.90
19	3258	Spacer	1	$2.35
20	3258-1	Spacer	1	$2.50
21	3257	Pin	1	$6.95
22	3236	Axle Ass'y	1	$34.65
23	3225	Washer, Lock	1	$5.60
24	18443	Nut, Castle, AN310-8	1	$1.63
25	3244	Wheel Ass'y	1	----
26	2600	Tire & Wheel Ass'y	1	----

SCOTT MODEL 2600 8-INCH PNEUMATIC TIRE

The Model 2600 8" pneumatic tire and wheel assembly is used on the 3200, 3250, 3400 and 3425 Series tailwheel assemblies. The Model 3245-1 10" pneumatic tire and wheel assembly is used on the 3425 & 3450 Series tail-wheel assemblies. Total Wt. 3 lbs. 13 oz.



Item No.	Part No.	Description	8" Assy P/N 2600	10" Assy P/N 3245-1	Price Each
1	3227	Spacer	2	2	$7.50
2	1863	Retainer, Grease	2	2	$8.25
3	1862	Spacer	2	2	$8.75
4	13286	Bearing Cone (A-4050)	2	2	$28.65
5	13287	Bearing Cup (A-4138)	2	2	$46.50
6	18438	Bolt	4	4	$0.21
7	33478-202	Nut, Self Locking	4	4	$0.10
8	2598	Hub	2	2	- - -
9	2602	Gasket	1	1	$2.45
10	3228	8" Tire	1		$46.50
11	06-08100	10" Tire		1	$54.00
12	3223	8" Tube	1		$19.95
13	3247	10" Tube		1	$21.50

SCOTT LEAF SPRING SPACERS AND SPRING KITS

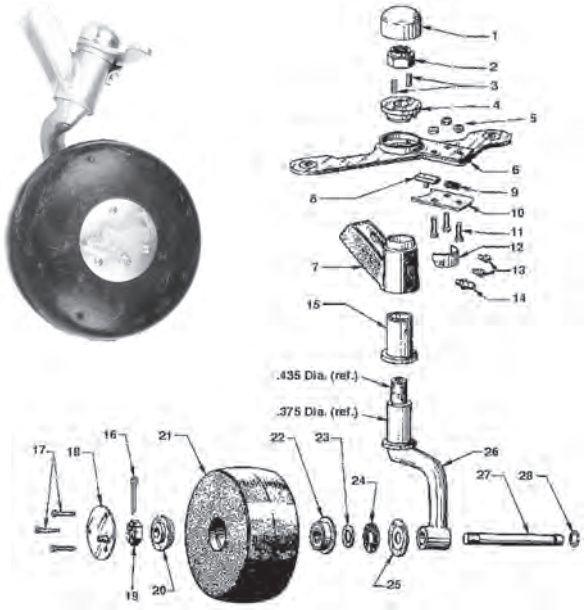
3241-3S - Spacer Only..... P/N 06-00406 ..... **$8.75**
3243-2 - Spacer Only..... P/N 06-00407 ..... **$55.75**
3241-1S - Adapter Kit - Converts 1-3/4" 3216 (1 3/4") bracket to 1-1/2" width. ..... P/N 06-00408 ..... **$68.75**
3239 - Heavy Duty Tension Spring Kit..... P/N 06-00008 ..... **$54.50**
3243-01 - Converts 1-3/4" Bracket to 1-1/4" Bracket. Used on 3200 Tailwheel..... P/N 06-00421 ..... **$78.75**

TAILWHEELS

MAULE MODEL SFSA SOLID TAILWHEELS

The SFSA tailwheel assembly is of the same type construction as the SFS-P8A unit except for the tire, which is a 6.50 x 2.50 soft rubber solid tire. Spring connector kit not furnished with this model. FAA-approved. Wt. 6 lbs.

SFSA-1-4, for 1-1/4" Spring ..... P/N 06-16710 ..... **$412.95**
SFSA-1-2, for 1-1/2" Spring ..... P/N 06-16720 ..... **$388.95**
Replacement Tire & Bearings ..... P/N TW-23A **$143.00**

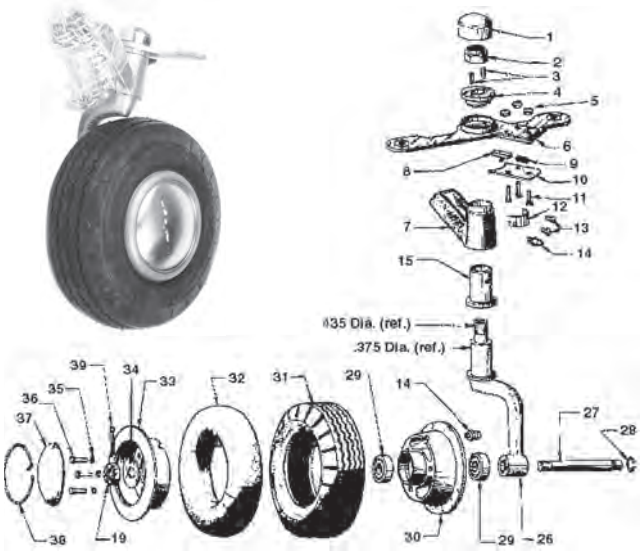


MAULE MODEL SFS-P8A PNEUMATIC TAILWHEELS

An inexpensive 8" pneumatic tailwheel assembly which is steerable and full swiveling, with new improved single arm shimmy-free fork. All working parts heat treated. FAA approved. Wt. 7 lbs.

Maule Tailwheel #SFS-P8A-1-4* ..... P/N 06-16730 ..... **$428.95**
Maule Tialwheel #SFS-P8A-1-2** ..... P/N 06-16740 ..... **$428.00**
McCreary Tire 2.80/2.50-4 4 Ply ..... P/N 06-08000 ..... **$46.50**
McCreary Tube 280 X 250 X 4 ..... P/N 06-08101 ..... **$19.95**

* - For 1-1/4" Leafspring ** - For 1-1/2" Leafspring



MAULE P8B TUNDRA TAILWHEEL

A new tailwheel with 8" pneumatic tire designed and engineered to meet the toughest conditions on all types of airports and landing fields.

SFS-P8B-1-4 ..... For 1-1/4" Leaf Spring Width ..... P/N 06-16750 ..... **$599.00**
SFS-P8B-1-2 ..... For 1-1/2" Leaf Spring Width ..... P/N 06-16760 ..... **$599.00**
SFS-P8B-3-4 ..... For 1-3/4" Leaf Spring Width ..... P/N 06-16770 ..... **$595.00**

MAULE TAILWHEEL PARTS LIST

Old Style (Pre 1976) has 3/4" Fork Shaft & New Style (Post 1976) has 7/8" Fork Shaft		Old Style SFS-P8 Pneumatic or SFS Solid Rubber	New Style SFS-P8A Pneumatic and SFSA Solid Rubber	Qty. Req.	Price Each
#	Description	Part Number	Part Number		
1	Cover Cap	TW-18 (1-1/4")	TW-63A (1-3/8")	1	**$5.75**
2	Nut	AN364-720A or AN365-720	AN364-720A or AN365-720	1	**$1.22**
3	Lock Ring Pin	TW-17	TW-60AB	1/2	**$0.89**
4	Lock Ring	TW-16	TW-57	1	**$33.50**
5	Nut	AN364-440A	AN364-440A	3	**$0.26**
6	Steering Arm Assembly*	TW-15 (TW-13 & TW-16 are included in this Assembly)	TW-15A	1	**$79.75**
7	Bracket Assy., 1-1/4 In	06-16101	06-16201	1	**$82.75**
	Bracket Assy., 1-1/2 In	06-16102	06-16202	1	**$79.90**
8	Lock Pin	TW-13	TW-13	1	**$17.90**
9	Steering Arm Spring	TW-14	TW-14	1	**$0.54**
10	Lock Cover Plate	TW-12	TW-12	1	**$7.90**
11	Screw	MS35206-217	MS35206-217	3	**$0.04**
12	Cam	TW-10	TW-10	1	**$11.50**
13	Screw	AN501-A10-4	AN501-A10-4	2	**$0.38**
	AN520-10-4	AN520-10-4			
14	Zerk Fitting	TW-7-A14	TW-7-A14	1	**$2.20**
15	Oilite Bearing	TW-7 (3/4" I.D.)	TW-59A (7/8" I.D.)	1	**$19.85**
Items 16 through 25 are for the solid rubber tire assembly only.					
16	Cotter Pin	AN380-3-3	AN380-3-3	1	**$0.03**
17	Screw	TW-A18	TW-A18	3	**$0.49**
18	Hub Cap	TW-27	TW-27	1	**$11.80**
19	Axle Nut	AN320-8	AN320-8	1	**$1.19**
20	Bearing	TW-3	TW-3/A15	1	**$13.85**
21	Tire–solid, no bearings	TW-23	TW-23	1	**$119.95**
	Tire–solid, with bearings	TW-23A	TW-23A	1	**$143.00**
22	Bearing (with washer)	TW-A15	TW-A15	1	**$15.50**
23	Washer	TW-28	TW-28	1	**$1.58**
24	Felt Seal	TW-26	TW-26	1	**$0.57**

Old Style (Pre 1976) has 3/4" Fork Shaft & New Style (Post 1976) has 7/8" Fork Shaft		Old Style SFS-P8 Pneumatic or SFS Solid Rubber	New Style SFS-P8A Pneumatic and SFSA Solid Rubber	Qty. Req.	Price Each
#	Description	Part Number	Part Number		
25	Retainer Washer Fork (with axle)	TW-64	TW-64	1	**$0.78**
	Solid Rubber	06-00093	TW-61A-1	1	**$99.65**
27	Axle	TW-5	TW-5	1	**$31.75**
28	Axle Sirclip Ring	TW-6	TW-6	1	**$0.42**
29	Bearing	TW-A7	TW-A7	2	**$74.75**
30	Inboard Wheelhalf, with bearings	TW-30	TW-30	1	**$116.95**
31	Tire, 8-inch			1	-------
32	Tube			1	-------
33	Outboard Wheelhalf	TW-31	TW-31	1	**$57.75**
34	Washer	TW-A6	TW-A6	1	**$0.95**
35	Lock Washer	AN935-516	AN935-516	3	**$0.03**
36	Bolt	TW-A12	TW-A12	3	**$1.89**
37	Hub Cap	TW-32	TW-32	1	**$14.50**
38	Hub Cap Sirclip Ring	TW-33	TW-33	1	**$1.56**
39	Cotter Pin	AN380-3-3	AN380-3-3	1	**$0.03**
Items 40 through 44 are used on the "Old" style & Pnematic tailwheel that have a shummy dampener.					
40	Adjusting Screw	TW-40		1	**$0.56**
41	Dampener Spring	TW-41		1	**$0.48**
42	Friction Block	TW-42		1	**$12.95**
43	Hex Housing	TW-43		1	**$13.60**
44	Bracket Assembly, 1-1/4 inch drilled	TW-44-1-4		1	-------
	Bracket Assembly, 1-1/2 inch drilled	TW-44-1-21	-------		-------

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Prices Subject to Change Without Notice

P/N 06-01615

P/N 06-01620

P/N 06-00831

MATCO SINGLE ARM TAILWHEELS

Matco tailwheels use a fiberglass reinforced nylon wheel with an operating load of 450 lbs. It takes over 5000 lbs to fail the wheel and it will hold up in the most rigorous conditions. Can be used with 1-1/4" or 1-1/2" leaf spring. These tailwheels are steerable, and are available with a 6 inch hard rubber solid tire or with 8" Shin pneumatic tire and tube for heavier aircraft. Tailwheel construction is anodized aluminum. Weight: 5 lbs.

Item	Part No.	Price
Matco solid rubber tire tailwheel assy	06-01615	**$149.95**
Replacement Tire (solid rubber) for T-6	06-00004	**$78.85**
Matco 6" Pneumatic the tailwheel assy.	06-00831	**$178.95**
Replacement 6" Pneumatic Tire * Tube	06-00832	**$17.50**
Matco 7" pneumatic tire tailwheel assy. Overall length of 10.50" and max width of this tail wheel with fully splayed arms is 9.29" and overall height is 10.2".	06-01362	**$201.15**
Matco 8" full swiveling pneumatic tire tailwheel assy	06-01620	**$214.00**
Matco 8" pneumatic wide tailwheel assy. Overall length of 12.51". Max fully splayed arms is 9.29" and overall height is 15.7". Weight 8lbs.	06-01361	**$239.00**
McCreary Replacement 8" Tire 2.80/2.50-4 4PLY	06-08000	**$46.50**
McCreary Replacement Tube 8" 280 X 250 X 4	06-08101	**$19.95**

MATCO DUAL ARM TAILWHEELS

MATCO TAILWHEEL DUAL ARM 7 INCH PNEUMATIC

MATCO mfg produces a superior light weight dual fork seven inch tail wheel for use with tail dragger aircraft which require a lighter weight tail wheel-the T-7D. The T-7D tail wheel utilizes a dual fork configuration and incorporates a geometric release mechanism that allows the wheel to caster after reaching a steered angle of 40 degrees (earlier release available with optional steering arms WHLT-03A). The WHLTW37 wheel used on the WHLT-7D has a .625 precision sealed ball bearing which is rigorously tested and designed to resist bearing fatigue providing a long bearing life. The arms and wings of the tail wheel fork assembly are composed of 4130 which is heat treated to a Rockwell 38-43 to ensure strength and are irridited to prevent corrosion. The tail wheel base and forks are cast and then black anodized to prevent corrosion as well. The wheel halves are die cast aluminum for light weight and superior strength. The T-7D features split rims for ease of mounting and dismounting its 7x1.75 tire and tube assembly. The T-7D tail wheel has a seven inch pneumatic tire and an overall length of 10.3 inches. Maximum width of this tail wheel with fully splayed arms is 7 inches and overall height is 10.3 inches. This machined aluminum tail wheel weighs 5.2 pounds.

P/N 06-01527 .....**$380.17**

DUAL ARM TAIL WHEEL ASSEMBLIES 8 INCH PNEUMATIC TIRE

The T-8LD tail wheel utilizes a dual fork configuration and incorporates a geometric release mechanism that allows the wheel to caster after reaching a steered angle of 40 degrees. The WHLTW37 wheel used on the WHLT-8LD has a .625 precision sealed ball bearing which is rigorously tested and designed to resist bearing fatigue providing a long bearing life. The arms and wings of the tail wheel fork assembly are composed of 4130 which is heat treated to a Rockwell 38-43 to ensure strength and are irridited to prevent corrosion. The tail wheel base and forks are cast and then black anodized to prevent corrosion as well. The wheel halves are die cast aluminum for light weight and superior strength. The T-8LD features split rims for ease of mounting and dismounting its 200x50 (8"x2") tire and tube assembly. Specifications: 8 inch pneumatic tire, Overall length of 10.8 inches, Maximum width of this tail wheel with fully splayed arms: 7 inches, Overall height: 10.8 inches, This cast aluminum tail wheel weighs 5.4 pounds P/N 06-01528 .....**$389.00**

LIGHTWEIGHT DUAL ARM TAIL WHEEL ASSEMBLIES 8.5 INCH PNEUMATIC TIRE

The T-8D tail wheel utilizes a dual fork configuration and incorporates a geometric release mechanism that allows the wheel to caster after reaching a steered angle of 40 degrees. The WHLTW40EE wheel used on the WHLT-8D has a .625 precision sealed ball bearing which is rigorously tested and designed to resist bearing fatigue providing a long bearing life. The arms and wings of the tail wheel fork assembly are composed of 4130 which is heat treated to a Rockwell 38-43 to ensure strength and are irridited to prevent corrosion. The tail wheel base and forks are cast and then black anodized to prevent corrosion as well. The wheel halves are die cast aluminum for light weight and superior strength. The T-8D features split rims for ease of mounting and dismounting its 2.80/2.50-4 tire and tube assembly. Specifications: 8.5 inch pneumatic tire, Overall length of 11.6 inches, Maximum width of this tail wheel with fully splayed arms: 7 inches, Overall height is 11.8 inches, This cast aluminum tail wheel weighs 6.7 pounds. P/N 06-01529 .....**$399.51**

DUAL ARM TAIL WHEEL ASSEMBLIES 8.5 INCH PNEUMATIC TIRE

The T-8WD tail wheel utilizes a dual fork configuration and incorporates a geometric release mechanism that allows the wheel to caster after reaching a steered angle of 40 degrees. The WHLNW40EE wheel used on the WHLT-8WD has a .625 precision sealed ball bearing which is rigorously tested and designed to resist bearing fatigue providing a long bearing life. The arms and wings of the tail wheel fork assembly are composed of 4130 which is heat treated to a Rockwell 38-43 to ensure strength and are irridited to prevent corrosion. The tail wheel base and forks are cast and then black anodized to prevent corrosion as well. The wheel halves are die cast aluminum for light weight and superior strength. The T-8WD features split rims for ease of mounting and dismounting its 9x3.50-4 tire and tube assembly. Specifications: 8.5 inch pneumatic tire, Overall length of 11.7 inches, Maximum width of this tail wheel with fully splayed arms: 7 inches, Overall height is 11.9 inches, This cast aluminum tail wheel weighs 8.3 pounds. P/N 06-01531 .....**$435.62**

DUAL ARM TAIL WHEEL ASSEMBLIES 10 INCH PNEUMATIC TIRE

The T-10D tail wheel utilizes a dual fork configuration and incorporates a geometric release mechanism that allows the wheel to caster after reaching a steered angle of 40 degrees. The WHLNW50CC wheel used on the WHLT-10D has a .625 precision sealed ball bearing which is rigorously tested and designed to resist bearing fatigue providing a long bearing life. The arms and wings of the tail wheel fork assembly are composed of 4130 which is heat treated to a Rockwell 38-43 to ensure strength and are irridited to prevent corrosion. The tail wheel base and forks are cast and then black anodized to prevent corrosion as well. The wheel halves are die cast aluminum for light weight and superior strength. The T-10D features split rims for ease of mounting and dismounting its 10x3.60-5 tire and tube assembly. Specifications: 10 inch pneumatic tire, Overall length of 13 inches, Maximum width of this tail wheel with fully splayed arms: 7 inches, Overall height: 13.3 inches, This cast aluminum tail wheel weighs 9.5 pounds

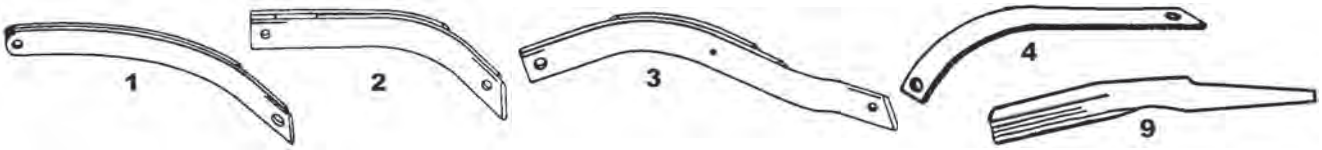
P/N 06-01532 .....**$499.27**

DUAL ARM TAIL WHEEL ASSEMBLIES 11 INCH PNEUMATIC TIRE

The T-11D tail wheel utilizes a dual fork configuration and incorporates a geometric release mechanism that allows the wheel to caster after reaching a steered angle of 40 degrees. The MH5N-S wheel used on the WHLT-11D has a .625 precision sealed ball bearing which is rigorously tested and designed to resist bearing fatigue providing a long bearing life. The arms and wings of the tail wheel fork assembly are composed of 4130 which is heat treated to a Rockwell 38-43 to ensure strength and are irridited to prevent corrosion. The tail wheel base and forks are cast and then black anodized to prevent corrosion as well. The wheel halves are die cast aluminum for light weight and superior strength. The T-11D features split rims for ease of mounting and dismounting its 11x6-5 tubeless tire assembly. Specifications: 11 inch pneumatic tire, Overall length of 13.5 inches, Maximum width of this tail wheel with fully splayed arms: 7 inches Overall height: 14 inches, This cast aluminum tail wheel weighs 9.6 pounds. P/N 06-01537 .....**$678.00**

LG

TAILWHEELS



STEEL TAILWHEEL LEAF SPRINGS

Set No.	Spring Width	Hole Dia. Fuselage End	Hole Dia. Tailwheel End	Distance Between Bolt Centers	Original Application	Wt. Lbs.	No. of Springs	Part No.	Price
1	1-1/4"	7/16"	3/8"	12"	Piper J3, PA11, PA11, PA12, PA14, PA15, PA17	3-1/8	3	06-14200	**$115.95**
2	1-1/2"	3/8"	3/8"	10"	T-Craft BC-12D	2-3/4	3	06-14300	**$119.50**
3	1-1/2"	3/8"	7/16"	15"	Aeronca 7AC, 11AC	3-1/2	3	06-14400	**$132.95**
4	1-1/2"	3/8"	3/8"	15"	Homebuilts	1-3/4	1	06-14500	**$53.75**
5	1-1/4"	5/16"	3/8"	11-3/4"	Luscombe	3-1/2	4	06-14600	**$139.95**
6	1-1/4"		Main Leaf Only	11-3/4"	Luscombe	1-1/2	1	06-14700	**$46.85**
7*	1-1/2"	5/8"	7/16"	13-1/8"	Cessna 120-140	4	4	06-14800*	**$189.75**
8	1-1/2"		Main Leaf Only	13-1/8"	Cessna 120-140	1-1/2	1	06-14900	**$61.50**
9	1-1/2"	5/8"	7/16"	13"	Cessna 170	5	5	06-15000	**$199.75**
10	1-1/2"		Main Leaf Only	13"	Cessna 170	1-3/4	1	06-15100	**$88.65**

DISCOUNTS LESS 10% ON 6, 15% ON 10 (ASSORTED) ****P/N 06-14800 has two bends***

LG

MAULE ANTI-SHIMMY CONNECTOR SPRING KITS

A high and low frequency spring is used to upset the natural frequency of the tailwheel. The lighter spring is used on the left side.
Compression Type Kit
P/N 06-15150 ..... **$43.85**

TENSION TYPE CONNECTOR SPRING KITS

Kit consists of two tension type springs, two chains and two connector links.
Lightweight Spring Kit Scott .....P/N 2151 ..... **Ea $54.00**
Connector Links.....P/N 06-15400 ..... **Ea $2.35**
Chain .....P/N 06-15500 ..... **Ft $1.14**

COMPRESSION TYPE CONNECTOR SPRING KIT

Replace conventional springs with new compression type. Original tension type springs keep rudder post under continuous tension which wears the hinges. Compression type springs keep rudder neutral - no tension on post. Assures more effective steering action.
Set of 2 stainless steel springs, (2) 1' chains, 4 connector clips: ..... P/N 06-15600 ..... **$24.85**
Springs Only ..... P/N 06-15700 ..... **Ea $7.35**
Connector Clips ..... P/N 06-15400 ..... **Ea $2.35**
Chain ..... P/N 06-15500 ..... **$1.14/Ft**

HUSKY TAILSPRING

The Husky Tailspring is now available. The 3-leaf tailspring, mounting bracket & hardware is all included. This is a direct replacement for all of Sky International (Aviat Husky) tailsprings and eligible on all Husky aircraft, the A1, A1-A, A1-B and the new A1-C.
Why do you need a new tailspring for your Husky? When a tailspring is 'sprung' or weak and/or of poor design that it puts the camber angle of the tailwheel into a negative position, therefore causing the tailwheel to shimmy, be hard to steer and increases the wear on everything.
P/N 06-01364 ..... **$219.00**

RUDDER ARMS

SCOTT TYPE - Cast aluminum brackets with reinforced chain mounting holes. Originally used on Piper J-3, J-4, J-5, PA-11, PA-18, L-21B. 3/4"dia. post between mounting holes.
P/N 1140..... **$147.95**

HOMEBUILDERS MODEL - Same style as Scott model. 3/4" dia. post and 3/4" arm (width)
P/N 06-15900..... **$39.50**

RUDDER ARM 1" SHANK - Originally designed for J-3 through PA-18 series, but adapts nicely to most homebuilts. Code 1
PN 06-01045..... **$39.90**

TAILWHEEL TIRES

6X2 AERO CLASSIC SOLID TIRE - Used on Scott 2000, Lang D-501A Tailwheels. Replaces Goodyear 6x2 tire. P/N 06-01044..... **$59.85**

6X2 GENERAL SOLID TIRE - A flexible rubber tire with four knobs on center hole. This is Scott P/N 1879 used on Scott Model 2000 tailwheels and some Scott 3-24B tailwheels. Also used on Lang D-501A tailwheel. Replaces Goodyear 6x2 (11 knobs) solid tailwheel tire.
P/N 06-15800 ..... **$78.95**

6.50 X 2.50 SOLID TIRE - Maule P/N 23 for Model SFSA tailwheels.
Tire Only..... P/N 06-00409 ..... **$119.95**
Tire w/ Bearings ..... P/N 06-00410 ..... **$143.00**

2.80/2.50 X4 MCCREARY PNEUMATIC TIRE - Used on Scott Model 2600 8" wheel assembly.
Tire ..... P/N 06-08000 ..... **$46.50**
Tube ..... P/N 06-08101 ..... **$19.95**

2.80/2.50 X4 AZUSA TIRE
Tire ..... P/N 06-01287 ..... **$9.95**
Tube ..... P/N 06-01288 ..... **$6.25**

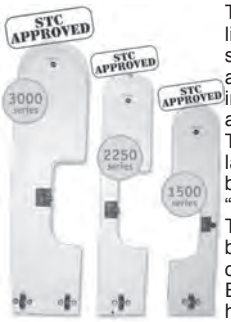
10 X 3.50 X 4 MCCREARY PNEUMATIC TIRE - Used on Scott Model 3450 tailwheel and Scott Model 3245-1 10" wheel assembly.
Tire ..... P/N 06-08100 ..... **$54.00**
Tube ..... P/N 06-08102 ..... **$22.50**

400 X 4 AERO CLASSIC - used on Grove Model 49-1A; Tire: 11.5" Dia. Looks like scaled down 500x5 tire.
Tire ..... P/N 06-00844 ..... **$54.00**
Tube ..... P/N 06-08102 ..... **$22.50**

400X6 AERO CLASSIC - The New Light Sport Tire, 400-6 6 Ply with a Deep Aircraft Type Tread.
Tire ..... P/N 06-00944 ..... **$55.50**
Tube ..... P/N 06-00945 ..... **$14.95**

AIRCRAFT SPRUCE WEST **AIRCRAFT SPRUCE EAST**
CORONA, CA • (877) 4-SPRUCE **PEACHTREE CITY, GA • (877) 477-7823** *Prices Subject to Change Without Notice*

TRICKAIR AIRCRAFT SKIS



Trick Air has developed simple and reliable light aircraft skis of fiberglass composite construction which are aerodynamic and easy to attach and detach from your plane. So easy, in fact, they attach or detach in less than half an hour!

These skis are made in the USA using the latest environmentally friendly technique in fiberglass called closed molding. This is a new "green" process of manufacturing the product.

The 3000, 2250 and 1500 series skis have been static tested to exceed the requirements of TSO-C28 and have been TSO approved.

EASY TO INSTALL - First time installation of hardware on the plane takes approximately 8 hours. After this initial Installation, it only takes 15 MINUTES PER SKI to install or remove the skis from the airplane. Skis are available in a white, sandable gray, Cub yellow, and Torch red finish.

SKIS

Series	Suspension	Part No.	Price
3000 series	Strut Suspension	05-04373	**$7,755.00**
3000-A series	Spring Gear Suspension	05-04374	**$8,465.00**
2250 series	Strut Suspension	05-04375	**$5,795.00**
2250-A series	Spring Gear Suspension	05-04376	**$6,095.00**
1500 series	Strut Suspension	05-04377	**$5,195.00**
1500-A series	Spring Gear Suspension	05-04378	**$5,195.00**

APPROVALS

The 3000 Series are STC approved for the following:

Oleo Strut Maule Models Bee Dee M-4, M-4, M-4C, M-4S, M-4T, M-4-210, M-4-210C, M-4-210S, M-4-210T, M-4-220, M-4-220C, M-4-220S, M-4-220T, M-5-210C, M-5-220C, M-5-235C, M-5-210TC, M-6-235, M-7-235, MX-7-235, M-4-180V, M-5-180C, M-5-200, M-5-210C, M-6-180, M-7-235A, M-7-235B, MX-7-160, MX-7-180, MX-7-180A, MX-7-180BÂ

Maule Spring Gear Models:

MX-7-180AC, MX-7-180C, MX-7-160C, M-7-235C, M-8-235

FULL LOTUS FLOATS

Full Lotus Manufacturing develops and manufactures inflatable floats for fixed wing aircraft and helicopters. They have extensive knowledge in fabric structural engineering and manufacturing, lightweight air retention membrane technology, and rotational molding.

PLEASE VISIT WWW.AIRCRAFTSPRUCE.COM FOR A COMPLETE LISTING OF LOTUS FLOATS AND PRICING

HOMEBUILDERS TAIL SKID

The skid is 1" wide and 6" long. It is made out of 3/16" thick 347 Stainless Steel. It will accept up to a 1-3/4" O.D. 3/8" thread tie down ring. This skid will eliminate bending of the tie down ring and damage to the tail. This a must have for training aircraft. The skid is currently mounted on several experimental and certified aircraft. P/N 05-04383 ..... **$68.75**

REAR RUDDER PEDAL KIT

These were designed especially for RV4's and Rockets but can be used on any aircraft with rudder cables that are installed down the side skins. The pedals are 6" tall and 3-1/2" wide, 1/2" diameter 6061 anodized aluminum bar. The kit includes; pedals, floor mounting brackets, cable clamps and chains. Pedals will fold out of hte way when not in use.

P/N 05-04372 ..... **$141.95**

BERINGER LIGHTWEIGHT TAILWHEEL

Beringer Wheels & Brakes produced a new, extremely lightweight tailwheel assembly for the Pipistrel Sinus, with applications for other aircraft. The two-piece anodized aluminum wheel with sealed ball bearings and its 6-ply 200x50 tire and tube, assembled, weighs just 830 grams (29 ounces). It rides on the 8mm diameter Sinus axle; no aircraft modifications are required. The wheel and tire have a design load of 150kg (330 lb), which makes this assembly ideal for the Sinus. The tire is delivered already mounted and pressure-tested. It is ready for immediate delivery for use as a retrofit improvement, or for new installations. P/N 06-01583..... **$278.50**

BERINGER WHEEL COVER

Wheel cover made of aluminum red anodized, fully CNC machined and laser engraved. Protect external bearing and axle nut. Fixed on rim with O-ring.

For Beringer 5" wheel.....P/N 06-00956 ..... **$69.90**
For Beringer 6" wheel.....P/N 06-01121 ..... **$78.00**

BERINGER SPARE CLIPS

Stainless steel clips between wheel rim and disc. Includes: 10 left and 10 right (set for 1 wheel), procedure. Set of 20.

P/N 06-01111 ..... **$39.00**

BERINGER WHEEL O-RINGS

These O-rings need to be replaced at each tire changing. Includes: 2 large O-rings and 1 small O-ring.

For Beringer 5" wheel ..... P/N 06-01112 ..... **$15.75**
For Beringer 6" wheel ..... P/N 06-01113 ..... **$15.75**

BERINGER TIRE CHANGING TOOL

Specific tire change tool for Beringer wheels with conical aluminum spacer to insert tire on wheel half. Plywood flanges maintain tire while positioning second wheel half with the O-ring. Includes: Plywood flanges, bolts with butterfly nut and conical aluminum spacer

Tire change tool for BERINGER 5" wheels ..... P/N 06-01109 ...**$158.00**
Tire change tool for BERINGER 6" wheels ..... P/N 06-01110 ...**$189.00**

NITROGEN TIRE INFLATION SYSTEM 20CU, 40CU NITROGEN ACCESSORY KIT

NOT FOR STRUT USE

GENTEC® Nitrogen aircraft tire inflation systems allow for easy, cost effective filling of General Aviation aircraft tires with pure Nitrogen.Due to the complex nature of construction and the severe operating conditions of aircraft tires, Michelin and other leading tire manufacturers recommend the use of Nitrogen as does the FAA. Nitrogen is a totally inert gas that will not support corrosion, oxidation or moisture within aircraft wheels and tires. Nitrogen has a larger gas molecule than air, so low tire pressure due to allowable leakage is minimized. Nitrogen also maintains a lower thermal coefficient, thus minimizing thermal damage and extending tire life versus compressed air. Gentec Nitrogen aircraft tire inflation systems are available in two versions. The GKNAT20-TC is a 20 cubic foot high pressure nitrogen tank (empty) with stand, six foot hose; pressure reducing single stage regulator and tire inflator with resettable dial pressure gauge. The GKNAT40-TC is a 40 cubic foot high pressure nitrogen tank (empty) with stand, six foot hose; pressure reducing single stage regulator and tire inflator with resettable dial pressure gauge. Note: The kit is for someone who may already have a nitrogen cylinder and only needs the accessories.

Vist our website to locate a filling station near you.

Nitrogen Tire Inflation System 20CU..... P/N 12-01586 ..... **$312.95**
Nitrogen Tire Inflation System CU40..... P/N 12-01587 ..... **$403.95**
Nitrogen Accessory Kit- (This kit is for someone who may already have a nitrogen cylinder and only needs the accessories)
P/N 12-01588 ..... **$172.95**

LG

CARBURETORS

REPLACEMENT CARBURETORS FROM KELLY AEROSPACE POWER SYSTEMS

Overhauling Lycoming and Continental carburetors & Providing FAA approved replacement parts for 20 years! Look to Kelly Aerospace Power Systems for Quality Fuel System Overhauled Units

Aircraft Spruce & Specialty, as a factory distributor, offers a carburetor exchange program covering all popular Marvel Schebler/Facet general aviation carburetors. These carburetors are overhauled to the strictest industry standards and carry a full 6 month warranty (from date of installation). Most carburetors are available from stock or within a week and are furnished complete with gaskets. Due to the various configurations of carburetor installations, we suggest you retain your carburetor core until receiving the exchange unit. This will enable you to transfer all external fittings and installation hardware to the new exchange unit. All cores being returned for credit shall be, as removed from the engine, complete and not disassembled. A reduction in core credit is charged for missing or damaged parts.

Customer will need to provide core for overhaul in the event that our supplier does not have cores available to overhaul

- Precision Carburetors
- TCM Fuel Systems
- Flow Dividers
- Fast Turn Time on Overhauls
- Unmatched Quality
- 100% calibration of fuel pumps and servos.
- Precision Fuel Servos
- Romec Fuel Pumps
- FAA/PMA Approved Replacement Parts
- Carburetor Overhaul Quick Kits
- Highly skilled/trained technicians

LYCOMING CARBURETORS

Carb. Model	Lycoming P/N	Vendor P/N	Our P/N	Price	Core
MA-3A	61547	A10-3103-1	10-03103-1	**$696.00**	**$600.00**
MA-4SPA	69250	A10-3678-12	09-00984	**$683.00**	**$800.00**
MA-4SPA	72394	A10-3678-32	07-00871	**$763.00**	**$800.00**
MA-4-5	71098	A10-3878	10-03878	**$811.00**	**$1,000.00**
MA-4-5	71710	A10-4164-1	07-00872	**$794.00**	**$1,000.00**
MA-4-5	66458	10-2827	07-01405	**$758.00**	**$1,000.00**
MA-3A	61383	10-2983	07-01408	**$683.00**	**$600.00**
MA-4-5	66869	10-3323	07-01411	**$758.00**	**$1,000.00**
MA-4-5	67713	10-3391-1	07-01412	**$758.00**	**$1,000.00**
MA-3SPA	62830	10-3565-1	07-01413	**$702.00**	**$600.00**
MA-4-5	69540	10-3634	07-01415	**$758.00**	**$1,000.00**
MA-3SPA	68856	10-3729	07-01416	**$683.00**	**$600.00**
MA-4-5	71546	10-3856-1	07-01417	**$758.00**	**$1,000.00**
MA-4-5	71685	10-3856-12	07-01418	**$758.00**	**$1,000.00**
MA-4-5AA	71139	10-4025	07-01419	**$758.00**	**$1,000.00**
MA-4-5AA	71684	10-4025-11	07-01420	**$758.00**	**$1,000.00**
MA-4-5AA	71684	10-4025-12	07-01421	**$758.00**	**$1,000.00**
MA-4-5	71654	10-4057-1	07-01422	**$758.00**	**$1,000.00**
MA-6AA	72407	10-4218-1	07-01424	**$758.00**	**$800.00**
MA-4-5	72386	10-4329	07-01426	**$758.00**	**$1,000.00**
MA-4-5	74121	10-4404-1	07-01427	**$914.00**	**$1,000.00**
MA-6AA	73899	10-4438-1	07-01428	**$758.00**	**$800.00**
MA-4-5AA	73257	10-4495	07-01429	**$758.00**	**$1,000.00**
MA-5	20671	10-4865	07-01430	**$758.00**	**$800.00**
HA-6	LW-15957	10-5219	07-01462	**$811.00**	**$800.00**
MA-3PA	LW-16073	10-5220	07-01463	**$683.00**	**$600.00**
MA-3PA		10-5220-E	07-01464	**$683.00**	**$600.00**
HA-6	LW-16066	10-5221	07-01465	**$758.00**	**$800.00**
HA-6	LW-15958	10-5224	07-01466	**$811.00**	**$800.00**

Carb. Model	Lycoming P/N	Vendor P/N	Our P/N	Price	Core
MA-4SPA	77279	10-4910	07-01431	**$758.00**	**$800.00**
MA-4SPA	LW-16559	10-4910-1	07-01432	**$758.00**	**$800.00**
MA-3A	77585	10-4953	07-01433	**$758.00**	**$600.00**
MA-6AA	77888	10-4975	07-01434	**$758.00**	**$800.00**
MA-3PA	77939	10-4978-1	07-01435	**$758.00**	**$600.00**
MA-4-5	LW-10064	10-5034	07-01437	**$811.00**	**$1,000.00**
MA-4-5	LW-10196	10-5042	07-01438	**$758.00**	**$1,000.00**
MA-3PA	LW-10619	10-5050	07-01440	**$683.00**	**$600.00**
MA-4-5	LW-10540	10-5054	07-01441	**$811.00**	**$1,000.00**
MA-4SPA	LW-11222	10-5062	07-01442	**$763.00**	**$800.00**
HA-6	LW-12097	10-5092	07-01443	**$758.00**	**$800.00**
MA-3PA	LW-13133	10-5126	07-01444	**$683.00**	**$600.00**
MA-3PA	LW-14016	10-5142	07-01445	**$683.00**	**$600.00**
HA-6	LW-14689	10-5180	07-01446	**$758.00**	**$800.00**
HA-6	LW-13757	10-5189	07-01447	**$758.00**	**$800.00**
MA-4-5	LW-15380	10-5193	07-01448	**$811.00**	**$1,000.00**
HA-6	LW-15504	10-5200	07-01450	**$758.00**	**$800.00**
HA-6	LW-15981	10-5200-1	07-01451	**$758.00**	**$800.00**
HA-6	LW-15626	10-5206	07-01453	**$758.00**	**$800.00**
HA-6	LW-16062	10-5206-1	07-01457	**$758.00**	**$800.00**
HA-6	LW-16413	10-5206-11	07-01458	**$758.00**	**$800.00**
HA-6	LW-15663	10-5210	07-01459	**$758.00**	**$800.00**
HA-6	LW-15674	10-5211	07-01460	**$758.00**	**$800.00**
HA-6	LW-15985	10-5211-1	07-01461	**$758.00**	**$800.00**
MA-4-5	72740	A10-4404	08-01543	**$914.00**	**$1,000.00**
MA-4SPA	78728	A10-5009	07-00873	**$763.00**	**$800.00**
MA-4SPA	13659	A10-5135	10-05135	**$763.00**	**$800.00**
MA-3A	15496	A10-5199	07-00234	**$696.00**	**$600.00**
MA-4SPA	15986	A10-5217	10-05217	**$763.00**	**$800.00**
HA-6	LW-16206	10-5227	07-01467	**$811.00**	**$800.00**
HA-6	LW-15959	10-5230	07-01468	**$811.00**	**$800.00**
HA-6	LW-15960	10-5235	07-01469	**$908.00**	**$800.00**

******NOTE******

Customer will need to provide core for overhaul in the event our supplier does not have cores available to overhaul.
If you do not see your model # here please contact Aircraft Spruce Sales Department for pricing and availability .
****All prices shown are with factory acceptable exchange carburetor.***
Send exchange carburetor core to Aircraft Spruce. Upon factory approval of core, you will be refunded the core charge.
BE CERTAIN ALL FUEL IS REMOVED FROM THE CORE.
If Carburetor is not in stock we can have yours overhauled in 5-7 working days. Please call or email for more information.

CONTINENTAL CARBURETORS

Part No.	Carb. Model	O.E.M. P/N	Our Part No.	Our Price	Core
A10-3168	MA-4-5	520120	07-01369	**$758.00**	**$1,000.00**
A10-3237	MA-3SPA	530490	10-03237	**$698.00**	**$800.00**
A10-3649-1	MA-4-5	535207	07-01370	**$758.00**	**$600.00**
A10-3859-1	MA-4-5	538872	07-01372	**$811.00**	**$1,000.00**
A10-3965-1	MA-4-5	539883	07-01373	**$758.00**	**$1,000.00**
A10-3965-11	MA-4-5	539883	07-01374	**$758.00**	**$1,000.00**
A10-3965-12	MA-4-5	539883	10-03965-12	**$811.00**	**$1,000.00**
A10-4115-1	MA-3SPA	627143	10-04115-1	**$683.00**	**$800.00**
A10-4171	MA-4-5	626789	07-01351	**$758.00**	**$1,000.00**
A10-4191	MA-4-5	626859	07-01375	**$758.00**	**$1,000.00**
A10-4233	MA-3SPA	627365	07-01376	**$683.00**	**$600.00**
A10-4240	MA-3SPA	627637	07-01377	**$684.00**	**$600.00**
A10-4439	MA-3SPA	628945	10-04439	**$683.00**	**$600.00**
A10-4457	MA-3SPA	629175	07-01378	**$683.00**	**$600.00**
A10-4893-1	MA-4-5	641139	07-00231	**$759.00**	**$1,000.00**
A10-4894	MA-3SPA	633028	07-00842	**$699.00**	**$800.00**
A10-5067	MA-3SPA	-	07-01381	**$683.00**	**$600.00**
A10-5082	MA-3SPA	637035	07-01382	**$914.00**	**$600.00**
A10-5128	MA-3SPA	640416	07-01385	**$683.00**	**$600.00**
A10-5192	MA-3SPA	641860	07-01386	**$758.00**	**$1,000.00**
A10-5284	MA-4-5	646232	07-01390	**$755.00**	**$1,000.00**

*All prices shown are with factory acceptable exchange carburetor. Add core charge on all models to each price shown. Send exchange carburetor core to Aircraft Spruce. Upon factory approval of core, you will be refunded the core charge.

BE CERTAIN ALL FUEL IS REMOVED FROM THE CORE.

FRANKLIN ENGINE CARBURETORS ALSO AVAILABLE. ADVISE EXACT ENGINE AND CARBURETORS ALSO AVAILABLE. ADVISE ENGINE AND CARBURETOR MODEL NUMBERS AND REQUEST QUOTATION

MARVEL-SCHEBLER CARBURETORS

MARVEL-SCHEBLER NEW CARBURETORS

Note: Customer will need to provide core for overhaul in the event our supplier does not have cores available to overhaul.

Note: All Rebuilt & Overhauled Carb Purchases will be Charged an Additional $600.00 for Core.

Please check with Aircraft Spruce on availability of cores at Marvel-Schebler.

Carb. Model No.	OEM Part No.	Our Part No.	Our Price	Tempest Carb. Model No.	OEM Part No.	Our Part No.	Our Price
MA-4SPA™	10-3678-12--F	08-06304	**$1,648.00**	MA-4SPA™	10-3678-32--F	08-06305	**$1,649.00**
MA-4-5™	10-3859-1--F	08-06327	**$2,116.00**	MA-4-5™	10-3878--F	08-06306	**$2,116.00**
MA-4-5™	10-4164-1--F	08-06307	**$2,116.00**	MA-3PA™	10-4233--F	08-06328	**$1,649.00**
MA-3SPA™	10-4240-1--F	08-06329	**$1,697.00**	MA-4-5™	10-4404-1--F	08-06308	**$2,117.00**
MA-4-5™	10-4404--F	08-06330	**$2,116.00**	MA-5™	10-4865--F	08-06331	**$2,598.00**
MA-4-5™	10-4893-1--F	08-06309	**$2,116.00**	MA-3SPA™	10-4894-1--F	08-06311	**$1,649.00**
MA-3SPA™	10-4895-1--F	08-06312	**$1,644.00**	MA-4SPA™	10-4910-1--F	08-06332	**$1,649.00**
MA-4SPA™	10-4910--F	08-06333	**$1,649.00**	MA-3A™	10-4953--F	08-06334	**$1,650.00**
MA-4SPA™	10-5009--F	08-06315	**$1,649.00**	MA-4-5™	10-5034--F	08-06335	**$2,116.00**
MA-3PA™	10-5050--F	08-06336	**$1,648.00**	MA-4-5™	10-5054--F	08-06337	**$2,117.00**
MA-3SPA™	10-5082--F	08-06338	**$1,649.00**	MA-3PA™	10-5126--F	08-06339	**$1,648.00**
MA-3PA™	10-5142--F	08-06340	**$1,648.00**	MA-4-5™	10-5193--F	08-06341	**$2,116.00**
MA-3A™	10-5199--F	08-06316	**$1,473.00**	MA-4SPA™	10-5217--F	08-06317	**$2,154.00**
HA-6™	10-5219--F	08-06342	**$2,296.00**	MA-3PA™	10-5220--F	08-06343	**$1,649.00**
HA-6™	10-5224--F	08-06344	**$2,293.00**	HA-6™	10-5230--F	08-06345	**$2,293.00**
HA-6™	10-5235--F	08-06346	**$2,293.00**	HA-6™	10-5253--F	08-06347	**$2,293.00**
HA-6™	10-5255--F	08-06348	**$2,293.00**	MA-3PA™	10-5257--F	08-06349	**$1,648.00**
MA-3PA™	10-5267--F	08-06353	**$1,649.00**	HA-6™	10-5283--F	08-06354	**$2,293.00**
MA-4-5™	10-5284--F	08-06356	**$2,116.00**	MA-4-5™	10-5288--F	08-06357	**$2,116.00**
HA-6™	10-6001--F	08-06358	**$2,293.00**	HA-6™	10-6019--F	08-06359	**$2,293.00**
HA-6™	10-6030-1--F	08-06363	**$2,293.00**	MA-4-5™	10-6035-11--F	08-06365	**$2,598.00**
MA-4-5™	10-6045--F	08-06366	**$2,116.00**	MA-4-5™	10-6050--F	08-06368	**$2,116.00**
MA-4-5™	10-6054--F	08-06369	**$2,117.00**	MA-4-5™	10-6102--F	08-06370	**$2,116.00**

MARVEL-SCHEBLER REBUILT & OVERHAULED CARBURETORS

Model Number	OEM Part No.	Rebuilt P/N	Rebuilt Price	Overhaul P/N	Overhaul Price	Core for Rebuilt / Overhauled
MA-4SPA™	10-3678-12	08-06325-1	**$869.00**	08-06325	**$749.00**	**$600.00**
MA-4SPA™	10-3678-32	08-06326-1	**$869.00**	08-06326	**$759.00**	**$600.00**
MA-4-5™	10-3859-1	08-06371-1	**$1,033.00**	08-06371	**$753.00**	**$600.00**
MA-4-5™	10-3878	08-06372-1	**$1,033.00**	08-06372	**$753.00**	**$600.00**
MA-4-5™	10-4164-1	08-06373-1	**$1,033.00**	08-06373	**$753.00**	**$600.00**
MA-3PA™	10-4233	08-06374-1	**$869.00**	08-06374	**$743.00**	**$600.00**
MA-4-5™	10-4404-1	08-06376-1	**$1,034.00**	08-06376	**$753.00**	**$600.00**
MA-4-5™	10-4404	08-06375-1	**$1,034.00**	08-06375	**$753.00**	**$600.00**
MA-4-5™	10-4893-1	08-06378-1	**$1,033.00**	08-06378	**$778.00**	**$600.00**
MA-3SPA™	10-4894-1	08-06379-1	**$869.00**	08-06379	**$769.00**	**$600.00**
MA-3SPA™	10-4895-1	08-06380-1	**$869.00**	08-06380	**$769.00**	**$600.00**
MA-4SPA™	10-4910-1	08-06382-1	**$869.00**	08-06382	**$742.00**	**$600.00**
MA-4SPA™	10-4910	08-06381-1	**$869.00**	08-06381	**$742.00**	**$600.00**
MA-3A™	10-4953	08-06383-1	**$759.00**	08-06383	**$705.00**	**$600.00**
MA-4SPA™	10-5009	08-06384-1	**$879.00**	08-06384	**$769.00**	**$600.00**
MA-4-5™	10-5034	08-06385-1	**$1,033.00**	08-06385	**$754.00**	**$600.00**
MA-3PA™	10-5050	08-06386-1	**$870.00**	08-06386	**$742.00**	**$600.00**
MA-4-5™	10-5054	08-06387-1	**$1,033.00**	08-06387	**$753.00**	**$600.00**
MA-3PA™	10-5126	08-06388-1	**$870.00**	08-06388	**$742.00**	**$600.00**
MA-3PA™	10-5142	08-06389-1	**$870.00**	08-06389	**$743.00**	**$600.00**
MA-4-5™	10-5193	08-06390-1	**$1,034.00**	08-06390	**$753.00**	**$600.00**
MA-3A™	10-5199	08-06391-1	**$759.00**	08-06391	**$705.00**	**$600.00**
MA-4SPA™	10-5217	08-06392-1	**$889.00**	08-06392	**$769.00**	**$600.00**
HA-6™	10-5219	08-06394-1	**$1,033.00**	08-06394	**$940.00**	**$600.00**
MA-3PA™	10-5220	08-06395-1	**$869.00**	08-06395	**$742.00**	**$600.00**
HA-6™	10-5224	08-06396-1	**$1,032.00**	08-06396	**$907.00**	**$600.00**
HA-6™	10-5230	08-06397-1	**$1,033.00**	08-06397	**$907.00**	**$600.00**
HA-6™	10-5235	08-06398-1	**$1,033.00**	08-06398	**$907.00**	**$600.00**
HA-6™	10-5253	08-06399-1	**$1,034.00**	08-06399	**$907.00**	**$600.00**
HA-6™	10-5255	08-06400-1	**$1,034.00**	08-06400	**$907.00**	**$600.00**
MA-3PA™	10-5257	08-06401-1	**$870.00**	08-06401	**$742.00**	**$600.00**
MA-3PA™	10-5267	08-06402-1	**$869.00**	08-06402	**$742.00**	**$600.00**
HA-6™	10-5283	08-06403-1	**$1,034.00**	08-06403	**$907.00**	**$600.00**
MA-4-5™	10-5284	08-06404-1	**$1,058.00**	08-06404	**$778.00**	**$600.00**
MA-4-5™	10-5288	08-06405-1	**$1,033.00**	08-06405	**$752.00**	**$600.00**
HA-6™	10-6001	08-06406-1	**$1,033.00**	08-06406	**$907.00**	**$600.00**
HA-6™	10-6019	08-06407-1	**$1,034.00**	08-06407	**$918.00**	**$600.00**
HA-6™	10-6030-1	08-06408-1	**$1,034.00**	08-06408	**$907.00**	**$600.00**
MA-4-5™	10-6035-11	08-06409-1	**$1,034.00**	08-06409	**$753.00**	**$600.00**
MA-4-5™	10-6054	08-06410-1	**$1,034.00**	08-06410	**$753.00**	**$600.00**

MARVEL-SCHEBLER FLOAT KIT

A new float has been developed for the small MA series carburetors. The new floats are a solid blue epoxy material with a smooth skin.

P/N 08-06508.....**$113.95**

THROTTLE SHAFT MINOR REPAIR KIT 778-1007-F

Tempest MSA throttle minor repair kit (778-1007--F). All parts contained in this kit are covered under FAA/PMA PQ0111NM and/or PQ1296CE.

P/N 08-06539.....**$132.95**

CARBURETOR PARTS

MARVEL-SCHEBLER FACET REPLACEMENT CARBURETOR PARTS

These Marvel-Schebler replacement parts are manufactured by Kelly Aerospace.

Mfg. Ref.	Part No.	Description.	Price
CF16-A39	07-06601	Gasket	$2.75
CF16-A42	07-06602	Gasket	$2.70
CF16-A4B	07-06603	Gasket	$4.70
CF16-A56	07-06604	Gasket	$11.95
CF16-B44	07-06605	Gasket	$3.95
CF16-B45	07-06606	Gasket	$2.70
CF16-B85	07-06608	Gasket	$4.25
CF17-372	07-06609	Rod	$21.25
CF17-383	07-06610	Rod	$19.60
CF194-580	07-06611	Pump Plunger	$99.85
CF194-581	07-06612	Pump Plunger	$79.85
CF194-591	07-06613	Pump Plunger	$99.95
CF194-593	07-06614	Pump Plunger	$84.75
CF194-605	07-06615	Pump Plunger	$93.65
CF233-614	07-06616	Valve & Seat	$87.75
CF233-615	07-06617	Float Valve	$73.65
CF24-262	07-06618	Spring	$2.05
CF24-A10	07-06619	Spring	$3.45
CF24-A115	07-06620	Spring	$3.50
CF24-A30	07-06621	Spring	$3.45
CF24-A33	07-06622	Spring	$3.95
CF29-182	07-06623	Clip	$7.56
CF32-32	07-06624	Shaft	$18.50
CF32-35	07-06625	Shaft	$17.90
CF32-72	07-06626	Valve	$14.50
CF34-91	07-06627	Valve	$12.50
CF44-220	07-06628	Packing	$5.75
CF44-223	07-06629	Packing"O" Ring	$6.50
CF44-224	07-06630	Packing	$5.75
CF44-49	07-06631	Packing	$12.80
CF60-260	07-06632	Bushing	$13.70
CF60-A160	07-06633	Bushing	$19.50
CF778-1003	07-06634	Throttle Shaft	$144.95
CF778-1004	07-06635	Throttle Shaft	$106.95
CF15-483	07-06666	Screw	$1.61
CF15-58	07-06667	Screw	$1.86
CF15-A14	07-06668	Screw	$4.55
CF15-A23	07-06669	Screw	$1.93
CF15-B108	07-06670	Screw	$3.20
CF15-B109	07-06671	Screw	$3.25
CF15-B98	07-06672	Screw	$4.75
CF16-222	07-06673	Gasket	$6.50
CF16-224	07-06674	Gasket	$2.55
CF16-625	07-06675	Gasket Kit	$74.50
CF16-646	07-06677	Gasket Kit	$73.85
CF16-653	07-06678	Gasket Kit	$37.70
CF16-676	07-06679	Gasket Kit	$36.75
CF16-696	07-06680	Gasket Kit	$38.65
CF16-713	07-06681	Gasket Kit	$29.75
CF16-735	07-06682	Gasket Kit	$36.25
CF16-A107	07-06683	Gasket	$2.75
CF16-A108	07-06684	Gasket	$2.75
CF16-A16	07-06685	Gasket	$2.80
CF16-A28	07-06686	Gasket	$2.90
CF16-A30	07-06687	Gasket	$3.90
CF16-A31	07-06688	Gasket	$4.70
CF16-A32	07-06689	Gasket	$3.80
CF16-A36	07-06690	Gasket	$3.75
CF82-1	07-06691	Pin	$1.01
CF82-11	07-06692	Pin-Cotter	$1.12
CF82-14	07-06693	Pin-Cotter	$1.14
CF99-44	07-06694	Plug	$7.90
CF99-8	07-06695	Plug	$12.75
CF47-850	07-06696	Nozzle	$113.95
CF47-851	07-06697	Nozzle	$120.95
CF47-852	07-06699	Nozzle	$162.95
CF778-1005	07-06636	Throttle Shaft	$135.95
CF778-1006	07-06637	Throttle Shaft	$139.95
CF778-1007	07-06638	Throttle Shaft	$118.95
CF778-1008	07-06639	Throttle Shaft	$145.95
CF78-121	78-121	Washer	$1.95
CF78-388	07-06648	Washer	$1.09
CF78-A109	07-06649	Washer	$2.95
CF78-A110	07-06650	Washer	$2.95
CF78-A111	07-06651	Washer	$2.75
CF78-A40	07-06652	Washer	$2.15
CF78-A97	07-06653	Washer	$2.75
CF81-311	07-06654	Nut	$4.10
CF13-1519	07-06655	Throttle Shaft	$179.59
CF13-1520	07-06656	Throttle Shaft	$136.95
CF13-1521	07-06657	Throttle Shaft	$122.50
CF13-1522	07-06658	Throttle Shaft	$103.35
CF13-1523	07-06659	Throttle Shaft	$151.95
CF13-1531	07-06660	Throttle Shaft	$152.95
CF13-1533	07-06661	Throttle Shaft	$190.95
CF155-226	07-06662	Lever	$13.75
CF155-307	07-06663	Lever	$26.30
CF15-126	07-06664	Screw	$5.25
CF43-648	07-06702	Needle	$25.90
CF43-564	07-06701	Needle	$42.40

SEE WWW.AIRCRAFTSPRUCE.COM FOR COMPLETE PARTS LIST.

EP

REPLACEMENT CARBURETOR VENTURI'S (ONE PIECE)

These one piece Venturis replace old type primary and main Venturis in Marvel-Schebler carburators. Order by new Venturi part number.

Old Main Venturi	New 1-Piece Venturi	Our Price
46-462	46-F7	$107.95
46-486	46-F8	$76.95
46-A2	46-F10	$77.75
46-A70	46-F12	$84.75

FLOAT NEEDLE SEAT DRIVER

This Float Needle Seat Driver is applicable to Marvel-Schebler MA3 and MA4 carburetors and is quality made of alloy steel. It facilitates the easy removal of needle valve seats, prevents damage to the main casting and the new seat during installation, and insures proper torque application. Features 7/16" hex drive fitting. P/N 12-30190..... **$72.50**

BENDIX/PRECISION RSA FUEL SERVOS & FLOW DIVIDERS

- Bendix/Precision (RSA-5, RSA-7da1, RSA-10 Overhaul/Exchange).
- Bendix/Precision (Flow Dividers Overhaul/Exchange.
- TMC Complete Fuel Injection Systems (IO-360, IO-550, L/TSIO-360,TSIO-520, GTSIO-520, TSI Overhaul Exchange).
- TCM Individual Fuel Injection Components Throttle Assemblies, Control Assemblies (without throttle Pumps, Manifold Valves, Pressure Regulators, No Assemblies (cleaning, rejetting, calibrating).
- FAA/PMA Replacement Parts.

Call or visit our website at: www.aircraftspruce.com for more info.

REPLACEMENT FLOAT KITS BY KELLY AEROSPACE

1984 FAA Service Bulletin A1-84 recommends replacing old Marvel-Schebler floats with the following float kits which feature metal floats to replace old plastic floats:

Kit CF666-915 - For MA3, MA3-SPA, MA4-SPAP/N 07-00677...**$107.95**
Kit CF666-916 - For MA4-5, MA5, MA6 .....P/N 07-00678...**$118.85**
Kit CF666-917 - For HA-6.....P/N 07-00679...**$118.95**
Needle and Seats for MA3-4 #233-615 .....P/N 07-06617.....**$73.65**
Needle and Seats for MA4-5 #233-614 .....P/N 07-06616.....**$87.75**

REPAIR KITS & PARTS FOR COMMON MARVEL-SCHEBLER CARBURETORS

Lycoming No.	Marvel-Schebler Kit P/N	Marvel-Schebler Carb P/N	Major Repair Kit Price
62289	286-1628	10-3346-1	$561.00
69250	286-1624	10-3678-12	$413.95
62830	286-1630	10-3565-1	$413.95

NOTE: Many Marvel-Schebler replacement parts are no longer available from Facet. These are manufactured by Kelly Aerospace.

CARBURETOR HEAT BOX PARTS

Unique Elastomer Bearing Replaces Needle Bearing - McFarlane's elastomer bearing is assembled with tension between the mating surfaces. This tension prevents micro-movement and its related metal erosion. The bearing contact area that transfers vibration motion from the heat box to the butterfly shaft is hundreds of times greater than that of the original needle bearing. This large surface effectively prevents localized metal erosion. • Absorbs shaft and butterfly vibration • Eliminates needle bearing failures • Increases service life of all components • Direct replacement for original parts. ***Proven Design:*** • Tested to over 700,000 cycles while exposed to avgas, heat and vibration without any change in performance • Extremely rugged and wear resistant in high temperature and fuel environments. ***Convenient:*** • Discontinued part numbers through the factory are now manufactured by McFarlane • Also available in kits containing the shaft, arm, bearing housings, monel rivets, and roll pin

CESSNA SHAFT Description	Part No.	Price
Cessna Shaft MC0450068-2 Model: FA152 Serial No: FA1520337 thru FA1520425	05-04430	$142.95
Cessna Shaft MC0550180-16 Model: 172B,C Serial No: 17247747 thru 17249544	05-04431	$123.95
Cessna Shaft MC0550180-28 Model: F172D,E,F, G Serial No: F172-0001 thru F172-0319	05-04432	$170.95
Cessna Shaft MC0509068-6 Model: 172Q Serial No: 17275869 thru 17276516	05-04433	$176.95
Cessna Shaft MC1752078-4 Model: 177A,B Serial No: 17701165 thru 17702752	05-04434	$78.75
Cessna Shaft MC0750112 Model: 180* Serial No: 30000 thru 32150	05-04435	$124.95
Cessna Shaft MC0750126-19 Model: 180*, 180A,B Serial No: 32151 thru 50661	05-04436	$139.50
Cessna Shaft MC0750133-8 Model: 175, 175A Serial No: 55001 thru 56777	05-04437	$76.50
Cessna Shaft MC0750173-3 Model: 185, 185A,B, C,D,E/ A185E* Serial No: 185-0001 thru 185-1300	05-04438	$149.95
Cessna Shaft MC0750173-4 Model: A185E* Serial No: 185-1301 thru 18501832	05-04439	$162.95

****Partial model eligibiliy.***

CESSNA ARM Description	Part No.	Price
Cessna Arm MCS2280-8-00 Model: 152, A152, F152, FA152 Serial No: 15279406 thru 15286033 A152 A1520735 thru A1521049 F152 F15201429 thru F1520198 FA152 FA1520337 thru FA1520425	05-04440	$133.95
Cessna Arm MC0750111-19	05-04441	$101.95
Cessna Arm MCS2280-3-157	05-04442	$166.95

CESSNA BEARING Description	Part No.	Price
Cessna Bearing HSG MC0750113-1 Model: 152 Serial No: MC0750113-1	05-04443	$46.50
Cessna Bearing HSG MC0750113-3 Model: 172Q Serial No:MC0750113-3	05-04444	$49.75

CARBURETORS

CARBURETOR OVERHAUL QUICK KITS

Kelly Aerospace "Quick Kits" are easy to use, and are designed to save you time and money. Quick Kits include not only the recommended replacement parts used in every overhaul, but the additional parts used by all fuel professionals to insure the job is done right.
Kits include (where applicable): Throttle shaft lever, throttle shaft, throttle adjusting screw, throttle valve screws, inlet strainer screws, throttle body screws, mixture control lever screw, gasket kit, pump connection rod, throttle adjustment spring, throttle opening spring, idle adjustment spring, float lever shaft, pump stem, throttle shaft bushings, inlet strainer washer, pump stem retainer washer, mixture control lever washer, throttle body washers, throttle lever lock nut, float shaft cotter pin, throttle nut cotter pin, pump lever, pump plunger assembly and float valve seat assembly.

KIT P/N	PRICE
CF286-00	**$329.00**
CF286-01	**$479.95**
CF286-02	**$473.00**
CF286-03	**$467.00**
CF286-04	**$429.00**
CF286-05	**$538.50**
CF286-06	**$458.00**
CF286-07	**$486.00**
CF286-08	**$459.95**
CF286-09	**$469.00**
CF286-10	**$529.00**
CF286-11	**$504.00**
CF286-12	**$351.95**

See which Part No. is for your application in the charts to the right.

Franklin Carburetors	
P/N	"Quick Kit" P/N
10-2971-P	CF286-02
10-3007	CF286-06
10-3063-2	CF286-06
10-3148-1	CF286-06
10-3479	CF286-06
10-5069	CF286-02
10-5093	CF286-00
Continental Carburetors	
P/N	"Quick Kit" P/N
10-2848	CF286-02
10-2948	CF286-02
10-3168	CF286-05
10-3237	CF286-03
10-3649-1	CF286-05
10-3759	CF286-05
10-3859	CF286-05
10-3859-1	CF286-05
10-3965	CF286-05
10-3965-1	CF286-05
10-4171	CF286-05
10-4191	CF286-05
10-4233	CF286-02
10-4240	CF286-02
10-4240-1	CF286-02
10-4252	CF286-02
10-4439	CF286-03

Continental Carburetors	
P/N	"Quick Kit" P/N
10-4457	CF286-02
10-4893	CF286-05
10-4893-1	CF286-05
10-4894	CF286-02
10-4894-1	CF286-02
10-4895	CF286-03
10-4895-1	CF286-03
10-5067	CF286-02
10-5082	CF286-02
10-5128	CF286-02
10-5192	CF286-05
10-5284	CF286-05
Lycoming Carburetors	
P/N	"Quick Kit" P/N
10-2827	CF286-07
10-2983	CF286-00
10-3103-1	CF286-00
10-3323	CF286-07
10-3346-1	CF286-02
10-3391-1	CF286-06
10-3565-1	CF286-02
10-3634	CF286-06
10-3678-12	CF286-04
10-3678-32	CF286-04
10-3729	CF286-02
10-3856	CF286-06

Lycoming Carburetors	
P/N	"Quick Kit" P/N
10-3856-1	CF286-06
10-3856-11	CF286-06
10-3856-12	CF286-06
10-3878	CF286-08
10-4057	CF286-09
10-4057-1	CF286-09
10-4164	CF286-08
10-4164-1	CF286-07
10-4404	CF286-09
10-4404-1	CF286-09
10-4910	CF286-04
10-4910-1	CF286-04
10-4953	CF286-00
10-4978-1	CF286-01
10-5009	CF286-04
10-5009N	CF286-04
10-5034	CF286-07
10-5042	CF286-00
10-5045	CF286-10
10-5045-1	CF286-10
10-5050	CF286-01
10-5054	CF286-09
10-5062	CF286-04
10-5092	CF286-10
10-5126	CF286-01
10-5135	CF286-04

Lycoming Carburetors	
P/N	"Quick Kit" P/N
10-5142	CF286-01
10-5180	CF286-10
10-5189	CF286-10
10-5193	CF286-08
10-5199	CF286-00
10-5206	CF286-10
10-5206-1	CF286-10
10-5206-11	CF286-10
10-5210	CF286-10
10-5217	CF286-04
10-5219	CF286-11
10-5220-E	CF286-01
10-5220	CF286-01
10-5221	CF286-12
10-5224	CF286-11
10-5227	CF286-12
10-5230	CF286-11
10-5235	CF286-11
10-5253	CF286-11
10-5255	CF286-11
10-5257	CF286-01
10-5267	CF286-01
10-5282	CF286-11
10-5283	CF286-11
10-5288	CF286-08
10-6014	CF286-11

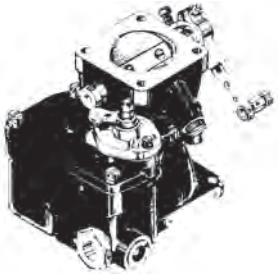
EP

ELLISON CARBURETORS

Ellison variable venturi throttle body injectors provide reliable fuel metering for a variety of homebuilt engine applications. Features include uniform fuel distribution, inverted flight operation, few moving parts, instantaneous response, easy starting, light weight, and low maintenance. When ordering, specify: Engine make, engine model/HP and displacement and RPM.

MODEL	EFS-3A
Part Number	07-00959
Airflow Capacity*	
Fuel Regulation	SV Diaphragm Controlled
Application	>80 HP
Fuel Pressure Requirements**	1/2 - 3 PSI
Controllable Mixture	Yes
Fuel Fitting	3/8 Flared Tube
	$1,025.00

BENDIX STROMBERG NA-S3A1 CARBURETOR OVERHAUL PARTS FOR NA-S3A1 CARBURETOR



The NA-S3A1 carburetor is no longer in production. Only the parts listed are carried in stock. Others may be special ordered. Originally used on Cont. A-65, A-75, A-80, C-75, C-85 and C-90 engines.
Gasket & Ring Set (Incl. gaskets for under seat)
P/N 07-02200 .....**$71.75**
P-14222 Steel Needle and P-17247 seat .....P/N 07-14222 .....**$157.95**
Needle (Delrin) .....P/N 2523047 .....**$125.95**
Metering Jet (C-85) .....P/N 07-00684 .....**$13.50**
Metering Jet (A-65).....P/N 07-00685 .....**$12.50**
Throttle Shaft (Ref. #34 in Manual) not available.

STROMBERG NA-S3A1 CARBURETOR OVERHAUL MANUAL

P/N 07-02400 .....**$15.75**

MARVEL-SCHEBLER CARB GASKETS

MC16-A36 GASKET FUEL INLET FAA-PMA - Marvel-Schebler Fuel Inlet Screen Gaskets for many Carbureted Aircraft The copper gaskets should be changed when finger screens are inspected at each annual inspection.
P/N 07-01387.....**$3.75**

Marvel-Schebler / Facet Carburetor Models Eligible for Installation	Eligible Engine Model Series	
	Continental Model Series	Lycoming Model Series
MA-3, MA-3PA, MA-3A, MA-3SPA, MA-4SPA	A-65, A-75, C-85, C-90, O-200, C-125, C-145, O-300	O-235, O-290, O-320

MC16-A108 GASKET FUEL INLET FAA-PMA - Marvel-Schebler Fuel Inlet Screen Gaskets for many Carbureted Aircraft The copper gaskets should be changed when finger screens are inspected at each annual inspection.
P/N 07-01389.....**$2.95**

Marvel-Schebler / Facet Carburetor Models Eligible for Installation	Eligible Engine Model Series	
	Continental Model Series	Lycoming Model Series
MA-4-5, MA-4-5AA, MA-5, MA-6AA, HA-6	GO-300, O-470	O-340, O-360, O-435, O-540

MC16-A48 GASKET FUEL INLET FAA-PMA - Marvel-Schebler Fuel Inlet Screen Gaskets for many Carbureted Aircraft The copper gaskets should be changed when finger screens are inspected at each annual inspection. Sold as a 5 pack.
P/N 07-01388.....**$11.85**

Marvel-Schebler / Facet Carburetor Models Eligible for Installation	Eligible Engine Model Series	
	Continental Model Series	Lycoming Model Series
MA-4-5, MA-5AA, MA-4-5AA, MA-5, MA-6, MA-6AA, HA-6	GO-300, O-470	O-340, O-360, O-435, O-540

BING CARBURETORS

COMPLETE CARBURETORS – TYPE 54

To Order, Specify:

1. Model indicated by engine number 277, 377, 447, 503, or 532.
2. With intake silencer or Without intake silencer.
3. Single Carb or Dual Carb.
4. Hand Choke or Remote Choke.

Model # 54/36/2040

P/N 07-00303 .....**$327.95**

TYPE 54 REBUILD KIT

#17 Top O Ring #7 Air Screw O Ring
#29 Bowl Gasket #26 Float Needle
#25 Hinge Pin #10 Sieve Sleeve (Screen)
#21 Cable Grommet

P/N 07-00304.....**$34.75**

TYPE 54 FIX-IT KIT

#12 New Spring Cup
#56 Jet Needle O Ring
#11 Clip P/N 07-00305 ..... **$13.75**

COMPLETE CARBURETORS – TYPE 84

To Order, Specify:

1. Model indicated by engine number 277, 377, 447, 503, or 532.
2. With intake silencer or Without intake silencer.
3. Single Carb or Dual Carb.
4. Hand Choke or Remote Choke.

Model # 84/32/3437

P/N 07-00306..... **$334.95**

TYPE 84 REBUILD KIT

#17 Top O Ring #7 Air Screw O Ring
#29 Bowl Gasket #26 Float Needle
#25 Hinge Pin #10 Sieve Sleeve (Screen)
#21 Cable Grommet P/N 07-00307 ..... **$34.75**

EP

ROTAX FLOAT & BOWL KIT

This float and bowl kit replaces a single float system. Includes clip float needle, float pin, float bracket, float chamber, and the float.

P/N 261-010..... **$86.75**

BING CARBURETOR ACCESSORIES

Bing Remote Choke Kit (w/8' cable) .... P/N 07-00308 ....**$72.50**
Bing Remote Choke Kit (w/o cable)..... P/N 07-00309 ....**$54.75**
Bing Aircraft Parts manual ..... P/N 07-00310 ....**$13.25**
Bing Plastic Crossover Vent Tube - 280mm long. Used on Bing type 84 carbs..... P/N 07-01360 ....**$10.50**

CARBURETOR SYNCHRONIZATION

CARBMATE - Quick & easy synchronizing by direct comparison of a set of carbs / Fuel Injector throttle bodies. Range adjstable from 2 to 0,05cmHg per LED. Hook up 2 or 5 cylinder with the optional adapter kit. PN 07-01265 .....**$109.95**

SYNCHROMATE - Precise synchronizing by direct comparison of a set of carbs / Fuel Injection throttle bodies.Fixed resolution of 0, 5cmHg. Includes absolute vacuum & 'wireless' RPM measurement. Hook up 3 or 4 cylinders with the optional adapter kit.

Synchromate .....PN 07-01266.....**$221.95**
W/ Rotax Accessory Kit.....P/N 07-01892.....**$254.95**

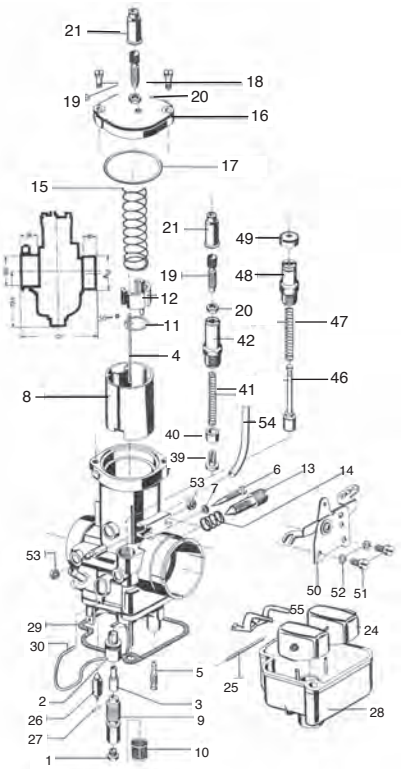
4-CHANNEL ADAPTER KIT

Converts the SynchroMate or CarbMate into a 4 carb/throttle valve synchroniser. This easy-to-mount & easy-to-use kit allows connection of SynchroMate's or CarbMate 2 channels (tubes) to 4 carbs / throttle valves at once.

PN 07-01267 ..... **$57.50**

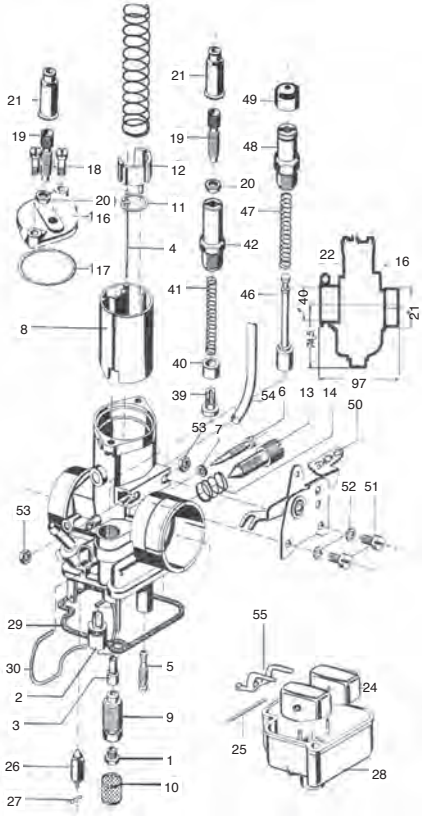
Accessories	Part No.	Price
4-Channek adapter kit TS-220	07-01267	**$57.50**
Rotax adapter w/ 2X6 ft hose TS-400	07-01889	**$61.00**
ROTAX ACCESSORY KIT TS-400 KIT	07-01890	**$87.50**
Rotax black nylon storage case TS-222	07-01893	**$22.25**
Rota rubber black holster TS-223	07-01894	**$8.95**
Rotax replacement 6 ft rubber hose	07-01895	**$13.85**

REPLACEMENT PARTS – TYPE 54



No.	Part No.	Description	Price
1	268-978-998	Main Jet	**$8.50**
2	251-554	Atomizer	**$19.75**
3	963-691-699	Needle Jet	**$14.25**
4	963-711-719	Jet Needle	**$12.65**
5	963-140-147	Idler Jet	**$26.25**
6	963-155	Air Screw	**$9.75**
7	831-710	O Ring	**$2.70**
8	963-679	Piston	**$83.75**
9	963-700	Mixing Tube	**$17.50**
10	261-625	Sieve Sleeve	**$7.90**
11	963-500	Clip	**$6.75**
12	827-347	New Style Spring Cup	**$6.50**
13	963-160	Mix Screw	**$7.25**
14	938-640	Spring	**$2.80**
15	938-655	Slide Spring	**$5.25**
16	963-720	Cover Plate	**$21.65**
17	831-450	O Ring	**$6.25**
18	241-430	Screw	**$1.47**
19	241-440	Adjuster	**$3.85**
20	942-541	Nut	**$1.03**
21	260-370	Grommet	**$2.85**
24	861-181	Indep. Float	**$29.75**
25	929-700	Pivot Pin	**$1.85**
26	261-705	Float Needle	**$29.75**
27	261-710	Clip	**$1.53**
28	261-010	Bowl Kit (bowl,24-27,55) *Float Needle Valve not included	**$86.75**
29	830-720	Gasket	**$8.25**
30	963-180	Bowl Clip	**$7.95**
39	963-740	Piston	**$7.95**
40	268-850	Sleeve	**$3.60**
41	661-050	Spring	**$1.70**
42	963-750	Housing	**$12.75**
46	268-847	Piston	**$19.75**
47	239-730	Spring	**$3.65**
48	261-770	Housing	**$9.75**
49	260-490	Rubber Cap	**$4.95**
50	261-755	Choke Lever	**$22.75**
51	240-791	Screw(51) & Washer(52)	**$2.40**
52	945-750		
53	261-200	Nut	**$1.11**
54	256-035	Vent Tube	**$2.85**
55	861-190	Float Arm	**$14.25**
56	831-715	Jet Needle O Ring	**$1.39**

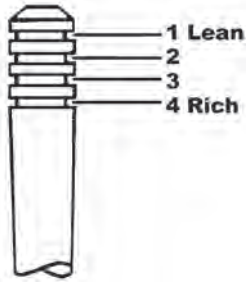
REPLACEMENT PARTS – TYPE 84



No.	Part No.	Description	Price
1	268-980	Main Jet 135	---
2	261-692	Atomizer	**$20.75**
3	261-606	Needle Jet 262	**$12.25**
4	261-643	Jet Needle 8H1	**$13.50**
5	963-140	Idler Jet 50	**$26.25**
6	963-155	Air Screw	**$9.75**
7	831-710	O Ring	**$2.70**
8	261-635	Piston	**$68.50**
9	963-130	Jet Stock	**$17.50**
10	261-625	Screen	**$7.90**
11	261-650	Holding Plate	**$7.50**
12	227-635	Spring Cup	**$6.95**
13	963-160	Mix Screw	**$7.25**
14	938-640	Spring	**$2.80**
15	239-700	Slide Spring	**$6.00**
16	261-660	Cover	**$19.25**
17	261-670	O Ring	**$7.50**
18	241-430	Screw	**$1.47**
19	241-440	Adjust. Screw	**$3.85**
20	942-541	Nut	**$1.03**
21	260-370	Grommet	**$2.85**
24	963-192	Float	**$47.75**
25	929-700	Pin	**$1.85**
26	261-705	Float Needle	**$29.75**
27	261-710	Clip	**$1.53**
28	963-170	Bowl	**$33.75**
29	830-720	Gasket	**$8.25**
30	963-180	Bowl Clip	**$7.95**
39	963-740	Piston	**$7.95**
40	268-850	Sleeve	**$3.60**
41	661-050	Spring	**$1.70**
42	963-750	Housing	**$12.75**
46	268-847	Piston	**$19.75**
47	239-730	Spring	**$3.65**
48	261-770	Housing	**$9.75**
49	260-490	Rubber Cap	**$4.95**
50	261-750	Lever	**$17.00**
51	240-791	Screw(51) & Washer(52)	**$2.40**
52	945-750		
53	261-200	Nut	**$1.11**
54	256-033	Vent Tube	**$2.85**

CARBURETOR JETTING CHART FOR ROTAX® UL ENGINES

Use this chart to identify part number you need, then use bottom chart to select correct part number to order.



ROTAX® ENGINE	$8.25 MAIN JET	$23.50 IDLER JET	$12.25 NEEDLE JET	$11.50 JET NEEDLE	CLIP POSITION	AIR SCREW
2771	148	45	2.72	8L2	2	1
2772	140	45	2.72	8L2	2	1
3771	165	45	2.70	8O2	2	.5
3772	155	45	2.70	8O2	2	.5
4471	165	45	2.70	15K2	2	.5
4472	155	45	2.70	15K2	2	.5
447DC1	135	50	2.70	6G1	3	1
447DC3	128	50	2.68	15K2	2	1
503SC1 Up to #3785371	180	45	2.74	8G2	3	.5
503SC2 Up to #3785371	158	45	2.74	6H2	3	.5
503SC1 From #3785372 Up	185	45	2.72	15K2	3	.5
503SC2 From #3785372 Up	165	45	2.70	15K2	3	.5
503DC1	158	45	2.74	8L2	1	.5
503DC3	148	45	2.68	11K2	2	1
532SC1	195	55	2.74	15K2	3	1
532SC3	170	55	2.74	15K2	3	1
532DC1	165	55	2.72	11G2	3	1
532DC3	145	55	2.68	15K2	3	1
5821	165	55	2.72	11G2	3	1
5823	145	55	2.68	15K2	3	1

1 = Without Rotax® intake silencer kit, with K&N RC1200 air filter, with or without Rotax® after muffler kit.

2 = With Rotax® intake silencer kit, with K&N CM0300 air filter, with or without Rotax® after muffler kit.

3 = With Rotax® dual intake silencer kit, with K&N RC1200 air filters, with or without Rotax® after muffler kit.

MAIN JET

125 = Part No. R268-978
128 = Part No. R261-085
130 = Part No. R268-979
135 = Part No. R268-980
138 = Part No. R268-998
140 = Part No. R268-981
145 = Part No. R268-982
148 = Part No. R268-995
150 = Part No. R268-983
155 = Part No. R268-984
158 = Part No. R268-996
160 = Part No. R268-985
162 = Part No. R268-990
165 = Part No. R268-986
170 = Part No. R268-987
175 = Part No. R268-988
180 = Part No. R268-989
185 = Part No. R261-080
190 = Part No. R261-084
195 = Part No. R268-992
200 = Part No. R261-082
205 = Part No. R261-087
220 = Part No. R261-081

IDLER JET

30 = Part No. R963-141
35 = Part No. R963-143
40 = Part No. R963-142
45 = Part No. R963-144
50 = Part No. R963-140
55 = Part No. R963-147
60 = Part No. R963-145
65 = Part No. R963-146

NEEDLE JET

2.62 = Part No. R261-606
2.68 = Part No. R963-691
2.70 = Part No. R963-698
2.72 = Part No. R963-697
2.74 = Part No. R963-699
2.76 = Part No. R963-693
2.78 = Part No. R963-696
2.80 = Part No. R963-695
2.82 = Part No. R963-694
2.94 = Part No. R961-022

JET NEEDLE

2H2 = Part No. R963-717
4E2 = Part No. R963-716
6G1 = Part No. R261-642
6H2 = Part No. R963-719
8G2 = Part No. R963-712
8H1 = Part No. R261-643
8L2 = Part No. R963-714
8O2 = Part No. R963-711
1O = Part No. R961-045
11G2 = Part No. R961-043
11K2 = Part No. R961-044
15K2 = Part No. R963-718

NEEDLE CLIP

P/N 07-00693 ..... **$6.75**

Lower numbers indicate smaller jet size or opening.
Low numbers = lean.
High numbers = rich.
First needle number denotes mixture above half-throttle.
Needle letter denotes mixture below half-throttle.

KWIK TUNE FOR ROTAX ENGINES

An EAA member called his brother-in-law to ask if he knew of a way to hold the spring and plastic cup while changing the jet needle clip setting on a Rotax engine. Finding no solution, he decided to invent one; the handy Kwik Tune, a timesaving tool he launched at Sun 'n Fun. Kwik Tune helps remove and reinstall the aircraft throttle cable, cover, spring, and slide in a Bing carburetor. P/N 08-05206 ..... **$9.95**

SILVERHAWK EX FUEL INJECTION SYSTEMS

The Silver Hawk EX, non-certified Fuel Injection System is proven technology drawn from decades of fuel metering engineering by Precision Airmotive. Manufactured as experimental, the new Silver Hawk kit provides experimental pilots with precise, dependable, and reliable fuel metering. Just what you'd excpect from Precision Airmotive.
At a price that will make you soar. Manufactured using the highest quality materials and components, the Silver Hawk EX features a machined finish with clear coat anodize. Designed for these major engine manufacturer applications: Lycoming 320, 360, & 540 series; Continental 470 series; Superior and others.

- Specifically engineered and built to meet the demands of aviations growing experimental segment.
- Precision Airmotive appointed worldwide network of factory authorized product support centers
- Backed by a Precision warranty program.

Model No.	Description	Part No.	Price
EX320-1	Application: Lycoming O-320 and IO-320 engines with 150/160 HP	07-00773	**$2,527.00**
EX360-1	Application: Lycoming O-360 and IO-360 parallel valve engines with 160/180 HP Superior O-360 and IO-360 parallel valve engines with 180 HP	07-00774	**$2,589.00**
EX360-2	Application: Lycoming O-360 and IO-360 angle valve engines with 200 HP	07-00775	**$2,828.00**
EX540-1	Application: Lycoming O-540 and IO-540 parallel valve engines with 235-260 HP Continental O-470 engines	07-00776	**$2,583.00**

EP

FUEL PUMPS

BUZZ PUMP AC2001

The Buzz Pump AC2001 is lightweight positive displacement, high volume, manual dual stroke auxiliary fuel pump for experimental aircraft. The Buzz Pump has capacity to operate aircraft engines as large as 300 HP models at full power. Eliminates the connection to a complicated electrical system and expensive high-pressure electrical fuel pump. The Buzz Pump is constructed with high quality engineered materials and components. It will bolt directly into standard Christen and D2 pump bolt patterns.

Specifications: • Weight: 2.4 lbs. •Aluminum billet housing construction • Double O-ring shaft seals • Triple precision bearing shaft support • Metal valves for long life • Pressure setting relief valve: 5-25psi • 90° stroke angle for comfortable operation • Housing dia.: 3.4" x 4.5" total length • Pump handle length: 4.5" • One input port and one output port @ 180° • 1/4-18 NPT tapped holes for fittings • Standard finish is clear anodize (light gray color) • Buzz Filter Sump AC2002, can bolt directly to the pump with an AN911-6D threaded nipple (not included)

P/N 07-00654 ..... **$625.00**

BUZZ FILTER SUMP

The Buzz Filter Sump, AC2002 is a fuel filter/moisture sump for high-pressure applications, 50psi ideally suited for precision fuel injection systems. The Buzz filter/sump can mount directly to the Buzz Pump AC2001 or to the fuselage or firewall. Easy to replace fuel filter. The Buzz Filter/Sump is engineered and constructed with high quality engineered materials and components and will mount directly to the Buzz Pump AC2001, with an AN911-6D threaded nipple.

Specifications: • High-pressure application to 50psi • Weight: 13 oz. •Aluminum billet housing construction • Large O-ring sump seal • 1/4-18 NPT tapped holes for fittings • CG-12 Fram filter with easy to replace insertion chamfer • Standard finish is clear anodize (light gray color) • Curtis drain fitting •*AN fittings not included. P/N 07-00655 ..... **$398.00**

Fuel Pump

MIKUNI FUEL PUMP

Genuine Mikuni fuel pumps. Replace original parts on Rotax®, Hirth, & many other engines.

Single Pump .....P/N 07-00777 ..... **$21.75**
Dual Pump.....P/N 07-00778 ..... **$28.90**

Rebuild Kits

MIKUNI REBUILT KIT FOR SINGLE/DUAL FUEL PUMPS.

Single Pump .....P/N 07-01011 ..... **$7.95**
Dual Pump.....P/N 07-01010 ..... **$14.75**

BING FUEL PUMP

Bing High-capacity pump. Use when tank is more than 5' away or significantly lower than engine.

P/N 07-00779...**$173.95**
Diaphragm Repair kit.....P/N 07-01007.....**$34.85**
Bing Low Vol. fuel pump.....P/N 07-01008...**$106.95**
Repair Kit for Low Vol pump.....P/N 07-01009.....**$27.95**

WELDON HIGH PRESSURE ELECTRIC FUEL PUMP

The 8150 series high pressure electric fuel pump is a positive displacement cammed vane type used primarily in airborne applications. It features a low pressure relief valve and integral bypass valve. Applications include in-line fuel transfer priming of fuel-injected engines & emergency fuel pump. A permanent-magnet, explosion resistant motor is rated for continuous duty. These self-priming, lightweight (2.6 lbs. max.) pumps have been used for over 15 years by major aircraft manufacturers.

Model No.	Flow GPH	Output	Fluid	Power	Core	Price Ea
8150-B Overhauled*	35 Min.	4.5 PSI	Av Gas	24V DC @ 2A	**$225.00**	**$776.00**
** Customer overhauled only. O/H unit comes with 8130.*						
New Fuel Pumps Not FAA approved. For Experimental Aircraft Only!						
8163-A New	35 Min.	21 PSI	Av Gas MIL-G-5572	14V DC @ 5A	---	**$745.00**
8170-A New	35 Min.	4.5 PSI	Gasoline	12V DC @ 4A	---	**$1,170.00**

NEW PMA'D WELDON 18000 FUEL PUMPS

Weldon 18000-A (14Volt) Replaces: Cessna C291504-0101, Dukes 4140-00-17
Weldon 18000-B (28Volt) Replaces: Cessna C291504-0201, Dukes 4140-00-15
18000-A Weldon Pump 14V ..... P/N 08-07082 ..... **$749.00**
18000-A Weldon Pump 28V ..... P/N 08-07083 ..... **$823.00**

MOUNTING BRACKET FOR WELDON FUEL PUMPS

This T-bolt quick release band clamp with mounting bracket fits all Weldon fuel pumps with 2-1/2" diameter motors. Made from certified aerospace quality stainless steel, this bracket offers secure holding power under extreme vibration. The band clamp rotates within the mounting foot to offer easy access to the quick release latch for a variety of mounting positions. P/N 05-00021..... **$37.50 ea.**

TEMPEST LYCOMING & TCM FUEL PUMPS

The Early Model Lycoming Fuel Pump

The New Continental Pump

OVERHAULED LYCOMING FUEL PUMPS

All internal parts are replaced with new certified parts. The actuating arms are magnetic particle test inspected; cast parts are inspected for wear, corrosion and cracks. Bboth the older laminated and newer channel style fuel pumps are overhauled for normally aspirated, pressure carburetor, and fuel injected systems.

Note: Customer will need to provide core for overhaul in the event our supplier does not have cores available to overhaul.

MMO	Description	P/N	Price
Overhauled Lycoming & TCM Diaphragm Fuel Pumps			
40174	Fuel Pump - Overhauled	05-02530	**$242.95**
40296	Fuel Pump - Overhauled	05-02531	**$218.95**
40595	Fuel Pump - Overhauled	05-19015	**$238.95**
41234	Fuel Pump - Overhauled	05-02532	**$207.95**
41270	Fuel Pump - Overhauled	05-02533	**$207.95**
41271	Fuel Pump - Overhauled	05-02534	**$207.95**
41272	Fuel Pump - Overhauled	05-02536	**$237.95**
41452	Fuel Pump - Overhauled	05-02537	**$234.95**
41617	Fuel Pump - Overhauled	05-02538	**$211.95**
41812	Fuel Pump - Overhauled	05-02539	**$239.95**
75246	Fuel Pump - Overhauled	05-02540	**$218.95**
75247	Fuel Pump - Overhauled	05-02541	**$207.95**
103396-01	Fuel Pump - Overhauled	05-02542	**$566.00**
103586-01	Fuel Pump - Overhauled	05-02543	**$566.00**
LW14282	Fuel Pump - Overhauled	05-02544	**$233.95**
LW15399	Fuel Pump - Overhauled	08-15399	**$208.95**
LW15472	Fuel Pump - Overhauled	05-19000	**$209.95**
LW15473	Fuel Pump - Overhauled	05-19010	**$218.95**
LW16335	Fuel Pump - Overhauled	05-02545	**$234.95**
LW16775	Fuel Pump - Overhauled	05-02546	**$234.95**
LW16947	Fuel Pump - Overhauled	05-02547	**$239.00**
RJ4033	Fuel Pump - Overhauled	05-02548	**$504.00**
R00253-1	Fuel Pump - Overhauled	05-02549	**$560.00**
R00253-2	Fuel Pump - Overhauled	05-02551	**$560.00**
R00253-501	Fuel Pump - Overhauled	05-02552	**$555.00**
R00253-502	Fuel Pump - Overhauled	05-02554	**$554.00**
AF1572	Fuel Pump - Overhauled	05-02555-1	**$207.95**
AF15473	Fuel Pump - Overhauled	05-02556-1	**$209.95**
New Lycoming Diaphragm Fuel Pumps			
AF15472	Fuel Pump - New	05-02555	**$250.95**
AF15473	Fuel Pump - New	05-02556	**$248.95**
Overhauled TCM Centurion Fuel Pumps			
4036/9076	Fuel Pump - Overhauled	05-19030	**$322.95**
6861	Fuel Pump - Overhauled	05-19035	**$477.95**
9051/9867	Fuel Pump - Overhauled	05-19025	**$498.95**
40585	Fuel Pump - Overhauled	05-02557	**$503.00**
40695	Fuel Pump - Overhauled	05-02558	**$487.95**
AF40585	Fuel Pump - Overhauled	05-02562	**$478.95**
AF40695	Fuel Pump - Overhauled	05-19045	**$325.95**
AF631391	Fuel Pump - Overhauled	05-19050	**$798.00**
New TCM Centurion Fuel Pumps			
AF6561	Screen Kit	05-02560	**$84.65**
AF16335	Fuel Pump - New	05-02561	**$307.95**
AF40585	Fuel Pump - New	05-02564	**$777.00**
AF40695	Fuel Pump - New	05-02565	**$777.00**
AF631391	Fuel Pump - New	05-19050	**$798.00**

$100.00 CORE CHARGE ON TEMPEST OVERHAULED FUEL PUMPS.

EP

FUEL PUMPS

LYCOMING & CONTINENTAL FUEL PUMPS

Proven to be a trouble-free mechanical pressure pump. Original equipment on numerous airframe installations and adaptable to most applications with one of 3 dual diaphragm types. Overboard vent of this design provides operating assurance throughout all flights.

Engine Type	Engine Model No.	Our P/N	Lycoming Part No.	Our Price
Lycoming	O-235, O-290, O-320, O-340, O-360, HO-360, GO-480, O-540, VO-540	41271 4-6 PSI 05-02534	05-19000 LW15472	**$378.00 (Core $100.00)**
	IO-320, IO-360, AIO-360 HIO-360, IVO-360, IO-540, IGO-540, IO-720	41234 25-30 PSI 05-02532	05-19010 LW15473	**$379.00 (Core $100.00)**
Continental	Can be used on A/C who formerly used low pressure (15 PSI) carb.	41272 (old 40595) 25-30 PSI	LW15473	**$379.00 (Core $100.00)**
	C-75(-12,-12F),C-90 (-8,-8F,-12,12F)	05-19045	AF40695	**$325.95 (Core $100.00)**
	C-90 (-16F), 0-200	05-19050	AF631391	**$798.00**

Adapt pump thread to AN fittings using AC Fuel pump adapters:
P/N 75505 .. Fitting .. **$43.75** or P/N 75505-1 . Fitting & O-Ring. **$43.50**

LYCOMING/AC FUEL PUMP FITTINGS

P/N 07-00783

P/N 07-00782

These fittings are designed to fit mechanical fuel pumps used on Lycoming engines. These fittings feature 3/8" AN flare outlets for connection to aircraft hoses, and are available in straight, 45° and 90° angle versions. Note: These fittings are not certified.

P/N 07-00780

P/N 07-00781

Straight fitting P/N 07-00780... **$3.30**
45° fitting ..... P/N 07-00781... **$9.85**
90° fitting .....P/N07-00782 ... **$7.50**
Tee fitting w/1/8" pipe thread tapping for fuel pressure..P/N 07-00783..... **$16.50**

ACS FUEL PUMP COOLING SHROUD

Designed to keep the fuel pump cooler in the hot engine compartments, and reduce the risk of fuel vapor lock. The cooling shroud will fit carbureted or fuel injector Lycoming engines using a diaphragm style pump. Made in the U.S.A. P/N 08-06097 ..... **$63.85**

FACET POSI-FLO SOLID STATE FUEL PUMPS

• **Fuel Compatibility:** All models of the Facet Posi-Flo Pumps are compatible with gasoline, diesel, biodiesel, blended alcohol fuels and fuel additives.

• **Reliability:** Proven on thousands of original equipment applications. No bearings, electrical contacts, or diaphragms to wear out or fatigue. Lasts four to five times longer than many other electric pumps.

• **Easy to Install-Easy to Service:** Two bolt installation plus the small size makes installation easy. For best results, mount the pump close to the fluid or fuel tank and below the liquid level.

• **Eliminates Vapor Lock:** When properly installed on most vehicles a constant, smooth, dependable supply of fuel under pressure is assured in the hottest weather or in high altitudes.
Not FAA Approved.

Model	Volts	PSI Max-Min	Fitting Size	Lift Min. Dry	Check Valve	Positive Shut Off Valve	Int.-Ext. Fuel Filter	Part No.	Price
60300	12	4-2.5	1/8-27 INT	20	Y	N	EXT.	05-06862	**$32.50**
60301	12	5-3.5	1/8-27 INT	30	Y	N	EXT.	05-06863	**$32.50**
60302	12	7-5	1/8-27 INT	32	Y	N	EXT.	05-06864	**$32.50**

FACET ELECTRIC FUEL PUMPS

SOLID-STATE TYPE PUMPS - Measure less than 3" in any direction and weigh only 18 oz. Fuel is supplied as soon as the ignition is turned on so the engine will start faster at colder temperatures. Built-in pressure relief prevents flooding and assures fast re-starts on hottest days. The all-steel plated case is water tight. Mounts with two bolts. For best results, mount the pump close to the fuel tank and below the liquid level. The tank is self-priming to 18" fuel lift. Standard 12 V models require only 1 amp at max. delivery. All of the pumps shown feature a all nylon valve and plunger.

FACET NO. 40104 - 12V Neg. Ground, 4. - 1.5 PSI Max.,25GPH. 1/8 x 27 internal pipe ports..... P/N 40104..... **$33.85**
FACET NO. 40105 - 12V Negative Ground, 3.0 - 4.5 PSI Max., 30 GPH. 1/8 x 27 internal pipe ports..... P/N 40105..... **$33.50**
FACET NO. 40106 - 12V Negative Ground, 4.5 - 6 PSI Max., 30 GPH. 1/8 x 27 internal pipe ports..... P/N 40106..... **$33.65**
FACET NO. 40163 - 12V Neg. Ground, 2.5-1.5 PSI Max, 17 GPH, 1/8 x 27 internal pipe ports..... P/N 40163..... **$53.50**
FACET NO. 40164 - 24V Negative Ground, 4-C PSI Max, 30 GPH, 1/8 x 27 internal pipe ports..... P/N 40164..... **$42.85**
FACET NO. 40171 - 12V Neg. Ground, 3.5 - 2 PSI Max, 15 GPH, 1/8 x 27 internal pipe ports..... P/N 05-40171..... **$48.50**
FACET NO. 40288 - 12V Neg. Ground, 4.5 - 3.0 PSI Max, 30 GPH, 1/8 x 27 internal pipe ports..... P/N 05-06860..... **$35.75**
FACET NO. 40289 - 12V Neg. Ground, 0 GPH, 1/8 x 27 internal pipe ports..... P/N 05-06861..... **$35.75**
FACET NO. 40108/40154 - Aircraft Spruce now carries 12V and 24V electric fuel pumps which have AN-style 37° male "dash 6" fittings built into the fuel pump to provide a simpler fuel line hookup than with the internal pipe threads on the older Facet fuel pumps.

4-6 Psi..... P/N 40108 (12V)..... **$44.75**
15 GPH. ..... P/N 40154 (24V)..... **$44.50**

Facet filter for solid-state pumps..... P/N 479735..... **$4.45 ea.**
Facet Gasket & Filter FEP 42370 ..... P/N 05-01019..... **$6.75**
The pumps above do not feature an anti-siphoning valve and fuel will flow through them in event of pump failure.

AEROQUIP FITTING FOR FACET PUMPS

On the recommendation of Rutan Aircraft Factory, we now stock Aeroquip #2071-6-6S fitting which is a steel elbow with a swivel nut which fits the 37 flares on the Facet 40108 and 40154 fuel pumps. This Aeroquip fitting makes installation of the pumps easy & economical. P/N 04-05800 ..... **$4.95**

INTERRUPTER TYPE PUMPS

Fuel Compatibility: All models of the Facet High Performance Gold-Flo Solid State Fuel Pumps are compatible with gasoline, diesel, biodiesel, blended alcohol fuels and fuel additives. **Reliability:** An enhanced version of the Interrupter model. It has Solid State circuitry and will meet or exceed all performance specifications and is totally interchangeable. (These pumps have demonstrated an endurance life almost double that of the nearest competitor, according to our test data). **Easy to Install-Easy to Service:** Two bolt mounting makes installations easy. Nothing to adjust. The pump is self-priming to 24 inches vertical fuel lift. Vertical mounting is preferred to assure maintenance of rated pressures. An installation kit is available for replacement applications. The only service normally required is a simple cleaning of the filter and fuel inlet cavity. **Eliminates Vapor Lock:** When properly installed on most vehicles a constant, smooth, dependable supply of fuel under pressure is assured in the hottest weather or in high altitudes. Available Features: • 12 - 24 inches dry lift • 20 - 45 GPH • 1 - 8 PSI • Transient Protection - 24 volt only • State of the art Electronics • Sealed Electronics • Built in Anti-Siphon Valve (Positive shut-off) • UL Certified • VCA Certified • Complies to Mil-std-461D • Replaceable 74 micron filter • Built in magnet to collect metal particles for additional filtration • 1.6 amp average • Self Priming and Self Regulating • 32 ounces and 5 inches • Corrosion Resistant over 100 hours of salt spray • Operating Temperature Range: -40F to 180F.

Facet No.	Part #	Price
480545-12V Neg. Ground, 4-5 psi, 30gph. Incl. anti-siphoning valve. Used on Maule aircraft.	480545	**$77.25**
478360E-12V Neg. Ground, 4-5 psi, 30 gph. W/o anti-siphoning valve. Used on some Piper aircraft.	478360E	**$75.85**
476088-24V Negative Ground, 4-5 psi, 30 gph. Used on some Piper and Grumman models.	476088	**$74.85**
480543-12V Neg. Ground, 6.5-7.5 psi, 45gph. Used by some engine rebuilders and aircraft modification shops.	480543	**$93.95**
Facet filter for interrupter pumps.	479729	**$3.65**
480534E- 12V Negative Ground, 8.-6 psi, 45gph, 1/4-18 fitting	05-00802	**$79.95**
480564E- 24V Negative Ground, 4-5 psi, 32gph. Includes anti-siphoning valve. 1/4-18 fitting.	05-01003	**$97.50**

UNLISTED PUROLATOR/FACET FUEL PUMPS - CALL US!
As a master distributor for the Purolator/Facet factory, Aircraft Spruce carries the full line of fuel pumps and parts. If the Purolator/ Facet pump or part you require is not listed above, please contact us at 1-877-4-SPRUCE (1-877-477-7823) or by email or fax for pricing and availability on the parts you require.

EP

AVIATION REFUELING PUMPS

These aviation pumps are only intended to be groundbased or vehicle mounted. Do not use or mount in or on the aircraft. For use with aviation gasoline (AVGAS 100LL) and kerosene grade (JET A). User should consult NFPA 407 Standard for aircraft fuel servicing for safety requirements during ground fuel servicing of aircraft using liquid petroleum fuels. This product has no actual or implied compliance with this standard. Warranty is 2 years.

M-150S-AV-PO

M-3025-CB-AV-PO

M-3120-AV-PO

M-3130-AV-PO

PUMPS

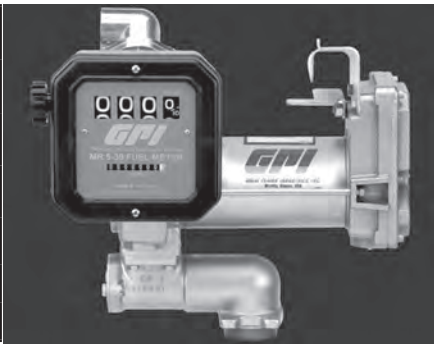
Pumps Model No.	M-150S-AV-PO	M-3025-CB-AV-PO	M-3120-AV-PO	M-3130-AV-PO
Part No.	08-07463	08-07464	08-07465	08-07466
Price	**$376.00**	**$643.00**	**$604.00**	**$989.00**
Volt	12-Volt	12-Volt	115-Volt	115/230-Volt
GPM	15 GPM / 57 LPM	25 GPM / 95 LPM	20 GPM / 75 LPM	30 GPM / 114 LPM
Approvals	Motor is U.L. Listed to U.S. and Canadian Standards			
Use With	Gasoline, Gasoline/Ethanol blends at levels designated as “gasohol” (E10 maximum), diesel, kerosene and aviation fuels gasoline (AVGAS 100LL) and kerosene grade (JET A).			

METERS

Meter Model No. & Part No. Price	08-07464	MR-5-30-G8N, Aviation	**$643.00**
	08-07468	MR-5-30-L8N, Aviation	**$229.00**
Flow Range	5-30 GPM (19-114 LPM)		
Use with	Gasoline, Gasoline/Ethanol blends at levels designated as “gasohol” (E10 maximum), diesel, kerosene, aviation gasoline (AVGAS 100LL) and kerosene grade (JET A).		

COMBOS

Model No. & Part No. Price	Calibrated in Gallons	08-07469	M-3025CB-AV-PO / MR 5-30-G8N	**$874.50**
		08-07470	M-3120-AV-PO / MR 5-30-G8N	**$825.00**
		08-07471	M-3130-AV-PO / MR 5-30-G8N	**$1,188.00**
	Calibrated in Liters	**Special Order. Please request a quote.**	M-3025CB-AV-PO / MR 5-30-L8N	**Special Order. Please request a quote.**
			M-3120-AV-PO / MR 5-30-L8N	
			M-3130-AV-PO / MR 5-30-L8N	



AIRCRAFT SPRUCE WEST **AIRCRAFT SPRUCE EAST**
CORONA, CA • (877) 4-SPRUCE **PEACHTREE CITY, GA • (877) 477-7823**

Prices Subject to Change Without Notice

FUEL PUMPS – GASKETS

ANDAIR FUEL BOOST PUMPS

The high pressure fuel boost pump from Andair features a brushless motor which is light weight, powerful, and reliable. The pump components are D2 tool steel providing unequalled wear characteristics. The model PX375-40A-5-25 boost pump is furnished with a BLX-150 controller that is needed to drive the pump. This pump was designed to meet the requirements of an engine such as the Lycoming IO-360 at full power. The model XP375-40A-5 has none of the pressure relief or bypass features of the boost pump and is designed for a smoke system or transfer fuel from tank to tank. This pump is furnished with a BLX-165 controller. **Features**: * Integral bypass and pressure relief valve. * 11-14V DC, 6 amps max * Flow: 16 GPH @ 25 PSI * Open Flow: 56 GPH @ 8 PSI * Pressure drop in bypass mode @ 36 GPH: <0.5 PSI * No flow max pressure: 26 PSI * Weight: 460g (16.23 oz) * Soft Start - Continuous Duty * Self Priming to 10ft (3M) Head through 3/8" tube. * Aerospace Grade Aluminium Body. * AN-6 male fittings. * Mounting bracket included.

Fuel Boost Pump..... P/N 07-01334 ..... **$720.00**
Smoke Transfer Pump..... P/N 07-01335 ..... **$555.00**
Boost Pump Bracket Kit..... P/N 07-01334-1 ..... **$38.85**

ANDAIR FUEL PUMP KITS

Engine Size	Description	Andair PN	Contents	Part No.	Price
IO320-IO360	Pump Kit	PK-360	Pump + Bracket (PX375-40A-5-25-F + KX10)	07-01352	**$722.00**
	Filter Pump Kit	FPK-360	Filter+ Pump+ Bracket (FX375-MK + PX375-40A-5-25-F + KX10)	07-01353	**$770.00**
	Fuel System Deluxe	FS-DE-LUX-360	Filter+Pump+ Bracket Valve + Gascolator + Bulkhead fitting (FX375-MK + PX375-40A-5-25-F + KX10 + FS20x7-T + GAS375-F + BH375)	07-01354	**$1,094.00**
	Fuel System Super Deluxe	FS-S/DE-LUX-360	Pump + Bracket + 2 x Gascolator Valve + Bulkhead fitting (PX375-40A-5-25-F + KX10 + 2off GAS375-F + FS20x7-T + BH375)	07-01355	**$1,195.00**
Engine Size	**Description**	**Andair PN**	**Contents**	**PN**	**Price**
IO540-IO580	Pump Kit	PK-540	Pump + Bracket (PX375-40A-5-28-F + KX10)	07-01356	**$722.00**
	Filter Pump Kit	FPK-540	Filter + Pump (PX500-TC + FX375-MK)	07-01357	**$770.00**
	Fuel System Deluxe	FS-DE-LUX-540	Filter+ Pump+ Bracket Valve + Gascolator + Bulkhead fitting (FX375-MK + PX375-40A-5-28-F + KX10 + FS20x7-T + GAS375-F + BH375)	07-01358	**$1,100.00**
	Fuel System Super Deluxe	FS-S/DE-LUX-540	Pump + Bracket + 2 x Gascolator Valve + Bulkhead fitting (PX375-40A-5-28-F + KX10 + 2off GAS375-F + FS20x7-T + BH375)	07-01359	**$995.00**

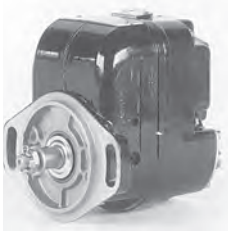
CONTINENTAL W-670 GASKETS

The following gaskets are FAA-PMA approved for use on the following engines: W-670-6A, -6N, -16, -K, -M, -23, -24.

Part No.	Model	Description	Price
08-07232	TA22075	COMPLETE OVERHAUL GASKET SET	**$507.00**
08-07233	TA22065	TOP OVERHAUL GASKET SET	**$297.95**
08-07234	YA22055	CYLINDER REPLACEMENT SET	**$56.95**
08-07235	YA2096-1	INTAKE PIPE SEAL AT CASE	**$9.95**
08-07236	YA2247-1	MAGNETO MOUNT GASKET (VMN TYPE)	**$9.95**
08-07237	YA2249-1	STARTER MOUNT GASKET	**$8.50**
08-07238	YA2589-1	OIL SCREEN HOUSING GASKET	**$4.35**
08-07239	YA2827-1	GASKET INTAKE PIPE AT CYL.	**$15.75**
08-07240	YA2845-1	CYL. BASE SEAL	**$5.50**
08-07241	YA3112-1	ACCESSORY CASE GASKET	**$31.25**
08-07242	YA3710-1	DUPLEX PUMP MOUNT GASKET	**$8.50**
08-07243	YA3939-1	DUPLEX INTERNAL GASKET	**$8.50**
08-07244	YA20254-1	ROCKER COVER	**$5.95**
08-07245	YA20254-R	ROCKER COVER RUBBER TYPE BLACK	**$10.25**
08-07246	YA20266-1	SEAL PUSH ROD TUBE	**$5.95**
08-07247	YA20268-1	LIFTER GUIDE GASKET	**$5.25**
08-07248	YA20268-R	LIFTER GUIDE GASKET RUBBER TYPE	**$6.75**
08-07249	YA20275-1	ROCKER HOSE .	**$7.75**
08-07250	YA20421-1	SEAL SCAVAGE OIL LINE BETWEEN CASES	**$4.25**
08-07251	YA20423-1	FUEL PUMP MOUNT GASKET	**$6.75**
08-07252	YA20467-1	ROCKER ELBOW GASKET	**$2.50**
08-07253	YA20532-1	SCAVAGE PUMP LEAD GASKET	**$10.25**
08-07254	YA20748-1	OIL OUTLET GASKET	**$3.40**
08-07255	YA20889-1	MAGNETO DRIVE GEAR SEAL	**$27.25**
08-07256	YA20951-1	FRONT SUMP GASKET	**$5.95**
08-07257	YA20952-1	REAR SUMP GASKET	**$5.95**
08-07258	YA20977-1	DUPLEX OIL PUMP SEAL	**$17.25**
08-07259	YA22142-1	SCAVAGE PUMP SEAL	**$21.25**
08-07260	YA22143-1	FUEL PUMP GASKET	**$6.75**
08-07261	YA22442-1	GENERATOR MOUNT GASKET	**$5.95**
08-07262	YA22443-1	TACH DRIVE GASKET	**$4.35**
08-07263	YA22446-1	SCAVAGE PUMP MOUNT GASKET	**$8.50**
08-07264	YA22453-1	AIR HORN TO CARB. GASKET	**$8.50**
08-07265	YA22803-1	CARBURATOR MOUNT GASKET	**$5.95**
08-07266	YA22931-1	MAGNETO MOUNT GASKET (SF7 TYPE)	**$8.50**
08-07267	YA24335-1	PUSH ROD TUBE GASKET	**$5.25**
08-07268	YA24355-R	PUSH ROD TUBE GASKET RUBBER TYPE	**$6.75**
08-07269	YA500060-1	STEP DRIVE TO CASE GASKET	**$5.25**
08-07270	YA500062-1	STEP DRIVE GASKET	**$6.75**
08-07271	YA531090-1	STARTER MOUNT GASKET (Thick)	**$12.75**

EP

BENDIX-SCINTILLA MAGNETOS



BENDIX MAGNETOS *(Outright Purchase)*

S4LN-20 (RH).....P/N 10-600644-1..... **$1,334.00** S4LN-21 (LH) ..... P/N 10-500514-1 ..... **$1,525.00**

All above magnetos have impulse coupling.

REMANUFACTURED BENDIX MAGNETOS

S4LN-20(RH)	10-51360-29R	**$578.00**	S4LN-21	10-51360-26R	**$580.00**	D3000	10-682555-11R **$1,534.00**
S4LN-21(LH)	10-51360-37R	**$698.00**	S4LN-21	10-51360-37R	**$698.00**	1200	10-68255-14 **$1,395.00**
200 Series	10-16305-9	**$523.00**	1200	10-34937-4	**$673.00**		10-34931-1 **$508.00**
	10-51365-47R	**$670.00**	D3000	10-68256-11	**$1,449.00**		10-51360-27R **$585.00**
	10-51360-28R	**$588.00**		10-51365-39	**$654.00**		10-79020-10 **$549.00**
	10-500516-4	**$736.00**					

Exchange Price. Add **$190.00** core charge to price above. Refundable with return of rebuildable exchange magneto.

ALL MODEL NUMBERS AVAILABLE

For a complete listing of Hartzell Engine Technologies and Tempest Overhauled Magnetos & replacement parts see www.aircraftspruce.com

BENDIX MAGNETO ENGINE APPLICATIONS

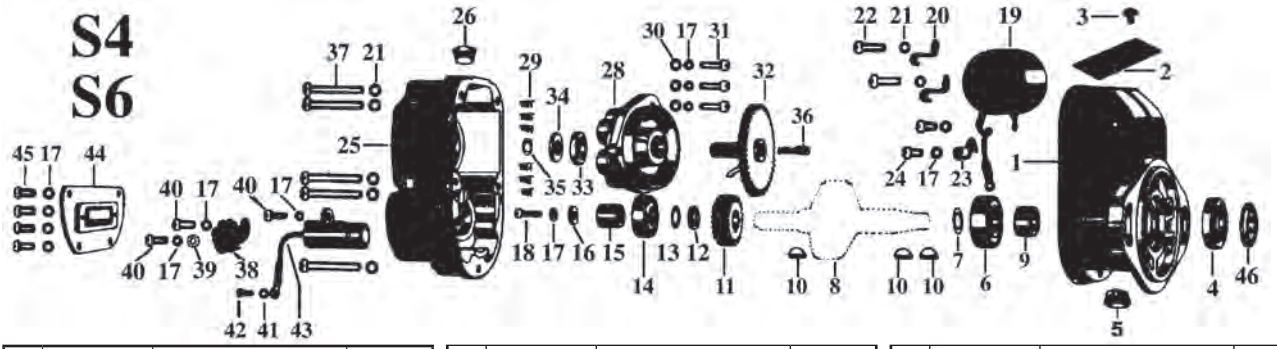
Engine		Magneto Type	Magneto Replacement	Units per Engine
Make	Model			
Continental	A-65-8, A-75-8,	S4RN-20	10-51360-27 (Rt. Side)	1
	C-75-8, C-85-8 with original crankcase	S4RN-21	10-51360-28 (Lt. Side)	1
	A65-8, A-75-8, C-75-8, C-85-8 with current crank-case castings No. 6794 & No. 6795	S4RN-21	10-51360-28	2
	C-75-12F, C-85-8F,C-85-12F, C-90-12,	S4LN-21	10-51360-26	2
	C-115, C-125-2, C-145-2, C-145-4	S6LN-21	10-51365-39	2
	E-165-2, E-185-2 (above S/N 10111) E-185-3, E-185-9 (above S/N 5937) (above S/N 20922), E-225-4, E-225-8 (all), O-470-7 (above S/N 5937)	S6LN-20	10-51365-43	2
	GO-300A, GO-300B	S6RN-21	10-51365-35	2
	O-470-2, -4, -13, -A, -B, -E, -G, -J, -K, -L, -M, BGSO-526-A	S6RN-25	10-79020-8	2
	O-470-13A	S6LN-23	10-52350-20	2
	PE-150-2, -6 Packette	S6LN-23	10-52350-20	1
	FSO-526-A	S6RN-26	10-85290-2	2
Franklin	6A4-150-B3, 6A4-165-B3	S6RN-21		2
	6V4-178-B3, -B33, O-335-2, -3	S6RN-21	10-51365-48	2

Engine		Magneto Type	Magneto Replacement	Units per Engine
Make	Model			
Franklin	6V4-200-C32, -C33, O-335-2, -3, -5, -6	S6RN-23	10-52350-19	2
	6A4-200-C6	S6RN-23	10-52350-21	2
Lycoming	††O-145-B2, -B3, -C2, -C3, ‡‡O-235-C,	S4LN-20	10-51360-29	1
	O-235-C1, -C1A,	S4LN-21	10-51360-30	1
	O-320-A1A, -A2A, -B1A, -B2A, O-340-A, -A1A,	S4LN-21	10-51360-30 (25° Lag) or	2
	-A2A, -B1A, B2A, O-360-A, -A1A, -A1B , -B1A, -B2A	S4LN-21	10-51360-25 (35° Lag)	2
	O-290-G (single ignition)	S4LN-21	10-51360-25	1
	GO-435-C2, -C2A, -C2B , -C2B2, -C2C, -C2E, GO-480, -B, -B1A6, -B1C,	S6LN-20	10-51365-31	1
	-B1D, -C1A, -C1D6, -C2E6, -F1A6, -F2A6, -F3A6, -F4A6	S6LN-21	10-51360-32	1
	O-435-19, -20, VO-435A, -A1A, -A1B, -A1C, -A1D, GO-480-C1B6, -D1A,	S6LN-20	10-51365-33	1
	-G1B6, GSO-480-A1A6, -A1C6, -B 1A6, -B1B6,-B1C6	S6LN-21	10-51365-34	1
	O-435-6, -6A, -23, -23A,	S6LN-22	10-52350-22	1
	-23B, -A1C (optional), O-480-1	S6LN-23	10-52350-23	1
	O-435-17, GO-435-C2, -C2A, -C2B, -C2D,	S6LN-20	10-51365-44	1
	GO-480-B1, -B1B, -C2C6, -F3B6, -F4B6	S6LN-21	10-51365-45	1
	O-540	S6LN-20	10-51365-46	1
		S6LN-21	10-51365-47	1

**See Listing Below.*

***New P/N 10-357584. ***New P/N 10-357586.*

PARTS COMMON TO S4N & S6N MAGNETOS



Ref. No.	Part No.	Description	Price Ea.
1	10-50727Y	Housing - Magneto	**$524.00**
2	10-400012	Plate - Mag Ident	**$21.75**
3	10-22067	Drive Screw - Ident Plate	— —
4	10-357592	Oil Seal - Drive Shaft	**$18.95**
5	10-157134	Vent - Mag Housing	**$3.95**
6	10-81806	Bearing - Mag. Drive End	**$32.75**
7	2-161-1	Shim Washer - .0025"	**$2.85**
	2-161-2	Shim Washer - .004"	**$6.50**
	2-161-3	Shim Washer - .005"	**$3.00**
	2-161-4	Shim Washer - .008"	**$2.45**
	2-161-5	Shim Washer - .010"	**$3.20**
	2-161-6	Shim Washer - .012"	**$2.90**
	-------	(Drive End Bearing)	-------
8	— —	Magnet - Rotating	— —
9	10-25788	Bushing - Drive Shaft	**$27.85**
10	10-90788-5	Key - Woodruff	**$1.74**
11	10-157123Y	Gear-Distrib., Small (S4)	**$58.75**
11A	10-157120Y	Gear-Distrib., Small (S6)	**$38.65**
12	10-3503	Spacer-Brkr End Bearing	**$1.85**
13	2-199-1	Shim Washer - .002"	**$1.96**
	2-199-2	Shim Washer - .004"	**$1.97**

Ref. No.	Part No.	Description	Price Ea.
13	2-199-3	Shim Washer - .005"	**$1.82**
	2-199-4	Shim Washer - .008"	**$2.15**
	2-199-5	Shim Washer - .010"	**$1.80**
	2-199-6	Shim Washer - .012"	**$1.81**
	--------	(Breaker End Bearing)	-------
14	2-202	Bearing-Magnet, Brkr End	**$43.50**
15	10-88543-1	Cam - Breaker	**$31.85**
16	10-51354	Washer-Plain (Cam Screw)	**$1.85**
18	10-35936-10	Screw - Cam	**$2.35**
19	10-357164	Coil	**$156.95**
20	10-50765	Clamp - Coil Core	**$5.95**
21	--------	Washer - Lock	-------
22	10-35937-8	Screw - Coil Core Clamp	**$2.20**
23	10-5752	Clip - Primary Lead	**$2.80**
24	10-16479	Screw	— —
25	— —	Housing - Distributor	— —
26	10-157135	Plug - Distributor Housing	**$3.90**
27	— —	Bushing - Ground Terminal	— —
28	10-52949	Block - Distributor (S4)	**$83.50**
28A	10-52958	Block - Distributor (S6)	**$122.95**
29	10-50737	Spring-H.T. Cable Contact	**$0.63**

Ref. No.	Part No.	Description	Price Ea.
30	-------	Washer - Plain	-------
31	-------	Screw - Distributor Block	-------
32	10-357584	Gear-Distrib., Large (S4)**	**$72.65**
32A	10-357586	Gear-Distrib., Large (S6)***	**$158.50**
33	10-50752	Washer - Felt	**$0.98**
35	10-92815-37	Ring-Retain. (Distrib.,Gear)	**$0.81**
36	10-9595	Brush - Carbon	**$7.50**
37	10-157158	Screw	**$2.47**
38	— —	Breaker Assembly*	— —
39	10-14268	Washer - Plain	**$1.89**
40	10-35936-6	Screw	**$2.60**
41	-------	Washer - Lock	— —
42	-------	Screw - Lead to Breaker	-------
43	10-51676	Condenser	**$25.75**
44	— —	Cover - Breaker	— —
45	10-157161	Screw - Breaker Cover	**$2.60**
46	10-51678	Oil Slinger - Drive Shaft	**$9.75**

EP

BENDIX-SCINTILLA MAGNETOS

BENDIX
BREAKER ASSEMBLIES

Early S4, S6 Mags

P/N 07-06305 (10-357173) with spring (current production) ..... **$34.75 Ea.**
P/N 07-06306 (10-357174) without spring (current production) ..... **$35.65 Ea.**

All above breaker assemblies used on either Right or Left Magnetos.
Late S4/S6 Mags, S200 Mags*

P/N 10-382584 (LH) ..... **$39.75 Ea.**
P/N 10-382585 (RH) ..... **$37.50 Ea.**

Used on many late Lyc. engines.
Note: Specify Bendix mag P/N e.g., 10-51369-29

REPLACEMENT COIL FOR BENDIX S4, S6 MAGS

Airborne FAA-PMA approved coil replaces both Bendix 10-357164 & 10-357165. Retrofits virtually the complete range of Bendix S20 & S200 series mags. Furnished with long & short "coil to points" leads.
P/N ES-652 ..... **$108.95**

NOTE: Part Nos. 10-357164-1, 10-357165-1, 07-06303, 07-06304 are all equivalents for ES-652

REPLACEMENT COIL FOR BENDIX 1200 SERIES MAGS

Aero Accessories, Inc. FAA-PMA approved coil is a direct replacement for Bendix 10-391088 coil as used on Bendix 1200 series mags at tremendous savings. P/N 07-05600 ..... **$154.95**

REPLACEMENT COILS FOR CONTINENTAL ENGINES PER SERVICE BULLETIN NO. 637

TCM Ignition Systems has issued Service Bulletin No. 637 to retire from service certain older coils and rotating magnets. The Bulletin applies to many S-20, S-200, S-600, and S-1200 series magnetos as identified in this chart. Compliance with this Bulletin is required at the next 100 inspection, annual inspection, or progressive maintenance inspection, whichever comes first. Order by new coil part number.

Magneto Series	Old Coil P/N	Color	New Coil P/N	Color	Our Price
S-20	10-51303 10-76384 10-160886	Opaque amber to Dark Purple	10-357164	Bright Red to Dark Red	**$156.95**
S-20 S-200	10-163172 10-163209 10-160887	Opaque Amber to Dark Purple	10-357165-1	Bright Red to Dark Red	**$156.95**
S-1200	10-349271	Opaque Amber	10-391088-1	Blue to Olive Green to Black	**$198.00**

ALTERNATOR FILTER

Replacement part for existing alternator filters. Wire won't break at the case and its clamp is made from heavy gauge steel. Double the capacitance compared to OEM alternator filters. For stubborn alternator noise, this Alternator filter combined with the Eliminator (P/N 11-08055) can trap a wide frequency range of electronic noise. Both of these filters have been thoroughly tested under a DO 160D and are FAA/PMA approved. P/N 11-08060..... **$59.95**

MAGNETO FILTER

Eliminates ignition noise. Install in primary lead of magneto. Not FAA approved. P/N 07-03200 ..... **$59.90 ea**

MAGNETO FILTER FAA APPROVED

Attenuates both low and high frequencies of noise generated from bendix magneto ignition systems. This filter has been used by avionics shops, OEM aircraft manufacturers, and FBO's, to attenuate and suppress pulsating noise generated by their aircraft's magneto systems. The magneto filter is FAA-PMA approved and is compatible with the bendix series S20, S21, S200, D3000, D4000 magneto. 1000 VDC working voltage, 5000VDC break down voltage. Capacitance: .05 uf-self healing technology. Heavy duty mounting clamp. Temp. range: -35°C to +80°C. Max. current: 20 amps P/N 07-00713 ..... **$68.80**

BENDIX MAGNETO GREASE

#10-27165 - Factory recommended lubricant for bearings in Bendix magnetos. 1 Lb. Can ..... P/N 10-27165 .... **$62.75**
#10-391200 - For use on distributor block bushing. Provides proper shaft lubrication.
8 oz. can ..... P/N 10-391200 .. **$64.50**
1 oz. tube ..... P/N 07-02500 ..... **$3.95**

GROMMET STRETCHER

Stop Cutting Grommets!
- Stretch grommets over large plugs and fittings.
- Great for spark plug wires or molex plugs.

P/N 11-06946 ..... **$24.75**

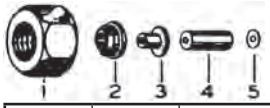
CONTINENTAL MAGNETO DRIVE GEARS

#36066 Gear (Now 655845) **$657.00**

GROUND TERMINAL KITS

For S-20 series mags. Kit No. 10-52306 (AN3105) **$38.85**

Reg. No.	Part No.	No. Req.	Description
1	10-30299	1	NUT - Coupling (Ground Terminal)
2	10-56507	1	CROMMET Assy.(Ground Terminal)
3	10-3383	1	FERRULE - Inner (Ground Wire)
4	10-25725	1	SLEEVE - Insulating (Ground Wire)



For 20 series mags. Kit No. P/N 10-52305 . **$74.65**

Reg. No.	Part No.	No. Req.	Description
1	10-37669	1	NUT - Coupling (Ground Terminal)
2	10-7030	1	FERRULE - Outer (Ground Wire)
3	10-7029	1	FERRULE - Inner (Ground Wire)
4	10-37668	1	SLEEVE - Insulating (Ground Wire)
5	2-155	1	WASHER - Ground Wire Contact

TCM/BENDIX IMPULSE COUPLINGS

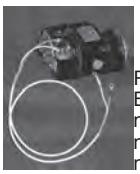
Part No.	Price
10-40307	**$388.95**
10-40309	**$306.50**
10-40310	**$306.50**
10-400313	**$366.95**
10-40314	**$339.75**
10-40315	**$339.75**
10-40322	**$279.95**
10-40325	**$365.95**

$70.00 core charge applies

TCM/BENDIX CAM ASSEMBLIES

Part No.	Price
10-40166-4	**$246.95**
10-40166-6	**$252.95**
10-40167-4	**$253.85**
10-40167-6	**$249.95**
10-40167-10	**$259.50**

$40.00 core charge applies



BOGERT AVIATION P-LEADS

P-leads for all aircraft using a Slick or Bendix Style Magnetos. This includes nearly all piston aircraft such as: Cessna, Piper, Grumman, Mooney, as well as many homebuilt and experimental aircraft. As a general rule cables should be replaced when ever wear is apparent. Broken ground leads should not be permitted. A drop in rpm is expected when one magneto of the two mags is shut off. Should the propeller be moved by hand and a functional "hot" magneto exists, the engine may fire causing injury. If there is no drop in rpm the owner should call a mechanic immediately. Bogert is using 14gauge MS27500 wire with aviation approved terminals. The shrink tube has an adhesive inside the sleeve to improve durability and reduce the possibility of corrosion. Cables are ready to install.

Length inches	Slick Style		Bendix Round Nut		Bendix Hex Nut	
	Part No.	Price	Part No.	Price	Part No.	Price
30	11-06869	**$30.25**	11-06891	**$69.25**	11-06914	**$86.50**
36	11-06870	**$31.85**	11-06892	**$70.75**	11-06915	**$87.65**
42	11-06871	**$32.75**	11-06893	**$87.25**	11-06916	**$88.75**
48	11-06872	**$33.50**	11-06894	**$72.75**	11-06917	**$88.50**
54	11-06873	**$34.75**	11-06895	**$73.85**	11-06918	**$91.50**
60	11-06874	**$35.75**	11-06896	**$75.00**	11-06919	**$92.25**
66	11-06875	**$37.65**	11-06897	**$76.25**	11-06920	**$93.25**
7	11-06876	**$38.00**	11-06898	**$77.50**	11-06921	**$95.00**
84	11-06877	**$41.50**	11-06899	**$81.25**	11-06922	**$98.50**
96	11-06878	**$44.50**	11-06901	**$84.50**	11-06923	**$101.95**
108	11-06879	**$48.50**	11-06902	**$88.00**	11-06924	**$105.95**
120	11-06880	**$52.00**	11-06903	**$91.50**	11-06925	**$108.95**
132	11-06881	**$55.50**	11-06904	**$95.00**	11-06926	**$112.95**
144	11-06882	**$59.00**	11-06905	**$98.50**	11-06927	**$115.95**
156	11-06883	**$62.50**	11-06906	**$101.95**	11-06928	**$119.95**
168	11-06884	**$66.00**	11-06907	**$105.95**	11-06929	**$122.95**
180	11-06885	**$69.50**	11-06908	**$108.95**	11-06930	**$126.95**
192	11-06886	**$73.00**	11-06909	**$112.95**	11-06931	**$129.95**
204	11-06887	**$76.50**	11-06910	**$115.95**	11-06932	**$133.95**
216	11-06888	**$79.50**	11-06911	**$119.95**	11-06933	**$136.95**
228	11-06889	**$86.75**	11-06912	**$122.95**	11-06934	**$140.95**
240	11-06890	**$87.00**	11-06913	**$126.95**	11-06935	**$143.95**

EP

BENDIX MAGNETO REPAIR KITS FROM TEMPEST

REPAIR KIT
1 - Contact Assy. Kit (3)
1 - Capacitor
2 - Bearings
1 - Oil Seal
1 - Oil Slinger
3 - Woodruff Keys
1 - Cotter Pin
1 - Cam Screw
1 - Felt Washer
1 - Felt Strip
1 - Snap Ring
1 - Carbon Brush

These magneto repair kits are designed to simplify the Bendix magneto overhaul process by providing all of the commonly needed overhaul parts in one convenient kit. The Repair Kits contain the parts needed for minor repair such as a 500 hour inspection, and the Deluxe Repair Kits contain the parts needed for major repair such as a magneto overhaul. These parts are highest quality direct replacement parts and are approved for installation and use on certificated aircraft. The Repair Kit and Deluxe Repair Kit for the Bendix -200, -201, and -202 series magnetos contain two sets of contact assembly kits. Some parts that may be need replacing during magneto overhaul are not included in these kits.

DELUXE REPAIR KIT
1 - Contact Assy. Kit (3)
1 - Coil Kit
1 - dist. Block Kit
1 - Gear Kit
1 - Capacitor
2 - Bearings
1 - Oil Seal
1 - Oil Slinger
3 - Woodruff Keys
1 - Cotter Pin
1 - Cam Screw

Bendix series	Magneto P/N	Magneto Type	Repair Kit P/N	Kit Price	Deluxe Repair Kit P/N	Kit Price
S-20 & S21	10-51360-1	S4R(L)N -20,21	07-00855	$100.95	07-00854	$298.00
	10-51360-3					
	10-51360-4					
	10-51360-6					
	10-51360-8					
	10-51360-10	S4R(L)N -20,21	07-00825	$99.65	07-00856	$312.95
	10-51360-11					
	10-51360-12					
	10-51360-25					
	10-51360-26	S4R(L)N -20,21	07-00855	$100.95	07-00854	$298.00
	10-51360-27					
	10-51360-28					
	10-51360-29	S4R(L)N -20,21	07-00825	$99.65	07-00856	$312.95
	10-51360-30					
	10-51360-31	S4R(L)N -20,21	07-00855	$100.95	07-00854	$298.00
	10-51360-33	S4R(L)N -20,21	07-00825	$99.65	07-00856	$312.95
	10-51360-37					
	10-51360-40					
	10-51360-41					
	10-51360-45	S4RN-21	07-00860	$142.95	07-00859	$339.95
	10-51360-46	S4R(L)N -20,21	07-00825	$99.65	07-00856	$312.95
	10-51360-47	S4RN-21	07-00860	$142.95	07-00859	$339.95
	10-51360-48	S4RN-21	07-00858	$131.95	07-00857	$338.95
	10-51360-54	S4R(L)N -20,21	07-00825	$99.65	07-00856	$312.95
	10-51360-55	S4R(L)N-20, 21	07-00860	$142.95	07-00859	$339.95
	10-51360-58					
	10-51360-1 up to S.N.238468	S6R(L)N-20, -21	07-00862	$94.75	07-00861	$373.95
	10-51365-1 up to S.N.238469	S6R(L)N	07-00864	$94.75	07-00863	$368.00
	10-51365-2	S6R(L)N -20,21	07-00862	$94.75	07-00861	$373.95
	10-51365-5					
	10-51365-7					
	10-51365-9	S6R(L)N -20,21	07-00864	$94.75	07-00863	$368.00
	10-51365-13	S6R(L)N -20,21	07-00862	$94.75	07-00861	$373.95
	10-51365-14	S6R(L)N -20,21	07-00864	$94.75	07-00863	$368.00
	10-51365-15					
	10-51365-16					
	10-51365-17					
	10-51365-20					
	10-51365-25					
	10-51365-26					
	10-51365-27					
	10-51365-28					
	10-51365-29					
	10-51365-30					
	10-51365-31					
	10-51365-32					
	10-51365-33					
	10-51365-34					
	10-51365-35					
	10-51365-39					
	10-51365-40	S6R(L)N -20,21	07-00862	$94.75	07-00861	$373.95
	10-51365-41					
	10-51365-42	S6R(L)N -20,21	07-00864	$94.75	07-00863	$368.00
	10-51365-43					
	10-51365-44					
	10-51365-45					
	10-51365-46					
	10-51365-47					
	10-51365-48	S6R(L)N -20,21	07-00862	$94.75	07-00861	$373.95
	10-51365-53	S6R(L)N -20,21	07-00864	$94.75	07-00863	$368.00
	10-51365-54					
	10-51365-57	S6LN -20,21	07-00868	$147.85	07-00867	$418.00

EP

AIRCRAFT SPRUCE WEST
CORONA, CA • (877) 4-SPRUCE
AIRCRAFT SPRUCE EAST
PEACHTREE CITY, GA • (877) 477-7823
Prices Subject to Change Without Notice

BENDIX MAGNETO REPAIR KITS FROM TEMPEST

Bendix Series	Magneto P/N	Magneto Type	Repair Kit P/N	Kit Price	Deluxe Repair Kit P/N	Kit Price
S-24 & S25	10-79020-5	S6R(L)N -24,25	07-00864	$94.75	07-00863	$368.00
	10-79020-6					
	10-79020-8					
	10-79020-10					
	10-79020-11	S6LN -25	07-00868	$147.85	07-00867	$418.00
	10-79020-13	S6R(L)N -24, -25	07-00864	$94.75	07-00863	$368.00
	10-79020-14					
	10-79020-16					
	10-79020-17	S6LN -25	07-00868	$147.85	07-00867	$418.00
	10-79020-18					
	10-79020-118					
	10-79020-19	S6RN-25	07-00866	$146.95	07-00865	$419.95
	10-79020-119					
S-200	10-163005-1	S4R(L)N-200*	07-00844	$152.95	07-00843	$362.95
	10-163005-2					
	10-163005-3					
	10-163005-4					
	10-163005-5					
	10-163005-7					
	10-163005-10					
	10-163005-11					
	10-163015-1	S4R(L)N-201*	07-00844	$152.95	07-00843	$362.95
	10-163015-2					
	10-163015-3					
	10-163015-4					
	10-163045-1	S4LN -204	07-00757	$136.95	07-00847	$338.95
	10-163045-2	S4RN -204	07-00846	$148.95	07-00845	$338.95
	10-163045-3	S4LN -204	07-00757	$136.95	07-00847	$338.95
	10-163045-4	S4RN -204	07-00846	$148.95	07-00845	$338.95
	10-163045-6	S4LN -204	07-00757	$136.95	07-00847	$338.95
	10-163045-7	S4RN -204	07-00846	$148.95	07-00845	$338.95
	10-163055-1	S4RN -205	07-00846	$148.95	07-00845	$338.95
	10-163055-2	S4LN -205	07-00757	$136.95	07-00847	$338.95
	10-163010-1	S6R(L)N -200*	07-00849	$157.95	07-00848	$426.00
	10-163010-2					
	10-163010-3					
	10-163010-4					
	10-163010-5					
	10-163010-6					
	10-163010-7					
	10-163010-8					
	10-163010-9					
	10-163010-10					
	10-163010-11					
	10-163010-15					
	10-163010-17					
	10-163020-1	S6R(L)N-201*	07-00849	$157.95	07-00848	$426.00
	10-163020-2					
	10-163020-3					
	10-163020-4					
	10-163030-1	S6R(L)N-204	07-00849	$157.95	07-00848	$426.00
	10-163030-4					
	10-163050-1	S6LN-204	07-00853	$132.50	07-00852	$384.95
	10-163050-2					
	10-163050-3					
	10-163050-5					
	10-163050-6	S6RN -204	07-00851	$135.95	07-00850	$384.95
	10-163050-7					
	10-163050-8					
	10-163050-9	S6LN -204	07-00853	$132.50	07-00852	$384.95
	10-163060-1	S6RN -205	07-00851	$135.95	07-00850	$384.95
	10-163060-2	S6RN -205	07-00853	$132.50	07-00852	$384.95
	10-163070-1	S6RN -206	07-00853	$132.50	07-00852	$384.95
	10-163070-3					

The Repair Kit and Deluxe Repair Kit for the Bendix -200, -201, and -202 Series Magnetos contain two sets of Contact Assembly Kits.

REPLACEMENT PARTS FOR BENDIX MAGNETOS FROM KELLY AEROSPACE

P/N	Description	Price	P/N	Description	Price	P/N	Description	Price	P/N	Description	Price
07-06301	Bearing	$11.75	07-06315	Breaker Points	$71.75	10-50737	Spring	$0.63	07-06341	Bushing	$4.85
10-357078	Bushing	$19.50	07-06316	Capacitor	$87.75	07-06329	Felt Washer	$0.98	10-160844	Brush	$5.25
10-357164	Coil	$156.95	07-06317	Washer	$3.55	07-06330	Plug	$8.25	07-06344	Bushing	$55.75
10-357165-1	Coil	$156.95	07-06318	Coil	$218.95	10-51676	Capacitor	$25.75	07-06345	Felt Strip	$0.87
10-35717-3	Breaker Points	$49.50	07-06319	Capacitor	$99.00	07-06332	Washer	$0.63	07-06346	Packing	$0.95
10-35717-4	Breaker Points	$49.85	07-06320	Gasket	$50.25	07-06333	Washer	$1.73	07-06347	Capacitor	$67.75
10-357193	Bushing	---	07-06321	Bushing	$28.75	07-06334	Distributor Block	$222.95	07-06348	Washer	$4.55
07-06308	Capacitor	$69.75	10-391088-1	Coil	$198.00	07-06335	Distributor Block	$232.95	07-06349	Breaker Points	$48.25
10-52949	Distributor Block	$83.50	07-06323	Gasket	$32.50	07-06336	Bearing	$32.75	07-06350	Breaker Points	$47.00
07-06311	Breaker Points	$94.25	07-06324	Gasket	$13.95	07-06325	Ring	$0.81	07-06351	Bearing	$22.75
10-382584	Breaker Points	$39.75	07-06325	Distributor Block	$71.00	07-06338	Ring	$1.16			
07-06313	Coil	$171.95	07-06326	Distributor Block	$77.00	07-06339	Bearing	$43.50			
07-06314	Breaker Points	$64.50	07-06327	Vent	$20.75	07-00787	Coil	$108.95			

HARTZELL ENGINE TECH. IGNITION HARNESSES

PLATED STEEL NUT: Steel nuts offer superior strength compared to aluminum nuts and reduce the potential for galling during installation FAA/PMA APPROVED FOR: - Franklin - Teledyne Continental Motors - Textron Lycoming .ABRASION AND HEAT RESISTANT: The abrasion resistant red polymer cover has been engineered specifically for the high-temperature environment of reciprocating engines. UNIQUE SPRING DESIGN: Hartzell ignition harnesses incorporate a negative-pitch spring design (the tip of the coil spring extends inward) allowing the coil spring tip to lie flat against the spark plug electrode, providing 360 contact. Ignition energy is maximized and flashover is reduced to a minimum. REPLACEABLE CONTACT SPRINGS: Replacement springs are available separately saving you time and money when a field repair is necessary. STRAIGHT AND CLOCKABLE 90 DEGREE STEEL ELBOW LEADS AVAILABLE: You have the option of using straight or clockable 90 elbow leads to make the installation neat and easy. PERFORMANCE - Plus: Using a tinned-copper, nickel plated braid shielding substantially reduces EMI and combined with a very flexible 19 strand conductor of stainless steel wire provides the ultimate in wire conductivity and ease of installation.

NOTE: PART NUMBERING SYSTEM and CROSS REFERENCE: The Hartzell part numbering system is "user Friendly" for quickly cross-referencing to both Champion and Unison Harnesses. The "KA1"prefix is equivalent to the Champion "CH1" or the Unison"M" with the balance of the part number remaining the same. Add the suffix "E"to the part number to designate the 90 degree steel elbow terminations whenever ordering an "Elbow" harness. (EXAMPLE: KA12121E).

P/N	BEND	SLICK	4 CYL	6CYL	ELBOW	STRAIGHT	Our P/n	Price
KA11480		X		X		X	08-01095	$368.95
KA11480E		X		X	X		08-01096	$410.95
KA1730	X			X		X	08-01098	CALL
KA11730E	X			X	X		08-01099	CALL
KA11740	X			X		X	08-01101	CALL
KA11740E	X			X	X		08-01102	CALL
KA11780		X	X			X	08-01103	CALL
KA11780E		X	X		X		08-01104	$294.00
KA11878		X		X		X	08-01105	$347.95
KA11878E		X		X	X		08-01106	$410.95
KA11884		X		X		X	08-01107	$347.95
KA11884E		X		X	X		08-01108	$410.95
KA11950	X			X		X	08-01109	$347.95
KA11950E	X			X	X		08-01110	$410.95
KA11978	X			X		X	08-01111	CALL
KA11978E	X			X	X		08-01112	$410.95
KA12007	X		X			X	08-01113	$244.00
KA12007E	X		X		X		08-01114	CALL
KA12015	X			X		X	08-01115	CALL
KA12015E	X			X	X		08-01116	$410.95
KA12037	X			X		X	08-01117	$347.95
KA12037E	X			X	X		08-01118	$410.95
KA12112	X		X			X	08-01119	$231.95
KA12112E	X		X		X		08-01120	$307.95
KA12120	X			X		X	08-01121	CALL
KA12120E	X			X	X		08-01122	$409.00
KA12121	X			X		X	08-01123	CALL
KA12121E	X			X	X		08-01124	$409.00
KA12130	X			X		X	08-01125	$343.95
KA12130E	X			X	X		08-01126	$409.95
KA12154	X			X		X	08-01127	$347.95
KA12154E	X			X	X		08-01128	$410.95
KA12157	X			X		X	08-01129	$343.95
KA12157E	X			X	X		08-01130	$410.95
KA12176	X			X		X	08-01131	$347.95
KA12176E	X			X	X		08-01132	CALL
KA12216	X			X		X	08-01133	$343.95
KA12216E	X			X	X		08-01153	$410.95
KA12235	X		X			X	08-01134	$244.95
KA12235E	X		X		X		08-01135	$307.95
KA12244	X			X		X	08-01155	$347.95
KA12244E	X			X	X		08-01156	$412.95
KA12247	X			X		X	08-01157	$347.95
KA12247E	X			X	X		08-01158	$409.95
KA12259	X			X		X	08-01159	$347.95
KA12259E	X			X	X		08-01160	$410.95
KA12318		X		X		X	08-01161	$347.95
KA12318E		X		X	X		08-01162	$410.95
KA12339	X			X		X	08-01163	$347.95
KA12339E	X			X	X		08-01154	$410.95
KA12360	X		X			X	08-01136	$258.00
KA12360E	X		X		X		08-01137	$301.95
KA12364	X		X			X	08-01138	$242.95
KA12364E	X		X		X		08-01139	$306.95
KA12365	X		X			X	08-01082	$244.95
KA12365E	X		X		X		08-01141	$305.95
KA12381		X		X		X	08-01142	$344.95
KA12381E		X		X	X		08-01143	$410.95
KA12423	X		X			X	08-01144	$241.95
KA12423E	X		X		X		08-01164	$307.95
KA12447	X			X		X	08-01165	$347.95
KA12447E	X			X	X		08-01166	CALL
KA12474	X			X		X	08-01167	$347.95
KA12474E	X			X	X		08-01168	$410.95
KA12508		X	X			X	08-01145	$244.95
KA12508E		X	X		X		08-01169	$307.95
KA12616	X		X			X	08-01170	$244.95

P/N	BEND	SLICK	4 CYL	6CYL	ELBOW	STRAIGHT	Our P/n	Price
KA12616E	X		X		X		08-01171	$307.95
KA12628	X			X		X	08-01172	$347.95
KA12628E	X			X	X		08-01173	$410.95
KA12709	X			X		X	08-01174	$347.95
KA12709E	X			X	X		08-01175	$410.95
KA12712	X			X		X	08-01176	$347.95
KA12712E	X			X	X		08-01177	$411.95
KA12742	X			X		X	08-01178	$347.95
KA12745	X			X		X	08-01180	$347.95
KA12745E	X			X	X		08-01181	$410.95
KA12778		X		X		X	08-01146	$347.95
KA12778E		X		X	X		08-01182	$410.95
KA12790	X			X		X	08-01183	$347.95
KA12790E	X			X	X		08-01184	$410.95
KA12828		X		X		X	08-01185	$347.95
KA12828E		X		X	X		08-01186	$410.95
KA12851	X			X		X	08-01188	$348.95
KA12851E	X			X	X		08-01189	$410.95
KA12854	X			X		X	08-01190	$278.95
KA12854E	X			X	X		08-01191	$410.95
KA12865	X			X		X	08-01192	$347.95
KA12865E	X			X	X		08-01193	$410.95
KA12890	X			X		X	08-01194	$347.95
KA12890E	X			X	X		08-01195	$410.95
KA12932		X		X		X	08-01147	$348.00
KA12932E		X		X	X		08-01196	$406.95
KA14001		X	X			X	08-01148	$241.95
KA14001E		X	X		X		08-01086	$307.95
KA14002		X	X			X	08-01150	$244.95
KA14002E		X	X		X		08-01151	CALL
KA14004		X	X			X	08-01152	$259.95
KA14004E		X	X		X		08-01197	$307.95
KA14033	X		X			X	08-01198	$244.95
KA14033E	X		X		X		08-01199	$307.95
KA17001	X			X		X	08-01202	$347.95
KA17001E	X			X	X		08-01203	$410.95
KA17002	X			X		X	08-01204	$347.95
KA17002E	X			X	X		08-01205	$410.95
KA17005	X		X			X	08-01206	$244.95
KA17005E	X		X		X		08-01207	$307.95
KA17006	X		X			X	08-01208	$244.95
KA17006E	X		X		X		08-01209	$306.95
KA17007	X		X			X	08-01210	$244.95
KA17007E	X		X		X		08-01211	$307.95
KA17008	X		X			X	08-01212	$245.95
KA17008E	X		X		X		08-01213	$307.95
KA17011		X	X			X	08-01214	$244.95
KA17011E		X	X		X		08-01215	$307.95
KA12365	X		X			X	08-01082	$244.95
KA14001E		X	X		X		08-01086	$307.95
KA11730	X			X		X	08-01098	$349.00
KA11730E	X			X	X		08-01099	$410.95
KA11740	X			X		X	08-01101	$343.95
KA11740E	X			X	X		08-01102	$410.95
KA12007E	X		X		X		08-01114	$307.95
KA12120	X		X			X	08-01121	$347.95
KA12176E	X			X	X		08-01132	$410.95
KA12508		X	X			X	08-01145	$244.95

P/N	BEND	SLICK	8 CYL.	ELBOW	STRAIGHT	Our P/n	Price
KA17012	X		X		X	08-01216	$509.00
KA17012E	X		X	X		08-01217	$571.00

EP

FOR A COMPLETE APPLICATION CHART PLEASE VISIT WWW.AIRCRAFTSPRUCE.COM

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Prices Subject to Change Without Notice

SLICK MAGNETOS

4300 AND 6300 SERIES SLICK MAGNETOS

These new lightweight aircraft magnetos are being used by many new equipment manufacturers. Weigh only 3-3/4 lbs. compared to 6-1/4 lbs. for typical old style magnetos. All units carry a six-month warranty after delivery to the user. These new model magnetos are completely rebuildable. The old 4000/4100 magnetos may not be returned as an exchange unit for a new magneto of the same model. Most other Magnetos may be returned for core credit. Drive gears are not included. *When purchasing slick magnetos separately gaskets are not included.

IF NO CORE IS RETURNED, ADD $150 TO THE PRICE OF A NEW MAGNETO.

ALL SLICK MAGNETO AND HARNESS PRICES SHOWN ARE WELL BELOW SLICK FACTORY LIST PRICE. WE WILL BEAT ANY COMPETITOR'S ADVERTISED PRICE!

Slick Harnesses are available in Black and Red.

Please Specify color choice at the time of order.

4300 SERIES (4-CYLINDER) MAGNETOS

Application (See Note)	Magneto*	Rotation & Impulse	New Magneto (Exchange)	Complete Harness(2 Mags Sparkplug Connector		
Continental A65-8, A75-8,C75-8 C85-8, C90-8	4330	R.H. with Impulse	**$931.00**	M2045	5/8-24	**$383.95**
Continental C75-12,-15 C85-12,-14,-15 C85-12F,-14F,-15F*** C90-12,-14,-16*** 0-200A,B,C	4301	L.H. with Impulse	**$834.00**	M1780	5/8-24	**$377.00**
Lycoming 0-235 0-290***,0-320,0-360	4370	L.H., no Impulse	**$749.00**	M4001/ M4004	5/8-24	**$366.95**
IO-320E1B,E2B AEIO-320E1B,E2B AEIO-360B1C6,H1A	4371	L.H. with Impulse	**$834.00**	M2508	3/4-20	**$378.95**
Lycoming O-235 Series, O-320 Series (See Application List)	4373	L.H. with Impulse	**$834.00**	M2266 (1 Mag)	5/8-24	**$271.95**
VW Conversion Single Ignition	4316	R.H. with Impulse	**$979.00**	M2266 (1Mag)	5/8-24	**$274.95**

* 4300 series replaces 4200 & feature improved cases & new bearings. Drive Gear No. 36066 applicable to Cont. A65-8, A75-8, C75-8, C85-8, C90-8,C85-12-14-15, C90-12-14-16 and 0-200A,B,C w/ light accessory case. **Please call for price and availability.**

** For new installations, order Kit No. K4521 which consists of two 4230 magnetos, one M2045 harness, two M2638 adapters (see Note 2) and four M2639 studs.

M2639 Studs **$10.75**
K-3328 Installation Pin & Clamp kit (one per mag) **$19.85**

****** The magnetos shown will fit the engine but installation is not FAA approved. Form 337 required. Note 2: Specify adapter thickness. M2638-1 (.560"), M2638-2 (.660"), M2638-3 (.760"), M2637 (.810"), measured from mounting pad to front of engine gear.***

PLEASE REMOVE DRIVE GEARS BEFORE RETURNING MAGNETO CORES FOR CORE CREDIT.

Starts determined by engine manufacturer. Lag angles: 4350 - no lag, 4351 - 20° lag, 4281 - 5° lag. Magneto Flange Gaskets not included. Order Lic. #62224 or Cont. #535324.

EP

6300 SERIES (6-CYLINDER) MAGNETOS

Application	Magneto*	Rotation & Impulse	New Magneto (Exchange)	Complete Harness (2 Mags) Sparkplug Connector		
Continental 0-300, C125***,C145	6364	L.H. with Impulse	**$908.00**	M2932	5/8-24	**$504.00**
				M2935	3/4-20	**$579.00**
Continental GO-300	6367	R.H. with Impulse	**$989.00**	M2938	5/8-24	**$581.00**
				---	3/4-20	**---**
Continental	6362 or 6382 0-470 (All)	R.H. with Impulse	**$949.00**	M1878	5/8-24	**$584.00**
				M1480	3/4-20	**$501.00**
Continental TSIO-470, IO-520	6362 or 6382	R.H. with Impulse	**$949.00**	M1878	5/8-24	**$584.00**
				M1480	3/4-20	**$501.00**
Continental IO-470 (All)	6362 or 6382 680 Series	R.H. with Impulse	**$949.00**	M1878	5/8-24	**$584.00**
				M1480	3/4-20	**$501.00**
				M1990	3/4-20	**$592.00**

SLICK REBATE PROGRAM

Program details:

1. Return competitive magneto cores and harnesses to the distributor where
2. Slick units were purchased.
3. Magnetos must be complete and in "as removed" condition.
4. Champion reserves the right to reject incomplete magneto cores, including
5. Slick 4000/4100 series magnetos.
6. Champion piston products distributors will return cores to Champion for rebate processing, and all core credits will be issued by your authorized Slick distributor.
7. Rebate checks are issued to the party named on the rebate core tag.

Products	Champion Cash Rebate
Two (2) TCM/Bendix magnetos and any complete ignition harness	$250
One (1) TCM/Bendix magneto	$100
Two (2) Competitive magnetos (not TCM/Bendix) and any complete ignition harness	$150
One (1) Competitive magneto (not TCM/Bendix)	$30
One (1) Competitive ignition harness	$35

Rebate does not apply to Slick Magneto cores. Factory rebates subject to change by factory. Slick requires a minimum of 90-120 days to process rebates. Rebates are sent direct from Slick to the purchaser, not through Aircraft Spruce.

Slick Magneto upgrade kits available for most Continental & Lycoming Engines. Provide engine make & model and spark plug size and request quotation on applicable upgrade kit. 6300 Series Replaces 6210 & 6262 magnetos. Includes new improved case and bearings.

SLICK IGNITION KITS

We offer complete Slick factory upgrade/conversion kits for virtually all general aviation aircraft. These kits include two factory new Slick magnetos, a complete Slick ignition harness, and conversion information. A $150.00 factory rebate is available for these kits. Rebate does not apply to Slick Magneto Cores. Add $300.00 core charge to the kit prices which is refundable upon return of the two old magnetos to Aircraft Spruce. Specify aircraft and engine make and model when ordering. Aircraft Spruce will issue rebate credit upon receipt of acceptable cores. Pn listed are red. Other colors available are: Blue, Yellow, and Gray.

Slick Kit Part No.	Engine Application 4 Cyl. Single Impulse 2 Mags & 1 Set Ignition Harness	Spark Plug Size	Part No.	Price Add $300.00 Core Charge to all kits
K4516	Lycoming: 0-235-C1A, C1C, C2C, E1, E2B, F1, G2B, H2C, J2B 0-320-A1A, A2D, C1A, D1D, D2G, D2H, D3G, E1J, E2D, E2E, E2G, E3D10-320-B1B, E1B, E2B, A2B, AE10-320-E1B, E2B 0-360-A1NG, A2H, A4K, A4M, B1A, C1E, C1F, C2B, C2E, D1A 10-360-B1FG A10-360-A2B AE10-360-A2B, B1F6, B2F6, H1A	5/8" PLUGS INCLUDED	08-01476	**$1,998.00**
			08-01473	**$1,925.00**
K4315	Lycoming: 0-235-C1C, C2C, E2B, F1, G2B, J2B, N2C, 0-320-A1A, B1A, B2A, C1A, C2A, C2B, C2C, C3A, C3B, C3C, D1D, D2G, D2H, D3G, E1J, E2D, E2E, E2G, E3D, 0-320-B1B, E1B, A10-320-A2B, AE10-320-E1B, E2B 0-360-A1NG, A2H, A4K, B1A, C1E,C1F,C2B,C2E,D1A 10-360-B1F6 A10-360-A2B AE10-360-A2B, B1F6, B2F6, H1A	3/4" PLUGS INCLUDED	08-01389	**$2,196.00**
			08-01391	**$2,193.00**
Slick Kit Part No.	**Engine Application 4 Cyl. Single Impulse**	**Spark Plug Size**	**Part No.**	**Price Add $300.00 Core Charge to all kits**
K4517	Lycoming: 0-235-C1, C2A, E2A, F2A; G1, G2A, J2A 0-290-D 0-320-A1B, A2A, A2B, A3A, A3B B1A, B1B, B2A, B2B, B3A, B3B, C2A, C2B, C2C, C3A, C3B, C3C, D1A, E1A, E2A, E2H 10-320-B1C, B2A, E1A, E2A, AE10-320-E1A, E2A 0-360-A1AWD, A2A, A1H, A3A, A4A, A4J, B2A, C1A, C1G, C2A, D2A 10-360-A1B, B4A, AE10-360-A1D, B4A	5/8" PLUGS INCLUDED	08-01493	**$1,937.00**
			08-01495	**$1,941.00**
K4317	Lycoming: 0-235-C1, C2A, C2B, E2A, F2A, F2B; G1, G2A, J2A 0-290-D 0-320-A1B, A2A, A2B, A3A, A3B, B2B, B3A, B3B, D1A, D1C, D1F, D2A, D2C, E1A, E2A, E2H, E3H 10-320-B1C, B2A, D1A, DIB, E1A, E2A A10-320-AIB, B1B, C1B AE10-320-DIB, D2B, E1A, E2A 0-360-A1A, A1AWD, A1FG, A1G, A1G6, A1H, A2A, A2F A2G, A3A, A4A, AHG, A4J, B2A, C1A, C2A, D2A 10-360-A1B, B4A, C1D6, F1A AE10-360-B4A	3/4" PLUGS INCLUDED	08-01421	**$2,196.00**
			08-01419	**$2,196.00**
K4520	Continental:C-75-12, 15 C-85-14, 15, C-90-12, 14, 16, 16F 0-200-A, B, C	5/8"	08-01525	**$2,048.00**
K4335	Consists of 4333 AMAG + One Drive Gear	N/A	K4335	**$1,080.00**
K4334	A-65 All, A-75 All (Except -12,-15) C-85 All (Except-12, 14, & 15) Includes Drive Gears	5/8"	08-01459	**$2,364.00**
Slick Kit Part No.	**Engine Application 6 Cyl. Single Impulse**	**Spark Plug Size**	**Part No.**	**Price Add $300.00 Core Charge to all kits**
K6520	0-470, B-C1, C, E, G,	5/8"	08-02822	**$2,413.00**
			08-02824	**$2,415.00**
K6320	G-C1, H, J, K, K-C1, L, L-C1,M, M-C1, N, P, R, S, U 10-470-A, C, D, E, F, G, H, J, K, L, LO, M, N, P, R, S, T, U, V, VO10-520-A, B, BA, BB, C, CB, D, E, F, G, H, J, K, L, M, MB, N, NB	3/4" PLUGS INCLUDED	08-02584	**$3,057.00**
			08-02587	**$2,188.00**

Add $300.00 core charge to all kit prices (refundable with return of old Magnetos) Request quotation for kits for unlisted engines.
* Plugs included.

The following information will aid you in selecting the correct magneto, upgrade kit, or ignition harness:

1. Engine Manufacturer: _____

2. Engine Model Number: _____

3. Engine Type (4 or 6 Cylinder): _____

4. Current Ignition System Manufacturer: _____

a) Number of impulse coupled magnetos (1 or 2): _____

Magneto Shaft Rotation (Right or Left) - See dataplate on current magneto _____
Lag Angle _____

b) Number of Direct Drive (Non-Impulse) Magnetos _____

c) Number of Retard Breaker Magnetos ___
d) Are the magnetos pressurized ? _____

e) Spark plug size (5/8" or 3/4") _____

5. Do you want to upgrade from a single impulse to a dual impulse system? _____

If yes, an additional drive gear and/or adapter purchase may be required.

6. Are you upgrading from a 600 Series to a 6200 Series magneto? _____

If yes, you will need to purchase an M3154 Adapter or a magneto equipped with an M3154 Adapter to be able to reuse the existing harness. Alternately, purchase a new harness configured for 6200 Series magnetos.

7. Are you upgrading a complete engine form a TCM/ Bendix to a Slick system ? _____

If yes, purchase a complete Engine Upgrade Kit.

SLICK IGNITION HARNESSES BY CHAMPION

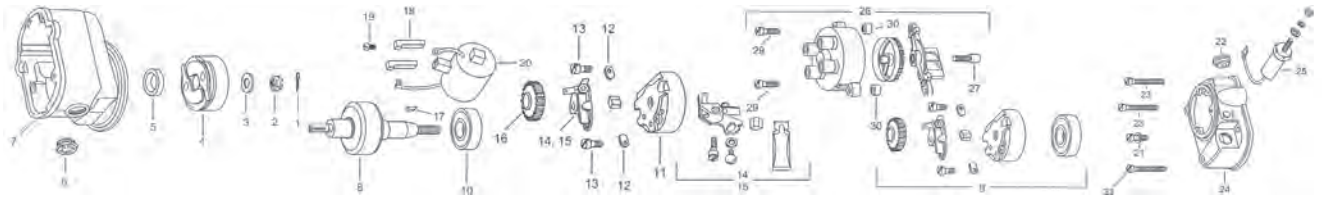
AIRCRAFT ENGINE APPLICATION CHART

Engine	Engine Models	Magneto	5/8" X 24 Spark Plug Termination	3/4" X 20 Spark Plug Termination
	Textron Lycoming			
O-235	C	S4-1200	M2365	M2235
O-235	C	S4-20, S4-200	M2364	M2360
O-235	C1,C1B,C2A,C2C,E1,H2C,J2A,J2B,K2C,L2A,L2C,M1,N2A,N2C,P1,P2A	S4-1200	M2365	M2235
O-235	C1,C1B,C2A,C2C,E1,H2C,J2A,J2B,K2C,L2A,L2C,M1,N2A,N2C,P1,P2A	S4-20, S4-200	M2364	M2360
O-235	C1,C1B,C2A,J2A,L2A,M1,N2A,P1,P2A	**4200, 4300**	**M4004**	**M2508**
O-235	C2C,E1,H2C,J2B,K2C,L2C,N2C	**4200, 4300**	**M4001**	**M2508**
O-290	D,D2	**4200, 4300**	**M4004**	**M2508**
O-290	D,D2,D2A,D2C	S4-20, S4-200	M2364	M2360
AEIO-320	D1B,D2B	**4200, 4300**	**M4005**	**M2508**
AEIO-320	D1B,D2B,E1A,E2B	S4-1200	M2365	M2235
AEIO-320	D1B,D2B,E1A,E2B	S4-20, S4-200	M2364	M2360
AEIO-320	E1A	**4200, 4300**	**M4004**	**M2508**
AEIO-320	E2B	**4200, 4300**	**M4001**	**M2508**
AIO-320	B1B	**4200, 4300**	**M4005**	**M2508**
AIO-320	B1B	S4-1200	M2365	M2235
AIO-320	B1B	S4-20, S4-200	M2364	M2360
IO-320	B1A,B1C,B1D,B2A,B2B,C1A,C1C,D1A,D1B,E1A,E2A,E2B,F1A	S4-1200	M2365	M2235
IO-320	B1A,B1C,B1D,B2A,B2B,C1A,D1A,D1B,E1A,E2A,E2B,F1A	S4-20, S4-200	M2364	M2360
IO-320	B1A,C1A,F1A	**4200, 4300**	**M4000**	**M2508**
IO-320	B1C,B2A,E1A,E2A	**4200, 4300**	**M4004**	**M2508**
IO-320	B1D	**4200, 4300**	**M4007**	**M2508**
IO-320	C1C	S4-20, S4-200	M2112	M2360
IO-320	D1A,D1B	**4200, 4300**	**M4005**	**M2508**
IO-320	E2B	**4200, 4300**	**M4001**	**M2508**
LIO-320	B1A,C1A	**4200, 4300**	**M4000**	**M2508**
LIO-320	B1A,C1A	S4-1200	M2365	M2235
LIO-320	B1A,C1A	S4-20, S4-200	M2112	M2360
O-320	A1A,A1B,A2A,A2C,A2D,A3A,A3B,B1A,B2A,B2B,B2D,B3A,B3B,B3C,C1A,C1B,C3A,C3B,D1A,D1B,D1F,D2A,D2B,D2J,D3G,E1A,E1B,E1C,E1F,E2A,E2C,E2D,E2E,E2F,E2G,E2H,E3D,E3H	S4-1200	M2365	M2235
O-320	A1A,A1B,A2A,A2D,A3A,A3B,B1A,B1B,B2A,B2B,B3A,B3B,C1A,C1B,C3A,C3B,D1A,D1B,D2A,D2B,D2J,D3G,E1A,E1B,E1C,E1F,E2A,E2C,E2D,E2E,E2F,E2G,E2H,E3D,E3H	S4-20, S4-200	M2364	M2360
O-320	A1A,A2D,C1A,C3A,D3G,E2D,E2E,E2G,E3D	**4200, 4300**	**M4001**	**M2508**
O-320	A1B,A2A,A2B,A2C,A3A,A3B,B1A,B1B,B2A,B2B,B2C,B2D,B3A,B3B,B3C,C1B,C3B,D1A,D2B,E1A,E2A,E2H	**4200, 4300**	**M4004**	**M2508**
O-320	A2B,A2C,B2C,B2D,B3C	S4-20, S4-200	M2402	M2360
O-320	D1F	S4-20, S4-200	M2363	M2360
O-320	D1F,D2A,E1C,E1F,E2F,E3H	**4200, 4300**	**M4005**	**M2508**
O-320	D2J	**4200, 4300**	**M4002**	**M2508**
O-320	E2C	**4200, 4300**	**M4007**	**M2508**
O-320	H2AD	DUAL		M2917
O-340	A1A	S4-20, S4-200	M2364	M2360
AEIO-360	A1A,A1B,A1B6,A1D,B1F,B1G6,B2F,B2F6,B4A,H1A	S4-1200	M2365	M2235
AEIO-360	A1A,A1B,A1B6,A1D,B1F,B1G6,B2F,B2F6,B4A,H1A	S4-20, S4-200	M2364	M2360
AEIO-360	A1A,A1D,B4A	**4200, 4300**	**M4004**	**M4029**
AEIO-360	A1B,A1B6	**4200, 4300**	**M4012**	**M4029**
AEIO-360	B1F,B2F	**4200, 4300**	**M4005**	**M2508**
AEIO-360	B1G6,B2F6,H1A	**4200, 4300**	**M4001**	**M2508**
AIO-360	A1A,A1B	**4200, 4300**		**M4029**
AIO-360	A1A,A1B	S4-20, S4-200	M2364	M2360
AIO-360	A1A,A1B,B1B	S4-1200	M2365	M2235
AIO-360	A1B,B1B	**4200, 4300**	**M4001**	**M4029**
AIO-360	B1B	S4-1200		M2492
HIO-360	A1A	S4-20, S4-200	M2817	M2859
HIO-360	B1A,C1A	S4-20, S4-200	M2795	M2856
HIO-360	D1A	**4200, 4300**	**M4007**	
HIO-360	D1A	S4-1200	M2655	
HIO-360	E1AD,E1BD,F1AD	DUAL		M2944
HO-360	A1A,B1A,B1BB	S4-20, S4-200	M2364	M2360
IO-360	A1A,A1B,A1B6,A1C,A1D6,A2A,A2B,B1A,B1B,B1D,B1E,B1F,B1F6,B2End,B2Ewd,B2F6,C1A,C1C6,C1D6,D1A,K2A	S4-20, S4-200	M2364	M2360
IO-360	A1A,A1B,A1C,A2A,A2B,B1A,B1B,B1D,B1F,B1F6,B2End,B2Ewd,B2F6,C1A,C1D6,K2A	S4-1200	M2365	M2235
IO-360	A1A,A2A,B1B,B1D,C1A,K2A	**4200, 4300**	**M4004**	**M2508**
IO-360	A1B,A1B6,A1C,A1D6,C1B,C1D6	**4200, 4300**	**M4012**	**M2508**
IO-360	A1B6	S4-1200	M2420	M2641
IO-360	A1B6D,J1A6D	DUAL		M2915
IO-360	A1D6	S4-1200	M2420	M2235
IO-360	A2B,B1E,B2End	**4200, 4300**	**M4006**	**M2508**
IO-360	A3B6D	DUAL		M2916
IO-360	B1E	S4-1200	M2423	M2235
IO-360	B1F,B2Ewd,B2F6	**4200, 4300**	**M4005**	**M2508**
IO-360	B1F6	**4200, 4300**	**M4001**	**M2508**
IO-360	C1B,D1A	S4-1200	M2365	M2616
IO-360	C1C,C1C6,C1E6	**4200, 4300**	**M4027**	**M2508**
IO-360	C1C,C1E6,C1F	S4-1200	M2423	M2616
IO-360	C1C,C1E6,C1F	S4-20, S4-200	M2658	M2661
IO-360	C1C6	S4-1200	M2423	
IO-360	C1F,D1A	**4200, 4300**	**M4007**	**M2508**
IVO-360	A1A	S4-20, S4-200	M2364	M4033
LIO-360	B1A,C1A	S4-20, S4-200	M2364	M2360
LIO-360	C1E6	**4200, 4300**	**M4027**	

EP

FOR A COMPLETE APPLICATION GUIDE AND PART NUMBERS PLEASE VISIT WWW.AIRCRAFTSPRUCE.COM

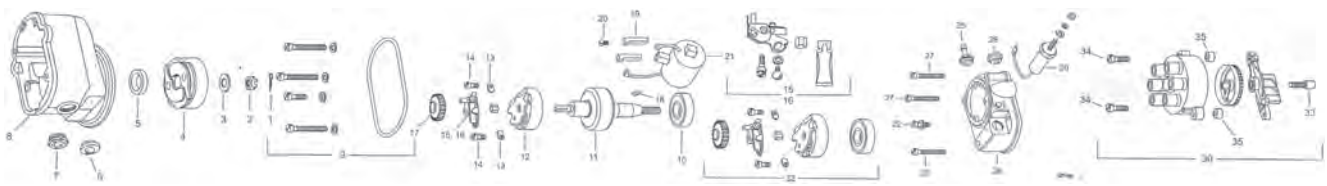
SLICK MAGNETO PARTS



4300 SERVICE PARTS LIST

No.	Description	4301	4302	4303	4316	4330	4331	4342	4344	4345	4347	4348	4353	4354	4370	4371	4372	4373	4374	4381	Qty	Price/ ea.
1	Cotter pin	M2556	M2556	M2556	M2556	M2556	M2556	M2556	M2556	M2556	M2556	M2556	M2556	M2556	M2556	M2556	M2556	M2556	M2556	M2556	1	$31.75
2	Nut	M3019	M3019	M3019	M3019	M3019	M3019	M3019	M3019	M3019	M3019	M3019	M3019	M3019	M3019	M3019	M3019	M3019	M3019	M3019	1	$14.25
3	Washer	M3172	M3172	M3172	M3172	M3172	M3172	M3172	M3172	M3172	M3172	M3172	M3172	M3172	M3172	M3172	M3172	M3172	M3172	M3172	1	$4.50
4	Impulse Coupling Assy.	M3007	-	-	M3076	M3068	-	-	-	-	-	-	-	M3529	-	M3163	M3100	M3529	M3689	M3007	1	$363.95
5	Oil Seal	M3062	M3062	M3062	M3062	M3062	M3062	M3062	M3062	M3062	M3062	M3062	M3062	M3062	M3062	M3062	M3062	M3062	M3062	M3062	1	$9.50
6	Air Vent	M1077	M1077	M1077	M1077	M1077	M1077	M1077	M1077	M1077	M1077	M1077	M1077	M1077	M1077	M1077	M1077	M1077	M1077	M1077	1	$4.60
7	Frame	M3859	M3900	M3859	M3888	M3888	M3900	M3900	M3900	M3900	M3900	M3900	M3900	M3859	M3900	M3859	M3859	M3859	M3888	M3859	1	$232.95
8	Rotor	M3073	M3518	M3338	M3047	M3065	M3548	M3513	M3548	M3548	M3513	M3548	M3158	M3548	M3158	M3158	M3158	M3158	M3065	M3158	1	$286.95
9	Bearing Kit	K3318-4	K3318-4	K3318-4	K3318-4	K3318-4	K3318-4	K3301	K3301	K3301	K3301	K3301	K3301	K3301	K3318-4	K3318-4	K3318-4	K3318-4	K3318-4	K3318-4	1	$215.95
10	Ball Bearing	M3006	M3006	M3006	M3006	M3006	M3006	M3006	M3006	M3006	M3006	M3006	M3006	M3006	M3006	M3006	M3006	M3006	M3006	M3006	1	$37.75
11	Bearing Cap Ass.	M3485	M3485	M3485	M3485	M3485	M3485	M3630	M3630	M3630	M3630	M3630	M3630	M3630	M3485	M3485	M3485	M3485	M3485	M3485	1	$80.00
12	Bearing Cap Clamp	M3018	M3018	M3018	M3018	M3018	M3018	M3018	M3018	M3018	M3018	M3018	M3018	M3018	M3018	M3018	M3018	M3018	M3018	M3018	2	$1.24
13	Screw	M3221	M3221	M3221	M3221	M3221	M3221	M3221	M3221	M3221	M3221	M3221	M3221	M3221	M3221	M3221	M3221	M3221	M3221	M3221	2	$12.50
14	Contact Point Kit-Primary	M3081	M3081	M3081	M3081	M3081	M3081	M3637	M3637	M3637	M3637	M3637	M3637	M3637	M3081	M3081	M3081	M3081	M3081	M3081	1	$47.75
15	Contact Point Kit-Secondary	-	-	-	-	-	-	M3740	M3740	M3637	M3637	M3637	M3637	M3637	-	-	-	-	-	-	1	$81.50
16	Rotor Gear	M3827	M3827	M3827	M3827	M3827	M3827	M3827	M3827	M3827	M3827	M3827	M3827	M3827	M3827	M3827	M3827	M3827	M3827	M3827	1	$9.90
17	Woodruff Key	M2536	M2536	M2536	M2536	M2536	M2536	M2536	M2536	M2536	M2536	M2536	M2536	M2536	M2536	M2536	M2536	M2536	M2536	M2536	1	$9.50
18	Coil Wedge	M3040	M3040	M3040	M3040	M3040	M3040	M3040	M3040	M3040	M3040	M3040	M3040	M3040	M3040	M3040	M3040	M3040	M3040	M3040	2	$9.95
19	Screw	M3020	M3020	M3020	M3020	M3020	M3020	M3020	M3020	M3020	M3020	M3020	M3020	M3020	M3020	M3020	M3020	M3020	M3020	M3020	1	---
20	Coil*(see below)	K3975	K3975	K3975	K3975	K3975	K3975	K3975	K3975	K3975	K3975	K3975	K3975	K3975	K3975	K3975	K3975	K3975	K3975	K3975	1	$279.85
21	Screw	M2555	M2555	M2555	M2555	M2555	M2555	M2555	M2555	M2555	M2555	M2555	M2555	M2555	M2555	M2555	M2555	M2555	M2555	M2555	1	$23.50
22	Air Vent w/Hood	M3084	M3084	M3084	M3084	M3084	M3084	M3084	M3084	M3084	M3084	M3084	M3084	M3084	M3084	M3084	M3084	M3084	M3084	M3084	1	$18.85
23	Screw	M3015	M3015	M3015	M3015	M3015	M3015	M3015	M3015	M3015	M3015	M3015	M3015	M3015	M3015	M3015	M3015	M3015	M3015	M3015	3	$11.50
24	Housing, Dist.	M3902	M3902	M3902	M3902	M3902	M3902	M3874	M3874	M3832	M3832	M3832	M3832	M3832	M3902	M3902	M3902	M3902	M3902	M3902	1	$159.95
25	Capacitor	K3984	K3984	K3984	K3984	K3984	K3984	K3984	K3984	K3984	K3984	K3984	K3984	K3984	K3984	K3984	K3984	K3984	K3984	K3984	1	$113.95
26	Dist. Block & Gear Assy.	K3822	K3822	K3822	K3822	K3822	K3822	K3822	K3822	K3822	K3822	K3822	K3822	K3822	K3822	K3822	K3822	K3822	K3822	K3822	1	$293.00
27	Carbon Brush	M3215	M3215	M3215	M3215	M3215	M3215	M3215	M3215	M3215	M3215	M3215	M3215	M3215	M3215	M3215	M3215	M3215	M3215	M3215	1	$9.00
--	Washer	M2532	M2532	M2532	M2532	M2532	M2532	M2532	M2532	M2532	M2532	M2532	M2532	M2532	M2532	M2532	M2532	M2532	M2532	M2532	1	$2.35
29	Screw	M3021	M3021	M3021	M3021	M3021	M3021	M3021	M3021	M3021	M3021	M3021	M3021	M3021	M3021	M3021	M3021	M3021	M3021	M3021	2	$7.50
30	Spacer	M3826	M3826	M3826	M3826	M3826	M3826	M3826	M3826	M3826	M3826	M3826	M3826	M3826	M3826	M3826	M3826	M3826	M3826	M3826	2	$24.50

Replaces M3525 Coil



6300 SERVICE PARTS LIST

No.	Description	6310	6314	6320	6324	6331	6340	6350	6351	6355	6360	6361	6362	6363	6364	6365	6367	6371	6380	6382	6390	Qty.	Price ea
1	Cotter pin	M2556	M2556	M2556	M2556	M2556	M2556	M2556	M2556	M2556	M2556	M2556	M2556	M2556	M2556	M2556	M2556	M2556	M2556	M2556	M2556	1	$31.75
2	Nut, Impulse Coupling	M3019	M3019	M3019	M3019	M3019	M3019	M3019	M3019	M3019	M3019	M3019	M3019	M3019	M3492	M3019	M3492	M3019	M3019	M3019	M3019	1	$14.25
3	Washer	M3172	M3172	M3172	M3172	-	-	-	-	-	-	-	M3172	-	-	-	-	-	M3172	M3172	-	1	$4.50
4	Impulse Coupling Ass.	M3050	M3089	M3050	M3089	M3800	-	-	M3333	M3635	-	M3333	M3050	-	M3590	-	M3524	-	M3050	M3050	-	1	$369.95
5	Oil Seal	M3062	M3062	M3062	M3062	M3331	M3331	M3331	M3331	M3331	M3331	M3331	M3062	M3331	M3062	M3331	M3062	M3331	M3062	M3062	M3331	1	$9.50
6	Pressure Vent Plug	-	-	M3179	M3179	M3179	M3179	-	-	-	M3179	M3179	-	M3179	-	M3179	-	-	-	-	-	1	$52.50
7	Air Vent	M1077	M1077	-	-	-	-	M1077	M1077	M1077	-	-	M1077	-	M1077	-	M1077	M1077	M1968	M1968	M1077	1	$4.60
8	Frame	M3837	M3847	M3837	M3847	M3888	M3900	M3900	M3859	M3859	M3900	M3859	M3837	M3900	M3853	M3900	M3856	M3900	M3850	M3850	M3900	1	$301.95
9	Gasket Pressure Kit	-	-	K3307	K3307	K3307	K3307	-	-	-	K3307	K3307	-	K3307	-	K3307	-	-	-	-	-	1	$71.50
10	Ball Bearing	M3006	M3006	M3006	M3006	M3006	M3006	M3006	M3006	M3006	M3006	M3006	M3006	M3006	M3006	M3006	M3006	M3006	M3006	M3006	M3006	1	$37.75
11	Rotor	M3047	M3093	M3047	M3093	M3792	M3801	M3117	M3327	M3416	M3117	M3327	M3047	M3117	M3496	M3117	M3499	M3117	M3047	M3047	M3117	1	$301.95
12	Bearing Cap Assembly	M3485	M3485	M3485	M3485	M3485	M3485	M3485	M3485	M3485	M3485	M3485	M3485	M3630	M3485	M3630	M3485	M3630	M3485	M3485	M3630	1	$80.00
13	Bearing Cap Clamp	M3018	M3018	M3018	M3018	M3018	M3018	M3018	M3018	M3018	M3018	M3018	M3018	M3018	M3018	M3018	M3018	M3018	M3018	M3018	M3018	2	$1.24
14	Screw	M3221	M3221	M3221	M3221	M3221	M3221	M3221	M3221	M3221	M3221	M3221	M3221	M3221	M3221	M3221	M3221	M3221	M3221	M3221	M3221	2	$12.50
15	Contact Pt. Kit-Primary	M3081	M3081	M3081	M3081	M3081	M3081	M3081	M3081	M3081	M3081	M3081	M3081	M3637	M3081	M3637	M3081	M3637	M3081	M3081	M3637	1	$47.75
16	Contact Pt. Kit-Secondary	-	-	-	-	-	-	-	-	-	-	-	-	M3637	-	M3637	-	M3637	-	-	M3740	1	$81.50
17	Rotor Gear	M3828	M3828	M3828	M3828	M3828	M3828	M3828	M3828	M3828	M3828	M3828	M3828	M3828	M3828	M3828	M3828	M3828	M3828	M3828	M3828	1	$9.25
18	Woodruff Key	M2536	M2536	M2536	M2536	M2536	M2536	M2536	M2536	M2536	M2536	M2536	M2536	M2536	M2536	M2536	M2536	M2536	M2536	M2536	M2536	1	$9.50
19	Coil Wedge	M3040	M3040	M3040	M3040	M3040	M3040	M3040	M3040	M3040	M3040	M3040	M3040	M3040	M3040	M3040	M3040	M3040	M3040	M3040	M3040	2	$9.95
20	Screw	M3020	M3020	M3020	M3020	M3020	M3020	M3020	M3020	M3020	M3020	M3020	M3020	M3020	M3020	M3020	M3020	M3020	M3020	M3020	M3020	1	---
21	Coil	M3975	M3975	M3975	M3975	M3975	M3975	M3975	M3975	M3975	M3975	M3975	M3975	M3975	M3975	M3975	M3975	M3975	M3975	M3975	M3975	1	$279.85
22	Screw	M2555	M2555	-	-	-	-	M2555	M2555	M2555	-	-	M2555	-	M2555	-	M2555	M2555	M2555	M2555	M2555	1	$23.50
23	Adapter	-	-	-	-	-	-	-	-	-	-	-	M3154	-	-	-	-	-	-	M3154	-	1	$59.85
24	Screw	-	-	-	-	-	-	-	-	-	-	-	M3125	-	-	-	-	-	-	M3125	-	3	$16.25
25	Pressure Tube Fitting	-	-	M3180	M3180	M1280	M1280	-	-	-	M1280	M1280	-	M1280	-	M1280	-	-	-	-	-	1	$5.75
26	Air Vent with Hood	M3084	M3084	-	-	-	-	M3084	M3084	M3084	-	-	M3084	-	M3084	-	M3084	M3084	M3084	M3084	M3084	1	$18.85
27	Screw	M3015	M3015	-	-	-	-	M3015	M3015	M3015	-	-	M3015	-	M3015	-	M3015	M3015	M3015	M3015	M3015	3	$11.50
28	Housing, Distributor	M3902	M3902	M3902	M3902	M3902	M3902	M3902	M3902	M3902	M3902	M3902	M3902	M3832	M3902	M3832	M3902	M3832	M3902	M3902	M3874	1	$159.95
29	Capacitor	K3984	K3984	K3984	K3984	K3984	K3984	K3984	K3984	K3984	K3984	K3984	K3984	K3984	K3984	K3984	K3984	K3984	K3984	K3984	K3984	1	$113.95
30	Distributor Block &	K3823	K3823	K3823	K3823	K3823	K3823	K3823	K3823	K3823	K3823	K3823	K3823	K3823	K3823	K3823	K3823	K3823	K3823	K3823	K3823	1	$289.50
31	Washer	M2532	M2532	-	-	-	-	M2532	M2532	M2532	-	-	M2532	-	M2532	-	M2532	M2532	M2532	M2532	M2532	1	$2.35
32	Bearing Kit	K3320	K3320	K3320	K3320	K3319	K3319	K3319	K3319	K3319	K3319	K3319	K3320	K3302	K3320	K3302	K3320	K3302	K3320	K3320	K3302	1	$155.95
33	Carbon Brush	M3215	M3215	M3215	M3215	M3215	M3215	M3215	M3215	M3215	M3215	M3215	M3215	M3215	M3215	M3215	M3215	M3215	M3215	M3215	M3215	1	$9.00
34	Screw	M3021	M3021	M3021	M3021	M3021	M3021	M3021	M3021	M3021	M3021	M3021	M3021	M3021	M3021	M3021	M3021	M3021	M3021	M3021	M3021	2	$7.50
35--	Spacer	M3826	M3826	M3826	M3826	M3826	M3826	M3826	M3826	M3826	M3826	M3826	M3826	M3826	M3826	M3826	M3826	M3826	M3826	M3826	M3826	2	$24.50

EP

AIRCRAFT SPRUCE WEST
CORONA, CA • (877) 4-SPRUCE
AIRCRAFT SPRUCE EAST
PEACHTREE CITY, GA • (877) 477-7823

Prices Subject to Change Without Notice

SLICK START – LASAR – BENDIX KITS

SLICK START

The FAA-PMA approved SlickStart™ magneto booster system integrates solid state electronics with conventional ignition hardware to deliver optimum spark energy for improved engine starting under all operating conditions. SlickStart™ delivers over 400% more spark energy during start than conventional impulse coupled or retard breaker systems. This added energy enables the magnetos to fire partially fouled spark plugs, ignite less than optimum fuel mixtures, improve hot engine restarts and improve starting performance during extreme cold weather operations.
SlickStart™ is designed to replace all TCM/Bendix starting vibrators used in conjunction with Slick Aircraft Products magnetos. SlickStart™ is also approved for use with Slick impulse coupled magnetos to enhance engine starting performance. SlickStart™ is not approved for installation on any airframe equipped with TCM/Bendix 20, 200, 1200, D-2000, or D-3000 series impulse coupled or retard breaker magnetos.
SlickStart™ can be installed with either impulse coupled or retard breaker magnetos and can be used with either 12V or 24V electrical systems. Fits all Slick impulse coupled and retard breaker 4200/6200 Series and 4300/6300 Series magnetos. ..... Slick Start for Slick Magnetos ..... P/N 08-01000 ..... **$654.00**

LASAR ELECTRONIC IGNITION SYSTEM BY CHAMPION

LASAR®, which stands for Limited Authority Spark Advance Regulator, is the first microprocessor based engine control system approved by the FAA for general aviation piston aircraft. With the system operating in its automatic mode, cylinder head temperature, manifold pressure, and engine speed (RPM) are monitored by the LASAR controller to establish and command the optimum ignition timing and spark energy to produce maximum torque from the engine.
LASAR has an inherent mechanical magneto backup system that automatically assumes control if electrical power is interrupted or if the microprocessor detects a system fault. STC approval has been granted for most 320, 360 and 540 engines. Installation requires repalacement of standard magnetos with Lasar magnetos, a LASAR Control Box, which is mounted to the firewall, a low-voltage control harness that carries the electronic signals between the system components. Specify exact aircraft and Engine Models for quotation or Lasar systems. *When purchasing slick magnetos separately gaskets are not included.

Benefits from LASAR include:

* Better engine starting with 3 times more spark energy and higher output voltage.
* Smoother transition in ignition timing from engine start to idle
* Increased spark plug life
* Up to 12% Reduced Fuel Consumption
* Faster Rate of Climb
* EGT reduced by 150°F on average
* Up to 8% Increased Horsepower.

Components	Part No.	Price
Champion 4771Slick Lasar Mag.	08-06224	**$2,351.00**
Champion 4755Slick Lasar Mag.	08-06162	**$2,379.00**
Champion 4776Slick Lasar Mag.	08-06163	**$2,378.00**
Champion 6755 Slick Lasar Mag.	08-06164	**$2,414.54**
Champion 6766 Slick Lasar Mag.	08-06165	**$2,378.00**
Champion 6776 Slick Lasar Mag.	08-06166	**$2,414.54**

Components	Part No.	Price
Champion LC1011-04 Lasar Controller	08-06167	**$3,734.00**
Champion LC1011-10 Lasar Controller	08-06168	**$3,734.00**
Champion LC1011-14 Lasar Controller	08-06169	**$3,734.00**
Champion LC101115 Lasar Controller	08-06170	**$3,734.00**
Champion Lasar Controller Core Charge	08-14778	**$250.00**

EP

SLICK MAGNETO ASSEMBLY & TIMING KIT

T-100 Assembly and Timing Kit for field-repairable Slick 4300/6300 Series Magnetos.

P/N 07-00788 ..... **$463.95**

T-200 SLICK® IGNITION HARNESS TOOL KIT

The Slick® Assembly Tool Kit is required to install all Slick Ignition Harness Leads on all magneto harness caps and spark plug termination ends. The complete kit includes: Pressing Tool, #72 Drill Bit, Pin Vise, Stripping Tool, Spring Assembly Tool, and Shield Stripper. Complete instructions for the use of this kit can be found in the Unison Industries L-1178 Service Manual.

P/N 12-00720 ..... **$189.50**

BENDIX SERIES MAGNETO REPAIR KITS FROM TEMPEST

These magneto repair kits and deluxe repair kits are designed to simplify the Bendix magneto overhaul process by providing all of the commonly needed overhaul parts in one convenient kit. The Repair Kits contain the parts needed for minor repair such as a 500 hour inspection, and the Deluxe Repair Kits contain the parts needed for major repair such as a magneto overhaul. These parts are highest quality direct replacement parts and are approved for installation and use on certificated aircraft. AB-200445SC-D and AB-200445SC-R kits contain two sets of contact assembly kits. Some parts that may be need replacing during magneto overhaul are not included in these kits.

4 CYLINDER KITS

Repair Kit Type	Tempest Kit P/N	Part No.	Price
MINOR	AB-484SC-R	10-04844	**$145.95**
MINOR	AB-485SC-R	10-04845	**$142.95**
MINOR	AB-200445SC-R	10-04849	**$168.95**
DELUXE	AB-484SC-D	10-04851	**$375.95**
DELUXE	AB-485SC-D	10-04852	**$348.95**
DELUXE	AB-200445SC-D	10-04855	**$374.95**

6 CYLINDER KITS

Repair Kit Type	Tempest Kit P/N	Part No.	Price
MINOR	AB-684SC-R	10-04847	**$145.95**
MINOR	AB-685SC-R	10-04848	**$142.95**
MINOR	AB-200645SC-R	10-04850	**$168.95**
DELUXE	AB-684SC-D	10-04853	**$399.85**
DELUXE	AB-685SC-D	10-04854	**$399.95**
DELUXE	AB-200645SC-D	10-04856	**$424.95**

SEE WWW.AIRCRAFTSPRUCE.COM FOR MAGNETO KIT ELIGIBILITY AND CONTENTS.

SHIELDED IGNITION HARNESSES

AERO-LITE FAA APPROVED SHIELDED IGNITION HARNESSES

Skytronics Aero-Lite harnesses are manufactured to rigid FAA-PMA and MIL-3702 specifications and are warranted to T.B.O. They are available for Lycoming, Continental and Franklin engines and come complete with all tiedowns and clamps. Original Aero-Lite harnesses feature the unique, screw-in magneto plate for easy replacement of worn-out leads. Aero-Lite II harnesses are built with new swaged (PMA) magneto plates, similar to those on original factory harnesses. Aero-Lite Custom harnesses use the customers original swaged magneto plates and are rebuilt to rigid Aero-Lite harness standards. Aero-Lite harnesses are available with or without 90° brass spark plug elbow fittings (see price table). Specify wire color choice of sky blue (standard), black, or red.
Wire Baffle Seals are not included, but are available upon request at no additional charge.

SKYTRONICS INCORPORATED

Continental Engines			*Lycoming Engines*		
Aero-Lite Part No.	**replaces Slick**	**replaces Champion**	**Aero-Lite Part No.**	**replaces Slick**	**replaces Champion**
C16-2BS-II	M1730	CH11730	A20-2AS-II	M2121	CH12121
C16-4BS-II	M1740	CH11740	A20-4AS-II	M2154	CH12154
C16-2AS-II	M1978	CH11978	A30-1BS-II	M2360	CH12360
C31-1AS-II	M2007	CH12007	A30-1AS-II	M2364	CH12364
C9-2BS-II	M2015	CH12015	A30-3AS-II	M2365	CH12365
C1-5AS-II	M2045	CH12045	A30-5AS-II	M4001	CH14001
C3-2AS-II	M2130	CH12130	***DUALS****		
C1-1AS-II	M2351	CH12351	A45-10AS	M2917	10-821414-4
C16-11BS-II	M2381	CH12381			
C19-11AS-II	M2932	CH12932			

Stock 4 Cylinder Harnesses.....**$149.50**

SEE WWW.AIRCRAFTSPRUCE.COM FOR LISTING OF STOCKED AEROLITE HARNESSES.

***Core deposit of $125 required unless dual magneto cover accompanies order.**
****Call us for prices on 8-cylinder harnesses or individual leads.**

PRICES FOR SPECIAL ORDER AERO-LITE HARNESSES

Aero-Lite Original harnesses machined lead fittings screw into threaded magneto plate ports	4-cyl. Engines **$195.00**	6-cyl. Engines **$275.00**
Aero-Lite II* machined with new swaged magneto plates	4-cyl. Engines **From $159.00**	6-cyl Engines **From $220.00**
Aero-Lite Custom harnesses Rebuilt to customer specifications using original swaged magneto plate.** An example of the Aero-Lite Custom harness is the dual Bendix harness.	4-cyl. Bendix	6-cyl. Bendix
	CALL FOR QUOTE	

*** Core deposit of $125 required unless dual magneto accompanies order.*
****Call for prices on 8-cylinder harnesses or individual leads.*

Note: For 90° brass spark plug elbow fittings, add $60 to 4-cylinder prices, and $80 to 6-cylinder prices.

All other Aero-Lite harnesses normally ship within 2 days.

ORDERING IS SIMPLE! JUST SPECIFY:

Harness Leads: Threaded or Swaged
Lead Termination: 90°Elbows or Straight fittings
Spark Plug Size: REM (5/8") or RHM (3/4")
Complete Engine Make and Model:_____

Complete Magneto Type:_____

Wire Color; Blue, Black, Red or Yellow:_____

. . . AND WE'LL DO THE REST!

LIGHTWEIGHT HIGH TEMPERATURE SHIELDED IGNITION HARNESSES

MFG. BY ACS PRODUCTS CO.

New production ignition harnesses at remarkably low prices. Late type 5MM wire constructed of 16 strands of tightly braided copper wire impregnated with scuff resistant white silicone. All strands must fracture before a complete open circuit type failure occurs thus extending lead life. Lead flexibility is retained from -65° to 400° F. Moisture and cleaning solvent penetration is eliminated by the impregnated silicone coating. This extremely flexible wire lends itself to sharp bends thereby eliminating the need for old style harness elbows. No soldered joints in the grounding circuit. Custom made for most 4 cylinder and 6 cylinder engines using Bendix or Eisemann magnetos and 4 cylinder engines using Slick magnetos. Cable outlet plates are not furnished for Bendix and Eisemann mags as these are already installed on the magnetos in service. They must be purchased separately for new magneto installations. Harnesses for Slick magnetos are furnished with the backplates installed. Standard harnesses for the Bendix S4/S6 mags are fitted with a male nut which screws into the threaded outlet plate on the back of the mag. Harnesses for old style Bendix SF4 and SF6 magnetos are fitted with female nuts.

HARNESSES FOR BENDIX AND EISEMANN MAGNETOS

All 4-Cylinder Harnesses (8 wires).....**$179.50**
All 6-Cylinder Harnesses (12 wires).....**$242.95**
(Not Available for Bendix S1200 Magnetos)
Replacement Leads to 48" (Specify Length)..... **Call For Quote**
(Bendix & Eisemann only)

HARNESSES FOR SLICK MAGNETOS

For 4000, 4200 & 4300 Series Mags (4 Cyl.) Only.....**$187.95**

All Harnesses Furnished with Cable Ties and Clamps
For plugs with 5/8-24 barrel size only.

BENDIX MAGNETOS

Engine/Magneto	Part No.
Cont. A-65/S4	12301-02
C-85/S4	12301-05
C-90/S4	12301-06
0-200/S4	12301-05
LYC. 0-100/S4	12301-21
0-235/S4	12301-21
0-290/S4	12301-21
0-320/S4	12301-22
0-360/S4	12301-22
Cont. A-65/SF4	12302-02
A-75/SF4	12302-03
Lyc. 0-100/SF4	12302-20
0-235/SF4	12302-20
0-290/SF4	12302-20
Cont. E-185/S6	12305-10
E-225/S6	12305-11
O-470/S6	12305-13
C-145/S6	12305-09
O-300/S6	12305-09
Lyc. 0-540/S6	12305-22
IO-540/S6	12305-22
Franklin165/S6	12305-41
Cont.C-125-SF6	12307-08
Lyc.0-435/SF6	12307-23

SLICK MAGNETOS

Engine/Magneto	Part No.
VW (M2266) *	12304-32
Lyc 0-235 (M2363)	12304-33
0-290 (M2363)	12304-33
0-320,0-360 (M2363)	12304-33
Cont. 0-200 (1780)	12304-31
C-75 (1780)	12304-31
C-85 (1780)	12304-31
C-90 (1780)	12304-31

EISEMANN MAGNETOS

Engine/Magneto	Part No.
Cont A65/LA-4	12303-04
A75/LA-4	12303-04
C-85/LA-4	12303-07
E-185/LA-6	12306-12
Franklin 150/LA-6	12306-40

***This harness only comes with 4-leads.**

ACS Products ignition harnesses can be used on experimental aircraft or on certified aircraft with field approval (FAA Form 337). If FAA/PMA harness is mandatory or if for use with 3/4" spark plugs, use Slick Bendix, Aero-Lite or Champion harnesses.

EP

IGNITION SYSTEMS

E-MAG ELECTRONIC IGNITION

Of all the E-MAG innovations, the self-powering capability of the "P" Model is the most significant. It solves the largest single issue faced by all electronic ignitions - their need for an uninterruptible power supply.
Power back-up strategies that a) compromise ignition effectiveness, b) solve only half the problem, or c) require additional maintenance are less than ideal. Next-Generation ignitions need a better solution. So what does a next-generation electrical back-up need to do?
Above all, it has to be reliable. When it's needed, it has to work - period. It should operate for as long as needed. Whether it's the last 10 minutes of a Sunday pleasure flight, or you're crossing the Atlantic. It should be maintenance-free. Benign neglect should not prevent it from working. On the rare occasion it's needed, it should automatically engage without operator intervention. A simple and convenient pre-flight check should confirm it's working properly. This P model ignition has an internal three phase brushless alternator that produce enough power to sustain the ignition when the engine is turning 800 rpm, or more. If the aircraft buss voltage goes off-line, the ignition has an internal alternator. With this arrangement, dual electronic ignitions can be run "clean". No back-up batteries and no back-up magnetos.
The P Model Built-In Alternator adds no (zero) mechanical contact/wear parts to the system. Adds only a few ounces of weight. Requires no additional hardware to install. Will operate as long as the engine is turning

E-MAG Aircraft Harness

Description	Part No.	Price
"P" Model (P-MAG) Ignition - Same as the E model above, but has a built-in backup alternator.	07-01292	**$1,195.00**
E-Mag P Model Ignition with Alternator 4C Continental - Ignition compatible with most 4 cylinder Lycoming and Continental O-200 engines. Specify Ignition type as follows: Lycoming (and like) engine P114-L4, Continental O-200 engines P114-C4	07-01311	**$1,172.00**
E-MAG Aircraft Harness - Trim-to-fit harness kit. Aircraft Harness kits include with the coil end fittings, tool, and appear on forms as "Air Packs".	07-01293 (one ignition)	**$127.50**
	07-01294 (two ignition)	**$227.95**
E-Mag Gear Adapter Kit C 200	07-01805	**$114.00**

E-MAG IGNITION KITS

Auto style custom fit kits. Include low-resistance spiral wound lead wire, end fittings, and tool.

Description	Part No.	Price
E-MAG 4 Wire Kit (One Ignition) with Auto Pack	07-01396	**$123.95**

Auto harness pre-terminated with auto plug adapters. Auto style harness with terminals and boots installed on both ends. Same wire used in their custom trim-to-fit kit.

E-MAG Auto Harness - 4 Wire Kit (One Ignition) with Auto Pack	07-01403	**$129.50**
E-MAG Auto Harness - 8 Wire Kit (Two Ignition) with Auto Pack	07-01404	**$231.95**
E-MAG Spark plug adapters - 4 pk.	08-06753	**$57.50**

EP

ELECTROAIR IGNITION SYSTEMS

EIS-1 KIT

EIS-2 KIT

EIS-3 KIT

EIS-4 KIT

Electroair Ignition Systems come complete with everything needed to install the EIS. Comprehensive installation procedure leaves little room for error when installing your system. STC'd for most Lycoming 4 cylinder engines. For more information on these kits and STC model list, please visit: www.aircraftspruce.com

EIS-1 KIT	Part No.	Price
4-cylinder Electronic Ignition System comes with: Coil Pack, Controller, Mag Timing Housing, MAP Sensor, spark plug wires, instruction manual. Specify engine make and model.	08-05953	**$1,561.00**
EIS-2 KIT	**Part No.**	**Price**
6-cylinder Electronic Ignition System comes with: Coil Pack, Controller, Crankshaft Timing Wheel, MAP Sensor, spark plug wires, instruction manual. Specify engine make and model.	08-05954	**$1,592.00**

EIS-3 KIT	Part No.	Price
Subaru EJ-22 4-cylinder Electronic Ignition System comes with: Coil Pack, Controller, Subaru Timing Wheel Kit (replaces COG pulley & factory pick-up), and instruction manual.	08-05955	**$1,235.00**
EIS-4 KIT	**Part No.**	**Price**
Rotorway RW 152 4-cylinder Electronic Ignition System comes with: Coil Pack, Controller, Trigger Wheel Kit (mounts on V-Belt Pulley), spark plug wires, and instruction manual.	08-05956	**$1,270.00**

ELECTROAIR FOUR CYLINDER ELECTRONIC IGNITION

The EIS-41000 Electronic Ignition Kit is a fully STC'd kit for most Lycoming 4cyl engines. Replacing one magneto with the EIS-41000 will typically improve fuel economy on average by 10-15% (many operators have reported consistent fuel savings of 1gph or greater). Additionally, there will be an improvement in horsepower, smoother engine operation, and improved high altitude performance. The EIS-41000 adjusts spark timing automatically by way of our MAP Sensor - timing is adjusted with altitude. Most parts on the EIS-41000 are not life limited (the MTH is recommended to be changed at overhaul of the engine; spark plug wires on a regular interval) - this combined with reduced spark plug fouling means lower maintenance costs. This kit can be used on either 12V or 24V systems.
Kit includes: all the required parts to replace the direct drive magneto (typically, the right hand mag) in most 4cyl Lycoming engines. (Please refer to the eligibility schedule to verify the system can be installed on your engine - Note: engines are being added regularly).
Features: 4cyl Electronic Ignition for most Lycoming Engines. 10-15% gain in fuel efficiency. Improved Horsepower. Smoother, low RPM operation. Timing adjusts with altitude (MAP)

P/N 08-07272 ..... **$2,890.00**

ELECTRONIC IGNITION SYSTEMS

ELECTRONIC ENGINE MANAGEMENT SYSTEM

The EFII system is a complete electronic engine management system for light aircraft engines. The EFII system can be used in any Experimental category aircraft using one of these engines.
The EFII system is very similar to what you would find on any modern automobile engine. It is a computer controlled electronic fuel injection and electronic ignition system. The system is controlled by an ECU (the computer) and incorporates a fully mapped fuel curve and ignition timing curve. The electronic fuel injection portion of the system utilizes an electronic fuel injector valve that is installed into each intake tube, just under the engine cylinder and a throttle body that replaces the typical carburetor or mechanical injector butterfly assembly. The electronic ignition portion of the system utilizes high energy inductive ignition coils instead of magnetos to produce a very strong and efficient spark to each plug.
The EPA has recently started the rules making process to decide the timeframe to mandate Unleaded Avgas. If you have an EFII system on your engine, you will already be compatible with the new fuel.

In The Box:
- Spark plug wire set, 8 plug
- Iridium spark plugs, 8 ea.
- High energy inductive ignition coil pack w/integral magneto block off plate, 2 ea.
- Spark plug adapters, 18mm to 14mm, 8 ea.
- EFII ultra compact electronic fuel injector assemblies with weld-in bases, 4ea. (note - customer provides intake tubes for weld-in base installation)
- EFII modified flywheel w/trigger magnets added. (note - customer provides flywheel for modification)
- Billet Hall effect crank trigger (no case drilling required)
- Dual fuel pump module
- Fuel pressure regulator
- High pressure EFII fuel filter
- EFII wire harness - All Tefzel harness with sealed waterproof connectors
- Engine computer - ECU
- Mechanical fuel pump block off plate w/integral engine temp sensor
- MAP sensor
- EFII throttle body w/throttle position sensor, intake air temp sensor, and Lycoming sump adapter
- Aviation programmer for ECU
- Mixture adjust knob - for easy system tuning.

Features:
- The advantages of an electronically controlled engine are numerous and include:
- Fully compatible with 100LL, auto gas and future Unleaded Avgas
- Approx. 10% increase in available horsepower
- Automatic mixture control (no mixture knob to fool with)
- A proper ignition timing curve to bring out the true power potential of your engine
- Fuel savings from always having the correct fuel mixture
- Decreased lead fouling
- Improved engine starting - No "hot start" or "cold start" problems
- Decreased weight - no magnetos or mechanical fuel pump
- Tunability - your fuel map can be fine tuned for your particular installation
- Lower maintenance costs - less lead build up means less wear and less oil contamination, uses automotive Iridium spark plugs.

P/N 07-01849 ..... **$4,995.00**

EP

SINGLE MAGNETO REPLACEMENT IGNITION

Electronic ignition systems for Lycoming engines have been around for awhile but this may be a better idea - you be the judge.
The manufacturer has taken the core control system of the EFII fuel injection system and pared it down to the ignition components. This allows them to offer a sinlge mag replacement high energy ignition system for your aircraft. And what is unique about that you ask? Well, the EFII system uses a very high energy inductive coil pack to deliver several times the spark energy of the most popular competitor system for more complete combustion. Secondly, once you have installed one of their ignition systems, you have opened the door for an easy upgrade in the future to the full electronic fuel injection and ignition EFII system. You can start now with a single or dual mag replacement ignition that utilizes their billet Hall effect crank trigger and proven engine computer and simply add the rest of the EFII fuel injection kit in the future if you choose to do so. This easy migration path between systems can not be matched by any other ignition or fuel injection company.
In The Box: Ignition computer, high energy coil pack with integral magneto block off plate, Billet Hall effect crank trigger (no case drilling required), high quality silicon spark plug wires, 4 ea., automotive Iridium spark plugs, 4 ea., spark plug adapters, 4 ea., MAP sensor, Tefzel plug and play wiring harness with environmentally sealed connectors.

P/N 07-01850 ..... **$1,200.00**

DUAL MAGNETO REPLACEMENT IGNITION

Electronic ignition systems for Lycoming engines have been around for awhile but this may be a better idea - you be the judge.
The manufacturer has taken the core control system of the EFII fuel injection system and pared it down to the ignition components. This allows them to offer a dual mag replacement high energy ignition system for your aircraft. And what is unique about that you ask? Well, the EFII system uses a very high energy inductive coil pack to deliver several times the spark energy of the most popular competitor system for more complete combustion. Secondly, once you have installed one of these ignition systems, you have opened the door for an easy upgrade in the future to the full electronic fuel injection and ignition EFII system. You can start now with a single or dual mag replacement ignition that utilizes their billet Hall effect crank trigger and proven engine computer and simply add the rest of the EFII fuel injection kit in the future if you choose to do so. This easy migration path between systems can not be matched by any other ignition or fuel injection company.
In The Box: Ignition computer, high energy coil packs with integral magneto block off plate, Billet Hall effect crank trigger (no case drilling required), high quality silicon spark plug wires, 8 ea., automotive Iridium spark plugs, 8 ea., spark plug adapters, 8 ea., MAP sensor, Tefzel plug and play wiring harness with environmentally sealed connectors.

P/N 07-01851 ..... **$1,850.00**

BUS MANAGER

This Bus Manager is an important safety device for aircraft that have critical electronics that require a protected essential bus. This would include aircraft that are running electronic fuel injection, electronic ignition, electric fuel pumps, or critical instrumentation. Provides a triple redundant essential bus for all critical electronic equipment. This redundency is crucial for engines that rely on uninterupted +12V power to critical items. The end user no longer has to attempt to come up with a home brew bus system for their plane. The Bus Manager has been professionally designed and over-built to faithfully provide extreme reliability.

P/N 07-01852 ..... **$540.00**

BUS MANAGER ACCESSORY KIT

The Accessory Kit for the Bus Manager consists of all the parts necessary to setup a Bus Manager based electrical distribution system for experimental aircraft.

P/N 07-01853 ..... **$145.00**

ELECTRIC BOOST PUMP MODULE

The EFII Boost Pump Module (BPM) brings a new level of installation simplicity and functionality to the fuel system of your aircraft equipped with Bendix, AFP or Precision Airmotive type mechanical fuel injection. The BPM reduces a time consuming and frustrating plumbing job to a simple and clean, easy to set up installation. It is used to supply a steady source of 30PSI fuel to your engine during take-off, landing, priming, or emergency situations. The BPM has integral back flow prevention and pressure regulation valving.

P/N 07-01854 ..... **$649.00**

LIGHT SPEED ENGINEERING PLASMA IGNITION SYSTEM

Light Speed Engineering, LLC (LSE) is a pioneer in the design and production of ignition systems for experimental aircraft. 22 years of research and development have been invested in producing the PLASMA CDI (Capacitive Discharge Ignition) system product line. LSE's PLASMA CD systems are the ideal replacement for yesterday's magneto technology. You can replace one mag with a PLASMA CDI or, for maximum performance, replace both magnetos with these state of the art systems. The Plasma CDI is a solid-state, high performance ignition system intended for today's home built aircraft. Light Speed Engineering currently offers two Capacitive Discharge Ignition Systems: the PLASMA II PLUS and the PLASMA III. Standard Plasma CDI kits include: direct crank sensor assembly, high tension leads, harness, spark plugs, spark plug adapters, and ignition coils with mounting bracket. One or two systems can be used.

PLASMA II PLUS CDI

The Plasma II is Light Speed Engineering's basic electronic ignition system for aircraft. It is a lightweight, high-energy capacitor discharge system containing all of the essential Plasma CDI features. Its smaller size and lighter weight sets it apart from any other ignition source. Like all LSE ignition systems it features automatic ignition advance based on engine load and RPM, auto retard for starting and a standard pulse tachometer output. The Plasma II was designed to provide a high tech ignition source at the cost of magnetos.

PLASMA III CDI

Light Speed Engineering has introduced a new ignition system to its line of products. The new Plasma III Capacitor Discharge System is the latest high performance ignition for all 4-cyl and 6-cyl aircraft engines. Its long duration spark and optimized timing curve makes more horsepower and improves fuel efficiency- at all altitudes. Other benefits include quick starts, reduced maintenance, light weight, lower EGT's and up to 20% more range. As with all LSE ignitions, RPM and manifold pressure inputs are used for our proprietary timing curves. The Plasma III is also capable of displaying the current timing advance, manifold pressure and rpm on an optional lightweight LCD display. The Plasma III can easily replace one or both magnetos, making your engine run better under all conditions.

PLASMA CAPACITIVE DISCHARGE IGNITION SYSTEMS

All Plasma CDI systems include: high tension leads, harness, spark plugs, spark plug adapters, ignition coils with mounting bracket, and Hall Effect Sensor module OR Direct Crank Sensor assembly.

Description	Part No.	Price
Plasma II Plus: 4 Cylinder Direct Crank Sensor	08-06294	**$1,075.00**
Plasma II Plus: 4 Cylinder Hall Effect Module	08-06295	**$1,275.00**
Plasma III: 4 Cylinder Direct Crank Sensor	08-00675	**$1,363.00**
Plasma III: 4 Cylinder Hall Effect Module	08-00676	**$1,556.00**
Plasma III: 6 Cylinder Direct Crank Sensor	08-00677	**$1,450.00**
Dual Plasma CDI Systems		
Dual Plasma II Plus: 4 Cylinder Direct Crank Sensor	08-06296	**$2,115.00**
Dual Plasma II Plus: 4 Cylinder Hall Effect Module	08-06297	**$2,495.00**
Dual Plasma III: 4 Cylinder Direct Crank Sensor	08-06298	**$2,649.00**
Dual Plasma III: 4 Cylinder Hall Effect Module	08-06299	**$2,995.00**
Dual Plasma III: 6 Cylinder Direct Crank Sensor	08-06300	**$2,895.00**
Options		
On all Turbo and Super-Charged ignition systems add $124.95	08-06301	**$124.95**
On all Franklin and Continental engine ignition systems add $194.99	08-06302	**$194.99**

S.5 SPARK PLUG ADAPTER FOR 14MM SPARK PLUGS

RECOMMENDED BY KLAUS SAVIER OF LSE

The high performance, electronic ignition, has demonstrated it's reliability, easy starts, greater power at altitude, and leaner, more efficient combustion. Yet your expensive aircraft Spark Plugs, can prevent the pilot from taking full advantage or this electronic powerhouse. The S.5 is a precision CNC adapter, that installs easily in aircraft engines, that use 18mm "short reach" spark plugs, transforming the 18mm threaded hole down to 14mm.

The Spark Plug Adapter allows you to use:

- High performance 14mm automotive/ motorcycle spark plugs, that offer an almost unlimited variety of heat ranges, & electrode styles, designed specifically to take advantage of electronic ignitions.
- Shorter plugs with 90° silicon boots, give greater clearance for sleeker cowls and less drag, meaning higher speed, using less power.
- Precious and semi precious metal racing spark plugs (the ultimate in reliability and long life) for less than you'd pay for ordinary aircraf plugs. More speed, power, efficiency, as well as a cost savings each time you change spark plugs.
- New & improved corrosion resistant design substantially extends the operational life of the S.5 Spark Plug Adapter.

Set of 4 adapters without gaskets .....P/N 08-06753 ..... **$57.50**
Set of 4 adapters with gaskets.....P/N 08-06753-1 ..... **$58.50**

WIRE TERMINAL CLIP

For 7 MM unshielded harnesses.
P/N 07-03500 ..... **$0.36**

HIGH TENSION CABLE

Unshielded 7MM ignition cable consists of tinned conductor, rubber insulation, reinforced glass braid and Hypalon jacket that resists sun, weather, heat, chemicals and oxidation by ozone. Temperature range -65° to 250°F.
P/N 07-03700 ..... **$1.27 Ft.**

P/N 526

M2376

P/N M2755

ENGINE BAFFLE IGNITION WIRE SEALS

Seal Type	Part No.	Each
5mm Wire Seal One-Wire	526	**$4.85**
5mm Wire Seal Two-Wire	375	**$6.50**
5mm Wire Seal Three-Wire	376	**$6.00**
5mm Wire Seal Slick 3-Wire	M2376	**$19.95**
5mm Wire Seal Slick 2-Wire	M2375	**$19.00**
5mm Wire clamp Slick 2-Wire	M2755	**$3.75**

BUZZ AERO ROCKER COVERS

The Buzz Aero Model AC2003 cover is made to fit Lycoming straight valve cylinders. Available in red, white, blue or black anodizing. Specs: Wt: 9oz; Machined from billet aluminum; Nickel chrome plated stainless steel socket head cap screws supplied with kit;
Set of gaskets supplied with each kit. AC2003 Applications: Lyc. 0-235, 0-290, 0, I0, LI0-320, 0-340, 0- 360-A, B, C, D; I0-360-B; H0-360-A, B; HI0-360-B, V0, IV0-360; 0- 540-A, B, E, F, G, I0-540-C, D, J, N, R.
Also Available by Special Order: AC2004 for Engines: I0-360-A, C, D; AI0-360-A, B; H0-360-A, C, D, TI0-360-A; LI0-360-C1E6; V0, G0-435; G0-480; I0, V0, TVI0-540; I0- 720, TV0-435.

Description	Part No.	Price
Rocker Cover 4 Cyl. Kit Red	08-00806-1	**Call for price**
Rocker Cover 4 Cyl. Kit White	08-00806-2	**Call for price**
Rocker Cover 4 Cyl. Kit Blue	08-00806-3	**Call for price**
Rocker Cover 4 Cyl. Kit Black	08-00806-4	**Call for price**
Rocker Cover 6 Cyl. Kit Red	08-00807-1	**Call for price**
Rocker Cover 6 Cyl. Kit White	08-00807-2	**Call for price**
Rocker Cover 6 Cyl. Kit Blue	08-00807-3	**Call for price**
Rocker Cover 6 Cyl. Kit Black	08-00807-4	**Call for price**

Call for Pricing!

EP

TEMPEST AVIATION SPARK PLUG APPLICATION CHART

FAA-PMA Approved Engine Applications	Massive Electrode								Fine-Wire Electrode					
	5/8"-24 thread				3/4"- 20 thread				5/8"-24 thread		3/4"- 20 thread			
Textron Lycoming	UREB37E	UREM37BY	UREM38E	UREM40E	URHB32E	URHB37E	URHM38E	URHM40E	UREB36S	UREM38S	URHB32S	URHB36S	URHM38S	
AEIO-320: D1B, D2B, E1A, E1B, E2A, E2B		x	x	x			x	x		x				x
AEIO-360: A2A, A2C	x	x	x	x			x	x	x	x				x
AEIO-360: A2B	x	x	x	x		x	x	x	x	x				x
AEIO-360: A1D, A1E	x	x	x			x	x		x	x				x
AEIO-360: B1D, B1F6, B2F6, H1A		x	x	x			x	x	x	x				x
AEIO-360: B1H									x	x				x
AEIO-360: A1C	x	x	x	x			x	x		x				x
AEIO-360: A1A, A1B, A1B6	x	x	x			x	x			x				x
AEIO-360: A1E6		x	x	x			x	x		x				
AEIO-360: B1B, B1F, B1G6, B2F, B4A, H1B		x	x	x			x	x		x				x
AEIO-540: D4B5			x	x			x	x	x	x				x
AEIO-540: D4A5, D4C5, D4D5, L1B5, L1B5D			x	x			x	x		x				x
AEIO-540: L1D5										x				x
AIO-320: A1B, A2A, A2B, B1B, C1B		x	x	x			x	x		x				x
AIO-320: A1A							x	x						
AIO-360: A1A, A1B, A2A, A2B		x	x	x			x	x		x				x
AIO-360: B1B		x	x	x			x	x						x
GO-435: C2, C2A, C2A2, C2B, C2B1, C2B2, C2C, C2D, C2E, D1		x	x	x			x	x		x				x
GO-480: G1A6	x				x	x					x	x		
GO-480: B, B1A6, B1B, B1C, B1D, C1B6, C1D6, C2C6, C2D6, C2E6, C3A6, D1A, F1A6, F2A6, F2D6, F3A6, F3B6, F4A6, F4B6, F6			x	x			x	x		x				x
GO-480: G1B6, G1D6, G1H6, G1J6, G2D6, G2F6			x				x				x	x		
GO-480: E1A6										x				x
GSO-480: A1C6, A2A6			x				x			x				x
GSO-480: B1A6, B1B3, B1B6, B1C6, B1E6, B1G6, B1J6, B2C6, B2D6, B2G6, B2H6			x				x							
GSO-480: A1A6										x				x
HIO-360: E1BD					x	x			x		x			
HIO-360: A1A, A1B, B1A, B1B		x	x	x			x	x		x				x
HIO-360: C1A, C1B, D1A			x				x			x				x
HIO-360: E1AD, F1AD					x	x					x			
HO-360: A1A, C1A		x	x				x			x				x
HO-360: B1A, B1B			x				x			x				x
IGO-480: A1A6, A1B6											x	x		
IGO-540: A1A, A1B, A1C, B1A, B1B, B1C	x				x	x				x	x	x		x
IGSO-480: 13/16" reach cyl.	x				x	x					x	x		
IGSO-480: 1/2" reach cyl.			x				x			x				x
IGSO-540: B1A, B1C	x				x	x				x	x			x
IGSO-540: A1A, A1C, A1D, A1E, A1F, A1H	x				x	x					x			
IO-320: F1A	x					x			x	x				x
IO-320: C1B		x	x	x			x	x	x	x				x
IO-320: A1A, A2A, B1A, B1B, B1C, B1D, B1E, B2A, D1A, D1B, D1C		x	x	x			x	x		x				x
IO-320: E1A, E1B, E2A, E2B		x		x			x	x		x				x
IO-320: 1/2" reach cyl.				x			x			x				x
IO-320: 13/16" reach cyl.						x								
IO-360: C1A	x					x			x	x				x
IO-360: F1A	x			x		x			x	x				x
IO-360: A1B6		x	x				x		x	x				x
IO-360: A1B6D	x					x				x				x
IO-360: A1A, A1B, A1C, A1D, A1D6, A1D6D, A2A, A2B, A2C, A3B6, A3D6D, C1B, C1C, C1C6, C1D6, C1E6, C1E6D, C1F, D1A, J1A6D, J1AD		x	x				x			x				x
IO-360: B1A, B1B, B1C, B1D, B1E, B1F, B1F6, B1G6, B2E-nd, B2E-wd, B2F, B2F6, B4A, E1A		x	x	x			x	x		x				x
IO-360: A3B6D		x	x				x			x				x
IO-360: K2A, L2A			x	x			x	x		x				x
IO-360: M1A				x						x				x
IO-360: C1G6														x
IO-540: P1A5, R1A5	x				x	x			x	x	x	x		x
IO-540: K1A5, K1A5D, K1B5D, K1G5D, K1H5, K1J5, K2A5			x	x			x	x	x	x	x	x		x
IO-540: K1C5, K1D5, K1E5D, K1F5, K1F5D, K1G5, K1J5D, K1K5			x	x			x	x	x	x				x
IO-540: E1A5, E1B5, E1C5, K1B5					x	x			x	x	x	x		x
IO-540: J4A5					x	x			x	x		x		x
IO-540: K1E5					x	x			x	x				x
IO-540: S1A5, U1A5D, U1B5D	x				x	x				x	x	x		x
IO-540: N1A5	x				x	x				x	x			x
IO-540: M1A5, M1A5D, M1B5D, M1C5, M2A5D	x				x	x				x				x
IO-540: AA1A5, AA1B5	x				x	x					x	x		
IO-540: G1A5, G1B5, G1C5, G1D5, G1E5, G1F5			x	x			x	x		x	x	x		x
IO-540: A1A5, AC1A5, B1A5, B1B5, B1C5, C1B5, C1C5, C2C, C4B5, C4C5, C4D5, C4D5D, D4A5, D4B5, D4C5, L1A5, L1A5D, L1B5D, L1C5, T4A5D, T4B5, T4B5D, T4C5D, V4A5D			x	x			x	x		x				x
IO-540: AB1A5, W1A5, W1A5D, W3A5D			x	x			x	x						
IO-540: C4B5D										x				x
IO-720: 13/16" reach cyl.	x				x	x					x	x		
IO-720: 1/2" reach cyl.			x				x			x				x
IVO-360: A1A	x				x	x					x	x		
IVO-540: A1A	x					x								
LHIO-360: C1A, C1B			x				x							
LHIO-360: F1AD					x	x								
LIO-320: C1A	x					x				x				x
LIO-320: B1A		x	x	x			x	x		x				x
LIO-360: C1E6		x	x				x			x				x
LO-360: A1G6D, A1H6		x	x	x			x	x		x				x
LO-360: E1A6D, E1AD, E2AD, E2BD			x	x			x	x		x				x
LTIO-540: F2BD, J2B, J2BD, N2BD, R2AD					x	x					x	x		
LTIO-540: K1AD, U2A, V2AD, W2A					x	x								
LTO-360: E1A6D	x				x	x					x	x		
LTO-360: A1A6D	x				x	x					x			
O-235: C1, C1A, C1B, C1C, C2A, C2B, C2C, E1, E1B, E2A, E2B, F1, F1B, F2A, F2B, G1, G1B, G2A, G2B, H2C, J2A, J2B, K2A, K2B, K2C, L2A, L2C, M1, M2C, M3C, N2A, N2C, P1, P2A, P2C, P3C		x	x	x			x	x		x				x
O-290: A, AP, B, C, CP, D2A, D2B, D2C		x	x	x			x	x		x				x
O-290: D, D2				x				x		x				x
O-320: D1A, D1B, D1C, D1D, D1F, D2A, D2B, D2C, D2F, D2G, D2H, D2J, D3G, E2A, E2C		x	x	x			x	x		x				x
O-320: A1A, A1B, A2A, A2B, A2C, A2D, A3A, A3B, A3C, B1A, B1B, B2A, B2C, B2D, B3A, B3B, B3C, C1A, C1B, C2A, C2B, C2C, C3A, C3B, C3C, E1A, E1B, E1C, E1F, E1J, E2B, E2D, E2F, E2G, E2H, E3D, E3H		x	x	x			x	x		x				x

FAA-PMA Approved Engine Applications	Massive Electrode								Fine-Wire Electrode					
	5/8"-24 thread				3/4"- 20 thread				5/8"-24 thread		3/4"- 20 thread			
Textron Lycoming	UREB37E	UREM37BY	UREM38E	UREM40E	URHB32E	URHB37E	URHM38E	URHM40E	UREB36S	UREM38S	URHB32S	URHB36S	URHM38S	
O-320: H1AD, H1BD, H2AD, H2BD, H3AD, H3BD			x	x			x	x		x				x
O-320: B2B										x				x
O-340: A1A, A2A, B1A			x	x			x	x		x				x
O-360: A1A-nd, A1A-wd, A1AD, A1C, A1D, A1F, A1F6, A1F6D, A1G, A1G6, A1G6D, A1H, A1H6, A1LD, A1P, A2A, A2D, A2E, A2F, A2G, A2H, A3A, A3AD, A3D, A4A, A4AD, A4D, A4G, A4J, A4K, A4M, A4N, A4P, A5AD, B1A, B1B, B2A, B2B, B2C, C1A, C1C, C1E, C1F, C1G, C2A, C2B, C2C, C2D, C2E, C4F, C4P, D1A, D2A, D2B, F1A6		x	x	x			x	x		x				x
O-360: E1A6D, E1AD, E1BD, E2AD, E2BD, G1A6, J2A			x	x			x	x		x				x
O-435: A, A2, C2			x	x			x	x		x				x
O-435: C, C1, K, K1			x				x			x				x
O-435: B										x				x
O-435: 1/2" reach cyl., 25											x			
O-540: L3C5D	x					x				x				x
O-540: A1A, A1A5, A1B5, A1C5, A1D, A1D5, A2B, A3D5, A4A5, A4B5, A4C5, A4D5, B1A5, B1B5, B1D5, B2A5, B2B5, B2B5-wd, B2C5, B2C5-wd, B4A5, B4B5, B4B5-wd, E4A5, E4B5, E4B5-wd, E4C5, F1A5, F1B5, G1A5, G1A5-wd, G2A5, G2A5-wd, H1A5, H1A5D, H1B5D, H2A5, H2A5D, H2B5D, J1A5D, J1B5D, J1C5D, J1D5D, J2A5D, J2B5D, J2C5D, J2D5D, J3A5, J3A5D, J3C5D			x	x			x	x		x				x
O-540: D1A5										x				x
R-680: 2, 5, 6, B2, B4, B4B, B4C, B4D, B4E, B5, B6, D5, D6, E1, E2, E3, E3A, E3B				x				x		x				x
R-680: 4				x				x						
TIGO-541: B1A, C1A, D1A, D1B, E1A, G1AD					x									
TIO-360: A1A, A1B, A3B6, C1A6D	x					x								
TIO-540: A1A, A1B, A1C, A2A, A2B, A2C, C1A, E1A, F2BD, G1A, H1A, J2B, J2BD, K1AD, N2BD, R2AD, S1AD, T2AD, V2AD					x	x					x	x		
TIO-540: AA1AD, AB1AD, AB1BD, AE2A, AF1A, AF1B, AG1A, AH1A, AJ1A, W2A					x	x								
TIO-541: A1A, E1A4, E1B4, E1C4, E1D4	x				x	x								
TIVO-540: A2A					x	x					x			
TO-360: C1A6D, E1A6D, F1A6D	x				x	x					x	x		
TO-360: A1A6D	x				x	x					x			
TVO-435: A1A, C1A, D1A, E1A, F1A, G1A, G1B	x				x	x				x	x	x		x
TVO-435: B1B, D1B	x				x	x				x	x			x
TVO-435: 13/16" reach cyl.	x				x	x					x	x		
TVO-435: 1/2" reach cyl.			x				x			x				x
VO-360: A1A, A1B, B1A		x	x	x			x	x		x				x
VO-435: 13/16" reach cyl.	x				x	x					x	x		
VO-435: 1/2" reach cyl.			x				x			x				x
VO-540: A1A, A2A, B1A, B1B, B1B3, B1C, B1D, B1E, B1F, B1H3, B2A, B2C, B2D, B2E, B2G, C1A, C1B, C1C3, C2A, C2B, C2C			x				x			x				x
Teledyne Continental Motors (TCM)														
A-65: 12, 12F, 12FJ, 12J, 14, 14F, 14FJ, 14J, 8FJ, 9, 9F, 9FJ, 9J		x		x				x		x				x
A-65: 1, 3, 6, 6J, 7, 8, 8F, 8J				x						x				x
A-75: 3, 6, 6J, 8, 8F, 8FJ, 8J, 9, 9J				x						x				x
C-115: 1, 2		x		x				x		x				x
C-125: 1, 2		x		x				x		x				x
C-145: 2, 2H, 2HP		x	x	x			x	x		x				x
C-75: 12, 12F, 12FH, 12FHJ, 12FJ, 12J, 15, 15F		x	x	x			x	x		x				x
C-75: 8, 8F, 8FH, 8FHJ, 8FJ, 8J				x						x				x
C-85: 14		x	x	x			x	x		x				x
C-85: 12, 12F, 12FH, 12FHJ, 12FJ, 12J, 14F, 15, 15F, 8, 8F, 8FHJ, 8FJ, 8J				x						x				x
C-90: 12F, 12FH, 12FJ, 12FP, 14F, 14FH, 14FJ, 16F, 8F, 8FJ				x						x				x
E-165: 2, 3, 4		x	x	x			x	x		x				x
E-185: 1, 10, 11, 2, 3, 5, 8, 9		x	x	x			x	x		x				x
E-225: 2, 4, 8, 9		x	x	x			x	x		x				x
FSO-470: A			x				x							
GIO-470: A					x									
GO-300: A, B, C, D, E, F		x	x	x			x	x		x				x
GTSIO-520: E					x						x			
GTSIO-520: C, D, F, H, K, L, M, N					x						x	x		
IO-240: A, B			x				x			x				x
IO-346: A, B			x	x	x		x	x		x				x
IO-360: B			x	x			x	x		x				x
IO-360: DB			x				x			x				
IO-360: A, AB, C, CB, D, E, ES, G, GB, H, HB, J, JB, K, KB			x				x			x				x
IO-470: A, C, G, J, K, P, R, T			x	x			x	x		x				x
IO-470: LO, VO					x						x			
IO-470: D, E, F, H, L, M, N, S, U, V					x						x	x		
IO-520: A, B, BA, BB, C, CB, D, E, F, J, K, L, M, MB, N, NB					x						x	x		
IO-550: D, E, F, G, L, N					x									
IO-550: A, B, C					x						x	x		
IOF-240: B			x				x							
IOF-550: B, C, D, E, F, L, N, P, R					x									
LIO-470: A			x	x			x	x		x				x
LIO-520: P					x									
LTSIO-360: E, EB, KB, RB			x				x			x				x
LTSIO-520: AE					x						x	x		
O-200: A, B, C				x						x				x
O-300: A, B, C, D, E		x	x	x			x	x		x				x
O-470: 11, 13, 13A, 15, 4		x	x	x			x	x		x				x
O-470: B, G, H, M, N, P, R, S			x	x			x	x		x				x
O-470: 2			x				x			x				x
O-470: B-C1, G-C1, K-C1, L-C1, M-C1			x	x			x	x						
O-470: 11-C1, 11B, 11B-C1, A, E, J, K, L				x				x		x				x
O-470: T, U					x						x	x		
R-670: 11, 11A, 3, 4, 5, 8, A, B, C, D, E, F, G, H		x		x				x						
R-9: A	x					x								
TSIO-360: A, AB, B, C, D, DB, E, EB, F, FB, G, GB, H, HB, JB, KB, LB, MB			x				x			x				x
TSIO-360: BB, CB, NB, PB, RB, SB			x				x							
TSIO-470: B, C, D					x						x	x		
TSIO-520: LB					x									
TSIO-520: A, AF, BB, BE					x						x			
TSIO-520: AE, B, C, CE, D, DB, E, EB, G, H, J, JB, K, KB, L, M, N, NB, P, R, T, U, UB, VB, WB					x						x	x		
TSIO-550: A, B, C, E					x									
W-670: 16, 23, 24, 6A, 6N, K, M		x		x				x		x				x

Not a complete list. To find the right Tempest Aviation Spark Plugs for your engine, see our complete application guide & engine cross reference at http://tempestplus.com

EP

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

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

Prices Subject to Change Without Notice

AVIATION SPARK PLUGS

TEMPEST AVIATION SPARK PLUGS

Made in USA. Copper, co-extruded inside a nickel alloy sleeve ensures outstanding heat and electrical conductivity while the nickel sleeve offers high resistance to corrosive combustion gases. High Alumina Ceramic Insulator. "V" tip focuses heat to reduce fouling and enhance heat range control. Proprietary Glass Center Seal, and resistor design, eliminating resistor degradation causing misfire. Environmentally preferable electrolytic nickel provides outstanding durable finish, superior corrosion protection, and extreme wear resistance. Aviation grade nickel electrode design focuses on minimizing sparking voltage requirements. Harness Wire Contact is a smooth, uninterrupted, oxide treated spring contact surface.

Massive Electrode

Model	Part No.	Price	Model	Part No.	Price
UREM38E	08-00046	**$21.50**	URHB32E	08-00245	**$21.50**
URHM38E	08-00047	**$21.85**	UREB37E	08-00246	**$21.50**
UREM40E	08-00048	**$21.50**	URHB37E	08-00247	**$21.50**
URHM40E	08-00049	**$21.50**	UREM37BY	08-00248	**$21.50**

Fine Wire

Model	Part No.	Price	Model	Part No.	Price
URHB32S	08-07213	**$64.50**	UREB36S	08-01233	**$49.50**
URHB36S	08-01230	**$49.50**	UREM38S	08-01234	**$49.95**
URHM38S	08-01232	**$49.50**			

NGK SPARK PLUGS

Note: The spark plugs listed are not for aircraft application

DCPR7E

BR8EIX

Size	Description	Part No.	Price
10mm	CR5HSB	08-06263	**$2.25**
12 mm	DCPR7E	08-00504	**$3.60**
12 mm	DCPR8E (Removable Terminal Nut)	08-01228	**$3.55**
12 mm	DCPR8E (Solid Terminal Nut)	08-07044	**$2.95**
12 mm	DR8EA	08-00693	**$2.40**
14 mm	BR8EIX	08-00650	**$8.75**
14 mm	B8ES (Solid Terminal Nut)	08-00730	**$2.35**
14 mm	B8ES (Removable Terminal Nut)	08-07075	**$2.45**
14 mm	BR8ES	08-00736	**$2.40**
14 mm	B7ES	08-07039	**$1.94**
14 mm	B9ES	08-07040	**$2.15**
14 mm	BR7ES	08-07041	**$2.25**
14 mm	BR9ES	08-07042	**$2.40**
14 mm	BR7EIX	08-07045	**$8.25**
14 mm	BR9EIX	08-07046	**$7.95**
12mm	DP9EA-9	15-05219	**$2.90**
14mm	IK24	15-05204	**$12.95**

CHAMPION SPARK PLUG ANTI-SEIZE

Apply sparingly to second and third threads. Do not contact electrodes as it could short out the plug. Do not apply to shielding barrel threads. Unbreakable 4oz. bottle with applicator brush top.....P/N 2612 ..... **$8.50**

TEMPEST SPARK PLUG ANTI-SEIZE COMPOUND

T-556 Spark Plug Thread Lubricant and Anti-Seize Compound helps to prevent galling and lubricates threads during installation. .....P/N 12-00709..... **$7.90**

COPPER SPARK PLUG GASKETS

Made of solid copper to current aircraft standards. Available in 14 MM and 18 MM sizes.

AN4027-2, 14MM..... P/N 07-01261.....**$0.59 ea**
AN4027-1, 18MM..... P/N 07-00877.....**$0.36 ea**

FOLDED STEEL SPARK PLUG GASKETS

The new type folded steel sparkplug gaskets provide better sparkplug retention with no adverse effect on heat transfer. Endorsed by FAA. These gaskets are not to be reused.

18mm Gaskets..... P/N M677.....**$1.87 ea**

SPARK PLUG TYPE DESIGNATION SYSTEM

All Champion Aviation Spark Plugs are identified by type designations selected by virtue of the plug design as applied to the following Spark Plug Number and Symbol Chart. The symbol is composed of a rating position number together with prefix & suffix numbers to indicate major plug design characteristics.

A TYPICAL SPARK PLUG NUMBER WITH SYMBOL EXPLANATION

R H B 37 E
① ② ③ ④ ⑤

R — Push-wire—90° to Center

1. RESISTOR
None — No Resistor R — Mil-Spec. Resistor - Erosion protection

2. BARREL STYLE
None — Unshielded E — Shielded 5/8"-24 Thread
H — Shielded 3/4"-20 Thread (All Weather Plug)

3. MOUNTING THREAD—REACH—HEX SIZE
B - 18mm 13/16"/2.06cm 7/8"/2.22cm M— 18mm 1/2"/1.27cm 7/8"/2.22cm
J - 14mm 3/8"/0.95cm 13/16/2.06cm L — 14mm 1/2"/1.27cm 13/16/2.06cm
U - 18mm 1-1/8"/2.85cm 13/16/2.06cm

4. HEAT RATING POSITION
Low number—cold High number—hot

5. ELECTRODE DESIGN
None—Conventional single E — Two prong massive N — Four prong massive
P—Fine wire (Platinum) W — Fine wire (Iridium) B —2 prong massive, Tangent to Center

CHAMPION SPARK PLUGS

SHIELDED – MASSIVE ELECTRODES			
5/8-24*	**Price**	**3/4-20***	**Price**
REJ38 (14MM)	**$44.75**	RHM38E	**$26.50**
REL37B (14MM)	**$44.75**	RHM40E	**$26.50**
REB37E	**$27.75**	RHU27E	**$63.50**
REM37BY	**$27.75**	RHB32E	**$26.95**
REM38E	**$26.95**		
REM40E	**$26.25**		
REB32E	**$29.25**		
SHIELDED – IRIDIUM ELECTRODES*			
5/8-24*	**Price**	**3/4-20***	**Price**
REM38S	**$94.75**	RHB32S	**$94.75**
REB-36S	**$93.25**	RHB36S	**$93.75**
		RHM38S	**$93.75**
UNSHIELDED			
5/8-24*	**Price**	**3/4-20***	**Price**
M41E (18MM)	**$31.50**		

* Shielded barrel thread size. Check barrel size - 5/8x24 or 3/4x20 threads before ordering and select proper plug number, See page 236 for Sparkplug Application Table.

**The "Iridium S" sparkplugs replace the Platinum and "W" Iridium types. Increased bore diameter improves scavenging action. Greater clearance volume can accept more combustion deposits. Single Iridium electrode offers greater resistance to lead attack. Easy to clean Easy to gap

CHAMPION RVL38S SPARK PLUGS

Used on M14 YAK P/N 08-06280 ..... **$112.95**

NOTE: Spark plugs are shipped in factory sealed plastic cases. Opened spark plug cases make the spark plugs non-returnable. Please do not open any spark plug until you are sure you have received the correct spark plugs for your application.

SURPLUS SPARK PLUG BARGAINS

New surplus 18MM longreach, shielded, 3/4-20 barrel. FAA approved for Continental IO-470, GIO-470, TSIO-470, IO-520 & GTSIO-520. Not for 0-470, which uses short reach plugs.

P/N 08-03699 ..... **$9.35 ea**

SEE TOOL SECTION FOR FULL LINE OF CHAMPION SPARK PLUG TOOLS

AN4062-1 DEHYDRATOR PLUGS 18MM

These plugs are used to prevent rust and corrosion in engines while in storage. Contain silica gel which turns from blue to pink when moisture is absorbed. Reusable & refillable. The pink silica gel may be reactivated (after removing from reservoir) by heating for 16 hours at 250°F.

AN4062-1 (18MM) ..... **$6.90 ea**

SILICA GEL. Indicating type, for refilling plugs.

1/4 Lb. Bag..... P/N 07-00731..... **$4.90**
1 Lb. Can ..... P/N 07-03400..... **$16.75**

EP

REGULATORS - ALTERNATORS

HARTZELL (ELECTRODELTA) VOLTAGE REGULATORS

Mfg P/N	Description	Replacement for	Part Number	Price
VR286	28V Voltage Regulator	Cessna 9910126-1,-2,-3	07-00920	**$196.00**
VR500-0101	27.7V Voltage Regulator	Cessna C11004-0101, C611002-0102, -0105	07-00912	**$109.00**
VR500-0102	28.8V Voltage Regulator	Cessna C611004-0102	07-00913	**$109.00**
VR515F	28V Voltage Regulator	Cessna C611501-0102, C611005-0101	07-00914	**$164.00**
VR515GA	28V Voltage Regulator	Cessna C611005-0103,-0102	07-00915	**$179.50**
VR580	28V Voltage Regulator	Cessna C611008-0101	07-00916	**$189.00**
VR600	14V Voltage Regulator	Cessna C611001-0101, -0102, -0201	07-00884	**$136.00**
VR801	28V Alternator Control	Cessna C611007-0101	07-00919	**$323.00**
VR371	14V Voltage Regulator	Zeftronic R15V0L	07-00718	**$189.00**
VR415F	14V Voltage Regulator	Zeftronic R15300	07-00910	**$219.85**
VSF7203A	12V Voltage Regulator	Zeftronic R1510N	07-00921	**$249.00**
VR382	28V Voltage Regulator	Lamar B-00382-2	07-00908	**$259.00**
VR392	14V Voltage Regulator	Lamar B-00392-1	07-00909	**$288.00**
VR2000-28-2	28V Voltage Regulator	N/A	07-00895	**$399.00**
VSF7403A	24V Voltage Regulator	Voltage Regulator VSF7403A	07-00922	**$247.00**
VR200A	14V Voltage Regulator	Piper 484121	07-00896	**$109.00**
VR300-14-20	14V Voltage Regulator	Delco-Remy 1118736, E,1118904, 1119226	07-00899	**$146.00**
VR300-14-35	14V Voltage Regulator	Delco-Remy 1118704	07-00901	**$146.00**
VR300-14-50	14V Voltage Regulator	Delco-Remy 1118713, 1118884, 1119224C	07-00902	**$146.00**
VR300-28-25	28V Voltage Regulator	Delco-Remy 1118951, 1118975, 1119218C	07-00905	**$246.00**
VR300-28-40	28V Voltage Regulator	Delco-Remy 1119237,1119656	07-00906	**$246.00**

Hartzell (Electrodelta) Voltage Regulators (Factory Overhauled)

Mfg. P/N	Description	Replacement for	Part Number	Price
VR300-14P-50	14V Voltage Regulator	Cessna 0413205-11	07-00904	**$255.95**
VR418-5	14V Voltage Regulators	Zeftronic R15400	07-00881	**$187.95**
-	14V Voltage Regulator	Zeftronic R1510L	07-00623	**$123.95**
VR300-14-25	14V Voltage Regulator	Delco 1118384	07-00900	**$149.95**
VR711	14V Voltage Regulator	Lamar B-00288-1	07-00918	**$226.95**
VR417-2	14V Voltage Regulator	Christen 61235	07-00911	**$195.95**
VR300-28-50	28V Voltage Regulator	N/A	07-00907	**$254.95**
VR-300-14-40	14V Voltage Regulator	Not PMA'd	07-01520	**$163.95**
VR300-14P-35	14V Voltage Regulator	Cessna 0413205-10, Delco Remy 1119145E	07-01521	**$286.95**
VR710	14V Voltage Regulator	Piper 584340, Prestolite FVR4002, 4016, 4024, Wico X18150	07-01522	**$164.95**
VR515G-2	28V Voltage Regulator	Schweitzer Aircraft Corp 269A4985	07-01108	**$168.95**

Hartzell (Electrodelta) Voltage Sensors & Monitors (Factory New)

Mfg. P/N	Description	Replacement for	Part Number	Price
GPM-001	28V Ground Power Motor	Cessna C593005-0101	07-01275	**$281.95**
OS60	14V Overvoltage Sensor	Cessna C5930001-0101	07-00890	**$92.75**
OS100-0101	28V Overvoltage Sensor	Cessna C593003-0101	07-00887	**$93.80**
OS100-0102	28V Overvoltage Sensor	Cessna C593003-0102	07-00888	**$96.25**
OS200-0101	28V Overvoltage Sensor	Cessna C593004-0101	07-00889	**$149.00**
OS75-14	14V Overvoltage Sensor	Zeftronic V1510A	07-00891	**$124.85**
OS75-28	28V Overvoltage Sensor	Zeftronic V2510A	07-00892	**$142.00**

Accessories

Mfg. P/N	Description	Application	Part Number	Price
PT001	Adapter Cable	For use w/ VR415-F ONLY	07-00893	**$96.75**

**** For complete application chart please visit our website at www.aircraftspruce.com***

OVERHAULED COMPONENTS

Alternators, generators, and starters which are remanufactured for installation in general aviation aircraft. **Fully FAA approved.**

EXPERIMENTAL ALTERNATORS

Part No.	Volt/Amp	Price
ES-6012	14V60A	**CALL**
ES-6024	28V60A	**CALL**
ES-6212	13.8V60A	**CALL**
ES-6224	28V60A	**CALL**
ES-7024	28V70A	**CALL**
ES-10024	28V100A	**CALL**

DELCO ALTERNATORS

1100715R	12V70A	**CALL**
1100716R	12V52A	**CALL**
1100717R	12V70A	**CALL**
1100718R	24V50A	**CALL**
1100723R	24V50A	**CALL**
1100747R	24V50A	**CALL**
1100753R	24V65A	**CALL**
1100792R	24V65A	**CALL**

AEROTECH GENERATORS

Part No.	Volt/Amp	Price
DEL1101876	12V12A	**$311.95**
DEL1101877	12V26A	**$314.95**
DEL1101878	12V13A	**$312.50**
DEL1101879	12V25A	**$249.95**
DEL1101880	12V26A	**$249.95**
DEL1101881	12V13A	**$249.95**
DEL1101882	12V26A	**$249.95**
DEL1101887	12V35A	**$312.95**
DEL1101888	12V50A	**$226.95**
DEL1101890	12V20A	**$237.95**
DEL1101892	12V35A	**$249.95**
DEL1101897	12V35A	**$249.95**
DEL1101898	12V35A	**$237.95**
DEL1101899	12V20A	**$237.95**
DEL1101900	12V35A	**$248.95**
DEL1101901	24V26A	**$248.95**
DEL1101904	24V25A	**$250.95**
DEL1101905	24V25A	**$250.95**
DEL1101906	24V25A	**$250.95**
DEL1101908	12V50A	**CALL**
DEL1101909	12V50A	**$319.95**
DEL1101910	12V20A	**$249.95**

Part No.	Volt/Amp	Price
DEL1101911	24V25A	**$250.95**
DEL1101912	12V50A	**$319.95**
DEL1101913	12V35A	**$250.95**
DEL1101914	12V35A	**$248.95**
DEL1101915	12V50A	**$237.95**
DEL1101917	12V35A	**$248.95**
DEL1101918	12V35A	**$248.95**
DEL1101923	12V50A	**$250.95**
DEL1105052	24V40A	**CALL**
DEL1105053	24V40A	**CALL**
DEL1105054	24V50A	**$289.95**
DEL1105055	24V50A	**$397.95**
DEL1105056	24V40A	**$273.95**
DEL1105057	24V50A	**$282.95**

DELCO STARTERS

Part No.	Volt/Amp	Price
DEL1108234	24V	**$314.95**
1108249R	12V	**CALL**
DEL1109471	12V	**$314.95**
1109511R	12V	**CALL**
1109517R	24V	**CALL**
1109511R	12V	**CALL**
1109518R	24V	**CALL**
1109511R	12V	**CALL**

Part No.	Volt/Amp	Price
1109511R	12V	**CALL**
1109514R	12V	**CALL**
1109651R	12V	**CALL**
DEL1109652	12V	**$299.00**
1109656R	12V	**CALL**
1109657R	12V	**CALL**
1109660R	12V	**CALL**
1109662R	24V	**CALL**
1109678R	12V	**CALL**
1109689R	12V	**CALL**
1109687R	24V	**CALL**
1109677R	12V	**CALL**
1109678R	12V	**CALL**
1109519R	12V	**CALL**
1109518R	24V	**CALL**
1109678R	12V	**CALL**

Minimum Core Charge on Delco Alt. and Starters $200.00
*Drive not included (DEL 1971890). For price see listing for drives.
**Drive not included (DEL 1940969). For price see listing for drives.

LAMAR 14V VOLTAGE REGULATOR

Lamar Voltage Regulator DGR6-1 fits Cessna 150 thru Cessna 210 series aircraft. DGR6-1 is the PMA replacement for DGR6, C611001-0101, C611001-0102, C611001-0201, and VR600. Manufactured in the USA.

P/N 07-01897.....**$148.95**

LAMAR 28V ALTERNATOR CONTROL

Lamar Alternator Control DGR3-1 fits Cessna 150 thru Cessna 210 series aircraft. DGR3-1 is the PMA replacement for DGR3, C611005-0103, C611501-0102, and VR15F. Manufactured in the USA.

P/N 07-01896.....**$199.95**

EP

HARTZELL ENGINE TECH. ALTERNATORS

HARTZELL ENGINE TECHNOLOGIES ALTERNATORS

The most popular alternators in use on Cessna and Beech aircraft are of Ford manufacture. Chrysler alternators are usually found on Piper aircraft. These units are manufactured to aircraft specifications and are not available through automotive parts stores. Note: Core charge is billed on all exchange units & credited upon receipt of acceptable core.

ALTERNATOR PRODUCT INFORMATION

If Unit Begins With:	Then Unit Is:
ALE-	12V / 40A
ALH-	12V / 55A
ALM-	12V / 30A
ALT-	24V / 50A
ALU-	24V / 70A
ALV-	24V / 100A
ALX-	12V / 70A
ALY-	12V / 60A
ALZ-	12V / 50A
ANG-	24V / 60A

If First Digit After (-) Is:	Then Unit Is:
6	Belt Driven / No Blast Tube
8	Belt Driven / Blast Tube
9	Gear Driven

If Unit Ends With:	Then Unit Is:
LS	New Unit - No Pulley
RS	Factory Rebuilt/Over-hauled- No Pulley
G	Ground Strap Attached
R	Factory Rebuilt/Over-hauled
None	Factory New-Various Applications

CHRYSLER ALTERNATORS - FACTORY OVERHAULED

Model No.	Description	Part No.	Price
2098615R	12V/37A BD	08-07032	**$282.95**
2642996R	12V/37A BD	08-07033	**$282.95**
2642997R	12V/60A BD	08-07034	**$298.00**
3656623R	12V/41A BD	08-07035	**$370.95**
3656624R	12V/60A BD	07-01344	**$232.95**
3659924R	12V/60A BD	07-06401	**$386.95**
4111810R	12V/60A BD	07-06402	**$298.00**

FORD ALTERNATORS - FACTORY OVERHAULED

Model No.	Description	Part No.	Price
DOFF10300BR	28V/60A BD	07-06413	**$317.95**
DOFF10300DR	28V/60A GD	07-06418	**$449.95**
DOFF10300ER	28V/38A GD	07-06414	**$432.95**
DOFF10300FR	15V/60A GD	07-06415	**$387.95**
DOFF10300JR	15V/60A BD	07-06416	**$318.95**
E3FF10300AAR	28V/95A BD	07-06417	**$439.00**
E3FF10300BAR	28V/60A BD	07-06419	**$349.95**
EOFF10300AAR	12V/95A BD	08-07036	**$427.95**
EOFF10300BAR	28V/60A BD	07-06419	**$349.95**

Alternator regulators for these alternators are new solid state units which replace the original blue colored Ford regulators. These are no longer available. Proper regulator for use with these alternators is Cessna Part No. C611001-0201, manufactured by Electro Delta. P/N VR600 ..... **Net Price $136.00

EP

HARTZELL ENGINE TECH. OVERHAULED COMPONENTS

Aircraft Spruce carries the full line of alternators, and starters which are remanufactured by Hartzell for installation in general aviation aircraft. Fully FAA approved. All prices shown are exchange prices. Core charges are billed when unit is shipped. Core credit is issued upon return of acceptable like model core to Aircraft Spruce West in Corona, CA. NOTE: If core is not in stock at factory, customer must send core to Aircraft Spruce at time of order to have the core overhauled.

PRESTOLITE AL SERIES ALTERNATORS - OVERHAULED

Part No.	Volt/Amp	Price
ALE-6520R	12V40A	**$307.95**
ALE-8520R	12V40A	**$298.95**
ALE-8521R	12V40A	**$292.95**
ALT-8520R	24V50A	**$392.95**
ALT-8521R	24V50A	**$418.95**
ALT-9522R	24V50A	**$411.95**
ALU-6521RS	24V70A	**$404.95**
ALU-8521R	24V70A	**$411.95**
ALU-8521RS	24V70A	**$406.95**
ALU-9522R	24V70A	**$430.95**
ALV-8511R	24V100A	**$832.00**
ALV-8512R	12V100A	**$811.00**
ALV-9510R	24V100A	**$868.00**
ALX-6523R	12V70A	**$430.95**
ALX-8521R	12V70A	**$433.95**
ALX-8521RS	12V70A	**$412.95**
ALX9522R	12V70A	**$405.95**
ALX-9524R	12V70A	**$422.95**
ALX-9525BR	12V70A	**$419.00**
ALY-6520R	12V60A	**$410.95**
ALY-6521R	12V60A	**$438.95**
ALY-6522R	12V60A	**$409.00**
ALY-6527R	12V60A	**$358.95**
ALY-8520R	12V60A	**$369.00**
ALY-8520RS	12V60A	**$359.00**
ALY-8524R	12V60A	**$358.95**
ALY-8526R	12V60A	**$388.95**

TCM ALTERNATORS - OVERHAULED

Part No.	Volt/Amp	Price
642056R	-	**$948.00**
646490R	-	**$546.00**
646843R	24V60A	**$754.00**
Part No.	**Volt/Amp**	**Price**
649280R	28V70A	**$411.95**
649281R	15V80A	**$441.95**
649304R	24V100A	**$947.00**

ES4000 SERIES ALTERNATORS - OVERHAULED

Part No.	Volt/Amp	Price
ES4019RS	28V130A	**$682.00**
ES-4020R	14V60A	**$380.95**

ALTERNATOR DRIVE COUPLINGS

Hartzell (Electrosystems) overhauls these alternator drive couplings for the gear driven TCM alternators. Add $500 core charge (refundable) to prices shown below. ***Part No. 646655R***
Applicable to engine models:
IO-520,TSIO-520,IO-550, GTSIO-520
P/N 07-00641.....**$694.00**
Part No. 635796R
Applicable to engine models:
C-75, C-85, C-90, C-115, C-125, C-145, E-165, E-185, E-225, O-200, O-300, GO-300, GIO-300, IO-240, IO-360, TSIO-360, & LTSIO-360
P/N 07-00642.....**$693.00**

ALTERNATOR & GENERATOR BELTS

LYCOMING ALTERNATOR
37A19773-376..... **$66.50**
LYCOMING GENERATOR BELTS
37B19774-374..... **$90.50**
37B19774-325..... **$66.85**
CONTINENTAL
539547-31.19 ..... **$28.75**

PLEASE VISIT OUR WEBSITE OR CALL FOR DETAILS ON THE Hartzell CORE RETURN POLICY.

HARTZELL ENGINE TECH. ALTERNATORS

HARTZELL ENGINE TECH. NEW ALTERNATORS

AL Series

ES4000 Series

ES4020 Series

As the OEM, Hartzell offers factory new alternators engineered specifically to meet the challenges and increased demands of today's aircraft electrical systems. Each unit is aviation designed & developed, no automotive parts used. For decades our alternators have been powering Lycoming/Continental engines with unmatched performance and reliability. No Core charges.

AL SERIES ALTERNATOR - Prestolite Style - FAA/PMA Approved.

Model No.	Volts/Amps	Discription	Part No.	Price
ALT8520	24V/50A	Belt Driven	08-07122	**$527.00**
ALT8521	24V/50A	Belt Driven	08-07123	**$597.00**
ALT8521LS	24V/50A	Belt Driven	08-07124	**$619.00**
ALT9522	24V/50A	Gear Driven	08-07125	**$620.00**
ALU6521 LS	24V/70A	Belt Driven	08-07126	**$639.00**
ALU8521	24V/70A	Belt Driven	08-07127	**$558.00**
ALU8521 LS	24V/70A	Belt Driven	08-07128	**$532.00**
ALU8532 LS	24V/70A	Belt Driven	08-07129	**$602.00**
ALX8521	12V/70A	Belt Driven	08-07130	**$544.00**
ALX8521LS	12V/70A	Belt Driven	08-07131	**$533.00**
ALX8523	12V/70A	Belt Driven	08-07132	**$616.00**
ALX9524	12V/70A	Gear Driven	08-07133	**$558.00**
ALX9525B	12V/70A	Gear Driven	08-07134	**$538.00**
ALY9524	12V/60A	Belt Driven	08-07135	**$607.00**
ALY6527	12V/60A	Belt Driven	08-07136	**$607.00**
ALY8520	12V/60A	Belt Driven	08-07137	**$545.00**
ALY8520LS	12V/60A	Belt Driven	08-07138	**$516.00**

ES4000 SERIES ALTERNATOR - Ford Style - FAA/PMA Approved

Model No.	Volts/Amps	Discription	Part No.	Price
ES4000	15V/60A	Belt Driven	08-07139	**$485.95**
ES400LS	15V/60A	Belt Driven	08-07140	**$541.00**
ES4001	15V/60A	Gear Driven	08-07141	**$637.00**
ES4002	15V/80A	Gear Driven	08-07142	**$595.00**
ES4003	15V/95A	Belt Driven	08-07143	**$703.00**
ES4004	28V/38A	Gear Driven	08-07144	**$506.00**
ES4006	28V/60A	Gear Driven	08-07145	**$515.00**
ES4008	28V/70A	Gear Driven	08-07146	**$616.00**
ES4009	28V/70A	Belt Driven	08-07147	**$566.00**
ES4011	28V/95A	Belt Driven	08-07148	**$615.00**
ES4019LS	28V/130A	Belt Driven	08-07149	**$925.00**

ES4020 SERIES ALTERNATOR - Chrysler Style - FAA/PMA Approved

Model No.	Volts/Amps	Discription	Part No.	Price
ES4020	14V/90A	Belt Driven	08-07150	**$413.95**
ES4029	28V/70A	Gear Driven	08-07151	**$616.00**

EP

HARTZELL ALV-9610 ALTERNATOR

Lighter, Tougher, and Proven! Introducing the brand new ALV-9610. The ALV-9610 alternator is a direct replacement for gear driven heavyweight alternators on the Continental 520 & 550 engines.

Weighing under 13 lbs., the ALV-9610 is up to 9 lbs. lighter than current heavyweight options. The ALV-9610 is a field proven design that has been in use for over 5 years with thousands of alternators operating on the world's top selling aircraft.
FAA/PMA Approved.
Features:
- Up to 9.6 lbs. weight savings (per engine)
- OEM Direct Replacement
- More power at engine cruise
- Built in noise cancellation
- Rugged design for extreme conditions
- More economical than overhauled units
- Two year warranty

Specifications:
- 28 Volt / 100 Amp Prestolite Style
- Replaces TCM part numbers: 642056, .. 646491, 646842, 649304, as well as ALV-. 9510.

P/N 08-07442..... **$688.00**

HARTZELL ES7024-14 ALTERNATOR

Hartzell Lightweight Alternator ES7024-14, for experimental use. 28 Volt, 70 Amps. Weight: 7 lbs.

Replaces TCM part number 657199.

Features:
- All aircraft quality parts, no automotive parts
- High altitude brushes
- High speed bearings
- High temperature varnish on rotor and stator
- No modifications necessary for Retro-fit into any existing Ford style applications
- Two year warranty

P/N 08-07444..... **$525.00**

HARTZELL ES10024 ALTERNATOR

Introducing the brand new ES-10024 28volt / 100amp aircraft alternator. The ES-10024 alternator is a direct replacement for TCM part number 656802.

The ES-10024 is a field proven design that has been in use for over 5 years with thousands of alternators operating on the world's top selling aircraft.

Prestolite Style - FAA/PMA Approved.

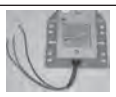
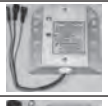
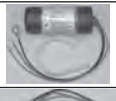
Lightweight, cost effective, 2 yr. warranty.

Features:
- Up to 9.6 lbs. weight savings (per engine)
- OEM Direct Replacement
- More power at engine cruise
- Built in noise cancellation
- Rugged design for extreme conditions
- More economical than overhauled units
- Two year warranty

Specifications
- 28 Volt / 100 Amp Prestolite Style
- Replaces TCM part number 656802

P/N 08-07443..... **$844.00**

ZEFTRONICS VOLTAGE REGULATORS

Photo	Description	Part No.	Approval	Price	Replacement For
	R15100 Rev A VR:14.2V. * Ground-Fault-Protection (GFP) * Trouble-Shooting Light (TSL) * Use R15V00 Rev A for built-in OV Protection.	07-00622	FAA-STC	**$118.95**	Cessna: C611001-0101, -0102, -0201. Beech: 33-380010 Electrodelta: VR600 Lamar: DGR6 FORD: D4FF-10316-BA, D4FF-10316-CA
	R15V00 Rev A VR:14.2V; OV 16V Same as R15100 Rev A plus OV Protection	07-00628	FAA-STC	**$149.50**	Zeftronics: R15100 Rev A (ACU), Plus V11100 (OVS)
	R1510N Voltage Regulation: 14.2V * Use R15V0N for built-in OV Protection * Single or Dual Alternator Application * Externally Adjustable	07-00624	FAA-STC FAA-PMA	**$201.95**	Prestolite: VSF7201, 2, 2S, 3, 3A, 3S, 4 Electrodelta: VSF7203A TCM: 649684-1 Piper: 550-383
	R15V0N VR: 14.2V ; OV 16.0V * Low/OV Light, OV Protection	07-00630	FAA-STC FAA-PMA	**$267.95**	Zeftronics: R1510N (ACU), Plus V1510A (OVR)
	R1510L Voltage Regulation: 14.2V. * Ground-Fault-Protection (GFP) * Trouble-Shooting Light * Reduced panel lights fli * Use R15V0L for built-in OV Protection	07-00623	FAA-PMA	**$123.95**	Piper: 450-392, 484-121, 66804-03, 756-055, 484-088 Beech: 169-380063 Wico: X16300B, X17990. Lamar: B00267-1, 2, B00331-1, 2. Delco Remy: 9000590, 1116393, 1116398 Electrodelta: VR200, A Commander: 1816110 Prestolite: FVR4004, 4224, 4011 RBM: 87-87102-21 Lycoming: LA-11357, 12747
	R15V0L VR: 14.2V ; OV: 16V * Ground-Fault-Protection (GFP) * Trouble-Shooting Light (TSL) * OV Protection built-in	07-00629	FAA-PMA	**$184.95**	Piper: 557-337 Lamar: B00371-1,-8,-14 Electrodelta: VR371 Zeftronics: R1510L (ACU), Plus V1510A (OVR)
	R15300 VR: 14.2V. OV: 16V * Ground-Fault-Protection (GFP) * OV Protection built-in, T/s Light	07-00625	FAA-PMA	**$218.95**	Mooney: 800270-505, 880016-503 Electrodelta: VR415F Lamar: DGR1-1
	R1530B VR: 14.2V. OV: 16V * Ground-Fault-Protection (GFP) * OV Protection built-in * Trouble-Shooting Light	07-00626	FAA-PMA	**$274.95**	Mooney: 880016-501 Beech: 35-380093-1,2,3 Electrodelta: VR414, B00403-1 ; EM2073-1, 2 Oeco: 20053, 20065, 20137, 20437, 20082
	R25101 Rev A VR: 27.7 * GFP & Trouble-Shooting Light * Use R25400 (require mod to ALT wiring & connector) for built-in OV Protection.	07-00631	FAA-PMA	**$112.95**	Cessna: C611004-0101, C611002-0102, -0105 Ford: C8FF/ C6FF-10316-A TCM: 636147 Electrodelta: VR500-0101
	R25102 Rev A Voltage Regulation: 28.7V Same features as R25101 Rev A	07-00632	FAA-PMA	**$115.95**	Cessna: C611004-0102 Electrodelta: VR500-0102
	R251DR VR: 27.7V **BEST VALUE** *Trouble-Shooting Light & GFP *Externally Adjustable	07-00634	FAA-PMA	**$250.95**	Delco Remy: 9000591 Lycoming: 74292 TMC: 631656
	R25400 VR: 28.7V *OV Protection built-in & GFP *Trouble-Shooting Light	07-00635	FAA-STC	**$157.95**	Cessna: C611005-0103, -0101, -0102 Electrodelta: VR515F,G, GA Lamar: DGR3
	R2510N VR: 28.4V *Use R25V0N for built-in OV Protection. *Single or Dual Alternator Application *Externally Adjustable	07-00633	FAA-STC	**$233.95**	Prestolite: VSF7403A, 3S, 4Piper: 550-381 Lycoming: LW10179, 77347
	R25V0N VR: 28.4V ; OV 32V R2510N plus OV Relay, Low/Over-Voltage Indicator	07-00636	FAA-STC	**$298.95**	Prestolite: VSF7403A,3S,4. Piper: 550-381. Lyc: LW10179, 77347 Zeftronics: R2510N + V2510A
	V11100 Over-Voltage Trip: 16.0V *Use w/ R15100 Rev A, VR600 or DGR6 *More Precise OV Protection	07-00637	FAA-STC	**$89.50**	Cessna: C593001-0101 Lamar: DG01 Electrodelta: OS60. Electromech: EM235
	V1510A Over-Voltage Trip: 16.0V *Use with R1510N or VSF72XX Series for OV Protection. *Use with R1510L for OV Protection *More Precise OV Protection	07-00638	FAA-STC FAA-PMA	**$122.95**	Piper: 450-397, 484-183, 550-380, 450-393 Beech: 138-1 Wico: X-17621 Lamar: B00289-2, B00339-1 Electrodelta: OS75-14 Delco-Remy: 1115831 Prestolite: FOC-4002B
	V25101 Over-Voltage Trip: 32V *Use with R25101(2) Rev A or VR500-0101,0102 for OV Protection	07-00639	FAA-STC FAA-PMA	**$94.85**	Cessna: C593003-0101, -0102 Electrodelta: OS100-0101 Electromech: EM233 Lamar: DG02-28 Other P/n: 138-3
	V2510A Over-Voltage Trip: 32.0V * More Precise OV Protection * Use with R2510N or VSF74XX	07-00640	FAA-STC	**$128.95**	Piper: 484-182, 550-382, 584-043 Prestolite: FOC4003A, B. Lycoming: 74804, 78060 Wico: X17634, X17620 Delco Remy: 1115832
	G1200N VR:14.2V. Current Limit (CL): 20A Trouble-shooting Lights, Electronic GCU	07-00617	FAA-PMA	**$139.95**	Delco: 1118736, 1118904, 1119226. VR300-14-20. Cessna: 0413025-4, 5, 12
	G1350N * VR 14.2V: Current Limit (CL): 35A trouble shooting Lights, Electronic GCU	07-00618	FAA-PMA	**$137.85**	Delco: 1118704, 1119220, 1118-704, 1118892. VR300-14-35, 450-390. Cessna: 0413025-6, 8, 10
	G1500N VR:14.2V: Current Limit (CL): 50A Trouble-shooting Lights, Electronic GCU	07-00619	FAA-PMA	**$139.95**	Delco: 1118884, 1118713, 1119224, Electrodelta: VR300-14-50. Cessna: 0413025-7, 9, 11
	G250KN VR: 28.4V.CL: 50A, EQR Built-in	07-01367	FAA-STC	**$228.95**	1119656 ,VR300-28-50. Cessna: 0850460-9

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PLANE POWER LIGHTWEIGHT ALTERNATORS

Plane-Power Lightweight Alternators are designed exclusively for aviation applications and constructed using only new, aviation-grade components. By maintaining higher quality standards and tighter tolerances, Plane-Power ensures improved performance, increased reliability and longer service than traditional OEM alternator solutions without the undesirable performance, weight and expense of conventional (heavyweight) OEM aircraft alternators. Plane-Power alternators are manufactured in Granbury, Texas by fellow aircraft owners and pilots who understand the importance of quality, value and simplicity desired by today's aircraft owners. Plane-Power alternators are available through dealers and FBO's worldwide. All Plane-Power alternators are warranted against failure in components and workmanship for a period of 2 years from the date of purchase. Finally Choice, Finally Plane-Power.

PMA APPROVED ALTERNATOR REPLACEMENTS

Plane-Power Certified Alternators are PMA certified to replace any existing alternator in the aircraft and engine applications listed below. No STC paperwork required. All Plane-Power PMA alterantors produce up to 70 amps. Your airframe/application may use only a portion of the available output as limited by the aircraft electrical system components and design. Every Plane-Power alternator is tested to exceed all quality and performance specifications. Plane-Power PowerFlex Voltage Regulators are also avialable seperately.

Model	Brackets included	Part No.	Price
AL12-F60	Yes	07-00998	**$482.00**
AL24-F60	Yes	07-00999	**$484.00**
AL12-F60C	No	07-01256	**$483.00**
AL24-F60C	No	07-01257	**$488.00**
AL24-FS60	No	07-01491	**$659.00**
AL12-P70	No	07-01001	**$488.00**
AL24-P70	No	07-01002	**$499.00**
AL12-70	Yes	07-01258	**$554.00**
AL24-70	Yes	07-01259	**$542.00**
C28-150	N/A	07-01838	**$1,247.00**

American Champion	OEM Part #	Model #
7ECA, 7GCAA, 7GCBC, 7KCAB, 8GCBC, 8KCAB	ALY-8420	AL12-P70
Beechcraft	**OEM Part #**	**Model #**
19A, B19, M19A, 23, A23-19, A23-24, B23, C23, A24, A24R, B24R, C24R	33-380009-1	AL12-F60
19A, B19, M19A, 23, A23-19, A23-24, B23, C23, A24, A24R, B24R, C24R	ALE-8105A / ALE-8406	AL12-P70
76 Duchess, 77Skipper	ALY-8420	AL12-P70
76 Duchess	ALU-8421	AL24-P70
B19, C19, C24R	ALU-8421R	AL24-P70
Cessna	**OEM Part #**	**Model #**
177, 177A, 177B	C611501-0101	AL12-F60
172I, K, L, M, N, P, 177, 177A, 177B, 177RG	C611501-0102	AL12-F60
P206A, P206B, P206C, P206D, P206E, U206, U206A, U206B, U206C, U206D, U206E, TP206A, TP206B, TP206C, TP206D, TP206E, TU206B, TU206C, TU206E, 207, T207, 210B, 210C, 210D, 210E, 210F, T210F, T210G, T210H, T210J	C611501-0101	AL12-F60C
180H, 180J, 180K, 182J, 182K, 182L, 182M, 182N, 182P, 182Q, 182R, 185E, A185E, A185F, 188, P206C, U206C, U206D, U206E, U206F, U206G, TP206C, TU206B, TU206C, TU206E, TU206F, TU206G, 207, T207	C611501-0102	AL12-F60C
180H, 182G, 182H, 185D, 210E	0750217-1	AL12-F60C
188, A188, A188A, A188B, 210K, T210K, 210G, 210H	1570213-6	AL12-F60C
152, A152, 172M, 172N, 172P, 172Q, 172RG, 177B, 177RG, R182, TR182	C611503-0102	AL24-F60
180J, 180K, 182P, 182Q, 182R, T182, U206E, U206F, U206G, TU206E, TU206F, TU206G, 207, T207, 210K, 210L, 210M, 210N, 210R, P210N, P210R, T210K, T210L, T210M, T210N, T210R, A185F, 207A, T207A	C611503-0102	AL24-F60C
188, 188A, 188B, A188, A188A, A188B, T188C, 207, T207	1570213-7	AL24-F60C
172R, 172S, 182S*, 182T*, T182T*	9910591-5	AL24-FS60
*S/N182001(1997) through 18281197(2004)	9910591-11	
Commander	**OEM Part #**	**Model #**
112, 112B, 112TC, 112TCA, 114, 114A, 114B, 114TC	LW14316	AL12-P70

Twin Commander Aircraft Corporation	OEM Part #	Model #
500-S	78314	AL24-P70
Diamond Aircraft Industries GmbH	**OEM Part #**	**Model #**
DA-40	ALU-8421LS	AL24-70*
Grumman (Gulfstream, Tiger)	**OEM Part #**	**Model #**
AA-1, AA-1A, AA-1B, AA-1C	ALE-6420 / ALY-6420 LW-14310	AL12-P70
AA-5, AA-5A, AA-5B, AG-5B, GA-7	DOFF-10300J	AL12-F60
AG-5B	ALU8421LS	AL24-P70
Mooney	**OEM Part #**	**Model #**
M20C, M20E, M20F, M20G, M20J	ALY-8420 / ALX-8403	AL12-P70
Mooney (cont.)	**OEM Part #**	**Model #**
M20J	ALU6421LS	AL24-P70
M20M (Single alternator installations only)	ES-4009LS	AL24-P70
Piper (Without Airconditioning)	**OEM Part #**	**Model #**
PA-44-180, PA-44-180T	751 346	AL12-P70
PA-28-151, PA-32R-301 (SP), PA-32-301T, PA-32R, 301(HP), PA-32R-301T (SP), PA-32-301, PA-34-200, PA-38-112	551-984	AL12-P70
PA-24-260	ALX8403	AL12-70
PA-23-235, PA-23-250	ALX8403	AL12-P70
PA-23-235, PA-23-250	ALU-8403	AL24-P70
PA-44-180, PA-44-180T	ALX8421LS	AL12-P70
PA-28-140, PA-28-150, PA-28-151, PA-28-160, PA-28-180, PA-28-235, PA-28R-180, PA-28R-200, PA-32-260, PA-32-300, PA-32R-300	69670-00 (60 amp)	AL12-C60
PA-28-140, PA-28-151, PA-28-161, PA-28-180, PA-28-235, PA-28R-200, PA-32-300, PA-32R-300	69670-03 (60 amp)	AL12-C60
PA-28-151, PA-28-161, PA-28-181, PA-28-236, PA-28R-201, PA-28RT-201, PA-32-300, PA-32R-300, PA-32RT-300, PA-32RT-300T	69670-04 (60 amp)	AL12-C60
Vulcanair, S.P.A	**OEM Part #**	**Model #**
P68, P68B, P68C, P68C-TC, P68 "OBSERVER", P68TC "OBSERVER", P68 "OBSERVER 2"	ALU-8421LS	AL24-P70

For Lycoming engines 235, 320, 360, 540, 720 and Superior engines O-360, IO-360, Plane-Power alternators AL12-P70, AL12-70*, and AL24-70* replace Lycoming and Superior certified 70amp alternators: LW14300, LW14302, LW14308, LW14310, LW14316, LW14319, LW14322, LW14324. *Comes with all new Plane-Power mounting brackets and hardware.

PMA CONTINENTAL ALTERNATOR REPLACEMENT

The C28-150 is PMA FAA eligible on most Continental 520 and 550 Series engines with front mounted gear driven alternators. This Spectacular alternator in addition to providing a continuous 150A at X RPM will deliver 60A at 1000 RPM and weighing only 12.6 lbs! Also available without debris shield sold as model C28-150S.

LIGHTWEIGHT EXPERMENTAL ALTERNATORS

Unlike automotive alternators, all Plane-Power Experimental Alternators are specifically engineered for Airplane Engines and have Dual Internal Fans designed for Airplane Engine Rotation the same as our Certified Alternators. 2 year warranty,

The ***AL12-EI60*** kit comes with an internally regulated ultra compact lightweight AIRCRAFT alternator (6.9 lbs.) with an exclusive internal crowbar over-voltage protection circuit. The alternator is fully pilot controllable through unique internal wiring. The dual internal fans are designed for aircraft engine rotation for maximum cooling. The AL12-EI60 kit includes the tension arm, mounting brackets, required AN hardware, and V-Belt for Superior and most Lycoming* engines. 10 lb. 70amp also available. Also available 70 amp version only 2 additional lbs.

The ***AL12-EI60-L*** , Plane Power's 60A LSA alternator which must be installed in combination with Sky-Tec LSA starter, provides the industry's lightest charging/starting package at 13.2 lbs. for Lycoming's O-233, O-235, O-290, O-320 engines. Sky-tec starter to be purchased separately. Fits engines with 122 tooth ring gear and case mount engines.

The ***EX14-50*** kit is an internally regulated alternator kit for Small Block Continental Engines. The alternator (6.9 lbs.) includes an exclusive internal crowbar over-voltage protection circuit and is fully pilot controllable through unique internal wiring. The alternator includes dual internal fans designed for aircraft engine rotation. The kit also includes a pre-wired enable/field plug. The EX14-50 kit fits C75, C85, C90, C125, C145, E165, E185, E225, IO-240, O-200 and O-300.

FlySAFE The ***FS1-14 Fly Safe*** back up alternator, internally regulated (13.6 volt +-0.3) with built-in overvoltage protection. Designed for use in experimental aircraft. FS1-14. Features a 30A continuous output, precision internal voltage regulator, fail-safe Over Voltage Protection, Shear Coupling Assembly, 6lbs installed weight, higher level of safety. 2-Year Limited Warranty. Weight: 6 Pounds. 12 volt/30 amp. Also availbale as a primary unit sold as model FS1-14B.

Model	Output	Voltage	Part No.	Price
AL12-EI60/B (Boss Mount)	60	12	07-01313	**$439.00**
AL12-EI60/C (Case Mount)	60	12	07-01313-1	**$439.00**
AL12-EI70/B (Boss Mount)	70	12	07-01414	**$439.00**
AL12-EI70/C (Case Mount)	70	12	07-01414-1	**$439.00**
AL12-EE70/B (Boss Mount)	70	12	07-01005	**$518.00**
AL24-EE70/B (Boss Mount)	70	24	07-01006	**$530.00**

Model	Output	Voltage	Part No.	Price
AL12-EE70/C (Case Mount)	70	12	07-01005-1	**$518.00**
AL24-EE70/C (Case Mount)	70	24	07-01006-1	**$530.00**
EX14-50	50	12	07-01268	**$598.00**
AL12-EI60-L	60	12	07-01839	**$455.00**
FS1-14 Fly Safe	30	12	07-01857	**$698.00**
FS1-14B	30	14.2	07-01883	**$700.00**

PLANE POWER CONVERSION KITS

BELT DRIVEN GENERATOR CONVERSIONS

Aircraft Parts & Development	Plane-Power
Intermountain (Callair) A, A-2, A-4, A-5, A-5T, A-9, A-9B	SAL12-70
Alexandria Aircraft, L.L.C.	
Bellanca 14-19-2, 14-19-3, 14-19-3A	SAL12-70C
Cessna Aircraft Co.	
180, 180A, 180B, 180C, 180D, 180E, 180F, 180G,	SAL12-70C
182, 182A, 182B, 182C, 182D, 182E, 182F, 182G, 182H,	SAL12-70C
185, 185A, 185B, 185C, 185D	SAL12-70C
210, 210A, 210-5 (205), 210-5A (205A)	SAL12-70C
206, P206	SAL12-70C
Cessna 310, 310A, 310B, 310C*, 310D*, 310E*, 310F*, 310G, 310H, 310I, 310J, 310K *10-9006 kit may be required for installation. View installation instructions online for further information	TAL24-70C
Fred Garcia	
Camair 480	TAL24-70C
FS 2003 Corporation (Piper)	
Piper PA-12, PA-12S	SAL12-70
Hawker Beechcraft Co.	
Beech H35, J35, K35, M35, N35, P35, 35-33, 35-A33, 35-B33, 35-C33	SAL12-70C
23	SAL12-70
Beech Baron 95-55, 95-A55, 95-B55, 95-B55A	TAL24-70C
Beech Travelair 95, B95, B95A, D95A, E95	TAL24-70
Helio Aircraft, LLC	
Helio H-250	SAL12-70
Helio 500	TAL12-70
KWAD Co.	
Super-V	TAL12-70
Latinoamerican De Aviacion	
Piper PA-25, PA-25-235, PA-35-260	SAL12-70
Lockheed Aircraft Corp.	
402-2	SAL12-70C
Mooney Airplane Company	
M20, M20A, M20B, M20C, M20D, M20E, M20F, M20G	SAL12-70
Piper Aircraft, Inc.	
Piper PA-16, PA-16S	SAL12-70
Piper PA-18, PA-18S, PA-18 "105" (SPECIAL), PA-19S	SAL12-70
PIPER PA-18A, PA-18 "125" (Army L-21A), PA18S "125", PA-18AS "125", PA-18 "135" (Army L-21B), PA18A "135", PA-18S "135", PA-18AS "135", PA-18 "150", PA-18A "150", PA18S "150", PA-18AS '150", PA-19 (Army L-18C), PA-20, PA-20S, PA-20-"135", PA-22, PA-22-135, PA-22S-135, PA-22-150, PA-22S-150, PA-22-160, PA-22S-160 (When modified with FAA Approved rear mounted oil cooler)	SAL12-70
Piper PA-20-"115", PA-205-"115"	SAL12-70
Piper PA-22-108	SAL12-70
Piper PA-24, PA-24-250, PA-24-260, PA-24-400	SAL12-70
Piper PA-28-140, PA-28-150, PA-28-160, PA-28-180, PA-28-235, PA-28S-160, PA-28S-180	SAL12-70
Piper PA-23, PA-23-160, PA-23-235, PA-23-250, PA-E23-250	TAL12-70
Piper PA -30	TAL12-70
Prop-Jets Inc.	
Meyers 200, 200A, 200B, 200C, 200D	SAL12-70C
Raytheon Aircraft Co.	
35, A35, B35, C35, D35, E35, F35, G35, 35R, modified by STC conversion to O-470 or IO-470 engine.	SAL12-70C
Revo, Inc.	
Colonial C1, Colonial C2, Lake LA-4, LA-4A, LA-4P	SAL12-70
Sierra Hotel Aero, Inc.	
Navion D, E, F,G, H, and Navion (L-17A), Navion A (L-17-B & L-17C), B modified by STC conversion to O-470 or IO-470	SAL12-70C
Twin Commander Aircraft Corporation	
500A	TAL24-70C
500, 500-B, 500-U	TAL24-70

GEAR DRIVEN GENERATOR CONVERSIONS

Ad Aerospace	Plane-Power
T-211	ER14-50
Aerodifusion	
D-1190S	ER14-50
Aeromca (Burl A. Rogers)	
15AC, S15AC	ER14-50
Aircraft Parts & Development	
A-3	ER14-50
All American	
10A	ER14-50
American Champion	
402, 7EC, 7ECA, 7FC, 7JC, S7EC	ER14-50
Hawker Beechcraft	
35, 35R, 45 (YT-34), A35, B35, C35*, D35*, E35*,F35*, G35*, (*When equipped with E225-8 Engine)	ER14-50
Cessna	
120, 140, 140A, 150, 150A, 150B, 150C, 150D, 150E, 150F, 150G, 150H, 150J, 150K, 150L, 150M, A150M, 170, 170A, 170B, 172, 172A, 172B, 172C, 172D, 172E, 172F, 172G, 172H	ER14-50
Commonwealth Aircraft	
185	ER14-50
Edward Scott Kerns	
Trojan A-2	ER14-50
FA 2001	
J5A (Army L-4F) (when equipped with C75-12 Engine)	ER14-50
Swift Museum Foundation	
GC-1A, GC-1B	ER14-50
Goodyear	
GA-22A	ER14-50
Helio Aircraft	
15A (when equipped with C145-2 Engine)	ER14-50
Avion Jodel	
150, D-1190, DR-1050 ER14-50	ER14-50
The Don Luscombe Aviation History Foundation	
8E, 8F, T-8F	ER14-50
Maule Aircraft Company	
BEE DEE M-4, M-4, M-4C, M-14S, M4T, M-4-210, C, S, T, M-5-210C	ER14-50
Thomas H. McClish	
B85C	ER14-50
Micco Aircraft Company	
MAC-125C. MC-145	ER14-50
S.O.C.A.T.A	
(Ralley) Series 100S, Rallye Series MS 880B, Rallye Series	ER14-50
Navion	
(Army L-4),(Army L-17B and L-17C)	ER14-50
Piper	
J3C-35* (Army L-4), L-4A*, L-4B (Navy NE-1*), L-4H*, L-4J*(Navy NE-2*)), J3C-65S*, -4A**, J4E* (Army L-4E), PA-18, PA-19, PA-18S***, PA-19S*** (When equipped with (*C75-12)(**C85-12)(***C90-12F)Engine) PA-28-201T, PA-28R-201T, PA-28RT-201T, PA-34-200T, PA-34-220T	ER14-50
Quartz Mountain Aerospace	
11A	ER14-50
Superior	
(Culver) V, (Culver) V-2	ER14-50
Taylorcraft Aviation	
BC-12D-4-85, BCS12D-4-85	ER14-50
Univair Aircraft	
(Alon) A-2, (Alon) A-2A, (Forney) F-1, (Forney) F-1A, (Mooney) M10, ERCO 415-C*, ERCO 415-CD*, ERCo 415-D, ERCO E, ERCO G, (*When equipped with C75-12, C75-12F, C85-12 or C85-12F Engine)	ER14-50

PLANE-POWER LIGHTWEIGHT STC GENERATOR TO ALTERNATOR CONVERSIONS

BELT DRIVEN - Plane-Power Belt Driven Generator to Alterantor Conversion Kits include hardware and brackets to replace your existing generator and regulator. Plane-Power STC Belt Driven Generator Conversions allow for increasing the size of the output wire and circuit breaker to allow for a maximum of 70 amps of output. All Plane-Power alternators feature dual internal fans specially designed for aircraft engine rotation to maximize cooling. Models available for both 12 and 24 volt as well as for both Lycoming and Continental installations.

Model	Output	Voltage	Part No.	Price
SAL12-70	70 (max)	12	07-01301	**$718.00**
SAL12-70C	70 (max)	12	07-01299	**$783.00**
TAL12-70	70 (max)	12	07-01302	**$1,464.00**

Model	Output	Voltage	Part No.	Price
TAL24-70	70 (max)	24	07-01304	**$1,556.00**
TAL24-70C	70 (max)	24	07-01303	**$1,894.00**

GEAR DRIVEN - Plane-Power Gear Driven Generator to Alterantor Conversion Kits replace your existing generator with an alternator which will provide higher output at lower rpm and allow for increasing the size of the output wire and circuit breaker to allow for a maximum of 50 amps of output. The ER14-50 uses your existing gear assembly. The entire gear assembly (ER14-GR) may be purchased separately. Some older generators have larger diameter (5/8") shafts and require the gear support kit (G-Pack). Please call for details. The ER14-50 weighs 6.9 lbs and comes with a pre-wired enable plug, 50 amp gear driven alternator, alternator inoperative lamp, Seals and R1224B Power-Flex voltage regulator.

Model	Output	Voltage	Part No.	Price
ER14-50	50 (max)	12	07-01321	**$714.00**
Accessories				
Gear Drive designed for use with the ER14-50			07-01348	**$90.00**

PLANE-POWER ALTERNATOR VOLTAGE REGULATORS

R1224

Plane-Power Power-Flex Voltage Regulators are FAA-PMA Approved. Available for most certified aircraft. Solid-state voltage regulators with over-voltage protection, field short (over current) protection, and reverse battery protection. Plane-Power Power-Flex voltage regulators also support precision load sharing for twin applications and an alternator inoperative lamp. Power-Flex voltage regulators are designed to be setup in the field for 12 or 24 volt operation by a simple placement of the two internal jumpers. For smaller mounting placement on the R1224, installation aid 12-1021 may be used.

R1224B

Model	Description	Voltage	Part No.	Price
R1224	Replaces many Ford, Electrodelta, Prestolite, Interav, Wico, and FVR voltage regulators.	12 or 24	07-01305	**$185.95**
R1224B	Replaces voltage regulators on twin Cessnas, Beechcraft, and Vulcanair .	12 or 24	07-01306	**$185.95**

GEAR ADAPTER KIT G-PACK

Required for use with the existing drive gear when the generator shaft is over 0.5" in diameter. Uses existing gear from replaced generator.

Description	Part No.	Price
Gear Adapter Kit # G-Pack	07-01348	**$90.00**

EP

B & C ALTERNATORS

B & C LIGHTWEIGHT ALTERNATORS

MODEL L40 ALTERNATOR

The model L40 is a belt driven 40 amp 14 volt alternator system for Lycoming engines including alternator assembly, mounting hardware, and belt, ready to install. The alternator weighs 6.1 lbs. and measures 3.9" in diameter and 5.6" long. The model L40 alternator was specifically designed to meet the rigorous demands of today's weight sensitive homebuilt designs and has undergone extensive in-flight service testing. This system incorporates the latest state-of-the-art advances in solid state electronic power management as well as incorporating a factory new, modern lightweight alternator. Applicable to Lycoming 118 H.P. through the 300 H.P. engines. L40 Boss Mount P/N 07-06815 ..... **$424.00**

Note – On Models L40 & L60 Alternators, order as follows:

L40 Case Mount (Narrow Deck Bracket) P/N 07-06810 ..... **$518.00**

L40 requires voltage regulator – see below

Model L40 and L60 alternators require external regulators – use: P/N 07-06742 (LR3C) for 14V, P/N 07-06786 (LS1A) for 28V LS1A converts alternator to 28V

MODEL L60 ALTERNATOR

Model L60 is a belt-driven, 14 or 28 volt alternator system for wide deck (boss mount) 118HP through 300HP Lycoming engines. The kit includes a NEW alternator, steel mounting bracket, belt tensioning arm, belt and mounting hardware, ready to install. Alternator with pulley installed weighs 8.5 Lbs. With 60 amps of output, the L6. Will provide sufficient power to operate electric heaters in the Eze type airplanes. Warning! It is unwise to use this (or any other high output alternator) unless true over voltage protection is also installed. The LR-3C linear regulator and alternator control system is recommended.

L60 Case Mount ..... P/N 07-06820 ..... **$695.00**
L60 Boss Mount..... P/N 07-06785 ..... **$617.00**

L60 requires voltage regulator – see ABOVE

30 AMP GEAR DRIVEN ALTERNATOR WITH PMR3

A 30amp gear-drive alternator for the Continental Engines (C-75 through O-300). After many customer requests for a gear-drive alternator with higher output, B&C Specialty Products introduces the latest product, model BC433-H. Wt: 4lbs.; size: 4"dia. X 3.7" installed length. Features a billet aluminum mounting flange and creates 30 amps at cruise RPM. Ships with matching regulator. Sold without the Continental drive gear assembly (customer supplied), and requires the latest revision of the Hub (P/N 07-01327) and Retainer (P/N 07-01328) B&C has a limited supply of used drive gear assemblies, available at additional cost. NOTE: BC433-H requires purchase of PM/OV Kit 505-1which provides crucial over voltage protection.

P/N 07-00771 ..... **$557.00**

ACCESSORIES

505-1 B&C 14V Over Voltage Protection .. P/N 07-00772 ..... **$68.75**
Generator Hub Coupling 653983 ..... P/N 07-01327 ..... **$275.95**
Generator Attaching Retainer 653982 .... P/N 07-01328 ..... **$24.75**

MODEL LR3C LINEAR REGULATOR

P/N 07-06748

More than just another regulator. The LR3C Controller combines three essential devices in one physical container, making it a lightweight, space-saving, and cost-effective alternative for any aircraft electrical system, while also mproving safety of flight. First, the LR3C operates as a "quiet," linear regulator, generating no audio or radio noise (in contrast to switching-type regulators).

Second, it provides a vital safeguard for your aircraft electrical system with a solid-state, "crowbar" overvoltageprotection circuit. And third, the LR3C Controller functions as an important low-voltage monitoring and warning system.

- Used on all externally regulated alternators using circuit type "B" (one field lead grounded directly) except B&C alternators used in 28v sys tems. This 28v regulator will not work with a B&C alternator.
- The LR3C weighs approximately 9 ounces
- Select a location for mounting that will protect unit from heat, vibration, and water; the pilot side of the firewall, or inside the cabin near the instrument panel, is recommended.
- For experimental aircraft only

LR3C (14V) ..... P/N 07-06742 ..... **$228.00**
LR3C (28V) ..... P/N 07-06748 ..... **$229.50**
LR3C Battery Temp Sensor.. P/N 07-06744 ..... **$105.95**

MODEL SD-8 ALTERNATOR & REGULATOR

The model SD-8 is a spline-driven, 14V alternator system for aircraft with an open vacuum pump drive pad. Features an ultra-reliable, brushless construction. A permanent magnet assembly supported on sealed ball bearings is spun around a fixed coil. With 8 amps of output, the model SD-8 is adequate for many VFR-day applications. The model SD-8 will power a solid state nav/com and transponder in addition to charging a battery for engine starting. In production for over 10 years, hundreds of model SD-8 systems are flying. The model SD-8 is used by top aerobatic pilots around the world. Also used as backup power source on more sophisticated homebuilts. Wt.:3.7lbs. Pricing includes adjustable, solid state voltage regulator.

P/N 07-06770 ..... **$493.95**
Over Voltage Kit 14V (required) ..... P/N 08-00658 ..... **$68.95**
Over Voltage Kit 28V (required) ..... P/N 07-00708 ..... **$64.95**

MODEL SD-20 ALTERNATOR

The SD-20 is a high-performance spline-driven alternator that mounts on a standard vacuum pump accessory pad. May be used either as a primary or a stand-by alternator for a rated output 20 amps @ 2500 alternator RPM. Constructed of all NEW materials (with absolutely NO "re-manufactured" content), the SD-20 is designed for durable service, with heavy-duty sealed ball-bearings, 2 cooling fans, a dynamically balanced rotor, and a special "shear section" designed into the drive coupling. The SD-20 is available for both 14 and 28 volt applications. and is externally-regulated. It may be appropriately matched with our LR3C, LS-1A, or SB1B Controllers (depending) on your application and electrical system configurations). Measuring 4.6" wide and 6" deep, and weighing only 5.75lbs., SD-20 will clear the tachometer cable and oil filter on stock Lycoming engines. P/N 07-06771 ..... **$695.00**

MODEL 200G ALTERNATOR

Gear-driven, 14V alternator system for aircraft powered with Continental C85-12 engines. Features ultra-reliable, brushless construction. Permanent magnet assembly supported on sealed ball bearings is spun around a fixed coil. Use in the prototype Vari-Eze. Has also seen service on many Cassuts, Vari-Ezes, Q-200s. etc. In production for over 10 years, hundreds of 200G systems are in service. With 12 amps of output the 200G will support a modest VFR-night system load. Wt 4.25 Lbs. Pricing includes an adjustable solid state voltage regulator. You supply a Continental generator drive gear assembly. Gear must be shipped by the factory to Aircraft Spruce for installation.

P/N 07-06575 ..... **$409.00**
New Drive gear..... P/N 07-06500 ..... **$861.00**
Over Voltage Kit 14V (required) ..... P/N 08-00658 ..... **$68.95**
Over Voltage Kit 28V (required) ..... P/N 07-00708 ..... **$64.95**

TURBO STAND-BY ALTERNATOR

The Basic BAE-14/28 Auxiliary Power Supply is a manually deployed, air driven, emergency electric supply for small aircraft. The unit is capable of supplying electric power to drive a basic complement of flight critical instruments. If a primary electrical system failure should occur, the pilot deploys the miniature turboalternator. The flight can then be continued to the intended destination, or terminated at a convenient airport under more casual conditions. The TurboAlternator is a true stand-by power supply. In the event the aircraft loses its total electrical system the alternator will still function. The unit is self-exciting, thus it will work in the absence of the battery. The alternator was designed to be retrofit or original equipment on most small aircraft. Particular efforts was made to optimize the power output in the minimum package size and weight. The latest technology materials and techniques are used to achieve the high performance at a reasonable cost. The appropriate installation kit is included to reduce installation time and cost. The BAE-14/28 is currently STC'd for seven aircraft models: Cessna 210, 206, 182, Piper PA-32, PA-28, Bonanaza, and Mooney. One Cardinal installation is flying on a 337.

BPE-14 Turbo Alternator ..... P/N 10-00747 ..... **$799.00**
BAE-14/28 Auxillary Power Supply ..... P/N 10-00748 ..... **$2,199.00**

PERMANENT MAGNET ALTERNATOR OVER VOLTAGE MODULE WITH NOISE FILTER

A must for the PM alternators. The PM/OV was designed to give over voltage protection to the permanent magnet alternator. The yellow light will annunciate if the alternator switch is left off, or if the crowbar over voltage protection has been tripped. The capacitor will filter some noise, and help enhance the regulation.

14 Volt ..... P/N 08-00658 ..... **$68.95**
28 Volt ..... P/N 07-00708 ..... **$64.95**

EP

B & C LIGHTWEIGHT STARTERS FOR LYCOMINGS

This extraordinarily light weight starter was specifically designed to meet rigorous demands of today's weight sensitive aircraft designs. Weighing only 10.2 pounds, B & C starters develop more torque than standard starters. The first lightweight starter to be developed, the B & C starter has been in production for over 16 years. It is manufactured from 100% new components and features total ball-bearing construction. The pinion gear is mechanically engaged with the ring gear before power is applied to the motor. Cantilevered pinion gear mounting requires no forward shaft support bearing thus eliminating cowl interference. If battery failure precedes engine starting, a positive spring retraction system insures pinion gear disengagement. STC'd and PMA'd versions for installation on certificated aircraft are available. STC'd for aircraft powered by any of the following series of Lycoming engines:

- O-235
- O-290
- O-320
- IO-320
- AIO-320
- AEIO-320
- O-360
- IO-360
- AIO-360
- AEIO-360
- HO-360
- HIO-360
- O-540
- IO-540
- AEIO-540
- HIO-540
- TIO-540

B & C LIGHTWEIGHT STARTERS FOR CONTINENTALS

This new starter for the Continental 0-200 or 0-240 engine solves all the problems that other starters have had — worn out clutches, cracked pinion gears, hard to find parts. In addition, the BC320 is 4.3 to 5.2 lbs. lighter depending on whether you are replacing a key-type starter or a pull-cable type starter. The BC320 starter is STC'd for use in certificated aircraft and is available with, or without, the STC. Also available are two installation kits — one for replacing a key-type starter, the other for replacing a pull-cable type starter.

If you are replacing a key-type starter, you will need installation kit 501-1. Before installing the BC320, a needle bearing will need to be removed from your engine. To aid in removing this needle bearing, you may purchase Bearing removal kit, 501-2, for $119.00. If you do not care to keep this tool, you may return it and be refunded $80.00. If you are replacing a pull-cable starter, you will need installation kit 501-3. Before installing the BC320, you will need to cut off a steel shaft that is installed in your engine case. The new BC320 starter is a complete starter, ready to install, that will replace the existing motor, clutch, and pinion-gear. Tested by Continental with over 5000 start cycles without a problem. Recommended by Rutan Aircraft Factory. Except for paperwork, there are no differences between STC'd starters and starters for homebuilts. A starter must be ordered to match your battery voltage.

FOR CERTIFICATED AIRCRAFT APPLICATIONS

Part No.	Model No.	Pinion Gear Pitch	Teeth on Ring Gear	Battery Voltage	Price
		LYCOMING			
07-06700	BC315-100-1	10/12	122	12	$580.00
07-06705	BC315-100-2	12/14	149	12	$579.00
07-06710	BC315-100-3	10/12	122	24	$605.00
07-06715	BC315-100-4	12/14	149	24	$619.00
		CONTINENTAL			
07-06716	BC320-1			12	$798.00

FOR EXPERIMENTAL AIRCRAFT APPLICATIONS

Part No.	Model No.	Pinion Gear Pitch	Teeth on Ring Gear	Battery Voltage	Price
		LYCOMING			
07-06720	BCS206-122-12	10/12	122	12	$550.00
07-06725	BCS206-149-12	12/14	149	12	$549.00
07-06730	BCS206-122-24	10/12	122	24	$575.00
07-06735	BCS206-149-24	12/14	149	24	$571.00
		CONTINENTAL			
07-06737	BC320-H			12	$749.00

B & C ACCESSORIES

501-1 ..... Installation Kit (key type) ..... P/N 07-06752 ..... **$23.60**
501-2 ..... Bearing Removal Kit ..... P/N 07-06753 ..... **$117.95**
501-3 ..... Installation Kit (pull cable) ..... P/N 07-06754 ..... **$73.75**

GENNIPOD WIND GENERATOR

The GenniPod wind generator has been designed and built for use on EXPERIMENTAL and Ultralight Aircraft. Utilizing a new solid state voltage regulation system, the GenniPod has been designed to target 13.5 volts at a 4 amp output. Final Phase testing demonstrated sufficient power for, Instrument panel gauges, GPS, Handheld NavCom, VW Ignition (point), and a fuel transfer Pump for those long cross country flights, (OSHKOSH!) Targeted airspeed for this unit was a cruise of 75 mph, and an aircraft Vne of 110 mph. Your GenniPod is delivered ready to mount on your airplane. Two wires, (Positive and Negative), will be linked to your electrical system. You will supply generator switch, 5 amp Breaker, and wiring to link the GenniPod to your system. A small motorcycle lead acid battery is also required These items are not supplied to allow you to build to your needs, and to keep our prices low. The GenniPod measures approximately 9" long, with a diameter of 7" at the prop. Weight will be approximately 3.5 pounds installed.

P/N 11-07182 ..... **$249.50**

INTERAV BELT DRIVEN ALTERNATOR KITS

FAA APPROVED ALTERNATOR CONVERSION KITS

This high quality alternator kit is STC'D for most 14 volt aircraft and enables you to replace your belt driven generator with a current day alternator system. The superior features of this system include quick installation, voltage spike guard, built-in radio noise suppression, transistorized voltage regulator, and overvoltage relay protection. Kit includes alternator, mount, regulator, and overvoltage control.requires 60 Amp. Circuit Breaker(P/N 295-29694).

Single Engine Kit ..... P/N 07-06800 ..... **$869.00**
Twin Engine Kit ..... P/N 07-06850 ..... **$1,718.00**

INTERAV KITS INCLUDE

Model No.	Ref. No.	Description	Purchase Kit Components Individualy. Part No.	Price Per Component
015-01237	A-152A	Alternator Assy	07-00027	$454.00
625-61623	A-153C	Voltage Regulator	625-61623	$147.95
635-62448	OVR-128	Overvoltage Relay	635-62448	$169.95
015-01240	A-167D	Mounting Bar Assy	07-01290	$208.95
245-23709	A-178	Spike Guard Capacitor	07-00828	$54.50
165-15041	A-178-2	Clamps	---	
435-42408	A-178-4	Lead Kit	---	
395-37992	A-178C	Hardware Kit	---	
415-40054	OVR-12A-6	Pacard	---	
---	R-65-113	Installation Instructions	---	

ACCESSORIES

115-09964 Brush Holder Assembly ..... P/N 07-00317 ..... **$35.50**
295-29694 60 Amp. Circuit Breaker ..... P/N 295-29694 ..... **$34.80**

SKYTRONICS JASCO GEAR DRIVEN ALTERNATOR KITS

This Jasco alternator kit is STC'd for many aircraft including the early Cessna 150, 172, and 175 series as well as Beech Model 35's with early E series Continental engines. Applicable to Continental C-90, 0-200 and 0-300 engines. This kit includes 50 amp alternator, voltage regulator, over-voltage control, and STC documents. Available for 14V systems only. Well-proven over many years of use in a variety of aircraft. In stock for immediate shipment. STC'd for Cessna 150-170, 172, 175, Beech 35 Series, Navion A. Skytronics Kit #6560-1. P/N 07-06900 ..... **$686.00**

Volts	Amps	Drive	Alt. P/N	Kit P/N	Price
12	50	4 stud, 6 spline sqr pad	6555T	6555-1	849.00
12	50	Round pad like Delco config.	6560T	07-06900	686.00$9
12	50	6 stud, 16 spline rnd. pad	6565T	6565-1	19.00$85
24	50	4 stud, 6 spline sqr. pad	7555T	7555-1	6.00$918
24	50	6 stud, 16 spline rnd pad	7565T	07-75651	.00$1,27
24	70	Hiller UH12E round pad	7555H-72B	07-07555	1.00$92
27	70	4stud, 6spline sqr. pad	7655T	07-00703	1.00
24	70	**7555H-72B Kit** Alternator J12M24SPH Reg. Controller 17-10 Resist. 150 omega	 7555H-72B J12M24SPH 17-10	07-00702 07-07555 07-00314 07-01710	$1,462.00 $1,271.00 $187.95 $17.65
24	70	**7655T Kit** Alternator J12M24SPH Reg. Controller	 7655T J12M24SP	 07-00703 07-00696	$921.00 $189.50
24	70	17-10 Resist. 150 omega	17-10	07-01710	$17.65
12		Voltage Controler	J12M20SP	07-00697	$189.50
24		Voltage Controler	J12M24SP	07-00696	$189.50
24		Voltage Controler	J12M24SPH	07-00314	$187.95
24		Voltage Controler	J24-100SP	07-00698	$210.95
24		150 (omega) Resistor	17-10	07-01710	$17.65
24		75 (omega) Resistor	17-1	07-00699	$18.50
		Terminal Conversion kit	ESC-2	07-00701	$98.75

TEMPEST STARTERS

The Tempest PowerFlite series of aviation engine starters represents a new state-of-the-art energy efficient design providing reduced current draw and long life. The PowerFlite starter mounts directly to existing TCM engines and is available in both 12 and 24 volt configurations.

Tempest starter part numbers PL13459 (12v) and PL13484 (24v) are eligible on TCM engine models O-300-D, GO-300-D, IO-346, IO-360, L/TSIO-360, O-470, IO-470, TSIO-470, IO-520, TSIO-520, GTSIO-520, IO-550, TSIO-550 and TSIOL-550.

Powerflite Starter 12V ..... P/N 08-07284 ..... **$699.00**
Powerflite Starter 27V ..... P/N 08-07283 ..... **$699.00**

See www.aircraftspruce.com for parts and accessories.

EP

HARTZELL ENGINE TECH. STARTERS

HARTZELL ENGINE TECHNOLOGIES X-DRIVE STARTERS

Only 7.6 lbs.
Lightest Starter Available

- Lightest Starter Available » Weight 7.6 lbs.
- Perfect spin » Sweet spot engine starts, doesn't drain your power like other starters
- Start efficiency » Lowest inrush & operating current draw in the industry
- No mechanical Bendix
- Electromechanical solid-state solenoid
- Powerful permanent magnet » Performance
- Easy installation » Left or right mount
- FAA/PMA approved
- 2 Year Unlimited Hours Warranty *

The X-Drive aircraft starter is one of our most popular models because of its awesome power and compact size. Targeted toward Lycoming users that want one of the industries lightest but most powerful starter on the market, the X-Drive delivers the same high torque, low current draw, and superior duty cycle that had previously been available only to E-Drive customers. The introduction of the X-Drive starter allows Hartzell Engine Technologies to service virtually all OEM and aftermarket Lycoming applications.* Kick-backs not covered

Description	Part No	Price
Hartzell X-Drive Starter SRB-9021	08-06271	**$394.00**
Hartzell X-Drive Starter SRB-9022	08-06272	**$395.95**
Hartzell X-Drive Starter SRB-9031	08-06273	**$395.00**
Hartzell X-Drive Starter SRB-9032	08-06274	**$395.00**
Hartzell X-Drive Starter SRZ-9021	08-06275	**$358.00**
Hartzell X-Drive Starter SRZ-9022	08-06276	**$358.00**
Hartzell X-Drive Starter SRZ-9031	08-06277	**$358.00**
Hartzell X-Drive Starter SRZ-9032	08-06278	**$358.00**

APPLICATION DATA GUIDE

FIGURE 1

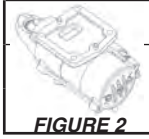

FIGURE 2

Solenoid to the Left: (X-Drive series: see figure 1)	
SRZ-9021 (12 Volt - 149 tooth)	SRZ-9022 (12 Volt - 122 tooth)
SRB-9021 (24 Volt - 149 tooth)	SRB-9022 (24 Volt - 122 tooth)
Solenoid to the Right: (X-Drive series: see figure 2)	
SRZ-9031 (12 Volt - 149 tooth)	SRZ-9032 (12 Volt - 122 tooth)
SRB-9031 (24 Volt - 149 tooth)	SRB-9032 (24 Volt - 122 tooth)
(12/14 pitch works on a 149 tooth ring gear & 10/12 pitch works on a 122 tooth ring gear.)	

CROSS-REFERENCE CHART

Sky-Tec P/N	X-Drive P/N
122-12LS	SRZ-9022
122-12PM	SRZ-9032
122-24LS	SRB-9022
122-24PM	SRB-9032
149-12LS	SRZ-9021

Sky-Tec P/N	X-Drive P/N
149-12PM	SRZ-9031
149-24HT	SRB-9021
149-24LS	SRB-9021
149-24PM	SRB-9031

EP

HARTZELL ENGINE TECHNOLOGIES E-DRIVE STARTERS

- IImmune to Kick-back damage!
- Perfect spin » Sweet spot engine starts, doesn't drain your power like other starters
- Lightweight » Only 9.5 lbs.
- No mechanical Bendix
- Electromechanical solid-state solenoid
- Powerful permanent magnet » Performance
- Easy installation » Lycoming engines
- Tough » Tested under the most extreme cond.
- FAA/PMA approved
- 2 Year Unlimited Hours Warranty

Hartzell Engine Technologies E-Drive starters, for Lycoming engines, have the Toughest Duty Cycle in the industry exceeding other aircraft starters by 40%. Ready to Fly, for weekend flyers or hard starting flight schools. There is no longer a need to replace overloaded devices (shear pins) after a Kick-back event. The E-Drive starter is unaffected by Kick-backs saving hours of service time & replacement cost$. Using absolutely no automotive aftermarket parts, the engine & starter are both protected by a proprietary torque limiting clutch drive design. ***- NO CORE CHARGE***

- High Performance Armature
- Increased commutator bar length
- Thin laminations
- High quality magnetic alloy
- 12 & 24 volt winding configuration
- Redesigned Brush Holder
- Metal construction for heat sinking
- Offset brush position for increased brush contact area
- Robust spring design
- High performance field housing
- Rare earth neodymium magnets
- Small package
- Stronger flux field
- Improved temperature stability
- 9.5 lbs.

- Starter system designed for maximum performance.
- Drive assembly integrates proprietary pinion gear, clutch, torque limiter, and actuator in one complete module.
- Available for coarse and fine pitch ring gears, clock-wise and counter-clock-wise rotation.
- No periodic service or recurring maintenance required.
- 9.5 lbs.

APPLICATION CHART

E-Drive Number - Approved Alternative for the following:

ERB-8011	ERB-8012	ERZ-8011	ERZ-8012
MHB-4001	MHB-4015	MZ-4205	MZ-4204
MHB-4002	MHB-4002	MZ-4206	MZ-6204
MHB-4003	MHB-6001	MZ-4207	
MHB-4005		MZ-4217	
MHB-4007		MZ-4218	
MHB-4010		MZ-4219	
MHB-4012		MZ-4221	
MHB-4013		MZ-4224	
MHB-4014		MZ-4222	
MHB-4016		MZ-4223	
MHB-4017		MZ-4225	
MHB-4019		MZ-6222	
MHB-4020		MZ-6224	

MODEL	DESCRIPTION	PART NO.	PRICE
ERZ-8011	Clockwise rotation, 12 Volt, 149 tooth - 12/14 Pitch Gear	07-01102	**$386.00**
ERZ-8012	Clockwise rotation, 12 Volt, 122 tooth - 10/12 Pitch Gear	07-01103	**$386.00**
ERB-8011	Clockwise rotation, 24 Volt, 14 9 tooth - 12/14 Pitch Gear	07-01099	**$438.00**
ERB-8012	Clockwise rotation, 24 Volt, 122 tooth-10/12 Pitch Gear	07-01101	**$435.95**

AIRCRAFT SPRUCE WEST
CORONA, CA • (877) 4-SPRUCE
AIRCRAFT SPRUCE EAST
PEACHTREE CITY, GA • (877) 477-7823

Prices Subject to Change Without Notice

HARTZELL ENGINE TECH. STARTERS

HARTZELL ENGINE TECHNOLOGIES M-DRIVE STARTERS

- Upgrade your Continental Engine with a M-Drive Starter.
- Safely Disengages from the starter adapter
- Protects All Continental Adapters
- No Back-Torque » Drive shaft spins free
- Lightweight » Only 7.5 lbs.
- Internal Solenoid
- Performance » Powerful permanent magnet
- Easy installation » Continental engines
- Tough » Tested under the most extreme cond.
- FAA/PMA approved
- Designed for Aviation » Not modified for aviation
- 2 Year Unlimited Hours Warranty

The new M-Drive starter has more cranking power than any current lightweight competitor & the perfect replacement for your old heavyweight or Iskra starter. Designed specifically for Large-bore Continental (formerly TCM) engines the M-Drive starter's electromechanical solenoid completely disengages from your aircraft's starter adapter, immediately releasing the wrap spring, so the starter adapter is protected from wear damage.
Recommended protection for ALL starter adapters (classic, Permold, Sand cast, etc.), the new M-Drive isthe lightest aircraft starter that truly protects your Continental (formerly TCM) starter adapter with a unique internal solenoid. To protect your starter adapter you need a starter that fully disengages after the engine has started. Not fully disengaging will lead to premature failure of the starter adapter from excessive wear of the shaft & wrap spring.
The M-Drive completely disengages the starter from the starter adapter, safely allowing the drive shaft to spin free. No other gear-reduction starter has this in-line engagement advantage resulting in more engine starts for your aircraft! Weighing only 7.5 lbs, FAA/PMA approved, & boasting a powerful 2.8kw high torque motor, the new M-Drive can start even the hardest cranking large bore TCM engines while reliably protecting the starter adapter.
12V MRZ-7000 M Drive.....P/N 08-07220 .....**$514.00** 24V MRB-7000 M Drive.....P/N 08-07221 .....**$514.00**

TCM ENERGIZER STARTERS

FACTORY NEW				FACTORY OVERHAULED			
Model	**Core**	**Part No.**	**Price**	**Model**	**Core**	**Part No.**	**Price**
ES646238-2	**$150.00**	CALL	**CALL**	646238-2R	$150.00	CALL	**CALL**
ES646238-3	**$150.00**	CALL	**CALL**	646238-3R	$150.00	07-06501	**$298.95**
ES646275-1	**$190.00**	CALL	**CALL**	646275-1R	$190.00	07-06502	**$296.95**

HARTZELL ENGINE TECHNOLOGIES FACTORY OVERHAULED STARTERS

If No Cores are Available at factory, we will require your core for overhaul.

Mfg. Ref.	P/N	Core	Price
MC-6501	07-06503	$150.00	**$296.95**
MHB-4004R	08-06206	$175.00	**$726.00**
MHB-4005R	08-06207	$235.00	**$726.00**
MHB-4008R	08-06203	$134.00	**$413.95**
MHB-4014R	08-06209	$200.00	**$489.95**
MHB-4016R	07-06504	$200.00	**$538.00**
MHB-4017R	08-06211	$200.00	**$487.95**
MHB-4018R	08-06212	$200.00	**$489.95**
MHB-4020R	CALL	$200.00	**CALL**
MHJ-4003SR	07-06505	$190.00	**$327.95**
MHJ-4004R	08-06204	$185.00	**$729.00**
MHJ-4005R	08-06205	$300.00	**$798.00**
MMU-4001R	07-06506	$200.00	**$465.95**
MZ-4204R	CALL	$165.00	**CALL**
MZ-4208R	08-06208	$124.00	**$355.95**
MZ-4214R	07-06513	$100.00	**$268.95**
MZ-4219R	CALL	$200.00	**CALL**
MZ-4220R	08-06198	$200.00	**$430.95**
MZ4222R	07-06509	$200.00	**$420.95**
MZ-4224R	CALL	$200.00	**CALL**
MZ-4225R	08-06201	$200.00	**$426.95**
MZ-4226R	08-06202	$200.00	**$426.95**

HARTZELL ENGINE TECH. NEW STARTERS

Description	Part No.	Price
MHJ-4003S New Hartzell Starter	08-06180	**$825.00**
MHB-4014 New Hartzell Starter	08-06182	**$676.00**
MHB-4016 New Hartzell Starter	07-01110	**$394.00**
MHB-6014 New Hartzell Starter	07-01109	**$558.00**
MZ-4214 New Hartzell Starter	08-06179	**$489.00**
MZ-4220 New Hartzell Starter	08-06186	**$691.00**
MZ-4222 New Hartzell Starter	08-06188	**$776.00**

EP

KELLY AEROSPACE DUAL ALTERNATOR KIT

The kit includes a duplicate 95 amp alternator to the original equipment, along with all the pulleys, belts, brackets and hardware for installation on the Lycoming IO-540 series engines. All system controls are panel mounted and the backup system is activated with a flip of a switch. STC Approved for Cessna 182, 182T, 182S. Installation during your next major maintenance event or annual should only add a few hours, company officials note, adding the system operates independently of the aircraft MCU, providing total electrical system redundancy.
Alternator Kit Cessna 182/182T .....P/N 07-01490 .....**$4,675.00**
Dual Alternator Kit Cessna 182S.....P/N 07-01804 .....**$4,585.00**

HARTZELL ENGINE TECH. STARTER DRIVES

Designed to fit prestolite starters. Shipping Weight: all units, 2 Lbs.

Description	Part No.	Price
EBB75A MZ series 42054207, 42174219. MHB series 40014007 & 40104013	07-06515	**$106.95**
EBB124AMHJ series-All, MMU series-All, M24204, MHB4015	07-06510	**$104.95**
EBB131AMZ series 4221 to 4223, MHB 4016 to 4019	07-06511	**$93.50**
EBB142A STARTER DRIVE ES EBB142A	07-06512	**$105.95**
Lamar 9301001-F 01 OVERHAUL KIT PM1201 & 2401 Series Starters includes shear pin	07-01180	**$81.75**

CONVERSION CHART

The Magnaflite lightweight starter listed in the table below will be superceded by the E-Drive and/or X-Drive starter listed therein. All Magnaflite P/N's listed below that are currently installed, being installed or in inventory are in no way affected. Standard Limited Warranty, is in effect and returns for reason of supercedure will not be accepted.

KAPS Part Number	X-Drive Left Hand Solenoid	X-Drive Right Hand Solenoid	E-Drive
MHB-6016	SRB-9021	SRB-9031	ERB-8011
MHB-6018	SRB-9021	SRB-9031	ERB-8011
MMU-6001	SRB-9022	SRB-9032	ERB-8012
MZ-6204	SRZ-9022	SRZ-9032	ERZ-8012
MZ-6222	SRZ-9021	SRZ-9031	ERZ-8011
MZ-6224	SRZ-9021	SRZ-9031	ERZ-8011
MZ-6226	SRZ-9021	N/A	ERZ-8011

SKY-TEC STARTERS

SKY-TEC ST2 & KCST2 MODEL STARTERS FOR SMALL CONTINENTAL ENGINES

SKY-TEC C12ST2 - FOR FACTORY KEYSTART STARTER FOR A65-12 THROUGH O-300C ENGINES - 9.2 lbs., Bolt-off / Bolt-on, High Torque, Low-Current, Gasket Included, Replaces TCM starter & continuous running sprag clutch in TCM factory keystart engines. Now featuring internal, self-resetting Kickback Protection System - zero maintenance - no pin to shear.

SKY-TEC KCST2 - STC-CERTIFIED CONVERSION KIT FOR FACTORY PULL-START ENGINES - STC Modification of Engine Required (removal of OEM starter pinion shaft in rear of engine). STC Modification of Airframe Required (replacement of pull-start T-handle with Sky-Tec-supplied push button & wiring) High Torque, Low-Current, 9.2 lbs. Now featuring internal, self-resetting Kickback Protection System - zero maintenance - no pin to shear.

Complete Conversion Kit includes: C12ST2/S Starter, Push Button Switch, Wiring Harness, Gasket, Instructions, STC for Airframe Modification, STC for Engine Modification

SKY-TEC KEY-START C12ST2/SR - REVERSE TURNING for Continental GO-300 Engines ONLY - Internal, self-resetting Kickback Protection System - zero maintenance - no pin to shear. 6-8 lbs. lighter and significantly more reliable than the original, heavyweight factory starter.

Also sold in a Kit (KCST2/SR) that includes the C12ST2/SR reverse-turning starter, STC to modify the engine to install the starter, STC to modify eligible aircraft to replace the pull-type starter handle with the included push-to-start button, new gasket, push button wiring harness, instructions and "PUSH TO START" placard. Model: C12ST2/SR Weight: 8.9 lbs.

Model C12ST2 (Starter only).....P/N 07-00614 ..... **$564.00**
Model C12ST2/S (Starter only) .....P/N 07-00719 ..... **$564.00**
Model KCST2 conversion kit .....P/N 07-00721 ..... **$586.00**
KCSW Switch and harness only.....P/N 07-00722 ..... **$47.50**
Model C12ST2/SR (Starter only).....P/N 07-01855 ..... **$564.00**
Model KCST2/SR (Kit).....P/N 07-01856 ..... **$527.00**

EP

SKY-TEC ST3 MODEL STARTERS FOR LARGE CONTINENTAL ENGINES

Safe for all types of TCM starter adapters! Feature Sky-Tec's exclusive proprietary clutch design virtually eliminating starterinduced TCM starter adapter wear. FAAPMA certified replacement part approved for all TCM starter adapters including "classic Style", "improved style", "permold", and "sand cast" engines. Simple bolt-off / bolt-on installation. Designed to crank no slower than TCM heavyweight OEM starters. Generous 2-Year factory warranty.

Model C12ST3 12 Volt..... P/N 07-00766.....**$498.00**
Model C24ST3 24 Volt..... P/N 07-00767.....**$527.00**

SKY-TEC ST5 SERIES STARTERS

The ST5 starter couples a high power 2.2 kW motor with an innovative solenoid-engaged (and disengaged) drive system completely disengages the powerful permanent magnet motor while the starter is unpowered eliminating possible TCM starter adapter wear while providing authoritative, high-torque starting. Positive solenoid enabled engagement and disengagement allows the TCM starter adapter to fully unwrap under all normal operating conditions thus greatly prolonging starter adapter life.

C12ST5 .....P/N 07-01341 .....**$512.00**
C24ST5 .....P/N 07-01342 .....**$556.00**

SKY-TEC BCE-6 EXTENSION CABLE KIT

6" Battery Cable Extension kit aids the installatin of starters in aircraft that have limited slack available in the aircraft's starter power cable. Generally not required for TCM starter installations. May be needed in some PM, and NL model Lycoming installations. P/N 07-00923 ..... **$12.50**

SKY-TEC STARTER 122-LSA

The lightest Lycoming starter ever at just 6.3 lbs. The 122-LSA is Lycoming's factory OEM starter on the new O-233 LSA engine. An excellent 12V starter for O-235, O-290 and O-320 engines with 122-tooth ring gears. Plenty of torque, high cranking speed, low current draw. Features a precision machined housing specifically designed to mount the lightweight Plane-Power AL12-EI60 alternator - enabling the industry's lightest weight starter/alternator pairing at just 13.2 lbs. for both! Perfect for lightweight, Lycoming-powered LSA aircraft. Experimental.

Starter 122-LSA.....P/N 07-01806 .....**$454.00**
122-LSA Starter & AL12-E160-L Alternator Kit
P/N 07-01806-1 .....**$898.00**

SKY-TEC STARTERS HIGH-TORQUE INLINE STARTERS FOR LYCOMING ENGINES

Featuring Sky-Tec's Exclusive KPS® Kickback Protection System, Sky-Tec's NL-series of starters fit all Lycoming powered aircraft. Also available in Extended Cranking 24V SuperDuty versions /ec models (see table below). Unmatched duty cycle capabilities and durability on even the hardest starting 12V or 24V aircraft. Now available as factory original equipment on nearly all new Lycoming-powered airplanes. No other starter is manufactured to more exacting standards for quality, reliability and workmanship than Sky-Tec Lycoming starters. All NL-series starters are FAA-PMA certified as replacement parts for all non-geared, flat Lycoming engines. Sky-Tec NL-series starters fit without modification or 337 paperwork. At only 9.4 lbs., the NL-series is the lightest Bendix-free inline available. Generous two-year warranty.

Model No.	Voltage/ Description	Pitch	FAA-PMA Eligible	Part No.	Price
122-NL	12 Volt (Also 24 Volt Switchable)	10/12 (for 122- Tooth Rng Gears)	Lyc 235, 290, 320, 360, 540 & 720	07-00761	**$431.00**
149-NL	12 Volt (Also 24 Volt Switchable)	12/14 (for 149- Tooth Rng Gears)	Lyc. 235, 290, 320, 340, 360, 540	07-00762	**$431.00**
149-NLR	12 Volt (Also 24 Volt Switchable)	12/14 (for 149- Tooth Rng Gears)	Lyc. LIO-320, LO-360, LTO-360, LIO-360, LHIO-360, & LTIO-540	07-00763	**$431.00**
122-NL/ec	24 Volt Super Duty	10/12 (for 122- Tooth Rng Gears)	Lyc. 235, 290, 320, 360, 540 & 720	08-07061	**$488.00**
149-NL/ec	24 Volt Super Duty	12/14 (for 149- Tooth Rng Gears)	Lyc. 235, 290, 320, 340, 360, 540 &	08-07059	**$488.00**
149-NLR/ec	24 Volt Super Duty	12/14 (for 149- Tooth Rng Gears)	Lyc. LTIO-540	08-07060	**$488.00**

SKY-TEC HIGH-TORQUE STARTER

Newly Improved with internal, self-resetting Kickback Protection System! Now stronger and even more durable thanks to an improved strontium fortified aluminum alloy and beefed-up mount castings. Still one of the lightest Lycoming starters available at only 8.5 lbs. Spins twices as fast as most heavyweight OEM starters. Zero maintenance - no pins to replace in the event of a kickback. FAA-PMA approved for most Lycoming engines. Also available specifically configuredd to directly replace costly B&C starters on Robinson helicopters. Some airframe applications may require minor modification for best fit. Confirm aircraft fit, ring gear tooth count and voltage before ordereing. Generous 2-Year factory warranty.

Model	Voltage	Description	Part No.	Price
122-12HT	12 Volt	10/12 Pitch (122 Tooth)	07-06250	**$488.00**
122-24HT	24 Volt	10/12 Pitch (122 Tooth)	07-06251	**$531.00**
149-12HT	12 Volt	12/14 Pitch (149 Tooth)	07-01840	**$488.00**
149-24HT	24 Volt	12/14 Pitch (149 Tooth)	07-01841	**$531.00**
149-24HT-H	24 Volt	Replaces B&C Starters on 24 Volt Robinson Helicopters	07-01844	**$531.00**

SKY-TEC FLYWEIGHT™ STARTERS FOR LYCOMING ENGINES

Newly Improved! The original Flyweight™ starter that started the lightweight revolution is now even stronger and more durable thanks to an improved strontium-fortified aluminum alloy and beefed-up mount castings. Still one of the lightest Lycoming starters available at 8.25 lbs. Spins twice as fast as most heavyweight OEM starters. Zero maintenance. FAA-PMA approved for most Lycoming engines. Some airframe applications may require modification for best fit. LS model has the solenoid offset to the left side and PM model is offset to the right. Confirm aircraft fit, ring gear tooth count and voltage before ordering. Generous 2-Year factory warranty. Note: The LS Solenoid is at the 2:30 position and the PM Solenoid is at the 7:30 position when viewed from the front.

Model	Part No.	Price
122-12LS	07-06245	**$380.00**
149-12LS	07-06246	**$380.00**
122-12PM	07-06252	**$380.00**
149-12PM	07-06253	**$380.00**
122-24PM	07-06249	**$452.00**
149-24PM	07-06257	**$452.00**

RECOMMENDED STARTER BY AIRCRAFT
For complete listing of recommended Sky-Tec™ Starters by Aircraft make & model, please see the Aircraft Spruce website for a link to the Sky-Tec™ website **at www.aircraftspruce.com**

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AIRCRAFT SPRUCE EAST PEACHTREE CITY, GA • (877) 477-7823
Prices Subject to Change Without Notice

LAMAR STARTERS

LAMAR STARTERS (NEW)

Lamar Permanent Magnet Starters represent the next generation in starter technology, setting new standards in performance and reliability. These new lightweight starters deliver exceptional torque to start virtually any general aviation piston engine in nearly any environment, yet weigh about 40 percent less than conventional starters. The key is Presicion's patented permanent magnet motor design. It replaces the bulky windings of a conventional starter motor with lightweight permanent magnets. This revolutionary design not only eliminates considerable weight, but results in more efficient starter operation and improved performance under all conditions. During extensive performance testing, Lamar starters consistently provided quicker engine starts than conventional starters under a variety of operating conditions. These TBO starters are built to go the distance between engine overhauls. Conventional starters generally don't last. They usually have to be pulled off for repair or replacement at least once during the life of the engine.

P/N 12V	PRESTOLITE	LYCOMING	PRICE
PM1203	MZ-4204	76210	**$528.00**
PM1201	MZ-4205	76213	**$489.00**
PM1201	MZ-4206	76211	**$489.00**
PM1201	MZ-4207	75699	**$489.00**
N/A	MZ-4208	75787	**---**
PM1204	MZ-4216	LW-10556	**---**
PM1201	MZ-4217	LW-14209	**$489.00**
PM1201	MZ-4218	LW-14207	**$489.00**
N/A	MZ-4219	LW-14211	**---**
PM1204	MZ-4220	LW-14215	**---**
PM1201	MZ-4221	LW-15573	**$489.00**
PM1201	MZ-4222	LW-17771	**$489.00**
N/A	MZ-4223	LW-15576	**---**
PM1202	MZ-4224	LW-16460	**---**
PM1201	MZ-4225	LW-18047	**$489.00**
PM1201	MZ-4226	LW-18989	**$489.00**
CONTINENTAL			
PM1207	---	646238	**$538.00**

P/N 24V	PRESTOLITE	LYCOMING	PRICE
PM2401	MHB-4001	76212	**$495.00**
PM2401	MHB-4002	75700	**$495.00**
PM2401	MHB-4003	76214	**$495.00**
N/A	MHB-4004	77879	**---**
PM2401	MHB-4005	78791	**$495.00**
PM2401	MHB-4007	LW-11936	**$495.00**
PM2401	MHB-4008	LW-12023	**$495.00**
PM2401	MHB-4009	LW-12159	**$495.00**
PM2401	MHB-4010	LW-14208	**$495.00**
N/A	MHB-4011	LW-14212	**---**
PM2401	MHB-4012	LW-14210	**$495.00**
PM2402	MHB-4013	LW-14213	**---**
PM2401	MHB-4014	LW-14214	**$495.00**
PM2403	MHB-4015	LW-15483	**$505.00**
PM2401	MHB-4016	LW-15572	**$495.00**
N/A	MHB-4017	LW-15571	**---**
PM2402	MHB-4018	LW-15577	**---**
PM2401	MHB-4019	LW-15574	**$495.00**
PM2401	MHB-4020	LW-18990	**$495.00**
N/A	MHB-4004	77879	**---**
N/A	MHB-4005	LW-12787	**---**
PM2403	MHB-4001	LW-16207	**$505.00**
CONTINENTAL			
PM2407	---	642275	**$537.00**

LAMAR STARTER OVERHAUL KITS

Lamar Technologies overhaul kits include all parts necessary for a normal major overhaul, as well as any special tools, lubricants, and thread compounds. In addition, a complete digital Overhaul and Parts manual is included.

Description	Part No.	Price
PM1201-OHK - Fits all PM1201/1202 starters	07-01269-1	**$196.95**
PM1203-OHK - Fits all PM1203 starters	07-01270-1	**$196.95**
PM1204-OHK - Fits all PM1204 starters	08-06007-1	**$247.50**
PM2401-OHK - Fits all PM2401/2402 starters	07-01272-1	**$196.95**
PM2403-OHK - Fits all PM2403 starters	07-01273-1	**$196.95**
PM2404-OHK - Fits all PM2404 starters	08-06009-1	**$196.95**

FOR A COMPLETE LISTING OF LAMAR STARTER OVERHAUL KITS & REPLACEMENT PARTS, SEE WWW.AIRCRAFTSPRUCE.COM

LAMAR OVERHAULED STARTERS

In addition to the factory new Lamar starters listed above, Aircraft Spruce also stocks overhauled Lamar starters. The PM1201 starter is ideal for the Lycoming O-320 & O-360 series engines and the PM2401 is applicable to the Lycoming O- 540 series engines.

Like the new Lamar starters, these overhauled starters are FAA/PMA approved, fully bench tested, provide superior cold weather performance, utilize a patented permanent magnet design, use a planetary gear reduction for optimum speed and torque (110 RPM), and draw less amperage than lightweights to help lengthen battery life.

Overhauled PM1201 starter ..... P/N 08-01201 ..... **$334.95**
Overhauled PM2401 starter ..... P/N 08-02401 ..... **$365.95**
Overhauled PM1204H starter..... P/N 08-06011 ..... **$294.95**
Overhauled PM2404H starter..... P/N 08-06015 ..... **$319.95**
Overhauled PM1207H starter..... P/N 08-06012 ..... **$270.95**
Overhauled PM2407H starter..... P/N 08-06016 ..... **$303.95**

LAMAR SUPERSWITCH™ SOLID STATE CONTACTOR

The SuperSwitch™ is designed to replace all contactors on the aircraft with a wide variety of applications from master contactor through starter, external power, and alternator contactors. The SuperSwitch reduces weight and increase reliability through solid state technology. Both Bi-directional and Uni-directional functions allow multiple applications. Current limiting is available for special applications requiring "Smart" technology. Experimental only.

Features: • Up to 66% lighter weight • 99% more reliable • 5 to 44 volt operating range • Replaces all mechanical contactors • Solid state technology • No moving parts • Up to 600 amps momentary operation • Up to 100 amps continuous • Negative or positive turn on

Specifications: • Input: Input control current 5 to 44 volts • Output: Operating DC voltage range 0 to 44 volts • Maximum continuous current 100 amps • Maximum surge current (IDM) - .1mS: 1200 • Ambient operating temperature range: -40 C to 85 C • Weight: Uni-directional .3 lbs • Bi-directional .5 lbs • Encapsulation: Potting or conformal coating

Description	Part No.	Price
Uni-Directional Superswitch- Neg.	07-01283	**$119.95**
Bi-Directional Superswitch - Neg.	07-01284	**$149.95**
Uni-Directional Superswitch- Pos.	07-01383	**$119.95**
Bi-Directional Superswitch - Pos.	07-01384	**$149.95**

EP

LAMAR ELECTRICAL COMPONENTS

LAMAR MC10 MASTER ELECTRICAL CONTROL UNIT

MC10

The Lamar MC10 is a master electrical control unit developed for 14V and 24V single engine experimental aircraft. It is designed to mount on the firewall or fuselage. It houses all the major electrical components except for the battery, starter, and alternator. the MC10 provides a greater degree of protection against moisture, dust and accidental electrical shorts along with the convenience of all the primary electrical components in one location. Features low installation cost, ease of installation and simplified troubleshooting and repair with several new performance & safety features.

PM Starter

XT60

The MC10 embodies the following functions: • Master (battery) (solenoid) control closing the master switch on pilot's panel connects the battery to the primary bus. • 3 aircraft bus outputs, protected via resetable circuit breakers. • Alternator Control; voltage regulation, overvoltage protection, field output overload protection, alternator feeder fault protection • Starter control (solenoid) • Low voltage warning.(L model also includes overvoltage, over-current and reverse-current annunciation) • Battery charge/ discharge ammeter drive (current shunt) • Clock output (always-on) protected with easily accesible external mounted fuse. • Ground power receptacle & control (solenoid) with reverse polarity protection.

Description	Part No.	Price
Lamar Master Controller only 14V Exper.	11-03295	**$1,162.00**
Lamar Master Controller 28V Exper.	11-03298	**$1,197.00**
Lamar XT2860 New Alternator 28	07-00839	**$650.00**
Lamar Master Control 14V Exp. MC-10	11-03295	**$1,162.00**
Lamar AC14-EXP 28V	11-05041	**$159.95**
Lamar GC07-EXP Generator Control	11-05042	**$1,414.00**
Lamar GC11-EXP Generator Control	11-05043	**$1,189.00**
Lamar MC09-T1 Master Control Turbo	11-05055	**$3,750.00**

LAMAR ELECTRICAL COMPONENTS

LAMAR #	DESCRIPTION	APPLICATIONS	OUR P/N	PRICE
A-00258-1	Switch, Alternator INOP	Piper: PA23 Series, PA30, PA39, PA38, PA28 Series, PA32 Series, PA34-200T, PA34-220T, Maule*, Raytheon:A36, V358, F338, F33, F33A, F33C, E33a, V35A, 36	07-01146	**$89.50**
A-00258-2	Switch, Alternator INOP	Piper: PA23 Series, PA31Series, PA34, PA31P, Twin Commander 700 Maule*, Raytheon: 57, E55., 5895B55, D55	07-01147	**$91.50**
B-00266-2	Overvoltage Relay, 28V, Piper	Piper: PA23-235, PA23-250, PA31 Series, PA36 Series, Islander*: BN2A, BN2B, BN2T. BN2T-4, Trislander*: BN2A MK 11 Series	07-01148	**$261.95**
B-00286-1	Regulator, 28V, Parallel OP (twin)	Piper:PA23-235, PA23-250, PA31, PA300, PA44-180/180T, PA31P, PA34-220T, Cessna*:421, 414, 402, 340, 310	07-01449	**$311.95**
B-00288-1	Regulator, 14V, Parallel OP (twin)	Piper: PA23-235, PA23-250, PA30,PA39, PA34-200T, PA34-220T, PA44-180, PA44-180T, Gulfstream Aero*	07-01150	**$243.95**
B-00289-2	Overvoltage Relay, 14V	Piper: PA18, PA30, PA39, PA23-235, PA23-250, PA28 Series, PA32 Series, PA34-220, PA34-220T, Beech*: 19A, B19, M19A, 23, A23, A23A, A23-19, A23-24, B23, C23, A24, A24R, B24R, C24R, Bellanca*: 14-19, 19-2, 19-3, 19-3A, 17-30, 31, 31TC, 17-30A, 31A, 31ATC, Citabria*: 70CAA, 7ECA, 7GCBC, 7KCAB, 1GCBC, 1KCAB, Commander*: 112, B, TC, TCA, Cessna*:175, 185, 188, Grumman*: AA-1, Lake*: LA-4, A, P, Maule*: M-5-180C, 235C, M-6-180, 235, M-7-235, MX-7-180, 235, Varga*: 2150A	07-01151	**$177.95**
B-00306-3	Regulator, 28V, Parrallel OP (twin)	Piper: PA60, PA60-601, PA60-601P, PA60-602P, PA60-700P	07-01153	**$352.95**
B-00307-1	Voltage Regulator, 28V	Twin Commander 700, 500s	07-01454	**$246.95**
B-00325-1	Timer, Pneumatic, 28V	Piper: PA23 Series, PA31 Series, PA31T Series	07-01455	**$240.95**
B-00331-2	Voltage Regulator, Type 1, 14V	Piper: PA38	11-04130	**$182.95**
B-00337-0	Overvoltage Relay, 28V	Twin Commander 690C, 695, 695A, 690D, 695B	07-01456	**$209.95**
B-00337-1	Overvoltage Relay, 28V	Twin Commander 700	07-01157	**$209.95**
B-00341-1	Time Delay Switch	Piper: PA31 Series, PA42-720	07-01158	**$537.00**
B-00345-1	Thermostat Control	Piper: PA31T, T1	07-01159	**$3,429.00**
B-00353-1	Timer Module, Surface De-ice	Piper: Pa31 Series, PA31P, PA42-720, PA42-1000	07-01161	**$630.00**
B-00363-1	Timer, Courtsey Light, Beech-28V	Raytheon: E55, 58, 58TC, 58P, 38P, 38P-1, 38P-2, 390	07-01162	**$196.95**
B-00364-1	Timer Courtsey Light (15 min.)	Piper: PA42-720, PA42-1000, PA46-350, PA31T Series	07-01163	**$177.95**
B-00364-2	Timer Courtsey Light (30 sec.)	Piper PA 31 Series, PA46-310, PA46-350	07-01164	**$177.95**
B-00368-2	Alternator Control, 28V Load	PA28/PA-32 Series - See www.aircraftspruce.com for listing.	07-01803	**$424.95**
B-00368-25	Alternator Control, 28V Load	Experimental	11-03164	**$239.95**
B-00369-2	Timer (15 sec.)	Piper: PA31T3	07-01166	**$238.95**
B-00371-1	Alternator Control, 14V	Piper: PA 28 Series, PA32 Series, PA38, Bellanca*: 80CB, 8KCAB, Maule*: M-5-180C, 235C. M-7-235, MT-7-235, M-8-235, MX-7-180, MXT-7-160, 180, 235, Aviat*:Pitts S-2B, S2S, Zenair*: Zenith 2000	07-01167	**$284.95**
B-300371-25	Alternator Control, 14V	Experimental	11-03163	**$252.95**
B-00372-1	Alternator Control,Load Balancing	Raytheon: 58, E55, 95B55	07-01168	**$624.00**
B-00375-1	Monitor Low Voltage	Twin Commander 690C, 690D, 695, 695A	07-01169	**$75.50**
B-00375-2	Monitor Low Voltage	Piper: PA31P, PA31T Series, PA34 Series, PA46-310, PA46-350, PA31 Series	07-01170	**$77.50**
B-00378-4	Monitor Low Voltage, 14V	Experimental	11-03166	**$162.95**
B-00378-5	Monitor Low Voltage, 28V	Experimental	11-03167	**$174.95**
B-00380-2	Sensor-Alt Out, 28V Pulsed	Raytheon: 58	07-01171	**$81.75**
B-00382-1	Alternator Control, 28V Load	Piper: PA31-350, PA34-220, PA46-310, PA46-350, PA31	07-01172	**$620.00**
B-00387-1	Voltage Regulator with Overvoltage Protection, 28V	Raytheon: A36, F33A, B36TC, 58, V35B, F33C	07-01173	**$367.95**
B-00392-1	Alternator Control, 14V, Piper	Piper: PA44-180, PA44-180T	07-01174	**$526.00**
B-00393-1	Motor Control	Piper: PA46-310P, PA60-700P	07-01175	**$558.00**
B-00396-2	Dimmer Assembly, 14V/28V	Experimental	11-03165	**$179.95**
B-00403-1	Voltage Regulator with Overvoltage Protection, 14V	Raytheon: F33A, F33C, V35B, A36	07-01176	**$378.95**

LAMAR SOLENOIDS

Aviation grade solenoid for applications in continuous duty, fitting current GA production aircraft as well as legacy aircraft. Replaces both single terminal switched units, as well as the current double terminal switched units in production today. All units have multiple quality and functional tests prior to certification and delivery.
Features: Replaces most contactors in general aviation. Available in 12 or 24 Volt. Available in Continuous or Intermittent. All units inspected and tested to performance standards

Description	Part Number	Price
X61-0028 12V Continuous	07-01875	**$49.95**
X61-0029 24V Continuous	07-01876	**$49.50**
X61-0030 12V Intermittent	07-01877	**$81.85**
X61-0031 24V Intermittent	07-01878	**$81.85**

INTAKE HOSES

Lycoming 1-3/4" Intake Hose 69603 ..... **$7.50**
Cont. #22800 OUTER & Cont. #21185 INNER Hose (8 sets required for A-65 thru 0-300) P/N 08-03700 .. **$6.60**
Cont. #22800 OUTER Intake Hose 22800 ..... **$4.95**
Cont. #21185 INNER Intake Hose 21185 ..... **$1.62**

INTAKE GASKETS

Cont. #21327 (4) for A-65 only. **$1.27 ea**
Cont. #22250 (4) for C-85 — 0-300 .... **$1.56 ea**

EXHAUST GASKETS

Cont.. #21493 (08-05237) for A-65 thru 0-300 **$1.25 ea**
Cont. #632837 Stainless Steel ..... **$2.40 ea**
#77611 for 0-320 - not for H series..... **$7.70 ea**

EXHAUST NUTS

Cont. #22022 (5/16-24) for A-65 thru 0-300 (8) ..... **$1.23 ea**
Cont. #MS20500-428 (1/4-28) for 0-470 (12) ..... **$2.45 ea**
Lyc. #STD1410 (5/16-18) .. **$2.30 ea**

ROCKER BOX GASKETS

Cont. #530162 for A-65 thru 0-300 (4 required)..... **$5.90 ea**
Lyc. #75906 for 0-235 thru 0-320 (4 req) .... **$2.65 ea**

ROCKER BOX COVER SCREWS

Cont. #535091 (24) **$0.66 Ea**
Lyc. #STD1925 (24)**$1.28 Ea**

CYLINDER BASE SEALS

Cont. #21477 for A-65 thru 0-200 (4)..... **$0.79 Ea**

MAGNETO FLANGE GASKET

Cont. ..... **$7.30 Ea**
Lycoming #62224 ..... **$2.15 Ea**

TACH OIL SEAL

Cont. #642714 (was #640087) for A-65 thru 0-300..... **$8.85**
Lyc. #LW14260 for 0-235, 0-290.. **$6.25**

OIL PRESSURE HOUSING GASKETS

Lyc. #61173 for 0-235, 0-290 (1) (2 with oil cooler) ..... **$1.88 Ea**

CARBURETOR GASKETS

For A-65 thru 0-200 Cont. #21051 (Top)..... **$2.55 Ea**
Cont. #21323 (Bottom)**$1.88 Ea**

GENERATOR DRIVE BELT

Lyc. #60886 for 0-235, 0-290 ..... **$66.85**

"O" SERIES LYCOMING VALVE COVER GASKETS

These homebuilder's Lycoming valve cover gaskets replace the original cork gaskets which come standard on Lycoming 0-235, 0-320 and 0-360 engines. NOT FAA approved. For experimental aircraft only.
P/N 08-01187..... **$3.95**

ANGLED VALVE "IO" SERIES LYCOMING VALVE COVER GASKETS

These gaskets are for the fuel injected "IO" series, sometimes referred to as the Angle Valve cylinder Lycoming They are not FAA approved and are not manufactured under a PMA. These are used on Angled valve Lycoming engines IO-360, IO-540, IO-720. P/N 08-05882.. **$5.85**

MAGNETO DRIVE GEAR

Used on Bendix S4LN-21 and S4RN-21 magnetos. Not to be used on a C-90-8 engine. FAA PMA'd #36066 ..... **$657.00**

PUSH ROD SEALS

Continental #539840 for A-65 thru 0-200 (8)..... **$1.57 Ea.**

OIL SUMP GASKET & PLUG

Cont. #3577 Gasket **$1.28**
Cont. #532432 Plug..... **$14.60**

CRANKSHAFT OIL SEALS

Cont. #530019 for A-65 thru 0-200, Flanged Shaft..... **$39.75**

Cont. #24321 for A-65 and C-85, Taper Shaft **$59.70**
Lyc. #76940 for 0-235, 0-290..... **$27.60**

AN900 COPPER GASKETS

Cont. Engine Applications, A-65 thru 0-200 (1) each:
-10: Oil sump drain plug thermometer hole in oil screen, suction tube ass'y ..... **$0.44 Ea**
-14: Oil relief valve..... **$0.58 Ea**
-22: Tach drive housing ..... **$1.98 Ea**
-28: Oil pressure screen..... **$0.56 Ea**

AERO-SEAL HOSE CLAMPS

Aero-Seal Clamps for Cont. Intake Hoses.
P/N QS100-M32W..... **$1.95 Ea**

PROP GOVERNOR GASKET

P/N 07-00878..... **$15.85**

RING HOSE CLAMPS

Cont. #536388 (16) Required **$2.25 Ea**

ENGINE MOUNT BUSHINGS

Cont. #22387 for A-65, C-85, C-90 except C-90-14F (8) Req'd **$2.30 Ea**

Lyc. #60883 for 0-235 and 0-290, 7/8" hole (8)Req'd..... **$18.50 Ea**
Lyc. #71032 for 0-320 with 1" hole (8) Req'd **$9.75 Ea.**

ENGINE MOUNT WASHERS

Cont. #21530 for A-65, C-85, C-90 except C-90-14F (8) Req'd ..... **$11.75 Ea**

Lyc #STD619 for 0-235 thru 0-320 (8) Req'd..... **$8.90 Ea.**

LYCOMING PARTS TO CONVERT 0-235 WITH SPIN ON OIL FILTER TO OIL SCREEN

Oil Pressure Screen Housing P/N 68974 ..... **$536.00**
Oil ScreenP/N 62817..... **$99.65**
Oil Screen Housing Gasket P/N 61173 ..... **$1.88**
FOR OIL COOLER INSTALLATION ADD:
SpringP/N 69436 ..... **$49.85**
PlungerP/N 62415 ..... **$34.75**
GasketP/N AN900-10 ..... **$0.44**

Cont. Oil Screen .....P/N 08-01544 ..... **$222.95**

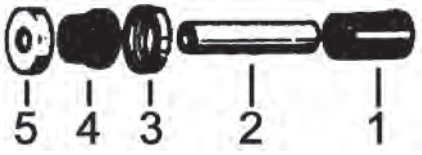
OIL COOLER PARTS SHOWN ABOVE NOT USED WITH THERMAL VALVE ASS'Y

GENERATOR ATTACHING PARTS FOR CONT. C85, C90 & 0-200

Ref.	P/N	Item	Price
#2	352068	Oil Seal	$8.75
#3	530406	653983 Hub Coupling	$275.95
#4	07-01328	Attaching 653982 Retainer	$24.75
#5	626543	Bushing*	$13.50 ea
#6	530407	Sleeve	$95.75
#7	531325	Gear	$432.95
#8	530412	Slotted Nut	$33.00
#9	352179	Starter Gaslet	$6.95
#10	35019	Generator Gasket	$7.65

*Note: 626543 is sold as a pair. If only one bushing is needed, order PN 08-06218 ..... **$6.75**

ENGINE MOUNTING PARTS FOR CONT. C-90-14F & O-200 ONLY



Ref.	P/N	Item	Qty.	Price Each
#1	628555-16	Hose	(4)	$8.85
#2	530627	Spacer	(4)	$27.50
#3	530626	Seat	(8)	$18.75
#4	530740	Bushing	(8)	$15.50
#5	530741	Washer	(8)	$7.50
	AN6-55	Bolt	(4)	$10.75
	AN310-6	Nut	(4)	$0.97
	MS24665-283	Pin	(4)	$0.03

ALTERNATOR & GENERATOR BELTS

Lycoming ..... 37A19773-376 (Alt.)..... **$66.50**
Lycoming ..... 37B19774-374 (Gen.) **$90.50**
Lycoming ..... 37B19774-325 (Gen.) **$66.85**
Continental ..... 539547-31.19..... **$28.75**

24031 VALVE SPRING

Continental Inner Valve Spring Used on C90 & O-200 Engines
P/N 07-24031..... **$12.50**

EP

CONTINENTAL ENGINE PARTS

C-85

	Price Each
639640 Bearing set, rod (2 req.)	$15.50
21477 Cyl base seal	$0.79
530917 Crankshaft seal taper	$49.95
SA402151 Ex. stud	$3.85
22022 Ex. nut	$1.23
646612 Exhaust Valve	$195.95
653728 Gasket, rocker	$5.90
632837 Gasket, no-blow	$2.40
22250 Gasket, intake	$1.56
646539-A1 Gasket set, moh	$118.95
21185 Intake hose	$1.62
641792 Intake Valve (30 degree)	$65.75
530019 Nose seal, flange sft	$39.75
530830 Piston pin	$62.50
539840 Push rod packing	$1.57
649632-A1 Ring set, steel barrel	$34.50

O-200

	Price Each
627246-A1 Bearing set, main	
639640 Bearing set, rod (2 req.)	$15.50
653851 Camshaft followr,tappet	$289.95
21477 Cyl base seal	$0.79
530019 Crankshaft seal	$39.75
SA402151 Ex. stud	$3.85
22022 Ex. nut	$1.23
646612 Exhaust Valve	$195.95
530162 Gasket, rocker	$5.90
627429 Gasket, no-blow	$10.75
22250 Gasket, intake	$1.56
646539-A1 Gasket set, moh	$118.95
22800 Intake hose	$4.95
641792 Intake Valve (30°)	$65.75
646255 Piston	$271.95
530830 Piston pin	$62.50
539840 Push rod packing	$1.57
649632-A1 Ring set, steel barrel	$34.50
653394 Ring set, chrm barrel	$29.50

O-300

	Price Each
639640 Bearing set, rod (2 req.)	$15.50
653851 Camshaft follower tappet	$289.95
21477 Cyl base seal	$0.79
530917 Crankshaft seal	$49.95
SA402151 Ex. stud	$3.85
22022 Ex. nut	$1.23
646612 Exhaust Valve	$195.95
530162 Gasket, rocker	$5.90
627429 Gasket, no-blow	$10.75
22250 Gasket, intake	$1.56
6465417-A1 Gasket set, moh	$151.95
21185 Intake hose	$1.62
641792 Intake Valve (30°)	$65.75
646255 Piston	$271.95
530830 Piston pin	$62.50
539840 Push rod packing	$1.57
649632-A1 Ring set, steel barrel	$34.50
625958 Springs outer	$8.50

O-470 ANGLE HEAD

	Price Each
653888 Camshaft follower tappet	$196.95
SSR532200 Cyl base seal	$3.60
PA641250 Crankshaft seal	$46.50
SSR401893 Ex. stud	$3.26
Ex. nut MS20500-428	$2.45
643967 Ex. nut	$2.45
SA643873 Exhaust Valve	$155.95
653191 Gasket, rocker, angle	$9.75
SSR628260 Gasket, no-blow	$9.90
SSR536413 Gasket, intake	$0.60
646546-A1 Gasket set, moh	$213.95
642917-1 Intake hose	$26.75
646263 Piston	$165.95
539467 Piston pin	$55.75
SA534610 Push rod packing	$1.15
649226 Ring set, steel barrel	$136.95
649226CP Ring set, chrm barrel	$120.95
SSR539740 Rocker shaft	$32.50
637837 Spring, valve, outer	$8.25
631521 Springs, valve, inner	$4.90

IO-470 ANGLE HEAD

	Price Each
SSR532200 Cyl base seal	$3.60
PA641250 Crankshaft seal	$46.50
SA402151 Ex. stud	$3.85
Ex. nut MS20500-428	$2.45
643967 Ex. nut	$2.45
SA643873 Exhaust Valve	$155.95
653191 Gasket, rocker, angle head	$9.75
628260 Gasket, no-blow	$9.90
SSR536413 Gasket, intake	$0.60
646546-A1 Gasket set, moh	$213.95
642917-1 Intake hose	$26.75
646283 Intake Valve	$89.75
539467 Piston pin	$55.75
SA534610 Push rod packing	$1.15
SSR539740 Rocker shaft	$32.50

IO-520 TSIO-520

	Price Each
630826 Bearing set, rod	$7.95
653888 Camshaft follower tappet	$196.95
SSR641066 Cyl base seal	$6.95
PA641250 Crankshaft seal	$46.50
SSR401893 Ex. stud	$3.26
SSR638125 Ex. stud, rosan	$6.50
Ex. nut MS20500-428	$2.45
643967 Ex. nut	$2.45
SA643873 Exhaust Valve	$155.95
653191 Gasket, rocker	$9.75
SSR628260 Gasket, no-blow	$9.90
SSR536413 Gasket, intake	$0.60
642917-1 Intake hose	$26.75
646283 Intake Valve	$89.75
654850 Piston IO-520	$164.95
630046 Piston pin	$45.50
SA534610 Push rod packing	$1.15
652148 Ring set, steel cyl IO-520	$141.95

CONTINENTAL ENGINE BELTS

	Price Each
539547-30.00	$28.50
539547-31.19	$28.75
539547-32.00	$37.50
539547-35.00	$46.25
642759	$41.75
37A19973-376 (76026)	$66.50
37A19973-382 (74519)	$72.75
37B19774-325 (60886)	$66.85
37B19774-341 (71579)	$71.50

CONTINENTAL CYLINDERS

	Price Each
O200 new assy 654377A10	$1,216.00

LYCOMING ENGINE PARTS

O-235 L,N SERIES

	Price Each
69373 Bearing, rod, 8 req.	$24.25
71105 Camshaft follower tappet	$106.95
SSR62869 Cyl base seal	$5.50
STD-2180 Cyl drain hose	$5.75
LW-11997 Crankshaft seal	$39.95
SSR31C-12 Ex. stud	$6.45
STD-1410 Ex. nut	$2.30
41271 Fuel pump, mechanical	$207.95
75906 Gasket, rocker 4 required.	$2.65
77611 Gasket, no-blow	$7.70
71973 Gasket, intake	$1.46
SSR61499-1 Gasket set, moh	$228.95
SSRSTD-1196 Intake hose 1-1/2"	$4.55
LW11901 Intake Valve	$86.95
SSRLW-13445 Piston pin	$71.50
68028 Piston pin plug	$8.60
SSRLW-18661 Push rod packing	$3.18
LW-11800 Spring, valve outer	$27.75

O-290

	Price Each
69373 Bearing set, rod	$24.25
SSR72877 Camshaft follower	$130.95
SSR71481 Cyl base seal	$3.35
SSR31C-12 Ex. stud	$6.45
STD-1410 Ex. nut	$2.30
41271 Fuel pump, mechanical	$207.95
75906 Gasket, rocker	$2.65
77611 Gasket, no-blow	$7.70
71973 Gasket, intake	$1.46
SSR69371-1 Gasket set, moh	$261.95
SSRSTD-1196 Intake hose 1-1/2"	$4.55
Intake Valve 73938	$19.90
69841 Piston	$358.50
SSRLW-18661 Push rod packing	$3.18
62916 Ring, compression steel cylinder	$97.00
69401 Ring, oil control steel cyl	$20.75
LW11795 Spring, Valve, inner	$17.50
LW-11800 Springs, Valve, outer	$27.75
69373 Bearing, rod	$24.25
SSR72877 Camshaft follower	$130.95
SSR71481 Cyl base seal	$3.35
LW-11997 Crankshaft seal	$39.95
SSR31C-12 Ex. stud	$6.45
STD-1410 Ex. nut	$2.30
LW-19001 Exhaust Valve	$243.95

LYCOMING CYLINDERS

	Price Each
O-235C,E,H chrome stud	$1,522.00
LW15318 O320H new ass'y	$1,522.00
LW12427 O-360 new ass'y	$2,139.00
LW12988 O540/HIO360 new ass'y	$2,738.00

O-320

	Price Each
71973 Gasket, intake	$1.46
SSRSTD-1196 Intake hose 1-1/2	$4.55
69603 Intake hose 1-3/4	$7.50
73938 Intake Valve	$19.90
75089 Piston, high compression	$127.95
75413 Piston, low compression	$167.95
SSRLW-13444 Piston pin	$84.60
SSRLW-18661 Push rod packing	$3.18
74241 Ring, compression steel cylinder	$39.80
SSR73857 Ring, oil ctl steel cylinder	$31.75

O,IO-360

	Price Each
SSA72877 Camshaft follower	$90.50
SSR71481 Cyl base seal	$3.35
LW-11997 Crankshaft seal	$39.95
SSR31C-12 Ex. stud	$6.45
STD-1410 Ex. nut	$2.30
LW-19001 Exhaust Valve	$243.95
LW15473 Fuel pump, mech.	$379.00
75906 Gasket, rocker	$2.65
77611 Gasket, no-blow	$7.70
71973 Gasket, intake	$1.46
SSR75439-1 Gasket set, moh	$267.95
69603 Intake hose 1-3/4"	$7.50
75089 Piston, high compression	$127.95
SSRLW-18661 Push rod packing	$3.18
74241 Ring, comp steel cyl	$39.80
SSR73857 Ring, oil ctk steel cyl	$31.75
LW11795 Springs, Valve, Inner	$17.50
LW-11800 Springs, Valve, Outer	$27.75

O,IO-540

	Price Each
SSR72877 Camshaft follower	$130.95
SSR71481 Cyl base seal	$3.35
13792 Crankshaft seal	$15.85
SSR31C-12 Ex. stud	$6.45
STD-1410 Ex. nut	$2.30
LW15473 Fuel pump, mech.	$379.00
75906 Gasket, rocker, most	$2.65
77611 Gasket, no-blow	$7.70
71973 Gasket, intake	$1.46
SSR71569-1 Gasket set, moh	$357.95
69603 Intake hose 1-3/4"	$7.50
73938 Intake Valve	$19.90
75089 Piston	$127.95
60828 Piston pin plugs	$11.50
SSR70310 Push rod packing	$0.87
74241 Ring, comp steel cyl	$39.80
SSR73857 Ring, oil ctl, steel cyl	$31.75
LW11795 Spring, Valve, inner	$17.50
LW-11800 Springs Valve, outer	$27.75

OIL COOLER GASKET SETS

Our P/N	Continental P/N	Price ea.
08-00951	631059/630849	$18.50
08-00952	537282 4 Req./eng.	$16.45
08-00954	626342	$13.35
08-00955	654554	$27.15

Our P/N	Continental P/N	Price
08-00956	626342	$13.35
08-00957	654554	$27.15
08-00958	626342	$13.35
08-00959	654554	$27.15
08-00960	631059/630849	$15.95

Our P/N	Continental P/N	Price
08-00961	632372	$16.95
08-00962	632372	$16.95
08-00963	629116	$34.29
08-00964	629116	$28.59

CHALLENGER AIR FILTERS

CHALLENGER AVIATION HIGH-FLOW AIR FILTER W/ K&N FILTER MEDIA

Features & Benefits of Prime air filters: • 40% - 50% better airflow • Can be washed and serviced up to 25 times • Increase horse power 2%-4% •Save money and improve engine efficiency • FAA-PMA approved • Properly serviced, can be used to TBO of an engine • Ecologically sound • Better takeoff and climb-out performance • Fire retardant • Faster airspeed and/or better fuel consumption • Have been used on high performance vehicles for 40yrs • Accordion fold design provides up to 5 times the filtering surface of non-pleated designs. **PART NUMBERS WITH A -1 INCLUDE GREASE.**

Model	Application	Installation	Part No.	Price
CPE-1957	Aero Commander - A-9, A9A, A9B	Brackett BA-104 Fram CA-161PL	08-00721-1	**$219.95**
CP-1150	Aeronca - S65, S65CA, 7AC, 7ACA, 7 BCM(L-16A) ARMY, 7CCM(6-16B) ARMY, 7DC, 7EC, 7FC, 7JC, 7ECA, 7GCAA, 7GCBC, 7KC, 7KCAB, S7AC, S7CCM, S7DC, S7EC P/N CP-3274 is the installation kit. Use P/N CP-2402 to replace gasket at annual.	Brackett BA-4106	08-00843	**$190.84**
CPE-1957	Aeronca - 7GC, 7GCA, 7HC, 7GCB, 7GCBA, 7KC	Donaldson P10-4145, Fram CA-161-PL, Air Maze 13203	08-00721-1	**$219.95**
CP-2004	Beech Baron - 95-C55 S/N TE-1 thru TE-451 except TE-50, 95-C55A S/N TE-1 Thru TE-451 Except TE-50, D55 S/N TE-452 Thru TE-492, D55A S/N TE-452 Thru TE-492, E55 S/N TE-768 Thru TE-1079, E55A S/N TE-768 Thru TE-1079 , 58 S/N TH1-TH740 No sealing grease or gasket required for this application.	Donaldson P12-7996, Air Maze 121128-2, Brackett BA-6210-1	08-01024	**$210.49**
CP-2003	Beech Bonanza/Debonaire - 35, A35, B35 S/N D2606 &UP, CBG35, 35-33, 35-A33, 35-B33, 35-C33, H35, J35, K35, M35, N35, P35, V35, V35A, V35B, S35, E33 all 225 H.P., E33A, F33, F33A, E33C, F33C, G33, 36, A36, A36TC, B36TC, G36, T-34 with STC SA1450SW. A45(T-34A) with STCSA1864SW, D45(T-34B) WITH STC SA1864SW, , A45(B-45) with STC SA1864SW, A45(B-45) with SA1864SW, A45(T-34A) WITH STC SA1042GL, D45(T34B) with STC SA1042GL, A45(B-45) with STC SA1042GL. P/N C-P3276 is the install kit. Use P/N CP-2502 to replace gasket at annual.	Beech 35-380035-1-3-5-7 , Donaldson - P10-5304, P10-137627, Brackett - BA-7110, BA-7210, BA-7410	08-00816-1	**$237.95**
CPE-1957	Beech Musketeer - A23A, A23, A23-24, B23, 23	Brackett BA-104, Beech 169-3	08-07101	**$209.95**
CP-1182	Bellanca - 14-19-3-A, 17-30 P/N CP-3276 Is the install kit. Use P/N CP-2602 To replace gasket at annual.	Brackett BA-8110	08-00870	**$227.95**
CPE-1957	Bellanca - 17-30A	Brackett BA-104	08-00721-1	**$219.95**
CPE-1957	Brantly B2B	Fram CA161PL	08-00721-1	**$219.95**
CP-1150	Cessna - 120, 140, 150, 150A-M, A150K, A150L, A150M, 152, A152 P/N CP-3274 Is the install kit. Use P/N CP-2402 to replace gasket at annual.	Brackett BA-4106, Donaldson P10-7150, Cessna C294510-0201	08-00843	**$190.84**
CP-1172	Cessna - 170, 170A, 170B, 172, 172A-G, H, I, K, L, M, N, P, Q P/N CP-3274 Is the install kit. Use P/N CP-2302 To replace gasket at annual.	Cessna C294510-0301, Donaldson P10-7172, Brackett BA-5110	08-00902	**$182.95**
CPE-1173	Cessna - 172R, S	Donaldson P198281, Fram 3559	08-00894-1	**$250.95**
CP-1182	Cessna - 180, (exception 1953-1955 models), 180A-H, 180J-K, 182, 182A-H, 182J-R, T182T S/N T18208001 AND ON, 182T S/N 18280945 AND ON, 185, 185A-E, A185E, A185F P/N CP-3276 Is the install kit. Use P/N CP-2602 To replace gasket at annual.	Cessna 0750038-1-4, Donaldson P10-6150, Brackett BA-8110	08-00870	**$227.95**
CPE-1202	Cessna - 182S, S/N >s 18280001 thru 18280944	Donaldson P19-8290, Fram CA3717	08-00903-1	**$212.95**
CPE-1178	CIRRUS - SR-20, SR-22 No sealing grease required for this application.	Brackett BA-111	08-01221	**$210.54**
CPE-2175	CIRRUS - SR-22 with STC SA10925SC	BA-111	08-07404	**$271.95**
CP-2175	GREAT LAKES - 2T1A-1, 2T1A-2	12009, P57A, AC-6486197 BA-101	08-06282	**$189.95**
CP-4423	ENSTROM HELICOPTER - F-28A	CA151PL, A86A, AFP5	08-07388-1	**$207.95**
CPE-1040	GRUMMAN - AG CAT G164B	Brackett BA-105	08-00717-1	**$211.95**
CPE-1957	LAVIA S.A. - PA25, PA25-235, PA25-260(PRIOR TO S/N 1477)	Fram CA-161PL, Brackett BA-104	08-00721-1	**$219.95**
CP-1150	LUSCOMBE - 8, 8A, 8B, 8C, 8D, 8E, 8F, T-8F P/N CP-3274 Is the install kit. Use P/N CP-2402 to replace gasket at annual.	Brackett BA-4106	08-00843	**$190.84**
CP-1172	MAULE - M-4, M-4T, M-4C, M-4S, M-4-180C, M-4-180S, M-180T, M-4-220, M-4-220C,M-4-220S, M-4-220T, M-5-180C, MX-7-160, MX-7-180,M-5-210C, M-5-235C, M-5-210TC, M-5-220C, M-6-180, M-6-235, M-7-235 P/N CP-3274 Is the install kit. Use P/N CP-2302 To replace gasket at annual.	Brackett BA-6110, Donaldson P12-6491	08-00902	**$182.95**
CPE-1178	MAULE - M-4-210, M-4-210C, M-4-210S, M-4-210T, M-5-210C No sealing grease required for this application.	Brackett BA-111	08-01221	**$210.54**
CP-1150	MOONEY - M10 P/N CP-3274 Is the install kit. Use P/N CP-2402 to replace gasket at annual.	Brackett BA-4106, Donaldson P12-0494	08-00843	**$190.84**
CP-1172	MOONEY - M20, M20A, M20B, M20C, M20D, M20G P/N CP-3274 Is the install kit. Use P/N CP-2302 To replace gasket at annual.	Fram 13219, Brackett BA-6110, Donaldson P12-6491	08-00902	**$182.95**
CP-1176	MOONEY - M20 E,F REPLACEMENT GASKET P/N-CP-2802	Donaldson P10-4065 Brackett BA-6310	08-01031	**$208.69**
CP-1174	MOONEY - M20J (201)	BRACKET BA-6210	08-00896	**$213.69**
CP-1175	MOONEY - M20K S/N 25-1000 & UP	Donaldson P13-6287	08-01020-1	**$173.95**
CPE-1179	MOONEY - M20M, M20R, M20S	MOONEY 600417-503, AM EDD4028, Donaldson P524257	08-01263-1	**$219.95**
CPE-1151	PIPER - PA-18 S/N 18-6964 and up O-320	Piper 454-118, Fram CA-122PL, Brackett BA-112	08-01032-1	**$203.95**
CPE-1040	PIPER - PA28R-180, PA28R-200, PA28R-200T, PA28R-201, PA28RT-201, PA28R-201T, PA30, PA-34-200, PA39, PA44-180, PA44-180T	Piper 460-630 Brackett BA-105	08-00717-1	**$211.95**
CPE-1957	PIPER - PA23-235A, PA23-235B , PA23-250B, PA-24 S/N 1479 and up, PA24-180 S/N 1477 and up, PA24-250 S/N 1477 and up, PA24-260, PA25-150, PA25-235, PA25-260 PRIOR TO S/N1477, PA28-140, PA28-150, PA28-160, PA28-180 ,PA28-181,PA28RT-201T, PA28-235,*PA32-260,*PA32-300 S/N 32-7640001 & UP, *PA32R-300, *PA32RT-300, *PA32R-300T, *PA32R-301 (SP), *PA34-200T, *PA34-220T, *PA36 W/CONT. *COVER PLATE CPE-0528 MAY BE REQUIRED WHEN REPLACING Brackett FILTER.	Fram CA-161PL, Piper 460-632, Brackett BA-104, PURO AFP-2, AC-6485710	08-00721-1	**$219.95**
CP-1150	PIPER - J3, J3C-65, J3C-65S, J5A, J5A-80, PA-11, PA-11S, PA-12, PA-12S, PA-16, PA-17, PA-18, PA-18A, PA-18S, PA-18-105, PA-20-115 PA-20-135, PA-22-108,PA-22-135, PA-22-150,PA-22-160, PA-38-112 P/N CP-3274 Is the install kit. Use P/N CP-2402 to replace gasket at annual.	Brackett BA-4106, Piper 460-638	08-00843	**$190.84**
CPE-1956	PIPER - PA28-151, 161 REPLACEMENT GASKET P/N CP-2604.	Brackett BA-16, Piper 560-679	08-01033	**$195.46**
CP-2003	PIPER - PA-28-236, S/N 7311001 thru 7911282 P/N C-P3276 Is the install kit.Use P/N CP-2502 To replace gasket at annual.	560-854, P13-6602	08-00816-1	**$237.95**
CP-3202	PIPER - PA-31-300, PA31-310, PA-31-325, PA-31-350, PA-32RT-300T	460-817 560-747 P10-6590	08-07405	**$223.95**
CP-1150	REIMS/(Cessna) F150G, F150H, F150J, F150K, F150L, F150M, FA150K, FA150L, F152, FA152 P/N CP-3274 Is the install kit. Use P/N CP-2402 to replace gasket at annual.	Cessna C294510-0201 Brackett BA-4106 Donaldson P10-7150	08-00843	**$190.84**
CP-1172	REIMS/(Cessna) - F172D, F172E,F172G, F172H, F172K, F172L, F172M P/N CP-3274 Is the install kit. Use P/N CP-2302 To replace gasket at annual.	Cessna C294510-0301 Brackett BA-5110 Donaldson P10-7172	08-00902	**$182.95**
CPE-1220	ROBINSON - R-44	ROBINSON C771-1	08-00720-1	**$206.95**
CP-4422	ROBINSON - R44 II	C-771-2	08-07380-1	**$228.95**
CPE-1104	ROBINSON - R-22	ROBINSON A771-1 Brackett BA-110	08-01021-1	**$211.95**
CP-2100	ROCKWELL COMMANDER - 100-180, 112, 112B	124748-019 Brackett BA-3910	08-05915	**$199.95**
CP-1172	SOCATA - TB9, TB10 P/N CP-3274 Is the install kit. Use P/N CP-2302 To replace gasket at annual.	Brackett BA-5110	08-00902	**$182.95**
CP-2003	SOCATA - TB20, TB21, TB200 FOR THIS AIRCRAFT ONLY THIS FILTER SHOULD BE ORDERED FROM FACTORY ONLY. GASKET CP-122 MUST BE INSTALLED. P/N C-P3276 INSTALLATION KIT IS INCLUDED.USE P/N CP-2502 TO REPLACE GASKET AT ANNUAL	Brackett BA-7110	08-00816-1	**$237.95**
CP-1150	TAYLORCRAFT - BF65, BF12-65, BFS65 P/N CP-3274 Is the install kit. Use P/N CP-2402 to replace gasket at annual.	Brackett BA-4106	08-00843	**$190.84**
CP-1150	TIGER AIRCRAFT/LLC/GULFSTREAM AMERICAN - AA-1, AA-1A, AA-1B, AA-1C, AA-5 P/N CP-3274 Is the install kit. Use P/N CP-2402 to replace gasket at annual.	Brackett BA-4210 AMS13202	08-00843	**$190.84**
CP-1960	TIGER AIRCRAFT / GULFSTREAM AMERICAN - AA5A	Brackett BA-19	08-07307	**$190.84**
CP-1958	TIGER AIRCRAFT/GULFSTREAM AMERICAN - TIGER AA-5B	Brackett BA-4106	08-01022-1	**$210.95**
CP-1150	UNIVAIR - A-2, A2A (FORNEY) F-1, F-1A - P/N CP-3274 Is the install kit. Use P/N CP-2402 to replace gasket at annual.	Brackett BA-4106	08-00843	**$190.84**
CP-1150	GLOBE/SWIFT - SWIFT GC-1A, GC-1B P/N CP-3274 Is the install kit. Use P/N CP-2402 to replace gasket at annual.	Brackett BA-4106	08-00843	**$190.84**
CP-2010	WACO AIRCRAFT - UPF-7	22756-B	08-07389-1	**$188.95**

CHALLENGER RE-CHARGING KIT

Challenger's recharger kit includes non-aerosol bottles of air filter cleaner and air filter oil for recharging air filters. Restores airflow efficiency. P/N 08-05884 ..... **$14.95**

If you do not see your application here, or for more CHALLENGER AIR FILTER ACCESSORIES, please call or VISIT OUR WEBSITE AT WWW.AIRCRAFTSPRUCE.COM

BRACKETT AIR FILTERS

The specially treated polyurethane element in the Brackett filter assures near total protection from any foreign material entering the system. Repels water, fire retardant and has good air flow for proper fuel/air ratio. Has no pleats to collect dirt. Low-cost maintenance with increased engine life. FAA approved. Replace original air filter unit with a Brackett assembly. Thereafter, throw away element and replace with new one at minimal cost.

Aircraft Model Assy	Air Filter P/N	Assy Price	Element Part No.	Element Price
Aero Commander: A9, A9A, A9B	BA104	**$26.75**	BA3	**$12.95**
100-100A	BA8910	**$74.50**	BA8905	**$10.65**
100-180,112,112A,112B	BA3910	**$65.75**	BA3905	**$14.95**
112TC,112TC-A,114,114A	BA4010	**$69.95**	BA4005	**$15.85**
500A-B,560F,680F,FL,FLP,500U	BA151	**$69.85**	BA151E	**$19.50**
560, 560A, 560E, 680 - L	BA2610L	**$66.85**	BA2605L	**$17.95**
560, 560A, 560E, 680 - R	BA2610R	**$66.85**	BA2605R	**$18.75**
Aircoupe: 415C, CD, D, E, G	BA8810	**$49.50**	BA8805	**$9.90**
F-1, A-1, A2-2	BA4106	**$54.85**	BA4108	**$7.45**
Beech: 23, A23, A23A, A23-19	BA104	**$26.75**	BA3	**$12.95**
A23-19A, A-23-24, B23	BA104	**$26.75**	BA3	**$12.95**
C-23, C24R, A24R, B24R, B19	BA7510	**$67.00**	BA7305	**$11.50**
33, A33, B33, C33, E33, F33	BA7110	**$69.50**	BA7112	**$13.85**
C33A,E33A,E33,F33A,F33C,G33	BA7210	**$73.85**	BA7112	**$13.85**
35, A35, B35 thru S/N2605	BA7310	**$68.95**	BA7305	**$11.50**
B35,C35,D35,E35,F35,G35,H35,J35	BA7110	**$69.50**	BA7112	**$13.85**
K35, M35, N35, P35, 35R	BA7110	**$69.50**	BA7112	**$13.85**
S35 thru S/N D7671	BA7410	**$59.25**	BA7112	**$13.85**
S35, V35, V35A, V35B,36,A36	BA7210	**$73.85**	BA7112	**$13.85**
A36TC, B36TC, A45(T-34)	BA7210	**$73.85**	BA7112	**$13.85**
B45((T-34A), D45(T-34B)	BA7210	**$73.85**	BA7112	**$13.85**
W/STC SA1450 SW Cont.IO-52O	BA7210	**$73.85**	BA7112	**$13.85**
50,B50,C50,D50,D50A,D50B,D50C,D50E	N/A	**N/A**	BA4805	**$18.95**
E50 (L-23D, RL-23D),F50	BA100	**$94.50**	BA7	**$18.65**
55, A55, B55	BA7610	**$69.85**	BA7605	**$14.75**
G50, H50, J50	BA100	**$94.50**	BA7	**$18.65**
C55, D55, E55, 355	BA6210-1	**$67.90**	BA6205	**$12.95**
S/N TE768-1078 58 thru S/N TH 740	BA6210-1	**$67.90**	BA6205	**$12.95**
E55, 355A, SN TE-1079 & up	BA7710	**$68.75**	BA7705	**$16.50**
58, 58A, SN TH741 & up	BA7710	**$68.75**	BA7705	**$16.50**
A65, 70, 65-B80, B88	BA100	**$94.50**	BA7	**$18.65**
76	BA7010	**$59.25**	BA7005	**$12.95**
77	BA2010	**$56.95**	BA6108	**$8.95**
95, B95, B95A, D95A	BA7810	**$68.50**	BA7805	**$16.75**
Bell:				
47G-2,47G2A,47G2A-1,47G-3,47G-3B	BA102	**$36.50**	BA2	**$18.90**
47G-3B-1,47G-3B-2,47G-3B 2A,47J,47J-2	BA102	**$36.50**	BA2	**$18.90**
47J-2A,47G-3B,47G-3B,47G-3B-1	BA102	**$36.50**	BA2	**$18.90**
47G-3B-2,47G-4,47G-4A,47G-5,47J-2,47J-2A	BA103	**$58.75**	BA9	**$23.75**
Bellanca: 14-19-3A, 17-30	BA8110	**$72.50**	BA8103-1	**$14.95**
17-30A	BA104	**$26.75**	BA3	**$12.95**
Brantly: B-2, B-2B	BA104	**$26.75**	BA3	**$12.95**
Cessna: 340,340A,402C,414,414A	BA109	**$59.75**	BA22	**$22.85**
402B,SN0801 & after,421,T310R	BA108	**$67.85**	BA13	**$23.75**
421A, 421B, 421C, T310R	BA108	**$67.85**	BA13	**$23.75**
337,337A-H,R172K,F337E-H,336,T41B-D	BA111	**$74.85**	BA24	**$16.95**
P337, T337 Rear Engine,172RG	BA5810	**$76.85**	BA5805	**$13.95**
R182, TR182, T-182, FR182	BA2510	**$69.75**	BA2505	**$17.95**
190, 195, 195A, 195B	BA8410	**$89.50**	BA8405	**$26.50**
120,140,140A,150,150A-M,152,152A	BA4106	**$54.85**	BA4108	**$7.45**
170, 170A-M,172, 172A-M	BA5110	**$58.75**	BA6108	**$8.95**
172N, 172P, F172N, F172P	BA5110A	**$59.75**	BA6108	**$8.95**
175, 175A-C, L-19	BA101	**$79.65**	BA8	**$10.95**
177, 177A, B, RG, F177RG	BA5710	**$84.65**	BA5705	**$9.85**
180 ('53-'55)	BA8010	**$67.85**	BA8005	**$10.50**
180A-K,182,182A-R,F182P,F182Q	BA8110	**$72.50**	BA8103-1	**$14.95**
185,185A-E,A185E,A185F	BA8110	**$72.50**	BA8103-1	**$14.95**
188, 188A	N/A	**N/A**	BA14	**$24.25**
205,205A,210,210A,B,C,310A,B,C,D	BA2110	**$79.85**	BA2305	**$16.50**
P206A-E, U206A-G, 207, 207A	BA2210L	**$84.85**	BA2205-L	**$18.85**
210D-N (to SN 64535 w/o air)	BA2210L	**$84.85**	BA2205-L	**$18.85**
210D-N (to SN 64535 w/o air)	BA2210R	**$78.50!**	BA2205-R	**$18.95**
210N(SN645436 & up w/air),210R,T210F-N	BA2410	**$84.75**	BA2405	**$31.75**
P210 All	BA8710	**$93.85**	BA8705	**$16.95**
310F thru L	BA2310	**$78.50**	BA2305	**$16.50**
310N-Q, T310P, T310Q, 401 S/N 145-401B S/N 221, 402 S/N 145-402B S/N 800	BA107	**$69.50**	BA12	**$21.90**
F150GthruM,FA150K-L,F152,FA152	BA4106	**$54.85**	BA4108	**$7.45**
R172K, FR172E-K	BA111	**$74.85**	BA24	**$16.95**
TP206,TP206A-E,TU206A-G,T207,T207A	BA2410	**$84.75**	BA2405	**$31.75**
411, 411A	N/A	**N/A**	BA3805	**$19.50**
Bobcat T-50, AT-17, UC-78, JRC-1	N/A	**N/A**	BA2705	**$22.25**
Champion: 7GC,7GCA,7GCBC,7HC	BA104	**$26.75**	BA3	**$12.95**
8KCAB,8GCBC,7KCAB,7GCBC,7GCAA	BA8110	**$72.50**	BA8103-1	**$14.95**
7GCAA,7GCBC,7KCAB,8KCAB,7ECA	BA106	**$28.75**	BA11	**$12.25**
7ECAw/Cont.0-200-A,7ACA,7ECA,7FC,65CA	BA4106	**$54.85**	BA4108	**$7.45**

Aircraft Model Assy	Air Filter P/N	Assy Price	Element Part No.	Element Price
DeHavilland: DHC-2 (L-20)	BA8210-1	**$96.75**	BA8205	**$29.50**
Great Lakes: 2TIA-2	BA101	**$79.65**	BA8	**$10.95**
Helio: H295	N/A	**N/A**	BA21	**$29.50**
Hiller: UH-12, UH-12-E	BA102	**$36.50**	BA2	**$18.90**
Grumman American				
AA-1,AA-1A,AA-1B,AA-5,AA-1C,AA-5	BA4210	**$56.50**	BA4108	**$7.45**
AA-5B-Tiger, GA-7, G164B	BA120	**$29.25**	BA20	**$17.85**
AgCat, G164, G164A	BA8210	**$96.75**	BA8205	**$29.50**
AA5A	N/A	**N/A**	BA19	**$13.85**
Hughes: 269A,269A-1,269B-C	BA102	**$36.50**	BA2	**$18.90**
Lake: LA4, LA4-200	BA3110	**$69.85**	BA7305	**$11.50**
Luscombe: 8, 8A thru 8F, T8F	BA4106	**$54.85**	BA4108	**$7.45**
Maule: M-4-210T, M-5-210C	BA111	**$74.85**	BA24	**$16.95**
M-4-210,M-4-210C,M-4-210-S	BA111	**$74.85**	BA24	**$16.95**
MA-4, M-4C, M-4S, M-4T	BA6110	**$69.95**	BA6108	**$8.95**
M-4-220, M-4-220C, M-4-220S	BA6110	**$69.95**	BA6108	**$8.95**
M-4-220T, M-4-180C, M-4-180S	BA6110	**$69.95**	BA6108	**$8.95**
M-4-180T, M-5-220C, M-5-235C	BA6110	**$69.95**	BA6108	**$8.95**
M-5-180C, M-5-210C, M-6-180	BA6110	**$69.95**	BA6108	**$8.95**
M-6-235, MX7-180, M-7-235	BA6110	**$69.95**	BA6108	**$8.95**
Mooney: M-10	BA4106	**$54.85**	BA4108	**$7.45**
M-18C	BA5110	**$39.95**	BA4108	**$7.45**
M20, M20A, B, C, D, G	BA6110	**$69.95**	BA6108	**$8.95**
M20E, F	BA6310	**$67.85**	BA6305	**$17.25**
M20J	BA6210	**$67.85**	BA6205	**$12.95**
Navion: A with (E) Series Engines	BA113	**$39.65**	BA25	**$17.25**
B; G, H, or with 10-470	BA4310	**$62.85**	BA4305	**$12.50**
North American: AT6 (SNJ)	N/A	**N/A**	BA8305	**$56.75**
Partenavia: P68, P68B, P68C	N/A	**N/A**	BA162E	**$11.95**
Piper: 600, 601	N/A	**N/A**	BA4	**$29.95**
J-3,J-4,J5,PA-11,11S,12,12S,16,17	BA4106	**$54.85**	BA4108	**$7.45**
PA-18,19,20,115,135,PA-22-ALL	BA4106	**$54.85**	BA4108	**$7.45**
PA-18-"150",18A-"150",18S-"150",18S-"150"	BA112	**$65.75**	BA13	**$23.75**
SN18-6964 & up w/TCDS Item 110 Installed	BA112	**$65.75**	BA13	**$23.75**
PA-23,160,24-180 up to SN1476	BA3110A	**$65.75**	BA7305	**$11.50**
PA-24-250 up to SN 1476	BA3210	**$67.75**	BA3205	**$14.95**
PA-23-235, 250, PA-25-235, 260	BA104	**$26.75**	BA3	**$12.95**
PA-28-140, 150, 160, 180, 235	BA104	**$26.75**	BA3	**$12.95**
PA-28-181, 201T, PA-28R-201T	BA104	**$26.75**	BA3	**$12.95**
PA-28RT-201T, PA-32-260,	BA104	**$26.75**	BA3	**$12.95**
PA-23-250,E23-250,SN27 2505 & up	BA115	**$39.25**	BA15	**$16.50**
PA-23-250, E23-250, w/Turbo Lyc.	N/A	**N/A**	BA3505	**$18.90**
PA-23-250 w/Air Research Turbo	N/A	**N/A**	BA8605	**$14.50**
PA-24-260C	N/A	**N/A**	B-4505	**$15.75**
PA-24-180 & PA-24-250 SN1477 & up	BA104	**$26.75**	BA3	**$12.95**
PA-24-25 SN103-1476 w/Piper Kit 754-285 Install	BA104	**$26.75**	BA3	**$12.95**
PA-24-260 SN4000-4802 except 24-4783	BA104	**$26.75**	BA3	**$12.95**
PA-32-300 SN76-40001&up	BA104	**$26.75**	BA3	**$12.95**
PA-32R-300,PA-32RT-300,PA-32R-301	BA104	**$26.75**	BA3	**$12.95**
PA-34-200T, 220T	BA104	**$26.75**	BA3	**$12.95**
PA-28R-201,PA-28RT-201,PA-28R-180, PA-28R-200	BA105	**$33.50**	BA10	**$17.85**
PA-28-236 S/N 28-7911283 & Up	BA2910	**$64.75**	BA2905	**$14.75**
PA-30-160	BA105	**$33.50**	BA10	**$17.85**
PA-31P, 31P-350	N/A	**N/A**	BA3305	**$22.95**
PA-38	BA4106	**$54.85**	BA4108	**$7.45**
PA-28-151,161	N/A	**N/A**	BA16	**$8.95**
PA-28-236 SN 28-7911283 & up	BA2910	**$64.75**	BA2905	**$14.75**
PA30, with Ray Jay Turbo	BA121	**$39.50**	BA27	**$14.95**
PA31, PA-31-300, -310, -325,-350	BA100	**$94.50**	BA7	**$18.65**
PA-31P, 31P-350	N/A	**N/A**	BA3305	**$22.95**
PA-32-300 w/I0-540-K1A5	BA115	**$39.25**	BA15	**$16.50**
PA-32RT-300T	BA100	**$94.50**	BA7	**$18.65**
PA-32-301T, 32R-301T	BA100	**$94.50**	BA7	**$18.65**
PA-34-200w/LYCI0360C01ES or LI0-360-C1E6	BA105	**$33.50**	BA10	**$17.85**
PA-44-180T	N/A	**N/A**	BA3505	**$18.90**
Robinson: R22	BA110	**$28.50**	BA23	**$18.25**
Stearman: All Series 75	BA118	**$64.85**	BA18	**$29.95**
Stinson: 108, 108-1, -2 ,-3	BA9110	**$42.85**	BA9105	**$10.75**
Swift: GC-1A, GC-1B	BA4106	**$54.85**	BA4108	**$7.45**
Taylorcraft	BA4106	**$54.85**	BA4108	**$7.45**
Varga: 2150A	BA4106	**$54.85**	BA4108	**$7.45**

EP

DONALDSON AIR FILTERS

Donaldson has been the OEM source for Cessna, Piper, Beechcraft, and Maule & Mooney since the 1960's. They currently supply Cessna all of their SE Piston aircraft filters, Beech Bonanza & Baron filters, Mooney & Maul with their filters. For Piper they currently supply all of their Turbo charge aircraft with filters. Aircraft Spruce is a factory authorized distributor for Donaldson filters.

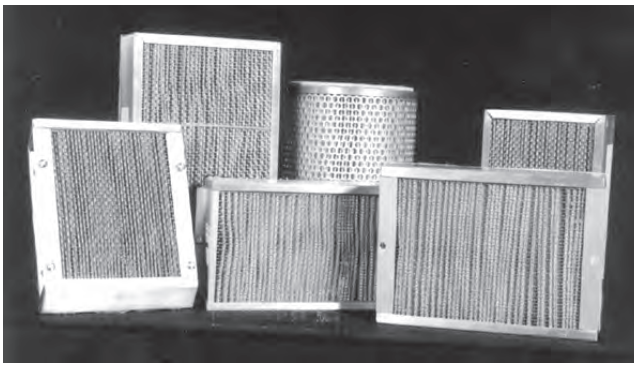
FEATURES: • High Performance Engine Intake Filters • Synthetic media: offers improved air flow and better dust capturing efficiency • Engineered to last 500 Flight Hours • Washable filter element, use compressed air/warm soapy water • Clean installation: dry media, no sticky/messy oil to trap dirt • OEM choice for GA aircraft for over 30 years • Meets All Flammability requirements per FAR 23.853 • Solid Construction with no removable parts-no loose screens, elements or screws • Exceptional wet weather performance, no oil to wash away in wet weather • Moisture passes thru the filter, doesn't build up an oiled surfaces (no oil present) • All filters starting with "P" feature our Premium Synthetic filter media • No Airworthiness Directives against Synthetic media filters • Cost efficient over the life of the filter, 3 years, 500 FH 5 cleanings

Only filters with * after part number have cellulous media

Donaldson	OEM	Description	PN	Price
P107150	C-294510-0201, 13203	C-150/152 & Various others Engine Intake air filter	08-06027	**$91.50**
P107172	C-294510-0301, 13219	C-170/172 Engine Intake air filter	08-06024	**$106.95**
P15-1936	PS600073 / 561-020	Piper PA-32R *(Engine Intake air filter)	08-06029	**$71.85**
P107336	C-294510-0401	C-172XP/ 337 Engine Intake air filter	08-06038	**$91.50**
AM102035FP	C-294510-0501	Engine Intake air filter	08-06052	**$112.95**
P106150	0750038-4	C-180/182/185 Engine Intake air filter	08-06023	**$116.95**
P131367	C-294510-0901	TR182/182R Engine Intake air filter	08-06042	**$147.95**
P107188	C-294510-0101	C-188 Engine Intake air filter	08-06043	**$196.95**
AM102135FP	1250704-3	C-206/207/210 Engine Intake air filter	08-06033	**$119.50**
AM102235FP	1250704-4	C-210 Engine Intake air filter	08-06046	**$129.95**
P107210	1250846-1	T206/T207/T210 Engine Intake air filter	08-06047	**$89.50**
P131364	C-294510-0801	T210N/P Engine Intake air filter	08-06049	**$131.95**
P108421	99100181	T310/320/335/401/402/421 Engine Intake air filter	08-06056	**$74.50**
P109337	C-294510-0701	337/T337 Engine Intake air filter	08-06051	**$162.95**
AM102035FP	C-294510-0501	Engine Intake air filter	08-06052	**$112.95**
P148670	C-294510-0902	T303 Engine Intake air filter	08-06053	**$138.95**
AM102735EA	9910018-2	310/401/402 Engine Intake air filter	08-06054	**$88.50**
AM102935EA	9910200-1	310R Engine Intake air filter	08-06055	**$110.95**
P128156	9913001-1	340/414 Engine Intake air filter	08-06028	**$87.50**
P128157	9910141-1	404 Engine Intake air filter	08-06057	**$96.75**
EBG03-0001	C-294501-0101	Instrument Air Filter Assembly, Cover & Filter element	08-06059	**$111.95**
P105290	C-294501-0203	Replaceable instrument Instrument air filter only, part of EBG03-0002 assy	08-06060	**$35.50**
AM103435IA	C-294501-0301	Instrument Air Filter	08-06035	**$59.95**
AM103535IA	C-294501-0302	Instrument Air Filter	08-06036	**$53.25**
P122322	169-380064-3	B19 Engine Intake air filter	08-06061	**$91.95**
P130374	45-91210, 13917	Debonair & Early Bonanza Engine Intake air filter	08-06062	**$129.95**
P105304	35-38005-5, -1	Bonanza Engine Intake air filter	08-06032	**$96.50**
P137627	35-380035-7	Bonanza Engine Intake air filter	08-06026	**$88.50**
P136680	105-389000-3	B76 Engine Intake air filter	08-06063	**$116.95**
P133881	P13-3881	B77 Engine Intake air filter	08-06064	**$117.95**
P128219	P12-8219, 122601, AM101020FP	95-55, A55, B55 Baron Engine Intake air filter	08-06065	**$71.95**
P127996	P12-7996, 121128-2, AM101120FP	C55, D55, E55 & 58 Baron Engine Intake air filter	08-06066	**$79.75**
P12-8167	96-389005-1	E55 & 58 Baron Engine Intake air filter	08-06025	**$61.75**
P108700	50-389070-15	Duke Engine Intake air filter	08-06067	**$93.95**
P124439	50-389070-23	58P Baron Engine Intake air filter	08-06069	**$58.50**
P105798	50-389070-11	A65, 70, B80 Engine Intake air filter	08-06070	**$72.50**
AM101720FP	50-389070-11	Engine Intake air filter	08-06071	**$84.50**
EBG03-0003	205538-089	Instrument air filter	08-06072	**$101.95**
EBG03-0018	101-380039-1	King Air Instrument air filter	08-06034	**$45.75**
P114419	26874-00 / 460-889	PA 23-250 Engine Intake air filter	08-06073	**$162.95**
P136602	560-584	PA-28-236 Engine Intake air filter	08-06074	**$136.95**
P138683	560-904	PA-28-236 Engine Intake air filter	08-06075	**$134.95**
P106590	560-747	PA-31 Engine Intake air filter	08-06076	**$73.50**
	460-609	PA-31P Engine Intake air filter	08-06077	**$136.95**
P136739	560-947	PA-32 Engine Intake air filter	08-06078	**$203.95**
P138580	86881-2, 560-953	PA-44T Engine Intake air filter	08-06080	**$116.95**
AM108365FP	P13-6287	M20K Engine Intake air filter	08-06081	**$149.95**
204418-156	77852	Lycoming Engine Spin on oil Filter adapter	08-06037	**$161.95**
P11-0172	C-294510-0601	Engine Intake air filter	08-06228	**$213.95**
P198281	P198281, CA3559	172R & 172S Engine Intake Filter	08-07051	**$108.95**
P198290	P198290, CA3717	182S Engine Intake Filter	08-07052	**$108.95**
P197268	P197268	T206H Engine Intake Filter	08-07053	**$169.95**
P13-0234	125997-010, BA6210	M20J Engine Intake Filter	08-07054	**$99.85**
ED04011	600417-501	M20K (s/n 25-1000 and up) engine intake Filter	08-07055	**$92.50**
ED04028	600417-503	M20M/R/S Engine Intake Filter	08-07056	**$92.75**
P10-5225	C-294501-0103	Various Instrument Air Filter	08-07057	**$30.75**
P617058	460-632	Oval Piper Filter PA28/PA34	08-07276	**$71.95**
P617053	460-630	Round Piper Filter PA28/PA44	08-07277	**$70.95**
P617774	460-629	Round Piper Filter PA23/32	08-07278	**$59.95**

VISIT OUR WEBSITE FOR COMPLETE AIRCRAFT APPLICATION INFORMATION.

AIR FILTERS



BEECH AIR FILTERS

Item	Our P/N	Beech Equivalent P/N	Aircraft Type	Price
1	08-00017	35-534470-19 P13-0374	Beech 33, 35	**$76.75**
2	08-00018	P10-5304 35-534470-19	Beech 33, 35, 36	**$117.95**
3	08-00019	P12-7996 (121128-2) TE946 thru TE1078 TH1 thru TH740	Beech 58	**$100.95**
4	08-00020	P12-8219 (122601)	Beech 55	**$69.50**
5	08-00021	P10-8700	Duke B60	**$72.25**
5A	08-00022	P12-4439 (50-389070-23)	P Baron (58P)	**$99.50**
6	08-00023	P12-8167 (96-389005-1) TE1079 & after TE741 & after	Beech E55 & 58 Late Model	**$82.75**
7	08-00024	169-380035-7		**$98.75**

CESSNA AIR FILTERS

Item	Our P/N	Cessna Equivalent P/N	Aircraft Type	Price
2	08-00000	C294510-0201	Cessna 150	**$95.25**
3	08-00001	C294510-0301	Cessna 172	**$96.00**
4	08-00002	C294510-0401	Cessna 336, 337A-H	**$112.95**
4A	08-00003	C294510-0501	Cessna 172 RG Cutlass	**$105.95**
5	08-00004	C294510-0601	Cessna 177	**$88.65**
6	08-00005	C294510-0801	Cessna P210N, R	**$126.95**
7	08-00006	C294510-0901	Cessna 182RG	**$88.25**
8	08-00007	0750038-4	Cessna 182	**$132.95**
9	08-00008	1250704-3 (Port)	P206,A,B,C,D,E	**$178.95**
9A	08-00009	1250704-4 (Stb)	To S/N 64535 w/o Air	**$198.95**
10	08-00010	1250846-1	T206,A,B,C,D,E	**$149.95**
11	08-00011	C294510-0501	Cessna 337	**$122.95**
12	08-00012	9910018-1	Cessna T310R	**$89.65**
13	08-00013	9910018-2	310N,P,Q,T310P,T310Q	**$88.75**
14	08-00014	9910200-1	Cessna 310R	**$87.50**
15	08-00015	9910141-1	Cessna 404	**$134.95**
16	08-00016	9913001-1 (108)	Cessna 340,340A Late Model	**$140.95**

PLEATED PAPER AIR FILTERS

These pleated paper aircraft induction air filters are manufactured in South Africa and are fully approved by the South African Dept. of Transport, Division of Civil Aviation. Strict quality control standards are enforced at all stages of manufacture. The filters feature aluminum frames and cured EA131 pleated elements with 96% micron rating. Rubber gaskets are waterproof, oil solvent, and chemical resistant. Mesh overlays are of stainless steel for enhanced strength, durability, and appearance. Not FAA approved at this time.

MOONEY AIR FILTERS

Item	Our P/N	Mooney Equivalent P/N	Aircraft Type	Price
1	08-00025	125997-010	M20J	**$109.95**
2	08-00026	125685-004	M20K	**$133.95**

PIPER AIR FILTERS

Item	Our P/N	Piper Equivalent P/N	Aircraft Type	Price
1	08-00028	560-772	Tomahawk (PA38)	**$98.75**
2	08-00029	124997-005	Navajo/Chieftain (PA31)	**$105.95**
3	08-00030	13681-02	Tri-Pacer (PA22)	**$76.50**
4	08-00031	560-947	Saratoga (PA32-301T)	**$129.50**
5	08-00032	125196	Piper Turbo Aztec (PA23)	**$108.95**
6	08-00033	CA161	PA28 & 32 Series (PA 36 Pawnee) (PA 34 Seneca)	**$82.00**
7	08-00034	CA162	PA32 & PA23	**$81.75**
8	08-00035	35477-00	PA28-161	**$95.85**
9	08-00036	CA122	Super Cub (PA18)	**$71.50**

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AIR FILTERS

AIR-MAZE AIR FILTERS

Filter for Continental for A-65 thru C-125* ..... P/N A40599 ..... **$73.50**
Filter for Lycoming O-235, O-290, some O-320 (advise aircraft application) ..... P/N A40599 ..... **$73.50**
Aeronca 7AC, 11AC ..... P/N 2-849 ..... **$88.75**
Carb. Intake Stud ..... P/N 24306 ..... **$41.25**
TCM Carb. Intake Pin ..... P/N 24308 ..... **$20.50**

FOR NEW INSTALLATION - P/N 24306 & P/N 24308 ARE REQUIRED

K&N AIR FILTERS

Our K&N Filters are the industry standard in excellence. All filters are constructed with ultra-strong molded pliable rubber flanges which absorb vibration and provide secure attachment. These flanges can be stretched up to 1/8" (3mm) to fit in-between sizes. K&N Universal air filters are available in round, tapered, and oval designs, to fit just about any application. Use the dimensioned sketch and the selection chart to find the filter best suited to your application.

Part No.	K&N Part No.	Application	Throat	Length	Dia.	Style	Price
08-01053	FRV2440	Rotax®/Bing 36mm	2"	2"	5-3/8"	Round Straight	**$41.50**
08-01273	RU0600	Mikuni 32mm	2-1/4"	4"	3-1/2"	Round Straight	**$28.25**
08-04977	RU0800	Mikuni 34mm	2-1/2"	4"	3-1/2"	Round Straight	**$39.50**
08-04980	FRC0930	Kawasaki/Mikuni 32mm	2-3/4"	3"	5"	Round Straight	**$103.45**
08-04981	FRC1250	Mikuni 36mm	2-1/4"	4"	2"	Tapered	**$32.25**
08-04978	RU2690	Rotax®/Bing 32mm	1-3/4"	2-1/2"	2"	Tapered	**$35.85**
08-01274	RC1350	Rotax®/Bing 36mm	2-1/16"	4"	3"	Round Straight	**$32.75**
08-01275	RC1200	Rotax®/Bing 36mm	2-1/16"	4"	2"	Tapered	**$36.50**
08-04979	RC2820	Rotax® 532/582 Dual Carbs	2-1/16"	3"	8-1/2"	Dual Oval	**$49.65**
08-04976	RC2720	Rotax® 503 Dual Carbs	2-1/16"	3"	8-1/2"	Dual Oval	**$49.85**
08-04977	RU0800	Mikuni 34mm	2-7/16"	4"	3-1/2"	Straight	**$39.50**
08-01278	RU2790	Rotax® 503/532 Aerobatic carb.	3-1/2"	4-1/2"	3-1/2"	Tapered	**$28.85**
08-01279	RA045V	Rotax® 912 Offset	2"	2"	5-7/8"	Round offset	**$37.50**
08-01280	RU0810	Rotax® 814 Rd. Center	2-7/16"	5"	3-1/2"	Round Centered	**$29.75**
08-04983	FRC1890	Rotax®/Bing 36mm	2-1/16"	3"	3"	Round Straight	**$44.80**
08-04984	FRC1150	Rotax®/Bing 36mm	2-1/16"	3"	3-1/2"	Round Straight	**$35.75**

EP

K&N AIR FILTERS

Rubber end cap instead of chrome makes this filter less likely to create damage in the event of a prop strike. Also includes rubber boss for safety wire attachment.
K&N Air Filter # SP2704 ..... P/N 08-06098 .. **$24.85**
K&N Air Filter # SP2706 ..... P/N 08-06099 .. **$54.75**
K&N Air Filter # RC-2314 ..... P/N 08-07291 **$142.95**

See website for engine applications.

K&N AIR FILTER CLEANER & DEGREASER

This is the only cleaner formulated to clean K&N Filtercharger elements. The use of any other cleaning solution will void the filter's warranty, and quite possibly could damage the cotton material. K&N Cleaner works to dissolve the dirt build-up and old filter oil, and can be washed away with water. It is biodegradable and safe on paint, chrome, cast aluminum, plastic, rubber, and vinyl when used as directed. Complete instructions on the bottle.

NOTE: Do not use on polished or anodized aluminum.
12-fluid oz. squirt bottle ..... P/N F99-0606 ..... **$8.50**

VARI-EZE / LONG EZ AIR INTAKE FILTER

NAPA #2904 air intake filter (equivalent to Purolator #AFP-177 & AC #44-8C)
P/N 2904..... **$13.85**

K&N FILTER CHARGER OIL

K&N Air Filter Oil is the only oil specially formulated to work in combination with the cotton fabric in K&N Filtercharger elements, providing a superior air filtration system. When used as directed, it quickly penetrates the filter pleats, where it remains suspended in the cotton fabric. Saturation is maintained until the element is cleaned with K&N Air Filter Cleaner.

6.5 oz. aerosol can - red ..... P/N F99-0504 ..... **$5.95**
8 oz. squeeze bottle - red..... P/N F99-0533 ..... **$5.85**

K&N POWER KLEEN

K&N Air Filter Cleaner is the only cleaner recommended to clean K&N Air Filter elements. K&N Air Filter Cleaner works to dissolve dirt build up and old filter oil and can be washed away with water. It is environmentally friendly and safe on paint, chrome, cast aluminum, plastic, rubber and vinyl when used as directed (do not use on polished or anodized aluminum). Complete instructions on bottle.
12 oz. Spray ..... P/N 05-01944 ..... **$8.50**
1 Gallon Refill..... P/N 15-05451 ..... **$26.50**
5 Gallon Pail..... P/N 08-07461 ..... **$81.40**

K&N AIR FILTER SEALING GREASE

K&N Sealing Grease provides an airtight fit around sealing surfaces on all types of air filter elements. It resists heat and will not melt or run off. K&N sealing grease is not to be used on clamp-on filter elements. 6 oz. Squeeze Tube. 8 oz. squeeze tube - black .....P/N 08-01093 .. **$8.65**

K&N RECHARGER KIT

K&N Recharger® kits contain K&N air filter cleaner and air filter oil for recharging any K&N Filtercharger® Air Filter. Restores air flow efficiency so your K&N air filter performs like new!
P/N 08-00722 ..... **$11.75**

JANITROL HEATERS - LUBRICANTS

EP

RAJAY AND GARRETT TURBOCHARGERS, PRESSURE RELIEF VALVES, WASTEGATES, AND CONTROLLERS BY HARTZELL

Constantly expanding product lines to meet the ever changing needs of the aviation industry, Hartzell is the OEM of RAJAY and Garrett turbochargers, pressure relief valves, wastegates, and controllers. We're your best source for both factory new and rebuilt turbocharging systems for all the general aviation aircraft flying today.

- Turbochargers, Valves & Controls
- Factory New, OEM Approved.
- Rebuilt to Factory New Tolerances.
- Performance Alloys That Resist Cracking.
- One Year Unlimited Hours Warranty.

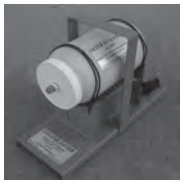
CALL FOR PRICING!

TOPCAP ENGINE PROTECTOR

Install TopCap in place of a removed cylinder to protect th engine from dirt, debris, and stray parts. Made from fuel and solvent resistant polymer, TopCap allows for full crankshaft rotation. One size fits Lycoming wide deck 320, 360, 540, 720 and Continental 470, 520, and 550.

P/N 08-00373..... **$23.75 /pr.**

ENGINE SAVER



Every aircraft owner knows that his engine is subject to moisture build up and internal rust formation when not flown regularly. Oil companies spend millions developing special additives to minimize rust. Now there is a better way to fight this rust! The Engine saver produces a continuous supply of very low humidity air that is introduced into the engine throught the breather. Low humidity air prevents water formation in the engine. The slight pressure built up keeps the moist outside air from entering, allowing the dry air to flow past the piston rings into the upper cylinder area protecting it as well. The Engine Saver is 110vac powered, requires no installation or FAA approval, and works with all piston engines. Pilots are flying less and the Engine Saver will save them money by reducing maintenance costs.

P/N 08-00724 ..... **$342.95**

AIM-A-SQUIRT

Aim-A-Squirt was developed out of the need to apply lubricants, corrosion inhibitors and solvents in those hard to reach areas with out getting the products all over everything. Aim-A-Squirt has been tested with hundreds of different products which have had no affect on the special plastics the straw is made of. The straw is flexible enough that it will not kink when it is twisted in a small circle.

P/N 09-02325..... **$4.70**

TANIS ENGINE PRESERVATION KITS

Engine Preservation Kit: recommended by engine manufacturers for storage of an engine longer than 90 days. Everything you need for long-term protection of your Lycoming & Continental engine.

4 Cylinder.....P/N 08-07085 ..... **$180.00**
6 Cylinder.....P/N 08-07086 ..... **$270.00**

JANITROL HEATERS BY HARTZELL

Our Janitrol heaters, rebuilt right at the factory by Janitrol Heater Products, a division of Hartzell feature new CermaKote combustion tubes and a more efficient, lightweight permanent magnet blower motor. These heaters are rebuilt to factory new tolerances and upgraded to the latest model configuration with a new serial number. These heaters are not affected by FAA AD Note 96-20-07. Three year, 1000 hour limited warranty, 1500 hour TBO.

CALL FOR PRICING!

JANITROL HEATER CERMAKOTE COMBUSTION TUBES BY HARTZELL

Janitrol Heater Products, division of Hartzell produces extended life "CermaKote" combustion tubes for individual sale. The "CermaKote" combustion tubes incorporate a special process to coat the areas susceptible to flame erosion. The FAA/TSO approved OEM combustion tube is engineered to provide years of safe operation through improved materials designed to better withstand the high temperatures and corrosive environment inside your heater. This product improvement will greatly decrease your routine heater maintenance cost and give you the added assurance that your heater is being maintained with the highest quality parts on the market today!

CALL FOR PRICING!

TEMPEST AA1000 ENGINE PRESERVATION SYSTEM

Protect Your Engine With the Tempest EPS.

All engines accumulate moisture when they are not run everyday. Moisture will oxidize and create rust in the engine causing potential damage as well as faulty oil analysis. AA1000 EPS pumps dry air into the engine oil filler cap and removes the moisture already in the engine. Continuous operation will prevent any additional moisture from accumulating. Removal of the moisture preserves and protects your engine.

110V.....P/N 08-07192 ..... **$179.00**
220V.....P/N 08-07383 ..... **$309.95**

ACCESSORIES

Replacement Desiccant for AA1000 EPS (1 lb)
P/N 07-03400 ..... **$16.75**
Replacement Desiccant for AA1000 EPS (1/4 lb)
P/N 07-00731 ..... **$4.90**

LINKITE AVBLEND LUBRICANT

An oil supplement for all piston engine-powered aircraft owners and operators worldwide. AvBlend produces a wetting action that allows lubrication to penetrate the pores of an engine's metal surfaces. Providing critical lubrication at start-up, AvBlend helps prevent accumulation of combustion chamber areas. Wear is reduced, engines stay cleaner and combustion chambers stay properly sealed. Proper cylinder sealing is essential for achieving optimum peak pressure and design-level output. FAA approved. 4-cylinder engines require 1 can at each oil change, and 6 cylinder engines require 2 cans.

12oz. can .....P/N 08-05470 ..... **$14.50**
1Case (24 cans) .....P/N 08-05470-1 ..... **$319.00**

BENDIX MAGNETO GREASE

#10-27165 **-** Factory recommended lubricant for bearings in Bendix magnetos.
1 Lb. Can..... P/N 10-27165 ..... **$62.75**

#10-391200 **-** For use on distributor block bushing. Provides proper shaft lubrication.
8 oz. can..... P/N 10-391200 ..... **$64.50**
1 oz. tube ..... P/N 07-02500 ..... **$3.95**

#10-39140-0 **-** Distributor block bushing coating
P/N 10-39140-0 ..... **$151.95**

#10-86527 **-** High temperature breaker/cam lubricant
P/N 10-86527 ..... **$43.85**

REAL GASKET PUSHROD TUBE SEALS

These seals from Real Gasket Tennessee provide 37% more sealing area at the point of contact with the pushrod tube, and vector spring pressure by its beveled top and companion washer. FAA Approved for the Continental engines shown below.

Part No.	Application	Kit Price
RG-360PR	IO/TIO-360 complete engine*	$76.85
RG-360PR-1	IO/TIO-360 single cylinder**	$11.85
RG-520PR	0/IO-470, IO-520, IO-550A,B,C***	$119.95
RG-520PR-1	As above except six cylinder	$20.65
RG-550GPR	IO-550-G complete engine	$69.75

***6 cylinder kit** ****1 cylinder kit** *****3 cylinder kit**

REAL GASKET PUSHROD TUBE CONVERSION KITS FOR CONTINENTALS

These kits from Real Gasket Tennessee replace problematic pushrod tubes of continental engine models: A-65, A-75, C-75/85/90/125/145, 0-200, 0-300 and GO-300. The installation does not require loosing or removal of the cylinder and converts it to an "independently serviceable" spring loaded pushrod tube system, similar to IO-470, IO-520, and IO-550 continental engines. It also allows access and service to the lifters. The kit is designed for easy installation and uses real gasket's FAA-PMA pushrod tube seals as used in the continental IO-470, IO-520 and IO-550 engines. For certified aircraft engines, form 337 is required.

1-cylinder kit ..... P/N 08-00802 ..... **$78.75**
4-cylinder kit ..... P/N 08-04444 ..... **$249.00**
6-cylinder kit ..... P/N 08-44444 ..... **$374.95**

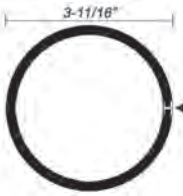
REAL GASKET FRANKLIN ENG. PARTS

RG-17794-S/12 ... Pushrod Tube Seal ..... P/N 08-00779 ..... **$4.15**
RG-17864-S/12 ... Pushrod Tube Seal ..... P/N 08-00780 ..... **$52.25**
RG-10366 ..... Oil Pan Gasket ..... P/N 08-00781 ..... **$31.75**
RG-17794-S/12 ... Valve Cover Gasket ..... P/N 08-00782 ..... **$9.90**
RG-17794-S/12 ... Crankcase Cover Gasket ..... P/N 08-00783 ..... **$38.95**

FAA Approved

REAL GASKET LYCOMING ENGINE PARTS

LYCOMING TO-360-C,F, TIO/TIGO-541 - Valve Cover Gasket (8 holes)
P/N 08-07384 ..... **$9.75**



LW12681 LYCOMING MAGNETO GASKET

Lycoming Magneto Gasket model # LW12681. For Lycoming 0320 all letter designations EXCEPT the "H" series.
P/N 08-00285 ..... **$1.80**

LOCTITE® HIGH TEMPERATURE GASKET SEALANT

LOCTITE® High Temperature Gasket Sealant is a slow drying viscous paste. It remains pliable and flexible and is designed to seal flanges, threaded connections and fasteners at temperatures from -45° C to +315 °C. It can be effectively applied to cork, paper, plastic and metal surfaces. Typical applications include sealing gaskets, flanges and threaded connections, aircraft heating systems, manifolds, pipe fittings, steam lines, gear boxes and cover plates. ..... P/N 09-28425 ..... **$18.75**

PERMATEX FORM-A-GASKET NO. 1

Seals and repairs a wide range of gaskets. Fills in uneven flanges surfaces. Seals pipe fittings, air ducts, boilers, plumbing connections and threaded assemblies. Dries fast, sets hard for sealing permanent or rigid assemblies. Easy to apply. Improves gasket sealing power, adds reliability to rigid or permanent assemblies. Eliminates delays.

3 oz., Tube, #1B ..... P/N 09-28415 ..... **$5.50**
11 oz, Tube, #1C .... P/N 09-28430 ..... **$11.75**

PERMATEX FORM-A-GASKET NO. 2

A non-hardening, heavy-bodied, pliable sealant for semi-permanent assemblies. Use on threaded assemblies, over plates and hose connections, metal-to-metal applications. Temperature range -65° to 400° F., pressures up to 5000 PSI. Apply with putty knife or stiff bristle brush. Conforms to MIL-S-45180B Type II.

3 Oz. Tube #2B ..... P/N 09-28420 ..... **$4.90**
11Oz. Tube #2C ..... P/N 09-28400 ..... **$12.25**

AVIATION FORM-A-GASKET NO. 3

A non-hardening sealant. Recommended for heating hose connections, close fitting metal parts and threaded connections. Resists water, gasoline, acids and alkalies. Temperature range -65° to 400°F., pressures to 5000 PSI. Conforms to MIL-S-45180B, Type III.

4 Oz. Can #3H ..... P/N 09-28500 ..... **$8.75**
1 Pint Can #3D ..... P/N 09-28600 ..... **$13.50**

GUNK SUPER CONCENTRATE DEGREASER

A concentrated self-emulsifying degreasing solvent for engine and parts. Dilute one part concentrate with nine parts of kerosine or light Diesel fuel oil for very effective cleaning. Spray or brush on. Does not harm electrical system, strip paint or cause rust. Water rinse.

SC-2A, Qt. (2 Lbs.) ..... P/N 09-29400 ..... **$7.95**
SC-3, Gal. (8 Lbs.) ..... P/N 09-29500 ..... **$28.75**
SC-5, 5 Gal. Pail (41Lbs.) ..... P/N 09-29600 ... **$141.95**

GUNK "ENGINE BRITE" ENGINE CLEANER

Ready-to-use engine cleaner in convenient aerosol or squirt can. EB-1, 16 Oz. Aerosol ..... P/N 09-29700 ..... **$4.70**

GUNK HYDRO-SEAL

Two-layer room temperature carbon digester and paint stripper. No flash point. Safe on all metals. Simply soak and pressure rinse or solvent rinse. 5 gal. pail contains parts soaking basket.

HS-3, 1 Gal. Can (11 Lbs.) ..... P/N 09-29900 ..... **$31.75**

HS-5K, 5 Gal. Pail w/ parts basket (Wt. 56 lbs., truck shipment req'd) ..... P/N 09-30000 ... **$169.95**

Factory-direct shipment on 50 gal. drums of Gunk and Hydro-seal. F.O.B. Charlotte, N.C.

TITESEAL

Prevents corrosion and seizing of metal parts. Assures leakproof, pressure tight connections. Unaffected by water, oil, gasoline.

Light Wt., #T20-66, 1 Lb. Can ..... P/N T20-66 ... **$17.75**
Medium Wt., #T25-66, 1 Lb. Can ..... P/N T25-66 ... **$11.50**

POB #4 PERFECT SEAL SEALANT

• Used worldwide in the automotive, aircraft and marine industries • Liquid sealant designed to meet rigid requirements of OEM specifications. • Non-hardening and resists extreme temperatures. • Seals all gaskets and threaded connections. • Prevents corrosion of bolts, studs and fitting threads. • Resistant to gasoline, oils, steam, salt-water, antifreeze and propane. • Withstands temperatures from -50 F to 400 F.

4oz. ..... P/N 08-07218 ..... **$7.75**
16oz. ..... P/N 08-07217 ..... **$12.65**

MARVEL MYSTERY OIL

Standard for break-in on new or overhauled engines and for carbon removal from cylinder heads, piston rings, valves, etc. Mix with regular oil for perfect engine operation to -20°F. Lubricates tight nuts, control hinges and landing gear. Dust repellent.

4 oz. ..... P/N 09-27515 ..... **$3.95**
Qt. ..... P/N 09-27500 ..... **$8.85**
Pint ..... P/N 09-27505 ..... **$7.85**
Gal. ..... P/N 09-27600 ..... **$36.75**

MOUSE MILK OIL

For speedy help in removal of rusted or frozen studs, nut and bolts; frees up cables, slides and linkage; unequalled wherever a lubricant and penetrant are required. Lasting lubricating qualities.

8 Oz. ..... P/N 09-39608 ..... **$5.75**
32 Oz. ..... P/N 09-39632 ..... **$16.90**

EP

ENGINE PREHEATERS

RED DRAGON ENGINE PREHEATERS

Model	Description	Part No.	Price
MH300	For quick engine starts in cold weather. Propane heated air is blown directly into engine compartment by a 12V fan (can be used to heat cabin, thaw ice or warm hanger).12V comes from either plane or car battery with no appreciable electrical drain. Easy-to-operate electric igniter allows you to ignite heater with a push of a button. Entire unit weighs only 14 lbs. 100% safety control stops fuel flow should flame go out. Complete with 5ft. of pressure propane hose, excess flow valve, regulator, safety control and 10ft. power cord with alligator clips to attach to battery. All UL approved. Now includes high limit safety control package - provides total protection from over-heat situations and will effectively shut down fuel upon an over-heat situation. Use standard propane bottles.	08-04300	**$317.00**
MH310	This model is the same as MH-300 except it uses 115 VAC to power the fan. Wt: 17lbs.	08-04305	**$348.00**
H175	This Red Dragon preheater is a cart style self contained preheater. Includes preheater, cart, battery box, fuel cylinder, and elbow. Excellent for FBO's. Wt: 58lbs.	08-04315	**$456.00**
	RED DRAGON ACCESSORIES		
--	***Heat Ducting -*** 12' long x 4" diameter; Heavy-Duty Flexible Ducting.	08-04310	**$86.50**
--	6'Lx4" Dia. Heavy-Duty Flexible Ducting.	08-04325	**$49.75**
--	Carrying Case - Strong Plastic Case with lock, for model MH300. (20.25"x 9.5"x 9.5")	08-04320	**$46.90**
--	12V Cigarette Lighter Adapter Plug	08-04330	**$16.95**
--	Propane Quick Disconnect set - For Rapid Connect & Disconnect of Fuel Line from Propane Bottle w/o Tools (even under pressure)	08-04340	**$22.00**
--	Propane Bottle - Std. Refillable Bottle (5 Gal. Cap. or 20 Lbs.) Supplies Min. 2 Hours of Heating. (Empty)	08-04351	**$55.00**
--	Soft Carring Case - This soft carring case is for 115V preheaters only.	08-01218	**$21.95**
--	Red Dragon Disposable Cylinder Adapter - Has a shut off valve and is disposable usually for 1 preheat.	08-01295	**$26.85**

E-Z HEAT AIRCRAFT ENGINE PREHEATERS

Preheating engines for winter operations is at best a miserable chore and at worst can be a disaster for the plane, the pilot & flight operations - until the development of the E-Z Heat Aircraft Engine Heater. The E-Z Heat was designed to provide very efficient engine heating for virtually all propeller driven aircraft. The heaters consist of a flexible synthetic pad that easily conforms to the contours of the oil pan. This pad will heat 12 qts of oil from -40° to +60°F in an hour while using approximately 300 watts of electricity. The heater is 1/32" thick. which enables the immediate heat transfer from heater to engine.
The heaters are thermostatically controlled, so leaving them plugged in overnight means the plane will be ready to go in the morning. Normally, complete pre-heating takes only 3-5 hours for the entire engine to be nice and warm. With this new lighted plug, the owner simply needs to look out the window or peek in the hangar to see if they remembered to plug in their E-Z Heat engine pre-heater. Molded into the male plug end is a newly designed light emitting diode (LED). This LED allows the operator to visually recognize if there is electrical power to the preheat system even from a distance. FAA approved for certificated aircraft.
End your cold weather starting problems and reduce premature engine wear with the installation of our proven
Specifications:
Power Consumption: 300 watts or less / Thermostatically Controlled
Power Requirement: 110/120 volts (models 441 and 540 are available in 220 volts).
Installation: The adhesive is already on the pad. All you need to do is peel and stick it on! (excluding model 470)
Preheat Time: 3 to 5 hours on cold soaked engine, although, since unit is thermostatically controlled, it may be left on overnight, or all the time. Cowl covers and prop covers are recommended for extreme cold weather, they also reduce preheat time.
Lite Brite Plug: With this new lighted plug, the owner simply has to look out the window or peek in the hangar to see if they remembered to plug in their E-Z Heat engine pre-heater! (excluding model 470)
Weight: Only 9 ounces!
Heat Transfer: Convection/conduction, the safest way of heat transfer available. No flames or glowing elements are potential fire hazards.

P/N	Application	Heater #	Price
07-00756	Cont. A-65 to o-200 (round)	260	**$149.95**
07-05315	Cont. A-65 to 0-200 (rectangle)	270	**$149.95**
07-05100	Cont. C-125 to 0-300, E-165 to E-225, IO-360 to TI0-360 Lyc. 0-235, 0-290, 0-320*	440	**$149.95**
07-05200	Cont. 0-470, I0-470, 0-520, I0-520 Lyc. 0-320*, 0-360, I0-360, 0-540, I0-540C, D, T10-540C	441	**$149.95**
07-01320	Cont. O-470, IO-470, O-520, IO-520	470	**$149.95**
07-01320-2		220V	**$149.95**
07-05210	Lyc. IO-360A & C Series	442	**$149.95**
07-05345	Cont. 0-470, I0-470, 0-520, I0-520 I0-550 Lyc. 0-540, TIO-540 (except C), I0-720	411, 440 or 540	**$177.95**
07-05345-2		220V	**$177.95**
07-05200-2	Model 441 - 220Volt	441-2	**$149.95**

**** Except H and Rear Carbs***

E-Z HEAT 912 ENGINE PREHEATER

The E-Z Heat Engine Preheater system fits the Rotax motors and many other light sport aircraft on the market today. The system consists of two heater pads connected with a common "Light Bright" power cord. Installation is easy by peeling and sticking a pad on both the sump and on the oil tank to assure the engine gets the proper amount of heat. P/N 07-01860 .....**$149.95**

EP

ENGINE PREHEATERS

DESIGN LOGIC ENGINE PREHEATERS

08-04425

Constructed of solid aluminum, known for their dependability, performance, and overall value. An improved design saves time and money by allowing easy transfer to other engines or reinstallation after overhaul. Ea. 08-04425 kit includes 2 adapter plates, 1 flat and 1 curved (curve fits Continental sumps).The applicable adapter plate is simply screwed to the heater plate. This assembly is then adhered to the engine sump with thermally conductive adhesive (included). When necessary to remove the preheater, simply remove 4 screws! Specifications: 330W (08-00425) or 220W (08-00372). Thermostatically controlled 170°–200°F. Thermal fuse to prevent overheating should thermostat fail and heater become dislodged. FAA/PMA approved for over 600 engines. 2-yr, no hassle warranty. Application: Continental (except kidney shaped)5"x4-3/8"x7/8". P/N 08-04430 ..... **$199.95**
Application: Lycoming (except as below), Continental (except kidney shaped), Franklin, Garrett, & Marathon. 2-yr. warranty. Size: 5"x 4-3/8"x 5/8" (7/8" w/curved plate) P/N 08-04425 ..... **$189.95**
Application: Lycoming IOs w/air intake on bottom (IO 360A1A, for example); for engines where a smaller footprint required; typically mounts on side of sump. 2-yr warranty. Size: 5"x 2-7/8"x 5/8"
P/N 08-00372 ..... **$189.95**

Replacement Parts

Replacement Adhesive ..... 08-01054 ..... **$12.50**
Replacement Adhesive Kit (includes Applicator, Tie wraps, and Safety Wire) 08-01055 ..... **$15.90**

KENNON INSULATED ENGINE BLANKETS

Kennon's insulated engine covers are custom made fro the specific year, make and model of aircraft for a a snug fit. Kennon makes it own engine blanket material using a bonded fiberfill that doesn't need to be quilted to stay in place, which can destroy the loft and put thousands of needle holes in the cover where heat can escape. The outer shell is made of red, blue, or black polyester rather than nylon, increasing the useful life of the cover and the inner layer is fluorescent orange which can be used as a signaling device in the event of an emergency. Flaps for oil doors to check or fill the oil and cowling inlet flaps for preheating purposes can be added for $25.00 each. Insulated prop and spinner covers are also available.
2-Seat A/C (sml) . 07-00983..**$395.95** 4-6 seat A/C (reg.).. 07-00984 . **$409.95**
Twin Eng. A/C ... 07-00985..**$769.99** Spinner Cover . 07-00987 ... **$98.95**
Prop Cover ..... 07-00988....**$49.95**

SAFE-HEET ENGINE HEATERS

SAFE-HEET is a thin flexible pad that is bonded to the engine oil sump. The kit is complete with materials and step-by-step instructions. A log book entry is all that is required for permanent installation; No S.T.C. or 337 form required. There are no airframe modifications required. SAFE-HEET can be used with a timer or the 707 temperature controller, and uses standard 110 A.C. voltage. We recommend using the SAFE-HEET 707 Temperature Controller to cure the adhesive for faster installation.
MODEL 700 Dimension: 4" x 4"..... P/N 05-04420 ..... **$158.50**
MODEL 720 Dimension: 4" x 7"..... P/N 05-04421 ..... **$158.50**

VARIABLE TEMPERATURE CONTROLLER - The SAFE-HEET Variable Temperature Controller can be used with any 700 Series SAFE-HEET Engine Pre-heater as an installation aid, or for providing temperature control for continuous pre-heat without promoting internal engine corrosion.

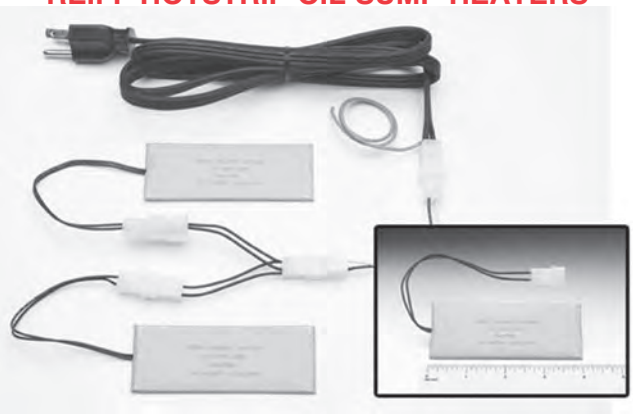
P/N 05-04423 ..... **$67.85**

For application information please call or visit our website at www.aircraftspruce.com

NORTHERN COMPANION PRE-HEATER

Compact: NC5A = 6" x 17.25", NC5B = 6" x 15". Lightweight: 6lbs, 6oz average weight. Multi Fuel: *100LL aviation gas - Leaded or unleaded auto gas - White Gas - Kerosene . Diesel - JP4 and JP8 jet fuel. Approximately 20,000 BTU: Type of fuel and pressure in bottle affect output. Shock-corded legs: Slide the legs away from the clips and they seat themselves in the base. Stainless Steel Burner Chamber. No Battery or Other Electrical Power Required. Fast Setup and Takedown - Even with mittens on!. No Tools Required
6" X 17.25"..... P/N 05-04767 ..... **$594.00**
6" X 15"..... P/N 05-04768 ..... **$594.00**

REIFF HOTSTRIP OIL SUMP HEATERS



HotStrip is thin and lightweight like a silicone pad, but made of steel for maximum durability. Works either as a stand-alone sump heater or integrated with the Hot Band Cylinder Heating Systems. Bonds to the bottom or side of oil sump and electrically heats the oil. Features dual heating elements for redundancy. System includes two 100W elements thermostat, and power cord.

FAA Approved for:
Lycoming 0-235; All 290, 320, 360 series; All 435, 480, 540, 541 series; Continental IO-346; All 300, 600 series; E-165, E-185, E-225, All 470, 520, 550 series. P/N 08-00688 ..... **$189.00**

REIFF PREHEATER FOR ROTAX 912/914

The Reiff preheat system for Rotax 912 and Rotax 914 aircraft engines is an engine-mounted electric preheat system designed for easier cold-weather starts. The preheat system consists of a 100-watt metal "hot strip" element, which is epoxied to the bottom of the crankcase, and a 50-watt band heater that is clamped to the oil tank. The Reiff is FAA-approved, and includes a thermostat to keep the oil from exceeding 150° F.
110V. ..... P/N 08-06219..... **$268.75**
220..... P/N 08-06219-1 ..... **$268.75**

EP

ENGINE PREHEATERS – CABIN HEATERS

BRUSHLESS CABIN HEATERS

DC Thermals heaters are hand built in the USA with only the very best parts, motors, and wire. The heaters are not constructed of snap together plastic, and cheap internal parts. They are constructed with DC Thermals own heater housings out of vinyl clad aircraft aluminum which is riveted together. DC Thermals heaters are designed to last you a lifetime, not a season. DC Thermal heaters will work in any vehicle with a DC electrical system from 12- 72 volts including cars, trucks, vans, busses, heavy equipment. DC Thermals heaters aren't your average heater. They offer the ultimate in durability and reliability and excel in the harshest possible environments.

The new Brushless SA series line of heaters are based on DC Thermals proven Stealth series, but with a newly designed brushless fan. The brushless cabin heater design has proven to work well with sensitive electronics found in some of todays equipment. The brushless design has proven to have very little EMI noise when tested on a scope.

RuCar vacuum sealed elements are featured in the brushless design as well as DC Thermal's own RuCar vibration dampeners. The Stealth Brushless series has a newly designed fan and motor assembly as well as a complete new mounting system. The Stealth SA is the perfect choice for the person who wants to add reliable INSTANT heat in just a few minutes. No water lines to run, fittings to install or worry about a corroded core down the road, and most importantly INSTANT HEAT, INSTANT DEFROST. No warm up time! These heaters are available from 12-72 volts, and different wattages as well. The Stealth heater is simple to install and can be operational in minutes. Measuring only 6" long and 5" tall, our Stealth heater will fit in virtually any small space. RuCar elements allow the heaters to be mounted vertically OR horizontally which allows even a tighter mounting space.

The Stealth heaters feature RuCar elements which have been tested to have a life expectancy of 10,000 hours, are vacuum sealed, and are exclusive to DC Thermal. RuCar elements operate at temperatures in excess of 650 degrees, are up to 300% more efficient than standard alloy heater elements.

Specifications: Heater Dimensions: 6"x 5" X 4". Brushless 50,000 Hour Ball Bearing Fan. 10,000 Hour DC Thermal ©RuCar Vacuum Sealed Elements. Case Construction: Riveted T5052 Aircraft Aluminum. Wired Entirely with GXL Wire. Thermally Protected. HIGH and LOW HEAT Settings. Comes complete with mounting hardware, mounting bracket, fuse, fuse holder, electrical connector ends, and detailed instruction. TWO YEAR Parts AND Labor Warranty.

Model	Volts/Watts	BTUS	Part No.	Price
SA12-3000	12V / 360W	6012	05-02121	**$198.95**
SA12-4000	12V / 480W	8016	05-01966	**$208.95**
SA12-5000	12V / 600W	10,020	05-03869	**$218.95**
SA24-2500	24V / 600W	10,020	05-04855	**$185.95**
SA24-3500	24V / 840W	14,028	05-03870	**$199.50**
SA24-4500	24V / 1080W	18,036	05-02123	**$218.00**

STAY WARM™ ENGINE SAVER

'STAY- WARM'™ Engine Saver will keep your oil in the sump at a constant temperature of 80° to 100°F., allowing for immediate circulation on start up. There is no installation required since all you do is take out your engine dipstick and insert the 'STAY-WARM'™ Engine Saver in its place and simply plug into a 110V outlet. (220V adapter available) Prior to flight simply remove and re-insert the engine dipstick. It only uses 90 watts, or the equivalent of a light bulb, so there is no fear of burning the oil and inexpensive to keep in your oil sump plugged in at all times, which is recommended for best results. The one size fits all 24" stainless steel tubing is semi flexible to fit most Continental and Lycoming 4 and 6 cylinder engines (does not matter if it is too long, as the heating element is at the bottom).

P/N 12-02830 .....**$36.50**

TANIS PREHEAT SYSTEM FOR ROTAX 912/914 SERIES ENGINES

Preheat system for Rotax 912/914 series engines. Kit contains heating elements for each cylinder, crankcase, and oil sump.

P/N 08-07395.....**$642.00**

TANIS PREHEAT SYSTEM FOR JABIRU 3300 ENGINES

Preheat system for Jabiru 3300 engine. Includes heating elements for each cylinder and oil sump, complete wiring harness and installation hardware.

P/N 08-07088.....**$574.95**

TANIS FLOOR MAT CABIN PREHEATER

Heated floor mats come in matched sets of two with a total heat output of 500 watts. They are interconnected with a harness and contain a thermostat in the power cord for temperature control. Each mat is 12" X 18" in size.

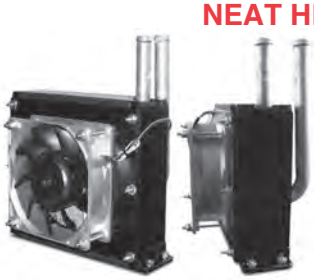
P/N 08-07396.....**$634.00**

RANS AIRCRAFT CABIN HEATER

The RANS aircraft heater is the answer to the winter flying "chills". It is very lightweight, inexpensive and installs easily in just two hours. This heater utilizes ram air & the heat off the engine muffler. Operation is simple. Slipstream air is forced through the heater inlet, passing over the muffler, picking up the heat and delivering it to the cabin or pod via an Aeroduct hose. Contains no moving parts. Fits Rotax mufflers and adaptable to other engines.

P/N 05-17400 .....**$209.95**

NEAT HEATER



A neat and compact, powerful heater system for your Light Sport Aircraft! Never fly cold again. Installs quickly and easily in any aircraft with a liquid cooled power plant. Specifically Designed For the Rotax 912 and 582.

Features:
- Powerful 300 CFM Fan
- Draws Only 3.4 amps
- Simple on/off controls
- Completely Shut Coolant Off In Summer
- Tested, Proven Design to 250 Deg at 25 psi.
- Infinite Mounting Possibilities
- Safe and Reliable
- Easy to Install/Service
- One Year Parts Replacement Warranty

Specifications:
- Dimensions: 7.5" x 6.75" x 3.75"
- Weighs only 6 lbs pounds

Neat Heater.....P/N 08-07376 .....**$393.95**
Neat Heater Install Kit .....P/N 08-07377 .....**$197.95**

EP

CH48110-1 CH48111-1

CHAMPION SPIN-ON OIL FILTERS

	Aircraft Model	Filter P/N
Beech	E33, F33, A35 thru S35	CH48109-1
Cessna	120, 140, 170, 172, 180, 182, 185,205,210, 310 C thru Q, 310R	CH48110-1
Mooney	M20, M22	CH48110-1
Piper	PA-18, PA-22, PA-23, PA-24, PA-25, PA-28, PA-30, PA-31, PA-34, PA-60	CH48110-1

Filter P/N	Price	12 Pack	Price
CH48103-1	**$21.75**	08-00905-12	**$247.95**
CH48104-1	**$21.75**	08-00906-12	**$258.95**
CH48108-1	**$21.75**	08-00907-12	**$257.95**
CH48109-1	**$21.75**	08-00908-12	**$258.95**
Filter P/N	**Price**	12 Pack	**Price**
CH48110-1	**$21.75**	08-00909-12	**$247.95**
CH48111-1	**$21.75**	08-00910-12	**$259.95**
CFO-100-1	**$20.75**	----	**---**

FM ENGINE MOUNTED OIL FILTER ADAPTER

FM engine mounted oil filter adapters eliminate the need for oil screens and provide increased filtering capabilities for longer engine life. Being engine mounted with no external lines, they reduce mess during oil changes and increase the time between oil changes. Includes adapter, filter, gaskets and STC. (CO-300 Pictured). Note: Tempest filters are included with FM adaptors. Price listed is for one adapter each.

FM Model	Aircraft Application	Engine Application	Part No.	Price
T.A.F.-L	Cont. C-75-12 C-85-12 O-200 O-200A	Cessna 120, Cessna 140, Cessna 150, Luscombes, Taylorcrafts, Cubs Note: Will only for Cubs with pressure cowls (totally encloses the engine). Will not work on Cubs that cylinders stick out through the cowling.	08-00631	$248.95
CO-300	Cont. C-125, C-145, CO-300	Cessna 170, 172, Globe Swift, Maule	08-00632	$329.95
C6LC-S	Cont. O-470, Cont. IO-470, Cont. IO-520	Bellanca Viking, Cessna 182, 55 series Beech Baron	08-00633*	$417.00
C6LC-L	Cont.O-470 IO-470, IO-520	Cessna 205, 206, 207, 210,310, Beech Bonanza & Debonair, Navion, Meyers, Twin Commander,Widgeon	08-00634	$417.00
C6SC	Cont. IO-360	Maule, Cessna 172 Hawk XP, Cessna 337, Cessna 336, Cessna 0-2, Mooney M20-K, Piper Turbo Arrow II & IV, Piper Seneca II, PA-34-200T, Cessna 175	08-01038	$427.95
C6LC-11/15	Cont. O-470-11, Cont. O-470-15	Cessna L-19 “Bird dog”	08-01037	$499.95

**** WILL NOT FIT AIRCRAFT WITH FLOATS***

ROTAX OIL FILTER 825-701

825-701(825-703) Oil Filter - Rotax 912. Original factory replacement filter. P/N 08-06100 .....**$19.95**

TEMPEST OIL FILTERS

Tempest Oil Filters feature a MAGNETIC secondary filtration system that attracts steel particles too small to be caught in the filter media.* Base Plate Thickness: .187” * Burst Pressure: 700 psi * Media Size: 311 sq. in. * AA48108 & AA48109: *Bypass Relief Valve TCM specs: 12-14 psi *Patented PC Housing.

Filter No.	Our Part No.	Price
AA48103-2	08-01266	**$16.75**
AA48104	08-01267	**$16.75**
AA48162 Cessna 162 LSA	08-48162	**$17.75**

Filter No.	Our Part No.	Price
AA48108-2	08-01268	**$16.75**
AA48109	08-01269	**$17.50**
AA48110-2	08-01270	**$16.75**
AA48111	08-01271	**$16.75**

SPIN-ON OIL FILTER - SIX PACK

Part No.	Tempest	Price	Part No.	Tempest	Price
08-04969	AA48103-2-6PK	**$99.50**	08-04972	AA48109-6PK	**$99.50**
08-04970	AA48104-6PK	**$94.75**	08-04973	AA48110-2-6PK	**$94.75**
08-04971	AA48108--26PK	**$96.75**	08-04974	AA48111-6PK	**$99.50**

TEMPEST ROTAX OIL FILTERS

The new filter has all the features which have made the Tempest oil filter so popular, including the magnetic secondary filtration system, and higher burst pressure. Full Can Thickness:.019”. Base Plate Thickness:.100”. Burst Pressure:275-325. Media Size:118 sq. in.

P/N 08-07226 .....**$19.95**

FOR TEMPEST OIL FILTER TOOLS SEE PAGE 723

AIRWOLF REMOTE MOUNTED OIL FILTER KITS

The remote mount oil filter kit by Airwolf Filter Corp. replaces the Lycoming oil screen and housing allowing every aircraft to have an oil filter and to locate it on the firewall where its easy to get to. The adapter takes up no more space on the engine than the original part, so even the tightest installations can benefit from it. Your Vernatherm and oil temp bulb are reused and transferred directly to our adapter, everything else is included. Universal STC’d kit fits any Lycoming powered Single/Multi engine airplane less than 450hp. All other STC’d for specific aircraft. Hoses not included unless where indicated. ***Perfect for Tight Installations in:*** * Avion * Aeronca * Bellanca *Beech *Cessna *Cozy MK-IV * Glasair * Grumman * Lancair *Long EZ *Maule *Mooney * Piper * Pitts * RV *Skybolt *T-18 *Vari-EZ * Velocity ***Fits Lycoming Series Engines: 0-235, 290, 320, 340, 360, & 540***

Application	Part No.	Price
Lycoming Filter Relocation Kit - Requires existing Lycoming 77852 Spin-on adapter. Application does not include helicopters.	08-00038	**$535.00**
STC’d Pratt & Whitney R985 Kit	08-00039	**$914.00**
P&W R985 Kit, Stearman	08-00995	**$816.00**
P&W R1340 Kit, T-6/Harvard Gorilla Pump for radial engines with slip on fittings.	08-07385	**$913.00**
P&W R1340 Kit, T-6/Harvard Gorilla Pump for radial engines with Aeroquip flare type fittings.	08-07386	**$798.00**
AFC-K015-D P&W R1830 Kit, DC-3/C-47	08-00997	**$1,295.00**
AFC-K015-E R985 Kit, Beach-18, Staggerwing, DGA-15	08-00998	**$815.00**
P&W R1340 Kit, Otter	08-00999	**$914.00**
AFC-K015-G P&W R985/1340 Kit, AG-Cat	08-01001	**$914.00**
AFC-K015-H P&W R1340 Kit, AT301/401/501	08-01002	**$909.00**
R1340 Kit, Thrush/S2D (Snow)	08-01003	**$914.00**
AFC-K015-L P&W R985 Kit,	08-01004	**$811.00**
FC-K015-K P&W R985 Kit, Weatherly ; Gorilla Pump for radial engines.	08-07297	**$927.00**
AFC-K016-A - Curtis Wright R755 Kit [Small Radials] Gorilla Pump for radial engines.	08-07298	**$523.00**
AFC-K016-B - Curtis Wright R1820 Kit [T-28]; Gorilla Pump for radial engines.	08-07299	**$995.00**
AFC-K016-C Curtis Wright R1820 Kit [Sikorsky S-58] Gorilla Pump for radial engines.	08-07300	**$1,234.00**
AFC-K016-D Curtis Wright R1820 Kit [DC-3] Gorilla Pump for radial engines.	08-07301	**$1,234.00**
AFC-K016-E Curtis Wright R1820 Kit [Grumman Tracker] Gorilla Pump for radial engines.	08-07302	**$995.00**
Lycoming Homebuilt Kit	08-05605	**$474.00**
STCD Husky Kit AFC-K005	08-05635	**$1,029.00**
STCD Super Cub Kit AFC-K006	08-05630	**$798.00**
STCD Universal Lycoming Kit	08-05660	**$524.00**
STCD Lycoming Kit-Fits all with Single Drive,Dual Magneto Engines.	08-05665	**$528.00**
STCD Lycoming Kit - Fits All IO-720 Engines	08-05670	**$575.00**
STCD Universal Continental Kit - Fits A50, A65, A75, A80, C75, C85, C90, C125, O-200, & IO-240 Engines.	08-05675	**$528.00**
STCD Continental Kit-Fits C145,O300,GO300,&IO360A,C,D,G,H,J,K	08-05680	**$519.00**
STCD Continental Kit (O470, IO470, IO520, TSIO520, GTSIO520, & IO550 Engines)	08-05685	**$524.00**
STCD Continental Kit (O470-11 & -15 Military Engines used on T34 & Cessna 305 Birddogs.)	08-05690	**$595.00**
STCd Continental Kit - Fits E-165, E-185, E-205, E-225	08-05700	**$544.00**
STCD Continental Kit (TIO360, IO520BA, C, M, TSIO520 B, D, E, J, K, L, N, U, BE, VB, WB & IO550B, C Engines)	08-05800	**$724.00**
STCd Continental Kit - Fits W-670 Radials(Stearman)	08-05805	**$535.00**
STCD Continental Kit - Fits W-670 Radials (Waco)	08-05810	**$531.00**
STCD Franklin Oil Filter Kit	08-05815	**$895.00**
Replacement Filter Standard Length (Champion oil filter)	CH48108-1	**$21.75**
Replacement Filter Long (Champion oil filter)	CH48109	**$21.75**

EP

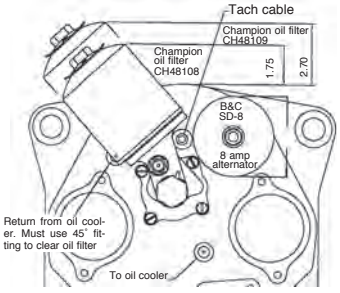
OIL FILTERS ADAPTERS — OIL DRAIN VALVES

K&N OIL FILTERS

K&N powersports oil filters are 'TUV' product endorsed and 'TUV' factory production monitored. This means every K&N oil filter is equal to or will exceed all OEM specifications. Our filters contain a modern synthetic filter media, designed for ultimate flow with less pressure drop, yet engineered for outstanding filtration to meet or exceed all OEM specifications. All K&N powersports 'spin-on' oil filters feature a heavy-duty metal can with a 17mm nut affixed onto the end that allows for easy installation and removal. The 17mm nut is crossed-drilled so racers can safety wire the filter to their bike.

K&N OIL FILTER KN-141 ..... P/N 08-06231 ..... **$9.75**
K&N OIL FILTER KN-142 ..... P/N 08-00691 ..... **$9.75**

B&C MODEL BC700 LYCOMING OIL FILTER ADAPTER



This 90˚, spin on oil filter adapter is FAA approved for replacement of existing oil pressure oil screens or spin-on filter adapters on Lycoming 0-235; O, IO, LIO, AIO, AEIO-320; O, IO, LIO, HO, HIO, TIO, AEIO-360; O, IO, HIO, TIO, LTI, AEIO-540 & IO-720 series engines. It is CNC milled from solid aluminum billet and fits perfectly without interference with the magnetos, vacuum pump, or the mechanical tach drive. Adapter kit comes complete with new gasket, new aluminum washer for the vernatherm, new copper gasket for the oil temperature sensor, sealant for the gaskets, & new Lycoming bolts for mounting the adapter. Wt: 4lbs. Uses CH48108 or CH48109 filters.

Adapter Kit w/ STC (for certified A/C) ..... P/N 08-00195 ..... **$447.00**
Adapter Kit w/o STC (for homebuilt A/C) ..... P/N 08-00196 ..... **$385.00**

Required Items:

B&C Oil Temp Probe Adapter ..... P/N 08-07092 ..... **$14.50**
B&C Vern-a-therm Opening Plug ..... P/N 08-07093 ..... **$49.75**

EP

CESSNA / CONTINENTAL OIL FILTER ADAPTER KITS

Part No.	Aircraft Application	Price
0450404-202	C150, A150, F150, FA150, FRA150	$932.00
0556010-200	C172, F172	$963.00
1250922-201	C180, C185, C188, T188	$629.00
1250922-200	C205, C206, U206, P206, 207	$559.00

All the Continental spin on adapter kits above require the following items in addition to the adapter: Oil Filter ..... P/N CH48110 ..... **$21.75**
Nut ..... P/N 1250405-1 ..... **$304.95**
AN123883 O-Ring . P/N 08-04930 ..... **$3.65**

LYCOMING SPIN-ON FILTER ADAPTER KITS

Part No.	Aircraft Application	Price
LW-13743	All Applicable Engines Except Models Shown In Table Below	$697.00
LW-13744	0-235 Series	$648.00
LW-13745	IO-720 with 1200 Series Series Magnetos	$611.00
08-00513	0-320-H (LW-14969)	$1,431.00
LW-13904	All Engines with Dual Magnetos. Includes Converter Plate Assembly and Does Not Include Filter	$671.00

All Lycoming spin on oil filter adapter kits above include adapter, oil filter assembly, adapter plate, gaskets, & attaching hardware. LW-14969 kit also contains oil cooler bypass valve assembly, 2 elbows, & 2 oil seals for oil cooler installations.

CASPER LABS LYCOMING 90° OIL FILTER HOUSING

Designed to provide sport plane builders and owners several improvements over the standard Lycoming oil screen or filter hardware. This device locates the filter in the vertical plane for two unique advantages. 1) The filter is now in "free" space, permitting installation with tight engine to firewall clearance (that would otherwise be limited to an oil screen). 2) The filter is easily accessible without contortions or broken knuckles. 3) When it is time for filter changes . . . a prick punch in the top of the filter allows oil to drain back to the sump such that none is spilled during removal. No accessory case, lower cowl, or nose gear cleanup is required after filter removal.

Kits Include: * Housing * Filter * O-Ring and Washer

Exper. Oil Filter Housing Kit CH48109-1 filter... P/N 08-00977 ... **$309.95**
Exper Oil Filter Housing Kit CH48108-1 filter.... P/N 08-00976 ... **$309.95**
Exper Adapter only..... P/N 08-00975 ... **$289.00**
STC'd Oil Filter Housing Kit CH48109-1 filter... P/N 08-01237 ... **$329.95**
STC'd Oil Filter Housing Kit CH48108-1 filter... P/N 08-01236 ... **$333.95**
STC'd Adapter only ..... P/N 08-01094 ... **$309.00**

AEROQUIP E-Z OIL DRAIN SUMP VALVES

Makes aircraft oil changes easy. The hand actuated valve when attached to the oil drain port permits engine oil changes from the ground without removing the engine cowling. The spring loaded E-Z Drain valve cannot be accidentally opened. Actuation of the valve requires a combination push/twist motion. It also contains a dual seal arrangement which combines both an O-ring & metal-to-metal seal to prevent accidental leakage of oil through the valve. FAA Approved for use on the engines listed. Incorporates fine Aeroquip quality hose. Installation eligibility listing furnished with each unit.

Part No.	Engine Application	Thread	Price
AE99950G	Cont. C-90, O-200, GO-300, IO-360 TSIO-360, O-470, IO-470 TSIO-470, IO-520, TSIO-520, GTSIO-520	5/8-18	$219.95
AE80666H	Cont. O-300, late C-145	1-18	$687.50
AE80664H	Lycoming Engines	1/2NPT	$169.95

Valve O-Ring, All Models ..... MS28775-011 ..... **$0.23 Ea.**
Interface O-Ring ..... AE99950G MS28775-113 ..... **$0.26 Ea.**
AE805555H MS28775-118 ..... **$0.21 Ea.**

Not to be used on Piper Models PA-28R-200, PA-28R-201, PA-28RT-200.

SAF-AIR OIL DRAIN SUMP VALVES

S6250

Changing engine oil has never been easier. With the Saf-Air oil Drain Valve, no wrench is needed to remove the drain plug. A simple push and turn of the Saf-Air valve locks it in the open position. The valves are made completely from aluminum & stainless steel parts. FAA & PMA APPROVED

Part No.	Engine Application	Thread	Price
S6250	Cont. (same as Aeroquip AE99950G)	5/8-18	$79.50
S1000	Cont. (same as Aeroquip AE80666H)	1-18	$85.75
P5000	LYC (same as Aeroquip AE80664H)	1/2NPT	$85.75
M12175	ROTAX 912, 914	12mm x 1.75	$38.75
S7516	Cont IO-520-E	3/4"-16	$84.50
P7500	Franklin Engines	3/4" NPT	$84.75
S5020J	Jabiru 2200 / 3300	1/2"-20	$38.75
M20150	Subaru 2.2L / 2.5L	20-1.50mm	$41.50

F62

SAF-AIR LOW PROFILE 2-PIECE OIL DRAIN SUMP VALVES

Perfect for a close clearance engine oil drain application such as on the Piper Arrow. These low profile oil drain valves are designed to clear retractable landing gears & other restrictions. The valve is very affordable and can be rebuilt. It is a simple procedure to sample or drain hot oil. The valve is made from 360 brass & 302 stainless steel. FAA & PMA APPROVED.

Mfg. No.	Part No.	Engine Application	Thread	Price
F62	05-00981	Continental	5/8-18	$114.95
F10	05-00982	Pratt & Whitney	1-18	$114.95
F50	05-00983	Lycoming	1/2-18 NPT	$114.95

LOW PROFILE OIL DRAIN VALVE FOR LANCAIR

This is exactly what Lancair IV owners have needed for their continental engine! Forget the huge mess when changing oil! Engineered to fit and will not interfere with the retracted nose strut! Finally, makes oil changing simple and easy in your Lancair IV! Fits any 5/8"-18 thread drain plug. Brass and steel construction; yellow zinc plated dust cover provides protection between changes. Drains via hose directly into container. P/N 08-01298 ..... **$97.50**

SAF-AIR OIL DRAIN VALVES

Changing hot engine oil has never been easier! With the SAF-AIR oil drain valve, no wrench is needed to remove the drain plug. A simple push and turn of the SAF-AIR valve locks it in the open position. The valve is made completely from anodized aluminum and stainless steel components. These materials are used throughout the aircraft industry due to their strength and durability. FAA & PMA APPROVED.

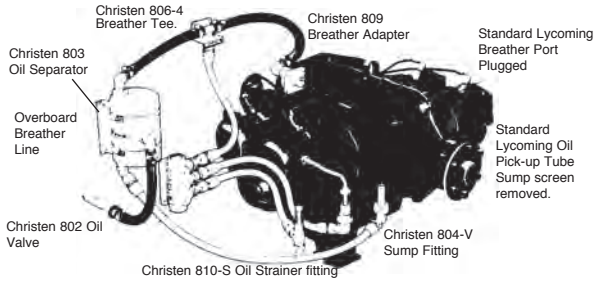
Description	Part No.	Price
S7516	05-00984	$84.50
P7500	05-00985	$84.75
P5000	07-00879	$85.75
M20150	05-00987	$41.50

Description	Part No.	Price
S6250	06-00637	$79.50
S5020J	05-00986	$38.75
M12175	07-00876	$38.75
S1000	07-00880	$85.75

AIRCRAFT SPRUCE WEST
CORONA, CA • (877) 4-SPRUCE
AIRCRAFT SPRUCE EAST
PEACHTREE CITY, GA • (877) 477-7823
Prices Subject to Change Without Notice

OIL SYSTEMS

CHRISTEN 801 INVERTED OIL SYSTEM



This accessory kit for Lycoming engines provides normal engine lubrication with minimal oil loss during aerobatic flight. It functions as a self-contained extension of the normal engine oil and breather systems. Can be installed in a few hours without engine disassembly.

Part No.	Description	Price
801-4	For four-cylinder engines. Includes 802 Oil Valve (with plug wrench and plugs for unused ports), 803 Oil Separator, 806-4 Breather Tee, and product manual which provides detailed instructions for application. Weight: 4.75 lb. installed.	**$988.00**
801-6	For six-cylinder engines. Same as 801-4 Kit, but is supplied with 806-6 Breather Tee. Weight: 4.75 lb. installed.	**$1,025.00**
811-V	For vertical-screen sump engines. Includes 810-S Oil Strainer Fitting, 810-R Oil Return Fitting, 804-V Sump Fitting (vertical type) with crush gasket and MS20822-10D elbow. Weight: 0.50 lb. installed.	**$359.50**
811-A	For horizontal-screen sump engines. Includes 810-S Oil Strainer Fitting, 810-R Oil Return Fitting, 805 Sump Plug with insertion tool, 804-A Sump Fitting (angular 360° swivel-type) with crush gasket and wrench for swivel clamping screw. Weight: 0.36 lb. installed.	**$527.00**
811-S	For horizontal-screen sump engines. Includes 810-S Oil Strainer Fitting, 810-R Oil Return Fitting, 805 Sump Plug with insertion tool, 804-S Sump Fitting (straight-type) with crush gasket. Weight: 0.33 lb. installed.	**$446.95**
809-K	For engines with forward breather ports such as the O-235 and O-290 models. Includes 809 Breather Adapter with gasket. AN842-12D hose elbow, and MS20913-6D plug for forward breather port. Weight: 0.53 lb. installed.	**$267.95**
812-2	For addition of oil ports to engine sumps. Includes two 812 Weld Bosses and quantity of 5% silicon-aluminum welding rod (type 4043) Weight: 0.12 lb. installed.	**$159.50**
812-1	Same as 812-2 Kit, except with only one 812 Weld Boss for addition of single sump port. Weight: 0.06 lb. installed.	**$88.25**
813-4	Stainless steel spring wire. Installed inside breather hose to permit relatively sharp bends without collapsing or kinking. 10 x 47/64". Weight: 0.12 lb. installed.	**$95.50**
813-6	Stainless steel spring wire. Installed inside breather hose to permit relatively sharp bends without collapsing or kinking. 10 x 63/64". Weight: 0.12 lb. installed.	**$16.25**
807-4	All hoses and fittings required for deluxe show-plane quality installation on four-cylinder engines. Includes Aeroquip braided stainless steel hose for oil lines, MIL-H-6000 rubber-fabric hose for breather lines, thin abrasive cut-off wheel for professional-quality hose cuts, AN and MS fittings (blue anodized), Aeroquip hose end fittings (blue and red anodized), and miniature stainless steel hose clamps. All materials are factory new; no surplus. Weight Excluding Hose: 1.53 lb. installed.	**$1,433.00**
807-4 Economy Hose & Fitting Kit	These kits include same items as Aviat Factory Kits but are packaged by Aircraft Spruce.	**$607.00**
807-6 Economy Hose & Fitting Kit		**$627.00**

10-page detailed manual - describes system operation & procedure for selecting proper components for each engine model.
P/N 05-20600..... **$17.50 ea.**

CHRISTEN OIL VALVE

Multiple port gravity operated ball valve. It is cast aluminum with textured white epoxy enamel finish and all internal steel parts are cadmium plated. Normally installed on firewall or on engine mount. Designed for fittings to be installed either at side or front or both. Requires 3 AN816-10D nipples for hose connection. Wt. 1.75 lbs. installed. P/N 08-06745 ..... **$349.00**

CHRISTEN OIL SEPARATOR

Features welded aluminum construction with a textured white epoxy enamel finish. All internal parts are cadmium plated, and unit includes stainless steel positioning clamps. Normally installed on fire wall or on engine mount. Requires 2 AN842-12D or -16D hose elbows and one AN823-10D hose fitting. Wt. 2.8 lbs. installed. Applicable to all Lycoming engine applications. Used to replace a worn out or broken oil separator on Christen 801-4 systems only. P/N 08-06740 ..... **$446.00**

AERO CONVERSIONS OIL SEPARATOR

A high-quality welded and powder-coated aluminum assembly designed to save oil vs. direct overboard crankcase breathers in normal flight operations. Features an extra-high-volume design offering enhanced inverted flight performance in entry-level aerobatic aircraft, allowing oil to be retained and returned to the engine during short-duration inverted and limited negative G maneuvers. The angled design makes it a perfect fit for Sonex Aircraft angled firewalls, while retaining compatibility with traditional vertical firewall installations in other aircraft. Comes with comprehensive installation instructions suitable for a wide-range of engine installations. P/N 08-07107 ..... **$106.95**

RAVEN WELD BOSS KITS

These kits for sump mods come with fittings and welding rod. Aluminum Sumps (most 4 cyl)
One boss... P/N 08-00789.... **$35.00**
Two boss... P/N 08-00790.... **$65.00**
Magnesium Sumps (most 6 cyl.) One boss... P/N 08-00791.... **$60.00**
Two boss... P/N 08-00792.... **$95.00**

RAVEN BASIC INVERTED OIL SYSTEM

Raven systems consist of the valve with three pipe plugs, tank, mount, and clamps. The tank is constructed from aluminum and is tig welded using stainless steel internal parts prevent corrosion. Valve is machined from solid aluminum, and all parts are power coated black or white. Valve is 5-1/2"h x 1-1/2" x 1-1/2" & weighs 1.85 lbs, 5" tank is for 4 or 6 cylinder applications, & 4" tank is for 4 cyl. applications only.
5" tank-black .....P/N 08-00796 ..... **$724.00**
5" tank-white .....P/N 08-00800 ..... **$735.00**
4" tank-black .....P/N 08-00797 ..... **$784.00**
4" tank-white .....P/N 08-00801 ..... **$724.00**

RAVEN INVERTED SYSTEM VAC ADAPTERS

These vac adapters are machined from solid aluminum with anodized finish. Furnished with a seal installed, and complete with AN fitting and gaskets.

Vac-4 for 4 cyl Lycomings.....P/N 08-00785.....**$198.95**
Non-Acc'y Vac Pad Oil P/U.....P/N 08-00786.....**$74.80**

RAVEN SUMP FITTING KITS

These sump fitting kits come with specialized fittings, washers , O rings needed to install the kit.
Sump kit for Horizontal screen 4 or 6 cyl. Lyc. P/N 08-00787 .... **$427.00**
Sump kit for Vertical screen 4 or 6 cyl. Lyc. P/N 08-00788 .... **$279.00**

SLIME FIGHTER

For engines that have horizontal oil filters, this system will eliminate the problem of oil dripping down into the engine and on the firewall while the filter is being removed. A tray is supplied that catches the oil coming from the engine flange and filter while it is being unscrewed. The oil in the tray pours down a hose connected to the bottom of the tray. The filter can now be removed and thrown away. Includes the welded aluminum tray, oil filter wrench and hose. Full set of instructions included.....P/N 08-00974 ..... **$59.75**

EP

OIL FILTER SYSTEMS

AIRWOLF AIR/OIL SEPARATOR

The Airwolf Air/Oil Separator will improve the efficiency of your aircraft dramatically whether it is a single engine fun craft of a twin powered corporate plane. Designed to separate air and oil in the crankcase breather & wet vacuum pump systems on conventional aircraft engines, Airwolf recovers oil from the crankcase, thus eliminating the oily overboard discharge and the ever present "oily belly" syndrome. Oil loss is greatly reduced - tests have indicated a recovery of up to 80% of crankcase oil previously wasted, depending on the type and condition of the engine. The Airwolf oil recovery system is only slightly larger than an oil filter cartridge (4" dia. x 7.5") and it is available for all conventional engines regardless of displacement. It can be easily removed and disassembled for inspection and cleaning. With no moving parts, the Airwolf is designed to last the life of your engine. Available for planes with either wet or dry vacuum pump. Now STC'd for most aircraft. Available in black epoxy finish only. Specify aircraft model no., serial no., and engine model. Now manufactured by Airwolf.

Airwolf	Application	P/N	Price
AFC-W300-A	Beech H35, J35, K35, M35, N35, P35 (S/N D-4866 thru D-7309) Debonair 35-33, 35-A33, 35-B33, 35-C33 (S/N CD-2 thru CD-1118)	08-00645	**$489.00**
AFC-W302-A	Cessna 180/182/185/A185	08-03806	**$474.00**
AFC-W304-A	Beech Bonanza (Pressure Gyro Systems Only) Beech V35B (S/N D-9787) Beech V35B (S/N D-9806 & after) Beech A36 (S/N E-716) Beech A36 (S/N E-732 & after) Beech F33 (S/N CE-602 & after)	08-01299	**$498.95**
AFC-W306-A	Piper Cherokee PA-28-140/150/160/180 & PA-285-160/180 Warrior PA-28-151 Archer PA-28-181 Arrow PA-28R-180, PA-28R-200	08-07398	**$474.00**
AFC-W307	Bellanca Viking 17-30A	08-01301	**$498.95**
AFC-W309-A	Beech (Vacuum Gyro Systems Only) Baron All 55 Series (with IO470)	08-01302	**$624.00**
AFC-W311-A	Mooney M20 A/B/C/D/E/F/G/J	08-01303	**$489.00**
AFC-W314-A	Piper PA24-250/260 Comanche	08-03834	**$469.95**
AFC-W316-A	Cessna (Non Turbo Charged) P206A, B, C, D, E U206A, B, C, D, E, F, G 210L, M	08-00652	**$474.00**
AFC-W318-A	Cessna (Turbo Charged) TP206A, B, C, D, E TU206A, B, C, D, E, F, G T210L, M	08-01297	**$695.00**
AFC -W321-A	Cessna Skyhawk 1721, K, L, M (3/8" Rocker Box Drain Lines)	08-00655	**$474.00**
AFC-W322	Cessna Cardinal 177 Cessna Cardinal 177RG	08-01304	**$474.00**
AFC-W323-A	Cessna Skylane RG 182	08-01306	**$489.00**

See www.aircraftspruce.com for unlisted models.

AIRWOLF MINI AIR/OIL SEPARATOR

Reduce oil consumption and remove harmful water vapor with Airwolf's Walker Air/Oil Separator. The AirSep distills and recirculates crankcase oil vapor generated by normal operation, extending engine life.

The Airwolf Walker AirSeps uses a tiny amount of vacuum pump discharge air, to help condense the oil inside the AirSep, and to overcome crankcase pressure to return collected oil to the engine while the engine is running. The competitive systems are only gravity flow so no oil returns into the engine until the engine is completely shut off. Thus, one system is large enough to clean both the engine breather oil and wet vacuum pumps discharge. It comes with a lifetime warranty on workmanship and material of all new AirSeps produced. STC'd

MiniSep, 3/4" Inlet ..... P/N 08-05887 ..... **$395.00**
MiniSep, 1" Inlet ..... P/N 08-07188 ..... **$395.00**
MiniSep, 5/8" Inlet ..... P/N 08-07189 ..... **$395.00**
Wet Vacuum Pump MiniSep, 5/8" Inlet ..... P/N 08-07190 ..... **$395.00**

ADVANCED AERO AIR/OIL SEPARATOR

Small

Med./Lg.

These air oil separators are proven and tested to help keep your kit plane or experimental A/C free & clean from oil splatter. Totally serviceable and easy to maintain by removing the lid , rinse inspect and reinstall. The design allows for easy installation in the breather line by the use of hose clamps. Oil from the separator is returned thru tubing to a port in your engine's housing or by returning at the base of the engine crank case. Made from durable 6061T6 Aluminum, tig welded and anodized in a flat gold an for high quality finish & corrosion protection. Suitable for most engines such as Lycoming, Continental,Jabiru, MP radials & most engines & Radials up to 1200HP for the (SP0900).

Small..... P/N 08-07286..... **$295.00**
Medium..... P/N 08-07287..... **$335.00**
Large ..... P/N 08-07288..... **$365.00**
Easy Clamp Bracket Mount..... P/N 08-07289..... **$170.00**

CHALLENGER FAA/PMA LIFETIME OIL FILTER SYSTEM

The filter element is made from medical grade, type 304 stainless steel micronic filter cloth providing unmatched protection against oil contamination and resultant engine damage.

A rare earth magnet is installed in the top of the element for magnetic pre-filtering of the oil. The unique twist lock design allows for easy disassembly, inspection and cleaning. The quad-ring gasket doubles the seal between the filter and the engine . The filter housing is carved out of a solid piece of 6061 T6 billet aluminum with cooling fins, which not only looks good but aids in dissipating heat.

Features: • Cleanable and Reusable • High Flow Rate • Unique Twist Lock Design • Exteriors Fins • Unaffected by Water, Heat, or Pressure • Safety Wire Attachments 360 degrees • Environmentally Friendly.

Challenger	Replaces	Our P/N	Engine Model	Price
CP-48103C 13/16-16 Thread w/o relief valve	CH48103-1	08-06017	LYCOMING O-320, IO320, O360,IO-360, LO-360, TO-360, HIO-360, LTO-360, LHI0-360 SERIES	**$295.00**
CP-48104C 13/16-16 Thread w/o relief valve	CH48104-1	08-06018		**$295.00**
CP-48108C 3/4-16 Thread w/o relief valve	CH48108-1	08-06019	CONTINENTAL 6-285, IO-346, IO-360, TSIO-360, O-470, IO-470, LIO-470, TSIO-470, IO-520, TSIO-520, GTSIO-520, LTSIO-520, IO-550 SERIES	**$295.00**
CP-48109C 3/4-16 Thread w/ relief valve	CH48109-1	08-06020		**$295.00**
CP-48110C 3/4-16 Thread w/ Nipple w/o relief valve	CP48110-1	08-06021	LYCOMING O-235, IO-320 SERIES LIO-320, AIO-3230, AEIO-320, O360,IO360, AIO-360, HIO-360,LIO-360, TIO-360, LHIO-360, AEIO-360, O-540, IO-540, HIO-540, TIO-540, AEIO-540, LTIO-540, TIO-541, IO-580, IO-720 SERIES	**$295.00**
CP-48111C 3/4-16 Thread w/nipple w/o relief valve	CH48111-1	08-06022		**$295.00**
CP-9124C w/ relief valve	8245-706	08-07174	Bombardier-Rotax 912 F2, 912 F3, 912 F4, 912 S2, 912 S3, 912 S4, 914 F2, 914 F3, 914 F4	**$195.50**

CHALLENGER ACCESSORIES

Bonanza Gasket	08-01041	**$9.95**
Gasket C140 150 152	08-01043	**$9.95**
Gasket C170 172	08-01044	**$9.95**
Gasket c180 182 185	08-01045	**$9.95**
Gasket PA28-151, 161	08-01046	**$9.95**
Gasket Mooney 20E, F	08-01047	**$9.95**
Gasket Mooney M20J	08-01048	**$9.95**
Gasket Oval	08-01049	**$9.95**
Gasket Piper Round	08-01050	**$9.95**
Gasket C177 Cardnal	08-01264	**$9.95**

CHALLENGER STAINLESS STEEL MICRONIC OIL FILTER FOR ROTAX 912/914 ENGINES

The filter element is made from medical grade, type 304 stainless steel micronic filter cloth providing unmatched protection against oil contamination and resultant engine damage.

A rare earth magnet is installed in the top of the element for magnetic pre-filtering of the oil. The unique twist lock design allows for easy disassembly, inspection and cleaning. The quad-ring gasket doubles the seal between the filter and the engine . The filter housing is carved out of a solid piece of 6061 T6 billet aluminum with cooling fins, which not only looks good but aids in dissipating heat.

Features: • Cleanable and Reusable • High Flow Rate • Unique Twist Lock Design • Exteriors Fins • Unaffected by Water, Heat, or Pressure • Safety Wire Attachments 360 degrees • Environmentally Friendly.

P/N 08-07174 ..... **$195.50**

EP

AIR OIL SEPARATORS

SLIME FIGHTER AIR-OIL SEPARATOR

Universal air-oil separator ideal for virtually any experimental aircraft. They are machined from aluminum stock and welded by a certified welder. Oil separation is provided by baffles attached on the inside. This is a one pipe system with no extra drain lines or hoses required. Oil drains back immediately to the engine and warm air without oil goes out. No back pressure. The unit is the size of a salt shaker and weighs only ounces. Installation instructions and fittings included. Easy to install. Currently in use on over 100 RV aircraft.

P/N 08-00661 ..... **$163.95**

SUPER SLIME FIGHTER®

Following in the success of the Slime Fighter® series of air separators, Aircraft Spruce now offers the Super Slime Fighter with the same ease of installation for large Lycoming engines found in aircraft such as the RV-10, Glassair III and the F1 Rocket. Installs in 20 minutes with no additional drain line required. Includes instructions. Clamps and hoses are only included in the RV-10 kit. RV-10 kit includes custom hose shape. Not FAA approved.

Standard Experimental ..... P/N 08-06151 ..... **$215.95**
RV-10 Experimental ..... P/N 08-06152 ..... **$239.95**

HOMEBUILDER'S OIL BREATHER/SEPARATOR

These 4 inch diameter reservoirs have beaded outlets for 5/8" I.D. hoses and a mounting flange for easy firewall attachment. These units are of a new, improved design and the reservoir body is now a spun aluminum bowl for optimum performance. The oil separators minimize oil loss and allow free breathing of the engine. They are recommended for experimental aircraft use only and are not STC'd for any certificated aircraft. Size: 4"dia.x 3-3/8"h. P/N 10570 ..... **$49.50**

RMJ-AERO OIL SEPARATOR

Designed to remove oil from the engine crankcase breather line providing the builder with a cleaner plane, less oil consumption, and prolonged engine life from maximum cooking, cleaning, & lubrication. Fashioned after Tony Bingelis's proven design, these separators incorporate several enhancements, including O-ring seals for the lid. Fabricated from aircraft quality materials, TIG welded, and alodyned for corrosion control. They can be firewall or cooling baffle mounted with the cushion clamp provided. The design allows for easy installation in the breather line by the use of hose clamps. Oil from the separator is returned thru tubing to a port in your engine's housing. Should your engine not have an available oil return port, RMJ-Aero can provide a Self Sealing Clamp-On Adapter utilizing your engine's oil filler neck. Installation of this adapter is easy for both flying and aircraft under construction. When clamped in place around the filler neck, the adapter provides a return port for separated oil and an integral seal, which prevents leakage. Installation & maintenance guidelines are included.

Description	Part No.	Price
Oil Separator for Lycoming (3/4" inlet/outlet)	08-00571	**$249.00**
Oil Separator for Cont. (5/8" inlet/outlet)	08-00572	**$254.95**
Adapter for Lycomings	08-00577	**$31.25**
Adapter for Continentals	08-00578	**$28.50**

HOMEBUILDER'S ENGINE CRANK CASE OIL BREATHER

This is a 3-1/4" dia. can reservoir with a 3/4" or 5/8" od hose barb outlet, 1/8npt curtis drain valve on bottom of can, and a fire wall mounting bracket. Item also available with a 5/8 od hose barb outlet, please call or email for price & availability. It keeps oil in can and off belly of airplane then can be drained later with petcock. Helps to keep crank case condensation to a minimum. Recommended for experimental aircraft use only not STC'd for certified aircraft.

3/4" od hose barb outlet ..... P/N 08-00765 ..... **$98.75**
5/8" od hose barb outlet ..... P/N 08-07219 ..... **$98.75**

AEROMAG

AeroMag is a powerful high-tech magnet assembly that fits around your oil filter to trap and hold steel particles against the inner wall of the filter canister. These are the particles that are missed by the standard aircraft filter. This results in fewer damaging wear particles recirculating in your oil, and prolonged engine life. Install is simple, and there are no moving parts. AeroMag fits all Lycoming & Continental engine filters. For experimental aircraft only (FAA approval pending). P/N 08-01088 ..... **$82.25**
AeroMag for 3" Dia. Filters (Rotax) ..... P/N 08-01235 ..... **$59.75**

M-20 AIR-OIL SEPARATOR

Model 300

Model 400

The M-20 Air/Oil Separators for crankcase breathers have set the performance standards for aviation. A simple performance test for any separator is to fill the engine oil to the full mark and take a 2 hour flight. Only with the M-20 will the oil still read full with none blown out on the belly. This difference makes them preferred over all others. Only the M-20 Separators carry FAA approval for all 1600 makes and modelos of certified piston aircraft from 45 hp to 950 hp. They are also applicable to all homebuilts and foreign made aircraft with similar power.

No vacuum pump connection is used, since the addition of as little as 1/16 PSI will make a new engine perform like it is run-out. M-20's vent the crankcase pressure and use only gravity for returning the oil.

The -A and -B suffix varies only in the direction of the oil return tube. On the -A models the direction is away from the inlet, on the -B towards the inlet. The -A's generally favor Lycoming, Franklin and radials, the -B's favor Continentals. Either may be mounted in-line; the -B may also be firewall mounted since it has a blank side.

Typical Airplane Models	***Part No.***	***Price***
Model 300-A, 45 to 315 hp	08-00182	**$396.00**
Model 300-B, 45 to 315 hp	08-00409	**$396.00**
High Horsepower Airplane Models	***Part No.***	***Price***
Model 400XL-A, 315 to 950 hp	08-00413	**$462.00**
Model 400XL-B, 315 to 950 hp	08-00861	**$462.00**
Helicopter Models	***Part No.***	***Price***
Model 300H-A, 45 to 315 hp	08-00411	**$436.00**

MODEL 605Y "Y" FITTING

The oil returns of both the M-20 Breather separator and the Wet Pump Separator may be combined using the Model 605Y. This "Y" fitting has a venturi for scavenging the drop-by-drop return oil from the breather separator by the stream of oil from the wet pump separator.

P/N 08-00862 ..... **$31.65**

RAVEN AIR/OIL SEPARATOR

This oil/air separator, used in non aerobatic applications uses female threaded inserts so you can use any size of straight or angled fittings to custom fit your application. P/N 08-00798 ..... **$275.95**

ANDAIR OIL/AIR SEPARATOR

Manufactured from aircraft grade materials and anodised for corrosion protection, this unit is extremely light weight and rugged. The OS8850 has been designed to remove the oil from the crankcase breather on Lycoming and Continental Engines. This gives reduced oil consumption, cleaner aircraft, and environment. The CS850 has some unique features that make it the best on the market.

* Upper outlet can rotate through 360° allowing easy installation. * The unit can be dismantled for inspection/cleaning. * Vortex swirl separation. O-Ring seals. * Light weight: 6.4 oz. * 4 off 10-32 mounting lugs on the base of the separator for easy fire wall mounting.

P/N 08-01034 ..... **$293.00**

ANDAIR CONDENSATION TRAP

This new device is a small and very light weight condensation trap. It is used to extract the water from the oil when used in conjunction with the Andair Oil / Air Separator. Water can build up in the engine due to water in the air condensing during a cold night. Overnight this water sinks to the bottom of the sump settling at the lowest point. This is generally where the oil pump pick up is. Therefore there is a real potential that if one of these devices is not used water can build up in the engine. Flight test have shown that the worst possible condition for water in the oil is on humid days, cold nights and where short flights are undertaken.

P/N 08-01035 ..... **$108.50**

OIL COOLER APPLICATION CHART

Aircraft Model	Aero-Classic Part No.	Positech Part No.	Stewart Warner Part No.
Beech 10, C23, A24R, C24R	8000075	4211	8406R
Cessna 150,152,A152,170,170,172,175,177	8000075	4211	8406R
Experimental	8000081	4215	10599
Piper PA23-150, PA28-140, PA23-160 (SN 23-163 up), PA28-150, -151, PA28-160, -161, PA28-180, -181	8000075	4211	8406R
PA18, PA18A, PA22-135, -150, -160	8000328		
Pitts S2B	8000215	4219	10611
Stinson 108, 108-1, -2, -3	8000075	4211	8406R
Taylorcraft F22B, F22C, F22R	8000075	4211	8406R

EP

OIL COOLERS

MEGGITT TROY OIL COOLERS

MEGGITT TROY 8406R

MEGGITT TROY South Wind 8406R (formerly Harrison P/N 8526250). Applicable to all Lycoming installations from 4-cylinder 0-235 through 6-cylinder IO-540 engines. Inlet & outlet ports accept 3/8" pipe fittings. Fits Beech B-19 Sport (0-320-E2C), C-23 Sundowner (0-360-A4G), Muskateer (0-360-A2G), Cessna 172 Skyhawk (0-320-E2D), 177 Cardinal (I0-360-AF6D), 177 Cardinal (0-0-360-A1FG), 177 Cardinal RG (0-360-AFGD), Mooney Ranger (0-360-A2D). Size: 7.75"l x 3.5"d x 4.75"h. Wt.: 4 lbs.

Model 8406R..... P/N 8406R.... **$615.00**

Model 8432R–Fits BeechA24R Sierra (IO-360-A2B), Mooney Chaparral (IO-360-A1A), Mooney Mark 22 (TIO-541-A1A). Weight 4 lbs. size: 5-3/4"Hx8"Wx3-5/8"L ..... P/N 8432R.... **$697.00**

Model 10611R - Fits Piper Single Engines..... P/N 10611R.. **$682.00**

Model 10599R - Fits Cessna and Stoddard..... P/N 10599R.. **$645.00**

Model 10578R - Fits Gulfstream AA-1 ..... P/N 10578R.. **$820.00**

Model 10610R - Fits Cessnas ..... P/N 10610R.. **$650.00**

Model 10614R - Fits Piper, Cessna, Mooney .. P/N 10614R **$1,182.00**

Model 10568R - Fits Gulfstream AA5B, GA-7.. P/N 10568R.. **$623.00**

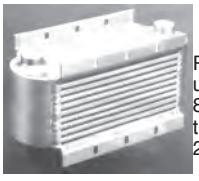
Note: The oil coolers manufactured by MEGGITT TROY formerly Stewart Warner will fit the aircraft listed but in most cases are not furnished with the FAA/PMA certification for those aircraft. The exceptions are P/N 8406R and P/N 8432R are furnished with FAA/PMA approval for certain Mooney aircraft. For all other applications, Form 337 field approvals are required for installation on certificated aircraft. Call for further information.

EP

LIGHTWEIGHT OIL COOLER FOR HOMEBUILTS

Lightweight, compact oil cooler improves cooling in closely cowled homebuilts. Mounts in any position. Furnished with 4 ft. of 5/16" I.D. hose and 4 clamps. Size 7-1/2H x 12-3/4L x 3/4D.

P/N 403 ..... **$56.50**



POSITECH OIL COOLERS

PosiTech factory new oil coolers are designed for use on experimental aircraft such as RV-4, 6, & 8, Glastar, Lancair, & Europa. Offered at exceptional savings compared to equivalent coolers. 2-yr/2000-hour warranty.

Posi-Tech Part No.	No.of Oil Tubes	Overall (WxHxD)	PC No.	Applic-ations	Our P/N	Price
P10578C	4	8"x 3.68"x 3.62"	4213MN	O-200	08-01285	**$164.00**
P10568C	5	8"x 4.17"x 3.62"	4212MN	O-300	4212	**$164.00**
P20002C	6	8"x 4.66"x 3.62"	4211MN	O-360	4211	**$189.00**
P20003C	7	8"x 5.15"x 3.62"	4220MN	O-360	08-01286	**$164.00**
P20004C	8	8"x 5.64"x 3.62"	4215MN	IO-360	4215	**$188.85**
P20005C	10	8"x 6.62"x 3.62"	4216MN	IO-360	4216	**$189.00**
P20006C	11	8"x 7.11"x 3.62"	4219MN	IO-540	4219	**$189.00**
P20008C	14	8"x 8.63"x 3.62"	4221MN	IO-540, Heli.	08-01287	**$249.50**
P10634C	12	8"x 7.60"x 3.62"	4222MN	IO-540	08-01288	**$249.00**
P20104C	8 Two Pass	8"x 5.64"x 3.62"	4214MN	Variou	4214	**$186.95**
P10641C	9 Two Pass	8"x 6.13"x 3.62"	4217MN	Various	08-01289	**$250.00**
P10631C	11Two Pass	8"x 7.11"x 3.62"	4218MN	Various	08-01290	**$188.85**
P010904	9	11.25" x 5.35" x 1.25"	4228MN	Rotax	08-01291	**$168.95**

AERO CLASSICS REMOTE MOUNT OIL COOLERS

8000357
Bar & Plate

Aero Classics now offers the General Aviation community the largest number of FAA-PMA (Federal Aviation Administration - Parts Manufacturing Authority) approved oil coolers in the world.

Remote-mount oil coolers for piston and turbine engines, mount to the airframe or engine baffle instead of directly to the engine. Hoses are used to connect the oil cooler to the engine. This type of oil cooler is used with most non-Continental engines including all Lycoming engines. All FAA-PMA approved with supporting FAA 8130-3 documentation unless otherwise noted. All Aero-Classic coolers come with a full two year warranty.

Features: Corrosion Protection per MIL-C-5541, Class 1A. Pressure tested to 400 psig. Optimized internal oil flow design. Light-weight. Low cost. Two year warranty

Note: Models 8000081, 8000706 & 8000942 are for experimental aircraft only. Not FAA-PMA Approved.

Model No.	Description	FAA/PMA Approved	Part No.	Price
8000075	7 Row Drawn Cup	YES	08-00640	**$246.00**
8000074	9 Row Drawn Cup	YES	08-00641	**$248.00**
8000081*	10 Row Drawn Cup	NO	08-00642	**$244.95**
8000215	13 Row Drawn Cup	YES	08-00643	**$239.95**
8000216	17 Row Drawn Cup	YES	08-00644	**$338.95**
8000353	18 Row Drawn Cup	YES	08-00808	**$429.00**
8000328	Bar & Plate	YES	08-00809	**$478.95**
8000343	9 Row 2 Pass Drawn Cup	YES	08-00810	**$498.95**
8000356	Bar & Plate	YES	08-00811	**$689.00**
8000357	Bar & Plate	YES	08-00812	**$689.00**
8000590	Bar & Plate with Valve	YES	08-07408	**$1,949.00**
8000661	13 Row Drawn Cup	YES	08-07409	**$384.95**
8000618	Bar & Plate with Valve	YES	08-07410	**$1,730.00**
8000706	Bar & Plate	NO	08-07411	**$688.00**
8000942	Bar & Plate	NO	08-07412	**$989.00**
8000950	Bar & Plate with Valve	YES	08-07413	**$1,679.00**
8000997	Bar & Plate with Valve	YES	08-07414	**$1,989.00**
8001201	7 Row Bar & Plate	YES	08-07415	**$467.00**

AERO CLASSICS ''HE SERIES'' AVIATION OIL COOLERS

Aero's new HE Series (High Efficiency) FAA-PMA oil coolers are designed to be direct replacements for Stewart Warner (today known as Meggitt) oil coolers – most of which do not have FAA-PMA. Aero-Classics new HE Series oil coolers are intended to be a competitively priced option for those whose aircraft came with a Stewart Warner oil cooler. The HE Series come with full FAA-PMA documentation, an industry leading 2YR/2,000HR warranty, and heat rejection capabilities that match or exceed the competition.

Aero's new HE Series oil coolers are approved for use on many Beech, Cessna, Grumman, Mooney, Robinson Helicopter, and other popular aircraft makes. Listed below is the SW part number and the corresponding Aero-Classics HE Series replacement part number.

SW Part No.	Aero Part No.	Description	Part No.	Price
10578R	8001535	4 Row 6" Long Core	08-07425	**$413.00**
10877A	8001588	6 Row 7" Long Core	08-07426	**$509.00**
10599R	8001599	8 Row 8" Long Core	08-07427	**$524.00**
8406R	8001602	6 Row 6" Long Core	08-07428	**$484.00**
10568R	8001640	5 Row 6" Long Core	08-07429	**$419.00**
10614R	8001643	14 Row 6" Long Core	08-07430	**$676.00**
10610R	8001646	10 Row 6" Long Core	08-07431	**$565.00**
10611R	8001649	11 Row 6" Long Core	08-07432	**$594.00**
10634R	8001652	12 Row 6" Long Core	08-07433	**$632.00**
8432R	8001689	8 Row Dual Pass 6" Long Core	08-07434	**$597.00**
8432S	8001694	8 Dual Pass 6" Long Core	08-07435	**$652.00**
10865B	8001701	16 Row 7" Long Core	08-07436	**$872.00**
10880A	8001713	16 Row Dual Pass 7" Long Core	08-07437	**$918.00**
10891A	8001718	14 Row Dual Pass 6" Long Core	08-07438	**$699.00**
10886A	8001723	16 Row 7" Long Core	08-07439	**$842.00**
8406R	8001733	6 Row Bar & Plate 8" Long Core	08-07440	**$484.00**

OIL COOLERS

8000545 10" Non-Congealing Universal 7th Stud

AERO CLASSIC CONTINENTAL OIL COOLERS

Aero-Classic's engine mounted oil coolers for Continental powered aircraft offer high quality features such as a CNC machined base for reliable, leak-proof mounting. Aero's line of Continental front mounted oil coolers feature a hassle free design that accommodates both 7th stud and non-7th stud engine cases - eliminating the chance of getting the "wrong" oil cooler. The oil coolers on Continental engines often mount directly to the engine and do not require hoses. All FAA-PMA approved with supporting FAA 8130-3 documentation, and full two year warranty.

Model No.	TCM PN	Description	Spruce Part No.	Price
8000545	639171	10" Non-congealing Universal 7th Stud Front Mount	08-04961	**$680.00**
8000677	654595	10" Non-congealing 7th Stud Only Front Mount	08-04962	**$679.00**
8000319	639151	11" Non-congealing Universal 7th Stud Front Mount	08-04963	**$628.95**
8000307	654593	11" Non-congealing 7th Stud Only Front Mount	08-04964	**$628.95**
8000531	639152	11.5" Non-congealing Universal 7th Stud Front Mount	08-04965	**$685.00**
8000127	652759	11.5" Non-congealing 7th Stud Only Front Mount	08-04966	**$679.00**
8000683	626189	12 Bolt Congealing Non 7th Stud Front Mount	08-04967	**$657.00**
8000687	652671	12 Bolt Congealing 7th Stud Front Mount	08-04968	**$658.00**
8000925	627392	8 Bolt Front Mount	08-07418	**$589.00**
8000440	654580	Rear Mount	08-07419	**$817.00**
8000464	646685	Rear Mount	08-07420	**$814.00**
8000934	646880	8 Bolt Rear Mount	08-07421	**$619.00**
8000953	654585	Rear Mount	08-07422	**$1,258.00**
8000960	654572	Rear Mount	08-07423	**$786.00**
8001213	655090	Rear Mount	08-07424	**$1,244.00**

NDM OIL COOLERS

NDM is one of the world's largest volume manufacturers of FAA approved oil coolers. An approved supplier to both Lycoming and Continental, as well as many airframe manufacturers, NDM holds FAA/PMA's for most of these oil coolers. NDM oil coolers are manufactured utilizing the vacuum oven brazing process rather than the less costly Controlled Atmosphere Brazing (CAB) method used by others to save costs. Utilizing the vacuum oven process guarantees a high quality product and lower warranty returns. If you are not sure which NDM oil cooler is FAA Approved for your aircraft, please provide the aircraft model & serial number and we will determine the correct oil cooler for your application.

Part No.	NDM P/N	Stew.t Warner P/N	Price
08-00739	20001A	N/A	**$321.95**
08-00740	20002A	8406R	**$326.95**
08-00741	20003A	N/A	**$356.95**
08-00742	20004A	10599R	**$393.95**
08-00743	20005A	N/A	**$425.95**
08-00744	20006A	10611R	**$476.95**
08-00745	20007A	N/A	**$428.95**
08-00746	20008A	10614R	**$509.00**

X-SERIES OIL COOLERS BY AIRFLOW SYSTEM

The first new aircraft oil cooler design in 50 years. Computer modeling and flight testing have been used to develop coolers that deliver significantly lower oil temps with no increase in oil cooler size or oil pressure drop. Designed as a direct replacement for popular oil coolers used in experimental aircraft, the X- SERIES oil coolers are built to Airflow Systems specifications and certified aircraft oil cooler standards.Flight testing on the popular RV series of aircraft has shown oil temperature drops of 10 -15 degrees F for coolers of the same size in the same location. Not FAA approved.

Model	Horsepower	PN	Price
2002X	Up to 150 hp	08-06153	**$324.95**
2006X	160 hp to 280 hp	08-06154	**$438.95**
2008X	280 hp to 390 hp	08-06155	**$548.00**

OIL COOLER DUCT SYSTEM

This economical duct system provides the aircraft builder with a simple way to route cooling air to Stewart Warner style oil coolers. Manufactured from .040 aluminum, this kit was designed for use on RV series aircraft but is ideal for virtually any homebuilt using a firewall mounted oil cooler. Kit includes baffle duct, oil cooler duct, hardware, & installation instructions. P/N 08-05000 ..... **$42.85 ea**

TUNDRA IN-FLIGHT ADJUSTABLE OIL COOLER COVER

The Tundra Cover is designed to fit your Rotax radiators either from the front or rear. It is in-flight adjustable so you have complete control of your engines' temperature at all times. In-Flight adjustable to give you complete control of your engines' temperature at all times. Control the Tundra Covers from the cockpit with precision and ease. Can adjust full open (giving approx. 80% airflow) to full closed or anywhere in between. Installs easily with all hardware supplied using only simple tools. PN 13-05601..... **$295.00**

TUNDRA GROUND ADJUSTABLE OIL COOLER COVER

A new ground adjustable Oil Cooler Cover is now available for your Rotax 912 or HKS engine. Comes complete and ready to install. There's a better way to get your engine's oil temps back in the green, so get rid of that Duct Tape and cardboard!

PN 13-05602..... **$73.60**

AIRWOLF OIL CHILLER

The new Airwolf Oil Chiller is 20 aircraft quality aluminum fins that are precisely bent to mold around the outside of any standard oil filter. These fins total a whopping 600 sq/in of cooling area to suck the heat from your oil filter, thereby cooling your engine oil. The fins are gold anodized and quickly secured to the oil filter with two hose clamps. Easy on..easy off. Everything you need is in the kit. Lower your oil temperatures today with our "Poor Mans" oil cooler. P/N 08-07394 ..... **$149.95**

XCOM OIL THERMOSTAT SYSTEM

Designed to regulate the oil temperature on engines like the Rotax and Jabiru. If you are flying time and time again and the engine temperature is only getting to say 85°C the water will remain in your oil as a contaminant and can go on to destroy your engine with corrosion problems. Additionally, warmup is achieved very quickly on even the coldest of days because the thermostat diverts the oil flow from the oil cooler. Made in the USA these special oil thermostat units are designed to quickly allow your engine to reach and maintain its optimum operating temperature even on the coldest of days. CNC machined from 6061-T6 the unit is anodised with the type 2 surface finish to protect the thermostat long-term against corrosion. All of the hardware is aircraft grade and the oil thermostat unit is finished to the highest possible standards and is supplied with hose nipples to fit the most common oil tubing diameter used by Rotax and Jabiru. There are a number of benefits in using an oil thermostat in your aircraft which include fuel savings resulting from quick warmup times and engine operation at optimum oil temperature which also increases engine life because the engine is being operated at the correct oil temperature.

P/N 08-07212 ..... **$146.95**

ROTAX 912 13MM OIL COOLER HOSE

912 Oil Cooler Hose 13mm high heat hose for 912-914 oil coolers. Sold by the yard.

P/N 15-06907 ..... **$7.50**

ALUMINUM SIDE LOUVERS

These side louvers let hot air out of your engine compartment - or, if they are installed with the louvered openings facing forward, to bring cool air into the engine compartment, enhancing performance and service life of the engine and under-hood components. Helicopter owners often mount these over their oil cooler to let cool air in and help reduce operating temperatures. Complete with do-it-yourself instructions and hardware. Rest a set on your plane, hood or fender- see just how good they look! P/N 05-04969 ..... **$99.00**

OIL DIPSTICKS

New manufacture oil tank dipsticks stamped with proper calibration markings.

Dipstick Long Neck 13-3/4" ..... P/N 08-00037 ..... **$42.50**
Dipstick Short Neck 9-1/2" ..... P/N 08-04612 ..... **$33.75**
Dipstick 6 Qt. Short Neck 11-3/4" for O-200, C-90
P/N 08-04613 ..... **$46.00**
Dipstick 4 Qt. Ercoupe long Neck 18-3/4"
P/N 08-04614 ..... **$49.50**

VERNI-THERM VALVE - Lycoming thermostatic oil cooler bypass valve wt. 4 oz. P/N 53E19600 ..... **$319.95**

EP

OIL ANALYSIS KITS - ENGINE TREATMENT

METAL CHECK AIRCRAFT ENGINE OIL FILTER ANALYSIS KIT

Includes oil and oil filter analysis. Oil filter debris analysis should be part of all preventative maintenance programs. Piston engines generate fine wear and larger particles as the wear becomes more critical. Filter analysis is critical for turbine engines because they generate predominately larger wear particles that are trapped by small micron filtration. The oil filter is rinsed and the exact alloys presents in the debris are determined by SEM/EDXRF. The AMS number, amount, type, form, and condition of the particles are reported. Features: • Largest Oil Analysis Results Database •The Most Accurate Interpretive Results Guidelines • The Most Experienced staff. • Recommended, Approved, or Authorized by Engine Manufacturers. • 24 Hour a Day Service Available 7 Days a Week. Large Oil Analysis Kit. P/N 08-06270..... **$64.75**

AVIATION OIL ANALYSIS (AOA) KIT

A cost-effective service to enhance your aviation maintenance practices.
Aviation Oil Analysis by ALS Laboratory Group's Tribology Division (formerly Staveley Services Fluids Analysis) brings you a state-of-the-art oil analysis program designed specifically for aircraft owners. Oil analysis is an early warning system that reduces downtime, lowers maintenance costs, and helps you spot troubling issues before they become serious problems. Aviation Oil Analysis has updated their packaging to reduce transit times and keep you up to date with your results. A small vial, mailing bag, and information form are furnished with order. Upon receipt at the laboratory in Phoenix, AZ, the oil sample is analyzed and a full report is forwarded within 24 hours. Note: insufficient postage will cause a delay in receipt of your sample, please consult your local post office or contact the laboratory (1-800-445-7930) regarding current postage rates.

EP

LAB ONE AVIATION (LOA) OIL ANALYSIS KIT

This kit includes a sample bottle, shipping container and the paperwork. Upon receipt, your sample will be processed within 24 hours with the results emailed or mailed from Lab One in Phoenix, AZ. Can be used on any reciprocating or turbine engine and helicopter transmissions and tail rotors. P/N 08-01222 ..... **$12.95**

CHAMPION CH48200 OIL FILTER ANALYSIS KIT

Helps you detect abnormal engine wear and even predict impending engine trouble. It provides a comprehensive analysis of both the larger wear particles in the oil filter and the finer wear particles in the engines oil. You will get a detailed report on the filter element and the oil that is based on the state of the art analytical techniques and lab results interpretation. The report will be generated with in 24 hrs of the receipt of the sample.
Each Kit Contains the following items: •Customer Information Form (CIF) •Plastic Oil Filter Bottle •Oil Sample Bottle •Oil Sample Hose •User label for Oil Filter Bottle •User label for Oil Sample Bottle •Shipping label address to Aviation Laboratories *The laboratory analysis of the oil filter debris and oil sample included in the price of the kit (if sent with the oil filter). The filer can be returned; however, the cost of this is not included in the price. P/N 08-01051..... **$112.95**

POLY-FIBER ESO ENGINE STORAGE OIL

A fine lubricating and preservative oil used to prevent corrosion in internal combustion engines during extended storage. MIL-1-21260. Quart.....P/N 09-42450 ..... **$24.00**
Gallon .....P/N 09-42455 ..... **$89.00**

GOLDEN SPECTRO 2-CYCLE ENGINE OIL

A modern synthetic blend that surpasses the lubrication and protection ability of petroleum oils. Formulated with clean-burning synthetics, it will not foul spark plugs. High film strength components ensure complete protection against piston seizure and scuffing due to inadequate lubrication.Special additives protect against rust and corrosion. Leaves your engine free of harmful deposits and offers essentially smoke-free operation when used at the recommended ratios. P/N GS001.....**$8.75**

VPCI-326™ CORROSION INHIBITOR OIL ADDITIVE

An approved Lycoming engine oil additive for prevention of oxidation of all metals. Designed for use in engine oil at 1:10 concentration, VpCI™ (Vapor Phase Corrosion Inhibitors) will protect your engine from corrosion (in solution and in all void spaces) for up to 3 years during storage. For hydraulic oil and gearbox assemblies. Performs effectively under the adverse conditions of 100% relative humidity, and in the presence of such corrosive species as chlorides, sulfur compounds or hydrogen sulfide. There are no hazardous chromates, nitrites or phosphate inhibitors, and it utilizes the finest paraffinic petroleum distillates as carriers. Possesses an exceedingly high flash point, enhancing in-plant safety when compared to common oil protectants. It comes in concentrate form, which is easily diluted with lubricating, hydraulic or preservative oils, saving shipping and inventory expense. Not only effective on ferrous metals, but also effective on zinc, aluminum, galvanized steel, copper, cadmium, silver, brass and many other alloys. Can be upgrade most lubricants in their anti-corrosion ability. Passes through 1 micron filter. Conforms to MIL-PRF-46002C. Conforms to MIL-I-85062 (Additives to oils). Conforms to MIL PRF-16173E. • NATO 6850-66-132-6100. • NSN 6850-01-470-3358 P/N 09-02002 ..... **$19.75**

CAMGUARD OIL ADDITIVE

Designed to dramatically improve the performance of all mineral based , semi-synthetic and fully synthetic motor oils in the areas of corrosion protection, wear reduction, and seal protection. Designed to make regular engine oil what it needs to protect and lubricate any engine. A synergistic blend of advanced oil additives from all over the world, designed to reduce wear, curb deposit formation and more importantly protect engines against rust and corrosion. It contains multiple corrosion inhibitors for both ferrous and non-ferrous metals. A combination of ashless anti-wear compounds, anti-oxidants designed to reduce carbon deposits and special seal conditioners to prevent oil weeping. Camguard is FAA accepted and approved for use in piston engine aircraft oils meeting SAE-1899 standards. Compatible with piston aircraft oils, passenger car motor oils, most marine oils, and heavy-duty diesel oils.

Camguard aircraft oil additive 1 pint..... P/N 08-07096.....**$24.95**
Camguard aircraft oil additive Case of 4 pints... P/N 08-07097.....**$92.50**
Camguard auto oil additive 1 pint..... P/N 08-07227.....**$23.75**
Camguard auto oil additive Case of 4 ..... P/N 08-07228.....**$92.50**
Camguard marine oil additive 1 pint..... P/N 08-07229.....**$23.75**
Camguard marine oil additive Case of 4 ..... P/N 08-07230.....**$92.50**
Camguard Small Engine Supplement(pint) ..... P/N 08-07402.....**$12.50**

GOLDEN SPECTRO 2-CYCLE ENGINE OIL

A modern synthetic blend that surpasses the lubrication and protection ability of petroleum oils. Formulated with clean-burning synthetics, it will not foul spark plugs. High film strength components ensure complete protection against piston seizure and scuffing due to inadequate lubrication.Special additives protect against rust and corrosion. Leaves your engine free of harmful deposits and offers essentially smoke-free operation when used at the recommended ratios. P/N GS001.....**$8.75**

MOBIL AGL SYNTHETIC AVIATION GEAR LUBRICANT

Mobil AGL Synthetic Aviaion Gear Lubricant offers measurably better wear protection for transmissions operating at high temperatures than Type I (MIL-L-7808) and Type II (MIL-L-23699) turbine oils, as well as wear resistance that is especially beneficial to military and other helicopters operating under unusual stresses. Mobil AGL is formulated with synthesized hydrocarbon-based fluids. The combination of a naturally high viscosity index and a unique proprietary additive system help enable the gear lubricant to provide outstanding performance in extreme service applications at high temperatures, well beyond the capabilities of mineral oils. Note: Exxon-Mibil recommends Mobil AGL for use in helicopter transmissions only. Before using Mobil AGL, operators should confirm the OEM's approved transmission lubricants. Size: 5 Gallon.
P/N 08-07406.....**$307.95**

MICROLON AIRCRAFT ENGINE TREATMENT

One-time metal treatment that virtually eliminates friction in all internal combustion engines which improves performance (horsepower), reduces wear, and extends engine life. Also decreases fuel consumption, reduces oil consumption, and lowers operating temperatures. Impregnates the engines bearing surfaces, forming a dry film lubricant that lasts no matter how many times the oil is changed. Continental A-65, C-85, and C-90 engines take the Half Kit. Most Lycoming and Continental engines used in light aircraft take the Single Kit. Turbocharged and Radial engines take from 2 to 6 Single Kits. Call for details if you have any questions on the quantity of Microlon needed for your application.

Microlon CL-100 Aircraft Kit (Single).....P/N 09-35805 .....**$119.95**
Microlon CL-100 Aircraft Kit (Half) .....P/N 09-35810 .....**$68.25**

AVIATION OIL - GREASE

AEROSHELL AVIATION OILS

Aeroshell W100 is an ashless, SAE 50 dispersant oil that provides excellent service in all four cycle aircraft piston engines. Aeroshell W Multigrade 15W-50 is an antiwear, ashless, dispersant, semi-synthetic oil. It is fully approved in all Lycoming, Continental, and Pratt & Whitney aircraft piston engines. Reduces engine wear, fuel consumption, and oil consumption. Helps engines start faster and eliminates the need for seasonal oil changes. Aeroshell W100 Plus contains additive LW16702 which reduces engine wear and corrosion. Ideal for operations in mild to warm temperatures. Aeroshell W100 & SAE 50 oils meet MIL-L-22851C specification. Aeroshell Turbine Oil 500 provides superior high temperature corrosion protection & excellent anti-wear protection. Shell Oil W80 Plus introduces the anti-wear and anti-corrosion additives of AeroShell W100 Plus engine oil into a lighter, single-grade oil for use in colder climates. The anti-wear additive reduces wear on start-up by forming a microscopic layer on the engine's moving parts to prevent metal-to-metal contract when there is little oil present. Combined with a corrosion inhibitor, it is designed for pilots who fly either in cooler weather or less frequently.
AeroShell W65 oil was produced to meet fully the SAE specification J-1899 (Grades SAE 30, 40, 50, and, 60 respectively). Promotes engine cleanness. the non-ash forming, polymeric additive was eveloped to help eliminate the harmful combustion chamber deposits that occur during normal operation.

Description	Qt. P/N	Price/Qt.	Case P/N	Price/Case
W80 Plus	08-05920	**$6.50**	08-05919	**$73.00**
W80	08-00884	**$6.50**	08-01223	**$69.00**
W100 SAE 50	08-05400	**$6.50**	08-05401	**$68.25**
15W-50 Multigrade	08-05450	**$7.75**	08-05451	**$82.00**
W100 Plus	08-05485	**$6.50**	08-05486	**$74.00**
Turbine Oil 500	08-00581	**$12.50**	08-00582	**$269.00**
100 SAE 50 Mineral Oil	08-05410	**$5.95**	08-05411	**$66.00**
W65	08-00883	**$6.50**	08-01224	**$77.75**

AEROSHELL OIL SPORT PLUS 4

AeroShell Oil Sport Plus 4 is ideal; as it is extremely resistant to the immense sheer forces that occur in areas of high-pressure contact such as high-speed gearboxes, valve trains, bearings, pistons and liners. This is where the blend of base oil and additives is most crucial. AeroShell Oil Sport Plus 4 is made up of a blend incorporating synthetic technology and high performance additives to provide long lasting protection. In addition, detergents in the oil keep important areas, such as the pistons and cylinders, clear of carbon based particles that tend to adhere to these surfaces. So when you change your oil to new AeroShell Oil Sport Plus 4, you are not only removing dirt from your engine, you are also replenishing the additives used to protect your engine during normal operation. ***DO NOT use AeroShell Oil Sport Plus 4 in engines that are designed to use Ashless Dispersant aviation piston engine oils such as AeroShell W Oils. This includes air cooled Teledyne Continental Motors, Textron Lycoming and Jabiru engines.***
4 Cycle Sport Plus 4 Oil (Liter) .....P/N 08-07048 .....**$13.95**
4 Cycle Sport Plus 4 Oil (Case of 12).....P/N 08-07047 .....**$149.95**

PHILLIPS 66 X/C AVIATION OIL

X/C oils provide easy starting and quick lubrication under low temperature conditions. Provides film strength and low wear under high temperature conditions. Provides excellent protection against engine deposits, ring groove carbon, piston lacquer, crankcase sludge and oil oxidation. Contains ashless dispersant which keeps engine clean. With more than 10 years of outstanding field performance, X/C oil meets Avco-Lycoming & Teledyne Continental engine specifications.

Description	Qt. P/N	Price/Qt.	Case P/N	Price/Case
X/C 20W-50 Av. Oil	08-05300	**$5.50**	08-05301	**$59.50**
20W-50 Mineral oil	08-05310	**$4.95**	08-07198	**$59.00**

PHILLIPS 25W-60 ENGINE OIL GALLON

X/C 25W-60 is the first and only multiviscosity aviation oil designed and approved for radial engines originally designed to run on 120 grade. Pilots and mechanics will notice immediate benefits with X/C 25W-60 over single grade oils. Benefits such as improved oil flow at startup, quicker warm-up time, cooler operating temperatures and a cleaner operating engine. X/C 25W-60 also has proven corrosion protection in extreme conditions. X/C 25W-60 can be used year-round, during break-in and on to TBO. P/N 08-00885 ..... **$23.75**

EXXON ELITE AVIATION OIL

Exxon Elite™ 20W-50 is a multigrade oil with the flexibility to lubricate effectively over a wider range of temperatures than monograde oils. Compared to a monograde oil, a multigrade oil provides better cold-start protection and a stronger lubricant film at typical operating temperatures. Other benefits include lower oil consumption and better fuel economy as a multigrade oil, Exxon Elite™ 20W-50 has all these intrinsic advantages. • Meets SAE J1899 • Meets MIL-L-22851D (obsolete) •U.S. military approved • Contains anti-wear/anti-scuffing additive required by some Lycoming engines • FAA approved fluid for Alternative Method of compliance w/AD-80-04-03-R2, paragraph b.1
Quart..... P/N 08-00392 .....**$8.65** Case..... P/N 08-00432..... **$83.00**

AEROSHELL AVIATION OIL W120 SAE 60

An ashless dispersant oil specifically developed for aviation piston engines. It combines non-metallic additives with selected high viscosity index base oils to give exceptional stability, dispersancy and anti-foaming performance. Based on the average ambient outside temperature at engine start-up the most common grades are SAE 40, SAE 50 and SAE 60, which equates to AeroShell Oil W80, W100 and W120 respectively. Traditionally, the choice is associated with climatic zones - AeroShell W80 for cold climate regions (-17 - 21°C), AeroShell Oil W100 for temperate regions (15 - 30°C) and AeroShell Oil W120 for warmer climates (above 26°C).
One Gallon ..... P/N 08-00344-1.....**$29.75**
Case (4 Gallons)..... P/N 08-00344.....**$89.00**

LYCOMING OIL ADDITIVE

Avco Lycoming has approved oil additive LW-16702 that contains an anti-scuffing agent and can dramatically reduce engine wear. This additive is applicable to all Avco Lycoming piston aircraft engines, and factory recommends use at every oil change or every 50 hours, whichever occurs first. For 6-8 qt. sump, use one 6 oz. can, for 12-15 qt. sump, use (2) 6 oz. cans, for 17-19 qt. sump, use (3) 6 oz. cans, for 23 qt. sump, use (4) 6 oz. cans. P/N 08-05600. **$34.75**

PENNZOIL OIL

Two-cycle oil for air-cooled engines. Recommended by engine manufacturers for air- *and* water-cooled engines.
8oz. Single Bottle..... P/N 08-06261 ..... **$1.85**
16 oz. Single Bottle ..... P/N 08-01240 ..... **$1.85**
Case of 24 8oz. Bottles ..... P/N 08-06260 ... **$42.00**

AVIATION GAS TURBINE OILS

Case quantities are 24 quarts.

Oil	Qt. P/N	Price	Case P/N	Price
Aeroshell Turbine 500	08-00581	**$12.50**	08-00582	**$269.00**
Aeroshell Turbine 555	08-00757	**$12.50**	08-00758	**$274.00**
Aeroshell Turbine 560	08-00759	**$13.85**	08-00760	**$298.95**
British Petroleum 2380	08-00761	**$16.00**	08-00762	**$389.00**

AEROSHELL GREASES

Mineral Grease #5 (MIL-G-3545C) ..... P/N 08-05455...**$7.50**
General Purpose Grease #6 (MIL-PRF-24139A).. P/N 08-05460...**$7.95**
Synthetic Grease #7 (MIL-PRF-23827C) ..... P/N 08-05475.**$15.65**
Mineral Grease/Helicopter #14 (MIL-G-25537C) .. P/N 08-05480...**$7.25**
Synthetic Grease #22 (MIL-PRF-81322G)..... P/N 08-05490.**$14.65**
Synthetic Lithium Grease #33 (MIL-PRF-23827C). P/N 08-00825.**$16.75**
Syn. High Pressure Grease #33MS(MIL-G-21164D). P/N 08-00824.**$19.90**

LEVER ACTION GREASE GUN

This heavy duty multipurpose grease gun can be loaded with 14 ounce cartridges, bulk loaded, or loaded through a dispenser. Lever action design permits accurate control of grease flow Comes with 6" nozzle and 9" flex hose P/N 08-07180 .....**$26.50**

MOBIL GREASE 28

Mobilgrease 28 meets the quality level of U.S. Military Specification MIL-G-81322E, General-Purpose, Aircraft, and is approved against U.S. Military Specification DOD-G-24508A (Navy) for shipboard auxiliary machinery. It can be designated U.S. Military Symbol WTR and NATO Symbol G-395.
Grease 28 ..... P/N 08-06157..... **$9.75**
Case..... P/N 08-07400..... **$409.95**

EXXON MOBIL GREASE 33 (CARTRIDGE)

Mobligrease33 is a true multipurpose aviation grease intended for use in highly loaded anti-friction bearings, gears, and actuators as well as instruments, high speed bearings (though not recommended for wheel bearings), and general airframe lubrication, over operating temperatures from 100° F to 250° F.
Cartridge...P/N 08-07407-1 ....**$12.75** Case....P/N 08-07407 ..**$528.00**

MOBIL JET OIL II (AVIATION)

Mobil Jet Oil II helps keep oil systems clean. That can mean less maintenance more flying and greater revenue. Mobil Jet Oil II has a history of helping to keep aircraft where they belong - in the air generating revenue. Today, about 160 major airline use Mobil Jet Oil II in more than 11,000 gas turbine engines. QT. ..... P/N 08-00763 .....**$13.95**
Mobil Jet II Case ..... P/N 08-00764 ....**$316.00**

MOBIL JET OIL 254

Mobil Jet Oil 254 is a third-generation synthetic lubricant made from a specially prepared hindered-ester base stock fortified with a special chemical additive package. The result is a product having superior thermal and oxidation stability that resists deterioration and deposit formation, while maintaining the physical characteristics required by builder and military specifications. Because of this, the physical properties of Mobil Jet Oil 254 are similar to currently available, earlier-generation turbine lubricants.
QT.....P/N 08-07374-1 .... **$15.85** Case ..... P/N 08-07374 ....**$373.95**

EP

FUNNELS—OIL DRAIN SYSTEMS

CLEAN FUNNEL™

Clean Funnel™ is the funnel that keeps itself clean. Replacing the caps on each end after each use prevents left over fluid from dripping out, and keeps your work area or baggage compartment clean. No need to wipe your funnel out with a rag before reusing. Clean Funnel™ is ideal for use with fuel or oil as well as windshield washer fluid, detergents, antifreeze, hydraulic fluid, and more. Great for aircraft, automobiles, motorcycles, tractors, boats, ATV's snowmobiles, and more.

- Model 112 (turquoise) has a 1 pint fluid capacity and a 12" vinyl tube attached to its spout, making it very handy to reach into small or tight spaces.
- Model 415 (red) has a 1-1/2 quart capacity, 17" long with flexible spout, and spout I.D. is 9/16".
- Model 428 (black) has 1-1/2 quart & 13-1/4" long with a flexible spout and 1-1/8" O.D. spout.

Model #	Color	Part No.	Price
112	Turquoise	12-00374	**$6.75**
415	Red	12-00375	**$7.95**
428	Black	12-00376	**$7.95**

EP

DISPOSABLE FOLDING OIL FUNNELS

These disposable funnels are very popular among aircraft owners and pilots for adding engine oil. They store flat, clean and dry in a recloseable bag, and eliminate the messy cleaning when using a regular funnel. Also ideal for brake fluid, resins, and paints. Furnished in pack of 10 funnels.

Pack of 10.... P/N 08-00040.....**$3.10**

OIL DRIP PAN

The drip pan is 54-1/2" x 32-1/2" x 2" and is manufactured out of an extremely durable and chemical resistant plastic (high density polyethylene). White in color, our drip pan is neat and clean in appearance and allows for easy visual inspection and monitoring of any engine leaks. The size and design of the drip pan will collect virtually any leaking fluids and eliminate the need for five quart pails and other messy collection containers. It is also a convenient place to pour fuel samples. Specifically designed for general aviation.

P/N 08-06700.....**$148.50**

DRIP PANS

These newly developed oil Drip Pans are designed to protect floors from those irritating drips of oil, fuel and hydraulic fluid. They are overlapping to prevent drips from getting between the pans. Their interlocking feature allows various pan sizes to be joined, protecting floors from all shapes and sizes of aircraft. Their lightweight and durable plastic design makes for easy set-up and clean-up. The interlocking feature allows various pans to be joined, protecting floors from all shapes and sizes of aircraft, cars, buses, trucks and more! "

24" X 30".....P/N 08-07378 ..... **$29.95**

DRIP TRAP - OIL ABSORBENT

Drip Trap is a mat made of corn stalks which captures oil, coolant, and other aviation fluids that can drip from the aircraft. Drip Trap measures 20" x 20" and can absorb up to 6 quarts of oil. It won't blow away, can be driven on, won't tip over like a drip pan, and can be walked on without tracking the fluids on the hangar floor. Excellent for use with aircraft, cars, SUV's, trucks, motorcycles and in shops. When Drip Trap is fully saturated just dispose of it and replace. Drip Trap is the environmentally friendly and economical way to capture and contain drips and spills.

P/N 13-04950 ..... **$22.95**

DRAIN MATE

The patented Drain Mate is a handy new pilot tool that works like a second pair of hands. Great for complete draining of motor oil bottles and other fluid containers, Drain Mate saves time, money, and frustration. Simple to use. The spring clamp attaches to the funnel, bucket or bowl. Bend or flex it to near vertical drain position, then insert bottle for final draining (after conventional bulk removal). Depress finger tabs to clamp/unclamp bottle. The Drain Mate can also be used for other draining chores around the hangar, home, garage, marina, and shop.

P/N 08-00570 ..... **$9.95**

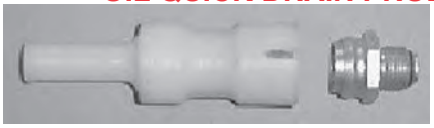
OIL SAVER FUNNEL

The OIL-SAVER is simple in appearance, but a great deal of research has gone into its design. It consists of a basic rectangular funnel that's molded to hold six inverted oil bottles, the contents of which gradually drain out and into the depository of choice -- usually another oil bottle, leaving the plastic bottles clean enough for recycling.

And with thousands of funnels already in use, they have proven to be versatile, practical tools that allow you to save money and recycle.

Features: Innovative, Customer Friendly, Multi-purpose Containment Residual Liquid Reclamation, Pro-active, Money-making Design, Exceeds Recycling Standards, Convenient Storage, Global Application, No Assembly Required, Green / Enables Consumer to Take Pre-emptive Steps to Protect the Environment. P/N 08-07391 ..... **$12.95**

OIL QUICK DRAIN PROBE KITS



STC SA4024NM - Drain oil in wind or shop with little clean up. - Save money on clean up, solvent, labor and parts. - Oil goes into bucket with out splashing or spilling.

Approved for Cessna Aircraft Models: 210J through 210 R, T210J through T210R, P210H through P210R, 337 through 337H, T337B through T337H, and P337H 310 through 310R, T310P through T310R 320 through 320F, 340, and 340 A401 through 401B, 402 through 402C, 404, 411, 411A, 414, 414A, and 421 through 421C

Description	Part No.	Price
Single Engine Cessna Oil Quick Drain Kit Includes:, 1 STC Paper Work, 1 Probe, 1 Valve With o-ring, 1 AN900-10 Gasket	12-02101	**$196.95**
Twin Engine Cessna Oil Quick Drain Kit Includes: 1 STC Paper Work, 1 Probe, 2 Valve With o-ring, 2 AN900-10 Gasket	12-02102	**$279.95**
Nylon probe only	12-00697	**$62.75**

OIL ACCESSORIES – GREASE

EXXON OIL BOTTLE ADAPTER

This adapter allows easier pouring from the large mouth Elite oil bottles in certain aircraft and includes a built-in valve to allow the flow of oil to be regulated.

P/N 08-01042 ..... **$3.95**

OIL VALVE - THE SPILL STOPPER

Oil Valve The Spill Stopper

• Takes the mess out of adding oil • On/Off control • No more spills • Re-usable .....P/N 13-02833 **$1.95**

OIL BUDDY (NO SPILL)

For do it yourself oil changes or refilling small tanks in lawn mowers, snowblowers and chainsaws, Oil Buddy is your best tool. Eliminating the messy cleanup and spillage problems, Oil Buddy gets the job done fast and easy without getting your clothes dirty. For small fill ups, the Oil Buddy screws onto the head of the oil container and can be left there for further use if the bottle is still partially full. When the valve is closed, oil can't get out and dirt can't get in. Even if the oil container gets knocked over, no spillage will occur. Fits most 1-Quart /1-Litre bottles.

P/N 13-03144 ..... **$2.75**

OIL AND OIL FILTER RECYCLING CONTAINERS

Distinctive Features: • Attractive, user-friendly design •Wide-mouth drain pan / lid make oil changing easy and neat. Snug-fitting top prevents spillage. • Large capacity. • Holds oil and filters for at least two average oil and oil filter changes. • Size: 4-1/2 gallons. Color: Yellow •Unique filter tray. •Filters drain on tray allowing for clean handling and removal. • Environmentally friendly. • Container's lid and tray are made of post-consumer recycled plastic.

P/N 08-04975.....**$13.85**

EVANS NPG + COOLANT FOR ROTAX ENGINES

NPG+ is new coolant providing dramatic improvements in heat transfer and viscosity that make the new fluid a "pour-in," not requiring changes to cooling system components. NPG+ waterless coolant virtually eliminates boil over in gasoline or diesels - the waterless coolant allows engines to tolerate running hotter, without boiling over, and allows the cooling system to run at very low or no pressure. Because there is no water in the system engines operating with NPG+ will be free from corrosion and electrolysis, and the engines will run well no matter how hard they are driven or how hot or cold the environment is. Specified coolant for Rotax Aircraft Engines, Type 912 and 914 (series). P/N 08-04535 ..... **$38.50**

EVANS PREP FLUID

Evans Waterless Flush is used when systems cannot be drained properly of all the conventional water and antifreeze. Suggested to be used with experimental aircraft conversion and all motorcycle, ATV and import cars. Not intended to be used as a coolant.

P/N 08-04534 ..... **$23.75**

ZX1 SUPERGREASE

ZX1 Supergrease is the only Lithium Complex based grease reinforced with ZX1 Micro-Oil! During operation, the non-particulate ZX1 migrates from the grease to the components forming an extremely durable substrate film, which becomes the wearing surface. It is designed to work at extreme loads and temperatures when conventional lubricants have proved inadequate.

For use in all environments, high speed, and high-pressure applications including oil fields, marine, industrial, agricultural, aeronautical, and automotive. For use on all bearings; slides and screws; swivel packings; rack and pinions; operating at extreme pressures and temperatures in hostile environments such as mud, water, steam, salt water, acids and alkalis. ZX1 Supergrease has a shear strength to cater peak loads well beyond the scope of other greases. ZX1 Supergrease is available in a 400 g cartridge and 500 g tub.

Cartridge 400G.....P/N 08-07273 ..... **$24.25**
Tub 500G.....P/N 08-07274 ..... **$29.95**

PROLUBER ENGINE PRE-OILER

ProLuber is a device that is added on to your oil system to give you pre-start oil pressure. You just turn on the ProLuber for a couple of seconds, watch your oil pressure gauge rise, and then start the engine when the pressure reaches the desired level. It is able to generate 40-60 lbs. of oil pressure in your engine before you hit the ignition switch. Simple to install and requires no drilling through your oil pan or the block. Complete kit for installation. P/N 08-00197 ..... **$465.00**

NEXT AIRCRAFT SERVICE DUE - STICKERS

Service reminder decal "NEXT AIRCRAFT SERVICE DUE" decal is black text on white semigloss background with "FILL IN" blanks. Removable decal is designed to adhere to any surface and not leave residue behind, perfect for aircraft rentals, owners, CFI's, trainers, service/repair stations, POH, log books, instrument panels, windows. Decal measures 3" x 3". Blank fields include: • Tail Number • Oil and Filter Change (Last and next hour and date)• Annual Inspection Due Date (Month and Year) • ELT Battery Due Date (Month and Year) • Transponder Test / Inspection Due Date (Month and Year) • Altimeter & Static System Test Due Date (Month and Year) • 100 Hour Inspection (Last and Next)

P/N 09-02137 ..... **$0.45**

AV-2 AVIATION 2-CYCLE OIL

AV-2 Aviation 2-Cycle Oil is a low-smoke formula specially formulated for Rotax Aircraft Engines.

For over 12 years, AV-2 has proven its formula to be superior, not by exaggerated claims or hyped advertising, but by literally millions of trouble free flight hours.

The custom blend of 50% high quality mineral base and 50% synthetic oils is designed to lubricate vital engine parts without leaving carbon deposits.

AV-2 also protects your engine against rust & corrosion even during prolonged storage, a protection not found in straight synthetic oils.

AV-2 is specially formulated for use in "Dykes" ring equipped Rotax Aircraft Engines. P/N 15-04992 ..... **$29.95**

AV-9 FOUR STROKE OIL 32 OZ. 10W40

Rotax 4 stroke, 4 cylinder engines require special protection from high temperatures and gear wear. The semi-synthetic blend of our AV-9 is specially formulated to handle the unique operating conditions found in Rotax 4 cylinder engines with built-in gearboxes. Gearbox components are protected from premature failure with blended additives found in AV-9. The semi-synthetic blend will also suspend lead from aviation fuels. Specially formulated and blended, AV-9 is the ideal choice for Rotax 4 cylinder 4 stroke engines.

P/N 15-04994 ..... **$7.65**

EP

PIG® OIL ABSORBENT PRODUCTS

PIG® LIGHT WEIGHT OIL ONLY ABSORBENTS

Hangs anywhere, goes anywhere! Grab one Pad or the whole tablet to clean up an oil-based spill or splatter in any corner of the shop. Durable PIG® Oil-Only Mat quickly soaks up gas and oil but won't waste absorbency on water like rags or floor sweep! • Safely absorbs and retains oils and oil-based liquids—including lubricants and fuels—while actually repelling water. • Floats to clean up oil-based liquids on water. • Use outdoors or indoors during inclement weather to avoid wasting capacity on rain and melted snow. • Self-extinguishing material helps eliminate fire hazards; melts instead of burning if contacted by direct flame.

*15 each 14"x14.25" Pads ..... P/N 08-07319 ..... **$10.90**
100 each 15"x20" Pads ..... P/N 08-07317 ..... **$45.90**
15"x50 ft. Roll ..... P/N 08-07320 ..... **$19.99**

PIG® MEDIUM WEIGHT OIL ONLY ABSORBENTS

Clean up oil-based spills without wasting absorbency on water. Unlike rags or floor sweep, PIG® Water-Repellent Oil-Absorbent Mat quickly soaks up gas and oil but repels water from rain, slush, washdowns, ponds and sumps and more! • Safely absorbs and retains oils and oil-based liquids—including lubricants and fuels—while actually repelling water. • Eight layers of 100% polypropylene are thermally bonded to make PIG® Mat the strongest mat on the market; won't rip, fray or fall apart, even when saturated • Exclusive dimple pattern speeds wicking of liquid toward dry spots on pad, so messes disappear fast, cleanup is simple and you use each pad to full capacity.

*3 each 15"x20" Pads ..... P/N 08-07354 ..... **$4.85**
100 each 15"x20" Pads ..... P/N 08-07318 ..... **$63.85**
30"x150 ft. Roll ..... P/N 08-07321 ..... **$89.95**

PIG® UNIVERSAL LIGHTWEIGHT ABSORBENTS

This Tablet goes anywhere to clean up drips, spills or splatters throughout the shop. Easier to use than floor sweep, so it reduces cleanup time. And with no damaging dust and grit to track around, the shop stays cleaner! • Eight layers of 100% polypropylene are thermally bonded to make PIG® Mat the strongest mat on the market; won't rip, fray or fall apart, even when saturated •Exclusive dimple pattern speeds wicking of liquid toward dry spots on Pad, so messes disappear fast, cleanup is simple and you use each Pad to full capacity • Convenient pop-up tabs let you hang the Tablet anywhere you need it

*15 each 14"x14.25" Pads ..... P/N 08-07314 ..... **$11.95**
100 each 15"x20" Pads ..... P/N 08-07312 ..... **$62.75**
15"x50 ft. Roll ..... P/N 08-07315 ..... **$19.99**

PIG® MEDIUM WEIGHT UNIVERSAL ABSORBENTS

Genuine PIG® Mat is the better way to soak up drips, spills and splatters, and spend more time repairing vehicles. Easier to use than floor sweep so it reduces cleanup time. And with no damaging dust and grit to track around, the shop stays cleaner! • Safely absorbs and retains oil, coolants, water, grease, gasoline, solvents, auto fluids, paint overspray, battery acid and most other liquids • Eight layers of 100% polypropylene are thermally bonded to make PIG® Mat the strongest mat on the market; won't rip, fray or fall apart, even when saturated • Use Medium-weight Pads for persistent leaks and mid-sized spills; strong enough to last all day at workstations, in service bays or under equipment.

*3 each 15"x20"Pads ..... P/N 08-07353 ..... **$4.50**
100 each 15"x20" Pads ..... P/N 08-07313 ..... **$74.75**
30"x150 ft. Roll ..... P/N 08-07316 ..... **$118.95**

PIG® UNIVERSAL ABSORBENT SOCKS

Wrap flexible, self-contained PIG® Socks around tanks, drum areas and puddles to halt the spread of liquid while the Socks' thirsty absorbent filler absorbs it. Easier to use and clean up than messy floor sweep! • Moldable Socks surround equipment, drums or tanks and contain spills to keep them from spreading into walkways; also great for catching liquid that seeps under overhead doors • Contained absorbent makes cleanup quick and easy • Thirsty 100% PIG® Mat filler; polypropylene is highly absorbent and chemical resistant • Polypropylene skin is chemical and tear resistant; reduces dust and holds in liquid, even when fully saturated • Safely absorbs and retains oil, coolants, water, grease, gasoline, solvents, auto fluids, paint overspray, battery acid and most other liquids.

*2 Universal Socks ..... P/N 08-07324 ..... **$8.75**
12 Universal Socks ..... P/N 08-07327 ..... **$39.85**
12 Water Eepelling Socks (oil only) P/N 08-07325 ..... **$59.50**

*** Designates item pictured.**

PIG® FORM-A-FUNNEL® DRAINING TOOLS

This handy tool guides oil around skid plates and cross members right into your oil drain for guaranteed no-mess oil changes! It quickly bends, molds and holds any shape, so you can customize the perfect channel to drain liquids without making a mess. • Thick, pliable nitrile rubber coating is highly compatible with common automotive fluids and works in temperatures from -30°F to 450°F . • Edges can be molded around filters or drains to create a leakproof seal; Tool stays in place for hands-free draining and channeling • Cleans easily with cleaners and degreasers; stores flat or rolls up to take along in your tool box or glove compartment • Great for draining oil and other fluids from any type of vehicle or equipment, including cars, trucks, motorcycles, aircraft, boats, forklifts, generators, snow blowers, mowers and more.

*14.5"x6.5" Funnel ..... P/N 12-03147 ..... **$19.95**
29"x5" Funnel ..... P/N 12-02599 ..... **$29.95**

PIG® UNIVERSAL LIGHT WEIGHT ABSORBENT DRUM-TOP PADS

Eliminate messy drum storage areas without touching a mop or rag! Precut to fit on 55-gallon drums, PIG® Drum-Top Pads quickly absorb drips or overfills to help keep your shop clean and safe, so you can focus on repairing vehicles. • Precut with holes for 3/4" and 2" bungs to provide a perfect fit on steel 55-gallon drum tops • Eight layers of 100% polypropylene are thermally bonded to make PIG® Mat the strongest mat on the market; won't rip, fray or fall apart, even when saturated • Highly absorbent material traps liquids, so it won't drip or leave behind fibers when you pick it up; spend less time collecting used absorbent between jobs.

5 Pads ..... P/N 08-07328 ..... **$11.50**
20 Pads ..... P/N 08-07329 ..... **$37.50**

PIG® MAGNETIC ROLL HOLDER

Keep your PIG® Mat within an arm's reach for easy access and hassle-free dispensing. The PIG® Magnetic Roll Holder attaches to any metal surface to keep Mat off the floor and close at hand. • Holds one 15"W x 50'L PIG® Mat Roll (P/N 08-07320 or P/N 08-07315) for easy one-hand dispensing• Durable, powder-coated steel resists chips, rust and corrosion • Powerful magnets keep Roll Holder firmly in place during dispensing; can be removed and relocated in seconds.14.5" Magnetic Roll Holder..... P/N 08-07331 ..... **$28.00**

PIG® VERTICAL ROLL HOLDER

Dispense PIG® Mat the convenient way with this handy roll holder! Its free-standing, locking metal frame adjusts to accept a wide variety of rolls and is collapsible for compact storage. • Adjust center bar to change width; choose 16" to save space and keep small rolls from sliding or 33" to maximize PIG® Mat supply • Folds for storage in tight spaces; locks open for hassle-free moving • Tilted design positions Mat roll above rear support for enhanced stability when dispensing • Durable painted steel resists rust and corrosion for long life.

Mat Roll Dispenser ..... P/N 08-07332 ..... **$69.85**

PIG® UNIVERSAL SPILL KIT

Respond to spills fast so you can get back to work. Our hi-viz Kit has the supplies you need for quick cleanups, and it's so affordable you can stock every spill-prone spot in your shop or stash one in each fleet vehicle for better liability protection! • Moldable Socks surround equipment, drums or tanks and contain spills to keep them from spreading into walkways; also great for catching liquid that seeps under overhead doors • Mat Pads and Socks safely soak up and retain oil, coolants, water, grease, gasoline, solvents, auto fluids, paint overspray, battery acid and most other liquids • Bright nylon Bag stands out, so you can find it when you need it; makes a great "insurance policy" and simplifies reg compliance.

Universal Spill Kit..... P/N 08-07326 ..... **$43.75**

PIG® TRAFFIC MAT® RUG

Help keep extreme-traffic walkways dry and safe with this highly durable, absorbent Rug. Heat-fused TRAFFIC MAT® Rug won't rip or fray, even under wheeled traffic, so it's perfect for ensuring heavy-use, splash-prone areas stay clean and injury free. • 100% polypropylene material is heat fused and needle punched for incredible durability; won't ball or fray, even under wheeled traffic • Roll out to add traction and absorbency near parts washers, paint areas, work benches, doorways, service bays and other high-wear areas • Safely absorbs and retains oil, coolants, water, grease, gasoline, solvents, auto fluids, paint overspray, battery acid and most other liquids • Self-extinguishing material helps eliminate fire hazards; melts instead of burning if contacted by direct flame.

*36"x150 Ft. Standard Mat ..... P/N 08-07322 ..... **$132.95**
36"x100 Ft. Polybacked Mat..... P/N 08-07323 ..... **$179.50**

ULTRALIGHT ENGINE ACCESSORIES

SPARK PLUG CADDY

Handy case holds (2) 14mm spark plugs. Small enough to fit into your pocket.
P/N 13-03869 ..... **$2.95**

SPARK PLUG WRENCH

Loosen or tighten your spark plugs with this handy tool.
P/N 13-03921 ..... **$3.35**

PLASTIC STARTER HANDLE

Black flexible plastic heavy duty handle.Tested to –40°F
P/N 13-03865 ..... **$4.95**

SPARK PLUG JACK

Rivets or screws to any flat surface and holds two spare 14mm plugs. Tough polycarbonate plastic with spring-loaded plug anchors keeps plugs dry and protects gaps. P/N 13-03870 ..... **$3.95**

NYLON STARTER ROPE

The perfect replacement rope for worn-out manual starters. P/N 13-03922 ..... **$0.45 per ft.**

SPARK PLUG CAPS

Original NGK. Black. 5000 ohm resistance. P/N 08-00737 is used on threaded type plugs. P/N 08-04960 is used on solid top plugs.
P/N 08-00737 ..... **$2.60**
P/N 08-04960 ..... **$2.60**

SPARK PLUG WIRE

High-quality multi-strand copper core unshielded wire. 7mm diameter. For all Rotax® and most other engines. Replaces Rotax® Part No. 965-158.
P/N 11-04105 ..... **$1.11 per ft.**

FLEXDRIVE

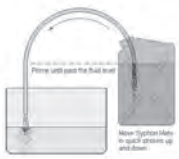
PosiFlex coupler for Quicksilver®

For 377/477 w/o high-thrust mod ..... P/N 05-01985 ..... **$249.95**
For all high-thrust mods ..... P/N 05-01986 ..... **$239.95**

RATIO-RITE CUP

Getting the right oil-to-gas ratio is no problem with this tough polypropylene cup. Just fill the cup with oil to the ratio level desired, and mix with gasoline. Ratios from 16:1 to 50:1. Graduated in ounces and CCs for filling chain cases, etc. 18 oz. capacity.
Cup..... P/N 08-01091 ..... **$3.95**
Lid..... P/N 08-03677 ..... **$1.70**

SYPHON MATE



Here's a safe and easy method of fuel transfer. A simple jiggle of the Syphon Mate establishes the flow, and then air pressure maintains it. Never wears out, and it's guaranteed for three years. The outlet end is 1/2" standard pipe thread for easy attachment to a garden hose, if needed.
P/N 05-01018 ..... **$7.95**

AIR-TECH ROTAX GEAR BOX CLUTCH RK400

The primary purpose of the clutch is to disengage the prop from the engine allowing it to start and operate at idle without vibration. When the engine is idling (below 2350 RPM) the prop is not turning. Installation of the clutch replaces the gear box flywheel and the hardy disk. Added weight is approx. 3 Lbs. P/N 10-04811 ..... **$519.00**

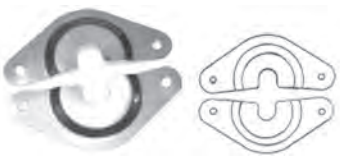
STAINLESS STEEL FIREWALL SHIELDS

Two piece shields for use over cables or wires with large end-fittings or existing installations. Single piece for use where the cable or wire may pass through the hole. Flat shields designed for use on wooden or composite firewalls using a fire resistant sealant to prevent leaks. Both types of shield available in flat or with dimple to accommodate rubber grommets up to outside diameter.
Actual hole size in 2 piece shields is slightly larger than indicated to prevent chafing cable. Ream pilot hole in single piece shields oversize for the size grommet used. Use grommets that fit tightly around the cable or wire to insure a good seal.
Shields may be installed with screws, bolts and plate nuts or rivnuts. Install cable and grommet in firewall. Locate the shield to insure that it is centered on the cable - then drill attach holes in firewall. Shields pre-drilled with 5/32" mounting holes. If more than one cable passes through grommet fire resistant sealant must be applied to grommet.
Caution: Any holes drilled in the firewall are potential source of carbon monoxide in the cockpit. Extreme caution must be exercised when installing firewall shields in your aircraft. They do not provide the necessary seal around cables or wires to prevent carbon monoxide, smoke or fire from entering the cockpit. The shields are designed only to protect the sealing material (grommets/gaskets) from excessive heat.

Single Piece 3/16" Hole with Rubber Backing P/N 61-175..... **$9.50**

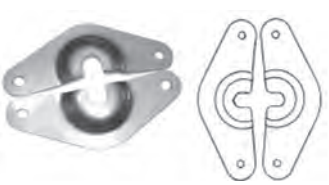
Single Piece 5/16" Hole 3/4" Dimple For Grommet
P/N 61-225..... **$9.50**

Two Piece 3/8" Hole 1" Dimple For Grommet
P/N 61-375..... **$11.50**



Two Piece 3/8" Hole 1-1/4" Dimple For Grommet
P/N 61-475..... **$11.50**

Two Piece 1/2" Hole 3/4" Dimple For Grommet
P/N 61-300..... **$11.50**



Two Piece 1/4" Hole 3/4" Dimple For Grommet
P/N 61-250..... **$11.50**

Two Piece 3/8" Hole 3/4" Dimple For Grommet
P/N 61-275..... **$11.50**

EP

BARRY ENGINE MOUNTS

Barry Controls has actively supported the general aviation market since 1981 and holds PMA approvals on a wide range of engine mounts. Barry mounts are warranted for 500 hours or 12 months and feature outstanding quality & value. Call for unlisted part numbers.

BEECHCRAFT

Aircraft		P/N	Engine	Price
Common Name	Model			
Skipper	77	94150-40	All	**$72.65**
Sport	B19, M19A	94150-01	All	**$74.85**
Musketeer	23	94150-01	All	**$74.85**
Sundowner	C23	94150-01	All	**$74.85**
Bonanza	S-35-V35, A, B, C33A, E33A, C, F33A, C, 36	7351231-3	All	**$126.95**
Bonanza	A36	7351231-3	All	**$126.95**
Sport (Musketeer)	19A	94150-01	All	
Twin Bonanza	E50, G50, H50, F50, J50	94110-40	All	**$74.65**
Turbo Baron	56TC, A56TC	94011-04	All	**$129.95**
Baron	58P	94031-03	All	**$162.95**
Baron	58TC	94031-03	All	**$162.95**
Baron	A24, A24R, B24R, C24R, D55, D55A, E55, E55A, 58, 95-C55, 95-C55A	96068-01	All	**$387.50**
Baron	99-55, 95-A55, 95-B55, 95-B55A	96071-01	All	**$344.95**
Bonanza	C35-G35	96115-01	All	**$255.45**
Duke	60, A60, B60	94011-04	All	**$129.95**
Queen Air	65, A65, 65/80, 65/88, 65-A80, 65-B80, 70	94110-40	All	**$74.65**
Duchess	76	94011-02(2)	All	**$109.95**
		94011-20(2)	All	**$103.95**
Travel Air	95, B95, A, D95A, E95	94150-40	All	**$72.65**

Note: (1) Denotes 1ea. per engine. (2) Denotes 2 ea. per engine. All others require 4 engine

GULFSTREAM

Aircraft		P/N	Engine	Price
Common Name	Model			
	111	94011-02(02)	All	**$109.95**
		94011-20(02)	All	**$103.95**
	112, B, T, TC, TCA	94011-02(02)	All	**$109.95**
		94011-20(02)	All	**$103.95**
Twin Commanders	500	94110-01	All	**$118.95**
	500A	94110-40	All	**$74.65**
	560A, E, F	94110-40	All	**$74.65**
	680, E, F, FL, FLP	94110-40	All	**$74.65**
	685	94001-01	All	**$175.95**
	720	94110-40	All	**$74.65**
Cougar	GA-7	94011-20	All	**$103.95**
Tiger	AA5B	94011-20	All	**$103.95**

Note: (1) Denotes 1ea. per engine. (2) Denotes 2 ea. per engine. All others require 4 engine **** AIRCRAFT SERIAL NUMBERS***

VANS

Aircraft		P/N	Engine	Price
Common Name	Model			
	RV-3	94011-20	All	**$103.95**
	RV-4	94011-20	All	**$103.95**
	RV-6	94011-20	All	**$103.95**

CIRRUS DESIGN

Aircraft		P/N	Engine	Price
Common Name	Model			
Cirrus	SR20	94006-01	All	**$159.50**
Cirrus	SR22	94001-01	All	**$175.95**

CESSNA

Aircraft		P/N	Engine	Price
Common Name	Model			
	152, 152A	94150-40	All	**$72.65**
Skyhawk	172I, J, K, L, M, N, P	94011-20	All	**$103.95**
	P172D	94110-40	All	**$74.65**
	R172E	94017-01	All	**$177.95**
Skylark	175, A, B, C	94110-40	All	**$74.65**
Cardinal	177, A, B	94011-20	All	**$103.95**
	180, A thru H	94110-40	All	**$74.65**
Skylane	182, A thru R	94110-40	All	**$74.65**
	R182, TR182, T182	94011-02	All	**$109.95**
Skywagon	185, A thru F, A185F	94110-40	All	**$74.65**
	188	94110-40	All	**$74.65**
Stationair	206, U206, A thru G, P206,A thru E	94030-01	All	**$118.95**
		94031-01	All	**$127.95**
	TP206, A thru E, TU206, A thru G	94030-01	All	**$118.95**
		94031-01	All	**$127.95**
	207, A, T207, T207A	94030-01	All	**$118.95**
		94031-01	All	**$127.95**
Yates Aircraft Conversion	A188B	94007-01	All	**$296.95**
Centurion	210, A thru C 210, D thru H, J	94110-40	All	**$74.65**
		94030-01 (2)	All	**$118.95**
		94031-01 (2)	All	**$127.95**
Centurion	210K thru N	94030-01 (2)	All	**$118.95**
		94031-01 (1)	All	**$127.95**
		94031-02 (1)	All	**$218.00**
Turbo Centurion	T210F thru H	94030-01 (2)	All	**$118.95**
		94031-01 (1)	All	**$127.95**
		94031-02 (1)	All	**$218.00**
Turbo Centurion	T210J thru N	94030-01 (2)	All	**$118.95**
		94031-01 (1)	All	**$127.95**
		94031-02 (1)	All	**$218.00**
Pressurized Centurion	P210N, R	94030-01 (2)	All	**$118.95**
		94021-01 (1)	All	**$194.95**
		94021-02 (1)	All	**$298.50**

CESSNA TWIN ENGINE

Aircraft		P/N	Engine	Price
Common Name	Model			
	310B, C	94110-40	All	**$74.65**
Skynight	320, A thru C	94016-03	All	**$145.00**
	320D, E, F	94006-01	All	**$159.50**
	ALT.	94017-01	All	**$177.95**
Skymaster	336	94016-01	All	**$119.95**
	337, A thru F	94017-01	All	**$177.95**
	P337H	94017-01	All	**$177.95**
	T337, B thru F	94017-01	All	**$177.95**
	340, A	94006-01	All	**$159.50**
	401, A, B	94006-01	All	**$159.50**
Business Liner	402, A thru C	94006-01	All	**$159.50**
Titan	404	94001-01	All	**$175.95**
	411, A	94001-01	All	**$175.95**
Chancellor	414, A	94006-01	All	**$159.50**
Golden Eagle	421, A thru, C	94001-01	All	**$175.95**

Note: (1) Denotes 1ea. per engine. (2) Denotes 2 ea. per engine. All others require 4 engine

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BARRY ENGINE MOUNTS

DEHAVILLAND

Aircraft		P/N	Engine	Price
Common Name	Model			
Beaver	DHC-2 MK1	MB100875	P&W R985	---
Otter	DHC-3	MB4040	P&W R-1340	---

PIPER

Aircraft		P/N	Engine	Price
Common Name	Model			
Cherokee 140	PA28-140	94150-01	*20002-24999	$74.85
	PA28-140	94011-02 (2)	*25000-7125641	$109.95
		94011-20 (2)	*25000-7125641	$103.95
	PA28-140	94011-02 (2)	*7225001 & UP	$109.95
		94011-20 (2)	*7225001 & UP	$103.95
Cherokee 150	PA28-150	94150-01	All	$74.85
Cherokee 160	PA28-160	94150-01	All	$74.85
Warrior	PA28-151	94011-02 (2)	0-320-E3-D	$109.95
		94011-20 (2)	All	$103.95
Warrior	PA28-161	94011-02 (2)	All	$109.95
		94011-20 (2)	All	$103.95
Cherokee180	PA28-180	94150-01	*1761-4377	$74.85
	PA28-180	94150-01	*4378-5149	$74.85
Cherokee Six	PA32-300	94110-02	*32-7240056 & UP	$126.95
Archer	PA28-180	94011-20	*5151 & UP	$103.95
Archer II	PA28-181	94011-20	All	$103.95
Arrow	PA28R-180	94011-20	*3000 & UP	$103.95
	PA28R-200	94011-20	*35001-7135329 IO-360-C1C	$103.95
Arrow II	PA28R-200	94011-20	*7235001 & UP	$103.95
Turbo Arrow II	PA28R-201T	94006-01	TSIO-360-F, FB	$159.50
Arrow III	PA28R-201	94011-20	*7737002 & UP	$103.95
Turbo Arrow III	PA28R-201T	94006-01	All	$159.50
Dakota	PA28-236	94011-02	*0-540-J3A5D	$109.95
Comanche 250	PA25-250	94110-01	0-540-A1A	$118.95
Comanche 260	PA24-260	94110-01	IO-540-E or D4A5	$118.95
Comanche 400	PA24-400	94011-04	IO-720	$129.95
Cherokee Lance	PA32R-300	94110-02	IO-540-K1G5D	$126.95
Lance II	PA32RT-300	94110-02	IO-540-K1G5	$126.95
Saratoga	PA32-301	94011-02 (2)	All	$109.95
		94011-03 (2)	All	$117.95
Saratoga S.P	PA32R-301	94011-02 (2)	All	$109.95
		94011-03 (2)	All	$117.95
Tomahawk	PA38-112	94150-01	0-235	$74.85
Brave	PA36-300	94110-02	All	$126.95
Pawnee 235	PA25-235	94110-01	All	$118.95
Pawnee 260	PA25-260	94110-01	All	$118.95

PIPER TWIN ENGINE

Aircraft		P/N	Engine	Price
Common Name	Model			
Apache 235	PA23-235	94110-01	0-540-B1A5	$118.95
Aztec	PA23-250	94110-01	0-540, IO-540	$118.95
Aztec C, F	PA23-250	94011-02	IO-540-C4B5, CIB5	$109.95
Twin Comanche	PA30	94011-03	All	$117.95
	PA39	94011-03	All	$117.95
Turbo Navajo	PA31	94011-02	All	$109.95
Navajo C/R	PA31-325	94011-02	TIO-540-F2BD(L)	$109.95
Navajo Chieftain	PA31-350	94011-02	TIO-540-J2BD(L)	$109.95
Seneca	PA34-200	94011-20	All	$103.95
Seneca II	PA34-200T	94006-01	All	$159.50
Seneca III	PA34-220T	94006-01	All	$159.50
Seminole	PA44-180	94011-20	All	$103.95
Turbo Seminole	PA44-180T	94011-20	All	$103.95
Aeorstar	PA60-700P	94011-40	All	$339.50
	PA60-600, 601	94011-01	All	$149.95
	PA60-601P,602P	94011-01	All	$149.95

Note: (1) Denotes 1ea. per engine. (2) Denotes 2 ea. per engine. All others require 4 engine * AIRCRAFT SERIAL NUMBERS

MAULE

Aircraft		P/N	Engine	Price
Common Name	Model			
Rocket	M-4-210, C, S, T	94016-01		$119.95
	M-5-210C	94016-01		$119.95
	M-5-235, C	94016-02		$152.95
	M-6-235	94016-02		$152.95
Orion/Super Rocket	M-7-235/260, M-8-235	94016-02	0-540-J/10-540-J	$152.95

MOONEY

Aircraft		P/N	Engine	Price
Common Name	Model			
PFM	M20L	95167-01	Porche	$738.00
Chaparral	M20E 1964 Only	94150-01	0-360-A1A	$74.85
Chaparral(Super 21)	M20E 1965 & Newer	94011-02	IO-360-A1A	$109.95
Executive	M20F	94011-02	IO-360-A1A	$109.95
201	M20J	94011-20		$103.95
231	M20K	94006-01	TSIO-360	$159.50
	CAP231	94016-44	ALL	$414.95
	M20A	94150-40	0-360-A1A, D	$72.65
	M20A	94150-01	0-360-A1A	$74.85
Master	M20D	94150-40	0-360-A1D, A2D	$72.65
Ranger	M20B	94150-40	0-360-A1A, D	$72.65
Ranger Mark 21	M20C	94150-40	0-360-A1A,D	$72.65
Statesmen	M20G	94150-40	IO-360-A1D	$72.65

LANCAIR

Aircraft		P/N	Engine	Price
Common Name	Model			
Lancair	235	94150-41	0-235	$118.95
Lancair	320	94150-41	0-320	$118.95
Lancair	360	94150-41	0-320, 0-360	$118.95
Lancair	4	94001-01, (2)	TIO-550, TIO-520	$175.95
		94011-20, (2)	TIO-550, TIO-520	$103.95
Lancair	ES	94017-01	All	$177.95
Columbia	300	94001-01	IO-550	$175.95

Note: (1) Denotes 1ea. per engine. (2) Denotes 2 ea. per engine. All others require 4 engine

SIAI MARCHETTI

Aircraft		P/N	Engine	Price
Common Name	Model			
	F260	94110-01	All	$118.95
	S208	94110-01	All	$118.95

SOCATA

Aircraft		P/N	Engine	Price
Common Name	Model			
Rallye	235C, E	94011-20	0-540-B4B5	$103.95

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LORD ENGINE MOUNTS

LORD ELASTOMERIC ENGINE MOUNTS

These compression type couplings consist of bonded rubber joints pressed into the sockets of metal hubs. These dynafocal engine suspensions provide proper flexible support to isolate engine vibrations and reduce noise transmission to airframe structure in all aircraft applications. Careful design assures maximum strength to hold the engine under ultimate load and emergency conditions. Suspensions also distribute loads in most desirable patterns, control engine motions, accommodate thermal expansion and manufacturers' tolerances.

PROMPT SHIPPING GUARANTEED! IF YOU REQUIRE UNLISTED LORD MOUNTS, PLEASE CALL US FOR YOUR BEST PRICE. WE BEAT ALL COMPETITOR'S PRICES! LET US KNOW OF ANY LOWER PRICE AND WE WILL BEAT IT!

Aircraft Model	Application/ Engine	No. per A/C	Part No.	Price Each
AVIAT				
A-1	Lyc. O-360-C1G/A1P	8	J-1552	**$39.95**
S-1	Lyc. O-320	8	J-7401-2	**$44.95**
S-1S, -2A	Lyc. O-360-B4A, A1P	8	J-7401-2	**$44.95**
BEECHCRAFT				
19	Lyc. O-320-E2C	4	J-7402-16	**$95.50**
B19, M19A	Lyc. O-320-E2D	4	J-7402-16	**$95.50**
23	Lyc. O-360-A4G	4	J-7402-16	**$95.50**
23	Cont. IO-346-A	4	J-10778-4	**$226.95**
A23-24	Lyc. IO-360-A2B	4	J-10778-4	**$226.95**
C-23	Lyc. O-360-A4K	4	J-7402-16	**$95.50**
24,A24,A24R,B24R	Lyc. IO-360-A2B	2 ea*	J-10778-14	**$419.50**
C-24R	Lyc IO-360-A1B6	2 ea*	J-10778-16	**$231.95**
B33, C33	Cont. IO-470-K	4	J-7518-2	**$139.95**
C33A	Cont. IO-520-B	4	J-10520-1	**$156.95**
E33, F33	Cont. IO-470-K	4	J-7518-2	**$139.95**
E33A/C, F33A/C	Cont. IO-520-BB	4	J-10520-1	**$156.95**
G33	Cont. IO-470-N	4	J-10520-1	**$156.95**
35, A35, B35	Cont. E185-8	8	J-2245-1	**$107.95**
C35, D35, E35, F35	Cont. E185-11	4	J-3804-26	**$144.95**
E35, F35, G35	Cont. E225-8	4	J-3804-26	**$144.95**
H35	Cont. O-470-G	4	J-7518-2	**$139.95**
J35, K35, M35	Cont. IO470-C	4	J-7518-2	**$139.95**
N35, P35	Cont. IO-470-N or-C	4	J-7518-2	**$139.95**
S35,T35,V35,V35A,B	Cont. IO-520-BB	4	J-10520-1	**$156.95**
36, A-36	Cont. IO-520-BB	4	J-10520-1	**$156.95**
A36TC	Cont. TSIO-520-UB	4	J-10520-1	**$156.95**
V35A-TC	Cont. TSIO-520-D	4	J-10520-1	**$156.95**
B50	Lyc. GO-435-C2/C2E	8	J-3804-10	**$178.50**
C50	Lyc. GO-480-F1A6	8	J-3804-10	**$178.50**
D50, D50B/C/E	Lyc. GO-480-G2F6	4	J-3804-10	**$178.50**
E50, F50, G50, H50 G50, G50, J50	Lyc. GSO-480-B1B6 Lyc. IGSO-480-A1B6	4 4	Use J-7525-1 & J-6545-1	**$93.95** **$104.95**
55, A55, B55	Cont. IO-470-L	8	J-7518-2	**$139.95**
55, A55, B55, B55A	Cont. IO-470-L	8	J-9613-5	**$279.50**
C55(1967), D55,				
D55A,E55,E55A	Cont. IO-520-CB	8	J-10778-16	**$231.95**
56TC, A56TC	Lyc. TIO-541-EIB4	8	J-9613-9	**$219.00**
58	Cont. IO-520-CB	8	J-10778-16	**$231.95**
58 (1984-on)	Cont. IO-550-C	8	J-10778-16	**$231.95**
58P	Cont. TSIO-520-L/-LB	8	J-12453-12	**$155.95**
58P	Cont. TSIO-520-WB	8	J-12453-12	**$155.95**
58TC	Cont. TSIO-520-L/-LB	8	J-12453-12	**$155.95**
58TC	Cont. TSIO-520-WB	8	J-12453-12	**$155.95**
60, B60	Lyc. TIO-541-EIC4	8	J-9613-9	**$219.00**
65, A65, 70	Lyc. IGSO-480-AIE6	4	J-7525-1	**$93.95**
		4	J-6545-1	**$104.95**
76TC	Lyc. TO-360-CIA6D	2 ea*	J-9613-49	**$145.95**
76	Lyc. O-360-AIG6D	2 ea*	J-9613-50	**$115.95**
77	Lyc. O-235-L2C	4	J-7402-1	**$97.50**
80, A80, B80, 88	Lyc. IGSO-540-AID	4	J-7525-1 &	**$93.95**
		4	J-6545-1	**$104.95**
C90, C90A	PWC PT6A-21	6	LM427SA7	**$562.00**
E90, F90	PWC PT6A-28,-135,-135A	6	LM427SA7	**$562.00**
H90	PWC PT6A-34B	6	LM427SA7	**$562.00**
95, 95A, 95B	Lyc. IO-360-B1B	8	J-7402-1	**$97.50**
D95A, E95	Lyc. IO-360-B1B	8	J-7402-1	**$97.50**
A100	PWC PT6A-28	6	LM427SA7	**$562.00**
B100	GA TPE331-6-252B	4&2*	LM821SA49	**$3,456.00**
			LM821SA50	**$3,456.00**
200, 200C, 200CT	PWC PT6A-41	8	LM427SA7	**$562.00**
A200/C/CT	PWC PT6A-41	8	LM427SA7	**$562.00**
B200	PWC PT6A-42	8	LM427SA7	**$562.00**
C90,E90,C99,200/C /CT, A200/C/CT, B200/C/CT/T	Overhaul kit for Barry Controls P/N5906-2SA5	8	LM427SA12	**$225.00**

Aircraft Model	Application/ Engine	No. per A/C	Part No.	Price Each
BELLANCA				
17-31, 17-31A	Lyc. IO-540-K	4	J-9868-5	**$199.50**
17-31A	Lyc. IO-540-KIE5	4	J-9868-5	**$199.50**
17-31TC,17-31ATC	Lyc. IO540-G, K	4	J-9868-5	**$199.50**
7ACA	Franklin 2A-120A, B	8	J-3608-1	**$15.50**
7ECA	Cont. O-200-A	8	J-3608-1	**$15.50**
7ECA	Lyc. O-235-C1	4	J-6230-1	**$119.95**
7GCAA, 7GCBC	Lyc. O-320-A2B	4	J-6230-1	**$119.95**
7GCAA, 7GCBC	Lyc. O-320-A2D	4	J-6230-1	**$119.95**
7KCAB	Lyc. O-320-E2A	4	J-6230-1	**$119.95**
7KCA	Franklin 2A-120A, B	8	J-3608-1	**$15.50**
8GCBC-CS	Lyc. O-360-C1E	4	J-6230-1	**$119.95**
8GCBC-FP	Lyc. O-360-C2E	4	J-6230-1	**$119.95**
8GCBC	Lyc. O-360-C2E	4	J-6230-1	**$119.95**
8KCAB	Lyc.IO-320-E1A	4	J-6230-1	**$119.95**
8KCAB-CS	Lyc. AEIO-320-E1B	4	J-6230-1	**$119.95**
8KCAB-FP	Lyc. AEIO-320-E2B	4	J-6230-1	**$119.95**
8KCAB-180	Lyc. AEIO-360-H1A	4	J-6230-1	**$119.95**
CESSNA				
120-140	Cont. C-85	8	J-3608-1	**$15.50**
140A	Cont. C-90	8	J-3608-1	**$15.50**
150, 150A-L	Cont. O-200-A	8	J-3608-1	**$15.50**
152, 152 Aerobat	Lyc. O-235-L2C	4	J-7402-1	**$97.50**
172 I-P	Lyc. O-320-E2D	4	J-9613-49	**$145.95**
172P	Cowl Mount	--	J-7444-14	**$17.75**
F172P	Cowl Mount	--	J-7444-14	**$17.75**
F172P	Cowl Mount	--	J-7444-24	**$26.50**
F172	Cowl Mount	--	J-7444-36	**$49.50**
172	Lyc. O-320-D2J	4	J-9613-49	**$145.95**
172N	Lyc. O-320-H2AD	4	J-9613-49	**$145.95**
172	Cont. IO-360-K	4	J-9613-42	**$121.95**
172RG	Lyc. O-360-A1F6	2 ea*	J-9613-49	**$145.95**
			J-9613-72	**$203.95**
172Q	Lyc. O-360-AL/N	2 ea*	J-9613-49	**$145.95**
			J-9613-72	**$203.95**
172P,Q	Cowl Mount	--	J-7444-24	**$26.50**
172	Cowl Mount	--	J-7444-36	**$49.50**
P172	Cont. GO-300-E	4	J-6545-1	**$104.95**
R172E,K	Cont. IO-360-D	4	J-9613-42	**$121.95**
175	Cont. GO-300-A	4	J-6545-1	**$104.95**
175A, B	Cont. GO-300-C, D	4	J-6545-1	**$104.95**
175C	Cont. GO-300-E	4	J-6545-1	**$104.95**
177	Lyc. O-320-E2D	4	J-9613-49	**$145.95**
177A	Lyc. O-360-A2F	4	J-9613-49	**$145.95**
177B	Lyc. O-360-A1F6D	4	J-9613-49	**$145.95**
177RG	Lyc. IO-360-A1B6	4	J-9613-59	**$197.50**
180	Cont. O-470-A, J	2 ea*	J-3804-14	**$167.95**
			J-3804-15	**$188.00**
180	Cont. O-470-K	4	J-6545-1	**$104.95**
180A-H	Cont. 0-470-K, R	4	J-6545-1	**$104.95**
180H, J	Cont. O-470-R, U	4	J-6545-1	**$104.95**
182, 182A-R	Cont. O-470-R, U	4	J-6545-1	**$104.95**
182, 182A-N	Accessory Mount	--	J-14290-4	**$27.85**
182H-N	Panel Mount	--	J-6984-64	**$12.90**
T182	Lyc. O-540-L3C5D	4	J-9613-12	**$135.95**
TR182	Lyc. O-540-L3C5D	4	J-9613-12	**$135.95**
185, 185A-E	Cont. IO-470-F	4	J-6545-1	**$104.95**
185	Cont. IO-520-D	4	J-6545-1	**$104.95**
A185F	Cont. IO-520-D	4	J-6545-1	**$104.95**
188	Cont. O-470-R	4	J-6545-1	**$104.95**
188	Cont. IO-520-D	4	J-6545-1	**$104.95**

NOTE: * indicates more than one Lord Part No. needed

LORD ENGINE MOUNTS

Aircraft Model	Application / Engine	No. per A/C	Part No.	Price Ea.
CESSNA cont.				
188	Cont. IO-520-D	2 ea*	J15198-1	**$387.95**
188A, 188B	Cont. IO-520-D	2 ea*	J15198-2	**$467.95**
205, 205A	Cont. O-360-B4A	4	J-6545-1	**$104.95**
206, 206A	Cont. IO-520A	2 ea*		
206B	Cont. IO-520F	2 ea*	J12453-1	**$155.95**
U206T	Cont. TSIO-520C	2 ea*	J12453-2	**$163.95**
U206	Cont. IO-520F	2 ea*		
U206,A,E	Panel Mount	--	J-6984-64	**$12.90**
U206G	Cont. IO-520-F	2 ea*		
TU206A-F	Cont. TSIO-520-C	2 ea*		
T206G	Cont. TSIO-520-M	2 ea*		
P206, P206A-E	Cont. IO-520-A	2 ea*	J12453-1	**$155.95**
P206T, P206T A-E	Cont. TSIO-520-C	2 ea*	J12453-2	**$163.95**
207, 207A	Cont. IO-520-F	2 ea*		
207A II	Cont. IO-520-F	2 ea*		
207T	Cont. TSIO-520-G	2 ea*		
T207A, T20A II	Cont. TSIO-520-M	2 ea*		
210, 210A-C	Cont. IO-470-E, S	4	J-6545-1	**$104.95**
210 D-J	Cont. IO-520-A, J	2 ea.*	J-12453-1	**$143.95**
210 K-R	Cont. IO-520-L	2 ea*	J-12453-2	**$163.95**
210 K, L	Panel Mount	--	J-6984-64	**$12.90**
T210M, N	Cont. TSIO-520-R	2/1/1*		
T210 F-L	Cont. TSIO-520-C, H	2 ea.*	J-12453-1	**$143.95**
P210M, N	Cont. TSIO-520-AF, P	2/1/1*	J-12453-2	**$163.95**
T210R (1985-86)	Cont. TSIO-520-CE	4/2*		
P210 R (1985-86)	Cont. TSIO-520-CE	4/2*		
310B	Cont. O-470-M	8	J-6545-1	**$104.95**
310C-H	Cont. IO-470-D	8	J-12390-1	**$149.95**
310JQ	Cont. IO-470-U, V, VO	8	J-12390-1	**$149.95**
310R	Cont. IO-520-M, MB	8	J-9613-58	**$207.95**
T310 P, Q, R	Cont. TSIO-520-B, BB	8	J-9613-58	**$207.95**
320, 320A-C	Cont. TSIO-470-B, D	8	J-7764-4	**$172.95**
320 D-F	Cont. TSIO-520-B, BB	8	J-9613-58	**$207.95**
337, 337A-H	Cont. IO-360-C, D, G	8	J-9613-31	**$197.95**
T337B-G	Cont. TSIO-360-A, H	8	J-9613-31	**$197.95**
P337H	Cont. TSIO-360-C, CB	8	J-9613-31	**$197.95**
340	Cont. TSIO-520-K, KB	8	J-9613-58	**$207.95**
340A	Cont. TSIO-520-NB	8	J-9613-58	**$207.95**
401, 401A,B	Cont. TSIO-520-E, EB	8	J-9613-58	**$207.95**
402, 402A,B	Cont. TSIO-520-E, EB	8	J-9613-58	**$207.95**
402C	Cont. TSIO-520-VB	8	J-9613-58	**$207.95**
404	Cont. GTSIO-520-M	8	J-9613-54	**$196.95**
411, 411A	Cont. GTSIO-520-C	8	J-9613-54	**$196.95**
414, 414A	Cont. TSIO-520-J, NB	8	J-9613-58	**$207.95**
421, A, B	Cont. GTSIO-520-D, H	8	J-9613-54	**$196.95**
421C	Cont. GTSIO-520-L, N	8	J-9613-54	**$196.95**
COMMANDER AIRCRAFT CO.				
112, 112B	Lyc. O-360-C1D6	2 ea.*	J-9613-40	**$133.95**
112T, TCA	Lyc. IO-360-C1A6D	2 ea.*	J-9613-53	**$129.95**
114	Lyc. IO-540-T4A5D	4	J-3804-28	**$198.50**
GRUMMAN AMERICAN				
AA-1	Lyc. O-235-C2C	8	J-6113-5	**$49.95**
AA-1A, B	Lyc. O-235-C2C	8	J-6113-5	**$49.95**
AA-1C (Tomcat)	Lyc. O-235-L2C	4	J-7402-24	**$112.95**
AA-1C (Lynx)	Lyc. O-235-L2C	4	J-7402-24	**$112.95**
AA-5	Lyc. O-320-32G	4	J-7402-24	**$112.95**
AA-5A	Lyc. O-320-32G	4	J-7402-24	**$112.95**
AA-5B (S/N 1-399)	Lyc. O-360-A4K	4	J-9613-49	**$145.95**
AA-5B, AG-5B	Lyc. O-360-A4K	4	J-9613-59	**$197.50**
MOONEY AIRCRAFT				
M20	Lyc. O-320	4	J-6230-1	**$119.95**
M20A (1958-1960)	Lyc. O-360	4	J-7402-16	**$95.50**
M20B (S/N1701-1939)	Lyc. O-360-A1D	4	J-7402-1	**$97.50**
M20C(S/N1940-20-1258)	Lyc. O-360-A1D	4	J-7402-1	**$97.50**
M20D (S/N101-260)	Lyc. O-360-A2D	4	J-7402-1	**$97.50**
M20E (S/N101-470)	Lyc. O-360-A1A	4	J-7402-16	**$95.50**
M20E (1969-75)	Lyc. O-360-A1A	4	J-9613-12	**$135.95**
M20F (1966-77)	Lyc. O-360-A1A	4	J-9613-12	**$135.95**
M20G (1968-70)	Lyc. O-360-A1D	4	J-7402-1	**$97.50**
M22 (1966-70)	Lyc. TIO-541-A1A	4	J-10520-1	**$156.95**
M20J (1976-up)	Lyc. IO-360-A3B6D	4	J-9613-40	**$133.95**
M20K (1979-85)	Cont. TSIO-360-GB1	4	J-9613-58	**$207.95**
M20K (1979-85)	Cont. TSIO-360-GB3	1/3*	J-9613-75	**$404.95**
M20K (1979-85)	Cont. TSIO-360-GB4	1/3*	and	
M20K (1979-85)	Cont. TSIO-360-LB1B	1/3*	J-9613-76	**$365.95**
M20K (1986-up)	Cont. TSIO-360-MB1	1/3*		
NAVION AIRCRAFT				
G, H	Cont IO-470-H or IO-520-B	4	J-7518-4	**$317.95**
PIPER				
PA-23	Lyc. O-320-D2	8	J-6230-1	**$119.95**
PA-23-160	Lyc. 0-320-B	8	J-6230-1	**$119.95**
PA-23-235	Lyc. OI-540-B1A5	8	J-3804-20	**$134.95**
PA-23-250	Lyc. O-540-A1B5, A1D5	8	J-3804-20	**$134.95**
PA-23-250 (6)	Lyc. IO-540-C1B5, A1D5	8	J-3804-20	**$134.95**
PA-23-250 (6)	Lyc. IO-540-C4B5	8	J-9613-12	**$135.95**
PA-23-250 (6)	Lyc. IO-540-J4A5	8	J-9613-12	**$135.95**
PA-23-250	Lyc. IO-540-C4B5	8	J-9613-12	**$135.95**
PA-23-250T	Lyc. TIO-540-C1A	8	J-9613-12	**$135.95**
PA-24-250	Lyc. O-540-C1B5, A1A	4	J-3804-20	**$134.95**
PA-24-260	Lyc. IO-540-E4A5, D4A5	4	J-3804-20	**$134.95**
PA-24-400	Lyc. IO-720-A1A, A1B	2 ea.	J-9613-9	**$219.00**
PA-25-235	Lyc. O-540-B2C5,B2B5	4	J-3804-20	**$134.95**
PA-25-260	Lyc. O-540-E4	4	J-3804-20	**$134.95**
PA-28-140	Lyc. O-320-E2A	4	J-7402-16	**$95.50**
PA-28-140	Lyc. O-320-E2A	2	J-9613-40	**$133.95**
PA-28-140	Lyc. O-320-E3D	2 ea.*	J-9613-40	**$133.95**
			J-9613-53	**$129.95**
PA-28-150	Lyc. O-320-A2B	4	J-7402-16	**$95.50**
PA-28-150	Lyc. O-320-A2B*	4	J-7402-24	**$112.95**
PA-28-150	Lyc. O-320-E2A	4	J-7402-16	**$95.50**
PA-28-151	Lyc. O-320-E3D	2 ea.*	J-9613-40	**$133.95**
			J-9613-53	**$129.95**
PA-28-160	Lyc. O-320-B2B	4	J-7402-16	**$95.50**
PA-28-160	Lyc. O-320-D2A**	4	J-7402-16	**$95.50**
PA-28-160	Lyc. O-320-D2A	4	J-7402-24	**$112.95**
PA-28-161	Lyc. O-320-D3G	2 ea.*	J-9613-40	**$133.95**
			J-9613-53	**$129.95**
PA-28-180	Lyc. O-360-A3A	4	J-7402-24	**$112.95**
PA-28-180	Lyc. O-360-A4A	4	J-7402-24	**$112.95**
PA-28-180	Lyc. O-360-A4A, M***	4	J-9613-40	**$133.95**
PA-28R-180	Lyc. O-360-B1E	4	J-9613-40	**$133.95**
PA-28-181	Lyc. O-360-A4M	4	J-9613-40	**$133.95**
PA-28R-200	Lyc. IO-360-C1C	4	J-9613-40	**$133.95**
PA-28R-201	Lyc. IO-360-C1C, C1C6	4	J-9613-40	**$133.95**
PA-28R-201T	Cont. TSIO-360-F, FB	4	J-9613-58	**$207.95**
PA-28-235	Lyc. O-540-B2B5	4	J-3804-20	**$134.95**
PA-28-235	Lyc. O-540-B1B5	4	J-7402-20	**$104.95**
PA-28-235	Lyc. O-540-B4B5	4	J-7402-20	**$104.95**
PA-28-235	Lyc. O-540-B4B5****	4	J-3804-27	**$136.95**
PA-28-236	Lyc. O-540-J3A5D	4	J-9613-12	**$135.95**
PA-30	Lyc. IO-320-B1A1C1A	8	J-9613-19	**$146.95**
PA-31	Lyc. TIO-540-A1A, or A1B, A2C, A2B	8	J-9613-12	**$135.95**
PA-31-310	Lyc. TIO-540-A2C	8	J-9613-12	**$135.95**
PA-31-325	Lyc. L/ TIO-540-F2BD	8	J-9613-12	**$135.95**
PA-31-350	Lyc. L/ TIO-540-J2BD	8	J-9613-29	**$144.95**
PA-31P-350	Lyc. TIO-540-V2AD	--	J-9613-53	**$129.95**
PA-31T-1, -500	PWC PT6A-11	6	LM-423-SA1	**$889.00**
PA-31T-620	PWC PT6A-28, 135	4	LM-423-SA1	**$889.00**
PA-31T-620XL,-31T2		2	LM-423-SAI2	**$806.50**
PA-32-260	Lyc. O-540-E4B5	4	J-7402-20	**$104.95**
PA-32-260 (s/n 570-up)	Lyc. O-540-E4B5	4	J-3804-27	**$136.95**
PA-32-300	Lyc. IO-540-K1A5	4	J-3804-27	**$136.95**
PA-32-300	Lyc. IO-540-K1G5, K1A5	4	J-3804-40	**$128.95**
PA-32R-300	Lyc. IO-540-K1G5D	4	J-3804-31	**$183.95**
PA-32R-300 (s/n 141-up)	Lyc. IO-540-K1G5D	4	J-3804-40	**$128.95**
PA-32RT-300	Lyc. IO-540-K1G5	2 ea.	J-3804-40	**$128.95**
PA-32RT-300T	Lyc. TIO-540-51AD	2 ea.	J-3804-37&	**$157.95**
			J-3804-39	**$352.95**
PA-32-301	Lyc. IO-540-K1G5D	2 ea.	J-9613-19 &	**$146.95**
PA-32R-301	Lyc. IO-540-K1G5D	2 ea.	J-9613-12	**$135.95**
PA-32-301T	Lyc. TIO-540-S1AD	2 ea.	J-9613-19 &	**$146.95**
PA-32R-301T	Lyc. TIO-540-S1AD	2 ea.	J-9613-55	**$289.00**
PA-34-200	Lyc. L/ IO-360-C1E6	8	J-9613-40	**$133.95**
PA-34-200, 200T	Cont. TSIO-360-E, EB	8	J-9613-58	**$207.95**
PA-34-220T	Cont. L/ TSIO-360-KB	4	J-9613-58	**$207.95**
PA-36-285	Cont. 6-285	4	J-14090-7	**$499.50**
PA-36-300	Lyc. IO-540-K1G5	4	J-3804-31	**$183.95**
PA-38-112	Lyc. O-235L2C	4	J-7402-16	**$95.50**
PA39	Lyc. IO-320-B1AC1A	8	J-9613-19	**$146.95**
PA-44-180	Lyc. 0-360-E1A6D	8	J-9613-40	**$133.95**
PA-44-180T	Lyc. T0-360-E1A6D	8	J-9613-40	**$133.95**
PA-46-310P	Cont. TSIO-520-BE	4	J-9613-55	**$289.00**
PA-46-350P	Lyc. TIO-540-AE2A	8	J-9613-55	**$289.00**
PA-60-360	Lyc. IO-360-E1A	8	J-9613-12	**$146.95**
PA-60-600A	Lyc. IO-540-K1F5	8	J-9613-9	**$219.00**
PA-60-600B	Lyc. IO-540S1A5	8	J-9613-9	**$219.00**
PA-60-601P	Lyc. IO-540S1A5	8	J-9613-9	**$219.00**

NOTE: * indicates more than one Lord Part No. needed

LOCKING TAB WASHER - Used to lock mounting bolts to Lord Mounts. This Continental P/N 501867 is similar to Cessna P/N 08-51559-1.

P/N 08-50186-7 ..... **$1.37 ea.**

COWL MOUNTS

Cessna150,172,177 ..... P/N J-7444-14 ..... **$17.75**

Cessna 182 ..... P/N J-7444-24 ..... **$26.50**

EP

ENGINE MOUNTS

DYNAFOCAL ENGINE MOUNT RINGS & KITS

Standard rings furnished with 2-3/4" I.D. retainers, completely welded, ready for mount assembly. The Dynafocal ring kits contain all tubing cut and bent, with 2-3/4" I.D. retainers, ready to weld.

Dynafocal Ring for Lyc. 0-235 to I0-360 (200 HP)..... P/N 33521....**$197.00**
Dynafocal Ring for Lycoming 0-320B..... P/N 33521-B **$308.95**
Dynafocal Ring Kit for Lyc. 0-235 to I0-360 (200 HP) . P/N 33522....**$149.85**
Retainer Cups & Rings Kit ..... P/N 33253....**$104.50**
(includes 8 cups & 4 rings - everything in #33522 kit above except the tubing)
Engine mount ring for most Lyc. I0-540's.....P/N 08-00795 .....**$294.00**

VIP ENGINE MOUNTS FOR EXPERIMENTAL AIRCRAFT

Spruce P/N	Lord Equiv.	Barry Equiv	Price ea.
08-00774	J9613-49	94110-20	**$88.75**

SANDWICH MOUNTS FOR HOMEBUILT AIRCRAFT

Sandwich assemblies of natural rubber and specially blended synthetic compounds bonded to 2 metal plates. Normal installation requires 4 assemblies, each consisting of 2 sandwich mountings and 1 spacer. Satisfactory performance requires that the spacer be designed to the correct length to precompress each mounting to guarantee proper positioning of the mountings. Set consists of eight bonded sandwich mountings equivalent to Lord Mount No. J-7402-5 (2" Dia.) and four 4130 steel spacers with mounted rubber shoulder. Use with dynafocal engine mount rings using 2-3/4" I.D. retainer cups. Used on many homebuilts including the Defiant and Long-EZ .....P/N 08-03500 .....**$449.00**

SPECIAL HEAVY DUTY MOUNT SETS

Designed for use on aerobatic aircraft such as Christen Eagle and Acro. Same style as homebuilt type but inner core has been "beefed up" and elastomers added to encapsulate the spacer. 2-inch diameter. Includes a set of 8 Mounts and 4 spacers to make one complete engine set of 4.

Note: Mounting hole is 7/16" and requires AN7 bolts for installation.

50401-300 w/4 Spacers .....P/N 08-03600 .....**$247.00**

DISCOUNT: LESS 10% ON 6 SETS, 15% ON 10 SETS, 20% ON 20 SETS

LORD MOUNTS FOR COZY ENGINE MOUNT

These Lord J-7402-24 mounts fit the engine mount for Lyc. 0-360 manufactured by CG Parts.

P/N 07-01115 .....**$112.95**

SKYBOLT PLATEMOUNTS

The SK2003A Series Mounts were specifically designed around the latest generation Cessna/Lord J7444-42 Series Mount. The SK2003-14A, -24A, and -42A all have the same flex feature as the J7444-42. They look and install exactly the same as the Cessna/Lord part it replaces using the same fastener length. The SK2003-14A, -24A, and -42A are fixed depth, Non-Adjustable Platemounts. The -14ADJ, -24ADJ, and -42ADJ are adjustable and can be adjusted without removing the cowling for an exact fit.

Model	Application	Part No.	Price
SK2003-14A	Cessna PN J7444-14. Used On - 67-On C150 (10ea), 67-86 C172 (11ea), C172XP (13ea) 68-78 C177 (14ea)	08-07222	**$14.65**
SK2003-14ADJ		08-00663	**$21.75**
SK2003-24A	Cessna PN J7444-24. Used On - 73-86 C182 (14ea)	08-07223	**$15.95**
SK2003-24ADJ		08-00664	**$21.95**
SK2003-42A	Cessna PN J7444-36 and -42. Used on -97, C172 R & S (14ea)	08-07208	**$19.85**
SK2003-42ADJ		08-00665	**$22.75**

SK-SP5 SKYBOLT CLOC TOOL - Adjust CLoc® 4000 Series Adjustable Receptacle and Mounts..... P/N 08-07210.....**$39.90**

SMALL URETHANE EAR STYLE ENGINE MOUNT BUSHINGS

These engine mount bushings are made of a special urethane formula which outlasts most other mounts. They have been in use on O-540, IO-540 and TI-540 series engines for years, and are now available to the experimental aircraft market. Includes two bushings, one spacer and two washers. Specifications: These small ear type bushings are applicable to the following engine models: O-540-A1A, -A1A5, -A1B5, -A1C5, -A1D, -A1D5, -A2B, -A3D5, -B1A5, -B1B5, -B2B5, -B2C5, -B4B5, -C1B5, -E4A5, -E4B5, -E4C5, -G1A5, G2A5, -F1A5, -F1B5

IO-540-A1A5, -B1A, -B1A5, B1C5, -C1B5, C4C5, -D4A5, -E1A, -E1A5, -E1B5, -E4A5, -G1A5, -G1B5, -G1C5, -G1D5, -G1E5, -G1F5, -D4A5, -K1A5, -K1A5D, -K1B5, -K1C5, -K1d5, -K1E5, -K1F5, -K1G5, -K1G5D, -K1J5D, -T4A5D, -T4B5D, -N1A5, -R1A5, -S1A5, -C4D5D

TIO-540-A2C, -S1AD P/N 08-07393 .....**$29.95**

912/914 ROTAX RING MOUNT

This ring mount for Rotax 912/914 engines is 4130 chrome-moly construction, powder coated, and fits all 912 and 914 engines. Not FAA approved, but built using the same processes and quality control required for certified parts. Standard color is white. Options include additional clearance for a 12-volt high-amp starter cable connection and powder coating in other colors. The mount is furnished with installation instructions and the required shim washers recommended by Rotax. Mounting hardware is not included.

Rotax 912/914 (WHITE)
P/N 08-07113 ..... **$656.00**
Rotax 912/914 Special Color
P/N 08-07152 ..... **$923.00**

BARRY MOUNT FOR VANS AEROBATIC AIRCRAFT

Barry Controls is a manufacturer of many aircraft engine mounts of both experimental and certified types. They also manufacture engine mounts for experimental and kit airplanes of various makes and models. Please call or visit our website for application information.

P/N 94016-08.....**$437.95**

HOMEBUILDERS CONICAL LYCOMING ENGINE MOUNT BUSHINGS

These new bushings offer superior damping qualities and do not harden over time as original mounts can do. They are molded from hi-tech silicone rubber which offering a much lower compression set which reduces engine sagging over time. Silicone also withstands a very wide temperature range and is compatible with grease and oil. These mounts are not PMA'd or FAA approved and are for use on experimental aircraft only. Not an approved replacement for Lycoming 71032 bushings. Sold in set of 8 bushings.

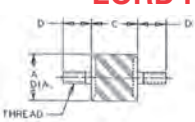
P/N 08-00662 ..... **$39.50 /Set**

LORD ENGINE MOUNTS FOR ULTRALIGHTS

All altitude mounts for vibration isolation and shock prevention in all directions. Available in soft, medium, or hard rubber.

Soft .....P/N 08-07049 .....**$15.75**
Medium .....P/N 08-01013 .....**$12.75**
Hard .....P/N 08-07050 .....**$10.75**
Snubbing Washer .....P/N 9810145-01804 .....**$1.24**

LORD RUBBER ENGINE MOUNT



LORD Flex-Bolt™ Sandwich Mounts are designed to protect equipment and machinery against damaging vibration. These mounts provide high load-carrying capacity and assure long life. Provide lowcost mounting systems which are compact, lightweight, easy to install and maintenance-free.

Model	C	D	Thread	Part No.	Price
J-4624-45	.75	.75	5/16-18	10-01557	**$6.75**
J-4624-57	.75	.62	5/16-18	08-07196	**$6.25**

LORD PLATEFORM MOUNT

Lord Plateform Mounts provide effective isolation against vibration. The contour of the flexing element was developed to provide uniform stress distribution. This, plus high strength bonding and the use of specially compounded elastomers, provides maximum service life.

150 Steel Square 24 lb..... P/N 08-07183..... **$8.45**
150 Steel Square 30 lb..... P/N 15-05391..... **$14.25**
150 Steel Holder 30 lb..... P/N 15-06524..... **$34.00**
200 Steel Holder 45 lb..... P/N 15-05499..... **$73.95**

URETHANE CONE STYLE ENGINE MOUNT BUSHINGS

These engine mount bushings are made of a special urethane formula which outlasts most other mounts. They have been in use on smaller 4 cylinder Lycoming engines from the 0-235 series to the GO-480 series for years, and are now available to the experimental aircraft market.

Specifications: These cone type mounts are applicable to the following engine models: O-235-C1, -C1B, -C2A, -C2C, -F, -F1B, -G2A, O-290-D, -D2, -D2B, -D2C, O-340-A, O-340-B, O-320-A2A, -A2B, -A2C, -A3A, -A3B, -A3C, -B2A, -B3A, -B3B, -B3C, -E1A, -E2A, IO-320-E2A, O-435-A, -A2

GO-480-B, -B1A6, -B1B, -B1C, -B1D, -C1B6, -D1A, -F6, -F1A6, -F2A6, -F4A6, -G1A6, -G1D6, -G2D6, -G2F6, -G1H6, -G1J6.

P/N 08-07392 .....**$5.95**

STAINLESS STEEL FIREWALL PENETRATION KIT 3/4

During the testing phase of our all stainless steel heater bypass box, we were astounded at the affects of a simulated engine fire on aluminum firewall components. Watching how fast the aluminum melted away (only 16 seconds) took us by surprise. It became very apparent that fireproofing the firewall was more important than most people realize.
After many months of trial and error, a fireproof pass through was designed. The firewall Penetration Kits offer a fireproof method of getting wires and cables trough the firewall in a clean, professional looking manner that allows easy removal for replacement if necessary.
Testing was initiated on most common methods of wire and cable penetrations available on the market. Simulated engine fire was directed at the stainless shields with rubber grommets, high temperature silicone, eyeball fittings, plain rubber grommets and several untried methods. All failed the fire test with the exception of the steel eyeball, and it only accepts one cable.
The kit comes complete with stainless steel fabricated fitting, fire sleeve tubing, two ALL stainless steel hose clamps and a tube of fire block sealant to seal the ends from moisture and gasses. Includes installation instructions.
• Fireproof seal of the firewall for penetration of wires and cables.
• Seals out moisture and gasses.
• Easy replacement of wires and cables if necessary.
• Very clean looking installation.
• Available in three sizes.
To determine the size you need, plan where you want to run your wire and cable bundles. Use a tie strap or twist tie to bundle the wires and cables. Measure what size holes the bundle will fit through and choose the NEXT LARGER size (see installation instructions.) You need enough clearance between the bundle and stainless fitting to push the second fire sleeve into the fitting creating the fireproof, chafe proof seal.
Typical installation. Wires can be run straight out or turned back to attach on firewall reducing vibration.
There are so effective that they received an STC under Advisory Circular AC 20-135 Power plant Installation and Propulsion Systems Component Fire Protection Test Methods, Standards and Criteria.
Firewall Penetration Kit 3/4" .....P/N 09-00978 ..... **$44.50**
Firewall Penetration Kit 1/2" .....P/N 09-02601 ..... **$36.95**
Firewall Penetration Kit 1" .....P/N 09-00979 ..... **$47.65**

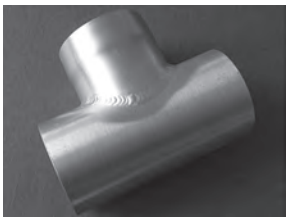
HEATER BYPASS VALVES

Three models of the all stainless steel heater bypass boxes are offered. The engine side control lever comes with a backing plate that attaches to the cabin side of the firewall and has a 2 inch scat tube outlet so a tube can be attached in the cabin that directs air where wanted.
All stainless steel construction offers a fireproof closure in case of an engine fire.
New flapper design offers better seal to keep out hot air when closed.

HEATER BYPASS VALVE FOR RV-10
P/N 08-06230 .....**$188.00**

HEATER BYPASS VALVE WITH CABIN SIDE CONTROL LEVER FOR RV-7, RV-8 AND RV-9
P/N 08-01311 .....**$96.00**

HEATER BYPASS VALVE WITH ENGINE SIDE CONTROL LEVEL
P/N 08-01311-1 .....**$94.50**



T TUBE CONNECTOR

Expanded on short leg to slip over a 2" O.D. tube to divert air in two directions. Especially handy for close to the firewall applications. Also available with non-expanded short leg. Weight is 1.7 ounces.
P/N 08-07304 .....**$31.75**

2-1/2 INCH Y TUBE CONNECTOR

With 2" offshoot. If you are running 2.5" tubing in one area and 2" to another, this is your part. Weight is 1.8 ounces.
P/N 08-07303 .....**$38.90**

2 INCH DIAMETER Y TUBE WITH SHUT-OFF VALVE

This is a DL-010 "Y" Tube, modified with a shut-off valve in the straight run tube. The shut-off valve enables the builder to divert the flow of air from the straight tube and direct all or part of the air flow to the angled tube. Furnished with one stainless steel hose clamp. Weight is 2.9 ounces.
P/N 08-07296 .....**$59.85**

MODIFIED VA175 TUBE CONNECTOR

This is a direct replacement for the VA175 (Van's part number). The VA175 directs warm air in the RV-10 tunnel to both sides equally.
With the Modified VA175, air can be directed all to one side, partially to one side, or both sides, through the controllable (cable actuated) flapper on the inside of the unit.
P/N 08-07306 .....**$59.95**

SHUT OFF VALVE TUBE CONNECTOR

Expanded on one end to 2" I.D. to slip over a 2" O.D. tube to regulate or shut off air. Also available non-expanded for in-line applications. Weight is 2 ounces. P/N 08-07305 .....**$67.50**

EXHAUST SHIELDS

Over the years we have seen failure of the rivets that hold the exhaust heat shield to the mounting bracket. The solution was to spot weld the stainless steel mounting bracket to the stainless steel heat shield thus eliminating the possibility of rivet failure. Adding additional spot welds insures reliability. They are offered in two sizes, 2 inch and 4 inch to cover most applications.
Exhaust Shield 2"
P/N 08-07351 .....**$11.50**
Exhaust Shield 4"
P/N 08-07352 .....**$12.95**

EP

EXHAUST COMPONENTS

ALL STAINLESS STEEL TRI-BOX

These boxes were developed for builders who want a simple, light, all stainless box that will fit in tight places, as it does not extend forward of the firewall as far as a standard box. Shown in the photo is a left unit. The box is available in both left and right units. The hole spacing is correct for the pre-punched holes in the RV-10 firewall, but they can be mounted on any firewall. For ease in cable routing, the arm on the box is adjustable using the provided lock nuts. Everything in the unit is stainless steel, including bushings and rivets. It is furnished with a closed-cell silicone gasket. Weight is 9.8 ounces. Please note that these boxes are a direct replacement for the aluminum box available from Vans. The RV-10 uses both a left and a right unit, and they also can be ordered separately. If you are not sure which one(s) you need, refer to your firewall plans drawings.

Right.....P/N 08-04958 .....**$139.50**

Left unit is a special order part. Please contact us to order.

2 1/2" INLET AND 2" OUTLET HOMEBUILDERS CABIN HEAT BOX

This box is identical to the deluxe stainless steel cabin heat box, except that the inlet is 2 ½" OD so that it can be used on larger heat muff applications where the builder is using 2 ½" scat tubing. This box is currently being used on the MICCO certified aircraft. Weight is 7.2 ounces.

P/N 08-04013 ..... **$119.95**

CABIN HEAT BOX

P/N DL-008 - 2.5" inlet and 2.5" outlet. The inlet is positioned 90 degrees to the outlet, versus straight through in all of our other boxes. The mounting plate, shaft, flapper and bushings are all stainless steel. The rest of the box is anodized aluminum. This box is certified and is the box currently being used on all Cirrus aircraft. Furnished with silicone gasket. Weight is 6.3 ounces. Certs are available from us.

P/N 08-04959.....**$258.95**

SIDE INTAKE HOMEBUILDERS CABIN HEAT BOX

P/N DL-015 - This box is identical to the standard cabin heat box, P/N DL-001, except that the air intake is parallel to the firewall rather than coming straight in from the heat muff. This gives the builder the option of running scat tube parallel to the firewall. Total weight is 5.2 ounces. Furnished with a flange gasket and four mounting rivets. Can also be bolted to firewall. P/N 08-04957 .....**$109.50**

CESSNA RISER HALF CLAMP 0750161-25

Cessna Riser Half Clamp 0750161-25, for Cessna 172R and 172S.

P/N 05-04890 .....**$54.75**

AERONCA HEAT MUFF

Aluminum muffs for models 7AC and 11AC exhaust stacks. Fit either left or right side. P/N 05-08715.....**$209.95**

2" DIAMETER 90° TUBE

This unit is designed to slide over the end of the 2" O.D. tube protruding from a cabin heat box that extends through the firewall. The short end of this unit is expanded to 2" I.D. Two stainless steel clamps are furnished with the unit. If you use scat tube, the 90° angle allows you to run the scat tube parallel to the firewall and away from undesirable areas (brake pedals, etc.) Constructed of seamless 6061T4 .028 wall tube. Weight: 1.4 oz.

P/N 08-00863 ..... **$26.50**

2" DIAMETER "Y" TUBE

"Y" tube is designed to be used with the Homebuilders cabin heat box to make warm air available to 2 or more locations in the aircraft. Constructed of seamless 2024T6 tube, it weighs only 2 oz. These tubes are expanded to 2" I.D. on the inlet end to slip over and clamp to the 2" O.D. tube of the cabin heat box. Due to the very light weight, "Y" tubes can be installed in scat tubing as well as attaching directly to cabin heat boxes. One stainless steel clamp is included with "Y" tube. Due to the light weight of only 1.7 oz., the non-expanded Y-tube can be placed anywhere in a run of tubing to give more options for heating additional areas of the aircraft. Furnished w/2 stainless steel hose clamps

Standard "Y" tube.....P/N 08-04100 ..... **$31.85**

Non-expanded "Y" tube.....P/N 08-04130 ..... **$29.85**

IN-LINE HEATER/ DEFROSTER VALVE

This in-line valve connects to 2" SCAT ducting. It comes complete with cable end and can be hooked up in any combination to direct air to either heater outlets or defrost outlets. Actuating lever is adjustable to any position. Very popular on RV's & other homebuilt aircraft.

P/N 08-00053 ..... **$107.95**

HOMEBUILDER'S HEAT MUFFS

P/N 08-03900

P/N 08-00473

These superior quality heat muffs are made entirely of 6061 and 5052 aircraft grade aluminum, offset from the center to clear the close cowling of most homebuilts. The muff can be installed anywhere on the exhaust system where there is 12" of straight pipe, baffle, or even on an aft vertical baffle. The reason for using forced air through the muffs rather than just taking warm air from the low pressure plenum is that in order to have cabin heat you have to have forced air. The muff is constructed so that it can be used for either cabin heat or carb heat, or both, as there is 1 outlet & 1 inlet. The muff is split and piano-hinged to "clam-shell" over the exhaust pipe. This is necessary if you have downturns on your exhaust pipes and do not want to cut off the downturns should you later want to remove the muff. Stainless steel clamps are furnished with the muff. Inlet and outlets are 2" dia. and will fit 1.75" dia. pipes. The standard 9" body has 1 inlet & 1 outlet and generally used for cabin heat (wt:10.4 oz.). The shorter 6.5" body 1 inlet & 1 outlet and generally used on the front crossover section of the exhaust to duct heat to the carburetor box (wt: 8.9oz.).

Standard 9" body ..... P/N 08-03900.....**$126.95**

Standard 6.5" body ..... P/N 08-00473.....**$126.95**

CESSNA TYPE HEAT MUFF

Heli-arc welded aluminum muff with rustproof stainless steel fins for clamping to stack. Similar in design to the new Cessna type. Furnished with attaching clamps.

Muff w/2" Outlet ..... P/N 08-02400 ....**$82.00**

Muff w/ 2.5" Outlet ..... P/N 08-02500 ....**$81.75**

HEAT BOXES – EXHAUST COMPONENTS

WARM/COOL AIR SELECTOR/MIXER

P/N DL-016HCV - This unit has not only the capability of providing warm air to the cockpit but also cool air, or a mix of both. There are two parts to the unit. The "T" section (engine side of firewall) has a flapper to direct cool air from one side and/or warm from the other side. This section is designed to be riveted or bolted to the firewall. The short expanded section slips over the protruding tube and is clamped with a stainless steel hose clamp. The flap in this section closes off all air from the unit. The hose clamp, a gasket and four stainless steel blind rivets are furnished. The shafts, arms, and flapper valves are all stainless steel. The bushings are brass and the tubing is 2" OD 6061-T4. The weight is 5.2 ounces. P/N 08-00629.....**$136.95 ea.**

DELUXE HOMEBUILDER'S CABIN HEAT BOX

P/N DL-002 - This cabin box is our first modification to our standard heat box. The only difference between this and the standard is that the deluxe cabin heat box has one inlet and two outlets; the second outlet must be used to dump and route, via 2" scat tube, the warm air away from the low plenum area when heat is not being used in the cabin. (It is very important not to run the dump tube to another box on the other side of the firewall, because a constant flow of air is necessary to ensure that the heat muff does not overheat.) The weight on this unit is 5.5 ounces. P/N 08-04005.....**$120.95**

DELUXE HOMEBUILDERS CABIN HEAT BOX STAINLESS STEEL

P/N DL-003 - This box is identical to the Deluxe Homebuilders Cabin Heat Box except the tubing that goes through the firewall and the mounting flange are also stainless steel for extra protection from fire. Weight is 7.1 ounces. ..... P/N 08-04010.....**$117.85**

2 ½" OD INLET AND 2 ½" OD OUTLET HOMEBUILDERS CABIN HEAT BOX

P/N DL-005 - This box is identical to the deluxe stainless steel cabin heat box, except that the inlet and outlet are 2 ½" OD so that this box can be used when the builder wants to use 2 ½" scat tubing throughout the project. (This box was used on the Cirrus SR20 certified aircraft. The SR20 now uses the DL-008 box listed below.) Weight is 6.3 ounces. P/N 08-04015.....**$129.50**

DELUXE HOMEBUILDERS CABIN HEAT BOX, ALL STAINLESS STEEL

P/N DL-006 - This box was recently developed in response to customer requests. With the exception of brass shaft bushings, this box is constructed entirely of stainless steel, including all SS blind rivets. Like the deluxe boxes, this unit has a 2" inlet and 2" outlets. For the added durability of all stainless steel, the box still only weighs 10 ounces. P/N 08-04025.....**$139.50 ea.**

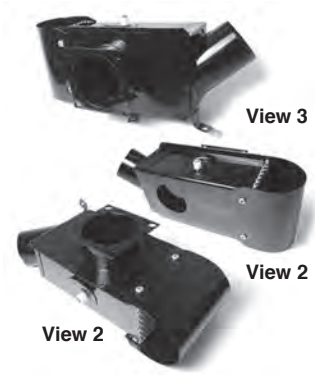
CARBURETOR HEAT BOX FOR ELLISON TBI

The carburetor heat box and air grid are designed specifically for the Ellison TBI to eliminate carburetor icing problems. There must always be a constant flow of air through a heat muff. The carburetor heat box has an automatic dump of hot air when carb heat is not being used, thereby eliminating the chance of heat muff burnout. The box has a 2.5" inlet for ram air and a 2" inlet for carb heat. The box is made of 5052 aluminum, stainless steel and 6061-T4 tube. The mounting surfaces, shaft, flapper, arm and rivets are stainless. In addition, the box is strengthened in the mounting hole area to eliminate the possibility of metal fatigue. A 4" inspection/ mounting hole with a cover plate secured by nut plates and screws is locate on the bottom of the box (not visible in the photo.) The purpose of the air grid is to eliminate air flow turbulence. The 1/2" stainless steel vanes straighten the air before it reaches the throat of the carburetor and achieves better air/fuel distribution. This is a proven performance enhancement technique.

Carburetor Heat Box	P/N 08-00813	**$214.50**
Air Grid	P/N 08-00814	**$94.75**
Extra Gaskets	P/N 08-00815	**$8.75**

STANDARD HOMEBUILDERS CABIN HEAT BOX

P/N DL-001 - This cabin heat box has been engineered to be the smoothest, most efficient and lightest heat box built. Fabricated from aircraft-grade aluminum with stainless steel shaft, arm and flapper. Originally designed for use on the popular RV-4 homebuilt, but is applicable to most other designs. Total weight is only 5.2 ounces. Furnished with a gasket flange for the forward side of the firewall for leak-free ducting of warm air to anywhere the builder wants it. Inlet and outlet are 2 inch OD 6061-T4 seamless alum. The body of the box is constructed of 5052-032 alum. The outlet tube extends through the firewall so that scat tubing can be attached to route the warm air. Superior craftsmanship and quality. Over 4,000 sold to date. P/N 08-04000.....**$106.95 ea.**



VAGABOND CARB HEAT BOX

This air grid carburetor heat box designed to fit the Piper PA-15 Vagabond. Dimension: 11" x 3-1/2" x 4"

P/N 08-06290.....**$175.95**

TUBING CONNECTORS

2" ALUMINUM FLANGE - Accepts 2" scat tube. Flange allows riveting to firewall, baffles, etc. Wt: 0.2 oz. P/N 08-04135..... **$9.90**

CARB HEAT CONNECTOR - Mounts on FAB airbox or similar airbox. Flange accepts 2" scat tube from muff. Standoff design allows hot air to escape when carb heat is not selected. Weight: 0.9 oz. P/N 08-04145..... **$17.95**

FLANGED DUCT - Accepts 2" ducting on both ends. Helps route ducting through bulkheads, firewalls, etc. Especially useful for getting heat to the back seat of the aircraft. 3" square plate with 2" tubing projecting 1" from each side. Wt:0.7 oz. P/N 08-04140..... **$14.85**

CABIN HEAT BOX

Custom built aluminum box mounts to firewall. Lever on butterfly may be attached to push-pull control for close adjustment of cabin air flow. Two 2" intake ports, one 2" outlet. Wt. 1 lb. 7-1/2" long. Fine quality construction. P/N 08-01500..... **$113.95**

HOMEBUILDERS CABIN HEAT SHUTTLE KIT

Easily assembled and designed so that it can be modified for custom applications. Kit includes construction plans and directions along with installation hints for the popular Vans RV series of homebuilt aircraft. Controlled by ratchet type control cable such as ACS model A740 (P/N 05-12500). Order control cable separately. P/N 08-04460 .....**$52.85**

EP

EXHAUST SYSTEMS

AWI
AEROSPACE WELDING MINNEAPOLIS, INC.

EXHAUST SYSTEMS BY AEROSPACE WELDING MINNEAPOLIS, INC.

Aerospace Welding, Inc. has earned a reputation for its uncompromising commitment to quality exhaust systems and components. Aircraft Spruce is an authorized distributor of AWI products, and as such can assure our customers of minimal down time and fast shipment through the Priority Service Proram at AWI. All exhaust systems are built in fixtures for precise fit and are FAA approved for the listed aircraft. Available in factory new (N) and overhauled (OH) condition as noted.

NOTE: *= 0550157-7 has been consolidated under PMA part number A0450338-14

Aircraft	OEM Part No.	Description	Our Part No.	Price
C-150	0450400-3	LH Muffler (N)	08-00061	**$313.95**
	0450400-26	RH Muffler (N)	08-00062	**$313.95**
	0450338-70	RH Riser (N)	08-00063	**$58.75**
	0450338-69	LH Riser (N)	08-00064	**$75.50**
	0450338-66	RH Tailpipe (N)	08-00065	**$86.75**
	0450338-67	LH Tailpipe (N)	08-00066	**$86.75**
C-152	0454009-5	Muffler (OH)	08-00067	**$368.95**
	0454009-6	Muffler (OH)	08-00068	**$314.95**
	EL0099001-716	Muffler (OH)	08-00069	**$576.00**
C-170B/172	0550157-9	LH Muffler (OH)	08-00070	**$386.95**
	A0450338-14*	RH Muffler (OH)	08-00071	**$385.95**
	0550157-7	Riser (N)	08-00072	**$61.75**
	0550157-8	Curved Riser(OH)	08-00073	**$94.75**
C-172 Cont.	0550176-59	Muffler (N)	08-00074	**$363.95**
	0550176-13	Riser (N)	08-00076	**$81.25**
C-172	1754001-25	Muffler (N)	08-00077	**$378.00**
	1754007-1	Riser (OH) RR	08-00079	**$153.95**
	1754008-1	Riser (OH) LR	08-00080	**$153.95**
	1754009-1	Riser (OH) LF	08-00081	**$153.95**
	1754010-1	Riser (OH) RF	08-00082	**$153.95**
C-177	1754001-25	Muffler No flm tube	08-00083	**$378.95**
	1754001-9	Muffler w/ flm tube	08-00084	**$377.95**
C-177RG	2054000-42	LH Muffler (OH)	08-00085	**$362.95**
	2054000-40	LH Muffler (OH)	08-00086	**$361.95**
	2054000-31	LH Muffler (OH)	08-00087	**$362.95**
	2054000-39	RH Muffler (OH)	08-00088	**$362.95**
C-180	0750290-3	Muffler OH Dual exh.	08-00089	**$326.95**
C-180/182	0750130-9	Muffler (OH)	08-00090	**$308.95**
	0750130-12	Muffler (OH)	08-00091	**$383.00**
	0750130-44	Muffler (OH)	08-00092	**$310.95**
	0750130-48			
C-182/185	0750161-89	Muffler (N)	08-00094	**$359.95**
	0750238-20	15 inch Stack (N)	08-00095	**$567.00**
C-182RG	1250251-12	Muffler (OH) w/ ringe	08-00107	**$287.95**
C-206/210	1250263-2A	LH Collector (OH)	08-00103	**$473.95**
	1250264-2A	RH Collector (OH)	08-00104	**$473.95**
	1250250-5	Heat Exchanger	08-00105	**$362.95**
	650-43	LH Muffler (OH)	08-00106	**$363.95**
	1250251-13	RH Muffler OH w/ rings	08-00107	**$287.95**
	1250251-16	RH Muffler (OH)	08-00108	**$235.95**
	1250256-7	LH Tailpipe (N)	08-00109	**$108.95**
	12502646-6	RH Tailpipe (N)	08-00111	**$108.95**
C-T206/T210	1250860-110	Tailpipe (OH)	08-00112	**$408.95**
	1250860-104	RF Stack (OH)	08-00113	**$432.95**
	1250860-105	Turbo Inlet (OH)	08-00114	**$433.95**
	1250860-203	Heat Exchanger (OH)	08-00115	**$1,030.00**
	1250860-90	Crossover (OH)	08-00116	**$195.95**
	1250860-100	Riser (N)	08-00117	**$54.50**
C-T206/T210	1250860-07	Tailpipe Adapter(OH)	08-00119	**$81.25**
C-337	1250250-5	Muffler (OH)	08-00120	**$354.95**
	1555001-1	Muffler (OH)	08-00121	**$1,393.00**
Piper J-3	71053-02	Muffler (OH)	08-00122	**$296.95**
PA18	12433-014	Muffler (OH)	08-00123	**$296.95**
	12457-002	Stack (OH)	08-00124	**$358.95**
PA22	10308-003	Muffler (OH)	08-00126	**$357.95**
	12043-22	Stack (OH)	08-00127	**$358.95**
	12043-23	Stack (OH)	08-00128	**$359.95**
PA28-140/-180	99482-00	Muffler (OH)	08-00129	**$296.95**
	99482-02	Muffler (OH)	08-00130	**$296.95**
	99044-02	Stack (OH)	08-00131	**$171.95**
	99044-04	Stack (OH)	08-00132	**$232.95**
	99044-05	Stack (OH)	08-00133	**$316.95**
	99044-03	Stack (OH)	08-00134	**$163.95**
PA28-151/161/180/191	66894-03	Muffler (N)	08-00135	**$249.00**
PA28R-180/200	67517-00	Muffler (N)	08-00136	**$256.00**

Aircraft	OEM Part No.	Description	Our Part No.	Price
PA28-235	65012-00	Muffler (OH)	08-00137	**$350.95**
	65813-00	Muffler (OH)	08-00138	**$350.95**
	68718-03	Muffler (OH)	08-00139	**$350.95**
	65038-00	LH Stack (OH)	08-00140	**$410.95**
	65039-00	RH Stack (OH)	08-00141	**$410.95**
PA28-236	67517-00	Muffler (N)	08-00136	**$256.00**
	LW12127	Transition (N)	08-00145	**$1,511.00**
	LW12437	Transition (N)	08-00146	**$1,189.00**
	40310-09	Lower Tailpipe (OH)	08-00147	**$443.95**
	40310-08	Upper Tailpipe (OH)	08-00148	**$344.95**
	40310-10	Upper Tailpipe (OH)	08-00149	**$419.95**
PA32-260	68718-00	Muffler (OH)	08-00150	**$359.00**
	65038-00	LH Stack (OH)	08-00151	**$417.95**
	65039-00	RH Stack (OH)	08-00152	**$408.95**
PA32-300	68796-00	Muffler (OH)	08-00153	**$350.95**
	68793-00	Stack (OH)	08-00154	**$409.95**
PA32R-301-T	W15859	Westgate (OH)	08-00156	**$1,064.00**
PA34-200-I	78463-10	LH Tailpipe (OH)	08-00158	**$469.95**
	78463-10	RH Tailpipe (OH)	08-00159	**$469.95**
PA38-112	77669-02	Muffler (OH)	08-00160	**$218.95**
PA44-180	86299-07	Muffler (OH)	08-00161	**$213.95**
B-33 & 35A-G	186	LH Muffler (OH)	08-00162	**$325.95**
	189	RH Muffler (OH)	08-00163	**$154.95**
B-V35/A36	35-950005-1	LH Stack (OH)	08-00164	**$434.95**
	35-950005-3	RH Stack (OH)	08-00165	**$408.95**
	701-4	LH Muffler (N)	08-00166	**$209.95**
	701-20	LH Muffler (N)	08-00167	**$255.95**
	701-5	RH Muffler (OH)	08-00168	**$362.95**
	701-19	RH Muffler (OH)	08-00169	**$390.95**
	35-950004-9	RH Tailpipe (OH)	08-00171	**$135.95**
	35-950005-61	LH Tailpipe (N)	08-00172	**$134.95**
	35-950005-57	RH Tailpipe (N)	08-00173	**$134.95**
	35-950004-7	LH Tailpipe (N)	08-00176	**$134.95**
B-35H-P	492-27	RH Muffler (OH)	08-00174	**$376.95**
	35-950005-61	LH Tailpipe (N)	08-00178	**$113.00**
	35-950005-57	RH Tailpipe (N)	08-00179	**$136.00**
B-55/58	96-950002-55	LE OTNBD Tailpipe (OH)	08-00180	**$536.00**
	96-950002-57	RE INBD Tailpipe (OH)	08-00181	**$506.00**
	96-950002-59	LE INBD Tailpipe (OH)	08-00200	**$506.00**
	96-950002-61	RE OTNBD Tailpipe (OH)	08-00201	**$506.00**
	96-950002-31	Riser Cyl. #3 (OH)	08-00202	**$293.95**
	96-950002-7	Riser Cyl. #4 (OH)	08-00203	**$292.95**
	96-950002-33	Riser Cyl. #5 (OH)	08-00204	**$185.95**
	96-950002-9	Riser Cyl. #6 (OH)	08-00205	**$184.95**
B-Sundowner	099001-127	Muffler (OH)	08-00206	**$530.00**
B-Sport	099001-126	Muffler (OH)	08-00207	**$530.00**
B-Sierra	099001-131	Muffler (OH)	08-00208	**$819.00**
Bellanca Citabria	3-1493R	Muffler (OH)	08-00209	**$232.95**
	3-1493L	Muffler (OH)	08-00210	**$232.95**
Bellanca 8KCAB	099001-046	Muffler (OH)	08-00213	**$561.00**
Bellanca 8GCBC	099001-046	Muffler (OH)	08-00214	**$561.00**
Bellanca 7GCAA	099001-050	Muffler (OH)	08-00215	**$531.00**
Bellanca 7ECA	099001-049	Muffler (OH)	08-00217	**$530.00**
Grumann AA1 Yankee	099001-113	Muffler (OH)	08-00218	**$625.00**
Grumann AA1 A&B	099001-137	Muffler (OH)	08-00219	**$625.00**
Grumann AA5 Traveler	099005-148	Muffler (OH)	08-00220	**$577.00**
Grumann AA5A Cheetah	099005-195	Muffler (OH)	08-00221	**$577.00**
Grumann AA5B Tiger	099001-191	Muffler (OH)	08-00222	**$611.00**
Mooney M20	630060-501	180 Muffler (OH)	08-00223	**$509.00**
	630060-503	200 Muffler (OH)	08-00224	**$638.00**

Note: (N) or (OH) after description indicates New (N) or Overhauled (OH) condition. All overhauled parts carry a care charge. Please Order according to "Our Part No."

HEAT SHIELDS – HEAT BOXES

VHT FLAMEPROOF COATINGS

Originally designed for NASA's reentry spacecraft. Designed to withstand temps. up to 1500°F (816°C) VHT FlameProof coatings are capable of withstanding extreme environments of spacecraft, satellites, military aircraft, and motor sports. It survives where other paints can't, shields & protects, maintains the finish, prevents rust & corrosion, and resists oils & solvents. For aircraft applications the typical use is on high temperature steel components such as exhaust & turbocharging systems.Excellent for use as a heat resistant and anti-corrosion coating on exhaust manifolds and turbine casings. Both the Flat Aluminum and Flat Black are non-facing colors.

Flat Aluminum 16 oz. aerosol spray..... P/N 08-00713.....**$11.95**
Flat Black 16 oz. aerosol spray..... P/N 08-00714.....**$11.95**

THERMO-TEC HEAVY-DUTY SPRAY ADHESIVE

Thermo-Tec's new Heavy-Duty Spray Adhesive is a fast-drying, quick-bonding, high temperature contact adhesive. Use it wherever you need a secure, long-lasting, easy-to-apply bond. It is available in a generous 16.75 oz. can.

P/N 08-01026.....**$13.50**

HI-HEAT COATING

Finish off a clean and well-protected Exhaust Insulating Wrap application. Will protect the wrap from abrasion and harmful liquid spills. Extra resins and binders toughen the surface, extend the life of wrap by protecting it from friction, and seal the pores to minimize the penetration of harmful liquids. The 11 oz. coating comes in black and aluminum colors. Black .....P/N 08-06725 .....**$9.85**
Aluminum .....P/N 08-06730 .....**$9.95**

BLACK SATIN COATING

The easiest to apply, Black Satin also requires bead or sand-blasting of all parts. It does not, however, require oven curing or burnishing. One 4oz bottle will cover one average exhaust system and will provide a long-lasting flat black finish. 4 oz. .....P/N 13-01024 ..... **$17.80**

EXHAUST HEAT SHIELD

This heat shield is placed on exhaust where fuel lines, cable, etc. are close to exhaust and where heat may be a problem. Mounts with stainless radiator type clamp (not included). Fits exhaust pipes up to 2.5" diameter. Very popular on RV's and other homebuilt aircraft.

Single Unit.....P/N 08-00050 ..... **$14.75**
Double Unit .....P/N 08-00051 ..... **$21.75**

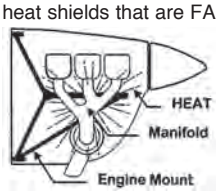
VARIEZE / LONG EZ CARBURETOR HEAT BOX

This box is an improved redesign of the original heat box. It eliminates the possibility of engine stoppage caused by worn parts plugging the carburetor intake.

Without Filter ..... P/N 08-01600.....**$194.50**
VE/LE Heat Box Repair Kit ... P/N 08-01610.....**$17.75**
VE/LE Filter Only..... P/N 08-01615.....**$29.90**
VE/LE Filter Cleaner Kit (cleaner & oil)
P/N 08-01620.....**$11.75**

ENGINE MOUNT HEAT SHIELDS

Heat damaged O-470 & O-520 engine mounts are a definite problem area. You can easily protect these engine mounts from further damage with these heat shields The aircraft manufacturers overlook providing heat protection in these areas when they designed and produced the aircraft. INSPECT ENGINE MOUNTS. Flaking paint, deterioration or pitting leads to cracking, and breakage – in other words, an UNSAFE CONDITION. If you want long-lasting protection from corrosion damage, the solution is install custom engine mount heat shields that are FAA & STC/PMA approved.



Avoid downtime and save money on airplane maintenance with this practical new device. The heat shields are built from an extremely durable 6061-T6 aluminum alloy and install in minutes. The complete kit includes installation hardware, instructions & copy of the Supplemental Type Certificate.

For Cessnas: Heat shield kit for 180, 180A-H, 180J, 180K, 182, 182A-R
P/N 08-01660.....**$169.85**
Heat shield kit 185A-E,A185F. Fits Standard and 3 bladed mounts.
.....P/N 08-00767.....**$206.95**
Replace. Intake Shields (heavy duty) PMA'd..P/N 08-00769.....**$29.25**

CARBURETOR INTAKE ASSEMBLIES (HEAT BOXES)

50256

P/N A40522 for Continental A-65 through C-125. Also fits Lyc. 0-235, 0-290, 0-320 engines with MA3SPA, MA4SPA carburetors.
Complete assembly includes heat box, filter, gaskets. studs and pins.
Not for Certified Aircraft, Homebuilts Only.

Component	Part No.	Price
Heat Box	50256	**$175.95**
Filter	A40599	**$73.50**
Gasket	35923	**$8.50**
Studs (4 required)	24306	**$41.25**
Pins (4required)	24308	**$20.50**
Bottom Carb. Gasket	21323	**$1.88**
A40522 Assembly	08-01300	**$498.00**

CONT. 0-200 HEAT BOX CESSNA 150 STYLE HEAT BOX

For Cont. 0-200 engine as used on Cessna 150. Also fits Cessna 120, 140, and PA-22 Tripacer. Order filter, gaskets, studs & pins separately. Not FAA/PMA Approved.
P/N 641534 .....**$173.95**
Cable 'B' Nut .....P/N 05-16245 .....**$7.95**
Heat Box for Cessna 170 - Similar to P/N 641534 above, but larger
P/N 08-01625 .....**$227.95**
Similar to Cessna 170 box. Fits Lyc. 0-360, 0-470, etc. Uses brackett BA-5110 filter.....P/N 08-01630 .....**$268.95**

LYCOMING AND CONTINENTAL CARBURETOR HEAT BOXES

Lycoming O-320 and Continental A65-100 Carb Heat Boxes. The 100-320 is 2-1/2" diameter height is 1" smaller flange.

Lycoming O-320 Carb Heat Box w/Tube..... P/N 05-01388 ....**$224.95**
Lycoming O-320 Carb Heat Box w/o Tube..... P/N 05-06841 ....**$219.95**
Lycoming A65-100 Carb Heat Box w/Tube ..... P/N 05-01387 ....**$246.95**
Lycoming A65-100 Carb Heat Box w/o Tube.. P/N 05-06840 ....**$224.00**

CARB HEAT BOXES FOR PUSHER AIRCRAFT

Designed for airplanes and rotorwing aircraft with engines in pusher configuration using MA3/MA4 carburetors (not MA4-5). Uses same baskets as J-3 & C-150 boxes.....P/N 08-00855..... **$208.50**

USHER CARBURETOR HEAT BOXES

These high quality carburetor heat boxes are available for most common Lycoming & Continental engines. Not FAA approved. (Shown here with tube)

K1F Heat Box w/o tube .....P/N 08-01601 .....**$156.95**
K1M Heat Box with tube.....P/N 08-01602 .....**$166.95**
KO320 Heat Box with tube.....P/N 08-01603 .....**$168.95**
KO360 Heat Box with tube.....P/N 08-01604 .....**$156.95**

CARBURETOR INTAKE BOX BRACKET FOR CESSNAS

This carburetor intake box bracket mounts on top of the heat box and attaches to the engine to provide support for the heat box. Fits Cessna 150. P/N 08-01305 .....**$43.85**

CARBURETOR HEAT BOX REPAIR KITS

Prevent carburetor heat box cracking - a common problem on Cessna 150 aircraft and Cont. O-200 engine. Kit consists of actuating shaft, 2 bearing assemblies and arm. Kit no. FG100 fits Cont. 0-200-A, B, C Engines. Kit No. FG105 fits Cont. 0-300-A, B, C, D, E engines.

Model FG100..... Kit No. 08-01309 ..... **$64.75**
ModelFG105..... Kit No. 08-01310 ..... **$62.25**

ECONOMY CARB HEAT BOX REPAIR KITS

These kits include new shaft & bearings.
Kit for Cont. C-85, C-90, 0-200 Engine
P/N 07-00110..... **$42.75**
Kit for Cont. C-145, 0-300 Engine
P/N 07-00120..... **$43.50**

Requires FAA form 337 for installation on certified aircraft

CARB HEAT BOX ARM HOLE REPAIR KIT

Use this kit to repair an elongated hole in the carburetor heat box actuating arm. Kit comes complete with new bolt and attaching hardware made of stainless steel. P/N 07-00130.....**$13.75**

CARBURETOR INDUCTION MANIFOLD (INTAKE SPIDER)

For O-200 engine..... P/N 35145A-1 ..... **$385.95**
For A-65,C-75,C-85 & C-90 engines.
P/N 35145..... **$298.50**

EP

EXHAUST GASKETS – HEAT SHIELDS

EXHAUST MANIFOLD NUTS

Part No.	Thread Size	Type	Engine Application	Price Each
21247	1/4-28	Brass	Cont., O-470	**$4.70**
22022	5/16-24	Brass	Cont. A-65, C-75 thru C-90, O-200, O-300	**$1.23**
STD1410	5/16-18	Steel	Lycoming	**$2.30**

EXHAUST STUDS FOR CONTINENTAL ENGINES

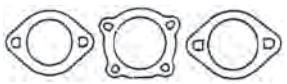
This high quality exhast/engine studs produced from corrosion resistant 321 stainless steel in 5/16" X 18"-5/16" X 24" standard thread size are a direct replacement for the TCM Continental part number 402-151 stud. FAA/PMA approved for the Continental engines C-75, C-85, C-90, O-200 series engines, and o-300 (early) series engines.

P/N 08-07282..... **$9.85**

STAINLESS STEEL EXHAUST STUDS FOR LYCOMING ENGINES

Produced from corrosion resistant 321 in 5/16 x 18 standard thread size and are a direct replacement for the Lycoming part number 31C12 stud. Stop stud corrosion and rust out problems, stop expensive cylinder repair costs cause by broken studs, allow easy removal of exhaust systems for gasket replacement or inspection, but does not feature a safety wire hole (refer to p/n 08-06780 for safety wire hole feature). FAA approved for all Lycoming engines from 0-235 through 0-540.... P/N 08-06279..... **$3.95**
With safety wire hole feature ..... P/N 08-06780.... **$11.50**
Stud for Continental Engines O-470, IO-470 (1/4"x20-1/4"x28)
P/N 08-07281..... **$9.50**

BLO-PROOF EXHAUST GASKETS



These gaskets are manufactured in a 1-piece design in 7/64" thick steel. They have a split metal inner ring which provides an absolute seal and they are guaranteed not to blow off. Engine manufacturer's parts.
Continental P/N 627429 for all A, C and E Series.....**$10.75 Ea**
Continental ..... P/N 628260 for 0-470-R ...**$9.90 Ea**
Lycoming P/N 77611 for 4 & 6 Cylinder Engines..... **$7.70 Ea**

COPPER EXHAUST GASKETS

Continental P/N 21493 (now P/N 632837 stainless steel)
Cont.#21493 for A-65 to 0-300 (4).....P/N 08-05237 ..... **$1.25 Ea**
Cont. #632837 Stainless Steel..... **$2.40 Ea**
Lycoming 0-320 except h series .....P/N 77611 .....**$7.70 Ea**

AIRBORNE SOLID COPPER BLO-PROOF GASKETS

2 gaskets used per cylinder, with raised beads interlocked facing the exhaust stack flange. Eight required for 4 cyl. engine, 12 for 6 cyl. engine.

Engine Model Number	Airborne P/N (Use 2/Cyl.)	Price Each
All Lycoming Engines except IO-540-B,-E,-M,-WD,IGO-540-B,IGSO-540-B,TIO-540 series,TIO-541 series TIGO-541 series, IO-540-B,-E,-M,-WD,IGO-540-B,IGSO-540-B	160	**$14.25**
TIO-540 Series, TIO-541 Series, TIGO-541 Series	161	**$13.30**
A-65 Series, C-85 Series, C-90 Series,)-200 Series,O-300 Series, GO-300 Series, E-185 Series,E-225 Series, O-470-A, -E, -J, IO-470-J, -K	157	**$8.75**

ROTAX EXHAUST SPRING 938-795

Genuine Rotax replacement spring for use with Rotax exhaust systems 277/377/447/503,618,912 UL,912 ULS. 66mm (2.60") hook distance. Part #938-795 Spring 2-1/4" with a 5/8" diameter. P/N 08-06101 .....**$3.28**

STEEL EXHAUST STACK FLANGES

MILD STEEL

Cont. A&C Series,0-200,0-300.....P/N 33011 ..... **$9.85 Ea**
Lycoming 0-235 to 0-540 .....P/N 33021 ..... **$9.90 Ea**

STAINLESS STEEL

Continental A & C Series .....P/N 33101 .... **$12.75 Ea**
Continental IO-470 thru IO-520.....P/N 33103 .... **$13.75 Ea**
Lycoming 0-235 thru IO-360 .....P/N 33102 .... **$12.95 Ea**
Lycoming IO-540 .....P/N 33104 .... **$12.75 Ea**

EXHAUST INSULATING WRAP

The original Exhaust Insulating Wrap was developed over 14 years ago by Thermo-Tec. Exhaust Insulating Wrap is an innovative way to create more horsepower and reduce under-hood temperatures.Wrapping headers maintains hotter exhaust gases that exit the system faster through decreased density. Increased exhaust scavenging is produced, along with lower intake temperatures. Exhaust Insulating Wrap withstands continuous heat up to 2000°F, and contains no asbestos. Thermo-Tec exhaust wrap will not over-insulate a system when properly installed due to a proprietary coating developed by Thermo-Tec -- Thermal Conduction Technology (TCT) -- that conducts heat across the wrap's surface. This coating controls heat build-up and dissipation. The Header Wrap is sold in 2" wide, 50'rolls with a low profile 1/6" thickness. P/N 09-41600 ..... **$47.75**

EXHAUST WRAP KITS

Now you can get everything you need for a complete, professional installation of our Exhaust Insulating Wrap, all in one package.Kits include Exhaust Insulating Wrap, Hi-Heat Coating and Snap Strap; available in Black and Original.

2" Original, 1 Roll.....P/N 08-07204 ..... **$56.75**
2" Original, 2 Rolls.....P/N 08-07205 ..... **$114.95**
2" Black, 1 Roll .....P/N 08-07206 ..... **$61.75**
2" Black, 2 Rolls.....P/N 08-07207 ..... **$129.95**

CLAMP ON HEAT SHIELDS

Flexible clamp on pipe heat shield blocks over 95% of the damaging radiant heat of the exhaust.Provides the ultimate in protection. The kits come complete with all clamps and new stainless stand offs. Installs in minutes. Incorporate Thermo-Tec's proprietary coating technology developed by Thermo-Tec, Thermal Conduction Technology.

6"X 1' .....P/N 08-07073 ..... **$23.50**
6" X 2' .....P/N 08-07074 ..... **$34.90**

SNAP STRAPS

The multi-purpose stainless steel Snap Straps are used to secure the Exhaust Insulating Wrap -- and more. The high-temperature stainless steel straps have a narrow profile to fit tight spots, and can be cut to the exact length needed. Snap Straps secure with easy-to-use slide-through fasteners. .

9" 12 pack .....P/N 08-13150 ..... **$25.75**
18" 6 pack .....P/N 08-13160 ..... **$17.75**

ALUMINIZED HEAT BARRIER STOPS UNWANTED HEAT TRANSFER

Keep heat where you want it with this hi-tech aluminized heat blanket. Thickness, 0.060". Furnished in 36"x40". Sheets (10 Sq. Ft.) P/N 08-06735.....**$78.85 ea.**

KEVLAR HEAT SHIELD

* Can be used for various uses* Can be used as a header blanket* Improve driver comfort* Protect engines components* Continuous heat up to 1100 degrees F* Reflects 90% of radiant heat up to 3000 degrees F. * Size: 26" x 40" Sheet P/N 08-07162 .....**$103.95**

KEVLAR MUFFLER COVER

Handles continuous temperatures up to 1100deg F. Reduces radiant heat inside vehicle. Dampens muffler noise and vibration. Includes stainless steel straps for installation. Neat attractive appearance and is abrasion resistant. P/N 08-07201.....**$124.50**

EXPRESS SLEEVES

Express Sleeves are just the thing that our customers have been looking for. An new easy to use sleeving which is a combination of a high temperature insulation material to a highly reflective mylar foil with a Velcro closure. The sleeving is designed to provide maximum protection for wires, hoses, and cables from the very damaging effect of radiant heat with an easy application. Simply pull apart the material, wrap around the wire, and re-close the sleeving. Express Sleeves reflect over 90% of radiant heat, is fireproof and fire resistant, and just looks good. Express Sleeves come in 1 1/2" diameter in 3', & 12' lengths.

Size	Part No.	Price	Size	Part No.	Price
1-1/2" X 3"	09-02060	**$26.85**	1/2" x 3	08-07202	**$24.50**
1-1/2" X 12"	09-02061	**$103.95**	1/2" x 12	08-07203	**$93.50**

THERMO-GUARD FR

Thermo-Guard FR offers the best in head and sound insulation. This lightweight, durable shield does everything: reduces sound, absorbs vibration, protects from radiant heat and provides an extra layer of insulating padding. The product features 100% synthetic fiber felt that provides sound and comfort control and high-tech foil heat barrier that blocks more than 90% of radiant heat. 48"x72" 1-Sided .....P/N 08-01028 .....**$41.50**
48"x72" 2-Sided .....P/N 08-01029 .....**$59.75**

EP

EXHAUST INSULATING PRODUCTS

ZIRCOFLEX™ FLEXIBLE CERAMIC HEATSHIELD

A flexible ceramic heat shield material that offers superb thermal barrier performance at minimal weight and minimal thickness. A thin aluminum backed foil, it is lightweight at only 460g/m(2) and only 0.25mm thick. It is however, robust and easy to handle. It can be cut and installed by hand or machine, and is easily fixed in place using mechanical fasteners or high temperature adhesives. Each piece is 35.4" X 21.5" (900mm x 550mm.)

Ceramic Heatshield ..... P/N 08-07214...**$166.50**
Double sided adhesive tape attachment kit..... P/N 08-07215.....**$9.95**
Stainless Steel Strapping kit..... P/N 08-07216.....**$9.95**

HIGH VELOCITY EXHAUST JACKET

An innovative way to insulate and block radiant heat. Cover the tubes vertically allowing for a consistent fit. The fit allows the exhaust system to expand as it comes up to operating temperatures without restrictions and provides air space for added insulation. Uses Thermal Conduction Technology (TCT), developed by Thermo-Tec, and can be applied with the headers in the vehicle.

4–6 cyl. kit ..... P/N 08-00597.... **$72.95**
8 cyl. kit ..... P/N 08-00598.... **$95.50**

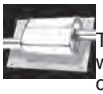
SPARK PLUG WIRE HEAT SHIELD

The ultimate protection for spark plug wires and boots from conductive and radiant heat. The dual-purpose sleeve has a surface that reflects over 90% of radiant heat, while the inside silica-based fabric prevents conductive heat from penetrating. P/N 08-00612 ..**$17.50**

TURBO KIT

Designed to protect, improve performance, and eliminate turbo lag of a turbo charger. Fits a wide variety of turbines. The custom cut-to-fit kit comes with an excessive amount of material to cover turbos from the smallest automotive application to heavy-duty truck applications. 4 cyl. kit ..... P/N 08-00613 ....**$96.75**
6–8 cyl. kit ..... P/N 08-00614 ..**$118.95**

MUFFLER/CAT HEAT SHIELD KIT



The 40"x 24" mylar Heat Shield is made up of woven silica with a flexible mylar finish. Can be installed between the catalytic converter, muffler, or any other component to reflect radiant heat away from the undercarriage of the car. The kit includes all necessary fasteners. P/N 08-00616 .....**$58.80**

HEAT TERMINATOR ULTRA-LITE

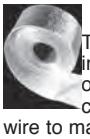
Made of the highest-quality insulating materials available today. The material is made of a highly-textured aluminum composite surface on one side, with a high-temperature silica felt center and a durable mylar composite facing. Uses Thermal Conduction Technology (TCT), developed by Thermo-Tec.

8"x 12" .....P/N 08-00617 ....**$58.75** 10"x 18"....P/N 08-00618 ... **$84.50**
18"x 18" ....P/N 08-00619 ..**$101.95** 18"x 24"....P/N 08-00620 . **$107.95**
24"x 24" ....P/N 08-00621 ..**$115.95** 24"x 36"....P/N 08-00622 . **$122.95**

STARTER HEAT SHIELD

Starters take in a lot of damaging heat that destroys the windings of the starter & solenoid. The Starter Heat Shield will reflect over 90% of radiant heat, adding life to the starter and assuring reliable starts. The Starter Heat Shield is a universal kit that fits all starters. P/N 08-00611..... **$27.75**

THERMO SHIELD



Thermo-Shield protects hoses & wires from radiant heat. Used in applications where it is difficult or not practical to disconnect one end of the hose or wire. The adhesive-backed composite construction tape can easily be wrapped around the hose or wire to make a clean, professional appearance. 15"x 1.5" roll.

P/N 08-00602..... **$16.95**

THERMO–FLEX

Thermo-Flex Aluminum is a composite heat shield material with unlimited uses. The material is manufactured with a combination of materials to provide abrasion-resistance, thermal insulation, and physical containment of hoses and wiring. The combination of aluminum, silica, and stainless steel is combined to produce a sleeving that is flexible, lightweight, and strong. The aluminum-silica combination can be slit for applications such as wire looms or hose covering without disconnecting the ends of the wire or hoses. Thermo-Flex Aluminum can withstand extreme temperatures of up to 750°F. Packaged in 10 ft. lengths.

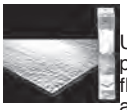
5/8" .....P/N 08-00623 .....**$44.75** 1.25"..... P/N 08-00626 .....**$64.75**
0.75" .....P/N 08-00624 .....**$47.25** 1.5"..... P/N 08-00627 .....**$73.50**
1" .....P/N 08-00625 .....**$58.75** 3"..... P/N 08-00628 ....**$117.95**

FIREPROOF SHIFTER BOOT

The Fireproof Shifter Boot is made up of woven silica with a flexible Mylar finish. The shifter boot was developed as a fire barrier for high speed engine fires, which can burn away rubber boots in seconds.

P/N 08-00615 .....**$28.75**

COOL-IT MAT



Use the Cool-It Mat to battle excessive heat and noise that penetrate the driver compartment through the firewalls and floorboards. It is also perfect in doors, under hoods, and above transmission housings. Cool-It Mat is composed of resin-bonded silica blanketing insulation sandwiched between a mylar facing on one side and a foil facing on the other. The highly-reflective mylar reflects heat away from surfaces, while the foil side is orientated away from the heat source to conduct any penetrating heat across its surface thus providing the ultimate in heat protection. The silica blanketing is a duel-density composite and is the main sound insulator. It is easy to trim and can be applied with the push-in fasteners provided or any weather strip adhesive. P/N 08-00610 ..... **$35.25**

THERMO–SLEEVE

Lamination of a high-temperature fabric to a highly-reflective foil is the makeup of Thermo-Sleeve, which provides protection from radiant heat for hoses and wires. Thermo-Sleeve's ultra light-weight construction provides more insulating than traditional bulky rubber-coated fiberglass. The aluminized sleeving reflects over 90% of radiant heat, and is fireproof & oil resistant. Comes packaged in 12-ft lengths, and sold in 5 different inside diameter sizes.

12' 1/2" ID.....P/N 08-00605 ..**$48.75** 12' 1" ID...P/N 08-00606 .**$66.75**
12" 1-1/2' ID....P/N 08-00607 ..**$79.95** 12' 2" ID...P/N 08-00608 .**$95.95**
12" 2-1/2" ID ..P/N 08-00609 **$112.95**

HEAT BARRIER - ADHESIVE BACKED

Aluminized Heat Barrier is made up of woven silica with a flexible aluminized finish. The highly reflective surface of the material is capable of withstanding radiant temperatures in excess of 2000°F. The adhesive backed composite construction material can easily be applied to any surface or wrapped around a hose or wire to make a clean professional appearance. Note: Clean surface before applying. Adhesive is rated up to 300° F. Don't apply to any parts of exhaust system. This product is designed to block radiant heat only!

12" x 12" ...P/N 08-00630 ... **$11.50** 12" x 24" ....P/N 08-00600 .. **$19.75**

HEADER MANIFOLD BLANKET

The Header Manifold Blanket provides excellent heat-retention for exhaust headers and manifolds. This flexible heat shield simply clips into place on the upper portion of the header. The fabric side of the material should be facing the heat source, and the aluminized side facing away, offering protection from abrasion and harmful liquid spills. Available in two sizes: (2) 20" by 24" blankets for V6 & V8 applications, and (1) 36" x 40" blanket for straight 6 & 4 cylinder engines.

20"x24" ....P/N 08-00603 ..... **$85.75** 36"x40" .... P/N 08-00604 .. **$84.75**

COOL-IT PLUG WIRE SLEEVES

This unique spark plug & ignition wire protector comes in five sporty colors; red, orange, blue, black & natural.These dual-purpose sleeves enhance performance, reduce misfires, extend plug wire life and will not react with petroleum products. The double-wall construction keeps the wire and boot cooler in a high-temperature engine. Its universal size fits most boots, is easy to install & non-flammable.

4-Pack .....P/N 08-01027 .....**$26.75** 6-Pack..... P/N 08-01030 . **$39.95**

GRAPHITE BLACK WRAP

Graphite Black Wrap offers the same unrivaled performance and insulating properties as our original exhaust wrap and more. Traditionally, high-heat coating spray had to be applied to the exhaust wrap to color it black. Now new Graphite Black Wrap eliminates the process of coating the wrap with its patented Thermal Conduction Technology (TCT) high-heat color pigment. Graphite Black Wrap is available in 2" widths, in 50-ft rolls.

P/N 08-00596 ..... **$49.75**

GENERATION II COPPER HEADER WRAP

Generation II Copper Header Wrap improves heat resistance up to 30% more than current technology, by utilizing a new proprietary coating developed by Thermo-Tec; improved Thermal-Conduction-Technology (T-C-T). Creates more horsepower & reduces underhood temps, increases exhaust scavenging, withstands continuous heat up to 2000ºF, contains no asbestos. Sold in 1" or 2" wide, 50 ft rolls with low profile 1/16" thickness. 1"X50.....P/N 08-11031 ..... **$28.85**
2"X50.....P/N 08-11032 ..... **$50.00**

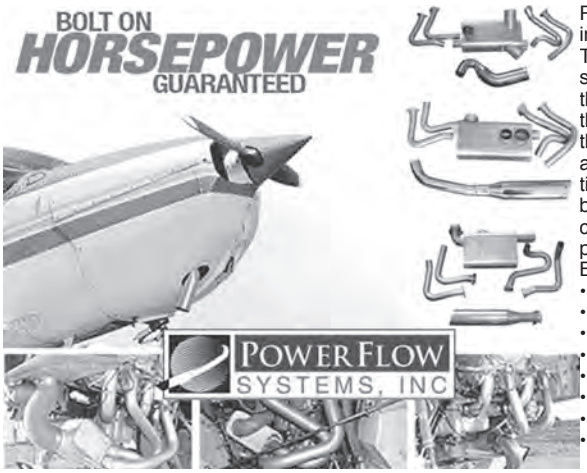
MICRO LOUVER AIR SHIELD

Lightweight yet durable, the aluminum Micro Louver Air Shield features micro air louvers, which allow air to flow through the metal shield. The movement of the vehicle creates dynamic air flow, cooling by natural convection. The textured surface created by the micro air louvers creates more area for heat dissipation. The Micro Louver Air Shield is flexible yet durable; it bends and flexes easily by hand, making a custom fit trouble-free.

12"X24".....P/N 08-11710 ..... **$31.25**
24"X24".....P/N 08-11720 ..... **$51.00**
48"X24".....P/N 08-11740 ..... **$88.50**

EP

POWER FLOW SYSTEMS INC. EXHAUST SYSTEMS



Power Flow Systems, Inc., the world leader in designing, manufacturing, and retailing of FAA Certified High Performance aircraft tuned exhaust systems.
Their Tuned Exhaust System is totally different. When you break down their exhaust system, you have two "sets" of pipes; the primary (header/collector combination) and the secondary (pipe after the collector). The primary contains four independent tubes that all join at the "4-1 Collector". As each "exhaust puff" of spent fuel travels through the primaries, it leaves a vacuum behind. In their tuned exhaust system, they have adjusted the length of each tube so that the vacuum reaches the collector just in time to "suck out" the exhaust from the next cylinder. The exhaust gases are not only being pushed out by the cylinder, but "extracted" by the vacuum, so a bigger, fresher charge will enter the cylinder during the next cycle. A tuned exhaust system really promotes a smoother, cooler, and finally more powerful running engine.

Benefits with Power Flow Systems:
- Shorter Take Off Roll
- Greatly Improves Rates of Climb
- More Usable Power
- Fuel Savings at Current Speeds
- Smoother Running Engine
- Runs cooler at Current Speeds
- Go up to 8 knots faster
- Mandrel Bent Tubes to maintain consistant interior dimension

Kit Contents:
- Kit includes everything to "bolt on" a Complete Replacement Exhaust System
- New Headers, Heater, & Muffler
- No blow gaskets, Nuts, Lock washers, Flat washers, Cotter pins etc.
- Stainless Steel Construction
- Up to 40% thicker than stock
- New Improved Heating System

EP

Airplane	Type of System	Power Flow P/N	Our P/N	Price
Aviat Husky A1B, A1C-180 with Lyc., O-360	Classic Polished	PFS-18101	08-07279	**$5,500.00**
	Ceramic Upgrade	PFS-18101 Upgrade	08-07280	**$200.00**
Cessna 172 C-172 w/ O-320	Classic Polished	PFS-13204	08-00358	**$3,726.00**
	Classic Ceramic	PFS-13204-Ceramic	08-05957	**$3,925.00**
	Short Stack Polished	PFS-13204-InternalC	08-05958	**$4,250.00**
	Short Stack Ceramic	PFS-13204-Internal-CCER	08-05959	**$4,225.00**
Cessna 172 or 175 C-172 w/ O-360	Classic Polished	PFS-13204-O360	08-00359	**$3,925.00**
	Clssic Ceramic	PFS-13204-O360-Ceramic	08-05960	**$4,125.00**
	Short Stack Polished	PFS-13204-O360-InternalC	08-05961	**$4,225.00**
	Short Stack Ceramic	PFS-13204-Internal-CCER	08-05962	**$4,425.00**
Cessna 177 C-177 w/ O-320	Classic Polished	PFS-13704	08-00360	**$3,725.00**
	Clssic Ceramic	PFS-13704-Ceramic	08-05963	**$3,925.00**
	Short Stack Polished	PFS-13704-InternalC	08-05964	**$4,025.00**
	Short Stack Ceramic	PFS-13704-Internal-CCER	08-05965	**$4,225.00**
Cessna 177A C-177 w/ O-360	Classic Polished	PFS-13704-O360	08-00361	**$3,925.00**
	Clssic Ceramic	PFS-13704-0360-Ceramic	08-05966	**$4,125.00**
	Short Stack Polished	PFS-13704-0360-InternalC	08-05967	**$4,225.00**
	Short Stack Ceramic	PFS-13704-0360-InternalCCER	08-05968	**$4,425.00**
Cessna 177B (0-360)	Classic Polished	PFS-13705	08-00880	**$3,925.00**
	Clssic Ceramic	PFS-13705-Ceramic	08-05969	**$4,125.00**
	Short Stack Polished	PFS-13704-InternalC	08-05970	**$4,225.00**
	Short Stack Ceramic	PFS-13705-Internal-CCER	08-05971	**$4,425.00**
Cessna 177RG (IO-360)	Clssic Ceramic	PFS-15102-CERAMIC	08-07165	**$5,190.00**
	Short Stack Polished	PFS-13706	08-07163	**$5,400.00**
	Short Stack Ceramic	PFS-13706-CERAMIC	08-07164	**$5,600.00**
Grumman AA-5 (below serial #640)	Classic Polished	PFS-13801	08-00635	**$3,690.00**
	Clssic Ceramic	PFS-13801-Ceramic	08-05972	**$3,890.00**
	Short Stack Polished	PFS-13801-InternalC	08-05973	**$3,990.00**
	Short Stack Ceramic	PFS-13801-Internal-CCER	08-05974	**$4,190.00**
Grumman AA-5 (above Serial #640) & Grumman AA-5A	Classic Polished	PFS-13802	08-00636	**$3,990.00**
	Clssic Ceramic	PFS-13802-Ceramic	08-05975	**$4,190.00**
	Short Stack Polished	PFS-13802-InternalC	08-05976	**$4,290.00**
	Short Stack Ceramic	PFS-13802-Internal-CCER	08-05977	**$4,490.00**
Grumman AA-5B & AA-5B	Classic Polished	PFS-13803	08-00637	**$3,990.00**
	Clssic Ceramic	PFS-13803-Ceramic	08-05978	**$4,190.00**
	Short Stack Polished	PFS-13803-InternalC	08-05979	**$4,290.00**
	Short Stack Ceramic	PFS-13803-Internal-CCER	08-05980	**$4,490.00**

Airplane	Type of System	Power Flow P/N	Our P/N	Price
Glastar & Sportsman 2+2 Experimental/ Homebuil	Polished	PFS-16104	08-04986	**$2,695.00**
	Ceramic	PFS-16104-Ceramic	08-05981	**$2,895.00**
Piper PA-28-140	Classic Polished	PFS-14150	08-05924	**$3,775.00**
	Clssic Ceramic	PFS-14150-Ceramic	08-05982	**$3,975.00**
	Short Stack Polished	PFS-14150-InternalC	08-05983	**$4,075.00**
	Short Stack Ceramic	PFS-14150 - Internal-CCER	08-05984	**$4,275.00**
Piper PA-28-150, 160 w/ Dynafocal Mounts (Below Serial #1761)	Classic Polished	PFS-14150	08-05985	**$3,775.00**
	Short Stack Polished	PFS-14150-Internal-InternalP	08-05987	**$4,075.00**
	Short Stack Ceramic	PFS-14150-InternalP-CER	08-05988	**$4,275.00**
Piper PA-28-150, 160 w/ Conical Mounts (Below Serial #1761)	Classic Polished	PFS-14151	08-04985	**$3,775.00**
	Classic Ceramic	PFS-14150-Ceramic	08-05986	**$3,975.00**
	Classic Ceramic	PFS-14151-Ceramic	08-05989	**$3,975.00**
	Short Stack Polished	PFS-14151-InternalP	08-05990	**$4,075.00**
	Short Stack Ceramic	PFS14151-InternalPCER	08-05991	**$3,975.00**
Piper PA-28-180 (Below Serial #1761)	Classic Polished	PFS-14150	08-05992	**$3,775.00**
	Clssic Ceramic	PFS-14150-Ceramic	08-05993	**$3,975.00**
	Short Stack Polished	PFS-14150-InternalP	08-05994	**$4,075.00**
	Short Stack Ceramic	PFS-14150-InternalP-CER	08-05995	**$4,275.00**
Mooney M20 (B,C,D,G) w/ O-360	Polished	PFS-16101	08-00694	**$4,190.00**
	Ceramic	PFS-16101-Ceramic	08-05996	**$4,390.00**
Mooney M20 (E,F,J) w/ IO-360	Polished	PFS-16201	08-01219	**$4,590.00**
	Ceramic	PFS-16201-Ceramic	08-05997	**$4,790.00**
Diamond DA 40	Polished	PFS-15102	08-05949	**$4,990.00**
Raytheon Beechcraft 23 (O-360)	Ceramic	PFS14152-Ceramic	08-05998	**$4,490.00**
	Polished	PFS-14152	08-05950	**$4,290.00**
	Ceramic	PFS-13804-Ceramic	08-06000	**$4,490.00**
	Polished	PFS-113804	08-05999	**$4,290.00**

CERAMIC UPGRADE - Hides discoloration that occurs when the stainless steel is heated. Retains silver finish and requires no maintenance or polishing. ..... P/N 08-05945 ..... **$550.00**

AIRCRAFT SPRUCE WEST **AIRCRAFT SPRUCE EAST**
CORONA, CA • (877) 4-SPRUCE **PEACHTREE CITY, GA • (877) 477-7823** *Prices Subject to Change Without Notice*

EXHAUST SYSTEMS

All exhaust stacks are heli-arc welded using Type 321 stainless steel tubing for light weight and long service life. Stainless steel stacks weight 50% less than a set in mild steel. All stacks are custom made and the workmanship is consistently of exceptional quality.

WHEN ORDERING, SPECIFY COMPLETE MODEL NUMBER AND HP OF ENGINE AND AIRCRAFT TYPE.

STRAIGHT STAINLESS STEEL EXHAUST STACKS

Basic exhaust pipes for Pitts Special, Smith Miniplane, Acro Sport, Starduster and many other homebuilts with Lycoming engines O-235 through O-360. This exhaust system fits under the intake tubes, starting at the rear cylinders, around the front intake tube, then points aft. Two mufflers (P/N 33205) or two tail pipes (P/N 33204) can be used with this system. With stainless swivel joints for vibration dampening and for positioning of tail pipes through 25° range. Wt. 7-1/4 lbs.

SYSTEM FOR LYCOMING ENGINES THRU 180 HP
Set of two basic stacks only, consisting of:
Right Hand, P/N 33202 & Left Hand, P/N 33203
Set of Two..... P/N 33202/33203 ..... **$779.00**
(Tail Pipes not included.)

System for Lyc. O-320B (Fuel-Injected) Tightest system for this engine.
P/N 33270-1 ..... **$845.00**
(Tail Pipes not included.)

ADD OPTIONS:

STRAIGHT TAILPIPES

P/N 33204 (14") ....**$165.00 Pr.** P/N 33204-24 (24") ...**$211.95 Pr.**
P/N 33204-18 (18") ....**$213.95 Pr.** P/N 33204-28 (28") ...**$239.95 Pr.**
P/N 33204-20 (20") ....**$205.75 Pr.** P/N 33204-36 (36") ...**$230.00 Pr.**

MUFFLER WITH 8" TAILPIPE (NO HEAT EXCHANGER)

P/N 33205 ..... **$243.95 Ea.**

MUFFLER WITH 8" TAILPIPE & HEAT EXCHANGER

2" Dia. Inlet & Outlet ..... P/N 33206-1 ..... **$365.00 Ea.**
2-1/2" Dia. Inlet & Outlet ..... P/N 33206-2 ..... **$382.95 Ea.**
When ordering muffler with heat exchanger, advise if inlet & outlet pipe diameter other than 2" or 2-1/2" is preferred.
When ordering muffler with heat exchanger, advise diameter of inlet and outlet pipe preferred (2", 2-1/2" or other).

HOMEBUILDERS SPECIAL STACKS

Designed to fit Lycoming engines 0-235 to 0-360. Mild steel. These stacks do not fit Pitts Special. Applicable to many home builts. Wt. 7.25 lbs.
P/N 08-01900..... **$629.00**

STAINLESS STEEL CROSSOVER EXHAUST SYSTEMS

A exhaust system allows your engine to breathe properly by reducing back pressure and by picking up the correct firing order of the cylinders. This results in increased HP compared to an untuned exhaust. The added HP will be evident as higher takeoff RPM, higher cruise speed and lower fuel consumption.
This crossover system fits all Lycoming engines from O-235 to IO-360 (180 HP) with bottom or aft mounted carburetors or fuel injection controllers. It is designed for tight cowling and in most cases no cowling modification will be necessary. If fit is the problem, custome tighter crossover systems are available by special order (Additional charges may apply). The system has slip joints between cylinders and ball joints where tail pipes or mufflers connect to collector tubes to prevent cracking due to expansion and vibration and to allow for positioning of the tail pipes. The exhaust system can be ordered in the following combinations:

1. With straight tail pipes
2. With two mufflers (no heat exchangers)
3. With two mufflers (one heat exchanger)
4. With two mufflers, both with heat exchangers.

All mufflers include removable 8" tail pipes. Heat shrouds have one inlet and one outlet for 2" or 2-1/2" flex tubing
Compression Springs - used on Exhaust System Ball Joints. 6 required per system. P/N 33703..... **$5.75**

STANDARD CROSSOVER SYSTEM
Basic system with all Collector Tubes (Without Tail Pipes)
P/N 33251 ..... **$927.00**
ADD OPTIONS:
Straight Tailpipes (14"). ..... P/N 33204 ..... **$165.00 Pr.**
Muffler w/8" Tailpipe (no heat exchanger) .... P/N 33205 ..... **$243.95 ea**
Muffler w/8" Tailpipe & Heat Exchanger. ..... P/N 33206-1 ... **$365.00 ea**

COMPLETE STANDARD CROSSOVER SYSTEM PRICES
Basic System with Two Straight 14" Tailpipes.
Ass'y # 33270..... **$1,005.00**
Basic System for 0-320B w/o Tailpipes. ....Ass'y # 33270-1 ..... **$845.00**
System with 2 Mufflers, Removable 8" Tailpipes & No Heat Srouds.
Ass'y # 33272..... **$1,105.00**
System w/2 Mufflers, 1 Heat Shroud for either Cabin heat or Carb. heat.....Ass'y # 33274..... **$1,360.00**
System w/2 Mufflers, Both w/ Heat Shrouds for Cabin heat &C arb. heat.....Ass'y # 33276..... **$1,676.00**
Stainless Crossover Systems for IO-360 (200HP)
Please specify front (35), bottom (40), or rear injector (45)
P/N 08-057--..... **$998.00**
(Does not include tailpipes or heat muffs)

SPECIAL CROSSOVER SYSTEM FOR VERY TIGHTLY COWLED AIRCRAFT
Designed for the Thorpe T-18, RV-6, 7 7 8, Mustang II, and others using Lyc 0-320 to 0-360 engines

Basic System with all Collector Tubes — Please furnish exact engine designation to insure proper fit. P/N 33250.....**$798.00**

Special Mufflers for the T-18 with Heat Shrouds for Cabin Heat and Carb. Heat. P/N 33250-1..... **$395.95 Ea.**

Special Tailpipes for the T-18 (to be used when mufflers are not used). Comes with same ball joint as the mufflers and an attaching bracket.
P/N 33250-2.....**$214.95 Pr.**

NOTE: PRODUCTS ON THIS PAGE ARE FOR EXPERIMENTAL AIRCRAFT AND ARE NOT FAA APPROVED. ALL EXHAUST SYSTEMS ARE SPECIAL ORDER AND ARE NON RETURNABLE

EXHAUST SYSTEMS

EXHAUST SYSTEM FOR OSPREY AIRCRAFT

This stainless steel exhaust system is specifically designed for the Osprey Aircraft. Ideal for amphibians as the tailpipe exits vertically upward. Fits aircraft using the following engines: O-235 thru O-360.
RH & LH Stacks Only
P/N 33420.....**$625.00**

ADD OPTIONS:
Muffler Only ..... P/N 33422.....**$195.00**
Muffler with Heat Exchanger ..... P/N 33424 ... **$345.00**

EXHAUST SYSTEM FOR CONTINENTAL 0-200

This universal stainless steel exhaust system is designed for experimental aircraft using Continental A65 thru O-200 engines. Consists of 2 manifolds, left hand manifold has heat shroud with 2-1/2" connection for carb heat. Muffler outlet are 3" long. Tailpipe extensions may be required, sold separately
Mufflers.....P/N 33401 ..... **$898.00**
8" Tailpipe Extensions. Furnished with slip joint and pin clamp.
P/N 33402 ..... **$115.00**

THIS SYSTEM IS PATTERNED AFTER A CESSNA 150 SYSTEM, BUT WILL NOT FIT A CESSNA 150 OR 152.

EXPRESS AIRCRAFT EXHAUST MANIFOLDS Y-STYLE

Fits Lycoming IO-540 (Angle Valve Engine) (Includes Custom 2-1/4" Tailpipes With Cabin heat shroud) (Optional studding to increase cabin heat available)
P/N 08-02105 ..... **$1,496.00**

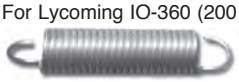
WHEN ORDERING EXHAUST SYSTEMS, PLEASE SPECIFY COMPLETE MODEL NUMBER & HP OF ENGINE AND AIRCRAFT TYPE

STAINLESS STEEL STACKS FOR PUSHER TYPE AIRCRAFT

Designed specifically for tightly cowled engines. Exhaust fits inside of intake tubes.
Applicable to:
For Continental C-85 thru O-200
P/N 33601 ..... **$695.00**
For Lycoming O-235 thru O-360 ..... P/N 33602.....**$695.00**

COZY MARK IV PUSHER EXHAUST SYSTEM

This custom stainless exhaust system was designed specifically for the Cozy Mark IV aircraft.
For Lycoming O-235 to O-360 (180 HP or less)
P/N 33702.....**$875.00**
For Lycoming IO-360 (200 HP) Angle Valve Engine
P/N 33702-1.....**$895.00**



Replacement Cozy Extension Spring
P/N 33704.....**$7.75 ea**
Cozy Inside Cowl Exhaust ..... P/N 08-07342.....**$995.00**

NOTE: PRODUCTS ON THIS PAGE ARE FOR EXPERIMENTAL AIRCRAFT AND ARE NOT FAA APPROVED. ALL EXHAUST SYSTEMS ARE SPECIAL ORDER AND ARE NON RETURNABLE

EXHAUST SYSTEM COMPONENTS

Fabricate your own exhaust system with these precision-formed type 321 stainless steel components.

STAINLESS STEEL 45° & 90° BENDS

Tubing Size	P/N	Radius	Angle	Price
1-1/2" X .035	33241	2-1/2"	90°	**$41.75**
1-1/2" X .035	33241-4	4-12"	90°	**$46.50**
1-1/2" X .035	33242	2-1/2"	45°	**$39.75**
1-3/4" X .049	33236	1-3/4"	90°	**$49.75**
1-3/4" X .035	33243	2-7/8"	90°	**$41.75**
1-3/4" X .049	33243	2-1/2-12"	90°	**$40.65**
1-3/4" X .035	33245	4"	90°	**$42.85**
1-3/4" X .049	33245	4-12"	90°	**$42.57**
1-3/4" X .035	33237	5-1/2"	90°	**$51.75**
1-3/4" X .035	33244	2-7/8"	45°	**$39.50**
2" X .049	33238	2-1/2"	90°	**$52.50**
2" X .035	33246	4"	90°	**$52.00**
2" X .049	33246	4-12"	90°	**$46.75**
2-1/8" X .049	33239	2-3/4"	90°	**$65.02**
2-1/4" X .049	33240	2-3/4"	90°	**$67.80**
2-1/2" X .049	33247	4"	90°	**$59.90**
3" X .049	33248	4-1/2"	90°	**$85.00**
2-5/8" X .049	34000	2-5/8"	90°	**$77.85**
2-3/4" X .049	34001	3"	90°	**$69.50**

STAINLESS STEEL 180° "U" BENDS

180° "U" Bends w/ odd or even leg lengths.

Tubing Size	P/N	Radius	Angle	Leg Length	Price Each
1-1/2" X .035	33260	2-1/2"	180	6"/6"	**$58.65**
1-1/2" X .035	33262	2-1/2"	180	10"/10"	**$55.50**
1-1/2" X .035	33261	2-1/2"	180	11"/14"	**$59.75**
1-3/4" X .035	33265	2-7/8"	180	6"/6"	**$58.75**
1-3/4" X .035	33264	2-7/8"	180	10"/10"	**$64.50**
1-3/4" X .049	33264	2-7/8"	180	10"/10"	**$69.50**
1-3/4" X .035	33263	2-7/8"	180	11"/14"	**$59.80**

STAINLESS SWIVEL BALL JOINTS - CLAMP TYPE

Tubing I.D.	P/N	Male Sz	Female Sz	Price
1-3/4"X 1-3/4"	33231	1-3/4"	1-3/4"	**$72.80**
1-3/4"X 2"	33232	1-3/4"	2"	**$65.00**
2"X 2"	33233	2"	2"	**$76.75**
2-1/2"X 2-1/2"	33234	2-1/2"	2-1/2"	**$79.85**
2-3/4"X 2-3/4"	33235	2-3/4"	2-3/4"	**$73.75**

CUSTOM AIRCRAFT HARDWARE KIT - Ball Joint Hardware Kit. Kit Includes: (3) Nuts (3) Bolts (3) Washers (3) springs Fits 33231 thru 33234
P/N 08-07168 .....**$17.50**

HYDRO-FORMED SLIP JOINTS - TWO PIECE UNIT 4" LONG

Slip Joint Size	P/N	Expanded Length	Price
1-1/2"	33221	2-3/4"	**$45.85**
1-5/8	33226	2-5/8"	**$42.75**
1-3/4	33222	2-5/8"	**$51.65**
2"	33223	2"	**$52.25**
2-1/4"	33227	2"	**$53.75**
2-1/2"	33224	2-3/8"	**$53.75**
3"	33225	2-1/4"	**$60.75**

STUB EXHAUST STACKS

Stainless tubing 6"L welded onto stainless exhaust flange.

1-1/2"x .035 for Continental (doesn't fit 0-240)
P/N 13352 .....**$66.50**

1-3/4"x .035 for Lyc. .....P/N 13354 .....**$53.50**

STAINLESS TUBING FOR EXHAUST STACKS

Stainless type 321 welded tubing for exhaust stacks.

Tubing Size (O.D. x Wall)	P/N	Price per Ft.
1-1/2" x .035	03-16300	**$21.25**

Tubing Size (O.D. x Wall)	P/N	Price per Ft.
1-3/4" x .035	03-16400	**$22.93**
2" x .035	03-16500	**$24.85**

EP

AIRCRAFT SPRUCE WEST
CORONA, CA • (877) 4-SPRUCE
AIRCRAFT SPRUCE EAST
PEACHTREE CITY, GA • (877) 477-7823

Prices Subject to Change Without Notice

EXHAUST SYSTEMS

LONG-EZ EXHAUST SYSTEM

Long-EZ exhaust system fits all Lycoming 4 cylinder engines.
P/N 08-00832 ..... **$775.00**

LONG-EZ EXHAUST SYSTEM INSIDE THE COWL

With this configuration the exhaust tips are located where the cooling air exits. This design eliminates cutting the cowling for exhaust exit and improves propeller efficiency by moving the exhaust pulses inboard, closer to the center of the prop hub. Fits Lycoming O-320 & O-360 parallel valve engines. P/N 08-00833 ..... **$938.00**

BERKUT 4 PIPE EXHAUST SYSTEM

Fits all Lycoming 4 cylinder engines.
P/N 08-00834 .....**$775.00**

BERKUT 6 PIPE EXHAUST SYSTEM

Fits 6 cylinder Berkut only. P/N 08-00835..... **$1,095.00**

VELOCITY EXHAUST SYSTEM

Velocity exhaust system fits 6 cylinder Lycoming parallel valve and angle valve engines.
Parallel.....P/N 08-00836 ..... **$773.00**
Angled.....P/N 08-00837 ..... **$773.00**

MUSTANG II CROSSOVER EXHAUST SYSTEM

Mustang II Crossover Exhaust System Lycoming O-235 through O-360 (Comes with Custom Tailpipes) (Vertical Induction Intake)
P/N 08-07337 .....**$1,192.00**

CONTINENTAL IO-240 CROSSOVER SYSTEM

Crossover exhaust system Continental IO-240 (Tailpipe Not included)
P/N 08-07338 .....**$825.00**

STAINLESS STEEL EXHAUST STACKS

Manufactured from aircraft quality 321 stainless steel tubing. Set of two stacks or purchase each side individually. Patterned after Aeronca style exhaust. Fits Continental C90 Thru 0-200. Not FAA approved. Wt. 3-1/4 lbs.
Set of two
P/N 08-02001 .....**$636.00**
Right side
P/N 08-02101 .....**$318.95**
Left side
P/N 08-02201 .....**$318.95**

LANCAIR LEGACY EXHAUST SYSTEM

Lancair legacy exhaust system, left & right hand maniflolds with tailpipes and cabin heat shroud. Fits IO-550 Continental.
Exh. Sys. 33805-1 ..P/N 08-00838 ..... **$1,675.00**
Exh. Sys. 470-550 ..P/N 08-02103 ..... **$1,675.00**
Legacy Exhaust ... P/N 08-02104 .. **$1,795.00**

6 Cylinder Continental O-470 to IO-520 Stacks - Exhaust Manifolds Y-Style L/H & R/H Continental 0-470 through IO-550 .....P/N 08-07344 ..... **$950.00**

GLASAIR I & II CROSSOVER EXHAUST SYSTEMS

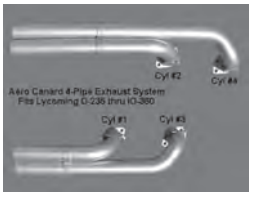
Fits Lyc. O-320 to O-360 with vertical induction.
P/N 08-00839 ..... **$1,624.00**
Fits Lyc. engines w/ horizontal induction up to 180HP P/N 08-00840 ..... **$1,495.00**

GLASTAR CROSSOVER EXHAUST SYSTEM

Includes exhaust system with (1) heater muffler, (1) non-heater muffler and tailpipes. Fits Lycoming O-235 and O-360 with vertical induction. P/N 08-00842..... **$1,345.00**

EXPERIMENTAL SUPER CUB CROSSOVER EXHAUST SYSTEM

PN 08-02100-Fits Lycoming O-320 (Vertical Induction Intake) (Must use "short" miniature light weight Sky Tec starter for clearance) (Optional studding to increase cabin heat available)
PN 08-02102-Fits Lycoming O-360 (Vertical Induction Intake) (Must use "short" miniature light weight Sky Tec starter for clearance) (Optional studding to increase cabin heat available)
P/N 08-02100 .....**$1,675.00**
P/N 08-02102 .....**$1,675.00**



4 CYLINDER AERO CAD 4 PIPE STACKS

Aero-Cad 4-Pipe Exhaust Manifolds Lycoming 0-235 through IO-360 200 HP
P/N 08-07343 .....**$852.00**

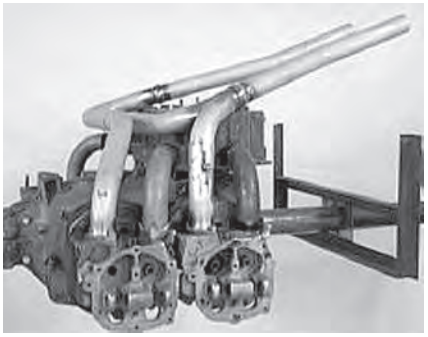
4 CYL LYCOMING CROSSOVER EXHAUST 200HP

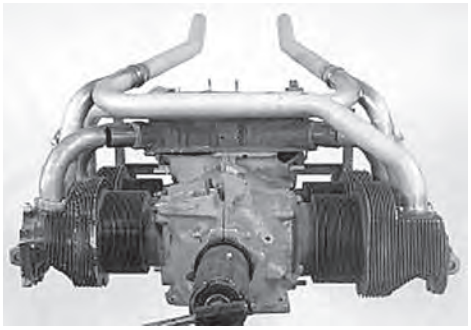
Crossover Exhaust System Lycoming IO-360 200 HP & IO-390 210 HP Angle valve engine.
NOTE: Photo shows optional tailpipes,P/N 33204-18 (08-00827) tailpipes are not included, but can be purchased seperately.
4 Cyl. Lyc. Croosover Exhaust 200HP.....P/N 08-07341 ..... **$975.00**
18" Tailpipes 33204-18.....P/N 08-00827 ..... **$213.95**

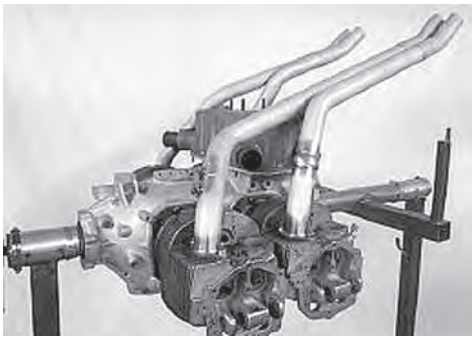
EP

EXHAUST SYSTEMS

VETTERMAN RV EXHAUST SYSTEM







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Vetterman Exhaust has been manufacturing exhaust systems for the Van's Aircraft RV series since 1990. Exhaust systems for all RV models & Van's approved engine models are available. All systems are manufactured from MIL Spec 321 stainless steel, which is mandrel bent, trimmed to length and tack welded on a Lycoming engine. This method assures the best fit possible. All systems incorporate ample slip & ball joints which greatly reduces breaking potential. All systems include blow proof gaskets, stainless exhaust nuts & washers for installation. Also include tail pipe mounting kits or pipe support brackets. Some systems also include a cabin heat muff.

AIRCRAFT	DESCRIPTION	P/N	PRICE
RV-3	O-320 Conical Mount 4 pipe sys.	08-00583	**$737.00**
RV-3	O-320 Dynofocal Mnt. 4 pipe sys.	08-00584	**$742.00**
RV-3	O-360 Dynofocal Mnt. 4 pipe sys.	08-00585	**$732.00**
RV-4	O-320 Conical Mount 4 pipe sys.	08-00586	**$732.00**
RV-4	O-320 Dynofocal Mnt. 4 pipe sys.	08-00587	**$733.00**
RV-4	O-360 Dynofocal Mnt. 4 pipe sys.	08-00588	**$733.00**
RV-4	O-320 Dynofocal Mnt. X-over sys.	08-00589	**$763.00**
RV-4	O-360 Dynofocal Mnt. X-over sys.	08-00590	**$767.00**
7-7A,8-8A,	*Includes tail pipe mounting kit	08-00591	**$946.00**
RV-6,7,8,9A	*Includes tail pipe mounting kit	08-00592	**$945.00**
RV 7-7A	*Includes tail pipe mounting kit	08-00593	**$929.00**
RV8	*Includes tail pipe mounting kit	08-00594	**$842.00**
RV 8A	*Includes tail pipe mounting kit	08-00595	**$966.00**

NOTE: EACH OF THESE SYSTEMS WILL NOT INTERCHANGE BETWEEN AIRCRAFT AND ENGINE MODELS. THESE SYSTEMS ARE DESIGNED AND INTENDED FOR USE ON RV AIRCRAFT ONLY. PRICES DO NOT INCLUDE SHIPPING CHARGES.

NICROCRAFT EXHAUST PARTS

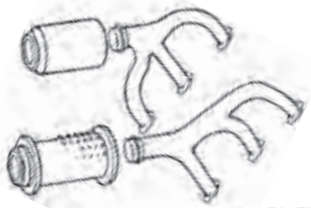
NICROCRAFT EXHAUST PARTS BUILT TO TAKE THE HEAT

Aircraft Spruce & Specialty Co. offers fully overhauled and factory new exhaust components for use in most general aviation aircraft. Manufactured by Wall Colmonoy Corp. Nicrocraft exhaust parts are built to the latest original equipment specifications. Heat-resistant 321 stainless steel is used in the construction of all new p arts. Bellows are made of Inconel alloy for superior heat resistance. Individual exhaust components and complete systems are available for virtually all single and twin engine Cessna, Piper, Beech, Bellanca, Grumman, Mooney, and Rockwell aircraft. (Please provide your complete aircraft and engine model and serial numbers, year of aircraft, and exact components required.) Most components are available for immediate shipment.

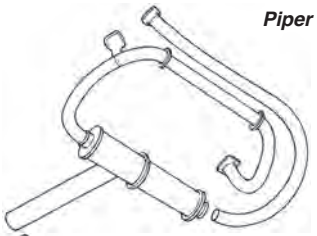
FACTORY NEW EXHAUST PARTS

Cessna 180/182/185

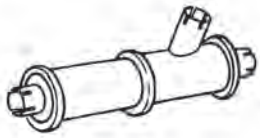
Beechcraft 33/A33/B33/35



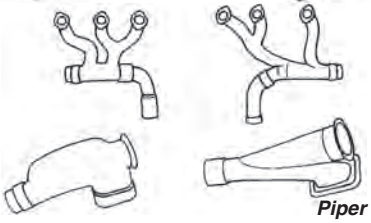
Piper PA-18



Piper PA-12, 14, 16, 20, 22, 25



Piper PA-23 Turbo



CESSNA 150 (MODELS G-L)

Aircraft	Description / OEM #	Part No.	Price
Cessna 150	Muffler RH / #0450400-26	8300-4	**$307.95**
Cessna 150	Muffler LH / #0450400-3	8300-3	**$304.95**

CESSNA 152/A152

Aircraft	Description/OEM #	Part No.	Price
Cessna 152 (S/N 735-975)	Muffler/#454009-5	CEM0025	**$309.00**
& A152 (S/N 978 & up)	Muffler/#454009-6	CEM0024	**$319.00**

CESSNA 170/172

Aircraft	Description / OEM #	Part No.	Price
C170,172, A	Muffler LH / #0550157-9	221-9	**$477.95**
Cont 0-300/C145	MufflerRH / #0550157-32	221-32	**$477.95**

CESSNA 172B-H/175

Aircraft	Description / OEM #	Part No.	Price
Cessna C172B-H & 175 B-D	Muffler LH&RH / #	568-110	**$324.95**
Cessna R172	Muffler / #1455009-3	CEM0023	**$385.95**

CESSNA 172

Aircraft	Description/OEM #	Part No.	Price
C172 O-320	Stack/#1754007-1	W1754007-1	**$169.95**
C172 O-320	Stack/#1754008-1	W1754008-1	**$145.95**
C172 O-320	Stack/#1754009-1	W1754009-1	**$145.95**
C172 O-320	Stack/#1754010-1	W175010-1	**$158.00**

CESSNA 180/182/185

Aircraft	Description / OEM #	Part No.	Price
Cessna C180,C182, & 185 late model	Muffler/#0750161-28/89	CEM0002	**$332.95**
180B,C,D,E,F	Heat Muffler 0750130-44	CEM0001	**$310.95**
182B,C,D,E,F	Heat Muffler 0750130-9	CEM0006	**$403.95**
	Heat Muffler 0750130-12	CEM0009	**$383.00**
210B s/n58086&up to M	Heat Muffler LH/#1250250-5	650-43	**$493.95**
C210B	Muffler RH 1250251-16	650-92	**$309.95**
C210B	Collector LH 1250263-2	650-25	**$429.95**
C210B	Collector RH 1250264-2	650-36	**$429.95**

BEECHCRAFT 33/A33/B33/35

Aircraft	Description / OEM #	Part No.	Price
Beechcraft 33, A33, B33, 35	Heat Muffler RH/#186-30	186-30	**$455.95**
	Muffler RH / #189	189	**$237.95**
	Stack Assy RH/#35-950116	BES-0001	**$445.95**
	Stack Assy LH/#35-950118	BES-0002	**$445.95**

BEECHCRAFT C33A/36/A36

Aircraft	Description / OEM #	Part No.	Price
C33A,E33A,F33A	Muffler LH/#701-20	701-20	**$234.95**
C, S35, 36, A36	Heat Muffler RH/#701-19	701-19	**$368.95**
C33A, 36, A56	Collector LH / #35-9016-1S	08-00853	**$453.95**
C33A, 36, A36	Collector RH / #35-9016-3/5S	08-00854	**$472.95**

BEECHCRAFT H35/P35 THRU S/N D-7108

Aircraft	Description / OEM #	Part No.	Price
Beechcraft H35,	Heat Muffler LH/492-43	492-43	**$434.95**
J, K, M, N, P35	Muffler RH/#492-27	492-27	**$376.95**

PIPER PA-12, 14, 16, 20, 22, 25

Aircraft	Description / OEM #	Part No.	Price
PA-12, 14,16, 20, 22, 25	Muffler / #10308-03	PIM0003	**$419.95**

PIPER PA-18

Aircraft	Description / OEM #	Part No.	Price
Piper PA18	Muffler / #12433-15	PIM0006-100	**$419.95**

PIPER PA-28

Aircraft	Description / OEM #	Part No.	Price
PA-28-140, 150, 160	-140 Muffler w/o shroud / #99482-00	PIM0001	**$359.00**
PA-28-151,161,180,181	Muffler (2 req.)/#66894-03	PIM0007	**$262.95**
PA-28R,180, 200, 201, 236	Muffler (2 req.)/#67517-00 3 req. for 236	PIM0004	**$283.00**
PA32-300,32-760001 & up, PA32-R300	Muffler (3 req.) 67517-00	PIM0004	**$283.00**

PIPER34-200 SENECA I

Item	OEM No.	Part No.	Price
Left hand Tailpipe Core	78463-10	08-05885	**$800.00**
Right hand Tailpipe Core	78-463-18	08-05886	**$800.00**

OVERHAULED EXHAUST PARTS

Aircraft	Description / OEM#	Part No.	Price
Beechcraft C33A, E33A, F33A, C, S35, 36, A36	Heater Muffler RH w/o shroud / #701-19	701-19R	**$276.95**
Cessna 210B	Heater Muffler LH / #1250250-15	1250250-5R	**$239.00**
Piper PA-18	Muffler / #12433-15	12433-15R	**$325.95**

PIPER EXHAUST CLAMP

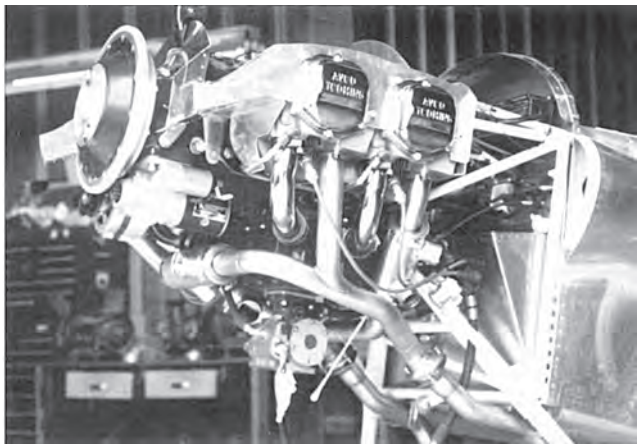
This clamp is used on the exhaust system. The spot weld on the V Band is failing. The failure could result in the release of high-temperature gasses inside the engine compartment and possibly cause an in flight fire according to the published AD.

P/N 05-04866.....**$583.50**

EP

EXHAUST SYSTEMS

SNOWLINE RV-4 CROSSOVER EXHAUST SYSTEM

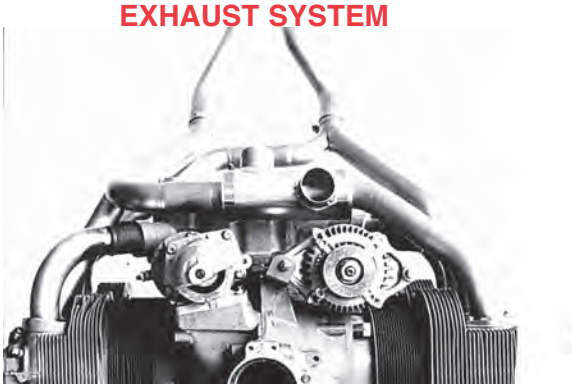


The material used on this System is 1-3/4" O.D. x .035 wall 321 stainless steel. This system is designed for use with Lycoming engines up to 180 H.P. Bending is performed using an inside mandrel which the tube is drawn over during bending to maintain the inside diameter. Flanges are made from 1/4" Stainless Steel. This heavy material greatly reduces warping and cracking. Tail pipes are fitted with a stainless steel spring-type swivel ball joint. This flexible joint not only allows for easy alignment of the tail pipes through the opening in the bottom cowling; but most important, this joint allows the engine and tail pipes to move independently, and greatly reduces the chance of cracking. One heat muff has been provided on the front cross-tube. This muff is intended for carburetor heat. If an injection system is being used, this muff can be used for cabin heat. An optional cabin heat muff can be ordered when carburetor heat requires the use of the standard heat muff. All hardware is provided to install the system. Stainless steel nuts, bolts, washers, blow-proof exhaust gaskets, two stainless clamps for attaching tail pipes to the firewall or engine mount. Building brackets and positioning mixture and throttle cables is always a hassle. A bracket which simply bolts to the engine case and positions the cables in front of the mixture and throttle arms for easy attachment is available as an option. A U-type clamp attaches cable housing securely in place

RV-4 Crossover Exhaust System P/N 08-05785 ..... **$825.00**

NOTE: THIS SYSTEM WILL NOT FIT LYCOMING, 0-320-H2AD OR H3AD ENGINES

SNOWLINE RV-6 & RV-6A CROSSOVER EXHAUST SYSTEM



The material used on these systems is 1-3/4" O.D. x .035 wall 321 stainless steel tubing. 2 models are available; one for Lycoming engines up to 180 H.P. and the other for the Lycoming IO-360 (200 H.P. engine). Bending is performed using an inside mandrel which the tube is drawn over during bending to maintain the inside diameter. Flanges are made from 1/4" stainless steel. This heavy materialgreatly reduces warping & cracking. Tail pipes are attached to the header with a slip joint. Simply slide the tail pipes onto the header, position the end of the pipe as desired in the bottom opening, and attach with the stainless steel retaining clamp. One heat muff has been provided on the front cross-tube. This muff is intended for carburetor heat. If an injection system is being used, this muff can be used for cabin heat. An optional cabin heat muff can be ordered when carburetor heat requires the use of the standard heat muff. All hardware is provided to install the system. Stainless Steel nuts, bolts, washers, blow-proof gaskets, 2 stainless clamps for attaching tail pipes to the firewall or engine mount. U-type clamp attaches the cable housing securely in place.

RV-6/RV-6A Crossover Exhaust Sys. (To 180 H.P.)
P/N 08-05790..... **$803.00**

RV-6/RV-6A Crossover Exhaust Sys.* (To 200 H.P.)
P/N 08-05795..... **$867.00**

Optinoal Cabin Heat Muff..... P/N 08-00679..... **$92.50**
Will not work with front mounted injectors

The RV-6/RV-6A exhaust systems are recommended for these aircraft only.

For other expermentals, the RV-4 system may fit better under cowls as it is built tighter to the engine.

REAL PREMIUM SILICONE VALVE COVER GASKETS

REAL are twice as thick as typical gaskets and have been hot oil and dry heat tested at 300°F. Only REAL gaskets seal uneven surfaces, eliminate corrosion, and reduce maintenance costs. They may be reused, are installed dry, and maintain screw torque. Indefinite shelf life. Highly recommended by Rutan Aircraft Factory.

Part No.	Application	Price Ea.	Part No.	Applicaion	Price Ea.	Part No.	Application	Price Ea.
RG-75906	0-235; 0-290; O,IO,LIO-320; O-340;O-360-A,B,C,D; IO-360-B; HO-360-A,B;HIO-360-B; VO,IVO-360;O-540-A,B,E,F,G; IO-540-C,D,J,N,R.	**$8.65**	***RG-71450***	IO-540-B,E,M; TIO-540-A; IGO, IGSO-540-B.	**$8.75**	***RG-534857***	O-470;IO,TSIO-470;IO,TSIO-520	**$8.65**
						RG-632310	IO, TIO, TSIO-360.	**$4.25**
			RG-530162	A-65; C-75, 85, 90, 145, 175; O-200; O-300.	**$7.85**	***RG-632459***	GTSIO-520; TSIO-520-BE.	**$4.35**
RG-67193	IO-360-A,C,D; AIO-360-A,B; HO-360-A,C,D; TIO-360-A; LIO-360-C1E6;VO,GO-435; GO-480; IO,VO,TVIO-540; IO-720; TVO-435;	**$7.75**	***RG-532451***	E-185; E-225; IO-346; O-470-A,E,J; IO-470-J,K	**$7.85**	***RG-17727***	4A-235, 6A-335, 6A4-150, 6A4-165, 6A4-200, 6A5-335, 6A5-350.	**$7.65**

EP

GASKETS

"O" SERIES LYCOMING VALVE COVER GASKETS

These homebuilder's Lycoming valve cover gaskets replace the original cork gaskets which come standard on Lycoming 0-235, 0-320 and 0-360 engines. These new gaskets are molded from high temperature silicone rubber and do not harden over time so they can be re-used again and again. This hi-tech silicone rubber offers a much lower compression set, so it is superior at maintaining an oil-tight seal for the life of the engine. NOT FAA approved. For experimental aircraft only.

P/N 08-01187 ..... **$3.95**

ANGLED VALVE "IO" SERIES LYCOMING VALVE COVER GASKETS

These gaskets are for the fuel injected "IO" series, sometimes referred to as the Angle Valve cylinder Lycoming, as well. these gaskets are molded from the same high-temperature silicone rubber as the "O" series gaskets above, and do not harden over time, so they can be reused again and again.This hi-tech silicone rubber offers a much lower compression set, so it is superior at maintaining an oil-tight seal for the life of the engine. They are not FAA approved and are not manufactured under a PMA. These are similar to Lycoming part number 67193 used on Angled valve Lycoming engines IO-360, IO-540, IO-720. P/N 08-05882 ..... **$5.85**

RAPCO REPLACEMENT EXHAUST GASKETS

High quality, economical stainless and copper beaded gaskets. Extra thick spiral woundstyle available "Blow Proof"

	Style	RAPCO P/N	Use As Replacement For: OEM P/N	Airborne P/N	Superior P/N	Use on These Engine Models	Our P/N	Price Each
CONTINENTAL	Solid	RA-630365	630365	N/A	SA630365	IO-360-A, C, D, G, H, J, K	08-05215	**$1.70**
	Spiral Wound	RA-970	N/A	970	N/A	IO-360-A, C, D, G, H,J, K TSIO-360-A, B	08-05270	**$7.85**
	Solid	RA-632837	632837 21493	157	SA 632837	A-65, A-75,C-85-12F, C-90-8F,12F, 14F, -16F,E-165,E-185,E-225,O-200-A,B,O-300-A,C,D,O-470-A,E,J E-165, E-185, E-225O-200-A, B, O-300-A, C, DO-470-A, E, J	08-05237	**$1.25**
	Spiral Wound	RA-627429	627429	999	SA 627429		08-05229	**$8.65**
	Solid	RA-631544	631544 537379	158	SA631544	O-470-B, G, K, L, M,P, R, S, U	08-05244	**$1.25**
	Spiral Wound	RA-628260	628260	972	SA628260	O-470-B, G, K, L, M,P, R, S, U,IO-470-D, U, V, TSIO-470-B TSIO-520-B, C, D GTSIO-520-C, D	08-05260	**$7.85**
LYCOMING	Solid	RA-75118	75118 73720 67196 77611	160	N/A	0-290,0-320,IO-320,0-340,0-360,HO-260-B,IO-360-A,-B,-C,HIO-360-A,-B-C,V0-435,TVO-435,G0-480,GSO-480,ISGO-480,O-540-A,-B,-E,-G,IO-540-A,-C,-D,-G,-J,-K,IG0-540-A,IGS0-540-A,10-720-A	08-05218	**$1.55**
	Spiral Wound	RA-77611	77611	1000	SL77611		08-05211	**$7.35**
	Solid	RA-LW15619	LW15619 74756	161	SL15619	TIO-541	08-05219	**$3.35**
	Spiral Wound	RA-LW15486	LW15486	971	N/A		08-05286	**$11.35**
	Solid	RA985	3503			R-985-AN-1,-3,-4,-6,-6B,-10,12,-12B,-14B	08-64452	**$8.65**

EP

REPLACEMENT GASKET FOR WOODWARD GOVERNORS

Part Name	Approved Replacement for Part No.	Model Eligibility	Part No.	Price
Engine Accessory Drive Gasket	Woodward Gov. 206684 Pratt & Whitney 3039526	PT6A-20/20A/-20B/-21/-25C/-27/-28/-34/-34AG/-34B/-36/-38/-41/-42/-42A/-60A/-60AG/-61/-67A/-67AF/-67AG/-67B/-67D/-67R/-67T PT6A-45A/-45B/-45R/-65B/-65AG -65AR/-65R/-114/-114A/-135/-135A	08-06264	**$146.95**
Governor Gasket	Woodward Gov. 206685 Pratt & Whitney 3118953-01	PT6A-6/-6A/-6B/-11/-11AG/-15AG/-20/-20A/-20B/-34/-34AG/-34B/-36/-38/-41/-42/-42A/-45/-45A/-45B/-45R/-60A/-60AG/-61/-65B/-65R/-65AG/-65AR/-67/-67A/-67AF/-67AG/-67B/-67D/-67R/-67T/-110/-112/-121	08-07154	**$81.85**

2577256 PRECISION AIRMOTIVE GASKET PEX-1

Gasket part number 365533 is no longer available from Precision Airmotive. The new gasket, part number 2577258 is available and should be used in place of 365533. P/N 07-01312..... **$0.81**

LYCOMING PROP GOVERNOR GASKET

Propeller governor gasket for Lycoming 0-320 A & E Series engines. P/N 72053 ..... **$1.69**

POLY-FIBER AIRCRAFT COATINGS

AIRCRAFT SPRUCE - WORLD'S LARGEST DISTRIBUTOR OF POLY-FIBER PRODUCTS

This FAA approved process utilizing Poly-Fiber Dacron polyester and the unique "Poly" line of finishes assures a beautiful, durable, weather-resistant cover job every time. Documented time tested results by the professionals. The Poly-Fiber Covering Process was issued Supplemental Type Certificate No. SA-1008-WE in 1965 and this number will apply to all aircraft.

Note: Formerly known as Stits covering process. Only Poly-Fiber materials may be used through the topcoat paint to comply with STC requirements. Poly-Fiber finishes are required for approval. Poly-Fiber is approved for use on most certified aircraft. To be sure, check the Master Eligibility List in the latest revision of Poly-Fiber Procedure Manual No. 1.

POLY-FIBER FABRIC

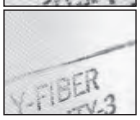
UNCERTIFIED LIGHT

1.87 oz lightweight fabric recommended for covering ultralight aircraft. This fabric will be unstamped. It is not approved for certified aircraft except on plywood surface. 72" Width P/N 09-02001 ..... **$8.40 /Lineal Yd.**

MEDIUM WEIGHT

3.16 oz standard fabric recommended for normal service on all types of aircaft regardless of speed, wing loading or horsepower. 72" Width

P/N 09-01600 ..... **$11.95 /Lineal Yd.**



HEAVY DUTY

3.5 oz Recommended for severe operating conditions and very high wing loading aircraft where a very tough, durable, low elongation, high tension fabric is required and weight is not critical. Great for agricultural, aerobatic and bush planes. 72" Width P/N 09-01700 ..... **$13.30 /Lineal Yd.**

POLYESTER PADDING

Non -woven, 45" wide, 3 oz. per yard. Used under fabric on wing leading edge and turtle deck to smooth rough surfaces.

P/N 09-01750 ..... **$7.20**

POLY-FIBER POLYESTER FINISHING TAPES

* Style - L indicates Linear Cut *Style - B indicates Bias Cut.

Part No.	Style #	Roll Width	Roll Length	Price.
09-02200	Med.	1"	25 yds.	**$16.05**
09-02400	Med.	1-1/2"	25 yds.	**$17.65**
09-02450	Med.	2"	25 yds.	**$23.20**
09-02500	Med.	2"	50 yds.	**$30.20**
09-02900	Med.	3"	25 yds.	**$27.80**
09-03300	Med.	4"	25 yds.	**$32.40**
09-03350	Med.	6"	25 yds.	**$45.00**
09-02300	Light	1"	25 yds.	**$16.05**
09-02350	Light	1-1/2"	25 yds.	**$17.65**
09-02705	Light	2"	25 yds.	**$23.20**
09-02700	Light	2"	50 yds.	**$30.20**
09-03100	Light	3"	25 yds.	**$27.80**
09-03400	Light	4"	25 yds.	**$32.40**
09-03545	Light	6"	25 yds.	**$45.00**
09-03565	Bias	2"	25 yds.	**$32.45**
09-03570	Bias	3"	25 yds.	**$46.15**
09-03580	Bias	4"	25 yds.	**$57.35**

POLY-FIBER TAPES, CORD & THREAD

	Item	P/N	Yds. Spool	Price
Reinforcing Tape	1/4" Wide	09-03500	60	**$55.00**
	3/8" Wide	09-03600	60	**$56.60**
	1/2" Wide	09-03700	60	**$57.95**
Rib Lacing Cord	(Std. Round)	09-03800	296	**$45.25**
	Rib Cord, Flat	09-03810	500	**$45.25**
Sewing Thread	Machine	09-03900	500	**$15.25**
	Hand	09-04000	250	**$11.75**

HEAVY INTER-RIB BRACING TAPE

Non-adhesive polyester twill tape for inter-rib bracing. Twice as strong as cotton tape. 36 yd. rolls.`1/2" Wide P/N 09-40912 ..... **$16.70**

AIRCRAFT FABRIC COVERING

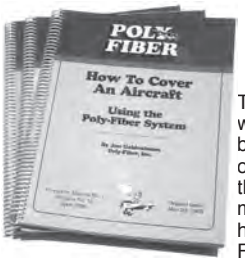
Aircraft Fabric Covering is a must for anyone who wants to cover their own airplane. This 2-hour comprehensive DVD presents every aspect of the Poly-Fiber™ fabric covering process in detail, and in easy-to-understand language. From preparing the airplane for covering to spraying on the colors, you are guided step by step through the entire process by a professional EAA SportAir fabric instructor. When used in conjunction with the Poly-Fiber manual, Aircraft Fabric Covering removes the mystery surrounding this important process in the construction or restoration of your airplane. Information covered includes: • Preparing surfaces • Attaching the fabric •Tightening the fabric • Applying the first coat of Poly-Brush •Tying rib-lacing knots • Applying finishing tapes • Spraying UV-blocking chemical • Poly-Spray •Applying the color coats.

DVD ..... P/N 13-40428 ..... **$35.50**

THE POLY-FIBER PRACTICE KIT

If you're thinking of building a fabric-covered airplane but are wondering what the covering process is like, this is the perfect answer. You get a practice frame, fabric, tapes, needles, rib lacing cord, thermometer, instructions, and all the coatings you need to work through the Poly-Spray stage. There's enough of everything to do the entire process twice. You'll see how easy and enjoyable fabric covering really is.

P/N 09-06220 ..... **$62.50**



'HOW TO COVER AN AIRCRAFT USING THE POLYFIBER SYSTEM'

The Official Poly-Fiber how-to manual. It's a whole covering course in a book. A spiral-bound classroom, as the ads say. 151 pages of clear, non-jargon, step-by-step instruction, the entire Poly-Fiber system, from basic materials to blue ribbon. In plain language & has a sense of humor all its own. Entire Poly-Fiber catalog of products is included.

P/N 09-06000 ..... **$9.95**

Poly-Fiber Color Card #50 P/N 09-00234 ..... **FREE**

POLY-FIBER SOLVENTS & CLEANERS

METL-SOL C-2200 METAL SURFACE CLEANER

A strong solvent blend formulated to remove oil, silicone, wax and other contaminants from all metal surfaces before priming. Not for painted surfaces.

Qt. ..... P/N 09-40710 ..... **$18.90**
Gal. ..... P/N 09-40720 ..... **$60.70**

C-2210 PAINT SURFACE CLEANER

A mild solvent blend formulated to remove oil, silicone, wax and other contaminants from all painted or primed surfaces. Also removes tape gum from painted surfaces and acrylic windshield materials.

Qt. ..... P/N 09-40810 ..... **$11.95**
Gal. ..... P/N 09-40820 ..... **$44.95**

310 ALKALINE DETERGENT CLEANER

Highly recommended as an alkaline metal cleaner for removing greases and oils. Also a very good cleaner for interior cabins and vinyl upholstery, as well as a wide variety of household applications to remove waxes, dirt, and stains. Furnished as a concentrate for 32:1 dilution with water. Lemon scented and not harmful to your hands.

Qt. ..... P/N 310-QT **$11.95**
Gal. ..... P/N 310-1G **$27.90**

POLY-FIBER MEK

Solvent used to remove coatings for repairs, for clean up, and to release cemented seams. NOT used to thin or reduce any products.

Qt. ..... P/N 09-40835 ..... **$14.30**
Gallon ..... P/N 09-40845 ..... **$41.25**

CS

POLY-FIBER AIRCRAFT COATINGS

POLY-BRUSH

FLAMMABLE A pink translucent, 1 part air drying resin used for the first 2 or 3 coats to penetrate and seal the fabric weave and assure good adhesion. Also used to attach the finishing tapes and reinforcing patches. Brush on initial coat thinned 3:1 with reducer. Subsequent coats are thinned 3:1 with reducer and applied with a spray gun to avoid brush marks & cut application time.

	Tinted		*Untinted*	
Quart	P/N 09-04100	**$25.55**	P/N 09-04110	**$25.55**
Gallon	P/N 09-04200	**$85.00**	P/N 09-04210	**$85.00**
5 Gal.	P/N 09-04300	**$420.00**	P/N 09-04350	**$420.00**

POLY-SPRAY

FLAMMABLE A high-solids aluminum-pigmented, 1 part, air drying resin used after the Poly-Brush preliminary coating to protect fabric from UV and prepare for a smooth finish. Thin 4:1.

Poly Spray (Qt.)	P/N 09-04400	**$25.20**
Poly Spray (Gal.)	P/N 09-04500	**$83.60**
Poly Spray (5 Gal.)	P/N 09-04600	**$413.10**

POLY-FIBER REDUCERS

FLAMMABLE A blend of solvents used for viscosity and drying control of Poly-Brush, Poly-Spray and Poly-Tone. Blend #R-65-75 is recommended as the standard reducer in normal weather, 65°–75°F. #RR-8500 is a retarder-reducer with slower drying time. Recommended for temp above 85° & warm humid weather.

	#65-75		*#RR-8500*	
Qt.	P/N 09-04700	**$15.20**	P/N 09-04750	**$15.40**
Gal.	P/N 09-04800	**$47.80**	P/N 09-04850	**$48.25**
5 Gal.	P/N 09-04900	**$230.70**	P/N 09-04950	**$230.90**

POLY-FIBER RETARDER

This blended solvent improves flow-out and prevents blushing under high temperature or high humidity conditions. Improves gloss.

FLAMMABLE

BR-8600 (Qt.)	P/N 09-40830	**$14.00**
BR-8600 (Gal.)	P/N 09-40840	**$49.00**

POLY-TAK CEMENT

FLAMMABLE Excellent cement for all types of fabrics. Shelf life unopened is 2 years.

Pint	P/N 09-05110	**$14.40**
Quart	P/N 09-05000	**$27.25**
Gallon	P/N 09-05100	**$99.80**

POLY-TONE® FINISH

A durable semi-gloss, 1-part, air drying flexible paint available in over 50 popular aircraft colors. Recommended as the standard finish for the Poly-Fiber cover process. Also may be used over suitably primed metal components of fabric covered aircraft. Fabric damage is more easily repaired when Poly-Tone finish is used. All pigments are non-bleeding or fading. Will not oxidize with age. Poly-Tone is always thinned to 4 to 1with Poly Fiber Reducer (65-75 or 8500).

FLAMMABLE

POLY-TONE FINISHES

4 Whites:	*QUART*	*GALLON*
Insignia White (#105)	**$24.50**	**$88.80**
Juneau White (#110)	**$24.85**	**$77.20**
Glacier White (#117)	**$24.85**	**$88.75**
Daytona White (#120)	**$24.85**	**$89.50**

All other colors (Color Card #50) ..... **No Charge**

TO ORDER POLYTONE: Create the part number for the Polytone you require: *Color*-PQ (for Quart) or *Color*-PG (for Gallon)
Example: 100-PQ is 1 Quart of Color #100

POLY TONE U.V. BLOCKING

FLAMMABLE Used for additional UV Protection in ultralight airplanes. 1 fl.oz. blocks 1Quart Polytone

1/2 Pint Blocker (8 fluid oz) ..... P/N 09-02053 ..... **$23.75**

POLY TONE

FLAMMABLE RJ-1200

Quart	P/N 09-05200	**$24.50**
Gallon	P/N 09-05300	**$80.50**

STITS EPOXY PRIMER (GREEN) EP-420/EP-430

FLAMMABLE This green primer is fast drying, corrosion inhibiting, and has application and curing qualities down to 35°F. It is a heavy duty chemical and solvent resistant amine cured primer. Mixing ratio is 2 parts base, 1 part catalyst. Order in kits.

Quart Kit (Yields2 1/2 quarts)
Incl. catalyst and reducer ..... P/N 09-00352 ..... **$74.60**

Gallon Kit (Yields 2 1/2 Gallons)
Incl. catalyst and reducer ..... P/N 09-00353 ..... **$298.00**

Base:	Quart	P/N 09-05605	**$48.35**
	Gallon	P/N 09-05610	**$165.40**
Catalyst:	Pint	P/N 09-05615	**$18.75**
	Quart	P/N 09-05620	**$31.80**
Reducer E-500 (Reduce 50%)	Quart	P/N 09-01163	**$15.75**
	Gallon	P/N 09-01108	**$37.15**

STITS EPOXY PRIMER (WHITE) EP-420/EP-430

FLAMMABLE This white heavy duty chemical and solvent resistant amine cured primer, the excellent primer from Stits is fast drying and corrosion inhibiting. It can be applied and cured to temperatures down to 35°F. Mixing ratio is 2 parts base, 1 part catalyst.

Quart Kit (Yields 2 1/2 quarts)
Incl. catalyst and reducer ..... P/N 09-00285 ..... **$75.00**

Gallon Kit (Yields 2 1/2 Gallons)
Incl. catalyst and reducer ..... P/N 09-00438 ..... **$298.00**

Base:	Quart	P/N 09-05625	**$48.35**
	Gallon	P/N 09-05630	**$165.40**
Catalyst:	Pint	P/N 09-05615	**$18.75**
	Quart	P/N 09-05620	**$31.80**
Reducer E-500 (Reduce 50%)	Quart	P/N 09-01163	**$15.75**
	Gallon	P/N 09-01108	**$37.15**

STITS EPOXY VARNISH EV-400/EV-410

FLAMMABLE An excellent clear gloss epoxy varnish for interior and exterior use. It provides superior weather durability and excellent chemical and solvent resistance. Can be used over a one component varnish primer if desired. Mixing ratio is 2 parts base, 1 part catalyst. Can be ordered as a kit which includes base, catalyst and reducer, or each component separately.

Quart Kit (Yields 2-1/2 quarts)
Incl. catalyst and reducer ..... P/N 09-00349 ..... **$65.35**

Gallon Kit (Yields 2-1/2 Gallons)
Incl. catalyst and reducer ..... P/N 09-00350 ..... **$217.80**

Base:	Quart	P/N 09-05645	**$37.60**
	Gallon	P/N 09-05650	**$127.55**
Catalyst:	Pint	P/N 09-05655	**$15.85**
	Quart	P/N 09-05660	**$26.55**
Reducer E-500 (Reduce 50%)	Quart	P/N 09-01163	**$15.75**
	Gallon	P/N 09-01108	**$37.15**

EPOXY ACCELERATOR EX-501

FLAMMABLE A chemical curing accelerator for use in EP-420 Epoxy Primer and EV-400 Epoxy Varnish according to directions on base component listing. Reduces polymerization time, not solvent evaporation.

1/2 Pint ..... P/N 09-04650 ..... **$9.00**

POLY-FIBER ESO ENGINE STORAGE OIL

FLAMMABLE A fine lubrication and preservative oil used to prevent corrosion in internal combustion engines during extended storage. MIL-21260.

Quart	P/N 09-42450	**$24.00**
Gallon	P/N 09-42455	**$89.00**

POLY-FIBER 60"X 48" FINE MESH PAINT STRAINER CONES

P/N 09-02115 ..... **$0.70**

IMPORTANT NOTICE: ***Poly-Fiber and Randolph Coatings are now manufactured by Consolidated Coatings Co.and current colors do NOT all match original Randolph colors. If matching an old color is required, please match it to a current color card or send in a sample of old color for custom matching.***

ALL mixed paints are special order and are non-returnable.

CS

POLY-FIBER AIRCRAFT COATINGS

POLY FIBER AEROTHANE

A tough, flexible, high-gloss two part polyurethane especially formulated for fabric covered aircraft and marine surfaces subject to flexing loads. Recommended as a premium quality fabric finish over Stits Poly-Fiber covered aircraft. Wet look, high gloss. Aerothane requires catalyst, which is sold separately, and will be offered to you t the time of purchase. If you currently have an adequate supply please notify a sales rep or note it on you online order. Aerothane additives are also sold separatley, but must be requested as needed.

AERO-THANE (All Paint 3/4 filled cans)			
Size	**Color**	**Part No.**	**Price**
Quart	Insignia White	105-AQ	**$39.90**
Gallon	Insignia White	105-AG	**$129.95**
Quart	Juneau White	110-AQ	**$34.60**
Gallon	Juneau White	110-AG	**$113.15**
Quart	Glacier White	117-AQ	**$34.60**
Gallon	Glacier White	117-AG	**$113.15**
Quart	Daytona White	120-AQ	**$34.60**
Gallon	Daytona White	120-AG	**$113.15**
CLEAR AERO-THANE AO-100 (All paints 3/4 filled cans)			
Size	**Color**	**Part No.**	**Price**
3/4 Quart Paint	Clear	AO-100-QT	**$44.50**
3/4 Gallon Paint	Clear	AO-100-1G	**$151.00**

AERO-THANE ADDITIVES			
Description	**Size**	**Part No.**	**Price**
Urethane Catalyst U-865	1/2 Pint	09-05400	**$19.95**
Urethane Catalyst U-865	Quart	09-05500	**$53.65**
Urethane Reducer UE-820	Quart	09-05600	**$17.05**
Urethane Reducer UE-820	Gallon	09-05700	**$55.10**
Urethane Retarder UR-826	Quart	09-05800	**$18.55**
Urethane Retarder UR-826	Gallon	09-05900	**$60.35**

TO ORDER AEROTHANE:
Create the part number for the Aerothane you require: Color-A-Q(quart) or G (gallon). Add -K (kit) if catalyst is required. Example: 100-A-Q-K is 1 quart of color #100 with catalyst included.

POLY-TONE/AEROTHANE ENAMEL FLATTENER

Used to make Aerothane and Enamel match the semi gloss finish of Polytone, or to make either Aerothane, Polytone and Enamel Full Military Flat.
Use 1 Pint, to flatten 1 Quart .....P/N 09-02052 .....**$22.55**
Use 1 Qt. & 1 Pint, to flatten 1 Gallon.....P/N 09-02051 .....**$43.15**

CALIBRATION THERMOMETER

Thermometer is accurate from 100°F to 400°F / 50°C to 200°C. Easy-to-read dial. Adjustable pan clip. Durable stainless steel.
P/N 09-37475 .....**$14.40**

BLACK BARON FABRIC IRON

The Black Baron Iron was designed specifically for use on small aircraft. The exclusive "roll bars" fit into fillets and undercambers. The flat sole is for sheeted and open structures, and its beveled edges provide constant heat without marks. The toe is rounded and flat best performance. The coating is 100% blackstone making the iron slide like butter, even on tacky surfaces with almost no adhesive buildup. An advanced hi-tech thermostat reduces temperature drift to only 5° – Ordinary irons can vary up to 40°, causing surface bubbles. Get the best – get Black Baron.
110V.....P/N 09-37411 ..... **$23.85**

CUSTOM SEALING FABRIC IRON

This Teflon coated sealing works on a variety of coverings and has adjustable heat setting. It's an AC unit which operates at 170 watts. The temperature range is approximately 100-350°F. Has a 1-year warranty.
110V.....P/N 09-37400 .....**$27.75**
220V.....P/N 09-37401 .....**$48.85**

POLY-FIBER COLORS AVAILABLE

Each color group in chart below is listed from light to darker shades. Free Poly-Fiber color chart available on request. Color Card #50.

CLEAR
100.....(Aerothane Only)
WHITE
105.....Insignia White (Eagle White)
110.....Juneau White
117.....Glacier White (Federal 17038)
120.....Daytona White
CREAM
132.....Sun Valley Ivory
125.....Tucson Cream
131.....Diana Cream
YELLOW
242.....Ag Cat Yellow
136.....Lemon Yellow
139.....Federal Yellow
145.....Lockhaven Yellow
240.....Champion Yellow Titanine Yellow
140.....Orange Yellow (Schweizer Yellow) (Thrush Yellow) (Orange Yellow)
143.....Cub Yellow
146.....J3 OEM Yellow
ORANGE
142A .....Eagle Yellow (Orange)
182.....Pumpkin Orange
183.....International Orange
180.....Cruiser Orange
RED
189.....Madrid Red
187.....Eagle Red
191.....Pontiac Red (Toreador Red)
190.....Tennessee Red (Federal 11136) (Insignia Red)
195.....Santa Fe Red (Maroon)
196.....Boston Maroon
197.....Stinson Maroon
PURPLE
361.....Eagle Purple
BROWN
205.....Bermuda Tan
203.....Elsinore Brown
BLUE
165.....Lakeland Blue
170.....Bahama Blue
173.....AN Blue (True Blue) (Federal 15102)
318M.....Piper Trainer Blue
177.....Eagle Blue
176.....Insignia Blue (Federal 15044 Blue)
GREY/SILVER
210.....Polar Grey
220M.....Nevada Silver
213A .....Federal 36321 Grey
213.....Ag Cat Grey
219.....Jasper Grey
222M.....Rancho Silver
BLACK
215.....Dakota Black (Eagle Black)
MILITARY CAMOUFLAGE
212.....Oak Green
208.....Federal 14087 (Olive Drab)
208A .....Federal 24064 Green
GREEN
157.....Cuby Sport Trainer (Green)
151.....Everglades Green
156.....Portland Green
160.....Forest Green
GOLD
301M.....Reno Gold

TO ORDER POLY-FIBER COLORS:
Simply specify Poly-Fiber color number from chart above, either PolyTone or AeroThane, and quart or gallon.

IMPORTANT NOTICE: ***Poly-Fiber and Randolph Coatings are now manufactured by Consolidated Coatings Co.and current colors do NOT all match original Randolph colors. If matching an old color is required, please match it to a current color card or send in a sample of old color for custom matching.***

ALL mixed paints are special order and are non-returnable.

BLACK & DECKER THE CLASSIC IRON

With a classic design and a wide range of convenient features, The Classic™ iron brings simplicity and style back to ironing. A SmarTemp™ indicator light ensures you're ironing at the right temperature, while the 3-way auto shutoff provides added security and peace of mind. Wrinkle-Fighting Power. Aluminum Soleplate. Steam On/Off Button. Ironing Made Easy. 3-Way Auto Shutoff. Anti Drip. Fabric Guide. Button Groove. Pivoting Cord
P/N 09-00980 .....**$34.50**

IRON KIT

Includes large iron and standard small iron, a glass thermometer and silicone heat sink compound.
P/N 09-37420 ..... **$95.00**

SILICONE HEAT SINK COMPOUND

For more accurate thermal transfer during iron calibration. 1 oz. Syringe
P/N 09-37450 ..... **$15.80**

ENAMELS – REPAIR KITS

POLY-FIBER MARK II FOR METAL

(NOT FOR USE ON FABRIC) - Use Mark II for Metal is available in the same 50 colors as Poly-Fiber Poly-Tone and Randolph Colored Butyrate Dope. Mark II is used over primed metal or composite parts and is too brittle to be used over fabric. Mark II is a tough, long-lasting top-coat paint. Although Mark II is a two-part catalyzed paint, it is not catalyzed with an isocyanate, thus normal safety equipment (a charcoal filtered spray mask) is sufficient. You do not have to use a supplied air respirator when spraying Mark II. Packaging: Mark II comes in two-part kits: one part is a can of the colored paint; part two is a separate can with an equal volume of Mixing Liquid. Mixing Liquid contains the catalyst and thinner.

	QUART	GALLON
4 Whites:		
Insignia White	**$58.75**	**$192.95**
Juneau White	**$48.35**	**$147.45**
Ivory White	**$66.75**	**$200.50**
Daytona White	**$48.35**	**$147.45**
All other colors	**$66.75**	**$200.50**
Color Card #50		**FREE**

White
105 Insignia White
110 Juneau White
117 Glacier White
120 Daytona White

Cream
132 Sun Valley Ivory
125 Tucson Cream
131 Diana Cream

Yellow
242 Ag Cat Yellow
136 Lemon Yellow
139 Federal Yellow
145 Lockhaven Yellow
240 Champion Yellow
140 Orange Yellow
143 Cub Yellow
146 J3 OEM Yellow

Orange
142A Eagle Yellow Orange
182 Pumpkin Orange
183 International Orange
180 Cruiser Orange

Red
189 Madrid Red
187 Eagle Red
191 Pontiac Red
190 Tennessee Red
195 Santa Fe Red
196 Boston Maroon
197 Stinson Maroon

Purple
361 Eagle Purple

Brown
205 Bermuda Tan
203 Elsinore Brown

Blue
165 Lakeland Blue
170 Bahama Blue
173 AN Blue (True Blue)
318M Piper Trainer Blue
177 Eagle Blue
176 Insignia Blue

Grey/Silver
210 Polar Grey
220M Nevada Silver
213A Federal 36321 Grey
213 Ag Cat Grey
219 Jasper Grey
222M Rancho Silver

Black
215 Dakota Black

Military Camouflage
212 Oak Green
208 Federal 14087
208A Federal 24064 Green

Green
157 Cuby Sport Trainer
151 Everglades Green
156 Portland Green
160 Forest Green

Gold
301M Reno Gold

ALL mixed paints are special order and are non-returnable.

POLY-FIBER MARK II MIXING LIQUID

Mixing liquid is a combination of catalyst and thinner to be used only with Mark II for Metal paint. Included in Mark II kits above, but also available separately. See directions for mixing, thinning, and application above. Shelf life is two years in unopened package.

Quart P/N 09-03695 **$45.15**
Gallon P/N 09-03696 **$149.50**

POLY-FIBER MARK II THINNER

Used to thin Mark II for Metal paint after it has been combined with Mark II Mixing liquid. Included in Mark II kits above, but also available separately. thinning is generally unnecessary when Mark II is sprayed. However, if orange peel results, you may use Mark II Thinner with 5 parts mixed Mark II paint. Shelf life is four years in unopened storage.

Pint P/N 09-03697 **$9.00**
Quart P/N 09-03698 **$14.00**
Gallon P/N 09-03699 **$53.00**

POLY-FIBER REPAIR KIT

Includes:
1 ..... 1" Dope Brush
1 Pint ..... Poly-Tak
1 Quart ..... Poly-Spray
1 Quart ..... Poly-Brush
1 Quart ..... Reducer (Specify 65-75 or 8500)
1 Yard ..... Medium Fabric
4 Sheets ..... #400 Sandpaper
1 ..... 3" Curved Needle
10 Feet ..... 2" Surface Tape
1 ..... Thread

With #65-75 Reducer ..... P/N 09-06210 ..... **$93.75**
With #8500 Reducer ..... P/N 09-06215 ..... **$93.25**

CECONITE FABRIC REPAIR KIT

Ceconite 101 ..... P/N 09-00299 ..... **$147.95**

Kit Includes:

1	1" Brush	1 quart	286 Nitrate Thinner
1	3"Curved Needle	1 quart	Super Seam Fabric Cement
1	3M Wetordry Sandpaper 413	2 quarts	286 Butyrate Thinner
1 quart	G-6302 Rand Nitrate Dope Grain	1 quart	W-8350 Non-Taut Butyrate
1 quart	Ceconite 101 (3.4) 70"	1 Yard	Stits Hand Sewing Thread
1 quart	Rand O- Fill G6303	5 Yards	2" C102 Straight Tape 2"

Ceconite 102 ..... P/N 09-06225 ..... **$148.95**

Kit Includes:

1	1" Brush	1 quart	Nitrate Thinner
1	3" Curved Needle	1 quart	W-8350 Non-Taut Butyrate
1 quart	Ceconite 102 (2.6oz)	2 quarts	Butyrate Thinner 970
1 sheet	3M Wetordry Sandpaper 413	1 quart	Rand-O-Fill G-6303 QT
1 quart	Super Seam Fabric Cement	6 Yard	C102 Straight Tape 2"
1 quart	G-6302 N/T Nitrate Dope Grain	1	Ceconite Hand Thread 250

FABRIC COVERING TOOL KIT

This kit includes the items most commonly needed to complete your Poly-Fiber covering project.

Kit Includes: 4 - 1" Disposable Brushes, 3 - 2" Disposable Brushes, 4 - 2" opening 6" long Spring Clamps, 1 - CB-9 Pinking Shears, 10 - 1/2" Glue/Acid Brushes, 1 - Black & Decker Classic Iron, 1 Hobbico Fabric iron 110V, 1 - Silicone heat sink compound, 1 - Thermometer, 1 - 12" Straight Needle, 1 - 12" Curved Tip Needle, 1 - 6" Curved Needle, 2 - Gallon Paint Saver Lids, 1 - V-plore 330 series mask only, 1 - X-plore P100 Combo cart pkg. P/N 09-06230 ..... **$170.95**

CYCLONE PAINT SHAKER

Only the Cyclone has "Varishake", adjustable haking power that automatically compensate for can size. A Cyclone will give you superior mixing power to quickly and completely separate and disperse individual metallic and pigment particles so you can match intensity and pitch exactly. Then, at a touch, your Cyclone will give your batch an extra gentle agitation while you are painting, to hold the batch in the fully mixed condition. Cyclone helps eliminate problems with panel to panel uniformity. Features: • Clamps cans quickly, easily, positively. • Thoroughly mixes most products in 60 to 90 seconds. • Breaks up and resuspends well settled solids. • Accepts pint through four-liter cans, including U.S. gallon, Imperial gallons, square gallons, and aerosol cans. (Some 5.1 cans, also 1/4 and 1/2 pts. stacked or with spacers.). • Quiet. • Mounts solidly. • Rugged construction. Engineered and manufactured in the U.S.A.

Cyclone Shaker ..... P/N 09-00902 ..... **$662.00**
Cyclone Pedestal ..... P/N 09-00903 ..... **$134.95**

POLY FIBER COVERING KIT

The Poly Fiber Covering Kit from Aircraft Spruce includes all of the materials generally required to re-cover a wide variety of small aircraft (see list below) except the fabric. When you order this Covering Kit from Aircraft Spruce, you can also order the presewn fabric envelope or fabric yardage you will need to cover the aircraft. Aircraft Spruce is the best choice for your covering materials requirements. Count on Poly Fiber's largest distributor ...Aircraft Spruce!

This kit recommended for these aircraft:

- AERONCA CHAMPION
- AERONCA CHIEF
- CALLAIR
- CITABRIA
- FUNK
- INTERSTATE CADET
- PIPER J3, J4, J5, PA-11, PA-12, PA-14, PA-18, PA-25
- PORTERFIELD
- REARWIN
- TAYLORCRAFT

Note: This kit is for aircraft requiring about 45 yards of fabric. Quantity required vary by aircraft. Verify quantity shown are correct for your aircraft before ordering kit.

P/N 09-02046 ..... **$2,528.00**

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PRE-SEWN POLY-FIBER AND CECONITE ENVELOPES

Presewn envelopes are much easier to install than fabric yard goods. The envelopes are sewn to fit each individual surface depending upon the type of airplane. They can be placed on the surface like a sock. The envelopes are sewn using a special thread and special stitches. Fabric tapes must be placed over all seams. The seams can be sewn chordwise or spanwise for the wings. Individual Pieces Priced Per Each. On presewn envelopes, individual pricing is done by each piece. (i.e. If your airplane is a Stearman, you will have 4 wings. Price shown is per wing - $86.44. Your cost for all 4 would be: 86.44 x 4 =$345.76

PLEASE ORDER BY PART NUMBER - Basic part numbers (09-XXX) are shown in the chart. Complete the part number with 10 for wing, 20 for fuselage, 30 for aileron, 40 for stabilizer, 50 for elevator, 60 for flap, 70 for rudder, or 80 for complete set. ***After the P/N***, add -1 for Heavy Duty 3.4 oz Polyfiber Fabric, -3 for Medium Weight 2.6 oz. Polyfiber Fabric, -5 for Ceconite 101 fabric, or -6 for Ceconite 102 Fabric. ***Prices of envelopes vary based on Fabric selected.*** Example: Complete part number for a Stinson 108-1 complete set in Ceconite 102 fabric would be 09-67380-6. Note: All pre-sewn envelopes are non-cancelable, non-returnable special orders items.

PRICES SHOWN ARE FOR CECONITE 102 ONLY

Aircraft	Part No.	Wing (10)	Fuselage (20)	Aileron (30)	Stabilizer (40)	Elevator (50)	Flap (60)	Rudder (70)	Complete (80)
Aeronca 7AC 2place	09-641	$230.95	$365.95	$52.50	$48.00	$48.00		$45.25	$997.00
Aeronca 15AC	09-642		$399.95	$36.25	$26.50	$45.00		$43.25	$697.00
Beech D175/F17D/E17D	09-643	$213.95	$427.95	$48.25	$57.00	$33.25	$48.25	$48.25	$1,149.00
Beech D18/AT1/Twin	09-644			$60.00		$96.00	$84.00	$60.00	$474.95
1Bellanca14-19/14-13	09-645		$375.95						
Bellanca Viking	09-646		$350.95	$59.25	$52.50	$36.25	$40.75	$62.50	$915.00
Cessna 120/140/170	09-647								$417.95
Christen Husky	09-648	$244.95	$240.95	$36.25	$33.25	$36.25		$29.75	$1,108.00
Citabria 7, 8	09-649	$230.95	$365.95	$52.50	$52.50	$52.50	$48.25	$42.50	$1,146.00
Douglas DC-3	09-650			$209.95		$175.95		$127.95	$576.00
Ercoupe	09-651	$182.95							$365.95
Fairchild 24G/RW	09-652	$261.95	$281.95	$59.25	$75.25	$33.50		$103.95	$931.00
Fairchild 19/23/26	09-653		$172.95	$33.50	$33.50	$52.50		$103.95	$593.00
Funk			$266.95						
Great Lakes 2T1	09-654	$147.95	$313.95						$590.00
Howard DGA	09-655		$240.95						
Luscombe	09-656	$178.95							$339.95
Maule 4	09-657		$255.95		$48.00	$48.00		$48.00	$541.00
Maule 5	09-658		$374.95						
Navy N3N	09-659	$153.95	$204.95						$1,488.00
N. American AT6/SNJ	09-660			$63.50		$69.75		$113.95	$242.95
N. American P51	09-661							$33.50	
Piper J2/3	09-662	$216.95	$365.95	$39.50	$52.50	$52.50		$48.00	$1,052.00
Piper J5/PA 12/14	09-663	$216.95		$31.50	$52.50	$52.50		$48.00	$1,049.00
Piper PA 15/17	09-664	$153.95	$365.95	$48.00	$52.50	$52.50		$48.00	$737.00
Piper PA16	09-665	$221.95	$330.95	$53.00	$40.00	$53.00		$53.00	$659.00
Piper Colt	09-666	$164.95	$313.95	$43.75	$52.50	$52.50		$52.50	$971.00
Piper PA20/22	09-667	$164.95	$365.95	$52.50	$52.50	$52.50	$48.00	$52.50	$956.00
Ryan PT22/STA	09-702	$161.95		$35.75	$48.00	$48.00		$48.00	$766.00
Schweizer 119	09-668	$153.95	$255.95	$25.50	$38.50				$813.00
Schweizer 126	09-669	$63.50	$213.95	$52.50	$69.75	$69.75		$52.50	$510.00
Schweizer 222	09-670	$230.95	$255.95	$52.50	$69.75	$46.50	$31.50		$910.00
Schweizer 233	09-671		$365.95					$43.75	
Stearman PT13/17	09-672	$179.95	$278.95	$96.50	$69.75	$69.75		$69.75	$1,097.00
Stinson 108-1, 2, 3	09-673	$182.95	$399.95						$852.00
Stinson 10A/105/HW75	09-674	$127.95	$383.95	$22.95	$25.50	$82.50	$35.50	$38.50	$1,163.00
Stinson L5	09-675	$115.95	$270.95	$38.50	$51.25	$51.25	$38.50	$36.00	$864.00
Taylorcraft	09-676	$240.95	$365.95	$48.00	$48.00	$48.00		$48.00	$976.00
Waco UPF7	09-677	$128.95	$205.95		$25.50	$25.50		$25.50	$567.00
J-3 Interior	09-678								$178.95
Agricultural Aircraft	**Part No.**	**Wing (10)**	**Fuselage (20)**	**Aileron (30)**	**Stabilizer (40)**	**Elevator (50)**	**Flap (60)**	**Rudder (70)**	**Complete (80)**
1Ag Cat	09-679				$38.50	$65.25		$79.25	$282.95
Airtractor	09-680							$77.25	
Callair A9/A9B	09-681	$128.95	$115.95		$25.50	$25.50			$451.95
Piper PA25/Pawnee	09-682	$227.95	$179.95	$48.00	$52.00	$48.00	$48.00	$48.00	$1,008.00
Snow	09-683	$231.95	$205.95	$64.25	$38.50	$38.50	$64.25	$38.50	$1,071.00
Snow C/D	09-684				$38.50	$38.50		$38.50	$231.95
Thrush	09-685				$130.95	$220.95		$48.00	$644.00
1Weatherly	09-686			$38.50				$64.25	$244.95
Homebuilts	**Part No.**	**Wing (10)**	**Fuselage (20)**	**Aileron (30)**	**Stabilizer (40)**	**Elevator (50)**	**Flap (60)**	**Rudder (70)**	**Complete (80)**
Acro Sport I	09-687	$77.25	$154.95	$25.50	$38.50	$38.50		$19.00	$1,123.00
Acro Sport II	09-688	$90.00	$296.95	$25.50	$38.50	$65.25		$48.00	$852.00
Avid Flyer	09-689	$115.95	$296.95		$65.25	$25.50		$25.50	$515.00
Baby Great Lakes	09-690	$82.50	$90.00		$6.00	$12.50		$25.50	$334.95
Bowers Fly Baby	09-691	$196.95	$141.95	$48.00	$62.00	$52.00		$52.00	$502.00
Christen Eagle 1 & 2	09-692	$128.95	$196.95	$25.50	$25.50	$25.50		$25.50	$696.00
Corbin Baby Ace	09-693	$64.25	$115.95		$38.50	$38.50		$38.50	$425.95
Kitfox	09-694	$227.95	$205.95		$25.50	$25.50		$25.50	$835.00
Pitts S1S/S1C	09-695	$140.95	$192.95	$30.75	$48.00	$48.00		$48.00	$722.00
Pitts S2S/S2A	09-696	$199.95	$334.95	$12.50	$25.50	$25.50		$25.50	$1,049.00
Smith Miniplane	09-697	$147.95	$102.95		$12.50	$12.50		$25.50	$380.95
1Sonerai II	09-698		$253.95		$52.75	$46.25		$33.25	$528.00
Starduster I	09-699	$64.25	$90.00	$12.50	$25.50	$25.50		$25.50	$600.00
Starduster II	09-700	$166.95	$201.95	$38.50	$54.50	$62.00		$62.00	$738.00
Steen SkyBolt	09-701	$147.95	$115.95	$25.50	$25.50	$25.50		$25.50	$759.00

COMPLETE SETS

Antiques	Part #	Price
Cessna Airmaster	09-705	$709.00
BMooney Mite	09-717	$296.95
Cessna T50/UC78	09-706	$1,252.00
AN. American B25	09-718	$192.95
Commonwealth	09-707	$1,046.00
Porterfield 35/70	09-719	$644.00
BCulver Cadet	09-708	$399.95
Rearwin Sportster	09-721	$657.00

Antiques	Part #	Price
Skyranger	09-722	$990.00
ADeHavilland Heron	09-710	$386.95
Stinson 10/10A/10S	09-723	$1,218.00
Fleet	09-711	$593.00
Stinson AT19/V77	09-724	$1,771.00
Funk	09-712	$1,073.00
Stinson SR5C	09-725	$1,174.00

Model	Part #	Price
BGrumman TBMS	09-713	$412.95
Stinson SR9	09-726	$1,325.00
BMeyer OTW	09-714	$576.00
Taylorcraft 15	09-727	$1,046.00
Monocoupe	09-715	$606.00
DTravel Air 4000	09-728	$309.95
AMooney 20A	09-716	$72.00
Piper PA-18	09-450	$1,220.00

Homebuilts	Part #	Price
CCassutt 111M	09-730	$141.95
AChipmunk	09-731	$179.95
Corbin Jr. Ace	09-732	$399.95
EAA Bipe	09-733	$780.00
Fokker Tri-Plane	09-734	$696.00
Meyer Toot	09-735	$709.00
Pietenpol	09-736	$838.00
Stampe SV4C	09-737	$1,132.00
DVolksplane I	09-738	$283.95
DVolksplane II	09-739	$425.95
CWittman Tailwind	09-740	$425.95

[1]Does not include fabric for plywood wings - order separately. For individual wing envelope pricing, divide the number of wings on your aircraft into the wing price. [A]Tails Only [B]Plywood Or Metal Fuselage

ULTRALIGHT SAILS

Our sails are made in the United States by a top flight sail loft. These sails are made from the highest quality 3.9 oz. Dacron, many of them from the original OEM sail patterns. These sails are guaranteed to fit properly. All sail sets come complete with tail feathers and fuselage covers, except where noted. All sail orders are on custom-fabricated basis. Therefore, please allow an average of three weeks for delivery. There are no refunds on sail sets unless they are defective. Non-refundable 100% deposit or credit card purchase required. A wide selection of sail colors are available. Contact Aircraft Spruce for details on colors, patterns, and custom work. Prices subject to change without notice.

Model	Part No.	Price
Teratorn Aircraft		
Tierra 2-Place Sail set(excludes cabin enclosure)	09-01780	**$1,845.00**
Tierra Complete Sail Set	09-01781	**$1,856.00**
Tierra Wing Surface set	09-01782	**$1,345.00**
T/A Complete Sail Set	09-01783	**$1,198.00**
T/A Wing Surface Set	09-01784	**$1,031.00**
Teratorn W/S Complete Sail Set	09-01785	**$835.00**
Tierra Aileron Surface Set	09-01786	**$227.95**
Elevator Surface Set	09-01787	**$155.95**
Tierra Horizontal Stabilizer	09-01788	**$194.95**
T/A Horizontal Stabilizer	09-01791	**$95.00**
Tierra Vertical Stabilizer	09-01792	**$85.00**
T/A and Tierra Rudder	09-01793	**$122.95**
Star Flight Aircraft		
TX 1000 and 2000 Complete Sail Sets	09-01794	**$1,252.00**
TX 1000 and 2000 Wing Surface Sets	09-01795	**$1,136.00**
Elevator Surface Set	09-01796	**$100.00**
Horizontal Stabilizer	09-01797	**$105.95**
Rudder Surface	09-01798	**$95.00**
Hurricane, Avenger & Phantom Aircraft Complete Sail Set	09-01799	**$1,447.00**
Wing Surface Set	09-01801	**$1,197.00**
Aileron Surface Set	09-01802	**$270.00**
Elevator Surface Set	09-01803	**$140.00**
Horizontal Stabilizer Surface Set	09-01804	**$140.00**
Upper Vertical Stabilizer	09-01805	**$80.00**
Lower Vertical Stabilizer	09-01806	**$50.00**
Rudder Surface	09-01807	**$105.95**
Advanced Aviation		
Cobra A or B Complete Sail Set	09-01855	**$1,724.00**
Cobra A or B Wing Surface Set	09-01856	**$1,445.00**
Cobra Aileron Surface Set	09-01857	**$250.95**
Cobra Horizontal Stabilizer	09-01858	**$165.95**
Cobra Elevator Surface Set	09-01859	**$140.00**
Cobra Rudder Surface	09-01860	**$115.95**
Explorer Complete Sail Set	09-01861	**$1,776.00**
Explorer Aileron Surface Set	09-01862	**$175.00**
Explorer Wing Surface Set	09-01863	**$1,327.00**
Explorer Wing Flap Set	09-01864	**$160.95**
Explorer Horizontal/Elevator Set	09-01865	**$275.00**
Explorer Vertical Stabilizer	09-01866	**$140.00**
Explorer Rudder Surface	09-01867	**$150.95**
Explorer Gap Cover	09-01868	**$95.00**
Buccaneer 2 & Carrera 180	09-01869	**$2,337.00**
Buccaneer 2 Wing Only	09-01870	**$1,223.00**
Buccaneer 2 Aileron Set	09-01871	**$225.00**
Buccaneer 2 Vertical Stabilizer	09-01872	**$179.95**
Buccaneer 2 Rudder Surface Set	09-01873	**$150.95**
Buccaneer 2 Stabilizer/Elevator	09-01874	**$280.00**
Buccaneer 2 Gap Cover	09-01876	**$95.00**
Buccaneer 2 Flap Set	09-01877	**$170.00**
Buccaneer SX Sail Set	09-01878	**$2,156.00**
Carrera Complete Sail Set(Includes Pylon Cover)	09-01879	**$2,245.00**
Carrera Complete Sail Set	09-01880	**$1,249.00**
Carrera Wing Surface Set	09-01881	**$225.00**
Carrera Wing Surface Set	09-01882	**$669.00**
Carrera Wing Flap Set	09-01883	**$173.95**
Carrera Aileron Set	09-01884	**$150.95**
Carrera Pylon Fairing	09-01885	**$281.95**
Quicksilver Aircraft		
MX Complete Sail Set	09-01736	**$975.00**
MX Wing Surface Set	09-01737	**$729.00**
MX Qualifier Complete Sail Set	09-01738	**$1,246.00**
MX Qualifier Wing Set	09-01739	**$1,089.00**
MX Tapered Stabilizer Option	09-01763	**$60.00**
MX Horizontal Stabilizer	09-01765	**$80.00**
MX Rudder Surface	09-01768	**$95.00**
MX-MXL Elevator Set	09-01764	**$95.00**
MX2 Complete Sail Set	09-01740	**$1,015.00**
MX2 Wing Surface Set	09-01741	**$744.00**
MX2 H.P. Complete Sail Set (X-tra Ribs/ Tapered Stabilizer)	09-01742	**$1,150.00**
Quicksilver Weight Shift Rudder	09-01769	**$85.00**
Quicksilver Weight Shift Complete Sail Set	09-01743	**$875.00**
MXL Complete Sail Set	09-01744	**$1,595.00**
MXL Wing Surface Set	09-01745	**$1,250.00**
MXL Aileron Surface Set	09-01766	**$259.00**
MXL Tapered Stabilizer	09-01767	**$100.00**

Model	Part No.	Price
MXL Sport 2 Complete Sail Set	09-01746	**$1,750.00**
MXL Sport 2 Wing Sail Set	09-01747	**$1,425.00**
MXL Super Sport Complete Sail Set	09-01748	**$1,650.00**
MXL Super Sport Wing Sail Set	09-01749	**$1,299.00**
Sprint Complete Sail Set	09-01751	**$1,225.00**
Sprint Wing Sail Set	09-01752	**$859.00**
Sprint 2 Sail Set	09-01755	**$1,335.00**
Sprint 2 Wing Set	09-01760	**$965.00**
GT 400 Complete Sail Set(Includes Pylon Cover)	09-01761	**$2,315.00**
GT 500 Complete Sail Set	09-01790	**$2,306.00**
GT 400 Wing Surface Set	09-01770	**$1,265.00**
GT 500 Wing Surface Set	09-01771	**$1,335.00**
GT 400/500 Wing Flap Set	09-01772	**$215.00**
GT 400/500 Aileron Set	09-01773	**$215.00**
GT 400 Pylon Fairing	09-01774	**$525.00**
GT 400/500 Stabilizer/Elevator Set	09-01775	**$275.00**
GT 400 Rudder	09-01776	**$145.00**
GT 500 Rudder	09-01777	**$245.00**
GT 400 Vertical Stabilizer	09-01778	**$50.00**
GT 500 Vertical Stabilizer	09-01779	**$1,447.00**
GT 500 Door Set (Left & Right)	09-01762	**$825.00**
Wizard Aircraft		
Weight Shift Complete Sail Set	09-01808	**$1,058.00**
J-3 Complete Sail Set	09-01809	**$1,169.00**
J-3 Wing Surface Set	09-01810	**$965.00**
T-38 Complete Sail Set	09-01811	**$1,350.00**
T-38 Wing Surface Set	09-01812	**$1,170.00**
J-3 & T-38 Elevator Surface Set	09-01813	**$90.00**
J-3b & T-38b Elevator Surface Set	09-01814	**$90.00**
J-3 & T-38 Rudder A or B	09-01815	**$95.95**
Flight Star Aircraft		
Flight Star Complete 2 Place Sail Set	09-01816	**$2,162.00**
Flight Star Complete Single Place Sail Set	09-01817	**$1,614.00**
Flight Star Wing Surface Set	09-01818	**$1,090.00**
Flight Star Aileron Surface Set	09-01819	**$305.95**
Flight Star Elevator Surface Set	09-01820	**$143.95**
Flight Star Horizontal Stabilizer Surface	09-01821	**$139.95**
Flight Star Vertical Stabilizer	09-01822	**$75.00**
Flight Star Rudder Surface	09-01823	**$95.00**
Flight Star 2-Place Left & Right Wing	09-01824	**$1,327.00**
Rotec Rally Aircraft		
Rotec Ralley 2b & Champ Complete Sail Set	09-01826	**$1,075.00**
Rotec Ralley 2b & Champ Wing Surface Set	09-01827	**$890.00**
Rotec Ralley Sport Complete Sail Set	09-01828	**$1,115.00**
Rotec Ralley Rally 3 Complete Sail Set	09-01829	**$1,390.00**
Rotec Ralley Rally 3 Wing Surface Set	09-01830	**$1,235.00**
Rotec Ralley Rally Wing Tip Option	09-01831	**$90.00**
Rotec Ralley 2b & Champ Elevator Surface Set	09-01832	**$90.00**
Rotec Ralley 2b & Champ Horizontal Stabilizer	09-01833	**$90.00**
Rotec Ralley Sport Elevator Set	09-01834	**$110.95**
Rotec Ralley Sport Rudder	09-01835	**$105.95**
BI-RD Aircraft		
BI-RD Complete Sail Set	09-01836	**$1,526.00**
BI-RD Wing Surface Set	09-01837	**$1,218.00**
Aileron Surface Set	09-01838	**$140.00**
Elevator Surface Set	09-01839	**$95.00**
Horizontal Stabilizer Surface Set	09-01840	**$95.00**
Vertical Stabilizer Surface	09-01841	**$45.10**
BI-RD Rudder	09-01842	**$85.00**
Condor Aircraft		
Condor Complete Sail set	09-01843	**$1,160.00**
Condor Wing Surface Set	09-01844	**$940.00**
Elevator Surface Set	09-01845	**$105.95**
Horizontal Surface	09-01847	**$105.95**
Rudder Surface	09-01848	**$90.00**
Weedhopper Aircraft		
Weedhopper Super Nova Set	09-01849	**$1,620.00**
Weedhopper C or B Complete Sail Set	09-01850	**$1,475.00**
Weedhopper C or B Wing Surface Set	09-01851	**$1,295.00**
Weedhopper Stabilizer/Elevator Surface Set	09-01852	**$290.00**
Weedhopper Sub Fin Surface	09-01853	**$55.00**
Weedhopper Rudder Surface	09-01854	**$85.25**

FOR A COMPLETE LISTING OF ULTRALIGHT SAILS, COLOR CHARTS, AND DIAGRAMS, PLEASE VISIT www.aircraftspruce.com

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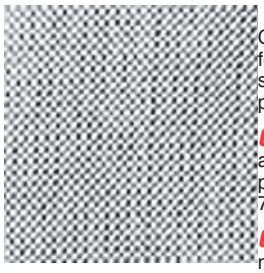
CECONITE – STAR GLOSS



CECONITE FABRIC

Ceconite, 100% polyester fabric is approved for use on most certified aircraft. To be sure to check the master eligibility list in the procedure manual.

CECONITE 101 (3.4 oz.) - Much stronger and far more durable than cotton. It has a probable lifetime durability.
70" Width .. P/N 09-00700 ..**$13.30 /lin. yd**

CECONITE 102 (2.6 oz.) - A fine weave medium weight fabric to be used as a replacement for intermediate weight cotton fabric as described in TSO-C15. 70" Width ..... P/N 09-00900 .....**$11.95 /lin. yd**

UNCERTIFIED LIGHT - 1.7 oz., lightweight fabric recommended for covering ultralight aircraft. This fabric will be unstamped. It is not approved for certified aircraft except over plywood surfaces.
66" Width ..... P/N 09-00921 .....**$8.40 /lin. yd**

SUPER SEAM FABRIC CEMENT

New Super Seam Fabric Cement. Not compatible with original nitrate-based Super Seam. Used to attach Ceconite Fabric to structures. High solids nitrate based cement approved in the Ceconite STC.

FLAMMABLE

1 Qt. ..... P/N 09-18100 ..... **$27.25**
1Gal..... P/N 09-18200 ..... **$99.80**

POLYESTER THREAD & CORD
(FAA APPROVED)

CECONITE - D693 waxed, 600 yds.
P/N 09-41300-1 ..... **$45.25**

CECONITE - Flat Braided, 500 yds.
P/N 09-00822 ..... **$45.25**

HAND SEWING THREADS - 250 yds
P/N 09-41400 ..... **$11.75**

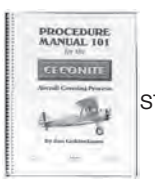
MACHINE SEWING THREAD - 5600 yds..... P/N 09-41500.. **$15.25**

INTERIB BRACING TAPE - 36 yd roll, 1/2"w .... P/N 09-41560.. **$16.70**

CECONITE REINFORCING TAPES
(FAA APPROVED)

Polyester twill with adhesive back. Applied under riblacer, server, or pop rivet to prevent fabric from ripping. 60 yd. length.

1/4" width ..... P/N 09-41230 ..... **$55.00**
3/8" width ..... P/N 09-41238 ..... **$56.60**
1/2" width ..... P/N 09-41212 ..... **$57.95**



CECONITE PROCEDURE MANUAL

STC manual for applying ceconite materials.
P/N 09-01000 ..... **$10.00**

STAR-TAK FABRIC CEMENT

Star-Tak is a vinyl-based cement that is used to cement aircraft fabric to steel, aluminum, wood, or composite surfaces. It is also used to join fabric together in overlapped cemented seams. It dries to the touch in 15 to 20 minutes in normal temperatures. In two hours, it develops a bond strong enough to allow heat shrinking the fabric.

Quart ..... P/N 09-02583..... **$27.25**
Gallon..... P/N 09-02584..... **$99.80**

STAR GLOSS GRAY SEALERS

Gray Sealer is used to seal Ceconite fabric prior to spraying Silver Urethane Fabric Primer. This coat prevents pinholes in the Silver Urethane Fabric Primer. Gray Sealer is also used to apply Ceconite finishing tapes. It is tinted translucent gray to help see it when applied.

Quart ..... P/N 09-02577..... **$25.55**
Gallon..... P/N 09-02578..... **$85.00**
5 Gallon..... P/N 09-02579..... **$420.00**

STAR GLOSS SEALER REDUCER

Thinner for Gray Sealer. Mix three parts Gray Sealer to one part Sealer Reducer. Shelf Life: Four years, unopened in protective storage. Not affected by freezing.

Quart ..... P/N 09-02580..... **$15.40**
Gallon..... P/N 09-02581..... **$48.25**
5 Gallon..... P/N 09-02582..... **$230.90**

CECONITE TAPES

This FAA approved process utilizing Ceconite polyester fabrics and the Randolph line of finishes assures a beautiful, durable, weather-resistant cover job every time. The Ceconite cover process was issued Supplemental Type Certificate No. SA4503NM in 1997, and this number will apply to all aircraft. Note: Only Randolph materials may be used through the topcoat paint to comply with STC requirements. Randolph finishes are required for approval. Ceconite is approved for use on most certified aircraft. To be sure, check the Approved Model List in the latest revision of Procedure Manual 101 for the Ceconite Aircraft Covering Process.

LINEAR STRAIGHT TAPES (CECONITE 102)

Width	*Roll*	*Part No.*	*Price*
1"	50 yds	09-41010	**$21.35**
1.5"	50 yds	09-41015	**$28.65**
2"	50 yds	09-41020	**$34.75**
3"	50 yds	09-41030	**$51.90**
4"	50 yds	09-41040	**$60.85**
6"	50 yds	09-41060	**$72.60**

LINEAR PINKED TAPES (CECONITE 102)

1"	25 yds	09-41111	**$16.05**
1.5"	25 yds	09-41116	**$17.65**
2"	50 yds	09-41120	**$30.20**
2"	25 yds	09-41125	**$23.20**
3"	25 yds	09-41135	**$27.80**
4"	25 yds	09-41145	**$32.40**
6"	25 yds	09-41166	**$45.00**

LINEAR PINKED TAPES (CECONITE LIGHT)

1"	25 yds.	09-41251	**$16.05**
1.5"	25 yds.	09-41255	**$17.65**
2"	25 yds.	09-00298	**$23.20**
2"	50 yds.	09-41252	**$30.20**
3"	25 yds.	09-41253	**$27.80**
4"	25 yds.	09-41254	**$32.40**
6"	25 yds.	09-41256	**$45.00**

BIAS PINKED TAPES

For use on curved edges.

2"	25 yds.	09-41165	**$32.45**
3"	25 yds.	09-41170	**$46.15**
4"	25 yds.	09-41175	**$57.35**

STAR GLOSS SILVER URETHANE FABRIC PRIMER

Silver Urethane Fabric Primer is a polyurethane product that serves two purposes: to build the coating over the fabric to prepare for paint, and to protect the fabric from UV radiation. Silver Primer uses a metallic-like flake additive. This proven system results in a positive metallic light block and reflection to both visible and invisible UV without relying on chemical UV light blockers.

Quart ..... P/N 09-02585..... **$28.75**
Gallon..... P/N 09-02586..... **$101.20**

STAR GLOSS SILVER URETHANE FABRIC PRIMER CATALYST

Silver Urethane Fabric Primer Catalyst is the only catalyst that can be used with Silver Urethane Fabric Primer. Note that unlike other catalysts it is mixed at a four to one ratio of primer to catalyst.

1/2 Pint..... P/N 09-02587..... **$34.50**
Quart..... P/N 09-02588..... **$78.20**

STAR GLOSS SILVER URETHANE FABRIC PRIMER REDUCER

A special blend of solvents specifically formulated for use with Ranthane and Star Gloss Silver Urethane Fabric Primer.

Gallon..... P/N 09-02590..... **$31.00**

STAR GLOSS AIRCRAFT COVERING PROCESS PROCEDURE MANUAL

114 pages of step-by-step instruction on how to cover your airplane with the Ceconite/Star Gloss system, helpful photos, great nostalgic cartoons, extra words of wisdom, and a delightful sense of humor. Includes catalog of products, everything from fabrics to top coat paint. P/N 09-02576..... **$10.00**

FABRIC – TAPES

DACRON TAPE / PEEL PLY

A layer of 2.7 oz. Dacron fabric strips or tape laminated into a layup as if it were an extra ply of glass. The peel coat wets out with epoxy like glass cloth and cures along with the rest of the layup. However, the Dacron does not adhere structurally to the glass and when peeled away it leaves a surface ready for glass-to-glass bonding without sanding.
Requirements for Small Aircraft: For Expermental Aircraft.
• 3 Rolls of 1" x 50 Yds. Tape • 2 Rolls of 2" x 50 Yds. Tape • 1 Roll of 3" x 50 Yds. Tape • 1 Roll of 4" x 50 Yds. Tape

Width	Smooth Edge		Pinked	
50 Yd Roll	P/N 09-	Price/ Roll	P/N 09-	Price/ Roll
1"	15000	**$6.50**	15450	**$6.90**
2"	15100	**$14.25**	15500	**$13.75**
3"	15200	**$21.75**	15600	**$21.75**
4"	15300	**$28.75**	15700	**$29.00**
6"	15400	**$44.25**	15800	**$44.25**

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

DACRON FABRIC / FULL WIDTH PEEL PLY

Poly/Dacron blend is excellent as peel ply for composite lay-ups, and for covering expermental aircraft.
2.7oz. 64-66" #604 ....P/N 09-00300 ....**$4.75/yd.**
1.8 oz. X 64" #611 .....P/N 09-00100 ....**$3.90/yd.**
2.97 oz. X 62" #605 ...P/N 09-00500 ....**$3.95/yd.**

DACRON BIAS TAPE
FOR HOMEBUILT AIRCRAFT

Bias-cut tapes (weave 45° to edge) are especially useful for trimming compound curves on components such as wing tips and tail surfaces. Bias tape will stretch to conform to the contour without wrinkles, without heat-shrinking edges or cutting and notching to remove excess fabric. Stretching reduces the width about 35% so 3" tape should be used to finish areas normally covered with 2" tape. 2" Bias tape will pull to about 1-3/8" width.
2" x 50 Yd . Roll .....P/N 09-16300 ..... **$46.75**
3" x 50 Yd. Roll .....P/N 09-16400 ..... **$59.95**
NOT FOR USE ON CERTIFIED AIRCRAFT

COTTON REINFORCING TAPES

Tape	Size	Part No.	Price/Roll
DDD-T-86F	1/2" x 36 Yds.	09-17000	**$19.70**

THREADS & CORDS

Only synthetic threads and rib lacing cords should be used with Dacron covering to insure uniform strength. Waxed linen rib cord Conforms to PMA# TQ0075NM and STC# SA1008WE.

Material	Quantity	Part No.	Price
Dacron Machine Sewing Thread	500 Yds.	09-03900	**$15.25**
Dacron Hand Sewing Thread	250 Yds.	09-04000	**$11.75**

FAB-TAC FABRIC CEMENT

A superior quality cement for strong splice joints. Use to cement tapes, rings and grommets to fabric cover.
1 Pint ..... P/N 09-17800 ..... **$12.90**
1 Qt..... P/N 09-17900 ..... **$17.75**
1 Gal. ..... P/N 09-18000 ..... **$56.75**

CLOTH MASKING TAPE

Has many uses in aircraft maintenance work. Strip over sharp corners under fabric. Strips on parts under doped fabric will prevent fabric from sticking to parts. Pressure-sensitive adhesive backing. Easily applied, easily removed. Leaves no residue. Should not be applied below 32°F.
1" x 60 yds. ..... P/N 09-17100..... **$9.75**

DIAMOND BACK TAPE

Advantages: • Save TIME with easy installation • Save OPERATING COSTS with improved energy efficiency • Save REPAIR COSTS with long lasting quality at high temp • Save ON PRICE with quantity discounts

CHARACTERISTICS	
Fibers	Ceramic
Application	Insulation with bolt holes
Weave Style	Drop Warp
Thickness	.125 in
Bolt Diameter	Up to .75 in
Continuous Service	1,800°F
Maximum Use	2,300°F
Durability	High Strength
Coating	Plain or Vermiculite Avail.

Type	Width	Thickness	Roll Length	Part No.	Price
1/8" Thickness - Plain	2"	.125"	100ft.	05-03510	**$106.75**
1/8" Thickness - Vermiculite Coated	2"	.125"	100ft.	05-03511	**$133.90**

SOLDERING IRON

Use to melt drain holes and inspection rings in polyester fabric. 35 Watt, 900°F tip. Tip is replaceable & long life coated.
P/N 09-37430 ..... **$77.25**

HEAVY-DUTY HEAT GUN

This soft air velocity of this heat gun increases the surface temperature to the required working temperature much faster than conventional heat guns and maintains a higher temperature for faster completion of the application. Features double insulation, two temperature selections of 570°F and 1000°F, and a unique impact resistant heating element. Operates on 120V AC at 11.6 amps. Air volume 14.8 cu. ft. per minute. Wt. 1-1/2 lbs. ..... P/N 09-00354 ..... **$99.75**

DELUXE HEAT GUN

This handy tool gives you a fast, drum-tight, mirror smooth finish. It's ideal for heat-shrinkable covering films. Get a professional finish with less time and effort. 1-year warranty.
Features: • Includes removeable wide nozzle • 1000-watt heating power • Heavy-duty fan motor • Textured, composite hand-grip • 3-position, hot/cool/off switch • Adjustable air intake baffle • Weight: 15 oz • 5.5' AC power cord with 2 prong plug
P/N 12-00527 ..... **$27.50**

POCKET THERMOMETER

This Pocket thermometer can eliminate 80% of your iron-on covering problems. These problems are caused by your iron's temperature varying as much as 60° while in use, which causes bubbles and sags. If you are using an iron other than Black Baron, this thermometer is a must in monitoring iron temperatures.
P/N 09-37500..... **$7.50**

MAULE FABRIC TESTER

A fine quality tool to test fabric covered aircraft for minimum FAA requirements without removing or punching holes in fabric. Also used to test struts for inside rusting as required by FAA on all Piper aircraft with struts.
P/N 09-14900 ..... **$294.00**

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PTI SPECIALTY PAINTS

PTI Specialty Paint & Coatings, exclusively from Aircraft Spruce & Specialty Co., are featured in space, aerospace and aviation applications throughout the world -- the Space Shuttle and Space Station projects, the Patriot and Stinger missile projects and in refurbishing of landing gear for commercial aircraft. Now, Aircraft Spruce brings PTI products to General and Sport Aviation.

See all PTI Paint Products at www.aircraftspruce.com

PTI COMPLETE SPECIALITY PAINT SYSTEM

1.Paint Strippers
2.Primers: Acid Etch and Epoxy
3.Topcoats: A chemical resistant Polyurethane with UV protectors
4.PTI Polykick™ to accelerate drytime
5.Cleaners

Note: Strong professional recommendation – These products have been specifically formulated to work together. Maximum adhesion, durability and performance is achieved when these products are applied as a system. To Purchase Your Specialty Paint System Simply tell us the make and model of your aircraft, and the Federal 595 Color – see chart on our website at: www.aircraftspruce.com Need a custom color that is not on the chart? – Ask us, we can help you with that too.

SOLVENTS, REMOVERS, & REDUCERS

PTI-MEK is virgin (not recycled) MEK that may be used to clean and prepare the substrate for painting. PTI-MEK may also be used to clean brushes, paint guns and other painting tools. PTI-Acetone is virgin (not recycled) Acetone that may be used to remove lacquer finishes, for cleanup after painting, and to soften lacquers or acrylics that set up in spray guns or hoses. Acetone is not effective on urethanes and should not be used. Use MEK for cleanup on urethane products. Use only virgin acetone. Recycled acetone can damage virtually anything to which it is applied. H. PTI-Toluene is virgin (not recycled) toluene that may be used as a reducer for enamels and other coatings in the alkyd family. Do not use with PTI chromate and chromate free primers. Instead, use PT-1022X66 reducer. PT-1045 is a reducer specially formulated to compliment the PTI Air Dry Wash Primer. PT-1022X66 is a reducer specially formulated to compliment the PTI chromate and chromate free primers. PT-1003 Type II is a reducer specially formulated to compliment the PTI Epoxy primer.

Description	Part No.	Price
PRB Paint Remover Drum	09-00967	**$2,218.00**
Alkyd&Lacquer Thinner Qt.	09-00943	**$21.25**
Alkyd&Lacquer Thinner Gal.	09-00942	**$45.75**
Mek Qt.	09-00972	**$17.95**
Mek Gal.	09-00971	**$32.50**
Acetone Qt.	09-00974	**$17.95**

Description	Part No.	Price
Acetone Gal.	09-00973	**$32.50**
Toluene Qt.	09-00976	**$18.25**
Toluene Gal.	09-00975	**$27.75**

EPOXY PRIMER

PTI's Epoxy Primer is a low VOC (volatile organic compounds) epoxy polyamide solvent primer which conforms to the military specification MIL-P-23377 Rev. E. This coating is highly recommended for use on aluminum and all plated or unplated metallic surfaces to insure maximum protection against corrosion. This primer may be used as an interior or exterior primer that insures maximum adhesion of any paint or lacquer finish coats.

NOTE: Before applying, refer to the technical data sheet for this product.
****Must be shaken for 15 min. on a paint shaker.***

Description	Part No.	Price
Yellow QT KIT	09-00934	**$82.50**
Yellow GAL KIT	09-00932	**$228.95**
Green QT KIT	09-00935	**$82.50**
Green GAL KIT	09-00933	**$228.95**
Epoxy Thinner QT	09-00937	**$21.25**
Epoxy Thinner Gal	09-00936	**$45.50**

ACID ETCH PRIMER

PTI's Air Dry Wash Primer requires no sanding and is a polyvinyl butyral zinc chromate formulation that may be used to prime all plain or plated metallic surfaces. Priming surfaces with this primer will ensure maximum adhesion of all bake or air-dry finish coats (including lacquer finish coats). The finely ground emulsions of zinc chromate pigment, resins and phosphoric acid hardeners are virtually non-settling. For the best results follow the instructions on the technical data sheet. This primer exceeds the performance standards specified in Department of Defense specification (DOD) 15328 and Military Specification MIL-8514.

Description	Part No.	Price
Yellow Acid Etch Primer QT.	09-00948	**$31.25**
Yellow Acid Etch Primer Gal.	09-00946	**$72.75**
Yellow Acid Etch Primer 5Gal	09-00944	**$306.95**
Green Acid Etch Primer QT	09-00949	**$30.75**
Green Acid Etch Primer Gal	09-00947	**$72.75**
Green Acid Etch Primer 5Gal	09-00945	**$306.95**
Reducer 1045 QT	09-00951	**$16.50**
Reducer 1045 GAL	09-00950	**$35.75**

ZINC CHROMATE PRIMER

PTI's Zinc Chromate Primer is formulated to exceed the performance standards in the Federal Specification TT-P-1757. This primer promotes maximum adhesion to bare aluminum and steel and is recommended for that purpose. PTI's zinc chromate primer is a formulation proven to perform.

Description	Part No.	Price
Zinc Chromate Yellow Spray 13 oz.	09-00901	**$9.95**
Zinc Chromate Yellow QT	09-00919	**$40.50**
Zinc Chromate Yellow Gal	09-00922	**$86.50**
Zinc Chromate Yellow 5Gal	09-00952	**$388.95**
Zinc Chromate Green Spray 13 oz.	09-00895	**$9.95**
Zinc Chromate Green QT	09-00917	**$39.75**
Zinc Chromate Green Gal	09-00918	**$86.50**
Zinc Chromate Green 5Gal	09-00953	**$388.95**
1022X66 Reducer QT	09-00956	**$15.90**
1022X66 Reducer Gal	09-00954	**$35.75**

ZINC OXIDE PRIMER - CHROMATE FREE

PTI's Zinc Oxide Primer is formulated to exceed the performance standards in the Federal Specification TT-P-1757. Promotes maximum adhesion to bare aluminum and steel. Formulated to provide a high performance primer that is considered a safer, more environmentally friendly, alternative to the zinc chromate primer.

Description	Part No.	Price
Zinc Oxide Yellow Spray 13 oz.	09-01617	**$9.95**
Zinc Oxide Primer Yellow QT	09-00961	**$42.25**
Zinc Oxide Primer Yellow Gal	09-00959	**$90.50**
Zinc Oxide Primer Yellow 5Gal	09-00957	**$392.95**
Zinc Oxide Green Spray 13 oz.	09-00904	**$9.95**
Zinc Oxide Primer Green QT	09-00962	**$41.95**
Zinc Oxide Primer Green Gal	09-00960	**$89.95**
Zinc Oxide Primer Green 5Gal	09-00958	**$388.95**

PTI SANDABLE PRIMER

PT-573 is a two component epoxy based primer. PT-573 is capable of filling small holes and imperfections before topcoating. PT-573 provides a smooth, sandable base coat that improves the adhesion and appearance of the topcoat. Because of PT-573's unique formula, this primer also provides excellent rust and corrosion protection. This sandable primer is compatible with PTI's epoxy and Polyurethane topcoats.

Description	Part No.	Price
PTI 573 Sandable Primer 2 gallon	09-02311	**$137.95**
PTI 573 Sandable Primer 1 gallon	09-02312	**$79.95**
PTI 573 Sandable Primer Quart	09-02313	**$58.25**

ALL mixed paints are special order and are non-returnable.

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Prices Subject to Change Without Notice

PTI SPECIALTY PAINTS

PTI EPOXY TOPCOAT INTERIOR APPLICATION

Ttwo component catalyst cure epoxy polyamide which meets, and exceeds, MIL-PRF-22750E&F; Type 1. This system cures to an extremely hard, impervious film which resists yellowing and chalking. The Epoxy Topcoat provides the ultimate protection and gives a high quality finished appearance to metal, wood, and most other materials capable of being coated. Intended specifically for interior application to improve longevity and provide durability. This product is available in every color from the 595C Federal Color standard. Custom color matching available upon request.

To Order use "Base Part No." followed by the dash number of desired finish and size listed below.

-43 is for Flat Quart **-53 is for Semi-Gloss Quart** **-63 is for Gloss Quart**
-44 is for Flat Gallon **-54 is for Semi-Gloss Gallon** **-64 is for Gloss Gallon**

Color	Base Part No.	Flat		Semi-Gloss		Gloss	
		Quart (-43) Price	Gallon (-44) Price	Quart (-53) Price	Gallon (-54) Price	Quart (-63) Price	Gallon (-64) Price
Boston Maroon	09-10049	$168.95	$278.95	$168.95	$278.95	$163.95	$270.95
Elsinore Brown	09-10080	$110.95	$183.95	$110.95	$183.95	$105.95	$175.95
Bermuda Tan	09-10324	$110.95	$183.95	$183.95	$183.95	$105.95	$175.95
Madrid Red	09-11120	$168.95	$278.95	$168.95	$278.95	$163.95	$270.95
Tennessee Red	09-11136	$168.95	$278.95	$168.95	$270.95	$163.95	$270.95
Christian Eagle	09-11140	$168.95	$278.95	$168.95	$278.95	$163.95	$270.95
Inter Orange	09-12197	$115.95	$191.95	$115.95	$191.95	$110.95	$183.95
Yellow Orange	09-12243	$115.95	$191.95	$116.95	$191.95	$110.95	$183.95
Pumpkin Orange	09-12246	$115.95	$191.95	$115.95	$191.95	$110.95	$183.95
Champion Yellow	09-13275	$170.95	$283.95	$170.95	$283.95	$165.95	$275.95
Eagle Yellow	09-13415	$170.95	$283.95	$170.95	$283.95	$165.95	$275.95
Cat Yellow	09-13432	$170.95	$283.95	$170.95	$283.95	$165.95	$275.95
OEM Yellow	09-13507	$170.95	$283.95	$170.95	$283.95	$165.95	$275.95
Cub Yellow	09-13538	$170.95	$283.95	$170.95	$283.95	$165.95	$275.95
Lemon Yellow	09-13591	$170.95	$283.95	$170.95	$283.95	$165.95	$275.95
Dlockhaven Yellow	09-13637	$170.95	$283.95	$170.95	$283.95	$165.95	$275.95
Federal Yellow	09-13655	$170.95	$283.95	$170.95	$283.95	$165.95	$275.95
Tuscon Cream	09-13523	$110.95	$183.95	$110.95	$183.95	$105.95	$175.95
Diana Cream	09-13578	$110.95	$183.95	$110.95	$183.95	$105.95	$175.95
Sun Valley Ivory	09-13690	$90.00	$150.95	$90.00	$150.95	$85.00	$141.95
Forest Green	09-14036	$130.95	$216.95	$130.95	$216.95	$125.95	$208.95
Portland Green	09-14062	$130.95	$216.95	$130.95	$216.95	$125.95	$222.95
Federal Green	09-14064	$130.95	$216.95	$130.95	$216.95	$125.95	$208.95
Oak Green	09-14079	$130.95	$216.95	$130.95	$216.95	$125.95	$208.95
Olive Drab Green	09-14084	$130.95	$216.95	$130.95	$216.95	$125.95	$208.95
Lawn Green	09-14090	$130.95	$216.95	$130.95	$216.95	$125.95	$208.95
Everglades Green	09-14110	$130.95	$216.95	$130.95	$216.95	$125.95	$208.95
Cuby Green	09-14193	$130.95	$216.95	$130.95	$216.95	$125.95	$208.95
Twilight Blue	09-15052	$105.95	$175.95	$105.95	$175.95	$100.00	$166.95
Christian Eagle Blue	09-15056	$105.95	$175.95	$105.95	$175.95	$100.00	$166.95
True Blue	09-15102	$105.95	$175.95	$105.95	$175.95	$100.00	$166.95
Bahama Blue	09-15180	$105.95	$175.95	$175.95	$175.95	$100.00	$166.95
Piper Trainer Blue	09-15812	$105.95	$175.95	$105.95	$175.95	$100.00	$166.95
Lakeland Blue	09-15526	$105.95	$175.95	$105.95	$175.95	$100.00	$166.95
Insignia Blue	09-15044	$105.95	$175.95	$175.95	$175.95	$100.00	$166.95
Cat Gray	09-16099	$90.00	$150.95	$90.00	$150.95	$85.00	$141.95
Federal Gray	09-16251	$90.00	$150.95	$90.00	$153.95	$94.50	$141.95
Polar Gray	09-16357	$90.00	$150.95	$90.00	$150.95	$85.00	$141.95
Glacier White	09-16492	$90.00	$141.95	$90.00	$150.95	$85.00	$158.95
Daytona White	09-16555	$90.00	$150.95	$90.00	$150.95	$85.00	$141.95
Juneau White	09-17886	$90.00	$150.95	$90.00	$150.95	$85.00	$141.95
Insignia White	09-17925	$90.00	$150.95	$90.00	$150.95	$85.00	$141.95
Dakota Black	09-17038	$99.50	$150.95	$97.00	$150.95	$85.00	$141.95
Reno Gold	09-17043	$100.00	$166.95	$100.00	$166.95	$95.00	$158.95
Nevada Silver	09-17178	$100.00	$166.95	$100.00	$166.95	$111.95	$158.95
Rancho Silver	09-16314	$100.00	$166.95	$100.00	$166.95	$95.00	$158.95

PTI WATERBORNE EPOXY PRIMER - LOW VOC

Chemical and solvent resistant. It is a TUF/FILM epoxy primer that conforms to MIL-PRF -85582D. It is especially recommended to inhibit corrosion of aluminum and other plated or unplated metallic surfaces. That being said this primer is also able to be used on composite surfaces. The Water Reducible Epoxy Primer has one of the lowest VOC levels of any primer of its kind on the Navy's QPL. This primer should be used with PTI topcoats to provide maximum adhesion and corrosion protection. May be used with any other manufacturer's paint or lacquer finish coats.

Light Green Primer Quart ..... P/N 09-02679 ..... **$108.95**
Light Green Gallon Primer kit with Catalyst ..... P/N 09-03436 ..... **$172.50**
Dark Green Primer Quart ..... P/N 09-02681 ..... **$58.50**
Dark Green Primer Gallon ..... P/N 09-02682 ..... **$95.00**
Catalyst Pint ..... P/N 09-02683 ..... **$33.50**

PTI ANTI-SEIZE COMPOUND

PTI's Anti-seize Compound is a silicone base grease with a high pigmentation of micro fine molybdenum disulfide. It is heat stable and will not decompose or form a gum deposit. It is effective under light or medium bearing loads on steel to bronze, metal babbit, zinc, nylon, Teflon or hard-anodized aluminum surfaces. Normally it is suitable for operating temperatures of -65 F to + 1000 F.

Pint ..... P/N 09-02901 ..... **$80.75**
Quart ..... P/N 09-02902 ..... **$125.95**

PTI MOLY SPRAY LUBRICANT

Moly spray is unequaled as a lubricant for machine tools, plastic molding machines, paper and textile making equipment, oven mechanisms, and sheet metal and tube bending operations. Provides lubrication on surfaces for which a "wet" or "liquid" lubricant is undesirable.

P/N 09-02903 ..... **$13.50**

PTI NO PEEL™ EPOXY AND POLYURETHANE TOPCOAT ADDITIVE

Formulated to help epoxy and polyurethane topcoats flow to their maximum ability. Keeps the coating "open" to allow bubbles to escape and the surface to flow in high temperature conditions. Refer to the manufactures technical data before using this product.

4 oz..... P/N 09-02672 ..... **$11.75**
8 oz..... P/N 09-02673 ..... **$16.75**
16 oz..... P/N 09-02674 ..... **$11.75**

PTI NO POP™ RETARDER

Used as an additive to slow down the dry time of fast drying paints and primes. During hot and dry temperatures, coatings have a tendency to "solvent pop" and/or "dry spray". This retarder keeps the material wet allowing it to flow, dry, and cure as it should.

4 oz..... P/N 09-02675 ..... **$8.50**
8 oz..... P/N 09-02676 ..... **$16.75**
16 oz..... P/N 09-02677 ..... **$30.00**

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PTI SPECIALTY PAINTS

SPECIALITY PAINTS POLYURETHANE - ENAMELS - WATERBORNE

POLYURETHANE/CATALYST CURE: Low VOC - Two component topcoat system with built-in U.V. protection. The system has both corrosion and chemical resistance properties with a gloss range > 95%. Comes in all Federal 595C colors. Custom colors available upon request.

ENAMEL: PTI's Enamel is formulated to meet the performance specifications of Federal specification TT-E-489G. This product is a high quality alkyd enamel which performs best when used with PTI's zinc chromate or chromate free primer. It may be applied over wood or metal and is suitable for both interior and exterior applications.

WATERBORNE: Waterborne Polyurethane: ZERO V.O.C. general purpose, exterior protective coating for metal surfaces. This product also works great for interior applications. The Waterborne Polyurethane should be applied over top of the PTI Waterborne Epoxy Primer. Available in all Federal 595C colors; custom colors available upon request.

HOW TO ORDER:

Add the following dash numbers after the "Base Part No. listed in the chart for the size and type desired.

For PTI Polyurethane:: Qt. Size add -13
Gal. Size add -14

For PTI Enamel:: Qt. Size add -23
Gal. Size add -24

For PTI Waterborne Qt. Size add -33
Gal. Size add -34

Description	Base Part No.	Poly.Qt. Price	Poly.Gal. Price	Enamel Qt. Price	Enamel Gal. Price	Waterborne Qt. Price	Waterborne Gal. Price
Boston Maroon	09-10049	$81.00	$193.95	$61.75	$93.25	$120.95	$175.75
Elisnore Brown	09-10080	$73.00	$129.95	$40.50	$64.50	$111.65	$160.95
Bermuda Tan	09-10324	$73.00	$129.95	$40.50	$64.50	$111.65	$160.95
Madrid Red	09-11120	$117.95	$194.95	$61.50	$100.95	$120.95	$175.75
Tennesse Red	09-11136	$117.95	$194.95	$61.50	$104.95	$120.95	$175.75
Christin Eagle Red	09-11140	$104.95	$193.95	$61.50	$104.95	$120.95	$175.75
Intnl Orange	09-12197	$81.00	$162.95	$57.00	$88.75	$130.95	$182.85
Yellow/Orange	09-12243	$56.75	$78.75	$64.75	$104.95	$120.95	$175.75
Pumpkin Orange	09-12246	$97.00	$161.95	$56.50	$88.75	$120.95	$175.75
Champion Yellow	09-13275	$129.95	$225.95	$64.75	$104.95	$140.95	$199.95
AC Eagle Yellow	09-13415	$129.95	$225.95	$64.75	$104.95	$140.95	$199.95
AG Cat Yellow	09-13432	$144.95	$201.95	$64.75	$104.95	$140.95	$199.95
J3 OEM Yellow	09-13507	$129.95	$225.95	$64.75	$104.95	$140.95	$199.95
Tyson Cream	09-13523	$129.95	$225.95	$72.75	$129.95	$111.65	$160.95
Cub Yellow	09-13538	$129.95	$251.95	$64.75	$104.95	$140.95	$199.95
Diana Cream	09-13578	$73.50	$129.95	$40.50	$72.75	$111.65	$160.95
lemon Yellow	09-13591	$129.95	$226.95	$64.75	$104.95	$140.95	$199.95
Lockhaven Yellow	09-13637	$129.95	$225.95	$64.75	$104.95	$140.95	$199.95
Federal Yellow	09-13655	$129.95	$225.95	$64.75	$104.95	$140.95	$199.95
Sun Valley Ivory	09-13690	$97.25	$112.95	$32.50	$53.50	$111.65	$160.95
Forest Green	09-14036	$80.75	$145.95	$48.50	$72.00	$111.65	$160.95
Portland Green	09-14062	$80.75	$145.95	$48.50	$79.90	$111.65	$160.95
Federal Green	09-14064	$80.75	$145.95	$48.50	$71.50	$111.65	$160.95
Oak Green	09-14079	$80.75	$145.95	$48.50	$71.50	$111.65	$160.95
Olive Drab Green	09-14084	$108.95	$128.95	$48.50	$79.90	$111.65	$160.95
LAWN GREEN	09-14090	$80.75	$145.95	$48.50	$71.50	$111.65	$160.95
Everglades Green	09-14110	$80.75	$145.95	$48.50	$71.50	$111.65	$160.95
Cuby Sport Trainer Green	09-14193	$80.75	$145.95	$48.75	$71.50	$111.65	$160.95
Insignia Blue	09-15044	$106.95	$161.95	$58.25	$104.95	$111.65	$160.95
Twilight Blue	09-15052	$97.00	$161.95	$61.50	$93.50	$111.65	$160.95
Christin Eagle Blue	09-15056	$108.95	$195.95	$61.50	$93.25	$111.65	$180.95
AN True Blue	09-15102	$86.00	$143.95	$61.50	$104.95	$108.95	$180.95
Bahama Blue	09-15180	$97.00	$161.95	$61.75	$104.95	$111.65	$160.95
Piper Trainer Blue	09-15182	$97.00	$161.95	$61.50	$104.95	$108.95	$180.95
Lakeland Blue	09-15526	$97.00	$161.95	$61.50	$104.95	$108.95	$180.95
AG CAT Gray	09-16099	$79.90	$129.95	$48.50	$79.00	$108.95	$180.95
Federal Gray	09-16251	$81.25	$129.95	$48.75	$88.75	$108.95	$180.95
Rancho Silver	09-16314	$80.75	$146.95	$48.50	$89.25	$111.65	$180.95
Polar Gray	09-16357	$72.75	$129.95	$48.50	$89.25	$98.50	$161.95
Glacier White	09-16492	$71.50	$112.95	$33.25	$53.25	$98.50	$161.95
Daytona White	09-16555	$71.25	$112.95	$32.50	$56.75	$98.50	$161.95
Insignia White	09-17925	$77.75	$128.95	---	---	$101.65	$143.85
Reno Gold	09-17043	$116.95	$157.95	---	---	$108.95	$180.95
Christin Eagle Purple	09-17100	$129.95	$225.95	---	---	---	---
Nevada Silver	09-17178	$81.00	$145.95	---	---	$108.95	$180.95
Juneau White	09-17886	$64.75	$112.95	---	---	$98.50	$161.95

PTI POLYKICK™

Other products used with: Use only with PTI Polyurethanes. Typical Uses: PTI PolyKick is formulated to accelerate the cure time for PTI's polyurethane formulations.

4 oz. ..... P/N 09-02670 ..... **$11.75**
8 oz. ..... P/N 09-02671 ..... **$16.75**

PTI POLYURETHANE PAINT KIT

This kit will provide all the materials needed to paint any RV or similar size aircraft.

The kit consists of: • Green Acid Etch Primer & Reducer • Yellow Epoxy Prime, Catalyst, & Reducer • Polyurethane White topcoat, with catalyst & Reducer -Clear coat sold separately

Additional colors are available upon request, for an additional cost.

Paint KIT ..... P/N 09-02074 ..... **$999.00**
Clear Coat Kit ..... P/N 09-02073 ..... **$257.95**

PTI COLOR CHART

These samples are an approximate computer representation of the actual color and are to be used for reference only. P/N 09-01969 ..... **FREE**

ALL POLYURETHANE PAINTS REQUIRE CATALYST TO CURE!

Note: Polyurethane requires catalyst and the system will add the required amount automatically. If you currently have an adequate supply please otify your sales rep.

Always refer to Technical Data before use for mixing instructions and curing times.

Description	Size	PN	Price
Polyurethane Catalyst	Gal	09-01256	$120.95
Polyurethane Catalyst	Qt	09-01964	$56.50
Polyurethane Thinner	Qt	09-01657	$16.70
Polyurethane Thinner	Gallon	09-01658	$35.60

ESTIMATED QUANTITIES PTI RECOMMENDED

STRIPPER ***Small Plane:*** 3-5 gallons ***Medium Plane:*** 9-10 gallons ***Large Plane:*** 18-25 gallons	***WASH PRIMER*** ***Small Plane:*** 2 gallons ***Meduim Plane:*** 5 gallons ***Large Plane:*** 9-10 gallons ***Extra Large Plane:*** 35 gallons
PRIMER ***Small Plane:*** 3-4 gallons ***Medium Plane:*** 10-11 gallons ***Large Plane:*** 18-20 gallons ***Extra Large Plane:*** 66-75 Gal.	***TOPCOAT*** ***Small Plane:*** 4-5 gallons ***Medium Plane:*** 12 gallons ***Large Plane:*** 22-24 gallons ***Extra Large Plane:*** 75-80 Gal.
PLANE SIZE ***Small Plane:*** Cessna, Beechcraft ***Medium Plane:*** Lear Jet, Gulfstream ***Large Plane:*** Commerical Embraser Commuter ***Extra Large Plane:*** Airbus, 747	

PAINT & REDUCERS CROSS REFERENCE CHART

Coating System	*Solvent/Reducer*
Zinc Chromate & Zinc Oxide Primers	**1022X66** Gallon P/N 09-00954 Quart P/N 09-00956
Epoxy Primer	**PT-1003 TY 2** Gallon P/N 09-00936 Quart P/N 09-00937
Acid Etch Primer	**PT-1045** Gallon P/N 09-00950 Quart P/N 09-00951
Enamel	**Toluene** Gallon P/N 09-00975 Quart P/N 09-00976
Polyurethanes	**PT-1003 TY1** Gallon P/N 09-01658 Quart P/N 09-01657

VISIT OUR WEBSITE FOR A COMPLETE COLOR CHART OF PTI PAINT AT : www.aircraftspruce.com

ALL mixed paints are special order and are non-returnable.

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DOPES – THINNERS – SOLVENTS

CERTIFIED COATINGS PRODUCTS, located in Los Angeles, has been manufacturing aircraft dopes, thinners and special products for the aircraft industry for 50 years. It is a small company making good quality, high-solids dopes, very competitively priced. Since their products are made locally, we enjoy a tremendous saving in delivery costs which is reflected in the pricing as well. We have handled their line for many years with complete customer satisfaction.

FAA/PMA
In January 2005, Certified Coatings Products received FAA-PMA (Federal Aviation Administration Parts Manufacturing Approval) for use on Ceconite fabric. The products have always been approved for use on any other fabric. (PMA#PQ2435NM)

FLAMMABLE

Certified Coatings

DOPES, THINNERS, AND SOLVENTS

Product Description	Part No.	Quart Price	Part No.	Gallon Price	Part No.	5 Gal. Price	Part No.	54 Gal. Drum Price
Nitrate Dope, Clear	09-09400	**$24.85**	09-09500	**$41.65**	09-09600	**$199.95**	09-09700	**$1,139.00**
Nitrate Dope, Blue Tint	09-09000	**$26.75**	09-09100	**$41.75**	09-09200	**$188.95**	09-09300	**$1,140.00**
Nitrate Dope, Clear, Non-Tautening	09-09900	**$17.25**	09-10000	**$39.95**	09-10100	**$173.95**	09-10200	**$1,647.00**
Butyrate Dope, Clear	09-10400	**$31.85**	09-10500	**$53.75**	09-10600	**$225.95**	09-10700	**$1,669.00**
Butyrate Dope, Clear, Non-Tautening	09-10900	**$38.50**	09-11000	**$63.50**	09-11100	**$255.95**	09-11200	**$1,687.00**
Nitrate Thinner	09-11400	**$19.95**	09-11500	**$34.75**	09-11600	**$149.50**	09-11700	**$890.00**
Butyrate Thinner	09-11900	**$22.75**	09-12000	**$37.75**	09-12100	**$159.95**	09-12200	**$1,051.00**
Retarder, Nitrate*	09-12400	**$21.75**	09-12500	**$22.85**	09-12600	**$98.50**	---	---
Retarder, Butyrate*	09-12800	**$14.95**	09-12900	**$48.50**	09-13000	**$145.95**	---	---
Toluene	---	---	---	---	09-14300	**$104.95**	---	---

Add 5% to 10%, as needed, of this blend of fast-cutting, high-boiling solvents to prevent dope blushing under conditions of high humidity. Also improves flow by slowing drying time.

Certified Coatings offers only a limited number of colors in butyrate dope which have been selected as standards. The colors will match as closely as possible the corresponding color on the Randolph selection card reproduced in this catalog.

CERTIFIED COATINGS SPECIAL SOLVENTS

Product	P/N 09-	Quart	P/N 09-	1 Gal.	P/N 09-	5 Gal.
Toluene Paint Remover	05702	**$16.50**	05711	**$27.75**	---	---

FLAMMABLE

CERTIFIED COATINGS COLORED BUTYRATE DOPE

Product Description	Product No.	Quart	Price Gallon	5 Gallon
Chrome Yellow	8520	**$58.50**	**$60.00**	**$290.95**
Daytona White	8125	**$47.25**	**$65.00**	**$295.95**
Juneau White	8415	**$48.75**	**$79.90**	**$268.95**
Miami Blue	8611	**$79.95**	**$68.25**	**$352.95**
Insignia Blue	8124	**$82.50**	**$74.50**	**$309.95**
Cub Yellow	8522	**$58.50**	**$89.50**	**$380.95**
Tennessee Red	8321	**$21.75**	**$130.95**	**$277.95**
Insignia Red	8350	**$81.25**	**$63.50**	**$329.95**
Plain White	8120	**$48.75**	**$76.00**	**$265.95**

To Order: Use Product # plus "QT" for Qt., "1G" for Gal. and "5G" for 5 Gal.

CERTIFIED COATINGS COLOR CHART

Ask for Certified Coatings Products Co. color chart. .....P/N 09-02118 ..... **FREE**

CERTIFIED COATINGS A134 ALUMINUM PASTE

ALUMINUM PASTE - Mix 4 ounces of Aluminum Paste to 1 gallon of Certified Coatings N/T Butyrate Dope. 1 Lb. ..... P/N 09-02417 ..... **$22.85**

CERTI-FILL SILVER

This non-tautening butyrate UV barrier can be sprayed or brushed over nitrate or butyrate coatings for optimum ultra-violet ray protection.

Quart .....P/N 09-12300 ..... **$42.25**
Gallon .....P/N 09-12310 ..... **$71.25**
5 Gallon .....P/N 09-12320 ..... **$310.95**

SURE SEAM FABRIC CEMENT

Sure Seam is a high quality, high tack fabric cement which has excellent bonding properties.

Quart .....P/N 09-13330 ..... **$28.50**
Gallon .....P/N 09-13340 ..... **$62.00**

SURE STRIP PAINT REMOVER

Removes urethanes, epoxies, lacquers, primers, enamels, vinyls, varnishes, acrylics, shellac and polyesters. Washing off with water leaves a clean film-free surface that is ready for refinishing. Product of Certified Coatings Products Co.

1 Qt. .....P/N 09-05701 ..... **$16.50**
1 Gal.....P/N 09-05710 ..... **$26.75**
5 Gal.....P/N 09-05715 ..... **$116.95**

CERTIFIED COATINGS AIRCRAFT, MARINE, AND AUTOMOTIVE PAINT REMOVER

1 Qt. .....P/N 09-05702 ..... **$16.50**
1 Gal. .....P/N 09-05711 ..... **$27.75**

ALL mixed paints are special order and are non-returnable.

PAINT REMOVERS – SANDING PRODUCTS

AIRCRAFT SPRUCE ACETONE

Use to remove lacquer finishes, for cleanup after painting, and to soften lacquers or acrylics that have set up in spray guns or hoses. It has little effect on polyurethane which has cured in the lines.Use only virgin acetone as recovered acetone can damage virtually anything on which it is used.

Pint ..... P/N 01-01077 ..... **$6.25**
Quart ..... P/N 01-01078 ..... **$9.25**
Gallon ..... P/N 01-01079 ..... **$17.50**

TOP PAINT STRIPPERS

TOP PAINT STRIPPER (PRO)® - 5000-B (Brush/Spray type) TOP Paint Stripper (Pro) 5000-B has been specially formulated for aircraft and marine applications. Removes epoxy and polyurethane from metal surfaces. Also removes varnish, baked varnish, lacquer, baked enamel and baked urea alkyd coatings, phosphate & chromate coatings. Concentration: Use full strength, as received. Note: 55 Gallon drums are shipped direct for customer from factory in Canada.

Size	Part No.	Price
1 Gal Can	09-02142	**$57.85**
5 Gal Pail	09-02143	**$187.95**
55 Gal Drum	09-02144	**$1,583.00**

TOP PAINT STRIPPER® - EF 6600-B (Brush/Spray type) Environmentally Advantaged TOP Paint Stripper 6600-B has been specially formulated for aircraft and marine applications. * Boeing Certified (D6-17487) * No Methylene chloride, No Phenols, No Chromates, no chlorinated solvents * PH neutral * Low odor * High Flashpoint; non-flammable * No heat needed * Ideal for removing multiple layers of paint * Easily rinsed from parts with either steam or high pressure water. Note: 55 Gallon drums are shipped direct for customer from factory in Canada.

Size	Part Number	Price
1 Gal Can	09-02139	**$57.85**
5 Gal Pail	09-02140	**$243.95**
55 Gal Drum	09-02141	**$1,356.00**

FABRIC REJUVENATORS

A blend of deep cutting solvents which penetrates the dope finish and restores some of the original flexibility. Use on old fabric in fair condition. Do not use on weak or rotted fabric. Specify type of finish. Rejuvenator Type Certified Coatings Nitrate Rejuvenator Butyrate Rejuvenator Stits Poly-Fiber RJ-1200

1 Gallon		5 Gallon		1 Quart	
Part No.	Price	Part No.	Price	Part No.	Price
09-22500	**$34.50**	09-22600	**$93.75**	09-01263	**$22.25**
09-22700	**$37.50**	09-22800	**$149.95**	09-01264	**$23.50**
09-05300	**$80.50**				

SUNMIGHT WATERPROOF SANDPAPER

Sunmight Waterproof is made with quality water resistant paper backing for flexibility and outstanding finish. Special resin technology reduces possible curling problem during wet sanding operations. Features:Wet or dry sanding for all surface, Finest finishing even under wet sanding, Long durability without tearing or curling, Superior cutting for hand sanding. Specifications: Grain: Grit 220~800 Aluminum Oxide; Grit 1000~2000 Silicon Oxide, Backing: Latex Paper, Bond: Resin over Resin, Coating: Closed Coat, Grit Range: 220-2000, Box: 250.

Grit	Part No.	Price
220	09-03108	**$29.50**
240	09-03109	**$26.85**
280	09-03110	**$29.25**
320	09-03111	**$29.25**
360	09-03112	**$26.85**
400	09-03113	**$29.25**

Grit	Part No.	Price
600	09-03114	**$29.25**
1000	09-03115	**$32.50**
1200	09-03116	**$29.90**
1500	09-03117	**$29.90**
2000	09-03118	**$32.50**

SUNMIGHT VELCRO DISC SANDPAPER

Sunmight Film is a premium product with strong and even surface film backing that allows better surface finish and longer life. It is also great for corner and edge sanding without problems with tearing. Specifications: Grain: Premium Aluminum Oxide, Backing: Polyester Film, Bond: Phenolic Resin, Coating: Open Coat, Grit Range: 36-2000, Box: 50.

Grit	Part No.	Price
120	09-03119	**$47.85**
150	09-03120	**$47.85**
180	09-03121	**$47.85**
220	09-03122	**$47.85**

Grit	Part No.	Price
240	09-03123	**$47.85**
320	09-03124	**$47.85**
400	09-03125	**$47.85**
500	09-03126	**$47.85**

SUNMIGHT P.S.A. GOLD DISCS

Sunmight God is a premium paper product made with high quality grain, latex paper and strong resin. This provides better performance and longer life. Features: Aluminum Oxide resin paper, Open coat, Tear resistance, Good Sharpness and longer lasting life, High performance without clogging, Excellent finish. Specifications: Grain: Premium Aluminum Oxide, Backing: Latex Paper, Bond: Phenolic Resin, Coating: Open Coat, Grit Range: 80-320, Box: 100.

Grit	Part No.	Price
80	09-03099	**$23.95**
100	09-03101	**$21.50**
120	09-03102	**$21.50**
150	09-03103	**$21.50**

Grit	Part No.	Price
180	09-03104	**$21.50**
220	09-03105	**$21.50**
240	09-03106	**$21.50**
320	09-03107	**$21.50**

SUNMIGHT P.S.A. FILM DISC - SANDING PAPER

Sunmight Film is a premium product with strong and even surface film backing that allows better surface finish and longer life. It is also great for corner and edge sanding without problems with tearing. Features: Open coat stearated, Excellent Cutting Performance, Longer lasting life with durability, Perfect sanding surface, Especially, excellent for contour snading without folding. Specifications: Grain: Premium Aluminum Oxide, Backing: Polyester Film, Bond: Phenolic Resin, Coating: Open Coat, Grit Range: 80-320, Box: 100.

Grit	Part No.	Price
80	09-03092	**$32.50**
100	09-03093	**$26.75**
120	09-03094	**$29.25**
180	09-03095	**$26.75**

Grit	Part No.	Price
220	09-03096	**$26.75**
240	09-03097	**$26.75**
320	09-03098	**$26.75**

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RANDOLPH AIRCRAFT COATINGS

Randolph coatings are the FAA-approved coatings for the Ceconite STC covering process.

210 NITRATE DOPE, TAUTENING, CLEAR, HI-SOLIDS

Used only on Grade A cotton or Irish Linen. A premium high solids nitrate dope that tightens natural fabric as it dries. Not for use on Ceconite or heat-shrunk synthetic fabrics. Thin 1:1 w/286 Nitrate Thinner.

FLAMMABLE

Quart.....P/N 210-QT **$14.65**
Gallon .....P/N 210-1G **$44.10**
5 Gallons .....P/N 210-5G **$212.35**

W-7868 NITRATE DOPE, TINTED, NON-TAUTENING (BLUE)

Initial coating for Ceconite or heat shrunk polyester fabric. Additional plasticizers slow shrinking after application. Thin 1:1 with 286 Nitrate Thinner.

FLAMMABLE

Quart.....P/N W-7868-QT..... **$16.05**
Gallon.....P/N W-7868-1G..... **$47.85**
5 Gallons.....P/N W-7868-5G..... **$231.50**

E-4964 NITRATE DOPE, CLEAR,NON-TAUTENING

Initial coating for Ceconite or heat shrunk polyester fabric. For use on open cockpit aircraft where tinted dope is not desired. Thin 1:1 w/286 Nitrate Thinner.

FLAMMABLE

Quart..... P/N E-4964-QT..... **$15.95**
Gallon..... P/N E-4964-1G..... **$47.60**
5 Gallons..... P/N E-4964-5G..... **$230.60**

G-6302 RAND-O-PROOF NITRATE DOPE (GREEN)

Special formulation of nitrate dope and additives for the initial coat on Ceconite fabric and for applying tapes. This is the recommended first coat in the Ceconite/ Randolph system. Thin 1:1 with 286 Nitrate Thinner.

FLAMMABLE

Quart .....P/N G-6302-QT **$16.20**
Gallon.....P/N G-6302-1G **$49.90**
5 Gallons.....P/N 09-01017 ..... **$233.40**

286 NITRATE THINNER

Used 1:1 to thin nitrate dopes & Rand-OProof.

FLAMMABLE

Quart.....P/N 286-QT..... **$11.00**
Gallon.....P/N 286-1G..... **$43.85**
5 Gallons.....P/N 286-5G..... **$219.95**

9701 BUTYRATE DOPE, TAUTENING, CLEAR

Used only on Grade A Cotton or Irish Linen to tighten the fabric as it dries. Not for use on Ceconite or heat-shrunk synthetic fabrics. Thin 1:1 with 9703 Butyrate Thinner.

FLAMMABLE

Quart ..... P/N 9701-QT..... **$15.60**
Gallon ..... P/N 9701-1G..... **$46.60**
5 Gallons ..... P/N 9701-5G..... **$224.40**

W-8350 BUTYRATE DOPE TINTED, NON-TAUTENING (TAN)

This non-taughtening butyrate dope features an increased level of plasticizer and will not tauten excessively. Takes longer to dry than standard butyrates. Tinted. Used to apply finishing tapes. Additional plasticizers slow shrinking. ***TINTED LIGHT TAN BUT DRIES CLEAR.*** Recommended initial build butyrate coating to follow Rand-O-Proof in the Ceconite/Randolph system. Thin 1:1 with 9703 Butyrate Thinner.

FLAMMABLE

Gallon .....P/N 09-00788 .....**$50.15**
5 Gallons .....P/N 09-00789 .....**$242.50**

55 Gallon Drums - For 55 gallon drum of Randolph product, use basic P/N D55 - Example: 210-D55

J3000 BUTYSOLV REJUVENATOR

Used to soften older dope coatings which exhibit cracking or ring-worming. Restores plasticizers in aged finishes to add flexibility. Only works on aircraft painted with butyrate dope; will not work on polyurethane topcoat finishes.

FLAMMABLE

Quart.....P/N 09-14505 .....**$27.20**
Gallon.....P/N 09-14510 .....**$81.65**
5 Gallons.....P/N 09-14515 .....**$400.15**

G-6303 RAND-O-FILL BUTYRATE (SILVER)

Rand-O-FillG-6303 is a non-tautening butyrate material designed as the aluminum spray coat over Rand-OProof G-6302, over Nitrate Clear Dope or Butyrate clear Dope. Allow to dry. Wet sand to desired smoothness. Wash and allow surface to completely dry before applying following coat. Thin as needed with Butyrate Thinner.

FLAMMABLE

Quart .....P/N G-6303-QT **$18.45**
Gallon.....P/N 09-01018 ..... **$55.55**
5 Gallons.....P/N 09-01019 ..... **$269.25**

701 ALUMINUM PASTE

FLAMMABLE

A fine mesh paste which is easier to use than powder. Mix 4 oz. by weight of paste to one gallon of clear butyrate dope before thinning.

1 Lb. .....P/N 09-14500 ..... **$21.10**

9703 BUTYRATE THINNER

Used 1:1 to thin butyrate dopes & pigmented butyrate colors.

FLAMMABLE

Quart ..... P/N 9703-QT **$11.30**
Gallon..... P/N 9703-1G **$42.75**
5 Gallons..... P/N 9703-5G **$210.00**

Y-9910 UNIVERSAL RETARDER

Prevents blush in nitrate and butyrate products. Also used to slow nitrate and butyrate drying in high temperatures.

FLAMMABLE

Quart ..... P/N Y-9910-QT **$14.80**
Gallon..... P/N 09-01048.....**$46.75**
5 Gallons..... P/N 09-01049.....**$213.65**

A-1690 BUTYRATE DOPE, NON-TAUTENING (CLEAR)

For use as a build coat after E-4964 Non-Tautening Nitrate (Clear) on open cockpit aircraft where tinted dope is not desired. Thin 1:1 with 9703 Butyrate Thinner.

FLAMMABLE

Quart ..... P/N 09-00817..... **$16.70**
Gallon..... P/N 09-00818..... **$49.90**
5 Gallons..... P/N 09-00819..... **.$241.45**

MATERIAL REQUIREMENTS FOR AVERAGE SIZE AIRPLANE
USING RANDOLPH FINISHES AND CECONITE FABRIC

- 45 yds. 70" Ceconite 102
- 5 gals. Rand-O-Proof
- 10 gals. NT Butyrate
- 3 gal. Universal Finishing Retarder
- 13 rls. Pinked Ceconite Tape
- 2 rls. 1/2" Reinforcing Tape
- 30 Inspection Rings
- 5 gal. Nitrate Thinner
- 10 gal. Rand-O-Fill
- 30 gal. Butyrate Thinner
- 10 gal. (White) Butyrate Dope
- 1 rl. Ceconite Rib Lacing Cord
- 100 Plastic Drain Grommets
- 1 gal. Rand-O-Bond

TOTAL (Estimate).....$ 3,500

RANDOLPH FLOAT LACQUER

This specialty product is used as a spray on the bottom of aluminum floats on amphibious aircraft to protect them from marine growth. Reduce with Randolph 286 Nitrate Thinner.

FLAMMABLE

Qt .....P/N 09-00830.....**$17.50**
Gal.....P/N 09-00831.....**$52.75**
5 Gal .....P/N 09-00832.....**$258.05**

RANDOLPH ACID-PROOF BATTERY BOX BLACK PAINT #345

Battery Box Black Paint is an asphaltic coating used to provide protection from battery acid in battery boxes and compartments. It is generally applied with a brush or roller to any metal area that may be exposed to leaking battery acid. Shelf life: Guaranteed 2 years from date on manufacture in sealed container in protected storage. Coverage: 225 square feet per gallon with one coat. Mixing: Stir well before use.Thinning: Use out of the can. If thinning is necessary, thin five parts paint to one part 286 Nitrate Thinner. Application: Apply with a brush. Three coats will provide the best possible protection to epoxy primed metal surfaces.Qt. ..... P/N 344-QT **$16.85**

FLAMMABLE

ALL mixed paints are special order and are non-returnable.

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RANDOLPH FINISHES

RANDOLPH COLOR PRODUCTS

RANDOLPH COLORED NON-TAUTENING BUTYRATE DOPE - The final color coat applied over fabric in the Ceconite/Randolph system. Available in 50 standard colors. Thin one to one with 9703 Butyrate Thinner. One thinned gallon covers approximately 200 sq ft with one coat.

RANTHANE POLYURETHANE FINISH

Ranthane is a low viscosity, very high solids polyurethane material resulting in low film weight providing a lasting high gloss. Will withstand most chemicals, engine oils, and hydraulic fluids. Has superb adhesion and abrasion resistance as well as high temperature resistance. For fabric and primed metal.

Whites: Qt..From **$43.95** Gal. From **$134.05**

All Other Colors: Qt..From **$60.70** Gal. From **$182.25**

RANTHANE HIGH SOLIDS CATALYST -

Pint ..... P/N 09-00328 ..... **$33.50**

Use w/ High Solid Polyurethane

Qt..... P/N 09-00400 ..... **$63.15**

RANTHANE ACCELERATOR - Qt. ..... P/N D-7201-QT..... **$44.85**

RANTHANE REDUCER - Qt..... P/N G-4200-QT **$14.00**

Gal..... P/N G-4200-1G..... **$49.00**

The FAA has approved the use of Ranthane over Poly-Fiber. To order Ranthane colors, please specify Randolph color from chart on right and specify quart or gallon.

NOTE: Randolph paints are now manufactured by Consolidated Coatings and will not exact match old Randolph colors. If you are ordering to match old Randolph colors, please provide a paint sample that can be matched by the factory.

MARK II FOR METAL

(NOT FOR USE ON FABRIC)

A tough, long-lasting, two-part topcoat paint catalyzed with a non-isocyanate catalyst. Supplied air respirator not required when spraying. Available in same 50 colors as Colored Butyrate Dope and Ranthane for use over primed metal or composite parts. Mix 1:1 with Mark II Mixing Liquid.

MARK II MIXING LIQUID - Combination of catalyst and thinner to be used with Mark II for Metal paint.

Qt ..... P/N 09-02193 ..... **$45.15**

Gal ..... P/N 09-02194 ..... **$149.50**

MARK II THINNER - Used as needed to thin Mark II for Metal after combining with Mark II Mixing Liquid to increase flow out.

Pt ..... P/N 09-02195 ..... **$9.00**

Qt ..... P/N 09-02196 ..... **$14.00**

Gal ..... P/N 09-02197 ..... **$53.00**

FAST-DRY ENGINE ENAMELS

Formulated to be heat resistance and maintain good gloss and color retention. For use in the painting of engine crank cases and cylinders, after major overhaul or for general maintenance. Can also be used on engine mounts and supports. Service temperature is 300-350 degrees F. Reduction: Thin to correct spray viscosity with #257 Enamel Thinner(approximately 20% reduction). Application: Spray two coats. Allow to dry to the touch between coats.

Color	Quart		Gallon	
	Part No.	Price	Part No.	Price
303 Black	303-QT	**$22.00**	303-1G	**$57.35**
D-5973 Continental Gold	D-5973-EQ	**$22.00**	D-5973-EG	**$65.95**
G-5436 Lycoming Gray	G-5436-EQ	**$22.00**	---	**---**

RANDOLPH ENAMEL THINNER

Fast drying thinner for use with Randolph Aircraft Enamels and Fast Dry engine Enamels.

Qt. ..... P/N 257-QT **$12.00**

Gal. ..... P/N 257-1G **$46.00**

PAINT VISCOSITY CUPS

A precision tool to accurately measure paint viscosity when spraying automotive and aircraft finishes. Consists of a nylon cup with a precisely sized small hole in the bottom. As paint flows through the hole, time the rate of flow. Adjust viscosity by adding thinner as required to produce recommended flow for product being used.

P/N 01-25400..... **$13.50**

RANDOLPH COLOR SELECTIONS AND PRICES

COLORS	BUTYRATE For Fabric Only		Mark II For Metal Only	
	Qts.	Gals.	Qts.	Gals.
Reds				
B-3534 Madrid Red	**$22.00**	**$84.70**	**$66.75**	**$200.50**
B-9163 Colorado Red	**$24.20**	**$84.70**	**$66.75**	**$200.50**
M-9522 Tennessee Red	**$24.20**	**$93.15**	**$66.75**	**$200.50**
M-9530 Vermillion Red	**$24.20**	**----**	**$66.75**	**$200.50**
W-3665 Pontiac Red	**$24.20**	**$84.70**	**$66.75**	**$200.50**
J-9555 Cadillac Red	**$24.20**	**$84.70**	**$66.75**	**$200.50**
H-9150 Santa Fe Red	**$24.20**	**$84.70**	**$66.75**	**$200.50**
X-5680 Boston Maroon*	**$30.75**	**$84.70**	**$66.75**	**$239.95**
X-5749 Stinson Maroon	**$24.20**	**$84.70**	**$66.75**	**$200.50**
Standard Colors				
M-9526 Cruiser Orange	**$24.20**	**$84.70**	**$66.75**	**$200.50**
C-2065 Ocala Orange	**$22.00**	**$84.70**	**$66.75**	**$200.50**
E-6427 Aeronca 7AC Yellow	**$25.65**	**$77.00**	**$59.25**	**$194.95**
M-9512 Lemon Yellow	**$24.20**	**$84.70**	**$66.75**	**$200.50**
M-9501 AN Orange Yellow	**$22.00**	**$77.00**	**$66.75**	**$200.50**
F-6285 Cub J-3 Yellow	**$22.00**	**$84.70**	**$66.75**	**$200.50**
M-9521 Lock Haven Yellow	**$22.00**	**$77.00**	**$66.75**	**$200.50**
Y-5783 Dallas Yellow*	**$22.00**	**$84.70**	**$66.75**	**$200.50**
D-9270 Ag Cat Yellow	**$24.20**	**$84.70**	**$66.75**	**$200.50**
N-3353 Federal Yellow	**$22.00**	**$84.70**	**$66.75**	**$200.50**
F-2406 Federal Green	**$22.00**	**$77.00**	**$66.75**	**$200.50**
F-5830 Montego Green*	**$22.00**	**$84.70**	**$66.75**	**$200.50**
Y-6350 Forest Green*	**$27.75**	**$84.70**	**$66.75**	**$200.50**
W-3554 Lakeland Blue	**$22.00**	**$77.00**	**$66.75**	**$200.50**
W-9506 AN True Blue	**$24.20**	**$98.00**	**$66.75**	**$200.50**
H-9170 Bahama Blue	**$22.00**	**$84.70**	**$66.75**	**$200.50**
X-5700 Miami Blue	**$22.00**	**$77.00**	**$66.75**	**$200.50**
M-9502 Insignia Blue	**$22.00**	**$84.70**	**$66.75**	**$200.50**
Z-7245 Sun Valley Ivory	**$26.25**	**$84.70**	**$66.75**	**$200.50**
M-9518 Diana Cream	**$24.20**	**$84.70**	**$66.75**	**$200.50**
X-5260 Tucson Cream*	**$24.75**	**$84.70**	**$66.75**	**$200.50**
Q-1050 New Insignia White	**$23.50**	**$83.75**	**$58.75**	**$192.95**
W-9170 Tropic White	**$17.60**	**$63.80**	**$48.35**	**$147.45**
K-7641 Vestal White	**$17.60**	**$70.20**	**$48.35**	**$147.45**
B-4243 Juneau White	**$23.75**	**$87.00**	**$48.35**	**$147.45**
J-9545 Daytona White	**$17.60**	**$63.80**	**$48.35**	**$147.45**
Q-1916 RandolphWhite	**$19.35**	**$63.80**	**--**	**$147.45**
F-7790 AG Cat Gray	**$22.00**	**$77.00**	**$66.75**	**$200.50**
R-4870 Neutral Gray	**$22.00**	**$84.70**	**$59.00**	**$200.50**
R-8174 Platinum Gray	**$22.00**	**$77.00**	**$66.75**	**$200.50**
Y-6100 Polar Gray	**$22.00**	**$77.00**	**$66.75**	**$200.50**
H-6117 Black	**$22.00**	**$77.00**	**$66.75**	**$200.50**
R-8175 Sandalwood*	**$22.00**	**$77.00**	**$66.75**	**$200.50**
Y-9775 Hickory Brown	**----**	**$77.00**	**$66.75**	**$200.50**
R-4869 Olive Drab* (Glossy)	**$22.00**	**$77.00**	**$66.75**	**$200.50**
E-6428 Aeronca 7AC Orange	**$22.00**	**$104.95**	**$66.75**	**$200.50**
P-8600 Cessna Tiger Orange	**$22.00**	**$84.70**	**$66.75**	**$200.50**
Metallic Colors				
W-8427 Tampa Green*	**$22.00**	**$84.70**	**$66.75**	**$200.50**
W-8430 Newport Blue*	**$22.00**	**$84.70**	**$66.75**	**$200.50**
M-9514 Silver	**$22.00**	**$77.00**	**$66.75**	**$200.50**
B-9916 Reno Gold	**$38.50**	**$84.70**	**$66.75**	**$200.50**

How to Order: Use these dash #s to complete Randolph color part #s: Butyrate: Qts -BQ, Gallons -BG; Example: P-8599-BG

ALL mixed paints are special order and are non-returnable.

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SEM INTERIOR REPAIR PRODUCTS

AEROSPACE SEM SOAP

First step cleaner gravitates into the substrate and floats contaminants to the surface. AEROSPACE SEM SOAP can be used on all substrates. Use AEROSPACE SEM SOAP to clean vinyl and leather seat covers prior to restoring with AEROSPACE SURE-COAT™ or AEROSPACE COLOR COAT

P/N 09-03588 .....**$13.85**

SEM AEROSPACE PLASTIC & LEATHER PREP

Leaves plastic substrates clean for coating, will not soften or distort plastic; removes contaminants such as mold, release agents, fingerprints and grease. Aerospace Plastic & Leather Prep can be used on all plastics and leather. 16 oz. Aerosol.

P/N 09-03587 .....**$13.95**

SEM LOW VOC RUBBERIZED UNDERCOATING

40523 SEM Low Voc Rubberized Undercoating is a paintable, fast-drying, asphalt free coating for rust proofing, sound deadening, chip resistance and corrosion protection. Less than 40% VOC. 24 oz Aersol. P/N 09-03581 .....**$11.75**

SEM TRIM BLACK

SEM Trim Black 39143 is the industry standard for restoring faded and peeling exterior trim parts. This paint coating offers maximum adhesion on stainless steel and chrome. 20 oz. Aersol. P/N 09-03579 .....**$11.50**

SEM COLOR COAT

SEM COLOR COAT is formulated to match, restore or change color on most vinyl surfaces, flexible and rigid plastics, carpet and velour. Fade resistant and flexible, COLOR COAT is not a dye, but a permanent paint coating. 16 oz. aerosol.

Color	Part No.	Price
15003 Phanton White	09-03556	**$12.98**
15013 Landau Black	09-03557	**$12.95**
15043 Shadow Blue	09-03558	**$12.98**
15103 Super White	09-03559	**$12.98**
15143 Sandstone	09-03561	**$12.85**
15163 Presidio	09-03562	**$12.98**
15173 Camel	09-03563	**$12.98**
15183 Warm Gray	09-03564	**$12.98**
15233 Gloss Black	09-03566	**$12.98**
15243 Satin Black	09-03567	**$12.98**
15283 Pescadero Sand	09-03568	**$12.98**
15303 Graphite	09-03569	**$12.98**
15393 Medium Gray	09-03571	**$12.98**
15603 Sailcloth White	09-03572	**$12.98**
15763 Storm Gray	09-03573	**$12.85**

SEM CLASSIC COAT

SEM CLASSIC COAT uses advanced technology to provide superior adhesion and flexibility when changing or restoring the color of most leather and vinyl. CLASSIC COAT is a fade resistant coating that won't chip or peel and is available in many of today's popular OEM colors.

Color	Part No.	Price
17013 Midnight Black	09-03537	$13.98
17033 Lt. Parchment	09-03538	$13.98
17043 Med Graphite	09-03539	$13.98
17053 Med Parchment	09-03541	$13.98
17083 Dk Graphite	09-03542	$13.98
17093 Black	09-03543	$13.98
17103 Dark Gray	09-03544	$13.98
17013 Lt Gray	09-03546	$13.98
17123 Lt Neutral	09-03547	$13.98
17133 Med Dk Pewter	09-03548	$13.98
17163 Med Gray	09-03549	$12.95
17173 Shale	09-03551	$13.98
17203 Very Dk Pewter	09-03552	$13.98
17223 Taupe	09-03553	$13.98
17243 Ivory	09-03554	$13.98

SEM LEATHER & VINYL REPAIR COMPOUND

SEM Leather & Vinyl Repair Compound 38422 is a unique compound that successfully repairs cuts and abrasions on leather or vinyl. This product has exceptional strength, flexibility and can also be used to fill minor imperfections.

Works effectively on leather and vinyl substrates to create a durable and long lasting repair. This product is packaged in an easy-to-use tube, which helps to prevent waste and is a great value for any shop! P/N 09-03578 .....**$21.85**

SEM SOLVE

38373 SEM SOLVE removes adhesives, wax, road tar, grease and paint overspray. 20 oz. Aersol.

P/N 09-03577 .....**$9.95**

SEM SAND FREE

38363 SEM SAND FREE softens the substrate promoting adhesion on difficult to sand areas. 16 oz. Aersol.

P/N 09-03576 .....**$13.85**

SEM VINYL PREP

SEM Vinyl Prep 38343 cleans soil, wax and grease from vinyl substrates while it softens and prepares the surface for adhesion of topcoat. Great for use with SEM flexible coatings. 16 oz. Aersol. P/N 09-03575 .....**$13.85**

SEM SCUFF & CLEAN

38338 SEM SCUFF & CLEAN prepares bumpers or panels when refinishing or blending. It's abrasive action improves adhesion of repair and refinishing materials. Pint.

P/N 09-03574 .....**$18.95**

SEM AEROSPACE SURE-COAT FLATTENER

The SEM AEROSPACE SURE-COAT™ process restores aircraft interior leathers, vinyl and plastics at a fraction of the cost of replacement.

The SEM AEROSPACE SURE-COAT process (SCLA-101), cleans, repairs, and restores interiors to a like new condition without changing the aircraft's burn certification. All products have passed vertical burn testing requirements under Federal Aviation Regulations and have been shown not to add flammability to the aircraft interior surfaces.

AEROSPACE SURE-COAT is a waterborne coating system that offers excellent flexibility and outstanding adhesion for a variety of aerospace applications. Sure coat dries quickly and may be brushed or sprayed to change or enhance current color while maintaining the texture and look of leather, vinyl and plastic. P/N 09-03586 .....**$54.82**

SEM AEROSPACE SURE-COAT PINT MIXING SYSTEM

SEM SURE-COAT is a waterborne coating system offering excellent flexibility and outstanding adhesion for a variety of interior and exterior automotive, marine, aerospace and commercial applications.

SURE-COAT allows the user to change or enhance the current color while maintaining the texture and look of leather, vinyl and plastic. It will not get brittle with age nor soften or crack within normal temperature ranges.

SURE-COAT Mixing system contains 9 toners and 3 clears that can be mixed to match almost any color and dries quickly when brushed or sprayed.

Contains one each: • 16004 SURE-COAT Cross Linker • 70400 SURE-COAT Dauber Bottle • A16018 Black • A16088 Silver • A16508 Red Oxide • A16518 Indo Yellow • A16528 Quindo Red • A16538 Thalo Blue • A16548 White • A16568 Thalo Green • A16598 Yellow Oxide • A16705 High Gloss Clear • A16715 Satin Gloss Clear • A16725 Low Luster Clear. Also includes: Pint labels and A70034 Fleet Color Selector

P/N 09-03585 .....**$610.26**

CS

3M™ ABRASIVES

3M™ STIKIT™ DISC PAD 05575

For use with 5 diameter Stikit™ Discs. Has medium density foam and a 45° tapered edge for flexibility. These lightweight, shock-resistant pads have a vinyl face (blue) that provides excellent disc adhesion yet allows quick, easy removal.

Color	Size	Part No.	Price
Blue	5" x 3/4"	09-01535	**$35.50**

3M™ STIKIT™ DISC HAND PAD 11063

Use with 5 diameter Stikit™ Discs. Made with soft density foam for conformability. Has 1 inch wide strap for holding the pad to the operators hand.

Size	Part No.	Price
5" x 1"	09-01448	**$12.50**

3M™ STIKIT™ PAPER DISC ROLL 236U

Constructed of durable aluminum oxide; works well for most wood species. The open coat feature provides a more aggressive cut than a comparable closed coat abrasive of the same grade and a special loading resistant coating makes this disc a good choice when loading is a problem. The C weight, paper backing is more durable for extended disc life and harsher sanding applications.

Style #	Grade	Weight	Size	Qty.	Part No.	Price
236U	P80	C	5" x NH	100	09-01572	**$34.50**
236U	P100	C	5" x NH	100	09-01573	**$49.50**
236U	P120	C	5" x NH	100	09-01574	**$49.50**
236U	P150	C	5" x NH	100	09-01575	**$43.95**
236U	P180	C	5" x NH	100	09-01576	**$30.50**
236U	P220	C	5" x NH	100	09-01577	**$32.75**
236U	P240	C	5" x NH	100	09-01578	**$49.50**
236U	P320	C	5" x NH	100	09-01579	**$51.75**
415U	80	A	5" x NH	125	09-01558	**$33.00**
415U	100	A	5" x NH	125	09-01559	**$15.75**
415U	120	A	5" x NH	125	09-01560	**$42.75**
415U	180	A	5" x NH	250	09-01562	**$88.75**
415U	220	A	5" x NH	250	09-01563	**$31.50**
415N	320	A	5" x NH	250	09-01450	**$46.60**

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3M™ SCOTCH-BRITE™ GENERAL PURPOSE HAND PAD

Most universally used in a variety of applications. Excellent starting point to clean, finish, grain, denib and defuzz. May be used by hand, with a hand pad block, or on an in-line sander.

Grade	ID	Part No.	Price
VFIN	7447	09-01503	**$1.15**

3M™ SCOTCH-BRITE™ HEAVY DUTY HAND PAD

Tight and dense, this pad is the most aggressive and durable web. Excellent for heavy cleaning, deburring, and finishing. May be used by hand, with a hand pad block or on an in-line sander.

Grade	ID	Part No.	Price
MED	7440	09-01504	**$2.95**

3M™ SCOTCH-BRITE™ LIGHT DUTY CLEANSING PAD

Conformable web and fine mineral are excellent for fine finishes, light cleaning. Among our least aggressive abrasive hand pad. May be used by hand, with a hand pad block or on an in-line sander.

ID	Grade	Part No.	Price
7445	SFIN	09-01415	**$1.15**

3M™ SCOTCH-BRITE™ SR RADIAL BRISTLE DISC

Bristles are idea for cleaning, blending and deburring.

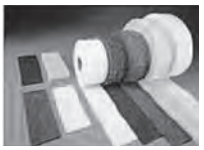
2"..... 09-01416..... **$3.80**
3"..... 09-01417..... **$4.40**

3M™ WETORDRY™ PAPER SHEET 431Q

A silicon carbide Wetordry™ abrasive product constructed on a C weight, intermediate paper backing. Can be run wet or dry.9"x11" sheets.

Grade	Part No.	Price
600	09-01446	**$1.41**
360	09-01526	**$1.50**
400	09-20900	**$0.89**
320	09-20800	**$0.92**
280	09-20700	**$0.89**

Grade	Part No.	Price
240	09-01529	**$1.40**
220	09-20600	**$0.96**
150	09-01532	**$1.52**
120	09-20550	**$0.99**
100	01-37700	**$1.26**



3M™ SCOTCH-BRITE™ CLEAN AND FINISH

Flexible web for finishing, blending, and polishing. Conformable for access to hard-to-reach areas. Great for general use on a variety of materials. Use manually or on an in-line sander.

Description	Size	Part No.	Price
3M Clean and Finish Medium	4" x 30 FT. Roll	09-01500	**$56.75**
3M Clean and Finish Fine	4" x 30 FT. Roll	09-01501	**$43.50**

3M™ ROLOC™ DISC PAD ASSEMBLY

Rubber backup pads available in different degrees of hardness for varying grinding applications. Backup pad designed to support 3M™ Roloc™ abrasive discs. This pad has a ¼-20 INT thread which allows it to be mounted directly to tools with ¼-20 EXT threaded shaft or the included 1/4" diameter shank that fits 1/4" collet chucks or drill chucks.

Description	Part No.	Price
45902 - 3" Med. Disc Pad and Shank	09-02129	**$17.75**
Replacement Parts	**Part No.**	**Price**
45092 - 3" Med. Disc Pad	09-01554	**$16.50**
1/4 inch Diameter shank	09-01557	**$2.45**

3M™ SCOTCH-BRITE™ ROLOC™ TR SURFACE CONDITIONING DISC

A non-woven abrasive product used for cleaning, finishing, blending and deburring applications. A threaded attachment system secures the disc to the holder.

Grade	Size	Part No.	Price	Grade	Size	Part No.	Price
ACRS	1.5"	09-01510	**$0.76**	AVFN	2"	09-01505	**$1.17**
AMED	1.5"	09-01511	**$0.72**	AMED	3"	09-01509	**$1.98**
AVFN	1.5"	09-01512	**$1.25**	ACRS	3"	09-01508	**$2.35**
ACRS	2"	09-01506	**$1.20**	AVFN	3"	09-01507	**$1.98**

3M™ SCOTCH-BRITE™ ROLOC™ TR EXL UNITIZED WHEEL

High performance and durability for deburring and finishing applications. Threaded attachment system secures the wheel to the holder.

Size	Grade	Part No.	Price
2"	MED 2A	09-01514	**$3.35**
2"	MED 6A	09-01516	**$4.00**
3"	MED 2A	09-01515	**$6.25**
3"	MED 6A	09-01517	**$7.25**

3M™ SCOTCH-BRITE™ RO-LOC™ BRISTLE DISC

Brush-like bristle disc removes coarse coatings from the large, open areas of a work piece. Works on right angle tools quickly and easily with little or no pressure.

Size	Grade	Part No.	Price
2" x 5/8"	Tapered 120 GRDE	09-01520	**$12.25**
2" x 5/8"	Tapered 50 GRADE	09-01518	**$12.25**
2" x 5/8"	Tapered 80 GRADE	09-01519	**$11.90**

3M™ GREEN CORPS™ CUT OFF WHEEL

Wheel is designed to provide high cut rates and long life on most all materials including fiberglass, stainless steel, mild steel and aerospace alloys. Ideal for use on a wide variety of utility type cut off tools. Do not use on tools without guards.

ID	Size	Part No.	Price
01985	3"x1/32"x3/8"	09-01521	**$3.95**
01994	4"X1/32"X3/8"	09-01524	**$5.30**
82238	3"X1/32"X1/4"	09-01570	**$5.50**
88755	4"X1/32"X1/4"	09-01580	**$4.60**
01986 5 Pack	3"X1/16"X3/8"	09-01523	**$29.25**

3M™ SCOTCH-BRITE™ DEBURRING WHEEL

Two Styles Available: Cut & Polish/Unitized Wheel-7A Medium grade (harder) Use to radius and deburr edges of aluminum parts. These wheels give a uniform brushed satin finish to parts and deburr quicker and easier than hand finishing. These wheels are discs of Scotch-Brite web compressed and bonded to form a rugged, dense wheel. Wheel size: 6" dia. x 1" wide x 1/2" thru hole. .....P/N 12-00875 .....**$71.50**

Light Deburring Wheel-7S Fine Grade (Softer)
Light deburring 7S Fin 6 x 1 x 1. This wheel has a 1" thru hole. To fit 1/2" order P/N 12-01585.....P/N 12-00948 .....**$63.25**
3M Flange Adapter 3 45035 1/2".....P/N 12-01585 .....**$4.25**

3M™ REPOSITIONABLE 75 SPRAY ADHESIVE

This adhesive provides tape-like bonds on many lightweight materials. It adheres in seconds, yet has an extra-long tack range that allows you to lift and reposition materials. 16 oz. Can.

P/N 09-01377 .....**$19.25**

3M™ SCOTCH-WELD™ URETHANE ADHESIVE DP601/ DP601NS

3M™ Scotch-Weld™ ***DP601*** is a self-leveling, gray, rapid setting, two-component polyurethane adhesive. It is packaged as 1:1 ratio liquids in duo-pak cartridges. With the squeeze of the trigger, the components are automatically mixed and easily dispensed as a bubble-free liquid. ***DP601NS*** is the same as the DP601 except it is a non-sag, gray, rapid setting, two-component polyurethane adhesive.

Description	Size	Color	Part No.	Price
DP601 (Self-leveling)	12 oz	Gray	09-01413	**$27.25**
DP601NS (Non-Sag)	50 ml	Gray	09-01412	**$9.95**

3M™ HI-STRENGTH 90 SPRAY ADHESIVE

High strength, fast contact-type adhesive. Fast contact strength buildup for many decorative laminates. Only needs 1 minute of drying time.

Size	Part No.	Price
24 oz	09-01376	**$23.85**

3M™ SCOTCH-WELD™ EPOXY ADHESIVE DP125 DUO-PAK

Two-part epoxy adhesive with a 1:1 mix ratio, 25 minute work life and exhibits very high peel strength. Moderately flexible and the gray version has exceptional shear adhesion. Use to bond rubber, metal, wood, plastics, and masonry products.

Size	Color	Part No.	Price
1.7 oz	Gray	09-01403	**$22.75**
1.7 oz	Translucent	09-01402	**$18.50**

3M™ SCOTCH-WELD™ EPOXY ADHESIVE DP100 PLUS

Exhibits much higher shear and peel strengths compared to DP100 Adhesive. It has a 1:1 mix ratio, a 4 minute work life, and is slightly flexible when cured. Clear in color. 1.7 oz. package. P/N 09-01401 .....**$19.75**

3M™ SCOTCH-WELD™ EPOXY ADHESIVE DP190 DUO-PAK

A flexible, two-part adhesive that cures at room temperature and provides high strength bonds with good performance in shear and peel. Can be used to bond rubber, metal, wood, most plastics, and masonry products.

Size	Color	Part No.	Price
1.7 oz	Gray	09-01375	**$19.90**

3M™ SCOTCH-WELD™ EPX™ APPLICATORS AND ACCESSORIES

Mixing nozzle will perform to your requirements. With consistent air pressure for easy uniform application, the Duo-Pak cartridge will give you the flow rate needed. Fast, convenient way to simultaneously meter, mix and apply two-part adhesives and potting compounds. System features handy 3M™ Scotch-Weld™ EPX™ Cartridges that snap quickly into the durable, lightweight Scotch-Weld™EPX™ applicator. A slight squeeze on the trigger advances the plunger into the cartridge. Accurate measurement and the mixing nozzle provides thorough mixing and precise placement of material. Ideal system for assembly, maintenance and in-field service.

Size	Color	Part No.	Price
50 mL	EPX Metal Applicator w/Plunger	09-01371	**$62.25**
50 mL	EPX Mixing Nozzle 9742	09-01372	**$2.25**

3M™ SCOTCH-WELD™ EPX™ PLUS II APPLICATOR

This Plunger is for the Scotch-Weld™ EPX™ Plus II Applicator. The Scotch-Weld™ EPX™ Plus II Applicator is used to Dispense 3M™ Scotch-Weld™ Adhesives in Duo-Pak Cartridges. The applicator is a low-cost portable, self contained metering, mixing and dispensing machine that simultaneously meters and mixes two-part adhesives as the material is applied. P/N 09-01380 .....**$68.50**
50 mL Mixing Nozzle 9742 ..... P/N 09-01372 .....**$2.25**

3M™ SCOTCH-WELD™ EPX™ APPLICATOR NOZZLE

Applicator nozzle designed for both the 200 mL and 400 mL applicators.

P/N 09-01408 .....**$2.95**

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3M™ ADHESIVES

3M™ SCOTCH-WELD™ EPOXY ADHESIVE 2216 B/A

A flexible, two part, room temperature curing epoxy with high peel and shear strength. Scotch-Weld epoxy adhesive 2216 B/A is identical to 3M™ Scotch-Weld™ Epoxy Adhesive EC-2216 B/A in chemical composition. Scotch-Weld epoxy adhesive EC-2216 B/A has been labeled, packaged, tested, and certified for aircraft and aerospace applications. Scotch-Weld epoxy adhesive 2216 B/A may be used for aircraft and aerospace applications if proper Certificates of Test have been issued and material meets all aircraft manufacturer's specification requirements. 24 month shelf life.

SIZE	COLOR	DESCRIPTION	PART NO.	PRICE
2 oz.	Gray	Adhesive 2216 B/A	02-00045	**$43.80**
Pint	Gray	Adhesive 2216 B/A	02-00113	**$139.50**
Quart	Gray	Adhesive 2216 B/A	02-00114	**$186.95**

3M™ SCOTCH-WELD™ INSTANT ADHESIVE CA40H

One-part, high strength, very fast setting adhesive cures at room temperature. Adheres to difficult to bond substrates such as EPDM rubber, aluminum, and flexible vinyl. Comes in a 1 oz. Bottle. Clear.

P/N 09-01368 ..... **$27.25**

3M™ SCOTCH-WELD™ INSTANT ADHESIVE CA8

This instant adhesive has a fast set time of 5 to 40 seconds. Excellent adhesion on metal, plastic and rubber. Bonds resist shock and impacts. A cyanoacrylate adhesive. Comes in a 1 oz. bottle.

P/N 09-01366 ..... **$27.75**

3M™ SCOTCH-WELD™ INSTANT ADHESIVE SURFACE ACTIVATOR

It is ideal for use with all 3M Cyanoacrylate Adhesives for a broad range of industrial and electronic applications. It is also ideal for use with CA-5, CA-9, or CA-50 Gel for many wire tacking and coil terminating applications.

P/N 09-01407 ..... **$10.75**

3M SCOTCH-GRIP HP CONTACT ADHESIVE 1357

A high performance contact adhesive that provides a long bonding range and excellent initial strength.

1357 Grey/OLIV..... P/N 09-01362..... **$93.75**
1357 Neutral 1G ..... P/N 09-01373..... **$85.95**

3M™ SCOTCH-GRIP™ PLASTIC ADHESIVE 2262

A clear, non-staining high strength adhesive with exceptional resistance to plasticizer migration. Develops tack very rapidly. Can be used to bond many flexible, rigid and extruded vinyls to metal and many other surfaces. Comes in a 1 qt. can. P/N 09-01365 ..... **$51.25**

3M™ SCOTCH GRIP RUBBER ADHESIVE 1300

Lower viscosity, sprayable version of Scotch-Weld Neoprene High Performance Rubber and Gasket Adhesive 1300. Has excellent adhesion to metal, baked enamel, wood, most plastics, and neoprene, reclaim, SBR, and butyl rubber. not for EPDM rubber.

UPC	Size	Color	Part No.	Price
1300L	1 qt	YELLOW	09-27220	**$41.50**
1300L	Gallon.		09-01712	**$122.95**
1300L	5 Gallon		09-01713	**$447.95**
1300	5 oz.		09-01708	**$15.50**
1300	Quart		09-01709	**$47.75**
1300	Gallon		09-01710	**$131.95**
1300	5 Gallon		09-01711	**$463.95**

3M™ SCOTCH-GRIP™ CONTACT ADHESIVE

A brushable, neutral-colored contact adhesive for bonding many decorative laminates, aluminum, steel, plywood, panels, wood and wood veneer, masonry, rubber, canvas and other porous and non-porous materials to each other or to themselves.

P/N 09-01364 ..... **$26.85**

3M™ SCOTCH-GRIP™ RUBBER AND GASKET ADHESIVE 847

This fast drying adhesive develops strength very quickly. It has excellent heat resistance; temperature performance is from -5 to 300F. Meets specification requirements of MIL-A-1154C. Bonds neoprene, reclaim, SB-R, and butyl rubber to metal, wood, most plastics, and many other products. 5oz. Tube. reddish Brown in Color.

P/N 09-01361 ..... **$15.75**

SUPER DOOR SEAL ADHESIVE

Super adhesive for door seals and other applications. Many customers have had difficulty finding EC1300L adhesive (or equivalent). Search no more! This super adhesive has exceptional bonding strength, is fast drying, and firmly bonds the seals making your installation easier! They recommend you order the adhesive when you order your new seals. One tube is enough for installing all the seals on your aircraft when applied in accordance with the seal installation instructions. A free acid brush is included with each order. P/N 09-27200 ..... **$6.75**

3M™ FINESSE-IT™ FINISHING MATERIAL 81235

Specially designed compounds and polishes to be used on OEM and baked refinish paints to remove sand scratches or to remove swirl marks from previously compounded areas. 1qt. bottles.

P/N 09-01451 ..... **$24.50**

3M™ FINESSE-IT™ NATURAL BUFFING PAD

The 3 inch buffing pad is designed to get you into tight areas not accessible with a conventional polisher. Pads are hook-and-loop backed. Pads are sold each.

P/N 09-01452..... **$4.10**

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AIRCRAFT SPRUCE WEST
CORONA, CA • (877) 4-SPRUCE
AIRCRAFT SPRUCE EAST
PEACHTREE CITY, GA • (877) 477-7823

Prices Subject to Change Without Notice

3M™ PRODUCTS-CLEANERS

3M™ PERFECT-IT PAINT FINISHING SYSTEM

Improve buffing and polishing productivity – and finish faster with more consistent results. Includes the following: • 3M Perfect-It Rubbing Compound - P/N 09-02999 • 3M Perfect-It Low-linting Wool Compound Pad - P/N 09-03001 • 3M Perfect-It Machine Polish - P/N 09-03004 • 3M Perfect-It Foam Polishing Pad - P/N 09-03005 • 3M Perfect-It Ultrafine Machine Polish - P/N 09-03006 • 3M Perfect-It Ultrafine Foam Polishing Pad - P/N 09-03007. Items are also sold separately.

P/N 09-03010 ..... **$198.00**

3M™ PERFECT-IT™ SHOW CAR PASTE WAX

Ultra high gloss paste wax with exceptional durability for use on automotive paints. Shines and protects new and like new pint finishes, producing a deep high gloss, lustrous, durable, "wet look" finish.

P/N 09-01443 ..... **$17.50**

3M™ PERFECT-IT™ BACKUP PAD

Enables 3M™ Superbuff™ Compound Pad users to use the 3M™ Perfect-It™ Foam Polishing Pad without having to remove the 3M™ Superbuff™ Adaptor 05710 from the shaft of the polisher. Fits all standard 5/8 in shaft slow-speed polishers. 7" x 3/4". P/N 09-01426 .. **$44.75**

3M™ AVIATION RUBBING COMPOUND

Effectively refines scratches in business jet cabinet clear coats using polyesters and polyurethanes. Also used for refining scratches on painted aircraft surfaces created during the defect removal process, as well as removing paint oxidation on painted aircraft surfaces. Can be used on aircraft cabinetry or painted surfaces. * No Silicone * Non-corrosive ..... P/N 09-02173 ..... **$19.75**

SuperBuff Buffing pad 05703 ..... P/N 09-02174 ..... **$27.90**

3M™ WHITE GREASE 8875 *(LITHIUM LUBE)*

Long-lasting lubrication, easy spray viscosity. Won't drip or run. Resists "washing out" if exposed to road spray. 10.5 oz. Can.

P/N 09-01445 ..... **$6.75**

3M™ OVERSPRAY PROTECTIVE SHEETING MASKER

Portable masker designed to dispense Overspray Protective Sheeting (PN06727). Can be used horizontally, vertically or wall mounted. Spring loaded end frame designed for easy loading of Overspray Protective Sheeting. Paper is not included with masker.

P/N 09-01441 ..... **$102.50**

3M™ FIBERGLASS RESINS

Designed to be used with Fiberglass Cloth (PN05838) and/or Fiberglass Mat (PN05833). Waterproof when cured. Liquid Hardener (PN0536) included. For metal and fiberglass. Thick formulation resists sags or runs.1 Qt. P/N 09-01433 ..... **$23.85**

3M™ LIGHTWEIGHT BODY FILLER

Cures tack-free in 15-20 minutes — reduces sandpaper loading. Creamy texture. Smooth spreading. Easy smoothing. Vacuum processed to minimize pinholes.

1 Qt. ..... P/N 09-01428 ..... **$10.25**

1 Gal. ..... P/N 09-01429 ..... **$19.50**

3M™ FLOWABLE FINISHING PUTTY

Tack-Free and Stain Resistant. Two component, self-leveling putty designed for use as a "skin" coat over plastic filler to fill pinholes, sand scratches, low areas or other imperfections. Available in quart and handy squeeze dispenser — no mess. Fills pinholes in body fillers and small imperfections in metal and fiberglass. Cures tack-free in 30 minutes. Flowable, brushable. Easiest sanding 3M™ Polyester Putty. Minimizes staining that can occur with basecoat/clearcoat systems over body filler. Vacuum processed to minimize pinholes. Excellent adhesion to galvanized, aluminum and thoroughly cured and sanded factory-applied paint surfaces. P/N 09-01432 ..... **$31.75**

3M™ LIQUID HARDENER

Fast-acting liquid hardening agent designed to be used with 3M™ Sprayable Polyester Filler (PN05825 or 05856), and/or 3M™ Fiberglass Resin (PN05833 or 05834). 22oz. tube P/N 09-01434 ..... **$3.90**

3M™ SHORT STRAND FIBERGLASS REINFORCED FILLER

Contains chopped fiberglass. Repairs holes, cracks and tears in fiberglass. Repairs holes in metal. Smooth spreading. Waterproof. Can be used with Fiberglass Mat (PN05837) or Fiberglass Cloth (PN05838) to reinforce large repair areas.

1 Gal. Can ..... P/N 09-01431 ..... **$44.95**

3M™ SPREADERS

Designed for spreading body and fiberglass fillers, finishing putties, and resins. Sharp edge. Flexible. Durable. Easy to clean. Cured fillers pops off easily. Available in 4" or Assortment (1 each 4, 5 and 6).

4" ..... P/N 09-01435 ..... **$0.76**

Assortment ..... P/N 09-01436 ..... **$4.55**

3M™ ADHESIVE REMOVER CITRUS BASE

Provides easy clean up of most types of adhesives. Quickly removes waxes, road tars, grease, oil and similar materials. Will not harm paint, vinyl or fabrics when properly used. 24 oz. Can. Pale yellow in color. P/N 09-01379 ..... **$25.25**

3M™ ADHESIVE REMOVER CITRUS BASE

A liquid cleaner/degreaser that can be used to dissolve and remove dirt, grease, tar, and many non-curing type adhesives. It can also be used to degrease substrates for adhesive bonding in place of many chlorinated or petroleum-based solvents. 24 oz. Can. Clear in color. P/N 09-01393 ..... **$25.75**

3M™ 5-WAY PENETRANT

Multi-purpose product that is effective as a demoisturant - displaces moisture and "dries out" electrical apparatus. 24. oz. Can. Light Amber in color.

P/N 09-01370 ..... **$16.25**

3M™ SCOTCHGARD SPOT REMOVER AND UPHOLSTERY CLEANER

Designed to clean carpets and upholstery. Releases both oil- and water-based soils from carpet and upholstery. Aerosol foam is sprayed directly on spot with minimum of overspray. Requires no rinsing. Wipe or blot area with a clean, absorbent cloth. P/N 09-01722 ..... **$9.85**

3M™ STAINLESS STEEL CLEANER AND POLISH

Ideally suited for stainless steel, chrome, laminated plastics and aluminum surfaces. With a high-gloss formula, it wipes clean with no streaks or buildup, resists fingerprints and masks surface blemishes. Pleasant lime fragrance. Contains no petroleum distillates.

P/N 09-01721 ..... **$12.25**

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3M™ SCOTCHMATE™ VELCRO FASTENING TAPES

RECLOSABLE FASTENER HOOK

Its as simple as pressing together and pulling apart. When your product calls for thousands of easy openings and closings, 3M™ Scotchmate™ Reclosable Fasteners pull through for your. Tiny, stiff hooks mesh with pliable loops for quick secure fastening. In addition, provide a solution as strong as you need. No adhesive, nylon and sewable hook so can be easily attached to many substrates. Sold by the foot.

Velcro Fastening Tape 2" Black.....09-22223 ..... **$2.35**
Hook 2" SJ3402.....09-01388 ..... **$1.36**
Loop 2" SJ3401 .....09-01387 ..... **$1.07**

VELCRO FASTENING TAPES

Consists of a set of 2 mating 1" wide black Nylon tapes, which, when pressed together, lock tightly and hold until peeled apart.Tapes have pressure-sensitive adhesive backs. Ideal for use in cockpit to mount pilot supplies or as an upholstery and rug attachment. An effective fastening material - applications are unlimited. Sold by the yard.

Velcro Fastening Tape 1" Black.....09-31400 ..... **$6.75**
Loop 1" SJ3571 .....09-00251 ..... **$3.05**
Hook 1" SJ3572.....09-00250 ..... **$3.70**

3M SCOTCHMATE 2" LOOP SJ3572

It's as simple as pressing together and pulling apart. When your product calls for thousands of easy openings and closings, 3M ™ Scotchmate ™ Reclosable Fasteners pull through for your. Tiny, stiff hooks mesh with pliable loops for quick secure fastening. In addition, Scotchmate reclosable fasteners are backed with 3M adhesive techonology expertise which range from rubber adhesives to high performance, double-coated foam tape which can be adhered to most surfaces to provide a solution as strong as you need. Premium performance nylon hook with VHB ™ Tape for high temperature resistance and great shear performance. Sold by the foot.

Velcro Fastening Tape 2".....09-01656 ..... **$12.50**
2" Loop SJ3572.....09-01653 ..... **$5.25**
Hook 2" SJ3572.....09-01652 ..... **$6.90**

3M™ SAFETY WALK SHEET

A durable, mineral coated, non-slip fabric for wing walks. Waterproof, weatherproof and unaffected by vibrations, heat, cold, gasoline or oil. Assures safe footing. Pressure-sensitive backing should have additional coating of 3M 1300L (located on pg 388) to assure adhesion for aircraft applications.

COMFORMABLE TREADS		
Description	**Part No.**	**Price**
Safety Walk 510 2" W	09-01485	**$2.35**
Safety Walk 510 4" W	09-01486	**$2.35**
GENERAL PURPOSE		
Description	**Part No.**	**Price**
Safety Walk 24 INCH W	09-31675	**$9.95**
Safety Walk 610 2" W	09-01482	**$1.80**
Safety Walk 610 4" W	09-01483	**$1.82**
Safety Walk 610 12" W	09-32250	**$4.95**

3M™ EAR MUFFS 1435

General purpose ear muffs. Wide, forked headband and multi-position large ear cup create a comfortable, secure fit. Economical, lightweight design. Replaceable, soft sealing cushions. Noise Reduction Rating: 23dB*.

P/N 09-01494.....**$13.25**

3M™ EAR PLUGS 1100

Smooth dirt resistant surface, tapered design to fit the ear canal, provide added comfort and hygiene. Hypo-allergenic material. Each box contains 200 pairs, and each package is easy to dispense. Noise Reduction Rating: 29dB*.

P/N 09-01493.....**$0.25**

3M FLAME RETARDENT VELCRO FASTENER

Flame resistant, rubber adhesive, nylon, woven loop reclosable fastener and meets F.A.R. 25.853 paragraph (a)(1)(i) 60 second vertical burn test. Mates with SJ3519FR, black.

This flame resistant product is coated with a unique flame resistant synthetic rubber based adhesive. High temperature performance. Bonds wells to paper and cardboard, paint, bare and painted metal, glass, sealed wood and many plastics.

Hook 2" x 50 yds. ..... P/N 09-02598 .....**$189.95**
Loop 2" x 50 yds..... P/N 09-02597 .....**$189.95**

3M™ GLASS CLOTH TAPE 398FRP

Flame Retardant Sealing Tape 398FRP is a glass cloth tape with an acrylic adhesive for many applications requiring high adhesion, an abrasion-resistant backing and flame retardant properties. The tape meets flame retardancy requirements of F.A.R.

2"x36 yards..... P/N 09-01728 .....**$42.75**
3"x36 yards..... P/N 09-02135 .....**$61.50**

3M™ FLAME RETARDANT VHB TAPE

A flame retardant, very conformable, double-sided, pressure-sensitve, closed-cell acrylic foam tape with a PE film liner. Bonds high, medium and medium/low surface energy substrates. Provides handling convenience, cushioning, damping, and impact resistance. 40 mil thick. Black color.

1" X 3" .....P/N 09-02998..... **$19.99**
3" X 3" .....P/N 09-03054..... **$29.99**

3M™ CARPET TAPE 9377 2 INCH X 25 YARD

3M 9377 Tape has a differential adhesive system with a high-tack acrylic that bonds to the top-layer substrate and a rubber-based adhesive system that attaches to the flooring material. One side is black and attaches to the flooring material with an acrylic-based adhesive. The white side of the tape is a rubber-based adhesive that provides a bond to the floor surface. Firm application pressure helps develop better adhesive contact and improve bond strength. The bond strength will build over time reaching maximum strength at 72 hours. FAR-25-.853

P/N 09-02133..... **$35.85**

3M™ SCOTCH® SUPER 33+D VINYL ELECTRICAL TAPE DISPENSER

A premium grade vinyl electrical insulating tape, its aggressive adhesive and elastic backing ensure easy, water-resistant conformation to irregular surfaces in low temperatures, yet will not ooze or melt in high temperatures. 3/4" wide X 33' Long. P/N 09-01465..... **$5.85**

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3M™ TAPE - MASKING

3M™ SCOTCH® FINE LINE TAPE 218

This 3M tape is particularly suitable for pin striping, multicolor and other custom painting applications. It is a thin, conformable green polypropylene film tape with a special finish that resists paint runoff. The adhesive adheres instantly and offers good holding power, resists lifting and curling. Stretchable and easy to handle. Provides an extremely fine color-line separation for decorative painting of aircraft. Scotch No. 218.

Width	Length	Part No.	Price
1/8”	60 Yards	09-20200	**$12.90**
1/4”	60 Yards	09-20300	**$9.65**
3/8”	60 Yards	09-20350	**$18.90**
1/2”	60 Yards	09-20400	**$10.95**
3/4”	60 Yards	09-20500	**$13.95**
1”	60 Yards	09-01348	**$17.75**

3M™ ALUMINUM FOIL TAPE 425

Dead-soft aluminum foil tape. Applications include masking of sensitive components to protect from damage during aircraft paint stripping. In white goods appliances, tape provides an excellent moisture barrier, helps reflect and dissipate heat.

Size	P/N	Price
1.5” x 60 Yards	09-01382	**$39.85**
1” x 60 Yards	09-01381	**$27.85**
2” x 60 Yards	09-01383	**$54.75**
3” x 60 Yards	09-01385	**$77.50**
3/4” x 60 Yards	09-01386	**$21.75**

3M™ VHB™ TAPE 4920

15.0 mil, white closed cell acrylic foam carrier with film liner and all purpose adhesive. High strength, handling convenience, cushioning, damping and impact resistance. UL listing 746C. 1” in width, 72 Yards per roll. P/N 09-01397.....**$161.95**

3M™ VHB™ TAPE 4950

45.0 mil thick, white closed cell acrylic foam carrier with all purpose acrylic adhesive and paper liner. High strength, handling convenience, cushioning, damping and impact resistance. UL listing 746C.

Size	Color	Part No.	Price
1”x36yds	White	09-01360	**$103.95**
2”x36yds	White	09-01389	**$198.95**

3M™ VINYL TAPE

3M™ Vinyl Tape 471, ideal for masking, wrapping or sealing many curved or irregular surfaces, excellent for many lane and safety marking applications, ideal for color coding, abrasion protection, decoration and splicing applications

Color	Size	Part No.	Price
Blue	2” x 36 Yards	09-01344	**$17.90**
Black	2” x 36 Yards	09-02179	**$30.75**
Yellow	1” x 36 Yards	09-01338	**$10.95**
White	1” x 36” Yards	09-02076	**$16.50**

3M™ DOUBLE COATED FILM TAPE 415

A medium-firm, acrylic, pressure sensitive adhesive that featuring an excellent balance of good initial adhesion (quick stick) and good shear holding power. It is ideal for bonding together a wide variety and dissimilar materials such as metals, glass, wood, paints, and many plastics.

Size	Color	Part No.	Price
2”x36yds	White	09-01343	**$39.75**

SCOTCH® POLYETHYLENE COATED CLOTH TAPE 390

Polyethylene coated cloth with rubber adhesive for applications requiring good strength and moisture resistance. Applications include holding insulation materials

P/N 09-01727 .....**$29.25**

3M™ SCOTCH® HIGH PERFORMANCE MASKING TAPE 232

A high performance paper masking tape to be used in the medium temperature paint bake operation. A smooth crepe paper tape that is treated with a heat and solvent resistant coating.

Size	Part No.	Price
48MM	09-01340	**$5.50**
72MM	09-01331	**$8.25**

3M MASKING POLY TAPE 5903 (RED)

5903 is a poly tape comprised of heavy duty polyethylene film and synthetic rubber adhesive. It is UV weather resistant and removes cleanly for up to a month with little or no adhesive residue on most opaque surfaces without deteriorating or fading. Used for window and door masking, outdoor holding and protecting surfaces including stucco, concrete, brick, and a variety of construction surfaces where removability is important.

P/N 09-02136.....**$8.75**

3M™ HAND MASKER KIT

Tape guide pin molded into the M3000 KML frame. Guide pin aids tracking of the masking tape onto masking paper while dispensing. Tack-Down Tape Dispenser (PN06789) allows easy on-off mounting. Provides fingertip access to an extra roll of masking tape. Includes 12 cut off blade. Making film is not included with dispenser.

P/N 09-01442.....**$58.75**

3M™ SCOTCH® SAFERELEASE™ BLUE PAINTERS MASKING TAPE 2090

Ideal for long-term masking projects when tape must be left on for up to a week. Removes cleanly and easily for up to seven days without leaving adhesive residue.

Size	Part No.	Price
3/4”	09-01420	**$3.45**
1”	09-01421	**$4.50**

Size	Part No.	Price
1-1/2”	09-01422	**$6.75**
2”	09-01423	**$8.50**

3M™ SCOTCH® STEEL GRAY MASKING PAPER

Strong, flexible and pliable. Formulated to resist penetrations of solvents, lacquers or enamels. Comes in 1000 rolls.

Description	Part No.	Price
Gray Masking Paper 12”	09-01353	**$54.75**
Gray Masking Paper 18”	09-01354	**$73.70**
Gray Masking Paper 24”	09-01355	**$79.50**
Gray Masking Paper 36”	09-01356	**$132.95**

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3M™ PRODUCTS

3M™ SCOTCH-WELD™ THREADLOCKER

THREADLOCKER 3493 PURPLE - For fasteners less then 5/16". Low removal torquer
50 mL..... P/N 09-01628.....**$31.95**

3M™ NOVEC™

3M™ NOVEC™ ELECTRONIC DEGREASER - Effectively removes oils, greases adn handling soils from electric motors, electrical equipment, precision devices and other electro-mechanical or sensitive devices. Based on proprietary 3M solvent technology; it is non-flammable, non-ozone depleting and contains no HCFCs, HFCs, nPB or HAPs. 12oz can, 6 can per case.
PN 09-01703 ..... **$18.90**

3M™ NOVEC™ FLUX REMOVER - Effectively removes rosin solder fluxes, waxes and similar contaminants found in electronics manufacturing and repair. Based on proprietary 3M solvent technology; it is non-flammable, non-ozone depleting and contains no HCFCs, HFCs, nPB or HAPs. 12oz can, 6 can per case.
PN 09-01702 ..... **$18.90**

3M™ NOVEC™ CONTACT CLEANER - Effectively removes light oils, greases, silicones, dust and particulates from sensitive electrical and electronic equipment. It is compatible with plastics, is non-flammable, non-ozone depleting and contains no HCFCs, HFCs, nPB or HAPs. 11oz can, 6 can per case
PN 09-01704..... **$21.75**

3M™ PAINT PREPARATION SYSTEM (PPS™) CUP AND COLLAR, 16023

3M™ PPS™ Cup and Collar, 16023 Large hard cup that supports and holds the PPS large flexible liner, part number 16024. If filled to the top, this cup will hold 32 fl oz.
P/N 09-01717..... **$18.95**

3M™ PPS™ MINI CUPS & COLLARS 16115

Hard cup that supports and holds the PPS mini flexible liner, part number 16114. If filled to the top, this cup will hold 6 fl oz.P/N 09-01720..... **$25.50**

3M™ PPS™ MIXING CUP AND COLLAR, 16001

Small, hard cup that supports and holds the PPS small flexible liner, part number 16000.
P/N 09-01715..... **$34.90**

3M™ PPS™ ADAPTOR, 16054, TYPE 18

Adaptor converts DeVilbiss TGHV 530 Siphon Feed and all Full Size Siphon Feed Guns with North American 3/8 Female-18 Thread NPS guns for use with 3M™ Paint Preparation System. P/N 09-01716.....**$21.75**

3M™ HEADLIGHT LENS RESTORATION SYSTEM

With the 3M™ Headlight Lens Restoration System, you will use a 1200-1600 rpm drill equipped with a backup pad and sanding discs to remove the yellowed layer from the headlight lens surface. A higher rpm drill could generate excessive heat and can cause damage to the headlight lens that is difficult to remove. A lower rpm drill does not work efficiently for this process. Two sanding steps will follow to refine or reduce the sand scratches that are made when removing the yellowed layer. Finally, 3M™ Headlight Lens Polish and a foam pad will remove the fine scratches and put the final clarity on the headlight lens. Kit Includes: 1 - Disc Pad Holder 1 - 3M™ Soft Interface Pad 6 - 3M™ Sanding Discs 4 - 3M™ Finishing Discs 1 - 3M™ Trizact™ Disc 1 - 3M™ Headlight Lens Polish, 1oz 1 - Buffing Pad 1 - Step by Step Directions PN 09-02109.....**$17.25**

3M BODY FILLERS

3M premium fillers with adhesion promoters, offer the very best in all-around performance. Our premium fillers adhere to virtually any surface including wood, metal, aluminum, galvanized steel, fiberglass and concrete. They are also non-staining, non-shrinking, creamy and are great for building plugs, patterns, molds, prototypes and general repair to composite parts. 3M premium fillers are easy to sand and are manufactured with only the highest quality ingredients.

Description	Size	Part No.	Price
Marson™ Platinum™ Body Filler	Quart	01-01090	**$15.85**
Marson™ Platinum™ Body Filler	Gallon	01-01091	**$36.75**

STANDARD BODY FILLERS

3M standard fillers are the economical choice for gap filling, fairing, smoothing and general repair. They are also great for plug, pattern and tooling departments for creating and building shapes, curves and intricate elements to molds and patterns. They are easy to mix, apply, and sand, and have a quick cure time. Great for quick repairs to fiberglass, wood, metal concrete and aluminum.

Description	Size	Part No.	Price
Dynatron ™ Ultralite™ Advanced Body Filler	Quart	01-01084	**$9.50**
Dynatron ™ Dynalite™ Body Filler	Quart	01-01072	**$10.50**
Dynatron ™ Dynalite™ Body Filler	Gallon	01-00368	**$20.75**

REINFORCED FILLERS

3M's line of reinforced filler products offers users a unique and flexible array of repair solutions. Each product is reinforced with short fiberglass strands, long fiberglass strands or milled fiberglass. These reinforced fillers are significantly stronger than regular fillers and are waterproof. Great for repairing fiberglass and rust holes in metal.

Description	Size	Part No.	Price
Dynatron ™ Ultra-Glass™ Reinforced Filler	Quart	01-01097	**$13.50**
Dynatron ™ Ultra-Glass™ Reinforced Filler	Gallon	01-01098	**$30.50**
Dynatron ™ Dyna-Glass™ Reinforced Filler	Quart	01-01073	**$13.25**
Dynatron ™ Dyna-Hair™ Reinforced Filler	Gallon	01-01103	**$39.50**

3M™ DYNATRON PUTTY-COTE FINISHING PUTTY

3M finishing putties have excellent adhesion to wood, metal, aluminum, e-coat, galvanized metal, fiberglass, SMC, epoxy, concrete and primer/paint.
These finishing putties are ideal for repairing or filling smaller dents, scratches, gouges and voids. Each product is non-shrinking, non-staining, cures quickly and sands exceptionally well.

Description	Part No.	Price
Dynatron ™ Dyna Maxx™ Finishing Putty - Quart	01-01086	**$21.75**
Dynatron ™ Dyna Maxx™ Finishing Putty - 1/2 Gallon	01-01087	**$41.50**
Dynatron ™ Putty Cote™ Advanced Body Filler - 1/2 Gallon	01-01089	**$28.50**

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3M™ SPRAYERS – POLISHERS

3M™ ACCUSPRAY SPRAY GUN

Introducing the 3M™ Accuspray™ System, the equivalent of having a brand new primer spray gun for a fraction of the cost. Provides the equivalent of a brand new primer spray gun for a fraction of the cost. Kit contains 1 spray gun, 3 atomizing heads and 1 air flow control valve.

The innovative replaceable atomizing head allows for the following benefits: • Reduces Primer Consumption: minimizes overspray • Boosts Productivity: lowers primer spraying time, decreases primer sanding time, reduces clean-up • Maximizes Benefits of the 3M™ PPS™ System: reduces gun cleaning time, uses less solvent for clean up, decreases hazardous disposal cost, improves productivity and profitability

HG09 Gun ..... P/N 09-03016 ..... **$156.95**
Head Refill Kit..... P/N 09-03060 ..... **$17.50**

3M™ ROLOC BRISTLE DISK KIT

Convenient introductory pack contains a variety of grades of Roloc™ Bristle Discs 2-inch diameter x 5/8-inch trim with a disc pad holder for an optimized finish.

2" Disc ..... P/N 09-03014 ..... **$72.50**
3" Disc ..... P/N 09-03015 ..... **$100.95**

3M™ PTFE GLASS CLOTH TAPE BROWN

This brown, 5.3 mil (0.134 mm) glass cloth tape (5451) impregnated with PTFE and silicone adhesive. It is a heat seal tape. Provides a high temperature release surface for protection and insulation such as the bar underneath where the hot wire seals plastic film. The reinforcement provided by the woven glass cloth adds tensile strength and tear resistance. Low Coefficient of Friction: Self-lubricating nature of PTFE film tape can help improve the processability of many web materials. Excellent Heat Resistance: High temperature PTFE glass cloth tape provides long lasting performance on many heat sealing machines. Anti-Stick/Release: Release nature of PTFE film tape facilitates clean up of hot plastic extrusion coating by not allowing plastic build-up on rollers. Chemical Resistance: PTFE film tape provides chemical barrier for harsh design environments. Conformability: PTFE film tapes hug rollers for easy application and effective service..... P/N 09-03011 ..... **$121.95**

3M PTFE FILM TAPE GRAY

3M™ PTFE Extruded Film Tape 5491 is PTFE extruded film with silicone adhesive, provides an exceptionally slick surface when applied and resists curling during unwind. Chemical resistant surface for sealing and masking. Extruded, calendered film tapes that resist curling during unwind and provide an exceptionally smooth surface when applied. Extruded PTFE film tapes lie flatter than typical skived PTFE film tapes. Thicker backing helps extend the service life, compared to thinner versions, when subjected to abrasion or wear. Provides excellent chemical resistance except to organic solvents. Note: The silicone adhesive will be attacked by commercial organic solvents and is not recommended for applications requiring organic resistance. ..... P/N 09-03012 ..... **$149.95**

3M PAINT BUSTER HAND CLEANER

3M Paint Buster Hand Cleaner is a non-toxic and non-caustic cream-type hand cleaner that removes enamel and urethane paints, varnish, lacquer, putties, and adhesives. Superior performance without the use of skin damaging solvents. Almost no odor, non runny, easy-to-squeeze tube. 9.75 oz Tube..... P/N 09-03018 ..... **$19.50**

3M™ TARTAN TAPE DISPENSER GUN

3M Tartan™ Box Sealing Hand Dispenser is an economical, easy to use box sealing tape dispenser. It applies 3 inch (72 mm) box sealing tape.

P/N 09-03019 ..... **$25.50**

3M™ ELECTRIC VARIABLE SPEED POLISHER

Yes, you can have it all. Improve buffing and polishing productivity – and finish faster with more consistent results – when you add the 3M™ Electric Variable Speed Polisher to complete your finishing system. It's designed to deliver an excellent finish on the painted surfaces of cars, boats and planes – and it works great on acrylic and gelcoat too.

Features: More Productivity Finishing faster with consistent results saves time and money. More Performance Get a great-looking finish time after time, while reducing potential rework. More Power The 11 Amp motor delivers 37.5% more power (Compared to polishers with an 8 Amp motor). More Control Maintain speed and power under load with 1,000 - 3,000 rpm variable speed control. More Comfort 3M gripping material and vibration-absorbing handle improve comfort. More Durability Solid, lightweight construction with an extra-long and extra strong power cord. More Options Now all your finishing system elements are available from one source..... P/N 09-03013 ..... **$0.00**

ACCESSORIES

Description	Part No.	Price
3m™ Perfect-It™ Rubbing Compound	09-02999	**$41.75**
3m™ Perfect-It™ Low-linting Wool Compound Pad	09-03001	**$28.75**
3m™ Perfect-It™ Foam Compounding Pad	09-03002	**$23.50**
3m™ Perfect-It™ Wool Compounding Pad	09-03003	**$26.00**
3m™ Perfect-It™ Machine Polish	09-03004	**$36.85**
3m™ Perfect-It™ Foam Polishing Pad	09-03005	**$24.75**
3m™ Perfect-It™ Ultrafine Machine Polish	09-03006	**$47.85**
3m™ Perfect-It™ Ultrafine Foam Polishing Pad	09-03007	**$26.75**
3M™ Quick Connect Adaptor	09-03008	**$39.75**

3M FINISHING GLAZES

3M finishing glazes are the right choice when contouring and finishing surfaces or repairing minor surface imperfections prior to painting. Each product is self-leveling and easy to apply and sand. They will not stain/bleed through paint and adhere to most surfaces, including primed and painted surfaces.

Description	Size	Part No.	Price
Dynatron ™ Dyna Maxx™ Finishing Glaze	24fl. oz Tube	01-01094	**$26.85**
Dynatron ™ Xtra Glaze™ Finishing Glaze	24fl. oz Tube	01-01095	**$18.50**
Dynatron ™ Dyna-Glaze™ Finishing Glaze	24fl. oz Tube	01-01096	**$23.50**

3M SPREADERS

A special, flexible spreading edge makes precise application of body fillers, putties and glazes a breeze. Cured body filler will easily pop off the spreader, allowing it to be reused.

Description	Color	Size	Part No.	Price
Dynatron ™ Spreader	Yellow	3" x 4"	01-01105	**$0.40**

3M MIXING BOARDS

Clean, wax-free surface for mixing body filler. Cured body filler can be easily removed, allowing repeat uses or use the disposable paper board that offers a non-porous, wax-free surface and easy disposal.

Description	Size	Part No.	Price
Dynatron ™ Mixing Board	12 " x 11.5"	01-01107	**$3.75**
Marson ™ Disposable Paper Mixing Board	100 - 10" x 10"	01-01108	**$15.50**

3M FIBERGLASS RESIN/KITS

3M's Fiberglass Resin and Resin Kits use the exact same high-strength polyester resin that is used to manufacture high performance watercrafts, snowmobiles, bathtubs and showers. Polyester resins can be used alone or in conjunction with fiberglass mat, cloth or tape to create waterproof repairs to wood, metal, concrete, stainless steel, aluminum and fiberglass. Great for repairing large rust holes in metal and large fiberglass areas where lamination must be rebuilt. Compatible with all paints, including gel coat and marine paints. Quart. P/N 01-01104..... **$37.25**

CS

MEGUIAR'S PRODUCTS

MEGUIARS ALL METAL POLISH

Turn dull, oxidized wheels and metal stunningly bright in just minutes! Meguiar's proprietary formula cuts quickly to remove oxidation, but without scratching. Gentle polishing oils finish the surface for blindingly bright shine. Formulated to work quickly with Meguiar's DynaCone wheel polishing tool or by hand. Not for use with painted or clear-coated wheels. Quantity: 8 ounces.

P/N 09-03439 ..... **$8.00**

MEGUIARS ULTIMATE PROTECTANT

For superior UV protection and shine on rubber, vinyl and plastic that lasts weeks, look no further than Meguiar's Ultimate Protectant. Utilizing break-through UV clear-coat technology, Ultimate Protectant offers superior UV protection with shine that significantly outlasts conventional products, creating a rich shine and darkness on interior surfaces, while bringing new life to exterior trim, moldings and tires. Quantity: 16 ounces.

P/N 09-03437 ..... **$9.00**

MEGUIARS ULTIMATE BLACK

Makes trim and plastic look like new, with extended durability that lasts for weeks! Restore new life to all exterior plastic, vinyl and rubber trim such as bumpers, moldings, door handles, rearview mirror housings and windshield cowlings. Utilizing breakthrough UV clear-coat technology, Meguiar's Ultimate Black significantly outlasts conventional protectants and trim-care products. This durable formula dries almost instantly and, once cured, will not streak when treated surfaces get wet. Quantity: 12 ounces.

P/N 09-03442 ..... **$8.00**

CS

MEGUIAR'S DUAL ACTION POLISHER

Whether you're a seasoned professional or a weekend warrior who wants show quality, swirl-free results, this is the tool for you. Meguiar's® Dual Action Polisher greatly reduces the amount of time it takes to apply paint cleaners, polishes and protection products and produces results far superior to applying these products by hand. And because of its dual action - rotation and orbit, you never have to worry about burning the paint. *G110 includes (polisher, "D" handle, custom hard case, W67DA backing plate, wrench, manual) P/N 09-02358 ..... **$206.95**

MEGUIAR'S MIRROR GLAZE

PLASTIC POLISH (NO. 10) **-** Safely restores and maintains optic clarity to all clear plastics. This complete one-step product keeps new and like-new transparent plastics in perfect condition with a static-free coating that repels dust. Meets Military Spec MIL-C-5547 and MIL-C-18767A(ASG). 8 Oz. P/N 09-23300 ..... **$7.75**

PLASTIC CLEANER (NO. 17) **-** Safely removes fine "hairline" scratches and grime from clear plastic windows and windshields, acrylic and polycarbonate surfaces. Follow with an application of Plastic Polish (No. 10) to restore perfect clarity. 8 Oz ..... P/N 09-23500..... **$7.75**

CLEAR PLASTIC CLEANER/POLISH (NO. 18) **-** Mirror Glaze #18 restores optical clarity and romoves surface residue. Its anti-static formula repels dusts and its one-step action saves maintenance time. Just spray on and wipe dry to safely remove surface contaminants and restore optic clarity. .....8 oz. P/N 09-23800 ..... **$9.25**

FINAL INSPECTION (NO. 34) **-** Mists on and wipes off to remove fresh contaminants and maintain a showroom shine... anywhere, anytime. High lubricity formula removes dust, fingerprints, contaminants and fine scratches. Contains optical brighteners for a high gloss shine. It is "paintable", safe for use in a paint shop environment and safe on all paint finishes, including clear coats.

16 Oz. ..... P/N 09-00446 ..... **$6.95**
1 Gal. ..... P/N 09-00445 ..... **$31.75**

VINYL & RUBBER CLEANER/CONDITIONER (NO. 40) **-** Gives a clean, natural looking luster to rubber and vinyl surfaces. Cleans the surface while restoring its original color. Prevents fading, cracking & drying. Avoids typical synthetic shine of conventional protectants. Contains UV protectants to extend life of vinyl & rubber. Great for use on tires, rubber trim, under hood detailing. Perfect for vinyl surfaces, including dashboards, door panels, vinyl tops and interiors.

16 Oz. ..... P/N 09-23450 ..... **$9.90**
1 Gal. ..... P/N 09-23460 ..... **$29.50**

POLYMER SEALANT (M-20) **-** Polymer Sealant outshines any other wax or polymer product. It has a unique blend of polymers, silicones and imported waxes which create a brilliant high gloss finish that outlasts all other waxes. Polymer Sealant is safe and effective on all paint finishes, including clear coats. 16 oz..... P/N 09-00764 .... **$17.50**
64 oz..... P/N 09-00185 .... **$39.00**

MEGUIAR'S SOFTBUFF FOAM PADS

SoftBuff foam pads are safer than wool pads because they will not leave scratches or buffer swirl marks. When used to apply Meguiar's cleaners, polishes & waxes, these unique, fiber-free foam pads add incredible gloss and depth of color to all fiberglass & painted finishes.

W-7000 8" CUTTING PAD **-** Offers aggressive cleaning ability without leaving swirl marks, scratches or other blemishes. Its quick-change anchor-loop backing matches up with all popular types of hook and loop buffer backing plates. P/N 09-23470 ..... **$14.00ea**

W-9000 8" FINISHING PAD **-** The finest finishing tool to create the ultimate high gloss, swirl-free finish! Its quick-change anchor-loop backing matches up with all popular types of hook and loop buffer backing plates.

P/N 09-23480 ..... **$13.75ea**

W-65 6-1/2" PROFESSIONAL BACKING PLATE **-** The perfect partner to all SoftBuff foam buffing pads with quick-change anchor loop backing.

P/N 09-23490 ..... **$18.75ea**

W-1000 8" & W-5500 5-1/2" FINESSE POLISHING PADS **- *(with convenient screw-on backing plate)*** Match up with any rotary buffing tool. Both multipurpose pads produce a swirl-free, high gloss finish with added depth of color and reflection. W-1000 ..... P/N 09-23510 .... **$13.50 ea**

W7207 - SOFT BUFF™ 2.0 FOAM CUTTING PAD **-** New foam technology cuts through moderate surface defects with fewer swirls. 7" pad size reduces chatter resulting in easy buffing. High-tech laminate provides durability and is machine washable. Recessed backing for easy centering.

P/N 09-02359 ..... **$14.75**

W8207 - SOFT BUFF™ 2.0 FOAM POLISHING PAD **-** Eliminates minor surface defects while restoring gloss. 7" pad combined with new technology provide a smooth buffing experience. High-tech laminate provides durability and is machine washable. Recessed backing for easy centering.

P/N 09-02360 ..... **$12.50**

W9207 - SOFT BUFF™ 2.0 FOAM FINISHING PAD **-** All new soft foam technology removes light swirls and creates a luxurious high gloss finish. Smooth buffing experience with minimal fatigue. High-tech laminate provides durability and is machine washable. Recessed backing for easy centering

P/N 09-02361..... **$11.75**

MEGUIAR'S PRODUCTS

MEGUIAR'S GOLD CLASS

GOLD CLASS CAR WASH SHAMPOO & CONDITIONER - Meguiar's® Gold Class™ Car Wash Shampoo & Conditioner is a rich and luxurious product designed to both wash and condition paint in one easy step. The premium formula gently foams away tough dirt, road grime and contaminants without compromising wax protection. Ultra rich paint conditioners clear away debris to reveal color and clarity, leaving paint looking radiant.

16oz. ..... P/N 09-02330 ..... **$8.50**
64oz. ..... P/N 09-02331 ..... **$8.25**
1 Gal ..... P/N 09-02332 ..... **$15.25**

GOLD CLASS WAX - Elegant, timeless, premium...Since its introduction, Meguiar's® Gold Class™ Liquid Wax has inspired automotive enthusiasts worldwide to pamper, condition and protect their treasured investments. Our unique and proprietary blend of conditioners nourish and enrich paint to create clear, deep reflections and brilliant shine. Carnauba and polymer protecting agents reflect damaging UV rays, remove fine swirls, and create strong, long-lasting protection to preserve your finish.

Liquid ..... P/N 09-02333 ..... **$11.50**
Paste ..... P/N 09-02334 ..... **$14.75**

GOLD CLASS™ RICH LEATHER LOTION, SPRAY & WIPES - Meguiar's® Pamper and protect your leather in one easy step with Meguiar's improved Gold Class Rich Leather Cleaner & Conditioner Lotion, Spray and Wipes. The enhanced, premium blend of moisturizers and nutrients - now with aloe for improved conditioning - quickly absorbs into leather for a natural, nongreasy finish. The convenient spray format is great for large areas or when working on perforated leather. The wipes feature 25 thick, textured wipes saturated with our enhanced, premium blend of moisturizers and nutrients deeply nourish fine leather. Each contains advanced sun-blocking agents and UV sunscreens to help defend against premature wear and fading.

Lotion ..... P/N 09-02346 ..... **$7.50**
Spray ..... P/N 09-02316 ..... **$8.90**
Wipes ..... P/N 09-02317 ..... **$6.75**

GOLD CLASS™ TRIM DETAILER - Gold Class Trim Detailer features innovative technology pioneered by Meguiar's to instantly restore color and richness to faded and discolored trim and molding. Trim is protected so well that the "like new" appearance lasts for weeks, not days. Trim Detailer also helps to remove unwanted contaminants and wax residue.

10oz. ..... P/N 09-02336 ..... **$3.75**

MEGUIAR'S GOLD CLASS ALL PURPOSE CLEANING WIPES - Meguiar's combines its strongest cleaning and degreasing formulas in a disposable wipe. Designed for multi-surface use including vinyl, metal, rubber, chrome, plastics & fabrics, Meguiar's Gold Class wipes are environmentally safe, non-abrasive and non-toxic. Packaged 25 to a container, the 7"x 9" wipes store easily in gloveboxes, trunks or bulkheads. They are powerful enough to clean road grime from wheels and engines, or salt spray from fiberglass hulls, yet safe on hands.

P/N 09-01651 ..... **$5.95**

MEGUIAR'S NXT GENERATION

NXT GENERATION® CAR WASH - Meguiar's® expertise in Engineered Synthetic Polymer technology has led to the development of a completely synthetic car wash concentrate that loosens and emulsifies even the toughest dirt and road grime with extreme sudsing action. This pH balanced, non-detergent formula won't strip off wax protection and is gentle on all painted finishes as well as rubber, vinyl, and plastic components. Meguiar's NXT Generation® Car Wash is the first step to a show car shine, and prepares your paint for an application of Meguiar's NXT Generation Tech Wax® 2.0.

18oz. ..... P/N 09-02326 ..... **$4.95**
64oz. ..... P/N 09-02327 ..... **$7.75**

NXT GENERATION® TECH WAX® 2.0 - NXT Generation® Tech Wax® 2.0 is a scientific breakthrough that introduces a new dimension of gloss and protection. This improved formula produces unbelievably deep, vibrant color and a dramatically clear wet-look. New Hydrophobic Polymer Technology™ provides relentless water beading and protection against oxidation, corrosion, UV rays and surface degradation. "Hydrophobic" means "water-fearing" and this new breakthrough technology builds such incredible protection and surface tension that water beads up and just glides off your paint finish, wash after wash!

Liquid ..... P/N 09-02328 ..... **$16.75**
Paste ..... P/N 09-02329 ..... **$15.50**

MEGUIAR'S CLASSIC

DEEP CRYSTAL® CAR WASH - Contains special ingredients that extend the life of the suds. Dirt and grime are quickly loosened and removed while wax protection is preserved. For unparalleled performance, use with Meguiar's® Microfiber Wash Mitt. P/N 09-02337 ..... **$5.25**

CLEANER WAX - Meguiar's® most versatile, one step wax specially formulated to produce eye-dazzling results on all finishes. Rich conditioning oils and legendary gentle cleaning ability make it an excellent choice for daily drivers exposed to the elements.

Liquid ..... P/N 09-02318 ..... **$10.75**
Paste ..... P/N 09-02319 ..... **$8.95**

DEEP CRYSTAL® SYSTEM CARNAUBA WAX - Creates a strong, protective barrier on your paint that locks in shine and gloss. Our long-lasting, tried-and-true formulation utilizes the highest grade of carnauba to protect all paint surfaces, including clear coats.16oz. P/N 09-03426 ..... **$6.95**

DEEP CRYSTAL® SYSTEM POLISH - A pure polish specially formulated for dark-colored cars. Clear coat safe, the formula creates a brilliant, high gloss finish by conditioning and nourishing paint through the replenishment of valuable oils. This makes dark colors darker and reflections deeper. It's that extra step necessary to create an amazing wet-look show car shine.

16oz. ..... P/N 09-02320 ..... **$7.65**

SMOOTH SURFACE® CLAY KIT - Removing above surface bonded contaminants and restoring a smooth surface to your paint finish is easily accomplished by using this Clay Kit. The non-abrasive clay bar safely, easily and instantly removes bonded contaminants as you rub it across the surface of your car using a mist & wipe product, like Meguiar's Quik Detailer® as a lubricant. Meguiar's Smooth Surface Clay Kit contains everything you need to create a smooth surface! Clay Kit includes: two 50 gram clay bars, individually wrapped & in a moisture-seal case, Quik Detailer for use as a clay lubricant, Cleaner Wax sample & Meguiar's Supreme Shine® Microfiber Towel.

Clay Kit ..... P/N 09-02338 ..... **$20.00**
Replacement Clay ..... P/N 09-03425 ..... **$18.75**

QUIK WAX® - Hi-performance, spray on carnauba protection offers dramatically deeper, darker reflections with increased gloss and shine. Just mist on and wipe off to wax your entire car (wet or dry) in minutes. For superior results during application and removal, we recommend using our Supreme Shine® Microfiber or Ultra Plush Super Terry. P/N 09-02321 ..... **$6.95**

QUIK DETAILER® - Keeps a waxed car looking "just waxed". Clear coat safe, Meguiar's Quik Detailer removes harmful contaminants before they damage your finish. Use Quik Detailer right after your car is sprayed by a water sprinkler, hit by a bird dropping, or exposed to any other condition that ruins your "just waxed" appearance. Details a full sized car in less than 15 minutes!

16oz. ..... P/N 09-02322 ..... **$7.45**
32oz. ..... P/N 09-02323 ..... **$8.75**

QUIK INTERIOR DETAILER - The fastest way to clean all interior surfaces. Use every time you wash or Quik Detail your paint to give your interior that "just detailed" look. In just 5 additional minutes, your entire interior will look sharp and smell fresh. Quickly and easily maintains the look and feel of interior plastics, vinyl, leather, rubber, metal and even audio/video equipment. The safe, high lubricity formula lifts off dust, ashes, dirt, grime, spills and fingerprints without build-up. And, unlike traditional protectants that leave an artificial greasy feeling, Quik Interior Detailer leaves your interior surfaces looking natural and revitalized.

Spray ..... P/N 09-02339 ..... **$5.75**
Wipes ..... P/N 09-02340 ..... **$5.95**

QUIK OUT® CARPET & UPHOLSTERY CLEANER - The fast and easy solution to keeping carpet and upholstery looking like-new. Active, penetrating foam attacks stains from the bottom up for deep cleaning. The powerful, professional-strength foam easily tackles the toughest stains, such as motor oil, grease, lipstick and coffee. The unique formula dries quickly without leaving behind a sticky or stiff residue so carpets and upholstery are left looking and smelling fresh and feeling like-new. P/N 09-02341 ..... **$4.50**

SUPREME SHINE PROTECTANT - With the addition of Supreme Shine Protectant to the Meguiar's® line-up, Meguiar's now has a protectant family that offers users the ability to choose from two different levels of shine. For those who love shine, Supreme Shine Protectant is the fastest and easiest way to create a hi-shine surface on vinyl, rubber, and plastic surfaces.

450ml ..... P/N 09-02349 ..... **$4.65**

NATURAL SHINE PROTECTANT - Maintain that "like new" look on dashboards, trim, tires and more. Natural Shine's complex formula includes mild cleaning agents that help remove daily dirt and grime and restore the original, natural finish. Includes UV blockers to help reduce the effects caused by the sun.

P/N 09-02342 ..... **$4.85**

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MEGUIAR'S PRODUCTS

MEGUIAR'S CLASSIC

SWIRLX - Car Guys are constantly asking how to best remove swirl marks/spider webs/holograms to restore crystal clear reflections and have a flawless, show-car shine. SwirlX Swirl Remover effortlessly removes swirl marks while improving color and clarity. SwirlX can be applied by hand or with our DA Polisher, and is a non-abrasive formula that gently smoothes away micro-fine swirl marks so you can have a flawless finish on all paints.16oz. P/N 09-02357 ..... **$7.85**

SCRATCHX® 2.0 - Keep ScratchX® 2.0 close at hand for quick removal of isolated paint scratches or blemishes … whenever they occur. Competitive products either hide the blemish or scratch the finish. Meguiar's® exclusive micro-abrasive system enables ScratchX 2.0 to remove paint blemishes fast while restoring brilliant high gloss. The new and improved formula can be applied by hand or with a DA.
P/N 09-00304 ..... **$8.85**

COLORX® - Meguiar's® COLORX® is the tested and proven system to restore deep color and gloss from your oxidized or contaminated paint finish. Helps remove fine scratches and swirl marks too. Our polish and wax combination will dramatically revive brilliant color and add a long lasting protection that locks in the shine. For best results, apply with an Even-Coat Applicator and remove residue with a Supreme Shine® Microfiber or Ultra Plush Super Terry.
P/N 09-02343 ..... **$7.85**

PLASTX CLEAR PLASTIC CLEANER & POLISH - This easy-to-use, rich gel formula quickly restores optical clarity to both rigid and flexible clear plastics. Cutting-edge advancements in Meguiar's® exclusive Microscopic Diminishing Abrasive™ Technology (MDAT) remove light oxidation, chemical degradation, surface contamination, stains and light surface scratches with ease. Special highly water resistant polymers provide long lasting durable protection to keep your clear plastics clear and beautiful longer. We recommend applying PlastX with a High Tech Applicator Pad or Ultra Plush Super Terry and using an Ultra Plush Super Terry or Supreme Shine® Microfiber for the final wipe-off.
P/N 09-02324 ..... **$7.35**

MEGUIARS ENDURANCE TIRE SPRAY

Rich, dark, high-gloss tire protection that lasts for weeks! Our advanced, long-lasting formula endures, even through washing and rain, and dries quickly eliminating overspray, runs and drips. Proprietary macropolymers and copolymers protect against UV damage and tire browning. The end result is that your tires stay black – with a rich, dark, high-gloss shine – for weeks longer than ordinary tire-shine products. See for yourself why Endurance is the enthusiast's favorite for high-gloss shine that lasts! Quantity: 24 ounces. Trigger Spray Bottle version.
P/N 09-03441 ..... **$8.25**

MEGUIARS ENDURANCE AEROSOL TIRE SPRAY

Our best performing, longest lasting aerosol! Endurance is a significant advancement in tire protection technology. Proprietary macropolymers and copolymers protect against UV damage and tire browning. The end result is that your tires stay black – with a rich, dark, high-gloss shine – for weeks longer than ordinary tire-shine products. See for yourself why Endurance is the enthusiast's favorite for high-gloss shine that lasts! Quantity: 15 ounces.
P/N 09-03440 ..... **$8.75**

MEGUIAR'S ACCESSORIES

WATER MAGNET® MICROFIBER DRYING TOWEL - Meguiar's® ultra plush Water Magnet® reduces drying time with less wring-outs by absorbing up to two times the water of traditional terry towels. The extra large 22" x 30" waffle texture wrings out easily and leaves a spot-free finish. X2000 Single pack P/N 09-02351 ..... **$7.85**

SOFT BUFF™ TERRY TOWELS - Meguiar's® Soft Buff™ Terry Towels are thick and plush to provide superior absorbency and a swirl-free finish. The towels are pre-washed for instant absorbency and lint-free performance.
P/N 09-02352 ..... **$7.95**

SUPREME SHINE® MICROFIBER TOWEL - Meguiar's® Supreme Shine® is an incredibly plush microfiber towel for producing swirl free, mirror-like results. The thick, deep dual-sided microfiber pile absorbs two times more than traditional terry towels providing faster wipe off with less strokes.

Single ..... P/N 09-02353 ..... **$3.65**
3-pk ..... P/N 09-02354 ..... **$5.95**

MICROFIBER WASH MITT - Meguiar's® extra thick Microfiber Wash Mitt is the ultimate choice for show car perfect finishes. The clear coat safe Microfiber lifts and traps dirt and grime for a brilliant, swirl-free finish. The comfort-fit cuff and soft inner lining make this wash mitt a pleasure to use.
P/N 09-02355 ..... **$4.80**

EVEN COAT™ MICROFIBER APPLICATOR PADS - Meguiar's® Even Coat™ microfiber applicator is the ultimate pad for swirl free, show car perfect results. Gentler than a foam pad, this applicator is ideal for ultra fine polishing and waxing. Its large, 5 inch surface area allows for faster polishing and waxing.
P/N 09-02356 ..... **$3.70**

MEGUIARS ENGINE CLEANER

Tough on grime and safe for your engine! Our non-caustic formula penetrates and cleans even the hardest to reach areas, quickly removing dirt, grease and grime, yet will not damage rubber and plastic components. Biodegradable formula is quick and easy to use. Works great for wheel-well cleaning, too! Quantity: 16 ounces.
P/N 09-03438 ..... **$5.75**

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FOAM CUSHIONING

Foam Cushioning is a dense* open cell foam that can be used for-glare shield padding, side panel padding, seat cushioning and for soundproofing. Meets FAR 25.853 burn requirements. Width is 48" and is sold by the linear yard. Available in 1/8" and 1/4" and thickness. *Density (pcf)+/-.5 pcf=5

1/8" Foam cushioning ..... P/N 11-02062 .....**$51.50/yd**
1/4" Foam cushioning ..... P/N 11-02063 .....**$58.50/yd**

ABS PLASTIC SHEETS

ABS thermoplastic fire-rated sheet material can be used as a base material for making of glare shields and side panel backing. Easily cut, drill, saw, and grind this ABS sheeting. The plastic sheets have an excellent ductility and formability. Meets FAR 25.853 burn requirements. Smooth flat surface on one side and a matte finish on the other side. Color: Black. Sheet size is .063" x 23.5" x 54'.

P/N 11-02054 ..... **$73.65**

LEATHER-LIKE VINYL UPHOLSTERY MATERIAL

Leather-Like Vinyl has the ultra-soft leather feel without the leather cost. It can be used for seats, wall panels and headliners. Meets FAR 23.853(a) flammability requirements. It provides superior wear resistance (100,000 cycles), abrasion resistance and excellent tailorability. Width is 54" and weight is 27 oz. per linear yard. Available in camel, gray and black. Pricing is per linear yard. Sample provides a smallpiece of each. Burn certificates are available upon request.

Gray..... P/N 11-02056 .....**$49.85/yd.**
Black..... P/N 11-02057 .....**$49.50/yd.**
Camel ..... P/N 11-02059 .....**$49.50/yd.**

Sample Kit includes small piece of each

Sample Kit ..... P/N 11-02061 .....**$1.99/yd.**

COLOR-BOND LEATHER, VINYL & HARD PLASTIC REFINISHER

Color-Bond restores or changes the color of leather, vinyl, ABS plastic, PVC, polycarbonate, acrylic, fiberglass, lexan and thermal plastic urethane permanently. It is dry to the touch in 45 seconds and fully bonded in 10 minutes. It will not crack, flake or peel & gives complete grain simulation. You can change color over and over and never obscure the grain or affect the hand. It is now OEM approved by the Ford Motor Company. After 3-1/2 years of testing, the specification that Color-Bond passed is the first of its kind and is approved for worldwide use. Color-Bond will be distributed to the 5,200 Ford Quality Service Parts dealers of North America. It will also be used for repair of instrument panels, door panels and seats in all of the assemble plants. Color-Bond is excellent for restoration of aircraft seats, side panels, glare shields, and other items. Aircraft Spruce & Specialty Co. has been appointed as the aviation distributor for Color-Bond.

Color	Size	Part No.	Price
#3 Eggshell White	6 oz. Spray	13-01496	**$12.75**
#106 Black	12 oz. Spray	13-01495	**$12.75**
#108 Prairie Tan	12 oz. Spray	13-01497	**$12.75**
#107 Gray	12 oz. Spray	13-01498	**$12.75**
#105 White	12 oz. Spray	13-01499	**$12.75**
#103 Navy Blue	6 oz. Spray	13-05120	**$12.75**
#103 Navy Blue	12 oz. Spray	13-01883	**$12.75**
#254 Natural Tan	6 oz. Spray	13-02477	**$13.25**
#231 Ivroy	12 oz. Spray	13-02588	**$12.75**
#94 Jag Tan	6 oz. Spray	13-01881	**$12.95**

Molecubond color chart..... P/N 09-00327..... **$3.95**

The color chart can be viewed on our website at: www.aircraftspruce.com

GRACO HVLP SPRAY SYSTEMS

Virtually eliminates mist. Requires less maintenance. Blows less heat up the stack. Uses up to 50% less material. Delivers better pattern control. Reduces overspray up to 90% Eliminates high-pressure "flop" and tiger stripes.

GTS-3800 HVLP SPRAYER

The GTS-3800 is highly productive for nearly all fine finish applications. Easily spray stains, lacquers, oils, enamels, urethanes and automotive finishes. Plus, it atomizes many water-based latex and acrylic coatings, multi-color and other higher viscosity coatings.

- Turbine Stages – 3
- Turbine Air Working Pressure – 6 psi (.414 bar, 41.4 kPa) max.
- Turbine Air Outlet Flow Rate – 80 cfm (2265 lpm) max.
- Gun – GTS-980 Non-Bleeder Style with Fluid Set #3
- Cup – 1 qt (1 liter)
- High-Flex Turbine Air Hose Length – Standard units incl. 30 ft (9 m). Use 60 ft (18 M) max.
- Power Cord – No. 16 AWG, 3 wire, 6 ft (1.8 m)
- Electrical Rating – 12A at 120 VAC
- Weight: Complete – 34 lb
- Dimensions: 18 in. x 15-1/2 in. x 16 in.

P/N 12-15780 ..... **$954.00**

GTS-4900 HVLP SPRAYER

Our most powerful and versatile sprayer offers everything you need on the job for high productivity. This unit is loaded with features and can spray the broadest range of materials.

- Turbine Stages – 4
- Weight: Complete – 39 lb
- Turbine Air Working Pressure – 8 psi (.552 bar, 55.2 kPa) max.
- Turbine Air Outlet Flow Rate – 82 cfm (2321 lpm) max.
- Gun – GTS-980 Non-Bleeder Style with Fluid Set #3, #4 and #5
- Cup – 1 qt (1 liter)
- High-Flex Turbine Air Hose w/Quick disconnects – Standard units include 30 ft (9 m). Use 60 ft (18 M) max.
- Power Cord – No. 12 AWG, 3 wire, 15 ft (4.6 m)
- Electrical Rating – 14A at 120 VAC
- Dimensions: 18 in. x 15-1/2 in. x 16 in.

P/N 12-15950.....**$1,652.00**

GRACO ACCESSORIES

DESCRIPTION	P/N	PRICE
30 ft. Replacement Hose	12-00016	**$92.25**
Superflex Hose 54"	12-74660	**$32.75**

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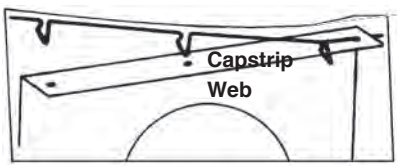
NEEDLES – GROMMETS – PLATES

MARTIN FABRIC CLIPS



Used to secure fabric to metal ribs in wings and control surfaces. Replaces rib-stitch cord or P-K screws. Provides a more secure and streamlined installation. Drastically reduces covering time. FAA-approved for aircraft listed. Easily adapts to homebuilts with metal ribs. Spacing between clips, 3". Spacing may be reduced to 1-1/2" on high-performance aircraft by using 2 wires, with clips inserted in alternate holes that are spaced 1-1/2" apart. Fabricated from stainless steel wire. Supplied in 25-ft. continuous coils.

25-Ft. Coil..... P/N 09-19400 ..... **$15.50**

INSTALLATION KITS

Aircraft Model	STC No.	Part No.	Feet Req'd.
Aeronca-Champion	SA150S0	09-19500	225
Piper — All Models	SA126S0	09-19600	175-250
Stinson	SA615S0	09-19700	175
Taylorcraft	Original Equipment	09-19800	225

All install kits $38.95. No clips are included. Order separately.
****If clips are used to secure fabric on controls, add 50 ft.***

CESSNA-TYPE FABRIC CLIPS

Individual spring steel clips used to attach fabric to metal ribs. Eliminates rib stitching.

5% Discount on purchase of 100

P/N 09-19900 ..... **$0.78**

TAC RAGS

Tac Rags pick up dust like a magnet. Use Tac Rags in final cleaning or dusting of surface before applying enamel, lacquer or synthetic paints. Wipe surface gently to remove all dust, lint and fine sand particles from metal, wood or plastic surfaces. Tac Rags are anti-static, epoxy compatible, and remain soft and tacky indefinitely. Individually packaged.Size: 18" x 36".

P/N 09-20000..... **$0.85 ea.**.....**$9.18/Dzn**

3M™ FINE-LINE PAINT TAPE

This 3M™ tape is particularly suitable for pin striping, multicolor and other custom painting applications. It is a thin, conformable green polypropylene film tape with a special finish that resists paint runoff. The adhesive adheres instantly and offers good holding power, resists lifting and curling. Stretchable and easy to handle. Provides an extremely fine color-line separation for decorative painting of aircraft. Scotch No. 218.

1/8" x 60 Yds. .....P/N 09-20200 ..... **$12.90**
1/4" x 60 Yds. .....P/N 09-20300 ..... **$9.65**
3/8" x 60 Yds. .....P/N 09-20350 ..... **$18.90**
1/2" x 60 Yds. .....P/N 09-20400 .....**$10.95**
3/4" x 60 Yds..... P/N 09-20500 ..... **$13.95**

Less 10% on 6 Rolls (Assorted) • Less 15% on 12 Rolls (Assorted)

WOOD BRUSHES

Natural, undyed bristle with smooth, unpainted wood or polyethyle handles. Unaffected by paint, dopes, thinners or solvents.

Brush Width	Part Number	Price Each	Brush Width	Part Number	Price Each
1/2"	09-21100	**$0.27**	2-1/2"	09-38825	**$0.57**
1"	09-21200	**$0.43**	3"	09-38803	**$0.86**
2"	09-21300	**$0.56**	4"	09-38804	**$2.10**
Discount: Less 10% on 50, 15% on 100 (per size)					

ACID OR GLUE BRUSHES

Horse hair with metal handle.

#1- 3/8" Wide..... P/N 09-21400 ..... **$0.24 ea.**...**$3.65/dz.**
#2- 1/2" Wide..... P/N 09-21500 ..... **$0.37 ea.**.. **$3.65/dz.**

DOLLAR PATCHES

Grade B fabric patches for quick repairs on Grade B & Dacron covering. Smooth edge, 2.5" dia. Also available in Dacron which are more durable & less noticeable on aircraft exterior. Less 10% For 12 or More.

Grade A cotton patches.....P/N 09-17700... **$5.50/ea**
Dacron Dollar Patches .....P/N 09-17705... **$0.98/ea**
Ceconite C101.....P/N 09-00162.. **$7.75/ea.**
Ceconite C102.....P/N 09-00163.. **$7.75/ea.**
PF P-103 Med. .....P/N 09-18750.. **$5.25/ea.**
P99 Heavy Duty .....P/N 09-00164.. **$7.75/ea.**

RIB LACING & SEWING NEEDLES

3"..... Curved ..... Needle 3C ..... P/N 09-18705..... **$2.75/ea**
6"..... Curved ..... Needle 6C ..... P/N 09-18710..... **$2.70/ea**
12"..... Curved Tip .... Needle 12C .... P/N 09-18720... **$21.40/ea**
12"..... Straight ..... Needle 12..... P/N 09-18725..... **$6.95/ea**
18"..... Curved Tip .... Needle 18C .... P/N 09-18730... **$22.15/ea**

Needle Assortment includes 1 each of the following: 3" curved, 6" curved, 12" curved, 12" straight, 18" straight.

P/N 09-18735..... **$38.00**

RIB STITCH NEEDLES

Made from the highest quality steel. Heat treated, nickel plated.

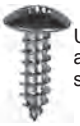
2-1/4"..... Curved..... 18 Gauge .....P/N 09-18300 ..... **$1.26/ea**
4"..... Straight ..... 15 Gauge .....P/N 09-18400 ..... **$2.70/ea**
10"..... Straight ..... 13 Gauge .....P/N 09-18500 ..... **$3.05/ea**
14"..... Straight ..... 13 Gauge .....P/N 09-18600 ..... **$7.75/ea**
18"..... Straight ..... 12 Gauge .....P/N 09-18700 ..... **$4.65/ea**

"T" HEAD PINS

Used to hold fabric in place temporarily in covering operation.

Plated steel, 1-1/2" L. 100 Pins..... P/N 09-18850..... **$4.29**

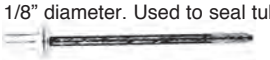
SCREWS



Used on some aircraft models to attach fabric to metal wing ribs and empennage ribs instead of rib lacing. Truss-head, type "A" self-tapping sheet metal screws. Size #4 x 1/4".

Stainless Steel, Phillips Head..... P/N T4X4 .....**$0.03/ea**
Stainless Steel Type A, Phillips..... P/N 4RX1/2SS...**$0.04/ea**
Stainless Steel Type A, Phillips..... P/N T4X6 .....**$0.04/ea**

AD-41H CLOSED-END BLIND POP RIVET



1/8" diameter. Used to seal tubing vent holes.

P/N 04-01496 .....**$0.08/ea**

BLIND RIVETS

Use these 1/8" dia. "Pop" rivets to attach fabric to the ribs on Champion/Bellanca aircraft. 100 Rivets.

P/N 09-18900 .....**$22.35**

WASHERS

Aluminum washers may be use in place of original plastic washers under screws and pop rivets to attach fabric to metal wing or empennage ribs.

Plastic, 1/8" I.D. x 1/2" OD
P/N 09-19000 .....**$29.50**
Aluminum, 0.128" ID x 1/2" OD x 0.016
P/N 09-19100 .....**$7.30**

DRAIN GROMMETS

Manufactured from virgin cellulose acetate butyrate resin.

Grommet Type	Part No.	O.D.	I.D.	Price each
Flat	AN231-1	1-1/4"	3/8"	**$0.19**
Flat	AN231-2	3/4"	5/16"	**$0.18**

Grommet Type	Part No.	O.D.	I.D.	Price each
Seaplane*	AN231-4	1-1/8"	—	**$0.18**
Aluminum	09-19110	3/4"	1/4"	**--**

****Depressed center — LESS 15% ON QTY. OF 100 (per Part No.)***

INSPECTION RINGS

Plastic rings, 4-5/8" O.D. x 3-1/2" I.D. x .050" thick, molded from virgin cellulose acetate butyrate resin. To be cemented to fabric as inspection plate retainer. ***20% Discount on 100 or more.*** P/N 09-19200.....**$0.55 ea**

INSPECTION RING PATCHES

Glued over inspection rings to prevent accidental removal.

P/N 09-18750.....**$5.25 ea**

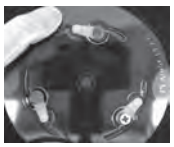
INSPECTION PLATES

DOMED - Concave aluminum snap-type plate has single clip riveted across full diameter. Snaps to the ring at 2 contact points. Plate is 4.75" dia.

P/N 09-19300..... **$1.93ea**.....**$164.05/100**

RECESSED - Recessed center and flanged-edge design will not creep off center due to vibration in propwash areas. 4-3/4" dia. x .020 aluminum. Will not twist or vibrate. P/N 09-18740.....**$5.45 ea**

CLEAR AIRCRAFT INSPECTION PLATE COVER



This is a clear window, aircraft inspection cover that is a cover replacement for a 3.5" inspection ring. The plate is made from Lexan plastic, can be used with an inspection hole size of 3.38 minimum up to a 3.56 maximum, and should not be installed on aircraft traveling at speeds in excess of 250 knots. It can be cleaned with standard aircraft windshield cleaners. P/N 09-02114 .....**$8.85**

PAINT ACCESSORIES – REPAIR KITS

PREVAL SPRAY GUN

Sprays paints, primers, gel coats, lubricating oils, cleaners, zinc chromate, etc. Perfect color matches in minutes. No wires, no hoses-portable and disposable. Sprays up to 16 ounces of any liquid thinned to the same consistency as for heavy spray equipment.

#267 Complete Set ..... P/N 09-00339 ..... **$7.25**
#268 Power Unit..... P/N 09-00340 ..... **$5.85**
#269 Product Container ..... P/N 09-00341 ..... **$1.65**

PAINT N' POUR PAINT CAN LID WITH POUR SPOUT

Paint can lid with pour spout, yellow, material: Polypropylene. For Use With 1 gallon paint cans.
P/N 09-03592 ..... **$6.25**

POUR-IT REUSABLE PAINT LID

The only reusable paint can lid that seals to the inside of all one gallon cans. This keeps the paint out of the lid channel for a perfect re-seal. It keeps all contaminates out of your paint. As it was designed for accurate pouring, it also has a quality screw cap on the pour spout for easier access to trim paints, primers & sealers that are used often, in smaller quantities. Pourit eliminates hazardous paint spill, saves clean-up time and reduces material waste. It is washable and reusable. This product should be used anytime you open a round one gallon can. P/N 09-01756 ..... **$2.65**

POURING PAL

Just Snap It On! One size fits pint, quart, gallon and 4 liter paint cans. Snaps onto inner rim of paint can to keep paint out of the gutter and ensure a goo seal after use. P/N 09-22210 ..... **$0.66**

PAINT STIRRING PADDLE

P/N 09-22205 ..... **$0.16**

AIRCRAFT SPRUCE PAINT CAN OPENER

P/N 09-02063 ..... **$0.85**

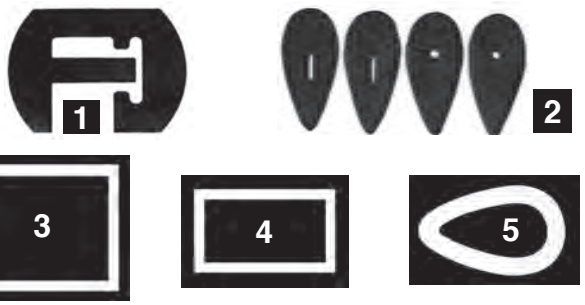
EXTEND-A-LUBE SUPER STRAWS (PACKAGE OF 3)

Super Straws reduce or eliminate messes from overspray. The high grade plastic is extremely chemical resistant and can be used with various lubricants, harsh degreasers, and compressed gases.

Super Straws increase the range and utility of aerosol products by using a 16" high grade plastic tube to access those hard to reach places.

Easily cut to any length using a knife or scissors, Extend-A-Lube Super Straws are proudly manufactured, packaged, and sold in the U.S.A.!

P/N 09-02398 ..... **$2.95**



PIPER INSPECTION FRAMES

Front & Rear Strut Opening Reinforcements - Set of 4
P/N 09-00334 ..... **$6.90**
Naugahyde Cable Seal Kit - 2 slotted fuselage and 2 aileron punched cable seals ..... Set of 4 ... P/N 09-00335 ... **$6.40**
Front Trim Yoke Inspection Frame..... Set of 2 ... P/N 09-00336 ... **$5.50**
Underwing Inspection Ring Grommet Set of 2 ... P/N 09-00337 ... **$5.90**
Tear Drop Reinforcement..... Set of 2 ... P/N 09-00338 ... **$9.75**

POLYESTER FLANNEL

45" width. For leading edge..... P/N 09-01750 ..... **$7.20/yd**

SCOTCH-BRITE™ ULTRA FINE HAND PAD 7448

Use for cleaning, scuffing, deburring and finishing by hand with water or solvents. Will never rust.
P/N 09-01753 ..... **$1.15/ea**

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PAINT STRAINERS

Cone type strainer. Medium mesh (48x36), for filtering all pigmented finishes.
P/N 09-22200..... **$0.14ea.**

3M™ PARTICULATE RESPIRATORS

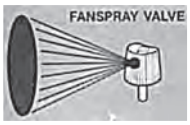
P/N 09-01496

P/N 09-01497

Helps provide worker protection against certain non-oil based particles. Comfortable, easy to use, and promotes greater worker acceptance increasing wear time. Features 3M's patented filter media, nose foam, and adjustable noseclip that helps provide a secure seal and helps reduce eyewear fogging. Workplace applications: woodworking, grinding, sanding, sweeping, bagging, other dusty operations.

Description	Part No.	Price
8210 Standard dust mask	09-01496	**$0.98**
Vented dusk mask	09-01497	**$1.91**

TEMPO FINISHES – SUPERFLITE



AIRCRAFT SPRAY COATINGS

All Tempo spray products feature the exclusive adjustable Fanspray valve which offers a professional spray pattern so anyone can "paint like a pro". The extra-width pattern evenly coats about 3 times the area with each pass compared with an ordinary spray valve. Packaged in 11 oz. to 16 oz. cans, depending on product.

Discount: 10% on 6 cans, 15% on 12 cans, 25% on 24 cans. (May be assorted.)

ULTRA-HIGH TEMPERATURE PAINTS

Exceptional durability up to 1200°F. Will not burn off, chip or peel when properly applied. No primer required. Ideal for exhaust stacks. Ultra-High Temperature paints air-dry in minutes but require curing at temperatures over 650°F.

- White #13-1
- Black #13-2
- Racing Silver #13-8 ..... **$7.95**

TEMPO MAINTENANCE & SPECIALTY PRODUCTS

Fluorescent Paint (Red/Orange) — Up to 4 times brighter than other colors. Ideal for aircraft, boat - wherever visibility is vital. For best results, use over light colored base.
#18-1301 ..... **$7.85/ea.**

Chrome Paint — restores new chrome appearance to chromed surfaces. #20-199 ..... **$7.75/ea.**

Scratch Filler Primer — Ideal for filling nicks, scratches, and minor surface imperfections. They dry fast, are sandable, and provide a smooth uniform surface for top coats.
#7-3500 - Red Oxide ..... **$5.20/ea.**
#7-4500 - Platinum Gray ..... **$7.50/ea.**

PREMIUM SELF-ETCHING PRIMER

Etches and primes in one easy step. Can be used under all today's automotive finishes. Perfect for spot repairs. Creates superior adhesion on most plastics, fiberglass, bare steel, aluminum and stainless steel. Color: Green. 12oz. Spray Can P/N 09-02099 ..... **$9.75**

CAN-GUN

Can-Gun is an aerosol spray can trigger handle which makes painting, cleaning, and lubricating jobs safer and easier. The user-friendly form-fit handle and trigger eliminates finger fatigue and provides the user with accurate control over the amount, speed, and direction of spray. The built-in safety shield insures no more messy hands or fingers. Sprays virtually all spray paints, lacquers, polishes, cleaners, lubricants, sealers, and adhesives and Can-Gun fits most spray cans. P/N 09-14760 ..... **$1.85 ea.**

EPOXY PROPELLER COATING

Extends blade life. Tempo's Epoxy Propeller Coating is formulated with the extra adhesion and abrasion resistance needed to protect propellers from corrosion and wear. Compared to standard enamel and lacquer paints, our epoxy formula stays on the blade more flying hours; hence, with regular use, this formula can extend blade life.

Flat Black	P/N 09-00982	**$6.95**
Med. Gray (Matches Hartzell OE Gray)	P/N 09-00983	**$6.95**
White	P/N 09-00992	**$6.95**

KRYLON AEROSOL HIGH HEAT PAINT

Krylon High Heat & Radiator Paint is ideal for mufflers, radiators, and engine blocks. Withstands temperatures to 1200F. Guards against rust. Available in three colors. 12 oz. aerosol cans. 12 oz. Aersol.

Aluminum	P/N 15-05467	**$12.25**
White	P/N 15-08254	**$12.50**
Black	P/N 15-08255	**$12.25**

AIRCRAFT ENAMEL

Excellent adhesion to aluminum and steel

Tempo's Aircraft Enamel has been especially formulated to adhere to aluminum and steel; providing excellent corrosion resistance. Recommended applications are all interior and exterior aluminum and steel surfaces, including wheels, landing gear and inside door hatches. For propeller blades, we recommend Epoxy Propeller Coating.
Neutral Gray Enamel Primer #750 ..... **$6.95/ea.**

09-00985	Black	**$6.95**
09-00989	Gloss White	**$6.95**
09-00987	Medium Gray	**$6.85**
09-02070	Flat Black	**$6.95**
09-00988	Flat White	**$6.95**

TEMPO ENGINE ENAMEL

Resists heat to 500°F . Tempo's Aircraft Engine enamel withstands the high heat demands of aircraft engines. This modified chain-stop alkyd enamel formula has excellent corrosion and fuel resistance.

All Tempo spray products feature the exclusive adjustable Fanspray valve which offers a professional spray pattern so anyone can "paint like a pro". The extra-width pattern evenly coats about 3 times the area with each pass compared with an ordinary spray valve. Packaged in 11 oz. to 16 oz. cans, depending on product.

WARNING: POSSIBLE LINK BETWEEN CHROMATE PIGMENTS AND LUNG CANCER

Several independent technical studies have suggested that excessive inhalation of zinc chromate dust may cause lung cancer. If conditions are such that this limit may be exceeded, additional protective equipment is required. A respirator that has a NIOSH/MESA approval TC-23C. See catalog for respirators that meet this requirement.

Lyc. Gray	P/N 219	**$6.75**
Olds Cont. Gold	P/N 239	**$6.75**
Gloss Black	P/N 09-00995	**$6.95**
Chevy Orange Engine	P/N 09-02405	**$6.85**

AIRCRAFT LACQUER

Dries in under 15 minutes

Tempo's Aircraft Lacquer is ideal when a very fast dry is required. This blended nitrocellulose lacquer formula can be applied to all interior and exterior aluminum and steel surfaces, including wheels, landing gear and inside door hatches. When additional corrosion protection is required, we recommend Tempo Aircraft Enamel.

Clear	P/N 809	**$7.50**
Blk Acrylic	P/N 09-01032	**$5.95**

ZINC PHOSPHATE AND ZINC OXIDE PRIMERS

Maximum adhesion to bare aluminum and steel

Tempo's Zinc Phosphate and Zinc Oxide Primers are recommended for priming bare metal. These primers provide maximum bonding to bare aluminum and steel. Tempo's Primers have been the workhorse in the aviation industry for many years. Zinc Oxide has been recently introduced to provide a "safer, healthier" alternative to Zinc Chromate with equal performance. The A-701 Yellow and A-702 Green Zinc Phosphate Primers meet the performance standards outlined in Federal Specification T-P-1757A. They also exceed the 800 hours of salt spray fog test (ASTM #B117). A-701 will replace A-901 Yellow and A-702 will replace A-902 Green.

Yellow (12oz.) A-701	P/N 09-02128	**$7.95**
Green (12oz.) A-702	P/N 09-02127	**$8.25**

SUPERFLITE AIRCRAFT ENGINE ENAMELS

Superflite engine enamels are fast-drying enamels developed specifically for air-cooled aircraft engines used in light duty aviation industries. The Superflite enamels feature superior adhesion, heat resistance, and a gloss finish. Cure Schedule: Dry to touch: 15 minutes, Dry to handle: 60 minutes Dry through: 24 hours To recoat: Before 60 minutes , or after 72 hours Benefits: Topcoat - Air dry or low temperature cure, For use on bare metal or painted surfaces Specifications: Shelf Life: 12 months at recommended storage temperatures, Heat Resistance: Up to 400 degree F.

Lyc. Grey Paint Quart	P/N 09-02558	**$21.85**
Lyc. Grey Paint Spray	P/N 09-02556	**$9.85**
TCM Gold Paint Gallon	P/N 09-02560	**$99.50**
TCM Gold Paint Quart	P/N 09-02557	**$21.50**
TCM Gold Paint Spray	P/N 09-02550	**$9.85**
Gloss Paint Black Quart	P/N 09-02559	**$22.25**

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PREKOTE SURFACE PRETREATMENT

PreKote® Surface Pretreatment from Pantheon Chemical, is a non-chromated surface pretreatment utilizing a safe, hazard-free technology that is flying on over 1,500 United States Air Force aircraft. PreKote® offers superior adhesion, improved paint flexibility, and advanced corrosion protection on painted surfaces, relative to traditional chromate and conversion pretreatments (such as alodine). PreKote® has passed stringent testing by the U.S. Department of Defense, the Boeing Company and other coating industry leaders. By eliminating the need for chromated conversion coatings (such as alodine), acid etches, solvent washes and other toxic processes, PreKote® can reduce paint preparation time and costs by up to 40%. PreKote® can be used on a wide range of surfaces including aluminum, steel, magnesium, titanium, CRES, galvanized surfaces, composite and plastic surfaces. Consistent, high performance results are achieved with a variety of paints and primers. PreKote® is non-toxic, non-corrosive, non-flammable, CFC free, ODS free, odor free, and readily biodegradable upon disposal. FEATURES: • Easy & safe process • Quantified superior results • Immediate cost reductions • Reduces hazardous waste • Decreases material, labor, and hazardous handling costs • Results in a high-performing surface finishes • No short and long term health risks.

Quart.....P/N 09-00825 ..**$26.70** Gallon..... P/N 09-00826 .....**$61.35**
5 Gallon .P/N 09-00827 **$223.50** 55 Gallon. P/N 09-00828 **..$1,989.00**
Prekote Large area repair kit..... P/N 09-00829.....**$64.95**

ALUMINUM PREPAINT PRODUCTS

ALUMIPREP USED FIRST MAKES THE PAINT FINISH LAST!

Use on unpainted aluminum aircraft, truck trailers, house trailers, boats, garage doors, outdoor furniture, etc.

ALUMIPREP NO. 33 – Use to clean, brighten and transform badly corroded aluminum to its natural appearance. Covers 400 sq.ft. per quart. **HAZARDOUS**

Qt. ..... P/N 09-01621 .... **$17.75**
Gal. ..... P/N 09-01620 .... **$34.75**

ALODINE NO. 1001 – An invisible coat to provide in-depth corrosion proofing to the brightened aluminum surface and act as a firm barrier against the elements and continued corrosion. Covers 250 sq.ft. per quart.

Qt ..... P/N 09-01628 .... **$31.95**
Gal. ..... P/N 09-01629 .... **$49.75**

METAL PREP NO. 79 – A non-flammable multi-purpose phosphoric acid based cleaner and prepaint conditioner for most metals. Leaves the surface chemically clean and corrosion free. Can be used to deep clean and etch a metal surface prior to paint or to prepare a surface for a subsequent chemical coating like that produced by GALVAPREP® SG on zinc and steel or ALODINE® 1201 on aluminum surfaces. **HAZARDOUS**.

Qt.....P/N 09-01625.....**$24.50**
Gal. .....P/N 09-01624.....**$33.85**

ALODINE NO. 1201 – After precleaning with Alumiprep 33 or Metal Prep 79, rinse with water. Apply Alodine without dilution by brushing or swabbing with sponge. Rinse with water and surface is ready for paint. This is a visible coating which leaves the surface with a golden coloration. The alodized surface provides protection against weather and firmly bonds paint. One quart treats about 200 sq. ft. **HAZARDOUS**.

Qt. ..... P/N 09-01619..... **$17.95**
Gal. ..... P/N 09-01618..... **$39.85**

AQUAPREP AVIATION METAL CLEANER

Aquaprep is a safe, superior cleaner for use on any metal or hard surface and is designed to replace solvent cleaners. It may be used on painted, primed, or bare metal surfaces. It is non-staining, provides improved cleaning and improved corrosion resistance, and is compatible with MetalPrep and Alodine. Designed to remove sealers, wax, grease, silicone, and crayons. Try some new Aquaprep on your next metal cleaning project. Covers 400 sq.ft. per quart.

1 Gal. ..... P/N 09-42100 ..... **$51.85**

ALODINE TOUCH-N-PREP 1132

Touch-N-Prep Alodine 1132 no-rinse conversion coating effectively phosphates most metals including aluminum, ferrous and galvanized substrates. Doesn't require rinsing, and can be air dried or force dried with hot air or an infra-red lamp. High density acrylic tip of the Touch-N-Prep applicator can be modified with a single edge razor blade to form any shape. The application method controls the amount of coating applied to the surface. Covers 20 sq.ft. P/N 09-01630.....**$76.85**

AKZO FAST DRYING INTERIOR EPOXY PRIMER

AKZO interior epoxy primer #463.12-8 is a chemically cured 2-component epoxy primer designed to provide maximum protection from various chemicals, hydraulic fluids, aviation fuels, hydraulic fluids, and corrosive causing media. Drying time to touch is 15 minutes and to recoat is 1-24 hrs. Shelf life: 2yrs, Color: Green. Used extensively in military and aerospace applications and popular with aircraft builders. Uses 1 gallon of primer and 1 gallon of catalyst.

2 gal. kit ..... P/N 09-24735 ..... **$182.95**
TR-19 Thinner..... P/N 09-00439 ..... **$94.25**

RANDOLPH W-2248 EP-420W EPIBOND EPOXY PRIMER (WHITE)

This white heavy duty chemical & solvent resistant amine cured primer is fast drying and corrosion inhibiting. Can be applied & cured to temps down to 35°F. Mixing ratio is 2 parts base primer: 1 part EP-430 Catalyst. Order in kits.

Product	Part No.	Quart Price	Gallon Part No.	Price
W2248/EP420 Primer White kit	09-00573	**$83.75**	09-00574	**$289.95**
Epoxy White base	09-00564	**$48.35**	09-00565	**$165.40**
Rand E-500	09-00566	**$15.00**	09-00567	**$58.80**
Reducer				
Rand EP430 Catalyst (pt)(qt)	09-00570	**$20.65**	09-00571	**$35.00**

RANDOLPH B-6433 RAND-O-PLATE EPOXY PRIMER (DARK GREEN)

This green primer is solvent resistant, amine cured, fast drying and corrosion inhibiting. Can be applied & cured to temperatures down to 35°F. Mixing ration is 2 parts base primer: 1 part EP-430 Catalyst. Order in kits.

Product	Quart Part No.	Gallon Price	Part No.	Price
Rand B6433 PrimerGreen kit	09-00575	**$84.00**	09-00576	**$285.95**
Epoxy Green base	09-00568	**$48.35**	09-00569	**$165.40**
Rand E-500 Reducer	09-00566	**$15.00**	09-00567	**$58.80**
Rand EP430 Catalyst (pt)(qt)	09-00570	**$20.65**	09-00571	**$35.00**

RANDOLPH EPOXY VARNISH EV-400/EV-410

An excellent clear gloss epoxy varnish for interior and exterior use. It provides superior weather durability and excellent chemical and solvent resistance. Can be used over a one component varnish primer if desired. Mixing ratio is 2 parts base varnish: 1 part EV-410 Catalyst. Order in kits.

Quart Kit (yields 2.5 qts) Incl. EV-410 Catalyst & E-500 Thinner P/N 09-00670 ..... **$59.40**
Gallon Kit (yields 2.5gal) - Incl. EV-410 Catalyst & E-500 Thinner P/N 09-00671 ..... **$198.00**

Base: Quart .....09-00666 ..... **$43.25**
Gallon.....09-00667 ..... **$146.70**
Catalyst: Pint .....09-00668 ..... **$18.25**
Quart .....09-00669 ..... **$30.55**

E-500 thinner (Reduce 50%)
Quart .....09-00566 ..... **$15.00**
Gallon.....09-00567 ..... **$58.80**

RANDOLPH EPOXY ACCELERATOR EX-501

A chemical curing accelerator for use in W-2248 EP-420W Epibond Epoxy Primer, B-6433 EP-420G Rand-O-Plate Epoxy Primer, and EV-400 Epoxy Varnish according to direction on base component label. Reduces polymerization time, not solvent evaporation.

1/2 Pint .....P/N 09-04650 ..... **$9.00**

RANDOLPH C-2210 PAINT SURFACE CLEANER

A mild solvent blend formulated to remove oil, silicone, wax, and other contaminants from all metal surfaces before priming. Also removed tape gum from painted surfaces and acrylic windshield materials.

Qt.....P/N 09-40810 ..... **$11.95**
Gal .....P/N 09-40820 ..... **$44.95**

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STEWART SYSTEMS EVERSHIELD CERAMIC SURFACE TREATMENT

An Easy-To-Apply Glass-Like Finish With Many Incredible Protective Properties For Almost Any Aircraft Surface. In tests it resists blow-torch heat (yes, blow-torch flame) above 2000°F It is impervious to virtually any chemical. It is excellent for hardness, flexibility, impact and scratch resistance, adhesion, and corrosion protection. On any aircraft, EverShield has applications from nose cone to tail cone. Wiped on a prop, this incredible film sheds bugs, pebbles, salt spray, whatever. On an exhaust, it seals the metal from corrosion and by refraction reduces heat transmissions to cowling and elsewhere. On leading edges bugs slide off. Over the entire plane, the slick surface fortifies the boundary layer, reduces drag. It is non-hazardous (like all SS products). Cleans up with water (or solvents). Grips most any surface, from stainless steel, to plexiglass, to paint. EverShield is a true breakthrough miracle coating. There's nothing comparable available. Once you use it you'll continue to find a myriad of applications. Better give it a try soon. STEWART SYSTEMS EVERSHIELD is a two-component, ceramic clearcoat/chemical treatment system designed for Original Equipment Manufacturers (OEM) to protect the substrate over which it is applied from corrosion and oxidation. Will not yellow, chip, crack, or peel. If gouged or damaged, the finish will not experience creepage and is repairable. A low VOC and EPA compliant coating. Considered non-hazardous by EPA definitions and does not contain lead or chromates. Please follow local and state regulations in the proper use and disposal of this product.

Size	Part No.	Price
2 oz.	09-00465	**$37.85**
4 oz.	09-00466	**$65.50**
8 oz.	09-00467	**$75.50**

STEWART SYSTEMS WATERBASE STEEL CONVERSION COATING

A water-based product that eliminates rust. First, rust is converted to ferric iron, a black organic compound. Second, a coating of clear acrylic is formed over the coated area. The surface that remains after the transformation can be either left black or coated with Stewart Systems wide range of products for the desired outcome. Product tests have shown that it has extended the life of equipment or products for several more years after probable replacement. Can be used on all rusted surfaces. P/N 09-00482.....**$45.75**

STEWART SYSTEMS ALUMINUM ETCH / CLEANER

EkoEtch Aluminum Etch is a concentrated combination acid based detergent and degreaser. Removes scale, corrosion, light oil, processing fluids and brightens aluminum. A non-hazardous, water reducible and non-flammable. Use it to prepare both old and new aluminum surfaces before applying Stewart Systems Primer/ Sealers. P/N 09-00473.....**$24.85**

STEWART SYSTEMS EKOBOND

Stewart Systems EkoBond EkoBond is a revolutionary water based cement for the application of fabric. EkoBond has extreme bond strength for fabric to fabric and fabric to non-fabric surfaces in both peel and shear tests. EkoBond is very user friendly since it has very little odor and can be used in a closed shop with no health or fire hazards. EkoBond dries quickly and will not attack primers or enamel paints. EkoBond is non-flammable and environmentally friendly.

Quart.....P/N 09-41195.....**$53.75**
Gallon.....P/N 09-41200.....**$168.95**

EKOBOND LINEN - For the look of old linen with the convenience of Dacron. EkoBond linen will make the fabric look just like old cotton, while giving you not only the antique look, but also the strength and durability of EkoBond. Quart.....P/N 09-03064.....**$53.75**
Gallon.....P/N 09-03065.....**$171.95**

STEWART SYSTEMS EKOFILL

Part of the Stewart Aircraft Covering System, Stewart Systems EkoFill seals the fabric, provides UV protection, fills the weave and acts as a primer for application of EkoPoly. On fabric airplanes, all covering, rib stitching and tapes are complete and the fabric has been cleaned with EkoClean before applying EkoFill. EkoFill is used on Dacron/polyester fabric, glass cloth, gel coat and composite materials. It has excellent adhesion, superior high build properties and is an outstanding UV barrier on fabric and composite surfaces. EkoFill dry sands very easily with open coat sand paper. EkoFill is non-flammable, has little odor and is water cleanup.

Grey Quart.....P/N 09-06700.....**$49.65**
Grey Gallon.....P/N 09-06800.....**$163.95**
White Quart.....P/N 09-03087.....**$49.50**
White Gallon.....P/N 09-03088.....**$155.95**

STEWART SYSTEMS EKOSTRIP

Stewart Systems EkoStrip is an environmentally safe paint stripper that can be sprayed, brushed or rolled on your painted surface. EkoStrip is not solvent borne and does not dry out and stop working overnight. In most cases the stripping action will take place in 2-4 hours. EkoStrip has no harsh odors, is not caustic and is biodegradable.

1 Gallon.....P/N 09-03080.....**$58.85**
5 Gallon.....P/N 09-03081.....**$255.95**

STEWART SYSTEMS EKOPOXY

Stewart Systems EkoPoxy Primer/Sealer is a high quality water based Epoxy primer for use on many substrates. Stewart Systems EkoPoxy can be used on interior and exterior surfaces where there is more chance of corrosion from the environment. Excellent adhesion to bare metals, resists flash rusting which can occur with latex based primers. Stewart Systems EkoPoxy has superior chemical resistance, is fast drying and mar resistant. Stewart Systems EkoPoxy is low in VOCs and compatible with a wide range of top coats including EkoPoly Top coat. Nonhazardous, nonflammable and water cleanup, Stewart Systems EkoPoxy is your best choice for Primer.

Quart White.....P/N 09-03066.....**$49.65**
Quart Smoke Grey.....P/N 09-03068.....**$54.85**
Quart Charcoal Grey.....P/N 09-03070.....**$49.95**
Quart Green.....P/N 09-03072.....**$52.25**
Gallon White.....P/N 09-03067.....**$189.95**
Gallon Smoke Grey.....P/N 09-03069.....**$198.95**
Gallon Charcoal Grey.....P/N 09-03071.....**$189.95**
Gallon Green.....P/N 09-03073.....**$189.95**

STEWART SYSTEMS EKOPRIME PRIMER/SEALER

Stewart Systems Primer Sealer is a high quality, water-based single component primer, not requiring any catalyzing agent. Performance obtained is equal or superior to that of two-component, catalyzed epoxy systems. Primer Sealer offers good coverage, excellent durability, and ease of application, as well as being a low VOC and EPA compliant coating. It is a low VOC (Volatile Organic Compound). high performance production coating. It is considered non-hazardous by EPA definitions and does not contain lead or chromates. The solid and semi-solid sludge produced in spraying and clean up can be flocculated; dried and sent to a "Class B" landfill. Check with your local and state regulations for proper handling.

Quart White.....P/N 09-00464.....**$36.50**
Quart Smoke Grey.....P/N 09-03074.....**$39.85**
Quart Charcoal Grey.....P/N 09-03076.....**$36.50**
Quart Green.....P/N 09-03078.....**$38.75**
Gallon White.....P/N 09-00481.....**$117.95**
Gallon Smoke Grey.....P/N 09-03075.....**$121.95**
Gallon Charcoal Grey.....P/N 09-03077.....**$173.95**
Gallon Green.....P/N 09-03079.....**$121.95**

STEWART SYSTEMS EKOCLEAN

EkoClean Heavy Duty Cleaner/Degreaser concentrate is used with the Stewart Covering System to clean fabric before application of EkoFill. For cleaning fabric, EkoClean is diluted 30-1 with water, and lightly applied with a spray bottle, and rinsed with clear water. EkoClean is a non-butyl, water soluble, concentrated degreaser and general purpose cleaner. In stronger concentrations EkoClean attacks grime, exhaust stains and grease spots from painted surfaces. EkoClean does not contain phosphates and is USDA approved. Quart.....P/N 09-03089.....**$13.75**
Gallon.....P/N 09-03090.....**$48.85**

STEWART SYSTEMS EKOSEAL E1800/E1850

E1800 - EkoSeal is a water dispersible top coat, offering outstanding coverage, durability and ease of application. EkoSeal is a low VOC, EPA compliant coating. Use on wood spars and plywood before installation of fabric. Wood sealer is resistant to UV yellowing in exterior applications and is also available in a satin finish. Size: 1 quart.

Quart Clear.....P/N 09-03082.....**$41.75**
Quart Satin.....P/N 09-03083.....**$41.75**

E-1850-EkoSeal Sanding Wood Sealer E1850 is a wood sealer with a sanding filler added to fill light voids and grain in wood products. After sanding, apply EkoSeal Wood Sealer or any other top coat. Size: 1 quart. Quart Clear.....P/N 09-03084.....**$46.85**

STEWART SYSTEMS PROCEDURES 21 MANUAL

A complete written manual for the Stewart Systems Covering Process. It includes product application, painting instructions, continued airworthiness and more. Also contains many helpful hints for each step of the process.

P/N 09-03091.....**$14.95**

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NUVITE POLISH - PROTECTANT SYSTEMS

NUGLAZE SUPER PAINT GLOSSER

Nuvite introduces NuGlaze to create a super high gloss "show quality" finish for paint in new or excellent condition, and it adds a U/V and sealant protection . It will put that final "wet-look" finish on good paint, and can be used as a final step for maximum gloss after using a drywash cleaner/polish such as Nuvite NuPower II. With regular NuGlaze use, a continuing surface barrier against most of the effects of airborne chemicals and ultraviolet radiation is created. Paint can be maintained in "new" condition longer and maintain the color balance intended by the manufacturer with regular use.

Bugs and normal soil remove easily from a NuGlaze surface, and the added gloss keeps the "new paint" look longer. NuGlaze is simple to use and avoids complicated setups and special application or buffing equipment. Proven techniques and continuing technology advancement from Nuvite have come together to produce NuGlaze - the best thing you can do to maintain and protect your near-new or "new-looking" paint.

1Gal ..... 09-01224 ..... **$43.95**
5Gal ..... 09-01225 ..... **$197.95**

NUVITE CITRI-CUT CLEANER

NuVite CitriCut is a citrus based airframe wetwash and wipe-down cleaner. Pleasant citrus smelling wet wash or wipe down cleaner that is especially friendly to the environment. Works great for standard wet washing with mops or scrub pads. When used as a wet wash, water sheets off, minimizing water spotting. CitriCut is also handy for hand debugging or hand wipe down without need for rinse -so there is no need for water or floor cleanup. Spray CitriCut at 1:8 from hand trigger sprayer for hand debugging or wipedown and wipe with terry towel until clean. Use a clean towel to buff up surface shine. No need to rinse surface. Supplied as concentrate—use 1:8 for hand wipe down or 1:16 in wet wash water.

P/ N 09-00584..... **$12.95**

NUVITE ONE-TIMER KITS

Clean & Polish in One Step!

Two quarts of Famous Nuvite NuPower II cleaner/polish. Will clean tough dirt & oil and give your paint a slick, shiny "New Paint" look and leave a protective coating against the sun's U/V damage. Includes three terry application towels and two special finishing gloss microfiber cloths. For Nuvite NuPower II details see Part No. 09-00581 & 09-00580.

P/N 09-02026 ..... **$59.50**

Restore Your Paint to Look Great Again!

Two quarts of super Nuvite NuPol heavy-duty cleaner and paint restorer—will clean up a really "grimy one", removing paint surface oxidation to reveal the bright color paint you once had, and leave an amazing super shine with UV protection! Includes two special spun fiber application pads and three terry polishing cloths.

For Nuvite NuPol details see Part No. 09-00583 & 09-00582.

P/N 09-02027 ..... **$58.25**

NUVITE C-49 SUPERCLEANER

Nuvite C-49 SuperCleaner is the most versatile and effective cleaner you can buy when you want to clean fabrics, leather, carpet, plastics, laminates and even metals! In other words, for cleaning all types of surfaces generally found in commercial & private aviation, building or institutional interiors, RV, truck and marine interiors, or even home interiors!

P/N 09-02089 ..... **$6.95**

NUVITE SS9-3 CLEANER

Nuvite SS-9-3 is the championship-caliber answer to the need for an effective and safe all-purpose liquid alkaline cleaner. It will clean the toughest of underbelly grease, oils and fluid leakage at full strength, or can be diluted to 1:12 to make an easy-to-use debugger and whole-airframe wipedown fluid that leaves a beautiful squeaky-clean and shiny surface that does not need to be rinsed. It works great for in-place cleaning during other airframe or engine maintenance.

P/N 09-02084 ..... **$5.50**

NUVITE LEATHER GUARD

Nuvite Leather Guard helps you keep that brand-new, supple, fine finished leather look and feel for luxury aircraft, RV or automotive seating, fine furniture or institutional use. Leather Guard is the finest enrichening formula available for leather nutrition .

P/N 09-02091 ..... **$11.95**

NUVITE POLISH/PROTECTANT SYSTEMS

Nuvite's surface finish enhancement and protection echnology offers the highest-performance surface maintenance and protection systems available. These products are designed to be used on your aircraft, boat, recreational vehicle, truck, auto or other vehicle anywhere, anytime. Nuvite has the answer for your operations in an EPA-sensitive environment.

NUPOL POLISH / RESTORER / UV PROTECTANT

Same easy wipe on, let dry, wipe off surface cleaner with enhanced cleaning and oxidation removal capabilities. Ideal for tough cleaning due to long intervals between cleanings. Leaves a beautiful shine and an effective UV protective barrier.

Qt. .....P/N 09-00583 ..... **$11.95**
Gal. .....P/N 09-00582 ..... **$34.95**

NUPOWER II POLISH/UV PROTECTANT

Dry Wash Cleaner and Polish (Routine dry wash cleaning with gloss enhancement and UV protectant barrier) - Use for routine cleaning where wetwashing is not possible or gloss enhancement is desired. Contains non-abrasive media to remove even stubborn soiling. Cleans dirt, carbon and oil and leaves a protective barrier against UV deterioration of paint. Can also be used to clean bare metal surfaces. Apply with mop, spun cotton pad, towel or by hand. Agitate uniformly over area to be cleaned, spreading material to a very thin layer. Let dry completely and buff off by hand with clean terry towel. Supplied ready-to-use.

Qt. .....P/N 09-00581 ..... **$10.95**
Gal. .....P/N 09-00580 ..... **$32.95**

NUSHINE II POLISH/ SYSTEM

Nuvite engineers have formulated a system of polishes to meet the needs for almost any metal and paint polishing project. New metal to antique, the formulations in the NuShine II Polishing System will give superior definition, highlights, imagery, clarity, and will retain the finish longer than normal polishes. Nuvite's NuShine II graded polishes use high technology materials with programmed abrasive characteristics and are blended with superior carriers to offer the ability to produce cutting action when needed, yet offer micron-level finishing in the finer grades that produces highest reflectance and image excellence.

Grade S (for final finishes) – The finishing grade that gives the really deep, clear image when used as a final finish over a properly prepared, oxidation-free surface. 0.5 Lb. jar .....P/N 09-00578 ..... **$35.95**

Grade G6 (SS & titanium or heavily oxidized aluminum) – When a heavy cut of the surface is needed, G6 may be a good answer. G6 has a high-tech abrasive system that is designed to do a quick, aggressive cut, and immediately break down to a finer cut, similar to Grade C. Use when there is heavy oxidation on the surface of aluminum, or even when very light corrosion is evident. Can also be used to blend surface scratches in aluminum. Can also be used for polishing stainless steel. 0.5 Lb. jar.....P/N 09-00586 ..... **$35.95**

Grade C (for unpolished aluminum and repolishing degraded brightwork) - C is a cutting grade polish that we recommend to prep for using Grade S. Use Grade C to begin polishing on clad aluminum that has never been polished. Will also remove the cloudy/hazy white background found in many otherwise good polish finishes.

0.5 Lb. jar .....P/N 09-00587 ..... **$35.95**

NUSHINE II POLISH SYSTEMS

Polishes for both metal and paint finishing that will provide the finest surface finish available. Has been shown to outperform all other aviation, automotive and marine polishes in side-by-side testing by users throughout the world. Affords the operator the choice to select the grade of polish to match the needs of the surface to be polished, be it brand new, oxidized in use, or with atmospheric corrosion. NuShine II not only polishes paints and metals to an incredibly deep, clear and image-reflecting surface, but also imparts a protective chemical barrier to inhibit corrosive oxidation to the metal.

Grade F9 1/2 lb..... P/N 09-02086..... **$35.95**
Grade F7 1/2 lb..... P/N 09-02087..... **$35.95**
Grade F7 1 lb..... P/N 09-02087-1..... **$49.95**
GradeGrade A 1/2 lb. ..... P/N 09-02088..... **$35.95**

CS

POLISHES – CLEANERS

AERO GLOSS

Aero Gloss polish is used by 80% of the worlds major airlines. It is now available to the general aviation and experimental aircraft market. Removes turbine soot and exhaust stains from paints. It is an excellent plexiglass polish and can be applied with a power buffer. It takes 1-2 pints and 3-4 hours to polish an average Cessna 182 with Aero Gloss.

Pint .....P/N 09-38100 .....**$19.95**
Gallon .....P/N 09-38101 .....**$79.90**
5 Gallon.....P/N 09-02180 .....**$289.95**

STAR BRITE AIRCRAFT POLISH

This exceptional new polish cleans off dirt, stains and oxidation and restores the original bright color of the aircraft leaving a dazzling shine. StarBrite also cuts fuel consumption and boosts speed by reducing drag an amazing 5.5%. Contains no wax, oils or acids. 16 fl.oz. ..... P/N 09-23900 ..... **$22.75**

TOP GUN ULTRA FINISH

Top Gun Ultra Finish is the ideal one-step product for all aircraft finishes. The product removes surface contaminates and oxidation though a unique chemical process, rather than using harsh abrasives. The coating left behind is not a wax, but an extremely hard and durable sealant. This affords superior long term protection (up to 12 months or longer), and easier cleaning of your finish. Once applied, bugs and corrosive elements remove more easily. Use Top Gun Ultra Finish to add brilliance to your aluminum and magnesium alloys. It is also very effective in restoring clarity to plexiglass windshields, side windows, and lenses. 16 fl. oz. Made in the U.S.A. 16 oz. .....P/N 09-00192 .....**$16.75**

AUTO GLOSS POLYMER WETCOAT

Polymer Wetcoat removes mild oxidation leaving your auto's finish protected for one full year. No other product can make that claim. A combination of polymeric resins and 100% premium carnauba creates the most durable finish on the market. 16 FL. OZ. P/N 09-00157 .....**$19.95**

SEAL-A-PLANE

Seal-A-Plane provide an unbelievable shine that seals and protects the finish; we have also found that the exhaust and bugs don't like to stick to the surface and can be removed with just a damp cloth. Unlike products that were designed for the automobile industry, Seal-A-Plane is for aircraft and protects the aircraft surfaces from harmful UV rays and corrosion. Common waxes breakdown in the sun. Seal-A-Plane actually gets harder in the sun and is stable up to 500 degrees F. Seal-A-Plane contains no silicones and is non corrosive. It normally only requires application once a year (depending on the planes operating environment) and can be used on any surface including fiberglass and Plexiglas. Never before has there been a product on the market like Seal-A-Plane. Turbine owners especially will appreciate a product that is available that will remove the ugly exhaust stains. One 16 ounce bottle will be enough for most single engine planes and two will do most light twins. P/N 09-01650 .....**$24.95**

MASTER FORMULA - SEALER GLOSS

Master Formula Sealer Gloss Protective Sealer waterproofs, protects and seals any hard surface. It leaves a durable, glossy protective coating that's easily maintained and lasts up to one full year. Master Formula Sealer Gloss is excellent for use on any metal or painted surface. These surfaces include all car finishes including clear coasts, gel coasts, plastics fiber glass. They also include all metal surfaces such as aluminum, chrome, brass, stainless steel, gold, silver and more. 16oz.

12OZ. ..... P/N 09-02077..**$22.75**

MET-ALL

An aluminum polish which removes and prevents pitting. Makes aluminum shine with mirror-like brilliance. Non-toxic, non-abrasive and non-flammable. A non-silicone product which resists further corrosion. Meets military specifications. 1 Lb. Can.....P/N 09-24200 .....**$10.90**
2 Lb. Can.....P/N 09-24300 ..... **$17.75**

BUG BLASTER SPRAY

Dissolves and removes bugs without scrubbing - no elbow grease is required! This is a quick, time saving product. Just spray, wait and wipe. Finally a product that solves messy problems without being messy!! Unlike other formulations, when sprayed, Bug Blaster instantly attacks bug proteins and acids. You will not have the dripping, messy run-off you have with conventional bug removers. Perfect for use in paint shop environments where run-offs need to be avoided.

32 OZ ..... P/N 09-02080..... **$18.75**
1 GALLON..... P/N 09-02081..... **$38.25**

MET-ALL DETAIL POLISHING KIT

Met-All's Detail Polishing Kit will produce a show room finish on bare metal, painted surfaces and fiberglass using Met-All polishes and premium bonnets. Each bonnet features a recessed loop back so the edge and face can be effectively used with less concern for marring the finish. Change pads quickly and easily. Ideal for polishing aircraft, cars, motorcycles, boats etc.

P/N 09-00448 ..... **$34.50**

BLUE MAGIC METAL POLISH

Blue Magic produces a deep mirror shine. The oxide residue left after polishing is easily wiped off with a rag. A small amount will polish a large area. Airshow aerobatic pilot Chuck Lischer, Jr., whose high performance Swift is shown here, recommends Blue Magic as the best polish available for polished aluminum aircraft.

#500 1 lb. Can.....P/N 09-24600 ..... **$13.25**

210® PLASTIC CLEANER/POLISH

•Anti-static, Anti-fog • Will remove marks from crayons, magic markers and paint oversprays • Removes residue glue from protective backings and masking tape • Evaporating properties in the formula - cleaning is quick and easy without leaving any streaks or swirl marks • Resists fingerprints • Seals pores in plastic and leaves a protective coating • Pleasant clean aroma • Gives plastic a clear, lustrous look.

7 oz..... P/N 09-00518..... **$7.95**
14 oz..... P/N 09-00517..... **$9.75**

210® PLUS PLASTIC SCRATCH REMOVER

•Extremely mild abrasive compound, with anti-static and anti-fog properties in its formula • Ideal for the removal of surface scratches and blemishes from windshields or heavy cleaning of all plastic materials • Water soluble, excess can be wiped off with a wet sponge or cloth •Easy to use.

15 oz. ..... P/N 09-00519..... **$11.75**

210® WINDSHIELD CARE KIT

Recommended by LP Aero Plastics and other leading aircraft windshield manufacturers, our 210® Plastic Cleaner & 210® Plus will help keep your windshield crystal clear and scratch free for safe, enjoyable flying. Our Windshield Care Kit Contains: (1) 7 oz. 210® Anti Static/Anti-Fog cleaner & polish, (1) 7.5 oz. 210® Plus Anti-Static plastic scratch remover, (100) 9"x 16" Sontara Aircraft Wipes. P/N 09-00521 .....**$38.75**

CLEARVIEW PLASTIC CLEANER/POLISH

Bring new life to your plastics with Clearview. Developed to clean, polish and protect all types of clear and colored plastics Helps hide small scratches by filling them with a fine protective coating. Wipes on & off easily with no smudges or residue. Anti-static. Spray can.

16 oz..... P/N 09-00531 ..... **$5.50**

GRANITIZE METAL POLISH SYSTEM

Simple but effective system of six polishes designed to polish painted surfaces, aluminum 22916T6 & 2024T6 both clad and bare, and other metals including steel and titanium. All polishes are color coded to reduce cross contamination and aid in taking the guesswork out of any polishing procedure. When used properly, The Granitize System will produce a smooth, highly reflective mirror-like surface on brightwork that can be treated with Xzilon molecular adhesion to maintain the finish.

FINISH

XMP-S METAL POLISH (SUPERFINE) - Final polish for a mirror like finish. Can also be used on painted surface

P/N 09-02181 ..... **$48.50**

XMP-M METAL POLISH (MEDIUM) - For Light oxidation/ scratches, Rain Spotting. Can also be used on painted surfaces P/N 09-02184 ..... **$48.50**

XMP-F METAL POLISH (FINE) - Color: Yellow. Use on: Swirls, Very fine scratches, Can also be used on painted surface. PN 09-02183 ..... **$48.50**

CUTTING

XMP-C METAL POLISH (COARSE) - For Medium oxidation/ scratches P/N 09-02233 .....**$48.50**

AIRCRAFT SPRUCE WEST
CORONA, CA • (877) 4-SPRUCE
AIRCRAFT SPRUCE EAST
PEACHTREE CITY, GA • (877) 477-7823

Prices Subject to Change Without Notice

POLISHES – CLEANERS

ROLITE METAL AND FIBERGLASS POLISH

Rolite Metal and Fiberglass Polish will restore the original brilliance of virtually any metal surface, as well as being ideal for fiberglass and plexiglass parts. Rolite products are preferred by many EAA members maintaining bare aluminum aircraft as well as by commercial airlines and prop shops worldwide. Will create a mirror-like shine like you have never seen. Recommended for maintaining brilliant propellers and spinners.

10 Oz. Can.....P/N 09-42555 .....**$17.50**
2 Lb. Can.....P/N 09-42560 .....**$33.75**

ROLITE AP-300 ALUMINUM POLISH

A super-fine, high quality aircraft cleaner/polish that improves the appearance of alcald aluminum. It removes light to medium oxidation, soil, and jet blast residue with ease. Finished gloss and reflection of aluminum: extremely high.

1 Lb. Jar .....P/N 09-00183 .....**$63.85**

ROLITE SUPRA 90 ALUMINUM POLISH

Researched and developed for the commercial aircraft industry. This precision aluminum polish is widely used by many domestic airlines. Manufactured to meet all Boeing and McDonnell Douglas Specifications (Boeing D6-17486; CSD-1, Type 1 &V). Supra 90 will give you a mirror-like shine on your aluminum (or any other metal) surface that was never before believed possible!

2 Lb. Can.....P/N 09-42420 .....**$65.75**

MAAS ALUMINUM & FIBERGLASS POLISH

Maas polish removes fine scratches, prevents clouding on plexiglass windshields and windows, reduces air resistance, and repels moisture. It is used by major air carriers and has provided them with a 10% savings on fuel due to Maas' ability to substantially reduce parasitic drag and friction on the leading edges of the aircraft. Excellent for use on anodized or bare aluminum, painted surfaces, plastics, plexiglass, and fiberglass. 1 lb. can ..... P/N 09-23545 ....**$17.95**

ROLITE PREMIUM VINYL & LEATHER PROTECTANT

"The Sun Protector". Protect your aircraft interior by using Rolites' maximum sun block formula. Contains no solvents, silicone oils, or petroleum distillates. Its anti-static formula will produce a shine on your vinyl or leather seats without being slippery or tacky. And will actually repel dust! Comes in spray pump bottle.

8 oz. Bottle ..... P/N 09-42435.....**$8.95**

VOODOO WAX™ RACING FORMULA

Developer for high speed aircraft applications. Voodoo Wax™ is the wax of choice for Team Voodoo's P-51 Mustang Unlimited Air Racer. The Voodoo Wax™ formula is ideal for application on aircraft, boats, automobiles and motorcycles.

Voodoo Wax™ Cleaner Polish contains the finest blends of ultra fine polishing agents, polymers and imported waxes.

Voodoo Wax™ Cleaner Polish rapidly cleans and removes fine and medium scratches, oxidization, water spots and environmental contaminates leaving a deep, rich luster and durable finish. Safe for clear coat and non-clear coat finishes, cleans and restores Lexan and Plexi-Glass.

Voodoo Wax™ Cleaner Polish is the ideal companion product to use prior to Voodoo Wax™ Racing Formula.

P/N 09-01594 .....**$16.95**

VOODOO WAX™ CLEANER POLISH

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ACTION CHIPKIT

FIXES PAINT CHIPS AND SCRATCHES

The Action Chipkit stops rust around paint chips and scratches and produces repairs which are flush with the rest of the paint. The kit includes the Eliminator rust remover which is used to prepare the surface, and then the kit's clear paint sealer is applied. The kit's microfine sanding papers and sanding block are used to create a smooth and flush finish. Extrafine polishing compound completes the job by removing irregularities and restoring gloss. Everything you need for small paint chip repairs is included in the easy-to-use Action ChipKit.

P/N 09-27225 ..... **$16.50**

PEEK METAL POLISH

P/N 09-02390
P/N 09-02391
P/N 09-02392

Excellent for cleaning and polishing stainless steel and aluminum leading edges and nose cones. Use Peek to restore tired looking paint surfaces. Removes scratches from Perspex windscreens and helicopter bubbles. Peek protects against the elements. The use is simple, the results conclusive.

100 ml tube..... P/N 09-02390 .....**$12.25**
500G mousse ..... P/N 09-02392 .....**$21.95**
1000 ml can..... P/N 09-02391 .....**$39.98**

PLAS-TEC ACRYLIC/PLASTIC CLEANER & POLISH

Plas-Tec cleans, shines, and protects today's high-tech plastics. Plas-Tec is a non-aggressive, optically clear cleaner that lifts fingerprints and smudges, leaving a protective, anti-static coating that resists dirt build-up. Plas-Tec is excellent for use on acrylic, Lexan, or Plexiglass windshields and windows as well as aircraft instrument panels, and many other applications.

4 oz. Can.....P/N 09-00308 ..... **$4.50**
16 oz. Can.....P/N 09-00309 ..... **$9.50**
1Gal. Can .....P/N 09-00310 ..... **$29.75**

REJEX SOIL BARRIER & STAIN PROTECTOR

RejeX™ is an advanced polymer system that seals painted surfaces to guard against corrosive exhaust gas, oil, and bug stains. It forms a slick, long-lasting, glass-like barrier that allows easy removal of turbine and piston-engine exhaust stains with mild detergents. Bugs can be removed quickly and easily with just a stream of plain water. On paint in good condition, RejeX eliminates the need for waxes and polishes, and one application will last a minimum of 4 months. Surfaces to be protected should be clean, dry, and cool to the touch and the product should not be applied in direct sunlight. Damaging contaminants, such as bug acids and exhaust stains will no longer be a problem. High Gloss Finish

12oz. Can.....P/N 09-01729 ..... **$13.95**
16 oz. Can.....P/N 09-00303 ..... **$17.95**
1 gal. Can.....P/N 09-00924 ..... **$88.95**

BRILLIANIZE

Brillianize makes shiny surfaces brilliant. The cleaned surface resists finger marking, has anti-static properties, repels dust. It is a nonflammable and nontoxic liquid. Use it to clean Plexiglas, Lexan, mirrors, chrome - any shiny surface. Apply and polish with Kleenmaster shop towels.

8 oz. spray bottle .....P/N 09-24000 .....**$8.95**
#128P -1 gal. plastic bottle ....P/N 09-24100 .....**$27.50**

SPEED CLEAN™ -PLASTIC CLEANER/PROTECTOR

Just spray it on, let it work, and gently wipe off with a soft cloth. The surface is clean, protected and will be even easier to clean the next time! Now you can safely Clean and protect just about anything in your life that gets messy.Plastic surfaces, are found everywhere. Aircraft, autos, watercraft, kitchens, motorcycles, watches, and the list goes on. Once you clean the surface, Speed Clean™ leaves an invisible velvety smooth surface that helps dust and dirt from sticking to it. Cleaned surfaces will be static & dust free for weeks, and everything will be even easier to clean the next time. Available in a 2 oz. travel bottle of a 12 oz. bottle.

12 oz.....P/N 09-01962.....**$12.75** 2 oz. .... P/N 09-01962-2 ....**$5.85**

BUG-OFF

BUG & EXHAUST REMOVER - Bug Off is a presoak bug and exhaust remover designed to remove organic matter, bug juice, and engine exhaust soot from surfaces of aircraft, automobiles, and trucks. Bug Off dissolves most dried up bug matter and exhaust soot in seconds. It eliminates scrubbing and does not affect painted surfaces.

1 Qt. (Spray Bottle) .....P/N 09-35710 ..... **$9.75**
1 Gal. Refill .....P/N 09-35712 ..... **$22.50**

CS

PLEXIGLASS CLEANERS & POLISHES

NOVUS PLASTIC POLISH #1 CLEANS & PROTECTS

Novus Plastic Polish #1 gently cleans all plastics without scratching and leaves a lustrous shine that resists fogging, repels dust, and eliminates static. Leaves a shield that resists fingerprints and smudging, and is nontoxic and free of strong odors. Contains no abrasives or harsh chemicals.

8 oz.. ..... P/N 09-38110..... **$4.65**
64 oz. ..... P/N 09-38115..... **$12.75**

NOVUS PLASTIC POLISH #2 RESTORES & REFINISHES

Novus Plastic Polish #2 removes fine scratches, haziness, and abrasions from most plastics. With repeated use, it will restore faded and discolored plastics. Contains mild abrasives, but is non-toxic and has no strong odor. Creates a deep shine which resists scratching, marking, and aging.

8 oz.. ..... P/N 09-38120..... **$6.50**
64 oz.. .... P/N 09-38125..... **$25.50**

NOVUS PLASTIC POLISH #3

Novus No. 3 removes heavy scratches and abrasions from most acrylic surfaces. This is an aggressive polish and is not intended for use on coated plastics or polycarbonates. Requires both Novus No. 1 and No. 2 polishes for final finishing.

8 oz.. ..... P/N 09-38130..... **$7.50**
64 oz ..... P/N 09-02397..... **$33.25**

SUPERCOAT LEATHER, PLASTIC & RUBBER TREATMENT

No need to wash or prepare. Cleans, conditions and restores. Protects & beautifies. Removes dirt and stains. Excellent on tires. Protects against stains, soils, oils, salt and dirt. Unaffected by temperature, weather or sunlight. Prevents cracking and deterioration.

8 oz.. ..... P/N 09-42520..... **$21.70**

AWESOME CANOPY CLEAN

Is an eco-freindly, non-abrasive, non-flammable, non-yellowing, non-glare, static-free clear plastic cleaner and preservative, excellent for cleaning Mylar, Lexan, Plexiglas, AS-2, plastic windows and windshields on motorcycles, boats, aircraft, autos, formica and other structural plastics. 8 fl. oz.

P/N 09-02549 ..... **$12.85**

SCRATCH OFF WINDSHIELD REPAIR KIT

Developed by an A&P and manufactured since 1993, Scratch Off has become the leading Plexiglas and Lexan restoration system worldwide and is guaranteed, when used as directed, to permanently improve the clarity of aircraft windows and windshields. Scratch-Off is being used worldwide and highly recommended by airframers, aircraft window/windshield manufactures and enthusiasts to restore optical clarity back to aircraft windshields and windows. The 8 panel instruction booklet walks you through a step by step process on how to determine where to start the process as all four steps are not always needed.

Standard Kit .....P/N 09-42600 ..... **$36.75**
Deluxe Kit .....P/N 09-00252 ..... **$65.75**

Please see our website for a complete list of all kit details.

POLY-SAND SCRATCH REMOVER

This is the original Poly-Sand process. Consists of a series of cloth-backed cushioned abrasives which when used in proper sequence will restore the finish of plastics. Also used for fine finishing of wood and precious metals. Recommended by Rohm & Haas Co., manufacturers of Plexiglas. Kit includes series of Poly-Sand cushioned abrasive cloth tapes, all required accessories and instructions.

PCA Kit #40 .....P/N 09-24800 ..... **$26.75**

UNIGRIT™ SANDING PRODUCTS

Unigrit™ Finishing Papers & Sanding Blocks use precise, uniform grit particles to eliminate deep sanding scratches and the need for compounds. More economical to use because they work faster, last longer and won't load up as quickly as conventional sanding products.

FINISHING PAPERS				*SANDING BLOCKS*			
Grit	**Sheet Size (in)**	**Part No.**	**Price Each**	**Grit**	**Block Size (mm)**	**Part No.**	**Price Each**
1000	5.5x9	09-23580	**$2.95**	1000	60x30x20	09-23640	**$16.95**
1200	5.5x9	09-23590	**$0.91**	1500	60x30x20	09-23650	**$17.00**
1500	5.5x9	09-23610	**$0.79**	2000	60x30x20	09-23660	**$17.00**
2000	5.5x9	09-23620	**$0.96**				

PLEXUS AIRCRAFT PLASTIC CLEANER, PROTECTANT & POLISH

Plexus™ was developed for use in aviation, specifically for cleaning and protecting aircraft windshields and painted surfaces. It's quite simply the most effective product you can buy for cleaning, polishing and protecting all clear and colored plastics and painted surfaces. Plexus is easier to use, and leaves a noticeably cleaner, more lustrous finish than conventional polishes. It protects by actually sealing the pores in plastic making it more resistant to debris, oil, bugs or scratches. Because it's anti-static, it repels dust and lint. It's perfect for windshields and the leading edges of the wings, as well as for removing exhaust stains and cleaning wheel wells. Also, Plexus polishes without harmful abrasives. It leaves an invisible, micro-thin layer of wax without smears or smudges. It dries to a crystal clear luster, leaving no oily, sticky or tacky residue. It's the ultimate detailer for your aircraft. So, if you're looking for a better way to save time, money and help protect your valuable investment, it's clearly brilliant. Plexus. Clearly the best. Plexus contains no CFC's, so it's safe for the environment. And because it's an aerosol, there is virtually no waste.

7 Oz. Can ..... P/N 09-29715..... **$15.25ea**
13 Oz. Can ..... P/N 09-29710..... **$17.85ea**

PERMATEX PLASTIC CLEANER

Removes grease, stains and insects. Retards fogging. Rain repellent, anti-static. Cleans Plexiglas, fiberglass, stainless steel and painted surfaces without scratching.

#403D Pint Can.....P/N 09-00344 ..... **$7.75**

LP AERO'S ACRYLIC POLISH SEALANT FOR AIRCRAFT WINDSHIELDS

A superior no-wax, non-yellowing formula containing polyethylene poymers. This product not only gives a super slick surface to your windshield and windows, but can also be used on your entire aircraft, including all the painted gloss surfaces, aluminum & fiberglass. Ease of application and removal is unmatched. Sold in 16 oz. bottles. .....P/N 09-42055 ..... **$16.50**

SPRAYWAY #848 PLASTIC CLEANER

Sprayway plastic cleaner contains no chemicals or abrasives that will cause damage to transparent surfaces. This formula is anti-static, anti-fog, fast-drying, non-streaking, and it reduces glare. It also repels finger smudges, dirt, and dust. Great for use on acrylics, plexiglass, lexan, glass, and polycarbonates. No. 848 meets the following miitary and commercial specifications: • MIL P5425 • MIL P25690A • Douglas Aircraft CSD-1 • ANSI/ASTM F484-77 • Boeing Letter-Lexan 9600. Product is free of ozone-depleting chlorfluorocarbons (CFC's)

P/N 09-42060..... **$8.50**

PLEXI-CLEAR ACRYLIC CLEANER

Plexi-Clear is an anti-static aircraft plexiglass cleaner, protectant, and polish. Plexi-Clear produces a microscopic, high luster, soil retarding and water repellent finish to all aircraft plexiglass and plastic and makes small scratches less visible,leaving a surface that is fresh, lustrous, and protected. Plexi-Clear dries perfectly with no smears, no scratches, no smudges, no oily, tacky or sticky residue.Plexi-Clear can be applied in seconds, in one easy step. Boeing and MIL spec Approved.

P/N 09-37960 ..... **$12.95ea**

SPEEDCOAT

"How much faster? In just a matter of minutes you can treat your entire airplane. You can coat paint, bare metal, composite and fabric surfaces. Windshields, glareshields and even your interior. Just a simple spray, wipe, hand buff and you are done. Your baby will not only shine but you will have added great UV protection as well as environmental protection. Dust, dirt, soot, bird droppings are easy to clean on a SpeedCoat protected airplane" - David LoPresti Features * 16 oz Bottle * One bottle is more than enough to treat an average sized aircraft. * Long shelf life. * Environmentally friendly. * Silicone Free. * No residue buildup. * Hand only applications. * No mechanical buffing required.

P/N 09-02107 ..... **$37.80**

WINBRIGHT PLASTIC CLEANER

WinBRIGHT is safe to use on any polycarbonate, acrylic, or plexiglass window. Developed for aircraft transparencies, but perfect for any plastic surface:AIRCRAFT, MOTORCYCLE WINDSCREENS, BOATS, AQUARIUMS, CONVERTIBLE WINDOWS, INSTRUMENT PANELS, BIMINI TOPS, SAFETY GLASSES, RVs, CDs This professional strength spray with Micro-Brighteners leaves surfaces sparkling clear and clean. Removes, dust, dirt, stains, smudges and finger prints. Optical clarity improves with extended use. Clean surface with water first, then simply spray WinBRITE onto a dampened flannel cloth and polish into the surface of the window until polish disappears. Contains no wax, solvents or ammonia and leaves no residue or build-up.

8OZ Spray..... P/N 09-02079..... **$13.75**

MICRO-MESH LEADING EDGE POLISHING KIT

This kit will restore up to 100 sq. feet of unpainted aluminum surface. Perfect for leading edges, vertical and horizontal stabilizers, engine nose cowls and thrust reversers, removes oxidation, corrosion, orange peel, and surface scratches. Provides a uniform high-luster gloss.

Specifications:

- 1 - instructions
- 2 - 5" loop discs, Micro-Mesh 1500 AO..
- 2 - 5" loop discs, Micro-Mesh 1800 AO
- 2 - 5" loop discs, Micro-Mesh 2400 AO..
- 2 - 5" loop discs, Micro-Mesh 3200 AO
- 1 - 16 oz. bottle aluminum cutting fluid...
- 1 - 1/4 lb. container aluminum polish
- 2 - flannel cloths
- 1 - 5" x 3/4" nap TUFBUF lambswool polishing pad
- 1 - 5" white, loop back foam pad
- 1 - 5" soft interface pad with hook.
- 1 - 5" soft interface pad with hook

P/N 09-00785 ..... **$104.95**

BOOTYWAX PURPLE GLAZE

A easy on and even easier off polish, wax and light hand glaze, all in one bottle. Deep cleans, deep shines, and gently removes light oxidation, fine scratches, buffer swirl marks. It's deep penetrating high gloss finish is safe on all windows, paint surfaces chrome trim and wheels. Repels dirt, bugs and even brake dust on aircraft and vehicle Sheds water like crazy.

16 oz. .....P/N 09-02436 ..... **$14.95**
Gallon .....P/N 09-02437 ..... **$68.75**

BOOTYPREP LIQUID GOLD

When wax alone is not enough. Body Shop Safe - No wax or silicone. Can apply by hand. Deeply penetrates as it cleans, polishes, a controlled 1500 cut safely removes heavier oxidation, fine surface scratches, swirl marks and is an excellent color restorer.Follow with a coat of Booty-Wax Purple Glaze to "Seal the Deal" with an even deeper shine.

16 oz. .....P/N 09-02438 ..... **$21.50**
Gallon .....P/N 09-02439 ..... **$82.65**

BOOTYMARINE CRUD CUTTER GRAY

Deep cleans the way for a micro sanding-polishing action that waxes and seals itself all in one step saving you time and money. Great protection against all future harsh weather elements, sun, water lines, mildew, salt and river scum.

16 oz. .....P/N 09-02440 ..... **$28.85**
Gallon .....P/N 09-02441 ..... **$156.50**

BOOTY WASH

A Wash'n'Wax concentrate that is a non-abrasive rich, sudsing formula fortified with the BootyWax to assure a great shine every time! A multi-purpose product that sheds water like crazy.

16 oz. .....P/N 09-02562 ..... **$14.95**
Gallon .....P/N 09-02568 ..... **$36.75**

THOR AIRCRAFT CONCENTRATE

Thor Aircraft Concentrate is specifically formulated to dissolve the residue of exhaust, grease, dirt and oil. It is safe on all surfaces such as ferrous metals, aluminum, plastic. rubber, painted and unpainted surfaces. Also a non toxic, non-corrosive, non hazardous product. Use 1 to 2 quarts of product per 5 gal. of water, depending on how heavily soiled the aircraft is. P/N 09-02122 ..... **$15.65**

THOR BUG SPONGE

This product is designed to be used when wet, this foam like material will safely scrub away bugs, bird droppings and any other contaminants. It can be used on Plexi-glass and all painted surfaces.

P/N 09-00898 ..... **$3.95**

THOR AERO DRY WASH

When you do not have access to water, this is the product for you. Simply spray it on and wipe it off. This unique product also has a polish in it to protect the painted surface. It also contains a corrosion inhibitor which protects the painted surface. Thor Aero Dry Wash is especially safe on plexiglass.

8oz. .....P/N 09-01325 ..... **$2.10**

THOR AERO BRUSH

This a 10" foam block that is completely filled with a one threaded green nylon. This brush will effectively remove oil, grease, exhaust fumes, and other oily residues. 60" length metal handle not included, order separately.

Thor Aero Brush..... P/N 09-00897 .... **$13.75**
Handle For Brush ..... P/N 09-02097 ..... **$7.85**

KPC PRODUCTS, CLEANERS AND PRESERVATIVES

WINDSHIELD SPEED CLEANER & POLISH - KPC Windshield Shield Speed Cleaner & Polish for Transparent Plastic Aircraft Materials. Meets U.S.A. Military Requirements MIL-C-18767A (ASG). This product is non-static, non-glaring, and abrasive free, will help prevent hazing and discoloration of clear plastic materials. Can be used in arid, humid, rain or sunny conditions. Recommended for: plastic windows, windshields, windscreens, and instrument faces, AS-2 safety glass, plexiglas, lexan and mylar, formica and other structural plastics. Safe, quick, easy to use.

12 oz. .....P/N 09-00544 ..... **$11.75**
1 gal. .....P/N 09-00545 ..... **$49.05**

KPC VINYL COATED CLEANER AND PRESERVATIVE - KPC Vinyl Cleaner and Preservative is a neutral biodegradeable spray on - wipe off chemical. The finest chemical available for cleaning and preserving your breathable or solid vinyl, deep grained vinyls, pearlized vinyl, hercolyn, leatherette, naugahyde, or any synthetic fabric. No abrasives, residue, coating, or discoloration. KPC Vinyl Cleaner will not damage cloth, rugs, chrome, painted walls or any of the threads or seals that hold the vinyls together, or any backing of breathable vinyl as used on some of the imported cars. Leaves article soft and pliable.

12 oz. .....P/N 09-00542 ..... **$9.27**
1 Qt. .....P/N 09-00543 ..... **$6.10**

KPC RUBBER CLEANER AND PRESERVATIVE - KPC Rubber Cleaner and Preservative restores new look to your rubber accessories. All rubber parts will look like new (no painted or artificial look). Cleans and preserves all rubber molding of aircraft, auto, commercial, etc. Cleans and restores floor mats whether clear, red, brown, etc. to their original color. Not harmful to paint, glass, chrome, rugs, aluminum, etc., and will not change the original color of any rubber material.

16 oz. .....P/N 09-00548 ..... **$8.95**

KPC LEATHER CLEANER & PRESERVATIVE - KPC Leather Cleaner and Preservative cleans genuine leather with a saddle soap base -preserves leather with pure neatsfoot oil. A one step leather care for all leather goods. Wipe on -wipe off. No oily residue is left on your leather. Kleenmaster uses only natural animal oils which penetrate into the leather. It preserves the finish even if leather becomes hot. Product is nonflammable, free of offensive odor, and will not irritate skin. Helps prevent mildew.

4 oz. .....P/N 09-00550 ..... **$4.75**
8 oz. .....P/N 09-00551 ..... **$9.65**

CP/S CLEANER-POLISH/SEAL-COAT

Removes oxidation and dirt out of the paint layer and restores the original brilliance, color and gloss. Hard rubbing is not required. Is designed for a light pressure manual application. Can be applied in direct sun or on a hot surface, however, expect best performance when the surface is not hot to the touch. Proper application will provide the best results and will maximize the resin seal-coat. P/N 09-00784 ..... **$22.95**

AEROSHELL FLIGHT JACKET POLISHES AND CLEANERS

AEROSHELL FLIGHT JACKET POLISH - Frees leather of ground-in dirt. Works well on vinyl, plastic, & rubber. Contains no silicone. P/N 09-00392 ..... **$14.65**

AEROSHELL FLIGHT JACKET PLEXICOAT - Increases visibility of aircraft windows. Protects Plexiglas and glass surfaces from UV yellowing and clouding. Removes and prevents light scratches. Commercial Aviation Certified. Contains no silicone. (16-oz. Bottle)

P/N 09-00393 ..... **$12.95**

AEROSHELL FLIGHT JACKET OIL & EXHAUST REMOVER - Non-abrasive formula removes exhaust residue without removing Aeroshell Flight Jacket Polish or damaging paint. Safe for all paint surfaces.16 oz

P/N 09-00394 ..... **$8.25**

AEROSHELL FLIGHT JACKET INTERIOR CLEANER - Flight Jacket Interior Cleaner frees leather of ground-in dirt and debris. Can also be used on interior trim surfaces including vinyl, plastic and rubber (not recommended for cloth).

P/N 09-00395 ..... **$6.95**

AEROSHELL FLIGHT JACKET INTERIOR CONDITIONER - Moisturizes and protects leather and vinyl from wear and UV rays. Dries without leaving an oily residue. No messy overspray. Contains no silicone.(7.5-oz. Bottle)

P/N 09-00396 ..... **$7.95**

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GRIME OFF CLEANING PRODUCTS

GLI GRIME OFF™ AIRCRAFT EXTERIOR WASH

Grime Off™ Exterior Airplane Wash may be diluted in a bucket and applied with a brush or mitt, or applied via the detergent tanks on the 2-in-1 Hydro Washer. This product does not foam up like car wash detergents, so please don't expect that. It will coat the plane and, with some gentle washing, rid it of exhaust stains and grease. Used by commercial airlines by the drum, you should use if for the same reason they do. It will clean your plane but not harm your paint, seals, plexiglass, or fragile components in and around landing gear.

P/N 09-03512 .....**$32.99**

GLI GRIME OFF™ AIRCRAFT CLEANER & DEGREASER

Mean, green, and made to clean. When you think of Grime Off™, think stained bellies, hard to reach landing struts, engines, and deceased bugs. Available in a 12 oz. foaming aerosol spray, 16 oz. spray, or wipes-24ct.

12 oz. Spray Foam.....P/N 09-03507 .....**$9.29**
16 oz. Aersol .....P/N 09-03508 .....**$13.29**
24 Pack of Wipes .....P/N 09-03509 .....**$14.59**

GLI GRIME OFF™ HEAVY DUTY CLEANER & DEGREASER

FBO sized pail, these are perfect for removing bugs and exhaust stains. Your techs need to keep their hands clean and grease free. This is the solution. It is easy to pull out a wipe, do the job, and discard it. No dealing with rags or paper towels. Continental® and American Airlines® buy these in the 75 wipe buckets and go through pallets of them.

75 Pack of Wipes .....P/N 09-03511 .....**$46.59**
5 Gallon .....P/N 09-03513 .....**$132.99**
55 Gallon .....P/N 09-03514 ...**$1,264.99**

GLI GRIME OFF™ AIRCRAFT WINDSHIELD CLEANER

Line of sight in an airplane is critical. You don't want to trust your windshield to just any cleaner that may leave a haze. When you need something that will do the job and leave a streak-free clean, trust Grime Off Windshield Cleaning Spray & Wipes. They cut through grease and grime and leave both plastic and glass surfaces streak and residue free.

24 Pack of Wipes.....P/N 09-03517 .....**$13.29**
oz. Spray.....P/N 09-03518 .....**$13.29**

GLI GRIME OFF™ DE-ICE BOOT CLEANING WIPES

After removing bugs and grime with a De-Ice Boot Cleaning Wipe, restore the boots luster with a quick coating of Simply Soy™ applied with a De-Ice Boot Conditioning Wipe. Features: • Large 7"x12" Durable Cotton Wipes • Certified to Boeing® D6-17487 • pH neutral • 100% biodegradeable • 100% non-toxic; inhalation, ingestion, dermal • Zero VOCs - volatile organic compounds • Made in the USA. •24 each.

P/N 09-03515 .....**$14.59**

GLI GREEN CARPET™ AIRCRAFT CARPET & UPHOLSTERY

Remove over 95% of the most common stains in carpets and upholstery with Green Carpet, according to the Carpet & Rug institute. Green Carpet has none of the hazardous chemicals present in other commercial solutions, which we find particularly inviting with the relative tight quarters and limited ventilation typical of most aircraft. 12 oz. Foaming Aerosol.

P/N 09-03519 .....**$9.29**

GLI GRIME OFF® BRAKE CLEANER

This biodegradable, non-toxic brake cleaner is the safe alternative to what is currently on the market. It quickly removes brake fluid, grease and oil without the hazardous vapors of existing products. This non-chlorinated, non-flammable product is tough on the things it needs to be tough on, while being gentle on users. 12 oz. Spray .....P/N 09-03525 .....**$9.29**

GLI SHIELD IT™ RUST PREVENTION

Don't just protect it from rust and corrosion, Shield It® with this advanced rust prevention and anti-corrosion lubricant. We all fight corrosion in our aircraft. Shield It® is the answer. Safe for almost all surfaces including wood, glass, vinyl, metal and plastics not under stress. Shield It® evaporates to leave a long-lasting dry film. Greater than 90% biodegradable.

7.5 oz spray. .....P/N 09-03524 .....**$9.29**

GLI BOLT OFF® LUBRICANT

Cut through corrosion quickly, loosen stubborn nuts, and penetrate rust faster than the competition. It's formulated to adhere to surfaces and last longer, but because it's greater than 90% bidegradable, it's good for the environment too. 8 oz. Spray.

P/N 09-03523 .....**$9.29**

GLI LUB FIX® LUBRICANT

Fix squeaks and creaks in minutes with LubFix®, a long-lasting green formulation with the staying power to outlast heavy usage on door and air stair hinges, gear, flaps, and ailerons. LubFix® will lift it right off. A safe, effective alternative to petroleum-based lubes and greater than 90% biodegradable. 8 oz Spray.

P/N 09-03526 .....**$9.29**

GLI SIMPLY SOY® LUBRICANT

Made from 100% soy beans harvested between America's shores, it is the toughest non-toxic cleaner and lubricant available. Simply Soy®'s 100% biodegradable formula cuts through commercial-grade corrosion and rust. Lub Fix is completely safe for food areas, child, pe, and food environments. 8 oz Spray.

P/N 09-03527 .....**$9.29**

GLI GAS OFF™ WIPES

Made from a solvent-free, environmentally safe formula, Gas Off extra-large, 100% biodegradable wipes thoroughly suspend and absorb smells from your hands, power tools, clothing, and more. Continental Airlines' mechanics swear by them, as do the mechanics at my FBO before breaks, meals, and climbing into my plane. Throw a couple of these in your flight bag.

12 Pack of Wipes .....P/N 09-03522 .....**$17.29**
24 Pack of Wipes .....P/N 09-03521 .....**$14.59**

GLI SIMPLY SOY® DE-ICE BOOT CONDITIONING WIPES

Simply Soy® De-Ice Boot Conditioning Wipes contain a soy-based formulation which thoroughly conditions and restores rubber de-icing boots and tires. After removing bugs and grime with a De-Ice Boot Cleaning Wipe, restore the boots luster with a quick coating of Simply Soy® applied with a De-Ice Boot Conditioning Wipe. This wipe will add a nice protective layer that also makes it more difficult for the next round of bugs to adhere to the boot. 24 each. .....P/N 09-03516 .....**$14.59**

GLI PUMP-UP FOAMER

This is the perfect utility foamer for any small job, anywhere around the house, the farm, the shop or the work site. Just add the diluted chemical or soap, pump it up and you're good to go! The Lafferty Pump Up Foamer creates a rich, clinging foam that adheres to the surface longer to put an extra "kick" into your cleaning! It's great for the car wash / detailing shop for pre-soaks, bug & tar solutions, wheel & tire cleaners and lawn & garden. It's portable so it works anywhere you can go.

1.5 Gallon .....P/N 09-03528 .....**$80.99**
3.0 Gallon .....P/N 09-03529 .....**$102.99**

GLI PUMP-UP SPRAYER

Adjustable spray nozzle. Great for indoor and outdoor watering. Wide mouth for easy filling. Comfortable grip handle and thumb trigger. Viton O-rings. Translucent tank for easy view of product level. Applications: carpet spot cleaning, restroom cleaning and car washes. Unique nozzle which produces smooth, thick foam with foaming product. Easily converts to regular spray nozzle. 64 oz capacity. .....P/N 09-03536 .....**$44.99**

GLI FREEDOM FOAMER

Features: • Cover 500 ft2 in 2 1/2 minutes • 16 minutes foaming time per 20 gallons of chemical solution • Up to 12 ft. usable foam throw distance • Wall Mount model requires external chemical solution tank • Tanks hold RTU chemical solution

Includes: • Lockable, stainless steel enclosure • Stainless steel cart with stainless steel casters • High density polyethylene tanks • Yamada pump with Teflon® diaphragms • Machined polypropylene foamer body • Discharge hose, stainless steel ball valve, foam wand and fan nozzle

20 Gallon. 2 Wheel..... P/N 09-03531 .....**$1,357.99**
20 Gallon. 4 Wheel..... P/N 09-03535 .....**$1,529.99**

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POLISHES & CLEANERS

ALL KLEER

Black Labs Corporation is proud to introduce, All Kleer, the ultimate plastic windshield cleaner and polish. All Kleer was invented by a pilot over 25 years ago for cleaning and maintaining plastic aircraft windshields that require absolute clarity.

All Kleer is different than most windshield products on the market as it not only cleans dirt, bugs and grease but leaves a very fine, slick finish. This finish helps to repel water, dust, bugs, and water spotting - making it easier to see and to clean the next time. All Kleer contains no wax, ammonia, or abrasives and does not require the use of any water. A non-pressurized leak proof 8oz bottle is designed to be carried on board if desired.

Simply apply All Kleer with a clean towel to a dry windshield cleaning off any bugs and dirt and allow 30-60 seconds for a haze to form. After it has completely dried, wipe off with a clean towel and feel the All Kleer finish. P/N 09-01602 ..... **$6.95**

PRIST® ACRYLIC, PLASTIC AND GLASS CLEANER: FOR ALL TYPE OF WINDOWS

The convenient 13-ounce can is ideal for use on acrylic, stretched acrylic, poly carbonate, glass, and coated glass. It may also be used for cleaning many other sources including aircraft interiors, goggles, helmets, lenses, and plastic and metal surfaces. Prist® cleaner contains no abrasive cleaning agents and cleans without scratching glass or plastic surfaces. This prevents scratches in acrylic windshields that necessitate costly replacement. Unlike other cleaners, Prist® cleaner dispenses as foam and leaves no residue. The cleaning agent soaks into the dirt, grease and insects to remove them with minimum effort. Suitable for interior and exterior cleaning, Prist® cleaner prevents static charge build-up with regular use.

13oz. Can..... P/N 09-02049..... **$5.95**
Case (12 Cans)..... P/N 09-02049-1..... **$77.25**

PILOT'S VIEW POLISH & CLEANER

Put a coat of Pilots View Polish on your aircraft windshield and Improve your vision up to 300% in the rain. This product will shed the rain in a huge way! Ideal for GPS, Avionics, Plexiglas Windows and much more! This Product Will Not Scratch Anything! Safe on: Eyeglass/Sunglass lenses, Anti-reflective, protective-coated and shaded lenses, sun visors and plexi windshields

1 oz. Spray ..... P/N 09-01583..... **$3.90**
27 oz. Sprayer ..... P/N 09-01584..... **$7.95**
Kit (27 oz. Sprayer / 1 oz. Spray)..... P/N 09-01585..... **$10.95**

GLARE PROFESSIONAL POLISH

A non-stick high-gloss all-weather sealant. The finest polish for your car, airplane, boat, motorcycle, glass, stainless steel, fiberglass, chrome, Carbon Graphite, and RV in the world's market. Filters out UV Rays, turns to glass on and within your paint. Contains Glassplexin®. Bonds molecularly to your paint. The most revolutionary polish ever developed. Beyond 22nd century technology. Lasts up to five years.

12oz. P/N 09-01055 ..... **$27.50**

GLARE SPIDER

"Another innovation of Ultra 2000 MFG Int'l, Inc. Beyond 22nd century technology."

GLARE Spider is the most advanced swirl, spider web, and scratch removal product in the market. Ultra high purity metal interlinked fusion of glass particles to Glassplexin forming a unique highly advanced swirl mark remover polish. GLARE Spider fills in permanently, it is NOT a temporary solution - not found anywhere. 12oz. ..... P/N 09-01061 ..... **$26.75**

GLARE RAPID ACTION SPRAY

Ultimate protection for Cars, Planes, Boats, Motorcycles, Fiberglass, Plastic, Stainless Steel, Chrome, Carbon Graphite & Polished Aluminum. Now in a convinient and easy to use spray formula. Contains Glassplexin and lasts up to six months. Bonds molecularly to your paint. The most exciting polish ever developed. Beyond 22nd century technology.

P/N 09-01057 ..... **$23.75**

GLARE ULTRA WASH

"Cleans your vehicle, keeps your shine."

The most advanced wash ever developed. A PH balanced concentrated wash. Safe for all paints and finishes including the new clear-coated paints. New technology that leaves your vehicle clean and glossy like no other vehicle wash can. Contains Glasplexin.

12oz. .....P/N 09-01062 ..... **$11.50**

GLARE VINYL • LEATHER ALL WEATHER PROTECTANT

A special blend of natural ingredients and a chemical formulation called SUPPLEXIN which is designed to beautify, soften, deodorize, preserve, and protect against damaging agents found in the everyday usage of your vehicle's interior. This product cleans, conditions, preserves, and protects in one easy step. Contains no harmful silicons, or adverse active ingredients. Blocks harmful UV rays.

12oz. .....P/N 09-01056 ..... **$27.50**

GLARE LIQUI-CLAY

"The Clay Bar in a Bottle."

Smoothes and removes stubborn blemishes before polishing! Won't rescratch your paint like a regular Clay Bar. Fast and very easy to use. The MOST advanced claying system for your vehicle's finish ever developed!

• Restores Color • Picks up Debris. Fallout, Insects, & Dirt Particles like a Magnet! • Smoothes paint like glass
• Preps paint before polishing

12oz. .....P/N 09-01059 ..... **$23.50**

GLARE TIRE MAGIC

"The ultimate all in one tire appearance protection product!"

Glare Tire Magic will filter out harmful Ultra Violet Rays from the sun. Extreme temperature resistant formula for all climates. Stops tires from cracking and fading. Gives a beautiful rich natural high gloss finish. Splatter resistant formula. Easy to use - just spray and wipe!

16 oz. ..... P/N 09-01058 ..... **$10.50**

GLARE KNOCK OUT!

"Restores all paints, removes & reverses oxidation, and fills in scratches." – Glassplexin actually fills in the surface scratches and reverses oxidation to bring the painted surfaces to a new level of beauty not available with any other compounds. One step compound: NO WAX! NO SILICONE! NO POLYMER! • Great for all clear coats •Easy to apply. Works quickly! Saves time! • Removes swirl marks from all paint including clear coats • Preps paint with the most advanced ingredient - Glassplexin

12 oz.....P/N 09-01064 ..... **$23.25**

GLARE TURBO ACTION WHEEL CLEANER

Glare Turbo Action Wheel Cleaner is the most powerful, effective, & fastest working wheel cleaner on the market. Safe for ALL types of wheels - Aluminum, Chrome, Magnesium - as well as clear coated & painted wheels. Makes your wheels look show room bright and shiny the easy and safe way. Removes and dissolves dirt, grime, brake dust, and grease. Spray on Glare Turbo Action Wheel Cleaner to dirty wheels & hose off with clean water to get your wheels looking like new again!

16oz. ..... P/N 09-01063 ..... **$8.75**

GLARE (GALLON) PROFESSIONAL POLISH • MICRO-FINISH • ULTRA WASH

GLARE Professional Polish – A non-stick high-gloss all-weather sealant. The finest polish for your car, airplane, boat, motorcycle, glass, stainless steel, fiberglass, chrome, Carbon Graphite, & RV in the world's market. Filters out UV Rays, turns to glass on and within your paint. Contains Glassplexin®. Bonds molecularly to your paint. The most revolutionary polish ever developed. Beyond 22nd century technology. Lasts up to 5 years.

GLARE Micro-Finish – "We burn out the competition." – A non-stick high-gloss all-weather sealant that lets paint breathe. Contains Glassplexin®. Ultimate scratch and oxidation remocoval for Cars, Planes, Boats, Motorcycles, Fiberglass, Plastic, Stainless Steel, Chrome & Polished aluminum. For use with GLARE Professional Polish.

GLARE Ultra Wash – "Cleans your vehicle & keeps your shine" – The most advanced wash ever developed. A PH balanced concentrated wash. Safe for all paints and finishes including the new clear-coated paints. New technology that leaves your vehicle clean and glossy like no other vehicle wash can. Contains Glasplexin ®.

Glare Micro Finish - 12 oz. .....P/N 09-02362 ..... **$26.95**
Glare Micro Finish - Gallon .....P/N 09-01065 ..... **$237.95**
Glare Pro Polish - Gallon .....P/N 09-01066 ..... **$237.95**
Glare Ultra Wash - Gallon .....P/N 09-01060 ..... **$105.95**

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PLEXIGLASS RESTORATION - LEATHER CARE

MICRO-MESH WINDSHIELD SCRATCH REMOVAL KIT

Micro-Mesh is a cloth backed cushioned abrasive with a resilient layer of material between the back and the abrasive. When pressure is applied, the abrasive crystals recede into the resilient layer and find an even plane for cutting. The result is a smooth shaving action with an ultra fine scratch pattern which restores scratched, discolored, or damaged fiberglass or acrylics to like-new condition. Kit includes everything needed to repair approximately 30 sq. ft.

Standard Kit (restores up to 30 sq. ft.)..... P/N 09-24700.....**$24.75**
Large Kit (restores up to 60 sq. ft.) ..... P/N 09-24701.....**$45.50**
Professional Kit (restores up to 100 sq. ft.)..... P/N 09-24716.....**$71.75**

MICRO-GLOSS POLISH

Safe for use on bare acrylic, bare polycarbonate, and coated polycarbonate. Tests using Micro-Gloss were completed according to ASTM F791 standards and to USAF specification 16ZK002F (Addendum2) at stress levels of 2000 and 3000 PSI in both dry and humid conditions. Approved for use on the inside and outside surfaces of F-16 aircraft. * Removes fine scratches . * Removes swirls created by improper cleaning methods. * Removes haze and milkiness from interior/exterior windows. * Provides a final polish, leaving you wiht an ultra-clear finish. * Can be applied by hand or machine * Approved for use by Boeing, Spec D6-52021 * Approved for military use, NSN #5350-01-334-89978 oz.....P/N 09-24710..... **$10.85**

MICRO-SURFACE WINDSHIELD RESTORATION KITS

Micro-Surface Finishing Products, Inc. FAA Repair station #KY2R969K, has been a leader in acrylic restoral for the past 30 years. The following kits were developed for use with standard power tools. Micro-Mesh is approved by Boeing/McDonnell Douglas, the Military and FAA. All kits come with easy to read instructions. Designed to save you both money and time, these kits will restore acrylic back to optical clarity using a minimum of steps. Re-order individual components as you need them. All kits restore up to 100 sq. ft.

MAINTENANCE KIT - Remove scratches, halos and haze. 5" White Foam Sponge Pad. 5" TufBuf, All Natural Lambswool Polishing Pad. 5" Back-up Pad. 8 Ounce Bottle Micro-Gloss. 8 Ounce Bottle Anti-Static Cream. 2 Cotton Flannel P/N 09-24715 .....**$69.85**

LIGHT DAMAGE REMOVAL KIT - Remove minor scratches and scuff. 2-5" Loop Back Discs, Micro-Mesh 1500, 2-5" Loop Back Discs, Micro-Mesh 2400, 2-5" Loop Back Discs, Micro-Mesh 3600, 5" White Foam Sponge Pad, 5" TufBuf All Natural Lambswool Polishing Pad, 5" Back-up Pad, 8 Ounce Bottle Micro-Gloss, 8 Ounce Bottle Anti-Static Cream 2 Cotton Flannel P/N 09-24720 .....**$97.50**

HEAVY DAMAGE REMOVAL KIT - Remove crazing, scratches, and gouges. 5-5" Loop Back Discs, Wet/Dry 120 Grit, 5-5" Loop Back Discs, Wet/Dry 220 Grit, 5-5" Loop Back Discs, Wet/Dry 400 Grit, 2-5" Loop Back Discs, Micro-Mesh 1500, 2-5" Loop Back Discs, Micro-Mesh 2400, 2-5" Loop Back Discs, Micro-Mesh 3600, 5" White Foam Sponge Pad, 5" TufBuf All Natural Lambswool Polishing Pad, 5" Back-up Pad, 8 Ounce Bottle Micro-Gloss, 8 Ounce Bottle Anti-Static Cream, 2 Cotton Flannel P/N 09-24725 .....**$104.95**

MICRO-MESH POLYCARBONATE RESTORATION KIT

Excellent for restoring polycarbonate such as Lexan on aircraft, boats, cars, & motorcycles. Will restore up to 100 square feet material. Kit includes: • 5" disc w/ loop 2400 MicroMesh • 5" disc w/loop 3600 MicroMesh • 5" random orbital or drill back-up pad • 5"x 3/4" TufBuf lambswool polishing pad • (2)11.5"x 12" flannel sheets • Instructions • 5" white sponge pad • 8 oz. Micro-Gloss #5 • 8 oz. Micro-Gloss • 8 oz. Final Finish

P/N 09-00490 .....**$91.50**

MICRO-MESH FINISHING KIT FOR WOOD

This kit is designed for craftsmen for use in hand finishing applications and without the mess of steel wool, rottenstone or pumice. MicroMesh may be used on bare or finished wood with wet or dry application method. A high reflective finish, satin or matte finish can be achieved, depending on how many MicroMesh steps are completed. This makes it an excellent product for spot matching of finishes.

P/N 09-24705 .....**$38.50**

PLEXIGLASS LENS REPAIR KIT

Protect your investment by restoring crazed, scratched, hazy lenses. Perfect for recognition light lenses, navigation light lenses, and landing light lenses. Lenses can be restored on the plane without removal. Soft Touch pads in this kit fit nicely in your hand and allow you to polish both concave and convex surfaces with ease. Dry pads, store and reuse again and again. P/N 09-01603 .....**$11.95**

PERRONE LEATHER PRODUCTS

DEEP CLEANER FOR LEATHER

Perrone's Leather Cleaner / Conditioner is a premium blend of gentle cleansers and light conditioners formulated to clean and rejuvenate finished leather, vinyl and plastic surfaces. Perrone's Leather Cleaner/ Conditioner removes dirt, dust and oils without drying or damaging the surface.

Perrone's Leather Cleaner/ Conditioner helps protect leather from weathering and fading. Leaves leather surfaces soft, supple and smelling like new again. The wipes are treated with the same leather cleaner/ conditioner as in the spray bottle.

Perrone Leather Cleaning/ Conditioning products create an invisible barrier between leather seat covers and soils. This quick, convienient and cost effective method of reducing ink stains, dir, grease, grime and body oils from penetrating leather surfaces will add to the longevity and appearance of your aviation leather interior without any adverse effects on flammability.

32 oz. w/Trigger Spray ..... P/N 09-00557 ..... **$15.75**
1 Gallon Refill ..... P/N 09-02062 ..... **$39.95**
Sontara Wipes (45 Wipes)..... P/N 09-00559 ..... **$36.25**

DEEP CLEANER FOR LEATHER

This unique formula is custom blended to clean and rejuvenate fine leather surfaces. Leather Cleaner with Conditioner features a unique protective barrier that, when used regularly, helps to prevent soiling from stains such as dirt, grease, ink, grime and body oils.

P/N 09-02120 ..... **$17.95**

LEATHER CONDITIONER

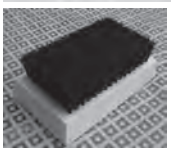
This unique formula is custom blended to clean and rejuvenate fine leather surfaces. Leather Cleaner with Conditioner features a unique protective barrier that, when used regularly, helps to prevent soiling from stains such as dirt, grease, ink, grime and body oils. 16 oz.

P/N 09-02121 ..... **$18.75**

INK REMOVER

Perrone Ink Remover will help to effectively remove most ink and highlighter stains from finished leather surfaces. Removes lipstick and other stains quickly and effectively. Will not harm the finish system of finished leather. 2oz

P/N 09-02122 ..... **$11.75**



LEATHER CLEANING BRUSHES

Specifically designed for leather cleaning, Perrone's Leather Cleaning Brushes dig out tough soils and stains from the pores of natural and corrected grained leather. For best results use in conjunction with Perrone's cleaning products. Can also be used for suede and nubuck. Sturdy Wood Block with 3-1/2"x2" Bristle Bed

P/N 09-02123 ..... **$18.90**

HEADLIGHT REPAIR & SCRATCH-AWAY RESTORE KITS

PLEXIGLASS LENSE REPAIR KIT - Removes crazing, scratches, scuffs, and haze from navigation light lenses, recognition light lenses and landing light lenses. Not necessary to remove lense to restore to optical clarity. PN 09-02171 .....**$13.50**

SCRATCH AWAY HEADLIGHT RESTORE KIT - This kit will remove haze, cloudiness, and light scratches. Process will resurface the lense rather than fill in scratches. Once the process is complete, damage will not return. This is a spot repair kit. We also have larger kits available.

PN 09-02170 .....**$14.95**

ACRYLIC HEADLIGHT LENSE RESTORATION KIT - Easy to use double sided MICRO-MESH SOFT TOUCH PADS make removing cloudiness and haze from lenses, lense covers, tail lights, tail light blackouts, and bug deflectors a snap! Each kits contains: 3 IN. x 4 IN. double sided pads in 120/220, 400/1500, 2400/3600, 4000/12000, 1 oz. bottle MICRO-GLOSS liquid abrasive, and 2 cotton flannel cloths. Clean, dry, and reuse over and over - A FANTASTIC VALUE! PN 09-02172 .....**$32.75**

CLEANERS – POLISHES

CLEAR™ WINDSHIELD CLEANER

Specifically developed for aircraft windshields. Flight Bright® CLEAR™ provides optimum visibility without harming the windshield or paint. Features: • Easy to use • Streak-free • Anti-static •Non-abrasive • Prolongs windshield lifespan •Non-Yellowing Formulation

2.5 oz. .....P/N 09-00792 .....**$2.85**
22 oz. .....P/N 09-00793 .....**$16.50**

FINAL APPROACH™ POLISH & SEALANT

Provides long-term protection and an impressive high gloss finish. No wax or free silicones. Safe for all types of paints, clear coats, graphics, fiberglass and plexiglass. Features: • Easy to apply • High gloss finish • Leaves no white powdery residue •Acid rain and sun fading protection.

P/N 09-00794..... **$15.95**

ARRIVAL METAL POLISH

Arrival Metal Polish is a first-class liquid polish designed to give your aircraft a premium shine in no time. It is the ultimate polish for the restoration and maintenance of unpainted metals. Arrival also works great in the removal of rust and oxidation.

P/N 09-01090..... **$13.75**

ILS™ INTERIOR LEATHER SYSTEM

Flight Bright® ILSTM uses a gentle balance of moisturizers and lanolin oils to nourish, preserve and enhance fine leather. With regular use, this conditioning cream penetrates and softens leather to prevent dryness and cracking. Yellow application sponge included. Features: •Moisturizes • Nourishes • Softens P/N 09-00802..... **$8.95**

PRE-FLIGHT™ WASH *(CONCENTRATE)*

Highly concentrated, commercial-strength, gloss-enhancing wash. Contains no acids, silicones, waxes or damaging sodium chloride. Its thick foaming action delivers a thorough but gentle cleansing for any aircraft. Features: • Will not remove polish •Non-abrasive • Streak-free rinsing •Quick drying

Wash.....P/N 09-00803 .....**$10.50**
Gallon.....P/N 09-00804 .....**$63.75**

GEAR-UP™ EXHAUST & OIL REMOVER

Specially formulated to remove exhaust and oil from airplanes. Quickly cuts through carbon & grease. Solventfree, caustic-free GEAR-UP™ removes stains and ink from fine leather, upholstery & carpets. Features: • Cuts through grease & oil in seconds • Non-corrosive •Solvent-free.

2.5 oz. ..... P/N 09-00795 .....**$2.50**
22 oz. ..... P/N 09-00796 .....**$14.50**
1 Gallon .. P/N 09-00797 .....**$68.75**

TAKE-OFF™ BUG REMOVER

Specially formulated to soften and neutralize the acidic proteins found in bugs. TAKE-OFF™ safely removes bug residue without removing polish or damaging paint, clear coat, glass, plastic, metals & chrome. **Features:** • Powerful & effective • Will not remove polish • Excellent spot cleaner for bugs inbetween regular washings • Ready-to-use as a pre-soak for bugs before washing

2.5 oz .....P/N 09-00805 .....**$2.50**
22 oz. .....P/N 09-00806 .....**$14.50**
1 Gallon .....P/N 09-00807 .....**$68.75**

GO-AROUND™ WATERLESS WASH & DETAILER

Gives your aircraft that just-polished, slippery feel and highgloss wet-look! Fast and easy to use. Petroleum-free, silicone- free, Flight Bright® GO-AROUND™ safely removes dust, bugs and mild grime. Features: • Wont scratch, streak or smear •Anti-static gloss enhancer • Leaves no oily film

2.5 oz. .....P/N 09-00798 ..... **$2.50**
22 oz .....P/N 09-00799 .... **$16.50**
1 Gallon .....P/N 09-00801 .... **$73.50**

DRIVEN MARINE POLISH

Driven Marine Polish is the most highly advanced formulation of premium grade polymer polish on the planet. Sheeting action reduces water spots that wipe clean. Nothing sticks. Harmful elements can't "bite in". Easy to apply in sun or shade. Super high gloss wet look with incredible depth & clarity. Long lasting. Holds up under intense heat from sun and severe winter cold for up to one full year. Maximum U.V. inhibitors prevent sun damage. Excellent for use on aircraft.

P/N 09-00777 ..... **$18.50**

DRIVEN WASH CONCENTRATE

Driven Premium Polymer Wash safely cleans all automotive and marine finishes without stripping polish or wax. Activated by water, this unique combination of cleaning agents foams away surface contaminants while brightening and nourishing the finish with a full spectrum of protective polymers. Biodegradable. pH balanced. Safe for clear coat and fiberglass gel coat. Super concentrate provides more washes per bottle. Sheeting action is highly effective in the reduction of hard water spots. Rich foamy lather.Will not streak. Brightens and extendspolish protection and shine. Excellent for use on aircraft. P/N 09-00780 ..... **$15.00**

EAGLE ONE A2Z ALL WHEEL & TIRE CLEANER

The ever-popular A2Z thick foam formula safely removes brake dust, grime and grease. Easy-to-use (spray on, hose off), no scrubbing required. Acid-free - Safe for ALL types of wheels, hubcaps and tires.

Tip: Make sure your wheels and tires are cool to the touch before applying and clean one wheel/tire at a time. For extremely dirty wheels/tires, agitate with a soft sponge or brush. P/N 10-04938 ..... **$6.75**

M-RON GLASS CLEANER / WAX

M-Ron Glass is not your ordinary wax. It is a CLEANER & WAX so you are not waxing over a dirty surface or getting a waxy build up. That's why M-Ron Glass gives you such an AMAZING SHINE! Because of how this works, it is recommended that once applied; let it sit and bake in the sun for 15 to 30 minutes. You will get a deeper shine and a higher luster than you would if you were to apply it and take it off right away. It will NEVER bake itself to the surface!

12 oz.....P/N 09-03483 ..... **$15.95**

SPRAY SHINE™ SPRAY-ON CARNAUBA WAX

Spray Shine™ was designed for the finest of finishes, car show enthusiasts, new car dealers and people who really like to take care of their vehicles. Just a quick spray and wipe will give your ride a complete new shine! Use Spray Shine™ on paint, glass, chrome, plastic, tile, lamps stoves, refrigerators, microwaves, mirrors, computer screens, etc.

Spray Shine™ will give a high gloss surface an amazing CLOUD FREE SHINE!

16 oz.....P/N 09-03485 ..... **$10.95**

LVC LEATHER VINYL CONDITIONER

LVC Leather Vinyl Conditioner is a non-greasy conditioner designed for interior use but also works great for keeping leather or vinyl roofs or covers looking and feeling like new. "LVC" is a mild cleaner but a serious conditioner that allows the leather to "breathe", and actually does help to protect leather and vinyl from the elements, keeping them SOFT and SUPPLE with NO GREASY FILM!

8 oz.....P/N 09-03484 ..... **$6.95**

FLIGHT LINE KIT

The complete Flight Line Kit comes with a custom-made, compartmentalized, easy-access, leak-proof gear bag. Each of the following Flight Bright® products are included: *CLEAR™ Windshield Cleaner *FINAL APPROACH™ Polish & Sealant *GEAR-UP™ Exhaust & Oil Remover *GO-AROUND™ Waterless Wash & Detailer *ILS™ Interior Leather System *PRE-FLIGHT™ Wash Concentrate *TAKE-OFF™ Bug Remover *AIRCRAFT WINDSHIELD WIPES *ANTI-STATIC HAND PAD * MULTI-FIBER POLISHING CLOTH *ARRIVAL METAL POLISH *Also included is a Flight Bright® T-Shirt.

P/N 09-00808 ..... **$115.95**

AIRCRAFT CLEANING PRODUCTS

TRI-GUARD™

The Best boot treatment available!

One of the most frequently asked questions we receive from aircraft owners is "What is the best way to take care of my de-ice boots and not spend a lot of time?" After researching, testing, and re-testing; The Proper Aircraft® has found a solution. Tri-Guard™ De-Ice Boot Protectant, the newest edition to The Proper Aircraft's® line of quality aircraft cleaning products. Tri-Guard™ is a rejuvenating conditioner with a high gloss shine, as well as a component to help with the ice-shed process. It is specially formulated to achieve superior care of your de-ice boots in less time (and money) over traditional multi-step products.Description

16 oz. ..... 09-02028 ..... **$33.65**
1 Gallon..... 09-02029 ..... **$139.95**

TRI-GUARD™ PREP CLEANER

To ensure the most effective results, proper preparation is key. Tri-Guard™ Prep Cleaner is formulated for use before each application of Tri-Guard™ De-Ice Boot Protectant. It effectively cleans the de-ice boot of all old boot treatments, ensuring the best results.

16 oz. ..... 09-02030 ..... **$14.95**
1 Gallon..... 09-02031 ..... **$69.95**

AERO SURFACE WASH

Formulated specifically for aircraft finishes. Aero Surface Wash quickly penetrates and loosens oil and grease without stripping the wax. Its advanced, highly concentrated cleaning formula cuts through stains, dirt and acid rain. It revives colors and dries without streaking or spotting. Gentle, yet effective, Aero Surface Wash is safe for all aircraft exteriors.

16 oz. ..... 09-02014.....**$10.80**
1 Gallon ..... 09-02039.....**$45.95**

POWER CLEAN GEL

Safe, yet aggressive, Power Clean Gel attacks even the most stubborn cleaning problems. It removes bugs, grease, oil, bird droppings and hydraulic oils. The gel stays where it's sprayed – no runs, no drips. And it cleans the leading edge and difficult exhaust stains without damaging the paint. Use our Sontara disposable wipe cloths Power Clean Gel to achieve the best results.

16 oz.....09-02015 .....**$14.95**
1 Gallon. .....09-02016 .....**$64.25**

WINDSHIELD GEL

One of our best sellers! Cleaning gel formulated for acrylic windshields. Unlike other window cleaners, Windshield Gel doesn't streak or leave a residue. Windshield Gel's unique blend of ingredients penetrates and lifts dirt allowing a clean wipe off and a sparking, streak-free finish. It cleans, shines, and protects without scratching. Safe on all surfaces. Its antistatic qualities and excellent vertical cling are specially formulated for acrylic windshields.

16oz. ..... 09-02017..... **$18.50**
1 Gallon ..... 09-02018..... **$62.95**

WINDOW POLISH

The Proper Aircraft Window Polish removes fine scratches and helps restore clarity to aircraft windows. Manufactured to meet milspec PP560B specifications, Aircraft Window Polish is safe and effective for use on all acrylic aircraft windows. It removes cumulative surface soils, produces a smooth, lustrous finish and is nontoxic, antistatic and noncorrosive to adjoining aluminum surfaces. Simply apply the polish, let dry, and wipe it off. The results? Clear, clean, residue-free windows.

P/N 09-02019..... **$10.80**

LIQUID CARNAUBA WAX

Liquid Carnauba Wax – the ultimate in shine, durability and protection. Liquid Carnauba Wax will safely protect your finish from the effects of insect stains, acid rain, engine exhaust and other finish eaters. Our unique formula Liquid Carnauba Wax contains the highest-grade #1 yellow carnauba wax – the best in the world! The special ingredients are designed to protect and preserve all aircraft finishes, including clearcoats. Its easy-on, easy-off application is a plus. For use on newer finishes. P/N 09-02020 ..... **$18.75**

REJUVINATING LIQUID CARNAUBA WAX

Rejuvenating Liquid Carnauba Wax restores oxidized finishes to their original beauty. Our rejuvenating wax contains the same rich ingredients as Liquid Carnauba Wax with the addition of a mild rejuvenating polish. In one easy step, Liquid Carnauba Rejuvenating Wax safely strips away oxidation from old painted surfaces. The result: a polished gleam that lasts. Carnauba doesn't leave a buildup of wax because you apply it with one thin coat. It goes on and wipes off with ease. For use on finishes that have oxidation P/N 09-02021 ..... **$20.80**

AERO WASH WAX MOP KIT

Wash Wax Mop Kit: ALL you need to get started with the New Waterless Wash Wax Mop. The Wash Wax Mop was specifically designed for aircraft and is the only mop with two sides. One wet and one dry. Now you can waterless wash and wax with the reach and leverage of an extension pole. This allows you to clean a much larger area faster and with less effort, all from the safety of the ground. No ladder needed. Customers report time savings up to 50% over waterless hand application. Simply spray Wash Wax ALL on the Wet Side of the mop, wipe the aircraft with the wet side, flip the mop over, and wipe dry with the dry side. Includes: (1) Mop head with two (2) Microfiber Mop pads , (1) Deluxe Mop Pole, (1) Pack of four (4) Microfiber Mop pads, (1) Pack of four (4) Aero Towels (1) Gallon of Wash Wax ALL, (1) 16oz spray bottle, (1) 16oz Wash Wax ALL (Degreaser), (1) Aero Scrubber Pad with Handle and an Aero Bag to store and carry the kit.

Wash Wax Mop Kit ..... P/N 09-03502 ... **$414.28**
Replacement Waterless Mop Pads (4)..... P/N 09-03503 ..... **$29.95**

DEND ULTRA CONCENTRATE CLEANER

Dend is a technologically advanced cleaner that has been developed for the discriminating owner and professional. This specially formulated cleaner, with a wax component can be used as a wet-wash or a dry-wash application. And because of the built-in rinsing agent in Dend, if the product dries on the surface, simply re-apply and buff to a shine.

This aviation-approved product is safe for the environment and offers a great value because it is shipped in a concentrate. This means you add the water and lower the per gallon price. Dilute 50 to 1 or 40 to 1. Dend is biodegradable, non-toxic, non-flammable and contains no phosphates, silicone or Teflon®

4 oz..... P/N 09-03443..... **$9.95**
Quart..... P/N 09-03444..... **$56.25**
Gallon ..... P/N 09-03445..... **$169.75**
5 Gallon ..... P/N 09-03446..... **$566.95**

PERMASHINE BUMPER AND CLADDING COAT TEXTURED PLASTIC RESTORER

PermaShine is designed to protect new textured plastics from fading and to restore the appearance of faded textured plastics. PermaShine will provide permanent protection and gloss enhancement for textured TPO plastics, and it sticks so well that a pressure washer cannot blow it off. PermaShine can be applied by spray gun or roller for added convenience.

Features: • There is nothing else on the market that works like PermaShine - it is totally unique. • Permanently restores the appearance of faded textured plastics; not the quick-fading shine that silicone dressing provide. • PermaShine's adhesion to textured plastic is so good that it cannot be blasted off with a pressure washer.

11OZ Aerosol ..... P/N 09-02408 ..... **$21.50**
Quart..... P/N 09-02407 ..... **$59.95**
Gallon ..... P/N 09-02406 ..... **$199.95**

CS

AERO COSMETICS CLEANING PRODUCTS

WASH WAX ALL

Wash Wax ALL is a waterless wash and wax that is safe to use on all aircraft surfaces. Leaves a non-stick anti-static UV protective coating on everything you clean. Removes dirt and bugs without scratching, simply spray on and wipe dry. Safely cleans and protects aluminum, composite, and fabric aircraft. Also excellent on aircraft windows and avionics. Meets (or *conforms to*) Boeing aircraft cleaning specification Exterior D6-17487 and interior D6-7127M. Wash Wax ALL is water based, non-toxic, biodegradable, and contains no alcohol or ammonia. Also use our Wash Wax Mop for hard to reach areas.

Pint ..... P/N 09-02514 ..... **$8.75**
Quart ..... P/N 09-00493 ..... **$12.95**
Gallon ..... P/N 09-00494 ..... **$24.85**

WASH WAX ALL DEGREASER

Wash Wax ALL (Degreaser) is a waterless wash and wax. Removes exhaust soot, Carbon residue, oil, and grease from all aircraft surfaces including belly and landing gear. Simply spray On and wipe dry. Safely cleans and protects aluminum, composite, and fabric aircraft. Meets Boeing aircraft cleaning specification Exterior D6-17487 and interior D6-7127M. Wash Wax ALL (Degreaser) is Water Based, non-toxic, biodegradable, and does not contain Alcohol or Ammonia. Use with our Wash Wax Mop for hard to reach areas.

Pint ..... P/N 09-02418 ..... **$8.75**
Gallon ..... P/N 09-00496 ..... **$24.85**

AERO BELLY WASH

Belly Wash will clean the dirtiest aircraft bellies. Removes exhaust soot, carbon residue, oil, and grease from all aircraft surfaces including the belly and landing gear. Simply spray on and wipe dry. Safely cleans aluminum, composite, and fabric aircraft. Meets Boeing aircraft cleaning specification D6-17487 and interior D6-7127M. Belly Wash is Water Based, non-toxic, biodegradable, and contains no alcohol or ammonia.

Pint ..... P/N 09-02518 ..... **$12.50**
1/2 Gallon ..... P/N 09-02410 ..... **$29.50**

AERO PLEX ALL

Plex ALL an aircraft window cleaner that is safe to use on all aircraft windows. Leaves a non-stick, anti-static UV protective coating on both glass and plastic aircraft windows. Safe on heated glass and avionics. Sheds (possible *Beads up and sheds*) water for better visibility. Removes dirt and bugs without scratching. Simply spray on and wipe dry. Meets Boeing aircraft cleaning specification D6-17487 Plex ALL is water-based, non-toxic, biodegradable, and contains no alcohol or ammonia.

8 oz. ..... P/N 09-02517 ..... **$8.50**
Gallon ..... P/N 09-02519 ..... **$19.90**

AERO CABIN CLEANER

Cleans and removes beverage spills and stains from aircraft carpets, seats, tray tables, side panels, cockpit and galleys. Works well with the Aero Scrubber.

Pint ..... P/N 09-00497 ..... **$9.95**
1/2 Gallon ..... P/N 09-02520 ..... **$17.90**

AERO SAFESOLV SOLVENT

All purpose citrus solvent. Removes tar, oil, hydraulic fluid, adhesives and gum. A safe, effective alternative to toxic chemicals that is safe to use on paint, plastic, glass, bare metal, carpet and seats.

8 oz. ..... P/N 09-00499 ..... **$8.50**
1/2 Gallon ..... P/N 09-02521 ..... **$35.75**

AERO LEATHER SOAP

Leather Soap gently cleans and removes dirt, grease, body oils, and lotions from leather and vinyl. Meets Boeing Aircraft Interior cleaning specification D6-7127M. Condition with Leather Care. For everyday cleaning use Wash Wax ALL (Blue). Water Based, Nontoxic, biodegradable, Alcohol and Ammonia free. Does not contain animal oils, solvents, or petroleum products.

Pint ..... P/N 09-00502 ..... **$8.50**
1/2 Gallon ..... P/N 09-02516 ..... **$21.50**

AERO LEATHER CARE

Leather Care restores, moisturizes, conditions, and protects Aircraft leather and vinyl. Repels dust and dirt without leaving an oily residue. Provides a long lasting barrier against drying and cracking from damaging ultra-violet rays.

Pint ..... P/N 09-00503 ..... **$8.50**
1/2 Gallon ..... P/N 09-02522 ..... **$29.95**

AERO RUBBER CARE

Easy to use water-based rubber and de-ice boot care product. Restores and protects rubber, giving that new semi-gloss look without leaving oily residue. Excellent on weather stripping, tires or any rubber or plastic item.

Pint ..... P/N 09-00505 ..... **$8.50**
1/2 Gallon ..... P/N 09-02515 ..... **$21.50**

WATER SPOT REMOVER

Removes hard water spots from paint, gelcoat, plastic, chrome, aluminum and stainless. Clear Coat safe, waterbased. To prevent water spots, use Wash Wax ALL. Use Aero Scrubber to softly scrub without scratching.

Pint ..... P/N 09-00507 ..... **$8.50**
1/2 Gallon ..... P/N 09-02523 ..... **$18.00**

AERO POLISH ALL

Polish ALL is an easy-on, easy-off, liquid finishing polish. It will remove oxidation and fine scratches from paint, plastic (Aircraft Windows), aluminum, and other metals. Polish ALL can be applied by hand or with a power polisher. Keep the finish clean and protected after polishing by applying Wash Wax ALL.

8 oz. ..... P/N 09-00508 ..... **$12.95**
1/2 Gallon ..... P/N 09-02524 ..... **$43.85**

WASH WAX CLAY

Safely removes surface contaminants such as over spray, tree sap, Acid Rain & Rail Dust allowing wax to bond better. Use on paint, plastic, glass, chrome, gel coat and other surfaces. For use on aircraft, RVs, cars, boats, and motorcycles.

2 oz. ..... P/N 09-00512 ..... **$19.95**

AERO SCRUBBER

The Aero Scrubber is a soft, non-scratching, long-lasting, reusable scrubber pad. Use with Wash Wax ALL to help remove bugs from leading edges or use with Wash Wax ALL (Degreaser) or Belly Wash on tough cleaning jobs such as aircraft bellies, engine areas, wheels and tires.

Pack of 5 Pads ..... P/N 09-00509 ..... **$7.95**
Scrubber Kit - Includes 4 pads and one holder
P/N 09-01616 ..... **$19.95**

AERO TOWELS

Aero Towels are an All purpose reusable Microfiber towel. Super soft, absorbent, long-lasting and lint-free. The best towel for all of your aircraft cleaning needs. Four (4) washable 16"x16" Aero Towels per package4 pack ..... P/N 09-00510 ..... **$8.50**

AERO DIAPER

AeroDiapers are soft, absorbent, lint-free, 100% cotton 1-ply diaper for all your cleaning and polishing needs. 12 washable 16"x18" Aero Diapers per package ..... P/N 09-00511 ..... **$27.95**

AERO STARTER KIT

ALL you need to get started with Wash Wax ALL
Kit includes: 16oz Wash Wax ALL, 16oz Wash Wax ALL (Degreaser), 4oz Belly Wash, Aero Scrubber Pad , Package of 4 Aero Towels
Starter Kit ..... P/N 09-00513 ..... **$39.95**

AERO LEATHER/VINYL KIT

The Leather Vinyl Care Kit is ALL you need to clean, restore, and protect leather and vinyl in one kit. Kit Includes: one 16oz Leather Soap, one 16oz Leather Care, one package of 4 Aero Towels, one mini Aero Scrubber, and a 4oz Wash Wax ALL.

AEROSCRUBBER BUG AND BELLY KIT

All you need to get those stubborn bugs and hard to clean bellies looking new again. The Aeroscrubber Bug and Belly Kit includes two soft, non-scratching, long-lasting, reusable Aero Scrubber pads, an Aero Scrubber handle, 4oz Wash Wax ALL, 4oz Belly Wash and two Micro Fiber Aero Towels.

Bug and Belly Kit ..... P/N 09-01616 ..... **$19.95**

TRAVEL KIT

4 of our most popular products packaged to fit in your glove box. Kit includes: 4oz Wash Wax ALL, 4oz Wash Wax ALL (Degreaser), One Aero Towel and a mini Aero Scrubber.

Travel Kit ..... P/N 09-00515 ..... **$9.95**

AERO WASH WAX MOP

The Wash Wax Mop was specifically designed for aircraft and is the only mop with two sides. One wet and one dry. Now you can waterless wash and wax with the reach and leverage of an extension pole. This allows you to clean a much larger area faster and with less effort, all from the safety of the ground. No ladder needed. Customers report time savings up to 50% over waterless hand application. Simply spray Wash Wax ALL on the Wet Side of the mop, wipe the aircraft with the wet side, flip the mop over, and wipe dry with the dry side.

Wash Wax Mop ..... P/N 09-02526 ..... **$99.75**
Mop Pads (Pack of 4) ..... P/N 09-02527 ..... **$21.50**
Mop Scrubber (1 each) ..... P/N 09-02528 ..... **$29.95**

Mop All - a multi surface floor and glass cleaner that is formulated to be used with the Wash Wax Mop. Safe to use on all floor types.

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CESSNA AIRCRAFT CLEANING PRODUCTS

FLYERS SPEED WAX

This carnauba-enriched waterless aircraft dry wash is a high-gloss protectant with an easy-on, easy-off application process. Can be used to remove carbon, oil, bugs and airborne contaminants. Safe on all aircraft painted surfaces including composite and fabric.
This Cessna detailing product has been approved by Cessna Aircraft Company. It has been developed and tested by industry professionals specifically to protect and safely care for your aircraft's exterior and interior. Cessna remains committed to it's legendary customer service by authorizing and approving this safe, reliable, and high quality cleaning product that is among the best in the industry. P/N 09-02713..... **$14.75**

QUICKTURN

Quick Turn keeps aircraft looking just waxed. Will remove harmful contaminants before they damage aircraft surfaces. Use Quick Turn between flights or as often as needed when wet washing or waxing is not required. Product is safe for use on exterior painted surfaces, polished aluminum and de-ice boots. Not intended for interior use.
This Cessna detailing product has been approved by Cessna Aircraft Company. It has been developed and tested by industry professionals specifically to protect and safely care for your aircraft's exterior and interior. Cessna remains committed to it's legendary customer service by authorizing and approving this safe, reliable, and high quality cleaning product that is among the best in the industry. P/N 09-02657..... **$22.95**

ULTRA MAGNUM MULTI-PURPOSE AIRCRAFT DEGREASER

Ultra Magnum is a non-corrosive, heavy duty alkaline cleaner designed to remove carbon, oil and bugs from aircraft exterior painted surfaces.
This Cessna detailing product has been approved by Cessna Aircraft Company. It has been developed and tested by industry professionals specifically to protect and safely care for your aircraft's exterior and interior. Cessna remains committed to it's legendary customer service by authorizing and approving this safe, reliable, and high quality cleaning product that is among the best in the industry. P/N 09-03478..... **$17.75**

PLEXICLEAR CLEANER

Plexiclear is an aircraft Plexiglass cleaner, protectant and polish. Produces a high luster, soil retarding and water repellant finish to aircraft Plexiglass, leaving a lustrous surface. Will dry with no smears, smudges or oily residue.
This Cessna detailing product has been approved by Cessna Aircraft Company. It has been developed and tested by industry professionals specifically to protect and safely care for your aircraft's exterior and interior. Cessna remains committed to it's legendary customer service by authorizing and approving this safe, reliable, and high quality cleaning product that is among the best in the industry. P/N 09-02712..... **$12.95**

AIRCRAFT LEATHER CLEANER

Will effectively clean, condition and preserve the beauty of new and worn leather. Will not bleed onto fabric. Contains no silicone or heavy waxes that can damage stitching or become slippery.
This Cessna detailing product has been approved by Cessna Aircraft Company. It has been developed and tested by industry professionals specifically to protect and safely care for your aircraft's exterior and interior. Cessna remains committed to it's legendary customer service by authorizing and approving this safe, reliable, and high quality cleaning product that is among the best in the industry. P/N 09-02659..... **$14.75**

AIRCRAFT STAIN REMOVER

Aircraft Carpet and Upholstery Stain Remover is a powerful stain and spot remover. Will remove stains caused by grease, dirt, wine, coffee, juice, soft drinks, tea, food and more.
This Cessna detailing product has been approved by Cessna Aircraft Company. It has been developed and tested by industry professionals specifically to protect and safely care for your aircraft's exterior and interior. Cessna remains committed to it's legendary customer service by authorizing and approving this safe, reliable, and high quality cleaning product that is among the best in the industry. P/N 09-02658..... **$15.50**

MICROFIBER DETAILING CLOTHS AND TERRYCLOTH APPLICATORS

Microfiber Detailing Cloths make cleaning your aircraft easy, inside and out. These scratch and lint free cloths work well on aircraft instrumentation, windows, gauges, screens, painted and unpainted surfaces. Can also be used for applying and removing Cessna Detailing Products on aircraft surfaces.
The multi-dimensionally knit fabric will not unweave or wear out, but due to the quantity of dirt lifted and trapped, the cloths should be frequently machine washed. The cloths will withstand several hundred washings with standard laundry detergents. Terry cloth applicators are used for applying wax and cleaning leather seats.
This Cessna detailing product has been approved by Cessna Aircraft Company. It has been developed and tested by industry professionals specifically to protect and safely care for your aircraft's exterior and interior. Cessna remains committed to it's legendary customer service by authorizing and approving this safe, reliable, and high quality cleaning product that is among the best in the industry.
P/N 09-02660..... **$15.25**

CLEANING KIT BAG

Carry all of your JetStream Aviation Products' cleaners and accessories in this convenient and stylish bag.
P/N 09-02662..... **$65.00**

CESSNA AIRCRAFT CLEANING KIT

This Cessna detailing kit has been approved by Cessna Aircraft Company. The products provided in the Aircraft Cleaning Kit have been developed and tested by industry professionals specifically to protect and safely care for your aircraft's exterior and interior.
Cessna remains committed to it's legendary customer service by authorizing and approving this safe, reliable, and high quality cleaning kit that is among the best in the industry. Cessna has built a reputation for rising above the competition and their approval of this Aircraft Cleaning Kit is another example of their continuous attention to customer care.

Your Cessna Aircraft Cleaning Kit contains the following detailing products:

- Flyers Speed Wax (16 oz)
- Quick Turn (16 oz)
- Ultra Magnum (16 oz)
- Plexiclear (16 oz)
- Leather Cleaner (8 oz)
- Stain Remover (8 oz)
- Terry Cloth Applicators (2)
- Microfiber Cloths (2)
- Care Guide
- Carry Bag

P/N 09-02661..... **$119.95**

POLISHES – CLEANERS

AEROLIFE POLYSHINE AIRCRAFT POLISH

Aircraft Polish with Tef Easy to use liquid Polymer formula polishes and protects, acts like a glaze to eliminate microscopic imperfections in the aircraft finish, helps reduce drag, adds to increased speed and keeps the bugs off leading edge components. Contains UV inhibitors for protection from the UV rays, is PH compatible for the new LSA market place. "Contains No Silicone".
For optimum performance application aircraft must be clean, AeroLIFE PolyShine with Tef is a Premium Aircraft Polish and Sealer, contains no cleaning agents. May be applied by hand or machine by the professional AeroLIFE complete line of cleaning products can be found at www.aerolifeindustries.com all products Made In the USA. 8 oz. P/N 09-02536..... **$6.50**

AEROLIFE ALUMINUM CLEANER

Ideal for all rotorcraft and fixed wing. 16 oz.
P/N 09-02534..... **$9.25**

AEROLIFE AIRCRAFT CLEANER & BELLY WASH

Emulsifies oil and scum, the non-foaming biodegradable formula cleans without "Phosphates". The water-based degreaser also cleans aircraft carpets, upholstery, fabrics and leaves a pleasant fragrance. Economical concentrate 50/50 ratio saves money; one gallon makes two gallons of cleaner and can be applied with a power washer or by hand. Can also be used in the engine compartment and is safe on rubber products and hoses. The ladies love this product for washing machines, as it does a great job removing oil from work clothes. Can also be used to clean up oil spills.

1 oz. ..... P/N 09-02539..... **$2.95**
Gallon ..... P/N 09-02533..... **$28.75**

AEROLIFE AEROWAX AIRCRAFT WAX

AeroWax Aircraft Wax is made from Poly-Carnauba. Easy Application and Aerospace Developed. 16 oz.
P/N 09-02535 **$14.95**

AEROLIFE RELEASE

Adhesive & Sealant Remover (#AL13045)
For fast clean-up and removal of sealants, and is ideal on residue from decals, labels and adhesives.
Release™ will remove Loctite 5910 in a matter of seconds (Loctite #5910 is used to reseal the gearbox to the engine Rotax 912 series)

1 oz. ..... P/N 09-02538..... **$6.25**
16 oz. ..... P/N 09-02537..... **$26.95**

METAL ARMOR METAL POLISH

Formulated to give incredible results on the following metals: Aluminum, brass, bronze, chrome, copper, gold, magnesium, nickel, pewter, platinum, silver, stainless steel, and sterling silver. Not recommended for use on plated surfaces with the exception of chrome. Can be safely and effectively used on paint, clear coat and power-coated surfaces. Can be applied by hand or by buffer. 8oz bottle.
P/N 09-02569..... **$16.95**

REKRETE WATERLESS CONCRETE CLEANER

Clean Your Oil Stains with No Water, No Pressure Washer, In Less Time and For Less Cost with ReKRETE Waterless Concrete Cleaner! Power washing sends detergents and oils directly into the storm water systems. ReKRETE 's bio-enzymes consume stains reducing contaminated water run off. ReKRETE works with its own specific gravity by penetrating deep into the pores of the concrete where petroleum-based stains are trapped. ReKRETE then breaks down the hydrocarbon chain of the petroleum-based stains. Once the chain is broken ReKRETE decomposes and dissolves the hydrocarbons with bio-organic compounds that actually consume the stains.

10-lb..... P/N 09-03498..... **$30.00**
20 lb..... P/N 09-03499..... **$58.00**
30 lb..... P/N 09-03501..... **$86.00**

METAL ARMOR PAINT & HARD SURFACE POLISH

Specially formulated to address polishing of clear coat paints, enamels, lacquers, acrylics, powder-coated surfaces, polycarbonates, ABS plastics, glass, fiberglass, Corian™, and cultured marble. Can also be used as a second step on all metal surfaces. Creates an unmatched finish and treats the surface with a protective barrier when applied as directed. 8oz bottle.
P/N 09-02570..... **$18.95**

METAL ARMOR FINAL POLISH & SEALANT

Cutting edge technology lead to the creation of this "next level" formula. We recommend this product for all surfaces as a "Final Step." It is a PDF (Petroleum Distillate Free) blend that offers the highest degree of reflective qualities while adding a barrier that protects against oxidation, UV rays and "acid" rain. The product can be applied by hand or by buffer. Leaves crystal clear results and "No Swirls" when applied as directed. A must on reds and blacks. 8oz bottle.
P/N 09-02571..... **$18.95**

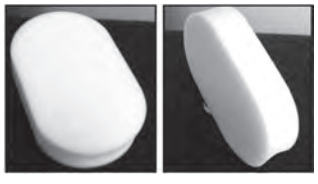
METAL ARMOR DETAIL MICRO-FIBER DETAILING CLOTH

Optical quality (short weave) used in the camera, optical & telescope industris. Very high quality does not collect debris and lasts forever. They have washed these 100's of times and they still work perfectly.
P/N 09-02572..... **$4.75**

METAL ARMOR BY HAND TOOL KIT

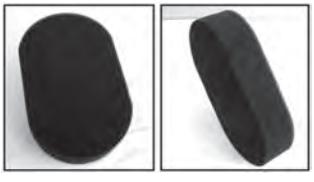
This kit is specially designed to be used as an application and removal system of our products when using by hand. The materials have been developed using specially developed foams and optical quality micro-fiber cloths. The foams do not create static and produce an absolute scratch free result. Can be washed and resused many times.
P/N 09-02575..... **$14.95**

METAL ARMOR MATERIAL APPLICATION PAD (WHITE)



This Pad is made from material that is compatible with Metal Armor Products. It is designed as a by hand applicator for their products. It produces no static and produces scratch free results. Can be washed and re-used many times. Can also be used as applicator for other products. P/N 09-02573..... **$3.49**

METAL ARMOR DETAILING PAD (BLACK)



This pad was designed to act as a removal device of (spent) material after it has been used. The pad is very absorbent and collects the residue before using the polishing cloth. The pad can be washed and re-used many times. It is static free and produces no scratches.
P/N 09-02574..... **$3.49**

CS

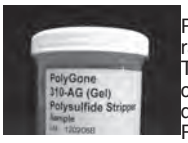
RPM TECHNOLOGY CLEANING PRODUCTS

POLYGONE 300-AG GEL

PolyGone™ stripping agents are unique formulations that remove polysulfide (PRC) and silicone RTV sealants from metal, ceramic, and some plastic substrates. The top polysulfide producers include PRC DeSoto (now PPG), AC Tech, and Flamemaster. The top silicone producers are GE, Dow, and Wacker. Both polysulfide (polysulphide) and silicone RTV are difficult to remove completely since they actually bond into surface/substrate. PolyGone reacts with the polymers chemically and breaks them down so they can be rinsed away without damage to the surface/substrate. This offers significant advantages over other removal methods. PolyGone emulsifiers are specialty blended chemistries that wet and penetrate the polymer and relatively quickly emulsify it. This emulsification prevents redeposition of the reaction by-products and allow for water rinsing (except PolyGone 535 which requires an alcohol rinse). The polysulfide (polysulphide) sealant remover is also available as a gel for use in vertical, inverted and non-immersion applications. PolyGone is effective at removing silicone RTV and polysulfide (polysulphide) sealants at room temperature, are fast acting and environmentally friendly as opposed to regularly used solvents. PolyGone is currently being used by several MRO organizations as a sealant remover.

6 oz. ..... P/N 09-02444 ..... **$19.75**
5 lb. ..... P/N 09-02445 ..... **$199.75**
1 gal. ..... P/N 09-02446 ..... **$104.50**

POLYGONE 310-AG



PolyGone™ stripping agents are unique formulations that remove polysulfide (PRC) and silicone RTV sealants from metal, ceramic, and some plastic substrates. The top polysulfide producers include PRC DeSoto (now PPG), AC Tech, and Flamemaster. The top silicone producers are GE, Dow, and Wacker. Both polysulfide (polysulphide) and silicone RTV are difficult to remove completely since they actually bond into surface/substrate. The typically, sealant removal method requires scraping that results in damaging the substrate. There are also products that try to "disslove" the sealants but due to their inertness, this does not work. PolyGone however, reacts with the polymers chemically and breaks them down so they can be rinsed away without damage to the surface/substrate. This offers significant advantages over other removal methods. PolyGone emulsifiers are specialty blended chemistries that wet and penetrate the polymer and relatively quickly emulsify it. This emulsification prevents redeposition of the reaction by-products and allow for water rinsing (except PolyGone 535 which requires an alcohol rinse). The polysulfide (polysulphide) sealant remover is also available as a gel for use in vertical, inverted and non-immersion applications. PolyGone is effective at removing silicone RTV and polysulfide (polysulphide) sealants at room temperature, are fast acting and environmentally friendly as opposed to regularly used solvents. PolyGone is currently being used by several MRO organizations as a sealant remover.

6 oz. ..... P/N 09-03492 ..... **$29.50**
Gallon ..... P/N 09-03491 ..... **$144.95**
5 lb. Tub ..... P/N 09-03493 ..... **$295.95**

POLYWIPES

RPM Technology is proud to introduce a revolutionary product for anyone using sealants, mastics, adhesives, silicones, paints, drilling oils, or greases. PolyWipes contain no solvents or abrasives; no fuss, and no mess! Why clean your hands with a product that has a NFPA heath rating of 1 and is flammable? PolyWipes have a health rating of 0 and are NOT flammable! They safely remove uncured or partly-cured adhesives and sealants by breaking the surface tension between the material and the substrate. The material then transfers to the wipe for disposal. Can be used anywhere adhesives or sealants are applied. To clean up after applying sealant to fuel tanks, access doors, windshields, and any other location where sealants are used. Biodegradable – a "green" product, Non-Toxic – eliminates the need to dispose of hazardous solvents, Not flammable, unlike other wipes, Mild – employees may not need hand protection to use this product, NFPA rating is 0,0,0, Inexpensive – less expensive than cloth towels and solvents .

Small box (25 wipes) ..... P/N 09-02447 ..... **$27.75**
Large Box (150 Wipes) ..... P/N 09-02448 ..... **$49.75**

CS

EOX AIRCRAFT CLEANER

eOx Aircraft Cleaner (AC) is a specialty product for the aviation industry. eOx AC is suitable for external and internal cleaning of virtually all metal and/or painted surfaces. Completely removes difficult substances such as hydraulic oil, grease, carbon, brake dust, "blue stains", and dirt safely and easily. Removes chemicals and dirt from the grain of the paint thus making it look new and extending its useful life. eOx AC conforms to Boeing D6-17487, Douglas CSD #1, AMS 1525B and AMS 155A. Non-toxic, Non-flammable, Non-hazardous - Not subject to dangerous goods regulations., No phosphates, acids or silicones High biodegradability (tested by the University of Ghent, Belgium), Very economical to use., Contains no phosphates, acids, silicones and is non-butyl., Safe to use on all surfaces including metal, plastic & rubber materials with no stock loss., Fast, intense cleaning action surpasses other cleaners' performance., Cleaned surfaces become slightly antistatic and corrosion inhibitive for up to 4 weeks., Can be effective used as a spray-on & wipe-off process., Safe for use in high-pressure washers, immersion systems and ultrasonic machines., Fresh smell – NOT citrus.

Quart ..... P/N 09-02449 ..... **$11.45**
Gallon ..... P/N 09-02451 ..... **$27.65**

EOX AIRCRAFT HYDRAULIC FLUID REMOVER

eOx Aircraft Hydraulic Fluid Remover (AHFR) is a proprietary cleaner designed to easily remove all hydraulic fluids, baked on carbon, and corrosion protecting compounds. An excellent replacement for chlorinated products and solvent based cleaners. Meets AMS–1526B. Application: specially developed to remove sticky hydraulic oil deposits from the aircraft fuselage, wheel wells, landing gear, wings, and any area or part where hydraulic fluid accumulates. eOx AHFR also removes numerous oils, greases and stubborn carbon deposits; especially from around engine exhaust areas. Ready to use and intended as a spot cleaner on the aircraft. Non-toxic, Non-flammable, Non-hazardous - Not subject to dangerous goods regulations. No phosphates, acids or silicones, High biodegradability (tested by the University of Ghent, Belgium) Neutral pH of 6-8, Very economical to use. Contains no phosphates, acids, silicones and is non-butyl. Fast, intense cleaning action surpasses other cleaners' performance. Can be effective used as a spray-on & wipe-off process. Safe for use in high-pressure washers, immersion systems and ultrasonic machines. Fresh smell – NOT citrus

Quart ..... P/N 09-02452 ..... **$27.95**
Gallon ..... P/N 09-02453 ..... **$67.50**

DIGESIL NC GEL

Digesil NC de-polymerizes uncured and cured silicone elastomers, resins, oils, and greases from components, surfaces, tools, electronics and process equipment used in engineering, construction, and glazing industries. Digesil NC is effective and fast working. It has a high flash point for safety and contains less than 0.2% aromatics. Benefits: Quickly dissolves cured silicone, Leaves a silicone free surface, Chlorinated and fluorinated solvent free, Negligible aromatic solvent content, Environmentally responsible, Low odor for operator comfort, High flash point for safety, Low density for ease of handling, Rinses with water or solvent, Safe on glass, metal, and most plastic (except nylon), Safe on paint and powder coating, Water free. Specifications: Appearance: Liquid, Color: Brown, Odor: Aliphatic-hydrocarbon, Sp.Gr.: 0.82

6 oz. ..... P/N 09-02454 ..... **$24.50**
5 lb. ..... P/N 09-02455 ..... **$199.50**
1 Gallon ..... P/N 09-02456 ..... **$72.85**

DIGESIL NCX

Digesil NC de-polymerizes uncured and cured silicone elastomers, resins, oils, and greases from components, surfaces, tools, electronics and process equipment used in engineering, construction, and glazing industries. Digesil NC is effective and fast working. It has a high flash point for safety and contains less than 0.2% aromatics. Benefits: Quickly dissolves cured silicone, Leaves a silicone free surface, Chlorinated and fluorinated solvent free, Negligible aromatic solvent content, Environmentally responsible, Low odor for operator comfort, High flash point for safety, Low density for ease of handling, Rinses with water or solvent, Safe on glass, metal, and most plastic (except nylon), Safe on paint and powder coating, Water free Specifications: Appearance: Liquid, Color: Brown, Odor: Aliphatic-hydrocarbon, Sp.Gr.: 0.82

Gallon ..... P/N 09-02457 ..... **$85.75**

POLYSCRAPER KIT

Red Canvas Pouch with black trim. Kit contains 10 Polyscrapers, each having its own pocket. Pouch can be rolled and secured with black tie. ..... P/N 09-02458 ..... **$48.50**

SPRAY NINE CLEANERS & DEGREASERS

AV-8 MILITARY AIRCRAFT SOAP
FROM SPRAY NINE

Type IV Heavy Duty, Water Dilutable Cleaning Compound. AV-8 is a biodegradable, highly concentrate, microemulsion blend of surfactants and builders that provide a broad range of cleaning on painted and unpainted aircraft exteriors, aerospace ground equipment (AGE) and AGE engines with the assistance of a proprietary blend of corrosion inhibitors. AV-8 effectively and efficiently removes grease, oils, carbon exhaust, hydraulic fluid, gun gas, graphite, dirt and other soils. Rinses easily without having streaks or residue. AV-8 is low emulsifying and will not negatively impact oil water separator systems and other pollution abatement systems. ***Features:*** • Qualifies to MIL-PRF-87937. • Listed on AF Qualified Products List QPL#AFTT-05-002 . • AMCOM approved for use on Army helicopters. • Conforms to Boeing D6-17487 Rev. P Spec. • Conforms to Douglas CSD-1 Spec. • Conforms to AMS-1526B Spec. • Meets EPA 793.3100 Aerobic Aquatic Biodegradation ****AV8 55 Gallon inbound freight fee of $30.00 applies to the 55 gallon drum.***

Ready-to-Use 24 oz. Spray ..... P/N 09-01970.....**$7.95**
Concentrated Soap - 5 Gallon ..... P/N 09-01972.....**$191.95**
Concentrated Soap - 55 Gallon ..... P/N 09-01973.....**$1,528.00**

SPRAY NINE MULTI-PURPOSE CLEANER

Cleans • Disinfects • Degreases • Deodorizes • Removes Stains ***Tough Task Cleaner -*** Spray Nine's no-nonsense power tackles your worst cleaning jobs, even when others fail. And it does it FAST! ***Money Saver -*** The only product necessary to clean up facilities & maintenance costs. One "does it all" formula reduces chemical use and gets the job done with less labor in less time than the competitors. ***Broad Spectrum Disinfectant -*** EPA-registered disinfectant kills harmful germs like HIV-1, Staphylococcus aureus, Salmonella choleraesuis & E. coli in just 45 seconds. Also helps prevent cross contamination. Authorized by USDA for use in federally inspected meat & poultry plants with an C-1 rating.

24 oz. Multi-Purpose..... P/N 09-01974.....**$5.50**
25 oz. Multi-Purpose..... P/N 09-01975.....**$4.95**
32 oz. Multi-Purpose..... P/N 09-01976.....**$6.95**
1 Gallon Multi-Purpose..... P/N 09-01977.....**$17.85**
5 Gallon Multi-Purpose..... P/N 09-01978.....**$69.95**
55 Gallon Multi-Purpose..... P/N 09-01979.....**$657.50**

EARTH SOAP CONCENTRATED CLEANER/DEGREASER
FROM SPRAY NINE

Premium Environmentally Preferable Cleaner Cutting-edge biodegradeable technology combines powerful surfactants with low emulsifying action to create Earth Soap, a potent, yet environmentally thoughtful product. Earth Soap's innovative formula dissolves dirt, grease, grime and other hard-to-remove soils from most hard, washable surfaces. This versatile, concentrated cleaner may be "custom-formulated" by diluting in any proportion with water - from 1:1 for heavy soil loads to 50:1 for routine light-duty cleaning. Additionally, Earth Soap contains NO solvents, butyl, phosphates, or other harsh chemicals. Earh Soap is low-emulsifying and will not negatively impact oil/water separators and other pollution abatement systems. ***Corrosion Inhibiting -*** Corrosion-inhibiting formula cleans metal parts without damaging parts or parts washers (metal and plastic, traditional and heated up to 180 degrees F) Ideal uses: Dip Tanks • Engines • Concrete/Hangar Floors • Vehicles (Inside & Out) • Wash Racks • Tools & Equipmen • CTK Took Kits • Plastic & Vinyl • Floors & Walls • Parts Washer (both traditional and heated up to 180°F)

32 oz..... P/N 09-01980.....**$7.50**
1 Gallon ..... P/N 09-01981.....**$18.75**
5 Gallon ..... P/N 09-01982.....**$84.75**
55 Gallon ..... P/N 09-01983.....**$753.00**

GREZ-OFF HEAVY DUTY DEGREASER
FROM SPRAY NINE

When Nothing Else Cuts It - Grez-Off works hard so you don't have to. This heavy-duty answer to heavy-duty grease and grime leaves engines, machinery, asphalt, garage floors and more whistle clean. ***Top Rated Track Record -*** Twice rated the #1 degreaser in an independent consumer report with top marks for effectiveness, safety and environmental impact. Made With You And Your Environment In Mind - Biodegradable, non-flammable formula hits hard and fast with less impact on user and environment. Finally a water based product that really works!

Ready-to-Use Formula is Gentler to the User: • Non-Flammable • Non-Combustible • No Acids • No Fumes or Unpleasant Odors

32 oz..... P/N 09-01984.....**$7.75**
1 Gallon ..... P/N 09-01985.....**$21.25**
5 Gallon ..... P/N 09-01986.....**$88.75**
55 Gallon ..... P/N 09-01987.....**$663.00**

POLY SCRUB HEAVY-DUTY HAND CLEANER
FROM SPRAY NINE

Industrial Strength Paste-Type Hand Cleaner - Hits hard with millions of dirt busting "poly scrubbers" to dig out and mop up even the toughest soils.
Tough On Dirt, Gentle On Hands - Contains no harsh solvents that dry out hands yet powers off dirt, grease, ink, adhesives, hydraulic fluid, carbon and more while leaving behind a refreshing lemon-lime fragrance.
Fights Foul Odors - Combats fish, onion, garlic, fuel, oil, lubricant & printer's ink odors.

Poly Scrub Easily Removes:
Grease • Oil • Hydraulic Fluids • Glues • Ink • Asphalt • Varnish • Paint • Carbon • Adhesives • Tar • Stains • Cement

3.8 Pound ..... P/N 09-01991.....**$18.50**
26 Pound ..... P/N 09-01992.....**$114.95**

COCO SCRUB HEAVY-DUTY HAND CLEANER
FROM SPRAY NINE

Tough On Dirt - Industrial strength hand cleaner formulated with millions of dirt busting poly "scrubbers" that dig out and mop up even the toughest soils.
Easy On Hands - Fortified with emollients to prevent drying & cracking. Leaves behind a pleasant coconut fragrance.
Fights Foul Odors - Combats fish, onion, garlic, fuel, oil, lubricant & printer's ink odors.

Poly Scrub Easily Removes:
Grease • Oil • Hydraulic Fluids • Glues • Ink • Asphalt • Varnish • Paint • Carbon • Adhesives • Tar • Stains • Cement

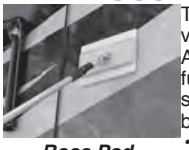
4 Pound ..... P/N 09-01994.....**$18.85**
26 Pound ..... P/N 09-01995.....**$132.95**

POLY 500 HAND CLEANER DISPENSING SYSTEM
FROM SPRAY NINE

Economical - Use just one "dollop" of Poly Scrub to clean even the dirtiest hands. Each 4 lb. cartridge packs 500 "dollops" when dispensed through the POLY 500 - so each wash is only "pennies per use!"
Convenient - Simply insert a fresh 3.8 lb. tub - no mess, no waste.
Durable - Rugged injection molded construction and tough, durable plastic components will hold up to the toughest use and abuse.
Lockable - Lockable lid keeps Poly Scrub fresh & Secure

P/N 09-01996.....**$21.50**

BOSS AIRCRAFT CLEANING PAD



Boss Pad & Holder

The BOSS Aircraft Cleaning Pad is the most advanced aircraft cleaning pad available. The BOSS Aircraft Cleaning Pad will safely clean bugs, carbon, fuel residues, dirt, grime, etc., from all your aircraft surfaces, leaving your plane the cleanest it's ever been or your money back.

• Safe for all paints, clear coat, plastics, graphics, metals, etc.
• Works extremely well with soap & water, waterless cleaners or just a small amount of chemicals!
• Reusable
• Eco-friendly
• Requires no harmful chemicals
• Best product to use to clean leather or vinyl interiors
• The pads chosen to clean the Blue Angels
• Cleans your car just as well as your aircraft

Aircraft Cleaning Pad ..... P/N 09-03474.....**$3.95**
Aircraft Pad Holder (flat) ..... P/N 09-03475.....**$15.95**
Aircraft Pad Holder (curved) ..... P/N 09-03476.....**$17.95**

CS

COMPOSICLEAN AIRCRAFT CLEANING PRODUCTS

COMPOSICLEAN BUCKET-WASH

Bucket-Wash™ concentrate is neutral pH and safe and effective on all aircraft. Bucket-Wash™ will not attack composite components or assist corrosion. With several cleaning agents, real Carnauba Wax & U.V. protection additives this IS the right stuff. 64 ounce with pump top.

P /N 13-05254.....**$22.75**

COMPOSICLEAN SUPER SPRAY-WAX

Super Spray-Wax™ is neutral pH and SAFE on all aircraft. Will not attack composite components or assist corrosions. With real Carnauba wax and other cleaning and conditioning additives, this product is sure to satisfy. Provides a great shine and superior protection. Try it with one of our MicroFiber cloths. 1 Quart with commercial quality trigger sprayer.

P/N 13-05255 ..... **$19.65**

COMPOSICLEAN MULTI-PURPOSE CLEANER

This multi-purpose ALKALINE cleaner is very effective at breaking down grease, oils, carbon & other stains. Use with brush or rag to agitate for tougher Stains & soils. 1 quart with commercial quality trigger sprayer. This is not a neutral pH product.

P/N 13-05256 ..... **$10.95**

COMPOSICLEAN HAZE GLAZE

A neutral pH mild abrasive cleaner & polish in one. Removes oxidation haze, surface-stains, swirl marks and paint overspray. Haze Glaze also removes minor acid rain contamination, light scratches & increases gloss on base coat & clear coat finishes. A great one-step or fist step product in the detailing process. Use Composiclean Haze Glaze by hand or with orbital/random style buffers. Use Composiclean Haze Glaze on clean dry surface. Apply Haze Glaze to buffing cloth/pad or directly to surface. Rub or buff in circular motion then flip cloth or change to dry pad for finish buff. 1 quart with flip-top.

P/N 09-02065 ..... **$34.95**

COMPOSICLEAN VIEW POLISH

Composiclean™ View Polish™ will probably be the best glass cleaner you will ever use, try it around the house too. Use View-Polish™ on windscreens, side windows, plastics, Lexan, acrylic and glass. You will see No streaking! View-Polish™ is guaranteed to leave no film. Non-caustic-non-flammable, Non-ammonia formula dries fast and contain no CFC's that deplete the ozone layer. View-Polish™ is also a great bug remover for the leaning edges, wheel pants, car grills etc. Spray product onto area to be cleaned (the thick foam helps it hang there), wait 2 to 3 minutes then wipe clean. Give View-Polish™ a try with our MicroFiber cloths, you'll love it! Offered in big 19oz aerosol can.

P/N 13-05257 ..... **$8.95**

COMPOSICLEAN LEATHER CLEANER & CONDITIONER

A rich conditioning cream that cleans leather as it brings back softness. Leaves leather looking natural with no greasy residue. 1 quart with flip top. 32oz.

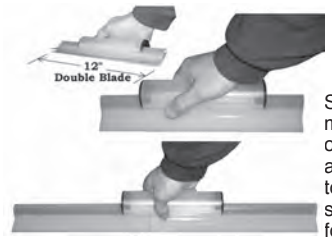
P/N 13-05258 ..... **$24.95**

COMPOSICLEAN MICRO- FIBER CLOTH

MicroFiber is a man-made product that consists of two fibers, Polyester and Polymide. The Polyester is the scrubbing and cleaning fiber, while the Polymide is the absorbing and quick drying fiber. Each square inch in a MicroFiber towel contains approximately 90,000 MicroFibers. MicroFiber is a lint free, non-abrasive, and hypoallergenic products. Unlike ordinary cotton towels that move, or push, the dirt and dust from one point to another, MicroFiber actually gets underneath the dirt and lifts it from the surface. It then stores the dirt particles in the towel until it is washed. MicroFiber is very absorbent and can hold up to seven times its weight in moisture providing "streak-free" cleaning. MicroFiber cloths are safe on all surfaces.

Keep MicroFiber cloths clean and separate from cotton towels. To ensure the effectiveness of your MicroFiber Towels only wash with other MicroFiber Towels. If MicroFiber is washed with cotton is will grab onto the cotton fibers and hold on to them. Washing by hand with mild hand soap is the best way to maintain this high quality cloth. MicroFiber cloths along with Composiclean™ Super Spray-Wax™ will provide a great streak free deep shine even in direct sun. When buffing off Super Spray-Wax™, it is best to NOT let cloth get to saturated, dryer is better. Try a MicroFiber cloth with Composiclean™ View Polish™ for streak-free window cleaning.

P/N 13-05259 ..... **$16.85**



COMPOSICLEAN SUPER SQUEEGEE

Super Squeegee is perhaps the most versatile squeegee you'll ever own. It works great and is extendable from 12" to 22". It is designed to be used in a back n' forth motion saving time and effort. It's perfect for use on the irregular and curved surfaces of an airplane.

P/N 13-06323 ..... **$12.95**

COMPOSICLEAN WASH MOP

Soft chenille mop has 180° Swivel Head, handle extends up to 45". Includes 1 replacement head cover.

P/N 13-05261 ..... **$19.95**

COMPOSICLEAN SOLAR SCREEN

This is a Composiclean™ Solar-Screen™ statically attached to the inside of a window looking right into the sun. Comes in 6" x 9" and 9" x 12". Great for airplanes, cars, boats, RV's and can be cut to fit inside motorcycle & ski helmets too.

6X9..... P/N 13-05263 ..... **$5.75**

9X12..... P/N 13-05262 ..... **$8.95**

COMPOSICLEAN PROPER CARE KIT

1 - 64oz Composiclean Bucket-Wash with pump top
1 - 32oz Composiclean Super Spray-Wax with trigger sprayer
3 - Plush 14" x 14" Micro-Fiber cloths
1 - Super-Soft Chenille wash mitt
1 - 11" Composiclean Super Squeegee

P/N 13-05264 ..... **$79.95**

CS

QUICSHINE 99 DRY WASH

QuicShine99 is the only patented aerosol one-step revolutionary waterless formula for your vehicle, RV, airplane, etc. Just spray on and wipe off. With worldwide water shortages and environmental concerns at an all time high QuicShine99 is waterless car care product that provides the consumer with a solution to these growing concerns. With its special ingredients and high performance wax, you wash, wax and protect without using a single drop of water. One of the outstanding features of QuicShine99 is the fact that it can be applied to the finish of a dirty vehicle without scratching the surface! When sprayed on a dirty surface, the formulation emulsifies and lifts the dirt and road film without scratching. Think of the time, effort and water you will save by not having to wash and dry before waxing.
QuicShine99 quickly removes grease, tar, bugs, oil residue and road film. QuicShine99 is recommended for cleaning glass, Plexiglas and Lexan windows. In fact, it will strip through layers of dull waxes and oxidation as though it never existed. QuicShine99 is available in a 12-ounce aerosol can. P/N 09-02532 ..... **$14.95**

TIRE CLEANER

Dissolves grease, oil and road grime. Unique optical brighteners whiten white walls and leave tires with even, natural, black luster. No harmful bleaching agent. 18 oz.
P/N 1060618..... **$7.65**

WAX AS-U-DRY

After washing your aircraft leave it wet, then spray Wax-As-U-DRY on the surface. After the water sheets away, you dry the surface with a chamois towel. The result is high gloss shine without spending the afternoon buffing. A one step spray wax is a blend of water reactive polymers and waxes that are safe for all painted surfaces, windows, trim & wheels. P/N 09-00370 ..... **$11.75**

STRIKE HOLD II CLEANER/PENETRANT/LUBRICANT

One of the most significant long term enemies to aviation is corrosion. Strike Hold is a potent anti-corrosive and has a dielectric strength of 38,000+ volts so it can also be used on electrical contacts and connections. It "finds" the small spaces which allow filiform corrosion to form. Its capillary action will quickly encapsulate metals by flowing against gravity and under overlapping sheets of metal.
It is a highly penetrating and mobile liquid with CFC's and is non-flammable by flame projection test as opposed to other liuids containing butane or propane propellants. The lubricant in Strike Hold doesn't harden or become brittle.
It completely seals out water with a shield film. The carrier agent evaporates (unlike ACF 50) and does not leave a dust collecting film to recontaminate a surface. The flash point is in excess of 450°F and the freezing point is -85°F. This product is heavier than water and does not damage polymers, rubber or plastics. Strike Hold can be used on virtually any surface that is susceptible to corrosion and that needs lubrication.

2 oz. Squirt Bottle	P/N 09-02412	**$3.50**
8 oz. Squirt Bottle	P/N 09-02593	**$10.85**
13 oz. Spray Can	P/N 09-00890	**$20.75**
32 oz. Spray Bottle	P/N 09-02594	**$45.80**
1 gallon bottle	P/N 09-02595	**$18.85**

THERMAPLEX BEARING GREASES

THERMAPLEX® BIO GREEN™ BEARING GREASE - Environmentally responsible, biodegradable grease. Qualified to the USDA Biopreferred program. NLGI 2 grease that prolongs bearing life. Provides outstanding extreme pressure performance. Offers superior rust and corrosion protectionDelivers exceptional water resistance
P/N 09-02367..... **$10.95**

THERMAPLEX® CS MOLY BEARING GREASE - Premium performance, calcium sulfonate grease. Enhanced with molybdenum disulfide. NLGI 2 grease that reduces wear from vibration and prolongs bearing life. Has a very load capacity and superior water resistance. Provides excellent rust and corrosion protection.
P/N 09-02368 ..... **$7.95**

STRIKE-HOLD® BRAND MICROFIBER CLOTH

These high quality 16"x16" Microfiber® Cloths are machine washable and won't scratch, mar or streak surfaces. Features; • lint-free • non-abrasive •machine washable • eco-friendly "Green" • inexpensive and long-lasting
P/N 09-02043 ..... **$3.20**

V & S AIRCRAFT CLEANERS & ADHESIVES

V&S #581 FOAM & FABRIC SPRAY ADHESIVE - V&S 581 Foam & Fabric Spray Adhesive is specially formulated for bonding flexible urethane or latex foams to themselves or most other material (wood, metal, paper, corrugated, fabrics, etc.) Produces bonds with foam-tearing strength.
P/N 09-42650 ..... **$6.80**

SUPER TRIM ADHESIVE #1081 - A high temp high strength contact type adhesive. Bonds metal, foam, decorative laminates, fabrics, headliners. Variable width spray pattern. Meets Fed. Spec. MMM-A-130B. P/N 09-42652 ..... **$7.60**

V & S DRY SILICONE SPRAY- Exceptionally high quality dry silicone lubricant that stops adhesion of urethane foam backings, foam rubber and other non-sliding materials to metal, wood or rubber. Non-staining, will not harm painted surfaces.
P/N 09-42654 ..... **$5.95**

CITRUS CLEANER #609 - Can be used safely on many surfaces to remove adhesives, grease, inks, and residue from various tapes. Environmentally safe, biodegradable and pleasantly scented. P/N 09-42656 ..... **$12.95**

AERO-600 AVIONICS CLEANER

The secret formula used in the film and photography industry, is now available for the aviation community! Eliminate fingerprints, streaks, dust, dirt, oils, from your avionics, glass cockpit screens, electronic flight bags, GPS screens, Laptop, and plasma screens. Aero 600™ tested for well over three years by professionals in the aviation industry with outstanding results. It's designed to have industrial strength; be powerful, yet mild and gentle to your screens. "We keep a bottle in the side pocket of our corporate aircraft and have been using it exclusively to clean our instruments, laptop screens and even our eyeglasses. It never streaks and helps keep the dust at a minimum."Nina Anderson, Hawker pilot. Aero 600™ is also safe for use on Laptop & TFT LCD screens, LCD, Plasma & Projection TVs (LCD and Projection screens have a soft membrane in place of glass which can easily be degraded by harsh chemicals. Plasma screens have a thin delicate protective coating which also can be damaged.
P/N 09-02040 ..... **$14.85**

AEROSPACE PROTECTANT 32OZ

The World's most effective UV-screening product. AAP leaves a like-new, non-oily, anti-static finish that does not attract dust. Protected surfaces not only last much, much longer, but are easier to maintain. AAP treated surfaces repel soiling and stains, clean up easier and stay clean longer. 100% prevention of UV caused slow-fade - Plastics, Plexiglass, Lexan, Door Seals, Wing and Prop De-icing Boots, Tires, Vinyl & Leather Interiors.

32 oz.	P/N 09-02413	**$26.95**
2 oz.	P/N 09-02414	**$3.95**

STEWART SYSTEMS PROPOLISH

Stewart Systems ProPolish is the perfect metal polish to use in conjunction with Stewart Systems EverShield. ProPolish holds it's shine longer than most other polishes and is very easy to use. Wipe on, wipe gently until polish is black, and wipe off. Repeat until you achieve the desired shine. Use SS ProPolish on bare metal or chromed surfaces, and then apply EverShield to make the shine permanent. SS ProPolish is available in green for cleaning and white for finishing.

Green 8 oz.	P/N 09-02054	**$13.85**
White 8 oz.	P/N 09-02055	**$13.85**
Green 16 oz..	P/N 09-02056	**$18.70**
White 16 oz.	P/N 09-02057	**$18.70**

CS

CLEANERS – WIPES

X-IT CARBON REMOVER & CLEANER

X-IT™ Carbon Remover & Cleaner from Pantheon Chemical is a revolutionary aerospace chemistry powerful enough for difficult cleaning applications, but safe enough for daily routine aircraft cleaning & maintenance. X-IT™ Carbon Remover & Cleaner is safe on all surfaces (rubber, plastic, metal, painted or unpainted) & quickly removes heavy carbon, dirt, grease, grime and oil. X-IT™ Carbon Remover & Cleaner is non-toxic, non-corrosive, nonhazardous, odorless, and aqueous-based.

32oz. spray bottle ..... P/N 09-00768 ..... **$7.85**
Carb Cleaner &Remover Gal..... P/N 09-00769 ..... **$24.65**
Carb Cleaner &Remover 5 Gal .... P/N 09-00770 ..... **$68.75**
Carb Cleaner &Remover 55 Gal .. P/N 09-00771 ... **$574.00**

HYDRASOLVE

Hydrasolve is a thickened, heavy duty, water soluble gel degreaser formulated for efficiency an dperformance in a broad range of cleaning and degreasing applications. It will easily and safely remove carbon exhaust, exhaust tracks, hydraulic fluid, thrust reversers, soot areas, oil & bugs. Hydrasolve is a gel product that clings to the surface being cleaned and has the ability to rinse spot free. it will not smear, but lift and suspend soils, making rinsing easy & complete. Meets Boeing & McDonnell Douglas approvals.

1 gal. ..... P/N 09-00528 ..... **$25.75**
5 gal. pail ..... P/N 09-00529 .... **$118.95**

PURPLE METAL POLISH

Purple Metal Polish is in a class of it's own. This is truly a no-rub metal polish. When you see just how easy it actually is to polish aluminum, chrome, brass and even plastic, you will be totally amazed.

Specially formulated for easability, durability and a super high quality shine. It is a super quick and easy maintenance product. Purple Metal Polish contains a superior abrasive along with Hi-tech cleaners and sealers to safely clean, shine and protect all metal surfaces without scratching! Also removes scratches from acrylic windshields.

P/N 09-02860 ..... **$13.85**

FAST WING PAINT SEALANT

T-500 Paint Sealant with PTFE-M is more than a wax or polish. T-500 provides a tough, long-lasting, mirror-like finish that protects paint longer. Works great on aircraft, cars and boats. Fast Wing will increase performance by reducing parasitic drag. The performance of the aircraft actually increased due to the slick surface the Teflon Sealant left on the paint. 100% Satisfaction Guaranteed. 16 oz. (1 pint) ..... P/N 09-00186 ..... **$17.95**

FAST WING VINYL & LEATHER CLEANER

Fast Wing T-600 vinyl & Leather Protector wipes dry leaving that lustrous new look finish. It creates a anti-static surface that helps repel dust and dirt, without leaving an oily residue. Fast Wing T-600 leaves a non-glare finish that is especially important to pilots and race car drivers.

16 oz. (pint) ..... P/N 09-00188 ..... **$6.95**

FAST WING CLEANER

Originally designed to remove over spray, Fast Wing T-11 cleans and restores the paint to the original luster without the use of harsh abrasives found in most rubbing compounds. Rubbing compounds almost always use some sort of abrasive material, such as volcanic ash, which can leave microscopic scratches. Abrasives may actually accelerate the oxidation process. 16 oz. (pint) ..... P/N 09-00187 ..... **$8.95**

SAFETY WASH

Safety Wash is a mild neutral PH water based exterior wash & wax concentrate designed to be gentle on your aircraft. It provides detergency and built-in easy rinse characteristics that will enhance gloss and eliminate the risk of streaking. Formulated for general routing washing of aircraft. Meets Boeing & McDonnell Douglas approvals. Safety Wash is NOT designed to clean heavily soiled areas.

1 gal. ..... P/N 09-00526 ..... **$23.50**
5 gal. pail ..... P/N 09-00527 ..... **$106.95**

WORX INDUSTRIAL WIPES

- 70ct High powered pre-moistened multipurpose cleaner
- Automotive, industrial, manufacturing, construction
- Natural oils and emollients, safe for hands and skin
- Durable non-scratching fabric for maximum cleaning
- Simple to use - just wipe down surface and dispose

P/N 09-02604 ..... **$12.95**

PS WORKPLACE HAND CLEANER TOWEL

- Uniformly premoistened towel
- Superior terpene blend
- Deep cleaning, non-scratching abrasives quickly remove embedded dirt and grime
- Fast acting
- Disposable
- Eliminates the need for soap, water and a sink
- Improves workplace productivity by reducing costly clean-up time
- Does not require water
- Easy to carry and store
- Convenient
- Bucket of 72 Towels

P/N 09-02546 ..... **$18.75**

ROYCO 756 HYDRAULIC WIPE

This 6" by 6" wipe is an excellent choice for cleaning chrome piston cylinders and struts. The wipe is presaturated with top of the line hydraulic fluid: Royco 756. It is lint and static free, made of 100% cotton cloth woven and finished without starch, binders, or any foreign substances. The cloth finish gives this wipe a softer and better dirt-trapping capacity and has incredible retention to minimize fluid drip.

P/N 09-02668 ..... **$2.45**

ROYCO 782 HYDRAULIC WIPE

This 6" by 6" wipe is an excellent choice for cleaning chrome piston cylinders and struts. The wipe is presaturated with top of the line hydraulic fluid: Royco 782. It is lint and static free, made of 100% cotton cloth woven and finished without starch, binders, or any foreign substances. The cloth finish gives this wipe a softer and better dirt-trapping capacity and has incredible retention to minimize fluid drip.

P/N 09-02669 ..... **$2.45**

ALUMINUM DEOXIDIZER

Want a product that really takes the elbow grease out of polishing? This is a very Hi-Tech chemical designed to clean and deoxidize all metal surfaces without streaking, hazing, burning or damaging the surfaces. Removes scale, road film, most acid stains and even rust on Chrome! It is the easiest and safest way to prep the metal before polishing. It really works great!

Can be used with most cream type polishes. If your aluminum has a milky look to it even after being polished, try this Aluminum Deoxidizer before polishing, you will achieve a Crystal Clear Shine.

P/N 09-02859 ..... **$13.85**

WATER SPRITE SYNTHETIC CHAMOIS

Water Sprite is an exclusive PVA material that gently cleans and dries fine finished surfaces. It actually lifts off residual dirt and grime away from the surface, leaving it clean and dry. It is not affected by mildew, bacteria or common household chemicals.

It is used in place of a sponge or towel and when wet, can be used immediately upon removal from its package. It is individually packaged in a reusable plastic tube for convenient storage, moist or dry, in glove compartment or trunk. Size 3.0 square feet. P/N 09-03062 ..... **$12.95**

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AVL LUBRICANTS & RUST INHIBITORS

AVL LIGHT - The premium light lubricant and rust inhibitor that penetrates and displaces moisture fast, leaving a delicate coating for excellent lubrication and rust protection. A fine, light film that resists the accumulation of dust and dirt. Ideal for drying and protecting electrical connectors and delicate machinery. Can sprays upright or inverted. P/N 09-02106 ..... **$4.75**

AVL MEDIUM - The premium medium lubricant and corrosion preventor is specifically designed to penetrate and displace moisture fast. It leaves a medium weight oily coating for long term lubrication and rust prevention. Can sprays upright or inverted. P/N 13-02963 ..... **$4.85**

AVL THICK - The premium thick lubricant and corrosion preventor penetrates and displaces moisture. It stops corrosion on contact leaving a thick coating for long term lubrication and corrosion prevention. Can sprays upright or inverted. P/N 13-02964 ..... **$4.45**

AVL NO CHLOR CLEANER/DEGREASER

The powerful flushing action and a high solvency formulation makes cleaning metal parts faster and easier. Penetrates quickly into hard to reach areas, cleaning thoroughly. AVL NO CHLOR Cleaner/Degreaser does not contain any 1,1,1 Trichloroethane or any solvents or CFCs known to deplete the stratospheric ozone layer. Evaporates quickly leaving no residue. Removes oil and grease on contact. This is the best non-chlorinated degreaser we have ever produced. 14 oz. P/N 13-02961 ..... **$5.80**

AVL ELECTRO CONTACT CLEANER

The premium aviation cleaner that penetrates fast, cleans and degreases, removes dust and dust buildup without leaving a noticeable film or oil residue. Both penetrate and dry quickly. Ideal for air and ground, electrical and avionics, and sensitive mechanisms. Non-flammable. P/N 13-02958 ..... **$12.65**

AVL FAST ACTING CLEANER/ DEGREASER II

AVL Fast Acting Cleaner/Degreaser II is a highly concentrated solvent designed to remove dirt, grease, oil and grime from metallic and non-metallic surfaces. Cleaning is quick and simple without the danger of injury to working parts. Ideally suited for use on electronic motors even while running, electronic equipment, ignition systems, geneerators, power tools, etc. It is non-flammable and non-conductive so it can be used while motors and equipment are operating. Cleans & degreases very fast and dries quickly leaving little residue. P/N 13-02960 ..... **$7.50**

MACH #1 DEGREASER/CLEANER

A citrus scented degreaser and cleaner designed for the aircraft industry. This surface degreaser is non-irritating but will remove heavy encrustations. Mach #1 (formally known as Big Orange Plus)combines solvent power with an emulsifier system that removes hydraulic fluids, fuel stains, and exhaust soot. P/N 13-00031 ..... **$19.85**

AVL AIRCRAFT GLASS CLEANER

AVL glass cleaner is safe on all plastics and glass. It contains no ammonia. This foaming glass cleaner cleans and leaves a shiny finish with no residue. It easily removes bugs and grime from windshields and all surfaces. 15 oz. P/N 13-02959 ..... **$4.90**

CRAZY CLEAN ALL PURPOSE CLEANER

Crazy Clean is an all purpose cleaner which is excellent for removing fuel stains, exhaust stains, an dgrease and grime from your aircraft. Ideal fro removing bugs from leading edges. Crazy Clean produces a cinging foam which cleans and deodorizes and leaves a clean, not waxy surface. Keep a can in the airplane to use when travelling. Recommended by Aviation Consumer. 15 oz. aerosol can. P/N 09-00563 ..... **$6.95**

EXTREME SIMPLE GREEN AIRCRAFT CLEANER

Unique cleaning & anti-corrosion chemistry delivers superior performance and materials-safety all in one. Cuts through tough, built up grease, oil, dirt, pollution, insect residue & impact soils. Gets its superior cleaning from a unique "triple play" cleaning formula. 2 high performance surfactants and new generation grease lifter/cutter combine to get the soil away from the aircraft surface quickly and keep it away so it can be cleanly rinsed away. Also able to go into oil/water separators and have oil break from solution. Extreme Simple Green's safety upon aircraft materials and precision cleaning surfaces comes from a combination of proven anti-corrosion agents. Time tested coupling agent allows these to work together to battle corrosion & hydrogen embrittlement. This makes it safe to put through pressure washing equipment, rack wash systems, dip tanks & parts washers, without any equipment damage.

32 oz..... P/N 09-00809 ..... **$10.95** Gallon..... P/N 09-00810 ... **$18.85**
5Gal. ..... P/N 09-01236 ..... **$82.50** Spray..... P/N 09-01241 ... **$49.75**
55 Gallon Drum ..... P/N 09-01606 ..... **$587.00**

SIMPLE GREEN PRO HD CLEANER

Simple Green® Pro HD is a non-toxic, non-corrosive, professional grade product developed for multi-purpose contractor applications including use on floors, walls, industrial equipment, appliances; automotive or recreational vehicle cleaning and degreasing; commercial kitchens and baths; and for pressure washing, parts washing, ultrasonic cleaning, and more. It quickly eliminates tough grease and grime, removes stains, and is safe on metal surfaces. Simple Green Pro HD is your one-stop cleaner and degreaser!

P/N 09-02399 ..... **$14.85**

SIMPLE GREEN SAFETY TOWELS

Non-toxic and Biodegradeable. Pre-moistened, quick and versatile with no color and no added scent. Non-abrasive and abrasive sides. .....09-01297 ... **$13.50**

CRYSTAL SIMPLE GREEN INDUSTRIAL CLEANER/DEGREASER

Use for equipment and machinery degreasing, parts washers and dip tanks, mechanized applicators. Non-toxic & biodegradeable, non-abrasive & non-flammable.

24 oz. (Trigger Spray) .....P/N 09-01298 ..... **$7.95**
1 Gallon .....P/N 09-01299 ..... **$17.85**

SIMPLE GREEN HAND CLEANER GEL

Simple Green® Hand Gel is the safer solution for heavy-duty hand cleaning. With over 25 years of environmental leadership, Simple Green has customized a hand cleaner that has the powerful cleaning ability of Simple Green All-Purpose Cleaner/Degreaser, while being easy on the hands. It contains natural pumice to enhance the cleaning of stubborn dirt and grease; and lanolin for moisturizing and protecting skin.

5 oz. ..... P/N 09-01301 ..... **$1.78**
1 Gallon (pump) ..... P/N 09-01302 ..... **$16.95**

SIMPLE GREEN 30 GAL. PARTS WASHER

15" depth soak basin at deepest point). Stainless steel workshelf, flex spigot & nylon flow-thru brushClean out plug for easy draining, includes filter kit and circulating pump. Overall dims: 36"L x 24"W x 39"H. ..... P/N 09-01303 ..... **$998.00**

SIMPLE GREEN 4-WAY PROPORTIONER

Assures proper mixing, controls material usage costs, minimizes excessive packaging disposal, and saves time. Dispenses diluted Simple Green® concentrates in four strengths at 1 gallon per minute. Also includes six foot hose with trigger handle for bucket fill and pre-formed tube for bottle fill. .. P/N 09-01304 ...**$149.85**

SIMPLE GREEN FOAMING CRYSTAL INDUSTRIAL CLEANER/DEGREASER

Fragrance-free and color-free solution.

P/N 09-01305 ..... **$4.95**

SIMPLE GREEN CONCENTRATED CLEANER/DEGREASER DEODORIZER

Clean & deodorize grease filters/traps.

24 oz. (Trigger Spray) ..... P/N 09-01306..... **$6.50**
1 Gallon ..... P/N 09-01307..... **$15.75**

SIMPLE GREEN LIME SCALE REMOVER INDUSTRIAL/INSTITUTIONAL DESCALER

Dissolves soap scum & mineral deposits. Deodorizes-contains no bleach, ammonia or phosphorus. Non-abrasive & non-flammable.

Spray..... P/N 09-01308 ..... **$5.95**
Bottle..... P/N 09-01309 ...**$12.90**

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MICROFIBER CLEANING TOWELS

These non-abrasive, super absorbent cleaning towels are excellent for cleaning plexiglass, rotors, props, and fronts of aircraft to remove bugs and dirt without fear of scratching. Microfiber needs only water to work due to it's unique construction. Used extensively on aircraft, boats, RVs, and motorcycles. Available in Terry style (16"X16", blue) and in Chamois style (16"X 24", gold).

Terry style .....P/N 09-00272 ..... **$2.75 ea**
Chamois style .....P/N 09-00273 ..... **$6.65 ea**

KIMTEX SHOP TOWELS

The heavy-duty oil and solvent disposable wiper to replace cloth. Excellent for machine shop use.

Each..... P/N 09-03473 ..... **$0.35**
Pkg of 10..... P/N 09-02996 ..... **$3.95**
Pkg of 50..... P/N 09-02997 ..... **$14.95**

MICROFIBER CLEANING CLOTH

The Mystic Maid® Microfiber Cleaning Cloth will clean all hard surfaces to a streak-free brilliance without chemicals. No cleaning agents, soap, or detergent is needed; just the cloth and water. Simply wet the cloth, wipe the surface, and the cloth leaves a brilliant surface that air-dries in seconds. Machine washable and reusable for countless applications. Removes grease, dirt, and dust. Excellent for cleaning the aircraft windscreen and on leading edges for bug removal.

13"x 20" cloth .....P/N 09-00191 ..... **$9.95 ea**

AERO WIPEASE

AERO WIPEASE CABIN & INTERIOR WIPES - A new convenient and easy way to clean and shine your aircraft or boat cabin and interior. Anti-static and lint free with UV protection to use on Plastic, Glass, Vinyl, Trim, Dash, Laminated Wood and Leather. Keeping your aircraft or boat looking like new also works well on your automobile. Moisture Lock Lid. 35 Wipes.

P/N 09-01238 ..... **$6.95**

SONTARA AIRCRAFT WIPES

Tough Dupont Sontara® AC™ aircraft wipes are the smart choice bor both aircraft manufacturing and maintenance. Their strength and durability make them ideal for a wide variety of general purpose & pre-paint applications. Sontara® AC™ wipes leave surfaces clean because they're exremely low-linting. Tackles tough cleaning agents without falling apart. every Sontara® AC™ is clean right out of the box. No chemical residues or stains. Sontara® is specially engineered to resist snagging on metal parts and corners. Superior to paper wipes which snag & tear. Outperforms cheesecloth which leaves strings behind when it snags on a rivet. Sontara® AC™ is great for wiping surfaces dry because it contains no additives that hamper absorbency.

9" x 16' Wipes (Box of 100).....P/N 09-00369 ..... **$18.75**
12" x 16' Wipes (Box of 125).....P/N 09-00368 ..... **$49.75**

NEVR-DULL WADDING POLISH

Cleans and polishes all metals including: Silver, gold, brass, copper, pewter, glass, steel, aluminum & chromium. Nevr-Dull removes rust and tar from automobile and motorcycle chrome. Excellent for Mag & chrome wheels, boat fittings, workshop tools, fishing gear, sinks, showers & campers.

5 oz.....P/N 1035605 ..... **$6.95**

NEVR-DULL POLISH

Cleans and polishes all metal including: silver, gold, brass, copper, pewter, glass, steel, aluminum and chromium. Removes rust and corrosion instantly. NEVR-DULL removes rust and tar from automobile and motorcycle chrome. Leaves no deposits in the crevices of metal work. Excellent for: Mag and chrome wheels, boat fittings, workshop tools, fishing gear, sinks, showers and campers.

P/N 09-24350..... **$36.50**

NEVR-DULL NATURAL STAIN REMOVER

Nevr-Dull® Stain Remover is a proprietary blend of natural cleaning agents, plant-based surfactants, biocatalysts and enzymes. This specially blended enzyme-based stain remover is strong enough to remove all protein matter from hard surfaces, as well as carpeting and fabrics. Safe to use around people and animals. Ideal for use in hospitals, bathrooms, offices, automobile interiors and boats. Strong enough to use in commercial and industrial settings, but safe enough to use in the home. **Features**: • Works on hard surfaces, carpet and any fabric • Enzyme-based formulation • Non-caustic and environmentally friendly • No-caustic and environmentally friendly • No harsh chemical fumes or vapor • Removes food stains, mold, mildew, blood and much more • Ideal for cleaning hard-to-reach spots like tile, grout and corners • Safe to use around people and animal • Renewable-plant-derived formulation, phosphate free, no glycol ether, ozone safe, phthalate free

P/N 09-02363 ..... **$7.50**

NEVR-DULL NATURAL GLASS CLEANER

Nevr-Dull® Glass Cleaner is an environmentally friendly glass and surface cleaner that leaves a streak-free shine. Use on a variety of surfaces that include plastics, glass, mirrors, chrome, automobiles, boats and especially Strata, EZ2CY and Eisen glass. Ideal for use in hospitals, bathrooms and offices. Strong enough to use in commercial and industrial settings, but safe enough to use in the home.

P/N 09-02364 ..... **$7.25**

NEVR-DULL FOAMING HAND SANITIZER

Nevr-Dull™ Hand Sanitizer is a fast drying, non-sticky foam that contains unique conditioning and moisturizing ingredients. Skin is left feeling soft, silky and smooth, not dry or gooey. Proven to reduce S. Aureus by 99.99% in as little as 15 seconds. 1.7 oz pump bottle size. Fast acting – effective in as little as 15 seconds. Will not stain clothing. Kills 99.99% of most common germs. Biodegradable . No alcohol – non drying . Towel and rinse free use. No polymer thickeners or silicones. Nonflammable. Passes security check points including airports

P/N 09-02369..... **$3.95**

PROTECT ALL POLISH

Protect-All makes everything look better - cleans and polishes in one easy step. Works on vinyl, rubber, plastics, painted surfaces, fiberglass and chrome. Use Protect-All on the entire aircraft, inside and out, including windshields.

6oz. spray can..09-00556 ... **$6.50**
13.5oz. spray ...09-24900 ... **$9.75**
1/2 Gallon Jug ..09-00599 .. **$33.85** 1 Gallon. Jug....09-00601 . **$49.50**

PROTECT ALL QUICK & EASY WASH

A non-abrasive, anti-static, water repellent wash that replaces soapy detergent products and eliminates rinsing when washing aircraft and other surfaces. No hose is needed. Quick & Easy Wash conserves water.Removes oxidation, stains and heavy grime with a strong cleaner or polishing compound before using Quick & Easy Wash for the first time. From then on use 1/2 oz. (1 capful) in a bucket with 2 qts of water for an average size plane. Use 1 oz per gal. for larger aircraft Wash a section at a time then just chamois, towel or squeegee dry! This is especially important where water use is restricted. Because you don't need to rinse, you can wash in your hangar and airplane tie-downs.

Pint .....P/N 09-24910 ..... **$8.95**
Quart .....P/N 09-24920 ..... **$15.90**

PROTECT ALL FIBERGLASS OXIDATION REMOVER & COLOR RESTORER

1-Step Application: Cleans, Polishes, Seals Removes: Oxidation, Wax build-up, Stains, Surface scratches, Hard water spots For: Fiberglass, Gelcoat, Enamel, Polyurethane painted surfaces. 32oz. PN 09-01659 ..... **$15.95**

PROTECT ALL BLACK STREAK CLEANER & DEGREASER

Use on 100's of surfaces indoors and outdoors. Removes: Black streaks, grease and oil, stains, bugs, mildew, soap scum and more! Extra heavy-duty and super concentrated, it not only removes the heaviest black streaks quickly and easily, but may be diluted for 100's of uses indoors and outdoors. Use full strength for big jobs and dilute to make gallons of multi-purpose cleaner. Biodegradable

PN 09-01660 ..... **$12.25**

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PPC AIRCRAFT CLEANERS

PERFECT DETAIL™ SURFACE ENHANCER

Perfect DetailTM is the nation's leading choice for producing "wet look" shine! A light mist instantly produces maximum depth of gloss and flawless glassy brilliance on clear coat, black, and all other paint finishes. It works especially well on all other non-porous surfaces (such as chrome, glass, etc.) while lightly cleaning and accenting soft surfaces such as vinyl, rubber, and leather. For engine detailing Perfect DetailTM can't be beat! Perfect DetailTM is anti-static and slippery, enabling it to resist dust, dirt, and abrasion better than any product.

18 oz. .....P/N 09-00165 .....**$10.75**
1 Gallon .....P/N 09-00166 .....**$46.50**

BELLY WASH™ DEGREASER

Water-based BellyWashTM is highly concentrated for versatility and cost-effectiveness in any aircraft surface maintenance situation. It can be applied in any manner – spray, brush, wipe, power washer, etc. – and can be diluted with water by as much as 80:1 for routine cleaning in commercial application. Stubborn stains are dissolved almost on contact using full strength Belly WashTM, making it perfect for keeping troublesome aircraft bellies and wheel well areas in like-new condition. When used to remove concealing grime and petroleum-based residues form the aircraft engine area, Belly WashTM makes it possible to perform a more thorough inspection when checking for potential maintenance problems.

18 oz. .....P/N 09-00168 .....**$12.95**
1 Gallon .....P/N 09-00169 .....**$48.75**

WING CLEAN™ LEADING EDGE CLEANER

One major performance factor the aircraft owner/operator can improve upon is complete removal of all parasitic drag resulting from impacted air debris on the leading edges. Wing CleanTM is specifically formulated to both safely and effectively dissolve the problem. Wing Clean'sTM water-based non-solvent "spray-soak-rinse" application dramatically improves an aircraft's flight-ready condition. Routine use of Wing CleanTM, in series with PPC's Perfect DetailTM and/or Prestige Protective Polish, produces a microcellular separation barrier on leading edge surfaces, making future bug removal a progressively easier task.

18 oz. .....P/N 09-00170 .....**$9.65**
1 Gallon .....P/N 09-00171 .....**$39.75**

CRUD REMOVER™

Crud Remover – made with water – is an environmentally safe replacement for heavy-duty petroleum cleaning solvents. It's extremely powerful degreasing and defatting abilities enable it to dissolve diesel fuel, soot, and oily deposits on contact, grease and heavy grime in seconds, and virtually any stain from any surface – including cloth – in a matter of seconds! It also loosens bolts. It can be applied in any manner – spray, brush, wipe, or soak – and simply rinses off with water.

18 oz. .....P/N 09-00172 .....**$9.85**
1 Gallon .....P/N 09-00173 .....**$43.75**

AERO GLAZE DRY WASH & POLISH

Aero Glaze is a high-grade protector and restorer. Removes oxidation, fuel stains, soil, insects and exhaust deposits. Aero Glaze retards corrosion, resists stains and prevents paint deterioration. 1 Gallon .....P/N 13-00030 ..... **$54.75**

KLEEN JET CLEANER & DEGREASER

Kleen Jet is a biodegradable aircraft industry cleaner and degreaser. It is a water-soluble, non-flammable, non-toxic concentrate that leaves no oily film or residual gumminess. Removes carbon, oil, grease, insects and inhibits corrosion and rust. 1 Gallon .....P/N 13-00029 ..... **$27.50**

BIG ORANGE PLUS

A citrus scented degreaser and cleaner designed for the aircraft industry. This surface degreaser is non-irritating but will remove heavy encrustations. Big Orange Plus combines solvent power with an emulsifier system that removes SKYDROL, hydraulic fluids, fuel stains. exhaust soot.

1 Gallon.....P/N 13-00031 .....**$19.85**

FLEET WASH

Fleet Wash aircraft wash and wax is an effective cleaner that leaves a wax-like surface on the washed aircraft. Contains a high percentage of W-300. Fleet Wash leaves a high luster, water-repellent surface which helps to repel dust.

1 Gallon.....P/N 13-00032 .....**$18.95**

FORMULA 2™ CLEANER/ PROTECTANT

Formula 2TM Cleaner/Protectant is a chemically unique multipurpose liquid which thoroughly cleans, beautifies, and protects all leather, rubber, vinyl, and finished wood products in one easy sstep with no greasy film! Due to its unique chemistry, Formula 2TM can also be used on painted and plastic surfaces. When applied sparingly to such surfaces it dries to a slick smooth, invisible coating resistant to mud, fingerprints, food splatters, soap scum, water spotting, etc. On leather, rubber, and vinyl Formula 2TM first dissolves away imbedded grime, then penetrates and softens the material to give it new life and flexibility, at the same time providing a lustrous, weather-resistant finish to prevent future deterioration.

20 oz. .....P/N 09-00174 .....**$10.50**

EASY™ ALUMINUM POLISH

EasyTM Aluminum Polish is a unique liquid formula that produces a "mirror-like" shine in seconds on smooth aluminum, magnesium, stainless, brass, nickel, etc. Its ability to melt oxidation and simultaneously bring up the metal's true brilliance can't be matched by any other polish. The application of EasyTM allows its exclusive acrylic polymer barrier to "lock" onto the metal's polished surface to resist staining, tarnish, and weathering effects indefinitely. The fine "mirror" finish can easily be maintained with a quick "touch up" application of product as desired.

8 oz. ..... P/N 09-00177 ..... **$10.75**

REAL™ WHEEL CLEANER

RealTM Wheel cleaner is the first detergent-based single product able to clean brake dust and corrosion from any type wheel in seconds! It works on contact to remove corrosion from older unfinished or neglected metals (aluminum, copper, brass, bronze, zinc) and is great for antique restoration. RealTM Wheel Cleaner's exclusive detergent action saves both time and money when detatiling any vehicle.

18 oz. ..... P/N 09-00178..... **$7.95**

NATURALLY NEW™ TIRE DRESSING

Naturally NewTM Tire Dressing utilizes PPC's advanced water-based polymer technology to produce an effective, cost-efficient dressing that actually protects rather than destroys the integrity of the sidewall. Naturally NewTM exactly describes the lustrous sheen imparted on contact with this instant action formula. The dry, semi-permanent barrier is both water repellent and resistant to dust, dirt etc. Naturally NewTM Tire Dressing adds maximum beauty while conditioning to keep that "new tire" look during the treadlife of the tires

18 oz. .....P/N 09-00179 ..... **$9.95**

SUNBLOCK FOR LEATHER KIT

SunBlock's newest product features cleaning and protection for leather that prevents stains and cracking. The SunBlock Cleaning System for leather interiors keeps your leather soft and supple by maintaining the moisture in the leather and preventing the destructive effects of everyday use while preserving the leather topcoat. Regular use of SunBlock Leather Cleaner and SunBlock Protection Cream will maintain the original look and feel of the leather without affecting the leathers breath-ability. This kit is safe for all leather except Suede or Nubuck.

Contains;
1- 5oz. Bottle of SunBlock Leather Soft Cleaner
1- 5oz Bottle of SunBlock Leather Protection Cream
1- Soft Cloth
1- Sponge

P/N 06-01048.....**$19.95**

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POLISHES – WAXES – CLEANERS

JET STREAM AVIATION PRODUCTS

POWERFOAM SPRAY & WIPE FOAM CLEANER

An exterior and interior spray and wipe cleaner. On aircraft exteriors, Powerfoam will effectively clean carbon exhaust, engine cowlings, oil and bugs. Excellent for use between wash jobs as a "trip ready" wipe and cleaner. On aircraft interiors, Powerfoam will completely clean smudge marks, nicotine stains, fingerprints and food stains. Can also be used on leatherette, sinks, table tops, woodwork, stainless steel, lavs, painted or similar surfaces.

19 oz. Can .....P/N 09-37970 ..... **$13.95**

SUPREME GLAZE AIRCRAFT FINISH TREATMENT

Supreme Glaze is a semi-flowing paste cleaner wax that cleans, shines, resurfaces, all aircraft painted surfaces while bringing out the brilliance of the original color. Supreme Glaze safely removes light to medium oxidation and scratches. Excellent for use on carbon exhaust stains associated with aircrafts such as King Airs. Supreme Glaze contains color brighteners and will protect against oxidation, salts, UV rays, hydraulic fluid, insect residue and acid rain. Can be used by hand or machine polisher. 16 oz. Bottle.....P/N 09-37980 ..... **$20.75**

FLYERS SPEED-WAX WATERLESS DRY-WASH

SpeedWax is a specially formulated waterless aircraft polish and high gloss protectant Dry-Wash. This product is Carnauba Rich & is easy-on, easy-off. With Flyers there is no need to pre-clean any surfaces before using. Due to EPA regulations, cleaning aircraft with soap and water is becoming more and more regulated. Flyers SpeedWax is the answer to the ever increasing EPA regulations. This product will allow you to clean your aircraft in a reasonable amount of time, leaving the surface of your aircraft highly protected. 16 oz. bottle.....P/N 09-42015 ..... **$15.75**

JET STREAM METAL POLISH

SKAI METAL POLISH - Skai Metal Polish is designed to polish and restore aluminum or stainless steel to a mirror image. Used for polishing aircraft leading edges, spinners, engine inlets, thrust reversers and bare aluminum skins. Also safe for use on aircraft paint for removing heavy oxidation and stains. Skai Metal Polish is also very economical. A one pound container will normally equal several pounds of our competitor's products. Skai makes very little mess when you are polishing and will not sling over the aircraft if used properly. Skai is non-abrasive, fast cutting and quick to clear under a buffer. Surfaces treated with Skai are protected and resistant to oxidations **MIRROR IMAGE -** Mirror Image Brightwork Swirl Remover is designed to remove swirls in polished metal caused by machine buffing. Mirror Image can also be used as a light maintenance polish between machine polishing jobs. Contains corrosion inhibitors and anti-oxidation agents for long lasting protection on all polished metal. Mirror Image will produce 100% protection while sealing the polished metal.

1 Lb. can. Polish .....P/N 09-41713 ..... **$44.95**
Mirror Image 5 oz. roll Swirl Remover.....P/N 09-41715 ..... **$29.95**

AIRCRAFT SQUEEGEE

Neoprene Aircraft Squeegee has been improved by adding locking threads for pole attachment and is now constructed from white plastic instead of metal. Will remove water from un-even aircraft surfaces safely and smoothly. You will save time and dozens of wet towels while completely drying any size aircraft in just minutes. P/N 09-42025 ..... **$24.95**

BUFFING / POLISHING PADS

Buffing Pads are made from 100% wool with a 1-1/2 inch pile. These pads can be used for all of your brightwork and paint polishing needs and will cut through oxidation quickly and wear evenly for extremely smooth polishing. Our buffing pads can also be washed and re-used multiple times for long lasting life. They do not have velcro backing and are designed to be used with a threaded nut and backing plate. P/N 09-42035 ..... **$13.65**

BUFFING PADS SPUR / CLEANER

Absolutely a must tool when buffing.The Buffing Pad Spur Cleaner is used to break down compound build- up without removing the pad from the machine polisher. When buffing, your pads fill up with polishing compounds not allowing to perform properly. The Buffing Pad Spur Cleaner will quickly and efficiently remove this build-up, restoring the pad to it's full potential. P/N 09-42045 ..... **$12.85**

FLITZ FIBERGLASS / PAINT RESTORER

Flitz Fiberglass/Paint restorer safely cleans, polishes, and protects fiberglass, plexiglas, painted surfaces, and plastics. It removes rust, oxidation, tarnish, and tar. It will not harm gel coat or clear coat, anodized or polished aluminum, stainless steel, brass, copper, chrome, and more. Contains no ammonia or abrasive. 8.5 fl. oz. .....P/N 09-01240 ..... **$13.95**

FLITZ SPEED WAXX

This wax is perfect for waxing between flights. This remarkable spray on/wipe off wax is water based. No streak. No Smear. No white residue. Gives a super gloss, super fast. 16oz. trigger spray. 09-01678 ..... **$13.75**

FLITZ WAXX PROTECTANT

Flitz Waxx Protectant is a water-based super-premium white carnauba & beeswax product. Will not dull aluminum, billet aluminum and magnesium like other waxes can. That's because Flitz waxx protectant contains no silicone. 100% compatible with Flitz Polish. Use on: All painted surfaces, clearcoat, gelcoat, ceramic coatings, lacquer, aluminum, stainless steel, Emron®, powdercoat, polyurethane, fiberglass, acrylic sheet, eisenglass, acrylics and plastics. Features: Ultra-creamy texture. Pleasant smell. No white residue. Outstanding performer for airplane / auto / truck / boat. Environment friendly. The ultimate in UV and rain protection. Body Shop safe - Silicone Free. Protects up to 6 months in fresh water / 3 months in salt water. 16 oz. .....P/N 09-03482 ..... **$25.25**

FLITZ ALUMINUM & FIBERGLASS POLISH

PN 09-42405

PN 09-01676

PN 09-42415

Flitz is a non-abrasive metal polish which can be used on all metal surfaces including polished aluminum, painted surfaces, and fiberglass. It is easy to apply and remove, and leaves a protective film to protect shiny surfaces up to 4 months A very popular multi-purpose polish.

1.76 oz. Tube .....P/N 09-42405 ..... **$9.50**
5.29 oz. Tube .....P/N 09-01676 ..... **$18.36**
2.2 Lb. Can.....P/N 09-42415 ..... **$47.50**

FLITZ POLISHING AND BUFFING BALL

The Flitz 8" Polishing & Buffing Ball is made of a viscos materialwhich is a cooling material vs. lambs wool or cotton which is a heating material. This way it doesn't burn the paint and can be used to buff leading edges without having to tape them. This ball works wonders with Flitz Products and makes polishing much easier, faster and more effective in less than half the time. It fits all drills and air tools and will buff out scuffs, oxidation tarnish, pitting, corrosion on all metals, paints, fiberglass, plastics, and wood. Re-usable & washable.

P/N 09-00554 ..... **$35.70**

FLITZ MICROFIBER CLOTH

The Flitz microfiber cloths are 30 times finer than cotton and are great for buffing out waxes and polishes by hand. They will wash windows without chemicals (just use water) and will not streak or leave lint. Size: 16"x16".

P/N 09-00556 ..... **$6.50**

KOZAK SUPER DRY WASH

Use on metal, painted, or buffed aircraft surfaces to clean and maintain a beautiful shine. Good on spinners and prop blades too! Made from specially woven cotton fibers with a unique cleaning formula that lifts loose dirt and dust up and away from the surface. Use every time you fly to maintain a shine all year round! Reusable more than 50 times. P/N 09-00345 ..... **$12.85**

SUPER SHINE SPRAY CLEANER & PROTECTOR

Super Shine is a no-run, all purpose spray cleaner and protector. Just spray on Super Shine and let its foaming action lift off dirt and grease from all washable surfaces. Surfaces stay cleaner longer, while fogging and static build-up is eliminated. Ideal for use on plastic windows. Plexiglas, windshields, vinyl, leather, glass, tires and trim, chrome, fiberglass, acrylics, veneers, and painted surfaces. Non-toxic and meets California Clean Air Act. Widely used in aviation, racing/automotive, motorcycle, & marine industries. 15 oz. Spray Can .....P/N 09-42580 ..... **$5.40 ea**

CYCLO POLISHING PRODUCTS

CYCLO ORBITAL POLISHERS FOR AIRCRAFT

Genuine Cyclo Polishers: a fifty-year heritage of quality.

Precision machined and hand assembled for a lifetime of trouble-free operation, the Cyclo Polisher's dual heads orbit in a random, overlapping motion that mimics fine hand polishing. Leaves a dazzling, swirl-free shine every time. The Cyclo Dual Head Orbital Polisher is the most effective means of polishing available today. Even in the hands of a novice, it is safe to operate and provides professional results every time. The difference lies in the tool's overall balance and its patented dual heads. The dual heads operate in a synchronized motion, providing the most effective results without fear of heat buildup; damage to trim pieces, moldings and gaskets; swirl marks, holograms and more. The low-vibration and balanced design allow for a more even application and better control when operating.
Electric Polishers

CYCLO ELECTRIC POLISHER

* Power Supply: 115 Volts, 60 Hertz, 220 Watts * Motor: alternating current, semi-enclosed 24-bar commutator, * Speed: 3000 orbits/minute, * Output: 1/3 H.P. (.25 Kw) * Weight: 6.5 lb. (2.9 kg) * Head Rotation/ Diameter: clockwise /4" * Electric Cord: 10' length, 16 ga/3SJTOW * Housing: heavy-duty cast aluminum * Polisher Only.

P/N 09-35715 **$329.95**

CYCLO PNEUMATIC POLISHER

This pneumatic machine is designated for use in professional and industrial settings. The polisher heads orbit to produce a world-class shine without burning paint or leaving behind any swirl marks. Vibration Elimination System (VES™) is available exclusively on this polisher and is composed of a completely redesigned counterweight and precision matched, weighted inserts. Prior to this innovation, the polisher imparted only about one-tenth the vibration of traditional rotary and dual action polishers. Now the amount of vibration is reduced even further and nearly eliminated. **Specifications:** Air Pressure: Optimum operation at 90 p.s.i., 22 scfm. Motor: Pneumatic motor, Speed: 3000 orbits/ minute. Weight: 6.5 lb. (2.9 kg). Head Rotation/Diameter: clockwise/4". Recommend Hoses: 3/8" with 3/8" to 1/4" NPT Adapter. Extended NPT adapter line available. Housing: heavy-duty cast aluminum. Requires in-line air filter, dryer and lubricator P/N 09-03020 ..... **$496.85**

CYCLO POLISHER BONNETS

THE ORIGINAL CYCLO CUTTING WOOL - • Metal Polish/ Cleaner • Paint Deox • Paint Compound • Paint Swirl Removal.

With Velcro .....P/N 09-35727 ..... **$4.40**
Without Velcro .....P/N 09-35700 ..... **$5.90**

WHITE FINISHING PADS - • Extreme Shine • Final Wax Buff • Wax Application • Sealant • Metal Sealant

With Velcro .....P/N 09-35735 ..... **$4.60**
Without Velcro .....P/N 09-35736 ..... **$5.50**

GREEN POLISHING PADS - • Sealant • Paint Polish • Paint Cleaner • Metal Sealant

With Velcro .....P/N 09-35732 ..... **$3.40**
Without Velcro .....P/N 09-35711 ..... **$6.50**

Note Polishing Pads with Velcro require the RUBBER PAD HOLDERS P/N 09-35730 listed with the Cyclo accessories

COTTON TERRY PAD COVER - • Final Wax Buff • Upholstery A 100% cotton terry cover. Perfect for cleaning interior surfaces and for buffing, polishing, and drying exterior surfaces. P/N 09-35755 ..... **$3.50**

FASTCUT™ 600 GRIT DISC - • Tile and Grout • Ice Hockey Rink Walls • Rust Removal - This coarse nylon pad is strong, durable, and specifically designed for rough surface areas.

P/N 09-35737 ..... **$1.21**

CYCLO BRUSHES

GRAY ULTRA SOFT UPHOLSTERY BRUSH - • Upholstery • Fine Carpets • Fine Interiors P/N 09-00689 ..... **$21.85**

AQUA SOFT CARPET BRUSH - • Fine Carpets • Durable Carpets • Auto & RV Carpets & Upholstery P/N 09-00690 ..... **$20.75**

WHITE STANDARD CARPET BRUSH - • Auto & RV Carpets & Interiors • Tile & Grout • Durable Carpets P/N 09-35742 ..... **$20.75**

BLACK STIFF SCRUB BRUSH - • Tile & Grout • Truck Bed Liners. P/N 09-35740 ..... **$21.75**

CYCLO POLISHER ACCESSORIES

Rubber Pad Holders.....P/N 09-35730 ..... **$9.95**
Flat Wrench.....P/N 09-35745 ..... **$5.25**

CYCLO CLEANER-DEOXIDIZER

CTI Cleaner - Deoxidizer is great for removing hairline scratches and light to medium oxidation.Its mild abrasion creates a clean, smooth surface. Does not contain any shine components. Follow with polish or wax.....

1GAL P/N 09-00413.....**$64.25**
16OZ. .....P/N 09-00414 ..... **$9.90**

CYCLO CTI 1 PASS EXPRESS™ CLEANER - POLISH – SEALANT

CTI 1 Pass Express removes light scratches and environmental contaminants in one operation. Restores showroom color and brilliance, and protects finishes with a brilliant weather resistant silicone film. Excellent on any paint surface, including clear coats.

1GAL.....P/N 09-00416 ..... **$53.25**
16OZ. .....P/N 09-00417 ..... **$13.95**

CYCLO POLISH & PROTECTIVE SEALANT

CTI Polish & Protective Sealant is a high poly sealant that will give your surface 12-18 months of durable protection and brilliant gloss. Restores your paint to its original new car shine. Great for use on all painted surfaces.
Cannot be sold to residents in the following states: CA, CT, DE, DC, IL, IN, ME, MD, MA, MI, NH, NJ, NY, OH, PA, RI, VT, VA, WI

1GAL.....P/N 09-00418 ..... **$64.25**
16OZ.....P/N 09-00419 ..... **$9.50**

CYCLO FREE FLITE™ PROTECTIVE SEALANT

CTI Free Flite™ Protective Sealant is a mild deoxidizing agent specially formulated to bond to bare metal. It removes those fine polishing swirl marks seen only in direct sunlight and leaves a protective coating that prevents further oxidization. For use on metal only.
Cannot be sold to residents in the following states: CA, CT, DE, DC, IL, IN, ME, MD, MA, MI, NH, NJ, NY, OH, PA, RI, VT, VA, WI

1GAL.....P/N 09-00423 ..... **$37.95**
16 OZ.....P/N 09-00422 ..... **$14.50**

CYCLO FREE FLITE™ CLEANER – POLISH

CTI Free Flite™ Cleaner - Polish is an aggressive rubbing compound for badly oxidized aluminum. It removes corrosion, oxidation, and surface film, leaving a hard polished finish. Popular with airlines for decades. For use on metal only.

1QT.....P/N 09-00424 ..... **$18.75**
5GAL.....P/N 09-00425 ..... **$212.85**

CYCLO AVIATION POLISHING KIT

The Cyclo Dual Head Orbital Polisher is the most effective means of polishing available today. Even in the hands of a novice, it is safe to operate and provides professional results every time. The difference lies in the tool's overall balance and its patented dual heads. The dual heads operate in a synchronized motion, providing the most effective results without fear of heat buildup; damage to trim pieces, moldings and gaskets; swirl marks, holograms and more. The low-vibration and balanced design allow for a more even application and better control when operating. Electric Polishers.
The Cyclo Aviation Polishing Kit includes the Cyclo Polisher, two Cyclo wool polishing pads, two Cycloe green polishing pads, and one 1 lbs. can of MET-ALL aluminum polish. This kit will enable you to polish the painted and aluminum surfaces on your aircraft to a high shine quickly and easily. For complete line of Cyclo accessories see the Aircraft Spruce website or catalog.

Specifications:

- Power Supply: 115 Volts, 60 Hertz, 220 Watts
- Motor: alternating current, semi-enclosed 24-bar commutator
- Speed: 3000 orbits/minute
- Output: 1/3 H.P. (.25 Kw)
- Weight: 6.5 lb (2.9 kg)
- Head Rotation/Diameter: clockwise 4"
- Electric Cord: 10 feet length, 16 ga/3SJTOW
- Housing: Heavy-duty cast aluminum - polisher only

P/N 09-02553.....**$364.95**

CS

DE-ICER PRODUCTS

CS

BF GOODRICH AGE MASTER RUBBER NO. 1 PROTECTIVE AGENT

Age Master #1 rubber protectant helps extend the life of your de-icers so you can cut maintenance costs, slow deterioration and aging, extend service life and save money. Age Master #1 protectant isn't just a surface coat. It penetrates neoprene rubber to help retard damage from ozone, weathering and pollutants to help your de-icers stay strong and flexible. And now it's economical, long lasting and easy to apply. Just follow the simple BF Goodrich guidelines. Wipe or brush on Age Master #1 protectant every 150 flight hours or at least semi-annually, for continuing protection. Age Master #1, the only rubber protectant recommended by BF Goodrich. Meets military specification MIL-P-11520E. Age Master #1 protectant is a staining material. Avoid contact with painted surfaces. Apply sparingly and let dry thoroughly before flying in rain to prevent run-back.

Quart ..... P/N 09-42545 .... **$189.95**

BF GOODRICH ICEX II FOR DE-ICERS

Icex coating boosts your de-icer performance so you fly with greater confidence by helping your de-icers shed ice at peak efficiency. Icex coating chemically bonds with rubber de-icer surfaces and forms a slick film that makes your de-icers slippery. It will lower the adhesive bond between ice and de-icer surfaces so your de-icers break the frigid grip of ice better and faster! Icex coating is easy to apply and economical, too. A single application provides 50 flight hours of added ice fighting protection on leading edge de-icers and 15 flight hours of protection on prop de-icers. Get Icex coating in quart cans for an attractive uniform satin finish on your de-icers. One is enough to treat a complete single or twin-engine aircraft.

Quart ..... P/N 09-42530 .... **$294.00**
16 oz. Spray ..... P/N 09-42531 .... **$174.50**

BF GOODRICH DE-ICER CEMENT 8 oz. can . P/N 09-42535 ..... **$72.50**

BF GOODRICH SHINEMASTER PNEUMATIC BOOT TREATMENT

Shinemaster Prep is a surface coating that cleans de-icing boots & prepares the de-icer for Shinemaster. Shinemaster is a wax surface coating that enhances the appearance of pneumatic de-icing boots. Simply clean the boots with Shinemaster Prep per the instructions, then apply a couple of coats of Shinemaster treatment per the instructions. New boots look spectacular and old boots look like new. Compatible with Agemaster No. 1 and Icex products.

Shinemaster Prep (qt) ..... P/N 09-42532 ..... **$59.95**
Shinemaster (pt) ..... P/N 09-00325 ..... **$87.50**

RAPCO BOOTSAVER- THE DE-ICE BOOT REPAIR KIT

Another quality product from Rapco, Bootsaver seals pin holes by bonding with the boot material. It is black in color and can be smoothed to blend with the boot surface..... P/N 09-41705 ..... **$67.50**

JET STREAM PBS BOOT SEALANT

PBS Prep is formulated for use before each PBS Boot Sealant application to avoid dulling and hard to remove build-up. PBS Prep will effectively clean pneumaticde-ice boots of all old treatments assuring the best results possible when applying PBS Boot Sealant. Failure to prepare de-ice boots with PBS Prep may result in dulling due to build-up.

Qt. PBS Prep ..... P/N 09-41711 ..... **$26.85**
Qt. PBS Sealant ..... P/N 09-41712 ..... **$53.75**

BOOTSEDGE DE-ICER SEALANT & WAX REMOVER

BOOTSEDGE PNEUMATIC DE-ICER SEALANT - This is a non-corrosive, bio-degradable and non-hazardous. • High gloss • Easy to apply • Superior results • Quick drying • Long lasting protection • UV protection • Helps prevent dry-rot

P/N 09-02395 ..... **$51.65**

BOOTSEDGE WAX REMOVER / MULTIPURPOSE CLEANER - This is a non-corrosive, bio-degradable and non-hazardous. Great for cleaning: • Pneumatic de-icers • Exhaust stacks • Exhaust soot • Landing gears • Aircraft underside • Hard to clean areas P/N 09-02396 ..... **$29.95**

KILFROST TKS406B ICE PROTECTION FLUID

TKS 406B contains a mixture of glycol and alcohol and offers good ice protection capability (freezing point below -60°C). Principally used for in-flight ice protection, TKS 406B can also be applied to remove frozen deposits of snow, ice and frost from stationery aircraft on the ground. TKS 406B is designed for use in cold concentrate form (as supplied) and is available in 2.5 gallon, 5 gallon, 30 gallon, and 55 gallon containers. **Features**: • Ice Protection capability • Fully biodegradable • Simple to use Note: NO HAZ SHIPPING FEES (UP TO 250 GAL)

Description	Part No.	Price
TKS406B Ice Protection Fluid 2.5 gal.	09-02401	**$59.95**
TKS406B Ice Protection Fluid 5 gal.	09-02402	**$109.95**
TKS406B Ice Protection Fluid 55 gal.	09-02404	**$968.00**
TKS406B Ice Protection Fluid 250 gal.	09-02984	**$3,565.00**

TKS FLUID FUNNEL

• Measure then release desired amount • On/off valve • Extension tube

P/N 12-02586 ..... **$12.85**

ICE AWAY - PROP ICE GRIP INHIBITOR

Sooner or later, most pilots get into icing conditions and an ice-free propeller may be the ticket to safety. Years of testing have shown Ice-Away to stay on for several hours in icing cconditions. Ice-Away facilitates propeller ice shedding and enhances safety. Simply spray Ice-Away on the propeller leading edges and reapply as necessary P/N 09-00264 ..... **$19.85**

RAIN B GON

Rain B Gon will dramatically improve your wet weather flying, riding or driving visibility. A hydrophobic coating technology that forms a chemical bond and causes the raindrops to bead up and blow away from the windshield. Rain B Gon's innovative technology is designed especially for plastic Acrylic and Lexan windshields, and has no alcohol which can harm plastic. It is safe to use on glass windshields also. Can be applied on painted surfaces, and aids in easy removal of salt, ice, frost, insects and mud. 8 oz. spray bottle P/N 09-03487 ..... **$9.95**

RAIN-X RAIN REPELLENT

Aircraft with bleed air rain removal systems, such as Cessna Citation and Learjet, need to have their windshields treated to help disipate the rain. Repcom rain repellant was the recommended product, but it is no longer available. Rain-X is manufactured by the same company and it is the same formulation. While not FAA approved, it works well in dispersing water on the windshield. ****Not Recomended for plexiglass or acrylic products, such as, windshields or windows on small general aviation aircraft.*** **Benefits:** • Improves driving visibility • Repels rain • Helps reduce sleet and snow from sticking • Rain-X transparent polymer coating causes rain to "bead up" and roll off glass surfaces

P/N 09-42500 ..... **$4.95**

RAIN AWAY

A protective treatment which leaves a clear, smooth, non-stick surface. Visibility is improved by repelling rain, bugs, frost and road film. Raindrops bead up and are blown away while flying.

P/N 09-01279 ..... **$5.95**

RAINCOAT ADVANCED WATER REPELLENT COATING

Easy to apply and long lasting, Raincoat® has a special wax blend that is suspended in a mixture of alcohol and water which is safe for all plastics. These waxes are hydrophobic, that is, they 'hate' water. They repel water by beading up the drops. Because those beads of water have less contact with your plastic optics, the larger ones run off with gravity or the wind. The remaining water will appear as smaller and more rounded droplets rather than a smear that distorts your vision. By repelling the water, the trapped dirt and salts stay off your lenses or shields. So you will not need to clean them as often. Aso, it has been reported that ice and snow find it difficult to stick to plastic surfaces coated with Raincoat® Advanced Water Repellent Coating..

P/N 09-03427 ..... **$14.85**

ALL-SPRAY DETAILERS

The All-Spray Detailer packages All- Spray cleaner and a disposable Microfiber Towel into a portable Wet/ Dry combo pack. This on-the-go Detailer is designed for a quick, single-time aircraft window cleaning application. Stow these window detailers in the back of the aircraft or in the glove box. The Detailer measure 3.25" x 4.5" when folded in half. A package of 10 makes a great gift.

P/N 09-02375 .....**$3.95**

ALL-SPRAY CLEANING AND DETAILING GA AIRCRAFT WINDOWS

Detailer's All-Spray is an aviation grade, anti-static detailing spray that will quickly restore a brilliant luster to acrylic surfaces. All-spray is ideal for cleaning aircraft windows, instrument panels, landing light and navigational lenses. It is also great for cleaning clear plastic boat windows, convertible windows, helmet shields, motorcycle windscreens, CD's, aquariums, skylights, displays, and other Plexiglas, Lexan, Acrylite and Lucite plastic surfaces.

8 o.z. ..... P/N 09-02383.....**$8.75**
32 o.z. ..... P/N 09-02379.....**$27.95**

ALL-SPRAY AIRCRAFT WINDOW CLEANING AND DETAILING KIT

This kit packages All-Spray Window Cleaner, Disposable Microfiber Towels, on-the-go All-Spray Detailers and a small polishing cloth all in one. All-Spray is a premium, aviation grade, cleaning spray that will give windows a residue-free, smooth polished appearance. After using this anti-static product, there will be no micro particles of dirt and dust left on the window to reflect the light, thus making the window easier to see through; the window will feel smooth and waxed to the touch. All-Spray is ammonia-free.

The small kit includes: 1 - All-Spray (Qty: 8 fl. oz.), 10 - Microfiber Towels (16" x 17"), 3 - All-Spray Detailers, 1 - Small Polishing Cloth
P/N 09-02378.....**$28.95**

The large kit includes: 1 - All-Spray (Qty: 32 fl. oz.), 50 - Microfiber Towels (16" x 17", 15 - All-Spray Detailers, 1 - Large Polishing Cloth
P/N 09-02382.....**$123.95**

EZCLEAR INSTRUMENT PANEL CLEAN KIT

This product meets Garmin G1000 Pilot Guide specs for cleaning and is safe to use on glass panels. EZCLEAR Instrument Cleaning provides a safe, effective way to remove fingerprints and dust from glass panels, instruments and more. The kit contains three EZCLEAR Cleaning Packs and one Polishing Cloth; these items have been specifically paired together to ensure safe and effective screen cleaning. Per the instructions, the user wipes the surface with the Cleaning Pack and then dries the area with the Polishing Cloth. The Cleaning Packs are ammonia free, aviation-grade and will not remove or damage any anti-reflective coating. The Polishing Cloth is washable. This kit will last between 3-4 months depending upon frequency of use.

P/N 09-02394.....**$14.85**

DISPOSABLE MICROFIBER TOWELS

These disposable Microfiber Towels are a generous 16 x 17 inch size and are made of the highest quality, aviation-grade Microfiber. Use these scratch-free/lint-free towels with All-Spray (PN: 09-02379) to leave your aircraft windows clean, smooth and brilliant.

10 Pack
P/N 09-02384.....**$7.45**
50 Pack
P/N 09-02376.....**$28.50**

AIRCRAFT MICROFIBER POLISHING CLOTH

This Polishing Cloth is an aviation grade, re-usable microfiber cloth designed to remove any residue, dust or fingerprints from aircraft windows. Can also be used to go over painted surfaces and helps restore a brilliant shine. The smaller cloth can be used on avionics and helps remove dust and fingerprints.

Large Cloth: 22" x 25"
Small Cloth: 7.5" x 7.5"

Large Polishing Colth (22 X 25 inches) ..... P/N 09-02380.....**$8.95**
Small Polishing Cloth (7.5 X 7.5 inches) ..... P/N 09-02377.....**$6.75**

RID ODOR SPORT

Rid Odor Sport is a product that nearly every owner of a Single Engine/Multi Engine both pressurized and non-pressurized need! Why? Because there are two things that nearly ever aircraft owner fights, whether they hanger their aircraft or tied down. Moisture and Bacteria are the two major reasons why cabin spaces have terrific problems with "Odors".

Rid Odor Sport is chemically engineered and designed to be attracted to ALL Malodor molecules and the reasons for them being there. Everything that is organic is surrounded by atoms. All atoms have one thing singularly in common and that is that they are oriented with a positive (+) charged molecules. Rid Odor Sport is designed so that the each molecule inside our formula is constructed with a negative (-) charged molecule. When Rid Odor Sport is pump sprayed into the vicinity of all of the" Malodor Molecules (+) ", the Rid Odor Sport Molecules (-) are attracted and drawn in by Malodor molecules. Once they collide, the Sports molecule bonds to the malodor and destroys the malodor molecule. Unlike other products that just mask over the odor, Rid Odor destroys the malodor and leaves the inside of the cabin smelling like new !

2 oz. Pump Spray.....P/N 09-02609 .....**$7.95**
8 oz. Trigger Spray.....P/N 09-02610 .....**$12.75**

AEROKROIL PENETRATING OIL

Corrosion, compression, chemical reactions, thermal variations, and electrical interrelationships are the primary factors which contribute in varying degrees to frozen metal parts. For example, in some instances, loosening a frozen metal part requires that the molecular bond of oxidation be broken at the first molecular level. This requires that a chemical bond be broken in an often-inaccessible location that literally exists in infinitely small spaces.

Based on a unique proprietary formula and manufacturing process, Kano created a molecule which had an inherent means of expedient self propulsion which would penetrate into spaces which are immeasurably small.

In the lab, it was nicknamed Creeping Oil, Kreeping Oil, and finally Kroil. To these penetrating properties were added the ability to disrupt the existing corrosive bond while remaining chemically neutral to the base metal. Since not all frozen parts are caused by corrosion, additional research has provided for the inclusion of other molecular properties assuring that the final molecular architecture would also be capable of loosening frozen metal parts when other factors such as compression were more responsible for the problem. The result is Kroil, the world's largest selling penetrating oil.

Guaranteed to penetrate, lubricate, and loosen frozen metal parts or it costs you nothing!

13 oz Aersol ..... P/N 09-02665.....**$16.95**
16.5 oz Aersol ..... P/N 09-03022.....**$19.65**

LPS PRODUCTS

LPS LOW SURFACE TENSION (LST)

A deep penetrating formulation attacks rust and corrosion to free "frozen" parts. LST has an extremely low surface tension that combines with a powerful foaming action to provide complete surface coverage, better penetration and improved moisture displacement. LST Penetrant lubricates and protects against rust and corrosion.

11 oz. aerosol can. ..... P/N 09-01916..... **$9.75**

LPS COPPER ANTI-SEIZE

Prevents seizure up to 1800°F (982°C). Lead free. Protects against seizure, heat-freeze, galling, rust and corrosion. Brushes easily. Highly adhesive on both wet and dry surfaces. Will not run, drip or settle out. Conforms to Mil-PRF-907E. Ideal for use on stainless steel and for joining dissimilar metals. Copper color

1/2 lb. can ..... P/N 09-02908..... **$14.85**

LPS MAGNUM TEFLON LUBRICANT

LPS® Magnum Teflon® Lubricant provides ultra-high lubricity, plus the additive strength of Teflon® for high-temperature, high-pressure environments. In even the most demanding situations, extend equipment life and reduce maintenance.

11 oz.. Spray Can .....P/N 09-26430 ..... **$14.75**

LPS® HEAVY-DUTY SILICONE LUBRICANT

Meets FDA regulation for incidental food contact. Silicone-rich formula. Water-based formula. Colorless, odorless & non staining. Ideal for rubber and plastic surfaces. Eliminates sticking, binding and squeaking. Does not contain chlorinated solvents. Safe on most surfaces NSF® H1 registered. 13oz. (368g) – aerosol.....P/N 09-26410 .....**$11.95**

LPS® COLD GALVANIZE CORROSION INHIBITOR

* Zinc purity greater than 99% * Works like a hot-dip on ferrous metals indoors and outdoors * Withstands water temperature up to 212°F (100°C) and continuous dry heat up to 750°F (400°C) * Commonly used as a flash rust preventive on welded areas * Long term protection * Flexible coating will not yellow, chalk, crack or peel * Electrochemically protects bare metal * Dries to touch in 3 to 5 minutes * 14oz. (397g) – aerosol P/N 09-26425 .....**$19.25**

LPS® INSTANT SUPER DEGREASER *

* Heavy-duty performance * Power blast spray * Non-flammable * Removes oil, greases, dirt and tar * Non-chlorinated * Fast evaporating * Non-conductive * No rinsing * No residue * NSF® C1 registration #129029: (aerosol); #129028: (bulk) * Canadian Food Inspection Agency (CFIA) approved 20 oz.....P/N 09-26415 .....**$36.00**

LPS® TKX® ALL-PURPOSE LUBRICANT

All purpose, value lubricant which displaces moisture, loosens rusted or frozen parts and protects metal against corrosion. Does not contain chlorinated solvents or silicones. Safe to use on most surfaces. High flash point of 175°F (79°C). Inverta Spray Valve allows user to spray in an upright or inverted position. NSF® H2 registration. 11oz. (312g) – aerosol.

P/N 09-00148 .....**$7.25**

LPS® HDX HEAVY-DUTY DEGREASER *

* Nonflammable * Removes oil, grease, wax, dirt, moisture, tar, brake fluid and other contaminants * Fast evaporating * Low odor * Quick penetration * No residue * Non-conductive * NSF K1 registration # 059809: (aerosol); # 059810: (bulk)

19oz. (539g) – aerosol.....P/N 09-26407 .....**$10.75**

1gal. (3.78l) .....P/N 09-26408 .....**$69.25**

**** ATTENTION:** Volatile Organic Compounds (VOCs) Government Regulations: Product cannot be purchased, sold or used in the states listed below.*
CA, CT, DC, DE, IL, IN, ME, MD, MA, MI, NH, NJ, NY, OH, PA, RI, VA

LPS 1® PREMIUM LUBRICANT

Provides a dry, thin lubricating film. Resists oil, dust and dirt build-up. Fast acting penetration. Displaces moisture Loosens rusted or frozen parts. Provides a short term, light corrosion resistant barrier. Nonconductive Ideal for delicate mechanisms. Used worldwide in aviation. Safe on paint and most plastics. Inverta Spray Valve allows user to spray in an upright or inverted position NSF® H2 registered .

11oz. (312g) – aerosol ..... P/N 09-25900..... **$13.75**

1 gal. (3.78 l) ..... P/N 09-26000..... **$49.00**

LPS 2® HEAVY-DUTY LUBRICANT

Strong, multi-purpose lubricant and penetrant with added corrosionprotection. Provides a nondrying, light, oily film for use on indoor/outdoor equipment. Reduces wear caused by friction and corrosion. Displaces moisture Loosens rusted or frozen parts. Provides up to one year of protection. Nonconductive Safe on paint and most plastics. Inverta Spray Valve allows user to spray in an upright or inverted position. NSF® H2 registered

11oz. (312g) – aerosol ..... P/N 09-26100..... **$11.95**

1 gal. (3.78 l) ..... P/N 09-26200..... **$48.50**

LPS 3® PREMIER RUST INHIBITOR

* Forms a transparent, soft, waxy film for protection & lubrication * Inhibits rust & corrosion, protects steel parts indoors for up to two years * Penetrates to displace moisture * Does not contain chlorinated solvents or silicone * Nonconductive * Safe on most surfaces * Stops rust and corrosion * Provides non-sling lubrication * Provides anti-seize coating * Safe to use on rubber, fabric, plastics and paints * Inverta Spray Valve allows user to spray in an upright or inverted position * NSF® H2 registered #129027: (aerosol); #059849 (bulk)

11oz. (312g) – aerosol ..... P/N 09-26300..... **$14.95**

20fl. oz. (591ml) – trigger ..... P/N 09-01223..... **$22.75**

1 gal. (3.78 l) ..... P/N 09-26400..... **$72.85**

LPS® QB PRECISION DUSTER *

Patented formula – Patented US #6,342,471. Electrical contact cleaner. Cleans electrical parts without harming plastics. * Non-flammable * Plastic safe * Non-conductive * No residue * Replaces HCFC 141b contact cleaners * Fast evaporating * Conforms to CARB VOC requirements. 10 oz. spray can.

P/N 09-26210 ..... **$26.50**

LPS® PRESOLVE® ORANGE DEGREASER *

* High performance industrial cleaner that cleans on contact * Ideal for removing grease, tar, oil & adhesives * Fast acting, deep penetration * Natural based * Does not contain chlorinated solvents * Flash point above 100°F (38°C) * Non-conductive * Low residue * Safe on all metals and most plastics * Inverta Spray Valve allows user to spray in an upright or inverted position * NSF® C1 registered #129025: (aerosol); #059830: (bulk)

15oz. (425g) – aerosol.....P/N 09-00311 .....**$15.75**

1gal. (3.78l) .....P/N 09-00312 .....**$91.75**

5gal. (18.93l) .....P/N 09-00313 .....**$388.00**

LPS® ZEROTRI® HEAVY-DUTY DEGREASER *

* Penetrating action instantly removes oil, grease, wax, dirt, moisture, tar and other contaminants * Removes conformal coatings * No ozone depleting chemicals * Fast evaporating * Safe to use on most surfaces * Does not contain chlorinated solvents * No rinsing, no residue * Inverta Spray Valve allows user to spray in an upright or inverted position * NSF® C1 registered #059845: (aerosol); #059846: (bulk) * Canadian Food Inspection Agency (CFIA) approved

15 oz. spray.....P/N 09-26470 .....**$21.75**

LPS® LVC CONTACT CLEANER

Reduced VOCs (Volatile Organic Compounds). Conforms to CARB (California Air Resources Board) requirements for. VOC emissions. Fast evaporating. Ideal for electronic and fine parts. Cleans and degreases delicate precision mechanisms. Safe on plastics. Penetrating action removes oil, grease, dirt, flux and other contaminants. Does not contain chlorinated solvents. No residue

P/N 09-02045..... **$18.75**

LPS® U-10 BRAKE CLEANER

* Low VOC (Volatile Organic * Compounds) content * Complies with CARB/OTC (California Air Resources * Board/Ozone Transport Commission) Rules * Instantly removes brake fluid, dust, grease and oil * Improves brake performance * Helps stop disc brake squeal * Powerful jet spray and high solvency * Can be applied without disassembling the brake unit * No ozone depleting chemicals * Fast evaporating * Does not contain toluene * Does not contain chlorinated solvents * No rinsing or no residue * 14oz. (397g) – aerosol P/N 09-02119..... **$11.75**

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LPS PRODUCTS

LPS STRONG STEEL STICKS

Easy-to-use, hand-kneadable stick for immediate repairs to steel equipment and surfaces. Ideal for stopping leaks, even works on underwater applications. Permanently fills gaps and holes in metal, concrete, wood, fiberglass, and ceramics. Has a working time of 4 minutes, and will fully cure in 30 minutes to form a durable mass which can be machined, drilled, and painted. Can be used for many types of repairs, such as plumbing, electrical, ceramic, vehicle, equipment, and machinery. It is ideal for patching holes and cracks in pipes, drums, and tanks.4 oz. stick ..... P/N 09-26444 ..... **$12.75**

LPS ELECTRO 140 CONTACT CLEANER

LPS Electro 140 Contact Cleaner is the high flash point, fast penetrating, non-residue cleaner alternative to CFCs for fine parts. The Electro 140 Contact Cleaner flash point is above 140°, making it safer to use in areas where flammability may be a concern. It is free of any known stratospheric ozone depleting substances - like CFCs, HCFCs, and 1,1,1 trichloroethane. Electro 140 has a low odor & is effective for flux removal and immersion cleaning.

11 oz.. Spray Can..... P/N 09-26465..... **$15.75**

Warning: Due to VOC Regulations CA, OR, WA, CO states laws prohibit use, sell, or purchase of this product as of 01/2008.

LPS NO FLASH ELECTRO CONTACT CLEANER

LPS NoFlash is a vaporous solvent cleaner alternative to CFC's that's safe to use on most surfaces. It's nonconductive and nonflammable, so it can be used while equipment is in operation to avoid costly downtime. NoFlash Electro Contact Cleaner penetrates and evaporates quickly, dislodging oil, grease, dirt and other materials from precision mechanical and delicate electrical/ electronic parts leaving no residue. P/N 09-26412 ..... **$32.75**

LPS MICRO-X CONTACT CLEANER

Quick penetration. Does not contain any chlorinated solvents. No residue. No rinsing. Fast drying. Safe on metal and plastics. Inverta Spray Valve lets you spray in upright or inverted position. Value Performance.

P/N 09-00151 ..... **$14.75**

Warning: Due to VOC Regulations CA, OR, WA, CO states laws prohibit use, sell, or purchase of this product as of 01/2008. Replacement P/N for these states is # 09-02045*

On previous page.

LPS ELECTRA-X CONTACT CLEANER

A non-flammable contact cleaner that removes oil, grease, dirt and other foreign materials from precision mechanical and delicate electrical/electonic parts. Fast evaporating. No flash point. No rinsing.

15 oz.. Aerosol..... P/N 09-00153 ..... **$21.75**

LPS SA-X X-TREME DEGREASER

LPS SA-X X-treme Degreaser is ideal for removing grease, oil, tar, and dirt. LPS SA-X is water based and has a super powerful formula for cleaning machinery, equipment, parts, floors, and many other surface. SA-X can be diluted with water and it requires less product than traditional water-based cleaners in many applications.

LPS SA-X X-treme Degreaser is available in a ready-to-use 28 fl.oz. trigger sprayer and bulk concentrate in a 1 gallon container, 5 gallon pail, and a 55 gallon drum.

Features: Water-based, High Alkalinity - pH: 12.0 - 13.0, Super aggressive formula Non-flammable, Removes greases, oil, tar, and dirt, Economical: can be diluted with water Efficient: requires less product than traditional water-based cleaners to get the job done Rinses clean with no residue Safe on most metals, Trigger spray bottle is ready-to-use, Value Performance

Specifications: Appearance: Red, Odor: Cherry Specific Gravity: 1.00-1.03 pH: 12.0-13.0 Boiling Point: >200 F Volatiles: >80%

12 oz..... P/N 09-02605 ..... **$7.75**
Gallon ..... P/N 09-02606 ..... **$18.85**
5 Gallon ..... P/N 09-02607 ..... **$79.50**
55 Gallon ..... P/N 09-02608 ..... **$584.00**

LPS MICRO-X NU FAST EVAPORATING CONTACT CLEANER

Reduced VOCs (Volatile Organic Compounds)

Conforms to the VOC regulations of CARB (California Air Resources Board), OTC (Ozone Transport Commission) and LADCO (Lake Michigan Air Directors Consortium) Quick penetration. Safe on plastics. No residue. Ideal for electronic and fine parts. Does not contain any chlorinated solvents. Removes dirt, dust, flux and other contaminants. NSF Nonfood Compounds Program Listed Category Code: K2 Registration # 142149. Inverta Spray Valve lets you spray in an upright or inverted position.

Applications: Circuit Breakers , Connectors , Contacts Controls Fluid Systems Generators , Instrumentation , Keyboards , Magnetic Tape Heads , Motors Office Equipment, Printed Circuits , Relays ,Semiconductor Assemblies Sensors , Switch Gears , Switches , Telecommunication Equipment , Telephone Equipment, Terminals , TV Tuners

Specifications: Size: 11oz, Surface Tension: 17.3 dynes/cm @77 F KB Value: 24, Specific Gravity: 0.64 - 0.66 @ 77 F Flash Point: 0 degree F, VOC Content: 74%, 48l g/L, 4.0l lb (aerosol) Propellant: HFC 134a Nonvoltiles: 50 ppm maximum P/N 09-02563 ..... **$14.95**

LPS G-49 ORANGE DEGREASER LOW VOC'S

Reduced VOCs. Instant cleaning action, no residue. Excellent for removing grease, grime, oil, and adhesives. High solvent strength. Moderate evaporation. Excellent alternative to Methyl Ethyl Ketone (MEK). Ideal for cleaning equipment. Not a Hazardous Air Pollutant (HAP). No ozone depleting chemicals (ODC). NSF® registered category code C1, registration #142147. Inverta Spray Valve

P/N 09-02372 ..... **$16.75**

LPS PROCYON CORROSION INHIBITOR

Hard film rust & corrosion protectant. Multi-year protection of metal surfaces. Resists dirt buildup, dripping & puddling during application. Penetrating, water-displacing formula. Excellent to use in high risk area. Inspectable, removable film. Resists water, acids, alkalis, salt spray, corrosive, elements.1 Gal

P/N 09-00150 ..... **$136.95**

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CRC AVIATION MAINTENANCE PRODUCTS

CRC 3-36® MULTI PURPOSE LUBRICANT

FLAMMABLE

A corrosion inhibitor which helps prevent electrical and electronic malfunctions caused by water penetration, humidity, condensation, or corrosion. Displaces moisture and inhibits corrosion. •Appearance-Amber Liquid • Odor-Petroleum Distillate • Base Type-Petroleum • Flashpoint-144°F • Flammability-Flammable

11 oz. .....P/N 09-39600 ..... **$8.95**

CRC ULTRA-LITE LUBE

Ultra-thin, non-staining lubricant that resists oil, dirt and dust build-up. Seals out moisture and prevents corrosion with protective film. Excellent for drying out electrical/electronic components. • Appearance-Amber Liquid • Odor-Petroleum • Base Type-Petroleum Solvent • Flashpoint-172°F • Flammability-Flammable • Specific Gravity-0.8034 • Plastic Safe-No • Film Type-Ultra Thin and Dry • Film Thickness-0.05 Mils • Working Temp-40 to 300°F 11 oz.....P/N 09-39602 ..... **$8.95**

CRC POWER LUBE®

POWER LUBE is a high performance, multi-purpose lubricant that utilizes PTFE and extreme pressure additives to provide unparalled lubricating performance. It has twice the load carrying capacity of most general purpose lubricants. • Appearance-Light Amber Liquid w/white pecipitate • Odor-Wintergreen • Base Type-Petroleum Solvent • Flashpoint-<20°F • Flammability-Extremely Flammable

11 oz.....P/N 09-39605 ..... **$10.50**

CRC HV SWITCHGEAR CLEANER & LUBRICANT

CRC HV Switchgear Cleaner & Lubricant is a one-step cleaner, lubricant and corrosion inhibitor for metering. It penetrates to coat contacts and provides corrosion protection on switchgear mechanisms. The Power Jet spray nozzle allows application from greater distance overhead with a Hot Line tool adapter. HV Switchgear Cleaner and Lubricant is recommended for use on metering, distribution and substation class switchgear contacts, including URD and OVH applications.

P/N 09-02611 ..... **$22.85**

CRC QUICK DRY CONTACT CLEANER

An alcohol-based precision cleaner that is 100% free of CFCs. Ideal for applications where lower flashpoint solvents may be used. It evaporates rapidly and completely and is harmless to most plastics. Applications include: •Switchgears • Circuit breakers • Telecommunication equipment • Fusible connecting devices • Motors • Generators •Relays • Terminals • Rheostats • Instrumentation •Communications equipment. Not for use on energized equipment. 16 oz.....P/N 09-39620 ..... **$16.50**

CRC PAINT & DECAL REMOVER

A solvent-based, high strength cleaner that effectively loosens and helps remove paint., adhesives and sealants. It helps protect equipment surfaces by eliminating damage caused by excessive scraping. Applications include: •Dissolves and aids removal of paints, lacquers, adhesives and varnish • Removes graffiti from metal and stone •Removes conventional and formed-in-place gaskets on motors, pumps & flanges. Not for use on energized equipment.16 oz.....P/N 09-39622 ... **$10.95**

CRC SPRAY ADHESIVE

A general purpose quick tack adhesive especially formulated to bond to many foils, plastics, papers, foams, metals, cardboards and cloths. P/N 09-02431 ..... **$15.65**

CRC GREEN FORCE MULTI-PURPOSE CLEANER

Formulated to meet strict environmental requirements without sacrificing performance. It is a safe and versatile product for all of your cleaning needs. .....P/N 09-02419 ..... **$33.85**

CRC GREEN FORCE HEAVY DUTY CLEANER

An environmentally preferable alternative to conventional water based solvent cleaners and degreasers. It quickly removes petroleum based soils such as grease, grime, and oil found in manufacturing environments. P/N 09-02420 ..... **$43.50**

CRC GREEN FORCE GLASS & SURFACE CLEANER

Ideally suited to clean soiled glass and other hard surfaces. It effectively cuts greasy films and soils, leaving surfaces sparkling clean. 32 oz.....P/N 09-02421 ..... **$10.50**

Gallon .....P/N 09-02422 ..... **$32.50**

CRC AVIATION WINDOW CLEANER

A modern blend of detergents and corrosion inhibitors designed to safely clean aircraft glass, plexiglass and other surfaces (pH 10.6±0.5). Applications include: • Windows • Interior surfaces • Galley areas • Overhead compartments. Not for use on energized equipment. 16 oz .....P/N 09-39630 ..... **$4.25**

AVIATION DEGREASER

A halogenated solvent-based cleaner/degreaser that is chemically stable and extremely effective in heavy duty cleaning applications. Fast-acting, non-flammable, and evaporates quickly leaving no residue. Extremely effective solvent for cleaning and removing corrosion inhibiting compounds. Contains no HAPs. Removes carbon buildup. High dielectric strength of 26,800 volts. Allows for east visual inspection. Prepares metal surfaces for painting on adhesive bonding. Evaporates fast leaving no residue.

20 oz. aerosol.....P/N 09-39690 ..... **$21.75**

Attention:Volatile Organic Compounds (VOCs) Government Regulations: Product cannot be purchased, sold or used in the states listed: CA

CRC SUPER DEGREASER

A revolutionary alternative to 1,1,1 Trichloroethane and other chlorinated solvents. Cleaner and degreaser that effectively removes grease, oil, dirt and other contaminants from motors, parts and equipment. •Exhaust trails • Hinges • Antenna mounts • Static tubes •Wheel wells • Struts & tubes • Galleys • Seat tracks • Cargo doors • Cargo tracks. Not for use on energized equipment.

20 oz P/N 09-39642 ..... **$19.00**

CRC CORROSION SHIELD

A long-term corrosion inhibitor that provides extended protection for all metal parts and assemblies, both in storage and during shipment. Easily removed with solvent cleaners. • Seat and cargo tracks •Landing gear, wheel wells & keel beam • Fuselage structure • Wing to body fairing • Pins • Hinges • Wing front & rear spar • Lower fuselage interior • Wing interior structure • Horizontal stabilizer • Ground support equipment • Chains and cables • Air conditioning ducts • Lap joints • Skin panel edges • Emergency escape hatches • Bulkheads • Entry and cargo doors. Not for use on energized equipment. 20 oz. P/N 09-39655 ..... **$12.50**

CRC CORROSION SHELL

A long-term indoor and outdoor corrosion inhibitor for machined surfaces and assemblies subjected to long periods of storage or adverse conditions during shipment. Its firm, waxy film is highly resistant to humidity and salt spray and never becomes brittle. Petroleum solvents may be used to dilute the product to vary the film thickness or to remove it after application. Applications include: • Completed assemblies • Seat tracks • Chains and cables • Landing gear •Wheel wells • Faying surfaces• Air conditioning ducts • Lap joints • Skin panel edges • Fuselage • Landing gear and bilges • Emergency escape hatches • Bulkheads • Entry & cargo doors. Not for use on energized equipment.16 oz.

P/N 09-39657 ..... **$14.75**

ISOPROPYL ALCOHOL - ULTRA PURE CLEANING SOLVENT

A quick drying light-duty degreaser for use in industrial, electrical, electronic and aviation applications. Its 99% pure formula aggressively dissolves grease, dust, dirt, lint, oils and flux from most non-plastic surfaces. 12oz.....P/N 09-02423 ..... **$9.50**

CRC BATTERY CLEANER

Water-soluble formula removes corrosion quickly and economically. Neutralizes acid spills. Restores battery output and reduces voltage leakage due to contaminants. Assures maximum battery current flow and promotes longer battery life. 11 oz.

P/N 09-02424 ..... **$8.25**

CRC KNOCK'ER LOOSE PLUS PENETRATING SOLVENT

A unique penetrant that immediately drops the temperature of the area in contact with the spray. The freeze shock action cracks rusted surfaces allowing it to reach deeper & work more effectively than other penetrants. 11.5 oz.....P/N 09-02426 ..... **$8.95**

DRY GRAPHITE LUBE

Ideal where a dry lubricant is required or where petroleum products must be avoided. Resists dirt, dust and oil build-up. Wide effective temperature range up to 850°F constant. 10 oz.

P/N 09-02427 ..... **$9.95**

CRC WHITE LITHIUM GREASE

Superior lubrication and durability in any weather or temperature. Perfect for use as a break-in lubricant for bearings or as a general purpose lubricant and corrosion inhibitor for tools, machinery and equipment. 10 oz. P/N 09-02428 ..... **$10.75**

CS

LUBRICANTS

LOCTITE THREADLOCKER

Loctite Threadlocker used on a standard fastener can eliminate expensive locking devices while you increase the reliability and quality of your assembly. One drop prevents loosening. 2 removable strengths for large & small applications and permanent strength for locking parts you never want to take apart.

#222 Threadlocker (permanent, for small screws)

10 ml..... P/N 09-42605..... **$14.50** 50 ml..... P/N 09-42610 .. **$39.65**

#242 Threadlocker (removable, for large screws)

10 ml..... P/N 09-42615..... **$16.75** 50 ml..... P/N 09-42620 .. **$39.90**

#262 Threadlocker (permanent, for large screws)

10 ml..... P/N 09-42625..... **$16.75** 50 ml..... P/N 09-42630 .. **$43.25**

PARKER-O-LUBE

Excellent for use on exposed valve plungers, cylinder rods, and other o-rings. It lubricates without causing deterioration of rubber and is water resistant. Good for low pressure vacuum and pneumatic systems.

4 oz. tube..... P/N 05-00773 ..... **$8.95**

SEALUBE

Anti-seize sealer for threaded aluminum alloy parts exposed to gasoline, oil, water, air or vacuum. Good lubricating qualities. Will not harden or set. Will not freeze joints at low temperatures. Non-corrosive, insoluble in gasoline, oil or water.

1 Lb. Can ..... P/N 09-25200 ..... **$44.50**

LUBRIPLATE NO. 630AA

Multi-purpose lubricant. Forms a wearing film on working surfaces. Excellent protection against rust and corrosion. Recommended for controllable pitch props, wheel and magneto bearings, general greasing.

14 oz. Can ..... P/N 09-25400 ..... **$14.00**

6 Lb.. Can ..... P/N 09-25500 ..... **$64.75**

WD-40 PENETRANT/LUBRICANT

Displaces moisture on any metal surface, preventing rust, corrosion or oxidation of the surface. Used on switches pulleys, wheel housings, seam areas. Non-gumming, non-conductive—safe for all electrical systems. 12 oz. Spray P/N 09-00347..... **$8.50**

FAST DRYING GRAPHITE SPRAY 50605

Lubricates and protects - MCKAY Graphite Spray lubricates and leaves a fast drying graphite film on all automotive, marine and industrial parts before and after assembly. Keeps gears, valves, heads, shafts, rocker arms, engines, transmissions and all metal parts operating quietly and efficiently by reducing heat and friction. Keeps valves and valve seats carbon-free. Leaves a dark metal-like finish that adds a high quality look to all repair work. prevents rust, corrosion and shelf deterioration. Non-abrasive, non-flammable, non-corrosive, non-toxic. Harmless to Anti-freeze and coolants. 12 Oz. Spray P/N 09-25600..... **$4.15**

EZ TURN LUBRICANT (FUELUBE)

EZ Turn is a specialty lubricant/sealant used for fuel and oil line valves and is resistant to high temperatures. It is expecially effective where high octane fuels and aromatics are present. EZ Turn is also extremely efficient as a gasket paste and anti-seize agent. EZ Turn will not gum, crack or dry out. Each shipment is independently tested. Excellent for tapered plug valves, aircraft engine manufacturing, and marine applications. EZ Turn is the functional equivalent of fuel lube.

5 oz. tube..... P/N 09-00306..... **$11.85**

1 Lb. can..... P/N 09-00180..... **$22.75**

PERMATEX ANTI-SEIZE LUBRICANT

Prevents galling, seizing and corrosion of metal parts from 65°F to 2000°F. Acts as a low speed lubricant and maintains a corrosion-resistant coating at high temperatures. Makes aluminum and stainless steel joints disassemble quickly, easily. Excellent lubricant for press fit assembly. Works on industrial engine parts, boilers, outdoor motors, cables and internal combustion engines. Conforms to MIL-A-907D. Improves reliability at high temperatures. Saves time, labor. 1 oz. tube ..... P/N 09-28410..... **$4.20**

MICROLON PRECISION OILER

This oiler has the famous Microlon resin suspended in a lightweight oil to lubricate, penetrate and prevent rust. It is excellent for lubricating bearings, threaded parts, hinges, pocket knives, chains, rollers, fishing gear, chain saws, guns, garage doors..... just about anywhere that friction causes noise and resistance. Furnished in a handy pen size oiler with a pocket clip. .25 Fluid Ounces. P/N 09-00756.....**$7.95**

TRI-FLO TEFLON LUBRICANT

Penetrating lubricant with Teflon, corrosion inhibitors, moisture displacers and solvents to soften and remove dirt and corrosion. Will not cause corrosion. Use on aircraft cabin door hinges, landing gear hinges and struts. Loosens rusted bolts and other fasteners. 12oz. aerosol can P/N 09-42540..... **$15.50**

FOAMING SUPERIOR LUBRICANT

Tri-Flow is revolutionizing the way you clean, protect and lubricate all of your moving parts with the introduction of Foaming Superior Lubricant and Foaming Citrus Cleaner Degreaser. Tri-Flow's powerful foaming action clings to both horizontal and vertical surfaces to allow for deep penetration and accurate application. Tri-Flow Foaming products are ideal for use on bicycles, firearms, sporting equipment, manufacturing equipment, and more! P/N 09-02082..... **$10.85**

LIQUID WRENCH

A powerful blend of quick acting solvents to free parts frozen by rust, corrosion or paint. Harmless to metals. 11 oz. Aerosol

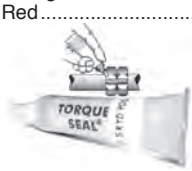
Spray..... P/N 09-25800..... **$3.65**

F-900 "TORQUE SEAL"

Inspection Lacquer is used in production on compression fittings, studs, nuts, parts, and assemblies after they are in proper torque or position. Widely used as "Anti-Sabotage Lacquer". Inspectors can visually detect any movement or tampering; Torque Seal becomes brittle and will crack. Excellent adhesion to all metals and to most other surfaces. Dries fast. Torque Seal is packaged in convenient 1/2 oz. poly squeeze tubes. Available in 6 high visibility colors.

Yellow..... P/N 09-25807 ..... **$1.95**
White ..... P/N 09-02411 ..... **$2.65**
Blue ..... P/N 09-25809 ..... **$1.95**
Green..... P/N 09-25808 ..... **$1.95**
Orange..... P/N 09-25810 ..... **$1.95**
Red..... P/N 09-02033 ..... **$1.95**

F-925 RESISTANT SEAL



F-925 "Skydrol" RESISTANT SEAL An inspection lacquer used in areas where aircraft hydraulic fluid (Skydrol) might come in contact with the seal. A fast drying material that has excellent adhesion to most substrates. It becomes hard and brittle so that visually any movement can be detected. Available in 1/2 oz. squeeze tubes. Color YELLOW and PINK

Yellow..... P/N 09-25811 ..... **$3.25**
Pink..... P/N 09-03486 ..... **$3.10**

F-1000 SENTRY SEAL

Used on compression fittings, studs, nuts, parts and assemblies after they have been set to proper tension or position. Service personnel or inspectors can quickly spot any changes or tampering with equipment. Sentry Seal has excellent adhesion to metals, including aluminum, magnesium, titanium, stainless and copper, and is non-corrosive to these metals. It is packaged in handy metal tubes. Squeeze the tube to extrude the Sentry Seal through the small hole to form a bead (narrow stripe) across the parts. The surface dries in about one minute, then it will start to polymerize and become brittle as it dries completely. Available in blue. P/N 09-28512.....**$4.80**

LOCTITE BLACK HIGH PERFORMANCE RTV SILICONE GASKET MAKER

Loctite® 598™ Black High Performance RTV Silicone Gasket Maker retains high flexibility and oil resistance for longer gasket life. Temperature range is -75°F to 625°F (-59°C to 329°C) intermittent. Low odor, non-corrosive. Resistant to most chemicals and solvents. Fills gaps to 0.25". P/N 09-03532 ..... **$26.50**

LOCTITE QUICKSTIX C5-A COPPER ANTI-SEIZE

Loctite® QuickStix™ C5-A® Copper Grade Anti-Seize Stick provides a shield against high temperature seizing and galling. All mated parts, studs, bolts, flanges and gaskets, remove more easily and in cleaner and better condition. This product can be used on copper, brass, cast iron, steel, all alloys including stainless steel, all plastics and all non-metallic gasketing materials. Protects metal parts to 1800°F. Prevents rust, corrosion, seizing; eases disassembly. Fine or coarse threads. P/N 09-03533..... **$14.25**

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BOELUBE LUBRICANTS

A Space Age Lubricant developed by The Boeing Company that fights friction at the interface of the cutting edge and theworkpiece. The reduction of friction at these surfaces minimizes heat generation and concurrent chip weld. Tools retain their cutting edge longer, leading to closer tolerances and prime chip yield. Manufactured frompersonal care ingredients, Boelube is non-toxic, non-irritating and biodegradable. Boelube is non-corrosive, non-flammable, chemically stable and free of halogens, heavy metals, sulfur, phosphorus, silicone, petroleum or paraffin wax.

BOELUBE BL70200-13 SOLIDS LUBRICANT

Drilling - Tapping - Reaming - Abrasive Belts - Files - Deburring Tools - Grinding Wheels - Chisels - Band, Circular and Hand Saw Blades.
Boelube Solids improve tool life by reducing heat build-up in belt, disc or wheel grinding operations. Apply the push-up tube to the tool before start up. Individual Boelube Blocks are ideal for grinding operations.

1.6oz Push Tube ..... 09-01731 ..... **$3.55**

BOELUBE 90 HIGH EFFICIENCY MACHINING LUBRICANT

BOELUBE® 90 is non-toxic, non-irritating, environmentally safe synthetic lubricant that is effective for machining many types of materials. BOELUBE® 90 will provide superior lubricity leading to better finish and longer tool life. BOELUBE® 90 is compatible with Aluminum, Titanium, Graphite, Composites, Honeycomb, Inconel, Kevlar, Wood, Ferrous and Non-ferrous Metals. BOELUBE® 90 is recommended for Drilling, Deburring, Broaching, Forming, Grinding, Milling, Gun Drilling, Routing, Reaming, Oil Hole Tools, Sawing, Punching and Tapping. BOELUBE® 90 is best utilized in One-Shot or Mist Applications, and is ideal for applications where Cold-Cut® or Positive-Lube units are utilized.

4oz Bottle ..... 09-01734 ..... **$7.75**
Gallon ..... 09-01733 ..... **$118.75**

BOELUBE 70104 LUBRICANT

BOELUBE® 70104 is non-toxic, non-irritating, environmentally safe synthetic lubricant manufactured from personal care ingredients that is effective for machining many types of materials. BOELUBE® 70104 will provide superior lubricity leading to better finish and longer tool life. BOELUBE® 70104 is non-corrosive, non-flammable, chemically stable, and free of Halogens, Silicone, Petroleum, Paraffin Wax, Sulfur, Phosphorus and Heavy Metals whether added or present in any of its ingredients. BOELUBE® 70104 is compatible with Aluminum, Titanium, Graphite, Composites, Honeycomb, Inconel, Kevlar, Wood, Ferrous and Nonferrous Metals. BOELUBE® 70104 is recommended for Drilling, Deburring, Broaching, Forming, Grinding, Milling, Routing, Reaming, Gun Drilling, Oil Hole Tools, Sawing, Punching and Tapping.

Handheld lubricant .....09-01732 .....**$8.50**

BOELUBE BL70307L PASTE

Boelube® Pastes provide excellent lubricity and are extremely cost effective in single point work such as Tapping, Drilling and Reaming. A small amount of Paste applied to the tool is all that is required to obtain a high quality finish and extended tool life with little or no clean-up required. Brush it on or dip tool in paste. Boelube pastes are also ideal for Forming and Bending as well as in Drop Hammer, Verson Press and Spin Forming applications. Boelube Pastes provide closer tolerance parts and extended diaphragm and die life. We furnish 70307 meduim (blue) paste. 4oz Jar ..... 09-01735.....**$6.95**

JAD HANGAR / FLIGHT LINE CLEANER

JAD Hangar Deck & Flight Line Cleaner (MA-117) is a concentrated liquid compound especially formulated for use in cleaning aircraft carrier flight deck, flight line areas, and hangar floors. Formulated to be used manually or dispensed through automatic scrubbing machines. Creates less of a hazardous - slippery surface as with most hangar floor cleaners. The low foam characteristic makes it a desirable flight deck and flight line cleaning compound.

Normally diluted 1 part cleaner to 1 part water for the first heavy duty scrubbing on heavily soiled surfaces. Dilutes 1 part cleaner to 19 parts water for normal flight deck and flight line cleaning. Specifications: Non-Flammable, Non ODS, Biodegradable, Non-Photochemically Reactive.

5 Gallon ..... P/N 09-03465 ..... **$150.95**
55 Gallon ..... P/N 09-03472 ..... **$772.00**

JAD EQUIPMENT CLEANER & DEGREASER

JAD Equipment Cleaner & Degreaser (MA-404) is a biodegradable, true water-based cleaner, approved for total equipment wash. It comes ready to use and is extremely effective in removing greases, oils, hydraulic fluids and soils from flaps, wheels, wheel wells, and hard to degrease areas. Also excellent for cleaning racks and related components to remove carbon, grease and oil. Special ingredients are designed to clean the new Non-Specular paint system or the Semi-Gloss system. Non-Flammable, Low pH, Non-Carcinogenic, and Ozone Safe.

24 oz. Spray ..... P/N 09-03464 ..... **$16.75**
5 Gallon ..... P/N 09-03463 ..... **$209.95**
55 Gallon ..... P/N 09-03471 ..... **$1,788.00**

JAD ALL PURPOSE CLEANER

JAD All Purpose Cleaner (MA-102) has the ability to remove heavy soils, grease oil, and carbon on Aircraft related surface and will not leave residue. It has been shown to remove fungus growth in hard to reach areas by Spray on Wipe-Off eliminating alcohol (ex. interior walls on aircraft) and rinses easily. Special ingredients are designed to clean the new non specular paint system or the semi-gloss system. Concentrate: Must add water.

Specifications: Biodegradable: Yes, Poly X Wiring: Safe, PH: Below 10.0, Stability: Stable in hard or soft, hot or cold water, Odor: Low-Pleasant, lemon scent, Phosphates: None, Rinsibility: Superior-Streak Free, Cleaning Ability: Excellent.

24 oz. Spray ..... P/N 09-03457 ..... **$14.95**
5 Gallon ..... P/N 09-03456 ..... **$120.95**
55 Gallon ..... P/N 09-03466 ..... **$698.00**

JAD ALL PURPOSE PERFORMANCE CLEANER

JAD All Purpose Performance Cleaner (MA-102PRF) has the ability to remove heavy soils, grease oil, and carbon on Aircraft related surface and will not leave residue. It has been shown to remove fungus growth in hard to reach areas by Spray on Wipe-Off eliminating alcohol (ex. interior walls on aircraft) and rinses easily. Special ingredients are designed to clean the new non specular paint system or the semi-gloss system. Ready-to-use. Specifications: Biodegradable: Yes, Poly X Wiring: Safe

PH: Below 10.0, Stability: Stable in hard or soft, hot or cold water, Odor: Low-Pleasant, lemon scent, Phosphates: None, Rinsibility: Superior-Streak Free, Cleaning Ability: Excellent.

24 oz. Spray ..... P/N 09-03459 ..... **$19.75**
5 Gallon ..... P/N 09-03458 ..... **$209.95**
55 Gallon ..... P/N 09-03467 ..... **$1,772.00**

MATERIAL REQUIREMENTS FOR ULTRALIGHT AIRCRAFT

USING UNCERTIFIED LIGHT FABRIC

USING POLY-FIBER UNCERTIFIED LIGHT FABRIC

25yds..... Uncertified Light Fabric
5 ..... Gal. Poly-Brush
6 ..... Gal. Poly-Spray
2 ..... Qts. Poly-Tak
5 ..... Gal. Reducer
3 ..... Rolls 2” Pinked Tape
1 ..... Roll 3” Pinked Tape
6..... Gal. Poly-Tone
100..... Drain Grommets
15..... Inspection Rings

ESTIMATED MATERIAL REQUIREMENTS FOR COVERING FABRIC AIRCRAFT

(Average aircraft the size of Piper J-3, PA-11, PA-25, Aeronca, Taylorcraft)

USING POLY-FIBER MED-1 FABRIC

45 ...Yards Med-1 Fabric
10 ...Gal. Poly-Brush
11 ...Gal. Poly-Spray
1....Gal. Poly-Tak
4 ...Gal. Reducer
1 ...Roll 1” Pinked Tape
7 ...Rolls 2” Pinked Tape
2 ...Rolls 3” Pinked Tape
1 ...Roll 4” Pinked Tape
1 ...Roll 3” Bias Tape
1 ...Roll 4” Bias Tape
1 ...Roll Std. Rib Cord
2....Rolls 1/2” Reinf. Tape
10 ...Gal. Poly-Tone
30....Inspection Rings
100....Drain Grommets

USING CECONITE 102 FABRIC

45 ..Yards Ceconite 102
5 ..Gal. Non-Tautening Nitrate Dope
10 ..Gal. Non-Tautening Butyrate Dope
7 ..Rolls 2” Ceconite Tape
1 ..Ceconite Rib Lacing Cord
1 ..Ceconite machine Thread
10 ..Gal. Colored Butyrate Dope
2 ..Rolls 1/2” Reinforcing Tape
1 ..Gal. New Seam Fabric Cement
5 ...Gal. Nitrate thinner
24 ..Inspection Rings
100 ..Drain Grommets
30 ..Gal. Butyrate Dope Thinner
100 ...Drain Grommets
10 ...Gal. Silver Butyrate Dope

LOGO DECALS

AUTHENTIC AIRCRAFT LOGO DECALS

Our full line of authentic aircraft logos are produced on state-of-the-art long lasting UV coated pressure sensitive adhesive vinyl. They are precision cut by a specially programmed computer and have no clear background. Other brands of decals can be produced cheaply but the clear background tends to yellow, rendering unsightly over time. With our custom cut decals, only the letters themselves go on the aircraft giving the lettering a truly professional look which will last as long as the aircraft paint. Please order by part number shown. Many other logos and styles are available, as well as other colors. Call for quotation or send $2.00 for our complete logo and decal catalog. For quote on custom logo decals, send sketch and details.

FOR OTHER LOGOS AVAILABLE. Send $$2.90 FOR COMPLETE LOGO AND DECAL CATALOG P/N 09-43736

AERONCA

5.75"h x 13.25"w
Black....09-43502 ..... **$9.95**
White ...09-43504 ..... **$8.95**

DECATHLON

1-5/8"h x 10-3/4"w
Black ...09-43506 ... **$11.95**
White ...09-43508 ... **$11.95**

BELLANCA

Black, Gold, White
6"h x 8.75"w
09-43509 ..... **$36.90 pr.**

Citabria

2"h x 9-1/2"w
Black..... 09-43516
White 09-43518
$14.95 ea

Cessna

Black..... 09-43519
White 09-43522
Red..... 09-43524
Blue 09-43526
6"h x 10.5"w **$19.90 /pr**

140 Cessna

Black..... 09-43528
White 09-43529
Red..... 09-43532
Blue 09-43534
6"h x 10.5"w **$21.50 pr**

cessna

Black..... 09-43536
White 09-43538
2"h x 10.5"w **$12.95 ea**

CESSNA

Black..... 09-43540
White 09-43542
Gold..... 09-43544
2"h x 8.25"w **$12.95 ea.**

Cardinal

Black..... 09-43546
White 09-43548
4-1/4"h x 10"w **$12.95 ea.**

SKYLANE

Black..... 09-43550
White 09-43552
1.75"h x 10"w **$12.95 ea.**

SKYLANE

Black..... 09-43554
White 09-43556
2.25"h x 8.5"w **$12.95 ea**

SKYWAGON 180

Black..... 09-43558
Silver..... 09-43560
1.25"h x 14.5"w **$13.95 ea**

CENTURION

Black..... 09-43562
White 09-43564
1.5"h x 15.5"w **$12.95 ea**

Gold..... 09-43566
6.25" Diameter **$27.90 pr**

Turbo CENTURION II

2.937"hx18.75"w
Black..... 09-43568
White 09-43570
$13.95 ea

SKYHAWK

Black..... 09-43572
White 09-43574
1.5"h x 13"w **$13.95 ea**

Skyhawk

Black..... 09-43576
White 09-43578
4.5"h x 9.5"w **$12.95 ea**

17.5"hx8.875"w
Gold Bkgrnd, Black Border
P/N 09-43580 ....**$37.90 pr.**

Skymaster

Black..... 09-43582
White 09-43584
5"h x 8.75"w **$13.95 ea.**

Mooney

Black..... 09-43586
White 09-43588
1.75"h x 8"w **$10.95 ea.**

Small Black..... 09-43587
Small White 09-43589
4"h x 10"w **$22.75pr.**

Large Black 09-43591
Large White 09-43593
7.75"h x 19"w **$35.90 pr.**

Full Color 09-43598
8.5"h x 7.75"w **$9.95 ea**

Full Color
09-43500 ..... **$9.95 ea**
1-Color
09-43602 ..... **$8.95 ea**
2-1/2"h x 5-1/4"w

PIPER

Black..... 09-43604
White 09-43606
2"h x 8.75"w **$10.95 ea**

Piper

Black..... 09-43608
White 09-43609
2.5"h x 11.25"w **$12.95 ea**

CHEROKEE 140

Black..... 09-43612
1.5"h x 11-3/8"w **$13.95 ea**

CHEROKEE 180 D

Black/Silver..... 09-43616
White 09-43618
1.5"h x 12.5"w **$13.95 ea**

Archer II

Black..... 09-43619
White 09-43622
2.75"h x 10"w **$12.95 ea**

Warrior II

Black..... 09-43624
White 09-43626
3"h x 11"w **$13.95 ea**

Arrow

Black..... 09-43628
White 09-43629
2.75"h x 6-1/8"w **$12.95 ea**

CHEROKEE SIX E

Black..... 09-43632
Silver..... 09-43634
1.5"h x 13"w **$12.95 ea**

Comanche C

Black..... 09-43636
White 09-43638
1.25"h x 12.75"w **$13.95 ea**

SENECA

Red&Black w/Silver Bkgrnd
09-43640
2-1/8" x 61/2" **$14.25 ea**

Super Cub

Black..... 09-43642
White 09-43644
1.5"h x 7.75"w **$14.95 ea**

Beechcraft

Black
09-43646 ..... **$13.95 ea**
White
09-43648 ..... **$13.95 ea**
Gold
09-43650 ..... **$18.95 ea**
4-1/8"h x 13-1/2"w

Baron

Black..... 09-43652
White 09-43654
3"h x 7"w **$14.95 ea**

Bonanza

Black..... 09-43656
White 09-43658
3"h x 9"w **$11.95 ea**

Black..... 09-43660
White 09-43662
2.5"h x 8.5"w **$15.95 ea**

Luscombe

Blue on Silver 09-43664
2.5"h x 7"w **$13.95 ea**

MAULE

Black..... 09-43666
White 09-43668
2-7/8"h x 17"w **$13.95 ea**

TURBO

Black..... 09-43670
White 09-43672
2.5"h x 17-3/8"w **$11.95 ea**

TURBO CHARGED

Black..... 09-43674
White 09-43676
1"h x 10-7/8"w **$9.95 ea**

Pitts

Black..... 09-43678
White 09-43680
4"h x 12"w **$12.95 ea**

SPECIAL

Black..... 09-43682
White 09-43684
1"h x 5"w **$8.95 ea**

TAYLORCRAFT

Black..... 09-43686
White 09-43688
2.5"h x 18-5/8"w **$8.95 ea.**

Glasair III

Black..... 09-43690
White 09-43692
2.25"h x 17"w **$14.95 ea**

Glasair

Black..... 09-43694
White 09-43696
2.75"h x 15.75"w **$13.95 ea**

LANCAIR

Black..... 09-43698
White 09-43700
2.5"hx 8.75" **$17.95 ea**

PULSAR

Black..... 09-43702
White 09-43704
3"h x 14.5"w **$13.95 ea**

RANS

Black..... 09-43706
White 09-43708
2"h x 9.5"w **$12.95 ea**

FAIRCHILD

Black..... 09-43709
White 09-43712
3.25"h x 8.75"w **$14.95 ea**

Stearman

Black 09-43718
White 09-43719
4"h x 19"w **$9.95 ea**

Swift

Black..... 09-43722
White 09-43724
Gold outline on both.
3"h x 5.5"w **$15.95 ea**

WACO CLASSIC

09-43728
(Black, Red, Gold)
2-3/8"hx14.25"w **$13.95 ea**

Small: 4"H x 8"W
Left..... 09-43732-1.. **$14.75**
Right .. 09-43732-2.. **$14.95**

Large: 6"H x 12"W
Left..... 09-43734..... **$17.95**
Right .. 09-01955..... **$17.95**

CS

LOGO DECALS

3" ..... 09-43740 ..... **$4.95 ea**
4.5" ..... 09-43741 ..... **$6.95 ea**
Not available in lefts and rights only available as shown.

Full Color 09-43748
2"h x 6.75"w **$7.95 ea**

Black & Silver 09-43751
1.25"h x 8-3/8"w **$13.00 ea**

Black 09-43752
4-7/8"h x 12-7/8"w **$15.95 ea**

09-43755(White) ..... **$18.00 ea.**

Black 09-43756
White 09-43757
3.5"hx16-5/8"w **$23.95 ea**

Black 09-43758
White 09-43759
5/8"h x 8.25"w **$9.95 ea**

Black 09-43742
White 09-43743
1"h x 4.25"w **$8.95 ea**

Black 09-43744
White 09-43745
5"h x 12"w **$13.95 ea**

Full Color-screened 09-43764
8.25"h x 9"w **$19.95 ea**

Black, Grey, White, Red . 09-02103
6"h x 1.5"w ..... **$4.50 ea**

Black 09-43746
2.25"h x 6.75"w **$12.95 ea**

Black 09-43780
White 09-43781
9.25"h x 23.5"w **$18.95 ea**

Black 09-43782
3.25"h x 3.25"w **$12.95 ea**

Left, Black 09-43784
Right, Black 09-43785
5.25"h x 5-3/8"w **$10.95 ea**

Black 09-43788
8"h x 16"w **$23.95 ea**

White 09-43791
2-1/8"h x 8.25"w **$10.95 ea**

Black 09-43792
9-7/8"h x 46.75"w **$33.95 ea**

Black 09-43796
White 09-43797
3-3/8"h x 11.5"w **$17.95 ea**

Black & Silver 09-43798
2.5"h x 12"w **$21.95 ea**

B lack 09-43800
White 09-43801
1"h x 9-1/8"w **$8.95 ea**

Black 09-43802
1.5"h x 13"w **$9.95 ea**

Black 09-43806
5.75"h x 13.25"w **$16.95 ea**

Black 09-43808
White 09-43809
2.5"h x 12.75"w **$15.95 ea**

Black 09-43811
1"h x 10"w **$21.75 ea**

Left, Black 09-43813
Right, Black 09-43814
Left, White 09-43816
3"h x 3.5"w **$17.95 ea**

Black 09-43774
4-3/8"h x 10"w **$11.95 ea**

Black 09-43778
White 09-43779
4-3/8"h x 10"w **$11.00 ea**

Black 09-43822
White 09-43823
1.75"h x 8.75"w **$11.95 ea**

Left, Black 09-43824
Right, Black 09-43826
Left, White 09-43827
Right, White 09-43828
4-3/8"h x 5-7/8"w **$13.95 ea**

Black 09-43829
White 09-43831
2.75"h x 19"w **$13.95 ea**

Left,Black 09-43832
Right,Black . 09-43833
1.5"h x 11.75"w **$25.95 ea.**

Left, Black 09-43837
Right, Black 09-43838
1.5"h x 7.5"w **$15.95 ea**

Black 09-43841
White 09-43842
1.5"h x 7.5"w **$9.95 ea**

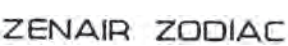
Black 09-43843
2"h x 12.5" **$10.95 ea**

Black & Gold 09-43845
2.5"h x 10.5"w **$16.95 ea**

Black 09-43749
White 09-43750
3.5"h x 7.5"w **$16.95 ea**

Black 09-43848
White 09-43849
1.25"h x 8.5" **$9.95 ea**

Black 09-43850
White 09-43851
5"h x 20"w **$17.95 ea**



Black 09-43852
White 09-43853
1"h x 14.25"w **$11.95 ea**

Black 09-43765
White 09-43766
3"h x 6.75"w **$9.95 ea**

CS

LOGO DECALS

CENTURION
CL-311-1-3/16"h x 10-3/4"w
P/N 09-43981 (Blk)
P/N 09-43982 (Wh)
$10.95 ea.

stationair
CL-137 - 1-1/2"h x 14-1/2"w
P/N 09-43983 (Blk)
$14.25 ea.

SKYMASTER
CL-359 - 1-1/2"h x 11-1/2"w
P/N 09-43985 (Blk)
P/N 09-43986 (Wh)
$13.95 ea.

SKYMASTER 337
CL-179 - 1-1/2"h x 15-1/8"w
P/N 09-43987 (Blk)
$13.95 ea.

Golden Eagle
CL-126 - 2-1/2"h x 13-5/8"w
P/N 09-43989 (Blk),
$13.95 ea.

421 GOLDEN EAGLE
CL-299L&R - 1-5/8"h x 24"w
09-43992 (Blk)
09-43994 (Gd)
$13.95 ea.

CHRISTEN HUSKY
CH-060 - 3/4"h x 7-1/4"w
P/N 09-43997 (Blk)
P/N 09-43998 (Wh)
$12.95 ea.

Curtiss
CR-031 - 6-3/8"h x 12"w
P/N 09-43999 (Blk)
P/N 09-44001 (Wh)
(up to 15"w) **$19.95 ea.**

EXTRA 200
ET-001 - 1-3/4"h x 15-1/2"w
P/N 09-44002 (Blk)
P/N 09-44003 (Wh)
$14.95 ea.

EXTRA 300
ET-002 - 1-3/4"h x 15-1/2"w
P/N 09-44004 (Blk)
P/N 09-44006 (Wh)
$16.95 ea.

Funk
FU-002 - 4-3/4"h x 16-1/2"w
P/N 09-44007 (Blk)
P/N 09-44008 (Wh)
$17.95 ea.

GL-002L&R - 4-1/2"h x 15"w
(Full Color on Tail)
P/N 09-44009
$39.95 ea.

GULFSTREAM
GL-016 - 3/4"h x 5-1/2"w
P/N 09-44011 (Blk)
$11.95 ea.

Learjet
LE-001 - 3-1/8"h x 10-1/4"w
P/N 09-44013 (Blk)
P/N 09-44014 (Wh)
$13.95 ea.

Meyers 200
MR-001 - 1"h x 5-1/2"w
P/N 09-44016 (Blk)
P/N 09-44017 (Wh)
$15.60 ea.

MOONEY Ranger
ML-053L&R - 1-1/2"h x 9"w
P/N 09-44018 (Blk)
$25.90 ea.

Mooney 201
ML-037 - 1-1/4"h x 8-3/4"w
(Black, White or OPT. Wing Tip)
P/N 09-44021 (Blk)
P/N 09-44022 (Wh)
$16.70 ea.

Turbo Mooney 231
ML-017 - 1-3/4"h x 18"w
P/N 09-44023 (Blk)
$17.95 ea.

TLS
ML-012 - 1-1/2"h x 4-1/4"w
P/N 09-44026 (Blk)
P/N 09-44027 (Wh)
$14.95 ea.

Ryan Navion
RYAN AERONAUTICAL CO. SAN DIEGO
NL-004 - 3-1/4"h x 12"w
P/N 09-44028 (Blk)
P/N 09-44029 (Wh)
$19.95 ea.

Fat Pacer
PL-128 - 2-1/4"h x 18-1/2"w
P/N 09-44031 (Blk)
P/N 09-44032 (Wh)
$15.95 ea.

LANCE
PL-248 - 1-1/2"h x 10"w
P/N 09-44033 (Blk)
$12.95 ea.

LANCE II
PL-073 - 1-5/8"h x 14-1/4"w
P/N 09-44036 (Blk)
P/N 09-44037 (Wh)
$12.95 ea.

APACHE
PL-116 - 2-3/8"h x 10-7/8"w
P/N 09-44038 (Blk)
P/N 09-44039 (Wh)
$12.95 ea.

aztec
PL-058 - 1-3/4"h x 3-1/2"w
P/N 09-44041 (Blk)
P/N 09-44042(Wh)
$13.95 ea.

DAKOTA
PL-0191- 1/8"h x 9-1/2"w
P/N 09-44043 (Blk)
$11.95 ea.

SEMINOLE
PL-020 - 1-1/2"h x 15"w
P/N 09-44046 (Blk)
$15.95 ea.

NAVAJO
PL-091 - 3"h x 23-1/2"w
P/N 09-44048 (Blk)
$15.95 ea.

CHIEFTAIN
PL-083 - 2"h x 20-5/8"w
P/N 09-44051 (Blk)
$15.95 ea.

RL-018 - 6-1/2"h x 7"w
P/N 09-44053 (Blk)
$13.95 ea.

Commander 112
RL-027 - 3"h x 21-1/2"w
P/N 09-44056 (B/W)
$16.95 ea.

Commander 112B
RL-016 - 3"h x 16-1/2"w
P/N 09-44058 (B/G)
$15.95 ea.

Commander 112TC
RL-025 - 2-7/8"h x 22-1/2"w
P/N 09-44061 (B/W)
$16.95 ea.

VELOCITY
VL-005 - 3"h x 13"w
P/N 09-44063 (Blk)
P/N 09-44064 (Wh)
$14.95 ea.

THE WACO AIRCRAFT CO.
WL-004 - 3-1/4"h x 15-1/4"w
P/N 09-44066
(Black, Gold, & Red)
$29.95 ea.

Barracuda
HB-017 - 2"h x 2-1/2"w
P/N 09-44069 (Blk)
$12.95 ea.

Coyote
HB-038 - 2-1/4"h x 12"w
(Wing Tip) 09-44072 (Blk),
$11.95 ea.

Diamond AIRCRAFT
HB-139 - 3-3/4"h x 19"w
P/N 09-44076 (Wh)
$14.95 ea.

AllStar
HB-124 4- 1/2"h x 16-1/2"w
P/N 09-44077 (Blk)
P/N 09-44078 (Wh)
$19.95 ea.

Katana DA20
HB-126 - 8"h x 24-1/4"w
P/N 09-44079 (Blk)
P/N 09-44080 (Wh)
$25.95 ea.

KITFOX
HB-023 - 1"h x 4-1/4"w
P/N 09-44082 (Blk)
$8.95 ea.

LANCAIR IV
HB-027 - 2-1/2"h x 12"w
P/N 09-44084 (Blk)
$21.95 ea.

LANCAIR IV P
HB-102 - 2-1/2"h x 14-3/4"w
P/N 09-44087 (Blk)
P/N 09-44088 (Wh)
$12.95 ea.

LANCAIR ES
HB-046 - 3-1/8"h x 10-7/8"w
P/N 09-44089 (Blk)
$19.95 ea.

LANCAIR SUPER ES
HB-090 - 3-1/4"h x 12-1/2"w
P/N 09-44091 (Blk)
$12.95 ea.

quickie
HB-125 - 2-1/2"h x 8-1/2"w
P/N 09-44093 (Blk)
P/N 09-44094 (Wh)
$10.95 ea.

QUICKSILVER
HB-104 - 5-1/2"h x 28"w
P/N 09-44097 (Multi-color)
$29.95 ea.

RANS S7
HB-057 -3-1/4"h x 25-1/4"w
P/N 09-44101 (Blk)
$14.95 ea.

RANS S10
HB-057 - 3-1/4"h x 25-1/4"w
P/N 09-44103 (Blk)
$13.95 ea.

RV-4
HB-098L&R- 5-1/4"h x 13"w
P/N 09-44106 (Blk)
P/N 09-44107 (Wh)
$25.90 /pr

RV-6
HB-097L&R - 5-1/4"h x 13"w
P/N 09-44108 (Blk)
P/N 09-44109 (Wh)
$25.95 ea.

RV-8
HB-096L&R -5-1/4"h x 13"w
P/N 09-44111 (Blk)
P/N 09-44112 (Wh)
$12.95 ea.

Starlet
HB-015 - 3"h x 6-1/2"w
P/N 09-44113 (Blk)
$11.95 ea.

Wag-A-bond
HB-016 - 2"h x 12"w
P/N 09-44116 (Blk)
$11.95 ea.

Wheeler
HB-035 - 1-1/4"h x 6-7/8"w
P/N 09-44118 (Blk)
$9.95 ea.

ZENAIR
HB-065 - 1-1/4"h x 8-1/2"w
P/N 09-44121 (Blk)
P/N 09-44122 (Wh)
$9.95 ea.

ROBERTSON/STOL
MS-070 - 2-1/2"h x 20"w
P/N 09-44126 (Blk)
$12.95 ea.

MS-050 - 3-1/2"h x3-1/2"w
09-44128 (Blk)
$13.95 ea.

MS-061 - 3"h x 3-1/2"w
P/N 09-44131
White lettering on red.
$10.95 ea.

AAM
MS-061 - 3"h x 3-1/2"w
P/N 09-44133 (Rd)
P/N 09-44134 (Wh)
$10.00 ea.

CS

LOGO DECALS

AC-001 - 7"h x 8"w
P/N 09-01967
White, Blue, & Yellow
$9.90 ea

AC-002 - 7"h x 8"w
P/N 09-43221
White, Red, & Black
$9.95 ea

CHAMP
AL-007 - 1"h x 8-1/8"w
$10.95 ea
P/N 09-43922 (Blk), 09-43923 (Wh), 09-43926 (Silver)

Sundowner
BE-021- 1/2"h x 12"w
$11.95 ea
P/N 09-43927 (Blk), 09-43928 (Wh)

Sierra
BE-030- 4.75"h x14.5"w
$16.95 ea
P/N 09-43929 (Blk)

Decathlon
BL-065 - 2"hx10-7/8"w
$13.95 ea
P/N 09-43932 (Blk), 09-43933 (Wh)

BELLANCA SUPER VIKING
BE-005 - 1.5"h x 18"w
White Left & Right (pair)
P/N 09-43936 .....**$37.90**
(Gold Wing Black type) Right side
P/N 09-43934 .....**$18.95 ea**

8"h x 7-3/4"w
P/N 09-43939
(Black, Red, Blue)
$17.85 ea.
P/N 09-43940 (Black)
$11.95 ea

CL-089
2"h x 3-3/4"w
P/N 09-43941
(Full Color)
$11.95 ea

CL-225 - L & R
P/N 09-43942 (Blk)
P/N 09-43943 (Wh)
6"h x 10-1/2"w **$19.95 /pr**

CL-071 - L & R
P/N 09-43944 (Blk)
P/N 09-43945 (Wh)
6"h x 10-1/2"w **$21.90 /pr**

CL-071 - L & R
P/N 09-43946 (Blk)
P/N 09-43947 (Wh)
6"h x 10-1/2"w **$21.90/pr**

CL-257L & R
P/N 09-43948 (Blk)
P/N 09-43949 (Wh)
6"h x 10-1/2"w **$21.90 /pr**

CL-112L & R
P/N 09-43950 (Blk)
P/N 09-43951 (Wh)
6"h x 10-1/2"w **$19.90 /pr**

CL-340 - L & R
P/N 09-43952 (Blk)
P/N 09-43953 (Wh)
6"h x 10-1/2"w **$21.90 pr.**

CL-214 - L & R
P/N 09-43954 (Blk)
P/N 09-43955 (Wh)
6"h x 10-1/2"w **$19.95 pr.**

CL-487 - L & R
P/N 09-43956 (Blk)
6"h x 10-1/2"w **$19.90 pr.**

CL-032L & R
P/N 09-43958 (Blk)
P/N 09-43959 (Wh)
6"h x 10-1/2"w **$19.95 pr.**

CESSNA 150

CL-454 (Black, White or OPT.)
P/N 09-43960 (Blk)
P/N 09-43961 (Wh)
1"h x 27"w **$19.95ea.**

CESSNA 206

CL-164 (Black, White or OPT.)
P/N 09-43962 (Blk)
P/N 09-43963 (Wh)
1-1/2"h x 15-1/2"w **$12.95 ea.**

CESSNA 310

CL-297 (Black, White or OPT.)
P/N 09-43964 (Blk)
1-1/2"h x 10-1/4"w **$13.95 ea.**

CESSNA 340

CL-327 P/N 09-43966 (Blk/Wh)
P/N 09-43967 (Blk/Gd)
2"h x 3-3/4"w **$13.95 ea.**

SKYHAWK

CL-178 P/N 09-43968 (Black)
P/N 09-43969 (Silver)
1-1/8"h x 9"w **$13.95 ea.**

SKYHAWK II

CL-102 (Black, White or OPT.)
P/N 09-43972 (Blk), P/N 09-43973 (Wh)
1/3/4"h x 11-1/2"w **$12.95 ea.**
CL-485 (Black, White or OPT.)

Superhawk

P/N 09-43977 (Blk),
P/N 09-43978 (Wh)
4"h x 12.5"w **$12.95 ea**

AMERICAN FLAG DECALS

Sold In Pairs Only

STRAIGHT
P/N 09-429– –

SLANTED
P/N 09-430– –

WAVY
P/N 09-431– –

HGT.	STRAIGHT		SLANTED		WAVY	
	WIDTH	PRICE	WIDTH	PRICE	WIDTH	PRICE
4"	7.5"	**$7.50**	7-1/2"	**$8.50**	4"	**$8.50**
6"	10.5"	**$9.50**	10-3/4"	**$13.50**	6"	**$11.50**
8"	14"	**$15.50**	14-1/2"	**$17.50**	8"	**$16.95**
10"	17.5"	**$21.50**	18-1/4"	**$25.95**	10"	**$26.85**
12"	20.5"	**$29.90**	21-1/4"	**$34.95**	12"	**$31.50**

Please order by part number. Use basic part number at top of chart, and complete part number with height of decal. Example: Wavy flag, 8" high is P/N 09-43108. Prices per pair (left & Right).

STARS & BARS

STYLE 1

1943
Between 29 June and 14 August, the official national insignia incorporated white sidebars and an overall red surrounding.

P/N 09-432– –

STYLE 2

1943-1947
The red surround of the official insignia was quickly changed to a *blue surround* During its 4 years use this insignia appeared on more aircraft than all its predecessors combined.

P/N 09-433– –

STYLE 3

1947-Present
With the reorganization of the Defense Department and the creation of the USAF, red bars were added to the official national insignia. A variation of this insignia appears officially without the blue surround on F-15 aircraft.

P/N 09-434– –

STYLE 4A

1917, 1921-1941
Introduced prior to the American entry into World War I and officially adopted after the war.

P/N 09-436--

STYLE 6A

1942-1943
Some aircraft in the European and Mediterranean theaters unofficially incorporated a yellow surround in British style.

P/N 09-439--

PRICING

SIZE	Style 1	Style 2	Style 3	Style 4A	Style 6A
10"	$65.00	$45.50	$49.95	$36.50	$25.00
15"	$72.25	$52.50	$58.50	$42.50	$43.20
20"	$87.50	$62.50	$69.75	$52.50	$45.00
25"	$99.50	$74.50	$82.50	$64.50	$62.50
30"	$120.50	$93.50	$115.95	$83.50	$75.50
35"	$175.50	$149.50	$155.50	$129.50	$101.80

Please order by part no. Use basic part no. under each style number and complete part no. with size of decal. Example: Style 3 decal in 25" size is P/N 09-43425

CESSNA Piper

Size 2-1/2" x 15" ***Size 2-1/2" x 11"***

Distinctive aircraft identification names, either stencils for painting or black vinyl lettering for easy press-on application.

Aircraft	Vinyl		Stencils	
	Part No.	Price/Set	Part No.	Price/Set
Cessna	09-33800	**$8.50**	09-33900	**$10.95**
Piper	09-34000	**$8.50**	09-34100	**$8.50**

PROPELLER DECALS

Sold In Pairs Only

09-42830 ... **$5.95 pr.**

09-42832 ... **$5.95 pr.**

09-42834 ... **$5.95 pr.**

09-42836 .. **$5.95 pr.**

Black
09-42838 ... **$5.95 pr.**
White
09-02986 ... **$5.95 pr.**

09-42840 ... **$5.95 pr.**

CS

DECALS - PLACARDS

U.S. FLAG DECALS

Proudly display the Red, White, & Blue. Colorful vinyl pressure-sensitive U.S. Flag decals in right & left hand pattern.

2.5" x 4".....P/N 13-01485 .....**$5.95**
4" x 6.5".....P/N 09-35400 .....**$7.85**
6" x 10.5".....P/N 09-35500 .....**$11.95**

AIRCRAFT SPRUCE LOGO DECALS

These royal blue on white self-adhesive oval shaped decals of the Aircraft Spruce & Specialty Company logo look great on your airplane, bumper, reference books, etc. Available in 3 sizes.

4" wide ..... P/N 09-40400 .....**FREE**
8" wide ..... P/N 09-40410 .....**FREE**
18" wide ..... P/N 09-40420 .....**FREE**

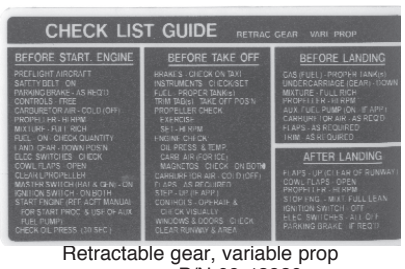
AIRCRAFT SPRUCE PATCH

This is an embroidered patch, oval in shape, and approximately 3-1/2", colors are Red/White/Blue. ..... P/N 13-02703..... **$3.50**

CHECKLIST PLACARDS

Fixed gear, Fixed prop
P/N 09-42816.....**$3.75**

Fixed gear, Variable prop
P/N 09-42818 .....**$3.75**



Retractable gear, variable prop
P/N 09-42820 .....**$3.75**

Flight Plan Sequence
09-42822 .....**$3.95**

VFR minimums
09-42824 ..... **$3.75**

Emergency
09-42826 .....**$2.75**

Transponder Codes
09-42828 ..... **$2.50**

INSTRUCTIONAL USE ONLY PLACARD – Used on Part 103 exempted 2-seat ultralights. Available in pre-spaced vinyl lettering in your choice of colors. Size 3" x 10"

Vinyl Lettering ..... P/N 09-43901.....**$2.50**

HOT EXHAUST – Black & red on white decal. Measures 1.5"x 4". A must where muffler can can be accidentally touched or brushed up against during aircraft servicing or entry.

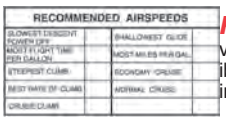
P/N 09-43902 ..... **$3.50**

OPEN ARROWS – Custom computer cut decals to indicate operation of door handles. Specify arrow CW or arrow CCW. Arrow and "OPEN" can be separated and individually positioned. Color: Red. Call for quote on custom size and colors. Standard size: 2"x 3-1/2".

Clockwise..... P/N 09-43903.....**$3.50**
Counter clockwise.. P/N 09-43904.....**$3.65**
Custom Color..... **add $1.00**

SOLO SEATING PLACARDS – Silkscreened in red ink on white all weather vinyl. Placards for solo from front or reat seat (specify). Size: 1"x 3".

Front Seat Solo..... P/N 09-43906.....**$2.50**
Rear Seat Solo ..... P/N 09-43907.....**$2.50**



RECOMMENDED AIRSPEEDS – Black on white vinyl. May be written on with a fine point indelible marker. Provides space for all your most important airspeeds. Size: 3.5" x 4.5

P/N 09-43908.....**$2.95**

WINDOW PLACARD – Black on white vinyl. Specify left arrow or right arrow. Size: 3/4" x 3".

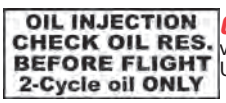
Left ..... P/N 09-43909.....**$2.00**
Right..... P/N 09-43911.....**$2.00**

STATIC AIR – Black on white vinyl. U-V coated, fuel resistant. Used to mark location of static air ents. Size: 3/4" x 1".

P/N 09-43912 .....**$1.95**

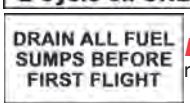
CANOPY RELEASE – Black on white vinyl. Marks location of emergency release mechanisms for doors or canopies. Size: 7/8" x 3-1/8".

Canopy..... P/N 09-43913.....**$3.70**
Door ..... P/N 09-43914.....**$2.65**



OIL INJECTION PLACARD – Black on white vinyl. Used on oil injected Two- Stroke engines. U-V and Fuel resistant. Size: 1" x 2-1/3".

P/N 09-43916.....**$1.95**



DRAIN SUMPS – Black on white vinyl. U-V and Fuel resistant. Size: 1" x 2".

P/N 09-00348.....**$4.50**

FUEL DRAIN LOCATOR – Black on white vinyl. Used to locate fuel drain petcocks on aircraft. U-V & Fuel resistant. Size: 1/2" x 2".

P/N 09-43917 .....**$1.95**

FIRE EXTINGUISHER – Black & Red on white vinyl. Used to locate extinguisher in emergency. Size: 2"x 3.5"

P/N 09-43918.....**$3.65**

BALLISTIC CHUTE – Black & red on white vinyl. Used to locate Ballistic Chute Handle in emergency. Size: 2" x 3.5".

P/N 09-43919.....**$3.95**

NO STEP DECAL - No Step, 1"x5" Decal-black letters

P/N 1040.....**$2.25**

NO LIFT DECAL - No Lift Decal. Color: Black on White. Size: 1/2" x 2-1/2"

P/N 104212.....**$1.35**

CS

DECALS - PLACARDS

NAMEPLATE

All amateur-built aircraft must have a nameplate. Etch or stamp required data on this indestructible stainless steel nameplate. Conforms to FAA requirements. Size: 3"x 4-1/4".
P/N 09-01997..... **$6.95ea**

STAINLESS STEEL ID TAG

Suitable for all aircraft. Made of .015 acid-etched stainless steel. Size: 3"x 2".
P/N 09-00761..... **$3.35ea**

EXPERIMENTAL Single-piece decal with adhesive back. No need to line up 12 individual letters. One-step operation. Just remove protective backing and apply to any clean surface. 2" black letters on clear Mylar base. Decal Size: 2-1/4" x 19".
Set of 2..... P/N 09-33400 **.....$4.95**

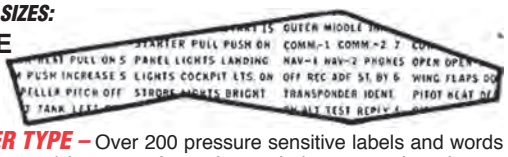
LIGHT-SPORT ***LIGHT-SPORT DECALS -*** Similar to our EXPERIMENTAL Decals, complies with marking requirements for LSA. Available in: 2"x14-1/4"
Black on Clear .....P/N 09-00762.....**$2.25**
Black on White.....P/N 09-00782.....**$2.25**
White on Clear.....P/N 09-00783.....**$2.25**

NO STEP Bright red on white vinyl. Letters are 1" high. Decal size: 1-3/8" x 4-3/8".
P/N 09-33500..... **$1.25ea**

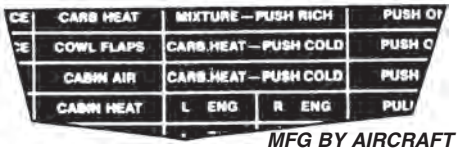
NO STEP 1"x5" Decal-black letters.
P/N 1040..... **$2.25**

PANEL MARKING SETS

ACTUAL TYPE SIZES:
THROTTLE
THROTTLE



DRY TRANSFER TYPE – Over 200 pressure sensitive labels and words conveniently grouped for ease of transfer to airplane controls or instrument panel. Available in two type sizes (see illustration) and in black or white lettering (specify).
Large Black ..... P/N 09-34600 Large White ..... P/N 09-34700
Small Black..... P/N 09-34800 Small White..... P/N 09-34900
$9.75 Set



MFG BY AIRCRAFT SPRUCE

SELF-ADHESIVE VINYL TYPE – White lettering on black background. Just cut, peel and press in place. Includes 349 of the most commonly used cockpit identifications and symbols (avionics, electrical, engine and aircraft controls) plus 248 numbers & letters. The most complete selection available. P/N 09-35000.....**$4.75 Set**

HOMEBUILDERS TYPE – Self-adhesive vinyl markings for the Long-EZ but applicable to many other aircraft. P/N 01-37800.....**$2.85 Set**

P/N 09-34200

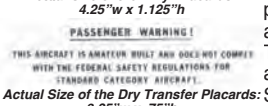
P/N 09-34300

P/N 09-34400

P/N 09-34500

SOFT ALUMINUM DECALS - Soft Aluminum Decals Letters are 1-1/4"H X 3-3/4"L with black lettering. **$4.45 ea.**

Actual Size of the Vinyl Placards: 4.25"w x 1.125"h

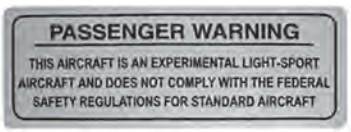


Actual Size of the Dry Transfer Placards: 3.25"w x .75"h

PASSENGER WARNING PLACARDS

These Passenger Warnings must be displayed in the cockpit of all amature-built aircrafts.
The dry transfer passenger warning placards available in black, & white lettering. Simply remove the protective backing and rub on the desired area.
The vinyl placard has brilliant red lettering on a white background. Simply remove the paper backing and apply.

Lettering	Background	Type	Part No.	Price
Red	White	Vinyl Placard	09-33300	**$1.95**
Black	Clear	Dry Transfer Placard	09-33310	**$1.85**
White	Clear	Dry Transfer Placard	09-33320	**$1.95**



PASSENGER WARNING DECALS

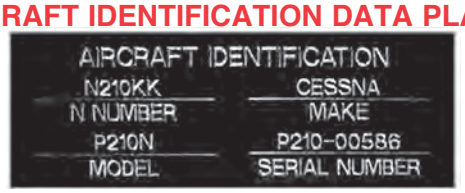
E-LSA- Red & White
P/N 09-01966 ..... **$1.95**

S-SLA - Red & White
P/N 09-01968 ..... **$1.95**

FUEL OCTANE DECALS

Handsome vinyl placards have brilliant red lettering on a white background. Simply remove paper backing and apply. Size: 1" x 2-7/8".
80/87 red on white .....P/N 09-33610 .....**$1.85 pr.**
100/130 green on white .....P/N 09-33615 .....**$1.85 pr.**
100/130 red on white .....P/N 09-33700 .....**$1.85 pr.**
100/130 red on white .....P/N 09-33710 .....**$1.85 pr.**

AIRCRAFT IDENTIFICATION DATA PLATES



FACTORY BUILT - Aircraft ID plate factory built made of aluminum. Not FAA Approved. Engraving included. When ordering please provide: Make, Model, S/N, N# for factory built aircraft only.
P/N 09-00447..... **$13.95**

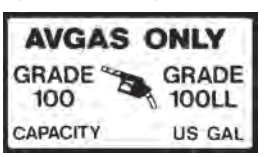
EXPERIMENTAL ONLY - Aircraft ID plate factory built made of aluminum. Not FAA Approved. Engraving included. When ordering please provide: Make, Model, S/N, N# for factory built aircraft only.
P/N 09-40000..... **$13.95**

FUEL PLACARDS

09-42803
$4.50 ea.

09-42802
$4.50 ea.

80 Octane-half red/blue, round.
P/N 09-42804 ..... **$4.50 ea.**
100 Octane, Low Lead Only Blue
P/N 09-42806 ..... **$4.85 ea.**
100 Octane Only
P/N 09-42808 ..... **$4.50 ea.**



09-42801 ..... **$12.95 pr.**

USE 100/130 OCTANE FUEL ONLY
09-42810 ..... **$4.50 ea.**

FUEL
80/87 MIN. GRADE
AVIATION GASOLINE
or
UNLEADED AUTO GASOLINE
87 MIN. ANTIKNOCK INDEX
PER ASTM SPEC D-439

Yellow on Black. Size: 1-1/4"x5"
P/N 09-01141 ..... **$3.75/pair**

09-42814 ..... **$4.50 ea**

CS

PLACARDS – STENCILS – VINYL LETTERS

PLACARDS

Color for placards below are white on black.

5/8"x 3-1/4" . P/N 09-42842
1"x 5" ...P/N 09-42844 . **$2.50 ea**

1"x 5" .....P/N 09-42850
5/8"x 3-1/4"...P/N 09-42848 .. **$2.50ea**

1"x 3" 09-42858. **$1.95**

1"x 3" 09-42852. **$1.95**

1"x 3" 09-42854. **$1.95**

1"x 5" ..... 09-42856 ..... **$2.50ea**

INOPERATIVE
1/4"x1-3/4" ...09-42862 .... **$1.95ea**

1"x 4" ..... 09-42846..... **$2.50ea**

1"x 3" .....09-42860 ..... **$1.95ea**

All the placards & decals on this page are produced on long lasting UV coated pressure sensitive adhesive vinyl. They are computer cut using no clear background so they won't yellow. These are all top quality decals which will enhance your aircrafts looks for years to come. Do not settle for "cheap" imitations.

12-INCH STENCIL NUMBER STRIP

Highly recommended as the easiest and most effective way to apply painted 12" stenciled "N" numbers on any aircraft. These come pre-spaced and aligned horizontally or vertically and assure a professional looking job. Shipped factory-direct to you within 48 hours. Provide exact "N" number when ordering. Special order - Non-returnable. Please specify horizontal or vertical. 6 Characters on each strip or less. Made of Vinyl.

12" Strip (straight) (right/left).....P/N 09-00287 .... **$56.95 set**
12" Strip (slanted) (right/left).....P/N 09-00288 .... **$56.95 set**

3-INCH STENCIL STRIP

Vertical or horizontal lettering individually spaced and aligned. Advise number. Stencils will be made-to-order and shipped in about two weeks.

Straight Set of 2 (Right/Left).....P/N 09-00289 .... **$13.50 set**
Slanted Set of 2 (Right/Left).....P/N 09-00290 .... **$13.50 set**

INDIVIDUAL FIGURE STENCILS

N4804K N2510T N6979N
N425WT N100MD N51ER

Precut sticky paper masks for spraying registration numbers. Used by Piper and other aircraft manufacturers. Order two of each character for vertical stencils. Slanted stencils are furnished in pairs (R/L), so order one pair of each character. Order by part number. For last digit, put in number or letter needed.

3 Inch Vertical Figures.....P/N 09-3280x ..... **$1.25 Ea**
12 Inch Vertical Figures.....P/N 09-3290x ..... **$6.25 Ea**
12 Inch Slanted Figures.....P/N 09-3300x ..... **$13.50 Pr**

Painting Options: These stencils offer you two methods of spraying lettering incorporated in a single stencil.

You can: (1) Letter after the body color has been applied or
(2) Letter before the body color has been painted. This second method provides recessed, protected lettering and eliminates masking.

LETTERING & NUMBERS

For any use. Available in over 40 type styles. Most colors available.

Cap Size(In.)	In Stock Colors	Slanted or Reversed	Reflective & Metallic
3/4	.40	.45	N/A
1	.75	.80	.80
1-1/2	.75	.80	80
2	1.00	1.05	1.05
2-1/2	1.00	1.05	1.05
3	1.35	1.40	1.40
4	1.35	1.40	1.40
4-1/2	1.50	1.55	1.55
5	1.50	1.55	1.55
6	1.80	1.85	1.85
7	2.25	2.30	2.30
8	2.50	3.00	3.00
9	4.00	4.50	4.50
10	5.00	5.50	5.50
12*	6.75	7.05	7.05

***Numbers excluded**

12-INCH VINYL N NUMBER STRIP

The fastest and easiest way to apply registration numbers. These numbers come pre-spaced and aligned and are ready to apply in one simple operation. These are top quality numbers which are shipped factory direct to you. Provide exact "N" number when ordering. 6 Characters max. on each) Color choices are black, white, red, blue, or gold. Standard type style is helvetica. Military block, drop shadow, or outline styles are also available. Please specify your N number, color, orientation, and print style in the special instructions of the online order form. Colors Available: * Black * White * Tomato Red (Light Red) * Cardinal Red (Dark Red) * Olympic Blue (Sky Blue) * Bright Blue * Sapphire Blue * Light Navy * Metallic Gold * Metallic Silver * Green * Brown

Note: Drop Shadow style is double the cost due to it being two colors.

Straight 12" Strip (6 Characters max. on each)
P/N 09-41910..... **$56.95 pair.**

Slanted 12" Strip (6 Characters max. on each)
P/N 09-41922 ..... **$56.95 pair.**

Slanted 12" Drop Shadow Strip (6 characters max. on each)
P/N 09-03434 ..... **$112.95 pair**

12-INCH INDIVIDUAL VINYL NUMBERS

We now offer new 12" vinyl "N" numbers as now required for return flight to the U.S. from foreign countries. Available in black, gold, red, white or blue. Numbers are slightly slanted. Basic part number is 09-387xx. Second to last digit is for color. 1 – Black, 6 – Gold, 7 – Red, 8 – White, 9 –Blue. For last digit, put in number or letter needed.

Please Note: N-Numbers ship via priorty mail only to all U.S. domestic customers.

See our website for a complete listing of Part Numbers

Slanted 12" Individual #'s..... **$10.25 / pair**

3-INCH VINYL INDIVIDUAL NUMBERS & LETTERS

Individual vertical numbers and letters. Pressure sensitive vinyl for easy application. Black only. No slanted numbers available. Basic part no. is 09-3310x. For last digit, put in number or letter needed..... **$1.25 ea.**
Helvetica Straight ..... **$4.50/letter** Helvetica Slanted..... **$5.25/letter**
Monument Block..... **$9.00/ letter** Monument Block Slant.. **$9.00/ letter**
Vinyl Figure 3" Slant Black # 3..... P/N 09-02386..... **$1.75**
Vinyl Figure 3" Slant Black # 5..... P/N 09-02387..... **$1.75**

3" VINYL NUMBER STRIP

"N" Number Strips assure handsome registration numbering in minutes. Complete made-to-order 3" registration number on adhesive application strip individually spaced and aligned (NOT A FILM). Lay strip on aircraft and remove backing. Permanent number remains bonded to aircraft. A real time saver. Will outlast paint - look better. Available in black, white or gold. Vertical or horizontal lettering. Specify vertical or horizontal lettering and color. Colors Available: * Black * White * Tomato Red (Light Red) * Cardinal Red (Dark Red) * Olympic Blue (Sky Blue) * Bright Blue * Sapphire Blue * Light Navy * Metallic Gold * Metallic Silver * Green * Brown

3"Straight..... Right & Left..... P/N 09-00294 ..... **$17.25 set**
3"Slanted..... Right & Left..... P/N 09-00302 ..... **$14.95 set**

Letter styles available for your aircraft. 3" and 12" vinyl strips.

CARDBOARD DIE-CUT ONE-PIECE STENCILS

	Size	Part No.	Price Each
EXPERIMENTAL	2"H x 18"L	09-32400	**$5.95**
NO STEP	2"H x 4-3/4"L	09-32500	**$4.65**
NO PUSH	1"H x 4-3/4"L	09-32600	**$2.25**
NO STEP	1"H x 4-3/4"L	09-32700	**$2.45**

TRACE-IT STENCIL SETS

Allows for stenciling of every letter and number. NOTE: Illustration is portrayal of item you actually receive - each kit contains 3", 12" and 24" sizes.

P/N 09-42831 ..... **$43.75**

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AIRCRAFT PLACARD KITS

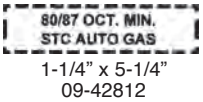
INTERIOR PLACARD KITS

These quality decal sets are designed to provide all the necessary placards for the interior of various production and homebuilt aircraft. Just cut the decals you want to use from the card and apply to the aircraft interior.

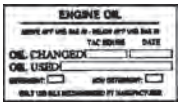
These kits are available with black letters on clear background, white letters on black background, or white letters on clear background. Please specify color of letters and background when ordering.

DESCRIPTION	P/N	PRICE
AVIONICS	09-00981	**$13.75**
BEECHCRAFT		
MUSKATEER 19, 23	13-03954	**$56.25**
24, 24R, SIERRA	13-03950	**$56.25**
33, 35, 36 SERIES	13-03951	**$104.95**
TWIN BONANZA	13-03953	**$104.95**
BELLANCA		
CITABRIA/DECATHLON	13-03949	**$54.25**
CESSNA		
120/140/150/152	09-44055	**$48.50**
170/172/175	09-44060	**$48.50**
177/177RG	13-03955	**$54.75**
180/182/185	13-03956	**$49.95**
190/195	09-01158	**$50.00**
205/206/207	09-01963	**$78.95**
210/210T	09-01010	**$79.25**
310 H-M	09-01084	**$135.95**
310 P-Q	09-01160	**$113.95**
310 -D	09-01162	**$113.95**
336/337	09-01191	**$20.85**
ERCOUPE	09-01165	**$84.50**
GROB		
SEAPLANE	09-01021	**$41.70**
GRUMMAN		
AA1/AA1A	09-01168	**$41.75**
AA5/AA5A, AA5B	09-01170	**$58.75**
COUGAR	09-01171	**$133.95**
BARON	13-03952	**$125.00**
PIPER		
PA-18 SUPER CUB	09-01176	**$32.75**
PA-23 AZTEC SERIES	09-01184	**$82.25**
PA-24 COMANCHE	09-01181	**$54.25**
PA-28 140-181 CHEROKEE	09-01179	**$53.95**
PA-28 235-236	09-01180	**$53.95**
PA-28 R ARROW SERIES	09-00441	**$54.25**
PA-30 TWIN COMANCHE	09-01183	**$69.95**
PA-32 CHEROKEE-LANCE	09-01182	**$54.25**
SARATOGA		
PA-34 SENECA SERIES	09-01185	**$79.25**
PA-38 112 TOMAHAWK	09-01178	**$28.95**
PA-44 SEMINOLE SERIES	09-01186	**$79.25**
TRI-PACER	09-01177	**$34.95**
WESTWIND	09-01046	**$208.95**
UNIVERSAL INTERIOR	09-01197	**$8.95**

PLACARDS



1-1/4" x 5-1/4"
09-42812
$4.50 ea.



09-42809 **$0.65 ea.**
or 10 for **$4.88**

1-1/4" x 5-1/4"
09-42813
$4.50 ea.

1-1/2" x 2-1/4"
for Beechcraft
09-42811 **$4.50 ea.**

1-5/16" x 2-11/16"
09-42827 **$2.50 ea.**

1-5/16" x 2-11/16"
09-42829 **$2.50 ea.**

09-42604 **$4.50ea**

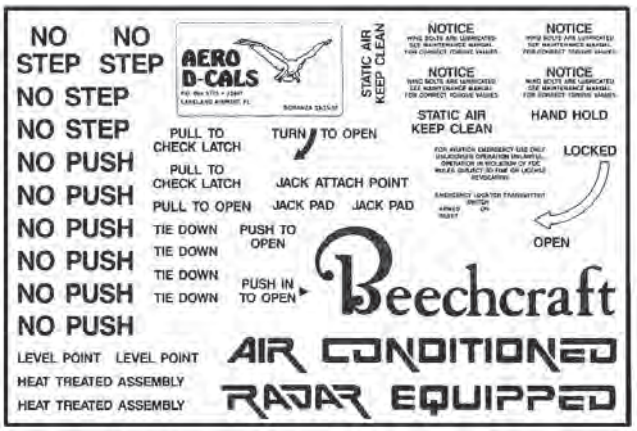
09-42817 **$4.50ea**

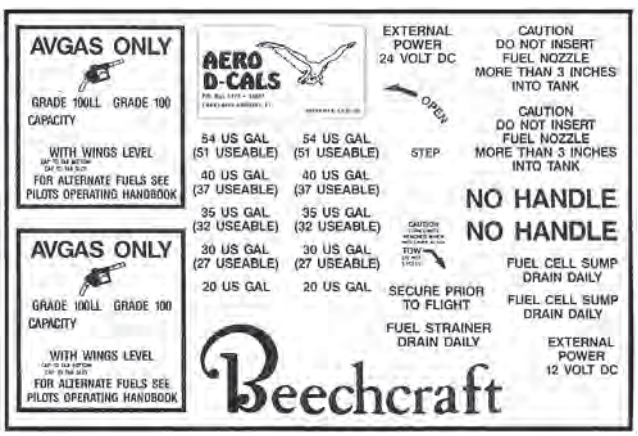
09-42608 **$4.50ea**

09-42821 **$4.50ea**

09-42823 **$2.50ea**

EXTERIOR PLACARD KITS





Aircraft Model	P/N	Price
Helicopter (Universal)	09-44201	**$37.50**
Single Engine (Universal)	09-44202	**$37.50**
Mooney M20/21	09-44203	**$49.95**
Piper PA28 Cher/Warrior/Archer II	09-44204	**$42.75**
Piper PA32 Cher/Lance/Saratoga	09-44206	**$48.75**
Piper PA32 Apache/Aztec	09-44207	**$62.00**
Piper PA34 Seneca I/II/III	09-44209	**$62.75**
Piper PA30/39 Twin Comanche	09-44211	**$66.75**
Piper PA31T/42T Cheyanne	09-44205	**$131.95**
Cessna 100/200	09-44213	**$29.95**
Cessna 300 Series	09-44210	**$133.95**
Cessna 400 Series	09-44220	**$83.50**
Cessna 425/441	09-44235	**$112.00**
Cessna Jet 500 Series	09-44245	**$172.95**
Beech Bonanza V35	09-44216	**$96.85**
Beech Baron 55/58	09-44251	**$123.95**
Beech Duke 60	09-44217	**$133.95**
Beech Queen Air 65/88	09-44218	**$157.00**
Beech King Air 200/300	09-44250	**$162.95**
Beech Jet 400 Series	09-44255	**$238.75**
Exterior Kit Beech King Air	09-01956	**$154.95**
Saber Jet 40/60	09-44219	**$193.00**
Hawker Jet 500	09-44280	**$164.00**
Westwind Jet 1100	09-44223	**$209.00**
Gulfstream 690-1000	09-44224	**$244.95**
Challenger Jet 600	09-44227	**$169.00**
Falcon Jet 10/20	09-44228	**$139.95**
Lear Jet 20 Series	09-44260	**$165.00**
Lear Jet 30 Series	09-44265	**$198.95**
Lear Jet 50 Series	09-44231	**$165.00**
Rockwell 112/114	09-44232	**$53.85**
Rockwell Gulf Stream 690	09-44233	**$131.00**

Die cut decal kits are available on request. Call for quotation.

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SIGMA-TEK ATTITUDE GYROS (VACUUM)

An air operated instrument which indicates aircraft attitude through 360° in roll & 360° in pitch. The pictorial airplane remains fixed during gyro operation but may be adjusted by the pilot for changing conditions. The upper half of the horizon bar and the mask are light blue color. Sky is blue and ground is brown. Zero pointer and airplane wings" are yellow. Numerals and markings are white on dull black background. Vacuum port and air inlet ports 1/4" NPT. Gauge port 1/8" NPT. Size: 3-3/8"x 3-3/8"x 6-3/8". Wt:1.9lbs. Standard equipment in production Cessna & Piper aircraft. If instrument panel is tilted, special order gyro is required. ***Lighting tray must be purchased to attach to the bezel for lighting.***

Model 5000B ..... P/N 5000B **$939.00**
Model 5000B-20 (Black/Blue) ..... P/N 10-00389 ..... **$1,022.00**
Model 5000B Lighted (tray sold separately) .. P/N 10-01071 ..... **$1,118.00**
Model 5000B with 8° panel tilt ..... P/N 5000B-42 ..... **$1,080.00**
Model 5000B-F w/Vacuum Failure Flag ..... P/N 5000B-F **$1,152.00**
Model 5000B w/Fail. Flag ..... P/N 10-00132 ..... **$1,316.00**
5000B Light Tray 14V ..... P/N 10-00111 ..... **$54.75**
5000B Light Tray 28V ..... P/N 10-00112 ..... **$54.75**

SIGMA-TEK 5000EG ELECTRIC GYRO ATTITUDE INDICATOR

(Shown with optional slip indicator installed)

Lighted bezels have anti-reflective glass. Lighted gyros do not include lamp trays. All gyros calibrated for zero degree panel tilt. Mating Connector not included with gyro. FAA Certified as a primary or standby gyro (FAA advisory circular AC20-41A) Approved to Replace you turn coordinator (FAA advisory circular AC91-75) ***Optional Features***: * Panel Tilt Inclination: 0 to 10 degrees, Standard tilts 0°, 5°, 7-1/2°, 8°, & 10° * LightingL 5, 14, 28 Vdc external lamp tray, 12-inch leads. * Incliometer: Slip Indicator, ball type, bezel mounted. * Mating Connector: Part No. 10-02756 ***Specifications***: * Panel mount: Standard 3-1/8 inch round cutout, rear mount * Length: 8.1 inches maximum * Weight: 2.6 lbs. maximum, C/G 3.25 inches from mounting face * Input Power:14Vdc input-1500 mA starting & 1400 mA running; 28Vdc input-600 mA starting & 550 mA running. * Dial Presentation: Fixed pointer, rotating dial, with symbolic airplane. * Operating Temperature Range: -30°C to +50°C, -22°F to +122°F * Certification: FAA TSO-C4c * Limited Warranty: 12 Months from date installed / 6 months shelf life. ***All lighted gyros must order tray separately.***

Standard 28 Vdc, Lighted Bezel, and Slip Indicator... P/N 10-02748 .**$1,983.00**
Standard 14 Vdc, Lighted Bezel, and Slip Indicator... P/N 10-02749 .**$1,967.00**
Standard 28 Vdc, Lighted Bezel ..... P/N 10-02750 .**$1,895.00**
Standard 14 Vdc, Lighted Bezel ..... P/N 10-02751 .**$1,895.00**
Standard 28 Vdc, and Slip Indicator ..... P/N 10-02752 .**$1,895.00**
Standard 14 Vdc, and Slip Indicator ..... P/N 10-02754 .**$1,896.00**
Standard 28 Vdc ..... P/N 10-02753 .**$1,870.00**
Standard 14 Vdc ..... P/N 10-02755 .**$1,745.00**
Mating Connector ..... P/N 10-02756 .....**$76.85**
Lamp Tray, 14 Vdc, 12-inch leads ..... P/N 10-02757 .....**$59.50**
Lamp Tray, 28 Vdc, 12-inch leads ..... P/N 10-02758 .....**$59.85**

RC ALLEN VACUUM HORIZON GYRO

The RCA22 Series of vacuum artificial horizon are controlled by air driven precision gyros to present the pilot with pitch and roll information. The attractive color scheme of blue sky and brown ground presents a realistic spherical display of flight. Unless otherwise indicated all instruments have a dark blue/brown display, fixed pointer and are unlighted. This is the "standard" display. Instruments equipped with a warning flag will let you know when vacuum has dropped below 3.8 inch Hg. Flag retracts from view at 4.3 inch. Hg. Instrument fits in a standard 3 1/8" panel cutout. ***Meets of exceeds all requirements of FAA TSO C4c and Aeronautical Standard AS396B.***

Model No.	Description	Part No.	Price
RCA22-7	Standard display, tilt must be specified at time of order.	10-01371	**$759.00**
RCA22-7-8	Standard Display, with 8° Tilt.	11-03607	**$759.00**
RCA22-7F	Standard Display with a warning flag.	10-00504	**$858.00**
RCA22-11	Standard display, lighted 14V, Tilt must be specified at time of order.	10-00502	**$856.00**
RCA22-11	Standard display, lighted 28V, Tilt must be specified at time of order.	10-01391	**$856.00**
RCA22-11	Standard display, lighted 28V, 8° tilt	10-03635	**$856.00**
RCA22-11F	Standard display, lighted, with a warning flag. (14V)	10-00094	**$967.00**
RCA22-11F	Standard display, lighted, with a warning flag. (28V)	10-03574	**$977.00**
RCA22-15	Display is blue over black Tilt must be specified at time of order.	10-01109	**$766.00**

RC ALLEN ATTITUDE GYROS (ELECTRIC)

The RCA26 Series is the top of the line and has been designed for precision and reliability. The RCS26EK Series is a 12-30VDC instrument. You have a choice of a fixed or moveable pointer, and a 14 or 28 volt lighting. Performance characteristics include roll indication of 360°. Pitch ± 30°. Pitch trim range ±7°. Slip Indicator can be added upon request. Mating connector (MS3116E8-4S) is also available. ***Pictured is the RCA26EK-11***

Model No.	Description	Part No.	Price
RCA26EK-11	Fixed Pointer, unlit. Tilt must be specified at the time of order.	10-02524	**$2,076.00**
RCA26EK-12	Fixed Pointer, lighted. Voltage and tilt must be specified at time of order.	10-02526	**$2,171.00**
RCA26EK-13	Moveable pointer, unlit. Tilt must be specified at time of order.	10-02527	**$2,088.00**
RCA26EK-14	Moveable pointer, lighted. Voltage and tilt must be specified at time of order.	10-02528	**$2,229.00**
RCA26AK-1	Standard look, 14V, Lighted, Moveable pointer, Stationary roll dial.	10-00608	**$2,192.00**
RCA26AK-2	Standard look, 14V, Lighted, fixed pointer, moveable roll dial.	10-01683	**$2,195.00**
RCA26AK-2-8	Standard look, 8° Tilt, 14V, Lighted, fixed pointer, moveable roll dial.	10-00392	**$2,187.00**
RCA26AK-3	Standard look, 14V, Moveable pointer, sationary roll dial.	10-01118	**$2,079.00**
RCA26AK-4	Standard look, 14V, Fixed Pointer, Moveable roll dial.	10-01392	**$2,079.00**
RCA26AK-4-8	Standard look, 8° Tilt, 14V, Fixed Pointer, Moveable roll dial.	10-00391	**$2,064.00**
RCA26BK-2	Standard look, 28V, Lighted, Moveable pointer, Stationary Roll Dial.	10-01119	**$2,196.00**
RCA26BK-6	Standard look, 28V, Fixed Pointer, Moveable Roll Dial.	10-01393	**$2,098.00**
RCA26BK-8	Standard look, 28V, Moveable pointer, Stationary Roll Dial.	10-01120	**$2,078.00**
RCA26BK-9	Standard look, 28V, Lighted, Fixed pointer, Moveable Roll Dial.	10-00466	**$2,187.00**
RCA26BK-12	5° Tilt, 28V, Lighted, Moveable pointer, fixed roll dial	10-01122	**$2,196.00**
MS3116E8-4S	Connector	10-00791	**$24.95**
444-0011-01	A slip indicator/inclinometer for all the RCA26 series & RC Allen vacuum horizons	10-04623	**$149.95**

RCA 2600 SERIES DIGITAL ATTITUDE GYROS

RCA 2600-3

RCA 2600-2

Fully adjustable LCD screen is bright and highly visible. There are two models to choose from; The RC 2600-2, which is a 2 inch instrument and the RCA 2600-3, which is a 3 inch instrument. Same size as traditional horizons and can be easily installed in a standard panel cutout. FAA TSO-C4c certified and is designed to be a direct replacement for any Electric Attitude indicator. Totally electronic and contains no mechanical gyro. These light weight instruments are ideal for light sport and home built applications. The precision and stability qualities of these instruments also make them suitable for larger aviation applications such as business aircraft and rotorcraft. The RCA 2600 is capable of aerobatic type maneuvers with a full 360 degrees of pitch and roll without the typical "tumbling" of mechanical gyros and without any harm to the instrument. Similar to our RCA 26EK Series horizon gyro and RCA 15EK Series Directional gyro, the RCA 2600 Series instrument is multi-volt and can be installed in either a 14 volt or 28 volt aircraft. The unit is self-contained and installs just like a standard horizon.

RCA2600-2 (2 Inch Gyro) ..... P/N 11-07324 .... **$2,596.00**
RCA2600-2 with 8° tilt ..... P/N 11-09199 .... **$2,573.00**
RCA2600-3 (3 Inch Gyro) ..... P/N 11-07325 .... **$2,595.00**
RCA2600-3 with 8° tilt ..... P/N 11-08142 .... **$2,635.00**
2600 Inclinometer Option ..... P/N 10-03862 ..... **$147.50**

RC ALLEN ESP BATTERY BACKUP

A battery-based emergency power unit designed to give you at least an hour of auxiliary power when you need it the most. Paired with the new RCA 2600 Digital Horizon, the ESP can provide up to 6 hours of backup power. The ESP can be easily mounted behind the instrument panel and can power your new R.C. Allen instrument, or retrofit your existing Attitude gyro in an emergency. Comes complete with a wire harness and panel-mounted status light. Recharges itself during flight and does not drain the aircraft battery when aircraft power is off.FAA TSO-C179

14V ..... P/N 10-04171 ..... **$625.00**
28V ..... P/N 10-04525 ..... **$625.00**

IN

SIGMA-TEK DIRECTIONAL GYRO VERTICAL CARD (VACUUM)

Sigma Tek's Attitude Gyros are selected as standard equipment by aircraft and autopilot manufacturers worldwide. They are the recognized industry leaders, offering features and options that improve safety and enhance pilot convenience. The unique warning flag and cageable options are significant features extremely useful upgrades for owners of light general aviation aircraft. The warning flag model instantly alerts the pilot to a loss of pneumatic power, especially important during busy operations when panel scanning is focused on the attitude gyro. The unique cageable attitude provides for quick erection and display alignment; a high priority for aerobatic aircraft owners and for aircraft operations that require short stops. Sigma Tek's highly reliable and proven attitude gyros are available with electrical pitch and roll outputs for autopilot and other stabilization applications. ARINC style bezel, display graphics, colors, inclinometer, internal lighting, and various panel tilts are all available options. Sigma Tek Gyros can be customized for compatibility with any instrument panel.

An air operated instrument which indicates compass headings through 360 degrees. The gyro is functional during dives, climbs or banks up to 55 degrees displacement from level flight. Dial has matte white numerals and markings on a dull black background. Vacuum port and air inlet ports 1/4" NPT. Gauge port 1/8" NPT. Size: 3-1/4" x 3-1/4" x 6-1/2. Wt. 2.6 lbs. Standard equipment in production Cessna and Piper aircraft. New manufacture.

* All lighted units must purchase light tray separately.

Model 4000B (Unlighted).....P/N 4000B.....**$941.00**
Model 4000B-31 (Lighted - Tray sold separately).P/N 10-00588 ..**$1,080.00**
Model 4000B w/ Heading Bug.....P/N 10-00469 ..**$1,170.00**
4000HR-3 w/Bug (Tray sold separately) .....P/N 10-00095 ..**$1,363.00**
Model 4000C Autopilot DG.....P/N 4000C.....**$1,697.00**

SIGMA-TEK 4000D-6 DIRECTIONAL GYRO

Lighted gyro is compatible with S-Tec autopilots (S-Tec Model 6406)

Gyro Only ..... P/N 10-00587 .....**$2,126.00**

Accessories

14 Volt Light Tray P/N 10-00111 .....**$54.75**
28 Volt Light Tray P/M 10-00112.....**$54.75**

5000B-36

4000B-30

SIGMA-TEK FACTORY OVERHAULED GYROS

These units are factory-overhauled gyros that are like new and carry the same warranty as a new units. Provided installation is within 6 months of factory ship date, full replacement warrarnty is 12 months from date of installation.

Exchange core must be a like core* and the core must be returned no later than 20 days from the invoice date to receive core credit.

*Like cores include: any 4000B series Sigma Tek/EDO-Aire core as exchange for a 4000B-30 any 5000B series Sigma Tek/EDO-Aire core as exchange for a 5000B-36

*All lighted units must order light tray separately.

Description	Sigma-Tek Model No.	Our PN	Core	Price
Attitude Gyro	5000B-36	10-03360	$275.00	**$525.00**
Directional Gyro	4000B-30	10-03359	$275.00	**$519.00**

INSIGHT GYRO 4000

Replace Troublesome Learjet DN-101 or DN-104 Gyros with Dependable 10,000 Hour Sperry/Honeywell Gyros The Insight Gyro 4000 is based on the best heading system in the industry, the Sperry/Honeywell C-14A. The C-14A rotors are equipped with long life ceramic bearings rated for 10,000 hours. Combining the C-14A with special interface circuitry in a compatible package, the Gyro 4000 is a plug-in replacement for the old JET DN-101 or DN-104. STC'd for Learjet: 23, 24, 25, 28, 29, 31, 35 and 55 DN-101,104 equipped Learjets as a direct replacement.

P/N 11-05199 .....**$8,893.00**

RC ALLEN DIRECTIONAL GYROS VERTICAL CARD (VACUUM)

RCA11A-8

RCA11A-15

The RCA-11A series of vacuum directional gyros utilize and air driven precision gyro that controls a vertical rotating azimuth gimbal. The R.C. Allen Model RCA11A has been designed to provide a long life of accurate operation even when subjected to severe operating requirements. This instrument is engineered with a minimum of machined parts, providing lower initial cost and lower maintenance cost through its lifetime.

The RCA11A is non-tumbling within ±85° limits in pitch and roll and can be easily installed in any 3 1/8" panel cut out. Full freedom design allows accurate indication, even after extreme maneuvers. Stainless steel is used at wear points, with aluminum investment and die casting.

A knob is provided to reset the gyro, when compared to the magnetic compass. the RCA11A-8 features the "standard" display.

Meets of exceeds all requirements of FAA TSO C5c and Aeronautical Standard AS397.

Dimensions: Length: 6.7" Height: 3.4" Width: 3.4" Weight: 2.3 Pounds

Model No.	Description	Part No.	Price
RCA11A-8	Standard Display	10-01370	**$759.00**
RCA11A-8F	Standard Display with Flag	10-01680	**$857.00**
RCA11A-15	Cardinal Heading markers N., S., E., & W. (Piper/cessna display)	10-00390	**$883.00**
RCA11A-16B	Standard Display, Lighted, 14 Volt.	10-01369	**$972.00**
RCA11A-17B	Standard Display, Lighted, 28 Volt	10-01389	**$796.00**
RCA11D-4	Single Pointer, 400hz Autopilot with heading bug.	10-01117	**$1,494.00**
RCA11D-5	Dual Auto Pilot with Heading Bug	10-03430	**$1,494.00**
RCA11D-7	With Heading bug Only	10-02931	**$1,375.00**

RC ALLEN DIRECTIONAL GYROS (ELECTRIC)

Pictured is RCA15AK-1

The RCA15 Series electric directional gyro employs and electrically driven gyro motor and is a direct reading, azimuth indicator. Rotor run up time is 3 min. They have a built in inverter which converts aircraft DC power to the required AC voltage and frequency. May be used in both fixed wing and rotor wing aircraft and is easily installed in standard 3 1/8" panel cut out. Power failure flag drops into view when supply voltage is lost or has dropped below a level for proper operation of the gyro. Azimuth indication range 360°. Altitude operation -1,000 to 40,000 feet. Internal 3 phase inverter prodeces high starting torque and increases gyro roto speed. Internal lighting provides even light distribution at any intensity level. calibrated to an accuracy of 3° maximum drift error after 10 minutes of ±1.5° scorsby motion.

Electrical Requirements:
Starting Current @ 14 VDC: 2.4A Max
Running Current @ 14 VDC: 1.2A
Starting Current @ 28 VDC:; 1.4A Max
Running Current @28 VDC .6A
Reccomended Circuit Breaker 3A
Dimensions:Length: 6.7" Width; 3.4" Height: 3.4" Weight; 2.3 pounds
Meets of exceeds all requirements of FAA TSO C5c and Aeronautical Standard AS397.

Model	Description	Part No.	Price
RCA15AK-1	14 VDC, Lighted	10-01681	**$2,195.00**
RCA15AK-2	14 VDC	10-01390	**$2,089.00**
RCA15BK-1	28 VDC, Lighted	10-01682	**$2,195.00**
RCA15BK-2	28 VDC	10-00501	**$2,079.00**
RCA15AK-16	14 Volt, 400HZ, 5K.	10-02530	**$2,889.00**
RCA15AK-17	14 Volt,Heading Bug only.	10-02529	**$2,738.00**
RCA15BK-16	28 Volt, 400HZ, 5K.	10-02533	**$2,889.00**
RCA15BK-17	28 Volt,Heading Bug only.	10-02532	**$2,738.00**
Accessories			
MS3116E8-4S	Mating Connector	10-00791	**$24.95**
444-0011-0	Mini Slip Indicator - Add this to your new or current Electric Gyro Horizon. Replaces 444-0007-01.	10-04623	**$149.95**

GYROS

MID-CONTINENT INSTRUMENTS ELECTRIC ATTITUDE INDICATOR

Engineered as a primary or standby artificial horizon in fixed-wing aircraft and helicopters, this indicator's single connection makes installation a snap. This indicator is standard equipment on many OEM aircraft including the Beech Baron and Bonanza. Featuring 10-32 volt DC operation, antireflective glass, long-life lighting and 7,500 hours MTBF, this is a cost-effective and safe alternative to unreliable vacuum systems.

4300-311 - 10/32V, lighted, 0-20° Without btty
P/N 10-00751.....**$3,395.00**

4300-313 - 10/32V, Lighted, 0-20°, Delta
P/N 10-03899.....**$3,395.00**

Emergency power supply MD420 .. P/N 11-05540.....**$2,075.00**

MID-CONTINENT INSTRUMENTS 3300 ELECTRIC DIRECTIONAL GYRO

FEATURES: • Weighs just 1.8 lbs. – One pound less than most electric directional gyros • Multi-voltage 10–32 volt DC, remains valid until the aircraft main battery discharges to 10VDC • Direct replacement for many AIM205 and RC Allen RC15A units • Designed specifically for use in high vibration applications • Warning flag monitors rotor speed and power input • Anti-reflective glass enhances visibility and reduces fatigue • Approved to FAA TSO-C5e and RTCA DO-160E • Requires less than half the power of standard DG units • Long-life LED lighting, user selectable to 5, 14 or 28 volt input • One year limited warranty ***SPECIFICATIONS***; Power Input: 10–32 VDC, Current Rating: At 14 VDC Start: 1.4A Max., Run: 0.44A nominal, At 28 VDC Start: 0.6A Max., Run: 0.22A nominal, Lighting: Internal LED lighting switchable to 5, 14 or 28 VDC input; wired through main connector, Weight: 1.9 lbs., Length: 4.7 inches, MTBF: 2,500 hours, Mating Connector: MS3116F8-4S ,Mounting: Rear panel mount in standard 31/8" round panel cutout

3300-10 no lighting.....P/N 10-02821 .....**$3,295.00**
3300-11 14V LED Lighting .....P/N 10-04773 .....**$3,706.00**
3300-11 28V LED Lighting .....P/N 10-04774 .....**$3,706.00**
Mating Connector MS3116F8-4S.....P/N 10-00791 .....**$24.95**

MID-CONTINENT INSTRUMENTS "LIFESAVER" ELECTRIC ATTITUDE INDICATOR

Fly with confidence and peace of mind with the Lifesaver® gyro. Even if every other system in your aircraft's avionics panel goes dark, the Lifesaver powers on. The only attitude indicator with a self-contained battery backup, it delivers one full hour of emergency attitude reference. 1 hr of precious time to pull you through when trouble strikes and all other power fails. Optional sli p indicator can be installed anytime. No removal of gyro necessary.

Benefits: Field replaceable lighting, Anti-reflective glass enhances visibility and reduces fatigue, Battery life 3 years in average aircraft environment, 10-32 VDC replacement for use in either 14 or 28V aircraft, May be installed in place of an existing turn coordinator or turn, and slip indicator per FAA advisory circular AC91-75.

14V Gyro With Battery.....P/N 10-00750 .....**$4,075.00**
Slip Indicator.....P/N 10-00764 .....**$223.95**
Remote Battery Mounting Kit .....P/N 10-00763 .....**$241.95**
Replacement Battery Pack.....P/N 10-01054 .....**$249.95**
3/32" Front Mount Adapter .....P/N 10-00765 .....**$86.75**
1/2" Front Mount Adapter .....P/N 10-00766 .....**$151.00**

FALCON ATTITUDE GYRO (VACUUM)

This Gyro Horizon is controlled by an air driven precision gyroscope to present the pilot with pitch and roll information, through the full 360° "pictorial" presentation leads to faster interpretation of airplane attitude. A zero pitch adjustment knob is provided. Dims: 3-1/8 x 3-1/8 x 8 max. Similar to Air Italia Gyros. Non-TSO'd for Experimental Aircraft Only.....P/N 10-22955 .....**$577.00**
Gyro with 8° tilt.....P/N 10-02242 .....**$671.00**

FALCON ATTITUDE GYRO (ELECTRIC)

This factory new electric attitude gyro fits the standard gyro instrument cut-out. Features push-to-cage knob, low power/power failure flag, longer life & reliability due to lower operating temp.; Black case, black adjustment knob, & bright yellow/green airplane marker with sky blue/brown ground dial. Roll & loop without worry. Size: 6.4", Wt: 2.4 lbs., Power: 14VDC req. MS3116E8 connector (included). Non-TSO'd for Experimental Aircraft Only.

Size	Model No.	Description	Part No.	Price
3-1/8"	GH02E-3	Artificial horizon, 14V	10-04671	**$1,525.00**
3-1/8"	GH02E-3L	Artificial horizon, 14V, lighted	10-04672	**$1,598.00**
3-1/8"	GH02E-3A	Artificial horizon, 14V, 8° tilt	10-04673	**$1,499.00**
3-1/8"	GH02E-3AL	Artificial horizon, 14V, 8° tilt, lighted	10-04674	**$1,598.00**
3-1/8"	GH02E-3B	Artificial horizon, 28V	10-00102	**$1,598.00**
3-1/8"	GH02E-3BL	Artificial horizon, 28V, lighted	10-00103	**$1,733.00**
4 Pin	MS3116E8-4S	Connector for electrial gyro	10-00791	**$24.95**

FALCON DIRECTIONAL GYRO (VACUUM)

The vertical rotating azimuth card is controlled by a precision gyroscope air-driven. The directional gyro will give correct heading information through ±60° of aircraft attitude in roll and pitch, 360° in yaw. A caging knob is provided to reset the gyro to the magnetic compass. Similar to Air Italia Gyros. Non-TSO'd for Experimental Aircraft Only.
P/N 10-22950 ..... **$576.00**

FALCON DIRECTIONAL GYRO (ELECTRIC)

The Directional Gyro is a gyroscopic navigation instrument designed to provide the pilot with a constant directional reference that is not subject to characteristics of a magnetic compass that cause errors. The vacuum type is operated by the air flow generated by the aircraft's vacuum system while the electrical type is operated by the aircraft's power supply. Non-TSO'd for Experimental Aircraft Only.

Size	Model No.	Description	Part No.	Price
3-1/8"	DG02E-3H	14V with heading indicator	10-01798	**$1,519.00**
3-1/8"	DG02E-3HL	14V, lighted, with heading indicator	10-01796	**$1,549.00**
3-1/8"	DG02E-3BH	28V with heading indicator	10-01799	**$1,578.00**
3-1/8"	DG02E-3BHL	28V, lighted, with heading indicator	10-01822	**$1,526.00**

Falcon gyros can tolerated some aerobatic flight, but aerobatics can reduce the life of the gyro. It is recommended that the gyros be rem oved when the aircraft will be performing extensive aerobatic maneuvers. The Falcon electric gyros have caging knobs, but the vacuum gyros do not.

CASTLEBERRY ELECTRIC ATTITUDE INDICATOR

The high quality electric attitude indicator replaces the turn and bank and may be installed in the same panel location, freeing up crowded panel space. Installation of these units is straight-forward. It has an inclinometer for use in standard rate turns and a failure warning flag to indicate loss of gyro RPM. When used together with the Castleberry Emergency Power Unit, Model EPU 28-24RMT, this instrument provides the pilot with a welcome margin of insurance in case of aircraft electrical power failure. ***Features:*** • Inclinometer • Power failure flag • Pull to cage knob • Backlit • Standard 3 1/8 in. diameter

Model No.	Description	Part No.	Price
300-14EL	14V Gyro **	10-02823	**$2,395.00**
300-14EL	14V Gyro With 8° Tilt	10-02828	**$2,195.00**
300-14EL	28V Gyro With 8° Tilt	10-02829	**$2,385.00**
300-14ELP	300-14EL With Auto Pilot outputs.*	10-02826	**$3,592.00**

***Please Specify at time of order 14 or 28V or tilt if desired.**
****Light Tray required.**

CASTLEBERRY EMERGENCY POWER BACK-UP EPU-2

TSO'd emergency power supply, Model EPU 28-24RMT that can replace some older non TSO'd units made by Terra and AIM that are no longer in production. This unit provides a 24 VDC output up to 5 Amps for 30 minutes for emergency buss power to operate the standby attitude gyro with extra capacity of up to 4 amps for other critical instrument or avionics. This is economical insurance in a 7.5 pound package for aircraft frequently involved in IFR operations.

Emergency Power Supply EPU-2 .....P/N 11-05822 .... **$1,272.00**
EPU Connector.....P/N 11-07713 ..... **$71.00**
Rack Mount and Connector for EPU-2.....P/N 11-05823 ..... **$286.00**
Component Maintenance Manual.....P/N 11-00187 ..... **$441.95**

IN

GYROS – STANDBY VACUUM SYSTEMS

MID-CONTINENT INSTRUMENTS MINI 2-INCH ATTITUDE INDICATORS

The Mini Gyro offers big features in a compact package. At half the cost of the competition, the Mini Gyro not only saves panel space, but also time and money. An ideal standby instrument, this TSO-approved indicator has 10-32 volt DC operation and is an attractive alternative to vacuum systems. It features unique LED lighting selectable to 5, 14 or 28 volts. Remote emergency power supply available for this indicator (P/N 11-05540).

Standard airplane dislplay ..... P/N 10-01721 ..... **$3,395.00**
Delta airplane display ..... P/N 10-01722 ..... **$3,395.00**
Slip indicator (inclinometer) ..... P/N 10-04775 ..... **$218.95**
Emergency Power Supply ..... P/N 11-05540 ..... **$2,075.00**

VOLT & VAC ALERT

A gyro instrument can start giving false information in less than one minute, and it is important that the pilot become instantly aware of a vacuum loss. The Volt & Vac Alert monitors instrument vacuum and electrical voltage. Should either fall below set values, the system will provide an instantly recognizable voice warning directly in the pilots headset, and then flash a light positioned within the normal gyro scan area, providing him with instant recognition of a problem. The Volt & Vac Alert is STC - PMA approved P/N 10-00393 ..... **$479.95**

RAPCO STANDBY PNEUMATIC CLUTCH REPLACEMENTS

400 Series replacement clutches for Rapco standby pneumatic systems are available in 12 volt or 24 volt. They can be purchased either new or as an overhauled exchange. A core charge will be added to the purchase price of exchange units and refunded with the return of a repairable 400 series core.

Description	Description	Price
400 NEW clutch, 12V	10-02656	**$766.00**
400 EXC Clutch, 12V Remanufactured exchange	10-23949	**$428.95**

VACUUM PRESSURE WARNING LIGHT KIT

The instrument Source Warning indicator for Pressure systems is designed to alert pilots of the loss of pressure prior to the gyros tumbling. This early warning can be critical in giving the pilot enough time to react to the situation properly and avoid spatial disorientation.
The kit connects to the pressure gauge via a tee fitting and will only work on aircraft equipped with PRESSURE systems. This generally is confined to various Beech Bonanza models. Please double check your system type before ordering this kit. This kit is not STC'd but is usually installed as a minor modification. P/N 11-08458 ..... **$79.95**

VACUUM WARNING INDICATOR

The Precise Flight Vacuum Warning Indicator will provide the pilot with immediate warning of failure of the vacuum system, providing valuable time prior to gyro failure. An inexpensive system that can alert the IFR pilot immediately in the event of vacuum failure.

P/N 11-02205 ..... **$79.95**

VENTURI

2" VENTURI - This small aluminum venturi provides 2" Hg vacuum for operating turn/bank indicator. Has 1/8" NPT port. Use 1/4" tubing for hookup. Wt. 3.5 oz.

P/N 15045 ..... **$47.50**

4" VENTURI - This venturi develops 4" Hg suction from double-throat venturi and 10" long horn. Used to operate a directional gyro or gyro horizon. When operating a directional gyro there is sufficient capacity to also operate a turn/bank. All aluminum construction. May require a suction regulator.

Wt. 0.9 lb. ..... P/N 15050 ..... **$66.85**

9" VENTURI - This "super venturi" is similar in appearance to the 4" venturi but with redesigned air passages and a recontoured, long (11-1/4") horn. It pulls enough vacuum to operate a gyro horizon, directional gyro and a turn/bank. Must be used with a suction regulator.

P/N15052 ..... **$69.75**

SIGMA TEK CAGEABLE ATTITUDE GYROS

Short stops (engine off less than twelve minutes) and some aerobatic maneuvers may cause your attitude gyro to tumble or precess from its vertical reference. When the rotor is spinning, the gyros normal erection system is slow and can take several minutes to correct a large erection error. This non-locking caging feature allows the pilot to quickly align the gyro display and rotor to gyro case reference. The attitude gyro should only be caged for quick alignment during straight and level VFR flight using well defined earth horizon for reference or prior to take off. ***All lighted gyros must order tray separately.***

P/N	DESCRIPTION	PRICE
5000B	Standard Gyro, Unlighted (non-cageable)	**$939.00**
5000B-F	Standard Gyro w/Vacuum Failure Flag (non-cageable)	**$1,152.00**
5000M-1	With Caging Knob, 0° Panel Tilt	**$1,695.00**
5000M	With Caging Knob, 0° Panel Tilt, Lighted	**$1,598.00**
5000M-2	With Caging Knob, 8° Panel Tilt	**$1,552.00**
5000M-5	With Caging Knob, 8° Panel Tilt, Lighted	**$1,656.00**
5000B-46	With Inclinometer, 0° Panel Tilt	**$1,295.00**
5000B-45	With Inclinometer, 0° Panel Tilt, Lighted	**$1,465.00**
5000B-51	With Inclinometer, 8° Panel Tilt	**$1,295.00**
5000B-53	With Inclinometer, 8° Panel Tilt, Lighted	**$1,895.00**
5000M-3	With Caging & Inclinometer, 0° Panel Tilt	**$2,079.95**
5000M-6	With Caging & Inclinometer, 0° Panel Tilt, Lighted	**$2,033.00**
5000M-4	With Caging & Inclinometer, 8° Panel Tilt	**$1,979.00**
5000M-7	With Caging & Inclinometer, 8° Panel Tilt, Lighted	**$2,081.00**
10-00111	5000B Light Tray 14V	**$54.75**
10-00112	5000B Light Tray 24V	**$54.75**

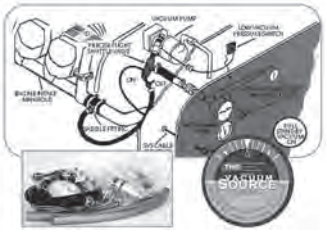
VAC-2 VACUUM PUMP ADAPTER

The revolutionary VAC-2 adapter provides a direct replacement for the Lycoming vacuum pump pad adapter casting. The VAC-2 design provides a standard vacuum pump pad with provision for inverted oil pick-ups. Normally there is a T fitting mounted on the firewall that supplies the inverted oil. For many engines when this T fitting is used, the oil pressure will drop down into the yellow on the oil pressure gauge for three to five seconds when inverted. On some aircraft this drop in oil pressure will cause the prop to cycle because of lack of oil pressure. With the VAC-2 adapter installed you do not have this drop in oil pressure. By using the VAC-2 adapter you have (1) the best inverted oil pickup, (2) a stock vacuum pump pad adapter. Used in place of Christen "T" fitting.

The VAC-2 comes complete with oil seal installed, gaskets. and MS 20822-10D fitting. Just slip vacuum pump gear assembly and washer into VAC-2 and install on engine. The standard Lycoming vacuum pump gear assembly and washer will fit into the B & C adapter. (Gear and washer shown are not included.)

VAC-2-4 for 4 Cylinder Engines ..... P/N 07-06790 ..... **$185.00**
VAC-2-6 for 6 Cylinder Engines ..... P/N 07-06795 ..... **$185.00**

STANDBY VACUUM SYSTEM SVS V



Manufactured by Precise Flight, Inc., this Standby Vacuum System, SVS V, is a new solution to the old problem of in-flight vacuum pump failures. It operates on a differential between manifold pressure and ambient pressure which is directed through a shuttle valve system to drive the flight instruments. When the vacuum pump fails, the pilot simply turns on the SVS system and adjusts engine power settings while observing the instrument suction gauge to obtain adequate differential to operate the instruments. Kit includes low vacuum light and installs in 2-4 hours. STCd for most aircraft. This kit can provide peace of mind on all flights and, if that pump ever fails, can be a real life saver. P/N 10-00400 ..... **$485.00**

AERO SAFE GUARDIAN I STANDBY VACUUM/PRESSURE SYSTEMS

The Aero Safe Guardian I Standby/ Pressure system is designed to provide the pilot with the most reliable standby source of instrument air available for single engine aircraft. STC'd for most Bellanca, Beech, Cessna, and Piper single engine aircraft. Specify aircraft make, model, year, and serial number when ordering.

Vacuum system ..... P/N 10-00267 ..... **$2,033.00**
Pressure system ..... P/N 10-00268 ..... **$2,159.00**

IN

TURN COORDINATORS – TURN & BANKS

RCA TURN COORDINATOR 3 INCH. INDICATORS

Used in many production aircraft. Incorporates an electrical Gyro Turn Indicator with an inclinometer. The inclinometer, by movement of a ball in relation to the lubber lines, indicates the slip angle of aircraft while in a turn. The airplane on the dial rotates with reference to the indices. A power failure flag drops into view whenever the supply voltage is lost or when voltage has dropped below a level acceptable for proper operation of the gyro. Operates on 14 to 28V DC. New manufacture. First installation requires electrical connector and clamp. ***DIMENSIONS:*** Length: 6 1/5 in. Max, Width: 3 3/8 in Max, Height:3 3/8 in Max, Weight: 1.9 lbs. Meets or exceeds requirements of FAA TSO C3b

Description	Model	Part No.	Price
Unlighted - Mating Connector: MS3106A-10SL-3S	RCA82A-11	10-01372	**$798.00**
Lighted (14V) - Mating Connector: MS3106A-10SL-3S	RCA83A-11-14	10-00485	**$942.00**
Lighted (28V) - Mating Connector: MS3106A-10SL-3S	RCA83A-11-28	10-01685	**$899.00**
Mating Connector	MS3106A-10SL-3S	10-00789	**$13.95**
Cable Clap	MS3057-4A	10-00959	**$4.60**

MID-CONTINENT INSTRUMENTS TURN COORDINATOR (ELECTRIC)

Engineered for a long service life, the new "B" model turn coordinator features a proven AC rotor powered by a solid-state inverter. This creates less heat behind the panel. By utilizing a brushless rotor design, this instrument has one of the top ratings in the industry – 4800 hours MTBF. A direct replacement for most 3-pin turn coordinators, it is perfect for use in high-performance aircraft and cold-climate applications. The well-known "Z" models are an industry standard. Value priced and reliable they are in more aircraft than any other brand. All 3-inch turn coordinators operate from 10 to 32 volts DC for convenience and reliability.

1394T100-7Z 10-32v, UNLIT ..... P/N 1394T100 ..... **$728.00**
1394T100-3Z 14v, LIT ..... P/N 10-22514 ..... **$896.00**
1394T100-10RB (Cessna, KAP 140, Autopilot)
P/N 10-02311 ..... **$1,575.00**
MS3106A-10SL-3S Electrical Plug Connector. P/N 10-00789 ..... **$13.95**
MS3057-4A Cable Clamp..... P/N 10-00959 ..... **$4.60**
Note: 3A & 8A models have brushless rotors to reduce air noise

MID-CONTINENT INSTRUMENTS TURN COORDINATORS (ELECTRIC) - B MODELS

Certified to FAA TSO C3b. OEM standard - proven reliablity. Includes power warning indicator. Features: •4500 hours MTBF, more than double the original "Z" design• Brushless AC rotor operates on 14 or 28 VDC. •Proven reliability through HALT (Highly Accelerated Life Testing) requirements and OEM usage since 1999.• Improved "Off" warning flag pulls out of view when rotor is up to speed. • Is a direct replacement for the popular 1394T100-7Z and most standard 3-pin turn coordinators.

1394T100-7B Unlighted 12-32V..... P/N 10-02108 ..... **$874.00**
28V unit- 14V Bezel Lighting..... P/N 10-01024 ..... **$1,036.00**
Unlighted G300A Autopilot, ARC ..... P/N 10-02653 ..... **$1,580.00**
1394T100-14RB Low Wing Turn Coordinator Autopilot - For use on low wing aircaft. ..... P/N 10-04022 ..... **$1,575.00**

FALCON TURN COORDINATOR (ELECTRIC)

3-1/8" cut out, 3-3/4" long. Small and lightweight, excellent for homebuilt aircraft. For 14V or 28V systems. Features power out warning flag. Unlighted. Includes electrical plug connector and cable clamp.

Unlit 0° Panel ..... P/N 10-22510 ..... **$493.00**
Unlit 8° Panel ..... P/N 10-02261 ..... **$498.95**
Lit 0° Panel ..... P/N 10-02262 ..... **$599.00**
Lit 8° Panel ..... P/N 10-02263 ..... **$584.00**
Connector MS3106A-10SL-3S..... P/N 10-00789 ..... **$13.95**
Cable Clamp MS3057-4A..... P/N 11-04969 ..... **$6.75**

WINTER SLIP INDICATORS

The basic flight instrument for co-ordinated turns. Available in two styles: Rectangular model fits easily in cramped panel space. Square model matches a 2-1/4" instrument hole, fits on either side of the panel. Both feature finely crafted metal cases and precision ball and tube assemblies.

Square ..... P/N 10-03812 ..... **$89.95**
Rectangle ..... P/N 10-03857 ..... **$89.50**

BANK INDICATORS (BALL TYPE)

In turning, instantly register slightest departure from the correct banking angle. Bank scale has white markings on black background. New manufacture. Available in 2 models:

10°-10° Scale, 2.25" between mounting holes.P/N 10-00600 ... **$103.95**
20° - 20° Scale, 5" between mounting holes... P/N 10-00700 ..... **$62.75**

MID-CONTINENT INSTRUMENTS TURN & SLIP (ELECTRIC)

Built-in voltage regulator allows it to be used in either 14V or 28V systems. Small, compact unit and weighs only 1.2 lbs. Incorporates a small "power out" warning window which is black when normal current is being supplied but turns red in the case of electrical power failure. This turn and bank is now being used in many production aircraft. New installation requires electrical connector and cable clamp. New manufacture by Electrical Gyro Corp. Size: 3-3/8" x 3-3/8" x 3-3/4" long.

Unlighted ..... P/N 1234T100 ..... **$979.00**
14V Bezel-Lit..... P/N 10-22614 ..... **$1,183.00**
28V Bezel-Lit..... P/N 10-22628 ..... **$1,183.00**
MS3106A-10SL-3S Electrical Plug Connector..... **$13.95**
MS3057-4A Cable Clamp **$4.60**

FALCON TURN & BANK(ELECTRIC)

The unit is an electrically-driven gyroscope. The inclinometer, by movement of a ball in relation to the lubber lines, indicates the slip angle of the aircraft while in a turn. A power flag drops into view whenever the voltage drops below a level which is required for proper operation of the gyro. It incorporates a built-in voltage regulator so it can be used with either 14VDC or 28VDC power supply system. It has a DC-AC-DC converter. Power Supply: 10-30VDC, Electrical Consumption: Max. 1.0A at 11-26VDC Max. 0.35A at 26 to 30VDC, Operating Range: 2 min. Turn, Weight: 18 oz./0.5 kg, Length: approx. 5 inchesUnlit..... P/N 10-22515 ..... **$1,059.00**

RCA TURN & BANK (ELECTRIC)

instrument is powered by an electrically driven DC precision gyro with an inclinometer. It gives the pilot turn and bank information. The RCA56 series is an all volt instrument, with a power warning flag, a black or white ball inclinometer and either lighted or non-lighted. DIMENSIONS: Length: 6 1/4 in. Max Width: 3 3/8 in. Max Height: 3 3/8 in. Max Weight: 1.9 lbs.

Meets or exceeds requirements of FAA TSO C3bNew manufacture by A.I.D. RC Allen. New installation requires plug connector & cable clamp.

RCA56-3B, UNLIT..... P/N 10-01684 ..... **$899.00**
RCA56-3BL, LIT..... P/N 10-02138 ..... **$876.00**
Plug Connector ..... P/N MS3106A-10SL-3S... **$13.95**
Cable Clamp ..... P/N MS3057-4A0..... **$4.60**

RCA MINIATURE TURN/BANK (ELECTRIC)

Similar to the air driven model but the gyroscope is electrically driven. Connection is by electrical plug. Power: 14 or 28V DC. New manufacture.

28V, 4 Min Turn Yellow markings P/N 10-03429..... **$1,180.00**
14V, 2 Minute Turn..... P/N 10-00499..... **$2,000.00**
14v, 2 Minute Turn 14/28 V Lit..... P/N 10-02587..... **$1,235.00**
Plug Connector..... P/N MS3106A-10SL-3S$..... **$13.95**
Cable Clamp..... P/N MS3057-4A..... **$4.60**

AN5820-1 TURN & BANK (VACUUM)

AN5820-1 Turn & Bank indicator completely overhauled and certified to FAA requirements. Fresh matte-white dial markings with "doghouses". Power: 1.8" to 2.2" Hg vacuum produced by a 2" venturi or vacuum pump. Size: 3.25"x 3.25"x 4.75" long. Weight: 1.5 lbs. 1 year warranty.P/N AN5820-1 ..... **$526.00**

TURN & BANK KIT

Consists of an overhauled and certified Turn & Bank indicator, 2" venturi, hoses, fittings and instrument screws.

P/N 10-00300 ..... **$593.00**

MID-CONTINENT INSTRUMENTS TURN & SLIP INDICATOR, 2-INCH

Widely used in the turbo-prop market as standard equipment, this dependable instrument fits into the tightest panel space. The AC brushless rotor offers great reliability. Internal lighting options of 5, 14 and 28 volt offer greater flexibility. These were factory installed on the DeHavilland Dash 8 and Boeing Chinook CH47

14V Turn & Slip ..... P/N 10-00305..... **$1,858.00**
28V Turn & Slip ..... P/N 10-00310..... **$1,858.00**
Plug Connector..... P/N MS3106A-10SL-3S **$13.95**
Cable Clamp..... P/N MS3057-4A **$4.60**

FALCON 2-1/4" INCLINOMETER

This in-dash mounted inclinometer is lightweight and fits a standard 2-1/4" instrument hole. Used on Kitfox aircraft & ideal for virtually any homebuilt. P/N 10-00705 ..... **$53.00**

IN

TEMPEST DRY AIR PUMPS

TEMPEST TORNADO 3000 DRY AIR PUMPS

New revolutionary LRT oil drain, patent pending feature is designed to drain oil, caused by a leaking Garlock Seal, before it reaches the drive coupler. Provides a tell tale leak path. Closed front ends, designed to eliminate oil and oil residues from entering into the pump. Helps prevent pump failures caused by oil entering into the drive mechanism or rotor and vanes. 3 year 1300 hour warranty

Tempest Tornado 3000 Model AA3215CC..... P/N 10-00609.. **$365.00**
Tempest Tornado 3000 Model AA3216CW ..... P/N 10-00610.. **$365.00**
Tempest Tornado 3000 Model AA3215CC-9 ... P/N 10-00611.. **$365.00**

TEMPEST VACUUM PUMP COOLING SHROUDS

Cooling shrouds have been proven to reduce pump operating temperature and therefore extend service life. Testing has proven reduction in operating temperature by as much as 15%. Saves money - extends service life of dry air pumps. AA20T fits all 200/240 series pumps. AA40T fits all 400 series pumps. Sigma - Tek® pumps are not eligible.

AA207.....P/N 10-02796 ..... **$57.50**
AA40T .....P/N 10-02797 ..... **$59.90**

TEMPEST HOMEBUILT VACUUM SYSTEM KITS

Kit includeds •Vacuum Pump •Vacuum Regulator •Vacuum Gauge •Gyro Filter Asssembly •6-5/8 Hose & Clamps •6-3/8 Hose & Clamps •4-1/4 Hose & Clamps •Pump Inlet & Outlet Fittings •Gyro Inlet Fittings •Gyro Outlet Fittings •Gyro to Vacuum Gauge Fitting •Installation Instructions

Model 215CCHK..... P/N 10-02004 ..... **$884.00**
Model 216CWHK..... P/N 10-02005 ..... **$766.30**
Model AA3215CCHK..... P/N 10-01134 ..... **$925.00**
Model AA3216CWHK..... P/N 10-01135 ..... **$903.00**

VACUUM PUMP APPLICATION

See www.aircraftspruce.com for complete listing of vacuum pump applications for most general aviation aircraft.

TEMPEST WEAR INDICATOR TOOL KIT

Tempest Wear Indicator Tool Kit. Kit includes: 3 Star Lockwashers (82-50122-2A2), 3 Hole Plugs (82-50122-2A1), 1 WIP Tool (82-501222A6T) P/N 10-04814.....**$38.75**

TEMPEST ELECTRIC AUX. DRY AIR PUMPS

Electric auxiliary dry air pumps are recommended for single engine aircraft flown in IFR conditions as a back-up in the event the primary vacuum pump fails. These pumps are FAA-PMA approved as direct replacements for Airborne pumps previously installed under STC eligibility and STC approval for these pumps for many additional aircraft is pending.

28VEC..... Electric Auxiliary Dry Air Pump Model AA4A2-1 ..... P/N 10-00585.....**$1,438.00**
14VEC..... Electric Auxiliary Dry Air Pump Model AA4A3-1 ..... P/N 10-00584.....**$1,644.00**

TEMPEST DRY AIR PUMPS

Tempest dry air pumps, from Aero Accessories, are 100% new production and use all new components. They are FAA-PMA approved replacements for like and similar models on many installations. These pumps are available in the 200, 240, and 400 series.

The AA215CC series come with a 1-year, unlimited hour warranty and the AA241CC, AA242CW, and the AA441CC and AA442CW series come with a 1-year, 500 hour warranty. Warranties expire 2-years from date of manufacture. **$100.00 Core Charge applied to Overhauled Pumps**

Core Rebate available for new pumps.

TEMPEST DRY AIR PUMPS - OVERHAULED

MODEL	DESCRIPTION	PART NO.	PRICE
215CCWIP	Overhauled Dry Air Pump w/WIP	10-24000-1	**$259.00**
216CWWIP	Overhauled Dry Air Pump w/WIP	10-24600-1	**$259.00**
241CC	Overhauled Dry Air Pump	10-24700-1	**$451.95**
243CC-13	Overhauled Dry Air Pump	10-01969	**$454.95**
243CC-15	Overhauled Dry Air Pump	10-01968	**$432.95**
242CW	Overhauled Dry Air Pump	10-24800-1	**$451.95**
244CW-4	Overhauled Dry Air Pump	10-01971	**$430.95**
244CW-10	Overhauled Dry Air Pump	10-01972	**$430.95**
441CC	Overhauled Dry Air Pump	10-01976	**$559.00**
441CC-3	Overhauled Dry Air Pump	10-01974	**$577.00**
441CC-7	Overhauled Dry Air Pump	10-01975	**$598.00**
441CC-7A	Overhauled Dry Air Pump	10-01976	**$559.00**
441CC-9	Overhauled Dry Air Pump	10-01977	**$577.00**
441CC-11	Overhauled Dry Air Pump	10-01978	**$577.00**
441CC-17	Overhauled Dry Air Pump	10-01979	**$562.00**
441CC-23	Overhauled Dry Air Pump	10-01980	**$562.00**
442CW	Overhauled Dry Air Pump	10-23600-1	**$594.00**
442CW-4	Overhauled Dry Air Pump	10-01981	**$608.00**
442CW-6	Overhauled Dry Air Pump	10-01982	**$594.00**
442CW-8	Overhauled Dry Air Pump	10-01983	**$592.00**
442CW-10	Overhauled Dry Air Pump	10-01984	**$562.00**
442CW-12	Overhauled Dry Air Pump	10-01146	**$613.00**
442CW-14	Overhauled Dry Air Pump	10-01985	**$562.00**
442CW-20	Overhauled Dry Air Pump	10-01986	**$562.00**
AA215CWHK	Overhauled Dry Air Pump	10-01554	**$866.00**
AA216CCHK	Overhauled Dry Air Pump	10-01155	**$545.00**

TEMPEST DRY AIR PUMPS - NEW

MODEL	DESCRIPTION	PART NO.	PRICE
AA241CC	New Dry Air Pump	10-24700	**$647.00**
AA243CC-13	New Dry Air Pump	10-01987	**$669.00**
AA243CC-15	New Dry Air Pump	10-01988	**$686.00**
AA243CW	New Dry Air Pump	10-24800	**$648.00**
AA244CW-4	New Dry Air Pump	10-01989	**$669.00**
AA244CW-10	New Dry Air Pump	10-01990	**$669.00**
AA3215CC	New Dry Air Pump	10-00609	**$365.00**
AA3216CW	New Dry Air Pump	10-00610	**$365.00**
AA3215CC-9	New Dry Air Pump	10-00611	**$365.00**
AA441CC	New Dry Air Pump	10-23500	**$918.00**
AA441CC-3	New Dry Air Pump	10-01991	**$936.00**
AA441CC-7	New Dry Air Pump	10-01992	**$954.00**
AA441CC-9	New Dry Air Pump	10-01993	**$936.00**
AA441CC-11	New Dry Air Pump	10-01994	**$906.00**
AA441CC-17	New Dry Air Pump	10-01995	**$906.00**
AA442CW	New Dry Air Pump	10-23600	**$899.00**
AA442CW-4	New Dry Air Pump	10-01996	**$892.00**
AA442CW-6	New Dry Air Pump	10-01997	**$906.00**
AA442CW-8	New Dry Air Pump	10-01998	**$906.00**
AA442CW-10	New Dry Air Pump	10-01999	**$906.00**
AA442CW-12	New Dry Air Pump	10-02001	**$1,039.00**
AA442CW-14	New Dry Air Pump	10-02002	**$906.00**
AA442CW-20	New Dry Air Pump	10-02003	**$906.00**

AIRCRAFT SPRUCE WEST
CORONA, CA • (877) 4-SPRUCE
AIRCRAFT SPRUCE EAST
PEACHTREE CITY, GA • (877) 477-7823

Prices Subject to Change Without Notice

TEMPEST PNEUMATIC COMPONENTS

PNEUMATIC FITTINGS

MODEL	DESCRIPTION	PART NO.	PRICE
AA1K1-4-6	Fitting -1/4 NPT x 3/8 Hose	10-00914	$42.25
AA1K1-4-8	Fitting -1/4 NPT x 1/2 Hose	10-01923	$66.75
AA1K1-6-6	Fitting -3/8 NPT x 3/8 Hose	10-01924	$328.40
AA1K1-6-8	Fitting -3/8 NPT x 1/2 Hose	10-00915	$44.00
AA1K1-6-10	Fitting -3/8 NPT x 5/8 Hose	10-00916	$27.85
AA1K1-8-10	Fitting -1/2 NPT x 5/8 Hose	10-00917	$48.75
AA1K1-8-12	Fitting -1/2 NPT x 3/4 Hose	10-01925	$66.75
AA1K8-6-8	Fitting -3/8 NPT x 1/2 Hose	10-01926	$73.75
AA1K8-6-10	Fitting -3/8 NPT x 5/8 Hose	10-01147	$67.75
AA1K9-4-6	Fitting -1/4 NPT x 3/8 Hose (A-45O)	10-01927	$35.75
AA1K9-6-10	Fitting -3/8 NPT x 5/8 Hose (A-45O)	10-01928	$44.50
AA1K10-2-4	Fitting -1/8 NPT x 1/4 Hose	10-01929	$45.75
AA1K10-4-4	Fitting -1/4 NPT x 1/4 Hose	10-01930	$68.25
AA1K10-4-6	Fitting -1/4 NPT x 3/8 Hose	10-00918	$28.25
AA1K10-4-8	Fitting -1/4 NPT x 1/2 Hose	10-01932	$49.95
AA1K10-6-10	Fitting -3/8 NPT x 5/8 Hose	10-01933	$51.95
AA1K10-6-12	Fitting -3/8 NPT x 3/4 Hose	10-01934	$116.95
AA1K10-8-12	Fitting -1/2 NPT x 3/4 Hose	10-01935	$99.25
AA1K14-6-6-6	Fitting -3/8 NPT x 3/8 x 3/8 Hose	10-01936	$67.50
AA1K14-10-10	Fitting -5/8 NPT x 5/8 x 5/8 Hose	10-01937	$132.95
AA1K17-4-8-6-4	Fitting -1/4 NPTx1/2x3/8x1/4Hose	10-01938	$217.95
AA1K22-10-10	Fitting -5/8 NPT x 5/8 Hose	10-01148	$98.25
AA1K24-2	Fitting -3/4 Hose Flange	10-01939	$204.95
AA1K30-6-6-4	Fitting -3/8 x 3/8 x 1/4 Hose	10-01940	$91.75
AA1K30-10-6-6	Fitting -5/8 x 3/8 x 3/8 Hose	10-01942	$76.50
AA1K31-4-6-4	Fitting -1/4 NPTx1/2x3/8x1/4 Hose	10-01943	$71.25
AA1K43-10-10	Fitting -5/8 x 5/8 Hose	10-01949	$49.95
AA1K43-12-12	Fitting -3/4 x 3/4 Hose	10-01944	$124.95

PNEUMATIC FILTERS

MODEL	DESCRIPTION	PART NO.	PRICE
AAD9-14-3	Filter	10-00923	$18.75
AAD9-14-5	Filter	10-00924	$18.95
AAD9-18-1	Filter	10-01354	$18.90
AA2J4-4	Filter	10-01946	$33.85
AA2J4-6	Line Mounted Filter	10-01946	$33.85
AA2J4-7	Line Mounted Filter	10-01947	$33.85
AA1J7-1	Gyro Filter Assembly	10-01948	$41.75
AA1J7-2	Gyro Filter Assembly	10-01949	$49.95
ARB3-5-1	Garter Filter	10-01333	$2.95

MISCELLANEOUS PARTS

MODEL	DESCRIPTION	PART NO.	PRICE
82-06768	Coupling	10-01951	$63.25
82-50130B	Flange Gasket	10-01952	$2.40
82-50130BP	Flange Gasket-Package of 10	10-01953	$25.85
82-50195	WIP Plug-New Pumps Only	10-01954	$4.90
82-50195P	WIP Plug-New Pumps Only-Pkg. of 10	10-01955	$43.75
82-50195A	WIP Plug-O/H Pumps Only	10-01958	$7.75
82-50195AP	WIP Plug-O/H Pumps Only-Pkg. of 10	10-01959	$61.50
82-50155DP	LRT Diverter Kit	10-01961	$12.50
AA9144	Prop Governer Gasket	10-01962	$14.75
AAD5-77-1	WIP Plug-O/H Pumps Only-Pkg. of 10	10-01963	$38.25
AAF7-236-1	Aux. Switch 14 Volt DC	10-01964	$342.95
AAF7-236-2	Aux. Switch 28 Volt DC	10-01965	$343.95

NEW VACUUM REGULATORS

MODEL	DESCRIPTION	PART NO.	PRICE
AA1H5-25A	Regulating Valve	10-03457	$458.95
AA2H3-2	Regulating Valve	10-03458	$379.95
AA2H3-5	Regulating Valve	10-03459	$267.95
AA2H3-6	Regulating Valve	10-03460	$266.95
AA2H3-12	Regulating Valve	10-03461	$258.95
AA2H3-23	Regulating Valve	10-03462	$277.95
AA2H3-48	Regulating Valve	10-03463	$391.95

OVERHAULED AIRBORNE SOLENOIDS

MODEL	DESCRIPTION	PART NO.	PRICE
1H15-6	Solenoid	10-01860	$526.00

OVERHAULED AIRBORNE VACUUM MANIFOLDS

MODEL	DESCRIPTION	PART NO.	PRICE
1H5-1	Vacuum Manifold	10-01861	$426.95
1H5-2	Vacuum Manifold	10-01862	$461.95
1H5-3	Vacuum Manifold	10-01863	$508.00
1H5-4	Vacuum Manifold	10-01864	$498.95
1H5-6	Vacuum Manifold	10-01865	$525.00
1H5-8	Vacuum Manifold	10-01866	$550.00
1H5-9	Vacuum Manifold	10-01867	$413.95
1H5-10	Vacuum Manifold	10-01868	$523.00
1H5-13	Vacuum Manifold	10-01869	$686.00
1H5-14	Vacuum Manifold	10-01870	$556.00
1H5-18	Vacuum Manifold	10-01871	$385.95
1H5-19	Vacuum Manifold	10-01872	$772.00
1H5-20	Vacuum Manifold	10-01873	$540.00
1H5-21	Vacuum Manifold	10-01874	$766.00
1H5-22	Vacuum Manifold	10-01875	$592.00
1H5-23	Vacuum Manifold	10-01876	$393.95
1H5-24	Vacuum Manifold	10-01877	$499.95
1H5-25A	Vacuum Manifold	10-03457	$458.95

OVERHAULED AIRBORNE PRESSURE MANIFOLDS

MODEL	DESCRIPTION	PART NO.	PRICE
1H24-3	Pressure Manifold	10-01879	$558.00
1H24-6	Pressure Manifold	10-01880	$646.00
1H24-7	Pressure Manifold	10-01881	$710.00
1H24-8	Pressure Manifold	10-01882	$615.00
1H24-10	Pressure Manifold	10-01883	$583.00
1H24-11	Pressure Manifold	10-01884	$760.00
1H24-12	Pressure Manifold	10-01885	$947.00
1H24-18	Pressure Manifold	10-01886	$720.00
1H24-20	Pressure Manifold	10-01887	$910.00
$200 CORE CHARGE			

OVERHAULED AIRBORNE CHECK VALVES

MODEL	DESCRIPTION	PART NO.	PRICE
1H37-1	De-Ice Valve	10-01888	$289.95
1H37-3	De-Ice Valve	10-01889	$331.95
1H37-4	De-Ice Valve	10-01890	$297.95
1H43-11	De-Ice Valve	10-01891	$1,363.00
1H43-12	De-Ice Valve	10-01892	$1,384.00
1H43-13	De-Ice Valve	10-01893	$1,178.00
1H43-14	De-Ice Valve	10-01894	$1,312.00
1H43-15	De-Ice Valve	10-01895	$1,167.00
1H43-16	De-Ice Valve	10-01896	$1,126.00
1H43-20	De-Ice Valve	10-01897	$1,523.00
1H43-21	De-Ice Valve	10-01898	$1,436.00
1H44-12	De-Ice Valve	10-01899	$1,323.00
1H44-16	De-Ice Valve	10-01906	$1,250.00
1H44-17	De-Ice Valve	10-01907	$1,685.00
1H44-18	De-Ice Valve	10-01908	$1,684.00
2H22-11	De-Ice Valve	10-01909	$928.00
2H22-16	De-Ice Valve	10-01910	$1,581.00
2H48-14	De-Ice Valve	10-01911	$799.00
2H48-22	De-Ice Valve	10-01913	$888.00
2H48-23	De-Ice Valve	10-01914	$730.00
2H48-24	De-Ice Valve	10-01916	$1,063.00
2H59-3	De-Ice Valve	10-01917	$1,634.00
2H59-4	De-Ice Valve	10-01919	$2,025.00
2H59-8	De-Ice Valve	10-01920	$1,363.00
2H59-16	De-Ice Valve	10-01921	$2,337.00
$200 CORE CHARGE			

IN

TEMPEST PNEUMATIC COMPONENTS

TEMPEST OVERHAULED AIRBORNE VACUUM REGULATORS

Model	Description	Superseded by
133A2	Overhauled Airborne Vacuum Regulators	2H3-1
133A3	Overhauled Airborne Vacuum Regulators	2H3-2
133A4	Overhauled Airborne Vacuum Regulators	2H3-12
133A6	Overhauled Airborne Vacuum Regulators	2H3-4
133A7	Overhauled Airborne Vacuum Regulators	2H3-7
133A8	Overhauled Airborne Vacuum Regulators	2H3-25
133A13	Overhauled Airborne Vacuum Regulators	2H3-11
133A16	Overhauled Airborne Vacuum Regulators	2H3-16
133A17	Overhauled Airborne Vacuum Regulators	2H3-13
133A18	Overhauled Airborne Vacuum Regulators	2H3-14
133B3	Overhauled Airborne Vacuum Regulators	2H3-6
133B4	Overhauled Airborne Vacuum Regulators	2H3-22
133B5-1	Overhauled Airborne Vacuum Regulators	2H3-8
133B5-2	Overhauled Airborne Vacuum Regulators	2H3-9
133C1	Overhauled Airborne Vacuum Regulators	2H3-5
133C3	Overhauled Airborne Vacuum Regulators	2H3-10

TEMPEST OVERHAULED VACUUM MANIFOLD

Model	Description	Part No.	Price
2H3-1	Vacuum Manifold	10-02970	$819.00
2H3-4	Vacuum Manifold	10-02972	$566.00
2H3-5	Vacuum Manifold	10-02973	$361.95
$200 CORE CHARGE			

TEMPEST OVERHAULED PRESSURE MANIFOLD

Model	Description	Part No.	Price
2H3-7	Pressure Manifold	10-02976	$439.95
2H3-8	Pressure Manifold	10-02977	$439.95
2H3-10	Pressure Manifold	10-02979	$473.95
2H3-11	Pressure Manifold	10-02980	$349.95
2H3-13	Pressure Manifold	10-02982	$612.00
2H3-14	Pressure Manifold	10-02983	$619.00
2H3-15	Pressure Manifold	10-02984	$409.95
$200 CORE CHARGE			

TEMPEST OVERHAULED CHECK VALVE

Model	Description	Part No.	Price
2H3-16	Check Valve	10-03004	$393.95
2H3-19	Check Valve	10-03006	$670.00
2H3-22	Check Valve	10-03007	$475.95
$200 CORE CHARGE			

TEMPEST OVERHAULED DE-ICE VALVE

Model	Description	Part No.	Price
O/H 2H3-20	Overhauled Regulating Valve	10-03399	$498.95
2H3-25	De-Ice Valve	10-03013	$475.95
2H3-27	De-Ice Valve	10-03015	$639.00
2H3-32	De-Ice Valve	10-03017	$515.00
2H3-35	De-Ice Valve	10-03018	$546.00
2H3-38	De-Ice Valve	10-03019	$575.00
2H3-44	De-Ice Valve	10-03022	$663.00
2H3-45	De-Ice Valve	10-03023	$695.00
2H3-46	De-Ice Valve	10-03024	$438.95
2H3-48	De-Ice Valve	10-03025	$443.95
$200 CORE CHARGE			

Due to a shortage of cores Vacuum / Pressure regulators may not be in stock. Customer may need to ship their unit to Aircraft Spruce for overhaul.

TEMPEST OVERHAULED AIRBORNE PRESSURE REGULATORS CROSS-REFERENCE

Model	Description	Superseded by
1H30-1	Overhauled Airborne Pressure Regulators	2H30-1
1H30-2	Overhauled Airborne Pressure Regulators	2H30-2
1H30-3	Overhauled Airborne Pressure Regulators	2H30-3
1H30-6	Overhauled Airborne Pressure Regulators	2H30-6
1H30-8	Overhauled Airborne Pressure Regulators	2H30-8
1H30-9	Overhauled Airborne Pressure Regulators	2H30-9
1H30-11	Overhauled Airborne Pressure Regulators	2H30-11
1H30-13	Overhauled Airborne Pressure Regulators	2H30-13
1H30-14	Overhauled Airborne Pressure Regulators	2H30-14

TEMPEST OVERHAULED PRESSURE REGULATORS

Model	Description	Part No.	Price
2H30-1	Pressure Regulators	10-03029	$438.95
2H30-2	Pressure Regulators	10-03037	$520.00
2H30-3	Pressure Regulators	10-03039	$425.95
2H30-6	Pressure Regulators	10-03042	$540.00
2H30-8	Pressure Regulators	10-03043	$991.00
2H30-9	Pressure Regulators	10-03045	$438.95
2H30-11	Pressure Regulators	10-03047	$524.00
2H30-13	Pressure Regulators	10-03053	$493.95
2H30-14	Pressure Regulators	10-03054	$584.00
2H30-17	Pressure Regulators	10-03056	$711.00
2H30-27	Pressure Regulators	10-03057	$427.95
2H30-28	Pressure Regulators	10-03060	$429.95
2H30-32	Pressure Regulators	10-03066	$397.95
$200 CORE CHARGE			

Due to a shortage of cores Vacuum / Pressure regulators may not be in stock. Customer may need to ship their unit to Aircraft Spruce for overhaul.

VACUUM PUMP FITTINGS – VACUUM PUMPS

RAPCO FAA APPROVED FITTINGS

RA1K1-6-10 - This 90° fitting with 5/8" hose and 3/8" NPT is used in most inlet threaded ports of 200 series vacuum pumps and is a FAA PMA direct replacement for the Airborne Model 1K1-6-10. This 90° fitting has superior flow and low pressure loss.
P/N 10-00395 ..... **$30.75**

RA1K8-6-10 - This 152° fitting with 5/8" hose and 3/8" NPT is used in most outlet threaded ports of 200 series vacuum pumps and is a FAA PMA direct replacement for the Airborne. P/N 10-00396 ..... **$38.75**

RA1K31-4-6-4 - This 3/8" and 1/4" hose, 1/4" NPT, "T" fitting is used in most threaded ports of the flight instruments and is a FAA PMA direct replacement for the Airborne Model 1K31-4-6-4. P/N 10-00397 ..... **$24.75**

RA1K10-4-6 - This 3/8" hose, and 1/4" NPT fitting is used in most inlet threaded ports of the flight instruments and is a direct replacement for the Airborne Model 1K10-4-6. .....
P/N 10-00398 ..... **$14.75**

RA1K10-6-10 - This fitting with 5/8" hose and 3/8" NPT is used in most inlet and outlet threaded ports of the 200 series vacuum pump. The fitting is 5/8" hose with 3/8" NPT threads. The Rapco, Inc. fitting is a FAA PMA direct replacement for the Airborne Model 1K10-6-10.. P/N 10-01849 ..... **$27.75**

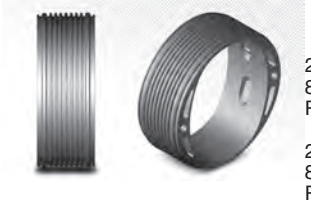
RA1K1-4-6 - This 90° fitting with 3/8 hose, 1/4" NPT is used in most threaded ports of the flight instruments and is a FAA PMA direct replacement for the airborne. P/N 10-01130 ..... **$30.75**

RAPCO RA-1H5-1 MANIFOLD CHECK VALVE

This valve is used in many Multi-Engine General Aviation applications. The Rapco, Inc. FAA PMA Multi-Engine manifold check valve is a direct replacement for the Airborne Model 1H5-1.
P/N 10-01131 ..... **$737.00**

AIRBORNE VACUUM PUMP REPAIR KITS

Basic Kits – These FAA/PMA kits include rotor, vanes,gasket, and drive coupling.
For Airborne 211/212 Pumps
P/N 10-00901 ..... **$98.50**
For Airborne 200 cc/cw Pumps
P/N 10-00902 ..... **$99.85**
For Airborne 241/242 Pumps ..... P/N 10-00903 ..... **$85.95**
For Airborne 441/442 Pumps ..... P/N 10-01001 ..... **$147.95**
Deluxe Kits – These FAA/PMA kits include rotor, coupler, external spline, bushing, blades, nut, cushion washer and band gaskets. Washer and gaskets not included on 200CC kits. Installation instructions included.For Airborne 211/212 pumps ..... P/N 10-01901 ..... **$143.95**
For Airborne 241/242 pumps ..... P/N 10-01903 ..... **$187.95**
For Airborne 441/442 pumps ..... P/N 10-01904 ..... **$187.95**



PUMP STATOR HOUSINGS

215/216 Pump Stator Housing
82-50122A
P/N 10-00919 ..... **$80.75**
$15.00 Core Charge
241/242 Pump Stator Housing
82-50122-1
P/N 10-00920 ..... **$108.95**
$35.00 Core Charge
441/442 Pump Stator Housing 82-50122-2
P/N 10-00921 ..... **$256.95**
$15.00 Core Charge

RAPCO VACUUM SYSTEM KIT

This Vacuum System Kit is ideal for use on experimental aircraft, allowing the kit builder to obtain all of the necessary components of their vacuum system in one convenient kit. The price of this kit reflects a substantial discount over the individual prices of the components if purchased separately.
This Kit Includes:

- 1 RA215CC Vacuum Pump w/Gasket
- 1 RA2H3-12 Vac. Regulator w/Garter Filter
- 1 RA-IJ7-1 FilterAssembly
- 1 RA1K1-6-10 90° 5/8" Fitting
- 1 RA1K8-6-10 152° 5/8" Fitting
- 2 RA1K31-4-6-4 3/8" and 1/4" T-Fitting
- 2 RA1K10-4-6 3/8" Fitting
- 1 - 5/8" x 3' Hose
- 1 - 3/8" x 5' Hose
- 1 - 1/4" x 6' Hose
- 10 - #8 Hose Clamps
- 4 - #4 Hose Clamps
- 1 Installation Diagram
- 1 Suction Gauge

Kit with RAP215CC Pump - For engines with ***COUNTER CLOCKWISE*** turning accessory drives. ..... P/N 11-00099 ..... **$698.00**

Kit with RAP216CW Pump - For engines with ***CLOCKWISE*** turning accessory drives..... P/N 06-00635 ..... **$698.00**

Kit Without Pump..... P/N 10-02010 ..... **$527.00**

AIRWOLF VACUUM REGULATOR & FIREWALL ADAPTER

Fully adjustable, cleanable, and rebuildable. (2) 1/2" NPT ports make it fully adaptable to all aircraft.
Vacuum Regulator/Firewall Adapter..... P/N 10-00769 ..... **$385.00**
Adapter, 5/8" x 1/2" hose..... P/N 10-00770 ..... **$95.00**
Adapter, 5/8" x (2) 1/2" hoses ..... P/N 10-00771 ..... **$95.00**
Adapter, 5/8" x (2) 3/8" hoses ..... P/N 10-00772 ..... **$95.00**

GARWIN / PESCO REMANUFACTURED WET PUMPS

Our supplier remanufactures run-out Pesco and Garwin wet pumps to factory specifications. FAA Approved.

Note: Pump Drive is included.

Pesco 194 pump ..... P/N 10-00028 ..... **$474.00**
Pesco 207 pump ..... P/N 10-00029 ..... **$579.00**
Garwin G455 pump ..... P/N 10-00027 ..... **$479.00**
Garwin G450 pump ..... P/N 10-00026 ..... **$479.00**
Add $125.00 core charge to purchase price. Like cores in repairable condition may be returned to Aircraft Spruce West for full core credit. Return cores via UPS and reference invoice number.

AIRWOLF 3P194-AFC WET VACUUM PUMP

The Airwolf 3P194-F pump incorporates new manufacturing techniques, employs superior bearings to those found in dry pumps, an dis machine to extremely tight tolerances. Replaces all 211/212, 215/216, 242/244 Series Airborne / Champion / Rapco / Tempest / Dry Vacuum Pumps, Pesco 3P194-F Garwin G-455 Wet Vacuum Pumps & Sigma Tek 1U128-006 Dry Vacuum Pumps, regardless of direction of pump rotation. This pump works on ALL aircraft that do not have deice boots. Comes with a 2,000 hr, 10 year warranty Airwolf Factory Warranty. **$100.00** Core charge applies. P/N 10-00707 ..... **$1,599.00**

IN

VACUUM PUMPS

RAPCO DRY AIR PUMPS - VACUUM / PRESSURE

RAPCO FAA approved quality dry air pumps are available in brand new replacement models or overhauled. All are backed by warranty.

BRAND NEW RAPCO DRY AIR PUMPS are FAA-PMA approved and come with an inspection port to help determine replacement time. An exclusive internal shaft seal helps to keep out destructive oil and solvents. Mounting gasket included. Warranty period for 200 series is three year 1300 hours, 240 and 400 series is 1 year 500 hours, whichever comes first. No core charge on new pumps. Core rebate available.

Rapco New Dry Air Vacuum Pumps

Description	Rapco Part Number	Our Part Number	Price
RAP215CC New Rapco Pump	RAP215CC	10-23925	**$289.00**
RAP215CC-9 New Rapco Pump	RAP215CC-9	10-03401	**$293.00**
RAP216CW New Rapco Pump	RAP216CW	10-23935	**$289.00**
RAP241CC New Rapco Pump	RAP241CC	10-23950-1	**$473.95**
RAP241CC-13 New Rapco Pump	RAP241CC-13	10-03447	**$473.95**
RAP241CC-15 New Rapco Pump	RAP241CC-15	10-03448	**$473.00**
RAP242CW New Rapco Pump	RAP242CW	10-23960-1	**$474.00**
RAP242CW-4 New Rapco Pump	RAP242CW-4	10-03449	**$473.95**
RAP242CW-10 New Rapco Pump	RAP242CW-10	10-03450	**$473.95**
RAP441CC New Rapco Pump	RAP441CC	10-01126	**$729.00**
RAP441CC-3 New Rapco Pump	RAP441CC-3	10-03074	**$719.00**
RAP441CC-7 New Rapco Pump	RAP441CC-7	10-03075	**$724.00**
RAP441CC-9 New Rapco Pump	RAP441CC-9	10-03076	**$719.00**
RAP441CC-17 New Rapco Pump	RAP441CC-17	10-03077	**$719.00**
RAP441CC-23 New Rapco Pump	RAP441CC-23	10-03078	**$721.00**
RAP442CW New Rapco Pump	RAP442CW	10-01127	**$719.00**
RAP442CW-4 New Rapco Pump	RAP442CW-4	10-03079	**$719.00**
RAP442CW-6 New Rapco Pump	RAP442CW-6	10-03080	**$724.00**
RAP442CW-8 New Rapco Pump	RAP442CW-8	10-03081	**$719.00**
RAP442CW-12 New Rapco Pump	RAP442CW-12	10-01128	**$729.00**
RAP442CW-14 New Rapco Pump	RAP442CW-14	10-03082	**$724.00**
RAP442CW-20 New Rapco Pump	RAP442CW-20	10-03083	**$719.00**

OVERHAULED DRY AIR PUMPS by RAPCO are FAA approved and shipped with FAA form 8130-3. Mounting gasket included. Warranty period for 200 series is two years 1000 hours, 240 and 400 series is one year 400 hours, whichever comes first.

Rapco Overhauled Dry Air Vacuum Pumps

Description	Rapco Part Number	Our Part Number	Price
211CC Overhauled Pump	211CC	10-23930	**$194.00**
211CC-9 Overhauled Pump	211CC-9	10-23931	**$194.00**
212CW Overhauled Pump	212CW	10-23940	**$194.95**
215CC Overhauled Pump	215CC	10-03084	**$198.50**
216CW Overhauled Pump	216CW	10-03085	**$198.50**
241CC Overhauled Pump	241CC	10-23950	**$382.95**
241CC-13 Overhauled Pump	241CC-13	10-03086	**$382.95**
241CC-15 Overhauled Pump	241CC-15	10-03087	**$382.95**
242CW Overhauled Pump	242CW	10-23960	**$384.00**
242CW-4 Overhauled Pump	242CW-4	10-03088	**$382.95**
242CW-10 Overhauled Pump	242CW-10	10-03089	**$382.95**
441CC Overhauled Pump	441CC	10-02349	**$498.00**
441CC-3 Overhauled Pump	441CC-3	10-03090	**$498.00**
441CC-7 Overhauled Pump	441CC-7	10-03091	**$494.50**
441CC-9 Overhauled Pump	441CC-9	10-03092	**$498.00**
441CC-11 Overhauled Pump	441CC-11	10-03093	**$498.00**
441CC-13 Overhauled Pump	441CC-13	10-03094	**$498.95**
441CC-17 Overhauled Pump	441CC-17	10-03095	**$498.00**
441CC-23 Overhauled Pump	441CC-23	10-03096	**$498.00**
442CW Overhauled Pump	442CW	10-02350	**$498.00**
442CW-4 Overhauled Pump	442CW-4	10-03097	**$498.00**
442CW-6 Overhauled Pump	442CW-6	10-03098	**$498.00**
442CW-8 Overhauled Pump	442CW-8	10-03099	**$498.00**
442CW-10 Overhauled Pump	442CW-10	10-03101	**$498.00**
442CW-12 Overhauled Pump	442CW-12	10-02351	**$524.00**
442CW-14 Overhauled Pump	442CW-14	10-03102	**$498.00**
442CW-16 Overhauled Pump	442CW-16	10-03103	**$498.00**
442CW-18 Overhauled Pump	442CW-18	10-03104	**$500.95**
442CW-20 Overhauled Pump	442CW-20	10-03105	**$498.00**

Add Core Charge to purchase price of Overhauled models. 200 Series **$100.00**, 400 Series **$200.00** To receive core credit return repairable Rapco or Airborne aluminum cores to Aircraft Spruce West via UPS and reference invoice number.

RAPCO VACUUM PUMP REMOVAL & INSTALLATION TOOL

The RA716 Pump Wrench provides superior access to the vacuum pump flange nuts. This new tool is made from quality hardened steel with corrosion resistant nickel plating. The shank is shaped to provide easy access to tight areas between the pump and accessories. The open end head is laser cut providing a close tolerance fit on the nut. Plastic coating on the handle provides a firm grip. P/N 10-13911 **$22.75**

SIGMA-TEK DRY AIR PUMP

The Sigma-Tek 1U128-006 is a pump which carries a warranty for 2-years or 1000 hours. It uses an aluminum rotor and rotor housing, making the pump very resistant to damage from ingestion of foreign objects, excessive loads or engine oil. It provides clean, dry air for operation of air driven instruments in aircraft operating at medium altitudes. Pump rotates clockwise or counterclockwise in vacuum or pressure mode. May be mounted in either a vertical or horizontal position. FAA approved as a direct replacement for all instrument pumps but is not intended for supplying air to deicing boots. Mounting gasket furnished. Install suction regulator in line to instruments. Delivers 6 In. Hg vacuum (2.9-8.5 minimum CEM) or 6 In. Hg pressure (3.7-8.5 minimum CEM) from 1500 to 4000 RPM. No core charge. P/N 10-02778 ..... **$539.00**

SIGMA-TEK AEON DRY PISTON AIR PUMP

The Sigma Tek 1U478-003 piston air pump's unique design features give virtually maintenance free operation with unprecedented long life and is backed by a full 5 year/2,000 hours warranty. Will replace 200 series and 1U128 series instrument vacuum pumps. Contains no brittle carbon rotor and vanes to shatter, making this pump highly resistant to damage from foreign objects or excessive loading. This pump operates either clockwise or counterclockwise engine pad rotation in the vacuum or pressure mode. Each port is clearly marked. May be mounted in any orientation. Mounting gasket furnished. Sigma Tek recommends using our high flow fittings, always use P/N 58B423-003 (90 degree long) and 58B423-004 (90 degree short) fittings where applicable. FAA-PMA approved.

PN 10-01133 ..... **$725.00**

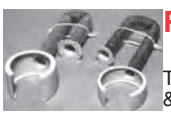
AAA REMANUFACTURED DRY AIR PUMP

Arizona Aircraft Accessories is an FAA Approved overhaul facility which remanufactures run-out Airborne vacuum pumps to factory specifications. Warranty on 211/212 series pumps is 1-year/1000 hours and on 240/440 series pumps warranty is 1-year/400 hours. Weight: 211/212/240 series= 3 lbs.; 441/442 series = 4 lbs.

215cc pump ..... P/N 10-00068 ..... **$197.95**
216cw pump ..... P/N 10-00069 ..... **$197.95**
241cc pump ..... P/N 10-00070 ..... **$292.95**
242cw pump ..... P/N 10-00071 ..... **$289.00**
441cc pump ..... P/N 10-00072 ..... **$357.00**
442cw pump ..... P/N 10-00073 ..... **$357.00**

Call for RMA before sending pump to Aircraft Spruce West for overhaul.

RAPCO DRY AIR PUMP COOLING SHROUD/FLANGE KITS



These kits are easy to install onto Airborne, Edo-Aire, & Sigma-Tek dry air pumps. Keeping the air pump cool can extend pump life and help prevent premature pump failure.

Model RA20A, For 200/240 series pump. ..... P/N 10-23955 ... **$49.85**
Model RA40A, For 400 series pumps ..... P/N 10-23965 ... **$57.85**
Model RA30E, For EDO Aire/Sigma-tek pump .. P/N 10-23975 ... **$48.00**

VACUUM PUMP SHEAR COUPLINGS

These parts fit Airborne 200 & 400 series pumps.

Shear Coupling ..... P/N 82-0067 ..... **$14.00 ea**
Standard Bushing ..... P/N 82-20095 ..... **$14.85 ea**

VACUUM PUMP RETAINING NUT TOOL

This tool efficiently places the retaining nuts on the vacuum pump mounting studs on Lycoming engines, saving time and frustration for the aircraft mechanic. Use this tool to start the nuts on the studs, and complete the operation using the Rapco wrench (10-13911). Made in the U.S.A. P/N 10-01052 ..... **$30.50**

TEMPEST VACUUM FILTERS

FAA-PMA Approved

ARB3-5-1 ..... P/N 10-00922 ..... **$2.95**
AAD9-14-3 ..... P/N 10-00923 ..... **$18.75**
AAD9-14-5 ..... P/N 10-00924 ..... **$18.95**
AAD9-18-1 ..... P/N 10-00937 ..... **$18.90**

TEMPEST VACUUM PUMP WRENCH

Case hardened steel, with nickel-chrome plating for corrosion resistance. Slip resistant vinyl grip. Rare earth magnet allows efficient and easy installation of hard-to-get-to install nuts. Eligibility: Fits all 200, 240, 400 and 3200 series vacuum pumps. ..... P/N 10-02654 ..... **$24.95**

IN

SUCTION REGULATORS – PNEUMATIC FILTERS

PARKER SUCTION REGULATOR

Constructed of lightweight aluminum. Large air passages minimize the pressure drop through the valve. Valve chatter is virtually eliminated by pneumatically balancing the regulating diaphragm. The simple but effective polyurethane garter filter protects the air pump and may be easily replaced. Beaded hose fittings simplify installation and eliminate expensive AN fittings which unnecessarily restrict air flow.

Has 5/8" & 5/8" Ports (Straight)..... P/N 10-02105 ... **$495.00**
Has 5/8" x 3/8" Ports (45° elbow)..... P/N 10-02102 ... **$495.00**
Has 5/8" x 3/8" Ports (Straight) ..... P/N 10-03423 ... **$943.00**
Replace. Filter (replace after 100 hrs operation). P/N B3-5-1 ..... **$2.95**

TEMPEST VACUUM REGULATORS

FAA/PMA Approved

AA 2H3-2 ..... P/N 10-03458..... **$379.95**
AA 2H3-6 ..... P/N 10-03460..... **$266.95**
AA 2H3-12 ..... P/N 10-03461..... **$258.95**
AA 2H3-23 ..... P/N 10-03462..... **$277.95**

VACUUM RESTRICTOR VALVE

AN5829-2 manually adjustable needle valve complete with locking collar and mounting flange. For reducing vacuum to 2" Hg for operation of turn/bank. Manufactured by ACS Products Co.....P/N AN5829-2..... **$23.65**

RAPCO PNEUMATIC REGULATORS

RAPCO RA2H3-2 FAA-PMA APPROVED VACUUM REGULATOR - This FAA Approved Rapco vacuum regulator is designed to maintain a constant setting at various pressure altitudes. Adjustable setting. Vacuum regulators come with the RAB3-5-1 garter filter. 5/8" Hose Fitting (Pump), 1/2" Hose Fitting (instruments). Replaces - Airborne PN. 2H3-2, 133A3, Aero Accessories PN. 2H3-2
P/N 10-03895 ..... **$194.00**

RAPCO RA2H3-5 FAA-PMA APPROVED VACUUM REGULATOR - This FAA Approved Rapco vacuum regulator is designed to maintain a constant setting at various pressure altitudes. Adjustable setting. Vacuum regulators come with the RAB3-5-1 garter filter. 5/8" Hose Fitting (Pump), 5/8" Hose Fitting (instruments). Replaces - Airborne PN. 2H3-5, 133C1, Areo Accessories PN. 2H3-5
P/N 10-03894 ..... **$192.50**

RAPCO RA2H3-6 VACUUM REGULATOR - This FAA Approved Rapco vacuum regulator is designed to maintain a constant setting at various pressure altitudes. Adjustable setting. Vacuum regulators come with the RAB3-5-1 garter filter. 5/8" Hose Fitting (Pump), 5/8" Hose Fitting (instruments). Replaces - Airborne PN. 2H3-6, 133B3, Aero Accessories PN. 2H3-6, Piper PN. 584-324
P/N 10-03918 ..... **$194.95**

RAPCO RA2H3-11 VACUUM REGULATOR - This FAA Approved Rapco vacuum regulator is designed to maintain a constant setting at various pressure altitudes. Adjustable setting. Vacuum regulators come with the RAB3-5-1 garter filter. Two AN-8 Threaded Fittings (Thread OD 7/8"). Replaces - Airborne PN. 2H3-11, 133A13 P/N 10-03919 ..... **$594.00**

RAPCO RA2H3-12 VACUUM REGULATOR - This FAA Approved Rapco vacuum regulator is designed to maintain a constant setting at various pressure altitudes. Adjustable setting. Vacuum regulators come with the RAB3-5-1 garter filter. 5/8" Hose Fitting (Pump), Two 3/8" Hose Fitting (instruments). Replaces - Airborne PN. 2H3-12, 2H3-16, 133A16, Cessna PN. C482001-0401
P/N 10-00289 ... **$189.95**

RAPCO RA2H3-15 VACUUM REGULATOR - This FAA Approved Rapco vacuum regulator is designed to maintain a constant setting at various pressure altitudes. Adjustable setting. Vacuum regulators come with the RAB3-5-1 garter filter. One AN-8 Threaded Fitting (Thread OD 7/8"). Replaces - Airborne PN. 2H3-15
P/N 10-04842 ..... **$594.00**

RAPCO RA2H3-19 VACUUM REGULATOR - This FAA Approved Rapco vacuum regulator is designed to maintain a constant setting at various pressure altitudes. Adjustable setting. Vacuum regulators come with the RAB3-5-1 garter filter. 5/8" Hose Fitting (Pump),Two 3/8" Hose Fittings (Instrument)Replaces – Airborne PN.2H3-19, Piper PN. 492-240
P/N 10-04780 ..... **$399.50**

RAPCO RA2H3-23 VACUUM REGULATOR - This FAA Approved Rapco vacuum regulator is designed to maintain a constant setting at various pressure altitudes. Adjustable setting. Vacuum regulators come with the RAB3-5-1 garter filter. 5/8" Hose Fitting (Pump), Two 3/8" Hose Fitting (instruments). Replaces - Airborne PN. 2H3-23, 133A4, Piper PN. 492-272
P/N 10-03009 ..... **$194.00**

RAPCO RA2H3-48 VACUUM REGULATOR - This FAA Approved Rapco vacuum regulator is designed to maintain a constant setting at various pressure altitudes. Adjustable setting. Vacuum regulators come with the RAB3-5-1 garter filter. AN-8 Threaded Fitting, Thread OD 7/8" (Pump), 5/8 Hose Fitting (instrument) Replaces - Airborne PN. 2H3-48, Aero Accessories PN. AA2H3-48
P/N 10-03921 ..... **$249.00**

RAPCO RA2H30-6 PRESSURE REGULATOR - This FAA Approved Rapco pressure regulator is designed to maintain a constant setting at various pressure altitudes. Adjustable setting. 3/4" Hose Fitting (Pump), 5/8" Hose Fitting (instruments). Replaces - Airborne PN. 1H30-6, 2H30-6, Piper PN. 492-243
PN 10-04234 ..... **$249.85**

RAPCO RA2H30-9 PRESSURE REGULATOR - This FAA Approved Rapco pressure regulator is designed to maintain a constant setting at various pressure altitudes. Adjustable setting. 5/8" Hose Fitting (Pump), 5/8" Hose Fitting (instruments). Replaces - Airborne PN. 1H30-9, 2H30-9 P/N 10-03147 ..... **$249.95**

RAPCO REPLACEMENT PNEUMATIC FILTERS

Aircraft Spruce offers RAPCO FAA-PMA approved filter replacements for Airborne assemblies. Destructive contamination abounds within an aircraft environment. Without proper filtration, system dirt and dust from the cabin as well as cigarette smoke will take its toll. This results in the replacement of expensive gyro instruments and other components. Your operating costs can be significantly reduced when filters are changed on a scheduled basis. RAPCO in-line and central filters are constructed to the highest industry standards. They utilize a 0.3 micron filtration media which provides superior filtration without undue air flow restriction. As a RAPCO distributor, Aircraft Spruce offers these replacement filters at exceptionally low prices.

Description	Recomended Replacement	OEM Number	RAPCO Number	Part No.	Price
Line Mounted Filter, 1/2"x1/2" Tube	1 yr / 500 Hrs	1J4-4	RA 1J4-4	10-23810	**$25.85**
Line Mounted Filter, 5/8"x5/8" Tube	1 yr / 500 Hrs	1J4-6	RA 1J4-6	10-23820	**$24.85**
Line Mounted Filter, 5/8"x5/8" Tube Overall length 5-1/2"	1 yr / 500 Hrs	1J4-7	RA 1J4-7	10-23830	**$24.85**
Vacuum Central Gyro Air Filter Assy	1 yr / 500 Hrs	1J7-1	RA 1J7-1	10-23840	**$24.85**
Line Mounted Filter - 3/8" x 3/8"	1 yr / 500 Hrs	110-1	RA1J10-1	10-00287	**$19.50**
Vacuum Pump Inlet Garter Filter	1 yr / 100 Hrs	B3-5-1	RA B3-5-1	10-23850	**$1.95**
Replacement Element, 1J2-2 filter	1 yr / 100 Hrs	D9-14-3	RA D9-14-3	10-23860	**$15.25**
Rep. Element for1J2 series (except 1J2-2)	1 yr / 100 Hrs	D9-14-5	RA D9-14-5	10-23870	**$15.85**
Replacement Element, 1J7-1 Filter	1 yr / 500 Hrs	D9-18-1	RA D9-18-1	10-23880	**$14.95**
Mitchell Filter Element	1 yr / 100 Hrs	51A-5	RA51A-5	10-02118	**$42.95**

IN

PNEUMATIC FILTERS – UMA GAUGES

AIRBORNE CENTRAL AIR FILTERS

Increase gyro life with Airborne gyro air filter. Incorporates a 0.3 micron filter element that protects gyro instruments by filtering out tobacco smoke and cabin dust. Small, lightweight, easily installed. Fits most planes. Dual 3/8" beaded tubes simplify 2-gyro installations.

Part No.	Description	Price
1J7-1	Vacuum Instrument Central Gyro Air Filter: 0.3 micron	**$65.00**
	pleated paper element with two 3/8" installation tubes.	
B3-5-1	Vacuum relief & pump inlet foam garter filter: Foam	**$2.95**
	Garter filter. Fits Airborne 133 & 2H3 Regulating Valves.	
D9-14-5	Replacement element used in Airborne 1J2 Series	**$42.00**
	Inlet filter (except 1J2-2)	
D9-14-3	Replacement element used in Airborne 1J2-2.	**$15.25**
D9-18-1	Replacement Filter for Airborne1J7-1 Gyro filter Assy.	**$14.95**
1J10-1	Line mounted Filter 3/8"x3/8" non-beaded tube.5-3/4"long.	**$55.75**

CLEAR VIEW INLINE AIR FILTER

Constructed of high temperature, high impact material, the CV1J4 transparent housing allows the aircraft mechanic, pilot or owner to visually monitor filter contamination when referenced with an internal "Change Indicator" decal. This revolutionary new design will aid in identifying malfunctioning or inoperative system components that cause premature air pump wear and avoid replacement of clean filters usually replaced annually or based on aircraft operating hours. When installed in a "Vacuum" gyro system between the air pump and gyro instruments, the CV1J4 "Clear View" air filter will prevent contamination of gyro instruments from carbon dust created by air pump failure. The CV1J4 filter is a direct replacement for Airborne 1J4-6 and 1J4-7 filters. FAA/PMA approved for Beechcraft Singles & Twins, Piper PA31, 31P, -300, -310, -325, -350, PA-31P-350, PA31T2, PA-34-200T, Grumman GA-7, Rockwell 700, standard equipment on all Mooney aircraft. P/N 10-00450 ..... **$67.50**

INLINE AIR FILTER KIT FOR CESSNAS

This FAA-PMA approved kit includes a CV1J4 clear view filter, necessary hardware, a copy of the STC and detailed instructions for smooth installations. An adhesive backed label is provided for recording kit installation data in aircraft log books. P/N 10-00451 ..... **$99.75**

INLINE AIR FILTER KIT FOR PIPERS

Similar to kit for Cessnas above. FAA approved for most PA-28 and all PA-38. P/N 10-00452 ..... **$99.75**

Model	Year	A/C Serial No.
150K, L, M	1970-1977	15071129 to 15079405
A150K, L, M	1970-1977	A1500001 to A1500734
152	1978-1985	15279046 to 15286033
A152	1978-1985	A1520735 to A1521049
172 I, K, L, M, N, P, Q	1968-1985	17256513 to 17276516
R172K	1977-1961	R1722000 to R1723454
172RG	1980-1985	172RG0001 to 172RG1191
177, A, B	1968-1978	17700001 to 17702752
177RG	1971-1978	177RG0001 to 177RG1366
182R	1985-1986	18268435 to 18268615
T182	1981-1985	18267716 to 18268541
R182	1983-1986	R18201929 to R18202041
TR182	1983-1986	R18201929 to R18202041

UMA 1" GYRO SUCTION GAUGES

Case: Molded ABS Plastic. Weight: 1.4 oz.

Part No.	Range	Dial Markings	Price
10-02361	3-7 IN.HG	B & W	**$133.95**
10-00311	3-7 IN.HG	GA 4.5-5.4	**$144.95**
10-02464	3-7 IN.HG	GA 3.5-5.0, RR 3.5 & 5.0	**$143.95**

UMA 1-1/4" GYRO SUCTION GAUGES

Case: Molded ABS Plastic. Weight: 1.4 oz.

Part No.	Range	Dial Markings	Price
10-01010	3-7 IN. HG.	GA 4.5-5.2, RR 4.5 & 5.2	**$152.95**
10-02465	3-7 IN. HG.	GA 4.75-5.25, RR 4.75 & 5.25	**$163.95**
10-02466	3-7 IN. HG.	GA 4.5-5.0	**$163.95**
10-02467	2-6 IN. HG.	GA 3.8-4.4, RR 3.8 & 4.4	**$163.95**
10-02358	3-7 IN. HG.	B & W	**$157.95**
10-02468	2-6 IN. HG.	GA 4.0-5.0	**$163.95**
10-02469	2-6 IN. HG.	GA 4.5-5.4, YA 2.0-4.5, RR 6.0	**$163.95**
10-02470	2-6 IN. HG.	GA 3.5-5.0, RR3.5	**$161.95**
10-02471	0-10 IN. HG.	B & W	**$161.95**

UMA 2-1/4" UMA GYRO SUCTION

Case: Cast Aluminum. Weight: 4.7 oz.

Part No.	Range	Dial Markings	Price
10-00090	2-8 IN. HG.	GA 4.6-5.4	**$164.95**
10-01000	0-10 IN. HG.	B & W	**$153.95**
10-02359	0-10 IN. HG.	GA 4-5, RR 5	**$162.95**
10-02360	0-10 IN. HG.	GA 4.2-4.4, RR 4.2 & 5.3	**$141.95**

UMA 1-1/4" PNEUMATIC PRESSURE

Case: Molded ABS Plastic. Weight: 1.4 oz.

Part No.	Range	Dial Markings	Price
10-02364	0-25 PSI	GA 5.0-10, YA 10-21	**$220.95**
10-02365	0-25 PSI	GA 15-21, YA 21-25, RR 14.9	**$220.95**
10-12305	0-25 PSI	GA 15-21, RR 24	**$220.95**
10-02366	0-25 PSI	GA 2.5-7.5, YA 7.5-21	**$220.95**

VARGA 1" INCH ROUND SUCTION GAUGE

Miniature 1" round case instrument. Used in many production aircraft. A real space saver.

P/N 10-01100 ..... **$86.75**

FOR EXPERIMENTAL AIRCRAFT ONLY. NOT FAA APPROVED

1-1/4 INCH GYRO PRESSURE GAUGE

These units are designed to save space in cockpit panels. These gauges utilize an internal diaphragm for accuracy and reliability. Miniature 1-1/4" instrument. Case: Molded ABS Plastic. Weight: 1.4 oz.

Part No.	Range	Dial Markings	Price
10-01105	3-7 IN. HG.	GA 4.25-6.25	**$162.95**
10-02462	3-7 IN. HG.	GA 4.25-5.2, RR 4.25 & 5.2	**$164.95**
10-02463	3-7 IN. HG.	GA 4.5-5.2, YA 3.8-4.5, RR 3.8 & 5.2	**$164.95**

UMA 2-1/4" GYRO PRESSURE GAUGES

These units are designed to save space in cockpit panels. These gauges utilize an internal diaphragm for accuracy and reliability. Case: Cast Aluminum. Weight: 4.7 oz.

Part No.	Range	Dial Markings	Price
10-02362	2-8 IN. HG.	B & W	**$154.95**
10-02363	2-8 IN. HG.	GA 4.5-5.5	**$162.95**

UMA 2-1/4" CABIN ALTITUDE DIFFERENTIAL PRESSURE GAUGE

Case: Valox 420 Plastic Weight: 7.4 oz.

Part No.	Range	Daial Markings	Price
10-02370	0-25,000 Ft. 0-6 PSI	B & W	**$462.95**
10-02371	0-30,000 Ft. 0-6 PSI	GA 0-10, YA 10-28	**$487.95**
10-02460	0-30,000 Ft. 0-6 PSI	GA 0-10, YA 10-28	**$486.95**
10-02461	0-35,000 Ft. 0-8 PSI	B & W	**$486.95**

IN

AIRSPEED INDICATORS

UMA AIRSPEED INDICATORS (NON-TSO'D)

These quality UMA, non-TSO'd airspeed indicators are available in MPH, Knots or Dual Scales.
Note: An inverter is required for the Internal Lighting Option (P/N 10-02083 UMA 14V LIGHT INVERTER)

Description	Dial	Part No.	Price
3-1/8"	20-80 mph	10-04905	**$168.95**
3-1/8"	20-100 mph	10-04910	**$168.95**
3-1/8"	20-120 mph	10-04915	**$168.95**
3-1/8"	20-140 mph	10-04920	**$181.95**
3-1/8"	20-160 mph	10-04925	**$181.95**
3-1/8"	40-180 mph	10-04930	**$168.95**
3-1/8"	40-200 mph	10-01029	**$168.95**
3-1/8"	40-240 mph	10-00512	**$168.95**
3-1/8"	40-260 mph	10-01030	**$168.95**
3-1/8"	40-280 mph	10-01031	**$168.95**
3-1/8"	40-300 mph	10-01032	**$168.95**
3-1/8"	20-80 mph Knots	10-01033	**$168.95**
3-1/8"	20-100 mph Knots	10-01034	**$168.95**
3-1/8"	20-120 mph Knots	10-04950	**$168.95**
3-1/8"	20-140 mph Knots	10-04955	**$181.95**
3-1/8"	20-160 mph Knots	10-01035	**$181.95**
3-1/8"	40-180 mph Knots	10-04965	**$168.95**
3-1/8"	40-200 mph Knots	10-04970	**$168.95**
3-1/8"	40-240 mph Knots	10-00514	**$168.95**
3-1/8"	40-260 mph Knots	10-01036	**$168.95**
3-1/8"	40-280 mph Knots	10-01037	**$168.95**
3-1/8"	40-300 mph Knots	10-01038	**$168.95**
3-1/8" Dual	20-140 mph/20-120 Knots	10-00511	**$181.95**
3-1/8" Dua	40-160 mph/20-135 Knots	10-02200	**$181.95**
3-1/8" Dual	40-180 mph/20-150 Knots	10-02300	**$181.95**
3-1/8" Dual	40-200 mph/40-170 Knots	10-02400	**$181.95**
3-1/8" Dual	40-240 mph/40-205 Knots	10-02600	**$181.95**
3-1/8" Dual	40-260 mph/40-225 Knots	10-01039	**$181.95**
3-1/8" Dual	40-300 mph/40-250 Knots	10-01040	**$181.95**
3-1/8" Dual	40-350 mph/40-300 Knots	10-01041	**$181.95**
3-1/8" Dual	40-260 Knots/50-300 mph	10-01042	**$181.95**
3-1/8" Dual	40-300 Knots/40-340 mph	10-01043	**$181.95**
Range Markings	UMA Range Markings on NON-TSO Units	10-02792	**$125.00**

UMA 3-1/8" AIRSPEED INDICATORS (TSO'd)

These quality UMA airspeed indicators are available in MPH, Knots or Dual Scales.

Single Scale	P/N	Price	Dual Scale	P/N	Price
3-1/8" 40-160MPH TSO'D	10-03250	**$479.95**	3-1/8" 160MPH TSO'D	10-03270	**$479.95**
3-1/8" 40-180MPH TSO'D	10-03251	**$478.00**	3-1/8" 180MPH TSO'D	10-03271	**$480.95**
3-1/8" 40-200MPH TSO'D	10-03252	**$477.95**	3-1/8" 200MPH TSO'D	10-03272	**$478.95**
3-1/8" 40-240MPH TSO'D	10-03253	**$480.95**	3-1/8" 240MPH TSO'D	10-03273	**$477.95**
3-1/8" 40-260MPH TSO'D	10-03254	**$479.95**	3-1/8" 260MPH TSO'D	10-03274	**$479.95**
3-1/8" 40-280MPH TSO'D	10-03255	**$479.95**			
3-1/8" 40-300MPH TSO'D	10-03256	**$479.95**			

Single Scale	P/N	Price	Dual Scale	P/N	Price
3-1/8" 40-160K Not TSO'D	10-03257	**$479.95**	3-1/8" 205K Not TSO'D	10-03276	**$479.95**
3-1/8" 40-180K Not TSO'D	10-03258	**$477.95**	3-1/8" 240K Not TSO'D	10-03277	**$479.95**
3-1/8" 40-200K Not TSO'D	10-03259	**$479.00**	3-1/8" 260K Not TSO'D	10-03278	**$480.95**
3-1/8" 40-240K Not TSO'D	10-03260	**$478.95**	3-1/8" 300K Not TSO'D	10-03279	**$480.95**
3-1/8" 40-260K Not TSO'D	10-03261	**$479.95**	3-1/8" 300MPH TSO'D	10-03275	**$479.95**
3-1/8" 40-280K Not TSO'D	10-03262	**$479.95**			
3-1/8" 40-300K Not TSO'D	10-03263	**$478.95**			

UMA 2-1/4" MINIATURE AIRSPEEDS

A fine quality instrument of new manufacture for the exceptional homebuilt aircraft. Matte-white dial markings. Fits standard 2-1/4" instrument panel opening. Space saving dims: 2-3/8"x2-3/8"x3.25"L. All ranges available in knots.

Range	P/N	Range	P/N	Range	P/N
20-100 MPH	10-03992	40-160 MPH	10-03996	40-240 MPH	10-04000
20-120 MPH	10-03993	40-180 MPH	10-03997	40-260 MPH	10-04001
20-140 MPH	10-03994	40-200 MPH	10-03998	40-300 MPH	10-04002
0-120 Knot	10-03995	40-140 Knot	10-00507	40-160 Knot	10-01787
40-180 Knot	10-00508	40-200 Knot	10-00509	40-240 Knot	10-00510
ALL MODELS.....					**$195.95**

UNITED AIRSPEED INDICATORS (TSO'D)

These 8000 series United airspeeds are TSO'd for instalation on certificated aircraft. Factory new. Available in dual scale MPH/knots, or in MPH or knots only. Fits standard 3-1/2" panel hole. Wt: 0.7 lb. Not Lighted.

Range	Part No.	Price
40-200mph/40-170kts	10-00190	**$603.00**
0-250mph/40-200 kts	10-00191	**$598.00**
40-300mph/40-260 kts	10-00192	**$602.00**
0-260 knots	10-00201	**$610.00**
0-170 knots	10-00198	**$603.00**

Available with custom range marks .....P/N 10-02614 ..... **$145.00**

LIGHTED UNITED AIRSPEEDS

Add -1 to P/N's above for internally lighted airspeed indicators.
For an additional $128.00

UNITED TRUE AIRSPEED INDICATORS

The true airspeed indicator corrects the indicated airspeed for changes in temperature and pressure encountered as aircraft changes altitude. By aligning outside temperature and pressure altitude with setting knob, movable airspeed scale is rotated proper amount so pointer registers true airspeed. Factory new 8100 series by United. TSO'D for certificated aircraft. Dual scale. Not Lighted. ***Add $145.00 for custom range marks & specify exact range marks needed.***

Series	Range	Part No.	Price
8100	0-200mph/170kt	10-00203	**$655.00**
8125	0-250mph/215kt	10-00204	**$655.00**
8100	40-170 Knots	10-00216	**$655.00**
8125	0-200mph/170kt	10-00217	**$655.00**
8130	0-260 Knots	10-00218	**$655.00**
8140	60-350 Knots	10-00219	**$699.00**

LIGHTED UNITED AIRSPEEDS

Add -1 to P/N's above for internally lighted airspeed indicators.

Dual Scale (MPH/Knots) with multicolor markings

UMA 2-1/4 TSO'D AIRSPEED INDICATORS

UMA indicators are FAA TSO'd to C2d specifications. Installable in a fixed wing aircraft with a reciprocating or Turboprop Engine. Must be installed in a temperature controlled environment from -55 to +85 °C, to a max altitude of 25,000 ft. UMA offers indicators with full scale ranges available, from 160 to 300 in MPH or Knots.

UMA Part NO.	Range	Part No.	Price
T16-210-121	20-120 MPH	10-03577	**$507.00**
T16-211-121	20-120 Knots	10-03578	**$506.00**
T16-210-141	20-140 MPH	10-03579	**$506.00**
T16-211-141	20-140 Knots	10-03580	**$502.00**
T16-210-142	30-140 MPH	10-03582	**$505.00**
T16-211-142	30-140 Knots	10-03583	**$506.00**
T16-210-160	40-160 MPH	10-03584	**$398.95**
T16-211-160	40-160 Knots	10-03585	**$506.00**
T16-210-161	20-160 MPH	10-03586	**$506.00**
T16-211-161	20-160 Knots	10-03587	**$506.00**
T16-210-180	40-180 MPH	10-03588	**$503.00**
T16-211-180	40-180 Knots	10-03589	**$510.00**
T16-210-200	40-200 MPH	10-03590	**$506.00**
T16-211-200	40-200 Knots	10-03591	**$498.95**
T16-210-240	40-240 MPH	10-03592	**$506.00**
T16-211-240	40-240 Knots	10-03593	**$506.00**
T16-210-260	40-260 MPH	10-03594	**$506.00**
T16-211-260	40-260 Knots	10-03595	**$506.00**
T16-210-300	40-300 MPH	10-03596	**$506.00**
T16-211-300	40-300 Knots	10-03597	**$506.00**
T16-210-400	40-400 MPH	10-03598	**$564.00**
T16-211-400	40-400 Knots	10-03599	**$564.00**
T16-212-240	40-240 KmH	10-03602	**$506.00**
T16-212-260	40-260 KmH	10-03603	**$506.00**
T16-212-280	40-280 KmH	10-03604	**$506.00**
T16-212-300	40-300 KmH	10-03605	**$506.00**
T16-212-320	40-320 KmH	10-03606	**$506.00**
T16-212-380	40-380 KmH	10-03607	**$506.00**
T16-212-400	40-400 KmH	10-03608	**$550.00**
T16-212-440	40-440 KmH	10-03609	**$564.00**

IN

AIRSPEED INDICATORS

FALCON 3 1/8" SINGLE RANGE AIRSPEEDS

Falcon Gauge Airspeed Indicators have been one of the most chose flight instruments by kit plane builders and pilots. There are many great advantages to using these gauges: excellent slow speed characteristics; very progressive increments; a variety of ranges, light weight; short length, and affordable price. All Falcon Gauge Airspeed Indicators are housed in an aluminum case and consist of all metal parts. Available ranges: mph, knots, km/hr; single range reading or dual range readings. Non-Tso'd.

Model No.	Length	Range	Part No.	Price
ASI200M-3	3.5"/97.3mm	30-200 MPH	10-02918	**$167.95**
ASI180M-3	3.5"/97.3mm	30-180 MPH	10-03000	**$136.95**
ASI080M-3	2.2"/56.5mm	0-80 MPH	10-02905	**$134.95**
ASI100M-3	2.2"/56.5mm	0-100 MPH	10-02910	**$167.95**
ASI120M-3	2.2"/56.5mm	0-120 MPH	10-02915	**$163.95**
ASI140M-3	3.5"/97.3mm	0-140 MPH	10-02916	**$167.95**
ASI150M-3	2.2"/56.5mm	0-150 MPH	10-02225	**$167.95**
ASI160M-3	3.5"/97.3mm	0-160 MPH	10-02917	**$167.95**
ASI080N-3	3.5"/97.3mm	0-80 Knots	10-02896	**$168.95**
ASI100N-3	2.2"/56.5mm	0-100 Knots	10-02897	**$167.95**
ASI120N-3	2.2"/56.5mm	0-120 Knots	10-02898	**$167.95**
ASI140N-3	3.5"/97.3mm	0-140 Knots	10-02899	**$167.95**
ASI160N-3	3.5"/97.3mm	0-160 Knots	10-02900	**$167.95**
ASI180N-3	3.5"/97.3mm	0-180 Knots	10-02217	**$167.95**
ASI200N-3	3.5"/97.3mm	0-200 Knots	10-02218	**$167.95**
ASI220N-3	3.5"/97.3mm	0-220 Knots	10-02219	**$167.95**
ASI120K-3	2.2"/56.5mm	0-120 KPH	10-02625	**$163.95**
ASI150K-3	2.2"/56.5mm	0-150 KPH	10-02221	**$167.95**
ASI200K-3	2.2"/56.5mm	0-200 KPH	10-02222	**$167.95**
ASI300K-3	2.2"/56.5mm	0-300 KPH	10-02223	**$167.95**

FALCON 3 1/8" DUAL RANGE AIRSPEEDS

Falcon Gauge Airspeed Indicators have been one of the most chose flight instruments by kit plane builders and pilots. There are many great advantages to using these gauges: excellent slow speed characteristics; very progressive increments; a variety of ranges, light weight; short length, and affordable price. All Falcon Gauge Airspeed Indicators are housed in an aluminum case and consist of all metal parts.

Falcon Gauge Dual Dial Airspeed Indicators provide dual readings and are suitable for higher performance type aircraft flying at moderate to high speeds. Matte-white dial markings, housed in a sturdy protective aluminum case.

Weight: approx. 10.5 oz./301g Length:2.2" or 56.5mm
Size: 3-1/8"

Model No.	Range	Part No.	Price
ASI164MN-3	20-160 MPH/140 Knots	10-02227	**$135.95**
ASI186MN-3	30-180 MPH/160 Knots	10-02228	**$164.95**
ASI208MN-3	30-200 MPH/180 Knots	10-02901	**$166.95**
ASI252MN-3	30-250 MPH/220 Knots	10-02229	**$167.95**
ASI306MN-3	40-300 MPH/260 Knots	10-02230	**$166.95**
ASI316KN-3	30-300 KPH/160 Knots	10-02231	**$166.95**

THE KIT COLE CLARIFIER

The Kit Cole Clarifier Removable

The Kit Cole Clarifier is a non FAA approved coated, high quality glass lens provided in a kit that allows you to temporarily attach it to your altimeter face for all of your VFR & LSA flying needs. The kit comes complete with a non-permanent, clear bonding gel and instructions for installation. This product is sold as a removable visual aid and is not intended for IFR use on TSO'd altimeters. The Kit Cole Clarifier is not sold to be permanently bonded to your altimeter face by any non FAA approved techniques.

The FAA Approved Kit Cole Clarifier

The Kit Cole Clarifier (US Patent No 7,313,962, 7,404,322) is a FAA approved coated, high quality glass lens provided in a kit that is attached to your altimeter face for all of your VFR & LSA flying needs. This product is sold as a visual aid and is intended for IFR use on TSO'd altimeters. Special order only must send in altimeter to have bonded.

Kit Cole Clarifier Removeable .....P/N 10-02838 ..... **$64.75**
Kit Cole Clarifier - FAA Approved.....P/N 11-07785 ..... **$189.95**

FALCON 3 1/8' TRUE AIRSPEEDS

Falcon Gauge True Airspeed Indicators have a sub-dial and window. The pilot can set the dial to coincide the outside temperature with the flight altitude for immediate and accurate true airspeed reference. It is a high precision airspeed indicator which makes for a nice feature and impression in an experimental aircraft cockpit. It also features all parts made with metal, aluminum case housing, short length and light weight. Non-Tso'd

Dual Range: mph inside/knots outside or knots inside/mph outside
Single Range: mph or knots Size: 3-1/8"
Length: 2.2" or 56.5mm Weight: 10.5 oz. or 301g

Model No.	Range	Part No.	Price
ASIT260M-3	40-260 MPH	10-02235	**$225.95**
ASIT260M-3L	40-260 MPH, Lighted	10-02236	**$341.95**
ASIT210N-3	40-210 Knots	10-02237	**$225.95**
ASIT210N-3L	40-210 Knots, Lighted	10-02238	**$377.95**
ASIT2210N-3	40-220 Knots	10-02240	**$281.95**
ASIT220N-3L	40-220 Knots, Lighted	10-02239	**$342.95**
ASIT240M-3	40-240 MPH	10-02248	**$225.95**
ASIT240M-3L	40-240 MPH, Lighted	10-02249	**$340.95**
ASIT241MN-3	40-240 MPH/210 Knots	10-00001	**$274.95**
ASIT241MN-3L	40-240 MPH/210 Knots, Lighted	10-02214	**$310.95**
ASIT262MN-3	40-260 MPH /220Knots	10-00004	**$225.95**
ASI262MN-3L	40-260 MPH/220 Knots, Lighted	10-02234	**$377.95**
ASIT214NM-3	40-210 Knots/240 MPH	10-00002	**$225.95**
ASIT214NM-3L	40-210 Knots/240 MPH, Lighted	10-02233	**$342.95**
ASIT226NM-3	40-200 Knots/260 MPH	10-00003	**$225.95**
ASIT226NM-3L	40-200 Knots/260 MPH, Lighted	10-02216	**$310.95**

FALCON 2 1/4" MINIATURE AIRSPEEDS

Falcon Gauge Miniature Airspeed Indicators are designed for ultralights. They offer ultralight pilots an affordable alternative to other higher priced indicators found in the market today without compromising the pilot's needs for a quality gauge that provides accuracy, light weight, compactness and safety. Their excellent slow speed performance provides an extra measure of safety by assuring accurate speed readings when flying low or critical stall speeds. Weight: approx. 2.8 oz. or 80g Length: 2-9/16" or 41mm

Model No.	Range	Part No.	Price
ASI050M-2	0-80 MPH	10-02605	**$149.95**
ASI100M-2	0-100 MPH	10-02610	**$149.95**
ASI120M-2	0-120 MPH	10-02615	**$149.95**
ASI140M-2	0-140 MPH	10-02620	**$145.95**
ASI120K-2	0-120 KPH	10-04198	**$145.95**
ASI140K-2	0-140 KPH	10-02226	**$149.95**
ASI120N-2	0-120 KNOTS	10-04069	**$149.95**

SIGMA-TEK AIRSPEEDS (TSO'D)

Sigma-Teks precision airspeeds are original equipment on a variety of aircraft and over 144,000 have been delivered worldwide. Select from a single MPH scale or dual scale showing MPH / Knots. New manufacture. TSOD for certificated aircraft unlit. Add $95 for custom range markings. (Specify exactly)

Description	Part No.	Price
SigmaTek Airspeed 40-200MPH	10-03100	**$520.00**
SigmaTek D/S Airspeed 40-200MP	10-03200	**$535.00**
SigmaTek Airspeed 40-250MPH	10-03110	**$526.00**
SigmaTek D/S Airspeed 40-250MP	10-03210	**$456.95**
SigmaTek Airspeed 40-300MPH	10-03115	**$582.00**
SigmaTek D/S Airspeed 40-300MP	10-03215	**$466.95**

IN

AIRSPEED INDICATORS - ALTIMETERS

WINTER AIRSPEED INDICATORS

3-1/8" airspeeds are supplied and marked in MPH and knots scales. Indicators feature 360 degrees sweep for easy reading at a glance. All Winter Airspeeds come complete with mounting screws.

P/N 10-03897

Size	Range	Style	Part No.	Price
2-1/4	0-75 MPH	Pitot	10-02920	**$291.95**
2-1/4	0-100 MPH	Pitot	10-02925	**$259.95**
2-1/4	0-120 MPH	Pitot	10-02930	**$306.95**
2-1/4	0-160 MPH	Pitot	10-02935	**$364.00**
3-1/8	0-75 MPH	Venturi	10-02940	**$272.95**
3-1/8	0-75 MPH	Pitot	10-02945	**$269.95**
3-1/8	0-100 MPH	Pitot	10-02950	**$290.95**
3-1/8	0-120 MPH	Pitot	10-02955	**$386.95**
3-1/8	0-160 MPH	Pitot	10-02960	**$398.00**
3-1/8	0-200 MPH	Pitot	10-02965	**$369.95**
3-1/8	0-200 MPH	Venturi	10-03897	**$312.95**

MID-CONTINENT INSTRUMENTS AIRSPEED INDICATORS

Customizable range markings can be added to match aircraft operating handbook. Affordable, certified 2-inch instrument which can be used as standby or primary indicator. Combine with a Mid-Continent MD15 Altimeter and 4200 Attitude Indicator for a complete standby package designed for tight panel applications. Approved to FAA TSO-C2d. Integral long life 5, 14 or 28 volt LED lighting. Anti-reflective glass enhances visibility and reduces pilot fatigue. Rear-mounted in standard 2 1/4" cutouts horizontally, vertically or individually. Designed and built in the USA. One year limited warranty.

Model	Description	Part No.	Price
MD25-160	2-Inch 20-160 knots, Lighted	10-04761	**$1,420.00**
MD25-200	2-Inch 40-200 knots, Lighted	10-04763	**$1,420.00**
MD25-260	2-Inch 40-260 knots, Lighted	10-04764	**$1,420.00**
MD25-300	2-Inch 40-300 knots, Lighted	10-04765	**$1,420.00**
MD25-350	2-Inch 40-350 knots, Lighted	10-04766	**$1,420.00**
MD25-400	2-Inch 40-400 knots, Lighted	10-04767	**$1,420.00**

HALL WINDMETER

Designed for hang gliders but can be mounted on low speed aircraft as an airspeed indicator. Easy to read. Mounting bracket clamps to 7/8 or 1 1/8" dia. tube. Short bracket is 3' long, Long bracket 15" long.

Wind Meter (0-55 mph).....P/N 10-04100 .....**$18.85**
Wind Meter (0-80 mph).....P/N 10-04105 .....**$18.85**
Short Bracket .....P/N 10-04200 .....**$5.75**
Long Bracket.....P/N 10-04300 .....**$6.75**

WESTACH AIRSPEED KIT K2M6RH

Air speed 60 MPH kit, 2" round, with 303GW sender with 510A-1 propeller & 323B mount & 205-SS-SS 5' cable and 692B-323 bullet case with 323B mount, 2GM60R

P/N 10-01295 .....**$177.95**

OPERATING RANGE DECALS

Yellow, red, green and white, pressure sensitive. Just pull off backing and place on instrument lens.

P/N 10-03905 ..... **$2.95/set**

VECTOR WRIST-TOP COMPUTER

The Vector combines an altimeter, vertical speed indicator, barometer, compass and a precision timepiece in one compact wristwatch-sized case. The instrument allows altitude measurement in feet or meters, up to a max. 27,000 ft., accurate to plus or minus 10 ft. It also provides instantaneous vertical ascent & descent rates in either feet/second or meters/second. The backlit display is easy to see in all lighting conditions. The barometer displays current barometric pressure and trends for accuracy, and deviation adjustment to correct for differences between true and magnetic north. Reliable & accurate, this new instrument provides time, day and date, as well as three daily alarms, a stopwatch and countdown timer. The unit is also waterproof to 100 ft.P/N 10-19325 ..... **$199.00**

WINTER MINIATURE ALTIMETERS

The mini altimeter is a remarkable instrument. Through the use of an accurate single pointer design, the 0-5,000 and 0-10,000 altimeters are able to squeeze precision and reliability into a 2-1/4" instrument which is less than 2" deep. All altimeters are designed with Kollsman windows, glass faces, precision jewelled movements and a rugged combination metal and plastic case. Static porting is standard.

0-5000 ft. Altimeter, Inches..... P/N 10-24100 ..... **$373.95**
0-5000 ft. Altimeter, Millibar..... P/N 10-24105 ..... **$449.50**
0-10000 ft. Altimeter, Inches..... P/N 10-24115 ..... **$365.95**
0-10000 ft. Altimeter, Millibar..... P/N 10-24125 ..... **$330.95**

WINTER ALTIMETER 3-1/8 INCH

Through the use of an accurate single pointer design, the 0-10,000 altimeter is able to squeeze precision and reliability into a 3-1/8" instrument which is less than 2,2" deep. Designed with a Kollsman window, glass face, precision jewelled movements and a rugged combination metal and plastic case. Static porting is standard. Weight: 230g

P/N 10-03831 ..... **$259.00**

TASKEM 2000 DIGITAL ALTIMETER

The Series 2000 Digital Altimeter is a precision instrument providing altitude readings from -100 to +30700 feet in 10' steps. A standard 3-1/8 instrument powered from 11–35V DC & uses a highly visible backlighted liquid crystal display. Displayed data includes Altitude, Baro Ref & Vertical Speed. A programmable altitude alert function combines both audio and visual (LED) outputs. An oxygen alert cautions when over 12500 feet. All data is output in computer compatible RS-232 format. Model 2000 devices display pressure in Hg while Model 2001 units are in mBar. 2 options can be added to the basic (-1) model; OAT (-2) includes temperature sender and also computes and displays Density Altitude, Mode C (-4) is a standard TSO-C88a compatible encoder. Both options are included in the (-3) versions. Wt., 8 oz. Depth behind back of instrument panel, 3-7/8". 2-yr factory warranty.

Model	P/N	Price	Model	P/N	Price
2000-1	10-24040	**$399.50**	2001-1	10-24041	**$405.95**
2000-2	10-24050	**$498.95**	2001-2	10-24051	**$499.95**
2000-3	10-24060	**$597.00**	2001-3	10-24061	**$597.00**
2000-4	10-24070	**$498.95**	2001-4	10-24071	**$498.95**

TASKEM 5000 DIGITAL ALTIMETER

Unlike mechanical altimeters, the Taskem 5000 is insensitive to the high vibration of 2-stroke engines frequently used on ultralight aircraft. This has literally shaken many mechanical altimeters. The 5000 is all solid state and can withstand severe shock and vibration without damage. It has a full 4.5 digit liquid crystal (LCD) display with large, 1/2" high characters. Because the LCD uses direct drive, it is easily readable from most viewing angles and does not disappear when viewed from an angle or does not washout in bright sunlight. Includes a backlight for night or dusk viewing. The altitude range extends from below sea level to well above the need for supplementary oxygen. The limits are -1000 to 19,990 ft. (-305 to 6,093 meters). Increments are in 10 ft./1m steps. The instrument is powered from DC in the range of 7–30V and is protected for accidental polarity reversal. A 9V battery is a common power source and a battery holder for this is provided on the back, external to the case. An alkaline battery will provide over 40 hours of operation, without the backlight illuminated. The backlight is not powered in the ON power switch position to conserve battery life.

Feet.....P/N 10-24010 ..... **$265.95**
Meters....P/N 10-24020 ..... **$265.95**

ALTILERT ALTITUDE ALERT

Designed for general aviation use, the Altilert is a portable device to help the pilot maintain an assigned or desired altitude. It's use is simple. Fly to your desired altitude and turn the unit on. The Altilert learns your current altitude (by sampling barometric pressure, just like your altimeter) and stores this information. As your altitude drifts, an error signal is generated. At approximately +/- 100 ft. (or 50 ft. in Precision Mode), the red indicator flashes quickly and is accompanied by a piezo horn. The horn can be silenced by pressing the push button switch. Alarms will clear upon return to your original altitude. A new desired altitude can be set by turning the unit off and back on at any time. SPECIFICATIONS: • Size: 1.5"h x 4"L • Wt: 5 oz. (including battery) • Battery: 9V (not included) • Battery Life: 24 hrs+ • Dual Sensitivity Levels •Audible Alarm.

P/N 10-01727 ..... **$149.00**

IN

ALTIMETERS

UNITED SENSITIVE ALTIMETERS

Designed to help the pilot determine altitudeby measuring existing atmospheric pressure, this altimeter translates this measurement into "height-above-sea-level." This is indicated on the dial of the instrument in feet, which requires setting the barometric pressure in the Kollsman window. Standard 3-1/8" size.

Range	Scale	Manufacturer	P/N	Price Ea.
0-20000 ft.	Inches	United (TSO)	10-04550	**$987.00**
0-35000 ft.	Inches	United (TSO)	10-04570	**$1,069.00**
0-20000 ft.	Millibar	United (TSO)	10-04560	**$947.00**
0-20000 ft.	Inches	United (Lighted)	10-00929	**$1,070.00**
0-35000 ft.	Inches	United (Lighted)	10-00930	**$1,182.00**
0-20000 ft.	Millibar	United (Lighted)	10-00931	**$1,329.00**
0-20000 ft.	In/Mil	United (Lighted)	10-00932	**$1,086.00**
0-20000 ft.	In/Mil	United (Unlighted)	10-00933	**$981.00**
0-35000 ft.	In/Mil	United (Unlighted)	10-02696	**$1,075.00**
0-35000 ft.	In/Mil	United (Lighted)	10-02697	**$1,200.00**
0-35000 ft.	Millibar	United (Lighted)	10-02698	**$1,452.00**
0-35000 ft.	Millibar	United (Unlighted)	10-02699	**$1,085.00**

UNITED ALTIMETER WITH CORRECTED BAROMETRIC OUTPUT

True airspeed all the time! No need to correct the barometer, the altimeter does it automatically for the pilot. • Compatible with most Air Data Systems • 35,000 ft., dual barometric scale • Internally lighted – light tray included • TSO C10d certified • Standard D.C. voltage barometric output • Mounts in standard 3 1/8" panel cutout • Requires just 5" depth behind the panel • 1/8" NPT static port • Connector included • Manufactured by United Instruments. P/N 10-02718..... **$2,495.00**

MID-CONTINENT INSTRUMENTS ALTIMETER, 2-INCH

Reliable for primary or standby use, these altimeters provide flight critical data with a three-pointer or counter drum pointer display. The compact, 2-inch size is ideal for complex panel installations. Lighting is included. These altimeters are used in many popular OEM and STC packages. Call for application assistance.

Model	Description	Part No.	Price
MD15-211	2-Inch 20K, 3-ptr., Right-hand knob, Mil., lighted	10-04753	**$3,812.00**
MD15-212	2-Inch 20K, 3-ptr., Left-hand knob, Mil., lighted	10-04754	**$3,812.00**
MD15-221	2-Inch 20K, 3-ptr., Right-hand knob, In., lighted	10-04755	**$3,812.00**
MD15-222	2-Inch 20K, 3-ptr., Left-hand knob, inches, lighted	10-04756	**$3,812.00**
MD15-311	2-Inch 35K, 3-ptr., Right-hand knob, Mil., lighted	10-04757	**$3,987.00**
MD15-312	2-Inch 35K, 3-ptr., Left-hand knob, Mil., lighted	10-04758	**$3,987.00**
MD15-321	2-Inch 35K, 3-ptr., Right-hand knob, In., lighted	10-04759	**$3,987.00**
MD15-322	2-Inch 35K, 3-ptr., Left-hand knob, In., lighted	10-04760	**$3,987.00**

FALCON 3 1/8" AND 2-1/4" SENSITIVE ALTIMETERS

1. Three Pointer Altimeter with Barometric Window and Low Altitude Warning Stripes is a modern type. The easy to read striped sector will show while flying below 16,000 ft. 2. Three Pointer Altimeter with a Barometric Window enables the pilot to adjust the altimeter to the barometric conditions existing at the point of landing. 3. Two Pointer Altimeter without Barometric Window. This type of altimeter is designed to meet the demands of some pilots who either live or fly the area's barometric pressure beyond 28.1 to 31 inches of mercury, or 950 to 1050 millibars, or some pilots prefer to set the altimeter to"0" altitude before taking off without regard to the barometric pressure. By installing this altimeter, the pilot can fly anywhere in the world without having to care about the barometric pressure changes. Non-TSO'd.

Size	Model No.	Range	Part No.	Price
Altimeter-Sensitive, without Barometric Window, 2 Pointers				
3-1/8"	ALT100F-3	10,000 feet	10-02259	**$378.95**
Altimeter-Sensitive, with Barometric Window, and Warning Stripes , 3 Pointers				
3-1/8"	ALT20INF-3	20,000 feet, inches	10-04400	**$413.95**
3-1/8"	ALT20MBF-3	20,000 feet, millibars	10-04500	**$423.95**
3-1/8"	ALT20IMF-3	20,000 Feet, inches & millibars	10-02260	**$429.95**
3-1/8"	ALT6MEMB-3	6,000 meter, millibars (no stripes)	10-02257	**$413.95**
2-1/4"	ALT20MBF-2	20,000 feet, millibars	10-02968	**$1,675.00**

UMA 3-1/8" ALTIMETERS

This UMA standard altimeter utilizes a single pointer and is designed to meet the needs of the low-cost Non-IFR user. This altimeter utilizes a single pointer and adjustable barometric scale, viewed through a Kollsman Window. Can be ordered in inches of mercury or milibar. Available in feet or meters. Aluminum case. **$161.95 ea**

Part No.	Range	Dial Markings	Scale
10-22965	0-20,000 Ft.	B &W	w/ IN HG
10-02436	0-10,000 Ft.	B &W	w/ IN HG
10-02369	0-5,500 Ft.	B &W	w/ IN HG
10-05120	0-5,500 Ft.	B &W	w/ Milibar
10-05125	0-10,000 Ft.	B &W	w/ Milibar
10-05126	0-20,000 Ft.	B &W	w/ Milibar
10-05127	0-3,000 M	B &W	w/ Milibar

UMA 2-1/4" ALTIMETERS

This UMA standard altimeter utilizes a single pointer and is designed to meet the needs of the low-cost Non-IFR user. This altimeter utilizes a single pointer and adjustable barometric scale, viewed through a Kollsman Window. Can be ordered in inches of mercury or milibar. Scale is available in feet or meters. **$308.95 ea**

Part No.	Range	Dial Markings	Scale
10-05131	0-10,000 Ft.	B &W	w/ IN HG
10-05132	0-20,000 Ft.	B &W	w/ IN HG
10-05133	0-10,000 Ft.	B &W	w/ Milibar
10-05134	0-20,000 Ft.	B &W	w/ Milibar

FALCON 3 1/8" NON-SENSITIVE ALTIMETERS

Falcon Gauge light weight altimeters feature a non-sensitive altimeter on a 3-1/8", single pointer, and a barometric window. A setting knob allows the pilot to set the barometric reading to the correct field elevation or barometric pressure setting. They are weight conservative, economical, yet very precision and accurate instruments that provide excellent altitude measuring capabilities; designed for ultra-light airplanes. 3-1/8" is non-sensitive. Standard Types are either feet reading with barometric window inches of mercury or millibars reading; or meters reading with barometric window millibars reading. Length: 2 3/8" Weight: 10.7 oz.

Part No.	Range	Price
10-05100	6,000 ft./12,000 ft Inches	**$158.50**
10-03422	10,000 ft./20,000 ft. Inches	**$156.95**
10-02251	6,000 ft., Millibars	**$154.50**
10-02252	10,000 ft., Millibars	**$165.95**

FALCON 2 1/4" SENSITIVE ALTIMETERS

2-1/4" is sensitive. Single Pointer, and a barometric window. A setting knob allows the pilot to set the barometric reading to the correct field elevation or barometric pressure setting. They are weight conservative, economical, yet very precision and accurate instruments. It is suitable where space and weight is a consideration. This type is available in Feet or Meter reading, the baro-metric window can be either in inches of mercury or in millibars reading. Length: 2 3/8" Weight: 3.6 oz.

Model No.	Part No.	Range	Price
ALTN6INF-2	10-02205	5,500 ft, Inches	**$194.50**
ALTN10INF-2	10-04510	10,000 ft, Inches	**$194.95**
ALTN6MBF-2	10-04070	6,000 ft., Millibars	**$202.95**
ALTN10MBF-2	10-04071	10,000 ft., Millibars	**$196.95**
ALTN3ME-2	10-02207	3,000 Meters, Millibars	**$198.00**
ALTN6ME-2	10-02254	6,000 Meters, Millibars	**$198.00**

IN

MICROTIM™ BAROMETRIC ALTIMETER

Features: * Extreme sensitivity. Registers changes in altitude of 2 feet or less. * Calibrated from -2000 feet MSL (2000 feet BELOW sealevel) to +20000 feet MSL (20000 feet ABOVE sealevel). * Low Power. Single AAA battery lasts for months. Battery monitor gives several DAYS of low-battery notice. * One foot resolution, barometric-pressure and field-elevation adustable. * AGL(relative), MSL(sealevel) or BOTH alternately every 2 seconds. * Selectable units: feet/inHg or meter/kPa or feet/mbar(hPa). * Excellent ultralight altimeter or backup unit. Small (3"x1.5"x3/4") with large easy-to-read numbers (3/8" high numbers). Very durable (resin encapsulated internals), resists shock, vibration, and moisture. * EASY TO USE right out of the box. The 3 primary key functions allow you to o 1) Raise the barometric pressure setting o 2) Lower the barometric pressure setting o 3) Zero the ground-level altitude (AGL) * Then three additional functions are accessed by holding down one key for 5 seconds which allows you to o 4) Change units o 5) Change the display mode (AGL, MSL, or BOTH) o 6) Reset MicroTim to factory defaults (AGL only, feet, 29.92 inHg). ...and that's all there is to it! P/N 10-01726 ..... **$198.95**

ALTIMETER BUG

Altimeter Bug: Attaches to the face of your altimeter. Set the green bars to DH, MDA, CRUISE, or FIELD ELEVATION. Blue dot marks 800', 600', and 400' above the pre set altitude. Made from a hard clear plastic with mini single suction cup attached. Outer Circle: 2 3/4" Inner Circle: 1 1/2"
P/N 17-00218 ..... **$8.50**

INSTRUMENT BUGS

"Bugs" are perfect for pilots who rent aircraft, and for owners. The transparent suction cup works on all instruments. A thumb screw friction lock lets the yellow pointer tip rotate 360°. Fly with it day & night. Includes: 2 "Bugs" in a plastic reusable storage box with instructions and 4 disposable alcohol swabs, which are used to clean the instrument face and bugs so that they stick well. P/N 10-00114 ..... **$9.85**

AIRCRAFT INSTRUMENT COVER

The instrument cover is a plastic disk approximately 2 3/4" in diameter and 1/16" thick. By use of the attached suction cup, the cover will mask the face of most general aviation flight instruments. It is useful in many training situations one of which is partial panel work. As a safety aid, the cover can be used to mask an instrument when it is non-functional, as is required by Regulations. Each package has two covers.
P/N 13-04968..... **$5.95**

INSTRUMENT COVERS

The suction cup on the back of this soft rubber disc enables the pilot or instructor to cover up one or more flight instruments for partial panel instruction or to cover a failed instrument during flight. Measures 3-1/8" in diameter. Flight instructors and IFR pilots should have several of these handy covers in their flight bags. P/N 13-00088..... **$2.65 ea**

PARTIAL PANEL INSTRUMENT COVER

Partial Panel Instrument Cover: Hard plastic instrument cover with single mini suction cup attached. Easy to remove and easy to use. 2 3/4".
P/N 17-00222..... **$2.95**

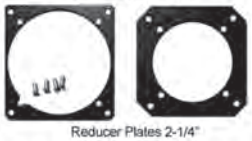
INOPERATIVE INSTRUMENT AID

Designed with static cling polyester, the IIA will stick to your glass instrument face without licking and will stay there until you want to remove it. Practicing instrument failures during flight is a requirement by the Federal Aviation Administration for your practical test. One package includes four Inoperative Instrument Aids. Developed by a Certified Instrument Flight Instructor with the intent to improve instrument instruction. measures 3" in diameter. P/N 13-04173 ..... **$8.95**

3ATI REDUCER PLATES

Reducer Plates 3-1/8"

3ATI Reducers to 3 1/8" - Use a 3ATI hole cut out to mount 3 1/8" diameter instrument. Plate can be shimed to instrument panel thickness . Simple installation. Heat-treated aluminum .080 thick with black anodize finish.
P/N 07-01331 ..... **$16.75**



Reducer Plates 2-1/4"

3ATI Reducers to 2 1/4" - Use a 3ATI hole cut out to mount 2 1/4' diameter instruments. Plate can be shimed to instrument panel thickness, comes with 4 rivets. Simple installation. Heat-treated aluminum .080 thick with black anodize finish.BACK PLATE 3.8 X 3.8
P/N 07-01330 ..... **$16.75**

REDUCING MASKS

Precision die-cut black anodized aluminum masks simplify installation of small instruments in large instrument panel cut-outs. 3 types available.
#1: Large AN-type artificial horizon cut-out to 3-1/8" size
P/N 10-05900 ..... **$11.40**
#2: Large AN-type directional gyro cut-out to 3-1/8" size.
P/N 10-06000 ..... **$13.75**
#3: 3-1/8" size cut-out to 2-1/4" size ..... P/N 10-06100 ..... **$10.95**

DRILL JIG AND FILING TEMPLATE FOR THE 3 ATI INSTRUMENT CUT

A handy much needed tool to have for those difficult to make 3 ATI cut outs that everyone complains about. A rugged tool made of alloy steel with a 58–60 RC hardness for long life. Simply drill mounting holes and cut opening file to template. P/N 10-00153 ..... **$32.50**

MOUNTING PLATE FOR THE 3 ATI INSTRUMENT

Quick fix for a hard to cut out opening. Plate is .500 wider than instrument. For easy mounting, material is .080 aluminum P/N 10-00154 ..... **$10.50**

REDUCING PLATE FROM 2-1/4" DIA.

Reduce from 2.25" to 2" diameter instrument. For oil pressure, ammeter gauge etc. P/N 10-00155 ..... **$8.50**

INSTRUMENT COVERS FOR PARTIAL PANEL PRACTICE

Sold in 4 packs of 25 (for a total of 100 sticky notes). These round pads are white with a light blue ASA logo, and fit any aviation instrument. Perfect for partial panel practice or jotting down quick notes. P/N 13-21776 ..... **$6.25**

ANGLED INSTRUMENT MOUNTS

This angled instrument mount allows replacement of a 3-1/8" gauge with a 2-1/4" gauge. It places the gauge at a 20° angle toward the pilot for easier reading and reduced glare. Made from 20% glass fiber filled Lexan. P/N 10-06800 ..... **$19.95 ea**

INSTRUMENT PANEL COVER-UPS

These white stick on instrument size covers are ideal for partial panel practice or to cover an actual failed instrument. These covers are reusable and are furnished in a package of 5 covers P/N 10-00066 ..... **$3.50**

INSTRUMENT PANEL COVER-UPS FOR PFD / MFD

Cover ups for PFD and MFD screens for glass cockpit training. For partial panel practice & actual instrument failures. * Reusable, 3 per pack * "Cling" type plastic covers, with lift tab * Zip lock plastic bag for convenient storage. P/N 13-06116 ..... **$6.95**

INSTRUMENT HOLE COVER PLATES

Use these plates to attractively cover unused panel cut-outs. Aluminum and plastic plates have raised center, which brings the plug face about even with the front surface of the panel.

Plastic plate for 2-1/4" Cut-Out	P/N 10-06900	**$3.95**
Plastic plate for 3-1/8" Cut-Out	P/N 10-07000	**$6.95**
Plastic plate for standard altimeter hole	P/N 10-07100	**$8.85**
Aluminum plate for 2-1/4"hole, black wrinkle	P/N 10-00427	**$9.75**
Aluminum plate for 2-1/4"hole, no paint	P/N 10-00428	**$9.75**
Aluminum plate for 3-1/8"hole, black wrinkle	P/N 10-00429	**$11.50**
Aluminum plate for 3-1/8"hole, no paint	P/N 10-00430	**$10.75**
Plastic plate for 3ATI hole, black fire retardant	P/N 10-00433	**$8.50**
Aluminum plate for 3ATI hole, black wrinkle	P/N 10-00434	**$11.50**
Aluminum plate for 3ATI hole, no paint	P/N 10-00436	**$10.50**
Plastic plate for half ATI hole, black fire resist.	P/N 10-00437	**$6.95**

INSTRUMENT PANEL LAYOUT TEMPLATE

Use this template for precise positioning of instrument holes and mounting screw holes in panel. For both 2-1/4" & 3-1/8" dia. instruments. With transfer punch for marking screw hole centers and instructions.
P/N 12-14600 ..... **$17.95**

IN

VSI - ACCELEROMETERS

FALCON ACCELEROMETER (G-METER)

Accelerometers register to "g" forces acting on the airframe during turbulence or aerobatic maneuvers. One pointer gives a continuous reading, the other two indicate maximum positive and negative loads. Easy to reset by pushing the "push to reset" knob.
All models are mechanical and offer precision, accuracy, reliability and durability. They are very easy to operate with no wiring necessary.
Whether flying acrobatic or not, this G-Meter provides the pilot valuable information for a winged airplane and helicopter without having to spend astonishing figures.

Size	Part No.	Range	Price
3-1/8"	10-00936	-5g to +10g	**$389.95**
3-1/8"	10-00935	-2g to +5g	**$419.00**
2-1/4"	10-09800	-5g to +10g - white pointers	**$396.00**
2-1/4"	10-04072	-5g to +10g - orange pointers	**$458.95**
2-1/4"	10-04073	-5g to +10g, Lighting 24V	**$727.00**
2-1/4"	10-02049	-5g to +10g, Lighting 12V	**$595.00**
2-1/4"	10-04074	-5g to +10g, Lighting 5V	**$718.00**
2-1/4"	10-00840	-2g to +5g	**$399.00**

FALCON ACCELEROMETER SMALL G METER

This instrument, mounted in the aircraft panel with its face in the vertical plane, register to "g" forces acting on the airframe during turbulence, or aerobatic maneuvers. One pointer gives a continuous reading, the other two indicate maximum positive and negative loads. A reset knob is provided. The mechanism is locked for shipping. Interchangeable with MS282025-1. Specifications: Dim: 2-1/4" X 2-1/4" X 4" Weight: Approx. 7lbs Range: -5g to +10g.

P/N 10-09800 ..... **$396.00**

CENTURY INSTRUMENTS RECONDITIONED ACCELEROMETER (G-METER)

This reconditioned instrument, mounted in the aircraft panel with its face in the vertical plane, register to "g" forces acting on the airframe during turbulence, or aerobatic maneuvers. One pointer gives a continuous reading, the other two indicate maximum positive and negative loads. A reset knob is provided. The mechanism is locked for shipping. Interchangeable with AN5745. Specifications: Dim: 3-1/8" X 3-1/8" X 3" Weight: Approx. 8lbs Range: -5g to +12g.

P/N 10-09710 ..... **$359.95**

FLIGHT DATA G-METER GT50 12/28

The GT-50 is a Six Function: Accelerometer - Clock - Voltmeter - Temperature for Experimental Aircraft.
G-Meter:
* Continuous Instantaneous Display to +12/-10 G's
* Records and Saves Max and Min G's
* 30 Degree (Sonex) Tilted Panel Compatible
Flight Timer: Automatically Records Flight Time
Clock: 12 or 24 Hour Format
Timer/Stopwatch Voltmeter

Features:
* Best G-Meter Value Available
* Extreme Operating Temperature Display
* Soft Orange Backlight
* 2-1/4" Panel Mounted
* Weighs 2.5oz
* Includes Pre-Wired Connector
* 12-28 Volt Compatible ..... P/N 10-03691..... **$159.00**

Flight Data OAT Probe GT50..... P/N 10-03694..... **$29.00**

WINTER VARIOMETERS

These extremely sensitive Winter instruments provide instantaneous indication of changes in vertical speed. Mechanical operation, with vario flask included. 2 1/4" and 3 1/8" sizes, 1000 fpm, and 1500 fpm ranges

Description	Part No.	Price
2-1/4" 1000 FPM	10-03813	**$559.00**
2-1/4" 1500 FPM	10-03819	**$685.00**
3-1/8" 1000 FPM	10-03830	**$698.00**
3-1/8" 1500FPM	10-03839	**$583.00**

UNITED VERTICAL SPEED INDICATORS

The vertical speed indicator is a precision instrument which provides an accurate indication of rate of change of altitude. This instrument is temperature compensated and is provided with a zero adjustment screw on the face of the case in the seven o'clock position. Power: Static system.

Manufactured by United Instruments. Used in most production aircraft. Size: 3-1/8" x 3-1/8" x 4", Wt. 0.7 lb. TSO-C8b.

Unlighted VSI's
0-2000 FPM ..... P/N 10-05200 ..... **$498.00**
0-3000 FPM ..... P/N 10-20400 ..... **$498.00**
0-4000 FPM ..... P/N 10-20500 ..... **$499.00**
0-6000 FPM ..... P/N 10-05250 ..... **$898.00**

Lighted VSI's
0-2000 FPM ..... P/N 10-00925 ..... **$616.00**
0-3000 FPM ..... P/N 10-00926 ..... **$616.00**
0-4000 FPM ..... P/N 10-00927 ..... **$616.00**
0-6000 FPM ..... P/N 10-00928 ..... **$1,018.00**

3-1/8" UMA VERTICAL SPEED INDICATORS

Part No.	Name	Range	Price
10-20505	Vertical Speed	0-2,000 Ft.	**$189.95**
10-02368	Vertical Speed	0-3,000 Ft.	**$189.50**
10-20506	Vertical Speed	0-4,000 Ft.	**$239.95**
10-20508	Vertical Speed	0-6,000 Ft.	**$237.95**
11-07239	Optional internal lighting		**$49.95**

UMA MINIATURE 2 1/4" VERTICAL SPEED INDICATORS

This instrument mounts in a standard 2-1/4" instrument panel cutout. New manufacture with brilliant easy-to-read matte-white numerals on black background. Size: 23/8"x 23/8"x 31/4" long.

Part No.	Name	Range	Price
10-05500	Vertical Speed	0-2,000 Ft.	**$266.50**
10-00079	Vertical Speed	0-3,000 Ft.	**$270.95**
10-05550	Vertical Speed	0-4,000 Ft.	**$296.95**
10-05560	Climb	0-4,000 Ft.	**$315.95**
10-05570	Rate of Change	0-4,000 Ft.	**$315.95**
10-05580	Cabin Climb	0-4,000 Ft.	**$315.95**
10-05600	Vertical Speed	0-6,000 Ft.	**$296.95**
10-05610	Climb	0-6,000 Ft.	**$315.95**
10-06910	Rate of Change	0-6,000 Ft.	**$315.95**
11-07239	Optional internal lighting		**$49.95**

FALCON VERTICAL SPEED INDICATORS

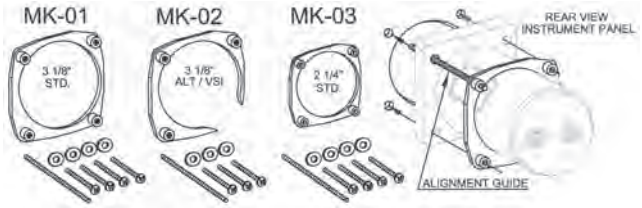
Falcon Gauge Vertical Speed Indicators (Rate of Climb), have been installed in thousands of planes. Available in climb ranges from 2,000 feet per minute to 3,000 feet per minute, and 10 meters per second. This precision aircraft instrument provides immediate climb and descent information with an easy to read dial and is extremely reliable and durable. Over several decades, they have been servicing and satisfying pilots and kit plane builders worldwide.
The 2-1/4" altimeter is perfect for the ultra-light models and where space and weight are a factor of consideration.

Part No.	Size	Range	Length	Weight	Price
10-05205	3 1/8"	2,000 ft/min	4.25"/105mm	12.7 oz	**$152.95**
10-05210	3 1/8"	3,000 ft. / Min.	4.25"/105mm	12.7 oz	**$169.50**
10-02246	3 1/8"	10 meter/second	4.25"/105mm	12.7 oz	**$154.50**
10-01643	2 1/4"	2,000 ft. / Min.	4.8"/112mm	9.2 oz	**$228.95**
10-00983	2 1/4"	10 Meters / Sec.	4.8"/112mm	9.2 oz	**$237.95**

IN

INSTRUMENT MOUNTING & ADAPTER KITS

INSTRUMENT MOUNTING KITS

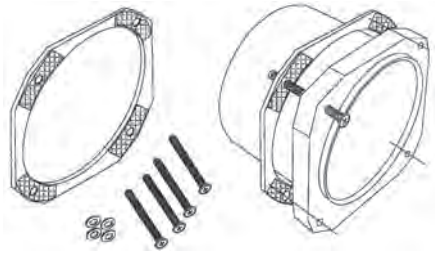


Kits come with "special" self-locking black pan head screws nylon washers, and alignment guide pin.

Precision machined "Nut Ring" instrument mounting kit. Designed to slide on from the back side of the instrument using the alignment guide pin inserted through a screw hole. Pulling on the alignment pin from the front side of the panel allows you to hold the instrument in correct alignment in the panel. Specially designed self-locking pan head black brass mounting screws and nylon washers are then easily installed from the front. Countersunk self-locking black brass screws are also available. Extra screws & washers are sold in packs of 12. The nylon washer keeps from chipping the instrument panel. All self-locking screws are extra long to accommodate the extra thickness of light wedges and internally lighted instruments. Nut Rings can be installed without removing hoses, tubing, or electrical connections. Designed to replace "grasshopper nuts". PMA'd. Alignment guide pin sold separately.(P/N 10-03696)

Model	Description	Part No.	Price
MK-01	3-1/8" Std.	10-00335	**$8.65**
MK-02	3-1/8" ALT/VSI	10-00336	**$8.65**
MK-03	2-1/4" Std.	10-00337	**$8.65**
MKNR-05	Pan Head Screws	10-00338	**$9.87**
MKNR-06	Countersunk Screws	10-00339	**$9.50**
Accessories			
AP-01	Alignment Mounting Kit	10-03696	**$1.75**

"EZ NUTS" INSTRUMENT MOUNTING SYSTEM BY SPT



Take the frustration out of mounting instruments with the use of Superior Panel Technology's EZ Nuts. Adhesive tape securely holds nut ring in place. No realignment if instrument is later removed. Aluminum bezel is treated to prevent corrosion. The pressed in stainless steel inserts eliminate the problem of striped threads. Simply cut off one corner if only three screws are needed. Save labor time when compared to "grasshopper nuts".
Includes four 1-1/2" non-magnetic black oxide stainless steel, pan-head screws. Stronger than brass. Includes four black nylon washers to prevent marring of the panel.
*100 degree countersunk screws available and are sold in packs of eight.

3-1/8" Bezel.....P/N 11-01830 ..... **$8.95**
2-1/4" Bezel.....P/N 11-01831 ..... **$8.95**
Black-Oxide Stainless Steel Countersunk screw package (set of 8).....P/N 11-06546 ..... **$3.95**
Black-Oxide Stainless Steel Pan head screw package (set of 8).....P/N 11-09911 ..... **$2.95**

PITOT TUBE PROTECTORS

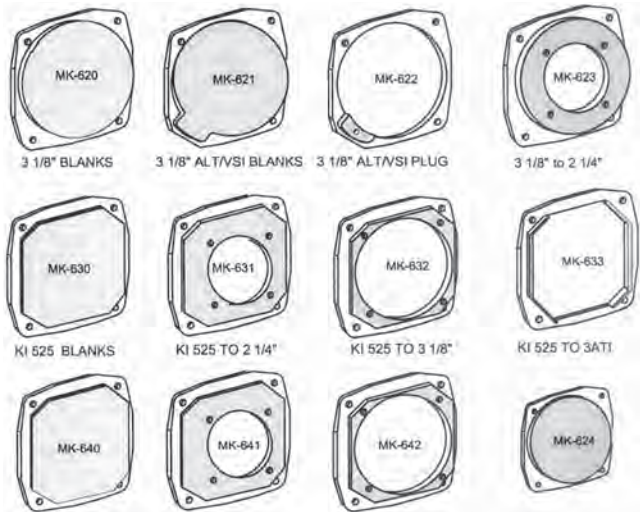
These hinged pitot tube protectors open automatically in take off at speed of about 40 mph and close automatically at end of landing roll.

Model No.	Part No.	Fits Pitot Tube Sizes	Price
1	10-02000	1/4" O.D.	**$7.65**
2	10-02100	1/2" O.D.	**$7.65**
3	10-04968	3/16" O.D.	**$7.65**
4	10-04969	3/8" O.D.	**$7.65**

REMOVE BEFORE FLIGHT RIBBON

This 3" x 24" orange vinyl streamer with black letters, features a grommet for a clip ring to attach anywhere on the aircraft. High visibility, fire resistant material. P/N 15200 .....**$6.85**

INSTRUMENT ADAPTER KITS



CNC Machined from aircraft grade aluminum. The adapter face is raised .075" to give the flush panel look. Easy to install and easily painted.
See www.aircraftspruce.com for specifications.

Model	Description	Part No.	Price
MK-620	3-1/8" Blank	10-00340	**$13.50**
MK-621	3-1/8" ALT/VSI Blank	10-00341	**$13.50**
MK-622	3-1/8" ALT/VSI Plug	10-00342	**$19.75**
MK-623	3-1/8" to 2-1/4"	10-00343	**$19.75**
MK-624	2-1/4" Blank	10-00344	**$13.50**
MK-630	KI525 Blank	10-00345	**$13.50**
MK-631	KI525 to 2-1/4"	10-00346	**$19.75**
MK-632	KI525 to 3-1/8"	10-00347	**$19.75**
MK-633	KI525 to 3 ATI	10-00348	**$17.75**
MK-640	3 ATI Blank	10-00349	**$13.50**
MK-641	3 ATI to 2-1/4"	10-00350	**$19.75**
MK-630	3 ATI to 3-1/8"	10-00351	**$19.75**

PITOT TUBE COVERS

PITOT TUBE BOOTY – Durable leather-like cover provides optimum protection. Velcro strap attaches booty to 5/8" or 11/16" dia. L-shaped pitot tube. Bright red "Remove Before Flight" streamer. Made of flame-proof & weather-resistant National Aerospace material.
P/N 15210 ..... **$5.95**

SLIP-ON PITOT TUBE COVER – Not shown. Same as above except is slip fit over 1/4" or 1/2" dia. pitot tube. Red "Remove Before Flight" streamer is attached to cover. Made of flame-proof and weather-resistant National Aerospace material.
P/N 15220 ..... **$6.95**

DEGROFF'S PITOT SHIELDS

PITOT SHIELDS are a "fail-safe" pitot tube cover that will protect the pitot tube from contamination by insects, debris and ice while the airplane is on the ground. It is friction-fit to the pitot tube and has a calibrated "flat-plate-forward" design that, upon reaching a specific velocity, will release from the pitot tube and fall harmlessly away, allowing for normal airspeed indications. The cover utilizes EVA foam that is UV resistant and stable at temperatures reached by heated pitot tubes. It is a highly visible color with the words "REMOVE BEFORE FLIGHT" printed and visible from all directions. This pitot tube cover is soft, but tough. It will not damage aircraft surfaces when it comes off during ground roll, nor will it be a potentially hazardous foreign-object on the runway.

For 5/8" pitot tube.....P/N 10-00491 ..... **$19.95**
For 3/4" pitot tube.....P/N 10-00492 ..... **$18.95**
For Piper pitot tube .....P/N 10-00493 ..... **$18.95**

IN

PITOT TUBES

UNHEATED PITOT TUBES

STRAIGHT TYPE – Flange-mounted through leading edge of spar. Aluminum tube 24" long, 1/4" dia. May be cut to shorten.
P/N 15133 .....**$19.85**

L-SHAPED TYPE – Flange mounted L-shaped model for under-the-wing mounting. 1/4" dia. aluminum tube.
P/N 15135 .....**$28.75**

L-SHAPED PITOT-STATIC TUBE – Same design with static tube added. For pitot tube cover order #15220 or 10-02100 (flip up). P/N 15144 .....**$34.85**

STRAIGHT TYPE PITOT-STATIC TUBE – Clamp-mounted for leading edge of wing. 14-1/2" long. May be shortened, formed or shaped to best angle of attack. 1/4' dia. aluminum tubes. All installation hardware furnished.
P/N 10-01800 .....**$26.75**

STRUT TYPE PITOT-STATIC TUBE – Simple L-shaped design for clamping to strut. 1/4" dia. aluminum tubes.
P/N 10-01900 .....**$32.50**

MAST-MOUNT PITOT TUBE - Designed for mounting in 3/4" O.D. x .049" wall aluminum tubing (not furnished). Machined from solid aluminum. Polyethylene fitting for 1/4" I.D. hose included. P/N 15170 .....**$35.85**

RAVEN PITOT STATIC TUBE

Pitot system combines pitot and static functions in one tube. Used for years on many different aircraft. Comes complete with mounting block to install it.
P/N 10-00476.....**$198.00**

PITOT STATIC SUMP BOTTLE

This pitot-static sump bottle collects moisture in the aircraft's static system which prevents water damage to panel mounted instruments. Used in many Cessna aircraft. Measures 1.625" dia. x 4.75" long.
Cessna.....P/N 10-00630 .....**$13.50**

STATIC PORTS

Aluminum static port for mounting through 9/16" dia. hole in side of fuselage. Base has 1/8" NPT female port for connecting to static line (polyethylene fitting included). Install with 3/32" dia. flush rivets.
P/N 15160 .....**$16.85**

Aluminum static port mounts from outside of fuselage through 9/16" dia. hole. Secure to skin with 9/16" Pal nut & lock washer on inside. Includes (1) 0700-153 polyethylene fitting.
P/N 15165..... **$19.50**

Aluminum static port mounts from outside of fuselage through .560 dia hole. Secure with four countersunk 100o 3/32" rivets. Includes one 0700-153 polyethylene fitting.
P/N 15175..... **$18.90**

Aluminum single engine cessna type static port. External mounted through a 19/64" hole. Can be used on fabric, composite or aluminum. No need for rivets. 1-3/8" dia.x1" depth. Ideal for homebuilts of all types.
P/N 10-00250.....**$17.75**

BOND-IN STATIC PORT SET

This aluminum static port is designed for high performance composite aircraft. Simply bond through the fuselage from the outside. Base has a 1/8" NPT for connecting to the static line. Furnished with installation instructions. Sold in set of 2.
P/N 10-00229 ..... **$39.95**

AEROGIZMOS PITOT TUBE

Incorporates the mount and the tube in one convenient unit, making it no longer necessary to have a separate mount. This unit further enhances the building experience as there is no protruding mast from the wing if it is to be stored during the building process. Made from a single piece of 6061 aluminum making it strong and long lasting. The unit has been lightened in the interest of weight savings. Not for IFR use. P/N 10-03633 .....**$199.00**

WINTER PITOT TUBE

The pitot tube is the sensor for aircraft instruments. It consists of a cylindrical tube open at the front to sense total pressure (measuring pressure for airspeed indicators) and slotted along the sides to sense static pressure. These pressures must then be carried to the instruments by hoses. .....P/N 10-03854 ... **$29.25**

HEATED PITOT TUBES

AN5812 PITOT TUBE - This heated pitot tube mounts under the wing. Used on Mooney, Beech, Piper, Maule, American Aviation aircraft, Glasair & Glastar. Threaded outlet fits 1/4" size AN tube fittings. Use 2.023x.857x.049 4130 Streamline Tubing to fabricate mount. AN5812-12 (12V) (10 amp.) **$879.95**
AN5812-1 (24V) (15 amp.) **$837.00**
Phenolic connector receptacle P/N 10-00032..... **$69.50**

AN5814 PITOT-STATIC TUBE - Same design as AN5812 pitot tube but with heated static tube added. Used on Glasair & Glastar (Piper No. 305-12).
AN5814-12 (12V) (20 amp.) **$2,024.00**
AN5814-2 (24V) (15 amp.) **$1,876.00**

AN5813-1 PITOT TUBE - The AN5813-1(PH500) is the standard replacement heated pitot tube for twin Cessnas with 24V systems. Draws 3-4 amps and measures 93/4" long. Mounts in 1.18 diameter tube. Dull finish.

P/N 10-00064 ..... **$954.50**

FALCON HEATED PITOT TUBES

The AN5812 heated pitot tube has been used on a wide variety of aircraft over the years and is now available for experimental aircraft. Made from brass and weighing 1.5 lbs, these imported pitot tubes meet the AN specifications.

Model No.	Description	Part No.	Price
12-AN5812	12V, standard	10-00984	**$589.00**
12-AN5812-1	12V, for RV's	10-04199	**$586.00**
12-AN5812-2	12V, left and right drain holes	10-04201	**$586.00**
24-AN5812	24V, standard	10-00985	**$580.00**
24-AN5812-2	24V, left and right drain holes	10-04202	**$579.00**
PT-001	non-heated, 1 drain hole	10-04224	**$346.95**
PT-002	non-heated, left and right drain hole	10-04225	**$346.95**
30-PT1000	Mounting bracket for standard	10-01063	**$37.50**
30-PT2000	Mounting bracket for RVs	10-02276	**$99.00**

GRETZ GA-1000 HEATED PITOT TUBE

The Gretz Aero GA-1000 is molded from a very high-tech polymer material that has nearly the same thermal conductivity as that of metal. This design has electronics embedded in the Pitot tube. Comes with a small electronic control module to control the heat of the Pitot as well as to provide information to the pilot regarding thermal and heater performance of the Pitot tube. A 3/16" diameter multi-conductor cable that has a LED board already attached that will mount conveniently on the panel. Will fit the Gretz mounting bracket kits that were designed for other popular Pitot tubes. Come with the electronic control module, the LED board and cable, Pitot mounting screws, electronic control module mounting hardware, and complete instructions for installation and use. P/N 10-01715 .....**$425.00**

GRETZ GA-500 UNHEATED PITOT TUBE

The Gretz GA-500 is the same shape and color as the heated GA-1000 Pitot tube, but does not include the heater, electronic instructions, etc. It will mount into the same Gretz mounting bracket kits.
P/N 10-01716 .....**$125.00**

WELDED PITOT TUBE ASSEMBLY

This non-heated non-IFR welded pitot tube assembly. It is intended for the experimental VFR aircraft market. The tube and mast are from 4130 tube welded in a fixture to assure alignment. The orifice is produced from aircraft grade aluminum. The pressure tube is polyethylene for easy connection to the aircraft pitot system. Dimension: 6" x 5" x 2-1/2"
P/N 10-03637 .....**$148.95**

FALCON GAUGE PITOT TUBE MOUNTING BRACKET

This Falcon Gauge Mounting Bracket for Pitot Tubes works with heated and non-heated tubes.Material: Aluminum Alloy
Standard Mounting Bracket.....P/N 10-01063 ... **$37.50**
Mounting Bracket for RV's .....P/N 10-02276 ... **$99.00**

SPACEAGE HEATED PITOT-STATIC PROBES

Avionics engineers needing AN5812-mount pitot tube and AN5814-mount pitot-static tube compatibility but requiring the latest in low-power, low-mass, and small-size technology can now specify SpaceAge Control 4380-tpe air data probes. Meet FAA TSO C16a deicing requirements. Weighs in just 1/4 pound, and have a power consumption of just 45 watts continuous.

Description	Drain Hole	Part No.	Price
4450-03 Pitot-Static 28V	Top	10-03640	**$1,069.00**
4450-04 Pitot-Static 28V	Bottom	10-03641	**$1,069.00**

IN

ANGLE OF ATTACK INDICATORS

SPACEAGE PITOT

Offer the lowest power consumption and lowest weight available to the general aviation market. A small tip diameter of .31 inches allows the sensing tip to remain free of ice under severe in-flight icing conditions at only 50 watts of power. Constructed of highquality corrosion resistant materials – a stainless steel outer shell on the nose section, aluminum body, stainless steel pressure lines, and aircraft grade lead wires.

Straight		
Description	Part No.	Price
28 VDC 4254-05	10-02682	**$365.00**
12 VDC 4254-06	10-02683	**$365.00**
STAT28V 4254-07	10-02684	**$465.00**
-STAT12V 4254-08	10-02685	**$465.00**

L-Shaped		
Similar Items	Part No.	Price
12VDC 4254-02	10-02679	**$424.00**
STAT28V 4254-03	10-02680	**$525.00**
STAT12V 4254-04	10-02681	**$525.00**

THE REDDISH STALL WARNER

Developed in the UK by Nigel Reddish, these stall warners have been installed in many RV series aircraft. the vane is ground adjustable and installation is simple. Includes a micro switch and vane. For experimental aircraft only.***Note:*** The Mark 2 Version is practically the same as the Mark 1, the only difference is the vane on the Mark 2 is longer. The installation is the same as the Mark 1.only.

Mark I ..... P/N 10-00189..... **$89.95**
Mark II ..... P/N 10-02686..... **$89.95**

RITE ANGLE BASIC SYSTEM AOA

The RiteAngle Basic, is a high quality AOA system for aircraft without flaps. This is the most accurate low cost AOA system available to customers today. **Note: The Basic system is for aircraft without flaps only.** The RiteAngle™ Basic uses electronics not available during earlier designs of RiteAngle™ systems. Although operationally similar to prior RiteAngle products, the RiteAngle Basic is a totally new, more efficient, economical design. It is a modern up to date system, that accurately determines your aircraft's angle of attack. This series uses our proven, easy-to-understand, five LED display. Green indicates Safe, Amber indicates Caution, and Red indicates Danger. The "On Speed" AOA, 1.3 Vso will be correct, regardless of bank angle, density altitude, or any of the other variables where the airspeed might be inaccurate

P/N 11-10388 .....**$315.00**

RIGHT ANGLE BUDDY AOA

The RiteAngle™ Buddy also uses electronics not available during design of the initial RiteAngle™ systems. Although it is similar to the prior RiteAngle systems, for aircraft with no flaps, The RiteAngle Buddy operationally, is a totally new design using an enhanced display.

Note: The Buddy is for aircraft without flaps only. The RiteAngle™ Buddy is a modern, up to date system that accurately determines your aircraft's angle of attack. This series uses an improved easy-to-understand LED display. This instrument is designed to FAA standards. Green indicates safe, amber indicates caution, and red indicates danger. P/N 11-06626 .....**$410.95**

Ema AOA Basic And Buddy Sensor..... P/N 11-10392.....**$50.00**

RITE ANGLE ELITE SYSTEM AOA

With the RiteAngle Elite system you have the advantage of having a system which was designed to the FAA guidelines for use on certified aircraft, without all the expense of tracking of parts and having it assembled by a PMA facility, and of course not having to pay for the time, effort, and work involved in getting the STC!

The RiteAngle™ Elite is a modern, up dated system that accurately determines your aircraft's angle of attack. Easy to understand - Green Safe, Amber Caution, Red Danger. There are no computed values, the vane actually measures the relative wind.

Ema Elite Angle Of Attack ..... P/N 11-10389.....**$750.00**
Ema AOA Small Vane Option..... P/N 11-10390.....**$49.95**
Ema Elite Enhanced Display Opt ..... P/N 11-10391.....**$175.00**

AOA PROFESSIONAL MODEL

This angle of attack instrument is designed for experimental aircraft pilots. The AOA Professional includes a four color liquid crystal display and a aural voice system which warns of critically high AOA, gear position errors and installation/hardware errors. There are no ugly probes, vanes or protrusions to slow you down or accumulate ice.

For Composite Construction
P/N 10-00016..... **$1,479.00**
For Metal Construction
P/N 10-00736..... **$1,479.00**

AOA SPORT MODEL

Designed for those tight panels, requiring simplified features but still uses revolutionary patent pending sensing techniques. This angle of attack instrument is only 1/2" wide by 1-3/4" by 1-1/4" deep overall and will fit on or under your glare shield or between instruments as a panel mount in either the vertical or horizontal position. The display is a three color LED ladder and includes the same aural voice warnings as the AOA Professional. It can be powered with a 9V battery or by standard 14 or 28 aircraft bus systems. Excellent for RV's, Glasairs, Lancairs, and other homebuilts.

For Composite Construction
P/N 10-04792..... **$874.00**
For Metal Construction
P/N 10-04793..... **$874.00**

SAFE FLIGHT PRE-STALL WARNER

Warns by light and horn of any danger of an approaching stall regardless of the flight maneuver. Never signals unless a stall is imminent. Consists of an instrument panel unit (fits standard 2.25" hole) containing a warning horn & signal light, and a small vane wing unit which operates a relay. Operation of the instrument doesn't depend upon air speed but rather on the air flow conditions of the wing. Complete with installation kit & instructions. Installation time: 2-6 hours.

Description	Model	Part No.	Price
Complete Lit	164R (12V)	164R	**$2,978.00**
	164S (24V)	164S	**$2,958.00**
Lift Detector	164	164	**$1,898.00**
Horn & Light	R (12V)	10-22712	**$1,459.00**
	S (24V)	10-22724	**$1,089.00**

ACI STALL WARNER

Few pilots need reminding of the catastrophic consequences of an unintentional stall at low level. A frequent sequence of events is distraction of pilot attention, leading to lack of speed control, with the stall rapidly followed by rotational entry into a spin. Steep ground impact follows all too quickly. We all know about this, but why do stall accidents continue to kill pilots and their passengers year after year? Factors include the rapidity with which our low inertia aircraft lose airspeed, their sensitivity to gusts, the higher frequency of engine failure - and so on. However, very few Experimental and PFA aircraft are fitted with audible stall warners, and yet we are flying aircraft that need them. Virtually every certified production light aircraft has a stall warning system as standard. The ACI Stall Warner is for experimental aircraft only. P/N 10-00235..... **$311.00**

MPL 503 AIR PRESSURE SWITCH

MPL 500 Series switches offer pressure, vacuum, and differential sensors, sensitive to as low as 0.05 in/H 2 O. Their accuracy and reliability offer the designer an excellent general purpose low pressure to electric interface for monitoring and control applications. Miniature size and low cost make the 500 Series ideal for OEM applications. MPL 503 is a Range B switch, which is 0.50 to 3.00 in/H2O

P/N 11-02379 ..... **$47.50**

IN

ALPHA SYSTEMS AOA KITS

AOA-5060K MECHANICAL KIT (3-1/8" MOUNT)

The Alpha System AOA mechanical kit includes everything needed to install an angle of attack gauge in any aircraft. This kit includes probe, probe mounting plate, all fittings, 21 feet of hoses and the AOA gauge with a 3-1/8" standard panel instrument opening mount. PN 11-05601 .....**$695.00**

AOA-5070K MECHANICAL KIT (DASH MOUNT)

The Alpha Systems AOA Mechanical Kit includes everything needed to install an angle of attack gauge in any aircraft. This kit includes probes, probe mounting plate, all fittings, 21ft. of hoses, the AOA gauge, and custom dash mount with mounting plate.
PN 11-06446 .....**$745.00**

AOA-5050K MECHANICAL KIT (2-1/4" MOUNT)

The Alpha Systems AOA mechanical kit includes everything needed to install an angle of attack gauge in any aircraft. This kit includes probe, probe mounting plate, all fittings, 21 feet of hoses and the AOA gauge with a 2-1/4" standard panel instrument opening mount. PN 11-05599 .....**$695.00**

AOA-2000K ELECTRONIC KIT (2-1/4"ROUND DISPLAY)

The Alpha Systems AOA electronic kit includes everything needed to install an angle of attack display in any aircraft. This kit includes probe, probe mounting plate, all fittings, 21 feet of hoses, the AOA digital control module with audio beeper, power cord and round LED display with a 2-1/4" standard panel instrument opening mount.
PN 11-05596 .....**$895.00**

AOA-3000VK ELECTRONIC KIT (VERTICAL DISPLAY)

The Alpha Systems AOA electronic kit includes everything needed to install an angle of attack display in any aircraft. This kit includes probe, probe mounting plate, all fittings, 21 feet of hoses, AOA digital control module with audio beeper, power cord and 4" bar graph LED vertical display.
PN 11-05597 .....**$895.00**

AOA-3000HK ELECTRONIC KIT (HORIZONTAL DISPLAY)

The Alpha System AOA electronic kit includes everything needed to install an angle of attack display in any aircraft. This kit includes probe, probe mounting plate, all fittings, 21 feet of hoses, AOA digital control module with audio beeper, power cord and 4" bar graph LED horizontal display. PN 11-05598 .....**$895.00**

Visit our website to see how it works and to download product brochures.

AOA HEATED PROBES

Heated Probe has a built in heater of 12V DC that minimizes the potential for ice build up on the leading edge of the probe. Probe comes complete with high temperature fittings and tubing. It is a drop in replacment and can be used or upgraded in the existing Alpha Systems AOA mounting plate.
12V Heated Probe.....P/N 11-09983 .....**$157.95**
24V Heated Probe.....P/N 11-09984 .....**$157.95**

ENHANCED CLASSIC 2 1/4" ROUND PANEL MOUNT KIT

The AOA 2000 REK Enhanced Classic 2 1/4" Display Kit incorporates the same great performance of the Standard Classic Kit plus it has an inline display disconnect connector, a direct stereo connection of a built-in audio interface system for multiple selectable tones or voice warnings. 16 (5mm) ultra birght, colored LED readout of available lift when calibrated to the aircraft.
The kit comes complete with all parts including the AOA probe, mounting hardware, 9"x9" mounting plate, fittings, 25 ft of blue and white hoses, AOA interface module, display, prewired interconnect cables, installation and calibration manuals. P/N 11-10455 .....**$1,050.00**

ENHANCED CLASSIC 4" VERTICAL LED ELECTRONIC KIT

The AOA 3000VEK Enhanced Classic 4" Vertical Display kit incorporates the same great performance of the Standard Classic kit plus it has an inline display disconnect connector, a direct stereo connection of a built-in audio interface system for multiple selectable tones or voice warnings. 16 (5mm) ultra birght, colored LED readout of available lift when calibrated to the aircraft.
The kit comes complete with all parts including the AOA probe, mounting hardware, 9"x9" mounting plate, fittings, 25 ft of blue and white hoses, AOA interface module, display, prewired interconnect cables, installation and calibration manuals. P/N 11-10456 .....**$1,050.00**

ENHANCED CLASSIC 4" HORIZONTAL LED ELECTRONIC KIT

The AOA 3000HEK Enhanced Classic 4" Horizontal Display kit incorporates the same great performance of the Standard Classic kit plus it has an inline display disconnect connector, a direct stereo connection of a built-in audio interface system for multiple selectable tones or voice warnings. 16 (5mm) ultra birght, colored LED readout of available lift when calibrated to the aircraft.
The kit comes complete with all parts including the AOA probe, mounting hardware, 9"x9" mounting plate, fittings, 25 ft of blue and white hoses, AOA interface module, display, prewired interconnect cables, installation and calibration manuals. P/N 11-10457 .....**$1,050.00**

ENHANCED ULTRA 2 1/2" VERTICAL LED ELECTRONIC KIT

The Enhanced Ultra 2 1/2" Vertical AOA Display kit features include an inline display disconnect connector, a direct stereo connection of a built-in audio interface system for multiple selectable tones or voice warnings and a 16 (5mm) ultra birght, colored LED readout of available lift when calibrated to the aircraft.
The kit comes complete with all parts including the AOA probe, mounting hardware, 9"x9" mounting plate, fittings, 25 ft of blue and white hoses, AOA interface module, display, prewired interconnect cables, installation and calibration manuals. P/N 11-10458 .....**$1,300.00**

ENHANCED ULTRA 2 1/2" HORIZONTAL LED ELECTRONIC KIT

The Enhanced Ultra 2 1/2" Horizontal AOA Display kit features include an inline display disconnect connector, a direct stereo connection of a built-in audio interface system for multiple selectable tones or voice warnings and a 16 (5mm) ultra birght, colored LED readout of available lift when calibrated to the aircraft. The kit comes complete with all parts including the AOA probe, mounting hardware, 9"x9" mounting plate, fittings, 25 ft of blue and white hoses, AOA interface module, display, prewired interconnect cables, installation and calibration manuals. P/N 11-10459 .....**$1,300.00**

ENHANCED LEGACY VERTICAL AOA DISPLAY KIT

The "Enhanced Legacy" line of AOA display kits utilize ultra bright LED driven colored segments to give the pilot AOA readout when calibrated to the aircraft. Kit features a direct stereo connection of a built-in audio interface system for multiple selectable tones or voice warnings with display connector quick disconnect, electronic pushbutton calibration. The "Enhanced Legacy" display is housed in a billet aluminum case and comes standard with panel mount brackets. Additional glare shield mounting options allow for the display to be mounted above the glare shield in the pilot's peripheral vision.
Kit includes probe, probe mounting plate, all fittings, 25 ft of hoses, instruction manual, AOA digital control module, power cord, aux cable and 2 1/2" chevron style, LED driven dsplay.
P/N 11-10460 .....**$1,600.00**

IN

COMPASSES

AIRPATH COMPASSES

Factory-new Airpath compasses as used in almost all production aircraft. 2.25" size.

Model	Mounting	Lighting	P/N	Price
C2300	Panel	None	10-01340	**$134.50**
C2300- S. Hemisphere	Panel	12V Red	10-01342	**$139.95**
C2300-L4	Panel	12V Red	10-01341	**$155.95**
C2300-L4- S. Hemisphere	Panel	12V Red	10-01387	**$159.50**
C2400-L4P	Pedestal	12V Red	10-01343	**$174.00**
C2400-L4P - S. Hemisphere	Pedestal	12V Red	10-01344	**$184.95**
C2400-L4VT	Overhead	12V Red	10-01345	**$216.95**
C2400-L4VT - S. Hemisphere	Overhead	12V Red	10-01346	**$228.95**

BULBS FOR AIRPATH COMPASSES

14V .....P/N 11-04016 **$1.35 ea** 28V ..... P/N 11-04015.....**$0.88 ea**

AIRPATH COMPASS REPAIR KITS

Kit consists of diaphragm, 1/2pt of compass fluid & face glass gasket.
Repair Kit (with fluid)
P/N 10-08000 .....**$16.95**
Repair Kit (without fluid)
P/N 10-08020 .....**$15.75**
Compass Fluid: 1/2 Pint
P/N 10-08100 .....**$1.60**
Quart ..... P/N 10-08200.....**$5.25**
Airpath Compass Deviation Card Holder... P/N 10-01658.....**$1.50**
Deviation Card ..... P/N 10-01659.....**$0.75**
CB21-914H - Inner gasket ..... P/N 10-00505.....**$6.95**
C21-915G Spacer gasket ..... P/N 10-00368.....**$1.85**
Diaphragm Only ..... P/N 10-01386.....**$6.50**
Glass Compass Lens for C2300/C2400 series compasses.
P/N 10-08010.....**$17.65**

C2400 SERIES COMPASS HOUSINGS

C24-730A Houding for C2400L4P Top Panel Mount
P/N 10-04696 .....**$19.25**
C24-727A Housing for C2400L4VT Windshield Mount.
P/N 10-04697 .....**$20.50**

C2400 W/R INNER CASE - Replacement Compass only for Model 2400L4VT. P/N 10-04718 .....**$98.50**

FALCON AIRCRAFT COMPASSES

These compasses are very similar to the Airpath C2300 & C2400 style compasses above but are priced more economically. New manufacture. Not certified.

Size	Model No.	Description	Part No.	Price
		Northern Hemisphere		
2-1/4"	MCPN-2	Panel Mount	10-02067	**$93.75**
2-1/4"	MCPN-2L	Panel Mount, Lighted	10-02069	**$99.75**
2"	MCDN-2	Pedestal Mount	10-02071	**$109.95**
2"	MCDN-2L	Pedestal Mount, Lighted	10-02070	**$109.50**
		Southern Hemisphere		
2-1/4"	MCPS-2	Panel Mount	10-02068	**$99.85**
2-1/4"	MCPS-2L	Panel Mount, Lighted	10-02243	**$102.95**
2"	MCDS-2	Pedestal Mount	10-01704	**$112.95**
2"	MCDS-2L	Pedestal Mount, Lighted	10-02070	**$109.50**

FALCON NON-TSO'D VERTICAL CARD COMPASSES

It is easy to read presentation and see the complete 360 degree dial in proper relation to your aircraft heading. 14V, lighting. 2-1/4"

Model	Description	Part No.	Price
MCVC-2L-A	Improved for install on metal aircraft, 12-14V light	10-04173	**$199.95**
MCVC-2L-A-M	Improved for install on metal aircraft, 12-14V light with bracket	10-04174	**$228.95**
30-V-0001	Vertical Card Compass Universal Mounting Bracket	10-04175	**$24.85**

FALCON COMPASS SOUTHERN HEMISPHERE - MCVC-2SL-A

It is easy to read presentation and see the complete 360 degree dial in proper relation to your aircraft heading. 12V DC, lighting. 2-1/4" P/N 10-04489 .....**$229.95**

FALCON COMPASS SOUTHERN HEMISPHERE WITH MOUNTING BRACKET - MCVC-2SL-AM

It is easy to read presentation and see the complete 360 degree dial in proper relation to your aircraft heading. 12V DC, lighting. 2-1/4" P/N 10-04490 .....**$246.95**

PRECISION VERTICAL CARD COMPASS

The Precision Vertical Card Compass is a totally new concept for today's aircraft. It is a dry compass, designed to replace the float/liquid type compass; no more leaking fluid or backward azimuth readings. It uses eddy current damping and as such has no overshoot. It consists of a 2"vertical rotating dial which is compared with a fixed miniature airplane (lubber line) to present the magnetic heading of the aircraft at all times. Heading information is more natural because the heading is read at the 12 o'clock position and off the nose of the miniature aircraft. The compass card rotates and presents all quadrants in their true relation to line of flight. Requires no power (except for lighting) to operate. Fully TSO'd. Installed in many current production aircraft and helicopters. Size: 2-7/8"H x 2-3/8"W x 2-1/8"D. Wt. 0.6 lb. After installation, compass must be compensated using standard compensation procedures. Also used in sailplanes. ***Bracket / mount is required for installation and is not included with unit.***
14V..... P/N 10-00421..... **$288.95**
28V..... P/N 10-00423..... **$288.95**

For Southern Hemisphere Add "-S0" to Part Number.

REPLACEMENT LIGHT BARS FOR PAI-700

14V..... P/N 10-00092.....**$29.65**
28V..... P/N 10-00093.....**$27.50**
5V Light Assy. ..... P/N 10-02956.....**$29.50**

PRECISION COMPASS MOUNTS

PACMG-2 – Universal mount for many aircraft using a glare shield or deck mount. Models include Beech Baron and Bonanza, Cessna Skyhawk, Skylane and Cardinal.....P/N 10-07500 ..... **$25.50**
PACMO-U – Universal overhead bracket kit for customer adaptation. P/N 10-07600 ..... **$25.75**
PACMO-CESNO – Custom mount for several Cessna models using one-piece windshield & compass mounting block. Models include Cessna 150,152,170,180,182,185 & 210....P/N 10-07700 ..... **$41.75**
PACMO-PIPER – Custom mount for several Piper models with 5/8" hat-section center windshield post. Models include Piper Cherokee, Warrior, Arrow, Archer, Lance, Comanche, Navajo & Cherokee Six. P/N 10-07800 ..... **$41.85**
PACMO-APZ21 – Custom mount for use in Piper Apache, Aztec, & Cessna 421. .....P/N 10-07910 ..... **$41.50**
PACMO-SRN – Custom mount for use in Beech Sierra using windshield mount. P/N 10-07920 ..... **$41.50**
PACMO-KA – Beech King Air.....P/N 10-07921 ..... **$40.75**
PACMO-EB – Early Bellanca. Compass mounted overhead. P/N 10-07922 ..... **$47.50**
PACMO-LB – Late Bellanca. Compass mounted on windshield. P/N 10-07923 ..... **$40.75**
PACMO-2CN – Cessna early 172, 182 with compass mounted on windshield with 1" center with 1" divider strip.....P/N 10-07924 ..... **$41.50**
PACMO-340R – Cessna 340 Twin. .....P/N 10-07925 ..... **$59.75**
PACMO-310RN – Cessna 310 Twin.....P/N 10-07926 ..... **$51.65**
PACMO-GTR – Grumman Tiger, Cheetah. P/N 10-07936 ..... **$39.75**
PACMO-MHN – Mooney compass mounted on housing covering center post. P/N 10-07927 ..... **$40.75**
PACMO-HMN – Mooney compass mounted on center post with horizontal screws. P/N 10-07928 ..... **$41.50**
PACMO-VMN – Mooney compass mounted on center post with vertical screws. P/N 10-07929 ..... **$41.50**
PACMO-PCN – Comanche with no center post use PACMG-2, twin, SE. P/N 10-07931 ..... **$41.75**
PACMO-R22 – Robinson R22. .....P/N 10-07932 ..... **$47.75**
PACMO-R44 – Robinson R44. .....P/N 10-07933 ..... **$48.50**
PACMO-RV6C – RV6 kit. (Sliding Canopy only, not tip-up) P/N 10-07934 ..... **$47.95**
PACMO-HSN3A – 32.50 40.63 Schweizer 300 & 300 CB. P/N 10-07935 ..... **$57.50**
PACMO-3/4P – w/ a 3/4" post .....P/N 10-00426 ..... **$46.75**
PACMO-5/8P – w/ a 5/8" post .....P/N 10-00431 ..... **$44.75**
PACMO-7/8P – w/ a 7/8" post .....P/N 10-00432 ..... **$47.75**
PACMO-ARCP – Ercoupe .....P/N 10-00435 ..... **$49.25**

COMPASS COMPENSATOR

Very sensitive to stray magnetic fields within the aircraft. If the compensators of the compass will not bring the compass within tolerances, it will be necessary to install the HBB47S compensator ("balanced balls"). These balls contain magnets which permit the compass to be properly compensated. Instructions furnished. P/N 10-07900 ..... **$43.85**

MAGNETIC COMPASS SHIELD

Use this .005" x 5" x 12" metal strip to shield the precision PAI-700 compass from magnetic interference in the instrument panel. P/N 11-00973 ..... **$19.75**

NON-MAGNETIC SCREWDRIVER FOR COMPASSES

This small non-magnetic screwdriver blade is ideal for adjusting magnetic compasses. This blade is durable, corrosion resistant, & can be put on a key chain until needed. .....P/N 10-07930..... **$4.35**

IN

SIRS "PEGASUS" (TSO'D)

Utilizes the most advanced technology and manufacturing methods to produce the most accurate compass in the industry. It utilizes high quality components throughout, including Silicone rubber seals, metal expansion bellows, and Tungsten Carbide pivots. Has a high-visibility spherical display, and can be viewed over a 140° arc instead of the standard 90°. Fits standard 2-1/4" panel hole (by 2-1/4" deep) and weighs only 30% of a typical liquid compass. The "Pegasus" comes in blue/white lighted or unlighted versions, and has a 3-yr. warranty.

NORTHERN HEMISPHERE					
P/N	**LIGHT**	**PRICE**	**P/N**	**LIGHT**	**PRICE**
PG-2A	NONE	**$274.95**	PG2C-28	28V BLUE	**$254.95**
PG2C-12	12V BLUE	**$254.95**			
SOUTHERN HEMISPHERE					
P/N	**LIGHT**	**PRICE**	**P/N**	**LIGHT**	**PRICE**
PG-2ASH	NONE	**$246.95**	PG2C-12SH	12V LIT	**$273.95**
PG2C-28SH	28V LIT	**$205.95**			

SIRS "NAVIGATOR" (TSO'D)

Delivers extremely accurate readings due to it's fully integrated, 4 magnet correction facility. Same features as "Pegasus", but is mounted with a fully adjustable bracket. This allows the compass to be mounted in a variety of positions located away from magnetic influences. Size: 20-3/8"h x 2-1/4"w. "Navigator" comes in lighted or unlighted versions; 3yr. warranty.

NORTHERN HEMISPHERE					
P/N	**LIGHT**	**PRICE**	**P/N**	**LIGHT**	**PRICE**
NV-2A	NONE	**$243.00**	NV2C-28	28V BLUE	**$268.00**
NV2C-12	12V BLUE	**$272.00**			
SOUTHERN HEMISPHERE					
P/N	**LIGHT**	**PRICE**	**P/N**	**LIGHT**	**PRICE**
NV2C-12SH	NONE	**$273.95**	NV2C-28	28V LIT	**$273.95**
NV2C-12V-SH	12V LIT	**$273.95**			

NAVIGATOR MOUNTING BRACKETS & ACCESSORIES

Description	**Part No.**	**Price**
Install Kit for Pegasus Compass	10-02124	**$41.85**
PA28/30 Piper bracket	10-00274	**$41.75**
MF1 Short foot (self adhesive)	10-00277	**$25.75**
Glareshield Mount for SIRS Nav Compasses	10-00276	**$43.50**

SIRS NAVIGATOR NV2-2400X

Designed to be installed on the glareshield using the same location holes required for other compass installations. The compass rose suspended in a silicone-based fluid and features silicone seals to eliminate the problem of leaks and fluid evaporation. Metal expansion bellows allow for flexing in high-altitude, unpressurized flight. The display shows 140° of heading, as opposed to the 90° view offered by standard compasses. TSO'd Navigator comes in 6, 12, & 28V configurations, with a 3 year warranty.

Northern Hemisphere		
Description	**Part No.**	**Price**
NV2A-2400 UNLIT COMPASS	10-00401	**$246.95**
NV2C-2400 LIT COMPASS 12V	10-00467	**$254.95**
NV2C-2400 LIT COMPASS 28V	10-00468	**$254.95**
Southern Hemisphere		
Description	**Part No.**	**Price**
NAV TSOD COMPASS 28VLIT SH	10-02131	**$273.95**
NAV NV2A-2400 UNLIT COMPASS SH	10-02132	**$261.95**
NV2C-2400 LIT COMPASS 28V SH	10-02134	**$235.95**
NV2C-2400 LIT COMPASS 12V SH	10-02133	**$273.95**
NAV TSOD COMPASS UNLIT SH	10-02129	**$246.95**
Accessories	**Part No.**	**Price**
INSTALL KIT NAV SERIES COMPASS	10-02123	**$40.75**

SIRS MASTER COMPASS

Designed to indicate very accurate magnetic headings. The compass card is graduated in 1/2 degree intervals and the compass is supplied with a calibration chart indicating any deviations in minutes of arc. Ideal for use with larger aircraft. A specical reverse-read version (954-2399REV) is available to indicate the same headings as those read from the aircraft instruments during the compass swing operation, when viewing from the front of the aircraft. Magnetic headings are viewed through a magnified prism and a special mounting Tripod is available (non-magnetic tripod) to ensure steady readings PN 10-04231 Warranty: 3 years Accuracy: Better than 30 Minutes Tilt: 7 Degrees

Standard Compass.....P/N 10-04230 .....**$2,474.00**
Reverse Read Compass.. P/N 10-04817.....**$2,474.00**
Tripod..... P/N 10-04231 .....**$865.00**

SIRS HAND HELD PRISMATIC MASTER COMPASS

Designed to meet demanding requirements of the Aviation and Military environments where accurate bearings are required. Supplied with a calibration certificate and can be configured with reversed readings to assist with aircraft wings. Ideal for use with small to medium aircraft. The liquid damped card is divided in 2 degree increments.Warranty: 3 years. Dial Markings: DegreesTilt: 15 Degrees.

Standard Compass.....P/N 10-04232 .....**$1,294.00**
Reverse Read CompassP/N 10-04816 .....**$1,334.00**

MID-CONTINENT INSTRUMENTS CARBURETOR TEMPERATURE INDICATORS

The MD-11 carburetor temperature gauge & B-5 temp. probe are designed to help eliminate carburetor icing by early detection, reduce spark plug fouling, extend engine life, increase range & power, and maximize fuel economy. Designed for use with most Marvel-Schebler & Bendix float type carburetors. FAA approved. Mounts in 2-1/4" instrument hole.

14V carb air temp indicator only .....P/N MD-11-3 ..... **$510.00**
28V carb air temp indicator only .....P/N MD-11-4 ..... **$510.00**
B-5 probe only.....P/N B-5..... **$320.95**
Mating Connector.....P/N 10-01563 ..... **$11.90**
14V Carburetor Air Temperature Kit .....P/N 10-02759 ..... **$777.00**
28V Carburetor Air Temperature Kit .....P/N 10-02760 ..... **$747.00**

ICEMAN CARBURETOR ICE DETECTION SYSTEM

Fits into a 2-1/4" or 3-1/8" instrument cut-out (or optional bracket) on the panel. The system works on normal 12 or 24V aircraft electrical systems. No temp gauge, no worries about humidity, no graph. Enables an interface with the audio panel, effectively "piping" the ice alert warning sound right into the headset. The ICEMAN is a sealed, solid state unit weighing only 5oz and is currently approved by the FAA in the United States, certified by the CAA, by Transport Canada, and validated in Australia. Probe is included with the system. The Iceman is approved for most general aviation aircraft. Approval list available on request

Iceman System (2-1/4")..... P/N 10-00057 .....**$369.00**
Replacement Probe..... P/N 10-00059 .....**$58.75**
Remote Mounting Brckt (for 2-1/4" only).....P/N 10-00060 .....**$12.50**
Patch Cord kit..... P/N 10-00057-1 .....**$20.75**
3" Front Plate..... P/N 10-02163 .....**$13.00**

ARP CARBURETOR ICE DETECTION SYSTEM

Made in USA. Available in three (3) different mounting configurations (Panel Mount, Remote Mount and Universal Mount) thus providing flexibility for any aircraft installation. GIVES UP TO 5 MINUTES WARNING TIME by illuminating a RED visual ice warning light. LIGHT WEIGHT less than 13 ounces. SIMPLIFIED INSTALLATION keeps installation cost down – approx. 1 to 3 man-hours. WARRANTY 3-Years on Electronics Box and 1-Year on Probe. FAA-STC SA489EA APPROVED for normal, utility and acrobatic airplanes and helicopters equipped with Continental, Franklin and Lycoming type engines and Precision Air-Motive (Facet or Marvel-Schebler) MA-2, MA-3, MA-3A, MA-3SPA, MA-4, MA-4-5, MA-4SPA, MA-5, MA-6, MA-6AA and HA-6 series carburetors. Installation on other aircraft not specified on the STC may be performed via FAA Form 337. FAA-PMA APPROVED for installation on Type Certificated aircraft.

Panel Mount, 12V (107AP-12).....P/N 10-09900 .....**$374.95**
Panel Mount, 24V (107AP-24) .....P/N 10-03707 .....**$315.00**
Remote Mount, 12V (107AP-R-12) .....P/N 10-03708 .....**$498.95**
Remote Mount, 24V (107AP-R-24) .....P/N 10-03709 .....**$424.95**
Universal Mount, 12 (107AP-U-12) .....P/N 10-03697 .....**$429.95**
Universal Mount, 24 (107AP-U-24) .....P/N 10-03698 .....**$435.95**
Spare Probe (107AP-P).....P/N 10-03710 .....**$187.95**

FLIGHT DATA SYSTEMS FC-10

Flow: Instantaneous Display of Fuel Flow , Used: Fuel Used , Remaining: Fuel Remaining , Endurance: Time or Distance Remaining , Required: Fuel Required to Active GPS Waypoint , Reserve: Fuel or Time Remaining at Active GPS Waypoint , Efficiency: Miles Per Gallon (or Liter) Displays Fuel Flow and Fuel Used for Each Engine (Two Engine Systems) ***Features:*** Communicates with Handheld or Panel Mount GPS , User Selectable Units (Gallons, Liters, Nautical Miles, Statute Miles) , Low Fuel Warning , Best Fuel Computer Value Available , Large Extreme Operating Temperature Display , Soft Orange Backlight with Automatic Brightness , Weighs 2.6oz 12-28 Volt Compatible , Includes Floscan 201B6 Transducer 0.6-60 Gallons/Hour , Includes Pre-Wired Harness , Connector is pin to pin compatible with many JPI, Hoskins, and Shadin Systems .

FC-10 Single Engine (additional sender req.) ..P/N 10-03150... **$369.95**
FC-10 Twin Engine.....P/N 10-03151 ... **$535.00**
FC-10 With Out Sender.....P/N 10-03152 ....**$235.95**

FLIGHT DATA SYSTEMS AFP-30 FUEL COMPUTER

Designed for the experimental aircraft owner who wants instantaneous flight information previously reserved only for transports and private jets. Features complete Winds Aloft information, Airspeed information including: True Airspeed and Mach number, Altitude information such as Density Altitude and Vertical speed, and both Total and Saturated Air Temperature. Complete with GPS communication enabling it to display fuel computer data. The Performance Computer function calculates, instantaneously, Percent Horsepower based on the engine manufacturer's power chart. Backup Tachometer and Manifold Pressure indications. Compatible with most handheld and panel mount GPS units. .....P/N 10-03154 ..... **$699.00**

IN

ENGINE GAUGES

2-1/4" UMA MANIFOLD PRESSURE GAUGES

Manifold pressure is one factor used to obtain correct power setting of the engine. The indicators are temperature and altitude compensated. Matte-white dials. Units are new. Manufactured by UMA.

2-1/4" Gauge, 10-50 Hg. ..... P/N 10-11200 . **$131.95**
2-1/4" Gauge, 10-35 Hg. ..... P/N 10-11250 . **$131.95**
UMA optional internal lighting .. P/N 11-07239 ... **$49.95**

FALCON 3 1/8" MANIFOLD GAUGE

Falcon Gauge Manifold Pressure Gauge is designed and manufactured for use on aircrafts and is a standard diaphragm pressure instrument. This indicator is temperature and altitude compensated. Manifold pressure is one of the factors required to obtain the correct power setting of the aircraft engine.

10-50 IN HG ..... P/N 10-02269 ..... **$176.95**
10-35 IN HG ..... P/N 10-02270 ..... **$166.85**

3-1/8" UMA MANIFOLD PRESSURE GAUGES

3-1/8" Gauge, 10-35Hg.
P/N 10-00080 ..... **$232.95**
3-1/8" Gauge, 10-50Hg.
P/N 10-11300 ..... **$232.95**
UMA optional internal lighting
P/N 11-07239 ..... **$49.95**

P/N 10-00080

UMA FUEL/AIRBOX DIFFERENTIAL PRESSURE GAUGE

Displays the differential pressure between the fuel system and air box on turbo charge engines where it is necessary to maintain constant fuel pressure that is above the airbox pressure. Sender sold separate. (Requires the use of a 1EU007D UMA different pressure sneder.)

1 1/4" ..... P/N 10-00979 ..... **$177.95**
Sender 0-7 PSI ..... P/N 10-00980 ..... **$118.95**

ROCHESTER OIL PRESSURE GAUGES

Rochester oil pressure gauges have matte-white dial with black bezel. Mount in 2-1/16" dia. hole. 1/8" NPT port fits AN910-1D coupling. New mfg.

0-50 PSI ..... P/N 10-22301 ..... **$83.50**
0-80 PSI* ..... P/N 10-00015 ..... **$39.75**
0-120 PSI ..... P/N 10-22302 ..... **$47.50**

****Chrome Bezel***

MINI WATER PRESSURE GAUGE

Range	P/N	Price
(-5)-25 PSI	10-22241	$178.95
(-15)-15 PSI	10-22248	$187.95

ROCHESTER OIL TEMPERATURE GAUGES

Rochester oil temperature gauges have matte-white dial with black bezel. Mount in 2-1/16" dia. hole. New manufacture. Furnished with one 5/8-18UNF X 5/8-18UNF adapter nut. Available in the following temperature ranges and capillary lengths.

P/N 10-11600 ..... 100-250°F .... 60" Cap **$83.75**
P/N 10-11700 ..... 100-250°F .... 72" Cap **$91.50**
P/N 10-11800 ..... 00-250°F ..... 144" Cap **$89.95**
10-11900 ..... 100-250°F .... 48" Cap **$91.50**
Adapter Nuts Only: 44-0024 5/8-18UNF x 5/8-18UNF **$9.95**

SCOTT OIL TEMPERATURE GAUGE

FAA Approved for Aeronca 7ECA, 7GCAA, 7KAB, 7GCBC, 8KCAB, 8GCBC. Model 13340-00 Kit is designed for panel holes of 2 1/16" diameter to 2 1/8" diameter, equipped with an adapter to fit a 5/8"- 18 female thread. For panel holes exceeding 2 1/8" diameter and up to 2 3/4" diameter, accessory washers are available for easy installation. Capillary tubes for AVOX Systems Oil Temperature Gauges are a standard 5' long. Range: 100°F to 250°F.

P/N 10-04647 ..... **$199.75**

MECHANICAL OIL TEMPERATURE GAUGE

A quality gauge which is complete with all installation fittings. Range is 100-250° F. 5/16-18 female capillary adapter fitting. 60" lead length Not FAA approved. P/N 10-00954 ..... **$113.95**

OIL TEMPERATURE BULB ADAPTER

Brass fitting used to shorten long capillary bulbs for use in light aircraft engines. Internal 5/8-18 threads mate with fitting on bulb. External 5/8-18 threads fit into engine.

P/N 95527 ..... **$6.90**

MILITARY OIL PRESSURE GAUGE

AN5771-2 Military style gauge with sq. case. Mounts in 2-1/4" dia. hole. New surplus. Matte-White Dial (0-150 PSI)

P/N 10-00955 ..... **$249.95**

MECHANICAL OIL PRESSURE GAUGE

Scott's quality Oil Pressure Gauge features 0-120 PSI range and 1/8 NPT thread on flared tube fitting. Not FAA Approved P/N 10-00956 ..... **$228.95**

OIL PRESSURE INSTALLATION KIT

This kit contains 4 Weatherhead brass fittings with 1/8" pipe thread & 6 ft. of 1/8" Nylo-Seal tubing. Compatible with most mechanical oil pressure gauge installations.

P/N 10-12000 ..... **$5.50**

MS28034-3 ENGINE TEMPERATURE SENSOR

Presently in use in government and general aviation industry under liquid and gaseous conditions, this sensing device exceeds stringent U.S. Military Specifications for response time, burst pressure, and AC high potential tests.

P/N 10-01668 ..... **$158.50**

3-IN-1 GAUGES (ELECTRIC OIL TEMP)

Oil temperature range is -50° to 150°C, oil pressure 200 psi, fuel pressure 0-25 psi. The pressure gauges operate by direct connection to the appropriate system and the oil temperature by an electrical resistance bulb probe. New installation requires Cannon plugs & cable clamps for instrument and resistance bulb.

Certified Overhauled Unit - Gauge ..... P/N 10-12800 ..... **$595.00**
3-IN-1 White Electric Gauge Farenheight .... P/N 10-03144 ..... **$595.00**
MS3106A-14S-2S Cannon Plug P/N 10-00790 ..... **$10.95**
MS3057-6A Cable Clamp for Instrument ..... P/N 10-00957 ..... **$3.30**
MS28034-1 Res. Bulb,1-7/8" (#563BH) ..... P/N 10-00953 ..... **$148.95**
MS3106A-12S-3S Cannon Plug (Res.Bulb) P/N 10-00958 ..... **$15.85**
MS3057-4A Cable Clamp for Res. Bulb ..... P/N 10-00959 ..... **$4.60**

KELLY MANUFACTURING TORQUE INDICATORS

P/N 10-03441

Our Torque Indicators are a wet line, direct reading bourdon tube type instru-ment, housed in a 2" diameter case. Unit can be calibrated over a wide rage of PSI input to direct read torque. Units can be furnished to your specifications. Indicate needed pressure input and pressure-to-torque conversion. This unit cannot be damaged by oil back up in vent line. DIMENSIONS: 2" diameter x 2.125" length, Weight: 0.4 lbs, Power: Wet line direct reading pressure gage

Model No. / Part No.	Description	Price
27-3007-1 P/N 10-03441	0 to 1800 FT/LB, Green Arc 0 - 1628, Red Line at 1628	$469.95
27-3007-4 P/N 10-03442	0 to 75 P.S.I, Green Arc 0 - 64.4, Red Line 64.4	$469.95
27-3007-7 P/N 10-03443	0 to 75 P.S.I 0 to 53	$469.95

KELLY MANUFACTURING OIL TEMPERATURE INDICATOR

Housed in a 2" diameter case, this instrument can be calibrated in C° or F°. Oil Temperature is sensed by a MS28034-1 resistance bulb. DIMENSIONS: 2" Dia. x 3.12" L Weight: 0.4 lbs Power: 28VDC Connector: MS3112E8-4P

29-1004-10 - Green Arc 0° C -110° C, Yellow Arc -40° C - 0° C Red Line -40° & 110° C ..... P/N 10-03445 ..... **$375.95**

IN

UMA ENGINE GAUGES

UMA 2-1/4" SINGLE EGT GAUGES

These highly reliable and lightweight gauges are self-contained, requiring no external power source. Specify probe size and type. Standard markings are black and white.

P/N 10-22275

2-1/4" EGT Gauge
700-1700°F- 90° Sweep ..... P/N 10-22275 .... **$126.95**
700-1700°F- 270° Sweep ... P/N 10-02427 .... **$131.95**

Type K EGT Probes
1-5/8" - 2-1/2" Clamp ..... P/N 10-04791 ..... **$73.75**
1-2" Clamp ..... P/N 10-00966 ..... **$73.75**
8mm, Bayonet-Rotax ..... P/N 10-00967 ..... **$73.75**
Optional internal lighting for all UMA 2-1/4", 3-1/8" instruments (except altimeter). ..... P/N 11-07239 ..... **$49.95**

P/N 10-22209

ELECTRONIC UMA 2-1/4" FUEL PRESSURE GAUGE

This reliable and rugged instrument is designed using a moving coil type movement for aircraft use. The electronic pressure gauge connects to pressure transducer which mounts directly to aircraft engine. Made in USA. Order transducer separately.

0-15 PSI (pictured above) ..... P/N 10-22209 ..... **$131.95**
0-30 PSI ..... P/N 10-22210 ..... **$131.95**
0-80 PSI ..... P/N 10-02060 ..... **$131.95**
UMA Pressure Sender 1EU100G for 0-80 PSI (for P/N 10-02060) ..... P/N 10-01060 ..... **$112.95**

ELECTRONIC UMA 2-1/4" OIL PRESSURE GAUGE

This reliable and rugged instrument is designed using a moving coil type movement for aircraft use. The electronic pressure gauge connects to pressure transducer which mounts directly to aircraft engine. Made in USA. Order transducer separately.

0-80 PSI ..... P/N 10-22245 ..... **$132.95**

UMA 2-1/4" WATER TEMPERATURE GAUGE

This instrument is designed to be durable yet lightweight. Excellent for a wide variety of homebuilt aircraft applications. Made in USA. Order probe separately.

0-300°F ..... P/N 10-02058 ..... **$131.95**
Probes
1/8" NPT (Rotax) ..... P/N 10-00968 ..... **$62.85**
3/8-24 (automotive) .... P/N 10-00969 ..... **$62.75**

UMA 2-1/4" OIL TEMPERATURE GAUGE

This instrument is designed to be durable yet lightweight. Excellent for a wide variety of homebuilt aircraft applications. Made in USA. Order probe separately.

100-300°F ..... P/N 10-22285 ..... **$131.95**

UMA OPTIONAL INTERNAL LIGHTING

Optional internal lighting for all UMA 2-1/4", 3-1/8" instruments (except altimeter). This is just a lighted option. Order the instrument in addition to the internal lighting. ..... P/N 11-07239 ..... **$49.95**

UMA 3 IN 1 ELECTRONIC INSTRUMENT

While rumors have been circulating regarding a new way to maximize on space, saving instruments, UMA has now developed a product line that can combine any three electronic instruments into a 3-1/8" case. Standard product is with black and white dials, but UMA's reputation is to provide custom range markings and to meet customer demand for specific design. THe 3-in-1 can now satisfy space saving, custom markings, and combine any selection of 3 instruments into a 3-1/8" opening to fit your needs ...Customization is Great!!

****Note - Senders are required and sold separately.***

P/N 10-03452 ..... **$411.95**
UMA Range Markings ..... P/N 10-02792 ..... **$125.00**

MECHANICAL UMA 2-1/4" FUEL PRESSURE GAUGE

These factory new fuel pressure gauges from UMA fit standard 2-1/4" panel hole. They are mechanical, wet-line gauges and require no sending unit.

0-25 PSI ..... P/N 10-02356 ..... **$180.95**
0-50 PSI ..... P/N 10-00316 ..... **$180.95**
0-10 PSI ..... P/N 10-22201 ..... **$180.95**
0-30 PSI ..... P/N 10-22203 ..... **$180.95**
0-100 PSI ..... P/N 10-22205 ..... **$179.50**

MECHANICAL UMA 2-1/4" OIL PRESSURE GAUGE

These factory new oil pressure gauges from UMA fit standard 2-1/4" panel hole. They are mechanical, wet-line gauges and require no sending unit.

0-50 PSI ..... P/N 10-22240 ..... **$179.50**
0-130 PSI ..... P/N 10-22242 ..... **$180.95**
10-100 PSI ..... P/N 10-02357 ..... **$179.50**

UMA 1" PRESSURE GAUGES

This mechanical, direct hook-up pressure indicator is ideal for monitoring the engine pump cooling system. Suitable to a wide variety of homebuilt aircraft applications. Made in USA. 0-10 PSI (water)

P/N 10-22247 **$167.95**

UMA 1" OIL PRESSURE GAUGE

Case is molded ABS plastic. Wt:1.4oz. Black and white dial markings. 25-125 PSI.

P/N 10-22251 **$167.95**

UMA 1" FUEL PRESSURE GAUGE

Case is molded ABS plastic. Wt:1.4oz. Black and white dial markings. 0-10 PSI.

P/N 10-22252 **$166.95**

MECHANICAL UMA 2 1/4" WATER PRESSURE GAUGE

This mechanical, direct hook-up pressure indicator is ideal for monitoring the engine pump cooling system. Suitable to a wide variety of homebuilt aircraft applications. Made in USA. -15 to +15 PSI

P/N 10-22249 **$180.95**

2-1/4 INCH UMA WATER TEMPERATURE 100-300F

2-1/4 inch UMA Electronic (UMA P/N 12-360-300F°) Water Temperature Gauge, Range: 100-300 deg. F°

P/N 10-02058 ..... **$131.95**

UMA 2 1/4" FLAP POSITION INDICATOR

This 2-14" flap indicator uses a resistance potentiometer as a flap position sensor. Transmitter required. Wt: 9.8 oz.

Indicator (0-30°) ..... P/N 10-02441 ..... **$168.95**
Indicator (0-40°) ..... P/N 10-22250 ..... **$179.50**
Indicator (0-50°) ..... P/N 10-22265 ..... **$178.95**
Indicator (0-60°) ..... P/N 10-02442 ..... **$179.95**
Transmitter ..... P/N AN5785 ..... **$198.95**

UMA OPTIONAL INTERNAL LIGHTING

Optional internal lighting for all UMA 2-1/4", 3-1/8" instruments (except altimeter). This is just a lighted option. Order the instrument in addition to the internal lighting. ..... P/N 11-07239 ..... **$49.95**

MINI OIL PRESSURE GAUGE

Miniature mechanical instrument, only 1-1/4" dia., as used in many production aircraft. New manufacture.

0-125 PSI Oil Press. ..... P/N 10-12400 ..... **$178.95**

MINI FUEL PRESSURE GAUGES

1-1/4" Dia. New manufacture by UMA.

0-10 PSI Fuel Press..... P/N 10-12100 ..... **$178.95**
0-35 PSI Fuel Press..... P/N 10-12200 ..... **$178.95**
0-50 PSI Fuel Press..... P/N 10-12300 ..... **$178.95**

IN

UMA ENGINE GAUGES

2-1/4 inch UMA Electronic Water Pressure Gauge Case: Valox 420 Plastic Weight: 4.8 oz.

UMA 2-1/4" ELECTRONIC WATER PRESSURE 270°GAUGE

Electronic Water Pressure Gauges connect to a pressure transducer and connects to the gauge with wires. Standard dial markings are black and white.

2-1/4", 0-15 PSI ..... P/N 10-02372 ..... **$131.95**
2-1/4", 0-30 PSI ..... P/N 10-02373 ..... **$132.95**

SENDER NOT INCLUDED

2-1/4 inch UMA Electronic Oil Pressure Gauge Case: Valox 420 Plastic Weight: 4.7 oz.

UMA 2-1/4" ELECTRONIC OIL PRESSURE 270°GAUGE

Electronic Oil Pressure Gauges connect to a pressure transducer and connects to the gauge with wires. Standard dial markings are black and white.

2-1/4", 0-60 PSI, TSO'd .... P/N 10-02415 ... **$181.95**
2-1/4", 0-80 PSI, TSO'd .... P/N 10-02416 ... **$181.95**
2-1/4", 0-100 PSI, TSO'd .. P/N 10-02417 ... **$188.95**
2-1/4", 0-100 PSI ..... P/N 10-02424 ... **$131.95**
2-1/4", 150 PSI ..... P/N 10-02761 ... **$131.95**

SENDER NOT INCLUDED

2-1/4 inch UMA Electronic Fuel Pressure Gauge Case: Valox 420 Plastic Weight: 4.7 oz.

UMA ELECTRONIC FUEL PRESSURE 270°GAUGE

Electronic Fuel Pressure Gauges connect to a pressure transducer and connects to the gauge with wires. Standard dial markings are black and white.

2-1/4", 0-7 PSI, TSO'd..... P/N 10-02412... **$188.95**
2-1/4", 0-15 PSI, TSO'd..... P/N 10-02413... **$188.95**
2-1/4", 0-60 PSI, TSO'd..... P/N 10-02414... **$188.95**
2-1/4", 0-15 PSI ..... P/N 10-02421... **$131.95**
2-1/4", 0-30 PSI ..... P/N 10-02422... **$131.95**
2-1/4", 0-60 PSI ..... P/N 10-02423... **$131.95**

SENDER NOT INCLUDED

2-1/4 inch UMA Electronic Hydraulic Pressure Gauge Case: Valox 420 Plastic Weight: 4.7 oz.

UMA ELECTRONIC 2-1/4" HYDRAULIC PRESSURE 270° GAUGE

Electronic Hydraulic Pressure gauge connects to a precision, high pressure transducer which mounts directly to the aircraft's hydraulic system. Standard markings are black and white.

2-1/4", 0-2000 PSI, TSO'd
P/N 10-02459 ..... **$181.95**
2-1/4", 0-2000 PSI ..... P/N 10-02458 ..... **$131.95**

SENDER NOT INCLUDED

2-1/4 inch UMA Electronic Oil Temperature Gauge Case: Valox 420 Plastic Weight: 4.8 oz.

UMA 2-1/4" ELECTRONIC OIL TEMPERATURE 270° GAUGE TSO'D

These rugged aircore gauges work with either thermocouple or thermister probes. Standard markings are black and white.

100-300° F, TSO'd ..... P/N 10-02443 ..... **$188.95**

SENDER NOT INCLUDED

P/N 10-02057

UMA ELECTRONIC 2-1/4" CHT 270° GAUGE

These gauges are available for either thermocouple or thermistor probes. Standard markings are black and white.

2-1/4", 100-300 °F - compatable with VDO..... P/N 10-02426.... **$131.95**
2-1/4", 100-600 °F - 90° sweep for use with thermocouple powered aircraft..... P/N 10-02429.... **$118.95**
2-1/4", 100-600 °F - 270° sweep for use with internal powered aircrat
P/N 10-02057.... **$131.95**

Type J CHT Probes

10mm Spark Plug Ring ..... P/N 10-00960..... **$61.25**
12mm Spark Plug Ring ..... P/N 10-00961..... **$62.85**
14mm Spark Plug Ring ..... P/N 10-00962..... **$62.75**
18mm Spark Plug Ring ..... P/N 10-00963..... **$61.75**
3/8"-24 Bayonet w/snap ..... P/N 10-00795..... **$88.50**

UMA ELECTRONIC 2-1/4" WATER TEMPERATURE 270° GAUGE

2-1/4 inch UMA Electronic (UMA P/N T12212U300F000) Water Temperature Gauge Range: 100-300 deg. F TSO2-1/4", 100-300 °F TSO'd
P/N 10-02428..... **$188.95**

UMA ELECTRONIC 2-1/4" CARBURETOR AIR TEMPERATURE 270° GAUGE

These gauges use either thermistor or electronic sensors. Standard markings are black and white.

2-1/4", -60-120 °F TSO'd..... P/N 10-04670..... **$188.95**
2-1/4", -20-120 °F..... P/N 10-02391 ..... **$131.95**

UMA TSO'D 2-1/4 CARBURATOR AIR TEMPERATURE GAUGE

TSO'd Carburetor Temperature 2 1/4" gauge. Range from -60 - 120°F.

NOTE: This is the standard black and white gauge. For color range markings as shown you must add the color range markings part no. to your order.

P/N 10-03465 ..... **$188.95**
UMA Color Range Markings..... P/N 10-02792 ..... **$125.00**

UMA 2-1/4" ELECTRONIC MANIFOLD PRESSURE 270° GAUGE

Electronic Manifold Pressure gauges connect to a pressure transducer which connects to the aircraft's engine and indicates the absolute pressure in the intake manifold of the aircraft. These units are very precise and avoid plumbing issues. Standard markings are black and white.

2-1/4", 5-35 IN. HG..... P/N 10-02389 .. **$131.95**
2-1/4", 5-50 IN/ HG..... P/N 10-02390 .. **$132.95**

SENDER NOT INCLUDED

UMA 2-1/4" ELECTRONIC OUTSIDE AIR TEMPERATURE

The digital Outside Air Temperature (O.A.T.) is available in either Fahrenheit or Celsius. Standard models use a Red LED display.

2-1/4", -40-60 °C, 270° ..... P/N 10-02387 ... **$185.95**
2-1/4", -40-140 °F, 270° ..... P/N 10-02388 ... **$185.95**
2-1/4", 0-100 °C..... P/N 10-00205 ... **$218.95**
2-1/4", -40-165 °F..... P/N 10-00206 ... **$218.95**

SENDER INCLUDED

UMA DUAL AMP/VOLTMETERS

These 2-1/4" dual amp voltmeters are ideal for any aircraft where panel space is limited. Amperage is displayed at all times, and simply push a button to display voltage. Complete with gauge and shunt. Voltage range 0-30 volts.

Range: 30 amp..... P/N 10-14680 ..... **$261.95**
60 amp..... P/N 10-14685 ..... **$261.95**
80 amp..... P/N 10-14690 ..... **$261.95**
100 amp..... P/N 10-14695 ..... **$261.95**
0-150 amp ..... P/N 10-00082 ..... **$261.95**
UMA Optional internal lighting..... P/N 11-07239 ..... **$49.95**

AMMETERS

These new manufactured ammeters offer accuracy, rugged construction, and contemporary styling. Made in U. S. A. Furnished with shunt. Size: 2-1/4".

Range: 0-30 (0 center)..... P/N 10-14650 ..... **$178.95**
0-60 (0 center) ..... P/N 10-14655 ..... **$177.95**
0-80 (0 center) ..... P/N 10-14660 ..... **$178.95**
0-100 (0 center) ..... P/N 10-02788 ..... **$175.95**

REPLACEMENT UMA AMMETER SHUNTS 30/60/80/100AMP

WUMA Ammeter shunt 30AMP, 60AMP, 80AMP, and 100AMP.

Shunt 30AMP 1C1 ..... P/N 10-02072 ..... **$31.85**
Shunt 60AMP 1C2 ..... P/N 10-02073 ..... **$31.85**
Shunt 80 AMP 1C3 ..... P/N 10-02352 ..... **$31.25**
Shunt 100AMP 1C4 ..... P/N 10-02074 ..... **$32.75**

UMA OPTIONAL INTERNAL LIGHTING

Optional internal lighting for all UMA 2-1/4", 3-1/8" instruments (except altimeter). This is just a lighted option. Order the instrument in addition to the internal lighting. ..... P/N 11-07239 ..... **$49.95**

IN

UMA ENGINE GAUGES

2-1/4 inch Fuel Flow Gauge

UMA 2-1/4" FUEL FLOW 270° GAUGE

These affordable indicators display gallons/hour fuel flow in a conventional analog instrument package. Standard markings are black and white.

2-1/4" 08- GPH ..... P/N 10-02407 .. **$163.95**
2-1/4" 0-20 GPH .... P/N 10-02408 .. **$164.95**
2-1/4" 0-30 GPH .... P/N 10-02409 .. **$164.95**
2-1/4" 0-20 GPH .... P/N 10-03706 .. **$164.95**

Turbine FlowTransducer

UMA 2-1/4" FUEL AIR BOX 270° PRESSURE

Electronic, Fuel/Air-box Differential Pressure gauges and senders are designed for the Rotax 914 engine but have other applications where differential pressures need to be measured. It eliminates having to calculate the fuel/air-box differential pressure by looking at two separate gauges and having two separate senders.

2-1/4" 0-7 diff. PSI (U)
P/N 10-00979 ..... **$177.95**
SENDER NOT INCLUDED

2-1/4 inch UMA Fuel Airbox Pressure Case: Valox 420 Plastic Weight: 4.8 oz.

UMA OPTIONAL INTERNAL LIGHTING

Optional internal lighting for all UMA 2-1/4", 3-1/8" instruments (except altimeter). This is just a lighted option. Order the instrument in addition to the internal lighting. ..... P/N 11-07239..... **$49.95**

UMA 2-1/4" ELECTRONIC FUEL QUANTITY GAUGE

SENDER NOT INCLUDED

Description	Part No.	Price
2-1/4 inch UMA Electronic Fuel Quantity Indicator Range/Sweep: E-F/270° Sender: (C) 0-5V	10-02392	**$188.95**
2-1/4 inch UMA Electronic Fuel Quantity Indicator Range/Sweep: E-F/180°l Sender: (C) 0-5V	10-02393	**$188.95**
2-1/4 inch UMA Electronic Fuel Quantity Indicator Range/Sweep: E-F/270° Sender: (F) 240/30 ohms	10-02394	**$181.95**
2-1/4 inch UMA Electronic Fuel Quantity Indicator Range/Sweep: E-F/180° Sender: (F) 240/30 ohms	10-02395	**$188.95**
2-1/4 inch UMA Electronic Fuel Quantity Indicator Range/Sweep: E-F/180° Sender: (F) 0-30 ohms	10-02396	**$188.95**
2-1/4 inch UMA Electronic Fuel Quantity Indicator Range/Sweep: E-F/270° Sender: (F) 0-90 ohms	10-02397	**$188.95**
2-1/4 inch UMA Electronic Fuel Quantity Indicator Range/Sweep: E-F/180° Sender: (F) 0-90 ohms	10-02398	**$181.95**
2-1/4 inch UMA Electronic Fuel Quantity Indicator Range/Sweep: E-F/270° Sender: (F) 78-6 ohms	10-02399	**$188.95**
2-1/4 inch UMA Electronic Fuel Quantity Indicator Range/Sweep: E-F/180° Sender: (F) 78-6 ohms	10-02401	**$188.95**
2-1/4 inch UMA Electronic Fuel Quantity Indicator Range/Sweep: E-F/ Sender: (C) 0-5V	10-02410	**$111.95**
2-1/4 inch UMA Electronic Fuel Quantity Indicator Range/Sweep: E-F/ Sender: (F) 240/30 ohms	10-02411	**$132.95**

UMA PRESSURE SENDERS

UMA's pressure senders offer high reliability and accuracy at an affordable cost. They use precision solid state sensors and are designed for rugged use in just about any environment.

UMA Pressure Sender (U)(G)(D) 1/8"-27 NPTF Connection(s) 1' Cable 5/8-18 Mounting Thread

UMA Precision Sender (A)

Description	PSI	Part No.	Price
UMA Pressure Sender (U)	0-7 PSI Differential	10-00980	**$118.95**
UMA Pressure Sender (U)	0-7 PSI	10-01057	**$112.95**
UMA Pressure Sender (U)	0-35 PSI	10-01058	**$112.95**
UMA Pressure Sender (U)	0-70 PSI	10-01059	**$112.95**
UMA Pressure Sender (U)	0-100 PSI	10-01060	**$112.95**
UMA Pressure Sender (U)	0-150 PSI	10-01061	**$112.95**
UMA Pressure Sender (U)	0-60 InHg Absolute	10-01062	**$118.95**
UMA Pressure Sender T1EU35(G)(D)	0-35 PSI	10-02646	**$151.95**
UMA Pressure Sender T1EU100(G)(D)	0-100 PSI	10-02647	**$151.95**
UMA Ashcroft Precision Sender (A)	0-30 PSI	10-02418	**$175.95**
UMA Ashcroft Precision Sender (A)	0-150 PSI	10-00530	**$175.95**
UMA Ashcroft Precision Sender (A)	0-2000 PSI	10-02420	**$175.95**

UMA TEMPERATURE PROBES

(U) All 1BX Temperature Probes contain a thermistor for temperatur sensing. 6" Lead Wires.

(J) All 2B1X & 2B0X Temperature Probes use Type J Thermocouple. 6' Lead Wires.

(K) All 2B2X & 2B3X Temperature Probes use Type K Thermocouple. 6' Lead wires

UMA P/N	Sizes	Our P/N	Price
1B1	Thread:1/8 NPT, 1/2 Hex Head	10-00968	**$62.85**
1B2	Thread: 3/8-24, 5/8 Hex Head (Auto)	10-00969	**$62.75**
1B3	Thread: 5/8-18, 7/8 Hex Head (Lyc.)	10-00418	**$61.25**
1B4	Thread: 10mm x 1.5 Pitch (Rotax 912 & 914)	10-00973	**$61.25**
1B5F	Thread: 3/8-24, 2-1/4" OAT F°	10-02374	**$73.75**
1B6	Thread: 16mm x 1.5 Pitch	10-02375	**$61.25**
1B7	Thread: 12mm x 1.5 Pitch	10-02376	**$61.25**
1B8	Thread: 1/4-20 (Carb. Temp.)	10-01156	**$62.85**
1B10	Thread: 1/4-28	10-02377	**$61.25**
1B11	Thread: 1/4-18 NPT	10-02378	**$61.25**
2B10	10mm Spark Plug Ring	10-00960	**$61.25**
2B12	12mm Spark Plug Ring	10-00961	**$62.85**
2B14	14mm Spark Plug Ring	10-00962	**$62.75**
2B18	18mm Spark Plug Ring	10-00963	**$61.75**
2B01	Bayonet Type: 1/8 NPT	10-02448	**$85.70**
2B02	Bayonet Type: 3/8"-24, w/snap	10-00795	**$88.50**
2B20	Clamp Size: 1-5/8 - 2-1/2" Length: 1" Tip	10-04791	**$73.75**
2B21	Clamp Size: 1 - 2" Length: 1" Tip	10-00966	**$73.75**
2B30	Clamp Size: 8mm, Bayonet Length: (Rotax)	10-00967	**$73.75**

UMA 1-1/4” ENGINE INSTRUMENTS

Monitor your engine’s vitals with a full line of space saving 1-1/4” engine instruments with 240 degree analog sweep. These instruments allow you the opportunity to utilize panel space without compromising readability. No longer do you have to decipher cluster gauges or push buttons for readings or try to concentrate on flashing numbers. These premiere UMA instrument are electronic and can be powered from 14 or 28 volts. Signals are acquired from remote mounted sensors, processed and displayed on analog dials with easy to read markings. Each gauge uses rugged aircore meter movement for vibration resistance and repeatability. Each gauge can be placed in a 1-1/4” diameter hole and mounted behind the panel with (4) 6-32 screws. They can be cluster mounted as close as 11/2” centers. ***Senders are sold separately.***

UMA Technical Support: 800-842-5578.

STREAMLINE • STACKABLE • EASY TO READ • RUGGED DESIGN

CYLINDER HEAD TEMP. (CHT)

Description	Part No.	Price
CHT Gauge 100-300°F	10-00035	$163.95
CHT Gauge 100-600°F	10-00036	$163.95
CHT Thermocouple 14mm Plug (Rotax)	10-00962	$62.75
CHT Thermocouple 18mm Plug (Lyc.)	10-00963	$61.75
CHT Thermocouple 3/8-24 Bayonet (Lyc.)	10-00795	$88.50

OIL PRESSURE

Description	Part No.	Price
Oil Pressure Gauge 0-80psi	10-00037	$164.95
Oil Pressure Gauge 0-130psi	10-00038	$164.95

FUEL QUANTITY

Description	Part No.	Price
Fuel Qty. Ind. (Float 240-30)	10-00039	$163.95
Fuel Qty. Ind. (Cap. 5v)	10-00040	$164.95
Sender (Float type 240-30 ohms)	10-00056	$37.75
Sender (Capacitance 0-5V)	10-00797	$129.50

AMMETER

Description	Part No.	Price
Ammeter ±30 Shunt incl.	10-00041	$203.95
Ammeter ±100 Shunt incl.	10-00043	$203.95
Ammeter +60	10-00581	$203.95
Ammeter +80	10-00582	$203.95

WATER PRESSURE

Description	Part No.	Price
Water Press. Gauge 0-15psi	10-00044	$164.95
Water Press. Gauge 0-30psi	10-00045	$164.95

WATER TEMPERATURE

Description	Part No.	Price
Water Temp. Gauge 100-300°F	10-02457	$156.95

OUTSIDE AIR TEMPERATURE

Description	Part No.	Price
OAT (-25) -40°C	10-02385	$206.95
OAT (-10) -110°F	10-02386	$206.95

EXHAUST GAS TEMPERATURE (EGT)

Description	Part No.	Price
EGT Gauge 700-1700°F	10-00046	$163.95
EGT Thermocouple Clamp style (Lyc.)	10-04791	$73.75
EGT Thermocouple 8mm, Bayonet (Rotax)	10-00967	$73.75

FUEL AIRBOX PRESSURE

Fuel Airbox Pressure Range: 0-7 Diff.	10-02401	$188.95

FUEL FLOW

Description	Part No.	Price
Fuel Flow 0-8 6PH	10-02403	$164.95
Fuel Flow 0-20 6PH	10-02404	$164.95
Fuel Flow 0-30 6PH	10-02405	$164.95

OIL TEMPERATURE

Description	Part No.	Price
Oil Temp. Gauge 100-300°F	10-00047	$163.95
1-1/4 inch VDO - TSO’d Electronic Temperature Gauges 100-300 deg F	10-02779	$164.95
Oil Temp. Probe 3/8-24 (Automotive)	10-00969	$62.75
Oil Temp. Probe 5/8-18 (Lyc./Cont.)	10-00418	$61.25
Oil Temp. Probe 10mm (Rotax 912/914)	10-00973	$61.25

FUEL PRESSURE

Description	Part No.	Price
Fuel Pressure Gauge 15psi	10-00048	$163.95
Fuel Pressure Gauge 30psi	10-00049	$163.95
Fuel Pressure Gauge 0-80 psi	10-00050	$163.95

VOLTMETER

Description	Part No.	Price
Voltmeter 18-36V	10-00052	$163.95
Voltmeter 9-17V	10-00578	$163.95

FLAP INDICATOR

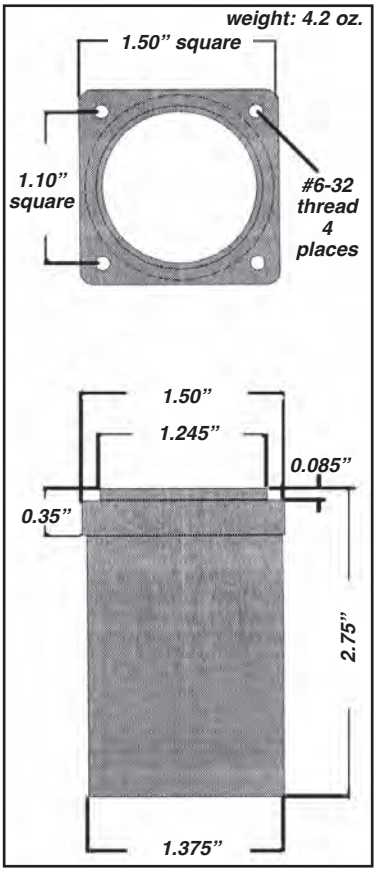
Description	Part No.	Price
Flap Position Indicator 0-30°	10-00053	$179.95
Flap Position Indicator 0-40°	10-00054	$179.95
Flap Position Indicator up-full	10-00055	$178.95
Flap Indicator Transducer	AN5785	$198.95

MANIFOLD PRESSURE

Description	Part No.	Price
5-35”	10-02438	$164.95
5-50”	10-02439	$164.95

For Experimental aircraft only. See next page for TSO’d Gauges. Mount individually or as a cluster.

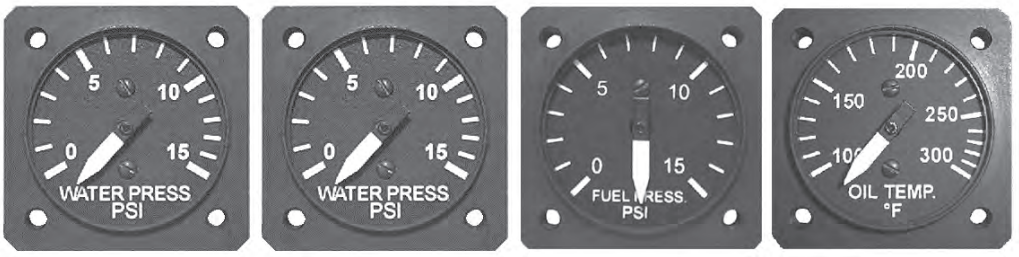
MOUNTING INFORMATION



IN

UMA 1-1/4” TSO’d ENGINE INSTRUMENTS

These 1 1/4” instruments are identical to the 1 1/4” UMA Gauges on previous page, except these are TSO’d for certified aircraft. (Except Ammeters)



UMA No.	Size & Type	Range / Sender Sender Range	Markings & Sweep	Part No.	Price
TO4 113V 080P 000	1 1/4” OIL PRESS	0-80 PSI (VDO)	B & W	10-00037	**$164.95**
TO4 113V 130P 000	1 1/4” OIL PRESS	0-130 PSI (VDO)	B & W	10-00533	**$188.95**
TO4 1135 060P 000	1 1/4” OIL PRESS	0-60 PSI (ASHCROFT)	B & W	10-00534	**$187.95**
TO4 1135 100P 000	1 1/4” OIL PRESS	0-100 PSI (ASHCROFT)	B & W	10-00535	**$187.95**
TO4 1135 150P 000	1 1/4” OIL PRESS	0-150 PSI (ASHCROFT)	B & W	10-00536	**$186.95**
TO4 1135 010B 000	1 1/4” OIL PRESS	0-10 BAR	B & W	10-00537	**$188.95**
TO4 112V 015P 000	1 1/4” FUEL PRESS	0-15 PSI (VDO)	B & W	10-00538	**$188.95**
TO4 112V 030P 000	1 1/4” FUEL PRESS	0-30 PSI (VDO)	B & W	10-00539	**$188.95**
TO4 112V 080P 000	1 1/4” FUEL PRESS	0-80 PSI (VDO)	B & W	10-00540	**$187.95**
TO4 1125 015P 000	1 1/4” FUEL PRESS	0-15 PSI (ASHCROFT)	B & W	10-00541	**$188.95**
TO4 1125 030P 000	1 1/4” FUEL PRESS	0-30 PSI (ASHCROFT)	B & W	10-00542	**$188.95**
TO4 1125 060B 000	1 1/4” FUEL PRESS	0-60 PSI (ASHCROFT)	B & W	10-00543	**$187.95**
TO4 1125 100P 000	1 1/4” FUEL PRESS	0-100 PSI (ASHCROFT)	B & W	10-00544	**$187.95**
TO4 1125 150B 000	1 1/4” FUEL PRESS	0-150 PSI (ASHCROFT)	GA 59-115, RR@ 59-115	10-00545	**$186.95**
TO4 115V 015P 000	1 1/4” WATER PRESS	0-15 PSI (VDO)	B & W	10-00546	**$188.95**
TO4 115V 030P 000	1 1/4” WATER PRESS	0-30 PSI (VDO)	B & W	10-00547	**$186.95**
TO4 1155 015P 000	1 1/4” WATER PRESS	0-15 PSI (ASHCROFT)	B & W	10-00548	**$188.95**
TO4 1155 030P 000	1 1/4” WATER PRESS	0-30 PSI (ASHCROFT)	B & W	10-00549	**$188.95**
TO4 1145 2K0P 000	1 1/4” HYDRAULIC PRESS	0-2000 PSI (ASHCROFT)	B & W	10-00550	**$188.95**
TO4 11A5 100P 000	1 1/4” GEARBOX OIL PRESS	0-100 PSI (ASHCROFT)	B & W	10-00551	**$157.95**
T12 113U 150C 000	1 1/4” OIL TEMP	40-150 0C	B & W	10-00555	**$188.95**
T12 113U 300F 000	1 1/4” OIL TEMP	100-300 0F	B & W	10-00556	**$188.95**
T12 115U 150C 000	1 1/4” WATER TEMP	40-150 0C	B & W	10-00557	**$188.95**
T12 115U 300F 000	1 1/4” WATER TEMP	100-300 0F	B & W	10-00558	**$188.95**
T12 116J 530C 000	1 1/4” CHT	50-300 0C	B & W (Thermocouple)	10-00561	**$188.95**
T12 117K 1K7F 000	1 1/4” EGT	100-900 0C	B & W (Thermocouple)	10-00562	**$188.95**
T12 118U 120F 000	1 1/4” CARB. TEMP	-60-120 0F	B & W	10-04670	**$188.95**
T12 11AU 300F 000	1 1/4” GEARBOX TEMP	100-300 0F	B & W	10-00564	**$148.95**
T12 11T5 1K0C 000	1 1/4” TURBINE TEMP	0-1000 0C	B & W, 5V INPUT	10-00565	**$157.95**
T18 1125 1C10 000	1 1/4” FUEL QTY IND.	EMPTY TO FULL (cap 5V)	B & W (2700)	10-00566	**$181.95**
T18 1125 2C10 000	1 1/4” FUEL QTY IND.	EMPTY TO FULL (cap 5V)	B & W (1800)	10-00567	**$188.95**
T18 112F 1F10 000	1 1/4” FUEL QTY IND.	EMPTY TO FULL (float 240-30 ohms)	B & W (2700)	10-00568	**$181.95**
T18 112F 1F20 000	1 1/4” FUEL QTY IND.	EMPTY TO FULL (float 0-30 ohms)	B & W (2700)	10-00569	**$188.95**
T18 112F 1F30 000	1 1/4” FUEL QTY IND.	EMPTY TO FULL (float 0-90 ohms)	B & W (2700)	10-00570	**$188.95**
T18 112F 1F40 000	1 1/4” FUEL QTY IND.	EMPTY TO FULL (float 78-6 ohms)	B & W (2700)	10-00571	**$188.95**
T18 112F 1F50 000	1 1/4” FUEL QTY IND.	EMPTY TO FULL (float 10-180 ohms)	B & W (2700)	10-00572	**$188.95**
T18 112F 2F10 000	1 1/4” FUEL QTY IND.	EMPTY TO FULL (float 240-30 ohms)	B & W (1800)	10-00573	**$188.95**
T18 112F 2F20 000	1 1/4” FUEL QTY IND.	EMPTY TO FULL (float 0-30 ohms)	B & W (1800)	10-00574	**$181.95**
T18 112F 2F30 000	1 1/4” FUEL QTY IND.	EMPTY TO FULL (float 0-90 ohms)	B & W (1800)	10-00575	**$188.95**
T18 112F 2F40 000	1 1/4” FUEL QTY IND.	EMPTY TO FULL (float 78-6 ohms)	B & W (1800)	10-00576	**$188.95**
T18 112F 2F50 000	1 1/4” FUEL QTY IND.	EMPTY TO FULL (float 10-180 ohms)	B & W (1800)	10-00577	**$188.95**
Ammeters are not TSO’d					
15 11S0 P30A 000	1 1/4” AMMETER (2700) (w/shunt)	-30 to 30 A	B & W	10-00041	**$203.95**
15 11S0 P60A 000	1 1/4” AMMETER (2700) (w/shunt)	-60 to 60 A	B & W	10-00581	**$203.95**
15 11S0 P80A 000	1 1/4” AMMETER (2700) (w/shunt)	-80 to 80 A	B & W	10-00582	**$203.95**
15 11S0 P1CA 000	1 1/4” AMMETER (2700) (w/shunt)	-100 to 100A	B & W	10-00043	**$203.95**

NOTE: ***These Ammeters are NOT TSO’d***

Senders sold separately, optional internal lighting available, Range Markings available at additional cost.

KELLY MANUFACTURING CO. INSTRUMENTS

KELLY MANUFACTURING CO. AMMETERS

12-1100 Ammeters - This ammeter is similar to 12-1200 series except that zero amps are positioned at the left of the scale. To be used with 50 MV shunt. Dimensions: 2-3/8 x 2-3/8 x 2. Weight: .4 lbs approx. Voltage: 14 or 28 VDC

12-1200 Ammeters - Moving coil type, designed for aircraft use. Requires 50 MV shunt (12-902 series). Dimensions: 2-3/8 x 2-3/8 x 2 Weight: .4 lbs approx. Voltage: 14 or 28 VDC

Model No.	Range (Amps)	Part No.	Price
12-1100-1	0 to 30 amps	10-02555	**$375.95**
12-1100-2	0 to 60 amps	10-02556	**$563.00**
12-1100-3	0 to 80 amps	10-02557	**$375.95**
12-1100-4	0 to 120 amps	10-02558	**$782.00**
12-1100-5	0 to 150 amps	10-02559	**$375.95**

KELLY MANUFACTURING CO. VOLTMETERS

Model No.	Range (Amps)	Part No.	Price
12-5000-1	0 to 16 VDC	10-02567	**$758.00**
12-5000-2	0 to 30 VDC	10-02568	**$763.00**
12-5000-3	0 to 60 VDC	10-02569	**$758.00**
12-5000-4	0 to 100 VDC	10-02570	**$758.00**
12-5000-5	0 to 200 VDC	10-02571	**$758.00**

KELLY MANUFACTURING CO. SHUNTS

For use with ammeters and voltammeters with a 50 MV rating. Dimensions: 2 x 1-1/4 x 1-5/8 Weight: .5 lbs approx.

Description	Model No.	Part No.	Price
Shunt - 30 amps	12-902-1	10-02574	**$112.95**
Shunt - 50 amps	12-902-2	10-02575	**$112.95**
Shunt - 55 amps	12-902-8	10-02576	**$112.95**
Shunt - 60 amps	12-902-3	10-02577	**$112.95**
Shunt - 75 amps	12-902-4	10-02578	**$112.95**
Shunt - 80 amps	12-902-6	10-02579	**$112.95**
Shunt - 100 amps	12-902-11	10-02580	**$112.95**
Shunt - 120 amps	12-902-9	10-02581	**$112.95**
Shunt - 125 amps	12-902-5	10-02582	**$112.95**
Shunt - 150 amps	12-902-10	10-02583	**$112.95**

KELLY MANUFACTURING CO. LOW VOLTAGE WARNING SYSTEMS

An amber light will come on at the moment of low voltage condition which will inform the pilot of attention needed to the alternator, generator, or voltage regulator. Any of these conditions allowed to continue will result in a weak or completely discharged battery condition and loss of radio and electrical equipment. Indicator light features a built in dimmer and press to test with amber lens. Lights will trigger at 13 volts for 14V systems and 25 volts for 28V system. Accuracy, plus or minus 0.2 volts. Size: 1/2" Dia. 3" Depth required behind panel. Weight: .2 lbs., Power: less than 1/10 amp. Fuse supplied with kit.

Model No.	Description	Part No.	Price
33-2013A	14 Volt, Red Lens Low Voltage Warning System	10-02572	**$154.50**
33-2013	14 Volt, Amber Lens with Dimmer Low Voltage Warning System	33-2013	**$156.95**
33-2025A	28 Volt, Red Lens Low Voltage Warning System	10-02573	**$154.50**
33-2025	28 Volt, Amber Lens with Dimmer Low Voltage Warning System	33-2025	**$156.95**

KELLY MANUFACTURING CO. TACHOMETERS

RCA40A-6

RCA40A-6 - 2" Prop Tachometer, Green Arc from 0 RPM to Red Line at 1700 RPM

RCA40AB-07

RCA40AB-07 - 2" Prop Tachometer, Lighted, Green Arc from 1400 RPM to Red Line at 1700 RPM.

RCA41A-07

RCA41A-07 - 2" Percent Tachometer, Type MU-1 (MIL 25623A)

Many years of experience were drawn upon in the design and development of these tachometers. Only the best time tested and field proven features were used. These instruments use a three phase alternating current synchronous motor powered by a remote tach generator. The simplicity of design results in a twofold gain: increased reliability and ease of overhaul. Dimensions: 2" diameter x 5". Weight: .7 lbs. Power: Tach Generator, MIL-G-9398. Connector: MS3106A-14S-5S

Description	Model No.	Part No.	Price
2" Prop Tachometer	RCA40A-06	10-02616	**$857.00**
2" Prop Tachomerter	RCA40A-07	10-02617	**$856.00**
2" Prop Tachometer	RCA40A-09	10-02618	**$857.00**
2" Prop Tachometer	RCA40A-10	10-03431	**$857.00**
2" Prop Tachometer Lit	RCA40AB-06	10-02619	**$956.00**
2" Prop Tachometer Lit	RCA40AB-07	10-02621	**$956.00**
2" Prop Tachometer Lit	RCA40AB-09	10-02622	**$956.00**
2" Percent Tachometer	RCA41A-06	10-02623	**$857.00**
2" Percent Tachometer	RCA41A-07	10-02589	**$857.00**
2" Percent Tachometer	RCA41A-08	10-03433	**$857.00**
2" Percent Tachometer	RCA41A-09	10-02588	**$843.00**
2" Percent Tachometer Lit	RCA41AB-06	10-02624	**$956.00**
2" Percent Tachometer Lit	RCA41AB-07	10-02626	**$956.00**
2" Percent Tachometer Lit	RCA41AB-09	10-02627	**$956.00**

IN

HOUR METERS – ENGINE GAUGES

HOBBS HOUR METERS

P/N 15000

P/N 15001

P/N 15006

P/N 15007

The Quartz + series of hour meters provide performance and reliability. Features include a highly reliable drive mechanism and odometer gear train combined with the accuracy of quartz crystal timing. Accurate to +/- 0.02% from -40° to 185°F. Total digital quartz readout is 9999.9 hours. Easy-to-read white numerals on black face dials. Sealed against dirt and moisture. Meets requirements of spec. MIL-L-3971B. Power: 10 – 32 V DC. Models 85094, 85001 and 85011 read "Total Hours". Model 85012 reads "Flight Hours".

Hobbs Hour Meter 85094 +..... P/N 15000 ..... **$26.75**
Hobbs Hour Meter 85001 +..... P/N 15001 ..... **$66.85**
Hobbs Hour Meter 85011 +..... P/N 15006 ..... **$76.85**
Hobbs Hour Meter 85012 +..... P/N 15007 ..... **$67.85**

PRESSURE SWITCH FOR HOBBS HOUR METERS Normally open. Closes at 4 PSI. Single circuit with 2 insulated terminals. Switch has silver contacts enclosed in weatherproof case. 1/8" male pipe thread connection. P/N 10-00813 ..... **$31.85**
Water Compatible Pressure Switch for Rotax engines.
P/N 10-00326..... **$23.75**

TEE CONNECTORS - For pressure switches with 1/8" male pipe threads. For 1/4" O.D oil pressure lines.
P/N 10-13300..... **$31.95**

For pressure switches with 1/8" male pipe threads. For 1/4" O.D oil pressure lines..... P/N 10-04846 ..... **$9.85**

DATCON HOUR METERS

871
3-Hole Flange Mounting 2.54" Bolt Circle 1.45" Dia. Holes

873
Mounts in Standard 2-1/4" Instr. Hole

876
Bracket Mount in 2-1/32" - 2-1/8" Panel Hole

Standard equipment in most production aircraft. Operate on any DC voltage from 4-40V. Recommended for use on aircraft because they start or stop instantly when power is applied or removed. Furnished with mounting hardware. If meter is connected improperly it will not operate but meter will not be damaged. The running indicator indexes every 6 seconds.

Model 871 .....12/24V ..... P/N 56456-3 ..... **$65.50**
Model 873 .....12/24V ..... P/N 56457-3 ..... **$68.90**
Model 876 ..... 12V ..... P/N 56458-4 ..... **$71.85**

TINY TACH TACHOMETER/HOUR METERS

RPM reading adjustable from 1 spark per 2 revolutions to 8 sparks per revolution. One TINY-TACH™ now works for most gas engines. RPM display from 1 to 19,000. RPM update time 1/2 second. Hour meter records total actual running time on your engine. Job timer can be reset to record run time for record keeping. Coax cable transmits signal without EMF interference. 1 Antenna cable winds around your spark plug wire to give you the RPM reading – clean and simple to attach. Signal strength can be controlled by the antenna wire. Standard cable length is 6 feet. This unit is potted to prevent damage from moisture and vibration. Lithium battery life 5+ years, not replaceable. One year warranty.

TT2A Standard Model .....P/N 10-04182 ..... **$48.50**
For Diesel Engines - 6mm transducer.....P/N 10-04016 ..... **$95.00**
For Diesel Engines - 1/4 inch transducer ..P/N 10-04017 ..... **$95.00**

FALCON VOLTMETERS AND AMMETERS

Falcon Gauge Voltmetersand ammeters are 6-16V and are availble in 2-1/4" and 2" Round.

Size	Model No.	Description	Part No.	Price
2 1/4"	VM16-2Q	Voltmeter, 6-16V	10-02271	**$48.25**
2 1/4" round	VM16-2R	Voltmeter, 6-16V	10-02272	**$43.75**
2-1/4"	VM30-2Q	Voltmeter, 0-30V	10-04040	**$73.25**
2 1/4"	A30-001	Ammeter, +/-30A	10-03410	**$45.75**
2 1/4" round	A30-001R	Ammeter, +/-30A	10-03411	**$40.75**
2 1/4"	AV60-001	Ammeter, +/-60A	10-04041	**$72.50**
2 1/4" round	AV60-001R	Ammeter, +/-60A	10-03415	**$121.95**
2 1/4"	AV30-002	Amp/Voltmeter +/-30A, 6-16V	10-03412	**$96.75**
2 1/4" round	AV30-001R	Amp/Voltmeter +/-30A, 6-16V	10-03413	**$107.95**
2-1/4"	AV3016-002R	Amp/Voltmeter +/-30A, 30V	10-04042	**$111.95**
2-1/4"	AV3030-002	Amp/Voltmeter +/-30A, 30V	10-04043	**$96.25**
30A	SHT-030	Shunt for Amp/Voltmeter, 50mV/30A	10-03416	**$30.75**
60A	SHT-060	Shunt for Amp/Voltmeter, 50mV/60A	10-03417	**$30.25**

ENM VIBRATION ACTIVATED HOUR METERS

Features 6-digits with an hour glass as a running indicator - operates only when engine is vibrating. Install anywhere with no wired connection or power source to operate. Internal battery supplies all the necessary power for the gauge to operate for years of service. Total operating hours are always shown on the LCD display. Compact tamper-proof meter is sealed against the environment to provide years of service.

ENM Hourmeter DC Power ..... P/N ENMDC.....**$37.50**
ENM Hourmeter AC Power ..... P/N ENMAC.....**$69.75**

UNIVERSAL DIGITAL TACH/HOURMETER

Now both a digital tachometer and an hourmeter in the same low cost and small size package! No power required yet there is a large 7 segment LCD display. Solid state electronics with quartz crystal technology make this instrument highly reliable. Easy to install - just wrap the attached wire around your spark plug cable. The case is completely sealed, it operates in a wide temperature range and the service interval is programmable.
P/N TLPT14 .....**$46.85**

CURTIS HOURMETER

All solid state. Mount from front or back of panel in 1 3/8" by 7/8" hole. Requires 12 VDC.
P/N CUR701 .....**$35.00**

VOLTMETERS

These new manufacture voltmeters offer accuracy, rugged construction, and contemporary styling. Made in USA. 2 1/4" Range:

9-16V.....P/N 10-14620 .....**$131.95**
20-32V.....P/N 10-02064 .....**$131.95**

KOBRA TACH/HOUR METER

This tiny and portable RPM meter and hour meter unit is chip controlled, fully programmable, and is suitable for both two and four stroke engines: one product fits all engines. It keeps in memory the max RPM and the time the engine has been running: both values are resettable. Its two small batteries last for years before needing to be replaced. A strong velcro for fixing is included. Features: * Velcro set for attaching the RPM-H * 2m cable * Batteries Included * One product fits all engines in the market thanks to programmable chip * Battery can be replaced, virtually is a life long product * it registers max RPM of the life of the engine, which are resettable.
P/N 10-03573.....**$98.95**

DIGITAL FLAP INDICATOR

The Visual Instruments Flap Indicator system provides a means for owners of older aircraft to upgrade their troublesome indicators to a modern, more reliable design. The system includes a new transmitter, a modern digital display, and all parts necessary to perform the upgrade. The new display incorporates a color LED bar graph. The appearance is similar to flap indications shown on modern glass cockpits. Positions of more than 10° flap are indicated in a different color. This allows for easy identification during an emergency procedure such as a balked landing (go-around). The LEDs are very viewable from a wide angle. This is particularly useful since the indicator on many Cessna models is located on the right side of the panel. The display automatically adjusts to the ambient light for IFR or night operation. The Flap Indicator system includes all necessary parts and typically takes a mechanic approximately 2 hours to install. 5 year factory warranty. STCd for installation on early model Cessna 172s, 182s, 205s, 206s, & 210s. P/N 10-00240 .....**$495.00**

IN

AIRCRAFT SPRUCE WEST
CORONA, CA • (877) 4-SPRUCE
AIRCRAFT SPRUCE EAST
PEACHTREE CITY, GA • (877) 477-7823
Prices Subject to Change Without Notice

INSTRUMENT MOUNTING PODS

An economical, high-quality, easy-to-install solution to your instrument mounting problems. Made of vacuum-molded white and black ABS plastic with attractive black matte ABS faces. The white pod may be easily spray-painted with acrylic enamel to match your aircraft. Two-piece mounting brackets fit snugly around 1" tubing, secured with screws provided. Available for 2, 3, 4 or 5 instruments with the face precut and mounting holes drilled for either 2-1/4" or 2" instruments. Blank face plates also available. May be used horizontal or vertically. When you order, specify either 2-1/4"or 2" instruments holes or blank face plate. Instruments not included.

P/N	Instr 2-1/4" Hole	Color	Price	P/N	Instr. 2" Hole	Color	Price
10-01513	2	White	**$42.25**	10-01538	2	Black	**$42.25**
10-01517	3	White	**$57.25**	10-01539	3	Black	**$54.25**
10-01521	4	White	**$53.25**	10-01540	4	Black	**$54.25**
10-01525	5	White	**$58.50**	10-01541	5	Black	**$66.50**
10-01529	2	Black	**$43.50**		Blank		
10-01530	3	Black	**$54.25**	10-01542	2	White	**$42.25**
10-01531	4	Black	**$54.25**	10-01543	3	White	**$60.25**
10-01533	5	Black	**$66.50**	10-01544	4	White	**$39.95**
	2" Hole			10-01545	5	White	**$60.25**
10-01534	2	White	**$42.25**	10-01546	2	Black	**$39.95**
10-01535	3	White	**$60.25**	10-01547	3	Black	**$54.25**
10-01536	4	White	**$54.25**	10-01548	4	Black	**$54.25**
10-01537	5	White	**$48.75**	10-01549	5	Black	**$66.50**

SHOCK MOUNTS

For vibration and shock proofing on instruments and radios.

10-02183 - 1" Square Plate Type Lord Mounts, 6 lb. rating. Monel mounting plate. Base holes .141" dia. for 6-32 screws. Center hole .166" dia. for 8-32 screw. New surplus item - like new mfg.
P/N 10-02183 ..... **$6.85**

200P-35 - 2" Square Plate Type Lord Mounts, 35 lb. rating. Steel mounting plate. Base holes .196" dia. for 10-32 screw. Center hole .391" dia. for AN6 bolt. P/N 10-00034 ..... **$16.75**

ROUND MOUNT – As used in Cessna aircraft. Overall length 1.25". Rubber molded on 8-32 threaded projections. New manufacture. Similar to Cessna P/N J6984-8. P/N 10-14700 ..... **$6.45**

LORD J-14290-4 INSTRUMENT SHOCK MOUNT -
5 lb rating • Metal mounting plate • .144 dia. base hole (screw size: #6) • .195 dia. center hole (screw size #10) • Aircraft: Cessna 182, 182A-182N
P/N 08-00381 ..... **$27.85**

RTC-2 AVIATION REAL TIME CLOCK & OAT DISPLAY

The RTC-2 is a 2.25" aviation Real Time Clock featuring a two time zone system, stopwatch, countdown timer, alarm and OAT (Outside Air Temperature) display. It is primarily intended to show UTC time (also known as Greenwich Mean Time, GMT or Zulu time) together with a local time to facilitate ordinary ATC time reporting.
P/N 11-06443 ..... **$225.00**

SCOTT TYPE FREE AIR THERMOMETER

Mounts through 3/8" dia. hole in windshield or cowling. Convenient scale reads in both Centigrade and Fahrenheit. Stem length is 4". Face diameter 2-1/8". Sunproof crystal. P/N 10-15500 ..... **$82.65**

KELLY MANUFACTURING CO. OUTSIDE AIR TEMPERATURE GAUGE

This quality manufacture outside air temperature gauge features a moving coil meter movement housed in a 2" diameter case. Operated by MS28034-2 type resistance bulb. Size: 2-3/8" x 2-3/8" x 2-1/4". Wt. 1 lb. Power: 14 or 28 VDC. Range -45°C/-50 to 120°C.
P/N 29-3003-14 ..... **$498.95**
P/N 29-3003-28 ..... **$375.95**
Connector: .....P/N 11-02023 ..... **$7.95**

KELLY MANUFACTURING CO. CABIN AIR TEMPERATURE GAUGE

This quality new manufacture cabin air temperature gauge features a moving coil meter movement housed in a 2 inch diameter case. Operated by MS28034-2 type resistance bulb. Size: 2-3/8" x 2-3/8" x 2-1/4". Wt. 1 lb. Power: 14 or 28 VDC.
14V 29-4000.....29-4000-14..... **$233.95**
28V 29-4000.....10-03146..... **$249.95**
MS28034-2 Resistance Bulb.....MS28034-2..... **$164.95**

KELLY MANUFACTURING 3 INCH ENGINE GAUGES 18-1000 & 18-1002 SERIES

P/N 10-03435

Consists of three independent gages contained within a standard 3" diameter case. Oil temperature and cylinder head temperature gages are moving coil meter movement operated by MS28034-1 and AN5546-1 resistance bulbs respectively. Connection for the temperature gage is by cannon type connector: P/N MS3106A-14S-2S. FAA TSO Approved C47.

Model No. / Part No.	Description	Price
18-1000-1 P/N 10-03435	28 VDC Oil Temp. 50°-250°F, Oil Press. 0-200 PSI, Cylinder head temperature 100 to 500°F	**$649.00**
18-1000-2 P/N 10-03436	28 VDC Oil Temp. 20° to 120°F, Oil Press. 0 to 200 PSI, Cylinder head temp. 50 to 250°F	**$649.95**
18-1000-3 P/N 10-03437	14 VDC Oil Temp 50°-250°F, Oil Press. 0-200 PSI, Cylinder head temp. 100-500°F.	**$649.95**
18-1000-4 P/N 10-03438	14VDC Oil Temp 20° to 120°F, Oil Press 0 - 200 PSI, Cylinder head temp. 50 to 250°F	**$649.95**

P/N 10-03439

18-1002 SERIES - This gage consists of three moving coil meter movements within a 3" diame-ter case. Oil temperature is sensed by an MS28034-1 resistance bulb and cyl-inder head temperature is sensed by an AN5546-1 resistance bulb. Oil pres-sure is sensed by a VDO Transducer. Connection is made by a single cannon type connector: Part Number MS3106A-14S-6S.

Model No. / Part No.	Description	Price
18-1002-1 P/N 10-03439	Oil Temp 50° - 250°F, Oil Press. 0 - 120psi, Cylinder temp. 0 - 500°F	**$649.95**
18-1002-5 P/N 10-03440	Oil Temp 50° - 250°F, Green Arc 100° - 200°F, Red line at 249°F, Oil Press. 0 - 120psi, Red line 10psi & 100psi, Yellow Arc 10psi - 30psi, Green Arc 30psi - 60psi, Yellow arc 60psi - 100psi, Cylinder Temp 0°- 500°F, Green Arc 220° - 420°F, Red Line 460°F	**$998.00**

ACCESSORIES FOR 18-1000 & 18-1002 SERIES

Part No.	Description	Price
10-00958	Resistance Bulb MS3106A-12S-3S	**$15.85**
10-00953	Resistance Bulb MS28034-1	**$148.95**
AN5546-1	86146 CHT Probe Thermistor	**$263.95**
10-00790	MS3106A-14S-2S Cannon Plug	**$10.95**

Note: Use MS3106A-14S-2S Cannon Plug for instruments and MS3106A-12S-3S for Resistance Bulb MS28034-1.

DIGITAL OUTSIDE AIR TEMPERATURE GAUGE

This high quality digital outside air temp. gauge gives constant and precise readings on a bright, easy-to-read digital presentation. Comes complete with probe and ready to install. Made in USA
Celsius.....P/N 10-00205 ..... **$218.95**
Fahrenheit .....P/N 10-00206 ..... **$218.95**

HYDRAULIC PRESSURE GAUGE

AN5771-4A Military style gauge with steel case. Mounts in 2-1/4" dia. panel opening. Range: 0-2000 PSI. Overhauled and Certified. With fresh Matte-white dial. P/N AN5771-4A **$215.95**

IN

CLOCKS – TIMERS

ASTROTECH QUARTZ CHRONOMETERS

A fine quality instrument to satisfy all cockpit clock/timer needs. 12 or 24 hour clock, 24 hour elapsed timer with time-out or hold feature, month and date. Will operate on internal battery for 2 years or can be connected to electrical system. 12 or 28V DC operation. **Does not include internal battery.**

Part no.	Model	Description	Price
10-15508	LC-2	Panel Mount Aircraft Powered 14/28V	**$334.95**
10-15512	LC-2A-5	King Air, 28 volts	**$995.00**
10-15513	LC-2A-6	Beechcraft 28V Clock	**$825.00**

NOTE: For Aircraft Application Information on Astrotech Chronometers visit www.aircraftspruce.com

LC-6 LIQUID CRYSTAL CHRONOMETER

The LC-6 is a 5-function, liquid crystal display, aircraft quartz chronometer. All functions contained in a single Large Scale Integrated Circuit (LSI) bonded directly to a printed circuit board. Features 6-digit local time or GMT stopwatch, 100-hour remote-activation timer, presettable down-counter. Unit mounts into standard 2.25" panel cutout, back-lit, may be wired into aircraft instrument panel lighting system (14 or 28V).

P/N 10-15503 ..... **$619.95**

FLIGHT DATA SYSTEM ELECTRIC TACHOMETER

Tachometer: Monitors both left and right ignition systems. Works with magnetos and electronic ignition. Warns when an ignition system has failed. Engine Hour Meter: Saves engine hours in "tach time" or actual time. Flight Timer: Automatically records flight Time. Features: Large and easy to read digits. Extreme operating temperature display. Soft orange backlight with automatic brightness. 2-1/4" panel mounted. Weighs 2.6oz. Includes pre-wired connector. 12-28 volt compatible

P/N 10-03898 ..... **$159.95**

AEROSPACE LOGIC DT1-F CLOCK/OAT

Includes a feature-rich aircraft chronograph with constant viewable Outside Air Temperature - all in one 2 1/4" mount instrument. For experimental aircraft. Programmable Features - CT1 allows you to configure the instrument just the way you need it. All clock functions are available in both 12 and 24 hour format with instant indication of the current operating format. Local time is calculated as an offset from UTC. Just set your offset. Programmable to 23 hrs/30 min. either side of the date line.

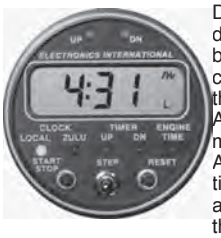
Other features: • MultiFunction Flight Timer • Down Timer • Outside Air Temperature • Hi-Tech Temperature Sensor • TSO & STC Certificate pending (Oct 2005) • Dimensions: 2.45" X 2.45" X 1.6"
• Weight: 8oz. • Power: 6V-40VDC P/N 10-01719 ..... **$424.95**

FALCON MULTI-FUNCTION DIGITAL CLOCK

Three clocks packed into one convenient, easy to use clock, providing the pilot with standard time, flight time and elapsed time. The bright red LCD display is easy to read day or night by adjusting brightness control. Regular time recorded in hours, minutes, and seconds. Four switches provide control and mode selection. Fits standard 2-1/4" instrument cutting hole.

Includes Connector. ..... P/N 10-00370..... **$239.95**
Replacement Connector..... P/N 11-04970..... **$17.25**

SUPERCLOCK FROM ELECTRONICS INTERNATIONAL



Displays local and Zulu time. May be set to display in a 12 or 24-hr format. A 10-year lithium battery keeps the clock running even if the aircraft battery is removed. Displays an Up Timer, that will start running when the engine is started. Acts as an automatic Flight Timer. The Up Timer may be started, stopped or reset. A Recurring Alarm may be set to alert you at appropriate time intervals. Displays a Down Timer. Displays an Engine Timer. Acts as a Hobbs Meter. When the engine starts, the Engine Timer will run. Specifications: 2-1/4" mount. 3.65" Depth. 10 Oz. Unit. Viewable in direct sunlight. Backlit for night operation. Operates from 7.5 to 35 volts at .3 amps.

P/N 10-01612..... **$289.00**

SUPERCLOCK/ALTITUDE ALERT FROM ELECTRONICS INT'L.

Reads your Altitude Encoder and displays your current altitude as seen by ATC. Display indicates when your current altitude is above or below your Programmed Target Altitude. A "Level off Alarm" occurs as you approach your Programmed Target Altitude. Displays Density Altitude based on your current OAT reading. Degrees F and degrees C. A Timer may be set as an "UP" or "Down" counting Timer. A Recurring Alarm may be set to alert you at appropriate time intervals. Displays Local and Zulu Time. The Local Clock may be set to display in a 12 or 24-hr format. Meets FAA requirements for a clock. Specifications: 2-1/4" mount. 3.65" Depth. 10 Oz. Unit. Viewable in direct sunlight. Backlit for night operation. Operates from 7.5 to 35 volts at .3 amps.

P/N ASC-5..... **$483.00**

PRECISION QUARTZ AIRCRAFT CLOCKS

Designed for accuracy, this precision clock is manufactured to meet rugged aircraft environmental standards. High-quality, solid state quartz movement. Comes with a factory one year limited warranty.

Features: FAA/PMA approved. Precision quartz movement. Transient and reverse polarity protected. One year limited warranty. Continuously powered by aircraft battery. Low power consumption (3mA). Fits standard 2-1/4" panel hole

Specifications: Dimensions: 2.5 x 2.5 x 3.2 inches max. Weight: 0.5 lbs.. Altitude: -1,000 to +55,000 feet. Mounting: Front or rear panel.

Standard Quartz Electric Clock (unlit)..... P/N 10-00459..... **$227.95**
Lighted Quartz Electric Clock (14V)..... P/N 10-00460..... **$259.95**
Lighted Quartz Electric Clock (24V)..... P/N 10-04615..... **$268.95**

QUARTZ ELECTRIC AIRCRAFT CLOCKS

These clocks are constructed for easy installation in a wide variety of aircraft. The rugged quartz movement is accurate within 2 seconds in 24 hours under normal operations and runs accurately in temperatures from -30°–180°F. The clock kit includes a power harness, mounting screws and installation instructions. The clock features adjustable red elapsed time hands.

P/N 10-22812 (12V) **$117.50**
P/N 10-22824 (24V) **$117.50**

MID-CONTINENT INSTRUMENTS QUARTZ ANALOG ELECTRIC CLOCK

FAA PMA approved. Precision quartz movement. Compact 2 1/4-inch size – fits standard panel cutout. Transient and reverse polarity protected. Original equipment for many major aircraft manufacturers Low power consumption (3 mA). Continuously powered by aircraft battery One year limited warranty.

MD-90-1 8-32VDC ..... P/N 10-04771.... **$241.95**
MD-90-L 14V Lighted.... P/N 10-00460.... **$259.95**
MD-90-L 28V Lighted.... P/N 10-04615.... **$268.95**
MD-90-L 14V Lighted.... P/N 10-00460.... **$259.95**
MD-90-L 28V Lighted.... P/N 10-04615.... **$268.95**

CLOCKS – TIMERS

YOKE MOUNT FLIGHT CLOCK

Battery-operated quartz aircraft clock reads out 12 or 24 hour formats in bright digital display, and has stopwatch & alarm features. Includes yoke attachment for mounting directly in front of the pilot, and the yoke clip holds charts, approach plates, etc. Uses one watch battery (included). 1yr warranty. A great clock & approach timer.

Flight Clock (for Piper) .....P/N 13-31200 ..... **$19.75**

Flight Clock (for Cessna & all others)
P/N 13-31210 ..... **$18.95**

AVIATOR'S 5-IN-1 FLIGHT TIMER

5 timers in one package! A combination of 12/24 hour digital chronometer, plus stopwatch, plus 3 countdown timers is about as close to timed maneuver perfection as a pilot can get. Large LCD digital readouts and large push-buttons make reading and operating easy. Memory stores each waypoint, tank change or approach count-down preset. When time is up, timer element flashes and counts up. The Flight Timer Amplifier is very compact and includes a speaker volume control & external output jack for audio annunciation.

5-in-1 w/ piezo alarm (No LED).....P/N 13-01833 ..... **$24.85**
5-in-1 w/ red LED .....P/N 13-00095 ..... **$47.75**
5-in-1 w/ red LED & audio alarm.....P/N 13-00391 ..... **$69.85**
Flight Timer Amplifier .....P/N 13-01941 ..... **$86.25**

ELECTRONIC STOPWATCH/TIMER

This easy-to-use stopwatch counts up to 60 minutes, then recycles automatically. As a timer, it counts down from 100 minutes in minutes and seconds. Features loud tone when timing period is complete, a large LCD digital display, and soft-touch buttons which are easy to set. Stands or hangs for convenience. 1.5V battery included. By Westbend.

P/N 13-31380.....**$19.95**

ASA FLIGHT TIMER

Ergonomically designed and engineered for reliability, ease and convenience, the ASA Flight Timer should be considered essential equipment for all aviatiors. Features: Large LCD backlit display, multi-function clock and three simultaneous timer options. Exclusive digital notepad for squawk codes or frequencies, stores up to 12 approach times, audible and visual alarms.

P/N 13-02357 **$39.75**

NELSON FLIGHT CLOCK

• Stopwatch / Alarm • Quartz clock • Digital • Replaceable battery • Yoke clip holds Sectionals, Approach plates, etc. • 2 yoke sizes, Piper & Cessna • 12 or 24 hour time

Cessna .....P/N 13-31210 ..... **$18.95**
Piper .....P/N 13-31200 ..... **$19.75**

MODEL 100 STOPWATCH

The Bodytronics Model 100 stopwatch strikes a great balance between price and performance. You will not find a better quality stopwatch at this price! .....P/N 13-02954 ..... **$9.90**

NAVITEC CHRONOGRAPH T1

Essential onboard aircraft, the Navitec chronograph is designed to make readings easier for pilots on both time and timing: Large 30 minutes chronometer eye zone. Red marks for standards STR 1 & 2 (sustained Turn Rates). Indexes and graduated rotating bezel in super-luminova.

Constructed in 316L stainless steel, T1 is equipped with Swiss movement ETA G10.211.

Silver.....P/N 10-04819 ..... **$318.95**

WESTBEND ELECTRONIC TIMER

The jumbo LCD display on this electronic timer displays time in hours, minutes and seconds. Includes clock feature, electronic alarm, clip, stand, magnet and hanging hole for versatile use. AAA Battery included.

P/N 17-00240 ..... **$12.50**

DUAL CHANNEL TIMER

The Dual Channel Timer times 2 activities at once. One channel times hours, minutes, and seconds. Second channel times minutes and seconds. Dual LCD readout shows both times. Memory recalls previous time settings Includes clip, stand, magnet and hanging hole for ease of use 4½"L x 1½"W x 2.4"H. AAA battery included.

P/N 17-00241 ..... **$14.25**

WESTBEND ELECTRONIC TRIPLE TIMER/CLOCK

Features of this electronic timer include a continuous running clock that displays hours, minutes, seconds, and AM/PM mode, three timing channels that count to and from 100 hours, and three distinctive alarms.

Additional Features: Memory recalls previous time setting. Times three activities at once. Alarm beeps for one minute and counts up to show elapsed time. Easy-to-read large LCD display. Clip, stand, magnet and hanging hole for versatile use.

Specifications: One AAA battery included. 2.5" x 3" x 1".

P/N 17-00239 ..... **$18.00**

DAVTRON DIGITAL CHRONOMETER MODEL 800

MODEL 800

MODEL 800 Illuminated Buttons

- GMT, LT & ET
- ET Counter (UP/DOWN), Visual Alarm
- Model 800 AA Memory Battery (Optional)
- Input Voltage 11 to 28 Volts
- External Output for Optional Audio Alarm (ET)
- NVIS (NVG) Option Green A
- Available for Beechcraft yoke
- Internal Lighting

Description	Part No.	Price
GMT, LT, & ET Digital Clock 5 Volt Lighting (800)	10-03323	**$139.95**
800-5V With Battery Holder (AA)	10-03305	**$147.95**
800-5V With Night Vision Lighting Green A	10-03324	**$229.95**
800-5V NVG With Memory Battery Holder (AA)	10-03325	**$229.95**
GMT, LT, & ET Digital Clock 14V Lighting (800)	10-04508	**$139.95**
800-14V With Memory Battery Holder (AA)	10-02050	**$147.95**
800-14V With Night Vision Lighting Green A	10-03330	**$229.95**
800-14V NVG With Memory Battery Holder (AA)	10-03331	**$229.95**
GMT, LT, & ET Digital Clock 28V Lighting(800)	10-24535-28	**$139.95**
800-28V With Memory Battery Holder (AA)	10-02051	**$147.95**
800-28V With Night Vision Lighting Green A	10-03335	**$229.95**
800-28V NVG With Memory Battery Holder (AA)	10-03336	**$229.95**
800-5V, Illuminated Buttons, Battery Holder	10-04730	**$308.95**
800-14V, Illuminated Buttons, Battery Holder	10-04574	**$308.95**
800-28V, Illuminated Buttons, Battery Holder	10-04575	**$308.95**
800-5V NVG, Illuminated Buttons, Battery Holder	10-04576	**$463.95**
800-14V NVG, Illuminated Buttons, Battery Holder	10-04577	**$463.95**
800-28V NVG, Illuminated Buttons, Battery Holder	10-04578	**$463.95**

IN

DAVTRON INSTRUMENTS

DIGITAL CHRONOMETERS AND CLOCKS

MODEL 803

- UT, LT, FT, & ET
- FT & ET Visual Alarm
- External Output for Optional Audio Alarm(FT/ET)
- Aircraft Voltage
- OAT F & C (12Ft. Temperature Probe)
- Internal Lighting
- AA Memory Battery
- Input Voltage 11 to 28 Volts
- NVIS (NVG) Option Green A

Description	Part No.	Price
UT, LT, FT, & ET Digital Clock 5V Lighting, Voltmeter, OAT (F & C)	10-03304	**$425.95**
UT, LT, FT, & ET Digital Clock 14V Lighting, Voltmeter, OAT (F & C)	10-25520-14	**$424.95**
UT, LT, FT, & ET Digital Clock 28V Lighting, Voltmeter, OAT (F & C)	10-25520-28	**$424.95**
803-5V With Night Vision Lighting Green A	10-03342	**$549.00**
803-14V With Night Vision Lighting Green A	10-03343	**$549.00**
803-28V With Night Vision Lighting Green A	10-03344	**$549.00**
C307PS Temperature Probe 12Ft. Coax (Analog)	11-04603	**$64.75**
Audio Alarm Son-Alert	11-04610	**$44.50**

MODEL 800

- GMT, LT & ET
- ET Counter (UP/DOWN), Visual Alarm
- Model 800 AA Memory Battery (Optional)
- Input Voltage 11 to 28 Volts

MODEL 800 Illuminated Buttons

- External Output for Optional Audio Alarm (ET)
- NVIS (NVG) Option Green A
- Available for Beechcraft yoke
- Internal Lighting

• 5 volt and 28 volt lighting units need at least 20 volts on main power input for clock to operate. For 14 volt systems, order a clock with 14 volt lighting.

Description	Part No.	Price
GMT, LT, & ET Digital Clock 5 Volt Lighting (800)	10-03323	**$139.95**
800-5V With Battery Holder (AA)	10-03305	**$147.95**
800-5V With Night Vision Lighting Green A	10-03324	**$229.95**
800-5V NVG With Memory Battery Holder (AA)	10-03325	**$229.95**
GMT, LT, & ET Digital Clock 14V Lighting (800)	10-04508	**$139.95**
800-14V With Memory Battery Holder (AA)	10-02050	**$147.95**
800-14V With Night Vision Lighting Green A	10-03330	**$229.95**
800-14V NVG With Memory Battery Holder (AA)	10-03331	**$229.95**
GMT, LT, & ET Digital Clock 28V Lighting(800)	10-24535-28	**$139.95**
800-28V With Memory Battery Holder (AA)	10-02051	**$147.95**
800-28V With Night Vision Lighting Green A	10-03335	**$229.95**
800-28V NVG With Memory Battery Holder (AA)	10-03336	**$229.95**
800-5V, Illuminated Buttons, Battery Holder	10-04730	**$308.95**
800-14V, Illuminated Buttons, Battery Holder	10-04574	**$308.95**
800-28V, Illuminated Buttons, Battery Holder	10-04575	**$308.95**
800-5V NVG, Illuminated Buttons, Battery Holder	10-04576	**$463.95**
800-14V NVG, Illuminated Buttons, Battery Holder	10-04577	**$463.95**
800-28V NVG, Illuminated Buttons, Battery Holder	10-04578	**$463.95**

MODEL 811

- Six-digit Display on all 3 Functions.
- Time Function (12 OR 24HR Selectable)
- FT & ET
- Bright Sunlight Readable Displays
- Memory Battery Included
- Input Voltage11 to 28 Volts
- NVIS (NVG) Option Green A

Description	Part No.	Price
LT, FT, & ET Clock	10-24550-14	**$423.95**
LT, FT, & ET Clock 811 With Gray Faceplate	11-05873	**$423.95**
Model 811 With Night Vision	10-03346	**$559.00**

Accessories / Replacement Parts	Part No.	Price
811 Dropping Resistor	11-04607	**$2.95**
811 Memory Battery Pack	10-24560	**$21.50**
811 Inverting Cable	11-04608	**$23.75**
811B Female Connector (Standard Cable)	11-04609	**$23.75**
KW-505FDigital Display for Model 811B	11-04613	**$44.75**

DIGITAL CHRONOMETERS AND CLOCKS

MB800 (BEECHCRAFT YOKE)

- GMT, LT & ET
- ET Counter (UP/DOWN), Visual Alarm
- Input Voltage 11 to 28 Volts

MB800 Illuminated Buttons

- External Output for Optional Audio Alarm (ET)
- NVIS (NVG) Option Green A
- Available for Beechcraft yoke
- Internal Lighting

Description	Part No.	Price
MB800-5V (Black)	10-03341	**$139.95**
MB800-14V (Black)	10-02649	**$139.95**
MB800-28V (Black)	10-02651	**$139.95**
MB800-5V (Cream)	10-04581	**$139.95**
MB800-14V (Cream)	10-02906	**$139.95**
MB800-28V (Cream)	10-03340	**$139.95**
MB800-5V (Black) NVG Green A	10-04582	**$236.95**
MB800-14V (Black) NVG Green A	10-04583	**$236.95**
MB800-28V (Black) NVG Green A	10-04584	**$237.95**
MB800-5V (Cream) NVG Green A	10-04585	**$236.95**
MB800-14V (Cream) NVG Green A	10-04586	**$235.95**
MB800-28V (Cream) NVG Green A	10-04587	**$236.95**
MB800-5V (Black) Illuminated Buttons	10-04588	**$308.95**
MB800-14V (Black) Illuminated Buttons	10-04589	**$308.95**
MB800-28V (Black) Illuminated Buttons	10-04590	**$308.95**
MB800-5V (Black) NVG Green A, Illuminated Buttons	10-04591	**$463.95**
MB800-14V (Black) NVG Green A, Illuminated Buttons	10-04592	**$463.95**
MB800-28V (Black) NVG Green A, Illuminated Buttons	10-04593	**$463.95**

MODEL 877 REAR MOUNT

MODEL 850 NVG FRONT MOUNT

MODEL 850 FRONT MOUNT

- GMT, LT, FT, & ET
- FT & ET Visual Alarm
- External Output for Optional Audio Alarm(FT/ET)
- Bright Sunlight Readable displays
- Illuminated Displays
- Model 850 N Size Memory Battery
- Model 877 AA Memory Battery
- Input Voltage 11 TO 28 Volts
- NVIS (NVG) Optional Green A (850 & 850-2)

Description	Part No.	Price
GMT, LT, FT, & ET Clock 5V Lighting (850)	10-03310	**$416.95**
850A-5V-With Gray Faceplate	10-03311	**$416.95**
850-5V With Night Vision Compatibility (Green A)	10-03306	**$553.00**
850A-5V-NVG With Gray Faceplate	10-03347	**$553.00**
850-2-5V Rear Mount Night Vision (Green A)	10-04725	**$615.00**
GMT, LT, FT, & ET Clock 14V Lighting (850)	10-03312	**$416.95**
850A-14V With Gray Faceplate	10-03348	**$416.95**
850-14V With Night Vision Compatibility (Green A)	10-03349	**$553.00**
850-2-14V Rear Mount Night Vision(Green A)	10-04726	**$615.00**
850A-14V-NVG With Gray Faceplate	10-03350	**$553.00**
GMT, LT, FT, & ET Clock 28V Lighting (850)	10-03313	**$416.95**
850A-28V With Gray Faceplate	10-03314	**$416.95**
850-28V With Night Vision Compatibility (Green A)	10-03351	**$553.00**
850-2-28V Rear Mount Night Vision(Green A)	10-04727	**$615.00**
850A-28V-NVG With Gray Faceplate	10-03352	**$553.00**
GMT, LT, FT, & ET Clock 5V Lighting (877)	10-03308	**$408.95**
877A-5V With Gray Faceplate	10-03309	**$408.95**
GMT, LT, FT, & ET Clock 14V Lighting (877)	10-24545-14	**$408.95**
877A-14V With Gray Faceplate	11-05879	**$408.95**
GMT, LT, FT, & ET Clock 28V Lighting (877)	10-24545-28	**$408.95**
877A-28V With Gray Faceplate	11-05880	**$408.95**
Audio Alarm Son-Alert	11-04610	**$44.50**

IN

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PEACHTREE CITY, GA • (877) 477-7823
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DAVTRON INSTRUMENTS

MILITARY CHRONOMETER

MODEL M880

- Military clock
- Two button control system
- Control switch has remote capability
- Sunlight readable displays
- N.V.G. Filter, Green A or BG7B
- Manual dimming of the display
- Full 6 digit display selectable, GMT, LT, ET
- Elasped time is count up or down
- Keep alive battery (2 year life)
- GMT full 6 digit hours/minutes/seconds
- Local Time, 24 hour, 4 digit

Description	Part No.	Price
GMT, LT & ET Clock with night vision compatibility for military (BG7B)	11-08021	**$1,283.00**
GMT, LT & ET Clock with night vision compatibility for military (Green A)	11-08022	**$1,095.00**

DENSITY & PRESSURE ALTITUDE MODEL 655

FRONT MOUNT

REAR MOUNT

- OAT (F) & OAT (C)
- Pressure & Density Altitude With Pressure ALT. Alarm
- Aircraft Voltage with Flashing Alarm
- Bright Sunlight Readable Displays
- Input Voltage 11 TO 28 Volts.
- Complete with 12 FT. Digital Probe.

Description	Part No.	Price
O.A.T. F&C/Vol/ Pres & Den ALT (Front Mount)	10-24515-1	**$274.95**
O.A.T. F&C/Vol/ Pres & Den ALT (Rear Mount)	10-24515-2	**$278.95**

DIGITAL VOLTMETER OUTSIDE AIR TEMPERATURE MODEL 303

FRONT MOUNT

REAR MOUNT

- OAT (F) & OAT (C)
- Aircraft Voltage with Flashing Alarm
- Bright Sunlight Readable Displays
- Input Voltage 11 TO 28 Volts.
- Complete with 12 FT. Digital Probe.

Description	Part No.	Price
O.A.T. F & C / Voltage (Front Mount)	10-24565-14-1	**$224.95**
O.A.T. F & C / Voltage (Rear Mount)	10-24565-14-2	**$224.95**

DIGITAL VOLTMETER AMMETER MODEL 475VA/475VAA

M475VA

- Low current drain .001 amp
- Plus 100.0 volt D.C. range
- 1.3" case depth
- Sunlight readable
- One tenth volt resolution

M475VAA

- Plus or minus 100.0 amp range
- 2¼ Standard mount
- 5, 14, or 28 volt back lighting
- One tenth amp resolution

The M475VAA has dual shunts and can read voltage and two current flows (M475VA has a single shunt). The 475VA and the 475VAA were designed for low current drain and are also used in standby and emergency battery packs. One example of safety is if the alternator fails, you can monitor the load current out of the battery.

Description	Part No.	Price
Volt/Amm Meter 14V Lighting (Single Shunt)	10-03319	**$262.95**
Volt/Amm Meter 28V Lighting (Single Shunt)	10-03320	**$262.95**
Volt/Amm Meter 14V Lighting (Double Shunt)	10-03321	**$293.95**
Volt/Amm Meter 28V Lighting (Double Shunt)	10-03322	**$293.95**
Volt/Amm Meter 14V Lighting (Single Shunt) With Night Vision Compatibility Green A	10-04562	**$358.95**
Volt/Amm Meter 28V Lighting (Single Shunt) With Night Vision Compatibility Green A	10-04564	**$358.95**
Volt/Amm Meter 14V Lighting (Double Shunt) With Night Vision Compatibility Green A	10-04566	**$358.95**
Volt/Amm Meter 28V Lighting (Double Shunt) With Night Vision Compatibility Green A	10-04567	**$358.95**

DIGITAL OUTSIDE AIR TEMPERATURE

MODEL 301

- OAT (F)
- OAT (C)
- Bright Sunlight Readable Displays
- Input Voltage 11 TO 28 Volts.
- Complete with 12 FT. Digital Probe.

Description	Part No.	Price
O.A.T. Celsius (301 C), Amber LED	10-08312	**$123.95**
301C 3 Pin Connector for Probe, Amber LED	10-03316	**$131.95**
O.A.T. Fahrenheit (301 F), Amber LED	10-08512	**$123.95**
301F 3 Pin Connector for Probe, Amber LED	10-03317	**$131.95**
O.A.T. Celsius, Green LED	10-04543	**$131.95**
O.A.T. Celsius, White LED	10-04544	**$137.95**
301C 3 Pin Connector For Probe, Green LED	10-04545	**$139.95**
301C 3 Pin Connector For Probe, White LED	10-04546	**$139.95**
O.A.T. Fahrenheit, Green LED	10-04547	**$131.95**
O.A.T. Fahrenheit, White LED	10-04548	**$131.95**
301F 3 Pin Connector For Probe, Green LED	10-04549	**$139.95**
301F 3 Pin Connector For Probe, White LED	10-04551	**$139.95**

M307FC

M307FCE

M307FCI

- OAT (F) & OAT (C) Voltage
- Bright Sunlight Readable Displays
- Input Voltage 11 TO 28 Volts.
- Complete with 12 FT. Digital Probe.

Description	Part No.	Price
O.A.T. F & C (307FC)	10-08513	**$200.95**
O.A.T. F & C Cabin Air (307FCI)	11-05881	**$200.95**
O.A.T. F & C & Voltmeter (307FCE)	10-04552	**$231.95**

M307CD

M307FD

Description	Part No.	Price
Celsius Differential Intercooler (307 CD)	10-03318	**$262.95**
Fahrenheit Differential Intercooler (307 FD)	11-05882	**$262.95**

MODEL 450

MODEL 451

- Aircraft Voltage with Flashing Alarm
- Bright Sunlight Readable Display
- Input Voltage 11 TO 28 Volts.

- Aircraft Voltage (451)
- Bright Sunlight Readable Display
- Minimum panel Space
- Input Voltage 11 TO 28 Volts.

Description	Part No.	Price
Voltmeter (450), Amber LED	10-24505	**$106.95**
Voltmeter (450), Amber LED, Remote Sensing	10-04555	**$115.95**
Voltmeter (450), Green LED	10-04553	**$108.95**
Voltmeter (450), Green LED, Remote Sensing	10-04556	**$123.95**
Voltmeter (450), White LED	10-04554	**$108.95**
Voltmeter (450), White LED, Remote Sensing	10-04557	**$123.95**
Voltmeter (451), Red LED	10-02819	**$124.95**
Voltmeter (451), Red LED, Remote Sensing	10-04558	**$131.95**

ACCESSORIES / REPLACEMENT PARTS

Description	Part No.	Price
KW-105G Display for Model 303, 307, 655, 880, & 903	11-04611	**$44.75**
KW-115G Display for Model 303, 655, 850, 877, & 880	11-04612	**$51.50**
KW-505F Digital Display for model 811B	11-04613	**$44.75**
800 Series Alarm Son-Alert	11-04610	**$44.50**
Temp Probe - 7Ft Red/Black Twisted (Analog)	11-04598	**$64.75**
Temp Probe - 12Ft COAX C307PS (Analog)	11-04603	**$64.75**
Temp Probe for 307CD/307FD (Analog)	11-04602	**$64.75**
Temp Probe 12Ft COAX D307PS (Digital)	11-10717	**$64.75**

See our website for additional sizes.

IN

TACHOMETERS – TACH CABLES

MITCHELL MECHANICAL TACHOMETERS

3-1/8" Tach

In 1985 AC discontinued production of the popular "RT" series of mechanical tachometers. We now offer Mitchell tachometers to fill this void. These tachs feature exceptional accuracy and reliability. Mitchell tachs come with a 2-year factory warranty. Range on all models is 500 - 3500 RPM. Determine the correct part number for your application from the chart below, and order by our part no. from the charts shown here. All Mitchell tachs are FAA approved for certificated aircraft. $30.00 for custom range marks (specify ranges). $12.50 to set hours (specify hours)

Mitchell P/N	Our P/N	Price
D1-112-5023	10-24623	**$177.00**
D1-112-5122	10-24622	**$177.00**
D1-112-5030	10-24630	**$209.00**
D1-112-5124	10-24624	**$219.00**

Mitchell P/N	Our P/N	Price
D1-112-5025	10-24625	**$177.00**
D1-112-5032	10-24632	**$233.95**
D1-112-5028	10-24628	**$177.00**

Mitchell P/N	Our P/N	Price
D1-112-5034	10-24634	**$177.00**
D1-112-5029	10-24629	**$209.00**
D1-112-5024	10-24644	**$177.00**

2-1/4" Tach

2566 Cruise RPM Clockwise..... P/N 98480-2..... 2-1/4" TACH (98480-2)..... **$209.00**
2300 Cruise RPM Clockwise..... P/N 10-02046..... 2 1/4" TACH..... **$209.00**

IFR P/N	Mitchell P/N	Stewart Warner No.	AC Type	Direction of Rotation	Average Cruise RPM	APPLICATION (REPLACEMENT FOR ORIGINAL EQUIPMENT INSTALLATIONS)
55-35-7	D1-112-5023	P-551-AZ	RT-7	Clockwise	2300	***Aero Commander:*** A9, A9A, A9B ***Aeronca:*** 15AC Sedan ***Alon:*** F1, F1A, A-2, A-4 & 415C. D, E, F, G (Including Ercoupe and Forney) ***Grumman/American:*** AA-1, AA1A, AA-5 ***Beech:*** C35, D35, E35, F35 ***Bellanca/Champion:*** 7EC, 7FC, 7GC, 7HC,7GCB, 7K, 7ECA, 7GCAA, 7GCBC, KCAB, 8KCAB, 260, 14-19, Viking 300, TurboViking ***Call:*** A2, A3, A4, A5, A9 ***Cessna:*** 120, 140, 170, 180, 182, 185 (with IO-470 eng.) 188, 336, 337 ***Culver:*** Cadet ***Lake Aircraft:*** C-1, C-2, L-4, LA-4SC, LA5 ***Mooney:*** Mark 20, 20A, 20D, 21, 200, 201, 202, 220 ***Piper:*** PA12, PA16, PA18, PA20, PA22, PA23, PA24, PA25PA28,PA30,PA32,PA39 ***Rockwell:*** 112, 114 ***Taylorcraft:*** 19,15A, 20, 20AG, Zephyr ***Temco:*** (Swift: GC-1, GA-1B)
55-35-8	D1-112-5122	P-551-AYZ	RT-8	Clockwise	2050	***Beech:*** 35, A3S, B35, 35R
55-35-9	D1-112-5030	P-551-AZH	RT-9	Counter-clockwise	2300	***Aeronca***: Champion, Chief (early models) ***Piper***: PA15, PA18, (W/TCM eng)
55-35-10	D1-112-5124	P-551-AZJ	RT-10	Counter-clockwise	2050	***Aeronca***: Champion, Chief (late models) ***Champion***: 7AC, 11AC, 7CCM Beech
55-35-11	D1-112-5025	P-551-TA	RT-11	Clockwise	2566	***Bonanza Models***: G35 thru V35, V35TC, 36, A36, 95, B95, B95A, D95A- All Musketeer Models. All Debonair Models ***Cessna***:150,152, 172, 177, 185 & 188 (with IO-520 eng), 206, 207, 210, 310, 320 ***Helio***: H250, H391, H392, H395 ***Navion***: E, F, G ***Stits***: SA9A, SA9B ***Bellanca/Champion***: 7AC
55-35-12	D1-112-5032	P-551-AZK	RT-12	Counter-clockwise	2566	***Stinson***: 105,108
55-35-14	D1-112-5028	P-551-AZA	RT-14	Clockwise	1800	***Aero Commander*** (Ayres Corp.) B1A, S2B, S2C, S2D, S2R ***Stearman***: A75 (P & W eng.)
55-35-15	D1-112-5034	P-551-AZB	RT-15	Clockwise	3000	***Cessna***: 175
55-35-16	D1-112-5029	P-551-AZL	RT-16	Counter-clockwise	1800	***Grumman***; G164
55-35-17	D1-112-5024	N/A	RT-17	Clockwise	2400	***Maule***: M5/6/MX7-180, M5/6/7/MX7-235

The specific tachometer listed is best suited if the installation has this approximate cruise rpm.
Direction of rotation must be compatible with the previous tachometer that was used.

IN

SLI AIRCRAFT TACHOMETERS

For three decades, Superior Labs, Inc. (SLI) has supplied the aircraft OEM's with the finest quality and most reliable mechanical tachometers in the industry for new production aircraft and can be customized for a variety of aircraft applications. These are now available to the public as aftermarket tachometers. ***Specifications***: • Accuracy to within ± 25 RPM • Range 0-3500 RPM • Diameter 3-1/8" • Length 3-1/2" • Weight: 13 Oz. • Two Years Warranty Most Models **$326.95**

SEE WWW.AIRCRAFTSPRUCE.COM FOR APPLICATION CHART, PART NUMBERS, AND PRICES.

Accessories	Part No.	Price
SLI Custom Range Markings	10-03685	**$61.50**
Sli Tach Lighting	10-03672	**$101.95**
SLI Tach Hours Set	10-03673	**$56.75**

TACHOMETER RIGHT ANGLE DRIVE

Attach this 90° adapter to male thread on the recording tachometer & female end of the tach cable. Makes installation possible in "impossible" places. May also be used as a reversing drive by removing plug and replacing it with threaded fitting opposite it. Screw plug in opening left by fitting removed. 1:1 Ratio. P/N 10-00815..... **$68.80**

ENGINE RIGHT ANGLE DRIVE

Female end attaches to engine tach drive outlet. Male output end accepts standard tach cable female nut (7/8-18 thread). Eliminates bending of tach cable at the engine in cramped installations. Designed for heavy-duty service. Gears and shafts are of heat-treated alloy steel. Oil impregnated sintered bronze shaft bearings. Cast iron case and fittings. With lubricator fitting for greasing. 1:1 ratio. P/N 10-00814..... **$62.70**

TACHOMETER CAP

This Tach Cap can be used to close off the tachometer drive of a Lycoming engine when an electronic tach drive is being used off the magneto or electronic ignition. 7/8" thread and Viton (R) O-ring to seal. P/N 10-06754..... **$19.70ea**

TACHOMETER CABLES

Custom made cables to exact specifications. Over-length cables can cause problems - order one that fits the installation. Select the proper length from the listing below, but measure old tach cable to verify length in chart is correct for your aircraft, as tach cables can vary from aircraft to aircraft. Measure original cable from end of Ferrule to end of Ferrule when fully extended. **Left lay is standard on all stock tach cables.** Tach Cables have male ends only. 7/8-18 on one end and 5/8-18 on the other. No female ends. When ordering special length tach cables specify aircraft, engine make, model & dash number. **Note**: General rule for installation: Tach cable should be installed as straight as possible - the inner cable length will decrease 11/16" per 360 degrees of bends.

Tach Cable Ass'y – Lengths to 4ft (Add $2.50/Ft. for Longer Lengths)
4 foot length **$48.95**

Inner Cable Only – Length is 4ft (Add $0.90/Ft. for Longer Lengths)
P/N **$26.00**

TACH CABLE LENGTH

Various	10-02675	22"	Mooney	10-00012	46"
Aeronca Chief	10-15700	29-1/2"	Navion	10-16400	42"
Aeronca Champ	10-15700	29-1/2"	Piper J3, J5	10-16500	34"
Bellanca Cruisair	10-15800	26"	Piper PA-22	10-16600	32"
Cessna 120, 140	10-15900	29"	Stinson	10-16700	35"
Cessna 175	10-16000	25"	Universal Use	10-16900	48"
Cessna 170,172,180	10-16100	37"	Various	10-16910	52"
Mooney	10-16200	36"			

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Prices Subject to Change Without Notice

TACHOMETERS

UMA 2-1/4" ELECTRONIC TACHOMETERS

These tachs have high resolution and easy to read displays. The analog model has a 250° sweep which provides great resolution in both the 3500 & 7000 ranges. The digital model has a bright LED display. Separate power source required. All tachs require power from a 14 or 28V system. Installations are simple with instructions included.

3500 ANALOG TACH - Lyc./Continental (to replace mechanical tachs) Current: 37 milliamps Size: 2.25"rnd. X 2.75"deep. Magnetic pickup (6 ft. cable length) included with P/N's 10-02141 and 10-02140 (T1A9). 6 ft. harness, sending unit, and .156 diameter tang adapter included with P/N 10-00083 (1A3-4).

0-3500 RPM, 4 cyl., Pulses:1 ..... P/N 10-02140 .**$244.95**
0-3500 RPM, 4 cyl., Pulses:2..... P/N 10-00083 .**$255.95**
0-3500 RPM, 6 cyl..... P/N 10-02141 .**$243.95**

7000 ANALOG TACH - Current: 37 milliamps; Size: 2.25" round X 2.75" deep

Rotax 19-519-206.....P/N 10-01854 .....**$135.95**
Rotax 912 .....P/N 10-01853 .....**$135.95**
Rotax 912/914 Lit .....P/N 10-02053 .....**$140.95**

UMA ELECTRONIC TACHOMETERS

These electronic tachometers use a 250° sweep meter movement to withstand high levels of vibration and register flight time accurately. The hour meter counts flight hours at RPM settings of 1800 & higher. Power: 12-28VDC. 2-year warranty.

Range	Description	Part no.	Price
0-7000 RPM	3-1/8" For Rotax 912 Engine B & W Markings, built-in hourmeter	10-00119	$233.95
	3-1/8" For Rotax 912 Engine Color Markings	10-04223	$256.95
	2-1/4" For Rotax 912 Engine Color Markings	10-01852	$161.95
0-3500 RPM	3-1/8" *To replace Mechanical Tachometer (readsCW or CCW; B&W Dial Only) Furnished w/mechanical sender	10-00120	$328.95
0-3500 RPM	3-1/8" *To replace Mechanical Tachometer (Green Arc 500-2700 - Red 2700) Furnished w/ mechanical sender	10-00121	$349.95

**** P/N 10-00120, 10-00121, 10-24870, & 10-24885 tachs eliminate the problems associated with mechanical tach cables, and the sending unit is a direct replacement for the tach cable. All models are analog style tachs with hour meters and can read RPM for either clockwise or counter-clockwise revolutions. Sender included. **Slick Mags Only***

WESTACH TACHOMETERS

CLamps to ultralite tubing or motorcycle handle bar. Swivels 360° at any angle. Furnished with chrome plated installation hardware. SINGLE TACH (Tachometer requires no sender.)

Powered By	Application	RPM	Head Type	Part No.	Price
Mag	2/4 cyl. dist/mag & 1/2 VW	0-5000	Round	10-02926	$109.85
Mag		0-8000	Round	10-02928	$93.75
CDI	2 or 6 imp alt (Rotax, 2Si, Hirth, Arctica)	0-5000	Round	10-02923	$83.00
CDI		0-8000	Round	10-01302	$105.95
CDI	Jabiru 5 imp alt.	0-3500	Round	10-00480	$99.50
CDI	Jabiru 6 imp alt.	0-3500	Round	10-00481	$104.95
Mag	2/4 cyl. dist/mag & 1/2 VW	0-3500	Square	10-01275	$121.95
Mag		0-5000	Square	10-01294	$118.95
Mag	3/6 cyl. dist/mag except GEO	0-3500	Square	2AT33-2	$89.95
CDI	2 or 6 imp alt (Rotax, 2Si, Hirth, Arctica)	0-8000	Square	2AT8A-2/6	$113.95
CDI	Jabiru 5 imp alt.	0-3500	Square	10-00478	$108.95
CDI	Jabiru 6 imp alt.	0-3500	Square	10-00479	$99.50

WESTACH 2-1/4" TACH/HOUR METERS

SQUARE

ROUND

Powered By	Application	RPM	Part No.	Head Type	Price
Magneto	2/4 cyl. dist/mag & 1/2 VW	3500	10-01305	Square	$211.95
Magneto		8000	10-01690	Square	$168.95
Coil Ignition	2 or 6 imp alt (Rotax, 2Si, Hirth, Arctica)	3500	10-01689	Square	$220.95
Coil Ignition		8000	10-00829	Square	$192.95
Magneto	2/4 cyl. dist/mag & 1/2 VW	3500	10-01691	Round	$189.95
Magneto		3500	10-01693	Round	$185.95
Coil Ignition	2 or 6 imp alt (Rotax, 2Si, Hirth, Arctica)	3500	10-01692	Round	$189.95
Coil Ignition		8000	10-01694	Round	$176.95

2-1/4" REMOTE HEAD TACHOMETER

This tachometer is driven with power supplied by a transducer on the engine tach drive. Range 0-3500 RPM. Wt. 6 oz. Includes Gauge, sender, and tang.

Complete kit .....P/N 10-00805 ..... **$185.95**
Sender only .....P/N 10-02084 ..... **$67.75**
Tang only .....P/N 444-2 ..... **$5.75**

WESTACH TACHOMETER INSTRUMENTS

KY3GA3-1/2A - 500-3,500 RPM with hourmeter kit, 3-1/8" sq., 1/2 to 1 ratio. adjustable, with 303 DGT sender, 444-2 tang, 208-SS-SS cable. PN 10-02644.....**$218.00**

K3GA3-1/2A - Tachomter 500-3,500 RPM kit, 3-1/8" square, 1/2 to 1 ratio. adjustable with 303DGT sender, 444-2 tang, 208-SS-SS cable. Does not come with a sender. PN 10-02643 .....**$122.95**

ELECTRONIC TACHOMETER 0-3500 RPM FOR 6 CYLINDER

UMA has one of the most extensive line of tachometers available on today's market. They manufacture tachometers for a wide variety of engines and ignition systems used in ultralights, kit planes, and most general aviation aircraft.3-1/8" ..... P/N 10-02116 .....**$300.95**

FOR 4 CYLINDER -

3-1/8" 0-3500 RPM (2 Pulse) ..... P/N 10-00120 .....**$328.95**

UMA ELECTRONIC TSO'D TACHS

Owners of Lycoming &d Continental powered airplanes now have an electronic, analog alternative to the old cable driven tachometer. The new UMA tach is certified to FAA TSO C49b standards for fixed wing aircraft. The system uses a tach sender mounted on the engine in place of the mechanical cable and is connected to the indicator with a single, 3-conductor cable. The 3 1/8" indicator utilizes a high torque pivot and jewel movement. The hour meter can be factory set to start at any desired RPM point. This unit gives the pilot the analog display that is easiest to scan and provides electronic accuracy and ease of installation. Custom dial markings in color & internal Electro-Luminescent lighting are available at extra cost. UMA manufactures a complete line of TSO'd & non-TSO'd gauges & instruments in the USA.

UMA Model#	Range	Dial Marking	Part No.	Price
T19-801-10	0-3500 RPM	Black & White	10-01221	$419.95
T19-801-11	0-3500 RPM	Green Arc 500-2700 & Red Line 2700RPM(Lyc.)	10-01222	$412.95

UMA ELECTRONIC TACHOMETER WITH HOURMETER

3 1/8" Analog Tachometer with hourmeter. 4 Cylinder. 0-3500 RPM. Records engine time above a set RPM point. Standard set point is 1800 RPM. Engine Type: Continental/ Lycoming. TSO'd Magnetic pickup for Slick or Bendix Magnetos (6 ft. cable length), alternative to p-lead connections.

For Bendix Mags ..... P/N 10-04867..... **$301.95**
For Slick Mags..... P/N 10-04868..... **$299.00**

P-1000 DIGITAL TACH BY HORIZON INSTRUMENTS

Provides diagnostic and performance information about the aircraft engine and ignition system not normally available with current mechanical or electrical/electronic tachometers. Eliminates problems resulting from inaccurate tachometers. STC approved for primary installation, not just secondary. Also incorporated into the P-1000 is a highly accurate engine hours clock, and an RPM Trap memory that recalls the highest RPM achieved by the engine. Both features are enabled with a touch of a button. The P-1000 is housed in a rugged, light-weight aluminum standard 3-1/8 inch "MS" style case. Installation is simple. Only four wires are connected, all of which are located under the panel! The P-1000 is the ideal aircraft tachometer, for upgrades or new designs, providing the conscientious pilot with high reliability, accurate RPM reading, and valuable diagnostic information.

P/N 10-01592..... **$609.00**

TRU-TACH II DIGITAL TACHOMETER

Mechanical tachometers are notoriously inaccurate. The TruTach II Optical Digital Tachometer measures the true speed of your propeller from inside or outside the aircraft. Just point it at the propeller or rotor blades and TruTach II will directly display the rotational speed with a resolution of 1 RPM. No connection to aircraft systems is required and measurements may be made at any speed setting from 240 to 70000 RPM. Direct display is available for 2, 3, 4, and 5 blade propellers. Digital Signall Processing assures rock-solid display in single and multi-engine aircraft as well as helicopters. The compact 4-inch instrument weighs just 4 ounces and may be used with fast turning ultra-lights and kit plane propellers. Automatic shut-off turns the unit off if you forget. Includes an Impact resistant case and standard 9 volt battery providing 150 hours of operation.

P/N 10-01021 ..... **$194.95**

MICROFLIGHT DUAL TACH/EGT

2" Round Gauge Tachometer - Universal for single or dual ignition. EGT range: 700-1700°F EGT probe (clamp type) Sender not included P/N 10-01628 ..... **$85.50**

MITCHELL D1-112-5240 ROTAX 912 TACHOMETER

Mitchell 2-1/4 Inch Mechanical Recording. FAA-TSO Approved. D1-112-5240 Special-Rotax 912

P/N 10-02744 ..... **$239.95**

UMA SENDING UNITS FOR TACHOMETERS

1A3-4

Unit 1A3-4 Includes: Sending Unit, and .156 dia. tang adapter. P/N 10-01706 ..... **$110.95**

T1A9 Magnetic pickup for Slick or Bendix Magnetos (6 ft. cable lengths)

Slick .....P/N 10-02432 .....**$86.25**
Bendix.....P/N 10-02433 .....**$86.25**

T1A9

IN

ALCOR EGT & CHT SYSTEMS

BASIC EGT & CHT SYSTEMS

FAA and PMA approved for all reciprocating-powered aircraft!

2-1/4" GAUGES

A46125 A46150 A46126 A46151 A46127 A46164

3-1/8" GAUGES

A46124 A46156 A46155 A46157

Instruments: Provide a quick and easy way to troubleshoot and determine an engine's efficiency. Alcor's instruments are known for their quick response time, easy-to-read design and long life. All Alcor instruments are FAA/PMA approved for anything piston-powered that flies! Available in 2 ¼" and 3 1/8" diameters, these instruments can be purchased in single or dual configurations with or without internal lighting. Special order options are also available. All Alcor instruments carry a 3 Year Warranty!

Sensors: Recommended by the most popular manufacturers of digital engine monitoring systems because Alcor sensors are: • Made from the highest-quality materials • FAA approved • Provide fast response time • Built to last • Covered by a 5 Year warranty for grounded probes • Manufactured in the USA!

Basic Systems: Kit includes the 2 ¼" or 3 1/8" instrument, one lead and one sensor for single cylinder EGT or CHT monitoring.

Multi-Cylinder Systems: Kit Includes 2 ¼" or 3 1/8" instrument, all leads, switches and sensors for EGT and CHT monitoring of every cylinder. Alcor's 2 ¼" instrument uses Alcor's Universal Cylinder Selector (UCS) (p/n 80825 or 80827) switch to convert the basic system into an affordable Alcor analyzer!

BASIC SYSTEMS		
System	Part No.	Price
EGT	10-08700	$256.95
CHT	10-08800	$291.95
EGT/CHT 21/4"	10-08900	$617.00
EGT/CHT 31/8"	10-20700	$566.00

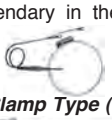
ANALYZER SYSTEMS		
System	Part No.	Price
EGT (4Cyl.)	10-09000	$732.00
CHT (4 Cyl.)	10-09100	$798.00
EGT/CHT (4 Cyl.)	10-09200	$1,497.00
EGT (6 Cyl.)	10-09300	$974.00

BASIC EGT & CHT SYSTEMS

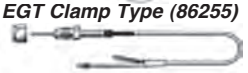
Alcor's probe (thermocouples) reliability is legendary in the aviation community, designed to give years of dependable and accurate service.

GROUNDED THERMOCOUPLES

ALCOR	DESCRIPTION
86255	EGT Clamp Type Probe min/ max dia.-1.5"to 3.25") (Yellow/Red, Chrome/ Alumel)
86240	EGT Screw-In Probe, fitting dims: 7/16" x 20 threads (Yellow/Red) less boss
86245	EGT Screw-In Probe, fitting dims- 7/16" x 20 threads (Yellow/Red, reverse stagger leads) less boss
28113	Weld Boss
86251	CHT Bayonet Probe (Black/ Yellow,
28202	Iron/Constantan) AN5541-1 CHT Bayonet Probe Adapter
86202	CHT Gasket Style Thermocouple. Type: J - Black and Yellow. Grounded Style: Gasket. Size: 18 mm. Resistance: .13 + .16 Ω - .05 Ω. Weight: 0.12 lbs.

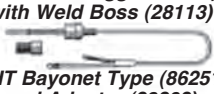


EGT Clamp Type (86255)



EGT Screw-In Type (86240) with Weld Boss (28113)

EGT Screw-In Type (86245) (Reverse Stagger Leads) with Weld Boss (28113)



CHT Bayonet Type (86251) and Adapter (28202)

CHT Gasket Type (86202)

EGT/CHT Leads

IMPORTANT! EGT systems & components with red/brown color codes are not compatible with systems & components using red/yellow codes.

Alcor Systems are FAA Approved and the grounded probes have a 5Yr factory warranty, the ungrounded probes have a 1yr factory warranty, and the instruments have a 3yr factory warranty.

ALCOR COMPONENT PRICE LIST

Alcor	Our P/N	Description	Price
System Tester			
85331	10-00995	Alcal 2000 EGT/CHT (FAA/PMA Not Req'd.)	$2,941.00
EGT Leads, Type K			
42525	42525	EGT Leads, Type K (90")	$31.85
42526	42526	EGT Leads, Type K (144")	$39.75
42527	10-00131	EGT Leads, Type K (240")	$59.25
42528	42528	EGT Leads, Type K (216")	$54.50
CHT Leads, Type J			
42535	42535	CHT Leads, Type J (90" 8 ohm)	$35.50
42536	42536	CHT Leads, Type J (144" 8 ohm)	$42.75
42537	42537	CHT Leads, Type J (240" 8 ohm)	$58.75
42543	42543	CHT Leads, Type J (216" 8 ohm)	$56.85
Meters, Single 2-1/4"			
46149	10-03859	EGT Internal light 24V Type K	$219.95
46150	46150	EGT Type K Fahrenheit red and yellow	$163.95
46151	46151	CHT Type J, Fahrenheit black & yellow	$158.95
46162	10-00992	EGT Type K, Fahrenheit (Green Arc)	$215.95
46164	10-00993	EGT Type K,Fahrenheit (No Green Arc)	$177.95
46171	10-00996	CHT Type J, Celsius Black & Yellow	$215.95
46244	10-00997	EGT 240" Lead Type K, Fahrenheit (Green Arc)	$239.95
Meters, Dual 2-1/4"			
46124	10-00994	TIT/TIT Type K, Fahrenheit Red & Yellow	$444.95
46125	10-00126	EGT/EGT Type K Red & Yellow	$369.50
46126	46126	EGT/CHT Type K & J, Fahrenheit	$369.50
46127	10-00127	CHT/CHT Type J, Fahrenheit	$379.50
Meters, Dual 3-1/8"			
45993	10-00998	EGT Type E Fahrenheit Red and Brown. Designed for twin engine aircraft.	$606.00
46115	10-03861	EGT/EGT 24V Type K. Designed for twin engine aircraft.	$437.95
46155	10-00128	EGT/EGT Type K	$349.95
46156	46156	CHT/EGT Type J & K, Fahrenheit	$344.95
46157	10-03860	CHT/CHT Type J Farenheit	$348.00
46224	10-00999	TIT/TIT Type K, Fahrenheit	$396.95
Meters, Dual 3-1/8" w/ switch			
TCP			
73061	05-21500	Syringe Assembly	$7.95
73099	05-01429	TCP 5-Gallon Can	$229.00
73100	05-01430	TCP 55-Gallon Drum	$1,718.00
73107	05-21300	TCP Quart w/Perm. Draw Tube	$39.95
EGT Probes, Type K			
86143	10-01005	Model N, Screw-In (1/4" NPT)	$125.95
86159	10-01006	Model H, Screw-In (1/4" NPT)	$128.95
86160	10-01007	Model J1, Screw-In (7/16"-20)	$127.95
86161	10-01008	Model K, Screw-In (1/4" NPT)	$127.95

Alcor	Our P/N	Description	Price
86226	10-01009	Model A, Clamp, 11.56" length (Reverse Stagger)	$126.95
86230	10-01011	Model N2, Screw-In (1/4" NPT)	$124.95
86240	10-00129	Model B, Screw-In (7/16-20)	$85.50
86245	86245	Model B,Screw-In(7/16"-20) (Reverse Stagger)	$86.75
86255	86255	Model A, Clamp (Normal Stagger)	$74.85
86275	10-01012	Model A, Clamp, 13.6" (Rev. Stagger)	$83.85
86281	10-01013	Model A, Clamp C/A Extended Lead	$158.85
EGT PROBES, Type E			
86149	10-01014	Model B, Screw-In (7/16"-20)	$567.00
86153	10-01015	Model H, Screw-In (1/4 NPT)	$567.00
86156	86156	EGT/TIT probe. Clamp 1-1/8"-3-1/4"	$243.95
CHT Probes			
86146	AN5546-1	Bayonet (AN5546-1) Thermistor	$263.95
86202	86202	Gasket Style Type J 18mm	$96.75
86251	86251	Bayonet Style Type J	$76.80
86252	10-04949	Bayonet Style, Type K, Red/Yellow, reverse stagger	$116.95
86253	10-04951	Bayonet Style, Type K, normal stagger, Red/ Yellow	$149.95
Parts and Accessories			
35309	10-04953	EGT Heater (1004-6)	$228.95
86188	10-04954	EGT Reference Thermocouple (1004-7)	$56.50
35291	10-04956	EGT Heater .128 Hole	$228.95
35311	10-04957	CHT Heater (1004-26)	$218.95
86261	10-04958	CHT Reference Thermocouple	$80.00
28187	10-04959	Gasket Thermocouple Adapter (1004-72)	$46.50
Ungrounded EGT Probes			
86307	10-86307	Screw-In (1/4 NPT)	$429.00
86341	10-04952	Red/Yellow, Screw-in (1/8 NPT)	$476.95
86308	10-86308	Screw-In (7/16-20)	$429.00
86309	10-86309	Screw-In (7/16-20), Extended Lead	$429.00
86310	10-86310	Clamp - 2.35" max	$399.50
86343	10-86339	Clamp (with Plug, Short) 3.25"max	$309.75
Accessories			
28113	10-01017	Weld Boss 7/16 UNF (for B Probe)	$23.25
28202	28202	CHT Adapter for Bayonet Probe (AN4076-1)	$24.50
28204	10-01018	Plug for 28113 Weld Boss.	$23.25
42523	10-01019	EGT Lead Stagger Adapter. Type K	$7.75
80825	80825	Universal Selector Switch - 2 section	$147.95
80827	80827	Universal Selector Switch - 4 section	$179.85
Vernier			
93882	10-01020	Vernier Control Assembly 112"	$128.95
Alcor, CHT Parts			
28202	28202	Bayonet Thermocouple Adapter (1004-4)	$24.50

IN

AIRCRAFT SPRUCE WEST
CORONA, CA • (877) 4-SPRUCE
AIRCRAFT SPRUCE EAST
PEACHTREE CITY, GA • (877) 477-7823

Prices Subject to Change Without Notice

WESTACH INSTRUMENTS

2-1/4" ENGINE INSTRUMENTS

Guaranteed accurate within 2% with a 1-yr. warranty. Weight - an unbelievable 4oz. These instruments are self powered by the thermocouple, except for the lighting.

CYLINDER HEAD TEMPERATURE

100-700°F ..... P/N 2A1 ..... **$68.75**
25°–375°C ..... P/N 2A1-2 ..... **$69.75**
SENDERS: CHT Senders have 4 ft. leads.
14mm gasket type (VW, Rotax)
P/N 712-4W **$28.50**
18mm gasket type (Cont,Lyc.)
P/N 712-5W **$28.75**
Bayonet type 3/8" x 24 thread
P/N 712-7D **$58.75**
Bayonet type 1/8" NPT thread ..... P/N 712-7DJ **$56.50**
(All Rotax) ..... P/N 712-912K **$58.75**

EXHAUST GAS TEMPERATURE

700-1700°F/350-950°C ..... P/N 2A2 ..... **$65.85**
100-1900°F/100-1000C ..... P/N 2A2-1 ..... **$64.75**
400-900°C ..... P/N 2A2-2 ..... **$66.50**
4000-1600°F/200-850°C ..... P/N 2A2-7 ..... **$66.50**
SENDERS - Clamp type senders with 3/16" diameter probe. EGT Senders have 4 ft leads.
1" long tip ..... P/N 712-2DWK ... **$42.75**
1/2" long tip ..... P/N 712-20DWK . **$42.75**
Long tip 1/4" threads ..... P/N 712-4D **$52.75**
3/8-24 for Lycomings ..... P/N 712-4D1 ..... **$52.75**
Long tip for VW (1/12" OD tailpipe) ..... P/N 712-24DWK . **$43.25**
(All Rotax) ..... P/N 712-32DWK . **$43.25**
Bayonet K type, EGT probe for Rotax ..... P/N 712-4D6K **$59.50**
Exposed Tip, model 712-20DWKE - Hose clamp style 1/2" probe.
P/N 10-01300 ..... **$52.50**

Note: Westberg 712 Series Thermocouples are for Non-TSO'd CHT & EGT Gauges only. They have two small pins which are the same size.

OIL TEMPERATURE

100° - 260°F ..... P/N 2A9-2* **$64.75**
Sending Unit ..... P/N 399S7 ..... **$29.85**
*Use Sender #399S9-7/8 for Cont & Lyc Engines. (5/8-18 Thread) ..... P/N 399S9 ..... **$45.75**

OIL PRESSURE

Guaranteed accurate within 2% with a 1-year warranty. Weight an unbelievable 4oz.
K2A8MM . 0-80 PSI (w/sender)
P/N 10-01292 ..... **$318.95**
Sending Unit (Available Separately)
P/N 387-12S **$29.85**

FUEL PRESSURE

This specially constructed instrument offers accuracy and durability in a lightweight (3.5oz) package. Perfect for home-built and custom applications.
K2A8-8MM. 0-15 PS w/Sender(SET)
P/N 10-01553 ..... **$295.75**

MANIFOLD PRESSURE GAUGE

2-1/4" Size 0-30 PSI & 0-50 PSI.
2A4-14 - 0-50 IN HG (square) not altitude compensated..... P/N 10-04178 ..... **$59.00**
2A6-6 - 0-30 IN HG ..... P/N 10-04797 ..... **$63.50**

WESTACH VOLTMETER

2" round.

Range	Pat No.	Price	Range	Pat No.	Price
18-28 VOLT	10-04184	**$68.50**	0-200 VDC	10-04193	**$49.25**
15-50 VDC	10-04185	**$49.75**	0-100 VDC	10-04194	**$54.50**
0-300 VDC	10-04186	**$49.25**	200-400 VDC	10-04195	**$49.75**
100-200 VDC	10-04187	**$49.75**	60-90 VDC	10-04196	**$53.75**
0-80 VDC	10-04188	**$54.95**	0-150 VOLT w/ threaded studs	10-04203	**$56.65**
0-150 VDC	10-04190	**$49.25**	0-300 VAC w/ threaded studs	10-04204	**$52.50**
180-280 VDC	10-04192	**$49.75**			

FUEL LEVEL GAUGES (SQUARE)

2-1/4 Non-TSO'd fuel quantity indicators available for single or dual tanks. Require 0-5Vcapacitance senders (not incl.)
Instrument (Single) ..... P/N 2A7V **$65.50**
Instrument (Dual) ..... P/N 2DA4V **$119.95**
2A7-2, 0-30 OHM ..... P/N 10-04125 ... **$61.50**
2A8-37, 10-180 OHM ..... P/N 10-04129 ... **$60.75**
2A7-4, 78-6 OHM ..... P/N 10-04127 ... **$61.50**
2A7, 240-30 OHM, Uses Float Sender ..... P/N 11-01210 ... **$59.85**
2A7-31, 0-90 OHM, Uses Float Sender ..... P/N 10-04128 ... **$61.50**
2A7-3 0-900 (Propane) Uses Float Sender ..... P/N 10-04126 ... **$61.50**
2AHT7V, Full Sweep Meter ..... P/N 10-04121 ... **$95.25**
Sender (6"-12"Depth) ..... P/N 10-00797 . **$129.50**
AP-24-D120-5V Sender (12"- 24" Depth)
P/N 10-03875 . **$126.95**
395-5-5 6" Capacitance, non-bend sender ..... P/N 10-04344 . **$129.95**
395-5SB-5 Sender (6"-12" Depth-Bend.) ..... P/N 10-00798 . **$131.95**
395-5S-1B-5 Sender (12"-24" Depth-Bend) ..... P/N 10-01262 . **$127.95**
AP24B5-D120-SV Sender (24", 5" bend. section) P/N 10-04412 . **$129.50**

FUEL LEVEL GAUGES (ROUND)

2C7V, 2" Round ..... P/N 10-04119 ... **$55.75**
2C7-4, 5-78 OHM, Uses Float Sender
P/N 10-04124 ... **$50.75**
2C7-2, 0-30 OHM, Uses Float Sender
P/N 10-04122 ... **$58.50**
2C7, 240-30 OHM, Uses Float Sender ..... P/N WS2C7 ..... **$59.50**
2C7-3, 0-10 OHM, Propane, Uses Float Sender .. P/N 10-04123 ... **$50.75**
2CHT7V-5, Fuel Sweep Meter ..... P/N 10-04120 ... **$69.95**

WESTACH 0-70 HZ FREQUENCY METER

Westach frequency meter 0-70 Hz, 2" round, 110 vac.
P/N 10-04205 ..... **$56.85**

WESTACH DUAL OIL PRESS / WATER TEMP GAUGE

Dual OP 80 psi / WT 100-260f, 2" round, 8 to 30 vdc, Use with 387-80V2-C, white dial
P/N 10-04219 ..... **$110.95**

OUTSIDE AIR TEMPERATURE

P/N 2A3-3 ..... **$64.50**
Sending Unit ..... P/N 399-OT **$43.65**

CARBURETOR AIR TEMP

Provides instant icing check of carburetor.
2A3-1 - 2-1/4" square, -50°C to 50°C
P/N10-01243 ..... **$68.75**
2C3-1 - 2" round, -50°C to 50°C
P/N 10-03949 ..... **$59.50**
Sending Unit - Fits 1/4-28 Thread
P/N 399W **$42.75**

COOLANT TEMPERATURE

100° to 260°F, for aircraft and helicopters using coolants other than oil. ... P/N 10-01301* ... **$63.75**
Sending Unit ..... P/N 10-01249 .... **$29.85**
Order one Type 381 Fuse Adapter for each tachometer installation as a safety measure against magneto failure.
P/N 10-17000 ..... **$9.95**

IN

**** These instruments may be powered by connection to 12V battery, magneto, distributor or alternator. If installation is to be made using other than 12V electric power, order one Magneto Adapter, P/N 103-18 ($6.30) and one Fuse Adapter, P/N 10-17000 ($6.30) for each instrument. For 24V operation, order one Adapter, P/N 329-24 ($2.30) for each instrument.***

WESTACH INSTRUMENTS

AMMETERS (SQUARE)

Westach Ammeter, amp -30-0-+30A adc, 2 1/4" square, 50 mv f/s. Model with or without shunt.
With Shunt P/N10-01267..... **$102.95**
Without Shunt P/N 10-04116..... **$65.50**
-60 to +60A, & #237-3A Shunt
P/N K2A6-15.....**Set $104.95**

WESTACH AMMETER 2A6-15 (SQUARE)

Westach Ammeter, amp -60-0-+60 adc, 2 1/4"square, 50 mv f/s.
With Shunt..... P/N 10-01277..... **$104.95**
Without Shunt.... P/N 10-04114..... **$61.25**

WESTACH AMMETER 2C6-22 (ROUND)

Westach Ammeter, amp -30-0-30 adc, 2" round, 50 mv f/s. Note: Gauge does not include shunt. Range: -60-0-30 adc. Size: 2" round. Shunt: Model 237-30
Ammeter 2C6-22 .....P/N 10-04108 ..... **$55.65**
Shunt #237-30.....P/N 10-01306 ..... **$42.50**

WESTACH AMMETER 2C6-15 (ROUND)

Westach Ammeter, amp -60-0-60 adc, 2"round, 50 mv f/s. Note: Gauge does not include shunt. Range: -60-0-60 adc. Size: 2" Round. Shunt (Not Included): Model 237-60
Ammeter 2C6-15 .....P/N 10-04104 ..... **$54.50**
Shunt #237-60.....P/N 10-01298 ..... **$41.50**

WESTACH AMMETER 2C6-11

Westach Ammeter, amp 0-60 adc, 2"round, 50 mv f/s. Note: Gauge does not include shunt. Range: 0-60 adc. Size: 2" Round. Shunt (Not Included): Model 237-60
Ammeter 2C6-11 .....P/N 10-04102 ..... **$54.75**
Shunt #237-60.....P/N 10-01298 ..... **$41.50**

HOURMETER

Power Range, 5V-40V, Record running time of engine.
P/N 2A10-2 ..... **$109.95**
No sender required.

VOLTMETERS

Check generator & alternator charging
6-16 VDC..... P/N 2A5..... **$65.75**
0-35 VDC..... P/N 2A5-2 ..... **$63.85**
No sender required.

WESTACH 2C4-7 GAUGE

Boost 0-30 psi, 2-Inch round, with 220-9, 203-17, 203-21
P/N 10-04155 ..... **$48.25**

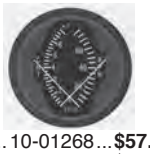
SELECTOR SWITCHES

These switches are used with the Westach CHT, EGT, or CHT/EGT gauges to allow multiple cylinder engine analyzing. Switches included with Engine Analyzer kits & Add-On kits on following pages, or can order separately below. Non-TSO'd. These switches have two small connectors of same size.
2-Position .....P/N 254-2F..... **$33.25**
4-Position .....P/N 254-4F..... **$39.85**
4-Position (Dual) .....P/N 254-4DF*..... **$64.75**
6-Position .....P/N 254-6F..... **$46.25**
6-Position (Dual) .....P/N 254-6DF*..... **$71.75**
****To convert dual EGT/CHT to Engine Analyzer.***

FAA APPROVED SWITCHES
4-Position .....P/N 254-20EP **$46.50**
6-Position .....P/N 254-21EP **$55.60**
6-Position (Dual) .....P/N 254-21EDPP **$86.00**

These switches are furnished with 96" leads.

WESTACH INSTRUMENTS FOR ULTRALIGHTS



Single CHT ... 10-00419 ....**$61.75** Single EGT..... 10-01268 ... **$57.50**
Thermocouple for CHT (14MM) .....P/N 10-01227 ..... **$28.50**
Probe for EGT .....P/N 10-01225 ..... **$42.75**
SINGLE TACH *(Tachometer requires no sender.)*..... **$105.95**

P/N	RPM	Powered By	P/N	RPM	Powered By
2CT5-2	0-5000	Mag	2CT5A-2/6	0-5000	CDI
2CT8-2	0-8000	Mag	2CT8A-2/6	0-8000	CDI

DUAL TACH/CHT (All CHT's are 0-600° F) **$137.95**

P/N	RPM	Powered By	P/N	RPM	Powered By
2DC9-5-2	0-5000	Mag	2DC9-5A-2/6	0-5000	CDI
2DC9-8-2	0-8000	Mag	2DC9-8A-2/6	0-8000	CDI

WESTACH 2DC8 DUAL CHT

Cylinder Head Temp. Range: 100-700°F. Use 48" Type J thermocouples. Input: 9.81 mv @ 400F, Weight: 2.7 oz.
P/N 10-01791 ..... **$109.95**

BULLET SHELL MOUNTING CASE

FOR 2" ROUND WESTACH GAUGES

Molded plastic housing clamps to ultralite tubing or motorcycle handle bar.Swivels 360° at any angle. Furnished with chrome plated installation hardware. P/N 10-01290..... **$16.75**

WESTACH TACHOMETERS

FOR DUAL IGNITION

2" Round.....P/N 10-01302 ..... **$105.95**
3" Round.....P/N 3CT8A-2/6..... **$119.95**
2" Square.....P/N 2AT8A-2/6 ..... **$113.95**
3" Square.....P/N 3AT8A-2/6 ..... **$123.95**

WESTACH ROTOR TACH

For the rotorcraft pilot, the rotor tachometer is a valuable aid to safe flight. Utilize a stateof- the-art Hall-effect sensor to accurately gauge rotor RPM based on the rotational positions of a series of magnets which are easily mounted on the rotor shaft or hub. Sensor and magnets are supplied with the gauge along with complete assembly instructions. 12 volt DC power required. Square style, 2 1/4 inch.
0-500 Tooth ...10-03808 .. **$266.95** 0-500 Mag. Pulse.... 10-03809 ... **$258.95**
0-800 Tooth ...10-03810 .. **$168.95** 0-800 Mag. Pulse.... 10-03811 ... **$235.95**

WESTACH LOW POWER ADAPTER

For those instruments requiring 12V DC, this low output regulator/rectifier provides sufficient power to operate up to 2 WESTACH instruments. Converts lighting coil AC to 12V DC. Includes instructions, wiring harness. P/N 329-LPA **$31.50**

WESTACH SENDER 720-14RB

Proximity sensor, Hall effect sender for Bendix mag. 9/16 - 24 thd. 5-12 VDC. Weight: 7 ounces
P/N 10-00863 ..... **$59.95**

WESTACH EXTENSION LEADS

Complete extension leads, with connector terminals, for extending CHT or EGT leads up to Complete extension leads, with connector terminals, for extending CHT or EGT leads up to 10 ft. without affecting accuracy. Longer lengths give low reading, requiring recalibration of instrument.
18" Lead ..P/N 10-17900 .. **$10.50** 4 Ft. Lead .... P/N 10-18000 . **$11.85**
6ft Lead ...P/N 10-18100 .. **$13.25** 8 Ft. Lead .... P/N 10-18200 . **$14.45**
10ft Lead .P/N 10-18300 .. **$15.50** 12 Ft. Lead .. P/N 10-18350 . **$16.50**

WESTACH TSO'D EXTENSION LEADS

TSO'D 2-Conductor EGT/CHT Extension Leads with sockets and sleeves at both ends.
Westach TSO'D EGT/CHT 6ft Extension..... P/N 10-02161 . **$11.75**
Westach TSO'D EGT/CHT 8ft Extension..... P/N 10-02162 . **$12.85**

WESTACH INSTRUMENT LIGHTING

An internal lighting fixture may be added to all 2-1/4" & 3-1/8" instruments. Comes with clear bulb and red & green boots.
P/N 186..... **$5.75ea**

TSO CABLE 2-CONDUCTOR WITH SOCKET

TSO Cable 2-Conductor 3' W /Socket ..... P/N 10-02096..... **$9.95**
TSO Cable 2-Conductor 15' W/ Socket ..... P/N 10-02095..... **$13.50**
TSO Cable 2-Conductor 10' W/ Socket ..... P/N 10-02094..... **$12.50**

WESTACH BULLET CONNECTORS

Bullets are used to connect sockets and sleeves together on the back of Westach instruments. P/N 10-02795..... **$0.29**

IN

WESTACH INSTRUMENTS

2-1/4-INCH DUAL INSTRUMENTS SAVE PANEL SPACE (SUPREME SPACE SAVERS)

TWO INSTRUMENTS IN ***ONE*** 2-1/4" SIZE CASE - PERFECT FOR THE HOME BUILDER

All pressure instruments come complete w/pressure senders only (matched to instrument). On all other instruments, order senders at bottom of page.

DUAL EGT-CHT
700-1700°F EGT
100-700°F CHT
P/N 2DA1 **$117.95**

DUAL EGT 700-1700°F
P/N 2DA2 **$119.95**

DUAL OIL PRESSURE OIL TEMPERATURE
0-80 PSI/100-260°F
P/N2DA3MM **$379.95**
Complete w/ oil pressure sender.

DUAL TACHOMETER VOLTMETER
0-5000 RPM/6-16V
P/N 2DA6 **$169.50**

DUAL TACHOMETER 0-5000 RPM
P/N 2DA5-2 **$189.95**

DUAL FUEL LEVEL
Uses capacitance type senders. 5V output.
P/N 2DA4V **$119.95**

DUAL CHT
100-700°F
P/N 2DA8 **$118.95**
Celsius version
P/N 2DA8-2 **$118.95**

DUAL
TACHOMETER CHT
0-5000 rpm/100-700°F
P/N 2DA9-5-2 **$149.95**

DUAL VOLT-AMMETER
6-16V/0-30 A
P/N K2DA10-21 **$153.95**
6-16KV/0-60 amp
P/N K2DA10-18 **$159.95**
Complete with Shunt

DUAL CARB TEMP-OUTSIDE AIR TEMP
-50° to +50° C.
P/N 2DA3-8 **$118.50**
Order 399W & 399-0T
Senders Separately

3-1/8" WESTACH GAUGES

TWIN CHT
3-1/8" Size; Wt. 10 Oz., 100-800°F
P/N 3DA8...**$124.95**
Order 2 thermocouples

TWIN EGT
3-1/8" Size, Wt. 10 Oz. 700-1700°F
P/N 3DA2...**$117.95**

COMBINATION EGT & CHT
3-1/8" size, Wt.10oz., 700-1700°F/ 100-800°F.
P/N 3DA1..**$136.95**
Order 1 EGT probe & 1 thermocuople.

RECORDING TACHOMETER
3-1/8" size Runs directly off magneto. 12V power required to run Hour Meter
0-3500 RPM ... P/N Y3AT32....**$216.95**
0-5000 RPM ... P/N Y3AT5-2...**$239.95**

EGT – CHT GAUGES
3-1/8" Square EGT P/N 3A2-1..**$83.75**
3-1/8" Round EGT. P/N 3C2-1..**$69.75**
Square CHT ..... P/N 3A1 .....**$68.95**
3-1/8" Round CHT. P/N 3C1 .....**$69.85**

All Pressure Instruments come complete with Pressure Senders only (matched to Instrument). On all other instruments order senders at bottom of page.

IN

SPACE SAVING GAUGES - THE WESTACH QUADS

Four electric instruments in one standard size 3-1/8" aircraft case. Weight - only 6 oz. Guaranteed for accuracy within 2%. 1 year warranty. Get four "like" readings or four different ones. Order Senders below except for pressure instruments.

QUAD CHT
P/N 3AQ1..**$308.95**

QUAD EGT.
P/N 3AQ2..**$267.95**

QUAD COMBO TACH/ EGT VOLTS/CHT
P/N 3AQ7-3..**$429.95**

QUAD COMBO VOLTS/CHT OIL PRESS/OIL TEMP & OIL
Press. Sender Only
P/N 3AQ5MM.....**$598.00**

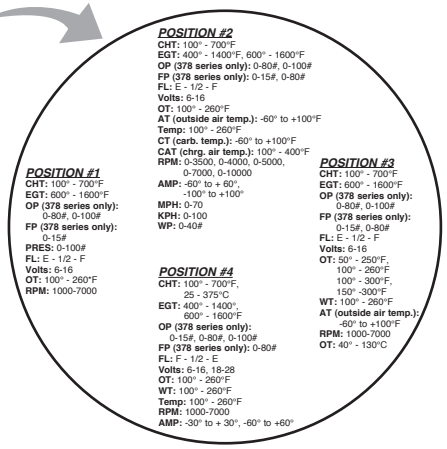
QUAD COMBO CHT/EGT OIL PRESS/OIL TEMP
P/N 3AQ4MM..**$648.00**

OTHER QUAD COMBOS AVAILABLE:

3AQ1-14 .....CHT/Volts/EGT/Amps..... **$323.95**
3AQ4-8MM .....OP/Amps/OT/Volts **$494.95**
Quad Fuel Gauge..... WS3AQ9 ..... **$195.00**

Over 75 Quad Combos available.
Request availability of unlisted models.
****With Senders***

For custom quad gauges, request quotation & exact location of each function as shown in the diagram.



WESTACH SENDERS

EGT
712-2DWK (Long Life) 1" Tip.....**$42.75**
712-20DWK 1/2" Tip.....**$42.75**
712-4D (1/4" Plpe Bayonet) **$52.75**
712-4D1 (3/8"-24 for Lycomings).....**$52.75**
712-4D6K (.8-1MM Bayonet for Rotax).....**$59.50**
712-4D2 (1/8" NPT).....**$51.75**

CHT
712-5W (18 MM Thermocouple) **$28.75**
712-4W (14 MM Thermocouple) **$28.50**
712-7D (3/8-24 Bayonet).....**$58.75**
712-9W (10MM Thermocouple) **$28.85**

Oil Pressure-387-12S (for old style gauge).....**$29.85**
Oil Temp-399S7 1/8" NPT..... P/N 10-01249.....**$29.85**
Oil Temp-399S9 (cont., lyc.) ..... P/N 10-01236.....**$45.75**
Fuel Level- 6"-12" Depth ..... P/N 10-00797....**$129.50**
Fuel Level- 6"-12" Depth-Bendable P/N 10-00798....**$131.95**
Fuel Level- 12"-" Depth-Bendable P/N 10-01262....**$127.95**
Temp Send- 10X1.5mm thread, 1" tip, 4' lead, with crush washer 1,750 ohms @ 100F..... P/N 10-02641.....**$43.75**
Temp Send 10X1.5mm thread, 5/8" tip, 4' lead, with crush washer 1,750 ohms @ 100F..... P/N 10-02642.....**$45.85**
Westberg SS Trans-0-100 psi, 1/8" npt P/N 10-02640....**$223.95**

WESTACH INSTRUMENTS

FAA-APPROVED WESTACH INSTRUMENTS FOR CERTIFICATED AIRCRAFT

K33X

K29PCX

K30X

K31X

Westach Instruments now has FAA approval on all the instruments listed below. These gauges are fully approved for installation in factory aircraft, so the weight and cost savings of Westach gauges can now be enjoyed by owners of production aircraft as well as home builders. All systems are complete with instrument (internally lighted), senders and leads. The multi-position CHT and EGT systems also include sender selector switch with wiring. The EGT and CHT systems are furnished with #713-2DWK and #713-5W senders. If threaded senders are preferred, #7l3-4D and #713-7D senders can be furnished for an additional $35.00 each. The EGT gauges have an adjustable pointer. All of these gauges fit 2-1/4" panel hole.

Description	Model	Part No.	Price
EGT Gauge 700-1700°F (1 Position)	K28PX	10-01237	**$139.50**
EGT Gauge 700-1700°F (4 Positions)	K28PCX	10-01362	**$296.95**
Air Temperature Gauge	K34X	10-01363	**$149.95**
EGT Gauge 700-1700°F (6 Positions)	K28PDX	10-01291	**$358.95**
CHT Gauge 100-700°F (1 Position)	K29PX	10-01250	**$119.95**
CHT Gauge (K29PX) w/713-7D sender	K29PX	10-00187	**$157.95**
CHT Gauge 100-700°F (4 Positions)	K29PCX	10-01269	**$216.95**
CHT Gauge (K29PCX) w/713-7D sender	K29PCX	10-02793	**$399.95**
CHT Gauge 100-700°F (6 Positions)	K29PDX	10-01283	**$271.95**
CHT Gauge (K29PDX) w/713-7D sender	K29PDX	10-00375	**$494.00**
Carb Temp Gauge -50 to +50°C	K30X	10-01248	**$154.95**
EGT/CHT Gauge 700-1700°F/100-700°F	K31X	10-01232	**$209.00**
EGT/CHT Gauge (K31X) w/713-7D Probe	K31X	10-00161	**$243.95**
K31X Kit w/713-4D/713-7D Probes	K31X	10-00180	**$258.95**
Dual EGT Gauge 700-1700°F	K32X	10-01272	**$227.95**
Dual CHT Gauge 100-700°F	K33X	10-01297	**$187.95**
Oil Temp Gauge 100-260°F	K35X	10-01265	**$151.95**
Water Temp Gauge 100-260°F	K36X	10-01388	**$137.95**
Fuel Pressure Gauge 0-16 PSI	K37K	10-01663	**$438.95**
Oil Pressure Gauge 0-100 PSI	K38X	10-01299	**$474.95**
Pressure Gauge 0-80PSI	K39X	10-01664	**$475.95**
Spare CHT Senders (18mm)	713-5W	10-01231	**$25.85**
Spare CHT Senders (14mm)	713-4W	10-01271	**$26.50**
Spare EGT Senders	713-2DWK	10-01228	**$47.75**
CHT Senders (3/8-24 Bayonet)	713-7D	10-01238	**$64.85**
EGT Senders (1/4" pipe bayonet)	713-4D	713-4D	**$58.85**
399OT-TDO Air Temp. Sender	399OT-TSO	10-04532	**$105.95**
399W-TSO Carb. Temp. Sender	399W-TSO	10-04541	**$47.50**
399S9-TSO Oil Temp. Sender	399S9-TSO	10-04540	**$49.85**
TSO'D 2-Conductor EGT/CHT Extension Leads with sockets and sleeves at both ends.			
Westach TSO'D EGT/CHT 6ft Extension	--	10-02161	**$11.75**
Westach TSO'D EGT/CHT 8ft Extension	--	10-02162	**$12.85**

Note: Westberg 713 Series Thermocouples are for TSO'd CHT & EGT Gauges only. They have one small pin and one large gold color pin.

WESTACH EGT/CHT COMBINATION KITS

HOMEBUILDERS ENGINE ANALYZER KITS

Complete kits include CHT or EGT gauge, selector switch and probes for each cylinder of 4 or 6 cylinder engine. EGT kits furnished with long-life #712-2DWK probes.

Kit	4 Cyl.		6Cyl.	
	Part No.	Price	Part No.	Price
14MM CHT Kit	10-17114	**$221.95**	10-17214	**$285.95**
18MM CHT Kit	10-17118	**$222.95**	10-17218	**$286.95**
EGT Kit	10-17300	**$289.00**	10-17400	**$389.00**

HOMEBUILDERS ADD-ON KITS

Add-on kits for single-position system already installed. Consists of selector switch & 3 or 5 probes for CHT or EGT to provide analyzer for 4 or 6 cylinder engines. EGT kits furnished with long-life #712-2DWK probes.

Kit	4-Cyl.		6-Cyl.		Type "k" probe	
	Part No.	Price	Part No.	Price	Part No.	Price
CHT Kit	10-01064	**$119.00**	10-01066	**$179.00**	10-03892	**$33.50**
EGT Kit	10-01065	**$157.95**	10-01067	**$250.95**		

FAA APPROVED CHT/EGT ADD-ON KITS

These kits include FAA approved Westberg selector switches and probes which can be used to convert the FAA approved kits on this page to engine analyzers.

Kit	4 Cyl.		6Cyl.	
	Part No.	Price	Part No.	Price
14MM CHT Kit	10-01068	**$116.95**	10-01073	**$176.95**
18MM CHT Kit	10-01069	**$116.95**	10-01072	**$175.95**
EGT Kit	10-01070	**$179.95**	10-01074	**$279.95**

TSO'D WESTACH GAUGES

CHT-

Model: 2A1P-TSO
TSO C43A CHT 100-700f gauge, 2-1/4" square, w/ adjustable red pointer, Gauge only no senders, Use with 713 series type J thermocouple.
P/N 10-04531 ..... **$105.95**

EGT-

Model: 2A2P-TSO
TSO C43A EGT 700-1700f gauge, 2-1/4" square, w/ adjustable red pointer, Gauge only no senders, Use with 713 series type K thermocouple.
P/N 10-04532 ..... **$105.95**

CHT/EGT-

Model: 2DA1-TSO
TSO C43A Dual EGT/CHT 2-1/4" square, EGT: 700-1700 f / CHT: 100-700f, Gauge only no senders, Use with 713 series type J&K thermocouples.
P/N 10-04535 ..... **$158.50**

EGT/EGT-

Model: 2DA2-TSO
TSO C43A Dual EGT 2-1/4" square, EGT: 700-1700 f, Gauge only no senders, Use with 713 series type K thermocouples.
P/N 10-04536 ..... **$162.95**

OIL TEMPERATURE-

Model: 2A9-2-TSO
TSO C43A Oil temp 100-260F, 2 1/4" square, 12/24 vdc.
2A9-2 Gauge ..... P/N 10-04534..... **$124.75**
399S9 TSO'd Sender .... P/N 10-04540..... **$49.85**

CARB TEMPERATURE-

Model: 2A3-1-TSO
TSO C43A Carb temp gauge, 2-1/4" square, 12/24 vdc, 90 degree meter, -50 to+ 50, color range markings: yellow arc -10c to 10c, with 18" cable.
2A3-1 Gauge ..... P/N 10-04533..... **$106.95**
399W-TSO Sender ..... P/N 10-04541..... **$47.50**

IN

ISS 2-1/4” ENGINE GAUGES

This quality line of engine gauges will provide an affordable engine monitoring package for experimental aircraft. Hundreds of these gauges are flying today in various homebuilts worldwide. Used extensively in Vans RV line of aircraft. NOTE: Our gauges do not include our company name or logo on the face.

FEATURES

- 270° Sweep Electric Gauges.
- High Quality Movements in Injection Molded Cases.
- Standard Aircraft 2-1/4” hole & mounting pattern.
- Internally Lit (12V only)
- Clear & sharp lettering with appropriate operating arcs & redlines screened directly on the face.
- Electric design uses tranducers & senders. No pressurized fuel & oil in the cabin
- Wires attach with nuts (Included) to 6-32 studs on instrument. No spade fittings.
- Cases have Brass Inserts for the #6 Mounting Screws. No Need for Instrument “Grasshopper” nuts.
- Works with Standard Stewart Warner match transducers.

CHT (0-600°F)

Gauge P/N 10-01093 ..... **$49.85**
Screw-in Sender 10-00808 .... **$89.95**
Gasket Sender ... 10-01368 .. **$86.75**
Probe P100 ..... 10-00808 .. **$89.95**
Wire Ext.(XS-6) ... 10-01688 .. **$36.50**

EGT (0-1600°F)

Gauge ..... P/N 10-01094 .. **$49.85**
Sender ..... P/N 10-01591 .. **$87.75**
Probe P110 . P/N 10-00376 .. **$95.50**
Wire Ext.(XS-6 P/N 10-01688 .. **$36.50**

OIL PRESSURE 0-100 PSI GAUGE

P/N 10-01088 ..... **$36.85**
Sender P/N 10-01089 ..... **$42.25**
0-60 PSI Gauge P/N 10-02478 ..... **$38.75**
Sender P/N 10-01085 ..... **$49.75**

OIL TEMPERATURE (0-240°F)

Gauge P/N 10-01090 ..... **$36.85**
Sender P/N 10-01091 ..... **$9.50**

AMMETER (40-0-40)

Gauge ..... P/N 10-01080 ..... **$36.85**
Shunt ..... P/N 10-01081 ..... **$14.95**

MANIFOLD PRESSURE (10”-35”)

Gauge ..... P/N 10-01086 ..... **$36.75**
Sender ..... P/N 10-01087 ..... **$53.85**

FUEL PRESSURE CARB (0-16 ACI)

Gauge ..... P/N 10-01082 ..... **$38.75**
Sender ..... P/N 10-01083 ..... **$38.75**

FUEL PRESSURE INJECT (0-50 PSI)

Gauge ..... P/N 10-01084 ..... **$36.75**
Shunt ..... P/N 10-01085 ..... **$49.75**

TACHOMETER (0-3500 RPM)

Tach. ..... P/N 10-01076 ..... **$45.75**
Tach/Gen. Sender P/N 10-01077 ..... **$74.75**
Tach./Sender Tang. P/N 10-03148 ..... **$12.75**

VOLTMETER (8-16V)

Gauge ..... P/N 10-01092 ..... **$36.75**

FUEL LEVEL

Gauge ..... P/N 10-01108 ..... **$36.85**

270° Sweep Electrical Gauges

FUEL LEVEL SENDERS

ISS Fuel Sender LH 6-12 Tank ..... P/N 10-01099 ..... **$30.50**
ISS Fuel Sender RH 6-12 Tank ..... P/N 10-01101 ..... **$36.75**
ISS Fuel Sender LH 10-15 Tank ..... P/N 10-01102 ..... **$38.85**
ISS Fuel Sender RH 10-15 Tank ..... P/N 10-01103 ..... **$39.75**
ISS Fuel Sender RH 10-15 Tank ..... P/N 10-01103 ..... **$39.75**
ISS Fuel Sender LH 15-.5-24 ..... P/N 10-01104 ..... **$39.90**
ISS Fuel Sender RH 15-.5-24 ..... P/N 10-01104 ..... **$39.90**
ISS Fuel Sender RH 27-36” Tank ..... P/N 10-01107 ..... **$57.25**
ISS Fuel Sender Gasket ..... P/N 10-01097 ..... **$1.65**
SS Wire Float Arm ..... P/N 10-01098 ..... **$5.75**

REPLACEMENT LAMPS

Replacement 12V Lamp for Gauges
P/N 10-01095 ..... **$1.65**

MITCHELL INSTRUMENTS

MITCHELL AIRCRAFT INSTRUMENTS

2-1/4" ELECTRIC GAUGES

Mitchell Aircraft Instruments is a high quality, economical line of gauges which is ideal for the homebuilt aircraft market. These electric instruments are lighted, allow easy installation, and feature a 2 year factory warranty. Order gauges and senders separately as shown. 12V operation unless other wise noted. Gauges fit 2-1/4 panel hole. For 24 volt operation, order P/N PE-111-4074 Resistors ($3.50 each) for each instrument.

OIL TEMPERATURE

100-250° F Gauge..... P/N 10-25000 ..**$53.50**
100-250° F Sender (Rotax).. P/N 10-25005 ..**$19.95**
100-250° F Sender (LYC) .... P/N 10-25175 ..**$33.50**
120-300° F Gauge..... P/N 10-25010 ..**$53.50**
120-300° F Sender (Rotax).. P/N 10-25015 ..**$19.95**
120-300° F Sender (LYC) .... P/N 10-25180 ..**$39.95**

Rotax Senders are 1/8-18 NPT, Lycoming Senders are 5/8-18 VNF.

OIL PRESSURE

0-80 PSI Gauge.....P/N 10-25030 ...**$49.50**
0-80 PSI Sender.....P/N 10-25035 ...**$37.50**
0-100 PSI Gauge.....P/N 10-25040 ...**$49.50**
0-100 PSI Sender.....P/N 10-25045 ...**$37.50**
0-145 PSI Gauge use with Rotax sender.
P/N 10-03928 ...**$76.50**
0-150 PSI Gauge.....P/N 10-25050 ...**$49.50**
0-150 PSI Sender.....P/N 10-25055 .. **$37.50**

FUEL PRESSURE

0-30 PSI Gauge .....P/N 10-25060 ...**$59.95**
0-30 PSI Sender.....P/N 10-25065 ...**$37.50**
0-15 PSI Gauge.....P/N 10-25058 ...**$59.95**
0-15 PSI Sender.....P/N 10-25065 ...**$37.50**

EXHAUST GAS TEMPERATURE

0-1600°F EGT Gauge ..... P/N 10-02746 ....**$106.95**
EGT Clamp probe for above EGT Gauge only.
P/N 10-02177 .....**$39.95**
KIT - Includes Sender, Weld-on adapter and 6 Ft. Lead with/ connector. 0-1600 EGT kit
P/N 10-25090 ....**$146.75**

CYLINDER HEAD TEMPERATURE

100-600° F Gauge .....P/N 10-25070 ...**$66.75**
120-300F Gauge.....P/N 10-02717 ...**$59.75**
18MM Sender (Cont, Lyc)...P/N 10-25075 ...**$25.50**
14MM Sender (VW, Rotax).P/N 10-25080 ...**$13.95**
10 Ft. CHT Lead w/connector
P/N 10-25185 .....**$9.50**

MITCHELL 2-1/4" MECHANICAL GAUGES

OIL TEMPERATURE

110 - 270 F. 6 foot capillary supplied
P/N 10-02714 .....**$53.50**

OIL PRESSURE

0-100 PSI .....P/N 10-02706 ..... **$53.50**
0-150 PSI .....P/N 10-02712 ..... **$53.50**

FUEL PRESSURE

0-15 PSI.....P/N 10-02702 .....**$53.50**

AMMETER

60-0-60 Ammeter
P/N 10-25115 ..... **$47.95**
P/N 10-01212 (30-0-30)**$47.95**

FUEL LEVEL

P/N 10-25130(10-180 OHM) .**$53.50**
P/N 10-02719(0-90 OHM) **$53.50**
P/N 10-02721(0-30 OHM) **$73.50**
P/N 10-02722(240-33 OHM) .**$53.50**
Sender .....P/N 10-25135 .....**$53.50**

VOLTMETER

P/N 10-25105 (8-16V) **$46.75**
P/N 10-02747 (12-31V) **$53.50**
No Sender required.

TURBO

Mechanical Turbocharger Gauge. Gauge is mechanical. No sender required. P/N 10-25140 .... **$53.50**

OUTSIDE AIR TEMPERATURE

2-1/4" -10°F to +120°F
P/N 10-02715 ..... **$122.95**

CYLINDER HEAD TEMP GAUGE

For Rotax 120-300°
P/N 10-02717 ..... **$59.75**
Sender: Probe Supplied w/ Rotax Engine.

OUTSIDE AIR TEMPERATURE

2-1/4" Electric -10°F to +120°F
P/N 10-03137 ..... **$122.95**
Sender ..... P/N 10-02170 . **$18.75**

LIGHTED QUARTZ ELECTRIC CLOCK

Features black dial with matte white numbers and hands. Length: Mounts in standard 2-1/4" instrument hole. Power: 12v Note: Requires adapter #PE-211-2000 to function in 24 volts. FAA approved.
P/N 10-01214 ..... **$89.95**
28V Adapter Kit
P/N 10-02827 ..... **$12.75**

WIRING KIT GAUGE CONNECTOR

Fits all 2-1/4" Mitchell Gauges

P/N 10-02724 **$6.00**

IN

MITCHELL MODULAR INSTRUMENTS

MITCHELL MINIATURE MODULAR GAUGES

This line of miniature engine gauges from Mitchell is ideal for a wide variety of general aviation applications. They measure nearly 1.5" square and are stackable. The modular design allows them to be plugged from the front of the panel. The units are internally lighted. Complete standard panels are also available as shown in the steps below.

Step 1 - Select your gauge(s) from the list below

Choose 14 volt or 24 volt

Note range marking for gauge(s) (free if information given at time of instrument cluster order)

Step 2 - Select your sendor(s) for gauge(s) from the list below

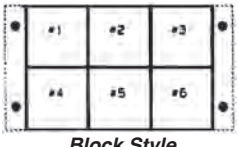
Any sendor with a * can also use a Rotax Engine Sender

Gauge Part Number		Gauge Description	Price	Sender Part Number		Sender Description	Price
Spruce #	Mitchell #			Spruce #	Mitchell #		
Pressure Gauges				**Pressure Senders**			
10-03621	D1-211-6060	Fuel Pressure 80 PSI	**$99.50**	10-25035	PS-211-9002	Pressure Sender 80 PSI	
10-10150	D1-211-6061	Fuel Pressure 15 PSI (FAA/PMA)	**$98.95**	10-25065	PS-211-9000	Pressure Sender 15/30 PSI (FAA/PMA)	**$37.50**
10-10152	D1-211-6064	Fuel Pressure 30 PSI	**$100.00**	10-25065	PS-211-9000	Pressure Sender 15/30 PSI	**$37.50**
10-04094	D1-211-6065	0 – 2 bar Fuel	**$125.95**	10-25065	PS-211-9000	Pressure Sender 15/30 PSI	**$37.50**
10-04139	D1-211-6097	Oil Pressure 150 PSI 10Bar	**$105.95**	**Rotax engine Sender**			
10-02725	D1-211-6092	Oil Pressure 150 PSI (FAA/PMA)	**$100.00**	10-25055	PS-211-9040	Pressure Sender 150 PSI (FAA/PMA)	**$37.50**
10-10166	D1-211-6090	Oil Pressure 100 PSI (FAA/PMA)	**$99.85**	10-25045	PS-211-9039	Pressure Sender 100 PSI (FAA/PMA)	**$37.50**
10-02726	D1-211-6093	Oil Pressure 80 PSI	**$100.00**	10-25035	PS-211-9002	Pressure Sender 80 PSI	**$37.50**
10-10168	D1-211-60...91	0 – 9 bar Oil	**$100.00**	10-25055	PS-211-9040	Pressure Sender 150 PSI	**$37.50**
10-04095	D1-211-6094	0 – 7 bar Oil	**$125.95**	10-25045	PS-211-9039	Pressure Sender 100 PSI	**$37.50**
10-04096	D1-211-6095	0 – 5 bar Oil	**$125.95**	10-25035	PS-211-9002	Pressure Sender 80 PSI	**$37.50**
10-02723	D1-211-6089	Liquid Pressure 80 PSI	**$98.75**	10-25035	PS-211-9002	Pressure Sender 80 PSI	**$37.50**
Temperature Gauges				**Temperature Sendors**			
10-02279	D1-211-6068	Oil Temp 100F-250F (FAA/PMA)	**$93.50**	10-25005	PS-211-8044	Temp Sender 1/8 250F (FAA/PMA)	**$19.95**
				10-25175	PS-211-8045	Temp Sender 5/8 250F (FAA/PMA)	**$33.50**
10-10154	D1-211-6066	Oil Temp 120F-300F (FAA/PMA)	**$93.50**	10-25015*	PS-211-8090	Temp Sender 1/8 300F (FAA/PMA)*	**$19.95**
				10-25180*	PS-211-8112	Temp Sender 5/8 300F (FAA/PMA)*	**$39.95**
10-10155	D1-211-6067	Oil Temp 40C-120C	**$93.50**	10-25005	PS-211-8044	Temp Sender 1/8 250F	**$19.95**
				10-25175	PS-211-8045	Temp Sender 5/8 250F	**$33.50**
10-02728	D1-211-6069	Oil Temp 50C-150C	**$93.50**	10-25015*	PS-211-8090	Temp Sender 1/8 300F*	**$19.95**
				10-25180*	PS-211-8112	Temp Sender 5/8 300F*	**$39.95**
10-10156	D1-211-6088	Liquid Temp 100F-250F	**$93.50**	10-25005	PS-211-8044	Temp Sender 1/8 250F	**$19.95**
				10-25175	PS-211-8045	Temp Sender 5/8 250F	**$33.50**
10-02746	D1-211-6101	EGT 0F-1600F	**$106.95**	10-02177	PS-211-8163	EGT Sender clamp - type K	**$39.95**
				10-04140	PS-211-8165	EGT Sender Probe - type K	**$46.95**
10-10170	D1-211-6102	CHT 100F-600F	**$106.95**	10-25080	PS-211-8152	CHT Sender 14mm - type J	**$13.95**
				10-02171	PS-211-8154	CHT Sender 12mm - type J	**$14.00**
				10-25075	PS-211-8168	CHT Sender 18mm - type J	**$25.50**
				10-25076	PS-211-8156	CHT Sender probe	**$69.50**
				10-25080	PS-211-8152	CHT Sender 14mm - type J	**$13.95**
				10-02171	PS-211-8154	CHT Sender 12mm - type J	**$14.00**
				10-25075	PS-211-8168	CHT Sender 18mm - type J	**$25.50**
				10-25076	PS-211-8156	CHT Sender probe	**$69.50**
10-02745	D1-211-6109	CHT Rotax 120F-300F	**$86.75**	Rotax engine Sender			
Voltmeter Gauges							
10-10164	D1-211-6086	Voltmeter 8-16 volts (FAA/PMA	**$86.75**				
10-10165	D1-211-6087	Voltmeter 12-31 volts	**$86.75**				
Ammeters Gauges				**External Shunts**			
10-10174	D1-211-6104	ammeter 45-0-45 amp	**$106.95**	10-10184	PS-211-9100	45 amp shunt	**$42.75**
10-10176	D1-211-6106	ammeter 75-0-75 amp (FAA/PMA)	**$106.95**	10-10185	PS-211-9101	75 amp shunt (FAA/PMA)	**$42.75**
Fuel Quantity Gauges				**Sender Resistance (E- F)**			
10-02730	D1-211-6071	right Fuel 240-30 omh	**$86.75**	240 - 33 Ohms			
10-03610	D1-211-6072	left Fuel 240-33 ohm	**$86.75**	240 - 33 Ohms			
10-03613	D1-211-6073	Fuel gauge 240-33 ohm	**$86.75**	240 - 33 Ohms			
10-10158	D1-211-6074	right Fuel 10-180 omh (FAA/PMA)	**$86.75**	10-25135	PS-211-8038	Fuel Sender 10-180 ohm (FAA/PMA)	**$53.50**
10-10160	D1-211-6075	left Fuel 10-180 ohm (FAA/PMA)	**$86.75**	10-25135	PS-211-8038	Fuel Sender 10-180 ohm (FAA/PMA)	**$53.50**
10-10162	D1-211-6076	Fuel gauge 10-180 ohm (FAA/PMA)	**$86.75**	10-25135	PS-211-8038	Fuel Sender 10-180 ohm (FAA/PMA)	**$53.50**
10-03614	D1-211-6077	right Fuel 0-30 ohm	**$106.95**	0 - 30 Ohms			
10-03615	D1-211-6078	left Fuel 0-30 ohm	**$106.95**	0 - 30 Ohms			
10-03616	D1-211-6079	Fuel gauge 0-30 ohm	**$106.95**	0 - 30 Ohms			
10-03617	D1-211-6080	right Fuel 0-92 ohm	**$86.75**	0 - 92 Ohms			
10-03618	D1-211-6081	left Fuel 0-92 ohm	**$86.75**	0 - 92 Ohms			
10-03620	D1-211-6082	Fuel gauge 0-92 ohm	**$86.75**	0 - 92 Ohms			
Blank							
10-02740	D1-211-6010	blank face gauge (FAA/PMA)	**$46.75**				

Step 3 - Select your frame for your gauge(s) from the list below

Select what postion your gauge(s) will go into. Postions are counted left to right (block style), top to bottom (vertical) starting at #1

Horizontal or Vertical Style



Block Style

Spruce #	Mitchell #	Gauge Capacity	Configuration	Price
10-02964	PM-211-9811	1 Gauge	1 Gauge	**$53.50**
10-04084	PM-211-6826	2 Gauges	1 Wide 2 High	**$79.95**
10-02739	PM-211-6808	2 Gauges	2 Wide 1 High	**$53.50**
10-04083	PM-211-6824	3 Gauges	1 Wide 3 High	**$84.95**
10-04079	PM-211-6809	3 Gauges	3 Wide 1 High	**$79.95**
10-04020	PM-211-6825	4 Gauges	2 Wide 2 High	**$89.95**
10-04082	PM-211-6823	4 Gauges	1 Wide 4 High	**$94.75**
10-01710	PM-211-6805	4 Gauges	4 Wide 1 High	**$66.75**
10-04080	PM-211-6810	5 Gauges	1 Wide 5 High	**$105.95**
10-01711	PM-211-6806	5 Gauges	5 Wide 1 High	**$73.50**
10-02738	PM-211-6807	6 Gauges	1 Wide 6 High	**$80.00**
10-01712	PM-211-6804	6 Gauges	6 Wide 1 High	**$80.00**
10-01708	PM-211-6803	6 Gauges	3 Wide 2 High	**$80.00**

Spruce #	Mitchell #	Gauge Capacity	Configuration	Price
10-04097	PM-211-6802	6 Gauges	2 Wide 3 High	**$119.95**
10-04081	PM-211-6822	7 Gauges	1 Wide 7 high	**$118.95**
10-04091	PM-211-6833	7 Gauges	7 Wide 1 High	**$139.95**
10-04090	PM-211-6832	8 Gauges	8 Wide 1 High	**$139.95**
10-01709	PM-211-6801	8 Gauges	1 Wide 8 High	**$93.50**
10-03915	PM-211-6800	8 Gauges	2 Wide 4 High	**$99.95**
10-04089	PM-211-6831	9 Gauges	9 Wide 1 High	**$148.95**
10-04085	PM-211-6827	9 Gauges	3 Wide 3 High	**$149.95**
10-04087	PM-211-6829	10 Gauges	2 Wide 5 High	**$159.95**
10-04086	PM-211-6828	10 Gauges	5 Wide 2 High	**$159.95**
10-04088	PM-211-6830	12 Gauges	2 Wide 6 High	**$185.95**
10-04092	PM-211-6835	15 Gauges	5 Wide 3 High	**$199.95**

IN

FALCON ENGINE GAUGES

FALCON GAUGE TACHOMETERS

Falcon Gauge Tachometers feature both clockwise and standard pointer type configurations. Falcon Gauge Universal Tachometers can be used for both point and Ducati ignitions.

Size"	Description	Model	Range	Part No.	Price
3-1/8	Clockwise Tach.	TH-007CC	"0-3500 RPM, 500-2750 RPM Color Markings"	10-02273	**$122.95**
2	Standard Pointer Type Tach.	TR-001D	0-8000 RPM CDI	10-00831	**$67.50**
2	Standard Pointer Type Tach."	TR-003	"0-8000 RPM Universal Point and CDI"	10-01615	**$73.50**
2-1/4	Standard Pointer Type Tach.	T2-001U	0-8000 RPM Universal Point and CDI	10-00816*	**$79.50**
2-1/4	Standard Pointer Type Tach.	T2-004	"0-8000 RPM For MZ 202 Engine"	10-04039	**$72.85**
3-1/8	Standard Pointer Type Tach.	T3-001U	"0-8000 RPM Universal Point and CDI"	10-00817*	**$81.50**

*Works with Rotax-point & CDI Ignition, but not 912/914 engines.

FALCON GAUGE CHT GAUGES

Falcon Gauge Cylinder Temperature Gauges work with most 2 cycle 2 cylinder engines.

Size"	Description	Model	Range	Part No.	Price
3 1/8	FALCON GAUGE CHT / CHT DUAL	C3-002	100-700ºF / 100-700ºF	10-02280	**$77.00**
3 1/8		C3-002C	0-340ºC / 0-340ºC	10-02281	**$77.00**
2 1/4		C2-002	100-700ºF / 100-700ºF	11-03960	**$82.00**
2 1/4		C2-002C	0-340ºC / 0-340ºC	10-01421	**$82.25**
2 Round		CR-002	100-700ºF / 100-700ºF	10-00486	**$74.75**
2 Round		CR-002C	0-340ºC / 0-340ºC	10-01416	**$74.75**
3 1/8	FALCON GAUGE CHT SINGLE	C3-001	100-700ºF	10-02283	**$49.85**
3 1/8		C3-001C	0-340ºC	10-02284	**$49.85**
2 1/4		C2-001	100-700ºF	11-03958	**$47.50**
2 1/4		C2-001C	0-340ºC	11-03959	**$49.75**
2 Round		CR-001	100-700ºF	10-01412	**$43.75**
2 Round		CR-001C	0-340ºC	10-01413	**$43.75**
10 x 1.5 mm	FALCON CHT SENDER	CP-001	Screw-in type, 4 feet metal shield wire	10-04051	**$36.75**
10mm		CP-010	10mm dia. ring, 4 ft metal shield wire	10-01438	**$16.90**
12mm		CP-012	12mm dia. ring, 4 ft metal shield wire	10-02286	**$17.50**
14mm		CP-014	14mm dia. ring, 4 ft metal shield wire	10-02287	**$17.50**
18mm		CP-018	18mm dia. ring, 4 ft metal shield wire	10-02288	**$18.95**

FALCON GAUGE EGT GAUGES

Size"	Description	Range	Part No.	Price
3 1/8	EGT / EGT DUAL"	700-1700ºF / 700-1700ºF	10-02290	**$98.50**
3 1/8		200-900ºC / 200-900ºC	10-02291	**$98.50**
2 1/4		700-1700ºF / 700-1700ºF	10-00487	**$81.50**
2 1/4		200-900ºC / 200-900ºC	10-02292	**$82.50**
2		700-1700ºF / 700-1700ºF	10-01453	**$74.80**
2		200-900ºC / 200-900ºC	10-01454	**$74.75**
3 1/8	EGT Single"	700-1700ºF	10-02289	**$49.85**
3 1/8		200-900ºC	10-02293	**$49.85**
2 1/4		700-1700ºF	10-01457	**$48.75**
2 1/4		200-900ºC	10-01450	**$48.00**
2		700-1700ºF	10-01449	**$43.25**
2		200-900ºC	10-01458	**$49.25**
8X1.0mm	FALCON EGT SENDER"	"8X1.0mm Screw-in Style 4 Feet Metal Shield Wire"	10-00489	**$34.75**
Clamp		"1"" - 1-3/4"" Clamp Style 4 Feet Metal Shield Wire"	10-02294	**$32.50**
Clamp		"1-1/4"" - 2"" Clamp Style 4 Feet Metal Shield Wire"	10-00488	**$31.00**

FALCON GAUGE COMBINATION GAUGES

Falcon Gauge Temperature Gauges work with most 2 cycle 2 cylinder engines.

Size"	Description	Range	Part No.	Price
3 1/8	CHT / EGT DUAL"	100-700ºF / 700-1700ºF Square	10-02794	**$99.75**
3 1/8		0-340ºC/ 400-900ºC	10-02296	**$77.00**
3 1/8	EGT / TACH DUAL"	700-1700ºF / 0-8000 RPM	10-02297	**$88.75**
3 1/8	CHT / TACH DUAL	100-700ºF / 0-8000 RPM	10-02298	
3 1/8		0-340ºC / 0-8000 RPM	10-02314	**$88.00**
2 1/4	CHT / EGT DUAL	100-700ºF / 700-1700ºF Square	10-01404	**$92.25**
2 1/4		0-340ºC/ 400-900ºC Square	10-01405	**$69.95**
2 1/4	CHT / TACH DUAL	100-700ºF / 0-8000 RPM	10-02317	
2 1/4		0-340ºC / 0-8000 RPM	10-02318	**$86.50**
2	CHT / EGT DUAL	100-700ºF / 700-1700ºF	10-01400	**$74.75**
2		0-340ºC/ 400-900ºC	10-01401	**$72.50**

FALCON WATER TEMPERATURE / PRESSURE & OIL TEMPERATURE/ PRESSURE GAUGES

Size"	Description	Model	Range	Part No.	Price
2-1/4	Water Temp.	WT-001	100-260ºF / 40-120ºC	10-02320	**$47.75**
2 Rnd.		WT-001R	100-260ºF / 40-120ºC	10-02321	**$66.75**
1/8 NPT	Water Temp.	WP-001	Water Temp. Sender	10-02322	**$16.50**
2 Rnd.	Oil Temp.	OT-001R	120-300ºF / 50-150ºC	10-03404	**$63.00**
2-1/4		OT-001	120-300ºF / 50-150ºC	10-03403	**$69.50**
2 Rnd.	Oil Pressure	OP-060-001R	60 PSI	10-04063	**$67.50**
2-1/4		OP-080-001	80 PSI	10-04060	**$67.50**
2-1/4		OP-100-001	100 PSI	10-04058	**$67.50**
2 Rnd.	Oil Press / Oil Temp. Dual	OPT080-001R	120-300ºF / 80 PSI	10-04052	**$118.95**
2-1/4		OPT080-002	120-300ºF / 80 PSI	10-04054	**$122.95**
2 Rnd.		OPT100-001R	120-300ºF / 100 PSI	10-04053	**$119.00**
2-1/4		OPT100-002	120-300ºF / 100 PSI	10-04055	**$122.95**
"1/8"" NPT"	"1/8"" NPT Oil Temp.	OTS-001	"1/8"" NPT Oil Temp. Sender"	10-03406	**$17.25**
10X 1.5mm	Oil Temp. Sender	OTS-002	"Oil Temp. Sender For Rotax 914, 912"	10-03407	**$41.50**

FALCON GAUGE FUEL QUANTITY INDICATOR

The Falcon Gauge Fuel quantity indicator's resistance Empty R=240 Ohms Full R=40 Ohms. The Falcon Gauge Fuel quantity sender is electronic capacity type. 12" can be cut down to 9.5" 24" can be cut down to 12.5"

Size"	Description	Model	Part No.	Price
2-1/4	Single Gauge, 5V Input	F2-001-5	10-02264	**$52.50**
2-1/4	Dual Gauge, 5V Input	F2-002-5	10-02265	**$80.25**
2 Round	Single Gauge, 5V Input	FR-001-5	10-03873	**$53.50**
2 Round	Dual Gauge, 5V Input	FR-002-5	10-03874	**$78.75**
12	12"Bendable Sender, 5V Output	FP-012-5	10-03419	**$79.50**
24	24"Bendable Sender, 5V Output	FP-024-5	10-03421	**$76.75**
2 Round	Single Gauge 185Ω Input	FR-001	10-02266	**$49.95**

FALCON ENGINE GAUGE EXTENSION CABLES

Falcon Gauge extension wire is used to lengthen the existing wire that comes with engine gauges. It is temperature compensated wire. Available in lengths of 4-10 ft, 2 or 4 conductors. Pins must be crimped onto wire.

Size	Model No.	Description	Part No.	Buy
4'	Wire-042	2 Conductor, 4 Feet	10-02339	**$5.75**
4'	Wire-044	4 Conductor, 4 Feet	10-02340	**$7.50**
6'	Wire-062	2 Conductor, 6 Feet	10-02341	**$7.35**
6'	Wire-064	4 Conductor, 6 Feet	10-02342	**$11.65**
8'	Wire-082	2 Conductor, 8 Feet	10-02344	**$9.25**
8'	Wire-084	4 Conductor, 8 Feet	10-02345	**$11.75**
10'	Wire-102	2 Conductor, 10 Feet	10-02346	**$13.75**
10'	Wire-104	4 Conductor, 10 Feet	10-02347	**$17.85**

IN

BELITE INSTRUMENTS

BELITE AIR SPEED INDICATORS

2.25" Bezel

Air Speed Indicator is calibrated for slow flight and designed to provide much more precise measurement of "low and slow" airspeeds than nonprecision steam gauges.Provides airspeed information with a visual LED display. Uses a solid state pitot pressure sensor device, which converts into a visual representation of speed.

28-82 MPH With 1.75" Square Bezel P/N 10-04376 ....**$129.95**
28-82 MPH With 2.25" Round Bezel ..... P/N 10-04378 ....**$129.95**
35-135 KIAS With 2.25" Round Bezel ..... P/N 10-04622 ....**$128.95**
Straight Pitot Tube, black powdercoat..... P/N 10-04382 .....**$9.95**
Bent Pitot Tube, black powdercoat..... P/N 10-04383 .....**$14.95**

BELITE ABOVE GROUND LEVEL ALTIMETERS

1.75" Bezel

Above Ground Altimeter measures from field elevation of the airport (rather than mean sea level). Its calibrated in 100-foot increments from 0 to 1200 feet. The new air computer allows it to automatically zero for reset.

With 1.75" Square Bezel .....P/N 10-04360.....**$99.95**
With 2.25" Round Bezel .....P/N 10-04361.....**$99.95**
3"x2"x1" with 9V battery and power switch - Portable P/N 10-04363...**$119.95**

BELITE VERTICAL SPEED INDICATORS

3"x2"x1" portable

Vertical Speed Indicator displays rates of up to 600 FPM, depending on model. No buttons to push, yet provides vertical speed information using a dimmable LED display that can be adjusted for viewing in bright daylight or reduced lighting conditions. Available in dual function instrument with Air Speed Indicator and Above Ground Altimeter.

With 1.75" Square Bezel..... P/N 10-04350 ...**$129.95**
With 2.25" Round Bezel..... P/N 10-04351 ...**$129.95**
3"x2"x1" with 9V battery and power switch - Portable P/N 10-04352 ...**$140.95**

BELITE DUAL AIR SPEED INDICATOR / VERTICAL SPEED INDICATOR

2.25" Bezel

Air Speed Indicator is calibrated for slow flight and designed to provide much more precise measurement of "low and slow" airspeeds than nonprecision steam gauges. Vertical Speed Indicator displays rates of up to 600 FPM. No buttons to push, yet provides vertical speed information using a dimmable LED display that can be adjusted for viewing in bright daylight or reduced lighting conditions.

28-82 mph ASI/VSI With 1.75" Square Bezel.... P/N 10-04681...**$199.95**
28-82 mph ASI/VSI With 2.25" Round Bezel..... P/N 10-04682...**$199.95**
35-135 KIAS ASI/VSI With 2.25" Round Bezel.. P/N 10-04683...**$199.95**

BELITE DUAL ASI / AGL

1.75" Bezel

Air Speed Indicator is calibrated for slow flight and designed to provide much more precise measurement of "low and slow" airspeeds than nonprecision steam gauges. Available in 28-82MPH in 1.75" square and 2.25" round. Above Ground Altimeter measures from field elevation of the airport (rather than mean sea level). Calibrated in 100-foot increments from 0 to 1200 feet. The new air computer allows it to automatically zero for reset.

With 1.75" Square Bezel.....P/N 10-04749...**$188.50**
With 2.25" Round Bezel.....P/N 10-04750...**$188.50**

BELITE DUAL VSI / AGL

2.25" Bezel

Vertical Speed Indicator displays rates of up to 600 FPM, depending on model. No buttons to push, yet provides vertical speed information using a dimmable LED display that can be adjusted for viewing in bright daylight or reduced lighting conditions. Above Ground Altimeter measures from field elevation of the airport (rather than mean sea level). Its calibrated in 100-foot increments from 0 to 1200 feet. The new air computer allows it to automatically zero for reset.

With 1.75" Square Bezel.....P/N 10-04751...**$188.50**
With 2.25" Round Bezel.....P/N 10-04752...**$188.50**

BELITE FUEL LINE WATER DETECTOR

The Fuel Line Water Detector capable of detecting water in the fuel tank or fuel line. A discrimination between water and fuel is detected and provides an alarm signal to the aircraft operator when water is detected (even in minute quantities). The technology also provides an all clear indication when the water has passed through the detector. Water detection probes may be placed, for example, at low points in fuel tanks, or inline (between the fuel tank and the fuel selector in the engine compartment). Prevents accidents and improves flight safety. Provides a warning signal which may be used in simple applications to trigger an alarm on the instrument panel.....P/N 10-04794.....**$140.95**

BELITE INCLINOMETERS

3"x2"x1" portable

Provides immediate slip and skid information, simulating and improving upon the classic ball inclinometer. In enclosure with 9V battery and power switch.

With 1.75" Square Bezel..... P/N 10-04366....**$64.95**
With 2.25" Round Bezel..... P/N 10-04368....**$64.95**
3"x2"x1" with 9V battery and power switch - portable P/N 10-04369....**$84.95**

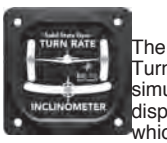
BELITE TURN RATE INDICATORS

3"x2"x1" portable

State-of-the-art, low cost, true solid state gyro based turn indicator. Calibrated to exactly match existing turn rate coordinators, (at 3 degrees per second for a 2-minute turn), it is cleverly configured so that the LEDs show when this rate is not being met by the pilot. More precise than traditional mechanical gyro instrument.

With 1.75" Square Bezel..... P/N 10-04385 ....**$119.95**
With 2.25" Round Bezel..... P/N 10-04386 ....**$112.95**
3"x2"x1" with 9V battery and power switch - portable P/N 10-04388 ....**$139.95**

BELITE TURN COORDINATOR



The Belite Turn Coordinator shows a digital gyro based Turn Rate Indication and solid state Bubble Inclinometer simultaneously, producing a standard turn coordinator display. The turn rate indicator includes new technology which automatically calibrates itself every time it is turned on, so it does not have to be re-centered. In addition, power consumption has been reduced. 2.25" Bezel. P/N 10-04795 ....**$187.95**

BELITE POSITIVE / NEGATIVE G METER

1.75" Bezel

This G Meter shows how strong the bumps are! It depicts G forces up to +/-6Gs. The precision, solid state accelerometer inside exceeds the capabilities of older mechanical units.

With 1.75" Square Bezel ..... P/N 10-04735 .....**$94.50**
With 2.25" Round Bezel ..... P/N 10-04736 .....**$94.50**
3"x2"x1" with 9V battery and power switch - portable. P/N 10-04737 ....**$112.95**

BELITE FUEL GAUGES

1.75" Bezel

Pilots dream of having a fuel gauge that actually works. Here's one that does! Uses LEDs to provide a range of 0% to 100% in calibrated steps.

Single With 1.75" Square Bezel P/N 10-04390 .....**$69.95**
Single With 2.25" Round Bezel.. P/N 10-04392 .....**$74.95**
Dual With 1.75" Square Bezel ..... P/N 10-04738 .....**$94.50**
Dual With 2.25" Round Bezel ... P/N 10-04739 .....**$94.50**

BELITE EGT / CHT GAUGE

2.25" Bezel

This is a high precision device that provide a quick visual indication of engine temperatures with an LED column for each parameter. LEDs use color to alert pilot when things start getting hot; the display LEDs switch from bright yellow to ultra bright amber at high temperatures.

EGT / CHT With 1.75" Square Bezel..... P/N 10-04740 ....**$168.95**
EGT / CHT With 2.25" Round Bezel..... P/N 10-04741 ....**$168.95**
Dual CHT With 1.75" Square Bezel..... P/N 10-04742 ....**$168.95**
Dual CHT With 2.25" Round Bezel..... P/N 10-04743 ....**$168.95**
Dual EGT With 1.75" Square Bezel..... P/N 10-04744 ....**$168.95**
Dual EGT With 2.25" Round Bezel..... P/N 10-04745 ....**$168.95**

BELITE VOLT METERS

Large

Small Volt Meter - Dimensions are 0.8" x 1.3". 8-19.99 volts. No backlight. Power source is from the system 7-19.99 volts. 300 micro amps nominal. Recommended for continuous power monitoring.

Large Volt Meter - 3-3/4" display with backlight. Monitors 8-39.99 colts.

Small ..... P/N 10-04395....**$69.95**
Large ..... P/N 10-04746....**$65.75**

BELITE INSTRUMENT PANELS

(9 INSTRUMENTS)

Full Panel: Includes: Battery Condition Voltmeter, CHT/EGT Gauge, Fuel Gauge, Above Ground Altimeter, Turn Rrate Indicator, Inclinometer, G Meter and Air Speed Indicator.

Half Panel: Includes four instruments plus the Volt MiniMeter. This is a metal panel with hardware and wiring, but the builder must make the harness and assemble.

Empty Panel: Choose and install your own instruments. Holds nine instruments. Full metal panel.

Empty Full Panel for 1.75" square gauges ..... P/N 10-04666 .....**$99.95**
Empty Full Panel for 2.25" round gauges ..... P/N 10-04747 .....**$94.50**
Empty Half Panel for 1.75" square gauges..... P/N 10-04748 .....**$94.50**

IN

MICROFLIGHT GAUGES

MICRO-1000 ENGINE GAUGES

Senders and probes are not included umless specifically noted. See lower half of the page for senders, probes, and other accessories. 2" gauges are round. 2 1/4" gauges are square.

OIL PRESSURE ELECTRIC

MICRO-1000 oil pressure electric includes 1/8 NPT SDR.

2 1/4" OP031 ..... P/N 10-01574 ..... **$71.85**
2" OP030 ..... P/N 10-01572 ..... **$58.75**

OIL TEMPERATURE ELECTRIC

Includes 1/8 NPT Sender

2 1/4" OT031 ..... P/N 10-01588 ..... **$59.85**
2" OT030 ..... P/N 10-01586 ..... **$48.85**

HOUR METER

AC or DC Powered

2 1/4" HO031 ..... P/N 10-01507 ..... **$49.25**
2" HO030 ..... P/N 10-01506 ..... **$37.50**

DC VOLTMETER

2 1/4" VM031 ..... P/N 10-01641 ..... **$46.50**
2" VM030 ..... P/N 10-01639 ..... **$34.75**

WATER TEMPERATURE

Includes 1/8 NPT Sender. All electrical gauges have air core movements.

2 1/4" WT031 ..... P/N 10-01652 ..... **$58.85**
2" WT030 ..... P/N 10-01650 ..... **$48.75**

AMMETER ±30 AMPS

2 1/4" AG031 ..... P/N 10-01319 ..... **$39.95**
2" AG030 ..... P/N 10-01317 ..... **$33.85**

MICROFLIGHT SENDERS & ACCESSORIES

100# PRESSURE SENDER

HAS A 1/8" NPTF fitting.

OP030.2 ..... P/N 10-01573 ..... **$25.50**

TUBING KIT

Nylon tubing with brass fittings.

OP032.1 ..... P/N 10-01575 ..... **$14.70**
OP032.2 ..... P/N 10-01576 ..... **$17.90**

TEMPERATURE SENDERS

Single-station senders for water and oil temperature gauges.

WT030.2 ..... P/N 10-01384 ..... **$8.75**
OT030.2 ..... P/N 10-01587 ..... **$9.75**

SENDER ADAPTERS

Electric sender adapter. 3/8" NPT

ADP04 ..... P/N 10-01311 ..... **$8.75**

METRIC ADAPTER

ADP06 ..... P/N 10-01313 ..... **$4.90**
ADP07 ..... P/N 10-01314 ..... **$5.50**
ADP08 ..... P/N 10-01315 ..... **$5.50**

FLOAT-TYPE FUEL PROBES

6-23" Probe. Adjustable, 6-23"; 240-33 ohms standard: 5-hole ASME pattern. Requires mounting kit.

FGP031 ..... P/N 10-01489 ..... **$26.65**

UNIVERSAL PROBE MOUNT

Works well with plastic and other tank. Includes threaded attachment ring, gasket, and hardware. Standard 5-hole SAE pattern.

FMK01 ..... P/N 10-01501 ..... **$8.75**

COLOR TINT LAMPS

Color tint lamp boots. Set of Boots. Changes your instrument backlighting to red for night flying.

LB001 ..... P/N 10-01556 ..... **$0.95**

APPLICATION NOTE: Most current production Rotax® engines require 1/8NPT temperature and pressure senders.

THERMOCOUPLES

BAYONET TYPE

Threaded Fitting with 1/8" ..... P/N AN4076 ..... **$24.50**

Pipe thread to mate with bayonet type thermocouple.

UNIVERSAL REPLACEMENT PROBES

CHT Probe, Type J, Style AN 5541-1
P/N AN5541-1 ..... **$62.70**

EGT Probe, Type K MM-111 ..... P/N 11-01022 ..... **$59.50**
CHT Probe, Type K ..... P/N 11-01023 ..... **$61.50**

Cessna CHT Probe S2334-3 - Must be used with the new Rochester Gauges. Cannot be used with the old Stewart Warner Gauges
P/N 06-00703 ..... **$271.95**

Note: These probes will only work with a grounded system.

THERMOCOUPLE LEADS

HEAVY-WEIGHT AN SPEC. WIRE LEADS

8 Ohm Resistance, Iron-Constantan, 90 In.
P/N 42535 ..... **$35.50**
8 Ohm Resistance, Iron-Constantan, 144 In. ..... P/N 42536 ..... **$45.75**
8 Ohm Resistance, Iron-Constantan, 20 Ft. ..... P/N 42537 ..... **$58.75**
EGT E.W. Rings P/N 11-05672 . **$62.75**

LIGHT-WEIGHT 20 GA. WIRE LEADS

2 Ohm Resistance,Copper-Constantan,10 Ft. .. P/N 10-10900 .... **$34.85**
2 Ohm Iron-Constantan, 5 Ft. 7 In. ..... P/N 10-11000 .... **$34.85**
8 Ohm Resistance, Iron-Constantan, 10 Ft. ..... P/N 10-11110 .... **$34.85**

Terminals on instrument end of lead are plain eye type (one for No. 8 screw and one for No. 10 screw).

IN

MICROFLIGHT GAUGES

MICRO-1000 PYROMETERS & PROBES

CP131 EP131 EP130

Superior to any other type of pyrometer available. Unlike competing brands, these units are temperature compensated. That is, when the ambient temperature changes, MICRO-1000 pyrometers still read the same. And we guarantee that, when properly installed, these pyrometers will be accurate within 2%. Like other MICRO-1000 gauges, these units come with our standard 2-year warranty. Order gauges, probes, and extension leads separately. NOTE: MICRO-1000 pyrometers are not compatible with other thermocouple probes. Order Micro-1000 Probes. ***• 2% Accuracy • Easy-to-Read Dial • Backlighting • Standard • Temperature Compensated • Shock & Vibration Resistant • Designed & Built for Aircraft***

MICRO-1000 EGT PROBES

Weld-on Boss Type EP131 ..... P/N 10-01477 ..... **$26.25**
Clamp-on Type EP130 ..... P/N 10-01471 ..... **$55.25**
Adjustable 8mm EP130R ..... P/N 10-01475 ..... **$44.50**
(for all Rotax w/factory Boss)
Adjustable 1/8NPT EP132 ..... P/N 10-01478 ..... **$41.50**
Adjustable 1/4NPT EP133 ..... P/N 10-01479 ..... **$41.50**

MICRO-1000 CHT PROBES

14mm CP130 ..... P/N 10-00823 ..... **$23.65**
18mm CP131 ..... P/N 10-01440 ..... **$23.50**
10mm CP132 ..... P/N 10-01441 ..... **$22.65**

MICRO-1000 LEADS

7-ft. CHT - Leads required ..... P/N 10-01442 ..... **$21.60**
15-ft. CHT - Leads required ..... P/N 10-01443 ..... **$46.75**
7-ft. EGT - Leads required ..... P/N 10-01480 ..... **$17.75**
15-ft. EGT - Leads required ..... P/N 10-01481 ..... **$33.75**

NOTE: For a complete CHT or EGT set, order Gauge, Probe, and leads

The CHT probe (above left) is a high quality Chrome/Constantan "E" type. A more expensive material than that of the more commonly found "J" type, the "E" type probe produces much greater accuracy at lower temperatures (less than 600°F). Extension wire is of the same material as the thermocouple to preserve the accuracy and temperature compensation qualities. NOTE: The 15' extension leads may be shortened up to seven feet. The EGT probes are high-quality Chrome/Alumel "K" types. Choose the weld-on boss type (above) for new engine installations. Choose the clamp-on type (above) to replace the existing probe. Order gauges, Micro-1000 probes and extensions separately. ***Note: These are "K" type grounded probes, not for use on digital gauges. For use with Micro-1000 gauges.***

CHT

Scaled 0-600°F
2-1/4" CH131 ..... P/N 10-01426 ..... **$68.75**
2" CH130 ..... P/N 10-01425 ..... **$59.50**

DUAL CHT

Scaled 0-600°F
2-1/4" CH141 ..... P/N 10-01429 ..... **$99.50**
2" CH140 ..... P/N 10-01428 ..... **$99.50**

EGT

Scaled 800-1700° F
2-1/4" EG131 ..... P/N 10-01464 ..... **$76.50**
2" EG130 ..... P/N 10-01463 ..... **$59.50**

DUAL EGT

2-1/4" EG141 ..... P/N 10-01467 ..... **$98.75**
2" EG140 ..... P/N 10-02093 ..... **$99.50**

DUAL CHT/EGT

2-1/4" CE141 ..... P/N 10-01409 ..... **$105.95**
2" CE140 ..... P/N 10-01408 ..... **$101.95**

VDO GAUGES & PROBES

CYLINDER HEAD TEMP.

2-1/4" ... P/N 10-01424 ... **$112.95**
2" ..... P/N 10-01423 ..... **$99.85**
0-600°F
Includes 14mm ring probe

EXHAUST GAS TEMP.

2-1/4" .... P/N 10-01462 ... **$150.95**
2" ..... P/N 10-01461 ... **$138.95**
250 -1650°F
With weld-on Boss type probe

OIL PRESSURE

2-1/4" ... P/N 10-01570 .... **$91.75**
2" ..... P/N 10-01567 .... **$79.50**
Includes 1/8NPT sender

OIL TEMP.

2-1/4" ... P/N 10-01583 ..... **$62.50**
2" ..... P/N 10-01579 ..... **$49.85**
Includes 1/8NPT probe

AMMETER - 12 VDC

2-1/4" ... P/N 10-02335 .... **$47.50**
2" ..... P/N 10-02334 .... **$41.65**
No shunt required

VOLTMETER-12 VDC

2-1/4" ... P/N 10-01638 ..... **$39.75**
2" ..... P/N 10-01637 ..... **$38.50**
With color arc

FUEL LEVEL-10-180 OHM

2-1/4" .... P/N 10-01485 ... **$33.75**
2" ..... P/N 10-00825 ... **$21.75**
Order only P/N 10-04788 probes for this instrument.

WATER TEMP.

2-1/4" .... P/N 10-01649 ... **$59.95**
2" ..... P/N 10-01646 .... **$48.75**
Includes 1/8NPT probe

HOUR METER-12VDC

2-1/4" ... P/N 10-01505 ..... **$36.75**
2" ..... P/N 10-01504 ..... **$28.75**
With minute hand

FLUID TEMPERATURE GAUGE

2" ..... P/N VDO180902D .. **$43.00**
Includes 96" capillary tubing and adapter kit.

VDO PROBES

VDO Float Probes - 240 ohms ..... P/N 10-00826 ..... **$47.70**
Fuel Probe Mounting Ring ..... P/N 10-01502 ..... **$26.50**
VDO Temperature Probes - 1/8NPT
Water Probe 1/8" NPT ..... P/N 10-01648 ..... **$11.75**
Oil Probe 1/8" NPT ..... P/N 10-01580 ..... **$14.95**
Oil Temp. Probe 3/8" NPT ..... P/N 10-01582 ..... **$16.50**
VDO CHT Probe - Type "J"
14mm ring type ..... P/N 10-01439 ..... **$28.50**
VDO EGT Probe - Type "K"
Weld-on Boss. ..... P/N 10-01461 ..... **$138.95**
Oil Pressure Sender 1/8" NPT ..... P/N 10-01568 ..... **$41.75**

IN

MICROFLIGHT GAUGES

STANDARD MICROFLIGHT ENGINE GAUGES

Standard gauges are a low cost solution for monitoring engine performance. The gauges on this and part of the next page are light-weight, inexpensive alternatives. These gauges are not temperature compensated; changes in ambient temperature will affect their readings. Unlike our MICRO-1000 gauges, they do require shock mounting. All gauges come with a 1-year warranty which covers any malfunction. Prices include probes with 4-ft. leads. Gauges leads may be extended with 18-gauge wire. "C" at end of P/N indicates temperature scale in degrees celsius.

CYLINDER HEAD TEMP.

2-1/4", 0-700°F .. P/N CH004 .... **$73.75**
2-1/4", 0-350°C .. P/N CH004C . **$75.25**
Includes probe

EXHAUST GAS TEMP.

2-1/4",
600-1700°F .... P/N EG004 .... **$82.50**
2-1/4",
400-900°C ..... P/N EG004C .. **$82.50**
Includes probe

DUAL CHT

2-1/4" ... P/N CH005 ... **$133.95**
2-1/4" ... P/N CH005C **$133.95**
Includes probe

DUAL EGT

2-1/4" .... P/N EG005 ... **$147.95**
Includes probe

0-8000 RPM TACHOMETER

3-1/8" for 2-cycle engines for single Ignition
Ducatti Ignition... P/N TA023 ... **$81.50**
For lighting coil operation
No power required.

0-8000 RPM TACHOMETER

2-1/4" for 2-Stroke Engines
Single Ignition (all) .. P/N TA006 .. **$79.50**
Ducatti Ignition..... P/N TA021 .. **$69.85**
For lighting coil operation
No power required.

CHT/EGT COMBINATION

2-1/4" ..... P/N CE003 .... **$150.95**
2-1/4" ..... P/N CE003C . **$128.95**
Includes probe

CHT PROBE

"J" type sending unit with 4-ft. lead.
14 mm .... P/N CP001 .... **$25.75**
10 mm .... P/N CP002 .... **$16.90**

CYLINDER HEAD TEMP.

2", 0-700°F .... P/N CH001 ..... **$69.75**
2", 0-350°C .... P/N CH001C **$70.00**
Includes probe

EXHAUST GAS TEMP.

2", 600-1700°F . P/N EG001 ... **$74.25**
2", 400-900°C ... P/N EG001C . **$81.25**
700-1700°F
Includes probe

CHT/EGT COMBINATION

2" ..... P/N CE001 ..... **$129.00**
2" ..... P/N CE001C **$131.95**
Includes probes

EGT PROBE

"K" type sending unit with 4-ft. lead.
P/N EP001 ..... **$31.00**
8 mm threaded EGT Probe (for new 2-stroke Rotax)
P/N EP002 ..... **$34.75**

DUAL CHT

2" ..... P/N CH002 ..... **$126.95**
2" ..... P/N CH002C **$126.95**
Includes probes

DUAL EGT

2" ..... P/N EG002 ..... **$139.00**
2" ..... P/N EG002C **$139.00**
Includes probes

DUAL TACH/EGT

2" round gauge
Tachometer – Universal for single or dual ignition.
EGT range: 700-1700°F
EGT probe (clamp type).
P/N ET002R **$85.50**

0-8000 RPM TACHOMETER

2" for 2-Stroke Engines
Single Ignition (all)
P/N TA001 .. **$73.50**
Ducatti Ignition.... P/N TA020 .. **$67.50**
For lighting coil operation

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ADI RH60-A TACHOMETER/HOUR METER GAUGE

The RH60-A RPM/Engine hours/Elaped time gauge is a four digit digital display of engine RPM, total engine hours and elapsed time. The RH60-A works with any engine and can be driven from a wide range of tacho signal frequencies and amplitudes. Front panel calibration is provided for spot-on accuracy to +/- 1RPM. A separate engine hours countdown alarm can be set to remind you of upcoming oil change or 100 hr maintenance due. A high RPM alarm can be set, and the RH60-A keeps track of the maximum RPM seen. When activated, the RH60-A built-in 85dB alarm will sound and the display will flash. Five levels of backlighting can be selected from, and thirteen levels of display dampening. All calibrations, alarm values and max RPM are saved to a nonvolatile memory. Terminal C can be programmed as an External Alarm output if so desired. Signal Generator RH6-SG is req. for install (PN 10-04197)

RH60-A ..... P/N 10-02879 ..... **$224.95**
RH60-SG ..... P/N 10-04197 ..... **$69.25**

ADI MAP60-A MANIFOLD PRESSURE GAUGE

The MAP60-A, Manifold Absolute Pressure Gauge provides an accurate digital display of your engine's intake manifold absolute pressure. Commonly found and used in high performance aircraft with constant speed propellers, and/or with boost devices such as super and turbochargers. The MAP60-A is set up to use the UMA 5-60 InHg absolute pressure transducer. The display will show manifold pressure in tenth of an inch increments, from 5.0 to 60.0 InHg. The LOW and HIGH user settable alarms can be set over the entire range. The HIGH alarm in this case might be set to alert the pilot to a "OVERBOOST" condition. When activated the built-in 85dB alarm will sound and the display will flash. The External Alarm output would most likely be used to activate an annunciator/warning "OVERBOOST" condition light. Five levels of backlighting can be selected and then all setup, and alarm values will be saved to a nonvolatile memory. Senders not included.

MAP60-A ..... P/N 10-02872 ..... **$154.95**
N1EU50A Pressure Sender ..... P/N 10-01062 ..... **$118.95**

ADI DIGITAL PRESSURE GAUGES

The P60-A DIGITAL PRESSURE GAUGE, can be used to display ENGINE OIL(AO), DRIVE OIL(ADO), WATER(AW), or FUEL(AF)pressures in PSI or Bars. It has built-in calibration curves for most popular senders manufactured by VDO, Teleflex, and Stewart-Warner (sender not included). The sender type is easily selected with the front panel keys. LOW and HIGH pressure alarms can be set over the entire range of the instrument/sender. When activated the P60-A built-in 85dB alarm will sound and the display will flash. Five different levels of internal backlighting can be selected, and then all setup, calibrations, constants, alarm values, sender type, and lighting level are all saved to a nonvolatile memory. Terminal "C" comes Factory preset to use as an External Alarm signal. This 5V,10mA signal voltage could be used in conjunction with the optional ER-1A electronic relay to control a backup/secondary piece of equipment (electric water pump / fuel pump) or simply used to illuminate a panel warning light. NOTE: Alarm functions must be activated or enabled to utilize them.

P60-A Engine Oil Pressure Gauge ..... P/N 10-02874 ..... **$158.95**
P60-AD PSRU Oil Pressure Gauge ..... P/N 10-02875 ..... **$154.95**
Water/Coolant Pressure Gauge ..... P/N 10-02876 ..... **$154.95**
P60-AF Fuel Pressure Gauge ..... P/N 10-02877 ..... **$154.95**
Hydralic Pressire Gauge (with sender) ..... P/N 10-02878 ..... **$198.95**

ADI DIGITAL TEMPERATURE GAUGES

The T60-AE ***DIGITAL TEMPERATURE GAUGE*** provides an accurate digital display for Engine Oil(AO), Drive Oil(ADO), or Engine Water(AW) TEMPERATURES in either degrees F or C. It has built-in calibration curves for most popular senders manufactured by VDO, Teleflex, Stewart-Warner, and others(senders not included). Sender type is easily selected using the front panel keys. LOW and HIGH temperature alarm limits can be set over the entire range of the instrument/sender. When activated, the built-in 85dB alarm will sound and the display will flash. The alarm can be enabled or disabled with a single key press. Five different levels of internal backlighting can be selected. Then all setup, calibrations, constants, alarm values, sender type, and lighting level selected are all saved to a nonvolatile memory. Terminal "C" can be programmed as an External Alarm output.....

T60-AE Engine Oil Temperature Gauge ..... P/N 10-02881 ..... **$154.95**
T60-AD PSRU Oil Temperature Gauge ..... P/N 10-02882 ..... **$154.95**
T60-AW Water Temperature Gauge ..... P/N 10-02883 ..... **$154.95**

The PY60-AE ***DIGITAL EGT/CHT GAUGE*** works with both J and K type thermocouples to provide accurate monitoring of your engine's cylinder head or exhaust gas temperatures, from -4-2012F (-20-1100C). LOW and HIGH temperature alarm limits can be set from 32-2012F (0-1100C). When activated, the built-in 85dB alarm will sound and the display will flash. The highest temperature seen is automatically saved to a nonvolatile memory, and can be displayed or reset at any time. Five different levels of internal backlighting can be selected, then all setup, calibrations, and constants are also saved to nonvolatile memory.

PY60-AE Exhaust EGT Gauge ..... P/N 10-02884 ..... **$233.95**
PY60-AC Exhaust EGT Gauge ..... P/N 10-02885 ..... **$224.95**

ADI DIGITAL FUEL GAUGES

The F60-A DIGITAL FUEL GAUGE provides an accurate digital display of fuel remaining, trip fuel and total fuel used. Fuel remaining can be displayed up to 6550 liters or gallons, or as a percentage (0-100%) with user selectable display dampening to help prevent unwanted fluctuations in rough air. The F60-A is programmed for use with all known resistive American and European level senders made by VDO, Teleflex, Mercury, GM, Stewart-Warner, Centroid, Faria and others. LOW and HIGH fuel alarms can be set over the entire range. When activated, the built-in 85dB alarm will sound and the display will flash. Five different levels of internal backlighting can be selected, then all setup, alarm values, sender type and maximum tank capacity are saved to a nonvolatile memory. The External Alarm output on Terminal "C" can be programmed to activate an annunciator warning light, such as "LOW FUEL" or to control one of our ER-1A remote relays for the possible transferring of fuel from another tank. When the transfer mode is selected (tFEr), the pump will turn ON at the selected LOW alarm value, and OFF, when the fuel reaches the HIGH alarm setting. The gauge display will flash during the pump's operation. P/N 10-04908 is the correct sender for this unit. Will work up to 150 PSI. **For experimental use only, not for use on certified aircraft.** Specifications: Power Supply; 9.5-33.0 VDC (.018 amp nominal). Operating Temp: 32-122F(0-50C). Size/ Weight: 2.475" square, low profile...easily stackable bezel, with standard aviation 2.250" raised round ring. Standard 2.625" diameter mounting hole layout at 45 degrees. Proprietary unique bezel design allows user the option of either front or rear mounting our gauges in their panel. Gauge depth behind panel: surface mounted approx. 2.60", rear mounted, approx. 2.90". Weight approx 2.3oz.. Accuracy: Limited only by sender accuracy.. Sender: Works with 0-30, 0-70, 0-90, 10-73, 10-180, 33-240, 40-250 ohm (and/or their inverse) level senders by VDO, Teleflex, GM, Stewart-Warner, Mercury, Faria,and others (both American and European) Also available in capacitance (0-5V), and 4-20mA sender versions.. Alarms: 85dB internal LOW and HIGH level alarms, settable from 000.0 to 6553. External alarm output (5V,10mA(max). Display: 4 digits, Liters, Gallons, or %. 000.0 to 6553 gallons or liters Five levels of backlighting.. Output: Terminal C can be used as an External Alarm signal,(5V, 10mA) for a LED warning light... or as a control signal for an ER-1A relay and a possible fuel transfer pump.

F60-A Fuel Gauge (pictured) ..... P/N 10-02868 ..... **$139.00**
Fuel Flow Gauge FU-60-A ..... P/N 10-02869 ..... **$232.95**

AIRCRAFT DIGITAL INSTRUMENTS

ADI T60-ACR CHT GAUGE FOR ROTAX

The T60-ACR Cylinder Head Temperature Gauge is compatible with Rotax 912S/914 series engine, supplied with the 1000-75 OHM (68F-320F) Temperature Sensor. Low and High temp alarms can be set over the entire range of the instrument/sender. When activated, the built-in 85 dB alarm will sound and the display will flash. The alarm can be enabled or disabled with a single key press. Five levels of backlighting can be selected. Then all setup, calibration constants, alarm values, sender type and lighting levels selected are saved to nonvolatile memory. Terminal C can be programmed as an External Alarm output. This could be used in conjunction with ER-1A electronic relay to control optional equipment such as an electric radiator cooling fan, or to simply activate a warning/annunciator light on your panel.

T60-ACR CHT Gauge for Rotax.....P/N 10-04878 ..... **$149.95**

T60-A OIL TEMPERATURE GAUGE FOR ROTAX

The T60-A Temperature Gauge displays water or engine oil temperature in either degrees F or C. It has built-in calibration curves for most popular senders manufactured by VDO, Teleflex, Stewart-Warner, and others. (senders available separately) Sender type is selected with the front panel keys. LOW and HIGH temperature alarms can be set over the entire range of the instrument/sender. When activated, the built-in 85dB alarm will sound and the display will flash. The alarm can be enabled or disabled with a single key press. Five levels of backlighting can be selected. Then all setup, calibration constants, alarm values, sender type and lighting level selected are saved to nonvolatile memory. Terminal C can be programmed as an External Alarm output. This could be used in conjunction with an ER-1A electronic relay to control optional equipment such as an electric radiator cooling fan, or to simply activate a warning/annunciator light on your panel. NOTE: The T60-AE (Engine Oil Temperature Gauge) is compatible with the Rotax 912S / 914 Series supplied with 1000-75 OHM (68F-320F) Oil Temperature Sensor.

T60-A Oil Temperature Gauge for Rotax .....P/N 10-04877 ..... **$149.95**

ADI F60-OPR OIL PRESSURE GAUGE FOR ROTAX

The F60-OPR Oil Pressure Gauge provides an accurate digital display of Engine Oil Pressure.
The F60-OPR is programmed for use with the ROTAX Factory installed Honeywell Oil Pressure Transducer. Low and High alarms can be set over the entire range. When activated, the built-in 85dB alarm will sound and the display will flash. Five different levels of internal backlighting can be selected, then all setup and alarm values are saved to a nonvolatile memory. The External Alarm output on Terminal "C" can be programmed to activate an annunciator warning light, such as "Low or High Pres" or to control one of our ER-1A remote relays.

F60-OPR Oil Pressure Gauge.....P/N 10-04873 ..... **$149.95**

ADI F60-FPR FUEL PRESSURE GAUGE FOR ROTAX

The F60-FPR Fuel Pressure Gauge provides an accurate digital display of the fuel system's pressure.
The F60-FPR can be specifically used with the ROTAX 912S/ 914 series engine with the Mechanical Fuel Pump, in conjunction with a F60-FPT (0-15PSI Fuel Pressure Transducer) LOW and HIGH pressure alarms can be set over the entire range. When activated, the built-in 85dB alarm will sound and the display will flash. Five different levels of internal backlighting can be selected, then all setup and alarm values are saved to a nonvolatile memory. The External Alarm output on Terminal "C" can be programmed to activate an annunciator warning light, such as "Low or High Pressure" or to control one of our ER-1A remote relays.

F60-FPR Fuel Pressure Gauge for Rotax .....P/N 10-04875 ..... **$139.95**

IN

ADI V60-A VOLTMETER

The V55-A Battery/System Voltage Monitor gauge provides an accurate low cost digital instrument for battery/ system voltages between 9.5-33.0 VDC. You can set independent LOW and HIGH voltage alarms. The V55-A built-in 85dB alarm will sound and the display will flash. Five levels of backlighting can be selected and then all setup, calibration constants and alarm values are saved to nonvolatile memory. Terminal C can be selected and used as an External Alarm output signal. (5V, 10mA max).

V60-A Voltmeter..... P/N 10-02886..... **$156.95**

ADI AM60-A DIGITAL AMMETER

The AM60-A Digital Ammeter provides an accurate low cost digital instrument for monitoring your aircraft's electrical load (amps), and is programmable to use a 5.0 to 900 amp shunt. (available separately). Up to 90.0 amps the AM60-A can display your load current in tenths of an amp. Above 90 amps current is displayed in full amps. The AM60-A can be powered by any voltage between 9.5 and 33.0 Volts. Five levels of backlighting can be selected using the front panel keys and backlighting can be turned ON/OFF remotely. All setup, calibrations, and constants are saved to nonvolatile memory

AM60-A Digital Ammeter..... P/N 10-02864..... **$136.95**
Ammeter With 150A Shunt..... P/N 10-02932..... **$149.95**
ADI AM60 85AMP Shunt only ..... P/N 10-02893..... **$45.95**
ADI 150AMP 50MV DC Shunt..... P/N 10-04879..... **$46.75**
ADI 450AMP 50MV DC Shunt..... P/N 10-04880..... **$59.75**

ADI CT60-A CLOCK / TIMER

The CT60-A Clock/Timer is an accurate 12/24 hour format clock with a resettable down-counting timer with eight time-of-day settable alarms. The clock is Factory calibrated, but can be adjusted with the front panel switches and calibrations saved to nonvolatile memory. The clock is accurate to within five seconds per day, and is Factory calibrate to within one second per day. The CT60-A has a large LCD display, yet draws only 0.018 amps. Five levels of backlighting can be selected and all setup, calibration constants and alarm values are saved in nonvolatile memory.

CT-60A Clock/Timer ..... P/N 10-02865.....**$138.75**

PRO DIGITAL ACCESSORIES

Description	Part No.	Price	Description	Part No.	Price
Electronic Relay - ER-1A	10-02887	**$57.75**	6061 6 Hole, Aluminum Gauge Cluster	10-02889	**$52.95**
DC Ammeter Shunts	10-02893	**$45.95**	Hydraulic Pressure Transducer TDM3000	10-04872	**$249.95**
Type K Thermocouple AD-2000TK	10-02895	**$38.50**	Hydraulic Pressure Transducer Rotax	10-04876	**$249.95**

TL ELEKTRONICS INSTRUMENTS

COMBINED ENGINE INSTRUMENT

• High performance, small dimensions & weight - an ideal instrument suitable for all types of engines • Set value limits at 2 levels (Warning & Alarm) for all measured values. In case these values are exceeded the instrument will warn you in time of any possible engine damage • Configure display to show temperature, pressure, rotations, battery voltage, engine hours, OAT, fuel consumption as you wish using the configuration program delivered with the instrument. Size: 3-1/8"

Digital eng. instr. for combinate engine values measuring ..... P/N 10-00893 ..... **$856.00**
Thermocouple probe for EGT (type K) M8x1 screw type - for all engines ..... P/N 10-00894 ..... **$75.50**
Thermocouple probe for CHT (type J) 12mm hole - for all engines ..... P/N 10-00895 ..... **$42.65**
Thermocouple probe for CHT (type J) 14mm hole - for all engines ..... P/N 10-00896 ..... **$59.95**
Thermocouple probe for CHT (type J) 18mm hole - for all engines ..... P/N 10-00897 ..... **$59.95**
Oil or water temp. sender (0 to 110°C/230°F) for Rotax 2-stroke ..... P/N 10-00898 ..... **$59.95**
Oil or water temp. sender (0 to 150°C/300°F) for Rotax 4-stroke ..... P/N 10-00899 ..... **$59.95**
Passive oil pressure sender (0 to 145 PSI, 1/8"-NPT) for all engines ..... P/N 10-00904 ..... **$75.75**
Active oil pressure sender (0 to 145 PSI, 1/8"-NPT) for all engines ..... P/N 10-00905 ..... **$350.95**
Metal hi-quality flow sensor (0-30 gph)-all engines ..... P/N 10-00906 ..... **$324.00**
Passive speed sensor-all eng. (inductive sensor) ..... P/N 10-00907 ..... **$39.95**
Active speed sensor-all engines (hall effect 3-wire sensor) 5-30V power supply req. ..... P/N 10-00909 ..... **$148.95**
Active speed sensor-all engines (hall effect 3-wire sensor) 5V. ..... P/N 10-00910 ..... **$148.95**

FUEL COMPUTER

• Measure immediate fuel flow of your engine in liters/hour or liters/100 km and average fuel consumption • Set limit values at 2 levels (Warning & Alarm), for all measured values. In case these values are exceeded, the instrument will warn you prior possible failure or damage of the engine • Display at any time the fuel levels in the left, right or both fuel tanks. Size: 2-1/4"

Fuel computer without fuel-flow sensor..... P/N 10-00870 ..**$444.95**
Metal high-quality flow sensor for all engines ... P/N 10-00871 ..**$325.00**
Fuel Qty Sender Float (240-30 OHM)..... P/N 10-00056 ....**$37.75**
Active cap. fuel level sender (all aircraft) ..... P/N 10-00798 ..**$131.95**
Active fuel pressure sender (all aircraft) ..... P/N 10-00873 ..**$255.95**

INTERCOM

• Intelligently managed voice activators (VOX) •Listen to your favorite music e.g. from CD/cassette directly to your headphones or attach your intercom to your mobile telephone • Control your intercom digitally using keys & displays • Record and play pre-takeoff or landing checklist directly to your headphones (checklist can easily be created on your PC and recorded into the intercom) • In case of accident simply switch on emergency broadcast, which will be re-played at short intervals and transmitted using a RDST w/pre-recorded message. Size: 2-1/4"

Intercom w/voice alarm, checklist & digital voice rec.
P/N 10-00867 .**$459.00**
Connection cable for mobile phone..... P/N 10-00868 ...**$26.40**
Connection cable to VHF airband-transceiver ... P/N 10-00869 ...**$52.75**

ALTIMETER WITH ENCODER

• 2 instruments for the price of one – altimeter & mode C encoder for all types of transponder • Set value limits at 2 levels (Warning & Alarm) for multiples • Display QNH or QFE levels with the option of setting zero • The instrument will provide a warning if an insufficient oxygen altitude is reached • The instrument will signal low altitude, e.g. after opening of undercarriage, MDA, approach. Size: 2-1/4"

P/N 10-00891 ....**$522.00**

VOLT-AMPERE METER

• First volt-ampere meter with 3-phase measurement of voltage, current & frequency • Connect up to 3 circuits for measuring current and voltage, for example instrument panel circuit, light circuit and flash and other circuit • Check the activity of the three-phase voltage converter for an artificial horizon using your voltmeter with the option of checking 400 Hz frequency • Set value limits at two levels (Warning and Alarm) for minimum & maximum voltage and current. Set the form of display either by gradual switching of voltage and current on the display at intervals chosen by you (SCAN function) or by displaying lowest or highest current-voltage. Size: 2-1/4"

Digital volt-ampere meter & frequency meter P/N 10-00883.....**$379.00**
Current shunt sensor for measuring to 50amps (for all aircraft)
P/N 10-00884.....**$59.95**

RPM & ENGINE HOURS

• Measure rotations & engine hours with the option to trigger the counting from a certain engine rotation rate (by your choice) so that you can divide taxing from flight time • Set value limits at 2 levels (Warning & Alarm) for all measured values. In case these values are exceeded the instrument will warn you in time of any possible engine damage • Several separate users with pilot/student option – suitable for several owners or in flight schools, where the instructor selects the student and the time will be measured only against his/her name. Size: 2-1/4"

Digital RPM w/ engine-clock & stop-watch ..... P/N 10-00886....**$309.00**
Digital RPM w/ engine-clock, stop-watch & internal speed sensor
P/N 10-00887....**$556.00**

THERMOMETER

• Use the thermometer to measure up to 4 temperatures and oil pressure • Use the automatic choke function using the modeler's servo regulated by thermometer according to any of the measured temperatures e.g. CHT • Set value limits at 2 levels (Warning and Alarm) for all measured values. In case these values are exceeded the instrument will warn you at time of any possible engine damage • Set the form of display either by gradual switching of measured temperatures on the display at intervals selected by you (SCAN function) or displaying the closest temperatures to the limit values that you have set. Size: 2-1/4"

Therm. for 4 temp. & press. w/choke control P/N 10-00874.... **$369.95**
Thermocouple probe for CHT (type J) 12mm hole - for all engines
P/N 10-00876..... **$59.95**
Thermocouple probe for CHT (type J) 14mm hole - for all engines
P/N 10-00877..... **$59.95**
Oil or water temp. sender (0 to 150°C/300°F) for Rotax 4-stroke.
P/N 10-00879..... **$28.75**

G ACCELEROMETER

• Using the accelerometer measure the operational values of your aircraft on the vertical axis • Set value limits at 2 levels (Warning and Alarm) for all measured values. In case these values are exceeded the instrument will warn you in time of any possible damage to the aircraft • Always be informed of values approaching the limits, which could result in damage to the aircraft • Always be aware of exceeded values from the previous flight after switching on the instrument • Start of logging is carried out by a switch on the undercarriage or by an internal / external pressure sensor on attaining your selected speed. Size: 2-1/4".

Digital accelerometer.....P/N 10-00889 .....**$431.95**
Digital accelerometer w/ internal airspeed sens.
P/N 10-00890 .....**$579.00**

TL-3424-RAS ACCELEROMETER

The TL-3424 is complete weight acceleration management. The instrument incorporates a high-precision sensor for measuring acceleration in the vertical axis. The SAS version also incorporates a sensor for measuring the indicated airspeed, which enables the activation of memory recording. Both versions enable to utilize an undercarriage scanner that can also activate memory recording.

P/N 10-02312 ..... **$564.00**

TL INSTRUMENTS ARE FOR EXPERIMENTAL AIRCRAFT ONLY.

IN

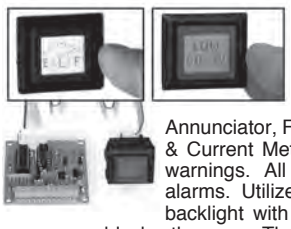
AE FUEL GUARDIAN

AE FUEL GUARDIAN LOW FUEL ANNUNCIATION SYSTEM

This system gets your attention before you have to switch tanks. When the annunciator light flashes, you will know your precise fuel quantity and also the time to engine shut-down for that tank. HOW DOES IT WORK? - The optical fuel sensor is a non-contact sensor mounted in a single hole in the fuel tank. It operates by bouncing a beam of light into the sensors lens. If it is reflected back into the sensor, there is no liquid present. If it is not reflected back, it is dissipated into the liquid media. The sensor output is pulled down, or activated.The electronics constantly monitors the sensor outputs of both tanks. When a low fuel level is detected, the appropriate light starts to blink, getting the pilot's attention immediately. After the pilot sees the alarm, he can press the acknowledge button. This action turns the light on solid (continuous) denoting a low fuel quantity. This function of the annunciator eliminates the distracting flashing action of the lights for the pilot, yet he can still see that he has a low fuel indication. The AE Fuel Guardian also has an audio output that can be wired into the aircraft intercom or audio system if desired. The audio beep is only present when the annunciator lights are flashing. The AE Fuel Guardian annunciator lights can also be wired into the aircraft dimmer bus if desired for night flight. This system is 100% solid state and is compatible with 12VDC or 24VDC electrical systems. The installer sets the sensors to provide low fuel warning at whatever level is desired. System includes (2) annunciator panel lights, (2) optical sensors, (1) push button, Sensor drive and annunciator electronics enclosure, wiring, and lettering decals. For Experimental aircraft only.

Kit With One Sensor .....P/N 10-01811 .....**$149.00**
Kit With Two Sensor .....P/N 10-00399 .....**$210.00**

AE AG6 ANNUNCIATOR GAUGE METER



One Button, Multi-function,Aircraft Annunciator - Fuel Gauge, Several styles available (with low fuel warning and caution zones) Volt Meter & Current Meter (with low & high warnings and caution zones) A full service Aircraft Annunciator, Fuel Gauge, Oil Level Gauge, Volt Meter & Current Meter. Will display many different aircraft warnings. All devices feature user programmable alarms. Utilizes a push-button LCD display that is backlight with a 3 color LED. All functions are fully programmable by the user. The push-button/display can be used for programming, acknowledging the alarms, and paging thru up to 16 different screens or "annunciator points". Can automatically scan thru each screen or it can be done manually using the push-button. The pilot has the ability to mask or unmask annoyance alarms. ***NOTE***: Input devices not included. It is up to the user to provide input devices such as fuel senders, shunts, oil level sensors and input switches to drive the AG6 DISPLAY & PUSH BUTTON P/N 10-04180.....**$169.95**

AE LOW OIL LEVEL SENSOR

Originally designed for small Lycoming engines, but can be utilized on several other engine types as well. Utilizes a 1/2" NPT fitting so that it can be inserted directly into the oil pan of most small Lycoming Engines. The 5/8" x 5/8" square bolt head of this sensor has been drilled (0.08" dia.) to accept a safety wire. Material: Stainless Steel construction Switch: Normally open when normal oil level, 30V @ 0.35Adc max. Temperature: -20°F to +280°F

You can utilize the "flashing panel light", a relay, or utilize your own panel indicator. The maximum current draw for any light or relay is 0.2Adc. The light can be mounted in the instrument panel using a 0.249" to 0.254" diameter mounting hole. The light supplied will operate from a +12Vdc system. To make this system +24V compatible, you will need to add a 12V zener diode in series with our flashing panel light. AE Low Oil Level Sensor (sensor ONLY) .....P/N 10-01812 ..... **$99.00**
AE Low Oil Level Sensor with blinking red LED (LED blinks when oil level is low).....P/N 10-03891 ..... **$109.95**

AUXILIARY FUEL PUMP RELAY

The AFPR is a "Smart" Auxiliary Fuel Pump Relay. This device allows the pilot to flip oneswitch and quickly drain the contents of the auxiliary fuel tank without over stressing the auxiliary fuel pump. The AFPR will pump down the auxiliary fuel tank, and then automatically shut the fuel pump off when no fuel is detected. The AFPR includes a very reliable optical fuel sensor that can be easily installed in the auxiliary fuel tank or in the fuel line. The AFPR can be operated in and one of four modes of operation. The AFPR also has an output that can be used for a light to indicate when the fuel pump-down has been completed. Input Power: 12Vdc or 24Vdc, 0.1A max. Enclosure: 3.5" x 2.25 x 1.25" (89mm x 57 x 32mm) Fuel Sensor Mounting Hole: 0.475" (12mm) P/N 10-04343.....**$129.95**

IN

AE AIRSPEED SWITCH & RELAY BOARD

RELAY BOARD USE: Control your Flap & Elevator Trim motors. This board allows you to use any inexpensive switch [Single Pole, Double Throw, (ON)-OFF-(ON), Spring Loaded, 3 Position] to control your flap and elevator trim motors. You can series as many switches as you desire control your flap & elevator trim motors. Free connection diagrams for relay boards and airspeed switch for several typical systems. ***AIRSPEED RELAY USE:*** Flap Deployment Protection at High Airspeeds When our relay board is used with our airspeed switch, you can protect you flaps from being actuated in the downward direction when your airspeed is too high (above the white arc). We provide the end user with easy connection diagrams for several different systems. Automatic Speed Adjust for Elevator Trim Motors Many have complained about the fast adjustment speed of elevator trim motors at high airspeeds. When our relay board is used with our airspeed switch, it eliminates this problem. You will have two speeds, fast for slower airspeeds, and slower for high airspeeds. The slower speed is adjusted by supplying this relay board a lower motor drive voltage. ***RELAY BOARD SPECIFICATIONS*** Each board includes two independent, Single Pole, Double Throw Relays. Relay contacts are protected against inductive sparking generated from switching inductive loads such as motors. For use on 12Vdc systems. Switch currents up to 10 Amps. Boards are stackable to 3 levels high for saving panel space. Mounting hardware included

AE Relay Board One.....P/N 10-01814.....**$45.25**
AE Relay Board Two Staked.....P/N 10-01815.....**$63.75**
AE Relay Board Three Staked.....P/N 10-01816.....**$79.00**
AE Airspeed Switch & Board.....P/N 10-01817.....**$93.00**

SAFETY-FLY 700

Safety-fly 700 is a useful universal control device for ultralight aircrafts that monitors in real-time, by means of warning lights and an acoustic buzzer, all the engine pre-alarm parameters listed below using the standard sensor signals installed on the Rotax engine, thus avoiding engine problems.
Safety-fly 700 displays and checks:

- pre-alarm cylinder heads
- pre-alarm engine oil temperature
- pre-alarm minimum and maximum engine oil pressure
- green light for regular oil temperature
- fuel light for open taps
- the position of flaps on 3 levels
- timer set to 2 minutes

The calibration is done directly by the pilot, by means of the existing instruments installed on the dashboard.
Safety-fly 700 is supplied with wiring harness, connectors and operating manual. 3 year warranty. Made in Italy.

P/N 10-04934.....**$265.95**

AEROSPACE LOGIC CHT/EGT INDICATORS

Available in 4 or 6 cylinder configurations • Supports most type K thermocoupleprobes • Displays information in °C & °F with automatic conversion of all setup parameters • Accuracy to within 1°F • Displays temps from 0°F – 1900°C / 0°C—1040°C (EGT); 0°F – 700°C / 0°C—371°C(CHT) • High speed scan and acquisition rates. While others update information every 5 seconds and more, our instrument provides precise information every 1 second! • Analog bar type and digital display Select between any of these powerful display pages:
1) Any specific cylinder. Choose the cylinder you wish to monitor and change to the next whenever you wish.
2) Sequential step through each cylinder with 5 second delay.
3) Auto select. Selects the hottest cylinder, updated every 1 second.
4) Switch between any selectable function and the auto function and return to the last monitored setting without any data loss!
• User programmable high and low limits • Internal and external brightness control (user programmable) • 9V-33V operating range • Only 2.2" deep • Fits std 2.25" mounting holes • Full 1 year warranty.

Part No.	Model No.	Description	Cylinders	Price
10-00447	CHT-100-4	Cylinder Head Temperature Instrument	4	$445.95
10-02154	CHT-100-4V	Cylinder Head Temperature Instrument with Built in Voltmeter	4	$499.95
10-00449	CHT-100-4RP	Cylinder Head Temperature Instrument with 18mm Ring Probes	4	$544.00
10-01752	CHT-100-4VRP	Cylinder Head Temperature Instrument with 18mm Ring Probes and built in Voltmeter	4	$598.00
10-00723	CHT-100-4BP	Cylinder Head Temperature Instrument with Bayonet Probes	4	$643.00
10-01754	CHT-100-4VBP	Cylinder Head Temperature Instrument with Bayonet Probes and Built in Voltmeter	4	$696.00
10-00454	CHT-100-6	Cylinder Head Temperature Instrument	6	$464.95
10-01755	CHT-100-6V	Cylinder Head Temperature Instrument with Built in Voltmeter	6	$520.00
10-01756	CHT-100-6RP	Cylinder Head Temperature Instrument with 18mm Ring Probes	6	$640.00
10-01757	CHT-100-6VRP	Cylinder Head Temperature Instrument with 18mm Ring Probes and built in Voltmeter	6	$651.00
10-01758	CHT-100-6BP	Cylinder Head Temperature Instrument with Bayonet Probes	6	$760.00
10-01759	CHT-100-6VBP	Cylinder Head Temperature Instrument with Bayonet Probes and Built in Voltmeter	6	$812.00
10-01719	CT1-F	Clock and Outside Air Temperature Degrees F°	ALL	$424.95
10-01761	CT1-C	Clock and Outside Air Temperature Degrees C°	ALL	$322.95
10-00439	EGT-100-4	Exhaust Gas Temperature Instrument	4	$445.95
10-00441	EGT-100-4P	Exhaust Gas Temperature Instrument with Probes	4	$734.00
10-01762	EGT-100-4V	Exhaust Gas Temperature Instrument with Built in Voltmeter	4	$489.95
10-01763	EGT-100-4VP	Exhaust Gas Temperature Instrument with Probes and Built in Voltmeter	4	$742.00
10-00443	EGT-100-6	Exhaust Gas Temperature Instrument	6	$459.95
10-00445	EGT-100-6P	Exhaust Gas Temperature Instrument with Probes	6	$754.00
10-01764	EGT-100-6V	Exhaust Gas Temperature Instrument with Built in Voltmeter	6	$515.00
10-01765	EGT-100-6VP	Exhaust Gas Temperature Instrument with Probes and Built in Voltmeter	6	$782.00

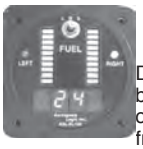
AEROSPACE LOGIC FUEL PRESSURE/AMMETER/VOLTMETER

Fuel Pressure and Ammeter kit. Includes instrument with integrated voltmeter, solid state fuel pressure sender and 30A current shunt.

Part no.	Model No.	Description	Price
10-01773	FP-100-K30	Fuel Pressure, Ammeter, and Voltmeter Instrument w/ External 30A Shunt	$666.00
10-01774	FP-100-K60	Fuel Pressure, Ammeter, and Voltmeter Instrument w/ External 60A Shunt	$624.00
10-01775	FP-100-K100	Fuel Pressure, Ammeter, and Voltmeter Instrument w/ External 100A Shunt	$624.00

AEROSPACE LOGIC INTELLIGENT TACHOMETER

Intelligent Tachometer Kit. Works with all magneto based ignition systems. Complete with instrument, data download cables, all sensors and installation hardware. For experimental aircraft, TSO and STC in progress.
P/N 10-01776 ..... **$490.95**



AEROSPACE LOGIC FL-100 DUAL FUEL LEVEL INDICATORS

Displays fuel level of two separate tanks on color coded bar graph indicators and a digital readout of fuel quantity on a 4-digit display. Fully user programmable from the front panel. For use with 0-5V sensors/ transducers. Fits standard 2-1/4" mounting hole. Voltage: 9-33 VDC. Displays fuel in US gallons.

Part No.	Model No.	Description	Price
10-00304	FL-100-R	Dual Fuel level Indicator for Senders with a Maximum Resistance of 300 Ohms	$622.00
10-01767	FL-100-R (44)	Dual Fuel level Indicator for Senders with a Maximum Resistance of 44 Ohms	$549.00
10-01768	FL-100-R (67)	Dual Fuel level Indicator for Senders with a Maximum Resistance of 67 Ohms	$545.00
10-01769	FL-100-R (108)	Dual Fuel level Indicator for Senders with a Maximum Resistance of 108 Ohms	$545.00
10-01770	FL-100-R (711M)	Dual Fuel level Indicator for Use with Cessna Pennycap Capacitive Fuel Senders	$622.00
10-00303	FL-100-6	Dual Fuel Level Indicator for Senders with a DC Voltage Output of 0v-5v	$580.00

AEROSPACE LOGIC OIL PRESSURE & TEMPERATURE

Your OL-100 Oil Pressure and Temperature Indicator will provide you with years of reliable service and generally outlast the life of your aircraft.Every reading you will see displayed on your instrument has been validated at least 256 times before you see it. This all happens in less than a second. When you see the result you know the instrument is functioning correctly as it is monitored by an independent microprocessor just to ensure that it is functioning correctly. In turn the main processor validates the independent monitoring processor.

Part No.	Model No.	Description	Price
10-01779	OL-100-TK	Oil Pressure and Temperature Instrument with Pressure and Temperature Senders	$735.00
10-01780	OL-100-TKV	Oil Pressure and Temperature Instrument with Pressure and Temperature Senders and Built in Voltmeter	$697.00

AEROSPACE LOGIC VOLMETER / AMMETER

Voltmeter and Ammeter kit. Includes instrument and current shunt.

Part No.	Model No.	Description	Price
10-01782	VA-100-K30	Voltmeter and Ammeter Instrument with 30A External Shunt	$433.95
10-01783	VA-100-K60	Voltmeter and Ammeter Instrument with 60A External Shunt	$433.95
10-01784	VA-100-K100	Voltmeter and Ammeter Instrument with 100A External Shunt	$373.95

AEROSPACE LOGIC CLOCK & OUTSIDE AIR TEMPERATURE

Clock and Outside Air Temperature kit choose °F or °C. Includes instrument and digital temperature sensor. For experimental aircraft, TSO and STC in progress.
P/N 10-01761 ..... **$322.95**

AEROSPACE LOGIC CLOCK & OUTSIDE AIR TEMPERATURE

Manifold and fuel pressure combination instrument. Instrument contains an integrated manifold pressure sensor and requires 0.5v-4.5v fuel pressure input (0-100 PSI at full scale) Features: • Manifold Pressure 0.2-50 in.Hg • Fuel Pressure 0-60 PSI • Use as either manifold, fuel or both pressure instrument • Programmable display formats • Integrated MP sensor • Remote mount FP sender • External alarm output • All limits and functions are user programmable P/N 10-01766..... **$562.00**

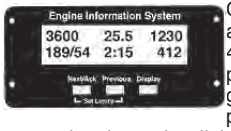
AEROSPACE LOGIC SENSORS AND PROBES

Description	Part No.	Price
A200-TEC5 EGT Probe Kit	10-04813	$184.95
A200-TEC20 EGT Probe Kit	10-04812	$149.95
A200-TEC25 EGT Probe Kit	10-04800	$149.95
A200-HAS Hall Effect Current Shunt	10-04808	$126.95
A200-PSF Fuel Pressure Sensor	10-04804	$213.95
A200-HMB Bendix Rotational Speed Sensor	10-04806	$175.95
A200-HMS Slick Rotational Speed Sensor	10-04807	$175.95
A200-PSO Oil Pressure Sensor	10-04805	$213.95
A200-TSO Oi; Temperature Sensor	10-04801	$156.95
A200-TCB Bayonet CHT Probe Kit	10-04799	$158.95
A200-PMP Manifold Pressure Sensor	10-04803	$213.95
A200-TSA Air Temperature Sensor	10-04802	$119.95

PLEASE SEE OUR WEBSITE FOR ADDITIONAL MODELS, INCLUDING STC'D MODELS.

IN

SUPER ENGINE INFORMATION SYSTEM (EIS)



Complete engine instrumentation packages available in various models for nearly all 2 & 4-stroke engines.The EIS includes 6 display pages. Combination pages provide convenient grouping of 6 or 7 engine parameters. Labeled pages are used by the alarm system with its external red warning light to make unsafe engine conditions immediately apparent. 2-stroke models provide tach, dual EGT, dual CHT, fluid temperature, auxiliary input, hourmeter, flight timer, voltmeter and outside air temperature. Four-stroke models include all of this, plus oil pressure, a second auxiliary input and a 10 rpm resolution tachometer. All models also available with the fuel flow option (including totalizer and time to empty). The 2-stroke model is available w/altimeter/rate-of-climb. The instrument has been proven in thousands of installations worldwide. Excellent quality and robust design makes this instrument highly reliable. Systems include probes and pre-wired cables, or may be purchased individually. Requires (5) 15/16"w x 2-3/4"h x 2-1/2"d panel space.Specify engine and aircraft makes and models, standard systems furnished with gasket type CHT senders and hose clamp type EGT senders. Threaded senders available at additional cost.

Lifetime warranty for manufacturer defects

Description	Model	Part No.	Price
EIS System for Cont./Lyc./Franklin	4000	10-00285	**$877.95**
EIS System for 4 Stroke	4000	10-28002	**$824.00**
EIS Fuel Flow Option	OPT-FF-01	10-28004	**$365.95**
2-stroke, 4 Cylinder	4002	10-00280	**$695.00**
Rotax 912/912S/914	2004	10-00281	**$546.95**
Rotax HKS	2004	10-00282	**$659.00**
EIS system for Jabiru 4 Cyl.	4000	10-00283	**$824.00**
EIS system for Jabiru 6 Cyl.	6000	10-00284	**$956.00**
Cont./Lyc./Franklin 6 Cyl.	6000	10-00286	**$1,045.95**
EIS Lyc/Cont 6 Cylinder (Package for Lycoming/Continental 6-cylinder engines includes EIS Model 6000 Instrument, 6 EGT probes, 6 CHT bay-onet-type CHT probes with adapters, Oil temperature Sensor, Oil Pressure Sensor, and pre-wired cables.)	6000P	11-03421	**$1,034.00**
Super EIS 2-stroke package	2000	10-28000	**$477.95**
2-stroke Altimeter/rate-of-climb pkg	2000	10-28003	**$139.00**

PRINCETON CAPACITIVE FUEL PROBES

• Easy Push Button Calibration - Simple push buttons make calibration easy and accurate. No sensitive screw adjustments to make. Place the probe in tank, connect power and press EMPTY. Fill tank and press FULL. Calibration is complete. ***• Steady Readings -*** Digital filtering minimizes the effects of fuel slosh providing greater accuracy.***• Proven Design -*** Designed specifically for the aircraft that are subject to harsh environments, such as vibration, temperature, and electrical noise. Probes designed for industrial applications can fail under these conditions. Proven reliability with over 10 years of history. ***• SAE 5 Hole Bolt Pattern -*** Industry standard flange mount compatible. ***• Unique Press fit installation option -*** Simply drill a 1/2" hole and use a rubber bushing to seal and hold the probe in place. ***• No Moving Parts -*** Nothing to wear out. ***• Output*** - 0 to 5 Volts ***• Compatible Fuel Quantity Gauges -*** UMA P/N: 18-110-1C1 (P/N 10-01717), 18-210-1C1 (P/N 10-01717);Westach P/N: 20A4V (P/N 10-01255) & 2A7V (P/N 10-01246) and other 0-5V gauges.

Mounting Options: ***• Unique Pressfit Installation -*** Can be mounted in plastic tank by drilling a 1/2" hole. A rubber grommet is used to hold the probe in place. ***• Standard SAE 5-Hole Bolt Pattern -*** A backing plate and seal are used to secure the probe to the tank. Standard Lengths of 12, 18, & 24 inches. Flange mount with standard SAE 5-hole pattern, or rubber grommet press fit. Probes may be shortened up to 1/2 of their measurable length. 0, 3, or 5 inch bendable section. 2 or 5 set points.

Ordering: (LL-BB-SS-MM)

LL - Length (12, 18, 24 inches or 25 to 48 inches custom)
BB - Bendable Section (NB= non-bendable, 3B= 3 inch, 5B= 5 inch)
SS - Set points (1S= Empty, 2S= Empty/Full or 5S= Empty,1/4,1/2,3/4,Full)
MM - Mounting method (PF= Press Fit Bushing, FM= Flange Mount Gasket)

Example: A 12", non-bendable, 2 set point probe using a press fit mounting part number would be 12-NB-2S-PF.

Description	Part No.	Price
Standard, 1 Or 2 Set Point, Pf Or Fm Mounting	10-00257	**$89.00**
Standard, 5 Set Point, Pf Or Fm Mounting	10-00258	**$139.95**
Standard Sae 5-hole Flange Mounting Kit	10-00259	**$20.80**
Advanced Npt Model, 1,2,or 5 Set Point, Npt Mount.	10-00256	**$189.95**
Accessories	**Part No.**	**Price**
Wire For Capacitance Fuel Probe	11-03996	**$1.10**
Fuel Tank Bushing	05-01039	**$0.88**
ISS Fuel Sender Gasket	10-01097	**$1.65**

IN

SKYSPORTS CAPACITIVE FUEL SYSTEMS

The Skysports fuel monitoring system is a capacitance system which has no float and no moving parts except the needle on the gauge. Used in hundreds of various ultralight, homebuilt, and military aircraft, these fuel systems have been very popular due to their accuracy and durability. The Skysports fuel probe electronically measures the level of fuel in the tank, and sends the signal through the wire harness to the gauge. Available for single or dual tank use and for 12 or 24 volt operation. The system includes the gauge, probe, 8 ft. wire harness, mounting hardware, & instructions.

The SkySports 240-33ohm fuel systems are no longer available. They have been replaced with a new 0-5V system. These new systems, (listed below) can be used on both 12 or 24 volt aircraft. The older 240-33ohm gauge and probes are not interchangeable with the new 0-5V gauge or probes. However the installation of the systems are the same.

Note:The Skysports 240-33ohm older style probes are only available as special order upon request.

ROUND GAUGE SYSTEMS

Description	Part No	Price
2" Round 6" Straight Probe	10-04509	**$157.46**
2" Round 12" Straight Probe	10-04495	**$160.36**
2" Round 24" Straight Probe	10-04496	**$162.11**
2" Round 12" with 3" Bendable Probe	10-04497	**$160.36**
2" Round 24" with 3" Bendable Probe	10-04498	**$164.36**
2" Round 12" with 5" Bendable Probe	10-04499	**$160.36**
2" Round 24" with 5" Bendable Probe	10-04501	**$164.36**

SQUARE GAUGE SYSTEMS

Description	Part No.	Price
2-1/4" Square 6" Straight Probe	10-04511	**$167.21**
2-1/4" Square 12" Straight Probe	10-04502	**$170.11**
2-1/4" Square 24" Straight Probe	10-04503	**$171.86**
2-1/4" Square 12" with 3" Bendable Probe	10-04504	**$170.11**
2-1/4" Square 24" with 3" Bendable Probe	10-04505	**$174.11**
2-1/4" Square 12" with 5" Bendable Probe	10-04506	**$170.11**
2-1/4" Square 24" with 5" Bendable Probe	10-04507	**$174.11**

INDIVIDUAL COMPONENTS

Description	Part No.	Price
2" Gauge Only	10-04119	**$55.75**
2-1/4" Gauge Only	10-01246	**$65.50**
12" Straight Probe	10-03758	**$82.75**
6" Straight Probe	10-03753	**$79.85**
24" Straight Probe	10-03773	**$84.50**
12" with 3" bend probe	10-03746	**$82.75**
24" with 3" bend probe	10-03774	**$86.75**
12" with 5" bend probe	10-03761	**$82.75**
24" with 5" bend probe	10-03776	**$86.75**
Installation Kit	10-03731	**$21.85**

US-8A, STCd / PMAd, ULTIMATE ENGINE ANALYZER

US-8A ULTIMATE ENGINE ANALYZER (DUAL DISPLAY)

Simultaneously displays EGT and CHT for Singles. (For Twins, call for model designation. May require two US-8As, depending on your requirements). Automatic Diagnostic Assist helps diagnose engine problems such as fouled plugs, burned valves, intake leaks, low compression, etc. Impressive Features Include: Auto Scan up to 16 temperature channels, Reprogrammable Temp Limits From the Front Panel (unavailable on competition's gauges in this category), Auto Detection of hottest EGT and hottest CHT + pilot-programmed Over-Temp and Under-Temp limits!, Programmable Scan Rate for each channel displayed (rather than competition making that decision for you). One Degree, STEADY Resolution! Only 6lbs., Standard 2-1/4" hole (or use an EI adaptor plate for 3-1/8" holes) Choose up to 16 probes (w/ cables): EGT, CHT, OAT, Carb Temp, Oil Temp

SINGLE-ENGINE US-8A PKG PRICES			
Model	**Description**	**Part No.**	**Price**
US-8A-4	4-cylinder engines without a Primary CHT gauge already installed. Includes 4 EGT probes, 4 CHT probes and 8 ea 6-ft harnesses	10-00595	**$1,108.00**
US-8A-4G	4-cylinder pkg for a/c w/ Primary CHT gauge already installed. Includes 4 EGT probes, 3 CHT probes, 1 P-102 Piggy Back CHT probe and 8 ea 6 ft harnesses	10-03283	**$1,108.00**
US-8A-6	6-cylinder pkg for a/c without a Primary CHT gauge already installed. Includes 6 EGT probes, 6 CHT probes & 12 ea 6-ft harnesses	10-00596	**$1,350.00**
US-8A-6G	6-cylinder pkg for a/c with a Primary CHT gauge already installed. Includes 6 EGT probes, 5 CHT probes, 1 P-102 Piggy Back CHT probe and 12 ea 6-ft harnesses	10-03284	**$1,350.00**
NOTE: The UBG-16 can accommodate to 16 probes (w/ cables): EGT, CHT, OAT, Carb Temp, and / or Oil Temp			
TWIN-ENGINE US-8A PKG PRICES:			
US-8A-4T	4-cylinder Twin pkg for a/c without Primary CHT gauges already installed. 4 EGTs L&R and 4 CHTs L&R. Includes 8 EGT probes, 8 CHT probes and 16 ea 20-ft harnesses.	10-00597	**$2,025.00**
US-8A-4G-T	4-cylinder Twin pkg for a/c with Primary CHT gauges already installed. 4 EGTs L&R and 4 CHTs L&R. Includes 8 EGT probes, 6 CHT probes, 2 P-102 Piggy Back CHT probes and 16 ea 20-ft harnesses.	10-00602	**$2,025.00**
US-8A-6-T	6-cyl Twin pkg (scans all EGTs L&R + 2 CHTs L&R). Includes 12 EGT probes (for 6 channels of EGT on both engines), 4 gasket CHT probes (for 2 channels of CHT on each engine), plus 16 ea 20-ft harnesses. (For more than 12 EGTs and 2 CHTs L&R, + add'l temps, order 2 US-8As)	10-00598	**$2,025.00**

SR-8A ENGINE ANALYZER

SR-8A (SINGLE DISPLAY)

STCd, PMAd - EGT's, CHT's TIT, Oil Temp, OAT, Carb. Temp + others, up to 8 channels. Manual and Auto Diagnostics (Scan) Modes. Auto Detects the hottest EGT or CHT. Factory-set EGT Over-Temp Limit (1650'F). Factory-set EGT Under-Temp Limit (1100'F). Factory-set CHT Over-Temp Limit (500'F). Differential Limit set from back panel (95'F or 195'F). Selectable Scan Rate + Number of Channels to be Scanned. 2 1/4" Mount. 5.35" Depth. 16 Oz. Instrument. 1' F Resolution. Accuracy; 1/2%. Superior Sunlight Viewability. Backlit. Operates from 7.5 to 35 volts @at .3 amps.

Model	**Description**	**Part No.**	**Price**
SR-8A	SR-8A Instrument only (no probes or cables)	10-25220	**$425.99**
SR-8A-4	4 Cyl. SR-8A Package w/ 4 p-110 EGT probes, 4 P-100 CHT probes, 8 ea 6' Cables (uses all 8 inputs)	10-00599	**$916.00**
SR-8A-6	6 Cyl. SR-8A Package w/ 6 P-110 EGT probes, 2 P-100 CHT probes, 8 ea 6' Cables (uses all 8 inputs)	10-00603	**$915.00**

UBG-16 ULTIMATE BAR GRAPH ENGINE ANALYZER

UBG-16 features include: Sixteen input channel capability. Any channel may be set to display EGTs and CHTs, TIT, and Oil Temp in either digital or bar graph display, O.A.T, Carb. Temp, Cowl Temp, Other Temp, Oil Pressure, Fuel Pressure, Manifold Pressure, Gyro Pressure, R.P.M.,Fuel flow, Bus Voltage or Amps. Engine Analysis is performed automatically with sixteen pilot programmable Over-Temp limits and sixteen Under-Temp limits, a differential limit and a shock-cooling limit.
Note: Unit is STC'd/PMA'd. Can only be used as a secondary engine monitor. For primary see the MVP-50.

Model	**Description**	**Part No.**	**Price**
UBG-16-4M	4-Cylinder Package. Includes 4 EGT probes, 4 CHT probes, 8 ea 6' harnesses and Data Recorder (MUX-8A)	10-00593	**$1,638.00**
UBG-16-6M	6-Cylinder Package. Includes 6 EGT probes, 6 CHT probes, 12 ea 6' harnesses, and Data Recorder (MUX-8A)	10-00594	**$1,635.00**
EGView	Software for analyzing downloaded software	10-01219	**$125.00**
Remote	UBG-16 Remote Head option.. Must be purchased at the same time as the UBG-16	10-02763	**$105.95**
UBG-16-4G-MEM	Electronics International Ubg-16 Engine Analyzer 4 Cylinder	10-01048	**$1,648.00**
UBG-16-6G-MEM	Electronics International Ubg-16 Engine Analyzer 6 Cylinder	10-01049	**$2,098.00**

E.I. DIGITAL/GRAPHIC INSTRUMENTS

These Digital/Graphic Instruments are solid state and hold their accuracy over time and a range of environmental conditions. The colorful Graphic Analog display emits green, yellow, or red lights enabling the pilot to spot problems immediately without interpreting a needle. Gauges mount in 2-1/4" instrument holes.

TACHOMETER - R-1, TACHOMETER: STCd, PMA'd and TSO'd as PRIMARY REPLACEMENT. Features a 210 degree graphic analog display with green, yellow, and red LEDs. Accurate 10 RPM resolution digital display. Flight Timer. Tach Timer. Peak RPM Recorder. Automatic Mag Drop Calculation. Connects to both "P" leads through isolators (no magnetic pick-ups required). 2 1/4" Mount. 3.65" Depth. 10 Oz. Unit. Superior sunlight viewability. Backlit. Operates from 7.5 to 30 volts @ .3 amps. Note: This instrument may come with labels on the faceplate rather than silkscreening, depending on you're a/c's required markings..

P/N 10-25200 ..... **$440.95**

OIL PRESSURE/TEMPERATURE - OPT-1, OIL TEMP/PRESSURE: STC'd, PMAd and TSO'd as PRIMARY REPLACEMENT. OPT-1 features dual 90 degree graphic analog displays w/ green, yellow, and red LEDs. Accurate to 1 PSI and 1°F Resolution. External Oil Press and Temp Transducers (no oil in the cockpit). 2 1/4" Mount. 3.65" Depth. 22 Oz. Kit. Superior sunlight viewability. Backlit. Operates from 7.5 - 35 volts @ .3 amps. Note: This instrument may come with labels on the faceplate rather than silkscreening, depending on you're a/c's required markings.

P/N 10-25205 ..... **$499.00**

MANIFOLD PRESSURE - M-1, MANIFOLD PRESSURE. STC'd, PMA'd & TSO'd as PRIMARY REPLACEMENT. 210 degree graphic analog display w/ green, yellow, and red LEDs. Accurate 1" Mercury Resolution digital display. Connects to std pressure line through 1/4" male flare union. 2 1/4" Mount. 3.65" Depth. 13 Oz. Unit. Viewable in direct sunlight. Backlit.. Operates from 7.5 to 30 volts @ .3 amps. Note: This instrument may come with labels on the faceplate rather than silkscreening, depending on you're a/c's required markings.

P/N 10-25210 ..... **$479.95**

VOLTS/AMPS - ***VA-1A, VOLTS/AMP.*** STCd, PMAd as PRIMARY REPLACEMENT. Internal Shunt. Discharge @ High Voltage Warning Lights. 100 amp capability. .1 volt & .1 amp 1% Resolution. Accuracy: 2 1/4" Mount. 2.5" Depth. 9 Oz. Unit. Viewable in direct sunlight. Backlit. Operates from 7.0 to 40 volts @ .1 amp.

P/N 10-00809 .....VA-1A (internal shunt) **$339.00**

VA-1A-XX, VOLTS/AMP - STCd, PMAd as PRIMARY REPLACEMENT. (For use with External Shunt. Discharge and High Voltage Warning Lights. 100 amp capability (or order VA-1A-300 for 300-amp capability). .1 volt and .1 amp Resolution. Accuracy: 1%. 2 1/4" Mount. 2.5" Depth. 9 Oz. Unit. Superior sunlight viewability. Backlit. Operates from 7.0 to 40 volts @ .1 amp.

P/N 10-01378 .....VA-1A-50 (S-50 external shunt) **$369.95**
P/N 10-01394 .....VA-1A-300 (S-300 external shunt) **$378.95**
P/N 10-03207 .....RSVA-3 Remote Switch **$89.75**

The UBG-16 input channels. Any of the following options can be added at any time. Each option uses 1 input channel unless otherwise noted.

Model	**Description**	**Part No.**	**Price**
FM-FLOW-60	Flow Transducer Use w/ engine-driven fuel pumps up to 350 HP. 1/4" female NPT, .6-70+ GPH, .6 PSI drop @ 30 GPH, 2.3 PSI drop @ 60 GPH	10-25343	**$329.95**
FM-FLOW-90	TRANSDUCER For 350 to 550 HP engines or gravity-feed engines, 1/4" NPT, 2 to 125+ GPH, .05 PSI drop @ 20 GPH, .2 PSI drop @ 40 GPH.	10-02208	**$329.95**
FM-FP	Secondary Fuel Pressure Includes PT-30GA Pressure Transducer. (Can be used with The UBG-16 and also with the FP-5L (Fuel Flow/Pressure w/ GPS Interface instrument)	10-25337	**$249.00**
FM-OP	Secondary Oil Pressure Includes PT-100GA Pressure Transducer. (For use with UBG-16 or FP-5(L).	10-25336	**$224.95**
FM-RPM	Secondary RPM Connects directly to the Mag Switch. (For use with UBG-16 or FP-5(L)	10-04818	**$175.00**
FM-VA	Secondary Volts/Amps w/S-50 Shunt Volts uses 1 input channel and Amps uses 1 input channel (i.e., monitoring volts and amps require the use of two of the UBG-16's input channels.	10-25342	**$214.95**
FM-GYRO	Gyro Vacuum Includes Pressure Transducer.	10-25339	**$175.00**
FM-MP	Secondary Manifold Pressure Includes Pressure Transducer.	10-25338	**$217.95**

IN

FP-5 FUEL FLOW + HORSEPOWER

PMAd and STCd - Same amazing Fuel Flow/Horsepower Instrument as our FP-5L, but without GPS interface. Features: • HORSEPOWER to 1% hp • FLOW Displayed in Gallons, Pounds, Liters or British Gallons. • AUTOMATIC K-Factor Calibration for UNSURPASSED • ACCURACY. • FUEL USED Displays "Used for Flight" and "Used Since Fill Up" • FUEL REMAINING Displays fuel remaining to 1/10 gallon. • SCAN MODES Manual and Automatic. • RECURRING FUEL USED ALARM Pilot Programmable! • AUXILIARY Channel To monitor one of the following options: EGT, OAT, Carb Temp, Oil Temp, Manifold Pressure, Gyro Vacuum, RPM, Volts or Amps • Pilot Two LOW FUEL ALARMS Pilot Programmable! • TIME TO EMPTY automatically calculated and displayed. Specs: 2-1/4" mount, 3.65" deep, 28 oz. pkg, Backlit, Superior Viewing in Sunlight, External Warning Line. Operates from 7.5 to 30 volts @ .3 amps.

Model	Description	Part No.	Price
FP-5	Instrument Only FUEL FLOW w/ HP (instrument only, no transducers)	10-25300	**$658.00**
FP-5-60	FUEL FLOW w/ HP w/ FT-60 flow xdr, up to 350HP, engine-driven fuel pump	10-25304	**$568.00**
FP-5-90	FUEL FLOW w/ HP, w/ FT-90 Flow Transducer, for aircraft w/ 350-550 HP or without an engine-driven fuel pump	10-00260	**$748.00**
FP-5-180	FUEL FLOW w/ HP, includes HIGH FLOW Transducer (for aircraft w/ more than 550HP)	10-03208	**$838.00**

FP-5L FUEL FLOW, PRESSURE, HORSEPOWER AND GPS PMAd & STCd PRIMARY REPLACEMENT INSTRUMENT

Positively the best Fuel Flow/Horsepower Instrument there is! Nothing else even comes close. The FP-5L's High-Powered Features Include: • HORSEPOWER, to 1 percent hp. No other fuel gauge provides this! • FLOW, displayed in Gallons, Pounds, Liters or British Gallons. • AUTOMATIC K-Factor Calibration for UNSURPASSED ACCURACY. • FUEL DISPLAYS: "Used for Flight", "Used Since Fill Up", "MPG", "Fuel Required to. • Destination", "Fuel Remaining", "Time to Empty." • SCAN MODES: Manual and Automatic. • RECURRING FUEL USED ALARM Pilot Programmable. • 2 LOW FUEL ALARMS Pilot Programmable w/ Red Warning LED. • FUEL REMAINING displayed to 1/10 Gal. • AUTOMATICALLY CALCULATES AND DISPLAYS "Time to Empty", "Fuel Req to Dest," and "Fuel Reserve.". Displays Nautical and Statute Miles per Gallon. Multiple Data Outputs & Inputs, Handhelds & Panel Mounts. One-of-a-kind AUXILIARY Channel can be used to monitor an additional function (choose one):EGT, TIT, CHT, OAT, Carb Temp, Oil Temp, Cowl Temp, Fuel Pressure, Gyro Vacuum, Manifold Pressure, Volts or Amps. Specs: 2-1/4" mount, 3.65" deep, 28 oz. pkg, Backlit for Night Operation, Superior Sunlight Viewability, External Warning Line. Operates from 7.5 to 30 volts @ .3 amps.

Models	Description	Part No.	Price
FP-5L	Fuel Flow w/ Horsepower & GPS input/output (instrument only; no transducers)	10-01217	**$575.00**
FP-5L w/ FT-60 & Pressure	Includes FT-60 Flow Transducer (for engines up to 350 HP) & PSI Transducer	10-25310	**$917.00**
FP-5L-60	Fuel Flow w/ Horsepower & GPS input/output, includes FT-60 Flow Transducer	10-01045	**$598.00**
FP-5L-90	Fuel Flow w/ Horsepower & GPS input/output, includes FT-90 Flow Transducer	10-01050	**$563.00**

FP-5 & FP-5L AUXILLARY OPTIONS

	The FP-5 & FP-5L feature an Auxiliary Channel. Any one of the following choices can be added to at any time.		
FFDM-1 w/ FT-60	FUEL FLOW Differential Module, for aircraft with a Pressure Carburetor. Includes FT-60 or FT-90 Flow Transducer	10-25325	**$337.95**
FFDM-1 w/ FT-90	to measure the returned fuel. Please specify FT-60 or FT-90. DOES NOT use up the FP-5's Auxiliary channel.	10-03190	**$329.95**
FM-Temp-P-110	EGT hose clamp probe and 6' cable. Compensates HP reading when leaning.	10-02188	**$215.95**
FM-Temp-P-128	OAT or CARB Temp probe (1/4"-28 thread) and 6' cable	10-02769	**$249.00**
FM-Temp-P-120	Secondary OIL Temp probe (5/8"-18 thread) and 6' cable	10-02770	**$249.00**
FM-Temp-P-111	Secondary TIT or OIL Temp probe (1/8: NPT adjustable depth) and 6' cable	10-02765	**$249.00**
FM-Temp-P-112	Secondary TIT or OIL Temp probe (7/16-20 thread adjust. depth) and 6' cable	10-02766	**$249.00**
FM-Temp-P-114	Secondary TIT or OIL Temp probe (1/4" NPT adjust. depth) and 6' cable	10-02767	**$249.00**
FM-OP	Secondary OIL PRESSURE. Includes PT-100GA Pressure Transducer	10-25336	**$224.95**
FM-FP	Secondary Fuel Pressure. Includes PT-30GA Pressure Transducer	10-25337	**$249.00**
FM-MP	Secondary Manifold Pressure. Includes Pressure Transducer	10-25338	**$217.95**
FM-RPM 6C	Secondary RPM. Connects directly to the Mag Switch	10-01786	**$221.95**
FM-Gyro	Gyro Vacuum. Includes Pressure Transducer	10-25339	**$175.00**
FM-VA	Secondary Volts or Amps (one or the other) w/ S-50 amp shunt.	10-25342	**$214.95**
AV-17	Voice Annunciator. Connects through the Audio Panel or Intercom. The 1"x1" control panel mounts on your instrument panel. The 4.1"x 2.6"x 1.7" control box mounts under the instrument panel. See all Annunciator Panels on our "Accessories" page.	10-00181	**$249.95**

E.I. INSTRUMENTS

The entire line of Electronics International digital instruments offers precise readings at exceptional prices. All gauges are accurate to 1%. They are FAA-approved under STC No. 1626NM. Furnished complete with all probes & leads.

10-01355

10-01339

10-01348

10-01373

Sigle-Engine:	Description	Part No.	Price
E-1	Single-Channel EGT or CHT, STCd, TSOd, PMA'd 2 1/4" Mount, 2.5" Depth, 12 Oz. Kit.	10-01355	**$279.00**
C-1		10-01338	**$276.00**
T-1P	EGT, CHT or TIT, PRIMARY REPLACE-	10-01373	**$307.95**
E-1P	MENTS STCd, TSO'd, PMA'd w/ Over-	10-02762	**$319.95**
C-1P	Temp Warning Light, 2 1/4" Mount, 2.5" Depth, 12 Oz.	10-01339	**$307.95**
EC-1	Switchable from EGT to CHT (1 of ea), STCd, TSOd & PMAd. 2 1/4" Mount, 2.5" Depth, 16 oz	10-01358	**$364.00**
EAC-1	STCd, TSOd, PMAd. - EGT/OAT/CHT Ice Zone Warning Light (from 10 to 39 degrees Celsius).	10-00806	**$419.00**
CA-1	STCd, TSOd, PMAd - CARB TEMP/OAT w/ Ice Zone Warning Light. (from 10 to 39 degrees Celsius)	10-01351	**$339.00**
A-1	OAT w/ Ice Zone Warning Light, STCd, PMAd, TSOd (light comes on between 10 and 39 degrees F).	10-01307	**$249.95**
E-4	EGT and CHT instruments, STCd, TSOd	10-01356	**$557.00**
C-4	and PMAd. Four Channels (EGT or CHT)	10-01348	**$554.00**
E-6	EGT and CHT instruments, STCd, TSOd	10-01357	**$649.00**
C-6	and PMAd Six Channels	10-01350	**$641.00**

Sigle-Engine:	Description	Part No.	Price
EC-1P	3-1/8" STCd/PMAd/TSOd PRIMARY	10-00807	**$505.00**
TC-1P	replacement Instruments w/ OverTemp Lights.	10-02736	**$505.00**
FOR TWINS - Orders for following instruments MUST specify type of probes: EGT hose clamp, TIT (hose clamp, 1/8" NPT, 1/4" NPT or 7/16 x 20). CHT, and OverTemp Limits.			
EE-1P	Dual Display EGT (1 L & 1 R), Over-Temp Lights, 3-1/8" mount	10-01447	**$599.00**
CC-1P	Dual Display CHT (1 L & 1 R), OverTemp Lights, 3-1/8" mount	10-02735	**$598.00**
TT-1P	Dual Display TIT (1 L & 1 R), OverTemp Lights, 3-1/8" mount	10-02733	**$600.00**
EC-1PT	Dual Display 1 EGT & 1 CHT w/ OverTemp Lights, 3-1/8" mount	10-02731	**$599.00**
TC-1PT	Dual Display 1 TIT & 1 CHT w/ OverTemp Lights, 3-1/8" mount	10-02732	**$585.00**
FOR TWINS - Not Primary Replacement Instruments, but STCd, PMAd, TSOd. Same order requirements and specifications as above:			
E-2	(one display, switchable from left to right	10-00098	**$498.00**
C-2	engine, either EGT or CHT)	10-01661	**$589.00**
EC-2	(one display, switchable from EGT, L/R and CHT L/R).	10-01359	**$641.00**

MVP-50P GLASS PANEL ENGINE & SYSTEM MONITOR

MVP-50P is Certified Primary Replacement. 5.55" x 5.15" x 2.4" Deep Engine and System Monitoring: The MVP-50P replaces over 15 Engine Instruments and 50 Functions in a single, full color, enhanced TFT glass display instrument. It features excellent viewability, even in direct sunlight. The MVP-50 is an unrivaled Engine and Aircraft System Monitor with an easy-to-read and easy-to-use format. There are Pilot-Programmable colors, ranges and limits and a voice alarm for each instrument displayed. Its "System Page" displays trims, flaps, wheel status lights, many system parameters and annunciators. This is the most powerful engine and system analyzer on the market, featuring the following displays: Bar Graph (with Scan and Hottest Cylinder modes), Rich-of-Peak, Lean-of-Peak, Full Digital, Normalized and Differential. The MVP-50P's instant red and yellow visual warnings, as well as voice annunciators for all Programmed Limits, eliminate the need to constantly scan an entire panel for possible problems. In-Flight Data: The MVP-50P provides many "Flight Data Screens" to reduce cockpit clutter and pilot workload. Some of these screens are: Fuel Management, Timers, Clocks and Date, Weight and Balance, Data Recording, Custom Checklists (Start, Taxi, Run-up w/ Mag Drop, Take Off, Landing, Emergency and more!), Custom Flight Plans, General Information (Aircraft Performance, Engine Diagnostics, VSI Lights, Airspeed, VFR Minimums, Altitude Table, Light Gun Signals, Transponder Codes, Frequencies, Real-Time Out (providing telemetry for UAV racers, etc.), plus additional Screens, including: Flight Log, Max Data Log, Min Data Log and others. And it's easy to create your own Custom Screens and download them to the MVP-50P through its USB port. Compatible with OP Technologies and Chelton. EGView Charting Software is also available for use with the MVP-50P. Other Functions Included: Help Screen; EGT & CHT Differentials; Shockcooling; Horsepower; Weight & Balance Data and Graph; GPS Interface and Data; Fuel Efficiency; Fuel Used for Trip; Fuel Used Since Fill Up; Time to Empty; Distance to Empty; Fuel; Time and Distance to Way Point; Fuel Reserve; Time Reserve; Distance Reserve; Up and Down Timers; Flight and Tach Timers; Engine Hours; Date; Local and Zulu Time; Voice Warnings; Data Recording: selectable .33 – 6 min., 665 hours @ 6 seconds!

Experimental	Description	Part No.	Price
MVP-50P-4	4-Cylinder Pkg	10-01192	**$4,163.00**
MVP-50P-6	6-Cylinder Pkg	10-01191	**$4,571.00**
MVP-50P-7	7-Cylinder Pkg	10-03174	**$4,675.00**
MVP-50P-8	8-Cylinder Pkg	10-03175	**$5,443.00**
MVP-50P-8W	8-Cylinder Water-Cooled Pkg	10-03178	**$4,605.00**

Experimental	Description	Part No.	Price
MVP-50P-9	9-Cyl. Radial Pkg	10-03176	**$5,442.00**
MVP-50P-12W	12-Cylinder Water-Cooled Pkg	10-03177	**$4,715.00**
MVP-50P-4-FADEC	4-Cyl. Aerosance Pkg	10-03173	**$4,163.00**
MVP-50P-6-FADEC	6-Cyl. Aerosance Pkg	10-03172	**$4,163.00**

Certified	Description	Part No.	Price
MVP-50P-4-C	4 Cylinder Certified	10-03867	**$4,997.00**
MVP-50P-6-C	6 Cylinder Certified	10-03868	**$5,398.00**
MVP-50P-8-C	8 Cylinder Certified	10-03869	**$6,268.00**

OPTIONAL OUTPUT INTERFACES AVAILABLE FOR MVP PKGS LISTED ABOVE

Models	Description	Part No.	Price
-OPT	Allows the MVP to provide engine data to an OP Technologies unit.	10-03169	**$667.00**
-RTDO	Real-Time Data Out. Can be used to provide telemetry for UAV's, racers and other applications.	10-03168	**$879.00**

ACCESSORIES FOR MVP PKGS

EGView	EGView Charting Software. Use for analyzing and downloading data to the MVP-50P.	10-01219	**$125.00**
USB-64	USB Memory Stick, 64 MB or larger. Used to upload and download data to the MVP-50P.	10-03186	**$32.95**
CP-1-MVP	LED Intensity Control Pot. External pot used to control the display intensity.	10-03211	**$35.00**
EDC-33P-4/6	4/6 Cylinder Engine Data Converter. Adding a second EDC to the MVP allows. Additional pressures, annunciators and other functions to be monitored on the MVP (uses the Input Port 3 on the MVP).	10-03184	**$879.00**
MVP-50P Head Only	Display unit only! May be used to display parameters in a second location Display Only	10-01193	**$2,996.00**

TEMPERATURE PROBES FOR MVP-50P & MVP-50T

Models	Description	Part No.	Price
P-100-MVP	CHT probe, screw-in, 3/8"-24	10-03212	**$86.75**
P-101MVP	CHT probe, Military Bayonet.	10-03213	**$86.75**
A-101MVP	CHT Adaptor for P-101 Probe, 3/8"-24	10-03216	**$86.75**
P-102-18-MVP	CHT probe, 18mm gasket.	10-03214	**$89.95**
P-102-14-MVP	CHT probe, 14mm gasket	10-03217	**$86.75**
P-102-12-MVP	CHT probe, 12mm gasket	10-03218	**$86.75**
P-102-3/8-MVP	CHT probe, 3/8" gasket, piggy-backs on a primary CHT probe	10-03219	**$86.75**
P-110-MVP	Std EGT/TIT probe, Hose Clamp Type, .187"D	10-03220	**$86.75**
P-110-F-MVP	Fast-Response EGT/TIT probe, Hose Clamp Type, .125"D	10-03221	**$89.95**

Models	Description	Part No.	Price
P-111-MVP	Std TIT probe, 1/8" NPT, .187" D	10-03222	**$86.75**
P-111-F-MVP	Fast Response TIT probe, 1/8" NPT, .187" D	10-03223	**$86.75**
P-112-MVP	Std TIT probe, 7/16"-20, .187" D	10-03224	**$86.75**
P-114-MVP	Std TIT probe, ¼" NPT, .187" D	10-03225	**$86.75**
P-114-F-MVP	Fast Response TIT probe, ¼" NPT, .125" D	10-03226	**$86.75**
P-120-MVP	OIL Temp probe, 5/8"-18	10-03227	**$86.75**
P-128-MVP	OAT/Carb Temp probe , ¼"-28	10-03228	**$86.75**
P-104-MVP	Universal Temp probe, #6 hole	10-03229	**$86.75**
XDS-6'	One 6 ft TC harness w/ crimped D-Sub pins. Use to interface any temperature Probe to the MVP system. Specify length at time of order.	10-03192	**$34.50**

PRESSURE TRANSDUCERS AND MODULES

(Each includes a Cbl-4D-6' harness when ordered w/ the MVP-50 & MVP-50T)

PT-30GA-MVP	Pressure Transducer, 0 to 40 PSI (see Accessories page for details)	10-03232	**$169.95**
PT-100GA-MVP	Pressure Transducer, 0 to 120 PSI (see Accessories page for details)	10-03233	**$177.95**
PT-300GA-MVP	Pressure Transducer, 0 to 300 PSI (see Accessories page for details)	10-03235	**$149.99**
PT-3000S-MVP	Pressure Transducer, 0 to 3000 PSI (see Accessories page for details)	10-03236	**$227.95**
PT-30ABS-MVP	Absolute Pressure Transducer, 0 to 36 In Hg (Manifold Press or Cabin Altitude)	10-03238	**$149.99**
PT-30ALT-MVP	Altitude Transducer	10-03239	**$360.95**
PT-60ABS-MVP	Absolute Pressure Transducer, 0 to 70 In Hg (Manifold Pressure)	10-03240	**$149.95**
PT-05Diff-MVP	Differential Pressure Transducer, 0 to 60 In Hg (Vac Pressure or Cabin Diff Pressure)	10-03241	**$136.95**
PT-04H20-MVP	Differential Pressure Transducer, 0 to 5 In H20	10-03242	**$227.95**
FM-PR-MVP	Allows an EDC temperature channel to measure a pressure (operates w/ any EI MVP Pressure Transducer). Pressure transducer sold separately.	10-03204	**$132.95**
DPIM-1-30-MVP	Differential Pressure Interface Module for aircraft that require fuel pressure to be Measured in reference to the upper deck. Includes a PT-30GA pressure transducer to measure the upper deck pressure.	10-03205	**$348.95**
Cbl-4D-6'	One 6' 4-wire cable with crimped D-Sub pins. Used to interface any pressure transducer, fuel flow transducer or fuel level probe to the MVP system. Add $.95 per foot to the price for anything over the standard 6' length.	10-03183	**$16.95**

FUEL FLOW TRANSDUCERS AND MODULES

FT-60	Fuel Flow Transducer (Red Cube), .6 to 70+ GPH	10-01196	**$148.00**
FT-90	Fuel Flow Transducer (Gold Cube), 3 to 125+ GPH	10-01224	**$249.00**
FT-180	Fuel Flow Transducer (Black Cube), 5 to 250+ GPH	10-01197	**$417.00**
FFDM-1-MVP-FT60	Fuel Flow Differential Module for aircraft w/ a pressure carburetor. Includes FT-60 or FT-90 transducer to measure the returned fuel. Please specify FT-60 or FT-90 at time of your order.	10-03244	**$348.95**
FFDM-1-MVP-FT90		10-03245	**$346.95**
FM-Flow-P	Measures Fuel Flow from a pulsed injector signal.	10-03206	**$348.95**

FUEL LEVEL PROBES AND MODULES

RFLM-4-12	Resistive Fuel Level Module. Must be used w/ EI's "EDC" to measure up to 4 Resistive Fuel Level Sensors.	10-02772	**$89.95**
RFLM-4--24		10-03231	**$56.00**
P-300C	3/4" Capacitive Fuel Level Probe w/ Accessories. (see our Accessories Page for details.) Specify Probe length at time of order.	10-00382	**$222.95**
P-300C-Mini-1/8"	3/16" Capacitive Fuel Level Probe (see our Accessories Page for details)	10-03193	**$173.95**
P-300C-Mini- 1/4"		10-03194	**$172.95**

VOLTS AND AMPS MODULES AND SHUNTS

FM-VA-MVP-50	Volts/Amps Module. Allows any temperature or pressure channel on EI's EDC to measure Voltage and Current on a separate bus. Comes w/ an S-50 or S-300 shunt.	10-03247	**$172.95**
FM-VA-MVP-300		10-03248	**$172.95**

MVP SCREEN ANNUNCIATOR INTERFACE UNITS

VI-221	Voltage Interface Unit. Allows any temperature or fuel level channel on our EDC to measure the output voltage of any device. This voltage measurement can then be used to drive an annunciator (Canopy Latch, Gear Lights, Baggage Door, etc.) that will be displayed on the MVP screen.	10-03187	**$7.50**

IN

ELECTRONICS INTERNATIONAL PANEL PACKAGES

DELUXE PACKAGE - Includes: 1. US-8: All EGT's, all CHT's, OAT, carb. Temp, 16 programmable upper limits, 16 programmable lower limits, 2 programmable differential limits and a programmable shock-cooling limit. 2. FP-5: Fuel flow, Rem, used time to empty, fuel pressure, 2 programmable low fuel limits, 1 programmable time to empty limit, programmable high and low pressure limits, programmable K factor, programmable fuel weight and programmable display for gallons or pounds. 3. R-1: RPM w/high warning, tach time and flight time. 4. M-1: Manifold pressure to .1" Hg. w/high warning. 5. OPT-1: Oil pressure and oil temperature w/high and low warnings. 6. VA-1A: Volts and amps with discharge and high voltage warnings. • Total pkg will fit in a 5" x 7.5" space with no external boxes. • Includes all probes, 6' cables, transducers, accessories and a free LED front panel intensity control pot. ***CALL FOR SPECIAL PRICES***

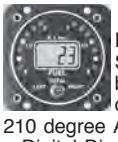
STANDARD PACKAGE - Includes: 1. EAC-1: One channel of EGT, CHT and OAT. The EGT and CHT may be upgraded to an analyzer with the addition of a remote switch. 2. FP-5: Fuel flow, Rem, used, time to empty, fuel pressure, 2 programmable low fuel limits, 1 programmable time to empty limit, programmable high and low pressure limits, programmable K factor, programmable fuel weight and programmable display for gallons or pounds. 3. R-1: RPM w/high warning, tach time and flight time. 4. M-1: Manifold pressure to .1" Hg. w/high warning. 5. OPT-1: Oil pressure and oil temperature w/high and low warnings. 6. VA-1A: Volts and amps with discharge and high voltage warnings. • Total pkg will fit in a 5" x 7.5" space with no external boxes. • Includes all probes, 6' cables, transducers, accessories & a free LED front panel intensity control pot. ***CALL FOR SPECIAL PRICES***

SUPER CLOCK INSTRUMENTS

ASC-5A - Displays Local & Zulu Time in 12 or 24 hr format, Up & Down Timers w/ alarms, Altitude (as seen by ATC), and OAT. Several programmable alarms, including Assigned Altitude, Level Off, Deviation Alarm and an Approach Alarm + a recurring alarm to alert you at a programmable interval, for checking fuel. P/N 10-02914 ..... **$483.00**

SC-5 - Displays Local (12 or 24-hour format) & Zulu Time. 10-year Lithium battery keeps the clock running even if the a/c battery is removed. Displays an Up Timer, which starts running when the engine is started, acting as an automatic Flight Timer. The Up Timer may be started, stopped or reset. Recurring Alarm may be set to alert you at appropriate time intervals, e.g., if set for 30 minutes, there will be an alarm at 30 minutes, 60 minutes, 90 minutes, etc. Alarm can be used as a reminder to check fuel level or switch tanks at set time intervals.

P/N 10-01612 ..... **$289.00**



FUEL LEVEL INSTRUMENTS

For TC holders, STC holders or Experimental Aircraft No STCs. FL-1CA Fuel Level Instrument . The FL-1CA is to be used w/ EI's P-300C Capacitive Fuel Probe (custom order probe length from 6" to 20'). The FL-1CA features a 210 degree Arc of LEDs for an excellent "field of vision" reference and a Digital Display. Can display in gallons (one or one-half gallon increments), pounds or liters. Specifications: 2 1/4" Mount, 3.65" Depth, 10 Oz. Unit, Viewable in direct sunlight and Backlit for night operations.

Model	Description	Part No.	Price
FL-1CA	The FL-1CA is to be used w/ EI's P-300C capacitive fuel probe (order from 6" to 20' long). 210 degree LED arc + a digital display. Can display in gallons (one or one-half gallon increments), pounds or liters. Specifications: 2 1/4" Mount, 3.65" Depth, 10 Oz. Unit, Viewable in direct sunlight and Backlit for night operations.	10-00386	**$399.95**
FL-1RA-12/24	The FL-2RA-12 designed to be used on a 12-volt system w/ resistive fuel probes. Features a 210 degree LED arc + a digital display. Max resistance between 90-270 ohms. Can display in gallons (one or one-half gallon increments), pounds or liters. Specifications: 2 1/4" Mount, 3.65" Depth, 10 Oz. Unit, Viewable in direct sunlight and Backlit.	12V 10-03209 24V 10-00388	 **$399.95** **$415.95**
FL-2CA	The FL-2 is a fuel level instrument featuring dual 90 degree LED arcs + a digital display. The FL-2 can display in gallons (one or one-half gallon increments), pounds or liters. Specifications: 2 1/4" Mount, 3.65" Depth, 10 Oz. Unit, Viewable in direct sunlight, Backlit, Operates from 7.5 to 35 volts at .3 amps.	11-03788	**$394.00**
FL-2RA-12/24	The FL-2 is a fuel level instrument featuring dual 90 degree LED analog displays and a digital display. The FL-2 can display in gallons (one or one-half gallon increments), pounds or liters. FL-2 Specifications: 2 1/4" Mount, 3.65" Depth, 10 Oz. Unit, Viewable in direct sunlight, Backlit, Operates from 7.5 to 35 volts at .3 amps. Please specify 12/24 volt at the time of order.	11-03789	**$398.00**
FL-2RA-24		11-07104	**$389.95**

MVP-50T GLASS PANEL MULTI-FUNCTION DISPLAY

Replaces 15 engine gauges and 50 functions. Remarkable full-color, enhanced TFT Glass Display (excellent viewability, even in direct sunlight) Pilot-Programmable Colors, Range Markings, Limits and Voice Alarms (for each parameter monitored) "System Page" to display Trims, Flaps, Wheel Status Lights, and many other system parameters and annunciators. 27 Pilot-Customized Annunciators at the top of the "Main Page". Fuel Management, Timers, Clocks, Date, Weight & Balance. Data Recording (.33 – 6 min, 665 hours @ 6 seconds). Pilot-Customized Checklists and Flight Plans. General Info, Flight Log, Start Log, Max & Min Data. Pilot easily can generate Custom Screens and download them to the MVP-50P through the USB port. Help Screen, GPS Interface and Data, Fuel Efficiency, Fuel Used for the Trip, Fuel Used Since Fill Up, Time to Empty, Distance to Empty, Fuel to Way Point, Time to Way Point, Distance to Way Point, Fuel Reserve, Time Reserve, Distance Reserve, Up Timer, Down Timer, Flight Timer, Engine Hours, Cycles, Date, Local and Zulu Time. Other functions, such as Fuel Level, Gyro Vac, Hydraulic Pressure, etc., may be added by purchasing an appropriate probe & harness, or transducer, etc. See our Accessories, "Probes and Transducers" section on previous page. Using your current Resistive Fuel probes require our FFLM-4-XX to interface with the MVP-50T System. Torque, Oil Pressure & Temperature, Fuel Flow & Pressure, OAT, Amps, Volts, Multiple Fuel Screens, Pre-wired Harness, N1 and N2 hookups. Includes EDC (Engine Data Converter), cables and harnesses, transducers, shunt (for amps), USB Download/Upload Memory Stick, and our AV-17CP (Voice Warning Control Panel). Only 5.55"x 5.15"x 2.4" deep

Models	Description	Part No.	Price
MVP-50T-PT6	Pratt & Whitney PT-6 Turboprop Pkg	10-03160	**$6,175.00**
MVP-50T-W	Walters Engine Turboprop Pkg	10-03161	**$6,175.00**
MVP-50T-G	Garrett Turboprop Pkg	10-03162	**$6,175.00**
MVP-50T-L	Lycoming Turboprop Pkg	10-03163	**$6,175.00**
MVP-50T-A	Allison Turboprop Pkg	10-03164	**$6,175.00**
MVP-50T-J85	General Electric J85 Jet Engine Pkg	10-03165	**$6,175.00**
MVP-50T-L39	L39 Aircraft Pkg	10-03166	**$7,725.00**
MVP-50T-WJ33	WJ33 Aircraft Pkg	10-03201	**$6,175.00**
OPTIONAL INTERFACES AVAILABLE FOR PKGS LISTED ABOVE			
-OPT	Allows the MVP to provide Engine Data to an OP Technologies unit.	10-03169	**$667.00**
-RTDO	Real-Time Data Out. Can be used to provide Telemetry Data for UAV's, racers and other applications.	10-03168	**$879.00**
ACCESSORIES			
USB-64	USB Memory Stick, 64 MB or larger. Used to upload & download data to the MVP.	10-03186	**$32.95**
CP-1-MVP	LED Intensity Control Pot. External pot used to control the display intensity.	10-03211	**$35.00**
EDC-33T	Turboprop/Jet Engine Data Converter. Adding this second EDC to the MVP allows monitoring of additional temperatures, pressures, annunciators and other functions.	10-03185	**$879.00**
MVP-50T Display Head	May be used to display parameters in a second location. (display only)	10-03202	**$3,550.00**

INSTRUMENTS FOR TURBOPROP AIRCRAFT

10-03249 10-03264 10-03265 10-03267 10-03268

Model	Description	Part No.	Price
R-1-N1	RPM INSTRUMENT, TSOd, PMAd (no STCs). Digital 1% Resolution Display + 210 degree LED arc display with green, yellow and red LEDs. 2 1/4" Mount, 3.65" Depth, 10 Oz. Viewable in direct sunlight, Backlit. Operates from 7.5 to 30 volts @ .3 amps.	10-03249	**$790.00**
R-1-N2	RPM Instrument displayed in RPM. TSOd, PMAd (no STCs). Digital 10 RPM Resolution Display + 210 degree LED arc display with green, yellow and red LEDs. 2-1/4" Mount, 3.65" Depth.	10-03264	**$790.00**
M-1T	PRESSURE OR TORQUE INSTRUMENT, TSOd, PMAd (no STCs). 1 PSI or 1% Resolution + 210 degree LED arc display with green, yellow and red LEDs. 2 1/4" Mount, 3.65" Depth, 10 Oz. Instrument. Backlit.	10-03265	**$790.00**
M-1-ITT	INERT-Turbine Temperature Instrument IN Celsius. TSOd/PMAd (no STCs). Digital display (1 degree C resolution) + 210 degree LED arc with green, yellow and red LEDs. 2 1/4" Mount, 3.65" Depth, 10 Oz.	10-03266	**$790.00**
M-1-TOT	Turbine Outlet Temperature INC. TSOd/PMAd (no STCs).	10-03267	**$790.00**
OPT-1-FV-60	AC BUS VOLTAGE & FREQUENCY, TSOd/PMAd (no STCs). The "-60" instrument is for a 60 Hz. bus and the "-400" instrument is for a 400 Hz. bus. Accurate Digital Display can be switched between Voltage and Frequency, displays in Volts and Hz. 2 1/4" Mount, 3.65" Depth, 10 Oz. Instrument.	10-03268	**$790.00**
OPT-1-FV-400		10-03269	**$790.00**

IN

AP-7H OR AP-7V LED ANNUNCIATOR PANEL

(H = Horizontal Mount; V = Vertical Mount) When mounted in front of the pilot, the AV-7 Annunciator Panel's bright red LEDs give a quick warning of any out-of-limit condition. Can be connected to these E.I. instruments: US-8A or SR-8A, FP-5(L) and/or FL-2, R-1, M-1, and OPT-1. A control switch will dim or turn off the warning LEDs. Simple to install (requires only 8 ea. 1/2" holes to mount). Connect to a small 3" x 2" x 1" Control Box tie wrapped to a wire bundle under the instrument panel. Size: 5.3" x .9", 10 Oz. Kit, Operates on a 12 or 24-volt system. Includes: Annunciator Panel, Control Box and all wires and connectors.

Vertical ..... P/N 10-03288 ..... **$165.00**
Horizontal (Pictured) ... P/N 10-03289 ..... **$167.95**

AL-1 RED CHROME ANNUNCIATOR LIGHT

The AL-1 makes an excellent indicator light for displaying boost pump on, gear status, power on, flags, etc. Also, it can be used as a remote warning light for any E.I. instrument featuring an external warning line. The AL-1 is more attractive, operates on less power and is smaller than the old fashioned indicator lights.

The AL-1 has a service life of over 1000 times that of incandescent bulbs. Mounts in a 5/16" hole. Size: .4" diameter x 1" depth. Operates on a 12 or 24-volt system. Comes with 32" leads.

Red ..... P/N 10-04164 ..... **$17.95**
Yellow ..... P/N 10-04165 ..... **$17.95**
Blue ..... P/N 10-04166 ..... **$17.95**
Orange ..... P/N 10-04167 ..... **$17.95**
Green ..... P/N 10-04168 ..... **$17.95**

AV-17 VOICE ANNUNCIATOR

The AV-17 can provide up to 17 verbal warnings through your headset, ending the need to constantly scan the instrument panel. Eliminate concern about missing an alarm at a critical moment. The instant a monitored alarm occurs, the Voice Annunciator will chime in the headset and a pleasant female voice will announce a phrase, such as: "Check Oil Pressure," or "Check Altitude," etc. The AV-I7's voice alarm in the headset provides an instant and clear understanding of what's going on in the cockpit without the hassle of having to scan instruments, decipher functions, interpret readings or translate numerous bells, buzzes or beeps. The AV-17 connects to the headset through the Audio Panel or Intercom or may be connected directly to the headset. The AV-17 receives most of its warning signals from any one or more of Electronics International's instruments which feature a warning light. However, other alarm inputs can be received from any warning device that drives a horn or light. It is not necessary to activate all 17 of the AV-17's warnings. A "Check Bus Voltage" warning is built into each AV-17. Further voice alarms can be activated as EI instruments are added to the panel. The AV-17 is compact. A 4.1" x 2.6 x 1.7" Control Box tie wraps under the instrument panel. A 1" x 1" Control Panel mounts on the aircraft instrument panel. The Control Panel allows you to turn the VoiceAnnunciator on or off, and allows you to acknowledge, and thereby deactivate, any active alarm for either 1 minute or 10 minutes. The AV-17 voice alarms are activated by pulling the appropriate control line to ground (0 volts).

AVI-1 MODULE - This Module allows a positive voltage to activate one AV-17 control line. Use with the AV-17 when utilizing inputs from gauges other than Electronics International's.

AV-17 ..... P/N 10-00181 ..... **$249.95**
AVI-1 ..... P/N 10-03292 ..... **$17.95**

RC-1 TACH DRIVE CAP

The RC-1 is a Tach Drive cap. The thread pattern is 7/8 x 18 and fits most Tach Drive Lines.

P/N 10-04836 ..... **$4.95**

FIELD TEST DEVICES

Models	Description	Part No.	Price
FCD-FF	Outputs a variable fuel flow signal.	10-03295	**$58.95**
FCD-FP	Outputs a variable fuel pressure signal (0 to 50+ PSI).	10-03296	**$58.95**
FCD-OP	Outputs a variable oil pressure signal (0 to 100+ PSI).	10-03297	**$58.95**
FCD-RPM	Outputs a variable RPM signal (800 to 2800 RPM).	10-03298	**$58.95**
FCD-AMP	Outputs a 50mV signal. Used to test the VA-1A-XX Volt/Amp Instrument.	10-03301	**$58.95**
FCD-CFL	Outputs a variable capacitive fuel level signal.	10-03302	**$58.95**
FCD-RFL	Outputs a variable resistive (0-250 ohms) fuel level signal.	10-03303	**$58.95**

REMOTE SWITCHES

A remote switch may be used to upgrade many single-channel E.I. instruments to multi-channel EGT and/or CHT engine analyzers. This is an excellent way to insure your engine is operating properly. Specifications for all switches: Body - 1"x 1"x 1.5" depth, front panel - 2"x 1.15", STC'd / PMA'd

RS-4-1S - Upgrades any unit to read four channels of EGT or CHT, Package includes: Unit, (3) 6' cables, (3) probes. Specify probe type with order.
P/N 11-01688 ..... **$290.95**

RS-4-2S - Upgrades any two channel unit to read four channels of EGT and CHT, Package includes: Unit, (6) 6' cables, (3) EGT probes, (3) CHT probes P/N 11-01689 ..... **$419.95**

RS-6-1S - Upgrades any unit to read six channels of EGT or CHT, Package includes: Unit, (5) 6' cables, (5) probes. Specify probe type with order. P/N 11-01690 ..... **$394.50**

RS-6-2S - Upgrades any 2 channel unit to read six channels of EGT and CHT, Package includes: Unit, (10) 6' cables, (5) EGT probes, (5) CHT probes P/N 11-01691 ..... **$617.00**

RS-8-1S - Upgrades any unit to read eight channels of EGT or CHT, Package includes: Unit, (7) 6' cables, (7) probes. Specify probe type with order.
P/N 11-01692 ..... **$468.95**

RS-12-1S - Upgrades any unit to read 12 channels of EGT or CHT, Package includes: Unit, (11) 6' cables, (11) probes. Specify probe type with order. P/N 11-01693 ..... **$666.00**

PRIMARY REMOTE SWITCHES

REMOTE SWITCHES for use w/ EI 1 or 2 channel EGT/CHT instruments. STCd, PMAd Electronics International gauges are available to replace your Primary Engine Instruments. Available for single and twin engine applications.

RS-5-1PS - Upgrades any primary TIT/CHT unit to read 4 channels of EGT or CHT, Package includes: Unit, (4) 6' cables, (4) probes. 15 oz. kit Specify probe type with order..... P/N 11-01694 ..... **$365.95**

RS-5-2PS - Upgrades any primary TIT/CHT unit to read 4 channels of EGT and CHT, Package includes: Unit, (8) 6' cables, (4) EGT probes, (4) CHT probes. 2.2 lb. kit..... P/N 11-01695 ..... **$490.95**

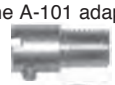
RS-7-1PS - Upgrades any primary TIT/CHT unit to read 6 channels of EGT or CHT, Package includes: Unit, (6) 6' cables, (6) probes. 27 oz. kit. Specify probe type with order..... P/N 11-01696 ..... **$457.95**

RS-7-2PS - Upgrades any primary TIT/CHT unit to read 6 channels of EGT and CHT, Package includes: Unit, (12) 6' cables, (6) EGT probes, (6) CHT probes. 3.2 lb. kit..... P/N 11-01697 ..... **$666.00**

PROBES

P-100 CHT Probe; screw-in type, Standard with most kits. Can be used in a pressure environment. 700°F max. P/N 10-00808 ..... **$89.95**

P101 - CHT Probe; Military Bayonet type, 1/4 turn locking for quick removal. To be used with the A-101 adaptor. 700°F max. P/N 10-00438 ..... **$89.95**



A101 - CHT Adaptor; 3/8" - 24, to be used with the P-101 CHT probe.
P/N 10-00374 ..... **$11.95**

P-102 - CHT Probe; Gasket type, 18mm, 700°F maximum.
P/N 10-01368 ..... **$86.75**

P-110 - EGT/TIT Probe; Hose clamp type, used with 13/64" hole. Standard with most kits. Weight: 1.6 oz.
P/N 10-01591 ..... **$87.75**

FAST RESPONSE P-110 - EGT/TIT Probe; Hose clamp type, used with .130" hole. Optional with most kits. Weight: 1.6 oz.
Probe only ..... P/N 10-00376 ..... **$95.50**
Probe w/6'cable ..... P/N 10-00377 ..... **$134.95**

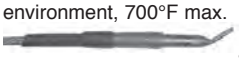
P-111 - TIT Probe; 1/8" NPT with adjustable depth. (with cable) P/N 10-25235 ..... **$89.95**

P-112 - TIT Probe; 7/16"-20, with adjustable depth. (without cable)
P/N 10-00378 ..... **$89.95**

P-114 - TIT Probe; 1/4" NPT with adjustable depth. (without cable)
P/N 10-00379 ..... **$89.95**

P-120 - Oil Temp. Probe; Can be used in a pressure environment, 700°F max.
P/N 10-25245 ..... **$89.95**

P-128 - OAT/Carb Temp. Probe; uses a precision connector, can be used in a pressure environment, 700°F max. P/N 10-00301 ..... **$91.50**



P-104 - Universal Probe; Used to measure surface temperatures, 700°F max.
P/N 10-00380 ..... **$89.95**

IN

INSIGHT ENGINE MONITORS

GRAPHIC ENGINE MONITOR (SINGLE ENGINE)

Graphic Engine Monitor - STC'd Single Engine - Normally Aspirated 4 or 6 Cylinder. The GEM 602 is designed for use with all 4 or 6 cylinder piston engine aircraft. The instrument graphically displays up to 12 critical engine temperatures in a single instrument in an easy-to-read bar- graph format on a brilliant plasma display. ***Features:*** Displays up to 12 EGT, CHT temperatures. Lean Mode: is used during cruise to identify the leanest cylinder. Lean Mode can be entered at any time. The GEM's microprocessor analyzes EGT temperatures and indicates the leanest cylinder by blinking the appropriate column. Monitor Mode: each time that Monitor Mode is entered, the GEM microprocessor stores the EGT values into memory. Should any cylinder's EGT subsequently rise 50°F or more, the corresponding column will begin blinking to signal change in fuel flow or ignition.· Test Mode: is designed into the GEM system should trouble be suspected. Entering the test Mode causes each bar column to stack up, a bar at a time, until fully illuminated, then blank. Each successive column until all six have be done. Automatic selection of the correct number of cylinders. Automatic intensity control for all lighting conditions. Whether you fly a home-built, war bird, or latest model aircraft, the GEM 602 provides a complete picture of EGT and CHT at a glance.

P/N	Model	Description	Price
10-18805	GEM603	Single Engine, 4 cyl., turbocharged	$2,031.00

GEM PROBES

GEM 602 Wire Harness ..... P/N 10-03576 ..... **$199.00**
#2870 EGT Probe ..... P/N 2870 ..... **$69.85 /ea.**
#2852 CHT Spring Probe ..... P/N 2852 ..... **$69.85 /ea.**
#2853CHT Gasket Probe ..... P/N 10-00827 ..... **$69.50 /ea.**
#2855 CHT Adapter Probe* ..... P/N 2855 ..... **$178.50 /ea.**
#2856 CHT Probe** ..... P/N 2856 ..... **$189.00/ea.**

***Use with factory spring probe **Use with 3/8 x 24 threaded factory probe**

E3 UNIVERSAL ENGINE MONITOR

The E3 universal engine monitor combines in one compact 2.25" format instrument all that is needed to monitor most smaller aircraft engines from two-stroke ultralight engines to medium sized four strokes such as from Rotax, Continental and Lycoming. Also most automotive engine conversions can benefit from the use of the E3 engine monitor. P/N 11-06442 ..... **$280.00**

INSIGHT G3 GRAPHIC ENGINE MONITOR

The original GEM was a solitary player. The G3 instrument has two control knobs that operate combination rotary and push button switches. The top knob in general controls screen selection while the bottom knob controls items within the given screen. Each screen assigns its own functional needs to the controls that may change depending on context. A screen may also label the controls with guidance information like "Push to exit". The G3 is also designed to expand and grow with the times. Less than half of its true potential has been released at this time. The instrument can be updated to acquire new features by loading the SD card via the internet. Another great feature is why not have the G3 instrument diagnose itself? Then you don't have to disassemble the airplane or even touch the wiring. The probe diagnosis page indications are in green for normal readings and red for readings that fail the criteria set at the bottom of the screen. System Monitors: EGT, CHT, Fuel Flow, RPM, Manifold Pressure O, il Temp/Pressure, OAT, TIT, Carb Temp, HP%, Prop Balance, Clock/Calendar

GEM G3 4 Cylinder 2.25" ..... P/N 10-03195 ..... **$2,985.00**
GEM G3 4 Cylinder Turbo 2.25 ..... P/N 10-04685 ..... **$3,330.00**
GEM G3 6 Cylinder 2.25" ..... P/N 10-03196 ..... **$3,215.00**
GEM G3 6 Cylinder Turbo 2.25" ..... P/N 10-04686 ..... **$3,561.00**
GEM G3 4 Cylinder 3-1/8" ..... P/N 10-04687 ..... **$3,892.00**
GEM G3 6 Cylinder 3-1/8" ..... P/N 10-04688 ..... **$4,030.00**
GEM G3 6 Cylinder Turbo 3-1/8" ..... P/N 10-04689 ..... **$4,334.00**

Upgrade from GEM 602, 603, 610 to 63

4 Cylinder Upgrade ..... P/N 10-03198 ..... **$2,295.00**
6 Cylinder Upgrade ..... P/N 10-03197 ..... **$2,491.00**

INSIGHT TRUE FLOW 500

A new concept in fuel flow computers, True Flow 500 is designed to give pilots a simple and efficient way of reading fuel information directly on the GPS fuel pages. Eliminates tedious installation and set-up proce and set-up proceure-dures that are required for other fuel flow computers. Install True Flow 500 on top of the engine and connect fuel lines, GPS power, ground and RS232 RX input. Works on fuel infected or carburated engines, but not on carburated engines with a fuel return line. Many other STC's for installation on certificated aircraft. Unit is TSO'd for Beechcraft Aircraft Only. P/N 11-01913 ..... **$743.00**

INSIGHT G1 SINGLE ENGINE COLOR MONITOR - COMPLETE SYSTEM

Single Engine - 2.25 Bezel
Protect Your Engine By: • Saving Fuel On Every Flight By Leaning Accurately And Safely • Revolutionary New Leaning Process • See Lean Peak In Order And Temperature Spread • Seeing Simultaneous EGT, CHT, TIT Bars And Temperatures • Save Time Trouble-Shooting • Continuous Probe Diagnosis That Confirms System Integrity • Extensive List Of Primary Approved Aircraft Models • SD Card Software Updates • FAA & TC Primary STC • EGT, CHT, & TIT

Also available with Carburetor Temperature and/or for G1 Field Update Kit, see Accessories.

Description	Part No.	Price
4 Cylinder Standard	10-04916	$1,235.00
6 Cylinder Standard	10-04917	$1,365.00
4 Cylinder Turbo	10-04918	$1,365.00
6 Cylinder Turbo	10-04919	$1,495.00
Accessories		
Carburetor Temp. Option	10-04922	$176.00
Head Only	10-04921	$1,034.00

INSIGHT G2 SERIES SINGLE ENGINE COLOR MONITOR - COMPLETE SYSTEM

G2 Series Single Engine Color Monitor - Complete System - 2.25 Bezel
Save Fuel, Save Money, Save Your Engine! Affordable Engine Monitoring you can't afford to be without. Top reasons to install a G2: • Best lean of peak process in the industry • The only nozzle balance analysis, the key to lean of peak • The only probe diagnostic scree • Comprehensive data log - windows files SD card • Over the web software updates - constant improvement • GEM plug compatible - easy install • Best technical support

Description	Part No.	Price
4 Cylinder, Single Engine, 2.25 Bezel	10-04924	$2,093.00
6 Cylinder, Single Engine, 2.25 Bezel	10-04926	$2,275.00
4 Cylinder Turbo, Single Engine, 2.25 Bezel	10-04927	$2,223.00
6 Cylinder, Single Engine, 2.25 Bezel	10-04928	$2,405.00
4 Cylinder Turbo, Dual Engine, 2.25 Bezel	10-04929	$2,353.00
6 Cylinder, Dual Engine, 2.25 Bezel	10-04931	$2,535.00
Accessories		
4 or 6 Cylinder G2 Upgrade	10-04932	$1,684.00
Head Only	10-04933	$1,294.00

GEMINI 1200 SYSTEM (TWIN ENGINE)

Graphic Engine Monitor -
Twin Engine - Normally Aspirated or Turbo-Charged with Data logging for 2, 4, 6, 7, 8 and 9 Cylinder.
Designed for twins, the GEMINI 1200 has all of the same advanced features as the GEM 610.
ALL NEW 1200 UNITS ARE FACTORY CALIBRATED.

Features:

- Display up to 30 temperatures.
- IAT Temperature.
- Side-by-side display of Left/Right or Front/Rear Engines.
- 4 digit readout of any EGT, CHT, TIT, OAT and IAT.
- Primary Instrument Replacement STC

Part No.	Model	Description	Price
10-18815	GEMINI	Twin Engine, 4 cyl., normal asp.	$3,330.00
10-18820	GEMINI	Twin engine, 6 cyl., normal asp.	$3,606.00
10-18825	GEMINI	Twin Engine, 4 cyl., turbo (1T)	$3,983.00
10-18830	GEMINI	Twin Engine, 4 cyl., turbo (2T)	$4,189.00
10-18835	GEMINI	Twin Engine, 6 cyl., turbo (1T)	$4,353.00
10-18840	GEMINI	Twin Engine, 6 cyl, turbo (2T)	$4,539.00
10-02142	1200-021	Insight OAT Probe	$139.85

GEM-610 SYSTEMS

Graphic Engine Monitor -
Single Engine - Normally Aspirated or Turbo-Charged with Data logging for 4 or 6 Cylinder.
ALL NEW GEM 610 UNITS ARE FACTORY CALIBRATED.

Features:

- Selectable Fahrenheit/Celsius Temperatures.
- Normalization Mode: allows easy observation of any change in EGT . during cruise flight.
- Lean Mode: is used during cruise to identify the leanest cylinder.
- See www.aircraftspruce.com for a complete list of features.
- **Specifications:**
- Size: 2-1/4" panel mount.
- Weight installed is 3 lbs.
- Power: 10-30VDC.

Single Engine 4-cyl. GEM-610 ..... P/N 10-18845 ..... **$1,894.50**
Single Engine 6-cyl. GEM-610 ..... P/N 10-18846 ..... **$2,123.00**
Single Engine 4-cyl. turbo GEM-610 ..... P/N 10-18805 ..... **$2,031.00**

IN

JPI ENGINE SCANNERS

J.P. INSTRUMENTS EDM-700 DIGITAL AND ANALOG EGT/CHT SCANNERS

All pilots know that to run their engines at peak performance means maximum efficiency! Maximum efficiency translates to substantial savings in fuel burned and engine maintenance. JPI's EDM-700 assures pilots of ***Peak Precision Engine Performance Simply and Economically.*** The EDM-700 includes: Computer assisted diagnostics for troubleshooting the entire system, 2-1/4" panel mount, Normalize mode, Graphics resolution, Automatically finds the first EGT to peak, display of OIL, OAT, IAT, CDT, voltage, shock cooling of two TIT's, one degree temperature resolution, selectable °C or °F, all functions have Hi/Lo pilot programmable limits, supplied with JPI's well known, grounded, fast response probes, TSO quality, FAA TSO/STC approved, 3 year warranty. All probes, harness, and hardware included. ***Data Recording -*** All EDM-700 and EDM-760 systems come with data recording and provide long term trend monitoring for maintaining ultimate engine health. Data Recording capability records and stores all displayed parameters and, at a later time, transfer the info to a palmtop or laptop PC. Retrieve all the data stored in the EDM-700 and 760 or only the new data recorded since your last retrieval. In either case, no data is erased in the EDM unit. PC program supplied with the unit will graph the data for display and use by other programs, such as MS Excel or Lotus 123. EDM-700 or 760 Data Recording contains a date and time clock. You may also program an aircraft ID, such as your aircraft registration no. or your name that will appear in the output data file.

Systems include EGT & CHT probes, harness, memory module, leads, and hardware

EDM SINGLE ENGINE SYSTEMS

Description	Part No.	Price
EDM-700-4C 2-1/4" (No Fuel Flow)	10-00262	**$1,400.75**
EDM-700-4C 3-1/8" (No Fuel Flow)	10-02008	**$1,698.75**
EDM 700-4C with Fuel Flow 201 2-1/4" (Fuel Pump)	10-00263	**$1,910.80**
EDM-700-4C with Fuel Flow 201 3-1/8" (Fuel Pump)	10-02009	**$2,208.75**
EDM 700-4C with Fuel Flow 231 2-1/4" (Gravity Fed)	10-02845	**$1,910.75**
EDM 700-4C with Fuel Flow 231 3-1/8" (Gravity Fed)	10-02849	**$2,208.75**
EDM-700-6C 2-1/4" (No Fuel Flow)	10-00264	**$1,856.75**
EDM-700-6C 3-1/8" (No Fuel Flow)	10-02012	**$2,163.00**
EDM 700-6C with Fuel Flow 201 2-1/4" (Fuel Pump)	10-00265	**$2,375.75**
EDM 700-6C with Fuel Flow 201 3-1/8" (Fuel Pump)	10-02013	**$2,673.25**
EDM 700-6C with Fuel Flow 231 2-1/4" (Gravity Fed)	10-02844	**$2,375.75**
EDM 700-6C with Fuel Flow 231 3-1/8" (Gravity Fed)	10-02846	**$2,673.25**
EDM-700-8C 2-1/4" (No Fuel Flow)	10-28095	**$2,375.75**
EDM-700-8C 3-1/8" (No Fuel Flow)	10-02016	**$2,673.25**
EDM 700-8C with Fuel Flow 201 2-1/4" (Fuel Pump)	10-02852	**$2,885.75**
EDM 700-8C with Fuel Flow 201 3-1/8" (Fuel Pump)	10-02017	**$3,183.25**
EDM 700-8C with Fuel Flow 231 2-1/4" (Gravity Fed)	10-02853	**$2,885.75**
EDM 700-8C with Fuel Flow 231 3-1/8" (Gravity Fed)	10-02841	**$3,183.25**
EDM-700-9C 2-1/4" (No Fuel Flow)	10-28100	**$2,630.75**
EDM-700-9C 3-1/8" (No Fuel Flow)	10-02018	**$2,928.25**
EDM 700-9C with Fuel Flow 201 2-1/4" (Fuel Pump)	10-02861	**$3,140.75**
EDM 700-9C with Fuel Flow 231 2-1/4" (Gravity Fed)	10-02862	**$3,140.75**
EDM 700-9C with Fuel Flow 231 3-1/8" (Gravity Fed)	10-02842	**$3,438.25**
Trade-in Price for EDM 700. Basic Gem, (Use old System wire harness and EGT/CHT/TIT Probes)	10-03611	**$995.00**

Accessories

Description	Part No.	Price
EDM 700 Transducer (Fuel Pump)	10-27089	**$335.75**
EDM 700 Transducer (Gravity)	10-27094	**$335.75**
JPI EDM RPM Option	10-01720	**$263.95**
Fuel Flow Without Transducer	11-09232	**$343.95**
Fuel Flow With Transducer	11-09233	**$545.00**
TIT,Turbine Inlet Temperature Probe and Sensor	10-27090	**$164.95**
EDM-700/800/900 OAT Probe	10-27095	**$169.50**
700/760/800 Oil Temperature Probe & Sender	10-27100	**$166.95**
EDM 700 Induction Air Temperature Probe	10-02277	**$167.95**
EDM 700 Compressor Discharge Temperature Probe	10-02278	**$165.95**
EDM 700 IAT/CDT Induction Air & Compressor Temp.	10-27105	**$328.95**
5050-T CHT Bayonet Probe	10-18500	**$103.95**
M-113 CHT Gasket Probe	10-27093	**$104.00**
JPI Probe M113-3/8	10-03689	**$104.95**
M-111 Replacement EGT Probe	10-00830	**$104.95**
EDM Option TIT Function Probe	11-08452	**$335.75**
EDM Option CHT Gasket 14mm Probe	10-04157	**$106.50**
VDO Pressere Sender (V) 0-160 PSI	10-04183	**$143.95**
EDM PC Interface Cable	10-27112	**$36.75**
EDM HP Interface Cable	10-27111	**$36.75**

All Systems which include Fuel Flow come with Transducers. 201 Transducer is for Aircraft with Fuel Pumps. 231 Transducer is for Gravity Fed Aircraft.

BASIC EDM-760 TWIN ENGINE SYSTEMS

The value of Digital engine temperatures for precision engine monitoring is well documented. JPI has merged the Analog and digital information into one gauge. The EDM-760 monitors 29 channels of information with 14 columns of analog information. All EDM's have a built in voltmeter monitoring high and low system voltage. All the enhancements found on the single engine EDM-700 are available in the Twin engine EDM-760, including: Digital display of OAT, TIT, OIL, CARB, IAT, CDT, and EGT/CHT, Shock Cooling displayed in degrees per minute with alarms, Normalize Mode levels the bar graph display for instant identification of engine trends during cruise, Automatically finds first cylinder to peak on each engine. EDM-760 is shipped complete including everything necessary for installation. The package contains Quick response EGT probes, Bayonet CHT probes w/wiring harness, memory module, insulating sleeves, terminals w/mounting screws. Options like Oat, Oil & CDT/IAT are available and can be added later. 3 year warranty on electronics. Size: 3-1/8" display with 14 columns, installed weight = 6 lbs. RS-232 Output port and 1 TIT function are included in the system.

Description	Part No.	Price
EDM-760-6C 3-1/8" (No Fuel Flow)	10-28080	**$3,820.75**
EDM-760-6C with Fuel Flow 201 3-1/8" (Fuel Pump)	10-00640	**$5,010.75**
EDM-760-6C with Fuel Flow 231 3-1/8" (Gravity Fed)	10-02851	**$5,010.75**
EDM-760-4C 3-1/8" (No Fuel Flow)	10-28085	**$3,944.00**
EDM-760-4C with Fuel Flow 201 3-1/8" (Fuel Pump)	10-00639	**$4,160.75**
EDM-760-4C with Fuel Flow 231 3-1/8" (Gravity Fed)	10-02847	**$4,160.75**

ACCESSORIES

Description	Part No.	Price
EDM PC Interface Cable +	10-27112	**$36.75**
EZ Trends (Free with new instrument)	10-27113	**$69.00**
Fuel Flow Without Transducer	11-09232	**$343.95**
Fuel Flow With Transducer	11-09233	**$545.00**

JPI EDM-740 INSTRUMENTATION SYSTEM

Functions included on EDM-740: All in One Engine Instrumentation that works. Start saving fuel today with JPI's exclusive Over lean (LOP) feature. All functions also show up in large digital display. Same as the EDM-830 plus now with Fuel Level and Fuel Pressure. User selectable landscape or portrait mode. For experimental aircraft only.

RPM Propeller, MAP Manifold Pressure, % HP Percent of Horse Power, EGT Exhaust Gas Temp., CHT Cylinder Head Temp, O-T Oil Temperature, O-P Oil Pressure, OAT Outside Air Temp., VDC Voltage, GPH Gallons per Hour, REQ Required to destination, USD Fuel used, H:M Endurance, MPG Miles per Gal, CLD Shock Cooling on all cylinders, DIFF Gami spread, USB Memory stick Data Recording, EZTrends Graphing program

Optional functions:TIT Turbine Inlets Temp., F-P Fuel Pressure, CDT Compressor Discharge., AMP Current amps, CRB Carburetor Temp , L-Tank Fuel Quantity, level, R-Tank Fuel Quantity, level

EDM 740 4C Experimental ..... P/N 11-08058 ..... **$2,699.00**
EDM 740 6C Experimental ..... P/N 11-08059 ..... **$2,925.00**

IN

JPI ENGINE SCANNERS

JPI EDM-730/830

The EDM-730/830 revolutionizes engine monitoring by the integration of brilliant full color graphical LCD display with the extremely popular EDM 700/800 series functionally and yet reduces the package size to the smallest on the market! The EDM-730 packs more features, functionality, and information onto its large full color screen than any other monitor available and features larger characters for easier reading. Oil pressure has also been added to the entire EDM series line. Mounting is a breeze due to its standard 3-1/8" format, and because it can be mounted in either portrait or landscape orientation, thus accommodating virtually any panel configuration. Depth behind the panel is an amazing 2-1/2". The unit is "Plug and Play" compatible with existing EDM-700/800 units. Full Color LCD Display: * More Graphics * Large digits for easy reading. * Full color parameter range markings. * FAA STC/TSO approved. Package Form Factor: * Standard 3-1/8" Mounting from the front. * Face is offset from center to better fit in spaces where other equipment is currently located. * Can be mounted in four different face orientations to satisfy tough mounting scenarios. * Depth is nearly the same as the height of a business card, 2.5". * Plug and play compatible with the JPI EDM-700/800 harnesses for easy upgrade. * Front mounted USB jack for easy software upgrades and data downloads.

Model	Part No.	Price
EDM-730-4Cyl	10-03701	$1,881.00
EDM-730-4C W/ FF 201	10-03717	$2,316.25
EDM-730-4C W/ FF 231	10-03718	$2,316.25
EDM-730-6C	10-03703	$2,599.00
EDM-730-6C W/ FF 201	10-03719	$2,990.00
EDM-730-6C W/ FF 231	10-03720	$2,990.00
EDM-730-7C	11-07753	$2,831.00
EDM-730-7C W/ FF 201	11-07754	$3,208.75
EDM-730-7C W/ FF 231	11-07755	$3,208.75
EDM-730-8C	11-07756	$3,209.00
EDM-730-8C W/ FF 201	11-07757	$3,565.75
EDM-730-8C W/ FF 231	11-07758	$3,565.75
EDM-730-9C	11-07759	$3,492.00
EDM-730-9C W/ FF 201	11-07760	$3,833.00
EDM-730-9C W/ FF 231	11-07761	$3,833.50
EDM-830-4C W/ FF 201	10-03721	$3,587.00
EDM-830-4C W/ FF 231	10-03723	$3,587.00
EDM-830-6C W/FF 201	10-03724	$4,059.00
EDM-830-6C W/FF 231	10-03725	$4,059.00
EDM-830-7C W/ FF 201	11-07762	$4,136.00
EDM-830-7C W/ FF 231	11-07763	$4,136.00
EDM-830-8C W/ FF 201	11-07764	$4,406.00
EDM-830-8C W/ FF 231	11-07765	$4,406.00
EDM-830-9C W/ FF 201	11-07766	$4,676.00
EDM-830-9C W/ FF 231	11-07767	$4,676.00
Fuel Flow Without Transducer	11-09232	$343.95
Fuel Flow With Transducer	11-09233	$545.00
UPGRADE YOUR EDM 700 TO THE EDM 730, OR YOUREDM 800 TO THE EDM 830.		
Description	**Part No.**	**Price**
EDM 700 to EDM 730	10-03863	$1,065.00
EDM 800 to EDM 830	10-03864	$1,065.00

EDM 930 & 930T PRIMARY

True TFT Transflective Custom Display - Display brightness increases with ambient brightness, always sunlight readable. All gages have a Variable Scale and alarm limit to fit your engine. New form factor, panel size: 6"w X 4"h X 2.9"d. Records all engine parameters at 2 to 255 second intervals. Plot the data with EZplot. All probes and transducers supplied. High Flow transducer (120 GPH) included in EDM930T Compatible with and transmits RS-232 data to most MFD's, also sold less the display.

PISTON FUNCTIONS: • Tachometer/Hobbs • Manifold Air Press • 6 EGT/CHT • Oil Temp. • Oil Press • Fuel Quantity • Fuel Press • OAT • Carb. • Temp • TIT, TIT-2 • CDT • GMT • Votls/Amps 1-2 • Differential EGT • Shock cooling • GPH • Fuel remaining • Fuel Endurance • Fuel required to GPS waypoint • Fuel used • Percent of horse power • Receives data from any GPS and transmits data to any GPS.

FAA TSO PRIMARY

Description	Part No.	Price
JPI EDM-930 (4) Cylinder Primary STC	10-02111	$5,467.00
JPI EDM-930 (4) Cylinder Primary STC 4 Tank System	10-04731	$6,090.00
JPI EDM-930 (4)Cylinder Primary STC No Tank System	10-04909	$5,136.00
JPI EDM-930 (6) Cylinder Primary STC	10-02112	$5,900.00
JPI EDM-930 (6) Cylinder Primary STC 4 Tank System	10-04732	$6,524.00
JPI EDM-930 (6) Cylinder Primary STC No Tank System	10-04911	$5,583.00
JPI EDM-930 (7) Cylinder Primary STC	10-02632	$7,893.00
JPI EDM-930 (8) Cylinder Primary STC	10-02633	$8,172.00
JPI EDM-930 (9) Cylinder Primary STC	10-02634	$10,082.00

Call for Special Prices on JPI Products!

JPI EDM 800 DIGITAL/ANALOG SCANNERS WITH AUTOMATIC HORSEPOWER COMPUTING

The EDM-800 instrument has all the advanced functions of the EDM-700, but incorporates some new features that can only be found on JPI products. No longer do pilots have to waste time looking up and guesstimating the present percentage of horsepower (HP). There are new easily readable digits located at the top of the EDM display which continually show the percentage of horsepower being used, and can also display RPM. What is truly unique about this new feature is that it can also display HP over lean. HP can be displayed for either carbureted or injected engines, even if they are turbocharged. Now you can be sure that you are within the horsepower limits of your engine, and in IFR conditions, this can be quite a task. At the present time HP is only available on single engine 4 and 6 cylinder engines. The EDM-800 calculates percent of horsepower in an Over lean condition. Lycoming & Continental horsepower charts stop at peak EGT on the first cylinder to peak. Gami has developed a method of going over lean on all cylinders. When you are over lean, every ounce of fuel is burned and used to create horsepower and heat. Cooling is accomplished by excess air in the combustion chamber. JPI has developed an algorithm to calculate horsepower based on fuel consumption and other factors. To obtain HP in this over lean condition you must have an EDM-800 engine analyzer which includes fuel flow, RPM, MAP, OAT, Memory and Gami tuned injectors. In addition to JPI's HP function, the EDM-800 also has a Memory Module that can store up to 25 hours of engine data, which can be downloaded to a laptop or palmtop PC. When using the memory function, all functions of the EDM will be recorded, including Fuel Flow and HP.

Description	Part No.	Price
EDM-800-4C w/Fuel Flow 201 2-1/4"(Fuel Pump)	10-02854	$2,779.50
EDM-800-4C w/Fuel Flow 201 3-1/8"(Fuel Pump)	10-02021	$3,077.00
EDM 800-4C w/Fuel Flow 231 2-1/4"(Gravity Fed)	10-02855	$2,779.50
EDM 800-4C w/ Fuel Flow 231 3-1/8"(Gravity Fed)	10-02843	$3,077.00
EDM-800-6C w/Fuel Flow 201 2-1/4"(Fuel Pump)	10-02856	$3,395.75
EDM-800-6C w/Fuel Flow 201 3-1/8"(Fuel Pump)	10-02857	$3,693.25
EDM 800-6C w/Fuel Flow 231 2-1/4"(Gravity Fed)	10-02859	$3,395.75
EDM 800-6C w/Fuel Flow 231 3-1/8"(Gravity Fed)	10-02858	$3,693.25

J.P. INSTRUMENTS EDM-960

The EDM-960 is the latest graphic engine analyzer for Piston Engine Twins from JP Instruments. The EDM-960, STC'd as Primary engine instrument, takes the best from their EDM-760 and adds total engine display monitoring including Tach, % Horsepower, Hobbs, Manifold Pressure, EGT, CHT, Oil Pressure, Oil Temp, Fuel Flow, Outside Air Temp, Volts, and Amps plus optional Fuel Pressure, Fuel Quantity, and Turbine Inlet Temp. Each individual engine display has a scale and alarm limit to fit your particular airplane. As with the popular EDM-760, the EDM-960 has internal memory that records all engine parameters that can be recalled and displayed on your computer to keep track of the health of your engine. Plus: warnings for shock cooling and excess temperatures, leaning assist for both "lean of peak, and "rich of peak".

Description	Part No.	Price
JPI EDM-960-6C Twin	10-03726	$15,782.00
JPI EDM 960-6C Twin 4 Tank System	10-04734	$16,625.00
JPI EDM 960 6C No Tanks	10-04914	$15,195.00
JPI EDM-960-4C Twin	10-03727	$14,526.00
JPI EDM 960-4C Twin 4 Tank System	10-04733	$15,514.00
JPI EDM 960 4C No Tanks	10-04913	$13,956.00
JPI EDM-960-7C Twin	11-07750	$18,041.00
JPI EDM-960-8C Twin	11-07751	$18,525.00
JPI EDM-960-9C Twin	11-07752	$22,582.00

IN

AIRCRAFT SPRUCE WEST
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AIRCRAFT SPRUCE EAST
PEACHTREE CITY, GA • (877) 477-7823
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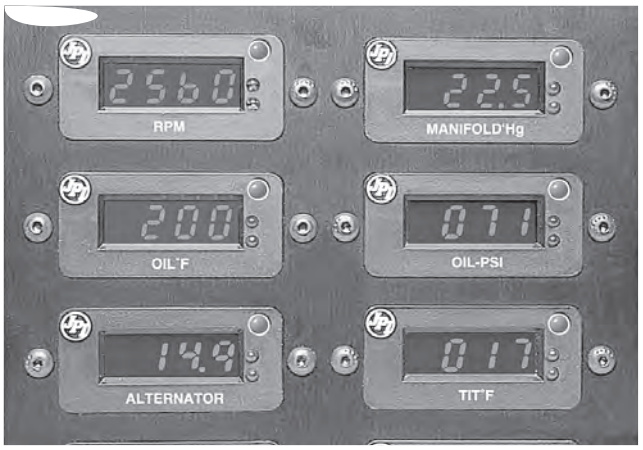
JPI FUEL COMPUTERS

J.P. INSTRUMENTS SLIM LINE DIGITAL ENGINE INSTRUMENTS



These compact engine instruments from have a bright red display and feature central remote and individual alarms on all gauges. The gauges are easily stackable in a homebuilt aircraft panel, and come complete with sensors. Specify voltage. NOT FAA APPROVED.

Tachometer **-** Features quartz crystal and accuracy of 1 RPM. Resolution is 10RPM and includes red line alarm. Specify engine and magneto models, number of cylinders, voltage, and red line.
P/N 10-24900 ..... **$420.75**

Manifold Pressure **-** Features resolution of 0.1 inches mercury, accuracy of 0.1" Hg, solid state sensor, and over boost alarm. Range: 0-50".
P/N 10-24910 ..... **$297.50**

Outside Air Temperature (O.A.T.) **-** Features resolution of 1° and has range of -40 to 195°F. P/N 10-24940 ..... **$250.75**

Oil Temperature **-** Features resolution of 1° and over temperature alarm of 235 F. P/N 10-24960 ..... **$250.75**

Volt/Ammeter - Features resolution of 0.1 volts/amps and discharge alarm.
Volt/100 amp-14V ..... P/N 10-24920 ..... **$250.75**
Ammeter Shunt - (100 Amp) ..... P/N 10-24925 ..... **$63.75**
Volt/100 amp-28V ..... P/N 10-24921 ..... **$250.75**

Oil Pressure **-** gives readout in PSI and features resolution of 1 PSI and an under pressure alarm. P/N 10-24930 ..... **$250.75**

Turbine Inlet Temperature (T.I.T) **-** Features resolution of 1° or 10° and a Hi-temperature alarm at 1650° F.
P/N 10-24950 ..... **$250.75**

Fuel Pressure **-** Features Resolution of 1 PSI and under pressure alarm.
Slimline Injected 10-32 PSI ..... P/N 10-24970-30A **$250.75**
Slimline Carb 1-8 PSI ..... P/N 10-24970-30B **$335.75**

J.P. INSTRUMENTS FUEL SCAN –450

- Continuous display of fuel burned,in upper display in Gallons per Hour. Liters and Lbs per hr also available.
- An amazingly low price includes Instrument harness and a Flow Scan 201 or 231 transducer.
- Upgrade your old Hoskins, or Shadin System. Will function with any K factors; connector is pin to pin compatible.
- Automatically calculates the K factor.
- All programming done from the front panel.
- Size 2.25" diameter (small hole)
- Light Weight 5 oz with Super Thin 1.5" depth
- Three year warranty. (yes, the only three year warranty around!)
- Serial port sends and receives data from all GPS units, even handhelds.
- Calculates fuel to next waypoint.

FS 450 Scanner Fuel Pump ..... P/N 10-00135 ..... **$658.75**
Fuel Scan 450 Gravity Fed+ ..... P/N 10-00134 ..... **$658.75**
FS-450R Fuel Scan Rotax (2 Transducers for aircraft with return fuel line) ..... P/N 10-00266 ..... **$924.00**
FS-450M-3 3-1/8" Twin Engine ..... P/N 10-03692 ..... **$1,463.00**
CALL FOR SPECIAL PRICE!

JPI EDM-900 SINGLE ENGINE PRIMARY

The EDM-900 includes an ALL IN ONE Bright VGA Display with over 40 functions including fuel level. It is FAA STC approved to replace all engine instruments in over 1000 aircraft and all probes, sensors, and transducers are included. The EDM-900 has a built in EDM-800, plus many other gauges in combination together. Fits in a standard 3" hole no panel rework. Made in California. **EDM-900 System Includes:** EDM-900 ALL IN ONE Bright VGA Display, Pre-Wired Harness for all functions, All EGT/CHT probes, Oil Pressure Transducer, Oil Temperature Sensor, Fuel Pressure Transducer, Oat Sensor, RPM Sensor, One required, Manifold Pressure Transducer, 100 amp Shunt (2) (for Amps), Volts pick-up V-1 and V-2, 2 GB memory Download/upload stick, FloScan Fuel Flow Transducer w/firesleeve, Demo DVD, and 3 year warranty.

Description	Part No.	Price
900-4CP-0 (4 Cyl) for NO tanks Primary	10-04857	**$5,501.00**
900-4CP-2 (4 Cyl) for L/R 2 tanks setup complete Primary	10-04858	**$5,591.00**
900-4CP-4 (4 Cyl) for L/R and Aux 4 tanks setup complete Primary	10-04859	**$6,128.00**
900-6CP-0 (6 Cyl) for NO tanks Primary	10-04860	**$5,691.00**
900-6CP-2 (6 Cyl) for L/R 2 tanks setup complete Primary	10-04861	**$6,069.00**
900-6CP-4 (6 Cyl) for L/R and Aux 4 tanks setup complete Primary	10-04862	**$6,631.00**
900-7CP-4 (7 Cyl) for L/R and Aux 4 tanks setup complete Primary	10-04863	**$7,041.00**
900-8CP-4 (8 Cyl) for L/R and Aux 4 tanks setup complete Primary	10-04864	**$7,497.00**
900-9CP-4 (9 Cyl) for L/R and Aux 4 tanks setup complete Primary	10-04865	**$7,980.00**
900-D May be used to display parameters in a second location	10-04866	**$4,845.00**

JPI EDM 711 SYSTEMS

4 or 6 Cylinder. Configured like the EDM-700 or EDM-800, this is STC'd as the Primary Replacement for certified aircraft. Includes one primary function; CHT, Oil Temp, or T.I.T. To add a function, select P/N 10-00647, 10-00648, or 10-00649. Fuel Flow may also be added (P/N 10-00650), but the Transducer is sold separately.

Use P/N 10-27089 or 10-27094 for Transducer. When ordering, please provide Aircraft Make & Model, Engine Make & Model, Mag Type, and Redline for each function.

Description	Part No.	Price
EDM711-4C (configured as 700)	10-00641	**$1,742.00**
EDM711-6C (configured as 700)	10-00642	**$2,212.00**
EDM711-4C (configured as 800)	10-00643	**$3,059.00**
EDM711-6C (configured as 800)	10-03858	**$3,743.00**
Add Primary Functions to EDM711	10-00647	**$356.95**
Add Oil Temp Function to EDM711	10-00648	**$358.95**
Add Fuel Flow to EDM711	10-00650	**$531.00**
Fuel Flo Harness	10-04650	**$118.95**
EDM 4 Cyl. Harness	10-04661	**$189.95**
EDM 6 Cyl Harness	10-04663	**$328.95**

IN

FUEL TOTALIZERS - FUEL GAUGES

SHADIN MINIFLO TOTALIZERS

MINIFLO SYSTEMS - Miniflo is the miniature fuel flow meter which constantly displays fuel flow in the lower windows. The fuel used and fuel remaining functions are continuously computed and can be displayed in the upper window by pressing the appropriate button. Endurance (time remaining) can be displayed in the upper window by using the rotary switch. STC's for most aircraft. Power: 12-28V DC Furnished in gallons readout (pounds also available). Weight: 31 oz. (meter& transducer). Size: 3.25"x 1.25"x 7.5". Miniflo now provides all features of standard Miniflo system plus a Loran interface as described in Digiflo above. This gives the pilot NM/Gal, Gallons to Destination and Gallons of Reserve. Specify aircraft and engine model on all Miniflo orders.Prices vary according to aircraft model.

Single Engine GPS Miniflo ..... P/N 10-24735.... **CALL FOR PRICE**

SHADIN DIGIFLOW TOTALIZERS

Digiflo-L is a Digital Fuel Management System designed to provide complete fuel management information under real flight conditions without any manual entry of data (after eztry of the initial fuel on board information).Digiflo-L is connected to the engine fuel flow transducer for fuel flow information and to the Loran-C or GPS receiver serial port for navigation data (ground speed, distance and estimated time en route).This system is also capable of transmitting the fuel information to the Bendix/King KLN-88, KLN-90, and Garmin GPS navigation receivers, for additional calculations and display of fuel management data.

Single Engine GPS Digiflo ..... P/N 10-02212 ..... **Please Call**
Twin Engine GPS Digiflo ..... P/N 10-02213 ..... **Please Call**

SHADIN F/ADC-200 FUEL/AIR DATA COMPUTER

The affordable Shadin F/ADC-200 Fuel/Air data computer maximizes aircraft range and fuel economy by providing automatic updating to your GPS for true air speed, winds aloft, wind components, density altitude, OAT, pressure altitude, fuel flow rate, fuel used, fuel required to destination, fuel endurance, and more. Interfaces with most popular GPS units including Bendix King KLN series, Garmin 150, 155, 165, Trimble 2000/3000 series, and Arnav. Please specify aircraft make/model, engine make/model, serial number of aircraft, and GPS make/model at time of order. P/N 10-24768 ..... **Please Call**

IMPORTANT: For all Shadin orders, please specify engine make and model number; aircraft make and model number; specify gallons, pounds or liters on readout and if Loran or GPS will interface. Specify make and model.

SHADIN SYSTEMS PRICING

Prices for Shadin Microflo, Digiflo, & Miniflo systems vary according to aircraft/engine models. Call Aircraft Spruce for your best pricing on any Shadin system. Aircraft Spruce guarantees to meet or beat any competitor's current advertised prices.

FUEL LEVEL SYSTEM BY DATCON

This Datcon fuel gauge and senders are designed for use with 12 volt electrical systems in automotive, marine and homebuilt aircraft applications. The gauges have a round 2" diameter case with chrome bezel. Mounting brackets and instructions are furnished. 240-33 Ohms.

Gauge No. 100177 with steel case
P/N 100177 **$34.85**
Lighting Kit (12V) ..... P/N 06215-00 ..... **$4.65**

UNIVERSAL SENDER FOR DATCON GAUGES

This Fuel Level Sender has removable mounting plate which can rotate 180° to mount on either right hand or left hand position. For tanks 6"-15" deep.
P/N 05-16710 ..... **$31.50**

STEARMAN FLOAT-TYPE FUEL SIGHT GAUGE

Float type fuel sight gauge used in Stearman dusters. Plastic tube with fuel level marking and 3/4" male pipe thread fitting. 16" long overall, 8" tank depth. 5-1/2" travel. Use AN867-6 Aluminum Welding Flange to mate with above gauge. P/N 10435..... **$69.25**
Aluminum Welding Flange to mate with above gauge.
P/N AN867-6..... **$11.50**

SPIRAL ACTION FUEL GAUGE

05-16900

A precision magnetic gauge for narrow vertical tanks. Rubber float travels on spiral rod to record fuel level on hermetically sealed side-reading dial marked E, 1/4, 1/2, 3/4, F. All aluminum construction. Housing has 1-1/2" NPT male threads for connection to threaded bushing (see below). Available in two lengths:
Length 'L' 15", Float Travel 12-3/4"..... P/N 05-16900..... **$69.85**
Length 'L' 19", Float Travel 16-3/4"..... P/N 05-17000 **$78.50**

Welding Bushings - 6061 aluminum, 2-1/4" O.D., 1/4" wall. Available in 1" & 2" length. Use with welding ring to provide base for attaching to fuel tank with bolts or rivets. Ring may be welded at any point along bushing to permit depth adjustment. Specify bushing length. For use with Spiral Action Gauge.

1"Bushing ..... P/N 10362-1 ..... **$14.25**
2"Bushing ..... P/N 10362-2 ..... **$15.75**

Welding Ring - 6061 aluminum, 4-3/8" O.D., 2-1/4" I.D. to fit above welding bushings. For use with Spiral Action Gauge..... P/N 10363 ..... **$4.40**

ROCHESTER 8341-R7090 SENDER

These fuel senders are designed for top mounting in unpressurized aluminum, stainless steel, or plastic fuel tanks in all types of marine vessels. They include special features and protection from corrosion problems (internal and external to the fuel tanks) which make them the quality standard for the industry. Standard configuration, with the lead hole at 12:00, has the float arm swinging at 3:00. The float arm on this sender is 24" [609mm] long measured from the pivot point allowing it to be cut to an appropriate length to gauge any tank depth from 6" [152mm] to 25" [635mm]. The float and the washers are furnished unassembled to the float arm. The cutting and crimping process is to be done prior to the float assembly. The fuel sender is equipped with a thick film resistance card with a range of 0 to 90Ù. The recommended gasket for use under the head is made of nitrile rubber and must be ordered separately.
P/N 10-02045 ..... **$21.65**

MECHANICAL FUEL GAUGE

Lever-action gauge measures fuel level from full to empty on fractional dial. Matte-white markings on 2" black dial with red "No Take-off" sector below the 1/4 full mark. Cork float has 4" travel. Wire arm 12" long may be cut off to required length, wire bent to 90° angle to secure cork float. 1-13/16" between mounting hole centers. Hermetically sealed dial assembly has magnetically driven, silicone-damped or position pointer to prevent flutter..... P/N 05-16700..... **$77.85**

Accessories

Replacement Fuel Float ..... P/N 05-03395..... **$2.20**
Weld Adapt FLANGE 10361 ..... P/N 10361 ..... **$10.45**
Gasket for 05-16700..... P/N 15-4..... **$3.25**

LUSCOMBE/AERONCA TYPE FUEL GAUGE

This direct reading fuel quantity gauge is usable in tank depths up to 9" such as Luscombe & Aeronca. Not FAA approved. Excellent for homebuilt aircraft. Displays fuel level from full to empty. Size: 1-1/2" diameter face.

Fuel Gauge ..... P/N 05-00029 ..... **$43.00**
Rebuild kit for Fuel Gauge..... P/N 05-00031 ..... **$9.25**

GAS GAUGE TOOL SETS

Use the Gas Gauge Tool Set to remove or install gauges. It helps prevent damage to chrome inner & outer nuts. Available in standard (economical version) and deluxe (heavy-duty version). The tool used on the standard (outer nut) has been specifically designed to work on the original or new style nut. The tool used on the deluxe (inner nut) has a tight fitting handle, which you will need to hammer in. This offers you better leverage & sure grip. Heavy-duty version.

Standard..... P/N 05-06813..... **$9.85**
Deluxe ..... P/N 05-06814 ..... **$21.75**

GAS GAUGE FLOATS

Gas Gauge Float comes in two versions (Epoxy-Coated Cork and Modern Neoprene Cork). Epoxy-Coated Cork Float: - When replacing the float on the wire, follow it with a washer and a drop of solder to secure the float in place. Modern Neoprene Float: - This float is alcohol and gas resistent, and will not sink. It is not affected by modern ethanol based fuels. Highly recommended. USA made.

Epoxy-Coated Cork Float:..... P/N 05-06818..... **$1.75**
Modern Neoprene Float: ..... P/N 05-06815..... **$6.95**

GAS GAUGE NUT

Gas Gauge Nut available in two versions:
Inner - Chrome Plated - Small..... P/N 05-06816..... **$7.85**
Inner - Chrome Plated - Large..... P/N 05-06817..... **$8.35**

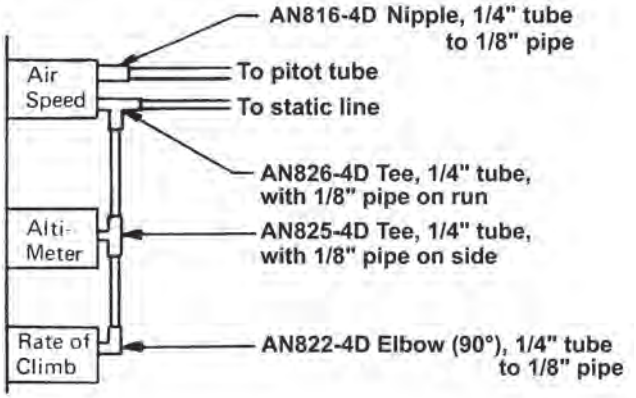
IN

INSTRUMENT HOOK-UPS

SELECTING FITTINGS FOR INSTRUMENT HOOKUPS

1. Make sketch of instrument layout.
2. Draw lines showing routing of tubing from instruments to the fire wall or other locations.
3. Determine diameters of instrument lines. 1/4" diameter tubing is used for most instruments. The artificial horizon and directional gyro should have at least 3/8" diameter lines.
4. Select the required AN or Nylo-Seal fittings.

EXAMPLE NO. 1: HOOKUP OF AIRSPEED, ALTIMETER, & RATE OF CLIMB



The aluminum lines (1/4-in. diameter) will be flared and attached to the fittings with AN818-4D nuts and AN819-4D sleeves.

EXAMPLES OF EQUIVALENT AN-TYPE AND NYLO-SEAL FITTINGS

AN Fitting	Thread Size	Nylo-Seal Fitting
AN816-4D Nipple	1/4 tube x 1/8 pipe	268-N 1/4
AN816-6D Nipple	3/8 tube x 1/4 pipe	268-N 3/8
AN818-4D Nut	1/4 tube	Nuts and Sleeves
AN818-6D Nut	3/8 tube	are included with
AN819-4D Sleeve	1/4 tube	all Nylo-Seal
AN819-6D Sleeve	3/8 tube	fittings.
AN822-4D Elbow	1/4 tube x 1/8 pipe	269-N 1/4 x1/8
AN825-4D Tee	1/4 tube, 1/8 pipe on run	272-N 1/4 x1/8
AN826-4D Tee	1/4 tube, 1/8 pipe on side	271-N 1/4 x 1/8
AN912-1D Bushing	1/4 pipe x 1/8 pipe	No Equivalent

*Use AN816 Nipple and Nyloseal 266-N Female Connector to transition from AN-type fittings to Nyloseal fittings.

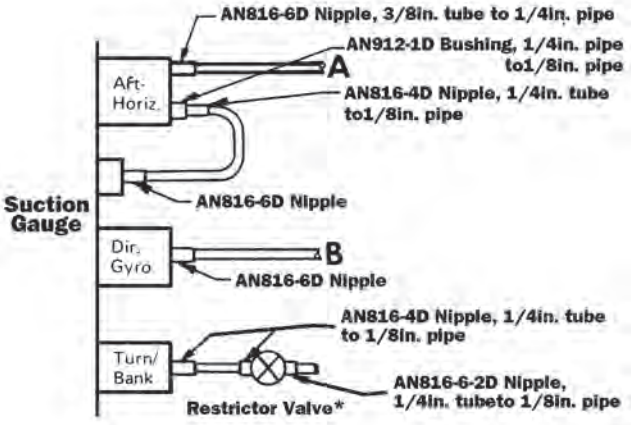
Each connection between the aluminum lines and the fittings requires either all AN818-4D nut and AN819-4D sleeve (1/4-in. line) or an AN818-6D nut and an AN819-6D sleeve for 3/8-in. line.

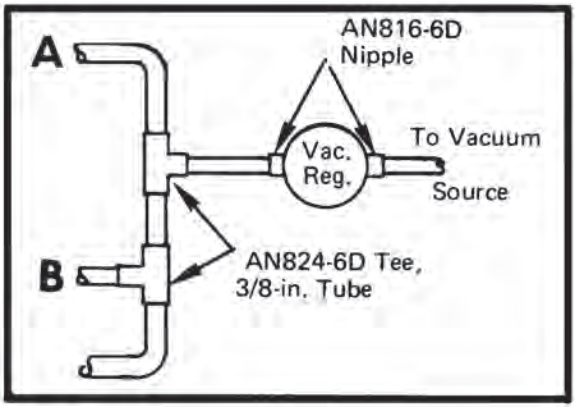
*Turn/Back vacuum set at 2 In. Hg.

HELPFUL HINTS

It is good practice to put some form of water trap in both the pitot and static lines. It should be placed at the lowest practical point in the system between the pressure source and the instrument. The trap can be a simple T-fitting with a cap:

EXAMPLE NO. 2: HOOKUP OF GYRO INSTRUMENTS





OVERHAULED INSTRUMENTS

These instruments are overhauled and certified at our affiliated instrument repair facility and are available on an outright purchase basis (stock permitting). For outright purchase, you will be billed the purchase price plus core charge. Core charge is credited upon return of acceptable core. We can also overhaul your instrument at the price shown, and no core charge will be billed. Allow 2-3 weeks for overhaul of your instrument. If in stock, outright purchases can ship within 2 days. Warranty details are included with the instrument.

To send in your instrument for overhaul or to return a core, please contact Aircraft Spruce Customer Service in advance for an RMA number and then ship instrument to Aircraft Spruce East in Georgia.

Model	Description	Core Charge	PN	Price
Overhauled 5000 Series Standard	Attitude Gyro	**$125.00**	10-03111	**$645.00**
Overhauled 4000 Series Standard	Directional Gyro	**$125.00**	10-03114	**$645.00**
Overhauled 1U367-002-2	Attitude Gyro	**$125.00**	10-03117	**$398.00**
Overhauled 5934 Series	Altimeter	**$125.00**	10-03119	**$0.00**
Overhauled 5950 Series	Altimeter	**$125.00**	10-03120	**$197.00**
Overhauled 371 Series	Altimeter	**$125.00**	10-03121	**$197.00**
Overhauled 671 Series	Altimeter	**$125.00**	10-03122	**$197.00**
Overhauled 7000 Series	VSI (Vertical Speed Indicator)	**$0.00**	10-03123	**$0.00**
Overhauled 8000 Series	Airspeed Indicator	**$100.00**	10-03125	**$224.95**
Overhauled 8025 Series	Airspeed Indicator	**$100.00**	10-03126	**$197.00**
Overhauled 8030 Series	Airspeed Indicator	**$100.00**	10-03127	**$197.00**
Overhauled 8040 Series	Airspeed Indicator	**$100.00**	10-03128	**$197.00**
Overhauled 8100 Series	Airspeed Indicator	**$100.00**	10-03129	**$197.00**
Overhauled 8125 Series	Airspeed Indicator	**$100.00**	10-03130	**$197.00**
Overhauled 8130 Series	Airspeed Indicator	**$100.00**	10-03131	**$197.00**
Overhauled 8140 Series	Airspeed Indicator	**$100.00**	10-03132	**$197.00**

GILL BATTERIES

Founded in 1920 in Redlands, CA, Gill has become the OEM original equipment battery for Raytheon, Cessna, Learjet, Mooney, Piper, Ayres, Airtractor, Maule, and many other manufacturers. Gill's 600 series batteries have proven to be the high performance, high discharge lead-acid batteries need by jet and turbo-prop aircraft. Gill's line of sealed recombinant batteries are now available in most popular sizes and are FAA approved. Gill also provides batteries for battery powered carts which are available by special order. ***NOTE: Part Numbers with an asterisk (*) ship with acid.***

G-35

12 VOLT DRY CHARGED BATTERIES FOR GENERAL AVIATION SINGLE & TWIN ENGINE AIRCRAFT

Model	AH @ 1 hr. rate	30 Min. Emer. Cap.(amps)	Wt. (filled)	Electrolyte (qts.)	Application (Aircraft)	Part No.	Price
G-25	18	30	23.8	2	***Aerostar***: 600, 601, 601P ***Beech***: 19, 23, 24, 55, 58, 77 ***Cessna***: 120, 140, 150, 170, 172, 175, 177, 310, 320, 340 ***Piper***: PA-11, PA-36, PA-38,	**11-01833***	**$151.95**
				--		11-01673	**$147.95**
G-35	23	40	28.7	3	***Beech***: 17, 18, 19, 23, 24, 33, 35, 36, 50, 76 ***Bell***: 47G-5 ***Cessna***: 180, 182, 185, 188, 195, 206, 207, 210 ***Mooney***: M20, M20B, M20D, M20G, M20J, M20K ***Piper***: PA-11, PA-12, PA-14, PA-16, PA-18, PA-22-25, PA-28, PA-30, PA-32, PA-34, PA-39, PA-44	**11-01832***	**$186.95**
				--		11-01672	**$179.95**
G-35M	23	40	30.7	3	***Maule***: M-4-210, -4-210C, -4-230C, -4-180C, -5-210C, -5-220C, -5-200, -5-235C, -5-180C, -6-235, -6-180, M-7-235, MX-7-180, MX-7-235	**11-03791***	**$224.95**
						11-03624	**$214.95**
G-88	65	108	78.0	8	***Ayres Corp.*** S-2R	**11-04011***	**$900.00**
						11-01685	**$874.00**

G-242

24 VOLT DRY CHARGED BATTERIES FOR GENERAL AVIATION SINGLE & TWIN ENGINE AIRCRAFT

Model	AH @ 1 hr. rate	30 Min. Emer. Cap.(amps)	Wt. (filled)	Electrolyte (quarts)	Application (Aircraft)	Part No.	Price
G-240	8	13	23.0	3	***Cessna*** 152, 172, 182	**11-01655***	**$322.95**
				--		11-01683	**$313.95**
G-241	8	13	24.0	3	***Cessna*** 152, 172, 182, 172R, 172S	**11-01656***	**$308.95**
				--		11-01681	**$299.95**
G-242	10	17	27.0	3	***Cessna***: 152, 172, 177, 182, 207, 210, 336, 337 ***Piper***: PA-23, PA-31, PA-36	**11-01657***	**$327.95**
				--		11-01675	**$327.95**
G-243	10	17	28.0	3	***Cessna***: 152, 182, A152, 172, 172R, 172RG, 172S, T182, R182, TR182, T303, 210 (S/N 21059503 & ON), T210M, T210N, T210R, 188, 188A, 188B, A188, A188A, A188B AND T188C ***Cirrus***: SR20, SR22 ***Slingsby Aviation, Ltd.***: T67M260, T67M260-T3A	**11-01658***	**$354.95**
				--		11-01678	**$345.95**
G-244	18	30	38.5	4	***Beech***: A60 ***Cessna***: 310, 335, 340, 402, 404, 414, 421 ***Piper***: PA-31	**11-01555***	**$349.95**
				--		11-01543	**$336.95**
G-245	18	30	39.5	4		**11-01660***	**$367.00**
				--		11-01670	**$354.00**
G-246	19	32	41.5	4	***Airtractor***: AT-300, AT-400 ***Piper***: PA-23, PA-31	**11-01661***	**$364.95**
				--		11-01680	**$351.95**
G-247	19	32	42.5	4	Piper PA-31P-350	**11-01772***	**$409.95**
				--		11-01662	**$385.95**

G-25

12 VOLT VRLA BATTERIES FOR GENERAL AVIATION SINGLE & TWIN ENGINE AIRCRAFT (SEALED)

Model	AH @ 1 hr. rate	30 Min. Cap.(amps)	Wt. (filled)	Application (Aircraft)	Part No.	Price
G-25S	18	30	25.0	**Cessna**: 120, 140, 150, 150A, 150B, 150C, 150D, 150E, 150F, 150G, 150H, 150J, 150K, 150L, 150M, 170, 170A, 170B, 172, 172A, 172B, 172C, 172D, 172E, 172G, 172F (USAF T-41A), 172H (USAF T-41A), 172I, 172K, 172L, 172M, 172N, 172P, 172Q, 172R, 172S, 175, 175A, 175B, 175C, 177, 177A, 177B, 310, 310A (USAF U-3A), 310B, 310C, 310D, 310E (USAF-U-3B), 320, 320-1, 320A, 320B, 320C, 320D, 320E, 320F, 340 **Piper**: PA-11, PA-36-285, PA-36-300, PA-36-375, PA-38-112 **Aerostar**: PA-60-600 (Aerostar 600), PA-60-601(Aerostar 601), PA-60-601P (Aerostar 601P), PA-60-602P (Aerostar 602P) Raytheon: 19A, 23, A24, D55, E55, E55A, 58, 58A, 77 ***Sky International***: A-1, S-1S, S-1T, S-2, S-2A, S-2S, S-2B	11-01316	**$149.95**
G-35S	23	40	29.0	***Beechcraft***: 23, 35, 36, 50, 76 G-35S ***Bell***: 47G-5 ***Cessna***: 180, 182, 185, 188, 195, 206, 207, 210 ***Maule***: M-4-210, -220, -180, M-5-180, -210, -220, -235, -200, -210TC, M-6-180, -235, M-7-235, MX-7-180, MX-7-235, MXT-7-180, MT-7-235, MX-7-160, MXT-7-160, MX-7-180A, MXT-7-180A, MX-7-180B, M-8-235 ***Mooney***: M20, M20B, M20D, M20G, M20J, M20K ***Piper***: PA-12, PA-14, PA-16, PA-18, PA-22, PA-23, PA-24, PA-25, PA-28, PA-30, PA-32, PA-34, PA-39, PA-44	11-01679	**$187.95**

G-246

200 SERIES 24 VOLT VALVE REGULATED LEAD ACID BATTERIES (SEALED)

Model	AH @ 1 hr. rate	30 Min.Cap. (amps)	Wt. (filled)	Application (Aircraft)	Part No.	Price
G242S	10	17	27	***Cessna*** 152,172,177,182,207,210,336,337; Piper PA-23/31/36	11-01665	**$366.95**
G-243S	13	20	28.8	***Cessna***: 152, 182, A152, 172, 172R, 172RG, 172S, T182, R182, TR182, T303, 210 (S/N 21059503 & ON), T210M, T210N, T210R, 188, 188A, 188B, A188, A188A, A188B AND T188C ***Cirrus***: SR20, SR22 ***Mooney***: M20M, M20R ***Slingsby Aviation, Ltd.***, ; T67M260, T67M260-T3A	11-01666	**$354.95**

Free UPS Ground* Shipping in 48 States No UPS Hazardous Charge ~ Pay Price of Battery - That's It! FULL MFG. WARRANTY - SHIPPED SAME DAY ORDERED *Batteries up to 50 lbs.

NOTE: The data in the "Application" section above is intended as a reference guide only. Some installations may vary and require airframe or battery box modification. Some applications may require field approval and some listings are pending FAA approval. Verify correct battery model for your aircraft before ordering. Dry charged Gill Batteries are furnished with electrolyte (except overseas) unless requested otherwise.

GILL BATTERIES

NOTE: Part Numbers with an asterisk (*) ship with acid.

G-641

24 VOLT DRY CHARGED BATTERIES FOR TURBO PROP AND JET APPLICATION

Model	AH 1hr. rate	30min E.C. (amps)	Wt.lbs (filled)	Elect-rolyte (quarts)	Application (Aircraft)	Part No.	Price
G-6381E	43	70	80	9	***Dassault***: Fan Jet Falcon Series C-F Raytheon ***Beech***: 65-90, 65-A90, 65-A90-1(JU-21A, U-21A, RU-21A, RU-21D, U-21G, RU-21H), 65-A90-4(RU-21E, RU-21H), B90, C90, E90, F90, 99, 99A, 100, A99, A99A, A100, A100A, B100, 200, A100-1(U-21J), 200C, 200CT, 200T, A200(C-12A) OR (C-12C), A200CT(C-12D), OR (FWC-12D) OR (RC-12D), OR (C-12F) OR (RC-12G) OR (RG-12H) OR (RC-12K) OR (RC-12P), B200, B200C, (C-12F) OR (UC-12F) OR (UC-12M) OR (C-12R), B200CT, B200T, 300, B300, 300LW, B300C, MU-300-10, 400, 400T, Hawker 1000 ***Bell***: 204B, 205A, 205B, 205A-1, 212, 222U, 412 ***Cessna***: 208, 208B, 425, 441, 500, 501, 550, 551, S550, 560, 560XL ***Embraer***: EMB-110P1, EMB-110P2 ***Learjet***: 23, 24 series, 25 series, 28 series, 29 series, 35 series, 36 series, 31, 31A, 55, 55B, 55C series ***Gulfstream***: G-159 Israel ***Aircraft Industries***: 1121, 1121A, 1121B, 1123, 1124 ***Lockheed-GA***: 1329-23 series ***Mitsubishi***: MU-2B, MU-2B-10, -15, -20, -25, -26, 26A, -30, -35, -36, -36A, -40, -60 ***Pilatus***: Pilatus-PC-12 ***Piper***: PA-31T, -31T1, -31T2, PA-42 and PA-42-720 ***Rockwell***: NA-265 series; ***Aero Commander***: 680T, 680V, 680W, 690, 690A ***Sikorsky***: S-76A, S-76B, S-76C ***Socata Group Aerospatiale***: TBM-700	**11-01557***	**$1,234.00**
				---		11-01545	**$1,228.00**
G-638E	37	60	73	9	***Dassault***: Fan Jet Falcon Series C-F ***Beech***: 65-90, 65-A90, B90, B100, C90, E90, 99, 99A, 100, A99, A99A, A100, A100A, F90 ***Embraer***: EMB-110P1, EMB-110P2 ***Learjet***: 23, 24 series, 25 series, 28 series, 29 series, 31, 31A, 35 series, 36 series, 55, 55C ***Gulfstream***: G-159 ***Israel Aircraft Ind.***: 1121, 1121A, 1121B, 1123, 1124 ***Lockheed-GA***: 1329-23 series, 23A, 23D, 23E ***Mitsubishi***: MU-2B, MU-2B-10, -15, -20, -25, -26, -26A, -30, -35, -36, -36A, -40, -60 ***Rockwell***: NA-265 series; ***Aero Commander***: 680T, 680V, 680W	**11-02215***	**$1,234.00**
				---		11-01545	**$1,228.00**
G-639E	24	40	55	5	***British Aerospace***: DH.125-400A, HS.125-600A, HS.125-700A, BH.125-600A, BAE.125-800A, ***Jetstream*** series 3101 ***Hawker Siddeley, Beechcraft Hawker:*** DH.125, HS.125, BH.125 Messerschmitt-Bolkow-Blohm GMBH: BO-105S	**11-04158***	**$1,083.00**
				---		11-01607	**$1,065.00**
G-640E	14	25	40	3	***Beech***: 65, A65, 65-80, 65-A80, 65-B80, 65-88, 70	**11-04160***	**$646.00**
				---		11-01608	**$618.00**
G-641	18	30	54	4	***Bell***: 206, 206A, 206B, 206B-1, 206L, 206L-1, 206L-3 ***McDonnell Douglas (Hughes) :*** 369, 369A, 369H, 369HM, 369HS, 369HE, 369D, 369E, 369F, 369FF, 500N, 600N with STC kit SR01427LA ***installed Schweizer Aircraft Corporation:*** 269D (333)	**11-02448***	**$1,032.00**
				---		11-01684	**$998.00**
G-6381C	43	70	80	9	***Dassault***: Fan Jet Falcon Series C-F ***Beech***: 65-90, 65-A90, B90, C90, E90, 99, 99A, 100, A99, A99A, A100, A100A ***Embraer***: EMB-110P1, EMB-110P2 ***Learjet***: 23, 24 series, 25 series, 28 series, 29 series, 35 series, 36 series ***Gulfstream***: G-159 ***Israel Aircraft Ind.:*** 1121, 1121A, 1121B, 1123, 1124 ***Lockheed-GA:*** 1329-23 series ***Mitsubishi***: MU-2B, MU-2B-10, -15, -20, -25, -26, 26A, -30, -35, -36, -36A, -40, -60 ***Rockwell***: NA-265 series; ***Aero Commander:*** 680T, 680V, 680W	**11-04155***	**$1,246.00**
				---		11-01609	**$1,218.00**
G-638C	37	60	95	9	***Dassault***: Fan Jet Falcon Series C-F ***Beech***: 65-90, 65-A90, 65-A90-1(JU-21A, U-21A, RU-21A, RU-21D, U-21G, RU-21H), 65-A90-4(RU-21E, RU-21H), B90, C90, E90, F90, 99, 99A, 100, A99, A99A, A100, A100A, B100, 200, A100-1(U-21J), 200C, 200CT, 200T, A200(C-12A) OR (C-12C), A200CT(C-12D), OR (FWC-12D) OR (RC-12D), OR (C-12F) OR (RC-12G) OR (RG-12H) OR (RC-12K) OR (RC-12P), B200, B200C, (C-12F) OR (UC-12F) OR (UC-12M) OR (C-12R), B200CT, B200T, 300, B300, 300LW, B300C, MU-300-10, 400, 400T, Hawker 1000 ***Bell***: 204B, 205A, 205B, 205A-1, 212, 222U, 412 ***Cessna***: 208, 208B, 425, 441, 500, 501, 550, 551, S550, 560, 560XL ***Embraer***: EMB-110P1, EMB-110P2 ***Learjet***: 23, 24 series, 25 series, 28 series, 29 series, 35 series, 36 series, 31, 31A, 55, 55B, 55C series ***Gulfstream***: G-159 ***Israel Aircraft Ind.:*** 1121, 1121A, 1121B, 1123, 1124 ***Lockheed-GA***: 1329-23 series ***Mitsubishi***: MU-2B, MU-2B-10, -15, -20, -25, -26, 26A, -30, -35, -36, -36A, -40, -60 ***Pilatus***: Pilatus-PC-12 ***Piper***: PA-31T, -31T1, -31T2, PA-42 and PA-42-720 Rockwell International: NA-265 series; ***Aero Commander:*** 680T, 680V, 680W, 690, 690A ***Sikorsky***: S-76A, S-76B, S-76C ***Socata Group Aerospatiale:*** TBM-700	**11-01557***	**$1,234.00**
				---		11-01545	**$1,228.00**
G-639C	24	40	55	5	***Hawker Siddeley Beechcraft Hawker:*** DH-125, HS-125, BH-125 ***Messerschmitt-Bolkow-Blohm GMBH:*** BO-105S	**11-04157***	**$1,101.00**
				---		11-01610	**$1,089.00**
GE-50E	31	55	80	8		**11-03809***	**$742.00**
				---		11-01686	**$688.00**
GE-51E	22	35	56	4		**11-04192***	**$633.00**
				---		11-01612	**$633.00**
GE-54E	10	16	32	3		**11-09842***	**$667.00**
				---		11-01547	**$592.00**
GE-50C	31	55	80	8	***Gulfstream Commander:*** 500, 520, 560, 560A, 560E, 680, 680E, 720 ***North American:*** AT6-C, AT6-D, AT6-F, T-6G, SNJ-5, SNJ-6, SNJ-7 or any BC-1A, AT6, AT6-A, AT6-B, SNJ-2, SNJ-3, SNJ-4 converted to 24 volts per North American Drg 121-954004, P51	**11-03808***	**$698.00**
				---		11-01682	**$682.00**
GE-51C	22	35	56	4	***Airtractor***: AT-301, AT-301A	**11-03810***	**$584.00**
				---		11-03623	**$569.00**
GE-54C	10	16	34	3		**11-01558***	**$639.00**
				---		11-01546	**$607.00**

G-6381C

GE-51E

GE-54C

7000 SERIES - (VALVE REGULATED LEAD TIN BATTERIES)

Model	AH 1 hr. rate	30 Min. Cap. (amps)	Wt. (filled)	Application (Aircraft)	Part No.	Price
7641-20	20	35	44	***Bell***: 206A, 206B, 206L, 206L-1, 206L-3 with STC SR01406LA ***McDonnell Douglas(Hughes)***: 369, 369A, 369H, 369HM, 369HS, 369HE, 369D, 369E, 369F, 369FF, 500N, 600N with STC Kit SRO 1427LA installed. ***Schweizer Aircraft Corporation:*** 269D (333)	11-06245	**$1,677.00**
7638-44	44	70	85	Same applications as the G-6381E above	11-05171	**$2,063.00**
7639-27	27	42	60	***British Aerospace***: DH.125-400A, HS.125-600A, HS.125-700A, BH.125-600A, BAE.125-800A, ***Jetstream*** series 3101 ***Hawker Siddeley, Beechcraft Hawker:*** DH.125, HS.125, BH.125 Messerschmitt-Bolkow-Blohm GMBH: BO-105S	11-07462	**$1,783.00**

Free UPS Ground* Shipping in 48 States No UPS Hazardous Charge ~ Pay Price of Battery - That's It! FULL MFG. WARRANTY - SHIPPED SAME DAY ORDERED *Batteries up to 50 lbs.

NOTE: The data in the "Application" section above is intended as a reference guide only. Some installations may vary and require airframe or battery box modification. Some applications may require field approval and some listings are pending FAA approval. Verify correct battery model for your aircraft before ordering. Dry charged Gill Batteries are furnished with electrolyte (except overseas) unless requested otherwise.

GILL BATTERY ELECTROLYTE (ACID)

Battery electrolyte (battery grade sulfuric acid) in sealed polyethylene pouch with self-contained dispenser tube, packaged in sturdy cardboard container. Specific gravity 1.285. Detailed filling & disposal instructions on container.

2 Qts.....P/N 11-00300 .....**$6.95**
3 Qts.....P/N 11-00305 .....**$9.85**

SEALED "VALVE REGULATED SRT SERIES"

11-01316

11-01679

11-01666

Model	Weight	Part No.	Price
G-25S 12 Volt	25 Lbs. (full) Electrolyte: Not Needed	11-01316	**$149.95**
G-35S 12 Volt	29.0 Lbs. Electrolyte: Not Needed	11-01679	**$187.95**
G-243S 24 Volt	28.8 Lbs. (full) Electrolyte: Not Needed	11-01666	**$354.95**

EL

CONCORDE BATTERIES

Since their introduction in 1986, several styles of RG® Batteries, likewise known as VRSLAB, SLAB, or AGM batteries, have been developed by Concorde Battery Corporation. Concorde Battery has a dedicated Research and Development Department that is continuously improving and refining its recombinant gas product line. Formed in 1977 Concorde's factory was dedicated to manufacturing dry charged (vented or flooded electrolyte) aircraft batteries. In 1985 Concorde developed it's first recombinant gas battery with absorbed glass mat separators. Now, with the proven reliability of Concorde's recombinant gas (RG®) aircraft batteries and great acceptance in both military and commercial appllications, over 90% of its manufacturing has been changed over from dry charged to RG® production.

***NOTE* - The STC for some aircraft is available at an additional cost please call 877-4-SPRUCE (777823) if applicable to your aircraft.**

CONCORDE SEALED LEAD ACID BATTERIES

RG-25 RG-25XC RG-35A RG-35AXC RG-24-11 RG-24-11M RG380E/44

Concorde's line of sealed lead acid batteries is designed with larger positive and negative plates for more capacity and greater starting power even at sub-zero temperatures. They feature real aircraft quality terminals, patented copper alloy internally threaded terminals brass terminal bolts with conical silicon bronze lock washers, recommended 70" pound terminal torque, more than 20% higher capacity than earlier models, and a molded carrying or lifting handle. These valve regulated sealed lead acid batteries feature fully aerobatic sealed construction; no spillable electrolyte or flammable gas emissions. "XC" or "AXC" in the model number indicates extra cranking power, and "M" in the model number indicates manifold venting.

Part No.	Battery Type	Connect Type	Amp Hour	Volt	Our Part No.	Price	Part No.	Battery Type	Connect Type	Amp Hour	Volt	Our Part No.	Price
RG-25	Sealed Lead Acid	A	22	12	11-03879	**$188.95**	RG-12LSA	Sealed Lead Acid	A	11.00	12	11-09455	**$218.95**
RG-25XC	Sealed Extra Crank	A	24	12	11-03880	**$216.95**	RG24-15	Sealed Lead Acid	A	13.60	24	11-03878	**$479.00**
RG-35A	Sealed Lead Acid	A	29	12	11-03881	**$238.95**	RG24-15M	Sealed Lead Acid	A	13.60	24	11-04951	**$479.00**
RG-35AXC	Sealed Extra Crank	A	33	12	11-03882	**$254.00**	RG24-16	Sealed Lead Acid	A	13	24	11-05112	**$469.95**
RG-24-11	Sealed Lead Acid	A	11	24	11-03876	**$429.95**	RG24-20		A	19	24	11-00174	**$595.00**
RG-24-11 M	Sealed Lead Acid	A	11	24	11-03877	**$449.00**	RG380E/44*	Sealed Lead Acid	E	42	24	11-03883	**$2,457.00**

CONCORDE PLATINUM SERIES LEAD ACID BATTERIES

CB25 CB25XC CB35AXC CB35A CB24-11 CB24-11MXC

The Platinum Series® battery line from Concorde features more cold cranking amperes for one minute at 0°F, and more 30 minute emergency capacity than any other brand. Platinum Series® batteries provide more one hour capacity than any other brand as well as more high rate performance. These batteries utilize real aircraft quality copper alloy terminals with silicone bronze bolts and conical washers. The batteries listed in the chart below which are not described as "Platinum" are the original series of Concorde lead acid batteries.

BATTERY WARRANTY

(Applicable to Gill and Concorde)

The manufacturer will replace with a new battery without charge (except for transportation) any battery which fails in service within 90 days. Addition of any chemical other than water or battery grade sulfuric acid voids this warranty. After expiration of Service Guarantee, adjustment will be made on pro-rata basis based on unused months of service. Batteries that are broken, discharged or fail due to freezing or abuse are not covered.

CONCORDE BATTERY ELECTROLYTE (ACID)

2 QT. ..... P/N 11-04749.....**$10.95**
3 QT. ..... P/N 11-04750.....**$16.75**

Part No.	Battery Type	Ampere Hour	Weight (lbs.)	Volts	Price
11-06405	CB25 with acid	20 Ah	--	12	**$198.95**
11-05837	CB25 without acid	20 Ah	22.0	12	**$189.95**
11-01571	CB25XC with acid	25 Ah	28.5	12	**$224.95**
11-01572	CB35AXC with acid	34 Ah	--	12	**$269.00**
11-06244	CB35AXC without acid	34 Ah	32.5	12	**$262.95**
11-03776	CB-35A with acid	29 Ah	--	12	**$245.95**
11-03769	CB-35A without acid	29 Ah	28.5	12	**$229.95**
11-03771	CB24-11 with acid	10 Ah	--	24	**$433.95**
11-03772	CB24-11 without acid	10 Ah	27.0	24	**$417.95**
11-03773	CB24-11M without acid	10 Ah	28.0	24	**$448.95**

NOTE: Some installations may vary and require airframe or battery box modification. Some applications may require field approval. Verify correct battery model for your aircraft before ordering. There may be a charge for STC paperwork on certain batteries.

Free UPS Ground* Shipping in 48 States No UPS Hazardous Charge ~ Pay Price of Battery - That's It! FULL MFG. WARRANTY - SHIPPED SAME DAY ORDERED *Batteries up to 50 lbs.

RG-443 BATTERY

RG Valve regulated sealed lead acid battery. Lear-jet models 40 & 45. STC #ST01173WI FAA-PMA supplement #59. Emergency Battery ICA calls out the first Cap Check at 12 months or 2000 hrs; subsequent checks at 12 months or 1000 hrs. 24V, Wt: 27 lbs
P/N 11-02948 .....**$2,364.00**

RG-380E/40L BATTERY

RG-380E/40L and temperature sensor TSC6A Concorde #5-0242. RG valve regulated sealed lead acid battery. PIAGGIO P-180. Replacement for Ni-Cad battery. STC #SA01653LA. FAA-PMA Supplement #74 Engine starting, reliable power in the event of a generator failure. 24V, Wt: 86 lbs.
P/N 11-02949 ..... **$3,023.00**

RG-500 BATTERY

- Primary Aircraft Purpose: Helicopter Series
- Voltage: 24V
- Rated Capacity C1 = 1 hour
- Rate in ampere hours:17
- Max Weight: 42 lbs. / 19.1 kg

P/N 11-04738 ..... **$2,519.00**

EL

BATTERY CHARGERS AND TESTERS

GILL 12/24 VOLT CHARGER

Perfectly packaged, this compact charger is big on performance. Offering adjustable amperage for 12 & 24V batteries, digital 24-hour timer, LED display, constant voltage and constant current for the most efficient way to charge. Wt: 9 lbs. This unit is switchable from 100 Volt to 220 Volt.

P/N 11-01540 ..... **$867.00**

GILL GC-012 12VDC CHARGER

Light weight / High strength aluminum case, Fully automatic: 3 stage charger can be left on the battery for long periods, Charge Status LED's: Power on, charging and full charging.

Features: Light weight / High strength aluminum case. Fully automatic: 3 stage charger can be left on the battery for long periods. Charge Status LED's: Power on, charging and full charging. Circuit protection: reverse polarity and short circuit protected (fused). UL and CE approved. Power cord length 6 feet and 4 foot Charger cord with ring terminals included Charge control: Modified constant current charge to a constant finishing voltage, then to a float standby. Supported with a 2 year warranty

Specifications: Input: 100-240VAC 50/60Hz 3 Amps. Output: 12 VDC 5A. Dimensions: 6.5"W x 3.5"H x 1.8"D. Weight: 1.8 pounds.

P/N 11-09985 ..... **$99.95**

GILL 24 VDC CHARGER

Small, lightweight. 'Smart' state-of-the-art software. Charger starts when battery requires charge •Adjusts to all Gill 24V batteries. LED progress indicators: indicates battery charge level. 'Smart' Circuit will not overcharge battery. Circuit Protection - reverse & short protection •Sleep mode when battery is charged. Specifications: Input: 110-120VAC @ 60 HZ 3.4 amps, Output: 27 VDC Nominal 7.7 Amps, Oper. Temp.: 23-104ºF, Wt: 3.3 lbs.....P/N 11-01541 ..... **$319.95**

Gill 24 60187 - 220V international.....P/N 11-07862 ..... **$319.95**

CONCORDE AIRCRAFT BATTERY PARASITIC LOAD TESTER

This Parasitic Load Tester Adaptor (PLTA) measures the parasitic load / drain on aircraft batteries when the master switch is off and the aircraft is inactive. The adaptor is designed to mate with a MS3509 style quick disconnect receptacle. Measuring parasitic load is easy to do by connecting the PLTA between the battery receptacle and the aircraft mating plug. The PLTA is a molded polypropylene body equipped with separate test leads for connection to a digital multimeter (DMM). It is rated for loads up to 10 amperes and is equipped with a 10 amp fuse. P/N 11-09841 ..... **$59.75**

BC-5000 BATTERY CAPACITY TESTER

A portable, light weight unit designed to provide the operator with an economical, easy, and accurate means for capacity testing aircraft batteries. Fully automatic testing for 12 Volt AND 24 Volt Lead Acid or Nickel Cadmium Aircraft Batteries. Powered by the battery being tested - No AC power required. Constant current load adjustable in one ampere increments from 10 to 50 ADC. 50 mv resolution. 10 LBS / 4.5 KG Kg. Length 12" (30 cm). Width 9" (23 cm). Height 10" (25 cm). LCD display. Over temperature protection. Audio alert when capacity test is complete P/N 11-07388 ..... **$1,372.00**

BC-6000 BATTERY CAPACITY TESTER

The BC-6000 Battery Capacity Tester from Concorde. The BC-6000 is designed to accurately test and report on batteries ranging in capacity from 10AH - 50AH. Plugged into a a USB port, the BC-6000 will create test reports directly from your computer. Tests both 12V and 24V lead acid batteries with capacity ratings from 10 AH to 50 AH. Constant current load in 1 Amp steps. Battery powered operation. No AC power required. LCD display. 50 MV voltage resolution. Overtemperature protection. Automatic audio warning upon completion of capacity test.

P/N 11-10482 ..... **$1,475.00**

BC-7000 BATTERY CAPACITY TESTER

The BC-7000 Battery Capacity Tester from Concorde. Create accurate reports straight from the computer. USB Port access required. Fully automatic testing for 12 Volt AND 24 Volt Lead Acid or Nickel Cadmium Aircraft Batteries. Tests both 12V and 24V lead acid batteries with capacity ratings from 0.5 AH to 50 AH. Adjustable End Point Voltage (EPV). Battery discharge mode to 1V EPV. Adjustable Constant Current loads in 0.1 Ampere increments from 0.5 Ampere to 15 Ampere plus or minus 1.5%. Adjustable Constant Current loads in 1.0 Ampere increments from 15 Ampere to 50 Ampere plus or minus 1.0%. Universal AC power input 85~264vac (47 to 63Hz). 10mv voltage resolution. Overtemperature protection. Audio warnings for completion of capacity test or a malfunction of the process.

P/N 11-10483 ..... **$2,164.00**

BC-8000 BATTERY CHARGER & CAPACITY TESTER

The BC-8000 has been designed to provide the operator with a cost effective battery charger and capacity tester in one unit. The step by step digital display is easy to program in order to set it and forget it. For use on Nickel Cadmium or Lead Acid Batteries.

Capacity Tester Features:

- Adjustable constant current load in 0.1 Ampere increments from 0.5 Ampere to 15 Ampere (+/- 1.5%)
- Adjustable constant current load in 1.0 Ampere increments from 15 Ampere to 55 Ampere (+/- 1.0%)
- USB 2.0 port for PC connection
- BC Report Utility software for hard copy printout of test results

Charger Features:

- Adjustable output from 3.0 to 36.0 Vdc
- Adjustable output amperes from 0.05 to 25 Adc
- Constant voltage (CV) or constant current (CC) charge
- Adjustable charge time from 1-999 min
- Single or two step charge routine

Common Features:

- Universal AC power input 90~264vac (47 to 64Hz)
- 10mv voltage resolution 4 line LCD display
- Over temperature protection
- Audio warning when capacity test is complete or if the unit malfunctions
- Real time internal clock with battery backup

P/N 11-10484 ..... **$4,182.00**

EL

BATTERIES - CHARGERS

POWERSONIC BATTERIES

P/N 11-03153

Power Sonic sealed maintenance-free batteries allow safe, trouble-free operation in any position. You never need to add electrolyte; gases generated during over charge are recombined in a unique "oxygen cycle". Under normal operating conditions, 4 or 5 years of dependable service can be expected in standby applications, or between 200 and 1000 charge/discharge cycles, depending on depth of discharge. Temp. range: -76° to +140°F.

3-AMP BATTERY - Model: Powersonic PS-1230, PPS SKU: 35L116S1 Shipping Weight: 3 lbs, Dimensions: 5.23"L x 2.64"W x 2.36"H, Voltage: 12 Volts, Capacity: 3 Amp Hour(s), Chemistry: Lead.
P/N 11-03153 ..... **$24.85**

18-AMP BATTERY - Model: Powersonic PS-12180NB, PPS SKU: 35L105S3, Shipping Weight: 14 lbs, Dimensions: 7.13"L x 2.99"W x 6.57"H, Voltage: 12 Volts, Capacity: 18 Amp Hour(s), Chemistry: Lead.
P/N 11-03154 ..... **$61.50**

26-AMP BATTERY - Model: Powersonic PS-12260NB, PPS SKU: 35L107S1, Shipping Weight: 18 lbs, Dimensions: 6.56"L x 6.97"W x 4.92"H, Voltage: 12 Volts, Capacity: 26 Amp Hour(s), Chemistry: Lead
P/N 11-03155 ..... **$84.50**

ATP HIGH POWER BATTERIES

ATP's UltraStart-Red & UltraBat-13 batteries are the ultimate in high power density non-spillable SLA batteries. Ideal for starting light aircraft engines for ultralight and experimental aircraft and other internal combustion engines. Typical applications include all Rotax 2 stroke engines and HKS 4-stroke engines. For engines 100HP and up

UltraStart-Red - Voltage: 12.6 VDC, Energy: 5AH cap., Peak current: 250A instantaneous, Weight: 4.4 lbs., Size: 2.7"l x 3.5"w x 5.0"h

UltraBat-13 – Voltage: 12.6 VDC, Energy: 13AH cap., Peak current: 650A instantaneous, Weight: 10.8 lbs., Size: 3-3/8"l x 7"w x 5"h

UltraStart-Red ..... P/N 11-00375 ..... **$89.95**
UltraBat-13 ..... P/N 11-00378 ..... **$179.95**
Battery box for UltraStart-Red..... P/N 11-01997 ..... **$32.75**

FULL SPECTRUM POWER LITHIUM BATTERIES

Full Spectrum Power makes no compromise in the design and construction of their lightweight batteries. These batteries deliver the highest current, at consistent voltage, powering the world's fastest motorcycles. Full Spectrum Power is the only battery company in the powersports market that uses real, certified cells from A123 Systems. These are the finest cells on the planet. Every Full Spectrum Power battery is designed and manufactured in the USA, using engineering and assembly methods derived from years of working with factory race teams in AMA Superbike, Supercross, Motocross, Drag Racing, Land Speed Racing, and Flat Track. Technology which was only available to the factory teams is now available to everyone! Full Spectrum batteries are now available to the Ultralight & LSA market. Not FAA Approved for Aircraft use.

PULSE SERIES

PULSE P1 BATTERY - • Save an average of 7 lbs. on a 600cc bike • 130 cranking amps / 2.5 amp hour capacity • Integrated Protection Circuit (IPC) • Heat, impact, and water resistant case • 100% Made in the USA. • Dimensions: 4.5 in (L) x 2.5 in (W) x 3.75 in (H) • Weight: 15.1 oz • Common Applications include: 600cc sportbikes (race trim); Dirt bikes less than 450cc..... P/N 11-10701 ..... **$129.00**

PULSE P2 BATTERY - • Save 7 lbs. on a 1000cc bike • 200 cranking amps / 5 amp hour capacity • Integrated Protection Circuit (IPC) • Heat, impact, and water resistant case • 100% Made in the USA • Dimensions: 4.5 in (L) x 2.5 in (W) x 3.75 in (H) • Weight: 1.6 lbs. • Common Applications include: 1000cc inline 4-cylinder sportbikes; V-Twin sportbikes up to 1098cc..... P/N 11-10702 ..... **$209.00**

PULSE P3 BATTERY - • Save 7 lbs. on a 1200cc bike• 390 cranking amps / 7.5 amp hour capacity• Integrated Protection Circuit (IPC)• Heat, impact, and water resistant case• 100% Made in the USA • Dimensions: 4.5 in (L) x 3.5 in (W) x 3.75 in (H) • Weight: 2.2 lbs. • Common Applications include: 1300cc inline 4-cylinder sportbikes; 1200cc twins; Drag racers using total-loss ignition systems..... P/N 11-10703 ..... **$269.00**

PULSE P4 BATTERY - • Save 10 lbs. over a stock battery with twice the power • 500 cranking amps / 10 amp hour capacity • Integrated Protection Circuit (IPC) • Heat, impact, and water resistant case • 100% Made in the USA • Dimensions: 4.5 in (L) x 3.5 in (W) x 3.75 in (H) • Weight: 3.3 lbs. • Common Applications include: 1300cc inline 4-cylinder sportbikes; 1200cc twins; Drag racers using total-loss ignition systems.
P/N 11-10705 ..... **$329.00**

ODYSSEY DRYCELL BATTERIES

11-01651

11-02233

11-01945

Odyssey batteries, with an eight year design life saves you time and money because you do not have to replace your battery as often. It is also the ONLY battery that is capable of delivering a large number of deep cycles – up to 400 when fully discharged or up to 500 when discharged to 80%. Plus, the battery is specially designed for high vibration applications. Unlike conventional batteries that need to be recharged every six to twelve weeks, the Odyssey battery will maintain up to 50% state of charge after 2 years if stored at room temperature (77°F). At temperatures lower than 77°F, storage times will be even longer. The cranking power of Odyssey batteries is double to triple that of equally sized conventional batteries, even when the temperature is as low as -40°F. Odyssey batteries may be shipped worry free by UPS/ Federal Express or air. 2 Year Warranty.

Part No.	Dimensions	Weight	Cranking Amps	Price
11-08080	6.7" x, 3.90" x 6.89".	13.2	625 for 5 seconds	**$106.67**
11-08081	7/8" x 3-3/16" x 5 1/8"	11.7	545 for 5 seconds	**$137.31**
11-08082	7.0" x 3 3/8" x 5 1/8"	12.6	545 for 5 seconds	**$156.71**
11-02233	7-1/5" x 3" x 6-6/5"	15 Lbs.	680 for 5 seconds	**$150.48**
11-01651	6-9/16"x 6-7/8"x 5-11/16"	24 Lbs.	925 for 5 seconds	**$210.06**
11-01945	73/16"x 31/16"x 69/16"	15 Lbs.	680 for 5 seconds	**$190.30**

METAL JACKET (TRAY)

For Odyssey 680Amp battery
P/N 11-02234 ..... **$22.50**

HOLD DOWN BRACKET FOR ODYSSEY 680AMP BATTERY

This hold down bracket for the Odyssey PC 680 battery can be easily mounted in any orientation. Color: Black.
P/N 11-01853 ..... **$38.75**

YUASA BATTERY Y50-N18L-A-CX

Yumicron CX technology is OEM's choice for longer battery life, lower maintenance and more cranking power.

- The YuMicron CX was the first small engine starting battery to use "lead calcium" technology. This special technology means the YuMicron CX generates more power, requires less maintenance, and lasts longer than any other conventional battery.

Specifications: Battery Family: YuMicron CX, Battery Type: Y50-N18L-A-CX, Voltage: 12 Capacity: 20 Dimensions: 8.125" x 3.5625" x 6.4375" Weight: 11.2 lbs. Metric Dimensions: 205mm x 90mm x 162mm Metric Weight: 5.1 kg, Acid Volume: 47.3 oz., Amps: 2 Electrolyte needed: 47.3 oz. P/N 11-09496..... **$96.50**

BATTERY TERMINAL TOOL

This unique tool is designed to provide positive tightening of battery terminals on all popular brands of lead/ acid aircraft batteries without over-torquing and without the danger of an electrical short. The tool is made from steel for rugged service and is fully insulated with a rubber hand grip for protection against electrical shorts. P/N 12-16200 ..... **$10.85**

BATTERY CORROSION GUARD

Battery Corrosion Guard forms a thin protective coating that will neutralize battery acid on all treated areas. It is an excellent way to clean the battery, hold down straps, and all metal parts you want to protect including cables, clamps, box, and posts. Excellent for aluminum battery boxes. Widely used in the aircraft, truck, and boat industries.

3 oz. can ..... P/N 11-00310..... **$16.65**
8 oz can ..... P/N 11-00320..... **$24.75**
11 oz. can ..... P/N 11-09615..... **$31.50**

PULSETECH POWERPULSE

PowerPulse is not a charger. It's a performance device designed to help batteries charge faster and provide maximum performance and power. This patented unit uses a revolutionary ReNew-IT Pulse Technology™ to safely prevent the main cause of battery problems and failure. Used extensively by the consumers and the U.S. Military worldwide for almost ten years. PowerPulse can be powered in two different ways. The PowerPulse system can also be used together with an existing charging system. In fact, it will work even faster and stronger. This means batteries can be both charged and desulfated at the same time.

12V..... P/N 11-07464 ..... **$45.75**
24V..... P/N 11-10461 ..... **$49.95**

EL

BATTERY BOXES - BATTERIES

ALUMINUM BATTERY RACKS & BOXES

RACK

BOX

These top quality battery racks and battery boxes are constructed from 5052 aluminum and are heli-arc welded. A corrosion resistant epoxy powder coating is applied using a electrostatic process and oven baked for a long lasting finish. Complete hold down hardware kits are provided with all racks and boxes, and mount flange are pre-drilled for mounting ease using 3/16" diameter bolts. Use battery racks when mounting in a ventilated area. Use battery boxes when mounting battery in a confined area. where enclosed battery protection is required. Battery boxes include a 1/4" tube for venting and drainage. Specify make and model of battery and horizontal or vertical mount when ordering.

Battery Racks				Battery Boxes			
P/N	Model	Dims.	Price	P/N	Model	App.	Price
11-00105 Horiz.	HR-25	8"H x 5-3/16"W x 7-7/8"L	**$124.95**	11-00125 Side load	HB-25	8"H x 5-3/16"W x 7-7/8"L	**$183.95**
11-00110 Vertical	VR-25	8"H x 5-3/16"W x 7 7/8"L	**$124.95**	11-00130 Top Load	VB-25	8"H x 5-3/16"W x 7-7/8"L	**$183.95**
11-00115 Horiz.	HR-35	8"H x 5-3/16"W x 9-7/8"L	**$132.85**	11-00135 Top Load	HB-35	8"H x 5-3/16"W x 9-7/8"L	**$188.95**
11-00120 Vertical	VR-35	8"H x 5-3/16"W x 9-7/8"L	**$130.95**	11-00140 Top Load	VB-35	8"H x 5-3/16"W x 9-7/8"L	**$188.95**

CESSNA FIREWALL MOUNTED BATTERY BOX

Firewall battery box for Cessna Models 170, 170A, 170B, 180 thru 180K, 185 thru 185E, A185E, A185F STC Approved: SA02333AK-D. Note: Does not include battery..... P/N 05-04766 ..... **$378.00**

BOGERT STAINLESS STEEL PA-28 BATTERY BOX

Replace Piper Battery Boxes * Metal & Plastic replacement approved. * Stainless Steel Construction * Brass screw-in vent-tubes. * Better than original drain tube * Battery Box Modification included.

BOX	MODEL		AIRCRAFT S/N
06-Bba	PA-18	A	ALL SN
06-Bba	PA-18	AS	ALL SN
06-Bba	PA-18	S	ALL SN
06-Bba	PA-18		18-1215-18-309025
06-BBc	PA-20	135	934 & Up
06-BBc	PA-20S	135	ALL SN
06-BBc	PA-22	108	ALL SN
06-BBc	PA-22	135	1021, 1022, 1024 AND UP
06-BBc	PA-22	150	ALL SN
06-BBc	PA-22	160	ALL SN
06-BBc	PA-22S	160	ALL SN
06-BBc	PA-22S	135	ALL SN
06-BBc	PA-22S	150	ALL SN
06-BBa	PA-24	180	103-243687
06-BBa	PA-24	250	ALL SN
06-BBa	PA-24	260	ALL SN
06-BBa	PA-24	400	ALL SN
06-BBa	PA-24	260B	ALL SN * Call For 4247-4300
06-BBa	PA-24	260C	ALL SN
06-BB	PA-28	140	ALL SN
06-BB	PA-28	150	ALL SN
06-BB	PA-28	151	ALL SN
06-BB	PA-28	160	ALL SN
06-BB	PA-28	161	28-7716001-28-8216236
06-BB	PA-28	180	ALL SN
06-BB	PA-28	181	ALL SN
06-BBa	PA-30		ALL SN
06-BBb	PA-32	260	ALL SN
06-BBb	PA-32	300	ALL SN
06-BBb	PA-32	301	ALL SN
06-BBb	PA-32	260B	ALL SN
06-BBb	PA-32	260C	ALL SN
06-BBb	PA-32	260D	ALL SN

BOX	MODEL		AIRCRAFT S/N
06-BBb	PA-32	260E	ALL SN
06-BBb	PA-32	300B	ALL SN
06-BBb	PA-32	300C	ALL SN
06-BBb	PA-32	300D	ALL SN
06-BBb	PA-32S	300E	ALL SN
06-BB	PA-32	301T	ALL SN
06-BBb	PA-32S	300	ALL SN
06-BBa	PA-39	(C/R)	ALL SN
06-BB	PA-28	235	ALL SN
06-BB	PA-28	236	ALL SN
06-BB	PA-28	140B	ALL SN
06-BB	PA-28	140C	ALL SN
06-BB	PA-28	140D	ALL SN
06-BB	PA-28	140E	ALL SN
06-BB	PA-28	150B	ALL SN
06-BB	PA-28	150C	ALL SN
06-BB	PA-28	160B	ALL SN
06-BB	PA-28	160C	ALL SN
06-BB	PA-28	160S	ALL SN
06-BB	PA-28	180B	ALL SN
06-BB	PA-28	180C	ALL SN
06-BB	PA-28	180D	ALL SN
06-BB	PA-28	180E	ALL SN
06-BB	PA-28	180F	ALL SN
06-BB	PA-28	180G	ALL SN
06-BB	PA-28	201T	ALL SN
06-BB	PA-28	B-235	ALL SN
06-BB	PA-28	C-235	ALL SN
06-BB	PA-28	D-235	ALL SN
06-BB	PA-28	E-235	ALL SN
06-BB	PA-28	F-235	ALL SN
06-BB	PA-28R	150	ALL SN
06-BB	PA-28R	200	ALL SN
06-BB	PA-28R	201	ALL SN
06-BB	PA-28R	201T	ALL SN
06-BB	PA-28RT	201T	ALL SN
06-BB	PA-28S	180	ALL SN
06-BBa	PA-30	B	ALL SN
06-BBa	PA-30	C	ALL SN

06-BB White ..... P/N 11-06951 ..... **$569.00**
06-BB Stainless ..... P/N 11-04420 ..... **$525.00**
06-BB Black ..... P/N 11-04421 ..... **$556.00**
06-BBA White ..... P/N 11-06952 ..... **$631.00**
06-BBA Black ..... P/N 11-06953 ..... **$618.00**
06-BBA Stainless ..... P/N 11-06954 ..... **$583.00**
06-BBB White ..... P/N 11-06955 ..... **$631.00**
06-BBB Black ..... P/N 11-06956 ..... **$618.00**
06-BBB Stainless ..... P/N 11-06957 ..... **$583.00**
06-BBC White ..... P/N 11-06959 ..... **$631.00**
06-BBC Black ..... P/N 11-06958 ..... **$618.00**
06-BBC Stainless ..... P/N 11-06960 ..... **$583.00**

FIBERGLASS BATTERY BOXES

Available as standard fiberglass battery box or as gel coated version. Gel coated battery box is same dimensions but with white gel coating and with the mount integrated into the box.

Fiberglass Battery Box ..... P/N 11-11007 ..... **$107.30**
Met-Co-Aire Battery Box White ..... P/N 11-05614 ..... **$128.75**

GELL CELL BATTERIES

• Maintenance-free operation • Excellent shelf life • Long cycle life • Can be mounted on its side • Delivered fully charged and ready for use • No corrosive gas generation • 300 Starting AMPS • Warranty 1 year or 100 hours. • Quality construction provides superior resistance to shock and vibration • DOT AND IATA approved for shipment by air as dry cells **Note: FOR EXPERIMENTAL AIRCRAFT ONLY.** P/N 11-03156 ..... **$143.95**

YUMICROM BATTERIES

These manifold vented batteries work well in home builts with low amperage requirements, putting out a lot of power for their size and weight. Made by Yuasa General in Reading, Pa. 27.1oz. electrolyte required to fill (not furnished). ***YB14LA2 , 12V, 14AH -*** This model being used in the VariEze & Long-EZ. Easily handles the load of starting a Lyc. 0-235 engine. Size: 5-9/32"l x 3-1/2"w x 6-11/16"h. Wt. 10 lbs.
P/N 11-01847 ..... **$52.75**

YB16-B, 12V, 18AH - Used in the Solitaire sailplane, VariEze, Long-EZ & other homebuilts without starter. Size: 7"lx4"wx6.25"h. Wt: 12.7 lbs
P/N 11-01848 ..... **$50.00**

BATTERY BOX BUMPER SEAL

Battery Box Bumper Seal. 1103M foam with sticky back. Mil Spec: AMS3195E
Bumper Seal 1"
P/N 11-05613 ..... **$4.95**
Bumper Seal 1-1/2"
P/N 11-05612 ..... **$4.95**

AIRCRAFT BATTERY HYDROMETER

Special Tester designed for testing aircraft batteries. Requires only small amount of fluid & ideal for close quarters. Float calibrated from 1.100-1.300 Sp. Gr. in 5° intervals..... P/N 11-01674..... **$24.50**

AIRCRAFT BATTERY LOCK

This simple locking device is designed to disable the battery from the electrial system which cuts off all power to the aircraft unattended many pilots disconnect the battery and locck the panel door. However, many panel locks are easy to pick and pry open. If a thief is able to unlock the panel door, it is simple to reconnect the battery. Then all on would have to do is go inside the plane through the emergency door, which is often left unlocked with a key, the engine can easily be started and the plane can be flown away. The batter lock is constructed using a tough space age plastic polymer and a seven pin round ball bearing lock that is impossible to pick which in turn prevents aircaft theft and increases security. ..... P/N 11-02753 ..... **$319.95**

BATTERY MAT

The Battery Mat is the world's only acid neutralizing and absorbing mat designed for use beneath any lead-acid battery. Each mat is simple, efficient, and cost-effective. It's ideal for use with all aircraft, as well as standard and heavy duty equipment. The acid-neutralizing and absorbing fabric is patented and manufactured with recycle material in the U.S. Battery Mat absorbs and neutralizes battery acid that may leak or result from a "boil over", prevents corrosion, cushions vibration shock, is simple to use and install, and is safe to handle. Width: 12". Sold by linear ft. P/N 11-00170..... **$4.95 Ft**

BOGERT BATTERY BOX NYLON FLANGES

Improve Starting Performance. Easier Removal & Installation of Battery. May prolong life of battery and starter. Less expensive to modify existing box than to replace. Compatible with our famous "Low Loss" Cable Kits! Eliminate extra connection on outside of the battery box. Do away with the troublesome braided negative strap.
Nylon Flanges replacement or experimental..... P/N 11-02892.... **$37.50**
Nylon Flanges STC'd / PMA'd..... P/N 11-02893.... **$51.90**

BOGERT CONCORDE BATTERY POST ADAPTERS

Aircraft using Concord CB-35A and RG-35A batteries must install two PN 1-1-6 adapter plates to the battery posts before completing the Battery Box Modification. These adapter plates raise the battery post height to equal the post height of standard G-35 series batteries. P/N 11-02891..... **$39.50**

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BATTERY CHARGERS

BATTERY CHARGERS BY SCHAUER

Over 70 years of manufacturing experience assures, the user of the finest line of battery chargers—solid state circuitry, non-aging silicon rectifiers at low prices. All chargers furnished with complete operating instructions. One year warranty

P/N 11-00885 Shown

JAC1212, JAC0524, & JAC0724 - Fully Automatic - World-Wide Universal Input, Electronic ChargerIntelligent chargers follow battery impedance to end of charge cycle for all battery types. Fully automatic. Red LED indicates AC power on, yellow LED indicates battery is charging, green LED indicates float mode. Aluminum case.

Amps	Volts	Size	Weight	Part No.	Price
12	12	6.5"W x 3.5"H x 1.8"D	1.8 lbs.	11-00890 (2)	**$76.65**
5	24	6.5"W x 3.5"H x 1.8"D	1.8 lbs.	11-00885 (1)	**$79.50**
7	24	6.5"W x 3.5"H x 1.8"D	1.8 lbs.	11-00889 (1)	**$89.75**

(1) DC cordsets 3' long: with ring terminals or XLR connector.
(2) With stripped leads

MODEL JAC2024H - Intelligent chargers follow battery impedance to end of charge cycle for all battery types. Fully automatic. Green LED indicates AC power on, yellow LED indicates battery is charging, yellow LED off indicates float mode. Charge control: constant current charge to a constant voltage, then to a float standby. Current limiting. Fully automatic 3 stage charger can be left on the battery in maintaining/float mode. Can be set for any type lead acid battery, including conventional, maintenance free, deep cycle, gelled-type, valve regulated batteries. Cyclic voltage: FLOODED 2.5 volts/cell; GEL & AGM 2.4 volts/cell. 2.6 volts/cell for 36 & 48 volt batteries. May be preset to customer's specification for battery type. Not intended for use as a DC power supply. Continuous - 100% duty cycle. Low voltage start: will start charging a deeply discharged battery with terminal voltage less than 4 volts. Reverse polarity and short circuit proof. Aluminum case. AC Input 115/230 volts, 50 or 60Hz Input voltage autosensed. 20 AMPS / 24 Volts. 10"W x 7.5"H x 3"D. 6.5 lbs P/N 11-00891 ..... **$268.95**

MANUAL CHARGERS

Manual chargers must be disconnected when battery is charged to prevent overcharging and damage to the battery. Normal indcation that battery is charged is when ammeter stabilizes for one hour.

SCHAUER 1A AUTOMATIC BATTERY CHARGER

This fully automatic charger can be left on the battery indefinitely. Features include indicator lights, overload protection, reverse polarity protection, and small size (4" x 3" x 2"). Charges, maintains, and conditions 12V batteries in stored vehicles, such as aircraft, cars, motorcycles, mowers, etc. Ten foot long cordset includes quick change battery clips and ring terminals. Wt: 2 lbs. P/N 11-04407 ..... **$31.80**

BATTERY AND ALTERNATOR CONDITION TESTER

Instant and accurate battery condition status: indicates if battery is "healthy" or in need of charging Instant status of your alternator/charging system: determines whether battery or alternator is at fault. Non-Aviation / Not for Aircraft.

P/N 11-04302 ..... **$16.75**

ZEUS POWER BANK BATTERY CHARGER

The ZEUS Power Bank is a portable battery charger that can charge many electronic devices via USB port, such as MP3 players, mobile phones, cameras, portable gaming devices, and other USB compatible devices. The ZEUS Power Bank comes with everything you see in the photo , a user guide and travel bag. It's easy, portable and perfect for anyone on the go! Ideal for long flights, outdoor activities where anytime anywhere remote charging is needed. NOTE: Recharge the power bank through any computer via USB port or with a 5V wall adaptor. Not all USB Wall chargers will work with the power bank and it may be damaged if not charged with a compatible USB power source. P/N 11-09964 ..... **$59.95**

THE BATTERY MAINTAINER SOLAR BATTERY CHARGER

The Battery Maintainer is the best device available to ensure that your battery will always be "topped off" and fully charged. It has the capacity to keep any 12 volt battery charged with as little as one full hour of sunlight per day. The life of your battery will be dramatically extended by using the Battery Maintainer. It features a diode to prevent the battery from discharging on cloudy days or at night. It is constructed with a glass face and black molded base. Size: 5-1/4" x 11" x 3/8" thick. Output: 100 ma 16 VDC full sunlight. Connects to battery via 12V "hot" cigarette lighter plug in aircraft. For 24 volt use two units. LED Light not included.

P/N 01-28312 ..... **$42.85**

Accessories	Part No.	Price
DC CIG Jack W/Cover & Fuse Wiring	11-06356	**$11.00**
DC CIG Jack W/Cover (Tabs for Wiring)	11-06357	**$9.00**
Bracket	11-06358	**$3.25**
Inline DC Jack	11-06359	**$3.00**
Cover	11-06360	**$1.95**
DC Power Plug	11-06361	**$4.75**
Clamp Red+black Battery Clamp W/Wiring	11-06362	**$14.95**
Eyelet Red+Black Battery Eyelet Connection W/Wiring	11-06363	**$12.99**
Fused Pre-Wired 24VDC Power Point (With Jacks installed)	11-06364	**$29.95**
Fused Pre-Wired 12VDC Power Point (With Jacks Installed)	11-06365	**$29.95**
12FT Solaar panel Extension Cable	11-06366	**$19.95**

SOLARGIZER AVIATION BATTERY LIFE EXTENDER

Solargizer is the only one of its kind in the world. It is not a battery charger, but a proven, patented electronic device designed to eliminate the #1 cause of battery problems and failures – sulfation. Whether you deal with aircraft, ground equipment, or virtually any other type of vehicle, Solargizer will dramatically extend the like of your battery, increase performance efficiency, reduce recharge time, extend battery capacity so your battery runs longer between charges, and even maintain a charge indefinitely no matter how long your aircraft or vehicle sits unused. Solargizer is small, weatherproof, and easy to install. Because it keeps batteries in optimum working condition, the Solargizer system helps reduce downtime, battery maintenance and replacement costs. And it even protects our environment by reducing the number of batteries needlessly discarded every year.

24 Volt w/ Battery Clamps.....P/N 11-11692 ..... **$267.95**

EMERGENCY CHARGE SYSTEM EBPA299

Keep cellphones and all personal devices charged. When electricity is unavailable simple attach 12volt (car style) adapter to the handheld power pack, plug in and go stay connected 300 hours of talk/standby time (Results may vary)• 9 AA Batteries included.

P/N 11-04739 ..... **$39.95**

XTREME CHARGE X2 DUAL BATTERY CHARGER

The Xtreme Charge X2 is a dual-station, 12-volt maintenance charger. The Xtreme Charge X2, works with all types and sizes of 12-volt lead-acid batteries.

P/N 11-06866 ..... **$169.95**

KELLY BC3000 BATTERY ANALYZER

"Your Battery M.D." Portable and cordless the BC-3000 is a lightweight fully automated battery analyzer assessing the health of all lead-acid aircraft batteries with an ampere hour range of 1-59. Connect the battery using the included quick battery connection adapters, the unit automatically senses and selects 12 or 24 volts, set the battery rating and press start, that's it. One hour later your test is complete and the health of your battery is displayed P/N 08-07161 ..... **$1,343.00**

HOME & AUTO CHARGER

PERFECT COMPANION FOR MRX! A home and auto charger perfect for charging on the go. Charges 2 or 4 AA and AAA batteries in 2-3 hours at home or away. Comes with 4 AA batteries and both car power adaptor & home charge adaptor. Charge indicators show when batteries are ready. "Trickle charge" capability keeps batteries at full charge.

P/N 11-04524 ..... **$20.75**

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BATTERYMINDER® BATTERY CHARGERS

AVIATION SPECIFIC CHARGER / MAINTAINER / DESULFATORS

These ensure 100% charge to sealed and wet-cell lead-acid aviation batteries made by Concorde, Gill, Hawker, Odyssey, etc. Temperature compensation prevents overcharging. Designed to be left connected when plane is hangered. Easy attachment to battery with supplied connectors. Patented high frequency pulse desulfation is designed to reverse and eliminate battery sulfation, the #1 cause of early battery failure.

Note: Aviation batteries require different charging voltages than automotive, marine or other battery types. Standard chargers can, over time, severely shorten battery life and performance. Specifically designed aviation chargers are multi-stage (five stages), microprocessor controlled and temperature sensing (at the battery). They are "very smart", yet simple to operate. These are the only type recommended / approved by major battery manufacturers.

Aviation Specific Models	
Model	**Battery Types**
S2	Standard Aviation (Concorde, Gill, etc.)
S3	AMG "Pure Lead" Aviation Batteries (Gill 7000 Series, Odyssey, Hawker, etc.)

BATTERYMINDER® INTERNATIONAL "E" SERIES 12V AND 24V BATTERY CHARGERS

Plug 'n Run - No buttons to push! 220-240 Volt versions of the 12-V and 24-V are available. Specific to sealed or wet aircraft batteries only. CE Approved, with easily replaceable cord set to match country of use. Designed in concert with Concorde, Gill and Odyssey. One-year 100% money back guarantee, five-year "no hassle" warranty.

BatteryMINDer E12248-AA-S2..... P/N 11-09379 ..... **$197.95**
BatteryMINDer E12248-AA-S3..... P/N 11-09380 ..... **$197.95**
BatteryMINDer E24041-AA-S2..... P/N 11-09381 ..... **$197.95**
BatteryMINDer E24041-AA-S3..... P/N 11-09382 ..... **$197.95**

BATTERYMINDER® NON-AVIATION MODELS

For your car, truck, boat, motorcycle, motorhome golf car, farm equipment, ATV, an more!

5- STAGE CONSTANT CURRENT-VOLTAGE CHARGER / MAINTAINER / DESULFATOR - Microprocessor controlled. For all sealed, AGM, Gell and flooded (wet cell) lead-acid batteries including Optima, Odyssey and Interstate AGMs. Actively monitors your battery's voltage, amperage acceptance and temperature at all times, these chargers work through a series of charging and diagnostics stages. When used as a maintainer, it is guaranteed to maximize your battery's life and storage capacity. The temperature compensated long-term float (maintenance) stage can add years of service, and patented full-time high frequency sweep pulse desulfation is designed to reverse and eliminate battery sulfation, the #1 cause of early battery failure. Not for Aviation. One-year 100% money back guarantee, five-year "no hassle" warranty. **Qualifies for FREE DMM - See details on this page.**

BatteryMINDer 12248 (12V)..... P/N 11-02006 ..... **$142.95**
BatteryMINDer 24041 (24V)..... P/N 11-02007 ..... **$145.95**

POWER SUPPLY / CHARGER / MAINTAINER / DESULFATOR - For all 24V sealed, AGM, Gell and flooded (wet cell) lead-acid batteries including Optima, Odyssey and Interstate AGMs. Also for two 12 Volt seriesconnected. Actively monitors your battery's voltage, amperage acceptance and temperature at all times. When used as a maintainer, it is guaranteed to maximize your battery's life and storage capacity. The temperature compensated long-term float (maintenance) stage can add years of service, and patented high frequency sweep pulse desulfation is designed to reverse and eliminate battery sulfation, the #1 cause of early battery failure. Supplies up to 25 amps of power from 100-240 VAC. Dedicated desulfation, optional equalization and the long-term float (maintenance) mode help recover lost capacity. LCD panel shows battery voltage, amperage, temperature, time and amphour acceptance. Not for Aviation. One-year 100% money back guarantee, five-year "no hassle" warranty. **Qualifies for FREE DMM - See details on this page.**

BatteryMINDer 28252..... P/N 11-09897 ..... **$879.00**

12 VOLT 1.33 AMP CHARGER-MAINTAINER-CONDITIONER (DESULFATOR) - A 3-mode maintenance charger -desulfator that extends performance and life of all types and sizes of 12 Volt lead acid batteries. It automatically dissolves harmful power-robbing sulfation using safe, low voltage, patented, high-frequency pulse technology3. Included Accessories: Battery Clip Cord Set with Qwik Connect, Ring Terminal Cord Set with Qwik Connect

BatteryMINDer 12117..... P/N 11-11671 ..... **$49.50**

BATTERY AND ALTERNATOR CONDITION TESTER - Instant and accurate battery condition status: indicates if battery is "healthy" or in need of charging or replacement. Determines whether battery or alternator is at fault. Non-Aviation / Not for Aircraft..... P/N 11-04302 ..... **$16.75**

BATTERYMINDER® U.S. SERIES 12V AND 24V BATTERY CHARGERS

Plug 'n Run - No buttons to push! Precision-set for Standard Aviation Batteries and using an array of microprocessor controlled sensors. Actively monitor your battery's voltage, amperage acceptance and temperature at all times. When used as a maintainer, it is guaranteed to maximize your battery's life and storage capacity. The temperature compensated long-term float (maintenance) stage can add years of service, and patented full-time high frequency sweep pulse desulfation is designed to reverse and eliminate battery sulfation, the #1 cause of early battery failure. One-year 100% money back guarantee, five-year "no hassle" warranty. **Qualifies for FREE DMM - See details on this page.**

BatteryMINDer 12248-AA-S2 ..... P/N 11-07739 ..... **$189.95**
BatteryMINDer 12248-AA-S3 ..... P/N 11-07742 ..... **$189.95**
BatteryMINDer 24041-AA-S2 ..... P/N 11-07740 ..... **$195.00**
BatteryMINDer 24041-AA-S3 ..... P/N 11-07741 ..... **$195.00**

BATTERYMINDER® POWER SUPPLY / CHARGER / MAINTAINER / DESULFATOR

Supplies up to 25 amps of ground power from 100-240 VAC, as far as 300 feet (91.44 meters) from the source. Approved by the major aircraft battery manufacturers in the U.S., it safely charges all 24 Volt sealed, AGM, Gell and flooded (wet cell) lead-acid batteries including Optima, Odyssey and Interstate AGMs. Also for two 12 Volt series-connected. Dedicated desulfation, optional equalization and long-term float (maintenance) mode help recover lost capacity enabling many marginal batteries to pass FAA airworthiness test. Power supply mode enables use of glass panel displays and other avionic electronics without draining your battery. LCD panel shows battery voltage, amperage, temperature, time and amp-hour acceptance. One-year 100% money back guarantee, fiveyear "no hassle" warranty. **Qualifies for FREE DMM - See details on this page.**

BatteryMINDer 28252-AA..... P/N 11-09378 ..... **$889.00**

BATTERYMINDER® AVIATION ACCESSORIES

#1 ***#2*** ***#3*** ***#4*** ***#5***

Accessories for use with 28252-AA ONLY				
1	11-09561	ELCTC ELCON Type Connector	optional	**$54.95**
2	11-09558	ABS-2825 Temperature/Voltage Sensor	included	**$30.00**
3	11-09559	A2ELCON Anderson Gray to ELCON-type	optional	**$79.95**
4	11-09560	A2RT 11/32" Ring Terminals	optional	**$31.90**
5	11-09562	A2GPU-1 Anderson to "Cessna"-type GPU Plug Assembly	optional	**$96.75**

BATTERYMINDER® CIGARETTE LIGHTER ADAPTER

12-V / 24-V w/15A Pwr Plug. Works with ALL BatteryMINDer products.

P/N 11-07209 ..... **$9.75**

AVIATION SOLAR CHARGER / MAINTAINER / DESULFATOR

PANEL SERIES- 12 VOLT, 5 WATT & 15 WATT

Actively monitor your battery's voltage any time the sun is up. The internal program adjusts its output several times a second based on this reading to quickly and correctly charge your battery. When used as a maintainer, the BatteryMINDer is guaranteed to maximize your battery's life and storage capacity. The long-term float (maintenance) stage can add years of service. One-year 100% money back guarantee, five-year "no hassle" warranty. **Qualifies for FREE DMM - See details on this page.**

BatteryMINDer SCC005-S2..... 5 Watt ..... P/N 11-02008..... **$139.00**
BatteryMINDer SCC005-S3..... 5 Watt ..... P/N 11-09898..... **$129.95**
BatteryMINDer SCC015-S2..... 15 Watt ..... P/N 11-09899..... **$188.50**
BatteryMINDer SCC015-S3..... 15 Watt ..... P/N 11-09901..... **$188.50**

FREE DIGITAL MULTI-METER (DMM) DT-830B **when you purchase a select BatteryMINDer unit and register your warranty at www. BatteryMINDers.Com.** Get seven functions and nineteen ranges to cover AC and DC voltage, resistance, DC amps, battery and diode testing. Includes 23" leads and low battery indicator. Requires one 9-V battery (not included).

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AVTEK PRODUCTS — BATTERY CHARGERS

AVTEK STANDBY ELECTRICAL SYSTEM

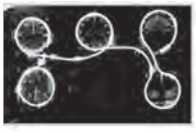
AvTek uses rechargeable, dependable, deep discharge batteries as the power source in its Standby Electrical System. They are sealed and maintenance free. These are deep-discharge batteries, not like your 'WET-Acid' cold-cranking car battery, and unlike Nicads, there will never be a memory problem with lead acid. All the potential stored energy will be available to your dead panel. Power is delivered through the cigarette lighter. No power wil be discharged through the cigarette lighter greater than what it takes to heat up the lighter element in the first place. AvTek's design is much more than a battery in a black box. AvTek uses a circuit board to control the power to the buss. This Smart board monitors the amperage demand at an efficient, reliable rate to insure a safe IFR descent. PCB gives you protection while delivering reliable, dependable source of power for 60 mins. or longer to your IFR panel.

28V system ..... P/N 11-01262.....**$695.00**

AVTEK 1ST ALERT ELECTRICAL FAILURE SYSTEM

An early warning detection system that is simple, flawless, & reliable. Detects alternator failure, broken/slipping belts, leaky diodes, regulator failure or if you forgot to turn OFF the master switch after tie down. Uses a reliable MicroCircuit and will never need repair. Has a pulsing red panel mounted LED that is larger and 15 times brighter than normal LEDs and will alert you at the first sign of trouble. Weighs only 1.5 oz. and installs quickly. The LED begins to pulse every time you first turn on the master switch and hit the starter key/button and will go out as the Alternator/Generator comes on so you know everything is alright before you depart. First Alert is now armed & ready to detect any in-flight electrical problems. Size: 3.25" length x 2" width x 1.25" height. Indicate your aircraft voltage when ordering. P/N 11-01259 .....**$159.00**

AVTEK TEKLITEZ



Flexible thin clear Fiber, that is energized by the inverter designed by AvTek. The fiber needs 66Vac at a specific frequency which when energized develops this Cool-Blue-Neon, that is embedded in the substrate. The gas is NOT free flowing. Use your imagination and Light YOUR panel the way you want. Unlike other panel lighting that comes ONLY in round screw-on "White Light Filaments". Each five foot TekLitez Fiber is "Snap" connected at the inverter…you can purchase one or more or add more in the future. 9 v Battery or you can connect to your buss, and use your own dimmer. TekLitez allows you to illuminate Square instruments. Use under the panel for better chart reading. Snap to install. The small thin E.L.F. is Super-Glued into place. The inverters is 2" cube, which goes anywhere behind the panel. Sold in 5 foot lengths per kit which will illuminate approx 5 or 6 large round instruments (includes inverter). Life expectancy is over 80,000 hours.

TekLitez Sold ONLY at Aircraft Spruce. Has No FAA-PMA intended for Experimental Aircraft. Consult your I/A or FSDO before installing. 9 Volt Battery, No alteration. Owner Install. Can be wired into panel dimmer switch. P/N 11-07169..... **$115.95**

AVTEK BONDING AND GROUND KIT

Do your Panel Instruments Bounce and become erratic? Does your Starter turn your Engine SLOWLY and you have a new fully charged battery? Do you see an ugly corroded Battery Post soon after you clean the Post? These are symptoms of BAD Ground/Bonds. When the Resistive Corrosion is developed at the Starter the result is slow turning during starts. Mechanics miss-diagnosing the problem and a NEW Starter is purchased needlessly. Kit includes: * FAA-APPROVAL * Three (3) Jumper One for the panel, starter and your battery...and Aluminum Fasteners * DVD step by step how to Power-Point Presentation * Sealant . P/N 11-07359 .....**$125.50**

LONESTAR POWER ADAPTOR AND USB KIT

This is a kit that comes with a FAA-TSO Approved Cigarette lighter power adapter and plug-in USB 5V converter. Just Plug in your USB socket into your Cigarette Lighter Power Adapter and get 5 volt USB power out. Lone Star Aviation's FAA-TSO approved "Power Adapter" is an exciting new product that will aid pilots, crew and passengers with a new power option to operate or charge many consumer devices. Examples include: Charging Cell-SAT Phones, iPad, iPhone, iPods, MP3 Players, Bose, Zulu Headsets.

P/N 11-09492 .....**$129.50**

PORTABLE STARTING SYSTEMS

KWIKSTART MODEL 6255 - Exclusive Heavy-Duty Sealed Lead Acid/AGM Battery. Built-in Charger recharges unit with AC cord (included). Instantly Jump-Starts WITHOUT the need for another vehicle. 12 Volt DC Accessory Outlet to Power and/or recharge DC Electronics. 1700 Peak Amps. LED Battery Status Indicator. 32" Heavy-Duty Cables for True Portability and Technician Ease of Use. Unit includes DC to DC cigarette lighter cord Patented. Weight: 22 LBS

P/N 11-08698 .....**$179.00**

MODEL 6275 KWIKSTART - Two 12 Volt 22 AH Heavy-Duty Sealed Lead Acid/AGM Battery provides "Best in Class" Performance. "Smart" 1000 mA Internal Charger with Built-In Overcharge Protection - Prolongs battery life. Up to 100 Hours of Portable 12 Volt DC. Two Position "ON/OFF" Switch with Easy-to-Read LED Battery Status Indicator. 12 Volt DC Accessory Outlet to Power and/or Recharge DC Electronics. Heavy Duty Clamps with 2AWG 66" Long Cables. Use Any Standard Extension Cord to Charge. Unit includes DC to DC cigarette lighter cord. P/N 11-08699 .....**$343.95**

MODEL 6295 KWIKSTART - Two 12 Volt 22 AH Heavy-Duty Sealed Lead Acid/AGM Battery provides "Best in Class" Performance. Jump start 24 volt systems with over 700 CCA of power. "Smart" 1000 mA Internal Charger with Built-In Overcharge Protection - Prolongs battery life. Up to 100 Hours of Portable 12 Volt DC. Three Position "24V/OFF/12V" Switch with Easy-to-Read LED Battery Status Indicator. 12 Volt DC Accessory Outlet to Power and/or Recharge DC Electronics. Heavy Duty Clamps with 2AWG 66" Long Cables. Use Any Standard Extension Cord to Charge. Unit includes DC to DC cigarette lighter cord

P/N 11-08701 .....**$441.95**

BATTERY TENDER CHARGER

BATTERY TENDER PLUS - 6V @ 1.25A 12V @ 1.25A. The Battery Tender Plus is a 1.25 amp battery charger designed to fully charge a battery and maintain it at proper storage voltage without the damaging effects caused by trickle chargers. Included is a quick connect harness for hard to reach areas. ****DO NOT USE P/N 11-03015 WITH GILL OR CONCORDE AVIATION BATTERIES.***

Voltage	Amps	Description	Part No.	Price
6Volt	1.25A	Battery Tender Charger	11-04085	**$42.85**
12Volt	1.25A	Battery Tender Charger	11-03157	**$43.75**

POWER TENDER PLUS - 12V @ 5A 24V @ 2.5A WATERPROOF, Shock & Vibration Resistant, Lightweight (LESS THAN 4 POUNDS), compact charger designed for either portable operation or permanent mounting. Charges and maintains both flooded and sealed, maintenance free, AGM, lead acid batteries. Float / Maintenance function maintains batteries at proper storage voltage without the damaging effects caused by trickled chargers. The Power Tender PLUS is easy to use, it's rugged, its compact, it's packed with power, and it's backed by the reputation of the undisputed battery charger industry leader, DELTRAN. Note: Part does not come the Alligator clips. PN 11-06403. Note: Not for use with Gill or Concorde Aviation Batteries.

Voltage	Amps	Description	Part No.	Price
12Volt	5A	Power Tender Plus	11-03016	**$81.95**
24Volt	2.5A	Power Tender Plus	11-03015	**$79.95**

Power Tender Alligator Clip ..... P/N 11-06403.....**$4.35**

BATTERY TENDER JUNIOR

120 VAC /60 Hz input. Includes Ring Terminals and Alligator Clips with BLACK (6V & 12V) QDC. Note: Not for use with Gill or Concorde Aviation Batteries.

6V, .750 Amps..... P/N 11-05163 .....**$29.85**

12V, .750Amps..... P/N 11-05164 .....**$29.95**

CIGARETTE LIGHTER RECEPTACLE

This 12V female cigarette lighter receptacle is made from stainless steel and is ideal or homebuilt panels. 292568 P/N 11-01294 .....**$8.90**

LONESTAR DC CIGARETTE LIGHTER RECEPTACLE

Perfect for portable GPS systems, cell phone chargers, laptop power supplies, or anything else you would plug into your car during a road trip. 12V Aircraft: If your aircraft runs on 12V you will not need any extra equipment to operate 12V equipment, and it comes with a a rubber cap marked with DC12V. 24V Aircraft: Please note, you will need a 28V to 12V convertor to power most 12 volt consumer electronic devices.

Non TSO'd ..... P/N 11-04862 ..... **$59.85**
TSO'd ..... P/N 11-09432 ..... **$84.95**
DC Converter 28-14VDC TSO ..... P/N 11-03309 ..... **$249.95**
SD Converter 24-13.8VDC TSO ..... P/N 11-04894 ..... **$499.95**

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CHARGERS - APU'S

OPTIMATE DIAGNOSTIC DESULFATING CHARGERS AND TESTERS

OptiMate 5

OPTIMATE 5 can SAVE a neglected / sulfated* leadacid battery unable to accept charge from the engine charging system (even after jump starting). The multi step charging system is suitable for any type of 12V lead-acid battery. During the 24/7 auto storage control the battery is tested every hour and recharged as necessary. The universal input system accepts AC power between 100 to 240VAC (incl. generator / inverter). Hook it up anywhere in the world, walk away, OptiMate5 does the rest, automatically, safely. Recommended for all lead-acid batteries from 7.5Ah – 120Ah. P/N 11-07220..... **$69.85**

OptiMate 6 ampmatic

OPTIMATE 6 can SAVE a neglected / sulfated* leadacid battery unable to accept charge from the engine charging system (even after jump starting). The micro processor controlled multi step charging system with cell equalizing is suitable for deep cycle and starter (SLI) batteries and the ampmatic auto current control takes the guesswork out of charge current selection. During the continuous maintenance and testing cycle the battery is tested daily and recharged as necessary. Hook it up, walk away, OptiMate6 does the rest, automatically, safely. Recommended for all lead-acid batteries from 15Ah – 240Ah.
P/N 11-07221..... **$107.90**

OptiMate PRO S

OPTIMATE PRO-S has a charging system able to save a neglected *sulfated battery that cannot accept charge from a standard charger or the engine charging system. Battery power is optimized during bulk, absorption & cell balancing charge modes, and then tested to verify charge retention. Battery life is extended if left connected to OptiMate PRO-S when vehicle/craft/equipment is not in use. Initializes, desulfates & charges 1 x 12V battery at a time – from small to large.
P/N 11-07222..... **$166.50**

OptiMate PRO-2

OPTIMATE PRO-2 OptiMate PRO-2 initializes, desulfates & charges 2 x 12V batteries at a time or a 24V system, made up of 2 x 12V batteries. The OptiMate Pro-2 has two independent charging systems able to save a neglected *sulfated battery that cannot accept charge from a standard charger or the engine charging system. Battery power is optimized during bulk, absorption & cell balancing charge modes, and then tested to verify charge retention. Battery life is extended if left connected to OptiMate PRO2 when vehicle/craft/equipment is not in use. Note: This charger cannot be used on a 24V battery. A battery discharged over time that has built up chemical resistance to charging, but otherwise undamaged and measuring at least 2V. PN 11-07223..... **$236.95**

****A battery discharged over time that has built up chemical resistance to charging, but otherwise undamaged and measuring at least 2V.***

AUXILIARY POWER UNIT (APU) & BATTERY CHARGER

Designed to supply filtered DC bus power through standard APU receptacle in private and commercial aircraft. Up to 25 or 50 amp is available for operating avionics and flight control systems when the master switch is activated. It can also charge the battery through the plug at a 10 amp rate. Output is current limited, and will withstand starting loads. Voltage is limited to prevent battery overcharging. DC Current and voltage are displayed on panel meters, voltage accurate to 00.00 ***NOTE: Available with piper plug too.***

Model	P/N	DC Amps	DC Volts	AC Power	Dimensions H.W.D.	Wt.	Price
Piper Plug APU14v/25A	11-07068	25	14	117 volts 60hz. 3 amps	8.5x10x12	22	**$645.00**
Piper Plug APU28v/25A	11-07067	25	28	117 volts 60hz. 6 amps	8.5x10x12	33	**$696.00**
Cessna Plug APU28V/25A	11-08146	25	28	117 volts 60hz. 6 amps	8.5x10x12	33	**$696.00**

AIRCRAFT APU & CHARGER

25 amps of auxiliary power to prevent battery drain while checking aircraft controls and avionics. Battery status is monitored by a digital volt meter accurate to 00.00, and a Tri-color LED. If left connected, will charge and fully maintain battery. Available with plug as shown, or Piper plug. Plugs into standard 117v 60 Hz. receptacle. Max current draw, 6 amps on 24 volt model (APU24v/25A), 3 amps on 12 volt model, (APU12v/25A). Warranty: (3) years.
Charger with Plug 12V.....P/N 11-05662..... **$596.00**
Charger with Plug 24V.....P/N 11-05661..... **$695.00**

SOLAR PULSE

Specifications	SolarPuse 2W	SolarPuse 5W
Pulse Frequency:	22-28 kHz	22-28 kHz
Max Charging DC Voltage:	16.5 V, 250 mA	16.5 V, 350 mA
Reverse Polarity Protected:	Yes	Yes
Circuit Box Dimensions:	3.25" x 2.25" x 1.5"	3.25" x 2.25" x 1.5"
Solar Panel Dimensions:	4.75" x 8.56" x .125"	8.875" x 8.75" x 0.125"
Box to Lugs Wire Length:	3 feet	3 feet
Box to Panel Wire Length:	17 feet	17 feet
Termination:	.375" Lugs	0.375" Lugs
Weight:	1.35 lb.	1.65 lb.

* Unique solar charger provides clean, quiet energy
* Cleans battery plates of large, damaging lead-sulfates so batteries can accept, store and release MAXIMUM power when you need it
* Helps offset energy-robbing key-off parasitic loads (see chart below)
* Works with all lead-acid batteries (flooded cell, AGM and gel)
* Ideal for virtually any kind of vehicle and equipment in areas with out access to electrical power
* Low-profile industrial-strength solar panel mounts flat (no frame required) so it's virtually indestructible
* Prevents the normal loss of battery power on vehicles stored out side no matter how long they sit unused — even months at a time
* Helps extend battery life up to 3X longer
* Choose from three models: 2-Watt, 5-Watt and 6-Watt
* The 5-Watt solar panel is almost HALF THE SIZE of other 5-watt panels yet offers full 5-watt power
* The smaller 5-watt panel provides more installation options
* The 6-watt model is ideal for emergency rescue and law enforcement vehicles because it has a unique rectangular solar panel designed to easily mount on any light bar
* 2- and 5-Watt models include 17-feet of wire between circuit box and solar panel, and the 6-Watt includes 14 feet of wire
* Five-year limited warranty

2WATT .....P/N 11-07120 ..... **$89.95**
5WATT.....P/N 11-07121 ..... **$159.95**

REDIPULSE PRO-12 CHARGE/MAINTENANCE SYSTEM

The PulseTech Pro-12 Charge/Maintenance System. It is designed to keep new batteries "factory-fresh" while they rest on the shelf waiting to be installed or sold. Batteries that sit idle suffer from damaging sulfation buildup (lead sulfate deposits on the battery plates). This buildup is the main cause of battery problems and failure. The Pro-12 uses our scientifically-proven ReNew-IT Pulse Technology to keep these deposits off the plates. By removing these energy-dampening deposits, your batteries are stronger than ever. This means your "shelf-life" warranty issues and other battery-related expenses are reduced dramatically. P/N 11-07122.....**$174.95**

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RED BOX START POWER RB25A POWER UNITS

The Red Box hand portable packs are some of the most powerful Hand Portable Packs available worldwide. Red Box uses the latest in military aerospace technology to achieve a very high power to weight ratio. These power packs are designed for starting of piston, turboprop or turbine aircraft and helicopters in the field or in remote locations and Red Box units may be carried safely on board all aircraft. The power packs are "all weather" units and being modular, can be used in single or dual format. They can be used or stored in any orientation, even inverted. Cells used are cleared as non-hazardous cargo for carriage in the aircraft. They are able to operate in extremes of temperature and have excellent standby characteristics. They are maintenance free and do not require cycling. They can be re-celled "on condition" at any Red Box service center in the world and are designed to give years of repeated service. In addition to aviation, these highly portable units can be used with Armored Fighting vehicles and Military equipment. They can be recharged from the automatic charging system, which is supplied in the package, or from any vehicle using a suitable interface.

Model	Description	Part No.	Price
RB25A	12V Power Unti	11-09806	**$1,623.00**
RB25A	24V Power Unit	11-09807	**$1,718.00**
RB50A	12V Power Unti	11-09814	**$2,357.00**
RB50A	24V Power Unit	11-09815	**$2,226.00**
RB75A	12V Power Unti	11-09819	**$2,665.00**
RB75A	24V Power Unit	11-09820	**$2,995.00**

RED BOX CONTINUOUS POWER UNITS

Compact, lightweight and highly portable power units. Red Box systems may be carried safely on board all aircraft.

They are designed to give continuous high quality DC power for crew training, aircraft servicing in the workshop, on the ramp or in the field. This continuous power supply is ideal for diagnostic work, pre-flight checks or for continuous powering of equipment during operations, without draining the onboard aircraft batteries. There is a range of built in safety features and the units are simple to use. This switchable unit will produce a steady 14.4 or 28.8 Volts up to the fully rated output current with power factor correction. The power supplies are multi-fan cooled with built-in thermal management for operation up to 50°C ambient environments. The safety features include over current and short circuit protection. The power modules conform to EMC standards for noise emissions and immunity.

Model	Description	Part No.	Price
RBP525	25 Amp Power Unit	11-09824	**$1,056.00**
RBP550	50 Amp Power Unit	11-09825	**$1,463.00**
RBP575	75 Amp Power Unit	11-09826	**$2,113.00**
RBPS100	100 Amp Power Unit	11-09827	**$2,875.00**
TOWBAR	Towbar	11-09828	**$163.00**
HANDLE	Towbar Handle and Caster Kit	11-09829	**$455.00**

LOW BATTERY ALARMS

These are a micro processor-controlled low battery alarm. The purpose of this product is to alert you of low battery voltage. This will allow you to prevent damage to the battery. Featuring a wide range of settings, the Low Battery Alarm can be preset to meet voltage specifications. The device comes with an LED indicator for visual reading along with a buzzer to warn of low voltage. Multi-color LED configurations indicates the battery status.

Applications: Battery Backup Systems, RV house batteries, Trolling motor battery, Marine batteries, Auxiliary Power Units (APU), Travel trailers, Power gate backup battery, Generator battery, Battery backup safety equipment, Bass Boat Central Approved Manufacturer, Bass Boat Supplies and Accessories.

Low Battery Alarm XL (5V to 24V) ..... P/N 11-10010 ..... **$34.95**
Low Battery Alarm XXL (6V to 36V) ..... P/N 11-10011 ..... **$57.85**

AEROVOLTZ LITHIUM BATERIES

Aerovoltz Lithium Iron Phosphate batteries are designed to replace the lead acid batteries that currently power most of the two and four cycle engines in Aviation.

Features: Up to 80% smaller than the stock battery. Up to 10 lbs. lighter than the stock battery. Designed, developed, and assembled in the USA. Completely "dry" technology so batteries can be mounted in any direction. Non-toxic and recyclable. Impact and water resistent. No special charger required

Description	Part No.	Price
Aerovoltz Lithium Battery (EVO2-4 CELL)	11-10028	**$99.00**
Aerovoltz Lithium Battery (EVO2-8 CELL)	11-10029	**$156.50**
Aerovoltz Lithium Battery (EVO2-12 CELL)	11-10030	**$179.95**
Aerovoltz Lithium Battery (EVO2-16 CELL)	11-10031	**$269.00**
Aerovoltz Battert Management System Balance Charger (120 volt)	11-10032	**$78.85**

AEROVOLTZ BATTERY CHARGER

The Aerovoltz battery charger system is the only charger on the market designed specifically to work with the Aerovoltz EVO2 battery. The balance mode balances the voltage of each cell or cell pack while charging. The primary advantage of the balance charger is the balance charging funciton.

Features: Plugs directly into the batteries BMS port. Able to balance charge all the cells individually for max power and durability. Can double the expected life of the EVO2 battery. Has Charge, Fast Charge, Balance Charge, and Storage Charge Functions. Specifications: 14.5-16V Balance Charger Kit-120 V. P/N 11-10032 ..... **$78.85**

ZAMP KICKER SOLAR BATTERY MAINTAINERS

The Zamp Kicker Battery Maintainer is designed to fully charge and maintain a battery at proper voltages without the damaging effects caused by unattended bench top and trickle chargers. The Zamp Kicker correctly charges any type of lead-acid, gel and AGM battery. Zamp Kicker Battery Maintainer available in 10 watt or 20 watt.

Includes: Solar panel mounts, hardware, connectors, wire, and charge controller and 6 amp waterproof controller.

Watts	Amps	Dimensions	Part No.	Price
10	6	11"w x 13"l x 1"h	11-10027	**$169.00**
20	6	16.4:w x 17.5"w x 1"h	11-10026	**$243.00**
40	6	Dim. closed: 16"w x 17"L x 3"h Dim. open: 32"w x 17"L x 1.5"h	11-10025	**$338.00**

SUNLINQ SOLAR PANELS

The ***6.5-watt*** portable solar pack module offers a unique solution for reliable and portable solar power for cell phones, PDA's, and other small personal electronics. The SUNLINQ™ 6.5-watt weighs less than half of a pound and when folded is compact, lightweight and easily stored and transported. The low maintenance design provides an optimal electrical path and rugged durability. Built-in grommets allow for hanging, mounting or laying in any position.

The ***12-watt*** portable solar pack module offers a unique solution for reliable and portable solar power for Sat phones, GPS, battery charging, etc. The SUNLINQ™ 12 watt weighs less than one pound and when folded is compact, lightweight and easily stored and transported. The low maintenance design provides an optimal electrical path and rugged durability. Built-in grommets allow for hanging, mounting or laying in any position.

The ***25-watt*** portable solar pack module offers a unique solution for reliable and portable solar power for vehicle battery charging, including boats and RVs and laptop computers. The SUNLINQ™ 25 watt weighs less than two pounds and when folded is compact, lightweight and easily stored and transported. The 25-watt SUNLINQ™ is made from a special urethane material giving it the utmost in durability and water resistance. The low maintenance design provides an optimal electrical path and rugged durability. Built-in grommets allow for hanging, mounting or laying in any position.

Cables included with SUNLINQ™ are one each, CLA receptacle, CLA vehicle power outlet, battery clamps, 4 in. barrel connector, and 8 ft. extension cable.

Description	Part No.	Price
SUNLINQ 6.5 WATT Module	11-06192	**$93.50**
SUNLINQ 12 WATT Module	11-06193	**$189.95**
SUNLINQ 25 WATT Module	11-06194	**$386.95**

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START PAC® STARTERS - POWER SUPPLIES

START PAC® PORTABLE STARTING UNITS

The new patent pending Start Pac QC models have separate removable batteries that can be changed in 15 seconds. This feature allows the user to change the batteries in the field without needing to send the Start Pac back to the shop or manufacturer. Batteries have no memory effect and can be recharged at anytime. Made in the USA. Certain aircraft will allow the ship's generator to back charge a GPU. In this manner, Start Pacs can be recharged in the field without an AC source indefinitely.
NOTE: When storing the Start Pac for more than 30 days, remove the battery pack from the charging unit and store separately.

MODEL 1324-1 QC - * 13 AMP hours @ 10 Amp Hour Rate * 1300 AMPS Peak Current complete with built in charger, power plug and cables. * 15.5"x4"x11.75" * 35 LBS. Complete * Units are 24 VDC output with a universal charger that will accept 90-240 VAC 50/60 hertz. Will start turbine or piston engines up to 500 horse power. Has a 4.5 amp charger and will provide a charge time of approx. 4 hours. Will give two to three starts between charges. This portable unit is mainly designed for emergency starting in remote locations. This unit is not designed for repeated daily starts or maintenance functions.

1324-1 QC .....P/N 11-04538 .....**$1,065.00**
1324-1 QC-RBS (Battery Set) .....P/N 11-07231 .....**$524.00**

MODEL 2300 QC - Built in chargers, power plug and cables. 24/26 VDC output, with universal chargers that will accept 90-240 VAC 50/60 hertz. * 26 AMP hours @ 10 Hour Rate * 2300 AMPS Peak Current * Trolley avail. * 19.2"x7.5"x11.5" * 69 LBS. Complete. For starting engines up to 1500 horse power and give four to six starts between charges. This unit has a dual redundant 4 amp chargers.. When plugged into an AC source, 8 amps at 28VDC, is available for maintenance functions without depleting the batteries. Recharge time is approx. 3-1/2 hours.

2300 QC .....P/N 11-06780 .....**$2,080.00**
2300QC-B (Batteries) .....P/N 11-06781 .....**$825.00**

MODEL 6028 QC - Built in chargers, power plug and cables. Units are 28.5 VDC output, with universal chargers that will accept 90-240VAC 50/60 hertz. * 26 AMP hours @ 10 Hour Rate * 2300 AMPS Peak Current * Trolley avail. * 19.2"x7.5"x11.5" * 77 LBS. Complete. Will start the largest electrically started turbine or piston engines including the Garrett TPE331. Will provide a faster and cooler start than most ship's aircraft batteries, thus increasing turbine life. Various maintenance duties can be performed with this pack that requires more than 24 volts for checkout. This unit has dual redundant chargers with a total of 7 amps output with a recharge time of approximately 4 hours.

6028 QC .....P/N 11-06783 .....**$2,685.00**
6028 QC-B (Batteries) .....P/N 11-07189 .....**$1,008.00**

MODEL LI2800 QC - A full 28VDC battery pack and will provide superior starts on all electrically-started turbine engines. It has dual, redundant chargers with a total of 7 amps output and a recharge time of approximately 4 hours. * 28 AMP hours @ 10 Hour Rate * 2400 AMPS Peak Current * L 19.2" x W 7.5" x H 9.75" * 46 LBS. Complete. Utilizes the latest technology in Lithium batteries. (can be left in a completely discharged state without causing damage)

Li2800 QC.....P/N 11-06782 .....**$3,596.00**

QUICK CHANGE TROLLEY - The Start Pac® QC trolley is a light weight accessory for either the Start Pac® Models 1324-2QC, 1628QC, 2300QC or the 6028QC

P/N 11-06775 .....**$288.95**

START PAC® POWER SUPPLIES

The entire aircraft electrical system can be powered up for GPS programming and electrical maintenance. Thus the on board aircraft battery can be saved for starting. Do not use for starting as starter motors require far more amperage than is available from the StartPac® Portable Power Supply. Not for battery charging. Made in the USA.

MODEL 53025/12VC - Do not cover or enclose this Start Pac® when using, as this will inhibit airflow needed for cooling purposes. Use a minimum of 12# wire size for the AC extension cord. 12 Volt output unit. * AC INPUT: 90 to 240 VAC, 7 amps * DC OUTPUT: 25 amps @ 14.2 Volts * 9 Lbs./4.08 kilos complete * 14" long, 5.25" wide, 5.5" high * Continuous duty fan cooled * Over current protection * Over voltage protection * Over temperature protection. Designed to power up 12 Volt aircraft systems. The voltage output is set to 14.2 Volts. Maximum amperage output is 50 amps which is adequate for most light aircraft. If overloaded, the 53025/12 will trip off and reset itself after a short period of time. This unit is ideal for powering up new and old aircraft with glass cockpits.

Standard Plug 53025 - 12V .....P/N 11-04536 .....**$518.00**
Standard Plug 53025-24V .....P/N 11-04537 .....**$518.00**
Piper Plug 53025-12V .....P/N 11-10088 .....**$518.00**

MODEL 53050 - Specifications: * No duty cycle, output voltage 28.5 VDC * AC input is universal 90-240 Volts. * Over current protection * Over voltage protection * Over temperature protection * Forced air-cooling * DIMENSIONS: Wt. 10 lbs./4.54 kilos 14" X 5.25" X 5.50". A 28.5 Volt continuous DC power supply when plugged into 110/220 Volt single phase AC power. Will deliver full 50 amp DC output continuously, but will not provide enough current for aircraft engine starting or mining equipment starting.

53050.....P/N 11-06833 .....**$979.00**

MODEL 53105 - Specifications: * Maximum continuous 105 amps +5%. No duty cycle. * AC input 190-240 Volts. * Over current protection. * Over voltage protection. * Over temperature protection. * Forced air cooling. * 8 foot power cable. * Weights 26 lbs./11.80 kilos complete with power cable. * 14.5"x7"x13.75". A 28.5 Volt continuous DC power supply when plugged into 220Volt single-phase AC power. Will deliver full 105 amp DC output, but will not provide enough current for engine starting.

53105.....P/N 11-06834 .....**$1,790.00**

START PAC® GROUND POWER UNITS

The following dimensions apply to each of the 3300s: 38"x21"x20" Handle Height 48". Avoid discharging the batteries completely as damage can result.

MODEL 3324 - Combination power supply and battery pack. Batteries: * 78 Amp Hours at 10 hour rate * 24 Volt DC - 25.5 Volts at rest Sealed cells non- hazardous Valve regulated high amperage output lead acid * 3200 Peak Amps Power supply / charger: * Multi- unit 58 Amp DC continuous output * 28 - 28.5 Volt output from 0 - 58 amp load * Battery recharge time from fully discharged - 2 hours * AC Input - 110 Volt or 220 Volts (only 1) Limitations : 200 amps maximum DC load NOTE- When using more than 58 continuous amps, the batteries will make up the difference until they become depleted. On most aircraft, a low voltage relay will drop the GPU offline when the voltage drops below a preset level. Once the GPU is dropped off, it's voltage will rise and will be accepted again by the aircraft, then will immediately drop off again. This oscillation can cause damage to aircraft components. NOTE-- PLEASE USE #12 or Larger AC EXTENSION CORD

3324.....P/N 11-07225 .....**$4,395.00**
3324-RBS (Battery Set) .P/N 11-07234 .....**$1,250.00**

FOR ADDITIONAL GROUND POWER UNITS PLEASE CALL OR VISIT OUR WEBSITE AT WWW.AIRCRAFTSPRUCE.COM

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START PAC® STARTERS - BYCAN POWER SYSTEMS

START PAC LI2600QC STARTER 26VDC

The all new Patent Pending Start Pac model Li2600QC utilizes the latest technology in Lithium batteries. These batteries provide the same power as the lead-acid type but are 42% lighter and 32% smaller. In addition, lithium batteries have two other major advantages: twice the battery life of lead-acid batteries and no sulphation problems (can be left in a discharged state without causing damage to the battery plates).

This compact portable Lithium Ion starting unit is a full 26VDC battery pack and will provide superior starts on small to medium size turbine engines. It has a built in charger with a total of 4.0 amps output and a recharge time of approximately 6 hours.

This unit is especially designed for aircraft that will not accept a full 28 volt battery pack (actually reads 30-31 volts). Aircraft such as the Phenom 100 and Eclipse 500 will accept this 26 volt unit (actually reads 28.5 volts).

Specifications: 23 amp hours at 10 Hour rate, 2400 AMPS Peak Current, 30 lbs. complete Dimensions: L 16" x W 3.75" x H 12" Patent pending, Not to be used as an aircraft battery charger Lithium ion batteries can be damaged by deep discharges. Do not run the batteries down below 20 volts, a spike during a start is okay. Voltages below 20 begin the damage to the batteries. At 18 volts, the batteries will be damaged beyond repair.....P/N 11-09515 .....**$2,475.00**

START PAC LI2000QC STARTER 28.5VDC

The all new Patent Pending Start Pac model Li2000QC utilizes the latest technology in Lithium batteries. These batteries provide the same power as the lead-acid type but are 42% lighter and 32% smaller. In addition, lithium batteries have two other major advantages: twice the battery life of lead-acid batteries, no sulphation problems (can be left in a discharged state without causing damage to the battery plates).

This compact portable Lithium Ion starting unit is a full 28VDC battery pack and will provide superior starts on small to medium size turbine engines. It has a built in charger with a total of 3.5 amps output and a recharge time of approximately 6 hours.

Specifications: 20 amp hours at 10 Hour rate, 2400 AMPS Peak Current, 30 lbs. complete, Dimensions: L 16" x W 3.75" x H 12", Patent pending, Not to be used as an aircraft battery charger, Lithium ion batteries can be damaged by deep discharges. Do not run the batteries down below 23 volts, a spike during a start is okay. Voltages below 23 begin the damage to the batteries. At 18 volts, the batteries will be damaged beyond repair.....P/N 11-09516 .....**$2,625.00**

START PAC LI2800QC TWIN PAC STARTER, 28.5VDC

The all new Start Pac Model Li2800 QC Twin Pac utilizes the latest technology in Lithium Batteries. These batteries provide the same power as the lead-acid type but are 42% lighter and 32% smaller. The multi-purpose Li2800QC Twin Pac can be easily broken down into 2 separate units for easy transport and shipping. In addition, lithium batteries have two other major advantages: twice the battery life of lead-acid batteries, no sulfation problems (can be left in a discharged state without causing damage).

This powerfully versatile Lithium Ion Twin Pac starting unit is a full 28VDC battery pack and will provide superior starts on all electrically-started turbine engines. It has dual, redundant chargers with a total of 7 amps output and a recharge time of approximately 4 hours.

Specifications: 56 AMP hours at 10 hour Rate, 4800 AMPS Peak Current L 19.2" x W 7.5" x H 9.75" each unit, Twin Pac trolley L 19" x W 23" x H 12" not including removable handles 109 lbs. Complete with Twin Pac Trolley, 46 lbs. complete for each unit when separated. Not to be used as an aircraft battery charger Lithium ion batteries can be damaged by deep discharges. Do not run the batteries down below 23 volts, a spike during a start is okay. Voltages below 23 begin the damage to the batteries. At 18 volts, the batteries will be damaged beyond repair.

P/N 11-09517 .....**$7,421.00**

BYCAN POWER SYSTEM PS-1450

The Bycan PS-1450 Aircraft Ramp Power Supply and Battery Charger is a dual-purpose aircraft flight line service and maintenance tool. The unit has a filtered 14 volt DC power supply with up to 50 amperes capability for tests of aircraft electrical systems and a secondary mode for recharging run-down batteries. The PS-1450 plugs directly into the aircraft APU connector and is tied to the electrical system when the master switch is activated.

The battery charging mode is selectable by a front panel switch. The charging process is fully automatic. When the charge is in progress a red LED is illuminated. This is replaced by a green LED when the aircraft battery is fully charged. The on/off switch on the unit also resets the unit. The 28 volt version, PS-2850 provides 50 amperes of filtered DC at 28 volts. Dimensions: 9" x 12" 8". Weight: 38lb.

Bycan Power Supply/Charger 14V.....P/N 11-09195 .....**$584.00**
Bycan Power Supply 14V 50Amps.....P/N 11-09196 .....**$569.00**
Bycan Power Supply 14V 50HZ.....P/N 11-09197 .....**$598.00**
Bycan Power Supply 14V Piper.....P/N 11-09198 .....**$629.00**

BYCAN POWER SYSTEM PS-2850

The PS-2850 plugs directly into the aircraft APU connector and is tied to the electrical system when the master switch is activated.

The battery charging mode is selectable by a front panel switch. The charging process is fully automatic. When the charge is in progress a red LED is illuminated. A green LED replaces this when the aircraft battery is fully charged. The on/off switch on the unit also resets the unit. The 14-volt version, PS-1450 provides 50 amperes of filtered DC at 14 volts.

P/N 11-07870 .....**$768.00**

BYCAN POWER SYSTEM PS-28100

The PS-28100 will furnish up to 100 amps at 28 VDC. It plugs into the APU connector on the engine cowling and automatically disconnects the battery so that it will not be drained by the servicing processes. A valuable ramp accessory.

100 amperes filtered 28 volt supply. Aircraft APU connectors furnished. Operates from 120/208/220/240 VAC, 60 Hz . 8 foot DC cable furnished. Ferro-resonant regulated supply . DC current limited Front panel meter, controls.

Portable, weighs only 62 lb. One year warranty

Extensive testing by FBO's. Dimensions:10" x 13" x 9". Weight: 62lb.

28V, 100AMP - Standard Plug ..... P/N 11-07822.....**$998.00**
28V, 100AMP - Piper Plug..... P/N 11-07823.....**$998.00**
28V, 100AMP - Pilatus PC-12 ..... P/N 11-07824.....**$998.00**
28V, 100AMP - Eclipse E-500 ..... P/N 11-07825.....**$975.00**

BYCAN POWER SYSTEM PS-14100

The PS-14100 will furnish up to 100 amps at 14 VDC. It plugs into the APU connector on the engine cowling and automatically disconnects the battery so that it will not be drained by the servicing processes. A valuable ramp accessory.

100 amperes filtered 14 volt supply. Aircraft APU connectors furnished. Operates from 120/208/220/240 VAC, 60 Hz . 8 foot DC cable furnished. Ferro-resonant regulated supply . DC current limited . Front panel meter, controls . Portable, weighs only 61 lb. One year warranty . Extensive testing by FBO's. Dimensions: 10" x 13" x 9". Weight: 61 lbs.

Bycan Power Supply 14V Standard ..... P/N 11-09191.....**$678.00**
Bycan Power Supply 100V 50HZ..... P/N 11-09192.....**$697.00**
Bycan Power Supply 14V Piper..... P/N 11-09193.....**$739.00**
Bycan Power Supply 100V 50MZ Piper ..... P/N 11-09194.....**$759.00**

EL

GROUND STARTING COMPONENTS

AIRCRAFT JUMPER CABLES

Cable is heavy duty, 4 ga. copper, 15 ft. long, twin extruded to help prevent tangling, and room temperature flexible at 40 degrees below zero. Fully insulated clamps wont arc or spark and are rated 500 amps, have a solid copper jaw, and have a flexispring strain relief to prevent cable breakage. Polarity light warns if clamps are connected incorrectly, preventing electrical system damage and personal injury. Available in two styles (above).

6141 - Jumper Cable with standard 3-pin Lexan female plug (equivalent to AN2551) on one end and alligator clamps on other end.
P/N 6141 ..... **$188.95**

6142 - Jumper Cable with special Piper single-pin plug on one end and alligatorclamps on other end.
P/N 6142 ..... **$219.00**

REPLACEMENT PAIR OF 500 AMP CLAMPS

Used on #6141 and #6142 jumper cables. (above)
P/N 11-06202 ..... **$37.75**

PIPER TYPE PLUG

Mates with 11041 socket. Electrical conductors and connections are designed for maximum efficiency and long life. With ground return terminal. Single pole. Brass female contact with spring-grip tension provides solid engagement with the socket. Cable clamp holds wires firmly in place. Diecast housing. Accepts up to 0AWG cable.
P/N 11-03159 ..... **$22.75**

PIPER TYPE SOCKET

Self-grounding socket. Single pole. Diecast housing, spring-loaded door. Solid brass contact, 3/8" (9.5mm) diameter, with insulated tip to prevent short circuits. Rubber boot protects terminals and connections. Accepts up to 0AWG cable. Fits 2" (50.8mm) diameter hole. Flange holes 21/64" (8.6mm) diameter, 2 15/16" (74.6mm) on centers. Mates with 11042 plug.
P/N 11-00500 ..... **$24.85**

EXTERNAL POWER RECEPTACLE

This external power receptacle is designed to mount in a hole in the skin of aircraft. Hole is then covered with hinged access door (not included). Mates with AN2551 type plugs. Model 4621B.
P/N AN2552-3A..... **$69.95**

PLUG & JUMP

The Plug & Jump is a very portable unit which can be carried in the aircraft at all times because it is so lightweight. It can be used to start the aircraft from an ordinary car using standard jumper cables. It comes in two models; The Universal Model is used for Cessna, Beechcraft, etc. (3 pin plug) and the Piper Model is a single pin. The Plug and Jump is a simple conduit of power from any external power source to the aircraft. It is not a battery in and of itself. The Plug n Jump can be used for either 28V or 14V systems.

Universal Model.....11-00971 ..... **$74.50**
Piper Model .....11-00972 ..... **$79.50**

MASTER RELAY

(Battery Solenoid) - Applicable to all homebuilts. Continuous duty. 12V and 24V. **Not for certified aircraft.** Features: * High current capacity control * Isolated or grounded coils * Enclosed in dust-resistant case * Longer steel encasement permits lower heat rise and more sensitive operation on Type 71

111-226 (12V).....P/N 11-03161 ..... **$24.75**
111-226 (24V).....P/N 11-05799 ..... **$28.75**

STARTER RELAY

(Starter Solenoid) - For 12V intermittent duty. Adequate current capacity for most engines.
P/N 11-03162 ..... **$9.85**

PORTABLE POWER SUPPLY

These portable power supplies are an excellent way to power your avionics on the ground while you train or practice in the cockpit. Especially helpful in learning how to operate glass cockpit avionics and panel mount GPS units. To use the Portable Power Supply plug the cord into an AC wall outlet, and then connect the 3-pin plug into the external power receptacle on your aircraft. Furnished with Cessna style 3-pin plug. Manufactured in U.S.A.

Features: •Charge control: constant current charge to a constant voltage then to a float standby. •Current Limiting. •Fully automatic 3 stage charger can be left on the battery in maintaining/float mode. •Can be set for any type lead acid battery, including conventional, maintenance free, deep cycle, gelled-type, valve regulated batteries. •Continuous - 100% duty cycle. •Low voltage start: will start charging a deeply discharged battery with terminal voltage less than 4 volts. •Reverse polarity and short circuit proof. •Aluminum caset. • Includes Battery Clip Adapter.

12V Port Power Supply 3 Pin Plug.....P/N 11-05084 ..... **$214.95**
12V Port Power Supply Piper.....P/N 11-05085 ..... **$194.95**
24V Port Power Supply 3 Pin Plug.....P/N 11-05086 ..... **$308.00**
24V Port Power Supply Piper.....P/N 11-05087 ..... **$238.95**

RED BARON AUXILLIARY POWER UNIT (APU)

The Bycan RB-14/28-25 Red Baron APU is designed to operate avionics equipment in private and commercial aircraft. It will output 14 or 28 volts DC at up to 25 amperes. The voltage is filtered to eliminate hum and is regulated against input AC line voltage changes. The output DC voltage and current are displayed on front panel meters. The DC is also protected by a circuit breaker. The RB-14/28-25 plugs directly into the APU receptacle on the aircraft. It comes equipped with either the standard three-prong connector or the Piper coaxial connector. Both connectors can be supplied, optionally at a slight extra cost. DC cable length is 8'.The AC line cord is normally 8' in length, but special lengths up to 50' are available. The housing is steel, powder coated in red, for optimum flight line safety. Rubber feet and handle are included.

Features: • AC Line Voltage: 115v, 60 Hz • AC Current Drain: 7 amperes Max • DC Output: 14 or 28 volts, up to 25 amperes. • Weight: 35 lbs (16 Kg) maximum • Size: 10" x 8" x 8" (25 x 20 x 20 cm) • Warranty: Two years from date of purchase • Regulation: 13.75V ± 1.5v, 27.5V ± 2.5v.

Standard Connector .....P/N 11-02142 ..... **$675.00**
Piper Connector .....P/N 11-02143 ..... **$718.00**

THE BLUE ANGEL AIRCRAFT POWER SUPPLY

The Bycan BA-14/2850 Aircraft Ramp Power Supply and Battery Charger is a multi- purpose aircraft flight line service and maintenance tool. The unit has a filtered 14 & 28 volt DC power supply with up to 50 amperes capability for tests of aircraft electrical systems and a secondary mode for recharging run-down batteries. This ramp or hangar accessory is an absolute must for avionics service, gear and flap actuator exercising and other electrical system service. The BA-14/2850 plugs directly into the aircraft APU connector and is tied to the electrical system when the master switch is activated. Selection of output voltage is by a front panel switch which is protected by a switch guard. Closing the guard forces the switch to the 14 volt position. The battery charging mode is selectable by a front panel switch. The charging process is fully automatic. When the charge is in progress a red LED is illuminated. This is replaced by a green LED when the aircraft battery is fully charged. The on/off switch on the unit also resets the unit.

Piper & Cessna Plugs 110V (2 Adapters) ..... P/N 11-06390 . **$1,495.00**
Cessna Plug 220V (1 Adapter) * For Europe .. P/N 11-06391 . **$1,595.00**
Cessna Plug 220V (1 Adapter)..... P/N 11-06392 . **$1,495.00**

AVIATION GROUND POWER UNIT 2860A

The 2860A GPU represents a dramatic departure in ground power design for aircraft owners, maintenance facilities, and aircraft manufacturers. Its lightweight, easily portable design utilizes the latest high-efficiency switching-mode power technology to provide massive amounts of stable, noise-free DC power from a standard 120-volt AC receptacle.

Features: • Output: 28 VDC, 60-amps continuous. • Stable, noise-free DC power, safe for today's advanced cockpit systems. • Digital output meters for both voltage and amperes, with overload warning. • Includes detachable output cable with AN2551 compatible connector. • Compact, lightweight design utilizes 6 highly efficient digital switching-mode power modules for greater reliability. • Built-in cable management with cord winder bumpers. Specifications: • Designed for horizontal or vertical operation • Input: 105-125 Volts AC, 50-60 Hz, up to 20 amperes •Output: 28 +/- 0.5 Volts DC, 60 amperes continuous •Weight: 23.8 lbs (10.8 kg) including output cable • Dimensions: 7.25"H x 14.6" W x 13.75"D (18.1 cm x 27.6 cm x 34.9 cm) • One Year Limited Warranty

P/N 11-09684 . **$1,095.00**

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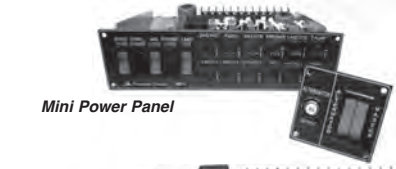
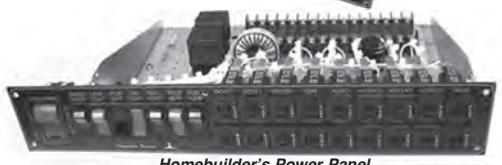
POWER PANELS

POWER PANELS FOR HOMEBUILTS



Mini Power Panel



Homebuilder's Power Panel

Based on a heavy duty printed circuit board that eliminates the bus bars an provides a user serviceable and logical arrangement of all power system components. Only DC rated switches and quality resettable thermal circuit breakers are utilized. Connections to the panels are via screw type terminal blocks. The avionics 'sub' bus is filtered. All metal parts are stamped aluminum. Lexan overlay on the faceplate. Complete documentation and suggested wiring diagrams are included. ***Standard Power Panel: 8 Switches:*** Fuel Pump, Landing Light, Strobe Lights, Navigation Lights, Panel Power, Pitot Heat, Radio Master, and a Cessna type split master switch for master solenoid and alternator field control. ***18 Circuit Breakers:*** Fuel Pump, Landing Light, Strobes, Nav Lights, Panel Power, Pitot, Alternator Field, Gyros, Gauges, Trim, and Spare, (on Radio Bus) Radio1, Radio 2, GPS, Transponder, Audio, Avionics. ***Dims & Wt:*** 2.25"H x 13.00"W x 7.50"D, approximately 3.0 lbs. ***Mini Power Panel: 6 Switches:*** (main panel) Fuel Pump, Landing Light, Strobe Lights, Navigation Lights, Panel Power, (side panel) has a Cessna type split master switch for master solenoid and alternator field control. ***13 Circuit Breakers:*** Fuel Pump, Landing Light, Strobes, Nav Lights, Panel Power, Engine Instruments, & Spare, (on Radio Bus) Radio1, Radio 2, GPS, Transponder, Avionics, (side panel) 30 amp alternator output breaker. ***Dims & Wt:*** (main panel) 2.375"H x 8.375"W x 6.50"D, (side panel) 2.375"h x 2.5"w x 2.0"d, approximately 2.5 lbs.

Homebuilders Panel ..... P/N 11-11675 ..... **$659.00 ea**
Mini Power Panel..... P/N 11-11680 ..... **$536.00 ea**

LIGHT SPORT POWER PANEL

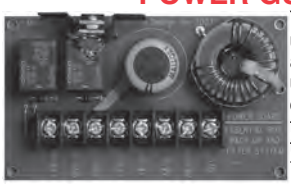
The Light Sport Power Panel was designed for LSA and light aircraft applications. It offers a new degree of flexibility in modern "Glass Panel" equipped aircraft. The electrical power bus is split into three segments including the Main Bus, Radio Bus and the Essential bus. The Radio Bus is switched and filtered. The Essential Bus can wire direct to the Main Bus or easily connected to a back up system such as the Composite Design Power Guard to allow dependable, constant power to critical flight and engine instruments. As with all Composite Design power systems, this panel is rugged, serviceable and dependable.

Specifications:

- 6 Switches: Fuel Pump, Landing Lite, Nav Lite, Strobes, Radio Bus Master, and Cessna type split master for Master Solenoid and Alternator Field.
- 14 Circuit Breakers: Main Bus - Fuel Pump, Landing Lite, Nav Lite, Strobes, Panel Power, Accessories
- Radio Bus (Filtered) Radio 1, Radio 2, Transponder, GPS, Audio Panel
- Essential Bus EFIS#1, EFIS#2, Flight Instruments, Engine Data
- Dimensions & Weight: 2.375"H x 10.5"W x 6.5"D, approx 2.25 pounds.

28V ..... P/N 11-09207 ..... **$598.00**
14V ..... P/N 11-09206 ..... **$589.00**

POWER GUARD MODULE



The Power Guard Module manages up to 10 Amps of secondary power for aircraft accessories that require back-up power. Typical accessories include electronic ignition, electronic engine/flight instrumentation and EFIS systems. The module works with a small 7-10 A secondary battery. The on board circuitry includes a secondary battery master relay, primary power controls, filter and charging circuit. Dims: 4.75"L x 2.75"W x 1.2"H..... P/N 11-02044 ..... **$135.95**

VERTICAL POWER VP-X

The VP-X integrates with many popular EFIS products enabling you to monitor and control your entire electrical system on the EFIS display. In addition using the EFIS for attitude, navigation, and engine information, you now can use the EFIS display to monitor the health of your electrical system, view and control the status of individual circuits, and respond to circuit faults.

Vertical Power offers these capabilities through the use of a patented electronic circuit breaker (ECB) technology that is at the core of all of our products. Of course, ECBs provide circuit protection like old-fashion thermal circuit breakers, but ECBs do a lot more than just detect circuit faults. ECBs are intelligent, configurable, and offer capabilities not otherwise available with old-style breakers. For example, ECBs can detect a burned-out landing light or disable the starter circuit while the engine is running.

The VP-X supports a single bus electrical architecture with a single or dual alternator configuration. It additionally supports the ability to measure the voltage on an aux battery. There are enough circuits to wire a typical RV (including the RV-10), Glastar, Lancair Legacy, Velocity, Cozy, or other 2 to 4 place aircraft.

Specifications:

- Power: 4-32 volts DC, 60A max continuous
- Weight: 1.9 lbs
- Mounting: Includes mounting bracket which attaches on side of VP-X. User can fabricate own mounting bracket as well.
- Connectors: Three power connectors, Ethernet for configuration, and two 25-pin d-sub connectors
- Operating Temperature: -25 to +85 deg C

Certification: The VP-X is for use only with experimental and light sport aircraft.

Note: Either a wiring harness kit or connector-only kit is required with the VP-X system.

Vertical Power VP-X-PRO ..... P/N 11-09293 ..... **$1,789.00**
Vertical Power VP-X Sport ..... P/N 11-09294 ..... **$1,189.00**
VP-X Pro Wiring Harness ..... P/N 11-09295 ..... **$395.00**
VP-X Sport Wiring Harness ..... P/N 11-09296 ..... **$365.00**
VP-X Sport Connector-Only Kit ..... P/N 11-09834 ..... **$139.95**
VP-X Pro Connector-Only Kit ..... P/N 11-09835 ..... **$149.95**
Crimp Tool (Req. w/ Connector-Only kit)
P/N 11-09836 ..... **$56.75**

RADIO STACK POWER PANEL

The Radio Stack Power Panel is designed to fit neatly in the 6.25" radio stack format. It is well suited for LSA and light aircraft applications, offering a new degree of flexibility in modern "Glass Panel" equipped aircraft. The power bus is split into three segments including the Main Bus, Radio Bus and the Essential Bus. The Radio Bus is switched and filtered. The Essential Bus can be wired directly to the Main Bus or easily connected to a back up system such as the Composite Design Power Guard. This allows dependable, constant power to critical flight and engine instruments. As with all Composite Design power systems, this panel is rugged, serviceable, and dependable. P/N 11-10081 ..... **$650.00**

SOLID STATE AVIONICS ELECTRONIC SWITCH

This Avionics Switch is a solid-state SMT device designed to replace the conventional mechanical relays earlier used. The switch incorporates MOSFET (Metal Oxide Silicon Field Effect Transistor) transistors for switching the high current with no moving parts and no any electrical arc to prevent fuel fumes ignition. The Avionics Switch requires only one toggle switch of any quality and any type to control the power for up to 7A each, different electronic / avionic equipment The Avionics Switch is enclosed in an aluminum enclosure for EMI/RFI protection and for easy installation onto the aircraft.

P/N 11-04335 ..... **$152.00**

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POWER SUPPLIES – VOLTAGE CONVERTERS

RC ALLEN ESP

Abattery-based emergency power unit designed to give you at least an hour of auxiliary power when you need it the most. Paired with the new RCA 2600 Digital Horizon, the ESP can provide up to 6 hours of backup power. Can be easily mounted behind the instrument panel and can power your new R.C. Allen instrument, or retrofit your existing Attitude gyro in an emergency. Comes complete with a wire harness and panel-mounted status light. Recharges itself during flight and does not drain the aircraft battery when aircraft power is off. The ESP utilizes a long lasting lithium polymer battery.

14V ..... P/N 10-04645 ..... **$707.00**
28V ..... P/N 10-04646 ..... **$648.00**

TRUE BLUE POWER® MD835 EMERGENCY POWER SUPPLY

In the event of aircraft power failure, the MD835 automatically supplies 24.5 VDC power for critical or standby equipment. 4.5 Amp-hour battery with friendly Lithium Nanophosphate™ cell chemistry Lightweight 4.8 lbs. – 8 lbs. less than legacy lead acid designs. Input Voltage: 24–32 VDC. 5V module connector available. Direct replacement for PS-835/PS-855 or forward-fit installations. Minimal scheduled maintenance required: 2-year capacity check, 10-year replacement life. Dimensions (approx.): 3.1"H x 12.6"L x 2.3"W Mounts in standard ¼ ATR Rack. Maintains full charge by recharging during normal flight operations. Remote mounted self-test switch required. FAA TSO C179 certified. Part 23 AML STC pending. Qualified to RTCA/DO-160F and RTCA/DO-311. Designed and built in the USA. One year limited warranty.

MD835 ..... P/N 11-08713 ..... **$3,195.00**
5V module connector.... P/N 10-04776 ..... **$995.00**

TRUE BLUE POWER® MD50 STATIC INVERTER

DC-to-AC static inverter produces 115 volts at 60 Hz for 500 watts of "wall outlet" power from an aircraft's 28 VDC input. Smaller and lighter than traditional inverters, the MD50 has the same connector and footprint of legacy designs, plus overload and short-circuit protection up to 150 percent of the rated load. Supplies power for various cabin accessories, such as laptops, cell phones and iPods, Compact design. Remote On/Off feature, 500VA rated output power, 85-90% efficiency, Input voltage: 20-36 VDC, Input current: 20A at 28 VDC input, Output voltage: 115 VAC, Frequency: 60 Hz ± 1%, Single phase, true sine wave output, Overload and short-circuit protection up to 150% of rated load, Rated from -65 F°to +160°F (-55°C to +71°C), FAA TSO-C73 certified and RTCA DO-160F qualified, Designed and built in the USA., USA, Two year limited warranty

P/N 11-09613 ..... **$2,773.00**

TRUE BLUE POWER® DC/AC INVERTER

This classic DC to AC solid- state "peanut" inverter provides a reliable source of 26 volt, 400 Hz, AC power. Versatile, compact and lightweight, it is ideal for use with Stormscope bootstrap and multifunction display installations. Specifications: * Input: 28VDC @ 0.75 amp. (MD26-28) * 14VDC @ .150 amp. (MD26-14). * Output: 26 VAC,400 Hz, Single Phase, 10 volt-amperes

MD26-14V Inverter ..... P/N MD26-14 ..... **$449.00**
MD26-28V Inverter ..... P/N11-07062 ..... **$458.00**

MID-CONTINENT INSTRUMENTS MD420-1 EMERGENCY POWER SUPPLY

Simultaneously provides one primary power output and three lighting power outputs. Pitot/Static ports or optional electrical input provides ability to work in automatic mode without pilot intervention. Arms at beginning of flight. Activates instantly upon power loss. Recharges during flight. Turns off after flight. Utilizes sealed lead-acid cells for reliability and cold weather performance. Lighting outputs can power LED or incandescent lighting at 5, 14 or 28 VDC. Remote, mini-annunciation switch (with automatic dimming) controls test and manual operations. Quality Mil-Spec connectors included. Field replaceable battery module(s). Amp-hours of power at 18V: 2.5 Ah. Total system weight: 5.0 lbs. Designed and built in the USA. One year limited warranty. P/N 10-04770 ..... **$2,298.00**

SS-6 CHARGE CONTROLLER

Morningstar's superior series switching provides many advantages compared to shunt controllers. Series regulation reduces FET heating and lowers voltage stress on the power FET's. A series configuration also improves protection against lightning surges and reduces switching noise. The series design improves charging accuracy. In PWM, series switching becomes self-correcting for temperature and system voltage drops.

P/N 11-04618 ..... **$70.50**

LONESTAR FILTER 70 AMP

Lone Star Aviation's 70 amp filter attenuates EMI-RFI noise generated from alternator, generator systems, gear motors, blowers for a/c systems and other higher current noise sources. The 70 amp filter also can be used to filter the aircraft's avionics buss to filter RF, NAV, GPS, as well as other navigational equipment. The filter is FAA- PMA for certificated aircraft as well as for experimental aircraft. P/N 11-04849 ..... **$219.75**

LONESTAR FILTER 100 AMP

Lone Star Aviation's 100 amp filter (FEED THRU) (Fail Safe Design) attenuates both low and high frequency, (10hz to 30 mhz) of EMI-RFI noise generated from the aircraft's alternator systems to the aircraft's dc buss. This filter, (100 amp Fail Safe design) is used by OEM aircraft manufacturers to attenuate 100% of the on board noise before it penetrates the aircraft's dc buss. The filter is FAA- PMA pending for certificated aircraft but can be used on experimental aircraft. P/N 11-04850 ..... **$349.95**

LONESTAR THE ELIMINATOR

The Eliminator is a low pass double (LC) PI type filter designed to suppress both low and high frequency line noise. The filter may be connected at the source of the noise or on the input of the effected component.

P/N 11-08055 ..... **$148.95**

LONESTAR USB POWER CONVERTOR PLUG

The Lone Star Aviation USB 2 Amp Power Converter Plug (LS03-05021) is the updated model of the LS03-05020. It's the same small size but with even more power for onboard charging of iPads, iPhone, iPods, cell phones and most things that use USB power to charge. This model is recommended for iPad owners as it has enough power to charge during heavy use.

P/N 11-10454 ..... **$49.95**

LONESTAR 2 AMP POWER ADAPTER & USB KIT FOR IPAD

Power Adapter USB Socket. Just plug the USB socket into your Cigarette Lighter Power Adapter and get 5 volt USB power out. Perfect for charging cell phones, iPads, iPods, GPS, PDA, Laptop and many consumer electronic devices. This is a kit that comes with a FAA-TSO Approved Cigarette lighter power adapter and plug-in USB 5V converter.

12V AIRCRAFT: If your aircraft runs on 12V you will not need any extra equipment to operate 12V equipment with your Power Adpater, and it comes with a rubber cap marked as DC12V.

28V AIRCRAFT: Please note, the USB Plug is able to convert 28V input into 5V USB output without additional equipment. However, In order to power most 12 volt consumer electronic devices you will need a Converter to get 12V output. P/N 11-10394 ..... **$149.95**

LONESTAR GROUND LOOP FILTER

Designed to ELIMINATE onboard ground loop noise problems in an easy to use module. Plugs in between your portable device and your aircrafts audio system. Was designed with a low frequency isolation audio transformers that isolates normal audio from unbalanced AC noise interference. Incorporates RCA, 2.5mm and 3.5mm connectors that ensures compatibility with numerous consumer devices currently used in modern aircraft. Easy Plug and Play Installation, Approval Types: Form 337, Portable Device 1 year Limited Warranty Ultra small footprint Custom configurations Portable device

P/N 11-09493 ..... **$89.95**

LONE STAR VOLTAGE CONVERTERS

Lone Star Aviation's new 12V STEP-UP Converter is the smallest (3" x5" x 2"), most efficient (93-95%) and the most versatile STEP-UP aircraft converter in our industry today. RTCA/DO 160D tested to operate 28V NAC/COM radio equipment such as KX 155, KX 165, KY 196A, KY 196B, and Motorola VHF transceivers on 12V aircraft. Additional 28V electronic devices are HSI, cameras, audio panels, battery backup systems, etc. FAA Approved Under TSO-C71 Now Approved LS03-05002B-MS Features: * Ultra-Small size 2.5" x 4.5" x 2.0" * 93-95% Efficiency rating * Light Weight 275 grams / 0.606 lbs * Optional Connector: MS 3102 Receptacle * Potentiometer for output adjustments * Universal Mounting * LED Status Indicators * Operating Temp: -55C to +70C * Circuit Protection: OV, UV, SC, SP, RP, OC * Regulation Load: +/- .5% * Ripple Input/Output: 20-25mVp-p * Transient response time .5 ms * Easy Installation * FAA TSO-C71 Approved (Pending)

Step-up 14V DC to 28V DC Converter ..... P/N 11-02888 ..... **$449.95**
Step-down 24VDC to 12VDC Converter ..... P/N 11-03309 ..... **$249.95**
Connector Kit 5 Pin DB Style ..... P/N 11-06001 ..... **$49.95**

EL

VOLTAGE CONVERTERS - POWER PANELS

AMERI-KING AK550 POWER BOOSTER

The Ameri-King AK-550 is a FAA TSO'd approved Regulated DC to DC Power Booster Converter. It transforms an unregulated input from a 12 Vdc to a regulated +28 Vdc output to a bootstrap mode. It may be installed in a pressurized area, controlled or non-controlled temperature at altitudes up to 55,000 feet. It's locations include Electrical/ Avionic equipment rack, behind or beneath aircraft panel, or cabin pressure bulkhead. Installation is extremely simple. All necessary Accessories are provided, including mating MS connector plug and MS cable clamp.

AK-550-6C (6 amp) GA Applications ..... P/N 11-00064 ..... **$328.95**
AK-550-6 (6 amp) ..... P/N 11-09316 ..... **$595.00**
AK-550-12 (12 amp) ..... P/N 11-01453 ..... **$734.00**
AK-550-24 (24 amp) ..... P/N 11-01454 ..... **$1,392.00**

AMERI-KING DC / DC CONVERTER

The Ameri-King AK551 is a FAA TSO'd approved Regulated DC to DC Power Reducer Converter. It transforms an unregulated input from a 24Vdc battery to a regulated +13.8 Vdc output in a Reducer mode. Applications include critical communication navigation digital Equipment: AM/FM/CD receivers; it may be installed in pressurized or non pressurized area, controlled or noncontrolled temperature at altitude up to 55,000 feet. It's locations include Electrical/Avionic equipment rack, behind or beneath aircraft panel, or cabin pressure bulkhead. Mating connector plug is provided.

AK-551-9 (9 amp) ..... P/N 11-00066 ..... **$189.95**
AK-551-18 (18 amp) ..... P/N 11-01455 ..... **$316.95**
Ak-551-40M (40 amp) ..... P/N 11-01456 ..... **$950.00**

EL

DELUXE COCKPIT VOLTAGE CONVERTER

11-04330

DC-DC Converter, Device to reduce voltage from 28V to 12V. Allowing the user to operate 12V items in a 28/24V airplane. The device is fully electronic, no passive elements generating heat. It is fully protected and fused. A green LED indicates normal and abnormal conditions (overload). The unit is enclosed in a small precision machined aluminum box with integrated heatsink. Input is via a fused lighter plug and output is via a female light receptacle. Size: 1.3"x 1.3"x 2.3"; Weight: approx. 5.0 oz. .....3 AMP.28-12V DC-DC Converter ..... P/N 11-04330 ..... **$41.50**
10 AMP.28-12V DC-DC Converter ..... P/N 11-04331 ..... **$89.75**

Y-COUPLER – Heavy duty device that allows user to split the output of their cigarette lighter outlet in their airplane or to be used in conjunction with one of the above Cockpit Voltage Converters (running multiple items of one converter). This device is fuse protected (6.0A)
02YC Y-Coupler ..... P/N 11-00401 ..... **$11.75**

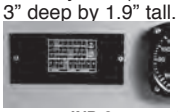
INVERTER – A device to produce Alternating Current out of a Direct Current Source. This device will generate 110V AC from a 28/24V DC Source (load limit is 150W continuous, 200W peak). Plug it in to your airplane lighter receptacle and have a household 110V AC outlet. This device is fuse and electronically protected against overload, over temperature, over and under voltage. Dims: 1.77"x 2.87"x 6.06"; Wt: 12.77 oz. 110I 28-110V Inverter ..... P/N 11-00402 ..... **$86.75**

EXP BUS PRODUCTS

EXP TRAY EX-110- he EXP BUS mounting tray is the ultimate in quick build time savings. The tray comes Pre-punched, and pre-assembled with rocker switches prewired to the PC board. All the builder needs to do is to cut a single rectangular hole in the panel, connect the battery, alternator, and all of the load wires to the proper terminals on the EXP BUS2 PC board mounted in the chassis. 14V DC systems (not recommended for 28V aircraft). Replaces all but one circuit breaker in most homebuilt aircraft, and includes the master switch, master relay, and the avionics master switch. The avionics output bus provides six protected circuits, and automatically shuts off when the starter is engaged. Three master bus outputs operate items such as panel lights, gyros and engine instruments. Switched outputs include the alternator field, Beacon/ Strobe output, nav light output, aux fuel pump output, two landing light outputs, and two spares. All outputs are overload protected, eliminating the need for fuses or circuit breakers, and saving the labor of installing and wiring them up. P/N 11-00430 ..... **$418.00**

EXP-2V
P/N 11-00431

EXP 2V - he Expbus II is a lifesaver when wiring up your homebuilt project. The EXPBUS II is a complete electrical system on a special high current, printed circuit board. 14V DC systems (not recommended for 28V aircraft) For a small additional charge, we can configure your board with any size (1 to 11 amps) breakers in any position. Size: 7.8" long by 3" deep by 1.9" tall. Weight 0.8 lbs. P/N 11-00431 ..... **$299.00**



IND-2
P/N 11-00432

IND 2 - Annunciators for each solid state breaker on the EXP BUS * Over and undervoltage warning lights * Ammeter display * Instrument light dimmer circuit * Single ribbon cable installation to EXP Bus The Indicator module is an accessory for the EXP BUS DC LOAD CENTER. This optional accessory provides several enhancements to the basic load center, all mounted in a small panel mount module, 4.6 inches long, and 2 inches wide. The module extends 2 inches in depth, behind the panel. The module provides an annunciator output for each fused output on the LOAD CENTER, which illuminates if the circuit is tripped. It also provides OVER and UNDER VOLTAGE annunciators, an AMP-METER indicator, and a light dimmer circuit for the instrument lights.
P/N 11-00432 ..... **$134.95**

BRKT 2 - Mounting brackets to simplify mounting the PC board in the aircraft. Put things where you want them to be. Free Shipping on this item.
P/N 11-00433 ..... **$21.95**

EXP 110 Tray unlit x/ Battery Back up . P/N 11-08430 ..... **$469.95**

HIGH/LOW VOLTAGE WARNING INDICATOR

An instrument panel mounted warning light which provides an indication of abnormal buss voltage. A flashing light indicates a buss voltage greater than 15.5VDC. A steady light indicates a buss voltage below 12.5 volts DC. The weight of the device is 4.5 oz. and operating voltage is 9 to 20 volts DC. Operating current exclusive of lamp load is 0.1 amps. Lamp load: .02 amps maximum.
P/N 07-06830..... **$89.75**

KEY WEST REGULATOR

Advanced regulator/rectifier circuit provides steady 13.8 volt output regardless of load. Maximum output 220 watts, 16 amps. 10v signal pulse output for digital or MaxPac® tachs. Accepts AC input from 15 to 100 volts. Can be used with AC strobe. **Features**: * Extremely clean filtered DC output * Electronics designed to deliver 16 amps producing 220 watts * Efficiency: No "consumer" or "dummy" load required for proper operation * A beautiful and rugged lightweight package weighs just 16 ounces and is 3.5 x 2.5 x 1 inch * Protection from the environment: complete epoxy encapsulation to insure all-season operation * Ease of installation: crimp type ring terminals and wiring schematics provided with every unit
P/N 11-03168 ..... **$57.75**

SMOOTHIE BRICKWALL NOISE FILTER

• Powers radios, intercoms, music players, and all digital gear • Eliminates all the electrical noise from your system • Provides fully-regulated power at your choice of voltage (adjustable) • Protects gear from all forms of power spikes, noise and over-voltage • Prevents in-flight problems including flaky operation and failures • Replaces most outboard power adaptors from other manufacturers • May be used in multi-unit installations

Specs:• Voltage out - 9.6-15.3V (adjustable, regulated within 1%) • Voltage in - 12-16V • Current out - 1.0A continuous, 3.0A intermittent • Size - 3.6 x 2.6 x 1.1 inches • Weight - 4.4 oz

****Note: Smoothie is a sophisticated noise filter and secondary voltage regulator - it does not replace the primary regulator used to power mechanical systems and charge the aircraft battery.***
P/N 11-05792 ..... **$148.50**

POWER BUSS 2075

The Power Buss 2075 is an electronic device designed to control and monitor the electrical circuits in an aircraft. The device employs solid state PTC current limiting fuse devices that automatically remove power from a circuit if it becomes overloaded. Just like conventional circuit breakers, a tripped circuit can be reset by turning off the device for a few seconds, then turning it back on. If a circuit trips due to overload, the pilot will instantly hear a distinctive voice message in his headset, and through the built in speaker. The voice warning will continue until the pilot pushes the panel mounted switch, with built in light, stopping the voice and turning on the built in red light. This provides a visual indication of the tripped circuit. The red light remains illuminated as long as the fault exists. The pilot can check the system at any time by pushing the switch. This performs a self test of the system. If any circuits have tripped, the pilot will hear the voice messages indicating what circuit has tripped. If no circuits are tripped, the pilot will hear the voice message "TEST OK". Connections to the power buss are made by using quick connect terminals. The power buss can be mounted anywhere behind the panel. the combination switch/light should be mounted in the panel, within the pilots normal scan. A separate buss is provided for the avionics. The avionics buss can be turned off whenever the engine starter is engaged. A separate master switch mounted close to the battery is required, as well as circuit breakers for the generator and devices drawing more than 11 amps. Not all circuits need to be used. The Power Buss is designed for 12volt systems only. Maximum current on the board is 30 amps. Maximum current on any one circuit is 11 amps. The audio output is designed to connect to an unswitched input in an audio panel or a radio. Note: This system is not FAA approved. It is intended for installation in Experimental category aircraft only.

The Power Buss is available in three versions:

2075-1A: Designed specifically for use on amphibian aircrafts.
P/N 10-03716.....**$450.95**

2075-1L: Designed specifically for use in both fixed and retractable gear land aircrafts that are powered by Rotax engines. It incorporates PTC fuses and voice messages for the most common circuits used in these aircrafts. P/N 11-10503.....**$515.00**

2075-1C: Designed specifically for use in both fixed and retractable gear land aircrafts that are powered by either Lycoming or Continental aircraft engines. It incorporates PTC fuses and voice messages for the most common circuits used in these aircrafts.
P/N 11-10504.....**$515.00**

ELECTRONIC FLAP ACTUATOR / INDICATOR

The Electronic Flap Actuator (2071/2072) is an electronic module designed to automatically control an electrical flap actuator and provide visual readout of 3 or 4 flap positions. The device can be used with any electrical actuator providing the operating current is less than 8 amps at 12 volts. A 5K or 10K resistive sensor is required to provide a voltage readout of the actuator position. The control unit incorporates pushbutton switches with built in LED lights. The system can be easily calibrated to your flap system. Once calibrated, pushing any of the switches will activate the actuator and drive the flaps to the correct pre-defined position. When the flaps are at the correct position, the actuator will stop, and the LED in the correct switch will illuminate indicating that the flaps are in the correct position. Note: This system is not FAA approved. It is intended for installation in Experimental category aircraft only. The Electronic Flap Actuator is available with 3 flap position switches (full up, takeoff position, and full down) or 4 flap position switches (full up, 20 degrees, 40 degrees, and full down).

3 switch..... P/N 11-10502.....**$198.75**
4 switch..... P/N 11-07728.....**$198.75**

ROTAX ELECTRICAL LOW VOLTAGE CUTOUT

LVC 2088 should be used with every Rotax Model 914 aircraft engine to help insure that electrical power is available to power the engine fuel pump under all conditions. Isolates the internal engine alternator from the aircraft electrical system if a low voltage condition develops in the electrical system. This helps insure that the fuel pump continues to operate. The Rotax Model 914 aircraft engine requires an electrically powered fuel pump for operation. The 2088 LVC satisfies the 2 independent power source requirements for the fuel pumps shown in the Rotax Model 914 installation manual. If a low voltage condition develops in the electrical system for any reason, the LVC instantly and automatically disconnects the output of the internal alternator from the electrical buss to assure power is available for the fuel pump. If the low voltage condition is corrected, the LVC will automatically reconnect the alternator. 2088 LVC is enclosed in a water resistant metal box. It should be mounted close to the engine using the tabs on the box.. The unit provides a convenient location for attaching the required 22000uf capacitor, the wiring to the regulator "C" terminal and one of the electrical fuel pumps. The fuel pump wiring is internally fused, so no external fuse is required. An output for an optional warning light is provided. P/N 11-10501 .....**$194.95**

RELAY DECK

Two axis relay deck to be used for both elevator and aileron servos. P/N 11-10512 .....**$79.00**

VOLT™ 12V USB CHARGER/ ADAPTOR

The Volt™ USB adaptor conveniently charges USB electronics through your car's 12-volt outlet ("cigarette lighter"). Features include a red LED charge indicator on charger top and spring loaded tip. Spring loaded tip fits most outlets.

Note: Colors are assorted. Color possibilities include Orange, Black, Fuscia, Green, Red, Blue, Red, or White.

Specifications: Power conversion: 12V Automobile Charger to USB. 5.0v output. Size: 2.2" x 1". Weight: .6 oz. CE certified
P/N 11-10518 .....**$8.95**

JOLT™/ VOLT™ USB COMBO PACK

The Jolt™ / Volt™ USB Combo pack includes the Jolt™ Rechargeable USB Mini Light and the Volt™ 12V USB Charger/Adaptor.

Jolt™ USB Mini Light: Recharges in any USB output device such as PCs or USB Car adaptors. Glows red when charging. Glows green when fully charged. Rubberized, soft grip case. Steady on and flashing modes. Color: Black

Volt™ 12V USB Charger/Adaptor: 5.0v output. Red LED charge indicator on charger top Conveniently charges USB electronics through your car's 12-volt outlet (cigarette lighter). Spring loaded tip fits most outlets. Size HxD: 2.2"x 1". Weighs just .6 oz.. CE certified. Color: Black.
P/N 11-10517 .....**$17.95**

TOSTEN STICK GRIPS

Wired with 22 gauge wiring. 7/16 stainless steel shaft with custom machine bushings to fit any diameter shaft. Comfortable grip. Made with lightweight glass-filled Wellman nylon. Rotates easily to any position. Made in the USA. For use in Experimental Aircraft Only.

Model	Functions	Part No..	Price
CS-2	Two function control stick Index trigger button Additional button underneath trigger Ambidextrous design	11-10508	**$99.00**
CS-4	Four function control stick Two trigger buttons Two face buttons Ambidextrous design	11-10509	**$119.00**
CS-6	Eight function control stick Four-way hat switch Trigger button and index button Ambidextrous design	11-10510	**$129.00**
CS-8	Eight function control stick Four-way hat switch Two face buttons Trigger button and index button Ambidextrous design	11-10511	**$139.00**

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STICK GRIPS

INFINITY MILITARY STICK GRIPS

P/N 11-00031

Infinity Aerospace designed these grips with safety, comfort, functionality, durability and aesthetics in mind. The ergonomic design is contoured to the shape of your fingers and includes a fatigue reducing hand rest at the base. The non-glare matte black finish is abrasion and impact resistant for long life, yet easily removable, maintainable & repairable. Matching customized right & left hand models available. All the major cockpit functions can be at your finger tips. Thousands have already been installed in over 50 models of aircraft. Features: • 6" long • fits stick OD's from 5/8" to 1-1/4" • Includes 3 ft of shielded cable w/17 conductors. Color coded pre-wiring & installation schematic • Made from lightweight high impact, durable high temp. tolerant flame retardant & flash resistant injected ABS material • Wt: 12 oz. • Easy removal for maintenance, customizing or repair.

Description	Part No.	Price
Military Stick Grip A/C with Flap/Brake (Right)	11-00031	**$174.00**
Military Stick Grip A/C with Flap/Brake (Left)	11-00032	**$174.00**
Military Stick Grip A/C without Flap/Brake (R)	11-00033	**$175.95**
Military Stick Grip A/C without Flap/Brake (L)	11-00034	**$175.95**
Military Stick Grip with Spoilers (Right)	11-00036	**$175.95**
Military Stick Grip with Spoilers (Left)	11-00667	**$175.95**
Replacement Switches for extra customizing:		
Momentary push-button switch	11-00218	**$11.75**
ON/OFF (8636) SPDT push-button	11-00219	**$11.75**
Toggle [spring loaded-to-center – ON/OFF/ON]	11-00220	**$11.75**
Toggle [ON/Center OFF/Momentary ON–ON/OFF/ON]	11-00221	**$9.95**
Spacers/Adapters:		
1″ OD x 3/4″ ID (i.e.-for Lancairs & canard tubes)	11-00222	**$22.85**
1″ OD x 7/8″ ID (i.e.-for Glasairs & RV co-pilot tubes)	11-00223	**$16.90**
Infinity Switch with China Hat (Right)	11-04757	**$17.80**

TEAK WOOD CUSTOM PISTOL GRIPS

Teak wood is beautiful and absorbs sweat, preventing any sticky slime build-up. The grips come in standard, master and ultra styles in left & right hand. The standard grip comes with a push button on top with special dust-proof cover. Normally used for a push-to-talk button, open switch and good for 250,000 cycles min. The master grip has a larger head to accommodate a 4-way trim switch & push-to-talk button. The trim switch is the same one used with the M.A.C. systems. The ultra grip has a larger surface to accommodate the 4-way trim and autopilot and/or air brake with the push-to-talk located near the tip of the index finger. The ultra can handle a total of four switches, when using the air brake, in its head. Configurations can also be custom designed. All grips come with buttons and 3/4" or 1" standard bore. Larger bores available.

RUBBER STICK GRIPS

Rubberized urethane with granular like non-slip surface.

7/8" I.D. Stick Grip..... P/N 11-00100 ..... **$12.95 ea**
1" I.D. Stick Grip..... P/N 11-00101 ..... **$12.95 ea**
1-1/8" I.D. Stick Grip ..... P/N 11-00102 ..... **$12.95 ea**

G101 *G205* *G207* *G301*

RAC STICK GRIPS

Ray Allen Company G1 and G2 series stick grips use modern, flush fitting push-button switches to control one or two axis electric trim. When one grip is used, these switches can be wired directly to RAC trim servos. This eliminates the need to wire relays in your trim system. However, if two grips are used, you will need either relays or a switch to transfer the control of trims from one grip to the other. The grip itself is made of semi-soft UV and oil resistant foam. The upper switch housing is made of nylon with a lightly textured finish.

The ***G101*** grip (4.75" height) features a momentary contact switch on top that can be used as a PTT button. (Old MAC Model G1)
P/N 11-09930 ..... **$36.95**

The ***G205*** grip (5.25" height) has 5 functions which include a PTT and a 4 SPDT,momentary contact switches. These switches are rated at 5 amps and can be used for other purposes. (Old MAC Model G5)
P/N 11-09920 ..... **$109.85**

The ***G207*** grip (5.4"height) has to additional momentary contact push-button switches mounted on top that can be used for controlling functions on avionics, auto-pilot, etc. (Old MAC Model G7)
P/N 11-09925 ..... **$148.95**

The **G301** stick grip feature four individual SPDT momentary contact switches to control one or two axis electric trim. The switches are triggered via a traditonal 4-way "hat" type activator. 6.5" (165 mm) tall.
P/N 11-08644 ..... **$64.50**

The ***G303*** stick grip has two trim switches, a faceplate slotted vertically for 1-axis trim and a PTT switch. P/N 11-02538 ..... **$114.50**

The **G305** stick grip has 4 trim switches, a faceplate slotted vertically and horizontall for 2-axis trim and PTT switch. P/N 11-02539 ..... **$139.75**

The ***G307*** stick grip has 4 trim switches, a faceplate slotted vertically and horizontall for 2-axis trim and PTT switch. P/N 11-02540 ..... **$157.75**

Ray Allen stick grips are designed to fit any stick size up to 1" in diameter with the use of spacers. Two nylon spacer are included with each grip enabling easy installation on 3/4", 7/8" and 1" sticks. All Ray Allen grips come as a complete kit and include pre-cut and stripped, Teflon insulated wire. A die-cut label sheet is also supplied in the ***G205*** and ***G207*** grips

#2 *#4*

FLIGHT GRIPS

The control stick grips from Flight Grip are modular in design to allow maximum flexibility when specifying switches to control the various electrical items on your aircraft and for ease of installation and assembly. Two "off-the-shelf" configurations are listed below. The Model #2 grip provides for control of two functions using the rocker trigger switch. The trigger switch features momentary contact either side of center, with spring return to center OFF action. The Model #4 grip is the same as the Model #2, but adds two push-button switches for thumb activation in the top cap of the grip. The switch mounted closest to the thumb rest is a latching type (push on – push off), and the remaining switch is a momentary type. Left hand grips are available with all the same switch options. Grips are designed to fit 1-1/8" OD control sticks and adapter bushings are available to adapt to 1", 7/8" and ¾" OD control sticks.

#2 (Right Hand-2 Functions) ..... P/N 11-02000 ..... **$126.95**
#4 (Right Hand-4 Functions) ..... P/N 11-02050 ..... **$149.95**
#2L (Left Hand-2 Functions) ..... P/N 11-06753 ..... **$118.95**
#4L (Left Hand-4 Functions) ..... P/N 11-06754 ..... **$164.95**
Adapter Bushing 1" ..... P/N 11-06755 ..... **$17.50**
Adapter Bushing 7/8" ..... P/N 11-06756 ..... **$18.65**
Adapter Bushing 3/4" ..... P/N 11-06757 ..... **$18.65**

HOMEBUILT CONTROL STICKS

These homebuilt control grips are made of high-strength urethane plastic, finish painted in matte black and come complete with all necessary hardware (AN screw, nut, washers). Available unbored or bored to accept 7/8", 1", or 1-1/8" diameter tubing.

All of these grips (except unbored) are available w/PTT Switch at $74.50 Add -1 to end of part number for PTT.

Grip	Bore	Part No.	Price
Right	Unbored	11-01010	**$71.50**
Right	7/8" Bore	11-01015	**$72.25**
Right	1" Bore	11-01020	**$71.50**
Right	1-1/8" Bore	11-01025	**$71.50**
Left	Unbored	11-01010-L	**$63.25**
Left	7/8" Bore	11-01015-L	**$71.65**
Left	1" Bore	11-01020-L	**$69.50**
Left	1-1/8" Bore	11-01025-L	**$63.25**
Neutral	Unbored	11-02010	**$72.00**
Neutral	7/8" Bore	11-02015	**$71.85**
Neutral	1" Bore	11-02016	**$72.00**
Neutral	1-1/8" Bore	11-02017	**$71.50**

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RAC TRIM SYSTEMS

RAC ELECTRIC TRIM SERVOS

Ray Allen trim systems were designed specifically for experimental aircraft. Ray Allen servos are small enough to fit in individual control surfaces or can be used with lighweight springs acting directly on the control system. Ray Allen trim systems also come with RS2 rocker switches and RP3 LED indicators. All Ray Allen indicators operate off of feedback sensors located inside the servo. These feedback sensors are purposefully isolated from the power supply to the servo motor to guard against possible electronic failure. Ray Allen trim systems also come with a RC8-7 clevis/pushrod kit. Ray Allen has three different T2 and T3 servos available: • T2-7A Trim System has .7" (17mm) travel • T2-10A Trim System has 1.0" (26mm) travel • T3-12A Trim System has 1.2" (31 mm) travel

In addition, we also have available the T4-5 Trim System which has .5 inch (13mm) travel. This servo does not have a compatible indicator.

T2-10A

T4-5

****T2-7A = exact replacement for MAC 4A servo.*T2-10A = exact replacement for MAC 6A servo. *T3-12A = exact replacement for MAC 8A servo. *T4-5 is exact replacement for the Mac S9 servo.***

T2/T3 SERVO SPECIFICATIONS

Operating Voltage	12-14 VDC
No Load Current	150 ma
Weight	4oz. (113 g)
Max Thrust	40 lbs. (18 kg)
Max Operating Thrust	20 lbs. (0.9 kg)
Output Shaft Movemt.(T2-7A*)	0.7" (17mm)
Output Shaft Movemt.(T2-10A*)	1" (26mm)
Output Shaft Movemt.(T3-12A*)	1.2" (31mm)
Output Travel Time (T2-7A)	10 seconds
Output Travel Time (T2-10A)	16 seconds
Output Travel Time (T3-12A)	19 seconds

T4-5 SERVO SPECIFICATIONS

Operating Voltage	12-14 VDC
No Load Current	75 ma
Weight	2.5 oz. (71 g)
Max Thrust	30 lbs. (13.5 kg)
Output Shaft Movement	0.5" (13mm)
Output Travel Time	15 seconds
Length	2.25" (57mm)
Width	2.25" (57mm)
Height	0.77" (20mm)

RAC SERVO SYSTEMS

RAC Servo System	Part Number	Output Shaft Movement	Output Shaft Travel Time	Price ea.
T2-7A	11-11505	0.7 in.	10 sec.	**$298.00**
T2-10A	11-11605	1.0 in.	16 sec.	**$298.00**
T3-12A	11-11615	1.2 in.	19 sec.	**$319.95**
T4-5	11-11620	0.5 in.	15 sec.	**$298.95**

SERVOS ONLY

RAC Servo System	Part Number	Output Shaft Movement	Output Shaft Travel Time	Price ea.
T2-7A	11-02048	0.7 in.	10 sec.	**$154.75**
T2-10A	11-02058	1.0 in.	16 sec.	**$158.50**
T3-12A	11-02065	1.2 in.	19 sec.	**$178.50**
T4-5	11-02066	0.5 in.	15 sec.	**$264.50**

****T2-7A = exact replacement for MAC 4A servo.** ***T2-10A = exact replacement for MAC 6A servo.***
****T3-12A = exact replacement for MAC 8A servo.** ***T4-5 is exact replacement for the Mac S9 servo.***

RAC SWITCHES

RS2 ROCKER SWITCH - Very positive snap action in 2 directions and returns to a center off position. It was designed specifically for Ray Allen trim systems. It is wired to connect both power leads to ground when the rocker is released. This eliminates motor coasting & allows very precise trimming. The RS2 switch is rated at 1amp. The faceplate measures 1.75" (44mm) x 1.0" (25mm) x 1.47" (37mm) deep. Included with trim systems or can be purchase separately. P/N 11-02035 ..... **$27.95**

ROS-4 FOUR-WAY SWITCH - This compact multi-action switch can be installed inside your control stick grip to activate both elevator and aileron trims. ROS-4 has a SPST action so it must be used in conjunction with a relay deck to operate Ray Allen servos. Rated at 1 amp. P/N 11-02075 ..... **$79.50**

RANS ELEVATOR TRIM SYSTEM

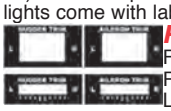
Rans Elevator Trim System features a trim tab actuated by a push-pull wire. By turning the trim wheel, the wire moves the trim tab. The system has the look and feel of a standard aircraft trim wheel. The trim tab is constructed of sheet aluminum and can be adapted to the trailing edge of many homebuilts and ultralights. The trim tab is sized for both low & high speed aircraft and since it is mechanical, requires no battery or power source other than the pilot's hands.

Trim Sys. less Tab (no panel or flap lever mount) .. P/N 11-09955 ... **$249.95**
Trim Sys. with Lower Panel ..... P/N 11-09960 ... **$293.95**
Trim Sys. Flap Mount ..... P/N 11-09965 ... **$282.95**
Trim Sys. without Wheel ..... P/N 11-09970 ... **$102.95**

RAC INDICATORS/SENSORS/ACCESSORIES

RP3 LED POSITION INDICATOR – This LED meter is designed to be installed in the cockpit and give an indication of the servo output shaft position. The ten LEDs are the brightest available for superior visibility in sunlight, but can be dimmed for night flight. It can be installed horizontally or vertically. 3 wires as small as 28 gage connect the indicator directly to a Ray Allen servo (or a position sensor). The face plate measures 1.75" x 0.75"x 1.1"deep. The RP3 is the standard position indicator included in R.A. trim systems. Labels are not included. See labels below. P/N 11-02020 ..... **$96.75**

GWL-1 GEAR WARNING LIGHTS – This 6 light indicator is designed to be installed in the cockpit and give an indication of the landing gear position. The lights are high intensity LEDs and are inset to probide maximum visibility in bright sunny conditions. The top lights are yellow and the bottom are green. Six 26-gage wires connect the lights directly to the gear safe/unsafe switches (not included). The faceplate measures 1.35"x 1.75" x 1.5"deep. Gear warning lights come with labels pre-installed. P/N 11-01575 ..... **$105.95**



POSITION INDICATOR/ROCKER SWITCH LABELS - Finish off your panel with these high quality labels. Rocker switches and needle indicators require a LARGE label, LED indicators use a SMALL label. Elev 1 shows trim down at top of label.

Rudder - Large	P/N 11-01819	**$0.55**
Rudder - Small	P/N 11-01820	**$0.55**
Aileron - Large	P/N 11-01816	**$0.55**
Aileron - Small	P/N 11-01815	**$0.65**
Elev 1 - Large	P/N 11-01822	**$0.55**
Elev 1 - Small	P/N 11-01821	**$0.55**
Wing Flap - Large	P/N 11-01818	**$0.55**
Wing Flap - Small	P/N 11-01817	**$0.55**
Cowl Flap - Large	P/N 11-01576	**$0.55**
Cowl Flap - Small	P/N 11-01814	**$0.55**

POS-12 POSITION SENSOR – When combined with a Ray Allen indicator, this sensor can be used to measure the position of wing flaps, cowl flaps, or many other mechanisms.Small enough to be installed anywhere, size: 2.7"l x 0.8"w x 0.5"h. (note: T2 & T3 servos have their own built-in sensors) 1.2" travel. P/N 11-01321 ..... **$36.50**

POS-5 POSITION SENSOR - Same as POS-12 Sensor. Measuring only 2.7"(69 mm) x .5"(13 mm) x .8"(20 mm) , it's small enough to be installed almost anywhere. 5"(13 mm) travel. P/N 11-08092 ..... **$37.90**

REL-2 SERVO RELAY DECK – This device converts the momentary contact action of the ROS-4 4-way switch, or any SPST pushbutton switch, into a DPDT action that is necessary to operate Ray Allen servos. You will need one of these relay decks for each servo in your installation. Measures 1.6" (40 mm) x 1.8" (49 mm) x 1.1" (28 mm).
P/N 11-05312 ..... **$47.60**

SPD-1 SERVO SPEED CONTROL – Enables you to slow the speed of your trim servo to suit your individual installation. Size: 2"x 0.5"x 0.8". P/N 11-02078 ..... **$48.85**

REG-1 12V REGULATOR – Enable you to operate servos and indicators in aircraft having 28V electrical systems. Converts all input voltages up to 35V to 12V. Capable of supplying 1 amp of current allowing you to operate 2 trim systems simultaneously. Size: 2"x 0.5"x 0.8". P/N 11-02036 ..... **$48.25**

RAY ALLEN BEZEL ONLY WITH HARDWARE- -They make an excellent addition to any instrument panel. The bezel was designed to integrate a professional appearing label near the switch.The bezel measures 1.25" (32 mm) x 1.35" (34 mm).
P/N 11-08642 ..... **$11.95**

RC8-7 CLEVIS/PUSHROD KIT – RC8-7 Clevis/Pushrod Kit - 11-02040. Contains two 8/32 threaded clevis forks, one 7" stainless steel pushrod and clevis pin hardware. NOTE: This clevis and pushrod kit is not compatible with Ray Allen POS series position sensors.

RC8-7 Kit	P/N 11-02040	**$27.95**
T4 Pushrod Kit	P/N 11-02042	**$15.35**

10/32 THREADS CLEVIS WITH HARDWARE - Contains 10/32 threaded clevis forks, stainless steel pushrod and clevis pin hardware. Included with Ray Allen trim systems, or can be purchased separately. Note: This clevis and pushrod kit is not compatible with Ray Allen POS series position sensors. P/N 11-08643 ..... **$12.90**

WC2 5-WIRE TEFLON® INSTALLATION CABLE – This durable, flexible wire cable is highly recommended for Ray Allen installations. 5 separate color coded, 26-gage, 19-strand, silver-plated, FEP Teflon® insulated wires inside a tough, all Teflon® sheathing.

20 ft. roll	P/N 11-01577	**$27.75**
25 ft. roll	P/N 11-01578	**$34.50**
50 ft. roll	P/N 11-01579	**$68.35**

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RAC BEZEL SWITCHES

RAC - RBS SERIES BEZEL SWITCHES

An excellent addition to any instrument panel. The bezel measures 1.25"w x 1.35"h. A die-cut label sheet is purchased separately. The switches are SPST. They have screw terminals and are rated at 15 amps. Specify Toggle (RBS-T11) or Pushbutton (RBS-P11) when ordering. The Ray Allen Gear Bezel Switch (RBS-GS) is the same custom bezel as above combined with SPDT retract gear toggle switch. The switch is rated at 15 amps and has a pull to unlock feature preventing accidental engagement. The Gear Bezel Switch comes with the labels pre-installed.

RAC Part No.	Description	Part No.	Price
RBS-T11	Bezel Switch - Toggle	11-01364	**$19.90**
RBS-P11	Bezel Switch - Push Button	11-01365	**$19.90**
RBS-GS	Bezel Gear Switch	11-01366	**$73.50**
RBS-L1	Bezel Switch label sheet	11-01367	**$4.95**

SINGLE AXIS TRIM RELAY BOARD

These Trim Relay Boards allow control of an aircraft's trim motors from the typical switches found in most stick grips. As the switches in the grips are too small to handle the motor loads and usually do not have the required number of poles, the 'TRB' offers a simple, elegant solution that is easy to wire and understand. The boards have a per axis rating of 10A at 12 volts, (24V units are also available). 4.00"L x 2.50"W x 1.00"H. P/N 11-09849 ..... **$49.95**

3 AXIS TRIM RELAY BOARD

3 Axis trim relay and buffer board has been designed to allow easy control of trim motors from small grip mounted or remote switches. Three Axis control is possible with each of the circuits being configured in a double throw format. "Off" circuit conditions apply ground to both motor wires providing an effective braking actions. Board will work with single or winding DC motors. Other remote controls are possible such as auto pilot disconnect or recognition lights and more. Relays are continuous DC rated at 10 Amps. Dimensions are 5.6"L x 4"W x 1.0"H

P/N 11-02043 ..... **$134.95**

BENDIX STARTING VIBRATORS

Part Number	Description	Used with Ignition System	Price
10-176487-121	12V DC	S-200, S-600, S-700	**$397.95**
10-357487-241	24V DC	S-200, S-600, S-700	**$649.00**
10-176487-122	12V DC	S-1200	**$389.00**
10-357487-242	24V DC	S-1200	**$600.00**
10-176485-121	12V DC W/ Relay	S-200, S-600, S-700	**$933.00**
10-176485-241	24V DC W/ Relay	S-200, S-600, S-700	**$1,453.00**
10-176485-242	24V DC W/ Relay	S-1200	**$1,124.00**

EL

TRIM SWITCHES

TRIM SWITCH CA3112 - The CA3112 is identical to the S-Tec 3112 switch but precision machined from aircraft aluminum and will not crack or break like the OEM version.

P/N 11-07354..... **$279.50**

TRIM SWITCH CA100-1 - The CA100-1 switch is used on a certified aircraft. It uses MIL-SPEC switches (SPST) and precision machined from aircraft aluminum and will not crack or break like cheap plastic switches. It has a nice tactile click action. P/N 11-07355..... **$359.00**

GEAR WARNING LIGHTS

This 6 light indicator is designed to be installed in the cockpit and give an indication of the landing gear position. The lights are high intensity LED's and are inset to provide maximum visibility in bright sunny conditions.

The three top lights are YELLOW and the three bottom lights are GREEN. Six wires as small as 26 gage connect the lights directly to the gear safe/unsafe switches (not included).

The faceplate measures 1.35"(34 mm) X 1.75"(45 mm) and it is 1.5"(38 mm) in depth. Ray Allen gear warning lights come with label pre-installed. GWL-1 PN 11-01575

This indicator is also available with BLUE top lights for SEAPLANE useage. GWL-1B PN 11-07963

Description	Part No.	Price
Gear Warning Lights GWL-1	11-01575	**$105.95**
Gear Warning Lights GWL-1B	11-07963	**$165.00**

TWO PLACE TRIM MIXER

The Two Place Trim Mixer is solid-state equipment designed to replace the traditional mechanical relays earlier used for two pilots to operate the aircraft's trim system while adding the advantages of logic functions found in electronic equipment.

The mixer incorporates MOSFET (Metal Oxide Silicon Field Effect Transistor) transistors for switching the high current with no moving parts and no electrical arc to prevent fuel fumes ignition.

The trim system is formed of the following elements:

A mixer unit and the following which should be provided by the user: -Two "Chinese Hat" switches on both front and rear sticks (or left and right sticks). -Two DC trim motors (such as the MAC Servo with or without connections to position indicator) -Harnesses -An SPST switch (option). P/N 11-02876 ..... **$193.00**

AIRCRAFT SPRUCE WEST CORONA, CA • (877) 4-SPRUCE **AIRCRAFT SPRUCE EAST** PEACHTREE CITY, GA • (877) 477-7823 *Prices Subject to Change Without Notice*

SMARTSTART MODULE

An electronic control module that controls the operation of the engine starter system. Improves the safety and security of push-button or key-switch starting systems by providing an interlocked and time limited operation of the engine starter. SmartStart controls standard aviation starter contactors and provides simple integration of control stick switch or panel mounted start switches. SmartStart includes inputs for interlock and arming switches and provides a 1 minute timer for activating the starter contactor and includes an armed LED that indicates when the engine may be started. Helps avoid unintentional activation of the engine starting system. Available with an optional airspeed switch that ensures in flight restarting of the engine may be accomplished at anytime without the need to press the arming button. Hidden arming switch provides improved anti-theft protection. Door/canopy interlock provides improved safety. Compatible with standard keyed mag/starter switch.

Description	Part No.	Price
Smartstart Module	11-08499	$67.50
SmartStart Module Kit - Includes: module, wiring harness, and airspeed switch	11-08502	$148.50
Accessories		
Description	**Part No.**	**Price**
Smartstart Wiring Harness	11-08501	$40.50
Airspeed Switch 40 Knot for 2 speed function	11-08665	$44.10

INTELLIGENT POWER STABILIZER

Provides aircraft bus voltage surge and sag protection for the connected electrical equipment. The IPS system allows electronic equipment such as engine monitors, EFIS and GPS's to be operational before and during engine starting. Used with aircraft engine monitors it ensures the pilot can monitor critical engine operating parameters such as oil pressure during the engine starting process. Ensures the connected electronic equipment is provided with a stabilized source of power even when the aircraft battery voltage drops significantly. Additionally provides surge protection by actively clamping the regulated output voltage. Features a panel mounted low voltage warning light which may be used to provide a pilot warning when the aircraft bus voltage falls below 12 volts.

4 amp ..... P/N 11-08495 ..... **$265.50**
8 amp ..... P/N 11-08496 ..... **$328.50**

INTELLIGENT POWER STABILIZER 24 VOLTS, 5 AMP

The Intelligent Power Stabilizer, IPS, is an electronic power converter for critical electrical equipment found in general aviation aircraft. The IPS system provides aircraft bus voltage surge and sag protection for the connected electrical equipment. The IPS system will operate over an input voltage range from 10 volts to 30 volts and provides a regulated output voltage of 24 volts. The IPS system allows electronic equipment such as engine monitors, EFIS and GPS's and radios to be operational before and during engine starting. This important feature allows the pilot to load flight plan data into the aircraft GPS prior to starting the engine, thereby saving fuel and operating expense. When used with aircraft engine monitors it ensures the pilot can monitor critical engine operating parameters such as oil pressure during the engine starting process. P/N 11-09712 ..... **$292.50**

INTELLIGENT LIGHTING CONTROLLER

Designed specifically to operate the lighting circuits used in homebuilt aircraft. Provides control of up to 4 lighting circuits plus dimmable control of up to 3 channels of instrument and cabin lights. The 4 lighting circuits may be used to control landing lights, taxi lights, strobe lights and navigation lights. Each channel is independently powered and controlled. Provides a wig-wag function between two of the lighting circuits. Each dimmable channel may include incandescent or LED lighting up to 1 amp. **Specifications**: • Input Voltage: 10-30 volts DC • Output Voltage: 4- Switched circuit rated at 10 amps each, 3 - Dimmed circuits rated 1 amp each • Dimmers: True DC:DC converter with full power filtering and regulated 2-12 volt outputs • Inputs: All switch inputs are low current closures to +voltage • Wig-Wag: 150 cycles/minute between channel 1&2; 1 minute warm-up time • Wiring: Standard 15-pin D-sub connector (male on controller) for connection to switching panel. • Enclosure: Overall dimensions 4.7" x 3.7" x 1.2"; Cast aluminum • Weight: 1.0 lb P/N 11-08497 ..... **$346.50**

UNIVERSAL SWITCH-SPDT AIRSPEED KIT

Universal switch airspeed kit (USW-1) includes an ASW-1 airspeed switch and a Universal Switch-SPDT controller. This combination of components allows for the switching of electrical loads up to 10 amps and up to 30 volts based on aircraft speed. The airspeed set point is factory calibrated to 100 knots, however, it may be field adjusted to switch at any speed between 55 and140 knots. Provides both a normally open and a normally closed contact for controlling any electrical load up to 10 amps. The system works with aircraft power systems from 10-30 volts. P/N 11-08498 ..... **$85.50**

INTEGRATED BACK-UP BATTERY SYSTEM

Combines a Ni-mh battery pack, a charger and switching logic in one convenient package. An engineered solution to enable an endurance bus for critical loads found in aircraft. It simplifies the wiring and installation of a source of back-up power by integrating all of the key elements into a single enclosure. Provides back-up power to electronic loads such as EFIS, GPS, Autopilots, and engine monitor systems. Nickel metal-hydride battery pack and a matched charging system to ensure the battery is properly charged and maintained. Includes switching circuitry to provide a stable source of output power during normal and emergency operations. Provides signals to other equipment such as EFIS systems to communicate the operating state of the back-up bus as well as the state of the battery. Connects to the standard aircraft power bus and provides an output to critical equipment that requires back-up power. Additionally, the IBBS system provides surge and sag protection for connected equipment, allowing operation of critical equipment during engine starting. **Specifications**: • Input Voltage: 10-15 volts DC • Input Current: 9.75 amps max continuous • Output Voltage: 10-12 volts DC during back-up operation • Output Current: 6 amps continuous, 9 amp peak for radio transmissions • Battery:Internal sealed Ni-mh • Charger: Integral high performance fast charger • Surge Protection: 16 volt active clamp, 1500w 10/1000uS waveform • Wiring: CPC connector with Mil-spec machined connections • Enclosure: Cast aluminum,4.74" x 3.13" x 2.17" • Weight: 2.5 lbs • Temperature range: Operating -10 C° to 60 C°, charging 0 C° to 40 C°

Description	Part No.	Price
TCW IBBS	11-08503	$337.50
Accessories	**Part No.**	**Price**
TCW IBBS Wiring Harness with CPC Connector	11-08504	$76.50
TCW IBBS mating CPC connector for field wiring.	11-08505	$15.30
TCW IBBS Charger	11-09444	$94.50

TCW SAFETY-TRIM SERVO CONTROLLER

An electronic speed control system for standard electric trim servos found on many homebuilt aircraft. It replaces other speed controllers and relay modules with an electronic solution that resolves issues such as run-away trim and failure to operate conditions. **Features**: • Electronic servo controller with speed control run-away protection • Time limited operation prevents trim servo run-away conditions • Servo travel limited to 3 seconds per trim switch actuation • Reverse function switch allows pilot to recover from a stuck or failed trim switch • Eliminates many other components, no extra relay decks or speed controllers needed • Very simple wiring, no extra parts needed for pilot and co-pilot trim switches • Designed for standard electric trim servos, such as the Ray Allen T2 & T3 series • Short circuit proof, reverse polarity protected • 1 axis, 2 axis models available • For Experimental aircraft only NOT TSO'd • Made in USA -- patented **Specifications**: • Input voltage: 10-30 volts DC • Output voltage: User adjustable 6-12 volts DC 1 amp maximum • Inputs: Trim switch inputs, closure to ground pilot/co-pilot switches wired in parallel 2 speed switch, closure to ground • output: Time limited, controlled DC voltage to servo Time limit factory set to 3 seconds • Wiring: Standard 15-pin D-sub connector (male on controller) pre-made wiring harness with ON/OFF/Reverse switch available • Enclosure: Overall dimensions 5.7" x 2.5" x 1.5" • Weight: 6oz.

Description	Part No.	Price
Safety-Trim Single Axis Servo Controller	11-08506	$166.50
Safety-Trim Single Axis, 2 Speed Servo Controller	11-08529	$220.50
Safety-Trim Dual Axis Servo Controller	11-08530	$256.50
Safety-Trim Dual Axis, 2 Speed Servo Controller	11-08531	$310.50
Accessories		
Description	**Part No.**	**Price**
Safety-trim 8 ft wiring harness for single axis controller	11-08532	$58.50
Safety-trim 8 ft wiring harness for dual axis controller	11-08533	$76.50
Airspeed Switch 100 Knot for triggering 2 speed function	11-08534	$44.10

INTELLIGENT FLAP CONTROLLER

Designed specifically to operate DC motor actuators, particularly the Van's Aircraft series of Flap Actuators used in RV type homebuilt aircraft. Connects to the standard up-off-(down) switches commonly used to control flap operation and directly drives a Van's flap actuator. Vfe protection by sensing airspeed and preventing flap deployment above a set airspeed. Allows for Pilot and Co-pilot flap switches and resolves the possible conflicts if the switches are operated in opposite directions. Requires NO sensor and is fully compatible with Safety-Trim servo controllers. **Specifications**: • Input voltage: 10-30 volts DC, reverse polarity protected • Output voltage: Overload protected, 2 amp continuous, 5 amp peak • Inputs: Flap switch inputs are closures to ground Pilot and Co-pilot switches separately wire to IFC controller Air speed switch is a closure to ground • Output: Time limited flap up voltage limited to 15 seconds • Wiring: Standar 15-pin D-sub connector (male on controller) pre-made wiring harness available • Enclosure: Overall dimenions: 5.7" x 2.5 x 1.5" • Weight: 4oz

Description	Part No.	Price
Flap Control	11-08493	$202.50
Flap Control Harness	11-08494	$58.50
Airspeed Switch 100 Knot for triggering 2 speed function	11-08534	$44.10

EL

IGNITION SWITCHES – E.I. COMMANDER

ACS KEYED IGNITION SWITCHES

11-03169

11-03170

MFG BY ACS PRODUCTS CO.

These fine quality switches are being used in many production aircraft such as Cessna, Schweizer, Ayers and Air Tractor. They provide "on" and "off" electrical control of both magnetos on single engine aircraft. The key-operated switches mount from rear of panel in 7/8" dia. hole. Available with or without starter position. Made in the U.S.A.

A-510-5 Without Starter Position., Supplied with switch plate and two keys. (diode not required) ..... P/N 11-03169..... **$104.95**
A-510-2 With Starter Position., Supplied with switch plate two keys. (diode included)..... P/N 11-03170..... **$124.50**

ACS IGNITION SWITCH AND LOCK SETS

MODEL NO. A-510-5K, Includes ignition switch without starter position, two aircraft locks (one door and one baggage lock)* and two keys mated to ignition switch and locks. (Diode not required)..... P/N 11-03171..... **$128.95**

MODEL NO. A-510-2K, Includes ignition switch with starter position, two aircraft locks (one door and one baggage lock)* two keys mated to ignition switch and locks . (diode included)..... P/N 11-03172..... **$148.85**
* Baggage lock may be modified to second door lock if preferred.

Part No. 11-03668

Part No. 11-03667

ACS IGNITION SWITCH PLATES

Plate without start - A-2255-A1 ..... P/N 11-03668..... **$1.75**
Plate With start - A-2255-A ..... P/N 11-03667..... **$1.75**

ACS DOOR AND BAGGAGE LOCK SETS

The door and baggage locks furnished with the ignition switches above are also available separately. Set of two locks (one door and one baggage lock) furnished with one key mated to both locks. The baggage lock may be used as second door lock if preferred. ..... P/N 11-01600 ..... **$39.50**
Universal Blank Key (uncut) for ACS door and Baggage Lock ..... P/N 11-03175 ..... **$3.95**
ACS Double Sided Blank Key uncut with black cap ..... P/N 05-03666 ..... **$5.50**

ACS LEVER TYPE IGNITION SWITCH

A-510-1 Lever Type - Twist-Knob Without Starter Position. (diode not required) .....P/N 11-03176 ..... **$127.95**

BENDIX IGNITION SWITCHES

MODEL NO. 10-357290-1, Without Starter Position. Includes two keys. Furnished with Switch Plate **$278.95**
MODEL NO. 10-357200-1, With Starter Position. Includes two keys. Furnished with Switch Plate **$333.95**
MODEL NO. 10-357210-1, With push to start feature. Includes two keys. Furnished with Switch Plate..... **$399.75**

ACS IGNITION SWITCH DEALER DISCOUNTS: 6-10 LESS 5%, 11-19 LESS 10%, 20-99 LESS 15%, 100+ LESS 20% (ASSORTED)

ACS STARTER SOLENOID DIODE ASSEMBLY

This is required for all new A-510-2 and A-510-2K ignition switches for compliance with ACS Service Bulletin SB92-01.
Diode Assembly for Starter Solenoid with one or Two Coil Contacts
P/N 16050-2 ..... **$7.80**

ACS IGNITION SWITCH SERVICE KIT

Consists of replacement internal switch contacts, lubricant, diode assembly, and terminal board as required for compliance with ACS Ignition Switch Service Bulletin SB92-01. Kit A-3650-2 contains diode assembly for starter solenoids with one or two coil contacts.
Kit No. A-3650-2..... **$16.85**

BENDIX SWITCH PLATES -

Without Starter Position..... Switch Plate No. 10-51127 ..... **$3.85**
With Starter Position..... Switch Plate No .10-126676 ..... **$4.60**

ELECTRONIC IGNITION COMMANDER

The Electronic Ignition Commander provides information and control solutions for experimental aircraft powered by Lycoming and Continental aircraft engines WHICH UTILIZE THE P-MAG ELECTRONIC IGNITION. Two different displays offered (2 1/4" Standard Instrument Display or Rectangular EFIS Display).

Features:

- Continuous verification of timing mark synchronization and a Preflight screen that reports the timing synchronization and condition of the ignition harnesses and spark plugs.
- Monitor E/P-mag operation.
- Three user definable timing map shifts in addition to the default A & B curves.
- Useful for running at high altitudes, auto fuel, or when it is desirable to use a different than standard timing curve.
- Dimmable screen for night flight.
- Sunlight readable Organic LED display with no viewing angle restrictions.
- Configurable tachometer with Hobbs meter function.
- Pilot adjustable RED line with multiple YELLOW RPM Ranges.
- Configurable LED warning light when running in YELLOW restricted ranges.
- Standard tachometer display with optional Manifold Pressure.
- Remote update capability allows you to update you EICommander from any computer.

2-1/4" Standard Instrument .....P/N 11-10041 ..... **$600.00**
Rectangular EFIS.....P/N 11-10042 ..... **$700.00**

EL

CIRCUIT BREAKERS

KLIXON 7270-5 CIRCUIT BREAKERS

Klixon 7270 series circuit breakers were designed to utilize less space behind the panel while protecting wire and cable in aircraft and ground support equipment on 120 VAC, 400 Hz or 30 VDC systems. Inherently resistant to shock and vibration, the Klixon disc element is capable of calibration within close tolerances throughout the service life of the breaker. **Features**: Trip–free operation, Snap–acting thermal element, Small size, Light weight, MIL-C-5809 qualified, High interrupting capacity, Typical use: Aircraft and ground support equipment. **Specifications**: Vibration: 10G minimum, 50–500 Hz (other vibration levels available). Mechanical Shock: 30G. Acceleration: 10G. Weight: 39 grams maximum (7270-1 and 7271-8). Interrupt Current: 4,000 amps at 30 VDC;3,500 amps at 120 VAC, 400 Hz. Endurance: 5,000 cycles: 120 VAC. 400 Hz, inductive;5,000 cycles: 120 VAC 400 Hz, resistive;5,000 cycles: 30 VDC, inductive;2,500 cycles: 30 VDC, resistive;5,000 cycles: Mechanical, no load.

Description	Current Rating	Part No.	Price
7270-5-3	3 amps	11-08344	**$213.95**
7270-5-5	5 amps	11-08345	**$164.95**
7270-5-7.5	7.5 amps	11-08346	**$164.95**
7270-5-10	10 amps	11-08347	**$164.95**
7270-5-15	15 amps	11-08348	**$168.95**
7270-5-20	20 amps	11-08349	**$164.95**
7270-5-25	25 amps	11-08350	**$164.95**
7270-5-30	30 amps	11-08351	**$146.95**
7270-5-35	35 amps	11-08352	**$164.95**

KLIXON 7274-2 CIRCUIT BREAKERS

Klixon 7274 series are small, lightweight, low amperage devices that are specifically designed to protect aircraft/aerospace cable and components in airborne vehicles and equipment. The commercial grade version is the Klixon 7277 series. The 7274 features a trip–free, indicating reset button and is available in standard ratings from ½ to 20 amps. A "wiping action" contact design assures low voltage drop, faster trip time and high reliability in low voltage applications. They are available in standard ratings from ½ to 20 amps. A water resistant panel seal designed to fit over the push button actuator is available for applications that require this type of protection. **Features:** Uses minimum space, Light weight, Trip–free, MIL-C-5809 qualified, Low amp, High vibration resistance, Typical use: Military airborne vehicle and equipment protection. **Specifications:** MS#: MS26574-1.5. Vibration: 10G minimum, 50–500 Hz (other vibration levels available). Mechanical Shock: 35G. Acceleration: 10G. Weight: 7274-2 (MS 26574): 28 grams maximum; 7274-4 (MS 26574 A): 28 grams maximum; 7274-11 (MS 22073): 33 grams maximum; 7274-69 (MS 22073V): 33 grams; 7274-70 (MS 26474L): 33 grams. Interrupt Current: 0.50–5 amps: unlimited at 28 VDC; 7.50–15 amps: 2,000 amps at 28 VDC; 0.50–1.50 amps: unlimited at 120 VAC, 400 Hz; 2–5 amps: 800 amps at 120 VAC, 400 Hz; 7.50–20 amps: 500 amps at 120 VAC, 400 Hz. Endurance: 2,500 cycles: 120 VAC, 400 Hz inductive; 5,000 cycles: 120 VAC, 400 Hz resistive; 2,500 cycles: 30 VDC inductive; 5,000 cycles: 30 VDC resistive; 10,000 cycles: Mechanical, no load

Description	Current Rating	Part No.	Price
7274-2-1.5	1.5 amps	11-08353	**$21.85**
7274-2-2	2 amps	11-08354	**$21.75**
7274-2-2.5	2.5 amps	11-08355	**$21.75**
7274-2-3	3 amps	11-08356	**$21.75**
7274-2-4	4 amps	11-08357	**$21.75**
7274-2-5	5 amps	11-08358	**$21.75**
7274-2-7.5	7.5 amps	11-08359	**$21.75**
7274-2-10	10 amps	11-08360	**$21.75**
7274-2-15	15 amps	11-08361	**$21.75**
7274-2-20	20 amps	11-08362	**$21.75**

KLIXON 3TC7 CIRCUIT BREAKER

A lightweight, high performance, non–ambient temperature compensated circuit breaker. The series features a trip–free design that prevents the circuit breaker from being closed manually on overload. **Features**: Miniature size, Light weight, Trip–free design, Current rating: 5 amps, AS58091 qualified (MS25244), High vibration resistance, Typical use: Aircraft, avionics and electrical systems. **Specifications**: MS25244-5. Voltage Drop: 0.25. Vibration: 10G. Mechanical Shock: 30G at peak. Acceleration: 10G. Weight: 38.9g. Operating Altitude: 65,000 ft

Description	Current Rating	Part No.	Price
3TC7-5	5 amps	11-08374	**$47.25**
3TC7-7.5	7.5 amps	11-08375	**$46.85**
3TC7-10	10 amps	11-08376	**$47.25**
3TC7-15	15 amps	11-08377	**$46.50**
3TC7-20	20 amps	11-08378	**$47.25**
3TC7-25	25 amps	11-08379	**$46.50**
3TC7-30	30 amps	11-08380	**$46.85**
3TC7-35	35 amps	11-08381	**$46.85**

KLIXON 2TC2 CIRCUIT BREAKER

Their light weight and small size make them especially well suited for aircraft, avionics and electronic systems. The Klixon trademark has set the standard for aerospace circuit breakers and the TC series offers the endurance and reliability required by exacting military specifications. The 2TC series breaker ratings are coordinated so any rating will trip before another rating twice its capacity in the event of a fault. of up to 6,000 amps let–thru current. This results in improved overall equipment performance since only the smallest faulted circuit is interrupted, while larger circuits remain operational. Ambient compensated circuit breakers let designers specify smaller gauge wire where the circuit breaker and wiring are exposed to different ambient temperatures. They are especially suited for application where ambient temperature exceeds the 160°F (71°C) maximum of non–ambient compensated thermal circuit breakers. The TC series may be applied where operating temperatures are as high as 250°F (121°C) with no derating of the circuit breaker. This eliminates the need for cooling air and allows substantial weight, space, and cost savings. The complete line of TC series circuit breakers is trip–free. The circuit breaker cannot be maintained closed during an overload even with the actuator button held closed. For its miniature size, the 2TC series offers unusually high current interrupting capacity. Overloads can be safely interrupted without affecting calibration or operating performance in the standard 2TC series for: • Overloads up to 6,000 amps at 28 VDC • Overloads of 2,000–3,500 amps at 120 VAC, 400 Hz. **Features**: Miniature size, Light weight, Trip–free design, High vibration resistance, High interrupting capacity, Coordinated ratings, AS58091 qualified (Also: Military Approvals, FAA PMA), Typical end use: Aircraft power distribution systems **Specifications**: Vibration 10G minimum, 50–500 Hz (other vibration levels available). Mechanical Shock 50G. Acceleration 10G

Description	Current Rating	Part No.	Price
2TC2-1	1 amps	11-08382	**$21.75**
2TC2-2	2 amps	11-08383	**$21.75**
2TC2-2-1/2	2.5 amps	11-08384	**$21.75**
2TC2-3	3 amps	11-08385	**$21.75**
2TC2-4	4 amps	11-08386	**$21.75**
2TC2-5	5 amps	11-08387	**$21.75**
2TC2-7.5	7.5 amps	11-08388	**$21.75**
2TC2-10	10 amps	11-08390	**$21.75**
2TC2-15	15 amps	11-08394	**$21.75**
2TC2-20	20 amps	11-08395	**$21.75**
2TC2-25	25 amps	11-08396	**$21.75**

KLIXON 6752100-100 CIRCUIT BREAKERS

Klixon 6752-100 series thermal–magnetic circuit breakers are designed and manufactured to meet stringent military standards with the reliability of the 6752 design. The 6752-100 is similar to the 6752-12 in size, and includes current ratings ranging from 50 to 100 amps.

The higher interrupting capacity, vibration resistance and longer cycling life of the 6752-100 series exceed previous military standards. In addition, the 6752-100 series provide ambient compensation, fault coordination of all ratings an option for auxiliary circuits.

The 6752-100 series circuit breakers maintain their performance capabilities by means of a thermal compensator in the temperature range of -40°C to 70°C.

A deionizing grid and magnetic assist enable the 6752-100 series to successfully interrupt four fault currents of 6,000 amperes — two at sea level and two at 60,000 feet — on either a 120 VAC, 400 Hz system or a 30 VDC system.

Features: Proven reliability and performance of the 6752 series circuit breaker, Trip–free design, Circuit protection unaffected by temperature fluctuations MIL-C-5809 qualified, Ambient compensated, High vibration resistance, High interrupting capacity: 6,000 amps, Typical use: Military, **Specifications:** Vibration: 10G, 50–2,000 Hz (other vibration levels available). Mechanical Shock: 30G. Acceleration: 10G. Weight: 113.6 gram (0.25 pound) maximum. Interrupt Current: 120VAC, 400 Hz: 3,500 amps; 28 VDC: 6,000 amps. Endurance: 5,000 cycles: 120 VAC, 400 Hz inductive;5,000 cycles: 120 VAC, 400 Hz resistive; 2,500 cycles: 28 VDC, 400 Hz inductive; 5,000 cycles: 28 VDC, 400 Hz resistive; 5,000 cycles: Mechanical, no load

Description	Current Rating	Part No.	Price
6752100-50	50 amps	11-08397	**$193.95**
6752100-60	60 amps	11-08398	**$193.95**
2752100-70	70 amps	11-08399	**$233.95**
6752100-75	75 amps	11-08400	**$193.95**
6752100-80	80 amps	11-08401	**$193.95**
6752100-90	90 amps	11-08402	**$189.50**
6752100-100	100 amps	11-08403	**$189.50**

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CIRCUIT BREAKERS

KLIXON 7270 & 7271 CIRCUIT BREAKERS

The Klixon 7270/7271 series circuit breakers were designed to utilize less behind panel space while protecting wire and cable in aircraft and ground support equipment on either 120 VAC, 400 Hz or 30 VDC systems. The units are available with neck mounting (7270-1 and 7271-8) or standard cover plate (7270-7 and 7271-3). In each of these Klixon circuit breakers, the bi-metallic element assures uniform current distribution throughout its responsive area. This design reduces current density at the critical areas, resulting in an element having a much higher interrupting capability than conventional design. Inherently resistant to shock and vibration, the Klixon disc element is capable of precise calibration settings and will retain the initial calibration within close tolerances throughout the service life of the breaker. Both circuit breakers have conventional actuator action; i.e., the toggle actuator on the 7270 moves to the OFF position for trip indication and the button the 7271 pops out. A standard black button with a white collar is used.

FEATURES: • Trip-free • Snap-acting Thermal Element • Simplicity of Design • Lightweight • High Rupture Capacity - 3500 Amps, 120 VAC, 400 Hz 4000 Amps, 30 VDC • Small Size

Part No.	Price
7270-1-3	**$124.95**
7270-1-5	**$124.95**
7270-1-7.5	**$121.95**
7270-1-10	**$123.95**
7270-1-15	**$118.95**
7270-1-20	**$124.95**
7270-1-25	**$125.95**
7270-1-30	**$124.95**
7270-1-35	**$109.95**
7270-7-3	**$161.95**
7270-7-5	**$155.95**
7270-7-7.5	**$131.95**

Part No.	Price
7270-7-10	**$149.50**
7270-7-15	**$155.95**
7270-7-20	**$158.95**
7270-7-25	**$172.95**
7270-7-30	**$155.95**
7270-7-35	**$198.75**
7271-3-3	**$111.95**
7271-3-5	**$124.95**
7271-3-7.5	**$121.95**
7271-3-10	**$124.95**
7271-3-15	**$124.95**
7271-3-20	**$111.95**

Part No.	Price
7271-3-25	**$124.95**
7271-3-35	**$111.95**
7271-8-3	**$113.95**
7271-8-5	**$103.95**
7271-8-71/2	**$112.95**
7271-8-10	**$113.95**
7271-8-15	**$103.95**
7271-8-20	**$108.95**
7271-8-25	**$99.85**
7271-8-30	**$99.85**
7271-8-35	**$108.95**

The last dash no. in the Part Number is the Amperage rating

KLIXON 7277 CIRCUIT BREAKERS

The 7277 series circuit breakers is physically and electrically identical to the 7274-2 style circuit breaker, with the exception that the 7277 series has wider calibration limits. Originally developed as an alternative to slow blow fuses, the trip free 7277 is used extensively as primary electrical circuit protection on general aviation aircraft. The wider calibration limits of the 7277 has also resulted in applications including protection for data processing and telecommunications equipment, computers, flight simulators, construction, material handling and other industrial electronic equipment.

FEATURES: The 7277 series is designed for applications that do not require the tighter performance characteristics and approvals of our military circuit breakers. • Small size • Light Weight • Inexpensive Auxiliary switch 7277-1 Only Longer Push Buttons 7277-5 Only

Temp.	Min Ult	Max Ult	Trip Time - Seconds		
°C	Traip	Trip	200%	500%	1000%
+25	110%	150%	2-35	.15-1.75	.028-.8

**** Performance characteristics and dimensions are equivalent to 7274***
Calibration: 1/2 - 20 amps*

Part No.	Price
7277-5-1	**$29.85**
7277-5-2	**$29.85**
7277-5-3	**$29.85**
4200-005-4	**$29.65**
7277-5-7.5	**$29.90**
7277-5-10	**$29.85**
7277-5-15	**$17.95**
7277-1-1	**$38.75**
7277-1-2	**$38.25**

Part No.	Price
7277-1-3	**$38.25**
7277-1-4	**$38.25**
7277-1-7.5	**$38.25**
7277-1-10	**$37.90**
7277-1-15	**$37.89**
7277-2-1/2	**$85.75**
7277-2-3/4	**$17.95**
7277-2-1	**$17.95**
7277-2-1.5	**$17.95**

Part No.	Price
7277-2-2	**$17.95**
7277-2-2.5	**$88.50**
7277-2-3	**$17.95**
7277-2-4	**$17.95**
7277-2-5	**$17.95**
7277-2-7.5	**$18.50**
7277-2-10	**$17.95**
7277-2-15	**$17.95**
7277-2-20	**$17.95**

ELECTRICAL PLUG CONNECTORS

Make your panel a "plug and play" panel with these heavy-duty electrical connectors. The connectors are designed for either panel mount or free hanging. Connectors are available in 4, 6, 9, 12, 18, 24, and 36 pin configurations. Choose the pins and sockets based on wire size. The pins and sockets are top quality and are gold/nickel plated. The plugs are sold in pairs and include both the plug and the connector.

Connectors	Part No.	Configuration	Price
SPT015/16	11-02147	4 pin	**$8.95**
SPT152/153	11-02148	6 pin	**$10.45**
SPT039/40	11-07356	9 pin	**$11.75**
SPT017/18	11-02149	12 pin	**$11.85**
SPT442/43	11-02150	18 pin	**$12.95**
SPT019/20	11-07357	36 pin	**$15.50**
Pins	**Part No.**	**Wire Gauge Size**	**Price**
SPT103-1	11-02153	24/20	**$1.14**
SPT099-1	11-02154	18/16	**$1.20**
Sockets	**Part No.**	**Wire Gauge Size**	**Price**
SPT105-1	11-02155	24/20	**$1.29**
SPT101-4	11-02156	18/16	**$1.51**

SEAL-ALL CRIMP TOOL - Crimp tool works with all Seal-All Terminals and seals. Its compact, low-cost parallel jaw design eliminates terminal rocking. P/N 11-06592.....**$37.95**

ALL-ELECTRONIC CIRCUIT BREAKERS

This circuit breaker has no mechanical parts, except for the reset switch. The power switching and control components are completely solid state. It has the added benefit of over- voltage and under-voltage protection. It will turn off if the input voltage foes too high, protecting valuable avionics or other equipment. ***NOT FAA APPROVED. For experimental aircraft only.***

Model No.	Amps	Volt	Part No.	Price
ECB-28-01	1	28	11-01156	**$76.50**
ECB-28-02	2	28	11-01157	**$76.50**
ECB-28-05	5	28	11-08703	**$76.50**

STATIC DISCHARGERS

ESD-1 STATIC WICK - Length: (including mounting base) 7.65 inches. (discharger element) 4.75 inches. Weight: Less than 4.5 grams. Airspeed: To 150 knots. Altitude: To 20,000 feet msl. Temperature: +85°C to -55°C, MIL-STD0202C, Method 102A, Condition D. Solvents: No physical changes after one hour immersion in aviation gasoline, jet fuel or hydraulic fluids. Equivalent to Cessna P/N C592001-0201. Note: This is Non-Certified Version. Fully Qualified to MIL-D-9129D P/N 11-10574..... **$12.95**

STATIC WICK

Comes with 2 holes to rivet to trainline edge and plain wire extension. Eligible For Installation: Beech Baron 58, Cessna 402, Eurocopter: BK117, BK117 C-2 P/N 11-04154 .... **$49.50**

NULL FIELD TRAILING DISCHARGER

For general aviation & business class aircraft. FAA/PMA, MIL-9129D. Mounting: (2) #8-32 flat head screws. Length: 10-9/32". Wt: .78 oz. P/N 11-16320..... **$69.99**

MICROPOINT TRAILING DISCHARGER

For general aviation aircraft (speeds below 300 mph). Mounting: (2) #4-40 screws, 100% countersunk. Length:8.75" Weight: 0.17 oz. P/N 11-16630..... **$54.60**

MICROPOINT TRAILING DISCHARGER (FLEXIBLE)

For general aviation & business class aircraft. FAA/PMA, MIL-9129D. Mounting: 15401, 15488, 15660-1, or 16195 screw retainer. Length: 7-5/8" Wt: 0.53 oz. P/N 11-16606.....**$54.75**

NULL FIELD TIP DISCHARGER

For general aviation & business class aircraft. FAA/PMA, MIL-9129D. Mounting: (2) #8-32 flat head screws. Length: 7-15/32". Wt: 0.53 oz. P/N 11-16325.....**$72.75**

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CIRCUIT BREAKERS

TYCO CIRCUIT BREAKERS

These bi-metallic single pole breakers weigh less than 2oz. and especially suitable for homebuilt aircraft. Used as original equipment in Beech, Cessna and Piper aircraft. Max. operating voltages: 32 VDC & 250 VAC (to 400 Hz).

W23 SERIES

White band around body of reset button becomes visible if breaker trips. Has heater wire for fast tripping. 8-32 screw terminals.

W31 SERIES

These are combination single pole switches and circuit breakers. Has a plain steel toggle w/ rating inscribed on tip. 8-32 screw terminals.

W58 SERIES

Recessed reset button has red band around it for visible trip indication. 6-32 screw terminals.

P&B P/N	AMP Rating	Aircraft Application			Prices Ea.
		Beech	Cessna	Piper	
W23X1A1G1	1			111-201-105	**$29.90**
W23X1A1G2	2			111-202-105	**$31.50**
W23X1A1G3	3			111-203-105	**$19.45**
W23X1A1G4	4			111-204-105	**$49.85**
W23X1A1G5	5	CB-2305A	S-1232-5	454656	**$21.75**
W23X1A1G7.5	7.5	CB-2307A			**$21.95**
W23X1A1G10	10	CB-2310A		454657	**$20.75**
W23X1A1G15	15	CB-2315A		454658	**$20.85**
W23X1A1G20	20	CB-2320A		454659	**$21.75**
W23X1A1G25	25	CB-2325A		454660	**$19.65**
W23X1A1G30	30	CB-2330A		454661	**$21.75**
W23X1A1G35	35	CB-2335A		454663	**$21.75**
W23X1A1G40	40	CB-2340A		454665	**$21.90**
W23X1A1G50	50	CB-2350A		454662	**$20.85**
W31X2M1G5	5				**$25.50**
W31X2M1G10	10				**$25.50**
W31X2M1G15	15				**$25.50**
W31X2M1G20	20				**$25.50**
W31X2M1G25	25				**$25.50**
W31X2M1G30	30				**$25.50**
W31X2M1G35	35				**$25.50**
W31X2M1G40	40				**$25.50**
W31X2M1G50	50				**$24.50**
W58XC4C12A1	1	431-201-101	S-1360-1A,-1L		**$6.75**
W58XC4C12A2	2	431-202-101	S-1360-2A,-2L		**$7.90**
W58XC4C12A3	3	431-203-101	S-1360-3A,-3L		**$6.75**
W58XC4C12A4	4	431-204-101	S-1360-4A,-4L		**$11.80**
W58XC4C12A5	5	435-205-101	S-1360-5,-5L	454668	**$5.50**
W58XC4C12A7	7	435-207-101	S-1360-7,-7L		**$6.85**
W58XC4C12A10	10	435-210-101	S-1360-10,-10L	454669	**$5.50**
W58XC4C12A15	15	435-215-101	S-1360-15,-15L	454670	**$5.50**
W58XC4C12A20	20	435-220-101	S-1360-20,-202		**$5.50**
W58XC4C12A30	30	435-230-101	S-1360-30,-302		**$6.95**

TYCO ROCKER TYPE CIRCUIT BREAKER

W33S2N1Q series breakers are 2 pole rocker actuated. Pole 1 is switch only, pole 2 is series trip overload sensing. These breakers are non-lighted with white rocker. W33S4B1Q series breakers are also 2-pole rocker actuated. Pole 1 is switch only, pole 2 is series trip overload sensing. These breakers feature 20 amp max. switch & amber plastic rockers.

Item / Description	Amps	Part No.	Price
W33S4B1Q-5 – Amber 24VDC	5	11-01887	**$35.95**
W33S4B1Q-10 – Amber 120VAC	10	11-01888	**$41.90**
W33S4B1Q-15 – Amber 120VAC	15	11-01889	**$27.75**
W33S4B1Q-20 – Amber 120VAC	20	11-01976	**$33.25**
W33S1N1Q-5 – Black	5	11-01977	**$26.75**
W33S1N1Q-10 – Black	10	11-01978	**$34.40**
W33S1N1Q-15 – Black	15	11-01979	**$28.90**
W33S1N1Q-20 – Black	20	11-01980	**$32.95**
W33S2N1Q-5 – White	5	11-01981	**$37.85**
W33S2N1Q-10 – White	10	11-01890	**$29.90**
W33S2N1Q-20 – White	20	11-01983	**$29.90**

FUSE HOLDERS

These fuseholders are non-indicating, plate mounted. The body is molded black phenolic. Knob grips fuse and pulls it from holder when knob is removed. Spring provides contact pressure on ends of fuse. For use with fuse size 1/4" x 1-1/4". Type HKP. P/N 11-13400 ..... **$1.87**

Nylon Twist-Lock in-line fuseholder. Supplied with 8" loop of 14-gauge wire and 1 spring to accommodate AGC fuses. Simple "twist-lock" allows easy fuse removal & replacement. P/N 11-04010 ..... **$3.35**

Bayonet knob in-line fuseholder. Supplied with 8" loop of 14-gauge wire and 1 spring to accommodate AGC fuses. Simple "twist-lock" allows easy fuse removal and replacement. P/N 11-01359 ..... **$2.75**

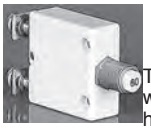
KLIXON 7274-11.75 CIRCUIT BREAKER

Klixon 7274 series are small, lightweight, low amperage devices that are specifically designed to protect aircraft/aerospace cable and components in airborne vehicles and equipment. The commercial grade version of this circuit breaker is the Klixon 7277 series. The 7274 features a trip–free, indicating reset button and is available in standard ratings from ½ to 20 amps. They are available in standard ratings from ½ to 20 amps.

Description	Amps	Part No.	Price	Description	Amps	Part No.	Price
7274-11-1	1	11-08364	**$21.75**	7274-11-5	5	11-08369	**$21.75**
7274-11-2	2	11-08365	**$21.75**	7274-11-7.5	7.5	11-08370	**$21.75**
7274-11-2.5	2.5	11-08366	**$21.75**	7274-11-10	10	11-08371	**$21.75**
7274-11-3	3	11-08367	**$21.75**	7274-11-15	15	11-08372	**$21.75**
7274-11-4	4	11-08368	**$21.75**	7274-11-20	20	11-08373	**$21.75**

KLIXON CIRCUIT BREAKERS

Feature a bi-metallic snap-acting disc as the sensing element. Widely used in production and military aircraft. The most popular models are illustrated. Models PSM and PSM-N are available in the following ampere ratings: 2, 3, 5, 10, 15, 20, 25, 35. When ordering specify if neck-mounting style is wanted by placing "N" after ampere rating. Example: PSM-10N (P/N 11-04244) **$94.25 Ea.** For weatherproof circuit breakers in ratings from 50 to 150 amperes, order Model PDLM. Example: PDLM-50 (P/N 11-04241) .. **$136.95 ea.**



60 AMP CIRCUIT BREAKERS FOR ALTERNATORS

These heavy duty circuit breakers are ideal for use with aircraft alternators and other applications using high amperage. 10-32 screw terminals. Size: 1-3/8"d x 1-3/8"h x 1/2"w. 60 Amp P/N 11-02191 ..... **$16.00**

70 AMP CIRCUIT BREAKERS FOR ALTERNATORS

These heavy duty 70 AMP circuit breakers are ideal for use with aircraft alternators and other applications using high amperage. 10-32 screw terminals. 1 3/8" D x 1 3/8" H x 1/2" W. P/N 11-05652 ..... **$17.85**

ELECTRONIC CIRCUIT BREAKERS

These circuit breakers have no mechanical parts, except for the reset switch. The power switching and control components are completely solid state. They have added benefit of overvoltage and undervoltage protection. Will turn off if the input voltage goes too high, protecting valuable avionics or other equipment. The circuit breakers operate differently than conventional ones in the following ways: If the circuit breaker 'trips', the switch will remain in the up or on position, but a red LED will illuminate indicating the condition. To reset the circuit breaker, the switch is set to off, then back to on. Removing power from the circuit breaker via a master switch and then restoring power will perform the same function. If a short or overcurrent condition exists at the output, the circuit breaker will continue to trip off after a reset. The electronic circuit breaker is a 3-terminal device. In addition to the usual 2 terminals, a ground reference is required for the electronics to operate and as a reference for the overvoltage & undervoltage protection. The 14V circuit breakers will shutdown with an overvoltage of 16V & undervoltage of 10V. The 28V will shutdown with an overvoltage of 33V & undervoltage of 20V. Available in 14V & 28V versions, with the following current levels: 1A, 2A, 5A, 10A. Not FAA Approved. For experimental aircraft only.

Model No.	Amps	Volts	Part No.	Price
ECB-28-01	1	28	11-01156	**$76.50**
ECB-28-02	2	28	11-01157	**$76.50**
ECB-28-10	10	28	11-01159	**$76.50**
ECB-28-05	5	28	11-08703	**$76.50**

FUSES

AGC-type fuses are glass-enclosed with a single fuse element. Fast acting to protect sensitive instruments and radios. Fuse dimensions 1/4" dia. x 1-1/4" long.

Part No.	Amp Rating	Price Each	Part No.	Ampere Rating	Price Each
11-03743	1	**$0.29**	11-03745	15	**$0.22**
11-03746	2	**$0.24**	11-03747	20	**$0.48**
11-03749	3	**$0.48**	11-03748	25	**$0.48**
11-03753	5	**$0.39**	11-03750	30	**$0.48**
11-03754	7	**$0.53**	11-03751	35	**$0.48**
11-03744	10	**$0.38**			

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SWITCHES

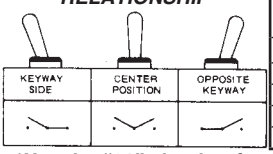
ULTRA-MINIATURE TOGGLE SWITCHES

Ultra-miniature switches are rated at 6 amps at 125V AC and 4 amps at 28V DC. Solid silver contacts. Terminals are gold flashed to inhibit oxidation and to provide easier soldering. Case material is green diallyl phthalate resin. Bushing thread size: 1/4-40, usable in panel thickness up to 1/4". Micro Switch Co. have discontinued the manufacture of the 8A and 8H type switches, so switches by alternate manufacturers will be furnished. In most instances, Alco switches will be supplied. Switches furnished complete with locking ring and attaching hardware.

Alco Sw. Part No.	Micro Sw. Part No.	Contact	Toggle Circuit*	Price Each
MTA-106D	8A1011	SPST	01	**$9.85**
MTA-106E	8A1021	SPDT	02	**$10.95**
MTA-106G	8A1041	SPDT	04	**$15.85**
MTA-206N	8A2011	DPST	01	**$12.85**
MTA-206P	8A2021	DPDT	02	**$11.75**
MTA-206S	8A2041	DPDT	04	**$22.25**
JMT-226	8A2061	DPST	06	**$22.50**
MTA-306D	8A3011	3PDT	01	**$23.25**
MTA-406N	8A4011	4PDT	01	**$24.50**

See Toggle Circuit Table

LEVER/CIRCUIT RELATIONSHIP



TOGGLE CIRCUIT TABLE

Toggle Circuit	Circuitry*		
	One Side	Center	Other Side
01	On	None	On
02	On	Off	On
04	(On)	Off	(On)
05	On	Off	(On)
06	On	None	(On)

****Use the "01" circuitry for On-Off switch. In hook-up, use center terminal & one side terminal. Leave other side terminal blank.***

The operating sequence above is repeated in multipole devices. Each pole has double-throw circuitry and consists of three terminals which exit at the bottom of the switch case. The keyway is a helpful reference when you are applying a switch with the momentary (ON) circuit at one of the extreme lever positions.

TWIN CESSNA SWITCH COVERS

Are your switch covers faded by the sun or just looking grimy? These replacement switch covers fit on nearly every typical switch in Cessna Twins. Switch cover sets are available for 300 series twins (4 red, 3 black, and 18 white switches) and 400 series twins (4 red, 3 black, & 23 white switches). Also available are sets of 30 mini-switch covers for audio panels, prop sync, fuel transfer pumps, DME, etc.

300 Series ..... P/N 11-22210 ..... **$29.95**
400 Series ..... P/N 11-22220 ..... **$29.95**
Mini Switch Package ..... P/N 11-22230 ..... **$14.85**

TOGGLE SWITCH COVERS

Dress up the appearance of your panel and color code your toggle switches with high quality vinyl covers that do not have a nipple at the end of the cover. Available in various colors.

Standard Size

Red.....11-00815.....**$1.35** Green .....11-00817 ..... **$1.35**
White .....11-00816.....**$1.35** Blue.....11-00819 ..... **$1.35**
Yellow.....11-01698.....**$1.35** Black .....11-02823 ..... **$1.35**

Mini Size

Red..... 11-00820.....**$1.35** White .....11-00821 ..... **$1.35**

SUBMINIATURE PUSHBUTTON SWITCH

One-piece bushing and case construction, furnished with beveled nut for finished appearance. It has a relatively high current carrying capacity (3 amps at 125V AC) and a life expectancy of 10,000 operations at rated current. Momentary type SPDT switch, ideal for use as a mic switch on control wheel. Furnished with. 205" dia. black pushbutton. Body is .354" dia. x .650" long. Mounts in 1/4" dia. hole. P/N 11-03909 ..... **$13.90**

CIRCUIT BREAKER SAFETY LOCKS

Skylox™ is a unique product that will provide safety to your aircraft ground service crews. The circuit breaker safety lock is easy to use and is an innovative safety solution, all at a very low price. Simple to use. Just squeeze and place over an open circuit breaker to prevent accidental closing of breaker circuits being serviced.

Regular round Skylox™ for standard size breakers and Skylox™ L for larger sizes. Hexagonal shape easily differentiates between the two sizes. Add Skytags™ for added safety. Red with white letters and all white backs for adding notes or special instructions. NOTICE! Skylox™ are designed for use by ground maintenance crews during ground maintenance procedures only! Skylox™ are NOT to be used during flight operations.

Danger..... P/N 11-07737.....**$2.20** Warning.... P/N 11-07738 .....**$2.50**
Large ..... P/N 11-07734.....**$4.65** Standard .. P/N 11-07736 .....**$3.75**

MS25224 SWITCHGUARDS

Prevents inadvertent operation of the switch. Switch can be operated only when the spring-loaded guard is lifted up. Returning guard to the down position forces the switch lever to the off position. Single-hole type for neck-mount switches such as AN3021 and AN3027. 3-hole type for panel-mounted switches such as AN3023. Color: Red.

MS25224-1 (one hole) ..... **$11.50 Ea.**
MS25224-2 (3 holes)..... **$19.85 Ea.**

KLIXON SWITCH GUARDS

Spring Loaded Switch Guards. Klixon switch guards can be used with 2 or 3 position switches. Covers are molded out of Thermoset molding materials. Guard covers are spring loaded to either close or lock in an open position.

Description	Pos.	Color	Code	Part No.	Price
Phenolic	2	Red	2	11-06221	**$23.75**
Metal	2	Green	4	11-06222	**$36.60**
Phenolic	3	Red	9	11-06223	**$14.75**
Phenolic	2	Red	10	11-06224	**$14.75**
Phenolic	2	Red	11	11-06225	**$24.75**

CESSNA SPLIT MASTER SWITCH

This versatile split red master switch has been used in virtually all single engine Cessna models since 1970 and can be used in most light aircraft with single alternator systems. Left rocker normally used for alternator and right half for battery. Order mount separately.

Red Switch..... P/N 11-15900 ..... **$29.70**
Beige Switch..... P/N 11-05733..... **$38.50**
Mount..... P/N 11-15910..... **$1.84**

BEACON/STROBE SPLIT SWITCH

This is a split switch used in many production aircraft featuring an On-Off switch on left for rotating beacon and On-Off switch on right for anti-collision strobe. Switch is grey. New manufacture. P/N 11-14910 ..... **$9.65**

TOGGLE SWITCHES

Toggle switches are available with 2 or 3 operating positions, one or three hole mounting and a variety of circuitry and electrical ratings. Contacts are made of solid silver. Wide usage is found in aircraft, mobile, marine, electronic and industrial applications. Available in full "AN" standard size and Ultra Miniature 1/2" size. The leading manufacturers of toggle switches are Micro Switch, Alcoswitch, Cutler Hammer, and JBT (now Cutler Hammer). Orders will be filled with switches of manufacturer whose product is available in local stock.

AN No.	MS No.	Mfgrs. P/N	Size	Contact	Toggle Circuit *	Price
AN3021-1	MS35058-21	JBT - MS No.	1/2 Miniature	SPDT	1*	**$16.50**
AN3021-2	MS35058-22	JBT - MS No.	1/2 Miniature	SPST	2*	**$10.90**
AN3021-3	MS35058-23	JBT - MS No.	1/2 Miniature	SPDT	3*	**$14.50**
AN3027-1	MS35059-21	JBT - MS No.	Full Standard	DPDT	1*	**$31.75**
AN3027-2	MS35059-22	JBT - MS No.	Full Standard	DPST	2*	**$16.50**
AN3027-3	MS35059-23	JBT - MS No.	Full Standard	DPDT	3*	**$29.75**
AN3027-7	MS35059-27	JSBT-MS No.	Full Standard	DPDT	5*	**$23.90**
AN3027-4	MS35059-24	JBT - MS No.	Full Standard	DPST	7	**$25.75**

**** See Toggle Circuit Table***

TOGGLE CIRCUIT CODE (*)	*Circuitry with Toggle at:*		
	UP	*CENTER*	*DOWN*
1	On	Off	On
2	On	None	Off
3	On	None	On
4	On	Off	On**
5	On*	Off	On**
6	Off	None	On*
7	On	Off	None

TOGGLE CIRCUIT TABLE

****Available toggle lever positions & circuits***

*****Momentary contact - when the toggle lever is placed in a momentary position and then released, the toggle lever automatically returns to a neutral position.***

PUSH BUTTON SWITCH

A quality momentary SPST switch, perfect as a starter button, Comes with a special boot that keeps out dust and weather.

P/N SPB01..... **$4.90**

MINIATURE MOMENTARY PUSHBUTTON SWITCH

Normally open. Found in many Piper aircraft. Color: Black.

#8631ZBD2 ..... P/N 11-01899 ..... **$8.50**

EL

OTTO SWITCHES & PISTOL GRIPS

T7 COMMERCIAL TOGGLE SWITCHES

T7 commercial toggle switch, waterproof bushing seal switches up to 16 amps 15/32-32 thread mount. Includes mounting hardware.

SPECIFICATIONS

Electrical: (at 28VDC or 115VAC, 60/400 Hz.)		
Load	**Amperes**	**Life (Nominal)**
Resistive	16	25,000
Inductive	10	25,000
Motor	1/2 HP	25,000

No. of Poles	OTTO No.	Circuit	Our P/N	Price ea.
1	T7-131A1	on-off	11-00755	**$10.90**
1	T7-131B1	on-on	11-00756	**$10.90**
1	T7-131C1	mom-off	11-00757	**$10.90**
1	T7-131D1	mom-on	11-00758	**$10.90**
1	T7-131E1	mom-of-mom	11-00759	**$10.90**
1	T7-131F1	on-off-on	11-00760	**$10.90**
1	T7-131G1	mom-off-on	11-00761	**$10.90**
2	T7-231A1	on-off	11-00762	**$16.25**
2	T7-231B1	on-on	11-00763	**$10.75**
2	T7-231C1	mom-off	11-00764	**$11.85**
2	T7-231D1	mom-on	11-00765	**$10.95**
2	T7-231E1	mom-off-mom	11-00766	**$11.75**
2	T7-231F1	on-off-on	11-00767	**$15.90**
2	T7-231G1	mom-off-on	11-00768	**$11.75**

Note: MOM designates Momentary On.

T3 MINIATURE TOGGLE SWITCHES

Military MS27718 qualified. High reliability, rugged. Solder turret for wire attachment. 303 stainless toggle, 15/32" bushing version has a waterproof seal. Specifications Electrical: (at 28VDC or 115VAC, 60/400 Hz.)

Load	Amps	Life (full load)
Resistive	5	30,000
Inductive/Motor	2	30,000

Load	Amps	Life (full load)
Lamp	1	30,000
Mechanical Life	n/a	100,000

No. of Poles	MIL No.	OTTO No.	Circuit	Our P/N	Price ea.
1	MS27718-21-1	T3-11111	on-off-on	11-00772	**$22.50**
1	MS27718-22-1	T3-11121	off-on	11-00773	**$20.85**
1	MS27718-23-1	T3-11131	on-on	11-00774	**$23.75**
1	MS27718-26-1	T3-11141	mom-on	11-00775	**$23.75**
1	MS27718-27-1	T3-11151	mom-off-mom	11-00776	**$25.50**
1	MS27718-31-1	T3-11161	mom-off-on	11-00777	**$23.75**
2	MS27719-21-1	T3-11211	on-off-on	11-00778	**$23.75**
2	MS27719-22-1	T3-11221	off-on	11-00779	**$24.25**
2	MS27719-23-1	T3-11231	on-on	11-00780	**$24.85**
2	MS27719-26-1	T3-11241	mom-on	11-00781	**$25.75**
2	MS27719-27-1	T3-11251	mom-off-mom	11-00782	**$24.75**
2	MS27719-31-1	T3-11261	mom-off-on	11-00783	**$23.00**

Note: MOM designates Momentary On.

P5 ON-OFF ALTERNATE ACTION SWITCH

Push and the P5 series switch holds "on" push again and the P5 switch turns "off". Positive tactile feedback is featured so the operator is clearly aware the switch mode has been executed. The button returns to the original position after each actuation.

To guard against front panel splash and dirt, the P5 series is sealed at the button with OTTO's patented rolling sleeve principle.The terminals are sealed with epoxy, providing a seal against flux during wiring and behind panel dirt and moisture. The combination of sealing provides smooth operation over a wide temperature range. Watertight sealing to 1meter (IP68) pressure is also available.

Load	Amps	Life (full load)
Resistive	10	25,000
Inductive	5	25,000

Load	Amps	Life (full load)
Motor	3	25,000
Lamp	1	25,000

Switch	Part No.	Price
Press Fit-red	11-00796	**$14.90**
Press Fit-black	11-00797	**$14.85**
Press Fit-white	11-00798	**$11.25**

Switch	Part No.	Price
Thread Mount Red	11-00769	**$13.75**
Thread Mount Black	11-00770	**$13.75**
Thread Mount White	11-00771	**$16.00**

OTTO PISTOL GRIPS

Otto Controls has been making the switches used in a majority of military and commercial flight grips manufactured for the last 40 years. Otto has evolved from a switch supplier into a major gri supplier with flight grips in numerous military and commercial aircraft. These rugged grips are the same as our military qualified grips but without the expensive threaded connector. Grips have a 1.15"ID which can be adapted to a 3/4" or 7/8" joystick with separate sleeves sold below.

Grip Kit	Otto Part No.	2-position Trigger	4-Way Trim Switch	Push-Button Switch	Our Part No.	Price Each
B8	G2-0048	1	1	3	11-00751	**$598.00**
Cobra	G2-0049	1	1	4	11-00752	**$569.00**
T4-0204 4-WAY SWITCH FOR B8 - Four way trim with a large hat style button. Fits into the trim position of the G2-0048 and G2-0049 flight grip kits. Can handle up to a 1 amp inductive load at 28VDC.					11-07956	**$183.95**

Grip/Joystick Sleeve			
Joystick O.D.	**Part No.**	**Our Part No.**	**Price**
3/4" shaft	302379	11-00753	**$36.75**
7/8" shaft	302380	11-00754	**$58.00**

P1 MOMENTARY SWITCHES

MIL qualified. Dustproof, snap action, solder terminals, rugged reliable construction.

SPECIFICATIONS

Electrical: (at 28VDC or 115VAC, 60/400 Hz.)		
Load	**Amperes**	**Life (Nominal)**
Resistive	10	25,000 cycles
Inductive/Motor	5	25,000 cycles
Lamp	3	25,000 cycles

PRESS FIT				
MIL No.	**Otto No.**	**Button Color**	**Our Part No.**	**Price**
MS25089-1AL	P1-12121	Red	11-00745	**$12.50**
MS25089-1A	P1-12122	Black	11-00746	**$12.45**
MS25089-1AW	P1-12129	White	11-00747	**$11.50**

THREADED BEZEL				
MIL No.	**Otto No.**	**Button Color**	**Our Part No.**	**Price**
MS25089-1CR	P1-32121	Red	11-00748	**$11.75**
MS25089-1C	P1-32122	Black	11-00749	**$11.50**
MS25089-1CW	P1-32129	White	11-00750	**$12.75**

T3 1/4-40 UNSEALED BUSHING TOGGLE SWITCHES

No. of Poles	MIL No.	OTTO No.	Circuit	Our Part Number	Price each
1	MS27716-21-1	T3-21111	on-off-on	11-00784	**$14.30**
1	MS27716-22-1	T3-21121	off-on	11-00785	**$14.85**
1	MS27716-23-1	T3-21131	on-on	11-00786	**$15.75**
1	MS27716-26-1	T3-21141	mom-on	11-00787	**$16.75**
1	MS27716-27-1	T3-21151	mom-off-mom	11-00788	**$15.40**
1	MS27716-31-1	T3-21161	mom-off-on	11-00789	**$17.75**
2	MS27717-21-1	T3-21211	on-off-on	11-00790	**$15.30**
2	MS27717-22-1	T3-21221	off-on	11-00791	**$14.50**
2	MS27717-23-1	T3-21231	on-on	11-00792	**$16.75**
2	MS27717-26-1	T3-21241	mom-on	11-00793	**$16.40**
2	MS27717-27-1	T3-21251	mom-off-mom	11-00794	**$17.75**
2	MS27717-31-1	T3-21261	mom-off-on	11-00795	**$18.90**

Note: MOM designates Momentary On.

EL

• SILVER SWITCH CONTACTS (MOST)

SWITCHES & INDICATOR LIGHTS

• .25" TAB TERMINAL (UNLESS SHOWN)

Commercial 12 VDC Illuminated & Non-Illuminated Toggle, Rocker, Push-Button, Pull Switches...
Incandecent & L.E.D. Indicator Lights...Switch Guards...Lever Covers

LEVER SWITCHES

20 AMP SILVER CONTACTS

Non-Illuminated	Single Pole	Price
On-Off	11-103	**$3.70**
On-On	11-107	**$5.00**
On-Off-On	11-123	**$4.70**
( )=MOMENTARY		

Illuminated	Red	Green	Amber	Blue	Clear
11/16" Lever	11-115	11-116	11-117	- - -	- - -
$6.90 Ea.					

DASH LIGHTS

Red	Green	Amber	Blue	MTG. HOLE	Price
Replaceable Lamp					
17-410	17-411	17-412	17-413	1/2"	**$4.75**
Replacement bulb.....P/N BA7-12.....					**$0.97**
Jumbo					
17-420	17-421	17-432	17-423	3/4"nut	**$6.75**
17-440	17-441	17-442	17-443	1"nut	**$16.75**
Non-Replaceable Lamp - *4" Wire Leads					
*17-165	*17-466	*17-467	--	1/2"	***$5.25**
17-210	17-211	17-212	--	9/32"	**$8.50**

LEGEND LIGHTS

Illuminated words.
Dimensions: 7/8" x 11/16" x 1-3/8"
Mounting Hole: .629" Diameter (16 mm)

Color	Part No.	Price	Color	Part No.	Price
Red	11-06000	**$14.95**	Orange	11-06050	**$14.95**
Green	11-06060	**$14.95**	Yellow	11-06055	**$14.95**
Blue	11-06065	**$15.50**	Clear	11-06070	**$14.95**

REPLACEMENT BULBS

12 Volt .....P/N 31-963.1 ..... **$1.96**
24 Volt .....P/N 31-963.2 ..... **$3.95**

NOTE: Order labeling (words) separately from list below.

LEGEND LIGHT LABELS

Description	Part No.	Price	Description	Part No.	Price
Alarm	17-538	**$0.55**	Hi Oil Pressure	17-625	**$0.55**
Auto-Pilot	17-710	**$0.55**	Hi Oil Temp	17-518	**$0.45**
AUX Lights	17-501	**$0.55**	Interior Lights	17-679	**$0.45**
AUX Rank	17-606	**$0.55**	Lock	17-711	**$0.40**
Battery	17-536	**$0.55**	Loran	17-716	**$0.35**
Carb Heat	17-712	**$0.45**	Low Fuel	17-512	**$0.55**
Caution	17-714	**$0.45**	Mags	17-715	**$0.35**
Danger	17-540	**$0.45**	Aux Brake Light	17-507	**$0.40**
De-ice	17-713	**$0.35**	Oil Filter	17-609	**$0.50**
Flaps Up	17-730	**$0.45**	Pitot Heat	17-709	**$0.45**
Flashing Lights	17-560	**$0.45**	Radio	17-717	**$0.45**
Fuel Pumps	17-587	**$0.55**	Strobe Lights	17-631	**$0.45**
Gear Down	17-718	**$0.45**	Wing Lights	17-614	**$0.45**

MS25041 PRESS-TO-TEST INDICATOR

Miniature press-to-test indicator with built-in bulb testing device. Adjustable dimmer. Uses #330 (12V) or #327 (24V) bulb. Bulbs NOT included, order separately.

Clear.....11-04226 ..... **$33.75**
Green.....11-03911 ..... **$33.75**
Blue .....11-04227 ..... **$33.75**
Red.....11-03910 ..... **$33.75**
Amber.....11-03912 ..... **$33.75**

ROCKER SWITCHES

SILVER CONTACTS

Non-Illuminated	Single Pole	Price	Double Pole	Price
On-Off	14-100	**$1.75**	14-200	**$4.60**
Off-(On)	14-101	**$4.75**		
On-On	14-102	**$3.50**	14-210	**$6.00**
On-Off-On	14-103	**$2.95**	14-220	**$8.50**
(On)-Off-(On)	14-104	**$4.70**	14-225	**$9.25**

Illuminated Single Pole (20 AMP, OnOff-OFF)				
Red	Green	Amber	Blue	Price
14-305	14-306	14-307	14-308	**$5.75**

PUSH BUTTON

Off-(On), 5 AMP
Mounting Hole: 1/2"
Aluminum Guard.....P/N 15-112 ..... **$9.85**

Off-(On) / Push On-Push Off, 20 AMP
Mounting Hole: 1"
Red Button.....P/N 15-132 ..... **$7.50**
Black Button.....P/N 15-133 ..... **$7.50**

Off-(On), 40 AMP, Sealed
Mounting Hole: 5/8"
Screw Terminal .....P/N 15-100 ..... **$6.75**

PULL SWITCHES

Pull On/Push Off, 75 AMP
Chromed.....P/N 16-140.....**$9.75 ea.**

METAL LEVER TOGGLE SWITCHES

- .25" Tab Terminal
- 20 AMP at 12/24VDC
- 15 AMP at 125VAC
- 1/2" panel hole size.

Operation	Single Pole	Price	Double Pole	Price
Off-On	*12-100	**$3.95**	12-200	**$6.75**
Off-(On)	*12-101	**$5.75**	12-201	**$6.75**
On-On	*12-102	**$6.75**	12-202	**$4.65**
On-Off-On	12-103	**$5.40**	12-203	- - -
(On)-Off-(On)	12-104	**$7.45**	12-204	**$11.65**
( )=Momentary				

SWITCH LEVER COVERS

Fits most metal switches with 15/32" bushing

Black Neoprene - Hex Nut
P/N 19-516 ..... **$1.67**

LONESTAR LED PRESS TO TEST INDICATORS

Lone Star Aviation's line of LED panel indicators are available in a RED, Green, or Amber lenses. The indicators are TESTED by a PRESS to TEST function. The panel indicators are available in 14V and 28V, and non-dimmable and dimmable versions. Are installed into a (.468 mounting hole)in the aircraft's instrument panel.

The indicator is a MS 25041 aluminum body and standard T1-3/4 led. Indicators are also available in 28vdc with standard led bulb as well as an FAA T1-3/4 bulb at 28vdc

Description	Color	Volt	Part No.	Price	Volt	Part No.	Price
Non-Dim	Red	14V	11-08768	**$36.85**	28V	11-08676	**$64.25**
Non-Dim	Green	14V	11-08769	**$36.75**	28V	11-08677	**$64.25**
Non-Dim	Amber	14V	11-08770	**$36.75**	28V	11-08678	**$64.25**
Dim	Red	14V	11-08764	**$39.50**	28V	11-08673	**$79.50**
Dim	Green	14V	11-08766	**$39.50**	28V	11-08674	**$79.50**
Dim	Amber	14V	11-08767	**$39.50**	28V	11-08675	**$79.50**

EL

WIRE — SLEEVING — VINYL TUBING

UNSHIELDED WIRE MIL-W-22759/16

This top quality aircraft unshielded wire is manufactured to Specification MIL-W-22759/16. It features standard tin-plated copper conductor and is insulated with extruded Tefzel (ethylene/tetrafluorbethylene) which has a maximum temperature rating of 150°C. This wire is rated for 600 volts.

COLOR: WHITE					
Wire Gauge	Wt./1000 Ft. Lbs.	Part No.	Price per ft.	Price (100ft)	Price (1000ft)
24	2.4	11-14524	$0.22	$18.70	$165.00
22	4.2	11-14522	$0.22	$18.70	$165.00
20	6.0	11-14520	$0.37	$31.45	$277.50
18*	8.6	11-14518	$0.39	$33.15	$292.50
16*	10.7	11-14516	$0.43	$36.55	$322.50
14	16.7	11-14514	$0.62	$52.70	$465.00
12	25.0	11-14512	$0.67	$56.95	$502.50
10	40.1	11-14510	$1.46	$124.10	$1,095.00
8	66.6	11-14508	$1.79	$152.15	$1,342.50
6	104.6	11-14506	$2.55	$216.75	$1,912.50
4	160.1	11-14504	$3.70	$314.50	$2,775.00
2	244.1	11-14502	$5.25	$446.25	$3,937.50
0	381.3	11-14501	$10.97	$932.45	$8,227.50
00	485.8	11-14500	$12.75	$1,083.75	$9,562.50

COLOR: BLACK					COLOR: BLUE				
Wire Gauge	Part No.	Price per ft.	Price (100ft)	Price (1000ft)	Wire Gauge	Part No.	Price per ft.	Price (100ft)	Price (1000ft)
24	11-06254	$0.26	$22.10	$195.00	24	11-07790	$0.23	$19.55	$172.50
22	11-06257	$0.30	$25.50	$225.00	22	11-07791	$0.23	$19.55	$172.50
20	11-06260	$0.37	$31.45	$277.50	20	11-07792	$0.34	$28.90	$255.00
18	11-01596	$0.39	$33.15	$292.50	18	11-01599	$0.35	$29.75	$262.50
16	11-01601	$0.43	$36.55	$322.50	16	11-01604	$0.40	$34.00	$300.00
14	11-07788	$0.68	$57.80	$510.00	14	11-07793	$0.68	$57.80	$510.00
12	11-07789	$0.96	$81.60	$720.00	12	11-07794	$0.87	$73.95	$652.50

COLOR: GREEN					COLOR: RED				
Wire Gauge	Part No.	Price per ft.	Price (100ft)	Price (1000ft)	Wire Gauge	Part No.	Price per ft.	Price (100ft)	Price (1000ft)
24	11-07795	$0.23	$19.55	$172.50	24	11-06253	$0.25	$21.25	$187.50
22	11-07796	$0.27	$22.95	$202.50	22	11-06256	$0.27	$22.95	$202.50
20	11-07797	$0.32	$27.20	$240.00	20	11-06259	$0.37	$31.45	$277.50
18	11-07798	$0.38	$32.30	$285.00	18	11-01597	$0.37	$31.45	$277.50
16	11-07799	$0.39	$33.15	$292.50	16	11-01602	$0.48	$40.80	$360.00
14	11-07801	$0.63	$53.55	$472.50	14	11-07806	$0.72	$61.20	$540.00
12	11-07802	$0.87	$73.95	$652.50	12	11-07807	$0.92	$78.20	$690.00

COLOR: YELLOW					*STRIPED WIRE				
Wire Gauge	Part No.	Price per ft.	Price (100ft)	Price (1000ft)	Wire	Part No.	Price per ft.	Price (100ft)	Price (1000ft)
24	11-06252	$0.19	$16.15	$142.50	18 - white w/ blk stripe	11-15601	$0.50	$42.50	$375.00
22	11-06255	$0.31	$26.35	$232.50	18 - white w/ red stripe	11-15607	$0.50	$42.50	$375.00
20	11-06258	$0.34	$28.90	$255.00	16 - white w/ blk stripe	11-15501	$0.48	$40.80	$360.00
18	11-06261	$0.37	$31.45	$277.50	16 - white w/ red stripe	11-15507	$0.51	$43.35	$382.50
16	11-01603	$0.44	$37.40	$330.00					
14	11-07804	$0.72	$61.20	$540.00					
12	11-07805	$0.87	$73.95	$652.50					

SHIELDED WIRE MIL-C-27500

This shielded and jacketed aircraft wire conforms to MIL-C-27500 and replaces MIL-C-7078/3. It incorporates MIL-W-22759/18 basic wire and features a Tefzel insulation, a shield of tin-plated copper braid and a jacket of Tefzel. It is temperature rated to 150°C & voltage rated at 600V. Top quality wire to military specifications.

Wire Gauge	Wt./1000 Ft. Lbs.	Part No.	Price Per Foot	Price 100 Ft.
22	10.8	11-14422	$0.86	$73.10
20	13.1	11-14420	$0.66	$56.10
18	16.5	11-14418	$1.33	$113.05
16	19.3	11-14416	$0.96	$81.60
14	26.2	11-14414	$1.47	$124.95
12	36.0	11-14412	$1.90	$161.50
8*	88.6	11-14408	$5.75	$488.75

15% Discount on 100ft. (Per Part No.)

* 8 Gauge shielded wire is used in converting generator systems to alternators. Conforms to MIL-C-27500.

Description	Part No.	Price Per Foot
2-Conductor Shielded Wire - 22 Gauge	11-05650	$0.99
3-Conductor Shielded Wire - 22 Gauge	11-05651	$0.99
4-Conductor Shielded Wire - 22 Gauge	11-07773	$1.63
5-Conductor Shielded Wire - 22 Gauge	11-06580	$2.10
6-Conductor Shielded Wire - 22 Gauge	11-07774	$2.40
8-Conductor Shielded Wire - 22 Gauge	11-09782	$2.70

Note: For 406 Mhz ELT installations: • Use 11-05651 3 conductor for the Kannad AF Compact • Use 11-07773 4 conductor for the Artex ME406 & 11-07774 for Artex ME406 with GPS interface.

COAXIAL CABLE

RG 400 - Standard cable for radio installations. Double shielded stranded conductor, MIL-DTL-17 spec. Approved for certified aircraft. P/N 11-09202.....**$4.20**

RG 142 - Double shielded solid conductor, MIL-C-17 spec. Approved for certified aircraft. PN 11-00043.....**$4.15**

RG 58A/U - Standard cable for experimental avionics installations. Single shielded stranded conductor, jacket type – PVC. For experimental aircraft only. PN 11-03920.....**$0.49**

RG 58C/U - Standard cable for experimental avionics installations. Single shielded stranded conductor, jacket type – Non-PVC. For experimental aircraft only. PN 11-04258.....**$0.58**

THIN WALL HEAT-SHRINKABLE TUBING

This is a general purpose heat shrinkable tubing with a wide scope of applications including harnessing, wire bundling, strain reliefs or any application where components or cables must be insulated or packaged. Material is an irradiated, thermally stabilized, modified polyolefin which is vastly superior to thermoplastic type materials. Flexible & flame retardant. Shrinkable by any hot air source such as an electric hair dryer or any heating device delivering at least 250°F. One person can complete installation in seconds. No need for special skills. Meets spec. MIL-I-23053B. Standard length - 4 ft. Min. purchase 4 ft. per size. Sold only in full 4 ft. lengths.

Expanded Size	Expanded I.D.	Recovered I.D.	Nominal Wall	Part No.	Price / 4 ft. Piece
1/16"	.063	.031	.017	11-00700	$1.83
3/32"	.093	.046	.020	11-00800	$1.31
1/8"	.125	.062	.020	11-00900	$1.89
3/16"	.187	.093	.020	11-01000	$2.25
1/4"	.250	.125	.025	11-01100	$2.35
3/8"	.375	.187	.025	11-01200	$2.48
1/2"	.500	.250	.025	11-01300	$2.85
3/4"	.750	.375	.030	11-01400	$2.85
1"	1.000	.500	.035	11-01500	$4.25
White					
1/16	.063	.031	.017	11-09443	$1.65
1/8"	.125	.062	.020	11-04029	$2.60
1/4"	.250	.125	025	11-04028	$2.35
3/8"	.375	.187	.028	11-04030	$2.70
1/2"	.500	.250	.025	11-04027	$3.15

Discount: 25% Discount on 12 or more 4' Lengths (Per Size)

Always order the largest size which will fit snugly over the component being covered. Wall thickness will be less if recovery is restricted during shrinking.

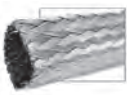
IGNITION SHIELDING BRAID

Tinned copper tubular braid. Very flexible multi-strand braid. Excellent way to shield spark plug wires to reduce radio frequency interference (RFI). Fits over standard spark plug wire. Use 1/2" heat shrink to secure the ends.

Shielding Braid per foot ..... P/N 11-02463 ..... **$0.77**

Heat Shrink Tubing, 1/2", 4 ft. length ... P/N 11-01300 ..... **$2.85**

TINNED COPPER BRAID



Used for static shielding on short lengths of wire or cable and for flexible bonding connections and ground straps. Made of extra flexible tinned copper wire. Rolled flat for spooling.

P/N	Nominal Flat Width	Current *Capacity Amps.	Wt./100 Ft. Lbs.	Price	
				Per Ft.	100 Ft.
858	1/8"	16	0.7	$0.34	$28.90
863	1/4"	32	1.5	$0.45	$38.25
864	3/8"	46	2.5	$0.94	$79.90
868	1/2"	53	3.3	$0.95	$80.75
865	5/8"	53	3.4	$0.99	$84.15

VINYL TUBING

Clear PVC tubing for cable protection. Commonly called "spaghetti". Meets Spec. MIL-I-63ID.

AWG Size	I.D.	Wire Wall	Size	Part No.	Price/Ft.	100 Ft.
9	.118	.020	20-22	11-02200	$0.20	$16.00
7	.148	.020	16-18	11-02300	$0.28	$22.40
5	.186	.020	12-14	11-02400	$0.19	$15.20
2	.263	.020	8-10	11-02500	$0.21	$16.80
5/16	.312	.025	6	11-02600	$0.35	$28.00
3/8	.375	.025	4	11-02700	$0.38	$30.40

Vinyl tubing for gas lines,1/4" I.D. x 3/8" O.D... P/N 0500-071 .. **$0.48 Ft.**

PREMIUM VINYL TUBING

This premium vinyl tubing is recommended for use in extremely cold temperatures where tubing can be prone to becoming stiff and brittle. Manufactured to Spec. MIL-I-7444B, this tubing can be coiled and bent easily and will retain some flexibility even in extreme temperatures. Sold in 50 ft. and 100 ft. coils in the sizes listed below.

AWG Size	Wire Size	I.D. (In.)	Wall (In.)	50 Ft. Coil		100 Ft. Coil	
				Part No.	Price	Part No.	Price
9	20-22	.118	.020	11-16195	$11.75	11-16190	$24.25
7	16-18	.148	.020	11-16175	$14.75	11-16170	$30.25
5	12-14	.186	.020	11-16155	$17.25	11-16150	$35.25
2	8-10	.263	.020	11-16125	$19.75	11-16120	$39.90
5/16	6	.312	.025	11-16165	$25.25	11-16160	$51.25

EXPANDABLE SLEEVING

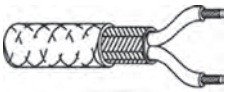
This expandable sleeving is used in many aircraft applications and is used extensively in warbirds and in race cars. Flame retardant. Color: black. Sold in 100ft. lengths.

Size Rng	Part No.	Price
3/32"-1/8"	11-01900	$18.60
1/4"-3/4"	11-01901	$32.80
1/2"-3/4"	11-01902	$58.50
1/4"-5/8"	11-01903	$39.50

Size Rng	Part No.	Price
1/2"–1-1/4"	11-01904	$89.90
3/4"–1-1/2"	11-01905	$107.95
1-1/4"–2-1/2"	11-01906	$236.95
1-1/2"–3"	11-01907	$334.95

NOTE: SOME WIRE ON THIS PAGE IS SOLD IN SPECIAL INCREMENTS ONLY (i.e.: 10 FT., 20 FT., 30 FT., ETC.) (As Noted)
- Extra 15% discount for 1000 ft. (off the 100 ft. price) on all items on this page.

EL

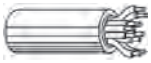


SHIELDED TEFZEL WIRE

This hook-up wire is standard in the aviation industry for installation of electronics equipment. Sold in 1' increments and spooled as a continuous length.

16G 2 CON ..... P/N 11-04473 ..... **$1.62**
18G 2 CON ..... P/N 11-04474 ..... **$1.66**
18G 3 CON ..... P/N 11-04475 ..... **$1.71**
24G 1 CON ..... P/N 11-04476 ..... **$0.39**
24G 2 CON ..... P/N 11-04477 ..... **$0.82**
24G 3 CON ..... P/N 11-04478 ..... **$1.03**

10 CONDUCTOR GRAY CODE TEFZEL WIRE



Excellent for carrying gray code information from the encoder to other devices that take gray code input such as transponder, Garmin 430 GPS, serializer etc. Instead of running individual 24AWG wirs and running them in a bundle, use this handy all in one, color coded, 10 conductor cable, saving time and effort. Sold in 1' increments. P/N 11-04479 ..... **$4.18**

BATTERY CABLE

6-gauge multi-strand copper core cable. Meets SAE Spec J1127-SGT. Price is per foot.

Black ..... P/N 11-03942 ..... **$1.50**
Red ..... P/N 11-03943 ..... **$1.41**
Lug (6 Gauge) ..... P/N 11-05110 ..... **$0.49**

4 CONDUCTOR UNSHIELDED WIRE 18 AWG

The cable can be cut to length, jacket removed and conductors stripped to custom specifications. Awg Size: 18 Thickness: .016" Nominal O.D: .032" Applications: Public address systems, Intercoms, Internal telephones, Remote control circuits, Suitable for EIA RS-232 applications

P/N 11-08280 ..... **$1.98 /ft.**

SOLDER SLEEVES

One-step, heat-shrinkable wire and cable interconnection devices are a labor saving alternative to conventional wire and cable termination methods. Create strong, soldered connections. Consist of a heat-shrinkable sleeve and a premeasured, fluxed solder band. When heated, the tubing shrinks and the solder melts, making reliable, insulated terminations.

.125"SM ..... P/N 11-04480 ..... **$1.80**
.200"MD ..... P/N 11-04481 ..... **$0.93**
.300"LG ..... P/N 11-04482 ..... **$1.64**

SUMITOMO SOLDER SLEEVES

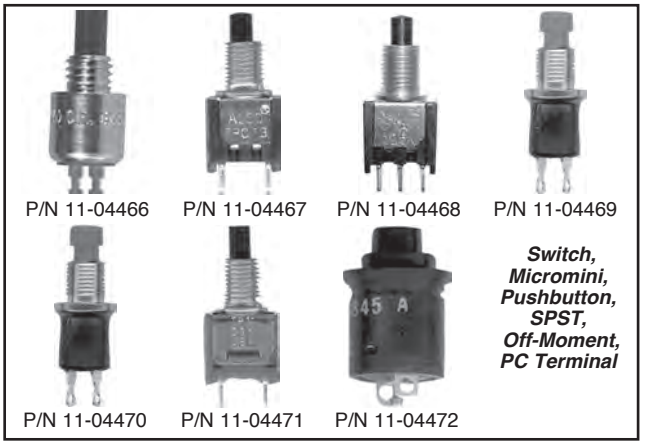
Consist of a heat-shrinkable, transparent, polyvinylidene fluoride sleeve with an inner, pre-fluxed, solder preform and two thermoplastic sealing inserts. When heat is applied, the solder melts and flows to provide a superior connection between the ground lead and the shield. The two thermoplastic sealing inserts melt and the outer sleeve shrinks to provide an environmentally protected termination.

.125 ..... P/N 11-07902 ..... **$0.58**
1/4" ..... P/N 11-07903 ..... **$0.57**
.300 ..... P/N 11-07905 ..... **$1.16**

MU-METAL MAGNETIC SHIELDING

Provides shielding when placed around electronic equipment proir to instalation. 4"x4 mil. Sold by the inch. P/N 11-04483 . **$3.95/inch**

MOMENTARY PUSH-BUTTON SWITCHES



P/N 11-04466 P/N 11-04467 P/N 11-04468 P/N 11-04469

P/N 11-04470 P/N 11-04471 P/N 11-04472

Switch, Micromini, Pushbutton, SPST, Off-Moment, PC Terminal

SPST, Normally Open, Black ..... P/N 11-04467 ..... **$19.75**
SPDT, Momentary, Black ..... P/N 11-04468 ..... **$15.85**
1/4" Threads, Normally Open, Red ..... P/N 11-04469 ..... **$5.50**
1/4" Threads, Normally Open, Black ..... P/N 11-04470 ..... **$3.95**
SPDT, Momentary, Black ..... P/N 11-04471 ..... **$5.50**

HEAT SHRINK BUTT SPLICES

PN 11-04427 (TIN PLATED) PN 11-04428 (NICKEL PLATED)

Heat-Shrinkable crimp butt splices completely insulate and protect electrical connections from water, condensation, salt and corrosion. Provides strain relief and protects against wire pull-out and vibration in the most rugged environments. Qualified to MIL-S-81824/1.

BLUE

AWG: 20-16 -- I.D. dimensions (mm/in) Crimp barrel size range 779-2680(CMA) 0.39-1.34(mm)

Sold by the Piece

Side 1	
Sealing Insert	Max. no. of wires
2.79(.110)	2
Side 2	
Sealing Insert	Max. no. of wires
2.79(.110)	2

Blue (Tin-plated) ..... P/N 11-04427 ..... **$1.95**
Blue (Nickel-plated) ..... P/N 11-04428 ..... **$5.90**

PN 11-04425 (TIN PLATED) PN 11-04426 (NICKEL PLATED)

RED

AWG: 26-20 -- I.D. dimensions (mm/in)Crimp barrel size range 1900-6755(CMA) 0.95-3.37(mm)

Sold by the Piece

Side 1	
Sealing Insert	Max no. of wires
4.32(.170)	2
Side 2	
Sealing Insert	Max no. of wires
4.32(.170)	2

Red (Tin-plated) ..... P/N 11-04425 ..... **$1.38**
Red (Nickel-plated) ..... P/N 11-04426 ..... **$3.75**

PN 11-04429 (TIN PLATED) PN 11-04430 (NICKEL PLATED)

YELLOW

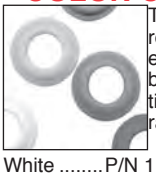
AWG: 16-12 -- I.D. dimensions (mm/in) Crimp barrel size range 1900-6755(CMA) 0.95-3.37(mm)

Sold by the Piece

Side 1	
Sealing Insert	Max no. of wires
4.32(.170)	2
Side 2	
Sealing Insert	Max no. of wires
4.32(.170)	2

Yellow (Tin-plated) ..... P/N 11-04429 ..... **$2.35**
Yellow (Nickel-plated) ..... P/N 11-04430 ..... **$5.95**

COLOR CODED CIRCUIT BREAKER CAPS



These color coded caps can easily be installed and removed from Klixon and similar type circuit breakers. Colored caps are used to "flag" designated circuit breakers for flight check and other purposes. In addition, they greatly improve grip. Won't shake loose and rattle like others can.

White ..... P/N 11-04455 ..... **$2.35**
Red ..... P/N 11-04457 ..... **$2.35**
Yellow ..... P/N 11-04459 ..... **$2.40**
Gray ..... P/N 11-04461 ..... **$2.35**
Orange ..... P/N 11-04456 ..... **$2.35**
Blue ..... P/N 11-04458 ..... **$2.35**
Black ..... P/N 11-04460 ..... **$2.35**
Green ..... P/N 11-04462 ..... **$2.35**

Discount: 10% Discount on 6 or more of the same Part number.

CIRCUIT BREAKER LOCKS

Circuit Breaker Safety Locks - With & Without Tags. Prevents the inadvertent closing of circuit breakers connected to equipment that is under repair or removed from the aircraft. Easily installed and removed from Klixon and similar type circuit breakers. Safety locks come both with and without tags. All locks are red, tags are red with white lettering. Tags measure 2"x3/4".

No Tag ..... P/N 11-04463 ..... **$3.75**
Remove Before Flight ..... P/N 11-04464 ..... **$7.95**
Inoperative ..... P/N 11-04465 ..... **$8.75**

EL

BNC COAXIAL ANTENNA CONNECTORS

Male.....P/N 11-03992 ..... **$2.93**
Female .....P/N 11-03993 ..... **$3.50**

TNC FEMALE CRIMP RG142

TNC Female Crimp RG142
P/N 11-08641 ..... **$15.75**

BNC CONNECTOR RIGHT ANGLE BNC MALE TO FEMALE

Male to Female .....P/N 11-04454..... **$6.75**

BNC CONNECTOR RG58

Male, Right angle, dual crimp.
P/N 11-04444 ..... **$42.65**

MALE BNC TO SMA FEMALE ADAPTER

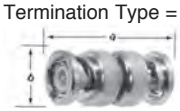
Male BNC/SMA Female adapter. Configuration: Straight Connector 1: BNC Male. Connector 2: SMA Female.
P/N 11-10463 ..... **$14.85**

BNC FEMALE BULKHEAD DUAL CRIMP

RG58 .....P/N 11-04445.....**$15.50**

BNC RF MALE CONNECTOR - RIGHT ANGLE

• Connector - RF • Plug • Housing Gender = Plug • Terminate To Coaxial Cable • Coaxial Cable Termination Type = Crcrimp
P/N 11-08415 ..... **$48.85**



BNC STRAIGHT ADAPTERS - PLUG/PLUG 50 OHMS

RF/Coaxial Adapter. Dimensions: a 1.25"; b .562". Connector Type: Intra-Series Coaxial. Convert From: BNC Plug. Convert To: BNC Plug
P/N 11-08416..... **$5.50**

BNC STRAIGHT ADAPTERS - JACK/JACK 50 OHM

RF/Coaxial Adapter. Connector Type: Intra-Series Coaxial. Convert From: BNC Jack. Convert To: BNC Jack
P/N 11-08417..... **$6.85**

TNC CONNECTOR AMP MALE, DUAL CRIMP RG58

P/N 11-04446..... **$38.75**

TNC CONNECTOR AMP MALE, DUAL CRIMP RG142-400

P/N 11-04447 ..... **$23.60**

TNC CONNECTOR AMP RIGHT ANGLE, MALE, DUAL CRIMP RG58

P/N 11-04449 ..... **$46.25**

TNC CONNECTOR AMP RIGHT ANGLE, MALE, DUAL CRIMP RG142-400

P/N 11-04450..... **$45.75**

TNC CONNECTOR AMP RIGHT ANGLE, MALE, DUAL CRIMP RG214

P/N 11-04451 .....**$69.85**

TNC CONNECTOR RIGHT ANGLE SOLDER/ SCREW RG58

P/N 11-04452.....**$115.95**

TNC CONNECTOR FEMALE, DUAL CRIMP RG58

P/N 11-04453 ..... **$65.75**

TNC CONNECTOR
FEMALE, DUAL CRIMP RG58
P/N 11-04453 ..... $65.75

LITTLE BLUE CRIMPER

The Daniels AFM8 is designed for most of the miniature and sub-miniature connector types that are so widely used in all types of electronic systems. Originally developed for the Air Force, the AFM8 meets the need for a miniature tool accommodating wire sizes 20 thru 32 AWG. The cycle controlled precision ratchet assures consistently accurate crimps every time. The tool has a built-in eight step selector knob for ease in dialing the correct crimp depth setting for the wire being used.
P/N 11-04443 ..... **$299.75**

BIG BLUE CRIMPER

The Daniels AF8 has virtually limitless application within the specified wire range of 12 thru 26 AWG. Over 1,000 turret heads or positioners are available to adapt the tool frame to your specific military or proprietary contact/wire combination. The eight impression crimp, which is standard in the AF8, assures absolute maximum tensile strength with almost every closed barrel contact. The precision ratchet controls cycling on the tool in both directions of handle movement. This assures the same, accurate crimp every time. It's like having a quality control inspector at every work station.
P/N 11-04442.....**$283.95**

HAND INSERTION TOOL

This inexpensive, manual tool is lightweight and easy to use in the placement and/or removal of a terminal in a housing.

P/N 11-04439..... **$53.75**

MATE-N-LOK INSERTION PIN & SOCKET TOOL

Insertion tool for grounding blocks and locking connectors. The AMP insertion tool for MATE-N-LOK pins. Contact sizes 20-24 AWG.
P/N 11-04437 ..... **$27.50**

MATE-N-LOK EXTRACTION PIN & SOCKET TOOL

Insertion tool for grounding blocks and locking connectors. The AMP insertion tool for MATE-N-LOK pins. Contact sizes 20-24 AWG.
P/N 11-04438 ..... **$26.75**

PIN & SOCKET TOOL W/ INTERCHANGEABLE TIPS

This insertion & extraction tool consists of a handle, a cap, six insertion/extraction tips, a plug, and a .050-in. hex wrench. The handle of the tool provides storage for the tips, plug and hex wrench. The insertion/extraction tips convert the tool for the appropriate product and are used to insert or extract connector contacts. Each tip is color coded according to specific type and wire size. The hex wrench is used to tighten the set screw which secures the tip in the tool handle.
P/N 11-04436..... **$26.50**

PIN INSERTION & EXTRACTION TOOL

The insertion of contacts during assembly or replacement during repair is quick and easy with the appropriate tools. The tools have to fit the contacts and the connectors if assembly and repair are to be carried out correctly. Plastic Body, Metal Tip Insertion & Extraction Too l After you've installed the pins on the wiring to a connector, this tool will help you set the pins correctly into the connector housing. This tool is also absolutely necessary to use for extracting a proken pin for replacement or moving a misplaced pin for relocation. Insert and extract all your connector pins & sockets with this premium tool. It will work with both standard and high-density pins.

16 AWG Blue/White ..... P/N 11-04431.....**$16.50**
20 AWG Red/White ..... P/N 11-04432.....**$14.95**
24-20AWG Red/White..... P/N 11-04433.....**$12.75**
22 AWG Green/White..... P/N 11-04434.....**$14.95**
22-28AWG Green/White ..... P/N 11-04435.....**$6.50**

EL

ELECTRICAL TERMINALS

KOROSEAL LACING

Excellent lacing material. Permanently flexible. Resists oxidation, impervious to petroleum products. Holds tension on knots indefinitely. Perfect for holding wire bundles, tubing, etc. Rectangular cross-section 3/32"x 5/32".

P/N 11-12200 ..... **$0.59/Ft.**

BREYDEN POLYESTER LACING TAPES

Flat braided tape manufactured from 100% high tenacity, continuous filament polyester fiber. This product conforms to the requirements of MIL-T-43435B; Type II, Size 3, Finish C. The tape is uniformly impregnated with a synthetic elastomer coating to improve knot holding and tying characteristics. Ideal for spot tying. 500 yd. rolls.
Width: .085" (±10%); Thickness: .014" (±.003"); Tensile Strength: 50 Lb. (min.); Elongation: 40% (max.)

Natural ..... P/N 11-02012 ..... **$17.75**
Black ..... P/N 11-02013 ..... **$19.85**

BREYDEN NYLON LACING TAPES

Flat braided tape manufactured from 100% high tenacity, continuous filament nylon yarn. This tape is impregnated with a specially formulated microcrystalline, fungicidal wax. Conforms to the requirements of A-A-52080-B-3. Recommended for continuous lacing. 500 yd. rolls. Width: .077" (min.) / .094" (max.); Thickness: .011" (min.) / .017" (max.); Tensile Strength: 50 Lb. (min.); Wax Content: 15-32%; Elongation: 40% (max.)

Natural ..... P/N 11-12170 ..... **$19.50**
Black ..... P/N 11-12160 ..... **$19.85**

MS25181 NYLON SPLICES

Butt-type, self insulated.

Part No.	Wire Range	Price
320559	22-18	**$0.72**
320562	16-14	**$0.81**
320570	12-10	**$1.40**

AMP® BATTERY TERMINALS

Terminals may be crimped or soldered.

P/N	AWG Size	Amps	Stud Size	Price ea
33461	8	35	1/4"	**$0.64**
33466	6	50	5/16"	**$0.88**
33470	4	70	5/16"	**$1.47**
321600	2	90	3/8"	**$1.97**
321867	1/0	125	5/16"	**$3.70**
321868	1/0	125	3/8"	**$2.45**

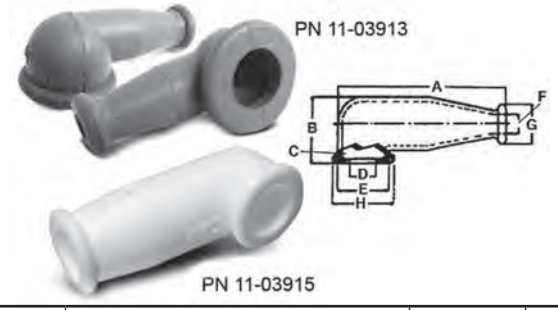
RING AND SPADE TONGUE TERMINALS

Specifications: Wire Range (mm [AWG]): 0.30-1.40² [22-16], Wire/Cable Size (CMA): 509 – 3,260 Tongue Material Thickness (mm [in]): 0.84 [0.033], Voltage (VAC): 300

Ring Tongue Term 320572 5/16 ..... P/N 11-09313 ..... **$0.50**
Ring Tongue Term 320573 3/8 ..... P/N 11-09314 ..... **$0.68**
Ring Tongue Term 328975 1/2" ..... P/N 11-09315 ..... **$1.26**

MS25171 ELECTRICAL TERMINAL NIPPLES

Right angle nipples made of silicone rubber (MIL-R-5847, Class II, Grade 50).



Part No.	Dimension								Dash No.	Price Each
	A	B	C	D	E	F	G	H		
11-03913	1.38	.56	.06	.40	.63	.16	.41	.76	-1S Red	**$1.16**
11-04837	1.38	.56	.06	.40	.63	.16	.41	.76	-1S Black	**$1.22**
11-03914	2.50	1.00	.06	.56	.82	.31	.56	.95	-2S White	**$1.18**
11-08287	2.50	1.00	.06	.56	.82	.31	.56	.95	-2S Black	**$1.69**
11-03915	2.50	1.00	.06	.56	.82	.43	.68	.95	-3S White	**$1.18**
11-03916	2.50	1.00	.06	.56	.82	.56	.82	.95	-4S White	**$1.16**

LIQUID ELECTRICAL TAPE

Protects connections with applicator brush protects electrical connections and terminals against corrosion. Ideal for battery switches, instrument panel terminations, bilge pumps and electrical connections. Dielectric, resists moisture by filling in wire nuts and butt connector ends. The water-based formula is environmentally friendly, non toxic, non-flammable, odor free, will not harden in container, and easy to clean up with water.

4oz. Bottle P/N 09-42565 ..... **$10.50**

AMP® SOLDERLESS TERMINALS & SPLICES

AMP's solderless electrical terminals and splices meet and exceed today's requirements for reliable terminals in applications ranging from control circuits to heavy duty power wiring. A limited number of sizes and types of terminals and tools are featured in this catalog. Information and pricing on unlisted items furnished on request.

RING TONGUE, NON-INSULATED TERMINALS

The barrel and tongue of these terminals are fabricated of the finest electrolytic copper and electro-tinned for optimum performance. The seam is brazed for uniform metal strength around the entire barrel area.

Part No.	AWG Size	Stud Size	Price
34104	22-16	4	**$1.60**
34105	22-16	6	**$0.17**
34108	22-16	8	**$0.25**
34109	22-16	10	**$0.29**
34113	22-16	1/4	**$0.24**
321684	16-14	6	**$0.17**
34122	16-14	8	**$0.20**
34123	16-14	10	**$0.19**
34124	16-14	1/4	**$0.22**
32994	12-10	8	**$0.28**
33457	12-10	10	**$0.15**
35772	12-10	1/4	**$0.26**
35135	12-10	1/2	**$0.48**

RING TONGUE, VINYL INSULATED TERMINALS

Each insulated terminal consists of a tin plated copper body, a tin plated copper wire support sleeve and a color-coded insulation sleeve.

Part No.	AWG Size	Stud Size	Price
31880	22-16 Red	4	**$0.40**
31885	22-16	6	**$0.23**
31890	22-16	8	**$0.27**
36154	22-16	10	**$0.29**
31894	22-16	1/4	**$0.43**
32442	16-14 Blue	6	**$0.27**
31902	16-14	8	**$0.25**
31903	16-14	10	**$0.24**
31906	16-14	1/4	**$0.32**
35149	12-10 Yellow	6	**$0.49**
35108	12-10	8	**$0.38**
35109	12-10	10	**$0.39**
35110	12-10	1/4	**$0.43**
35112	12-10	3/8	**$0.65**

KNIFE DISCONNECTS

Nylon InsulatedTwo Required Per Assembly.

32446 ..... 22-16 ..... Red ..... **$0.62 ea.**
32448 ..... 16-14 ..... Blue ..... **$0.63 ea.**

BUTT TYPE SPLICES

PLASTI-GRIP

34070 ..... 22-16 ..... Red ..... **$0.29 ea.**
34071 ..... 16-14 ..... Blue ..... **$0.27 ea.**
34072 ..... 12-10 ..... Yellow ..... **$0.42 ea.**

Discount: Less 20% on 100 pieces (per P/N)

AMP TERMINAL KITS

Terminal & Splice Kit ..... P/N 11-50000 ..... **$99.95**
Above w/15 Drawer Cabinet ..... P/N 11-50005 ..... **$133.95**
Above w/Cabinet and 604252-1 tool ..... P/N 11-50010 ..... **$153.95**

FOR KIT COMPONENTS VISIT
www.aircraftspruce.com
OR CALL OUR SALES TEAM AT:
1-877-4-SPRUCE

PIDG FASTON RECEPTACLES BY AMP

***Style A:** No dimple w/wire stop.
****Style B:** Dimple w/ wire stop.
Less 20% on 100 pcs. (per P/N)

Part #	Tab Width	AWG	Tab Thk.	Price
640903-1**	0.250"	22-18	.032	**$0.29**
640905-1**		16-14	.032	**$0.37**
42844-1**		14-12	.032	**$0.42**
11-00808**		12-10	.032	**$0.39**
640909-1**	0.205"	22-18	.020	**$0.33**
640911-1**		22-18	.032	**$0.28**
640913-1**		16-14	.020	**$0.27**
640915-1**		16-14	.032	**$0.36**
640917-1**	0.187"	22-18	.020	**$0.28**
640919-1**		16-14	.020	**$0.32**
61048-1**	.110"	22-18	.016	**$0.58**
61060-1**		22-18	.020	**$0.30**
60894-1**		22-18	.032	**$0.32**
640923-1*		22-18	.020	**$0.37**
640925-1*		22-18	.032	**$0.40**
640929-1*		16-14	.020	**$0.37**

EL

SEAL-ALL CONNECTORS – BUSS BARS

Seal-All Connectors are an environmentally sealed connection system developed to withstand exposure to extreme temperatures, moisture and harsh engine compartment fluids and chemicals with unfaltering performance. It consists of mating heat stabilized polyamide housings, male and female "pin and socket" terminals and self-lubricating silicone connector and cable seals. Seal-All connector configurations are available for one to six wires. -40 C to 125 C temperature range. Now you can have the same superior Plug/Connector that is used in vehicle OEM manufacturing.

Below are sold as the shell only. Terminal connector kits are not included. Order seperately.

SEAL-ALL CONNECTORS
(MALE AND FEMALE SHELLS ONLY)

SINGLE CONDUCTOR KIT

MANF P/N - WHT1C
P/N 11-06581.....**$3.25**

DOUBLE CONDUCTOR KIT

MANF P/N - WHT2C
P/N 11-06582.....**$4.50**

TRIPLE CONDUCTOR KIT

MANF P/N - WHT3C
P/N 11-06583.....**$4.50**

4 CONDUCTOR KIT

MANF P/N - WHT4C
P/N 11-06584.....**$5.65**

4 CONDUCTOR KIT

MANF P/N WHT4CSQ
P/N 11-06585.....**$5.75**

5 CONDUCTOR KIT

MANF P/N - WHT5C
P/N 11-06586.....**$11.50**

6 CONDUCTOR KIT

MANF P/N - WHT6C
P/N 11-06587.....**$7.85**

TERMINAL CONNECTOR KITS FOR SEAL-ALL CONNECTORS

Terminal Kits (includes 6 each-male, female terminals and 12 seals). Will work with all Seal-All Shells. Note-the male terminal pin goes into the female shell.

24-22 Ga Wire MANF P/N - WHT2422..... P/N 11-06588 .....**$8.95**
20-18 Ga Wire MANF P/N - WHT2018..... P/N 11-06589 .....**$8.95**
16-14 Ga Wire MANF P/N WHT1614..... P/N 11-06590 .....**$8.95**

SEAL-ALL HEAVY DUTY CONNECTOR

Heavy Duty Connector-42 amps continuous maximum current rating. For 12-10 gauge wire.
Complete 2 conductor kit
P/N 11-06591 .....**$16.95**

SEAL-ALL CRIMP TOOL

Crimp tool works with all Seal-All terminals and seals. Its compact, low-cost parallel jaw design eliminates terminal rocking.
Seal-All Crimp Tool..... P/N 11-06592 .....**$37.95**

PROFESSIONAL SEAL-ALL CRIMPER

Crimps Seal-All terminals and seals in one cycle. Features two double Cavities, an orientation block and a ratchet mechanism to ensure that each crimp cycle is completed. Factory calibrated to be used only with Seal-All terminals and seals. Wire range 20-14.
Pro Seal-All Crimper
P/N 11-06593 .....**$134.95**

SEAL-ALL TERMINAL RELEASE TOOL

A must have tool for working with Seal-All shells and terminals. Designed to depress Seal-All rentention barbs to allow terminal removal from shells.
Seal-All Tool
P/N 11-06594 .....**$8.60**

BUSS BARS

These MS25226 series buss bars are used as replacement bars for MS27212 board assemblies.

Part No.	Hole Size	# of Holes	Length	Our Part No.	Price
MS25226-10-4	3/16	4	2 5/8"	11-04676	**$13.25**
MS25226-10-8	3/16	8	5 5/8"	03-00133	**$7.75**
MS25226-10-16	3/16	16	11 5/8"	03-00131	**$9.75**
MS25226-4-8	1/4	8	5 3/4"	03-00134	**$5.50**
MS25226-8-4	1/2	4	5 1/8"	03-00135	**$17.25**

EL

CABLE TIES – SPIRAL WRAP

AMP® FLEXI-BLOCK MODULAR TERMINAL BLOCK SYSTEM

Assemble terminal blocks to custom requirements in seconds:
1. Pull out the number of block assemblies required from dispenser box. 2. Cut the track with hacksaw or cutting tool two spaces longer than unit. Slip the block assembly into the track 3. Insert end stops and assembly is complete.
USER'S KIT - Consists of 25 pcs Flexi-Block terminal block, 12 end stops and (2) 12" pcs. of track. Complete kit.
P/N 601883-1 ..... **$44.75**

PROFESSIONAL KIT - No. 6 kit consists of 100 ea. P/N 604101-1 block assemblies, 25 ea. of P/N 604111-1 end stops & 2 ea. P/N 601805-1 track 3 ft. long. Complete kit. P/N 601804-8 ..... **$149.50**

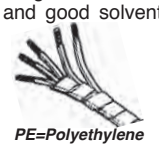
COPPER BUS BAR - 0.125" x .5" Wide
P/N 03-40890 ..... **$3.80/ft**

AMP® SPIRAP SPIRAL PLASTIC TUBING

Spiral plastic tubing is a fast and economical way to bundle wires and harnesses. It is designed to protect wire insulation for the life of the circuit even under severe vibration. Spirap tubing obtains its gripping ability from the memory of the plastic. When 1/4" diameter Spirap is wrapped around a 3/4" diameter wire bundle, the Spirap tubing tries to return to is original 1/4" diameter size, effectively gripping the wire bundle. Flame retardant polyethylene. Color—white. Bundle diameter range: 3/16" to 2". Discount: 20% less on orders of 100 feet
White .....P/N 500004-1 ..... **$1.30/ft.**
Black.....P/N 11-08320 ..... **$1.40/ft.**

SPIRAL WRAP WIRE PROTECTORS

Permits flexible routing of cable harness while forming a neat, protective bundle. It twists on easily and quickly and allows lead-outs at any point. When installed, it may be gapped for greater economy and flexibility or it may be butted tightly for maximum abrasion resistance, insulation protection and greater rigidity. Nylon type-for use in wider temperature ranges with high resistance to abrasion and good solvent resistance.



PE=Polyethylene
NY=Nylon

Part No.	Size	Max. Dia.	Price/ft.
11-12318 (PE)	1/8"	1/2"	$0.68
11-12316 (PE)	3/16"	1-1/2"	$0.74
11-12314 (NY)	1/4"	2"	$0.96
11-12338 (NY)	3/8"	3"	$1.95
11-12312 (NY)	1/2"	4"	$2.70
11-12334 (PE)	3/4"	6"	$2.15
11-12311 (PE)	1"	8"	$2.50

STA-KON ELECTRICAL TERMINALS

Color-coded MS25036 nylon ring w/self-insulated grip. 20% Discount on 100

Wire Range: 22-18		
P/N	Bolt Hole	Price
11-03864	4	$0.78
11-03865	6	$0.82
11-03866	8	$0.82
11-03862	10	$0.86
11-03863	1/4	$1.20
Wire Range: 16-14		
11-04093	4	$0.60
11-03869	6	$0.79

Wire Range: 16-14 Cont.		
P/N	Bolt Hole	Price
RB14-8	8	$0.74
RB14-10	10	$0.93
RB14-14	1/4	$0.73
Wire Range: 12-10		
RC10-6	6	$0.92
RC10-8	8	$0.67
RC10-10	10	$0.89
RC10-14	1/4	$0.86
RC10-38	3/8	$0.95

COBRA® RUBBER MOUNTS

Part No.	Size	Color	Qty.	Price
11-02470	3/4"	Black	100	$15.50
11-02472	3/4"	Natural	100	$15.00
11-02474	1"	Black	100	$19.75
11-02476	1"	Natural	100	$21.50

COBRA® ACRYLIC MOUNTS

Part No.	Size	Color	Qty.	Price
11-02478	3/4"	Black	100ct	$13.95
11-02479	3/4"	Natural	100ct	$13.90
11-02481	3/4"	Natural	1000ct	$15.00
11-02482	1"	Black	100ct	$24.85
11-02484	1"	Natural	100ct	$23.95

STANDARD CINCH AND TRIM GUN

C-200 Wraps ties from 18 to 50 lbs with auto tension setting & a rugged die cast aluminum body. Applies traditional ties as well as low profile ties.
P/N 11-02468 ..... **$39.75**

CABLE TIES

This all nylon cable tie is designed to hold cables securely. Bundling strength military requirements. Installs in just seconds.

Part No.	Cat. #	Length	Price
11-04230	L-4-18	4"	$0.06
11-04229	L-7-50	7"	$0.09
11-04058	L-14-50	14"	$0.28

CABLE TIE ASSORTMENT PACK

P/N 11-03768 ..... **$5.25**
P/N 11-04230 ..... **$0.06**
P/N 11-04058 ..... **$0.28**
11-04039 ..... **$0.09**
11-04229 ..... **$0.09**

TYTON HORIZONTAL IDENTIFICATION CABLE TIES

Length: 8"; Strength: 50 lbs..... P/N 11-12360 ..... **$0.67**

TYTON VERTICAL IDENTIFICATION CABLE TIES

Length: 4"; Strength: 18 lbs.
P/N 11-12365 ..... **$0.55**

TYTON MOUNTING CABLE TIES

Length: 4"; Strength: 18 lbs.....P/N 11-12350 ..... **$0.51**
Length: 8"; Strength: 50 lbs.....P/N 11-12355 ..... **$0.57**

ADHESIVE AND SCREW CABLE TIE MOUNTS

Part No.	Strength	Mounting	Price/50
11-01017	18 to 30 lbs.	#4 Screw	$34.25
11-03854	18 to 50 lbs.	#8 Screw	$42.75
11-03855	18 to 150 lbs.	#8 Screw	$47.75

CRADLE CABLE TIE MOUNTS

Part No.	Strength	Mounting	Price/50
11-03987	18 lbs.	#6 Screw	$18.75
11-03988	18 lbs	#8 Screw	$21.75
11-03989	18 to 50 lbs.	#8 Screw	$28.50
11-03990	18 to 50 lbs.	#10 Screw	$29.20
11-03991	18 to 120 lbs.	1.4" Screw	$31.25

NYLON BULKHEAD SEALS

Nylon Bulkhead seals are used when electrical harnesses or tubing is passed through bulkheads in pressurized and non-pressurized aircraft.
Bulkhead Seal, Square, 1-1/8" Hole.....P/N 11-04059 ..... **$9.50**
Bulkhead Seal, Elliptical, 3/4" Hole .....P/N 11-04061 ..... **$9.50**
Bulkhead Seal, Elliptical, 1/2" Hole .....P/N 11-04060 ..... **$8.50**
Bulkhead Seal, Square, 1-3/8" Hole.....P/N 11-04062 ..... **$21.50**

COBRA® CABLE TIES

With a contoured locking head, the Cobra configuration is safer, more flexible and stronger than existing cable ties. Safer because the (often barbed) stub is now deflected into a pocket at the rear of the head. More flexible because the flat lock section curves to the bundle contour and stronger because the Cobra uses an inline geometry, eliminating the stress points of traditional cable ties. Bundles down to 3/8" diameter and meets new AS 3361 specs. Features pick-proof underside lock & all rounded edges.

Color	Qty.	Tensil	Length/Width	Part No.	Price
UV Black	100	50 Lbs.	7.5" x .178"	11-01883	$4.95
UV Black	1000	50 Lbs.	7.5" x .178"	11-01884	$44.50
Natural	100	50 Lbs.	7.5" x .178"	11-01885	$4.35
Natural	1000	50 Lbs.	7.5" x .178"	11-01886	$39.85
UV Black	100	50 Lbs.	11"	11-08033	$8.95
UV Black	100	50 Lbs.	14"	11-08034	$9.25
Black	-	120 Lbs.	14" x .178"	11-02416	$17.50
Natural	-	120 Lbs.	14" x .178"	11-02417	$16.25
Black	-	18 Lbs.	4" x .178"	11-02464	$1.90
Natural	-	18 Lbs.	4" x .178"	11-02466	$1.85
Natural	-	18 Lbs.	4" x .178"	11-02467	$14.75

COBRA® CABLE TIE KITS

STANDARD - Kit includes: 100 low profile blk Cobra® ties , the rugged Cinch&Trim application gun and an instruction manual. Gun applies traditional as well as low profile ties.
Black 7.5" Ties P/N 11-06319..... **$45.00**
Natural 7.5" TiesP/N 11-06320 ..... **$44.95**

HEAVY DUTY - Kit includes: heavy duty Cinch & Trim application gun , qty. 25 Cobra® low profile 14 inch 120 lb ties blk . and an instruction manual. Gun applies traditional as well as low profile ties.
Black 14" Ties P/N 11-04729..... **$49.85**
Natural 14" TiesP/N 11-04730 ..... **$49.75**

EL

AIRCRAFT SPRUCE WEST
CORONA, CA • (877) 4-SPRUCE
AIRCRAFT SPRUCE EAST
PEACHTREE CITY, GA • (877) 477-7823

Prices Subject to Change Without Notice

BOGERT CABLES

BOGERT'S LOW LOSS COPPER CABLE KITS

Benefits:
- Starting performance improved, both hot & cold
- Eliminates nearly all voltage drop between battery & starter
- Starter current draw reduced
- Faster cranking, crank longer on the same battery
- Prolonged battery and starter life
- Less stress on battery & starter system
- Helps assure confidence in passengers
- Reduces the personal frustration and irritation factor
- Exceeds Piper Service Bulletins SB836 and SB836a

Contents:
- STC & AML Copy
- Sample log book entry
- Sample 337 sample entries
- Formula for figuring weight & balance, & C.G. Change
- Easy to follow instructions
- Schematic listing part numbers for all cables in the kit
- Flexible 1 gauge M22759, cut to length & assembled
- Cut to the correct length
- Assembled with 'slim-head' style terminals
- Insulated with shrink tubing

Aircraft Application		Part No.	Our Price	Aircraft Application		Part No.	Our Price
PA-12		11-00247	**$226.95**	PA-28-235	Cherokee	11-15150	**$372.95**
PA-16		11-00248	**$129.95**	PA-28-236	Dakota	11-15152	**$335.95**
PA-18	Super Cub	11-15102	**$250.95**	PA-30	Twin Comanche	11-15154	**$524.00**
PA-20	Pacer	11-15104	**$179.95**	PA-31-300	Navajo	11-15156	**$533.00**
PA-22	Tripacer/Colt	11-15106	**$179.95**	PA-31-310	Navajo	11-15158	**$533.00**
PA-23-150/160	Apache	11-15108	**$556.00**	PA31-325	Navajo	11-15160	**$533.00**
PA-23-250	Aztec (4&6 place)	11-15110	**$535.00**	PA-31-350	Navajo	11-15162	**$559.00**
PA-24-180/250	Comanche (Battery AFT)	11-15112	**$332.95**	PA-31P	Navajo	11-15164	**$559.00**
PA-24-260	Comanche (battery fwd of firewall)	11-15114	**$229.95**	PA-31T1	Cheyenne I	11-15168	**$1,095.00**
PA-31T	Cheyenne	11-15166	**$1,095.00**	PA-32R-301T	----------	11-15184	**$203.95**
PA-24-260	Comanche (AFT)	11-15116	**$226.95**	PA-32-260/300	Cherokee Six	11-15170	**$279.95**
PA-24-400	Comanche	11-15118	**$305.95**	PA-32R-300	Lance	11-15172	**$264.95**
PA-25-235/260	Pawnee	11-15120	**$309.95**	PA-32RT-300	Lance	11-15174	**$257.95**
PA-25-235/260	Pawnee (SN25-7556153 & up)	11-15122	**$306.95**	PA-32RT-300T	Lance	11-15176	**$257.95**
PA-28-140	Cherokee	11-15124	**$289.00**	PA-32-301	----------	11-15178	**$279.95**
PA-28-150/160	Cherokee	11-15126	**$337.95**	PA-32R-301	----------	11-15180	**$257.95**
PA-28-151	Warrier	11-15128	**$301.95**	PA-32-301T	Turbo Saratoga	11-15182	**$422.95**
PA-28-161	Warrier II	11-15130	**$309.95**	PA-34-200	Seneca I	11-15186	**$637.00**
PA-28-180	Cherokee	11-15132	**$336.95**	PA-34-200T	Seneca II	11-15188	**$590.00**
PA-28R-180	Arrow	11-15134	**$337.95**	PA-34-220T	Seneca III	11-15190	**$590.00**
PA-28-181	Archer II	11-15136	**$337.95**	PA-36-285		11-00250	**$251.95**
PA-28R-200	Arrow II	11-15138	**$336.95**	PA-36-300		11-00251	**$251.95**
PA-28R-201	Arrow III	11-15140	**$337.95**	PA-36-375		11-00252	**$365.95**
PA-28R-201T	Turbo Arrow III	11-15142	**$330.95**	PA-38-112	Tomahawk	11-15192	**$192.95**
PA-28RT-201	Arrow IV	11-15144	**$271.95**	PA-39 C/R		11-00253	**$477.95**
PA-28RT-201T	Turbo Arrow IV	11-15146	**$330.95**	PA-44-180	Seminole	11-15194	**$723.00**
PA-28-201T	Turbo Dakota	11-15148	**$330.95**	PA-44-180T	Turbo Seminole	11-15196	**$723.00**

CESSNA – BEECHCRAFT – BELLANCA – GRUMMAN – LUSCOMBE – MOONEY – STINSON – COMMANDER – SWIFT

Aircraft Application	ParT No.	Our Price
Cessna 150 A, B, C	11-00273	**$191.95**
Cessna 150 D, E, F, G, H`	11-00274	**$71.25**
Cessna 150 J, K, L, M	11-00275	**$174.50**
Cessna 152 no APU	11-00276	**$179.95**
Cessna 152 with APU	11-00277	**$179.95**
Cessna 170 A	11-00278	**$138.95**
Cessna 170 B	11-00279	**$138.95**
Cessna 172 A	11-00280	**$138.95**
Cessna 172 B, C	11-00281	**$178.95**
Cessna 172 D, E (rear), F	11-00282	**$128.95**
Cessna 172 G, H	11-00283	**$128.95**
Cessna 172 I, K, L, M	11-00284	**$158.95**
Cessna 172N	11-00285	**$178.95**
Cessna 172P	11-00286	**$321.95**
Cessna 175 A, B, C	11-00287	**$256.95**
Cessna 177 B	11-00288	**$354.95**
Cessna 177 RG	11-00289	**$369.50**
Cessna 180	11-00290	**$274.95**
Cessna 180 A, B, C, D, E	11-00291	**$271.95**
Cessna 180 J	11-00292	**$310.95**
Cessna 180 K	11-00293	**$306.95**
Cessna 182 1956 model	11-00294	**$306.95**
Cessna 182 A	11-00295	**$306.95**
Cessna 182 J	11-00296	**$276.95**
Cessna 182 E, F, G, H, J, K, L, M, N, P, Q	11-00297	**$363.95**
Cessna 185 E & A185E	11-00298	**$329.95**
Cessna A185F 12 VOLT	11-00299	**$305.95**
Cessna A185F 24 VOLT	11-02211	**$305.95**

Aircraft Application	ParT No.	Our Price
Cessna U206 C-G	11-00301	**$153.95**
Cessna 210 D	11-00302	**$214.95**
Cessna 210 E	11-00303	**$210.95**
Cessna T210 F	11-00304	**$191.95**
Cessna 210 K, T210K	11-00307	**$215.95**
Cessna 210 N, T210N	11-00306	**$215.95**
Beechcraft BE-35-C33	11-00254	**$231.95**
Beechcraft BE-V35	11-00255	**$118.95**
Beechcraft BE-C35	11-00256	**$136.95**
Beechcraft BE-S35	11-00257	**$227.95**
Bellanca BL-14-19-2	11-00258	**$276.95**
Bellanca BL-14-19-3	11-00259	**$276.95**
Bellanca BL-17-30	11-00260	**$276.95**
Bellanca BL-17-30A	11-00261	**$276.95**
Bellanca/Champion 7GCBA, 7ECA	11-00262	**$271.95**
Bellanca/Champion 7GCAA, 7KCAB	11-00263	**$271.95**
Bellanca/Champion 8KCAB	11-00264	**$271.95**
Bellanca/Champion 7GCB	11-00265	**$275.95**
Bellanca/Champion 7GCBC	11-00266	**$271.95**
Grumman GRUM-AA5, 5A, 5B	11-00267	**$106.95**
Grumman GRUM-AA-1A, 1B, 1C	11-00268	**$106.95**
Luscombe LU-8E	11-00269	**$173.95**
Mooney MO-M20C	11-00270	**$212.95**
Mooney MO-M20F	11-00271	**$234.95**
Stinson STI-108 1, 2, 3	11-00272	**$179.95**
Rockwell Commander RW-112	11-00308	**$395.95**
Rockwell Commander RW-114	11-00309	**$483.95**
Swift GC-1A, 1B	11-00311	**$138.95**

EL

LABEL PRINTERS – FLAP ACTUATOR

K-SUN LABEL SHOP BEE3 PRINTER

The K-Sun LABELShop® BEE3 3-in-1 Printer for custom labeling, bar code printing and heat shrink tube identification is a portable, compact keyboard printer that creates custom adhesive-backed labels in over 60 different size and color combinations.
It also prints on polyolefin heat shrink tube materials for wire and cable identification. It has 6-Bar Code formats for making custom bar code labels for multiple uses in asset management, product identification, packaging and shelving.
The BEE3 is loaded with features to make labeling easier and better. It runs on 6 standard AA batteries, a bench or desktop AC Adapter or revolutionary new 12V-DC Auto & Truck Adapter for in-field operation, saving money on replacement batteries.
Includes:
- K-Sun LABELShop® BEE3™ Printer with Rubber Base Bumper Guard
- AC Adapter
- Black Plastic Case
- 1 Tape Cartridges (212BW)
- Nylon Wrist Strap
- 6 "AA" Batteries
- Tape Liner Cutter Tool
- Owner's Manual

Features and Functions
- Automatic Tape & Heat Shrink Tube Cutter
- Keyboard: 67 Key QWERTY-Compatible Keyboard
- Transparent Tape Cover: Instantly Reveals Tape Color, Size and
- Quantity remaining
- LCD Display: 12 Characters, 2-Lines Dot Matrix Standard LCD
- LCD Light Adjustment: 5 Dark to Light Settings
- Complies With California Energy Reduction Requirements
- Power Management: Automatic Power Off
- Portability: Hand-Held or Desktop Operation, Built-in Frame Han dle
- Print Resolution: 180 DPI
- Print Technology: High Durability Thermal Transfer
- Print Speed: All Tapes Print 6mm Per second or 2.36" Per Second
- Print Density: 3 Dark to Light Settings
- Power: Runs on Batteries- 6AA, AC Power Adapter-115-240V
- 3 Year FREE Printer Warranty

Specifications
- Printer Dimensions: 7.4" (wide) x 2.3" (high) x 8.8" (deep)
- Printer Weight: 1.23 lbs.
- Printer Construction: High Impact Plastic

P/N 11-10506 ..... **$149.00**

EL

K-SUN LABEL SHOP BEE3 PLUS PRINTER

The K-Sun LABELShop® BEE3+® is the professional's choice for heat-shrink tube identification and general custom labeling of wires, cables, panels, terminals, face plates, tools and equipment. The BEE3+ offers 10 different heat-shrink tube sizes and colors!

Includes:
- K-Sun LABELShop® BEE3+™ Printer with Rubber Base Bumper Guard
- AC or DC Adapter
- Black hard plastic case
- (1)1/2" black on white tape
- (1)1/2" black on white heat-shrink tube cartridge
- Nylon wrist strap
- 6 "AA" Batteries
- Tape liner cutter tool
- Owner's manual

Features and Functions
- 4 Heat-Shrink Tube Sizes, 3 Color Combinations
- 3-Year FREE Printer Warranty
- Automatic Tape and Heat-Shrink Tube Cutter
- Keyboard: 67 Key QWERTY-Compatible Keyboard
- LCD Display: 12 Characters, 2-Lines Dot Matrix Standard LCD
- Print Preview: Shows Label Design and Type Style
- Print Speed: All Tapes Print 6mm Per Second or 2.36" Per Second
- Power: Runs on Batteries: 6 AA, AC Power Adapter: 115-240V
- Complies with California Energy Reduction Requirements and
- Power Management: Automatic Power Off

Specifications
- Printer Dimensions: 7.4"(wide) x 2.3"(high) x 8.8"(deep).
- Printer Weight: 1.23 Lbs.
- Printer Construction: High Impact Plastic with Rubber Base Guard.

P/N 11-10505 ..... **$249.95**

FPS PLUS - FLAP POSITIONING SYSTEM

The FPS-Plus is a full service, automatic, flap positioning system. This system operates similar to the "Cessna type flap systems" that many pilots were trained in. The pilot can easily go from one flap position to another with one quick press of the flap button. All flap stop positions (from 0 to 10, your choice) are easily, user programmable. This system is also fairly simple to retrofit it to your "already flying" aircraft.
The Plus feature of this system, allows you to program an elevator trim position for each flap position. Your elevator trim will be automatically adjusted, for every different flap setting that you choose. NO more manual tweaking of the elevator trim is needed for every different flight configuration.
The pilot can now pay more attention to the actual "flying the aircraft", rather than tweaking the correct amount of elevator trim for every different flight configuration. Flying is made much more enjoyable. If you desire to retract the flaps fully, all you have to do, is press the "flap up" button for more than 1 second. The flaps will be automatically retracted to their full up position. The elevator trim is also automatically adjusted to your cruise trim position.
Features: • Full Automatic Flap Positioning with or without "Automatic Elevator Trim Compensation" • Step and Proportional Modes • Designed for +12v and +24v Systems • Compatible with Most Motors and Indicators • Setup is Fully User Programmable • No Limit Switches to Install
Specifications: • The system will operate on +12Vdc or +24Vdc systems. • Maximum amperage for each motor, 10A. • Dimensions (overall) 3" x 5.75" x 1.25" • Footprint 3 x 5.75" • Mounting 2 holes in bottom flanges, 0.156" dia, 5.375" apart • Weight < 4oz.
FPS-Plus Reflex Operation -All features of this system are exactly the same as our FPS-Plus. The exception is, when you press the Flap Up Button for more than a second, it returns the flaps to the zero degree position, not "full up". This is an advantage when initiating a "go-around" and "touch and goes". It is also an advantage when your flaps are in any down position, and you want to return the flaps to the "take-off" position.

FPS-PLUS with Elev. Trim .....P/N 11-02980 ..... **$269.00**
FPS-PLUS without Elev. Trim .....P/N 11-02981 ..... **$189.00**
FPS - PLUS REFLEX.....P/N 11-06440 ..... **$285.99**

FLAP LINEAR ACTUATOR AS USED ON LANCAIR ES, LANCAIR 300 & 360

The FL1 (FL1-24) ACTUATOR offers a unique standard of performance, durability and reliability. The compact design incorporates wellproven part, like the high efficiency ball screw, a sturdy gear box assembly and fitted with compact high quality DC motor. DC motors are available in both 12 & 24 volt. All to give the best performance with unsurpassed operational life. The actuator is self-locking within the dynamic load range. The actuator is manufactured with the capacity of 1500 N maximum dynamic load and 2200 N is static. The stroke is 150 mm and with speed of 10-15 mm per second.

12 volt actuator..... P/N 05-66223 ..... **$987.00**
24 volt actuator..... P/N 05-66224 ..... **$968.50**

The FL2 LIMIT SWITCH and CONTROLLING UNIT makes it possible to set the actuator for the desires stroke length. It also protects the actuator from running against the mechanical end stops, thereby avoiding damage. It is durable and can be used in most environments. It includes the aluminum profile tube, in which is mounted the protection tube of the actuator. Two limit switch units are attached to the profile tube and can be adjusted to any position. The magnet rod is attached to the end of the adjustment tube and runs in a groove in the profile tube. When the magnet, which is attached to the free end of the rod, approaches the switch unit, the latter is activated. The switches are connected to the control unit, from which the relays disconnect the power to the motor. Dimensions: Overall Length: 210 mm, Extended 360 mm. Width: 86 mm, Motor Diameter: 140mm. P/N 05-66225 ..... **$215.50**

FL1A CLEVIS ATTACHMENT – Galvanized clevis head and journal fitting with a quick coupling. It allows simple and rapid attachment of actuator P/N 05-66226 ..... **$29.85**

POSITION LIGHTS AND ANTI-COLLISION LIGHT DISTRIBUTION PATTERNS REQUIREMENTS

An approved anti-collision strobe light system must project light 360° around the aircraft's vertical axis. One or more strobe lights can be used.

An approved anti-collision strobe light system must project light + or - 30° above and below the horizontal plane of the aircraft. One or more strobe lights can be used. The + or - 75° projected light is required since July 18, 1977.

LOCATIONS ON THE AIRCRAFT FOR ANTI-COLLISION STROBE LIGHTS, TO COMPLY TO THE LIGHT PATTERN REQUIREMENTS

VERTICAL FIN
One anti-collision strobe light mounted on the vertical fin will meet the minimum requirements on most aircraft. A half red and half white lens is recommended.

WING TIP
Two wing tip strobe lights that protrude beyond the wing tip.

ENCLOSED WING TIP
Enclosed wing tip anti-collision strobe lights, require a third strobe light on the tail or vertical fin, to fill in the required light envelope. This is an approved anti-collision system.

FUSELAGE
In a fuselage mounted anti-collision strobe light system, a minimum of two strobe lights are necessary to get the required vertical coverage. This is an approved anti-collision system.

ANTI-COLLISION AND POSITION LIGHT REQUIREMENTS, LOCATIONS, & DISTRIBUTION PATTERNS

All aircraft must have an approved anti-collision light and position light system for nighttime operations. The position lights consist of an Aviation Red on the left side, an Aviation Green on the right and an Aviation White taillight (REF. FAR 23.1389).
The anti-collision lighting system is required under FAR PART 91.205(c).
There are different requirements affecting different aircraft. These aircraft are categorized by the date of application for type certificate. Home built aircraft are determined by the date of issuance of the Experimental Operating Limitations. The different categories are as follows:

Aircraft for which type certificate was applied for after April 1, 1957 to August 10, 1971:
These anti-collision systems must produce a minimum of 100 effective candela in Aviation Red or White (REF. FAR 23.1397), 360º around the aircraft's vertical axis, 30º above and below the horizontal plane (REF. FAR 23.1401).

Aircraft for which type certificate was applied for after August 11, 1971 to July 18, 1977:
These anti-collision systems must produce a minimum of 400 effective candela in Aviation Red or White (REF. FAR 23.1397), 360º around the aircraft's vertical axis, 30º above and below the horizontal plane (REF. FAR 23.1401).

Aircraft for which type certificate was applied for after July 18, 1977:
These anti-collision systems must produce a minimum of 400 effective candela in Aviation Red or White (REF. FAR 23.1397), 360º around the aircraft's vertical axis, 75º above and below the horizontal plane (REF. FAR 23.1401).

Note: The position lights must be wired independently of anti-collision lights.

INSTALLATION LOCATIONS

WING TIP:
The major difference in systems is the location of the strobe power supplies which can be mounted locally, one in each wing tip, or a single power supply can be mounted in the fuselage. Installation time can be greatly reduced if done in conjunction with an annual or one hundred-hour inspection. Properly installed power supplies and cabling are necessary for the safe operation of Whelen or any light systems.

FUSELAGE:
Fuselage mounted units can be either self-contained with the power supply and lighthead as one unit, or remote lightheads run off a separate power supply. To meet the field of coverage, one must be on the top of the fuselage and one on the bottom.

VERTICAL FIN:
Finally, if applicable, a single anti-collision light can be mounted on the vertical stabilizer. It can be either a self-contained or remote lighthead depending on the aircraft.

HOME BUILT & KIT AIRCRAFT

For Aircraft with Standard Wing Tips – The most widely used system on the market, this provides all of the components for anti-collision and position lights without the need for a taillight. The power supply is mounted in the fuselage and shielded cable is run to the strobe lights. The following is recommended:

Quantity	Model #	Part #	Description
1 each	HDACF	01-0770028-05	Power supply
1 each	A600PG14	01-0790006-00	Wing tip strobe/position/taillight, 14 VDC
1 each	A600PR14	01-0790006-02	Wing tip strobe/position/taillight, 14 VDC
Note: Model 9034001 and 9034002 can replace Model A600 for a LED solution			
1 each	HD60	01-0750206-00	Installation package

For Aircraft with Enclosed Wing Tip Fairings – If the position and strobe lights are mounted under a clear fairing, a third tail strobe is required. The following is recommended:

Quantity	Model #	Part #	Description
1 each	HDACF	01-0770028-05	Power supply
1 each	A650PG14	01-0770054-00	Wing tip strobe/position light, 14 VDC
1 each	A650PR14	01-0770054-02	Wing tip strobe/position light, 14 VDC
Note: Model 7111001 and 7111002 can replace Model A650 for a LED solution			
1 each	A500AV14	01-0770024-00	Tail position/strobe light assembly
1 each	HDT390	01-0750205-00	Installation package

For Aircraft with Enclosed Wing Tip Fairings & Wing Tip Mounted Power Supplies – If position and strobe lights are mounted under a clear fairing, the need for a third tail strobe is required. The following is recommended:

Quantity	Model #	Part #	Description
2 each	A490ATSC	01-0770062-03	Power supply
1 each	A650PG14	01-0770054-00	Wing tip strobe/position/taillight, 14 VDC
1 each	A650PR14	01-0770054-02	Wing tip strobe/position/taillight, 14 VDC
Note: Model 7111001 and 7111002 can replace Model A650 for a LED solution			
1 each	A500AV14	01-0770024-00	Tail position/strobe light assembly, 14 VDC
3 each	HS5	01-0750215-00	Installation package

For strobe system recommendations for certified aircraft and for Whelen/ Aeroflash/ Grimes/ Cessna cross reference lists please visit our website WWW.AIRCRAFTSPRUCE.COM

EL

WHELEN POWER SUPPLIES - LIGHT HEADS

HOW TO CHOOSE A POWER SUPPLY AND ABOUT COMETFLASH®

The power supply needed depends on the application, and the mounting location. Model HDACF Series is a fuselage mounted power supply that will power two or three lights. Model A490ATSC Series is designed for installation adjacent to the strobe lighthead and will power one light assy. Model A490TCF Series is the most economical power supply when adding only one light. It mounts adjacent to the strobe lighthead assembly (not legal for light output with red strobe light). Most other Whelen power supplies are application specific, call for details. Unless otherwise noted, all power supplies are CometFlash®. A major advancement in the field of safety lighting. By pulsing the flash tube four times in rapid succession, the effective "on-time" of the strobe is increased from 2/1000 of a second to 4/10 of a second. This increases your airplane's visibility.

MODEL HDACF SERIES - HDACF series provides simultaneous flashing, alternate flashing or both. It will operate one, two or three strobe lightheads. Operating the wing tip strobes in the alternating mode will provide an accumulated 42 joules of power to each light. When in the simultaneous mode, the accumulated power to each light is 21 joules. In the three light mode, the wing tips will flash simultaneous at an accumulated 21 joules each, they alternate with a third light operating at an accumulated 42 joules. On the trigger selector outlet, a switch mounted in place of the jumper will allow wing tip outlets 2 & 3 to be turned off, while the tail outlet 1 will remain on. This power supply will operate from 10 to 30 VDC. **SPECIFICATIONS**: • Power Consumption: 7.0 amps @ 14 VDC; 3.5 amps @ 28 VDC • Weight: 2.1 lbs. (953gm) • Length: 5.50" (140mm) • Width: 5.0" (127mm) • Height: 2.37" (60mm)

Model #	Approvals	Part No.	Price
HDACF	FAA/PMA	11-16218	**$393.95**

MODEL A490ATSC SERIES - Operates one strobe lighthead. It produces an accumulated 34 joules of power and can be equipped to flash simultaneously with up to 5 other like units by connecting an 18 gauge wire between outlet 3 on the input power connector. This power supply will operate from 10 to 30 VDC. **SPECIFICATIONS**: • Power Consumption: 4.0 amps @ 14 VDC; 2.0 amps @ 28 VDC • Weight: 1.7 lbs. (771gm) • Length: 5.0" (127mm) • Width: 3.12" (79mm) • Height: 3.06" (78mm)

Model #	Approvals	Part No.	Price
A490ATSC	FAA/PMA	11-02666	**$324.95**

MODEL A490TCF SERIES - Operates one strobe lighthead. It produces an accumulated 19 joules of power. It will only meet 400 CP when used with the A470A-W. This unit cannot be synchronized. Operates from 10 to 30 VDC (not approved for use with red strobe light). **SPECIFICATIONS**: • Power Consumption: 1.7 amps @ 14 VDC; 0.85 amps @ 28 VDC • Weight: 1.2 lbs. (544gm) • Length: 5.0" (127mm) • Width: 3.12" (79mm) • Height: 2.38" (60mm)

Model #	Approvals	Description	Part No.	Price
A490TCF	FAA/PMA	20" leads, amp connectors	11-14714	**$248.95**
A490TCFM	—	20" leads, Molex connectors	11-06406	**$246.95**
7000615	—	20" leads, no connectors	11-07600	**$244.95**

MODEL A490TCCF SERIES - Same as the A490TCF but has a mounting plate with additional holes that directly replaces factory installed systems on single engine Cessna's, Aero Commanders, and Grumman Americans.

Model #	Approvals	Description	Part No.	Price
A490TCCF	FAA/PMA	20" leads, amp connectors	11-02661	**$249.95**
7000612	—	9" output, 7" input, leads (Cessna 172)	11-04493	**$255.95**
7000616	—	20" lds, ms conn on output ld	11-07601	**$229.95**
7000617	—	3" output, 7" input & 4 pos. amp conn (Cessna) (182,206)	11-04494	**$255.95**

MODEL HDS SERIES - Produces 20 joules of energy, SingleFlash, alternating between two light assemblies. The SingleFlash allows for a low current draw. This power supply will operate from 10 to 30 VDC. **SPECIFICATIONS**: • Power Consumption: 4.0 amps @ 14 VDC; 2 amps @ 28 VDC • Weight: 2.0 lbs. (907gm) • Length: 5.50" (140mm) • Width: 5.0" (127mm) • Height: 2.37" (60mm)

Model #	Approvals	Part No.	Price
HDS1428	—	11-03279	**$384.95**

MODEL 01-0770062-05 (CIRRUS) - Operates one (1) strobe light head at 36 joules in CometFlash. It is equipped to flash simultaneously with up to 5 other like units by connecting an 18 gauge wire between outlet 3 on the input connector. **SPECIFICATIONS**: • Power Consumption: 1.6 amps avg. • Input Voltage: 28 VDC Nominal • Weight 1.3lbs • Length: 5.00" • Width: 3.12" • Height: 3.00"

P/N 11-08306 .....**$353.95**

MODEL 90340 SERIES STROBE ANTI-COLLISION/LED POSITION LIGHT ASSEMBLY (FOR COMPOSITE WINGTIP STRUCTURE) - Same as 90340 series with addition of 3 feet of braided bonded protection. **SPECIFICATIONS**: • LED Navigation Light Power Consumption: 0.5 amps @ 14 VDC, 0.25 amps @ 28 VDC • Weight: 0.60 lbs. (272gm) 14 VDC, 0.65 lbs. (295gm) 28 VDC • Exposed Height: 2.70" (69mm) • LED Colors: Aviation Red, Aviation Green & Aviation White 1.1 lbs. (499gm) • Lens: Clear RFI coated glass: strobe, Clear Polycarbonate: Navigation Lights

Model #	Approvals	Description	Part No.	Price
9034001	FAA TSO-C96a/TSO-C30c Typ II & III	Pos Grn, 14V	11-05625	**$325.95**
9034002	FAA TSO-C96a/TSO-C30c Typ I & III	Pos red, 14V	11-05626	**$325.95**
9034003	FAA TSO-C96a/TSO-C30c Typ II & III	Pos Grn, 28V	11-05627	**$299.95**
9034004	FAA TSO-C96a/TSO-C30c Typ I & III	Pos red, 28V	11-05628	**$325.95**
9037501	FAA TSO-C96a/TSO-C30c Typ II & III	Pos Grn, 28V	11-06598	**$408.95**
9037502	FAA TSO-C96a/TSO-C30c Typ I & III	Pos red, 28V	11-06599	**$469.95**

MODEL A600 PG/PR SERIES - A600 PG/PR series wing tip anti-collision, forward position and tail position lights, all in one compact unit. Tail position light eliminates the need for a tail mounted position light. Available in 14 or 28 VDC and in a radio-shielded version. The forward position lamp is 26 watts and the taillight lamp is 25 watts. **SPECIFICATIONS**: • Weight: 0.8 lbs. (363gm) • Position Lamps Power Consumption: 4 amps @ 14 VDC; 2 amps @ 28 VDC • Exposed Height: 2.4" (61mm) • Length: 5.63" (143mm) • Width: 1.7" (43mm)

Model #	Approvals	Description	Part No.	Price
A600PG14	FAA TSO-C30b / FAA/PMA	Pos Grn, 14V	11-03220	**$268.95**
A600PG28	FAA TSO-C30b / FAA/PMA	Pos Grn, 28V	11-03245	**$267.95**
A600PR14	FAA TSO-C30b / FAA/PMA	Pos red, 14V	11-03221	**$268.95**
A600PR28	FAA TSO-C30b / FAA/PMA	Pos red, 28V	11-03246	**$268.95**
A600PGD1	FAA TSO-C30b / FAA/PMA	Pos green, 14V, radio-shielded	11-03636	**$316.95**
A600PGD2	FAA TSO-C30b / FAA/PMA	Pos Grn, 28V, radio-shielded	11-03732	**$310.95**
A600PRD1	FAA TSO-C30b / FAA/PMA	Pos red, 14V, radio-shielded	11-03638	**$322.95**
A600PRD2	FAA TSO-C30b / FAA/PMA	Pos red, 28 V, radio-shielded	11-06335	**$322.95**
9000612	FAA TSO-C30b used on Cirrus	Pos green, 28V, radio-shielded,	11-07602	**$269.95**
9000613	FAA TSO-C30b used on Cirrus	Pos red, 28V, radio-shielded,	11-07603	**$240.95**

MODEL 71110 SERIES STROBE ANTI-COLLISION/LED POSITION LIGHT ASSEMBLY - 71110 series is a wing tip mounted strobe anti-collision/position light assembly utilizing LED's for the forward position lights. The LED's provide a significant reduction in current draw over conventional position light bulbs. The strobe light lens assembly is radio shielded for maximum EMI/RFI protection. Direct replacement (exact footprint) for the Whelen Model A650PG/PR series without replacing the current strobe power supply. Navigation light portion is wired with flying leads. **SPECIFICATIONS**: • LED Colors: Aviation Red, Aviation Green • LED Navigation Light Power Consumption: 0.25 amps @ 14 VDC or 28 VDC • Weight: 0.45 lbs. (204gm) 14 VDC, 0.50 lbs. (227gm) 28 VDC • Exposed Height: 2.70" (69mm) • Lens: Clear RFI coated glass: strobe, Clear Polycarbonate: Navigation Lights

Model #	Approvals	Description	Part #	Price
7111001	FAA TSO-C96a / TSO-C30c Type II	Pos Grn, 14 V	11-05630	**$293.50**
7111002	FAA TSO-C96a / TSO-C30c Type I	Pos red, 14 V	11-05633	**$293.50**
7111003	FAA TSO-C96a / TSO-C30c Type II	Pos Grn, 28 V	11-05635	**$293.50**
7111004	FAA TSO-C96a / TSO-C30c Type I	Pos red, 28 V	11-05636	**$293.00**

MICROBURST SERIES LIGHTING FROM WHELEN - LED Wingtip and Tail Lighting for Experimental and Light Sport Aircraft. **MB3(Red or Green)** .21 lbs., .45 amp (avg). Forward facing Wingtip Nav, with CometFlash 180° LED-Strobe and rear facing white Nav. **MB2(Red or Green)** .20 lbs., .40 amp (avg). Forward facing Wingtip Nav with MB2G Green CometFlash 180° LED-Strobe. **MB1WT** White, .15 lbs, .35 amp (avg). Nav taillight with CometFlash 180° LED-Strobe. Utilizes same mounting as all (A500/A555 Style).

Description	Part No.	$199.00
MicroBurst I MB1WT Single Taillight	11-08472	**$199.00**
MicroBurst III Kit MB3K 1 MB3R (R) and 1 MB3G (G)	11-08473	**$398.95**
MicroBurst II Kit MB2K 1 MB2R (R) and 1 MB2G (G)	11-08474	**$299.00**
MicroBurst II with Taillight Kit MB2KWT 1 MB2R (R) and 1 MB2G (G) plus 1 MB1WT Taillight	11-08475	**$499.00**

NOTE: All non-FAA approved Whelens parts are signified by a (—) in the approval column. Parts without FAA approval may still be purchased, however, installation of these parts on U. S. Type Certificated products may require additional FAA approvals.

WHELEN LIGHT HEADS

MODEL A650 PG/PR SERIES - Wing tip with anti-collision & forward position lights can be used to convert non-Whelen position lights into a position/anti-collision light system. The small size allows for mounting into a wing tip enclosure. Available in 14 or 28V and in a radio-shielded version. The forward position lamp is 26 watts. **SPECIFICATIONS**: • Weight: 0.6 lbs. (272gm) • Position Lamp Power Consumption: 2 amps @ 14V; 1 Amp @ 28V • Exposed Height: 2.4" (61mm) • Length: 4.0" (102mm) • Width: 1.7" (43mm)

Model #	Approvals	Description	Part No.	Price
A650PG14	FAA/PMA	Pos Grn, 14V	11-03217	**$231.95**
A650PG28	FAA/PMA	Pos Grn, 28V	11-03239	**$239.95**
A650PR14	FAA/PMA	Pos red, 14V	11-03218	**$231.95**
A650PR28	FAA/PMA	Pos red, 28V	11-03247	**$239.00**
A650PGD1	FAA/PMA	Pos Grn, 14V, radio-shielded	11-03639	**$281.95**
A650PGD2	FAA/PMA	Pos Grn, 28V, radio-shielded	11-06336	**$278.95**
A650PRD1	FAA/PMA	Pos red, 14V, radio-shielded	11-03642	**$275.95**
A650PRD2	FAA/PMA	Pos red, 28V, radio-shielded	11-06337	**$279.95**

MODEL A650 SERIES - Converts W1285 position lights into a position/anti-collision system by removing the existing retainer & replacing it with the A650 assembly. Radio-shielded version available. **SPECIFICATIONS**: • Weight: 0.2 lbs. (91gm) • Exposed Height: 2.4" (61mm)

Model #	Approvals	Description	Part No.	Price
A650	FAA/PMA	Standard unit	11-03215	**$109.95**
A650D	FAA/PMA	Radio-shielded	11-07604	**$148.75**

MODEL A625 SERIES - Many different applications. It can be used for aircraft with tip-tanks with enclosed position lights (under a fairing), or as an add-on strobe on the wing or the tail. Available in a radio-shielded version. **SPECIFICATIONS**: • Weight: 0.2 lbs. (91gm) • Exposed Height: 1.7" (43mm)

Model #	Approvals	Description	Part No.	Price
A625	FAA/PMA	Standard unit, clear lens	11-03228	**$114.95**
A625D	FAA/PMA	Radio-shielded, clear lens	11-03659	**$159.75**
A625DR	—	Radio-shielded, red lens	11-07607	**$346.00**
7005815	—	Radio-shld, 3/c cbl, 12" grnd braid	11-07608	**$142.95**
7005816	—	Radio-shld, 24" 3/c cbl, w/MS conn	11-07609	**$171.95**

MODEL 70946 SERIES - A combination LED forward position/strobe lights designed to replace the existing combination nav/strobe lights typically seen mounted on most general aviation and helicopter applications (ref Whelen A650PG/PR Series). (28VDC Only).

Green .....P/N 11-05009 ..... **$495.00**
Red .....P/N 11-05010 ..... **$495.00**

MODEL 70821 SERIES - A remote streamlined strobe light assembly. Easily mounted on the wing tip for anti-collision or on the vertical fin for ground recognition. It is recommended for the wing tips on Cessna single engine aircraft 1970-71. It can be added as a low profile ground recognition light when mounted on the vertical fin or fuselage. A mounting adapter plate facilitates mounting. **SPECIFICATIONS**: • Weight: 0.3 lbs. (136gm) • Exposed Height: 1.8" (46mm) • Length: 3.5 (89mm) • Width: 1.8" (46mm)

Model #	Approvals	Description	Part No.	Price
7082100	—	Standard unit, clear lens	11-03287	**$175.95**
7082101	—	Radio-shielded, clear lens	11-70821-01	**$228.95**
7082103	—	Radio-shielded, red lens	11-70821-03	**$319.95**

MODEL 50626 SERIES STROBE TUBE ASSEMBLY - 50626 series strobe tube assemblies are used with the following model numbers listed in chart below:

Model #	Description	Used on	Part No.	Price
5062600	6"	Model 9011102	11-07681	**$71.50**
5062601	6" w/Grom	Model 9034000 - 07, 20, 21 Model 7111001 - 04	11-07682	**$71.50**
5062602	12.5" w/Grom	Model 9034008, 09	11-07683	**$71.50**
5062603	2" w/Grom	Model 9037501, 02	11-07685	**$71.50**

A610

A612

MODELS A610 & A612 - A610 flash tube and A612 glass lens are used for installing wing tip strobes in single engine Cessna's 1972 and later. The existing position light retainer is modified to accommodate the lens, and the flash tube is mounted directly behind. The unique magnifying design of the A612 lens increases the light intensity by two to three times in the horizontal plane. These items may be used for custom installations or as spare parts for existing light assemblies. The A612 lens is available in Aviation Red and an RFI coated version. Lenses meet material requirements of MIL-C-7989B Class B. **SPECIFICATIONS**: • Drawing Number A612: 90005 • A610 Flash Tube Weight: 0.09 lbs. (41gm) • A612 Lens Weight: 0.08 lbs. (36gm)

Model #	Approvals	Description	Part No.	Price
A610	FAA/PMA	Standard unit, 6" leads	11-03213	**$72.85**
A610M	FAA/PMA	Molex connector, 6" leads	11-03734	**$75.25**
5027601	FAA/PMA	14" leads	11-07611	**$66.75**
5027602	FAA/PMA	12.5" leads	11-07612	**$68.50**
A612	FAA/PMA	Standard clear lens	11-03222	**$31.75**
A612D	—	Radio-shielded, clear lens	11-03735	**$87.90**
A612DR	—	Radio-shielded, red lens	11-07614	**$257.95**

MODEL A500A SERIES - A500A series combination strobe/tail navigation light used when the wing tip anti-collision lights are mounted in an enclosure and can't provide 360° of strobe coverage. It is a direct replacement for the standard tail position light. Available in a radio-shielded version. Voltage (14 or 28) and mounting (horizontal or vertical) must be specified when ordering. **SPECIFICATIONS**: • Weight: 0.3 lbs. (136gm) • Exposed Height: 1.7" (43mm) • Diameter: 1.5" (38mm)

Model #	Approvals	Description	Part No.	Price
A500AV14	FAA/PMA, FAA TSO-C30b	Vert mnt, 14V	11-03223	**$158.95**
A500AV28	FAA/PMA, FAA TSO-C30b	Vert mnt, 28V	11-03255	**$161.95**
A500AH14	FAA/PMA, FAA TSO-C30b	Horz. mnt, 14V	11-03249	**$158.95**
A500AH28	FAA/PMA, FAA TSO-C30b	Horz. mnt, 28V	11-03264	**$159.95**
A500AVD1	FAA/PMA, FAA TSO-C30b	Vert mnt, 14V, radio-shielded	11-03721	**$198.95**
A500AVD2	FAA/PMA, FAA TSO-C30b	Vert mnt, 28V, radio-shielded	11-06407	**$199.75**
A500AHD1	FAA/PMA, FAA TSO-C30b	Horz. mnt, 14V, radio-shielded	11-03717	**$210.95**
A500AHD2	FAA/PMA, FAA TSO-C30b	Horz. mnt,, 28V, radio shielded	11-04281	**$218.95**
A500ASP2	—	Vert mnt, 28V, 50" cables, no Connectors	11-03720	**$270.95**
A500ABV1	—	Beech Special 14V, MS connector	11-03715	**$290.95**
A500ABV2	—	Beech Special 24V, MS connector	11-03716	**$292.95**

MODEL A470A SERIES - A470A series remote strobe light assembly is compatible with all Whelen power supplies. It can be installed on the fuselage or the vertical fin. The unique polycarbonate optic lens and reflector design, re-directs stray light rays into the horizontal plane to provide the maximum 360° of uniform light coverage possible. Available in three different lens colors, aviation red, aviation white and split aviation red/white. Available in radio-shielded configurations. All assemblies require either the model H102 or H103 mounting adapter. **SPECIFICATIONS**: • Weight: 0.3 lbs. (136gm) • Exposed Height: 3.75" (95mm) • Diameter: 2.5" (64mm)

Model #	Approvals	Description	Part No.	Price
A470AR	FAA/PMA	Standard assembly, red lens	11-03273	**$88.50**
A470AW	FAA/PMA	Standard assembly, white lens	11-03277	**$94.50**
A470AS	FAA/PMA	Std assy, split red/white lens	11-03259	**$88.50**
A470ADR	FAA/PMA	Radio-shielded asy, red lens	11-03714	**$166.95**
A470ADW	FAA/PMA	Radio-shielded assy, white lens	11-03291	**$234.95**
A470ADS	FAA/PMA	Radio-shielded assy, split red/white lens	11-04976	**$164.95**

H102

H103

MODELS H102 & H103 - Designed for the model A470A or model A450 series remote strobe lighthead assemblies. The model H102 allows flush mounting of the lighthead to the skin of the fuselage or the vertical stabilizer on later model Cessna Single engines. The H103 is designed for strobe assemblies to be installed in the standard 3-3/4" (95mm) dia. rotating beacon mounting hole.

Model #	Approvals	Description	Part No.	Price
H102	FAA/PMA	Flush mount adapter	11-03243	**$11.75**
H103	—	Rotating beacon mount adapter	11-03284	**$45.75**

MODEL A450 SERIES - A450 series remote strobe light assembly is compatible with all Whelen power supplies. It can be installed on the fuselage or the vertical fin. The Pyrex® Glass lens (clear only) makes the assembly suitable for use in severe vibration, chemical and moisture conditions (i.e. agricultural aircraft). Requires either the model H102 or model H103 mounting adapter. **SPECIFICATIONS**: • Weight: 0.3 lbs. (136gm) • Exposed Height: 2.25" (57mm) • Diameter: 2.5" (64mm)

Model #	Approvals	Description	Part No.	Prices
A450	FAA/PMA	Standard assembly, clear lens	11-03280	**$183.95**
SA418-1		Gasket for A450	11-03690	**$8.75**

MODEL 90358 SERIES SELF-CONTAINED LED ANTI-COLLISION/ LED POSITION LIGHT ASSEMBLY - (For Fixed Wing, TSO-C96a Class II (400 ecp) 90358 series is a self-contained all LED wing tip mounted anti-collision/position light assembly utilizing LED's for both the anti-collision, forward & tail position lights, eliminating the need for a tail mounted position light. The LED's provide a significant reduction in current draw over conventional position light bulbs, and strobe power supplies. The all inclusive LED design virtually eliminates EMI/RFI interference. All current source and flasher circuitry is contained within the attached flasher box. **SPECIFICATIONS**: • LED Navigation Light Power Consumption: 0.25 amps @ 28 VDC EACH • LED Anti-Collision Light Power Consumption: 0.5 amps @ 28 VDC • LED Colors: Aviation Red, Aviation Green & Aviation White • Weight: 1.3 lbs. (590gm) • Exposed Height: 2.80" (71mm) • Exposed Width: 2.64" (67mm) • Exposed Length: 7.29" (185mm) •Depth: 3.00" (76mm) • Lens: Clear Hard Coated Polycarbonate

Model #	Approvals	Description	Part No.	Price
9035801	FAA TSO-C96a/TSO-C30c Typ II & III	Pos Grn, 28V	11-06170	**$1,157.95**
9035802	FAA TSO-C96a/TSO-C30c Typ I & III	Pos red, 28V	11-06171	**$1,080.00**

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WHELEN SELF-CONTAINED LIGHT ASSEMBLIES

MODEL 70900 SERIES LED BEACONS - (for fixed wing aircraft) 70900 series are FAA TSO compliant self-contained anti-collision lights for fixed wing aircraft. An external power unit is not required. Conservative lab life results greater than 20,000 hours. No EMI or RFI produced. All units meet the minimum requirements stated in FAR Parts 23 & 25 for anti-collision light systems used on fixed wing aircraft, Ref; Class III (100 effective candela) of SAE AS8017a minimum performance standards. STC SA615EA approved.
Models 7090004 & 7090005 are designed to replace existing light assemblies with the 3-3/4" (95mm) dia. mounting pattern (Ref. Whelen HRCFA series, 90081 series, and "old style" rotating beacons). Same mounting hole pattern, no modification to the aircraft is required. **SPECIFICATIONS**: • Power Consumption: P/N 11-02523: 0.85 amps @ 14 VDC • Power Consumption: P/N 11-02524: 0.425 amps @ 28 VDC • LED Color: Aviation Red • Weight: 1.1 lbs. (499gm) • Exposed Height: 3.1" (78mm) • Exposed Diameter: 2.8" (71mm)

Model #	Approvals	Description	Part No.	Price
7090004	FAA TSO-C96a Class III	Red, 3-3/4 dia. mount, 14 VDC	11-02523	**$649.00**
7090005	FAA TSO-C96a Class III	Red, 3-3/4 dia. mount, 28 VDC	11-02524	**$649.00**

9052051

MODEL 90520 SERIES LED FLASHING BEACON (RED & WHITE LED'S) - 90520 series LED beacons are FAA TSO compliant self-contained LED anti-collision lights (Ref. Class I - 100 effective candlepower). They are designed to replace strobe lightheads as small as the A470A with available models to replace HR self-contained beacons (HRCFA) or our legacy 70900 LED beacon. Mounting plate included with assembly. Refer to models and descriptions below.
ELECTRICAL:
Models ending: 2001, 2004, 2005, 2014, 2015, 2051, 2055: 12" Flying Leads
Models ending: 2007, 2017, 2008, 2018: MS3102R10SL-3P Connector
MECHANICAL:
Models: 2004, 2014, 2008, 2018 are designed to replace existing beacons utilizing a 5 Hole mounting pattern on 4.656 diameter bolt circle (Whelen 70285 series / 7090501 series or 70900 with A440 adapter).
Models: 2005, 2015, 2007, 2017 are 3 ¾" opening designed to fit inside an A440 mounting adapter, mounting holes to fit in place of rotating beacons, Whelen model HRCFA, or 7090004, -05 series LED beacons
SPECIFICATIONS: • Current: 0.67 amps Average, 3.0 amps Peak • Weight: 0.65 lbs. (295gm) (-01 & -51) • Lens: Clear polycarbonate • Dimensions: 2.6" (66mm) Diameter, Exposed Height, 3.74" (95mm) (-01 & 51)

Model #	Approvals Pend.	Description	Part No.	Price
9052001	FAA TSO-C96a Class I	LED red/white, 28 VDC & mount	11-07615	**$538.00**
9052051		LED red/white, 14 VDC & mount	11-07616	**$538.00**
9052004		LED red/white, 28 VDC & 5 hole mount	11-07617	**$543.00**
9052014		LED red/white, 28 VDC & 5 lower mount	11-07618	**$543.00**
9052005		LED red/white, 28 VDC, 3.75" adapter	11-07619	**$618.00**
9052055		LED Red/White, 14 VDC 3.75" adapter	11-09908	**$618.00**
9052015		same as 9052005, lower mount	11-07620	**$597.00**
9052007		LED red/white, 28 VDC, 3.75" adapter	11-07621	**$561.00**
9052017		same as 9052007, lower mount	11-07622	**$561.00**
9052008		LED red/white, 28 VDC & 5 hole mount	11-07623	**$543.00**
9052018		LED red/white, 28 VDC & 5 lower mount	11-07624	**$543.00**

MODEL HRCFA SERIES - HRCFA series is a self-contained CometFlash® strobe anti-collision light. The unique polycarbonate optic lens and reflector design re-directs stray light rays into the horizontal plane to provide maximum 360° of uniform light coverage. Available in three different lens colors, aviation red, aviation white and split aviation red/white and in radio-shielded configurations. FAA approved as a direct replacement for any rotating beacon that uses a 3-3/4" (95mm) dia. mounting hole. Can be installed in the vertical fin or the fuselage. Fuselage installation requires the A440 mounting adapter. Operates between 10 to 30 VDC. **SPECIFICATIONS**: • Weight: 1.5 lbs. (680gm) • Height: 7.25" (184mm) • Diameter: 3.7" (94mm) • Power Consumption: 3.2 amps @ 14 VDC, 1.6 amps @ 28 VDC

Model #	Approvals	Description	Part #	Price
HRCFAR	FAA/PMA	Std. assy, red lens	11-16214	**$364.95**
HRCFAW	FAA/PMA	Std. assy, white lens	11-16212	**$364.95**
HRCFAS	FAA/PMA	Std assy, split red/white	11-16216	**$364.95**
HRCFADR	FAA/PMA	Radio-shielded, red lens	11-07625	**$437.95**
HRCFADW	FAA/PMA	Radio-shielded, white lens	11-07626	**$437.95**
HRCFADS	FAA/PMA	Radio-shielded, split red/white	11-07627	**$437.00**

7108051

MODEL 71080 SERIES LED BEACON FOR ROTORCRAFT, (150 EFF. CD) (14 VDC & 28 VDC) - 71080 series LED beacons are FAA TSO compliant self-contained LED anti-collision lights (Ref. Class I - 150 effective candlepower). They are designed to replace a range of products. Refer to models and descriptions below. **ELECTRICAL**: Models ending: 8001, 8004, 8005, 8014, 8015, 8020, 8051, 8055: 12" Flying Leads. Models ending: 8007, 8017, 8008, 8018: MS3102R10SL-3P Connector
MECHANICAL: Models: 8004, 8014, 8008, 8018are designed to replace existing beacons utilizing a 5-Hole mounting pattern on a 4.656 diameter bolt circle (Whelen 70285 series/7090501 series or 70900 with A440 adapter).
Models: 8005, 8015, 8007, 8017are 3 ¾" opening designed to fit inside an A440 mounting adapter, mounting holes to fit in place of rotating beacons, Whelen Model HRCFA, or 7090004, -05 series LED beacons
SPECIFICATIONS: • Current: 0.87 amps average, 3.0 amps peak • Weight: 0.65 lbs. (295gm) (8001 & 8051) • Lens: Clear polycarbonate • Dimensions: 2.6" (66mm) diameter, exposed height, 3.74" (95mm) (8001 & 8051)

Model #	Approvals	Description	Part #	Price
7108001	FAA TSO-C96a Class I (150 ecp)	LED red, 28 VDC Rotocraft (no adapter)	11-06173	**$547.00**
7108001		LED red, 28 VDC & Mt.	11-06174	**$567.00**
7108051		LED red, 14 VDC & Mt.	11-07656	**$781.00**
7108004		LED red, 28 VDC & 5-Hole mount	11-07687	**$643.00**
7108014		Same as 8004, lower Mt	11-07688	**$643.00**
7108055		LED Red, 14 VDC, 3.75" adapter	11-09909	**$620.00**
7108005		LED red, 28 VDC, 3.75" adapter	11-07689	**$665.00**
7108015		same as 8005, lower Mt	11-07690	**$665.00**
7108007		LED red, 28 VDC, 3.75" adapter	11-07691	**$665.00**
7108017		same as 8007, lower Mt.	11-07692	**$665.00**
7108008		LED red, 28 VDC & 5 hole mount	11-07693	**$665.00**
7108018		same as 8008, lower Mt.	11-07694	**$665.00**

MODEL 70285 SERIES - 70285 series self-contained CometFlash® strobe anti-collision light. It utilizes the same lens/reflector and strobe tube as the model HRCFA, however, its vibration resistant, heavy-duty construction is specially designed for helicopter applications. It has a fixed mounting adapter and an MS input connector. Available in three different lens colors, Aviation red, aviation white, and split aviation red/white and in radio-shielded configurations. FAA approved as a direct replacement for any rotating beacon that uses a 3-3/4" dia. mounting hole. Unit will operate between 10 to 30 VDC. **SPECIFICATIONS**: • Weight: 1.5 lbs. (680gm) • Height: 8.0" (203mm) • Diameter: 3.7" (94mm) • Power Consumption: 3.2 amps @ 14 VDC, 1.6 amps @ 28 VDC

Model #	Approvals	Description	Part #	Price
7028521	—	Shielded, red lens	70285-1	**$666.00**
7028522	—	Shielded, red lens with .31 mask	11-07696	**$669.00**
7028523	—	White lens	70285-3	**$640.00**
7028524	—	Split red/white lens	70285-24	**$528.00**
7028525	—	Red lens	70285-5	**$640.00**
7028526	—	Shielded, red lens with .29 mask	70285-6	**$662.00**
7028527	—	White lens, with lock wire	11-07698	**$545.00**
7028528	—	Shielded, split red/white lens	70285-2	**$646.00**

WHELEN 90028 SERIES LIGHTHEADS

90028 series wing tip strobe light used on Beech aircraft with commonality wing tip 1974 & later. It is a direct replacement for 30-0467-( ), 30-1331-( ) and the 30-1467-( ) series.
NOTE: Do not use with Cannon plug. Light assembly, 45° mounting bracket. Weight: 0.4 lbs. (181gm)• Exposed Height: 1.87" (48mm)• Length: 4.37" (111mm)• Depth: 2.25" (57mm)
P/N 11-00712 ..... **$165.95**

NOTE: All non-FAA approved Whelen parts are signified by a (—) in the approval column. Parts without FAA approval may still be purchased, however, installation of these parts on U. S. Type Certificated products may require additional FAA approvals.

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WHELEN SELF-CONTAINED LIGHT ASSEMBLIES

MODEL SACF SERIES - SACF series self-contained Comet-Flash strobe anti-collision light which utilizes the same power supply & housing as the model HRCFA. It uses an aviation white glass lens only, ideal for agricultural applications where chemicals are used. Because the lens has no optics built-in, it produces 300 effective candlepower. It uses a 3-3/4" dia. mounting hole. Fuselage installation requires the A440 mounting adapter. Operates between 10 to 30 VDC.
SPECIFICATIONS: • Weight: 1.5 lbs. (680gm) • Height: 5.50" (140mm) • Diameter: 3.7" (94mm) • Power Consumption: 3.2 amps @ 14 VDC, 1.6 amps @ 28 VDC

Model #	Approvals	Description	Part #	Price
SACF	FAA/PMA	Aviation white lens	11-03262	**$407.95**

MODEL A440 MOUNTING ADAPTER - A440 mounting adapter is for fuselage installations for the HRCFA series and the SACF series.

Model #	Approvals	Description	Part #	Price
A440	FAA/PMA	Mounting adapter	11-03699	**$20.75**

MODEL 70509 SERIES - 70509 series self-contained halogen flashing anti-collision light with the same mounting pattern as the factory installed beacon on single engine Cessna's 1967 & later. Available in three different lens colors, Aviation red, aviation white and split aviation red/white. When used in conjunction with the model 50519 mounting adapter, it can replace rotating beacons with the 3-3/4" (95mm) dia. mounting hole.
Note: Not recommended for installation on helicopters or twin engine aircraft.
SPECIFICATIONS: • Weight: 0.27 lbs. (122gm) • Height: 3.75" (95mm) • Diameter: 2.65" (67mm) • Power Consumption: 2.7 amps @ 14 VDC, 1.3 amps @ 28 VDC

11-03238

Model #	Approvals	Description	Part #	Price
7050900	FAA TSO-C96a	14V, red lens	11-03235	**$129.95**
7050901	FAA TSO-C96a	14V, white lens	11-03268	**$129.95**
7050902	FAA TSO-C96a	14V, red/white lens	11-03231	**$129.95**
7050903	FAA TSO-C96a	28V, red lens	11-03276	**$129.95**
7050904	FAA TSO-C96a	28V, white lens	11-05108	**$129.95**
7050905	FAA TSO-C96a	28V, red/white lens	11-03292	**$129.95**
7050907	FAA TSO-C96a	28V, red lens w/ mask, Cessna single engine	11-07628	**$135.95**
50519001	—	option mounting adptr	11-03238	**$56.75**

MODEL 90350 SERIES SELF-CONTAINED LED GROUND RECOGNITION LIGHT ASSEMBLY - 90350 series is a self-contained all LED ground recognition light assembly. The design is intended to provide a solution to the needs for ground recognition lighting on a wide variety of aircraft. All current source and flasher circuitry is contained within the base plate. Unit is flush mounted to aircraft surface eliminating the need for large cutouts in the aircraft structure. Item ships with flying leads. **SPECIFICATIONS**: • Power Consumption: 0.28 amps Avg. @ 28 VDC • LED Colors: Aviation Red • Lens: Aviation Red, Polycarbonate • Weight: 0.2 lbs. (91gm) • Exposed Height: 1.48" (38mm) • Exposed Width: 1.64" (42mm) • Exposed Length: 4.61" (117mm)

Model #	Approvals	Description	Part #	Price
9035000	—	Red, 28 VDC	11-06172	**$279.95**

MODEL 71055 SERIES LED BEACON - 71055 series beacons are FAA TSO compliant self-contained LED anti-collision lights. They are designed to replace existing quartz halogen flasher beacons installed as original equipment on single engine Cessna's from 1967 and later (contact factory for details). They can also replace remote mounted strobe lights (ref. Whelen A470 series) allowing for removal of the strobe power supply. Internal mounting plate provided with choice of mounting holes to retrofit most existing mounting patterns. STC SA615EA approved.
SPECIFICATIONS: • Power Consumption: 01-0771055-00 - 1.2 amps Avg. / 11-04542 - 0.6 amps Avg. • LED Color: Aviation RED • Lens: Clear Polycarbonate • Weight: 0.52 lbs. (236gm) • Exposed Height: 3.09" (78mm) • Exposed Diameter: 2.60" (66mm)

Model #	Approvals	Description	Part #	Price
7105500	FAA TSO-C96a Class III	LED beacon 14 VDC, red	11-04541	**$494.00**
7105501	FAA TSO-C96a Class III	LED beacon 28 VDC, red	11-04542	**$487.00**
38-0250885-00	-	Replacemnt Lens Gasket	11-10407	**$7.65**

NOTE: All non-FAA approved whelwn parts are signified by a (—) in the approval column. Parts without FAA approval may still be purchased, however, installation of these parts on U. S. Type Certificated products may require additional FAA approvals.

MODEL 90088 SERIES LED ANTI-COLLISION LIGHT - 90088 series is a self-contained LED anti-collision beacon. It's solid-state circuitry and LED light source obsolete the "old style" mechanical oscillating beacons as well as the Whelen 90044 series quartz halogen flashing beacons. Benefits include no moving parts, no EMI/RFI, no inrush current spikes and crisp on/off cycles. There are several models available to provide compatibility with existing mounting patterns and profiles, thus eliminating the need to alter the aircraft.
SPECIFICATIONS: • Power Consumption: 0.45 amps @ 28 VDC • LED Color: Aviation RED • Weight: 1.8 lbs (816gm) (unless otherwise noted) • Exposed Height: 2.70" (69mm) • Lens Color: Clear glass • Replaces: Whelen: 90044 Series and Grimes: G9950-( ), 40-0100-( ), 30-2140-( ), 40-0117-( ), 40-0127-( ), 30-2647-( )
To determine the model required for replacement, the following information is needed: upper or lower mounting, number of mounting holes (5 or 8), weight & position installed. Beacons installed on the rudder. Top replacement on Gulfstream II & III require a 9008812 in conjunction with the optional 16 hole mounting plate, P/N 06-170618-00.

Model #	Approvals	Description	Part #	Price
9008811	FAA TSO-C96a Class III	Lower, 5 hole, standard assembly, cable pigtail	11-05004	**$1,039.00**
9008812	FAA TSO-C96a Class III	Upper, 5 hole, standard assembly, cable pigtail	11-05005	**$1,039.00**
9008813	FAA TSO-C96a Class III	Upper, 5 hole, 2.25 lbs. rudder mount (Citations)	11-07629	**$1,055.00**
9008814	FAA TSO-C96a Class III	Upper, 5 hole, 2.25 lbs. cable pigtail (Beech Barons)	11-07630	**$1,096.00**
9008815	FAA TSO-C96a Class III	Lower, 5 hole, (MS27508E10A-5P connector)	11-07631	**$1,055.00**
9008816	FAA TSO-C96a Class III	Upper, 5 hole, (MS27508E10A-5P connector)	11-07632	**$1,055.00**
9008817	FAA TSO-C96a Class III	Lower, 5 hole, 2 drain holes (Hawker 800)	11-07633	**$1,054.00**
9008818	FAA TSO-C96a Class III	Upper, 8 hole, 1.9 lbs, cable pigtail	11-07634	**$1,054.00**
9008819	FAA TSO-C96a Class III	Lower, 8 hole, 1.9 lbs, cable pigtail	11-07635	**$1,096.00**

5-Hole

MODEL 90044 SERIES - 90044 series self-contained, 150 watt, quartz halogen flashing anti-collision light. Factory installed on Lear 31, Falcon 900 and Cessna Citation X. It is also a direct replacement for oscillating beacons on most corporate aircraft.
SPECIFICATIONS: • Weight: 1.6 lbs. (726gm) to 2.5 lbs. (1134gm) • Height: 5.5" (140mm) • Power Consumption: 3.25 amps @ 28 VDC • Replaces: G9950-( ), 40-0100-( ), 30-2140-( ), 40-0117-( ), 40-0127-( ), 30-2647-( )
To determine model required for replacement, the following information is needed: Lens color (red or white), upper or lower mounting location, number of mounting holes (5, 8, or 9), weight and position installed. Beacons installed on the rudder.Top replacement on GII and GIII require 9004401 or 9004402 in conjunction with the 16 hole mounting plate, P/N 06-170618-00.

Model #	Approvals	Remarks	Lens	Mount	Base	Part #	Price
9004401	FAA TSO-C96a	Std. Assy	red	upper	5 hole	11-03293	**$832.00**
9004402	FAA TSO-C96a	Std. Assy	white	upper	5 hole	90044-02	**$832.00**
9004403	FAA TSO-C96a	Std. Assy	red	lower	5 hole	90044-03	**$832.00**
9004404	FAA TSO-C96a	Std. Assy	white	lower	5 hole	90044-04	**$832.00**
9004417	FAA TSO-C96a	Std. Assy	red	upper	8 hole	90064-17	**$832.00**
9004418	FAA TSO-C96a	Std. Assy	white	upper	8 hole	90044-18	**$832.00**
9004419	FAA TSO-C96a	Std. Assy	red	lower	8 hole	90044-19	**$832.00**
9004420	FAA TSO-C96a	Std. Assy	white	lower	8 hole	90044-20	**$832.00**
9004435	FAA TSO-C96a	2.50 lbs. (Westwind)	red	upper	8 hole	90044-35	**$832.00**
9004457	FAA TSO-C96a	2.25 lbs., cable pigtail (Beech Barons)	red	upper	5 hole	11-01968	**$895.00**

2-Hole

MODEL 90033 SERIES SELF-CONTAINED LIGHT ASSEMBLIES - 90033 series self-contained, 150 watt, quartz halogen flashing anti-collision light which is factory installed on Beechcraft. It is also a direct replacement for oscillating beacons on most corporate aircraft.
SPECIFICATIONS: • Weight: 0.6 lbs.(272gm) to 0.9 lbs. (408gm) • Height: 4.4" (112mm) • Power Consumption: 5.5 amps @ 28 VDC

Model #	Approvals	Remarks	Lens	Mount	Base	Part #	Price
900331	FAA TSO-C96a	18" cable, no connector	red	lower	2 hole	90033-1	**$550.00**
900332	FAA TSO-C96a	18" cable, no connector	white	lower	2 hole	90033-2	**$523.00**

FOR ADDITIONAL 90044 AND 90033 SERIES LIGHTS PLEASE CALL OR VISIT OUR WEBSITE AT WWW.AIRCRAFT SPRUCE.COM

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WHELEN POSITION LIGHT ASSEMBLIES

MODEL 71105 SERIES LED POSITION LIGHT ASSEMBLY - 71105 series are fully FAA TSO compliant forward position lights. LED's provide a significant reduction in electrical current draw over conventional light bulbs. The 71105 is our latest design and lowest priced forward position light. Direct replacement for Whelen Model W1285 series (Version STC'd on Learjet Aircraft).

SPECIFICATIONS: • LED Navigation Light Power Consumption: 0.25 amps @ 14 VDC or 28 VDC • LED Colors: Aviation Red, Aviation Green • Weight: 0.20 lbs. (91gm) 14 VDC, 0.25 lbs. (113gm) 28 VDC • Exposed Height: 2.70" (69mm) • Lens: Clear Polycarbonate

Model #	Approvals	Description	Part #	Price
7110501	FAA TSO-C30c Type II	Position grn, 14V	11-05629	**$205.95**
7110502	FAA TSO-C30c Type I	Position red, 14V	11-05631	**$205.95**
7110503	FAA TSO-C30c Type II	Position grn, 28V	11-05632	**$187.95**
7110504	FAA TSO-C30c Type I	Position red, 28V	11-05634	**$189.95**

MODEL W1285 SERIES - W1285 series wing tip position light which uses a 26-watt incandescent lamp. It is a direct replacement for the brand "G" A1285 series. Specify 14 or 28 VDC.

SPECIFICATIONS: • Weight: 0.2 lbs. (91gm) • Height: 1.25" (32mm) • Length: 4" (102mm) • Power Consumption: 2 amps @ 14 VDC, 1 amp @ 28 VDC

Model #	Approvals	Description	Part #	Price
W1285PG1	FAA TSO-C30b Type II	14V, position grn	11-03226	**$209.00**
W1285PR1	FAA TSO-C30b Type I	14V, position red	11-03224	**$215.95**
W1285PG2	FAA TSO-C30b Type II	28V, position grn	11-03891	**$286.95**
W1285PR2	FAA TSO-C30b Type I	28V, position red	11-03283	**$216.95**

MODEL 71015 SERIES LED FORWARD POSITION LIGHTS - 71015 series are FAA TSO compliant forward position lights. They are compatible with the Whelen W1250 position light mounting as well as any other make that uses the same mounting pattern.

SPECIFICATIONS: • Power Consumption: 0.3 amps @ 28 VDC • LED Color: Aviation Red; and Aviation Green • Weight: 0.2 lbs. (91gm) • Exposed Height: 1.33" (34mm) • Length: 2.41" (61mm)

Model #	Approvals	Description	Part #	Price
7101501	FAA TSO-C30c Type II	Grn position, 28V	11-05011	**$274.95**
7101502	FAA TSO-C30c Type I	Red position, 28V	11-05012	**$270.00**

MODEL W1250 SERIES - W1250 series wing tip position light is designed for use under a wing tip fairing. It uses a 26 watt incandescent lamp and is a direct replacement for the brand "G" A1815A Series. Specify 14 or 28 VDC.

SPECIFICATIONS: • Weight: 0.3 lbs. (136gm) • Height: 1.25" (32mm) • Length: 2.75" (70mm) • Power Consumption: 2 amps @ 14 VDC, 1 amp @ 28 VDC

Model #	Approvals	Description	Part #	Price
W1250PR1	FAA TSO-C30b Type I	Position red, 14 V	11-04264	**$157.95**
W1250PR2	FAA TSO-C30b Type I	Position red, 28 V	11-03282	**$157.95**
W1250PG1	FAA TSO-C30b Type II	Position grn, 14 V	11-04263	**$98.75**
W1250PG2	FAA TSO-C30b Type II	Position grn, 28 V	11-03278	**$157.95**

MODEL A555A SERIES - A555A series tail mounted position light which uses a 25 watt halogen lamp. The suffix "V" or "H" in the part number designates the aircraft mounting screw locations in respect to the light shield. "V" designates vertical mounting and "H" indicates horizontal mounting on the aircraft. Supplied with a 2 position "AMP" connector. Specify 14 VDC or 28 VDC. Replaces the brand "G" A2064 series.

SPECIFICATIONS: • Exposed Height: 1.4" (36mm) • Mounting Diameter: 1.06" (27mm) • Power Consumption: 2 amps @ 14 VDC, 1 amp @ 28 VDC • Weight: 0.1 lbs. (45gm)

Model #	Approvals	Description	Part #	Price
A555AV14	FAA TSO-C30b Type III	Vert, 14 VDC	11-03256	**$116.95**
A555AV28	FAA TSO-C30b Type III	Vert, 28 VDC	11-03267	**$119.50**
A555AH14	FAA TSO-C30b Type III	Horz. , 14 VDC	11-03270	**$114.95**
A555AH28	FAA TSO-C30b Type III	Horz. , 28 VDC	11-03275	**$116.95**

MODEL 90377 SERIES LED POSITION LIGHT ASSEMBLY - 90377 series is a wing tip mounted position light assembly utilizing LED's for both the forward & tail position lights, eliminating the need for a tail mounted position light. The LED's provide a significant reduction in current draw over conventional position light bulbs. Direct replacement (exact footprint) for the Whelen Model A675PG/PR series. Single set of flying leads operates both forward & tail nav on 28 VDC version, and one set each of flying leads for the forward & tail nav on the 14 VDC version.

SPECIFICATIONS: • LED Navigation Lights Power Consumption: 0.5 amps @ 14 VDC, 0.25 amps @ 28 VDC • LED Colors: Aviation Red, Aviation Green and Aviation White • Weight: 0.35 lbs. (159gm) • Exposed Height: 1.08" (27mm) • Exposed Width: 1.87" (47mm) • Exposed Length: 5.69" (145mm) • Lens: Clear Polycarbonate

Model #	Approvals	Description	Part #	Price
9037701	FAA TSO-C30c Types II & III	Position grn, 14 V	11-06175	**$284.95**
9037702	FAA TSO-C30c Types I & III	Position red, 14 V	11-06176	**$269.00**
9037703	FAA TSO-C30c Types II & III	Position grn, 28 V	11-06177	**$271.95**
9037704	FAA TSO-C30c Types I & III	Position red, 28 V	11-06178	**$271.95**

MODEL A675 SERIES - A675 series wing tip position and taillight designed to eliminate the need for a tail mounted position light. It uses a 26 watt incandescent lamp for the forward position light and a 25 watt halogen for the tail position light. Specify 14 or 28 VDC.

SPECIFICATIONS: • Weight: 0.5 lbs. (227gm) • Height: 1.25" (32mm) • Length: 5.62" (143mm) • Power Consumption: 4 amps @ 14 VDC, 2 amps @ 28 VDC

Model #	Approvals	Description	Part #	Price
A675PR14	FAA TSO-C30b Type I & III	Position red, 14V	11-01896	**$289.00**

MODEL 71011 SERIES LED TAIL POSITION LIGHTS - 71011 series are LED tail position lights designed to replace the existing "old style" tail lights typically seen mounted on most general aviation, corporate, and helicopter applications. They have all the advantages associated with using LED's as a light source, improved reliability, and reduced operating costs. Now offered with a 14 Volt version.

SPECIFICATIONS: • Power Consumption: 0.5 amps @ 14 VDC; 0.3 amps @ 28 VDC • LED Color: Aviation White • Weight: 0.2 lbs. (91gm) • Exposed Height: 1.36" (35mm) • Mounting Hole Pattern: 1.75" (45mm)

Model #	Approvals	Description	Part #	Price
7101102	FAA TSO-C30c Type III	Vert 28V	11-05013	**$239.00**
7101103	FAA TSO-C30c Type III	Horz. 28V	11-05014	**$249.00**
7101112	FAA TSO-C30c Type III	Vert 14V	11-06325	**$254.95**
7101113	FAA TSO-C30c Type III	Horz. 14V	11-06326	**$239.95**

MODEL 70966 SERIES - 70966 series LED tail position light, is a high quality, long lasting, modern alternative to incandescent & halogen tail position lights. It offers significant technological upgrades over previous products. Utilizing LED technology, the following advantages are offered: Long Life (approx. 20,000 hours); Reduced Power Consumption (compared to alternative light sources); Shock & Vibration Resistant (no fragile filament to burn out); Light (produces bright white light) and No EMI or RFI Interference. 3 Year Warranty.

SPECIFICATIONS: • Exposed Height: 1.64" (42mm) • Length: 2.60" (66mm) • Width: 1.74" (44mm) • Power Consumption: 0.3 amps @ 28 VDC • Weight: 0.3 lbs. (136gm)

Model #	Approvals	Description	Part #	Price
7096600	FAA TSO-C30c Type III	28 VDC - no connectors	11-01228	**$448.95**
7096601	FAA TSO-C30c Type III	28 VDC - connectors, case ground used on Beechjet	11-07699	**$447.95**

NOTE: All non-FAA approved whelwn parts are signified by a (—) in the approval column. Parts without FAA approval may still be purchased, however, installation of these parts on U. S. Type Certificated products may require additional FAA approvals.

READING LIGHT - The Model A325 ML reading light will replace original equipment on 14 volt Piper aircraft. It is designed for passenger convenience and is equipped with an on/off slide switch. Specify voltage (14V or 28V).

14V.....P/N 11-03294 .....**$259.95**
28V.....P/N 11-03682 .....**$154.95**

OVERHEAD CABIN LIGHT - The Model A360 is designed for recessed overhead lighting. Aluminum housing & Pyrex lens. Weight: 0.25 Lb.

14V.....P/N 11-03685 .....**$122.95**
28V.....P/N 11-03686 .....**$110.95**

MODEL 71144 'GOOSENECK' LED LIGHT ASSEMBLY - 71144 assembly features a positive off position and rheostat controlled light intensity. Models including 'side' mounted intensity control are which is designed for the S76D. 28 VDC Only. **SPECIFICATIONS**: • Power Consumption: 0.06 amps @ 28 VDC • LED Colors: Aviation White • Weight: 0.46 lbs. (209gm) • Black Nylon Hood; fixed in position

Model #	Approvals	Description	Part #	Price
7114416	—	16" adj map light, 28V - Wht	11-07701	**$273.95**
70190R12	—	16" adj map light, 28V - Red	11-07731	**$228.95**
70190B12	—	16" adj map light, 28V - Blue	11-07732	**$228.95**

MODEL 70844 SERIES LED POST LIGHTS - The model 70844 series are LED (Light Emitting Diode) instrument post light assemblies. Designed to illuminate the instrument panel, and function as instrument mounting bolts. High quality, long lasting, modern alternative to standard incandescent post lights. Utilizing LED technology, the following advantages are offered: • Long life - approximately 20,000 hours. • Reduced power consumption -compared to alternative light sources • Shock and vibration resistant, no fragile filament to burn out • Light - produces bright white light. • No EMI or RFI interference ***Specifications:*** • Wt: .03 lbs. • Exposed Height: 1" w/o spacer • Width: 1.74 • Power consumption: .02 amps @ 14 V / .02 Amps @ 28V

Model No.	Whelen P/N	Description	Part No.	Price
7084400	01-0770844-00	14V, 1.0" post	11-01215	**$37.50**
7084401	01-0770844-01	14V, 1.5" post	11-01216	**$37.65**
7084402	01-0770844-02	28V, 1.0" post	11-01217	**$37.25**
7084403	01-0770844-03	28V, 1.5" post	11-01218	**$37.50**
Replacement light hood			11-07775	**$0.48**

A350 WHELEN POST LIGHTS - A350 and A350CN series instrument post light assemblies are designed to illuminate the instrument panel and function as instrument mounting bolts. The A350 is identical to the A350CN, but without the connector nut. SPECIFICATIONS: • Drawing Number A350: 70116 • Drawing Number A350CN: 70119 • Exposed Height: .875" (22mm) without spacer, 1.00" (25mm) with spacer • Power Consumption: 0.2 amps @6 VDC, 0.08 amps @14 VDC, & 0.04 amps • @ 28 VDC • Weight: 0.037 lbs. (17gm)

Post Light Assembly w/ nut black post.....P/N 11-08133.....**$37.25**
Post Light Assembly w/ nut grey post.....P/N 11-01171.....**$32.75**

Mfg Model#	Description	Part No.	Price
A350CN09	White, 14 VDC	11-03205	**$38.95**
A350CN10	Red, 14 VDC	11-03214	**$38.95**
A350CN15	White, 28 VDC	11-03210	**$38.95**
A350CN16	Red, 28 VDC	11-03653	**$38.95**

A715-1 LANDING LIGHT

The Model A715-1 landing light is standard equipment on new Beechcraft, and will retrofit into older aircraft, as well. Accommodates PAR 36 sealed beam lamp. Order lamp separately (#4509 - 100W, 12V; #4594 or #4613 100W, 24V; Wt. 1/2 lb. Size: 4-3/4" dia. x 6-1/2" long x 2-1/8" deep.

P/N 11-03281 ..... **$149.50**

MODEL 71141 SERIES LED LANDING LIGHT (INTERNAL MOUNT) PAR-36 STYLE - 71141 series is a self-contained all LED landing light assembly. The design is intended to provide a solution to the needs for a taxi & landing light on a wide variety of aircraft. All current source and electronic circuitry is contained within the housing. Unit is available in several mounting configurations to retrofit existing typical PAR-36 lighting. Unit is designed to be mounted internally behind existing lens. Item ships with flying leads. Contact your OEM for installation eligibility on your aircraft. **SPECIFICATIONS**: • Power Consumption: 1.5 amps @ 28 VDC • Weight: 1.0 lbs. (454gm) • Exposed Diameter: 4.46" (113mm), Overall • Depth: 1.90" (48mm) • Lens: Clear Polycarbonate

Model #	Approvals	Description	Part #	Price
7114112	—	LED landing/taxing light internal mount	11-06185	**$485.00**
7114122	—	LED landing/taxing light internal mount	11-06186	**$519.00**

MODEL 90361 SERIES LED LANDING LIGHT (EXTERNAL MOUNT) PAR-36 STYLE - 90361 series is a self-contained all LED landing light assembly. The design is intended to provide a solution to the needs for a taxi & landing light on a wide variety of aircraft. All current source and electronic circuitry is contained within the housing. Unit is available in several mounting configurations to retrofit existing typical PAR-36 lighting. Outer lens allows for mounting externally on aircraft, option of diffusion lens available upon request. Item ships with flying leads. Contact your OEM for installation eligibility on your aircraft. **SPECIFICATIONS**: • Power Consumption: 1.5 amps @ 28 VDC • Weight: 1.3 lbs. (590gm) • Exposed Diameter: 4.70" (119mm), Overall • Depth: 2.87" (73mm) • Lens: Clear Polycarbonate

Model #	Approvals	Description	Part #	Price
9036110	—	"U" bracket mounting	11-06181	**$632.00**
9036115	—	LED taxi, assy with spreader optic, 14V	11-06182	**$632.00**
9036120	—	"U" bracket mounting	11-06183	**$632.00**
9036125	—	LED taxi, assy with spreader optic, 28V	11-06184	**$621.00**

MODEL 71125 SERIES LED RECOGNITION LIGHT - 71125 series LED recognition light is designed to provide supplemental lighting for a wide variety of aircraft applications. Provides all of the advantages of LED's as a light source, no EMI/RFI, low current draw, low heat, long life. Perfect for vibration prone areas. Item ships with flying leads. Several different beam spreads available. Designed to replace the Whelen A775 series. Version containing integrated MS connector also available. Can be used in conjunction with 71115 Flasher control assembly. Contact your OEM for installation eligibility on your aircraft. **SPECIFICATIONS**: • Power Consumption: 0.9 amps @ 14 Volts, 0.45 amps @ 28 Volts • Lens: Clear polycarbonate • LED Color: Aviation White • Weight: 0.3 lbs. (136gm) • Overall Width: 3.25" (83mm) □ Overall Depth: 1.25" (32mm) • Overall Height: 1.95" (50mm)

Model #	Approvals	Description	Part #	Price
7112510	—	10 degree beam pattern, 14V	11-06164	**$264.95**
7112511	—	20 degree beam pattern, 14V	11-06165	**$292.95**
7112512	—	90 degree beam pattern, 14V	11-06166	**$291.95**
7112513	—	30 degree beam pattern, 14V	11-07702	**$279.95**
7112520	—	10 degree beam pattern, 28V	11-06167	**$272.95**
7112521	—	20 degree beam pattern, 28V	11-06168	**$264.95**
7112522	—	90 degree beam pattern, 28V	11-06169	**$264.95**
7112523	—	30 degree beam pattern, 28V	11-07703	**$279.95**

MODEL A775 SERIES - A775 series recognition light assembly which produces up to 22,000 beam candlepower using only a 35 watt lamp. **SPECIFICATIONS**: • Drawing Number: 70110 • Weight: 0.14 lbs. (64gm) • Width: 3.25" (83mm) • Height: 1.75" (44mm) • Depth: 2.25" (57mm) • Power Consumption: 2.5 amps @ 14 VDC, 1.25 amps @ 28 VDC

Model #	Approvals	Description	Part #	Price
7011001	FAA/PMA	Molex connector (Piper), 14V	11-07704	**$45.65**
7011002	FAA/PMA	Molex connector (Piper), 28V	11-07705	**$44.75**
A77514	—	12" leads, 14 VDC	11-03741	**$44.50**
A77528	—	12" leads, 28 VDC	11-03742	**$45.70**

INSTALLATION CABLE KITS - Cable kits include all required connectors for hooking up the strobe light to the power supply only. Warning placards included. All cable is 16 gauge 3/C shielded. The cable diameter is .275" (7mm). Weight is .050 lbs. per linear foot. (Kits do not include switches or breakers)

Model #	Approvals	Description	Part #	Price
HS5	—	5' Cable kit	11-04204	**$33.75**
HT10	—	10' Cable kit	11-08173	**$34.50**
HS30	—	30' Cable kit	11-03285	**$49.75**
HD60	—	60' Cable kit	11-02667	**$92.75**
HDT390	—	90' Cable kit	11-02668	**$109.00**
HT	—	Install kit only	11-02669	**$17.95**

REPLACEMENT CONNECTORS - Replacement connector kits and assemblies for cables.

Model #	Approvals	Description	Part #	Price
A441	—	3 Position male with pins kit	11-03211	**$4.95**
A442	—	3 Position male with sockets kit	11-03212	**$4.95**
A444	—	2 Position male with pins ass'y	11-03700	**$4.95**
A446	—	2 Position female with sockets ass'y	11-03702	**$4.95**
A447	—	4 Position male with pins	11-07706	**$5.25**
A448	—	4 Position female with sockets	11-07707	**$4.80**

CRIMP TOOL - Pin and socket crimping tool.

Model #	Approvals	Description	Part #	Price
CRIMPAV	—	Pin/socket crimping tool, MILBAR #25E	11-07708	**$151.95**

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WHELEN STROBE SYSTEMS

WHELEN LED STROBE SYSTEM #1

LED Navigation and White LED Tail Light with Strobe Anti-Collision Light. ***Whelen Strobe System #1 LED 14V Kit Includes:*** 1 ea. Whelen Green LED Navigation 14V 9034003 1 ea. Whelen Red LED Navigation 14V 9034004 1 ea. Whelen A413A,HDA-CF 14/28V 1 ea. Whelen HD60 Power Supply Installation Kit

14V Kit ..... P/N 11-07596..... **$1,169.00**
28v Kit..... P/N 11-07711..... **$1,111.00**

WHELEN LED STROBE SYSTEM #2

LED Navigation and White LED Tail Light with Strobe Anti-Collision Light. ***Whelen Strobe System #2 LED 14V Kit Includes:*** 1 ea. Whelen Green LED Navigation 14V 9034001 1 ea. Whelen Red LED Navigation 14V 9034002 2 ea. Whelen A490A, TS, CF 14V-28V 1 ea. Whelen Power Install Info Pack

14V Kit..... P/N 11-05646..... **$1,380.00**
28V Kit..... P/N 11-05647..... **$1,292.00**

WHELEN LED STROBE SYSTEM #4

LED Navigation with Strobe Anti-Collision Light ***Whelen Strobe System #4 LED Navigation 14V Model 711 Series Kit Includes:*** 1 ea. Whelen Green LED Navigation 14V 7111001 1 ea. Whelen Red LED Navigation 14V 7111002 2 ea. Whelen A490A, TS, CF 14V-28V 1 ea. Whelen Power Install Info Pack

14V Kit ..... P/N 11-05639..... **$1,253.00**
28V Kit ..... P/N 11-05640..... **$1,253.00**

WHELEN LED STROBE SYSTEM #4A

LED Navigation with Strobe Anti-Collision Light. ***Whelen Strobe System #4A LED Navigation 14V Model 711 Series Kit Includes:*** 1 ea. Whelen Green LED Navigation 14V 7111001 1 ea. Whelen Red LED Navigation 14V 7111002 2 ea. Whelen A490T, TS, CF 14V-28V 1 ea. Whelen Power Install Info Pack

14V Kit ..... P/N 11-05641..... **$1,101.00**
28V Kit ..... P/N 11-05642..... **$1,101.00**

WHELEN LED STROBE SYSTEM #5

LED Navigation with Strobe Anti-Collision Light. ***Whelen Strobe System #5 LED Navigation 14V Model 711 Series Kit Includes:*** 1 ea. Whelen Green LED Navigation 14V 7111001 1 ea. Whelen Red LED Navigation 14V 7111002 1 ea. Whelen A413A, HDA-CF 14V/28V 1 ea. Whelen Power Supply HD60 Installation

14V Kit ..... P/N 11-05648..... **$1,072.00**
28V Kit ..... P/N 11-05649..... **$1,072.00**

STROBE SYSTEMS WITH A600-PG/PR STROBE/NAV LIGHTS

NO. 1 Two A600-PG/PR Wingtip Strobe Lights, (1) A413A-HDA-CF-14/28, remote mounted Power Supply (400 Effective Candles) and HD-60 Installation Kit.

P/N 11-03000 (14V) ..... **$1,023.00** P/N 11-03100 (28V)... **$1,023.00**

NO. 2 Two A600-PG/PR Wingtip Strobe Lights, (2) A490A,TS,CF Power Supplies (400 Effective Candles) and HT Installation Kit.

P/N 11-03200 (14V)..... **$1,169.00**

STROBE SYSTEMS WITH A650-PG/PR STROBE/NAV LIGHTS

NO. 4 TWO LIGHT SYSTEM (With Local Power Supplies) - (2) A650-PG/PR Wingtip Strobe Lights, (2) A490A, TS, CF, Power Supplies (400 Effective Candles) and HT Information Packet.

14V ..... P/N 11-03600.... **$1,078.00** 28V..... P/N 11-03610 **$1,078.00**

(Same Kit but w/A490T, CF Power Supplies below)

14V ..... P/N 11-03605.... **$928.00** 28V..... P/N 11-03615 .. **$928.00**

NO. 5 TWO LIGHT SYSTEM (With Remote Power Supply) - (2) A650-PG/PR Wingtip Strobe Lights, (1) 413A,HDA-CF-14/28,CF remote mounted Power Supply (400 Effective Candles) & HD-60 Installation Kit.

14V ..... P/N 11-03800..... **$932.00**
28V ..... P/N 11-03805..... **$926.00**

NO. 6 THREE LIGHT SYSTEM (With Local Power Supplies) - Two A650-PG/PR Wingtip Strobe Lights, one A500 Tail Position/Strobe Light, (vertical) three A490A,TS,CF Power Supplies (400 Effective Candles Wingtip Strobes, 300 Effective Candles Tail Strobe) and HT Information Packet.

14V (A-500-Vert) . P/N 11-04000-14-V.. **$1,538.00**
14V (A-500-Hor) .. P/N 11-04000-14-H . **$1,538.00**
28V (A-500-Vert) . P/N 11-04000-28-V.. **$1,538.00**
28V (A-500-Hor) .. P/N 11-04000-28-H . **$1,538.00**

(Same Kit but w/A490T, CF Power Supplies below)

14V (A-500-Vert) . P/N 11-04010-14-V.. **$1,312.00**
14V (A-500-Hor) .. P/N 11-04010-14-H . **$1,312.00**
28V (A-500-Vert) . P/N 11-04010-28-V.. **$1,307.00**
28V (A-500-Hor) .. P/N 11-04010-28-H . **$1,307.00**

NO. 7 THREE LIGHT SYSTEM (With Remote Power Supply) - (2) A650-PG/PR Wingtip Strobe Lights, (1) A500 Tail Position/Strobe Light, (vertical) one A413A,HDA-CF-14/28 remote-mounted Power Supply (400 Effective Candles Wingtip Strobes, 330 Effective Candles Tail Strobe) & HD,T3-90 Installation Kit.

14V..... P/N 11-04400..... **$1,031.00**
28V..... P/N 11-04500..... **$1,031.00**

STROBE SYSTEMS WITH A650 STROBES

NO. 8 TWO LIGHT SYSTEM (WITH LOCAL POWER SUPPLIES)

(2)A650 Wingtip Strobe Lights,
(2) A490A,TS,CF Power Supplies (400 Effective Candles)
HT Information Packet.

P/N 11-04600 (14-28V) **$834.00**

Same but w/A490T, CF Power Supplies.

P/N 11-04605 (14-28V) **$684.00**

NO. 9 TWO LIGHT SYSTEM (WITH REMOTE POWER SUPPLY)

(2) A650 Wingtip Strobe Lights
(1) A413A,HDA-CF-14/28 remote-mounted Power Supply (400 Effective Candles)
HD-60 Installation Kit..... P/N 11-04800 (14-28V) **$688.00**

NO. 10 THREE LIGHT SYSTEM (WITH LOCAL POWER SUPPLIES)

(2) A650 Wingtip Strobe Lights
(1) A500 Tail Position/Strobe Light, (vertical)
(3) A490A,TS, CF Power Supplies (400 Effective Candles Wingtip Strobes, 300 Effective Candles Tail Strobe)
HT Info Packet.

Part No.	Description	Price
11-05000-14-V	A-500-Verticle - 14V	$1,295.00
11-05000-14-H	A-500-Horizontal - 14V	$1,294.00
11-05000-28-V	A-500-Verticle - 28V	$1,294.00
11-05000-28-H	A-500-Horizontal - 28V	$1,294.00
Same Kit but with A490T,CF Power Supplies		
11-05001-14-V	A-500-Verticle - 14V	$1,069.00
11-05001-14-H	A-500-Horizontal - 14V	$1,069.00
11-05001-28-V	A-500-Verticle - 28V	$1,069.00
11-05001-28-H	A-500-Horizontal - 28V	$1,069.00

NO. 11 THREE LIGHT SYSTEM (WITH REMOTE POWER SUPPLY)

(2) A650 Wingtip Strobe Lights
(1) A500 Tail Position/Strobe Light
(1) A413A,HDA-CF-14/28 remote-mounted Power Supply (400 Effective Candles)
HD,T3-90 Installation Kit.

Part No.	Description	Price
11-05400-14-V	A-500-Verticle - 14V	$869.00
11-05400-14-H	A-500-Horizontal - 14V	$869.00
11-05400-28-V	A-500-Verticle - 28V	$869.00
11-05400-28-H	A-500-Horizontal - 28V	$869.00

HOMEBUILDERS WHELEN STROBE KIT

This compact, lightweight strobe kit is very popular with builders of a variety of todays homebuilt aircraft. Kit includes: 2-A610 flash tube assys., 2-A612 magnifying lenses, 2-A490T,CF power supplies and 1-HT installation Kit.

P/N 11-00923 ..... **$724.00**

CUSTOM LOW ENERGY SYSTEM

Kit # 11-05600

Popular with Long-EZ, Q2, Q200 builders and others using a lightweight, low amperage generator or alternator. It consists of: (2) A600-PG/PR Wingtip Strobe Lights, (1) A413A, HDS-14/28 (Single Flash 20 Joules) remote mounted Power Supply, HD-60 Installation Kit (Draws less than 4A - 14V & produces 400 effective Candles.)

P/N 11-05600..... **$1,014.00**

WHELEN STROBE TESTER

Designed to determine whether power supply is operating normally. Kit contains troubleshooting procedures. Also contains adapter for testing some Grimes and Hoskins strobe light systems.

P/N 11-06800..... **$128.95**

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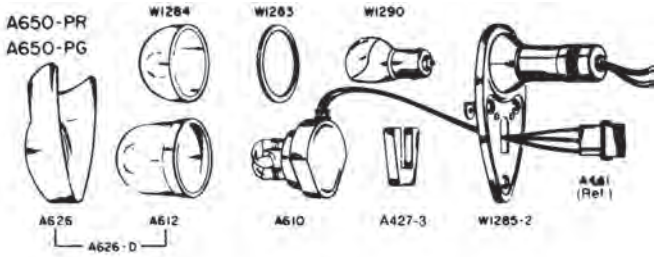
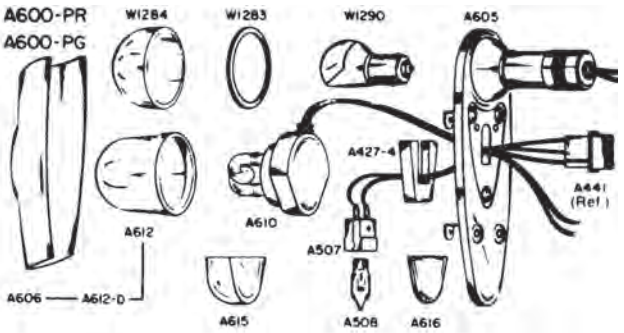
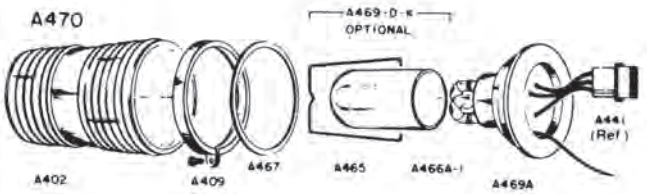
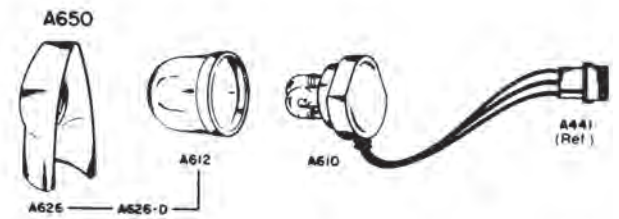
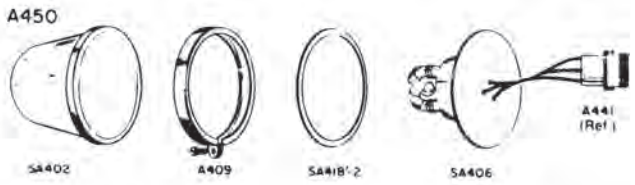
WHELEN STROBE LIGHTS

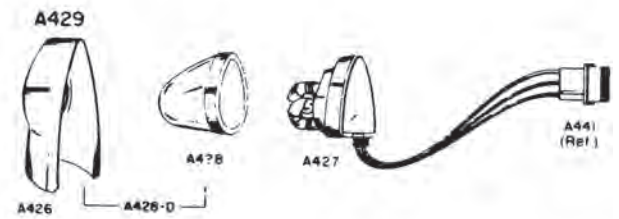


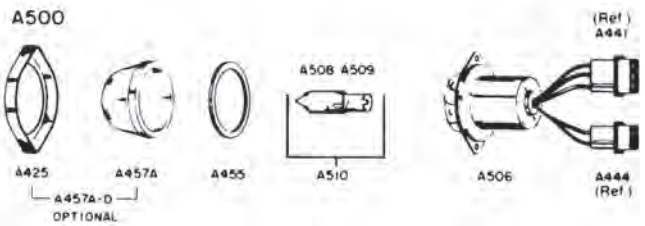


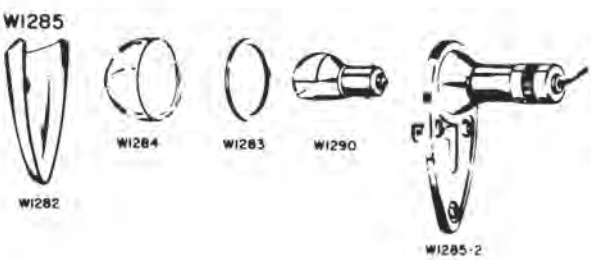


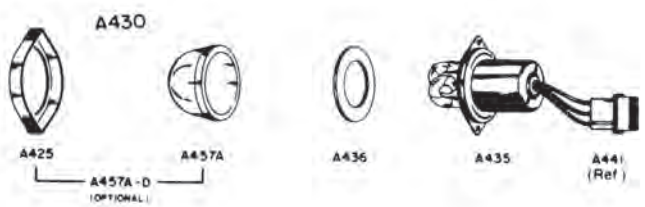


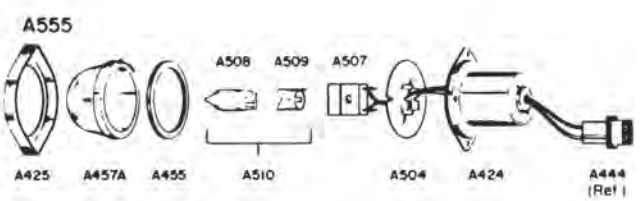


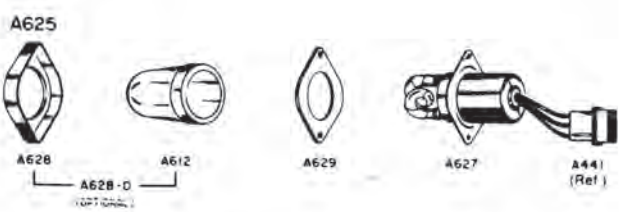


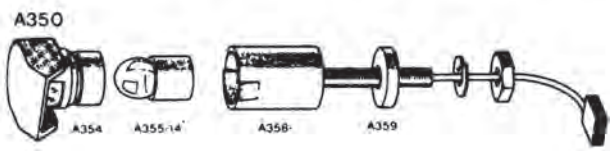


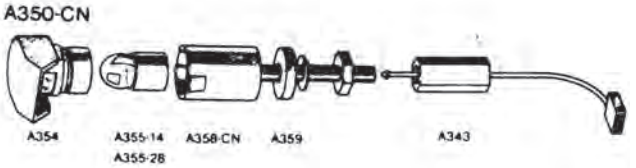












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WHELEN STROBES

STROBE SYSTEM PARTS

Model #	Description	Part No.	Price
A402R	Red Optic Lens	11-03254	$27.65
A402W	White Optic Lens	11-03271	$27.75
A402R/W	Split Red/White Optic Lens	11-03248	$32.70
A406	Flash Tube Assembly	11-03687	$83.75
A409	Clamp Ring Assembly	11-03688	$11.95
A414A, HDH, CF	HDH,CF Power Supply	11-03632	$475.95
A417-1	Interconnecting Cable	11-03658	$1.45
A421-1	Warning Decal	11-03691	$3.90
A425	Tail Strobe Lens Retainer	11-03692	$18.60
A426	Wingtip Strobe Lens Retainer	11-03233	$31.85
A427	Flash Tube Assembly	11-03219	$78.89
A427-M	Flash Tube Assembly with Molex Connector	11-03272	$77.25
A427-4	Rubber Pad Spacer	11-03693	$7.50
A428	Wingtip Strobe Lens	11-03236	$51.75
A428-C	Wingtip Strobe Radio Shielded Lens	11-03694	$78.25
A428-D	Wingtip Strobe Radio Shielded Lens plus A426 Retainer assy.	11-03290	$106.95
A429	Wingtip Strobe Head Assembly (Replaced by A650)	11-03695	$154.95
A430	Tail Strobe Head Assembly	11-03696	$123.95
A435	Flash Tube Assembly	11-03697	$83.50
A440	WRM-65 Mounting Adapter, forHR,DF & SA,DF	11-03699	$20.75
A441	AMP Connector and 3 Pins	11-03211	$4.95
A442	AMP Connector and 3 Sockets	11-03212	$4.95
M441	Molex Connector and 3 Pins for Piper Installation	11-04215	$7.50
M442	Molex Connector and 3 Sockets for Piper Installation	11-04216	$7.50
A444	AMP Connector and 2 Pins	11-03700	$4.95
M444	Molex Connector and 2 Pins for Piper Installation	11-04217	$7.50
A445	Switch Label	11-03701	$3.15
A446	AMP Connector and 2 Sockets	11-03702	$4.95
A450	Strobe Head Assembly	11-03280	$183.95
A455	Gasket	11-03703	$7.50
A457A	Tail Light Lens for A500 and A555	11-03227	$31.85
A457A-D	Radio Shielded Tail Light Lens Assembly for A500	11-03704	$82.25
A465	Spring	11-03707	$13.25
A466A-1	Radio Shielded Lens	11-03708	$75.25
A467	Gasket for A470	11-03709	$8.25
A469B	Flash Tube Assembly	11-03225	$74.65
A469D-K	Radio Shielded Kit for A469A	11-03711	$79.00

NOTE:
All Whelen Replacement parts reflect at least 30% discount off factory list price.

Model #	Description	Part No.	Price
A470-D	Radio Shielded Remote Strobe Head Assembly, Specify Color	11-03291	$234.95
A470-A-D-S	Strobe Head Assembly, Shielded Red/White	11-04976	$164.95
A470-D-R-SU	Radio Shielded Remote Strobe	11-03714	$166.95
A490 TC CF	14V Power Supply	11-02661	$249.95
A490 TC CF	28V Power Supply	11-06406	$246.95
A500-V-D-14	14V Radio Shielded Tail Position Strobe Light Head Assy. Vertical Mount	11-03721	$198.95
A500-V-D-28	28V Radio Shielded Tail Position Strobe Light Head Assy. Vertical Mount	11-06407	$199.75
A500-H-D-14	Radio Shielded Tail Position & Strobe Light Head Assembly Horizontal Mount	11-03717	$210.95
A500-H-D-28	Radio Shielded Tail Position & Strobe Light Head Assembly Horizontal Mount	11-06327	$214.95
A500-V-D-M-14	Radio Shielded Tail Position & Strobe Light Head Assembly Vertical Mount with Molex Connector	11-03722	$207.95
A500-V-D-M-28	Radio Shielded Tail Position & Strobe Light Head Assembly Vertical Mount with Molex Connector	11-06329	$209.95
A500-H-D-M-14	Radio Shielded Tail Position & Strobe Light Head Assembly Horizontal Mount with Molex Connector	11-03719	$207.95
A500B-V-14	Tail Position & Strobe Light Head Assembly (Beech)	11-03715	$290.95
A500B-V-28	Tail Position & Strobe Light Head Assembly (Beech)	11-03716	$292.95
A500SP-28	Tail Pos. & Strobe Assy. (Beech)	11-03720	$270.95
A502	Flash Tube & Socket Assembly	11-03723	$200.95
A506	Flash Tube & Socket Assembly	11-03274	$134.95
A506-B	Flash Tube & Socket Assembly	11-03724	$259.95
A506-M	Flash Tube & Socket Assembly	11-03725	$129.85
A506-SP	Flash Tube & Socket Assembly	11-03726	$247.95
A507	Lamp Socket Assembly for A555	11-03240	$18.80
A508-14	Halogen Lamp for A500,A555, A600	11-03216	$23.50
A508-28	Halogen Lamp for A500,A555, A600	11-03208	$23.75
A509	Lamp Shield for A500 and A555	11-03727	$9.90
A510-14	Lamp Assembly for A500 & A555	11-03728	$32.00
A510-28	Lamp Assembly for A500 & A555	11-03266	$32.50
A512-V-28	Tail Position & Strobe Light Head Assembly (Gulfstream Commander)	11-03729	$164.95
A540	Long Mounting Adapter	11-03730	$79.50
A600-PG-D-14	Radio Shielded Wingtip Strobe Light with Forward & Tail Position Light Assembly	11-03636	$316.95
A600-PG-D-28	Radio Shielded Wingtip Strobe Light with Forward & Tail Position Light Assembly	11-03732	$310.95
A600-PG-D-M-28	Radio Shielded Wingtip Strobe Light w/ Forward & Tail PositionLight Assembly (Molex Connector)	11-03732	$310.95
A600-PR-D-M-14	Radio Shielded Wingtip Strobe Light w/ Forward & Tail Position Light Assembly (Molex Connector)	11-03638	$322.95
A600-PR-D-M-28	Radio Shielded Wingtip Strobe Light w/ Forward & Tail Position Light Assembly (Molex Connector)	11-06335	$322.95
A605	Base Plate Assembly	11-03733	$98.75
A606	Retainer	11-03260	$25.95
A610	Flash Tube Assembly	11-03213	$72.85
A610-M	Flash Tube Assembly	11-03734	$75.25
A612	Magnifying Lens	11-03222	$31.75
A612-D	Radio Shielded Lens Retainer Assembly	11-03735	$87.90
A615	Lens for A600 Tail Light	11-03230	$61.75
A616	Gasket for A600 Tail Light	11-03261	$8.25
A625	Tail Strobe Head	11-03228	$114.95
A625-D	Radio Shielded Tail Strobe Head Assembly	11-03659	$159.75
A626	Retainer Lens	11-03229	$33.25
A626-D	Radio Shielded Lens Retainer Assy.	11-03736	$89.75
A627	Flash Tube Assembly	11-03263	$79.85
A628	Retainer Lens	11-03737	$21.50
A629	Gasket	11-03660	$8.25
A650	Wingtip Strobe Head Assembly	11-03215	$109.95

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WHELEN STROBES

Model #	Description	Part No.	Price
A650-PG-D-14	Wingtip Position & Strobe (Radio Shielded) Head assy.	11-03639	$281.95
A650-PG-D-28	Wingtip Position & Strobe (Radio Shielded) Head assy.	11-06336	$278.95
A650-PR-D-14	Wingtip Position & Strobe (Radio Shielded) Head assy.	11-03642	$275.95
A650-PR-D-28	Wingtip Position & Strobe (Radio Shielded) Head assy.	11-06337	$279.95
A650-PG-D-M-28	Radio Shielded Wingtip Strobe & Position Light Head Assemble w/ Molex Connector .	11-06338	$286.95
A730	Tail Flood Light Assembly	11-03740	$318.00
A1610-14	Power Supply	11-03666	$493.95
C-70178-1	Power Supply (Single Flash)	11-04132	$399.00
C-70188-1	Power Supply	11-04133	$464.00
C-70190-1	Goose Neck Light (12" Long)	11-04134	$233.95
70285-1	Self Contained Strobe RadioShielded Red	70285-1	$666.00
70285-2	Self Contained Strobe Radio Shielded Red with Mask	70285-2	$646.00
70285-3	Self Contained Strobe White	70285-3	$640.00
70285-5	Self Contained Strobe Red	70285-5	$640.00
70285-6	Self Contained Strobe Radio Shield Red with Mask	70285-6	$662.00
70294-1	Power Supply	70294-1	$554.00
H102	"B" Mounting Adapter	11-03243	$11.75
H103	"A" Mounting Adapter 3-3/4"	11-03284	$45.75
HR-CF200-14	14V Power supply for HR or SA	11-03838	$360.95
SA402	Lens Assembly for SA & A450	11-04259	$146.95
SA406	Flash Tube Assembly for SA & A450	11-03250	$73.75
W1282	Forward Position Light Lens Retainer	11-03232	$34.75
W1283	Forward Position Light Gasket	11-03209	$8.75
W1284-G	Forward Position Light Lens (Green)	11-03206	$38.75
W1284-R	Forward Position Light Lens (Red)	11-03207	$37.75
W1285-2	Forward Position Light Base	11-03244	$74.75
W1284C	Lens, Clear	11-04117	$108.95
W1290-14	14 Volt Position Light Bulb	11-02602	$29.50
W1290-28	28 Volt Position Light Bulb	11-02604	$28.85
90029-1	Combination Wing-tip Light Assy.	90029-1	$1,069.00
90029-2	Combination Wing-tip Light Assy.	90029-2	$1,069.00
90029-3	Combination Wing-tip Light Assy.	90029-3	$1,104.00
90029-4	Combination Wing-tip Light Assy.	90029-4	$1,104.00
90033-1	Anti Collision Beacon Assy. Red	90033-1	$550.00
90033-2	Anti Collision Beacon Assy. White	90033-2	$523.00
34-0226010-91	Lamp Quartz 150 Watt	11-05091	$42.65

INTERIOR LIGHTING

Model #	Description	Part No.	Price
A300-14	14V Map Light Assembly	11-03673	$142.95
A300-28	28V Map Light Assembly	11-03674	$138.95
A315HIR2	28V Cockpit Utility Light - Red	11-03678	$72.75
A315-HI-B-14	14V Cockpit Utility Light - White	11-03675	$92.25
A315-LO-B-14	14V Cockpit Utility Light	11-03679	$30.75
A315-LO-B-28	28V Cockpit Utility Light	11-03680	$32.25
A325-ML-14	14V Reading Light Assembly	11-03294	$259.95
A325-ML-28	28V Reading Light Assembly	11-03682	$154.95
*A350-14	14V Post Light Assembly	11-03205	$38.95
*A350-28	28V Post Light Assembly	11-03210	$38.95
A360-14	14V Dome Light Assembly Overhead	11-03685	$122.95
A360-28	28V Dome Light Assembly Overhead	11-03686	$110.95
A360SW	Dome Light Assembly w/Switch	11-03629	$136.95
70339-1	Floodlight Assembly (14V)	70339-1	$127.95
70339-02	Floodlight Assembly (28V)	70339-02	$126.95
70339-03	Floodlight Assembly (14V Switch)	70339-03	$143.95
70339-04	Floodlight Assembly (28V Switch)	70339-04	$148.95
70348-00	Post Light (28V 10-32Thread) (IW)	70339-00	$74.50
70348-01	Post Light (28V 10-32Thread) (RD)	70339-01	$74.50

PARTS FOR POST LIGHTS

Model #	Description	Part No.	Price
A343	Connector Assembly	11-03252	$13.90
*A354	Head Assembly	CALL	$20.75
*A358	Base Assembly	CALL	$25.50
A359	Spacer	11-03684	$9.85

**** Requires dash numbers for lens color and finish. Please contact factory.***
‡ For complete information contact factory.

RECOGNITION LIGHT & LANDING LIGHT

Model#	Description	Part No.	Price
A715-1	14V Fixed Landing Light (PAR 36)	11-03281	$149.50
A775-14	14V Recognition Light 35 Watt	11-03741	$44.50
A775-28	28V Recognition Light 35 Watt	11-03742	$45.70
A775-EXP-14	14V - Recognition Light 35W Explosion Proof	11-03648	$131.95
A777	Lens for A775-EXP	11-03649	$12.00
70346-00	Recognition Light (14V No Lens)	70346-00	$39.95
70346-01	Recognition Light (28V No Lens)	70346-01	$39.85
70346-02	Recognition Light (14V Clear Lens)	70346-02	$48.75
70346-03	Recognition Light (28V Clear Lens)	70346-03	$48.75
70346-04	Recognition Light (14V Optic Lens)	70346-04	$48.75
70346-05	Recognition Light (28V Optic Lens)	70346-05	$48.75
01-0790095-02	Fixed Landing Light (PAR 46)	01-070095-02	$222.95
38-0240063-00	Sealed Beam Gasket (PAR 46)	11-05103	$15.45
38-0240197-01	Sealed Beam Gasket (PAR 36)	38-0240197-01	$15.25
19-270407-000	Clamp Ring (PAR 46)	19-270407-000	$33.50
19-250147-000	Clamp Ring (PAR 36)	19-250147-00	$37.25

SURFACE ILLUMINATING LIGHTS

Model #	Description	Part No.	Price
A708-28	28V Halogen Lamp (50 Watt)	11-00023	$30.25
A750	Flasher Assembly	11-00024	$109.95

PARTS FOR ROTATING BEACON

Rotating Beacon Replacement- The round mechanical rotating beacon was used on the vertical fin of all Barons from 1961 thru 1969. Models using this light are 95-55 (1961), A55 (1968-1969). Note: The B55 Baron continued to use this beacon until production stopped in 1982.

Model#	Description	Part No.	Price
WRM-10	Lexan Dome	11-03257	$25.75
WRM-25	Clamp Ring	11-04272	$25.25
WRM-30	Gasket	11-04273	$10.75

MISCELLANEOUS HARDWARE

Model#	Description	Part No.	Price
GLJ-106	Lamp Retainer	11-03811	$29.50
GLJ-111	Lamp Assembly	11-03812	$125.95
GLJ-126	Lens Retainer Assembly	11-03813	$116.95

ALL PRICES ON THIS PAGE REFLECT AT LEAST 30% DISCOUNT OFF WHELEN FACTORY LIST PRICES.

EL

WARNING SYSTEMS

VOLT AND VAC ALERT

*Provides an instantly recognizable voice warning directly in your headset if low vacuum (or pressure) or low voltage develops. * Includes a red warning light mounted close to the gyro instruments. Many aircraft are equipped with backup vacuum systems, however you must first know that your instrument power system has failed before any of these backup systems are engaged. You must "know you have a problem before you have a problem". Volt & Vac Alert consists of a small electronic unit that can be mounted anywhere in the aircraft. It connects to aircraft voltage, instrument power (vacuum or pressure), and the aircraft audio system. If the voltage falls below 12v or 24v the voice message "CHECK VOLTAGE CHECK VOLTAGE" will be heard. Should the gyro power fail, the pilot will hear the voice message "CHECK GYROS, CHECK GYROS" directly in his headset. The voice message will sound once, and then the red warning light will illuminate until the problem is fixed. The unit can be used in 12v or 24v aircraft with either vacuum or pressure gyro power systems. It can be installed in pressurized or un-pressurized aircraft. Sold as a complete assembly with everything necessary for the installation except a 1 amp fuse or circuit breaker. STC'd for most general aviation aircraft

P/N 10-00393 .....**$479.95**

VOICE ALERT

Whenever the existing stall horn sounds, the pilot will hear the instantly recognizable voice message "STALL, STALL" from the built in speaker, and directly in his headset. If the gear warning horn sounds, the pilot will hear the voice message "CHECK LANDING GEAR, CHECK LANDING GEAR" alerting of the problem. No more confusion over which horn is sounding. These voice messages are in addition to the original horn sounds. The Voice Alert consists of a small electronic unit about 2-1/2" by 3-1/2" in size that can be mounted almost anywhere in the cockpit. The installed weight of the unit is less than 1 lb. The unit is supplied as a complete kit consisting of the electronic unit, a pre-wired cable assembly, and all the connecters and mounting hardware. The only other item required is a 1 amp fuse or circuit breaker. Installation is easy, and can be performed by an A&P mechanic or an avionics shop. The system is approved for both fixed and retractable gear aircraft.

Description	Part No.	Price
VOICE ALERT 2040-1-1 produces voice messages for gear and stall warnings, and can be programmed with up to 8 additional warning voices such as altitude, vacuum, fuel, pressures, etc. Supplemental system only.	10-03713	**$623.00**
VOICE ALERT 2040-1-2 produces stall and gear voice messages in the pilot's headset. Supplemental system only.	10-00394	**$525.00**
VOICE ALERT 2040-1-1P similar to the 2040-1-1 except approved for installation as primary replacement for existing warning units like Cessna Electronic Dual Warning units	10-03714	**$785.00**
VOICE ALERT 2040-1-2P similar to the 2040-1-2 except approved for installation as primary replacement for existing warning units like Cessna Electronic Dual Warning units	10-03715	**$697.00**

GEAR WARNING SYSTEM (2048)

* Provides both voice and visual warning if the landing gear is not in the correct position for either a runway landing or a water landing. * Airspeed activated, activation speed is easily set from 45 to 90 mph. * Works with aircraft having 2, 4, or 8 gear indicating lights or simple switches that provide gear position. Consists of a small electronic module (2.5 inch by 3.25 inch weighing less than 1 lb), and a panel mounted switch with light. The system is airspeed activated. The activation speed can be easily set using a screwdriver. On takeoff once the speed has exceeded the activation speed, the system activates. A time delay is built in to prevent false triggering due to speed fluctuations. The light in the switch illuminates when the system is activated. The pilot can perform a self test of the system. Can place in a disengage mode which temporarily disengages the system for slow flight. If the aircraft has flaps, a flap switch can be added to cause the landing sequence to be initiated whenever the flaps are fully extended. The unit also includes an airspeed activated switch which closes whenever the airspeed is above 45 mph. This can be used to activate a transponder, Hobbs meter etc. The unit is sold as a complete system including the electronic unit, a pre-made cable assembly, a pre-wired switch, connecters, mounting hardware etc. Expermental aircraft. P/N 11-02258 .....**$584.00**

POWER GUARD BUS MANAGEMENT SYSTEM

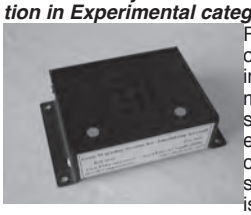
An essential bus management circuit designed to protect power sensitive and critical electronics. Starting currents are usually high enough to cause battery voltage to drop below tolerable limits for many electronics systems. The result could leave you without engine instrumentation until EFIS "reboots" (up to 30 seconds). Protection includes low voltage drop out and essential backup in the event of primary power loss. Filtration on the secondary supply and secondary battery charging are also an integral parts of the circuit. A secondary battery is required for the Power Guage we recommend a 5-12 Amp battery for emergency supply. Several control modes are possible with the system allowing for installation and operational flexibility. Load Ratings: 7A continuous, 10A 10% duty. Dims: 4.75"l x 2.75"w x 1.2"h P/N 11-02044 .....**$135.95**

AMPHIBIAN GEAR WARNING SYSTEM

Designed to provide an additional margin of safety for amphibian pilots by providing a backup electronic means of verifying landing gear position for both water and runway landings. Consists of a small electronic box (about 2.5 inch by 3.25 inch weighing less than 1 lb) that can be mounted anywhere in the aircraft, and 2 panel mounted switches with lights. The system is activated by airspeed. The activation speed can be set by a simple screwdriver adjustment. On takeoff, as the airspeed exceeds the activation speed, the system becomes active. There is a time delay built in to prevent false triggering. When the system becomes active, the lights in the panel switches will illuminate for 6 sec, to alert the pilot that the system is active. The pilot can perform a self test. Can be temporarily disengaged for slow flight. As the aircraft slows below the activation speed for a landing, the landing sequence is initiated. Panel switches are marked "L" for land, and "W" for water. If the gear is in the correct position, the voice message "GEAR O.K." will be heard. If the gear is not in the proper position, the voice message "CHECK LANDING GEAR, CHECK LANDING GEAR" will be heard. This message will continue until the speed is increased above the activation speed, or the gear is placed in the proper position. When installed in aircraft having multiple gear indicating lights, the system will respond with the "CHECK LANDING GEAR" voice warning if it determines that any of the wheels are in the wrong position. Also responds with the warning if the gear indicating lights loose power. Also incorporates an airspeed activated electronic switch which closes whenever the airspeed is above 45 mph. This can be used to activate a transponder, Hobbs meter etc. Supplied as a complete kit consisting of the electronic module, a pre-wired, color coded cable, switches, connecters, mounting hardware etc. The only other item required is a 1 amp fuse or breaker. STC'd for many amphibian aircraft and aircraft on amphibian floats P/N 11-07537.....**$795.00**

GEAR ALERT SYSTEM 2050

NOTE: This system is not FAA approved. It is intended for installation in Experimental category aircraft only.



For Experimental amphibian aircraft consists of a small electronic module (2.5 inch by 3.25 inch weighing less than 1 lb), and a panel mounted switch with light. The system is airspeed activated. The activation speed can be easily set using a screwdriver. On takeoff, once the speed has exceeded the activation speed, the system activates. A time delay is built in to prevent false triggering due to speed fluctuations. The light in the switch illuminates when the system is activated. The pilot can perform a self test of the system.Disengage mode which temporarily disengages the system for slow flight. During this period, the light in the switch flashes indicating the system is disengaged. Pushing the switch again re-engages the system. As the aircraft slows for landing, the system enters the landing mode. The light turns off, and the electronics then checks the gear position lights to determine the gear position. If the aircraft has flaps, a flap switch can be added to cause the landing sequence to be initiated whenever the flaps are fully extended. A switch can be added to the throttle so that closing the throttle with the gear up will cause the warning voice message to be heard. The unit also includes an airspeed activated switch which closes whenever the airspeed is above 45 mph. This can be used to activate a transponder, Hobbs meter etc. The unit is sold as a complete system including the electronic unit, a pre-made cable assembly, a pre-wired switch, connecters, mounting hardware etc. P/N 11-07538 .....**$558.00**

GEAR ALERT

The Gear Alert uses an electronic sensor to detect the presence of the ground during landing. If the wheels are up, it instantly sounds a voice warning directly into your headset. It is a full time positive warning system and does not depend on throttle position or airspeed for operation. Gear Alert is supplied as a complete kit with all mounting hardware, doubler plates, connectors, and a pre-wired and tested cable assembly for fast and easy installation. 1 yr warranty. FAA Approved. STC's for most single and twin engine aircraft including Cessna up through the 400 series, Beech uo through King Air series, Piper up through the Chieftain, Mooney and others.

P/N 11-21135.....**$1,438.00**

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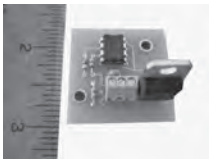
ELECTRONIC ACCESSORIES - STROBES

INTERCOM GEAR WARNING DEVICE

A small electronic device that can be connected to either the landing gear throttle warning switch or the Flap UP Light or Switch and the Landing Gear Down Light or Switch. The pilots headphones are connected to the audio circuit in the IGWD II and should an unsafe condition occur, a loud pulsing tone is heard in the pilots headphones. In the single input mode, Throttle gear safety switch, if the throttle is reduced and the gear is Up, the IGWD II will sound. The two input mode with the flap UP light and the landing gear down light connected to the sensing inputs, provide added safety by ensuring that the landing gear is down before the flaps are lowered. Should the flap UP light go out before the landing gear Down light is on, the warning tone will be enabled. In addition to the warning tone, a warning light output is available for a panel mounted light as well as a Test Switch input. Small size: 3.2"L x 2.3"W x 1.0"H •Adjustable Tone Level •Input triggering for Throttle switch or Landing Gear and Flap Lights or Switches •Remote Test Switch Option •Remote Warning Light •DC voltage range 12 to 28 VDC •Weight, 10 oz •Two Year Warranty •Not Approved for Certified Aircraft.

P/N 11-01943.....**$210.95**

GRETZ AERO AUDIO WARNING TONE GENERATOR



The Gretz Aero GA-TB2 is a very small audio tone generator used to make an audio tone annoucement through your headset advising of a user selected warning function. This warning tone can be used to get your attention for one of a variety of events.

P/N 11-06491 .....**$49.95**

GRETZ AERO AUDIO MIXER

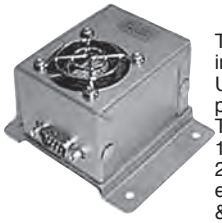
The Gretz Aero GA-AM Audio Mixer is a must have economical item if you have two or more audio sources in your aircraft. If you do not want to install a very costly and panel-space-hungry audio panel, the GA-AM is for you. The GA-AM is light, small and mighty for what it does. It can be mounted out of sight behind the panel in any convenient location with no clumsy modules to have to tie up into your wire harness. Up to nine audio sources can be fed into this device. All of the audio sources are wide range adustable for balance to your system. There is even a wide range output level adjust to make the GA-AM compatable with all intercoms without having to tinker with matching resistors. P/N 11-06490 .....**$149.50**

DIGITAL VOLTAGE MONITOR

Helps pilots monitor critical electrical system. STC approved. Features a Multi Color LED display, which is easily viewable from a wide angle. In the event of an alternator/generator failure, the LED display indicates the reserve battery capacity. The display automatically adjusts to the ambient light for IFR or night operation and also serves as a reminder to turn off the electrical system after flight. Comes in either 12V or 24V models and includes all necessary hardware and FAA Documents. The display must be set to Dot mode for FAA approved installations.

12 Volt Digital Voltmeter .....P/N 10-00752..... **$87.95**
24 Volt Digital Voltmeter .....P/N 10-00753..... **$87.95**

CABIN POWER SYSTEM



The Cabin Power System provides a 12V outlet in the cabin. It consists of a Voltage Regulator Unit (VRU) assembly that is connected to a power outlet mounted within the aircraft cabin. The VRU (pictured) converts aircraft power to 12V @ 1.5A at the outlet. Size: 2-7/8"l x 3.5"w x 2-1/8"h; Wt: 5 oz., the VRU can easily be mounted in a variety of locations. In Cessna 172, 182, & 206 models it is approved for mounting on top of the map compartment behind the instrument panel. STC-PMA'd for Cessna 172,182, & 206 models. System is shipped complete w/Flight Manual Supplement, Instructions for Continued Airworthiness, and Installation Manual. P/N 11-01894 ..... **$345.95**

SKYSPORTS BRIGHT STAR STROBE

Measuring only 4" high by 2 3/4" diameter, it weighs less than 5 ounces! Special dual xenon flashtube arrangement provides ultra-bright flash visible for over 3000' in daylight, much more at dusk and dawn. No separate power pack is required, all electronics are fully contained in the strobe itself. Lens is available in clear, red or green. Each strobe draws less than 300ma. Mounting bracket included. Buy two for wing-tip installation. Must be run from 12 volt battery. Dimensions: 4"x 2.75"(dia) Weight: 4.5 ounces. Features: • Operates on 12VDC (12' lead is hardwired to unit) • Completely self-contained • Water-resistant • Ultra-compact • Meets FAR 103 • Bright 8 joule flash
40 flashes/minute

Strobe 12VDC Clear.....P/N 11-07769.....**$47.95**

ACCESSORIES

Strobe Lens Clear.....P/N 11-07772.....**$4.75**
Strobe Lens Red.....P/N 11-07770.....**$4.75**
Strobe Lens Green .....P/N 11-07771.....**$4.75**

MINIATURE AEROFLASH ANTI-COLLISION SYSTEM

Mounted on vertical fin of many Cessna and other production aircraft models. Fully FAA-PMA approved. Only 2.5" dia., 2.5" high. Weighs 6 oz. Unit available with red or clear Fresnel dome. Has 125W quartz bulb. Draws 10 amps nominal at 12V. Use 12 or 14 Ga. wire for hookup. Kit consists of light assembly and 12V/24V power supply. Specify bulb voltage and red or clear dome.

12V Kit (Clear Lens)157-0001C..... P/N 11-05906.....**$124.95**
12V Kit (Red Lens) ..... P/N 157-0001R.....**$124.95**
24V Kit (Clear Lens)157-0002C..... P/N 11-05907.....**$124.95**
24V Kit (Red Lens) ..... P/N 157-0002R.....**$124.95**

Description	Ref No.	Part No.	Price
Flasher	A	150-0015	$59.75
Red Lens	B	111-0001	$13.50
Clear Lens	C	111-0004	$12.90
Quartz Lamp 24 Volt/150W	D	040-0003	$22.00
Quartz Lamp 12 Volt/125W	D	040-0028	$19.50
Gasket	E	080-0001	$7.30
Clamp Ring	F	073-0002	$8.30
Socket & Plate Assembly	G	073-0021	$10.95
Mounting Plate Assembly	H	073-0055	$25.90
Aeroflash Resistor 100 W	-	012-7426	$28.85

MINIATURE AEROFLASH SINGLE LIGHT STROBE

A high-intensity anti-collision strobe system producing 10 joules. FAA-PMA approved. Mount on top or belly of fuselage or on vertical fin. The Xenon lamp is designed to produce symmetrical illumination pattern of light 360° around the aircraft and 70° above and below the horizon. Less than 3" dia., 2-1/2" high. Mounts in 7/8" dia. hole and is secured by two screws. Draws 2 amps nominal at 12V. Kit includes light, remote power supply and 15 ft. cable. Light has clear Fresnel lens and strobe tube. Wts: Light 6 oz., Power Supply 20 oz. Hardware NOT included.

12V Kit .....P/N 156-0007.....**$153.95**
24V Complete Kit.....P/N 156-0002.....**$153.95**
12V Power Supply .....P/N 152-0007.....**$93.95**
24V Power Supply .....P/N 152-0010.....**$93.95**
Flash Tube Only .....P/N 073-0141.....**$31.40**
Flash Tube Ass'y .....P/N 153-0001.....**$98.50**

AEROFLASH TWO-LIGHT STROBE KIT

Solid State Power Supply for each wing tip. Complete with two power supplies, two strobe tubes, lenses and retainer. Specify 12-14V or 24-28V. FAA approved . Used on Grumman aircraft.

Kits consist of:	Part No.	Price
(2)-152-007, 12V Power Supply, (2)-153-008, Light Assy.	156-0010	$329.00
(2)-152-0010, 24V Power Supply, (2)-153-0008, Light Assy.	156-0011	$314.95
(2)-152-0021, 24V Power Supply Explosion Proof, (2)-153-0008, Light Assy.	156-0011EX	$358.95

AEROFLASH NAV/ STROBE LIGHT KITS

These non-PMA'd remote nav/strobe light kits are excellent for ultralights and homebuilts. Kit includes one red light assembly, one green light assembly and two power supplies.

Single flash, 12V kit.....P/N 156-0039-12V **$374.95**
Single flash, 28V kit.....P/N 156-0039-28V **$374.95**
Double flash, 12V kit.....P/N 11-04762..... **$396.95**

AEROFLASH NAV/STROBE/POS. LIGHT KITS

These non-PMA'd remote nav / strobe /position light kits are excellent for ultralights and homebuilts. Kit includes one red light assembly, one green light assembly and two power supplies. The nav lights include clear position lights on rear of assemblies.

Single flash, 12V kit.....P/N 156-0049-12V **$446.00**
Single flash, 28V kit.....P/N 156-0049-28V **$442.95**
Double flash, 12V kit .....P/N 11-04763 ..... **$464.95**

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AEROFLASH STROBES

AEROFLASH FAA/PMA AIRCRAFT APPROVAL LIST

Aeroflash Original P/N	Current P/N	Manufacture P/N	Description	Aircraft Installation Eligibility	Price
40-6	040-0003	G.A.A.C P/N	24V/150W QUARTZ LAMP	AA1B, AA5A, AA5B	$22.00
40-0010	040-0028		12V/125W Bulb		$19.50
150-0002	Same		14V Single or Dual Flasher	AA1B, AA5A, AA5B	$109.75
151-0001	Same		14V Light Assembly, Red Lens	AA1B, AA5A, AA5B	$64.50
152-0004	152-0007		14V Power Supply	AA1B, AA5A, AA5B	$93.95
153-0008	Same		Strobe Assembly	AA1B, AA5A, AA5B	$112.95
073-0270	Same	Varga P/N	U-Type Flash Tube Assembly	2150A	$38.70
152-0004	152-0007		14V Power Supply	2105A	$93.95
152-0008	152-0007		12V Power Supply Single Flash		$93.95
150-0015	Same	Rockwell P/N DVA-2	14V or 28V, Single, or Dual Flasher, DVA-2	112, 112B, 112TC, 112TCA, 114	$59.75
151-0001	Same		14V Light Assembly Red Lens	112, 112B, 112TC, 112TCA, 114	$64.50
150-0015	Same	Great Lakes P/N DVA-2	12V-14V, or 24V.- 28V, Sgle or Dual Flsr ,DVA-2	2T-1A-1,-2	$59.75
151-0001	Same		14V Light Assembly Red Lens	2T-1A-1, -2	$64.50
40-6	040-0028	C17312-3	12V/125W Bulb	150, 172, 177, 177RG, 180,	$19.50
40-0010	040-0028		12V/125W Bulb	182, 185, 188, 206, 207	$19.50
40-14	040-0003	C17312-1	24V/150W QUARTZ LAMP	210, 337, 28 Volt Version of	$22.00
40-0027				185, 188, 206, 207	
73-0165	073-0270	C622006-0108	U-Type Flash Tube	150, 172, 177, 177RG, 180	$38.70
111-0016	Same	C622006-0103	Wing Tip Clear Dome	150, 172, 177, 177RG, 180, 182, 185, 188, 206, 207, 210	$19.90
150-0008	Same	C594501-0204	28 Volt Single or Dual Flasher A2E	337	$109.75
150-0010	150-0015	C594502-0102	14V or 28V, Single/	150, 172, 177, 177RG, 180,	$59.75
			Dual Flasher DVA-2	185, 188, 296, 207, 120	
151-0002	151-0001	C621001-0106	14V Lamp Assembly	150, 172, 177, 177RG, 180,	$64.50
			Red Lens X1E-6	182, 185, 188, 206, 207	
151-0006	151-0005	C621001-0102	28V Lamp Assembly	210, 337, 28 Volt Version of	$118.95
			Red Lens X2E	206, 207, 185, 188	
152-0004	152-0007	C622008-0101	14V Power Supply	150, 172, 177, 177RG, 180, 182, 185, 188, 206, 207, R172, 210	$93.95
152-0010	152-0010	C622008-0102	28V Power Supply	210, 28 Volt Version of 185, 188, 206, 207, R182, 150, 172, 177, 177RG, 180, R172	$93.95
153-0006	153-0009	C622006-0107	Wing Tip Strobe Assembly	150, 172, 177, 177RG, 180, 182, 185, 206, 207, 210	$98.85
151-0008	11-02103	Not FAA Approved	24-28V Red Tear Drop Lt Assy	Helicopter	$203.95
151-0009	11-02104	Not FAA Approved	24-28V Red Light Assy w/ Mt Plate	Helicopter	$111.95

AEROFLASH TAIL STROBE/ POSITION LIGHT KIT

This non-PMA'd kit for experimental aircraft only includes (1) 12V clear lens assy. & (1) 12V single flash remote power supply. output 10 joules.

Model 156-0029SF Kit..... P/N 11-00979..... **$243.95**
Replacement Clear Dome..... P/N 11-00980..... **$22.75**
Replacement Gasket..... P/N 11-00981..... **$5.90**
Replace. Flashtube w/pos. lamp..... P/N 11-00982..... **$136.95**

AEROFLASH FUSELAGE MOUNT SYSTEM

P/N 156-0017 consists of: **$157.95**
One-152-0007 12 Volt Power Supply
One-163-0001 Light Assembly
One-073-0217 Cable Assembly

P/N 156-0018 consists of: **$157.95**
One-152-0010 24 Volt Power Supply
One-163-0001 Light Assembly
One-073-0217 Cable Assembly

P/N 156-0018EX consists of: **$168.50**
One-152-0021 24 Volt Power Supply Explosion Proof
One-163-0001 Light Assembly
One-073-0217 Cable Assembly

Spare Parts for Light Assemblies:

Ref #	P/N	Description	Price
A	152-0007	12V Power Supply Clear Anodized	$93.95
	152-0010	24V Power Supply Gold Anodized	$93.95
	152-0021	24V Power Supply Explosion Proof Blue Anodize	$109.95
B	073-0271	Cable Assembly	$6.25
C	073-0055	Mounting Plate Assembly	$25.90
D	101-0020	Hold Down Ring	$6.80
E	080-0008	Gasket	$8.40
F	073-0141	Strobe Flashtube	$31.40
G	111-0001	Red Lens	$13.50
	111-0004	Clear Lens	$12.90
H	080-0001	Gasket	$7.30

AERO FLASH PIGGYBACK WING TIP STROBES

Original equipment on many Cessnas. Kit includes two strobe units with wiring which mount on Grimes Model "E" wing position lights (not furnished), two power supplies which mount on wing tip ribs, and two lens retainers. Strobes simply plug into power supplies - no interconnecting cables. Draw just 2.5 amps mominal at 12 volts.

P/N 156-0003 consists of: **$279.00**
Two-152-0007 12 Volt Power Supply
Two-153-0009 Light Assembly

P/N 156-0004 consists of: **$279.00**
Two-152-0010 24 Volt Power Supply
Two-153-0009 Light Assembly

P/N 156-004EX consists of: **$284.00**
Two-152-002124 24V Power Supply Explosion Proof Ideal for wet-wing aircraft
Two-153-0009 Light Assembly

Ref #	P/N	Description	Price ea.
A	152-0007	12 Volt Power Supply Clear Anodized	$93.95
	152-0010	24 Volt Power Supply Gold Anodized	$93.95
	152-0011	12 Volt Double Flash Power Supplies (each draws 2.7 amps and weighs 1.33 lbs.)	$101.95
	152-0021	24V Power Supply Explosion Proof Blue Anodize	$109.95
B	073-0270	Strobe Flashtube	$38.70
C	101-0084	Lens Retainer	$13.90
D	080-0018	Gasket	$12.90
E	111-0016	Clear Dome	$19.90

AEROFLASH NAVIGATION/STROBE COMBINATION SYSTEM

Red..... P/N 156-0019R.....**$507.00**
Green..... P/N 156-0019G.....**$557.00**

Spare Parts:

Ref #	P-N	Description	Price ea.
A	152-0024	24V Power Supply	$175.95
B	111-0068	Clear Dome	$35.50
C	040-0043	Strobe Flashtube	$63.25
D	101-0238A	Hold Down Bracket	$14.00
E	111-0066	Red Navigation Dome	$17.60
	111-0067	Green Navigation Dome	$17.95
F	040-0046	Navigation Lamp	$24.00
	*080-0046	O-Ring Gasket	$9.80
	*080-0042	Flange Gasket	$10.80

***Not Shown**

AEROFLASH REPLACEMENT FLASHERS

P/N 150-0002 consists of: **$109.75**
12 Volt Single and/or Dual Flasher
Replaces Old Style Flashers in Cessna Aircraft

P/N 150-0003 consists of: **$109.95**
24 Volt Alternating Flasher Replacement for Helicopters

Aeroflash flashing lights have been used on Cessna aircfaft since 1964. The strobes have been original equipment since 1977 on Cessna, Varga and Aero Commander.

P/N 150-0008 consists of: **$109.75**
24 Volt Single and/or Dual Flasher
Replaces Old Style Flashers in Cessna Aircraft

P/N 150-0013 consists of: **$109.75**
24 Volt Single Flasher

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AIRCRAFT SPRUCE WEST
CORONA, CA • (877) 4-SPRUCE
AIRCRAFT SPRUCE EAST
PEACHTREE CITY, GA • (877) 477-7823

Prices Subject to Change Without Notice

STROBES – POSITION LIGHTS - LED LIGHTS

ILLUSION AIRCRAFT STROBE

Powered by the lighting coil of Rotax and other two-cycle engines, this is the most efficient strobe light on the market because it uses only the power normally wasted by the voltage regulator in a battery charging system. It has no effect on the charging system, so you can still connect other equipment to the lighting coil. The two strobe lights flash alternately an average of 55 times per second. Lesser strobe systems fire their lights simultaneously, resulting in a much longer firing cycle because the lighting coil can only develop so much power in a given time. The illusion Strobe use a specialized prismatic Fresnel lens. This lens increase the strobe's effective light intensity up to 8 times. The illusion Strobe works with the new Rotax 170W dual-ignition lighting coils and the standard 125W single-ignition type. It meets Part 103 requirements to add to an extra hour of legal flying time each day. The illusion Strobe comes with 2 lights rated at 25 joules; driver, wire, hardware, instructions, and a two-year manufacturer's warranty.

Dual Wingtip Strobe Sys. ..... P/N 10-00819 ..... **$291.95**
Single Strobe System ..... P/N 11-05911 ..... **$177.95**

FLIGHT STROBE FS 4400

This precision compact unit mounts easily on top or below fuselage, and directly replaces rotating beacons. It features a high-intensity Xenon arc lamp, a high-efficiency push pull inverter circuit for stable flash voltage and a flame-resistant military circuit board assembly. The lamp is readily replaceable without removing the unit from the aircraft, and the unit weighs only 1 lb. 4 oz. The Flight Strobe FS-4400 is visible for over 50 miles at night, in haze, smog or bright sunlight and is manufactured using the highest quality components for maximum reliability and service life. Amp draw 3 Amp. (14V) & 1.5 Amp (28V). STC'D for Cessna 180. FAA form 337 for field approval is required for installation of other certified aircraft. Order adapter separately.

14V (FS-4400-14V) ..... P/N 11-01018 ..... **$217.95**
28V (FS-4400-28V) ..... P/N 11-01019 ..... **$236.95**
FS-4400 Adapter ..... P/N 11-06500 ..... **$17.95**
FS-227 Repl. Bulb 14V/28V ..... P/N 11-06510 ..... **$39.95**
FS-210C Clear Lens ..... P/N 11-01024 ..... **$23.25**
FS-210C/R2 (1/2 Clear-1/2 Red) ..... P/N 11-01026 ..... **$40.75**
FS-210R Red Lens ..... P/N 11-01021 ..... **$24.85**
Fuse for FS-4400 ..... P/N 11-02027 ..... **$2.75**

PSA ENTERPRISES LED BASED LIGHTS

8000 SERIES (LED) ANTI-COLLISION BEACON - LED based self-contained, High Impact Polycarbonate Optical Lens. Lighter, Brither, Cooler Longer Life (up-to 50,000 hrs.) and draws less than 1 amp. (.13 amps) @ 12vdc. Weighing in at 3.5oz. it stands 3" high and 2.5" in diameter.
P/N 11-07241 (Red) **$81.25**
P/N 11-07246 (Clear) **$79.65**

MODEL 918 (LED) TAIL LIGHT TL918 TAIL LIGHT - LED based Tail Light that weighs only 1.5oz. High Impact Polycarbonate Optical Lens. Up-to (50,000 hrs.) life. Draws .13 amps @12vdc. It measures approximately 1.6" high and 1.4" diameter. P/N 11-07242 ..... **$96.75**

MODEL 927 (LED) ANTI-COLLISION BEACON - Completely Completely Self-Contained LED Based Anti-Collision Beacon 927ACB - RED High impact polycarbonate optical lens. Up-to (50,000 hr.) life. Draws .14 amps@12vdc. It measures approximately 1.6'' high and 1.4'' diameter. That's right, it is in the same package as the Tail Light! Lighter, Brighter and Cooler, and weighs only 1.6 oz. Flasher included. P/N 11-07243 (Red) **$109.50**
P/N 11-07244 (Clear) **$110.95**

ELECTRONIC (IN LINE) FLASHER MODEL PSA-EF - High Impact Polycarbonate Case. An (in line) 12vdc up-to 5amp flasher to flash all those lamps you always wanted to flash. 1'' x 1'' x 1/2'', wt .8oz.P/N 11-07245 ..... **$27.50**

WHELEN WING LIGHTS

W1285

W1250

W1285 series are the same design as Grimes Model E. Available with red or green lens and 12V or 24V bulb. W1250 PG/PR are FAA approved position lights and are designed to fit underneath the wing tip fairings.

W1285		
14V Green W1285 Assembly	11-03226	**$209.00**
28V Green W1285 Assembly	11-03891	**$286.95**
14V Red W1285 Assembly	11-03224	**$215.95**
28V Red W1285 Assembly	11-03283	**$216.95**
W1250		
14V Green W1250 Assembly	11-04263	**$98.75**
28V Green W1250 Assembly	11-03278	**$157.95**
14V Red W1250 Assembly	11-04264	**$157.95**
28V Red W1250 Assembly	11-03282	**$157.95**
Replacement Bulbs		
14V W1290 Bulbs	11-02602	**$29.50**
28V W1290 Bulbs	11-02604	**$28.85**

Model B wing

GRIMES MODEL B - Early type wing light with flat mounting pad. Mounts on tip of wing. Wt. 7oz Order by part number.

SINGLE CONTACT -
w/#93 Bulb New Surplus **$142.95**
Green, 14V ..... P/N A-2430-1-G
Red, 14V ..... P/N A-2430-1-R

STEEL FORMED NAVIGATION LIGHT PLATES

Wing tip light plate is welded or screwed to wing tip bows to attach teardrop type position lights. Tail light plate is welded to rudder to attach Model S tail light.
Model E Wing Light Plate . P/N 11-06900. **$25.50 ea**
Model S Tail Light Plate .... P/N 11-07000. **$24.85 ea**

"C-LITE" WING TIP NAV LIGHT INDICATORS

These indicators identify your wingtips when taxiing at night, and assure your nav lights are working. Installs in minutes with just a screwdriver, and you don't disconnect the lights to do it. Works with high-or-low-wing aircraft, thick wing too. Designed for use with Grimes #A-1285 & #B-6345 nac lights, which means practically all aircraft.
P/N 5122..... **$10.95**

GRIMES TAIL LIGHTS

GRIMES MODEL S - For tailcone or rudder installation. Wt. 3 oz. Single contact. 15 Candlepower. For 12V use, order #93 bulb
PN 11-04199 ..... P/N 11-03652 ..... **$163.75**

GRIMES EARLY MODEL C - Mounts on trailing edge of rudder. Wt. 5 oz. Double contact. 15 Candlepower. For 12V use, order #94 bulb
PN 11-04200
Model B-1943-4 (New Surplus) ..... P/N 11-07200 ..... **$257.95**

REPLACEMENT PARTS FOR POSITION LIGHTS

Lenses for Grimes A, B, C Wing or Tail Lights
Clear ..... P/N 11-03662 ..... **$39.95** Red ..... P/N 11-03655 ..... **$42.50**
Green ..... P/N 11-03663 ..... **$39.95**

Lenses for Grimes Model E or Whelen Wing Tip Lights
Red ..... P/N 11-02754 ..... **$25.75** Green .... P/N 11-02755 ..... **$25.75**
Lens for Model S Tail Light (Clear) ..... P/N 11-07400 ..... **$31.25**
Bale Wire - Grimes ..... P/N 11-03664 ..... **$18.20**

LED REPLACEMENT LAMPS FOR NAVIGATION LIGHTS

Upgrade your Indicating, Position, or Recognition lights to LED's. These lamps fit standard S.C. Bayonet Indexed Base Sockets (Bay15S). Converts common Incandescent Lamps to LED Lighting without modifications. (Use a new clear plastic lens for maximum brightness) and you are ready to go. They last longer, run cooler, and draw less than .15amps. Non-PMA.

Description	Part No.	Price
LED75 12V Red Lamp	11-07744	**$32.50**
LED75 12V Green Lamp	11-07745	**$32.50**
LED75 24V Red Lamp	11-07746	**$33.75**
LED75 24V Green Lamp	11-07747	**$33.75**
LED75 TPL-12 Tail Position Lamp	11-07748	**$33.75**
LED75 TPL-24V Tail Position Lamp	11-07749	**$33.75**

T1284PC CLEAR LENS

T1284PC-Clear, polycarbonate lens high impact polycarbonate optical lens, for use with new LED lights. Direct replacement for your standard red, green and clear glass navigation lens. Use with standard 1283 nav lens gasket.
P/N 11-09299..... **$14.85**

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AVEOFLASH LIGHTING

AVEOFLASHLP™ LSA - WING NAVIGATION/ POSITION/ STROBE LED LIGHTS

The Aurora series AveoFlash LSA™ is the incredibly popular light of the light sport, kit, experimental and ultralight industry. At only 83 grams, and with an extremely aerodynamic shape and minimal footprint, the AveoFlash-LP LSA light is now standard on most leading S-LSA and kit planes.
With synchronization as a standard feature, the LSA light is a complete solution for navigation, position and strobe to all international aviation requirements and standards. Available with a variety of mounting adapters and custom composite fairings, the LSA light is extremely easy to install. Encapsulated in the exclusive AveoDiamidium™ formulation, these are virtually unbreakable. Exclusive limited aircraft lifetime warranty there is no risk to ever need to buy another set of wing lights due to LED burnout. Aveo's policy is simple, IF IT FAILS THEY'LL REPLACE IT!
Integrating the most technologically-advanced and brightest LEDs available in the world to the amazing and all-new exclusive AveoOptimizer™ circuitry, the futuristic E-Series are marked as "LP", for "low profile". At a fully 25 mm (1 inch) lower overall height than the 2008 AveoFlash™ lights. Current consumption (for 12V): steady 0.24A flash 1.65A (@ 200ms)..... P/N 11-07360.....**$681.00**

AVEOMAXX 6-IN-1 LANDING LIGHT

AveoEngineering introduces the exclusive next-generation AveoMaxx™ Premiere 6-in-1 embedded wingtip light solution (Landing-Taxi-WigWag, Nav-Pos-Strobe wing lights not included and must be purchased separately).
Unlike all the "Brand X" LED landing light products out there, which are just a collection of commercial TIR lenses placed over some industry standard single LEDs, the AveoMaxx™ is the world's first ultra-high power LED landing light module, incorporating the amazing Aveo MaxiChip™ power and performance.
The AveoMaxx™ uses far less power than competitive products illuminated by mercury-arc, high intensity discharge, or halogen lamps, which means they help to reduce air pollution from carbon emissions. Mercury and Lead-free, this RoHS compliant environmentally - friendly technology helps reduce power consumption and the amount of hazardous waste entering the environment. Finally, a "green" aircraft light!
Please note that this light contains the landing/taxi/wigwag functions and has a mount on its housing for the addition of wing lights. AveoFlash LSA and Ultra wing lights are sold separately and either model is compatible with and able to be mounted on this light's housing.
P/N 11-09675.....**$595.00**

AVEO E-SERIESLP AURORA ANDROMEDA

Exhaustively engineered to the finest optical angles and to ranges that far exceed all certification standards, and also thoroughly and rigorously tested to the latest DO-160F environmental testing standards. Incorporating special highly reflective chrome reflectors that are designed by special software to optimize angular intensities to design requirements, the Andromeda lights are ideal for aircraft that want to be seen at the maximum distance possible, while still enjoying extremely low electrical draw and the absolute minimum drag profile. Encapsulated in the exclusive AveoDiamidium™ formulation, the Andromeda lights are virtually unbreakable and with the exclusive aircraft lifetime limited warranty, there are very few owners who would ever need to buy another set of wing lights again. The Aurora model of the Andromeda is currently available in the HSLP unibody construction..... P/N 11-08427.....**$1,097.00**

AVEO ULTRA EMBEDDED 2-IN-1 POSITION/STROBE LED LIGHT

The Ultra Aurora™ is the higher-output version of the incredibly popular e-series LSA wing lights. Packed with 30 ultra high brightness LEDs that are the industry state-of-the-art in performance, the Ultras still feature the tiny footprint the e-series wing lights have become so well-known for, at only 84 grams they are also unbreakable like all Aveo aircraft lights. Very popular choice for light sport and general aviation aircraft. With full optical testing for brightness and chromacity, the Ultra also completed the rigorous DO-160F testing regime exceeding all requirements. The Ultra has also become the leading winglight solution for numerous military and law enforcement/surveillance UAVs around the world. Encapsulated in the exclusive AveoDiamidium™ formulation, the Ultra wing lights are virtually unbreakable and with our exclusive aircraft lifetime warranty there is no risk to the owner that he will ever need to buy another set of wing lights again.
P/N 11-08135.....**$783.00**

AVEO POWERBURST LIGHT SET

14 Volt Navigation/Position/Strobe LED wing lights [from the AveoEngineering Aurora Series of AveoFlash lighting] At less than an inch in height (0.87 inch/22 millimeters), the new PowerBurst™ wing light will save you on drag. It is a value light that does not sacrifice anything in performance nor in standards as do other economy-priced lights offered by other light manufacturers. Aveo's exclusive and highly advanced optics and chromed reflector system, unmatched power and led management circuitry, and famous lowest-drag profile in the industry are all combined into this product. Plus there is a 3 year limited warranty from Aveo on led burnout. Meets ALL DO-160F Environmental Standards These lights are popular for ultralights, kits, sport, LSA and experimental aircraft. PLEASE NOTE: The PowerBurst™ is only for 14 volt applications. Sold as a pair of lights: one green/white, one red/white. P/N 05-04877.....**$396.00**

AVEO ULTRA AURORA™ 3-IN-1 NAV/POSITION/STROBE LED LIGHTS

An extra-performance model of the wildly successful AveoFlash™ E-SeriesLP, the new Ultra led wing lights feature even more LEDs packed into the same space and are optically optimized through Aveo's comprehensive optics software. The Ultra is for those customers who want phenomenal brightness and can afford the slightly higher cost. Every Aveo LED light comes with the Exclusive free-replacement lifetime warranty to your aircraft -- they are the last lights you will ever need to purchase. This pair of wing lights has a red/ white and a green/ white led lighting combination for navigation/ position/ strobe. The voltage input range is from 9 – 32 volts. NO external power supply or strobe box is needed. These aircraft lights meet both TSO C30c and C96a design specifications and EXCEED the requirements of TSO C30c, C96a, SAE AS 8037 and AS8017a, plus DO-160B. P/N 11-07933 .....**$783.00**

POSISTROBE MINIMAX™

• 2-in-1 Position & Strobe , popular miniature anticollision light for Trikes, PPC, UAVs, ultralights • Extremely lightweight at only 53 grams • 9-32 volt input range • No external power supply or strobe unti, an Aveo world first • Light synchronization feature • Unbreakable Diamidium encapsulation • Exclusive Lifetime Warranty
Red - 9-32V ..... P/N 11-08127.....**$339.00**
White - 9-32V..... P/N 11-08134.....**$339.00**

POSISTROBEXP™

PosiStrobeXP™, a higher performance mini-position / strobe, the all-new and super bright PosiStrobeXP™. Integrating the most technologically-advanced and brightest LEDs available in the world to the amazing and all-new exclusive AveoOptimizer™ circuitry. White / White 9-32V. Exclusive limited aircraft Lifetime Warranty.
P/N 11-07361.....**$305.00**

AVEO BARON MAXI

The RedBaron Maxi™ version incorporates 40 of the brightest LEDs available in the world today, with chromacity and intensity compliant to all international aviation and safety standards. The optical performance is incredible, and these are the ideal replacement unit for any anticollision light system in existence. Features: Popular miniature anticollision light for certified aircraft requirements, Extremely light weight, 9-32 volt DC input range No external powersupply or strobe unit, Lightsynchronizationfeature, Minimumdragprofile, Unbreakable Diamidium™ encapsulation Exclusive Life time Warranty, Unmatched circuit technology Advanced computer and goniophotometer engineered optics. White P/N 11-08425 .....**$739.00**

TRIKEPAK AVEO TRIKE MOUNT SYSTEM

The Aveo Trike Mount Systerm is an extremely lightweight adapter to mount your Aveo lights to your trike or ultralight frame. Mount system versions include adapters for holding the Aveo Wing, Posistrobe, and Powerburst lights.
Features: Aluminum construction with stainless bolts. Extremely lightweight. Hinged at two points to permit quick angular mount adjustment to meet lighting requirements. Aveo Lifetime Warranty. 9-32 volts Aveo lights operation.
For Wing Light .....P/N 11-09976 .....**$89.00**
For Posistrobe .....P/N 11-09977 .....**$89.00**
For Powerburst .....P/n 11-09978 .....**$89.00**

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AVEOFLASH LIGHTING

AVEO RED BARON MINI LED LIGHT

The RedBaron Mini™ is a cousin to the RedBaronXP™, the world's smallest and brightest total coverage LED anticollision light. The new RedBaron Mini™ resulted from requests by high-performance racing aircraft, super lightweight UAVs in the defense industry, and aircraft/helicopter manufacturers who wanted an upper and lower anti-collision light due to mounting area constraints. The answer came in this incredible new light, only 27 mm high and only 110 grams in weight. Exceeding all TSO intensity requirements and all DO-160F environmental requirements, the RedBaron Mini™ is now the world's smallest anti-collision light.

White ..... P/N 11-10534 .... **$495.00**
Red ..... P/N 11-10535 .... **$495.00**

REDBARONXP™

Incorporates 36 of the brightest LEDs available in the world today.

White. ..... P/N 11-08423 ..... **$575.00**

AVEO REDBARON ADAPTER

If you are replacing a Whelen anticollision light, this adapter by Aveo is designed to match up perfectly with your existing mounting site.

Adapter works for following Whelen models:
• A450 • A470A • 7108001 • 7108006 • 7108051 • 7105500 • 7105501 • 9052001 • 9052051

Specifications: Universal holes (4x1.75" x 4x1.625", 4x1.25"). Color: Silver.

P/N 11-10631 ..... **$69.00**

AVEO REDBARON MAXIMINI RECOGNITION LED LIGHT

Introducing the Aveo MaxiMini™ - the ultimate recognition light. Spawned from the incredible technology of the incredible and unmatched RedBaron™ AntiCollision series, the new MaxiMini™ is the world's brightest and smallest recognition light, at only 27 mm high and weighing only 85 grams. The MaxiMini™ only comes in aviation white led color, since it is 43% brighter than red leds, which means you will BE SEEN, NOT SORRY for sure! And of course, the EXCLUSIVE AVEO LIFETIME WARRANTY means your investment is protected. The MaxiMini™, when only the best and the brightest will do. Features include: Exclusive Lifetime Warranty, Unbreakable Diamidium™ encapsulation, 9-32 Volt Input Range, Vibration Proof, Waterproof, Lowest Drag Profile recognition light, Anodized aluminum finish, Extremely light weight..... P/N 05-04934 .... **$599.00**

AVEO MAXX HERCULES LED LANDING / TAXI / WIGWAG LIGHT

The AveoMaxx™ uses far less power than competitive products illuminated by mercury-arc, high intensity discharge, or halogen lamps, which means they help to reduce air pollution from carbon emissions. Mercury and Lead-free, this RoHS compliant environmentally - friendly technology helps reduce power consumption and the amount of hazardous waste entering the environment. Finally, a green aircraft light!

All fit the standard PAR 36. The brightest model (intensity of 30) contains TCAS sensing for automatic trigger of recognition wig-wag mode.

30 (brightest) ..... P/N 05-06492 ..... **$975.00**
20..... P/N 05-06493 ..... **$825.00**
16..... P/N 05-06494 ..... **$725.00**

AVEO MAXX ATLAS LED LANDING / TAXI / WIGWAG LIGHT

The AveoMaxx™ uses far less power than competitive products illuminated by mercury-arc, high intensity discharge, or halogen lamps, which means they help to reduce air pollution from carbon emissions. Mercury and Lead-free, this RoHS compliant environmentally - friendly technology helps reduce power consumption and the amount of hazardous waste entering the environment. Finally, a green aircraft light! The AveoMaxx Atlas™ is smaller than the Hercules and requires an optional adapter for PAR 36 replacement use. Perfect for nosegear applications and use with smaller aircraft.

15 (brightest) ..... P/N 05-06495 ..... **$725.00**
10..... P/N 05-06496 ..... **$649.00**

AVEOMAXX LANDING LIGHT

AveoEngineering introduces the exclusive next-generation AveoMaxx™ landing/taxi/wig-wag light module.

Unlike all the "Brand X" LED landing light products out there, which are just a collection of commercial TIR lenses placed over some industry standard single LEDs, the AveoMaxx™ is the world's first ultra-high power LED landing light module, incorporating the amazing Aveo MaxiChip™ light-emitting surface power and performance assembly.

The AveoMaxx™ technology features a solid state light source that integrates the benefits of both LED and laser technologies. A unique lattice structure results in maximum surface emission from a one square centimeter massive LED source - resulting in uniform and unequalled brightness over the entire LED chip face, exceeding up to 2500 lumens per chip. This optical power and brightness for the first time allows an LED-configured light to replace arc or halogen lamps in applications like landing lights, where arrays of traditional LEDs cannot. With an amazing lumen retention level of over 70% after 60,000 hours, and 100,000 hour design life, these lights will far exceed the lifetime of the aircraft.

Features include:

- AveoMaxx configuration incorporates the internal custom optic RockyReflector™ system
- Taxi Light and WigWag function from the exclusive custom optics of a second proprietary RockyReflector™ module with 18 integral Hi-Power LEDs dedicated to these functions alone
- Integral custom PowerOptimizer™ supply and AveoSmartController™ circuitry eliminates bulky external strobe or power boxes as pioneered only by Aveo in all of its products for more than 3 years
- 5 Options of heat pipe and heat sink integral to the housing for maximum operating efficiency
- For inside-cowling or other location mounts, the AveoMaxx™ is an aero dynamically streamlined module that is versatile enough to be mounted in the optimum location for your particular aircraft.
- In the cockpit, simply add Aveo RockRack™ led-backlit custom icon rocker switches for the ultimate control of your entire aircraft lighting system, with specific icon switches to control all functions
- AveoMaxx™ features an adjustable tilt mounting system the Aveo Maxx™ lights can be set to the optimal angles for your aircraft operating requirements with the simple turn of a screwdriver

The AveoMaxx™ uses far less power than competitive products illuminated by mercury-arc, high intensity discharge, or halogen lamps, which means they help to reduce air pollution from carbon emissions. Mercury and Lead-free, this RoHS compliant environmentally - friendly technology helps reduce power consumption and the amount of hazardous waste entering the environment. Finally, a "green" aircraft light!

P/N 11-09676 ..... **$573.00**

AVEO EYEBEAM MINI

Aveo's incredible capacitive-sensing technology from its highly popular EyeBeam Touch™ products has now been engineered into an even smaller footprint, providing a one-color LED cabin/cockpit/area lighting product for those with limited installation space or only simple lighting needs.

With one light finger touch you can control the power and the brightness scale and the light easily swivels to put the beam where you want it. No mechanical switches to fail, no bulbs to burn out. The EyeBeam Mini™ comes with a variety of easily-applied color faceplates, with standard colors of silver and black. The EyeBeam Mini™ is made from anodized aircraft grade aluminum.

Cockpit and cabin lighting, especially on aircdraft, helicopters, boats, recreational vehicles and trucks are plagued by problems from vibration... the EyeBeam™ product line from AveoEngineering overcomes this with a vibration-proof product that has the exclusive Aveo lifetime warranty.

Featuring: • 9-32 volt input range • No external power supply • Swiveling light permits light beam control • Capacitive sensing touch controls • No mechanical switches to fail • Exclusive Lifetime Warranty • Unmatched circuit technology

Silver ..... P/N 11-09678 ..... **$168.95**
Black ..... P/N 11-09679 ..... **$168.95**

AVEO EYEBEAM DOME

EyeBeam Dome™ - Remote Touch Control Interior LED Light The EyeBeam Dome was developed to meet the requests of an interior dome light for all aircraft, that would complement the amazing Aveo EyeBeam products, and their unique touch-controls. Long gone are the days of mechanical switches which can corrode and spark, etc. Available with a remote control finger-slide panel for intensity and operation.

Black ..... P/N 11-10627 ..... **$211.95**
Silver ..... P/N 11-09679 ..... **$211.95**

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AVEOFLASH LIGHTING - ROCKRACK SWITCHES

AVEOFLASH WING FAIRING E SERIES

The wing fairings come in a molded fiber-glas pair that fits the LSA and Ultra lights footprint. Cessna 150-180 fairings for wing nav lights - pair of right and left.

P/N 11-08136.....**$99.00**

AVEO EYEBEAM TOUCH LIGHTS

Introducing the revolutionary EyeBeam Touch™ LED Cockpit/Map/Cabin light system. With both red and white led lights included as standard and led backlighting of its touch control panel, the Eye-Beam Touch™ light swivels to adjust your beam to where you want it. Integral Capacitive Sensing processor technology in the EyeBeam Touch™ means no more buttons to locate and push and no more mechanical failures. Just a simple swipe of your finger to adjust brightness on the dimming slide bar is all it takes. For those flimsy headliners in your cockpit there is finally a light that will not be pressed into your roof to select what you need!

The EyeBeam Touch™ light is available in white, black or silver finish. Extra face plates available and sold separately.

Capacitive sensing technology means a simple light touch of your finger, with or without gloves, to turn the light on/off, select red or white led lighting, and adjust the brightness -- all with the quick touch of your finger.

The advantages of capacitive sense technology now used in many smartphones and other electronic devices are clear:

- Eliminates ugly and worn-down mechanical buttons and sliders
- LEDs replacing bulbs means extremely low electrical load
- Resistant to environmental factors: water, temperature, humidity
- Power supply: 9-32 volts
- Current Cunsumption:110 mA @ 12Volts
- Capactive Sensing Interface with LED backlighting
- 9 incremental step capacitive sensing slide bar for brightness adjust
- 2 x Red LEDs
- 2 x White LEDs
- Swiveling Beam
- 2024 Anodized Aluminum Construction

Description	Part No.	Price
AveoFlash Eyebeam Touch White Finish	11-07864	**$169.00**
AveoFlash Eyebeam Touch Black Finish	11-07865	**$169.00**
AveoFlash Eyebeam Touch Silver Finish	11-07866	**$169.00**
Accessories	**Part No.**	**Price**
AveoFlash Replacement Faceplate White	11-07867	**$8.95**
AveoFlash Replacement Faceplate Black	11-07868	**$9.90**
AveoFlash Replacement Faceplate Silver	11-07869	**$8.95**
AveoFlash Sticker Adhesive for Replacement Faceplates	11-08129	**$5.00**

AVEO EYE BEAM TOUCH NVG

The popular Aveo EyeBeam Touch™ capacitive sensing controlled cockpit and cabin lights are now available in NVG configuration, that is they include green LED lighting compatible with night vision equipment. Also included with the NVG model EyeBeam is the standard selection face-plate locations of white, red and blue LEDs too, so whatever your operational conditions there is a lighting option to match it available from this amazing product. With one light finger touch you can control power, white LED, red LED, green LED, blue LED or the brightness slider scale easily with no mechanical switches to fail and no bulbs to burn out.

The EyeBeam NVG™ also features as standard in its firmware automatic light dimming to OFF and automatic ON for the light when coupled to a door microswitch sensor. With a standard 2 minute delay programmed in. The EyeBeam overcomes this with a vibration-proof product that has the exclusive Aveo lifetime warranty. Features: 9-32 volt input range, No external power supply, Swiveling light permits light beam control, Capacitive sensing touch controls, No mechanical switches to fail, Exclusive Lifetime Warranty, Unmatched circuit technology. Specifications: Power supply: 9-32 Volts, Current consumption: 110 mA @ 12 Volts, Capacitive Sensing Interface with LED backlighting, 9 Incremental steps capacitive sensing slide bar for brightness adjust, Swiveling Beam, 2024 Anodized Aluminum Construction

Description	Part No.	Price
Silver Eye Beam Touch NVG	11-08444	**$239.00**
Black Eye Beam Touch NVG	11-08445	**$239.00**
Accessories		
Description	**Part No.**	**Price**
Silver Faceplate	11-08429	**$8.95**
Black Faceplate	11-08428	**$8.95**

AVEO ROCKRACK SWITCHES

Lighting

Avionics

Ice & Heat

Pumps

General / Misc.

Engine & Airframe

SWITCHES		
Description	**Part No.**	**Price**
Lighting 10 pk - Nav, Strobe, Taxi, landing, Beac/AC, Cock-pit, map, Panel, Wig-Wag, On/Off	11-07826	**$22.85**
Avionics 10 pk - Autopilot, Nav1, Nav2, Generator, Avionics Master, Weather, Standby Vacuum, Comm, Camera, Music	11-07827	**$22.85**
Ice & Heat 10 Pk - De-ice, Prop De-ice, Cabin Heater, Fan, Defrost, Carb heater, Boots, TKS, Pitot Heat, Seat Heat, Al-ternator	11-07829	**$22.85**
Pumps 10 Pk - Fuel Pump, Fuel Pump, AUX, Transfer Pump, HUD Pump, Boost Pump, Boost Pump High/Boost Pump Low, Prime, High/Low, On/Off	11-07832	**$22.85**
General 10 Pk - Emerg Bus, Up/Down arrow, MagL, MagR Aux, On/Off, High/Low, Aux Master, Avionics Master, Pitot heat	11-07830	**$22.85**
Engine & Airframe 10 Pk - Standby ALT, Battery Master, Starter, Elec Ignition, Speed Brake, parachute, Elec Trim, Left Mag, Right Mag	11-07831	**$23.75**
Auxiliary 19 pack - Cockpit, Fuel Pump, Aux, Standby ALT, Alternator, Standby Vacuum, MAP, Prop De-ice, Autopilot, TAXI, Weather, Panel, Fan, Beac/Ac, Landing, NAV, Cabin Heat, De-Ice, Strobe	11-06640	**$72.59**
Red switch top with icon Battery Master	11-06641	**$4.70**
Red switch top with icon Avionics Master	11-06642	**$4.70**
Blank Red Top	11-08420	**$4.70**
Blank Black Top	11-08421	**$4.65**

SWITCH BOTTOMS		
Switch Bottom part - red - 12V	11-06643	**$18.75**
Switch Bottom part - green - 12V	11-06644	**$18.75**
Switch Bottom part - blue - 12V	11-06645	**$18.75**
Switch Bottom part - white - 12V	11-06646	**$18.75**

TAB TERMINALS		
Aveo 14 gauge Tab Terminal 12 pack.	11-07833	**$3.75**
Aveo 14 gauge Tab Terminal 24 pack.	11-07834	**$6.25**
Aveo 14 gauge Tab Terminal 60 pack.	11-07835	**$15.75**
Aveo 14 gauge Tab Terminal 100 pack.	11-08422	**$25.80**

MOUNTING COMPONENTS		
End Module	11-06648	**$2.60**
Middle Module	11-06649	**$2.70**
Single Module	11-06650	**$4.85**
Connector (1 per switch)	11-06651	**$4.65**
Removing Tool - 2 required to remove the switch.	11-06652	**$6.50**

EL

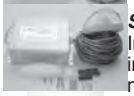
KUNTZLEMAN STROBE SYSTEMS

KUNTZLEMAN MAGNUM STROBES

The ***SINGLE MAGNUM SMART STROBE*** Driver is a state of the art single strobe light system. There is not another system on the market like this one. It will operate on 10 to 80 volts of AC or DC input power. It can be powered directly from the engine lighting coil (AC) or from a battery (DC) without any change in brightness or its double wink flash pattern at a 74 per min. rate There are NO options to change and NO special equipment needed. This model is a favorite for king post installations and with the PPC flyers. It is also available with either the standard STREAMLINE HEAD or the COMBO STREAMLINE WHITE HEAD. Both are popular for tail mounting. Average current draw is less than 2 Amps. The driver measures 4 ½" X 3 ½" X 1 ½" and weighs 10 ounces.

Smart Strobe Driver Box only - Single Magnum Smart Strobe driver only, without a strobe head. SS-DO
P/N 11-05116.....**$110.00**

Single Magnum Smart Strobe with round clear Fresnel Head - The globe style is a Fresnel lens. The head comes with 6' of wire and plug attached. SS-TM
P/N 10-01609.....**$149.00**



Streamline Model with Driver and Streamline Head - Includes 25' of 3 conductor wire, plug, pins and mounting hardware (includes adaptor plate for curved surface mounting if needed). SS-SLM P/N 10-01611 .....**$149.00**

SINGLE MAGNUM SMART STROBE DRIVER with a Round Taillight Strobe - Includes 25' of wire and mounting hardware. SS-TL-STR... P/N 11-07345.....**$198.95**

STREAMLINE COMBO Head, White Led & Strobe Combination - Includes 25' of 5 conductor shielded wire, plug, pins and mounting hardware (includes adaptor plate for curved surface mounting if needed). SS-SLCW
P/N 11-05114.....**$239.95**

ROUND TAILLIGHT COMBO Head - White Led & Strobe Combination Includes 25' of wire and mounting hardware. SS-TL-L/S ..... P/N 11-07346.....**$231.95**

The ***DOUBLE DUAL MAGNUM STROBE*** Driver is available in two models, the DDM 12 volt DC model and the SDDM smart model. The SMART Model simply means it can be powered by 10 to 80 volts of AC or DC. The 12 volt model is powered by the 12 volt electrical system of your aircraft. The strobe bulb fires a rapid double flash on one head and then the other in an alternating pattern. The first flash catches the eye and the second identifies your position. Total flash rate is 74 per min. Average current draw is less than 2 Amps. The driver measures 4 ½" X 3 ½" X 1 ½" and weighs 10 ounces.

Double Dual Magnum Driver Box Only - 12VDC Driver Box Only 12 volt Model DDM-DO ..... P/N 11-05118.....**$139.95**

Double Dual Magnum Smart Driver Box Only - Smart Model (10 to 80 volts of AC or DC)SDDM-DO ..... P/N 11-05117.....**$160.00**

Double Dual Magnum Driver Box with round clear Fresnel Heads - Two Round Fresnel Heads, driver, 6' of 3 conductor wire, plugs, pins, and installation hardware (Tang Mount used on PPC, TRIKES, or where bolting heads to frame is desired).

STANDARD - 12 VDC Model with /ROUND FRESNEL heads DDM-RH
P/N 10-01610.....**$228.00**

SMART - with /ROUND FRESNEL headsSDDM-RH
P/N 11-04956.....**$247.95**

Double Dual Magnum Driver Box with standard streamline Heads - Two Streamline Heads, driver, 50' of 3 conductor wire, plugs, pins, and installation hardware (includes adaptor plates for curved surface mounting if needed).

STANDARD 12 volt Model with Driver and Two STANDARD STREAMLINE Heads. ..... P/N 10-00824.....**$228.00**

SMART - model with with Driver and Two standard streamline Heads SDDM-SL ..... P/N 11-04995.....**$247.50**

Two ***STREAMLINE COMBO*** heads, driver, 50' of 5 conductor shielded wire, plugs, pins, adaptor plates (for curved or flat surface mounting) and installation hardware. SONEX Aircraft adapter plates available at no additional charge when mentioned at time of purchase.

COMBO - 12 VDC Model with Streamline Combo Heads DDM-SLC
P/N 11-04835.....**$379.00**

SMART - with Streamline Combo Heads SDDM-SLC
P/N 11-04957.....**$397.95**

KIT #1 IS A SET OF SPECIAL HEADS - For builders of RV 7, 9, & 10 aircraft or any other kit that has like mounted wing lights. Due to the wing light configuration on these aircraft, the white rear facing LED on the regular Combo head is of no use, because it can't be seen from the rear. A white position or tail light is then needed. These are strobe and red / green position light equipped heads No white LEDs, a 2 strobe driver box, that fires both wing strobes in an alternating double wink pattern, a white round LED equipped tail light to be mounted at the rear of the aircraft. 50 feet of 5 conductor shielded wire for the wings, plugs, pins and mounting hardware. Total power draw for this system is about 2 ½ Amps at 14 volts. ..... P/N 11-05833.....**$465.00**

The ***TRIPLE MAGNUM 3 LIGHT STROBE*** Driver is a 12 volt DC operated system. It fires 3 strobe heads in a double wink pattern. The two wing tip lights alternate between left and right while the tail, or third light is synchronized to flash every time one of the wing tips are flashing. Resulting in about 140 flashes per minute. Driver box measures 4 ½" X 7" X 1 ½", weighs 17.2 ounces. Current draw with 3 standard heads is about 3 amps. If using two COMBO heads and one standard head it is about 3 ¾ Amps .

Triple Magnum 3 Light DRIVER BOX ONLY - 12 volt Model TRI3-DO..... P/N 11-01355.....**$230.00**

TRI 3 DRIVER with 3 STANDARD HEADS, Streamline or Round. - with 3 standard SL or ROUND FRESNEL heads, please specify. Complete with 75' of wire, plugs, pins, adaptor plates (for flat or curved surface mounting) and all the installation hardware. TRI3-SLP/N 11-01829.....**$375.00**

TRI 3 DRIVER with 2 COMBO HEADS & 1 STREAMLINE, ROUND FRESNEL or TAILLIGHT HEAD - The TRIPLE MAGNUM 3 light system with 2 COMBO & a choice of either 1 Standard Streamline Head, 1 Round Fresnel head or 1 Round Tail Light without LEDs (Additional cost for the Round Tail Light) for the third head, please specify. Complete with 75' of shielded wire, plugs, pins, adaptor plates (for flat or curved surface mounting) and all the installation hardware. (Please specify choice at time of order) TRI3-SLC ..... P/N 11-05125.....**$579.95**

TRI 3 DRIVER with 3 COMBO HEADS - The TRIPLE MAGNUM 3 light system with 3 COMBO heads, please specify Streamline Combo or Round Tail light Combo for third head. Complete with 75' of shielded wire, plugs, pins, adaptor plates (for flat or curved surface mounting) and all the installation hardware. The tail COMBO heads both have a strobe and white LEDs to be used as a STROBE and WHITE tail light. TRI3-SLCW
P/N 11-05119.....**$599.95**

KIT #2 IS A SET OF SPECIAL HEADS - For builders of RV 7, 9, & 10 aircraft or any other kit that has like mounted wing lights. Due to the wing light configuration on these aircraft, the white rear facing LED on the regular Combo head is of no use. A white position or tail light is then needed. They are STROBE and RED / GREEN Position light equipped heads WITHOUT the white LEDs, a 3 strobe driver box, that fires both wing strobes in an alternating double wink pattern and a third STROBE and LED equipped round tail light for mounting at the rear of the aircraft. The tail strobe fires in sync with each wing. Also, included is 75 feet of 5 conductor shielded wire, plugs, pins and mounting hardware. Total power draw for this system is about 4 Amps at 14 volts. TRI3-RV ..... P/N 11-05834.....**$584.00**

KUNTZLEMAN REPLACEMENT PARTS AND ACCESSORIES

Standard Streamline Head Assembly - Silicon and lexan head measures 3-1/4" x 1" and weighs 1.8 ounces each. (bulb unit, clear lens, adapter plate, 25 feet wire, plug, pins, hardware and heat shrink) SL-HA
P/N 11-05127.....**$49.95**

Standard Streamline Bulb Unit - Less lensSL-BU
P/N 11-05128.....**$39.95**

Strandard Streamline Lens Only - SL-L. P/N 11-05130.....**$9.95**

Round head Assembly - Round clear Fresnel lens. Measures 2-1/2" dia. at the base and 3-1/2" tall. Weighs 6 ounces, and standard 6 ft. wire and plug installed. RND-HA -CLEAR ..... P/N 11-05135.....**$39.95**

Round Clear Fresnel Lens - RND-L..... P/N 11-05139.....**$9.95**

Round Wire Bulb Unit - Works on all Magnum drivers.
RND-3WBU - 3 Wire.... P/N 11-05137.....**$29.95**

Combo Streamline Head Assembly - Fitted with LED position lights. Measures 3-1/4" x 1" and weighs 2.8 ounces. 12 volt LEDs draw only (complete 2 head & wire) SL-HAC-S..... P/N 11-07465.....**$249.95**

SL-HAC-G - Green & White aft LEDs(1 head & wire)
SL-HAC-G..... P/N 11-07466.....**$89.99**

W/O Strobe Bulb SL-HAC-WG ..... P/N 11-07348.....**$89.99**

SL-HAC-R - Red/Wh aft LED SL-HAC-R.. P/N 11-07467.....**$129.95**

W/O Strobe Bulb SL-HAC-WR ..... P/N 11-07349.....**$89.99**

SL-HAC-W - White aft LEDsSL-HAC-W ... P/N 11-07469.....**$129.95**

W/O Strobe Bulb SL-HAC-W..... P/N 11-05132.....**$89.00**

Combo Streamline - REPLACEMENT Strobe Bulb Unit Only, fits SL and ROUND Combo tail light heads..... P/N 11-05133.....**$39.95**

Combo Streamline - LENS Only SL-LC... P/N 11-05134.....**$9.95**

Round Taillight with Strobe Only..... P/N 11-05805.....**$92.75**

Round COMBO Taillight..... P/N 11-05804.....**$129.95**

Round Taillight with LEDs TL-LED..... P/N 11-05806.....**$96.75**

Strobe Head Plug Set - SH-PS..... P/N 11-05140.....**$2.50**

Inline Plug Set - IL-PS..... P/N 11-05141.....**$4.95**

Trike Mount Adaptor Kit - TRK-MT..... P/N 11-05143.....**$27.95**

3 Wire Cable Extension - EXT-3W..... P/N 11-05142.....**$10.85**

Mounting Kit - RND-MK..... P/N 11-07347.....**$27.95**

WIG-WAG circuit and a DPDT center off switch to operate 1 or 2 LTRs in a wig-wag mode..... P/N 11-08419.....**$48.75**

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KUNTZLEMAN STROBE – AEROLEDS

KUNTZLEMAN SELF CONTAINED 12 VDC STROBE

The SC103 STROBE is a self contained 12 volt DC operated light designed specifically for Ultralight use where an external 12 vdc power source (battery) is available. Its physical size is the smallest of any self contained strobe light in its class. Measuring2 ½" dia. At the base and 4" tall. Using the same xenon flash tube and Fresnel lens that is currently being used on its big brother the Single Magnum Smart Strobe. The brightness has been actual flight tested before sunset and is visible at 3 statute miles (FAR 103 requirement). The flash is in a single wink pattern at about 42 per minute, power consumption is 500 ma (1/2 Amp) and it weighs only 7 ½ ounces. The SC103 is mounted with a 1/4 X 20 stud located in the center on the bottom of the unit. Also, a stainless steel tang is supplied. Its rugged construction makes it a great economical stand alone unit. P/N 11-04098..... **$99.85**

SHOCK MOUNT - Designed to be used when mounting the SC103 strobe in an area of high vibration. P/N 11-06251..... **$14.95**

KUNTZLEMAN LANDING/TAXI/ RECOGNITION (LTR) LIGHTS

LSA and EXPERIMENTAL aircraft line of lights. Made in the USA, called the LTR which stands for Landing-Taxi-Recognition. The LTR consists of 9 extremely bright LEDs, focused through special lenses. This results in a white beam of light that has been measured with a light meter to be 2 1/2 times the brightness of a 55 watt halogen lamp while drawing 1/3 the current and 1 1/2 that of an HID lamp at about the same current. Powered by 12 to14 volts DC it uses only 1.35 Amps of power. The LTR dimensions are 3" Dia. X 1" deep and weighs less than 6 ounces. Flashing it on & off can be accomplished with an led flasher from your local auto parts store. You must see the LTR in operation to believe the light output. Sold with a money back satisfaction guarantee. P/N 11-06854.....**$229.00**

KUNTZLEMAN HOT BOX

The HOT BOX is a complete electrical system intended for use with an electric starter equipped engine. The box contains a heavy duty regulator, starter solenoid, custom length cables, labeled terminal strips, a fuse panel and many more features.

Hot Box with Regulator HB..... P/N 11-05144.....**$240.00**
Hot Box no Regulator HB ..... P/N 11-05145.....**$208.95**

COURTESY LIGHTS FOR CESSNA AIRCRAFT

This unique LED lighting system operates from a standard 9 volt battery. The system is designed to replace one or more inspection panels on the bottom of each wing with a new inspection panel and a battery operated LED light. This LED will provide lighting around the aircraft for loading passengers or assisting in preflight inspections during night time operations.

The LED has been designed and tested specifically for aircraft applications where altitude and temperature fluctuations can destroy certain components of a standard LED. The unit is also equipped with an indicator to assist the pilot in finding the switch in the dark. A timing feature allows the operator to run the light for either 3 or 15 minutes after which time the unit will shut itself off. Available with your choice of 5 different sized inspection panels. STC' d for many models of Cessna Aircraft.

Visit or website for aircraft eligibility list.

Description	Part No.	Price
Courtesy Light with 5-1/16" Inspection Panel (Most Common)	11-05741	**$119.85**
Courtesy Light with 5-11/16"" Inspection Pane.	11-05742	**$119.85**
Courtesy Light with 6-1/32" Inspection Pane.	11-05743	**$119.85**
Courtesy Light with 6-13/64" Inspection Pane.	11-05744	**$120.95**
Courtesy Light with 7-9/16" Inspection Panel.	11-05745	**$119.85**

AEROLEDS SUNRAY PLUS LANDING LIGHT

The SunRay Plus is a wing-mounted LED (Light Emitting Diode) landing light with a built-in wig wag feature in addition to its standard operation as a landing/taxi light. The SunRay Plus is a very intense light source that uses 4 high power LED's to produce up to 1,000+ lumens of light and 30,000 candela using 10 watts of power.

Each SunRay Plus light uses less than half the power of an equivalent 55 watt halogen light while producing more usable light in a more narrow beam. The LED light source last up to 50,000 hours of constant operation, so you will never have to replace this light once it has been installed. It will outlast both Halogen and HID lamps. The SunRay Plus is protected against overheating with a built in protection circuit, is protected from lightning transients and ESD, voltage spikes, reverse voltage, and undervoltage conditions.

Polycarbonate leading edge windows are commonly used with wing-mounted landing lights, and are typically available for most airplane types from a number of third-party suppliers. This light is small enough to fit in the wingtip cutout found in Van's RV kits.

Specifications: Power: 17 Watts, Voltage: 9-36 VDC, Lumens: 1,000+, Lens Material: Polycarbonate, Candela: 25,000+, Beam Angle: 10 Degrees, Rated Life: 50,000 Hours, Temperature Range: -55C to +70C, Weight: 5 oz, Dimensions: 2.7" x 2.7" x 1.7" P/N 11-09348 .....**$289.95**

AEROLEDS PULSAR NAV/ STORBE

An all LED navigation/position/ strobe designed for the wingtips of an aircraft and exceeds 400 effective candela for the anti-collision light. The Pulsar is the same size as the traditional forward and rear facing position light with anti-collision. The Pulsar does not require an external power supply and will retrofit the mounting footprint of traditional legacy lighting. Specifications: Voltage Range: 9-36 VDC, Length: 5.6", Current Draw at 12VDC: 1.7 Amp Avg / 4.5 Amps Peak Width: 1.8", Power Consumption: 20 Watts Avg, Depth: 1.5", Strobe Power Supply: Built In, Weight: 4 Oz, Strobe Synchronization: Built In, Heat Sink Material: Clear Anodized Aluminum, Thermal Protection: Built In, Lens Material: Polycarbonate, Nav/Position Light: Exceeds 100 candela, Screw Mount: 3x 6-32 Machine Screws, Strobe: Exceeds 400 effective candela, Rated , Temperature Range: -55C to +70C

P/N 11-09349 .....**$985.00**

EPL POSITION LIGHTS & STROBES

The new LED technology allows excellent navigation lights with only approximately 10% of the input power, compared with conventional navigation lights. The casting in a high-optical plastic makes the EPL (Electronic Position Light) absolutely insensitive against water, vibrations and other environmental influence.

The efficiency of the output is much higher than with conventional electric light bulbs. The self-warming of the EPL is low and can be determined as safe. To avoid overheating, the heat balance is controlled electronically. As a precaution you must pay attention to ventilation with a cover installed, so that no heat accumulation within the casing can appear. This may be assumed by suitable constructive measures. These lights are manufactured in Germany.

EPL Wing Tip Light Set(1 red, 1 green)..... P/N 11-05120.....**$349.95**
EPL Tail Light ..... P/N 11-05121.....**$229.50**
EPL Wing / Tail / Strobe Light..... P/N 11-05122.....**$358.95**
EPL ELL 4 Light Set..... P/N 11-05123.....**$1,070.00**

LED TASK LIGHT MODULE 24V WHITE

The LED task light features a rain and brake light, two separate functions in the same package. The LED task light module has a high flash rate which is important in attracting attention in low visiblity conditions. This is a three wire unit with wires for Brake, Rain and battery negative. It uses LOW power, so minimal that you can power it from a single 9 volt battery. Low drain on battery and alternator equals more horsepower, more valuable horsepower available to win races. No resistor to install or break like other LED lights.

Specifications: 18 Super Bright White LEDs, Solid State LED Less power than an incandescent bulb which uses 1.8 amps ore more, High vibration resistant, Waterproof, Made In USA, Operating voltage range 5vdc to 18vdc, Dimensions: 2.7"x2.5"x0.89"

P/N 11-02881.....**$74.95**

RECESSED MOUNT LED LIGHT FIXTURE

Recessed mount convenience light. 3 Bright LEDs behind a frosted panel. Recessed mount with hardware. Dimensions: 2.25" x 2.25" x .5" depth. #6 mounting holes with snap on cover. 12 Volt DC or 24 Volt DC, very low power drain (0.1mA). Applications: Mounts flush into foot wells, door panels, and side panels. Ideal as a convenience light, mp light, or chart light.

12V White..... P/N 11-09266.....**$13.90**
12V Red ..... P/N 11-09267.....**$13.90**
12V Blue..... P/N 11-09642.....**$12.90**
12V Green ..... P/N 11-09643.....**$12.90**
24V White..... P/N 11-09268.....**$13.90**
24V Red ..... P/N 11-09269.....**$13.90**
24V Blue..... P/N 11-09644.....**$12.90**

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AIRCRAFT SPRUCE WEST
CORONA, CA • (877) 4-SPRUCE
AIRCRAFT SPRUCE EAST
PEACHTREE CITY, GA • (877) 477-7823

Prices Subject to Change Without Notice

AEROLEDS SUN SPOT 36LX LED LIGHT

Designed as a LED drop in replacement for the existing GE4509 PAR 36 aircraft lights. Landing light projects 30,000 candela using 30 Watts/3 AMPs max of power. Taxi light projects 10,000 candela. Mounts with existing ring clamp. Power consumption: 30 Watts Max; Current Draw at 12VDC: 3 Amps Max Available in taxi or landing lights. Clamp Mount: Par 36 Ring Clamp. Over-temp Sense Protection; ensures our 50,000 hour lifetime guarantee. Low-voltage Sense (shuts down half the LED's in emergency, low voltage conditions) Specifications: Power: 30 Watts, Voltage: 9-36 VDC, Lumens: 2,400, Weight: 10 oz, Dimensions: 4.2" x 4.2" x 1.5".

Landing Light ..... P./N 11-09351 ..... **$384.00**
36LX Taxi Light ..... P/N 11-09352 ..... **$389.95**
They strongly recomend adding the Pro-tech lens coating which comes with a lifetime warranty on the lens for damage caused from rocks and debris. ..... P/N 11-08143 ..... **$34.50**

AEROLEDS SUN SPOT 36HX LANDING LIGHT

LED drop-in replacement for your existing GE4509, PAR36 aircraft lights. It comes with an integrated "wig-wag" or "pulse" feature built into the light that is recommended to be used throughout your flight to increase recogniton from other pilots. Landing light projects 45,000 candela using 45 Watts/3.75 AMPS max of power. Taxi light projects 15,000 candela. Power consumption: 45 watts Max; Current Draw at 12VDC: 3.75 Amps Max Available in taxi or landing lights. Clamp Mount: Par 36 Ring Clamp. Built in Wig/Wag (stand-alone or synchronous with any of our other products). Over-temp Sense Protection; ensures our 50,000 hour lifetime guarantee. Low-voltage Sense (shuts down half the LED's in emergency, low voltage conditions) Specifications: Power: 45 watts, Voltage: 9-36 VDC, Lumens: 3,600 Weight: 10 oz, Dimensions: 4.2" x 4.2" x 1.5".PMA APPROVED

Landing Light ..... P/N 11-09353 ..... **$437.00**
36HX Taxi Light ..... P/N 11-09355 ..... **$489.95**
They strongly recomend adding the Pro-tech lens coating which comes with a lifetime warranty on the lens for damage caused from rocks and debris. ..... P/N 11-08143 ..... **$34.50**

AEROLEDS SUN SPOT 46 LED LIGHT

Power: 85 Watts . Voltage: 10-36 VDC. Lumens: 6,500+. Weight: 20 oz. Dimensions: 5.6" x 5.6" x 2.3".

46 Landing Light ..... P/N 11-09347 ..... **$895.00**
46 Taxi Light ..... P/N 11-09350 ..... **$895.00**

AEROLEDS SUN SPOT 64 LED LIGHT

Over 17,000 lumens, drawing 224 watts. Allows the aircraft to be visible from 10 miles away, day and night. Specifications: Voltage Range: 15-36VDC, Current Draw at 28VDC: 8 Amps Max, Power Consumption: 224 Watts Max, Thermal Protection: Built In, Landing Lens Candela: 290,000+, Taxi Lens Candela: 105,000+ Landing Beam Angle: 10 Degrees Taxi, Beam Angle: 10 Deg up, 40 Left/Right, Total LED Lumens: 17,000+, LED Count: 8, Height: 8" Round, Width: 8" Round, Depth: 2.7", Weight: 35 Oz, Heat Sink Material: Black Anodized Aluminum, Lens Material: Polycarbonate, Clamp Mount Option: PAR 64 Ring Clamp, Rated Life: 50,000 Hours, Temperature Range: -55C to +70C. ..... P/N 11-09458 ..... **$1,586.00**

SUNBEACON B LED / RED

The 01-1200-A Sunbeacon B is an all LED red 360 degree beacon that exceeds 150 effective candela. It is suitable for mounting on the top or bottom of a fuselage, or on the vertical stabilizer to provide a highly visible red beacon that can be seen from any direction around the aircraft.

Sunbeacon Red ..... P/N 11-10475 ..... **$868.00**
Sunbeacon White ..... P/N 11-10476 ..... **$985.00**

AEROLEDS MICROSUN LANDING LIGHT

The MicroSun is a wing-mounted LED (Light Emitting Diode) landing light with a built-in wig wag mode in addition to its standard operation as a landing/taxi light. The MicroSun is a very intense light source that uses 12 high power LED's to produce up to 1500+ lumens of light using 20 Watts of power. The MicroSun is equivalent to an AeroSUN 1600. P/N 11-07779 ..... **$334.50**

AEROLEDS SUNTAIL TAIL LIGHT

SunTail™ is designed to perform the tail position/strobe functionality on the rudder of the aircraft. The design addresses all the shortcomings of the existing line of competitive products and can synchronize its strobe with any of the AeroLEDs' wingtip family of nav/strobe and nav/position/strobe products. Suntail does not require an external power supply and will retrofit the mounting footprint of legacy lighting. SunTail™ was intended to meet or exceed all of the FAA requirements for certification.

White Experimental ..... P/N 11-07781 ..... **$369.00**
Red Experimental ..... P/N 11-10474 ..... **$369.00**
White Certified ..... P/N 11-10479 ..... **$464.95**

1600 LED LANDING LIGHT

The 1600 is a wing-mounted LED (Light Emitting Diode) landing light with a built-in wig wag mode in addition to its standard operation as a landing/taxi light. Made from extruded aluminum, is a very intense light source that uses 8 high power LEDs to produce up to 1600 lumens of light using just 24 Watts of power. The product is ideal for closed or open environments. Each uses one fourth the power of an equivalent 100 Watt halogen light while producing as much usable light. The LED light sources last up to 50,000 hours of constant operation. The unit is completely sealed and is very rugged. The 1600 is protected against overheating with a built in protection circuit, is protected from lightning transients and ESD, voltage spikes, reverse voltage, and undervoltage conditions. For installation on experimental category airplanes.

Sold each ..... P/N 11-05797 ..... **$324.95**
Mounting Kit (Single) ..... P/N 11-08144 ..... **$19.95**
Pro-Tech Lens Coat ..... P/N 11-08143 ..... **$34.50**

AEROLEDS NS90 WINGTIP STROBES

An all LED navigation/strobe designed for the wingtip cutouts of an aircraft and project a 90 degree light coverage for the experimental market. NS90 does not require an external power supply and will retrofit the mounting footprint of legacy lighting. It is recommended that the SunTail be sold with the NS90 for aft position/strobe to enhance recognition. Specifications: Power: 10 Watts, Voltage: 9-36 Vdc, Weight: 4oz. P/N 11-08170 ..... **$759.00**

AEROLEDS NS180 WINGTIP STROBES

An all LED navigation/strobe designed for the wingtips of an aircraft and projects 180 degree light coverage. NS180 does not require an external power supply and will retrofit the mounting footprint of legacy lighting. It is recommended that the Suntail be sold with the NS180 for aft position/strobe to enhance recognition. Power: 18 Watts. Voltage: 9-36 Vdc. Weight: 4oz

Experimental ..... P/N 11-08171 ..... **$868.00**
Certified ..... P/N 11-10477 ..... **$1,079.00**

AEROLEDS NSP WINGTIP STROBES

An all LED navigation/position/strobe designed for the wingtips of an aircraft and project a 180 degree light coverage that exceeds 400 effective candela for the anti-collision light. NSP does not require an external power supply and will retrofit the mounting footprint of traditional legacy lighting.

Experimental P/N 11-08172 ..... **$895.00**
Certified P/N 11-10478 ..... **$1,122.00**

AEROLEDS PULSAR EXP STROBES

All LED navigation/position/strobe designed for the wingtips of an aircraft and projects a 180 degree light coverage. ExP does not require an external power supply and will retrofit the mounting footprint of legacy lighting. Specifications: Voltage Range: 9-36VDC, Current Draw at 12VDC: 1 Amp Avg / 2.5 Amps Peak, Power Consumption: 13 Watts Avg, Strobe Power Supply: Built In, Strobe Synchronization: Built In, Thermal Protection: Built In, Position Light: FAR Compliant, Strobe: FAR Class 1 Equivalent, LED Count: 16, Length: 5.63", Width: 1.85", Depth: 1.3", Weight: 4 Oz, Heat Sink Material: Clear Anodized Aluminum, Lens Material: Polycarbonate, Screw Mount: 3x 6-32 Machine Screws, Rated Life: 50,000 Hours, Temperature Range: -55C to +70C ..... P/N 11-06577 ..... **$849.95**

AEROLEDS RV KITS

RV KIT OPTION 1:

Pulsar NS90 Pair (Nav/Strobe for wingtip cut out), SunTail (Position/Strobe). Requires NO POWER SUPPLY.

P/N 11-09921 ..... **$1,129.00**

RV KIT OPTION 2:

Pulsar NS90 pair (Nav/Strobe for wingtip cut out), SunTail (Position/Strobe), Two 1600s landing lights for the leading edge. Requires NO POWER SUPPLY. P/N 11-09922 ..... **$1,695.00**

RV KIT OPTION 3:

Pulsar NS90 pair (Nav/Strobe for wingtip cut out), SunTail (Position/Strobe), Two Sunray Plus landing lights for wingtips. Requires NO POWER SUPPLY P/N 11-09923 ..... **$1,595.00**

RV KIT OPTION 4:

Pulsar ExP pair (Nav/Position/Strobe), Two 1600 landing lights for the leading edge. Requires NO POWER SUPPLY

P/N 11-09924 ..... **$1,395.00**

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BEACONS – DIMMERS

DC-POWERED FLASHER

This anti-collision flasher meets Part 103 ultralight dawn to dusk flying requirements. The units draw 2.7 amps at 14V (nominal). It has a clear Lexan Polycarbonate lens and a 35W halogen lamp. Mounting bracket shown is also included.

P/N 10-01490 ..... **$87.75**

ULTRALIGHT BEACONS

These miniature self-contained units use solid state circuitry for reliability and a lexan lens that is UV protected and shatter resistant for durability. Now available with an internally regulated flashing LED Lamp. .14 amps & 50,000 hr expected life. 12V DC power source required for both units. Wt. less than 7 oz. Size: 3" H x 2-5/8" W. For Experimental Aircraft Only

Beacon, red lens..... P/N 11-03008.....**$72.25**

RED LED AIRCRAFT BEACON

This self contained 14 Volt beacon uses surface mounted LED (Light Emitting Diode) technology and meets FAA requirements for anti-collision light systems in both airplane and rotorcraft categories. Measures 1.7 inches in diameter, 3.5" tall and weighs 8.4 oz. Average current draw at 14V is 0.6 Amps with peak input current of 1.2 Amps. Flash rate of 60 per minute and will not produce EMI or RFI interference. Aviation Red LEDs through a clear Polycarbonate Fresnel lens. Projected life for the LEDs is up to 100K hours. Mount with a #10-32 stainless steel stud that is in the bottom center of the base. NOT TSO'D P/N 11-05111 .....**$233.95**

ULTRALIGHT RED/GREEN POSITION LIGHTS

Made for easy installation to fit the tube that makes up the wing tip of most Ultralights. Powered by 12VDC and drawing only 1/3 amp each, these lights are just the thing for the Ultralight flyer that wants to add that special touch of position lights to his bird for those twilight flights. These easy to mount lights measure 1-3/8" x 4-3/8". Please note that these lights are NOT TSO'd for VFR night flight...P/N 11-01356 .....**$36.75**

NFLITE'S LOW VOLTAGE ANNUNCIATOR

The EA-1050 is designed for experimental aircraft. The microcontroller-based design is reliable, light-weight, consumes minimal current, and uses very little panel real estate. The industrial grade surface mount components used are shock/vibration resistant and provide a wide operating temperature range. The large red LED flashes for 60 seconds when alternator output voltage drops to 13V (normal output is ~14V). It then goes to continuous illumination until the condition is rectified. The flashing draws immediate attention to the condition -- continuous illumination is not a pilot distraction thereafter. The voltage drop could be the result of an alternator malfunction or an overloaded system. Check by switching off a high load device, like landing light or strobes. If the ALT light goes off, the alternator is not malfunctioning but you are sourcing more voltage from your battery than the alternator is replacing. If the ALT light remains on, the alternator is malfunctioning and all non-essential electrical systems should be shut down immediately to conserve remaining battery voltage. The LED activates when the master switch is turned on and goes out after engine start, assuming the alternator side of the master is on and alternator output is normal. Observing this should be a checklist item, as it indicates that conditions are normal and the annunciator unit is functioning prior to flight. The flashing LED serves as a reminder to turn off the master switch after engine shutdown. It's also a helpful reminder to turn on the alternator switch after engine start (recommended starting procedure). The entire unit is less than 1 sq. in. x 0.5" deep. A drill template is provided for attaching the LED bezel unit to the panel. Complete installation and electrical connection instructions are also provided. P/N 11-02451.....**$89.95**

SINGLE / 2 CHANNEL PWM DIMMERS

The two dimmers include a single channel model. Both use pulse wave modulation, or PWM electronic design for precise control of LED lighting such as LED instrument panel lighting, baggage, utility, map or post lights. The self-contained products are designed for easy installation and feature integrated on/off switches on each rheostat.

Rated at 18 Watts per dimmer channel, the dimmers are capable of operating a large number of interior lighting products and are engineered to provide additional over-current, over-voltage and reverse polarity protection.

Single Channel Pilot's Light Dimmer

Single Channel Dimmer is ideal for LED Light Strips, General Panel Lighting or Series of Lights (such as map or baggage lights). The rotating control has its own on/off switch.

* 1.5A (18W) 12V dimmer using PWM (pulse wave modulation) for precise control * Integrated on/off switch and smooth action rotating control * Just 1.75" x 1.75" inches square. 1/4" shaft with high quality knob * Screw down terminals for input and output wiring. *Very easy to install. * Powerful enough to operate numerous panel lights and convenience lights * To install, drill 1/4" hole, wire input and output to screw terminals and install.

2-Channel Pilot's Light Dimmer

Dual Channel (2 channel) Dimmers can be used with any combination of lighting - Dual Color LED Light Strips or for controlling 2 different sets of lights. Each channel has its own ON/OFF switch and dimmer control.

* Each channel controls 1.5A (18W) using pulse-wave modulation for precise control * Controls LED or incandescent lighting, up to 18W each channel * Dual integrated on/off switches and smooth action rotating control * Permits complete independent operation of each channel (on/off & dimming) * Just 2.5" x 1.75" inches square. Dual 1/4" shafts with push-on knobs * Screw down terminals for input and output wiring. *Very easy to install. * Powerful enough to operate numerous panel lights and convenience lights

Specifications:

* Mode of Operation: Continuously variable, pulse width modulation (PWM)
* Supply Voltage: 8 to 20 VDC working voltage, up to 30VDC momentary. Dimmer must be fused at power source
* Output Voltage Range: From zero VDC to supply voltage
* Output Current Range: Up 1.5A
* Max Continuous Output Current: Full rated current up to 105F (40C), 75% of rated current up to 115F (46C)
* Ambient Temp Range: Minus 40F (-40C) to 115F (46C), with restriction as noted
* Size: About 1-3/4" inch square
* Weight: 30 to 40 gm, depending on wired connection type
* Heat Sink: Electrically isolated from voltage and acts as a circuit enclosure. Max. temperature rise under load is about 40 F (22C) above ambient.

Description	Part No.	Price
Single Channel PWM Dimmer 12V	11-06674	$33.75
Single Channel PWM Dimmer 24V	11-07286	$35.85
Two Channel PWM Dimmer	11-06675	$48.50

LIGHTMAN HIGH INTENSITY STROBE

Portable battery operated strobe which is an ideal addition to a pilot survival kit. Flash can be seen up to 3 miles and operates for 3-7 hours on AA batteries. It is impact & weather resistant; size: 3.5" on each triangular side; wt: 3.5oz. w/batteries. Includes storage pouch, belt/visor clip, magnet, & other attachment accessories. Furnished with clear dome. ....P/N 11-08200 ..... **$19.95**

Dome only (Price/ea.)

Amber.... P/N 11-08205..... **$3.50** Red .P/N 11-08210 ..... **$3.50**
Green..... P/N 11-08215..... **$3.50** Blue.P/N 11-08220 ..... **$3.50**
Clear..... P/N 11-08225..... **$3.50**

BLACK FLUTED CONTROL KNOB

Black Bakelite knob. Fluted grip. ¼" brass bushing with set screw. ¾" in diameter x 7/16" high. Fits potentiometers for Superior Panel Technology dimmers.

P/N 11-07344.....**$4.50**

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AIRCRAFT SPRUCE WEST
CORONA, CA • (877) 4-SPRUCE
AIRCRAFT SPRUCE EAST
PEACHTREE CITY, GA • (877) 477-7823
Prices Subject to Change Without Notice

754 SERIES LED COCKPIT LIGHTS

Parts Sold Separately

These versatile cockpit lights can be used to illuminate the instrument panel. They can be repositioned to illuminate your charts with their 110 degrees of angle adjustment while being able to rotate a full 360 degrees. Dimensions: 3/4" diameter, 1-5/8" tall fully-extended, 7/8" tall at 90 degrees. The mounting stud is 1/4" in diameter and can be mounted onto a surface up to .200" thick. Switchable models facilitate wiring an SPDT switch (not included) to the light, allowing either red or white operation. We also offer a flush-mount flange to mount the light if the back side of the light is unreachable. Flush Mount - (Pictured above) This part is for mounting and LED light Model 754 from the front side. The adapter base is 1-1/2" in diameter, stands 1-2" tall, and has a 1" bolt hole circle.

Model	Description	Body	Part No.	Price
754R-14V	4 Red 14V L.E.D.s	Alum.	11-04393	**$49.85**
754R-28V	4 Red 28V L.E.D.s	Alum.	11-04394	**$49.85**
754W-14V	4 White 14V L.E.D.s	Alum.	11-07481	**$49.85**
754W-28V	4 White 28V L.E.D.s	Alum.	11-07482	**$49.85**
754RW-14V	2 Red 2 White 14V L.E.D.s	Alum.	11-04395	**$49.85**
754RW-28V	2 Red 2 White 28V L.E.D.s	Alum.	11-04396	**$49.85**
754R-14V	4 Red 14V L.E.D.s	Black	11-07483	**$47.75**
754R-28V	4 Red 28V L.E.D.s	Black	11-07484	**$49.85**
754W-14V	4 White 14V L.E.D.s	Black	11-07485	**$49.85**
754W-28V	4 White 28V L.E.D.s	Black	11-07486	**$49.85**
754RW-14V	2 Red 2 White 14V L.E.D.s	Black	11-07487	**$49.85**
754RW-28V	2 Red 2 White 28V L.E.D.s	Black	11-07488	**$49.85**

Accessories	Body Color	Part No.	Price
Flush Mount	ALUMINUM	11-04397	**$14.50**
Flush Mount	Black	11-07502	**$14.75**

LED MAPLIGHTS

The body of the maplight is constructed of aircraft grade 6061 T6 aluminum and black anodize treated for protection from corrosion. The LED bulbs and internal components are high quality components, and are engineered to withstand 150% of their rated voltage without damage. The wire is tefzel coated mil-spec wire used in certified aircraft and the component potting material is a two part epoxy making this maplight highly vibration and shock resistant. The average bulb life of the LED used in this product in excess of 20,000 hours of use and the maplight draws only 20 milliamps of power with virtually no heat produced.
The red LED used in this maplight gives the most light available in environments where night vision must be retained. This "LED Maplight" is built to be durable, simple to operate, lightweight and compatible with dimming systems. Each "LED maplight" is tested twice during production for maximum quality and customer satisfaction. The "LED maplight" is intended for use in Experimental, Amateur-Built aircraft only.

MAPLIGHT I - 4 LEDS			
Color	**Voltage**	**Part No.**	**Price**
Red	12	11-04387	**$51.85**
Green	12	11-04388	**$57.25**
White	12	11-04389	**$59.75**
Red	24	11-04390	**$57.85**
Green	24	11-04391	**$59.50**
White	24	11-04392	**$59.75**
MAPLIGHT II - 6 LEDS			
Color	**Voltage**	**Part No.**	**Price**
Red	12	13-06620	**$69.50**
White	12	13-06621	**$65.50**
Blue	12	13-06622	**$69.50**
Green	12	13-06623	**$69.00**
Red	24	13-06624	**$69.25**
White	24	13-06625	**$68.85**
Blue	24	13-06626	**$69.00**
Green	24	13-06627	**$69.00**
MAPLIGHT II - 6 LEDS Dual Color			
White/Red	12	13-06628	**$73.50**
White/Blue	12	13-06629	**$72.00**
White/Green	12	13-06630	**$69.95**
White/Red	24	13-06631	**$73.00**
White/Blue	24	13-06632	**$70.00**
White/Green	24	13-06633	**$56.75**

Accessories

Surface Mount Adapter SMA/MMII .....P/N 13-06651 .....**$15.50**

1512 SERIES LED EYE-BALL COCKPIT LIGHTS

These lights work great in overhead consoles and tight spaces. 30 degree adjustable angle, 360 degree adjustable rotation. LED technology draws less current (40 mA max.) and last much longer, (20,000+ hours.) and are fully dimmable. The light is availabe in three light color version, two housing colors, and two voltages. The light colors are four red LED's, four white LED's, and two red/two white LEDS that can be lit separately with a SPDT switch (not included.) The housing colors are black or clear anodize. There are two voltages: 14 and 28. The light has a 1.45" flange and mounts in a 1.25" hole. The light requires 1" behind the mounting surface and is only 5/8" in front. It will accept up to 0.2" thick mounting surface.

Model	Description	Body	Part No.	Price
1512R-14V	4 Red 14V L.E.D.s	Alum.	11-07489	**$112.95**
1512R-28V	4 Red 28V L.E.D.s	Alum.	11-07490	**$110.95**
1512W-14V	4 White 14V L.E.D.s	Alum.	11-07491	**$116.95**
1512W-28V	4 White 28V L.E.D.s	Alum.	11-07492	**$108.95**
1512RW-14V	2 Red 2 White 14V L.E.D.s	Alum.	11-07493	**$116.95**
1512RW-28V	2 Red 2 White 28V L.E.D.s	Alum.	11-07494	**$116.95**
1512R-14V	4 Red 14V L.E.D.s	Black	11-07495	**$108.50**
1512R-28V	4 Red 28V L.E.D.s	Black	11-07496	**$110.95**
1512W-14V	4 White 14V L.E.D.s	Black	11-07497	**$116.95**
1512W-28V	4 White 28V L.E.D.s	Black	11-07498	**$116.95**
1512RW-14V	2 Red 2 White 14V L.E.D.s	Black	11-07499	**$108.95**
1512RW-28V	2 Red 2 White 28V L.E.D.s	Black	11-07501	**$116.95**

PRECISE FLIGHT HID LANDING & TAXI LIGHTS

HID Lighting provides the brightest illumination available. Increase Safety Increase Visibility 6X Brighter than Standard Lights 5000 Hour Bulb Life Reduce Heat & Power Consumption For Experimental Aircraft Only Only 35 Watts, Equivalent to 200

Type	Shape	Voltage	Part No.	Price
Landing Lights	Round	12V	11-05588	**$568.00**
	Round	24V	11-05589	**$568.00**
	Rectangle	12V	11-05590	**$568.00**
	Rectangle	24V	11-05591	**$568.00**
Taxi Lights	Round	12V	11-05582	**$568.00**
	Round	24V	11-05583	**$568.00**
	Rectangle	12V	11-05584	**$568.00**
	Rectangle	24V	11-05586	**$568.00**

SUPER NOVA STROBE

Provides the most powerful flash circuitry available to the light-plane market. Computer-controlled design allows the pilot to select from several different flash patterns, sequencing four ultra-bright compact flash heads, alternating two pairs of flashes, or operating either two or four flash heads with either a fast double or quadruple flash. A powerful 60 joules of energy.. Operates from any 12-30 volt DC source. Current draw: 5.5 amps @ 12VDC Input power: 70 watts Output power: 60 watts System weight: 4 lbs Power pack size: 5 x 6 x 2

P/N SUPERNOVA **$164.50**

LEADING EDGE LANDING LIGHT KIT

Kit consists of (2) GE #4509 12V, 100W sealed beam lamps, brackets for installation, switch, switch plate, 60 ft. of 2-conductor hookup wire & instructions. Size: 4.5"hx5.25"w x2.25"d w/ bulbs installed.

Complete Kit.....P/N 11-08000..**$111.95**

Replacement #4509 Bulbs P/N 11-03796....**$13.80**

Switch Plate only P/N 11-14900.....**$3.90**

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LED LIGHTING - INSTRUMENTS LIGHTING

LED CABIN LIGHTS

12 Very Bright LEDs in an ABS Housing. 12or 24 Volt; Very low current draw (under 80 mA) Red , White, Blue, and Green LED colors available. Compact Size - Just 3"x2"x1" with side mounting flanges for easy installation. Broad, "flood" lighting distribution. Extremely resistant to vibration, shock and moisture. Ideal for baggage area and utility light illumination

Light Color	12V	12V Price	24V	24V Price
Red	11-05521	**$44.90**	11-08404	**$44.90**
White	11-05522	**$48.50**	11-08406	**$43.50**
Blue	11-05524	**$44.90**	11-08405	**$44.90**
Green	11-08408	**$44.90**	11-08407	**$44.90**

CABIN LIGHTS

Designed for use in experimental aircraft, these LED lights are excellent for cabin lighting, work station lighting, interior lighting, or cargo space illumination. They feature small size (2" x 3"), low power draw (less than 95ma, and weigh less than 3 ounces. the basic module consists of 3 rows of LED's potted with epoxy in a strong plastic housing. This makes it extremely resistant to vibration and moisture. The modules are very efficient, and are available in 12 or 24V and in super bright white or red colors. Furnished with a diffused light pattern and a 3 ft. cable length. No on-off switch.

Example Uses for These Convenient Lights Include:

Cabin Lighting — Work Station Lighting
Interior Illumination of Work Area (Without Loss of Night Vision)
Illumination of Operator Controls — Cargo Space Illumination

Benefits:

Small Size - Only 2" x 3" — Low Power Draw - Typically Less Than 95mA
Customizable to Meet your Unique Needs — Low Cost
Weight is Less Than 3 Ounces

12V Red LED..... P/N 11-02880 ..... **$104.95**
24V Red LED..... P/N 11-02883 ..... **$85.50**

LED MAP LIGHT, DOME, AND BAGGAGE AREA LIGHTS

INTERIOR CONVENIENCE AND MAP LED LIGHTING - Three very bright LEDs in an ABS housing. Compact size, just 2" long. #4 holes for horizontal mountnig. 12 volts, low current draw (under 40 mA). Ideal for map lighting or utility installations

Red..... P/N 11-05527 ..... **$7.95**
Blue ..... P/N 11-09649 ..... **$7.95**
Green ..... P/N 11-09650 ..... **$7.95**

DOME AND BAGGAGE AREA LIGHTS

Four (4) very bright LEDs. Compact size, just 1.5" long. #4 mounting holes 12 or 24 volts. "Flood" type wide area lighting. Ideal for map lighting, dome or utility installations. Black or Chrome Base.. Chrome Base only comes in White and Red 12V. **For exprimental aircraft only**

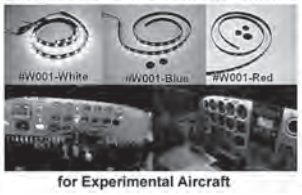
Case	Light	Volt	Part No.	Price	Volts	Part No.	Price
Black	White	12V	11-09651	**$7.95**	24V	11-09654	**$7.95**
Black	Red	12V	---	**---**	24V	11-09655	**$7.95**
Black	Green	12V	11-09652	**$7.95**	24V	---	**---**
Black	Blue	12V	11-09653	**---**	24V	11-09656	**$7.95**
Chrome	Red	12V	11-05526	**$7.90**	24V	---	**---**

LED PANEL MOUNT INDICATOR

Specifications: Mounting Hole Dia: 6.35mm. Forward Current If: 20mA. Forward Voltage: 12V or 24V, your choice. Luminous Intensity:1 0mcd. Viewing Angle: 60°. Bulb Size: 5.08mm. Lens Width: 7. RoHS Compliant: Yes.

Color	Volts	Part No.	Price	Volts	Part No.	Price
Red	12V	LEDRED12	**$8.95**	24V	11-07839	**$7.75**
Green	12V	11-07841	**$7.95**	24V	11-07840	**$6.95**

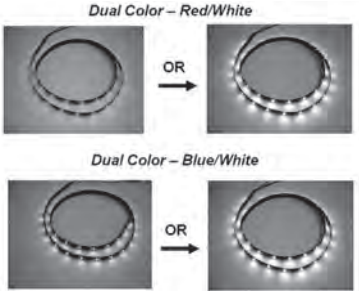
INSTRUMENT PANEL LIGHT STRIP



Flexible LED Instrument Lights
Dimmable LEDs encased in a flexible resin strip. Ideal for mounting under glare shields for instrument panel lighting. Available in White, Red and Blue LEDs. Can be trimmed every 2-1/2 inches (every 3 LEDs). Easy-to-install, waterproof, shockproof and requires no inverter to operate. Draws only 83 mA, 12 volts DC, and has a service life of over 10,000 hours. 35" length, 3/8" width and 1mm high. Installs in minutes with double-sided tape

Description	P/N	Price
12V LED Light Strip - Red	11-05224	**$37.90**
12V LED Light Strip - Blue	11-05225	**$37.90**
12V LED Light Strip - White	11-05226	**$37.90**
24V LED Light Strip - Red	11-06828	**$37.90**
24V LED Light Strip - Blue	11-06829	**$37.90**
24V LED Light Strip - White	11-08409	**$37.90**

FLEXIBLE LED INSTRUMENT LIGHTS - DUAL COLOR



- Dimmable LEDs encased in a flexible resin strip.
- Identical to standard Flexible LED strips but with twice the LEDs.
- Permits independent control of the RED and White or Blue and White colors.
- Ideal for using White lights for loading/unloading or in cloudy conditions and MIX or use of colored lighting during dusk or night conditions.
- 35" length, 3/8" width and 1mm high. Installs in minutes with double-sided tape
- Power consumption no greater than 160mA.

Description	P/N	Price
12V Dual Flexible LED W001-Dual Red	11-05511	**$49.90**
12V Dual Flexible LED W001-Dual Blue	11-05512	**$54.50**
24V Dual Flexible LED W001-Dual Red	11-08410	**$52.75**
24V Dual Flexible LED W001-Dual Blue	11-08411	**$49.90**

FLEXIBLE LED INSTRUMENT LIGHTS - WITH CIGARETTE LIGHTER AND DIMMER

For production aircraft OR experimental aircraft

- The same quality Dimmable LEDs as our standard Flexible LED instrument Lights but with a Cigarette Lighter plug and in-line dimmer control
- Ideal for non-permanent installation in aircraft and other vehicles
- Power is supplied by the Cigarette Lighter plug (12 Volt systems only)
- In-line dimmer controls lighting level
- Available in Red, White or Blue LEDs.
- Ideal for mounting under glare shields for instrument panel lighting
- Can be trimmed every 2-1/2 inches (every 3 LEDs)
- Easy-to-install, waterproof, shockproof and require no inverter to operate.
- Draws only 83 mA, 12 volts DC, and has a service life of over 10,000 hours
- LED is 35" length, 3/8" width and 1mm high.

Description	P/N	Price
Flexible LED With Cigarette Lighter W003- CLA Red	11-05513	**$43.50**
Flexible LED With Cigarette Lighter W003- CLA White	11-05514	**$43.50**
Flexible LED With Cigarette Lighter W003- CLA Blue	11-05515	**$43.75**
Flexible LED Cigarette Lighter Dimmer Kit only	11-05516	**$9.95**

BATTPACK BATTERY BACKUP

The BattPack Battery Backup System can be used as an emergency/secondary power source for aircraft lighting. The 14V or 28V system will provide up to one hour or more of lighting for the FiberLite instrument lighting system (that uses LEDs light sources) or the Glow Strip (electroluminescent lamp) glare shield lighting system or for other low current draw lighting such internally lighted instruments. The system includes the battery holders, a three position switch (normal, off, emergency), engraved placard and tefzel hook up wire.

14V - BP12V..... P/N 11-06595 ..... **$47.85**
28V - BP24V..... P/N 11-06596 ..... **$57.85**

EL

AIRCRAFT SPRUCE WEST
CORONA, CA • (877) 4-SPRUCE
AIRCRAFT SPRUCE EAST
PEACHTREE CITY, GA • (877) 477-7823
Prices Subject to Change Without Notice

COCKPIT LIGHTS – RUNWAY/TAXI LIGHTS

MINI EYEBALL LED LIGHTS

Mini Eyeball LED spotlight. Powerful & Dimmable 1 Watt LED. Adjustable eyeball directs light beam at 30 degree angle. Designed for overhead consoles or side panels Mounts using spring loaded retainers Dimensions: 1.75" diameter - mounts in 1 1/8" diameter hole - depth is just 3/4". Satin black aluminum housing. 12 Volt DC, very low power drain (240mA) Applications: Overhead panel, sidewall panels or anywhere a compact powerful LED light is needed.

Light	Volt	Part No.	Price	Volts	Part No.	Price
White	12V	11-09271	**$41.90**	24V	11-09274	**$41.90**
Red	12V	11-09272	**$41.90**	24V	11-09276	**$41.90**
Green	12V	11-09645	**$41.90**	24V	11-09646	**$41.90**
Blue	12V	11-09273	**$41.90**	24V	11-09277	**$41.90**

MINI LED SPOT LIGHTS

Black/White

For experimental aircraft

- High intensity, dimmable multi-LED lamps
- Easy to install
- Flexible pivot mounts
- 1.75" length, 1" wide (at lens), 1.75" height (with base)
- 12 volts, less than 50mA
- Metal housing available in Black and Aluminum
- Red and White LED Colors

Case	Light	Volt	Part No.	Price	Volts	Part No.	Price
Black	Red	12V	11-05519	**$45.75**	24V	11-08771	**$45.75**
Black	White	12V	11-05520	**$45.75**	24V	11-08772	**$45.75**
Black	Green	12V	11-09647	**$45.75**	24V	11-10513	**$45.75**
Black	Blue	12V	11-09285	**$45.75**	24V	11-09289	**$45.75**
Silver	Red	12V	11-10576	**$45.75**	24V	11-05517	**$45.75**
Silver	White	12V	11-05518	**$45.75**	24V	11-10577	**$45.75**

GOOSENECK LED CHART LIGHTS

Applications: anywhere high-intensity task lighting or map lighting is needed.
Features: Bright Gooseneck LED fixtures with 1 Watt LED, Powerful, dimmable and No RF Interference Heavy-duty construction, Beam dispersion – 60 degrees, Includes mounting hardware, Dimensions: Length: 11" (base to top); Flexible shaft length is 8.75". Head is 2"; Width: 0.75 inches (at head), 12 Volt DC, very low power drain (0.15 mA). On/Off switch optional.

12V White LED with switch..... P/N 11-09281..... **$37.50**
12V Red LED with switch..... P/N 11-09282..... **$44.75**
12V White LED with out switch..... P/N 11-09283..... **$33.95**
12V Red LED with out switch ..... P/N 11-09284..... **$42.75**

SURFACE MOUNT LED LIGHTS

Surface mount convenience light. 2 Bright LEDs behind a frosted panel. Surface mount with hardware. Dimensions: 2.5" x 1.25" x 5/8". #6 mounting holes. 12 Volt DC or 24 Volt DC, very low power drain (0.1mA). Applications: foot wells, door panels, side panels, map light, chart lights or anywhere a dimmable, bright LED light is needed.

Light	Volt	Part No.	Price	Volts	Part No.	Price
White	12V	11-09255	**$11.90**	24V	11-09258	**$11.90**
Red	12V	11-09256	**$11.90**	24V	11-09259	**$11.90**
Green	12V	11-09640	**$11.90**	24V	11-09641	**$11.90**
Blue	12V	11-09257	**$11.90**	24V	11-09261	**$11.90**

FLUSHMOUNT WATERPROOF LED UTILITY LIGHT

Applications: Side panels, overhead consoles, door panels, exterior application (waterproof)
Features: Bright LED fixtures with ¼ Watt LEDs Powerful & Dimmable, Installs in a 3/4" hole with self-locking nut, Designed for overhead consoles or side panels, Mounts in panels up to 3/4" thickness Dimensions: 1.25" length x 1 ¼" top flange; mounts in 3/4" diameter hole; depth is just 1 1/8"; installed flush height is 1/8" Fresnel lens and clear plastic housing Waterproof and vibration resistant 12 Volt DC, very low power drain (0.1 mA)

12V White ..... P/N 11-09278..... **$8.95**
12V Red..... P/N 11-09279..... **$9.50**
12V Blue ..... P/N 11-09280..... **$9.50**

SOLAR BLUE LED AIRPORT TAXIWAY MARKER

Emits blue LED light from both sides. Poly Carbonate, Poly Crystalline Silicon fixture. Maintenance Free. LED Visibility over 1/2 mile. Nickel Metal Hydride Batteries. Secures to asphalt or concrete w/2 part epoxy. Approximately: 4¾" x 4¾" x ¾". Designed to withstand 20 tons PSI. Built for extreme weather conditions. Three (3) to five (5) year life span, Maintenance FREE Batteries charge in approximately four (4) hours using the suns energy. Operate all night (8 or more hours on a full charge). LED brightness equates to 35 lumens.

Blue BSL05DTW..... P/N 11-09385..... **$39.95**

SOLAR GREEN LED CENTERLINE TAXIWAY MARKER

Emits green LED light from both sides. Poly Carbonate, Poly Crystalline Silicon. Maintenance Free. LED visibility over 1/2 mile Nickel Metal Hydride Batteries Secured to asphalt or concrete w/epoxy. Approximately: 4¾" x 4¾" x ¾". Designed to withstand 20 tons PSI. Built for extreme weather conditions. Three (3) to five (5) year life span, Maintenance FREE Batteries charge in approximately four (4) hours using the suns energy. Operate all night (8 or more hours on a full charge). LED brightness equates to 35 lumens.

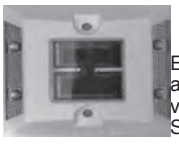
Green BSL-05DCL..... P/N 11-09394..... **$39.95**

SOLAR GREEN LED THRESHOLD MARKER

Emits Green/Red LED light. Poly Carbonate, Poly Crystalline Silicon. Maintenance Free LED visibility over 1/2 mile Nickel Metal Hydride Batteries Secures to asphalt or concrete w/epoxy. Approximately: 4¾" x 4¾" x ¾". Designed to withstand 20 tons PSI. Built for extreme weather conditions. Three (3) to five (5) year life span, Maintenance FREE Batteries charge in approximately four (4) hours using the suns energy. Operate all night (8 or more hours on a full charge). LED brightness equates to 35 lumens.

Green BSL-05DTH..... P/N 11-09387..... 2.95

SOLAR WHITE LED AIRPORT EDGE MARKER



Emits White LED light from both sides. Poly Carbonate, Poly Crystalline Silicon. Maintenance Free. LED visibility over 1/2 mil. Nickel Metal Hydride Batteries Secured with 2 part epoxy Approximately: 4¾" x 4¾" x ¾". Designed to withstand 20 tons PSI. Built for extreme weather conditions. Three (3) to five (5) year life span, Maintenance FREE Batteries charge in approximately four (4) hours using the suns energy. Operate all night (8 or more hours on a full charge). LED brightness equates to 35 lumens.

White BSL-05DEL..... P/N 11-09386..... **$39.95**

SOLAR RED LED AIRPORT OBSTRUCTION MARKER

Emits Red LED light from one single side. Poly Carbonate, Poly Crystalline Silicon. Maintenance Free Nickel Metal Hydride Batteries. Secures with 2 part epoxy. Approximately: 4" x 4" X ¾". Designed to withstand 20 tons PSI. Built for extreme weather conditions. Three (3) to five (5) year life span, Maintenance FREE Batteries charge in approximately four (4) hours using the suns energy. Operate all night (8 or more hours on a full charge). LED brightness equates to 35 lumens. Red BSL03AOM ..... P/N 11-09389..... **$35.95**

SOLAR LED BEACON MARKER RED

Emits light from all sides. Poly Crystalline Silicon, ABS Plastic. Super Bright Red LED light. Mounted to post or pipe. Approximately: 9" diameter x 6" height. Designed to withstand 20 tons PSI. Built for extreme weather conditions. Three (3) to five (5) year life span, Maintenance FREE Batteries charge in approximately four (4) hours using the suns energy. Operate all night (8 or more hours on a full charge). LED brightness equates to 35 lumens.

Red Beacon VRH-4704 .... P/N 11-09384..... **$47.95**

RUNWAY MARKER ADHESIVE PADS

The Adhesive Epoxy Pads are a non toxic, zero V.O.C., performance thermoplastic adhesive designed to adhere raised pavement markers to the concrete or asphalt surface. When heated with a propane heat torch, a Pad liquefies and fuses with the surface and the marker providing a bond that will last throughout the marker's lifetime. Size: 5" x 5".

P/N 13-10451..... **$4.00**

EL

DIMMING SYSTEMS - COCKPIT LIGHTS

AMERI-KING LIGHT DIMMERS

Linear Designed, Single, Triple, Quad outputs. FAA TSO-C71 approved. Input: +14 Vdc or + 28 Vdc. One year warranty. Optional extension of three years. 9.6 lbs.
Features: • Short Circuit Protection. Solid State Linear Design. D-Sub/Miniature AMP connector included

Description	Part No.	Price
AK-551-LD-S 1 POT 6AMP 0-28V	11-06228	**$100.00**
AK-551-LD-S 1 POT 12AMP 0-14V	11-06229	**$196.95**
AK-551-LD-S 1 POT 12AMP 0-28V	11-06230	**$196.95**
AK-551-LD-S 1 POT 18AMP 0-14V	11-06231	**$292.95**
AK-551-LD-S 1 POT 18AMP 0-28V	11-06232	**$292.95**
AK-551-LD-S 1 POT 24AMP 0-14V	11-06233	**$364.00**
AK-551-LD-S 1 POT 24AMP 0-14V	11-06234	**$364.00**
AK-551-LD-D 2 POT 12AMP 0-14V	11-06235	**$185.00**
AK-551-LD-D 2 POT 12-AMP 0-28V	11-06236	**$185.00**
AK-551-LD-D 2 POT 24AMP 0-14V	11-06237	**$364.00**
AK-551-LD-D 2 POT 24AMP 0-28V	11-06238	**$364.00**
AK-551-LD-Q 4 POT 24AMP 0-14V	11-06239	**$364.00**
AK-551-LD-Q 4 POT 24AMP 0-28V	11-06240	**$364.00**
AK-551-LD-O 8 POT 24AMP 0-14V	11-06241	**$713.00**
AK-551-LD-O 8 POT 24AMP 0-28V	11-06242	**$713.00**

SOLID STATE LIGHT DIMMING KIT

Economical solution for the dimming of aircraft interior lighting. This heavy-duty solid state dimming kit by Superior Panel Technology includes a potentiometer with built-in off switch and 115W power transistor mounted to a heat sink. The supplied colored Mil Spec wire and very easy to follow wiring diagram allows the aircraft builder to customize the wiring harness to fit individual needs. When compared to rheostats, this unit provides more even dimming when a combination of LEDs, incandescent bulbs and electroluminescent lamps (such as SPT's Glow Strips) are used. Appropriate for both 14V and 28V systems. Knob sold separately ..... P/N 11-00846 ..... **$67.95**
Control Knob ..... P/N 11-07344 ..... **$4.50**

LC-40E/LC-40 LIGHTING CONTROLLERS

The LC-40e comes in an anodized brushed aluminum chassis. Features extra control knob sensitivity at dim end of the lighting range where it is needed most. It is microcontroller controlled and has continuous over voltage, current limit & fault protection. Each channel can handle 1.5 amps. LC-40E P/N 11-03366 ..... **$126.95**

VARIABLE INTENSITY LIGHTING CONTROLLER

The A200-DDC Intensity Controller will support up to ten instruments in a single installation. It provides infinitely variable, uniform intensity control for all instruments. These units are TSO qualified with all 200 Series instruments and is STC'd as a primary replacement instrument component under all flight conditions (day/night VFR and IFR). DC Power Source: Input voltage 6 to 36 VDC. Power consumption 250mA (maximum brightness).
P/N 10-04809 ..... **$110.95**

VAL AVIONICS CLA 500 COCKPIT LIGHTING ASSEMBLY

The CLA 500 is a Multiple Circuit, Solid State Cockpit Lighting Assembly that will accommodate (4) independent dimmer lighting circuits such as instruments, sub panels, avionics, eyebrow, overhead, flood, and post lamps etc. The CLA 500 unit itself measures 5"l x 4.7"w x 1.5"h; wt: 0.8 lbs. The unit is rated at 14/28VDC input at 2.5 amps max per circuit. The CLA 500 comes complete with 4 on/off dimmer control switches and connector assembly.The CLA 500 carries a full 1 yr factory warranty. **Not TSO'D**

P/N 11-05700(14v) **$259.00**
P/N 11-04592(28v) **$254.95**

COCKPIT LIGHTS

TYPE C4A - A multi-purpose light providing narrow spotlight or floodlight beam. Rotate dial for red or white lens. Push-button for instant full light. Adjustable rheostat. Coiled cord & snap-in mounting base makes light portable in cockpit area. New mfg. Most suitable for larger aircraft.

12V ..... P/N 11-03921 ..... **$129.75**
24V ..... P/N 11-03922 ..... **$129.50**

MINIATURE EYEBALL COCKPIT LIGHTS

MOD1 OVERHEAD CONSOLE - The Mod1 Overhead Console is mounted to top of cabin or top wing skin with four stainless steel screws into the four standoffs or posts on Console. All lights are ordered separately. Weight: 3.8 oz.

P/N 11-06003 ..... **$27.65**

MINIATURE EYEBALL COCKPIT LIGHTS - A compact, low current draw, (now all LED), lightweight light for instrument panel, chart reading, or baggage area illumination. The MOD1 Cockpit Light is available in three models: Soft White "W" - (viewing sect'l. charts) Red "R" - (for total area night vision protection) Green "G" - (well adapted for Night Vision Goggles).
A ¾" black acrylic ball with ¼" aperture rotates in a rugged 1.5" diameter ABS body for full swivel adjustment. Mounts with three black screws included.Originally used on Voyager's around the world flight.

White ..... P/N 11-07800 ..... **$18.75**
Red ..... P/N 11-03141 ..... **$18.75**
Green ..... P/N 11-08480 ..... **$18.75**

EYEBALL COCKPIT LIGHTS

These high quality cockpit lights are engineered to match the eyeball swivel vents on the page on Air Vents in this catalog. Simple twist on/off operation provides white beam for cockpit lighting. Made from 2024T351 aluminum. Diameter: 2.75". Has 4 mounting holes (1/8"dia.) which are spaced 2-3/8" apart on a mounting plate with a thickness of .71". Made in USA.

Black (no bulb) ..... P/N 05-01401 ..... **$68.85**
Gray (no bulb) ..... P/N 05-01402 ..... **$68.85**
Order 14V or 28V bulb separately
14V ..... P/N 11-04197 ..... **$1.29**
28V ..... P/N 11-04172 ..... **$3.25**

NIGHT FLIGHT LIGHT

Red, Blue and Green lights independently dimmable with emergency battery that automatically operates in case of total power failure at the same adjustment. Attached with Velco in any position and connected to the power with cigarette lighter cord (provided), or directly connected to the harness in the vehicle with a fuse of 2 Amp in line. The combination of the 3 colors creates the perception of white light. Measurements: 2.36"x1.58"x1.22". Input Power: 12 volts to 28 volts. Warranty: One year warranty parts and labor in the factory P/N 11-06482 ..... **$189.00**

EL

DIMMERS

LIGHT DIMMING KIT

Kit includes a Mil.Spec Potentiometer, Mil. Spec Power transistor mounted to a heatsink and a wiring harness. Breaker Size: 2A @ 14V, 1.5A @ 28V, Operating Range: 0-32 VDC, Current: 1.4A@ 14V, .7A@28V, Power: 20W ....
P/N 11-02082 ..... **$153.95**

PANEL LIGHT DIMMING RHEOSTATS

These high-quality rheostats are used in production aircraft to dim instrument panel lights. Size: 1-9/16" dia. x 2-1/4" long. Mounts in 3/8" dia. panel hole. Shaft is 1/4" dia. w/flat for knob set screw. New manufacture. Power Rating: 25 Watts.
0-8 OHM Panel light dimming retrostat
P/N 0144 ..... **$32.85**
0-15 OHM Panel light dimming retrostat
P/N 0146 ..... **$46.75**

FINGER GRIP KNOB

Finger grip knob or rheostats. 1-1/2" Diameter, 1/4" Hole.
P/N 11-07967 ..... **$9.65**

MULTIPLE CIRCUIT SOLID STATE LIGHT DIMMERS

Choose from 2, 3, or 4-circuit heavy-duty 115W light dimming systems by Superior Panel Technology. Circuit board design with pin connector allows for easy and neat wiring. Mil Spec Tefzel color-coded wire is included.. Unlike rheostats, this system will provide even dimming of incandescent lights, electroluminescent lamps (such as the SPT Glow Strips) and LEDS when used in combination on the same circuit. A separate control switch (with circuit breaking off position) is included for each circuit. Knobs sold separately.

2 Circuit.....P/N 11-02046 ..... **$119.00**
3 Circuit.....P/N 11-02047 ..... **$211.95**
4 Circuit.....P/N 11-02049 ..... **$249.95**
Control Knob.....P/N 11-07344 ..... **$4.50**

K11 AIRCRAFT PANEL DIMMER

Features: • 3 outputs with a tracking capability - One output is the "Master", and the other two can be set to track the master from 0 to any set voltage behind the master. This allows items on the dimmer bus to be grouped according to their relative brightness. Photocell light sensor automatic control capability • Low cost • Performance: • Voltage range: 0 to Input supply - .6V • Output current - Depends on ventilation - Each channel is capable of 5 amps, practical dissipation limitation is ~ 5 amps total for all channels. (For 28 volt systems, current limit is 1 A per channel) Unit connections are made through a DB15 connector, and are easy to integrate into the rest of the aircraft wiring. P/N 11-02244 ..... **$149.95**

MAX DIM DIMMER CONTROL UNIT

5-35 VDC 0-12.5A Control 350 Watts in a 1-1/4" Diameter package. Complete compact, light weight, powerful, solid state dimmer. Great for light wedges. FAA STC Approved. PMA'd . Features: • Aircraft Lighting Boat Cruiser Cabins. • Instrument Panels. •Hundreds of DC Lighting Control applications
P/N 11-05738..... **$214.50**

MAXPULSE LANDING LIGHT CONTROL/ PULSER - (STC'D)

Extreme long life, low temperature operation, high current capability, noise free operation and small size makes it a ideal landing light controller for all aircraft. This new STC version sports eight functional pulse, flash and steady state modes of operation. It is also an ideal replacement for old technology controllers requiring large heavy heat sinks and or noisy relays as part of the installation.
STC'd ..... P/N 11-06998..... **$239.00**
NON-STC'd ..... P/N 11-05737..... **$245.95**

MAXPULSE LANDING LIGHT CONTROLLER MODEL - B

12-35 volts @ 10 Amps per channel - 2 channels, Ring Connectors, Controlled Output: 0 to 12-35 VDC , 0 to 10 A per channel. No outboard heat sinks, rheostats, or other packages. STC, PMA, RTCA/DO-160E SEC 21: qualified. Configure for Wig Wag or Wing and taxi light pulsing, single light pulsing etc. Increased safety for your passengers and yourself. Hundreds of DC Lighting Applications. Emergency Vehicles. Assembled in the USA
P/N 11-08175..... **$239.00**

MAXDIM DIMMER CONTROLLER MODEL - B

Specifications: 5-35 volts @ 15 Amps. Ring Connectors. Controlled Output:. 0 to 5-35 VDC - 0 to 15 A **Capacity**: 75 Watts @5 VDC. 180 Watts @12 VDC. 360 Watts @24 VDC. 420 Watts @28 VDC. 700 Watts @35 VDC **Features**: Aircraft Lighting. Comply to Cessna AD 93-24-15 about cockpit fires. We have the AMOC allowing this installation for the MaxDim.. Excellent control of Nulite instrument lighting. Excellent LED control. Smaller DC motors. STC, PMA, RTCA/DO-160E SEC 21: RFE Qualified. Instrument Panels. Nulite dimmers. UMA pre-inverter dimmer. Avion Glare shield pre-inverter dimmer. Boat Cruiser Cabins. LED lit panels. Hundreds of DC Lighting Control applications. Assembled in the USA. Includes: MaxDim unit, installation instructions, color coded terminals, reference panel label, STC printout for your logs, installation template, and knob. ..... P/N 11-08176..... **$239.95**

MAXDIM DUO DUAL DIMMER CONTROLLER MODEL - D

12 to 35 VDC, 0-15 A per channel, Control 1050 Watts In a 1-1/4 Inch Diameter Package. Complete compact, light weight, powerful, solid state dimmer..... P/N 11-08177..... **$324.00**

For Complete info on Dimmers and MaxDim Mini Control Units please visit our website at www.aircraftspruce.com

MAXDIM MINI SINGLE DIM CONTROL UNIT

Single Channel, complete, compact, light weight, powerful, solid state dimmer. 5 to 35 VDC, 0-5 A per channel, control over 175 watts channel in a .85 inch square by 3" package. Applications and features: Aircraft instrument panel lighting. Excellent control of Nulite instrument lighting. Smaller DC motors. Instrument Panels. Nulite dimmers. UMA dimmer. Avion Glare shield dimmer. Boat Cruiser Cabins. LED lit panels, Excellent LED control. Hundreds of DC Lighting Control applications. Included: MaxDim Mini unit. Installation instructions. Color coded terminals. Reference panel label. STC pending printout for your logs. Installation template. Knobs.
Single Dimmer Control ..... P/N 11-09753..... **$197.50**
Dual Dimmer Control..... P/N 11-09752..... **$286.00**

EL

INSTRUMENT LIGHTING

UMA INSTRUMENT LIGHTING - PMA'D

The UMA EL Light Bezel System replaces instrument post-lights, provides a uniform light around the dial of each instrument using a solid-state electro-luminescent element rather than a incandescent bulb. The bezels have a design life of 5,000 operating hours. The system consists of a bezel or "wedge", DC to AC inverter, and a connector kit. The bezel fits over the instrument face, and is available in a variety of configurations to accommodate various adjusting knobs. The bezel mounts either between the instrument face and the panel, or between the panel and the overlay. The bezel is held in place by the instrument mounting screws. The DC to AC inverter provides power for as many as 12 bezels or about 25 sq. inches of lighting. To facilitate installation and maintenance a connector kit is supplied with each bezel. Colors are White, Aviation Green, and red, **with white being the only FAA approved color.** The PMA is based on a STC for Beechcraft King Air 90s. To assist you in filing a FAA form 337, the approved data package used for the King Air installation is available from UMA, or can be downloaded on or website. Copies of previously issued 337s are available upon request.
* Inverter is required. Must be ordered separately.

Model No.	Size	Cut-Out	Light	Part No.	Price
2-30-W	3-1/8"	SINGLE (Left or right)	WHITE	10-00794	**$52.50**
2-30-G	3-1/8"	SINGLE (Left or right)	GREEN	10-02089	**$49.95**
2-30-R	3-1/8"	SINGLE (Left or right)	RED	2-30-R	**$51.75**
2-31-W	3-1/8"	NONE	WHITE	2-31-W	**$51.85**
2-31-G	3-1/8"	NONE	GREEN	10-02090	**$49.95**
2-31-R	3-1/8"	NONE	RED	2-31-R	**$49.95**
2-33-W	3-1/8"	CENTER	WHITE	2-33-W	**$51.75**
2-33-G	3-1/8"	CENTER	GREEN	10-02091	**$49.95**
2-33-R	3-1/8"	CENTER	RED	2-33-R	**$49.95**
2-34-W	3-1/8"	DOUBLE	WHITE	2-34-W	**$61.25**
2-34-G	3-1/8"	DOUBLE	GREEN	10-02092	**$59.95**
2-34-R	3-1/8"	DOUBLE	RED	2-34-R	**$59.95**
2-35-W	3-1/8"	NONE w/Undercut for VSI	WHITE	11-02095	**$51.75**
2-20-W	2-1/4"	SINGLE (Left or Right)	WHITE	10-00792	**$52.50**
2-20-G	2-1/4"	SINGLE (Left or Right)	GREEN	10-02087	**$49.95**
2-20-R	2-1/4"	SINGLE (Left or Right)	RED	2-20-R	**$49.95**
2-21-W	2-1/4"	NONE	WHITE	2-21-W	**$51.85**
2-21-G	2-1/4"	NONE	GREEN	10-02088	**$49.95**
2-21-R	2-1/4"	NONE	RED	10-00793	**$49.95**

INVERTERS FOR UMA LIGHTING -

5V (JETS) ..... P/N 10-02086..... **$56.25**
14V..... P/N 10-02083..... **$56.85**
28V..... P/N 10-00986..... **$56.85**

Each inverter will run up to 12 lighting wedges.

Rheostat..... P/N 6002..... **$21.85**
Elec. Wire Kit*..... P/N 10-02085..... **$8.75**

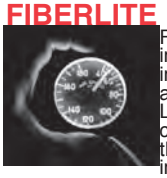
Contains AMP connector and connecting pins

UMA ELECTRO-LUMINESCENT LIGHT STRIPS

UMA, Inc. now offers an ultra-thin (0.006") flexible self-adhesive long-life light strip based on the same technology that is used in our EL Light Bezel. Since there is no filament, these light strips are not bothered by vibration or rapid changes in temperature. Perfect for use under a glare shield, or for any other interior lighting need (both aircraft and automotive). Length may be cut as needed. Available colors are Aviation Green & White/Blue. Power Inverter required.

Dimensions	Color	Part No.	Price
0.5"W x 25"L	White/Blue	10-00321	**$56.85**
0.5"W x 25"L	Aviation Green	10-00322	**$56.25**
1.5"W x 18"L	White/Blue	10-00323	**$76.25**
1.5"W x 18"L	Aviation Green	10-00324	**$76.25**

FIBERLITE INSTRUMENT LIGHTING SYSTEM



FiberLites, by Superior Panel Technology, offers an innovative FAA approved instrument and label lighting system that uses fiber optics to evenly illuminate aircraft instruments with easily accessible, long lasting, LED light sources. Fiber-optics are affixed to specially designed bezels that are sandwiched between the instrument and the panel for appearance of an internally lighted instrument. The advantages of using FiberLites over other lighting devices are a) easier wiring, three LED light sources will light up all the instruments on most panels b) the LEDs are very long lasting, however, if they ever do need to be replaced, they are easily replaced without having to remove any instruments c) FiberLites provide even 360 degree lighting around the instrument, d) the instrument is not altered in any way e) FiberLites can be used to backlight printed labels. The following items are included in the FiberLite package. a) Three LED light sources with appropriate resistor (must specify 14 or 28V system). b) Eight 3 1/8" instrument bezels c) You can substitute TWO 2 ¼" inch bezels for each 3 1/8" inch instrument light. For example a package could consist of SIX 3 1/8" and FOUR 2 ¼" instrument lights. Bezels come in 3 sizes (3 1/8" standard with four screw holes (FL318), 3 1/8" with cut-out in corner that can be rotated either for a right or left hand cut-out (FL318CO) and the 2 ¼" bezel with four screw holes (FL214). Please specify the bezel sizes, and quantity and the voltage of the aircraft.The Superior Panel Technology's Pulse-Width Modulation Dimmer is recommended for dimming the LEDs. Optional 14V or 28V battery back-up systems are available and recommended. See Accessories.

Aircraft spruce and spt have worked together to offer a discount on the fiberlites and pwm dimmer when ordered as a package.

3 LED Package..... P/N 11-04009..... **$254.95**
3 LED Package with PWM Dimmer..... P/N 11-10601..... **$349.95**

Individual Parts Pricing:

2-1/4" inst. ..... P/N 11-04000..... **$26.95**
3-1/8" inst. ..... P/N 11-04002..... **$26.95**
3-1/8" inst w/cut out..... P/N 11-04003..... **$26.95**
14V LED Light Source ..... P/N 11-03998..... **$2.25**
28V LED Light Source ..... P/N 11-04001..... **$3.10**
Solid State Dimming Kit ..... P/N 11-00846..... **$67.95**
Battery Back Up 14V..... P/N 11-06595..... **$47.85**
Battery Back Up 28V..... P/N 11-06596..... **$57.85**

FIBERLITE ILLUMINATED LABELING

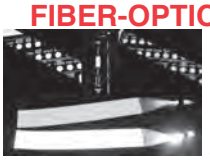
Backlite the wording on your panel with FiberLite fiberoptics and custom printed labels. A single fiber optic ribbon can illuminate a label strip up to 8.2″ in length. You can use two fiber optic ribbons for labels up to 14″ in length. Fiber optic tails are 30″ in length to allow for remote light source placement. Use either the FiberLite 8-port light source (see above) or an ultra-bright small LED light source. One port on the 8-port light source will illuminate two 8″ labels (or one longer label that utilizes two fiber optic ribbons). The LED light source can illuminate up to seven fiber optic ribbons. Mounting channel is 5/16″ in height and the label has a black background with white lettering. The FiberLite fiber optic ribbons can also be used to backlite reverse evgraved panels.

Labels	Part No.	Price
Single line label up to 8.2″ in length	11-00224	**$39.00**
Label 8.3″ - 14″ in length	11-00225	**$44.00**
Above labels include mounting channel, custom printed label, fiber optic ribbon and connectors		

Light Sources	Part No.	Price
14V LED Light Source	11-03999	**$19.75**
28V LED Light Source	11-07838	**$19.85**
8-port light source see above The LED light sources are wired using appropriate resistor.		

Fiber Optic ribbons - for Backlighting Reverse Engraved Panels					
Size	Part No.	Price	Size	Part No.	Price
1/4″ x 6″	11-04005	**$19.99**	1/4″ x 8.7″	11-04006	**$22.50**
Ribbons come with 30″ leads and connectors for light source chosen					

FIBER-OPTIC PANEL BACKLIGHTING KIT



Backlight the lettering on reverse engraved panels using FiberLites fiber-optic panels. The panels can be cut to width and normally one fiber-optic panel can illuminate all the text for switches and breakers on a panel. The fiber-optic panels are 3" x 8.5" and come with the needed connectors and three LEDS (either green or white). The panels can also be used as mini flood lights over breakers and switches.

Fiber-Optic Back Light Kit Green.....P/N 11-08561 ..... **$149.95**
Fiber-Optic Back Light Kit White.....P/N 11-08562 ..... **$149.95**

EL

PILOT LIGHTS - LANDING STRIP LIGHTS

NULITE INSTRUMENT LIGHTING SYSTEM

Replace your existing lighting system of post lights or indirect lighting using the latest technological developed in optical enhancements. The NULITE uses dual incandescent bulbs with a rated life of 10,000 hours in a translucent material designed to look like an internally lighted unit. Nulites are easily installed by anyone in just minutes and are pre-cut to fit all standard instruments operating on 14, or 28 Volts. NULITE light wedges can be installed over the instrument or between the panel and the instrument. One wire is connected to ground and the other to a dimmable buss. Installation takes about 30 minutes for each unit and does not require any special tooling. The instrument is not altered in any way therefore only a log book entry is required. FAA/PMA approved.

Description	Part No.	Price
14V 2-1/4"	11-03851	**$43.95**
14V 2-1/4" Left cutout	11-01257	**$43.95**
14V 2-1/4" Rt. cutout	11-04373	**$43.95**
28V 2-1/4"	11-02571	**$43.95**
28V 2-1/4" Left cutout	11-04374	**$43.95**
28V 2-1/4" Rt. cutout	11-04375	**$43.95**
14V 3-1/8"	11-02572	**$43.95**
14V 3-1/8" Lt. cutout	11-02673	**$43.95**
14V 3-1/8" Altimeter	11-02573	**$43.95**
14V 3-1/8" for VSI	11-01099	**$43.95**
28V 3-1/8" for VSI	11-01230	**$43.95**
14V 3-1/8"Rt. cutout	11-02574	**$43.95**
28V 3-1/8"	11-03852	**$43.95**
28V 3-1/8" Lt. cutout	11-02762	**$43.95**
28V 3-1/8" Altimeter	11-02851	**$43.95**
28V 3-1/8" Rt. cutout	11-03853	**$43.95**
14V 3-1/8" R/L cutout	11-00818	**$43.95**
28V 3-1/8" R/L cutout	11-01352	**$43.95**
14V, 4" light bar	11-02788	**$43.95**
28V, 4" light bar	11-02789	**$43.95**

NULITE NV6 LIGHTING

Features: Daytime Readability: Because Nulites utilitze an open ring bezel, there are no daytime readability issues., Ease of Installation: A typical aircraft installation takes approximately 8 hours and can be done in the field by an A&P mechanic., Color Shifting: Nulites uses NVIS White Technology that does not shift any color and illuminates what is on the instrument., Upgrades the Panel Not The Instrument: Nulite nvg does not alter the instrument in any way and reduces the need for rotables, Lower Cost: A Nulite nvg conversion cost a third of what traditional filtered conversions cost. Reduce Training Time: With an open ring bezel, there is no need for additional training for Daytime Operations.

Specifications: NVIS White long lasting LED, Pulse type dimming circuit, 28 volt systems with lower power consumption (40ma average per unit) Nulites are FAA approved and STC's are available, .220" thick and tight tolerances of .005", Meets all FAR burn tests, NVIS radiance per MIL-STD-3009

White Light 28V 3-1/8" Round .....P/N 11-08774 .....**$649.95**
White Light 28V 3-1/8" Left Cutout .....P/N 11-08775 .....**$649.95**
White Light 28V3-1/8" Altimeter Cutout.....P/N 11-08776 .....**$649.95**
White Light 28V Left & Right Cutout.....P/N 11-08777 .....**$649.95**
White Light 28V 3-1/8" Right Cutout.....P/N 11-08778 .....**$649.95**
White Light 28V 3-1/8" VSI Cutout .....P/N 11-08779 .....**$649.95**
White Light 28V 2-1/4" Round .....P/N 11-08780 .....**$649.95**
White Light 28V 2-1/4" Left Cutout .....P/N 11-08781 .....**$649.95**
White Light 28V2-1/4" Right Cutout.....P/N 11-08782 .....**$649.95**

LIGHTSAVER

The Lightsaver prevents this massive inrush allowing the filament to draw the rated current even at turn on with no change in typical light output performance. The filament life increases up to 10 times due to reducing the stress induced by inrush current. This is something the lamp manufacturers don't want you to know. After all they are in the business of manufacturing replacement lamps for your aircraft. Installation is simple.

Description	Part No.	Price
12 V 100W	11-07316	**$39.75**
24 V 100W	11-07317	**$39.75**
24 V 150W	11-07318	**$38.75**
24 V 250W	11-07319	**$39.85**

GLOW STRIPS - GLARE SHIELD LIGHTING

Superior Panel Technology has developed a brighter, more uniform and longer lasting Glare Shield lighting system. The 18" x 1" Glow Strip electroluminescent lamps provide a beautiful fluorescent-like aviation green or a white light output. The ultra-thin lamps (.065 including the adhesive backing) are very flexible and conform to the curves of the underside of the glare shield. The Glow Strips meet the FAA 23.853 burn test. Inverters ARE included with the kit. A solid state dimmer and battery back-up system is available and recommended (see part numbers below).

THE ONLY MANUFACTURER THAT OFFERS A LIFETIME WARRANTY AGAINST LAMP FAILURE.

Green

Single Glow Strip - 14V.....P/N 11-00847 .....**$119.50**
Two Glow Strips - 14V .....P/N 11-00848 .....**$159.50**
Two Glow Strips - 28V .....P/N 11-00849 .....**$159.50**

White

Single Glow Strip - 14V.....P/N 11-10525 .....**$119.50**
Two Glow Strips - 14V .....P/N 11-10528 .....**$159.50**
Two Glow Strips - 28V .....P/N 11-10529 .....**$159.50**

Accessories

Solid State Dimmer .....P/N 11-00846 .....**$67.95**
BattPack Battery Backup 14V - BP12V .....P/N 11-06595 .....**$47.85**
BattPack Battery Backup 28V - BP24V .....P/N 11-06596 .....**$57.85**

PILOT LIGHT PRO

Pilot Light Pro serves two main functions. It provides hands free panel lighting, as well as map lighting. using the latest in LED technologies it delivers 19 hours of continuous use. Pilot Light Pro is delivered with two AA Procell 1500 batteries installed, and may also optionally be installed using ships power. The internal circuit board will cut off the internal battery source once ships power is turned on. Loss of ships power will return the unit back to it's battery source, leaving you with light to work by in the advent of any problem i.e. loss of alternator.

Quick Installation: Installation is quick and easy if using battery only option, simply peel and stick using 3M power lock. The panel light is fully adjustable see our web site for installation instructions. Wiring to ship's power will require a Licensed A&P and a 337 Form, field approval may be required by local Fisdo.

Blue ..... P/N 11-07819.....**$124.95**
Red..... P/N 11-07836.....**$124.95**
Green..... P/N 11-07837.....**$124.95**

MAP LIGHT PRO

For those who lack mounting space for Pilot Light Pro, or simple just want Map Lights. Map Light Pro uses the same AA Procell 1500 batteries and yields 24 hours of continuous use.

P/N 11-07820.....**$74.95**

LANDING STRIP LIGHT KITS

P/N 11-07953

P/N 11-07954

P/N 11-07952

P/N 11-07955

An "airfield in a suitcase" solution. A fast-deployed, 40 light kit of our Landing Strip Light. Used for expeditionary, improvised or temporary airfields. Suitable for a 4,000' runway, if placed at typical 200' intervals (max.). Order multiple kits for longer runways. Operators Liability- The system has been designed to be operated under normal visual meteorological conditions for night flying by a pilot with normal vision. The system is utilized at the operator's discretion and risk. The suppliers accept no liability whatsoever whether implied or explicit for any incidents/accidents that may incur. The operator must ensure that trained personnel operate the system and are made fully aware of aviation safety and that the runway remains clear of animals, pedestrians and obstructions at all times during landings and takeoffs. Only competent and currently night rated pilots may use this system. Use by student pilots training for night rating is prohibited.

Landing Strip Light Kit - 40 light basic kit, packed in a Pelican 1660 wheeled equipment case for ease of storage, handling, and set up. 180 lb. (82 kg) per kit.

Description	Part No.	Price
Landing Strip Light Kit with 40 Lights	11-07953	**$4,248.00**
Landing Strip Light Kit Jr. with 10 Lights	11-07954	**$925.00**
Landing Strip/Runway Light - Not available for sale to European Union at this time, not RoHS compliant.	11-07952	**$112.00**
Helicopter Landing Zone Light Kit - includes a rugged case, five strobes with bases, pace-out line, instruction manual and safety guides.	11-07955	**$593.00**

EL

PULSE LIGHT SYSTEMS - LANDING/TAXI LIGHTS

PULSAR LANDING LIGHT PULSE LIGHT SYSTEM

Pulses your landing or taxi light with a steady solid state electronic controller I/C. Filtered for quiet operation. Bulb life is not shortened, in fact bulb life is extended 10Xs longer; because the filaments never completely go out so there is no thermal shock turn-on. Even longer life w/ GE Halogen lights. Your panel landing or taxi light switch is turned OFF, Pulsar's separate On/Off switch turned ON, your light will begin to pulse. If you are landing at night, and want your lights on steady, you simply reach to that landing light switch (which has been off during the pulse mode) and turn it ON. Your landing light or taxi light will come on steady because Pulsar has not changed or altered your aircraft wiring. Owner installed in 30 minutes. Pulsar is approved for all 100 Watt GE lights. Weight: 3.5 oz.; Size: 3.25" length x 2" width x 1" height. The Standard Pulsar system uses a relay switch. The MOSFET Pulsar system (Metal oxide semi-field effect transistors) uses advanced P-channel technology which does not fail (no transistors or relays) and each pulse is brighter, than other older AvTek's Green-LED allows pilot with a Nose-Landing-Light to know from the cockpit if the light is: Pulsing, on steady or out. When ordering Pulsar, please indicate how many landing lights you wish to pulse and where they are in your aircraft, as well as your aircraft make and model. Dual Alternating Pulsing lights should never be side by side. Instead dual lights need to be located one in each wing. Two lights side by side can be pulsed together, or pulse just one light and leave the other light off. Now fully FAA/PMA Approved.

Description	Bulb	Part No.	Price
Pulsar for planes with one light on each wing, Recommended for frequent flyers, Mosfet Never needs repair, no transitors/relays	Quartz Q-4509 or Q-4591	11-04408	$388.95
Pulsar for planes with two lights on each wing, Recommended for frequent flyers, Mosfet Never needs repair, no transitors/relays	Quartz Q-4509 or Q-4591	11-04625	$386.95
AvTek Power MOSFET Pulsar Pulsing Light for 1 Light with speed select and built-in LED	Standard halogen Bulbs	11-05124	$221.95

PRECISE FLIGHT PULSELITE SYSTEM

Pulselite For General Aviation Aircraft. Solid state unit unit pulses two 125-watt channels or one 250-watt channel. The Pulselite System is designed to increase your aircraft's conspicuity. It pulses up to two 125-watt landing, taxi or recognition lights in patterns that create an illusion of exaggerated motion. Your aircraft becomes more visible for miles, even in fog or smog. P/N 11-17514 ..... **$259.00**

LANDING LIGHT AND FLASHER KIT

This Superior Panel Technology kit includes two bright 14V halogen bulbs, the SPT landing light flasher unit with wiring, toggle switch with attractive reverse engraved cover plate and the needed material to install the two lights in the wings' leading edge outboard bays. These halogen lamps are significantly brighter than both 50 and 100W incandescent bulbs. The solid state flashing system alternately flashes your landing lights and greatly extends the life of the halogen bulbs . The landing lights are easily aimed with the spring-loaded adjusting screws. The flashing unit is easy to install by following the comprehensive installation instructions. One 4PDT switch is added to the panel, giving you the option to switch from the flashing mode to the steady landing light mode. 14V. ***FOR EXPERIMENTAL AIRCRAFT ONLY.*** P/N 11-02051 ..... **$239.95**

SPT LANDING LIGHT FLASHER

Increase the visibility of your aircraft and give yourself that extra margin of safety. This solid state flashing system alternately flashes your landing lights so pilots in other aircraft and controllers in the tower will be able to see our aircraft much easier. The flasher unit extends the life of your landing lights since they run much cooler and its easy to install by following the comprehensive installation instructions. One toggle switch is added to the panel, giving you the option to switch the lights from the flashing mode to the landing mode. Choose the flashing unit based on the wattage of bulb used in the aircraft. For 14V systems only

FOR EXPERIMENTAL AIRCRAFT ONLY.

50W bulbs..... P/N 11-02070 ..... **$139.95**
100W bulbs..... P/N 11-02071 ..... **$169.95**

XEVISION LANDING & TAXI LIGHTS

XeVision™ super bright Xenon metal halide arc discharge landing & taxi lights for experimental aircraft. Light so bright and white you'd swear it's daylight; 500,00 candle power (3200 lumens) for our 35 Watt and more than 750,000 candle power (5400 lumens) for our 50 Watt systems – up to more than 8 times brighter than a standard 100 watt incandescent sealed beam. High HID efficiency means less than half the current draw and about ½ of the radiated heat of standard or Halogen lamps.

XeVision™ offers reliable HID pulsing capability based on the proprietary XeStrike™ series ballasts and the patented XePulse and new XePulse II™ pulsing module. All XeVision HID lighting systems are tested up to 100,000 feet altitude. XeVision systems are warranted up to 35,000 feet for continuous fail-safe operation.

XeVision offers retrofit kits for direct replacement or complete lighting system kits for new aircraft installation, different lamp shapes/sizes available. Many installation locations are possible now with a variety of lamp shapes and sizes, extremely small form factor, and lower lamp housing temperatures. They are especially suited for tight spaces in composite aircraft. XeVision reflectors are made of metal, not plastic. High Intensity Discharge (HID) lighting is the most significant breakthrough in aviation lighting since the development of modern sealed beam lamps.

XeVision offers highest quality at a very competitive price with a 5 year warranty and up to 3,000 hour typical lamp life. XeVision HID aviation lighting systems are DO-160E certified (35,50, and 75 watt models)

The XeStrike™ proprietary ballasts XV1D or XV4D are an integral part of all XeVision aircraft lighting systems with the following features: 12 or 24 VDC voltage input., Designed for pulsing or dimming of HID Xenon bulbs with the XePulse™ HID control module., Designed for 35 watt or 50 watt output, 75 watt for special applications only., Extremely low EMI/RFI in combination with third generation D1S bulbs with integrated igniter and double shielded silicone cables., Digital power control for pre-programmable start-up algorithm.

XeVision conversion kit & components	Key features & other information	
XeVision XV-36-SL - Standard landing light conversion kit . With XV1D or XV4D ballast and D1S bulb.	Beam angle 9º horizontal & vertical. PAR 36 size. Preferred Application - PAR 36 conversion, lamp diameter 4-5/16"	
XV-36-SL 35 Watt	P/N 11-01760	**$468.95**
XV-36-SL 50 Watt	P/N 11-05038	**$521.00**
XeVision XV-36-ST - Standard taxi light conversion kit . XV1D or XV4D ballast and D1S bulb.	Beam angle 55º horizontal & 10º vertical. Preferred Application - PAR 36 conversion, lamp diameter 4-5/16"	
XV-36-ST 35 Watt	P/N 11-01761	**$468.95**
XV-36-ST 50 Watt	P/N 11-05037	**$516.00**
XeVision XV-46-SL - Landing light conversion kit . XV1D or XV4D ballast and D1S bulb.	Beam angle 10º horizontal & vertical. Preferred Application - PAR 46 conversion, lamp diameter 5-11/16"	
XV-46-SL 35 Watt	P/N 11-01762	**$468.95**
XV-46-SL 50 Watt	P/N 11-05204	**$516.00**
XV-46-ST - Taxi light conversion kit. XeVision XV-46-ST taxi light conversion kit XV1D or XV4D ballast and D1S bulb.	Beam angle 50º horizontal & 8º vertical. Preferred Application - PAR 46 conversion, lamp diameter 5-11/16"	
XV-46-ST 35 Watt	P/N 11-01763	**$468.95**
XV-46-ST 50 Watt	P/N 11-05208	**$516.00**
XV-22 - Landing or taxi light for external use like gear struts. XV1D or XV4D ballast and D1S bulb.	15º horizontal & 10º vertical. Landing/taxi light conversion designations Preferred Application - Lamp fixture, rectangular, only 2.25" high 4.7" wide, and 4.2" deep.	
XV-22 35 Watt	P/N 11-01765	**$467.95**
XV-22 50 Watt	P/N 11-05209	**$516.00**
XV-23 - Landing or taxi light in wing area or externally as on a gear structure. With XV1D or XV4D ballast and D1S bulb.	20º horizontal & 8º vertical. Preferred Application - Lamp fixture, rectangular, only 2.25" high 4.7" wide, and 4.2" deep.	
XV-23 35 Watt	P/N 11-01764	**$467.95**
XV-23 50 Watt	P/N 11-05210	**$516.00**

FOR MORE MODELS PLEASE VISIT www.aircraftspruce.com

REPLACEMENT LAMPS

UNIVERSAL REPLACEMENT LAMPS

Our long life incandescent and halogen lamps offer greater light output with increased life and reduced costs. All lamps feature heavy filament construction. Improved design and manufacturing techniques produce a lamp far superior in service with lower cost to the user and packaging provides maximum protection in shipping, handling and storage.

11-01954 11-01955 11-01964
040-0028 040-0003 11-01965
11-01962 11-01963 11-01958

Universal	Grimes	Whelen	Gen. Electric	Cessna	Piper	Aeroflash	Our P/N	Price
12V125W				C17312-3		40-0028	040-0028	**$19.50**
24V150W	-	-	-	-	-	40-0003	040-0003	**$22.00**
U303			GE-303	303			11-01948	**$3.10**
U327			GE-327	327			11-01949	**$0.65**
U330			GE-330	330			11-01950	**$0.53**
U387			GE-387				11-01951	**$0.54**
U1163	11631						11-01953	**$12.75**
U1512	1512			1512			11-01954	**$16.75**
U1524	1524			1524			11-01955	**$17.75**
U1687	1687						11-01956	**$12.75**
U1940	1940	WRM-1940	GE-1940	1940			11-01958	**$10.75**
U1982-SP	LP-1982SP		GE-1982SP		761-214		11-01960	**$25.85**
UA-7079B-12	1-7079B-12			A-7079B-12			11-01962	**$21.85**
UA-7079B-24	A-7079B-24			A-7079B-24			11-01963	**$21.85**
UA-7512-12	A-7512-12	W1290-14		A-7512-12			11-01964	**$16.75**
UA-7512-24	A-7512-24	W1290-28		A-7512-24	753-478		11-01965	**$16.75**

GALAXY LANDING LIGHT BULBS

Bulb #	Volts	Watts	Par #	Part No.	Price ea
4313	13	250	36	11-03524	**$13.75**
4509	13	100	36	11-02219	**$7.95**
4509Q	13	100	36	11-02220	**$19.65**
4522	13	250	46	11-03525	**$16.85**
4537	13	100	46	11-03526	**$13.50**
4553	28	250	46	11-03527	**$16.75**
4570	28	150	46	11-03528	**$14.85**
4580	28	450	46	11-03529	**$21.85**
4581	28	250	46	11-03530	**$17.35**
4587	28	250	36	11-03531	**$14.95**
4591	28	100	36	11-03532	**$12.65**
4594	28	100	36	11-03533	**$9.50**
4595	13	100	36	11-03534	**$9.85**
4596	28	250	36	11-03535	**$15.75**
4626	28	150	36	11-03536	**$13.75**

GRAIN OF WHEAT INSTRUMENT BULBS

Replace burnt out Grain of Wheat Bulbs that are used to illuminate many instrument panels & instruments. These blue-white silicone booted lamps are filtered for illuminating integrally white-lighted aircraft instruments and panels as called out in MIL-L-27160. Available in 14/28V.

14V..... P/N 11-02052.....**$4.95**
28V..... P/N 11-02053.....**$5.00**

GRIMES REPLACEMENT FLASH TUBE

Replaces Grimes Part No. 5S-0221-1
P/N 11-10000 .....**$134.95**

GRIMES LAMPS FOR EXTERIOR LIGHTS

Lamp No.	Volts	Application	Price
11-02601	12	Wing Tip Lights, Model E	**$13.95**
11-02603	24	Wing Tip Lights, Model E	**$28.85**
11-03661	12	Rot. Bcn G7740A, G8400, D7080A	**$59.75**
11-03739	24	Rot. Bcn G7740A, G8400, D7080A	**$19.90**

WHELEN LAMPS FOR EXTERIOR LIGHTS

Lamp P/N	Application	Price
11-03219	Wing Tip Strobe, Xenon Flash	**$78.89**
11-03697	Tail Strobe, Xenon Flash	**$83.50**
11-03225	Flash Tube for SA & A450	**$74.65**
11-03274	Flash & Socket for A500	**$134.95**
11-03216	Halogen Lamp, A500/A555/A600	**$23.50**
11-02602	Replacement bulb (14V)	**$29.50**
11-02604	Replacement bulb (28V)	**$28.85**
11-03897	(12V) Rotating Beacon	**$12.75**

WHELEN PARMETHEUS LED REPLACEMENT LANDING LIGHTS

Parmetheus PAR36/46 LED lights are a drop-in replacement for outdated Halogen lamps. PMA Approved, lightweight, low-current and moisture resistant, they provide stable light output for thousands of operating hours. LED lighting is the ideal technology for aviation applications. Whelen LED lights are time and field-tested for reliability and long-life performance under the tough conditions required by Fire, Emergency, DOT and Law Enforcement professionals around the world. PMA Approved

LED PAR 36 Landing Light 28V .....P/N 11-08292 .....**$229.00**
LED PAR 36 Taxi Light 28V .....P/N 11-08293 .....**$229.00**
LED PAR 36 Landing Light 14V .....P/N 11-08294 .....**$229.95**
LED PAR 36 Taxi Light 14V .....P/N 11-08295 .....**$239.00**
LED PAR 46 Landing Light 14V .....P/N 11-09523 .....**$239.00**
LED PAR 46 Landing Light 28V .....P/N 11-09524 .....**$269.00**

RAPCO REPLACEMENT LAMPS

Rapco P/N	Our P/N	Price
RAC17312-1	11-04356	**$22.75**
RAC17312-3	11-04357	**$22.75**
RA1512	11-04358	**$18.95**
RA1524	11-04359	**$12.90**
RA330	11-04362	**$0.58**

Rapco P/N	Our P/N	Price
RA327	11-04363	**$0.59**
RA7079B-12	11-04364	**$14.45**
RA7079B-24	11-04365	**$14.45**
RA7512-12	11-04366	**$11.95**
RA7512-24	11-04367	**$12.45**

SEE RAPCO LAMP CROSS REFERENCE CHART AT WWW.AIRCRAFTSPRUCE.COM

WHELEN FLASH TUBE FOR GRIMES STROBES

This flash tube replaces Grimes P/Ns 30-0467, 30-1467, 30-1331, 30-1172-5, & 30-0515 series. Used on many Cessna aircraft.

W55-0221-1 .....P/N 11-02780 ..... **$65.25**

LED MIDGET FLANGED BI-POLAR LAMP T1-3/4 (5-28 VOLTS)

Replaces miniature lamps: # 328, 345, 350, 7335 (5/6V), 330, 382, 394 (12/14V), 327, 376, 387 (24/28V)
P/N 11-09629 .....**$7.50**

MINIATURE BAYONET BASED T3 1/4 LED LAMP

Replaces miniature lamp: # 6MB, 44, 47, 755, 1302, 1847 (5/6v); 12MB, 57, 386,756, 1445, 1815, 1889, 1893 (12/14v); 1437, 24MB (24V); 28MB, 313, 757, 1819, 1829 (28V); 48MB (48V); 60MB, 1835 (60V); 120MB, NE51H, 967 (120VAC); 130MB (130V) P/N 11-09628 .....**$7.50**

MARTEK AIRCRAFT 4509 LANDING LIGHT LAMP

Lamp	Part No.	Price	Lamp	Part No.	Price
4509	11-08431	**$7.95**	4509Q	11-08432	**$13.95**
4537	11-08433	**$12.85**	4570	11-08434	**$17.75**
4580	11-08435	**$22.75**	4587	11-08436	**$13.95**
4591	11-08438	**$13.75**	4596	11-08439	**$14.85**
4626	11-08440	**$12.95**			

TELEDYNE ALPHABEAM LED LANDING & TAXI LIGHT

Drop-in replacement for traditional incandescent lights. The Teledyne LED Alphabeam Landing & Taxi light will replace the following incandescent replacement lamps: 4313, 4509, 4591, 4594, 4596.

Features:
· FAA PMA Approved
· Draws less power
· Longer life than incandescent bulbs
· Ruggedized for shock and vibration
· Meets applicable DO-160 environmental requirements
· Reduced maintenance costs

Specifications:
· Lamp type: PAR 36 – LED Technology
· 45W
· 12 – 30 VDC
· MBCP: 170,000
· 4.5" Bulb Diameter
· 2.75" Max Overall Length

P/N 11-08459 .....**$285.00**

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GE REPLACEMENT LAMPS

MINIATURE LAMPS FOR COCKPIT/WING/TAIL LIGHTS

Lamp No.	Primary/Application	Volts	Amps/Watts	Part No.	Price
B-31/2 Bulb 7/16" (11mm) Diameter					
GE-PR2	Flashlight-2D Cells	2.38	.50A	11-03069	**$0.75**
GE-PR3	Flashlight-3D Cells	3.57	.50A	11-03071	**$0.59**
GE-PR6	Flashlight-2D Cells	2.47	.30A	11-03070	**$0.54**
GE-PR7	Flashlight-3D Cells	3.70	.30A	11-03072	**$0.74**
GE-PR12	Flashlight-5D Cells	5.95	.50A	11-03073	**$0.58**
GE-PR18	Flashlight-6D Cells	7.20	.55A	11-03074	**$0.78**
B-6 Bulb 3/4" (19mm) Diameter					
GE-1308	Reading Light	28	.56A	11-03076	**$2.35**
GE-1309	Aircraft Interior	28	.52A	11-04162	**$3.85**
GE-1317	Emergency Landing	6	.51A	11-03075	**$3.35**
G-31/2 Bulb 7/16" (11mm) Diameter					
GE-356	Map Light	28	17A	11-04184	**$3.65**
GE-1450	Indicator	24	.035A	11-03077	**$7.25**
G-41/2 Bulb 9/16" (14mm) Diameter					
GE-55	Panel Indicator	7	2 CP	11-04194	**$1.49**
GE-57	Panel Indicator	14	2 CP	11-04195	**$0.88**
GE-425	Lantern-4F Cells	5	.50A	11-03079	**$2.45**
GE-456	Instrument	28	.17A	11-03080	**$1.15**
G-5 Bulb 5/8" (16mm) Diameter					
GE-302	Aircraft	28	.17A	11-03038	**$4.15**
GE-1315	Emergency Lighting	2.5	1.0A	11-03037	**$3.35**
G-6 Bulb 3/4" (19mm) Diameter					
GE-81	Wing/Tail	6.5	1.02A	11-04196	**$2.90**
GE-303	Cockpit Light	28	.30A	11-04172	**$3.25**
GE-304	Cockpit Light	28	.30A	11-04173	**$3.20**
GE-623	Aircraft - 2 Filaments	28	.37A	11-03041	**$1.75**
GE-1251	Aircraft - 2 Filaments	28	.23A	11-03039	**$0.93**
GE-1252	Aircraft - 2 Filaments	28	.23A	11-03040	**$4.25**
S-8 Bulb 1" (25mm) Diameter					
GE-305	Wing/Tail	28	.51A	11-04174	**$3.90**
GE-305AF	Wing/Tail-All Frosted	28	.51A	11-03027	**$3.10**
GE-306	Wing/Tail	28	.51A	11-04175	**$4.95**
GE-307	Wing/Tail	28	.67A	11-04176	**$3.45**
GE-308	Wing/Tail	28	.67A	11-04177	**$1.29**
GE-315	Wing/Tail	28	.90A	11-04180	**$3.95**
GE-705	Aircraft	28	.51A	11-03028	**$4.35**
GE-1619	Instrument	6	4.1A	11-03025	**$3.95**
GE-1665	Aircraft	28	.80A	11-03034	**$3.90**
GE-1665AF	Aircraft - All Frosted	28	.80A	11-03035	**$3.25**
GE-1680	Wing/Tail	6	4.1A	11-04165	**$2.65**
GE-1691	Aircraft - 2 Filaments	28	.61A	11-03029	**$8.25**
GE-1692	Marine - 2 Filaments	28	.61A	11-03030	**$8.75**
GE-1777	Aircraft Tail Light	12.8	1.52A	11-04014	**$6.95**
GE-2232	Spiral Lead	28	6.43A	11-03031	**$1.95**
GE-2233	Spiral Lead	28	.766A	11-03033	**$2.40**
S-11 Bulb 1-3/8" (35mm) Diameter					
GE-309	Aircraft	28	.90A	11-03036	**$4.95**
GE-311	Wing/Tail	28	1.29A	11-04178	**$3.95**
T-1 Bulb 1/8" (3mm) Diameter					
GE-685	Aircraft	5.0	.06A	11-03042	**$1.18**
GE-718AS15	Aircraft - 1 Filament	5.0	.115A	11-03043	**$1.63**
T-13/4 Bulb 7/32" (5.5mm) Diameter					
GE-85	Indicator	28	.04A	11-03044	**$2.30**

Lamp No.	Primary/Application	Volts	Amps/Watts	Part No.	Price
GE-327	Eyebrow/Post Lt.	28	.04A	11-04015	**$0.88**
GE-328	Panel Indicator	6	.20A	11-04181	**$1.40**
GE-330	Eyebrow/Post Lt.	14	.08A	11-04016	**$1.35**
GE-334	Panel Indicator	28	.04A	11-04182	**$1.22**
GE-387	Panel Indicator	28	.04A	11-04185	**$0.96**
GE-388	Panel Indicator	28	.04A	11-03045	**$1.19**
T-21/4 Bulb 9/32" (7.5mm) Diameter					
GE-786	Emergency-Halogen	6	2.0A	11-03046	**$7.60**
T-3 Bulb 3/8" (9.5mm) Diameter					
GE-1978X	Navigation	10	100W	11-03047	**$22.30**
GE-1982	Navigation	28	75W	11-03048	**$20.25**
T-31/4 Bulb 13/32" (10mm) Diameter					
GE-43	Indicator	2.5	.50A	11-03049	**$1.65**
GE-44	Panel Indicator	6.3	.25A	11-04186	**$0.97**
GE-316	Instrument	6	.70A	11-03050	**$4.35**
GE-400	Aircraft	28	.10A	11-03054	**$1.84**
GE-757	Indicator	28	.08A	11-03053	**$1.46**
GE-1813	Wing/Tail-All Frosted	14.4	.10A	11-04166	**$1.81**
GE-1815	Indicator	14.0	.20A	11-03052	**$1.37**
GE-1816	Map/Dome Light	13	.33A	11-04167	**$1.58**
GE-1818	Panel Indicator	24	.17A	11-04168	**$2.60**
GE-1819	Panel Indicator	28	.04A	11-04169	**$1.58**
GE-1820	Panel Indicator	28	.10A	11-04170	**$1.65**
GE-1873	Aircraft	28	.17A	11-03056	**$5.60**
GE-464	Aircraft	28	.17A	11-03055	**$1.55**
GE-1864	Panel Indicator	28	.17A	11-04171	**$1.66**
T-4 Bulb 1/2" (13mm) Diameter					
GE-1986	Navigation	28	250W	11-03058	**$69.75**
GE-1987	Navigation	28	150W	11-03057	**$31.75**
T-5 Bulb 5/8" (16mm) Diameter Electric Discharge Lamps					
GE-1978X	Navigation	10	100W	11-03047	**$22.30**
GE-1982	Navigation	28	75W	11-03048	**$20.25**
GE-5004CW	Cool White	A.C.	4W	11-03060	**$7.35**
GE-5004WW	Warm White	A.C.	4W	11-03061	**$7.35**
GE-5008CW	Cool White	A.C.	8W	11-03063	**$7.05**
GE-5008WW	Warm White	A.C.	8W	11-03064	**$7.05**
GE-5013CW	Cool White	A.C.	13W	11-03066	**$6.00**
GE-5013WW	Warm White	A.C.	13W	11-03067	**$7.95**
GE-5104WW	Warm White	A.C.	4W	11-03062	**$5.35**
GE-5108WW	Warm White	A.C.	8W	11-03065	**$6.85**
GE-5113WW	Warm White	A.C.	13W	11-03068	**$6.90**
T-7 Bulb 7/8" (20mm) Diameter					
GE-1940	Rotating Beacon	14	3.57A	11-03794	**$12.75**
Cockpit & Wing/Tail Lights					
GE-53	Panel Indicator	14.4	1 CP	11-04193	**$0.99**
GE-67	Clock, tail, cargo area	13.5	8	11-01394	**$1.59**
GE-89	Cockpit Light	13	6 CP	11-04197	**$1.29**
GE-93	Wing/Tail	12.8	15 CP	11-04199	**$2.60**
GE-94	Wing/Tail	12.8	15 CP	11-04200	**$3.45**
GE-313	Cockpit Light	28	.17A	11-04179	**$1.85**
GE-336	Post Light	14	.08A	11-04183	**$0.88**
GE-356	Map Light	28	17A	11-04184	**$3.65**
GE-1073	Illuminator Lights	12.8	1.80A	11-04012	**$2.60**
GE-1141	Wing/Tail	12.8	1.44A	11-04161	**$1.25**
GE-1495	Panel Indicator	28	.30A	11-04164	**$3.15**

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P/N 11-03796

SEALED BEAM LAMPS FOR LANDING & TAXI LIGHTS

Lamp No.	Primary/Application	Volts	Amps/Watts	Part No.	Price
PAR36 Bulb 41/2" (114mm) Diameter					
GE-4509	Landing Spotlamp	13	100W	11-03796	**$13.80**
GE-4595	Navigation	13	100W	11-03081	**$23.85**
GE-Q4509	Landing	13	100W	11-03902	**$34.75**
GE-4313	Landing	13	250W	11-03795	**$26.50**
GE-Q4631	Landing	13	250W	11-03083	**$68.90**
GE-4505	Navigation	28	50W	11-04188	**$19.50**
GE-4589	Cockpit Flood	28	50W	11-03084	**$18.95**
GE-4593	In-Air Refueling	28	50W	11-03085	**$23.85**
GE-4591	Landing	28	100W	11-03802	**$39.75**
GE-4594	Navigation	28	100W	11-03803	**$17.75**
GE4627	Flood	28	100W	11-03088	**$53.85**
GE-4713	Logo	28	150W	11-03089	**$130.95**
GE-4587	Taxiing	28	250W	11-03090	**$25.75**
GE-4596	Landing	28	250W	11-03806	**$22.50**
GEH-7604	Landing Spotlamp	12.8	50W	11-04023	**$14.75**
PAR46 Bulb 53/4" (146mm) Diameter					
GE-4551	Taxiing	28	250W	11-03093	**$19.15**

Lamp No.	Primary/Application	Volts	Amps/Watts	Part No.	Price
PAR46 Bulb 53/4" (146mm) Diameter (Continued)					
GE-4553	Landing	28	250W	11-03799	**$28.75**
GE-4554	Taxiing	28	450W	11-03095	**$95.00**
GE-4570	Taxiing	28	150W	11-03801	**$14.95**
GE-4571	Flood	28	150W	11-03092	**$33.75**
GE-4580	Landing	28	450W	11-03901	**$40.65**
GE-4581	Landing	28	450W	11-03097	**$39.75**
GE-Q4681	Landing	28	450W	11-03101	**$89.90**
GE-4582	Helicopter Flood	28	450W	11-03098	**$50.75**
GE-Q4566	Taxiing	28	450W	11-03096	**$94.75**
GE-Q4597	Flood	28	450W	11-03099	**$175.95**
PAR56 Bulb 7" (178mm) Diameter					
GE-4541	Landing	28	450W	11-03102	**$44.65**
PAR64 Bulb 8" (203mm) Diameter					
GE-4557	Landing/Taxiing	28	1000W	11-04190	**$64.75**
GE-4559X	Landing	28	600W	11-03104	**$46.50**
GE-Q4559	Landing	28	600W	11-03103	**$56.75**

GALAXY 4509 LANDING LIGHT BULBS

The 4509Q lamp is a direct replacement for the standard 4509 lamp. While the amps & wattage are the same, the rated design life of the 4509Q is 4 times longer (100 hrs. vs. 25 hrs.) and 4509Q has nearly double the candlepower and narrower beam disbursement.

Galaxy 4509Q Landing Light Bulb .....P/N 11-02220 ..... **$19.65**
Galaxy 4509 Landing Light Bulb .....P/N 11-02219 ..... **$7.95**

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CUSTOM AVIONICS PANELS

ADVANTAGE AVIONICS

Advantage Avionics specializes in avionics installations and upgrades. Whether you want to upgrade an instrument, install a complete IFR radio stack, have a “plug and play” experimental panel built, or have an entertainment system installed, they can do it all. They can manufacture new panels for your older aircraft and make it look like it just rolled out of the factory. They know that every pilot and aircraft owner has different need and wants, and that’s why their recommendations and installations are tailored to each and every customer.

From conventional panel layouts to full “glass cockpits”, and simple radio installations to full IFR radio packages, just about any dream can become a reality at Advantage Avionics.

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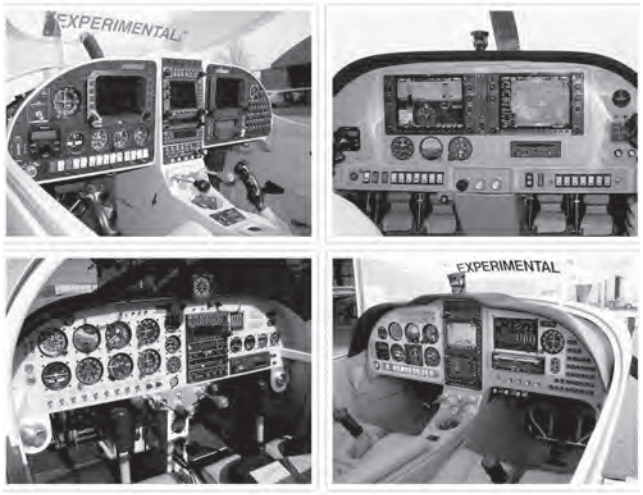

The Aircraft Spruce and Specialty Panel Builder allows you to plan your panel without having to search all over the internet and keep track of all your findings. Using drop down menus, you can easily search our large inventory of avionics & instruments by category.This tool displays every piece of equipment you will need for your panel, enabling you to get quotes quickly and simplify the ordering process. Your data can be saved so you can build your panel at your own convenience.

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AV

IMPORTANT NOTICE

Aircraft Spruce & Specialty Co. cannot accept a return of any instrument or avionics equipment that has been installed and/or altered in any way. All returns must include all components and accessories and all original packaging. All returns must be in new, saleable condition. Credit or replacement will be issued at our discretion pending inspection and testing by the manufacturer. Warranty repairs can be sent directly to the manufacturer with a copy of our invoice.

GARMIN PORTABLE GPS

GARMIN AERA 500 SERIES GPS

The Garmin aera™ lineup of touchscreen GPS portables. Featuring crisp 4.3-inch QVGA wide-format displays with menu-driven tap-and-drag user interface. Transition seamlessly from runways to roadways with the best in Aviation and Automotive moving-map navigation. Leveraging Garmin's industry-leading expertise in integrated systems design, the aera series offers a full range of smart, easy-to-use guidance solutions for today's pilot/motorist. In your aircraft, the aera's detailed Sectional chart-style shaded mapping and extensive terrain and aviation databases (including private airports and heliports) help you visualize your flight path in relation to nearby navaids, terrain, SUAs, obstructions, and so on. For added safety, a database-driven terrain advisory feature offers TAWS-like color coding and pop-up alerts when possible obstructions or ground proximity conflicts loom ahead. Garmin's patented Panel Page affords a reassuring backup to your panel-mounted instruments with its exclusive display of GPS-derived HSI, altimeter, groundspeed, vertical speed and turn indication. Plus, on the aera 550 and 560 models, preloaded Garmin SafeTaxi® charts provide detailed taxiway diagrams and position information for over 950 U.S. airports – while an included AOPA Airport Directory database gives you detailed listings, phone numbers, facilities and fuel location information on over 7,400 U.S. landing sites, as well as airports of entry for Canada, Mexico and the Caribbean. Other premium aera 550/560 features include high-resolution 9 arc-second terrain/obstacle detail, database-derived IFR airways map mode, and more. Further, TIS traffic alerting is supported by all four aera models (through an interface with your aircraft's Garmin GTX 330 Mode S transponder or other compatible third-party traffic devices). **Weather-watchers take note:** For continuous inflight weather awareness, both the aera 510 and 560 models provide access – via Garmin's GXM 40 Smart Antenna/Receiver – to the latest in XM WX™ Satellite Weather capabilitiesYou can even access select XM weather products in auto mode as well. Plus, the simplicity of a single integrated cabling solution for power, music and datalink weather antenna options makes for easy, clutter-free aera connectivity in your choice of cockpits. **Flying or driving, you're covered:** When your aircraft lands, your aera journey continues with full automotive GPS navigation and preloaded City Navigator® NT street map coverage for North America or Europe. Operating much like Garmin's popular nüvi line of touchscreen auto navigators. Other premium features available on the aera 550 and 560 models include lane assist with junction view, speed limit notification, Navteq traffic alerts2, and more. Skyways or highways, from driveway to destination: When you travel with Garmin's aera series, you've got a world of navigation capability at your fingertips. And with four great models to choose from, it's easy to find the aera portable solution that perfectly matches your needs and budget.

Description	Part No.	Price
aera 500 The most affordable aera touchscreen unit, the 500 model features a crisp 4.3-inch QVGA wide-format screen and preloaded graphical mapping. Go from runways to roadways with preloaded City Navigator® NT street mapping.	11-08044 Americas	$699.00
	11-08049 Pacific	$699.00
	11-08048 Atlantic	$699.00
aera 510 adds support for NEXRAD imaging and other great XM WX™ satellite weather capabilities. It also comes with detailed terrain mapping, Garmin's patented Panel page, preloaded street maps and touchscreen control.	11-08045 Americas	$1,099.00
aera 550 With higher-resolution 9 arc-second terrain graphics, offers detailed aviation and automotive mapping with preloaded SafeTaxi® charts and AOPA Airport Directory. Also includes built-in support for premium auto navigation and traffic features.	11-08046 Americas	$1,249.00
	11-08052 Pacific	$1,099.00
	11-08051 Atlantic	$1,099.00
aera 560 Garmin's premiere fly/drive touchscreen portable, with support for XM WX™ satellite weather capabilities. It also comes with preloaded SafeTaxi® charts, AOPA Airport Directory, City Navigator® NT street mapping, and support for premium auto features.	11-08047 Americas	$1,599.00

Accessories for the 500, 510, 550, and 560	Part No.	Price
Garmin aera Power Data Cable	11-08088	$59.95
Garmin aera Lithium-Ion Battery	11-08090	$32.95
Garmin aera Battery Pack Combo with Charger	11-08091	$59.95
Garmin Portable Friction Mount	11-08118	$27.75
Garmin aera Yoke Mount	11-08085	$48.95
Garmin aera Cigarette Lighter Audio Cable	11-08086	$48.95
Garmin 496 696 aera USB Cable	11-07503	$13.95
Garmin Vehicle Power Cable	11-08120	$22.95
Garmin Carring Case	11-08121	$23.95
Garmin Suction Cup Mount for GA 25 Antenna	11-08122	$9.45
Garmin GA 25MCX Antenna	11-07281	$24.75
Garmin GA 27C Remote Antenna	11-00052	$73.50
Garmin GA 27 8FT Extension Cable	11-07283	$29.85
Garmin GA 26C Suction Cup Mount	11-02685	$13.90
Garmin Dashboard Disk, 2-pack	11-08123	$14.50
Navishield Garmin aera Series	11-08217	$14.85
Airgizmo Garmin aera Dock	11-08321	$109.95
Glare Wizard for Garmin aera	11-08392	$34.75
Accessories for the 510 and 560 Only	**Part No.**	**Price**
Garmin GXM 40 XM Antenna 696	11-07058	$234.95
Garmin aera Cigarette Lighter Audio/USB	11-08087	$62.50
Accessories for the 550 and 560 Only	**Part No.**	**Price**
Garmin GTM 20 Traffic Cable	11-08124	$111.95

GARMIN AERA 795/796 GPS

With its 3D Vision navigation technology, advanced electronic flight bag capabilities, XM Weather capabilities and much more, the touchscreen aera 796 ushers in the next era of aviation portables

Revolutionary new 3D Vision technology shows a virtual 3-D behind-the-aircraft perspective of surrounding terrain derived from GPS and the onboard terrain database – a feature previously only available in our panel-mount avionics. Simply slide your finger across the touchscreen to rotate the view and show land and water features, obstacles, runways and airport signposts in relative proximity to the aircraft. Internal GPS provides position updates at a rate of 5 times per second (5 Hz). aera 796's bright 7" diagonal high-definition sunlight-readable display makes detailed mapping easy to see in any lighting conditions and works in both portrait and landscape mode. The physical design has been optimized to fit on the yoke or for use as a knee-mounted device. There are only 4 touch keys on the bezel representing "Back", "Menu", "Direct-to" and "Nearest" for quick navigation to the most frequent used functions. All other functions are quickly accessed through Intuitive onscreen icons with labels. This unique touchscreen interface even allows you to quickly pan across the map screen and pinch to zoom. Fullfills the role of either a Class I or Class II electronic flight bag, greatly reducing the need to rely on paper charts in the cockpit. Initial georeferenced VFR sectional and IRF enroute charts come preloaded that show your aircraft's position overlaid directly on the relevant chart. When in IFR map mode, the 796 can display victor airways, jet routes, minimum enroute altitudes and leg distance, much like what's found on traditional enroute charts. A "scratch pad" feature also allows you to quickly jot down clearances and other pertinent notes while in route, while a checklist viewer allows you to create customized and interactive electronic checklists. Also allows for a top-down view of your entire route. To help you navigate around unfamiliar airports, SafeTaxi® provides detailed taxiway diagrams and position information for over 1,000 U.S. airports, while a private airport and heliport database greatly expands your emergency "nearest" options. FBO, ground transportation, lodging and other facility information for most U.S. airports are also available through preloaded AOPA Airport Directory Data; international pilots may choose to opt for global AC-U-KWIK airport directory data instead. A GXM 40 smart antenna is included with aera 796, giving you access to high-resolution weather and audio entertainment right in the cockpit (XM subscription required). XM WX™ Satellite Weather includes next generation radar (NEXRAD), aviation routine weather reports (METARs), terminal aerodrome forecasts (TAFs), temporary flight restrictions (TFRs), lightning, winds aloft and more for the U.S. and Canada. In addition, the 796 can receive PIREPs, turbulence forecasts, icing forecasts and more. The weather data can be laid directly over the unit's navigation and topographic map databases. Plus, with 170+ channels of digital music, news and programming through your aircraft headset or cabin audio system, you'll stay informed and entertained. Allows for simultaneous connectivity with other hardware. With an optional Garmin GTX 330 Mode S Transponder Interface, you can access Traffic Information Service (TIS) alerts, where available, right on the device while also sending frequencies to a Garmin SL30/40 radio or relaying position reports to other devices.

aera 795 Americas ..... P/N 11-10034..... **$2,199.00**

Accessories	Part No.	Price
795/796 Power Data Cable	11-10044	$59.95
795/796 AC Power Home Dock	11-10045	$139.50
795/796 Carry Case	11-10046	$46.95

aera 796 Americas with XM Weather ..... P/N 11-10033..... **$2,499.00**

Accessories	Part No.	Price
795/796 Battery Pack	11-10047	$187.95
795/796 Lap Mount	11-10048	$46.95
Touchscreen Clean Cloth	11-10049	$4.75

AV

GARMIN PORTABLE GPS

GARMIN GPSMAP 696 & 695

GPSMAP 696 Meet our ultimate portable MFD: the GPSMAP 696, an all-in-one navigator designed exclusively for aviation. Featuring a large screen, detailed electronic charts and real-time weather, the 696 is your own personal avionics system.

See the Big Picture - The GPSMAP 696's bright 7-inch diagonal high-definition sunlight-readable display makes detailed mapping easy to see day or night — you can even view an entire approach plate on the large-format display. For easy operation, the bezel around the screen includes soft keys and a joystick control. And with a fast 5 Hz GPS update rate, the 696 renders graphics and presents flight data smoothly and continuously.

No Charts? No Problem. - With the addition of Garmin FliteCharts®[1] and IFR map mode, the GPSMAP 696 has Class 1/Class 2 electronic flight bag (EFB) capability, reducing the use of paper charts in the cockpit. With FliteCharts, you can quickly find and view all U.S. NACO departure procedures (DP), standard terminal arrival routes (STARs), approach charts and airport diagrams. If the current approach is known, GPSMAP 696 automatically selects the correct chart based on the flight plan. When in IFR map mode, the 696 can display victor airways, jet routes, minimum enroute altitude and leg distance, much like found on paper enroute charts.

Add Weather and Radio - The GPSMAP 696 includes a GXM 40 smart antenna, which gives you access to high-resolution weather and audio entertainment right in the cockpit (XM subscription required). XM WX™ Satellite Weather includes next generation radar (NEXRAD), aviation routine weather reports (METARs), terminal aerodrome forecasts (TAFs), temporary flight restrictions (TFRs), lightning, winds aloft and more for the U.S. and Canada. In addition, the 696 can receive PIREPs, turbulence forecast and icing forecast information. The weather data can be laid directly over the unit's navigation and topographic map databases. With 170+ channels of digital music, news and programming through your aircraft headset or cabin audio system, you'll stay informed and entertained.

Enhance Situational Awareness - The GPSMAP 696 features a high-resolution terrain page showing hazards relative to your altitude and a vertical profile of terrain along your route of flight. It comes with a built-in Jeppesen database, and an Americas, Atlantic or Pacific terrain database. It also includes an obstacles database for the U.S. or Europe. Using this information, the 696 displays your flight route over contour terrain mapping. With information from the terrain and obstacles databases, the 696 monitors your current position in relation to surrounding terrain to provide alerts. You can even customize your own minimum clearance levels to receive terrain cautions. The 696 also comes with a realistic "view from space" satellite imagery basemap.

GPSMAP 695 With features that focus on aviation-only navigation and mapping, GPSMAP 695 is Garmin's ultimate portable MFD. Similar to the 696, the GPSMAP 695 comes with a large screen and detailed electronic charts — minus XM compatibility — at a price you'll love.

Garmin GPSMAP 696 Americas ..... P/N 11-07022 ..... **$1,999.00**
Garmin GPSMAP 695 Americas ..... P/N 11-07023 ..... **$1,699.00**
Garmin GPSMAP 695 Atlantic..... P/N 11-07047 ..... **$1,699.00**
Garmin GPSMAP 695 Pacific..... P/N 11-07048 ..... **$1,699.00**

GPSMAP 696 & 695 ACCESSORIES

Description	Part No.	Price
Power Data Cable	11-07056	**$27.95**
Carrying Case	11-07049	**$49.95**
Lap Mount	11-07050	**$49.95**
Battery Pack	11-07051	**$196.50**
Yoke Mount	11-07057	**$74.95**
US AC Adapter	11-07052	**$49.95**
Intl. AC Adapter	11-07053	**$49.95**
12/24V Cig. Plug	11-07054	**$29.95**
Protective Cover	11-07055	**$19.95**
GMX 40 XM Antenna (696)	11-07058	**$234.95**
Description	**Part No.**	**Price**
GXM 40 Flange Mount	11-07059	**$3.95**
Mag Mount GXM Antenna	11-07060	**$14.75**
Zaon Traffic Interface Cable	11-07107	**$82.50**
MCX to BNC Antenna Cable	11-90210	**$18.85**
696 Audio Jack	11-07783	**$13.95**
695/696 E-learning CD	11-07594	**$99.95**
GA25MCX Antenna	11-07281	**$24.75**
Airgizmo 695/696 Panel Dock	11-09439	**$168.95**
Glare wizard for 695-696	11-08027	**$36.75**

GPSMAP 296, 396, 495, & 496 ACCESSORIES

Description	Part No.	Price
Garmin Power Data Cable	11-02694	**$21.95**
Garmin Battery Pack	11-04856	**$42.95**
City Navigator Europe	11-01192	**$149.95**
Auto Mount	11-03900	**$28.50**
Yoke Mount	11-02691	**$51.75**
Friction Mount	11-01033	**$27.50**
Garmin GPS Handheld Antenna	11-02681	**$44.95**
GA 26C Remote GPS antenna	11-00051	**$74.50**
GA 56 Low Profile External Antenna	11-18756	**$294.00**
GMX 30 Flange Mount with screws	11-06267	**$7.25**
GMX 40 Replacement Antenna for GMX series only	11-07058	**$234.95**
Cigarette Adapter with speaker (car only)	11-02693	**$33.85**
Description	**Part No.**	**Price**
Cigarette Adapter	11-02696	**$17.85**
AC Power Adapter	11-02676	**$32.85**
USB Cable	11-02692	**$12.95**
Carrying Case	11-18863	**$24.75**
GPS Protective Cover	11-02701	**$12.95**
Garmin 512MB Data Card	11-06268	**$159.95**
Garmin 256MB Data Card	11-02697	**$105.95**
Instruction 296 DVD	11-02821	**$19.95**
Naishield Garmin 495/496 Screen Protector	11-07165	**$13.95**
Make it Glare Wizard Glareshield for 495/496	11-07939	**$34.95**
Jeppesen Using the Garmin 496 CD	11-05024	**$74.95**

GARMIN GDL39 ADS-B RECEIVER

The GDL 39 portable ADS-B receiver combines a dual-link ADS-B receiver and a GPS receiver into a single unit that streams ADS-B traffic and subscription-free weather to Garmin aviation portables, iPads and a wide array of other mobile devices. The GDL 39 provides wireless support for the aera 796/795 and compatible mobile devices, such as the iPad, via built-in Bluetooth connection. Other Garmin portables including the GPSMAP 696/695 and the aera 500 series can connect to the GDL 39 with a single cable.

Description	Part No.	Price
GDL39 Portable ADS-B and GPS Receiver UNIT ONLY	11-10724	**$899.00**
GDL39 Portable ADS-B and GPS Receiver for GPSMAP69x	11-10725	**$899.00**
GDL39 Portable ADS-B and GPS Receiver for GPSMAP39x/49x	11-10726	**$899.00**
GDL39 Portable ADS-B and GPS Receiver for aera 5xx	11-10727	**$899.00**
GDL39 Portable ADS-B and GPS Receiver with DC Power Cable "IPAD"	11-10728	**$799.00**
GDL39 Portable ADS-B and GPS Receiver for aera 79x	11-10729	**$899.00**
GDL39 Portable ADS-B and GPS Receiver with Bare Wire "BT"	11-10730	**$899.00**
Acc,Power/Data Cable,GDL39 to GPSMAP69x	11-10732	**$100.00**
Acc,Power/Data Cable,GDL39 to GPSMAP49x/39x	11-10733	**$100.00**
Acc,aera 5xx Aviation Mount,CLA w/audio, mini-B & GDL39	11-10734	**$100.00**
Acc,Power/Data Cable,Bare Wire,GDL39	11-10735	**$100.00**
Acc,aera 79x Aviation Mount,CLA w/audio, mini-B & GDL39	11-10736	**$100.00**
Acc,Battery,GDL39	11-10737	**$129.00**

AV

GARMIN PORTABLE GPS

GARMIN GPSMAP 196

The GPSMAP 196 offers unprecendented features and utility in an aviation portable. In addition to the built-in Garmin basemap, the GPSMAP 196 accepts all of our MapSource products, and provides turn-by-turn route guidance for street navigation. Other exciting features include a unique "panel page", which offers a graphical depiction of GPS-derived flight information, and an automatic logbook function that records departure airports, arrival airports, and flight time (automatically recording night flight based on sunrise/sunset information). This flight information is stored in the unit, and can be downloaded to Garmin logbook software. The GPSMAP 196's processor provides map redraws and scrolling at over twice the speed of previous aviation portables. With these features plus a large (3.8"diagonal), 12-level grayscale display in a slim package, the GPSMAP 196 is sure to be the next big hit. Features: •3 distinct modes: Aviation, Land, Water Extended runway centerlines displayed on moving map •Unique panel page graphically displays flight info •Turn-by-turn automotive routing •Split-screen moving map and HSI display •Built-in basemap showing lakes, rivers, cities, highways, state boundaries •Benefits
Logbook feature automatically records flight data •WAAS-enabled, 12 parallel channel GPS receiver •1000 user waypoints with name and graphic symbol; 50 reversible routes wit 50 waypoints / route. •Compatible with most Map source products including Garmin BlueChart marine cartography, MetroGuide, and City Select.•Weight: approx. 1.5 lbs. with batteries •Battery life using (4) AA batteries; 16 hours with no backlighting used. 4 hours with full backlighting.

GPSMAP 196 Americas Database ..... P/N 11-01620 ..... **$549.00**
GPSMAP 196 Pacific Database..... P/N 11-01622 ..... **$549.00**
GPSMAP 196 Atlantic Database..... P/N 11-01621 ..... **$549.00**

DELORME EARTHMATE PORTABLE GPS

Navigate worry-free anywhere you go with the waterproof, impact-resistant PN-60w. Its high-end GPS features and unrivaled selection of included maps, aerial imagery, and boating charts are ideally suited for use on land or water. The PN-60w also enables 2-way satellite text messaging and interactive SOS when paired with a DeLorme inReach (see accessories). No other GPS offers such a broad array of navigation and communication solutions. **Features**: Enjoy blazing-fast-performance with high-sensitivity 32-channel chipset and dual-core processor. Daylight readable 65k color screen lets you read the PN-60w in any light conditions. Determine direction while stationary with tilt-compensated 3-axis electronic compass. Determine precise elevations with sensitive barometric altimeter. Save waypoints and tracks as .gpx files, to internal memory or to SD cards, with no maximum limits. Store all the maps and aerial imagery you need with 3.5 GB of internal memory and support for SD cards up to 32 GB. Extend battery life with power management features. **Box Includes:** Earthmate PN-60w GPS, Topo North America 9.0, Free MapPack Subscription, Quick Start Guide, 2 lithium AA batteries, USB data-transfer cable for PC-GPS data exchanges, 5 regional discs of pre-cut PN-Series maps, and Sturdy lanyard.

P/N 11-10450 ..... **$349.95**

INREACH FOR EARTHMATE GPS / ANDROID PHONES

Use the inReach satellite communicator by itself and stay connected with pre-loaded text messages, delivery confirmation, SOS, and remote tracking. Or, pair inReach with a PN-60w (see accessories) for exclusive two-way messaging and reliable GPS navigation. Features: Two-way satellite messaging. Interactive SOS. Message delivery confirmation. Pole-to-pole global coverage. inReach users can communicate directly with one other to share information and locations. You can also post messages to Facebook and Twitter and enable remote tracking so others can follow your travel online. Box Includes: inReach for PN-60w GPS, Quick Start Guide, Micro USB cable, 2 lithium AA batteries, and Lanyard.

For Earthmate GPS..... P/N 11-10449 ..... **$249.95**
For Android Phones ..... P/N 11-10448 ..... **$249.95**

GARMIN GPSMAP 96C

Full-featured GPS navigation with Jeppesen database and comprehensive towers-and-obstacles database. Users can quickly download and store map data from a variety of optional MapSource CDROMs. Whether on land, sea, or air, the GPSMAP 96C is the smart, versatile way to get there: • Extensive Jeppesen database includes airports, identifiers and services • Comprehensive U.S. database of obstacles and towers helps alert pilots of potential hazards • Graphic HSI steering cues with GPS-derived VNAV provide added orientation • Built-in autoroute basemap and optional MapSource marine, topo & city street mapping downloads let you move seamlessly from plane to car to boat to hiking boots. Features: Unit dimensions: 2.7"W x 6.2"H x 1.4"D, Weight: 7 ounces, Display size: 3.0" diagonally, Display resolution: 180x240-pixel, four-level gray FSTN display, Usable storage capacity: 23 MB, Battery life: Up to 25 hours in battery save mode, Antenna: Quad-helix, WAAS capability: WAAS GPS receiver for enhanced lateral/vertical guidance, Waterproof:(submersible in one meter of water for up to 30 mins.), Routes, Tracks, Waypoints: 50 reversible routes (300 waypoints each), 20 saved tracks (500 trackpoints each), TracBack® technology and 1,000 waypoints with graphical icon identification.

GPSMap 96C Americas Color .....P/N 11-02820 .....**$495.00**
GPSMap 96C Atlantic Color.....P/N 11-02827 .....**$495.00**
GPSMap 96C Pacific Color.....P/N 11-02828 .....**$495.00**

ACCESSORIES FOR GPSMAP 196, 96C AND 96

Description	Part No.	Price
Power Data Cable	11-90345	$19.95
AC Adapter	11-02299	$15.90
Cigarette Adapter	11-18759	$18.95
PC Interface with AC Adapter	11-00713	$34.50
PC Interface with Cigarette Adapter	11-90326	$33.75
PC Interface Cable	11-90346	$27.95
USB To RS232 Cable Converter	11-01037	$58.95
GA 27C Remote Antenna	11-00052	$73.50
8 Foot Extension cable for GA 27C	11-07283	$29.85
Antenna Flange Mount	11-02683	$16.25
MCX to BNC Antenna Cable	11-90210	$18.85
GA 26C Suction Cup Mount	11-02685	$13.90
Dash Mount Disk	11-18862	$9.50
Auto Mount	11-03900	$28.50
Bean Bag Mount	11-01033	$27.50
Temp. Adhesive 3-Pack	11-02689	$4.75
Permanent Adhesive Disk	11-00547	$2.65
Carrying Case (96C & 96)	11-90325	$9.95

GARMIN GPS TRADE-IN / TRADE-UP PROGRAM

Trade-in only applies towards a purchase of a new Garmin unit listed below (one unit per trade-in). Trade-in must be complete, having all accessories, and the unit must be in good cosmetic and working condition. Any unit not meeting this requirement can receive a lesser trade-in value or have the unit returned.

1. Purchase a new GPSMAP 695, 696, or Aera 500, 510, 550, 560.
2. At the time of order, our sales representatives will give you your customer number and order number to use when sending in your trade-in unit.
3. Once you receive your new Garmin unit, please call our customer service number at 800-861-3192 and reference your customer number and order number to receive an RMA to ship your trade-in to Aircraft Spruce and Specialty.
4. After we receive your trade-in, we will verify that the unit is complete and in good cosmetic and working condition. Once verified we will credit you the trade-in value. Units with missing accessories will add delay to the credit process.

GPSMAP 496.....**$900.00**
GPSMAP 495.....**$750.00**
GPSMAP 396.....**$650.00**
GPSMAP 296.....**$500.00**
GPSMAP 196.....**$200.00**

Verify current trade-in values at time of order by calling 877-477-7823 or email us at info@aircraftspruce.com. We will beat any other supplier's price on any unit. Aircraft Spruce no longer accepts the Pilot III, 90 Series, 195 or 295 for trade.

USED GARMIN GPS UNITS

Used Garmin GPS units are subject to availability.
Please call 877-477-7823 for availability and current prices.

Description	Part No.	Price
Used Garmin GPSMAP 196	11-02713	$350.00
Used Garmin GPSMAP 296	11-03593	$650.00
Used Garmin GPSMAP 396	11-04737	$895.00
Used Garmin GPSMAP 495	11-07063	$995.00
Used Garmin GPSMAP 496	11-07064	$1,195.00
Used Garmin GPSMAP 695	11-10051	$1,250.00
Used Garmin GPSMAP 696	11-10050	$1,399.00

AV

GARMIN PORTABLE GPS - ACCESSORIES

GARMIN PILOT™ AVIATION APP

Garmin is excited to announce Garmin Pilot, a new aviation app for the iPad, iPhone, and Android mobile devices. The app brings Garmin's industry-leading aviation technology to mobile devices; offering pilots complete trip planning, DUATS filing, weather, navigation and electronic flight bag capabilities. Garmin Pilot is the perfect complement to our extensive line of aviation navigation products and services. Garmin Pilot incorporates the intuitive icon user interface and many of the same great features from our other popular products. Pilots will find it very familiar and easy to use. The Garmin Pilot app will help with every facet of your trip - Planning, Filing, and Flying.

Note: Garmin Pilot app only serves USA for charts and navigation. Expanded coverage expected in future.

Basic..... P/N 13-11866.....**$99.00**
Pro with Safe Taxi and Geo-Ref Charts ..... P/N 13-11867.....**$149.00**

GARMIN SAFENAV

SafeNav is an innovative new GPS-based navigation and alert system designed to provide airport vehicle operators with real-time situational awareness. Garmin, in partnership with I.D. Systems, has created SafeNav to help airport support vehicles avoid accidental runway incursions. The system overlays your vehicle's exact position directly onto the airport operating area. SafeNav boasts a database of nearly 1,000 U.S. airports borrowed from our proven SafeTaxi® diagrams. . The system's 4.3-inch (11 cm) screen makes it easy to know where you are in relation to runways, taxiways and buildings. It's an ideal solution for improving new employee orientation, enhancing safety for transient vehicles, and even seasoned employees in low visibility conditions. It has built-in geofencing algorithms that define airport runways and provide audible alerts as you near an incursion. P/N 11-09666.....**$1,395.00**

GARMIN TRIP AND WAYPOINT MANAGER CD

Make trip planning simple for your next outdoor adventure with MapSource Trip and Waypoint Manager. This computer software allows you to transfer waypoints, routes and tracks between your Garmin device and your computer. For reference, Trip and Waypoint Manager provides general worldwide maps that include interstates, motorways, political boundaries, principal cities and towns, oceans and other general reference details to place your GPS data in context. Provides basic worldwide maps to help you understand your GPS data in context, including major interstates, boundaries, oceans, principal cities and towns, and other general reference details. Offers an easy and convenient way to archive your GPS data for future use. Does not contain detailed maps. You cannot use this product to load maps to your Garmin device. P/N 11-02703 .....**$22.95**

GARMIN OREGON™ 300

Features a rugged, touchscreen along with a built-in basemap with shaded relief, a high-sensitivity receiver, barometric altimeter, electronic compass, microSD™ card slot, picture viewer and more. Even exchange tracks, waypoints, routes and geocaches wirelessly between similar units. Touch and Go - A tough, 3-inch diagonal, sunlight-readable, color, touchscreen display. Durable and waterproof, it is built to withstand the elements. Share your waypoints, tracks, routes and geocaches wirelessly other Oregon and Colorado users. Supports Geocaching.com GPX files for downloading geocaches and details straight to your unit. Locates your position quickly and precisely and maintains its GPS location even in heavy cover and deep canyons.Built-in electronic compass that provides bearing information even while you're standing still, and its barometric altimeter tracks changes in pressure to pinpoint your precise altitude.
P/N 11-07247 .....**$499.99**

AVIATION SUITE FLIGHT PAD 10

The Aviation Suite FlightPad™ 10 is a full-featured touch-screen GPS offering moving map over VFR Sectionals, Terminal Procedure Publications and detailed information on over 19,000 airports. In addition the FlightPad™ 10 contains a 17-function E6B, graphical weight & balance calculator and N-Number lookup. Coverage includes United States, Puerto Rico, Virgin Islands, and Pacific Territories. Purchase Includes: Aviation Suite FlightPad 10, AC Power Adapter, 12 Volt DC Power Adapter, External GPS Antenna. Size: 10.5" x 6.6" x 0.4". Weight: 1.6lb.
Aviation Suite FlightPad 10.....P/N 11-10417.....**$499.95**
Aviation Suite Renewal 1 Year.....P/N 11-10418 .....**$99.99**

QREF GUIDES FOR GPS UNITS

Now you've got a choice. The quick reference books feature easy-to-use tabbed pages for concise procedures and navigation help in a compact size, prefect for someone who wants complete information or is new to a system. The cards provide all the essential information in a 5" x 8" full-color, hard plastic card for those who are already familiar with their system. Either way, Qref keeps you in the know, quickly and easily.

GPS Model	Card P/N	Price	Book P/N	Price
Garmin aera	13-07064	**$13.95**	13-07063	**$27.95**
GPSMAP 195	13-06355	**$13.95**	13-06291	**$19.95**
GPSMAP 196	13-06356	**$13.95**	13-06292	**$19.95**
GPSMAP 295	13-06357	**$13.95**	13-06293	**$24.95**
GPSMAP 296	13-06360	**$13.95**	13-06294	**$24.95**
GPSMAP 396	13-06362	**$13.95**	13-06295	**$29.95**
GPSMAP 495	13-06362	**$13.95**	13-06313	**$21.95**
GPSMAP 496	13-06362	**$13.95**	13-06315	**$25.95**
GPSMAP 696/695	13-06363	**$13.95**	13-06316	**$27.85**
GMX200	13-06353	**$13.95**	---	---
GNS 430	---	---	13-06288	**$29.95**
GNS 480/CNX80	13-06418	**$13.95**	13-06289	**$29.95**
GNS 530/430	13-06354	**$13.95**	13-06290	**$29.95**
G1000 Card	13-06417	**$13.95**	---	---
G1000 non WAAS	---	---	13-06423	**$48.95**
G1000 WAAS	---	---	13-06424	**$48.95**
Garmin Cirrus	---	---	13-06425	**$48.95**
AIRMAP 2000C	13-06365	**$13.95**	13-06317	**$21.75**
AIRMAP 600C	13-06364	**$13.95**	13-06318	**$16.95**
AV8OR	13-06348	**$13.95**	13-06287	**$29.95**
AV8OR Ace	13-07066	**$13.95**	13-07065	**$28.95**
GEOPILOT II	13-06347	**$13.95**	13-06286	**$24.95**
EKP-II			13-06285	**$29.95**
EKP	13-06322	**$13.95**	---	---
KLN 89B	13-06368	**$13.95**	---	---
KLN 90B	13-06367	**$13.95**	---	---
KLN 94	13-06366	**$13.95**	13-06422	**$23.95**
KLN GX Series	13-06369	**$17.25**	---	---
Avidyne Entegra version 3-5	---	---	13-06358	**$48.95**
Avidyne Entegra version 6-7	---	---	13-06359	**$48.95**

JEPPESEN GARMIN GPSMAP TRAINING CDS

The Jeppesen Training CDS let pilots learn at their own pace, practicing procedures at the comfort and safety of a computer desktop, rather than flying heads-down. Easily and quickly get the users familiar with operations by using a visual hands-on approach.

Description	Part No.	Price
Jeppesen GPSMAP 196 Interactive	11-02442-1	**$52.25**
Jeppesen GPSMAP 296 Interactive	11-02848-1	**$43.75**
Jeppesen GPSMAP 396 Interactive	11-04514-1	**$79.50**
Jeppesen GPSMAP 496 Training CD	11-04766	**$69.95**
JS202402 JEPP 430W/530W WAAS CD	13-05646	**$139.95**
Jeppesen Weight & Balance Graphic Planner CD	11-04767	**$41.75**

GPS MANUALS

Pilot-friendly manuals are available for most receivers. Our task-oriented manuals are simplified directions that lead you step-by-step through all the GPS operations. Includes descriptions of all pages.

Description	Part No.	Price
G1000W WAAS Manual	13-05694	**$49.95**
G1000W WAAS Ebook Manual	13-09879	**$49.45**
GNS-430W WAAS Manual	13-05129	**$39.95**
GNS-430 Guidebook	11-04307	**$49.50**
GNS 430W with Memory Jogger	13-11587	**$29.95**
GNS-530 Guidebook	11-04308	**$39.95**
G1000 Guidebook	11-04309	**$39.95**
GPSMAP 295	11-04310	**$37.95**
Learn How to Use Your GPS 496	11-05024	**$74.95**
GPSMAP 695/696 Manual	11-07937	**$35.75**
GPSMAP 695/696 Ebook Manual	13-09880	**$35.95**
GPSMAP 695/696 Guidebook	11-07937	**$35.75**
GPSMAP 496 Guidebook	11-05581	**$35.75**
GPSMAP 396 Guidebook	11-04311	**$40.00**
GPSMAP 296 Guidebook	11-04312	**$36.75**
GPSMAP 296 Owners Manual	11-02698	**$24.95**
GPSMAP 196 Guidebook	11-04313	**$36.75**
Garmin G300 Manual	11-09130	**$49.95**
Garmin G300 Ebook Manual	13-09877	**$35.95**
Garmin G900X Manual	11-09093	**$54.95**
Garmin G900X Ebook Manual	13-09878	**$49.25**
Bendix/King KLN-90B Guidebook	11-04303	**$39.95**
Bendix/King KLN-900 Guidebook	11-04304	**$45.00**
Bendix/King KLN-90B/900 Guidebook	11-04305	**$45.00**
Bendix/King KLN-89B/94 Guidebook	11-04306	**$39.95**

USING THE GNS430W/530W

This is not your typical "Cook Book" approach to learning the GNS430/530W. The manual contains 62 pages of text and dozens of colored pictures, the same pictures you would see in real-life when operating the unit. Written by Keith Thomassen.
P/N 13-06831 .....**$52.95**

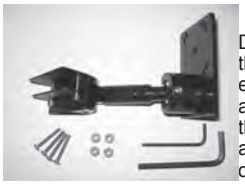
AV

GPS PROTECTORS

NAVIGATION SCREEN PROTECTORS

The Pre-cut navigation screen protectors provide excellent protection from scratches. The anti-glare layer reduces unwanted reflections, increasing contrast, clarity, and viewing comfort even with the use of polarized lenses. This film is thick enough to protect the screen, yet thin enough to have no effect on touch screen sensitivity. Light tack adhesion provides for residue-free removal. Does not require special cleaners. Available for: ADR, Anywhere Map, Avidyne, Apollo, Chelton, Eclipse Avio, Garmin, King, Vista Nav, and more.

Description	Part No.	Price
Flight Bag NAV	11-07140	**$21.25**
Map LS-800	11-07141	**$22.25**
CNX-80	11-07142	**$13.50**
Aspen EFD PRO	11-07143	**$16.50**
1 pc. Avidyne	11-07144	**$28.75**
2 pc. Avidyne	11-07145	**$48.00**
5 pc. Piper Models	11-07146	**$72.00**
1pc FlightMax 500	11-07147	**$14.50**
1pc Chelton IDU	11-07148	**$16.50**
4 pc. 2G-430	11-07149	**$43.25**
4 pc. 2G-430	11-07150	**$57.75**
2PC C-P	11-07151	**$57.75**
3PC Eclipse Avio	11-07152	**$96.00**
1PC G-1000	11-07153	**$34.75**
1 pc AV8OR	11-08214	**$14.85**
2PC G-1000	11-07154	**$48.00**
3PC G-1000	11-07155	**$81.75**
Garmin 430	11-07157	**$12.95**
Garmin 480	11-07158	**$13.95**
Garmin G600/G500	11-07161	**$31.75**
Garmin 696	11-09441	**$18.75**
Garmin aera	11-08217	**$14.85**
GMX-20	11-07163	**$16.50**
GMX-200	11-07164	**$17.50**
196,296,396,496	11-07165	**$13.95**
KMD 250	11-07166	**$12.50**
King KMD550	11-07167	**$14.95**
CIS-1000	11-07168	**$22.25**
AV8OR Ace	11-08216	**$18.75**



PORTABLE GPS MOUNT

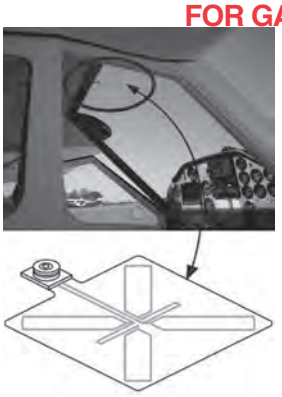
Designed, tested, and assembled entirely in the USA. Although it was developed and tested for many hours in Piper Aircraft and with a variety of Garmin GPS products including the brand new Garmin AERA line; it may be adapted to other applications and GPS units due to the utilization of a universal mounting plate and the ability of the windshield post clamp to fit any post size from 7/16 inch to 5/8 inch. This mount may also be permanently mounted in experimental aircraft. Note: It may be necessary to relocate the Magnetic compass in some aircraft if it is installed too close to the top of the glare shield. P/N 11-08297 .....**$62.50**

KNEEBOARD FOR HANDHELD GPS & PDAS

This angled kneeboard accommodates virtually every handheld GPS or PDA. The circular base is slightly cone-shaped for a leg-conforming fit and is wiggle-free secured around either upper leg with a velcro tape. The GPS or PDA attaches with velcro on a slant surface, which is angled about 30° and permits a perpendicular view on the screen.

P/N 11-01285 .....**$19.95**

CLEAR-NAV TRANSPARENT GPS ANTENNA FOR GARMIN UNITS



Clear-Nav is the aviation version of transparent GPS antennas using the design, development and manufacture of technologically advanced antenna systems for wireless applications. **Features**: Flick the GPS antenna from your dash-board, or the from the air-stream. Easy to install on plexi-glass, lexan or perspex windshields (Code X77P) .... also works well when installed on the inside of fiberglass upper fuselage - (for glass version please ask for Code X77G). UV resistant and virtually damage proof once it is installed. The supplied high quality RG174 thin (1/8") coaxial cable is easy to route around frame(s) and cabin linings. **Specifications**: Radiator: 2 x half-wave dipole 90 degrees phase shift(RHCP when Installed with adhesive side to sky), Antenna Gain: (Passive) 3dBi, LNA Gain: (Active) 27dB, System Gain: 30dB = Antenna + LNA, VSWR: < 1.2:1 @ Band center LNA Operating Voltage: +3 ~ +5v, Connector: MCX

For Garmin 296, 396, 496, 430, 530 .....P/N 11-08586 .....**$69.95**
For Garmin 696 .....P/N 11-08536 .....**$69.95**

EZCLEAR AND NAVISHIELD GPS PROTECTOR KITS

The pre-cut Navishield screen protectors provide excellent protection from scratches. The anti-glare layer reduces unwanted reflections, increasing contrast, clarity, and viewing comfort even with the use of polarized lenses. This film is thick enough to protect the screen, yet thin enough to have no effect on touch screen sensitivity. Light tack adhesion provides for residue-free removal.

These EZCLEAR products meet Garmin G1000 Pilot Guide specs for cleaning and is safe to use on glass panels. EZCLEAR Instrument Cleaning provides a safe, effective way to remove fingerprints and dust from glass panels, instruments and more. Click here to see EZCLEAR featured in the February 2011 edition of AOPA Pilot. The kit contains three EZCLEAR Cleaning Packs and one Polishing Cloth.

Description	Part No.	Price
GPS Protection Kit for Garmin aeras	11-09429	**$26.45**
GPS Protection Kit for AV8OR	11-09431	**$26.45**

EZCLEAR INSTRUMENT CLEANING KIT

This product meets Garmin G1000 Pilot Guide specs for cleaning and is safe to use on glass panels. EZCLEAR Instrument Cleaning provides a safe, effective way to remove fingerprints and dust from glass panels, instruments and more. The kit contains three EZCLEAR Cleaning Packs and one Polishing Cloth; these items have been specifically paired together to ensure safe and effective screen cleaning. Per the instructions, the user wipes the surface with the Cleaning Pack and then dries the area with the Polishing Cloth. The Cleaning Packs are ammonia free, aviation-grade and will not remove or damage any anti-reflective coating. The Polishing Cloth is washable. This kit will last between 3-4 months depending upon frequency of use. P/N 09-02394..... **$14.85**

AV

GARMIN PANEL PACKAGES

GARMIN AIRCRAFT PANEL PACKAGES

Add a PS Engineering PM 1000II with a 2 or 4 place harness.
PMA 1000II with 2 place harness ..... P/N 11-09448 ..... **$440.95**
Add a PS Engineering PM 1200 intercom for..... P/N 11-07969 ..... $625.00

*Package E, H and K cannot be sold over the counter for certified aircraft installation as the GTX 330 transponder must be installed by a Garmin dealer.

Package	Part No.	Price
GARMIN PACKAGE A		
• Garmin aera 500 Americas • Garmin Power Data Cable • AirGizmo Panel Dock • Garmin SL 40 COM with harness • Garmin GTX 320A Transponder w/ Harness • Ameri-King AK-350 Ecoder	11-05044	**$4,496.00**
GARMIN PACKAGE B		
• Garmin aera 500 Americas • Garmin Power Data Cable • AirGizmo Panel Dock • Garmin SL 40 COM with harness • Garmin GTX 327 Transponder w/ Harness • Ameri-King AK-350 Encoder	11-05045	**$4,518.00**
GARMIN PACKAGE C		
• Garmin aera 510 Americas • Garmin Power Data Cable • AirGizmo Panel Dock • Garmin SL 40 COM with harness • Garmin GTX 320A Transponder w/ Harness • Ameri-King AK-350 Encoder	11-05046	**$4,894.00**
GARMIN PACKAGE D		
• Garmin aera 510 Americas • Garmin Power Data Cable • AirGizmo Panel Dock • Garmin SL 40 COM with harness • Garmin GTX 327 Transponder w/ Harness • Ameri-King AK-350 Encoder	11-05047	**$4,975.00**
GARMIN PACKAGE E		
• Garmin aera 510 Americas • Garmin Power Data Cable • AirGizmo Panel Dock • Garmin SL 40 COM with harness • Garmin GTX 330 Mode S Transponder w/ Harness • Ameri-King AK-350 Encoder	11-05048	**$6,683.00**

Package	Part No.	Price
GARMIN PACKAGE F*		
• Garmin aera 560 Americas • Garmin Power Data Cable • AirGizmo Panel Dock • Garmin SL 40 COM with harness • Garmin GTX • 320A Transponder w/ Harness • Ameri-King AK-350 Encoder	11-05049	**$5,386.00**
GARMIN PACKAGE G*		
• Garmin aera 560 Americas • Garmin Power Data Cable • AirGizmo Panel Dock • Garmin SL 40 COM with harness • Garmin GTX 327 Transponder w/ Harness • Ameri-King AK-350 Encoder	11-05050	**$5,326.00**
GARMIN PACKAGE H*		
• Garmin aera 560 Americas • Garmin Power Data Cable • AirGizmo Panel Dock • Garmin SL 40 COM with harness • Garmin GTX 330 Mode S Transponder w/ Harness • AK-350 Encoder	11-05051	**$7,116.00**
GARMIN PACKAGE I		
• Garmin GPSMAP 696 Americas • Garmin Power Data Cable • AirGizmo Panel Dock • Garmin SL 40 COM with harness • Garmin GTX 320A Transponder w/ Harness • Ameri-King AK-350 Encoder	11-07124	**$5,881.00**
GARMIN PACKAGE J		
• Garmin GPSMAP 696 Americas • Garmin Power Data Cable • AirGizmo Panel Dock • Garmin SL 40 COM with harness • Garmin GTX 327 Transponder w/ Harness • Ameri-King AK-350 Encoder	11-07125	**$5,984.00**

Package	Part No.	Price
GARMIN PACKAGE K		
• Garmin GPSMAP 696 Americas • Garmin Power Data Cable • AirGizmo Panel Dock • Garmin SL 40 COM with harness • Garmin GTX 330 Mode S Transponder w/ Harness • Ameri-King AK-350 Encoder	11-07126	**$7,601.00**
GARMIN PACKAGE L		
• Garmin GMA 240 Audio Panel with basic harness • Garmin aera 500 Americas • Garmin Power Data Cable • AirGizmo Panel Dock • Garmin SL 40 COM with harness • Garmin GTX 327 Transponder w/ Harness • Ameri-King AK 350 Encoder	11-07127	**$5,429.00**
GARMIN PACKAGE M		
• Garmin GMA 240 Audio Panel with basic harness • Garmin aera 510 Americas • Garmin Power Data Cable • AirGizmo Panel Dock • Garmin SL 40 COM with harness • Garmin GTX 327 Transponder w/ Harness • Ameri-King AK 350 Encoder	11-07128	**$5,826.00**
GARMIN PACKAGE N*		
• Garmin GMA 240 Audio Panel with basic harness • Garmin aera 560 Americas • Garmin Power Data Cable • AirGizmo Panel Dock • Garmin SL 40 COM with harness • Garmin GTX 327 Transponder w/ Harness • Ameri-King AK 350 Encoder	11-07129	**$6,385.00**
GARMIN PACKAGE O		
• Garmin GMA 240 Audio Panel with basic harness • Garmin GPSMAP 696 Americas • Garmin Power Data Cable • AirGizmo Panel Dock • Garmin SL 40 COM with harness • Garmin GTX 327 Transponder w/ Harness • Ameri-King AK 350 Encoder	11-07130	**$6,624.00**

**** CAN SUBSTITUTE A GPSMAP 496 FOR A AERA 560 FOR THE SAME PRICE. MUST SPECIFY AT TIME OF ORDER.***

AIRGIZMOS PANEL DOCKS

AIRGIZMOS PANEL DOCK FOR THE GARMIN AERA SERIES

Fits the aera 500 GPS like a glove. Replaces the 496 Panel Dock without modifying the panel. Installs easily in a standard 6.25" opening. Allows quick and easy removal of your portable GPS. Includes an integrated actuator for the power button. Gives your instrument panel a professional, finished look. P/N 11-08321.....**$109.95**

AIRGIZMOS PANEL DOCK FOR GARMIN 695/696

Securely mounts the Garmin GPSMap 695/696. Designed to allow quick and easy removal of your portable GPS. Made from durable, high quality plastic similar in appearance to the GPS itself. Gives your instrument panel a professional, finished look.

Garmin 695/696 Panel Dock .....P/N 11-09439 ...**$168.95**
Horizontal Tilt.....P/N 11-07310 .....**$46.85**

AIRGIZMOS PANEL DOCK FOR GARMIN 196/296/396/495/496

Designed to securely hold your Garmin 196, 296, 396, or 496 portable GPS. It fits nicely in a standard 6.25" avionics stack. Allows you to quickly remove your portable GPS from your plane for upgrades, flight planning, or for use in your car or boat. The Panel Dock is shipped with a set of mounting hardware necessary for attaching it to an avionics stack. P/N 11-03509 ..... **$88.50**

AIRGIZMOS PANEL DOCK FOR GARMIN 295

The Garmin 295 is held safely and securely, but can be easily removed in a matter of seconds. The external power and antenna connections are made at the back of the unit, and the cables are secured from falling into the panel with special keyholes machined into the dock.....P/N 11-04315..... **$89.95**

AIRGIZMOS VERTICAL TILT ADAPTOR FOR GARMIN UNITS

The Vertical Tilt Adapter angles the viewing angle of the GPS so it is more readable when the GPS is mounted at the bottom of a tall instrument panel. This adapter fits the same opening as the Panel Dock itself, so adding the vertical tilt should be very easy for existing installations. ***REQUIRES P/N 11-03509.***

P/N 11-05029..... **$24.95**

AIRGIZMOS HORIZONTAL TILT ADAPTOR FOR GARMIN UNITS

AirGizmos Horizontal Tilt Bracket angles the GPS at a fixed angle of 15 degrees, providing a much more convenient viewing angle. This adapter fits in the same panel cutout as the Panel Dock, so if you already have a Panel Dock you can attach this adapter without having to modify your installation. ***REQUIRES P/N 11-03509.*** P/N 11-04671 ..... **$21.95**

AIRGIZMOS 396 XM ANTENNA DOCK

Now you can move the XM antenna from plane to plane, or from vehicle to vehicle. It is designed to mobilize your costly 496 XM antenna. It helps to maintain the clean look of a permanenet installation by organizing the antenna cable. Using a simple twist & lock mechanism (no tools required) the base will lock your antenna into the preinstalled cradle, and your 396 XM antenna is ready to go!P/N 11-04694..... **$74.95**

AIRGIZMOS PREMIUM BEANBAG XM 396 & 496 ANTENNA MOUNT

The AirGizmos Antenna Dock is designed to mobilize your costly 496 XM antenna. It helps to maintain the clean look of a permanenet installation by organizing the antenna cable. Package includes: base, cradle, beenbag assembly, and two cables.

P/N 11-07007.....**$117.50**

AIRGIZMOS 396 & 496 XM CRADLE & CABLE

This product wil allow you to use the AirGizmos XM Antenna Dock in a second vehicle or aircraft. Use of this product requires that you first purchase the AirGizmos XM Antenna Dock. P/N 11-04781 ..... **$38.95**

AIRGIZMOS PANEL DOCK COVER

FOR GARMIN 196/296/396/496

This panel is for Garmin panel dock for models 196/296/396/496. Protects unit from UV rays and hides unit in the aircraft so that theft is less likely to happen. Can be used even if Garmin unit has not been installed yet.

P/N 11-04775 ..... **$17.75**

AIRGIZMOS AV8OR PANEL DOCK

Securely mounts Bendix/King AV8OR GPS. Installs easily in a standard 6.25" opening. Designed to allow quick and easy removal of your portable GPS. Includes right angle extension cable for weather antenna. Gives your instrument panel a professional, finished look.

Width: 6.25" Height: 4.00" P/N 11-07782.....**$109.95**

AIRGIZMO AV8OR ACE PANEL DOCK

Designed to securely mount your AV8OR ACE in the panel, the AV8OR ACE Panel Dock is the perfect companion to this GPS from Bendix/King. Designed to match the styling of the rest of the avionics in your panel. It fits a standard 6.25" radio stack. The AV8OR ACE can be snapped into the Panel Dock with either the standard battery or the extended battery attached to the GPS.

P/N 11-08589.....**$139.95**

AIRGIZMOS PANEL DOCK FOR AVMAP EKP-IV

Now you can mount the beautiful, detailed display of the AvMap EKP-IV directly in your instrument panel using the AirGizmos EKP-IV Panel Dock. The AirGizmos EKP-IV Panel Dock is designed to hold the AvMap securely yet it allows you to easily remove your portable from your plane whenever the need arises. The AirGizmos EKP-IV Panel Dock offers easy installation, quick release, hassle-free management of cables, and elegance of design..... P/N 11-04371..... **$109.95**

AIRGIZMO GEOPILOT PANEL DOCK

This GPS has a nice large screen to go with it's small size. Our Panel Dock is designed to hold the GeoPilot securely in your panel while allowing it to be easily removed for portable use. Made from durable, high quality plastic similar in appearance to the GPS itself. Gives your instrument panel a professional, finished look.....P/N 11-05615 ..... **$96.95**

AIRGIZMO GEOPILOT II PLUS PANEL DOCK

Fits in a standard 6.25" radio stack. Power and antenna cables are organized and managed. The included WxWorx weather receiver bracket provides additional organization in the cockpit by providing a secure mount for the WxWorx receiver box.P/N 11-06855 ..... **$109.95**

AIRGIZMOS PANEL DOCK FOR AIRMAP 1000/2000C

The cables supplied by Lowrance fit through keyhole slots on the back of the unit. The release latch at the top of the Panel Dock permits quick removal of the device for use in another vehicle or simply for security purposes..... P/N 11-04372.....**$109.95**

AIRGIZMO LOWRANCE 600 PANEL DOCK

Lowrance makes a low cost handheld GPS that is just the perfect size for many panels. Our Panel Dock will allow the AirMap 600c to be nicely mounted in your panel while still allowing it to be easily removed and used as a handheld. Made from durable, high quality plastic similar in appearance to the GPS itself. Gives your instrument panel a professional, finished look. P/N 11-05616.....**$62.95**

AIRGIZMOS AERO COVER

Would you like to be able to permanently mount the GPS or XM Weather antenna from your favourite GPS? If so, the Aero Cover is for you. It fits all of the major brands of GPS and XM weather antennas. It will protect your antenna from the elements. It is streamlined and attractive. Best of all, it gets your antenna out of your way. P/N 11-04777.....**$64.95**

AIRGIZMOS XM ANTENNA CABLE

XM Antenna Cable
Straight, 2 meter extension for Garmin XM Weather Antenna P/N 11-04780..... **$13.95**

AIRGIZMOS AERO DOCK

Don't have room to install the Garmin XM Antenna inside your plane?
The Aero Dock gives you the option of mounting it on the outside.
The AirGizmos Antenna Dock is designed to mobilize your costly 396 XM antenna. It helps to maintain the clean look of a permanent installation by organizing the antenna cable. Using the AirGizmos Aero Dock you can freely move ONE XM antenna from location to location, avoiding high costs of additional equipment and service subscription.
Kit includes: 1 cradle, 1 base, 1 cable, mounting hardware.

P/N 11-04778..... **$74.75**

AV

BENDIX KING AV8OR™ GPS - WXWEATHER

BENDIX KING AV8OR™

In the Air - Large 4.3 inch diagonal, high brightness touch screen sets a new standard for portable systems. AV8OR's touch and see feature lets you identify and get critical information for objects on the map with a simple tap on the screen. Obstacle heights, airspace limitations, VOR frequencies - they're just a touch away. Interface - AV8OR's simple connection to WxWorxs™ XM satellite. A full range of wether products can be displayed, including: NEXRAD Composite Reflectivity, Lightning, METARs, AIRMETs, SIGMETs, Convective - SIGMETs, PIREPs, TFRs and more. AV8OR's simple hook-up to your Zaon Portable Collision Avoidance System (PCAS™) XRX™ provides a variety of traffic advisory options. Traffic can be shown as an overlay on the moving map, or displayed on the dedicated traffic page. On the Ground - AV8OR's built-in automotive navigation systems provides both 2Dand 3D navigation views to get you where you need to go in the most efficient was possible. All of the necessary mounting hardware for both you car and aircraft is included.

Description	Part No.	Price
AV80R GPS - North / South America	11-06623	$599.00
AV8OR GPS - With WX Weather	11-08465	$1,148.00
AV8OR GPS - Atlantic	11-06624	$625.00
AV8OR GPS - Pacific	11-07408	$725.00
AV8OR GPS - Mexico/Brazil	11-07929	$725.00
AV8OR GPS - South Africa	11-07931	$725.00
Accessories	**Part No.**	**Price**
Hard Copy Manual	11-07815	$36.50
Battery 800MAH without bracket	11-06936	$34.50
120/220V AC Adapter	11-06938	$47.25
AV8OR Cigarette DC Plug 12/24V	11-06937	$34.75
Remote GPS Antenna	11-06939	$73.00
Airgizmos Panel Dock for the AV8OR	11-07782	$109.95
Aviation Yoke Mount	11-06940	$65.00
Auto Mount - Dashboard	11-06941	$37.50
Auto Mount - Dashboard, Bean Bag	11-08109	$50.75
Auto Mount - Windshield	11-06942	$35.00
Brackett Mount will fit the 1600 MAH Battery	11-07016	$6.95
Battery 1600MAH	11-06943	$57.75
AV8OR to Zaon XRX Traffic Cable	11-06944	$41.25
4GB SD Card Americas Database	11-06962	$169.95
4GB SD Card International Database	11-06961	$185.95
4GB SD Card South Africa	11-07510	$189.95
4GB SD Card Brazil, Mexico	11-07511	$189.95
4GB SD Card Australia	11-07509	$189.95
AV8OR SD Card Europe	11-06961	$185.95
Make-it Glare Wizard for AV8OR	11-09318	$34.95

ADVENTURE PILOT IFLY 700 GPS

Large 7" Touch Screen GPS offers unprecedented spacial awareness and a simple to use intuitive interface. A sleek buttonless design. Please note that this unit only offers USA chart information at this time. Includes: iFly 700 GPS, Suction Mount, AC Power Adapter, 12-28V DC (Cigarette Lighter) Power Adapter, 4 GB SDHC Card, Remote Carrying Case 2 months Enhanced (IFR) Subscription. Features: 7" Color Samsung Touch Screen with 800 x 480 resolution. 20-Channel SiRF III GPS Receiver. FAA Sectionals, Terminal Area Charts, IFR Low Enroutes, App/Dep Plates and more; please note that this unit only offers USA chart information at this time. Public and Private Airport Database. Multiple Display Modes: Sectional, Night, Track-Up and more. Touch and Drag panning and scrolling. Customizable Instrument overlays. Airport Taxi Diagrams. Simple Update process using a USB flash drive. MP3 Player, Movie Player, Photo Viewer and more. Optional External Antenna. Optional Power Supply. (Provides 4+ hours at full brightness)

Description	Part No.	Price
Adventure Pilot iFly 700	11-09329	$549.00
Adventure Pilot iFly Antenna	11-09495	$23.75
Adventure Pilot iFly 700 External Battery	11-09494	$86.75

ADVENTURE PILOT IFLY 720 GPS

Sunny days are no issue with the iFly 720. Perfect for those bright open cockpits. Automatic Wi-Fi Updating. Connect to a Wi-Fi hotspot to enjoy fast and easy automatic data updates. iFly Streets™ is Included. Now you can go straight from the runway to the highway with iFly Streets™. The iFly 720 outperforms the competition with a faster dual-core processor and memory. An advanced power circuitry ensures clean power for the ultimate safety and stability. What's in the Box: iFly 720 Sunlight Readable Moving Map GPS, 12V-28V DC Adapter, 110V AC Power Adapter, Multi-point articulating suction mount, Remote control, Soft Case, and 2 months of VFR/IFR Updates. Note: When data on your iFly expires, you will use a Wi-Fi Internet connection or a USB Flash Drive to perform an update. Dimensions: 7.25" x 4.5" x 0.75". Screen Resolution: 800 x 480. Weight: 12 ounces. LCD Size: 7.0 inch. Power Requirement: DC 12V~28V. GPS Type: SiRF Star – III. Operating Temperature: 14°F to 140°F. Storage Temperature: -4°F to 176°F. P/N 11-10480 .....**$724.00**

BENDIX KING AV8OR™ ACE

The AV8OR ACE offers all the features of the smaller AV8OR, plus displays all FAA IFR charts (subscription required), including own ship position on Hi/Lo enroute charts, approach plates, and airport diagrams. Other features include: compact size - fits on most aircraft yokes placing a big screen right in front of the pilot, simplified airway navigation - being a dedicated GPS portable with IFR airway navigation and smart airway automatic routing, 7 inch diagonal touch screen interface simplifies planning, selecting waypoints and entering identifiers, portable glass panel which provides modern GPS-derived altitude information with HSI and course-lines on the top half of the screen, XM weather, XM Radio and traffic capability, flight guide, fuel pricing and local services directory, graphical weight and balance for fueling and loading, GoDrive car navigation gets you to your final destination and includes over 2 million points of interest in the U.S. and Canada, and lastly it plays music, movies, photos, and even serves as a speakerphone for any Bluetooth™ enabled cell phone.

Description	Part No.	Price
AV8OR Ace Go Fly - Americas	11-07925	$1,035.00
AV8OR Ace Go Fly - Americas with WX Weather	11-08466	$1,608.00
AV8OR Ace Go Fly Atlantic	11-07928	$999.00
Go Fly/Go Drive –Aviation & Car Database		
Description	**Part No.**	**Price**
AV8OR Ace Go Fly/Go Drive - Americas	11-07923	$1,199.00
AV8OR Ace Go Fly/Go Drive - Atlantic	11-07926	$1,199.00

• 11-07923 cover North/South America for aviation database and USA/Canada for road maps.
• 11-07926 covers Europe/Africa/Middle East for aviation database and Europe for road maps (does not include Russia).

Accessories	Part No.	Price
Carring Bag	11-08105	$26.75
Display Mounting Bracket	11-08106	$14.75
Windshield/Yoke Mount	11-08107	$59.65
Auto Dashboard Mount	11-08109	$50.75
Single RS 232 SRL Cable	11-08110	$13.50
7.4 WHR Battery	11-08113	$42.75
12-28V adapter 90°	11-08114	$34.75
14.8 WHR Battery	11-08115	$82.75
120/220V Adapter 90	11-08116	$42.75
PC to USB. Cable	11-08117	$11.95
Replacement Stylus	11-08108	$7.25

WXWEATHER FOR THE AV8OR AND AV8OR ACE

WX WEATHER BLUE TOOTH KIT - This is the weather kit for the Honeywell AV8OR & AV8OR Ace. The connection for this is a bluetooth receiver (no cable required to interface the two units). Includes: Basic Receiver, Bluetooth Interface Module, Portable Antenna, AC & DC Adapter, Mounting Hardware

P/N 11-06712 .....**$573.00**

WX WEATHER RS 232 KIT - This is the weather kit for the Honeywell AV8OR and AV8OR Ace. The connection for this is a USB cable (Cable required to interface the two units). Includes: Basic receiver, RS232 Interface Module Specific to the Honeywell AV8OR and AV8OR Ace Handheld, Portable Antenna

P/N 11-06713 .....**$515.95**

ACCESSORIES

WX WEATHER PORTABLE ANTENNA - Small and portable, the XM Radio antenna allows you to receive a satellite signal from XM Radio and XM WX Satellite Weather (subscriptions required). A 23-ft. cable ensures flexible installation to the WxWorx receiver via an SMA connection. The antenna features a magnetic mount that firmly affixes it to metal surfaces, with rubber feet to prevent scratching. NOTE: This antenna is not compatible with the original WxWorx receiver (Model WXP03).

P/N 11-06716 .....**$27.95**

AUDIO CABLE - Code:AUDCAB.....P/N 11-06729 .....**$15.75**

WX WEATHER DC POWER SUPPLY - 50 ft. extension cable for the XM Digital Antenna Code:DCDC2 .....P/N 11-06730 .....**$18.95**

WX WEATHER DC POWER WITH PLUG - Code:DCDCLUGS

P/N 11-06731 .....**$19.50**

WX WEATHER AC POWER SUPPLY - Code:ACDC2

P/N 11-06732 .....**$17.75**

AV

ANYWHERE MAP® – MOUNTS

ANYWHERE MAP QUADRA MAX

Add sectional charts to the Quadra and eliminate the hassle of fumbling, folding, and refolding paper charts in-flight. A simple online process automatically keeps the charts current. Works with your existing Anywhere Map subscription, no additional subscription are required. Please note that this unit only offers USA chart information at this time. Take a look at screen shots of Pocket Plates 3.0 on the Quadra. The Quadra™ is the best handheld GPS system for aviation, and features a 4.3" high-definition display. The HD display on the Quadra shows four times the detail compared to OTHER 4.3" aviation GPS units. Aviation navigation and street mapping are built right in, and features like geo-referenced taxiways, 180 meter terrain, and obstacle awareness are standard features. This easy-to-use system features an all new touch screen based user interface. Innovative safety features like our patented Cones of Safety®, Emergency Mode, Personal Digital Co-Pilot®, and obstacle and terrain warnings are even easier to use than ever. SUA's, TFR's and terminal areas will keep you out of trouble in today's complex airspace. The Nearest Anything™ function shows you everything from nearby airports to AWOS Frequencies, and even the FBO with the cheapest fuel. The virtual ILS, EFIS Arc, HSI and "flight following" features will help you to be a better pilot. The 100LL.com airport directory and fuel price guide and their pioneering Taxi Express Airport taxiway diagrams are also included giving you unmatched situational awareness in the air and on the ground. Once you reach your destination, you can take the compact, self-contained display unit with you and enjoy superb 3D street mapping in your car. The system comes with both a car mount AND a full yoke mount. The Anywhere Map Travel Companion is the best personal navigator available at any price. Includes: • GPS• Yoke Mount Suction Cup Mount• Cigarette Lighter Adapter• AC Adapter• 1GB SD Card P/N 11-08327 ..... **$595.00**

ANYWHERE MAP QUADRA DUO

7" WSVGA display. This 32GB solid state tablet offers excellent sunlight readability with no altitude restrictions. The lower profile of the new Duo is an even better fit on your aircraft yoke and features a built-in WAAS GPS. Comes standard with Anywhere Map® PRO for navigation, Pocket Plates and street navigation software. Fully portable, self-contained aviation GPS. It combines an advanced high-resolution terrain map, detailed aviation data including navaids, airspace, airways, SUAs and TFRs, with advanced flight tools like a VNAV, HSI, flight planning, weight & balance, calculator, and an Airport Guide. Anywhere Map's Personal Digital Co-Pilot® tracks your flight and issues Reminders like Switch Fuel Tanks and Begin Descent along with Obstacle and Terrain Warnings. System Includes: Anywhere SST Duo, PRO Mapping Software, Pocket Plates Software, Street Atlas USA 2010, Smart Card, Smart power adapter, Duo Yoke Mount. Like all handheld systems, Anywhere Map is not tested or approved by the FAA or any governmental agency and should not be used as a primary flight instrument.
Quadra Duo with XM ..... P/N 11-08491 ..... **$2,295.00**

AV

ANYWHERE MAP SEPTA

The SEPTA is a fully functional touch screen GPS with the real estate to show full size approach plates, with the aircraft position clearly shown on the plate. Complete sectional and enroute charts, along with a high resolution terrain elevation database insures that the flight environment is always clearly shown on the brilliant seven-inch, fully sunlight-readable display. The SEPTA is a complete standalone GPS, no programs to install, no operating system to learn, and no waiting for it to boot up. Nothing is brighter than the SEPTA. The display is the brightest in the industry, there isn't a GPS available with a brighter screen. Ordinary Tablet computers are not optimized for use in the bright light of an aircraft cockpit and are typically only a fraction as bright. Other portable GPS units are typically 30 to 50 percent as bright as the SEPTA. The SEPTA is a full featured GPS system, packed with the features that people love about Anywhere Map, like high resolution terrain, Geo-Referenced Charts, Cones of Safety, Emergency landing mode, Extensive VNAV, online updating, rich surface features, 100LL.com fuel prices, approach plates, sectional charts, low/high enroute charts and much more. Like all Anywhere Map products, it includes a suite of virtual instruments that can overlay the map, including an HSI, Turn rate, Rate of Climb, heading and speed, and virtual glideslope. The SEPTA is housed in a rubberized case with convenient grips, an elegant and rugged docking connector and a removable / replaceable battery. Screen brightness is controlled by two pushbuttons, up and down. All other controls are via the big bright and beautiful touch screen. ..... P/N 11-09907 ..... **$1,495.00**

ANYWHERE POCKET PLATES SOFTWARE

Pocket Plates Software with 6 months of Updates. Entire 12,000+ page library of current NACO (FAA) approach procedures for the lower 48 states for display on a Pocket PC (PDA) computer, or Windows® laptop or tablet PC. Included with the plates are all ephemera: performance, Arrivals and Departures. Exact reproductions of current procedures as published by the Charting Office. Updated online by subscription every 28 days. Satisfies requirements for Part 91 usage. ***Real-time GPS Position -*** Pocket Plates contain all underlying fixes, intersections, airports and navaids in map coordinate format. Plates are calibrated, a simple process that takes about ten seconds, consisting of identifying two objects on the plate such as a fix and the airport. ***Product components*** - Consists of a Plate Manager that installs on your laptop or desktop PC, and a Plate Viewer for displaying the procedures on a Pocket PC. The Plate Manager selects which plates you store on your Pocket PC or Tablet; performs automatic Auto-Pilot Updates of the plate library, and prints our hard copies of plates as backup for specific routes. Select approaches either by typing in an airport identifier or by tapping on geographic regions of the country. The procedure is intuitive and very fast and there are no fragile paper plates to remove from a binder. ***Storage Options*** - The entire 12,000-page U.S. plate library and the Plate Manager are stored on a Windows® PC in under 1 Gigabyte of disk space. Plates are stored for viewing on Pocket PC or Raven® computers using a memory card. A 1-gigabyte card will store the entire library with about 200 MB left over. C***ompatibility -*** Pocket Plates is supported for Pocket PCs with ARM processors such as iPAQs and Toshibas, and Windows® 2000/XP computers. It is not currently supported on Casio Pocket PCs. P/N 11-02239... **$214.95**

G-FORCE MOUNTS

The powerful G-Force vacuum base can withstand 23g of shear force, making a sturdy, lasting bond wherever you have a smooth, non-porous surface. That includes glass, plastic, even gelcoat. Creates a stable, reachable platform for your portable GPS that makes programming a breeze Take it from airplane to auto. It even works in the boat. All G-Force Mounts include appropriate mounting hardware and an easy-to-follow User Guide.

Mount for Early Garmins - The G-Force Mount docks directly to the OEM cradle supplied by Garmin International with its GPS/MAP models 195 through 496 and all Lowrance AIRMAP models. Other Garmin models and units from other manufacturers may require an interface cradle at additional cost. Cradles are not included with purchase.
P/N 11-08097 ..... **$42.75**

Mount for Garmin 695/696 - This G-Force GF2 Mount is all you need to turn your portable, large-format GPS into a heads-up display that will confirm your skill to think past the yoke. In the time it takes to unravel your headset, your portable, large-format GPS will look like a fixed addition to your panel instrument array. P/N 11-08099 ..... **$73.25**

GF1.2 Aera Mount - The G-Force GPS Mount Manages your cockpit Resources, Restores your priorities, Returns valuable seconds to your command P/N 11-08773 ..... **$42.75**

GF3 Antenna Farm - Collects Garmin's multiple antennas on the G-Force GF3 Mount, and locates them under the window canopy for superb clear satellite contact. A great way to manage that tangle of antenna wires. P/N 11-08101 ..... **$41.95**

GF7 Camera Mount - Now, High-Speed Photography is a One-handed No-Brainer. Attach your lightweight camera or video to this G-Force GF1 Mount, fitted with an industry standard 1/4-20 camera stud.
P/N 11-08103 ..... **$42.50**

GF27 Camera Mount -Twice the holding power means double security. Dock your heavier camera to the G-Force GF2 Mount, fitted with an industry standard 1/4-20 camera stud. P/N 11-08104 ..... **$79.50**

FAT GECKO CAMERA MOUNTS

Secure cameras to any smooth surface including: motorcycles, cars, airplanes, and more. Fat Gecko's suction cups are so strong they can safely secure hold a camera weighing up to six pounds. Allows for 360° tilt, 360° turn, and 360° rotation for all the best filming angles in any activity The 1/4 x 20 tripod mounting screws means you can use virtually any digital still or video camera on the market. Equipped with a removable extension tube so you can film around tire wells or over windshields.

Description	Part No.	Price
Fat Gecko Camera Mount	11-07877	**$79.99**
Fat Gecko Quick Release GPSMAP 696 - A quick and easy attachment of the Garmin™ 695 & 696 GPS units to be used in conjunction with the Fat Gecko.	11-07918	**$18.95**
Fat Gecko Mini Mount - Single suction cup, with a 3" extension bar. Tested to carry 4 lbs.	11-07917	**$38.95**
Fat Gecko Mini Tree Antenna - Gives users a quick and easy way to mount GPS antennas and others out of the way. To be used in conjunction with the Fat Gecko Mini Mount	11-07919	**$23.95**

AVMAP PORTABLE GPS

GEO PILOT II

GeoPilot II, the new portable navigator developed by AvMap based o the success of the GeoPilot, is high performance and truly affordable. More Hi Quality hardware and Software features have been added: GeoPilot II is faster than ever thanks to the new 300 MHz processor and is more compact and practical with the built-in GPS receiver and richer in information. ***Large display, Safe Navigation -*** AvMap GeoPilot II displays all the information you need on a wide 5" color LCD. The display is sunlight-readable and equipped with a sensor for automatic brightness control. The information is sharp and bright and the map page is fully customizable. The large control buttons and unique toggle cursor control make naviga ting through menus and editing flight plans easy. ***Most Accurate Information -*** The maps preloaded on the SD memory card includes the Jeppesen® navigation database with terrain and vertical obstructions. The Map also includes Victor Airways, marine objects, ULM Aerodromes and private airports. This enhanced database provides more navigation and emergency "nearest" options. ***Enhanced Situational Awareness -*** Situational awareness is greatly improved with TAWS (Terrain Awareness Warning System). With the new Crossed Airspace Predictor function, you can get a preview of the airspaces that you will cross along your flight, while the Crossed Airspace Advisor provides warnings during the flight on airspaces being crossed. ***Multifunctional: Navigate by Sky and Land! -*** AvMap GeoPilot II is engineered for aeronautical as well as terrestrial use as it can fit perfectly in your aircraft and in you car. With the optional 2GB SD Card preloaded with Tele Atlas Maps of all North America or Europe, GeoPilot II converts into an advanced car navigator with turn-by-turn vocal instructions! ***Hardware :*** Dimensions (mm): 140x100x35.4 Weight: 390g Display: LCD TFT 5" (12,7 cm) with audio - video input Display brightness: 400 nits Automatic brightness control: Yes + Night Palette for night flying Display Colors: 64 k Display resolution: 320x240 pixels GPS Receiver: Built-in Sirf Star III 20 channels Processor: Arm9 300Mhz RAM: 32 MB Memory Support: Secure Digital (SD) 256 / 512 MB Battery: Built-in Li-Ion rechargeable battery Power supply: Charger 10/35 V DC Built-in Speakers External GPS antenna serial Port

Operating System: AvMap Software update: Free 2D view: Land Elevation (color coded topographic map showing the altitude of the terrain) Turn-by-turn vocal instructions: With built-in speakers (only for terrestrial navigation). Full flight planning capability: Up to 15 flight plans of up to 100 legs each Editable aircraft checklist, Trip computer, Full nav data Page, Full simulator functions, TAWS - Terrain Awareness and Warning System: Yes + Crossed Airspace Predictor and advisor Integration with other on board navigation systems.

Content of the box :
SD memory card External GPS receiver, Flexible holder with suction cup Quick start guide

Description	Part No.	Price
AvMap GeoPilot II	11-05813	**$395.00**
AvMap GeoPilot II - European Database	11-06249	**$933.00**
Accessories	**Part No.**	**Price**
GeoPilot II European D/C Geopilot II	11-06485	**$437.00**
GeoPilot World Wide Data Card	11-06486	**$699.95**
Airgizmo Panel Dock for Geopilot II	11-05615	**$96.95**

GEOPILOT II PLUS

High Performance at an Affordable Price - The Geopilot II PLUS, the new portable aeronautical navigator developed by AvMap, is highly performing but truly affordable. GeoPilot II PLUS is faster than ever thanks to the new 300 MHz processor, more compact and practical with the built-in battery and GPS receiver, and an extra serial port available for connection with PC and autopilot devices. ***Large Display, Safe Navigation -*** AvMap GeoPilot II PLUS displays all the information you need on a wide 5" color LCD. The display is sunlight-readable and equipped with a sensor for automatic brightness control and an audio video input.The information are clearly visible and the map page is fully customizable. ***Weather Conditions -*** With an optional antenna you can receive constantly updated XM/WX weather conditions: NEXRAD (next generation radar), and Lightning information are displayed on the map. Enhanced Situational Awareness With the TAWS GeoPilot II PLUS displays your position in relation to surrounding terrain. With the new Crossed Airspace Predictor function, you can get a preview of the airspaces that you will cross along your flight, while the Crossed Airspace Advisor provides warnings during the flight on airspaces being crossed. ***Most Accurate Information -*** The cartography preloaded on the SD memory card includes the Jeppesen® navigation database with terrain and vertical obstructions. The Map also includes and Victor Airways, marine objects, ULM Aerodromes and private airports.This enhanced database provides more navigation and emergency "nearest" options. ***Multifunctional: Navigate by Sky and Land! -*** AvMap GeoPilot II PLUS is engineered for aeronautical as well as terrestrial use as it can fit perfectly in your aircraft and in you car. With the 2GB SD Card preloaded with Tele Atlas Maps of Europe or North America GeoPilot II PLUS converts into an advanced car navigator with turn-by-turn vocal instructions! SD included at no extra costs!

Hardware: Dimensions (mm): 140x100x35.4 Weight: 390g Display: LCD TFT 5" (12,7 cm) with audio - video input Display brightness: 400 nits Automatic brightness control: Yes + Night Palette for night flying Display Colors: 64 k Display resolution: 320x240 pixels GPS Receiver: Built-in Sirf Star III 20 channels Processor: Arm9 300Mhz RAM: 32 MB Memory Support: Secure Digital (SD) 256 / 512 MB Battery: Built-in Li-Ion rechargeable battery Power supply: Charger 10/35 V DC Built-in Speaker: Yes External GPS antenna serial Port

Operating System: AvMap Software update: Free 2D view: Land Elevation (color coded topographic map showing the altitude of the terrain) Turn-by-turn vocal instructions: Yes, with built-in speakers (only for terrestrial navigation). Full flight planning capability: Up to 15 flight plans of up to 100 legs each Editable aircraft checklist, Trip computer, Full nav data Page, Full simulator functions, TAWS - Terrain Awareness and Warning System: Yes + Crossed Airspace Predictor and advisor, Integration with other on board navigation systems, Full or split HSI / RMI screen with data fields

Content of the box : SD memory card, Flexible holder with suction cup, Quick start guide P/N 11-05814 .....**$599.00**

ACCESSORIES

AvMap WX/XM Package .....P/N 11-07066 .....**$599.00**
Airgizmos Panel Dock for Geopilot II+.....P/N 11-06855 .....**$109.95**

AV

AVMAP EKP V HANDHELD GPS

AvMap presents EKP V the next step in the evolution of aeronautical GPS, redefining the role of the GPS inside the cockpit.

Fully Portable
A brilliant 7" display, with built-in battery and GPS, only 0.8" thick. EKP V is slim and light, yet very powerful: with built in u-blox 5 GPS receiver, built-in battery and speakers.

Offering full Connectivity
Thanks to the special Docking Station, you can connect EKP V to several on-board devices at the same time (autopilot, XM WX, CAS, EIS, EFIS etc.) so that the large 7" LCD becomes multifunctional and capable to display different flight info.

Fully Customizable
Easily change the layout choosing what to see and where to display it: maps, taws, weather, vertical profile on map, nav data, HSI, EFIS. Set different PROFILES for different aircrafts with different settings for taws, selective display and even different hard keys configurations.

User Friendly
The new practical keyboard includes a configurable key, a progressive jostick and a smart wheel selector. Ease of use is ensured by the new graphic interface and the full qwerty virtual keyboard.

The cartography for AvMap aeronautical products includes information from several sources: Background and land elevation, Terrestrial data, Marine objects, Jeppesen data, Low Airways (Victor Airways), Private airports, Vertical obstructions, VFR reporting points, And more!
P/N 11-09748.....**$1,999.00**

HELM X650 GPS SYSTEM

The Helm X650 is the first open GPS system designed for aircraft use. Running Windows Xp allows the user to install and run the software of their choice in a panel mount, or yoke mount configuration. The X650 was designed, from the ground up, to be used in aircraft. It fits neatly in the avionics stack utilizing a snap in mount that maintains the units portable status. This allows the owner to install the X650 in the avionics stack of a certified aircraft. Remove that old Loran and ADF and install a state of the art gps. A log book entry by an A&P is all that is required. The X650 is also set up to use the RAM mount system of mounts. This allows the unit to be yoke mounted. It's perfect size means that it fits nicely between the rams horn yokes of any Cessna. The X650 is the perfect solution for any aircraft, and it never gets old. simply install the latest software, and it is like a new GPS all over again. Note: Software is sold separately.
Features: 6.5" Touch Screen, 1000 Nits Brightness, VGA Resolution, 640 x 480, Solid State Storage, Built-in Two Axis Gyro, Built-in GPS.

Description	Part No.	Price
Helm GPS System X650	11-09395	**$2,200.00**
Helm Software X650 Voyager	11-09396	**$59.95**
Helm X650 Software Anywhere Map	11-09397	**$259.95**
Helm X650 Software Flight Prep Chart	11-09398	**$259.95**

LOWRANCE ENDURA™ SIERRA

Premium GPS with top-of-the-line mapping, sensor navigation and multimedia capability. Fully loaded with over 3GB of detailed topographic outdoor maps and content in a high performance GPS computer with electronic compass and altimeter. Unparalleled ease-of-use with combination of simplified touch screen interface and "hot key" physical buttons to quickly access all primary features. Unparalleled ease-of-use with combination of simplified touch screen interface and "hot key" physical buttons to quickly access all primary features. Multi-recreational with dedicated outdoor features and a large range of mapping options preloaded on plug and play Micro SD cards or web download.

Description	Part No.	Price
Lowrance Endura™ Sierra	11-09720	**$389.00**
US/CANADA: Road Turn-by-Turn Navigation micro SD. Complete NAVTEQ road detail for USA and Canada.	11-09722	**$87.95**
GREAT LAKES: Advanced Outdoor microSD. 20ft topo contours with advanced hillshade. Covers MI, WI, OH, IN, WV, KY, and IL.	11-09723	**$87.95**
MIDWEST: Advanced Outdoor microSD. 20ft topo contours with hillshade. Covers MN, IA, MO, ND, SD, NE, and KS.	11-09724	**$87.95**
NORTHEAST: Advanced Outdoor microSD. 20ft topo contours with advanced hillshade. Covers ME, NH, MA, RI, CT, NJ, VT, NY, PA, DE, MD, and VA.	11-09725	**$87.95**
ROCKIES: Advanced Outdoor microSD. 20ft topo contours with advanced hillshade. Covers MT, ID, WY, CO, UT, NM, and AZ.	11-09726	**$87.95**
SOUTH: Advanced Outdoor microSD. 20ft topo contours with advanced hillshade. Covers OK, AR, LA, and TX	11-09727	**$87.95**
SOUTHEAST: Advanced Outdoor microSD. 20ft topo contours with advanced hillshade. Covers TN, NC, SC, GA, FL, AL, and MS.	11-09728	**$87.95**
WEST COAST: Advanced Outdoor microSD. 20ft topo contours with advanced hillshade. Covers CA, NV, OR, and WA.	11-09729	**$87.95**
Accessories		
Handheld Accessory: Cradle and Handle Bar Mount, Quickly remove or move between bikes, Power cable can be attached while mounted	11-09731	**$28.95**
Endura GPS Carrying Case: nylon; includes velcro belt strap, caribiner clip, and internal pocket for microSD cards.	11-09732	**$19.50**

BAD ELF GPS FOR IPAD / IPHONE / IPOD

iPhone not included.

Bad Elf provides GPS information to popular aviation apps using a high quality 66 channel WAAS GPS. It works with all iOS devices such as iPad, iPhone and iPod Touch. Bad Elf plugs into the bottom of the iPad or iPhone and includes a USB port which can be used to sync and charge the iPad or iPhone. Furnished with a detachable lanyard. Compatible with iPad 1 and 2, iPhone 3G, 3GS, 4GS, and iPod Touch 1G-4G. Specifications: 66-channel MTK GPS chipset, Fast GPS lock times Up to 10Hz update rate, SBAS/WAAS/EGNOS/MSAS Assisted GPS (when network available), Micro-USB port and 6ft cable provided for charging / syncing during use, App available to update satellite data and firmware, Max altitude: 60K feet, Max speed: 1000 mph..... P/N 13-10273.....**$99.95**

DUAL UNIVERSAL XGPS150 RECEIVER WITH BLUETOOTH

The XGPS150 is very simple to use. There is a quick set up process that includes pairing your device with the Receiver. Once this is done, the Receiver will automatically connect to the device it was last paired with, and you will be able to use it with hundreds of apps that require location information. The XGPS150 also comes with a useful GPS Status Tool App (available free on the iTunes store, not required for the device to work). The App is a simple utility application for use with the XGPS150. It shows detailed information from the XGPS150 including: Your location (or whether the device is still determining where you are) How many satellites the device sees and the signal strength of each satellite. The battery level of the XGPS150, and whether or not it is charging. Confirmation the XGPS150 is successfully connected to your iPad/iPod touch/iPhone P/N 11-09941 .....**$99.99**

IPAD / IPHONE / IPOD GPS WITH BLUETOOTH

This small GPS receiver provides position information to aviation apps such as Wing X and ForeFlight to provide a moving map display on Apple iPad, iPhone, and iPod Touch. It features a simple set up procedure, 32 channel GPS receiver, wireless Bluetooth and a rechargeable battery for over 10 hours of GPS use. This small (3.1" x 1.25" x 1/2") receiver uses Bluetooth to wirelessly connect GPS to your Apple device. Compatible with iPad 1 and 2, iPhone 3G, 3Gs, 4GS and iPod Touch 2G and 3G.
Features: STT SmartTouchTechnologie - to turn on or turn off, High-sensitive 32-channel GPS chip, NMEA und iPhone protocol, iPhone/iPod operating system from OS 3.0.1, iPad operating system, Over 10 hours of operation, Only 11,3 mm thin and 47 g in weight. **Compatibility**: iPod touch 4G, 3G, 2G, iPhone 4, 3GS, 3G, iPad 2, iPad. **In The Box:** GNS 5870 MFI Receiver, Charger cable, Cigarette-lighter socket adapter, Manual..... P/N 13-10270.....**$99.95**

FC-1 FLIGHT COMPANION

Multi functional electronic instrument that incorporates a sophisticated audio interface system with a high level input to accept external MP3, GPS and Cell phone products, a highly accurate digital Altitude Alert System, a digital Tank Timer for fuel Management, and a power management system designed to get the most out of its on board battery. By plugging the unit directly into the existing headphone jacks (phones and mic) the unit performs a seamless interface connection that allows the pilots headphones to continue to use the ships audio while at the same time provides the Aux I/O to be used with an MP3, Iphone, or Blackberry. Cell Phone audio is of course conditioned and routed through the system providing noise reduction and safety. Has a self contained VOX (Voice Operated Xchange). This feature mutes any audio coming from the Aux input any time there is audio activity on the intercom or radio. Internal Altitude Alert System is built around the highly accurate Bosch Digital I2C Pressure Sensor. The accuracy of this device allows the FC-The Tank Timer System that is supplied with the FC-1 is designed to keep the pilot aware of how much fuel is being burned. The FC-1 system uses a common 9 volt alkaline battery. Estimated life of the battery is approximately 25 active hours under typical operation. This can vary depending on usage. If for some reason the system is not shut down after a flight the unit will automatically go into sleep mode 2 minutes after either the left or right tank alarm is activated.

Description	Part No.	Price
Matchbox Flight Companion FC-1	11-09630	**$259.00**
Matchbox Altitude Alert AA-1	11-09634	**$126.95**
Matchbox Tank Timer TT-1	11-09633	**$67.95**
Matchbox Audio Interface AI-1	11-09631	**$139.95**
DVM-828 Voltage Monitor	11-09998	**$39.75**

AV

GARMIN PANEL MOUNT

GARMIN GTN 650 GPS/NAV/COMM SYSTEM

Garmin is changing the course of aviation yet again! Introducing the GTN 650 "next generation" touchscreen avionics. This panel-mount unit is certified and approved for installation in hundreds of makes and models of general aviation aircraft. The GTN 650 has GPS/NAV/COM capabilities and new features like intuitive touchscreen operation, graphical flight planning, victor airway and high-altitude jet route navigation, remote transponder, SafeTaxi® and more.
Thanks to built-in terrain, mapping and obstacle databases, the GTN provides a greatly enhanced, high resolution presentation of the surrounding area. A built-in terrain elevation database shows color-coded alerts when potential terrain conflicts are ahead. Full Class B TAWS alerting is also available as an option. The SBAS/WAAS equipped GTN 650 series lets pilots fly GPS-guided LPV glidepath approaches down to ILS-comparable minimums. In addition, precise course deviation and roll steering outputs can be coupled to select autopilots so that IFR flight procedures may be flown automatically. This includes all ARINC 424 leg types, excluding RF legs (for example, when coupled with a G500/G600 Flight Display, the aircraft can fly fully coupled missed approaches, including heading legs).
Included:
Garmin GTN 650 System (Black)
Garmin GTN Americas Database or Garmin International Database
Garmin GA 35 WAAS Antenna
Garmin GTN Harness
For certified aircraft please see our partner USA avionics shops.
Pricing below is for an experimental aircraft only with harness.

Garmin GTN 650 Americas w/ harness.....P/N 11-09702 .**$10,222.00**
Garmin GTN 650 International w/ harness.....P/N 11-09706 .**$10,694.00**

GARMIN GTN 625

Introducing the next generation of aircraft navigation. The GTN 625 is a 2.64-in.-tall standalone GPS navigator that puts a wealth of features – like high-resolution terrain mapping, graphical flight planning, traffic display and more – right at your fingertips. With the GTN 625's revolutionary new touchscreen interface, you're rarely more than two taps away from all of the system's primary functions. Traditional concentric knobs are also available for those who are used to that style of data input. The GTN family makes it easier than ever to get where you're going. Graphical flight planning capabilities allow you to edit your entire route using the map screen and easily enter new waypoints or modify existing ones. The system's robust 15-channel GPS receiver generates five position updates per second. Packed full of multifunction display capabilities, the GTN 625 brings enhanced situational awareness to your cockpit. With high-resolution terrain mapping – including topography features, cities, airports, terminal areas, SUAs and more – and optional Class B TAWS alerting, you'll find your way around the airspace safely and with ease. The system even allows you to load and follow Victor and jet airways. On the ground, built-in Garmin SafeTaxi® U.S. airport diagrams give you geo-referenced runways, taxiways, FBOs and hangars. Couple the system with a GDL™ 69 series datalink receiver and XM® subscriptions, you can overlay NEXRAD radar right onto your moving map display and receive satellite music. Or add a Garmin traffic system and pinpoint other aircraft in your vicinity. The GTN 625 can control the GTX™ 32/33 remote transponder, which could also save you valuable panel space. The GTN 625 features a front-loading SD™ card reader, so you can easily update your databases.
In The Box: GTN 625, Cleaning cloth, SD card with databases, Installation kit, Simulation software DVD, Familiarization video DVD, Pilot's guide, Cockpit reference guide, Complimentary database update certificate.....P/N 11-09973 ...**$7,923.00**

GARMIN GTN 750 GPS/NAV/COM SYSTEM

Note: Per Garmin, Aircraft Spruce can only offer this product to experimental aircraft with harness*
Packed full of powerful avionics, the GTN 750 is a fully integrated GPS/NAV/COMM solution. The 6-in.-tall system's intuitive touchscreen controls and large display give you unprecedented access to high-resolution terrain mapping, graphical flight planning, geo-referenced charting, traffic display, satellite weather and much more. Touch and Go - With the GTN 750's revolutionary new touchscreen interface, you're rarely more than two taps away from all of the system's primary functions. Navigate with Ease - The GTN family makes it easier than ever to get where you're going. Graphical flight planning capabilities allow you to preview your entire route on the map screen and easily enter new waypoints or modify existing ones. The system even lets you load Victor and jet airways. In IFR conditions, you now have more landing options, as well. The SBAS/WAAS-certified, 15-channel GPS receiver generates five position updates per second, enabling you to fly GPS-guided LPV glidepath instrument approaches down to as low as 200 ft. The system also includes a complete package of VHF navigation capabilities, with a 200-channel VOR/ILS with localizer and glidescope. Make Communication a Breeze
A fully certified, 2,280-channel VHF communications transceiver provides a standard 10 W (or optional 16 W) of power output. See More than Ever Before - With a wealth of multifunction display capabilities, the GTN 750 brings enhanced situational awareness to your cockpit. Couple the system with a GDL™ 69 series datalink receiver and XM® subscriptions, you can overlay NEXRAD radar right onto your moving map display and receive satellite music. Or add a Garmin traffic system and pinpoint other aircraft in your vicinity. The GTN 750 can even control the GMA 35 remote audio panel with clearance recorder, advanced auto squelch and more. Use the GMA 35 and a GTX™ 32/33 remote transponder to save up to 3 in. of panel space versus a typical GNS 430/530 install. The GTN 750 features a front-loading SD™ card reader, so you can easily update your databases. PilotPak™ database bundles are now available on a single aircraft basis, saving you money and simplifying the update process -- visit flyGarmin.com to learn more.
Garmin GTN 750 Americas w/ harness..... P/N 11-09703....**$14,976.00**
Garmin GTN 750 International w/ harness.. P/N 11-09704....**$15,449.00**

GARMIN GTN 725

Note: Per Garmin, Aircraft Spruce can only offer this product to experimental aircraft with harness
With its 6.9-in. (diagonal) display, intuitive touchscreen interface and wide range of multifunction display capabilities, the GTN 725 is so much more than just a GPS navigator. The 6-in.-tall system puts high-resolution terrain mapping, graphical flight planning, charting, traffic display, satellite weather and much more right at your fingertips. With the GTN 725's revolutionary new touchscreen interface, you're rarely more than two taps away from all of the system's primary functions. Traditional concentric knobs are also available for those who are used to that style of data input. The GTN family makes it easier than ever to get where you're going. The system even lets you load Victor and jet airways. The GTN 725 also allows you to enter your most recently visited or nearest airports as waypoints or "Direct-To" destinations. Built-in Garmin U.S. FliteCharts™ or optional Jeppesen®-style geo-referenced ChartView™, provides you with approach plates and procedures, while Garmin SafeTaxi® lets you see geo-referenced runways, taxiways, FBOs and hangars. The GTN 725's robust 15-channel GPS receiver generates five position updates per second. Packed full of multifunction display capabilities, the GTN 725 brings enhanced situational awareness to your cockpit. With high-resolution terrain mapping – including topography features, cities, airports, terminal areas, SUAs and more – and optional Class B TAWS alerting, you'll find your way around the airspace safely and with ease. Couple the system with a GDL™ 69 series datalink receiver and XM® subscriptions, you can overlay NEXRAD radar right onto your moving map display and receive satellite music. Or add a Garmin traffic system and pinpoint other aircraft in your vicinity. The GTN 725 can even control the GMA 35 remote audio panel with clearance recorder, advanced auto squelch and more. Use the GMA 35 and a GTX™ 32/33 remote transponder to save up to 3 in. of panel space versus a typical GNS 430/530 install. The GTN 725 features a front-loading SD™ card reader, so you can easily update your databases. Manage your databases directly through the manufacturer's website and purchase affordable updates as soon as they're available.
In the Box: GTN 725, Cleaning cloth, SD card with databases, Installation kit including:, Simulation software DVD, Familiarization video DVD, Pilot's guide, Cockpit reference guide, Complimentary database update certificate .....P/N 11-09972 .**$12,427.00**

AV

GARMIN PANEL MOUNT

GARMIN G3X EFIS/EMS SYSTEM

Now available with complete wiring harness for end user installations!
Designed around the GDU 370/375 series of panel-mount displays, the G3X suite provides an easy-to-install, non-TSO'd option that lets you grow your system as your needs and budget dictate.
Simplicity meets sophistication in the G3X flight deck. Using sophisticated graphics modeling, the integrated SVX™ synthetic vision technology provides a 3-D "virtual reality" perspective of what lies ahead. The system pulls together information from the built-in aviation basemap and terrain elevation database, letting you clearly visualize terrain features, obstacles, waterways and airport locations on the 7-inch high-definition display. By adding a GTX 330 Mode S transponder, your G3X display Traffic Information Service (TIS) alerts to help identify aircraft in your proximity. The system can also be coupled with the TruTrak GX Pilot autopilot system to provide sophisticated flight control modes including altitude preselect and capture, heading hold and GPS as well as ILS navigation. The autopilot can even be used to fly WAAS approaches when used in conjunction with a GNS 400W/500W series unit.
In addition to its detailed terrain map, the G3X system comes preloaded with geo-referenced Garmin FliteCharts®, which displays a graphical representation of your aircraft overlaid directly onto NACO-format IFR approach plates. FliteCharts also allows you to easily find and view all U.S. AeroNav Services, standard terminal arrival routes (STARs) and more. For pilots who prefer Jeppesen charts and diagrams, Garmin also offers ChartView™, which utilizes Jeppesen's extensive library to provide global geo-referenced charting capabilities (unlock card $499 plus subscription is extra). The Garmin SafeTaxi® service is also built-in, providing geo-referenced diagrams for over 900 U.S. airports. Plus, AOPA Airport Directory data puts detailed information on more than 7,400 U.S. Airports right at your fingertips.
The G3X system uses the latest in GPS-aided digital ADAHRS (Air Data and Attitude Heading and Reference Systems). Leveraging solid-state sensors and sophisticated attitude determination and integrity monitoring algorithms used in Garmin's high-end G1000 system, the G3X's ADAHRS provides highly accurate and reliable referencing of your aircraft position, rate, vector and accelera tion data. Better still, the complete sensor package – ADAHRS and EIS engine monitoring, plus magnetometer and temperature probe – takes up just a fraction of the space and weight previously required by conventional gyro-based instrument systems.

Step 1 – Pick your Kit - (Kit includes LRU-Line Replaceable unit, plus screen(s) as mentioned) (International units can be swapped in upon request)

Description	Kit Contents	PN	Price
Garmin G3X with GDU 370 & 375	11-07210 Garmin GDU 375 Americas, 11-07211 Garmin GDU 370 Americas, 11-09491 Garmin G3X Install Kit, 11-09468 Garmin G3X LRU Kit	11-09632	**$8,970.00**
Garmin G3X with Dual GDU 370	2 ea. 11-07211 Garmin GDU 370 Americas 11-09491 Garmin G3X Install Kit 11-09468 Garmin G3X LRU Kit	11-09662	**$8,570.00**
Garmin G3X with single GDU 375	11-07210 Garmin GDU 375 Americas 11-09491 Garmin G3X Install Kit 11-09468 Garmin G3X LRU Kit	11-09663	**$6,395.00**
Garmin G3X with single GDU 370	11-07211 Garmin GDU 370 Americas, 11-09491 Garmin G3X Install Kit, 11-09468 Garmin G3X LRU Kit	11-09664	**$5,995.00**

Step 2 – Select Antenna(s) (required)

Garmin #	Description	PN	Price
010-11373-00	GA 26 XM (remote dash) Antenna	11-09466	**$99.00**
010-10052-04	GA 26C GPS (remote dash) Antenna Kit	11-00051	**$74.50**
010-11370-10	GA 57X GPS/XM (external mount) Antenna	11-09467	**$225.00**

Step 3 – Add an engine probe package and/or additional engine parts.

Garmin #	Description	PN	Price
K00-00512-00	4 Cylinder Lyc/Cont Probe Kit	11-09469	**$999.00**
K00-00513-00	6 Cylinder Lyc/Cont Probe Kit	11-09474	**$1,250.00**
K00-00514-00	Rotax 912 Probe Kit	11-09476	**$299.00**

*Includes: EGT, CHT, oil temp., oil pressure, fuel flow, MAP and ammeter/shunt
**Includes: 2 EGT's, fuel pressure, MAP and ammeter/shunt

Engine Options			
494-30004-02	Fuel Pressure (Injected), 50 PSIG, 1/8-27 NPT	11-09477	**$109.50**
494-30004-03	Fuel Pressure (Carbureted) / Coolant Pressure, 15 PSIG, 1/8-27 NPT	11-09478	**$106.25**
494-10001-00	Fuel Flow, 1/4" Female NPT	11-09479	**$272.50**
494-50005-00	RPM, Hall Effect, Slick magneto	11-09480	**$99.75**
494-50005-01	RPM, Hall Effect, Bendix magneto	11-09481	**$98.08**
909-D0000-00	Ammeter, Shunt, +/-50 mV, 100 amps	11-09482	**$33.65**
494-70002-00	TIT, Type K thermocouple, 7/16-20, bayonet	11-09483	**$85.45**
494-70005-00	Carb Temp, RTD, 1/4-28	11-09484	**$75.00**

Step 4 – Transponder for Remote Mode S for the G3X

Garmin #	Description	PN	Price
GTX 23	TRANSPONDER for Mode S traffic surveillance, for use with the G3X	11-10001	**$2,199.00**

Step 5 – Pick Type of Harness (one harness required for sale of G3X system)

Garmin #	Description	PN	Price
HA-G3X-4-VFR	G3X VFR Hareness EFIS/EMS 4CYL CON/LYC	11-09485	**$995.00**
HA-G3X-4-IFR	G3X IFR Hareness EFIS/EMS 4CYL CON/LYC	11-09486	**$995.00**
HA-G3X-6-VFR	G3X VFR Hareness EFIS/EMS 6CYL CON/LYC	11-09487	**$1,025.00**
HA-G3X-6-IFR	G3X IFR Hareness EFIS/EMS 6CYL CON/LYC	11-09488	**$1,025.00**
HA-G3X-RX-VFR	G3X VFR Hareness EFIS/EMS Rotax	11-09489	**$995.00**
HA-G3X-RX-IFR	G3X IFR Hareness EFIS/EMS Rotax	11-09490	**$995.00**
N/A	G3X Screen Add-On Harness	11-09709	**$110.00**

All harnesses include wiring for dual screen GDU 375 and/or GDU 370, GSU 73, GMU 44 and includes a full harness for engine probes/sensors. IFR harnesses are pre-equipped for the GNS 430W, SL 30, SL 40, GMA 240, GTX 327, GTX 330. VFR Harnesses are pre-equipped for the SL 40, GTX 327, GMA 240.

MID-CONTINENT INSTRUMENTS GPS ANNUNCIATORS

MD41-1510

MD41-1468A

MD41-1408A

Vertical View

TWith fingertip annunciation and flight information in the pilot's primary view, Annunciation Control Units (ACU) offer important features in an efficient design. As an interface with popular NAV and GPS systems, the ACU provides vital safety information including waypoint, approach status and integrity alerting. Approved to strict TSO standards, Mid-Continent ACUs are engineered as a compact, affordable solution to the challenge of installing several switches. Most versions are configured 14V or 28V with vertical or horizontal mounting and feature long-life lamps with automatic photocell dimming.

GARMIN WAAS ACU - GNC 420W, GNS 430W/530W			
Model No.	Configuration	Part No.	Price
MD41-1510	28V Horz. for Garmin GTN650/750	10-04768	**$1,124.00**
MD41-1512	14V Horz. for Garmin GTN650/750	10-04769	**$1,124.00**
MD41-1464A	Horizontal, 14V (head only)	10-02665	**$1,067.00**
MD41-1468A	Horizontal, 28V (head only)	10-02663	**$1,067.00**
MD41-1474A	Vertical, 14V (head only)	10-02666	**$1,067.00**
MD41-1484W	Horizontal, 14V WAAS	10-02657	**$649.00**
MD41-1488W	Horizontal, 28V WAAS	10-02659	**$649.00**
MD41-1494W	Vertical, 14V WAAS	10-02660	**$649.00**
MD41-1498W	Vertical, 28V WAAS	10-02661	**$649.00**

GPS 400/500, GNC 420/520, GNS 430/530			
MD41-1404A	Horizontal, 14V (head only)	10-02669	**$1,062.00**
MD41-1404A	Horizontal, 14V (with remote relay)	10-02670	**$1,828.00**
MD41-1408A	Horizontal, 28V (with remote relay)	10-02667	**$1,828.00**
MD41-1418A	Vertical, 28V (head only)	10-02672	**$1,100.00**
MD41-1418A	Vertical, 28V (with remote relay)	10-02671	**$1,828.00**

AV

AIRCRAFT SPRUCE WEST CORONA, CA • (877) 4-SPRUCE
AIRCRAFT SPRUCE EAST PEACHTREE CITY, GA • (877) 477-7823
Prices Subject to Change Without Notice

GARMIN PANEL MOUNT

GARMIN GNS 430W

All-in-one GPS/Nav/Comm solution. It features a WAAS-certified GPS, 2280-channel capacity comm and 200-channel ILS/VOR with localizer and glideslope. High-speed 5 Hz processing makes navigation calculations and map redraw rates five times faster than earlier GNS series navigators.
Built-in WAAS navigation capabilities. It is approved to fly LPV "glideslope" approaches without reference to ground-based navaids of any kind. Featuring an advanced 15-channel receiver capable of five position updates per second, GNS 430W meets the FAA's stringent TSO C146a standards for WAAS "sole means" navigation — providing vertical and lateral approach guidance into thousands of U.S. airports previously inaccessible in IFR conditions.
4-inch high-contrast display with brilliant colors makes it easy to read and interpret pilot-critical information. Conveniently scan information from wide viewing angles, even in direct sunlight.
Integrates built-in terrain and navigation databases, providing a clear, concise picture of where you are and where you're heading. The 430W's huge Jeppesen® database, updated with front-loading data cards, contains location reference for all airports, VORs, NDBs, Intersections, Flight Service Stations, published approaches, SIDs/STARs, Special Use Airspace and geopolitical boundaries.

GNS 430W with harness (Exper. A/C)....P/N 11-06750.....**$8,522.00**
GNS 430W/530W Wiring Harness.....P/N 11-06749.....**$695.00**
Navishield 430 Screen Protector.....P/N 05-04224.....**$12.95**
Flight Plan Migrator Kit.....P/N 11-07592.....**$418.50**
Flight Plan Data Card.....P/N 11-07593.....**$324.00**

The Garmin GNS 530W/430W can only be sold over the counter to experimental aircraft (must verify) with harness. For certified aircraft, it must be installed by a Garmin Dealer.
Please call 1-800-826-3160 for partner shop location for certified installs.
(price of installation not included)

JEPPESEN INTERACTIVE 530/430 TRAINERS

Computer based training program for the pilot who wants an audio-visual, hands-on way to quickly master the Garmin 530/430 GPS. Windows and Mac compatible.

Jeppesen GNS 530/430 Advanced
P/N 13-05645.....**$109.95**
Jeppesen GNS 530/430 Interactive
P/N 13-05644.....**$159.95**
Jeppesen GNS 530/430 Training
P/N 13-05646.....**$139.95**

GARMIN GI 102A & GI 106A CDI'S

The GI 102A and GI 106A course deviation indicators (CDI) from Garmin feature rectilinear meter movements, resolver output for GPS interface, and internal GPS mode annunciation & VLOC. Works with the Garmin 430W, 530W, & SL 30. The 102A is VOR/LOC CDI and the 106A is VOR/LOC/GS CDI. Size: 3.25"w x 3.25"h x 4.625"d. The GI 102 is designed for VFR use. The GI 106A is designed for IFR installations.

GI 102A CDI P/N 11-18980 .....**$1,938.00**
GI 106A CDI P/N 11-05768 .....**$2,070.00**

GARMIN GTX 330 MODE S TRANSPONDER

A Level 2 Mode-S transponder with exciting datalink traffic capabilities. Sharing the same keypad & digital display with the popular GTX 327, the GTX 330 adds to the features with an outside air temperature display (temp. input required), altitude monitor with voice audio alert, and density altitude computations (temperature input required). But the real excitement lies in the GTX 330's datalink traffic capabilities through the FAA's Traffic Information Services. GTX 330 promises to deliver effective traffic information to the GA cockpit in busy terminal environments at a fraction of the cost of current traffic systems. The TIS system is available through 124 Mode-S Traffic Control radar sites throughout the U.S. Aircraft within a 60nm (expected to increase to 90+nm) radius of a Mode-S radar site will receive traffic advisories and warnings from ATC via Mode-S datalink, and this info will be displayed on Garmin 400/500 series products. This system will display 8 nearest targets within a 7nm radius and ±3,500 feet of the aircraft. Pilots will receive both visual traffic information (via 400/500 series products) and radio alerts of traffic in the area. The GTX 330 meets all requirements of the Mode-S mandate in Europe, which requires Mode-S for IFR traffic by 2003 and all VFR traffic by 2005. GTX 330 will be offered in diversity & non-diversity models to meet the requirements of a variety of aircraft and operations. The GTX 330D (diversity model) is the first panel-mount diversity-model transponder available. 2 year warranty.

The GTX 330 can only be sold over the counter to experimental aircraft owner's with a pre-wired harness.
Please call 1-800-826-3160 for partner shop location for certified installs.
(price of installation not included)

Description	Part No.	Price
GTX-330 Mode S Transponder w/ Harness	11-05893	**$3,485.00**

GARMIN GTX 327 MODE C TRANSPONDER

With the intro of the GTX 327, Garmin revolutionizes a part of the panel that has been long overlooked. This full-featured, TSO certified transponder brings a unique level of functionality and utility to your airplane.
Its solid state transmitter provides 200 watts nominal power output and eliminates the need for a cavity tube which will eventually fail and require expensive replacement. And since the GTX 327 design is 100% solid state there is no warm up time, lower power consumption and lower heat emission. All of which translates to a longer service life. Some of the GTX 327 biggest features are the easiest to see. Among them, the easy-riding DSTN Liquid Crystal Display which reverses yellow numbers out of black for optimal viewing. An innovative keypad makes entering a squawk code a snap. And a dedicated VFR button allows for quick and easy 1200/VFR squawking. The GTX 327 also offers two important timing functions.
The first screen shows the current time and count up timer. The second indicates flight time and a count down timer. Together they represent a whole new standard in transponder utility.

GTX 327 with Harness .....P/N 11-00329..... **$1,839.00**

The GTX 327 can be sold over the counter to certified & experimental aircraft owner's with a pre-wired harness.

NOTE: The GTX 330 & GTX 327 DO NOT include an antenna.
Experminental Aircraft can order TED
Transponder antenna P/N 11-17995 for $17.95

For a quote on complete custom panels for experimental aircraft please email: avionics@aircraftspruce.com

AV

GARMIN PANEL MOUNT

GARMIN SL 30 NAV/COM RADIO

Powerful 760 channel comm radio with a 200 channel VOR, glidescope and localizer receiver. Built-in course deviation indicator may be displayed and the SL 30 interfaces with most common mechanical CDIs and HSIs. The SL 30 can be shipped for installation in any aircraft and does not require dealer installation.

SL 30 ..... P/N 11-03581 ..... **$3,950.00**
SL 30 With Harness ..... P/N 11-05109 ..... **$3,895.00**

GARMIN SL 40 COM RADIO

Monitor ATIS while never leaving your assigned ATC channel. The SL 40 always gives priority to the active channel, meaning you'll never miss a transmission. With 10-watt transmit power and only 35-watt DC input, the SL 40 is power efficient and cool running. ***Features:*** 760 channels; frequency range 118 to 136.975 mHz; tunes to National Weather frequencies; 16-character, high-intensity, alphanumeric LED display; transmit status indicator; capacity to store and recall 8 user-defined and previous frequencies.

SL 40 ..... P/N 11-02203 ..... **$1,849.00**
SL 40 With Harness ..... P/N 11-08032 ..... **$1,777.00**

GARMIN GMA 240 AUDIO PANEL

Non-TSO'd so it's priced really low. Yet, it includes an intercom and will support dual COMM, dual NAV, dual AUX receivers, and dual music audio inputs – plus up to three unswitched inputs for telephone ringers, altitude alerts, or other warning tones.

Pilots can connect up to two dedicated music sources to the rear connector (e.g. XM music and CD player) and over-ride one of those sources at any time by plugging-in a device (e.g. MP3 player) into the 2.5 mm front jack. The music source's volume can be increased or decreased with the GMA 240 by pulling out the copilot volume knob.

The 2.5 mm front jack also makes it easy for pilots to make and receive cell phone calls. It has a full-duplex telephone interface with intercom isolation capability.

Specifications: * Weight: 15.5 oz (440 g) * Dimensions: 1.3" x 6.29" x 7.12" * Power: Input voltage range: 11-33 Vdc, 4.3 W normal * Temperature range: -20C to +55C * Altitude: 55,000 MSL unpressurized * Transceiver inputs: 3 (including TEL) * Receiver inputs: 4 * Alert inputs: 3 * Input impedance: 500 Ohms * Input isolation: 60 dB min * Bandwidth: 100 Hz to 6.5 kHz * Music inputs (stereo): 2 * Music gain: -20 dB @ min. volume, +26 dB @ max. volume ..... P/N 11-06619 ..... **$845.00**

GARMIN GMA 340 AUDIO PANEL

The Garmin GMA 340 audio panel is compact and lightweight, making it an excellent choice for panels with limited space. Audio panel features include 3 transceiver inputs, 5 receiver inputs, and 2 unswitched inputs. The intercom provides 6 positions, 3 volume controls, 2 VOX level controls, 6 VOX circuits, and 2 stereo music imputs. This unit features 3 stereo headphone outputs and 2 speaker outputs, and the marker beacon receiver features input impedance of 50 ohms. Size: 6.8"d x 6.29"w x 1.3"h. Power req.: 11-33 VDC

GMA 340 Audio Panel ..... P/N 11-18960 ..... **$1,295.00**
GMA 340 with basic harness ..... P/N 11-08061 ..... **$1,345.00**
GMA 340 with Harness (2 place) ..... P/N 11-07172 ..... **$1,850.00**
GMA 340 with Harness (4 place) ..... P/N 11-07170 ..... **$1,850.00**

GARMIN GMA 350 AUDIO PANEL

Note: Per Garmin we cannot sell the GMA 350 to certified aircraft. For experimental aircraft please contact us for the wire harness form that is required and allow 2-3 weeks to ship.

The first truly all-digital audio panel, Garmin's GMA 350 introduces a number of new technologies to the cockpit, including voice recognition, 3-D audio processing, advanced auto squelch and more.

Features: Intuitive front panel layout with cursor control and volume indicator. Six/Seven position intercom: pilot, copilot, four or five passengers. Three stereo headset amplifiers: pilot, copilot, and passengers. Two stereo music source inputs Five selectable intercom operational modes. Independent pilot, copilot, and passenger volume controls. Individual VOX processing for each mic input. Automatic selection of radio audio source when corresponding mic is selected. Split COM transceiver function. Copilot may transmit and receive on one COM while pilot transmits and receives on another. Voice recognition. Automatic audio adjustment for ambient noise. 3-D Audio. Marker beacon receiver with lamp driver outputs.

GMA 350 Audio Panel ..... P/N 11-09667 ..... **$1,996.00**
GMA 350H Audio Panel ..... P/N 11-09668 ..... **$2,246.00**

The Garmin GMA 350 can only be sold over the counter to expermental aircraft (must verify) with harness. For certified aircraft, it must be installed by a Garmin Dealer. Please call 1-800-826-3160 for partner shop location for certified installs. (price of installation not included)

GARMIN GA30 ANTENNA

A replacement for our GA™ 29 GPS antenna, this robust and passive antenna is packaged in a low-profile waterproof housing and provides three easy mounting solutions: pole, surface or under-deck (for the underside of fiberglass decks). Includes surface, pole and under-deck mounting brackets, mounting hardware, antenna cable (32 ft/10 m) and installation instructions. P/N 11-08669 ..... **$53.50**

TED 4-70 GPS NOTCH FILTER

Your global positioning system receives its positional information at 1575.42 MHz. The communications radios on-board your aircraft typically broadcast in the 121.5 MHz range. That is a wide separation in frequency bandwidth but it's not the complete picture. Your comm's are also producing harmonics which can produce significant noise at the GPS frequency. Now you can filter that signal and avoid potentially hazardous situations.

A simple low cost way to clean up the receivers frequency environment. The TED 4-70 notch filter installs quickly and easily via standard BNC bayonet couplings, in-line between radios and antenna. The 4-70 rejects in excess of 50dB of 1575.42 signal at the source. Each filter is individually tuned and checked to assure maximum performance. Of course, the 4-70 also passes strenuous environmental criteria so important in aircraft applications. Major GPS manufacturers recognize this problem & recommend using the 4-70 on new and retrofit installation.

P/N 11-02204 ..... **$96.50**

AV

SILVER CROWN KX 165 NAV/COM

Solid state, 760 frequency COMM transceiver, 200-channel NAV receiver, 40 channel glidescope receiver and built-in VOR converter, 10W, 14V. Simultaneous, digital, gas-discharge display of active and standby NAV & COMM frequencies or select digital display of radial from the VOR or VORTAC in lieu of standy NAV frequency. Push button frequency flip-flop. Meets DO-156 frequency selectivity requirements.

14V.....P/N 11-03399 .....**$5,264.00**
28V.....P/N 11-00199 .....**$5,229.00**

SILVER CROWN KX-165A NAV/COM SYSTEM

Large, self-dimming, microprocessor-controlled gas discharge readouts and solid-state electronic tuning provide fast, accurate selection of all 200 Nav & 760 Comm frequencies. On the COMM side, the KX165 system gives you 10W minimum transmitter power for maximum range and clarity. And on the NAV side, the KX165's useful 'Radial' feature offers you an instant readout of the radial you're on (from the 'active' VORTAC station), digitally displayed in the 'standby' NAV frequency window. The KX-165A is TSO'd and offers 32 channels of com frequency memory, an additional CDI mode. The GPS "Quick Tune" feature allows the pilot to select and remotely tune the standby com & nav freq. from the KLN94 GPS 28V .. P/N 11-00644....**$3,395.00**

SILVER CROWN KX-155 / 155A NAV/COM

These high-quality, time-tested systems make "stay ahead" frequency pre-planning effortless.

Both the NAV and COMM frequency displays incorporate the popular "flip-flop" preselect feature. This function allows pilots to set up en route or approach frequency changeovers well in advance of the actual transition point of ATC handoff sequence, for true "stay ahead" flight management.

By selecting the NAV and COMM frequency in the "Standby" (STBY) display, pilots can "flip-flop" it into "active" status at the press of a button.

Large, self-dimming, microprocessor controlled readouts and solid-state electronic tuning provide fast, accurate selection of all 200 NAV and 760 COMM frequencies. Both the KX 155 and KX 165 feature a built-in 40-channel glideslope receiver. Both model are also available without the glideslope.

KX 155 w/o Glide Slope (14V) ..... P/N 11-00868.....**$3,952.00**
KX 155 w/o Glide Slope (28V) ..... P/N 11-00869.....**$3,959.00**
KX 155 w/Glide Slope (14V) ..... P/N 11-00871.....**$4,375.00**
KX 155 w/Glide Slope (28V) ..... P/N 11-00872.....**$3,375.00**
KX 155 NAV w/KI208 Indicator (14V) ..... P/N 11-03403.....**$5,047.00**
KX 155 w/GS & KI209 Indicator (14V) ..... P/N 11-03404.....**$5,899.00**
KX 155 w/GS & KI209 Indicator (28V) ..... P/N 11-03406.....**$5,940.00**
KX 155 NAV w/KI208 Indicator (28V) ..... P/N 11-03405.....**$4,945.00**
Approach KX-155 NAV Cable ..... P/N 11-05668.....**$139.95**
KING KX 155A 28V w/ Install No GS..... P/N 11-04404.....**$4,214.00**
KING KX 155A 28V w/ GS & Install..... P/N 11-04405.....**$4,375.00**
KING KX 155A/KI209A w/ GS..... P/N 11-04406.....**$4,875.00**

CROWN KX 125 DIGITAL NAV/COM

The KX-125 is ideal as a replacement radio, a primary system for homebuilts or a very affordable back-up. pDespite its low price, it comes with a complete list of features. For example, its COMM section provides 760 frequencies, 'flip-flop' frequency selection, a built-in audio amplifier with sidetone and audio leveling, direct tuning, stuck-microphone alert, and even remote transfer of both COMM and NAV frequencies. Its separate NAV section offers 200 frequencies, including localizer.

14V.....P/N 11-03402 .....**$3,937.00**
With Harness....P/N 11-05026 .....**$4,308.00**

CROWN KI SERIES INDICATORS

The KI203, KI208, KI204, & KI209 indicators feature an internal VOR/ LOC converter and are compatible with the KX155 transceiver. The KI203 & KI204 have rectilinear meter movement, while the KI208 & KI209 feature pivot needle action. The KI206 has rectilinear meter movement and works with the KX165 & KNS80. The KI209 includes GPS interface capability. Size: 3.125" x 8"D; Weight: 1.5lbs.

KI 203 NAV Indicator..... P/N 11-03407 ..... **$2,923.00**
KI 204GS Indicator..... P/N 11-03408 ..... **$2,962.00**
KI 209A GS Indicator ..... P/N 11-03409 ..... **$1,395.00**
KI 208 NAV Indicator..... P/N 11-00876 ..... **$950.00**
KI 208A 14/28V with install ..... P/N 11-07599 ..... **$1,695.00**
KI 209 GS Indicator..... P/N 11-00878 ..... **$1,524.00**
KI 206 GS Indicator..... P/N 11-04209 ..... **$2,379.00**
Approach KI 204 Indicator Cbl.. P/N 11-05669 ..... **$102.95**

CROWN KY 96A & KY 97A COM

With the anticipation of additional frequency allocations, Bendix/ King has designed the KY 96A and KY 97A to operate on 760 frequencies from 118.00 MHz to 136.975 MHz. You can switch between active and standby frequencies. Simply tune the desired frequency into the standby window ("STBY") while monitoring the "USE" channel-when the time is right, simply push the frequency transfer button to transfer the standby frequency into the active window. A remote switch may be installed as an additional means of providing the "flip-flop" function. Up to nine channels can be easily programmed by the pilot into the memory of the KY 96A or KY 97A. The KY 96A & KY 97A remember displayed frequencies and stored frequencies without batteries or external hookup during power shutdown or in the event of a power interruption and have an easy-to-read, illuminated LCD display.

KY 96A (28V) ..... P/N 11-03411..... **$2,984.00**
KY 96A (28V) With Harness..... P/N 11-03849..... **$3,030.00**
KY 97A (14V) ..... P/N 11-03410..... **$3,341.00**
KY 97A Unit only ..... P/N 11-02583..... **$2,897.00**
KY 97A (14V) With Harness..... P/N 11-05028..... **$3,131.00**

Accessories

King Install Manual KY96A/97A ..... P/N 11-18005..... **$231.95**
KY 96A / KY 97A Install Manual CD ..... P/N 11-02374..... **$5.95**
Harness ***ONLY*** for ***KY 96A*** ..... P/N 11-04021..... **$229.95**
Approach KY 96A / 97A COM Cable ..... P/N 11-05666..... **$102.95**

CROWN SERIES KT-76A MODE C TRANSPONDER

The KT76A is a panelmount, class 1-A transponder and provides maximum performance at any altitude up to 35,000 ft. A compact unit with Large Scale Integrated (LSI) circuitry, reducing both weight and power requirements. All Mode A & Mode C transponders perform the same functions: replying to radar interrogations, providing Air Traffic Control (ATC) with positive identification, and showing your ground speed on the Controller's radar monitor. If you have an encoding altimeter or blind encoder, the transponder will transmit your altitude as well.

KT76A 06 14V (Transponder) ..... P/N 11-02438 ..... **$1,849.00**
KT76A 06 14V With Harness ..... P/N 11-02436 ..... **$2,099.00**
28V Dropping Resistor ..... P/N 11-00913 ..... **$142.95**
Replacement Bulb Container ..... P/N 11-00522 ..... **$19.95**

KING SILVER CROWN KT 76C MODE C TRANSPONDER

The KT-76C is the finest panel-mounted Mode A/C transponder to allow for sequential push-button squawk code entry. To ease pilot workload, the push of a single button switches to a user-preset VFR code, such as 1200. Best of all, its bright microprocessor-driven gas plasma display is easily read in all light levels. The new unit features a bright, gas plasma display that shows the selected transponder code and, in a new feature, the encoder altitude output.The KT 76C will fit directly into the existing location of a KT 76A. However, in 28V installations the existing dropping resistor must be bypassed. Unit operates from 11-33VDC. Available with or without antenna.

Without KA 61 Antenna.....P/N 11-03413 ..... **$2,804.00**
Without KA 61 Antenna With Harness....P/N 11-05034 ..... **$2,879.00**
With KA 61 Antenna Without Harness....P/N 11-03414 ..... **$2,979.00**
With KA 61 Antenna With Harness.....P/N 11-05033 ..... **$3,048.00**

SILVER CROWN KY 196A & KY 197A COM

This unit measures a trim 1.3" x 6.3" and weighs just 2.8 lbs. The 28V KY196A delivers 16W minimum transmit output power and the 14V KY197A delivers 10W minimum transmit output power. Both units incorporate solid-state construction, with a digital frequency synthesizer generating all COMM frequencies. Despite their wide range of capabilities, the KY 196A and KY 197A were designed to be easy to read and logical to operate. For example, the active frequency is clearly distinguishable from the standby, with both displayed in separate, dedicated windows. Total frequency storage capacity is eleven, including those in "USE" and "STBY". The 118.00MHz to 136.975MHz range of the KY-196A & KY-197A provide 760 COMM frequencies. An audio leveling feature automatically amplifies weak audio signals and mutes strong signals.

KY 197A (14V) .....P/N 11-03848 ... **$4,695.00**
KY 196A (28V) .....P/N 11-03415 ... **$4,305.00**
KY 196B 8.33 KHZ Com Transceiver .....P/N 11-03417 ..... **$5,295.00**

Honeywell Crown Series can only be sold over the counter. Silver Crown series can only be sold to expermental aircraft (must verify) with harness. For certified aircraft, it must be installed by a Honeywell Dealer. Please call 1-800-826-3160 for partner shop location for certified installs. (price of installation not included)

AV

HONEYWELL PANEL MOUNT

CROWN KLX 135 GPS/COM

With unmatched GPS accuracy, 'Direct-To' operation, built-in CDI output and a host of other pilot-friendly features, the King KLX-135 provides the navigation capability you'd expect from the leader in panel-mounted avionics. Key features include storage capacity for up to 250 user-defined waypoints and as many as ten flight plans of up to 20 waypoints each; an OBS mode for flying specific radials/bearings; and supplemental calculations for estimated distance, bearing, time & fuel. KLX-135A includes a moving map display of flight plan waypoints, navaids, and special use airspace, in addition to an enhanced high contrast LCD display for easy readability.

Description	Part No.	Price
KING KLX 135A Americas 14V	11-03391	**$4,193.00**
KING KLX 135A Americas 14V With Harness	11-02018	**$3,827.00**
KING KLX 135A Americas 14V (Unit Only) *Antenna NOT included	11-02582	**$3,089.00**
KING KLX-35A ATLANTIC 14V	11-03389	**$4,185.00**
KING KLX 135A Atlantic 14V W/Harness	11-02724	**$4,923.00**
KING KLX 135A PACIFIC 14V	11-03390	**$3,946.00**
Accessories	**Part No.**	**Price**
KLX 135A PILOTS GUIDE	006-08789- 0000	**$146.95**
KING INSTALL MANUAL KLX 135A	006-10500- 0003	**$221.95**

SILVER CROWN KMD 250

The KMD 250 is intended for piston singles. The MFD offers most of the advantages of the KMD550 and 850 displays but without the radar and terrain awareness and warning system (TAWS) interfaces, systems the vast majority of singles don't need. KMD 250 is slightly smaller than the 550 or the 850. With a 3.8" diagonal display, compared with the 5" screen of the KMD 550, the size difference is slight. The 250 measures 3" high, compared to 4" for the 550. The software and remaining capabilities on the KMD 250 are nearly identical to those on the KMD 550, so pilots familiar with one of Honeywell's other MFDs will have an easy time transitioning to the new hardware. TSO Certified.

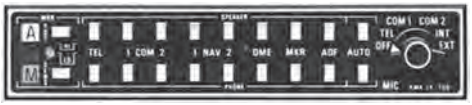
America with GPS & Harness.... P/N 11-05165..... **$4,995.00**
America with Harness ..... P/N 11-05167..... **$4,517.00**
Pacific with Harness..... P/N 11-05168..... **$4,549.00**
Atlantic with GPS & Harness ..... P/N 11-05169..... **$4,748.00**
Atlantic with Harness ..... P/N 11-05170..... **$4,549.00**

CROWN KLN 35A GPS

The KLN 35A is a standalone GPS identical to the KLX 135A except without the COMM transceiver. The KLN 35A provides accurate satellite navigation capability with moving map displays for increased situational awareness. It features Jeppesen NavData for data base updates via 3.5" diskette. The moving map display shows flight plan waypoints, navaids, and special use airspace, and the KLN35A has enhanced, high contrast LCD display for optimum readability. The KLN 35A is an outstanding GPS value with the Bendix/King reputation for quality avionics products.

KLN 35A (Americas) ..... P/N 11-03394 ..... **$2,832.00**
KLN 35A (Atlantic)..... P/N 11-03392 ..... **$2,597.00**
KLN 35A (Pacific)..... P/N 11-03393 ..... **$2,816.00**
KLN 35A America with harness ..... P/N 11-02719 ..... **$2,646.00**
KLN 35A America (Unit Only) ..... P/N 11-02730 ..... **$1,781.00**

SILVER CROWN KMA 24 AUDIO PANEL



Bendix/King's easy-to-use KMA 24 & KMA 24H systems are self-contained, all solid-state and stand only 1.3" high in your Silver Crown stack. The "slant top" package tailors it for the top slot in your instrument panel. KMA 24 controls as many as 3 transceivers and 6 receivers, including the internal marker beacon receiver and its automatically dimmed 3-light presentation. KMA 24H controls up to 5 transceivers and 5 receivers, or 4 transceivers and 6 receivers. KMA 24H includes the internal marker beacon receiver & VOX intercom, which provides unprecedented flexibility.

KMA 24 with HF ..... P/N 11-03841..... **$1,559.95**
KMA 24 with HF Auto..... P/N 11-03381..... **$1,559.95**
KMA 24 with Tel Auto..... P/N 11-03382..... **$1,559.95**

CROWN KA 134 AUDIO PANEL

Features: • Solid state unit containing funcitons of an isolation transformer and an audio control panel • Models availab le that operate on 14 or 28V without power supply section • International model available with third COMM switching function for HF transceiver operation (labeled HF instead of EXT, no electrical changes) • Push-button • Flat pack confguration measuers only 1" in height • can be integrated into 500Ω output audio system • Can control as many as 3transceivers and 5 receivers • Can be used as passenger address, ramp hailer, or intercom • Can be coupled w/KR-22 Marker Beacon Receiver/Lights to provide complete audio panel/marker package •14 or 28V operation • TSO'd

KA 134 Audio Panel.....P/N 11-03383 .... **$2,250.00**
Install Kit KA 134 W/ Harness.....P/N 11-00087 ..... **$293.95**

CROWN KR 22 AUDIO PANEL

The Bendix/King KR 22 Marker Beacon Receiver is a fully independent panel-mounted unit with its own audio output and self-test feature. The unit is all solid-state, and its compact size makes it an easy fit in virtually any panel.A crystal-controlled superheterodyne receiver and 3-light presentation ensures that the KR 22 will give precise visual and aural indications of marker beacon passage. Excellent receiver selectivity eliminates interference. Headphone audio is provided, or if speaker output is desired, the KR 22 may be interfaced with the KA 134 or other audio control panel. P/N 11-03843 ..... **$1,325.00**

Honeywell Crown Series can only be sold over the counter. Silver Crown series can only be sold to expermental aircraft (must verify) with harness. For certified aircraft, it must be installed by a Honeywell Dealer. Please call 1-800-826-3160 for partner shop location for certified installs. (price of installation not included)

AV

KING KI208A-10 VOR/LOC INDICATOR

The KI 208A VOR/LOC Indicator with VOR/LOC Converter and GPS Switching Relays has internal lighting. Internal relays allows from switching between VHF Nav and GPS. It is used with the KX 155 or KX 155A and KLN 89, KLN 89V, or KLN 94. Specifications: * Weight: 1.00 lbs. (0.45 kg) * Width: 3.25 in. (8.26 cm) * Power Required: 14/28 VDC @ 60 mA max. * Height: 3.25 in. (8.26 cm) * Length: 8.00 in. (20.32 cm) * Lighting Power: 14/28 VDC P/N 11-07599.....**$1,695.00**

KING INSTALLATION KITS

Model	Part No.	Description	Price
KRA 10A	11-00896	Mounting Tray	**$175.00**
KMA 20	11-00897	Installation Kit	**$526.00**
KMA 24	11-00898	Installation Kit	**$138.95**
	11-00909	Mounting Tray	**$162.95**
KMA 24H-52	11-00899	Installation Kit	**$189.50**
	11-00909	Mounting Tray	**$162.95**
KMA 24H-70/71	11-00902	Installation Kit	**$180.95**
	11-00903	Mounting Tray	**$145.95**
KA 51B	11-00904	Installation Kit	**$213.95**
KN 53	11-00905	Installation Kit	**$163.95**
	11-00906	Mounting Tray	**$314.95**
KN 62A/64	11-00908	Installation Kit	**$191.95**
	11-00925	Mounting Tray	**$382.95**
KN 63	11-00929	Mounting Tray	**$49.00**
KN 72	11-00930	Installation Kit	**$148.95**
KT 76A	11-00912	Mounting Tray	**$124.50**
	11-00913	28 Volt Kit	**$142.95**
KT 76A / 76C	11-00935	Installation Kit	**$167.95**
KNS 80	11-00937	Mounting Tray	**$307.95**
KR 86	11-00940	Installation Kit	**$1,015.00**
	11-00941	Mounting Tray	**$188.95**
KR 87	11-00942	Installation Kit	**$399.00**
	11-00943	Mounting Tray	**$138.95**
KLN 90B	11-00944	Installation Kit	**$275.95**
	11-00945	Mounting Tray	**$365.95**

Model	Part No.	Description	Price
KY 96A/ 97A	11-00914	Installation Kit	**$144.95**
	11-00915	Mounting Tray	**$146.95**
KG 102A	11-00947	Installation Kit	**$749.00**
KMT 112	11-00946	Installation Kit	**$168.95**
KX 125	11-00916	Installation Kit	**$257.95**
	11-00948	Mounting Tray	**$211.95**
KA 134	11-00986	Installation Kit	**$117.95**
	11-00949	Mounting Tray	**$237.95**
KLX 135	11-00918	Installation Kit	**$222.95**
	11-00950	Mounting Tray	**$230.95**
KX 155/165	11-00951	Installation Kit	**$189.00**
	11-00952	Mounting Tray	**$81.50**
KX 155/165 GS	11-00919	Installation Kit	**$177.95**
KX 170/170B/175B	11-00954	Installation Kit	**$1,039.00**
	11-00955	Mounting Tray	**$288.95**
KY 196/197	11-00957	Mounting Tray	**$483.95**
KY 196A/197A	11-00914	Installation Kit	**$144.95**
	11-00915	Mounting Tray	**$146.95**
KI 203 thru 207	11-00958	Installation Kit	**$175.95**
KI 208/209	11-00922	Installation Kit	**$151.95**
KI 209A	11-02342	Installation Kit	**$191.95**
KI 525A	11-00959	Installation Kit	**$226.95**
KDI 572	11-00961	Installation Kit	**$279.95**
	11-00962	Mounting Plate	**$38.75**

AIRCRAFT SPRUCE WEST
CORONA, CA • (877) 4-SPRUCE
AIRCRAFT SPRUCE EAST
PEACHTREE CITY, GA • (877) 477-7823
Prices Subject to Change Without Notice

ICOM PANEL MOUNT – TRANSCEIVERS

ICOM A210 25 COMM TRANSCEIVER

Note: Unit is not TSO'd (non-certified)
A210 25 Comm Transceiver (replaced version A210 21). New version is now capable of 25kHz and 8.33kHz channel pitch. The new A210 25 will use the CS A210 version 1.3. Older software will not work for programming the new versions. The software is backwards compatible. Innovative airband that's easier to install and see in more places! Large, bright OLED display offers many advantages in brightness, vividness, high contrast, wide viewing angle and response time compared to a conventional display. Easy channel selection allows you to monitor two channels simultaneously. GPS memory function. 12V/24V DC power source. Intercom functions. The IC-A210 has a built-in voice activated intercom function allowing the pilot to talk with the copilot via the headset. The IC-A210 has adjustable audio level and squelch control functions. Easy installation. The IC-A210 neatly fits inside the common mounting brackets used on most airplanes including Icom's IC-A200. Two types of rear-panel adapters are included, allowing for streamlined plug-in connectivity.

Description	Part No.	Price
ICOM A210 Panel Mount	11-05618	**$1,499.99**
ICOM A210M Mobile Mount	11-05836	**$1,699.99**

ICOM A210 ADAPTER MB113

MB-113 Rear Panel Adapter - For installation into a D-sub 15-pin connection system equipment.
P/N 11-08413.....**$66.50**

ICOM PS-80 BASE STATION POWER SUPPLY

The PS-80 offers quick, easy installation of the IC-A210 in one compact desk-top unit that combines a power supply, speaker, microphone, headphone and antenna connectors. Power Supply is user selectable for 110 or 220/240 V AC operation and supports a full 7 Watt transmitter output. Large internal speaker booms out 5 watts of audio. Microphone, headphone and antenna connectors are standard in the PS-80 so no wiring is necessary. Just plug in your selected hand or desktop microphone or headphone and outside antenna and youre on the air. Optional SM-6 Desktop Microphone, HM-7 or MIC Hand Microphone and B-ANT Base Station Antenna to complete the package are available and sold separately. Radio not included (use 11-05839 for complete system) Specifications: * Input voltage: * 117 V AC +/- 10%, * 220 V AC +/- 10%, or * 240 V AC +/- 10% (selectable) * Output voltage: 13.8 V DC +/- 5% (negative ground) * Output current: 6 A * Duty rate: 1 hour for maximum current * Ripple voltage: Less than 20 mV rms * Useable Temperature Range: -10°C to +40°C; +14°F to +104°F * Dimensions (projections not included): 200(W) x 200(H) x 300(D) mm; 7.9(W) x 7.9(H) x 11.8(D) in * Weight: 6.0 kg; 13.2 lb

Icom PS-80 Base Station Only..... P/N 11-00802..... **$735.00**
Icom IC A210 COM Panel Mount(not TSO'd) . P/N 11-05618.. **$1,499.99**
Icom IC A210 & PS 80 Base Station ..... P/N 11-05839.. **$1,999.99**
Icom A210B PS-80 Microphone..... P/N 11-18581..... **$189.95**

ICOM IC-A110-05B VHF AIR BAND TRANSCEIVER

The Icom IC-A110-05B is rugged and reliable for serious ground crew communications. The IC-A110-05B can plug right into an AC wall (110W) receptacle. Great for FBOs. The unit features a front mounted speaker, free from any obstacle blocking and puts out 10W of power for the external speaker. *Covers the 118-136.975 frequency range. **Features**: * Equipped EEPROM system provides maintenance free memory backup capability, without the use of a separate backup battery * Various scan functions, such as VFO and priority scans are available * Limited number of keys for simple manipulation, but providing advanced multi-functions * A total of 20 memory channels are available * 36 W (pep) of powerful output, 9W (Carrier) output. * Excellent durability to cope with even the toughest workplace **Specifications** * Dimensions: 150(W)x 50(H) X 180(D) mm * Weight: 1.5kg; 3lb. 5 oz. * Warranty 2 years * Power supply requirement: 13.75 VDC and 27.5 VDC * Current drain: Transmitting: 5.0 A max, Receiving: 4.0 A * Operating temperature range: IC-A110(-30° C to +60° C); IC-A110EURO(-20° C to +55° C) * Frequency stability: IC-A110 (5 ppm)

Icom IC-A110-05B Base Station..... P/N 11-02781 .**$1,099.99**
Icom B-ANT Building Antenna..... P/N 11-18581 ....**$189.95**
Icom K220A Magnetic Mount Car Antenna ..... P/N 11-06196 .....**$52.50**
Icom K220C Hole Mount Car Antenna ..... P/N 11-06197 .....**$33.75**
Icom OPC-871 Headset Adapter..... P/N 11-06198 ....**$123.95**

ICOM IC-A110-25 VHF AIR BAND TRANSCEIVER BASE STATION

The Icom IC-A110-25 is rugged and reliable for serious ground crew communications. The IC-A110-25 can be installed in any vehicle and is adaptable to vehicles working on 12V or 24V power sources. The unit features a front mounted speaker, free from any obstacle blocking and puts out 10W of power for the external speaker.*
In The Box: IC-A110-25, Hand Mic HM-161, Mounting Bracket with hardware, DC power cable, and Mic mounting bracket
Features: Additional to the predominantly used 25 kHz channel spacing, an extra version complying to new regulations is available for 8.33 kHz channel spacing. Equipped EEPROM system provides maintenance free memory backup capability, without the use of a separate backup battery. Various scan functions, such as VFO and priority scans are available. Limited number of keys for simple manipulation, but providing advanced multi-functions. A total of 20 memory channels are available Ideal compact size of 150(W) x 50(H) x 180(D) mm* to mount in various types of vehicles. * 5-29/32(W) x 1-31/32(H) x 7-3/32(D) in. 36 W (pep) of powerful output. Excellent durability to cope with even the toughest workplace. Memory channel only operation possible via PC programming. Hand microphone supplied

Icom ICA110-25 Panel Mount..... P/N 11-04352 .....**$999.99**
Icom K220A Magnetic Mount Car Antenna.... P/N 11-06196 .....**$52.50**
Icom K220C Hole Mount Car Antenna..... P/N 11-06197 .....**$33.75**
Icom OPC-871 Headset Adapter ..... P/N 11-06198 .....**$123.95**
Icom B-ANT Building Antenna ..... P/N 11-18581 .....**$189.95**
BNC female to UHF Male Adapter..... P/N 11-09556 .....**$10.95**
BNC male connect RG 58..... P/N 11-03992 .....**$2.93**

MICHEL TKM SLIDE-IN REPLACEMENT RADIOS

MX 11R COM

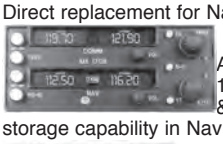
The MX 11 Comm is designed as a slide in replacement for the Narco Com 11, Com 11B, Com 111, Com 111B, and Com 120. The unit will replace the com 10 and Com 110 when the Nav 10 and Nav 110 are not used in the system. The MX 11 is warranted for 2 years. The MX 11 is the same unit as the earlier MX \-11 except it does not come with the tray. P/N 11-18815 .....**$895.00**

MX 12 NAV/COM

Direct replacement for Narco MK12A Nav/Com.
P/N 11-18846 .....**$1,575.00**

GLIDESLOPE ADAPTER CABLE FOR MX 12

Direct replacement for Narco MK 12 P/N 11-18847 .....**$153.95**



MX 170C NAV/COM

An ideal Nav/Com unit to replace King KX 170 & 175 series Nav/Coms. 14VDC. Features active & standby display w/flip-flop capability, plus storage capability in Nav and Com. P/N 11-18830 .....**$1,495.00**

MX 300 NAV/COM

The MX 300 Nav/Comm is designed to replace the RT 328T, RT 308C, RT 328T, RT 328A, RT 528A, RT 328C, RT 528E, RT 328D, and RT 508A. The MX 300 is available in the black face plate shown above or in a beige face plate to match many Cessna panels. The MX 300 operates on 13.75 vdc with 7 Adc maximum current in transmit.

With Black Face Cover..... P/N 11-18835 .....**$1,635.00**
With Tan Face Cover ..... P/N 11-04825 .....**$1,595.00**

MX 385 NAV/COM

MX 385 is a direct replacement for RT385 & RT485 series Nav/Com units. Features active & standby displays w/flip-flop capability plus storage in Nav & Com.; 28VDC.

Black Face..... P/N 11-18845 .....**$1,595.00**
Tan Face ..... P/N 11-09203 .....**$1,595.00**

Note: All Michel radios are furnished standard with black face. Tan face for Cessna panels are available at same prices on special order.

TKM MG 200 GLIDESLOPE RECEIVER

At last, it is back! The MG-200 Glide Slope Receiver, a marvel of avionics engineering from TKM. Measuring only 3 inches wide by 6 inches long by 1 inch high, this 40 channel, totally solid state receiver is capable of handling your Nav/Com needs. Using standard 25 DB connectors, it is easy to wire and install. Just wire the connector, plug it in, mount the receiver with four fasteners and run the wires to the receiver. That is it except the paperwork! P/N 11-06868.....**$933.00**

AV

FLIGHTLINE RADIOS – TRANSPONDERS

FLIGHTLINE FL-760 TRANSCEIVER

One of the smallest and lightest in the industry! 2-1/4" Panel Mount Transceiver; compact size but loaded with what you need in your aircraft, with a one year warranty.

Features: Flip Flop Frequency Selection, Built-In 2-Place VOX Intercom, Backlit Display, 32 Programmable Memory Channel Call-Up, 5 w Carrier, 16 w PEP, 25 KHz Channel Spacing, One Year Limited Warranty, Non-TSO

Specifications;

- Frequency range : 118.00 to 136.975MHz (Receive:108.00 to 136.975MHz)
- Channel spacing : 25kHz
- Mode : AM (6K00A3E)
- Number of memory channels : 32
- Acceptable power supply : 11.7 V or 33 VDC (Negative ground only)
- Usable temp. range : -20 to +60
- Frequency stability :+/- 5ppm
- Current drain : TX: 3A(max) RX 0.8A(max) Standby: 300mA
- Dimensions : W61 X D159 X H61 (mm)
- Weight : 430g/14.11oz
- Exposed dial face : 56.4mm 2 1/4.5 inches
- Certification: Not TSO
- Output power : 5 W (carrier), 16W (pep)
- Modulation : small stage modulation
- Modulation limiting : 70 to 100%
- Audio harmonics distortion : Less than 15% (at 85% modulation)
- Hum and noise ratio : More than 40dB
- Spurious emissions : -16dBm or less
- Antenna impedance : 50
- Receive system : Double conversion superheterodyne
- Intermediate frequency : 1st : 38.85MHz (Upper) 2nd : 450kHz (Lower)
- Sensitivity (at 6dB S/N) : Less than 1uV
- Squelch sensitivity : 0.5uV (Threshold)
- Selectivity : More than 8kHz (at 6dB), Less than 25kHz (at 60dB)
- Spurious response rejection : More than 60dB
- Audio output power : More than 4W (at 4)
- Side tone : More than 100mW (at 600)
- Hum and noise : More than 30dB
- Audio output impedance : Ext. SP 4 (4 to 8), Side tone 600
- 2-1/4" panel mount

P/N 11-06307 ..... **$699.00**

FLIGHTLINE FL-M1000AB BASE STATION

FL-M1000A Air Band Land Radio installed in an Astron Base Station.

The FL-M1000A is an Air Band Land Mobile Radio designed for land vehicles, or base station use, not for Aircraft. The radio can be operated with Hand Microphone or Headset. You can choose audio output from External Speaker and/or Headphone. The radio has various built-in Scan functions.

Features: Convenient Base Station Enclosure, Easy to read alpha/numeric display, Scanning, Usable in the 760 Channel VFO mode Simple to program, Compatible with a standard Push-to-Talk Switch and Air Band Headset, Priority scanning, Multiple speakers, antennas, cables and programming options, Front panel control of external speaker.

P/N 11-09190 ..... **$884.00**

FLIGHTLINE FL-M1000A AIR BAND RADIO

FL-M1000A Air Band Land Radio installed in an Astron Base Station.

The FL-M1000A is an Air Band Land Mobile Radio designed for land vehicles, or base station use, not for Aircraft. The radio can be operated with Hand Microphone or Headset. You can choose audio output from External Speaker and/or Headphone. The radio has various built-in Scan functions.

Features: Installs in any vehicle, Easy to read alpha/numeric display, Scanning, Usable in the 760 Channel VFO mode, Simple to program, Compatible with a standard Push-to-Talk Switch and Air Band Headset Priority scanning, Multiple speakers, antennas, cables and programming options, Front panel control of external speaker.

P/N 11-09189 ..... **$746.00**

STX 165 MODE AIRCRAFT XPDR

The STX 165 Sports a professional 1/2 3ATI Bezel that compliments any aircraft panel. Its bright OLED display is readable in virtually all lighting conditions and automatically dims for night time operations. Check out just a few of the STX 165 features.

- Built-in Encoder: Simplifies installations and lowers cost.
- Three Timer Functions: Elapsed Flight Time, Up Timer, Down Timer
- Pressure Altitude Display: See what altitude your transponder is reporting to Center
- Optional OAT Probe Input: Displays Outside Air Temp.,Density Altitude, Icing Alert
- Small and Light Weight: 7.4" behind the panel depth, 1.3 lbs.

Specifications:

- Electrical Input Voltage: 11-33 Vdc
- Current Requirements: 500mA@28Vdc
- Power Output: 200 Watts Nominal
- Transmitter Freq: 1090 MHz
- Receiver Freq: 1030 MHz
- Receiver Sensitivity: -74dBm Nominal at 90% reply rate
- Dimensions: 1.78"H x 3.5"W x 7.34"L
- Weight: 1.30Lbs
- Alt. Encoder: Built-in 35K' Encoder; External RS-232
- OAT Probe: Sandia STP 78 (Optional)
- Temperature: -20 degrees to +55 degrees C
- Altitude: -1000 to 35,000 Ft.
- Certification: DO160F; DO178B Level C; TSO C74d; TSO C88a

Sandia STX 165 Panel Mount ..... P/N 11-09251 ..... **$1,588.00**
Sandia STX 165R Remote ..... P/N 11-09252 ..... **$1,634.00**
Sandia STX 165 OAT Option ..... P/N 11-09253 ..... **$329.95**

GARRECHT TRANSPONDER CLASS 1 AND CLASS 2

VT01 UltraCompact

The Garrecht Transponder VT-01 is a flexible and modular system concept, in a compact size (57mm) with a very low current and integral alticoder. Available as Class-1 (125 Watt) or Class-2 (71 Watt) System. Specifications: Cetification i.a.w: ETSO-2C112a, ED-73B •Min. RF Output power @ Antenne: Class 1: 125 Watt Class 2:71 Watt. • Integral alticoder: Yes • Weight control unit: 0,21 kg. •Weight main unit: 0,61 kg •Supply voltage: 9-32 V DC • Power consumption (operation) @ 13,8 V (1200 Mode A/C or 50 Mode-S replies): Class 1: 0,24 A Class 2:0,22 A • Power consumption (on Ground) @ 13,8V (Squitter active): Class 1: 0,17 A Class 2: 0,16 A • Power consumption (Standby) @ 13,8 V: 0,005 A •Interfaces: RS232 + CAN •OPERATIONAL LIMITS • Max. Altitude: Class 1: 40.000ft Class 2: 15.000 ft (4.572 m) • Max. TAS: Class 1: 250 kts (463 km/h) Class 2: 175 kts (324 km/h • MTOW: Class 1: 5.700 kg Class 2: 5.700 kg

Transponder Class 1 ..... P/N 11-04529 ..... **$3,617.00**
Transponder Class 2 ..... P/N 11-04530 ..... **$2,396.00**
Transponder UltaCompact Class 1 ..... P/N 11-05869 ..... **$2,247.00**
Transponder UltaCompact Class 1 ..... P/N 11-05870 ..... **$2,986.00**

DITTEL KRT2 VHF TRANSCEIVER

The KRT2 VHF-AM transceiver has a full graphic LC-display that allows for easy reading under all light conditions, including full sun. Push button and display illumination can be dimmed. The KRT2 is, of course, prepared for 8.33 kHz spacing that will become the new international standard for airborne communication. Switching between the 8.33 and the 25 kHz mode is therefore made effortlessly simple. Standard or dynamic microphones can be used. A built-in-test facility increases flight safety. The dual watch mode that allows scanning of two different channels is included. The KRT2, with its integrated VOX/Intercom circuit, allows communication between pilot and co-pilot. **Specifications**: • Frequency Range: 118.000 MHz to 136.990 MHz • Channel Selection: 8.33 or 25 kHz (select automatically) • RF-Output Power: >6 W (carrier power) • Receiver Sensitivity: >12 dB sinad @ 2 uV • Input Voltage Range: 9 V DC to 36 V DC • Operating Temperature Range: -20°C to +55°C, for short time up to +70°C • Current Consumption: 1,6 A@12 V DC (transmit), 110mA@12 V DC (receive standby) • Certification: ETSO-2C169a, ED-23B Class 4, C, TSO-C169a, Class 6, H1 & H2 • Function: dual watch mode, integrated VOX/Intercom • Weight/dimensions: 360g /65 x 65 x 144 (+plugs) mm.

Transceiver ..... P/N 11-10691 ..... **$1,465.00**
Harness with open end ..... P/N 11-10692 ..... **$146.00**
Harness with jacks for dual seat ..... P/N 11-10693 ..... **$179.00**
Swan Neck Mic ..... P/N 11-10694 ..... **$154.00**

AV

USED AVIONICS FROM AIRCRAFT SPRUCE

Virtually all these avionics are in "Serviceable" condition. This is an FAA term that means that the radios have been repaired as needed, tested according to the manufacturer's procedure, and meet the manufacturer's performance specifications. These radios are legally approved for installation and use. These radios come with either a Yellow Tag or a 8130-3 Serviceable tag. Both tags certify that the radio is in "Serviceable" condition. The difference is the geographical area where the tag is accepted. The Yellow Tag is accepted in North America, while the 8130-3 tag is accepted worldwide. Generally 8130-3 tags are issued for our radios, because we rarely know exactly where it will be sent when it is in the shop. With an 8130-3 tag, we know that it can be used by any of our customers. Serviceable units carry a 90 day warranty. All used avionics are subject to availability, and will be shipped with the tray and connector included. Prices can vary. Please specify 14V or 28V when ordering.

Please call for price and availability.
Used avionics data bases are for North America Only.

3M	
3M WX-10 Stormscope	11-06005
3M WX-10A Stormscope	11-06006
3M WX-11 Stormscope	11-06007
3M WX-8 Stormscope	11-06008
ARC	
ARC (Cessna) IN-385A	11-06009
ARC (Cessna) IN-386A	11-06010
ARC (Cessna) IN-514B	11-06011
ARC (Cessna) IN-525B	11-06012
ARC (Cessna) R-446A ADF Receiver	11-06013
ARC (Cessna) RT-328T NAV / COMM	11-06014
ARC (Cessna) RT-359A Transponder	11-06015
ARC (Cessna) RT-385A NAV / COMM	11-06016
ARC (Cessna) RT-459A Transponder	11-06017
ARC (Cessna) R-485B NAV / COMM	11-06018
ARC (Cessna) R-443B Remote Glideslope Receiver	11-06019
ARNAV	
ARNAV STAR 5000 VFR GPS Navigator	11-06020
CENTURY	
Century NSD-360A Non-Slaved Compass System (HSI)	11-06021
Century NSD-360A Slaved Compass System (HSI)	11-06022
COLLINS	
Collins ADF-650 ADF System	11-06023
Collins ADF-650A ADF System	11-06024
Collins GLS-350 Remote Glidescope Receiver	11-06025
Collins IND-350 GPS / VOR / LOC Indicator	11-06026
Collins IND-350A GPS / VOR / LOC Indicator	11-06027
Collins IND-351 GPS	11-06028
Collins IND-351A GPS	11-06029
Collins IND-650 ADF Indicator	11-06030
Collins IND-650A ADF Indicator	11-06031
Collins MKR-350 Marker Beacon Receiver	11-06032
Collins RCR-650 ADF Receiver	11-06033
Collins RCR-650A ADF Receiver	11-06034
Collins TDR-950 Transponder	11-06035
Collins VHF-251 COMM Transceiver	11-06036
Collins VIR-351 NAV Receiver	11-06037
GARMIN	
Garmin GI-102A	11-06038
Garmin GI-106A	11-06039
Garmin GNC-250 VFR	11-06040
Garmin GNC-250XL VFR	11-06041
Garmin GNS-430 - 14 or 28 Volts	11-06042
Garmin GNS-430 IFR - 28 Volts	11-06043
Garmin GNS-530 IFR	11-06044
Garmin GPS-150 VFR	11-06045
Garmin GPS-150XL VFR	11-06046
Garmin GPS-155 IFR-	11-06047
Garmin GPS-155XL IFR	11-06048
Garmin GTX-327 Transponder	11-06051
II Morrow / Garmin AT Apollo 360 Map Moving Map	11-06052
II Morrow / Garmin AT Apollo 360 VFR	11-06053
II Morrow / Garmin AT Apollo 820 Flybuddy VFR	11-06054
II Morrow / Garmin AT Apollo GX-50 IFR	11-06056
II Morrow / Garmin AT Apollo GX-55 IFR	11-06057
INSIGHT	
Insight Strike Finder	11-06058
KING	
King KA-134 Audio Panel	11-06059
King KA-44B ADF Loop / Sense Antenna	11-06061
King KCS-55A Compass System (HSI)	11-06062
King KCS-55A Compass System (HSI) with Bootstrap Output	11-06063
King KDI-527 DME Indicator	11-06064
King KI-201C VOR / LOC Indicator	11-06066
King KI-202 GPS / VOR / LOC Indicator	11-06067
King KI-203 VOR / LOC Indicator	11-06068
King KI-204 VOR / LOC/ Glidescope Indicator	11-06069
King KI-206 GPS / VOR / LOC / Glidescope Indicator	11-06071
King KI-208 VOR / LOC / Glidescope Indicator	11-06072
King KI-209 VOR / LOC / Glidescope Indicator	11-06073
King KI-209A GPS / VOR / LOC / Glidescope Indicator	11-06074
King KI-211C VOR	11-06075
King KI-214 VOR	11-06076
King KI-227 ADF Indicator (Non-Slaved -00 Version)	11-06077
King KI-227 ADF Indicator (Slaved -01 Version)	11-06078
King KLN-89 VFR GPS Navigator	11-06079
King KLN-89B IFR-Approach GPS / Moving Map	11-06080
King KLN-90A IFR-En Route GPS / Moving Map	11-06081
King KLN-90B IFR-Approach GPS / Moving Map	11-06082
King KLN-94 IFR-Approach GPS / Moving Map System	11-06083

KING CONT.	
King KLN-94 IFR-Approach GPS / Moving Map unit only	11-06084
King KLX-135A VFR GPS	11-06085
King KMA-20 Audio Panel & Marker Beacon Receiver	11-06086
King KMA-24 Audio Panel & Marker Beacon Receiver	11-06087
King KMA-24H (-50 Series) Audio Panel and Intercom	11-06088
King KMA-24H (-70 Series) Audio Panel and Intercom	11-06089
King KMA-26 Audio Panel,	11-06090
King KN-53 NAV Receiver	11-06091
King KN-53 NAV Receiver with Glidescope	11-06092
King KN-62 DME	11-06093
King KN-62A DME	11-06094
King KN-62A DME (-01 Version)	11-06095
King KN-64 DME	11-06096
King KNI-520 GPS / VOR / LOC / Glidescope Indicator	11-06097
King KNS-80 NAV / RNAV / DME / Glidescope Receiver	11-06098
King KNS-81 NAV / RNAV / Glidescope Receiver	11-06099
King KR-21 Marker Beacon Receiver	11-06100
King KR-22 Marker Beacon Receiver	11-06101
King KR-85 ADF Receiver	11-06102
King KR-86 ADF Receiver and Indicator	11-06103
King KR-87 ADF System with Non-Slaved KI-227 Indicator	11-06104
King KR-87 ADF System with Slaved KI-227 Indicator	11-06105
King KT-70 Mode S Transponder	11-06106
King KT-71 Transponder	11-06107
King KT-76 Transponder	11-06108
King KT-76A Transponder	11-06109
King KT-76C Transponder	11-06110
King KT-78 Transponder	11-06111
King KT-78A Transponder	11-06112
King KT-79 Transponder	11-06113
King KX-125 NAV / COMM / Indicator	11-06114
King KX-155 NAV / COMM, 14 Volts	11-06115
King KX-155 NAV / COMM, 14 Volts with Glidescope	11-06116
King KX-155 NAV / COMM, 28 Volts	11-06117
King KX-155 NAV / COMM, 28 Volts with Glidescope	11-06118
King KX-155A NAV / COMM with Glidescope	11-06119
King KX-165 NAV / COMM, 14 Volts	11-06120
King KX-165 NAV / COMM, 14 Volts with Glidescope	11-06121
King KX-165 NAV / COMM, 28 Volts	11-06122
King KX-165 NAV / COMM, 28 Volts with Glidescope	11-06123
King KX-170B NAV / COMM	11-06124
King KX-175B NAV / COMM	11-06125
King KY-196 COMM Transceiver	11-06126
King KY-196A COMM Transceiver	11-06128
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King KY-197 COMM Transceiver	11-06130
King KY-197A COMM Transceiver	11-06131
King KY-96A COMM Transceiver	11-06132
King KY-97A COMM Transceiver	11-06133
L-3	
L-3 (Goodrich) WX-1000 Stormscope	11-06134
L-3 (Goodrich) WX-1000+ Stormscope	11-06135
L-3 (Goodrich) WX-900 Stormscope	11-06136
L-3 (Goodrich) WX-950 Stormscope	11-06137
MCCOY	
McCoy MAC-1700 NAV / COMM	11-06138
McCoy MAC-1700 VTX NAV / COMM	11-06139
NARCO	
Narco AT-150 Transponder	11-06140
Narco AT-50 Transponder	11-06141
Narco AT-50A Transponder	11-06142
Narco COM-810 COMM Transceiver	11-06143
Narco COM-811 COMM Transceiver	11-06144
Narco DME-890 DME	11-06145
Narco ID-824 VOR / LOC Indicator	11-06146
Narco ID-825 VOR / LOC / Glidescope Indicator	11-06147
Narco MK-12D NAV / COMM ARC (Cessna) Replacement	11-06148
Narco MK-12D NAV / COMM with Glidescope	11-06149
Narco MK-12E NAV/COMM ARC (Cessna) Replacement	11-06150
Narco MK-12E NAV/COMM with Glideslope	11-06151
Narco NAV-121 VOR / LOC Indicator / NAV Receiver	11-06152
Receiver / NAV Receiver / Marker Beacon Receiver and Indicator	11-06153
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Sandel SN-3308 Electronic HSI (EHSI)	11-06154
TERRA	
Terra TRT-250D Transponder	11-06155
TKM	
TKM MX-11 COMM Transceiver	11-06156
TKM MX-170B NAV / COMM	11-06157
TKM MX-300 NAV / COMM	11-06158
TKM MX-385 NAV / COMM	11-06159

CDIS - RELAY ASSEMBLIES

MID-CONTINENT INSTRUMENTS 2 INCH CDI

This indicator will fit the need of aircraft owners of LSA all the way up to business aircraft. The CDI allows for precise and accurate readings. Nav, GPS and VLOC annunciation are built-in and backlit by LED lighting, providing enhanced nighttime and sunlight readability. The CDI has TSO approval from the FAA and will interface with most nav and GPS receivers.

Features:

- Compact 2-1/4 inch size saves panel space
- Innovative Safety Feature – pointers move out of view with invalid signal
- Precision replacement for older navigation indicators
- Rectilinear meter movements allow for more accurate readings.
- LED backlighting looks great and provides increased reliability.
- Built-in annunciations for NAV, GPS, and VLOC or BC.
- FAA TSO approved for use with most GPS and VOR systems
- Rugged construction includes ball bearings in critical areas.
- True course resolver output (1 volt, 30 Hz)
- Quality Mil-Spec connectors included
- One year limited warranty

Specifications:

- Power Input: Accepts 11 to 32 Volts DC.
- Lighting: Internal white LED. Lighting control voltage is selectable for 5, 14, or 28
- Weight: 0.6 lbs.
- Length: 3.5 inches

Mid-Continent - CDI MD222-406 (This unit has the NAV/GPS & VLOC annunciations for the Garmin units) .... P/N 11-05106 ..... **$2,157.00**
Mid-Continent - CDI MD222-506 (This unit has the NAV/GPS & BC for all other applications) ..... P/N 11-05107 ..... **$2,157.00**
MD200-306 CDI GS Indicator ..... P/N 11-00184 ..... **$1,947.00**

MID-CONTINENT HORIZONTAL ANNUNCIATORS

Incudes CDI and suspend mode switching, independent of OBS per new GTN requirements.
Features: Compatible with Garmin GTN 6XX/7XX WAAS Navigators. Compact, self-contained GPS annunciation control unit. Automatic-dimming and daylight readable LED lighting. Single cutout and locking D-subminiature connector reduces installation costs. Quality Mil-Spec connector included. TSO-C129 certified. Qualified to RTCA DO-160 environmental specs. Designed and built in Wichita, Kansas, USA. One-year limited warranty.
14V Horizontal..... P/N 10-04769 ..... **$1,124.00**
28V Horizontal..... P/N 10-04768 ..... **$1,124.00**

AV

MID-CONTINENT COURSE DEVIATION INDICATORS

Features:

- 3 in. model fits standard panel cutout. Lighted.
- All-metal construction with ball bearings in critical areas
- FAA TSO and ETSO approved for use with all GPS and VOR systems
- High-quality rectilinear meter movements
- Annunciations for NAV, GPS and Back Course
- True course resolver output
- Pin-for-pin replacement for Collins Micro Line IND 350 Series CDI
- Can be used to replace old-style navigation indicators
- Compatible with WAAS GPS receivers
- Quality Mil-Spec connectors included

Specifications

- Voltage input: 14 VDC or 28 VDC
- Current input: 0.3 amps max
- Standard cutout (3 1/8-inch round)
- Weight: 1.4 lbs.
- Altitude: 0 to 55,000 ft.
- Rear mount panel mounting

MD200-302 CDI ..... P/N 11-10022 ..... **$1,420.00**
MD200-303 CDI Course Deviation..... P/N 11-10023 ..... **$1,610.00**
MD200-307 CDI Glideslope Course Deviation
P/N 11-10024 ..... **$2,364.00**

REMOTE SWITCHING RELAY UNIT

Remote mounted 24-pole unit features eight Nitrogen-filled relays (3 poles per relay) with Gold-plated contacts Ideal for GPS/VOR transfer and audio switching applications. Relays are activated individually by voltage or ... ground keying or as a group by ground keying. FAA PMA Approved (certified to 55,000 ft.) Versatile Mounting - Horizontal, Vertical or flat mount configurations. Fail-safe fault monitoring through interlocking of all internal relays. Adjustable dimmer output for external annunciations. Quality MIL-SPEC connector kit included. Specifications: Width: 2.86", Height: 1.52" , Depth: 2.6", Weight: .75lbs
Remote Relay Unit 14VP/N 10-02125 ..... **$848.00**
Remote Relay Unit 28V.....P/N 10-02127 ..... **$848.00**

AVMASTER RELAY 14VOLT & 28VOLT

The AvMaster Relay is the first and only self contained, fail-safe, avionics master relay package to protect expensive radio tear at an affordable price. The AvMaster Relay is installed between the power bus and the protected radios. The Avionics Master Switch then controls the AvMaster Relay only and not the radios directly. Not only does the AvMaster Relay protect the system from transient electrical spikes during normal operations, its four parallel relay controlled, surge protected circuits allow for individual fusing that separate all radios from each other. The avionics master switch is a great idea. It protects against the large power surge potential during start up and shut down. It's also useful to prevent premature wear of each radio's switches and allow the benefit of maintaining the volume settings. But, it has a major weakness. An Avionics Master Switch becomes a potential single point of failure. If it fails, ALL radios shut down! A second Avionics Master Switch has been used as the solution to this problem. However, this offers no spike protection while on and it still connects all radios together. An overload in one radio can potentially spill over to the whole avionics circuit and take them all out. The fail-safe design of the AvMaster Relay eliminates the need for a backup Avionics Master Switch. If the Avionics Master Switch ever fails, the pilot won't even realize it until after the flight is over and the Avionics Master Switch doesn't shut down the radio stack. The radios will just be controlled individually until the problem is resolved. The AvMaster Relay will pay for itself with fewer repairs over the increased lifetime of the avionics stack.
14 Volt ..... P/N 11-04857 ..... **$148.95**
28 Volt ..... P/N 11-04858 ..... **$126.95**

AMERI-KING REMOTE RELAY ASSEMBLIES

FAA TSO'd approved remote Relay Assembly. It is designed to provide Switching Function, for HSI / CKE Data Inputs, between NAV (VOR) Receiver and the approached certified GPS receiver. The Assembly consists of a 24 pole buit-in relay to simplify installation of the Switching Function. All Relays have gold-plated contacts and are Nitrogen filled for high reliability. Consists of 2 sub-groups, A & B. Subgroup A includes 20 poles switching; A failure detection pole built in; and an ILS auto override (to reverse to NC (NAV) position upon ILS frequency is turned in). Subgroup B includes 2 poles switching. Each subgroup is controlled independently. Protection includes input power reverse polarity, power transient. All relay coils are protected against EMI and transient switching. Installation is extremely simple. All necessary hardware is provided.

AK-950-R8-14V	8 Poles Relay Ass'y.	P/N 11-01407....	**$148.95**
AK-950-R8-28V	8 Poles Relay Ass'y.	P/N 11-01408....	**$148.95**
AK-950-R12-28V	12 Poles Relay Ass'y.	P/N 11-01409....	**$223.95**
AK-950-R12-14V	12 Poles Relay Ass'y.	P/N 11-01410....	**$212.95**
AK-950-R24-14V	24 Poles Relay Ass'y.	P/N 11-01411....	**$355.95**
AK-950-R24-28V	24 Poles Relay Ass'y.	P/N 11-01412....	**$355.95**
AK-950-R48-14V	48 Poles Relay Ass'y.	P/N 11-01413....	**$639.00**
AK-950-R48-28V	48 Poles Relay Ass'y.	P/N 11-01414....	**$639.00**

9500001B Connector Kit, 78 female mach. pins, crimp type Ass'y.
P/N 11-01415..... **$28.25**

AN-21 ANNUNCIATOR CONTROL UNIT

The AN-21 is a light and warning tone generator for use in experimental aircraft. A total of twenty-one circuits can be monitored, sixteen channels are activated by ground and five by positive input. Each channel activates a light and emits a warning tone when triggered. The AN-21 also includes a Windows Programming Utility to enable the user to configure it for each specific installation. Each channel, when activated, has an associated user programmable output which can be programmed to do the following: Steady light, Flashing light, Alert Tone with steady or flashing light. Features: "Master Caution" - User selected channels can trigger a Master Caution Annunciator •Test Function - Causes all lamps to illuminate to check the bulbs •Dim - Causes all Lamps to illuminate a selected lower brightness for night operation. P/N 11-04701..... **$298.00**

AIRCRAFT SPRUCE WEST
CORONA, CA • (877) 4-SPRUCE
AIRCRAFT SPRUCE EAST
PEACHTREE CITY, GA • (877) 477-7823
Prices Subject to Change Without Notice

AVIONICS COOLING FANS

TROLL AVIONICS COOLING FANS

THE ICE BOX - Avionics cooling fan is designed to mount remotely and cool up to 3 radios. It is shielded and filtered and uses standard 5/8" CAT type hose to direct air from 3 outlet ports. Thickness of the unit is only 1.4", and it operates on 14 or 28 volts. Ice Box offers a thin profile, flexible mounting, and very quiet operation. 2 yr warranty.

12V .....P/N 11-18350 .....**$163.95**
28V .....P/N 11-18360 .....**$163.95**

SUPER ICE BOX - Same as above except w/5 outlet ports instead of three, to cool 2 extra radios. 12V .....P/N 11-18365 .....**$224.95**
28V .....P/N 11-18370 .....**$224.95**

CYCLONE - The Cyclone-21 is a compact (3 x 3 x 1") aircraft electronics cooling fan that delivers 21 cubic feet per minute of forced air cooling to a variety of avionics equipment

3-port 12V fan.....P/N 11-18380 .....**$165.95**
3-port 24V fan.....P/N 11-18381 .....**$165.95**
6-port 12V fan.....P/N 11-05221 .....**$319.95**
6-port 24V fan.....P/N 11-05222 .....**$324.00**
5/8" fan tubing .....P/N 11-00504 .....**$5.50**

AMERI-KING AVIONICS COOLING FANS

The Ameri-king AK-950F is part of a FAA TSO'd approved.kit. GPS/Avionics fan is compact and delivers up to 26.6 CFM cubic feet per minute of forced air cooling to a variety of avionics equipment. It features ball bearing for highest reliability and long lasting. The AK-950F fan may be behind or beneath aircraft instrument panel or avionics equipment rack or cabin pressure bulkhead. The small, one port direct mounting fans (Fld) are for internal cooling and there is a second port for external cooling. No remote hose is required.

Features Include: power reverse polarity protection; compact size; choices of 1, 2, 3, or 5 hose outputs; universal mounting; hoses; connector kit and hardware (included). 4-year extended warranty. Size for 1-3 ports: L- 5.75" W- 5.130" H- 2.080". 5 ports: L- 6.75 " W- 5.130" H- 2.080". Small F1d port: L- 2.60" W- 2.5" H- 2.5". Power 14 or 28 VDC.

Description	14V P/N	Price	28V P/N	Price
1-port w/hose	11-18385	**$117.00**	11-01416	**$117.00**
2-ports w/2 hoses	11-18386	**$133.95**	11-00177	**$133.95**
3-ports w/3 hoses	11-18387	**$158.00**	11-01417	**$158.00**
5-ports w/5 hoses	11-18388	**$228.00**	11-01106	**$228.00**
10-ports w/ 10 hoses	11-05825	**$448.95**	11-05820	**$448.95**
Small, 1 Port (Fld)	11-01418	**$117.00**	11-01419	**$117.00**

AMERI-KING AK950-FTR RFI DC LINE FILTER

The AK950-FTR RFI DC line filter is the only TSO approved RFI filter available. The AK950-FTR was designed to replace all Hisonic RFI filters. It replaces Hisonic RFI-40, RFI-70, and RFI-100 filters. Works on 40-100 amp operation, working voltage is 30VDC. FTR1 designed to reduce noise from alternator or generator.

AK950-FTR (pictured) .....P/N 11-00182 .....**$96.75**
AK950-FTR1.....P/N 11-00183 .....**$78.75**

SANDIA ACF 314 (3 PORT FAN)

The ACF 314 and ACF 328 simultaneously cool up to three avionics units. Operating on 14Vdc and 28 Vdc respectively the ACF 314 and ACF 328 supply up to 20 cubic feet of cooling air per minute, helping maintain your avionics at a proper operating temperature. SANDIA Aerospace cooling fans use high quality, brushless blower motors and or RunQuiettm technology. These units are FAA PMA's and have passed stringent envrionmental testing to ensure years of reliable service. ***Specifications***: • Operating Voltage: 14Vdc • Current Draw: 960mA (1.7A at startup} • Size: 5.18" x 5.18" x 2.1" • Weight: 1.18 lbs. P/N 11-06345..... **$179.85**

CYCLONE 600 - 6 PORT AVIONICS COOLING FAN

The Cyclone-600 is a light weignt, highly reliable brushless DC avionics blower that delivers 45-50 CFM of forced air to onboard aircraft electronics. The universal mounting system mounts vertical, horizontally or at 45 degrees for straight forward installations for all aircraft make and models.

Features: * New DC Brushless Motor with FAA/PMA Approval. * High Performance 626ZZ Bearing for Extended Life. * High Impact Phenolic Housing. * Laser Balanced Impeller wheel. * Universal Front Plate (4,5,6, Ports). * Cable Harness (36"), included.

Benefits: * Over Current Protection * Locked Rotor Protected * Reverse Polarity Protected * FAA/PMA Approved * DO160 D Tested * Low Noise

Specifications: * Voltages: 12-14 VDC 600mA; 24-48 VDC 500mA * CFM: 45/50 CFM at 6000 RPM * Dimensions: 4.5in (H) x 3.0in (W) x 6.25in (L)

Description	Part No.	Price
Cyclone 600 6 Port Fan 12-14V	11-05221	**$319.95**
Cyclone 600 6 Port Fan 24/28V	11-05222	**$324.00**

LONE STAR 12/24 VDC BLOWER KIT

Lone Star Aviation's new 1 port blower is the smallest (1 x 2 x2), most efficient (brushless dc motor), and the most versatile avionics cooling fan in our industry today.

This New blower's universal mounting bracket makes it easy to set-up and install on a verity of aircraft Install immediately on experimental, sport and soon on general aviation, business, rotor-craft, commercial class aircraft as well as Land-Mobile, Marine and Military Vehicles.

Specifications: * Light Weight: 52 grams, 0.115 lbs * Enclosure: Aluminum, (powder coated) * Vdc, amperage: 12 = 10.2-15.8Vdc, 0.320ma * Vdc, amperage: 24 = 18.2-28.5Vdc, 0.300ma * 1 port = 5/8 inch x 1.0 * Max Static pressure: H2O = 0.64 * Max Air Flow: 6.7 CFM * Universal Mounting Bracket: (4)(mt)(h) * Operating Temp: -55C to +70C * FAA-PMA (pending), 6-30-08 * Ultra-Small Size: 2.0H x 1.00W x 2.0L * Easy Installation: (4 x 6-32) * 1 year Limited Warranty

Description	Part No.	Price
Lonestar 12 VDC Blower Kit LS03-02040	11-06567	**$129.95**
Lonestar 24 VDC Blower Kit LS03-02041	11-06568	**$129.95**

SANDIA ACF 528 5 PORT FAN PMA'D

The ACF528 is a FAA-PMA'd five port cooling fan that produces cooling air for one to five avionics units. Supplying up to 20 cubic feet of air per minute at 28 Vdc, the ACF528 can easily cool an entire stack of avionics. The ACF528 uses a brushless blower motor to provide years of reliable RunQuiet ™ operation.

Specifications: * Operating Voltage: 28Vdc * Current Draw: 480mA (850mA startup) * Size: 5.13" x 6.77" x 2.1" * Weight: 1.18 lbs * Certification FAA-PMA: DO160C

P/N 11-08020.....**$265.00**

SANDIA SAFE 128 AXIAL FAN PMA'D

The SAFE 128 is an axial fan that is designed to attach directly to an avionics unit's cooling port. Providing a nominal 20 CFM (no load) of cooling air. The SAFE 128 provides an alert output whenever the fan RPM drops below a preset level.

Specifications: * Voltage: 28 Vdc * Current Draw: 100mA nominal <.250mA Startup * Size: 2.36" x 2.87" x 1.44" * Weight: .25 lb. * Certification: PMA,DO160D * With Fault Detention

P/N 11-08019.....**$185.95**

SANDIA SAFE 528 (5 PORT) COOLING FAN

The SAFE 528 is a five port cooling fan that provides a fault output anytime the fan RPM drops below a predetermined value. The SAFE 528 is ideal for use with flight display systems that require cooling as part of the certification. The SAFE 528 uses a brushless DC motor to provided 20 cubic feet of air with reliable RunQuiettm operation.

Specifications: * Operating Voltage: 28Vdc * Current Draw: 400 MA Nominal (550MA stratup) * Size: 5.13" x 6.77" x 2.1" * Weight: 1.23 lbs. * Certification: FAA-PMA Pending

P/N 11-08017.....**$549.95**

AV

XCOM TRANSCEIVERS

XCOM VHF TRANSCEIVER

Designed from the ground up the XCOM offers superior performance under the demanding and noisy conditions experienced in many amateur built aircraft. With low power consumption this radio is ideally suited to use in gliders, homebuilts, and ultra-lights. A full 6-Watt carrier and 20 Watt PEP output ensure that you will be heard above the general chatter in a busy airspace and the VOX intercom system with music input will enhance your enjoyment of the flight. With expanded receive range from 108 MHz, the XCOM760 provides NOAA Weather reception ensuring that you are always aware of impending weather conditions. The XCOM 760 will also operate down to a 108 MHz so you can receive the VOR channels. Additional safely enhancements such as duel watch allows the pilot to listen to the standby frequency while still monitoring the primary frequency. The XCOM 760 also has 99 memory channels, large volume and channel selector knobs and well spaced buttons. This radio is extremely easy to operate even when wearing flight gloves and you can even check the condition of your battery with the built in voltage monitor. Software update capability and Internet downloads mean that you are always provided with the latest features. The XCOM 760 offers superior quality, enhanced features and improved performance over many of the more expensive airband radios, without the high cost found in other brands. FEATURES: • New easier to read LCD screen • Several software updates • Memory scanning of up to 99 memory channels • Streamlined software increasing reliability and performance • Music/Second comm input is now user selectable for another VHF, UHF or Music input • Added sidetone volume adjustment • Improved AGC controls for close and powerful stations • Improved speaker output for glider operations

760 VHF Panel Mount.....P/N 11-02206 ..... **$1,495.00**
Side by Side Standard Harness.....P/N 11-07387 ..... **$349.95**

XCOM INSTRUCTIONAL DVD WIN XP

Instructional DVD explaining the complete operation and set-up of the XCOM VHF Transceiver. 30 minutes duration. P/N 11-05674 ..... **$4.20**

XCOM UNIVERSAL STAINLESS STEEL MOUNTING BRACKETS

Designed for the XCOM VHF aircraft transceiver but equally suitable for any other radio or instrument with the same 2 1/4 inch mounting hole. Can also be used in the Marine or automotive environment.

Manufactured from 2 mm thick 304-2B grade stainless steel for strength and corrosive resistance. Two 6.5 mm holes are provided for conveniently mounting switches such as the intercom ON/OFF/Isolate and the backlight switch. Blanking plugs are factory fitted to maintain the appearance if the holes are not used.

Can be installed in any orientation e.g. left, right, top or bottom; switches can be mounted horizontally or vertically. P/N 11-05678 ..... **$73.00**

XCOM DUAL ALUMINUM BRACKET

This water jet cut bracket is ideal for mounting two XCOM's side-by-side in a normal aircraft rackmount system. Cut to the exact size required it will save you time and trouble in fitting a dual XCOM system to your aircraft. Comes mill finish in 2 mm aluminium ready for painting.

P/N 11-05679 ..... **$42.75**

XCOM GLIDER BOOM MICROPHONE

Boom Microphone - More than 1200 made and used all over the world, 3 year guarantee.

P/N 11-05675.....**$166.95**

XCOM GLIDER SPEAKER

Glider Speaker - Clear sound and easy to understand 5 watts output 8 ohm.

P/N 11-05676.....**$46.50**

XCOM REMOTE HEAD

he newest addition to the XCOM range is the XCOM VHF Remote Head option. Interfacing with the XCOM VHF, this tiny unit provides remote access to all of the capabilities of the XCOM VHF Radio in one quarter of the space. Ideal for training situations, tandem seat aircraft, limited space installations or simply to provide easy access for both pilot and co-pilot, this unit duplicates the entire XCOM VHF display and provides full access to all functions (except power on) from the front panel of the radio. The connection between the remote head and the XCOM VHF radio is via a simple cable allowing all of the controls on either panel to be duplicated on the remote. When the master unit is changed, the remote head follows and vice versa. For example, if the pilot in the front seat of the aircraft adjusts the radio to 123.450 then the remote display also adjusts to show 123.450. If the toggle button is pressed on the remote, then the frequencies are toggled on both units. All of the XCOM features apart from powering on can be duplicated with a remote head option. The remote head is extremely small, being less than 1 1/2" deep (40mm), allowing it to be installed in places where the XCOM will not fit such as in the very tight confines of the panel in the Pitts Special

P/N 11-04399 ..... **$504.00**

XCOM DELUXE KIT

The XCOM Deluxe package comes complete with XCOM VHF Transceiver , 2 place wiring harness for easy installation, electrolytic capacitor, Comant 121 TSO'd aerial and 2.5 meters double shielded coaxial cable and plugs.....P/N 11-04491 ..... **$2,113.00**
Side by Side Standard Harness.....P/N 11-07387 ..... **$349.95**

XCOM POWERMATE REGULATOR

The Power Mate regulator is designed to provide a clean DC power source to charge a 12Volt battery when connected to a single phase alternator found on Rotax and Jabiru engines. The output voltage is electronically stabilised and preset to a maximum output voltage of 14.5 V. @ 8 Amps. The Power Mate has inbuilt overload protection and is supplied with a 15 amp fuse and mounting instructions. Used on hundreds of aircraft worldwide with fantastic results removing engine electrical noise. Short circuit proof, overheating and over voltage protected, water and vibration proof, extends battery life.

P/N 11-05673..... **$354.95**

XCOM VOLTAGE CONVERTER 15-38V

Switch mode voltage converter with soft shutdown and intelligent control. Input Voltages 15 to 38 Volts, Output 13.2 Volts 7 amps. Compact, efficient, short circuit protected, reverse polarity protected, overload protected. Perfect for warbirds. Made in the UK. Lightweight 195 grams (6.8 oz), Mounting bracket supplied.

P/N 11-05680..... **$210.95**

XCOM STEREO VIDEO PATCH CABLE

Seamlessly connect a Stereo or Mono Video Camera, Tape Recorder or Digital Voice Recorder into your aircraft headsets and record all communications between the Pilot and Co-Pilot, ATC and other Aircraft. Perfect for making your own aviation videos with crystal clear narration, flight training or many other uses.

P/N 11-05658..... **$54.25**

ELECTROLYTIC CAPACITOR

Electrolytic Capacitor - 22, 000 uF 25V and absolute requirement to prevent regulator spikes on Rotax, Jabiru and other engines, the manufacturer recommend installing the electrolytic capacitor in nearly every installation to help protect your radio and other avionics from overvoltage. P/N 11-07992 ..... **$69.50**

AV

FREE FLIGHT TRA 3000 RADAR ALTIMETER / INDICATOR

The TRA 3000 Radar Altimeter, combined with the TRI40 Radar Indicator, provides precise AGL information from 2,500 feet down to 40 feet. This real-time system offers an extra measure of operational safety during landing, navigation, and hovering. It is especially useful in flying search and rescue missions, forestry operations, pipeline maintenance, offshore helicopter operations, aeromedical emergency medical services, border patrol, and electronic news gathering operations. The transmitter / receiver and antenna fit in a single lightweight & aerodynamic unit that is easy to install.

TRA 3000 with TRI 40 ..... P/N 10-02519 ..... **$5,978.00**

FREE FLIGHT RA-4000 RADAR ALTIMETER

For critical flight regimes, the new TSO-certified RA-4000 Radar Altimeter provides today's pilots with highly accurate and reliable above-ground-level (AGL) information. This real-time system enhances operational safety during approaches, nighttime operations, and hazardous flight above rough terrain. One of our newest radar altimeters, the RA-4000 is especially valuable when flying search and rescue missions, forestry operations, pipeline maintenance, off shore helicopter ops, aero-medical emergency services, border patrol, and electronic news gathering operations. The RA-4000 Radar Altimeter is designed to be easily integrated with electronic flight information systems (EFIS), flight director systems, and terrain awareness and warning systems (TAWS), possessing serial inputs.

Proven and precise, the RA-4000 offers improved situational awareness for a broad range of fixed and rotary wing aircraft. Designed for applications where accuracy is needed down to zero feet, such as helicopter and seaplane operations, the RA-4000 provides precise AGL information from 2000 feet down to ground level.

RA-4000 ..... P/N 10-03976 ..... **$11,376.00**

FREE FLIGHT RA-45000 RADAR ALTIMETER

For critical flight regimes, the new FreeFlight Systems RA-4500 Radar Altimeter (TSO-C87) provides today's flight crews with dependable, highly accurate and economical above-ground-level (AGL) information. This real-time system enhances operational safety during approaches, nighttime operations, and hazardous flight above rough terrain. The newest radar altimeter model, the RA-4500 is especially valuable when flying search and rescue missions, forestry operations, pipeline maintenance, off shore helicopter ops, helicopter emergency medical services (HEMS), other aero-medical emergency services, border patrol, and electronic news gathering operations. The RA-4500 Radar Altimeter with its ARINC 429 output can be easily coupled with modern electronic flight information systems (EFIS), flight director systems, and Terrain Awareness and Warning Systems (TAWS). Proven and precise, the RA-4500 offers improved situational awareness for a broad range of fixed and rotary wing aircraft. Designed for applications such as helicopter and seaplane operations where accuracy is needed down to zero feet, the RA-4500 provide precise AGL information from 2000 feet down to ground level.

RA-4500 ..... P/N 10-03977 ..... **$12,466.00**

TRIG TT21 MODE S TRANSPONDER

The TT21 system is the smallest, lightest, Mode S general aviation transponder. This two part system, which includes an integrated altitude encoder, can fit into the smallest of aircraft – and yet it is fully certified and compliant with all the transponder requirements. The front panel controller can be installed in a standard 2¼ inch instrument cut-out, or where space is really tight it can fit a compact cut-out just 45mm high. The TT21 transponder itself is also only 45mm high, and can be installed anywhere convenient in the airframe. Mode S for Light Aviation - The TT21 transponder is an ED-73B Class 2 compliant Mode S level 2 datalink transponder, with support for extended squitter. It meets all the requirements for Mode S elementary surveillance transponders in Europe for aircraft flying below 15,000 feet and with airspeeds below 175 knots. It can be used for both IFR and VFR flight. The TT21 also supports 1090 MHz Automatic Dependent Surveillance Broadcast (ADS-B) extended squitter, known as "ADS-B out". This provides improved airborne surveillance, vital information for airport ground surveillance, and is a key feature of future airspace plans. An appropriate GPS receiver is required to enable the ADS-B capability.

TT21 Mode S Transponder Unit Only..... P/N 11-09757..... **$1,642.00**
TT21 Mode S Transponder Complete Kit.... P/N 11-07999..... **$2,265.00**
Install Kit ..... P/N 11-09755..... **$176.95**
Mounting Tray..... P/N 11-09758..... **$22.50**
RAM Cradle UNI Thick Tablets ..... P/N 11-09768..... **$28.52**
TC20 Control ..... P/N 11-09762..... **$548.00**

TRIG TT31 MODE S TRANSPONDER

The TT31 is a power efficient, inexpensive, Mode S general aviation transponder. The TT31 meets the European elementary surveillance requirements, and fits the same mounting tray as the popular KT76A transponder, making it ideal for both new and retrofit installations.

The TT31 front panel has a backlit graphic display that provides easy access to the transponder functions, including setting of the Flight ID. Squawk code and Flight ID input uses a conventional rotary knob, and all functions are easily operated.

Meet Current and Future Mandates - The TT31 transponder is an ED-73B Class 1 compliant Mode S level 2 datalink transponder, with support for extended squitter. It meets all the current requirements for non-diversity Mode S elementary surveillance transponders in Europe for both IFR and VFR flight.

The TT31 also supports 1090 MHz Automatic Dependent Surveillance Broadcast (ADS-B) extended squitter, known as "ADS-B out". By linking the TT31 to your existing GPS receiver, the TT31 can transmit position information to appropriately equipped ground stations and other aircraft. This provides improved airborne surveillance, provides vital information for airport ground surveillance, and is a key feature of future airspace plans.

TT31 Mode S Transponder ..... P/N 11-07997..... **$2,395.00**
TT31 Mode S Transponder Replacement KT-76X
..... P/N 11-07998..... **$2,315.00**

TRIG TT22 MODE S TRANSPONDER

The TT22, is a high-power version of its miniature transponder based on the design and technology of the TT21 Mode S transponder. The TT21 is very popular, especially in the microlight and glider communities, "What was missing was a higher output version. With the TT22, Trig was adding just that."

The T22 qualifies as a Class 1 transponder, which are used on high-performance aircraft - those cruising faster than 175 knots and operating above 15,000 feet. The TT22 is fully certified with EASA ETSO and FAA TSO approval for IFR and VFR flight. It is part of the Trig automatic dependent surveillance-broadcasting product line, and includes extended squitter ADS-B Out, a key feature of future airspace plans.

Features:

- Low Weight - less than 500 grams!
- Minimal Panel Space
- Low Power Consumption
- 250 Watts Nominal Output
- Integrated Altitude Encoder
- Simple Installation
- Support for 1090ES ADS-B Out

TT22 Mode S Transponder Unit Only.....P/N 11-09759 ... **$1,898.00**
Install Kit.....P/N 11-09755 ..... **$176.95**
Mounting Tray.....P/N 11-09758 ..... **$22.50**
TC20 Control .....P/N 11-09762 ..... **$548.00**
TT22 Mode S Transponder Complete Kit.....P/N 11-08322 ... **$2,475.00**

AV

ENCODERS - CABIN SPEAKERS

ACK A-30 ALTITUDE ENCODER

Add Mode C capability to your aircraft the most cost-effective way. The ACK encoder is the smallest, lightest, highest quality encoder available today and features the latest solid-state electronics for high reliability. Installation is quick and easy and usually is completed in less than 1 hour. It is compatible with most transponders in use today and reports altitude to 30,750 ft. Includes quick-release mounting tray, 4-ft. color-coded wiring harness with prewired jack, static line and fittings for installation in any aircraft, and installation manual with popular transponder pin-outs. 1yr. warranty. P/N 11-01561 ..... **$188.00**

ACK A30.9 (MOD 9) ENCODER

The ACK A30.9 (Mod 9) encoder is ideal for use with most GPS and TAWS systems, and works well with most of today's mode S transponders. Feature Gray code in 100ft. increments and RS-232 in 10 or 100 feet increments. Furnished with a 4 ft. harness, pre-wired jack, quick release mounting tray, fittings, static line, and installation manual. Reports altitude to 42,000 ft. One Year Warranty. P/N 11-02375 **$239.50**

AMERI-KING ALTITUDE ENCODERS

The Ameri-King AK-350 is the most advanced blind altitude reporter on the market, extremely accurate and reliable, the AK-350 is compatible with all transponders, is TSO-C88 approved, and reports altitude to 30,000 ft. Only 3.5"x 2"x 4.75" and weighs 0.4 lbs. Perfect for pressurized or non-pressurized installations and uses 14V or 28V power. Installation is very simple; all accessories and installation instructions are included. 3 year extended warranty. The AK-35, AK-40 and AK-50 encoders are designed for aircraft flying at altitudes higher than 30,000 ft.

Model #	Max. Altitude	Part No.	Price
AK-350	30,000 ft.	11-12010	**$168.95**
AK-35	35,000 ft.	11-12011	**$520.00**
AK-40	40,000 ft.	11-12012	**$748.00**
AK-50	50,000 ft.	11-12013	**$748.00**
AK-60	62,000 ft.	11-01250	**$1,255.00**

TRANS-CAL ALTITUDE ENCODER MODEL SSD120-30N

Reliable service for over 10 years. * Pin for pin replacement for most other manufacturers encoders. * Comes with Mating Connectors with Cable Clamps, and Mounting Bracket. * Optional: Available with two independent RS232 serial data ports selectable message protocols for most popular avionics interfaces. Programmable for 100' and 10' resolutions. See Part No. 11-06983 * Optional: Available with adapter plates that will allow the installer to mount the unit in another manufacturers mounting tray. Specifications: * Size: 2.5"W x 3.42"H x 1.38"L.* Weight: 5.9 oz. * Will operate on either 14 or 28 VCD at 0.270 Amps.

There are two versions of this model:

• Standard Version SSD120-30N

• Version SSD120-30N-MOD1 for NARCO AT-5A, 6A, 50, 50A Transponders. The Narco AT-5A, AT-6A, AT-50* or AT-50A transponder will not accept data from the SSD120-(XX)N() Altitude Digitizer. A recent modification to remove the output decoupling capacitors is required and this version includes that modification.

30,000 ft. Range ..... P/N 11-06489 ..... **$267.00**
35,000 ft. Range ..... P/N 11-09608 ..... **$335.95**
SSD120-30N-MOD1 ..... P/N 11-09916 ..... **$386.95**

TRANS-CAL ALTITUDE ENCODER MODEL SSD120-30N-RS232

Reliable service for over 10 years. Pin for pin replacement for most other manufacturers encoders. Optional: Available with adapter plates that will allow the installer to mount the unit in another manufacturers mounting tray. * Will operate on either 14 or 28 VCD at 0.270 Amps.

There are two versions of this model:

•Standard Version SSD120-30N-RS232

•Version SSD120-30N-RS232-MOD1 for NARCO AT-5A, 6A, 50, 50A Transponders. The Narco AT-5A, AT-6A, AT-50* or AT-50A transponder will not accept data from the SSD120-(XX)N-RS232 Altitude Digitizer. A recent modification to remove the output decoupling capacitors is required and this version includes that modification.

30,000 ft. Range ..... P/N 11-06983 ..... **$329.00**
35,000 ft. Range ..... P/N 11-09609 ..... **$464.95**
SSD120-3N-RS232-MOD1 ..... P/N 11-09917 ..... **$341.95**

SANDIA SAE5-35 ALTITUDE ENCODER

The SAE5-35 altitude encoder from Sandia is small (1" high), lightweight (12 oz.) and utilizes Gillham Grey code in 100' resolution for optimum performance and accuracy. Features two RS232 outputs in 10 foot resolution, simplifying installations. All connectors are on the same side for easy mounting, and digital calibration eliminates analog drift. Altitude In-Flight Monitoring (AIM) mode alerts the pilot when he strays off altitude. Requires virtually no warm up time and uses very little power. Fully TSO'd and backed by factory 3 year warranty. Power: 11-33VDC. P/N 11-00665 ..... **$359.00**

SANDIA SAC 7-35 AIRDATA COMPUTER

The SAC 7-35 is FAA TSO Approved as an altitude encoder. It provides standard Gillham Grey code for legacy transponders and RS-232 data for the new generations of transponders. Altitude Alerting. The SAC 7-35 has SANDIA Aerospace's exclusive AIM (Altitude Inflight Monitoring) that alerts the pilot anytime he deviates more than 100 feet from his selected altitude. Fuel Flow. The addition of a fuel flow transducer (two for a twin) and your SAC 7-35 provides all the fuel flow data your navigation systems needs to monitor your fuel situation. Airdata Computer. The SAC 7-35 is a full up TSO'd Airdata Computer offering all of the functions and capabilities of systems costing thousands of dollars more. The SAC 7-35 has multiple interface formats that allow it to provide data to a wide variety of avionics systems. Designed and manufactured to most exacting standards, you can depend on SANDIA Aerospace products to provide years of reliable service. And every product is backed by a three year warranty and personal service support.

P/N 11-07938..... **$2,176.00**

SANDIA SAC 7-35-01 AIRDATA COMPUTER

The SANDIA aerospace SAC 7-35-01 is an airdata computer and data translator that interfaces the Garmin 400W/500W navigators Downlinked Aircraft Parameters in ARINC 429/743 format to the Collins TDR 94D for ADS-B out capabilities. **Functions**: • Altitude Encoder. The SAC 7-35 is FAA TSO Approved as an altitude encoder. It provides standard Gillham Grey code for legacy transponders and RS-232 data for the new generations of transponders. • Altitude Alerting. The SAC 7-35 has SANDIA Aerospace's exclusive AIM (Altitude Inflight Monitoring) that alerts the pilot anytime he deviates more than 100 feet from his selected altitude. • Fuel Flow. The addition of a fuel flow transducer (two for a twin) and your SAC 7-35 provides all the fuel flow data your navigation systems needs to monitor your fuel situation. • Airdata Computer. The SAC 7-35 is a full up TSO'd Airdata Computer offering all of the functions and capabilities of systems costing thousands of dollars more. The SAC 7-35 has multiple interface formats that allow it to provide data to a wide variety of avionics systems. P/N 11-09321..... **$3,612.85**

ICARUS MODEL 3000U ALTITUDE SERIALIZER

The Icarus Model 3000U Altitude serializer connects to the existing Mode C encoder in the aircraft. It converts the gray-code into a decimal format and sends it to the GPS receiver using a serial connection. It will function with Trimble,Garmin 150, Northstar, and Apollo GPS receivers.

Features: • Northstar has tested and approved the 3000U for use with its GPS receivers. • Garmin has tested and approved the 3000U for use with its approach approved GPS receivers. • Trimble Navigation has tested and approved the Model 3000U for use with its GPS aviation receivers. • IIMorrow has tested and approved the Model 3000U for use with all of its GPS aviation receivers.• Note: Please advise if transponder is a Narco AT-50 or 50A. or a Wilcox 1014.

Specifications: • Weight: 5oz. • Power requirements: 10 to 30 vdc at 20 ma. (must be fused) • Size: 4.2" x 3" x 1"

P/N 11-04692 ..... **$256.95**

MICROAIR EC2002 ALTITUDE ENCODER

EC2002 will accurately report the aircraft's altitude from -1000 to +35,000ft. The altitude output will be via the 10 line Gillham "Gray" code. Accuracy has been measured as a 40 foot drift over 35,000 feet. Lowest power requirements of any altitude encoder today. Typical current consumption of 10 – 90mA, this makes it the logical choice for all battery only operators. Small size and light weight make installation very simple. The chassis is flanged, and is predrilled with mounting holes for easy attachment. The connections consist of the well know DB-15 electrical connector with pin assignments identical to many existing encoders, and a 1/8" NPT fitting which is an industry standard for aircraft equipment. These connections make it compatible with all ATC transponders currently available. P/N 11-05105 ..... **$332.95**

AV

BECKER MODE S BXP-6403-2

The BXP6403-2-(01) is a compact and lightweight single block Mode-S transponder. It is certified according to ETSO-2C112b and is suited for VFR and IFR operations up to 15000 feet. The transponder is equipped with extended squitter and SI code function and it provides an interface to the central aircraft data system. It allows ELS, supports EHS, as well as ADS-B via extended squitter. The Mode S ICAO address and additional fixed data are stored in a separate address module, AM6400-1-(01), which is plugged on to the transponder and remains in the aircraft when the transponder is exchanged. The BXP6403-2-(01) is designed for slide-in mounting (tray available) and fits into a 160.3 x 41.28 mm cut out. The use of an adapter (available as accessory) allows for retrofit in a KT 76 A tray.

Description	Part No.	Price
Bxp6403-2-(01) - Mode S Transponder with installation kit for retrofit of kt76a - for vfr installation type 175 watt power output, extended squitter	11-06608	**$2,995.00**
Bxp6403-1-(01) - Mode S Transponder with installation kit for retrofit of kt76a - for ifr installation type 250 watt power output, extended squitter	11-06609	**$3,395.00**
Mode S Tansponder with installation kit for new installation. Class 2 for vfr installation type 175 watt power output, extended squitter	11-06694	**$3,085.00**
Mode S Transponder with installation kit for new installation. Class 1 for ifr installation type 250 watt power output, extended squitter	11-06695	**$3,215.00**

BECKER ATC 4401 175W MODE C TRANSPONDER

The ATC 4401 has been designed as a part of the Becker Compact Line for all aircraft and helicopters where small dimensions and light weight are essential. It has the same look and similar size as the successful transceiver AR 4201. The mounting behind the panel is as simple as for the AR 4201. The sunlight readable display is illuminated for night operations. Despite the small size, the operation is simple and straight forward. It even allows the one button recall of two preselected codes. **In The Box**: • ATC 4401 175W Mode C • Connector Kit (Solder type) **Specifications**: • Weight: 1.59lbs • Width: 2.41in • Length: 2.41 in • Depth (w/0 connector): 7.55in • Warranty: 2 years • Power Requirement: 14-28 VDC• TSO/JTSO C74c, C88a

ATC 4401 175W ..... P/N 11-01094 ..... **$1,995.00**
ATC 4401 250W..... P/N 11-01095 ..... **$2,245.00**
ATC 4401 Harness..... P/N 11-07874 ..... **$160.00**

BECKER AR 4201 TRANSCEIVER

Even smaller and lighter than its forerunner - the legendary AR 3201 - it is ideal for installation in gliders, motor gliders and small aircraft due to its low power requirement and 2 1/4 inch round panel cutout. Features: 118 - 136.975MHz, 25 kHz, 760 Channels, 7W Power Output, 5W Min., Sunlight Readable LCD, Active / Preset Frequencies, Channel Mode, Memory Up to 99 Channels, TSO/JTSO C74c, C88a Specifications: Width: 2.41", Length: 2.41", Depth (w/o connector): 7.55", Weight: 1.47lbs, Warranty: 2 years Power Requirement: 14 VDC..... P/N 11-01566 ..... **$1,395.00**
AR 4201 COM Harness ..... P/N 11-07086 ..... **$178.95**
Outside Air Temp Sender..... P/N 11-02190 ..... **$117.95**

BECKER AR 6201 TRANSCEIVER

Smaller and lighter than its legendary forerunner AR 4201 due to implementation of state-of-art DSP (Digital Signal Processing) technology. It is mountable in the 2 1/4 inch standard instrument panel recess, equipped with a highly efficient AM-transmitter, offering easy switching between the 8,33 and the 25 kHz mode. A built-in-test facility increases flight safety. The dual monitor mode allows scanning of two different channels. **Specifications**: • Frequency from 118.000 MHz to 136.990 MHz • 8,33 or 25 kHz channel spacing • RF-Output Power: > 6 W • Supply voltage 9 to 36 V DC

P/N 11-08550 ..... **$1,838.00**

COM / TRANSPONDER COMBO PACKAGES

MODE C COMBO 175 - Includes: Becker AR 4201 Com and the ATC 4401-1 175W transponder P/N 11-01096..... **$3,415.50**

MODE C COMBO-250 - Includes: AR 4201 Com, ATC 4401 175W Transponder, Solder Connector Kits P/N 11-07853..... **$3,585.00**

MODE S 150 COMBO - Includes: AR 4201 Com, BXP 6401 150W Transponder, and Solder Connector Kits for Both Units P/N 11-07854..... **$3,825.00**

MODE S 250 COMBO - Package consists of AR 4201 Com, BXP 6401 250W Transponder, Solder Connector Kits for Both Units P/N 11-07856..... **$4,525.00**

BECKER BXP6401-2-(01) MODE-S TRANSPONDER

Single block Mode-S transponder. It is certified according to ETSO-2C112a and is suited for VFR and IFR operations up to 15,000 feet. Equipped with extended squitter and SI code function and it provides an interface to the central aircraft data system. It allows ELS, supports EHS, as well as ADS-B via extended squitter. Designed for panel mounting and fits into a 2 ¼ inch cut out.

BXP6401-2-(01)..... P/N 11-05326..... **$2,595.00**
Becker 1K6401 Harness ..... P/N 11-07192..... **$200.00**

BECKER CU 5401 CONTROL UNIT

The CU 5401 - ( ) control unit is designed for installation in the instrument panel of aircraft. The dimensions of the unit correspond to the ARINC standard for instruments. All controls are located on the front panel of the unit. The 15-pole unit connector is mounted on the back of the control unit.

CU 5401 Control Unit..... P/N 11-07858..... **$775.00**
ATC 4401 Remote Harness..... P/N 11-07320..... **$160.00**

BECKER CU 5209 TRANSCEIVER CONTROL UNIT

The CU 5209 control unit is used to operate and control the RT 3209 or CM 4201 VHF-Transceiver. Both enable voice communications on 760 channels in the 118.000 MHz to 136.975 MHz frquency range with a channel spacing of 25 kHz. The mechanical construction of the control unit is such that it can be installed without limitation in aircraft. There is no restriction with regard to installation in the instrument panel or installation by rigid attachment to the fuselage in any aircraft, including rotary wing aircraft, in the verified environmental categories. Specifications: Fits into a standard 2-1/4" (57mm) round instrument cut out, Depth: 2-1/2", Weight: .57 lbs, 14 to 28 VDC, Power Required ***Note: The CU 5209 can only work with the CM 4201 or RT 32309 remote com.***

CU 5209 Control Unit..... P/N 11-07857..... **$725.00**
RS232 to RS422 Adapter - Essential for proper communication with the CM 4201 and the control unit, CU 5209. P/N 11-07964..... **$71.50**

BECKER CU 6401-1 CONTROL UNIT

Control Unit for the BXP 6402 series transponders. Together with the Mode-S transponder BXP 6402, the control unit CU 6401 forms the aircraft part of the air traffic control system.

CU 6401-1 ..... P/N 11-07859..... **$918.00**

REMOTE COM / TRANSPONDER COMBO PACKAGES

MODE C COMBO 175 - Includes: CU 5209 – Remote Com Head, CM 4201 – Remote Com, CU 6401 – Remote Transponder Head, 6402 250W – Remote Transponder, Solder Connector Kits for All Units Note: Package.....P/N 11-03513 ..... **$4,895.00**

MODE C COMBO-250 - Includes: CU 5209 – Remote Com Head, CM 4201 – Remote Com, CU 5209 – Remote Transponder Head, ATC 4401 250W – Remote Transponder, Solder Connector Kits for All Units Package.....P/N 11-07848 ..... **$5,195.00**

MODE S 150 COMBO - Includes: CU 5209 – Remote Com Head, CM 4201 – Remote Com, CU 6401 – Remote Transponder Head, 6402 150W – Remote Transponder, Solder Connector Kits for All Units. Package.....P/N 11-07849 ..... **$5,595.00**

MODE S 250 COMBO - Includes: CU 5209 – Remote Com Head, CM 4201 – Remote Com, CU 6401 – Remote Transponder Head, 6402 250W – Remote Transponder, Solder Connector Kits for All Units.... Package.....P/N 11-07851 ..... **$6,395.00**

Must order 11-07875 remote bracket with these packages.
Bracket.....P/N 11-07875 ..... **$150.00**

BECKER BXP6402-2-R TRANSPONDER

The BXP 6402-2R-(01) remote controlled Mode-S transponder forms, together with the corresponding control unit, the airborne component of the Air Traffic Control (ATC). It functions in accordance with the secondary radar principle and allows air traffic control to locate, identify and track aircraft.

BXP 6402-2 150W Remote ..... P/N 11-07860..... **$2,630.00**
BXP 6402-1 250W Remote ..... P/N 11-07861..... **$3,285.00**
BXP 6402 Remote Harness ..... P/N 11-07195..... **$295.00**

BECKER ATC 4401-2-175 TRANSPONDER

The ATC 4401-2 remote controlled transponder forms, to gether with a corresponding control unit, the airborne component of the Air Traffic Control Radar Beacon System ATCRBS. It functions in accordance with these secondary radar principle and allows the respective ground stations to locate, identify and track aircraft.

ATC 4401-2 175W Remote ..... P/N 11-07846..... **$2,195.00**
ATC 4401-2 275W Remote ..... P/N 11-07847..... **$2,432.00**

AV

BECKER – MICROAIR – APPROACH HUB

BECKER CM 4201 REMOTE TRANSCEIVER UNIT

Enables pilots and installation engineers to customize the VHF communication radios in any aircraft. Ideally suited for installations where minimum panel space is to be used. It utilizes a small, lightweight CU 5209 control unit, which fits into a standard 2 1/4" (57 mm) round instrument panel cut-out, and is only 2 1/2" deep. The CM 4201 offers 760 channels in the 118.000 MHzto 136.975 MHZ frequency range with channel spacing of 25 kHz, and has an output power of 5 - 7 Watts carrier (16 W PEP) with 99 channel memories. Note: Will only work with the CU 5209 Control Unit.

CM 4201 Remote COM Unit..... P/N 11-07843.....**$1,438.00**
CM 4201 Remote Harness..... P/N 11-07197.....**$180.00**
CU 5209 Control Unit ..... P/N 11-07857.....**$725.00**
RS232 to RS422 Adapter - Essential for proper communication with the CM 4201 and the control unit, CU 5209. P/N 11-07964.....**$71.50**

BECKER RT 3209 REMOTE TRANSCEIVER UNIT

Enables pilots and installation engineers to customize the VHF communication radios in any aircraft. Ideally suited for installations where minimum panel space is to be used. It utilizes a small, lightweight CU 5209 control unit, which fits into a standard 2 1/4'' (57 mm) round instrument panel cutout, and is only 2 1/2'' deep. The lightweight remote transceiver unit, AR 3209 - (11) is mated with this control head, to complete the system. It can be installed at any convenient place in the aircraft. Both, active and preset frequencies are displayed. Up to 20 preset frequencies can be easily entered in channel mode from the front panel, and stored in non volatile memory. Note: Will only work with the CU5209 Control Unit

RT 3209 Remote COM Unit ..... P/N 11-07844.....**$3,095.00**
RT 3209 Remote harness ..... P/N 11-07196.....**$180.00**
CU 5209 Control Unit ..... P/N 11-07857.....**$725.00**

BECKER AR3209-11 TRANSCIEVER

This transceiver is ideal for aviation professionals, who need the ultimate in performance and reliability. Because of efficient design and rugged construction, the AR 3209 transceiver is particularly well suited to demanding military operational environments. 760 channels may be tuned in the frequency range of 118.0 to 136.975 MHz, and 20 preset channels can be stored for immediate recall. It has an output of 10 W, with a power supply of 28 VDC. The complete system is housed in a single compact unit, which mounts in standard 5 3/4 '' DZUS rails. It does not require the remote boxes, interconnecting cables, or forced air cooling of older generation equipment.

AR 3209-11 Tranceiver ..... P/N 11-08131.....**$4,495.00**

BECKER GK 415 VHF MOBILE TRANSCEIVER

With its new set of features the Becker GK 415 provides excellent durability and reliability in demanding operating environments, capable of being hand-carried in its durable bag, installed in any vehicle or fixed as a low base station. Specifications: • Supply Voltage: External 10.0 – 32.0 VDC via charging device for 115/230 V, AC internal 12 V, 2.2 Ah Dry-lead-acid battery • Power Consumption: Receive Current: 70 mA Transmit Current: 2.5 A • Frequency Range: 118.000 – 136.975 MHz • Frequency Channels: 760 Channel Spacing: 25 kHz • Memories: 99 Storage • Height: 3.15" • Width: 6.29" • Depth: 10.63" • Weight: 6.61lbs • Warranty: 2 years • Com is TSO/JTSO C74c, C88a

GK 415 5W VHF/AM Mobile Tranceiver..... P/N 11-01097....**$2,650.00**
GK 415 10W VHF/AM Mobile Tranceiver..... P/N 11-07845....**$2,650.00**

APPROACH SPORT HUB AVIONICS WIRING SYSTEMS

Simply install the appropriate Approach hub for your instrument panel (basic, VFR or IFR), select the appropriate Approach cables for your avionics, and plug it in and your done. Upgrading and replacing avionics only requires a new Approach cable and future maintainability is greatly enhanced eliminating most hand writing and troubleshooting. All cabling is Milspec Tefzel and complies with FAA AC43-13B.

STEP 1: Select the appropriate Approach Hub for your instrument panel configuration.

Basic instrument panel configuration ..... P/N 11-01457 .. **$199.95**
VFR instrument panel configurations ..... P/N 11-01458 .. **$372.95**
IFR instrument panel configurations..... P/N 11-01459 .. **$575.00**
Pro G Hub for Garmin Stacks..... P/N 11-01893 .. **$489.95**

STEP 2: choose the Approach cables for your specific avionics.

SEE A COMPLETE LISTING OF APPROACH CABLES AT www.aircraftspruce.com

MICROAIR 760 COM REVISION P

Designed and manufactured in Australia, the Micro Air 760 VHF transceiver is ideal for aircraft requiring compact size and low power consumption. It has many of the features not found in radios costing much more and includes features not available in any other units. It's compatible with a variety of speaker & microphone combinations including all general aviation microphones. Standard model mounts in a standard 2-1/4" panel hole and weighs only 19.4 oz. It has been proven in high noise environments such as Rotax 2-stroke engines and is excellent for gliders, Ultralights, a general aviation aircraft. A unique LED multifunction annunciator located at the top right of the unit provides several alerts, and an external memory toggle switch allows remote control of the memory frequencies. Transmit output: 4W, Size: 2.56" x 2.44" x 7.779"d, 14V. Standard 2-1/4" model..... P/N 11-18700..... **$1,044.00**

760 Harness rev Q..... P/N 11-06306..... **$283.95**
M760 Twin Gold Harness..... P/N 11-07113..... **$233.95**
Boom Mic BM470-E ..... P/N 11-02864..... **$125.95**
Boom Mic BM470-D ..... P/N 11-08148..... **$125.95**
Spaker Box SP01 ..... P/N 11-02865..... **$43.00**

MICROAIR T2000 TRANSPONDER

The Microair Avionics T2000SFL Transponder is a mode 3A/C aircraft transponder designed to operate in an ATCRBS environment. The T2000SFL has been designed to meet RTCA/DO-144 requirements, and has been tested to DO-160D for environmental and EMC requirements.

The T2000SFL software has been developed and approved under RTCA/DO 178B requirements. The T2000SFL is a small lightweight transponder with low power requirements. The T2000SFL is compatible with any C88a compliant altitude encoder, and offers the following features: * Mode 3 A response (4096 codes) * Mode C altitude response * SPI indent response * Encoder Altitude displayed * Altitude Alert (HI / LO) * Voltage alter (OV / UV) * Security coding of serial number * Option to power encoder only in mode C operation.

T2000 Transponder..... P/N 11-00990..... **$2,458.00**
EC2002 Altitude Encoder..... P/N 11-05105..... **$332.95**
Harness T2000SFL Dynon..... P/N 13-08295..... **$199.00**
Harness T2000SFL Enigma..... P/N 13-08296..... **$193.95**
Ameri-King Encoder AK-350 30K..... P/N 11-12010..... **$168.95**
T2000 Harness AK-350..... P/N 11-01361..... **$196.95**
T2000 Coaxial Cable Kit 3.2M ..... P/N 11-02862..... **$45.25**

MICROAIR COMBO KITS

TRANSPONDER KIT TSO - Includes: T2000 Transponder, Ameri-King AK-350 Encoder, T2000 Wire Harness, Transponder Antenna, & Coax Kit Package.....P/N 11-02866 ..... **$2,887.00**

TRANSPONDER KIT NON TSO - Includes: T2000 Transponder, EC2002 Encoder, T2000 Wire Harness, Transponder Antenna, & Coax Kit Package.....P/N 11-05811 ..... **$2,439.00**

WORKS COMBO KIT- Includes: T2000 Transponder, EC2002 Encoder, Transponder Antenna, M760 Tranceiver, 4 place Voz Intercom, 2 wiring Harnesses, & Coax Kit Package.....P/N 11-02867 ..... **$3,568.00**

MICROAIR T2000UAV-L TRANSPONDERS

A special version of the T2000 Transponder, designed for operation in unmanned aircraft. This product is NOT TSO'd due to the OEM nature of the management software. It can help you to open ATC controlled airspace for your product, by making the UAV visible to ATC controllers. The UAV operator will be able to enter an ID code given by ATC, into the T2000UAV-L, to make the UAV uniquely identifiable. Transponder capability will make your UAV visible to TCAS operators, which affords great safety for commercial aircraft operators. The transponder will reply to all mode A and mode C interrogations, and will accept barometric altitude Gray scale (Gillham Code) data. It was designed for very low power consumption, which permits prolonged operation on battery. Can however still pulse out a 200W signal. Light at only 454g (16oz), and easy to istall. Available with either a standard BNC connector or standard TNC connector loaded on the rear face of the chassis.

T2000UAV-L TNC Connector..... P/N 11-07934.....**$3,395.00**
T2000UAV-L BNC Connector..... P/N 11-07935.....**$3,105.00**

MICROAIR MIC-45 MICROPHONE BM470D

A flexible gooseneck microphone. Mounting consists of a steel plate, with right angle flange for attachment of the flexible boom. Boom is fabricated from flexible aluminium conduit, with a conical aluminium housing at the tip to accommodate the microphone capsule. Offers superior noise cancellation and is terminated with a single core shielded 24awg wire. Approx 3m of free wire is provided for connection to the radio. Length: 470cm (18.5"). Cable Length: 3m (9' 8"). Weight: 480g (17oz). Microphone type: Omni directional with effective range 25-100mm (1-4"). Current Drain: 5-10mA Impedance: (600 ohm). Sensitivity: -80dB. Frequency Response: 60Hz to 12Hz

MIC-45..... P/N 11-08148.....**$125.95**

AV

PS ENGINEERING – AUDIO PANELS

PAV 80 IFE SYSTEM

Incorporates AM/FM radio, CD/MP3/MP3Pro for music, plus the added dimension of DVD video. A panel mounted player unit. A 5.5" Liquid Crystal Display (LCD) video terminal provides full color pictures(sold separatley). Up to 4 displays can be driven, using an optional video distribution amplifier. Multi-tasking capability. When coupled to an audio control system, such as PMA 7000B, the pilot & copilot can listen to the radio, while the DVD movie audio is provided to the passengers or visa versa. Designed specifically as a general aviation entertainment system by pilots for pilots, and incorporates the most asked-for features in an IFE system.

PAV 80 AM/FM/CD/MP3/DVD player .....P/N 11-02221 .....**$2,995.00**
Video Distrib. Amp for PAV80-0100.....P/N 11-02550 .....**$795.00**
5.6" color LCD display for PAV80-0100.....P/N 11-02551 .....**$395.00**
Remote IR Sensor For PAV80.....P/N 11-05157 .....**$79.95**

PS ENGINEERING PCD 7100 STEREO INTERCOM/CD PLAYERS

An integrated Intercom and CD player designed specifically for aircraft installations. Incorporates PS Engineering's exclusive IntelliVox™, automating the digitally controlled intercom squelch. Has music and intercom volume controls. 5 back-lit CD push button controls with LED mode annunciation In ISO mode, the pilot hears only aircraft radio traffic, without music or intercom interruptions. In crew mode, the pilot and copilot hear the internal CD player and radio traffic. Automatic fail-safe feature (EMG) connects the pilot directly to the aircraft radios if power is removed from the unit. Both the pilot and copilot have transmit capability over the aircraft radios. In ALL mode, all intercom positions hear the aircraft radios and the CD Player, with PS Engineering's proprietary SoftMute™ circuit. Can now be ordered with the MP3 player option. Installation is the same, and the units look identical, the units that can play MP3 discs.

PCD 7100-P Hi-Fi Stereo Std. Rack width CD Player
P/N 11-00541 ..... **$799.00**
PCD 7100 - 6-Pl Stereo IntelliVox w/MP3...P/N 11-01851 ..... **$1,099.99**

PS ENGINEERING PXE 7300 IFE SYSTEM

An inflight entertainment system specifically designed for general aviation airplanes. Can play CDs & MP3 recordings, and contains an AM/FM receiver. Not an adaptation of automotive technology. Meets all of the FAA TSO standards to ensure no interference with other avionics, fits in the normal radio stack and plays through any standard aircraft audio control. Approved for installation under an STC. Has soft mute feature that lowers volume from the entertainment system for the pilots when a comm signal is received. Passengers hear uninterrupted entertainment. The AM/FM receiver is designed & certified to not interfere with the VOR/LOC frequencies, not an easy task for FM, and has special logic that helps it discriminate between broadcast signals on the same frequency. At altitude, AM/FM radio receives competing broadcast signals because frequencies are assigned based on the receiver being on the ground. Identifies the strongest signal and rejects any others on the same frequency, so you hear only one radio station at a time. No external antenna required. A thin "strip" antenna can be mounted inside any cabin window, where it is out of the way while still providing excellent AM/FM reception. P/N 11-01767 .....**$1,695.00**

PS ENGINEERING AUDIO PANEL PMA5000EX

Designed specifically for the experimental and LSA owners. Without the traditional functions such as Marker Beacon Receiver, Speaker Amplifier, as well as avoiding the costs of certification, the PMA5000EX provides an unprecedented level of price/performance for the homebuilt.Capabilities: • IntelliVox® automatic VOX system with selectable "Extreme • Noise Capability" • Cellular telephone input with "DuTel" distribution • Monitor Mode allows automatic muting of non-primary radio • Front panel utility jack for phone • Split mode for dual audio panel capability • 2 - Differential, hi-fidelity stereo music source inputs • 3 - Isolation modes • 4 - music mute modes • 5 - unswitched inputs • Dedicated front panel music volume control • Selectable music distribution for passengers • 2 - Front panel switched inputs • 60 second auto-mute mode • RAM (Radio Master Mute) • 1-year Pro-Support Warranty. P/N 11-08289.....**$895.00**

MB 10 MARKER BEACON RECEIVER

MB 10-is a 3-light 75 MHz Marker Beacon receiver and indicator. This provides the necessary Marker Beacon lights and audio indications necessary for an Instrument Landing System (ILS) approach. A switch labeled Hi/Lo/TST allows the pilot select high or low sensitivity as well as test and mute modes. * Height: .95 inches * Width: 2.80 inches * Depth: 4.85 inches * Warranty: 1 year * Unit is TSO'D

Standard ..... P/N 11-05621 ..... **$595.00**
Remote Mount ..... P/N 11-10014 ..... **$595.00**

On all PS Engineering audio panels, a wiring harness must be done by PS Engineering or a PS Engineering dealer or the warranty is void.

PS ENGINEERING PMA 6000B SERIES AUDIO PANEL / INTERCOMS

4-place mono intercom and now sports the same style tray and chassis the PMA8000B uses. The new sleek bezel is populated with tactile Elastomeric pushbuttons We have also changed from the two 44-pin Molex connectors to a single 44-pin sub-D connector, making the harness a lot easier to build.

\PMA6000BAudio Panel..... P/N 11-08074 .... **$995.00**

Call For Special Prices!

PMA 7000B/7000H AUDIO PANEL

Lends itself nicely for upgrading an existing Bendix/King KMA 24 audio panel. KMA 24 pin compatible. None of the existing wires going to the KMA 24 have to be disturb, thus reducing the amount of installation. Renown 6-place IntelliVox® automatic Voice Operated Relay (VOX) intercom system, adjusting a squelch circuit is a thing of the past. Provides 3-com capability with the option to easily convert Com 3 to a full duplex cellular telephone interface. Also has the pioneered "Split Mode". Allows the pilot to be on Com 1 while the copilot is on Com 2. Also expandable to accommodate up to 12 places (10 passengers) with the addition of the 11606 IntelliPax. Has four un-switched and un-muted inputs. * Height: 1.3 inches * Width: 6.25 inches * Depth: 6.8 inches * Weight: 1.5 inches * Power Requirements: 12 to 24 VDC * Warranty: 2 Years * Unit is TSO'D. **PMA 7000H** was designed specifically for helicopter and other applications where large seat count and high end-low cost capabilities are required. Adds 3 more passenger positions (total of 7 with Pilot and Copilot seats), Cockpit Voice Recorder (CVR) output, and Push-To-Talk Intercom (PTT-ICS) function. (better known as Hot-Mic) * Height: 1.3 inches * Width: 6.25 inches * Depth: 6.8 inches * Weight: 1.5 pounds * Power: 12 to 24 VDC * Warranty: 3 years * Unit is TSO'D

PMA7000B Audio Panel..... P/N 11-01635 . **$1,395.00**
6 Place expansion for 7000..... P/N 11-02544 .... **$399.95**
7000CD Audio Panel with CD and MP3 ..... P/N 11-01850 . **$2,099.00**
7000H Audio Panel ..... P/N 11-07001 . **$2,099.00**

PAC 24 AUDIO PANEL/INTERCOM

Designed from the outset as an upgrade/replacement for the popular KMA24 –71. Many of the enhancements include; a powerful headset audio amplifier, and high-performance IntelliVox® intercom, dual audio capability in a single box, full duplex mode for wireless operations, and expansion capability with stereo IFE input. Can accommodate 5 transceivers. A monaural system, the PAC24 can include a music input. SoftMute™ silences music during radio traffic, but allows music other times. Incorporates a split mode that will allow a single audio panel to separate two pilots on different transceivers. When combined with IntelliPax® expansion system, the dual PAC24 can be a 14-place system. The audio amplifier is capable of providing 120 milliwatts (mW) into general aviation headphones. Horizontal Mounting.

P/N 11-01293 .....**$1,995.00**
Vertical Mounting.....P/N 11-05507 .....**$1,995.00**

PS ENGINEERING ACCESSORIES

PS Engineering cellphone cable. .....P/N 11-04376 .....**$28.95**
PS Engineering music cable .....P/N 11-04377 .....**$28.95**
Digital Recorder Aural Warning System w/ 4 unswitched inputs
P/N 11-05158 .....**$499.95**
FM Radio Adapter (allows interfacing of non-standard aviation radios)
P/N 11-05159 .....**$349.95**
4 Channel Summing Amplifier.....P/N 11-05160 .....**$195.00**

AIRCRAFT CABIN SPEAKERS

Engineered for 10,000 hrs. of performance, (minimum), these flame retardant speakers sound clearer and last longer. The magnet assemblies are heavier than original equipment, yet the overall speaker depth is only 2". The voice coils are heat-proof to withstand high power levels & the gaskets are treated with a moisture barrier, for unprecedented reliability. P.C. = Pin cushion.

Part No.	Size in inches & Description	Mag. Wt. (oz.)	Imp. (ohms)	Prog. Power Watts)	Depth	Price
11-04649	6 x 4 x 1.878 P.C. Oval	4.8C	3.2	10	1.550	**$31.65**
11-04646	6 x 4 Round	4.8C	3.2	10	2.018	**$27.85**

AV

PS ENGINEERING AUDIO PANELS — VAL COM

PS ENGINEERING PAR100EX AUDIO PANEL

With the PAR100EX, it was all about savings! The PAR100EX completely eliminates the need for a stand alone radio. The small 4 X 4 X 2 inch remote mounted radio can be mounted anywhere. The audio panel includes their highly acclaimed audiophile stereo intercom (4 places) and has their IntelliVox®, an automatic VOX. Enhanced IntelliVox® so it will accommodate even the noisiest of cockpits, including some open cockpits. The left knob controls the intercom and music volume, the right knob controls frequency selection and volume and squelch for their remote mounted radio. You can pair any phone or Bluetooth® enable audio device. Fully independent power supplies so you can power up the radio or audio panel individually, or together. And if you have a Navigator/Com, you can use it as Com 1 and use their remote radio as Com 2. Uses the same tray and connector as the GMA240, GMA340, PMA8000 series. However, there is additional wiring that is required to interface the Com Radio to the audio panel. Dimensions: Height: 1.3" Width: 6.25", Depth: 7.15" Weight: 1.34lb.. Note: Experimental Aircraft Only!

P/N 11-09708 ..... **$2,295.00**

PMA 9000EX AUDIO PANEL

Built with the "Wish List from the Homebuilder" the PMA 9000EX brings to the cockpit more capability than any other audio panel. The backlit Liquid Crystal Gra phics Display. At a glance see what radios are selected, titles of songs, and message alerts. A host of audio panel configurations can be changed with a twist of the Rotary Data Knob. Front panel utility jack acts as an iPod input, telephone input, or USB port for the onboard MP3 player. This USB port allows the crew and passengers to download music from a memory stick, providing hours of continuous music listening. Bluetooth® interface eliminates the wire clutter that used to be necessary to connect telephones. 5 different ways that any two of the three music inputs can be distributed. None of the capabilities of the PMA 8000B have been lost It too is plug and play with the GARMIN GMA 340. Specifications: Height: 1.3 inches, Width: 6.25 inches, Depth: 6.4 inches, Weight: 2.0 pounds, Power required: 12 to 24 volt VDC, Warranty: 2 years., Not TSO'd. On all PS Engineering audio panels, a wiring harness must be done by PS Engineering or a PS Engineering dealer or the warranty is void. For a quote on a PMA 9000EX Wiring Harness please call.

9000EX Audio Panel..... P/N 11-05587..... **$1,774.00**

PMA 8000B AUDIO PANEL

Front-mounted, 2.5mm multipurpose jack give pilots unprecedented access to their audio panel, allowing connections to cell phones, portable music devices, or audio announcements directly into the audio panel. 6 user configurations that are front panel selectable. When used as an entertainment input, the music is directed to the crew, and PS Engineering's patented SoftMute™ functions normally. Our original Karaoke Mode™ can be activated by pressing the front panel "Mute" button, allowing the music to be placed in the background while interruptions to the music will be eliminated. However, if the aircraft has a panel mounted music device and it is active, it changes the front jack for advisory messages. These alert messages are not muted, and presented to the crew headphones only. Also is a convenient way to connect your cellular telephone. Pilot can receive and transmit on the selected VHF COM with ATC as well, for seamless integration in the cockpit. (Cellular telephone use in flight is not permitted, but remains a convenient and safe way to contact air-traffic control or a weather briefer while on the ground.) Virtual Tech Support (VTS) voice prompts each special function selection assuring that the pilot knows exactly what the new audio panel configuration is, in plain English. Six different configurations can be selected from the front panel. Internal Recording System (IRS) is now standard equipment. Backward compatible with the PMA 8000. Note: Use of the front panel jack is restricted to advisory information only, from portable systems. Signals required for certified equipment must be interface in accordance with their specific installation manuals.Specifications: Height: 1.3 inches, Weight: 6.25 inches, Depth: 7.15 inches, Weight: 1.34 pounds, Power Required: 12 to 24 VDC, Warranty: 3 Years, Unit is TSO'D. On all PS Engineering audio panels, a wiring harness must be done by PS Engineering or a PS Engineering dealer or the warranty is void. For a quote on a PMA 8000b Wiring Harness please call.

PMA 8000B Audio Panel..... P/N 11-04354..... **$1,595.00**
PMA 8000BT Bluetooth capability. ..... P/N 11-08537..... **$1,795.00**
Music Cable ..... P/N 11-04377..... **$28.95**
Cell Phone Cable ..... P/N 11-04376..... **$28.95**

PS Engineering audio panels and intercoms can be sold over the counter buy must have a PS Engineering dealer make the harness or the warranty on the unit is void. Harnesses can be ordered from PS Engineering direct or when ordering from Aircraft Spruce.

AV

VAL AVIONICS NAV 2000 VHF RECEIVER

Turning back to a more traditional design ,the COM 2000 features dual concentric knob controls, displayed active and standby frequency with push button flipflop, 15 memory locations with user defined alphanumeric channel identifiers and a manual squelch control. It's 3/8" character display is easy to read from any angle and in any lighting condition. This mighty little radio's all metal construction is designed to serve all your communication needs well into the future. • Large 3/8" display character • 8 watt transmitter • 1 inch high and 9 inches long • Dual concentric knob controls • 15 memory locations with user-defined alphanumeric channel identifiers • Non-volatile memory • Manual squelch control • All machined aluminum construction • RS232 interface • Photocell dimming. P/N 11-10569 ..... **$995.00**

VAL AVIONICS COM 2000 VHF TRANSCEIVER

COM 2000 continues the tradition of hard working, affordable avionics by Val Avionics. The smallest panel mounted COM radio available today. Features dual concentric knob controls, displayed active and standby frequency with push button flip-flop and a manual squelch control. It's 3/8" character display is easy to read from any angle and in any lighting condition. All metal construction. 0 P/N 11-06411 ..... **$996.00**

VAL AVIONICS VOLTAGE STEP DOWN CONVERTOR TSO'D

This unit is a step down voltage converter that drops 28 volts DC down to 13.8 volts DC. This unit would be required to operate either our COM 760 TSO or INS 422 TSO units in an aircraft or vehicle that are 28 volts DC.

Specifications: • Physical Dimensions: L 4.0 " (10.16 cm) x W 4.625" (11.75cm) x H 1.250 (3.18cm)• Weight: 0.75 lbs• Power Requirements: Current 2.0A Continuous with 5.0A Intermittent P/N 11-02963 .... **$152.95**

VAL AVIONICS NAV INS 429 WITH VOR/LOC/GS/MB

The INS 429 is a high quality, multi-function, fully integrated navigational instrument displaying VOR, LOC, Glide Scope, Marker Beacon, and GPS/NAV inputs. Not only does it sport its own internal receivers, it will also display course deviation information from an external NAV or GPS source. A perfect solution for a crowded panel. **Not TSO'D (for experimental aircraft only).**

P/N 11-05592..... **$1,890.00**

IN-FLIGHT CABIN ENTERTAINMENT SYSTEMS

AVIONICS INNOVATIONS AICD III AM/FM/CD/MP3 PLAYER

The AICD III is the latest way to listen to your favorite CD/MP3 or radio station in flight. Designed for aviation & has an attractive brushed aluminum bezel to enhance your instrument panel. Comes with easy install kit to mount directly into your instrument panel.

Features: * FAA/PMA Approved * 24 Station Presets * Automatic Frequency Store * Seek Up/Down Tuning * Electronically Controlled Volume/ * Bass/Treble/Balance * 11-33 Volts DC * 6.25 x 2 x 9.25 Inches * Weighs 3.5 Pounds * Can be connected to "Sirius" Satellite Receiver or AI-8 Changer * Aux. input for an mp3 player * Remote Control

AICDIII AM/FM CD/MP3/WMA US..... P/N 11-05151..... **$1,613.00**
AICDIII A/FM CD/MP3/WMA EURO ..... P/N 11-05150..... **$1,723.00**

AVIONICS INNOVATIONS DMP-100

This Digital Media Player is a self-contained unit which stores and replays pre-recorded audio tracks. The audio tracks are encoded in "Motion Picture Expert Group (MPEG) Level 3 format", commonly referred to as MP3. Audio files are stored in a removable Compact Flash™ memory card which is prepared and installed by the user. **Features:** * Self-contained unit which stores and replays MP3 music and speech files. * MP3 files are stored on a standard Compact Flash card. * MP3 play lists (iPod) can be imported. * One MB = one minute of speech or, music. Currently, Compact Flash cards are available up to 4gb. * Up to sixteen languages can be programmed with the ability to play two different languages simultaneously. * The DMP-100 can be implemented as a cabin briefer. * Audio files can be selected via a single rotary push-button on the front panel. * Optionally, the DMP-100 can be connected to a maximum of seven external discrete trigger inputs to select a particular audio/speech file. * In addition, the RS232 data from a GPS can be connected to the DMP-100 allowing triggering of audio / speech files based on geographical position. * The DMP-100 provides a single pair of ground-referenced stereo line-level output signals. * User programmable with Avionics Innovations' exclusive Card-Prep software supplied with the DMP-100. **Benefits:** * Hours of continuous music and or speech files can be stored on a convenient Compact Flash card. * No more changing and maintaining of CD's. * Can be used for entertainment and or cabin briefing. * Single rotary knob with a push-button action for all front panel functions. * MP3 play lists (iPod) can be imported. * User programmable. * GPS can be connected to the DMP-100 to trigger either speech or music automatically when the aircraft is within a specific distance of a certain waypoint. * FAA/PMA approved. DO-160D tested. **Specifications**: * Power source: 11-33 Volts DC * Ground System: Negative * Current Draw: < 250 mA * Audio Output: Stereo line-level * Dimensions: 5.75" W x 1.875" H x 3.5" D * Mounting Type:Dzus-Rail Mount (adapter available for 6.25" racks) * Weight: 15 oz

AI DMP-100NVG ..... P/N 11-07253..... **$3,695.00**

AI - A/V VIDEO SWITCH SYSTEM

This new Cabin Class System will allow you to switch between 4 video & 6 audio sources simultaneously from up to 8 seat stations. **Features**: •4 video (composite) inputs •6 audio inputs (adjustable input levels) • PA override •Up to 8 passenger control stations • Separate volume control at each station • Listen or view any source fom any station • Activate an external amplifier • Custom plating available.

4 Seats.....P/N 11-01174 .... **$3,175.00**
6 Seats.....P/N 11-01175 .... **$4,422.00**
8 Seats.....P/N 11-01176 .... **$5,246.00**

AVIONICS INNOVATIONS CD 8 DISC CHANGER

• 11-33 VDC • Horizontal Or Vertical Mounting
• 9x2.75x6.25 Changer • 4lbs

P/N 11-07254 ..... **$649.95**

AI-DVD / 8 DISC CHANGER

The AI-DVD AM/FM Stereo & Disc Changer System allows you to view DVD movies or listen to your favorite CDs or radio station.

Features: • DVD audio, DVD video video CD & music playback • Anti-shock memory • Floating mechanism • Front & rear program capability • 5V high voltage preamp outputs • 18 FM and 6 AM presets • Full function remote control • Auxiliary input

AI-DVD / 8 Disc Changer .....P/N 11-01173 .... **$4,385.00**

AI - AMPLIFIER

The AI-Amplifier is the perfect companion to all our entertainment products. Enjoy your favorite music without the extra weight and confinement of headphones. Specifications: * FAA/PMA Approved * 20 Watts Per Channel Maximum * Low Distortion * 28 Volt * 2 Channel Output * 5.75 X 5 X 2 Inches * Weighs 1.5 Pounds. 28V P/N 11-19504 ..... **$1,084.00**

AI – DVD/CD PLAYER

Remote mounted multi-regional DVD drive which allows you to view DVDs from any region around the world. The unit also is a CD/MP3 player. Requires PCU (Passenger Control Unit) for operation. PN 11-04495 Specifications: * Operating Voltage: 11-33 VDC * Current Draw: 0.2 Amps * Antenna: Externally mounted (included) * Weight: 1.2 lbs. * Dimensions: 6.25"(L)x5"(W)x1.25"(H)

P/N 11-04496 ..... **$4,443.00**

AI–PASSENGER CONTROL UNIT

Passenger Control Unit with IR remote. Controls remote-mounted "I.C.E." components. Sirius© Satellite Radio. DVD/CD, or MP3 player. Two distinct channels allow some passengers to receive one source while others receive a second source. Specifications: * Operating Voltage: 11-33 VDC * Current Draw: 0.2 Amps * Weight: 0.75 lbs. * Dimensions: 125"(L)x5.5"(W)x2.00"(H)

P/N 11-04495..... **$1,350.00**

AVIONICS INNOVATIONS 10, 12, 15 INCH LCD SCREEN

10", 12",15" TFT active-matrix LC flat-panel display. Panel mount only. FAA/PMA Approved Extra-Wide Viewing Angle High-Intensity Backlight Drawn-Aluminum Enclosure Rounded Safety Corners Seek Up/Down Tuning NTSC Input Signal 1500 NIT 28 Volts DC

Description	Part Number	Price
AI 10" Flat Panel Display	11-07255	**$3,995.00**
AI 10" Flat Panel Display Flip Down Display	11-07258	**$5,195.50**
AI 12" Flat Panel Display	11-07256	**$4,695.50**
AI 15" Flat Panel Display	11-04509	**$5,415.00**

AI – 7" WIDE SCREEN

7" wide-screen format with optional touch screen Specifications: * Input Signals: 1 VGA and 2 NTSC * Resolution: 800 x 600 * Viewing Angles: (right/left/above/below)65/65/40/65 * Brightness: 1500 NIT * Operating Voltage: 18-33 VDC @ 750 mA * Weight: 2.5 lbs. * Dimensions: 5"(H) x7"(W)x1.5"(D) * Mounting: Bulkhead, headrest, or articulating arm

Standard .....P/N 11-04499 .... **$1,669.00**
With Arm .....P/N 11-04502 .... **$1,850.00**

AI – SATELLITE RADIO MODULE

Remote mounted Sirius© Satellite Radio module with antenna. 120 streams of coast-to-coast digital quality sound including NFL and NASCAR (available 2007). Specifications: * Operating Voltage: 11-33 VDC * Current Draw: 0.2 Amps * Antenna: Externally Mounted (included) * Weight: 1.2 lbs. * Dimensions: 6.25"(L)x5"(W)x1.25"(H)

P/N 11-04497 ..... **$2,495.00**

AI – VIDEO AMP

Remote mounted video amp with 2 video inputs & 6 video outputs. 6 individual 12 VDC power supplies at 0.75 amps each. Specifications: •Operating voltage: 18-33 VDC • Current Draw: 2.5 Amps • Wt: 1.0 lbs. • Dims: 6.25"(L)x2"(W)x1.75"(H)

P/N 11-04498 ..... **$1,410.00**

AV

RADIORAX - TRAFFIC ALERT SYSTEMS

RADIORAX THE REVOLUTIONARY AVIONICS RACK SYSTEM

Radiorax provides flexibility and ease of installation for panel mount avionics. The radiorax system consists of anodized slotted rails, stainless nuts, structural strength tray screws that are four times stronger than conventional screws used in aviation, and a stainless capture system that holds each nut where it is needed during assembly. The installer is able to position the nuts in the slot exactly where they are required to install each tray. Once installed, the trays can be easily moved until the screws are fully tightened. Additional nuts can be stored in the slots for future avionics additions. RadioRax provides great strength, ease-of-alignment, easy change and modification, ehanced quality, owner satisfaction, and is very cost effective.

Description	Part No.	Price
Radiorax Kit 1010-8 for Exp. A/C	11-01376	**$195.00**
RK1000 Single Stack STC Kit-Standard Rail	11-01855	**$375.25**
RK1010 Single Stack Kit-STC for Exp. A/C	11-01856	**$375.25**
RK1020 Single Stack STC Kit-STC Exp. A/C	11-01858	**$375.25**
RK1030 Single Stack STC Kit Cirrus/Lancair	11-01860	**$375.25**
RK2000 Dual Stack STC Kit	11-01862	**$467.40**
RK3000 Triple Stack STC Kit	11-01864	**$565.25**
Single Rail - Special Order	11-01866	**$280.25**
RX100 Tray Tool Kit	11-01867	**$38.00**
RK1005 Cessna Kit	11-02308	**$467.40**
RK1040 Single Stack	11-02309	**$565.25**
RK2010 Kit -18" dual stack,flange,FAA-PMA,STC'd	11-02608	**$467.40**
RK2015 Kit - 18" dual stack, flanged outer,FAA-PMA,STC'd	11-02609	**$467.40**
RK2020 Kit -18" dual stack, reduced outer,FAA-PMA,STC'd	11-02610	**$467.40**
RK2025 Kit -18" dual stack, reduced outer,FAA-PMA,STC'd	11-02611	**$467.40**
RK3010 Kit - 18.0" triple stack, flanged outer + Full Dim. Center Rail Tray Mount Kit - FAA-PMA, STC'd	11-02612	**$565.25**
RK3015 Kit - 18.0" triple stack, flanged outer+reduced dim. Center Rail Tray Mount Kit - FAA-PMA, STC'd	11-02613	**$565.25**
RK3020 Kit - 18.0" triple stack, flanged outer + Full Dim. Center Rail Tray Mount Kit - FAA-PMA, STC'd	11-02614	**$565.25**
RK3025 Kit -18.0" triple stack, reduced outer+reduced dim. Center Rail Tray Mount Kit - FAA-PMA, STC'd	11-02615	**$565.25**
RK4000-12 Kit - Standard Closeout Panel - Chem Film - 12" Kit - FAA-PMA, STC'd	11-02616	**$166.25**
RK4000 - 12A Kit - Standard Closeout Panel - Black Anodized - 12" Kit - FAA-PMA, STC'd	11-02617	**$185.25**

PROXALERT R5 - COLLISION AVOIDANCE SYSTEM

The R5 is a passive collision avoidance system. It detects transponder replies of aircraft flying in your vicinity and displays simultaneously both squawk code, altitude, vertical trend and estimated distance of the 3 closest threats. The R5 will increase your ability to visually locate threat aircraft and better apply the FAA 'See and Avoid' concept. The R5 has been designed to be very robust against interference coming from DME equipment and other sources of disturbance. Offers significant operational improvements over previous generation products at a very attractive price. The R5 comes with a 3 year manufacturer warranty. P/N 11-02782.....**$779.00**

ZAON BOSE HEADSET AUDIO ADAPTER

This custom audio cable is 100% compatible with all Bose 6-pin connector headsets, including noise reduction circuitry, and is stereo compatible. One simple cable is all you need! Replaces standard headset audio cable. 6-foot straight cable into Y.

P/N 11-04525 .....**$95.00**

MONROY ATD-300 AIR TRAFFIC ALERT

The Monroy ATD-300 provides that continuous traffic awareness in a compact size. Detects all transponder type replies from nearby traffic and displays their proximity and their altitude on a bright 8-character dot matrix display. Simultaneously, a clear female voice provides voice alerts in relation to traffic proximity. It even has a test mode to verify onboard transponder opeation. All of this and more in the size of an alumminum box (2.75"w x 0.75"h x 5"d) no bigger than your intercom. With the Plug N' Fly feature you jut plug the ATD-300 into the cigarette lighter (for power) and the aircraft headphone jack (for voice feedback) and you are ready to fly. No panel space or installation is required. Velcro and mounting brackets are provided for location on top or bottom of the instrument panel and in the panel. The unit comes with a detachable antenna, cigarette lighter power cord, and headphone cable for Plug N' Fly setup. The ATD-300 Traffic-Watch provides multiple capabilities that enhance the safety of flight, such as: • Traffic Range up to 5nm • High/Low Voltage alarm • Traffic MSL Altitude • Auto Mode Display • Voltage Indication • ATD-200 Interchangeable • Traffic relative altitude readout • Host transponder altitude/code readout • Bright LED 8 character dot matrix display Specifications: Weight: 10 oz.; Frequency: 1090 MHz; Max Range: 5nm. ..... P/N 11-02449..... **$549.00**
ANT-300 Antenna 5"x3"x1" single BNC .... P/N 11-08481..... **$464.00**

ZAON XRX ONYX COLLISION AVOIDANCE SYSTEM

PCAS XRX-ONYX is the first ever portable, passive, stand-alone collision avoidance system for general aviation to offer direction from within the cockpit. PCAS™, or Portable Collision Avoidance System, is Zaon's solution for providing high-quality, low cost traffic information to the general aviation pilot. XRX-ONYX is our flagship model, providing a complete picture in a simple, easy-to-use device. PCAS represents our third generation of proven traffic detection technology. XRX-ONYX is truly a "Plug and Go" device with its built-in antenna system and built-in display. ***XRX-ONYX ONYX UPGRADED SYSTEM*** - The new XRX-ONYX, is an upgraded version of the current XRX--A system. The differences include: * The code for the new product is ***XRX-O-A*** * Improved housing in a new black color (Tough-as-nails polycarbonate housing is semi-transparent and attractive) * Software Version 2.1 contains: Minor user interface enhancements, Forward compatibility with integrated systems. An industry first, XRX-ONYX detects threat aircraft direction from within your cockpit using a cutting-edge, proprietary, self-contained antenna design. With direction, locating and identifying traffic is simple and easy, and traffic information is "three-dimensional", which means it can be displayed on third-party systems, such as moving map GPS devices. Read more about this below. P/N 11-06504 ..... **$1,395.00**

XRX BARE WIRE POWER/DATA CABLE - Get XRX Traffic hard wired into your third-party moving map system. Provides hook-up for both the data port (DB9) and the power jack on the XRX. The other end of the 68" cable has tined leads ready for hook-up directly to your third party system. Uses a single lightweight cable for both power and data transmission. P/N 11-06243 ..... **$29.75**

ZAON MRX COLLISION AVOIDANCE SYSTEM

The world's smallest collision avoidance device. MRX displays range and relative altitude of the closest threat, with continuous monitoring of the top 10 threats within the 5 NM scalable detection window. Altitude detection is scalable up to +/- 5000 ft. At 2.5" (65mm) W x 4.2" (107mm) D x 0.6" (17mm) H, MRX is smaller than adeck of cards. MRX uses an easy menu-driven interface and audio annunciations for traffic advisories and alerts. The unit boasts a built in solid-state altimeter for "always relative" altitude information, and built-in temperature compensators and overtemp protection. Information is displayed on the high-brightness LED display (dimmable). MRX also monitors aircraft bus voltage and host transponder output. The unit is powered by aircraft power (12-40 VDC adapter included) or 2 "AA" Batteries (with 8+ hours of use). MRX is half the size, 1/3 less price, portable and offers better accuracy and many more features than the ATD-300.

P/N 11-05223.....**$499.00**

Zaon Accessories	Part no.	Price
Zaon MRX Antenna Extender	11-04518	**$39.90**
Zaon International Converter	11-04522	**$24.75**
Zaon Home and Auto Charger	11-04524	**$20.75**
Zaon Bose Headset Audio Adapter	11-04525	**$95.00**
Zaon Helicopter U174 Audio Adapter	11-04526	**$59.95**
Zaon Xrx - Garmin 396/496 Interface Cable	11-05267	**$84.50**
Zaon XPD-X Wire / Power / Data Cable	11-06243	**$29.75**
Zaon Battery Pack Z60-W	11-07027	**$184.95**
Zaon Medium Battery Z60-W	11-07046	**$178.00**
Zaon MRX installation Hardware Kit	11-07043	**$37.85**
Zaon Xrx - Garmin 695/696 Interface Cable	11-07107	**$82.50**
Zaon 396 496 XRX Traffic Cable	11-05267	**$84.50**
Zaon to AVMAP EKP-IV Cable	11-07714	**$32.95**
Zaon to AV8OR Cable	11-06944	**$41.25**
Zaon Bluetooth Module	11-08025	**$199.00**
Zaon aera Series Traffic Cable	11-08307	**$134.95**
Zaon XRX Ram Suction Cup Mount	11-08024	**$44.50**

AV

R-A-M MOUNTING SYSTEMS

RAM MOUNTING SYSTEMS
PATENTED & PATENT PENDING

RAM Mounts are the revolutionary patented ball and socket mounting system that allow you to mount just about anything anywhere in your cockpit. Providing special attachments for yokes, glare shields and more, now you can mount your accessories where you want them. RAM Mounts is up to speed with the latest aviation technology products. Whether you use an iPad, PND, or PC, RAM has you covered. Ordering RAM Mounts is easy, read on to find out more.

696 on Yoke

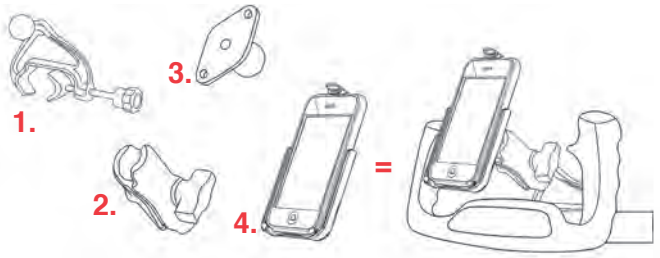
iPad on Yoke

X-Grip with Lil Buddy

Note: The "U" at the end of each model number means that the unit comes unpackaged.

BUILDING YOUR RAM MOUNT

Building and ordering your RAM Mount is easy. All you need to know is what you need to mount and choose where you would like to mount it, we take care of the rest. Building a RAM Mount solution usually consists of 4 parts, base, arm, adaptor and cradle/holder. Use the example image to the right for reference.



STEP 1: BASES

Model No.	Description	Part No.	Prices
RAM-B-224-1U	RAM 3.3" Dia Suction Cup w/Ball	11-06449	$13.98
RAP-B-121BU	RAM Universal Yoke Clamp w/Ball	11-05866	$15.90
RAM-B-202U	RAM Round Base w/Ball	11-07069	$6.53
RAM-B-231ZU	RAM Rail Base w/ball & Zinc U-bolt. 3/4" - 1-1/4" dia. rails.	11-03460	$12.33
RAM-B-108B-STRAP40U	RAM V-Base Rail Yoke Clamp for Breechcraft and Bonanza	11-09763	$15.85
RAM-B-259U	RAM 1" Ball Glareshield Base	11-09852	$20.29

RAM-B-224-1U
Suction Cup

RAM-B-108B -STRAP40U
V-Base

RAP-B-121BU
Yoke Clamp

RAM-B-202U
Flat Surface Base

RAM-B-231ZU
U-Bolt Rail Base

STEP 2: ARMS

RAM-B-201U-A
2-7/16" LONG

RAM-B-201U
3-11/16" LONG

RAM-B-201U-C
6" LONG

Model No.	Description	Part No.	Prices
RAM-B-201U-A	RAM Double Socket Short Arm	11-03458	$9.80
RAM-B-201U	RAM Double Socket Med. Arm	11-01255	$12.47
RAM-B-201U-C	RAM Double Socket Long Arm	11-09323	$18.72

STEP 3: ADAPTER

RAM-B-202U
ROUND ADAPTER

RAM-B-238U
DIAMOND ADAPTER

Model No.	Description	Part No.	Prices
RAM-B-202U	RAM Round Base w/Ball	11-07069	$6.53
RAM-B-238U	RAM Diamond Adapter w/Ball	11-00471	$6.12

IS YOUR BACKUP READY?

iPhone with Lil Buddy

696 with Glareshield Base

Multi-Pad on Yoke

STEP 4: CRADLE/HOLDER

Model No.	Description	Adapter	Part No.	Prices
RAM-HOL-AP9U	RAM Holder for Apple iPhone 4G	Diamond	11-09454	$7.73
RAM-HOL-AP10U	RAM Holder for Apple i-Pod Touch 4th Gen	Diamond	11-09764	$8.51
RAM-HOL-AP8U	RAM Holder Apple iPad & IPad 2	Round	11-08577	$20.84
RAM-HOL-AP8LU	RAM Locking Holder Apple iPad & iPad 2 - cradle with dial combination lock	Round	11-08578	$46.87
RAM-HOL-AP7U	RAM Holder Apple iPod Touch 2nd & 3rd Generation	Diamond	11-08583	$7.50
RAM-HOL-AP6U	RAM Holder Apple iPhone 3G/s	Diamond	11-08582	$8.14
RAM-HOL-AP4U	RAM Holder for Apple i-Pod Touch 1st Gen	Diamond	11-06432	$8.23
RAM-HOL-AP5U	RAM Holder for Apple i-Pod Nano Touch & Nano 3rd Gen.	Diamond	11-06433	$7.27
RAM-HOL-AP3U	RAM Holder for Apple iPhone 1st Gen.	Diamond	11-06431	$7.73
RAM-HOL-AP2U	RAM Holder for Apple i-Pod Nano 1st & 2nd Gen.	Diamond	11-06430	$9.80
RAM-HOL-TAB2U	RAM Universal Tablet Holder, Picture on next page	Diamond	11-09766	$24.75
RAM-HOL-TAB3U	RAM Universal Tablet Holder, Picture on next page	Diamond	11-09767	$29.03
RAM-HOL-TAB4U	RAM Universal Tablet Holder, Picture on next page	Diamond	11-09768	$28.52
RAM-HOL-TAB5U	RAM Universal Tablet Holder, Picture on next page	Diamond	11-09887	$30.27
RAM-HOL-GA38U	RAM Holder Garmin GPSMAP 695/696	Round	11-08576	$19.64
RAM-HOL-GA25U	RAM Holder Garmin Nuvi 200W & 250W, 2xxW & 2xxWT	Diamond	11-06471	$8.33
RAM-HOL-GA31U	RAM Holder Garmin Oregon	Diamond	11-08585	$8.88
RAM-HOL-GA5U	RAM Holder Garmin E-Trex	Diamond	11-01923	$9.15
RAM-HOL-GA7U	RAM Holder Garmin GPSMAP 176, 196, 276, 376, & 496.	Diamond	11-01925	$8.60
RAM-HOL-GA14U	RAM Holder Garmin 76C Series	Diamond	11-06477	$9.84
RAM-HOL-GA30U	RAM Holder Garmin Nuvi 880 850 860	Diamond	11-06475	$13.48
RAM-HOL-GA39U	RAM Holder Garmin Nuvi 3750, 3760T & 3790T	Diamond	11-09769	$10.50
RAM-HOL-GA41U	RAM Holder Garmin GPSMAP 62, 62S, &62ST	Diamond	11-09770	$8.75
RAM-HOL-SPO1U	RAM Holder Spot Satellite Unit	Diamond	11-07508	$10.49
RAM-HOL-SPO2U	RAM Holder Spot 2 Satellite Unit	Diamond	11-08581	$9.61
RAM-HOL-BC1U	RAM Holder for Electronics with Belt Clip	Diamond	11-01917	$8.85
RAM-HOL-PD3U	RAM Universal PDA Holder	Diamond	11-05488	$14.14
RAM-HOL-UN4U	RAM Universal Plastic Radio/ GPS Holder	Diamond	11-06450	$17.48
RAM-HOL-MP1U	RAM Holder Multi-Pad™ (Note Pad holder)	Diamond	11-08579	$25.58
RAM-HOL-UN5U	Ram Spring Loaded Cradle For Iphone And Ipod Touch	Diamond	11-10087	$7.95

AV

R-A-M MOUNTING SYSTEMS

DEVICE CRADLES / HOLDERS

RAM-HOL-TAB2U
Universal Tablet Hldr
Tablets in thin cases
NOOKcolor
BlackBerry PlayBook
Dell Streak
Samsung Galaxy

RAM-HOL-TAB4U
Universal Tablet Hldr
Tablets in thin cases
+ Rugged Case
Samsung Galaxy
NOOKcolor
BlackBerry PlayBook
Dell Streak

RAM-HOL-TAB3U
Universal Tablet Hldr
Tablets in covers/cases
Apple iPad
Apple iPad 2
HP Slate
HP TouchPad
Lenovo LePad

RAM-HOL-TAB5U
Universal Tablet Hldr
Tablets w/no cases
Samsung Galaxy
Barnes & Noble
NOOKcolor
BlackBerry PlayBook
Dell Streak

RAM-HOL-AP8U
Apple iPad Cradle
w/no case/skin

RAM-HOL-AP8LU
Apple iPad Locking
Cradle w/no case/
skin

RAM-HOL-SPO2U
Spot 2 Messenger Hldr

RAM-HOL-AP9U
iPhone 4G Hldr

RAM-HOL-MP1U
Multi-Pad Writing Pad

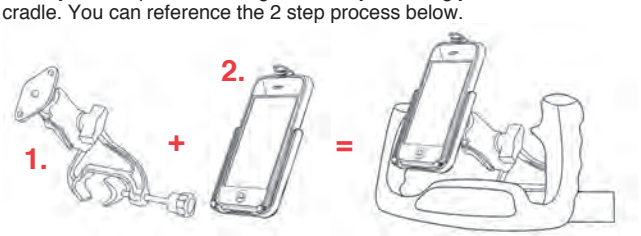
RAM-HOL-GA38U
Garmin 696 Cradle

RAM-HOL-UN4
Handheld Hldr

RAM-HOL-AP10U
iTouch 4th Gen

SPECIALTY MOUNTS

Order your complete mounting solution by choosing your mount and then cradle. You can reference the 2 step process below.



Model No.	Description	Adapter	Part No.	Prices
RAM-B-316-1-238U	RAM Universal Floor Mount	Diamond	11-09771	**$33.65**
RAM-B-131-202U	RAM Cessna Aircraft Seat Rail Mount	Round	11-09436	**$89.75**
RAM-B-131-238U	RAM Cessna Aircraft Seat Rail Mount	Diamond	11-09773	**$94.50**

ACCESSORIES / MISC. MOUNTS

RAM-B-316-1-238U

RAM-B-131-202U

Model No.	Description	Part No.	Prices
RAM-B-132BU	RAM Self Leveling Drink Cup Holder. Requires purchase of base and arm	11-01334	**$16.07**
RAM-MAG-1U	Magnifying Glass for GPS. Intended for use with diamond adapter and cradle	11-04299	**$25.85**
RAM-CIG-LIGHT-8U	RAM 12 Volt Red/White Light Adaptor. Plugs into 12v receiver	11-08580	**$6.10**
RAN-B-202AU	1/4"-20 Camera Adapter Base. Requires purchase of base and arm	11-02080	**$5.95**

STRAP MOUNT & LITTLE BUDDY

Fast, simple, and cost effective are all things that describe the EZ-Strap and Little Buddy Mounts. Great for small devices like smart phones and PNDs. Simply choose your favorite EZ-Strap or Little Buddy and then choose any cradle/holder that incorporates the Diamond adapter pattern (diamond adapter purchase is not required).

RAP-SB-187U
EZ-Strap

RAP-SB-180U
Little Buddy

Little Budy with X-Grip

Model No.	Description	Part No.	Prices
RAP-SB-180U	RAM Little Buddy Adhesive Mount	11-08584	**$9.20**
RAP-SB-187U	RAM EZ-Strap Rail & Yoke Mount	11-09774	**$10.75**

X-GRIP

The NEW RAM X-Grip is perfect for the modern pilot. Sleek, user friendly, and universal, the RAM X-Grip is the right cradle for the techno savvy pilot. Pats. Pend.

Features:

1. Spring loaded holder expands and contracts for perfect fit of your device.
2. Rubber coated tips will hold device firm and stable
3. Versatility of holder allows for attachment to many RAM-to-RAM ball mounts.
4. Single socket technology allows for multiple adjustment angles and articulation of device.

RAM-HOL-UN7BU

RAP-SB-180-UN7U

RAP-SB-187-UN7U

Model No.	Description	Part No.	Prices
RAP-SB-180-UN7U	RAM X-Grip w/Little Buddy	11-09775	**$26.75**
RAP-SB-187-UN7U	RAM X-Grip w/ EZ-Strap Mount	11-09776	**$26.75**
RAM-HOL-UN7BU	X-Grip Cradle w/1" Ball Adapter	11-09777	**$25.00**

ROTATING KNEEBOARD MOUNT FOR THE APPLE IPAD & IPAD 2

The mount consists of a leg kneeboard base, two straps for tight support, socket system and custom high strength composite cradle for the Apple iPad and iPad 2. Fits Apple iPad (1st Generation) without case/sleeve/skin & Apple iPad 2 (2nd Generation) without case/sleeve/skin.

P/N 11-10080 ..... **$44.50**

AV

LOBSTER MOUNTS - GPS MOUNTS

LOBSTER MOUNTS

The “Shrimp” Series of mounts provide an economical solution for mounting mobile electronics. This basic system provides a minimal extension, and utilizes a tri-wing finger knob for locking and positioning. Our off-centered 1-1/4 inch ball-base (patent pending) provides adaptability that cannot be matched. The Shrimp mount extends as little as 2-1/2 inches from the mounting surface and can extend to about 5 inches. The “Shrimp” was designed to support devices up to 3 lbs, and is available with bolt-on, MC/ATV, and Suction bases.

UNIVERSAL MC-ATV CLAMP - Base only! For an additional anchor point we offer this universal rail-clamping base, designed to fit square or round tubing from 3/4 inch to 1-1/2 inch diameter (by adding a 1/4-20 x 3” bolt, this base will fit up to 1-3/4 tube). This rugged base is made from extruded aluminum, an aluminum ball, and includes stainless steel hardware. Weight - Unit 0.5 lbs.

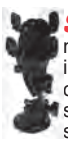
P/N 11-04709 ..... **$24.85**

UNIVERSAL CRADLE - The Cradle comes with four grip fingers and one stop finger, which are capable of being positioned in any of the eight slots on the body. Rubber pads for the grip fingers and stainless steel hardware are provided. In the short direction, the grip fingers are adjustable from 1-1/2” to 3-1/4”, and in the long direction, the grip fingers adjust from 4-1/2” to 5-1/2”. For longer devices, the fingers on top could be left off, allowing the device to overhang the cradle base. This product, like our other products is produced for use in aviation and marine environments where being compass compatible and corrosion resistant are important. P/N 11-04710 ..... **$16.75**

SHRIMP SERIES BOLT-ON WITH CAMERA TOP - A removable 1/4-20 camera stud, universal mounting ball-base and mounting flange, lanyard loop; accommodates the AMPS bolt up pattern (AMPS is a 1-1/2” by 1-3/16” screw hole pattern used in many portable electronic products). Aluminum alloy and reinforced composite parts with stainless steel hardware. P/N 11-04711 ..... **$16.75**

SHRIMP SERIES MC/ATV CLAMP WITH CAMERA TOP - Same as our Bolt-On model, while adding a universal rail-clamping base, designed to fit square or round tubing from 3/4 inch to 1-1/4 inch diameter (by adding a 1/4-20 x 3” bolt, this base will fit up to 1-3/4” tube). This rugged base is made from extruded aluminum, an aluminum ball, and includes stainless steel hardware. P/N 11-04713 ..... **$31.50**

SHRIMP SERIES BOLT-ON + CRADLE - Universal mounting ball-base and mounting flange, lanyard loop, along with our cradle for hand-held devices. The Cradle (UN-198) comes with four grip fingers and one stop finger, which are capable of being positioned in any of the eight slots on the body. Rubber pads for the grip fingers and stainless steel hardware are provided. In the short direction, the grip fingers are adjustable from 1-1/2” to 3-1/4”, and in the long direction, the grip fingers adjust from 4-1/2” to 5-1/2”. For larger devices, the finger may be left out at the top allowing the device to overhang the cradle base. Like our other products, the SH-259 is produced for use in aviation and marine environments where being compass compatible and corrosion resistant are important. P/N 11-04715 ..... **$27.50**



SHRIMP SERIES SUCTION + CRADLE - Our Suction Base attachment ball is capable of being tilted for extra versatility in positioning your device. Cradle (UN-198) comes with four grip fingers and one stop finger, capable of being positioned in any of the eight slots on the body. Rubber pads for the grip fingers and stainless steel hardware are provided. In the short direction, the grip fingers are adjustable from 1-1/2” to 3-1/4”, and in the long direction, the grip fingers adjust from 4-1/2” to 5-1/2”. For larger devices, the finger may be left out at the top allowing the device to overhang the cradle base. This mount, like our other products is produced for use in aviation and marine environments where being compass compatible and corrosion resistant are important. P/N 11-04716 ..... **$38.90**

SHRIMP SERIES MC/ATV + CRADLE - A universal rail-clamping base, designed to fit square or round tubing from 3/4 inch to 1-1/4 inch diameter. Made from extruded aluminum, an aluminum ball, and includes stainless steel hardware. Cradle comes with four grip fingers and one stop finger, capable of being positioned in any of the eight slots on the body. Rubber pads for the grip fingers and stainless steel hardware are provided. In the short direction, the grip fingers are adjustable from 1-1/2” to 3-1/4”, and in the long direction, the grip fingers adjust from 4-1/2” to 5-1/2”. For larger devices, the finger may be left out at the top allowing the device to overhang the cradle base..P/N 11-04717 ..... **$38.90**

UN-327 SUCTION BASE - Suction Base Only, If you are already using a Bolt-On or MC/ATV base, this allows you to easily transfer your device to your car or any place with a smooth surface. The Suction Base attachment ball is capable of being titled for extra versatility in positioning your device. This base, like the other products is produced for use in aviation and marine environments where being compass compatible and corrosion resistant are import.

P/N 11-06616 ..... **$24.95**

SH-334 SHRIMP SUCTION MOUNT WITH CAMERA TOP - Our Suction Base attachment ball is capable of being tilted for extra versatility in positioning your device. The Camera Top (UN-310) has a removable 1/4-20 camera stud. It also features a mounting surface with holes and slots, which accommodate the AMPS standard (1.496” x 1.181”) pattern for direct attachment to numerous electronic devices. This base, like our other products, is produced for use in aviation and marine environments where being compass compatible and corrosion resistant are important. P/N 11-06617 ..... **$31.50**

UN-303 ROLL BAR CLAMP - Base only! For your ATV, golf cart steering column or other applicable with 1-1/2” to 2-1/2” tubing. This rugged base is made from aluminum extrusion, an aluminum ball, and zinc plated steel hardware. Note that this is not compass friendly.

P/N 11-06618 ..... **$27.85**

UN-310 CAMERA TOP - Camera Mounting surface that can also be used for mounting other devices. If you are already using a Universal Cradle (UN-198), this allows you to easily use your mounting system for other purposes. The holes and slots in the flange accommodate the AMPS standard pattern as well as several size u-bolts. This base, like our other products is produced for use in aviation and marine environments where being compass-compatible and corrosion resistant are important. P/N 11-06615 ..... **$9.90**

ROTATING MOUNT FOR GARMIN GPS

The rotating mount attaches to the Garmin yoke mount supplied with the GPS units. The GPS then mounts on the product and allows the GPS unit to be rotated so the passenger can view the unit if mounted on the pilots side. If used on the co-pilots side, then the pilot can rotate the GPS so he/she can view it as well. Note: The rotating mount is used for the Garmin GPS units (295,196,296,396)

Rotating Mount-Pilot rotates right..... P/N 11-04661 ..... **$64.85**
Rotating Mount-Copilot rotates left..... P/N 11-04662 ..... **$64.85**

ANGEROLE INSTRUMENT PANEL MOUNT

The photo illustrates the Model 241 040 fitted to a blank instrument panel. An adaptor plate (included with the mount) fits any standard 2-1/4”" instrument panel hole so, generally, it can be fitted without any modifications to your airplane. If your application needs it, we can supply this mount with a 3-1/8”" panel adaptor plate. If you don't have an unused panel hole, a viable alternative is to drill two holes and simply bolt the mount directly to your panel. The "footprint" area is only 2" x 0.5" so there's probably going to be somewhere you can make it fit. Naturally, you need to be certain this is appropriate, sensible and legal for your installation before drilling holes in your airplane.

P/N 11-07238..... **$149.00**

AV

ICOM HANDHELD TRANSCEIVERS

ICOM IC-A24 NAV/COM

Easy To Use While Flying - Simple one-handed operation is the most essential feature of the IC-A24. The well labeled, large keypad provides user friendly operation. The large display shows both letters and numbers and is easy to see, making for fast frequency recognition. The display is backlit, and so is the keypad. The light stays on until you turn it off - a very handy feature for flying at night! “Flip-Flop” Channel Recall - The IC-A24 stores the last 10 channels used. You can easily recall those channels by pushing the “flip-flop” recall buttons on the front panel. It is convenient for switching between several channels, such as Nav and Com channels. VOR Navigation - The IC-A24 has VOR navigation functions. The DVOR mode shows the radial to or from a VOR station and the CDI mode shows the course deviation to/from a VOR station. You can also input your intended radial to/from the VOR station and show the course deviation on the display. The duplex operations allows you to call a COM channel while you are using VOR navigation. External DC Power Jack - An external DC power jack allows for operation with the wall charger or the cigarette lighter cable. When the battery pack is installed, simultaneous charging during operation is also possible. Water Resistant Construction- The water resistant construction provides reliable operation in wet conditions.

IC-A24 Nav/Com (110V) - Includes Nicad battery, wall charger, belt clip, carrying case, headset adapter & handstrap. ...P/N 11-02942 .. **$379.99**
IIC-A24 Nav/Com (220V) .....P/N 11-04355 .. **$379.99**

ICOM IC-A6 COM

Simple one-handed operation is the most essential feature of the IC-A6. The well labeled, large keypad provides user friendly operation. The large display shows both letters and numbers and is easy to see, making for fast frequency recognition. The display is backlit, and so is the keypad. The light stays on until you turn it off. The IC-A6 stores the last 10 channels used. You can easily recall those channels by pushing the “flipflop” recall buttons on the front panel. External DC Power Jack - An external DC power jack allows for operation with the wall charger or the cigarette lighter cable. When the battery pack is installed, simultaneous charging during operation is also possible. Water Resistant Construction - The water resistant construction provides reliable operation in wet conditions. Features: • 200 memory channels (10 banks of 20 channels) allows you to load in up to 10 separate flight plans. 6 character alphanumeric for channel names. • Dedicated 121.5 “emergency” key. • All NOAA weather channels preprogrammed. • Automatic Noise Limiter (ANL) built in for noise reduction. • Icom’s exclusive front panel programmable side tone allows you to set the correct side tone level for almost any headset • Icom’s exclusive “TAG” scanning and memory bank scanning make it the most user friendly radio on the market. Specifications: • Frequency range: Tx/Rx 118.000-136.975MHz • Weather 161.650-163.275MHz • Wt: 15.02oz. • Dims: 2-1/8” x 5-3/32” x 1-13/32”

IC-A6 Com (110V) - Includes Nicad battery, wall charger, belt clip, headset adapter & handstrap. ..... P/N 11-02944 .....**$319.99**
IC-A6 Com (220V) ..... P/N 11-03178 .....**$319.99**

ACCESSORIES FOR IC-24 & IC-A6

Model	Description	Part No.	Price
BP-200L	Battery-9.6V, 760mAh Ni-MH	11-00606	**$99.50**
CP20L	Cigarette Lighter adapter. DC-DC Converter. Will charge from 12-24 volts	11-03604	**$47.50**
OPC-478	Programming Cable	11-18563	**$43.95**
BP-210N	Icom Battery	11-04385	**$57.50**
LC-159	Protective Case for A24 or A6	11-05003	**$34.75**
BC-144N	110V Charger for IC-A24 & IC-A6	11-04847	**$53.50**
OPC-656	PC Power Cable for IC-A24 & IC-A6	11-05022	**$9.75**
BC-167SA	80AD Wall Charger 117V	11-09311	**$27.95**
BC-119N	ICOM BC-119N Fast Charger for BP-209N, BP-201N, AND ORBP-211N. Desktop charger and adapter cup BC-145A. Must purchase adapter cups for other models.	11-04773	**$59.25**
AD-87A	Desktop Charger Adapter AD-87A	11-00612	**$8.95**
BC-121N	6 Unit charger Kit for IC-A24 & IC-A6	11-05020	**$229.95**
MB-86	Swivel Belt Clip for IC-A24 & IC-A6	11-05002	**$8.75**
MB-103	Icom Belt Clip	11-03494	**$9.95**
HM-173	Speaker Mic for IC-A6 & IC-A24	11-05832	**$79.85**
PTT-SW	Icon Headset PTT Switch for IC-A6, IC-A3, IC-A4, IC-A5, IC-A22, IC-A23	11-18529	**$22.50**
BC145SE	Icom 220V AC Adapter BC145SE	11-08813	**$24.50**
BC-167SD	Wall Charger 220V	11-09425	**$29.95**
BC-147SA	AC Adapter for BC-192	11-09317	**$12.95**
A6/A24	Headset noise modification Ferrite Core for A6/A24	11-09346	**$6.95**
BC-147SA14	110V AC Adapter Charger	11-10076	**$12.25**
BC-147SE15	220V AC Adapter Charger	11-10075	**$11.85**
BC121N & BC-197	Icom 110v Power Supply For BC121n And BC197 Chargers	11-10575	**$98.75**

ICOM A14 HANDHELD COM

700mW* loud audio - Because air band radios are usually operated in high-noise environmetns, it is essential for the radio to provide loud clear audio. The IC-A14/S series employs a BTL amplifier that doubles the audio output, offering loud and clear audio that’ll cut through cabin or tarmac noise. (*internal speaker only) **Full keypad type or Simple keypad type -** The IC-A14 full keypad type allows you to input the channel or frequency directly and has an exclusive button for the 121.5MHz emergency channel. The IC-A14 receives NAV and WX channels. The IC-A14S simple keypad type provides simpler operation with a minimum of buttons that is suitable for ground crews. **Compact, light weight and rugged body -** The IC-A14/S series is compact (only 120.mm tall) and light weight (approx. 350g including antenna and BP-232N). The water resistant construction, equivalent to IPX4, provides reliable operation in wet conditions. **Large capacity Lithium-Ion battery pack -** With the 2000mAh large capacity Lithium-Ion battery pack, BP-232N, the IC-A14/S series provides stable output power and 18 hours long (approx.) operating time*. The BP-261, battery case takes 6 AA (LR6) alkaline cells for convenient battery backup. * Typical operation, Tx:Rx: Stand-by=5:5:90. **200 channels with memory banks -** A total of 200* memory channels can be named with an 8-character channel name for easy recognition. For fast and simple operation, these channels can be grouped into 10 memory banks*. ***IC-A14 only. The IC-A14S has 100 memory channels and memory banks are not available.***

Description	Part No.	Price
ICOM IC-A14S Simple Keypad Version 110V	11-05903	**$249.99**
ICOM IC-A14 Full Keypad Version 110V	11-05904	**$249.99**
ICOM IC-A14S Simple Keypad Version 220V	11-06187	**$249.99**
ICOM IC-A14 Full Keypad Version 220	11-06188	**$249.99**

Accessories for A14

Description	Model	Part No.	Price
Antenna A4 A5 A6 A23 A24	FAB02AR	11-05031	**$29.95**
Speaker Microphone	HM173	11-05832	**$79.85**
Headset Adapter	PAOPC499	11-18537	**$47.50**
Alkaline Battery Case (6 - AA Batt. Req.)	BP261	11-06210	**$57.75**
7.2v 2000mAh Li-Ion Battery	BP232N	11-06211	**$52.50**
Desktop rapid Charger for BP230, BP231, BP232 Batteries.	BP160	11-07339	**$54.75**
AC adptr. 110V - Used with the BP-160, it charges the BP-232N in approx. 3 hours	BC-145SA	11-08672	**$62.75**
AC adptr. 230V - Used with the BP-160, it charges the BP-232 in approx. 3 hours	BC-145SE	11-08671	**$19.95**
Belt Clip - Swivel type	MB93	11-06212	**$8.85**
Belt Clip - Alligator type	MB94	11-06213	**$8.50**
Drop In Desktop Charger 110V	BC179-01	11-06214	**$37.65**
Cig Lighter Adptr Cbl for BC179 (12-24V)	CP22	11-06215	**$54.75**
Drop In Desktop Charger 220V	BC179-02	11-06218	**$37.65**
Rapid Charger (BC160-01)	BC160-01	11-06219	**$22.75**
AC Adptr for use w/ BC119N & BC160	BC145 A/E	11-06220	**$9.75**
6 Way Rapid Chgr. w/ BC157(6-AD106 Req.)	BC121N	11-05020	**$229.95**
DC Pwr Cbl for BC119N or BC160	OPC515L	11-18533	**$18.50**
DC Power Cable for BC121N	OPC656	11-05022	**$9.75**

ICOM IC-4088A UHF FM TRANSCEIVER

The Icom IC-4088A is a compact, inexpensive transceiver, water resistant and very easy to use. Channel changing is as simple as pushing the up/down keys. The radio can be controlled with only 5 button and a volume control knob. The easy to read LCD shows information at a glance.Other outstanding features includes: Economical AA alkaline batteries (3 not supplied) provide 30+ hrs of use, low battery indicator provides warning of battery condition when using alkaline batteries, rotary type antenna folds down behind radio, optional Ni-Cd battery pack and rapid charger, compact body fits neatly in your hand, and auto power-off timer (two hours). This radio is excellent for use in communicating with friends at airshows.

P/N 11-18608 .....**$132.95**

Accessories for icom IC-A4

Description	Part No.	Price
AD-81 Desktop Charger Adapter	11-18621	**$15.75**
BC-124 AC Adapter	11-00615	**$87.25**
BC15702 is the power supply unit for the BC-121	11-05603	**$91.75**
CP-12 Cigarette lighter	11-18594	**$31.85**
OPC-254l DC Power Cable for IC-A4, IC-A5, & IC-A23	11-18607	**$16.85**
BC-133 Trickle Battery Charger	11-05689	**$31.85**
OPC-474 Cloning Cable (hanheld to handheld)	11-02124	**$15.25**
OPC-752 Headset adapter	11-18602	**$59.90**
MB-74N Alligator type belt clip	11-05593	**$9.75**
MB-87 Swivel Belt Clip	11-05686	**$4.85**
Nylon Carrying Case	11-18617	**$23.95**
CP12L - Cigarette Lighter adapter (For use with A22, A23, A4, A5) w/ noise filter. Will only charge from 12 volts	11-18604	**$34.75**
FA-801AR - Antenna	11-05031	**$29.95**
OPC-254L - Power cable	11-18607	**$16.85**

AV

HANDHELD TRANSCEIVERS

ICOM IC-R6 HANDHELD RECEIVER

Retaining the basic features of the very popular IC-R5, the IC-R6 has a new design and new features. 100 kHz – 1309.995 MHz* wideband coverage. While the IC-R6 receives an ultra wideband frequency range, the radio provides superior sensitivity and receiver characteristics that is insusceptible to interference. Amateur stations, AM, FM, short wave broadcasts, TV audio* and a variety of utility communications can be caught and listened to. Frequency range depends on version. Analog TV audio only. Cannot decode digital TV audio. The IC-R6 has 100 channels per second high speed scan capability*. With the supplied rechargeable Ni-MH cells (1400mAh × 2), the IC-R6 provides up to 15 hours of continuous receive capability*. At 50 mW output using external speaker. 1300 memory channels with 22 memory banks. The VSC opens the squelch only when a modulated signal is detected and ignores un modulated beat noise. The IC-R6 can be powered by rechargeable Ni-MH cells, or with alkaline batteries. Run the IC-R6 using the AC adapter, BC-196S, or opt for a cigarette lighter cable, CP-18. When used the optional drop-in charger stand BC-194 with the AC adapter or cigarette lighter cable, you can easily start charging the Ni-MH cells, while eliminating the need to connect the power source to the DC power jack of the receiver. Usable temperature range: +14 F to +140 F. Antenna impedance: 50 ohm (SMA). Dimensions:58(W) x86(H)x29.8(D) mm. Weight: 7.1 oz

United States Version.....P/N 11-08477 ..... **$226.95**
International Version.....P/N 11-08476 ..... **$229.95**

YAESU VXA-220 PRO VI

The VXA-220 features 5 watts TX power output, loud audio (700 mw), long life nickel metal hydride battery, larger LCD display, 250 memory channels with programmable 8 character alpha numeric display, submersible design (3 feet for 30 minutes), NOAA weather receive (10 channels). All of this is backed by the manufacturers 3 year parts and labor warranty. The VXA-220 uses the same accessories as the popular VXA-300. **Includes**: VXA-220 COM , FNB-83: 1400 mAh Ni-MH battery, CD-32: Charging Cradle, CN-3: SMA TO BNC Adapter, FBA-25A: Alkaline Battery Tray, ATV-10: Helical Antenna (Q3000194), E-DC-5B: DC cable with 12v cigarette lighter plug, PA-48B: 110VAC Overnight charger, CT-96: Headset Adapter Cable. Note: The 220v model comes with the PA-48C: 220VAC Overnight charger.

VXA-220 PRO VI 110V .....P/N 11-05054 ..... **$215.00**
VXA-220 PRO VI 220V .....P/N 11-07029 ..... **$215.00**
Yaesu CD-32 Charger Cradle ....P/N 11-09277 ..... **$41.90**

YAESU VXA-300 TRANSCEIVER

The VXA-300 Aviator Pilot III is the result of over 45 years of engineering know how. The pilot III features a more powerful audio amplifier than ANY other handheld airband transceiver and comes supplied with a 1400 mAh nickel metal hydride battery pack that provide almost double the battery capacity of Icom's IC-A23 or IC-A5! **Includes**: VXA-300: 5W Portable VHF Transceiver with VOR, ATV-10: Helical Antenna (Q3000194), CN-3: SMA to BNC adapter, FBA-25A: Alkaline Battery Tray, FNB-83: 1400 mAh Ni-MH battery, CD-28: Charging cradle, E-DC-5B: DC cable with 12v cigarette lighter plug, PA-48B: 110VAC Overnight charger, CT-96: Headset Adapter Cable. Note: The 220v model comes with the PA-48C: 220 VAC Overnight charger.

Description	Part No.	Price
VXA-300	11-02716	$245.00
VXA-300/C	11-04342	$245.00
VXA-300 PILOT III ACCESSORIES (Included)		
Description	**Part No.**	**Price**
ATV-10 - Rubber Duck antenna (included)	11-04343	$22.00
CT-96 - Headset Adapter For VXA-300,700, 710	11-02562	$10.75
NC-88B -110V,12hr charger. Req. CD-28 charging stand	11-09461	$23.85
CD-28 - Overnight desktop charger cradle. Requires NC-88 wall charger	11-04346	$9.90
Yaesu Vertex 220v Wall Charger For Vxa 220 300 710	11-09915	$24.95
FNB-83 - 7.2v 1400mah Ni-MH battery (included)	11-04347	$33.90
Clip-14 - Swivel belt clip (included)	11-04340	$7.20
VXA-300 PILOT III ACCESSORIES (Optional)		
Description	**Part No.**	**Price**
CN-3 SMA to BNC Antenna Adapter - Antenna Adapter For VXA-150, VXA-210, VXA-300, VXA-700, VXA-710	11-16957	$9.75
E-DC-5B - 12V Cigarette Lighter Adapter for all Yaesu Standard airband transceivers.	11-16961	$24.75
MH-44B4B - Speaker Mic for VXA-700,300,710	11-02381	$49.95
Rubber Duck Antenna for VXA-100/150/210	11-00827	$14.50

VXA-710 "SPIRIT" AIRBAND NAV/COM TRANSCEIVER

A first in aviation communications! Yaesu Standard has combined over 50 years experience in amateur radio communications and our expertise in aviation communications to make the world's first Air Band, VOR Navigation and VHF Business Band Radio receive handheld transceiver! **Includes**: VXA-710: 5W Portable Multiband Transceiver with VOR, ATV-9: Helical Antenna (Q3000188), CN-3: SMA to BNC adapter, FNB-80LI: 1400 mAh Ni-MH battery, PA-48B: 110VAC Overnight charger, CT-96: Headset Cable. Note: The 220V model comes with the PA-48C: 220VAC Overnight charger.

Yaesu Transceiver w/ 117V Charger ..... P/N 11-04337.... **$297.00**
Yaesu Transceiver w/ 220V Charger ..... P/N 11-04338.... **$319.00**

Accessories (Included)		
Description	**Part No.**	**Price**
ATV-9 Dual Band Rubber Duck Antenna	11-02561	$22.00
CT-96 Headset Adapter	11-02562	$10.75
NC-72B 120 Volt 12 Hour Charger	11-05864	$24.75
FNB-80LI 7.2v 1300mah Li-Ion Battery	11-02563	$96.50
Accessories (Optional)		
Description	**Part No.**	**Price**
Swivel Belt Clip	11-04340	$7.20
PC Programming kit for VXA700 only	11-02564	$72.00
CN-3 SMA to BNC Antenna Adapter	11-16957	$9.75
E-DC-5B 12 V Cigarette Lighter Adapter	11-16961	$24.75
FBA-23 Alkaline Case for VXA-700, 710	11-02565	$32.50
CSC-88 Soft Case for VXA-700, 710	11-02566	$19.85
MH-44B4B Speaker Microphone	11-02381	$49.95
CD-15A Desktop Rapid Charger (117V)	11-02567	$38.75
220v Wall Charger For VXA 220 300 710	11-09915	$24.95

AR-108 AIRBAND SCANNER

AR-108 is a full-featured handheld Air-Band Scanner with weather channels. The AR-108 is small, rugged and compact. The features include 10 weather channels; 9-digit/24 icon backlit LCD display; 99 programmable memory channels; selective channel steps; scans from either the pre-programmed memory channels or the entire aviation frequency band; key lock; key beep tone on/off; battery power saver; powered by 2 "AA" batteries. Includes: scanner, antenna, beltclip and manual. 1yr warranty.

P/N 11-18505..... **$97.50**

Accessories

AR-108 Protective Case..... P/N 11-04997..... **$12.80**

YAESU STANDARD DC CABLE PLUG AND WIRE ONLY

Yaesu Standard E-DC-6 DC cable; plug and wire only. P/N 11-08490..... **$8.50**

YAESU STANDARD ALKALINE BATTERY TRAY

Yaesu Standard FBA-25A Alkaline Battery Tray
P/N 11-08492..... **$16.95**

PUSH TO TALK SWITCH

High-quality Push-To-Talk switch. Universal In-Line PTT Switch W-103
P/N 11-07087 ..... **$18.95**

CBE-210N BATTERY ELIMINATOR

The CBE-210 is a DC battery eliminator for ICOM handheld radios such as the IC-V8, F3GT, F4GT, & F21GM. One end plugs into a 12-13.8VDC lighter socket. The coiled cord links the lighter plug to the battery housing, which clips onto the back of the radio. The CBE-210 includes Voltage & Current-limiting circuitry; noise filtering circuitry is also built into the housing. 5A fuse is located in the Cig Plug. P/N 11-08252..... **$23.95**

AV

HANDHELD TRANSCEIVERS –BATTERIES

UNIDEN BEARCAT SCANNER BC355C 800MHZ

• 300 Channels • Close Call RF Capture Technology - Instantly tunes to signals from nearby transmitters • Preprogrammed Service Search • Temporary Lockout • Search Lockouts • Backlit Display • 100 ch/sec Scan Speed (max) • Frequency Coverage - Includes the most interesting "action" bands where you can hear police, ambulance, fire, amateur radio, public utilities, weather, and more. •AC Adapters, DC Power Cable and Automotive Power Outlet Plug - More options for supplying power to your scanner at home or in your car. • Public Safety Scanner.

P/N 11-08329 ..... **$136.95**

UNIDEN BC370CDS RADIO SCANNER

The BC370CRS scanner is a multi-featured conventional channel scanner with All Hazards alert. You can easily enter and store frequencies for police, fire/emergency, marine, air, amateur, and other radio services into 300 channels distributed over ten banks. The scanner also alerts you when NOAA (National Oceanic and Atmospheric Administration) or any broadcast station the scanner is tuned to issues an EAS (Emergency Alert System) signal. These alerts are issued for severe weather, homeland security, and law enforcement events (such as Amber alerts).

P/N 11-04736 ..... **$234.95**

WINDSHIELD ANTENNA KIT FOR HANDHELD RADIOS

This antenna kit attaches to the inside of the windshield & dramatically improves portable nav/com's transmit, receive, and VOR performance based on extensive field testing. It is portable and ideal for those who can't use an ANT-SB. Simply attaches one's own flexible antenna to inside of windshield with BNC, coax, suction cup adapter. Works with any handheld radio using BNC connections. P/N 11-18603 ..... **$28.95**

GLEIM KA11AIR PORTABLE AVIATION RECEIVER

Aviation radio communications are now available to you with Gleim's Aviation Radio Receiver. Monitor the entire aviation frequency band! This radio is very portable, easy to operate, and extremely cost effective. Enjoy Listening to aircraft and air traffic control communications and build your proficiency in "pilot speak". This radio receiver is an integral part of GLEIM's Watching Airplanes Course- a tool to assist those interested in aviation to learn more about it. The KA11Air receiver comes with two AA batteries, the earphones, and external antenna..... P/N 13-06717 ..... **$63.50**

PASSIVE AIR BAND AIRCRAFT MONITOR

Monitors the entire aircraft band without tuning! Passive design, can be used onboard aircraft, no local oscillator, generates and creates no interference whatsoever!! Great for air shows! Patented circuit and design! For decades we have been known for our novel and creative product designs. Well, check this one out! An aircraft receiver that receives all nearby traffic without any tuning. It gets better... there is no local oscillator so it doesn't produce, and can't produce, any interference associated with all other receivers with an LO. That means you can use it onboard aircraft as a passive device! And what will you hear? The closest and strongest traffic, mainly, the one you're sitting in! How unique is this? We have a patent on it, and that says it all!

P/N 11-04735 ..... **$159.95**

DISCOUNT BATTERIES AND BATTERY CHARGERS FOR HANDHELDS

Battery Model	Description	Part No.	Price
For Icom A24/A6			
BP-210N	7.2V 2000mAh Ultra long life	11-08251	**$42.75**
BP-211N	Lightweight, Ultra ling life. Li-On charger required.	11-08254	**$49.95**
EMS-211	Rapid Desktop Cgr for BP-211/N	11-08256	**$49.95**
For ICOM A23/A5 Handheld aviation radios-			
BP-197H	Alkaline Battery pack	11-01082	**$23.95**
BP-200XL	9.6v 1450 mAh long Life Ni-MH	11-06351	**$55.85**
BP-200L	9.6V 850mAh	11-08274	**$43.50**
CP-12L	12VDC Cig Lighter for A5	11-08249	**$15.95**
For ICOM A-4 Handheld aviation radios-			
BP-195	9.6v 1000 mAh pk	11-00226	**$42.75**
BP-196	9.6v 1500 mAh pk	11-00227	**$49.95**
EMS-196	Desktop Fast Charger BP-195/196	11-08248	**$48.75**
For ICOM A-22 &A-3 radios-			
CM-166	NiMH Battery 12.0v 1200 mAh	11-00228	**$49.95**
EMS-166	Desktop Charger for CM-166	11-08236	**$51.95**
EC-166	Wall charger for CM-166	11-08234	**$11.85**
BC-79A	Desktop Charger	11-18557	**$59.95**
For ICOM IC-A14 / IC-A14S Handheld aviation radios-			
BP-232N	Operating Time: 15.5 hours	11-08231	**$42.75**
For ICOM A-20, A-21, & Delcom-			
CM-7x	13.2v 1000 mAh pk	11-00230	**$49.95**
IC-WC	Wall charger for CM-7 / CM-7X	11-08237	**$11.95**
BP-D1x	12.0v 1000 mAh pk	11-00319	**$76.00**
IC-8	8 cell AA case 3-1/4" tall	11-08246	**$26.75**
IC-CP	Car Power/Charge cord	11-00351	**$13.85**
For ICOM R-1 radios-			
BP-83	7.2v 600 mAh pk	11-00233	**$39.95**
BP-83xh	7.2v 1500 mAh pk	11-00234	**$49.50**
BC-79A	Desktop Quick Charger	11-18557	**$59.95**
Icom Chargers			
CP-11L	DC Power/Charge Cord for ICOM IC-T90A, IC-91AD, IC-A24, IC-A5	11-06348	**$29.95**
EMS-201	7.2V thru 13.2V Ni-cd & Ni-MH	11-08245	**$48.75**
EMS-210N	Smart charger for ICOM	11-06350	**$54.95**
EMS-232	Rapid Desktop Charger for Icom-style Lithium ION Bttys	11-08233	**$48.75**
EMS-30i	Desktop smart-quick charger.	11-06352	**$52.50**
For Yaesu Aviator Pilot & Aviator Pro nav/com radios-			
FNB-41xh	9.6v 1000 mAh pk	11-00237	**$59.50**
FNB-47xh	7.2v 1800 mAh pk	11-00238	**$49.95**
FNB-41xs	9.6v 1450 mAh pk	11-06354	**$51.65**
EMS-41/47	Rapid Cgr for FNB-40/41/47	11-08244	**$52.00**
FNB-80LI	7.2V 1600mAh Yaesu & Vertex	11-08268	**$45.50**
CBE-41	Battery Eliminator	11-06355	**$24.50**
CBE-80	Battery Eliminator Cig Lighter	11-08269	**$23.95**
BC-601c	Smart Quick Charger	11-00239	**$54.95**
E-DC-5BA	DC Power Cord, Cig Lighter	11-08241	**$18.75**
EM-57-83	Super Desktop Charger	11-08239	**$51.50**
For Bendix/King radios-			
BP-KX99	10.0v 1400 mAh pk	11-00240	**$45.50**
KX-99XH	10.0V 1500 mAh	11-08257	**$49.95**
IC-CP	Car Power/Charge cord	11-00351	**$13.85**
KX-99	Battery case, 8-cell AA (BP-99A)	11-08258	**$23.95**
For STS handheld radios-			
BP-STS+	7.2v 1400 mAh pk	11-00241	**$38.75**
WC-STS	Wall Charger	11-00352	**$20.75**
For Bearcat/Uniden 100/200/250XLT-			
BP-200	7.2v 600 mAh pk	11-00321	**$44.75**
For Bearcat/Uniden 2500XLT, 3000XLT, & 3500XLT-			
BP-2500x	6.0v 1000 mAh pk	11-00322	**$57.85**
For Bearcat/Uniden Trunk Tracker & Sportcat-			
BC-120	4.8v 1000 mAh pk	11-00323	**$17.25**
BC-120x	4.8v 1500 mAh pk	11-00324	**$27.95**
BP-120XE	4.8V 2000 mAh Long Life	11-08272	**$31.85**
BP-120XX	4.8V 2500 mAh	11-08273	**$29.50**
BP-120 80	4.8v 800 mAh pk	11-08270	**$13.85**
BP-120 110	4.8v 1100 mAh pk	11-08271	**$18.75**
For Santec/Narco radios-			
BP-800	9.6v 600 mAh pk	11-00242	**$32.50**
BP-800sh	9.6v 1000 mAh pk	11-00325	**$39.95**
Standard C228A/C528A/C628A, etc.			
CNB-152XS	12V 1800mAHr NiMH	11-08261	**$49.95**
CNB-152XH	12V 1200mAh Long Life	11-08259	**$42.50**
CSA-181	Quick Desktop Charger	11-08266	**$49.95**
For Bose Aviation Headset Series 1			
BP-A	14.4v 1250 mAh	11-00243	**$80.00**
Battery Eliminators			
CBE-152	DC Battery Eliminator for standard-ADI-JRC radios	11-08262	**$23.95**
CBE-196	Battery Eliminator for ICOM	11-08247	**$23.85**
CBE-83	12VDC. 5W, Voltage & Current limiting, & noise filter!	11-08238	**$22.95**

AV

TRUTRAK AUTO PILOTS – ADI / EFIS

SORCERER AS AUTOPILOT

Same features as the TruTrak DFC-250 ATI, plus GPSV and VNAV. GPS-Slaved solid-state DG • Digital Ground Track Selector • VOR / LOC / ILS • VOR / LOC Reverse • Selected-angle Intercept • GPS Nav Mode • GPS Steering • Solid-state gyroscopically-controlled pitch axis • Selected Vertical Speed climbs and descents • Altitude Hold • Built-in • Digital Altimeter • V-NAV • Vertical GPS Steering • Altitude Selector with 50-ft resoultion for approaches • Selectable airspeed for altitude transitions (in addition to VS) • True Control Wheel Steering* • Simplified User Interface P/N 11-02968.....**$7,750.00**

TruTrak Yaw Damper.....P/N 11-02972.....**$1,425.00**

DIGITRAK AUTOPILOT

• GPS-Slaved solid-state DG • Digital Ground Track Selector • GPS Nav Mode • Magnetic Backup Mode • True Control Wheel Steering* • 12V only • 2-1/4" - Dims 2.5"H x 2.5"W x 3.5"D • Standard weight including servo: 3.5 lb

• P/N 11-01595..... **$1,550.00**

TruTrak Yaw Damper

P/N 11-02972.....**$1,425.00**

TRUTRAK YAW DAMPER

The Yaw Damper employs a solid state rate gyro to damp out short term yaw oscillation, and a transverse accelerometer to control rudder position long term, so as to keep the ball centered. The Yaw Damper can be added to the DFC-200 or Sorcerer autopilots.

• 2.05" H x 4.12" W x 1.69" D • 12-28 volts • Standard Weight including servo 3.25lb (Servo Must be Purchased Separately)

P/N 11-02972 .....**$1,425.00**

AUTOMATIC TRIM

Failsafe Automatic Pitch Trim can be added to any system with vertical speed select. TruTrak is the only company serving the experimental market to offer Failsafe Automatic Pitch Trim; this ensures that a single failure will not cause runaway trim. Automatic Trim can be added to the Yaw Damper. • 2.05" H x 4.12" W x 1.69" D • 12-28 volts • Weight 4lb P/N 11-02970 .....**$350.00**

DIGIFLIGHT IIVS - • Fits Standard 2.25" Round Instrument Hole • Built-in Digital Slaved Directional Gyro • Digital Track Selector • GPS Nav Mode • Altitude Hold • 12-28 Volts • All Solid-State Sensors • Simple Intuitive User Interface • Climb and Descend on Vertical Speed • Trim Sensing Pitch Servo that Annunciates for Trim • Lighter and Smaller then Comparable Systems • True Control Wheel Steering* • Dims - 2.5"H x 2.5"W x 5.5"D • Flat Dims - 1.6"H x 4.3"W x 5.5"D • Standard weight including servos – 6lb

TruTrak Digiflight IIVS .....P/N 11-02633 .....**$3,350.00**

TruTrak Digiflight II VS FLAT .....P/N 11-03147 .....**$3,350.00**

DIGIFLIGHT IIVSGV - • Fits Standard 2.25" Round Instrument Hole • Optional Flat Rack Mounting • Built-in Digital Slaved Directional Gyro • Digital Track Selector • GPS Nav Mode • GPS Steering • Altitude Hold • All Solid-State Sensors • 12-28 Volts • Simple Intuitive User Interface • Climb and Descend on Vertical Speed • Trim Sensing Pitch Servo that Annunciates for Trim. • Vertical GPS Steering (GPSV) • Dims: 2.5"H x 2.5"W x 5.5"D • Flat Dims - 1.6"H x 4.3"W x 5.5"D • Lighter and Smaller then Comparable Systems • True Control Wheel Steering* • Standard weight including servos – 6lb

TruTrak Digiflight IIVSGV RND.....P/N 11-05549 .....**$4,700.00**

TruTrak Digiflight IIVSGV FLAT .....P/N 11-03151 .....**$4,700.00**

TRUTRAK GX PILOT

Designed to interface with Garmin G3X™ • Fits Standard 2.25" Round Hole • Built-in Ground Track DG • Track Select Mode • Altitude Hold • VS Select Mode • EFIS Mode (Lateral and Vertical Steering) • Control Wheel Steering • Pitch Trim Annunciation • 12-28 Volts • 2.5" H x 2.5" W x 5.5" D

P/N 11-08553.....**$2,990.00**

ALTRAK ALTITUDE HOLD

• (Easy Installation) • Can be used alone or with any roll servo Autopilot • Only panel space required is for engage/disengage button • Solid-state gyroscopically-controlled pitch axis • Flight dynamics equal to higher priced systems • Control Wheel Steering • Available with vertical speed select (Altrak VS) • 12 Volts only • Programmer Dimensions 3"H x 0.9"W x 2.8"D • Standard weight including servo - 3 lb..... P/N 11-02032..... **$1,550.00**

TruTrak Altrak VS..... P/N 11-02631..... **$1,850.00**

PICTORIAL TURN AND BANK

This display is like an artificial horizon in roll and actually moves in unison with it. This makes the transition from viewing the horizon much easier than the reverse display of the turn coordinator. Uses a solid state gyro instead of a spinning rotor. The Pictorial Turn & Bank is superior to a turn coordinator in all ways. It looks and flies like the roll display of an artificial horizon. It agrees with the real horizon, so one does not have to reverse his or her sensing when entering or exiting IMC. The roll response is without lag just as it is in an artificial horizon. Of most importance, it is easier and safer for the non-instrument pilot to fly. 12-28 Volts - Weight-6oz

2-1/4"..... P/N 11-02834..... **$480.00**

3-1/8"..... P/N 11-02628..... **$530.00**

TRUTRAK GEMINI ADI

The Gemini ADI is a glass replacement for the ADI. Touch Screen. Sunlight –readable. Fits Standard 3.125" Cut-out. Velocity Vector Display. Pitch Atitude Display. Full access to all ports. Bank Angle Display. Vertical Speed Display. Track DG. Slip / Skid Indicator. Standard Rate Turn Indicator. Low Airspeed Warning

P/N 11-10451..... **$995.00**

TRUTRAK ADI PILOT II

Features: • GPS-Slaved solid-state DG • Digital Ground Track Selector • GPS Nav Mode • True Control Wheel Steering • Altitude Hold • Altitude adjust for baro change • Built-in ADI: Bank angle is instantaneous gyro data. Pitch is gyro enhanced vertical speed. Direction is an electronic DG showing track. Extreme bank angle is enunciated by flashing red arrows which indicate required stick motion to correct unusual attitude. Low airspeed warning is enunciated by flashing A-S on the display. • 12-28 Volts only • Programmer Dimensions 3.4"H x 3.4"W x 4.7"D • Standard weight including servo 6lb

P/N 11-04675..... **$3,850.00**

TRUTRAK ADI FLIGHT INSTRUMENTS

Bank angle is instantaneous gyro data. Pitch is gyro enhanced vertical speed. Direction is an electronic DG showing track. Extreme bank angle is enunciated by flashing red arrows which incidcate required stick motion to correct unusual attitude. Low airspeed warning is enunciated by flashing A-S on the display. Solid state rate gyros for pitch and roll. • Built in GPS (optional) • Backup battery (optional)• Power: 12-28 Volts ADI 2 is 2.5"H x 2.5"W x 6.75"D. ADI 3 is 3.4"H x 3.4"W x 4.6"D.

Description	Part No.	Price
TruTrak ADI 2 With GPS Option	11-05735	**$1,400.00**
TruTrak ADI 2 Without GPS	11-05736	**$1,250.00**
TruTrak ADI 3 Without GPS 120KNT +	11-05655	**$1,050.00**

TRUTRAK ADI II 120 KNOT

Gyro / VS pitch display. Bank Angle Display. Built-in Ground Track DG. High Bank Angle Warning. Low Airspeed Warning. Specifications: 2.5" H x 2.5" W x 6.625" D

Without GPS..... P/N 11-08539..... **$1,250.00**

With GPS..... P/N 11-08540..... **$1,400.00**

TRUTRAK EFIS SG

FLIGHT DIRECTOR transitions to an airspeed mode in which airspeed is held at or above a minimum value preset to the specific aircraft. **The main thing that sets this new EFIS apart from other units is flyability** ***Beyond flyability is ease of operation*** - The use of labeled soft keys makes the unit so simple to operate that a manual is not even necessary. ***Picture quality second to none*** - This system is bold and readable (more like the painted lines in good old steam gauges). ***Sunlight readability and viewing angle beyond all others.*** - Readable in ALL lighting conditions and can be seen at the widest viewing angle of any system in comparable price range..... P/N 11-05969 .. **$2,800.00**

EFIS AP III EFIS built-in dual axis AP - AS ....P/N 11-05988 .. **$8,000.00**

EFIS AP IV EFIS built-in dual axis AP - HB....P/N 11-05991 .. **$7,250.00**

EFIS AP IV EFIS built-in dual axis AP - AS....P/N 11-05994 .. **$7,250.00**

TRUTRAK EFIS GP

12-28 Volts. EFIS GP is available in three bezel types: FM - Front Mount, DC - Diagonal Corner, AS - Avionics Stack. FM: 6" H x 7.25" W x 3.3" D. DC: 5.85" H x 6.45" W x 3.3" D. AS: 5.85" H x 7.05" W x 3.3" D. Features: Airspeed, Altimeter, Artificial Horizon: Attitude, Velocity Vector, Vertical Speed Indicator, Track DG, Current Selected Waypoint, Distance to Waypoint, HSI: GPS CDI, Slip / Skid Ball, Standard Rate Turn Indicator, Bank Angle Indicator, Adjustable Heading Bug, Altitude Bug, Round or Rectangular Airspeed and Altimeter, High Bright / Sunlight Readable LCD.....P/N 11-08463 ..**CALL FOR QUOTE**

2 Axis Autopilot Option .....P/N 11-08563 ..**CALL FOR QUOTE**

AV

TRIO AVIONICS – LONESTAR

TRUTRAK IMONITOR EMS

Offers you an easy-to-use back-up instrument, displaying essential engine data and informations about other components on your airplane directly on your iPhone, iPod Touch or iPad. You will quickly realize that every action is very intuitive and easy to perform, even when flying in rough air. This product is wireless to communicate between the EDM module and your device, so that you do not depend on a cord that may not always be in your airplane. Therefore, in addition of the EDM module to be powered up, Wi-Fi needs to be enabled and connected to the EDM wireless network before launching iMonitor. Otherwise, the software will warn you that no connection with the module is available, and will give you the possibility to enter the DEMO mode. In this case, all features remain available, but the data being displayed are fake. Please note that this is the only way to buy in-app purchases (audio and visual alerts or engine configuration) This product should be used in conjunction with a TruTrak EDM Module and a TS-83 Wi-Fi module (part number 11-09682), all made by TruTrak Flight Systems, Inc. These devices should be installed, up and running prior to launching the App required for this product (purchased from Apple iTunes for $0.99).

iMonitor EMS ..... P/N 11-09681 ..... **$970.00**
TS-88 Wi-Fi Module ..... P/N 11-09682 ..... **$150.00**

TRIO AVIONICS

EZ PILOT AUTOPILOT - A single axis, gyro stabilized roll control autopilot. It is a modern navigation system designed to accurately track a GPS flight plan or "Go To" course that is entered into a handheld or panel mount GPS receiver. Track, Course (similar to a heading bug), and Intercept modes are available to the pilot. Pilot Command Steering simplifies course changes. Full data display of all GPS input data. Fits standard 3-18" instrument cutout. Length: 3". Weight – Control Head: 6 ounces/ 169 grams Gold Standard Servo: 27 ounces/ 765 grams P/N 11-06547 **$1,795.00**

PRO PILOT AUTOPILOT - A GPS enabled autopilot that provides high-quality 2 axis navigation solutions for Experimental and LSA aircraft. It uses solid-state MEMS gyros for pitch and roll stability. Horizontal and Vertical functions may be individually enabled. Horizontal navigation provides three modes of control – Track, Course and Intercept. Vertical navigation functions offer Altitude Hold, Climb/Descent with Airspeed Limiting, and Altitude Pre-Select. Multi-color LEDs and a bright PLED display screen provide a clear picture of functions and displayed data (LCD screen available upon request). A slip-skid indicator and a turn rate display duplicate the functions of a standard turn rate coordinator. Advanced Safety Features – "G" force limiting, automatic servo disconnect on takeoff, "intelligent" servos with independent emergency disconnect authority, horizontal Track Offset Positioning, and Trio's "automatic 180 degree turn" feature (for VFR pilots encountering poor weather). Fits a standard 3-1/8" instrument cutout. Length: 6". Weight – Control Head: 12 ounces/ 340 grams Each Servo: 27 ounces/ 765 grams
P/N 11-06548 **$2,995.00**

Auto-Trim option for existing aircraft electric pitch trim system - P/N 11-06549 ..... **$225.00**
GPS Option for the Pro Pilot ..... P/N 11-08554 ..... **$500.00**
GPSV Option for the Pro Pilot AutoPilot ... P/N 11-08555 ..... **$500.00**
Pro Pilot Rack Mount ..... P/N 11-08556 .. **$3,095.00**
Fuel Management Option Software - Option for the Pro Pilot allows the pilot to view multiple fuel parameters. ..... P/N 11-08557 ..... **$199.00**

EZ-1 ALTITUDE HOLD - Single axis altitude control system. Provides pitch stabilization and accurate altitude hold using MEMS gyro and sensitive altimeter. LCD switch/display provides a graphical message display for system messages, alerts and warning advisories. Rotary encoder allows fine altitude adjustments. "G" force limiting to prevent high wing stress – alarms and disconnects when sensing high sustained G loads. Remote servo disconnect. Senses and displays pitch trim requirements. Weight – Electronic Components: 8 ounces/ 226 grams Servo: 27 ounces/ 765 grams. P/N 11-06550 **$1,795.00**

EZ-2 ALTITUDE CONTROL - Same physical configuration and features as EZ-1 but adds climb/descent capability and airspeed capture. Pitot port on the electronics module enables airspeed sensing to prevent stalling or over-speeding the aircraft. Pilot Command Steering allows climbs and descents on vertical speed or airspeed. P/N 11-06551 **$2,070.00**

EZ-3 ALTITUDE CONTROL - Same as EZ-2, but adds Altitude Pre-Select. Pilots may enter climb/descent rates and target altitude. Upon reaching the target altitude the EZ-3 will level the aircraft and automatically enter Altitude Hold mode. P/N 11-06552 **$1,795.00**

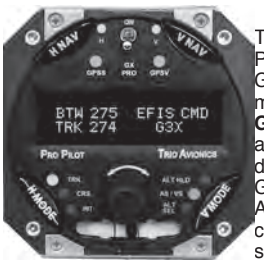
Auto-Trim option for existing aircraft electric pitch trim system - P/N 11-06549 ..... **$225.00**

All altitude control systems employ the Trio Gold Standard servo.

ACCESSORIES

EZ Pilot Harness Assembly ..... P/N 11-06702 ..... **$90.00**
EZ Altitude Control Harness Assembly ..... P/N 11-06703 ..... **$125.00**
ProPilot AuoPilot Harness Assembly..... P/N 11-06704 ..... **$199.00**
Gold Standard Servo ..... P/N 11-06705 ..... **$750.00**

GX PRO AUTOPILOT



This pro Pilot autopilot product, the GX PRO, is designed for use with the Garmin G3X EFIS System. It is available in two models:

GX PRO Instrument Mount - It mounts in a standard 3-18" instrument cutout. When driven by a G3X EFIS, it has full GPSS and GPSV capability without the need for an ARNIC 429 data interface, thus lowering the cost substantially. Includes 2 servos and servo installation kit.
P/N 11-09714 ..... **$2,995.00**

GX PRO Stack Mount - This includes a metal sleeve that may be mounted into a radio stack, allowing the unit to be removed from the front. It has the same characteristics as the instrument mount system. Includes 2 servos and servo installation kit. P/N 11-09715 ..... **$3,095.00**

COMMANDER 2900 KLN-900 DOCKING STATION

The Commander 2900K is Lone Star Aviation's Docking Station for BENDIX/ KING/HONEYWELL KLN 900 DZUS-Mounted GPS. The portable docking station is designed to let you explore the KLN 900 features in a non-flying environment...in the comfort of your home or office. Operation is simple and fast, just slide your KLN 900 into the Commander's Tray and you are ready to go.
P/N 11-04911 ..... **$379.00**

COMMANDER GARMIN GNS-430/530

Lone Star Aviation's Docking Station for Garmin's GNS 430/530 Flight Management System. The Commander is a portable Docking Station designed to let you explore the Garmin GNS 430/530 features in a non.

Features:•Simulate your route of flight and published approaches. •Access sids and stars. •Program and store flight plans. •Simulate approaches. •Enter and store waypoints. •Reduce your learning curve. •Operating your GNS430/530 in flight will become automatic.

GNS-430 ..... P/N 11-04864 ..... **$249.00**
GNS -430 INT ..... P/N 11-04865 ..... **$259.00**
GNS-530 ..... P/N 11-04866 ..... **$269.00**
GNS-530 INT ..... P/N 11-04867 ..... **$279.00**

GARMIN COMMANDER GNS 480

The Commander 2000 GNS480 is a Docking Station designed to allow you to explore the Garmin GNS-480(CNX-80) features in a non-flying environment.

Features: * Simulate your route of flight and published approaches * Access sids and stars * Program and store flight plans * Simulate approaches * Enter and store way points * Reduce your learning curve * Operating your GNS-480(CNX-80) in flight will become automatic
P/N 11-04916 ..... **$259.00**

COMMANDER 2900 KMD 150 & 250

Lone Star Aviation's 2900 Station has been designed for the KMD 150, KMD 250 equipment so that the user can practice their GPS, Display and all of it's functions in a non flying environment. The 1 port cooling fan (LS03-02013) plugs into the rear accessory panel and provides 6-8 CFM of cooling to the KMD 150/250 receiver. The KMD connectors plug into the rear panel of the Commander Station for an easy set-up so you can get right into the training mode. P/N 11-04922 ..... **$279.00**

COMMANDER STATION FOR C-5000

Lone Star Aviation's Commander Station has been designed for the Wulfsberg C-5000 Control Head equipment so that the pilot can practice GPS, control head functionality at his or her own pace in a non flying environment. The 1 port cooling fan (LS03-02013) plugs into the rear accessory panel and provides 6-8 CFM of cooling to the C-5000 receiver.
P/N 11-04928 ..... **$379.00**

AV

LONESTAR – TEST EQUIPMENT

COMMANDER GMA-350 DOCKING STATION

Brand New from Lone Star, Commander GMA-350 Docking station designed for one of Garmins new exciting products. Designed to show off Garmin's new 3D audio capabilities. Comes with everything you will need to run your GMA-350.

P/N 11-10595 ..... **$398.75**

COMMANDER GTN-650 DOCKING STATION

Brand New from Lone Star, Commander GTN-650 Docking station designed for one of Garmin's new exciting products. Comes with everything you will need to run your GTN-650, including a chassis mounted avionics cooling fan.P/N 11-10593..... **$348.75**

COMMANDER GTN-750 DOCKING STATION

Brand New from Lone Star, Commander GTN-750 Docking station designed for one of Garmin's new exciting products. Comes with everything you will need to run your GTN-750, including a chassis mounted avionics cooling fan.P/N 11-10594..... **$348.75**

COMMANDER 2000K

Pre-wired in the "take home" mode. Simply slide your KLN90A/B, KLN89/B, KLN35 Series, and KLX-135 Series GPS or GPS-COM, into the tray and explore your GPS receiver as if you were flying. Practice actual flight or approach at home, store flight plans, and learn all of your units functions. Update your units database via the internet using a desktop or laptop computer & save up to $300/year. Appropriate connector is shipped free via UPS Blue Label from the factory. Additional connectors, cooling fan, Argus and moving map interface available.

2000K Station..... P/N 11-18478 ..... **$240.95**
2000K 220VAC..... P/N 11-04876 ..... **$269.00**

COMMANDER 2900 TRIMBLE 2101 24VOLT

Lone Star Aviation's Docking Station for the Commander 2900 2101/CUGR GPS System is designed to allow you to explore the FreeFlight Systems 2101/CUGR features in a non-flying environment. Ideal for Guard Units, EMS, Law Enforcement, DEA, Boarder Patrol, etc. staff training. Unit does not include cable.

P/N 11-04926 ..... **$379.00**

LONESTAR ACCESSORIES

Description	Part No.	Price
1 Port Dock Station Cool Fan	11-04859	**$57.00**
Multi-Signal Coverter	11-04892	**$752.95**
KA-20 Mounting Bracket	11-04873	**$59.95**
MX-20 Power Supply and Cable Kit	11-04869	**$479.95**
USB to Serial Converter	11-04884	**$58.95**
150, 155, 165 Garmin Connector	11-04899	**$38.95**
II Morrow with GX-55	11-04900	**$48.95**
II Morrow GX60 Connector	11-04904	**$58.95**
II Morrow GX50 Connector	11-04906	**$86.75**
CNX-80 Power / Simulation Harness	11-04918	**$86.75**
Garmin 100 Connector	11-04903	**$79.50**
250, 300 Garmin Connector	11-04902	**$48.95**
II Morrow 2001 Connector	11-04901	**$38.95**
USB Military Cable	11-04891	**$99.95**
KLN-89B-94 Data Cable	11-04882	**$48.95**
KLN-88-Power Cable	11-04881	**$48.95**
KLN-35A Power Cable	11-04880	**$48.95**
KLN-89B 94 Power Cable	11-04879	**$48.95**
KLN-90A/B Power Cable	11-04878	**$58.95**
KLX-135 Power Cable	11-04874	**$58.95**
KLN-900 & A/C Panel	11-04913	**$49.95**
KLN-900 Power Cable	11-04912	**$86.75**
SD Converter TSO 24-13.8 VDC	11-04894	**$499.95**
DC Converter TSO 24-16 VDC	11-04895	**$499.95**
DC Converter 24-19VDC TSO	11-04898	**$499.95**
6 Port Cable Kit 36"	11-04914	**$39.95**
6 Port Cable Kit 60"	11-04915	**$49.95**

TRANS-CAL ATS-400 ALTITUDE DIGITIZER

The Trans-Cal Model ATS-400 is designed to test, display and simulate the output of Altitude Reporting Equipment, which conform to the ICAO Standard for SSR Pressure Altitude Transmission. In accordance with the U.S. National Standards for I.F.F. Mark X (SIF)/Air Traffic Control Radar Beacon System SIF/ ATCRBS. The ATS-400 will also display the output of altitude reporting equipment which transmit serial data in either RS232, RS422, RS485 or ARINC 429 Label 203. The ATS-400 may be used in the aircraft or on the bench making this an extremely versatile piece of test equipment.

P/N 11-09607 ..... **$1,595.00**

TRANS-CAL EET-200 ENCODER EMULATOR TESTER

The EET-200 provides the avionics technician a clean, quick and reasonably priced method of emulating an altitude encoder output by providing a known good altitude code source to aide in isolating each data bit D2 through C4. Simply unplug the altitude encoder and substitute the EET-200; rotating the knob will move the transponder through a variety of preprogrammed altitudes testing each data bit in sequence.

P/N 11-09606 ..... **$347.95**

NC 2210A NAV/COM RAMP TESTER

The NC 2210 Tester is optimized for ramp testing of navigation and communication equipment. The unit provides test signals for marker beacon, communication, localizer, glide slope, and VOR. Also included, is a wide band comm receiver to permit evaluation of comm transmitter AM fidelity. The TKM NC 2210 is a NAV-COMM Ramp Tester. The unit has improvements over the 2200, which it replaces. The improvements include the following: Higher •RF power • Precise localizer and glide slope deflection • Calibrated VOR bearings at 10 degree increments • Crystal controlled modulation frequencies • Longer battery life • Internal antenna with adjustable length • Smaller size. Specifications: •Size: 3.8 x 7.4 x 2.3" •Weight: 1.3 lbs. •Power: Internal battery with over 2 hours running time (110VAC charger included) •Warranty: 2-year from date of purchase. P/N 11-01813 ..... **$1,435.00**

MICHEL 3300 TRANSPONDER TEST SET

The 3300 is designed to test ATC transponders on the bench as well as when they are installed in aircraft. As such the 3300 contains an interrogation transmitter. The intended range of the interrogation is less than 100 ft. When used for Ramp testing the interrogation signal is comprised of pulse groups (PG) transmitted at a PRF of 2353 PG/S

P/N 11-08560 ..... **$2,095.00**

MC 60 NAV CONVERTER

The TKM MC 60 is designed to provide a display for a variety of Nav signals including ILS, LOC, Back course, LOC, GS, GPS, and MB. The VOR display includes a Left and Right bar graph with an OBS and a tracking mode with reciprocal selection. When a GPS is selected by grounding the enableline, GPS is displayed in the OBS window and VOR and LOC functions are disabled. When the GPS is not enabled the VOR/LOC selsction is made by the ILS enable line from the associated Nav receiver. Back Course selection is made by grounding the back course enable line. The digital display includes OBS, bearing, LOC, BAC, and GPS. The bar graph display contains 10 dots forLeft, Right, Up, and Down. The center dot is used to indicate valid signals for LOC, VOR, or GPS. A Glide Slope light indicates a valid Glide Slope signal. P/N 11-04594..... **$497.00**

QUICK SHOT AVIONICS REFERENCE MANUAL

Quick Shot is a compact, rugged binder type manual which shows detailed wire pin-outs for a wide variety of general aviation avionics equipment. Each page is removable and very durable. The wiring diagrams in Quick Shot Volume 1 include Apollo/UPS, Bendix, Garmin, Icom, Sandel Mid-Continent, Sigtronics, United, Telex, David Clark, PS Engineering, Narco, Val, and many more.

P/N 11-01623 ..... **$56.50**

PRO HUB

A revolutionary product that allows you to easily install and connect avionics into an existing aircraft or one you are building. Designed to accept and connect most NAV/GPS/COM, modern audio panels, intercoms, VOR indicators, moving map displays, HSI's, RMI's, ADF's, annunciators, mode control and almost any "send and receive" RS-232 formatted device. Approach's custom cables are made to connect with the Fast Stack Pro Hub and associated avionics and come with connectors installed. Virtually No Hand wiring •Lower Upgrade Costs •Single Point Grounding P/N 11-04731..... **$582.00**

AV

ELTS

EBC ELTS

Emergency Beacon Corporations ELTs are among the most popular on the market today due to their size, weight and convenience. EBC-102A is the smallest cabin mounted ELT available. Operating the toggle switch on top of the unit allows manual activation or pre-flight testing of the EBC-102A. The EBC-502 is fully approved by the FAA and FCC under TSO-C91a . It uses a 9V battery pack and comes complete with a handhold lanyard, mounting bracket, and batteries. It is easily installed and requires no external antenna or cabling.

EBC-102A Signal only ELT ..... P/N 11-02575 ..... **$529.00**
EBC-502 Portable Cabin Mount ELT ..... P/N 11-02576 ..... **$489.00**
EBC GS21 ELT Battery..... P/N 11-04771 ..... **$32.50**

POINTER 3000 SERIES ELTS

The Model 3000 (AF/AP) and 3000 (AF) which have been in production for twenty years are now revised to incorporate the upgrades of RTCA DO-183 for emergency locator transmitters.The new models, designated 3000-10 (AF/AP) and 3000-11 (AF) are interchangeable with existing units in form, fit and function. The 3000-10 and 3000-11 transmitters incorporate an alkaline battery pack specifically designed to endure the short term extreme thermal variations and mechanical shock requirements of RTCA DO-183. Installed weight is 2.0 lbs. Emergency voice transmission is provided on the 3000-10 transmitter if desired. Size: 3 Size: 3 1/2"W x 7 5/8"H x 2-3/4"D.

P/N 3000-10 ..... **$464.00**
P/N 3000-11 ..... **$448.50**

Accessories:
Battery pack, 2-year Alkaline ... P/N 11-17950 ..... **$22.95**
Mounting bracket assembly ..... P/N 2017 ..... **$49.50**
Master switch guard kit ..... P/N 2021 ..... **$11.75**
Remote panel switch kit ..... P/N 2019 ..... **$52.50**
2019-10 Remote switch kit..... P/N 11-05889 ..... **$52.75**
Fixed (remote whip) antenna ... P/N 3001 ..... **$59.75**
Coaxial antenna cable..... P/N 3002 ..... **$39.50**
Telescopic antenna w/tether .... P/N 2006 ..... **$35.25**

ACK 406/121.5 MHZ E-04 ELT

The all new E-04 ELT is a direct replacement for the more than 62,000 model E-01 ELT's (by ACK) on the market today. The new E-04 fits directly into the current E-01 mounting trays and uses the same remote control panel indicator. The E-04 external antenna will utilize your current antenna mounting and wiring installations.
Undergoing certification testing, ACK is not accepting orders for the E-04 until ELT certification process is complete.
Features: * Accepts GPS position imput data from Bendix/King. Garmin, Nema 0183 GPS * New antenna is swept back 20 degrees, and features a molded plastic base. * 5 watts @ 406MHz for 24 hours, and 100 Mw @ 121.5 MHz for 48 hours. * New simple plug in audible alert indicator. * New lithium battery pack offers a 5 year battery life, and makes it substantially lighter. * Can use Ameri-king remote panel indicator

Description	Part No.	Price
ACK E-04 406MHZ ELT Kit	11-06395	**$598.00**
ACK E-04 406MHZ ELT Kit INTL.	11-09582	**$625.00**
Accessories	**Part No.**	**Price**
ACK E-01 TO E-04 Retro FIT Kit	11-06396	**$549.00**
ACK E-01 TO E-04 Retro FIT Kit INTL.	11-09231	**$603.00**
E-04 Whip Antenna	11-10465	**$99.95**
RCPI Cable For ACK 406/121.5 MHZ ELT	11-09971	**$18.75**

ACCESSORIES FOR E01 ELT

ELT Replacement antenna..... P/N 11-17961 .... **$43.50**
ACK E-01 ELT G-Switch E-01G..... P/N 11-05537 ..... **$49.95**
RCPI Unit / Remote Switch / E-01 (E-01-05) .... P/N 11-05262 .... **$47.75**

POINTER ELT 8000 SERIES

The COSPAS/SARSAT search and rescue network will discontinue monitoring the current 121.5/243.0 MHz frequencies as of Feb. 1, 2009. The 121.5/243.0 MHz frequencies will continue to be monitored on a voluntary basis by overflying aircraft and utilized by the current search and rescue organizations. After this date, the COSPAS/SARSAT will monitor only 406 MHz. The 406 MHz aircraft ELT, defined by COSPAS/SARSAT operational specifications, incorporates many new features and improvements for search and rescue.
To comply with the new requirements, Pointer, Inc is pleased to announce the Model 8000 series ELT. The transmitter design incorporates the functional and programming requirements of COSPAS/SARSAT specification CST.001, FAA RTCA DO-204 and TSO-C126. The Pointer ELT Model 8000 series transmits phase modulated aircraft identification data on the 406 MHz frequency to quickly identify an emergency . The unit also transmits 121.5 MHz frequency for airborne and ground search operations. Optional features include factory or field programming of the microprocessor as a separate module and internal GPS. The approval program is in process and have completed COSPAS/SARSAT testing. FAA testing has begun.

Description	Part No.	Price
Model 8000-1(AF) Complete Unit	11-07543	**$912.00**
Model 8000-1(AF) (H)* Complete Unit (H) Model is a helicopter version with four addintal G-switches to provide hemispherical activation.	11-07544	**$1,096.75**
International Version		
Description	**Part No.**	**Price**
Model 8000-1(AF) Complete Unit	11-07545	**$912.00**
Model 8000-1(AF) (H)* Complete Unit (H) Model is a helicopter version with four addintal G-switches to provide hemispherical activation.	11-07547	**$1,096.75**

Accessories		
Description	**Part No.**	**Price**
Battery Pack	11-07548	**$134.95**
Mounting Bracket	11-07549	**$59.95**
Remote Switch	11-07550	**$70.75**
Remote Antenna 3000-15	11-07551	**$108.95**
Pointer Remote Antenna Cable	3002	**$39.50**

ELT REPLACEMENT BATTERIES

P/N 11-04758

We now offer the complete line of ELT replacement battery packs. These top quality battery packs are factory new & meet or exceed FAA TSO-C91a and are also Transport Canada approved. Request current price on any ELT replacement battery or ELT, not shown here. ***NOTE: ELT Replacement Batteries are non-returnable due to shelf-life.***

Application	Part No.	Price
BP-1020 Dorne & M. (2 yr.)	11-17920	**$24.95**
BP-1045 EBC102/302 (2 yr.) - GS-21	11-17925	**$23.75**
BP-1035 Garrett R88 (2 yr.)	11-17930	**$33.65**
BP-1005 Merl/Larago (2 yr.)	11-17935	**$43.75**
BP-1040 Martec Eagle	11-17940	**$59.75**
BP-1026 CIR-11	11-17910	**$49.90**
BP-1030 Pointer (2 yr.)	11-17950	**$22.95**

Application	Part No.	Price
Narco (2 yr.) (ELT10) Bp-1010 Approved for Canadian use.	11-17945	**$25.85**
BP-1015 Sharc-7 (2 yr.)	11-17955	**$21.95**
452-0130 Artex 110-4	11-17957	**$79.95**
EBC 502 - GS-52	11-02577	**$59.95**
452-3063 ELT-200	11-14935	**$41.85**

AV

EBC 406-SERIES ELT'S

Encapsulated electronics and battery packs to provide for added protection against shock, moisture, and other environmental hazards. Built-in monitor that emits a loud beeping tone if the ELT is activated. Can be activated either automatically or manually. Should be installed in the cabin of the aircraft. Allows for easy removal of the ELT in case of an actual emergency - just disconnect the external antenna coax cable and attach the survival antenna. The EBC 406 AF-Series should be installed in the tail section of the aircraft for those who prefer that ELT location. In that case, a remote unit is provided for the aircraft panel so the the ELT can be controlled by the pilot. Survival antenna is used when the transmitter is removed from the aircraft. All EBC 406 ELT's have a built-in self test feature that allows the pilot to check 406 power and the antenna-coax connection. Both cabin and tail mount ELT's use an external antenna. ***Features:*** • Operating Freqs: 406.028 MHz and 121.5 MHz • Output Power on 406 MHz: 5W for 24 Hours at -20C • Output Power on 121.5 MHz: 50mW min for 50 Hours at -20C • Operating Temperature: -20C to +55C • Useful Battery Life: 5 Years or 1 Hour of Cumulative Use • Modulation 406 MHz: Biphase L (16KOG1D) • Modulation 121.5 MHz: Swept Tone 1600Hz to 300 Hz, 2-4 • Times/Second • Automatic Activation: Velocity Change of 4.5 feet per Second • Altitude: 50,000 feet • Decompression: 8000 feet to 40,000 feet • High Pressure: -15,000 feet • Humidity: 95% for 50 Hours • Shock Performance: Withstands 500G's on 6 axes • Vibration: Withstands 10 G's • Immersion: Withstands 24 hours in Salt Water • Warranty: 2 Years, Made in the USA.

Model	Description	Part No.	Price
EBC 406AP	For fixed wing aircraft. Includes transmitter, survival antenna, mounting bracket, external whip antenna with cable & battery pack. For cabin/cockpit installation.	11-05917	**$998.00**
EBC 406AF	For fixed wing aircraft. Includes transmitter, survival antenna, mounting bracket, external whip antenna with cable, remote control monitor with connector kit & battery pack. For aircraft tail installation.	11-05918	**$1,235.00**
EBC 406APH	Same as AP system but with omni-directional helicopter activation system. For helicopter use only.	11-05919	**$1,394.00**
EBC 406AFH	Same as AF system but with omni-directional helicopter activation system. For helicopter use only.	11-05920	**$1,562.00**
EBC 406AFH	Same as AF system but with omni-directional helicopter activation system. For helicopter use only. (International Version)	11-10009	**$1,562.00**
EBC 406HM	Cabin mounted tri-frequency ELT (406.028, 121.5 and 243.0 MHz) Non-reflective flat black for night vision equipment contractility. With integral antenna, omni-directional helicopter activation system and battery pack.	11-05921	**$1,114.00**
EBC-406HM-INT		11-07240 Intl	**$1,178.00**
EBC 406APM	Same as EBC 406AP but finished in non-reflective flat black for night vision equipment compatibility. Tri-frequency signal. Comes with external rod antenna.	11-05922	**$1,750.00**
EBC 406AFM	Same as EBC 406AF but finished in non-reflective flat black for night vision equipment compatibility. Tri-frequency signal. Comes with external rod antenna.	11-05923	**$1,977.00**
EBC 406APHM	Same as EBC 406APM but with the addition of an omidirectional helicopter activation system. For cabin mounting. Comes with external rod antenna.	11-05924	**$1,885.00**
EBC 406AFHM	Same as EBC 406AFM but with the addition of an omi-directional helicopter activation system. For tail mounting. Comes with external rod antenna.	11-05925	**$2,128.00**

Model	Accessories	Part No.	Price
GS-46	5 year lithium battery pack for any of EBC's 406 ELTs	11-05926	**$159.95**
BB-12	Mounting bracket for EBC 406AP series ELTs	11-05927	**$155.95**
BB-12M	Mounting bracket for EBC 406HM, APM and APHM	11-05928	**$155.95**
BB-14	Mounting bracket for EBC 406AF series ELTs	11-05929	**$123.95**
RCM-1	Remote Control Monitor for EBC 406AF series ELTs with connector kit	11-05930	**$255.95**
ANT-406W	External whip antenna for both EBC 406AP and AF series ELTs. Two frequencies	11-05931	**$247.95**
ANT-406T	Survival tape antenna for all EBC 406 ELTs. Three frequencies.	11-05932	**$102.95**
ANT-406R	External rod antenna for helicopter or high speed use. For use with three frequencies 406 ELTs.	11-05933	**$1,098.00**
ANT-406B	Blade antenna for high speed use. Three frequencies	11-05934	**$1,592.00**
CB-1	6ft. cable between ELT and antenna	11-05935	**$68.50**
Manual	Operation and Installation Manuals	11-05936	**$49.00**

AMERI-KING AK-451 PERSONAL LOCATOR BEACON

ACOSPAS-SARSAT & FCC approved, 406 MHz Satellite P-ELT Personal Emergency Locator Transmitter, triple (406 Satellite /243 Military /121.5 Civilian) MHz frequencies. Having triple frequencies insures your distress message reaches both NOAA Satellite Operation and US Air Force AFSR Ground Operation, Search and Rescue Team, with 100% confidence, due to transmitting on both 243.0 Military and 121.5 Civilian bands, for immediate ground search dispatch, narrowing the searching time to the minimum. The Position accuracy of the 406 MHz satellite signal is about 110 meters at 9.5 degree Cross Track Angle (found in Satellite Qualitative Test at a COSPAS-SARSAT approved Laboratory). Features:• Applicable to all Aviation Uses such as Flying, Gliding, etc. • Harsh/ Robust/ Heavy Duty P-ELT in an enduring composite Emergency Carrying Case. • Ultra long lasting Battery Package, up to 78 hours @ -20 deg C, end of life, 10 years useful life time Lithium type, LiMnO2, 4 D-Size. P/N 11-06305..... **$465.00**

AMERI-KING AK-450 ELT

The AK-450 ELT from Ameri-King is FAA TSO-C91a approved & meets FCC rule for improved satellite detection. It features voice transmitting capability, visual "on" lights for both ELT main unit and remote panel, and uses standard Duracell batteries (included). Includes low drag aircraft antenna, portable antenna, remote control panel, wiring and coaxial cable assembly, handheld lanyard web, mounting tray and clamp. Size: 4.27"w x 2.95"h x 5.64"l. Wt: 2 lbs.,10 oz. 2 yr factory warranty **ATTENTION**: 2009, the international COSPAS-SARSAT satellite system will no longer provide satellite-based monitoring of the 121.5/243 MHz frequency. After the date of the satellite termination, in 2009, 121.5 MHz signals transmitted from ELTs operating on the lower frequency will only be detected by ground-based receivers such as local airport facilities or air traffic control facilities or by overflying

AK-450 ELT for helicopter (6 axles) AK450-1 ..... P/N 11-01249 ..... **$626.00**
AK-450 Cable Assembly ..... P/N 11-04973 ..... **$12.85**
AK-450 Remote Switch ..... P/N 11-04937 ..... **$46.75**
AK-450 Coaxial Assembly ..... P/N 11-04938 ..... **$11.95**
2 Year Warranty ..... P/N 11-05793 ..... **$46.75**
AK-450 antenna 450017 ..... P/N 11-03303 ..... **$38.75**

AMERI-KING AK-451 ELT

Mic jack feature not available on 406 MHz ELTs FAA TSO'd approved, EASA ETSO'd approved, 406 MHz ELT Emergency Locator Transmitter Types (AF) Automatic Fixed, & (AP) Automatic Portable. It transmits aircraft position data, immediately and accurately, on triple (406 Satellite /243 Military /121.5 Civilian) MHz frequencies. Having triple frequencies insures your distress message reaches both NOAA Satellite Operation and US Air Force AFSR Ground Operation, Search and Rescue Team, with 100% fully confidence, due to transmitting on both 243.0 MHz Military and 121.5 MHz Civilian bands, for immediate ground search dispatch. **Package Includes:** * AK-451 w/ Battery (AF/AP ELT) * Portable Antenna * Whip, Rod, or Blade Antenna * Remote Switch * Prefabricated 25 Foot Wiring Harness Assembly * Audible Buzzer Monitor * Six Foot Coaxial Cable Assembly * Mounting Tray * Velcro Holder * Portable Soft Case

ELTS PROGRAMMED FOR US REGISTERED AIRCRAFT			
Model No.	**Description**	**Part No.**	**Price**
AK-451-2	ELT W/ Whip and Port Antenna.	11-06677	**$699.00**
AK-451-2D	AK451ELT Dual w/Whip & Port Antenna	11-10472	**$579.00**
AK-451-23	AK451ELT W/Whip & Port Antenna W/GPS interface.	11-08304	**$1,183.00**
AK-451-3	ELT W/ Rod 3 and Port Antenna.	11-06678	**$1,294.00**
AK-451-4	ELT W/ Rod 4 and Port Antenna.	11-06758	**$1,475.00**
AK-451-5	ELT W/ Blade and Port Antenna.	11-06679	**$1,799.00**
AK-451-6	ELT 406/GPS/NAV POS/Whip and Port Ant.	11-06680	**$1,950.00**
AK-451-12	ELT w/ Multi Axes G Switch for Hel. & Dual Ant.	11-06691	**$1,466.00**
AK-451-13	ELT Set w/GPS & Opt Multi Axes	11-06692	**$2,857.00**
AK-451-14	ELT Set 406 Rod/Port Ant./Helicopter	11-06970	**$1,349.00**
AK-451-15	EL Set 406 for Helicopter	11-06969	**$1,203.00**
AK-451-16	ELT Set/Helicopter/Opt Multi Axes	11-06971	**$1,609.00**
AK-451-17	ELT Set/Helicopter/GPS/NAV POS	11-06972	**$2,658.00**
AK-451-18	ELT Set 406/GPS/NAV POS/Helicopter	11-06973	**$3,038.00**
INTERNATIONAL PROGRAMMED ELTS - Can be programmed for international registered aircraft (specify when ordering).			
Model No.	**Description**	**Part No.**	**Price**
AK-451-CAN	ELT W/ Whip and Port Antenna. Canadian	11-06966	**$719.00**
AK-451-23 CAN	ELT W/ Whip Antenna & GPS Interface. for Canada registered aircraft.	11-08667	**$1,183.00**
AK-451-INT	ELT with Whip and Port Antenna. Int.	11-06968	**$699.00**
AK-451-INT	AK-451 2D ELT Dual Freq/Whip Antenna	11-10573	**$579.00**
AK-451-INT	ELT with Rod 3 hole antenna	11-07563	**$1,279.00**
AK-451-INT	ELT with Rod 4 hole antenna	11-07566	**$1,475.00**
AK-451-INT	ELT with Blade antenna	11-07568	**$1,825.00**
AK-451-HELI	ELT with Whip antenna heli.	11-07560	**$1,466.00**
AK-451-GPS	ELT with GPS/NAV antenna whip	11-07569	**$2,145.00**
AK-451-GPS	ELT with GPS/NAV antenna rod 3 hole	11-07570	**$2,579.00**
AK-451-GPS	ELT with GPS/NAV antenna rod 4 hole	11-07571	**$2,795.00**
AK-451-GPS	ELT with GPS/NAV antenna blade	11-07572	**$3,115.00**

ACCESSORIES	Part No.	Price
Installation Adapter Kit	11-06988	**$13.50**
AK-451 ELT Replacement Battery	11-06686	**$144.95**
ELT ID Software Reader	11-06974	**$341.95**
Optional Mil Spec Remote wiring harness Assembly, 25'	11-06760	**$49.50**
Whip Ant., General Aviation, 250 knots, 406/121.5MHZ	11-06690	**$125.95**
Rod4, Business Jet, 350 knots, 406/243/121.5 MHZ.	11-06761	**$884.00**
Btty Pack Lithium, LIS02, 4D Cells, 87 Hrs Lasting, 5 Year Life	11-06685	**$29.50**
Rod3, Business Jet aircraft, 350 knots, 406/243/121.5 MHz	11-06689	**$488.00**
AK-451 Mount Tray	11-09966	**$24.00**
AK-451 Audio Buzzer	11-09967	**$37.50**
AK-451 T Adapter	11-09968	**$6.75**
AK-451 Hex Key Tool	11-09969	**$1.34**

ELTS

KANNAD 406 ELT'S

KANNAD 406 AF-COMPACT ELT KIT - Designed for all light aircraft requiring a very compact automatic fixed ELT that is fully FAA TSO-C126 approved. The robust and reliable shock sensor will automatically activate the ELT in the event of a crash, the pilot can also manually activate the ELT in case of emergency. Features: * Ultra small size and light weight ideal for any general aviation aircraft. * Six year lithium manganese battery. * Complete kit with install manual.. * Two frequency transmitter (121.5 / 406 MHz) * Weight (Including batteries): 1.87 lbs

ELT Only		Price	W/ Whip Antenna	Price	With Rod Antenna	Price
USA	11-05786	**$812.00**	11-09525	**$1,045.00**	11-09526	**$1,204.00**
Canada	11-05786	**$812.00**	11-09670	**$1,045.00**	11-09671	**$1,204.00**
International	11-06314	**$811.00**	11-09527	**$1,045.00**	11-09528	**$1,204.00**

KANNAD 406 AF - Designed to be installed near the tail and to be connected to an outside antenna. A sophisticated "shock sensor" system will activate the ELT automatically in the event of a crash. Its small size and light weight make it ideal for general aviation. The "Mounting Bracket, 1 Strap" is not included. Features: * Optional Navigation Interface transmits GPS coordinates significantly shortening Search and Rescue response time. * Operates without aircraft power and incorporates an internal alarm/buzzer avoiding costly installation procedures. * Six year lithium manganese battery. * Three frequency transmitter (121.5 / 243 / 406 MHz) * Weight: (Including batteries) 2.44 lbs (1110 g) / max 2.60 lbs (1180g)..... P/N 11-06285 .....**$2,241.00**
406 AF ELT International..... P/N 11-06987 .....**$2,271.00**

KANNAD 406 AF-H - Can be installed on board helicopter in flat position Features: * Optional Navigation Interface transmits GPS coordinates significantly shortening Search and Rescue response time. * Operates without aircraft power and incorporates an internal alarm/buzzer avoiding costly installation procedures. * Six year lithium manganese battery. * Rod (ANT300) or Blade (ANT650) ELT antennas sold separately. * Three frequency transmitter (121.5 / 243 / 406 MHz) * Weight: (Including batteries) 2.44 lbs (1110 g) / max 2.60 lbs (1180g) P/N 11-05790 .....**$1,850.00**
406 AF-H ELT International..... P/N 11-07559 .....**$2,338.00**

KANNAD 406 AS - The KANNAD 406 AS is a aeronautical survival beacon. Thanks to its small size and light weight, the Kannad 406 AS fits easily inside a liferaft. It is supplied with a floating collar. Features: * Battery replacement is only every 6 years. * Precise pinpointing (<1NM) due to the unparalleled frequency accuracy of the 406 transmitter. * Three frequency transmitter (121.5 / 243 / 406 MHz) * Weight (including battery, auxiliary antenna and floating collar) 2.53 lbs (1150 g)..... P/N 11-05787 .....**$2,395.00**

KANNAD 406 SURVIVAL - Fitted with a water switch sensor. It is automatically activated when in contact with water. Emergency locator transmitter of type (S), the survival is supplied with a floating collar. Features: * Six year lithium battery. * Includes water sensor switch and is automatically activated when in water. * Three frequency transmitter (121.5 / 243 / 406 MHz) * Weight: (including battery, auxiliary antenna and floating collar) 3.031 lbs (1375 g)
P/N 11-06287 .....**$1,684.00**

KANNAD 406 AP - Installed near the tail and connected to an outside antenna. A sophisticated "shock sensor" system will activate the ELT automatically in the event of a crash. When removed from the bracket and connected to the auxiliary antenna, the Kannad 406 AP becomes an autonomous survival beacon operating on 3 frequencies (121,5/243/406 MHz). Features: Operates without aircraft power and incorporates an internal alarm/buzzer * Six year lithium manganese battery. * Three frequency transmitter (121.5 / 243 / 406 MHz) * Weight: (With battery, bracket, and auxiliary antenna) 2.84 lbs (1290 g)..... P/N 11-06284 .....**$1,969.00**
406 AP ELT International ..... P/N 11-07558 .....**$2,425.00**

KANNAD 406 AP-H - Installed on board helicopter in a flat position. When removed from its bracket and connected to the auxiliary antenna, the Kannad 406 AP-H becomes an autonomous survival beacon operaing on 3 frequencies. (121.5/243.0/406 MHz). The "Mounting Bracket, 1 Strap" is not included. Features: * Ultra small size and light weight ideal for any helicopter installation. * Optional Navigation Interface transmits GPS coordinates. * Operates without aircraft power and incorporates an internal alarm/buzzer. * Six year lithium manganese battery. * Three frequency transmitter (121.5 / 243 / 406 MHz) * Weight: (With battery, bracket, and auxiliary antenna) 2.84 lbs (1290 g)..... P/N 11-05788 .....**$2,784.00**
406 AP-H ELT International..... P/N 11-07557 .....**$2,499.00**

KANNAD 406 AF (6D) - Designed to be installed near the tail and to be connected to an outside antenna. A sophisticated 6 way "shock sensor" system will activate the ELT automatically in the event of a crash. Its small size and light weight makes it ideal for any helicopter. The "Mounting Bracket, 1 Strap" is not included. Features: * Automatic Fixed ELT * Specifically designed for aircraft or helicopters * Fitted with 6 G-switches * Three frequency transmitter (121,5 / 243,0 / 406 MHz) * 6 year battery life-time * Short circuit protection * Weight: 1260 gr (max) P/N 11-05786 .....**$812.00**

KANNAD INTEGRA 406AF ELTS

Weighing in at just 1.873lb and measuring just 6.89 x 3.90 x 3.40 inches the INTEGRA boasts a number of new and innovative features in a very small easy to install package. The INTEGRA transmits on both the international 406MHz satellite search and rescue system and on 121.5MHz for local direction finding. The minimum operating temperature of the unit is -20°C. The internal battery life of the INTEGRA is 6 years.
406 ELT AF U.S. ..... P/N 11-09325 .....**$896.00**
406 ELT AFH (Heli.) U.S. ..... P/N 11-09327 .....**$935.00**

KANNAD ANTENNAS

ANT100 - AUXILIARY ANTENNA (BNC) - Auxilary Whip antenna. Turns any Kannad ELT into a portable survival unit. Stores under the velcro strap of the mounting tray. P/N 11-06288 .....**$149.95**

ANT650 - BLADE ANTENNA - Developed by RAYAN. Three frequency antenna (121.5 / 243 / 406 MHz) High performance low profile outside antenna designed for Corporate jets and airliners **Applications**: AF, AF-H, AS, AS-H * "High Speed" Aircraft * JTSO and TSO
P/N 11-06294 .....**$1,597.00**

KANNAD WHIP ANTENNA ANT200 - The ANT200 ia a 406 ELT Antenna. For use with Kannad ELTs only. ANT200 is a dual frequency Whip antenna for aircraft up to 250 kts (frquencies: 121.5 / 406 MHZ). Has a female BNC connector out. Specifications: Color: Black, Overall Dimensions:, 24.98" X 1" (634.5 MM X 25 MM), Height: 24" (609.6 MM), Weight - 0.375 LB (170 G) P/N 11-07994 .....**$129.50**

KANNAD AV300 RAMI ROD ANTENNA - For use with an ELT for general aviation. Passive three frequency fiberglass rod whip antenna, designed for low speed aircraft (up to 350 knots).BNC Female, 9 oz max, 14.00 Inches max P/N 11-07995 .....**$289.00**

KANNAD ACCESSORIES

BAT200/300 - BATTERY REPLACEMENT KIT - **Application**: AF, AF-H, AP, AP-H, AS, Survival Comes with 3 cell battery pack, replacement o-ring, desiccant pack and replacement self locking nuts. 406AF uses BAT200
BAT-200 .....P/N 11-06297 .....**$167.95**
BAT-300 .....P/N 11-06296 .....**$361.95**

RC102 - REMOTE CONTROL - Replacement control panel for ACK, AMERIKING plus Narco two wire switches and challenging locations . Front panel included in RC102 & RC100 P/N 11-07901 .....**$94.25**

RC200 - REMOTE CONTROL - Outline Dimensions: 1.3 x 1.97 x 1.69 in (33 x 50 x 43 mm). 3-position red switch (ON, ARMED, TEST/RESET). D-SUB 9 pin connector with threaded locking device (UNC 4-40) .The Kit includes mating SUB-D9 connector for easier installation. **Applications**: AF- Compact, AF, AF-H, AP, AP-H ***Switch is not waterproof. Cannot be installed flat.*** P/N 11-06302 .....**$143.00**

DIN12 CONNECTOR - For connection to Remote Control Panel, CSI44 interface module, dongle or programming equipment. **Compatible** with all KANNAD 406 ELTs P/N 11-06303 .....**$22.50**

MOUNTING BRACKET 1 STRAP- Designed to fix the ELT with a retaining strap for quick removal in an emergency Qualified to maintain the ELT into place during 500 G shocks for 4 ms. **Applications**: AF, AF-H, AP, AP-H P/N 11-06301 .....**$84.25**

UNIVERSAL COMPACT MOUNTING BRACKET - Compatible with the drilling on all 121.5 Mhz beacons. P/N 11-07900 .....**$59.00**

PROGRAMMING DONGLE, ASSY - Din 12 connector with serial memory module (SMM) for programming operations. Fitted with a female DIN12 connector on RCP side instead of 19 Pts Jaeger connector. Avoids the use of specific programming equipment in case of ELT replacement. **Compatible** with all KANNAD 406 ELTs P/N 11-06304 .....**$285.95**

KANNAD PROGRAMMING DONGLE - A smart connector identical to the DIN12 that is used to store aircraft programming information. Once attached to the ELT wire harness it allows fleet operators to move any ELT to any other aircraft. The stored aircraft data will be automatically downloaded into the ELT. This connector is used in place of the DIN12 connector. Required for Navigation Interface connection. P/N 11-07088 .....**$226.95**

KANNAD PROGRAMMING DONGLE INT - Can be use with the following Kannad ELT models: (AF-COMPACT, AF, AF-H, AP, AP-H, AS, SURVIVAL) P/N 11-06990 .....**$295.00**

KANNAD 406 PR600 ELT PROGRAMMING TRAINER - Replaces the former PR550 Programming Equipment kit. P/N 11-07102 .....**$1,065.00**

KANNAD 406 AS CARRY OFF BAG - P/N 11-07716 .....**$198.00**

KANNAD 406 AS CARRY OFF BAG SHORT - P/N 11-07717 .....**$198.00**

KANNAD 406 AS MOUNTING BRACKET - P/N 11-07718 .....**$187.95**

AF COMPACT INSPECTION KIT - P/N 11-08063 .....**$49.95**

KANNAD 406 AS LOCKING PIN - P/N 11-07719 .....**$16.50**

KANNAD ACK RETRO-FIT INSTALLATION KIT - Contains everything you need to ensure a simple swap-over.
P/N 11-10007 .....**$181.95**

KANNAD AMERI-KING RETRO-FIT INSTALLATION KIT - Contains everything you need to ensure a simple swap-over
P/N 11-10008 .....**$181.95**

AV

AIRCRAFT SPRUCE WEST
CORONA, CA • (877) 4-SPRUCE
AIRCRAFT SPRUCE EAST
PEACHTREE CITY, GA • (877) 477-7823
Prices Subject to Change Without Notice

ARTEX ME406 ELT

The Artex ME-406 is a single output ELT. Two emergency frequencies (121.5 and 406.028 MHz) utilize the same RF output, requiring only one coax cable to connect to the new series of Artex single input antennas. The ELT automatically activates during a crash and transmits the standard swept tone on 121.5 MHz. Every 50 seconds for 440 milliseconds the 406 MHz transmitter turns on and transmits an encoded digital message to the Cospas/Sarsat satellite system.The mounting hardware for the ME-406 Series is compatible with all previous models of Artex 406 MHz, as well as the ELT200 Series, ACK, Pointer Model 3000 ELT and Narco ELT's. Current owners of Artex 2-frequency ELT can re-use the remote switch in the cockpit as well as the wiring harness from the cockpit to the ELT thus greatly reducing installation costs.

USA PROGRAMMED ELTS

Artex No.	Part No.	Description	Price
ME406	11-03492	Artex ME406 ELT w/ whip antenna.	$939.00
ME406	11-03493	Artex ME406 ELT w/ rod antenna.	$1,489.00

INTERNATIONAL PROGRAMMED ELTS

Artex No.	Part No.	Description	Price
ME406	11-04652	Artex ME406 ELT w/ whip antenna. Can be programmed for international registered aircraft (Specify when ordering).	$939.00
ME406	11-06370	Artex ME406 ELT w/ rod antenna. Can be programmed for international registered aircraft (Specify when ordering).	$1,495.00

ACCESSORIES

Description	Part No.	Price
Artex ME406 whip antenna	11-06978	$218.95
Artex ME 406 Rod Antenna	11-08597	$739.00
5-Conductor AWG 22 Shielded Wiring for ELT to Remote Switch Installation. Recommended by Artex.	11-06580	$2.10
Artex ME406 Replacement Battery Kit	11-05277	$147.95
Artex ME406 Mounting Tray	11-07191	$27.95
Artex NAV Remote Switch Kit	11-08542	$59.95

ARTEX ME406 HM ELT

The Artex ME-406 HM is a single output ELT. Two emergency frequencies (121.5 and 406.028 MHz) utilize the same RF output, requiring only one coax cable to connect to the new series of Artex single input antennas. The ELT automatically activates during a crash and transmits the standard swept tone on 121.5 MHz. Every 50 seconds for 440 milliseconds the 406 MHz transmitter turns on and transmits an encoded digital message to the Cospas/Sarsat satellite system.The mounting hardware for the ME-406 Series is compatible with all previous models of Artex 406 MHz, as well as the ELT200 Series, ACK, Pointer Model 3000 ELT and Narco ELT's. Current owners of Artex 2-frequency ELT can re-use the remote switch in the cockpit as well as the wiring harness from the cockpit to the ELT thus greatly reducing installation costs.

USA PROGRAMMED ELTS

Artex No.	Part No.	Description	Price
ME406 HM	11-04966	Artex ME406 HM ELT w/ rod antenna.	$1,949.00

INTERNATIONAL PROGRAMMED ELTS

Artex No.	Part No.	Description	Price
ME406 HM	11-05670	Artex MA406 HM ELT w/ rod antenna. Can be programmed for international registered aircraft (specify when ordering).	$1,998.00

ACCESSORIES

Description	Part No.	Price
5-Conductor AWG 22 Shielded Wiring for ELT to Remote Switch Installation. Recommended by Artex.	11-06580	$2.10
Artex ME406 replacement battery kit	11-05277	$147.95

ARTEX ME406/P ELT

Uses the proven technology of the ME406 and attaching a removable wrap-around auxilliary flex antenna. Allows the disconnection of the ELT from the installed aerial antenna, removal of the transmitter from a downed aircraft and after attaching the flexible antenna the distress call is again transmitted with full signal strength. Although Search and Rescue authoritiese recommend to remain in close proximity to the aircraft, using the ME406/P in it's portable version enables to wait for the Search and Rescue crews in areas sheltered better from the environment.

USA Programmed .....P/N 11-05671 ..... **$2,249.00**
International Programed.....P/N 11-06985 ..... **$2,249.00**

ARTEX C406 ELT

Operates on the latest SAR frequency of 406.025 MHz & 121.5 243 MHz. Ready to connect to the Artex ELT NAV interface. Includes ELT transmitter, LiMnO2 5-year battery pack, mounting bracket, remote switch, horn/buzzer, coax cables, high speed blade antenna, installation hardware, and installation and operation manual. The C406-1 is approved for aircraft operating speeds up to Mach 1, and C406-2 is approved for speeds up to 350 knots. COSPAS/SARSAT, FAA TSO C126 & JTSO-2C126 Approved.

C406-1 ELT with 110-340 Blade Ant. U.S. ...P/N 11-02984 ... **$3,833.00**
C406-1 ELT with 110-340 Blade Ant. Intl.....P/N 11-09320 ... **$3,833.00**
CC2 ELT with Rod Antenna.....P/N 11-02985 ... **$3,281.00**

EXCLUSIVELY FROM AIRCRAFT SPRUCE

EMERGING LIFESAVING TECHNOLOGIES 406 ELT WITH INTERNAL GPS.

Emerging Lifesaving Technologies has presented the first ELT with internal GPS approved for General Aviation. Along with the 406MHz emergency signal, Copas/ Sarsat satellites will read your specific GPS location during a crash. The GPS automatically updates every 15 seconds and upon activation bursts a 5 watt signal within 25 meters every 50 seconds to the Global Satellite System. Search and Rescue will be notified of your location within minutes. The ELT406GPS mounts with most standard ELT configurations from previous manufacturers. GPS data comes from the internal module in the ELT- 406GPS. There is no need to install expensive interface modules and retrieve GPS information from existing systems. The antenna houses both 406 MHz and GPS passive antenna in a sleek blade configuration. A replaceable 5 year battery pack is easily installed by the owner/operator. With American Ingenuity and American Engineering, Emerging Lifesaving Technologies is committed to keeping all of their products "Made in the U.S.A".

Specifications: • Output Power: 5W (440ms/50sec) for 72 hours @ -20C to +50C. • GPS Cycle Time: Every 15 seconds. • Battery: 5-Year Lithium (LiMn02). • Weight: ELT Transmitter - 2.5 lbs Mounting Tray - 0.3 lbs. • Total Weight: 2.8 lbs. • Dimensions: 7.715" L x 3.660" H x 4.200"

In the Box: • 406 ELT • Mouting Tray • Antenna 406/GPS • Remote Switch • 6 Feet of GPS coax cable BNC • 6 Feet of 406 coax cable SMA • ELT and antenna install kit

Description	Part No.	Price
E.L.T. 406 with internal GPS USA	11-08053	$1,199.00
E.L.T. 406 with internall. GPS International	11-08456	$1,199.00
E.L.T. 406 Helicopter 6G with internal GPS USA	11-08150	$1,499.00
E.L.T. 406 Helicopter 6G w/ internal GPS Intl.	11-08457	$1,499.00
Accessories	**Part No.**	**Price**
8-Conductor Shilded Wire, 22 Gauge	11-09782	$2.70
E.L.T. 406 ELT Battery Pack	11-08152	$212.50
Universal Mounting Tray	11-08153	$63.75
9" whip antenna	11-08154	$84.15
406 GPS Dual Mid Speed Antenna. 250 KTAS at 35k feet	11-08155	$339.15
406 GPS Dual High Speed Antenna. 600 KTAS at 50K feet	11-08156	$594.15
Remote switch with Aural Alert	11-08164	$84.15
406 Coaxial Cable BNC to BNC	11-08161	$58.65
GPS Coaxial Cable SMA to SMA	11-08160	$33.15
Antenna Install Kit: Mounting Template, 8 Washers, 8 nuts	11-08163	$18.50
ELT Install Kit	11-08162	$63.75

ARTEX 2-WIRE REMOTE INTERFACE SYSTEM

This product allows an upgrade to an Artex 5-Wire 406 MHz ELT using an existing 2-wire configuration. The 2-Wire Remote Interface allows two wires from the existing wiring harness to connect the cockpit remote switch to the ELT for simplified, cost-efficient installation.

P/N 11-07776 ..... **$396.00**

406 MHZ ELT BEACON MONITOR

Monitors 406 ELTs in real time, displays and decodes messages, measures and displays RSSI (receiver signal strength), and displays distance to beacon. Automatically receives all past, present, and future Cospas Sarsat channels with -125 dBm sensitivity (software adjustable sensitivity). Automatically maps the location of the decoded GNSS location data into Google Earth™ for easy viewing and access to a detailed geographical interface Data is XML formatted for use in database applications. Can send alerts via email and/or SMS text messaging. Capable of logging data with a time stamp. Connects to user PCs with a USB cable or Ethernet interface which allows for remote management and diagnostics; power is supplied through connection to a PC USB port or an AC adapter. Multiple units can be connected together for a wider range of coverage. Rugged aluminum design can sit on a desk or be mounted on a wall. Includes USB cable (2 meter length), AC to USB adapter, ethernet cable (2 meter length), molded 406 MHz monopole antenna, GPS active antenna (5 m cable length), certificate of calibration, operator's manual, and user interface software. Optional components: high performance outdoor antenna P/N 11-10473 ..... **$4,495.00**

AV

PERSONAL LOCATOR BEACONS

AQUALINK PLB

The AquaLink™ broadcasts a unique registered distress signal that not only tells rescuers where you are, but who you are. The onboard GPS can fix your position to within 100 meters and then utilizes a powerful 406 MHz signal to relay your distress call to orbiting satellites. As local Search and Rescue is deployed, a separate homing signal and integrated LED strobe light guide rescuers to your exact location.

USA..... P/N 11-09693 .....**$395.00**
Canada..... P/N 11-10404 .....**$395.00**

ACR AQUALINK VIEW

The AquaLink™ View broadcasts a unique registered distress signal that not only tells rescuers where you are, but who you are. The onboard GPS can fix your position to within 100 meters and then utilizes a powerful 406 MHz signal to relay your distress call to orbiting satellites. As local Search and Rescue is deployed, a separate homing signal and integrated LED strobe light guide rescuers to your exact location. Features: 3 levels of integrated signal technology — internal GPS, powerful 406 MHz satellite signal and 121.5 MHz homing beacon Super bright integrated strobe. No float pouch required – Self Buoyant. Allows for multiple testing/display of GPS coordinates. Typical Performance 35 Hours. On Board 66 Channel GPS Reflective Keypad. Made in the U.S.A

USA .....P/N 11-09241 .....**$499.95**
Canada .....P/N 11-10405 .....**$498.00**

RESQLINK 406 PLB WITH GPS

Note: Unit is programmed for USA use only. Cannot sell internationally At 4.6 oz, the ResQLink™ weighs less than a couple of energy bars. And topping just 3.9 inches, it's smaller than the cell phone in your pocket. Small and mighty, the ResQLink™ is a full-powered, GPS-enabled rescue beacon designed for anglers, pilots and back country sportsmen. With three levels of integrated signal technology - GPS positioning, a powerful 406 MHz signal, and 121.5 MHz homing capability - the ResQLink™ quickly and accurately relays your position to a worldwide network of search and rescue satellites. A built-in strobe light provides visibility during night rescues. Even in extreme conditions and situations, the ResQLink™ activates easily. Just deploy the antenna and press the ON button. With its powerful 66-channel GPS, the ResQLink™ guides rescuers to within 100 meters or less of your position. And, in the continental U.S., search and rescue personnel are typically alerted of your position in as little as five minutes with a GPS-enabled PLB such as the ResQLink™. Two built-in tests allow you to routinely verify that the ResQLink™ is functioning and ready for use - with the push of a button, you can easily test internal electronics and GPS functionality.

- No Subscription Fees
- Super Bright LED Strobe
- Onboard 66-Channel GPS
- Self-Test and GPS Test Features
- Typical Performance 30 Hours
- Non-Hazmat Battery
- Made in the U.S.A.

P/N 11-10005 ..... **$279.00**

KANNAD XS-ER GPS PLB

Minimum of 48 hours continuous operation. Compact, light weight, small size. Easy and intuitive activation. Waterproof to 10 meters and buoyant Subscription-free and no call charges. 5 year battery life User replaceable battery 406 MHz international messaging & 121.5 MHz homing signal

P/N 11-08711.....**2.95**

KANNAD XS-4 GPS PERSONAL LOCATOR BEACON

The distress signal is relayed by the Cospas-Sarsat LEOSAR satellites to the ground stations (LUT) that calculate its position thanks to the Doppler Effect. With a built-in GPS, the GEOSAR satellites receive the signal and position within 5 minutes. The ground breaking new XS-4 GPS Personal Locator Beacon is a compact and versatile 406 MHz emergency location beacon. The XS-4 GPS transmits two signals simultaneously, one to the subscription free Global 406 MHz international Search And Rescue (SAR) satellite system. The other (121.5 MHz) is a homing signal designed to speed up the local recovery response process. Once activated, the signals will continue to transmit for at least 24 hours. The powerful 406 MHz 5 watt output transmission ensures that a call for help gets through to the international SAR authorities whatever the conditions. This PLB is programmed for USA residents for worldwide use. Cannot be registered for customers outside the USA

XS-4 GPS PLB For U.S..... P/N 11-08468.....**$269.95**
XS-4 GPS PLB For Canada ..... P/N 11-09324.....**$297.95**

ACR SARLINK 406 GPS PLB

The SARLink is light in weight and small enough to be easily carried in a pack or pocket by pilots, hikers, hunters, kayakers, climbers, skiers, snowmobilers or any other outdoor enthusiast. Performing a full functional self test of the PLB's internal circuitry, battery voltage & power, and 406 MHz transmission gives you peace of mind knowing your PLB will work the moment you need it most. ACR Exclusive: Built-in GPS acquisition test mode allows you to test GPS functionality up to 12 times over the life of the battery. Tap in to the same field-tested rescue technology used by the U.S. Military, U.S. Coast Guard, NATO Special Forces and Arctic explorers. Internal 66 channel gps. High intensity strobe light. Non hazmat battery. Typical performance 35 hours. Mounting holster included Limited 5 year manufacturer warranty. Not approved for use in australia & new zealand USA..... P/N 11-08057 .....**$369.00**
Canada..... P/N 11-10402 .....**$409.00**

ACR SARLINK VIEW PLB WITH GPS

Broadcasts a unique registered distress signal that not only tells rescuers where you are, but who you are. The onboard GPS can fix your position to within 100 meters and then utilizes a powerful 406 MHz signal to relay your distress call to orbiting SAR satellites. As local Search and Rescue is deployed, a separate homing signal and integrated LED strobe light guide rescuers to your location. Size: 2.25 x 5.88 x 1.29" (5.72 x 14.94 x 3.28 cm) Weight: 8.9 oz (258g) with lanyard Waterproof: 16.40ft (5 m) @ 1 hr., 33 ft (10 m) @ 10 min. USA..... P/N 11-08339 .....**$495.00**
Canada..... P/N 11-10403 .....**$495.00**

MCMURDO FASTFIND 210 PLB WITH GPS

Get Found FAST with a PLB as small as a mobile telephone. Fits easily into backpacks, on lifejackets...put it just about anywhere, and get found anywhere in the world! No subscription fees are required, and weighs just 5.3 oz. * Haz-Mat: Non-hazardous Shipping: Air or ground. **NOT APPROVED FOR USE IN AUSTRALIA & NEW ZEALAND**

P/N 11-07323.....**$249.00**

FASTFIND PLUS 406 PLB WITH BUILT-IN GPS

Features a built-in GPS receiver combined with a 406 MHz transmitter and 121.5 MHz homing signal. In the event of an emergency, an alert signal is transmitted to COSPAS-SARSAT satellites and forwarded to a rescue coordination center within typically 3 minutes. **NOT APPROVED FOR USE IN AUSTRALIA & NEW ZEALAND**

P/N 11-02256.....**$563.00**

SPOT 2 SATELLITE GPS MESSENGER

New Enhancements: • Enhanced GPS • Extra Message Button • Tracking message queuing • Safety flaps over 911 and help message • Replaceable button cover (see left) • Illuminated buttons • Intrinsically safe • Sent message light • Case included (see below) • Enviromentally safe packaging **Features**: • Check In: Lets contacts know where you are and that you're okay. • Track: Acquires your GPS location every 10 minutes for 24 hours. • Alert SOS: Alert emergency assistance request with your exact location to GEOS every 5 min up to 4.7 days. • Ask For Help: Request help from friends and family every 5 min for 1 hour. Up to 10 contacts – phone & email. •Removable Case: Arm Band, Carabiner & Car Dash attachment.

Spot 2 Orange ..... P/N 11-07878.....**$169.99**

SPOT HUG

Using state-of-the-art satellite technology, SPOT HUG monitors a virtual security perimeter around your boat. SPOT HUG will instantly alert the appropriate parties even from remote areas beyond cellular coverage. 100% satellite-based for maximum coverage. Unauthorized Movement alert notification to Asset Monitoring Center Receive Daily Status update message with boat's location and any sensor notifications Sensor Alert monitoring and notification for bilge, engine and battery monitoring. Configure up to 4 monitoring sensors. Key FOB for easy wireless activation. Wireless Keypad security and messaging system. Uses battery power or direct line power. Easy to install.

P/N 11-09611.....**$399.95**

SPOT CONNECT

Simply pair your smartphone with SPOT Connect, and get connected to a global satellite network that lets you send messages and GPS coordinates from virtually anywhere on the planet. Update Twitter and Facebook. Send email and text messages. Request non-emergency help from professional service providers. And in the case of a critical emergency, send an SOS message requesting emergency assistance. P/N 11-09612.....**$149.95**

AV

ALTITUDE MANAGEMENT - STRIKEFINDER®

SHADIN AMS 2000 ALTITUDE MANAGEMENT AND ALERT SYSTEM

With a range of feature previously unavailable in general aviation, the Shadin Avionics AMS-2000 Altitude Management and Alert System brings advanced instrumentation to new levels of function and affordability. The Shadin Avionics AMS-2000 uses information from Mode-C altitude encoder to deliver: •Time-based Altitude Alerting, rather than fixed altitude buffers. •Automatic calculation and display of Density Altitude. • Real-time display of IVS without the inherent lag of your aircraft's static system. •Calculation and display of Aircraft and Engine Performance • Percentage, at your demand.

These are but a few of the Standard features that are make the AMS-2000 the best value in advanced altitude monitoring instrumentation: 8 FAA approved. TSO C88a, DO-160B. • An appropriate audio and visual warning broadcast upon deviation outside a user-selected envelope surrounding your assigned altitude. • Smooth capture of your cruise altitude is facilitated by a level-off warning sounded and displayed at a user-defined distance from target altitude. • Alerts you just above your pre-selected Decision Height or MDA. • Gear-down reminder. • Displays density altitude and aircraft/engine performance percentage. • Digital display of altitude from -1000 to +62,000 feet in 100 foot increments. • Adjustable audio alert tone and level. • Compatible with most Mode-C transponders in current production. • Standard rectangular 1/2 ATI configuration. • Made in the U.S.A., the AMS-2000 features a 12-month warranty.

The AMS-2000 coupled with the Falcon Altitude Encoder provides all advanced altitude alert functions previously noted, plus the following high-resolution altitude management functions: • Time-based level-off warning sounded and displayed 15 seconds from target altitude--smooth capture is assured regardless of climb or descent rate. • Digital display of altitude from -1000 to +62,000 feet in high resolution, 10-foot increments. • Digital reading of Instantaneous Vertical Speed (IVS). • Deviation envelope is adjustable in 10 foot increments P/N 10-03711 ..... **$1,964.00**

Falcon Altitude Encoder .....P/N 11-12035 ..... **$1,323.00**

SPIDER S3 PORTABLE GLOBAL TRACKING SOLUTION

Spidertracks is the affordable, satellite-based flight tracking system designed specifically for aviation to bring peace of mind to pilots and their families. With a portable spider unit on board, the pilot's friends can follow the flight in real time on-line so they know the pilot is safe, and so they can share the fun of flying on-line. Automatic alerting and simple messaging mean the pilot can tell those they trust that they are safe or when they need help. The SOS is sent automatically as soon as the system loses contact with the aircraft, so help can be dispatched quickly when needed. **Features**: Streamlined design, Integrated keypad, Simple to use, Compatible with Aviator & Fleetpro websites, Global coverage in real time, Portable, Mark button text and email messaging, Automatic SOS alerting with Spiderwatch active tracking service, Manual SOS, Manual or automatic activation of Spiderwatch, Type certification not required, AFF compliant. **Specifications**: Dimensions: 3.5" x 4.7" x 1.0" (89mm x 119mm x 25mm), Weight: .35lb, Power Consumption: Operating <- 100mA at 12 V DC with reverse polarity protection., Operating Temp: -13 - +158 F, Frequency: L1, 1575 MHz, Channels: <- 50, Position accuracy: within 8'., Operating parameters: 59,000'. Speed limit of 500 KNTs. Power Source: Vehicle auxiliary power. The cigratte lighter plug supplied can be hard wired by a LAME. P/N 11-09789..... **$995.00**

STRIKE FINDER® DIGITAL WEATHER AVOIDANCE SYSTEM

The STRIKE FINDER® Digital Weather Avoidance System detects and analyzes the electrical activity emanating from thunderstorms within a 200 nautical mile (nm) radius of the aircraft. A unique graphic display plots an accurate, reliable and easily-interpreted picture of electrical activity, that you can use to circumnavigate the hazards associated with thunderstorms.

The STRIKE FINDER® System analyzes the individual strike signal properties to determine the bearing, range and severity of the activity. Strike data is plotted on the display as single orange dots by range and azimuth, in relation to the aircraft symbol ("heads up"). As the number of lightning strikes increase, so does the number of plotted strike dots. Cells start to form indicating increased lightning activity.

Must be installed by Advantage Avionics or another approved StrikeFinder dealer except for experimental aircraft.

Strike Finder Standard System .....P/N 11-00348 ..... **$3,585.00**
Strike Finder SF2000 with Gyro .....P/N 11-20200 ..... **$5,495.00**
Strike Finder with Ultra Bright Display .....P/N 11-00348 ..... **$3,585.00**
Strike Finder Lightning Detector w/ Gyro ....P/N 11-04722 ..... **$5,495.00**
Strike Finder Lightning Detector w/o Gyro ..P/N 11-04733 ..... **$4,495.00**
Strike Finder Upgrade .....P/N 11-00349 ..... **$1,166.00**
R.B.S. Module for Strike Finder .....11-00350 ..... **$1,178.00**

INSIGHT TAS 1000 AIR DATA COMPUTER WITH WINDICATOR

Today's modern avionics integrate many functions with your GPS, but standard installations leave many important features untapped. The TAS 1000 Multi-Function Data Source was specifically designed to supply all the information needed to fill in the missing pieces of your GPS or MFD display in real-time. TAS 1000 provides the pilot with a wealth of useful information all based on real time measurements of airspeed, altitude, temperature, fuel flow, heading, ground speed and track. Designed to interface with many brands of GPS, TAS 1000 unlock many previously hidden data pages in most GPS navigators, In addition to TAS 1000s in flight advisory function, TAS 1000 can also serve as a backup altimeter, airspeed indicator or fuel flow meter. The TAS 1000 is designed for use in any piston, turboprop, or jet aircraft and provides a full compliment of features when interfaced to a slaved compass system or HSI, fuel transducers, and compatible GPS system. TAS 1000 will deliver a useful subset of features even if all the interfaces are not available.

The Windicator is an integral part of the TAS1000 system. It presents a previously unavailable graphical display of the winds aloft in real time. The Windicator information alone is so useful that it makes the TAS 1000 installation worthwhile. TAS 1000 system options include an altitude encoder to provide altitude information to a transponder or GPS unit as well as alerting the pilot with overspeed, altitude, approach & altitude difference alerts.

MUST BE DEALER INSTALLED.

Part No.	Insight No.	Description	Price
11-00626	1000-001-P	TAS1000 Sys. for Piston Engine Aircraft (Incl. 1 Windicator) 18,000ft. Alt- 250kt max.	**$2,850.00**
11-00627	1000-001-T	TAS1000 for turbo-charged Piston & Turboprop aircraft (Incl.1 Windicator) 55,000ft. Alt-500kt max.	**$4,275.00**
11-00628	1000-002	Windicator (replacement)	**$795.00**
11-00629	1000-003	Expansion Module (Alt. encoder, Alt. Serializer, & Overspeed warn.)	**$495.00**
Fuel Injection - Fuel flow smart sensors for Piston Engine aircraft			
11-00630	1000-004-1	Spine Mount, 201, Fuel Injected	**$477.95**
11-10414	1000-004-4	Spine Mount, 231, Gravity Fed	**$515.95**
11-10412	1000-004-2	Firewall Mount, 201, Fuel Injected	**$477.95**
11-10415	1000-004-5	Firewall Mount, 231, Gravity Fed	**$515.95**
11-10413	1000-004-3	Inline Mount, 201, Fuel Injected	**$477.95**
11-10416	1000-004-6	Inline Mount, 231, Gravity Fed	**$515.95**

HONEYWELL APEX EDGE KFD840

The KFD 840 integrated Primary Flight Display (PFD) stands at the forefront of the new Apex Edge Series from Bendix/King by Honeywell. Its combination of the latest technology, size, affordability and full functionality make it unique in general aviation. Large 8.4" diagonal LCD display with high resolution and excellent sunlight readability—but is sized for easy installation in existing piston engine cockpits. A self-sufficient unit with an embedded Air Data module and MEMS Attitude and Heading Reference System (ADAHRS).

Features: • Full width horizon ADI • Easy-to-read vertical tapes for altitude and airspeed • Large 8.4" diagonal display • Separate course and heading knobs • Integrated ADAHRS • Customizable checklist page • Optional battery backup.

Specifications: • Size: 8.5" W x 7" H x 7.3" D • Weight: < 8 lbs • Screen Diagonal/Display Size: 8.4" Active Matrix LCD • Power: 11-33 VDC • Resolution: 640 W x 480 W (307, 200 Pixels) • CERTIFICATION: DO-178B, Level C; DO-160E; Fully TSO'd • INTERFACES: Full set of analog and digital interfaces to work with the more popular autopilot systems; KX-155/165 compatible analog interfaces, plus a full set of ARINC;429 and RS-232 interfaces to work with the popular digital NAV and GPS systems; Additional available digital interfaces to support future growth. ***This unit is install only.*** P/N 11-08469.....**$11,995.00 + Installation**

AV

DYNON

DYNON EFIS-D10A

Dynon's EFIS-D10A is a full-featured Electronic Flight Information System in a small package. This instrument fits into a standard 3-1/8" panel hole, making it an ideal candidate for replacing vacuum and electric attitude indicators. In addition to a full complement of flight instruments, the EFIS-D10A also has a built-in HSI and autopilot capability.

EFIS-D10A features and options: • Sunlight-readable, 4" color display with full dimming control • Attitude Indicator, Heading, Altimeter, ASI, VSI, Turn Coordinator / Slip/Skid Ball, HSI, OAT, TAS, Angle of Attack, Voltmeter • Altitude encoder output • Dual-axis autopilot • Backup battery • 25 User-defined checklists • Dynon three-year factory limited warranty

EFIS-D10A Instrument (with out battery) ..... P/N 10-00844 ..... **$2,150.00**

EFIS-D10A OPTIONS

Description	Part No.	Price
Internal Li-Ion Backup Battery	10-00755	**$129.95**
Remote Compass (EDC-D10A)	10-01046	**$99.95**
OAT Probe (requires EDC-D10A)	10-01823	**$66.75**
D10 Flush Mount Bracket	10-00757	**$19.95**
Optional AP74 Vertical	10-03565	**$450.00**
Optional AP74 Horizontal	10-03566	**$449.00**

Description	Part No.	Price
AOA/Pitot Probe (unheated)	10-01157	**$196.50**
Wiring Harness	10-01158	**$79.50**
Encoder Converter Module (serial to parallel convertor for gray code transponders)	10-01159	**$79.85**
USB-Serial Converter	10-01824	**$21.50**
Roll Servo Kit RV10	10-04076	**$795.00**

DYNON EFIS-D100

Dynon's EFIS-D100 includes all of the instruments and features of the EFIS-D10A, but on a brilliant 7" wide-screen display with full dimming control. The larger size allows for multiple information pages to be displayed side-by-side in a split-screen format, enabling you to have full PFD while also displaying HSI, timers, or engine monitoring information from your Dynon EMS.

Additionally, the EFIS-D100 is available in an optional Super-Bright Screen format, improving its readability and overall performance in all light conditions.
Dimensions: 6.95" W x 4.90" H x 4.51" D
Includes Dynon three-year factory limited warranty

EFIS-D100 System (includes remote compass, mounting tray & USB-serial converter..... P/N 10-01705 ..... **$2,487.00**
EFIS-D100 System with Super Bright Screen..... P/N 10-02155 ..... **$2,495.00**

EFIS-D100 OPTIONS

Description	Part No.	Price
Internal Li-Ion Backup Battery	10-00755	**$129.95**
OAT Probe	10-01823	**$66.75**
AOA/Pitot Probe (unheated)	10-01157	**$196.50**
Roll Servo Kit RV10	10-04076	**$795.00**

Description	Part No.	Price
Wiring Harness	10-01158	**$79.50**
Encoder Converter Module (serial to parallel convertor for gray code transponders)	10-01159	**$79.85**

DYNON EFIS-D6 / EFIS-D60

Because some like to keep it simple, Dynon offers the EFIS-D6 and EFIS-D60 as basic, even more affordable Electronic Flight Information System (EFIS) solutions. Perfect for pilots who want to save panel weight, space, and installation time compared to a conventional analog gauges, the EFIS-D6 and EFIS-D60 feature all the amenities of a traditional six-pack while also adding a voltmeter and altitude encoder. The EFIS-D6 fits into a standard 3-1/8" panel hole, making it an ideal candidate for replacing vacuum and electric attitude indicators. The EFIS-D60 maintains the same profile and 7" screen as the EFIS-D100, and is available in the Super-Bright screen version only. EFIS-D6 / EFIS-D60 features and options: • Sunlight-readable, color display with full dimming control • Attitude Indicator, Heading, Altimeter, ASI, VSI, Turn Coordinator / Slip/Skid Ball, Angle of Attack, Voltmeter • Altitude encoder output • Backup battery • Dynon three-year factory limited warranty.

Description	Part No.	Price
EFIS-D6	10-03865	**$1,549.00**
EFIS-D60 With Super Bright Screen	10-03866	**$1,845.00**
EFIS Wiring Harness	10-01158	**$79.50**

Accessories	Part No.	Price
EFIS/FLDEK Wiring Harness	10-01158	**$79.50**
EFIS Backup Battery D180 D100 D60	10-00755	**$129.95**
OAT Probe D180 D100 D60 D10A D6	10-01823	**$66.75**
Flush Mount Bracket D10A D10 D6	10-00757	**$19.95**

AV

DYNON HS34 HSI EXPANSION MODEL

The HS34 HSI Expansion Module was designed to enhance the capability of Dynon's best-selling EFIS products. The panel-mounted HS34 not only expands the HSI functionality of your EFIS-D10A, EFIS-D100, or FlightDEK-D180, but also enables several new features for any Dynon instrument to which it is networked:
• Allows Dynon EFIS to interface with multiple radios and GPS devices simultaneously • Includes multiple interfaces to accommodate analog, ARINC-429 and RS-232 inputs • Accepts signals from marker beacon receivers and DME devices • Backlit to facilitate night flight conditions • Designated control knobs for adjusting Heading, Course (OBS), or general purpose values such as barometer. • Designated NAV and Bearing Source selection buttons • Simple 2-wire connection to Dynon EFIS instruments. • Dimensions: 1.639" W 4.903" H 4.951" D • Dynon three-year factory limited warranty

Dynon HS34 HSI Expansion Model - Vertical ..... P/N 10-02590 ..... **$645.00**
Dynon HS34 HSI Expansion Model - Horizontal ..... P/N 10-02773 ..... **$646.00**

DYNON D1 POCKET PANEL - PORTABLE EFIS

"A LITTLE ATTITUDE FOR EVERYONE"

Dynon introduces a real, portable attitude indicator that can be used by ALL pilots. The D1 utilizes the Dynon ARHS technology that has made them the leading supplier of EFIS (Electronic Flight Information Systems) for experimental and light sport aircraft. Unlike smartphone apps, the D1 displays actual aircraft attitude.

Features: • Proven Dynon MEMS-based attitude sensors • Accurate pitch and roll: A true artificial horizon • Internal Li-Ion battery and GPS for hours of portable use • Versatile portable mounts: RAM suction mount and 3-1/8" panel hole "pinch" mount both included • GPS ground speed and track (heading) • GPS altitude and vertical speed • Turn rate • Slip/skid ball • Dimmable screen for night flight • Truly pocket sized, approx. 3½" x 3¼" x 1"

Included accessories are: • AC Wall Charger • DC Vehicle Charger • Qty 2 Mounting Cradles • RAM® Portable Suction Cup Mount • Portable "Pinch" Mount for Standard 3-1/8" Instrument Hole • External GPS Antenna.
P/N 11-10739 ..... **$1,425.00**

DYNON

DYNON EMS-D10 ENGINE MONITORING SYSTEM

The Dynon EMS-D10 offers more engine information in less space then ever before – full engine monitoring with up to 27 separate inputs on a highly readable 4" display, installed in your standard 3-1/8" panel hole. A designated Fuel Computer page allows the pilot to see fuel levels for up to 4 tanks, fuel pressure, fuel flow, fuel used, fuel remaining, time remaining and fuel required to destination all on one optimized display. To keep the classic look and feel of the Dynon product family, the EMS-D10 utilizes the same highly-visible display, keypad, and bezel as the best-selling EFIS-D10A – and will provide engine information to your Dynon EFIS through a simple 2-wire connection. As an added safety feature, the EMS-D10 also features programmable alarms which can be displayed on screen, through a separately mounted indicator light, or by an audible annunciation through your intercom. EMS-D10 features and options: • Sunlight-readable, 4" color display with full dimming control • Replaces up to 16 different types of gauges • Individual displays for up to 6 EGT and 6 CHT inputs • Customizable displays for Tachometer, Fuel Pressure, Oil Pressure, Oil Temp, Manifold Pressure, Volts/Amps, Carb Temp, OAT, Coolant Temp /Pressure, Hobbs/Tach Time • Fuel level display for up to 4 tanks • Fuel flow measurement with fuel computer display • Customizable settings for Green/Yellow/Red parameters on all inputs• Inputs for flaps/trim position sensors and contacts • Programmable visual and audio alarms • 25 User-defined checklists • Dynon three-year factory limited warranty P/N 10-01160.....**$1,665.00**

COMPLETE ENGINE PACKAGES

(EMS-D10 Engine Monitor, engine sensors and 2 wiring harnesses)

Description	Part No.	Price
EMSKIT-L4C, 4Cyl Lycoming/Continental Package (Carbureted)	10-01161	**$2,363.00**
EMSKIT-L4F, 4Cyl Lycoming/Continental Package (Fuel Injected)	10-01162	**$2,343.00**
EMSKIT-L6C, 6Cyl Lycoming/Continental Package (Carbureted)	10-01163	**$2,330.00**
EMSKIT-L6F, 6Cyl Lycoming/Continental Package (Fuel Injected)	10-01164	**$2,492.00**
EMSKIT-RTX, 4Cyl Rotax 912/914 Package	10-01830	**$1,885.00**
EMSKIT-J22, 4Cyl Jabiru 2200 Package	10-01832	**$2,143.00**
EMSKIT-J33, 6Cyl Jabiru 3300 Package	10-01834	**$2,263.00**

EMS OPTIONS

Description	Part No.	Price
Capacitance to Volt Converter	10-02159	**$49.95**
Fuel Flow Sensor	10-01165	**$148.00**
USB-Serial Converter	10-01824	**$21.50**
D10 Flush Mount Bracket	10-00757	**$19.95**
EGT Thermcouple Ext Wire	10-01167	**$0.99**
CHT Thermcouple Ext Wire	10-01168	**$0.99**

DYNON EMS-D120 ENGINE MONITORING SYSTEM

Featuring all of the same inputs and features of the EMS-D10, the Dynon EMS-D120 brings full engine monitoring to your panel on a stunning 7" wide-screen display. The larger size allows for multiple information pages to be displayed side-by-side in a split-screen format, enabling you to have full view of your primary engine inputs while also viewing your fuel computer, engine timers, or flight information from a Dynon EFIS.
Additionally, the EMS-D120 is available in an optional Super-Bright Screen format, improving its readability and overall performance in all light conditions.
Dimensions: 6.95" W x 4.90" H x 4.51" D
Includes Dynon three-year factory limited warranty

EMS-D120 System
(no engine sensors or wiring harnesses).....P/N 10-01825..... **$1,859.00**
EMS-D120 w/ Superbright Screen.....P/N 10-02156..... **$2,129.00**

SENSOR INPUTS

6 - EGT (Type K Thermocouple)
6 - CHT (Type J Thermocouple)
2 - Fuel Level (Resistive [0-1 K ohm] or Capacitance [0-5 volt])
2 - RPM (Frequency)2 - Contacts
1 - Manifold Pressure (Voltage)
1 - Oil Temperature (Resistive)
1 - Oil Pressure (Resistive)
1 - Fuel Pressure (Resistive)
1 - Fuel Flow (Frequency)
1 - Amps (Shunt)
1 - Volts
1 - Turbine Inlet Temperature (Type K Thermocouple)
3 - General Purpose (Either resistive or voltage for OAT, Fuel Tanks 3 & 4, Coolant Temp/Press, Carb Temp)

COMPLETE ENGINE PACKAGES

(EMS-D120 Engine Monitor, engine sensors and 2 wiring harnesses)

Description	Part No.	Price
EMSKIT-L4C, 4Cyl Lycoming/Continental Package (Carbureted)	10-01826	**$2,595.00**
EMSKIT-L4C, wirh Super Bright Screen	10-02201	**$2,827.00**
EMSKIT-L4F, 4Cyl Lycoming/Continental Package (Fuel Injected)	10-01827	**$2,575.00**
EMSKIT-L4F, wirh Super Bright Screen	10-02203	**$2,798.00**
EMSKIT-L6C, 6Cyl Lycoming/Continental Package (Carbureted)	10-01828	**$2,598.00**
EMSKIT-L6C, wirh Super Bright Screen	10-02197	**$2,864.00**
EMSKIT-L6F, 6Cyl Lycoming/Continental Package (Fuel Injected)	10-01829	**$2,885.00**
EMSKIT-L6F, wirh Super Bright Screen	10-02196	**$2,956.00**
EMSKIT-RTX, 4Cyl Rotax 912/914 Package	10-01831	**$2,184.00**
EMSKIT-RTX, wirh Super Bright Screen	10-02166	**$2,474.00**
EMSKIT-J22, 4Cyl Jabiru 2200 Package	10-01833	**$3,431.00**
EMSKIT-J22, wirh Super Bright Screen	10-02193	**$2,607.00**
EMSKIT-J33, 6Cyl Jabiru 3300 Package	10-01835	**$2,457.00**
EMSKIT-J33, wirh Super Bright Screen	10-02194	**$2,727.00**

EMS OPTIONS

Description	Part No.	Price
Capacitance to Voltage Converter	10-02159	**$49.95**
Fuel Flow Sensor	10-01165	**$148.00**
USB-Serial Converter	10-01824	**$21.50**
EGT Thermcouple Ext Wire	10-01167	**$0.99**
CHT Thermcouple Ext Wire	10-01168	**$0.99**

DYNON FLIGHTDEK-D180

The FlightDEK-D180 combines Dynon's best-selling EFIS and EMS (Engine Monitor System) instruments into one brilliant 7" sunlight readable display, giving you an unparalleled assortment of functions in one easy-to-use, very powerful instrument. Pilots may elect to display both EFIS and engine monitor functions simultaneously in split-screen format or switch over to a full screen EFIS or EMS via simple hotkey commands – allowing for full monitoring of any combination of PFD, engine sensors, fuel computer, HSI, and timers. Like all other Dynon instruments, the FlightDEK-D180 comes with a 3-year warranty and free lifetime software updates. Additionally, the FlightDEK-D180 is available in an optional Super-Bright Screen format, improving its readability and overall performance in all light conditions.
Dimensions: 6.95" W x 4.90" H x 4.51" D Includes Dynon three-year factory limited warranty
DEK-D180 w/ Superbright Screen.....P/N 10-02157 ..... **$3,295.00**

COMPLETE ENGINE PACKAGES

(FlightDEK-D180, engine sensors and 2 wiring harnesses)

Description	Part No.	Price
EMSKIT-L4C, 4Cyl Lycoming/Continental Package (Carbureted)	10-01837	**$3,978.00**
EMSKIT-L4C, with Super Bright Screen	10-02198	**$3,978.00**
EMSKIT-L4F, 4Cyl Lycoming/Continental Package (Fuel Injected)	10-01838	**$3,973.00**
EMSKIT-L4F, with Super Bright Screen	10-02199	**$3,973.00**
EMSKIT-L6C, 6Cyl Lycoming/Continental Package (Carbureted)	10-01839	**$4,015.00**
EMSKIT-L6C, with Super Bright Screen	10-02190	**$4,015.00**
EMSKIT-L6F, 6Cyl Lycoming/Continental Package (Fuel Injected)	10-01840	**$4,107.00**
EMSKIT-L6F, with Super Bright Screen	10-02191	**$4,107.00**
EMSKIT-RTX, 4Cyl Rotax 912/914 Package	10-01841	**$3,640.00**
EMSKIT-RTX, with Super Bright Screen	10-02168	**$3,640.00**
EMSKIT-J22, 4Cyl Jabiru 2200 Package	10-01842	**$3,773.00**
EMSKIT-J22, with Super Bright Screen	10-02192	**$3,773.00**
EMSKIT-J33, 6Cyl Jabiru 3300 Package	10-01843	**$3,893.00**
EMSKIT-J33, with Super Bright Screen	10-02195	**$3,893.00**

FLIGHTDEK OPTIONS

Description	Part No.	Price
Battery	10-00755	**$129.95**
OAT Probe	10-01823	**$66.75**
AOA/Pitot Probe (unheated)	10-01157	**$196.50**
AOA/Pitot Probe (heated)	10-02158	**$449.00**
Encoder Converter Module	10-01159	**$79.85**
Fuel Flow Sensor	10-01165	**$148.00**
EGT Thermcouple Ext Wire	10-01167	**$0.99**
CHT Thermcouple Ext Wire	10-01168	**$0.99**
OAT	10-01176	**$36.95**
HS34 HSI Expan. Mdl. Vertical	10-02590	**$645.00**
HS34 HSI Expan. Mdl.Horizontal	10-02773	**$646.00**
Capacitance to Volt Converter	10-02159	**$49.95**
Wiring Harness	10-01158	**$79.50**
Roll Servo Kit RV10	10-04076	**$795.00**

SEE WWW.AIRCRAFTSPRUCE.COM FOR LISTING OF ALL ENGINE SENSORS, HARNESSES, & PACKAGES

DYNON

DYNON AUTOPILOT SERVO + MOUNTING KIT PACKAGES

Dynon Avionics servos are dimensionally identical to other leading servos for drop-in upgradability. Behind the scenes, though, the SV line of servos are all-new. A lightweight aluminum case houses a stainless steel gear train to optimize weight while not sacrificing strength. The servo control arm is captured by a castellated nut and secured by a cotter pin, just like other critical interfaces in your aircraft. Each servo is managed by its own microprocessor, making the servo an active, smart extension of the autopilot. This simplifies the control-surface-to-servo calibration, and prevents the servo from driving itself endlessly like other servos can. As an ultimate mechanical failsafe, a simple and effective shear pin is employed to let you break the servo free of the aircraft control surface in an emergency.

Description	Part No.	Price
RV-6 Roll Servo + Mounting Kit (Includes Servo mounting kit RV-6 roll (fuselage):101020-001, pkg SV32L (long output arm): 100854-001	10-03555	**$825.00**
RV-7/8/10 Roll Servo + Mounting Kit (Includes Servo Mounting kit-RV-7/8/10 roll (R wing): 101020-003, pkg SV32 (std. output arm): 100854-000	10-03556	**$795.00**
RV-9 Roll Servo + Mounting Kit (Includes Servo Mounting kit-RV-9 roll (R Wing):101020-004, pkg SV32 (std. output arm): 100854-000	10-03557	**$795.00**

Description	Part No.	Price
RV-6/7/9 Pitch Servo + Mounting Kit (Includes Servo Mounting Kit-RV-6/7/9 Pitch: 101020-005, pkg SV32 (std. output arm): 100854-000)	10-03559	**$795.00**
RV- 4/8 Pitch Servo + Mounting Kit(Includes Servo Mounting kit- RV-4/8 Pitch : 101020-002, pkg SV32 (std. output arm): 100854-000	10-03560	**$795.00**
RV-10 Pitch Servo + Mounting Kit: (Includes servo mounting kit RV-10 pitch (fuselage):101020-006, pkg SV42 (std output arm): 101058-000	10-03893	**$824.95**

SEE WWW.AIRCRAFTSPRUCE.COM FOR LISTING OF ALL ENGINE SENSORS, HARNESSES, & PACKAGES

DYNON SKYVIEW EFIS/EMS SYSTEM

Skyview 10" Display

SkyView is the latest glass-panel solution from Dynon Avionics, featuring a full PFD with synthetic vision, moving map with terrain and obstacles, engine monitor, and autopilot. Very bright, high-resolution screens with full dimming control provide excellent visibility in all conditions, while two multi-position control knobs allow easy user input. The full-color PFD features a full set of flight instruments over a highly-detailed 3D synthetic vision display, while your aircraft's position is shown on a moving map with color-coded terrain, obstacles, and airport/airspace information. In addition, the SkyView will accommodate full engine monitor display and a dual-axis autopilot through the addition of optional Dynon hardware. SkyView systems come standard with Dynon's three-year factory limited warranty.

Skyview 7" Display

SkyView system features and options: • 10" display screen, 1024x600 resolution and 1350 nits brightness • 7" display screen, 800x480 resolution and 1200 nits brightness • Synthetic Vision / 3D terrain • PFD featuring Altimeter, ASI, Compass/Heading, VSI, OAT, TAS, Turn Coordinator / Slip/Skid Ball, HSI, GPS Ground Track, Angle of Attack • GPS / Moving Map with color-coded terrain, obstacles, airports & airspace • Engine Monitor with fully-customizable display • Dual-axis Autopilot • Altitude encoder output • Backup battery • Convenient program and data updates via USB memory stick • Unlimited future expandability including include external video display, weather data, traffic, and complete Com radio, Nav radio, and transponder control. **Dimensions**: • 10" display: 10.32" W x 7.06" H x 2.14" D • 7" display: 7.64" W x 5.51" H x 2.14" D

Model No.	Description	Part No.	Price
SV-D700	SkyView 7" Display (includes main wiring harness)	10-03933	**$2,579.00**
	SkyView 7" Display (Display Only)	10-03935	**$2,465.00**
SV-D1000	SkyView 10" Display (includes main wiring harness)	10-03932	**$3,395.00**
	SkyView 10" Display (Display Only)	10-03934	**$3,295.00**
SV-ADAHRS-200	SkyView ADAHRS - First	10-03936	**$1,175.00**
SV-ADAHRS-200 & 201	SkyView ADAHRS - Dual	10-04018	**$1,941.00**
SV-EMS-220	SkyView Engine Monitoring Module	10-03938	**$574.00**
SV-GPS-250	SkyView GPS 5Hz Receiver Module	10-03939	**$198.50**
SV-BAT-320	SkyView Backup Battery	10-03940	**$178.50**
SV-HARNESS-D37	Dynon Display Harness with Wiring	10-03941	**$93.50**
SV-MAP-270	SkyView GPS Navigation Software Enhancement	10-04678	**$495.00**
SV-ETHERNET-3CC	Dynon Ethernet Cable	10-04679	**$24.95**
101406-000	Skyview ARINC Adapter	10-04520	**$469.95**
SV-VPX-290	SkyView Vertical POwer Unlock Code	10-04810	**$266.95**
SV-NET-3CC	Network Cable – Both ends with connectors, 3' long	10-03942	**$39.90**
SV-NET-6CC	Network Cable – Both ends with connectors, 6' long	10-03943	**$44.00**

Model No.	Description	Part No.	Price
SV-NET-10CP	Network Cable – 1 end with connector, 1 end with pins only, 10'	10-03944	**$49.75**
SV-NET-15CP	Network Cable – 1 end with connector, 1 end with pins only, 15'	10-03945	**$54.85**
SV-NET-20CP	Network Cable – 1 end with connector, 1 end with pins only, 20'	10-03946	**$59.00**
SV-NET-SPL	Network Splitter	10-03948	**$65.00**
SV-NET-SERVO	Network Autopilot Servo Wiring Kit Includes 20	10-04491	**$54.75**
EMSKIT-L4C	Lycoming/Superior/Continental 4 Cylinder, Carbureted	10-04827	**$698.00**
EMSKIT-L6C	Lycoming/Superior/Continental 6 Cylinder, Carbureted	10-02306	**$735.00**
EMSKIT-L6F	Lycoming/Superior/Continental 6 Cylinder, Fuel Injected	10-04831	**$827.00**
EMSKIT-RTX	Rotax 912	10-02307	**$294.00**
EMSKIT-J33	Jabiru 3300	10-02310	**$550.00**
RV10	Roll Servo Kit RV10	10-04076	**$795.00**
01411-000	SkyView XPDR M-S C-1	10-04518	**$2,099.00**
101412-000	SkyView XPDR M-S C-2	10-04519	**$1,695.00**
100403-003	Dynon EMS Fuel Flow Sensor	10-01165	**$148.00**
100654-000	Dynon Capacitance to Volt Converter	10-02159	**$49.95**
101409-000	Dynon SkyView XPDR M-S C-1	10-04518	**$2,099.00**
101410-000	Dynon SkyView XPDR M-S C-2	10-04519	**$1,695.00**

AV

DYNON PACKAGES

OPTIONS

Description	Part No.	Price
Add a PM 501 intercom	11-11800	**$269.95**
Add PM 1200 high noise intercom	11-01671	**$429.99**

PACKAGE A

- Dynon FlightDEK D180 w/ Super Bright
- Dynon EFIS Harness
- Garmin SL 30 NAV/COM w/ Harness
- Garmin GTX 327 Transponder w/ Harness

Note: D180 does not come w/ engine harness.

P/N 11-07133.....**$8,746.00**

PACKAGEB

- Dynon FlightDEK D180 w/ Super Bright
- Dynon EFIS Harness
- Icom A210 COM
- Garmin GTX 327 Transponder w/ Harness

Note: D180 does not come with engine harness.

P/N 11-07134.....**$6,294.00**

PACKAGE C

- Dynon D100 w/ Super Bright
- Dynon EFIS Harness
- Garmin SL 30 NAV/COM w/ Harness
- Garmin GTX 327 Transponder w/ Harness

P/N 11-07135.....**$7,970.00**

PACKAGE D

- Dynon D100 w/ Super Bright
- Dynon EFIS Harness
- Icom A210 COM
- Garmin GTX 327 Transponder w/ Harness

P/N 11-07136.....**$5,549.00**

PACKAGE E

Dynon D100 w/ Super Bright

- Dynon EFIS Harness
- Dynon D120 w/ Super Bright
- Garmin SL 30 NAV/COM w/ Harness
- Garmin GTX 327 Transponder w/ Harness

Note: D120 does not come w/ engine harness.

P/N 11-07137.....**$10,000.00**

PACKAGE F

- Dynon D100 w/ Super Bright
- Dynon EFIS Harness
- Dynon D120 w/ Super Bright
- Icom A210 COM
- Garmin GTX 327 Transponder w/ Harness

Note: D120 does not come w/ engine harness.

P/N 11-07138.....**$7,836.00**

PACKAGE G

- Dynon FlightDEK D180 w/ Super Bright
- Dynon EFIS Harness
- Dynon HS 34 HSI Vertical Module
- GNS 430W w/ Harness
- GTX 327 Transponder w/ Harness

Note: D180 does not come w/ engine harness.

P/N 11-07139.....**$13,998.00**

AIRCRAFT SPRUCE WEST **AIRCRAFT SPRUCE EAST**
CORONA, CA • (877) 4-SPRUCE **PEACHTREE CITY, GA • (877) 477-7823** *Prices Subject to Change Without Notice*

ADVANCED FLIGHT SYSTEMS - GRAND RAPIDS

ADVANCED FLIGHT SYSTEMS AF3400

AF-4500EF 8.4" AF-3500EF 8.4" AF-3400 6.5"

Can be configured as an EFIS (EF), Engine Monitor (EM), or Combination (EE) or both with the appropriate hardware modules installed. Utilize the Advanced Avionics Bus allowing the pilot and copilot displays to exchange screens. Powered by a state-of-the-art certified Crossbow AHRS engine. LCD display is 50% brighter than any competitor. EFIS — Unlike other systems the horizon display is generated from an internal Crossbow AHRS that is based on certified boards and software. The display features a clear and easy to read airspeed indication with user adjustable color ranges, the altimeter is set using a familiar and convenient adjustment knob. Heading display is generated from a remote mounted magnetometer. The heading can be displayed on a tape across the top or with our new EFIS DG©. Other flight instruments functions include a slip ball and user-configurable g-meter. Aircraft Monitoring and Data Acquisition System — The system continuously monitors and displays not only all aircraft engine data but any of the standard instruments can be eliminated or added to the screen.

Mapping — An optional feature, your AF-3400s/3500s can now be configured with onboard mapping. Position is derived from an outboard GPS signal and displayed on the screen. Several display page options can be selected.

Model	Part No.	Description	Price
EFIS Screens			
AF-3400	11-10554	6.5" Display	$1,733.00
AF-4500	11-10555	8.4" Display	$3,376.00
AF-5500	11-10556	8.4" Display	$4,245.95
AF-5600	11-10557	10.4" Display	$5,018.00
Engine Monitor Board (Does not include probes/ sensors)			
---	11-10558	Engine Board	$720.00
EFIS AHRS			
AHRS Board	11-10559	Attitude Heading Reference System	$2,217.00
Probes and sensors			
AF-4CYL	11-04952	4 Cylinder Sensor Pack	$1,100.00
AF-6CYL	11-04953	6 Cylinder Sensor Pack	$1,300.00
AFS Autopilot			
---	11-10563	Autopilot 2 Axis with Servos	$3,500.00
---	11-10564	Standard Torque Servos	$2,200.00
---	11-10565	Autopilot Controller (no servos)	$2,000.00
EFIS Upgrades			
---	11-10566	New High Speed CPU and Base Board	$2,200.00
---	11-10567	Synthetic Vision Upgrade (3400s/3500s units only)	$500.00
EFIS Options			
AF-AOA	11-07181	AOA Option	$789.95
AF-BAT	11-05624	Battery Pack	$127.95
AF-ARINC	11-05964	ARINC adapter	$495.95
AF-MAP	11-05963	Moving map software for AF-3400/3500/4500	$789.99
AF-GPS	11-08324	5 hz antenna puck GPS	$289.95
AF-WEATHER	11-08325	XM Weather option	$775.00

GRAND RAPIDS EFIS HORIZON HX

The centerpiece of the EFIS Horizon is its primary flight display. Combined into 1 intuitive display is attitude, navigation and the aircrafts current state. The EFIS Horizon includes a moving map displaying all US airports and navaids, plus user created waypoints. Engine data is provided to the Horizon EFIS via the proven and well known Engine Information System products. Features include split screens, convenient controls, integrated navigation and attitude, active redundancy, continuous self-testing and a dedicated AHRS processor. All versions of the EFIS Horizon Series I, and EFIS Series I Display unit require a GPS to display GPS related data, and/or an EIS Model 4000 / 6000 / 9000 to display engine data. These items are not included, and must be purchased separately unless otherwise indicated.

SCREENS

Model	Part No.	Description	Price
MFD-WS	11-07476	Grand Rapids Horizon WS 6.5".	$2,000.00
MFD-HS	11-07477	Grand Rapids Horizon HS 6.5"	$2,000.00
MFD-HX	11-07479	Grand Rapids Horizon HX 6.5"	$4,000.00
HS-8.4	11-07480	Grand Rapids HS-8.4 OPTION	$600.00

ATTITUDE HEADING REFERENCE SYSTEM (REQUIRED)

Model	Part No.	Description	Price
AHRS-1-PKG	11-09212	Grand Rapids Single AHRS	$3,000.00
AHRS-2-PKG	11-07478	Grand Rapids Dual AHRS Pack	$4,000.00

OPTIONS

Model	Part No.	Description	Price
ARINC-429/P	11-09213	Grand Rapids Arinc 429 H OPT	$475.00
GPS-HS/INT	11-09214	Grand Rapids Internal GPS OPT	$400.00
GPS-HS/EXT	11-09216	Grand Rapids External GPS OPT	$400.00
GPS-RAIM-HS/INT	11-09217	Grand Rapids INT RAIM GPS OPT	$750.00
GPS-RAIM-HS/EXT	11-09218	Grand Rapids EXT RAIM GPS OPT	$750.00
XM-WEATHER/CPU	11-09219	Grand Rapids Weather S/HS/WS	$950.00
XM-WEATHER/USB	11-09221	Grand Rapids Weather HX	$550.00
USB-EXT	11-09222	Grand Rapids USB Extention	$15.75
--	11-09783	AutoPilot Servos Standard Version	$1,750.00
--	11-09791	AutoPilot Servos Roll Servo Version	$850.00
--	11-09792	AutoPilot Servos Pitch Servo Version	$900.00

ENGINE PACKAGES

Model	Part No.	Description	Price
H/ENG-LYC-4	11-09242	Grand Rapids 4CYL LYC Horizon	$1,350.00
H/ENG-LYC-6	11-09243	Grand Rapids 6CYL LYC Horizon	$1,550.00
H/ENG-CONT-4	11-09244	Grand Rapids 4 CYL CON Horizon	$1,350.00
H/ENG-CONT-6	11-09245	Grand Rapids 6CYL CON Horizon	$1,550.00
H/ENG-912	11-09246	Grand Rapids Rotax 912 Horizon	$975.00
H/ENG-J4	11-09247	Grand Rapids JAB 2200 Horizon	$995.00
H/ENG-J6	11-09248	Grand Rapids JAB 3300 Horizon	$1,195.00

GRT AVIONICS AUTOPILOT SERVOS

Add full-featured autopilot capability to any GRT EFIS.

Features: • Servos support all autopilot features provided by the EFIS, including: Heading select, ILS approach coupling, GPS approach coupling, Climb/Descent to selected altitude, Climb/Descent on IAS or vertical speed, Synthetic approach coupling, Automatic approach capture, VOR coupling • Fail-Safe Servo Design: Clutchless - Minimizes possibility of inadvertent servo jam, Shearable Output Arm - disconnects servo mechanically in the rare case of an internal servo jam, Limited Authority - Pilot may override the servo by simply moving the control stick •Safe Design Features: Servo arm retained by castle nut., Case retained with safety-wired fasteners such that the geartrain can not separate to potentially jam flight controls. Servo torque sensing provides Trim Up/Down indication to prevent unexpected loss of pitch control Unexpected disconnect or mode change generates EFIS alarm

Autopilot Servos Roll Servo Version ..... P/N 11-09791 ..... **$850.00**
Autopilot Servos Pitch Servo Version ..... P/N 11-09792 ..... **$900.00**
Autopilot Servos Standard Version ..... P/N 11-09783 ..... **$1,750.00**

AV

GRAND RAPIDS EFIS SPORT SX

GRT recognizes that most flying is not hard IFR . Not every pilot needs the Horizon HX redundancy and features. With this in mind we set out to design a system built on our legacy Sport's success, the Sport SX, for experimental and lightsport aircraft. The Sport SX is designed to provide a low-cost EFIS (electronic flight information system) with room for growth and expansion with optional ARINC-429, faster processor, vertical autopilot commands, shaded color map, and synthetic vision. Yes, synthetic vision. The Sport SX with synthetic vision has 10 miles forward visibility, shaded color mapping, and terrain collision warning. Standard Sport SX unit comes with 4 serial ports and two power inputs.

SCREENS

(Internal AHRS included on the S200. S100 does not have an AHRS used for MFD)

Model	Part No.	Description	Price
S200-SX	11-08483	Grand Rapids Sport EFIS 6.5"	**$3,000.00**
S100-SX	11-09249	Grand Rapids Sport MFD 6.5"	**$2,000.00**
SX-8.4	11-09250	Grand Rapids SX-8.4 Option	**$600.00**

OPTIONS

Model	Part No.	Description	Price
SX-SV	11-08484	SV OPT	**$600.00**
SX-GPSV	11-09548	VERT A/P OPT	**$495.00**
GPS-S-INT	11-09547	Sport INT GPS	**$395.00**
ARNIC-429-E	11-09546	ARINC S OPT	**$474.95**
XM-WEATHER/ CPU	11-09219	Weather S/HS/WS	**$950.00**
USB-EXT	11-09222	USB Extension	**$15.75**
--	11-09783	AutoPilot Servos STD. V	**$1,750.00**
--	11-09791	AutoPilot Servos Roll	**$850.00**
--	11-09792	AutoPilot Servos Pitch	**$900.00**

ENGINE PACKAGES

Model	Part No.	Description	Price
S/ENG-LYC-4	11-09549	4CYL LYC Sport	**$1,195.00**
S/ENG-LYC-6	11-09550	6CYL LYC Sport	**$1,375.00**
S/ENG-CONT-4	11-09551	4CYL CON Sport	**$1,195.00**
S/ENG-CONT-6	11-09552	6CYL CON Sport	**$1,375.00**
S/ENG-912	11-08485	ROTAX 912 Sport	**$900.00**
S/ENG-J4	11-08487	JAB 2200 Sport	**$930.00**
S/ENG-J6	11-08488	JAB 3300 Sport	**$1,030.00**

LEVIL EFIS 1831

This modular Electronic Flight Instrument Systems (EFIS) was specifically designed to allow homebuilt and light sport aircrafts to finally incorporate the latest technology in glass cockpit into the perfect plane at an affordable price! It's uniqueness relies on the combination of all Primary Flight , Engine and Navigation monitoring functions into a fully integrated 10.4 inch Touch-Screen Computer. These Multi-Function Systems provides pilots with:

Easy to Scan Touch-Screen Display, L1000c

Feel the power at your fingertips as you effortlessly navigate through your flying software of choice with just a tap of a finger. The EFIS 1831 is equipped with a 10.4" touch-screen LCD. Natural resolution of 800x600 pixels with LED backlight of 1000 nits for sunlight operation and a manual dim for night flying. External displays are also available.

AHRS and Engine monitoring functions

Your choice of EFIS will depend on your AHRS of preference. AHRS-basic will provide you with only a primary flight display. If you would like to monitor your engine gauges, perhaps your choice of AHRS would be AHRS-G or even AHRS - Gplus. You can always upgrade your AHRS system with an Engine POD module.

Flight Software System of choice

No pilot wants to get stuck in the air fumbling through an unfamiliar program. This Electronic Flight System allows you the flexibility to choose the navigation program you are most comfortable with, such as APIC, Voyager, Anywhere Map, just to name a few. Depending on the software of choice you can enjoy features such as Built-in Terrain, Airspaces, Weather reports, Winds, TFRs etc. If you decide not to purchase a navigation software, you can still enjoy all AHRS and Engine monitoring functions through the standard Levil-Primary Flight Display software (L-PFD).

EFIS - 1831 Basic (No Engine POD)..... P/N 11-08166.....**$3,485.00**
EFIS - 1831 Basic (Engine POD G) ..... P/N 11-08167.....**$3,765.00**
EFIS - 1831 Basic (Engine POD G Plus) ..... P/N 11-08168.....**$4,226.00**

EFIS INTEGRA TL-6524

EFIS Integra TL-6524 is a multifunctional flight monitoring system integrating all primary flight instruments (Altimeter, Vertical Speed Indicator, Air Speed Indicator, Compass, Accelerometer, Chronometers, Turn & Bank Indicators, Angle Of Attack Indicators, IAT, OAT etc.). The EFIS Integra also combines navigation (HSI, CDI with connection to the popular Garmin SL-30) and 3-D terrain for use worldwide. The wide viewing angles, brilliant colour and direct sunlight readability of the display will give you a new dimension in EFIS instrumentation. Proven, state of the art technology and components will provide you with comfortable, user-friendly control. The Integra controls are fully ambidextrous and provide functions that have previously only been dreamt of - listening to your favourite music after inserting your flash drive into the front panel USB port, 3-D visualization of terrain, integrated 3-axis autopilot, direct voice warnings into your headphones, etc.

Features: * Voltage: 10.0 to 32.0 Volts * Backlights internal or external: 5V, 12V or 24V * Current consumption: 500 to 750 mA @ 14 Volts * Maximal voltage and signal current: 30 Volts, 1 Ampere * Measurement: +/-1% * Operating: -20°C to 70°C (-4°F to 158°F) temperature range * Relative humidity: 95% without condensation * Load: +/-20 g * Vibration: 1 to 200 Hz * Weight: 750 grams (0,55 lbs) * Dimensions: 192x149x90 mm (7.550x5.860x3.540 inch)

Benefits: * Option to select required language - English by default * Option to simply update firmware by inserting a Flash drive containing the newest firmware version * Option of pre-setup of glass cockpit according to the particular aircraft type saved in a Flash drive * Shows a graphical previous flight directly on the glass cockpit display * Shows a checklist including the voice output * Shows a flight logbook including name of pilot (student and instructor), date, time and position of take-off and landing * Download the history of previous flights to a Flash drive or directly to a PC

Description	Part No.	Price
Integra TL-6524 System	10-03469	**$2,815.00**

ACCESSORIES

Description	Part No.	Price
TL-6524 Backup Battery	10-03470	**$214.95**
TL-6524 Remote Compass	10-03471	**$358.95**
TL-6524 Premium Autopilot Key	10-03472	**$482.95**
TL-6524 Silver Autopilot Key	10-03473	**$1,373.00**
TL-6524 Gold AutoPilot Key	10-03474	**$2,460.00**
TL-6524 Servo W/ Magnetic Clutch	10-03475	**$1,518.00**
TL-6524 Terrain of Europe	10-03476	**$187.95**
TL-6524 Terrain of Asia	10-03477	**$187.95**
TL-6524 Terrain of Africa	10-03478	**$187.95**
TL-6524 Terrain of North America	10-03479	**$187.95**
TL-6524 Terrain of South America	10-03480	**$187.95**
TL-6524 Terrain of South Pacific	10-03481	**$187.95**

EFIS & EMS INTEGRA TL-6624

EFIS & EMS Integra TL-6624 is a multifunctional system that monitors both your flight and engine. TL-6624 integrates all primary flight instruments (Altimeter, Vertical Speed Indicator, Air Speed Indicator, Compass, Accelerometer, Chronometer, Turn-indicator with Inclinometer, Angle of Attack Indicator, internal air temperature, external air temperature, etc.).

The EFIS Integra also includes navigation systems (HSI, CDI with connection to the popular Garmin SL-30) and worldwide 3-D terrain maps. It also integrates all primary engine instruments (RPM, Fuel Flow Pressure Indicator, Exhaust Temperature Indicator, Cylinder Head Temperature Indicator, Oil and Water Temperature Indicator, Fuel Level Indicator, Fuel Pressure Indicator, Voltmeter, Ampere Meter, Timer, Internal Air Temperature Indicator, External Air Temperature Indicator, etc.) In addition the EMS Integra includes Propeller Control for "Constant Speed" and Engine Choke Control. The EMS Integra is designed for use with all engine makes and models. P/N 10-03482.....**$3,939.00**

SEE WWW.AIRCRAFTSPRUCE.COM FOR A LIST OF PROBES, SENDERS, AND ACCESSORIES FOR THE INTEGRA TL-6624.

AV

MGL V6 VHF AVIATION RADIO TRANSCEIVER

Based on the digital technology intruduced in the V10, the V6 provides the same powerful 6W transmitter and modulation system. Designed for 25Khz spacing with 8.33Khz compatible operation selectable, the dual scan receiver boasts the fastest scanning time which means no loss of reception quality during receive of the standby channel. 100 channel storage and channel operating mode compatible with the V10. Four place, dual circuit intercom system with full isolate. Each intercom microphone input has its own level control and VOGAD noise suppression system. Dual PTT inputs. Black box flight recorder audio output. The intercom outputs are fully stereo with a dedicated stereo music input plus two auxiliary channels for mobile phone and EFIS annunciators. The V6 radio fits a standard 2 1/4" round instrument hole from the rear and provides simple mounting due to captive nuts. Wide Operating voltage range: 12V to 28V DC.

VHF-6 Transceiver ..... P/N 11-10464 ..... **$1,082.00**
Standard Harness..... P/N 11-10533 ..... **$179.95**

MGL AVIONICS V10 VHF AVIATION RADIO TRANSCEIVER

MGL's air band VHF transceiver is the first commercial product of its kind to utilize modern receiver and transmitter technology. All audio processing and much of the receiver and transmitter circuitry is fully digital resulting in an outstanding quality experience unavailable with traditional technology. VHF Airband transceiver based on modern digital signal processing technology with built in multi-mode dual circuit intercom system. Small Size: Fits in a round 3 1/8" instrument hole, but has a mounting depth of only 2.2" + connectors! Light Weight: Approximately 8.8 oz (about 0.5 lb). One of the lightest out there! Powerful: 6 full Watts of transmit power.

Transceiver..... P/N 11-07817 ..... **$1,065.00**
Harness ..... P/N 11-07818 ..... **$169.00**

MGL AVIONICS E1 ENGINE MANAGEMENT SYSTEM

A compact 3 1/8" format instrument all that is needed to monitor most smaller aircraft engines from two-stroke ultralight engines to medium sized four strokes such as from Rotax, Continental and Lycoming. Most automotive engine conversions can benefit from the use of the E3 engine monitor. • 66 different engine setup configurations possible • Universal, programmable rev counter (engine RPM) with digital and analog readout, with a programmable high alarm limit • Programmable engine Hobbs meter (password protected) and running timer (flight timer) with automatic flight log • Can monitor up to four programmable thermocouple channels for EGT and CHT probes with a user programmable high alarm limit • A universal temperature sender input with a user programmable low and high alarm limits • A universal pressure sender input with a user programmable low and high alarm limits • Supply voltage measurement up to 30V with a user programmable low and high alarm limits • Maximum recorded values for all measured values are stored in non-volatile memory • High accuracy: Built in thermocouple linearization curves and cold junction compensation • Thermocouple temperature probes can be common K, J or E-type thermocouple probes • Uses standard automotive temperature and pressure senders • Special Rotax 912/914 engine monitor mode utilizing the standard built in Rotax NTC CHT probes • Supports the new Rotax 912/914 4-20mA oil pressure sender.

P/N 11-05578 ..... **$315.00**

MGL AVIONICS XTREME MINI EFIS

The XTreme EFIS is a mini-EFIS unit based on a 4.3" sunlight readable, wide viewing angle, high resolution LCD display. It integrates an SD card reader (for software updates and for flight data recorder), 5 function buttons, a rotary control and a basic GPS navigator (functions available in future firmware release). It can be connected to standard MGL Avionics AHRS sensors and RDAC (engine monitor) boxes. It also integrates a CAN Aerospace compatible communications interface that will be used with future versions of MGL Avionics sensors. Standard RS-232 ports are also available. The XTreme is designed to fit a standard 3 1/8" round instrument hole.

P/N 11-08757 ..... **$1,150.00**

MGL SERVO LINK KIT

Optional accessory MGL Servo link kit.
Kit includes:
(1) Alu tube 30 cm
(1) Rod end bearing RHT with fitting and nut
(1) Rod end bearing LHT with fitting and nut
(4) Rivets

P/N 11-10423 ..... **$995.00**

MGL AVIONICS VOYAGER - EFIS/EMS/GPS

8.4" Perfect Fit

The Voyager is IDENTICAL in PRICE and FUNCTION to the Odyssey. The only difference is the size. The Voyager is a comprehensive flight, engine and navigation instrument designed for Experimental and Light Sport aircraft. Like the Enigma, the Odyssey/Voyager is a hardware and software concept that promotes a flexible, powerful EFIS platform together with a software application system that is highly user-modifiable. The Voyager shares all software features with the Enigma, but differs in the following ways: Larger screen (8.4" diagonal). High resolution full VGA active TFT display - one of the best we have found! Faster processor for future functionality. 2 user-configurable rotary knobs and 7 function keys. ARINC 429 interface for communication with traffic alert systems (TIS and ZAON XRX) and for communicating with high-end digital autopilots (GPS Steer and Vertical Nav). CAN (automotive bus) for reading the ECU of automotive engine conversions. Analog +/- 150mA NAV inputs to display CDI/LOC/GS when connected to older analog Nav radios Low... Weight: Under 4 lbs. Current Draw: Only 1.5 Amps @ 12 Volts High... Screen brightness (800-1000 nits). Reliability. Flexibility (any screen layout you want!). Feature count (more instrument options available than most EFISs) P/N 11-06963 ..... **$3,900.00**

MGL XTREME EMS

The XTreme EMS is based on a 4.3" sunlight readable, wide viewing angle, high resolution LCD display. It integrates an SD card reader (for software updates and for engine data recorder), 5 function buttons, a rotary control. It can be connected to standard MGL Avionics RDAC (engine monitor) boxes (required). The XTreme EMS is designed to fit a standard 3 1/8" round instrument hole. The body is located off-center allowing the unit to replace instruments on the right side of a standard 6-pack configuration or any other location that currently occupies two instruments. Due to the light weight and very low mounting depth no complicated mounting brackets or trays are needed. Power use is low and operation from much less than 12V to around 28V is fully supported

EXtreme MS .....P/N 11-10393 ..... **$850.00**
RDAC XB 12 CH Thremocouple ....P/N 11-05552 ..... **$230.00**

MGL AVIONICS GENERATION 2 ODYSSEY - EFIS/EMS/GPS

The Odyssey is a comprehensive flight, engine and navigation instrument designed for Experimental and Light Sport aircraft. Like the Enigma, the Odyssey is a hardware and software concept that promotes a flexible, powerful EFIS platform together with a software application system that is highly user-modifiable. As an EFIS hardware platform, the Odyssey provides state of the art multi-processor based processing utilizing components chosen for absolute robustness in radiation intense environments such as found at high altitudes. This is coupled with intense low power design methods to further maximize overall system application and reliability. The large amount of flexibility built into the base system allows the adaptation of the Odyssey to almost any mission and aircraft. Due to low system cost, the Odyssey is equally suited to very light aircraft, gliders and rotorcraft, while providing enough flexibility to be utilized by even twin-engine aircraft with full dual engine monitoring.

10.4" Display MGL Odyssey Generation 2..... P/N 11-05835.. **$3,900.00**

To complete these systems: Select a RDAC engine Unit, Select Sensors, Order Attitude/Heading Sensor (SP-28, SP-4), Select accessories.

MGL MAGNETIC CURRENT MEASUREMENT SENSOR

This sensor can be used to measure DC currents in aircraft power systems in a wide range from less than 4A to as high as 120A depending on installation and configuration. The sensor connects to an EFIS system via spare RDAC inputs. Inputs CHT1,CHT2,oil pressure or oil temperature can be used and these can also be used on a second RDAC unit (consider a low cost RDAC VD as second RDAC if required). G1 and G2 EFIS systems can support up to 4 of these sensors while Enigma can support 2.

P/N 11-10422 ..... **$49.75**

AV

STRATOMASTER ENIGMA EFIS WITH GPS AND ANTENNA

The Enigma is a comprehensive flight, engine and navigation instrument designed for Experimental and Light Sport aircraft. The large amount of flexibility built into the base system allows the adaptation of the Enigma to almost any mission and aircraft. Due to low system cost, Enigma is equally suited to very light aircraft, gliders and rotorcraft, while providing enough flexibility to be utilized by even twin-engine aircraft with full dual engine monitoring. ***Please note: Select RDAC model and engine senders for engine* functions, and select Attitude/Heading sensors (SP-4 and SP-2) for AHRS funtions.** P/N 11-05555 .....**$2,550.00**

STRATOMASTER EFIS SYSTEMS			
Model	**Description**	**Part No.**	**Price**
Odyssey	Odyssey 10-.4", including GPS and antenna	11-05835	**$3,900.00**
Voyager	Voyager 8.4", including GPS and antenna	11-06963	**$3,900.00**
Enigma	Enigma 5.7", including GPS antenna	11-05555	**$2,550.00**
Ultra Horizon XL	Ulta Horizon XL 5.7", monochrome	11-05550	**$945.00**

SENDERS			
Model	**Description**	**Part No.**	**Price**
CHT10	Type-K CHT Thermocouple,10mm spark plug	11-05561	**$35.00**
CHT12	Type-K CHT Thermocouple, 12mm spark plug	11-05562	**$35.00**
CHT14	Type-K CHT Thermocouple, 14mm spark plug	11-05563	**$35.00**
CHT18	Type-K CHT Thermocouple, 18mm spark plug	11-05564	**$35.00**
CHT Bayo	Type-K CHT Therm, bayonet-style 3/8"-24	11-05565	**$35.00**
EGT	Type-K EGT Thermocouple, M8 x 1 thread	11-05567	**$45.00**
EGT Clamp Lg	Type-K EGT Therm., Clamp-Type Lg. (<1.5" dia)	11-05568	**$50.00**
EGT Clamp Sm	Type-K EGT Therm., Clamp-Type Sm. (>1.5" dia)	11-07842	**$50.00**
Water temp.	Water Temperature Sender	11-05566	**$18.00**
Prec. Sender	Precision Water/Oil Temperature Probe	11-05570	**$35.00**
Oil Temp	Oil Temp, 5/8-18 UNF thread (Lyc/Cont)	11-08070	**$45.25**
OP-VDO	Oil Pressure 150 PSI, VDO 360-004	11-08066	**$45.00**
Flowsend	Fuel Flow Sensor	11-05559	**$195.00**
201A-6	Floscan 201A-6 Fuel Flow Sensor 30 GPH "A"	11-08071	**$210.00**
201B-6	Floscan 201B-6 Fuel Flow Sensor 60 GPH "B"	11-08072	**$210.00**
201C-6	Floscan 201C-6 Fuel Flow Sensor 80 GPH "C"	11-08073	**$210.00**
FP-100 UMA	Fuel Pressure 100 PSI (fuel injected engines)	11-08067	**$110.00**
FP-35 UMA	Fuel Pressure 35 PSI (carbureted engines)	11-08068	**$110.00**
FP 7 PSI UMA	Fuel Pressure 7 PSI (Rotax/Jabiru engines)	11-08337	**$109.95**
CNV-AT	Serial to Parallel Converter - Ultra/Infinity Sngl	11-05723	**$125.00**
GT1	Gear Tooth Speed Sensor	11-05725	**$85.00**
Keyring	Download Keyring Device, Incl. Airtalk PC Cable	11-05726	**$105.00**
Airtalk	Airtalk PC Cable with Serial Adapter	11-07810	**$40.00**
MNEA Cab	NMEA to Airtalk Cable for fuel computer	11-08331	**$34.95**
Ferrite	EMI Ferrite Bead Intereference Suppresor	11-08064	**$6.00**
Ferrite - Clip	EMI Ferrite Bead Intereference Suppresor Clip-on	11-08332	**$12.50**
Batt 12v 1.2Ah	12V 1.2Ah Backup Btty - Sealed Lead-Acid	11-08065	**$29.95**
Batt 12v 2.5Ah	12V 2.5Ah Backup Btty - Sealed Lead-Acid	11-08065	**$29.95**
Tach-Slick	UMA Tach Pickup for Slick Mags	11-08334	**$94.75**
Tach-Bendix	UMA Tach Pickup for Bendix Mags	11-08335	**$95.00**
SD 1GB	1GB SD Card with North American Databases	11-05569	**$50.00**
Shunt	50mV Shunt - 50 Amp	11-08330	**$20.00**
CAP	10,000uF / 25V Electrolytic Capacitor	11-05724	**$6.50**
Transorb	33V High Speed transorb	11-05727	**$6.00**

STRATOMASTER EXTREME EFIS

The Stratomaster Extreme is a glass cockpit primary flight and EMS system for use in light aircraft. The Extreme is designed specifically for outdoor use in aircraft with open cockpits. Able to give excellent viewing quality in poor light conditions under low and high temperatures, the Stratomaster Extreme is the most complete and compact light aircraft instrumentation package available on the planet today. Providing a multichannel EMS as standard, the Extreme gives you the ability to keep a close watch on your engine and to optimise your engine performance. The EMS is highly configurable in true Stratomaster fashion and is therfore suitable for a large range of engines from small two-strokes to four cylinder four strokes. Rotax engines are of course usable from the 447 to the 914 but the EMS is not limited to just Rotax engines - connect just about anything you like, from VW to Jabiru to 2SI.

P/N 11-05571 .....**$1,195.00**

STRATOMASTER ULTRA HORIZON XL

• Altitude to 40 000 ft (12 195 m) calibrated, 1ft dynamic resolution • Airspeed ASI analog and digital, TAS digital • Stopwatch • Glide and climb ratio to 1/99 • QNH 960 to 1 060 mb (28.3 - 31.3 Inch of Hg) • QNE 1013 mb quick select (29.9 Inches of Hg) • Time of day, Date for flight log entries • Air time since take-off (or lesson time) • Ambient temperature using external sensor • Up to two Fuel level using flow sender or optional level sender • Fuel flow using optional flow sender • Current range estimate (range at current speed and fuel burn) • Fuel bingo estimate (time until tank empty) • Range calculator using manually entered ground speed • Air distance made good • Voltage. Supply to unit. Usually 12V battery. • VSI +/- 9 990 ft/minute (50.7 meters per second) range • Flight log storing up to 200 entries • Hobbs meter, presetable to current engine time • Density altimeter • Barometer for ambient pressure • Aircraft registration number display • Maintenance timer • Warnings for engine temperature, speed high, speed low, maximum altitude, low fuel level, etc • Alarm output to switch a warning lamp • Audio alarm output to drive a panel speaker or low level output for alarm tone injection into a suitably equipped headset or intercom system. • Master and slave modes for dual instrument setup • Measuring take-off run to 50 ft (15.24 m) above ground level • Artificial horizon (requires SP-4) • Slip indicator (requires SP-4) • Rate of turn indicator (requires SP-4) • Compass (requires SP-2) • Air talk link for connection to; - PC's and Laptops using optional cable - Stratomaster "Black Box" flight recorder - Stratomaster Ultra secondary instrument - Key ring flight log download device - Compass and AHRS sensor packages. P/N 11-05550..... **$945.00**

OTHER MGL PRODUCTS			
RDAC VD	RDAC VD, 4-Channel Thermocouples	11-05554	**$160.00**
RDAC VT	RDAC VT, 4-Channel Therm for Turbine Engines	11-05553	**$165.00**
RDAC X-B	RDAC X-B, 12 Channel Thermocouples	11-05552	**$230.00**
RDAC X-D	RDAC X-B, 12 Channel Therm with MAP	11-05556	**$335.00**
IOX	In/Out Extender	11-08336	**$209.95**
AHRS ATTITUDE / HEADING SENSORS			
SP-5	SP-5 Advanced Attitude Sensor (Horizon)	11-06554	**$2,150.00**
SP-6	SP-6 Magnetometer Sensor (Compass)	11-09744	**$260.00**
SP-7	SP-7 Standard Attitude Sensor (Horizon)	11-09743	**$800.00**
STRATOMASTER 2-1/4" INFINITY SINGLES			
ALT-1	Encoding Altimeter	11-05702	**$310.00**
ALT-2	Encoding RS232 Altimeter	11-05703	**$320.00**
ASI-1	Airspeed Indicator	11-05704	**$280.00**
ASX-1	Encoding Altimeter / Airspeed Indicator	11-05705	**$350.00**
AV-1	AHRS Display	11-05706	**$215.00**
BAT-1	Battery Voltage / Current Monitor Inc 50 Amp Shunt	11-05707	**$245.00**
E3 EMS	Engine Monitoring System	11-06442	**$280.00**
FF-1	Fuel Computer	11-05713	**$265.00**
GF-1	G-Force Indicator	11-05715	**$240.00**
MAP-1	Universal Pressure Indicator	11-05716	**$270.00**
RTC-2	Aviation Real Time Clock	11-06443	**$225.00**
RV-1	Universal RPM Indicator	11-05717	**$225.00**
RV-2	Turbine RPM Indicator	11-05718	**$225.00**
TC-1	4-Channel Thermocouple Temp	11-05719	**$250.00**
TP-1	Universal Temp/Press Display	11-05720	**$215.00**
STRATOMASTER 3-1/8" VELOCITY SINGLES			
ALT-3	Altimeter	11-05572	**$325.00**
ALT-4	Encoding Altimeter (Gillman Code)	11-05684	**$350.00**
ASI-3	Airspeed Indicator	11-05573	**$300.00**
ASX-2	Altimeter / Airspeed Indicator	11-05687	**$355.00**
AV-2	AHRS Display (Requires SP-2 & SP-4)	11-05690	**$235.00**
E1-EMS	Engine Monitor System	11-05578	**$315.00**
FF-3	Fuel Computer	11-05576	**$275.00**
Flight-2	Primary Flight Display	11-05575	**$420.00**
GF-2	G-Force Indicator	11-05693	**$260.00**
MAP-2	Manifold Pressure / RPM	11-05695	**$285.00**
ROTOR-1	Rotor / Engine Tach	11-07812	**$255.00**
RTC-1	Aviation Real Time Clock	11-05696	**$220.00**
RV-3	Universal RPM Indicator	11-05697	**$230.00**
TC-2	4-Channel Thermocouple Temp	11-05698	**$255.00**
TC-3	12-Channel Thermocouple Temp	11-05699	**$340.00**
TP-2	Universal Temp/ Press Display	11-05701	**$225.00**

EFIS SYSTEMS

FLIGHT CHEETAH FL190

Cheetah FL 190 has all the capabilities and ability to upgrade of the Flight Cheetah line at a price that is affordable for every cockpit. The FL 190 runs on a combination of hard keys and touch screen access (stylus not required)
Package includes: • Flight Cheetah FL 190 display • Complete TrueMap software package • WAAS GPS Receiver by US Global SAT • AC power adapter DC power adapter (accepts 9-28 volts) • 4 cell Rechargeable Lithium ION Prismatic Battery.
Specifications: • Intel Atom 1.3GHz Processor • 1gb DDR2 Ram • 7" diagonal High Contrast LCD. • 16GB SLC Solid State Hard Drive (32GB option available) • 802.11 a/b WIFI • Resolution 1024x600 • 1 USB 2.0, H/P jack, DC in. • Dimensions 8.2 x 4.6 x 0.8 • Weight 1.48 lbs.

True Flight Cheetah FL190 Display..... P/N 11-04828.....**$1,524.85**
True Flight WXWORX Receiver ..... P/N 11-04830.....**$595.00**
True Flight WXWORX Software ..... P/N 11-04831.....**$195.00**
True Flight XRX Traffic Software..... P/N 11-04832.....**$181.95**
True Flight Electric Attitube Ind. ..... P/N 11-04834.....**$795.00**

FLIGHT CHEETAH FL210

With the FL 210 you get the an optimal combination of affordability, incredibly high quality bright display, and a range of capabilities unequaled by anything else you will see out there in the industry (see comparison below).
The FL210 is comparable to the certified panel install MFD's in the $10,000-$20,000 range but with far more capabilities, and a far more affordable upgrade path for the future.
Package includes: • Flight Cheetah FL210 display • Complete TrueMap software package • WAAS GPS Receiver by US Global SAT • AC Power Adapter • DC Power Adapter (accepts 9-28 volts) • Video and instructional manuals.
Specifications: • 1gb DDR2 Ram • 6.5" diagonal High Contrast LCD. • 16GB SLC Solid State Hard Drive • Resolution 640x480 • 3 Hi-Speed USB 2.0 Ports • Dimensions 8.06" H x 5.44 " W x 1.93" D. • Weight 2.7 lbs.

True Flight Cheetah FL210 Display..... P/N 11-04829.....**$2,995.00**
True Flight WXWORX Receiver ..... P/N 11-04830.....**$595.00**
True Flight WXWORX Software ..... P/N 11-04831.....**$195.00**
True Flight XRX Traffic Software..... P/N 11-04832.....**$181.95**
True Flight Electric Attitube Ind. ..... P/N 11-04834.....**$795.00**

HADRON MULTINAV

From a fully featured synthetic vision EFIS to a marine chart plotter, the Hadron is packed with features to make your travel easier and more pleasant, all in a lightweight portable unit.
For flying it acts as a combined MFD / PFD including all main instruments like 2D Moving Map and HSI, 3D Topographic textured vision (3DTTV), attitude, compass, altimeter, rate of climb, ground speed, wind data, waypoint and distance indication, fully featured flight planning and many more. With the built-in Collision Avoidance System you will be able to rapidly identify and avoid traffic conflicts.
While driving it acts as a complete GPS navigator with highly optimized routing and 3D / 2D display.
For sailing it provides marine charts and synthetically generated 3D view of the sea floor and shoreline.
And that's not all... The Hadron is also equiped with Wi-Fi and Bluetooth connectivity and can provide features like web browser, e-mail client, media player etc. Using the Wi-Fi connection you can download weather data, NOTAMs or other valuable information right before your trip. Using the Bluetooth a number of accessories can be connected to the Hadron like the Topwing Inertial Unit to provide real time, 9DOF attitude and acceleration data.OF attitude and acceleration data.

See www.aircraftspruce.com for complete specifications

Multi-Nav ..... P/N 11-09913.....**$2,375.00**
Inertial Unit ..... P/N 11-09914.....**$595.00**

VERTICAL POWER VP-400

The Vertical Power VP-400 is a next-generation backup EFIS that complements today's primary EFIS products and incorporates its own independent solid-state gyros, GPS receiver, and electronic circuit breaker system.
The Vertical Power VP-400 is a back-up EFIS that flies your aircraft safely to the best runway in an emergency. The best airport is the one with the longest and widest runway that is pointed most directly into the wind that you can still safely glide to without impacting terrain or obstacles. THAT is the airport you want to glide to in an emergency! Your existing GPS nearest function understands none of these things.
The VP-400 is built using the same field-proven hardware and software technology as our other products. It's been proven in hundreds of experimental aircraft over thousands of flight hours. And you can easily wire backup circuits for critical avionics to eliminate any single point of failure concerns.
The VP-400 system includes a display, GADAHRS (GPS, air data, attitude, heading reference system), and one power distribution unit (PDU).
Requires connector-only kit or wiring harness kit.
Note: You do not need a crimp tool if you're ordering the wiring harness kit, which has the terminals already crimped on the wire. Crimp tools are only needed for connector-only kit.

Description	Part No.	Price
VP-400	11-10546	**$7,728.00**
Accessories	**Part No.**	**Price**
VP-400 Wire Harness Kit	11-10547	**$579.00**
VP-400 Connector Only Kit	11-10548	**$289.95**
VP-400 PDU Mounting Tray	11-10549	**$115.95**
VP-400 Display Angle Bracket	11-10550	**$77.50**
Crimp Tool	11-09836	**$56.75**

VERTICAL POWER VP-400 DUO

The Vertical Power VP-400 is a next-generation backup EFIS that complements today's primary EFIS products and incorporates its own independent solid-state gyros, GPS receiver, and electronic circuit breaker system.
The Vertical Power VP-400 is a back-up EFIS that flies your aircraft safely to the best runway in an emergency. The best airport is the one with the longest and widest runway that is pointed most directly into the wind that you can still safely glide to without impacting terrain or obstacles. THAT is the airport you want to glide to in an emergency! Your existing GPS nearest function understands none of these things.
The VP-400 Duo system includes a display, GADAHRS (GPS, air data, attitude, heading reference system), and two power distribution units (PDUs). The Duo is recommended for true dual-independent bus electrical architecture (two batteries, two master contactors, two independent alternators, and a cross tie contactor) or a single bus architecture that needs more circuits than a single PDU can provide.
Requires connector-only kit or wiring harness kit.
Note: You do not need a crimp tool if you're ordering the wiring harness kit, which has the terminals already crimped on the wire. Crimp tools are only needed for connector-only kit.

Description	Part No.	Price
VP-400 DUO	11-10551	**$10,625.00**
Accessories	**Part No.**	**Price**
VP-400 DUO Wire Harness Kit	11-10552	**$966.00**
VP-400 DUO Connector-Only Kit	11-10553	**$389.00**
VP-400 PDU Mounting Tray	11-10549	**$115.95**
VP-400 Display Angle Bracket	11-10550	**$77.50**
Crimp Tool	11-09836	**$56.75**

AV

CAMERA SYSTEMS

MOTOCAM 360 SINGLE CAMERA WITH QUICK RELEASE CABLE

1080p Single camera with quick release audio cable. Video - 5 Megapixel Sensor, H.264 Codec, .mov file type Audio Standard - GA audio headset interface (6ft cable), AAC Audio Compression Lens - Wide Angle Lens: 135°: High Definition, 110°: Standard Definition, Dual alignment lasers Memory - Removable MicroSD, Capacity: 16GB (2GB included), Average Record Time HD >> 30 min / GB, SD >> 60 min / GB Body - Water Resistant Aluminum Shell, TRail™ Mount System Battery & Power - Removable Lithium-Ion Battery, Record Time: Up to 2 hours, Charge via USB to computer or chargers (sold separately), Charge time: 3 hours (average) P/N 11-09357.....**$598.95**

Motocam 360 4 Camera System with Quick Release Cable - 4 Cameras with a 4 Channel Control Box, 4 Camera Cables, and 4 Mounts.
P/N 11-09361.....**$2,199.99**

MOTOCAM 1080P SINGLE CAMERA WITH QUICK RELEASE CABLE & LCD

1080P Single camera with quick release audio cable and integrated LCD. Features: Sensor type: CMOS, Water Resistance: 0.5m, Video resolution: 1080p, 720p & WVGA, Video format: H.264, File format: .MOV, Frames per second: 30 FPS, Video format: 16:9, Lens Rotation: 300°, Recording Angles: 127° in 1080p, 170° in 720p & WVGA, White balance: Auto, Exposure: Auto / Manual (advanced users), Zoom: Digital x4 (in 720p & WVGA mode), Standard GA audio headset input (6ft cable), AV Output: HDTV out (cable included), Battery: 1110mAh rechargeable lithium-ion. Power-Save option saves batteries by powering down the screen, Built-in memory: 32 MB SDHC memory capacity: Supports memory cards up to 32 GB Photo resolution: 5 Megapixel LCD screen: 1.5" colour TFT Lens focal range: 0.5m to infinity. P/N 11-09358.....**$599.95**

Motocam 1080P Dual Camera System with Quick Release Cable & LCD- 2 Cameras with a 4 Channel Control Box, Camera Cables, and Mounts.
P/N 11-09616.....**$1,499.00**

MOTOCAM 1080P 4 CAMERA W/ QUICK RELEASE CABLE & LCD - 1080p 4 camera with quick release audio cable and integrated LCD. Camera Mounts: Choose flat Mount (4), Ubolt mount(4), or strap mount(4)..... P/N 11-09362 .....**$2,299.95**
Wireless..... P/N 11-10003 .....**$2,499.00**

MOTOCAM 1080P SINGLE CAMERA WITH QUICK RELEASE CABLE & GPS

1080p Single camera with quick release audio cable. Video - 5 Megapixel Sensor, H.264 Codec, .mov file type. GPS - Built-in GPS receiver, "Time to first fix" using AssistNow™ Service Audio Standard - GA audio headset interface (6ft cable), AAC Audio Compression Lens - Wide Angle Lens: 135°: High Definition, 110°: Standard Definition, Dual alignment lasers Memory - Removable MicroSD, Capacity: 16GB (2GB included), Average Record Time HD >> 30 min / GB, SD >> 60 min / GB Body - Water Resistant Aluminum Shell, TRail™ Mount System Battery & Power - Removable Lithium-Ion Battery, Record Time: Up to 2 hours, sold separately) P/N 11-09359.....**$648.95**

Motocam 1080P 4 Camera System with Quick Release Cable & GPS- 4 Cameras with a 4 Channel Control Box, 4 Camera Cables, and 4 Mounts. P/N 11-09363.....**$2,283.00**

MOTOCAM 1080P SINGLE CAMERA WITH QUICK RELEASE CABLE/LCD/GPS

1080p Single camera with quick release audio cable, integrated LCD, integrated GPS Video: Sensor Type: 1/3.2" 5M pixels CMOS, Light Sensitivity: Low-light sensitivity (>1.3V/lux-sec), Video Format: H.264 in Quicktime format (.mov) for Windows and Mac OS. Exposure Control: Vivid, Negative, B&W, Sepia, Art modes Photo Resolution: Supports 3 megapixel and 5 megapixel, Photo Burst Capture: Continuously 3 photo and 5 photo bursts Capture Modes: Single Shot, Countdown Timer: 5s and 10s settings Night Mode and White Balance adjustments Audio: Standard GA audio headset interface (6ft cable), Audio Format: 48kHz (Max.) ADPCM Power: Removable Lithium-Ion Battery, Record Time: Up to 2 hours GPS Module: Maps location where the video was shot on Google Maps, Shows corresponding acceleration and altitude on Google Maps Compatible with Windows XP, Windows 7 and Windows Vista Operating Systems Requires use of Quick Time 7 or greater, Not compatible with Mac OS.
P/N 11-09360.....**$698.95**

Motocam 1080P 4 Camera System with Quick Release Cabel, LCD, and GPS - 4 Cameras with a 4 Channel Control Box, 4 Camera Cables, and 4 Mounts. P/N 11-09364.....**$2,399.95**

AV

MOTOCAM ACCESSORIES

MOTOCAM 16GB MICRO SD CARD - MotoCam 16GB Micro SD Card w/ Adapter P/N 11-09366 .....**$54.25**

MOTOCAM 1080P STRADDLE - For MotoCam 1080P camera systems P/N 11-09367 .....**$38.95**

MOTOCAM NC360 5HOUR BATTERY - 5 Hour Li Ion DVR Battery (2200mAh) for extended video recording (2005 - 2008 DVR). 3.6V P/N 11-09434 .....**$49.95**

CONTOUR+ CAMERA

With the largest lens of any PoV camera, the Contour+ captures beautiful 1080p video. The 2.8" aperture, 170° wide-angle rotating lens delivers the truest, high quality image with minimal distortion and fisheye. It records and streams Full HD in all its glory - all from Contour's unique, award-winning form-factor. The Contour+ is specifically set up for capturing the perfect visuals. The reason is a market-leading mix of camera technology, from a six-element glass lens and 1080p video quality, to adjustable white balance for dialing in the details of each location. The Contour+ also expands normal perspective with an F 2.8, 170° superwide-angle lens, integrating peripherals and backdrops that would get cropped with a narrower focus. In addition, we incorporated a 270° rotating lens to allow you mount or position the camera in an infinite number of ways.
The camera also connects via an HDMI port, allowing live streaming of HD video via monitor or TV - to quickly and easily watch and enjoy your videos. This eliminates the lag time of downloads and transfers when checking footage on location or back home.
NOTE: Camera may be used for aircraft use, but it is not designed specifically for use in aircraft. Additional hardware may be needed if mounting on a plane. (Hardware not available through this manufacturer.)
P/N 11-10406.....**$499.99**

A/V-ATOR HD GPS IN-COCKPIT CAMERA SYSTEM

The A/V-ator HD system records in-flight video at 1080 resolution, while recording crystal-clear aircraft radio/intercom audio with Light Sport Group's proprietary noise-reduction circuitry. GPS speed, altitude, and position data are encoded with the video. Also included, are enhanced optical components which minimize the rotating propeller distortions that are common on CCD-camera video systems.
P/N 11-10019.....**$595.00**

CAMERA SYSTEMS

MOTOCAM CAMERA SYSTEMS

4 CAMERA SHOCKBOX DIGITAL VIDEO RECORDING SYSTEM

Package Contents:
* Sony 550 CCD color camera (4) * 12 foot camera cables (4) * RAM ball and socket camera mounts (4 set) * Stereo audio communication cable (1) * 4Gb SD memory card (1) * Video Editing Software (1) * TV & PC video transfer cables (2) * Charger(1)

PN 11-07112..... **$1,799.95**

BLIND SPOT ELIMINATOR

Package Contents:
* 4" Color LCD Monitor (1) * 12Volt Input Wire Harness (1) * Sony 550 CCD Color Camera (1) * RAM ball and socket camera mount (2) * Note: Video recording can be added separately.

P/N 11-08138..... **$749.95**

VIDEO DATA SYNCH BOX

Package Contents:
* Data Acquisition Box (1) * Wire harness (1) * GPS Receiver Puck (1) -Air Speed -Altitude -Heading -Location Option: - Garmin Data Port Cable - GPS receive puck. 12-32v input. Rugged aluminum housing construction. Simple 3 button design. Automatic real-time GPS data overlay on to composite video stream. Less than 1amp power draw. RCA style video input/output
Note: The video data synch box can be added to any standard composite video recording system. P/N 11-08137..... **$725.00**

MOTOCAM HARDWIRE OPTION

MotoCam 360 step down voltage regulator connector (In-line). This regulator will reduce the aircraft voltage from 24v down to 12v to supply any MotoCam 360 on-board video recording system constant power for unlimited video recording run-time. P/N 11-08342..... **$72.50**

ADVANCED TRAVEL MOUNT (ATM)

The Advanced Travel Mount (ATM) is a small, lightweight portable travel system designed to provide stabilized video shoots at an economical price. The user supplies their own camera and power. The ATM system requires no assembly. Simply attach the camera and power up to the gyros. Maximum camera weight is 10 lbs. The system comes with a one year warranty. The ATM systems are used in helicopter and fixed wing aircraft. Helicopters, cars, boats, ATV's, etc. The ATM is a camera tripod with accessories and weighs 16 lbs plus camera weight. It must remain portable and cannot be bolted to the airplane, helicopter, or vehicle. It is usually placed on the seat next to the camera operator and the seat belt is used to secure it. It can also be taped or strapped down. There are two power cables included. One cable can be used on a small rechargeable (user supplied) 12 V 18-35 amp battery (available at Aircraft Spruce). The second cable is a cigarette adapter and can be used in a 12 V source of least 10 amps. The ATM flys under FAR91.21 for Portable Electronic Equipment. **Note**: This is a portable camera stabilizer and does not attach to the helicopter or aircraft, they do not need an STC or 337.
In The Box: 1 ATM Gyro Platform, 2 KS-8 Tungsten Gyros, 1 - 2 Output 12 Volt Inverter/ Power Cables, 1 - Molded Travel Case.

P/N 11-09854..... **$11,495.00**

REMOTE CAMERA SYSTEM

• Mounts a traditional camcorder (i.e. Sony) • 360 degrees of rotation • 50 degrees of tilting ability • Optional stick grip with built in hat switch • Remote switch control • Weight - 7lbs • Dash mounted LCD screed to see what the camera is seeing • Vibration dampening built into mounting bracket.

Description	Part No.	Price
Basic Kit - Includes camera mount system with remote switch	11-04318	$750.00
Deluxe Kit - Includes camera mount system with remote switch and LCD screen	11-04319	$981.00
Super Deluxe Kit - Includes camera mount system, built in grip switch, & LCD screen	11-04320	$1,245.00

ACCULOCK BLACK BOX CAMERA PLANE/CAR

Features of the Acculock Black Box Camera include 2CH video recording, GPS module (speed & location info), exclusive viewer playback, indoor infrared recording, and an online map (Google). Great for planes and cars

P/N 11-10444..... **$499.00**

DATATOYS AV-HD AIRCRAFT CAMERA SYSTEM

The AV-HD is a high definition aircraft camera system which records video in full 1080P HD featuring a built-in LCD screen. AV-HD is compact and loaded with features. Using the included Headset Adapter Cable, the AV-HD is capable of recording crisp headset audio as well. Camera, recorder, and cable are all water resistant, rugged and built for harsh environments!
Features an advanced lens system that mitigates the propeller in the video providing a pleasant translucent blur. Wide Field-of-View of 170 degrees providing the widest angle available. Mounting is a snap using the built in 2.0" LCD and one of the many camera mounts included in the system. A cigarette power plug adapter is included. Videos can be easily downloaded using the USB cable or straight from the SD card. Video files can be viewed on a PC or a Mac with no special software needed, and can be easily uploaded to YouTube. P/N 11-09963..... **$499.00**

DATATOYS UDVP SPORT PLUS DUAL CAMERA SYSTEM

The UDVP recorder offers two channels of video with multiple user interfaces, media types, and modules. The UDVP Sport Plus 2 System includes everything you will need to start recording whether it be airborne recording or any other aviation application. Sport Plus 2 Systems include the UDVP Recorder, (2) WD-600 Wide Angle Bullet Cameras and all of the basic accessories for mobile recording. Solid metal, waterproof connections and 360 degree shielded cabling designed for harsh environments and airborne digital video recording. Feature the only prop filtering technology built into a camera. Designed for general aviation applications.

UDVP Sport Plus Dual Camera Systems..... P/N 11-09595..... **$2,199.00**
Aviation Headset Adapter Cable ..... P/N 11-09596..... **$79.99**
Record Start/Stop Switch ..... P/N 11-09599..... **$69.99**

DATATOYS UDVP PRO PLUS DUAL CAMERA SYSTEM

The UDVP recorder offers two channels of video with multiple user interfaces, media types, and modules. The UDVP Pro Plus 2 System includes everything you will need to start recording whether it be airborne recording or any other aviation application. Pro Plus 2 Systems include the UDVP Recorder, (2) WD-600 Wide Angle Bullet Cameras and all of the basic accessories for mobile recording. Solid metal, waterproof connections and 360 degree shielded cabling designed for harsh environments and airborne digital video recording. Feature the only prop filtering technology built into a camera. Designed for professional users with the highest video quality, featuring Military grade cabling and connectors for determinant installations. The UDVP-Pro also has the ability to upgrade to Full HD.

DVP Pro Plus Dual Camera System ..... P/N 11-09594..... **$2,799.00**
Aviation Headset Adapter Cable ..... P/N 11-09597..... **$79.99**
Record Start/Stop Switch ..... P/N 11-09598..... **$69.99**

FLYVIE PRO RECORDER

The Flight Recorder Pro is a patented and portable flight recorder. The unit captures and records high quality video from two small cameras, as well as GPS data and audio from internal and external communications in the cockpit. Captured imagery includes the pilot's view and the instrument panel as well as the pilot's manipulation of the flight controls. The data is saved to a small personal memory card which can then be downloaded and reviewed, analyzed and tagged over the Internet.
Package includes: Netbook, 2 - Webcams, GPS cable and accessories.
Features: Video record two views - both instrument panel and external horizon views, Audio record the cockpit and ATC communication, View your flight recording with GPS track overlaid on Google Earth, Share tagged segments of your flight with others - anytime, anywhere

P/N 10-04513..... **$1,795.00**

QSTARZ GPS FLIGHT RECORDER

The Best Economical and Efficiency Solution Applied by GPS BT-Q1000XT adopts the latest GPS chip-set MTK II bringing you the highest performance and longest battery life for your special commercial requirements. With it reliable and durable design, BT-Q1000XT is definitely the best choice to improve your bottom line: lower the cost and improve efficiency. Make your business having more bargaining power and competitive advantages over your competitors. **Powerful Software Integrated with Google Map**

P/N 11-08343..... **$110.00**

AV

ANTENNAS

ADVANCED AIRCRAFT ELECTRONICS HIGH GAIN AIRCRAFT ANTENNA SYSTEMS

Here is a new series of aircraft antennas specifically designed to be used without a ground plane. This means that composite aircraft and fabric covered aircraft can now have their antennas mounted totally within the structure. These antennas are designed using the latest engineering technology. Laboratory measurements show them to have better electrical characteristics than currently available products. The unanimous reports from pilots who have been using them confirm that they out perform everything now available on the market. One antenna model works for communication, navigation, and for ELT (Three antennas in the aircraft, but all the same design), and this design is tolerant to installation errors. They will work in metal airframes when a plastic or fiberglass wing tip or similar plastic component is available to provide the mounting structure. The VHF antennas, 5T and 5I, differ only in the location of the BNC connection. The 5T is configured to allow the coax cable to be routed flat along the mounting surface of the airframe. This antenna model would be appropriate for a composite aircraft where the antenna would be mounted in the fuselage or fin and the coax would be close to the skin and be attached periodically for strain relief. In either case, the antenna can be used as a retrofit on in service aircraft or in new installations. The 5I series has the BNC connection positioned so that the coax cable would route out and away from the antenna mounting surface. This configuration is offered for antenna installations such as wing tips of fabric aircraft. If the antenna is mounted on the inside of the tip, the coax route is directly inward toward the wing root and the BNC connection is located near the spar to provide support for the cable. Both antennas are identical in their electrical performance.

Features: Inside mounting. Use with composite skins. Use with fabric covered airframes. Glue or bond to the airframe. Light weight. Wide service temperature, No ground plane corrosion, Mount anywhere inside, Maximum range with low VSWR. Model VHF series designed for comm or nav or ELT. Guaranteed against failure for the life of the airframe. Adapts to existing airframes or to in process construction.

Model 5I (straight BNC connector) NAV/COM Antenna..... P/N 11-04261..... **$118.95**
Model 5T (right angle BNC connector) NAV/COMM Antenna..... P/N 11-04262..... **$118.95**
Model L2 Transponder Antenna..... P/N 11-04212..... **$98.95**

COMANT GPS ANTENNAS

GPS antenna kits from Comant enable you to install a low profile aerodynamic GPS antenna to the exterior of your aircraft. These antennas are all FAA approved under TSO C129, provide superior GPS signal acquisition, and are resistant to ice build-up in flight. All kits come complete with 10' of coax cable. Call with Comant Part No. for pricing on the Comant C1401, C1405, CI-406, OR CI4510 series antenna you require.

CI 401 ANTENNAS

These antennas are designed for aircraft up to 600 knots and feature a rectangular footprint. Available in active or passive models. Height: 0.75". 50 ohms.

CI 401 ACTIVE ANTENNAS		
APPLICATION	**P/N**	**PRICE**
Magellan w/detachable antennas except 5000A, Garmin 55, 89, 90, 95, 100, 150, 155, 165, 250, Skyforce, and panel GPS requiring 26 dB gain		
Antenna Only	CI-401-220	**$422.95**
CI 401 Passive Antennas (limited to 10' run of RG142 or 6' of RG58)		
Magellan w/detachable antennas incl. 5000A, Garmin 55, 89, 90, 95, 100, 150, 155, 165, 250, Micrologic Super Sport & all other GPS receivers requiring a passive antenna.		

COMANT CI 4510 GPS/COM ANTENNAS

The Comant CI-4510 antennas are ideal for use on any GPS/COM dual application and feature upper hemispheric, right hand circular polarized sense pattern (1575 MHz).

CI 4510 ACTIVE ANTENNAS		
APPLICATION	**P/N**	**PRICE**
II Morrow, Precedus, 920/+	CI4510-3K1C	**$518.95**
Magellan w/detachable antennas except 5000A, Garmin 55, 89, 90, 95, 100, 150, 155, 165, 250, Skyforce, and panel GPS requiring 26 dB gain		
	CI4510-6KC	**$528.95**
w/pass thru holes	CI4510-7KC	**$547.95**
Bendix King KLX100	CI4510-6K2C or CI4510-7K2C	**$524.95**
CI 4510 PASSIVE ANTENNAS (COMES W/10' COAX.)		
Magellan w/detachable antennas incl. 5000A, Garmin 55, 89, 90, 95, 100, 150, 155, 165, 250, Micrologic Super Sport & all other GPS receivers requiring a passive antenna.		
	CI4510-32KC	**$355.95**
Lowrance Eagle, Sport, Airmap	CI4510-32K3C	**$358.95**
Bendix King KLX100 (only)	CI4510-32GK2C	**$355.95**
King KLX-100 Interface Cable	11-19849	**$35.50**

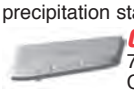
COMANT MARKER BEACON ANTENNAS

CI-102 MARKER BEACON - Frequency 75 MHz. For use with the modern, high sensitivity marker beacon receivers. Featuring 4-hole internal mounting for simple installation. Enclosed in an injection molded radome which is impervious to the tough environments typical of the underside of an aircraft. Skydrol and rain erosion resistant. DC grounded to minimize accumulation of precipitation static. P/N 11-17931.....**$137.95**

CI-118 MARKER BEACON - Frequency 75 MHz. Designed specifically for high-performance aircraft applications. Features aerodynamic design in a lightweight package. Antenna is a low profile blade-type encased in a molded polyurethane shell. Skydrol and rain erosion resistant. P/N 11-17932.....**$343.95**

COMANT MARKER BEACON (CI-118-1) - Frequency • 75 MHz. Low-drag, lower profile alternative to the popular CI 102 "boat style" marker beacon antenna. Approved for medium to high performance single, turbo-prop or jet aircraft and provides simple external mounting. Skydrol and rain erosion resistant. DC grounded to minimize accumulation of precipitation static. P/N 11-06847.....**$516.00**

COMANT MARKER BEACON (CI-118-9) - Frequency 75 MHz. Identical to the CI 118 except the mounting configuration allows for "drop-in" replacement to the Honeywell Bendix-King KA 26 Marker Beacon. This Comant design has been tested to the tough DO-160D environmental standards. Skydrol and rain erosion resistant. DC grounded to minimize accumulation of precipitation static. P/N 11-06989.....**$492.95**



COMANT MARKER BEACON (CI-118-10) - Frequency 75 MHz. This Comant marker beacon is identical to the CI 118 except with a 4-hole through mount configuration. This model has been tested to the tough DO-160D environmental standards. Skydrol and rain erosion resistant. DC grounded to minimize accumulation of precipitation static. P/N 11-06848.....**$493.95**

COMANT MARKER BEACON (CI-164) - Frequency • 75 MHz. Lightweight flush mount provides for dualmarker beacon signal outputsatthe antenna, eliminating theneed fora separate marker beacon splitter. Antenna is housed in a aluminum enclosure with a glass laminate cover. Internal components are potted in place for mechanical integrity. The CI 164 is designed for curved "crown" surface mounting as is currently used on the Cessna Citation I and II. P/N 11-06850..**$1,310.00**

COMANT MARKER BEACON (CI-165) - Frequency • 75 MHz. Lightweight flush mount antenna, provides for dual marker beacon signal outputs at the antenna, eliminating the need for a separate marker beacon splitter. Antenna is housed in a aluminum enclosure with a glass laminate cover. Internal components are potted in place for mechanical integrity. The CI 164 is designed for curved "crown" surface mounting as is currently used on the Cessna Citation I and II. P/N 11-06851..**$1,188.00**

COMANT GPS/ORBCOMM ANTENNA CI-2480-101 - Using the CI-248 radome, this antenna provides GPS for Garmin™ receivers and ORBCOMM™ Data Link Capability in a single footprint that matches standard VHF antenna configurations. This means the antenna offers nearly a "drop-in" installation process for your avionics technician. P/N 11-07075.....**$243.95**

AV

COMANT ANTENNAS

COMANT DME/TRANSPONDER ANTENNAS

COMANT DME/TRANSPONDER (CI 100 SERIES) - All Metal Blade DME/Transponder antenna designed and developed for Mach 2 military aircraft. Design is unique in the blade and mounting base are die-cast as one piece with no dielectric material in the airstream. Standard six-hole mounting configuration. See Order Options for available connectors

ORDER OPTIONS			
Connector	**Model**	**Part No.**	**Price**
BNC	CI 100	11-06812	**$222.95**
TNC	CI 100-2	11-06813	**$252.95**
C	CI 100-3	11-06814	**$309.95**
HN	CI 100-4	11-06815	**$370.95**
N	CI 100-5	11-06816	**$286.95**

CI-101 TRANSPONDER ANTENNA – Frequencies Covered 1030-1090 MHz. Transponder antenna with top loaded stub monopole. Contact points are made from beryllium copper. Mounts through a single 0.600" diameter mounting hole.
P/N 11-17970 ..... **$99.50**

CI-105 TRANSPONDER/DME ANTENNA – A very broadband and rugged antenna which is encased in glass reinforced molded shell. Rated to 400 kts. TAS. Height. 3.25"; Wt. 0.2 lb. Does not include BNC or hardware. P/N 11-17965 ..... **$137.95**

COMANT DME/ TRANSPONDER (CI -105-3) - Frequencies Covered 75 MHz. Antenna configuration specifically designed for external applications using a three hole flange mounting. BNC female connector. P/N 11-06810.....**$309.95**

COMANT DME/XPDR (CI -105-6 & 105-7) - Frequency • 960-1220 MHz. Comant CI 105-3 DME/ Transponder antenna. Ant signed for external applications using a three hole flange mounting. BNC female connector.
CI 105-6 connector - BNC . P/N 11-06811..**$280.95**
CI 105-7 connector - C ..... P/N 11-06817..**$346.95**

COMANT DME/ TRANSPONDER (CI-105-9) - Frequency • 960-1220 MHz. Antenna assembly encased in a glass reinforced polyester molded shell. Comes standard with a 6" extension coax cable and BNC connector. This model offers standard two stud mounting, where the studs are extended to 1 inch in length. P/N 11-06818.....**$236.95**

COMANT DME/ TRANSPONDER (CI -105-16) - Frequency • 960-1220 MHz. Was designed specifically for the Honeywell Bendix- King™ KA60. This unit offers the extended length two-stud mounting found on the KA60. Tested to the tougher DO-160D environmental requirements, this antenna offers the best in ruggedness and performance.
P/N 11-06819.....**$140.95**

COMANT DME/ XPDR (CI-110-40-30) - Frequency • 960-1220 MHz &1030-1090 MHz. All metal, low profile antenna is designed for business jet and commercial high speed aircraft. With a popular four hole mount and connector with open path to ground, this antenna is ideally suited for those aircraft equipped with standard and Mode S transponders. Tough one piece construction provides 175 lbs. side load capability. Moisture failure is prevented with completely sealed construction.
P/N 11-06820.....**$296.95**

COMANT DME/ TRANSPONDER (CI-110-41-30) - Frequencies Covered 960 -1220 MHz. All metal, low profile antenna is designed for business jet and commercial high speed aircraft. With a popular four hole mount and connector with short path to ground, this antenna is ideally suited for those aircraft equipped with standard and Mode S transponders. Tough one-piece construction provides 175 lbs. side load capability. Moisture failure is prevented with completely sealed construction.
P/N 11-06821.....**$368.95**

COMANT DME/XPDR (CI -110-60-30) - Frequency • 960-1220 MHz & 1030-1090 MHz. All metal, low profile antenna is designed for business jet and commercial high speed aircraft. Six hole mount and connector with open path to ground. Suited for aircraft equipped with standard and Mode S transponders. Provides 175 lbs. side load capability. Moisture failure is prevented with completely sealed construction.
P/N 11-06822.....**$303.95**

COMANT DME/ XPDR (CI-110-61-30) - Frequency • 960 -1220 MHz. All metal, low profile antenna is designed for business jet and commercial high speed aircraft. Six hole mount and connector with short path to ground. Suited for those aircraft equipped with standard and Mode S transponders. Tough one-piece construction provides175 lbs. side load capability. Moisture failure is prevented with completely sealed construction.
P/N 11-06823.....**$315.95**

COMANT DME/ TRANSPONDER (CI-305) - Frequency • 960-1220. Miniature high speed DME/ Transponder - one of the smallest DME/Transponder antennas available from Comant. Less than 2.75 inches high, featuring a very low-drag frontal profile. Strong, lightweight and easy to mount using four external mounting holes through base.
P/N 11-06824.....**$204.95**

COMANT FM BAND & AM/FM ANTENNAS

COMANT AM/ FM RECIEVER (CI-222) - Frequency 88-108 MHz 550-1600 KHz. Offers a unique low profile design using standard 4 hole mounting used on many VHF type antennas. Bent whip configuration is ideally suited for underbelly and helicopter installations.
P/N 11-00412.....**$246.95**

COMANT DATALINK & SATCOM ANTENNAS

COMANT FIS/DATA LINK (CI 248-180) - 136.450 - 136.475 MHz. Assures positive FIS performance with the new CI 248-180 FIS Data Link antenna. Designed specifically to bring NEXRAD, METAR, and TAF frequencies to the cockpit.
P/N 11-07077.....**$283.95**

COMANT IRIDIUM (CI-490-1) - Dual-band passive antenna operates at Iridium™ frequencies, with continuous transmit and receive coverage from 1616 to 1626.5 MHz. Can also operate separately as a passive GPS antenna. Iridium™ delivers essential communications services to and from areas where terrestrial communication are not available.
P/N 11-07078.....**$489.95**

COMANT RADIOPHONE / DME ANTENNAS

COMANT DME/ TRANSPONDER (CI-105-20) - Wide band vertically polarized/omnidirectional antenna designed for high performance aircraft over the UHF/L Band of frequencies from 806 to 960 MHz. 894-896 MHz Transmit 849-851 MHz Receive 960-1220 MHz P/N 11-07081.....**$425.95**

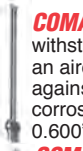
AV

COMANT ANTENNAS

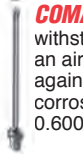
COMANT RADIOPHONE / DME ANTENNAS

COMANT UHF (CI-177-20) - 450-470 MHz. A rugged monopole antenna particularly wellsuited to the harsh environments experienced on the underside of an aircraft. Features standard4-hole mounting, diecast metal base and radiator encased in glass laminate housing. P/N 11-06836.....**$615.00**

COMANT UHF (CI-200) - 450-470 MHz. Rugged monopole antenna particularly well-suited to the harsh environments experienced on the underside of an aircraft. Features a very compact 3-hole mounted die-cast aluminum base with the radiator encased in a glass laminate housing.
P/N 11-06837.....**$385.95**



COMANT UHF (CI-271) - 403-512 MHz. Stub antenna designed to withstand the harsh environments associated with the underside of an aircraft. Antenna radiator is mechaniclly captivated and is sealed against leakage. All exposed metal surfaces are nickel-plated for corrosion resistance and long service. Mounts through a single 0.600" hole. BNC connector is standard. P/N 11-06838.....**$197.95**



COMANT UHF (CI-273)- -403-512 MHz. Stub antenna designed to withstand the harsh environments associated with the underside of an aircraft. Antenna radiator is mechaniclly captivated and is sealed against leakage. All exposed metal surfaces are nickel-plated for corrosion resistance and long service. Mounts through a single 0.600" hole. BNC connector is standard.
P/N 11-06839.....**$180.95**

COMANT UHF (CI-275) - Frequency 406-512 MHz. Wide band UHF antenna designed for high-performance aircraft over the full frequency range of 406-512 MHz. Low profile, blade-type antenna is encased in a low drag, low weight molded body to ensure high reliability. The CI 275 comes standard with a BNC connector. Other connectors available. See order option chart.

Connector	Model	Part No.	Price
BNC	CI 275	11-06840	**$532.95**
TNC	CI 275-2	11-06841	**$579.00**
N	CI 275-5	11-06842	**$623.00**

COMANT UHF (CI-285) - Frequency • 400-960 MHz UHF blade antenna design for high performance aircraft over the full range of 400-960 MHz. Features vertically polarized/ omni-directional pattern, extremely wide band/high efficiency electrical performance. DC grounding for lightning protection, 6 hole mounting. P/N 11-06843.....**$706.00**

COMANT UHF (CI-306) - Frequency • 800-870 MHz. Stub-type antenna tuned for the 800- 870 MHz radio telephone band. Intended for use on low-flying aircraft and helicopters. CI 306 available with BNC connector and mounts through a single 0.600" inch diameter hole. P/N 11-06844.....**$296.95**

COMANT CI 310-20 RADIOPHONE - Frequencies Covered 806-960 & 1030-1090 MHz L Band / UHF blade antenna designed for high performance aircraft. Features vertical/ omnidirectional pattern, wide band/high efficiency electrical performance and DC grounding for lightning protection.
P/N 11-06845.....**$376.95**

COMANT CI 310-22 RADIOPHONE ANTENNA- Frequencies Covered 806-960 & 1030-1090 MHz L Band / UHF blade antenna designed for high performance aircraft. Low profile, light weight antenna and is packaged in a molded body with metal mounting base to ensure stable environmental performance and resistance to vibration, rain erosion and cleaning solvents. Features vertical/omnidirectional pattern, wide band/high efficiency electrical performance and DC grounding for lightning protection.
P/N 11-06846.....**$395.95**

COMANT RADIOPHONE / DME ANTENNAS

COMANT VHF COMMUNICATION (CI-121) - Frequencies Covered 118-137 MHz. Similar to the CI 109, the CI 121 is smaller in diameter and lighter at only 0.5 pounds. Upgraded to the new RTCA DO-160D environmental requirements and offers the 118 to 137 MHz frequency associated with DO-186A MOPS.
P/N 11-17921.....**$154.95**

COMANT VHF COMMUNICATIONS (CI-122) - Frequencies Covered 118-137 MHz. Designed specifically for mounting to the underside of an aircraft providing excellent radiation coverage for air-to-ground VHF communications. Bent configuration makes it ideally suited for helicopters and low wing aircraft. Upgraded to the new RTCA DO-160D environmental requirements and offers 118 to 137 MHz frequency associated with the DO-186A MOPS. P/N 11-17922.....**$177.95**

COMANT VHF COMM (CI-211) - Frequencies Covered 118-137 MHz. For large twins and medium jet aircraft. Only 8.25 inches high. Upgraded to the new RTCA DO-160D environmental requirements and offers the 118 to137 MHz frequency associated with DO-186A MOPS.
P/N 11-07082.....**$667.95**

COMANT RADIOPHONE / DME ANTENNAS

COMANT VHF COMMUNICATIONS (CI-291) - Frequencies Covered 118-137 MHz Upgraded to the new RTCA DO-160D environmental requirements and offers the 118 to 137 MHz frequency associated with DO 186A MOPS. P/N 11-17991.....**$189.95**

COMANT VHF COMMUNICATIONS (CI-292-1 - Frequencies Covered 118-137 MHz. Designed specifically for top mounting on an aircraft. Upgraded to the new RTCA DO-160D environmental requirements and offers the 118 to 137 MHz frequency associated with DO-186A MOPS. P/N 11-05093.....**$217.95**

COMANT VHF COMMUNICATIONS (CI-292-2) - Upgraded to the new RTCA DO-160D environmental requirements and offers the 118 to 137 MHz frequency associated with DO 186A MOPS. P/N 11-29202.....**$229.95**

COMANT VHF COMMUNICATION (CI-248-5 - Frequencies Covered 118-137 MHz. Developed for Cessna 182 and 182T aircraft. The only VHF antenna with a built-in notch filter, that allows installation in close proximity to GPS antennas without co-sight interference. P/N 11-05585.....**$317.95**

COMANT VHF COMMUNICATIONS (CI-108) - Frequencies Covered 450-470 MHz Suitable for either top or bottom mounting. Upgraded to the RTCA DO-160D environmental requirements with DO-186A MOPS. Optional leading edge protection - CI 108-L.
CI-108 ..... P/N 11-07079.....**$673.00**
CI-108L ..... P/N 11-07080.....**$474.95**

COMANT VOR / LOC / GS ANTENNAS

COMANT VOR/ GS (CI-120G-S) - Frequency • 108-118 MHz (VOR/LOC) 329-335 MHz (GS) Antenna system qualified for use on single engine, twin, jet, and helicopter aircraft. Provides glideslope reception capability. Complete set includes a pair (2) of blades, each with single BNC connector output, two coax interconnect cables and a signal combiner output providing for a single cable run to the avionics installation. P/N 11-06801.....**$1,031.00**

COMANT VOR/LOC/GS (CI-120-200G/S) - Frequency • 108-118 MHz (VOR/LOC) 329-335 MHz (GS) Antenna system qualified for use on single engine, twin, jet, and helicopter aircraft. Provides glideslope reception capability. Complete set includes a pair (2) of blades, each with single BNC connector output, two coax interconnect cables.Dual output signal combiner providing for separate RF cable runs to the avionics installation for NAV1 and NAV 2 receivers, is included. P/N 11-06802.....**$1,061.00**

CI-120-200G/S-L - Blades have leading edge protection and come with rubber gasket enabling mounting on curved vertical stabilizers.
P/N 11-06803.....**$1,195.00**

COMANT VOR/LOC/GS (CI-120-400) - Frequency • 108-118 MHz (VOR/LOC) 329-335 MHz (GS) Designed for the Cessna 182 Series. Complete kit includes a pair (2) of blades, each with a single BNC output, and two coax interconnect cables. Single BNC output phasing combiner providing for a single RF cable run to the avionics installation. P/N 11-06804.....**$1,037.00**

COMANT VOR/LOC/GS (CI-157P) - Frequency 108-118 MHz (VOR/LOC) 329-335 MHz (Glide Slope) "V" dipole VOR/ Glide Slope antenna with fixed elements designed specifically for compatibility with the Piper Aircraft mounting. Radiating elements are not removable. Not approved for helicopter installations.
P/N 11-15700.....**$279.95**

COMANT VOR/LOC/GS (CI-185C) -Frequency • 108-118 MHz (VOR/LOC) 329-335 MHz (GS) "V" Dipole VOR/LOC/ GS antenna with detachable elements mounts on top of the vertical fin stabilizer for most single engine general aviation aircraft. RF design similar to the CI 157P. Integral ferrite balun provides for higher radiation efficiency. Not approved for helicopter installations. Consult your FBO or installation shop for best application information.
P/N -11-17923 .....**$286.95**

COMANT VOR/LOC/GS (CI-158C-2) - Frequency • 108-118 MHz (VOR/LOC) 329-335 MHz (GS) Detachable elements mounts on top of the vertical fin stabilizer offering the four-hole mounting configuration found on many beech aircraft. Detachable elements result in a significantly smaller shipping and storage carton than fixed element versions. Not approved for helicopter installations. P/N 11-06806.....**$296.95**

COMANT VOR/LOC/GS (CI-158C-3) - Frequency 108-118 MHz (VOR / LOC) 329-335 MHz (Glide Slope) "V" Dipole VOR/ Glide Slope Antenna with detachable elements was developed specifically for Beech Bonanza aircraft and encompasses reduced static capability with the use of P-Stat Paint and bleeder resistors. Not approved for helicopter Installations.
P/N 11-06807.....**$1,464.00**

COMANT VOR/LOC/GS (CI-159C) - Frequency 108-118 MHz (VOR / LOC) 329-335 MHz (Glide Slope) Similar to the CI 158C-3 with the exception of offering 2-hole mount instead of a 4-hole mount. Not approved for helicopter installations. P/N 11-17924.....**$360.95**

AV

COMANT ANTENNAS

COMANT VOR / LOC / GS ANTENNAS

COMANT GLIDE SLOPE (CI-193) - Frequencies Covered 329-335 MHz (GS) For interior mounting for GS reception.
P/N 11-05200.....**$178.95**

COMANT VOR/GS (CI-205-3) - Frequency 108-118 MHz (VOR/ LOC) 329-335 MHz (Glide Slope) Mounting on the aircraft vertical stabilizer or helicopter tail boom. Set includes a pair (2) of "towel bar" sensor elements each with a single BNC output connector and a one-piece dual coax interconnect signal combiner harness with a single BNC connector output. Provides for a single cable routing to the avionics location. P/N 11-17985.....**$1,393.00**

COMANT VOR/LOC/GS (CI-215) - Frequencies Covered 108-118 MHz (VOR/LOC) , 329-335 MHz (GS) Detachable elements featuring two integrally molded mounting legs or "spacers" for increased strength.
P/N 11-17926.....**$424.95**

COMANT VOR/LOC/GS (CI-259E) - Frequencies Covered 108-118 MHz (VOR/LOC), 329-335 MHz (GS) Fixed elements for helicopter aircraft. P/N 11-06809.....**$308.95**

COMANT COMDAT GPS ANTENNAS

COMDAT ANTENNA (CI-401-220) - Frequency • GPS 1575.42 +/- 3 MHz Contains stable amplifier that offers great performance. Gain performance at 26.5 to 31.5 dB minimum. Presents very low noise levels at 3.8 dB maximum. Built-in voltage regulator. P/N 11-04139.....**$422.95**

COMDAT GPS (CI-401-221) - GPS antenna with TNC connector. Meets RTCA DO 160-D operating standards including direct effects lightning. Operate with 26.5 dB panel mount GPS receivers. Certified FAA TSO-C144 for GPS and GPS WAAS Class Gamma 1 equ. Not compliant for GPS WAAS Class Gamma 2 and 3 applications. Not compatible with most portable GPS receiver systems. GPS 1575.42 MHz / 26.5 dB Gain P/N 11-06795.....**$422.95**

COMDAT GPS CI 408-20/ ACTIVE - Designed for airborne applications with aircraft speeds up to 600 KTAS. Drop-in replacement for many popular GPS applications. RTCA DO 160-D operating standards including direct effects lightning. GPS 1575.42 MHz - 28.0 db Gain P/N 11-06796.....**$589.00**

COMDAT ANTENNA (CI-420-220) - Stand-alone GPS antenna with TNC connector. Meets RTCA DO 160D operating standards including direct effects lightning. Designed to operate with 26.5 dB panel mount GPS receivers. Certified FAA TSO-C144 for GPS and GPS WAAS Class Gamma 1 equipment. Not compliant for GPS WAAS Class Gamma 2 and 3 applications. Not compatible with most portable GPS receiver systems. GPS 1575.42 MHz - 26.5 db Gain P/N 11-05848.....**$422.95**

COMDAT GPS (CI-420-221) - Stand-alone GPS antenna with TNC connector. Meets RTCA DO 160D operating standards including direct effects lightning. Designed to operate with Garmin 17.0 dB panel mount GPSreceivers. Not compatible with most portable GPS receiver systems. GPS 1575.42 MHz - 17.0 db Gain P/N 11-04291.....**$422.95**

COMANT COMDAT GPS/XM ANTENNAS

COMDAT GPS/XM (CI 420-420) - Frequencies • GPS 1575.42 MHz / 26.5 dB Gain XM 2332.5-2345.0 /30-34 dB Gain. GPS and XM Weather antenna. Designed for compatibility with panel mount 26.5 dB gain GPS receivers. Add XM to an existing GPS antenna location without the need for a completely new installation location. Certified FAA TSO-C144 for GPS and GPS WAAS Class Gamma 1 equipment. Not compliant for GPS WAAS Class Gamma 2 and 3 applications. Not compatible with most portable GPS receiver systems P/N 11-05852.....**$615.00**

COMANT COMDAT VHF/GPS ANTENNAS

COMDAT VHF/GPS (CI-2480-200) - Dual function single engine antenna for VHF/GPS. For popular 26.5 dB gain GPS panel mount systems.Certified FAA TSO-C144 for GPS and GPS WAAS Class Gamma 1 equipment. Not compliant for GPS WAAS Class Gamma 2 and 3 applications. VHF 118-137 MHz GPS 1575.42 MHz / 26.5 dB Gain P/N 11-05850.....**$576.00**

COMDAT ANTENNA (CI-2480-201) - 1575.42 MHz 17.0dB Gain 118 - 137 MHz VHF. Separate connectors for GPS and VHF, GPS is protected from VHF harmonics. Designed for use with Garmin's™ panel mount GPS systems that require 17dB gain. P/N 11-05849.....**$576.00**

COMANT COMDAT VHF/GPS ANTENNAS

COMDAT VHF/GPS (CI-2680-200) - Designed for use with Aircell Broadband Systems (ABS). Single and twin engine piston aircraft for applications of this antenna design. Some light turbine and light jets. Consult your FBO or installation shop for best application information. VHF 118-137 MHz GPS 1575.42 MHz / 26.5 dB Gain P/N 11-06789.....**$576.00**

COMDAT VHF/GPS CI-2680-201 - Dual function high speed antenna for twins and light jets. Featuring VHF and GPS in a single antenna. Designed for use with Garmin GPS panel mount receiver units requiring 17.0 dB gain. Not compatible with most portable GPS receiver systems. VHF 118-137 MHz GPS 1575.42 MHz / 17.0 dB Gain P/N 11-06790.....**$576.00**

COMANT COMDAT VHF/GPS/XM ANTENNAS

COMDAT VHF/GPS/XM (CI 2480-400) - Frequency • 1575.42 MHz 26.5dB Gain GPS 2332.5 - 2345.0 MHz XM® WX 118-137 MHz VHF VHF, GPS and XM® Weather Data in a single, combined antenna. Built-in 80dB low pass filter protects both GPS and XM® antennas against unwanted VHF interference. 26.5dB GPS amplifier. Helicopter rated. P/N 11-05853.....**$1,038.00**

COMDAT VHF/GPS/XM (CI-2680-400) - Triple function VHF/GPS/XM Weather antenna for twin and light jet aircraft. Certified FAA TSO C144 for GPS and GPS WAAS Class Gamma 1 equipment. Not compliant for GPS WAAS Class Gamma 2 and 3 applications. Not compatible with most portable receiver systems. VHF 118-137 MHz GPS 1575.42 MHz / 26.5 dB Gain XM 2332.5 - 2345.0 / 30 dB Gain P/N 11-06786.....**$995.00**

COMDAT ANTENNA (CI 2680-500) - Frequencies • VHF 118-137 MHz XM 2332.5 - 2345.0 30-34dB Gain. VHF/GPS/XM For twin and light jet aircraft. Provides 80 dB of VHF harmonic suppression. Requires Avidyne's DC50 coupler switch for dual VHF/Data Link functionality. Certified FAA TSO-C144 for GPS and GPS WAAS Class Gamma 1 equipment. Not compliant for GPS WAAS Class Gamma 2 and 3 applications. P/N 11-05855.....**$1,182.00**

COMANT COMDAT XM ANTENNAS

COMDAT XM (CI-420-10) - XM 2332.5-2345.0 /25.0 dB Gain. For Garmin GDL 69/69A receivers and Heads Up Technologies (HUT) receivers with short coaxial cable runs. Feature robust TNC female connector. P/N 11-06798.....**$538.00**

COMDAT XM (CI-420-16) - XM 2332.5-2345.0 /26-30 dB Gain. For Heads Up Technologies (HUT) receivers with longer coaxial cable runs . Features robust TNC female connector.
P/N 11-06799.....**$538.00**

COMANT ATTENUATOR, SPLITTERS, COUPLERS, & DUPLEXERS

COMANT SPLITTER (CI-5120) DUAL VOR/ LOC/ GS - 108-118 MHz & 329-335 MHz. For use with Garmin GNS 580 and similar systems. Splits single coax antenna input into equally proportioned VOR/ LOC/GS outputs. P/N 11-06826.....**$197.95**

CI-502 Dual VOR Coupler – Allows the simultaneous use of two VOR receivers from one VOR antenna. P/N 11-17975 ..... **$148.95**

CI-503 Dual GS Diplexer – Permits operation of two glide slope receivers from one glide slope antenna. P/N 11-17976 ..... **$137.95**

CI-505 VOR/GS Triplexer – Permits operation of two NAV & one glide slope receiver from 1 VOR/LOC antenna.
P/N 11-17977 ..... **$159.95**

CI-507 Single VOR/GS Diplexer – Provides the operation of one VOR and one glide slope receiver from one VOR/GS antenna.
P/N 11-17980 ..... **$137.95**

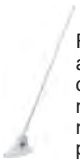
CI-509 COMANT COUPLER MARKER BEACON - Permits the use of two marker beacon receivers from one marker beacon antenna.
P/N 11-06852 ..... **$137.95**

CI-601 COMANT DUPLEXER - Designed to provide operation between two transceivers and one antenna. P/N 11-06827 ..... **$924.00**

CI-1125 VOR/GS Quadraplexer – Permits operation of two NAV & two glide slope receivers from 1 VOR/LOC antenna.
P/N 11-03777 ..... **$191.95**

AV

DORNE & MARGOLIN ANTENNAS - ANTENNA TEMPLATES



DM C63-1/A COM ANTENNA

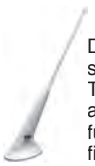
Frequency Range 118-137 MHz The DM C63-Series antennas are VHF communication antennas designed for high mechanical strength with machine tapered aluminum alloy radiating elements. These vertically polarized antennas cover the frequency range of 118-137 MHz for both transmitting and receiving applications. The DM C63-1/A is designed for mounting on top of the fuselage. All DM C63-Series antennas are supplied with a gasket and a doubler plate. P/N 11-02764.....**$149.50**

DM C63-2 COM ANTENNA

Designed for high mechanical strength with machine tapered aluminum alloy radiating elements. Vertically polarized antennas cover the frequency range of 118-137 MHz for both transmitting and receiving applications. Low profile "bentback" radiating element designed for mounting on the bottom of the fuselage. Supplied with a gasket and a doubler plate. P/N 11-02765.....**$206.95**

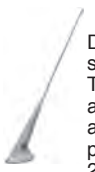
DM C63-3/A ANTENNA

VHF communication antenna designed for high mechanical strength with machine tapered aluminum alloy radiating elements. These vertically polarized antennas cover the frequency range of 138-174 MHz for both transmitting and receiving applications. Low profile "bentback" radiating element designed for mounting on the bottom of the fuselage. Supplied with a gasket and a doubler plate. P/N 11-02766.....**$298.85**



DM C70-1/A COM ROD ANTENNA

Designed for top or bottom installation on high-performance, single, twin and turbo engine fixed and rotary wing aircraft. These uniquely designed antennas offer mechanical strength and high-electrical efficiency to provide maximum reliability and full 360/720 channel transceiver operation. The lightweight profile is unobtrusive, resists icing and offers low drag. Height: 15" Speed Rating: 400 mph. P/N 11-02768.....**$239.95**



DM C70-3 COM ROD ANTENNA

Designed for top or bottom installation on high-performance, single, twin and turbo engine fixed and rotary wing aircraft. These uniquely designed antennas offer mechanical strength and high-electrical efficiency to provide maximum reliability and full 360/720 channel transceiver operation. The lightweight profile is unobtrusive, resists icing and offers low drag. Height: 20.5". Speed Rating: 250 mph. P/N 11-02769.....**$314.95**

DM C70-4 COM ANTENNA

Designed for top or bottom installation on high-performance, single, twin and turbo engine fixed and rotary wing aircraft. These uniquely designed antennas offer mechanical strength and high-electrical efficiency to provide maximum reliability and full 360/720 channel transceiver operation. The lightweight profile is unobtrusive, resists icing and offers low drag. P/N 11-02770.....**$294.95**

DM NI70-2 COM ANTENNA

L-band metal blades with and extended bandwidth for use with both transponders or distance measuring equipment. Sealed and waterproofed for increased reliability. P/N 11-02767.....**$229.95**

DM N48-1 NAV ANTENNA

Balanced loop design assures an omnidirectional radiation pattern at the horizon to obtain the maximum signal for standard VOR and area navigation systems installed in lightweight aircraft, medium twins, and helicopters operating up to 250 mph. Dual VOR receiver operation is obtained when the antenna is used with the DM H21-1 diplexer. P/N 11-02771.....**$739.00**

DORNE & MARGOLIN -2/L BAND BLADE/ 4HOLE/C CONN

Blades are low profile antennas which incorporate high side load strength, a sealed construction against water and Skydrol, and lightning protection circuits. Reduced maintenance costs. P/N 11-08338.....**$232.95**

11-02774

DORNE & MARGOLIN NAV ANTENNA SPLITTERS

DM H21-2 - Dual Market Beacon or Dual VOR P/N 11-02772.....**$123.95**

DM H22-1 - Single G/S or Single VOR. P/N 11-02773.....**$139.85**

DM H23-1 - Triplexer. Dual VOR & Single G/S P/N 11-02774.....**$294.95**

DM H69-1 - Quadraplexer. Dual VOR & Dual G/S..... P/N 11-02775.....**$167.95**

DM H24-1 - Diplexer, Dual G/S..... P/N 11-02776.....**$166.95**

ANTENNA INSTALLATION TEMPLATES

Custom designed templates improve the antenna sealing process, making it more precise, efficient and cost-effective.

Each Sealing Guide template is custom designed to correspond to an individual antenna. They consists of 2 pieces, one inner part and one outer part. The inner template adheres to the base of the antenna, the outer template is placed on the body of the aircraft surrounding the antenna. Sealant is applied to the gap between the templates. Sealant is applied to the gap between the templates. When the templates are removed and discarded, the sealant is left to cure, resulting in a clean, precise and smooth seal.

Each template is custom designed to correspond to an individual antenna. You will no longer need to laboriously cut and paste various lengths of tape, trying to fit them around the irregular antenna shape.

The Sealing Guide template consists of 2 pieces, one inner part and one outer part. Application is simple. The inner template adheres to the base of the antenna, and the outer template is placed on the body of the aircraft surrounding the antenna. Sealant is applied to the gap between the templates. The templates are then removed and discarded. The sealant is left to cure, resulting in a clean, precise and smooth seal.

Incorporating the "Sealing Guide" system into your sealing process will significantly reduce labor time.

For use with the following antennas:	Part No.	Price
CI-105-9, CI-105, CI-105-16, AV-74	11-06653	**$23.85**
CI-105-3	11-06653	**$23.85**
CI-100 Series, CI-105-6, CI-105-7, CI-110-40 Series, CI-110-41 Series, CI-110-60 Series, CI-110-61 Series, S65-5366-850L, S65-5366-890L, S65-5366-2L, S65-5366-3L, S65-5366-7L, S65-5366-8L, S65-5366-10L, S65-5366-10LC, S65-5366-11L, S65-5366-116L, S65-5366-119L, S65-5366-144L, S65-5366-145L, S65-5366-168L, S65-5366-4 Series, AV-741, DM N150 Series, DM N170 Series	11-06656	**$25.85**
CI-275-2, CI-275-5, CI-310-20, CI-310-22, CI-310-25	11-06658	**$26.95**
CI-305	11-06660	**$25.85**
CI-105-20, CI-105-22, CI-105-24, CI-105-25, CI-150-250-L	11-06666	**$26.95**
CI-118-10, CI-118-1, CI-118-9, CI-118	11-06662	**$36.75**
CI-200, CI-175	11-06663	**$26.95**
CI-121, CI-122, CI-177, CI-177-1, CI-177-13, CI-177-3, CI-177-4, CI-177-20, CI-291, CI-292-1, CI-292-2, CI-292-3, CI-292-4, CI-222, CI-222-1, CI-4510, CI-317, CI-317-1,CI-405 Active Series, CI-405-26 Active, AV-10, AV-14, AV-17	11-06665	**$26.95**
CI-248-5, CI-248-30, CI-248-180, CI-2480-100, CI-2480-101, CI-2480-200, CI-2480-201, CI-2480-204, CI-2480-206, CI-2480-300, CI-2480-301, CI-2480-304, CI-2480-400, CI-2480-401, CI-420-10, CI-420-16, CI-420-220, CI-420-221, CI-420-224, CI-420-230, CI-420-420, CI-420-421, 2.70-4.40, 110-338	11-06666	**$26.95**
CI-401 Series ACT, CI-401 Series PAS, S67-1575-16, S67-1575-52, S67-1575-82, S67-1575-132, S67-1575-133, S67-1575-134, S67-1575-135, S67-1575-145, AV-GPS, DM N1021-1	11-06667	**$26.95**
CI-145, CI-2680-500, CI-2680-400, CI-2680-401, CI-119, CI-138, CI-139, CI-196	11-06668	**$28.50**
CI-119, CI-138, CI-139, CI-145, CI-145-1, CI-196, CI-238	11-06669	**$26.85**
CI-211, CI-211-1, CI-211-1-L, CI-211-16, CI-211-L CI-408-20, S67-1575-20, S67-1575-39, S67-1575-49, S67-1575-59, S67-1575-14, S67-1575-76, S67-1575-86, S67-1575-98, S67-1575-96,	11-06670	**$30.95**
S67-1575-136, S67-1575-863, S67-1575-109, S67-1575-137	11-06671	**$26.95**
CI-108, CI-108-1, CI-108-1-L, CI-108-L	11-06672	**$34.95**
CI-164, CI-165	11-06673	**$38.75**

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R.A. MILLER ANTENNAS

ALL LISTED ANTENNA SPECIALISTS HAVE 50 OHM IMPEDANCE. FOR SPEEDS TO 250 MPH AND 25,000' ALTITUDE.

AV-534

VHF COM ANTENNA - Stainless steel bent whip antenna with insulator and mounting hardware. 118-136 MHz. Wt. 3-1/2 oz. Application: Airborne Communications Frequency: 118 to 137 MHz Impedance: 50 Ohms Nominal VSWR: 3.0 to 1 Maximum Polarization: Vertical Pattern: Omni-Directional Connector: N/A Max Weight: 8 oz Max Height: 19-1/2" RF Power Capacity: 50 Watts

P/N AV-534.....**$65.75**

Same antenna as described above but furnished w/96" lead of RG58 A/U cable with BNC and ground strap with lugs. Wt. 7.5 oz.

P/N AV-534L.....**$78.50**

VHF "BROAD BAND" COM ANTENNA - Blade type-low drag. Aluminum radiator encapsulated in rigid urethane foam with white fiberglass housing. 118-136 MHz. Power capability: 50 watts. 13-1/2" high. Weight: 20 oz. Application: Airborne Communications Frequency: 118 to 137 MHz Impedance: 50 Ohms Nominal VSWR: 3.0 to 1 Maximum Polarization: Vertical Pattern: Omni-Directional Connector: Type "BNC" Female Max Weight: 20 oz Max Height: 13-1/2" RF Power Capacity: 30 Watts P/N AVT-4.....**$328.95**

VHF "BROAD BAND" ANTENNA - Rod type. Silver plated braid radiator encapsulated in fiberglass tube with white epoxy finish. Die cast aluminum base. 118-136 MHz. Wt: 8 oz. BNC termination. Supplied with weather sealing rubber pad and mounting hardware. Application: Airborne Communications Frequency: 118 to 136 MHz Impedance: 50 Ohms Nominal VSWR: 1.8 to 1 Maximum Polarization: Vertical Pattern: Omni-Directional Connector: Type "BNC" Female Max Weight: 8 oz Max Height: 20-1/4" RF Power Capacity: 25 Watts

P/N AV-529.....**$126.95**

CB ANTENNA - This "general aviation" CB communications antenna is uniquely designed w/ "center loading coil" to permit the antenna to be short for practical operation. Constructed of a fiberglass rod mounted in an aluminum die cast base. BNC connector. Power rating 5W. 27 MHz. Final tuning on airplane. Wt. 10 oz. Application: Airborne Communications Frequency: 27 MHz Impedance: 50 Ohms Nominal VSWR: 1.5 to 1 Maximum Polarization: Vertical Pattern: Omni-Directional Connector: Type "BNC" Female Max Weight: 8 oz Max Height: 26-1/2" RF Power Capacity: 5 Watts.

P/N AV-568.....**$144.95**

RA MILLER VOR ANTENNA - A VOR receive only antenna consists of taper ground high-strength 17-7PH stainless steel elements Insulators are weather-sealed compression-molded bakelite with the mounting holes provided. May be mounted with the V pointed either forward or aft. Operates at speeds up to 350 mph and altitudes up to 50,000 ft. Drag force of 3.42 lb @ 250 mph. The AV-532L includes all of the same features as the AV-532 and a 30 ft cable with integral balun is also supplied. Order P/N 11-03992 for male BNC connector.

P/N AV-532L.....**$159.95**

P/N AV-532 (without Cable) .**$113.95**

TRANSPONDER ANTENNA - Chrome plated, phosphor bronze radiating element mounted in Teflon insulator. Ball tip for low-noise static discharge. May be installed from the outside. TSOd. 1030-1090 MHz. BNC connector. Wt. 1 oz.

P/N AV-22.....**$44.95**

MARKER BEACON ANTENNA - Sled type. Centerless ground stainless steel, supplied with feed system, low-absorption high-strength standoff insulator, stainless steel mounting hardware. Lead not supplied. 75 MHz. Wt. 7.25 oz.

P/N AV-533.....**$252.95**

MARKER BEACON ANTENNA - Boat Type Application: Marker Beacon Frequency: 75 MHz Impedance: 50 Ohms Nominal VSWR: 1.6 to 1 Maximum Connector: Type "BNC" Female Max Weight: 6.25 oz Max Height: 2-1/2" RF Power Capacity: Receive only

P/N AV-569.....**$112.95**

VHF DIPLEXER COUPLER - Splits the signal from a single antenna into two NAV receivers; eliminating the need for a second antenna. Application: Navigation Frequency: 108 to 118 MHz Impedance: 50 Ohms Nominal VSWR: 1.4 to 1 Maximum Connector: (3) Type "BNC" Females Max Weight: 3.5 oz Insertion loss: 3 dB Avg / 5 dB Max Isolation: 30 dB Minimum Dimensions: 2" x 1-3/3" x 1-1/8" RF Power Capacity: Receive only

P/N AV-547.....**$92.50**

ANTENNA AV-9 - A broadband DME ("L" band) antenna durably constructed around a Type "N" low-loss connector. Easily installed and operates to speeds of up to 250mph and altitudes up to 50,000 ft. Application: DME Frequency: 980 to 1220 MHz Impedance: 50 Ohms Nominal VSWR: 1.75 to 1 Maximum Polarization: Vertical Pattern: Omni-Directional Connector: Type "N" Female Max Weight: 3 oz Max Height: 2-1/2" RF Power Capacity: 250 Watts Pulse P/N 11-02344.....**$104.95**

BASE STATION ANTENNA - Ground Plane 118-136 MHz Application: VHF Communications Frequency: 118 to 137 MHz Impedance: 50 Ohms Nominal VSWR: 1.5 to 1 Maximum Polarization: Vertical Pattern: Omni-Directional Connector: Type PL-259 Max Weight: 1.0 lb Max Height: 34" RF Power Capacity: 100 Watts

P/N AV-5..... **$114.95**

AV-10 COMMUNICATIONS ANTENNA - 4-bolt design. Designed for high-performance aircraft applications. Identical in mounting and appearance to Cessna communications antennas. Rated to 250 knots. Equivalent to Comant CI-121 Antenna. Wt. 8 oz. Ht. 17-1/2" Application: Airborne Communications Frequency: 118 to 137 MHz Impedance: 50 Ohms Nominal VSWR: 2.0 to 1 Maximum Polarization: Vertical Pattern: Omni-Directional Connector: Type "BNC" Female Max Weight: 8 oz Max Height: 20-1/4" RF Power Capacity: 25

P/N 11-12500..... **$133.95**

PUBLIC SERVICE AND BUSINESS BAND ANTENNA AV-14- Available in 4-bolt design.Features a tapered glass laminate housing and die-cast aluminum base. Rated to 250 knots. Equivalent to Comant CI-177-1. Wt. 8oz. Ht. 17.5" Application: Airborne Communications Frequency: 138 to 174 MHz Impedance: 50 Ohms Nominal VSWR: 2.0 to 1 Maximum Polarization: Vertical Pattern: Omni-Directional Connector: Type "BNC" Female Max Weight: 8 oz Max Height: 14-1/2" RF Power Capacity: 25 Watts P/N 11-12600..... **$186.95**

AV-17 COMMUNICATIONS ANTENNA - 4-bolt design for mounting to the underside of an aircraft. Low profile configuration makes it ideal for helicopters and low-wing aircraft. Equivalent to Comant CI-122 antenna. Wt. 8 oz. Ht. 8-3/4" Application: Airborne Communications Frequency: 118 to 137 MHz Impedance: 50 Ohms Nominal VSWR: 3.0 to 1 Maximum Polarization: Vertical Pattern: Omni-Directional Connector: Type "BNC" Female Max Weight: 8 oz Max Height: 8-3/4" RF Power Capacity: 25 Watts P/N 11-12700 ..... **$149.95**

VHF TRIPLEXER SPLITTER - Splits signal from VOR NAV antenna into two NAV receivers and one glide slope receiver. Application: Navigation & Glide Slope Frequency: 108-118 & 328-335 MHz Impedance: 50 Ohms Nominal Connector: (4) Type "BNC" Females Max Weight: 3.5 oz Filtering: 30 dB Min / 40 dB Avg Insertion Loss: 3.75 dB Maximum Isolation: 22 dB Min / 35 dB Avg Dimensions: 2" x 1-3/3" x 1-1/8" RF Power Capacity: Receive only. P/N AV-571..... **$128.95**

RA MILLER TRANSPONDER/DME ANTENNA (AV-74) - Constructed of an acrylonitrile-styrene-acrylic (ASA) shell. Supplied with cellular neoprene mounting pad and hardware. The antenna is designed to operate at speeds up to 350 mph and altitudes up to 50,000 ft. It has a drag force of 0.09 lbs @ 250 mph. This antenna is a direct replacement for Comant's model CI-105. Application: DME/Transponder Frequency: 960 to 1220 MHz Impedance: 50 Ohms Nominal VSWR: 1.5 to 1 Maximum Connector: Type "BNC" Female Max Weight: 0.2 lb Max Height: 3.4" RF Power Capacity: 2.5 kW Peak

P/N AV-74.....**$108.95**

VHF DIPLEXER SPLITTER- Splits the signal from a VOR NAV antenna into NAV and glide slope receivers. Application: Navigation & Glide Slope Frequency: 108-118 & 328-335 MHz Impedance: 50 Ohms Nominal Connector: (3) Type "BNC" Females Max Weight: 3.5 oz Filtering: 30 dB Min / 40 dB Avg Insertion loss: 1 dB Maximum Isolation: 38 dB Min Dimensions: 2" x 1-3/3" x 1-1/8" RF Power Capacity: Receive only P/N AV-570..... **$97.75**

AV

R.A. MILLER ANTENNAS

ALL LISTED R.A. MILLER ANTENNA SPECIALISTS HAVE 50 OHM IMPEDANCE. FOR SPEEDS TO 250 MPH AND 25,000' ALTITUDE.

ANTENNA AV-1 - is a base station antenna for comminucations with ground vehicles or aircraft. It has heavy-duty construction with 3/8" diameter aluminum radials, a 1" diameter aluminum tube radiator, and is iridite-treated for durability. It mounts easily to a 1" diameter pipe or a 1-1/4" O.D. tube with locking set screws Application: VHF Communications Frequency: 118 to 137 MHz Impedance: 50 Ohms Nominal VSWR: 2.0 to 1 Maximum Polarization: Vertical Pattern: Omni-Directional Connector: Type PL-259 Max Weight: 2.75 lb Max Height: 34 RF Power Capacity: 1000 Watts

P/N 11-05996.....**$262.95**

VEHICLE COM ANTENNA AV-3 - is a low profile snap-in mounting quarterwave antenna for use on surface vehicles. It has a solderless cable connection at the antenna and is supplied with 12 feet of cable and PL-529 connector. Application: VHF Communications Frequency: 118 to 137 MHz Impedance: 50 Ohms Nominal VSWR: 1.5 to 1 Maximum Polarization: Vertical Pattern: Omni-Directional Connector: Type PL-259 Max Weight: 2.50 lb Max Height: 55" Max (field cuttable) RF Power Capacity: 100 Watts P/N AV-3 .....**$83.50**

ANTENNA AV-12 - is a VOR receive only antenna which uses a highly efficient technique of molding the elements directly into a high-impact thermo-setting bakelite center insulator. A 25 ft cable with integral balun is also supplied. with the AV-12L Application: VOR Receive Only Frequency: 108 to 118 MHz Impedance: 50 Ohms Nominal VSWR: 2.2 to 1 Maximum Connector: N/A Max Weight: 5.5 oz (14 oz with cable) Width Across Tips: 29-1/2" RF Power Capacity: Receive only P/N AV-12 .....**$162.95**
P/N AV-12L.....**$195.95**

QUICKIE ANTENNA KIT - Simple installation procedure produces excellent communications antenna. Order additional kit for navigation antenna.
P/N 11-09800 .....**$18.50**

Toroids Only - Used in our quickie antenna kit for composite aircraft.
P/N 11-09900 .....**$0.78 ea.**

ADF ANTENNA KIT - This ADF Antenna Kit is an economical replacement for the Cessna factory style antenna used on all the smaller Cessna aircraft. This antenna will work on most aircraft except those with a moveable tail such as the Mooney.

Replacement Kit..... P/N 11-12300.....**$23.50**
For new installations ..... P/N 11-02655.....**$33.95**

VHF ANTENNA MOUNTING PLATE - Aluminum 2x4 mounting plate for straight 45-90 degree antenna including transponder antenna. The antennas sold separately, 4 clearance for mounting and center hold for antenna.
P/N 11-09988.....**$15.50**

ANTENNA DM N4-17/N - VOR/LOC/GS BAL. LOOP SYSTEM (DM N4-17/N) Single Output -- Frequency VOR/LOC 108-118 MHz -- GS 329-335.3 MHz Frequency Range: VOR/LOC 108-118 MHz GS 329-335.3 MHz VSWR: 5.0:1 max Polarization: Horizontal Radiation Pattern: VOR/LOC Omnidirectional GS Forward Pointing Gain: 0 +/- 2 dB Impedance: 50 Ohms Lightning Protection: dc short Weight: 1.32 lbs Connector: BNC Female Cable Length: 27 inches Side Load: 17 psi FAA Approval: C34e, C36e, C40c D0138 ENV. CAT. AA5XXXXXHDXS
P/N 11-05859.....**$956.00**

CABLE ASSEMBLY AV-6 - Cable assembly consisting of 50 foot of RG-58/U low loss transmission line, a PL-259 connector at one end and a BNC male connector at the other. Commonly used with the
P/N 11-06992.....**$65.75**

ANTENNA AV-741 - Designed for use with DME/Transponder sets. Constructed from an aluminum casting which is capable of withstanding particle erosion at high speeds. Designed to operate at speeds up to 350 mph and altitudes of 50,000 ft. It has a drag force of 0.35 lb @ 250 mph. Application: DME/Transponder Frequency: 980 to 1220 MHz Impedance: 50 Ohms Nominal VSWR: 1.4 to 1 Maximum Polarization: Vertical Pattern: Omni-Directional Connector: Type Max Weight: 0.5 lb Max Height: 3.3 RF Power Capacity: 4 kW Peak, 0.1 kW continuous
P/N 11-06995.....**$322.95**

ANTENNA AV-15 - Used with aviation, land mobile radio and flight phone bands. Chrome-plated ball tip provides low noise static discharge. Designed to operate at speeds up to 350 mph and altitudes of 50,000 ft. It has a drag force of 0.75 lb @ 250 mph. P/N 11-06993.....**$137.95**

ANTENNA AV-64 - Marker beacon antenna designed for very low drag. Supplied with cellular neoprene mounting pad and hardware. Designed to operate at speeds up to 350 mph and altitudes up to 50,000 ft. It has a drag force of 0.22 lbs @ 250 mph.
P/N 11-06994.....**$115.95**

ANTENNA AV-530 - Designed for broadband communications. Has a die-cast aluminum base and a tapered stainless steel whip for less drag at higher airspeeds. Supplied with a weather-sealing gasket and mounting hardware. Designed to operate at speeds up to 350 mph and altitudes up to 50,000 ft. It has a drag force of 1.65 lb @ 250 mph.
P/N 11-06696.....**$154.95**

AV

ANTENNAS

BOB ARCHER AIRCRAFT ANTENNAS

Designed by Bob Archer utilizing concepts common to military aircraft and space vehicles. The antenna performance is superior to most in use today in private aircraft. Antennas must be installed in accordance with the installation instructions. These antennas are designed to be installed inside fiberglass or other non-conductive wing tips or tail caps of metal or other conductive material aircraft.

SPORT AIRCRAFT ANTENNAS

MODEL 1 - This VOR antenna is designed to fit inside larger fiberglass wing tips on metal (conductive that is) airplanes such as T-18's, RV's Bonanzas etc. The wing tips must have internal dimensions of at least 11"x24" and generally fit better on the bottom surface. The VSWR is normally less than 2.0:1 over a frequency band of 108-127 Mhz but could be higher due to installation factors.

Left Side .....P/N 11-21015-1 ..... **$94.50**
Right Side.....P/N 11-21015-2..... **$93.75**

MODEL 1A Wing tip Com antenna. looks the same as Model 1 above and fits the same tips as those above but tuned for the Com band. Offered because of pressure from RV builders. Does not perform as well as Model 2 Com antenna but users report good communications at ranges greater than 50 miles. Should be installed so that the maximum height of the tip is utilized to get the most vertical polarization.

Left Side .....P/N 11-21016-1.....**$93.75**
Right Side.....P/N 11-21016-2.....**$95.00**

MODEL 2 - Tail cap Com antenna for metal conductive airplanes installed inside a tail top fiberglass fairing with inside dimensions of at least 10" high x 12" long. VSWR is normally less than 2.0:1 over a COM frequency band of 118-136 Mhz.

Left Side.....P/N 11-21020.....**$93.75**

MODEL 3 - Wing tip VOR antenna of same general design as the Model 1 but of a narrower design to fit Mooney tips with internal dimensions of 8" x 24". VSWR less than 2.0:1 over the frequency band of 108 to 118 Mhz.

Left Side .....P/N 11-21010-1..... **$95.00**
Right Side.....P/N 11-21010-2..... **$95.00**

MODEL 4 - Wing tip VOR antenna designed for smaller tips than Model 3 and with a 10 degree flare on the top portion and a curled aft portion. VSWR less than 2.0:1 over the frequency band of 108 to 118Mhz.

Right Side..... P/N 11-21025-1 ..... **$94.50**
Left Side ..... P/N 11-21025-2 ..... **$93.75**

STYLE 1 OR 2 ANTENNAS

NOTE: Wingtip antennas come in RH and LH types. The -1 suffix indicates the installation of the antenna on the lower inside surface of the left wingtip or the upper inside surface of the right wingtip. The -2 suffix indicates the installation of the antenna on the upper inside surface of the left wingtip or the lower inside surface of the right wingtip.

MIRACLE AIR WHIP ANTENNA

The Air Whip uses a unique common-mode inductive core made of VHF ferrite material to isolate the feedline from the main body of the antenna. There is no need to provide a groundplane as is the case with ordinary quarter-wave whips. A better antenna for Ultralight and Light Sport Aircraft. High-performance half-wave end-fed design. Pre-tuned, ground-plane-free-perfect for composite/fabric aircraft. Installs in minutes without soldering or drilling on any inside surface. High-efficiency, wide bandwidth = greater range and clarity. Pre-wired mil-spec BNC connector - ready to plug-and-play. Receives VOR with appropriate radio.

COM/VOR .....P/N 11-03018 ....**$128.95**

STAINLESS VHF ANTENNAS FOR HOMEBUILTS

These VHF antennas are stainless steel including all hardware. Insulators are made of Delrin, which resists extreme cold or high temperatures and is non-breakable. Antennas are available in straight and 45° or 90° angles. 118–136 mHz range. Weight: 3 oz. Not FAA approved.

Straight..... P/N 11-04516... **$21.50** 45° .... P/N 11-04517 ...**$21.50**
Transponder ... P/N 11-02759... **$21.50** 90° .... P/N 11-00648 ...**$21.50**

COPPER ANTENNA FOIL TAPE 3/8 INCH

Used as an antenna ground in composite aircraft.

P/N 11-12900.....**$23.90**

TORROIDS (FERRITE BEADS)

Used in our quickie antenna kit for composite aircraft. P/N 11-09900.....**$0.78**

STAINLESS STEEL ADF ANTENNA KITS

• Replace your rusty antenna • Will never rust • Fits most high/low wing light aircraft • The safest! Ceramic safety insulator • Easy to install • The finest stainless ADF antenna you can buy ***Note: Not for Mooney aircraft or any aircraft with a movable empennage.***

Economy stainless ADF ANT.kit.....P/N 11-12300 ..... **$23.50**
ADF stainless ANTENNA kit.....P/N 11-02655 ..... **$33.95**

ANTENNAS FOR COMPOSITE AIRCRAFT

MODEL 5 - This transponder/DME antenna is an etched copper clad epoxy circuit board dipole that is designed to be installed inside non-conductive aircraft without need for the additional installation of a ground plane. The dimensions are 6" x 7" and it can be installed in the aft fuselage or the wings with the 6" dimension vertical. VSWR is less than 1.2:1 over bands of 1032 to 1090 Mhz.

P/N 11-21005 .....**$93.75**

MODEL 6 - This com antenna is designed to be installed on the inside surface of the aft fuselage of composite and wood aircraft. It is a dipole that is folded up to minimize the vertical dimension and requires 12" of fore and aft space and 26.5" vertically. It is designed with flexibility so it can match the internal curvature of the fuselage. The VSWR is less than 2:1 across the com frequency band. .....P/N 11-21000 .....**$94.50**

MODELS 7 & 8 - These antennas are essentially the same with the exception of the overall length and the matching devices with the com antenna being installed vertically and the nav antenna being installed horizontally. VSWR is less than 2:1 over their respective frequency bands. The outer ends of these antennas may be swept to +/-30° to facilitate installation in various aircraft types.

NAV Antenna Model 7 ..... P/N 11-21030 .....**$95.00**
COM Antenna Model 8..... P/N 11-21035 .....**$93.75**

ACTIVE GPS ANTENNA AV-GPS

The RAMI model AV-GPS is a permanently mounted external aircraft antenna designed for use with GPS receivers which provide +5 volts DC on their antenna connector. It is an active (amplified) antenna providing an average of 26 dB gain over a passive (non-amplified) antenna. The antenna is designed to operate at speeds up to 350 mph and altitudes up to 50,000 ft. It has a drag force of 0.18 lb @ 250 mph. (Not FAA TSO'd) Commonly used for an external mounted GPS antenna for portable GPS units. P/N 11-17990.....**$207.95**

ANTENNA COVER PLATE

For those of you who have been removing Loran-C antennas, here is your answer, the Antenna cover plate. It was designed to fit the same footprint as the CI-121SP or similar series antennas. Machined from white acrylic. P/N 11-17984 .....**$22.90 ea.**

ANTENNA WIRE

COAXIAL CABLE - RG-58U – Tinned copper conductor, solid polyethelane dielectric. Standard cable for radio installations. For experimental aircraft only. P/N 11-04258.....**$0.58 ft**..... **$40.60/100ft.**

TYPE RG-400U – Tinned copper conductor, PVC Type IIA jacket. FAA approved for certificated aircraft. P/N 11-09202. **$4.20/ft $357.00/100ft.**

BNC COAXIAL ANTENNA CONNECTORS FOR RG-58U CABLE

Male ..... P/N 11-03992.....**$2.93**
Female ..... P/N 11-03993.....**$3.50**

BNC COAXIAL ANTENNA CONNECTORS FOR RG-400U CABLE

Male.....P/N 11-01802 ..... **$3.60** Female ..... P/N 11-01803 .....**$4.00**

ANTENNA INSULATORS

(1) Feed-Thru Insulator for lead-in wire from fixed antenna. Type 4125. 10-32 threads, 3" length tip to tip, 1-9/16" casing. .....P/N 11-10500 .....**$14.75**
(2) Strain Insulator for receiver antenna. .....P/N 463 .....**$9.60**

ANTENNA SEALANT AC236B1/2

Perfect sealant for antenna installations. AC-236 Class B is a two-component, manganese dioxide cured, liquid polysulfide polymer system providing excellent fuselage seals. P/N 09-00532 ..... **$27.75**

WSI WEATHER/SIRIUS RADIO ANTENNA - Operates with all new WSI InFlight® capable receivers. The antenna receives Sirius Satellite Radio broadcasts to enable the WSI weather service. It was designed specifically to suppress interference from ground based signals. Its proprietary design allows for optimum performance while the aircraft is turning. The antenna has been thoroughly tested and meets all of the RTCA DO-160E requirements. P/N 11-05937 ..... **$720.00**

TED TRANSPONDER ANTENNA - This monopole transponder/DME antenna meets the same specifications and is a direct replacement for the CI-101 and AV-22 antennas. Exceptional performance and value. P/N 11-17995 .....**$17.95**

AV

AVIONICS TOOLS

KLEIN WIRE STRIPPERS / CUTTERS

Klein wire strippers and cutters cut, strip, gauge and loop a wide range of wire types and sizes. Made of strong, hardened steel with comfortable handles, these tools are durable and long lasting.

Part No.	Description	Price
12-00234	Strips 16 to 26 AWG stranded wire, easy-to-read wire gauge markings, comfortable handles with cushion ridges.	**$12.95**
12-00236	Solid and Stranded. Double-dipped comfort grips with curved handles, cuts, strips, loops and gauges 20-30 AWG solid wire and 22-32 AWG stranded wire, cleanly shears 6-32 & 8-32 screws, coil spring provides fast, self-opening action.	**$18.90**
12-00235	Solid and Stranded. Double-dipped comfort grips with curved handles, cuts, strips, loops and gauges 10-18 AWG solid wire and 12-20 AWG stranded wire, cleanly shears 6-32 & 8-32 screws, coil spring provides fast, self-opening action.	**$19.75**
12-00233	Strips 10 to 18 AWG solid wire, easy-to-read wire gauge markings, comfortable handles with cushion ridges.	**$14.75**

DELUXE HEAT GUN

This handy tool gives you a fast, drum-tight, mirror smooth finish. It's ideal for heat-shrinkable covering films. Get a professional finish with less time and effort. 1-yar warranty. Features: •Includes removeable wide nozzle •1000W heating power •Heavy-duty fan motor •Textured, composite hand-grip •3-position, hot/cool/off switch •Adjustable air intake baffle • Wt: 15 oz • 5.5' AC power cord w/2-prong plug. P/N 12-00527 ..... **$27.50**

HEAVY-DUTY HEAT GUN

This soft air velocity of this heat gun increases the surface temperature to the required working temperature much faster than conventional heat guns and maintains a higher temperature for faster completion of the application. Features double insulation, two temperature selections of 570°F and 1000°F, and a unique impact resistant heating element. Operates on 120V AC at 11.6 amps. Air volume 14.8 cu. ft. per minute. Wt. 1-1/2 lbs. ..... P/N 09-00354 ..... **$99.75**

BALLPOINT HEX SOCKET DRIVER

3/32" Ballpoint Hex Socket Driver for use on hex head screws and nuts.

This tool is commonly used with most avionics units like Honeywell Bendix/King and Garmin.

P/N 12-02063 ..... **$4.65**

QUICK SHOT AVIONICS REFERENCE MANUAL

Quick Shot is a compact, rugged binder type manual which shows detailed wire pin-outs for a wide variety of general aviation avionics equipment. Each page is removable and very durable. The wiring diagrams in Quick Shot Volume 1 include Apollo/UPS, Bendix, Garmin, Icom, Sandel Mid-Continent, Sigtronics, United, Telex, David Clark, PS Engineering, Narco, Val, and many more. P/N 11-01623 ..... **$56.50**

26-20GA ROUND BARREL CRIMPER

4-Way Indent Tool, Round Pin, 20-26 AWG, RS232 D-sub. High-grade steel construction for outstanding performance.

P/N 11-08685..... **$166.95**

LITTLE BLUE CRIMPER

The Daniels AFM8 is designed for most of the miniature and sub-miniature connector types that are so widely used in all types of electronic systems. Originally developed for the Air Force, the AFM8 meets the need for a miniature tool accommodating wire sizes 20 thru 32 AWG. The cycle controlled precision ratchet assures consistently accurate crimps every time. The tool has a built-in eight step selector knob for ease in dialing the correct crimp depth setting for the wire being used.

P/N 11-04443 ..... **$299.75**

BIG BLUE CRIMPER

The Daniels AF8 has virtually limitless application within the specified wire range of 12 thru 26 AWG. Over 1,000 turret heads or positioners are available to adapt the tool frame to your specific military or proprietary contact/wire combination. The eight impression crimp, which is standard in the AF8, assures absolute maximum tensile strength with almost every closed barrel contact. The precision ratchet controls cycling on the tool in both directions of handle movement. This assures the same, accurate crimp every time. It's like having a quality control inspector at every work station.

P/N 11-04442 ..... **$283.95**

AMP PRO CRIMPER II HAND TOOL

The PRO-CRIMPER II Hand Tool provides the versatility of general-purpose service of general-purpose service tools along with the reliability and ease of use of many premium-grade tools For versatility, 75 die sets (available separately) are interchangeable, including those for open-barrel contacts and terminals. Additionally, many of these die sets have multiple cavities for crimping a variety of contact or terminal sizes.

Pro Crimper II 58433-3.....P/N 12-01379..... **$174.95**
O-Crimp Die 58435-1 .....P/N 12-01380..... **$173.95**
Hex Crimp Die 58436-1.....P/N 12-01381..... **$188.95**
Pin & Socket 58495-2 .....P/N 12-01382..... **$169.95**

CRIMPING/CUTTING TOOL

This tool is designed to crimp insulated and non-insulated 10 to 20 AWG solderless terminals & connectors. It has easy-to-read tool markings to identify the insulated or noninsulated crimping dies. Its tapered nose design works well in tight places and has specially hardened cutter in th nose for quick, clean cuts. Size: 9.75". Lifetime warranty..... P/N 12-00698..... **$36.50**

CRIMPMASTER CRIMP TOOL FRAME

Crimpmaster Crimp Tool Frame Only. 1.26lb.
30-506 Crimp tool ..... P/N 11-08686. **$73.50**
Die Set Hex for the 30-506 ... P/N 11-08687. **$53.75**

CRIMPMASTER™ CRIMP TOOL

for #22 to #10 AWG (.324mm2 - 5.261mm2) Insulated Ring Tongue Terminals and Splices Features: Provides good and consistent crimp every time, Dies change quickly and easily with a screwdriver, Interchangeable dies provide versatility in a single tool, Cushioned, comfort-grip handles

30-500 Crimp tool ..... P/N 11-08688..... **$87.00**
Die set 26-16 AWG for 30-500 tool ..... P/N 11-08689..... **$46.75**

CRIMP TOOL (HX4) CRIMP TOOLS

The DMC HX4 Crimp tool features a system of interchangeable dies which eliminate the need of separate fixed die crimp tools for each and every different application. Many maintenance and manufacturing concerns have standardized on this model, thus eliminating the cost associated with maintainaing and calibrating bulky inventories of single purpose tools. Length: 11" Weight: 11 oz.

H4X Crimp Tool.....P/N 11-08690 ..**$257.95**
Die set 5-24 AWG.....P/N 11-08691 ..**$155.95**

COMMERCIAL CRIMP TOOL/AD-1377

Suggested Crimp Tool for RAYCHEM Heat Shrinkable Crimp Butt Splices.

P/N 11-08692 ..... **$153.95**

AV

INTERCOMS

AVCOMM AC-2EX PORTABLE INTERCOM

Expandable, stereo and portable AvComm's new AC-2EX may possibly be the only intercom you will ever need! Measuring a mere 5.1" by 2.85", the AC-2EX is designed to produce powerful communications you can depend on. The compact design makes it easy to carry in your flight bag, a feature pilots who rent aircraft will especially appreciate. Need 4 positions? Simply add the AC-2XM module to accommodate additional passengers. FEATURES: • AVCOMM's Expandable Portable: 2 to 4 place • Rugged compact design • Two 9V batteries with quick access or 12-28V DC power • Stuck mic' indicator & Power-transmit LED • For use with mono or stereo headsets • Pilot priority PTT • Fail safe feature • Wt: 14.1 oz. • Full 3 year factory warranty.

AC-2EX intercom .....P/N 11-02264 ..... **$196.95**

MULTICOMM AIRCRAFT INTERCOM

MultiComm is the first complete, fully-integrated multi-function intercom, radio-interface and power supply system for ultralights and lisght-sport aircraft. With it's unparalleled low-noise operation, rich sound quality and unique operating features, you now - finally - have the cabin sound you always wanted. Includes everything you need to get up-and-running, prewired and plug-and-play. MultiComm has multi-pass active and passive filters in the intercom and power supply to take all the noise out, while optimising the voice band-pass for maximum speech intelligibility. MultiComm is unique in providing four distinct operating modes to give you independent control over each individual mic's activation for both intercom and radio in a variety of combinations. Radio sidetone feeds your transmitted audio back to your headphones, confirming that you are transmitting as expected and allowing you to adjust your speech for maximum effectiveness.

P/N 11-05791.....**$547.00**

DRE D-205E INTERCOM

Two place portable/built-in expandable intercom with outstanding, clean stereo sound. Individual squelch circuits and PTT jacks. Stuck mic warning (visual and audio alarm). Automatic failsafe pilot communication to radio with loss of power to the intercom. Accessory inputs for Stall Warning, Altimeter Alert, Collision Avoidance & Engine Monitor, etc. (for built-in use). Standard cell phone interface. No deterioration of sound as battery weakens Powered by two 9V batteries. Auxiliary power input (on the side). Automatically compatible with mono or stereo headsets or a mix. Optional mounting flanges allow installation in ultralights and LSA. Anodized aluminum case. Additional features include Mil-Spec quality cabling, music input for MP3 players, CD, etc. and auto music muting with manual override. 3-year warranty.

DRE Stero Intercom ..... P/N 11-09576.....**$366.95**
DRE-205E Aux. Power Cord ..... P/N 11-09585.....**$14.75**
DRE Aux. Power Cord OI Style ..... P/N 11-09586.....**$13.50**
DRE-205E Mounting Brackets..... P/N 11-09577.....**$12.50**

FLIGHT DATA SYSTEMS AP-60 AUDIO MIXER

An Audio Mixer is Required any time there is more than one Audio Source. This unit mixes and amplifies six audio inputs. Mounts behind the instrument panel. ***For Example:*** * Communications Radio Audio * Navigation Radio Audio * EFIS Warning Audio * Music Player Audio * Traffic Warning Audio ***Specifications*** * Aux. Audio Input * Compact (2.5" X 3.4 X .6"), Lightweight (2.1 oz) * 12-28 Volt Compatible * No Special Tools Required For Installation

P/N 10-03427 .....**$84.75**

AIRCRAFT SPRUCE SKYCOM 2 & 4 PLACE INTERCOMS

Skycom 200 Portable Intercoms – measure just 2.25"x1.38"x 2.75". Features adjustable volume and squelch, y-adapter for 2 PTT switches & uses 9V battery power. * The skycom 200 4-place (11-11865) comes with a 2-place intercom and a 5 foot extension cable that connects to another 2-place remote intercom for passengers in the backseats.

SkyCom 200 2-Place Intercom .....P/N 11-11860 ..... **$96.50**
SkyCom 200 4-Place Intercom .....P/N 11-11865 ..... **$118.95**

SKYCOM 400 PORTABLE INTERCOMS – features dual volume controls, pilot/crew/pass, pilot/co-pilot isolate, auxiliary music input & 9V battery or cigarette liter operation.

SkyCom 400 4-Place ..... P/N 11-11875..... **$149.95**

PS ENGINEERING PM 1000II 4 PLACE MONO PANEL MOUNT INTERCOMS

PS Engineering's renowned voice activated intercom (VOX) eliminates clipped words and shouting. Other features include individual volume and squelch controls for the pilot and copilot. Independent microphone circuits allow individuals who are speaking to be heard, and keep background noises shut out. Music can be added to the intercom for in-flight entertainment. Automatic muting when the intercom is active, or intercom and radio (PM 1000II-series) ensures uninterrupted communications. PS Engineering's "SoftMute" gradually returns the music to the original level when conversation stops. Although monaural, the music fidelity is still excellent. In most airplanes, you won't notice the lack of stereo separation. The PM 1000 is an effective 2-place intercom, with individual volume and squelch controls, while the 4-place PM 1000II adds a transmit indicator lamp, and music muting during radio traffic.

The PM 1000II, 11-11922, has pilot isolate mode that allows the pilot to concentrate on flying, while the passengers enjoy music and conversation.

The PM 1000II with CREW mode (P/N 11-11920) allows for separate intercom for the pilot and copilot positions, as well as separate music sources for front and back.

On all PS Engineering intercoms a wire harness must be done by PS Engineering or a PS Engineering dealer or warranty is void.

For a quote on 11-11922 PM 1000II with out crew wire harness , on 11-11920 PM 1000II with crew wire harness, or on 11-02553 please call 800-826-3160.

Specifications: Height: 1.25 inches, Width: 3.0 inches, Depth: 5.50 inches, Weight: 12 ounces, Power Requirement: 12-24 VDC, Warranty: 1 year, Unit is TSO'D

PM1000II 4-Place Intercom ..... P/N 11-11922.....**$309.95**
PM1000II-w/Digital Recorder ..... P/N 11-11906.....**$419.95**
6-pl. for expansion module..... P/N 11-02555.....**$399.95**
PM1000II-w/ Internal Crew ..... P/N 11-11920.....**$449.95**
PM1000II-w/Crew & Recorder ..... P/N 11-11908.....**$479.95**
PM1000 2-pl. for dual audio panels..... P/N 11-02553.....**$429.95**
Jack Kit (4-Place)..... P/N 11-11910.....**$35.00**

NAV-DATA 4 PLACE INTERCOM

Our Four place intercom is packed with features only found in much more expensive units.

* Failsafe feature for pilot in the event of power loss
* Pilot isolate switch
* Oprates on one 9 volt battery
* Adjustable squelch (mute)
* Voice activated (VOX)
* Built in push to talk switch
* Music in / Record out jacks

P/N 13-06088 .....**$106.75**

AV

INTERCOMS

PS ENGINEERING AEROCOM III

The Aerocom III is a 2-place stereo portable intercom with IntelliVox™, a completely automatic VOX squelch. Each microphone computes the difference between speech and cabin noise. It opens instantly when somebody talks and only the microphone spoken into is active. This prevents unwanted background noise from entering the audio system. Powered by a 9V battery (10 hrs of use) or aircraft power. Features low battery alert. By using external push-to-talk buttons (not included), both the pilot and copilot positions have the ability to transmit over the aircraft radio. The aerocom III will route stereo music to the headsets through the optional music cable. The music automatically mutes when there is intercom activity or radio traffic.There are two modes controlled by a top-mounted switch. In "ALL" mode, both positions hear radio communications, music, and have intercom capability. In the "ISO" mode, only the pilot side is connected to the aircraft radios, without intercom or music distractions. The copilot position continues to have music, and intercom communications with an expansion unit if installed.The aerocom III is expandable to 4-places with the Aerocom EX expansion unit available by special order. This contains separate music input and dedicated IntelliVox™ processors. Specifications: Size: 4.375"l x 3.250"w x 1.500"h; Wt: 10 Oz.; Power: 9V batt. or 12/24V aircraft power Battery Life: Approx. 10 hrs.; Headphone output: 40m w/channel into 150Ω, < 1% THD; ±3dB mic frequency range: 350 Hz to 4500 (to reduce noise); ±3 dB music frequency range: 180Hz–15,000Hz P/N 11-00427 ..... **$299.95**
Expansion Unit (adds 2-places) ..... P/N 11-01108 ..... **$139.95**

PM 3000 PANEL MOUNT STEREO INTERCOM

The world's first stereo intercom to be FAA-TSO approved. Available in 4- & 6-place versions. The 4-pl. PM 3000 (P/N 11-11931) features pilot isolate and "All" reception modes. The PM 3000 6-place (P/N 11-00851) intercom includes a "CREW" mode. In CREW mode, the pilot & copilot are on one intercom channel, while passengers have conversation on another. Constant squelch adjustments are eliminated with the PM 3000. A single squelch knob controls multiple circuits making the intercom one of the quietest to use, even in the noisiest airplanes. The 6-place PM 3000 provides for two independent stereo entertainment inputs. This gives the passengers and the crew each the option to listen to their music device. The PM 3000 has an automatic fail-safe interconnect to the aircraft systems. If power to the intercom is disrupted, the pilot's headset is automatically connected to the aircraft radio. With the PM 3000 installed, both pilot and copilot have transmit capability over the aircraft radio. A 2-color LED shows green when power is on, and red during radio transmissions. This feature acts as a stuck microphone indication. On On all PS Engineering intercoms a wire harness must be done by PS Engineering or a PS Engineering dealer or warranty is void. For a quote on the PM 3000 4 place or 6 place please call.

PM 3000 4-Pl. Stereo Intercom (w/o digital recorder) – single music input. Installation hardware includes four sets of headset jacks, a music jack and reversible (horizontal and vertical) metal mounting plate.
P/N 11-04843 ... **$419.99**
PM 3000 4-Pl.w/ digital recorder w/o Crew..... P/N 11-02556 ... **$539.95**
2-1/4" Mounting plate (w/o crew)..... P/N 11-00394 ..... **$17.95**

PM 3000 6-Pl. Stereo Intercom (w/o digital recorder) – dual music input. Installation hardware includes six sets of headset jacks, two music jacks and reversible (horizontal and vertical) metal mounting plate.
P/N 11-00851 ... **$549.95**
2-1/4" Mounting plate (w/ crew)..... P/N 11-00393 ..... **$17.95**
PM 3000 6-Pl. Stereo Intercom (w/digital rec.) P/N 11-02557 ... **$639.95**

PM501 PANEL MOUNT INTERCOM

For the pilot who is interested in the basics and then some, the PM501 panel mount inter- com provides the pilot with standard features along with a few features found in more expensive systems.This four channel intercom features individual power output amplifiers for each headset, true pilot isolate for uninterrupted radio communications, music input w/ unprecedented high monaural music input, music muting during ICS communications w/ "soft mute" for easy listening entertainment, & PS Engineering's top quality squelch circuit. *The PM 501 does not come with jacks. For a quote on the wiring harness please call. Specifications: Height: .90 inches, Width: 2.60 inches, Depth: 4.85 inches, Weight: 8.5 ounces, Power Requirement: 12-24 VDC, Unit is not TSO'D P/N 11-11800 .... **$269.95**

PMA 4000 PANEL MOUNTED AUDIO PANEL/INTERCOM

Offers the simplicity of IntelliVox˙- automatic intercom squelch. Designed with the kit and homebuilt in mind, the PMA 4000 has 2 Com and 2 Nav inputs, along with 4 additional unswitched inputs. The PMA 4000 is a monaural 4-place intercom. A speaker amplifier is included. The copilot volume control can also be remote controlled, for tandem aircraft. On all PS Engineering intercoms a wire harness must be done by PS Engineering or a PS Engineering dealer or warranty is void. For a quote on the PMA 4000 harness please call.
PMA 4000 w/o Recorder ... P/N 11-01634 ..... **$775.00**
2-1/4" Mounting plate ..... P/N 11-00395 ..... **$19.95**

PS ENGINEERING PM 1200 2 PLACE MONO HIGH NOISE PANEL MOUNT INTERCOM

The PM 1200 is a 2-place panel mount intercom designed for the loudest of aircraft. If you fly Warbirds or other extremely noisy aircraft, PM 1200 is perfect. Incorporating IntelliVox with our new Active Mic Processor (AMP), the PM 1200 dynamically reduces noise inadvertently picked up by the Mic. It also supplies up to 120mW of headset audio. On all PS Engineering intercoms a wire harness must be done by PS Engineering or a PS Engineering dealer or warranty is void. For a quote on the PM 1200, or the PM 1200 blind mount click here. Specifications: Height: 1.25 inches, Width: 3.0 inches, Depth: 5.50 inches, Weight: 12 ounces, Power Required: 12-24 VDC, Warranty: 1 Year, Unit is not TSO'D P/N 11-01671 ..... **$429.99**

SIGTRONICS SCI-4 INTERCOM

The SCI-4 from Sigtronics features dual squelch indicator lights and dual volume and squelch controls to control volume and squelch independently for front and back seats, crew/pilot isolate and pre-wired harness for easy installation. The SCI-4 is RFI and EMI immune and measures only 1"x 2.5". Includes all hardware and jacks needed for installation. SCI-S4/S6 Intercoms have the same features as SCI-4/6 Intercoms plus music inputs. 5-yr warranty. Made in USA.

SCI-4 4-place ..... P/N 11-00027 ..... **$349.00**
SCI-6 6-place ..... P/N 11-00028 ..... **$379.00**
SCI-S6 Stereo 6-place ..... P/N 11-00425 ..... **$479.00**
SCI-S4 Stereo 4-place ..... P/N 11-00424 ..... **$450.00**

SIGTRONICS BATTERY POWERED PORTABLE INTERCOMS

5-year warranty and a sure-fit for all students, instructors and aircraft renters. All have a music input and Aux output for recording lessons and radio communications. Both pilot and co-pilot positions have PTT jacks. Powered by an internal 9V battery (included), good for 40 hours of operation in airplanes lacking a cigarette lighter socket. A 4' Aux power adapter is included. When using the power cord, the battery is by-passed, preserving the life of the battery. The 2-place SPO-22, 4-place SPO-42 and 6-place SPO-62 are compatible with all standard aircraft headsets. The 4-place and 6-place models have a satellite box for rear seat positions to keep unwanted headset cords out of the pilot's way. A special HIGH-NOISE model, perfect for Ultra-lights and Kit aircraft, is available in all configurations. It filters out background noise, lowers the input level at mic amp, increases output signal, and mic interface can be modified to interface with Icom radios. Also features a sidetone modification. Made in USA.

For 2 People (Standard) ..... P/N 11-02794 ..... **$187.00**
For 2 People (High Noise) ..... P/N 11-02793 ..... **$210.00**
For Up To 4 People ..... P/N 10-19115 ..... **$210.00**
For Up To 4 People (High Noise) ..... P/N 11-01799 ..... **$252.00**
For Up To 6 People ..... P/N 11-02798 ..... **$244.00**

SIGTRONICS SPORT 200/200S INTERCOM

Optimized for the High Noise Environment. Sigtronics 2-place Sport 200 & Sport 200S Intercoms are designed specifically for Light-Sport and Ultralight aircraft. Tested at ambient noise levels of up to 120dB, their Sport series intercoms will outperform all other intercoms on the market. modes of operation, voice activated squelch and push to intercom — perfect for open cockpit aircraft, give the Sport 200 intercoms maximum flexibility and performance. To this they added special internal circuitry to optimize the intercoms for the most demanding high noise environments. Use Satellite Radio, MP3 or CD players as your audio source with stereo headsets for true stereo sound. With full or partial music muting for intercom and full mute for radio reception and transmission, you will be able to enjoy your music and never miss a radio call. Size: 1" x 2.5" x 4"deep. For even more convenience you can mount the intercoms horizontally or vertically. All hardware including headphone and microphone jacks are included with these easy to install intercoms. Weight: 4.5 oz., Jacks & wiring harness: 5.5 oz.; Input power: 11VDC - 32VDC; Current: 0.06 am

SPORT 200S Stereo panel mount int. ..... P/N 11-02885 ..... **$279.00**
SPORT 200 Intercom ..... P/N 11-02884 ..... **$199.00**

SIGTRONICS FACE-PLATE OPTION FOR INTERCOMS

This new faceplate fits the Sigtronics SPA-400, SPA-600 and SBD-800 voice-activated panel mount intercoms. Designed to adapt these compact units to the standard 2-1/4" instrument hole, the new printed bezel increases mounting flexibility and customer convenience. Made of durable and lightweight ABS plastic.
P/N 11-08500 ..... **$9.95 Ea.**

AV

INTERCOMS

SIGTRONICS MINIATURE PANEL-MOUNTED INTERCOMS

Measuring only 1" x 2-1/2" x 4" deep, only 4.5 oz, the SPA-400 and 6-place SPA-600 are FAA TSO'd and can be mounted either horizontally or vertically. Also available in special "HIGH-NOISE" model SPA-400N for Ultra-lights, and open cockpit aircraft, kit aircraft and warbirds. The se intercoms allow you to put "push-to-intercom" buttons in the aircraft to eliminate VOX mode when desired. This is especially good for open-cockpits where wind noise can be a problem. The SPA-400N simulates side-tone because some radios that are currently used in these markets do not have it. The SAS-440 and SAS-640 intercoms feature Sigtronics' exclusive "Auto-Squelch". One touch of the squelch button and the intercom perfectly sets the squelch level to your headsets and the aircraft noise level. All Sigtronics intercoms are voice activated with a 5-year warranty and operate on any voltage from 12V to 24V. Made in USA.

2 Thru 4 Way (Standard SPA-400 ..... P/N 11-02791 ..... **$216.00**
6 Way (Standard) SPA-600 ..... P/N 11-02801 ..... **$252.00**
4 Way (High Noise) SPA-400N ..... P/N 11-02792 ..... **$237.00**
2 Thru 4 Way (Auto Squelch) SAS-440 P/N 11-02804 ..... **$324.00**
6 Way (Auto Squelch) SAS-640 ..... P/N 11-02816 ..... **$360.00**
Retrofit stereo switcher-use with previously installed
SPA-400 intercom - RES-401 ..... P/N 11-02796 ..... **$129.00**

SIGTRONICS SPA-4S STEREO INTERCOM

The SPA-4S is a 2 or 4 place voice activated intercom with inputs for stereo music. It is a small, compact system that allows it to fit in space critical panels. The SPA-4S uses the industry standard Sigtronics squelch, fast on slow off for hands free communication. The music will full mute during ATC communication and partial mute during intercom communication. Each intercom comes complete with all necessary mounting hardware, jacks, and two 4-foot pre-wired harnesses. The SPA-4S only requires 1" X 2.5" of panel space, mounts horizontal or vertically, is 4" deep, and weights 5.5 oz. The SPA-4S intercom can easily upgrade the SPA-400. The SPA-4S uses the same panel hole pattern and interface cable as the SPA-400. A second cable is provided for the music inputs and headphone outputs. The SPA-4SN is available for the high noise amateur built aircraft. As with all of Sigtronics products, the SPA-4S is RFI and EMI immune. Power: 11-32 VDC.

Standard SPA-4S ..... P/N 11-00567 ..... **$289.00**
High Noise SPA-4SN ..... P/N 11-00568 ..... **$311.00**

PILOT USA PA200 SERIES INTERCOM

PA200 World's Smallest Portable Intercom. A solid VOX intercom offering clear communications. Adjustable volume control and squelch control allows for easy adjustment for all ambient noise levels. 2 push-to-talk switches can be used with the intercom allowing transmission through the radio. Unit is ideal for rental aircraft. PA 200R is also available for motorsports. FEATURES: •On/Off volume control •Adjustable squelch circuitry •Fail-safe capability •Y-adapter for 2 push-to-talk switches •Powered by one 9V battery (24 hours) •Size: 2.25" x 1.38" x 2.75" •3-yr unconditional warranty •Wt: 8 oz. (227 grams)

PA-200T ..... 11-02712 ....**$115.00** PA-200IK .....11-11530 ....**$130.00**
PA-200ET ..... 11-11525 ....**$140.00** PA-200IC .....11-03544 ....**$130.00**
PA exp box ... 11-03541 .....**$32.95** PA-200V .....11-03545 ....**$130.00**
PA-200TA24 . 11-03542 ....**$140.00** PA-200TA23 11-03543 .....**$140.00**
PA-200R ..... 11-03547 ... **$130.00**

PILOT USA PA400 SERIES INTERCOM

The stereo version PA-400ST intercom is a portable design that has been used successfully in general aviation for over 18 years. No other intercom on the market has the features and capabilities of the PA-400ST intercom. This particular series has been recently modified to include a cell phone jack for your safety and convenience. Before using in an aircraft we recommend that you take a check-ride in your living room and become familiar with all the features of your new intercom. A hook-up diagram is included in this guide along with brief description of each function and each control setting. PA400ST ..... P/N 11-03548 ..... **$175.00**

FLIGHTTECH ITC-2004 ENRI 4-PLACE INTERCOM

4 place portable intercom with pilot isolate capability. Features: Exclusive Electronic Noise Reduction circuits. Up to 110db of Noise Reduction. Continues Audio, No missed Syllables or Words. Built-in Cellular Phone Interface, includes patch cable. Pilot/All Switch. 9 Volt Battery or External DC Operation, Cigarette Lighter Adaptor included. Auxiliary Stereo Audio Input with Radio Mute and Intercom Audio Mute. Light weight, 10 oz. Push-to-Talk Button for Keying the Comm Radio. Pilot and CoPilot Radio PTT Jacks. Small Size: 5.5" x 1.5" x 3.2" Three Year Warranty ....P/N 11-17669 ..... **$260.95**

FLIGHTCOM IISX PORTABLE INTERCOM

The IIsx is the world's most popular 2-place, portable intercom. The modular design offers expansion capability to the backseat if needed. * Expandable to 4-place portable with optional SR-4 expansion module * Auxiliary inputs and outputs for music or recording flight information * Low-battery indicator and pilot isolate * Uses aircraft power or 9-volt battery Flightcom IISX 2 place includes: • IISX Intercom • Cigarette lighter adapter • Co-pilot transmit cable Flightcom IISX 4 place includes: • All parts in the 2 place • SR-4 expansion module

Flightcom IISX 2 Place ..... P/N 11-08700 ..... **$99.00**
Flightcom IISX 4 Place ..... P/N 11-08710 .... **$138.95**
SR-4 Remote Expansion module ..... P/N 11-04260 ..... **$30.00**

FLIGHTCOM 403D PANEL MOUNT STEREO INTERCOM

Stereo intercom features include 6-place capability, instant music muting, and pilot isolate so you could focus on your flight and eliminate backseat chatter. * 3-place transmit capability * Easy to adjust squelch and volume controls * Instant music muting, pilot isolate Specifications: * Weight: 5 oz * Length: 5" * Width: 2.4" * Height: 1.2 in * Not TSO'D * Two-year warranty Flightcom 403 intercom includes * 403 Intercom * Connector kit * 6 place stereo jack kit * 2-1/4" hole face plate & vertical/horizontal face plates
Switches are provided in installation kit to allow individual headphone positions to select either stereo or mono mode, allowing the use of monaural headsets

403 w/o recorder w/ jack kit ..... P/N 11-17605 ..... **$229.00**
Stereo input and output jack kit ..... P/N 11-18755 ..... **$51.75**

FLIGHTCOM 403MC PANEL MOUNT INTERCOM

The 403 is a 6-place panel mount, voice-activated mono intercom. This easy to use intercom is designed to fit almost anywhere in the panel. Includes:* 403MC Intercom * Connector kit * 4 place mono jack kit. Features: * 3-position transmit capability * Selectable muting and pilot isolate * Auxiliary input for music or alerts * Rectangular faceplate can be mounted horizontally or vertically Specifications: * Weight: 3.6 oz * Length: 2.62 in * Width: 2.37 in * Height: 1 in * Not TSO'D * Power requirement: 12-28 VDC * Two-year warranty ..... P/N 11-08755 ..... **$149.00**

FLIGHTCOM 403LSA INTERCOM

2-place stereo activated intercom enhances the fun of flying, as well as safety, by optimizing communication clarity. Features include 2-place capability, instant music muting, and pilot isolate so you can focus on your flight. Easy to use and designed to fit almost anywhere in the panel. Switches provided in installation kit allow individual headphone positions to select either stereo or mono mode. Weight: 5.0 oz. Size: 5 in. L X 2.4 in. W X 1.2 in. H Power Requirements: 0.16 amp, 12-28 VDC

403LSA P/N 11-07871 ..... **$189.00**

XCOM INTERCOM

Digitally controlled, intercom system suitable for nearly every 2 or 4 place aircraft. Features a full VOX (Voice Activated) intercom with second com ability, music input with muting and the ability to use different branded headsets without compatibility issues. Successfully mated to the leading handhelds as well as panel-mounted Icom, Narco, King and the like. Measuring only 2-1/8 x 1 x 3-7/8" or (53 x 24 x 100mm) and with a panel size of only 1 x 2 1/8 (53 x 24mm), it's one of the smallest and lightest intercoms in the world and only draws 60 ma (at 14 V) during operation. Mount horizontally or vertically. No voice clipping. Nothing is lost in conversation between the pilot and passengers and the digital voice control provides clear and crisp communication at all times. Monitors and reduces background noise when the voice circuit is open. One simple DB15 connector is all thats needed, on top of the Intercom is the RS-232 port for future software updates. 2 com inputs cater for a primary airband com and a secondary VHF, UHF or Marine band transceiver. Additional input for CD player, FM Radio or MP3 player is available with auto muting to enable seamless communication in the cockpit. Voltage: 10-30 VDC. 2 yr warranty. P/N 11-02207 ..... **$495.00**

FLIGHTTECH ITC-401SJ INTERCOM

• Exclusive Background Noise Reduction Technology • Continuous Audio, No Missed Syllables or Words • Up to 110db of Noise Reduction • Single Volume Control • Built-In Cell Phone/Aux Audio Interface • 9 Volt Battery Operation • External DC Power Jack and Power Cord • PTT for Keying Comm Radio • Small Size: 4" x 2.5" x 1.5' • Compatible with headsets with Electret Microphones • Three Year Warranty.

P/N 11-09736 ..... **$169.95**

AV

FLIGHTTECH ITC-401-ENRI PORTABLE INTERCOM

The ITC-401-ENRI 2-place intercom features the Enhanced Noise Reduction Intercoms circuit in a basic, small package. With ENRI, the problems common with voice activated intercoms are eliminated. There are no squelch controls to adjust, no automatic squelch circuits that keep changing levels, only one single volume control. ENRI continuously monitors background noise picked up by the headset microphone and eliminates it, even while talking. Excellent for open cockpit aircraft. 9V Battery Operation • Pilot/All Switch • Available with cable and standard plugs or ICOM A-22, A3 and A4 Cable & Plug • 3 year warranty • 4"L x 2.5"W x 1.5"D. P/N 11-00544 ..... **$169.95**

ITC-401-23 - Plugs directly into Icom A5 & 23 with out the need for additional cables P/N 11-01005 ..... **$169.95**

ITC-401/1-ENRI - Plugs into Icom A22, A3, A4 with out need for additional cables P/N 11-00825 ..... **$169.95**

FLIGHTTECH ITC-2003-ENRI REMOTE PANEL MOUNT INTERCOM

The ITC-2003-ENRI features ENRI technology, a unique design, a small panel control unit and a remote intercom unit. The small control panel consisting of a Volume control and a Pilot/All switch measures only 1"w x 1.3"d x 1"h. The second part, the intercom unit is only 4.6"x 3.1"x 1.7" and included mounting tabs. Because of D.C. switching and control between the panel control and the intercom, the mounting location is not critical. Simply mount the intercom unit in an easy to reach location, run cables to the headphone jacks, power and a small six conductor cable to the panel control unit. The Electronic Noise Reduction feature is exclusive to FlightTech Intercoms and allows for quiet communications without the background noise common to Voice Operated Squelch controlled intercom. With ENRI, the microphones are active at all times, ENRI monitors the background noise and eliminates it allowing only the headset user's voice to pass.
Power: 12V or 24V P/N 11-00172 ..... **$365.95**
With preassembled 2-place cable ..... P/N 11-00822 ..... **$365.95**

FLIGHTTECH MINIVOX PORTABLE INTERCOM

The MiniVOX two place portable intercom is designed for the student pilot and renter pilot requiring a basic low cost voice operated intercom. Measuring 4" x 2.5" x 1.5", the MiniVOX features adjustable Squelch and Volume controls, on-board Push-To-Talk button and up to 25 hours of operation from a 9V battery. Ease of operation, long battery life and a small size make the the new MiniVOX an ideal entry level intercom. Weighs less than 10 oz. Made in the USA.
P/N 11-02126 ..... **$124.95**

FLIGHTTECH ITC-401TC INTERCOM

ITC-401TC is different from the rest of the ITC-401 series in that the "Noise Reduction" control is located on the front of the intercom, rather then an internal "Set and Forget" adjustment The ITC-401TC is available in versions with cables and plugs for panel mount jacks as well as handheld radios and they include the following: ITC-401TC, Standard cable and plugs for panel jacks P/N 11-03201 ..... **$169.95**
ITC-401TC-1, Cable and plugs for the ICOM, A22, A3, A24, & A
P/N 11-03202 ..... **$169.95**
ITC-401TC-23, Cable & plug for the ICOM A23 & A5
P/N 11-03203 ..... **$169.95**

ITC-2001-ENRI

FLIGHTTECH ITC-2001-ENRI 2PLACE PORTABLE STEREO INTERCOM

Ideal for the renter pilot or as a permanent intercom without the installations concerns associated with a panel mount intercom. Features: Exclusive Electronic Noise Reduction circuits. Up to 110db of Noise Reduction. Continues Audio, No missed Syllables or Words. Built-in Cellular Phone Interface, includes patch cable. Pilot/All Switch. Specifications: 9 Volt Battery or External DC Operation, Cigarette Lighter Adaptor included. Auxiliary Stereo Audio Input with Radio Mute and Intercom Audio Mute. Light weight, 10 oz. Push-to-Talk Button for Keying the Comm Radio. Pilot and CoPilot Radio PTT Jacks. Small Size: 5.5" x 1.5" x 3.2" Three Year Warranty.

Model	Description	Part No.	Price
	Electronic Noise Reduction Intercoms		
ITC-2001-ENRI	2-place portable intercom w/ENRI	11-17668	**$232.95**
ITC-402P-ENRI	Same as above but w/ cables and jacks	11-00926	**$219.95**
ITC-404SP-ENRI	4-place stereo intercom panel mount	11-01354	**$279.95**
ITC-2001-I	2 Place Intercom for use with (ICOM A22, A24 AND A6 Radios)	11-07010	**$234.95**
Model	**Description**	**Part No.**	**Price**
	Pre-Assembled Cables		
ITC-404S-P	2-place Cable	11-01377	**$130.95**
ITC-404S-P	4-place Cable	11-01378	**$138.95**
ITC-2003	2-place Cable	11-01379	**$130.95**
ITC-2003	4-place Cable	11-01380	**$138.95**
ITC-404S-P	Interface Cable	11-01381	**$29.95**

SOFTCOMM PANEL MOUNT INTERCOMS

ATC-2P (2-passenger), ATC-4P (4-passenger) & ATC-6P (6-passenger) panel-mounted intercoms are so compact that they fit most anywhere in the aircraft's panel. Designed to mount either horizontally or vertically, these panel-mounted intercoms will fit in any homebuilt, business aircraft, or general aviation aircraft in production today, and offer stereo or mono sound. The panel-mounted intercom has an exclusive Softcomm feature of a back-up battery (9V) that affords power to the Intercom when the aircraft's master power is shut off or fails in flight. The battery is automatically switched off when aircraft power is present and on when absent. The panel-mounted intercom offers SoftComm's features of Recorder-In and Recorder-Out. A miniature remote audio panel houses this feature and can be located anywhere the pilot prefers. This allows recording of clearances, flight lessons, enroute weather and flight events. The ATC-2P, ATC-4P, & ATC-6P panel-mounted intercoms come complete with mounting instructions, wiring diagrams, all required microphone and headphone jacks, audio recorder jacks, and bi-directional mounted nomenclature plates. These intercoms are supplied with pre-tested 8 ft. cable assembly terminated into a DB25 pin connector. Size: 1"hx2.5"wx6"d. Power 12Vdc. Wt:6.25oz., 3yr warranty.

ATC-2P ..... 2-Place Intercom (mono) ..... P/N 11-11812 .... **$199.95**
ATC-2PS .... 2-Place Intercom (stereo) ..... P/N 11-02216 .... **$212.95**
ATC-4P ..... 4-Place Intercom (mono) ..... P/N 11-11822 .... **$211.95**
ATC-4PS .... 4-Place Intercom (stereo) ..... P/N 11-05313 .... **$222.95**
ATC-6P ..... 6-Place Intercom (mono) ..... P/N 11-11824 .... **$241.95**
ATC-6PS .... 6-Place Intercom (stereo) ..... P/N 11-11807 .... **$242.95**

ITC-402P/404S-P PANEL MOUNT INTERCOMS WITH ENRI

The ITC-402P Enhanced Noise Reduction Intercom is a small,easy to install intercom designed for the pilot who flies a two or four place aircraft. Featuring single control volume control operation,the pilot and passenger can enjoy quiet communications on those long cross country trips. The ITC-402P includes a stereo auxiliary audio input.To prevent missing ATC communications, the music is muted when either audio from the communication radio is present or there is intercom audio. The new ITC-404S-P has full auxiliary Stereo in and Stereo out, with dual function muting. Features: • Enhanced Noise Reduction Technology • No Squelch circuits or controls • Size: 2.1"w x 1.2"h x 3.1"l • Single Volume Control Operation • Pilot/All Isolation Switch • Pilot and Copilot Push-to-Talk Switch Inputs • Stereo Music Input w/Muting • 12 to 28VDC operation.•Cellular Phone interface, include phone cable.

Model	Description	Part No.	Price
	Electronic Noise Reduction Intercoms		
ITC-404SP	2-place portable intercom w/ENRI w/ cables and jacks	11-00926	**$219.95**
ITC-404SP	4-place stereo intercom panel mount ***Note: Will not work w/ the unamplified dynamic mic.***	11-01354	**$279.95**

SOFTCOMM PORTABLE INTERCOMS

These top quality, economical intercom systems are perfect for any type aircraft and are compatible with any standard headset. Features include automatic on/off power, panel controls for volume and gain and a pilot isolate switch (ATC-4 only). The intercoms are 9V DC portable or panel mountable with pilot and copilot transmit as a standard feature. These intercoms can be used with other equipment to record instructions or play cassette music. The new model of the ATC-2 has reduced size and weight, and a front-panel mounted PTT switch. The improved ATC-4 and ATC-6 also have a new dual transmit design. All units have aux power cord and stereo cable. With pilot isolate and push-to-talk switch. Model ATC-2T is a 2-place portable intercom designed for the student pilot. It has a recording feature that allows all CFI and ATC instruction to be recorded on a standard cassette player for future study. It is 9V battery powered and is compatible with all general aviation headsets and radios.

2-Place Portable (mono) ATC-2Y ..... P/N 11-05818 ..... **$176.95**
4-Place Portable (mono) ATC-4Y ..... P/N 11-05819 ..... **$184.95**
4-Place Portable (stereo)ATC-4S ..... P/N 11-05905 ..... **$211.95**

SOFTCOMM INTERCOMS FOR ULTRALIGHTS

These Softcomm Intercoms are specially designed to operate with today's transceivers in mind. The ATC-2I models are full featured intercoms with Record-In and Record-out, a PTT switch mounted in the face place and a "AUX power" input for using aircraft power instead of the 9 VDC battery(S), Listen to CB's, CD players and AM/FM radios while in flight. Features music "MUTE" circuit, volume control and "squelch" adjustment. Housed in a rugged ABS case with a space for 2 batteries, these intercoms are compact and fully portable.

Model	Description	P/N	Price
ATC-2I-A23	Icom, IC-A23, IC-A5	11-02217	**$175.95**
ATC-2I-A20	Icom, Delcom and Bendix King radios	11-07700	**$173.95**
ATC-2I-A22	Icom's A-22 compact transceiver	11-07710	**$173.95**

AV

BOSE® A20™ HEADSET – CLARITY ALOFT

Improved noise reduction. Greater comfort. Bluetooth® connectivity.

The most technologically advanced Bose® headset ever. Bose was the first to introduce active noise reducing headsets to aviation more than 20 years ago, forever changing the way pilots fly. Now, the New Bose A20™ Aviation Headset introduces an entirely new standard. It's been engineered for significantly increased noise reduction in even louder environments. With an improved degree of comfort you'll appreciate. All without compromising the clear audio you expect from Bose. Plus, a Bluetooth® communications interface, auxiliary audio input and priority switching. It's made in the U.S.A., and meets or exceeds all TSO requirements. No other headset can deliver this advanced combination of benefits.

Bose® Acoustic Noise Cancelling® headset technology - Sound is monitored outside the earcups and at the ears, unwanted noise is identified, and a correction signal is created to cancel the unwanted noise. **TriPort® acoustic headset design -** Proprietary Bose® technology uses acoustically tuned ports to optimize the low-frequency output of the system. **Adjustable boom microphone -** Provides the means of communication for pilots and passengers. **Proprietary ear cushion design** - Provides an important acoustic seal between the headset and the head. **Replaceable ear cushions -** Provide an important acoustic seal between the headset and the head. **Redesigned earcup architecture -** Provides more room for customers' ears without compromising overall headset size. **Magnesium alloy headband** - Provides strong, lightweight structural frame to support the headset and distribute the necessary clamping force. **Adjustable headband sliders** - Offer up to three inches of adjustment in headband length, using high-strength, aerospace-grade composite material. **Detachable sheepskin headband cushion** - Evenly distributes the headset weight across the user's head. **Center torsion spring -** Mechanical support for the headband joint, allowing it to be opened or closed to fit different head sizes. **Side swappable down cable** - Allows easy attachment of integrated cable/boom mic assembly to either earcup. **Headband stop -** Prevents headband from closing completely when not in use. **Carrying case -** Custom-designed to fit the headset. **Adjustable clothing clips** - Provide means to attach the portable control module and cable to a pocket, belt or other suitable attachment point. **Cable, microphone and connector configurations -** Interface and compatibility with a wide range of civilian and military aircrafts. **Tethered battery door** - Provides protection and easy access to the battery compartment. **Integral circuit shielding -** Shields sensitive electronics from the harsh electromagnetic interference (EMI) associated with ground and airborne transmitters. **Digital micro-controller system -** A digital microcontroller operates the user controls and module functionality, and monitors battery life. **Auxiliary audio input -** Input jack for external audio sources such as GPS systems and music players. **Male-to-male audio cable** - Provides the means to connect an external audio source to the headset. **Independent, receded L/R volume controls with midrange detent and visual volume level indicator** - Adjust the headset audio volume level for left and right channels. **Power LED and battery-life indicators** - Indicates when the noise reduction is turned on. Indicates the remaining hours of battery life (green: healthy batteries, yellow: 2-8 hours, red: less than 2 hours). **User configurable switches** - Stereo/mono switch to configure the headset for a specific intercom. Auto-off (on/off) switch gives user the option of automatic or manual power control. **Audio prioritization switch** - Manages the different audio signals available to the headset (intercom, aux-in). **Flexible power circuitry -** Senses the power source of the headset and switches seamlessly from battery to aircraft power without compromising the headset performance. **Requires the 6-pin to Twin Plug adapter **Automatic smart shutoff** - Detects that the headset is no longer being used and automatically shuts off power after a period of inactivity. **FAA/JAA TSO-certified** - Meets or exceeds requirements for headset performance. **Limited 5-year transferable warranty** - Limited warranty coverage for parts, labor and second-day return shipping expenses of non-abusive malfunction.

Bose® A20 Aviation Headset™ with Bluetooth® Connectivity		
Description	**Part No.**	**Price**
Battery Powered. Electret microphone. Straight Cord, twin plug	11-08724	**$1,095.00**
Aircraft powered. Electret microphone. Straight Cord, 6 pin connector	11-08725	**$1,095.00**
Battery Powered. Electret microphone. Straight Cord, U-174 plug	11-08726	**$1,095.00**
Bose® A20 Aviation Headset™ Without Bluetooth® Connectivity		
Battery Powered. Electret microphone. Twin Plug, Straight Cord	11-08728	**$995.00**
Aircraft powered. Electret microphone. Straight Cord, 6 pin connector	11-08729	**$995.00**
Battery Powered. 5-ohm dynamic microphone. Straight Cord, U-174 plug	11-08731	**$995.00**
Bose® A20 Aviation Headset™ - No cable		
Headset Assembly	11-08732	**$800.00**
Bose® A20 Aviation Headset™ Cable Assemblies with Bluetooth® Connectivity		
Battery Powered. Electret microphone. Straight Cord, twin plug	11-08733	**$269.00**
Aircraft powered. Electret microphone. Straight Cord, 6 pin connector	11-08734	**$264.95**
Battery Powered. Electret microphone. straight Cord, U-174 plug	11-08736	**$264.95**
Bose® A20 Aviation Headset™ Cable Assemblies without Bluetooth® Connectivity		
Battery Powered. Electret microphone. Straight Cord, twin plug	11-08737	**$195.00**
Aircraft powered. Electret microphone. Straight Cord, 6 pin connector	11-08738	**$174.95**
Battery Powered. 5-ohm dynamic microphone. straight Cord, U-174 plug	11-08739	**$174.95**
Battery Powered. 150-ohm dynamic microphone. straight Cord, U-174 plug	11-08754	**$174.95**

Bose® A20 Aviation Headset™ Accessories		
Description	**Part No.**	**Price**
6-pin to Twin Plug Adapter	11-08741	**$49.75**
Aircraft power Installation Kit	11-01846	**$34.00**
Ear Cushion Kit	11-08743	**$29.95**
Headband Cushion Kit	11-08744	**$19.95**
Boom Microphone Windscreen (Electret)	11-04846	**$6.75**
Boom Microphone Windscreen (Dynamic)	11-08747	**$6.00**
Service Accessory Kit (ear cushions, headband cushion, mic windscreen)	11-08748	**$49.95**
Carry Case	11-08749	**$24.95**
Auxiliary Input Cable Adapter	11-08751	**$13.75**
Clothing Clip	11-08752	**$5.75**
Earcup Down-cable Cover	11-08753	**$9.95**

CLARITY ALOFT HEADSET

Used to improve both hearing protection and speech communications. Each earpiece includes a miniature speaker that reproduces speech signals from the aircraft audio system. The replaceable compliant foam tips attach to the earpiece and contain a pathway for the sound to travel from the transducer to the ear. Provides the highest level of hearing protection available by any method including active noise reduction. (ANR) The noise-canceling microphone is a high fidelity noise canceling Electret Condenser microphone. Include a music input in the Volume control box. This button could also be used as a backup in case of other system failures. Balance and comfort are the result of its elegantly simple design. P/N 11-02923.....**$525.00**

CLARITY ALOFT PRO HEADSET

Clarity Aloft™ Aviation Headsets are the result of our commitment to the highest standards in aviation communications. These headsets contain the most technically advanced components brought together from diverse experts in audio communications. All the features you'll love from the original with ***TSO Certification*** and additional features like: ***Music Input.*** Equipped with a music input in the volume control box that will accommodate most music devices through a 1/8 inch plug.

P/N 11-05794.....**$695.00**

CLARITY ALOFT LINK AVIATION HEADSET

Lets you wirelessly connect to multiple Bluetooth devices for phone calls, music, and more. Tailored Digital Signal Processing gives it the clearest sound available today. Purchase includes: Headset, carrying case, owner's guide, starter supply of eartips (package of 12), and 2 AA batteries. **Features:** • Light, low profile headband •Full spectrum noise reduction • Professional grade microphone with added Digital Signal Processing • 2 Bluetooth devices can be linked simultaneously •Bring your most used tool into the cockpit – your phone can be as indispensible in the air as it is on the ground • Enjoy music and movies on your iPod or iPad – clear and powerful sound will have you experiencing them like you never could in an airplane before • Connect to more than one device - you don't have to choose between your phone and your other devices, giving you the best functionality • Seamlessly transition from music to a call – the optional autofade will bring down the volume when calls from the radio or phone come in • Independently adjust the volume - dual controls allow you to set your cockpit radio volume and the volume from your phone and devices separately at exactly your preferred level • Connect with just the sound of your voice - use your smartphone's voice-activated dialing feature to let loved ones know when you'll be landing.

P/N 11-10420.....**$795.00**

AV

LIGHTSPEED HEADSETS

NEW ZULU HEADSET BY LIGHTSPEED

A distinctive new look and continuous innovation make the new Zulu the ultimate blend of design, technology and high performance. The new Zulu once again sets the standard by which all premium ANR (active noise reduction) headsets are measured. Check out these new features!

Quiet - With patent-pending Microport Vent℠ technology, the new Zulu offers greater ANR consistency and performance over a deep, broad range of low frequency noise. The magnesium ear cup is superior at blocking out high frequency noise.

Comfort - Weighing in at about 13 ounces, the new Zulu Lightcomfort℠ design includes new plush ear seals, exceptional fit and 15% less side pressure.

Durability - A low profile, stainless steel headband provides lightweight durability and excellent cabin clearance.

Bluetooth™ Connectivity - The New Zulu's full-function Bluetooth connectivity provides enhanced sound quality for voice, music or compatible audio devices.

Cell Phone/Music Connection - An integrated control box auxiliary input offers and additional option for connecting a cell phone, music player or other audio device.

Front Row Center℠ (FRC) - Concert-class fidelity and sound reproduction come alive in Lightspeed's exclusive Front Row Center feature by automatically adding a dynamic surround-sound quality to music.

ComPriority℠ - Never miss important radio communications with Lightspeed's patented ComPrioirty which lowers the volume of an auxiliary device automatically during radio or intercom transmissions.

Stereo or Mono - Easily match audio panel inputs with a quick switch to stereo or mono.

Description	Part No.	Price
Zulu-Circumaural, Anr, Straight Cord, Dual Ga Plugs, Battery Power	11-09692	**$900.00**
Zulu-Circumaural, Anr, Straight Cord, Single Lemo Connector, Panel Powe	11-09716	**$900.00**
Zulu-Circumaural, Anr, Coil Cord, Single Lemo Connector, Panel Power	11-09717	**$900.00**
Zulu-Circumaural, Anr, Coil Cord, Single U-174 Connector, Battery Power	11-09718	**$900.00**
Zulu-Circumaural, Anr, Coil Cord, Dual Ga Connector, Battery Power	11-09719	**$900.00**
Zulu-Custom	11-09721	**$900.00**
ACCESSORIES		
Part Number	**Price**	**Buy**
Zulu Head Pad	11-08723	**$9.75**
Aviator Sunglasses	13-10005	**$350.00**

Aircraft Spruce accepts the return of most models of headsets for credit towards the purchase of certain high end ANR headsets. Please Call or email our sales team for pricing and availability on trading in your headset at 877-477-7823 or info@aircraftspruce.com. One Headset per trade-in must be complete and in working condition per our inspection.

AV

LIGHTSPEED AVIATOR SUNGLASSES

No matter how many times you fly, you feel it…that breathtaking taste of freedom as you rise through the clouds and survey the horizon. And now, Lightspeed Aviation has developed the perfect companion to enrich and enhance your flying experience: Lightspeed Aviator Sunglasses.

Lightspeed Aviator Sunglasses are the only aviator glasses designed exclusively to fit perfectly with your Lightspeed headset. Designed and made in Italy, the lightweight frames are made with the same flexible spring steel as the Lightspeed Zulu headband.

The sleek low-profile design fits gently against your head assuring a solid seal with your Lightspeed headset. And the removable anti-glare, non-polarized flip shaded lenses allow you to quickly transition from un-obscured sunlight to reading maps in a dark cockpit.

Now you can fly safer with greater freedom by eliminating the hassle of needing to change from prescription glasses to sunglasses.

Simply present your Lightspeed Aviator Sunglasses to your preferred optician. Your optician will use the clear lenses from your Aviator Sunglasses as a production guide for your personalized prescription lenses.

Accessories Include: Hard carrying case, soft fabric bag and cleaning cloth. P/N 13-10005.....**$350.00**

SIERRA HEADSET BY LIGHTSPEED

Try on the latest addition to the Lightspeed line of premium headsets for a new flying experience. With the fit, comfort, features, and value you've come to expect from Lightspeed, Sierra is best in class. ANR and Bluetooth connectivity bring top-of-the-line features to Sierra. Plush ear seals and sturdy construction add to Sierra's durability. A wired input for audio devices and Auto Music Mute enrich your flying. A reversible headband design allows microphone placement on the left or right.

Sierra is everything you've been looking for in a value ANR headset.

Features:

ANR - Active noise cancellation over a broad range of low frequency noise bring state of the art technology to Sierra.

Comfort and Durability - At 16 ounces with plush ear seals and solidly designed ear cups, extended wearing is a breeze.

Bluetooth Connectivity - Allows wireless connection from Bluetooth phones. Stereo streaming (A2DP) is not available with Sierra.

Music Connection - An integrated control box input allows you to connect a music player.

Auto MusicMute - Receiving radio communications is a snap with MusicMute which automatically decreases a music player by 80 percent, lessening the chance of missing important interactions. Power Source and Connectors Two AA batteries, Dual GA.

Weight - 16 oz. 5-Year Lightspeed warranty

P/N 11-08588 .....**$600.00**

LIGHTSPEED HEADSET ACCESSORIES

3G SERIES ACCESSORIES		
Description	**P/N**	**Price**
1" Soft Leather Seals	11-01987	**$22.50**
Music Patch Cord	11-01989	**$5.95**
Cell Patch Cord	11-01990	**$7.50**
XL SERIES ACCESSORIES		
Description	**P/N**	**Price**
1.5" Soft Seals	11-01988	**$19.85**
Installed Heli. Coil Cable	11-01994	**$42.95**
QFR & SKYCOM SERIES ACCESSORIES		
Description	**P/N**	**Price**
0.75" Comfort Seals	11-01284	**$19.95**
Replacement Stock Seals	11-01995	**$19.85**
Zippered Comfort Headpad	11-07555	**$10.75**
HEADSET ACCESSORIES		
Description	**P/N**	**Price**
MACH 1 Wind Screen 2pack	11-00358	**$4.95**
Wind Screen - Zulu, 3G, QFRc, XLC	11-08575	**$3.35**
Dual headset flight bag	11-01996	**$29.95**

SIGTRONICS HEADSETS

AIRCRAFT SPRUCE SKYCOM & SKYPRO HEADSETS

P/N 11-08279

SKYCOM II SERIES - Offer a family of products with a different look, fit and performance from the 'traditional' headset design. While >30% lighter in overall weight, they offer better quieting with greater comfort and user features. They were designed around the best hearing protectors offered in the Industrial Safety world to offer maximum passive noise rejection. The thin, flexible wireframe headband design easily contours to your head, limiting clamping pressure yet maintains a very low profile for canopy clearance. The earseal system offers a larger ear opening with numerous options for type of seal available. The Boom mounts under the cup and is reversible for use on both sides. All models include dual volume controls, Electret N/C mics with adjustable gain, Stereo/Mono compatibility, a carry bag, and a 3 year warranty. Model-specific features include Cellphone interface, and stereo music interface with muting, and ANR performance with a convenient small/inline, 2 AA battery solution.

Skycom II: 11 Oz, 24 dB ..... P/N 11-02658..... **$89.95**
SkyCom II: with Cell interface ..... P/N 11-08278..... **$119.95**
Skycom II ANR: Cell/Music w/muting..... P/N 11-08279..... **$229.95**

P/N 11-09098

SKYCOM I SERIES - Was first offered over 10 years ago and is designed around the traditional, oval-shaped headset design used for over 40 years in aviation. It features a steel headband, large headpad, and metal yoke/pivot system. Earseals mount around a protruded flange and are easily replaceable. The reversible boom mounts on the side of the cup and offers two styles on the models offered.

All models offer electrets N/C mics and and a one year warranty. The ANR model offers over 15dB of additional cancellation using a detachable 9 volt battery module

Skycom 40-A: 18 oz, 24 dB ..... P/N 11-09099..... **$94.00**
Skycom 80-A: 18 oz, 23 dB ..... P/N 11-09098..... **$235.00**
Skycom ANR: >15 dB ANR..... P/N 11-02214..... **$129.00**

REPLACEMENT EAR SEALS

These seals fit SKYCOM H-40A, SKYCOM ANR, and SKYPRO H-80A headsets.

Replacement Gel Ear Seals..... P/N 11-04680.... . **$23.95**/pr.
Replacement Foam Ear Seals. ..... .P/N11-04681..... **$11.95**/pr.

HEADSET/INTERCOM PACKAGES

AIRCRAFT SPRUCE SKYCOM PACKAGE #1

• 2 Skycom H-40A Headsets • 1 Skycom 400 Intercom (portable) • Headset Bag • Push-To-Talk Switch..... P/N 11-11885 ..... **$382.95**

AIRCRAFT SPRUCE SKYPRO PACKAGE #2

• 2 Sky Pro Headsets • 1 Skycom 400 Intercom (portable) • Headset Bag • Push-To-Talk Switch ..... P/N 11-11890 ..... **$452.95**

SEE PREVIOUS PAGE FOR LIGHTSPEED ACCESSORIES.

SIGTRONICS S-AR HEADSET

The S-AR headset protects your hearing switched on or off. With S-AR switched on you hear a major reduction in low frequency noise. Radio transmissions that are weak and garbled on passive headsets will sound strong and clear with an S-AR headset. Features up to 19 db of active noise reduction, air foam head pad cushion that virtually eliminates "Hot Spots", ultra-deep gel ear seals for comfort and ease of use and custom flex boom for perfect mic placement. Sigtronics exclusive "Stop-Break" high flex cord and RFI and EMI free electronics make the S-AR ideal for pilots who want a high performance mono/stereo headset. A battery power module (9V) with belt clip and custom headset bag are included with all S-AR headsets. P/N 11-00859 ..... **$449.00**

SIGTRONICS S-8 HEADSET

Eliminate scratching the top of your canopy by using the Sigtronics S-8 headset. features a behind the head headband with quick adjust hook-n-loop strap that fits the shape of your head, a flex boom and gel ear seals. The S-8 has a passive noise reduction rating of 24 dB. 5 Year warranty. P/N 11-00645 .....**$259.00**

SIGTRONICS HIGH PERFORMANCE HEADSETS

All Sigtronics headsets and intercoms are specifically designed for high-noise environments and are RFI and EMI immune, giving you clear, interference-free transmission even in fabric or composite aircraft or in use with handheld radios.

SERIES 8 HEADSETS

"8 Series" superlight headsets are full-size quality headsets available at just 11.9 oz., delivering comfort, and performance. A new lightweight, custom flex boom stays where you put it, even in the roughest conditions.

S-58 features new, durable, non-glare "powder-coated" black hardware and Sigtronics "sky-blue" earcups. The new ergonomic headpad and custom fit gel seals deliver comfort and eliminate "hot-spots". A new microphone configuration cancels unwanted noise before it can get into the system. Sigtronics' 5-year warranty, custom padded bag, easy-grab volume controls, ultra foam windscreen & exclusive clothing clip are included. Wt. 11.9 oz. Flex boom.

Mono..... P/N 11-19105 ..... **$237.00**
Stereo ..... P/N 11-02803 ..... **$267.00**
Helicopter ..... P/N 11-02813 ..... **$252.00**

S-68 headsets include all of the S-58 features plus high-performance black earcups and 14K Gold Plated hardware. P/N 11-19125 .. **$252.00**

Stereo .....P/N 11-02805 ..... **$272.00**
Helicopter.....P/N 11-02815 ..... **$260.00**

SIGTRONICS S-40 is a high performance headset featuring an electret microphone, and fully articulating mike boom with full swivel action. The S-40 offers dual volume controls and soft, pliable polyurethane ear cushions for optimum comfort. The S-40 weighs 16 oz. It is made in the U.S.A. and carries a 3-year factory warranty. Earcups are royal blue. The S-40-S only has dual volume controls (stereo)

P/N 11-02795 ..... **$162.00**
Stereo.....P/N 11-02809 ..... **$194.00**
Helicopter .....P/N 11-02213 ..... **$191.00**

S-45 series headsets are the same as the S-40 headset, except they have airflow headpads and gel earseals for maximum comfort. ... P/N 11-02797 ..... **$194.95**
Helicopter ..... P/N 11-02810 ..... **$274.95**
Stereo..... P/N 11-02811 ..... **$229.95**

S-20 incorporates the M-80 microphone, designed specifically for use in high noise environments with its excellent noise canceling properties. The microphone gain is set to operate over a wider range of aircraft radios, even handheld - the ultimate test.

S-20 Headset..... P/N 11-02799 ..... **$144.00**

SIGTRONICS HEADSET ACCESSORIES

P/N 11-04368

Electret Mic Muff ..... P/N 900084 ..... **$2.75**
Foam Ear Seals..... P/N 100369 ..... **$9.70**
Shirt Clip ..... P/N 11-04368..... **$4.25**

SIGTRONICS HEADSET/INTERCOM COMBOS

SIGTRONICS 2-PLACE COMBOS - Includes 2 Sigtronics S-40 headsets, 1 SPO-22 (2)place intercom, push-to-talk switch, & comfort covers for headsets.

Combo #1 w/S-40 Headsets..... P/N 11-16929 ..... **$535.00**
Combo #1A w/S-58 Headsets..... P/N 11-00037 ..... **$679.95**

SIGTRONICS 4-PLACE COMBOS - Includes two Sigtronics S-40 headsets, SPO-42 (4)place intercom, push-to-talk switch, & comfort covers for headsets.

Combo #2 w/S-40 Headsets..... P/N 11-16930 ..... **$558.00**
Combo #2A w/S-58 Headsets..... P/N 11-00038 ..... **$706.85**

SIGTRONICS PANEL MOUNT COMBOS - Same as Combo #2 except substitute SPA-400 panel mount intercom for SPO-42 portable intercom.

Combo #3 w/S-40 Headsets..... P/N 11-16931 ..... **$564.00**
Combo #3A w/S-58 Headsets..... P/N 11-00039 ..... **$712.85**

SIGTRONICS SPO-22N PORTABLE INTERCOM COMBO - Combo #4 includes 2 S-20 headsets, SPO-22N Battery powered portable intercom and headset intercom bag..... P/N 11-04655 ..... **$387.50**
Combo #4A includes 2 S-58 Headsets, SPO-22N Battery powered intercom, and headset/intercom bag.... P/N 11-04656 ..... **$517.50**

SIGTRONICS SPORT 200 PANEL MOUNT INTERCOM COMBOS

Combo #5 includes 2 S-20 Headsets, Sport 200 Panel Mount Intercoms and Headset/Intercom bag. P/N 11-04653 ..... **$329.00**
Combo #5A includes 2 S-58 Headsets, Sport 200 Panel Mount Intercom, and headset /intercom bag... P/N 11-04654 ..... **$525.00**

CALL FOR SPECIAL PRICES!

AV

DAVID CLARK HEADSETS

DAVID CLARK X11 HEADSET

The new X11 ENC headset features Advanced Comfort Engineering for an incredibly comfortable, personalized fit which you'll appreciate during long flights. It features new, Electronic Noise-Canceling (ENC) technology that reduces pilot fatigue. Leading edge, lightweight materials such as genuine carbon fiber provide added durability. And of course, the X11 is backed by David Clark Company customer service and support which is second to none. All of which makes this new headset as comfortable to own as it is to wear. P/N 11-04651.....**$799.00**

Gel ear seals X11 DC ..... P/N 11-05803.....**$37.50**
X11 Headpad ..... P/N 11-09264.....**$25.50**
X11 Microphone ..... P/N 11-09263.....**$78.75**

DAVID CLARK X11P HEADSET

The model X11P features the same outstanding comfort and high performance features of the model X11 headset, but is designed to plug directly into the panel of the aircraft. Installation flexibility is provided by three available adapter cords and connectors which allow (1) wiring directly to aircraft avionics, (2) plug-in portability with other than primary aircraft or (3) connection to aircraft already equipped with David Clark ENC 'XP' Series panel mount modules. P/N 13-04790 .....**$799.00**

ACCESSORIES FOR X11P HEADSET

40998G-05 ADAPTER CORD - Designed for wiring into existing avionics built-in intercoms, radios, etc. PN 11-05542.....**$68.75**

40998G-02 ADAPTER CORD - Optional adapter cord with standard aviation plugs allowing use of the X11P when flying in other than primary aircraft. PN 11-05547.....**$110.95**

40998G-03 ADAPTER CORD - Optional adapter cord allowing use of the X11P in aircraft already equipped with David Clark ENC "XP" Series panel mount module. PN 11-05548.....**$89.95**

DAVID CLARK H10-13.4 HEADSET

Provides David Clark quality without the hot spots, clamping, or weight discomfort. Features a certified noise reduction rating of 23 dB and weighs only 13.4 oz. Drastically reduced headband force, new soft air-flow pillow headpad, flo-fit gel ear seals, M-7A noise cancelling electret mic, and low profile volume controls with detect settings. 5 yr warranty.

P/N H10-13.4 .....**$306.90**
P/N H10-13.4S (stereo) **$311.55**
P/N H10-13H (Helicopter, 5ft. coiled cord) **$320.85**

DAVID CLARK H10-13Y YOUTH HEADSET

Same features as the popular H10-13.4 Headset and has been especially designed to comfortably fit a child. Extremely lightweight and has a new headband assembly which allows you to adjust the headset to your child's head for a perfect fit every time. The new Super Soft Foam-filled Headpad and Flo-Fit Gel Ear Seals, also add to the headset's long-term wearing comfort. When your child grows, a conversion kit is available, to convert your H10-13Y to a David Clark Model H10-13.4 .....P/N H10-13Y **$306.90**

Conversion kit.....P/N 11-11950 .....**$29.75**

DAVID CLARK H20-10 HEADSET

H20-10 headset features the Custom Comfort System which is a whole new concept in headset in comfort. Includes a headband suspension assembly that can be adjusted to a perfect comfort level, a pillow soft "floating" headpad for maximum cushioning with no hot spots, and a larger contoured Flo-Fit gel ear seals which mold softly to your head. P/N H20-10 .....**$327.36**

P/N H20-16 (for helicopters).**$339.45**

DAVID CLARK H10-56HXL HELICOPTER HEADSETS

New Comfort gel, undercut ear seals. Battery Power Module - One 9 volt battery for up to 25 hours of operation. Pilot Selectable Automatic-Shut Off Feature. Five foot (extended) coil cord terminating with a 10 pin quick release connector. Coiled cord assembly connects Battery Power Module to panel intercom/radio. Same headset can be used with optional panel mount. (H10-56HXP) Dual volume controls let you adjust the level for each ear. Exclusive, patented flex/wire boom for easy, precise microphone placement. Super soft foam filled pillow headpad. NRR - 27 dB passive noise reduction rating plus 17 dB to 22 dB when ENC is turned on. Weight (without cord assembly): 22 oz.

Description	Part No.	Price
MODEL H10-56HXL	11-03828	**$736.56**
MODEL H10-56HXP	11-03829	**$698.43**
MODEL H10-56 - Hinged wire boom with the M-101 amplified Dynamic microphone. Conforms to MIL-M-27291A. Coil Cord (5' extended) with U-174/U Plug. FAA TSO Approved C57 Cat. B and C58a. Exceeds RTCA/DO-214 Standards. Weight (without cord assembly): 20 oz.	11-03827	**$332.94**

DAVID CLARK H10-76 LOW IMPEDANCE HEADSET

Undercut Comfort-Gel Ear Seal for Improved Comfort. Low Impedance Most popular noise attenuating headset ever produced for use with military radios. Standard headset of the U.S. Air Force, NATO and most airborne command centers. AWAC's, under command of NATO and the United States, use the H10-76 both in the cockpit and the communication operations. Headset of choice of M.A.T.S. pilots. Also used in ground support operations. Coiled cord terminates into a U-174/U plug. P/N 11-02226.....**$266.91**

DC H20-10X HEADSETS

Made of lightweight advanced composite materials. Features include: Portable battery power module accepts connector from headset and connector on communication cord to aircraft. Powered by 6 AA batteries, has power on LED, and guarded on/off switch. Dual volume controls let you adjust the level for each ear. Custom comfort headpad suspension system adjusts to your head like a pillow. Gel filled earseals are contoured to your ears. Universal flex boom. NRR-22Db passive noise reduction rating plus 12Db to 17Db when ENC is turned on.***CALL FOR SPECIAL PRICES !***

Part No.	Description	Price
H20-10XL	Fixed wing headset (ENC) with straight, 5ft. cord Snap Lock-Quick release connector/battery power module with mating headset and cord assy connectors/coil cord assembly with mating battery connector and panel-intercom plugs	**$756.09**
H20-10XP	Fixed wing Headset (ENC) w/straight, 5ft. cord,Snap Lock-Quick Release Connector and panel mount module with mating headset connector, on/off toggle switch. Connectors/Coil Cord Assembly with mating battery connector and Panel-Intercom Plugs	**$717.03**
H20-10HXP	Helicopter Headset (ENC) with coiled, 5ft. (extended) cord, Snap Lock-Quick Release Connector and panel mount module with mating headset connector, on/off toggle switch	**$730.05**

DAVID CLARK H10-13X ANR HEADSETS

The H10-13X aviation headset has the most advanced Electronic Noise Canceling (ENC) technology assuring an amazingly quiet flight. Available in the most popular and comfortable headset style. H10-13X Features: Quiet Performance —You'll hear and feel the difference immediately. When ENC is turned ON, noise cancellation actually improves by an additional 12-17 dB. That's better total protection than any other headset available today. 5 year warranty.

Outstanding Comfort - Lightweight at just 17oz. w/advanced comfort features. Super soft gel ear seals with new exclusive Velvet Fleece surface, combined with reduced headband pressure and a soft foam-filled pillow headpad create a comfort level never before experienced.

Superior Communication Intelligibility - The ENC system and the exclusive M-7A noise cancellation electret mic provide unsurpassed performance and clear, crisp transmission and reception. Stereo compatible for use with stereo intercom and cabin entertainment systems.

Model	Description	Part No.	Price
H10-13X	Fixed wing headset (ENC) with straight, 5ft. cord to Battery Power Module to straight 5ft. cord with A/C Panel-Intercom Plugs (hard-wired)	11-03819	**$628.68**
H10-13XL	Fixed wing Headset (ENC) with straight, 5ft. cord, Snap Lock-Quick Release Connector/Battery Power Module with mating Headset and Cord Assy Connectors/Coil Cord Assembly with mating battery connector and Panel-Intercom Plugs	11-03820	**$717.03**
H10-13XP	Fixed wing Headset (ENC) with straight, 5ft. cord, Snap lock-Quick Release Connector and Panel Mount Module with mating Headset Connector, on/off Toggle Switch	11-03821	**$679.83**
H10-13HXL	Helicopter Headset (ENC) with coiled, 5ft. (extended) cord, Snap Lock-Quick Release Connector/Battery Power Module with mating Headset and Cord Assy Connectors/Coil Cord Assembly with mating battery connector and Panel-Intercom Plug	11-03817	**$730.05**
H10-13HXP	Helicopter Headset (ENC) with coiled, 5ft. (extended) cord, Snap Lock-Quick Release Connector and Panel Mount Module with mating Headset Connector, on/off Toggle Switch.	11-03818	**$691.92**

AV

DAVID CLARK HEADSETS

DAVID CLARK HEADSET H10-66LX & H10-76XL

Pilots have trusted the green domes of David Clark Company headsets for over 25 years. Their high-performance products are now equipped with several new features to enhance pilot comfort: super-soft, double-foam headpads, comfort-gel, 'undercut' ear seals, and a smaller, lighter battery pack with auto shutoff for ENC models. Find out for yourself why quality conscious pilots will accept nothing less than the #1 Headset in Aviation.

Description	Part No.	Price
H10-66XL DUAL IMPEDANCE ENC HEADSET Designed for use with both high and low impedance systems. Select switch on dome matches headset to system impedance. Ideal for fleet operations. Certified Noise Reduction Rating (NRR): 27: dB. Built in ENC technology and enhanced comfort features.	11-05427	**$800.73**
H10-76XL PORTABLE LOW IMPEDANCE ENC HEADSET Feature ENC technology and designed for use with low impedance systems. Coil cord with single plug connects the battery-powered module to aircraft radio or intercom. Additional 17-22 dB noise attenuation with ENC activated.	11-05428	**$774.69**
H10-76XP PANEL-MOUNT LOW IMPEDANCE ENC HEADSET Same as H10-76XL but with permanent panel-mount module for utilizing the aircraft's power source.	11-05429	**$734.70**

H10-20 HEADSET

8 new headset design advances make the David Clark H10-20 a must see. The completely flexible boom assembly can be adjusted for perfect microphone placement. The M7A microphone is the most advance noise-cancelling amplified electret mike available. Features a redesigned air-flow headband with liquid-filled ear seals for optimum comfort. Comes with volume control and a 5yr warranty. Made in the U.S.

Straight Cord.....P/N H10-20.....**$302.25**
Coiled Cord.....P/N H10-21.....**$306.90**
Helicopter.....P/N H10-26.....**$314.34**

DAVID CLARK H10-30 HEADSET

This dual headset, used by the Air Force, features foam filled ear cushions with an M-1/DC amplified dynamic noise cancelling mike. With 6 feet straight cord, PJ-055B headphone plug and PJ-068 mike. plug. P/N H10-30 ..... **$251.10**

DAVID CLARK H10-36 HEADSET

The H10-36 headset features the M-1/DC dynamic mic and coil cord which extends to 5 ft., with U-174/U plug for helicopter installations.

P/N H10-36 ..... **$263.19**

DAVID CLARK H10-60 HEADSET

Features unique foam/air-flow headpad, low-pressure headband, Flo Fit Gel ear seals, and dual volume controls. Also features the M-7A advanced noise cancelling amplified electret mic. Customize your H10-60 with 3-position headset pressure adjustment, boom guide lock, headband size adjustment, and cord selection.

P/N H10-60 ..... **$345.96**

DAVID CLARK H10-66 HEADSET

A unique dual impedance headset for use in civilian and military style aircraft. The Model H10-66 features include new comfort gel, undercut ear seals, hinged wire boom with the M-101 amplified Dynamic microphone, and a Noise Reduction Rating (NRR) of 27 dB. P/N H10-66 ..... **$379.44**

DAVID CLARK H10-76 HEADSET

Undercut Comfort-Gel Ear Seal for Improved Comfort. Low Impedance. Most popular noise attenuating headset ever produced for use with military radios. Standard headset of the U.S. Air Force, NATO and most airborne command centers.Coiled cord terminates into a U-174/U plug. P/N 11-02226 ..... **$266.91**

DAVID CLARK H10-00 "LISTEN ONLY" HEADPHONE

David Clark comfort fit. For use w/handheld mic. With 18" coil cord which extends to 6 ft, & PJ-055B plug.

P/N H10-00..... **$205.53**

DAVID CLARK 6AA BATTERY PACK

Accepts 6 AA batteries. The protective cover keeps battery terminals from accidental contact with conducting surfaces while stored. Having a Spare Battery Cartridge, loaded and ready, will minimize time without electronic noise cancellation when batteries drain. P/N 11-02019 ..... **$15.50**

9V BATTERY PACK FOR ENR HEADSETS

This new XL-9V 9V battery pack is easier to operate, wear and store. It is 50% smaller and 50% lighter than previous battery packs. It runs off a single 9V alkaline battery to provide power to the headset ENC system. The XL-9V features an Auto Shut Off function to save the battery if the power switch is left on when the headset is not in use. P/N 11-01783 ..... **$97.65**

DAVID CLARK UNDERCUT COMFORT-GEL EAR SEALS

Ear Seals have redesigned to be softer, more supple and form fitting, with a unique "undercut" shape that provides more room for your ears. This exclusive design makes for a larger, yet lighter ear seal. This new ear seal is now standard on the entire line of DC aviation headsets. New Ear Seal Features: • 26% lighter • 60% more surface area in contact with your head provides greater comfort by dissipation of necessary headband pressure • 30% more interior volume creates more room for your ear P/N 11-01782..... **$22.50**

DAVID CLARK EAR SEALS (GEL/FOAM)

Excellent grooved gel/foam filled ear seals. Made to DCCI standards and very comfortable. Excellent alternative/replacement ear seals for most of the David Clark aviation, ground support, two-way, and vehicle intercom headsets. Note: Does not fit the David Clark H-20 series or X-11. P/N 11-09330..... **$16.85**

DAVID CLARK GROUND SUPPORT HEADSETS

Ground Support Headsets are designed to facilitate communication when background noise or distance makes it extremely difficult to communicate. During ground-support operations, communication is critical to ensure the safety of everyone in the vicinity as well as the protection of the aircraft from accidental damage.

MODEL H7010 - Noise Attenuating Headset * M-101 Noise-Cancelling Microphone * 30-inch straight cord with U174/U plug * Noise-shielded microphone (muff) with On/Off switch * Soft headpad and ear seals guarantee exceptional comfort * Snap-fastened nylon straps secure microphone muff to mouth * Corrosion-resistant, chrome plated headpad/stirrup assembly * Extremely durable and reliable * NRR 26dB

P/N 11-07116..... **$269.85**

MODEL H-133C/AIC - Noise Attenuating Headset * M-101/AIC Noise-Cancelling Microphone * 30-inch straight cord with U93A/U plug * Noise-shielded microphone (muff) * Soft headpad and ear seals guarantee exceptional comfort * Snap-fastened nylon straps secure microphone muff to mouth * Corrosion-resistant, chrome plated headpad/stirrup assembly * Heavy duty and extremely reliable * For noise levels to 140dB

P/N 11-07117..... **$289.95**

DAVID CLARK SERIES K HELMET

Series K Helmet provides the ability to convert all David Clark Over-The-Head style (Except H20-10 & H10-80) headsets into a Helmet/ Headset assembly. The Kit and a David Clark headset gives both impact and hearing protection in addition to clear, normal conversation in high noise environments. The Series K Helmet Kit consists of a helmet shell with nape pad and a helmet liner. Lightweight, the combined weight of the Helmet/Headset assembly is 42 oz.

Helmet Kit ..... P/N K10..... **$359.00**

DAVID CLARK HEADSET BAG

This ballistic Nylon Carry Bag is black on black, with the DC logo subtly embroidered in the lower right corner. This bag has been carefully chosen for its simplicity, quality and workmanship and is a fitting complement to any David Clark Headset. P/N 11-00642..... **$19.50**

AV

SENNHEISER HEADSETS

SENNHEISER S1 DIGITAL HEADSET

Sennheiser S1 Digital – The Quiet Revolution.
The Sennheiser S1 Digital aviation headset is designed to give you maximum control over noise levels in the cockpit, so you can focus on the joy of flying. At the push of a button, the S1's exclusive NoiseGard™/digital technology accurately analyzes the cockpit's noise levels to achieve superior noise cancellation during all phases of flight-from take-off to landing.
Smart adapt digital ANR customizes and optimizes noise reduction to your aircraft / your fit
Headband tension adjustment so you can choose how tight / loose you want it
Treble boost for customized audio clarity
Ear pad comfort zones reduce the squeeze on your glasses
Bluetooth connectivity for both music and cell phone
Optimized audio filters optimize clarity for communications and music

S1 Digital ..... P/N 11-09919 ..... **$1,095.00**
Headset P-XLR-3 Adaptor..... P/N 11-10052 ..... **$64.95**
Headset P-CIG Adaptor..... P/N 11-10053 ..... **$74.95**
S1 GA Headset Lemo Panel Mount Adaptor
P/N 11-10039 ..... **$99.95**

SENNHEISER S1 PASSIVE HEADSET

Highest performance, outstanding wearing comfort, feature packed, and state-of-the-art design – the new Sennheiser S1 Passive is the ultimate passive aviation headset.
Highest security is ensured by Sennheiser's renowned sound quality, ActiveGardTM and passive noise attenuation for clear communications.
The auto mute function automatically switches off your music or cell phone calls during ATC communication.
Adjustable contact pressure and a special sunglass zone provide the perfect balance between comfortable fit and optimum passive noise attenuation.
The state-of-the-art design, powered by BMW Group DesignworksUSA, makes the S1 Passive as good looking as it is comfortable - even on the longest flights..... **COMING SOON**

SENNHEISER HME 110 HEADSET

The HME 110 features outstanding comfort and performance with excellent passive attenuation. JTSO/TSO approval
• 10 year warranty
• lightweight 12.4oz
• Superior audio quality
• Microphone can be worn on either Left or right side.
• Up to 40 dB of passive noise attenuation.
• Stereo/mono switch.
• Highest wearing comfort

HME 110..... P/N 11-03589..... **$299.00**
Gel Ear Seals .... P/N 11-01333..... **$39.00**

SENNHEISER HMEC 250 HEADSET

The HMEC 250 offers a unique foldable, Lightweight design. Best for those quieter cockpits. 3 year warranty.
• HMEC 250 is Talk-Through equipped
• ANR powered by 2 AAA batteries
• Highest wearing comfort
• Peak-Level-Protection
• Audio input for Cell/MP3
• Weight 10 oz

HMEC 250 ..... P/N 11-07030..**$499.00**
HME 95 passive..... P/N 11-09139. **$229.00**
Conformal Ear Seals. P/N 11-07032....**$30.00**

SENNHEISER HMEC / HME 26 SERIES HEADSETS

The HMEC 26 is the premium headset for commercial and business aviation. It is lightweight, comfortable, and offers the best combination of ANR and passive performance for jet aircraft. The HMEC26-T is Talk-Through equipped for direct cockpt communication
• Up to 16dB ANR, and 11dB passive attenuation.
• Flip-away headphone allows single-sided listening.
• Operating time with 2 AA batteries approx. 60 hours (auto shut-off)
• Superior audio quality / modular cable concept
• BV-K model has Cell/MP3 input and volume controls
• Peak-Level-Protection eliminates volume peaks
• ETSO C57a & 58a and TSO C-139 approval / 5 year warranty

HMEC 26-BV-K with L/R volume control..... P/N 11-07945.....**$805.00**
HMEC 26-B-K..... P/N 11-07944.....**$731.00**
HMEC 26-T w/ Talk-Through (Headset Only) . P/N 11-07949.....**$588.00**
BV-K Cable for HMEC 26-T..... P/N 11-08056.....**$284.00**
B-K Cable for HMEC 26-T..... P/N 11-08054.....**$208.00**
HME 26-K passive model..... P/N 11-07950.....**$424.00**

SENNHEISER HMEC/ HME 46-1 SERIES HEADSETS

The HMEC 46-1 is a very lightweight, on the ear design; ideal for commercial and business jets.
• Up to 16 dB ANR
• Flip-away headphone for single-sided listening.
• Operating time with 2 AA batteries approx. 100 hours (auto shut-off)
• Superior audio quality / modular cable concept.
• Peak-Level-Protection eliminates volume peaks
• BV-K model has Cell/MP3 input and volume controls
• ETSO C57a & 58a and TSO C-139 approval, 5 year warranty

HMEC 46-1-BV-K with L/R volume control..... P/N 11-05274.....**$696.00**
HMEC 46-1-B-K..... P/N 11-05272.....**$521.00**
HME 46-K passive model..... P/N 11-05247.....**$399.00**
HME46 Headset Only..... P/N 11-10466.....**$274.00**
V-K Cable Only..... P/N 11-10467.....**$219.00**

AV

HEADSETS INC. HEADSETS

Headsets Inc. quality aviation headset. For the past 11 years Headsets Inc. has been manufacturing high quality aviation headset and intercoms. The new Headsets Inc. headsets are better than ever!

HEADSETS INC.-1001 PNR HEADSET

- 24dB NRR hearing protection
- Noise-canceling electret mic
- Rugged Mil-Spec cabling
- Dual volume control
- New Full flex boom
- Wide comfort foam ear seals
- Cotton cloth ear covers
- Available in black or white.
- Weight 14.5 oz.
- 3 year factory warranty

Additional features include high fidelity headphone drivers for music, thumbnut headband adjusters, gold-plated plugs, rugged ABS ear cups, and chrome stainless steel headband combined with the best audio components makes the Headsets Inc.-1001 the affordable aviation industry leader. Optional GEL ear seals available. The Headsets Inc.-1001H is available with Foam Ear Seals, Gel Ear Seals, or in a Bundle.

Bundle includes: Gel Ear Seals, Soft Top Headband, and Cloth Ear Covers.

Headsets Inc.-1001B Black PNR Headset ....P/N 11-06494 ..... **$108.95**
Headsets Inc.-1001BG Black PNR Headset with Gel Seals
P/N 11-09564..... **$119.00**
Headsets Inc.-1001B PLUS Black PNR Headset Bundle
P/N 11-10408..... **$145.00**
Headsets Inc.-1001W White PNR Headset.. P/N 11-09497..... **$108.95**
Headsets Inc.-1001WG White PNR Headset with Gel Seals
P/N 11-09565..... **$119.00**
Headsets Inc.-1001W PLUS White PNR Headset Bundle
P/N 11-10410..... **$145.00**
Headsets Inc.-1001TG Tan PNR Headset ....P/N 11-10086 ..... **$115.00**
Headsets Inc.-1001T PLUS Tan OND Headset with Bundle
P/N 11-10409 ..... **$145.00**
Headsets Inc.-1001H Black Heli. Headset.....P/N 11-08228 ..... **$112.95**
Headsets Inc.-1001HG Black Heli. Headset with Gel Seals
P/N 11-09622 ..... **$137.95**
Headsets Inc.-1001BH PLUS Black Heli. Headset with Bundle
P/N 11-10411 ..... **$150.00**
Headsets Inc.-1001WH White Heli. Headset.....P/N 11-08223 ..... **$119.95**
Headsets Inc.-1001WHG White Heli. Headset with Gel Ear Seals
P/N 11-09620 ..... **$116.95**

HEADSETS INC.-4001 STEREO PNR HEADSET

- 24dB NRR hearing protection
- Noise-canceling electret mic
- Rugged Mil-Spec cabling
- Dual volume control stereo
- Pillow top head pad
- New Full flex boom design
- Gel ear seals
- Cotton cloth ear covers
- Wind block mic muff
- Weight: 15 oz.
- 3 year warranty

Additional features include high fidelity headphone drivers for music, gold-plated plugs, rugged ABS ear cups and chrome stainless steel headband combined with the best audio components makes the stereo Headsets Inc.-4001 the affordable aviation industry leader.

Headsets Inc. 4001PNR Headset Black.. P/N 11-08093.....**$167.95**
Headsets Inc. 4001 PNR Headset White P/N 11-09566.....**$159.95**

HEADSETS INC.-6001 ANR HEADSET

- Powerful ANR performance
- Noise-canceling electret mic
- Rugged Mil-Spec cabling, chrome plated plugs
- Dual volume control stereo
- Pillow top head pad
- New Full flex boom design
- Gel ear seals
- Wind block mic muff
- Auto shut-off battery pack
- Auxiliary power input jack
- 20-hour battery life
- Weight: 16.5 oz.
- 3 year warranty
- D3P01 Personal Headset Bag

Ear cups with internal baffle-plate providing the strongest ANR in the industry. With 18-20dB of noise reduction @ 200Hz with an effective range from 20 to 600Hz, it is guaranteed to exceed the performance of any production ANR headset.

Headsets Inc. 6001B ANR Headset Black P/N 11-08094 .....**$399.00**
Headsets Inc. 6001T ANR Headset Tan . P/N 11-10074.....**$399.00**

HEADSETS INC. ACCESSORIES

GEL SEALS - Add all-day comfort with a pair of Deluxe silicone gel ear seals with the industry's first double bump design to keep the gel in place. Other gel seals tend to squash out over time. Deluxe gel seal will block out noise for increased noise reduction. Fits Headsets Inc. and other top brand general aviation headsets. .....P/N 11-06496 ..... **$22.50**

PILLOW TOP HEADPAD - Enjoy your flight with Pillow Top headpad. 100% sheepskin eliminates the pressure on the top of the head. Made to fit all general aviation, over-the-head headsets with 5/8" headbands. .....P/N 11-06495 ..... **$24.50**

HEADPAD FOR 6001 HEADSET - Extra padded head pad for the Headsets Inc.-6001 headset
P/N 11-09580 ..... **$17.75**

FOAM EAR SEALS - Fits Headsets Inc. and other top brand general aviation headsets. ..P/N 11-07366 ..... **$9.95**

CLOTH EAR COVERS - Great for comfort and hygiene! The cool cotton comfort improves the tactile quality of any ear seal. Easy to install, absorbs perspiration, and completely washable. These covers fit all general aviation headsets.
P/N 11-07367 ..... **$4.70**

MIC MUFF - This mic muff attaches easily, includes the o-ring retainer, improves transmission while eliminating wind noise, and protects the mic from moisture and dust. It is completely washable and fits all general aviation headset microphones.
Mic Muff .....P/N 11-06497 ..... **$3.55**
Mic Muff Large.....P/N 11-08230 ..... **$3.75**

HELICOPTER TO GENERAL AVIATION ADAPTER - Helicopter to General Aviation adapter converts helicopter to general aviation. .....P/N 11-09584 ..... **$49.95**

GENERAL AVIATION TO HELICOPTER ADAPTER - General Aviation to Helicopter Adapter converts general aviation application to helicopter. .....P/N 11-09583 ..... **$55.85**

ELECTRET MICROPHONE FOR HEADSETS INC. 1000/4000/6000, D502- BNC clear hear electret microphone.
P/N 11-06501 ..... **$24.85**

AUTO SHUT-OFF BATTERY BOX FOR HEADSETS INC. 6000 ,D700 - Will extend the battery life by automatically turning off after 4 minutes of inactivity. The flashing LED acts as a reminder.
P/N 11-07179 **$31.75**

POWER SUPPLY FOR PANEL MOUNT HEADSETS INC. 6000, D800 - For 12V or 24V aircraft. You can save on batteries by powering the ANR system from aircraft power. Has 2 voltage regulators, a DC-DC converter for isolation, and an in-line 1/4 amp fuse. Specify 12 or 24 volt aircraft when ordering.
P/N 11-07180 ..... **$38.75**

VOLUME KNOB - This Volume Knob is used on all models of Headsets Inc. headsets. P/N 11-09587 ..... **$1.50**

HEADSET THUMBSCREW - This black threaded thumbscrew allows adjustment of the headband on all model Headsets Inc. headsets. P/N 11-09588 ..... **$4.50**

HEADSETS INC.-1000/6000 CLAMP JOINT BRACKET - The clamp joint bracket mounts under the headset thumbscrew and holds the crossover cable in place when adjusting the headband.
P/N 11-09589 ..... **$0.50**

HEADSETS INC.-1000/6000 STIRRUP CLAMP - The Stirrup Clamp is adjoined to the stirrup and holds the crossover cable in place along the stirrup on each side of the headset.
P/N 11-09590 ..... **$0.39**

DUFFEL STYLE FLIGHT BAG D3002- Six compartments, dual zippered flap on the center compartment with a Velcro ® strip. On each end has a zippered pocket, and two smaller acces compartments
P/N 11-07373 ..... **$32.75**

PERSONAL HEADSET BAG, D3P01 -
P/N 11-07784 ..... **$17.95**

AV

BEYERDYNAMIC HEADSETS - FLITELITE

HS 800 DIGITAL AVIATION HEADSET

The HS 800 Digital is a closed-back aviation headset. The innovative DANR system (Digital Adaptive Noise Reduction) provides an extraordinary effective active ambient noise attenuation. The headphone features a very high reproduction precision and a balanced sound. Another special feature is the wide frequency response of 5 - 30,000 Hz. The soft, circumaural leather ear pads filled with viscoelastic foam and the adjustable padded headband provide a high comfort. The microphone with adjustable gain can be optimally positioned with the flexible gooseneck. Ensures a high gain before feedback and noise cancellation. The rotating microphone holder allows positioning the microphone on the right or left hand side. The connecting cable is single-sided. The connecting cable provides an audio box to adjust the volume of the headphone and to connect a mobile phone, music player (e.g. CD or MP3 player) or iPhone. If signals from the intercom occur, the volume of the mobile phone or music player can be reduced automatically. This auto mute function can be deactivated. **Features**: 1/4" (6.35 mm) connecting cables and PJ-068 jack Version, Outstanding ambient noise attenuation due to Digital Adaptive Noise Reduction (DANR), Ear pads with extra soft leather cover and viscoelastic filling, Audio box to connect mobile phones, music players or iPhones (supplied with 3 connecting cables), Automatic volume reduction of phone or music player when signals from the intercom occur (selectable function), Mono/Stereo selection switch, Noise-compensated microphone with adjustable gain, Integrated dual volume control, Power status LED, Ear cups in carbon design with metal bezels, Rugged headband design made of spring steel, Light weight of approx. 325 g (without cable), Modular construction for easy servicing, Five-year warranty, Made in Germany. **Specifications**: Weight: .72 lb., Connection Headphone: 1/4 inch stereo jack plug, Microphone: PJ-068 jack plug, Headphone Transducer type: Dynamic; Frequency response: 5-30,000 Hz; Nominal SPL: 95 dB SPL; Power handling capacity: 100mW, Microphone Transducer type: Condenser (back electret); Frequency response: 400-15,000 Hz; Polar pattern: Figure eight; Max SPL 120 dB; Nominal impedance: approx 350 ohm

HS 800 Digital Aviation Headset.....P/N 11-09831 ..... **$869.00**
HS 800 Digital 6 PIN LEMO Aviation Headset .....P/N 11-09832 ..... **$899.00**
HS 800 Digital Rotor Aviation Headset.....P/N 11-09833 ..... **$899.00**

BEYERDYNAMIC HS400 SIGNUM HEADSET

As a headset with a closed design, the HS 400 Signum provides perfect noise attenuation for a safe flight. Only high-quality materials, designed for long service life and maximum user comfort, are used for this handcrafted premium headset. Enjoy music from your MP3 player with beyerdynamic sound!
Features: Ambient noise attenuation of approx. 30 dB. Audio box to connect mobile phones or music players, IPhone compatible (supplied with connecting cables). Very comfortable due to low clamping force and soft visco elastic ear seals. Excusive design with silver metallic ear cups and black anodized metal parts. Double jack plugs. Noise-cancelling microphone with adjustable gain. Balanced sound with high reproduction precision for best intelligibility of speech and excellent sound. Double volume control. Mono/Stereo selection switch. Made in Germany. 5-year warranty. Automatic volume reduction of phone or music player when signals from the intercom occur (selectable function). Rugged headband design made of spring steel with soft headband pad (replaceable). Lightweight (approx. 11 oz. without cable). Modular construction for easy servicing. Supplied with padded bag.

HS400 Signum Headset ..... P/N 11-08646 ..... **$449.00**
HS400 Signum Helicopter ..... P/N 11-08647 ..... **$499.00**

BEYERDYNAMIC HS200 TREND AVIATION HEADSET

In conjunction with beyerdynamic's quality requirement and 80 years of experience in electroacoustics, the HS 200 Trend ensures comfort and safety when flying. As the HS 300 Individual headset, the HS 200 Trend is also supplied with a five-year warranty. The headset comes with a practical bag and a volume control. Now pilots who do not want to listen to music or phoning with their headset while flying, can enjoy the features of beyerdynamic's Aviation headsets. ***Features***: * Ambient noise attenuation of approx. 30 dBA * Noise-cancelling microphone with adjustable gain, which can be worn on the right or left hand side * Balanced sound with high reproduction precision to ensure excellent speech intelligibility * Integrated volume control * Made in Germany * Five-year warranty * Rugged headband design made of spring steel with soft, replaceable headband pad * Moderate headband pressure (approx. 8 N) for maximum comfort * Lightweight (approx. 325 g without cable) * Modular construction for easy servicing * Supplied with padded bag

HS200 Trend Headset..... P/N 11-07260..... **$349.00**
HS200 Roto Trend Headset (Helicopter)..... P/N 11-07988..... **$399.00**

Description	Part No.	Price
Ear pads, gel-filled, black	11-07264	**$36.50**
Ear pads, gel-filled, transparent	11-07266	**$37.85**

Description	Part No.	Price
Ear pads, leather, black	11-07262	**$36.50**
Ear pads, leather, blood-red	11-07263	**$36.50**
Ear pads, leather, cognac	11-07265	**$36.50**

Description	Part No.	Price
Wind shield, black	11-07267	**$7.50**

BEYERDYNAMIC DTX 60 EAR BUDS

The DTX 60 has plastic casing in black with ice-blue gleaming ear cushions made from silicone. Excellent sound quality, comfort, and durability. Outstanding bass response through powerful Neodymium HD acoustic drivers. P/N 11-10038 ..... **$38.75**

AV

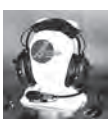
FLIGHT LITE GEN II DUAL SENSOR PILOT LIGHT

FLITELite GEN II Dual Sensor Pilot Light. The New GEN II is 30% smaller, and more efficient than GEN One. The new version was developed to meet MIL-STD-3009, for Night Vision Imaging Systems (NVIS) aircrew auxiliary and utility lighting. This light is also perfect for the General Aviation Cockpit. FLITELite comes complete with: * GEN II FLITELite unit, computer controlled, dual sensor pilot light * Headset or Helmet Adapter (new adapters are free) * AAA Battery Pack * Optional Coin Cell Pack * Attachment accessories * AAA Batteries * Warranty

Headset	White	Red	Blue	Green	Night Vision
Bose	11-07034	11-08002	11-08003	11-08004	$54.95
Lightspeed	11-07035	11-08006	11-08007	11-08008	$54.95
David Clark	11-07036	11-08010	---	11-08013	$54.95
Sennheiser	11-07037	11-08014	11-08015	11-08016	$54.95
Optional Coin Cell Battery Pack				11-07872	$3.85

AVCOMM HEADSETS

A new, intercom-powered hands-free LED flashlight that's built into the headset microphone. Never require batteries. Provides power to the LED's without a battery pack! Has a backup power system that provides 30 minutes of power in case of power failure. Integrated version powered by the aircraft intercom system (No battery pack required)



AVCOMM AC-747FL HEADSET - Comes with GA and Helicopter cords Key Features: Ships Power FLITELite - no battery pack or wires required! Exclusive PNR technology and "plug and fly" design. Full flex boom Ultra-lite micro samarium cobalt speakers. Each ear cup features an independent volume control. M-60 microphone with active filtering chip Deluxe Comfort Package included Full five-year factory warranty Converts easily by plugging in either the general aviation straight cord or the helicopter coil cord (both included with the headset). FACTORY INSTALLED • Stainless steel headband with easy thumbnut adjustment • Deluxe comfort headpad • Acoustic foam earseals ALSO INCLUDED • 100% cotton ear covers • Acoustic mic muff PN 11-05606 ..... **$299.95**

AVCOMM AC-900 FL HEADSET - Exclusive patented PNR™ (passive noise reduction) technology. Key Features: Patented PNR™ audio technology and full spectrum stereo response Ultra-lite Neodymium speakers M65 microphone with "active filtering" chip. Full flex boom Built-in push-to-talk. Mono-stereo switch built into the cord Each ear cup features an independent volume control Deluxe gel ear seals Full five-year warranty. Gold plated mic and headphone plugs PN 11-02263 ..... **$228.95**

FLIGHTCOM HEADSETS

DENALI PASSIVE HEADSETS*

Offering a level in pilot comfort and acoustic performance, the passive version of the new Denali weighs in at a scant 10.5 oz., yet provides outstanding noise attenuation. Denali Passive Headset (blue) ..... P/N 11-00012.....**$273.00**

FLIGHTCOM CLASSIC ANR HEADSET

Flightcom's Classic ANR Headset is built with comfort features not found in similar headsets. With overstuffed Confor® foam ear seals and larger than normal headband, the classic aviation style provides extended comfort and performance. Comfort: Classic ANR's Confor® Foam ear seals, and a wide polar fleece headpad ensure comfort. Innovation: A volume control on each dome allows for independent adjustment. Noise reduction: We keep it quiet with our advanced hearing protection technology. Confor® Foam ear seals effectively block out sound. Noise reduction rating is enhanced by 14 to 18 dB at certain key low frequencies. Comes with a durable nylon carry case • Precision flex boom with noise canceling electret microphone • 9-volt battery • Chrome headband with a washable polar-fleece headpad • Stereo/mono switch ensures audio compatibility • Mic muff and carrying case included • In-line, "drop-and-go" • Provides an additional 14-18dB noise attenuation at key low frequencies • Weight: 17.9 oz. • Dual-volume controls allow for independent volume adjustment in each ear dome • 3-year warranty

Standard ..... P/N 11-01326 ..... **$329.00**
Helicopter ..... P/N 11-09178 ..... **$325.00**

FLIGHTCOM 5DX CLASSIC

This headset provides supreme comfort and fit through its washable polar fleece headpad, silicone gel ear seals and cloth ear seal covers. Features include noise cancelling electret microphone, precision flex boom, dual volume controls, stereo/ mono switch, 22dB noise reduction rating and all top quality components. Wt 17.9oz. 3-yr factory warranty

P/N 11-08760 .....**$159.00**

FLIGHTCOM 4DLX CLASSIC

This headset combines the proven performance and affordability of the popular 4DX Classic headset with the comfort of the "air pillow" headpad. Features of the 4DLX Classic include combined foam and liquid ear seals, precision flex boom, noise cancelling electret microphone, stereo/ mono switch, cloth ear seal covers, mic cover and 3-yr factory warranty. 24dB noise reduction rating Wt 16.8oz P/N 11-17115.....**$119.00**

FLIGHTCOM E-13 PASSIVE MILITARY HEADSET

Flightcom's E-13 is a classic style headset designed for rugged cockpit environments. The headset prevents noise fatigue and enhances communication through ANR technology. Features: • Glove Rugged comm. cable bend relief provides increased durability • Steel spring chrome headband and stirrups with scratch resistant ABS eardomes • Standard comfort features include protein leather covered dual density foam ear seals and washable polar fleece headpad • U-174/U (4 Conductor) plug • 6-conductor, shielded, coiled comm cable • 5 ohm M-87 dynamic microphone meets MIL2654212E • In-line quick disconnect jack on the mic boom for chemical defense suit and boom replacement • Dome-mounted volume control • DO-160D tested ? environmental and explosive proof • Passive noise attenuation 21dB NRR Two-year warranty. P/N 11-10395.....**$295.00**

FLIGHTCOM F20 LIGHTWEIGHT HEADSET

The lightest weight headset available from Flightcom and replaces old model 4.2. The F20 has a new, durable construction and updated appearance along with new features such as a volume control and an improved flexible boom. Also included is a set of 30dB ear plugs to help give you noise attenuation along with the comfort of a lightweight headset. The F20 has stereo/mono capability, a noise cancelling electret mic, weighs only 4.6 oz, and includes a mic muff. 3-year factory warranty. P/N 11-17615.....**$108.00**

FLIGHTCOM 4DX CLASSIC

The 4DX Classic is an entry-level headset with classic Flightcom ruggedness. With an easy-to-position wire articulated boom and a ventilated foam rubber headpad and combined liquid and foam ear seals, the 4DX Classic is comfortable and affordable. Noise canceling electret microphone • Single-volume control • Stereo/ mono switchable • NRR 24dB • Weighs 16.9 ounces • Mic muff and cloth ear seal covers included • Three-year warranty

P/N 11-17110..... **$99.00**

FLIGHTCOM E-13 ANR MILITARY HEADSET

Newly designed battery box includes SAT/cellphone support, auxiliary input and improved battery monitoring. Active Noise Reduction (ANR) provides an additional 14-18dB noise attenuation. ANR is powered by two "AA" batteries providing up to 50 hours average operation. Versatile flexible microphone boom for precise adjustment. Cord configuration optimized for flight deck and cargo compartment crews. In-line, quick disconnect jack on mic boom for chemical defense suit and boom replacement. Sure Power System? (SPS) shuts off ANR when no audio is present. 5 ohm, M-87 dynamic microphone meets MIL 2654212E, mounted on flex boom. U-174/U (4 Conductor) plug. 6-conductor, shielded, coiled comm cable. Approved for use on USAF KC-135, C-5 and C-130 (all types except "J"). USMC approved. Also available in passive models. NSN 5965-01-521-3223. Includes carrying case. Two-year warranty

P/N 11-10396.....**$729.95**

ACCESSORIES

P/N 11-07371

P/N 11-08765

P/N 11-08317

HEADSET BAG - Padded nylon headset bag with 2 chart-size mesh pocket ..... P/N 11-07371 .....**$18.75**
COMFORT SEALS ..... P/N 11-17130 .....**$38.75**
GEL-FLO SEALS ..... P/N 11-17135 .....**$31.25**
LEATHER EAR SEALS - 103-0019-10 Protein Leather Ear Seals. Fits all Denali headsets. ..... P/N 11-05947 .....**$46.75**
CLOTH EAR SEAL COVERS - Fits dome style headsets 4DX, 4LX, 4DLX, & 5DX. ..... P/N 11-08467 .....**$15.50**
POLAR FLEECE HEADPAD - Fits 4DX, 4DLX, 5DX & Classic ANR. Velcro closure. ..... P/N 11-08313 .....**$25.75**
DENALI HYGIENE KIT - Ear seals, headpad and mic muffs. ..... P/N 11-04855 .....**$65.50**
5DX HYGIENE KIT - 2 gel ear seal, 2 cloth ear seal covers, 3 mic muffs and 3 securing o-rings. ..... P/N 11-08592 .....**$28.95**
A9 MIC - Eliminates distortion and background noise, provides enhanced voice clarity. Can be used as a replacement microphone for virtually all headsets with wire booms. ..... P/N 11-08765 .....**$54.75**
LARGE MIC MUFF ..... P/N 11-17649 .....**$17.50**
SMALL MIC MUFF - With o-ring (3 pk). For use on F20. ..... P/N 11-08591 .....**$13.50**
POLAR FLEECE HEADPAD - Fits 4DX, 4DLX, 5DX & Classic ANR. Velcro closure. ..... P/N 11-08313 .....**$25.75**
FLIGHTCOM COPILOT TRANSMIT CABLE - Requires separate PTT. (Not compatible with iNova.) ..... P/N 11-08309 .....**$11.75**
FLIGHTCOM CIG LIGHTER ADAPTER - Adapter to power intercom from aircraft power. ..... P/N 11-08310 .....**$12.95**
PTT SWITCH GOLD - Push-to-talk switch with durable gold contacts. ..... P/N 11-08311 .....**$22.85**
FC-06 MIC Y ADAPTER - Allows pilot and copilot to share a single Mic jack. Req. separate PTT for each position. P/N 11-08314 .....**$15.65**
4 PLACE JACK PACK - Switchcraft mic and stereo headphone jacks & hardware to install up to four positions. ..... P/N 11-08315 .....**$32.75**
FLIGHTCOM FC-07 GA TO HELICOPTER ADAPTER - Dual plug to single plug adapter ..... P/N 11-08316 .....**$49.95**
OPEN COCKPIT MIC MUFF - High density muff installs over existing muff on Classic headsets to block wind noise. ..... P/N 11-08317 .....**$7.85**

FLIGHTCOM COMBO PACKAGES

These combination packages offer extra savings as well as a pre-packaged set which includes two headsets, an intercom and a push to talk switch.

Ask for quote on any unlisted headset/intercom combo.

Combo#	Description (Combo includes:)	Part No.	Price
1A	2 Flightcom 4DX hdsts, (1) IISX 2 pl. intercom & (1) P-T-T switch	11-08705	$303.95
1B	2 Flightcom 4DX hdsts, (1) IISX 4 pl. intercom & (1) P-T-T switch	11-08706	$329.95
3A	2 Flightcom 4DLX hdsts, (1) IISX 2 pl. intercom & (1) P-T-T switch	11-08707	$334.95
3B	2 Flightcom 4DLX hdsts, (1) IISX 4 pl. intercom & (1) P-T-T switch	11-08708	$359.95
3C	2 Flightcom 5DX hdsts, (1) IISX 2 pl. intercom & (1) P-T-T switch	11-08717	$419.95
3D	2 Flightcom 5DX hdsts, (1) IISX 4 pl. intercom & (1) P-T-T switch	11-08718	$444.95

AV

TELEX HEADSETS

TELEX ASCEND ANR DELUXE HEADSET

Ascend is ideal for commercial pilots with diverse needs and discerning standards. A simple procedure allows you to change the connector, remove the boom, or add a battery. Ascend's advanced noise reduction system specifically targets common cockpit noises, such as wind noise and avionics cooling fans. Improves upon the Active Noise Reduction in the popular ANR 500 & 850 models and the passive noise reduction of the Airman 850. ANR power can be delivered without batteries through the mic plug, or with the convenient rechargeable battery module. Rechargeable long-lasting battery

Ascend with PJ Connectors ..... P/N 11-08535 .... **$598.00**
Ascend with XLR (Airbus type) Connectors... P/N 11-08574 .... **$589.00**

Accessories

Ascend Carrying Case ..... P/N 11-08564 ..... **$27.50**
Ascend Temple Pad PAD ..... P/N 11-08565 ..... **$9.95**
Ascend Filler Module..... P/N 11-08566 ..... **$18.50**
Ascend Audio Input Cable..... P/N 11-08567 ..... **$48.50**
Ascend International Power Adapter..... P/N 11-08568 ..... **$24.75**
Ascend N. America Battery Charger..... P/N 11-08569 ..... **$75.85**
Ascend Battery ..... P/N 11-08570 ..... **$55.65**
Ascend Headband Pad ..... P/N 11-08571 ..... **$14.25**
Ascend Mic. Windscreen..... P/N 11-08572 ..... **$7.95**
Ascend Ear Cushion (pair) ..... P/N 11-08573 ..... **$26.25**

TELEX ECHELON 20 AVIATION HEADSET

Designed for students, new pilots, and value-conscious experienced fliers. Offers comfort, excellent hearing protection and value. Provides an impressive 20+ dB of passive noise protection and a top-quality noise canceling electret microphone. A low-profile headband for even weight distribution plus patented ComfortCam™ technology, a three-click tension adjustment system for a custom fit. Special earpieces with foam ear-seals pivot two ways to conform to any wearer while detent sliders adjust the headband.

P/N 11-04564 ..... **$189.00**

TELEX ECHELON 25XT HEADSET

Includes Telex's innovative cell phone/MP3 adapter that allows you to attach both your cell phone and MP3 player at the same time. Features a plush, thick foam headband pad and newly designed, more comfortable ear cushions. Individual volume controls for each ear cup and a stereo/mono select switch. Impact-Resistant Headband Design. Flight Bag. Weight: 13.6 oz/386 grams P/N 11-04563 ..... **$329.00**

TELEX STRATUS 30XT

Allows you to power the headset from the aircraft panel, standard alkaline batteries, or rechargeable batteries. A built-in battery recharger that recharges when plugged into a wall socket, the aircraft's panel power or even your car's 12-volt power outlet. Ensures more than 50 hours of battery life. Telex's patented ComfortCam™ to eliminate clamping. A unique headband construction that distributes weight evenly for a perfect fit, plus thick foam headband pad. Telex's innovative cell phone/MP3 adapter which allows you to attach both your cell phone and MP3 player at the same time. Flight Bag. Weight: 14.2 oz/403 grams. Runs on 2 AA batteries

30XT headset..... P/N 11-04561 ..... **$569.00**
AC/DC 30XT Adapter..... P/N 11-04576 ..... **$22.50**

STRATUS™ 50-DIGITAL ANR HEADSET

Cuts noise 3 ways by providing 24dB passive attenuation for high frequency noise outside the ANR range, 15dB of analog ANR for noise reduction below 1000 Hz, and up to 50dB of digital tonal noise reduction. DSP (Digit Signal Processing) allows the Stratus to predict recurring cabin noise and fine tune the Active Noise Reduction for the ultimate in hearing protection. Patented Comfort Cam™ tension adjustment allows for a custom fit, as do the heat sensitive slow recovery foam ear cushions, which conform to the user's head during wear. Extra thick cushions and pad reduce headband tension and provide a luxurious feel. Overmolded rubber earcups, volume control knobs and comfort cams offer ease of handling, and add to the comfort package. Features • Capable of battery or panel power Stereo/mono switch • Auto shut-off feature saves battery • Dual volume controls • Reversible mic for pilot/copilot operation • 18 oz. • Collapses for ease of portability. • Incl. Deluxe carrying case

P/N 11-04560..... **$729.00**

TELEX STRATUS 30

Combines superior ANR protection, a noise-canceling electret microphone, and fully adjustable boom. Include Telex's patented ComfortCam™ technology that allows you to quickly and easily control the tension of the ear cups. Low profile headband. Utilizes impact-resistant headband design with stainless steel reinforced stress points. Cell Phone/Audio Adapter. Advanced Microphone Technology. Boom Microphone. Flight Bag. Weight: 14.2 oz/403 grams. Runs on 2 AA batteries

P/N 11-04562 ..... **$459.00**

TELEX PRO III 5X5 HEADSET

This headset from Telex features a single side soft ear tip receiver with superior noise cancelling amplifier. The electret microphone is fully adjustable for use on the right or left side. Order push-to-talk switch for aircraft not so equipped.

P/N 11-09600..... **$259.00**

TELEX AIRMAN 750 HEADSET

A featherweight headset which is the lightest in the industry (2.5 oz.). Features a miniature noise-cancelling electret microphone that provides superior 400 Hz hum rejection. Microphone pivot arm pivots 310° for use on left or right side. The optional Telex PT-300 push-to-talk switch is recommended for use with the Airman 750. P/N 11-09500..... **$363.95**

Airman 750 Airbus plug P/N 11-09302 ..... **$255.00**
Foam Ear Cushions for 750/760..... **$4.95**

TELEX AIRMAN 750 SINGLE-SIDED HEADSET

The Airman® 750SS is 25% lighter than the Airman® 750. Its effective weight (without the cord) is only 2.4 oz. Many pilots prefer the ergonomics of a single sided headset. It eliminates the need to pull off one of the earphones when listening to cockpit conversations.

P/N 11-01123 ..... **$225.00**

TELEX AIRMAN ANR 850

Uses Active Noise Reduction technology to provide up to 12dB of noise attenuation ensuring the clearest in-flight communication. Weighs less than 4 oz. Combines "set and forget" volume control with never worrying about a battery pack. Power to the ANR is provided by mic bias (active intercom) eliminating the need for battery packs or panel power. By drastically reducing wind noise in jet cockpits, the Airman ANR 850 helps to reduce fatigue. The Telex Airman ANR 850 is unsurpassed in clarity, comfort and convenience..... P/N 11-01880.... **$450.00**

Telex Airman ANR 850 (Airbus Application)... P/N 11-05464.... **$445.00**
Telex 850 Leather Ear Seals..... P/N 11-04332..... **$23.75**

TELEX HEADPHONES

TELEX AIRMAN 760 HEADPHONE - A featherweight headphone unit designed for use with hand-held microphones. For long term comfort, an adjustable clothing clip removes the cord weight from the head of the user.

P/N 11-09300..... **$92.00**

TELEX ACCESSORIES

Windscreen (750,Pro III,ANR500)..... P/N 11-01112 ..... **$6.25**
Cushions (750, 760)..... P/N 11-01113 ..... **$4.95**
Gel cushion-Full cushion headsets ..... P/N 11-01114 ..... **$29.95**
Windscreen-Full cushion headsets ..... P/N 11-01115 ..... **$7.50**
Foam Cushion - Full cushion headset ..... P/N 11-01117 ..... **$19.75**
Mic Muff for Dynamic mic..... P/N HS036.1 ..... **$3.95**

AV

HEADSETS – SPORT-LINK HEADSETS/HELMETS

PLANTRONICS HEADSET

The popular MS50/T30-3 from Plantronics is similar to the Starset model but is worn clipped to eyeglasses or on a headband. The MS50/T30-3 is very comfortable and like all Plantronics headsets, extremely reliable and widely used in the airline industry. Comes with a headband, and eartips.

P/N 11-12045 ..... **$159.75**

MS200 PLANTRONICS HEADSET

Combines a unique lightweight design and advanced technology to deliver the ultimate in comfort and reliability. The noise-canceling microphone enables clear, uninterrupted communications between air and ground. Its compact under-the-ear design ensures a secure, comfortable fit for extended wear, yet is convenient to carry and stow. Features: * Hear every word through superior audio quality * 5-foot cord with one each PJ055 and PJ068 plug. * FAA approved

M200 Headset Dual Plugs..... P/N 11-07311 ..... **$145.95**
MS200 For Airbus..... P/N 11-08905 ..... **$182.95**

NAV-DATA DELUXE HEADSET

The Nav-Data Technologies deluxe headset has one of the best passive noise reduction ratings of any headset available at any cost. There are many reasons to own the Nav-Data Headset :

* Switch selectable stereo or mono operation * Dual volume controls * Gel earseals for extra comfort and noise attenuation * Super padded head band for comfort during long flights * Full flexible mic boom - stays where you put it! * Noise canceling electret mic * Weighs only 14.3 ounces

P/N 13-06087 ..... **$92.50**

HEADSETS, INC. EM-1 ANR HEADSET

EM-1 features conservative dark green ear cups, an Oregon Aero SoftTop padded headband, gel ear seals, and place-it-anywhere mic boom which makes it ergonomically friendly. Stereo capable with individual volume controls for each ear and a switch on the cord for mono or stereo audio. New ANR modules are made of softer material for better noise absorption. Ear cups are also rubberized for the same reason. A separate battery box is used and shares a cord with the mic/phone jacks, eliminating the need to unite 2 separate cords. The cords are heavily reinforced at attach points to avoid wear or breakage. The cords separate at the end so you can find a convenient place to stow the battery box in the cockpit. Optional power sources allow the EM-1 to be powered by the aircraft's electrical system, a cigarette lighter, or rechargeable battery. Comes with a 3-yr warranty, headset bag, the Oregon Aero SoftTop, & gel ear seals.

P/N 11-00512 ..... **$359.00**

SUPER SOFT TOP FOR HEADSETS

The Super Soft Top headset is the ultimate in comfort. Put this headset on and feel the difference! It contains two layers of foam and one layer of polyester wool that is covered with a 90% cotton fabric for maximum humidity absorption. Easy to install, it fits the following headsets:

• All David Clark models, (except DC20-10 series) • All Pilot Avionics models, (except PA-1776, PA-1779,Premier,Concord HNE,& Commander series) • All Marv Golden MG's * All Sigtronics • All ASA's * All Softcom's • All Flightcom models (except F-20 & Eclipse)

P/N 13-00358 ..... **$15.99**

HEADSET COMFORTOP

Replaces the original head pad with a sheepskin pad providing optimum comfort.

P/N 11-03014 ..... **$28.75**

PILOT'S HEADSET CUSHION

Constructed of plush 3/4" thick sheepskin & genuine leather. Does your headset feel uncomfortable and create a sore spot on the top of your head after wearing it for just a short time? If so, you need our plush, super soft sheepskin and leather headset cushion! The soft sheepskin rests on your head instead of the uncomfortable headset pad. Designed to fit all headsets with it's adjustable velcro closure. Extra velcro across top also holds your flashlight for nighttime flying. Relieves all contact and pressure on the top of your head for even the longest trips. P/N 13-40730 ..... **$15.90**

SPORT-LINK INTERCOMS

Two Place Electret..... P/N 11-05327 ..... **$257.55**

SPORT-LINK THUNDER HEADSET

1303-1 LSA - Comm/Stereo/Electret
P/N 11-07907 ..... **$257.55**
1303-2 LSA - Comm/Stereo/Dynamic
P/N 11-07908 ..... **$257.55**
1303-3 LSA - Comm only / Electret
P/N 11-07909 ..... **$239.15**
1303-4 LSA - Comm only / Dynamic
P/N 11-07911 ..... **$239.15**
1303-10 GA-Comm/Stereo/Electret ..... P/N 11-07913 ..... **$257.55**
1303-11 GA-Comm/Stereo/Dynamic..... P/N 11-07914 ..... **$257.55**
1303-12 GA-Comm Only/Electret..... P/N 11-07915 ..... **$239.15**

SPORT-LINK HEADSETS

Single Headset, Electret ..... P/N 11-05330 . **$217.07**
Single Headset, Dynamic .... P/N 11-05329 . **$192.23**
Headset, General Aviation... P/N 11-05337 . **$244.64**
Dual Headset System, Electret P/N 11-05338 . **$616.35**

SPORT-LINK ANR ACTIVE NOISE REDUCTION
Please Call or visit our website at www.aircraftspruce.com for part number and pricing

SPORT-LINK OPEN FACE HELMET SYSTEM

Dual Helmet System, Electret... P/N 11-05496..**$947.55**
Dual Helmet System, Dynamic..P/N 11-05497..**$708.35**
Single Helmet System, Electret P/N 11-05498. **$340.35**
Single Helmet System, Dynamic P/N 11-05499..**$289.75**

SPORT-LINK DETACH HELMET SYSTEM

Dual Detach System, Electret... P/N 11-05500..**$947.55**
Detach Helmet / Electret Headset only
P/N 11-05502..**$340.35**
Detach Helmet / Dynamic Headset only ..... P/N 11-05503..**$289.75**
GA Detach Helmet - Lynx ..... P/N 11-09183..**$238.28**
GA Detach Helmet - Rad ..... P/N 11-09184..**$238.28**
GA Detach Helmet - Pilot USA ..... P/N 11-09185..**$238.28**
GA Detach Helmet - David Clark ..... P/N 11-09186..**$238.28**
GA Detach Helmet - Zulu ..... P/N 11-09181..**$238.28**

SPORT-LINK FULL FACE HELMET SYSTEM

C1 Single Helmet only, Electret
P/N 11-05409....**$386.35**
C1 Single Helmet only, Dynamic
P/N 11-05410....**$344.95**
C2 Single Helmet only, Electret
P/N 11-05411....**$395.55**
C2 Single Helmet only, Dynamic..... P/N 11-05412....**$386.35**
Single Face Shield (C1) ..... P/N 11-05413.....**$27.55**

SPORT-LINK RADIOS / PTT / CABLES

Description	Part No.	Price
Icom A4, A3, A22, A24, A6 PTT	11-05331	$86.43
Icom A5, A23 PTT	11-05332	$86.43
JRC/Icom A20, A21 PTT	11-05333	$75.39
FRS / GMRS PTT (dual plug version)	11-05334	$75.39
General Aviation PTT - shielded	11-05335	$33.07
General Aviation PTT - unshielded	11-05336	$25.71
Cell Phone Cord	11-05415	$31.23
Music Cord	11-05417	$16.51
Power Cord	11-05414	$10.07

SPORT-LINK ACCESSORIES

Description	Part No.	Price
Intercom - Pac	11-05419	$30.31
Speaker, Extended range	11-05420	$27.55
Mic. Boom	11-05421	$16.51
Dynamic Mic.	11-05422	$45.95
Electret Mic.	11-05423	$68.50
Electret Noise Cancelling Mic.LB1	11-09624	$46.50
Electret Noise Cancelling Mic.LB2	11-09625	$56.00
Heavy Duty Wind Screen	11-05424	$9.15
Peak Visor	11-05425	$8.75
Helmet Extension	11-05426	$22.95

******For detailed product information please visit******
our website at www.aircraftspruce.com

WARNING: - SLC helmets are not designed for safety or to protect against head injury, falling debris, impact, concussion, heat, cold, the elements or any type of injury. They are solely to facilitate communications.

AV

3M™ PELTOR HEADSETS

3M™ PELTOR™ ANR 9500 AVIATION HEADSET

With analog and digital active noise reduction
This lightweight headset is ideal for use with single/twin engine aircraft planes or with helicopters (with separate adapter cable). It uses both analog and digital active noise reduction for better attenuation. • Digital technology cancels propeller and engine noise • Single, Twin engine, or Helicopter settings • Noise-canceling gentex gooseneck microphone • Gel-filled cushions • White earcups help reduce heat • Peltor™ stainless steel spring arm headband provides even pressure all day • Leather headband • Leather headset bag • Folds for storage • Durable cables • 5 year warranty • NRR 23dB P/N 11-07590 ..... **$568.00**

3M™ PELTOR™ SPORT LE SERIES HEADSETS

These passive aviation headsets from Peltor™ features a new hygiene kit for increased comfort level and include an aviation carrying case. Color: Midnight blue. Lifetime warranty. Peltor™ stainless steel spring arm headband provides even pressure all day. Peltor™ stainless steel spring arm headband provides even pressure all day.

7000 SERIES STARTER AVIATION HEADSET - Includes deluxe carrying case, foam/liquid earseals, single volume control know, 180° electret swivel boom mic, folding headband, midnight blue cups, Lifetime warranty. NRR 24 dBA. P/N 11-01580 ..... **$260.00**

3M™ PELTOR™ PRO GT SERIES

These passive aviation headsets from Peltor™ feature new gel earseals, new goose neck boom design, new shielded cable assembly, and a Lifetime warranty. Deep earcup design for increased comfort and higher attenuation. Aviation carrying case included. Peltor™ stainless steel spring arm headband provides even pressure all day. Color is midnight blue.

7000 SERIES PREMIUM AVIATOR HEADSET - Includes deluxe carrying case, gel earseals, single volume with independent earphone level control, premium 180° swivel electret boom mic, shielded cable assembly. Deep earcup design for increased comfort and higher attenuation. • Peltor™ stainless steel spring arm headband provides even pressure all day. Lifetime warranty. NRR 26 dBA.
Midnight blue cups ..... P/N 11-01582 ..... **$299.00**

7000 SERIES PREMIUM HELICOPTER HEADSET - Same as the Premium Aviator headset, but come with a single plug helicopter format cable assembly, midnight blue cups. NRR 26 dBA.
Midnight blue cups ..... P/N 11-01585 ..... **$299.00**

3M™ PELTOR™ HUMMINGBIRD HELICOPTER HEADSET

This new headset, designed for low impedance helicopter intercom systems, leads the 3M ™ Peltor™ line, with advanced comfort and performance features • Twin Cup/Double Shell ear cup design provides high attenuation • NRR 30 dB • Top exit cables allow for easy connection to overhead intercoms • Coiled cables extend for console mounted intercoms. P/N 11-08712 ..... **$329.50**

3M™ PELTOR ™ 8103 HELICOPTER HEADSET

The Aviation 8103 helicopter headset has an ambient-noise compensated dynamic differential microphone, specially designed for aviation intercom systems. The microphone amplifier is designed for intercom systems with 5 Ohm impedance. The frequency range is adjusted for good speech recognition. The earphones have a limited frequency range, to give the best possible speech recognition in the ambient noise of a helicopter. Peltor's two-point suspension of the shells on a broad headband ensures total comfort and consistent noise attenuation. The spiral polyurethane cable has a moulded NATO-standard connector equivalent to the Nexus TP-120. P/N 11-08704 ..... **$199.85**

3M™ PELTOR WIRELESS SOLUTIONS HEADSET

Designed for industrial users working in high noise environments. They offer versatility along with the hearing protection, durability and comfort. Clear, concise ground crew communications and reliable hearing protection during ground support operations. Features the latest in Bluetooth wireless technology. Excellent flexibility when "synched up" to your existing communication system. Transmit and receive communications without the need for interconnecting cords and wires. Earcups fold over headband for compact storage. P/N 11-09779 ..... **$399.00**

3M™ PELTOR™ NORDICA SPORT HEADSETS

Peltor™ blends them masterfully with Nordica, the aviation headset developed to soar far beyond the expectations of the most discriminating pilots. Features: Lightest weight headset available. 9.8 ounces. Three dual-color designs. Crisp, clear reception/transmission. Countoured, low profile ear cups. Peltor™ stainless steel spring arm headband provides even pressure all day. Headset Carry Bag optional

Nordica Sport Headset Grey ..... P/N 11-04554 **$139.95**
Nordica Sport Headset Blue ..... P/N 11-04555 **$139.95**
Peltor™ Deluxe Carrying Bag ..... P/N 11-01586 .. **$34.75**
Peltor™ Foam/Liquid Sealing Ring ..... P/N 11-01587 .. **$16.25**
Peltor™ Gel Seaing Cushions ..... P/N 11-01588 .. **$45.75**
Peltor™ Cloth Ear Covers ..... P/N 11-04557 .... **$7.25**
Peltor™ Microphone Windscreen ..... P/N 11-04558 .... **$9.25**
Peltor™ Clothing Clip ..... P/N 11-04559 .... **$6.00**

3M™ PELTOR™ NORDICA SPORT GT HEADSET

Peltor™ blends them masterfully with Nordica– the aviation headset developed to soar far beyond the expectations of the most discriminating pilots. Cellphone/MP3 Audio Jack. Includes Headset Carry Bag and Cellphone and MP3 compatible cables. Peltor™ stainless steel spring arm headband provides even pressure all day • Lightest Weight • Headset Avail. • Only 9.8 ounces • Dual-Color Design • Crisp, Clear Reception/Transmission • Contoured, Low Profile Ear Cups • NRR 23 dB. Grey ..... P/N 11-05248 ..... **$189.95**

3M™ PELTOR™ DIGITAL WORKTUNES

Worktunes is a self-contained AM/FM noise attenuating headset (NRR 26db) which provides hearing protection combined with an AM/FM radio to provide. Features include: • Easy finger tip controls • 5 preset stations • Volume limited to a safe 82 dB level • Gel/Foam cushions • MP3 cord included • Peltor™ stainless steel spring arm headband provides even pressure all day. • Wide, soft padded headband, flexible antenna. • Quick and easy tuning and volume adjustments P/N 11-01589 ..... **$81.75**

3M™ PELTOR™ EARMUFFS

The only muff that lets workers listen safely without removing their muffs. When workers lift their muffs, they lower their protection. Now Peltor™ puts safe listening at their fingertips. Just push the button on the PTL muff and speech & sounds "outside" the muff cup can be heard "inside"--clearly and safely. After 30 seconds, the muff automatically returns to its full protection with an NRR of up to 26 dB. Listen again? Just push again. It's that simple. P/N 11-04310 ..... **$37.95**

3M PELTOR MT SERIES HARD HAT MODEL HEADSET

Incorporating 3M Peltor`s technology in both earcup design and electronics makes this MT Series hard hat headset an ideal choice for clear, crisp 2-way communication in high-noise areas. Designed for hearing protection, durability, and comfort. *The NRR may overestimate the hearing protection provided during typical use. 3M recommends reducing the NRR by 50% for estimating the amount of noise reduction provided. Note: Push-to-talk adaptor required
Features: •Soft foam earcushions •Noise cancelling boom microphone Deep earcup design for all day comfort • Possible applications such as heavy equipment operators, airport workers, construction, manufacturing, agricultural, racing
Specifications: Material: Foam plastic metal • Noise Reduction Rating: 21 Decibel P/N 13-11586 ..... **$304.75**

3M™ PELTOR™ AVIATION HEADSET ACCESSORIES

Deluxe Carrying Bag ..... P/N 11-01586 .. **$34.75**
Foam/liquid sealing ring w/ foam inserts - sold as a pair
P/N 11-01587 .. **$16.25**
Gel sealing cushions - sold as a pair ..... P/N 11-01588 .. **$45.75**
Mic Muff for MT22/MT24 ..... P/N 11-18535 .. **$12.95**
Peltor™ Cloth Ear Covers ..... P/N 11-04557 .... **$7.25**
Peltor™ Microphone Windscreen ..... P/N 11-04558 .... **$9.25**
Peltor™ Clothing Clip ..... P/N 11-04559 .... **$6.00**
MT70 Metal Mic Boom - 220 ohm dynamic noise cancelling microphone, military standard. 2-pin nexus plug. Used on all MT series headsets
P/N 11-08062 .. **$89.50**

AV

PILOT USA HEADSETS

PA-1779T ANR HEADSET

- Passive: 25dB (NR)
- Active: 20-22dB
- Auto Shut-off
- Cell/Satellite phone battery interface
- Auxiliary audio interface for music or audible checklist/ warnings
- Mono/Stereo capability
- Dual volume control
- Twin layer gel ear seals
- Custom padded case
- Rechargeable NIMH battery
- Usage time: 30-40 hrs.
- Weight: 14.9 oz (423 grams)
- 5-year warranty
- Made in USA

Model	Part No.	Price
PA-1779T	11-11515	$465.00
PA-1779TH (Helicopter)	11-03538	$490.00
PA-1779TP (Panel Mount)	11-00440	$500.00
PA-1779TB (Bose Connect)	11-03539	$530.00

PA-1771T ANR HEADSET

- Passive: 25dB (NR)
- Active: Additional 20-22dB
- Auto Shut-off
- Cell/Satellite phone interface
- Auxiliary audio interface for music or audible checklist/ warnings
- Mono/Stereo Capability
- Dual Volume control
- Custom padded protective case
- Powered by 9 volt battery
- Battery life: 25-30 hrs
- 12.9 ounces (366 grams)
- Five-year warranty
- Made in U.S.A

Model	Part No.	Price
PA-1771T	11-02110	$375.00
PA-1771TH (Helicopter)	11-03537	$400.00

PA-1761T ANR HEADSET

- Active Noise Reduction: 16-19dB
- Passive Noise Reduction
- Cell/Satellite phone interface
- Auxiliary audio interface for music or audible checklists/ warnings
- All flexible microphone boom
- Noise canceling electret mic
- Pillow top head pad
- Mono/stereo capability
- Twin layer silicone gel ear seals
- Cloth ear seal covers
- Dual Volume Control
- Padded protective case
- 9V Alkaline Battery
- Battery Life: 25-35 hours
- 13.9 ounces (389 grams)
- Three year warranty

Model	Part No.	Price
PA-1761T	11-03550	$295.00
PA-1761TH (Helicopter)	11-06505	$320.00

PA-2170T PASSIVE HEADSET

- Passive Noise Reduction: (NRR) 24dB
- Cell/Satellite phone interface
- Auxiliary audio interface for music or audible checklists/ warnings
- Full flex "memory" micro-phone boom
- Noise canceling electret microphone
- Sheepskin fleece head pad
- Mono/stereo capability
- Twin layer silicone gel ear seals
- Individual volume controls
- Soft padded headset case
- Five Year Warranty

Model	Part No.	Price
PA-2170T	11-04940	$179.95
PA-2170TH (Helicopter)	11-03553	$210.00

PA-1181T PASSIVE HEADSET

- Passive: (NRR) 23dB
- Push-to-talk switch
- Mono/Stereo capability
- Dual volume control
- All flexible mic boom
- Twin layer foam/gel ear seals
- Padded Protective bag
- Triple-plated black hard
- Weight: 13.4 ounces
- Washable fleece headpad
- Auxiliary audio inter-face for music or audible checklist/warnings
- Cell/Satellite phone interface
- Three year warranty

Model	Part No.	Price
PA-1181T	11-03554	$185.00
PA-1181T-P (Pink)	11-07326	$185.00
PA-1181TH (Helicopter)	11-03555	$210.00

PA-1171T PASSIVE HEADSET

- Passive Noise Reduction
- Weighs 14.5 ounces
- Cell/Satellite phone interface
- Auxiliary audio interface for music or audible checklists/warnings
- Half Metal / Half Flex "memory" microphone boom
- Noise canceling electret mic.
- Super Cushion Head Pad
- Mono/stereo capability
- Confor® foam leatherette ear seals
- Individual volume controls
- Soft padded headset case
- Three Year Warranty

Model	Part No.	Price
PA-1171T	11-03556	$145.00
PA-1171TH (Helicopter)	11-03557	$170.00

PA-1161T PASSIVE HEADSET

- Passive Noise Reduction: (NRR) 24dB
- Auxiliary audio interface for music
- or audible checklists/warnings
- Half Metal / Half Flex microphone boom
- Noise canceling electret microphone
- Air-Foam headpad
- Mono/stereo capability
- Foam ear seals
- Individual volume control
- Warranty: Three Year Warranty

Model	Part No.	Price
PA-1161T	11-04063	$120.00
PA-1161TH (Helicopter)	11-03559	$150.00

P-1151ACB/ACG PILOT CHILD PASSIVE HEADSET

- Passive Noise Reduction:(NRR)24dB
- Auxiliary audio interface for music-CD, IPOD, MP3 or Sony Playstation.
- Flex "memory" microphone boom
- Noise canceling electret microphone
- Small Headband for Perfect Fit
- Mini Super Cushion headpad
- Mono/stereo capability
- Foam ear seals
- Individual volume control
- Weight:13.9oz (389grams)
- Warranty:ThreeYearWarranty

Model	Part No.	Price
PA-1151ACB (Boys)	P/N 11-09660	$120.00
PA-1151ACG (Girls)	P/N 11-03540	$120.00

PA-1779M MILITARY HEADSET

- Passive: 25 dB
- Active: Additional 20-22 dB
- Auto Shut-off
- Cell/Satellite phone interface
- Auxiliary audio interface
- Checklists & Warnings
- Totally self-contained unit
- Mono/Stereo capability
- Dual volume control
- Gel ear seals, Noise canceling electret mic
- Custom padded protective case
- Rechargeable NiMH battery
- Usage time: 45-50 hours
- Weight: 14.5 ounces
- Five-Year warranty, Made in USA

Model	Part No.	Price
PA-1779M87	11-06539	$575.00
PA-1779M101	11-06538	$550.00

PA-1176M MILITARY HEADSET

- Passive: 24dB
- Shielded coiled cord with U174/U
- Metal-Flex sliding mic boom
- M-87 dynamic mic
- Super cushion headpad
- Padded Protective Bag
- M-101 dynamic mic also avail.
- Weight; 14.5 oz (406 grams)
- 3-year Warranty

Model	Part No.	Price
PA-1176M101	11-06542	$195.00
PA-1176M87	11-06543	$215.00

PA-1166M MILITARY HEADSET

- Passive: 24dB
- Shielded coiled cord with U174/U
- Metal-Flex sliding mic boom
- M-87 dynamic mic
- Super cushion headpad
- Padded Protective Bag
- M-101 dynamic mic also avail.
- Weight; 14.5 oz (406 grams)
- 3-year Warranty

Model	Part No.	Price
PA-1166M101	11-06544	$275.00
PA-1166M87	11-06545	$290.00

PILOT USA ACCESSORIES

EAR SEALS

11-04946

PA-21SLC - 3/4" Large Soft Cushion Ear Seals for DNC-XL .. P/N 11-04946. **$25.95**
PA-22-SLC - 3/4" Large Leatherette Sodt Cushion Ear Seals ..... P/N 11-07105. **$22.75**
PA-21G - Twin Layer Gel Ear Seals Dor DNC-Series P/N 11-04960. **$28.95**
PA-22G - Twin Layer Gel Ear Seals . P/N 11-04680. **$23.95**
PA-130 - Liquid Foam Ear Seals .... P/N 11-00810. **$21.20**
PA-20 - Cloth Ear Seal Covers ..... P/N 11-04950... **$5.75**

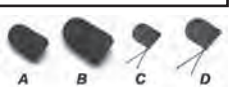
MICROPHONES

A. PA-3 ..... P/N 11-06557 ..... **$29.95**
B. PA-5 ..... P/N 11-06558 ..... **$38.50**
C. PA-7 ..... P/N 11-06559 ..... **$38.85**
D. PA-9 ..... P/N 11-06560 ..... **$39.75**

SHEEPSKIN HEAD PADS

114213SH..... P/N 11-06566 ..... **$29.75**

WINDSCREENS



A. PA-10 ..... P/N 11-06562 ..... **$3.35**
B. PA-10L .... P/N 11-04026 ..... **$3.95**

OPEN COCKPIT MIC COVERS

C. PA-11 ..... P/N 11-06564 ..... **$9.85**
D. PA-11L .... P/N 11-06565 ..... **$11.95**

AV

SOFTCOMM HEADSETS

SOFTCOMM C-10 CHANCELLOR HEADSET

• 24 db passive NRR • Mono/Stereo switchable • Built-in PTT switch • Black gel and foam earseals included • M-56 electret mic • 66" Flexible Heavy Duty Cables • Wt: 15.1oz. head weight • 5 year warranty

P/N 11-03756 .....**$167.95**

SOFTCOMM C-20 PHOENIX HEADSET

• 23 db passive NRR • 5 year warranty
• Mono/Stereo switchable
• Extra large thick soft ear seals
• M-56 electret mic
• 66" Flexible Heavy Duty Cables
• Weight: 13.9 oz. head weight

P/N 11-04761 .....**$153.95**

SOFTCOMM C-35 WHITE KNIGHT HEADSET

• 22 db passive NRR • 3 year warranty • Mono / Stereo switchable • Lightweight foam ear seals • M-56 electret mic • 66" Flexible Heavy duty cables • Wt: 11.9 oz. head weight

P/N 11-03759 ..... **$164.00**

SOFTCOMM C-40 PRO-AM HEADSET

• 23 db passive NRR • Mono only • Lightweight foam ear seals • M-56 electret mic • 66" Flexible Heavy Duty Cables • Wt: 12.3 oz. head weight • 3 year warranty.

P/N 11-03761 .....**$106.95**
Stereo .....P/N 11-03762 .....**$119.95**
Helicopter .....P/N 11-04131 .....**$185.95**

SOFTCOMM C-45 PRINCE HEADSET

• 22 db passive NRR • Mono only • Lightweight foam ear seals • M-56 electret mic • 66" Flexible Heavy Du ty Cables • Wt: 11.4 oz. head weight • Folds into Ball • 3 year warranty.

P/N 11-03763 .....**$99.00**
C-45-10A Black With Audio
P/N 11-06368 .....**$99.50**

SOFTCOMM C-80 BNE HEADSET

• 24db passive NRR • Mono/Stereo switchable • M-57 electret mic • Fully flexible mic boom • 66" Flexible Heavy Duty Cables • Wt:14 oz. C-80 head weight • Wt: 15.6 oz. • 3 conductor cell phone compatible • 3 yr warranty

P/N 11-00211 .....**$171.95**

C45-10 CHILD PRINCE HEADSET

• 22 db passive NRR • Mono only • Smaller lightweight foam ear seals • M-56 electret mic • 66" Flexible Heavy Duty Cables • Wt: 11.0 oz. head weight • Folds into Ball • 3 year warranty •
Red .....P/N 11-03764 .....**$88.75**
Purple .....P/N 11-07123 .....**$87.00**
C-45-10A - Red with audio plug for CD, DVD, MP3 players or handhelds video games.

P/N 11-05946 .....**$99.00**

SOFTCOMM HEADSET ACCESSORIES

Black Gel Ear Seals ..... P/N 11-11834.....**$21.50 Pr.**
Cloth Comfort Covers..... P/N 11-11810.....**$6.95 Pr.**
Foam Mike Muff..... P/N 11-11820..... **$5.95 Ea.**

C-200 CENTURION

The C-200 headset features a contoured head pad for a soft, comfortable fit, a flex boom articulating fulcrum with adjustable mic boom and mic muff, and a small power pack with low battery LED indicator. The C-200 is cell phone ready and is complete with interface jack, interconnect cable and hands free adaptor. Other features include silver black dones with silver letting, gel and foam filled ear seals; stereo/mono switch and dual volume controls, noise canceling electret mic and RF immune M-56 amplifier, -24 db passive and -19 ANR, and push-to-talk switch on ear dome. Wt: 14 oz. Power: 9V battery. 3 year warranty. Made in the USA. Specifications: • Head Weight: 14.2 oz. • Total weight: 18.5 oz. • NR Rating: -24 db Passive, -19 db active Warranty: 3yr Unconditional. P/N 11-03019.....**$329.95**

SOFTCOMM C-300 CENTURION

The C-300 headset features a fail safe power feature which automatically converts to a full performance -24 dB passive headset should ANR circuit fail. The C-300 is cell telephone ready with amplified volume, detachable cable supplied for ground phone use in noisy environments. Supports Cell Phones equipped with a 2.5mm 3 conductor hands free jack. Listen to both Cell-phone and ATC at same time. The C-300 has noise attenuation of -19db active ANR and -24 db passive, a unique noise absorbing material, positive set flex boom, soft foam ear seals, cloth covers and mic muff. Made in the USA. Specifications: •Weight: 16.2 oz •Total Weight: 21.7 oz •NR Rating: -24 db Passive, -17 db active • Warranty: 3yr Unconditional.....P/N 11-03020 .....**$398.00**

SOFTCOMM C-40-10 RED BARON

• 23 db passive NRR • Mono only
• Lightweight foam ear seals
• M-56 electret mic
• 66" Flexible Heavy Duty Cables
• Wt: 12.5 oz. head weight
• 3 year warranty

P/N 12-01087 .....**$99.00**

SOFTCOMM C-50 BLACK KNIGHT

• 22 db passive NRR • Mono only
• Lightweight foam ear seals
• M-56 electret mic • 3 year warranty
• 66" Flex HD Cables
• Wt: 11.4oz. head weight
• Folds into Ball

P/N 11-02654.....**$99.00**

SOFTCOMM C-60 SILVER EDITION

• 24 db passive NRR • PTT in Dome
• Mono/Stereo switchable
• Lightweight foam ear seals
• M-56 electret mic
• 66" Flexible Heavy Duty Cables
• Wt: 14.9 oz. headweight
• 5 year warranty

P/N 11-03766.....**$152.95**

SOFTCOMM C-40-20 HEADSET SILVER FOX

• Non-Reflective Black Metal Frame with Fixed Metal Stirrups.
• Gun Metal Grey Domes with Silver Lettering.
• A Black Two-Piece, 4-way Adjustable wire Mic boom.
• Extra-Soft, Foam Ear Seals.
• STEREO/MONO Switch with Dual Volume Controls.
• Mic Muff and Cloth Ear Covers ** Included **
• A ribbed Foam Head Pad and Black Adjustable Metal Head Band.
• RF immune M-56 Amplifier and Noise Canceling ELECTRET microphone.
• Gold Plated Communication cable Plugs for noise-free audio.

P/N 11-05728.....**$122.95**

SOFTCOMM C-45-20 YOUTH / PASSENGER ANR

• 22 db passive NRR • 17 db active NRR
• Mono/Stereo switchable
• M-56 electret mic
• 66" Flexible Heavy Duty Cables
• Wt: 14.5 oz. head weight
• Incl. child & adult lightweight foam ear seals
• Folds into Ball • 3 yr warranty

Purple .....P/N 11-01283.....**$246.95**
Black.....P/N 11-09529.....**$243.95**
Grey.....P/N 11-09530.....**$246.95**

AV

HEADSETS

C-20 BLACK HEADSET

Features for this headset include an extra thick ventilated cushion headpad and ear seals for maximum comfort, earphones wired in parallel for safety and reliability, adjustable boom microphone that can be placed on left or right side of mouth, and high performance noise cancelling microphones. **Additional Features**: Corrosion proof chrome plated steel in accordance with demanding government specifications • PU cord up to 5 feet long, shielded cable for near perfect E.M.I/R.F.I. protection • PU cord and plug configurations for specific aircraft • Lock nut construction for customized fit. Set it once it fits you right every time • Earphones (300 ohms ea.) wired in parallel for safety and reliability. Earphones compatible with 150-1000 ohm systems. • Listen Volume Control allows you to adjust to a comfortable level • Flexible tension boom assembly for more comfortable and precise microphone placement • Microphone Windscreen • Noise Reduction/Sensitivity: 21dB • PU cord and plug dual plug configurations for specific aircraft

P/N 17-00238.....**$131.95**

C-20 COBRA HEADSET

Features for this headset include an extra thick ventilated cushion headpad and ear seals for maximum comfort, earphones wired in parallel for safety and reliability, adjustable boom microphone that can be placed on left or right side of mouth, and high performance noise cancelling microphones. Additional Features: • Corrosion proof chrome plated steel in accordance with demanding government specifications • PU cord up to 5 feet long, shielded cable for near perfect E.M.I/R.F.I. protection • PU cord and plug configurations for specific aircraft • Lock nut construction for customized fit. Set it once it fits you right every time • Earphones (300 ohms ea.) wired in parallel for safety and reliability. Earphones compatible with 150-1000 ohm systems. • Listen Volume Control allows you to adjust to a comfortable level • Flexible tension boom assembly for more comfortable and precise microphone placement • Microphone Windscreen • Noise Reduction/Sensitivity: 21dB • PU cord and plug dual plug configurations for specific aircraft.

P/N 17-00237.....**$131.95**

AX-20 HEADSET

This headset helps to ensure four important goals of today's airline communications: • safety • reliability • health protection • convenience.

The hands of the pilot are completely free from any communication chores, thus ensuring full prompt response to all flight events. Thus, the headset contributes to flight safety. By being tightly, yet comfortably, positioned on the pilots head, above the ear, the headset allows to separate all important communications from cockpit noise, thus contributing to flight reliability. Noisy cockpits produce fatigue and stress on pilots. The headset nearly eliminates this problem, thus contributing to the pilots health protection. Comfort and conveniene are evident by a simple look at the headset. AX20 — straight cord up to 5 feet long . Stirrup pivot assembly, such that cups can provide universal fit; Comfortable, extra tick, headpad cushioning; — cushioned ear seals for the best possible noise attenuation and comfort; Shielded cable for near perfect E.M.I./R.F.I. protection; Corrosion-proof chrome plated steel; — parallel earphone wiring;— adjustable volume control; 150 to 10,000 ohms compatibility; Universal mike boom assembly for precise placement of microphone; High performance, noise cancelling microphone. P/N 17-00235.....**$131.95**

AX-40 HEADSET

This headset helps to ensure four important goals of today's airline communications: •safety • reliability • health protection • convenience.

The hands of the pilot are completely free from any communication chores, thus ensuring full prompt response to all flight events. Thus, the headset contributes to flight safety. By being tightly, yet comfortably, positioned on the pilots head, above the ear, the headset allows to separate all important communications from cockpit noise, thus contributing to flight reliability. Noisy cockpits produce fatigue and stress on pilots. The headset nearly eliminates this problem, thus contributing to the pilots health protection. Comfort and conveniene are evident by a simple look at the headset. AX40 — straight cord up to 5 feet long. Stirrup pivot assembly, such that cups can provide universal fit; Comfortable, extra tick, headpad cushioning; — cushioned ear seals for the best possible noise attenuation and comfort; Shielded cable for near perfect E.M.I./R.F.I. protection; Corrosion-proof chrome plated steel; — parallel earphone wiring;— adjustable volume control; 150 to 10,000 ohms compatibility; Universal mike boom assembly for precise placement of microphone; High performance, noise cancelling microphone. P/N 17-00236.....**$115.95**

FLIGHTCOM VENTURE 30 PASSIVE FIXED WING HEADSET

The Venture 30 Passive stereo headset combines affordable quality, durability, and features for new pilots and passengers young and old. The 17 ounce weight, open-cell foam PVC ear seals, ventilated foam-rubber head pad, and shallow speaker design deliver adaptable fit. The 24dB passive NRR enables clear communication. A stereo/mono switch and single volume control optimize hearing. The powder-coated black headband matches natural black ear domes. P/N 11-10585 ....**$109.00**

FLIGHTCOM VENTURE 50 PASSIVE HEADSET

The 17 ounce weight, open-cell foam PVC ear seals, wide and comfortable air-pillow head pad, and shallow speaker design make a very comfortable headset. With 24dB passive NRR, everyone will enjoy clear communication. A stereo/mono switch and dual volume controls optimize hearing. A powder-coated black headband complements the fresh look of onyx black ear domes. A lightweight carrying bag is included.

Fixed Wing..... P/N 11-10584.....**$139.00**
Helicopter..... P/N 11-10583.....**$179.00**

FLIGHTCOM VENTURE 70 PASSIVE FIXED WING HEADSET

This headset weighs a mere 17 ounces and comes with supple ComLeather ear seals and washable polar-fleece head pad for long-wearing comfort. Like other Flightcom™ Venture series headsets, the Venture 70 provides a 24dB NRR barrier against cockpit noise. Dual volume controls with stereo/mono switch optimize hearing. The powder-coated black headband and carbon fiber print ear domes look professional in any cockpit. A lightweight carrying case is included.

P/N 11-10581.....**$179.00**

FLIGHTCOM VENTURE 90 DUAL INPUT ANR HEADSET

Weighing in at 17 ounces with super-thick ComLeather ear seals and washable thick polar-fleece head pad, this headset is designed to maintain the comfort demanded by experienced pilots spending long hours in the left seat. With 24dB passive NRR and an additional 14-18dB ANR, noise won't prevent you from hearing radio traffic or using your MP3 and your Sat/Cell phone through the dual-input battery box. Auxiliary inputs are muted when communications are received. The Sure Power system shuts off ANR to preserve battery life when no audio is present longer than 15 minutes. A stereo/mono switch and dual volume controls optimize hearing. The chrome headband with carbon fiber print ear domes put this into a class of its own with the latest in style complemented with outstanding features and reliability. Includes a heavy-duty padded carrying case.

Fixed Wing..... P/N 11-10580.....**$229.00**
Helicopter..... P/N 11-10579.....**$269.00**

FLIGHTCOM VENTURE 50 DUAL INPUT ANR HEADSET

The 17 ounce weight, open-cell foam PVC ear seals, wide and comfortable air-pillow head pad, and shallow speaker design make a very comfortable headset. With 24dB passive NRR and an additional 14-18dB ANR, noise fatigue and clear communication shouldn't be an issue. A stereo/mono switch and dual volume controls optimize hearing. A powder-coated black headband complements the fresh look of onyx black ear domes. A lightweight carrying bag is included. P/N 11-10582.....**$299.00**

FLIGHTCOM VENTURE 90 DUAL INPUT ANR HEADSET

Weighing in at 17 ounces with super-thick ComLeather ear seals and washable thick polar-fleece head pad, this headset is designed to maintain the comfort demanded by experienced pilots spending long hours in the left seat. With 24dB passive NRR and an additional 14-18dB ANR, noise won't prevent you from hearing radio traffic or using your MP3 and your Sat/Cell phone through the dual-input battery box. Auxiliary inputs are muted when communications are received. The Sure Power system shuts off ANR to preserve battery life when no audio is present longer than 15 minutes. A stereo/mono switch and dual volume controls optimize hearing. The chrome headband with carbon fiber print ear domes put this into a class of its own with the latest in style complemented with outstanding features and reliability. Includes a heavy-duty padded carrying case. P/N 11-10578.....**$429.00**

AV

COMTRONICS HEADSETS & HELMETS

COMTRONICS HEADSETS

MODEL-3100 HEADSET - Comtronics Model-3100 Headset has a 34 dB noise attenuation rating making it one of the quietest passive headsets on the market today. The electret noise-canceling Microphone has state-of-the-art voice quality and is compatible with all current Comtronics intercoms and radio interface cables. Headset cables can be terminated with a single plug or configured with two plugs for general aviation use. Earmuffs can be adjusted up or down. All Comtronics helmets and headsets are designed for high noise environments and open cockpit flying including ultralights, powered parachutes, auto-gyros and all sport planes. Weight: 1 lb. (Black) P/N 11-07425 ..... **$227.95**

MODEL-3000 HEADSET - • The Model-3000 Headset offers 30 dB noise attenuation. • They are light-weight and have dark green muffs. • Ear seals are fluid foam-filled cushions and very comfortable. • Can be fitted with our PRO-COM Helmet. • Gel/Foam Ear Seals are optionally available. • This headset can also be used for high noise environments • Weight: 1 lb.(Dark Green)
P/N 11-09942 ..... **$191.95**

PRO-LITE SUPERIOR STEREO HEADSET - This headset uses either ultralight or general aviation audio and has a second pair of speakers for High Fidelity Stereo Music. Outstanding audio! • Music Speakers Frequency Response: 15 - 25000 Hz • 3.5 mm Stereo Music Jack on Ear Cup • Comes with Music Cord • Comfortable • Gel/Foam Ear Seals can be added for extra comfort and noise attenuation • NRR 33 - 45 dB • Can also be used with our PRO-COM Helmet • Weight: 1 lb.
w/ Electret Mic (Blue) ..... P/N 11-09943 ..... **$265.00**
Listening Only (Blue) ..... P/N 11-07429 ..... **$165.00**

COM-AIR MODEL-5000 GENERAL AVIATION HEADSET - • Similar to Model-3100 Headset • General Aviation Plugs and Audio • Can also be fitted with our PRO-COM Helmet • Also available is a General Aviation - to - Ultralight Adapter • Gel/Foam Ear Seals can be added • Weight: 1 lb. (Black) P/N 11-09944 ..... **$265.00**

COMTRONICS AERO-COM SYSTEMS

Each includes: Two headsets and the Intercom specified.

System	Headset	Intercom	Part #	Price
Aer-Com	Model 3100	Ultra-Com II	11-07414	**$590.00**
Aer-Com	Model 3100	Dual-Com II	11-07415	**$641.00**
Aer-Com	Model 3000	Ultra-Com II	11-07411	**$550.00**
Aer-Com	Model 3000	Dual-Com II	11-07412	**$590.00**

COMTRONICS HELMETS

Helmet Size Selection Chart	
Helmet Size	**Head Size**
XX-Large	7-5/8" & up
X-Large	7-3/8" to 7-5/8"
Large	7-1/8" to 7-3/8"
Medium	6-7/8" to 7-1/8"
Small	6-5/8" to 6-7/8"

COMTRONICS ULTRA-PRO 2000 - Earmuffs are attached to a spring steel wire frame which is secured to the inside surface of shell. This arrangement provides a more positive seal for noise reduction caused by the engine, propeller and wind. The Ultra-Pro 2000 Flight Helmet is available in Blue, Metallic White, Metallic Silver, Metallic Red, Metallic Wine, Gloss Red, and Gloss Black. Sizes include Small, Medium, Large, X-Large, and XX-Large..... **$344.95**

COMTRONICS ULTRA-PRO STANDARD - The ULTRA-PRO Standard Helmet also has a plush fully upholstered liner and beaded foam inner shell with the new ultra-soft chin pad design. A feature unique to the Comtronics ULTRA-PRO Standard Helmet, the flip-out ear muffs allow easy entry and ability to converse with a student or passenger while making pre-flight inspections. The Ultra-Pro 2000 Flight Helmet is available in Blue, Metallic White, Metallic Silver, Metallic Red, Metallic Wine, Gloss Red, and Gloss Black. Sizes include Small, Medium, Large, X-Large, and XX-Large **$344.95**

COMTROINCS ULTRA-PRO HF HELMET - The ULTRA-PRO HF Helmet has a built in communication system using an electret microphone, built-in ear cups, quick release fase shield with either a single plug for ultralight audio or two plugs for genera aviation audio. This helmet has an ultra-plush interior and check pads are added to prevent air and noise from entering the helmet. Adjustable top vent and rear exhaust diffuser keep the helmet at a comfortable temperature. Color choices: Metallic White, Metallic Silver, Metallic Wine, Glossy Black, and Flat Black. Sizes available: Small, Medium, Large, X-Large, and XX-Largelease specify color & Size. **$402.95**

COMTRONICS ULTRA-PRO FULL FACE - Comtronics Full-Face fiberglass helmets are complimented by an Air Channel technology vent system, quick release shield system, padded chin bar, adjustable chin and top vents, rear exhaust vents, breath spoiler, padded D-ring retention system, UV clear protects paint and graphics, and DOT approved. The helmet interior has a comfortable liner, fitted ear cups with a pair of 2-inch speakers to enhance audio reception and built-in electret microphone. Color choices: Metallic White, Metallic Silver, Gloss Black, Flat Black, Graphic Red (pictured), Graphic Blue (pictured), and Graphite Metallic. Sizes available: Small, Medium, Large, X-Large, and XX-Large.See sizing chart above. **$479.95**

COMTRONICS AERO-PRO SYSTEMS

Each includes: Two helmets and the intercom specified.

System	Headset	Intercom	Part #	Price
Aero-Pro	Ultra-Pro 2000	Ultra-Com II	11-07404	**$739.95**
Aero-Pro	Ultra-Pro 2000	Dual-Com II	11-07405	**$789.00**
Aero-Pro	Ultra-Pro Standard	Ultra-Com II	11-07401	**$739.95**
Aero-Pro	Ultra-Pro Standard	Dual-Com II	11-07402	**$789.00**

Each includes: Two helmets, two headsets and the intercom specified.

System	Headset	Intercom	Part #	Price
Aero-Pro	Pro-Com	Ultra-Com II	11-07417	**$780.00**
Aero-Pro	Pro-Com	Dual-Com II	11-07418	**$830.00**

COMTRONICS ACCESSORIES

Description	Part No.	Price
Helmet Bag - Fleece Lined	11-07437	**$47.75**
Coiled Cord - Helmet/Headset Option	11-07438	**$45.00**
Gel/Foam Ear Seal Cushions	11-07439	**$39.95**
Face Shield - Clear	11-07440	**$29.85**
Face Shield - Smoke	11-07441	**$29.00**
Ulta Paq II - Heavy duty pack for the Ultra-Com II intercom	11-07442	**$34.95**
Dual Paq II - Heavy duty pack for the Dual-Com II intercom	11-07443	**$39.95**
Peak Visor	11-07444	**$8.60**
Windscreen - Foam / Dynamic	11-07445	**$9.95**
Windscreen - Leather / Dynamic	11-07446	**$9.95**
Windscreen - Foam / Electret	11-07447	**$9.95**
Windscreen - Leather / Electret	11-07448	**$9.95**
Ultra to GA adapter	11-09433	**$129.95**
Ultra to Heli Adapter	11-09957	**$57.95**
GA Dual Plug	11-09805	**$57.95**

COMTRONICS INTERFACE CABLE

Interface cables are designed to connect our helmets or intercoms to your transceiver. Different interface and custom cables available.

Cable For:	Part No.	Price
Icom A6/A24/A14	11-07450	**$129.95**
Vertex VXA 220/300	11-07451	**$110.95**

PLEASE SEE AIRCRAFTSPRUCE.COM FOR A COMPLETE LISTING OF MODELS AND PART NUMBERS.

AV

RUGGED AIR HEADSETS

RUGGED AIR RA200 HEADSET

Headset with 24 db NRR, Clear Hear performance audio speakers, volume control and 3.5mm music input jack for Ipods and MP3. With Foam Fit ear seals, stainless steel headband and Deep Pocket ear canals student pilots and flight instructors will enjoy the all day comfort of the RA200. Superior Clear Hear 50mm audio performance speakers. EM56 noise reflective cup microphone and wind block foam mic muff. 7 year factory warranty

Rugged Air is bringing new audio technology with the same proven reliable cup and headband design. Finish it off with gold plated plugs, tough molded Y block, music input port, Total Shield cabling, and EM56 noise reflective microphone the RA200 is the perfect choice for all of your aviation adventures. P/N 13-09291 .....**$102.00**

RUGGED AIR STEREO AVIATION HEADSET RA454

Rugged Air brings new stereo audio performance with the same proven reliable cup and headband design. With Clear Hear stereo speakers and a 24 dB noise reduction rating ATC will come through loud and clear. Always be heard with the all new designed EM56 noise reflective cup microphone with wind blocking foam mic muff.

Other features include volume control, 3.5mm music input port for Ipods and MP3, Foam Fit ear seals, and adjustable stainless steel headband. Finish it off with a backup ATC push to talk, gold plated plugs, tough molded Y-Block, and Total Shield cabling. The Rugged Air RA454 headset is the perfect choice for all of your flying adventures. Full Factory 7 Year Warranty. P/N 13-09911 .....**$148.95**

RUGGED AIR RA900 FLEX HEADSET

The Rugged Air aviation headset with 24 db NRR, Clear Hear performance audio speakers, dual volume control stereo weather proof push to talk on the dome and 3.5mm music input jack for Ipods and MP3. With Foam Fit ear seals, stainless steel headband and Deep Pocket ear canals student pilots and flight instructors will enjoy the all day comfort of the RA900. Never miss an instruction with the superior Clear Hear 50mm audio performance speakers. Always be heard with the all new designed EM56 noise reflective cup microphone and wind block foam mic muff. 7 year factory warranty

Rugged Air is bringing new audio technology with the same proven reliable cup and headband design. Finish it off with gold plated plugs, tough molded Y block, music input port, Total Shield cabling, and EM56 noise reflective microphone the RA900 is the perfect choice for all of your aviation adventures. P/N 13-09293 .....**$199.00**

RUGGED AIR RA950 ANR STEREO AVIATION HEADSET

The Rugged Air RA950-ANR aviation headset with Active Noise Reduction, Clear Hear performance audio speakers, dual volume control stereo, and easy access 9v battery pack with mono/stereo switch. With urethane Gel ear seals, fully adjustable spring steel headband and Deep Pocket ear canals, pilots and flight instructors will enjoy the all day comfort of the RA950-ANR. Never miss ATC with the superior Clear Hear ANR audio technology blocking out the background noise. Always be heard with the all new designed EM58 noise cancelling microphone and wind block foam mic muff. 2 year factory warranty

Rugged Air is bringing new ANR audio technology with the same proven reliable cup and headband design. Finish it off with gel ear seals, comfort top head pad, quick change 9v battery compartment, Total Shield cabling, and EM58 noise reflective microphone the RA950-ANR is the perfect choice for all of your aviation adventures.

P/N 13-09294 .....**$374.00**

RUGGED AIR RA250 CHILD HEADSET

Headset with 24 db NRR, Clear Hear performance audio speakers, volume control and 3.5mm music input jack for Ipods and MP3. With Foam Fit ear seals, stainless steel headband and Deep Pocket ear canals student pilots and flight instructors will enjoy the all day comfort of the RA250. Never miss an instruction with the superior Clear Hear 50mm audio performance speakers. Always be heard with the all new designed EM56 noise reflective cup microphone and wind block foam mic muff. 7 year factory warranty

Rugged Air is bringing new audio technology with the same proven reliable cup and headband design. Finish it off with gold plated plugs, tough molded Y block, music input port, Total Shield cabling, and EM56 noise reflective microphone the RA200 is the perfect choice for all of your aviation adventures. P/N 13-09292 .....**$106.00**

RUGGED AIR RA600 HELICOPTER HEADSET

Rugged Air brings new audio technology with the same proven reliable cup and headband design. With Clear Hear performance speakers and a 24 dB noise reduction rating ATC will come through loud and clear. Always be heard with the all new designed EM56 noise reflective cup microphone with wind blocking foam mic muff. Other features include volume control, 3.5mm music input port for Ipods and MP3, Foam Fit ear seals, and adjustable stainless steel headband.

Finish it off with Military grade U174 plug, tough long lasting coil cord, and Total Shield cabling. The Rugged Air RA600 headset is the perfect choice for all of your flying adventures. Full Factory 7 Year Warranty.

P/N 13-10015 .....**$148.95**

RUGGED AIR RA620 HELICOPTER HEADSET WITH DUAL VOLUME CONTROL

Rugged Air brings new audio technology with the same proven reliable cup and headband design. With Stay Put full flex boom, Clear Hear performance speakers and a 24 dB noise reduction rating ATC will come through loud and clear. Always be heard with the all new designed EM56 noise reflective cup microphone with wind blocking foam mic muff. Other features include volume control, 3.5mm music input port for Ipods and MP3, Foam Fit ear seals, and an adjustable stainless steel headband.

Finish it off with Military grade U174 plug, tough durable coil cord, and Total Shield cabling. The Rugged Air RA620 headset is the perfect choice for all of your flying adventures. Full Factory 7 Year Warranty.

P/N 13-10016 .....**$199.00**

RUGGED AIR HEADSET ACCESSORIES

Description	Part No.	Price
Straight cord for music (IPod or MP#)	13-09295	**$4.90**
Cloth Ear Covers	13-09298	**$6.95**
Small Foam Ear Seals	13-09299	**$10.00**
Large Foam Ear Seals	13-09300	**$11.65**
Gel Ear Seals	13-09301	**$19.95**
Wind Blocking Foam Mic Muff	13-09302	**$4.45**
Deluxe Foam Headpad	13-10017	**$15.00**
Pillow top Headpad	13-09303	**$29.25**
Push-to-talk	13-09304	**$33.75**
GA to Helicopter Adapter	13-09305	**$39.75**
Helicopter to GA Adapter	13-09307	**$39.75**
RA200 Main Cable	13-09311	**$32.50**
RA900 Main Cable	13-09312	**$44.25**
RA950 Main Cable	13-09313	**$61.85**
Large Headband	13-10018	**$14.95**
Small Headband	13-10019	**$14.75**
Microphone: EM56 Amplified Electret Aviation Impedance	13-10021	**$14.95**
Electret Mic for flex boom non amplified	13-10022	**$15.00**

COMUNICA HEADSETS – POWDER PUFF HEADSETS

COMUNICA SELF-CONTAINED HEADSET-HELMET-INTERCOM-RADIOLINK

This headset-helmet-intercom-radiolink does it all! Wear the headset with or without the helmet. Fly without the intercom or link up to the passenger as well as to your radio. The Radiolink handles everything for you. Lightweight, comfortable and easy-to-wear. Tops in performance, comfort and reliability. Self-powered. 3-year warranty. Complete! 2 helmets with face-shields, headsets with builtin intercoms, push-to-talk switch and radio Interface. Please specify radio.

Description	Part No.	Price
Comunica Headset Blue	CSLINKB	**$189.00**
Accessories	**Part No.**	**Price**
Helmet Pad Front and or Back	CSLPADBANLONG8	**$10.00**
Helmet Pad Side	CSLPADBANSHORT8	**$10.00**
Comunica PTT Green Stick Throttle	CSLPTTS	**$43.00**
Comunica Headset Solo flight plug	CSLSPLG	**$10.00**

POWDER PUFF PINK HEADSETS

Pink Powder Puff Pilot headsets, available in PNR and ANR models, are built by a leading avionics manufacturer that specializes in FAA-qualified aviation headsets. Each Powder Puff Pilot headset is hand-made by skilled engineers, and built with an electret microphone and advanced special noise attenuation technology to provide a comfortable audio environment. Both models feature a flexible boom assembly that allows you to adjust the mic to a position that's just right for you. Powder Puff Pilot is so confident of the quality of our headsets, we offer a 3-year warranty on all headset parts and service. Another guarantee: the distinctive Powder Puff Pilot logo in pink on pink on the non-mic earcup is certain to keep flyboys' hands off your headset!
Operating Instructions: ANR, PNR. Specifications and Noise Attenuation Data: ANR, PNR . Warranty. Active Noise Reduction (ANR) or Passive Noise Reduction (PNR)? The ANR headset can isolate, offset, and cancel environmental noise. Compared with conventional (PNR) headsets, the ANR model reduces background noise to provide a quieter, more comfortable flight. Its noise-canceling circuitry increases comfort and decreases pilot fatigue, improving communication and safety. This ANR model accommodates both stereo and mono intercom systems.
The PNR model offers a more affordable option—especially suitable for student pilots and passengers—delivering a perfect combination of noise reduction, clear sound, and comfortable fit. PNR headsets obstruct annoying noise and amplify communication signals for crystal clear voice transmission.

Description	Part No.	Price
Powder Puff ANR Headset	11-08095	**$285.95**
Powder Puff PNR Headset	11-08096	**$182.95**

ZETA™ / ZETA II™ HELMET LINERS

Visco-elastic foam sewn into cool, washable wear-resistant fabric. Eliminates top-of-head hot spots. Self-wicking fabric controls heat buildup by evaporative cooling of perspiration. Eliminates "bob and roll" when mounting external equipment. Lighter weight than other liners. Fitting only takes a few minutes. Testing shows these helmet liners reduce skin temperature 1.5°F compared to existing liner systems.
Both liners come in four thicknesses: 1/4", 3/8", 1/2" and 5/8". The most commonly used thickness is 3/8".

Visit our website for the Application, Installation, Cleaning Instructions, and Sizing Chart in pdf format.

Zeta™ Helmet Liners							
Size	**Thickness**	**Part No.**	**Price**	**Size**	**Thickness**	**Part No.**	**Price**
12"	1/4"	11-09857	**$89.95**	15"	1/4"	11-09872	**$89.95**
12"	3/8"	11-09858	**$89.95**	15"	3/8"	11-09873	**$89.95**
12"	1/2"	11-09859	**$89.95**	15"	1/2"	11-09874	**$89.95**
12"	5/8"	11-09861	**$89.95**	15"	5/8"	11-09875	**$89.95**
13"	1/4"	11-09862	**$89.95**	16"	1/4"	11-09876	**$89.95**
13"	3/8"	11-09863	**$89.95**	16"	3/8"	11-09877	**$89.95**
13"	1/2"	11-09864	**$89.95**	16"	1/2"	11-09878	**$89.95**
13"	5/8"	11-09866	**$89.95**	16"	5/8"	11-09879	**$89.95**
14"	1/4"	11-09867	**$89.95**	17"	1/4"	11-09881	**$89.95**
14"	3/8"	11-09868	**$89.95**	17"	3/8"	11-09882	**$89.95**
14"	1/2"	11-09869	**$89.95**	17"	1/2"	11-09883	**$89.95**
14"	5/8"	11-09871	**$89.95**	17"	5/8"	11-09884	**$89.95**

Zeta II™ Helmet Liners							
Size	**Thickness**	**Part No.**	**Price**	**Size**	**Thickness**	**Part No.**	**Price**
15"	1/4"	11-07970	**$89.95**	17"	1/4"	11-07978	**$89.95**
15"	3/8"	11-07971	**$89.95**	17"	3/8"	11-07979	**$89.95**
15"	1/2"	11-07972	**$89.95**	17"	1/2"	11-07980	**$89.95**
15"	5/8"	11-07973	**$89.95**	17"	5/8"	11-07981	**$89.95**
16"	1/4"	11-07974	**$89.95**	18"	1/4"	11-07982	**$89.95**
16"	3/8"	11-07975	**$89.95**	18"	3/8"	11-07983	**$89.95**
16"	1/2"	11-07976	**$89.95**	18"	1/2"	11-07984	**$89.95**
16"	5/8"	11-07977	**$89.95**	18"	5/8"	11-07985	**$89.95**

AV

MGL AVIONICS MGL-880 HEADSET

High class anthracite look, metal frame - hand adjustable, no tools required. Very comfortable headband resulting in no pressure points due to light overall weight Operates as mono or stereo headset with volume and balance controls and very good audio quality. Super soft gel ear seals with soft material allows for a good acoustic seal even if you are wearing glasses. Very high passive noise suppression figures over the full audio band. Filtered, noise canceling microphone. Gold plated connectors and high quality, long life cable. Reversible microphone boom. The headset features two volume control knobs - one on each earcup. **Specifications**: Stereo and mono operation, Soft silicone gel filled earcups, Gold plated Headphone and Microphone plugs, Metal swivel gooseneck and metal microphone boom, Extremely light and strong at only 20.5oz / 580g, Excellent passive noise reduction rating of 27dB, Clear frequency response from 20-17,000Hz, distortion free through entire range, Adjustable open foam cushioned headband, Quick response noise canceling filter amplified electret microphone with wind muff, Conforms to FAA TSO C57a and TSO C58a

P/N 11-09437.....**$127.00**

HEADSETS

ASA AIRCLASSICS HEADSET WITH NEW FLEX BOOM

HS-1A Headset features: * Earcups of high-density acoustic foam * High fidelity speakers * Electret, noise-canceling microphone * Gold-plated microphone and headphone plugs *High-grade, multi-strand wire * Stereo/mono capability * Large, dual controls * Microphone muff * Adjustable headband with easy thumb screws * Quality foam ear seals and light weight add to overall comfort * Sleek, all-Black design with ASA silver wings silk-screened on each earcup * Sturdy and reliable - yet reasonably priced for maximum value * Lifetime warranty.
HS-1 Headset features: * Lifetime warranty * Stereo / mono capability * Earcups of high-density acoustic foam * High fidelity speakers for clear, natural sound * Electret, noise-canceling microphone reduces background noise and allows clearest voice transmission * Gold-plated mic & headphone plugs ensure best connection & resist corrosion * High-grade, multi-strand wire improves cable life * Large, dual controls for quick, easy volume adjustment of each ear * Microphone muff * Adjustable headband with easy thumb screws eliminates "hot spots" and accommodates eyeglasses and any head size * Quality foam ear seals and light weight add to overall comfort * Sleek, all-Black design with ASA silver wings tastefully silk-screened on each earcup * Sturdy and reliable - yet reasonably priced for maximum value.
ASA Airclassics Headset HS-1A ..... P/N 13-06671 ..... **$113.95**

SAFETYCELL HEADSET/ CELL PHONE ADAPTER

The Standard SafetyCell (pictured)utilizes sophisticated solid state circuitry to mix your cell phone and radio signals together and bring them into your headset where you can hear them clearly. It is small enough to fit in the corner of your flight bag and only weighs 6 oz. It does not require any batteries. It is compatible with any cellular telephone that accepts a hands free system (i.e. has a 2.5mm jack on the phone). Some phones do require an adapter to work properly. This unit works without batteries so you must have a VOX style intercom for it to work properly.
NOTE: This will only work in an extremely quiet environment; the Standard SafetyCell is not amplified.
The Amplified SafetyCell is similar to the Standard SafetyCell but power packed with features. It is our most popular model. The amplified SafetyCell filters your radio and cell phone signals, cleans them up and then amplifies your cell phone volume by as much as 600%, depending on your phone/headset combination. This is the unit you will want if your plane is on the noisy side or if you have "mature" ears. Must be plugged into your VOX mic jack to work properly. It can also be used with the optional battery pack for "out of the plane" use.
The Bose 6 Pin SafetyCell model is for those that have a built in Bose headset and do not use the Bose battery pack. This model is an amplified SafetyCell that is especially altered for the Bose headset circuitry. No batteries are required. The Bose 6 pin model fits between your headset and the panel to give you seamless intergration of your cell phone and radios. The standard Bose locking connectors are supplied.
The Helicopter SafetyCell amplifies the cell phone by an incredible 12db and uses the standard military (NATO Style) single plug interface. This is the loudest SafetyCell we make!
Safety Cell Standard ..... P/N 11-03003 ..... **$99.00**
Safety Cell (Amplified) ..... P/N 11-01350 ..... **$156.95**
Safety Cell Bose 6 pin ..... P/N 11-03009 ..... **$269.00**

AIRCRAFT SPRUCE HEADSET TRADE-IN PROGRAM

We are glad to offer you the opportunity to trade-in your old headset and upgrade to a new top-of-the-line headset. There is a chart below which contains the trade-in values for you current headset as well as the headsets that are eligible for our trade-in program. All headsets must be in working condition with all original accessories included. Full credit will be given if your headset meets our criteria. All trade-in headsets are subject to inspection. Some headsets due to their age do not have any resale value and will not be returned to the customer. One headset per trade-in. ***Only applies to the purchase of:*** • Lightspeed Zulu • Bose A20 • David Clark X-11 • Beyerdynamic HS600 • Sennheiser HMEC 460 • Telex Stratus 50 Digital

Trade-up Model Headset	Trade Credit Amount
Bose X	$350
David Clark X11	$325
Telex Stratus 50	$325
Sennheiser HMEC 400 Series	$300
Any David Clark*	$150
Any other manufacturer headset	$50

*Will accept the following headsets (H10-13.4, H10-20, H10-30, H10-56, and H10-60)

***** All Headsets must be equipped with current style plugs*****

SEE AIRCRAFTSPRUCE.COM FOR COMPLETE DETAILS

AVCOMM AC-260 PNR™ HEADSET

Features: • AVCOMM's exclusive P/NR™ audio technology • Perfect for kids or those who need a smaller headset • Simple & affordable desigN • Larger volume control knob — easy for a child to use • Ultra-lite Neodymium speakers • Lighter weight for added comfort • Higher noise attenuation • Acoustic mic muff included • Full 5 yr factory warranty.

AVCOMM AC454 P/NR STEREO HEADSET

Features: • AvComm's exclusive P/NR™ audio technology • Full spectrum stereo response •Each ear cup features an independent volume control • Ultra-lite Neodymium speakers • Built in Push-to-Talk • M-65 mic w/active filtering chip • 4-way adjustable wire boom • Deluxe Comfort package incl. • Full 5yr factory warranty P/N 11-02261 ..... **$178.50**

AVCOMM AC747 P/NR CONVERTIBLE HEADSET

Features: • Exclusive P/NR™ technology and "plug and fly" design • Converts from general aviation to helicopter use (both cables included) • Full flex boom • Ultra-lite Neodymium speakers • Each ear cup features an independent volume control • M-65 microphone with active filtering chip • Deluxe Comfort Package incl. • 5yr factory warranty
P/N 11-02262 ..... **$256.95**

AC900 P/NR CONVERTIBLE HEADSET

Features: • P/NR™ audio technology and full spectrum stereo response • Ultra-lite Neodymium speakers • M-65 microphone with "active filtering" chip • Full flex boom • Built-in push-to-talk • Mono-stereo switch built into the cord • Each ear cup features an independent volume control • Deluxe comfort package with deluxe gel ear seals • Full 5yr warranty. P/N 11-02263 ..... **$228.95**

AVCOMM AC200 P/NR HEADSET

Features: • Simple & affordable P/NR™ performance • Incredible voice clarity • Higher noise attenuation • Ultra-lite Neodymium speakers • Volume control and easy to adjust stainless steel headband • Acoustic foam ear seals and acoustic mic muff • M-65 microphone with active filtering chip • Lightweight; 13.4 oz. • 5yr. factory warranty. P/N 11-02259 ..... **$109.85**

AVCOMM ACCESSORIES

		Part No.	Price
FLIGHT BAGS			
P3-A01	Personal headset bag	11-02275	$18.50
P3-002	Duffle style flight bag	11-02276	$32.75
P3-A02	Deluxe duffle style flight bag	11-02277	$53.85
P3-A03	Deluxe flight bag	11-02278	$72.75
COMFORT ACCESSORIES			
P1-005	Foam ear seals - pair/jumbo	11-02279	$10.75
P1-006	Foam ear seals - pair/small	11-02280	$11.75
P1-007	Foam ear seals - pair/large	11-02281	$11.95
P1-009	Deluxe gel ear seals - pair	11-02282	$23.75
P1-004	Deluxe cloth ear covers-black	11-02283	$6.95
P1-022	Acoustic mic muff	11-02284	$3.35
P1-024	Acoustic mic muff	11-02285	$5.75
P1-041	AvComm deluxe head pad	11-02286	$15.80
PARTS & ADAPTERS			
P2-001V2	Deluxe PTT switch	11-02287	$37.75
P2-004	Adapter - GA to helicopter	11-02288	$38.65
P2-005	Adapter - helicopter to GA	11-02289	$41.75
P2-009	Headset extension cord - 5ft.	11-02290	$47.85
AC-I0410	Solderless Radio Adapter	11-02269	$59.90
P2-010	Headset splitter	11-02291	$57.50
P2-120	Gen. aviaiton coil cord - AC-747	11-02292	$39.95
P2-121	Gen. aviation straight cord	11-02293	$48.70

AV

LYNX HEADSETS - HELMETS - INTERCOMS

LYNX MICRO SYSTEM

The Micro System is a unique self contained intercom system which is plug and play compatible with any radio. This equipment is extremely popular for use is open cockpit aircraft and is the market leader for use in ultralight, powered parachutes, etc.

MICROSYSTEM PACKAGES

Part No.	System Package	Package Contents	Price
11-05340	Single Headset Package	One Micro System Headset, Dual Micro System Charger, One Headset Switching Adapter, One Headset Bag	$565.00
11-05341	Add-on Headset Package	One Micro System Headset, One Headset Coupling Adapter, One Headset Bag	$466.95
11-05342	Dual Headset Package	Two Micro System Headsets, Dual Micro System Charger, One Headset Switching Adapter, One Headset Coupling Adapter, Two Headset Bags	$1,032.00
11-05343	Single Headset-Helmet Package	One Micro System Headset, One Micro System Helmet, Dual Micro System Charger, One Headset Switching Adapter, One Helmet Visor, One Headset Bag, One Helmet Bag	$924.00
11-05344	Add-on Headset-Helmet Package	One Micro System Headset, One Micro System Helmet, One Headset Coupling Adapter, One Helmet Visor, One Headset Bag, One Helmet Bag	$826.00
11-05345	Dual Headset-Helmet Package	Two Micro System Headsets, Two Micro System Helmets, Dual Micro System Charger, One Headset Switching Adapter, One Headset Coupling Adapter, Two Helmet Visors, Two Headset Bags, Two Helmet Bags	$1,749.00

MICROSYSTEM COMPONENTS

Part No.	System Equipment	Description	Price
11-05346	Micro System Headset	Self contained intercom headset.	$419.00
11-05350	Micro System Helmet	EU certified protective helmet. S	$268.95
11-05351	Micro System Helmet	EU certified protective helmet. M	$268.95
11-05352	Micro System Helmet	EU certified protective helmet. L	$269.95
11-05353	Micro System Helmet	EU certified protective helmet. XL	$268.95
11-05354	Helmet Visor Standard	Attaches to the helmet with screw fixings.	$78.95
11-09310	High Visibility Visor	For use with Lynx helmets	$83.75
11-05364	Leather Helmet	Soft leather helmet for headset.	$348.95
11-05347	Headset Coup. Adap.	Connects two headsets together.	$40.75
11-05348	Headset Switch Adap.	Switch-on a single headset.	$20.75
11-05349	Dual Charger	Wall charger headsets.	$117.95
11-05356	Visor Extension	Wind deflector chin guard for visor.	$48.75
11-05357	Helmet Bag	Cloth bag for a helmet and visor.	$14.75
11-05358	Headset Bag	Cloth bag to protect a headset.	$12.85
11-05359	Headset Exten. Lead	Used to extend the headset leads.	$102.95
11-05360	Panel Exten. Lead	Extension lead with panel socket.	$123.95
11-05361	Headset Panel Adap.	Converts lead socket into panel.	$88.00
11-05362	Headset Lead Splitter	Used to connect several headsets together.	$131.95
11-05363	Headset Lead Comb.	Connects several interface units together.	$166.95
11-05365	Helmet Goggles	For use with either type of helmet.	$123.95
11-05366	Double Helmet Bag	Large bag for complete systems.	$169.95
11-07092	Radio Splitter + Coiled Radio Lead	Connects in-line with a headset and provides connections for an additional device.	$443.95
11-07093	Coiled Radio Leads	Connecting different radios to portable interface equipment.	$40.25
11-07094	Straight Radio Leads	Connecting different radios to portable interface equipment.	$33.75
11-07095	Car Charger	Charges two headsets at the same time.	$109.75
11-07096	Audio Output Lead	Connecting professional recording equipment to the Micro System	$40.00

HELMET SIZES:

To obtain the correct size of helmet, use a tape measure to measure the circumference of your head just above the ears.

Small: 55-57cm	Small: 22”
Medium: 57-59cm	Medium: 23”
Large: 59-61cm	Large: 23.5”
Extra Large: 61-63cm.	Extra Large: 24.5”

MICROSYSTEM ACCESSORIES

Part No.	Radio Equipment	Description	Price
11-05368	Twin Jack Adapter	Converts the headset to twin jack plugs.	$163.95
11-05369	Audio Adapter	Connects a Walkman or mobile telephone.	$190.00
11-05370	Radio Adapter *	Connects one headset to a radio.	$423.95
11-05371	Radio Interface unit *	Connects one or two headsets to a radio.	$434.95
11-05378	Radio/Power Interface unit *	Powers two headsets and a radio. For Type B connections only and these radios: ICOM A3, A22, A6, A24 and ICA5, A23 with the CT-44 adapter. Vertex Standard VXA-100, 120, 150, 200, 210 with the CT-44 adapter. All other radios will require special order.	$421.95
11-05372	Velcro Mount PTT Switch	Velcro fixing PTT Switch.	$75.00
11-05373	Screw Mount PTT Switch	Screw fixing PTT Switch.	$53.75
11-05374	PTT Extension Lead	Two Metre extension lead for PTT Switch.	$64.25
11-05375	PTT Connector and Lead	Special PTT connector with two metre lead.	$29.25
11-05376	Audio Input/Output Lead	Connects a Walkman to an Audio Adapter or Power Interface.	$39.95
11-05377	Mobile Telephone Lead *	Connects a mobile telephone to an Audio Adapter.	$54.50
11-05379	Power Supply Lead	Connects aircraft battery to Power Interface.	$54.50
11-05380	Power Supply Filter	Used to filter aircraft power supply.	$116.95
11-05381	Large Power Filter	Used with very noisy power supply.	$58.75
11-05382	Radio Power Filter	Used to prevent feed-back with Icom A2/A20 Radios.	$90.25
11-05383	Radio Power Adapter 11V13	Used to connect Icom A6/A24 radios to a Power Interface.	$114.95
11-05384	VHF Antenna -Short Flexible	Antenna for use with airband radios.	$93.00
11-05385	VHF Antenna -1/4 Wave Whip	Antenna for use with airband radios.	$100.00
11-05386	Antenna Extension Lead	Five metre extension for antenna.	$45.50
11-05387	Adapter LA-25	Used to connect Cobra FRS and GMRS radios.	$25.00
11-05388	Adapter LA-30	Used to connect Yaesu VXA 100 radios.	$25.00
11-05389	Adapter LA-44	Used to connect Yaesu VXA 100/120/150/200/210/220 radios.	$80.00
11-05390	Adapter CT-44	Used to connect Icom A5/A6/A23/A24 radios.	$47.50
11-05391	Adapter CT-91	Used to connect Vertex Stadard radios.	$46.00
11-05392	Adapter CT-96	Used to connect Yaesu VXA 300/700 radios.	$46.00
11-05393	Power Lead Adapters	Used to connect various radios to a Power Interface.	$44.75

Please specify the make and model that will be used with this product.

LYNX PILOT SYSTEM

The Pilot System is a range of headsets and helmets for use in light aircraft and helicopters. The main advantage of these products are that they provide an integrated headset and helmet system for use in aircraft which have standard twin jack intercom equipment already installed.

Part No.	System Equipment	Description	Price
11-05394	Pilot System Headset + Lead	Standard general aviation headset.	$446.95
11-05395	Twin Jack Headset Lead	Interchangeable lead for Pilot headset.	$71.75
11-05396	US NATO Headset Lead	Interchangeable lead for Pilot headset.	$97.50
11-05397	UK NATO (Euro) Headset Lead	Interchangeable lead for Pilot headset.	$78.25

NOTE: Pilot System uses the same helmet, helmet visor, visor extension, leather helmet, helmet goggles, helmet bag, headset bag, and double helmet bag as the Micro System. Order part numbers as shown for Micro System Components.

LYNX RELAI SYSTEM

The relai System is a range of headsets and helmets for direct connection to hand-portable radios. This equipment also provides the facility to use a helmet with the headset and is used mainly by pilots of single seat aircraft, Paramotor pilots and airport ground crew.

Please specify the make and model of radio that will be used with the Relai System Headset.

Part No.	Description	Price
11-05398	Relai System Headset + Radio Module.	$441.95
11-05400	Lynx Avionics Relai System headsets to be used with the following radios: Alinco, Cobra, Delcom, Icom A2/A20/ A21,JRC,Maxon,Motorola,Radio Shack, Yaesu FT-23R,YAESU 2000	$15.00
11-05401	Lynx Avionics Relai System headsets to be used with the following radios: ICOM A3/A4/A6/A22/A24 ICOM A5/A23	$40.00
11-05402	Allows Lynx Avionics Relai System headsets to be used with the following radios:ICOM A3/A4/A6/A22/A24/ ICOM A5/A23	$15.00

NOTE: Relai System uses the same helmet, helmet visor, visor extension, leather helmet, helmet goggles, helmet bag, headset bag, and double helmet bag as the Micro System. Order part numbers as shown for Micro System Components.

LYNX ACCESSORIES

Part No.	Spare Parts	Description	Price
11-05403	Ear Seals Type 1 Foam (Two)	For use with all Lynx headsets	$23.50
11-05404	Ear Seals Type 2 Gel (Two)	For use with all Lynx headsets	$41.50
11-05405	Microphone Wind Shield Large (37mm Ø)	Used in an open cockpit. For use with all Lynx headsets.	$11.50
11-05406	Microphone Wind Shield – Small (25mm Ø)	Used in an enclosed cockpit. For use with all Lynx headsets.	$11.25

AV

PUSH-TO-TALK - LEATHER HELMETS

PUSH-TO-TALK SWITCHES

TELEX PT-300 PUSH-TO-TALK SWITCH - Attaches to any control wheel. Simple installation, no tools required. Simply wrap hook and pile strap around control wheel. Provides instant communications when used with any headset or Telex flexible boom mike. With 6 ft. coiled cord, jack and plug. P/N PT-300 ..... **$54.50**

ECONOMY PUSH-TO-TALK SWITCH - Similar to PT-300, this top quality switch is offered at considerable savings. Features gold contacts for durability. Fully guaranteed.
P/N 11-12100..... **$13.75**

DAVID CLARK C10-15 PORTABLE PUSH-TO-TALK SWITCH - Compatible with all general aviation headsets, recommended for use with David Clark. Dual plunger switch assures positive contact. High quality features are incorporated in every aspect of this switch.
P/N C10-15 ..... **$67.75**

PTT-400 PORTABLE PUSH-TO-TALK SWITCH - Designed so that the pilot may push downward to invoke the radio transmit function, instead of the traditional "sideways activation" of typical strap-on PTTs. Secures to the top of the vertical handle of the contol yoke with provided velcro tape. Housed at the top of a thin, 1/2" dia. cylindrical enclosure, the soft-touch red push button is rated for 50,000 failure-free operations. 5ft. coiled cable terminates with standard plug & jack. Fast and easy plug-in installation, in virtually any aircaft. P/N 11-02072 ..... **$33.80**

SIGTRONICS PUSH-TO-TALK SWITCH - This versatile yoke mounted switch features a sealed aluminum alloy case and mounts in a .380" diameter hole. Button is red thermoplastic.
P/N 11-02926 ..... **$21.75**

NAV-DATA PUSH-TO-TALK SWITCH - Finally, an affordable Push-to-talk switch. Heavy duty construction. With dual internal contacts. Also equiped with a strap to attach to any yoke control.
P/N 13-06089..... **$24.95**

PROFLIGHT PTT SWITCH - Quality, affordable Push-to-Talk switch by ProFlight.
P/N 13-10444..... **$18.95**

MICROPHONES

TELEX 66T TRANSISTORIZED MICROPHONE - Dynamic, noise-cancelling, hand-held mic. Built-in amplifier is adjustable for full transmitter output. Meets specifications for aircraft and mobile applications. Impedance 50-600Ω. Wt: 9oz. Complete with 5 ft. coiled cord and hanger bracket. Also available with right-angle plug - specify model 66TRA.
P/N 66T..... **$141.95**
Right angle plug ..... P/N 66TRA..... **$139.50**

TELEX 100TRA DYNAMIC MICROPHONE - Dynamic, noise-cancelling, amplified, handheld mike. Push-to-talk switch is in front. Handsome beige and black with walnut grain trim. Impedance 50-600Ω. Wt. 9 oz. Includes 5ft. coiled cord with right-angle plug and hanger bracket.
P/N 100TRA..... **$122.95**

TELEX 38T ELECTRET MICROPHONE - A state-of-the-art high quality noise cancelling microphone designed as a direct replacement for the RS-38 series microphones. Hanger bracket not included. P/N 38T **$145.95**

TELEX 500T ELECTRET MICROPHONE - Amplified hand-held electret mike features outstanding noise cancellation. Impedance 50-600 Ω (ohms). Weight: 6.5oz. Complete with 5ft. coiled cord, plug and hanger bracket. P/N 500T..... **$169.00**

DAVID CLARK M-1/DC AMPLIFIED DYNAMIC HEADSET MIC - The M-1/DC Amplified Dynamic headset microphone is a noise canceling type designed to operate in place of carbon and amplified dynamic microphones.
P/N 11-09230..... **$71.75**

DAVID CLARK M-1A AMPLIFIED DYNAMIC HEADSET MIC - The M-1Amplified Dynamic headset microphone is a noise canceling type designed to operate in place of carbon and amplified dynamic mics.
P/N 11-09225..... **$67.85**

HEADSET MICROPHONE A1060 BLACK - Proper shielding improves noise immunity in aircraft with heated windshields, power inverters, and other sources of electrical noise. Fits all C40 Model Headsets (David Clark, Softcomm, Telex, etc.)
A1060 fits all C40 Models ..... P/N 11-04838..... **$28.75**
Microphone windscreen covers all headsets . P/N 11-04840..... **$1.85**

CALL FOR SPECIAL PRICES!

LEATHER FLYING HELMETS

MODEL 711
GOATSKIN HELMET FOR DAVID CLARK HEADSETS
Black (Small)..... P/N 11-10505-S..... **$76.25**
Black (Medium)..... P/N 11-10505-M..... **$77.25**
Black (Large)..... P/N 11-10505-L..... **$75.85**
Black (X-Large)..... P/N 11-10505-1..... **$77.65**
Brown (Small)..... P/N 11-10510-S..... **$75.85**
Brown (Medium)..... P/N 11-10510-M..... **$76.25**
Brown (Large)..... P/N 11-10510-L..... **$77.25**
Brown (X-Large)..... P/N 11-10510-1..... **$77.85**

MODEL 711K
COTTON CANVAS HELMET FOR DAVID CLARK HEADSETS
Brown with Leather Ear Cut-Outs
Small..... P/N 11-10525-S..... **$61.75**
Medium..... P/N 11-10525-M..... **$61.25**
Large ..... P/N 11-10525-L..... **$61.50**

MODEL 711L
FLEECE LINED GOATSKIN HELMET FOR DAVID CLARK HEADSETS
Black (Small) ..... P/N 11-10515-S..... **$75.85**
Black (Medium)..... P/N 11-10515-M..... **$79.75**
Black (Large) ..... P/N 11-10515-L..... **$79.75**
Black (X-Large)..... P/N 11-10515-1..... **$79.25**
Brown (Small)..... P/N 11-10520-S..... **$75.85**
Brown (Medium) ..... P/N 11-10520-M..... **$79.75**
Brown (Large)..... P/N 11-10520-L..... **$79.75**
Brown (X-Large) ..... P/N 11-10520-1..... **$79.85**

MODEL 711M
MESH FOR DAVID CLARK
Small..... P/N 11-10555-S..... **$65.75**
Medium..... P/N 11-10555-M..... **$64.75**
Large ..... P/N 11-10555-L..... **$65.75**
X-Large..... P/N 11-10555-XL..... **$65.75**

MODEL 712
TRADITIONAL GOATSKIN FLYING HELMET
Black (Small) ..... P/N 11-10530-S..... **$57.65**
Black (Medium)..... P/N 11-10530-M..... **$57.65**
Black (Large) ..... P/N 11-10530-L..... **$57.65**
Black (X-Large)..... P/N 11-10530-1..... **$57.65**
Brown (Small)..... P/N 11-10535-S..... **$57.65**
Brown (Medium) ..... P/N 11-10535-M..... **$58.25**
Brown (Large)..... P/N 11-10535-L..... **$57.65**
Brown (X-Large) ..... P/N 11-10535-1..... **$57.65**

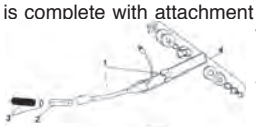
MODEL 712C
TRADITIONAL COTTON CANVAS FLYING HELMET
Small..... P/N 11-10550-S..... **$49.50**
Medium..... P/N 11-10550-M..... **$49.50**
Large ..... P/N 11-10550-L..... **$49.50**
X-Large..... P/N 11-10550-1..... **$52.25**

MODEL 712L
Black (Small) ..... P/N 11-10540-S..... **$59.50**
Black (Medium)..... P/N 11-10540-M..... **$59.50**
Black (Large) ..... P/N 11-10540-L..... **$59.50**
Black (X-Large)..... P/N 11-10540-1..... **$59.50**
Brown (Small)..... P/N 11-10545-S..... **$59.50**
Brown (Medium) ..... P/N 11-10545-M..... **$59.50**
Brown (Large)..... P/N 11-10545-L..... **$61.25**
Brown (X-Large) ..... P/N 11-10545-1..... **$58.50**

Note: Specify size by completing part no. with -S, -M, -L, or -1 for XL. Small (19"-20") Med.(21"-22") Large(23"-24") XL(25"-26")

MIC/BOOM KITS FOR AVIATION HELMETS

Now available for aviation helmets the David Clark patented combination flex/wire boom allow for easy, perfect microphone positioning. Each kit is complete with attachment assembly, microphone & cover, and boom with 16" cord for installation.



M-7A mic and flex/boom ass'y Kit for Aviation helmets (High impedance / Civilian radio systems. Model 40688G-24
P/N 11-00866..... **$105.95**

M-87/A1C mic & flex/boom ass'y. Kit for Aviation helmets (Low impedance/military radio systems. Model 40688G-23
P/N 11-00867..... **$84.95**

AV

DAVID CLARK ACCES. – BLUETOOTH ADAPTERS

DAVID CLARK HEADSET ACCESSORIES

Description	Part No.	Price
Comfort covers – David Clark Style ***(sold as a pair)***	11-04793	**$7.95**
Mic Muff -Protects mic on all David Clark and standard size headset mics. This is not a foam muff.	11-04788	**$4.20**
Mic Protector M77	11-09262	**$3.35**
Gel Earseals - Provide optimum comfort and fit all Clark Headsets.	11-04820	**$21.50**
David Clark Undercut Comfort - Gel Ear Seals	11-01782	**$22.50**
Foam-Filled Ear Cushions - Soft and durable covers with an all polyurethane core. Fits all David Clark headsets.	11-04787	**$8.35**
Foam Headband - A light, foam filled headband which snaps on all David Clark Headsets for great comfort.	11-04791	**$31.60**
H20-10 Gel Ear Seals	11-01828	**$52.50**
Headset Bag- Nylon Carry bag, Black on Black.	11-00642	**$19.50**
DC M-4 Mic Muff	11-04819	**$3.45**
Electret Microphone -Matches David Clark M-4 or equivalent.	11-05896	**$45.75**
DC Mic Muff - Fits standard electret mic. Foam mic muff w/O-ring.	11-09201	**$3.35**
Mic Muff M-7 - Designed to operate in place of carbon and amplified dynamic microphones. It will not operate in circuits that do not supply a DC bias voltage.	11-08282	**$79.95**
Low-Hi Impedance Adapter	11-08283	**$159.95**
Stop Gap - These eyeglass adapters place a soft coupler between the side of the head and the ear seal to prevent any noise leak and assure a comfortable fit.	11-04785	**$4.85**

STRAIGHT CORD (5 FT) WITH PJ-068 & PJ-05 40133G-04 - Increases the versatility of the H10-60 headset. Plugs into the dome connector.
P/N 11-05948.....**$76.50**

COIL CORD (5 FOOT) WITH PJ-068 & PJ-055 PLUGS 40133G-05 - Increases the versatility of the H10-60 headset. Plugs into the dome connector. P/N 11-05949...**$106.95**

COIL CORD (5 FOOT) WITH U-174/U PLUG 40133G-06 - Increases the versatility of the H10-60 headset. Plugs into the dome connector. P/N 11-05950.....**$78.50**

PLUG ADAPTER 18253G-01 - Converts PJ-068 & PJ-055 to U-75/U P/N 11-05952.....**$79.50**

PLUG ADAPTER 18253G-02 - 18253G-02 - Converts U-75/U to M642/5-1 (PJ068) and M642/4-1 (PJ055) P/N 11-05953.....**$79.75**

PLUG ADAPTER 18253G-03 - Converts U-75/U to U-174/U P/N 11-05954.....**$79.75**

PLUG ADAPTER 18253G-04 18253G-04 - Converts U-174/U or U-93A/U to U-75/U P/N 11-05955.....**$79.75**

PLUG ADAPTER 18253G-05 - Converts U-174/U or U-93A/U to M642/5-1 (PJ068) and M642/4 (PJ055). Also converts the Helicopter Single Plug to a Dual Plug configuration for Fixed Wing flying. General Aviation applications only.
P/N 11-05956.....**$79.75**

PLUG ADAPTER 18253G-06 - Converts PJ-068 & PJ-055 to U-174/U. Also converts the Fixed Wing Dual Plug configuration to a Single Plug for Helicopter flying. General Aviation Applications only. P/N 11-05957.....**$79.75**

PLUG ADAPTER 18253G-17 - Converts NATO to PJ-068 & PJ-055 P/N 11-05958.....**$82.75**

PLUG ADAPTER 18253G-16 - Converts PJ-068 & PJ-055 to NATO P/N 11-05959.....**$79.95**

PLUG ADAPTER 18253G-18 - Converts U-174/U to NATO P/N 11-05960.....**$79.75**

PLUG ADAPTER 18253G-19 - Converts NATO to U-174/U P/N 11-05961.....**$79.75**

CLOTH HELMET - To accommodate David Clark headsets.
Size 7-1/4..... P/N 11-04783 .....**$191.95**
Size 7-1/2..... P/N 11-04784 .....**$198.50**

PILOT USA BLUETOOTH CELLPHONE / MUSIC ADAPTER

Bluetooth (wireless) technology allows the use of Bluetooh cellphone and iPod / MP3 player with any General Aviation headset.
GA Version
P/N 11-06553 .....**$249.00**
Helicopter Version
P/N 11-06613 .....**$274.00**
Bose Version
P/N 11-06614 .....**$299.00**
Military Version
P/N 11-09226 .....**$349.99**

PILOT BLUETOOTH IPOD & IPHONE DONGLE

Use with an iPod or iPhone to stream music to up 2 different BlueLink Adapter at the same time. Features: Bluetooth 2.1 + EDR, compatible with Bluetooth receivers, Made-for-ipod and works-with-iPhone Bluetooth Transmitter, Multi-stream stereo music streaming capability, Tiny size, smaller than other Bluetooth Transmitters for iPods, iPhones, Bluetooth 2.1 + EDR, compatible with Bluetooth receivers ..... P/N 11-09254 .....**$59.99**

AVCOMM CELL PHONE ADAPTER

Connect your headset to your cell phone using Avcomm's cell phone adaptor. Allows you to have conversations on your cell phone through your headset. Gold plated plug for improved conductivity. For GA dual headsets.
P/N 11-09340 .....**$89.95**

LYNX BLUETOOTH ADAPTOR

This bluetooth adaptor allows wireless telephone connections to Lynx equipment. It can be used with an audio adaptor or any interface from the latest range of portable radio equipment. All handsfree functions can be controlled from the adaptor. When used with radio equipment, it supports the radio priority audio mute function and any bluetooth audio is automatically reduced in volume during radio reception. In addition, to further simplify use in an aircraft, the adaptor will automatically answer telephone calls after three rings.
Features:

- Rechargeable (USB), providing a minimum of eight hours talk time and three hundred hours standby time from each charge
- Plug-in connection lead
- Built-in belt clip, may be mounted for convenience using velcro.

P/N 11-09457.....**$99.00**

LYNX BLUETOOTH AUDIO ADAPTER

The Bluetooth Audio Adapter allows wireless connections to a Lynx Micro System headset and can also be used with two separate audio or telephone leads. The adapter is powered from the headset. or from a Radio/Power Interface, and does not require charging. Once paired with a telephone, all of the main handsfree functions can be controlled from the adapter, including: voice dialling. call transfer. call reject and last number redial. The adapter can also be used with audio players to make a wireless music connection. The adapter can be used with Lynx Audio Input/ Output Leads, Audio Output Leads or Mobile Telephone Leads. The leads may be used in any combination. When used with the appropriate lead, the adapter allows the connection of mobile telephones, music players and sound and video recording equipment. For connection to recording devices. the adapter provides output at 'Microphone Level' (with Audio input/Output Lead) or 'Line Level' (with Audio Output Lead). The adapter is particularly useful for adding audio devices to an existing system or to increase the number of audio connections in general. The adapter is backwards compatible with all Lynx Micro System products.
P/N 11-10446.....**$449.00**

AV

HEADSET ADAPTERS

CELL PHONE HEADSET ADAPTERS

Our cell phone headset adapters connect your cell phone to the headset and intercom system in your aircraft. The pilot can use the cell phone while ATC communications remain the priority at all times. These adapters enable you to close flight plans or get IFR clearances from the aircraft, contact FBOs or other services from the aircraft, or call anyone you wish. Will not work with Nokia 8000 series phones.

Universal adapter.....P/N 11-02230 .....**$109.95**
Bose adapter.....P/N 11-02231 .....**$122.95**
Helicopter adapter.....P/N 11-02232 .....**$146.95**

PILOT USA SMARTPHONE DIGITAL AUDIO ADAPTER

General Aviation Digital Audio Recorder Adapter: This product allows you to interface your Digital Audio/Video Recorder with the aircraft intercom system.

Great for creating your own aerial videos without excess cabin noise. Works with devices that use a 3.5mm Stereo External Mic Input like GoPro HD Video Cameras and Digital Voice Recorders. P/N 11-10531 ..... **$49.95**

ANR HEADSET RETROFIT KIT

The ANR Adapter is a product that will transform a current aviation headset into a high-tech active noise reduction unit. The ANR Adapter comes as a kit and includes a pair of inserts that fit more than 20 different headset models. Installation requires fitting the inserts, drilling a small hole in one earcup for the power receptacle, and soldering the original cable leads to the kit replacement parts. (uses two 9-volt batteries). IMPORTANT: It is mandatory that you use “silicone gel” type earseals. The original earseals (dry or liquid filled) are not as airtight as gel seals, and in addition do not dampen sound and vibration as effectively. The result is that the ANR units will greatly underperform (20-50%) and will be more likely to malfunction.

David Clark type..... P/N 11-11955..... **$159.50**
Peltor..... P/N 11-11956..... **$179.00**

AMP CABLE (AUDIO+MIC+POWER)

A standard ANR upgrade kit comes with a 6’ long addon power cable which tie-wraps to your original audio cable, and it requires that you drill a 1/4” hole in the left earcup (next to where the main cable enters the cup). The AMP cable replaces your original cable and has the DC power wires, audio wires and mic wires all in 1 cable. The result is more esthetically pleasing and no additional hole is required in the left earcup.

P/N 11-03012.....**$29.95**

LYNX AVIONICS HEADSET CONVERTERS

- Connects twin jack headset or helmet
- Works with speakers from 8 to 600 Ohms
- Accepts dynamic, electret or carbon microphones
- ANR power to microphone jack tip
- Headset volume control
- Maintains selective PTT operation and muting
- Water resistant bayonet locking connector
- Supplied with fixing kit

Lynx Twin Jack Headset Converter ..... P/N 11-09306 ....**$220.95**
Lynx Single Jack Headset Converter..... P/N 11-09307 ....**$220.95**
Lynx US NATO Jack Headset Converter..... P/N 11-09308 ....**$221.95**
Lynx UK NATO Jack Headset Converter..... P/N 11-09309 ....**$220.95**

PATCHCORD COCKPIT VOICE RECORDER

PatchCord has electronic circuitry specifically designed to enable direct hook-up between a 600Ω headphone jack and the mic jack of tape recorders and / or most video cameras. The PatchCord has been designed to enable you to record on any tape recorder or video camera, both sides of all your radio communications and all mic equipped persons in the aircraft when used with intercom. If not equipped with intercom, PatchCord enables you to record both sides of all your radio communications if aircraft radio has sidetone. The most advantageous way to use PatchCord is with the intercom and voice actuated tape recorder. Student Pilots: • Great learning aid • Playback of previously recorded tape enables students to review the entire flight lesson, whether it be ATC clearances or flight instruction • Great study aid for the FAA written test • Save recorded tapes of flight lessons as a momento of your student pilot experiences. Other Pilots: • Assists in studying for additional FAA ratings • Back up your memory and your notations by recording your IFR clearances • Record in-flight ATIS and weather reports, enabling you to play back and review in detail that part of briefing you need to know • Use tapes to improve your radio proficiency • Have your own tapes if you have a problem with ATC. P/N 13-01456 .....**$34.75**

THE MUSE PERSONAL MUSIC DEVICE

PS Engineering, Inc’s The Muse®, as simple and low cost way of interfacing your favorite entertainment device into your aviation headset. The Muse® is a miniature Personal Music Device (PMD) that allows connection of an entertainment source directly to your headset without complicated wiring or permanent installation--no rocket science here. About the size of a 9-Volt battery, The Muse® mates with stereo or mono headsets and has no effect on radio transmissions or intercom functions.

P/N 11-09045..... **$349.95**

AVIATION HEADSET PORTABLE MUSIC ADAPTER

The PSA0017C addresses the problem of attempting to use an aviation headset to listen to a portable music device while connected to the aircraft intercom. The PSA0017C resolves both of these issues easily. Implementation of dual low-noise amplifier stages cleanly boosts music signals to levels expected by general aviation headsets, while providing enough power to clearly hear the entire range of audio frequencies without distortion. Active auto mute silences the music whenever activity is detected on the intercom, thus ensuring that intercom activity and ATC communication is never missed. The included 9 volt battery provides 25-30 hours of useful battery life. The low battery indicator provides advance indication of battery expiration. P/N 11-06246..... **$99.95**

AIRCRAFT INTERCOM RECORDING CABLE

The IRC0014 series intercom recording cables addresses the problem of attempting to use a standard microphone interface to record a signal intended to drive a 600 ohm aviation headset. The integrated electronic circuitry steps the signal down to levels expected by the recording device, preventing oversaturation of the recording device and thereby eliminating any distortion. Additional protection is provided via AC coupling, ensuring that only the audio signal is passed while DC power remains isolated to the respective equipment. At low levels, DC power interference can reveal itself as a high-pitched squeal in the recorded audio. If enough voltage is present, irreparable equipment damage can occur. P/N 11-06247..... **$29.95**

IPOD / MP3 MUSIC ADAPTER

This adapter works with your existing intercom by pumping your music into any available mic jack, allowing it to be distributed through the intercom to everyone wearing a headset. Plug one end into the aircraft's mic jack and the other into your media player's headphone jack. * Compatible with ipod, iphone, mp3, CD, laptops, and most other portable media players * Music in your headset without costly upgrades * Listen to music through the aircraft’s speaker during pre-flight * Plugs into standard mic jack * Just Plug and Play! No more wearing uncomfortable in-ear headphones under your aviation headset. No need for an expensive new intercom or new headset. This will work in any intercom system with an available mic jack. Maintain the comfort and quiet of you current headset; just add your favorite music! Also works great in many airliners. P/N 11-07541.....**$19.95**

HEADSET CUSHION

For headsets with single 5/8” wide headband springs (Aviall, David Clark, etc.) and Telex ProAir 2000E and ANR-type headsets. Eliminates top-of-the-head pressure.

P/N 11-02858..... **$11.60**

MICROPHONE WINDSCREENS

PA-10M - Flightcom: 4DX, 5DX. Skycom H-40A, h-80A. Sigtronics: S-68, S-20. Peltor LE Sport, 7004, 7104. Telex: Stratus, Airman 750, ANR 150. David Clark: H 10-40, H-10-80, 10-20, 10-21, 10-26, 10-6-, 13.4.Pilot Hdsts: P-51, 11-40, all anrs. PN 11-05808..... **$1.25**

PA-10S - Flightcom Denali. Sigtronics S-58. Peltor 7000 Pro Gt. Bose ANRs. PN 11-05809 ..... **$1.25**

M-87 - Any headsets using M-87 Microphones (usually the mics in helmets such as Gentex or Gallet)

PN 11-05810 .....**$1.20**

HEADSET UPGRADE KITS

For considerably less than the cost of a new headset, you can upgrade the headset you already own to improve comfort and performance. You’ll experience improved intelligibility and transmission clarity, and you’ll enjoy pain-free, cool, dry ears. Comes with: A-SoftTop® Headset Cushion, B- SoftSeal® Ear Cushions, C- SoftSkin® Ear Seal Covers, D- HushKit® Passive Ear Cup Noise Attenuation Kit, & E- MicMuff® Microphone Cover.

David Clark Upgrade Kit.....P/N 11-07808 .....**$129.00**
Bose® Headset Upgrade Kit .....P/N 11-06309 .....**$92.50**

AV

HEADSET ACCESSORIES

HEADSET & HELMET ACCESSORIES BY OREGON AERO

Individual Oregon Aero® Upgrade components are available for the Headset & Helmet models listed.

OREGON AERO® SOFTTOP® HEADSET CUSHIONS - Eliminates top-of-head pressure. 100% plush sheepskin wool. Keeps head cool or warm. Moisture-proof, self-wicking action. Flexible leather backing. Customized mount of either rubber extrusion or nylon with hook/loop wrap.

10006 SoftTop® Headset Cushion for David Clark and David Clark Clones ..... P/N 11-10905 ... **$31.00**
10006D SoftTop® Headset Cushion with D ring for David Clark and David Clark Clones..... P/N 11-10906 ... **$30.85**
10020 SoftTop® Headset Cushion for Bose® Aviation Headset X™* and Bose® A20™..... P/N 11-08679 ... **$29.95**
10016 SoftTop® Headset Cushion for FlightCom Denali, LightSpeed QFR, Sennheiser 100/300, Telex Air 3000,3100,3500,4000,4100,4105,ANR 150, Echelon 100/150, ANR1-D,MRB-600 ... P/N 11-10915 .... **$31.00**
10017 SoftTop® Headset Cushion for Peltor 7000 series P/N 11-10903 ... **$31.00**

OREGON AERO® SOFTSEAL® EAR CUSHIONS - Conform to your head. 200-300% more volume for total comfort. Smooth, soft, washable synthetic leather cover over temperature and pressure sensitive visco-elastic foam core. Great with eyewear or earrings. Eliminate ear pressure. Attach with flange, adhesive ring or snap-on mount, depending on headset type.

20005 SoftSeal® Ear Cushions (1 1/8") for David Clark and David Clark Clones..... P/N 11-10917 ... **$49.95**
20034 SoftSeal® Ear Cushions for ANR David Clark and David Clark Clones other than X11 ..... P/N 11-10920 ... **$49.95**
20007 SoftSeal® Ear Cushions for Bose® Aviation Headset X™* and Bose® A20™..... P/N 11-08680 ... **$49.95**
20020 SoftSeal® Ear Cushions for Peltor 7000 Series, LYNX, and Sennheiser HMEC 200/222 Headsets ..... P/N 11-10921 ... **$56.75**
20002 SoftSeal® Ear Cushions (¾") for SPH-4B®*, SPH-5®* P/N 11-10928 ... **$49.95**
20050 SoftSeal® Ear Cushions (¾") For Plastic Ear Cups In SPH-4®* and HGU (Sonex) Helmets ..... P/N 11-08681 ... **$49.95**

OREGON AERO® SOFTSKIN® EAR SEAL COVERS - Keep your ears even drier and cooler and add to product life by slipping SoftSkin® Ear Seal Covers over SoftSeal® Ear Cushions. Self-wicking reduces perspiration buildup. Especially helpful in hot, humid climates. They fit loose, not tight like a drum (this is important because tight cloth covers produce pressure on the ear, causing pain).

29118 SoftSkin® Ear Seal Covers (1 1/8") for David Clark and David Clark Clones P/N 11-10930 ... **$10.95**
29034 SoftSkin® Ear Seal Covers for 3/4" SoftSeal® Ear Cushions P/N 11-10929 ... **$11.00**

OREGON AERO® HUSHKIT® PASSIVE EAR CUP NOISE ATTENUATION KIT - Testing shows the HushKit® Passive Ear Cup Noise Attenuation Kit performs better than ANR headsets in the 700-7000Hz mid-range where hearing loss Dramatically improves noise attenuation and intelligibility.

92005 HushKit® Passive Ear Cup Noise Attenuation Kit for David Clark and David Clark Clones P/N 11-10934 ... **$29.95**
92056 HushKit® Passive Ear Cup Noise Attenuation Kit for HGU-56 Helmets P/N 11-06312 ... **$29.95**
92050 HushKit® Passive Ear Cup Noise Attenuation Kit for SPH-4®, SPH-4B® , SPH-5® or HGU (Sonex) helmets. P/N 11-06311 ... **$29.95**

OREGON AERO® SOFTSEAL/HUSHKIT® COMBO - An ear seal and insulation kit in one — one giant shock absorber. Replaces triangular leather earpad or upgrades plastic Ear Cup. Eliminates pain.

28734 SoftSeal/HushKit® Combo for Telex 750 and 850 (¾" thick) P/N 11-10918 ... **$55.25**
28034 SoftSeal/HushKit® Combo for HGU Civilian Helmets (¾" thick) P/N 11-08682 ... **$79.95**
28118 SoftSeal/HushKit® Combo for HGU Civilian Helmets (1 1/8" thick) P/N 11-08684 ... **$79.95**

HEADSET MICMUFF™ MICROPHONE COVERS

Eliminates cockpit noise from radios and intercom. Greatly improves intelligibility. MicMuff™ functions as an acoustic baffle and must be used on all headsets installed in the communications system. Adaptable to all mics, electret or dynamic. Doesn't blow away.

Amplified Dynamic MicMuff Mic Cover ..... P/N 11-10937 ... **$13.95**
Electret MicMuff Mic Cover ..... P/N 11-10938 ... **$13.95**
Military Dynamic (M-87) MicMuff Mic Cover ..... P/N 11-10939 ... **$13.95**

EVERY HEADSET MICROPHONE USED IN AN INTERCOM SYSTEM MUST HAVE THE MICMUFF INSTALLED IN ORDER FOR THE MICMUFF TO BE EFFECTIVE! THE ONLY EXCEPTION IS PUSH-TO-TALK INTERCOM SYSTEMS.

OREGON AERO® COMPLETE HEADSET UPGRADE KITS

The Worlds Greatest Headset Is the One You Already Own!®
With an Oregon Aero Upgrade!®

For best results and best value, we recommend the complete Headset Upgrade Kit which includes all necessary components custom-designed for these headset types.

FOR BOSE® AVIATION HEADSET X™* & BOSE® A20™
83006BX -
Includes: SoftSkin® Ear Seal Covers, MicMuff® Microphone Cover, SoftTop® Headset Cushion , SoftSeal® Ear Cushions
PN 11-06309..... **$92.50**

MILITARY HEADSET UPGRADE KIT FOR DAVID CLARK TYPE HEADSETS -
Electret mic: 83006E.
Dynamic Military Mic: #83006DM
Includes: SoftSkin® Ear Seal Covers, MicMuff® Microphone Cover, HushKit® Passive Ear Cup Noise Attenuation Kit, SoftSeal® Ear Cushions, SoftTop® Ear Cushions
PN 11-06310..... **$132.95**
David Clark H10-76 P/N 11-07808..... **$129.00**

J-HOOK HEADSET HANGER

The J-Hook Aviation Headset Hanger is designed to be installed on one of the tube crossmembers in the cockpit of aircraft with exposed tubing upon which to hang your headsets when not in flight. These types of aircraft include Huskies, Cubs, Citabrias, etc. Machined from 6061-T6 aluminum with stainless steel hardware for a lifetime of service. Mounts on 3/4" or 7/8" tubing

J-Hook Headset Hanger 3/4"..... P/N 11-02409 ..... **$39.85**
J-Hook Headset Hanger 7/8"..... P/N 11-02410 ..... **$39.85**

HEADSET HANGER

• Hang your headset out of the way in a handy fold down bracket. • Secure headset with hold down hook & loop strap. • Headset Hanger - folds neatly out of the way when not in use. • Strong extruded aluminum - black finish • Mount with 2 screws • Made in USA..P/N 11-08615 ..... **$34.85**

UNIVERSAL AVIATION HEADSET HANGAR

No longer will you have to throw your expensive headset on the glare shield, the seat, or hang it on the control wheels. This easy to install device gets the headset up and out of the way so that it is easier to get into and out of the cockpit without fighting loose headsets. It also protects the headset by getting it up and out of the way. P/N 11-09312 ..... **$18.95**

SILICONE GEL EAR SEALS

Gel ear seals conform to the shape of your head, resulting in an airtight fit which is required for proper anr performance. If your earseals are the older dry foam or liquid filled they must be replaced. P/N 11-03011..... **$21.50**

COMLINKPRO ANGEL HEADSET INTERFACE

Quickly being able to call ATC or flight service provides a backup in the event of a radio failure. Stay in touch with family and loved ones to let them know your status. Control your Bluetooth® enabled MP3 player and cell phone though the easy to use interface. Delivers the highest quality audio possible to all general aviation headsets. With a backlit screen and keypad the E6B and flight timers are easy to use in any light condition. Free downloads for new flight tools and functions. Integrated E6B Flight Computer. Wired port for cell and Satellite phones that don't have Bluetooth Input port allows GPS, XM music or any source to be used. Caller ID, direct dial, and redial functions. Voice dial feature with one touch. Download phonebook and call list entries and dial direct. Stream Bluetooth® music and control with advanced control panel. Output port allows recording of ATC or narrate to a video camera. Automatic cut-out with radio / ATC transmissions. Ambient light sensor for day/night auto-dimming. Fuel timer keeps track of tank changes for you. 3 stopwatches let you keep track of time. Approach timer with two sets of approaches. Generates power required to operate most ANR headphones. Convenient and quick access with the included knee strap.

Description	Part No.	Price
Comlink Pro Angel Blue	11-08543	**$449.00**
Comlink Pro Angel Blue Heil	11-09208	**$449.00**
Comlink Pro Angel Black	11-08544	**$449.00**
Comlink Pro Angel Black Heli	11-09209	**$449.00**
Comlink Pro Angel Green	11-08545	**$449.00**
Comlink Pro Angel Green Heli	11-09211	**$449.00**
Comlink Pro panel Power Cable	11-08546	**$24.99**
Comlink Pro XL Interface Cable	11-08547	**$24.99**
Comlink Pro Helicopter Panel Interface Cable	11-08548	**$32.99**
Comlink Pro Helicopter Headset Interface Cable	11-08549	**$36.99**

AV

AIRCRAFT SPRUCE WEST
CORONA, CA • (877) 4-SPRUCE
AIRCRAFT SPRUCE EAST
PEACHTREE CITY, GA • (877) 477-7823
Prices Subject to Change Without Notice

AVIONICS ACCESSORIES

MIC & PHONE JACK HOUSINGS

SINGLE HOLE BLACK ALUMINUM HOUSING - Single-hole aluminum housing for single cord headset jacks (Nexus Jack TJT-120).

Description	Part No.	Price
Single Hole Black	11-09989	**$24.95**
Single Hole Beige	11-09990	**$24.95**
Single Hole Aluminum	11-09991	**$24.95**

2 HOLE SURFACE MOUNTED MIC & PHONE JACK HOUSING - If panel space is scarce or you'd prefer to locate your headphone jacks in a more convenient spot, this housing is perfect. Mounts flush to any flat surface. Heat-treated aluminum with a powder coat finish. Jacks not included. (See electrical section).

Description	Part No.	Price
Surface Mount, Black	10-01595	**$16.50**
Surface Mount, Beige	11-01120	**$14.95**
Surface Mount, Aluminum	11-01130	**$14.95**

TWO HOLE ALUMINUM HOUSING - Two-hole aluminum housing (no paint) for single cord headset jacks / Nexus Jack TJT-120.

Description	Part No.	Price
Two Hole Black	11-09994	**$25.95**
Two Hole Beige	11-09992	**$22.00**
Two Hole Aluminum	11-09993	**$25.95**

2 HOLE RECESSED MIC & PHONE JACK HOUSINGS - This versatile mic and phone jack housing has a powder coat finish. With this recessed housing in place in a side panel, your jacks are out of the way. Comes with a clamp to hold housing securely in place. Jacks not included. Size: 3.0" x 3.75" x 1".

Description	Part No.	Price
Recessed Mount, Black	11-01140	**$18.50**
Recessed Flush Mount, Beige	11-01150	**$16.95**
Recessed Flush Mount, Aluminum	11-01160	**$19.75**

4 HOLE SURFACE MOUNTED MIC & PHONE JACK HOUSING - If panel space is scarce or you'd prefer to locate your headphone jacks in a more convenient spot, this housing is perfect. Mounts flush to any flat surface. Heat-treated aluminum with a powder coat finish. Jacks not included. (See electrical section). **Housing only!**

Description	Part No.	Price
Black wrinkle finish	11-01195	**$18.95**
Tan wrinkle finish (Pictured)	11-00365	**$18.95**
Aluminum (unpainted with holes)	11-00366	**$18.95**
Aluminum (unpainted NO holes)	11-00367	**$17.85**

4 HOLE RECESSED MIC & PHONE JACK HOUSINGS - Modified to allow plugs to enter from the opposite side, being recessed they are out of the way. When jacks are plugged in they are flush with the edge of the housing. Made of aluminum, with a powder coat finish. Comes bagged with housing, clamp, mounting screw. Dims: 4"W x 5"L x 1.06"H; Cutout req.: 3.25"W x 4.43"L

Description	Part Number	Price
Black wrinkle finish	11-01939	**$27.85**
Tan wrinkle finish	11-01940	**$28.75**
Aluminum (unpainted with holes)	11-01941	**$28.75**

MIC / PHONE JACK MOUNTING BRACKET

Mic & Phone Jack Bracket 90 degree under the dash. Also for switches, fuses etc. . A sturdy and attractive mount, sides are formed to hide wires, .063 thick heat-treated aluminum. Black wrinkle powder coat finish. Five styles to choose from for most any installation. Easily installed.

MIC OR PHONE JACK MOUNT 1 HOLE - 1) Hole for either Mic or Phone Mounting Bracket Dimensions- 1.5w x 1.5h x 1.0 deep. Black wrinkle powder coat finish.
P/N 11-01170 .....**$11.50**

MIC OR PHONE JACK MOUNT 2 HOLE - (2) Hole Mic & Phone Mounting Bracket Dimensions- 2.3w x 1.5h x 1.0 deep. Black wrinkle powder coat finish
P/N 11-01180.....**$12.95**

MIC OR PHONE JACK MOUNT VERTICAL 4 HOLE - Bracket- (4) Hole Vertical for Mic & Phone Dimensions- 2.3w x 2.5h x 1.0 deep.
P/N 11-01190.....**$12.50**

MIC OR PHONE JACK MOUNT HORIZONTAL 4 HOLE - Bracket- (4) hole horizontal for either Mic or Phone Dimensions- 4.5w x 1.5h x 1.0 deep.
P/N 11-01942.....**$13.95**

PLUGS & PANEL JACKS

PLUGS - Made to specification MIL-P-642A. Molded, cord mounting type. Screw-on shell.

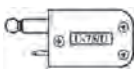
Headphone Stereo Plug 3-Circuit SWC 260 Takes SWL-12B mating jack P/N 11-08308.....**$9.95**
Headphone Mono Plug, 2-Circuit PJ-055B Takes JJ-034 mating jack P/N 11-04065.....**$8.95**
Microphone Plug, 3-Circuit PJ-068 Takes JJ-033 mating jack P/N 11-03918.....**$16.75**

PANEL JACKS -Made to specification MIL-J-541. Contact springs are of special alloys for long life. Insulation is high dielectric strength phenolic. Tinned terminal lugs for easy soldering. Short frame. Mounts by 3/8-32 threaded bushing and nut. Open circuit until plug inserted.

Stereo Headphone Jack, 3-Circuit SWC-12B P/N 11-04936.....**$2.55**
Mono Headphone Jack, 2-Circuit JJ-034..... P/N 11-03907.....**$3.65**
Microphone Jack, 3-Circuit JJ-033..... P/N 11-05995.....**$5.25**
Insulated Flat Washer (SWC S1028) Tan..... P/N 04-00975....**$0.29 ea.**
Insulated Flat Washer (SWC S1029) Black... P/N 04-00976 ...**$0.66 ea.**
Mini Stereo Jack 1/8" diameter ..... P/N 11-09332 .....**$3.85**
Mini Stereo Plug 1/8" diameter..... P/N 11-09333 .....**$7.45**

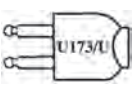
U-61/U JACK – (MIL-C22442/4-1) (NSN 5935-00-689-6052) Mates with U-75/U. P/N 11-00696 ..... **$47.00**

U-172/U MICROPHONE JACK –(NSN 5935-00-665-7599), Mates w/U-173/U, PJ-292, or MP-101. 2-conductor jack w/nickel-plated beryllium copper contacts assembled into nylon body.P/N 11-00697 ..... **$5.50**



U-75/U PLUG – (MIL-C-22442/5-1) Mates with U-61/U. P/N 11-00698 ..... **$46.75**

4-CONDUCTOR PLUG – (TP-120, U-174/U, U-93A/U, MIL-C9177/1B) (NSN 5935-00-642-0626) Mates with U-92/U, TJ-120 & TJ-102. Jack, and TJ-101 Jack. 1-piece nickel plated brass contacts are integrally molded into plastic body. P/N 11-00699 ..... **$13.50**



2-PIN MICROPHONE PLUG - (U-173/U, MP-101) (NSN 5935-00-888-5351) Mates with U-172/U, U-179/U, MP-101, & JJ-055. Nickel-plated beryllium copper contacts assemble into nylon body.
P/N 11-00701 ..... **$5.50**

.206" COMMERCIAL MIC PLUG – (S-267) (PJ-068) Mates w/JJ-033, S-12B, CES830. Black plastic handle with .206" dia. chrome plug. 3 conductors. solder plug and cable clamp. P/N 11-00702 ..... **$6.95**

.25" COMMERCIAL MONO PHONE PLUG – (S-250) Mono (PJ055B) Mates w/JJ-034, CE80. Black plastic handle w/ .25" dia. chrome plug. 2 conductors. solder plug & cable clamp. P/N 11-00703 ..... **$2.45**

.25" COMMERCIAL STEREO PHONE PLUG – (S-250; PJ055B) Mates with JJ-034 or CE80. Black plastic handle with .25" dia. chrome plug. 3 conductor. solder plug & cable clamp. P/N 11-00704 ..... **$2.25**

1/8" STEREO PLUG (3.5MM)– Black plastic handle w/ solder terminals & cable clamp.
P/N 11-00705 ..... **$2.25**

U174/U PLUG TP-101 - Mates with NEXUS Series TJ-120and TJ-102 jacks and jack TJ-101. One piece monel contacts integrally molded into glass filled nylon plastic. P/N 11-09335 ..... **$36.75**

FRONT MOUNT JACK TJT-120 - Mates with NEXUS Series TP-120 plugs and plugs TP-101 and TP-102. Same material and construction as the TJ-120. Jack housing is threaded for front mounting by screwing into threaded mounting hole or by inserting into front of panel and securing with nut and lockwasher from behind. P/N 11-09334 ..... **$10.50**

AV

HEADSET ADAPTERS AND EXTENSIONS

HEADSET EXTENSIONS

HEADPHONE EXTENSION – This heavy duty extension allows a .25" phone jack to be extended by 5ft. Great for customizing an aircraft with rear passenger headphone (listen only) capabilities.
P/N 11-10620 ..... **$22.75**

HEADSET EXTENSION – This heavy duty extension allows a general aviation headset using PJ-068 & PJ-055B or equivalent plugs to be extended by 5ft. Ideal when aircraft radio or intercom does not allow headset cords to reach comfortably. P/N 11-10640 ..... **$47.75**

MICROPHONE EXTENSION – This heavy duty extension allows a .206" mic jack to be extended by 5ft. Great for customizing an aircraft with rear passenger microphone jacks.
P/N 11-10625 ..... **$20.95**

HELICOPTER HEADSET EXTENSION – Extends a headset that uses a U-174/U, U-93A/U or equivalent plug. 5 ft. in length. P/N 11-00688 ..... **$48.95**

U-75/U EXTENSION – Extends a headset which uses U-75/U plug 5 ft. in length.
P/N 11-00689 ..... **$104.95**

"Y" ADAPTERS

DUAL HEADSET Y ADAPTER – This heavy duty adapter converts one .25" phone jack into two. Perfect for those who want to connect two headphones to one a/c radio headphone jack. Can be used with stereo or mono headphones and jacks. Length: 2 ft. P/N 11-10610 ..... **$27.90**

DOUBLE HEADSET Y ADAPTER – This heavy duty adapter converts one set of a/c radio panel jacks, (.206" mic and .25" phone) into two sets. Can be used with any general aviation headset using PJ-068 & PJ-055B or equivalent plugs.
P/N 11-10635 ..... **$58.25**

DUAL MICROPHONE Y ADAPTER – This heavy duty adapter converts one .206" aircraft radio microphone jack into two. Perfect for those who want to add another push-to-talk position to the radio. Length: 2 ft. P/N 11-10615 ..... **$29.95**

TRIPLE HEADSET ADAPTER – This high quality adapter converts a set of radio or intercom mic and phone jacks into 3 sets. Sets are one, three and five feet respectively. Great for adding a pair of headset to the back of the aircraft without requiring major installation. P/N 11-00680 ..... **$79.95**

DUAL HELICOPTER Y HEADSET ADAPTER – This adapter allow a single helicopter radio or intercom jack (TJ-120, TJT-120, TJT-102) to be used by two headsets. Length: 1 ft. Great for adding an additional space for headset without costly installation. P/N 11-00681 ..... **$59.95**

DIGITAL AUDIO RECORDER ADAPTER FOR GA HEADSETS - This adapter allows you to interface your video recorder with the aircraft intercom system. Great for creating your own aerial videos without excess cabin noise. Can also be used to listen to music etc. by plugging into something like an iPod or MP3 player.
P/N 11-10486 ..... **$34.95**

24 CONDUCTOR COIL CORD - This coil cord incorporates 24 individual 22-gauge wires, which is the minimum gauge required to connect typical PTT, Autopilot Disconnect, Map Light, Trim and other control wheel-mounted switches. The coiled section of the cord has a retracted length of 6 inches and a generous 18 inches of free length on either end, allowing electrical components to be connected without splicing additional wire.
P/N 11-09937 ..... **$249.00**

THREE-WAY SPLITTER WITH USB OUTPUT

Three-way splitter with USB output. USB charger output to 5V/500ma. Triple socket with 12V output. A fuse is included. DC 12V using only.
P/N 11-09741 ..... **$14.75**

AIRCRAFT/HELICOPTER CONVERSION ADAPTERS

.206" JACK Y ADAPTER – This adapter converts a headset with a single .206" plug into one with 2 (standard .206 mic & .25" phone plugs). Length: 9". P/N 11-00682 ..... **$32.75**

.25" JACK Y ADAPTER – This adapter converts a headset with a single .25" plug into 1 with 2 (standard .206" mic & .25" phone plugs). Length: 9".
P/N 11-00683 ..... **$31.50**

.206" PLUG Y ADAPTER – This adapter converts a headset w/ dual .206 mic & .25" phone plugs into one plug (.206') headset. Length: 9". P/N 11-00684 ..... **$33.75**

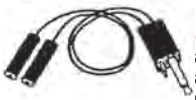
.25" PLUG Y ADAPTER – This adapter converts a headset w/ dual .206 mic & .25" phone plugs into one plug (.25") headset. Length: 9".
P/N 11-00685 ..... **$29.95**

STANDARD (MIC/PHONE) TO HELICOPTER ADAPTER – This adapter converts a G.A. headset that has both mic and phone plug into one that uses a helicopter (U-174U, U-93A/U or equiv.) plug. Length: 9". P/N 11-10630 ..... **$37.95**

HELICOPTER TO STANDARD (MIC/PHONE) ADAPTER – This adapter converts a helicopter (U-174U or U-93A/U) headset that has one plug into a G.A. headset that has both mic and phone plug. Length: 9". P/N 11-10650 ..... **$35.85**

HELICOPTER ADAPTER – This adapter converts a U-75/U plug to a U-93A/U plug. Length: 5".
P/N 11-00686 ..... **$76.75**

U-75/U HEADSET CONVERTER ADAPTER – This adapter converts a headset which has a U-174/U, U-93A/U or equivalent type plug into one which uses a U-75/U plug. Length: 9".
P/N 11-00687 ..... **$76.75**



U-75/U HEADSET CONVERTER ADAPTER – This adapter converts a headset which has a .206" mic and .25" phone plug into one which uses a U-75/U plug. Length: 9". P/N 11-00690 ..... **$77.75**

U-75/U TO STANDARD PLUGS CONVERTER – This adapter converts a headset which has a U-75/U or equivalent plug into a standard .206" mic & .25" phone plug. Length: 9".
P/N 11-00691 ..... **$76.75**

TRIPLE HELICOPTER ADAPTER W/7'CABLE

TJT-120 & TJT-102 type Jacks) This adapter allows for 3 headsets to share one 4 conductor panel mount in jack. Backing of converter box comes with commercial grade Velcro adhesive tape for easy attachment to any surface. P/N 11-02752 ..... **$128.95**

.25" HEADSET PLUG REDUCER

This adapter reduces a single .25 headset plug to a single .206 headset plug. 5" in length.(JB-34)
P/N 11-02748 ..... **$20.50**

.206 MICROPHONE PLUG REDUCER

This adapter reduces a single .206 microphone plug to a 3.5mm mini plug. 5" in length.(JB-35)
P/N 11-02749 ..... **$23.75**

HEADSET TAPE RECORDER ADAPTER

This adapter allows you to record conversations through your headset into a portable tape recorder.
(JB-40) ..... P/N 11-02750 **$15.75**

SPECIALTY ADAPTERS/ IMPEDANCE CONVERTERS

VIDEO RECORDER ADAPTER GA/HELICOPTER – This product allow you to interface your video recorder with the aircraft intercom system. Great for creating your own aerial videos without excess cabin noise. Records sounds transmitted through the intercom system only.
Std Version ..... P/N 11-00692 ..... **$29.95**
Helicopter Version ..... P/N 11-00693 ..... **$38.75**

CD PLAYER GENERAL AVIATION ADAPTER– This product allow you to interface your portable CD Player with a general aviation headset. ..... P/N 11-00694 ..... **$32.50**

LOW TO HIGH IMPEDANCE ADAPTER – This adapter converts a low impedance mic & military headset into higher impedance for use in general aviation aircraft.
Standard Version ..... P/N 11-10645 ... **$67.95**
Helicopter Version ..... P/N 11-00706 ... **$74.50**

AV

HEADSET ACCESSORIES — ADAPTERS

LIQUID FOAM EAR SEALS

Replacement ear seals for DC40 style headsets. Great comfortable replacement ear seals with foam and liquid interior.
P/N 11-02737 ..... **$19.25**

FOAM EAR SEALS

Replacement ear seals for DC40 style headsets. All foam interior with comfortable exterior. These superb ear seals will make you think twice before taking your headset off
P/N 11-02738 ..... **$41.50**

IPOD/MP3 ADAPTER

This adapter can be used to connect your IPOD or MP3 player directly into your intercom system. It comes in a 5' length. ..... P/N 11-03510 ..... **$30.25**

AIRBUS ADAPTER

This adapter will allow you to use your general aviation headset with a European Airbus intercom communication system..... P/N 11-03516 ..... **$41.50**

BOSE A20 (6-PIN) HEADSET TO GA ADAPTER

Model: PA-89/A20. Converts your 6-pin connector to a dual GA plug. Adapter measures approximately 21"
P/N 11-09422 ..... **$46.75**

BOSE A20 (6-PIN) HEADSET TO HELICOPTER ADAPTER

Model: PA-89H/A20 Converts your 6-pin connector to a single helicopter plug. Adapter measures approximately 21"
P/N 11-09423 ..... **$56.75**

PILOT USA ADAPTERS

Description	Part No.	Price
PA-50 Push-to-talk use with or without Intercom	11-07712	$18.95
PA-70S Headphone Extension (5ft)	11-06517	$19.95
PA-71 Microphone Extension (5ft)	11-10625	$20.95
PA-72S Dual Headset Adapter	11-06518	$44.95
PA-72H Dual Helicopter Headset Adapter	11-03562	$59.95
PA-73S Dual Headphone Y Adapter	11-06519	$27.95
PA-74 Dual Microphone Y Adapter	11-10615	$29.95
PA-75 Helicopter to GA headset Adapter	11-10650	$35.85
PA-76 GA to Helicopter Headset Adapter	11-10630	$37.95
PA-77S Headset Extension (2 Jacks, 2 Plugs)	11-06520	$39.90
PA-77H Helicopter Headset Extension (5ft)	11-00688	$48.95
PA-78 Mono Replacement Headset Cable (Chrome Plugs)	11-03563	$31.95
PA-79 Mono/Stereo Replacement Headset Cable (Chrome Plugs)	11-03564	$35.95
PA-79DNC M/S Headset Cable: For use with PA-1779, PA-1776, PA-2	11-06521	$37.65
PA-80S GA Video Recorder/CD Player Adapter	11-00694	$32.50
PA-80H Helicopter Video Recorder/CD Player Adapter	11-03565	$43.95
PA-81 Airbus Aircraft Headset Adapter	11-03566	$39.95
PA-82 Headset Adapter for ICOM A22,A24 Transceiver	11-02116	$49.85
PA-82.4 Headset Adapter for ICOM A4 Transceiver	11-03567	$40.95
PA-82B Bose Headset Adapter for IC-A6, A22,A24	11-06523	$58.75
PA-82H Helicopter Headset Adapter for IC-A6, A22,A24	11-06524	$58.75
PA-83 Europe NATO to US NATO Headset Adapter	11-06525	$68.95
PA-84 US NATO to Europe NATO Headset Adapter	11-06526	$68.95
PA-85 Headset Adapter for ICOM A5, A23 Transceiver	11-00618	$39.50
PA-86A Amplified Cell Phone Adapter GA (Twin Plug) Version	11-03568	$88.95
PA-86AH Amplified Cell phone Adapter - Helicopter Version	11-06527	$111.95
PA-86AB Amplified Cell phone Adapter (Panel Power) BOSE	11-06528	$159.95
PA-87 Impedance Converter Hi (GA) to low Military	11-06529	$51.95
PA-87H Impedance Converter Hi (Heli) to low Military	11-06530	$61.95
PA-88 Amplified Impedance Converter low (MIL) to Hi (GA)	11-10645	$67.95
PA-88H Impedance Converter Low (MIL) to Hi (Helicopter)	11-06531	$72.95
PA-89B Power Supply for Panel Power BOSE Headset	11-03570	$69.95
PA89/A20 Bose A20(6-Pin) to GA Adapter	11-09422	$46.75
PA89H/A20 Bose A20(6-Pin) to Helicopter Adapter	11-09423	$56.75
PA89A/A20 Bose A20(6-Pin) to Airbus XLR Adapter	11-09997	$59.95
PA89BH Bose X panel Powered to Helicopter Adapter	11-09996	$85.95
PA-90S Triple Headset Adapter	11-03571	$65.95
PA-91 GA (Twin Plug) Headset to (.25") Single Plug Adapter	11-00685	$29.95
PA-92 (.25") Single Plug Headset to GA (Twin Plug) Adapter	11-03572	$29.95
PA-93B GA to Bose Plug Headset Adapter	11-06533	$57.95
PA-93BH Helicopter Headset to Bose Plug Adapter	11-06602	$64.50
PA-94 Helicopter Ground Crew Extension Cable W/PTT (3ft.)	11-06534	$80.95
PA-95 Headset Adapter for Vertex Transceiver	11-03574	$43.95
PA-96 PC to GA (Twin Plug) Headset Adapter	11-03575	$39.85
PA-97 Airbus Plug to GA Headset Adapter	11-06535	$35.95
PA-98 Inline Helicopter Volume Control	11-06536	$49.50
PA-99 Inline GA Volume Control	11-06537	$49.50
PA-100B Oxygen Mask Microphone Adapter for Bose Plug Headset	11-06603	$76.85

PC TO HEADSET ADAPTER

This adapter allows you to plug your standard aviation headset into your zpc while using flight simulator to feed sound into your headset with high fidelity and mic for high quality verbal communication. Plug & play, no software needed. Requires a 9V battery, not included. Great companion to our fight-sim set-up. P/N 11-02751 ..... **$56.50**

FOUR CONDUCTOR PHONE JACK

(TJ-101) Mates with series TP-120, TP-102 plugs and plugs PT-101, U-93-A/U, and U-174/U. Nickel Plated beryllium copper contacts molded into a black plastic body. P/N 11-02744 ..... **$19.75**

FIVE CONDUCTOR PHONE JACK

(TJ-105, U385/U, M64/22-01) Mates with series TP-105, U-384/U, M642/14-01. Nickel plated beryllium copper contacts molded into a red plastic body. P/N 11-02745 ..... **$39.85**

AUDIO GOLD PLUG ADAPTERS

JB-11LDS - 1/8" stereo to .25 stereo plug, increases a 3.5mm plug to a .25" stereo plug. ..... P/N 11-02746 ..... **$3.45**

JB-11LDM - 1/8" mono to .25 stereo plug, increases a 3.5mm plug to a .25" mono plug. ..... P/N 11-02747 ..... **$3.60**

JB-11DLS - .25" stereo to 1/8" stereo plug, decreases a .25" plug to a 3.5mm stereo plug..... P/N 11-02740 ..... **$3.60**

JB-11DLM - .25" mono to 1/8" stereo plug,decreases a .25" plug to a 3.5mm mono plug..... P/N 11-02741 ..... **$3.60**

FIVE CONDUCTOR PHONE PLUG

(U-384/U, TP-105, M642/14-01) Mates with series TJ-105 and TJ-125. One piece monel contacts integrally molded into red plastic body.
P/N 11-02742 ..... **$37.75**

CABLE JUNCTION BOX

This product allows you to convert two cables into one. Size: 1.5" x 1" x .5"). Comes with 4 screws.
P/N 11-02743 ..... **$4.85**

SIGTRONICS ADAPTER CABLES

PTT Switch intercom use with intercom.....	P/N 11-02806	**$29.95**
Headphone Replace. Cable Stereo 5'.....	P/N 800029.....	**$19.40**
Headphone Replace. 3-6' Coil Mono	P/N 800034.....	**$24.50**
Headphone Replace. Coil 3-6' Stereo.....	P/N 800035.....	**$38.00**
Mono Headphone 5' Cord	P/N 800037.....	**$13.95**
M-90 Electret Microphone	P/N 800078.....	**$89.50**
M-80 Electret Microphone	P/N 800082.....	**$75.25**
Converter STD Aviation Plug	P/N 900050.....	**$43.85**
Converter Plug-STD Aviation	P/N 900051.....	**$42.50**
Converter Plug-STD Avia-Coiled.....	P/N 900052.....	**$49.50**
Headset 5' Straight Monaural.....	P/N 900053.....	**$37.50**
Headset 3-6' Coiled Monaural (GA Version)...	P/N 900054.....	**$46.00**
Headset Ext 3-6' Coiled (Helicopters Version)	P/N 900055.....	**$48.00**
Microphone Y Adapter.....	P/N 900056.....	**$46.95**
Headphone Monaural Y Adapter.....	P/N 900057.....	**$36.25**
Headphone Stereo Y Adapter	P/N 900058.....	**$49.95**
Headphone 5' Straight Monaural	P/N 900059.....	**$23.50**
Microphone Extension Cable	P/N 900060.....	**$29.95**
Headphone 5' Straight Stereo.....	P/N 900061.....	**$29.75**
Converter Plug to STD Avi Plug.....	P/N 900062.....	**$89.50**
Convert U-75U to U174 Plug 18".....	P/N 900063.....	**$89.50**
Convert STD Plug to U-75U.....	P/N 900064.....	**$89.50**
Converter to U-75 Plug 18".....	P/N 900065.....	**$89.95**

PUSH TO TALK SWITCH HOUSINGS

STANDARD HOUSING SWITCH REAR - Made for the American Standard switch P/N MSPF-101BCA. Housing is 3/4" in length, has a base width of 1" Machined from solid billet alunimum. Screws included with mounting instructions .Can also be used to mount any other switch control on the yoke. Color: Black ACS 002
P/N 11-04418 ..... **$113.95**

AWW PTT HOUSINGS - Housings measure 1 inch in length, 1/2" in diameter with a mounting width of 1/2". Mounts with (2) #4 countersunk screws.
TOP TOP..... P/N 11-07340 ..... **$112.95**
BACK P/N 11-07341 ..... **$113.95**

HOUSING FOR MICROMINI MOMENTARY SWITCH
P/N 11-07342 ..... **$113.95**

AV

TEST EQUIPMENT

EASTERN ELECTRONICS TEST EQUIPMENT

MAGNETO TIMING LIGHT - MODEL E50

Designed specifically for internal timing of aircraft magnetos and for synchronizing magnetos to aircraft engines. Eliminates all guesswork and provides a greater safety factor by creating perfect timing quickly and easily. Simply attach three clips to the magnetos and adjust until both bright lights flash in sync and the buzzer changes pitch. Fail-safe circuitry, variable pitch buzzer. Heavy-duty 3"x 5"x 2-1/8" unbreakable case. Wt. 1.5 lbs. Complete with 18 gauge lead wires 36" long and instructions.

P/N 12-01013 ..... **$88.75**

U.S. Industrial Equivalent.....P/N TP105.....**$56.85**

AIRCRAFT TIMING INDICATOR MODEL E25

The Aircraft Timing Indicator Model E25 is a unique device that locates the relative relationships between the crankshaft, magneto point openings, camshaft and valve timing. Easily attached to the propeller spinner with mounting bands that are included with the unit, the E25 quickly and accurately (within ½ degree!) locates top dead center. The result: the all-aluminum Model E25 speeds up and improves the process of timing magnetos to the engine. With its easy-to-read dial and 18mm, hardened aluminum piston stop, the E25 is a snap to use. Note: Piston Stop is sold separately. PN# 12-18100

E25 Timing Indicator ..... P/N 12-01014 ..... **$59.50**
Replacement Piston Stop..... P/N 12-18100 ..... **$17.50**
U.S. Industrial Equivalent TP102 ..... P/N 12-01167 ..... **$59.75**

MAGNETO TIMING LIGHT

Measures the change in inductance in the magneto coil when the points open and close. Simply shorting the clip leads together will not indicate a point closing, therefore eliminating any false reading caused by loss of contact to the magneto grounding terminal. Adjust magneto timing accordingly. 100% solid state, compact 3/4" x 3" x 5" size, long battery life. Color coordinated leads are 4 ft. long. Comes in strong anodized aluminum case.

Dual Magneto Synchronizer w/Tweeter ..... P/N 12-16901 .....**$43.50**
Dual Magneto Synchronizer w/o Tweeter ..... P/N 12-16902 .....**$38.75**
Single Magneto Timing Light w/Tweeter..... P/N 12-16903 .....**$68.75**

TRACERLINE AVIATION ULTRASONIC LEAK DETECTOR

Master Kit Includes: • Marksman Receiver • UltraSonic Emitter • Headphones • 12 inch Air Probe • Contact Probe • Carrying Case ***Features***: • Converts & Amplifies Ultrasonic Sound Into Audible "Natural" Sound for Accurate Diagnosis. Finds Problems Before They Result in Major Breakdowns • Frequency Response: 36,000 - 44,000 Hz • Detects Air Brake, Compressed Air, Vacuum, EVAP System and Other Pressurized Leaks Quickly and Effortlessly • Pinpoints Gear and Bearing Wear in Wheel Hubs, Transmissions, Transfer Cases, Differentials and Electric Motors. Check for Electrical Discharge Associated with Insulation Breakdown, Carbon Tracking and Arcing • Finds Air and Water Leaks Passed Faulty Seals, Gaskets and Weather Stripping in Passenger Cabs, Trailers and other Non-Pressurized Enclosures. • Power Requirement: One Standard 9-Volt Alkaline Battery Each for Receiver & Emitter.

P/N 12-01745.....**$698.75**

ENGINE TEST TOOL KIT

This small test kit is designed to allow the aircraft mechanic a convenient and economical way to purchase the basic small engine test equipment. This kit contains: 1 - TP104 Cylinder Pressure Tester, 1 - TP105 Magneto Timing Light, 1 - TP102 Timing Indicator, 1 - TP103 High Voltage Cable Tester, 1 - TP216 Tool Box

P/N 12-02349.....**$237.95**

ENGINE TEST KIT

EK5EM - The Engine Test Kit EK5EM has all of the test equipment needed to check engine compression, synchronize magnetos, time aircraft engines, and test ignition leads all in one tool box.

The kit contains: the 2EM Differential Pressure Tester with master Orifice, LED52 Electronic Magneto Synchronizer, Eastern E25 Aircraft Timing Indicator, Eastern E5 High Voltage Cable Tester, the Compression Tester Extension & Hip Roof Tool Box.

P/N 12-02449.....**$259.00**

EK5 - ATS Engine Test Kit has all of the test equipment needed to check engine compression, synchronize magnetos, time aircraft engines, and test ignition leads all in one tool box. Contains: 2E, LED52, Eastern E25, Eastern E5, & 19000 tool box. Now includes the 18mm-XT Compression Tester Extension. P/N 12-02943.....**$253.00**

HIGH VOLTAGE CABLE TESTER MODEL E5

Gives a fast, accurate test of high voltage aircraft ignition cables. Simply connect 3 wires, push test button and test is completed. The E5 will instantly indicate in its test window both good and defective cables - no waiting for indication to appear. Fail-safe circuitry. Heavy-duty lead wires. Compact 3" x 5" x 2-5/8" case. Wt. 1-1/2 lbs.

P/N 12-01016 ..... **$88.75**

DIFFERENTIAL CYLINDER PRESSURE MODEL E2A

Eliminates guesswork by allowing you to locate the exact location and cause of your engine's loss of efficiency. Field tester for 2 years by Teledyne Continental Motors, and approved for use on Teledyne Continental Engines by their Engineering and Field Services Group. Complete instructions with each unit. "M" models have built-in master orifice.*** Not approved by TCM.**

E2A - for cylinders < 5" bore.....P/N 12-01012 ..... **$78.50**
E2A-1000 - for cyl. > 5" bore .....P/N 12-01017 ..... **$78.50**
E2M - for cylinders < 5" bore .....P/N 12-01015 ..... **$107.85**
E2M-1000 - for cyl. > 5" bore***** .....P/N 12-00692 ..... **$107.85**
E2A-12mm (Rotax) for cyl. < 5" bore.....P/N 12-00693 ..... **$78.50**
12 mm Adapter .....P/N 12-01018 ..... **$15.65**
18 mm Adapter .....P/N 12-18202 ..... **$15.50**
U.S. Industrial Equivalent.....P/N TP104..... **$54.95**
14MM Adapter.....P/N TP171..... **$13.50**
18MM Adapter.....P/N TP104-9A **$12.95**

ATS DIFFERENTIAL CYLINDER PRESSURE TESTERS

Comes complete with on-off safety valve to eliminate pressure when disconnecting from the cylinder. Can be used to check intake or exhaust valves, cracked or worn rings, defective cylinders, worn bushings, etc.

LESS THAN 5" BORE - Specifications: Orifice size is .040". precision gauges matched to within +/-2%. 18MM plug adapter. 24" pressure hose. Includes hose and spark plug adapter. Factory calibrated. Letter of certification available upon request. Note: For use with engines of 5" Bore Diameter or smaller per AC43.13 REV 1B.

P/N 12-02344 ..... **$59.95**

GREATER THAN 5" BORE -Specifications: Orifice size is .060". precision gauges matched to within +/-2%. 18MM plug adapter. Includes hose and spark plug adapter. Factory calibrated. Letter of certification available upon request. Note: For use with engines with Bore Diameters greater than 5" per AC43.13 REV 1B. .....P/N 12-02345 ..... **$69.75**

DIFFERENTIAL PRESSURE TESTER WITH MASTER ORIFICE

Now you can conveniently check the calibration of your pressure tester before each use without disconnecting the tester. Comes with complete instructions. Includes hose and spark plug adapter.

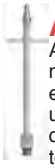
5" Bore Diameter or smaller.....P/N 12-02346 ..... **$86.95**
Bore Diameters greater than 5".....P/N 12-02347 ..... **$92.50**

COMPRESSION TESTER EXTENSION

This tool makes compression testing easy. Wrench free way to test that allows for exhaust system and baffling clearance. Tester is manufactured with quality-welded construction and offers a spark plug thread with O-Ring seal. It has a standard air fitting. .....P/N 12-01060 ..... **$28.95**

12mm Extension P/N 05-06883 ..... **$31.85**

ATS COMPRESSION TESTER EXTENSION



A replacement plug adapter with an 8-1/2" reach to work around manifolds, baffiling, harnesses, support structures, and anything else that gets in your way. The T-handle lets you to screw and unscrew the extender into the port without a wrench. The quick connect coupler makes it a snap to hookup and disconnect your tester. Note: For use with ATS models 2E and 2EM Compression Testers. 1 lbs (0.5Kg) weight. 18MM aviation engine plug threads 8-1/2" long to clear obstacles Standard .....P/N 12-02380 ..... **$33.95**

POWER PROBE

Use the probe tip and ground lead simultaneously to power up components right in your hand. Instantly check components for continuity as well as identify positive, negative and open circuits without re-polarizing hook-up clips. Locate shorts without wasting fuses. Audio tone indicates positive with a high pitched tone and negative by a low pitched tone. Has 2 white LED'S that flood the work area with bright light.

Power Probe III - Black..... P/N 12-02822.....**$169.95**
Power Probe III - Blue ..... P/N 12-02821.....**$169.95**
Power Probe III - Red..... P/N 12-02820.....**$169.95**

TO

TEST EQUIPMENT – VIDEOSCOPES

RITE SYSTEM MAGNETO TIMING KITS

These tools are for setting the proper ignition timing of engine magnetos and the other is for setting the proper deflection angle of flight controls. The magneto timing indicator is more precise than anything on the market today. It is far superior to the old needle indicator currently in use throughout the industry. It is designed to fit securely on any aircraft spinner without the use of filler material or tape to hold it in place. The surgical tubing used to secure their tool is stronger, more durable and easily adjustable for a variety of applications.

There are two 2 different kits. The Rite-System Kit (Basic) includes the Mag-Rite magneto timer, the Fly-Rite protractor, Digital Inclinometer, TDC Locator pin, 3 each Adjustable Bungees and Aluminum Case. Instruction and warranty information are also included.

The "Deluxe" kit will include the magneto synchronizer and the "Standard" kit will not. Both products are currently "Patent Pending".

Rite-System Deluxe Kit .....P/N 12-02636 ..... **$149.95**
Rite-System Basic Kit.....P/N 12-02635 ..... **$109.85**

TIME-RITE DELUXE COMBO KIT

The Time-Rite unit is the number one choice of aviation mechanics for precisely timing engines. It is assembled by hand and tested to the strictest standards to preserve the original craftsmanship. The unit has specialized arms and calibrated scales to accurately locate Top Dead Center (TDC) and then enables you to set the timing angle with dead-on accuracy. Kit includes: One 18 mm Time-Rite unit, one 14 mm Cone to adapt for 14mm use, a complete set of scales for 14mm and 18mm engines, a complete set of arms for 14mm and 18mm engines, an instruction manual, and a fitted case.

P/N 12-02872 ..... **$599.95**

ANGLE CUBE PROPELLER PROTRACTOR

The Protractor is a precision, highly accurate and simple to use device for checking, setting or changing propeller pitch. The resolution and repeatability is 0.05 degree and the accuracy is +/- 0.1 degree. It is powered with a standard 9 volt battery with approximately one year use life.

The Angle Cube can be used for other angle measuring applications such as checking and adjusting wing incidence, rotorcraft blade angles and tail-dragger ground angles. Aside from aircraft or airboat use, the gage can be used for measuring or setting table saw blade angles, machining or drilling angles or any other application requiring precision angle measurement. Magnets on three sides can be used to hold the unit to appropriate surfaces.

When the Angle Cube is magnetically attached to the protractor clip, the unit becomes a simple and accurate tool to measure blade angles.

P/N 12-02640 ..... **$93.85**

AUDIOTECH PROBE

The Model AT201 diagnostic Listening Tool is a versatile, time-saving tool which is ideal for use in any application where there is movement of mechanical parts, air, gas, or fluid. Ideal for use on commercial, general aviation, or homebuilt aircraft and helicopters for application such as air leak and vacuum detection, bearing wear, worn or chipped gears, engines, turbines, and compressors, hydraulics, fuel injectors, flow valves, instrument failure, and more. Audiotech Probe can quickly and accurately pinpoint the trouble spot so that the problem can be fixed quickly the first time. Diameter of small mic at end of probe is 3mm. AAA battery included. Perfect for homebuilders, A & P's, A & E's, and A & I's.

P/N 12-21420 ..... **$18.50**

MULTIMETER

Full function, fuse protected, auto-ranging multimeter that measures AC/DC voltage, milivolts, amps, miliamps and microamps, resistance and audible continuity, capacitance, frequency, temperature (k type thermocouple included), data hold function, relative measurement function, transistor and diode test function.

P/N 12-02703 ..... **$39.95**

MID-CABIN DEICE BOOT INFLATION TEST KIT

A pneumatic systems test kit that allows aircraft technicians to test the aircraft deice boot system in the hangar, via shop compressed air, rather than having the need to operate the aircraft engines on the ramp or run-up area. For Gulfstream Astra G100, G150, and G200 aircraft. This test equipment will eliminate: The need to fuel and/or defuel the aircraft for engine operation and system testing; aircraft towing/taxiing to and from the approved engine run-up areas; testing deice boot systems with loud aircraft engines; excessive man hours for aircraft engine operation and system testing.

P/N 12-02936 ..... **$610.00**

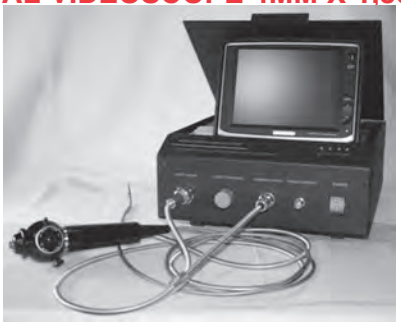
PORTABLE VIDEOSCOPE KIT 4MM X 1300MM

- 4 mm diameter 1300mm working length (available in other lengths and diameters)
- Steel braid insertion probe, water and oil proof, temp to 90 C
- Forward view, 2 ways of articulation ..... 120/120 up down
- Comfort grip with adjustable LCD screen
- Video output easily connects to capture device

KIT includes: Flexible Portable Videoscope Battery Charger Standard Storage / carrying case

Portable VideoScope 4MMX1300MM .....P/N 12-02583 ..... **$6,545.00**
Portable VideoScope Carry Case .....P/N 12-02584 ..... **$289.00**

DIGITAL VIDEOSCOPE 4MM X 1,300MM



- 1. 4.0 mm diameter 1300mm working length (available in other lengths and diameters)
- Steel braid insertion probe, water and oil proof, temp to 90 C
- Forward view, 2 ways of articulation
- 150/150 up down
- Universal type video out, easily connects to display and computer via USB cable.
- Built-in recorder and onboard hard drive with 40gig memory capacity. (optional-not included)

KIT includes: Flexible Videoscope Probe (Interchangeable with other dia. Probes), Integrated video and lightcable 5ft in length, TFT LCD Display and VPU with built-in lightsource for clear, wide and magnified image, Rugged carrying case, Remote control for ease of operation at distances up to 6 ft.

Digital Videoscope 4MMX1300MM .....P/N 12-02581 ..... **$7,426.00**
Heavy Duty Carry Case .....P/N 12-02582 ..... **$389.00**

TO

INSPECTION SCOPES

VISUAL OPTICS VIDEO STICK

Visual Optics new video based inspection scope, the VS36-10WW, gives you the latest in remote video technology. The Video Stik is for remote inspection of areas generally inaccessible to the naked eye. IT comes with a distal video camera at the end of a 36" shaft for internal inspection of engines, A/C systems, interior structures of walls, and other industrial and simi liar applications. Imaging and illumination is provided by a full color image sensor and dual solid state LEDs which are controlled by an on/off rocker switch. The 2.5" full color LCD screen allows the user to observe live video from the distal camera. The unit is powered by 4-AA batteries. The Video Stik is shipped with a protective case for storage. Accessory Mirror allows user to see 90 degrees to axis of the shaft. The Magnet accessory will pick up approx 1/4 lb. ***Features:*** High resolution remote color camera • 2.5" full color viewing monitor • 10mm shaft diameter • Waterproof, Flexible shaft • 36" standard shaft length • High output LED illumination • 5 hrs operation on 4-AA batteries (included) • Mirror and Magnet accessories included • Video Output for recording • Poly pro storage case ***Specifications:*** • Shaft Length: 36" Water Resistant • Distal Tip Dia: 0.42" Maximum • W/ Accessories: 0.46 Maximum • Viewing Angle: 55 Degrees • Viewing Distance: 0.4" to Infinity • Resolution: 320x240 pixels • Viewing Monitor: Color 2.5" LCD • Video outport: RCA - NTSC signal • Shaft Radius: 2.5" Minimum • Power: Alkaline AA batteries (4) • Battery Life: 4hours • Storage Temp: -4F to 158F (-20 to +70) • Operating Temp: 32F to 113F(0 to 45) • Accessories: Mirror and Magnet • Warranty: 1 Year.

VS36-10WD - 36" Length, 10mm Diameter..... P/N 12-01744 .....**$259.95**
VS24-6W - 24" Length, 5.8mm Diameter ..... P/N 12-02690 .....**$251.95**
VS72-10W - 72" Length, 10mm Diameter ..... P/N 12-02691 .....**$331.95**

VT-FLUV & VT-FLED SERIES SCOPES

Features: Highly detailed imaging with 7400 pixels • Compact Design• Superior optics provide easier viewing• Waterproof shaft• Petroleum & Chemical Resistant• Viewing range, 40 degree - 1/2 inch to infinity• Highly affordable

VT-FLED SERIES - Visual Optics has engineered and manufactured the next step in the evolution of the fiber optic bore scope. Their creation of the VO FLED Series Fiber Scope has raised the bar in the areas of optical quality, image light output, shaft control and material tolerance. The VO Series Fiber Scope achieves industrial level quality at an affordable price.

Model	Length	Diameter	Includes	Part No.	Price
VT24-4FLED	24"	4mm	Inspection Scope, Battery, White LED Flashlight, Mirror, Magnet & Suitcase Style Carrying Case	12-01739	**$345.95**
VT24-6FLED	24"	6mm		12-01740	**$292.95**

VT-FLUV SERIES - All VT Series Scopes (4.3MM or 6MM) can now be purchased with LEAK DETENTION CAPABILITIES. Exchanging the White Light LED flashlight with a UV Flashlight does this. The UV Flashlight will Fluoresce Leak detection dyes. The Kits (referred to as - FLUV) come complete with both flashlights. The VO FLUV Series Fiber Scope has raised the bar in the areas of optical quality, image light output, shaft control and material tolerance.

Model	Length	Diameter	Includes	Part No.	Price
VT24-4FLUV	24"	4.3mm	Inspection Scope, Battery, White LED Flashlight, UV Flashlight, Mirror, Magnet & Suitcase Style Carrying Case	12-01741	**$375.95**
VT24-6FLUV	24"	6mm		12-01743	**$375.95**

VISUAL OPTICS - 10MM LED SERIES SCOPES

Visual Optics has engineered and manufactured the next step in the evolution of the fiber optic bore scope. Their creation of the VO LED Series Fiber Scope has raised the bar in the areas of optical quality, image light output, shaft control and material tolerance. The VO Series Fiber Scope achieves industrial level quality at an affordable price.

Features: • High resolution image bundle • High flex shaft material • Strong / stable light source • Briefcase style instrument case • Highly detailed imaging with 7400 pixels • High output LED lighting - 2 White LED's in tip • No bulbs to change - Ever • Superior optics provide easier viewing • Spring Lok Design - Longer reach w/o drooping • Waterproof shaft • Industrial grade, 2 level light switch • Viewing range, 40 degree - 1/2 inch to infinity • Standard lengths 18, 24, 36 and 48 inch • Replaceable halogen bulb in the handle • Highly affordable

Model	L	Dai	Description	Part No.	Price
VO18-10W/W	18"	10mm	LED / Lithium Mirror/ Magnet Kits Included	12-01735	**$291.95**
VO24-10W/W	24"	10mm	LED / Lithium Mirror/ Magnet Kits Included	12-01736	**$303.95**
VO36-10W/W	36"	10mm	LED / Lithium Mirror/ Magnet Kits Included	12-01737	**$351.95**
VO48-10W/W	48"	10mm	LED / Lithium Mirror/ Magnet Kits Included	12-01738	**$397.00**

VISUAL OPTICS HALOGEN SERIES SCOPES

Visual Optics has engineered and manufactured the next step in the evolution of the fiber optic bore scope. Their creation of the VO Halogen Series Fiber Scope has raised the bar in the areas of optical quality, image light output, shaft control and material tolerance. The VO Series Fiber Scope achieves industrial level quality at an affordable price.

Features: • High resolution image bundle • High flex shaft material • Strong / stable light source • Briefcase style instrument case • Highly detailed imaging with 7400 pixels • Superior optics provide easier viewing • 4mm, 6mm diameters • Water and abrasion resistant shaft material • Industrial grade, 2 level light switch • Viewing range, 40 degree - 1/2 inch to infinity • Standard lengths 18, 24, 36 and 48 inch • Replaceable halogen bulb in the handle • Highly affordable

Model	L	Dia	Description	Part No.	Price
VO18-4H	18"	4mm	Halogen / Lithium Bulb/Mirror/Magnet Kits Included	12-01729	**$291.95**
VO24-4H	24"	4mm	Halogen / Lithium Bulb/Mirror/Magnet Kits Included	12-01730	**$254.95**
VO36-4H	36"	4mm	Halogen / Lithium Bulb/Mirror/Magnet Kits Included	12-01731	**$351.95**
VO18-6H	18"	6mm	Halogen / Lithium Bulb/Mirror/Magnet Kits Included	12-01732	**$291.95**
VO24-6H	24"	6mm	Halogen / Lithium Bulb/Mirror/Magnet Kits Included	12-01733	**$303.95**
VO36-6H	36"	6mm	Halogen / Lithium Bulb/Mirror/Magnet Kits Included	12-01734	**$351.95**

THE SEEKER VIDEO BORESCOPE SYSTEMS

THE SEEKER 200 VIDEO BORESCOPE SYSTEM - The Seeker 200 Video Borescope Inspection System features a 2.4-inch LCD color monitor for real-time viewing, with a 12mm flexible camera probe that retains its configured shape for inspecting hard-to-reach areas. A standard 1-meter probe length is provided with the unit and optional probes up to 10 meters (32.8 feet) are available. The Seeker 200 is ideal for use in automotive maintenance, electrical repair, plumbing applications, HVAC/R and the visual inspection of otherwise inaccessible areas. Includes: 3.3ft(1m)optional: up to 16ft., Extension Tools: (Mirror, Magnet, Pick-Up Hook) , 1 "9V" Battery , Blow Mold Case , Instruction Manual. Working Temperature: 32° to 113°F (0° to 45° C). Power Source: 1 "9V" battery .....P/N 12-02296 .....**$127.95**

DELUXE PROFESSIONAL VIDEO INSPECTION SYSTEM - The Seeker 300 Video Borescope System offers a large 3.5-inch LCD color monitor and a 12mm or 5.5mm flexible, configurable camera probe with adjustable LED lighting. The Seeker 300 is ideal for use in automotive maintenance, electrical repair, plumbing applications, HVAC/R and the visual inspection of otherwise inaccessible areas. This Video Borescope Kit also includes a mirror, magnet and pick-up hook that can be attached to the end of the probe. Includes: 3.3ft(1m)optional: up to 16ft. Extension Tools: (Mirror, Magnet, Pick-Up Hook) . 1 "9V" Battery . Blow Mold Case . Instruction Manual.

12mm Probe.....P/N 12-02297 .....**$169.50**
5.5mm Probe.....P/N 12-02652 .....**$256.95**

WIRELESS VIDEO INSPECTION SYSTEM DCS400 - The Seeker 400 Video Borescope System is ideal for any application requiring the inspection of hard-to-reach or hard-to-see areas. 3.5in. (88.9mm) TFT-LCD Wireless Color Monitor, can be detached from the unit for remote viewing up to 32.8ft. (10m) away 3.28ft. (1m) Flexible Waterproof (IP67) Obedient Probe retains configured shape. Standard Length: 3.28ft. (1m). (17mm) diameter Camera-tipped Probe has built-in adjustable LED lighting. Records in Still Photo (JPEG) and Video (AVI), or view it live. Records up to 3 hours continuously NTSC or PAL compatible. Choices of 10 menu languages. Includes: MicroSD Memory Card, Extension Tools: (Mirror, Magnet, Pick-up Hook), Video Interconnect Cable, USB Cable, Magnetic Base Stand, AC Adaptor, 4 "AA" Batteries, Blow Mold Case, Instruction Manual

12mm Probe.....P/N 12-02298 .....**$299.99**
9mm Probe.....P/N 12-02653 .....**$288.00**
5.5mm Probe.....P/N 12-02654 .....**$427.95**

TO

AIRCRAFT SPRUCE WEST
CORONA, CA • (877) 4-SPRUCE
AIRCRAFT SPRUCE EAST
PEACHTREE CITY, GA • (877) 477-7823

Prices Subject to Change Without Notice

INSPECTION SCOPES

THE SEEKER 050 USB VIDEO INSPECTION 12MM PROBE

Features a fixed 12mm diameter, 1 meter long, waterproof camera probe and USB connection to view images and video on your computer. USB computer interface. Works with Windows 7, Vista and XP. 12mm (0.47 in.) diameter camera tipped probe is flexible and strong. Camera pixel resolution: 320 x 240. Adjustable light intensity from two built-in LEDs. 1m (3.28 ft.) flexible shaft retains configured shape to suit various applications. Probe is water, oil and dust proof to IP67 standards. Elegant ergonomic design. Clear image quality both up close and far away.

P/N 12-02655 .....**$49.99**

THE SEEKER 100 USB VIDEO INSPECTION 12MM PROBE

Features wireless transmission of video and images to your computer up to 30 feet away and a Skype® enabled streaming video for remote viewing over the internet. Built-in radio transmitter wirelessly transmits (up to 10 feet) live video signal to the RCV100 USB video receiver, this enables the video to be viewed on a Windows PC and streamilined live over the internet. Works with Windows 7, Vista and XP. 12mm (0.47 in.) diameter, 1m (3.28 ft.) long, flexible-obedient, far focus camera-tipped probe is water, oil and dust proof to IP67 standards. Optional probe extensions of 1m, 2m, and 3m (3.28 ft., 6.56 ft., 9.84 ft.) are available for the 12mm probe. In addition to the 12mm (0.47 in.) diameter probe, this unit can also accept optional 9.0mm (.35 in.) and 5.5mm (.22 in.) camera tipped probes. Adjustable light intensity from built-in LEDs. Flexible-obedient probes retain configured shape to suit various applications.

Includes: Custom Hard Case, Transmitter Handle with 12mm Diameter x 1m Long, Flexible-Obedient Probe 3 Accessory Tools: (45° Mirror, Magnetic Pick-Up, Pick-Up Hook), RCV100 Wireless USB Video Receiver, Interface Cable, Software on Mini-CD Instructional Manual, 3 Year Limited Warranty. P/N 12-02656 .....**$171.95**

HIGH PERFORMANCE VIDEO SYSTEM DCS1600

Portable, hand-held, complete borescope system with monitor, camera and video. Kit Includes: • Charger • Lens module cable 39.4" (1 M) • SD memory card • 30.45 and 60º mirrors • USB to 5-pin mini-B cable • Video cable • Cleaning cloth • Cotton swabs • Instructions • Heavy duty water proof blow mold case P/N 12-02299 .....**$857.00**

WIRELESS VIDEO/AUDIO BORESCOPE SYSTEM PCS1800

A portable, hand-held borescope system with monitor, camera, video and wireless data transmission. Operate the instrument anywhere without the cable. The complete kit includes: Main monitor, 33 ft (1m) camera probe, 33 ft (1m) SD card, 30º 45º and 60º mirrors, instructions and waterproof blow mold carrying case.

Borescope System .....P/N 12-02301 .....**$1,114.00**
Probe Extensions - 3 Meters .....P/N 12-02396 .....**$34.25**
Probe Extensions - 2 Meters .....P/N 12-02397 .....**$25.75**

SOUNDSTIK LEAK DETECTOR

With SoundStik, you hear the problem; it let's you hear at frequencies you can't hear! All moving parts. gases, and liquids pruduce a broad range of sounds because of friction with their surroundings. The SoundStik is designed to listen to a non-audiblc unique range of Ultra Sounds which are extremely useful in the automotive, industrial and service trades. Ultrasound Technology allows smart, cost effective preventative maintenance and quick findings of potential or existing problems in major areas including air/vacuum leaks, electrical noise, friction wear, seal/fit integrity and fluid turbulence.....P/N 12-02711 .....**$399.00**

PIC STIK PICTURE AND VIDEO STORAGE DEVICE

VOscope's new user friendly picture and video storage device allows you to directly download and save from our popular VS 10mm VideoStik series inspection scope. An excellent way to document and provide important and supportive information to your customers. A must-have for mechanics or professionals working in automotive, marine, maintenance, law enforcement, diesel or home inspection trades. .....P/N 12-02710 .....**$165.00**

SEEKER 300 VIDEO BORESCOPE SYSTEMS

The Seeker 300 Video Borescope System offers a large 3.5-inch LCD color monitor and a 5.5mm flexible, configurable camera probe with adjustable LED lighting. Ideal for use in automotive maintenance, electrical repair, plumbing applications, HVAC/R and the visual inspection of otherwise inaccessible areas. This Video Borescope Kit also includes a mirror, magnet and pick-up hook that can be attached to the end of the probe. 3.5" (88.9mm) Color LCD Screen for crystal clear image, superb clarity and viewing effect. 5.5mm or 12mm diameter Camera-tipped Probe is flexible and strong with built-in adjustable LED lighting, and is slim enough to perform automotive engine check-up. Flexible Probe retains configured shape to suit different inspection needs. Probe Length: Standard: 3.28ft. (1m), Optional: up to 16ft (5m). View findings instantaneously

Includes: 3.28ft. (1m) Flexible Probe, Extension Tools: (Mirror, Magnet, Pick-Up Hook), 1 "9V" Battery Blow Mold Case Instruction Manual.

5.5 mm Probe .....P/N 12-02652 .....**$256.95**
12mm Probe .....P/N 12-02297 .....**$169.50**
3 Meter Probe Extension .....P/N 12-02396 .....**$34.25**
2 Meter Probe Extension .....P/N 12-02397 .....**$25.75**

SEEKER 400 VIDEO BORESCOPE SYSTEMS

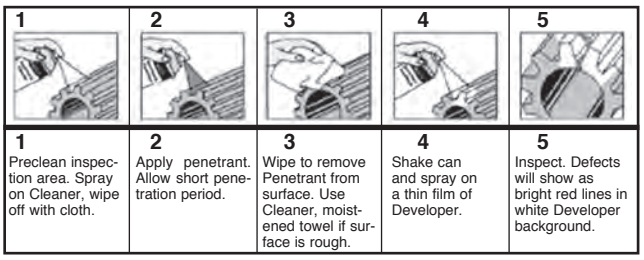
The Seeker 400 Video Borescope System is ideal for use in Plumbing, Construction and Restoration, HVAC/R and any other application requiring the inspection of hard-to-reach or hard-to-see areas. 5.5, 9, or 12mm diameter probe, 1m (3.28 ft.) long, flexible obedient and waterproof to IP67 standards. 3.5 in. (88.9mm) diagonal TFT-LCD Wireless Color Monitor can be detached from the unit for remote viewing up to 32 ft. (10m) away. 4x zoom feature. 180° image flip feature. Both monitor and handle use rechargeable "li-ion" batteries which can be charged at the same time using the included one–into-two charging cable. System comes complete with batteries and charger. Two adjustable LED lights inside the tip of the probe illuminate dark spaces for clear inspection. View results in real-time, record video and capture/save still photos (JPEG), up to 3 hours of video (AVI). NTSC or PAL compatible. USB and video interconnect cables are included. Built-in magnets and stand facilitate hands-free operation. Choice of 5 menu languages: English, French, Spanish, Chinese and Portuguese. Comes with 45º mirror, magnetic pick-up and pick-up hook accessories for probe tip

Includes: Custom Hard Case, Pistol Grip Camera Handle, 9mm Diameter, 1m (3.3 ft.) Long Flexible-Obedient Probe, Detachable, Wireless Monitor, 2GB Micro SD Memory Card, 3 Accessory Tools: (45° Mirror, Magnetic Pick-Up, Pick-Up Hook), USB and Video Interconnect Cables Built-in Magnets, 2 "li-ion" Rechargeable Batteries with AC Adapter/Charger, Instruction Manual, Three Year Limited Warranty.

5.5mm Probe .....P/N 12-02654 .....**$427.95**
9mm Probe .....P/N 12-02653 .....**$288.00**
12mm Probe .....P/N 12-02298 .....**$299.99**
3 Meter Probe Extension .....P/N 12-02396 .....**$34.25**
2 Meter Probe Extension .....P/N 12-02397 .....**$25.75**

TO

MAGNAFLUX NDT (NON-DESTRUCTIVE TESTING) KIT



A quick, easy way to make shop and in-field inspections of landing gear, airframe and components. Highly sensitive Spotcheck dye penetrants which give clear, bright red indications. Locates very fine cracks on the surface of ferrous and non-ferrous components, equipment and structures. Reveals cracks on materials with surface temperatures as high as 350°F. Perfect for testing welds before thorough cooling. Convenient spray cans make application easy and contain no fluorocarbon propellants. Non-flammable. Materials meet applicable specifications for dye penetrant inspections (ASME, ASTM and MIL specs). Considered flammable and hazardous by UPS.

4-CAN SPOT CHECK® TEST KIT - The lowest priced way to check for cracks, leaks and other defects on any metal parts. Kit includes 1 spray can of developer, 2 cans of cleaner & 1 can of dye penetrant in cardboard case.

Magnaflux 4-can kit - SK-416 ..... P/N 09-00391 ..... **$94.50**
Developer ..... P/N SKD-S2 ..... **$18.95**
Replacement Materials: Penetrant ..... P/N SKL-SP **$20.85**
Cleaner/Remover (12oz. Aerosols) ..... P/N SKC-S **$17.90**

SK-816 KIT - The SK-3 kit is larger, comes in a lightweight high-impact plastic carrying case containing 2 cans of penetrant SKL-SP, 4 cans of cleaner/remover SKC-NF, 2 cans of developer SKD-NF, brush, cloth and instructions. P/N 09-01192 ..... **$174.95**

SKC-S CLEANER - This clear, fast-drying solvent can be used for precleaning, post-cleaning and penetrant removal.
P/N 09-01188 ..... **$17.90**

SKL-SP1 PENETRANT - Because of its vivid red color, this solvent removable dye penetrant provides excellent color contrast performance to locate surface cracks in virtually any metal or non-porous ceramic material.
P/N 09-01191 ..... **$20.85**

SKD-S2 DEVELOPER - Made especially for use with SKL-SP penetrant, this developer contains suspended white particles that provide an ideal background for red Spotcheck penetrant indications.
P/N 09-01190 ..... **$18.95**

MET-L-CHEK PENETRANT INSPECTION KITS

Met-L-Chek kits provide a completely portable, job-proven method used throughout the industry to locate cracks, flaws and other defects. These economical & effective kits provide everything needed to make inspections in the shop or field. The penetrant materials are packaged in easy-to-use aerosol spray cans and a can of cleaner included for cleaning parts before inspection. The inspection procedure is easy to learn, accurate and inexpensive. Met-L-Chek can be used on ferrous and non-ferrous materials to find surface defects and 'thru leaks'. Supplied in a rugged metal case with complete instructions. The 4-Can Kit has one aerosol spray of cleaner, penetrant, developer and remover. The 8-Can Kit has 2 cans of each material. Individual replacement cans available.

4-Can Kit ..... P/N 09-03040 ..... **$63.50**
16 oz Kit ..... P/N 09-03052 ..... **$94.75**

AERO-BRITE UNIVERSAL FLUORESCENT LEAK DETECTION

Locates all leaks in petroleum- and synthetic-based aviation fluid systems! Checks an entire system in just minutes! Ideal for use as part of a diagnostic/ preventive maintenance program for commercial and military aircraft fuel and fluid systems! Features: FAST— The quickest way to inspect for leaks in aviation fuel, lubrication and hydraulic systems. SAFE — Specially formulated to accommodate the host fluid. Will not damage the fluid's properties or any of the system's components. VERSATILE — Allows inspection of the entire system under virtually all operating conditions. Ideal for both in-flight and static testing. COST EFFECTIVE — Super-concentrated. Use less per dose! Glows a bright green under UV light.See our website for suggested dilution ratios.

16 oz. ..... P/N 13-07351 ..... **$176.95**
8 oz. ..... P/N 13-07350 ..... **$94.85**
Optimax UV LED Flashlight Kit ..... P/N 13-07347 ..... **$742.85**
Leak Detection Kit ALK-365 ..... P/N 13-07348 ..... **$795.00**
Tritan Board Beam UV Lamp 365 ..... P/N 13-07349 ..... **$1,736.00**
Cobra Borescope 7400 Pixel ..... P/N 13-07352 ..... **$369.00**
Marksman II Ultrasonic Diagnostic Tool Kit ..... P/N 13-11730 ..... **$590.00**

PLEASE VISIT OUR WEBSITE FOR ALL KIT DETAILS LISTED ABOVE.

GARLAND NON-MARRING MALLETS AND HAMMERS

Since 1866, Garland Manufacturing has been supplying America with top-quality products made from the finest water buffalo rawhide. Today, they're the leader in the manufacture of soft-faced mallets and hammers of unsurpassed quality. All Garland products are manufactured in the U.S.A. to ISO 9002 international quality standards. They combine superior craftmanship with the best materials and then field-test their products extensively on a range of surface finishes to meet the requirements of the industries in which they're used. Industries ranging from foundries and electrical manufacturing to jewelry and woodworking. Their mallets and soft-faced hammers are preferred by both craftsmen and production workers.

RAWHIDE AND WEIGHTED RAWHIDE MALLETS

Garland's all-rawhide mallets are made of tough, long-wearing, water buffalo rawhide. They're ideal for use on broad-faced striking surfaces in a broad range of applications.

RAWHIDE MALLETS

Size	Face Dia. (Inches)	Head Length (Inches)	Weight (oz.)	Part No.	Price
0	1"	2"	2	12-00749	**$14.75**
2	1-1/2"	3"	6	12-00750	**$19.85**
4	2"	3-1/2"	11	12-00751	**$29.90**
6	2-3/4"	4-3/4"	24	12-00752	**$55.75**

WEIGHTED RAWHIDE MALLETS

Size	Face Dia. (Inches)	Head Length (Inches)	Weight (oz.)	Part No.	Price
7	1-1/4"	2-1/2"	8	12-00753	**$28.50**
10	2"	3-1/2"	20	12-00754	**$43.00**

RUBBER MALLETS

Garland's rubber mallets are designed for general-purpose applications. All sizes deliver solid, mar-free blows.

Size	Face Dia. (Inches)	Head Length (Inches)	Weight (oz.)	Part No.	Price
1	2-1/4"	3"	17	12-00755	**$29.90**
2	2-1/4"	3-7/8"	19	12-00756	**$32.50**
3	2-1/2"	4-1/2"	32	12-00757	**$39.75**

NYLON MALLET

Nylon mallet works great for shaping metal. Head Length: 3 1/2". Face Diameter: 1 1/2". Hammer Length: 10"
P/N 12-02895 ..... **$8.95**

SPLIT-HEAD HAMMER - NO FACE

The split-head hammer does the work of six different hammers because the face can be easily changed. Available in two sizes. Many materials & surfaces. Die moving or positioning. Assembly. Electric Motor Repair. Propeller Repair. Foundry.

Face Dia.	Head Length	Weight	Part No.	Price
1-3/4"	3-1/4"	2.5 lbs	12-00965	**$34.25**
2-3/4"	4"	5.25 lbs	12-00966	**$52.25**

TO

TUBE BENDERS – CUTTERS – FLARING TOOLS

SPRING TUBE BENDERS

Economical tools for hand-bending of soft aluminum and copper tubing to any shape without collapsing walls. Special spring steel, nickel finished. End belled for quick tube removal. Set of 6 for 1/4", 5/16", 3/8", 7/16", 1/2" and 5/8" O.D. tubing.

P/N 12-00823 .....**$18.75**

LEVER TYPE BENDERS

Each tool bends one size. Open side type slips over tube at any point. Makes smooth short-radius bends up to 180° with minimum effort. No marking, scraping or flattening of tubing. Calibrated to show angle of bend. Wide hook grips tube securely. Suitable for bending annealed copper, aluminum, steel, stainless steel and hard copper tubing of bending temper.

Tubing O. D.	Bender Model No.	Part No.	Bending Radius	Price
1/8"	364-FH-02	12-20002	3/8"	**$69.75**
3/16"	364-FH-03	12-20003	7/16"	**$86.95**
1/4"	364-FHA-04	12-20004	9/16"	**$89.95**
5/16"	364-FHA-05	12-20005	11/16"	**$115.95**
3/8"	364-FHA-06	12-20006	15/16"	**$87.95**
1/2"	364-FHA-08	12-20008	1-1/2"	**$84.95**
5/8"	364-FHA-10	12-20010	2-1/4""	**$217.95**
3/4"	364-FHA-12	12-20012	3"	**$326.95**

WIDE RANGE LEVER TYPE BENDERS

Tool quickly adapts to all sizes in its range by changing forming wheel and block. Long handles re-position during bend for best leverage. Calibrations show precise bend angle. Benders for 3/8" through 3/4" O.D. tubes are as illustrated. Benders for 1/4" and 5/16" O.D. tube in #350-FHA kit are one piece type. Kits furnished in steel tool box.

Model 350-FHA Kit- For 1/4",5/16",3/8",1/2",5/8"& 3/4" Tube..... P/N 12-20100 .**$497.50**

Model 360-FHA Kit- For 3/8",1/2",5/8"& 3/4"Tube. P/N 12-20200 .**$654.95**

TRIPLE HEADER TUBE BENDER

For bending annealed copper, aluminum, brass, steel and stainless steel tubing. Multi-tube design does the work of three conventional lever type benders. Calibrated markings for making accurate left-hand, right-hand and offset bends. (for 1/8", 3/16", 1/4" O.D.)

P/N 12-01577 .....**$23.85**

IMP® TRIPLE HEADER TUBE BENDER

Calibrated markings for making accurate left-handed, right-handed and offset bends. 90° start requires less effort-making bending fast and easy. For 1/4", 5/16", & 3/8" (6 & 8 mm) O.D. tubing. 15/16" radius to center of tube.(for 1/4",5/16",3/8" OD)

P/N 12-01578 .....**$49.50**

BRAIDED STAINLESS STEEL HOSE CUTTER

The AN braided stainless steel hose cutter makes quick work of cutting hoses to length. It features long handles for better leverage and a rubber no-slip grip. It can cut any braided stainless steel line up to size 12 AN. .....P/N 12-02574 .....**$53.50**

SOFT PIPE/TUBING CUTTER

This economical tool will cut soft pipe and tubing up to 1-1/4" outside diameter. The blade is teflon-coated and reverses for double the useful life of the blades. .....P/N 12-20020 .....**$14.25 ea.**

Replacement Blades.....P/N 12-20025 .....**$5.85 ea.**

PLASTIC TUBE SHEAR

Seal Plastics lightweight tubing shear only 3" overall in length, easily cuts all thermoplastic tubing and other types of non-wire reinforced hose....P/N 12-02580 .....**$10.65**

Pkg' of 5 blades.....P/n 12-02579.....**$4.85**

EZ-BEADER TUBING BEADERS

Designed to replace the original Parker beading tools. Compact design. Capable of tubing wall thickness from .035 to .065 thick

Size	Description	Part No.	Price
3/8"	EZ-BEADER TP885A	12-00354	**$25.90**
1/2"	EZ-BEADER TP885B	12-00355	**$31.50**
5/8"	EZ-BEADER TP885C	12-00356	**$36.75**
3/4"	EZ-BEADER TP885D	12-00357	**$41.25**
1"	EZ-BEADER TP885F	12-00358	**$58.90**
1-1/4"	EZ-BEADER TP885G	12-00359	**$82.50**
1-1/2"	EZ-BEADER TP885H	12-00360	**$73.85**
1-3/4"	EZ-BEADER TP885I	12-00361	**$73.85**
2"	EZ-BEADER TP885J	12-00362	**$72.50**
Set of all 9	EZ-BEADER Tubing Beader	12-00363	**$369.95**

HI-DUTY TUBE CUTTER

For 1/8" to 1" O.D. metal tubing. Makes clean, right-angle cuts with no burrs or chips to clog tubing. Roller type with flare cut-off groove, fold-away reamer and spare cutting wheel. Wt. 6-1/2 oz.

Hi-Duty Tube Cutter P/N 12-00382.....**$26.85**
Replacement Cutter Wheel P/N 75015.....**$8.75**
Replacement Reamer Blade P/N 79318-01.....**$10.95**

"IMP" TUBE CUTTER

Designed for use in tight quarters where other cutters won't fit. For 1/8" to 5/8" O.D. tubing. Requires only 13/16" swing radius. Perfect for instrument panels, control cabinets, machine tools, etc, Size: 111/16"x 1-5/16" x 7/8". Wt. 2-1/2 oz.

P/N 12-01277.....**$23.75**

JUNIOR TUBE CUTTER

Exceptionally handy in close quarters - only 3-1/2" overall length. Makes clean, right-angle cuts without flattening tube. Cuts 1/8" to 3/4" O.D. tubing. Enclosed feed mechanism. Wt. 5 oz.

Junior Cutter P/N 12-01576.....**$14.95**
Replacement Cutter Wheel P/N 32633.....**$7.25**

MINI TUBING CUTTER

The mini tube cutter's compact design is ideal for tight spots under sinks and behind appliances. It cuts copper, brass and aluminum tubing from 1/8" to 1 1/8". Extra cutter stores inside knob. Includes retractable deburring blade. P/N 15-07093.....**$7.85**

WEATHERHEAD

T-1295 Heavy Duty Segmented Flaring Tool (37°)

Tool Flares: 1/8", 3/16", 1/4", 5/16", 3/8", and 1/2", O.D. tubing. Forms 37° flares in annealed stainless steel (MIL-T-6845 or AMS-5566), cold drawn stainless steel, and annealed copper, brass, steel or aluminum. Bar has vice extension. Wt.: 3lbs. P/N 12-01166.....**$744.00**

HI-DUTY FLARING TOOL 37°

Hard chrome-finished cone makes exceptionally smooth, high strength flares with a radius at base of flare instead of the sharp angle formed by ordinary tools. Slip-on yoke permits use in tight quarters. For tubing sizes: 3/16", 1/4", 5/16", 3/8", 1/2" and 5/8" O.D. Wt. 1 lb. 11 oz.

Not for use on Stainless Steel Tubing. P/N 12-01581.....**$73.50**

ROL-AIR FLARING TOOL 37°

Faceted, hard chrome finished cone rolls out perfect flares above die block, then automatically burnishes flare face. Slip-on yoke permits use in tight quarters. Heat treated dies grip tubing without scoring. Flares and burnishes: 3/16", 1/4", 5/16", 3/8", 1/2" and 5/8" O.D. tubing. Wt. 1-1/2 lbs. Works on some Stainless Steel Tubing but not warranted for Stainless. P/N 12-01582.....**$93.75**

ROLO-FLAIR FLARING TOOL 37°

Operates on same principle as Imperial #507-FA but flares 1/8" (primer line) and 3/4" tubing as well. Size: 4"W x 4"D x 8"H. Wt. 2-1/2 lbs. Excellent tool for bench - not for close-quarter work. Not for use on Stainless Steel Tubing.

P/N 12-01575.....**$88.65**

DELUXE 37° FLARING TOOL

Forms 37° flare to AN standards in steel, stainless steel (including MIL-T 6845), titanium, an other metal tubing. Three rollers in flaring cone roll out 37° flare above die block. Extension on yoke for clamping in vise. Furnished in plastic kit. Wt. 2-1/2 lb. P/N 12-01579.....**$298.50**

TO

37° FLARING BLOCK FOR 1/8" TUBING

This tool is designed to flare 1/8" tubing for primer lines. Leaves no ridges or marks on tubing, complying with aircraft requirements. Furnished with 37° flaring punch. The slip-on yokes of most flaring tools also fit this block.

P/N 17010 ..... **$24.80**

37° DOUBLE LAP FLARING TOOL

This U.S. made 37° Double Lap Flaring Tool makes flares to AN standards in soft copper and aluminum tubing for 3/16" 1/2" O.D. Also makes single 37° S.A.E. standard and oversize flares. Adapters revolve for quick size change and act as positioning gauge for tube. For portable use or can be vise mounted. Sliding handle gives maximum leverage. Wt. 4 lbs.

P/N 12-00205 ..... **$595.00**

37° DOUBLE LAP FLARING TOOL KIT

Our 37° Double Lap Flaring Tool Kit includes the double lap flaring tool above which forms 37° double lap flares to AN10078 in soft copper and aluminum tubing (wall thick- ness to .040"). Flares tubing sizes 3/16", 5/16", 3/8", and 1/2" O.D. Also includes a tubing cutter, an inner-outer reamer, and a plastic carrying case. A quality tool kit which is made in the U.S.A. P/N 12-00210 ..... **$595.00**

FLARING TOOL KIT 402FA

Forms 37° flares aircraft grade stainless steel (MIL-T-6845), titanium, and other metal tubing, both soft and hard. Positive stop gauge assures correct size of flare. The three rollers in the flaring cone roll out 37° flares above the die block while burnishing the flare face to a smooth finish. A built in extension on the yoke can be clamped in a vise for extra support. Satin chrome and black nickel finish. Complete kit includes flaring tool and reaming yoke.

P/N 12-02423 ..... **$398.00**

BRAKE LINING & GENERAL RIVET SETS

Standard Model (403)- Designed especially to economically reline brakes, this riveting set is a handy tool for many other jobs where rivets are used to fasten leather, canvas, plastic and metal parts. ..... P/N 824..... **$14.50**
Brake lining Rivets... P/N 06-02300 .. **$0.03ea**
Deluxe Model (404) - Our deluxe model brake relining tool makes it virtually impossible to botch a brake relining job. The threaded screw action of the rivet insertion tool insures a perfect roll on brake rivets every time without damaging the liner.

Standard Model (Not Threaded) ..... P/N 824 ..... **$14.50**
Deluxe Model (Threaded)..... P/N 12-20810 ..... **$19.50**
Punch Non-Threaded / Brake Relining for model 403
P/N 12-01171 ..... **$3.75**
Punch Threaded / Brake Relining for model 403
P/N 12-02575 ..... **$5.95**
Anvil Punch / Brake Relining for model 404
P/N 12-01170 ..... **$3.75**
Brake Lining Rivet 4X6..... P/N 06-02300 ..... **$0.03**
BR1007 Rivet Set for Reline ..... P/N 12-01173 ..... **$6.75**

PARKER TYPE AIRCRAFT TUBE BEADING TOOL

The Parker Beading Tool has been the number one choice of aircraft mechanics for making clamping beads in metal tubes. To this day, no other tool even comes close to matching its quality. So by special arrangement, the manufacturer tooled up to recreate this classic tool in every detail. In the process they have added a few enhancements of their own, such as ground, hardened, and polished surfaces for mar-free beads in aluminum, copper, brass, and mild steel tubes ranging from 1/4" to 1" diameter. Meets MILSPEC MS33660D and SAE AS5131 standards. P/N 12-01049..... **$393.00**

IMPERIAL 470-FH TRIPLE HEAD 180° TUBING BENDER

The 470-FH Triple Head 180° Tube Bender bends 4 diameters of tubing with just one tool! It handles soft copper, aluminum and thin-walled steel tubing in 3/16", 1/4", 5/16" & 3/8" diameters. Like the heavy duty 464-FH, it features the patented ROTO-LOK™ two-stage handle that allows east fabrication of bends up to 180°. It also features optimized bending grooves that allow the user to bend the tubing in the smallest radius possible to enable tighter turns and minimize the space taken by the bends. Soft copper - .030-.032" wall. 304 stainless steel - .030-.032" wall. P/N 12-01042 ..... **$34.75**

ATS HAND RIVET SQUEEZER

The newest addition to our ATS Pro Rivet Squeezer Line is built for hard use, but we must admit it's also one of the best looking squeezers we've ever seen. It's an all stainless steel design that's constructed to last a lifetime. The unique unibody styling is drop forged for extra strengh and CNC machined to tight tolerances. The yoke (also stainless steel) is engineered to be half the weight of other yokes, yet retain full strengh. Finally, the whole thing is beautifully finished in a brush satin look and highly polished surfaces. Has a very solid feel, and professional look that will complement anyone's toobox. Squeezes up to 5/32" aluminum (1/8" seel) rivets. Works with any rivet sets, or diple dies having a 3/16" (.187") shank. Adjustable ram does not need shims. Lifetime warranty.
Features:•1.5" Yoke •Drop forged from Stainless Steel for unmatched strength and durability •Clasic bushed stainless steel finish. •Adjustable ram does not need shims •Squeezes aluminum rivets up to 5/32" and steel rivets up to 1/8" •Comfort grip rubber handles •4lbs shipping weight. P/N 12-01620 ..... **$104.75**

ATS DELUXE HAND/BENCH RIVET SQUEEZER KIT

The Rivet Squeezer Kit is designed to take on any riveting task. It contains the new ATS Heavy Duty Rivet Squeezer, a Bench Mount Kit, plus and extra 1-1/2" yoke head to reach into tight areas. You'll also get a complete set of squeezers and dimple dies in a convenient holder. Ats Pro Lifetime warranty. 14 lbs (6.5Kg) shipping weight. P/N 12-02406 ..... **$340.95**

PROFESSIONAL RIVETING KIT

This Professional Riveting Kit has all the tools you need to drive rivets like a pro... It contains the best-selling ATS Pro Series 3X Rivet Gun, a selection 4 of our most popular Bucking Bars (141, 142, 148, and 149), plus a complete assortment of Rivet Sets to install Universal Head (AN470) or Flush (AN426) rivets in sizes 3/32" to 3/16".
And it all comes to you in a stylish molded case to keep things neatly organized. This is the prefect "field" kit to take with you anywhere -- it has the riveting tools you need conveniently laid out in one handy ready-to-go package. The Professional Riveting Kit is a part of our ATS-PRO Series, so you can rest assured that your tool investment will be well protected by an Unconditional 30 Day Money Back Guarantee, and industry-leading ATS Pro Lifetime Warranty. 19lbs shipping weight.

P/N 12-01698 ..... **$257.95**

ATS PNEUMATIC ''C'' COMPRESSION RIVETER KIT

ATS's newest compression riveting kit features a USA made unit that is completely interchangeable with Chicago Pneumatic 0214 series squeezers.
The complete package includes: one 1 1/2" "C" Squeezer Yoke, one Longeron Yoke and a complete 17 pc. Rivet Squeezer/Dimple Die Mix. 1/8" maximum rivet capacity. Accepts all squeezer sets with .187 shank. Requires 80-90 psi at 3 cfm. 13 lbs (6Kg) shipping weight. P/N 12-03146 ..... **$599.95**

TO

RIVET SQUEEZERS – RIVET SETS

HANDI-CLAMPS

Handi-Clamps are a specially designed tool for clamping various types of surfaces, shapes and thicknesses. Ideal for holding light plastics, wood, sheet metal and other materials temporarily. The clamping cap is 0-5/16"

TP640HC - 1" Jaw Depth
P/N 12-02305 ..... **$2.20**

TP641HC - 1-1/2" Jaw Depth
P/N 12-02306 ..... **$2.30**

SPRING TENSION CLAMPS

Spring tension clamps can be applied in a fraction of the time required for ordinary screw clamps. The AT542 clamp, with 2" throat depth, has a Zamak alloy yoke and a steel spring which provides a 70 lb. clamping pressure. Designed for use with sheet holder pliers. P/N AT542..... **$6.75/ea.**

SIDE GRIP CLAMPS

Side-Grip clamps are designed to clamp at the edge of the work area. Ideal for holding work pieces of all types, particularly during bonding, sealing or gluing operations. Plier-operated. Spring loaded. Constant clamping force. Color-coded for easy identification. Use TP74 or US902 installation tool. Made in the USA

Part No.	Clamping CAP (GAP)	EFF. Body Depth (Reach)	Body Length	Price
12-01161	0-1/2"	1/2"	2-3/16"	**$1.85**
12-01143	0-1/2"	1"	2-3/16"	**$2.25**
12-02643	0-3/4"	1"	2-7/16"	**$2.85**

AT-114C3 QUICK-CHANGE RETAINER SPRING

Makes possible the changing of rivet sets without removal of retainer spring. For .402" shank dia. rivet sets. P/N AT-114C3..... **$4.35/ea.**

AT 107A FLUSH RIVET SETS

Large radii at critical points to prevent breakage. Slightly crowned, highly polished face designed for rapid flush riveting where a smooth skin surface is essential. Shank dia. .401".

Part No.	Face Dia.	Length	Price
AT-107A-1	1"	2-3/4"	**$22.45**
AT-107A-3	1-1/4"	3-3/4"	**$24.00**

AT 100A STRAIGHT RIVET SETS

Cup surfaces are highly polished and guaranteed to conform with rivet heads. Carried in stock in AN470 (MS20470) universal-head cup shape. Overall length, 3-1/2", .401" dia. centerless-ground shank.

AT-100A-3-3/32 ..... 3/32" **$6.75**
AT-100A-3-1/8 ..... 1/8" **$7.80**
AT-100A-3-5/32 ..... 5/32" **$7.95**
AT-100A-3-3/16 ..... 3/16" **$8.95**

AT 101A OFFSET RIVET SETS

Same tool as AT100A but has 10° bend 1" back from the cup to allow added clearance. Permits easier riveting where obstructions are encountered.

AT-101A-3-3/32 ..... 3/32" **$6.75**
AT-101A-3-1/8 ..... 1/8" **$8.35**
AT-101A-3-5/32 ..... 5/32" **$8.35**
AT-101A-3-3/16 ..... 3/16" **$12.75**

HAND RIVET SQUEEZER

Designed to squeeze 1/16" - 5/32" rivets and dimple 1/16" - 3/16" in material up to .040" thickness. Takes standard 3/16" shank rivet squeezer sets. With adjustable ram and 2-piece C-yoke of heat treated stainless steel. Throat depth: 1.5". Gap: 1-1/4". Overall length: 14". Best quality squeezer on the market. P/N 12-00300..... **$131.95**

YOKES FOR RIVET SQUEEZER

1-1/4" X 1" Reach ..... P/N 12-00308 .... **$51.75**
1-1/4" X 1-1/2" Reach ..... P/N 12-00309 .... **$51.75**
1-1/4" X 2" Reach ..... P/N 12-00310 .... **$63.75**
2" X 2" Reach..... P/N 12-00315 .... **$77.65**
1-1/4" X 2-1/2" Reach ..... P/N 12-00318 .... **$69.90**
1-1/4" X 3" Reach ..... P/N 12-00320 .... **$77.65**
1-1/4" X 3-1/2" Reach ..... P/N 12-00321 .... **$93.75**
1-1/4" X 4" Reach ..... P/N 12-00322 .... **$99.85**
1-1/4" X 5" Reach ..... P/N 12-00323 .. **$142.95**
1-1/4" X 6" Reach ..... P/N 12-00324 .. **$166.95**

SWIVEL HAND RIVET SQUEEZER

This tool incorporates a 3/8" stroke and 5/8" ram adjustment. The full 360° yoke can be locked in any position in relation to the handles. Uses standard squeezer sets with 3/16" shank diameter. Yoke depth: 1-1/2".

Model AT502AH-D.....P/N 12-00400 ..... **$259.95**

INSTRUCTIONS FOR SELECTING RIVET SETS

To develop maximum power, the riveter must drive the rivet near the end of the riveter's stroke. For maximum power the combined length of the two rivet sets must be of the correct length. Determine the correct length as follows:

WHEN TWO CUPPED RIVET SETS ARE USED – The sum of the two rivet sets "L" dimension should equal the closed height dimension of the yoke minus the total thickness of the material being used.

WHEN TWO FLUSH SETS ARE USED – The sum of the two rivet sets "L" dimension should equal the closed height dimension of the yoke minus the overall length of the rivet after it is driven.

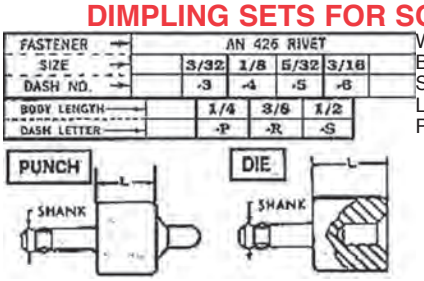
WHEN ONE CUPPED SET & ONE FLUSH SET ARE USED – The sum of the two rivet sets "L" dimension should equal the closed height dimension of the yoke minus the total thickness of the material being riveted and the height of the finished rivet head driven by the flush set. If necessary, select rivet sets a little short and shim to proper length with hardened shims listed in the table. The closed height dimension of the yoke referred to above is the opening available when jaws of plunger are in extreme closed or forward position with both rivet sets in place.

RIVET SETS FOR SQUEEZER

Assorted Squeezer Set. 5-piece, consisting of rivet sets for 3/32,1/8 and 5/32" AN470 rivets, and one flat set. Shank dia. 3/16".

P/N 26-5 ..... **$18.95**

DIMPLING SETS FOR SQUEEZER



When ordering, specify: Basic Part No. - Rivet Size No. - Body Length, Letter. PN PER SET 1 PUNCH 1 DIE

Part No.	Price
207/206-3-P	**$35.25**
207/206-3-R	**$33.00**
207/206-3-S	**$32.50**
207/206-4-P	**$31.85**

Part No.	Price
207/206-4-R	**$32.75**
207/206-4-S	**$32.25**
207/206-5-P	**$31.00**
207/206-5-R	**$33.25**

Part No.	Price
207/206-5-S	**$27.90**
207/206-6-P	**$32.50**
207/206-6-R	**$32.75**
207/206-6-S	**$31.85**

INDIVIDUAL CUPPED SQUEEZER SETS

Rivet Diameter	Body Length ("L" Dim.)	Part Number	Price
3/32"	3/8	AT108AR-3/32	**$7.00**
3/32"	1/4	12-01661	**$6.95**
3/32"	1/8	AT108AN-3/32	**$4.95**
3/32"	1/2	AT108S-3/32	**$6.95**
1/8"	1/8	AT108AN-1/8	**$5.65**
1/8"	1/4	12-01660	**$6.75**
1/8"	1/2	AT108S-1/8	**$6.90**
1/8"	3/8	AT108AR-1/8	**$7.00**
3/16"	1/4	12-02680	**$7.75**
3/16"	1/2	AT108S-3/16	**$6.95**
3/16"	3/8	AT108AR-3/16	**$6.95**
3/16"	1/8	AT108AN-3/16	**$7.70**
5/32"	1/4	12-01662	**$6.95**
5/32"	3/8	AT108AR-5/32	**$6.95**
5/32"	1/8	AT108AN-5/32	**$6.95**
5/32"	1/2	AT108S-5/32	**$6.95**

FLUSH RIVET SETS

Body Length ("L" Dim.)	Part No.	Price
1/8"	AT109AN	**$3.85**
1/4"	AT109AP	**$4.65**
3/8"	AT109AR	**$3.85**
1/2"	AT109AS	**$4.15**

TO

COUNTERSINK CUTTERS

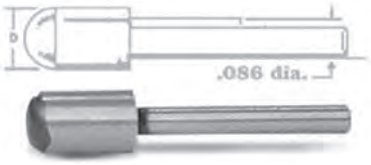
MICROSTOP COUNTERSINK CUTTER KIT AT590CSK

This kit provides countersinking versatility with nine different 1/2" diameter cutters, six of the most commonly used foot pieces, and a high-speed bearing-constructed microstop. The microstop controls cutting depth in .001 increments, from 0 to 5/16". Cutters-ground on-centers to ensure concentricity-are 100°, with pilot diameters #40, #30, #21, 3/32", 1/8", 3/16", and 1/4".

P/N 12-00824.....**$228.50**

100° AT455 COUNTERSINK CUTTER

Designed for operating in angle drills with 1/4-28 threads and in the AT441SLS Micro Stop Countersink. Has 1/4-28 threaded shank. Cutter angle 100°. AT455D-4 has 7/16" dia. cutter head. Use with AT484 pilots. P/N AT455D-4 ....**$13.85**



AT484 PILOTS

AT484 replaceable pilots have a .086" dia. shank with a flat to accommodate the set screw of the AT455 cutter. An undercut permits the head to seat on the cutter angle. Order by P/N.....**$10.50 ea.**

Part No.	Head Dia. "D"	Part No.	Head Dia. "D"
AT484-2	#40	AT484-56	3/32
AT484-12	#30	AT484-57	1/8
AT484-21	#21	AT484-59	5/32
AT484-31	#11	AT484-61	3/16
AT484-32	#10	AT484-63	7/32

AT441 HSS MICROSTOP COUNTERSINK

AT441 HS Micro Stop Countersink, similar to the AT442SLS unit, except with 1/4-28 female threaded nose to accommodate AT455 cutter.

P/N 12-01591.....**$26.85**

AT 442 HS MICRO STOP COUNTERSINK

A precision tool for production countersinking. Ball thrust bearing for absolute depth control. Adjusts in .001" increments, with positive adjustment lock. Skirt accepts cutters up to 5/8" dia. Has 1/4-28 male threaded shaft for use with AT418 cutters. Can be assembled and disassembled without special tools. Split shaft and taper locks pilot in place when cutter is tightened. Order cutters and pilots separately. P/N AT442-SLS **$96.75**

MICRO-STOP COUNTERSINK CAGES AND NYLONFOOT PIECE

2 Models available-one with NEEDLE bearing and one with BRONZE bushings. .001" increment depth adjustment. Positive adjustment lock. 1/4" dia. shank. 9/32" shaft travel. 9/16" cutter capacity. For 1/4-28 threaded cutters. Comes with "NO-MAR" foot piece. Rated at 3,000 RPM. Made in USA.

With Bronze Bushings
P/N 12-01412 .....**$36.25**

With Needle Bearings
P/N 12-00940 .....**$36.75**

BRAKE RIVET SET

Use these sets with your hand squeezer. Will set brake rivets eliminating the possibility of cracking your brake pads.

P/N 12-00550.....**$39.90**

DIE GRINDER MANDREL

Die Grinder Arbor (Mandrel). Holds your cutoff wheels. It has a 1/4" shank for use in most drills and die grinders. Can accomadate either 1/4" or 3/8" cut-off wheel through hole sizes.

P/N 12-02924.....**$4.95**

AT 409 SERIES STRAIGHT SHANK COUNTERSINK WITH INTERCHANGEABLE CUTTERS AND PILOTS

Assembly, consists of AT418E (1/2") cutter, AT416 pilot and AT409-1, 1/4" straight-shank. Has a collet-type shaft to securely hold the replaceable pilot.

When ordering specify: Part number of cutter and pilot dia.

Assembly Example: AT409 with 100° cutter A418E & 1/8 pilot. (AT416-57) ..... Adapter only.....P/N AT409-1 .....**$11.25**

AT418 STOP COUNTERSINK CUTTERS

Three-straight flute replaceable pilot cutters with female thread. These cutters are designed with extra deep flute to permit numerous resharpenings and radial clearance to assure fast smooth cutting.

For Replaceable Pilots Refer to AT416 Series. Used With AT418

Part No.	Cutter Dia.	Thread Size	Pilot Hole	Price
AT418A-4	1/4"	1/4 - 28	.086	**$28.65**
AT418D-4	7/16"	1/4 - 28	.086	**$34.80**
AT418E-4	1/2"	1/4 - 28	.086	**$36.25**

120° AT418 COUNTERSINK CUTTER

Same type cutter as described above except with 120° Cutter Angle. 7/16" Cutter Diameter. P/N AT418D-7 .....**$34.75**

AT416 PILOTS

Fit AT418 cutters. Undercut permits head to seat on cutter angle. Order by Part No. in table below.

Order by part Number. ..... **$8.50 Ea.**

Part No.	Head Dia. "D"	Part No.	Head Dia. "D"
AT416-2	#40	AT416-56	3/32
AT416-12	#30	AT416-57	1/8
AT416-21	#21	AT416-59	5/32
AT416-31	#11	AT416-61	3/16
AT416-32	#10	AT416-63	7/32
		AT416-65	1/4

COUNTERSINK SETS

Countersinks made of high-speed steel, 3-fluted and 14° - 28 threaded. Set includes #40, #30, #21, #10, and 1/4".

Countersink 82 degree 5 pc. set..... P/N 12-02883 .....**$42.95**
Countersink 120 degree 5 pc. set..... P/N 12-02884 .....**$42.95**

PANEL DIMPLING TOOL (C-SPEC 2700)

This panel dimpling tool is used for dimpling thin sheet metal panels to accept the 2700 Series C-Spec Fasteners. It can also be used to dimple panels to accept FJ4 Series Flush-Head Z-Spec Fasteners. This tool is made from premium tool steel and is bright Zinc plated. ..... P/N 12-02855 .....**$23.65**

PANEL DIMPLING TOOL (C-SPEC 4000)

This panel dimpling tool is used for dimpling thin sheet metal panels to accept the 4000 Series Flush-Head C-Spec Grommets. This tool is made from premium tool steel and is bright Zinc plated.

P/N 12-02856 .....**$23.65**

TO

HAND SEAMER

Handy tools for comparatively light work. Wide, deep jaws machined for smooth parallel fit. Form precise folds and seams. Strong, lasting drop-forged steel construction. No. 44 has plain 3 1/2" wide blades. No. 44r is similar with a radius to prevent tearing of aluminum and other light metals. No. 793 has a 3 1/2" wide blade with adjustable depth gauge. P/N 12-00620 .....**$54.85**

HAND SEAMER TP44

• Wide, deep jaws machined for smooth parallel fit • Forms precise folds and seams • 1" deep x 3-1/2" wide throat P/N 44R.....**$21.75**

ROPER-WHITNEY METAL CRIMPER

Handy crimping tool to disperse excess metal. Depth of throat 1-1/8". Overall length 9". Wt. 1 lb. P/N 111 .....**$79.95**

ROPER-WHITNEY NOTCHER

Designed for fast, accurate 32° notch in sheet metal. Hook design of jaws permits notching to exact desired depth without slippage. Spring-return jaws. Capacity 20 ga. Wt. 1 lb.
P/N 141 .....**$86.75**

FLUTING PLIERS

These aircraft-type fluting pliers are a drop-forged quality tool. Non-marring working surfaces of jaws specifically designed for use on aircraft components. Comfort grip handles.
P/N 12-00500 .....**$15.75**

HOLE FLANGING TOOL

A real time saver for flanging lightening holes. Non-marring. Easy to use. Nylon rollers and ball bearings assure long life. P/N 12-00600.....**$18.65**

MIGHTY ROD SHEET METAL BENDER

Designed to bend solid round, square and flat alloys into nearly any shape and angle. FEATURES: • Works on solid materials up to 3/8" diameter. • Coils and bends wires of many sizes. • Includes dies for 1/2", 3/4", 1", 1 1/4" & 1-1/2" diameter bends. • Constructed of 3" x 3" aluminum base 1" thick with a 12" handle 7/8" in diameter. • Made in the USA. • 1 year Replacement Warranty.
P/N 12-00934 .....**$31.75**

JUMBO ROD SHEET METAL BENDER

Constructed of 4" x 6" aluminum base 1" thick with a 16" handle 7/8" diameter. Bends solid round, square and flat iron. ***FEATURES:*** •Works on solid materials of up to 3/8" round and square (1/2" wide flat). • Coils and bends wire of many sizes. • Bends metal to any shape and degree of angle. • Include dies for 3/8", 3/4", 2", 3" & 4" diameter bends. • Installs on any vise. • Ideal for hobbyists, prototype shops and do-it-yourselfers. • Made in the USA. P/N 12-00935 .....**$54.75**

MAGNUM BENDER

For many homebuilders, the production of high quality aircraft metalwork can be a daunting prospect. There can be hundreds of intricate fittings to produce and many will require accurate bending. Magnum Bender has a BIG capacity and is capable of bending 1/8" thick x 6" wide 4130N. Magnum bender uses sets of interchangeable bending bars each with two different radii to produce high quality bends, up to, and including 90 degrees. Bending bars are hardeneded and polished and allow for material 'spring back'. The Magnum Bender is available as a metric version, with 3 bending bars offering 1,2,3,4,5 and 6mm radii. Each machine is supplied with two pairs of operating levers, 1 ft. long and 2 ft. long.
Metric.....P/N 12-01551 .....**$1,065.00**

ROPER-WHITNEY METAL PUNCH

#5 JR. HAND PUNCH – with one ton punching power. Punches 1/4" hole through 16 Ga. mild steel. Throat clearance 1-3/4". Complete set in metal box with 3/32, 1/8, 5/32, 3/16, 7/32, 1/4 and 9/32" punches & dies. Wt. 4-1/4 lbs. P/N 12-01600 .....**$89.90**

BENCH MOUNT BASE – for stationary use. Base swivels to any position. Punch is held by L-shaped clamp rod through a 7/16" or larger hole in bench.
P/N 12-01700 .....**$34.75**

STRAIGHT PUNCH & DIE SETS – for No. 5 Jr. punch in the seven sizes shown below.

3/32"	#12-01800	7/32"	#12-02200
1/8"	#12-01900	1/4"	#12-02300
5/32"	#12-02000	9/32"	#12-02400
3/16"	#12-02100	Each Size	**$16.85/set**

COMBINATION PUNCH & DIMPLING DIE SETS – For #5 Jr. punch. Punch and dimple in one operation. 3/32, 1/8 or 5/32" 100° punch & dimpling die sets.
1/8" .....#12-02500 .....**$71.65**
3/32" .....#12-02600 .....**$79.25**
5/32" .....#12-02700 .....**$61.25**

ECONOMY MODEL BENDING BRAKE

For bending and forming. Makes clean, smooth bends and forms up to 90° in metals. 18" & 30" handle up to 16GA aluminum. 40" handles is up to 20GA sheet metal, 18GA aluminum. All include brake bars. Clamps not included. Made in USA.
Up to 18" width stock..... P/N 12-02800 .....**$39.75**
Up to 30" width stock..... P/N 12-02810 .....**$99.50**

HEAVY DUTY BENCH BRAKE

This small, compact brake is excellent for all tough fabrication and repair jobs. The radiused dies make it possible to form those difficult materials such as 2024T3, 4130, and stainless without fear of cracks. Features solid steel bar construction, heavy duty clevis hinges, and portable bench mounting. Includes 2 sets of assorted width reversible dies with 1/16", 1/18", and 3/16" radii, plus complete instructions. Ideal for machine shops, aircraft, race car, boat builders, avionics installers, & auto repair shops. P/N 12-02850 .....**$1,398.80**

ORIGINAL LANCASTER PORTO-METAL FORMER

The Porto-Metal Former makes the specialty angle needed in minutes. Can be used on the work bench or in a vise to make inside angles, outside angles, straight bends - even circles, to a radius as small as 3". Jaws are made of hardened alloy steel. Works 18 gauge soft steel, 20 gauge stainless, 16 gauge aluminum up to 2" in width. 45 to 1 leverage for powerful press. Special malleable iron body will not break as we have found with cheaper imitations. Order #LSH-71 metal shrinker for inside angles. Order #LST-82 stretcher for outside angles. Wt. 12 lbs. each.
#LSH-71 Shrinker.....P/N 12-19800 .....**$172.95**
#LST-82 Stretcher.....P/N 12-19900 .....**$174.65**
Combination Shrinker/Stretcher Tool.....P/N 12-02950 .....**$239.95**

Either unit can be converted into its opposite by ordering complete conversion kit, includes jaws, blocks & wire.

TO

CHERRY RIVET TOOLS

HYDRO-SHIFT CHERRYLOCK® RIVETER

Specifically for the installation of all CherryLOCK® Rivets. Recommended primarily for 1/4" diameter CherryLOCK® rivets. It can be used to install all diameters and lengths as indicated on the tool capacity charts. Low recoil, low noise and a comfortable fit in the operator's hand. It can be operated in any posi-tion with one hand. The H681 Series pulling heads fit directly on this tool to install both bulbed and standard NAS type 2000 Series CherryLOCK® Rivets. With the proper adapters and pulling heads, this tool can install other types of rivets.

P/N 12-02983.....**$10,995.00**

LOCKBOLT POWER RIVETER G84

For high speed, reliable installation of the most popular sizes of aircraft Lockbolts. Incorporates a bayonet attachment for quick change of pulling heads. This tool can also be used to install blind bolts and blind rivets. A comfortable grip for one handed operation in any position. Compatible with Huck 352 & 230 riveter pulling heads. P/N 12-03011.....**$1,692.00**

LOCKBOLT POWER RIVETER TOOL KIT G84LBK

Installs: 5/32", 3/16" & 1/4" NAS Style. LockBolt **Includes**: G84 LockBolt Power Riveter - Stroke: 9/16", Pulling Force: 5, 750 lbs (2,608 kgs), Weight: 7.7 lbs (3.5 kgs). H513-08-35 Pulling Head. H513S-05-20 Pulling Head Cherry 5/32" D LockBolt. H513S-06-20 Pulling Head MaxiBolt 3/16" LockBolt. P1395 Molded Carrying Case. 269C5 Grip Gauge LockBolt. 670A20 Stem Catcher Bag. 700A77 Bleeder Bottle. All Necessary Manuals.

P/N 12-03013.....**$4,400.00**

CHERRY RIVETER SERVICE KIT G84KS

All the seals, 'O'-rings, gaskets and hardware required for routine maintenance of your Cherry blind riveters. A must for any in-house repair facility. For Tool G84.

P/N 12-03012.....**$135.60**

LIGHTWEIGHT LOCKBOLT RIVETER TOOL KIT G83AKT

Installs: 5/32" & 3/16" MS Blind Bolt & LockBOLT, 1/8", 5/32" & 3/16" Cherry MAX **Includes**: G83 Lightweight LockBolt Hand Riveter - Stroke: 7/16", Pulling Force: 3, 750 lbs (1, 701 kgs), Weight: 4.95 lbs (2.3 kgs). H513S-05-20 Pulling Head Cherry 5/32" D LockBolt. H513S-06-20 Pulling Head 3/16" LockBolt. H701B-456 Pulling Head Straight 3/4" x 1 3/4". H753A-4562 CherryMAX Pulling Heads RT Angle 2 1/4" x 5 7/16" x 3/8". H781-456 Cherry Pulling Head Offet 1/8"-5/32"-3/16". H83B-5MB Pulling Head MaxiBolt 5/32"D. H83B-6MB Pulling Head MaxiBolt 3/16" D G83/G84. P1393 Plastic Box. 269B12 Maxibolt Gauge. 269C3 CherryMAX Grip Gauge. 269C5 Grip Gauge LockBolt. 670A20 Stem Catcher Bag. 700A77 Bleeder Bottle. 744-300 Adapter. All Necessary Manuals

P/N 12-03008.....**$5,075.00**

LIGHTWEIGHT LOCKBOLT RIVETER TOOL KIT G83BKT

Installs: 5/32" & 3/16" MS Blind Bolt & NAS Style LockBolt Includes: G83 Lightweight LockBolt Hand Riveter - Stroke: 7/16", Pulling Force: 3, 750 lbs (1, 701 kgs), Weight: 4.95 lbs (2.3 kgs). H513S-05-20 Pulling Head Cherry 5/32" D LockBolt. H513S-06-20 Pulling Head 3/16" LockBolt. H83B-5MB Pulling Head MaxiBolt 5/32"D. H83B-6MB Pulling Head MaxiBolt 3/16" D G83/G84. P1393 Plastic Box. 269B12 Maxibolt Gauge. 269C5 Grip Gauge LockBolt. 670A20 Stem Catcher Bag. 700A77 Bleeder Bottle. All Necessary Manuals. P/N 12-03009.....**$5,187.50**

CHERRY RIVETER SERVICE KIT G83KS

All the seals, 'O'-rings, gaskets and hardware required for routine maintenance of your Cherry blind riveters. A must for any in-house repair facility. For Tool G83.

P/N 12-03010.....**$203.05**

LIGHTWEIGHT LOCKBOLT RIVETER G83

Designed for high speed, reliable installation of the most popular sizes of aircraft Lockbolts. By bending the rubber pin deflector sideways, 1-1/2" additional clearance can be obtained. This tool can also be used to install blind bolts and blind rivets. A comfortable grip for one handed operation in any position. Compatible with Huck 352 & 230 riveter pulling heads. Stroke: 7/16". Pulling Force: 3, 750 lbs (1, 701 kgs). Weight: 4.95 lbs (2.3 kgs).

P/N 12-03007.....**$1,383.00**

CHERRY RIVETER SERVICE KIT G800KS

All the seals, 'O'-rings, gaskets and hardware required for routine maintenance of your Cherry blind riveters. A must for any in-house repair facility. For Tool G800.

P/N 12-03006.....**$143.25**

CHERRYMAX HYDRAULIC HAND RIVETER G800

The G800 is an ergonomic, lightweight hand powered riveter capable of installing a wide variety of blind fasteners. The all metal design makes this compact and robust tool ideal for use in rugged shop environments or field repair. Exceptional power with low hand effort for increased productivity. Mounting system (same as G704B) compatible with popular pulling heads including H782, H781-456& H753A-456. Leak-proof design with advanced seals & built-in redundancies. Ergo design with internal shock absorber & cushioned handle. Adjustable lever easily accommodates different hand sizes. Stroke: 3/4". Pulling Force: Up to 6000 lbs. Weight: 1.7 lbs (0.8 kgs).

P/N 12-03004 .....**$674.00**

CHERRYMAX HYDRAULIC HAND RIVETER KIT G800CMR

G800CRM CherryMAX Hydraulic Hand Riveter Kit Includes: G800 CherryMAX Hydraulic Hand Riveter - Stroke 3/4", Pulling Force up to 6000 lbs, Weight 1.7 lbs. H781-456 Pulling Heads. H753A-456 Pulling Heads. 269C5 Grip Selector Gauge. 269B12 Grip Selector Gauge. Molded Plastic Case. All Necessary Manuals (except -6 all aluminum)

P/N 12-03005 .....**$2,642.00**

CHERRY RIVETER SERVICE KIT G784KS

All the seals, 'O'-rings, gaskets and hardware required for routine maintenance of your Cherry blind riveters. A must for any in-house repair facility. For Tool G784.

P/N 12-03002.....**$333.10**

NUT-PLATE RIVETER G702A

The G702A is a pneumatic-hydraulic tool designed specifically for installation of nut plate rivets. Its durable, all metal housing makes this tool ideal for use in rugged shop environments. The H702-3NPR pulling head fits directly on the tool to install -3, -4, 2.5 mm & 3mm nut plate rivets. 10° angled head allows user to work using a natural hand position. A comfortable grip for one handed operation in any position. Air Pressure: 90 PSI (6.2 bar) min./110 PSI (7.6 bar) max. Cycle Time: approximately one second. Noise Level: 71 dB (A). Vibration: less than 2.5 m/s2. Air Consumption: .09 SCF / cycle (2.55 L / cycle). Stroke: 3/4". Pulling Force: 1,100 lbs (499 kgs). Weight: 3.5 lbs. P/N 12-02985.....**$1,286.00**

CHERRYLOCK POWER RIVETER KIT G784CLRB

Includes: G784 Cherry Universal Power Riveter 12" High, 8 lbs., 15/16" Stroke. P1395 Molded Carrying Case. TLC852 CherryLock Selector Card. TLC864 CherryLock Process Manual. 269C3 CherryMAX Grip Gauge. 700A77 Bleeder Bottle. Note: No Pulling Heads Included.

P/N 12-03001.....**$4,338.00**

CHERRYLOCK POWER RIVETER G784

Installation of CherryLOCK rivets. Will install nearly all diameters of CherryLOCK rivets up to a half-inch grip, 'A' group only. With proper adapters & pulling heads this tool can be used to install other types of rivets. A comfortable grip for one handed operation in any position. Pulling heads not included with riveter. Air Pressure: 90 PSI (6.2 bar) min./110 PSI (7.6 bar) max. Noise Level: 69.7 dB (A). Vibration: less than 2.5 m/s2. Air Consumption: .27 SCF / cycle (7.65 L / cycle). Stroke: 7/8". Pulling Force: 2,600 lbs (1, 179 kgs). Weight: 8 lbs (3.6 kgs)

P/N 12-02998.....**$3,057.00**

POWER RIVETER G747

Installation of CherryMAX and nut plate rivets. This tool utilizes straight, offset and right angle pulling heads, all of which can install -4, -5 and -6 diameter CherryMAX bulb type rivets in all head styles, materials and grip lengths. Extensions are available for extending the pulling heads to reach limited access areas. 10° angled head allows user to work using a natural hand position. A comfortable grip for one handed operation in any position. Same weight as the G702A, with the power of much larger tools.

P/N 12-02995.....**$845.00**

TO

CHERRY RIVET TOOLS

CHERRYLOCK POWER RIVETER KIT G784CLRA

Installs: 1/8" to 3/16", NAS 1398/9. Type & Cherry Lock. **Includes**: G784 Cherry Universal Power Riveter 12" High, 8 lbs., 15/16" Stroke. H681-4C CherryLock H681Pulling Heads Dia. 1/8" Dim. A=.208 B=.341. H681-5C CherryLock Pulling Head 5/32" D. H681-6C CherryLock H681 Pulling Heads Dia. 3/16" Dim. A=.335 B=.386. P1395 Molded Carrying Case. TLC852 CherryLock Selector Card. TLC864 CherryLock Process Manual. 269C3 CherryMAX Grip Gauge. 700A77 Bleeder Bottle.

P/N 12-02999.....**$5,063.00**

CHERRY RIVETER SERVICE KIT G747KS

All the seals, 'O'-rings, gaskets and hardware required for routine maintenance of your Cherry blind riveters. A must for any in-house repair facility. For Tool G747.

P/N 12-02996.....**$178.80**

CHERRY RIVETER SERVICE KIT G746KS

All the seals, 'O'-rings, gaskets and hardware required for routine maintenance of your Cherry blind riveters. A must for any in-house repair facility. For Tool G746A.

P/N 12-02994.....**$219.00**

CHERRY RIVETER SERVICE KIT G704KS

All the seals, 'O'-rings, gaskets and hardware required for routine maintenance of your Cherry blind riveters. A must for any in-house repair facility. For Tool G704B.

P/N 12-02990.....**$185.30**

CHERRYMAX POWER RIVETER KIT G747CMR

Installs: NAS 9301 to 9312 (1/8" to 3/16"). MS90353/4. MS21140/1. TAF "S" TYPE (1/8" & 5/32"). MS20604/5 (3/32"). **Includes**: G747 Cherry Lightweight - Installs CherryMAX Rivets. H701B-456 Pulling Head Straight 3/4" x 1-3/4". H747-3NPR Pulling Head. H753A-456 CherryMAX Pulling Heads RT Angle 2-1/4"X5-7/16"X3/8". H781-456 Cherry Pulling Head Offet 1/8"-5/32"-3/16". P1393 Plastic Box. 269C3 CherryMAX Grip Gauge. 670A20 Stem Catcher Bag. 700A77 Bleeder Bottle. All Necessary Manuals. P/N 12-02997 .....**$2,469.00**

CHERRY POWER RIVETER KIT G746ACMRB

Installs: -4, -5, -6 CherryMAX. **Includes**: G746A Power Riveter Cherry 1/8",5/32",3/16" "A" Rivets. H701B-456 Pulling Head Straight 3/4" x 1-3/4". H753A-456 CherryMAX Pulling Heads RT Angle 2-1/4"X5-7/16"X3/8". H781-456 Cherry Pulling Head Offet 1/8"-5/32"-3/16". P1393 Plastic Box. 269C3 CherryMAX Grip Gauge. 670A20 Stem Catcher Bag. 700A77 Bleeder Bottle. All Necessary Manuals. P/N 12-02992.....**$3,368.00**

CHERRYLOCK POWER RIVETER KIT G746ACMRW

Installs: SST & -3, -4, -5, -6. CherryLock 'A'. **Includes**: G746A Power Riveter Cherry 1/8",5/32",3/16" "A" Rivets. H955-3 Pulling Head. H955-4 Pulling Head H955-5 Pulling Head. H955-6 Pulling Head. P1393 Plastic Box. 269C3 CherryMAX Grip Gauge. 670A20 Stem Catcher Bag. 700A77 Bleeder Bottle. All Necessary Manuals. P/N 12-02993.....**$3,397.00**

CHERRY POWER RIVETER KIT G704BCMR

Installs -4, -5, -6 CherryMax. **Includes**: 6704B Power Riverter - Cap = 1/8-3/16" Wt. = 4 1/2 lbs. H701B-456 Pulling Head Straight 3/4" x 1-3/4". H753A-456 CherryMAX Pulling Heads RT Angle 2-1/4"X5-7/16"X3/8". H781-456 Cherry Pulling Head Offet 1/8"-5/32"-3/16". P1393 Plastic Box. TLC816 CherryMAX Process Manual. TLC865 CherryMAX Selector Guard. 269C3 CherryMAX Grip Gauge. 670A20 Stem Catcher Bag. 700A77 Bleeder Bottle. P/N 12-02988 .....**$3,285.00**

CHERRY HAND NIPPER

Used for flush trimming Cherry rivets.

P/N 12-02977.....**$29.95**

GRIP GAUGE LOCKBOLT

Cherry Grip Gauge Lockbolt. Material thickness & grip.

P/N 12-02979.....**$19.00**

MAXIBOLT GRIP GAUGE 269B12

Cherry Maxibolt Grip Gauge 269B12.

P/N 12-02978.....**$5.65**

SPLIT POWER RIVETER G704B-40SH

Designed specifically for the installation of CherryMAX rivets in applications with extremely limited access. The tool transmits power from the power unit through a flexible hose to a small, lightweight head. By utilizing the proper pulling head, design problems and operator fatigue can be greatly reduced. Equipped with an 8 foot hose. Pulling heads not included with riveter. Hose Length: 10' (305 cm). Stroke: .518". Pulling Force: 3136 lbs (1423 kgs). Weight: 4.5 lbs (2.0 kgs) (power unit only) P/N 12-02987.....**$2,085.00**

SPLIT POWER RIVETER G704B-SR

Designed specifically for the installation of CherryMAX rivets in applications with extremely limited access. The tool transmits power from the power unit through a flexible hose to a small, lightweight head. By utilizing the proper pulling head, design problems and operator fatigue can be greatly reduced. Equipped with an 8 foot hose. Pulling heads not included with riveter. Hose Length: 3" (91.5 cm). Stroke: .518". Pulling Force: 3136 lbs (1423 kgs). Weight: 4.5 lbs (power unit only).

P/N 12-02989.....**$1,659.00**

CHERRY HAND RIVETER G30

Pulling head is integral part of tool. Great in areas with limited access or power limitations. The G30 is an efficient, compact and lightweight tool for installing Cherry LOCK 'A' rivets. Overall length: 9 1/4" (23.5cm). Weight 0.8 lbs..

P/N 12-02982.....**$232.95**

CHERRYMAX GRIP GAUGE

Rivet Grip & Diameter Gauge. P/N 12-00217.....**$8.75**

TO

CHERRY PULLING HEADS

PULLING HEAD FOR CHERRYLOCK® A-RIVETS H9055

STEM SIDE EJECTION: H9055 series pulling heads are available for installation of 3/32", 1/8", 5/32" and 3/16" diameter locked spindle CherryLOCK® 'A' code rivets in all materials, head styles and grip lengths. Stems are ejected from the side of the pulling head.

H9055-3: 3/32" ..... P/N 12-03132 ..... **$667.00**
H9055-4: 1/8" ..... P/N 12-03133 ..... **$667.00**
H9055-5: 5/32" ..... P/N 12-03134 ..... **$667.00**
H9055-6: 3/16" ..... P/N 12-03135 ..... **$667.00**

CHERRY® MS STRAIGHT PULLING HEADS H9040

Cherry MS Straight Pulling Heads - H9040 Series.

H9040-4C ..... P/N 12-03127 ..... **$1,036.60**
H9040-5C ..... P/N 12-03128 ..... **$1,036.60**
H9040-6C ..... P/N 12-03129 ..... **$1,036.60**
H9044-8C ..... P/N 12-03130 ..... **$1,036.60**

OFFSET MAXIBOLT PULLING HEAD H856-6MB

Maxibolt Pulling Head. Offset head style. Maxibolt Diameters: 3/16".

P/N 12-03112 ..... **$1,387.35**

CHERRY® NUT PLATE PULLING HEADS H902

These pulling heads fit directly onto Cherry G902 and G746A Power Riveters.

Cherry P/N	Rivet Dia. Inches	Part No.	Price
H902-3NPR	-3 (3/32")	12-03125	**$309.95**
H902-4NPR	-4 (1/8")	12-03126	**$382.65**

CHERRY® FLUSH STYLE PULLING HEADS H9015

Flush style pulling heads will install both universal and countersunk rivets. These pulling heads fit directly onto Cherry G902-15 riveters.

H9015-3C ..... P/N 12-03121 ..... **$536.15**
H9015-4C ..... P/N 04-01515 ..... **$540.00**
H9015-5C ..... P/N 12-03123 ..... **$533.30**
H9015-6C ..... P/N 12-03124 ..... **$533.30**

PULLING HEADS FOR CHERRYLOCK A-RIVETS H955

The H955 Series pulling heads fit directly on the G701A, G704B, G746A and G747 riveters. The heads in this series are capable of installing 3/32", 1/8", 5/32" and 3/16" diameter rivets in all materials and head styles and grip lengths. Stems feed through the pulling head and are ejected out the back of the tool.

H955-3: 3/32" ..... P/N 12-03136 ..... **$396.95**
H955-4: 1/8" ..... P/N 12-03137 ..... **$422.10**
H955-5: 5/32" ..... P/N 12-03138 ..... **$422.10**
H955-6: 3/16" ..... P/N 12-03139 ..... **$442.10**

CHERRY OFFSET PULLING HEAD H782

The Cherry® brand H782 is a new universal, off-set pulling head capable of installing a broad variety of pull-type fasteners. Its strength, light weight and compact dimensions make it ideal for a diverse range of applications including restricted spaces. The H782 is capable of installing CherryMAX rivets, CherryLOCK 'A' code rivets, MaxiBolt 'S' type blind bolts, MBC rivets, SPR rivets, NAS1398 A & AB code products, MS90353/4, MS21140/1, 4, 5, NAS1719, 1720 & 1721 and pull-through type nut plate rivets. Note: Uses CherryMAX mounting system (G704B, G746A, G747). P/N 12-03091 ..... **$612.00**

MAXIBOLT STRAIGHT PULLING HEADS

For use with G83 & G84 tools. For use with Cherry shift washer type only.

H83B-5MB ..... P/N 12-03098 ..... **$446.25**
H83B-6MB ..... P/N 12-03101 ..... **$446.25**
H84A-8MB ..... P/N 12-03107 ..... **$527.50**
H84C-8MB ..... P/N 12-03110 ..... **$583.05**

MAXIBOLT PULLING HEAD H84B-568

Maxibolt Pulling Head. Straight head style. Maxibolt Diameters: 5/32", 3/16".

P/N 12-03109 ..... **$648.00**

MAXIBOLT U-TYPE PULLING HEAD

Pulling heads to install "U" type Maxibolts®. Will fit G83 or G84-LS (w/744-700 adaptor).

H83B-5MBU ..... P/N 12-03099 ..... **$446.25**
H83B-6MBU ..... P/N 12-03102 ..... **$446.25**
H84A-8MBU ..... P/N 12-03108 ..... **$572.90**
H84C-8MBU ..... P/N 12-03111 ..... **$782.35**

MAXIBOLT RIGHT ANGLE PULLING HEAD H828

This pulling head aids installation of MAXIBOLTs in limited access applications. For use with G744 tool. For use with Cherry shift washer type only. Use 744-200 adapter for G83/G84.

Cherry P/N	Head style	Rivet Dia. Inches	Part No.	Price
H828-5MB	Right Angle	5/32"	12-03094	**$1,981.60**
H828-6MB	Right Angle	3/16"	12-03095	**$1,981.60**
H828-8MB	Right Angle	1/4"	12-03097	**$2,210.50**

CHERRYMAX STRAIGHT PULLING HEAD H846A-456

This pulling head installs 1/8", 5/32" & 3/16" Nominal & Oversize CherryMAX Rivets (G744 only). P/N 12-03103 ..... **$422.10**

CHERRYMAX RIGHT ANGLE PULLING HEAD H828-8

CherryMAX Right Angle Pulling Head installs 1/4" Nominal & Oversize CherryMAX Rivets (G744 only). P/N 12-03096 ..... **$1,881.00**

CHERRYMAX OFFSET PULLING HEAD H827-8

CherryMAX Offset Pulling Head installs 1/4" Nominal & Oversize CherryMAX Rivets (G744 only).

P/N 12-03093 ..... **$1,401.05**

CHERRYLOCK® RIGHT ANGLE PULLING HEADS H886

The H886 series right angle s fit directly on the G701A, G704B, G746A and G747 power riveters to install CherryLOCK® 'A' brand rivets in 3/32", 1/8", 5/32" and 3/16" diameters in all materials, head styles and up to -04 grip length.

H886-3 ..... P/N 12-03113 ..... **$1,021.20**
H886-4 ..... P/N 12-03114 ..... **$1,021.20**
H886-5 ..... P/N 12-03115 ..... **$1,021.20**
H886-6 ..... P/N 12-03116 ..... **$1,021.20**

TO

RIVET GUNS

CHERRY G-28 HAND RIVETER GUN

The Cherry G-28 is a lightweight (13 oz.) ruggedly compact hand tool designed to efficiently set a broad range of Cherry commercial rivets. A unique torsion spring keeps the lever arm in place, ready to accept rivet after rivet. The G-28 comes with two popular size nosepieces, 728A9-4 (to set Cherry N Rivets - 1/8" dia. & Cherry Q Rivets - 1/8" dia.) and 728A9-6 (to set Cherry N Rivets - 5/32" & 3/16" dia. & Cherry Q Rivets - 5/32" & 3/16" dia.), one of which is stored securely out of the wav in the riveter handle. P/N 12-03000.....**$115.95**

CHERRY G-29 HAND RIVETER

The Cherry® G-29 Hand Riveter is an efficient, compact, lightweight tool for installing Cherry® NUT-PLATE rivets. It comes equipped with a 728A9-3 nosepiece to install 3/32" rivets and has a 728A9-104 nosepiece stored in the handle for installing 1/8" rivets. The G-29 Riveter is 9-1/4" long, weighs just 13 ounces and is intended for use when access or power limitations prevent the use of Cherry® power tools. P/N 12-00701.....**$114.95**

CHERRY G-27 HAND RIVETER KIT

The Cherry G-27 Hand Riveter is designed specifically for the most efficient installation of 1/8" CherryMAX Rivets. The G-27 Riveter is intended for use where access or power limitation prevents the use where access or power limitation prevents the use of Cherry pneumatic power tools. Overall length of the G-27 is 9-1/4", the net weight is just 13 ounces and the pulling head is an integral part of the tool.

P/N 12-03105.....**$89.75**

RIVET KIT

This rivet kit includes 200 assorted Klik-Fast rivets in popular sizes. The molded plastic case houses and protects the tool and rivets. Weight 4 lbs.

P/N 12-03100.....**$97.85**

120° FLUSH DIMPLING TOOL

This unique tool for 1/8" 120° countersunk "Pop" rivets attaches to the Cherry G-28 standard hand "Pop" rivet gun. Simple design makes dimpling foolproof, quick and easy, with no cracking of metal. For use on aluminum to .040" thickness. P/N 17014..... **$10.75**

ADJUSTABLE RIVET SPACER

For uniform spacing of rivets, bolts, nails, etc. Unique fan design expands to 36". Equally spaces up to 20 holes between 2 given points. Made of 301 stainless steel.

P/N 12-11700..... **$38.75**

10 Hole spacer P/N 12-00184..... **$24.75**

RIVEDRILL™

Allows operators to set up to 14 rivets per minute - twice as many as can be set by standard hand tools. The RiveDrill is ergonomically friendly, requiring just 6.6 lbs. of pressure to operate, compared to 77.2 lbs. required for hand tool operation. Excellent for working on aircraft, autos, or boats. The RiveDrill™ can be quickly inserted into a 3/8" reversible power drill as any standard drill bit would and is able to set any standard blind rivet up to 3/16" aluminum. The shank of the rivet is expelled when the drill is operated in the "reverse" mode. (For cordless electric power drills, a minimum 12V battery is recommended.) Nosepieces for 1/8", 5/32", & 3/16" sizes are included. P/N 12-00253.....**$69.50**

ULTRALITE NUTPLATE DRILL MOTOR

Ergonomic, lightweight design. Only one hand required to locate, drill & countersink both holes. Easily convert rivet spacings with interchangeable foot attachments. Available in single wing, double wing & mickey mouse models. Accomodates all nutplate spindle spacings from 0.219" to 1.125". Fully adjustable feed rate. 600 or 7,000 RPM P/N 12-01376.....**$3,624.00**

SWIVEL RIVETING TOOL

Rotates 360° and rivets in any position. High leverage handles for added power. Hardened steel construction for long life. Extended nose for hard to reach places. Will pull 3/32", 1/8", 5/32", and 3/16" rivets. Model TP844..... P/N 12-00365.....**$56.85**

HOMEBUILDERS RIVET NUT TOOL

Its design enables the rivet nuts to be seated tighter than with conventional tools. This fastening tool has unique uses! The rivet nut possesses far greater load bearing capability than a regular sheet metal screw! Proudly made in U.S.A. Use it instead of a sheet metal screw. For use with aluminum or steel rivet nuts.Kit includes Rivet Nut Tool, Stabilizing Rod, and Qty 1 each of 6-32, 8-32 and 10-32 rivet nuts. P/N 12-00968 .....**$19.65**

ATS AIRCRAFT RIVET GUN #2602

So controllable you can easily buck rivets as small as 3/32" to as large as 3/16".

P/N 12-18340 ..... **$129.95**

RIVET SET MAX FOR 2602 RIVET GUN

3/32", 1/8", 5/32" and 3/16" rivets.

3-1/2" (5 pcs. straight, includes flat) P/N 12-18341 ..... **$28.95**
3-1/2" (4 pcs. offset) P/N 12-18342 ..... **$27.90**
5-1/2" (4 pcs. straight) P/N 12-18344 ..... **$29.90**

PROFESSIONAL HAND PLIER RIVET TOOL

Professional Hand Plier Rivet Tool is 50% easier to use then other hand tools. A patented compound link designed does the work for you. A shorter grip opening ergonomically designed for one hand operation. Grips cover the length of the lever and body, and soft handles are contoured to fit the hand.

The wrench and nosepieces (3/32", 1/8", 5/32", & 3/16") are stored in the handle of the tool. Excellent for use on Cherry and other standard pop rivets.

Features: • Robust aluminum casting and vanadium steel handle design • Setting capacity: aluminum rivets up to 3/16" (4.8 / 5.0mm) body diameter • Contoured handle grips for comfort • Rivet retaining handle design for one-handed riveting • Supplied with nosepieces for 3/32", 1/8", 5/32" & 3/16" (2.4mm, 3.2mm, 4.0mm & 4.8mm) rivets • Supplied nosepiece wrench • Length: 9.65" (245mm) • Weight: 1.3 lbs. (0.6 kg)

P/N 12-00178 .....**$28.85**

HEAVY DUTY RIVETER

Includes four nosepieces to set rivet diameters from 3/32" up to 3/16". Convenient lock chain keeps handles closed when tool is not in use. Made in U.S.

P/N 12-18352 .....**$38.95**

3M™ RIVETERS TAPE

3M™ Riveters Tape 685 Transparent Film with Green Adhesive, 1.7 mils (.043 mm) Polyester film with a rubber-strip coated along edges of tape only and tack-free center Window P/N 12-18355..... **$9.65**

COMBINATION RIVET-RIVNUT TOOL

Ideally suited to the needs of the aircraft homebuilder. Develops 3,500 lbs. of pulling force which permits the installation of all Cherry Commercial Blind Rivets or any other Pop type rivets through 1/4" diameter as well as all CherryMax rivets through 3/16" diameter. Will not pull Cherry Lock rivets. Quickly converts to a threaded blind nut setter. The kit includes the D100 hydraulic tool with adapters for blind rivet and blind nut installation, rivet nosepieces for 1/8", 5/32" and 3/16" diameter blind rivets, blind nut pull-up studs with nosepieces for 6-32, 8-32, 10-32 and 1/4-28 Rivnuts, operating instructions and a rugged Plastic storage case. Size: 12-1/2" x 8-1/4 x 3'. Weight: 3 lbs. P/N D100-RN Kit.....**$352.95**

PNEUMATIC-HYDRAULIC BLIND RIVETER

No larger than a compact drill motor, will install virtually any straight-pull blind rivet with installation loads of 3500 lbs. or less. All blind rivets from 3/32" dia. up to and including 1/4" dia. Can install CherryMax rivets. It utilizes a patented two-valve hydraulic pump actuated by 90 to 130 PSIG air pressure. Collect/jaw assembly remains stationary while the outer sleeve-nosepiece assembly is hydraulically moved, creating sufficient load to install the rivet. Furnished with three nosepieces for 1/4", 1/8", 3/16" & 3/32" rivets. Wt. 29 oz. P/N 09-01070 .....**$558.95**

RED BOX 737 RIVET GUN KIT INCLUDES BUCKING BARS

Includes: 1pc Rivet Gun (choose size 2X, 3X or 4X), 1pc Type A -Bucking Bar, 1pc Type B -Bucking Bar, 1pc Brass Regulator, 1pc Air Tool Fitting, 4pcs 3.5" Straight Rivet Set (3/32", 1/8" 5/32", 3/16"), 1pc Standard Flush Set (Surface: 1", Length: 2.5"), 1pc Beehive Spring, 1pc Retainer Spring, 1pc Marvel Air Tool Oil (Made in USA)

Gun	Length	BPM	Cap.	Bore	Shank	Stroke	Weight	Part No.	Price
2X	6-11/16"	2580	1/8"	1/2"	.401"	2-1/4"	3. lbs	12-02682	**$197.00**
3X	7-5/16"	2160	3/16"	1/2"	.401"	2-7/8"	3.2 lbs.	12-02686	**$197.00**
4X	8-1/2"	1740	1/4"	1/2"	.401"	3-1/16"	3.4 lbs.	12-02687	**$197.00**

THREAD SELF-COILING AIR/VACUUM HOSE

This 25 ft. air vacuum hose snaps back to a compact 20" coil for easy storage. Includes non-corrosive brass male fittings. Excellent for air tools using a compressor. 100 PSI working pressure. Oil resistant polyurethane construction High visibility color. 1/4" NPT air inlet

P/N 12-00218 .....**$10.75**

TO

RIVNUT TOOLS – TAPE MEASURES

L-6000 RIVNUT SPEED DRIVER

This tool is designed for light production and features high speed push-pull, smooth, spiral action. Sized #4 through #10 adequate for brass, aluminum, and steel. Sized #4 through #8 adequate for stainless steel. Provides easy on-and-off threading of rivet nut with push-pull knob. Adjustable anvil for different length rivet nuts. Made in U.S.A. The C-6000 Speed Header is available for Rivnuts with the following thread sizes:

6-32 ..... P/N 12-12600.... **$136.95** 8-32..... P/N 12-12700.... **$136.95**
10-32 .... P/N 12-12800.... **$136.95** 1/4-28..... P/N 12-12900.... **$153.95**

CONVERSION KIT - For changing speed header to a different Rivnut thread size. Order by P/N .

6-32 Kit.... P/N 12-13000 .. **$36.75** 8-32 Kit..... P/N 12-13100 ... **$34.85**
10-32 Kit.. P/N 12-13200 .. **$37.25** 1/4-28 Kit.. P/N 12-13300 ... **$53.50**

L-7000 RIVNUT SPEED DRIVER

Designed for light production. Same as the L-6000 except made with a longer stroke for slotted rivet nuts. Made in U.S.A. Order by part number. Available in the following thread sizes: 6-32 (P/N 12-13605), 8-32 (P/N 12-13610), 10-32 (P/N 12-13615), and 1/4-28 (P/N 12-13620)

$162.95/ea.

C-845 ECONOMY RIVNUT TOOL

Model L-845 wrench type rivnut tool is for field repair & experimental use. Adequate for aluminum, brass, steel, and stainless. Made in U.S.A. Order by part number. Available in following thread sizes:

6-32 ..... P/N 12-13400..... **$41.85** 8-32..... P/N 12-13500 .. **$47.75**
10-24 ..... P/N 12-13600..... **$39.90** 10-32.... P/N 12-13700 .. **$47.75**
1/4-20 ..... P/N 12-13800..... **$47.50** 1/4-28... P/N 12-13900 .. **$47.50**

L722 WRENCH TYPE RIVNUT TOOL

L722 Wrench Type Riv-Nut installation tool for the larger size fasteners 5/16" up to 1/2", tool comes with long arm allen wrench with plastic handle for easy installation.

L722 wrench type header	Part No.	Price	L722 wrench type header	Part No.	Price
5/16-18	12-00920	**$52.75**	5/16-24	12-00921	**$49.75**
3/8-16	12-00922	**$49.75**	3/8-24	12-00926	**$49.50**
1/2-13	12-00927	**$82.25**	1/2-20	12-00928	**$82.50**
M10	12-00930	**$79.50**			

WRENCH TYPE RIVNUT TOOL

Kit includes: TP726A, TP726B, TP726C, TP726N, and handy case. •Perfect for field repair and experimental use • Easy to use - inserts from one side of the work in seconds • Excellent for close quarters, overall height less mandrel 1-1/2" • Uses 3/4" open end or socket wrench • TP726N Notcher manually operated • Made in the U.S.A.

Model	Part No.	Price
TP726A / 6-32	12-00348	**$47.65**
TP726B / 8-32	12-00349	**$42.50**
TP726C / 10-32	12-00350	**$42.50**
TP726N/Notcher	12-00351	**$21.75**
TP726K / Kit	12-00352	**$133.50**

L-1000 ECONOMY HAND RIVNUT TOOL

The L-1000 economy hand rivnut tool is recommended for slotted rivet nut fasteners. Adequate for aluminum, brass, steel and stainless steel fasteners. Made in U.S.A. Order by part number. L-1000M is same tool, except in metric sizes.

Model	Thread Size	Part No.	Price Ea.
L-1000	(60-32)	12-13645	**$45.75**
L-1000	(8-32)	12-13650	**$45.75**
L-1000	(10-32)	12-13655	**$45.75**
L-1000	(1/4-28)	12-13660	**$45.75**
L-1000M	(M6)	12-13675	**$49.75**

HEAVY DUTY RIVET CUTTER

This high quality, durable rivet cutter features all steel construction and cuts 1/16" to 1/4" diameter rivets. It is adjustable for 1/4" to 3/4" long rivets.

P/N 12-16840 ..... **$42.50**

RIVET CUTTER

This handy rivet cutter, w/ 2 hardened blades, cuts rivets of any standard dia. from 3/32" to 3/16" without burring. The length of the cut rivet can be varied from 3/16" to 5/8" by means of 8 adjustable leaves attached to the cutting head. Plastic coated grips. Wt. 2 lbs. P/N 12-00200 ..... **$36.85**

BENCHTYPE RIVET CUTTER

Cuts 5 different diameter rivets, as well as wire and screws to 7 different lengths. Made of hardened and ground steel, this rivet cutter can be easily fastened to a workbench or held in a vise. Accepts rivet diameters 1/16, 3/32, 1/8, 5/32, 3/16, Will cut to lengths: 5/32, 7/32, 9/32, 11/32, 15/32, 17/32. P/N 12-00262 ..... **$133.95**

LUFKIN METRIC/INCH TAPE MEASURE

LUFKIN NO. W921OME Has 1/2" blade, 3 meters long (equal to about 10 ft.). Markings are on one side only, with millimeters on upper edge and inches to 16ths on lower edge. White face.

P/N 12-19700 ..... **$11.75**

STANLEY DECIMAL INCH TAPE MEASURE

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

P/N 33-272 ..... **$17.90**

SMART TOOL DIGITAL INCLINOMETER

Smart Tool is a unique digital inclinometer with up to 0.1° of repeatable accuracy. Place Smart Tool anywhere and it provides an accurate digital readout of angular reading instantly with no interpretation or guesswork needed. It measures and displays any angle through 360°, and readings can be relative to any angle. Smart level even calculates complicated slope measurements in either percent or inches per foot. It is sunlight viewable, features 3 sensitivity settings, and has 120-hour battery life with auto shut–off. Smart Tool is ideal for fixture work, tube bending, metal forming, body work, drive shaft angles, camber, caster, and A-arm angles, and a wide variety of other applications in the aircraft and race car building industries. Also ideal for coordinating and aligning flight control surfaces. Compact & rugged, Smart Tool is powered by any 9V battery.

Smart Tool in 24" rail..... P/N 12-21365 ..... **$163.95**
Smart Tool in 48" rail..... P/N 12-21370 ..... **$175.95**

INSTANT ANGLE FINDERS

MODEL 200M (2-3/4" Dia. Dial) - Very versatile tool —ideal plumb bob. Magnetic base and center hang hole. Body of high impact ABS plastic. Dial protected by acrylic cover. Angle and rise chart on back.

P/N 12-14800 ..... **$23.85**

DIGITAL PROTRACTOR/LEVEL ND-81

Very popular with aircraft builders, mechanics and woodworkers. Used for flight control surface rigging, setting propeller angle, and aircraft leveling and more. **Features:** Full 360-degree measuring range with maximum resolution and accuracy of 0.1 degree. Simple 30 second calibration procedure using only the top flat edge of a table or desk. Alternate zero button to set zero starting point at any angle (commonly used for aileron, flap and elevator rigging). Display hold button to freeze reading when measuring in tight spaces. Readout stays upright even when protractor is upside down. Dimensions: 7.5" x 5" x 3". Total weight: 16 oz. P/N 12-02651 ..... **$98.95**

PRO 360 DIGITAL PROTRACTOR

The Pro 360 Digital Protractor is a revolutionary measuring tool that provides an immediate, digital reading of all angles in a 360º circle.The machined aluminum frame is a rigid, light weight, ultra-precise platform that allows the state-of-the-art sensor and its microprocessor circuit to provide unsurpassed accuracy throughout the Protractor's 360º range. Typical used by aircraft builders, maintenance personnel and airport operators. P/N 12-20125 .... **$224.95**

PRO 3600 DIGITAL PROTRACTOR

The PRO-3600 is accurate to 0.01º and has an RS-232 compatible serial port for a computer interface and SPC records keeping.

P/N 12-00759 ..... **$355.95**

RIV-NUT PULLERS

The Riv-Nut Puller was designed for installation of steel and aluminum rivet-nuts. High speed, push-pull action. Available in sizes 6/32, 8/32, and 10/32.

Rivnut Puller 6/32 ..... P/N 12-02886 ..... **$95.95**
Rivnut Puller 8/32 ..... P/N 12-02887 ..... **$95.95**
Rivnut Puller 10/32 ..... P/N 12-02888 ..... **$95.95**
Rivnut Puller Conversion Kit 8/32..... P/N 12-02880 ..... **$36.50**
Rivnut Puller Conversion Kit 10/32..... P/N 12-02881 ..... **$36.50**
Rivnut Puller 6/32 w/ 2 Conversion KitS..... P/N 12-02885 ..... **$148.50**
Rivnut Stem Replacement 6/32..... P/N 12-02889 ..... **$22.95**
Rivnut Stem Replacement 8/32..... P/N 12-02890 ..... **$22.95**
Rivnut Stem Replacement 10/32..... P/N 12-02891 ..... **$22.95**
Rivnut Puller Conversion Kit 8/32..... P/N 12-02880 ..... **$36.50**
Rivnut Puller Conversion Kit 10/32..... P/N 12-02881 ..... **$36.50**
Rivnut Puller 6/32 w/ 2 Conversion Kit ..... P/N 12-02885 ..... **$148.50**

TO

AIRCRAFT SPRUCE WEST
CORONA, CA • (877) 4-SPRUCE
AIRCRAFT SPRUCE EAST
PEACHTREE CITY, GA • (877) 477-7823
Prices Subject to Change Without Notice

PLASTIC PRY TOOLS – AIR CHISEL TOOLS

BOJO PLASTIC PRY TOOLS

Soft, yet strong, all Bojo tools are made tough enough to pry, but not hard enough to damage. These 4 tools are provided as a set.

PLASTIC GENERAL WEDGE TOOL - General narrow point for reaching in narrow spaces.

PLASTIC STICKER/GASKET TOOL - Wedge tip, for use where a wide area is desired with a "soft" touch.

PLASTIC PRY BAR TOOL - The forked tip. The original for removing door panels and plastic grommets.

PLASTIC WEDGE PULLER TOOL - The forked tip. The original for removing door panels and plastic grommets.

Set of 4 listed above..... P/N 12-00748.....**$14.95**

MASTER INSTALLER KIT - Soft, yet strong, all Bojo tools are made tough enough to scrape, but not hard enough to damage. Set of 7.
P/N 12-00976.....**$19.95**

AIRCRAFT ASSEMBLY SCRAPER KIT - Soft, yet strong, all Bojo tools are made tough enough to scrape, but not hard enough to damage. Set of 4. P/N 12-00977 ..... **$15.50**

DELUXE SCRAPER KIT - This is an expansion of our original 4 Piece Scraper Kit (which you currently buy in the medium strength material NGL). The new tips were design from request in the aviation fuel bladder cleaning industry for the US Air Force and US Navy overhaul programs. This new, stronger material is highly resistance to all forms of chemicals and sealants. PN 12-01858.....**$31.75**

Description	Part No.	Price
Pry Tool Large LFT-2-N	12-01859	**$7.50**
Sheet Panel ADJ Tool Kit	12-01860	**$18.25**
Wire Guide Tool ATH-30-GNL	12-01857	**$3.75**

MULTI WEDGE NON-MARRING TOOL SETS

Multi Wedge non-marring tool sets allow homebuilders and avionics installers to remove panels, dash trim bezels, and other interior moldings, including door panels, without causing damage. Excellent for use in aviation, auto restoration, body work, electronics installation, upholstery etc. The Orange Set (3400) P/N 12-01671 is made of a softer polyethylene plastic blend for prying dash bezels, trims, and moldings without damaging the vehicles interior. The Black Set (3500) P/N 12-01672 is made of a more expensive high impact polycarbonate plastic for prying harder materials such as thin walled aluminum engine covers and sheet metal panels. ***Product Benefits:*** • Thin tip to fit into tiny gaps •Wide surface area to displace force, therefore reducing damage • Flexible • Slick surface for ease of prying • Built-in handle • Non-marring surface • Slim powerful angle • Curved tip for easy prying • Thing tip for tight gaps

Multi Wedge Set Orange (Soft) 3400 ..... P/N 12-01671 .....**$10.85**
Multi Wedge Set Black (Hard) 3500 ..... P/N 12-01672.....**$11.75**
Both Multi Wedge Sets - Orange (Soft) / Black (Hard) 3400/3500
P/N 12-01673.....**$18.50**

MULTI-PURPOSE SCRAPER

This Muli-purpose scraper has a 2 1/4" wide blade ideal for more coverage. This scraper is ideal for lighter duty jobs. It has a blade cover for safety and a hole in the handle to hang for convenience. This scraper is disposable and does not have replacement blades available.
P/N 12-02371 .....**$6.50**

AIR CHISEL TOOLS

Aircraft structures are sensitive to tool damage during manufacture, servicing and repair but the numerous plastic and composite materials available in our products are able to deliver the levels of strength and durability required of tools systems whilst conforming to aircraft manufacturer specifications.
Strong ribbed backing air chisels that are easily reshaped. Designed to fit standard air chisel tools with a 0.401" diameter shank, this scraper system maintains the damage reduction and non-marring properties of our hand tools but is suited to heavy-duty and higher volume material removal while reducing operator fatigue.

GENERAL SCRAPPER CHISEL TOOLS
Standard width air chisel scraper.
General Scrapper Chisel Tool - Soft
P/N 12-02282.....**$7.50**

FLAT SCRAPPER CHISEL TOOLS
Steep angle for air chisel scraping delicate, narrow jobs that require less of a wedging angle.
Flat Scrapper Chisel Tool - Soft
P/N 12-02284.....**$7.50**

BOX CORNER SCRAPPER CHISEL TOOLS
Ideal shape for air chisel scraping tight into corners, removing material on both sides surface at once.
Box Corner Scrapper Chisel Tool - Soft
P/N 12-02286.....**$7.45**
Box Corner Scrapper Chisel Tool - Hard..... P/N 12-02287.....**$7.45**

LARGE HEAVY DUTY FLAT AIR CHISEL TOOL
Wide air chisel scraper for larger areas of removal.

Large Heavy Duty Flat Air Chisel Tool- Hard
P/N 12-02288.....**$9.95**

NARROW HEAVY DUTY FLAT AIR CHISEL TOOLS
Narrow air chisel scraper for tight, confined areas of removal.
Narrow Heavy Duty Flat Air Chisel Tool- Hard
P/N 12-02289.....**$9.95**

TRIGGER TYPE SEALANT GUNS

This air-powered, trigger controlled sealant gun will spread sealant smoothly, uniformly, and exactly where you want it. Includes body, 10 ft. hose, and 2 1/2 oz. zinc plated corrosion resistant retainer to prevent cartridge split. Hose has Hanson-style air fitting.

Gun with 2.5 oz. Retainer ... P/N 12-02923.....**$95.50**
Gun with 6 oz. Retainer ..... P/N 12-02922.....**$95.95**

PISTOL GRIP SEALANT GUNS

Use this pneumatic pistol grip sealant gun to apply smooth, uniform material exactly where you want it. Comes with body, 10 ft. hose, and 2 1/2 oz. zinc-plated corrosion resistant retainer. Hanson-style air fitting on hose.

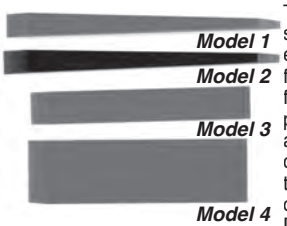
Gun with 2.5 oz. Retainer..... P/N 12-02921.....**$124.95**
Gun with 6 oz. Retainer..... P/N 12-02920.....**$124.95**

SEALANT CUTTERS

Sealant cutter quickly and safely removes thick applications of seam sealant for aircraft maintenance and repair. Eliminates the need for harsh chemicals. Saves time and effort. 1/4" x 28 Threaded Shank.

.40" Diameter..... P/N 12-02879.....**$6.35**
.83" Diameter..... P/N 12-02878.....**$6.50**

SEALANT REMOVAL TOOLS



These tools are full machined and/or laser cut, which helps them retain a sharp edge. The tools are used by many defense contractors and Naval air stations for sealant application, sealant removal, paint removal, acrylic canopy contact, and general use. They are made from cell cast acrylic or black nylon as noteed. These tools can be resharpened on an abrasive belt or disc. Note: 15% Discount on 12 or more (Per P/N)

Model	Material	Part No.	Price
Model 1	Acrylic	12-02360	**$1.65**
Model 2	Nylon	12-02361	**$5.50**
Model 3	Acrylic	12-02362	**$2.10**
Model 4	Acrylic	12-02363	**$2.80**

TO

RECOIL KITS

The Recoil System is the simple way to repair stripped or damaged threads. It provides stronger and more efficient threads which have great holding power. The system is quick and easy to use and is ideal for alloys and other light materials. The recoil insert, which is larger in diameter than the tapped hole, is compressed during installation then allowed to spring back, permanently anchoring into place. The Recoil System consists of Recoil stainless steel helically wound precision inserts, high quality HSS taps and installation tools.

Kit P/N	Size	Inserts Per Kit	Price
34600*	3/16 - 10-32	10	**$42.50**
34040*	1/4 - 28	10	**$64.50**
34050*	5/16 - 24	10	**$50.00**
33050**	5/16 - 18 (UNC)	10	**$64.50**
34060*	3/8 - 24	10	**$49.85**
34070RC*	7/16 - 20	5	**$81.95**
34080*	1/2 - 20	5	**$98.95**
35060***	M6x1 (Metric)	10	**$61.50**
35080***	M8x1.25 (Metric)	10	**$67.50**
33004**	UNC Range Kit	50	**$308.00**
34004*	UNF Range Kit	50	**$328.95**

UNF - Unified Fine Thread **UNC = United Coarse Thread
****** Metric = Metric & Spark Plug (ISO)***

BLIND SKIN SCRIBE

For use on flush skin butt joints. This tool quickly and easily finds the cut line on the overlap of new metal. The lower leg slides under the new metal and hooks on the adjacent skin and the upper leg scribes the new skin as it pulled along. This tool is adjustable to suite the desired gap at the skin joint. This tool is especially handy when the old skin that is removed is damaged beyond usefulness as a pattern Note: For use on aluminum only.P/N 12-00746 ..... **$33.75**

SCREWSTICK POCKET SCREWDRIVER

The Screwstick is a pocket screwdriver which accepts any common 1/4" tip. An extra tip is stored in the stainless steel shaft, and a heavy duty magnet holds tips firmly in place. A steel torque driver for stubAborn applications is stored in the shaft. A rubber finger grip for holding plus a heavy duty pocket clip are included. Ideal for aviation, automotive, & many other applications. Great for mechanics. P/N 12-20105.....**$4.50**

BALLPOINT HEX SOCKET DRIVER

3/32" Ballpoint Hex Socket Driver for use on hex head screws and nuts.

This tool is commonly used with most avionics units like Honeywell Bendix/King and Garmin.

P/N 12-02063 ..... **$4.65**

MASTER CHUCK

These versatile Master Key Chucks are available in two sizes (small & large) which open sizes 1/4" to 3/4". These tools allow you to open over 1200 different key chucks. Save wear on chucks by always having the proper key size available. The squared center of the keys opens acetylene tanks. Made of treated steel with black oxide finish.

Small..... P/N 12-30165..... **$15.25**
Large..... P/N 12-30170..... **$16.75**

ALL-SHARP DIAMOND SHARPENER

All Sharp is an innovative diamond sharpener that provides 4 different grit sizes on the same tool. All Sharp sharpens and fine sharpens tools and bits and cleans burrs on hard to reach parts and equipment. It's tough stainless body will not rust and All Sharp fits in any tool tray or pouch. Model ST-7.....P/N 12-21430. .....**$17.50**

TORK-IT PRECISION TORQUE SCREWDRIVER

12-14330

12-14335

The Tork-It Model 36 precision torque screwdriver is a micro-setting device that is adjustable from 2 to 36"-lbs. in 0.5" -lb. increments. The tool complies with ANSI type 3 class A style 1screwdriver grip torque wrench standards. Tork-It is supplied with a 1/4" pin-lock hex bit holder. 6-piece Hex-BIt set of 1.5mm, 2mm, 2.5mm, 3mm, 3/32 & 7/64" can be ordered separately.

Tork-It Screwdriver ... P/N 12-14330..... **$158.75**
Six Piece Hex Bit Set ..... P/N 12-14335..... **$15.80**

6-IN-1 COMBINATION SCREWDRIVER

• Industrial rated bits for extra long life • Heat treated 1/4" & 5/16" nut drivers • Interchangeable bits fit both Philips & Slotted screws • Bits: 3/16" Slotted; 9/32" Slotted; #1 Philips, #2 Philips. P/N 12-14000 .....**$7.85**

STRIP AND CRIMP TOOL

5 Way all purpose wire 9" long made of hardened steel matte black permanent finish with bright clear markings. Makes it an attractive & easy to use product. Features long comfortable plastic grip handles. A one piece tool that shapes & cuts wire 5 different ways. Specifications: Standard wire cutter crimps insulated terminals 22-14 12-10, Shears 5 bolt sizes 4-40 6-32 8-32 10-24 10-32, Crimps non-insulated terminals 10-12 14-16 18-22, Strips wire 10-22 awg P/N 11-08077 .....**$13.95**

COAX CABLE CRIMPING TOOL

This 12 point, full ratchet crimping tool terminates precision BNC connectors in size RG 55,58,59,62,141,142,223,303 and 400. This crimper is built to MS22520 specifications and die set is included with the crimper. Specifications: Cable Groups: RG 55/58/59/62/141/142/223/303/400

P/N 12-02378 .....**$130.95**

3M™ CRIMPING TOOL TH-440

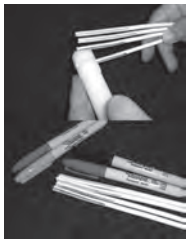
High carbon, heat-treated steel crimping tool that has a unique design that provides a high strength/weight ratio that crimps a broad range of 22-10 AWG terminals and connectors. P/N 12-01146 .....**$57.50**

AT508K CANNON CONNECTOR PLIERS

The AT508K features serrated jaws for improved gripping and a slip joint for improved leverage. Ideal for all common cannon connector applications.

P/N AT508K.....**$22.85**

WIRE MARKING TOOL



Ever been on your back looking up at a bunch of white wires or in a really tight space where only your arms and shoulders would fit and wonder, "how am I going to tell the difference between all of these wires?" this wire marking tool will allow you to do just that.

The wire marking tool works on wire from 24 ga to 8 ga. This tool is perfect for every mechanic and do it yourselfer. Mark just one wire or all of your wires before you start or while installing in just seconds. 4 and 12 pack of markers sold separately.

Wire Marking Tool .....P/N 12-02497 .....**$32.75**
4 pack colors: Black, Blue, Red, Green.....P/N 12-02501 .....**$9.50**
12 pack colors: Black, Blue, Green, Red, Orange, Yellow, Purple, Brown, Turquoise, Lime, Berry, & Aqua. .....P/N 12-02503 .....**$21.50**

POWER PRECISION SCREWDRIVER

General's Cordless Power Precision Screwdriver is ideal for ultra-delicate applications such as computer and electronics repair, hobbies and crafts. The 100+ RPM motor features forward and reverse controls, and the quick-change chuck allows for effortless swapping between 1/8" Slotted, Phillips and Torx bits. **Features**: • Cordless Precision Screwdriver (2 "AAA" alkaline batteries included) • 10+ hours of power • 100+ RPM motor with forward and reverse controls • Super-torque drive • Quick-change chuck • Ergonomic design allows for various comfortable grips • Precision bit assortment (1/8" drive) • Phillips: #00, #0 • Slotted: 1/16", 1/8" • Torx: T5, T6 P/N 12-02308 .....**$29.96**

AT 540M SCREW EXTRACTOR

This heavy duty screw extractor is designed with a .401 shank to fit most standard rivet guns and is held in place by a retainer spring. The square tip will accommodate 3/8" socket tool bit holders with inserts for removing hex, square, Phillips, or standard screws. Manufactured from high grade shock resistant tool steel.

P/N 12-01632.....**$8.90**

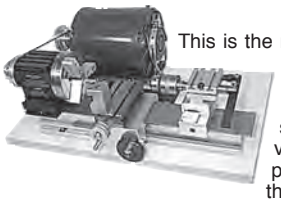
SCREW REMOVAL TOOL

•Useful in removing screws that are corroded or have stripped heads •.401 Parker taper shank for use in rivet gun •3/8" square drive with wrench. •Use standard Phillips or Slotted insert bits •Rivet gun required

P/N 12-00827 .....**$36.75**

TO

MICRO LATHE



This is the machine you don't have to "baby". The Micro Lathe is a rugged, precision instrument. Its machined, ground and stabilized steel bed has a lifetime ball bearing spindle, coupled with a 6-speed positive v-belt drive. Spindle speeds in geometric progression from 525 to 5200rpm provide the power to "HOG" 1/8-inch cuts in mild steel or the speed and accuracy to dust a few tenths. Other big lathe features include large .001 graduations on the cross slide dial, an all-angle tool post and a carriage depth stop. Adjustable gibs provide full compensation for carriage and cross slide wear. 2-yr. factory warranty. 15" bed. Comes factory assembled. The Unit pictured is a basic unit (P/N 12-00171) with an optional 3-Jaw Chuck, Boring bar(1097E), Tailstock (1150), Drill Chuck (1091), 1/4 HP 1725 RPM Motor (1021w), Motor Mount Bracket (1022), Mounting Board (1023), and Pulleys (1162 with 3M 500 belt). All accessories are sold separately and are not included in the base price. Note: Photo shows Lathe with all accessories which are not included (Available separately). P/N 12-00171 is basic lathe unit only. P/N 12-00171 ..... **$179.50**

General Specifications:

- Overall working accuracy: 0.0005"
- Max. bearing run out: 0.0004"
- Headstock normality to bed: .0004 in max error
- Max. taper bed dovetail over pins: 0.0001"
- All machine dovetails: 45°
- Bed width: 2 5/16 "
- Cross slide dial graduation: 0.001
- Cross slide screw: 1/4"-20 adjustment for back-lash take-up provided (jam nut arrangement)
- Carriage travel: 0.600" 1 rev. of hand wheel
- Max. spindle speed recommend: 7000 rpm
- Motor requirement: 1/8 – 1/4 HP
- Pulley type: Std. 5/8" bore, multi-step V-belt
- Length of headstock on ways: 2.875"
- Length of carriage on ways: 3.000"
- Width of cross slide on carriage: 2.000"
- Tool post: may be adjusted for angle cutting (chamfer, boring, etc.)

Capacity:

- Swing over bed: 4.5" (max. turning dia.)
- Swing over cross slide: 2 3/8"
- Overall length of bed: 15.5"
- Overall length of lathe: 16.5
- Tool bit size: 1/4"
- Drill chuck capacity: 0 to 1/2"
- Distance between centers: 9.75"
- Carriage travel: 9"
- Cross slide travel: 1.75"

Spindle Specifications:

- Sealed precision ball: 1.5748 O.D. 0.6692 I.D.
- Spindle nose: 3/4" – 16 (3/4" SAE)
- Spindle hole: 0.343
- Spindle ID taper: 15° (30° included)
- Max. collet diameter: 9/32"
- Pulley size: 5/8" bore

Accessories	Part No.	Price
3-jaw chuck	12-01602	**$57.85**
Boring bar	12-01603	**$4.80**
Tailstock	12-01604	**$35.95**
Drill chuck	12-01605	**$9.50**
1/4 1725 RPM Motor	12-01606	**$144.95**
Motor mount bracket	12-01607	**$4.75**
Mounting board	12-01608	**$6.95**
Pulleys 20" L	12-01609	**$23.25**
Pulleys 12-1/2" L	12-01710	**$23.95**

MICRO MILL

The Micro Mill has effortless, chatterless table and mill head movement. This is due to the unique design of our oversized gibs, ground steel ways, massive carriage, steel bed and vertical mill head support which makes the Micro Mill ready for CNC upgrade if you desire. Our small mill is really a scaled down big mill with manual operation. Other big mill features include large 0.001 graduations on friction adjustable micrometer dials for X, Y, and Z controls. Adjustable gibs provide full compensation for X, Y, and Z mill-ways wear. It all adds up to the best value in small mills. 15.5" table, power switch & cord included. Comes factory assembled. 2-yr. warranty. P/N 12-00170 ..... **$739.00**

General Specifications:

	Manual	*CNC*
•Height:	21-3/8"	26-3/8"
•Width:	17"	22"
•Depth:	16.75"	21"
•Weight:	65 lbs.	85 lbs.

- •Max. bearing run out: 0.0004"
- •Dovetails, X-axis: 45°; Y-axis: 90°

Capacity:

- •Working Axis Travel: X=9.5", Y=5.5", Z=6.0"
- •Maximum Z-Distance to Table: 9.0"
- •Z-Axis Swivel: 90°
- •Column Rotation: up to 180°
- •Spindle Head Rotation: 90°
- •6 Spindle Speeds: 525 to 5200 RPM
- •Z-axis: Steel box-ways
- •Pulley type: Std. 5/8" bore, multi-step V-belt
- •Construction: steel, hard anodized aluminum on all moving components adjustable brass gibs and precision ground steel-ways.

Spindle Specifications:

- •Maximum Spindle Speed: 7000 RPM
- •Sealed Precision Ball Bearing: O.D.=1.5748, I.D.=0.6692
- •Spindle Nose: 3/4" -16 (3/4" SAE)
- •Spindle Hole: 0.343"
- •Spindle ID taper: 15° (30° included)
- • Max. Collet Diameter: 9/32"
- • Pulley size: 5/8" bore

AT429SXC MICRO MILLER

The AT429SXC Micro Miller features a .75 horsepower 20,000 RPM Sioux Tools motor. Cutter capacity is 3/4" and the unit will cut steel, aluminum and stainless steel. Spindle size is 1/4-28 and inlet pipe tap is 1/4" NPT. Air requirements: 90 PSI. Tease trigger allows slow start up & exhaust porting is through the bottom of the handle. P/N AT429SXC **$465.95**

Cutter Size	Cutter Dia.	Skirt Part No.	Skirt Price	Cutter Part No.	Cutter Price
-1	5/16	AT429A-1	**$24.25**	AT429B-1	**$20.75**
-2	3/8	AT429A-2	**$25.50**	AT429B-2	**$20.75**
-3	7/16	AT429A-3	**$24.25**	AT429B-3	**$20.75**
-4	1/2	AT429A-4	**$24.25**	AT429B-4	**$21.75**
-5	9/16	AT429A-5	**$24.25**	AT429B-5	**$22.75**
-6	5/8	AT429A-6	**$24.50**	AT429B-6	**$22.25**
-7	3/4	AT429A-7	**$24.50**	AT429B-7	**$27.75**

PLYWOOD PLANER-SCARFFER ATTACHMENT

The Plywood Planer-Scarffer attachment enables you to make consistent scarf cuts quickly and easily. Easy installation and removal allows your planer to be readily used for scarffing as well as a regular planer. The Planer-Scarffer attachment is easily installed on the Makitan 1900B, Makitan 1911B and the Porter Cable 9125 planers. The attachment is not limited to these particular models or makes. With the Planer-Scarffer attachment, you can purchase standard size sheets of plywood and then join them together. This saves the extra cost of larger sheets and the shipping charges that would be required. By scarffing 4x8 sheets together, save 60% or more in the price of the plywood and make the cost more bearable. The attachment is mounted on a power-planer and cuts an 8:1 bevel. 2 models are available. One fits a 4-3/8" planer for plywood up to 1/2". The other is designed for a 3-1/4" planer and can be used on plywood up to 3/8". Specify planer type when ordering.

3-1/4" for Porter/Cable 9125 ..... P/N 12-20110-1900 ..... **$129.00**
4-3/8" for Makita 1912B..... P/N 12-02414 ..... **$164.95**
3-1/4" for Makita N1900B ..... P/N 12-20111-1911 ..... **$129.00**

PLYWOOD SCARFING MACHINE KIT

Simple and easy to construct using a sanding drum and other readily available items. Allows you to make neat and efficient scarf joints with all types of plywood, varying in thickness from a 1/4 inch down to .4 mm with a professional finish that all woodworkers like to achieve. Safe to use, easy to handle and portable. A fun gadget to use for the amateur or experienced woodworker alike. In The Box: Now includes: Dust removal attachment, 30 inch by 20 inch blueprint and instructions. ..... P/N 12-02819 ..... **$15.00**

CRAFTSMAN WOOD TOOL CHEST PLANS

Build this magnificent wood tool chest from our detailed professional plan. It's the kind of chest a craftsman dreams of. Features 10 drawers in the sturdy base, 12 more drawers plus a large top bin in the removable upper section. Overall size is 25"W x 10-5/16"L x 27"H. Ideal for the aircraft builder or aircraft mechanic. Plans only for Wood Tool Chest.

P/N 12-18350 ..... **$24.95**

CRAFTSMAN WOOD TOOL CABINET PLANS

Machinist's and woodworkers show your skill. Impress potential customers when they come into your shop, and see such a nice cabinet like this. This cabinet has removable trays for easy access to all hand tools. This cabinet when built by my plans, will have room for all your hand tools. As a bonus it has wheels on it for easy mobility. Size of this unit when completed 32"W x 19"D x 68"H

P/N 12-00978 ..... **$16.95**

TO

RV BUILDER TOOL KIT

These RV builders tool kits are based on recommendations from the Van's Aircraft Builders Manual as well as on the tools that have been purchased from Aircraft Spruce by RV builders. It is an excellent tool kit for the construction of the RV4, 6, 7, 8, and 10 aircraft. They include an air drill, hand rivet squeezer, rivet sets and other tools of the highest quality. If you are building a RV-9 order 100 extra 3/32" clecos and 50 extra 1/8" clecos. If you are building a RV-10 kit, order 175 extra 3/32" clecos and 125 extra 1/8" clecos as well as the RV-10 bucking bar. See Chart Below for Components

Kit with 2x Rivet Gun.....P/N 12-00890..... **$2,495.00**
Kit with 3x Rivet Gun.....P/N 12-00899..... **$2,491.00**
RV-10 Bucking bar .....P/N 12-00903..... **$20.50**

RV BUILDER KIT COMPONENTS

Part No.	Description	Price
12-02004	2X Rivet Gun	$148.95
A1006-234X	RETAINER SPRING, BEEHIVE TYPE	$7.75
12-00869	AVERY PNUEMATIC AIR TOOL REG.	$18.75
12-00816	AIR DRILL (PISTOL TYPE)4500RPM	$526.00
12-00872	AVERY AIR TOOL OIL	$6.75
12-00177	HAND RIVETING & DIMPLING TOOL	$213.95
12-00605	AVERY POLY. DIMPLING MALLET	$39.75
12-00320	3" YOKE for Hand Rivet Squeezer	$77.65
12-00882	AVERY 6PC SQUEEZER SET	$48.75
12-00868	AVERY DELUXE DIMPLE DIE KIT	$231.95
12-00613	AVERY POP RIVET DIMPLER 3/32"	$24.75
12-00611	AVERY VISE GRIP DIMPLER 3/32"	$49.90
12-00888	AVERY #615 BUCKING BAR	$29.50
TP-670	BUCKING BAR 1-3/4 LB.	$23.75
SM10-4704	STRAIGHT RIVET SET 1/8X 3-1/2	$7.75
12-00873	AVERY 1/8" DBL OFFSET RIVET ST	$25.50
12-00741	AVERY FLUSH SWIVEL RIVET SET	$44.75
12-07100-3	AVERY BACK RIVET SET 4-1/8"L	$31.80
12-00609	AVERY FLUTING PLIER	$49.75
12-00608	AVERY HAND SEAMER 3-1/2" JAW	$58.75
12-10105	CLECO PLIERS	$5.40
M-3/32	SHEET HOLDERS M-3/32 KWIK-LOK	$0.47
M-1/8	SHEET HOLDERS M-1/8 KWIK-LOK	$0.63
M-5/32	SHEET HOLDERS M-5/32 KWIK-LOK	$0.47
M-3/16	SHEET HOLDERS M-3/16 KWIK-LOK	$0.49
SC-1/2-1/2	1/2" X 1/2" SIDE GRIP CLAMP	$1.85
SC-1/2-1	SIDE GRIP CLAMPS P/N SC-1/2-1	$2.25
12-00632	AVERY EDGE ROLLING TOOL	$23.75
12-00618	AVERY BACK RIVETING PLATE	$64.50
12-00876	AVERY CUT/POLISH WHEEL KIT	$55.85
12-03900	UNIBIT STEP DRILL # 3	$45.25
12-18355	3M™ RIVET TAPE 3/4" GREEN	$9.65
12-04214	#40 SUPER COBALT DRILL (4PACK)	$1.30
12-04217	SUPER COBALT DRILL #30 (3PACK)	$1.65
12-14221	SUPER COBALT DRILL #21 (3PACK)	$1.95
12-04219	SUPER COBALT DRILL #27 (3PACK)	$1.90
12-00886	AVERY #19 COBALT DRILL BIT 2PK	$4.90
12-00885	AVERY #12 COBALT DRILL BIT 2PK	$6.75
12-00884	AVERY 1/4" COBALT DRILL BIT	$4.85
12-05200	DRILL BITS 12" LONG 3/32"	$5.50
12-05300	DRILL BITS 12" LONG 1/8"	$5.75
12-00867	AVERY 4PC DRILL STOP SET	$11.50
12-00883	AVERY 90° ANGLE DRILL KIT	$186.95
12-01412	AVERY MICRO-STOP CSNK CAGE	$36.25
12-00879	AVERY #40 X 3/8" CSNK CUTTER	$13.75
12-00880	AVERY #30 X 3/8 CSNK CUTTER	$13.90
12-00881	AVERY #20 X 1/2" CSNK CUTTER	$13.75
12-00874	AVERY 3PK PILOT PENS	$9.85
1216	STEEL RULES #1216	$8.95
12-00631	AVERY SHOP HD RIVET GAUGE SET	$22.65
12-00633	AVERY RIVET LENGTH GAUGE	$11.75
M-1R	WISS SNIPS # M-1R	$17.65
M-2R	WISS SNIPS # M-2R	$17.65
12-00622	AVERY SPEED DEBURR-CSINK TOOL	$35.50
12-00877	AVERY ROYAL MULTI-BURR TOOL	$13.50
12-00629	AVERY DOUBLE EDGE DEBURR TOOL	$21.85
12-00875	AVERY SCOTCHBRITE CUT/PLSH WHL	$71.50
01-00392	CURVED TOOTH FILE 14" LONG	$39.50
12-00870	AVERY 3/32" DRIVE PIN PUNCH	$7.50
12-00871	AVERY 1/8" DRIVE PIN PUNCH	$7.50
12-00889	AVERY 360DEG SWIVEL POP RVT TL	$46.95
13-19205	JEPP ACFT SHT METAL & EA SM	$19.95
13-11400	STANDARD AIRCRAFT HANDBOOK	$15.50

KIT BUILDER AIRCRAFT TOOL KIT

Initially designed for the RV3, RV4 and RV6 builders, this kit has proven to be very popular with virtually all aircraft home builders. It contains our most popular rivet hammer and is an excellent tool kit for RV builders. Weight: 40 lbs.

P/N 12-01145.....**$695.00**

Part No.	Pcs.	Description
02-R18C-12	3	Jobber's Length Drill
02-R18C-28	3	
02-306-21	1	Integral Pilot Cutter
02-306-30	1	
02-306-40	1	
02-441	1	Countersink Cage
04-M-1/8	175	'M'Type Fastener
04-M-3/32	325	
04-1120	1	Fluting Plier
04-17	1	Rivet Cutter
02-22022	1	Multi-Burr w/5 Blades
04-62	1	Cleco Plier
07-10-4703	1	Rivet Set, 3-1/2" O.A.L.
07-10-4704	1	
07-10-4705	1	
07-10-4706	1	
07-10-500	1	Flush Set, 3-1/2" O.A.L.
07-20-4703	1	Offset Rivet Set, 3-1/2" O.A.L.
07-20-4704	1	
07-20-4705	1	
07-20-4706	1	

Part No.	Pcs.	Description
07-20-500	1	Offset Flush Set, 3-1/2" O.A.L.
07-91	1	Mushroom Rivet Set
08-112	1	Bucking Bar
08-638	1	
08-647	1	
08-670	1	
09-RH-2	1	Handi Retainer Spring
10-420-2A	1	Hand Rivet Squeezer, 2" Yoke
17-3XSP	1	USATCO Rivet Gun
26-200-4703	1	Cupped Squeezer Set
26-200-4704	1	
26-200-4705	1	
26-210	2	Flush Squeezer Set
4263PDSB	1	Spring Back Punch &Die
4264PDSB	1	
62-54404	1	Plastic Kit Box
JSM-705	1	3/8" Reversible Air Drill
TP44	1	Hand Seamer

WHEELING MACHINE
(BENCH MODEL)

Clearly, this is the most popular of in-home English Wheels. Metal Ace offers extensive anvil configurations to meet your needs. Plus, with the new gusseted frame, it's the strongest benchtop wheel on the market. Trick out your custom-built bike or complete hobby projects without breaking the bank. These English wheeling machines provide outstanding performance on small jobs like motorcycle tanks, tank covers, seat cowls and aircraft fillets. Versatile use - mount on bench, clamp in vise or use with optional welded stand. Proudly made in the USA. **Features**: • Thickness capacity for steel is 18 gage;16 gauge with optional stiffener brace. • Features can be rolled into the center of a 44" panel. • Can be mounted to a bench, clamped in a vice or used with the optional welded floor stand. • Optional wheels and stand sold separately. • Anvil yoke is adjustable on both sides of the axle support with thumb screws so the anvil wheel can be trued with the upper wheel. **Specifications**: • 3.25" radius lower anvil • 8" upper wheel • 22" throat depth • Reinforced frame • 18 gauge mild steel capacity .080 AL capacity • Made in the USA.

Wheeling Machine MA 22B.....P/N 12-00571 . **$658.00**

ACCESSORIES

Radius Wheel 5" 22B-5.00.....P/N 12-02026....**$92.00**
Radius Wheel 5" 22B-5.00 Narrow .....P/N 12-02027... **$96.70**
Radius Narrow Offset Wheel 5" 22B-5.00NO.....P/N 12-02028... **$92.00**
Radius Wheel 5" Set of 3 22B-5.00SET .....P/N 12-02029..**$278.50**
Optional Stand for Wheeling Machine MA22B-STAND
P/N 12-00575..**$202.95**

WHEELING MACHINE
(U-WELD MODEL)

This English Wheel U-Weld Kit supplies the components to make your own English wheel, minus the steel tubing. A detailed assembly booklet is provided and the complete kit includes all the key components of the turn-key MetalAce 44F English Wheel. Other kits on the market come with smaller 2" wide x 2 1/2" diameter anvil wheels, smaller diameter upper wheels, and require more assembly. The screwlift quick release cam unit is fully assembled. Components proudly made in the USA.

Features: • Set of 6 lower anvil wheels, 3" wide x 3" diameter • Upper wheel, 3" wide x 8" diameter • Upper wheel yoke assembly with axle and spanner • Anvil yoke assembly • Screwlift quick release cam assembly • Set of 4 caster wheels • Assembly instruction manual • Made in the USA.

Specifications: • 8 x 3" upper wheel • 2.50 R, 3.75 R, 6.00 R, 12.00 R, 24.00 R and Flat lower anvil wheels.

MA44F-KIT - Components and bill of materials to build a 44F English Wheel. P/N 12-00570 ..... **$1,582.00**

MA44F - Fully assembled English Wheeling Machine
P/N 12-02294 ..... **$2,516.00**

TO

AIRCRAFT SPRUCE WEST
CORONA, CA • (877) 4-SPRUCE
AIRCRAFT SPRUCE EAST
PEACHTREE CITY, GA • (877) 477-7823

Prices Subject to Change Without Notice

TOOL KITS

MASTER KIT BUILDERS KIT

The Master Kit Builders Kit (TP176MKB) contains all the tools supplied in the "RV" tool kit plus many more. It is designed to supply all the major, most commonly used tools for the building sheet metal aircraft. These items can be used on RV's, Zenair, Questair and Mustang Aeronautic Kits as well as many, many others. A huge savings can be realized by purchasing this kit over the individual tool price. Wt. 50 lbs.

P/N 12-00832 ..... **$874.00**

Part No.	Pcs.	Description
02-R10C-1/4	1	Jobber's Length Drill
02-R18C-12	2	
02-R18C-30	4	
02-R18C-40	6	
02-306-21	1	Integral Pilot Cutter
02-306-30	1	
02-306-40	1	
02-441	1	Countersink Cage
04-M-1/8	175	'M' Type Fastener
04-M-3/32	325	
04-1120	1	Fluting Plier
04-17	1	Rivet Cutter
02-22022	1	Multi-Burr w/5 Blades
04-63	1	Cleco Plier w/Comfort Grips
07-10-4703	1	Rivet Set, 3-1/2" O.A.L.
07-10-4704	1	
07-10-4705	1	
07-10-4706	1	
07-170	1	Flush Mushroom Set w/Guard
07-20-4703	1	Offset Rivet Set, 3-1/2" O.A.L.
07-20-4704	1	
07-20-4705	1	
07-20-4706	1	
07-20-500	1	Offset Flush Set, 3-1/2" O.A.L.
07-90	1	Mushroom Rivet Set

Part No.	Pcs.	Description
08-112	1	Bucking Bar
08-638	1	
08-647	1	
08-670	1	
09-RH-2	1	Handi Retainer Spring
10-37001	1	POP Swivel Hand Riveter
10-420-2A	1	Hand Rivet Squeezer, 2" Yoke
17-3XSP	1	USATCO Rivet Gun
18-DS-1/4	1	Drill Stop
18-DS-10	1	
18-DS-30	1	
18-DS-40	1	
26-200-4703	1	Cupped Squeezer Set
26-200-4704	1	
26-200-4705	1	
26-210	2	Flush Squeezer Set
4263PDSB	1	Spring Back Punch I Die
4264PDSB	1	
53-120	1	POP Dimple Tool
53-70453	1	3 Piece Aviation Snip Set
61-13551	1	Hole Cutter
62-54405	1	Plastic Kit Box
JSM-705	1	3/8" Reversible Air Drill
TP44	1	Hand Seamer

MASTER AIRCRAFT TOOL KIT

This 121-piece complete Aircraft mechanics Kit is excellent for aircraft restoration, repair and manufacturing. It is ideal for the A & P mechanic, student and homebuilder. Kit comes with everything from sheet metal tools to riveting tools in a two-drawer tool chest. This kit includes the top quality riveting hammer manufactured in the U.S.A. Wt. 48 lbs.

P/N 12-01126 .....**$764.00**

Part No.	Pcs.	Description
02-2962-21	1	Threaded Shank Adapter Drill
02-2962-30	1	
02-2962-40	1	
02-306-21	1	Integral Pilot Cutter
02-306-30	1	
02-306-40	1	
02-441	1	Countersink Cage
02-1120	1	Fluting Plier
04-200	1	Chip Chaser
04-5S	1	Hand Metal Punch Kit
04-501	1	Heavy-Duty Rivet Cutter
04-6	1	Nibbling Hand Tool
04-62	1	Cleco Plier
04-EL-1/2-1	3	Side Grip Fastener
04-EL-1/2-1/2	2	
04-M-1/8	10	'M'Type Fastener
04-M-3/16	10	
04-M-3/32	10	
04-M-5/32	10	
04-WNX-1/8	5	Wing Nut Fastener
04-WNX-3/16	5	
04-WNX-3/32	5	
04-WNX-5/32	5	
07-10-4703	1	Rivet Set, 3-1/2" O.A.L.
07-10-4704	1	
07-10-4705	1	
07-10-4706	1	
07-10-500	1	Flush Rivet Set
07-170	1	Flush Mushroom Set w/ Guard
07-20-4703	1	Offet Rivet Set,
3-1/2" O.A.L.		
07-20-4704	1	
07-20-4705	1	Offset Rivet Set, 3-1/2" O.A.L.

Part No.	Pcs.	Description
07-20-4706	1	
07-20-500	1	Offset Flush Set
08-112	1	Bucking Bar
08-638	1	
08-647	1	
08-670	1	
10-420-2A	1	Hand Rivet Squeezer, 2" Yoke
149-1	1	Wrench (for Cone Jaw Chuck)
15-1580	1	Junior Air Vac
17-3XSP	1	Rivet Gun
18-DS-10	1	Drill Stop
18-DS-21	1	
18-DS-30	1	
18-DS-40	1	
20-127-4S	1	90°Angle Drill Attachment
20-M3	1	Cone Jaw Chuck
26-200-4703	1	Cupped Squeezer Set
26-200-4704	1	
26-200-4705	1	
26-210	1	Flush Squeezer Set
46-231-1	1	Strap Duplicator
46-231-2	1	
46-231-3	1	
46-231-5	1	
53-70453	1	3 Piece Aviation Snip Set
62-54405	1	Plastic Kit Box
75HP575	1	Sheet Metal handbook
JSM-705	1	3/8" Reversible Air Drill
TP44	1	Hand Seamer

TP83 & TP84 RIVET GUN KIT

Virtually all the tools you need for riveting in kit form. Intended for professional sheet metal mechanics, serious home builder/students. Packed in a sturdy molded plastic case. #1 selling kit.

Part No.	Description
07-10-4703	3/32" Rivet Set, 3-1/2" O.A.L.
07-10-4704	1/8" Rivet Set, 3-1/2" O.A.L.
07-10-4705	5/32" Rivet Set, 3-1/2" O.A.L.
07-10-4706	3/16" Rivet Set, 3-1/2" O.A.L.
07-11-4704	1/8" Rivet Set, 5-1/2" O.A.L.
07-11-4705	5/32" Rivet Set, 5-1/2" O.A.L.
07-11-4706	3/16" Rivet Set, 5-1/2" O.A.L.
07-11-4703	Flat Rivet Set
07-140	Offset Flush Mushroom Set
07-170	Flush Mushroom Rivet Set w/ Guard
07-20-4703	3/32" Offset Rivet Set, 3-1/2" O.A.L.
07-20-4704	1/8" Offset Rivet Set, 3-1/2" O.A.L.

Part No.	Description
07-20-4705	5/32" Offset Rivet Set, 3-1/2" O.A.L.
07-92	Flush Mushroom Rivet Set
08-111	Bucking Bar
08-112	Bucking Bar
08-669	Bucking Bar
08-670	Bucking Bar
09-140	Power Regulator
09-RB-2	Beehive Retainer Spring
09-RH-2	Handi Retainer Spring
17-	Rivet Gun
62-14	Molded Plastic Carrying Case

Kit with TP83(3x) Gun .....P/N 12-00240 .....**$298.00**
Kit with TP84(4x) Gun .....P/N 12-02011 .....**$296.00**

DELUXE STUDENT TOOL KIT

This kit meets most school requirements for basic sheet metal tools. These high quality tools will take the student through school and into the profession for years of outstanding service. It contains the most popular rivet hammer and is a great starter kit. Wt. 14 lbs.

P/N 12-01127 ..... **$359.00**

Part No.	Pcs.	Description
0210A-3/32	3	Jobber's Length Drill
0210A-1/8	3	
0210A-5/32	3	
0210A-3/16	3	
0210A-1/4	3	
02-306-21	1	Integral Pilot Cutter
02-306-30	1	
02-306-40	1	
04-M-1/8	10	'M' Type Fastener
04-M-3/16	10	
04-M-3/32	10	
04-M-5/32	10	
02-441	1	Countersink Cage
04-501	1	Rivet Cutter
04-62	1	Cleco Plier
08-670	1	Bucking Bar

Part No.	Pcs.	Description
09H-2	1	Handi Retainer Spring
09B-2	1	Beehive Retainer Spring
09-140	1	Power Regulator
17-3	1	Rivet Gun
07-10-4703	1	Rivet Set, 3-1/2" O.A.L.
07-10-4704	1	
07-10-4705	1	
07-10-4706	1	
07-170	1	Mushroom Set w/ Guard
18-D -10	1	Drill Stop
18-D -21	1	
18-D -30	1	
18-D -40	1	
62-297	1	Canvas Tool Bag
JSM-705	1	3/8" Reversible Air Drill

GLASTAR TOOL KIT

This kit is designed for all new Glastar kit aircraft. The tools included are recommended by the manufacturer, specifically for the assembly of the sheet metal portion of the kit. Many of these tools are of top quality, and designed to last. They are all covered by a 30 day unconditional money back guarantee. P/N 12-00831 ..... **$924.00**

Part No.	Pcs.	Description
02-2962-21	1	HREADED SHANK DRILL
02-2962-30	1	
02-2962-40	1	
02-306-21	1	PILOT CUTTERS COUNTERSINK
02-306-30	1	
02-306-40	1	
02-306-30-120	1	PILOT COUNTERSINK 120°
02-441	1	COUNTERSINK CAGE
02-501-12-40	3	12" AIRCRAFT EXTENSION DRILL
02-501-6-30	3	6" AIRCRAFT EXTENSION DRILL
02-501-6-40	3	
02-C1-H	1	DRILL SETS 60 (NUMBER SIZES)
02-R10B-1/16	3	JOBBERS LENGTH DRILL
02-R10B-1/4	3	
02-R10B-11/64	3	
04-200	1	CHIP CHASER
04-20SL	1	OFFSET SNIPS LEFT HANDED
04-20SR	1	OFFSET SNIPS RIGHT HANDED
04-22022	1	MULTI/BURR-5 5 BLADES INCLUDED
04-3090-1/2	2	SPRING TENSION CLAMPS A-1/2" D-3-1/2"
04-62	1	CLECO PLIER FOR SHEET METAL FASTNERS
04-EL-1/2-1/2	10	SIDE GRIP FASTENER CAPACITY-0-1/2" REACH 1"
04-EL-3/4-1/2	10	
04-K380	1	DEBURR TOOL W/ 3/4" BLADE

Part No.	Pcs.	Description
04-M-1/8	150	'M' TYPE SHEET METAL FASTENER
04-M-3/16	25	
04-M-3/32	250	
04-K380	1	DEBURRING TOOL
04-M-1/8	150	'M' TYPE SHEET METAL FASTENER
04-M-3/16	25	
04-M-3/32	250	
07-10-4703	1	RIVET SET, 3-1/2" O.A.L.
07-10-4704	1	
07-10-4706	1	
07-170	1	MUSHROOM RIVET SET
08-638	1	BUCKING BAR
08-647	1	
08-721	1	
08-760B-1	1	
09-140	1	POWER REGULATOR
10-37001	1	360° POP RIVETER
1245	1	12" FLEX RULER
17-3XSP	1	RIVET GUN
20-127-4S	1	90° ANGLE DRILL ATTACHMENT
53-211-4263	2	RIVET SQUEEZER
53-211-4264	2	PUNCH & DIE SET
53-420-2A	6	HAND SQUEEZER KIT
53-RBH-2	2	BEEHIVE & HANDI RETAINER SPRING
61-860	1	CENTER PUNCH & SCRIBE
62-54405	1	KIT BOX-PLASTIC & METAL
CP-785	1	AIR DRILL,REVERSABLE 3/8" CHUCK

MUSTANG KIT

This kit is designed especially for the assembly of the Mustang Kit aircraft. It is comprised of over 300 items, specifically required in the fabrication and assembly of this aircraft.

This 317 piece kit includes:

1 TP83(3x) or TP84(4x) Rivet Gun
1 TP91 Flush Rivet Set
1 SM10-4703 Rivet Set
1 SM10-4704 Rivet Set
1 SM10-4705 Rivet Set
1 A1007-234X QC Retainer Spring
1 TP346 Heavy Duty Rivet Cutter
1 TP61K Stop Countersink Kit
1 TP722 Fluting Pliers
130 TP75-1/8 Cleco Fasteners
25 TP75L-1/8 Cleco Fasteners
80 TP75-3/32 Cleco Fasteners
1 TP74 Cleco Pliers
1 TP44 Hand Seamer
1 TP227G Duckbill Pliers
1 TP266 Deburring Tool
1 TP888-3 Hand Rivet Squeezer
1 TP116A Squeezer Sets
1 TP751 Bucking Bar
1 TP670 Bucking Bar
1 SM181 Swivel Flush Rivet Set
5 TP641HC Handi-Clamp
25 TP75L-3/32 3/32 Cleco Fasteners
1 TP81 Hand Nibbler
4 TP49-30 Drill Bits
4 TP49-3/32 Drill Bits
4 TP49-40 Drill Bits
4 TP49-1/8 Drill Bits
2 TP49-12 Drill Bits
2 TP49-3/16 Drill Bits
1 TPA5611 Unibit Drill
1 TP294HD Auto Center Punch
1 TP735K Hand Pack Trial Kit
1 TPFS6 Flat File
1 TP4263 Dimple and Die Set
1 TP4264 Dimple and Die Set
1 TP216 Tool Box

Kit w/ TP83 gun (3x).....P/N 12-00347 .....**$723.00**
Kit w/ TP84 gun (4x).....P/N 12-00498 .....**$718.00**

TO

RIVETING HAMMERS

RIVETING HAMMERS

US 3X

These high quality riveting hammers are excellent for all light aircraft metal riveting applications. They feature a convenient offset handle (except Model US3AA which is straight handle) and come complete with retainer spring and regulator. All models feature metered teasing trigger, made in U.S.A.

Part No.	Blows / Min.	Capacity Alum.	Capacity Bore	Stroke	Length	Weight (Lbs.)	Price
US1X	3600	1/8"	9/16"	1-1/2"	5-11/16"	2	**$243.95**
US2X	2580	1/8"	1/2"	2-1/4"	6-11/16"	2-1/4	**$199.95**
US5X	1560	1/4"	3/4"	2-11/16"	6-11/16"	4-3/4	**$347.00**
US7X	900	3/8"	3/4"	5-13/16"	8-5/16"	6	**$373.95**

"RECOILLESS" RIVETING HAMMERS

US 3R

In the early stages of developing a truly recoilless/fatigueless riveting hammer, it was determined that the tools must meet certain goals. The main goal being a reduction in low-frequency vibration in accordance with ISO Standard #5349-1986. In this standard are guidelines for the measurement and assessment of human exposure to hand-transmitted vibration. As a result, the following has been achieved: •Ergonomic design: To maximize user comfort by achieving a relaxing, comfortable, lightweight and balanced tool •Compact tool size: Since aircraft riveting is never standard, a tool that will allow the best overall access • Retain user touch: A metered trigger which provides single or multiple blows per minute while maintaining the ability to set rivets in seconds • Further dampen noise output. • Least amount of parts: No similar tool is produced with fewer parts, thus enhancing reliability, but keeping it simple enough so that maintenance can be done by anyone.
Independent testing* has shown these tools will greatly lessen job-related effects of prolonged exposure to vibration & boost user productivity.

SPECIFICATIONS

Part No.	Capacity Alum.	Capacity Steel	Bore	Stroke	Blows per minute
US3R	3/16"	5/32"	1/2"	3"	1900
US5R	1/4"	3/16"	1/2"	5"	1400

Part No.	Rivet Set dia	Overall Length	Weight	Air Inlet	Price
US3R	.401	7-7/8"	3 Lbs.	1/4 NPT	**$379.95**
US5R	.401	9-7/8"	3.5 Lbs.	1/4 NPT	**$384.00**

PNEUMATIC RIVET SQUEEZER

Heavy duty industrial tools are manufactured to exacting standards to insure long service life. All critical parts, including the yoke, are fabricated from 4130 steel and heat treated to Rc 42-46. These rivet squeezers have earned a reputation for durability and reliability through years of service on the production lines of major airframe manufacturers such as Grumman, Piper, Beech and Cessna. Easily operated by one hand. All replacement parts and other yoke designs available. Features feathering throttle.

SPECIFICATION	MODEL 3000	MODEL 6000
Max. Force	3000	6000
Rivet Capacity Dural	3/16"	3/16"
Steel	5/32"	5/32"
Standard Yoke Reach	2"	2"
Air Hose Size	1/4"	1/4"
Set Travel	9/16"	9/16"
Recommended Line Pressure	90PSI	90PSI
Weight	6 LBS.	6 LBS.

3000..... P/N 12-03400..... **$593.00**
6000..... P/N 12-03500..... **$688.00**

RIVET CONVERSION KITS

Converts your conventional hand pop riveter into an economical RivNut installer tool.

Size	Part No.	Price
6-32	12-13680	**$11.75**
8-32	12-13681	**$11.75**
10-32	12-13682	**$11.75**

AIRCRAFT RIVET GUNS

2X

The standard tool used in aircraft manufacturing plants such as Boeing, Rockwell, Lockheed etc., is completely interchangeable with Chicago Pneumatic. These tools are slow hitting with excellent finger tip control. Accepts all .401 shank rivet sets and attachments. All guns are brand new and carry a full 1 year warranty.

Part No.	Blows / Min.	Capacity Alum.	Bore	Stroke	Weight (Lbs.)	Price
2X	2580	1/8"	1/2"	2-1/4"	2.7	**$148.95**
3X	2160	3/16"	1/2"	2-7/8"	3.4	**$148.95**
4X	1740	1/4"	1/2"	3-1/16"	3.6	**$148.95**

TP82 AND TP84 RIVET GUNS

This "X" type feathering trigger riveter is the only rivet gun that allows you to slowly begin riveting without damage to the skin. This is critical in performing riveting operations. This gun is used by aircraft mechanics worldwide. It's also the perfect tool for kit builders.
NOTE: Long term exposure to low frequency vibration caused by riveting may be harmful to your hands and arms. We suggest you take frequent breaks when riveting to reduce this exposure. Features: * Takes .401 shank rivet sets * Lightweight aluminum handle * Price includes spring retainer & regulator (TP97) * Precision machined hardened and ground valve * "Sure Grip" powder coated finish * Teasing trigger * Precision machined and hardened cylinder for long life. • Made in the U.S.A.
2X Rivet Gun (1/8" Capacity) ..... P/N 12-02004..... **$148.95**
4X Rivet Gun (1/4" Capacity) ..... P/N 12-02008..... **$129.95**

3X RIVET GUN KIT

Virtually all the tools you need for riveting in kit form. Intended for professional sheet metal mechanics, serious home builder/students. Packed in a sturdy molded plastic case. #1 selling kit. Visit www.aircraftspruce.com for a complete list of kit contents.
P/N 12-00240..... **$298.00**

SPECIAL DIMPLING & RIVET SET

FOR RV4, RV6, RV8 AIRCRAFT

This 21-piece dimpling and riveting set was designed especially for use in the construction of the Vans RV aircraft series, and is ideal for a variety of other aircraft as well. All the riveting sets and dimple dies are made from heat treated stainless steel.

**** Dimple dies size stainless steel – rivet set are steel. All are heat treated.***

Special RV Dimpling and Riveting Kit includes: Set holder block, Cup sets, Flat sets, and Spring back dimple dies.
Dimple Dies –3/32", 1/8", 5/32" rivet size. 6-32, 8-32, 10-32 screw sizes.
Cup Sets – 3/32", 1/8", 5/32".
Flat Sets – 1/16", 1/8", 3/16", 1/4", 5/16", 3/8", 1/2". Polyethylene set.
21-piece kit .....P/N 12-00450 ..... **$213.95**

7-PC RIVET SET

Holder includes 3/32", 1/8", 5/32 and 3/16 cups for AN470 rivets, plus 3 flat sets for AN426 rivets. To be used with pneumatic or hand rivet squeezer.
P/N 12-00555..... **$89.50**

6-PC DIMPLE DIE SET

RIVET SIZE

Holder includes springback dimple dies for 3/32", 1/8" and 5/32" rivets. To be used with pneumatic or hand rivet squeezer.
P/N 12-00560 ..... **$94.85**

6-PC DIMPLE DIE SET

SCREW SIZE

Holder includes springback dimple dies for 6-32, 8-32 and 10-32 screw sizes. To be used with pneumatic or hand rivet squeezer.
P/N 12-00565 ..... **$99.75**

TO

RIVET SETS FOR RIVETING HAMMERS

RIVET SETS STRAIGHT .401 SHANK (AN470)

Length "L"	Part Numbers					
	Rivet Size 3/32"	Rivet Size 1/8"	Rivet Size 5/32"	Rivet Size 3/16"	Rivet Size 1/4"	Price
3-1/2"	SM10-4703	SM10-4704	SM10-4705	SM10-4706	SM10-4708	$6.50
5-1/2"	SM11-4703	SM11-4704	SM11-4705	SM11-4706	SM11-4708	$11.95
7-1/2"	SM12-4703	SM12-4704	SM12-4705	SM12-4706	SM12-4708	$12.50
10-1/2"	SM13-4703	SM13-4704	SM13-4705	SM13-4706	SM13-4708	$20.75

RIVET SETS STRAIGHT .498 SHANK (AN470)

Length "L"	Part Numbers					
	Rivet Size 3/32"	Rivet Size 1/8"	Rivet Size 5/32"	Rivet Size 3/16"	Rivet Size 1/4"	Price
3-1/2"	SM30-4703	SM30-4704	SM30-4705	SM30-4706	SM30-4708	$19.50
5-1/2"	SM31-4703	SM31-4704	SM31-4705	SM31-4706	SM31-4708	$10.75
7-1/2"	SM32-4703	SM32-4704	SM32-4705	SM32-4706	SM32-4708	$25.90

FLUSH SETS STRAIGHT .401 SHANK (AN426)

Dia.	Length	P/N	Price	Dia.	Length	P/N	Price
1"	2-1/2"	SM90	$11.50	1-1/2"	5-1/2"	SM95	$22.75
1"	3"	SM91	$11.95	1-1/2"	3-1/8"	SM96	$22.75
1"	5-1/2"	SM92	$15.90	1-3/4"	3-1/4"	SM97	$26.95
1"	7-1/2"	SM93	$23.85	1-1/8"	2-1/4"	SM98	$22.75
1-1/4"	3"	SM94	$22.95	1-1/4"	2-1/4"	SM99	$23.25

NOTE: These flush sets are universal for any diameter rivet. Order by part number referencing the length and diameter of the flush set required.

FLUSH SETS STRAIGHT .498 SHANK (AN426)

Dia.	Length	P/N	Price	Dia.	Length	P/N	Price
1"	2-1/2"	SM100	$15.95	1-1/2"	3-1/8"	SM106	$23.50
1"	3"	SM101	$24.25	1-3/4"	3-1/4"	SM107	$24.75
1"	5-1/2"	SM102	$22.25	1-1/8"	2-1/4"	SM108	$22.50
1"	7-1/2"	SM103	$23.50	1-1/4"	2-1/4"	SM109	$17.95

NOTE: These flush sets are universal for any diameter rivet. Order by part number referencing the length and diameter of the flush set required.

SETS FOR HIGH SHEAR RIVETS .401 SHANK

Length on all is 3-1/2"

Rivet Size	Part No.	Price
1/8"	SMHS10-4	$22.85
5/32"	SMHS10-5	$20.95
3/16"	SMHS10-6	$21.75
1/4"	SMHS10-8	$20.75

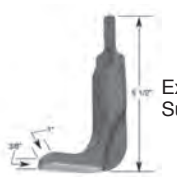
RIVET SETS OFFSET .401 SHANK (AN470)

Length "L"	Part Numbers					
	Rivet Size 3/32"	Rivet Size 1/8"	Rivet Size 5/32"	Rivet Size 3/16"	Rivet Size 1/4"	Price
3-1/2"	SM20-4703	SM20-4704	SM20-4705	SM20-4706	SM20-4708	$8.75
5-1/2"	SM21-4703	SM21-4704	SM21-4705	SM21-4706	SM21-4708	$13.50
7-1/2"	SM22-4703	SM22-4704	SM22-4705	SM22-4706	SM22-4708	$14.75
10-1/2"	SM23-4703	SM23-4704	SM23-4705	SM23-4706	SM23-4708	$23.50

FLUSH SETS OFFSET .401 SHANK (AN426)

DIA	Length	P/N	Price
1"	3-1/2"	SM140	$23.50
1"	7-1/2"	SM142	$18.90
1"	5-1/2"	SM141	$18.65

NOTE: These flush sets are universal for any diameter rivet. Order by part number referencing the length and diameter of the flush set required.



OFFSET FLUSH SET

Excellent for limited access areas. Shank: 0.401. Surface Face: 1" x 1 1/2".
P/N 12-02892.....**$34.95**

"T" FLUSH SET

T Flush Set New. Surface: 1 1/2" x 1/2". Overall Length: 5 3/4". Weight: 0.50 lbs.. Shank: 0.401.
P/N 12-02894.....**$14.95**

BUCKING BLOCKS

Designed to be used with a riveting gun or by striking with a hammer. For aid with dimpling and/or riveting applications. Acts as a holding fixture for .187 shank dimple dies or rivet sets. Weight: 4 lbs. P/N 12-00805.....**$36.50**

SWIVEL DIMPLING TOOL .401 SHANK

*Can be used with TP93 Bucking Block

***Example: To order L = 3-1/2 - 1/8" Rivet specify: SM10SP-4264

Model #	"L"	Type	Price
SM10SP***	3-1/2"	Punch	$59.75
SM10SD	3-1/2"	Die	$39.30

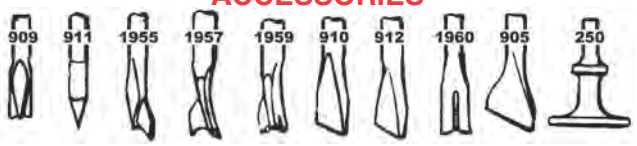
Cuppings	3/32	1/8	5/32	3/16
For 100° Rivets (AN426)	4263	4264	4265	4266

KNOCKOUT PUNCHES FOR HIGH SHEAR RIVETS

Knockout punches for high shear rivets .40 shank. Made in the U.S.A.

Description	Length	Rivet Size	Part No.	Price
SMHS401K-4	3-1/2"	1/8"	12-01116	$7.75
SMHS401K-5	3-1/2"	5/32"	12-01117	$19.85
SMHS401K-6	3-1/2"	3/16"	12-01118	$19.85
SMHS401K-8	3-1/2"	1/4"	12-01119	$7.75

.401 SHANK RIVETING HAMMER ACCESSORIES



Description	P/N	Price	Description	P/N	Price
Twin Blade Cutter	909	$18.75	Chisel	910	$13.25
Moil Point	911	$13.50	Rivet Buster	912	$65.25
Body Ripper	1955	$10.25	Spotweld Breaker	1960	$10.20
Panel Cutter	1957	$85.25	Scraper	905	$15.50
Metal Trimmer	1959	$15.90	Flush Set	SM97	$26.95

RETAINER SPRINGS

Retainer springs comes in two styles: Quick Change Type: Designed to make possible speedy changing of rivet set in rivet gun. Beehive Type: Designed as a fixed type to securely hold rivet set in rivet gun.

Rivet Hammer Model #	Beehive Type		Quick Change Type	
	Part No.	Price ea.	Part No.	Price ea.
1X-2X-3X-4X	A1006-234X	$7.75		
5X-7X-9X	A1006-579X	$7.75	A1007-234X	$4.90
E3-E5	A1006-234X	$7.75	A1007-100B	$7.50
100B-200B			A1007-234X	$4.90
AVC12-AVC13	A1006-AVC	$9.75		
3R-5R	A1006-234X	$7.75		

STUBBY MICROSTOP

Stubby Microstop 1/4"-28 Threaded Shank for use in angle motors. Adjustable in 0.001" increments. 1/4"-28 female threads. 1/2" cutter capacity. Rated for 3,000 RPM use.
P/N 12-02893.....**$19.25**

SPRING LOADED CENTER PUNCHES

Spring loaded center punch for 1/8" OR 3/32" and larger rivet heads. This spring loaded center punch works great with universal aluminum head rivets, oval head and round head rivets.
1/8" .....P/N 12-02464.....**$34.95**
3/32" .....P/N 12-02934.....**$34.95**

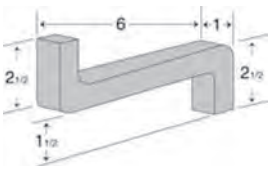
BACK RIVETING RIVET SET

For back riveting flush rivets on RV control surfaces and other homebuilts. Has a plastic Delrin sleeve with spring to hold multiple sheets of aluminum together while riveting. 0.401 shank x 4-1/8 inches long.
Back Rivet Set 3-1/2" long .....P/N 12-07100-3.....**$31.80 ea.**

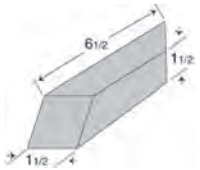
TO

BUCKING BARS

Our bucking bars are cast with ductile iron to insure non-porous finish which is very important in order to have a highly polished finished surface. They are heat treated to 38-42 RC and therefore can be repolished many times without changing hardness. This wide selection of sizes, shapes, and weights enables the aircraft builder to pick the proper bar for his job. Made in the U.S.A.

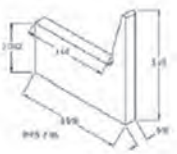


12-01302 2-3/4 Lbs. **$33.75**



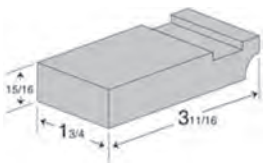
12-01303 3 Lbs. **$16.85**

12-01305 3 Lbs. **$16.75**

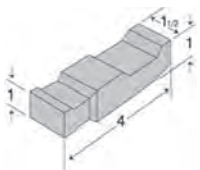


12-01306 2 Lbs. **$16.75**

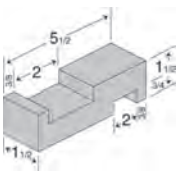
12-01307 1-3/4 Lbs. **$16.85**



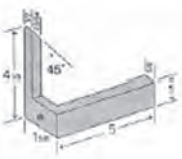
12-01308 1-1/2 Lbs **$16.85**



12-01309 1-1/4 Lbs. **$16.60**

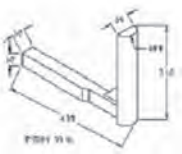


12-01310 2-3/8 Lbs. **$16.75**

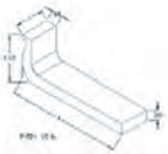


12-01311 1-1/4 Lbs. $16.75

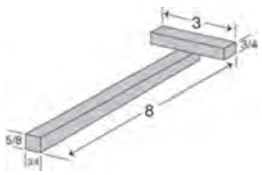
12-01312 3-5/16 Lbs. **$26.50**



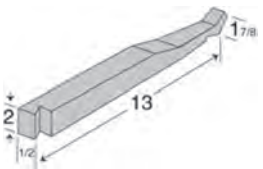
12-01313 1-1/4 Lbs. **$17.00**



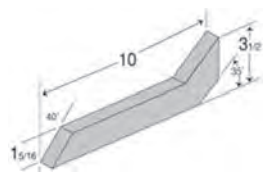
12-01314 1/2 Lbs. **$16.50**



12-01315 1-1/2 Lbs. **$60.75**



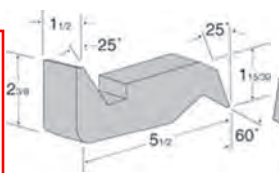
TP-683 3-1/4 Lbs. **$16.85**



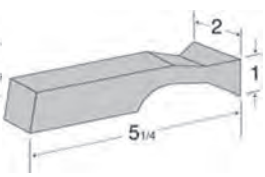
12-01319 1-3/4 Lbs. **$52.85**

12-01320 2-1/2 Lbs. **$36.75**

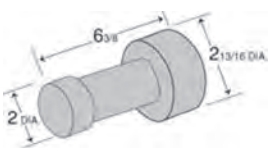
BACK RIVETING RIVET SET



12-01281 3 Lbs. **$15.90**



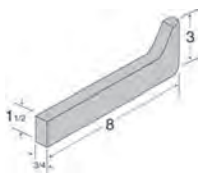
12-01282 1-3/8 Lbs. **$16.95**



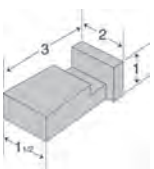
12-01284 6 Lbs. **$36.75**

12-01285 1-1/2 Lbs. **$16.85**

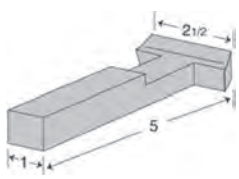
12-01286 3/4 Lb. **$36.50**



12-01287 2-3/4 Lbs. **$51.85**



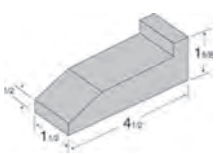
12-01288 1-1/4 Lbs. **$16.75**



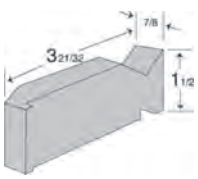
12-01289 1-1/4 Lbs. **$16.75**

12-01290 1 Lb. **$16.95**

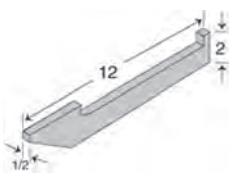
12-01291 1-1/4 Lbs. **$23.75**



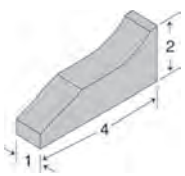
12-01292 2 Lbs. **$16.85**



12-01293 1-1/4 Lbs. **$19.75**



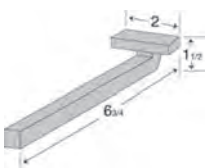
12-00828 2-1/4 Lbs. **$59.95**



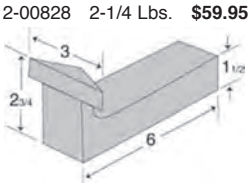
12-00841 1-1/2 Lbs. **$17.95**

12-01294 2 Lbs. **$27.50**

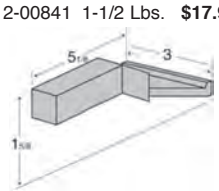
AT-618 2-1/4 Lbs. **$39.75**



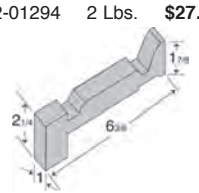
12-01295 1 Lb. **$16.85**



12-01296 4-1/4 Lbs. **$25.90**

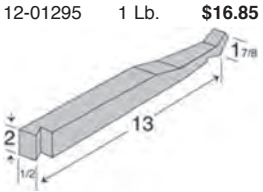


12-01297 1-3/8 Lbs. **$16.75**



12-01298 1-3/4 Lbs. **$23.75**

12-01299 2-1/4 Lbs. **$40.00**



12-01301 3-1/4 Lbs. **$16.85**

TO

BUCKING BARS – V-DRILL – V-TAP GUIDES

BUCKING BAR 601

5.25 lbs. ..... P/N 12-02907 ..... **$19.95**

BUCKING BAR 638

1.25 lbs. Style B..... P/N 12-02899 ..... **$15.95**

BUCKING BAR 670

2 lbs. Style A..... P/N 12-02898 ..... **$14.95**

BUCKING BAR 692

2.9 lbs. ..... P/N 12-02909 ..... **$16.95**

BUCKING BAR 736

2.11 lbs. ..... P/N 12-02908 ..... **$15.95**

BUCKING BAR 750U-1

1.65 lbs. ..... P/N 12-02906 ..... **$11.95**

BUCKING BAR KIT

This starter kit contains the most commonly used bucking bars. Multi-finished surfaces for numerous applications. Heat treated for durability.

- 1 AT638 Bucking Bar
- 1 AT681 Bucking Bar
- 1 AT647 Bucking Bar
- 1 AT670 Bucking Bar

P/N 12-00840..... **$156.95**

V-DRILL PORTABLE GUIDES

The V-Drill Guide is like a portable drill press for precision alignment. V-groove along the bottom of the guide allows for perpendicular alignment with all drill sizes on round parts and corners. Bottom surface is precision ground to assure stability and accurate perpendicular alignment on flat surfaces.
Drill guide is sized for drill bit sizes: 1/8" to 3/8", and made for 17 standard drill sizes (1/8 to 3/8 in 1/64 increments).
Guides are made from special nickel alloyed steel that is heat treated for durability. Drill Straight - Every Time!
Drill Guide comes with a handy plastic storage case and is 100% American Made Quality.
Features: • Accurate - 90 degree V-groove along the bottom - automatically squares up the drill with the surface • Portable - Pocket size - Reusable plastic storage tube • Built to Last - Special nickel alloyed steel • High Quality - Natural steel finish - non-plated - Heat-treated for durability. P/N 12-02937 ..... **$22.45**

V-TAP GUIDES

The V-Tap Guides are for regular ground taps for hand tapping threads into pre-drilled holes. Works great on flat surfaces, round parts, and angled edges. Tap Straight - Every Time!
Standard: Guide holes are sized for ANSI Standard Ground Taps (0-80, 1-64, 1-72, 2-56, 2-64, 3-48, 3-56, 4-36, 4-40, 4-48, 5-40, 5-44, 6-32, 6-36, 6-40, 8-32, 8-36, 8-40, 10-24, 10-32, ¼-20, ¼-28, 5/16-18, 5/16-24, 3/8-16, 3/8-24, 7/16-14, 7/16-20, ½-13, ½-20, 5/8-11, 5/8-18). A protective plastic storage tube is included.
P/N 12-02938 ..... **$20.66**
Metric: Guide holes are sized for ANSI Standard Ground Thread Metric Taps (1.6mm, 2mm, 2.5mm, 3mm, 3.5mm, 4mm, 5mm, 6mm, 8mm, 10mm, 12mm, 14mm, 16mm). A protective plastic storage case is included. P/N 12-02939 ..... **$20.66**

STI V-TAP GUIDES (SCREW THREAD INSERTS)

The STI (Screw Thread Insert) V-Tap Guides are for Helicoil type taps to repair striped out threads.
STI V-TAP Guide (Unified Course Threads): Can handle standard ground STI hand tap sizes: 9/16-12, 1/2-13, 7/16-14, 3/8-16, 5/16-18, 1/4-20, 12-24, 10-24, 8-32, 6-32. P/N 12-02940 ..... **$20.66**
STI V-TAP Guide (Unified Fine Threads): Can handle standard ground STI hand tap sizes: 5/8-18, 9/16-18, 1/2-20, 7/16-20, 3/8-24, 5/16-24, 1/4-28, 10-32, 8-36. P/N 12-02941 ..... **2.95**

TO

RIVET TOOLS – SHEARS

RIVET REMOVAL TOOL

This quality tool enables the user to quickly and accurately remove rivets and blind fasteners. The tool comes complete with drill bits and guides, #40, #30, #21, and #10. Made in U.S.A.

P/N 12-00817 ..... **$47.95**

REPLACEMENT BITS

P/N 12-01128 - #10 ..... **$3.35**
P/N 12-01129 - #21 ..... **$2.70**
P/N 12-01130 - #30 .. **$2.50**
P/N 12-01131 - #40 .. **$2.55**

HAND RIVETING & DIMPLING TOOL

Used for hand dimpling of skins and small parts and for hand riveting of parts, assemblies, and spars. This tool maintains alignment of the dies to each other, and insures proper alignment to the work surface for superior dimpling results over either rivet gun or free-hand dimpling methods.

Features include: • 22" deep x 4" tall throat • Heavy wall 1" x 2" steel tube arm • Heavy wall aluminum channel base • Bronze 1/2" I.D. guide bushings for shafts • Heat treated and centerless ground stainless steel driver shaft (2)– one shaft has flat end for riveting with rivet gun & one shaft accepts 0.187" shanks for dimple dies & sets. •1.5" extension shaft for dies • Adjustable die holder block. Rivet Tool Return Spring Kit now included (Spring, collar and wrench). Great for one handed dimpling of skins and parts. Uses rivet, dimple and die sets with .187" shank. (Dies and sets sold separately)

P/N 12-00177 ..... **$213.95**

DRDT-2 RIVET DIMPLER

DRDT-2 (AKA Dash 2) is a welded steel c-frame rivet dimpler. Replaces the common impact c-frame rivet dimplers of the past. With its ample mechanical advantage, dimpling is fast, easy, less fatiguing and safe on the skins. With a fully adjustable set holder you can achieve consistent and accurate dimples. The DRDT-2 incorporates a new low force spring return system that prevents skin damage from the accidental release of the handle without increasing the force required to dimple. 22" throat depth allows dimpling of up to 44" wide sheets. The relief under the lower frame member provides dimpling access to spars, ribs, leading edge skins. Designed and analyzed using state of the art engineering tools the DRDT-2 can handle all your dimpling needs on your project. The DRDT-2 is painted with an industrial powder coat giving one of the toughest finishes available. Features: • Weight: 60 lbs • Size: 28"X16"X3" • Capacity: Up to 22" depth • Gap: 4" • Skin thickness: Up to 0.040" Aluminum. Dimple Dies: 3/16" shank Diameter.

Rivet Dimpler ..... P/N 12-00907 ..... **$399.00**
Dimple Die Rivet Set ..... P/N 12-00560 ..... **$94.85**
Dimple Die Screw Set ..... P/N 12-00565 ..... **$99.75**

LONG REACH PLIER KITS

(3) pieces for access into the most demanding applications. Each plier has a full 11" reach. Medium carbon steel, hardened, fully polished. Cushion PVC handles. Vinyl storage pouch. Model TP942 ..... P/N 12-00364 ..... **$35.75**

HOLE DUPLICATORS

(DRILL BUSHING TYPE)

Provide an accurate means of drilling duplicate matching holes in overlapping sheets. Hole to be duplicated is drilled though bushing when pilot is in place..... **$12.75 ea**

Part No.	Pilot & Drill Size	Part No.	Pilot & Drill Size
AT532-61 #40	(.098")	AT532-63 #21	(.159")
AT532-62 #30	(.129")	AT532-65 #10	(.194")

DRILL STOPS

Lock on drill with set screw. Regulate hole depth, cushion the breakthrough. Eliminate surface marks & reduce drill breakage.

#40 Drill P/N 12-08800 ..... **$0.95**
#30 Drill P/N 12-08900 ..... **$0.95**
#28 Drill P/N 12-09000 ..... **$1.77**
#21 Drill P/N 12-09100 ..... **$1.15**
#20 Drill ..... P/N 12-09200 .. **$0.96**
#12 Drill ..... P/N 12-09300 .... **$1.47**
#10 Drill ..... P/N 12-09400 .. **$0.95**
1/4" Drill ..... P/N 12-09500 .... **$1.39**

ANGLE DRILL

One of the smallest angle head designs for close-quarter drilling operations. Made in USA. Features: • 2800 rpm • 90° angle head • Rear exhaust • 1/4" drilling capacity • 59/64" angle head height • 1/4"-28 threaded spindle • 12-5/8" length • 78DB P/N 12-00241 ..... **$324.50**

RIVET SHANK REMOVAL PLIERS

Tired of battling those rivet shanks stuck in the ribs and under other underlying structures after you have drilled the heads off and removed the skin? The Rivet Shank Removal Pliers will make short work of this unpleasant task and turn a two man job into a one man job. A handy, patented tool whhich will reduce labor time and costs.

P/N 12-00745 ..... **$65.50**

POWER SHEAR

This air-powered shear cuts straight lines or curves up to 180 inches/minute. An ideal shear for any aircraft builder. Cuts up to 18 gauge mild steel. Width of cut: 7/32". Length: 8-1/4". Wt. 2.14 Lbs.

P/N 12-01330 ..... **$375.00**

ROUTER

This air-powered router is very light weight and features a straight handle and rear exhaust. Base is 1-1/2" and router guide is included. RPM: 20,000. Router shank: 1/4". Length: 6". Wt.: 1-1/2.12 Lbs. Made in U.S.A.

P/N 12-01321 ..... **$285.95**

CHIP CHASER

This handy, economical tool removes chips and burrs on metal between sheets after rivet holes have been drilled. A recommended tool for any aircraft builder involved with sheet metal work.Router P/N 12-01304 ..... **$6.75**

WISS ANGLE SNIPS

The new M8R and M9R compound action snips possess the same outstanding durability as all the other products in the wide Wiss® compound action line, but feature a right-angle blade that allow greater reach in overhead and other awkward applications.

And like every other Wiss compound action snip, both the M8R and M9R have a unique blade edge, shaped to allow the material to set deeper and serrated to hold it tight during the cut.

M8R - Compound action right angle blade cuts straight to left
P/N 12-02007 ..... **$24.85**

M9R - Compound action right angle blade cuts straight to right.
P/N 12-02006 ..... **$24.85**

SMALL BODY RIGHT ANGLE DRILL

The ACAT 90 Degree Right Angle Drill is a high-precision, powerful, durable drill. 3200 RPM. Weight: 1.8 lbs. Length: 10 1/4". Accepts industry standard 1/4"- 28 threaded bits. P/N 12-02859 ..... **$247.95**

AIR DRILLS (PISTOL TYPE)

These air powered pistol drills feature ergonomic design and use .90 H.P. motors. Sound level is a low 84 db while production output remains high with these high quality drills. Made in U.S.A.

Part No.	RPM	Capacity	Length	Weight	Price
12-00816	4,500	1/4"	6"	2 lbs	**$526.00**
12-00815	1,800	3/8"	6-1/2"	2.6 lbs.	**$165.95**
12-00813	500	3/8"	7-1/2"	2.13 lbs.	**$661.00**

TO

SHEET METAL TOOLS

MARVEL AIR TOOL OIL

MARVEL brand oil - - especially engineered for care of piston-type and rotary air tools. Prevents rust formation while providing lubrication for longer tool life and smoother operation. Keeps your air tools in top shape. A "must" for all air tools. 4 oz. bottle with spout.

P/N 12-00872 .....**$6.75**

COUNTERBORE

A 10" thread extension is used for boring holes in hard-to-reach places. Primary use is in the installation of the landing gear on the LongEZ and Cozy aircraft. 3/4" bore does not have 1/4" pilot and must use the pilot received with the 5/8" boring tool. 5/8" dia. w/1/4" pilot ....P/N 12-00219.....**$55.75**
3/4" dia. w/o pilot.....P/N 12-00220.....**$39.50**

MICRO-STOP COUNTERSINK CAGES & NYLON FOOT PIECE

2 Models available-one with NEEDLE bearing and one with BRONZE bushings. .001" increment depth adjustment. Positive adjustment lock. 1/4" dia. shank. 9/32" shaft travel. 9/16" cutter capacity. For 1/4-28 threaded cutters. Comes with "NO-MAR" foot piece. Rated at 3,000 RPM. Made in USA.

With Bronze Bushings .....P/N 12-01412.....**$36.25**
With Needle Bearings.....P/N 12-00940.....**$36.75**

SQUEEZER SET MIX

6 piece set of the most commonly used squeezer sets shown above: 3/32" & 1/8" cup sets; 1/8" modified cup set; 1/8" & 1/4" flush sets; & 1/16" by 3/8" dia. flush set; plus #4510 organizer block.

P/N 12-00882 .....**$48.75**

90° ANGLE DRILL KIT

This angle drill kit includes a drill attachment with quality ball bearing construction for long life. Kit includes 12 threaded drills in assorted sizes and lengths, a mini 3-jaw chuck with 1/16" to 1/4" diameter capacity, and a molded storage case. Made in the U.S.A.

Drill Sizes:	1 ea.	#2140	#40 stubby	1 ea.	#2130	#30 stubby
	2 ea.	#3140	#40 short	2 ea.	#3130	#30 short
	1 ea.	#3127	#27 short	1 ea.	#3121	#21 short
	1 ea.	#3112	#12 short	1 ea.	#3114	#1/4" short
	1 ea.	#4140	#40 long	1 ea.	#4130	#30 long
	1 ea.	#20379 Mini 3-jaw chuck				

P/N 12-00883 ..... **$186.95**

STOP COUNTERSINK CUTTERS - 100°

• Made in the U.S.A. • High Speed Steel • 1/4" -28 Threaded Shanks • 100° 3-Flute Precision Ground •For Use in Micro-Stop Countersink Units • 8 Sizes Available

Pilot Size	Decimal Equiv.	Body Dia.	Part No.	Price
#40 (3/32" rivet)	.0980"	3/8"	12-00879	**$13.75**
#40 (3/32" rivet)	.0980"	1/2"	12-00942	**$13.95**
#30 (1/8" rivet)	.1285"	3/8"	12-00880	**$13.90**
#27 (#6 screw)	.1440"	1/2"	12-00943	**$13.95**
#20 (#8 screw)	.1610"	1/2"	12-00881	**$13.75**
#12 (#10 screw)	.1890"	1/2"	12-00944	**$13.95**
5/32" (5/32" rivet)	.1560"	1/2"	12-00945	**$13.95**
3/16" (3/16" rivet)	.1875"	1/2"	12-00946	**$13.95**
1/4" (1/4" rivet)	.2500"	1/2"	12-00947	**$13.95**

TEMPIL MARKERS

Marks easily on metal, ceramic, glass, plastic, wood and paper. Markings are fast drying, permanent, weatherproof. Won't rub off, run, fade, chip, peel or blister. The surface can be wet, dry, rough, smooth or oily. Efficient on any horizontal, vertical or inclined surface. Long-lasting 6" ball point tube with non-clogging paint.

Black..... P/N 12-11901.....**$7.50** Red ..... P/N 12-11907 ....**$7.50**
White ..... P/N 12-11908.....**$7.50** Yellow ..... P/N 12-11911 ....**$7.50**

360° SWIVEL HAND POP RIVET TOOL

Stanley brand professional hand pop rivet tool. Unique head design swivels 360° for riveting in any position, at any angle. Extended nose for hard to reach places. Built in handle latch. Die-Cast aluminum & hardened steel construction. Molded grips. Includes (4) interchangeable steel nose-pieces for: 3/32", 1/8", 5/32", & 3/16"

P/N 12-00889 .....**$46.95**

DELUXE DIMPLE DIE KIT W/BLOCK

This deluxe dimple die kit has all the most commonly used dimple
dies in one package--at a special price. This kit includes:

1- 3/32 Dimple Die Set
1- 1/8 Dimple Die Set
1- #6 Screw Dimple Die Set
1- #4520 Organizer Block for Dies
1- #14870 Female Die / 3/8" Dia.
1- #14871 1/8" Female Die / 3/8" Dia.
1- #8 Screw Dimple Die Set

P/N 12-00868 .....**$231.95**

DOUBLE OFFSET RIVET SET

SET OF 4 RIVET SETS - 5-1/2" long sets. Used for hard to reach rivets in corners. High alloy steel and heat treated. Shanks are precision ground. Cuppings are polished.

3/32" Double Offset Rivet Set .....P/N 12-00936 ..... **$21.95**
AVERY 1/8" Dbl. Offset Rivet Set .....P/N 12-00873 ..... **$25.50**
5/32" Double Offset Rivet Set .....P/N 12-00937 ..... **$24.95**
3/16" Double Offset Rivet Set .....P/N 12-00938 ..... **$28.75**
4-PC Double Offset Rivet Set .....P/N 12-00939 ..... **$92.25**

AVERY CUTTING & POLISHING WHEEL KIT

Avery cutting polishing wheels are a uniform blend of minerals and resins molded into wheel form with rugged, dense construction that provides aggressive polishing and blending action without removing excess base materials. These wheels generate uniform finishes and can remove minor surface imperfections. Use these wheels with a die grinder for deburring holes and edges. Small wheels are more versatile than large (6") wheels. Can be used on hand held parts or parts in the jig. These wheels are the same density, grade, and mineral type as the 7A MED 6" wheel.

Kit Contents: (1) #936 Mandrel + (2) 1" x 1" x 3/16" Wheels (1) #932 Mandrel + (2) 2" x 3/4" x 1/4" Wheels .....P/N 12-00876 .....**$55.85**
1" x 1" x 3/116" Hole Wheel .....P/N 12-01997 .....**$8.85**
Mandrel for 3700 .....P/N 12-01996 .....**$8.50**
2" x 3/4" x 1/4" Hole Wheel .....P/N 12-01999 .....**$7.75**
Mandrel for 3719 .....P/N 12-01998 .....**$9.75**

3M™ SCOTCH-BRITE™ DEBURRING WHEEL

Two Styles Available: Cut & Polish/Unitized Wheel-7A Medium grade (harder) Use to radius and deburr edges of aluminum parts. These wheels give a uniform brushed satin finish to parts and deburr quicker and easier than hand finishing. These wheels are discs of Scotch-Brite web compressed and bonded to form a rugged, dense wheel. Wheel size: 6" dia. x 1" wide x 1/2" thru hole. .....P/N 12-00875 .....**$71.50**

Light Deburring Wheel-7S Fine Grade (Softer)
Light deburring 7S Fin 6 x 1 x 1. This wheel has a 1" thru hole. To fit 1/2" order P/N 12-01585. .....P/N 12-00948 .....**$63.25**
3M Flange Adapter 3 45035 1/2" .....P/N 12-01585 .....**$4.25**

DRIVE PIN PUNCHES

Drive Pin Punch 1/16" .....P/N 12-00949 ..... **$8.75**
Drive Pin Punch 3/32" .....P/N 12-00870 ..... **$7.50**
Drive Pin Punch 1/8" .....P/N 12-00871 ..... **$7.50**

4-PIECE DRILL STOP SET

Use when drilling in sheet metal to help eliminate drill breakage & surface marks. Safely keeps drill from going too far through the work. Drill stops have a coiled spring to cushion the drill breakthrough & prevents the drill chuck from marring the work surface. Color coded for easy identification.

P/N 12-00867 .....**$11.50**

TO

SHEET METAL TOOLS

POLYETHYLENE DIMPLING MALLET

This custom made UHMW polyethylene plastic mallet is great for dimpling skins. Blows are more solid and much quieter than with steel hammers. Will outlast wood mallets. Hammer head measures 2.5" round x 4" long with 12" handle. Wt: 16oz. P/N 12-00605..... **$39.75**

PLASTIC FORMING MALLET

This custom made UHMW polyethylene plastic forming mallet is great for metal forming. Smooth radiused surfaces will not marr surface. Long life, split resistant. Mallet head measures 2.5" round X 5" long w/ 11" handle; Wt: 14 oz. Great combo to the shot bag.

P/N 12-00607 .....**$39.65**

METAL FORMING SHOT BAG

For those builders that want to try their hand at metal forming this leather shot bag is a must have item. Leather shot bag made from 3/4 oz. top grain cowhide. The bag is double stitched and fills through a 1" opening sealed with Velcro. The bag is 12" round and 1-1/2" thick. Use lead shot #8 - #7.5; or sand - mortar quality type (shot can be purchased at local sporting goods or gun stores). P/N 12-00606 .....**$47.25**

HAND SEAMER/3.5" JAW

Has VISE GRIP locking feature to aid clamping & holding work. Use for straightening and bending rib and bulkhead flanges. Made with 7" vise grip plier. Jaws are made from 3/16" X 1" X 3-1/2" stainless steel with machined radius. TIG welded & polished. P/N 12-00608 .....**$58.75**

FLUTING PLIER

Make narrow & precise flutes for straightening ribs and bulkheads easier & better than pliers with molded jaws. Made with 7" VISE GRIP pliers. Pins are 3/16" dia. stainless steel. TIG welded & polished.

P/N 12-00609 .....**$49.75**

VISE GRIP DIMPLERS

Made for dimpling in restricted and hard to reach places where regular dimple dies won't fit. Made with 7" VISE GRIP plier. Machined tool steel dimple dies are T.I.G. welded to the VISE GRIP jaws then polished. 2 sizes available (3/32" and 1/8").

3/32".....P/N 12-00611 .....**$49.90**
1/8".....P/N 12-00612 .....**$51.50**

LEVER SNIPS

Offset cutting tool, leaves 2 clean, finished edges. 8.5" length, .75 lb.

Model TP133 - (Right hand snip, cuts left & straight)..... P/N 12-00366 ..... **$24.50**
Model TP134 - (Left hand snip, cuts left & straight)
P/N 12-00367 ..... **$22.75**

ROBIN OFFSET HEAVY DUTY SNIP

This offset blade design allows the sheet to pass under your hand. The steel forged blades keeps metal from stretching and causing puckering marks along the cut edge. 16 gauge mild steel capacity. 1.63 lbs.

Model TP299 .....P/N 12-00369 ..... **$53.85**

OFFSET TINNER MAG-SNIPS M1200

Offset blades keep hands safely above material. Long cuts are easy because offset blades flow material away from blades. Light weight cast magnesium handles. Blades are easily replaceable. 13" long with 3" cut.

P/N 12-02421.....**$34.75**

ADJUSTABLE SET HOLDER FOR PNEUMATIC SQUEEZERS

New improved design. Heat treated 4130 steel investment casting with rolled threads. This special set holder is made to replace the rigid (2-9/16") set holder standard to most CP214 style pneumatic squeezers. This adjustable set holder will eliminate the need to shim the dies and sets with shim washers. Adjustments are faster & easier.

P/N 12-00615 .....**$85.00**

Note: Only for yokes with 1" thick base or less. Will not work in tandem units.

POP GRIP DIMPLERS AN-426 RIVETS

For dimpling in hard to reach places. Works with any hand pop rivet tool. Can be used over & over. Works for both 100 & 120 pop rivets. Extra nails included (Uses standard hardware store nails). 2 sizes available. 3/32".....P/N 12-00613 .....**$24.75**
1/8".....P/N 12-00614 .....**$24.50**

Note: The pop rivet dimplers show above are made with 100° angles, same as regular dimple dies. They will work with either solid flush rivets (AN-426 – 100°) or with pull type rivets such as a AVEX rivets (120°), etc. The dimple formed with these pop rivet dies will not be as 'sharp' as dimples formed with regular dimple dies. This is because you get more pressure with a squeezer or a hammer than with a pop rivet puller; however, the dimples formed with pop rivet dimplers are adequate for occasional use in tight or hard-to-use places.

FLUSH SWIVEL RIVET SET

U.S. MADE -- ATI Brand. New design flush rivet set with swivel action eliminates problem of rivet gun alignment with the work surface + rubber guard to reduce slippage while flush riveting. .401" shank X 1-1/4" dia. polished face. Built-in retaining spring.

P/N 12-00741 ..... **$44.75**

BACK RIVETING PLATE

Back riveting requires a hard flat surface to act as a bucking bar while you set the shop head of the rivet. Our plate is a perfect hard & flat surface for "Back Riveting". 3/8" thick X 4" wide X 15" long. Low carbon steel plate with flat ground surface. Weight 10 lbs. P/N 12-00618.....**$64.50**

HOLE FLANGING TOOL

For forming flanges around lightening holes. Made from 2024 aluminum and hard black anodized. Ball bearing style rollers. Comes with spare set of rollers. P/N 12-00619 ..... **$19.75**

SPARE ROLLER-SET OF 2

Replacement rollers for our edge rolling & hole flanging tools (above).

P/N 12-00621 .....**$2.95**

WISS COMPOUND ACTION SNIPS

12-01155

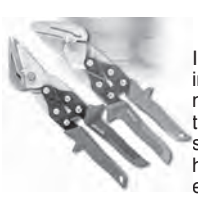
12-01190

12-01189

Famous for cutting ease, keeping their edge and making clean, sharp cuts. Hardened molybdenum steel blades, serrated jaws and vinyl comfort grips. Capacity 18 gauge (.049") steel. Length 9-3/4". Wt. 14 oz.

P/N 12-01155- Cuts left, from tight curves to straight.....**$17.65**
P/N 12-01189- Cuts right, from tight curves to straight.....**$17.65**
P/N 12-01190- Cuts straight (or wide curves left or right in light stock)....**$17.65**

IRWIN OFFSET SNIPS



Irwin offset snips handle virtually every cutting job in sheet metal - linoleum, carpet, tile and other materials. They are easier to use than conventional metal snips, and cut in 3 directions. Irwin snips feature forged steel blades, a unique curved handle for comfortable fit in the hand, and an exclusive pinchpoint wire cutter. They cut in three directions—straight, sharp angles in one direction, and 5" diameter circles in the opposite direction. Irwin offset snips make difficult cuts easy - they can make tight circular cuts, cut easily through corrugated metal, and cut solid and stranded wire. Available in right or left cutting models. IRWIN (Right Cutting) .....P/N 12-00187 .....**$17.75**
IRWIN (Left Cutting).....P/N 12-00186 .....**$17.50**

TO

SHEET METAL TOOLS

SPEED DEBURRING & C'SINKING TOOL

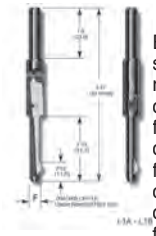
Swivel action - makes deburr & c'sink holes fast & easy. Molded handle with 2" long plated steel "Dog-leg" shaft with 1/4"-28 threaded holder. Includes (1) 3/8" X 100° 3-flute burring cutter (part #1050) + 8" extension shaft for deburring the inside of flanges & other hard to reach holes. .....P/N 12-00622 .....**$35.50**

Handle and Extension Shaft sold separately

Swivel handle only.....P/N 12-00623 .....**$17.75**

Extension Shaft only.....P/N 12-00624 .....**$8.50**

E-Z BURR - HSS SERIES



E-Z Burr High Speed Steel (HSS) tools are the industry standard for quick, effective and consistent front and rear burr removal. No other HSS deburring tool is this durable. By designing the blade to operate independent from springs and plungers, E-Z Burr has created a deburring tool with a flexible blade and a solid shank for optimum performance for deburring metal or plastic components. In addition, the patented E-Z Burr HSS deburring tool allows you to change chamfer settings, from extreme low to extreme high, and cutting blades without removing it from the holder. Once the desired chamfer is set, it won't change, even from blade to blade. The result is less downtime, more production, and higher profits.

E-Z Burr Tool Specifications:

Series L1A and L1B tools have a working range of -0.0 + .006 inches and -.03 + .15mm.

Series L2A and L2B tools have a working range of -0.0 + .016 inches and -.10 + .40mm.

Series L3A and L3B tools have a working range of -0.004 + .015 inches and -.10 + .40mm.

Note: All tools (front and rear cutting blade with positive rake)

** METRIC SIZES NOT LISTED, MAY BE AVAILABLE UPON REQUEST AS SPECIAL ORDER ONLY - CALL FOR QUOTE ON SIZES NOT LISTED: 1-877-477-7823 **

Hole Dia.	Shank Dia.	Blade Series	Part No.	Price
3/32 in. / 2.38mm	.236 in. / 6.00mm	L1A	12-02949	**$94.50**
1/8 in. / 3.17mm	.236 in. / 6.00mm	L1B	12-02951	**$71.75**
5/32 in. / 3.96mm	.250 in. / 6.35mm	L2A	12-02952	**$82.75**
3/16 in. / 4.76mm	.250 in. / 6.35mm	L2B	12-02953	**$82.75**
1/4 in. / 6.35mm	.359 in. / 9.10mm	L3A	12-02955	**$84.65**
2.50mm	6.00mm	L1A	12-02959	**$94.50**
3.00mm	6.00mm	L1A	12-02960	**$94.50**
4.00mm	6.00mm	L2A	12-02961	**$82.75**

EZ-BURR RIVET HOLE BUNDLE

The Rivet Hole Deburring Tool bundle by E-Z Burr includes 5 high performance HSS deburring tools for front and rear cutting. Sizes: 1/8, 5/32, 3/16, 7/32, & 1/4.

P/N 12-02956 ..... **$226.95**

HSS THREE FLUTE BURRING CUTTER - 100°

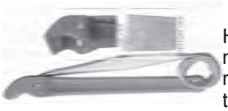
US made. High speed steel, precision ground, three flute burring cutter. 3/8" diameter X 100° with 1/4-28 threaded shank. Same style as a countersink but without the pilot. P/N 12-00625 ..... **$17.75**

SNAP RING PLIER KIT

Install or remove retaining rings of the Waldes Tru-Arc type with ease. Quality pliers made of heat-treated steel with vinyl covered handles. Kit includes two pair of pliers and two sets of four replacement tips to handle the most common sizes of both internal and external rings. Furnished in plastic box.

P/N 4440R.....**$25.95**

STRAP WRENCH



Heavy malleable iron body with latex-treated nylon webbing. For gripping and turning of round, hex or square parts without marring the surface.Indispensible tool for use in close quarters where ordinary pliers cannot be used. Tool is 11-1/2" long with 18" strap. Capacity 3". Wt. 1-1/2 lbs. P/N 3004 .....**$46.25**

DOUBLE EDGE DEBURRING TOOL

Used to quickly deburr edges of sheets up to 1/8" thick. Save time and motion deburring edges of parts. Precision ground Carbide "V" shape blade with hex aluminum handle. Non-removable cutter style.

P/N 12-00629 .....**$21.85**

EDGE MARKER BLOCK

This handy device holds a marking pen and has an adjustable stop for running along the edge of a part. The adjustable stop allows variable edge distance for rivet layout, etc. One thumbscrew holds the pen (pen sold separately) and the other thumbscrew holds the adjustable stop. Made from delrin (plastic) material. Comes ready to use with (1) Pilot marking pen.

P/N 12-00630 .....**$18.90**

SHOP HEAD RIVET GAUGE SET

Set of four gauges for -3, -4, -5, & -6 rivets. Each gauge measures MINIMUM height and MINIMUM diameter of shop heads AFTER setting. Eliminates guessing if your rivets are properly set. Works for measuring both universal head and flush rivets. Precision machined to size from 2024 aluminum. Rivet size permanently stamped on each gauge. Color coded anodized finish. Instructions included.

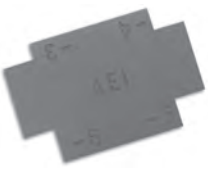
P/N 12-00631 .....**$22.65**

EDGE ROLLING TOOL

For pre-bending skin edges on lap joints and butt joints before riveting. "Edge rolling" will prevent skin edges from curling up during riveting. Machined round body made from 2024 aluminum. Hard black anodized finish for wear resistance. Ball bearing style nylon rollers (non marking); + spare set of rollers and instructions included.

P/N 12-00632 .....**$23.75**

RIVET LENGTH GAUGE



One gauge measures -3, -4, -5, & -6 rivets. Used to check for proper length of rivets BEFORE setting. Eliminates measuring and guessing of rivet lengths. Works for both universal head and flush rivets. Precision machined to size from 2024 aluminum. Rivet sizes permanently stamped. Gold anodized finish. Instructions included.

P/N 12-00633 .....**$11.75**

TEMPORARY ASSEMBLY PINS

Initial fitting of control surfaces require multiple installation and removals of the parts to fit, trim, and adjust everything. These temporary assembly pins make the task quicker and easier. Pins are 3/16" diameter with tapered points and angle bends for easy installation. The pins are threaded so the pin holder can be removed — this is necessary to prevent damage should you move the control surface too far during fitting. To remove pins just screw holder back on pin and remove pin. Packaged in sets: 6 pins / 2 holders. P/N 12-00627 .....**$18.90**

INSTRUMENT HOLE PUNCH ATS-123C

Reversible cutter for both 2-1/4" and 3-1/8" instrument panel holes. Easy to use even with instrument panel installed in aircraft. Allows for close work with other instruments already installed. 4 lbs (2Kg) shipping weight.

P/N 12-02743 .....**$134.75**

BOLT GRIP

This new tool lightly grips the heads of bolts and screws for easier insertion into tight or blind spots. No more dropped or lost parts. Tool has one end for -3 (3/16") fasteners and one for -4 (1/4") fasteners. 12" overall length.

P/N 12-00628 .....**$20.75**

CHUCKING REAMERS

We stock straight shank and straight flute Chucking Reamers in a wide range of sizes.

SEE WWW.AIRCRAFTSPRUCE.COM FOR A COMPLETE LISTING OF OUR CHUCKING REAMERS.

BRASS PLUMB BOB

Precision machined brass with clear lacquer finish and hardened replaceable tip. Top unscrews for centered string installation.

Model : 6C235 **Size :** 8 oz, 4 7/8" L **Finish :** Clear Lacquer **Characteristics :** Replaceable Tip, Screw Top To Attach String (String Not Included) P/N 12-01711 .....**$16.75**

TO

METAL WORKING TOOLS

SHOT BAGS

These shot bags are made out of .070/.090 thick top grain cowhide for extended life and to produce a blemish-free metal surface. These bags have suede outer or forming surface and a tanned inner surface to resist abrasive wear from the media. Convenient media filter and reinforced flap with velcro seal is provided. All bags are approximately 1.5" to 2" thick when filled. Can be filled with buckshot or silica sand (not included) found at most sporting good stores.

Model No.	Size (inches)	Part No.	Price
SB8	8"	12-02310	**$68.85**
SB12	12"	12-00996	**$41.75**
SB18	18"	12-00997	**$49.75**
SBR18 (rectangular)	18"x12"	12-02310	**$68.85**

PANEL BEATER HAMMER & DOLLY KIT

The most widely used selection of panel beaters and dollies for most metal shaping needs, provessional grade in a molded plastic box. Each hammer is color-coded for either shrinking (blue) or stretching (red) forming tasks. The 3 panel beaters included are the dinging, shallow-domed face a nd pick hammer combo. The dollies included are the thin toe, utility, curved and heel shapes, providing the user with the best combination kit on the market. See the individual sections on panel beaters and dollies for more specifications on each item. 8-piece kit includes: • DT2566, DT2560 & DDT2537 panel beaters • CP548, CP552, CP553, & CP554 dollies • Blow molded plastic case. All tools made from medium carbon steel, forged, heat treated and mechanically polished for years of continuous service. Weight: 16.5 lbs.; size: 16.5"L x 14"W x 4"H.

P/N 12-01011 .....**$151.95**

T-DOLLIES

Simple, but necessary forming tool allows you to create new flanges or straighten out damaged flanges. Can be used effectively by taking to an existing body panel or locked in bench vise and create an exact radius edge using any flat faced panel beater or wood slapper. T-dollies are fabricated out of carbon steel hardened and zinc plated to provide years of service life. Extra long flat handle. Heads have radius ends.

Model No.	Size (inches)	Part No.	Price
DCTD01	1"x 8"	12-01019	**$14.85**
DCTD02	3/4"x 6"	12-01020	**$15.90**
DCTD03	1"x 8"	12-01021	**$17.85**
DCTD 3-pc. kit (8lbs.)		12-01022	**$46.50**

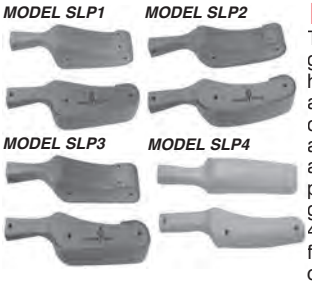
ARC360 HOLE CUTTER

Panel knock put punches and hole saws work well for holes that are aren't too big but it gets harder and more expensive as the size of the hole increases.

You can cut holes with a router but cutting holes with a router is a cumbersome ordeal. The router is really just too big a tool to be swinging 360 degrees easily. You can set it to cut holes down to around 1.5 inches and up to around 10 inches. The tool's small size allows you to easily see your work as you are cutting. If you want an arc you can start and stop anywhere you want. It will cut any thickness of sheet aluminum.

The cutting speed in 032 thick 2024-T3 aluminum is around 40 inches per minute so you can cut a 4-inch diameter hole in less than 20 seconds. P/N 12-01977 ..... **$98.95**

HARDWOOD SLAPPER



These slappers are made from grade A select midwestern grown hard maple for toughness, stiffness and durability. With an ergonomically designed grip area, the hand and wrist are positioned in a neutral and natural condition. Finished with protective oil that resists staining and guards against moisture penetration. 4 different shapes: gentle, medium, flat, and radius face. The new thinner cross-section of 2-1/4" allows working a tighter radius in more confined areas. Each slapper comes with a leather face cover to eliminate marring of the metal.

Model No.	Shape Style	Overall Length	Surface Length	Face Width	Weight (Lbs.)	Part No.	Price
SP1	Gentle	14"	8.5"	2.25"	1.3	12-02311	**$54.75**
SP2	Medium	14"	8.5"	2.25"	1.3	12-02314	**$54.75**
SP3	Flat	14"	8"	2.25"	1.3	12-02315	**$54.75**
SP4*	Radius	14"	8.5"	2.25"	1.3	12-01003	**$54.75**
SLP-001L Replacement leather cover & hardware						12-01004	**$6.90**

HAND FORMING DOLLIES

These professional series hand dollies are a complete selection of shapes and weights for most forming needs. These dolies can be used with panel beaters or wood slappers. Dollies weight and shapeimpacts the flow of the metal. Choose weights according to sheet metal thickness. Medium carbon steel, forged, ground, heat treated and mechanically polished for years of continuous use.

Model No.	Weight (lbs)	Part No.	Price
CP548	2.02	12-01005	**$28.50**
CP552	2.85	12-01006	**$28.85**
CP553	2.55	12-01007	**$29.50**
CP554	1.97	12-01008	**$29.90**
CP555	3.94	12-01009	**$39.25**
CP556	3.40	12-01010	**$39.75**

PANEL BEATER HAMMERS

These professional series panel beater hammers are uniquely balanced acting as a natural extension to the users own hand. Creating excellent feel and feedback each an devery time you contact the metal. Each hamer style is color coded for easy recognition: ***MODELS***: DT2537 & DT2566 are Stretching. ***MODELS***: DT2560 & D2569 are Shrinking.

Model No.	Head Wt./lbs	Overall Length	"A"	"L"	"B"	Part No.	Price
DT2537	.67	13"	1.6"	5.5"	-	12-01027	**$32.75**
DT2566	.57	13"	1.5"	5.4"	-	12-01029	**$32.95**
DT2560	.70	13"	1.6"	3.8"	1.5"	12-01028	**$32.75**
DT2569	.70	13"	1.6"	3.8"	1.6"	12-01030	**$32.95**

BOSSING MALLETS EXTENDED REACH

These extended depth plastic mallets allow deeper reach and a more aggressive and fuller finished shape. The UHMW polyethylene heads are lightweight, resistant to wear and non-marring. Hickory handles with full round shafts. When paired with shot bags, very creative, roughed out forms can be accomplished.

Model No.	Small radius dia.	Large radius dia.	Overall head lgth	Head dia.	Weight (lbs.)	Part No.	Price
DBM01	1/2"	2-1/4"	7"	2"	.70	12-01031	**$47.50**
DBM02	3/4"	1-3/8"	8"	2-3/4"	1.3	12-01032	**$48.50**
DBM03	1"	3	7"	3"	1.5	12-01033	**$52.75**

TO

MITTLER BROTHERS SHEET METAL TOOLS

POWER DRIVE BEAD ROLLER

The Industry Leading Power Drive Bead Roller Made In the U.S.A. Since 1984. Over 100 Bead Roll Profiles Available To Shape Or Strengthen Metal.

Max Capacity
16 Ga (.050") Aluminum
19 Ga (.040") Mild Steel
21 Ga (.035") Stainless Steel

Features Include:
0-9 FPM
Variable Speed Foot Pedal Control
Forward / Reverse Switch
Both Shafts Driven
Adjustable Depth Of Bead
& 1-1/8" Throat Height.

Used For Aircraft & Racecar, Construction & Repair.
Includes Choice of 1 Set of 2-1/2" OD ($65 value) Rolls
24" Power Drive Bead Roller Model 210-24 .... P/N 12-02744 .... **$695.00**
36" Power Drive Bead Roller Model 200-36 .... P/N 12-02745 .... **$895.00**

24" MANUAL BEAD ROLLER

Bead Rolls Sets Sold Separately
Model 210-24M
P/N 12-02746 .... **$450.95**

BEAD ROLL SETS

Nylatron (High Strength Plastic) Roll for Thin Aircraft Aluminum.

Round Roll
1/8"-1"

Step Roll
.062"-.250"

Art Pattern
P/N 12-02764

Spoiler Roll
P/N 12-02766

SEE WWW.AIRCRAFTSPRUCE.COM
FOR ROUND ROLL AND STEP ROLL PART NUMBERS.

Standard Tank
P/N 12-02765

Full Radius Tank
P/N 12-02768

Tipping Roll
P/N 12-02767

Wire Bead Roll
Step 1

Wire Bead Roll
Step 2

Wire Bead Roll
Step 3

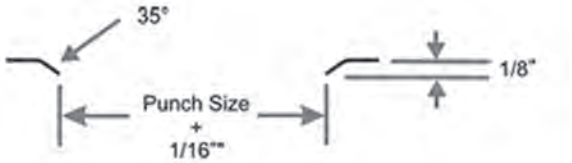
Above Bead Rolls = **$65.00** Per Set

Model 201-125-WBS Wire Bead Roll (3pc. Set)
P/N 12-02769 .... **$200.00**

See www.aircraftspruce.com for 100+ Bead Roll Selection

AIRCRAFT PUNCH & FLARES 1"- 6" OD

Just drill a pilot hole for the 1/2" draw bolt, apply the tool and tighten the bolt for a smooth, flared hole in one easy step. Punch hole only by removing female flare ring and use punch and die. Easily mounts in our Bench Presses.

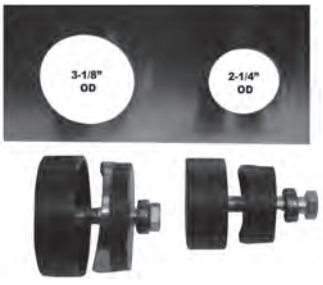


Aircraft Punch / Flare

Material Thickness Range
Aluminum - .020" to .040"
Mild Steel - .020" to .040"

OD	Part Number	Price
1"	12-02778	**$105.00**
1-1/4"	12-02779	**$105.00**
1-1/2"	12-02780	**$120.00**
1-3/4"	12-02781	**$120.00**
2"	12-02782	**$130.00**
2-1/4"	12-02783	**$130.00**
2-1/2"	12-02784	**$146.95**
2-3/4"	12-02785	**$145.00**
3"	12-02786	**$145.00**
3-1/8"	12-02787	**$195.00**
3-1/4"	12-02788	**$195.00**
3-1/2"	12-02789	**$195.00**
3-3/4"	12-02790	**$210.00**
4"	12-02791	**$210.00**
5"	12-02792	**$260.00**
6"	12-02793	**$310.00**
7pc Set 1"- 3" (MINUS 2-1/4" & 2-3/4")	12-02794	**$665.00**
9pc Set 1"- 3"	12-02796	**$1,995.00**
13pc Set 1"- 4"	12-02795	**$897.00**

INSTRUMENT HOLE PUNCH



OD	Part Number	Price
2-1/4"	12-02797	**$105.00**
3-1/8"	12-02798	**$115.50**

TO

SEE WWW.AIRCRAFTSPRUCE.COM FOR A COMPLETE SELECTION OF MITTLER BROTHERS TOOLS.

MITTLER BROTHERS SHEET METAL TOOLS

MANUAL BENCH PRESS

Economical & versatile. Bench press accepts tooling for punching round, square & oblong holes; punching louvers; creating radius corners; & shrinking or stretching metal. Punch/flare tooling & instrument hole punches. Easily mounted with included adapters. Can also Be used as arbor press.

Model 2200-M
P/N 12-02770....**$575.00**

LOUVER PUNCHES

LOUVER PUNCH START UP KITS WITH MOUNTING HARDWARE

Size	Part No.	Price
1”	12-02771	**$775.00**
2”	12-02772	**$775.00**
3”	12-02773	**$775.00**
4”	12-02774	**$795.00**
5”	12-02775	**$795.00**
3” Dome	12-02776	**$795.00**
4” Dome	12-02777	**$795.00**

ULTIMATE BOX & PAN BRAKE

The ULTIMATE Box & Pan Brake has a unique “3 Finger” design. Incorporating moveable segmented bed fingers & apron fingers as well as upper radius fingers. Radius fingers allow forming aircraft and racecar panels using 3003 to 2024 T3 aluminum, .062” mild steel & .0375” stainless steel . Bend combinations that were extremely difficult if not impossible before are easily formed. Features include wrenchless upper set back adjustments, 3-1/2” depth of box, 2” down leg,1” front to rear adjustment & 1/4” reverse bend capabilities. A complete set of upper radius fingers (your choice), bed fingers, apron angle fingers, and counterweight(s) are standard equipment. Ultimate 48” 16ga Box & Pan Brake With Radius Fingers
Model 2800-48-16 ..... P/N 12-02799 .**$3,450.00**

Upper Radius Finger Kits (radius is measured inside of bend)

12” KIT	48” KIT
1/16” 2800-A255-K12 (12”) **P/N 12-02801.....$275.00**	1/16” 2800-A255-K48 (48”) **P/N 12-02802.....$835.00**
1/8” 2800-A260-K12 (12”) **P/N 12-02803.....$275.00**	1/8” 2800-A260-K48 (48”) **P/N 12-02804.....$835.00**
3/16” 2800-A270-K12 (12”) **P/N 12-02805.....$275.00**	3/16” 2800-A270-K48 (48”) **P/N 12-02806.....$835.00**
1/4” 2800-A280-K12 (12”) **P/N 12-05807.....$275.00**	1/4” 2800-A280-K48 (48”) **P/N 12-02808.....$835.00**
5/16” 2800-A290-K12 (12”) **P/N 12-02809.....$343.95**	5/16” 2800-A290-K48 (48”) **P/N 12-02811.....$835.00**

BENCH TOP ENGLISH WHEEL

A Rugged, Robust Machine for the occasional metalworking project to the professional craftsmen. All wheels (anvil & top) are heat treated, hard turned & ground for accurate precision metal forming.
- 26-1/2” Deep Throat
- 2-1/2” OD - 2” Wide Anvils
- 7” OD - 2” Wide Top Wheel
- Cam Action Release on Top wheel For Easy Anvil Change
- Adjustable Anvil Wheel Angle
- 3” x 4” x 1/4” Tube Construction For Minimum Deflection
- Kick Wheel Manual Pressure Adjustment
- Anvil Wheels In Radius Of 2-3/8”,3-1/4”,5”, 8-1/2”,12” & Flat

Model 2900..... P/N 12-02812 .....**$1,425.00**

PLANISHING HAMMER

Speed up fabrication time on complex multi form aluminum and steel panels for making those impossible to find replacement parts.
- 4600 Hits Per Minute @ 90 PSI
- Rear Adjuster Sets Load Force & simplifies Anvil Changes
- Foot Pedal Control for Hands Free Operation
- 9 Radius Anvil Heads Included: 3/4” , 1-1/2”, 2”, 3”, 4”, 6”, 8”, 12” & Flat

12” Model 2700..... P/N 12-02813 .....**$850.00**
24” Model 2700-24 ..... P/N 12-02814 .....**$999.00**

AIRCRAFT SCALE SET

- 15 x 15” Cast Aluminum Pads
- 1500 Lbs Per Pad Capacity Lbs. or Kg
- Reads to 1 Lb. / 1/10% Accurate
- Displays All Information at Once
- Zero All Pads at Once or Individually
- 40 Hr. Battery Life (rechargeable)

Certification Available At Optional Cost.

Deluxe Aircraft Scales include custom length cables with Deluxe Stainless Steel connectors and software to calculate center of gravity height. 4500 lbs.
Model 50297..... P/N 12-02816 .....**$1,115.00**

SEE WWW.AIRCRAFTSPRUCE.COM FOR A COMPLETE SELECTION OF MITTLER BROTHERS TOOLS.

JACKCLAMP PARALLEL BAR CLAMP

The 12" JackClamp is a multi-use clamp for a variety of different projects. The JackClamp features standard and metric rulers and is capable of clamping over, under, inside and through different configurations. This tool does what other clamps are mechanically unable to do including re-configuring to function as a hoist , jack, or spreader. Features: • The JackClamp can be totally disassembled and then reassembled inside of a project • The JackClamp module design enables it to mate to a second JackClamp creating a tool capable of clamping and spreading simultaneously • By utilizing the optional accessory, V-Jaws (not included), the user can securely hold round stock or irregular shapes • By utilizing the optional accessory, Spreader Jaws (not included), the user can spread materials with a gap as small as 1/4" • Weight: 3 lbs.

Parallel Bar Clamp..... P/N 12-02846 .....**$59.75**
Replacement Pads Set..... P/N 12-02851 .....**$4.95**
Storage Bag..... P/N 12-02854 .....**$20.95**

JACKCLAMP 2 CLAMP KIT

The JackClamp 2 Clamp Kit includes 2 JackClamps, 2 Spreader Jaw Accessories, 2 V-Jaw Accessories, 2 JackClamp Foot Accessories, and a convenient carry-all bag. The JackClamp is a multi-use clamp for a variety of different projects. The 12" JackClamp features standard and metric rulers and is capable of clamping over, under, inside and through different configurations. This tool does what other clamps are mechanically unable to do including re-configuring to function as a hoist , jack, or spreader. The Spreader Jaws allow even more flexibility with the JackClamp including spreading materials with a gap as small as 1/4". The V-Jaws secure clamping and can hold round stock or irregular shapes. The Foot accessory allows for hand free jacking and works great for cabinet installation.

Note: JackClamp 2 Clamp Kit includes 2 JackClamps, 2 Spreader Jaw Accessories, 2 V-Jaw Accessories, 2 JackClamp Foot Accessories, and a convenient carry-all bag. ..... P/N 12-02852 .....**$186.95**

V-JAW JACKCLAMP ACCESSORY

The unique V-Jaw JackClamp accessory allows secure clamping including holding round stock and irregular shapes.

P/N 12-02848 .....**$14.75**

SPREADER JAW JACK-CLAMP ACCESSORY

The Spreader Jaw JackClamp accessory allows more flexibility with your JackClamp including spreading materials with a gap as small as 1/4".

P/N 12-02849 .....**$14.75**

JACKCLAMP FOOT ACCESSORY

The JackClamp durable Foot accessory allows hands free jacking.

P/N 12-02847 .....**$9.75**

JACKCLAMP ACCESSORY KIT

The JackClamp Accessory Kit includes the Spreader Jaw, V-Jaw, and Foot accessories for the JackClamp. The Spreader Jaw allows even more flexibility with the JackClamp including spreading materials with a gap as small as 1/4". The V-Jaw secures clamping and can hold round stock or irregular shapes. The Foot accessory allows for hands free jacking and works great for cabinet installation.

Note: JackClamp Accessory Kit includes the Spreader Jaw (1 pair), V-Jaw (1 pair), and Foot (1) accessories for the JackClamp Parallel Bar Clamp. P/N 12-02853 .....**$41.95**

EASY OUT SCREW EXTRACTORS

Black Max spiral screw extractor grips screw firmly with its tapered, left-handed spiralflutes. Intended to remove screw manually with T-handle tap wrench or equivalent.

Features: • Black oxide coating for maximum corrosion protection and cutting performance • Black oxide coating combined with a tough carbon tool steel construction ensures longer life • Extractor size is permanently etched on the tool for quick and easy reference. Specifications • To remove Bolts/Screws: 3/32" to 5/32" • Use Drill Bit Size: 5/64" • Shank Diameter: 1/8" • Point Diameter: 0.060"

Description	Part No.	Price
3/32" TO 5/32"	12-02873	**$2.29**
5/32" TO 7/32"	12-02874	**$2.29**
7/32" TO 9/32"	12-02875	**$2.29**
9/32" TO 3/8"AND 1/8" PIPE	12-02876	**$2.89**
3/8" TO 5/8"AND 1/4" PIPE	12-02877	**$3.45**
5 PIECE SET	12-02882	**$10.95**

RYOBI PLANER

The Ryobi cordless Hand Planer has the power of a corded hand planer when powers through the toughest jobs. The rear mounted "kickstand" keeps blades from contacting surfaces when the unit is placed shoe down between operations. The pommel front handle and rear handle designed with overmold for added comfort. Dust ejection adjusts for left or right exhaust. All these great features are a part of the Ryobi ONE+™ system which has have 40 tools and batteries. Depth adjustment knob adjusts from 0-1/64". Dual carbide blades for smooth, accurate planning. Rear mounted "kickstand" keeps blades from contacting a surface when the planner is set down between aperations. Extended front for balance and accuracy. MFG Brand Name : Ryobi. MFG Model # : P610. MFG Part # : P610

18 V Planer..... P/N 12-02824 .....**$100.00**
BI P100 ONE+ Nickel-Cadium 18-V Rechargable Battery
P/N 12-02825 .....**$57.25**
P131 ONE+ 18-V IN-Vehicle Charger . P/N 12-02826 .....**$57.25**

RYOBI PLANER KIT

Kit includes:

(1) 18 Volt Planer - The Ryobi cordless Hand Planer has the power of a corded hand planer when powers through the toughest jobs. The rear mounted "kickstand" keeps blades from contacting surfaces when the unit is placed shoe down between operations. The pommel front handle and rear handle designed with overmold for added comfort. Dust ejection adjusts for left or right exhaust. All these great features are a part of the Ryobi ONE+™ system which has have 40 tools and batteries.

(1) P100 ONE+ Nickel-Cadmium 18-Volt Rechargable Battery - The Ryobi ONE+ Nickel-Cadmium 18-Volt Rechargeable Battery provides extended run-time and works with all present and past Ryobi 18-volt ONE+ tools and chargers.

(1) P131 ONE+ 18-Volt In-Vehicle Charger - The Ryobi ONE+ 18-Volt In-Vehicle Charger is compatible with all past and present Ryobi 18-volt ONE+ NiCd and lithium-ion batteries. It plugs conveniently into a vehicle's 12-volt DC outlet and takes less than an hour to charge the batteries fully. ..... P/N 12-02827 .....**$215.95**

SPINNING RATCHET 3/8'' DRIVE

The Spinning Ratchet driver hand tool is a highly versatile ratchet driver that allows the operator to work in tight fitting areas that no other ratchet driver can. Snap any 3/8" male socket attachment into the handle end and any 3/8" female socket or attachment on to the driver end to get the needed reach or angle for the job at hand. The Spinning Ratchet tightens and loosens nuts and bolts like a standard ratchet driver as well as by twisting or "spinning" the handle in place. A must for any mechanic or handyman. ..... P/N 12-00742 .....**$25.90**

TO

AIRCRAFT BUILDER CALIPERS

Our Aircraft Builder's Calipers feature an easy-to-read dial, 6" length capacity, and measurement in 4 dimensions outer, inner, depth, and step. The dial has .001" graduations for case and bullet measurements. A chart that shows maximum and trim lengths for all popular calipers, plus a fitted case with instructions, are included. Ideal measurement tool for aircraft mechanics and homebuilders. Available in plastic or stainless steel.

Plastic Calipers.....P/N 12-30215.....**$57.95**
Stainless Steel Calipers.....P/N 12-30220.....**$59.75**

DIGITAL FRACTION CALIPERS

The Digital Fractional Caliper brings you three universal systems of measurement, making it an equally practical choice for both professional and do-it-yourself projects. The high-contrast digital display easily switches between inches, millimeters and fractions, with guaranteed accuracy to 0.001". In addition, the rugged stainless steel design delivers accurate readings of inside, outside, step and depth measurements. The Fraction+ comes with a foam padded plastic case for safe storage when not in use.

Features * Stainless Steel Caliper. * Tri-Mode digital display – inches, millimeters, and fractions. * For making inside, outside, depth and step measurements. * Resolution 0.0005" (0.01mm). * Accuracy 0.001" (0.02mm). * Auto on/off feature preserves battery life. * Bar scale is graduated in inches and millimeters. * Free-wheeling friction roller advances and retracts slide. * Extendable depth gage for use in slots and small holes. * Etched and filled black graduations. * Convenient foam-padded case for storage.

Digital Fraction Caliper - 6".....P/N 12-02012.....**$39.50**
Digital Fraction Caliper - 8".....P/N 12-02013.....**$52.75**
Digital Fraction Caliper - 12".....P/N 12-02014.....**$79.95**

FRACTIONAL DIGITAL CALIPER 3 INCH

Three universal systems of measurement-Guaranteed accuracy to 0.001". Delivers accurate readings of inside, outside, step and depth measurements. This 3" caliper fits conveniently into your pocket for working in the field. Range 0-3" (0-76mm) Resolution 0.0005" (0.01mm or 1/64"). Accuracy 0.001" (+/- 0.02mm). Auto on/off feature preserves battery life.Free-wheeling friction roller advances and retracts slide. Extendable depth gage for use in slots and small holes. Replacement Battery - SR54 or LR54 P/N 12-02307..... **$16.75**

DIGITAL CALIPER

0-6" Digital caliper with measuring resolution of .0005"; large LCD display and hardened stainless steel measuring faces and slide. Masures in inches or milimeters. Includes plastic case.

P/N 12-02705..... **$17.35**

DIAL INDICATOR

0-1" Dial indicator with measuring resolution of .001"; equipped with mounting lug on back of body for multiple mounting options. P/N 12-02709..... **$24.95**

PROFESSIONAL GRADE MICROMETER

0-1" Professional grade micrometer with measuring resolution of .0001"; carbide anvil faces for long life and durability. Includes plastic case.

P/N 12-02707..... **$39.95**

OFFSET KNOCKOUT PUNCHES (WITCHES FINGER)

Can be used to knock out those hard to reach stubborn fasteners. Available in 1/8", 5/32", 3/16", and 1/4" tip diameter. Also available in a 4 piece set.

Size	Part No.	Price
1/8"	12-02927	**$13.95**
5/32"	12-02926	**$13.95**
3/16"	12-02928	**$13.95**
1/4"	12-02929	**$13.95**
Set of 4	12-02925	**$55.95**

"CENTER IT" HOLE DRILLING JIG

"Center It" is a jig used to drill holes in pipe or tube stock. To use the Center It, simply place it on your drill-press table, run the bit down (with the motor off) to hold the centered jig on the bit, then bolt the jig to the press table. No clamping of the tube is necessary; the angled flats of the jig hold it in a centered position. Your holes are automatically centered on the tube with no center-punching necessary. If the tube is too fat to drill in a single operation, simply turn it over. The device is useful to kitplane builders who have to drill several holes in a single tube or many tubes because no clamping or center-punching of the tube is required. It also makes short work of drilling. P/N 12-20815..... **$13.85**

DRILL RITE PRECISION DRILL GUIDE

Light and portable, this tool provides straight and true holes every time. Your electric hand drill will perform like a professional drill press. The easy, accurate way to drill any curved surface: Simply place the Drill Rite VGuide™ on any type of pipe or round stock, from 1/2" to 2 1/2" in diameter. Swing the gate closed and lock it down. Insert the proper drill bit in the guide bushing and drill a precisely accurate hole. Includes super hardened drill bushings for popular 3/16" and 1/4" holes for rivets and aircraft hardware. Precision made in the U.S.A. from high quality aircraft grade aluminum. P/N 12-00836..... **$51.75**

PLATE NUT DRILL JIG

One piece heat treated tool steel jig. Use for accurate & fast drilling of rivet holes for plate nuts. Has flexible handle design. Use for both on lug (both holes on 1 side) & two lug (holes on both sides) style nut plates - K1000 & K1100 style nutplates.

#6 Plate Nut Drill Jig.....P/N 12-03041.....**$46.25**
#8 Plate Nut Drill Jig.....P/N 12-03042.....**$46.50**
#10 Plate Nut Drill Jig.....P/N 12-03043.....**$46.25**

TO

ECONOMY AIRCRAFT TOOLS

HAND RIVET SQUEEZER

Features includes an all-steel construction, adjustable set holder (accepts all sets with 3/16" shank), and long handles for increased force. The yoke is made of the highest quality tool steel, and by simply removing 3 pins you can change the yoke to match your riveting or dimpling application. Each squeezer includes the yoke of the coordinating size

Description	Part No.	Price	Description	Part No.	Price
1" Squeezer	12-01460	**$71.75**	1" Yoke	12-01457	**$23.50**
2" Squeezer	12-01461	**$74.25**	2" Yoke	12-01458	**$24.50**
3" Squeezer	12-01462	**$73.50**	3" Yoke	12-01459	**$26.60**

STAINLESS STEEL HAND SQUEEZER

This stainless steel hand squeeze made of quality stainless steel construction. Features include an adjustable set holder (accepts all sets and dies with 3/16" shank) and a locking lever arm. Yokes are easily interchangeable by simply removing three roll pins and designed to accept yokes and parts made by other stainless steel hand squeeze manufacturers. Includes a 3" Yoke. 1.5" is sold separately.

S/S Hand Squeeser 3" .....P/N 12-01464 ..... **$129.00**
1.5" Yoke .....P/N 12-01547 ..... **$49.85**
3" Yoke .....P/N 12-01548 ..... **$61.75**

QUICK CHANGE PINS

Quick Change Pin. Makes changing yokes quicker & easier 3/4" .....P/N 12-01798 ..... **$2.15**
5/8" .....P/N 12-01799 ..... **$2.15**

INTEGRAL WHOLE TYPE HAND SQUEEZER

A basic tool for all riveting operations. Quality steel construction with black oxide finish and all parts are heat treated. Adjustable set holder accepts dies and sets with 3/16" shank. 1-1/2" reach x 1-1/2" gap.
1-1/2" .....P/N 12-01465 ..... **$68.50**

RIVET SET FOR SQUEEZER

(FLUSH & CUPPED) - Made of steel and heat-treated for long wear and tool life. .187" (3/16") shank. *2 Flush sets required for Flush Head Rivets. 1 Flush and 1 Cup required for Round Head Rivets. *Sold as individual items / not a pair

Description	Part No.	Price
Flush 1/8	12-01466	**$1.71**
Flush 3/16	12-01554	**$1.71**
Flush 5/16	12-01556	**$1.71**
Flush 3/8	12-01557	**$1.75**
Flush 7/16	12-01558	**$1.71**

Descriptipn	Part No.	Price
Flush 1/2	12-01559	**$1.71**
Cupped 1/8	12-01561	**$2.30**
Cupped 5/32	12-01562	**$2.50**
Cupped 3/16	12-01563	**$2.30**

1-1/2" AND 3 YOKES

• Holds 3/16" die sets • Adjustable set holder • Stainless steel construction. 1-1/2" .....P/N 12-01547 ..... **$49.85**
3" .....P/N 12-01548 ..... **$61.75**

DIMPLE DIES

For any .187 shank diameter squeezer.
3/32" .....P/N 12-01468 ..... **$11.75**
1/8" .....P/N 12-01564 ..... **$11.75**
5/32" .....P/N 12-01565 ..... **$11.80**
3/16" .....P/N 12-01566 ..... **$11.85**
Economy Dimple Die Set Includes: 3/32", 1/8", 5/32", 3/16"
P/N 12-01467 ..... **$46.75**

SCREW REMOVAL TOOL

*Useful in removing screws that are corroded or have stripped heads *401 Parker taper shank for use in rivet gun *3/8" square socket end *Use standard Phillips or Slotted insert bits *Rivet gun required *1/4" hex adapter not included
4" Tool.....P/N 12-01567.....**$18.95**

MICRO-STOP

This tool permits you to set the desired cut depth to help eliminate mistakes and skin damage. • 1/4" Shaft travel • Depth adjustable in .001" increments • 1/4"-28 Female Threads • Rated for 3,000 RPM
P/N 12-01470 .....**$21.50**

HEAVY DUTY RIVET CUTTER

This high quality, durable rivet cutter features all steel construction and cuts 1/16" to 1/4" diameter rivets. It is adjustable for 1/4" to 3/4" long rivets.
P/N 12-01471 ..... **$39.85**

ECONOMY RIVET SET

2.5" Straight & Offset Rivet. Made of steel and heat-treated for long tool life. The precision made cups are highly polished. • .401 shank • Length: 2.5" • Cup Sizes: 3/32", 1/8", 5/32" & 3/16" • For AN470 rivets

2.5" Straight 3/32".....P/N 12-02318 .....**$6.80**
2.5" Straight 1/8".....P/N 12-02319 .....**$6.50**
2.5" Straight 5/32".....P/N 12-02320 .....**$6.35**
2.5" Straight 3/16".....P/N 12-02321 .....**$6.80**

ALUMINUM BODY MINI AIR VACUUM

A handy air powered vacuum works off an air compressor and is simple to use. Attached 12" clear plasticflex tube can easily get into tiny spaces to clean. The canvas bag is easily removed for cleaning. P/N 12-01474 .....**$16.00**

CHIP CHASER

Ideal for removing chips and burrs from between metal after drilling rivet holes. Each chaser features a plastic molded handle and flexible steel blade with hook on the end. Blades are 5.5"and 2.5" long.
2.5".....P/N 12-01597 .....**$2.85**
5.5".....P/N 12-01476 .....**$3.25**

DOGLEG DEBURRING TOOL

Swivel action of this tool makes deburring holes fast and easy. Shaft includes a 1/4"-28 threaded holder. *Flute De-burring cutter sold separately - PN 12-00625.....P/N 12-01478 .....**$12.75**

Accessories

Swivel Handle Only .....P/N 12-00623 .....**$17.75**
Extension Shaft only.....P/N 12-00624 .....**$8.50**
HSS 3 Flute De-burring cutter.....P/N 12-00625 .....**$17.75**

BURNISHING SPOON

Designed to remove surface blemishes in aircraft sheet metal. Hard chrome plated. Comfort grip handle. P/N 12-01479 ..... **$8.70**

CLECO PLIERS

Used in limited access areas, requires less travel per activation. P/N 12-01480 ..... **$4.90**

SPRING TENSION CLAMPS

(ZINC ALLOY YOKE OR STEEL YOKE)

Spring tension clamps can be applied in a fraction of the time required for ordinary screw clamps. The clamp, with 2" throat depth, has a Zamak alloy yoke and a steel spring which provides a 70 lb. clamping pressure. Designed for use with sheet holder pliers.

Description	Part No.	Price
Zine Alloy	12-01481	**$4.60**
Steel 2"	12-01482	**$6.30**
Steel 3"	12-01483	**$7.10**

SIDE GRIP CLAMPS

Designed to hold two or more work pieces together where no holes exist. Clamping force is applied at edge of work. Spring loaded, plier actuated. The lack of a takeup screw makes it impossible to overtighten and damage the work surfaces or the clamp. There are 4 standard sizes : 1/2 x 1/2", 1/2 x 1", 3/4 x 1/2" , 3/4 x 1".

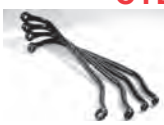
Description	Part No.	Price
1/2" x 1/2"	12-01484	**$1.87**
1/2" x 1"	12-01485	**$1.95**
3/4" x 1/2"	12-01486	**$1.87**
3/4" x 1"	12-01487	**$1.95**

DRILL STOPS

Use when drilling in sheet metal to help eliminate drill breakage & surface marks. Safely keeps drill from going too far through the work. Drill stops have a coiled spring to cushion the drill breakthrough & prevents the drill chuck from marring the work surface. Color coded for easy identification.

#10.....P/N 12-01488.....**$0.95** #20 ..... P/N 12-01489 .....**$0.95**
#30.....P/N 12-01490.....**$0.95** #40 ..... P/N 12-01491 .....**$0.95**
#1/4.....P/N 12-01492.....**$0.95** #5/16 ..... P/N 12-01493 .....**$0.95**

CYLINDER BASE NUT WRENCHES



Where torque application accuracy is critical these tools meet the requirement. They offer excellent rigidity and surpass other wrenches in overall quality and efficiency. Wrench Type A is for sizes 1/2", 9/16", 5/8", and 3/4" hex nuts. Wrench Type B is for 3/8" and 1/2" internal hex.

Type A 1/2".....P/N 12-01525 .....**$14.85**
Type A 9/16:.....P/N 12-01568 .....**$14.85**
Type A 5/8".....P/N 12-01569 .....**$14.85**

OFFSET TINNER MAG-SNIPS M1200

Offset blades keep hands safely above material. Long cuts are easy because offset blades flow material away from blades. Light weight cast magnesium handles. Blades are easily replaceable. 13" long with 3" cut.
P/N 12-02302 .....**$44.50**

TO

ECONOMY AIRCRAFT TOOLS

STRAP DUPLICATOR (BUSHING TYPE)

For drilling an accurate hole in overlapping sheets. The Bushing type duplicator is used by sliding the end with the pin between the sheets and locating the hole to be duplicated from inside. P/N 12-01498 is pictured.

Description	Part No.	Price	Description	Part No.	Price
#10 6-1/4"	12-01494	**$6.85**	#10 13-1/4"	12-01499	**$9.85**
#20 6-1/4"	12-01495	**$6.85**	#20 13-1/4	12-01501	**$7.75**
#30 6-1/4"	12-01496	**$6.85**	#30 13-1/4	12-01502	**$9.85**
#40 6-1/4"	12-01497	**$6.85**	#40 13-1/4	12-01503	**$7.75**
1/4" 6-1/4"	12-01498	**$6.85**	1/4" 13-1/4	12-01504	**$9.85**

STRAP DUPLICATOR (INVERTED TYPE)

For drilling an accurate hole in overlapping sheets. The inverted type duplicator allows you to locate a hole from the back of an overlaping sheet. #10 #21 #30 #40 1/4" drill sizes, 6-1/4" or 13-1/4". PN 12-01507 is pictured.

Description	Part No.	Price	Description	Part No.	Price
#10 6-1/4"	12-01505	**$6.85**	#10 13-1/4"	12-01510	**$6.10**
#20 6-1/4"	12-01506	**$6.85**	#20 13-1/4"	12-01511	**$9.85**
#30 6-1/4"	12-01507	**$6.85**	#30 13-1/4"	12-01512	**$9.85**
#40 6-1/4"	12-01508	**$6.85**	#40 13-1/4"	12-01513	**$9.85**
1/4" 6-1/4"	12-01509	**$6.85**	1/4" 13-1/4"	12-01514	**$9.85**

ECONOMY BLIND HOLE SPOTTERS

For inserting into drilled holes already bored and marking exact center for opposite hole. Available size: 5/16", 1/4", 3/16", 5/32" and 1/8"

Description	Part No.	Price
5/16"	12-01775	**$1.15**
1/4"	12-01774	**$1.15**
3/16"	12-01773	**$1.15**

Description	Part No.	Price
5/32"	12-01772	**$1.15**
1/8"	12-01771	**$1.30**

EDGE BREAKER

This tool allows the quick removal of burrs and roughness from the edges of sheet metal. .25" or .187" in diameter grooved blade with safety shield. Safety-grip plastic handle. P/N 12-01527 ..... **$9.50**

AIR SWIVELS & REGULATOR TOOLS

Air Swivel Connector W/ Regulator (Pictured to the left) ..... P/N 12-01530 ..... **$11.50**
Air Swivel Connector ..... P/N 12-01529 ..... **$9.95**
Air Swivel Regulator ..... P/N 12-01545 ..... **$7.95**

BRASS RIVET SET

This rivet set has a soft face to prevent damage to the fastener when inserted or removed. Fits into any standard rivet gun or air hammer that supports .401" shank tooling, 3 1/8" overall length. ..... P/N 12-01543 ..... **$8.20**

TO

RIVET GUN SHAFT REDUCER

Rivet set adapter sleeve, .401 shank. Made of hardened steel (SKD11) and is open at both ends to allow maximum riveting power. P/N 12-01544 ..... **$13.20**

ECONOMY SAFETY WIRE TWISTERS

These top quality twisting lock pliers with automatic return are economically priced and extremely durable. Features a sharp cutting edge and will twist up to .060" dia. safety wire. Length 6"& 9". Foreign made.
6"..... P/N 12-01472 ..... **$19.90**
12"..... P/N 12-01473 ..... **$19.75**

CAMLOC PLIERS

These Camloc Pliers are used to depress #2600, #2700 and #4000 series Camloc (C-LOCK) studs so they can be properly installed. Pliers are manufactured from forged steel and feature polished bearing surfaces to avoid scratching the stud as it 's being installed. The grips are rubber cushioned for extra comfort and to reduce slipping. P/N 12-01475 ..... **$16.75**

CANNON CONNECTOR PLIERS

The tool features serrated jaws for improved gripping and a slip joint for improved leverage. Ideal for all common cannon connector applications.
P/N 12-01531 ..... **$14.85**

SHOP HEAD RIVET GAUGE SET

Set of four gauges for -3, -4, -5, -6 rivets. Each gauge measures Minimum height and Minimum diameter of shop heads AFTER setting. Eliminates guessing if your rivets are properly set. Works for measuring both universal head and flush rivets. Precision machined to size from 2024 aluminum. Rivet size permanently stamped on each gauge. Color coded anodized finish.
P/N 12-01533 ..... **$9.85**

RIVET LENGTH GAUGE

One gauge measure -3, -4, -5, -6 rivets. Used to check for proper length of rivets Before setting. Eliminates measuring and guessing of rivets lengths. Works for both universal head and flush rivets. Precision machined to size from 2024 aluminum. Rivet size permanently stamped. Blue anodized finish. P/N 12-01534 ..... **$4.95**

DRILL EXTENSION THREADED

Use these different length extensions in your 90°or 45° drills. 1/4"-28 male threads on one end and 1/4"-28 female threads on other.
2"..... P/N 12-01535 ..... **$3.50**
4"..... P/N 12-01536 ..... **$3.50**
6"..... P/N 12-01537 ..... **$3.50**

DRILL EXTENSION DUAL THREADED

Use these different length extensions in your 90°or 45° drills. 1/4"-28 male threads on one end and 1/4"-28 female threads on other. Comes in three different lengths1"?2"?4".
2"..... P/N 12-01541 ..... **$3.85**
4"..... P/N 12-01542 ..... **$3.85**

SLIM MICRO-STOP

A slim design that's only 11/16" outside diameter. Used for those narrow areas that can't be reached with a standard micro-stop. • 1/4" Shaft • 1/4"-28 Female Threads • Adjustable in .001" increments • 1/2" Cutter Capacity • Rates for 3000 RPM use. P/N 12-01790 ..... **$19.50**

MICRO-STOP (LONG NOSE)

This micro-stop reaches into very confined areas. • 5/16" Quick-change Shaft or regular chuck • 1/4"-28 Female Threads • Adjustable in .001" increments • 3/8" Cutter Capacity • Rates for 3000 RPM use
P/N 12-01789 ..... **$42.75**

MICRO-STOP (NYLON FACE)

• 1/4" Shaft • 1/4" -28 Female Threads • Adjustable in .001" increments • 11/16" Cutter Capacity • Rates for 3000 RPM use P/N 12-01788 ..... **$25.50**

5.5" STRAIGHT & OFFSET RIVETS

Made of steel and heat-treated for long tool life. The precision made cups are highly polished. .401 shank. Length: 5.5". Cup Sizes: 3/32", 1/8", 5/32" & 3/16". For AN470 rivets

Size	Straight	Price	Offset	Price
3/32"	12-02326	**$7.50**	12-02330	**$8.25**
1/8"	12-02327	**$7.50**	12-02331	**$8.25**
5/32"	12-02328	**$7.50**	12-02332	**$7.35**
3/16"	12-02329	**$6.85**	12-02333	**$7.35**

ALUMINUM & NYLON RIVETS

Nylon

Aluminum

This rivet set has a soft face to prevent damage to the fastener when inserted or removed. Fits into any standard rivet gun or air hammer that supports .401" shank tooling. • Surface: 1" • Length: 3 1/8"
Nylon Rivet..... P/N 12-02342..... **$8.35**
Aluminum Rivet..... P/N 12-02343..... **$8.75**

RADIUS CHECK

Radius Check is a hand-held tool which can be used to check the radius of parts and panels used in the construction or restoration of aircraft. Also used extensively in the restoration of antique and classic automobiles. P/N 12-21595 ..... **$35.85**

RADIUS OR FILLET GAUGES

16 leaves, especially for checking radius of inside and outside fillets and corners. Checks 1/32 to 17/64" by 64ths.
P/N 432A..... **$22.50**

ECONOMY AIRCRAFT TOOLS

ECONOMY RIVET GUNS

These popular 2X /3X /4X rivet guns used in aircraft manufacturing plants worldwide. "X" series rivet gun has an incomparable teasing triggers, allowing you to slowly begin riveting without damaging the skin. A lightweight aluminum handle with powder coat finish for comfort. Hardened & precision ground steel piston, cylinder, spool valve for long life. Includes spring retainer & brass air regulator.

Length	BPM	Capacity	Bore	Shank	Stroke	Weight (lbs)	Part No.	Price
6-11/16"	2580	1/8"	1/2"	.401"	2-1/4"	3.1	12-02034	**$127.95**
7-5/16"	2160	3/16"	1/2"	.401"	2-7/8"	3.2	12-02035	**$128.95**
8-1/2"	1740	1/4"	1/2"	.401"	3-1/16"	3.4	12-02036	**$129.95**

ECONOMY FLUTING PLIERS

Narrow type fluting pliers are used for straightening out or coaxing sheet metal into the correct shape. This tool makes narrow and precise flutes in sheet metal. P/N 12-01782 ..... **$16.75**

RIVET HOLDER

This tool holds your rivet, small bolt, or screw so you can get into those hard-to-reach areas…
P/N 12-01791 ..... **$6.85**

RIVET ECONOMY COLLAR CUTTER

se with your rivet gun to easily remove Huck and Hi-Lok type collars. Shank: 0.401 Size includes 1/8", 5/32", 3/16" & 1/4" Overall Length: 5 1/2"

1/8..... P/N 12-02275 ..... **$15.95**
5/32..... P/N 12-02276 ..... **$15.95**
3/16..... P/N 12-02277 ..... **$15.95**
1/4..... P/N 12-02278 ..... **$15.95**

ECONOMY FLUSH SET

5.5" & 7.5" Flush Set Made of steel and heat-treated for long tool life. Faces are polished to a high luster for smooth, precise riveting. .401 shank Surface: 1" Length: 5.5" & 7.5"

5.5:" ..... P/N 12-02273 ..... **$12.85**
7.5" ..... P/N 12-02274 ..... **$15.75**

JIFFY RIVET SETTERS

ECONOMY JIFFY STRAIGHT RIVET SETTER - For use with "Jiffy" style rivet gun. Made of steel and heat-treated for long tool life. The precision made cups and highly polished. 401 shank, Length: 1-3/16", Cup Sizes: 3/32", 1/8", 5/32" & 3/16", For AN470 rivets

3/32" x 1-3/16" .... P/N 12-02381 ..... **$5.95**
1/8" x 1-3/16" ..... P/N 12-02382 ..... **$5.95**
5/32" x 1-3/16" .... P/N 12-02383 ..... **$5.95**
3/16" x 1-3/16" .... P/N 12-02385 ..... **$5.95**

ECONOMY JIFFY OFFET RIVET SETTER - For use with "Jiffy" style rivet guns. Made of steel and heat-treated for long tool life. The precision made cups are highly polished. 401 shank, Length: 1-3/4", Cup Sizes: 3/32", 1/8", 5/32" & 3/16", For AN470 rivets

3/32" x 1-3/4" ..... P/N 12-02387 ..... **$6.45**
1/8" x 1-3/4" ..... P/N 12-02388 ..... **$6.45**
5/32" x 1-3/4" ..... P/N 12-02389 ..... **$6.45**
3/16" x 1-3/4" ..... P/N 12-02390 ..... **$6.45**

ECONOMY RIVET GUN PUNCH - For use to remove rivet after collar is split. Made of steel and heat-treated for long tool life. 401 shank, Length: 3-1/2", Punch size includes: 3/32", 1/8", 5/32" & 3/16" & 1/4"

3-1/2" x 1/8" ..... P/N 12-02392 ..... **$6.95**
3-1/2" x 5/32" ..... P/N 12-02393 ..... **$6.95**
3-1/2" x 3/16" ..... P/N 12-02394 ..... **$6.95**
3-1/2" x 1/4" ..... P/N 12-02395 ..... **$6.95**

ECONOMY JIFFY FLUSH RIVET SETTER - For use with "Jiffy" style rivet gun, polished flush surface Length: 1-3/16", For AN470 Rivets
P/N 12-02386 ..... **$5.85**

QUICK-CHANGE CHUCK

Allows tool change in seconds. Designed for drilling bits, countersinks, etc. with quick-change ends. 3/8" x 24 thread. P/N 12-01778 ..... **$15.00**

C-SET

This C-Rivet Set bends around obstacles and allows you to reach into awkward areas for riveting. • 3/16" diameter hole for any squeezer sets or dimple dies with 3/16" shaft • 401 shaft P/N 12-01776 ..... **$28.75**

RED BOX RIVET GUN TOOL KITS

RED BOX RIVET GUN TOOL KITS

* 1pc Rivet Gun (Choose Size 2X, 3X or 4X) * 1pc Brass Regulator * 1pc Beehive Retainer * 1pc Handi Retainer * 4pcs 3.5" Straight Rivet Set (3/32", 1/8" 5/32", 3/16") * 1pc Standard Flush Set (size: surface diameter 1", length 2-1/2") * 1pc Marvel Air Tool Oil (Made in USA) * 1pc Thread Seal Tape * 1pc Air Tool Fitting

2X Rivet Gun Tool Kit ..... P/N 12-02047 ..... **$209.95**
3X Rivet Gun Tool Kit ..... P/N 12-02048 ..... **$209.95**
4X Rivet Gun Tool Kit ..... P/N 12-02049 ..... **$209.95**

RED BOX FLUSH RIVET SET

P/N 12-02050 ..... **$7.25**

RED BOX 3.5" RIVET SET

Size	Straight	Price	Offset	Price
3/32"	12-02051	**$5.65**	12-02322	**$5.85**
1/8"	12-02052	**$5.50**	12-02323	**$5.85**
5/32"	12-02053	**$6.25**	12-02324	**$5.85**
3/16"	12-02054	**$5.90**	12-02325	**$5.85**

RED BOX 7.5" RIVET SET

Size	Straight	Price	Offset	Price
3/32"	12-02334	**$7.90**	12-02338	**$8.85**
1/8"	12-02335	**$8.65**	12-02339	**$7.85**
5/32"	12-02336	**$7.35**	12-02340	**$7.85**
3/16"	12-02337	**$7.35**	12-02341	**$7.85**

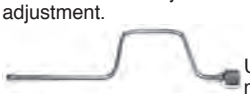
TURNBUCKLE WRENCH

2 inch diameter turnbuckle wrench easily rotates turnbuckle while chain tool holds the cable ends in precise alignment and prevents them from rotating.
P/N 12-01795 ..... **$28.75**

TURNBUCKLE CHAIN TOOL

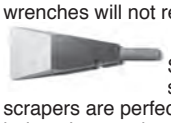
This tool consists of two clamps joined by sprocket type (bicycle) chain. When clamped to cable and fittings at each side of the turnbuckle, anchor the cable to allow free adjustment of the turnbuckle. The adjustment becomes a two hand instead of three hand adjustment. P/N 12-01794 ..... **$25.75**

SPEED HANDLE 3/8"



Useful for quickly tightening and loosening a nut or bolt particularly where other types of wrenches will not reach. P/N 12-01797 ..... **$5.50**

PHENOLIC SCRAPER



Scraper Blade, 2" wide x 6.5" long x 3/8" thick. Designed for use with a rivet gun (.401 shank). Phenolic scrapers are perfect for safely removing sealant, adhesives, stickers, labels, grime, and more. P/N 12-01796 ..... **$11.95**

SKIN WEDGE

Made of 4130 steel and heat-treated to perfection. • 7" long x 1" wide • Body thickness 1/4" P/N 12-01793 ..... **$9.85**

HEX KEYS

Designed to use when installing Hi-Lok style fasteners. Includes set screw and Allen key.

1/8" ..... P/N 12-01785 ..... **$6.75**
5/64" ..... P/N 12-01786 ..... **$6.75**
3/32" ..... P/N 12-01787 ..... **$6.75**

ECONOMY DRILL EXTENSION THREADED

Has a 5/16" quick change shaft on one hand and 1/4" -28 female threads on the other. Allows you to chuck threaded drill bits or countersinks into a quick-change chuck. . P/N 12-01781 ..... **$6.25**

60° C-SET

Excellent for limited access areas. • 60° Angle • .401 shaft P/N 12-01777 ..... **$30.75**

FORD WRENCH

• General-purose adjustable wrench • Sliding Jaw • Forged from Crescent special Analysis Tool Steel • Chrome-plated • Precision Machined

11" Wrench ..... P/N 12-01784 ..... **$23.75**

SEALANT MIXER

Designed to quickly and efficiently mix all types of pre-filled Semkit® packages. Has a 1/4' shank. Chuck it up in your drill to mix Semkit® sealant tubes.
P/N 12-01792 ..... **$16.85**

TO

ATS TOOLS - PORTABLE COMPRESSORS

ATS AIR NIBBLER

ATS8300
• Cuts up to 16 ga (.060" / 15 mm) steel or aluminum
• Easily replaceable punch and die
• Weight 1.74 lbs (.79 kg)
P/N 12-01414 ..... **$89.75**

ATS PUNCH & FLANGING TOOLS

ATS8400
• Capacity 16ga (.060"/15mm) steel
• Punch Diameter 3/16" (5 mm)
• Flange width 1/2" (12 mm)
• Rubber comfort grip
• 9-3/4" (248 mm) Overall Length
• 2.75 lbs (1.25 kg)
P/N 12-01413. ..... **$75.95**

ATS AIR POWER RECIPROCATING SAW KIT

ATS8202K
• Cuts up to 16 ga (.060" / 15 mm) steel or aluminum
• .063" (16, mm) Stroke Length
• 10,000 Strokes Per Minute (SPM)
• Weight 2.1 lbs (1.35 kg)
P/N 12-01419 ..... **$93.50**

ATS 90 DEGREE ANGLE DRILL

ATS6132
• Spindle 1/4"-28 Thread
• Head Length 1.08" (2.7 mm)
• 2,800 RPM
• Head Width .65" (1.6 mm) .33 hp
• 10" (254 mm) Overall Length
• Variable speed control
1.6 lbs (.73 kg)
P/N 12-01422 ..... **$228.95**

ATS TOOLS

ATS MNI ANGLE DIE GRINDER

ATS5105
• 1/4" (6.4 mm) Collet Size
• 5-1/2" (140 mm) Overall Length
• 1.1 lbs (.5 kg)
• 20,000 RPM Free Speed)
P/N 12-01416. ..... **$63.75**

ATS MINI DIE GRINDER

ATS5101
• 1/4" (6.4 mm) Collet Size
• Front exhaust keeps work area cleanl
• Very light weight .79 lbs (.36 kg)
• 26,000 RPM Free Speed)
P/N 12-01417 ..... **$56.50**

ATS 3" CUT-OFF TOOL

ATS8502
• 3" (75 mm) disc capacity, 3/8" (15 mm) mount
• Free speed 20,000 RPM
• Weight 1.74 lbs (.79 kg)
P/N 12-01420 ..... **$39.75**

ATS AIR HYDRAULIC RIVETER

ATS8805
• Pulling Force 2,300 lbs (1,045 Kg)
• Rivet Capacity 3/16" aluminum or mild steel
• Stroke Length .63" (16 mm)
• Nosepieces: 3/32" (2.4 mm), 1/8" (3.2 mm), 5/32" (4.0 mm), 3/16" (4.8 mm)
• Weight 3.26 lbs (1.48 kg)
P/N 12-01423 ..... **$89.95**

ATS HEAVY DUTY AIR DRILL

ATS6101
• 3/8" (9.5 mm) Jacobs® Chuck
• Full Cage Gear
• 2,600 RPM
• Variable speed control
• .67 hp (.5 kw)
• Ergonomic Design for Maximum Comfort
• 7-1/2" (190 mm) Overall Length
• 2.07 lbs (.94 kg)
P/N 12-01418. ..... **$63.95**

ATS HD REVERSIBLE AIR DRILL

ATS6104
• 3/8" (9.5 mm) Jacobs® Chuck
• Full Cage Gear For Smooth Operation
• 2,400 RPM • Variable Speed Control
• Fully Reversible with Positive Stop
• 7-1/2" (190 mm) Overall Length
• .67 hp (.5 kw)
• 2.86 lbs (1.3 kg)
P/N 12-01421 ..... **$69.50**

ATS PALM DRILL

ATS6100
• 1/4" (6.4 mm) Jacobs® Chuck
• Two-stage (Low/High) Control Trigger
• 5-7/8" (150 mm) Overall Length
• 1.54 lbs (.7 kg)
• 2,800 RPM Free Speed
P/N 12-01424 ..... **$93.75**

TO

BOSCH POWER TOOLS

BOSCH 10.8V I-DRIVER

MODEL PS10-2A -Features: • 80 in. - lbs. of Torque — Drives 100 3-inch screws per battery charge • Ultra-Compact Head Length — 3.5" total head length - 3 times shorter than most popular competitor • 90-Degree Articulating Head • 7+1 Electronic Clutch • Forward/Reverse Button — Equally useful at driving or removing screws • Quick Change Chuck- pull to insert or release 1/4" hex shank bits • Storage Hanger — Convenient tool storage between uses • Variable Speed Trigger — Revolutionary design provides increased sensitivity and control P/N 12-01754 ..... **$157.95**

BOSCH 10.8V POCKET DRIVER

MODEL PS20-2 - Features: • 80 in. - lbs. of Torque — Drives 100 3-inch screws per battery charge • Ultra-Compact Power & Design — Almost half the size of a 12V compact drill/driver • LED Light — For tight spaces and applications • Forward/Reverse Button — Equally useful at driving or removing screws • Quick Change Chuck — Prevents bit loss in drill or drive mode - pull to insert or release 1/4" hex shank bits • 10+1 Clutch — Enables precision driving and eliminates over torque in soft base materials. Max mode allows pilot and other small bore holes • Variable Speed Trigger — For increased sensitivity and control P/N 12-01755 ..... **$125.95**

BOSCH 10.8V LITHEON IMPACTOR FASTENING DRIVER

MODEL PS40-2 - Features:• 60% more torque than 18V drill/driver - 800 in.-lbs of max torque • Bosch Designed Hammer and Anvil System — Delivers 1,800 RPM/3,000 BPM • LED Light Ring — 3 LEDs illuminate work area for use in dark areas • Litheon™ 10.8V Batteries — • Spring-Loaded Impact Mechanism — Reduces user fatigue • Aluminum gear housing with protective rubber front • 1/4" hex drive with quick release •Ergonomic Soft Grip Handle — For extended comfort and control • Bumpers on Side of Tool — Protect work surface and prevent slipping • Variable Speed Trigger — For complete control P/N 12-01756 ..... **$199.95**

BOSCH 18V IMPACTOR CORDLESS IMPACT WRENCH

MODEL 22618 - Features: • Innovative Hammer & Anvil System delivers up to 1,950 in/lb of torque 1/2" Square Drive Anvil • Soft-grip handle, not the user, absorbs the impact during fastening applications — Reduces fatigue and stress, provides maximum cushioning and comfort • Cutting-edge, high-performance motor and all-metal gears — Super fast operating speed, delivering a category-best 3,200 BPM and 2,800 RPM • Optional Gear Box Cover — For Added Protection • Lightweight 4.6 pounds and 6.5 inches in length — Incredibly versatile for use in dozens of drilling, fastening and driving applications • Aluminum gear housing with protective rubber front Variable-speed trigger — For complete control • Externally accessible brushes — For easy brush replacement • Multi-purpose reversible tool hook • Multiple-position swivel LED lighting system — Increases visibility - great for dark or enclosed areas P/N 12-01757 ..... **$317.95**

BOSCH 18V IMPACTOR CORDLESS IMPACT WRENCH

MODEL 22618 - 12V Battery for medium-duty jobs. 14.4V Battery for heavy-duty jobs. The Most Powerful Impact Wrench In The Line Up! 18V Battery for heavy-duty jobs. Faster and more powerful than standard impact drivers. The most lightweight driver in the line up. 9.6V Battery for medium-duty jobs ***Includes*** (2) -- 2.4A-h Batteries - BAT181 (1) -- 30 Minute Charger - BC130 (1) -- Tool Hook - IMPKHOOK (1) -- Carrying Case - Included (1) -- Gear Box Cover P/N 12-01758 ..... **$306.95**

BOSCH 18V LITHIUM-ION JIG SAW

The Lithium-Ion Jig Saw (JSH180-01) is up to 30% lighter weight than the leading competitor and up to 10% smaller. The 1 handed blade insertion and ejection offers most convenience and ease of use while the small grip diameter reduces user fatigue during extended use applications. **Includes**: (2) 18V Lithium-Ion FatPack Batteries - BAT618, (1) 1-Hour Charger, (1) Carrying Bag. **Specifications**: Battery/Charger: 1 Hour Charger. Bevel Angle Range: 45 Degrees. Length: 10.24". Max. Capacity in Steel: 3/8". Max. Capacity in Wood: 3 1/2". No Load SPM: 0-2, 700. Stroke Length: 1". Voltage: 18V. Weight (lbs.): 5.3.
P/N 12-02958 ..... **$423.00**

BOSCH TOP HANDLE JIG SAW

MODEL 1590EVSK - ProVantage 3-year Protection Plan. Includes: • Precision for Wood Blade • Progressor® Wood Blade • Tight kerf blade -- T244D •Zero-clearance Insert • Non-marring Footplate • Carrying Case ***Features:*** • 6.4 Amps • Precision Control™ system • One-Touch® blade change • Quick bevel adjust cast aluminum foot • Constant Response™ circuitry • T-shank machined plunger • Robust 3-point connection • No blade play • On/off blower switch • 4-position orbital control • Variable speed trigger • Variable speed dial • Lock on button • Adjustable dust blower keeps cutting line clear P/N 12-01765 ..... **$186.95**

5 INCH RANDOM ORBIT SANDER

MODEL NO. ROS20VSK - Features: • Best all-around sanding performance and convenience. • Twist-off translucent dust canister shows dust level and detaches easily. Ant-spillback design prevents dust from spilling on removal. • Bosch Microfilter system traps dust particles as small as 1/2 micron. • Hook-Tight™ hook-and-loop disk attachment ensures firm grip of standard hook-and-loop sanding discs. • Comfortable, ergonomic soft-grip top and body • Integral pad dampening system prevents swirl marks • Soft microcellular backing pad ensures smooth, fine finish on flat or contoured surfaces. • Variable-speed dial allows matching of speed to work piece and task. P/N 12-01766 ..... **$98.25**

BOSCH 3-1/4 INCH PLANER

MODEL 3365 - Includes: (2) WoodrazorTM Blades, Guide Fence, Blade Wrench, Chip Bag. ***Features:*** •Powerful 5 Amp Motor, 18,000 RPM. • Electronically-Counterbalanced Single-Blade System automatically positions blade at ideal cutting angle. • Eliminates uneven planing caused by misaligned blades. • Equipped with Bosch Woodrazor™ micrograin carbide blades, which resist fractures from nail and staple strikes. • Ratcheting Depth Knob. • No need to re-zero the depth. • Chip Ejection Switch. • Edge Guide Fence. • Has a protective shield that covers the section of blade not in use. • Lock-off Release Button. • Park Rest Stand• Double insulated, UL listed, complies to OSHA. P/N 12-01767 ..... **$109.95**

18V COMPACT TOUGH™ 1/2'' DRILL/DRIVER

This drill includes a new ergonomic design for outstanding comfort and durability. The 4-pole open frame motor provides more power in a smaller size and the durashield housing is constructed to withstand jobsite conditions.
Includes: (2) - 18V High Capacity Lithium-ion SlimPack Batteries (1) - Lithium-ion Battery Fast Charger (1) - Double-sided Philips Drive Bit (1) - Carrying Case
Features: • Optional Flexible Power System (FPS™) Provides Choice of Max Run Time or Minimum Weight • Ratcheting Single Sleeve ½ in. Chuck- For one handed bit changes • LED Light- Great for dark or enclosed areas • Soft-Grip Wrapped Housing - Fits comfortably in hand for extended working time • Variable Speed Trigger- Provides maximum control • Bosch Lithium-ion HC batteries - Provides up to 50% more runtime, cold weather performance in -4 deg temps, and fuel gauge • Bosch Advanced Lithium-ion Technology delivers optimized performance through Electronic Cell Protection (ECP™), Unique Pack Design which keeps the battery cooler, and Electronic Motor Protection (EMP™) which protects motor in heavy duty applications. P/N 12-02948 ..... **$226.95**

BOSCH 4-1/2 INCH ANGLE GRINDER

Features: 6 Amps, 11,000 RPM• Lock-on/off switch — for extended use applications • Service MinderTM brushes — Eliminates guesswork, stops the tool when preventative maintenance is required • Epoxy Coated Field Windings — Provides ultimate protection against abrasive dust and metal debris • 5/8" -11 Spindle — wide flexibility for mounting most popular accessories • Spindle Lock — For quick wheel changes • Double insulated, UL listed, complies to OSHA • 2-Position auxiliary handle — specifically designed and angled to a "natural" position for maximum comfort and control. P/N 12-02685 ..... **$169.85**

BOSCH 3-1/4 INCH PLANER 120V

Powerful 6.0 amp motor, 16,500 RPM for fast stock removal and a smooth finish. Electronically-counterbalanced, single-blade system automatically positions blade at ideal cutting angle. Reduces drag and provides fast operation and a smooth finish. Eliminates uneven planing caused by misaligned blades. Equipped with Bosch Woodrazor™ micrograin carbide blades. Ratcheting depth knob that allows for fool-proof setting of depth increments from 0" to 1/16" (1.5 mm). Also features an edge guide fence. A protective shield covers the section of blade not in use. Amperage: 6.0. Cord Length: 10'. Country of Origin: Malaysia. No Load RPM: 16,500. Planing Depth: 0 - 1/16" (1.5 mm). Planing Width: 0" to 3-1/4". Rabbet Depth: 5/16". Rating: 120V AC. Shoe Length: 11 - 1/8" P/N 12-02823 ..... **$188.95**

TO

SUNEX TOOLS

SUNEX IMPACT WRENCH SX4335

3/8" Impact Wrench SX4335
P/N 12-02610 ..... **$236.95**

SUNEX IMPACT WRENCH SX4345

1/2" Impact Wrench. 750 ft.lbs. of quiet power. 1100 ft.lbs. of breakaway torque. One hand forward/reverse. Quiet Tech™ exhaust system delivers 82 dBA. Weighs only 4.3 lbs..
P/N 12-02611 ..... **$242.95**

SUNEX IMPACT WRENCH W/ ANVIL SX4345-2

1/2" Impact Wrench with 2" extended anvil. 750 ft.lbs. of quiet power. 1100 ft.lbs. of breakaway torque. One hand forward/reverse. Quiet Tech™ exhaust system delivers 82 dBA. Weighs only 4.3 lbs.
P/N 12-02612 ..... **$235.95**

SUNEX IMPACT WRENCH SX4355

3/4" Impact Wrench. 1400 ft.lbs. of quiet power. One hand forward/reverse. Quiet Tech™ exhaust system delivers 90 dBA. Weighs only 7.55 lbs...
P/N 12-02613 ..... **$571.00**

SUNEX AIR RATCHET SX3825

1/4" Air Ratchet. 30 ft. lbs. of quiet power. 84 dBA makes it the quietest in it's class. Weighs only 1.45 lbs....
P/N 12-02614 ..... **$148.95**

SUNEX SHORT AIR HAMMER

SX821A Specification	
Blows Per Minute	4,500
Bore (In.)	1-5/8
Stroke (In.)	1-5/8
Air Inlet (NPT)	1/4
Min. Hose Size (I.D.)	3/8
Recommended Air Pressure (PSI)	90
Average Air Consumption (CFM)	4
Sound Level (dBA)	105
Length (In.)	5.5

* Built-in regulator
* Accepts .401" Parker taper shank chisels
* Ideal for standard duty applications
* 3 pc. chisel set included
* Quick change retainer sprping

P/N 12-01934 ..... **$41.75**

SUNEX AIR RATCHET SX3830

3/8" Air Ratchet. 50 ft. lbs. of quiet power. 80 dBA makes it the quietest in it's class. Weighs only 2.7 lbs.
P/N 12-02615 ..... **$148.95**

SUNEX IMPACT RATCHET SX3835

3/8" Impact Ratchet Wrench. 300 ft. lbs. of quiet power. One hand forward/reverse. Quiet Tech™ exhaust system delivers 79 dBA. Weighs only 2.75 lbs.
P/N 12-02616 ..... **$221.95**

SUNEX STRAIGHT DIE GRINDER SX5201

1/4" Straight Die Grinder. 25,000 max. RPM of quiet speed. Only 85 dBA. Weighs only 0.9 lbs.
P/N 12-02617 ..... **$66.75**

SUNEX ANGLE DIE GRINDER SX5203

1/4" Angle Die Grinder. 20,000 max. RPM of quiet speed. Only 82 dBA. Weighs only 1.1 lbs.
P/N 12-02618 ..... **$112.95**

SUNEX REVERSIBLE CUT OFF TOOL SX6210

3" Reversible Cut-Off Tool. Reversible spark direction with 18,000 max. RPM. Strong 0.9 horsepower motor. Only 83 dBA. Weighs only 3.6 lbs.
P/N 12-02619 ..... **$102.95**

2" ANGLE GRINDER

SXC606 Specification	
Wheel Size (In.)	2
Length (In.)	7.4
Maximum Speed (RPM)	15,000
Air Inlet (In.)	1/4
Minimum Hose Diameter (In.)	3/8
Avg. Air Consumption (CFM)	3
Weight (Lbs.)	1.6

* Durable comfort grip
* 90° angle head for restricted areas
* 360° adjustable rear exhaust directs air away from work
* Built-in speed regulator
* Locking throttle lever for safety
* High-torque motor for maximum efficiency

PN 12-01942 ..... **$113.95**

TO

SUNEX SOCKET SETS

1/2" DRIVE STANDARD 13 PIECE SAE IMPACT SOCKET SET

* CR-MO alloy steel for long life
* Fully guaranteed
* Heavy molded storage tray

2650 Includes: 7/16" 1/2" 9/16" 5/8" 11/6" 3/4" 13/16" 7/8" 15/16" 1" 1-1/16" 1-1/8" 1-1/4"

P/N 12-01945.....**$63.50**

1/2" DRIVE DEEP 13 PIECE SAE IMPACT SOCKET SET

* CR-MO alloy steel for long life
* Fully guaranteed
* Heavy molded storage tray

2651 Includes: 7/16" 1/2" 9/16" 5/8" 11/6" 3/4" 13/16" 7/8" 15/16" 1" 1-1/16" 1-1/8" 1-1/4"

P/N 12-01946.....**$79.50**

1/2" DRIVE STANDARD 14 PIECE METRIC IMPACT SOCKET SET

* CR-MO alloy steel for long life
* Fully guaranteed
* Heavy molded storage tray

2652 Includes ;10mm 11mm 12mm 13mm 14mm 15mm 16mm 17mm 18mm 19mm 21mm 22mm 26mm 27mm

P/N 12-01947.....**$48.75**

1/2" DRIVE DEEP 14 PIECE METRIC IMPACT SOCKET SET

* CR-MO alloy steel for long life
* Fully guaranteed
* Heavy molded storage tray

2653 Includes: 10mm 11mm 12mm 13mm 14mm 15mm 16mm 17mm 18mm 19mm 21mm 22mm 26mm 27mm

P/N 12-01948.....**$79.50**

1/2" DRIVE DEEP SPINDLE NUT 4 PIECE METRIC IMPACT SOCKET SET

* Deep design for GM & Chrysler spindle nut applications
* CR-MO alloy steel for long life
* Fully guaranteed
* Heavy molded storage tray

2838 Includes: 30mm 32mm 34mm 36mm

P/N 12-01951.....**$71.85**

1/2" DRIVE WHEEL LOCK REMOVAL KIT

* CR-MO alloy steel for long life
* Fully guaranteed
* Heavy molded storage tray

2840 Includes: GM Hubcap Lock Remover, GM Sprocket Hubcap Remover, Ford & Chrysler Hubcap Lock Remover, Large Univ. Locking Lug Nut Remover, Large Wheel Cover Lock Remover, Remover for Stripped 18mm Lug Nuts, Oversize Wheel Lock Remover, GM "M" & "F" Body Wheel Lock Remover, Lug Nut Remover Punch

P/N 12-01952.....**$59.50**

3/8" DRIVE DEEP 25 PIECE SAE IMPACT SOCKET SET

* CR-MO alloy steel for long life
* Fully guaranteed
* Heavy molded storage tray

3325 Includes: 12 Standard Sockets: 5/16" 3/8" 7/16" 1/2" 9/16" 5/8" 11/16" 3/4" 13/16" 7/8" 15/16" 1"

12 Deep Sockets: 5/16" 3/8" 7/16" 1/2" 9/16" 5/8" 11/16" 3/4" 13/16" 7/8" 15/16" 1" P/N 12-01954.....**$112.95**

3/8" DRIVE MASTER 29 PIECE METRIC IMPACT SOCKET SET

* CR-MO alloy steel for long life
* Fully guaranteed
* Heavy duty blow mold case

3329 Includes: 14 Standard Sockets:: 8mm 9mm 10mm 11mm 12mm 13mm 14mm 15mm 16mm 17mm 18mm 19mm 21mm 22mm 14 Deep Sockets:: 8mm 9mm 10mm 11mm 12mm 13mm 14mm 15mm 16mm 17mm 18mm 19mm 21mm 22mm

P/N 12-01955.....**$126.95**

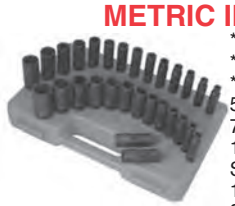
3/8" DRIVE MASTER DEEP 28 PIECE SAE & METRIC IMPACT SOCKET SET

* CR-MO alloy steel for long life
* Fully guaranteed (excludign adapter)
* Heavy duty blow mold case

3360DD Includes: 14 Deep SAE Sockets:: 5/16" 3/8" 7/16" 1/2" 9/16" 5/8" 11/16" 3/4" 13/16" 7/8" 15/16" 1" 14 Deep Metric Sockets:8mm 9mm 10mm 11mm 12mm 13mm 14mm 15mm 16mm 17mm 18mm 19mm 21mm 22mm 1/2" (F) x 3/8"(M) Adapter 3" Extension

P/N 12-01956.....**$116.95**

1/2" DRIVE DEEP MASTER 29 PIECE SAE & METRIC IMPACT SOCKET SET



* CR-MO alloy steel for long life
* Fully guaranteed
* Heavy duty blow mold case

5153DD Includes: 13 Deep SAE Sockets: 7/16" 1/2" 9/16" 5/8" 11/16" 3/4" 13/16" 7/8" 15/16" 1" 1-1/16" 1-1/8" 1-1/4" 14 Deep Metric Sockets: 10mm 11mm 12mm 13mm 14mm 15mm 16mm 17mm 18mm 19mm 21mm 22mm 26mm 27mm 2 Deep Flip Sockets: 3/4" x 13/16 19mm x 21mm

P/N 12-01949.....**$229.00**

1/2" DRIVE MASTER 39 PIECE METRIC IMPACT SOCKET SET

* CR-MO alloy steel for long life
* Fully guaranteed
* Heavy duty blow mold case

2669 Includes 19 Standard Sockets: 9mm 10mm 11mm 12mm 13mm 14mm 15mm 16mm 17mm 18mm 19mm 20mm 21mm 22mm 23mm 24mm 26mm 27mm 30mm 19 Deep Sockets: 9mm 10mm 11mm 12mm 13mm 14mm 15mm 16mm 17mm 18mm 19mm 20mm 21mm 22mm 23mm 24mm 26mm 27mm 30mm

P/N 12-01950.....**$189.00**

1/2" DRIVE EXTRA THIN WALL 9 PIECE SAE & METRIC WHEEL PROTECTOR IMPACT SOCKET SET

* Durable outer sleeve and insert protects high polished wheels and lug nuts from damage
* Fully guaranteed
* Heavy duty blow mold case
* CR-MO alloy steel for long life

2849 Includes 6 SAE Sockets: 3/4" (light green) 13/16" (purple) 7/8" (green) 15/16" (brown) 1" (silver) 1-1/16" (black) 3 Metric Sockets: 17mm (blue) 19mm (yellow) 21mm (red)

P/N 12-01953.....**$93.75**

SUNEX WRENCH SETS

7 PIECE JUMBO SAE COMBINATION WRENCH SET

* High density, dropped forged alloy steel for strength
* Raised panel design
* Comes with sturdy metal clip for storage

9707 Includes: 942-1-5/16", 956-1-3/4", 944-1-3/8", 960-1-7/8", 948-1-1/2", 964-2", 952-1-5/8"

P/N 12-01967 .....**$114.95**

14 PIECE SAE COMBINATION WRENCH SET

* Canvas pouch included
* Raised panel design
* High density, dropped forged alloy steel for strength

9714 Includes: 712-3/8", 726-13/16, 714-7/16", 728-7/8", 716-1/2", 730-15/16", 718-9/16", 732-1", 720-5/8", 734-1-1/16", 722-11/16", 736-1-1/8", 724-3/4", 740-1-1/4"

P/N 12-01970 .....**$56.25**

14 PIECE ANGLE HEAD SAE WRENCH SET

* Canvas pouch included
* Fully polished drop forged alloy steel
* 15° and 60° angled ends for added convenience

9914 Includes: 991401-3/8", 991408-13/16, 991402-7/16", 991409-7/8", 991403-1/2", 991410-15/16", 991404-9/16", 991411-1", 991405-5/8", 991412-1-1/16", 991406-11/16", 991413-1-1/8", 991407-3/4", 991414-1-1/4"

P/N 12-01975 .....**$73.25**

14 PIECE ANGLE HEAD METRIC WRENCH SET

* Canvas pouch included
* Fully polished drop forged alloy steel
* 15° and 60° angled ends for added convenience

9914M Includes: 991404M-6mm, 991408M-13mm, 991403M-7mm, 991409M-14mm, 991402M-8mm, 991410M-15mm, 991401M-9mm, 991411M-16mm, 991405M-10mm, 991412M-17mm, 991406M-11mm, 991413M-18mm, 991407M-12mm, 991414M-19mm

P/N 12-01976 .....**$57.75**

8 PIECE FLARE NUT CROWFOOT WRENCH SET

* 3/8" Drive
* Fully polished drop forged alloy steel
* Mounted on a convenient storage rail

9708 Includes: 970802-3/8", 970810-5/8", 970804-7/16", 970812-11/16", 970806-1/2", 970814-3/4", 970807-9/16", 970818-7/8"

P/N 12-01968 .....**$27.85**

7 PIECE JUMBO STRAIGHT CROWFOOT WRENCH SET

* Fully polished drop forged alloy steel
* 1/2" Drive
* Reusable blow mold storage tray

9720 Includes: 97732-1", 97734-1-1/16", 97736-1-1/8", 97738-1-3/16", 97740-1-1/4", 97760-1-3/8", 97744-1-1/2"

P/N 12-01971 .....**$62.25**

6 PIECE JUMBO METRIC CROWFOOT WRENCH SET

* Fully polished drop forged alloy steel
* 1/2" Drive
* Reusable blow mold storage tray

9722 Includes: 97746-1-5/8", 97752-2", 97748-1-3/4", 97754-2-1/8", 97750-1-7/8", 97756-2-1/4"

P/N 12-01972 .....**$89.25**

10 PIECE METRIC FLARE NUT CROWFOOT WRENCH SET

* Fully polished drop forged alloy steel
* 3/8" Drive
* Mounted on a convenient storage rail

9710M Includes: 971010-10mm, 971015-15mm, 971011-11mm, 971016-16mm, 971012-12mm, 971017-17mm, 971013-13mm, 971018-18mm, 971014-14mm, 971019-19mm P/N 12-01969 .....**$32.85**

8 PIECE JUMBO METRIC STRAIGHT CROWFOOT WRENCH SET

* Fully polished drop forged alloy steel
* Mounted on storage rail for convenience
* Reusable blow mold storage tray

9730 Includes: 97324-24mm, 97328-28mm, 97325-25mm, 97329-29mm, 97326-26mm, 97330-30mm, 97327-27mm, 97332-32mm

P/N 12-01973 .....**$55.25**

SX-230A DIE GRINDER & ACCESSORIES

1/4" air die grinder. Built-in regulator. Exhaust directed away. Lever throttle for positive lever control.

Die Grinder ..... P/N 12-01124.....**$59.50**

X-227B HEAVY DUTY METAL SHEARS

Muffled handle exhaust. Heavy-duty, ball and needle construction. Pneumatic.

P/N 12-01122.....**$106.50**

SUNEX PNEUMATIC TOOLS

1/4" DRIVE MINI AIR RATCHET WRENCH

SX1068 Specification	
Free Speed(RPM) @90PSI	230
Torque (ft.lbs.) @90PSI	25
Square Drive	1/4
Min. Hose Size	2/8
Recommend Air Pressure (PSI)	90
Average Air Consumption (CFM)	3
Sound Level (dBA)	87
Length(In.)	8

* Lever throttle for positive speed control
* Ball detent socket retainer
* Rear exhaust
* Also available: 1/4" head kit P/N 12-01932 ..... **$83.75**

3/8" DRIVE PISTOL GRIP IMPACT WRENCH

SX821A Specification	
Square Drive (In.)	3/8
Max. Torque (ft. lbs @90PSI)	75
Working Torque (ft.lbs.)	30-60
Free Speed (RPM@90PSI)	10,000
Air Inlet (NPT)	1/4
Recommended Air Pressure (PSI)	90
Average Air Consumption (CFM)	4
Sound Level (dBA)	84
Length (In.)	5

* Ring socket retainer for rapid socket changes
* Front bumper for added protection
* Built-in regulator for added protection
* Reliable dog clutch mechanism for dependable service
* Reliable dog clutch mechanism for dependable service

P/N 12-01937 ..... **$88.75**

MEDIUM DUTY AIR HAMMER

SX275B Specification	
Blows Per Minute	3,000
Bore (in.)	11/16
Stroke (In.)	2-5/8
Air Inlet (NPT)	1/4
Min. Hose Size (I.D.)	3/8
Recommended Air Pressure (PSI)	90
Average Air Consumption (CFM)	4
Sound Level (dBA)	105
Length (In.)	6.75

* Built-in regulator
* Accepts .401" Parker taper shank chisels
* An excellent general purpose hammer
* Quick change retainer spring P/N 12-01935 ..... **$42.75**

TO

SUNEX 20 TON CAPACITY AIR BOTTLE JACK

* Designed for operating either manually or pneumatically * Air hose can swivel in any direction * Fitted with safety valve to prevent overloading * Two piece handle allows for easy pumping * Extension screw gives added height when necessary * Minimum air pressure required is 90 PSI, 7 Bars * Double spring return 4920BAH Specifications: Capacity (Tons)-20, Power Lift (In.) -7, Closed Height (In.) -10.5, Raised Height (In.) -20.1, Add. Screw Adj. (In.)-3.5, Base Dimensions (In.)-6.5 x 8.9

P/N 12-01958 .....**$308.95**

4 PIECE 3/8 INCH DRIVE UNIVERSAL SPARK PLUG SOCKET SET

* All four sized spark plug sockets in one convenient set * Fully polished chrome vanadium alloy steel for durability * Universal joint design for easy access in confined areas * Rubber inserts hold spark plug securely during installation and removal * Includes new 9/16" size * Convenient blow mold case * Fully guaranteed 87602 Specifications: 8844-9/16, 8844-5/8, 8844- 3/4, 8844-13/16

P/N 12-01966 .....**$39.75**

8 PIECE PROFESSIONAL SCREWDRIVER SET - ORANGE

* Includes 5 flat tip drivers and 3 Phillips tip drivers * Hardened chrome vanadium shafts * Vapor blasted magnetic tips * Packaged in heavy molded plastic tray for storage * Hex bolsters on most sizes for extra turning power 87602 Specifications: 98061-3/8" x 8", 98062-5/16" x 6, 98063-1/4" x 4", 98064-3/16" x 3", 98065-1/4" x 1-1/2", 98066-#2 Phillips x 4", 98067-#1 Phillips x 3", 98068-#2 Phillips x 1-1/2"

P/N 12-01974 .....**$13.95**

SUNEX DELUXE CREEPER

* 1" Rugged steel tube construction * Oversize frame for added comfort * Tapered frame and head reast for extra clearnace in tight areas * 3-1/2" Heavy duty chrome finished casters with rubber tread * 5-Position stick shift headrest adjustment sytem * Rear drop frame design for extra leg comfort 8515 Specifications: Length (In.)-45.5, Width (In.)-19, Height (Headrest Down)-5, Height (Headrest Up)-9.5, Shipping Weight (lbs)-29.0, Bed Size-30.625 x 16.5 x 2.5

P/N 12-01964 .....**$186.95**

SUNEX SERVICE CART WITH LOCKING TOP & DRAWER

* 8016 - 3 Drawer Unit * 8011 - Large Locking Screwdriver/Pry Bar holder * 8004 - Side Work Bench * 8014 - Leg extension Drawer liner sold separately Note: This item is purchased as a complete unit with the accessories listed above. 8013ADLX Specifications: Load capacity (lbs.)-350, Shipping weight (lbs.)-115.5, Color: Blue-8013ABLDLX, 8844-13/16-13/16"

P/N 12-01962 .....**$467.95**

SUNEX SERVICE CART WITH LOCKING TOP & DRAWER

* This combination makes for the ultimate cart * The locking drawer and locking top are keyed the same, so the user only has one set of keys * Clip-on roller-bearing slides on drawer * Large, easy to maneuver 4" wheels: 2 locking and 2 standard, Chrome 16 gauge steel frame, Durable powder coated finish, 3" deep shelves, Available colors: red, blue, black & yellow 8013A Specifications: Load capacity (lbs.)-350, Shipping weight (lbs.)-69.5

P/N 12-01963 .....**$233.95**

SUNEX 6 INCH VISE

* 2 locking mechanism for stability * Made from cast iron with steel handle threads 87602 Specifications: Base Swivel- 360 deg.

P/N 12-01961 .....**$123.95**

SUNEX 3/8 INCH CUTTING WHEEL - 5 PCS.

* For general purpose metal cutting 3" x 1-/16" double reinforced * Use with 3/8" arbor * Do not exceed 20,000 RPMs * Comply with ANSI B7.1/OSHA regulations. 87602 Specifications: Diameter (In.)-3, Qty. Included -5, Max RPM -25,000

P/N 12-01965 .....**$10.50**

6 INCH BENCH GRINDER WITH LIGHT

* Bright, flexible work light * Has two 6" grit wheels: coarse 36 and medium 60 * Each wheel has protective spark guard and adjustable eye shield * Mounting holes and rubber feet make grinder easy to mount on a stand (optional - part #5003 or 5005) or use on an approved worktable or workbench * Conveniently placed, easy to use on/off switch * Long, 6-foot power cord * Cast iron base for durability * Ball bearing construction for smooth operation * 1/2" Arbor accepts standard 6" wheel * UL & CSA Listed * Includes: eye shields (RS500119B) & tool rests (RS500135B) 5001A Specifications: Power-1/2 HP Motor, No Load speed .3450 RPM Motor -3.5 Amp, Voltage -115V/60Hz, Shipping Wt. (Lbs) -22

P/N 12-01959 .....**$156.95**

5 TON CAPACITY 8-WAY, 2-3 JAW REVERSIBLE PULLER

* Can be assembled to make a two or three jaw puller when additional stability is needed * Reversible jaw design for added versatility and a broader range of pulling capability * Ideal for pulling gears, bearings, pulleys and other press fit parts 3908 Specifications: Maximum reach (in.)-5.5, Maximum spread (in.) -7

P/N 12-01957 .....**$35.25**

3/16 INCH HEAVY DUTY RIVET GUN

* Sets all conventional, standard blind rivets and all structural blind rivets, mono bolts and t-rivets up to and including 3/16" diameter in all materials * Comes with nose pieces in 3/32", 1/8", 5/32", and 3/16" sizes * Features a pulling (traction) power of 1,983 lbF @90PSI * Forged aluminum handle * Nose pieces stored conveniently underneath base of gun * Minimum air pressure required is 90 PSI, 7 Bars * Includes blow molded storage case SX0918T Specifications: Air Pressure (PSI) -75-90, Stroke Length (In.) -11/16, Height (In.) -12-3/8, Weight (Lbs.) -3.70, Min. Hose Size (I.D.) -3/8, Air Inlet Size (NPT) -1/4. * Tips available on special request.

P/N 12-01933 .....**$262.95**

SUNEX 3 PIECE PROFESSIONAL ANGLE BLADE PRY BAR SET

Includes angle blade pry bars in lengths of 12", 17" and 25" and boast a handle specifically designed to ensure a "no slip" grip allowing the user maximum leverage and control. Each pry bar also has hardened, tempered blades for unmatched strength and durability. Specifications • Weight: 4.1lbs • Length: 25.8" • Height: 1.9"

P/N 12-02451 .....**$51.50**

SUNEX 3PC FLEXIBLE PICKUP TOOL

Helps to get you into those tight spots and help you with removal, fastening, and pick up of fasteners and parts. **Features**: Includes: 1/4" Magnetic Bit Driver, 1/4" Socket Driver, and a 2 in 1 Magnetic Claw Pick-Up Tool. Flexible ends bend to desired angles. Extra long 24" length shafts. 1/4" Bit Socket accepts all standard bits. 1/4" Socket Driver can be used with all 1/4" sockets and bit sockets.

P/N 12-02450 .....**$38.75**

TO

1/4 INCH AIR DIE GRINDER - VT3000

- 1/4" Air Die Grinder - VT3000
- Lightweight - powerful compact design
- VT3000- 25,000 RPM
- All ball bearing construction for longer tool life
- Self-locking safety throttle lever to prevent accidental starts
- Ergonomic positive grip
- Rear exhaust

P/N 12-02550.....**$42.25**

1/4 INCH AIR DIE GRINDER - VT3000A

- 1/4" Angle Type Air Die Grinder VT3000A
- Lightweight - powerful compact design
- All ball bearing construction for longer tool life
- Self-locking safety throttle lever to prevent accidental starts
- Ergonomic positive grip
- Rear exhaust

P/N 12-02551.....**$92.25**

1/4 INCH AIR DIE GRINDER - VT3001

- Industrial duty
- Durable precision machined and hardened steel gears
- Precision air motor with exceptionally high turning force
- High quality ball bearings for longer tool life
- Safety throttle lever
- Ergonomic square handle design for positive grip
- Rear exhaust

P/N 12-02552.....**$96.25**

1/4 INCH AIR DIE GRINDER - VT3001A

- 105° angle type head
- Direct drive - no bevel and pinon gears to maintain
- One piece casting
- Ergonomic design for operator convenience
- Safety throttle lever
- Rear exhaust

P/N 12-02553.....**$104.95**

1/4 INCH HEAVY DUTY MINI ANGLE GRINDER - VT3003A

- Heavy duty performance and power in a light weight grinder
- Ergonomic rubber grip for greater operator com fort and safety
- Precision machined and hardened steel gears
- Precision air motor with exceptionally high turning force
- High quality ball bearings for longer tool life
- Safety throttle lever
- Front exhaust

P/N 12-02554.....**$192.95**

7" ANGLE POLISHER

- Polisher is ergonomically form fitting, light weight and easy to use
- Ball bearing mounted motor
- Includes reversible side handle for left or right hand operation
- Built-in regulator for adjusting free speed range from 1,500 to 2,500 RPM
- RPM: 2,500
- CFM: 6
- Pad Size: 7"
- Noise dB: 93
- Air Inlet: 1/4"
- Max Pressure: 100
- Length: 13"
- Weight: 4.8lbs

P/N 12-02555.....**$175.95**

RIGHT ANGLE POLISHER

The V716P is ideal for polishing and buffing paint, metal, wood or plastic. It has an adjustable speed control and a unique muffler design. Side handle is standard equipment and fits either the left or right side of polisher.

- Free Speed: 0-4,000 RPM
- Motor: 1 HP
- Average Air Consumption: 8 CFM
- Air Inlet Size: 1/4" NPT
- Spindle Size: 5/8"-11
- Sanding Pad: 7"
- Weight: 6 lbs.

P/N 12-02556.....**$359.95**

3" AIR ANGLE POLISHER

- Mini-size and light weight for easy use in tight areas
- Designed for extended use
- Powerful high torque motor
- Lever throttle trigger
- Built-in air regulator for positive speed control
- Special high speed ball bearings for vibration-free performance
- Rubber grip for non-slip feel and insulates from cold air
- Muffling system with rear exhaust
- RPM: 2,500, CFM: 10.5, HP: .3, Pad Size: 3", Noise dB: 80, Air Inlet: 1/4", Max Pressure: 90, Length: 6.30", Weight: 1.8lbs, Warranty: 1 year

P/N 12-02557.....**$209.95**

1/4" BELT SANDER

- Rear exhaust directs air away from work surface
- Equipped with silencer to reduce noise
- Precision air motor with exceptionally high turning force
- Precision ball bearings for longer life
- Can be used for internal and external finishing
- Quick change belt replacement system
- Built-in speed regulator
- Reaches normally inaccessible areas
- Light weight ergonomic handle design for control and comfort
- Rubber grip for non-slip feel and insulates from cold air
- Grind off contact wheel or platen
- 360° head rotation provides versatility for every job
- RPM: 16,000, CFM: 14.2, HP: .37, Noise dB: 80, Air Inlet: 1/4, Max Pressure: 85, Vibration: 3.8, Length: 10-7/16, Weight: 2, Warranty: 1 yr.

P/N 12-02558.....**$249.95**

3/8" REVERSIBLE ANGLE DRILL

- Compact, low profile angle head enables easy access to tight areas
- Light weight and powerful
- Comfortable lever throttle
- One hand quick reverse lever
- Ergonomic design with elastomer handle grip for improved comfort
- Heavy duty ball and needle bearing construction
- Planetary gear reduction balances the drilling load and maximizes performance
- Precision air motor with exceptionally high turning force

P/N 12-02559.....**$148.95**

TO

BAILEIGH METAL TOOLS

BAILEIGH MANUAL BENDER FB-4

Baileigh's FB-4 form bender is a useful tool for press bending ornamental iron, mild steel, aluminum and other metals. This flat bar bender is a manual press brake and can create 90 degree bends by simply turning a hand lever until the desired angle is accomplished.

This metal bender is perfect for hobbyists, ornamental iron artists, and much more. Of course this is not a production bender, but is perfect for small runs or those one off applications.

• Capacity: 3/16" • Shipping Dimensions (L/W/H): 17"/7"/8" • Shipping Weight: 19 lbs P/N 13-08987.....**$235.00**

BAILEIGH MANUAL ROLL BENDER R-M3

Baileigh The R-M3 metal ring roller is perfect for any typical sheet metal shop for bending small rod up to ¼". Metal artists, technical schools, and home shops can find hundreds of uses to keep this well built angle roll in use.

This single pinch metal ring roller can be bench or pedestal mounted. It has fine adjustment for the top roll and to power this machine there is a manual hand crank.

• Capacity Solid Round: .25" • Capacity Flat Bar: 1" (.1875 • Minimum Diameter: 3" • Handle Length: 13.5" • Power Requirement: Manual • Shipping Dimensions (L/W/H): 15" / 7" / 8" • Shipping Weight: 18 lbs

P/N 13-08975.....**$138.00**

BAILEIGH MANUAL ROLL BENDER R-M7

Baileigh Industrial's Roll Bender R-M7's small size makes it highly portable and versatile. Although not for rolling complete circles, it makes quick work of large radius bends. Many different tooling options are available as well.

Capacity / Size / Diameter: • Pipe - 1.5" / 20" dia • Round Tube - 1.25"(.078") / 31.5" dia • Square Tube - 2" / 70" dia • Rectangle Tube - 1x2" / 30" dia • Flat bar - Easy Way / 10" dia

Specifications: • Roll adjustment: Manual • Pinch: Single • Shaft Center Distance (lower rolls): Adjustable • Driven Rolls: 1 • Speeds: N/A • Motor: N/A • Power Requirements: Manual •Shipping Weight: 150 lbs P/N 13-08976.....**$675.00**

BAILEIGH MANUAL ROLL BENDER R-M10

Baileigh's R-M10 tube roller has a powerful manual drive system that has a maximum capacity of 1-1/4" (.078" wall) round tubing capacity (mild steel). It comes standard with segment rolls that allows for many different types of flat bar, some angle iron and some square to be rolled. This roll bender has optional rolls for round tube and pipe, as well as other profiles.

This tube roller is typically in stock for fast deliveries. For further information on the R-M10 roll bender, please contact your Baileigh representative.

Capacity / Size / Diameter: • Pipe - 1 " (Sch.40) / 28" dia • Round Tube - 1.25"(.078") / 31.5" dia • Square Tube - 1.2" (.078") / 35" dia • Angle Iron - 1.25" (.157") / 30" dia • Solid Square - .75" / 20" dia • Solid Round - .875" / 20" dia • Flat Bar Easy Way - 2" / 15.75" dia • Flat Bar Hard Way - .75" / 6.5" dia

All Specs based on 60,000 PSI (42 kg/mm2) Tensile Strength - Mild Steel. Specs are to be used as a base line for purchase purposes only. Baileigh Industrial cannot control Variations in Material.

Technical Specifications and Standard Equipment: • Two rolls are manually powered • Special cast frame • Shafts are hardened with special steel material • Rolls are special steel material hardened and ground • Gears milled with full material • Standard rolls, guide rollers, manual working • Users manual. P/N 13-08977.....**$1,549.00**

BAILEIGH MANUAL TUBE BENDER RDB-10

The RDB-10 manual hand tube bender is the perfect bending machine for bending air lines, brake lines, fuel lines, and general hydraulic lines. Thus, if you're into building or repairing race cars, auto and airplane repair or restoration, an automated machinery builder, or much more, the RDB-10 manual bender will save you time and money from the moment you use it.

This manual tube bender comes standard with 10 different size combinations from 1/4" to 5/8" OD in either 3 or 5 times the diameter radiuses. This manual tube bender works great with mild steel, certain coppers and aluminums, as well as stainless steel. It comes standard with a heavy pedestal, tooling rack, and bending machine.

The RDB-10 hand bender is easy to use and can bend tubing up to 180 degrees. Because of the design, this bending machine can do serpentine bends with ease at very tight radiuses depending on the OD, material and wall thickness. P/N 13-08971.....**$679.00**

BAILEIGH MANUAL TUBE BENDER RDB-25

This manual tubing bender comes standard with the following round tube die sets: 3/8" OD x 2" CLR; 1/2" OD x 2.25" CLR; 9/16" OD x 2.5" CLR; 5/8" OD x 3" CLR; 3/4" OD x 3.5" CLR; and 7/8" OD x 4.25" CLR. It also includes a 3/4" Square x 3.75" CLR and 1" Square x 4.25" die sets.

Sturdy cast iron frame that can be bench or pedestal mounted for ease of use. Even though this tube bending machine is very powerful, it has been designed to take up little shop floor space. This is the perfect manual tubing bender for the home hobbyist, metal artist, or small fabrication shop with low run requirements.

Specifications: • Capacities Round Tube(OD): 7/8" max • Capacities Square Tube: 1" max • Wall Thickness: .047" max • Bend Angle: Up to 180 deg • Power: Manual • Shipping Dimensions (L/W/H): 25"/15"/6.5" • Shipping Weight: 61 lbs P/N 13-08972.....**$189.95**

BAILEIGH MANUAL TUBE BENDER RDB-050

This bending machine is extremely powerful and can bend up to 2-1/2" OD mild steel with a wall thickness of .120" and 2" OD chromoly with a wall thickness of .120". Also has three unique speeds. The proper speed for each application depends on the material type, OD and wall thickness. Speed one (4 degrees per pull) has the most torque and would be used for bending 2" OD Chromoly or 2-1/2" OD mild steel. Speed two produces 8 degrees (for intermediate materials), while speed three produces 12 degrees (for lighter gauge materials) with each pull. Operator can bend to 200 degrees without re-pinning. It ships via UPS in four separate boxes to keep freight rates reasonable. Some assembly is required.

P/N 13-08973.....**$927.00**

BAILEIGH MANUAL TUBE BENDER RDB-100

This bending machine can be fitted with hundreds of round and square tubing die sets as well as round pipe dies sets with a maximum center line radius up to 7". This manual tube bender uses a large diameter indexing plate that allows the fabricator to bend up to 206 degrees (180 degrees plus spring back) in one shot without having to re-index and re-pin common on most other manual pipe benders on the market. Each pull of the handle bends the material approximately 8 degrees. When requirements are for lighter gauge materials this tube bending machines indexing unit can be shut off and the handle can be put into a manual override housing that allows the operator to simply walk around the manual bender and bend without the power of the indexing unit. Includes the stand, degree dial, and handle. P/N 13-08974.....**$2,235.00**

BAILEIGH ENGLISH WHEEL EW-28

This quality English wheel is a heavily built floor stand unit that can handle smoothing compound curves into mild steel and aluminum sheet metal for restoration or bodywork on autos, planes, cycles and much more. This machine has an 18-gauge mild steel capacity and has an ample 28" throat depth. The EW-28 English wheel comes standard with an 8" X 2" upper roll and includes six lower anvil rolls with varying crowns. The radius included for the six lower rolls are 2", 3", 4", 6", 8", and 12". Like other Baileigh English wheels, the machine comes intact with only minor assembly required (no welding required). The frame members are constructed of heavy walled square tubing that is electro welded to a truss system offering little flex at maximum capacity.

Specifications: • Capacity (Mild Steel): 18 ga • Throat Depth: 28" • Shipping Dimensions(L/W/H): 36"/34"/15" • Shipping Weight: 191 lbs

P/N 13-09001.....**$679.95**

BAILEIGH ENGLISH WHEEL MANUALLY OPERATED EW-40

Baileigh's quality English Wheels have a generous 40" throat depth, and ship complete with five bottom anvils and one 7" upper wheel. It has a rugged electro welded frame and stand for ease of use and years of quality shaping and forming metal. The EW-40 English wheel has an 18 gauge mild steel capacity and a 13 gauge aluminum capacity. Like all Baileigh metal forming machines the EW-40 is a quality machine for a reasonable price. This machine is in stock for quick deliveries.

Specifications: • Capacity (Mild Steel): 18 ga • Throat Depth: 40" • Shipping Dimensions(L/W/H): 72"/36"/15" • Shipping Weight: 388 lbs

P/N 13-09003.....**$1,459.00**

TO

BAILEIGH METAL TOOLS

BAILEIGH MANUAL MULTI-PURPOSE BENDER MCB-650

Baileigh's MCB-650 flat bar benders are ruggedly built to bend up to 5/16" X 1-1/4" mild steel or ¼" X 2" mild steel as the maximum capacity. This is a fantastic ornamental bender to have for railings, fences, gates and for hundreds of additional applications. This flat bar bender comes standard with 7 die sets from 1" up to 3" for flat metal. Other solid applications such as wire, rod, and bar can be bent as well up to 200 degrees.

Specifications: • Bend Capacity: 2" x .236" • Angle Capacity: 0 - 200 deg • Shipping Dimensions (L/W/H): 35"/10.5"/10.5" • Shipping Weight: 53 lbs

P/N 13-08988.....**$189.95**

BAILEIGH MANUAL HOLE SAW NOTCHER TN-200H

This coping machine can be vertically mounted in a drill press, or for larger pieces it can be horizontally mounted on a weld bench and powered by a portable drill.

This hole saw tube notcher is made of thick 3/8 inch aluminum with a heavy bronze bushing that is replaceable if ever need be. The spindle is made of a ½" hardened shaft for longevity and less vibration. This coping machine can notch at angles up to 45 degrees in less than 30 seconds and has a capacity of up to 2" round tube.

Specifications: • Notch Capacity (OD): 2" • Spindle Size: 1/2" • Spindle Adapter: 1/2" – 5/8" • Shipping Size (L/W/H): 12" / 7" / 5" • Shipping Weight: 10 lbs

P/N 13-08978.....**$195.00**

BAILEIGH MANUAL HOLE SAW NOTCHER TN-250

This is the most revolutionary hole saw pipe notcher on the market and is perfect for chassis, roll cages, and much more. This is the only hole saw tubing notcher that is always centered left to right and up and down. This coping machine is constructed of heavy steel plate to reduce vibration, uses a 1-1/4" Thompson® shaft that rides in a sealed needle bearing for longevity of the machine and hole saw. The TN-250 tube notchers vise has a powerful screw with a built in hand wheel that opens and closes the unique six radial clamping jaws. Can notch up to 2-1/2" OD and allows for steep angles as the hole saw can pivot up to 230 degrees making it the most versatile notching machine on the market. This tubing notcher can easily offset in seconds for off center notches and does not require crazy shims or spacers common on inferior models.

P/N 13-08981.....**$579.95**

BAILEIGH MANUAL HOLE SAW NOTCHER TN-300

This tubing notcher can notch from 1/2" to 3" tube and 1/2" to 2-1/2" Schedule 40 Pipe in materials such as aluminum, mild steel, chromoly, and stainless steel. The tube notchers vise has a quick release so different notch angles can be set up in a second or two and locked in with a solid taper lock. Can notch up to 60 degrees as standard, but with extended hole saws and the right size OD, notches up to 75 degrees can be attained. The vise is a self centering that is on an acme screw for quick tightening and releasing of the material. An offset adjustment is standard for those jobs where more strength is needed like on some hand railing or chassis frame applications. The drive carriage on the TN-300 pipe notcher houses an industrial grade motor tied to a direct drive gear reducer that turns the hole saw with ease, even at full capacity. This tube notchers carriage rides on a solid V-block roller assembly that is coupled to a large drive wheel for pushing the hole saw into the material with limited vibration and ease. This simple unique design on this tube notcher makes notching tube and pipe a breeze. P/N 13-08983.....**$2,429.95**

BAILEIGH MSS-18 MANUAL 18GA SHRINKER STRETCHER

Baileigh's MSS-18 sheet metal shrinker stretcher has one complete shrinker and one complete stretcher both in their own cast iron housings. The heavy casting assures a quality function at full capacity, which is 18-gauge in mild steel and 16-gauge in aluminum. Both units are foot operated and come with a heavy steel stand as standard.

Specifications: • Capacity Mild Steel: 18 ga • Capacity Aluminum: 16 ga • Minimum Forming Diameter: 4.5" • Stand: Included P/N 13-08984.....**$485.00**

BAILEIGH MSS-16 MANUAL 16GA SHRINKER STRETCHER

Baileigh's MSS-16 sheet metal shrinker stretcher has a heavy cast iron frame with a deep 8" throat. It comes standard with two sets of jaws, one for shrinking and one for stretching. This is a manually operated machine that has a heavy engagement lever that allows perfect control of the function at hand. This sheet metal shrinker stretcher has a mild steel capacity of 16 gauge and an aluminum capacity of 14 gauge. No other sheet metal stretcher shrinker on the market has such a generous throat depth with a heavy maximum capacity for such a good price.

Specifications: • Capacity Mild Steel: 16 ga •Capacity Aluminum: 14 ga • Throat Depth: 8"

P/N 13-08985.....**$579.95**

BAILEIGH MSS-16F SHRINKER STRETCHER

This model is a heavy duty foot operated shrinker stretcher for shrinking or stretching mild steel sheet metal down to 16-gauge (14-gauge aluminum) in thickness. This is the perfect machine for working metal for auto, cycle or airplane body work. This machine is ruggedly built and can shrink or stretch metal with ease at full capacity.

Our MSS-16F metal shrinker stretcher has a rugged floor stand with foot pedal control to actuate the jaws allowing the hands to be free to properly work the material. An ample 6" throat depth allows for hundreds of applications to be worked on compared to smaller throat depth models. The rugged base has wheels allowing for mobility in any cramped shop environment.

This metal stretcher shrinker has quick jaw change over features built in so changing from shrinking metal to stretching metal takes only a couple seconds. This machine comes standard with jaws to stretch metal and shrink metal (note: optional aluminum jaws are available).

Specifications: • Capacity Mild Steel: 16 ga • Throat Depth: 6" • Weight: 78 lbs P/N 13-08986.....**$1,068.00**

BAILEIGH VARIABLE SPEED POWER HAMMER

The Baileigh Industrial PH-19 power hammer is the little brother to the MH-19 Power Hammer . The PH-19 can do many of the same functions as the MH-19, shrink, stretch, dome, edge turn, bead, offset, but at a price that fits any budget. The PH-19 also accepts all readily available MH-19 tooling.

Specifications: • Capacity Mild Steel: 16 ga • Capacity Aluminum: 12 ga • Throat Depth: 19" • Tooling Height Adjustment: 5" • Speed: 0 - 1700 beats/minute • Power Requirement: 120V

P/N 12-02646.....**$8,707.00**

BAILEIGH ONE PHASE POWER HAMMER

MH-19 power hammer is the most revolutionary metal forming machine on the market. In summary you can achieve stretching, shrinking, planishing, and doming with critical adjustments on the fly while in operation. This is the ultimate metal shaping and forming power hammer on the market. No other machine is as versatile as the MH-19. The MH-19 includes the following tooling to get you up and running quickly at no extra charge: (1) set of thumbnail shrink dies, (1) flat top die, and (1) Lower planishing die.

Specifications: • Capacity Mid Steel: 16 ga • Capacity Aluminum: 12 ga • Throat Depth: 19" • Length of Stroke: .177 - .550 (adjustable) • Tooling Height Adjustment: 2" • Speed (variable): 0 - 1500 beats/minute • Power Requirement: 220v / 1 phase • Shipping Dimensions: (L/W/H)60"/60"/84" • Shipping Weight: 1600 lbs P/N 12-02645.....**$20,879.00**

TO

DE-ICE EQUIPMENT – DIGITAL THERMOMETERS

HANDHELD ANTI-ICING AND DEICING SPRAYERS

Handheld Deicing Sprayers are aircraft-portable pressure sprayers appropriate for defrosting and light deicing operations. They are commercial grade, polyurethane, controlled-pressure sprayers designed to spray hot SAE Type I deicing fluid directly on your aircraft to remove frost, and light snow & ice. They are equipped with a 2 piece brass wand, flat-fan spray pattern, high-capacity, interchangeable nozzle tip that sprays 1.2 gpm of deicing fluid at 20 psi. They will also accept our optional 120-volt, 1100 to 1700 watt electrical immersion heaters to quickly heat the fluid within the sprayer tank to 160. Following are the specifications on the Handheld Deicing Sprayers:

Description	Dimensions	Part No.	Price
1 Gal Sprayer	7" Dia. x 17" H	12-21605	**$89.95**
2 Gal Sprayer	8.5" Dia. x 19.5 " H	12-21610	**$112.95**
3 Gal Sprayer	9.5" Dia. x 21" H	12-00499	**$139.95**

To heat Deicing fluid you need to purchase a heater below.

Heaters					
Voltage	**Watts**	**Amps**	**Application**	**Part No.**	**Price**
120	1,100	9.2	12-21605 Sprayer	12-02087	**$512.00**
120	1,400	11.7	12-21610 Sprayer	12-02088	**$615.00**
120	1,700	14.2	12-00499 Sprayer	12-02089	**$445.00**

DEICING CARTS

Aircraft Deicing Gasoline Engine Powered Carts are designed for outdoor deicing operations . These carts use either a 5.0 or a 5.5 hp air-cooled gasoline engine, providing adjustable fluid flow rates and pressures of up to 6.0 gpm/150 psi and 10.0 gpm/300 psi respectively -- sufficient to deice all general aviation, corporate & charter aircraft. The standard carts range in capacity from 40 to 110 gallons, and all can be equipped with an electric immersion heater to heat the deicing fluid to a maximum of 160° F to help melt frost, snow & ice from your aircraft's surfaces. All carts are supplied complete, including steel frame, straight pin hitch, mainwheels, power source, pump, tank, adjustable pressure valve, pressure gauge, high-pressure hose, pistol-grip handgun w/ extension, and adjustable brass nozzle.

Gas powered engines		
Description	**Part No.**	**Price**
40 Gallon 3.5 Hp gas Engine with 2500 watt heater and pintel ring.	12-02083	**$2,806.00**
60 Gallon 3.5 HP gas engine with 2500 watt heater and pintel ring.	12-02084	**$3,793.00**
Electric powered engine		
Description	**Part No.**	**Price**
25 Gallon 12 volt Electric Cart with self Containment kit and pintel ring.	12-02085	**$1,285.00**
60 Gallon 12 volt Electric Cart with self Containment kit and pintel ring.	12-02086	**$1,871.00**

NYLON FLANGES IN BATTERY BOX MODIFICATION KIT

-Improve Starting Performance. -Easier Removal & Installation of Battery. -May prolong life of battery and starter. -Less expensive to modify existing box than to replace. -Compatible with our famous "Low Loss" Cable Kits! -Eliminate extra connection on outside of the battery box. -Do away with the troublesome braided negative strap.

Experimental.....P/N 11-02892 ..... **$26.25**
STC'd/PMA'd .....P/N 11-02893 ..... **$51.90**

BATTERY TERMINAL TOOL

The Right Tool for the Job. * Prevents damage to battery posts. * Steel frame, fits battery wing nuts securely. * Insulated to eliminate shorting, sparks or possible explosions. * Foam grip handle eliminates slipping. * Great gift for pilot or mechanic. P/N 12-16200 ..... **$10.85**

NICHOLSON HACKSAW BLADES

Nicholson Bi-Metaloy hacksaw blades last twice as long as high-speed steel and 10 times longer than carbon steel. Can operate 20%-50% faster. Practically unbreakable.

GENERAL RECOMMENDATIONS FOR BLADE SELECTION

14 TOOTH – For cutting heavy cross section and for soft materials where maximum chip clearance is needed. P/N 12-19514 ..... **$1.94**

18 TOOTH – For general shop use, where blade is used on several jobs. P/N 12-19518 ..... **$2.45**

24 TOOTH – For cross sections of 1/16" to 1/4", such as pipe, angles, small drill rod. P/N 12-19524 ..... **$2.45**

32 TOOTH – For cutting stock up to 1/16" thick, such as 4130 tubing, sheet metal, BX. P/N 12-19532 ..... **$2.45**

MICROTEMP DIGITAL INFARED THERMOMETERS

Digital, non-contact infared thermometers are used for hundreds of practical applications and are essential tools for professional automotive and aviation technicians.

Infared Thermometers (IRTs) are great automotive and race tuning diagnostic tools-and are great for countless diagnostic tasks. Check track surface temperatures, tire temps, brake rotors, header and exhaust temps, air intake temp, heating and A/C vents.

Model	Description	Part No.	Price
MT-250	-67°F - 482°F (-55°C - 250°C) measurement range 5:1 distance to sight (D:S) ratio. Super compact size: 2.94" x 1.65" x 0.8"	12-01656	**$39.75**
MT-EXP	Temp Range: -58F - 752F (-50C - 400C); Laser Target, Pistol Grip	12-01657	**$59.50**
MT-100	Temp Range: -27°F - 230°F; Distance to Spot Ratio (D:S) 1:1, Accuracy +/-2°F, Response Time: 1 Second, Dimensions: .75" x 3.25", Battery Type 2 LR44	12-01994	**$26.35**

WIDE RANGE DUAL PORT DIGITAL THERMOMETER

Features

- Jumbo Display with four digit LCD
- Dual Channel K type ports T1/T2
- Accepts K/J thermocouples
- Fast response
- Hi/Lo temperature alarm
- Temperarture hold
- Min./Max./Avg.
- Clock setting
- Relative temperature mode
- Low Battery and Overload indicators
- Auto Power off
- Protective rubber housing
- Instrument displays in °F/°C/Kelvin- absolute temperature

P/N 12-01893 ..... **$109.95**

MINITEMP PORTABLE INFRARED THERMOMETER

Diagnose problems faster and more easily with the Raytek MiniTemp MT6 infrared (IR) thermometer. Portable IR thermometers have become an indispensable tool for automotive troubleshooting and diagnosis. Spot cooling system faults, identify engine misfires, check for proper A/C performance, verify catalytic converter operation and much more.

The laser point sighting on the MT6 unit helps to direct measurements toward the target, and the large backlit display shows both the current and maximum readings simultaneously. With a protective boot for added durability, award winning ergonomic design and Raytek quality and accuracy, the MT6 model is the perfect introduction to infrared temperature measurements in automotive diagnostics. P/N 12-03153 ..... **$89.00**

HEAVY-DUTY IR DUAL-LASER THERMOMETER

Features of the IR Long Range Professional Thermometer include a bright, built-in dual laser which provides easy aiming and defines target area, amber back-light LCD display, programmable HI and LOW audible temperature alarms, and high intensity white LED flashlight. Uses 2 x AAA batteries (incl) to provide 180 hours of use. Weight and Dimensions: 16 ounces (with batteries,magnets); 8 x 8 x 2.8 inches. Temp Range: -76° to 1832°F. P/N 12-03152 ..... **$259.00**

TO

ENGINE TOOLS

VALVE WOBBLE TEST FIXTURE

The Valve Wobble Test Fixture for parallel valve Lycoming engines is used to comply with LycomingSB–388a. Quality made of aluminum and alloy steel, it is easy to use with no set screws or feeler gauges required. Allows direct reading of wobble from dial indicator. Note: Will work on a angle valve engine.

Fixture without indicator
P/N 12-21500 .....**$137.95**

Fixture with indicator
P/N 12-21505 .....**$174.95**

DISTRIBUTOR BLOCK SPRING INSTALLATION TOOL

This tool facilitates the proper installation of contact springs on Bendix magnetos. The O–ring locator ring assures proper location of the tool in the contact tower. Features knurled body grip and ball plunger grip. Made of alloy steel P/N 12-21510 .....**$84.75**

VALVE SPRING COMPRESSOR

This tool is used to compress valve springs during valve removal and installation. It is ergonomically designed for shop and field use and comes with special pivot pin. Features alloy steel construction with nickel plating. P/N 12-00202 .....**$72.75**

VALVE LASH ADJUSTING TOOL

This tool greatly reduces the time required to adjust valves and improves the accuracy of the adjusting operation. Used on Lycoming O 235 and O 290 series engines. Quality constructed of alloy and toolsteel.
P/N 12-21550 .....**$159.95**

ELECTRODE SPREADING TOOL

This tool is used to increase the electrode gap on all massive electrode spark plugs. It is constructed from heat treated alloy steel and is nickel plated.
P/N 12-51520 .....**$17.95**

SPARK PLUG SERVICE KIT

Our spark plug service kit includes the Precision Gap gapping tool which is easy to use, features fine thread adjuster and ball pressure tips, and works on all massive electrode plugs. Also includes the 18mm Thread Cleanout Tool with spring loaded jaws which offer maximum thread penetration & control carbon build–up in threads. Completing the Kit is a double–end Gap Plug Gauge which features an aluminum handle and is easy to use. Kit comes complete with durable birchwood storage case. P/N 12-21525 .....**$94.50**

THROTTLE SHAFT BUTTERFLY SCREW STAKING TOOL

This quality made alloy steel tool facilitates the proper staking of throttle shaft butterfly screws and eliminates the possibility of damaging the carburetor during staking. The tool can easily be operated by one person on the bench without chisels, special fixturing or hammers. All wear components are easily replaceable for long service life.
P/N 12-21528 ...**$130.95/ea.**

BENDIX MAG LOCK

This Bendix Mag Lock works on S4 and S6 and other Bendix Mags. To use simple place a cotter pin loosely into lower plunger hole. Screw sleeve into magneto case. Align red slot in plunger parallel to mag tooth gear. Remove cotter pin to engage gear tooth. Dimension: 2-3/4" x 1/2" x 3/4"
P/N 12-02243 ..... **$53.75**

SAFETY MAGNETO LOCK TOOL

This handy tool fits most Bendix magnetos and prevents damage to distributor gear teeth brought about by accidental turning of the engine during magneto installation. Use for E gap or engine timing. Body taper locks into timing window. Polyurethane rubber throughout.
P/N 12-21535..... **$9.95**

LYCOMING TIMING POINTER

This tool is used to align timing numbers and marks to the crankcase parting line on Lycoming engines. It permits timing from the marks on the aft side of the flywheel. A spring clip holds the tool to the flywheel.
P/N 12-21540..... **$44.75**

CONTINENTAL O–200 TIMING POINTER

This tool is used to align timing numbers and marks to the crankcase parting line on the Continental O–200 engine. It is held to the propeller flange with magnets, and eliminates the need for all other timing angle devices and TDC indicators. Quality made from delrin and tool steel. Greatly simplifies the timing of new magnetos and periodic timing checks. P/N 12-21545..... **$39.90**

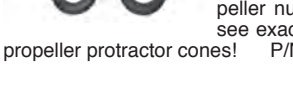
SIDEWINDER SPEED WRENCH

The Sidewinder Speedwrench specialty tool was developed to counter the frustrations of using standard socket wrenches especially in applications where excessive repetitions are required to install or remove long bolts; or where there is not enough resistance involved to allow the ratchet to function; or where there is not enough working space for efficient use of the standard ratchet wrench. The sidewinder can cut work time in half for professional mechanics and aircraft builders. Now being used by major racing teams, the Sidewinder is a revolutionary addition to every tool box.

1/4" .....P/N 12-21109 ..... **$32.50**
3/8" .....P/N 12-21100 ..... **$32.50**
1/2" .....P/N 12-21110 ..... **$32.50**

ENGINE OVERHAUL STAND

This inexpensive engine overhaul stand is ideal for actual overhaul and for storage of engines. Constructed of heavy duty steel, it features three legs which allow it to sit level on uneven floors and comes complete with an adapter spacer block. The stand is 24" tall with made for user installed casters and comes predrilled for Continental A–65 through O–520 series engines and Lycoming 65 through O–720 engines. A quality engine stand at an affordable price.
P/N 12-21555.....**$218.00**



ENGINE OVERHAUL STAND KIT

The engine stand kit has all of the components to construct an engine stand. Beginning at the top; the engine stand kit includes (1)The top plate. Designed to bolt down the engine flange to the stand. (2) Three legs that are pre-cut to the proper angle. (3)Three spreader bars to hold the base of the stand from spreading apart. (4) Three feet to stabilize the base and allow installation of casters. The kit is ready to weld. 24" tall when finished..
P/N 12-01364.....**$164.95**

ONTINENTAL ENGINE MAG TIMING TOOL

Aluminum CNC tool manufactured in Alaska for simple and perfect magneto timing. Simply position engine on #1 TDC compression stroke. Lube grommets. Put this tool on the top two propeller nuts and sight down top case halves to see exact mag timing. Now there's no need for propeller protractor cones! P/N 12-02817 ..... **$39.95**

TO

LYCOMING BAFFLE SPRING COMPRESSOR

Our top quality Lycoming Baffle Spring Compressor speeds up the removal & installation of cylinder baffle springs. It eliminates the danger of broken or bent cylinder fins caused by use of screwdrivers and punches. This tool is easy to use and features 2 pivot locations for parallel and angle valve cylinders.

P/N 12-30200 ..... **$64.85**

VALVE SPRING COMPRESSOR TOOL

This unit will work on Continental 65 thru 0300, and some 0-470's. Lycoming 0320 & 0360, and most any cylinder with a vertical valve constructed head.

It is extremely simple to use. Place Spring Compressor in drill press, and a length of wood in cylinder (to keep valve seated). Depress and remove valve stem clips, and spring. Removes valves in a minute. P/N 12-02072 ..... **$51.75**

LYCOMING VALVE SPRING COMPRESSOR

This cast aluminum alloy valve spring compressor fits Lycoming parallel valve and angle valve horizontally opposed engines. An excellent tool at an economical price. P/N 12-21520..... **$59.95**

LYCOMING TAPPET GAUGE

Similar to Lycoming Gauge ST23, this tappet gauge is Rockwell hardened to 48-52 and precision ground to .028 and .080. This gauge is a must for professional aircraft mechanics.

P/N 12-00918..... **$42.75**

EAR ISLAND REMOVAL TOOL

When substantial quantities of material have to be removed from the exhaust port, it may be necessary to also remove the island around the exhaust stud area. The ear island removal tool and pilot can be used to accomplish this without the use of power tools.

P/N 12-17608..... **$103.95**

ECONOMIZER VALVE SETTING TOOL

The economizer valve adjusting tool is a simple, functional gage that eliminates the hassle of using a depth mic. The tool is precision made to assure required accuracy.

P/N 12-17500 ..... **$176.95**

DRILL PILOT SLEEVE & BOLT HOLE BULLET

DRILL PILOT SLEEVE - Great for getting drill point centered, for drilling off rivet heads. Eliminates scoring of material and paint. Set of 3 (3/32, 1/8, & 5/32) Used with #40, 30, & 20 Drill Bit P/N 12-02092 ..... **$19.75**

BOLT HOLE BULLET - Every tool box should have a set. Simply tap bullet into bolt hole requiring alignment, and tap bullet on through with proper AN Bolt Set of 5 (1/4, 5/16, 3/8 7/16 and 1/2inch)

P/N 12-02093 ..... **$18.50**

HANDY BEARING PACKER

Quickly Flushes Out Old Grease and Repacks Bearings with Less Mess. The Handy Packer works on bearings up to 3 1/2" O.D. The grease stays in the tool cavity, not on your hands. To pack a bearing, place the bearing on the piston. Press down on the cap until the old grease is forced out and the new grease shows on top of the bearing. P/N 12-02578..... **$28.95**

LINK® TOOLS LOCKING SOCKET SETS

7-PC LINK 1/4 & 3/8 INCH PROFESSIONAL UPGRADE AND DELUXE PROFESSIONAL SET - LINK Tools are available as professional upgrade sets for customers that wish to upgrade their tool chests with just a few LINK Tools, Additionally, a variety of sets with sockets and bits are available in convenient mobile cases. Adding a few LINK Tools upgrades your entire tool chest! The revolutionary LINK Tools are forged from solid steel, with a distinctive chrome finish for outstanding durability and strength. LINK Professional Upgrade Sets are available and work with all detent sockets. Increase the productivity of every tool in your chest! ***Comes with***:• Locking Ratchet • Locking Unidriver® tool • Locking U-Joint • Locking Palm Wrench • 2" Locking Extendor™ Bar • 3" Locking Extendor™ Bar (1/4" Drive Only) • 6" Locking Extendor™ Bar • 9" Locking Extendor™ Bar ****available in deluxe set with Ratcheting Unidriver***

Description	Part No.	Price
3/8" (38007) Up-grade Set	12-01702	**$111.95**
3/8" (38009) (with Ratcheting Unidriver) Deluxe Up-grade Set	12-01703	**$144.95**
1/4" (25007) Up-grade Set	12-01704	**$94.00**
1/4" (25009) (with Ratcheting Unidriver) Deluxe Up-grade Set	12-01705	**$117.95**
Electric Tool Adapter 3"L	12-01706	**$23.50**

41-PC. LINK® 3/8" DRIVE SYSTEM SET - The revolutionary 3/8" Drive LINK® System tools are forged from solid steel, with a distinctive chrome finish. The set includes: [1] Universal Joint, [1] Unique UniDriverTM Drive, [1] LINK Automatic-Locking Ratchet, [2] ExtendorsTM (2 and 6-inch), [2] Spark Plug Sockets (5/8 and 13/16-inch), [9] SAE 6-Point Sockets (5/16, 3/8, 7/16, 1/2, 9/16, 5/8, 11/16, 3/4, and 13/16-inch), [11] Metric 6 Point Sockets (8, 9, 10, 11, 12, 13, 14, 15, 16, 17, and 18-mm), [5] Socket Mounted Hex Bits (3/16, 5/16, and 3/8-inch, and 6 and 10-mm), [5] Socket Mounted Torx or Star Bits (T- 25, T-30, T40, T45, and T-50), [4] Socket Mounted Screwdriver Bits (5-mm slotted, 9/3" slotted, #1 Phillips and #2 Phillips), and a Case.

P/N 12-00807..... **$148.95**

41-PC. LINK® 1/4" DRIVE SYSTEM SET - LINK® extensions and sockets will not pull apart until you unlock them. A small pull on the locking device lets the socket or extension fall free. The new 1/4" Drive Quick- Lock™ Set comes with 12 pt. sockets in a new custom-fitted carrying case that floats and contains storage space. The set includes the following 6 Link-Lock™ Drive Tools: [1] Universal joint, [1] All-metal UniDriver® [1] 36-tooth Slide Button Quick Release Positive Locking Ratchet, [3] ExtendorTM Extensions (1.5, 3, 6-inch); 16 12-point Sockets: [8] SAE (5/32, 3/16, 7/32, 1/4, 9/32, 5/16, 11/32, and 3/8 inch), and [8] Metric (4, 5, 6, 7, 8, 9, 10, 11 mm); 19 dingle piece machined steel socket bits: [6] Torx (T-8, T-10, T-15, T-20, T-25, T-27), [9] Hex (5/32, 3/16, 7/32, and 1/4 inch, 3, 4, 5, 6, and 7mm), [4] Screwdriver (#0 and #1 Phillips, 5.5 and 6.5 mm slotted); and a custom-fitted Case with storage space. .....P/N 12-02840 ..... **$125.95**

LINK® TOOLS PALM WRENCH & SPEEDER - LINK® extensions and sockets will not pull apart until you unlock them. A small pull on the locking device lets the socket or extension fall free. The locking device is similar to those found on air hose co plings, but is a lot easier to lock and unlock. Hand spin, then attach your ratchet to torque down. Not with old fashioned ball bearings, but a space age case-hardened nickel plated steel pin. Or, leave the Palm Wrench on your ratchet and use it as a handy spinner! Exceeds 130% of ANSI standards.

2" Palm Wrench/Speeder 3/8-in.Drive ..... P/N 12-00808..... **$14.75**
1-1/2" Palm Wrench/Speeder 1/4" Drive..... P/N 12-00809..... **$13.75**

LINK® BRACE STYLE SPEEDER 16.5 INCH - Just the accessory for tight places where there's not much room to turn. Hand spin, then attach your ratchet to torque down. Made of aluminum and steel. Highly polished and nickel chome-plated for durability, rust resistance, and beauty. Exceeds 130% of ANSI standards. 1/4" Drive, 16.5" Speeder #25557.

P/N 12-01701 ..... **$34.50**

LINK® 1/4" DR. LOCKING ELECTRIC-TOOL ADAPTER - For use with your battery-operated electric drill or screwdriver to always get secure locking and quick speed on your sockets and attachments. One end goes into the chuck of your power tool and the other clicks into a socket, socket-mounted accessory, or other LINK drive tool with the same Quick-Lock technology that gives you Hand-To-Work locking.

P/N 12-00933 ..... **$12.95**

TO

ENGINE TOOLS

PRECISE-GAP SPARK PLUG GAPPING TOOL

Precise Gap is a simple tool to gap two-, three- or four electrode 18 mm sparkplugs. Only 2" overall - comfortably handheld. Precision made of stainless steel. "T" handle adjusters move the ground electrodes closer to the center electrode until wire feeler identifies proper gap. Adjusters have fine thread with ball tips for precise movement. Don't buy an inferior imitation at a higher price! P/N 12-11600 ..... **$19.85**

.016 NOMINAL GAP PLUG GAUGE

Many customers have indicated that they have had difficulty obtaining setting wires for gaging the plug gap. We now provide a handy tool at reasonable cost. No need to buy extra gauge sizes that you don't need. Furnished with protective end caps.

P/N 12-17100..... **$10.90**

THREAD CLEANOUT TOOL

In servicing spark plugs, a common problem is carbon accumulation in the jug threads. Cleaning these threads regularly can save big money by preventing thread damage and the need to pull the jug and install thread inserts. This specially designed tool works very well to limit this problem. It provides maximum depth penetration and its unique spring action assures that there will be no enlargement of the existing thread pitch diameter. P/N 12-17200 ..... **$36.85**

COMPASS ADJUSTING TOOL

The compass screwdriver is a great little tool that is totally non-magnetic, but also overcomes the shortcomings of solid brass or aluminum tools. This tool has a nice hex aluminum handle and a stainless steel driver insert. No need to worry about damaging the tip on a frozen compensator screw, and you can also remove the cover plate screws with the same tool

P/N 12-17300 ..... **$9.50**

ENGINE CLEANER GUN

The fast easy way to clean dirt, grease, grime, salt, mud, and more! Can be used with a variety of solvents. An essential tool for farmers, truckers, contractors, shops, and garages. Includes 4 foot solvent suction hose with built-in solution strainer. Lightweight and easy to handle. Recommended air pressure: 60 PSI. Air consumption: 3 CFM @ 60 PSI. Specifications: Air inlet: 1/4"-18 NPT, Overall dimensions: 3" L x 1-1/16" W x 15" H P/N 12-02402 ..... **$21.65**

TEMPEST AA472 OIL FILTER TORQUE WRENCH

The Tempest AA472 oil filter torque wrench is a great addition to any toolbox. Its 1" hex allows easy installation or removal of all oil filters. The torque wrench also comes present to 17 foot pounds and is easily recalibrated

P/N 08-07023 ..... **$55.95**

TEMPEST AA473 OIL DRAIN TOOL

Tired of messy oil filter changes? Tempest oil drain tool with a twist of the knob drills a hole in the filter and allows the oil to drain out of the filter into your container. No mess, easy to do and inexpensive. Tempest improved the popular AA473 Oil Filter Drain Tool by redesigning the swivel fitting to a smaller, more compact design. The new fitting also allows for easier use of the tool because of its "true" swivel characteristics. If you want to upgrade your previously purchased AA473 Oil Filter Drain Tool you can purchase the fitting individually.

Can only be used on Tempest Oil Filters.

Oil Drain Tool .....P/N 12-02248 ..... **$23.50**
Replacement fitting.....P/N 12-02577 ..... **$3.95**

S4-1 RACE REMOVAL TOOL

A & P mechanics will find this S4 outer bearing race removal tool to be very effective and well priced. Hemispheres held together by the "O" ring are inserted together behind the bearing race. The pilot is then inserted to expand and lock the halves & push out the race. You'll like its simplicity and ease of use.

P/N 12-17601 ..... **$92.75**

S4-2 RACE REMOVAL TOOL

The S4 magneto drive end inner race removal tool works in conjunction with a standard bearing puller. The split gripper ring fits behind and around the race and is captured in the puller ring by 2 opposing set screws. A groove on the puller ring provides the point of attachment for the puller arms. P/N 12-17602..... **$127.95**

S4-3 RACE REMOVAL TOOL

The S4 magneto seal installation, inner and outer race installation tool is three tools in one and is proportioned in such a way that it is easily accommodated by most small bench arbor presses.

P/N 12-17603 ..... **$89.75**

TIMING JUMPERS

The timing jumpers are easily used for timing magnetos without removing the breaker box cover. Simply remove the "P" lead and replace with timing jumper. Then hook up timing light leads. These handy devices have proven to be a real time saver and, in some cases, an outright necessity. ***SOLD IN PAIRS***

Bendix S4..... P/N 12-17700..... **$42.50/pr.**
Bendix D2200, D3000, D3200, S6
P/N 12-17710..... **$42.50/pr.**

MAGNETO ROTOR BEARING SETTING GAUGE

Determines condition of excess bearing clearance and allows for precise adjustment of new bearings to prevent over or under preload. Available with or without dial indicator. Choice of 3/8-16 or 3/8- 24 threaded shaft fittings.

Kit Description	Thread	Part No.	Price
Setting Gauge & Ind.	3/8-16	12-17801	**$84.85**
Setting Gauge & Ind.	3/8-24	12-17802	**$150.95**
Setting Gauge & Ind.	Both	12-17803	**$169.85**
Setting Gauge, No Ind.	3/8-16	12-17901	**$94.75**
Setting Gauge, No Ind.	3/8-24	12-17902	**$69.85**
Setting Gauge, No Ind.	Both	12-17903	**$108.50**

STRUT LIFT JACK

In many instances, simple tire changing, bearing packing, etc., can be a real problem unless the wheel can be lifted in a safe, secure manner. The strut lift shown accomplishes this easily. A specially designed lift pad securely captures the strut elbow or gear leg. The compact jack can be stored in your toolbox.

P/N 12-18000 ..... **$126.95**

THROTTLE SHAFTBUSHING KNOCKOUT

The throttle shaft bushing removal tool is very competitively priced and will help you avoid a jury-rigged operation that could damage an expensive carburetor body. Now there is no reason not to have one. They are available and affordable.

P/N 12-17400 ..... **$149.50**

SPRING TOOL

Get a handle on those springs! The "C" shaped tip fit the bend in spring end and won't slip. Can be used to install and remove springs on anything!

P/N 12-16945 ..... **$11.90**

TO

ATS PISTON RING COMPRESSOR KIT

The ATS Piston Ring Compressor features a quick-change design to speed up piston ring installation. It includes the famous Hastings Ring-O-Matic® pliers and bands that operate in all positions: not just vertically or horizontally. The pliers incorporate a precision locking action for exact holding and quick release. The complete kit includes the Ring-O-Matic® pliers and one of each of the following size bands: 3-7/8" to 4-1/8", 4-1/8" to 4-1/2", 4-1/2" to 4-3/4", 4-3/4" to 5", 5" to 5-1/4", & 5-1/4" to 5-3/4"

Description	Part No.	Price
Kit	12-03154	$149.95
Compressor Pliers	12-03155	$29.95
Piston Ring Compressor Band 3-7/8"TO 4-1/8"	12-03156	$17.95
Piston Ring Compressor Band 4-1/8"TO 4-1/2"	12-03157	$17.95
Piston Ring Compressor Band 4-1/2"TO 4-3/4"	12-03158	$19.95
Piston Ring Compressor Band 4-3/4"TO 5"	12-03159	$19.95
Piston Ring Compressor Band 5"TO 5-1/4"	12-03160	$22.65
Piston Ring Compressor Band 5-1/4"TO 5-3/4"	12-03161	$25.95

PISTON RING COMPRESSOR SET

The most efficient, versatile and dependable tool of its kind on the market. Designed to operate both vertically and horizontally. Fine-tooth ratcheting lock permits bands to be contracted in extremely small increments. Positive lock insures a free hand. Eliminates broken rings during installation. Set includes compressor pliers and the two bands (1123, 1125).

P/N	Size	Engine Application
1123	3-7/8" to 4-1/8"	Cont. A-65, C-85, C-90, 0-200, 0-300
1125	4-3/8" to 4-5/8"	Cont. E-225, IO-470

Set .....P/N 12-10900 ..... **$79.00**
Pliers.....P/N 1114 ..... **$39.75**
Individual band # 1123 for 3-7/8 .....P/N 1123 ..... **$16.75**
Individual Band # 1125 for 4-3/8 .....P/N 1125 ..... **$17.75**

PISTON RING FILER

A portable rotary filer. Sizes any make, type, size of ring with machine shop accuracy. Turning crank files both ends at the same time.

P/N 12-11000 .....**$82.25**

Replacement Cutter File
P/N 12-11100 .....**$25.00**

CYLINDER BASE NUT WRENCHES *(CONTINENTAL)*

Made of top quality tool steel. 12 Point with 1/2" square drive, 13" long.
Set of 4..... P/N 12-11200 ..... **$75.50**
or order individual wrenches below.

LYCOMING & CONTINENTAL CYLINDER BASE NUT WRENCHES

Wrench Part #	Size	Engine Application	Price
2882	9/16"Hex	C-85, 0-200, 0-300, G0-300, E-185, E-225, 0 & IO-470, IO-360, IO-520	$18.95
2882-2	1/2" Hex	A-65, C-85, 0-200, 0-300, G0-300, E-185, E-225, IO-360	$18.95
2882-3	5/8" Hex	A-65, 0-470, IO-520	$18.95
2882-4	3/4" Hex	No longer used on Cont.; Used on Lyc. 0-390D, D2 and all wide deck Lyc engines	$18.95

ATS SPARK PLUG GAPPER

Sure-Gap is designed for use on all massive electrode aircraft spark plugs. Saves time and money, eliminates guessing of plug gap, prolongs plug life and ensures peak performance. 18mm. 1lbs shipping weight.
P/N 12-01682..... **$9.95**

ATS SPARK PLUG GAP GAUGE

Convenient Gap Gauge for all Champion and Tempest massive electrode spark plugs. Slider design keep gauge wires stowed away when not in use.
- Retractable slider design
- Includes wires for .015", .019", .018", and .022"
- Works with all Champion and Tempest Massive Electrode Spark Plugs
- Replacement Wire Gauges are available. 1lbs shipping weight.

P/N 12-01692..... **$13.95**

ATS SPARK PLUG GAPPER & GAUGE 415K

A low-cost efficent gap setting tool for closing gaps on massive-electrode Aviation Spark Plugs. Great design allows it to clamp on to your workbench for easy gapping. Features
- Manufacturued from 4160 Tool Grade Steel
- CNC Machined surfaces for exact alignment
- Includes ATS450 Feeler Gauge
- Clamps to workbench for easy one-handed operation
- Compatible with all Champion, and AutoLite Massive Electrode Spark Plugs
- 2lbs shipping weight.

P/N 12-01691 ..... **$79.95**

ATS SPARK PLUG THREAD CHASER

Chaser cleans threads in spark plug hole of dirt, carbon build-up, and metal particles. Double ended for both 14mm and 18mm threads. Neoprene band on hex drive holds tool securely in any 13/16" deep-well spark plug socket. 1lbs shipping weight.
P/N 12-01683 ..... **$8.75**

ATS MAGNETIC SPARK PLUG SOCKET

The new Spark Plug Socket features a thin-walled design to get into to the tightest confines. Magnetic interior guarantees that you won't accidentally drop the plug during installation or removal. Works with all Champion and Tempest Aviation Spark Plugs.
- Works with all Champion and Tempest Aviation massive electrode Spark Plugs
- Thin-Walled design to get to the tightly spaced plugs.
- Magnetic interior holds spark plugs and keeps them from falling out
- 7/8" Socket
- 3/8" Drive
- 3-1/2" Overall Length
- Made of Chrome Vanadium Steel
- 1lbs shipping weight.

P/N 12-01693..... **$27.50**

3/8-INCH DRIVE SPARK PLUG SOCKET

Chrome Socket, Deep Length, SAE. Drive Size: 3/8". Number of Points: 6. Size: 7/8". Overall Length" 2-3/4".
P/N 12-00710..... **$20.50**

ATS SPARK PLUG CLEANER

Cleans any size plug without changing grommet. Has 2-way valve (blast or air) and comes complete with abrasive powder. Ready to use.
P/N 12-01684..... **$25.80**

AIRCRAFT SPRUCE PLUG MAINTENANCE KIT

The Aircraft Spark Plug Maintenance Kit includes an aircraft spark plug tray, air-powered spark plug cleaner, feeler gauge, spark plug gap setting tool, aircraft spark plug socket, a set of 8 spark plug gaskets and a bottle of spark plug thread lubricant and anti-seize compound.
P/N 12-02250.....**$115.95**

CYLINDER BASE NUT WRENCHES

1/2" Allen Head Hex...P/N 64942 . **$48.50**

3/8" Allen Head Hex...P/N 64943 . **$48.50**

FOR ECONOMY WRENCHES SEE PAGE 705.

SPARK PLUG & FILTER TOOLS

CT-415AV GAP SETTING TOOL

A low-cost efficient gap setting tool for closing gaps on massive electrode type aviation spark plugs. May be used as a hand tool, mounted on a bench or held in a vise. Furnished with one adapter for 18mm spark plugs. (P/N GT-204) and one CT-450 gap gauge. Wt. 1-1/2 lbs., 7-1/2" high.

P/N 12-00796 ..... **$114.95**

CT-450 RETRACTABLE GAP GAUGE

High-impact red plastic case contains four sets of accurate, retractable "go" and "no go" wire gauges: 2 sets .015-.019 (.016 Nom.) 2 sets .018-.022 (.019 Nom.) Length: 3-1/2". Wt. 1-1/4 oz

P/N 12-00797..... **$20.85**

CT-457 FINE WIRE GAP SETTING TOOL

Designed exclusively for adjusting fine wire electrode sparkplug gap. Two sizes of slots fit all platinum or iridium electrodes for quick adjustment. Red plastic case.

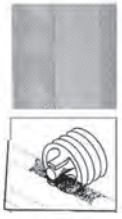
P/N 12-00798 ..... **$35.85**

LEAD-MASTER WRENCH SETS

Reduce time to remove and install sparkplug ignition leads. Permit shortarc turning due to 12-point grip head.

CT911 3/4" "T" Handle Box Wrench ..... P/N12-00799..... **$96.75**
CT912 7/8" "T" Handle Box Wrench ..... P/N12-00801..... **$92.95**
3/4" & 7/8" Open End Box..... P/N12-00802..... **$115.95**

SCREEN CLEAN SPARK PLUG CLEANER



The new Screen Clean tool works great for field cleaning of spark plugs. It is non-abrasive and can be used for several cleanings. Simple to use—just work the bi-fold edge through the gap with several strokes before setting the gap. Actually removes deposits blasting cannot reach.

P/N 12-15610 ..... **$5.90**

SPARK PLUG TRAY

This unique spark plug tray is quality made of PVC plastic. Each holding position has 18 mm thread so that plugs screw in for positive holding. This tray permits simultaneous inspection of either the electrode or barrel end of plugs, protects plugs from damage, and can be stored in any position. Optional carrying strap attaches to ends.

P/N 12-30185..... **$36.85**

PLUG-A-LONG SPARK PLUG TRAY

Holds 12 spark plugs each hole stamped with cylinder number also marked top and bottom so each plug can be identified easily, no mix-ups. Plugs can be serviced and returned back to where they were removed. a must for aircraft mechanics. Made from 18 gauge steel. Blue powder coat finish. Dimensions: W=4.0", L=8.0", H=2.6. P/N 12-00974 ..... **$27.50**

RADIAL ENGINE SPARK PLUG HOLDER

18 plug holder is made out of steel. Powder coated federal yellow.

P/N 13-11617 ..... **$34.95**

ECONOMY SPARK PLUG GAPPING TOOL

This handy spark plug gapping tool is made from heat treated stainless steel for long life. To adjust the spark plug gap, simply place the tool into plug with ground electrode between the forks, push up on the tool bending the ground electrode closer to the center electrode setting nominal gap of .016".

P/N 12-21352 ..... **$5.75**

SPARK PLUG HOLE THREAD CHASER

Chaser cleans threads in spark plug hole of dirt, carbon build-up, and metal particles. Double ended for both 14mm and 18mm threads. Neoprene band on hex drive holds tool securely in any 13/16" deep-well spark plug socket. P/N 15-06005 ..... **$7.95**

OIL FILTER DRAIN TOOL

This oil filter drain tool permits draining spinon oil filter prior to removal from the engine. Just clamp on to rear of filter with cutter, punch small air bleed at the top of the housing with anice pick, remove cutter and oil will drain freely in-can or hose-extended funnel.

P/N 08-04200 ..... **$43.60**

MODEL 2500 GAP SETTING TOOL

Complete with accessories, gauges and instructions for use. A precision gap setting tool for all massive electrode sparkplugs. Permits simultaneous adjustment of 2 opposite prongs without removing the spacing gauge. P/N 12-15500 ..... **$349.50**

CT-446 SPARK PLUG TRAY

Steel tray holds up to 12 plugs. Speeds handling of used or new plugs. Holes numbered to correspond with engine cylinders. Protects against shielding barrel contamination. Dims: 5"H x 8"L x 3.5"W. Wt. 1 lb.

(12 plug tray) ..... P/N 12-00795..... **$55.75**
(18 plug tray) ..... P/N 12-00162..... **$108.95**

ATS SPARK PLUG CLEANER & TESTER

The SPCT100 Spark Plug Cleaner & Tester Unit is used check spark plugs under pressure that is intended to closely simulate the firing conditions inside a cylinder. The cleaner section - consisting of a sand-blaster and air cleaner - will effectively remove carbon deposit from spark plugs.

Features: • Operating voltage: AC115V Single-phase 50/60Hz (The SPCT102 operates at 220V) • Recommended air pressure: 100 to 140 psi (7 to 10kg/cm2) • Cleaner section abrasive capacity (60# grain): 2 lbs (900g) • High-voltage output when spark testing : 15,000V • Dimensions: 19.3" (49cm) x 11" (28cm) x 10.4" (26cm) • Weight: 20.5 lbs (9.3kg) • Accessories included: 12mm, 14mm and 18mm spark plug adapters (2pcs each); 12mm, 14mm and 18mm cleaner gaskets (1 each); Adapter case (1pcs); Aviation Massive Electrode adapter plug (1pcs), Abrasive 2 lbs (900g).

110V ..... P/N 12-01629 ..... **$438.00**
220V ..... P/N 12-01637 ..... **$489.00**

MODEL 2600A VIBRATOR/CLEANER

Champion now makes it easier than ever to clean heavily lead-fouled spark plugs with this new, improved Vibrator/Cleaner. Each unit is shipped with all accessories required for cleaning fine-wire and 2-prong massive electrode aviation spark plugs. This unit features quick-change cleaning head assemblies, easy and inexpensive replacement of single cutter blades, improved heavy duty top-mounted switch and improved vibrator motor for faster cleaning and maximum durability.

Model 2600A ..... P/N 12-15600 ..... **$1,066.00**

NO. 91893 ABRASIVE COMPOUND

For use in CT-475AV Dry Abrasive Cleaner/Tester. Contains 1 full charge (15oz.).

Note: This main item no longer ships with a tip unless it is ordered separately.

P/N 91893. ..... **$8.95**

622 CHAMPION RUBBER TIP

P/N 12-94023 ..... **$6.75**

TEMPEST SPARK PLUG RESISTANCE TESTER

Tempest has developed an easy-to-use tester that makes it very efficient for IA/AP's to test the resistance in all aviation spark plugs. The IA/AP simply places the spark plug, barrel side down over the contact post and touches the other lead end to the firing end of the center electrode. If the light is green, the spark plug resistance is below 4kÙ (thousand ohms). If both the green and red lights are on, then the plug is between 4 - 5kÙ. This is acceptable for serviceable plugs. If the red light is on alone, this indicates a resistance value in excess of 5kÙ and the plug must be discarded and replaced.

P/N 08-07462 ..... **$124.50**

TO

SPARK PLUG TOOLS – OIL CAN CUTTERS

ULLMAN UNIVERSAL SPARK PLUG GAP GAUGE

This gap gauge provides easy accurate spark plug adjustment. Features flanged edge for electrode bending and beveled round hole for opening gap. 1-1/2" diameter. Wt.: 0.8 oz. Scaled from .020" to .100". Pewter plating makes the inches more legible for user to read. Also available in metric scale (0.5 mm to 2.4 mm).Gap gauge (inches)

P/N 12-21375 ..... **$1.65**

CHAMPION CT-482 SPARK PLUG EROSION GAUGE

Champion CT-482 spark plug erosion gauge provides an easy, accurate method of determining whether your plugs have reached their maximum wear limit. Simply recap the used plug to .016 nominal, then attempt to insert the electrode assembly through the chamfered hole in the gauge, as shown. Penetration of the hole by the electrode assembly indicates the plug has exceeded its recommended wear limits and should be replaced. The CT-482 is calibrated to reject plugs after their electrodes have eroded to at least one-half their original thickness. Although aviation spark plugs will continue to fire past this wear point, the rate of electrode erosion will increase as a result of non-parallel gaps and reduced sparking area. This leads to intermittent misfire, increased ignition system wear, and possibly costly unscheduled maintenance.

P/N 12-00791 ..... **$6.75**

"GET THE LEAD OUT" SPARK PLUG VIBRATOR CLEANER

Anyone that cleans a lot of spark plugs knows that a spark plug vibrator cleaner is the only way to go to break up and clean out stubborn lead deposits. A spark plug abrasive cleaner is great for the finish cleaning, but it just won't take care of the lead deposits found down around the plug porcelain. Aircraft Spruce now offers an inexpensive way to professionally clean spark plugs. This 115V vibrator cleaner is small, light weight, easy to use. It is great for the pilot or mechanic that wants to carry one along — just in case. 90 day guarantee.

P/N 12-21355 ..... **$29.85/ea.**

Extra Cutter Blades .....P/N 12-01147 ..... **$4.95/ea.**

SPARK PLUG CLEANER

This economical spark plug cleaner cleans any size spark plug without changing the grommet. Features a 2-way valve and comes complete with abrasive powder and bag.

Cleaning Kit-2.2 lbs. .....P/N 12-00786 ..... **$24.50**
Extra Powder-1.8 lbs. .....P/N 12-00787 ..... **$3.25**
Extra Bag-0.06 lbs. .....P/N 12-00788 ..... **$3.35**

CT-709 OIL FILTER ADAPTER WRENCH

The CT- 709 tool, designed by a professional aircraft mechanic makes the job easier. Manufactured from tool quality steel, the wrench features both 3/8" and 1/2" drives, as well as "flip over" reversibility. For Cessna adapter for 150 Series through 300 Series Aircraft.

P/N 12-00792 ..... **$118.50**

CHALLENGER OIL FILTER TORQUE WRENCH

Challenger CP102 Oil Filter Wrench Torque Wrench Adapter 1" L
P/N 12-01674 ..... **$16.85**

Challenger CP103 Oil Filter Wrench Torque Wrench Adapter 30 MMS
P/N 12-01675 ..... **$13.95**

Challenger CP102 Oil Filter Wrench Torque Wrench Adapter 1" ST
P/N 12-01676 ..... **$13.95**

OIL EASY WRENCH

The "Oil Easy Wrench" is specifically designed to remove the oil filter on any aircraft using the Teledyne Continental IO-520 or IO-550 engine. In fact, it is a universal oil filter wrench that works great on any piston engine airplane! Recommended at the Malibu Mirage Owners and Pilots Association (MMOPA) maintence seminar!!! On IO-520's & IO-550's engines, it's the only wrench that can get between the top of the oil filter and the pressure pump and still provide enough leverage to remove the old (usually stuck) oil filter by hand. And because you are able to remove the old filter without any damage, your inspections of the old filter are more accurate, without any contamination from more extreme filter removal methods.

P/N 12-01552 ..... **$39.95**

ACS OIL CAN CUTTER

This unit has the capacity of both P/N AFC-470 & 12-21395. It also uses the same replacement blade as the 12-21395. Anodized "Red" for corrosion resistance. Base can be clamped in a bench vise if desired. s black anodized.

P/N 12-01048 ..... **$59.85**

TEMPEST AA474 OIL FILTER WRENCH EXTENSION

Some aircraft applications create an environment that does not allow adequate clearance to get a torque wrench or even an open-end wrench around the install nut on oil filters. Even though Tempest has recently introduced the Dash II filter, which is the shortest oil filter on the market, the clearance is still not enough on some applications, such as Beech Barons and Bonanzas. To eliminate this problem Tempest producs the AA474 oil filter wrench extension. Features: Chrome-plated steel provides a high quality tool.Easy to use torque conversation label on back of tool. P/N 10-03929 ..... **$33.85**

TEMPEST OIL FILTER CAN CUTTER

This universal cutter from Tempest is easy to use and is a great addition to any toolbox. It's made from high quality aircraft aluminum, making it lightweight and very durable. Works on all aircraft spin-on oil filters. Adapter pin easily removed for 'male' filters.

P/N 12-01392 ..... **$89.90**

Tempest Oil Can Cutter Blades. .....P/N 12-01393 ..... **$9.75**

AIRWOLF AFC-470 OIL CAN CUTTER

Every A&P knows the importance of cutting every single oil filter open after an oil change. The problem up to now was oil filters were difficult to open and the tools to open them were expensive. This is no longer the case with the Airwolf AFC-470 oil filter cutter. The AFC-470 is the easiest and quickest way to determine the current health of your engine. The Airwolf AFC-470 oil filter cutter is constructed out of a solid 6" billet of super strong 6061-T6 aluminum, hard anodized to resist scratches and wear. Stainless steel rollers allow the oil filter to spin effortlessly during cutting. And finally, our specially designed razor sharp cutter wheel hardened to 60 Rockwell, will make quick work of opening any oil filter. This filter is designed to last a lifetime. Fits new style oil filters.

All Champion/Tempest/Kelly Filters ... P/N 12-00789-1..... **$87.95**
Rotax Filters ..... P/N 12-02295..... **$88.75**
Large Fram Filters..... P/N 08-07191..... **$129.50**
Replacement Cutting Wheel..... P/N 13-03958..... **$14.90**

HAND CRANK OIL FILTER CUTTING TOOL

This tool was designed to eliminate much of the mess that occurs with small handheld oil filter cutting tools. Very simple to operate, it is excellent for individual aircraft owners as well as FBO's and maintenance shops where a lot of filters need to be cut. Simply clamp in a vise, screw on the filter, turn the cutter into the filter and hand crank to open the filter. The rugged construction enables this tool to operate trouble free for years. P/N 12-00122 ..... **$107.95**

Replacement Cutting Wheel.....P/N 12-01685 ..... **$7.50**

AVIATION OIL FILTER CUTTER

This aviation oil filter cutter will open any size oil filter canisters for your inspection. To use the tool, place the filter in a vice, attach the tool to the top of the filter, and rotate 4 to 6 turns to open the canister. The cutting wheel will stay sharp for about 50 uses, and is easily replaced when dull. The tool is made from 6061 aluminum with a purple anodized finish. The tool is ready to use on any oil filter with a male or female thread. Oil filter cutter P/N 12-21395 ..... **$59.85**

Replacement cutting wheel .....P/N 12-21396 ..... **$9.50**

TEMPEST AA471 OIL FILTER MEDIA CUTTER

Tempest's new AA471 provides a low cost, efficient and safe tool that every mechanic will want to put in their tool box. Strong guard and non-retractable blade to secure the media and ensure an accurate cut.

P/N 12-01854 ..... **$34.95**

TO

SPARK PLUG TOOLS – OIL FILTER TOOLS

AUTOLITE SPARK PLUG TOOLS

T-554 AUTOLITE SPARK PLUG FEELER GAUGE - Sliding tabs check spark plug gap in decimals of an inch. P/N 12-00707 .....**$13.95**

SPARK PLUG DEEP SOCKETS - T-558 1/2" drive w/o magnet P/N 12-00712 .....**$29.85**

ATS VIBRATOR CLEANER PA01 - It will clean heavy deposits in and around the electrodes with absolutely no risk of damage to the plug. 1 lbs (0.5Kg) shipping weight.
P/N 12-00714 .....**$32.85**

SPARK PLUG SERVICE KIT

Kit Contains: 1 TP12 cleaner, 1 TP164 extra bag, 1 TP163 extra powder, 1 TP298 Go &No Go wire gauge, 1 TP339 spark plug tray, 1 TP340 gapper
P/N 12-02351 .....**$136.95**

ATS DELUXE SPARK PLUG KIT

Kit includes: ATS415 Bench Gapping Tool with Gap Gauge, #12 Spark Plug Cleaner, PA01 Spark Plug Vibrator Cleaner to remove lead deposits, Champion Spark Plug Tray, 10X Inspection Magnifier, 4oz Bottle of Anti-Seize Lubricant, Box of 100 Copper Gaskets, Thread Chaser, The new ATS950 Magnetic Spark Plug Socket, A durable military-style canvas storage bag, and SPCT100 Spark Plug Cleaner Tester Unit that will check plugs under simulated high voltage/ high pressure conditions for spark quality and leakage. 36 lbs (16.5Kg) shipping weight. P/N 12-02410 .....**$659.00**

BB PRODUCTS FC-2000 OIL FILTER CAN CUTTER

Features: • Cuts all Champion, Hartzell, and Tempest 3.7" Dia. oil filters • Rugged 6061-T6 aluminum construction • Roller bearings provide smooth rolling action • Hardened hardware throughout • No parts to change • Can cut in either direction • Made in USA Lifetime Warranty. ..... P/N 12-00923-1.....**$88.75**
Replacement Cutter Wheel ..... P/N 12-01689.....**$4.95**

BB PRODUCTS FC-3000 OIL FILTER CAN CUTTER

This an cutter incorporates a longer plate that allows cutting filters from 3.7 to 4.7 inches in diameter. Roller bearings provide smooth cutting action. Ideal for cutting racing filters too! Black anodized finish P/N 12-02628.....**$99.00**

BB PRODUCTS FMC-2000 OIL FILTER MEDIA CUTTER

This patented tool is designed to hold Champion Aerospace brand Aviation oil filter spools, and to allow cutting the paper filter media at each end of the spool without holding the filter spool by hand. Using this tool reduces the risk of cutting one's hands while cutting the filter media as well as reducing the time necessary to accomplish this task. The filter media is rotated in a special holder that is supported by roller bearings. A knife, with a retractable safety cover is brought into position to make a clean cut of the filter media at each end. The filter media can then be removed for inspection.Patented.
FMC-2000 Oil Filter Media Cutter.....P/N 12-00925-1 ....**$298.00**
FMC-2000BL Media Cutter Blades (3 pack)..P/N 12-01688 .....**$14.95**
FMC-2000BA Base to mount to bench.....P/N 12-01690 .....**$49.50**
FMC-2000K Kelly Filter Cutter Adapter.....P/N 12-01686 .....**$98.95**
FMC-2000T Tempest Filter Cutter Adapter...P/N 12-01687 .....**$98.95**

FMC-2010 OIL FILTER MED CUTTER

The Model FMC-2010 is a "Tool Box" version of the original Oil Filter Media Cutter that allows cutting and removing the filter media while reducing the chances if getting cut. The FMC-2010 can be mounted on the top of a toolbox or held in a vice for operation. Black powder coated finish. For Champion 3.7 diameter filters. Tempest and Kelly Aerospace filters are special order..... P/N 12-02629.....**$189.00**

BB PRODUCTS FH 2000 OIL FILTER HOLDER

Rigidly supports Champion, Hartzell, and Tempest 3.7" dia. aviation filters for cutting. After opening the filter, it keeps the oil inside the cup of the holder, instead of on your vice or shop floor. It holds the filter much more rigidly allowing you to cut the filter much faster while reducing side loads on your cutting tool..... P/N 12-00924-1.....**$89.00**

TOMS OIL FILTER CUTTING TOOL

Tom' s oil filter cutting tool will allow you to inspect your aircraft's oil filtering material for trapped debris in a quick and easy manner. Oil filter inspection is a critical measure of your engine's health and should always be a part of your aircraft's regular maintenance program. Most filter cutters work like a pipe or tubing cutter in that you have to go around and around the filter, adjusting cutter depth with each pass. Although you could do that with this tool, the real beauty of this new product is that the cut can be easily made in one pass. The tool is designed primarily for Lycoming oil filters that have a threaded insert protruding from the end of the filter. A few Lycoming oil filters and most Continental oil filters do not have this insert. For these filters, an adapter insert is supplied with the tool. Tom's oil filter cutter may also be used on smaller filters such as found on Rotax or automotive engines. Simply remove the cutter handle and reposition the pivot bolt to the inner hold on the base handle. The adapter insert may be needed on these filters as well. Made in USA.
P/N 12-01697.....**$59.95**

MODEL 7000 OIL FILTER CUTTER

• Accepts both male & female styles of aircraft oil filters, and many automotive sizes. • Ball bearing rollers make it easy to turn the filter • Effective design helps insure a straight cut (the filter does not try to spiral off the cutter) • Heavy duty construction (designed for daily commercial use) • Aircraft quality aluminum construction • Replaceable hardened steel cutter wheel • Contoured knob is easy to turn, even with oily hands • Accepts oil filters 3 1/8" to 4" in diameter, which includes most aircraft oil filters such as Champion: CH48103, CH48104, CH48108, CH48109, CH48110 AND CH48111 • The cutter may be completely disassembled, and all parts are replaceable. P/N 13-03145..... **$119.95**
Replacement cutter Wheel..... P/N 13-05737..... **$15.25**

MODEL 7100 OIL FILTER KNOB

• Slips onto the hex of an aircraft oil filter • Large diameter knob for a strong grip even with oily hands. • Allows many filters to be installed and removed without using a wrench. • Works in tight spaces, you do not have to swing a wrench • Knob will accept a 3/8" drive ratchet handle to help remove very tight filters (ratchet handle not included) • Stainless steel core durability (your ratchet goes into stainless steel, not plastic). • Use a torque wrench to accurately tighten a new filter to the proper torque. • Handle can be used as a base to support the filter, holding it upright so the oil does not spill out. • Color: bright yellow. P/N 13-03146 ..... **$42.75**

MODEL 7300 OIL DRAINER

Make your oil changes less messy. Drain your oil lines and filter before removing the filter. Works with most Lycoming engines and remote filter installations, and some Continentals. When you drain the oil from the engine, you are only emptying the oil sump. Generally quite a bit of oil remains in the filter and oil lines (if you have a remote mounted filter). A remote mounted filter installation can easily hold a quart of oil in the filter and lines after the engine is drained. This oil will come pouring out when the filter is removed, making a mess in the engine compartment. Cleaning up this mess often takes longer than the actual oil change. The Oil Drainer clamps over the center of the oil filter. A hardened steel rod pierces the filter can and allows the oil to be neatly drained into your catch bucket. After the oil is drained, you can remove the filter with much less mess. P/N 13-03147 .....**$107.95**

OIL FILTER WRENCH

The 1" hexes of the wrench easily fit Champion oil filters. The hexes are rotated 15 degrees from each other so by turning the wrench over or flipping it end-for-end you can easily find an orientation that allows you to get on the filter, even the tightest engine compartment. It's 6 inch overall length allows you to turn it tight locations, and the shorter length helps prevent over-tightening the filter during installation.
P/N 12-01638 ..... **$15.75**

TO

AIRCRAFT SPRUCE WEST
CORONA, CA • (877) 4-SPRUCE
AIRCRAFT SPRUCE EAST
PEACHTREE CITY, GA • (877) 477-7823
Prices Subject to Change Without Notice

ULLMAN MAGNETIC PICK-UP TOOLS

HT-3

HT-2

HT-1

These Ullman pick-up tools with Powercap offer a unique combination of features which make them ideal for work around aircraft. The stainless steel telescoping handle is strong, long, and lightweight, and the comfortable, textured cushion grip keeps handle secure even in wet or oily hands. The head features a compact industrial strength magnet for retrieving heavy objects in tight places. The powercap shields magnet side so that the head can be easily guided past ferrous metal objects. Available in 3 convenient sizes.

HT-1 lifts 1-1/2 lbs, over 2 lbs with POWERCAP™ telescopes from 6-5/8" to 33-1/4" P/N 12-21385 ..... **$10.95**

HT-2 lifts 3-1/2 lbs, over 5 lbs with POWERCAP™ telescopes from 6-5/8" to 33-1/4" P/N 12-21386 ..... **$12.95**

HT-3 lifts 5 lbs, 10 lbs with POWERCAP™ telescopes from 6-3/4" to 30-1/4" P/N 12-21387 ..... **$18.25**

CHP4-L HOOK & PICK SET - has picks that are 9.75" long with textured cushion grips. These longer picks are ideal for working in hard to reach awkward areas.
P/N 12-00716 ..... **$12.25**

MSR-3 MEGAMAG SOCKET RACK - has a strong magnet on the front of the racks that keeps 1/4", 3/8" & 1/2" drive sockets together, organized and ready to use. The magnetic force on the back holds the rack loaded with sockets to most flat metal surfaces. P/N 12-00717 ..... **$9.50**

GMC-2 DUAL PURPOSE TOOL - contains a MegaMag Pickup Tool that lifts 16 lbs. and a 2.25" Inspection Mirror with a metal base that mounts in seconds and brings hidden areas into full view.
P/N 12-00718 ..... **$20.75**

STEELMAX MAG-IT MAGNETIC PICK-UP TOOL

Safely remove metal chips and debris from machinery and work areas using SteelMax Mag-It® magnetic pick-up tool. The Mag-it® slide action lever quickly demagnetizes the tool, which releases chips for disposal.

10 inch Pick-Up.....P/N 12-01714 ..... **$24.75**
15 inch Pick-up .....P/N 12-01715 ..... **$47.50**

EXHAUST PORT RESURFACING TOOL

The exhaust port resurfacing tool is designed to recondition port surfaces where no more than .010" of material need to be removed. It is easily bracketed and aligned to the port in reference to the rocker cover surface. Execution of the cutting operation only requires hand power. No air or electrical power is required. Mounting bracket adapters are available for the following engines: A&C series continentals, Lycoming Parallel Valve, Lycoming Angle Valve, others on request.....P/N 12-17605 ..... **$396.00**

A & C Series Continental Bracket .....P/N 12-17609 ..... **$176.95**
Lycoming Parallel Valve Bracket.....P/N 12-17610 ..... **$177.65**
Lycoming Angle Valve Bracket .....P/N 12-17611 ..... **$247.50**
Cutter Head Inserts .....P/N 12-17607 ..... **$28.75**

EAR ISLAND REMOVAL TOOL – When substantial quantities of material have to be removed from the exhaust port, it may be necessary to also remove the island around the exhaust stud area. The ear island removal tool and pilot can be used to accomplish this without the use of power tools. .....P/N 12-17608 ..... **$103.95**

DELUXE HEAT GUN

This handy tool gives you a fast, drum-tight, mirror smooth finish. It's ideal for heat-shrinkable covering films. Get a professional finish with less time and effort. 1-yar warranty. Features: •Includes removeable wide nozzle •1000W heating power •Heavy-duty fan motor •Textured, composite hand-grip •3-position, hot/cool/off switch •Adjustable air intake baffle • Wt: 15 oz • 5.5' AC power cord w/2-prong plug. P/N 12-00527 ..... **$27.50**

THE CORE RECESSOR

The core recessor is a new product with the purpose of serving as an efficient tool that makes the process of removing core cells in Nordam Panels and composite fiberglass more efficiently. Thus, it reduces time for edge fillers, which are necessary procedures to customize aircraft cabinets, floorboard, vanity's headliners, valance panels, etc. Is light weight, easy and safe to use. Core panels from 1/8 to 3/4 inch with no adjusting. Requires no electricity.

Core Recessor .....P/N 12-02270 ..... **$106.95**
Core Recessor Mini.....P/N 12-02271 ..... **$73.50**

UNI-MAG WRIST BAND MAGNET

Uni-Mag is a wrist worn magnet that allows craftsmen to keep parts close to hand while working rather than in your pocket, on a ladder, or in your mouth. It holds nuts, bolts, screws, nails, tools, etc. A specially created magnetic field allows parts to lay flat on the face of Uni-Mag rather than upright. Save time and put an end to fumbling for small hardware with Uni-Mag. Comes complete with magnet and wristband. P/N 12-30110.....**$16.50**

SUPER HANDY MAGNETIC RETRIEVAL TOOL ST-225

The Super Handy Magnetic Retrieval Tool extends 26" and picks up five pounds.
P/N 12-02932.....**$9.50**

MAGNETIC FLEXIBLE LIGHTED PICK UP TOOL

Magnetic flexible lighted pick up tool. Flexible Shaft. Three LED Lights. Magnetic on both ends. Extends from 8" to 25"
P/N 12-02919.....**$15.95**

AMAZING ROD SAW

Tiny particles of tungsten carbide, one of the toughest and hardest substances in the world, have been bonded to a steel rod to produce the Rod Saw. Fits standard 12" hacksaw frame. Use when regular hacksaw will not work. Lets you cut steel, rock. Not recommended for soft materials. P/N 12-01180..... **$6.25**

EXHAUST DESICCATOR PLUGS FOR EXHAUST STACKS

Quality made polyurethane rubber plug won't wear out and provides a positive seal in the exhaust pipe. Desiccator housing contains interchangeable desiccator canisters. Desiccant never needs to be removed from canister for drying. Removal flag and cap attach to external end of plug when in use. During storage, flag cap fits on desiccator chamber. Limits internal engine damage caused by corrosion. Fits 2" dia. exhaust pipes. Other sizes available as a special order. Minimum special order 5 pieces.
P/N 12-30212..... **$41.75 ea.**

HIGH CAPACITY EXHAUST DESICCATOR

2.5 times the desiccant capacity of previous design, One piece construction allows the dessicant to be contained in the core of the plug. Made of durable high quality urethane rubber that will last almost indefinitely
P/N 12-01057 .....**$44.50/ea**

GOLDENROD DEHUMIDIFIER

This compact, low-voltage dehumidifier is an ideal way to eliminate dampness and mildew in aircraft which can cause mildew growth in carpet and upholstery and wreak havoc with electrical systems. In stall under the instrument panel or on the deck between seats. If installed in the engine compartment, Goldenrod will eliminate moisture which leads to rust, keep ignition wiring dry, and facilitate cold weather starts. In the hangar, Goldenrod can protect parts, tools, supplies, and components. Operates on standard 110V current 24 hours per day but uses four times less power than a standard light bulb. Safe and effective. Available in four lengths.

Part No.	Length	Watts	Approx. Coverage Up To	Price Ea.
12-30225	12"	8	100 cubic feet	$39.50
12-30230	18"	12	200 cubic feet	$42.50
12-30235	24"	15	300 cubic feet	$44.75
12-30240	36"	25	500 cubic feet	$47.95

EVA-DRY DEHUMIDIFIER

This is a product that is the answer to a very common problem in Aircraft, HUMIDITY!!! The Eva-dry is a 100% renewable, wireless, mini dehumidifier that requires no power to operate.

It works with a Silica gel that absorbs moisture from where ever it is placed. There is an indicator window on the front of the unit that will change from blue to pink as the units absorbs moisture. Once the crystals have turned pink it is time to renew.

To renew, simply fold down the hidden plug on the back of the unit and plug it in to any a/c outlet for 8-10 hours. A heating element will be activated which will evaporate the moisture. The Eva-dry has a 10 year life span and has a 5 year mfr. Warranty. Size: 6.25" X 4.75" X 1.25".
P/N 12-01621 ..... **$29.95**

TO

WING STAND

This wing stand is ideal for aircraft homebuilders or restorers needing to safely store and protect aircraft wings during the project. It accommodates virtually all shapes and sizes of wings and is available at a very economical price. We ship this wing stand direct to you from the factory (freight collect). Dims: 72"l x 44"h x 36"w. Assembly req. Each stand holds 2 wings.

P/N 12-21390 .....**$199.00/ea**

AEROROLLER-1000

AeroRoller makes movement of your aircraft or wheeled equipment easy. Aircraft can be loaded on AeroRoller without jack and minimum effort is required to move aircraft when on rollers. AeroRoller is constructed of Industrial 1/4" steel plate. Heavy duty Duraform 360° swivel castor wheels means no flat spots. Brake castor lock parking location. Each unit can carry 1000 lbs. Manufacturer's warranty covers defective parts & labor.

2-Roller Set.....P/N 13-00071 .....**$176.95**
3-Roller Set.....P/N 13-00072 .....**$209.00**

TENNSMITH BRAKES & SHEARS

HAND BRAKE & STAND - Versatile, economical hand brake designed for straight forming of mild steel in thicknesses of 22 gauge & lighter. Made in the U.S.A by Tennsmith. Bends material up to 48" wide. Wts: brake: 280 lbs. Optional stand: 95 lbs. Ideal for bending materials used in light aircraft construction. Shipped direct to you from factory in Tennessee.

Model S48-22 hand brake.....P/N 12-20700 .....**$665.00**
Optional Stand.....P/N 12-20705 .....**$230.95**

UNIVERSAL HAND BRAKE & STAND - Tennsmith's heavy duty universal hand brake is a great tool for a wide range of sheet metal binding and forming operations in 12 gauge and lighter mild steel. The brake is ideal for both box and pan and straight bending in hold and cold rolled plate, stainless steel, aluminum, and heavy plastic. Welded steel plate construction for strength and rigidity. Bends material up to 48" wide Wts: brake: 1330 lbs. Optional stand: 95 lbs. Shipped truck collect direct to you from factory in Tennessee.

Model HBU48-12 Hand Brake.....P/N 12-20710 .....**$3,554.00**
Optional Stand.....P/N 12-20705 .....**$230.95**

FOOT SQUARING SHEAR - Tennsmith squaring shears offer precision shearing and rugged construction. These shears feature traction, ground alloy tool steel blades to prevent material movement during shearing. Will shear material up to 16 gauge mild steel and up to 20 gauge stainless steel. Both blades are adjustable and back gauge gives highly accurate readings. Wts: Model 36: 700 lbs. Model 53: 950 lbs. Shipped truck collect to you direct from factory in Tennessee.

Model 36 Shear (Max. Cutting Width 37") P/N 12-20715 .....**$1,939.00**
Model 52 (Max. Cutting Width 52").....P/N 12-20720 .....**$2,498.00**

TENNSMITH -These products are shipped truck, priced F.O.B. McMinnville,TN. Allow 4-6 weeks for delivery

LAP JOINT JOGGLE TOOL

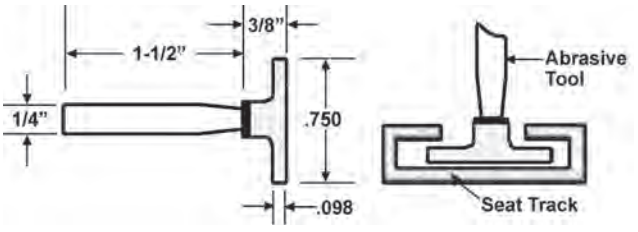
FOR UP TO .032 ALUMINUM SHEET - To use the Lap Joint Joggle Tool, install washers to adjust joggle set-back from edge of sheet. Start at one end of sheet and pull smoothly along edge to be joggled. Keep back plate of tool firmly and squarely against edge of sheet for smooth and parallel joggle. To break a sheet edge, insert sheet just one bearing depth (.4") then bend down as desired as tool is pulled along edge. Adjustments - For set-back, add or subtract washers. For different material thickness, loosen bolts, spread or close. For use on aluminum sheet up to .032 thickness. P/N 12-30275 .....**$41.90**

NON-CONTAMINATING SCRAPER

Our Non-Contamination Scraper is suitable for all airframe scraping operations. It will not contaminate delicate aluminum parts with steel particles which can induce corrosion. It is easily resharpened with a mill file and the .060" thick heat treated aluminum blade is easily replaceable. Features positive wood grip handle.

P/N 12-30205 .....**$21.60**

SEAT TRACK CLEANER



Maintaining adjustable cockpit seats, or passenger seating secured in notched tracks, requires removing the dirt and grit that have become embedded in the tracks. Rex-Cut Products has developed a thin-profile mounted wheel specially designed to accomplish this job efficiently and safely.

The seat track cleaners are manufactured using layers of reinforced nonwoven cotton fiber and abrasive grain which are bonded into discs. When mounted on a die grinder they are able to fit inside the seat tracks. Designed for cleaning all the interior surfaces of the track without having to change discs, one disc will remove caked on sludge, dirt and grit while removing minor burrs and rough edges.

The seat track cleaners are non-loading on aluminum and leave superior surface finishes. Available in 54 and 80 grits in aluminum oxide grain mounted on a 1/4 x 1/2" shank.

54 Grit Seat Track Cleaner ..... PN 12-00955 ..... **$7.95**
80 Grit Seat Track Cleaner ..... PN 12-00952 ..... **$7.95**

SLIDE HAMMER

Blue vinyl hand grip over steel handle reduces sting on technicians hands and provides 100% grip. 3 lb. slide weight is mounted on 1/2" plated steel shaft. Broached hex in nose cone locks pulling screw in place...ends breakage. Supplied with two hardened pulling screws and "L" puller hook fabricated of aircraft quality steel. Nose cone and shaft threads are 1/2" - 20. P/N 15-08252 .....**$41.50**

MACHINIST HOOK SCRIBE

Machinist Hook Scribe New. 2-point scriber has hardened, ground steel points. Features a straight point and a 90 degree point. Length: 9".

P/N 12-02896 .....**$3.95**

PIG TAIL HOOK SCRIBE

Both the 45 degree and pig tail points of the scribe are made of hardened, ground steel. Both ends of the tool unscrew from the body.

P/N 12-02897 .....**$3.95**

NOTCHERS

ACCU-JIGGER TUBING NOTCHERS

Constructed of 6061T6 hard anodized aluminum extrusions, steel, and cast iron with two 2750 lb. rated roller needle bearings, the Accu-Jigger rigidly holds the holesaw and tube to produce accurate, chatterless cuts. Accu-Jigger, with Single Point Technology, is able to notch tubes that "Fit Right The First Time" as fast as those produced from custom tooling. It employs a flip up Tube End Stop, (2) 1° step, pin settable Angle Indexes and standard bimetal holesaws to accurately notch the ends of tubes used in aircraft fuselages and engine mounts. Notches tubes up to 1" diameter with up to 2" holesaw at angles from 30 to 90°. Spin Angle settable 0 to 359°. Meant to be driven by 1/2 inch chuck hand drill or mounted to a drill press.

1" diameter capacity.....P/N 12-00377 ..... **$349.95**
2" diameter capacity.....P/N 12-00529 ..... **$479.95**

PIPE NOTCHER

Produces accurate notches in steel or aluminum, giving perfect fits for better, stronger welds. It can be mounted on your drill press or bolted to a stand and powered by a hand drill. Built-in protractor gives accurate cuts from 90° down to 40°. Sturdy accurate V-block clamping system will hold 3/4" to 2" tubing (pipe size from 1/2" to 1-1/2"). It works fast, accepts standard hole saws, and is powered by any 1/2" variable speed drill motor. Notches all the way through in one pass. Hole saw cutters sold separately.

P/N 12-30000 ..... **$223.59**

MAGNETIC BIT CADDY

A non-spill bit holder at your fingertips. 36 individual 1/4" and 5/16" screwdriver bits may be stored in this magnetic-based organizer. Remains solid at any angle placement while holding bits in their respective slots. .....P/N 12-01083 ..... **$19.75**

RARE EARTH MAGNETS

These super-strong magnets made from neodymium are lighter and five times stronger than samarium-cobalt rare earth magnets. Nickel plated to resist corrosion. Ideal for work projects, experiments, shop and everyday use. Pack of 10. P/N 10-04077.....**$2.60**

SCREW PAINT CUTTERS

For AN4 Screws. You know how frustrating it can be to remove a painted over screw only to wind up chipping up the paint job. But you wouldn't have that problem if you had a set of these innovative paint cutters. They work by slicing through the paint around the head of the screw so you can remove it without chipping the paint. They have a 1/4x28 thread to fit into any angle drill or you can get the optional arbor (p/n 12-02460) for use in a drill chuck. Does not work on dome head rivets. 1 lbs (0.5Kg) shipping weight.

Size	Part No.	Price	Size	Part No.	Price
AN4	12-02452	**$23.75**	AN6	12-02453	**$22.85**
AN8	12-02454	**$25.75**	AN10	12-02456	**$24.85**
1/4"	12-02459	**$22.65**	6 pc. Set	12-02461	**$119.95**

Arbor .....P/N 12-02460 ..... **$18.75**

INSTRUMENT MOUNTING HOLE DRILL JIG

Aircraft instrument mounting hole drill jig for standard 2-1/4" & 3-1/8" diameter instruments. Accurate and simple tool to use, drill jig made of hardened steel for long life. P/N 12-00975 ..... **$34.85**

MAGNETIZER / DEMAGNETIZER

This versatile tool saves you time and trouble by instantly magnetizing or demagnetizing you tools & parts on the job. Reliable, powerful permanent magnets for a super long life, and its compact size,shatterproof plastic shell, this tool will fit easily in you tool box. This tool allows easy, precise handling of small steel parts in confined spaces, collects metal items from inaccessible places, leaves 1 hand free for positioning the work piece, demagnitizes instruments & electronics components. Size: 2.1"x2"x1.1". Wt. .22 lb. P/N 12-16835..... **$16.50**

OL' JOINT JIGGER

OL' JOINT JIGGER MODEL RTN-100 TUBING NOTCHER - Ol' Joint JiggerTM quickly notches tubing of up to 2" O.D. in less than 30 seconds. Great for assembling and welding tubing in your garage or workshop. Adjusts in single degree increments to make up to 60° angle notches. Automatic round tubing centering and alignment. CNC machined steel construction. Bi-metal hole saws not included. Use with your 1/2" hand drill. U.S.A. Ship Wt. 9 lbs.

P/N 12-01107 ..... **$159.95**

RTN-BASE (UNIVERSAL DRILL PRESS MOUNT) - For use with RTN100 only. Allows for set up and dedication of a small drill press for tube notching. Adjustable for out-of-square tables, the RTN-Base also makes it easy to lay the notcher over horizontally, still bolted to the table, to handle long or cumbersome tubing that can't be notched in a vertical position. Minimum requirements: 1/3HP drill press with 3-1/2" to 4" of travel and 14" from the table or base to the chuck. (Bolts for attachment included) U.S.A. Ship Wt. 3 lbs. P/N 12-00691 ..... **$32.25**

OL' JOINT JIGGER MODEL RTN-1000 DELUXE ALUMINUM TUBING NOTCHER - Ol' Joint JiggerTM combines precision performance, versatility and comfort for quickly notching tubing of up to 2" O.D. in less than 30 seconds. Enhanced vibration-reducing design and dual-axis base allow for either work bench or drill press mounting to provide the professional or hobbyist with the ultimate in tubing notchers. Laser-engraved protractor allows adjustments in single degree increments to make up to 60° angle notches. Automatic tube centering and alignment. Anodized aircraft-grade aluminum construction. Bi-metal hole saws not included. Use with your 1/2" hand drill or drill press. U.S.A. Ship Wt. 9 lbs.

P/N 12-01108 ..... **$237.95**

RTN NOTCHER REPLACEMENT PARTS & HOLESAWS

Description	Part No.	Price
5/8"-18 Thread Adapter	12-00020	**$6.50**
Main Arbor/Shaft (1/2"-20 Thread)	12-00021	**$16.35**
Bushings for Arbor Support (pair)	12-00022	**$6.00**
5/8" Holesaw	12-00023	**$14.75**
3/4" Holesaw	12-00024	**$14.75**
7/8" Holesaw	12-00025	**$14.75**
1" Holesaw	12-00026	**$14.75**
1-1/2" Holesaw	12-00030	**$15.25**
1-3/4" Holesaw	12-00032	**$18.75**
2" Holesaw	12-00034	**$18.75**

HOLESAW ASSORTMENTS

Description	Part No.	Price
1", 1-1/8", 1-1/4", 1-3/8", & 1-1/2"	12-00035	**$69.85**
1-1/8", 1-1/4", 1-3/8", 1-1/2" & 1-5/8"	12-00036	**$69.75**
1-1/4", 1-3/8", 1-1/2", 1-5/8", & 1-3/4"	12-00037	**$75.25**
1-3/8", 1-1/2", 1-5/8", 1-3/4" & 1-7/8"	12-00038	**$79.50**

PIPEMASTER WELDER'S TOOL FOR CONTOUR FITS

Pipemaster gives aircraft builders the ability to cut a piece of tubing on both ends and have it fit its intended location on the first try. Tedious hours of grinding and misfit joints can be eliminated producing exact welds and stronger airframes. Features spring temper stainless steel pins, aluminum inner shell, and rugged ABS housing. Simply slip over the pipe, push down, transfer and cut, and the tubing is ready to weld. Pipemaster transfers the exact outline of the pipe joint in just seconds. Use for penetration cuts as well.

Part No.	Tubing O.D.	Price
12-00102	3/4"	**$39.65**
12-00103	7/8"	**$47.75**
12-00104	1"	**$39.85**
12-00105	1-1/8"	**$50.25**
12-00106	1-1/4"	**$41.75**
12-00107	1-5/16"	**$49.80**
12-00108	1-3/8"	**$57.25**

Part No.	Tubing O.D.	Price
12-00109	1-1/2"	**$57.25**
12-00111	1-5/8"	**$57.25**
12-00112	1-3/4"	**$62.50**
12-00113	1-7/8"	**$65.50**
12-00114	2"	**$65.50**
12-00116	2-3/8"	**$66.50**

TO

SANDERS - SURFACE TREATMENT KITS

ADJUSTABLE FLEXIBILITY SANDERS (AFS)

Countless prototypes were built and tested for three years on performance, comfort, and durability to bring forth a line of finely tuned sanding tools that have been refined to perfection. Adjustable Flexibility Sander available in 4.5", 6", 9", 15", 21", 27", and 36".

Size (inches)	Part No.	Price
4.5	12-02862	**$24.85**
6	12-02866	**$14.90**
9	12-02867	**$41.90**
15	12-02868	**$67.75**
21	12-02869	**$73.65**
27	12-02870	**$104.50**
36	12-02871	**$199.75**

P-KIT AIRCRAFT WINDOW INSPECTION PRISM KIT

The "P-KIT" (Inspection Prism Kit) is packaged as a completely self contained aircraft window inspection tool kit. It comes in a waterproof lockable case and includes Instructions, Inspection Prism, Coupling Agent and a 6000 Candlepower Flashlight with batteries. It's ready to use to inspect your aircraft windows for possible bolt hole damage. P/N 12-01333..... **$795.00**

ELECTRIC TOOL ADAPTER

3/8" Drive, 3-inch, locking adapter for electric tools
P/N 12-01706 ..... **$23.50**

MBX KITS AND ACCESSORIES

MONTI

MBX Surface Treatment Systems

PATENTED TECHNOLOGY - MBX Systems are different from conventional surface treatment systems in that MBX Systems are based on several physical principles. Flexible brush-belts are inserted loosely into a cage-like adaptor system and secured with safety arms. The centrifugal force created by rotation causes the brush-belt to tighten and work as if suspended on a cushion of air. Advantages:Vibration-free operation: The vibration of the wire bristles that occurs when the bristles strike the target surface is absorbed by the air-cushion. The bristles re-strike the target surface at rest (without vibration). This achieves the maximum kinetic energy.

MBX BRUSH-BELT TECHNOLOGY - MBX Belts consist of individual, U-shaped crimped wire bundles anchored in a polyamide fabric. Made of spring steel, the wires have hardened tips that strike the target surface individually during rotation.

ADVANTAGES - High safety level: The U-shaped anchor points of the individual crimped bundles prevent wire bristles from being thrown clear. No heat development: Avoid toxic fumes and no smearing during the removal of sticky materials. No grinding: No removal of healthy material, no deformations. Flexibility: High degree of adaptability when working on contoured areas or areas with sharp edges.Optimal performance: Because of their design, each wire tip strikes the target surface twice per rotation.Long service life: Specially hardened wire tips with a hardness up to 68 HRC (Rockwell hardness) provide for a level of hardness never before achieved with conventional brush technology.

MBX PNEUMATIC DRIVE UNIT - Easy handling, lightweight - 1.1 kilograms, high torque, safe to use!Specially developed for the MBX brush-belt and MBX Vinyl Zapper systems. The high output rpm of the compressed-air turbine (21,000 rpm) is reduced to 3,500 rpm by means of a planetary gear and toothed belt; torque increases. This gives our MBX pneumatic drive units an optimised power profile. MBX brush-belts and MBX eraser wheels work as a direct extension to the drive shaft, i.e., there is no lateral centre of gravity and MBX drive units operate in-line. Work in hard-to-reach areas or in the removal of tough, thick, sticky materials (e.g. compounding materials, underbody corrosion) with optimal ventilation.

MBX PNUEMATIC STARTER SET

For the removal of seam sealant, corrosion, paint, vinyl decals, glue on aluminum and alloy.

SET 1 - • MP-3500 - MBX Pneumatic Power Tool S (3500 rpm) with adapter system for 23mm belts/31mm rubber eraser. • AA-0011 - Adapter for 11mm wire belts • BS M11X - V2A Wire Belt, Med., 11mm angled tips • BS-F11 - V2A Brush Belt, Fine, 11mm • RE-0023 - Rubber Eraser, 31m P/N 12-01394 ..... **$502.85**

MBX ELECTRIC STARTER SET

For the removal of seam sealant, corrosion, paint, vinyl decals, glue on aluminum and alloy.

ME-3200 - MBX ELECTRIC POWER - Tool A (3200 rpm) with adapter system for 23mm belts/31mm rubber eraser • AA-0011 - Adapter for 11mm wire belts • BS-M11X - V2A Wire Belt, Med., 11mm angled tips • BS-F11 - V2A Brush Belt, Fine, 11mm • RE-0023 - Rubber Eraser, 31mm
P/N 12-01396 ..... **$514.85**

MBX BRUSH BELTS

Medium (11 or 23 mm)
For the removal of seam sealant & corrosion on alluminum bodies

Fine (11 or 23 mm)
For the removal of paint on aluminum bodies.

MBX Belts are made of a high-performance polyamide fabric - tension resistant up to 440 kilograms. Individual bristles made of spring steel or stainless steel are anchored U-shaped in the flexible polyamide fabric. The materials used for the production of MBX Belts offer top safety and durability due to the high flexibility of the MBX Belts. No clogging - no heat built-up - no grinding. The high masses due to centrifugal force during rotation are absorbed safety by MBX Adapter Systems.MBX Medium have angled tips to create a sandblast effect. 11mm is for expecially hard-to-reach-areas such as a 90° angles.

BS-M11X Med. Blue 11mm Brush
P/N 12-01402 ..... **$29.85**

BS-M23X Med. Blue 23mm Brush
P/N 12-01403 ..... **$29.85**

BS-F11 Fine Blue 11mm Brush
P/N 12-01404 ..... **$29.85**

BS-F23 Fine Blue 23mm Brush
P/N 12-01405 ..... **$29.95**

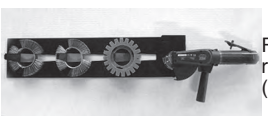
MBX VINYL ZAPPER

"The rotating toothed eraser wheel", patented For the removal of self-adhesive foils and materials, wide-area decoration, adhesive residue on decorative strips and lettering on OEM-painted surfaces made of metal, aluminium, glass, fibreglass (gel coats) - and most amazing: NO PAINT DAMAGE.The centrifugal force created by rotation makes the MBX Vinyl Zapper work as if suspended on a cushion of air. Advantages: Faster working speeds of up to 3,500 rpm Conventional rubber eraser wheels operate only at circa 1,500 rpm. No paint damage, no smearing despite speeds of 3,500 rpm Toothed wheel design. Easy handling. Vibration-free, smooth running (compare a solid rubber tire with an air-filled tire). Increased performance. The working surface of the MBX Vinyl Zapper is strongly enlarged by the application of pressure to the work surface. This improves performance (compare to a car tire containing only a small amount of air). Long service life Wide construction. Vinyl Zapper 31mm Toothed Wheel Construction Removal of elements such as vinyl decals & DOT tape from metal surfaces, fiberglass, plate glass, wood, aluminum, OEM paint finish.
P/N 12-01406 ..... **$31.95**

MBX VINYL ZAPPER KITS

MBX Vinyl Zapper Kit is for removing vinyl decals and graphics on metal glass and fiber glass. It is available with either a pneumatic tool or an electric tool.

Description	Part No.	Price
MBX Electric Vinyl Zapper Kit USSE-01-05 MBX Electric Tool, 1-23mm Adaptor, 3 Vinyl Erasers	12-02037	**$469.50**
MBX Pneumatic Vinyl Zapper Kit USSP-01-05 MBX Pneumatic Tool, 1-23mm Adaptor, 3 Vinyl Erasers	12-02038	**$469.50**



STORAGE STATION

For storage of up to 15 wire belts or 9 rubber erasers and one MBX Power Tool (machine, belts, erasers not included).
P/N 12-01399 ..... **$52.75**

CLECOS - HOLE SAWS - CRIMPING TOOLS

CLECO SHEET HOLDERS

K-SERIES SPRING CLECOS - Sheet holders provide the quickest method for holding sheets together for drilling or riveting. Drill the size hole needed for the rivet and insert the sheet holder. The holders listed comprise the most common sizes. Material thickness range 0" - 1/4". Use with sheet holder pliers. ***10% discount on 50 pcs., 15% discount on 100 pcs.***

Description	Size	Part No.	Price
M-3/32 CLECO	3/32"	12-01140	**$0.47**
M-1/8 CLECO	1/8"	12-01138	**$0.63**
M-5/32 CLECO	5/32"	12-01141	**$0.47**
M-3/16 CLECO	3/16"	12-01139	**$0.49**

KK-SERIES SHORT BODY SPRING CLECOS - A shorter overall body to use in areas of limited space. 0-1/4" grip range. Made in USA

Description	Size	Part No.	Price
CC-3/32 CLECO	3/32"	12-02073	**$0.82**
CC-1/8 CLECO	1/8"	12-02074	**$0.79**
CC-5/32 CLECO	5/32"	12-02075	**$0.83**
CC-3/16 CLECO	3/16"	12-02076	**$0.83**

KHD-SERIES LONG REACH SPRING CLECOS - Designed for clamping thicker material. 0-1/2" grip range. Made in USA

Description	Size	Part No.	Price
CHD-3/32 CLECO	3/32"	12-02077	**$0.80**
CHD-1/8 CLECO	1/8"	12-02078	**$0.83**
CHD-5/32 CLECO	5/32"	12-02079	**$0.77**
CHD-3/16 CLECO	3/16"	12-02080	**$0.83**

CL SERIES - The "CL" series fasteners are the standard plunger type Cleco with an extended grip range. Spring type Fastner

Description	Size	Part No.	Price
0-1/2" Grip, Zinc	#40	12-02425	**$0.83**
0-1/2" Grip, Copper	#30	12-02426	**$0.83**
0-1/2" Grip, Black	#21	12-02427	**$0.79**
0-1/2" Grip, Brass	#10	12-02428	**$0.79**

CLECO KEEPER

Fabricated of durable polypropolene, the Cleco Keeper is prepunched to hold up to fifty sheet metal fasteners. Allows the builder to extract and install Clecos from the storage bin to the work with one hand. Compact, the Cleco Keeper measures 8"L x 3"W. Helps eliminate misplaced fasteners and makes inventory of available fasteners quick and accurate. Available in three models to hold 3/32", 1/8", or 5/32" clecos. For 3/32" clecos .....P/N 12-10116 .....**$7.95**
For 1/8" clecos .....P/N 12-10117 .....**$7.95**
For 5/32" clecos .....P/N 12-10118 .....**$7.95**
For 3/16" clecos .....P/N 12-00604 .....**$7.95**

NO-MAR" REUSABLE CLECO BOOTS

Eliminates surface marring both on painted and unpainted surfaces. Easily slips on plier operated style clecos, one size fits all. Yellow polyurethane color. 25 pcs./pkg.
P/N 12-00626 ..... **$10.50**

CLECO SHEET HOLDER PLIERS

These pliers are designed to grip and actuate all standard sizes of sheet holders and tension clamps. New manufacture. P/N 12-10105 .....**$5.40**

CLECO REVERSE PLIERS

Used in limited access areas. requires less travel per activation. Model TP74B.
P/N 12-00370 .....**$25.75**

PNEUMATIC CLECO INSTALLATION TOOL

Features a lever throttle, 360° swivel mount, quiet operation, a straight handle, and a 6ft. polyurethane lead hose. Quick insertion of all button or plunger type fasteners, including side grips. Wt. 12 oz. Length: 5 1/8", Air Inlet: 1/4". P/N 12-01120 .....**$84.95**

SUPERCHAMP IV CRIMPING TOOL

The professional quality crimping tool. This versatile hand tool has crimping dies for insulated an uninsulated terminals and splices in wire sizes No. 22 to No. 10 AWG. It has a terminal locator to position insulated terminals during crimping and an in-nose cutter for tight locations. This tool is a wire stripper and has a built-in heavy duty bolt cutter. Color coded dies in tool nose correspond to color on terminal insulation sleeve to insure die selection. A stud gauge and wire stripping gauge are important on the tool body. Cushioned handles. Made in the U.S.A.
P/N 604252-1 .....**$19.85**

BANTAM ROTA-CRIMP TOOL

The AMP Bantam Rota-Tool crimps uninsulated terminals and splices for No. 8 to 1/0 sizes. The correct die position is selected by rotating dies to correct AWG number. Dies are fixed in tool to avoid loss. Compact, rugged and easy to handle. 15" long. Wt. 5 lbs. Not for certified Aircraft use. P/N 601075 .....**$646.00**

CLECO GRIP POWER DRIVEN SHEET HOLDERS

Power-Hex Nut Style -Standard Grip 0-1/2". Hex Nut Fasteners are recommended for high production applications that require a consistent clamping force. They are pneumatic driven with the US7381HX Power Nut Runner.

Description	Size	Part No.	Price
0-1/2" Grip Power Driven Hex Nut Fastner, Zinc	#40	12-02429	**$3.20**
0-1/2" Grip Power Driven Hex Nut Fastner, Copper	#30	12-02430	**$2.70**
0-1/2" Grip Power Driven Hex Nut Fastner, Black	#21	12-02431	**$2.95**
0-1/2" Grip Power Driven Hex Nut Fastner, Brass	#10	12-02432	**$2.90**

Power-Hex Nut Style -Long Grip 0-1"

Description	Size	Part No.	Price
1" Grip Power Driven Hex Nut Fastner, Zinc	#40	12-02433	**$2.95**
1" Grip Power Driven Hex Nut Fastner, Copper	#30	12-02434	**$3.49**
1" Grip Power Driven Hex Nut Fastner, Black	#21	12-02435	**$2.95**
1" Grip Power Driven Hex Nut Fastner, Brass	#10	12-02436	**$3.49**

Manual Wing Nut Style - Standard Grip 0-1/2". Wing Nut Fasteners are recommended for low production applications where high clamping force is required. The clamping force ranges from zero to 300 lbs.

Description	Size	Part No.	Price
0-1/2" Grip Manual Wing Nut Fastner, Zinc	#40	12-02437	**$2.90**
0-1/2" Grip Manual Wing Nut Fastner, Copper	#30	12-02438	**$3.10**
0-1/2" Grip Manual Wing Nut Fastner, Black	#21	12-02439	**$3.10**
0-1/2" Grip Manual Wing Nut Fastner, Brass	#10	12-02440	**$2.80**

Manual Wing Nut Style - Long Grip 0-1"

Description	Size	Part No.	Price
1" Grip Manual Wing Nut Fastner, Zinc	#40	12-02441	**$3.15**
1" Grip Manual Wing Nut Fastner, Copper	#30	12-02442	**$3.20**
1" Grip Manual Wing Nut Fastner, Black	#21	12-02443	**$3.15**
1" Grip Manual Wing Nut Fastner, Brass	#10	12-02444	**$3.15**

HEAVY-DUTY BI-METAL HOLE SAWS

Milwaukee hole saws provide an economical means of extending the useful range of portable drills, drill presses and lathes. High speed cutting edges welded to steel bodies produce clean, accurate holes All hole saws listed cut to standard 1.25" depth. Order appropriate arbor for use with each size hole saw.

Hole Dia.	Part No.	Use w/Arbor No.	Price
5/8"	49-56-0620	12-01993	**$7.85**
3/4"	12-02001	"	**$7.95**
7/8"	12-01992	"	**$7.95**
1"	49-56-1000	"	**$8.50**
1-1/8"	12-01991	"	**$8.50**
1-3/16"	49-56-1180	"	**$7.95**
1-1/4"	49-56-1250	49-56-7055	**$7.70**
1-3/8"	49-56-1370	"	**$7.95**
1-1/2"	12-01990	"	**$9.75**
1-5/8"	49-56-1620	"	**$8.95**
1-3/4"	49-56-1750	"	**$9.95**
1-7/8"	49-56-1870	"	**$9.55**
2"	49-56-2000	"	**$10.85**
2-1/4"	49-56-2250	"	**$14.85**
3-1/8"	49-56-3120	"	**$15.25**

HEAVY-DUTY SHOE SAW ARBORS

ARBOR - Use for hole saw sizes 5/8" through 1-3/16". 3 milled flats prevent slipping in chuck. Pilot hole size 1/4". Has 1/4" shank. P/N 12-01993 ..... **$12.45**

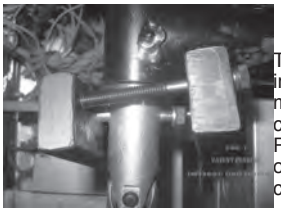
QUICK CHANGE ARBOR - Use for hole saw sizes 1-1/4" and larger. The Quick Change 7/16" shank prevents slipping in chuck. Pin drive construction permits fast interchanging of hole saws without removing arbor from chuck. Pilot drill size 1/4".
P/N 49-56-7055..... **$22.75**

TO

TAPER PIN REAMERS

Brown & Sharpe Taper pin reamers for installation of AN385 and AN386 aircraft taper pins. Straight shank, straight flute. High speed steel. No. 596 Straight Flute.

B&S Taper No.	Diameter		Flute Length	Part No.	Price
	Small End	Large End			
1	.1974	.3176	2-7/8"	12-01622	**$43.00**
2	.2474	.3781	3-1/8"	12-02704	**$47.75**
3	.3099	.4510	3-3/8"	12-09900	**$49.75**
4	.3474	.5017	3-11/16"	12-10000	**$49.85**
5	.4474	.6145	4"	12-10100	**$56.75**
6	.4974	.6808	4-3/8"	12-10200	**$59.65**



TAPER PIN EXTRACTOR

The Tapered Pin Extractor tool easily, inexpensively, and without damage removes the tapered pin from the control column universal joint in Piper models PA-28, PA-32, PA-34, and PA-44. Made of Stainless Steel with two carbon steel capscrews. P/N 12-02933 ..... **$86.50**

5 INCH SERRATED EDGE SCISSORS

5" stainless steel scissors are ideal for consumer and industrial applications. High quality stainless steel blades meet perfectly for precision cutting. The material being cut is held in place by one blade which is slightly serrated providing maximum control. Scissors so sharp, they can cut through electrical wiring, plastic, aircraft composites, Kevlar® and more. P/N 12-02975 ..... **$19.00**

TWO STEP STUD EXTRACTORS

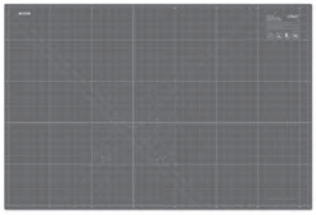
Our Two Step Stud Extractors are the simplest way to remove broken studs and require only 1/8" of the broken stud for removal. Simply tap stud remover on stud or frozen bolt with a hammer or mallet, and then remove stud by attaching a wrench to the hex portion of the remover. Just hammer on and screw out. Built to last from case hardened steel. Stud Extractors available in sizes listed below.

Part No.	Size	Price Ea.	Part No.	Size	Price Ea.
76001-76	3/16"	**$41.50**	76008-76	5/8"	**$67.25**
76002-76	1/4"	**$39.95**	76009-76	3/4"	**$67.25**
76003-76	5/16"	**$42.85**	76010-76	7/8"	**$74.50**
76004-76	3/8"	**$44.85**	76011-76	1"	**$78.75**
76005-76	7/16	**$43.75**	76012-76	Set 3/16-1/2"	**$212.95**
76006-76	1/2"	**$49.75**	76013-76	Set 9/16-1"	**$351.95**
76007-76	9/16"	**$64.25**			

SPOTFACE KIT

The Spotface Kit tool makes a flat spot for screws. This tool is specifically modified to provide rail cap clearance for use on seat rails. Cutter comes with 1/8", 5/32", 3/16" pilots.
P/N 05-04429 ..... **$74.75**

SELF HEALING ROTARY CUTTING MATS



Self-healing, double-sided large mat protects and covers work. Green, self-healing professional quality rotary mat. Double-sided with yellow grid lines on one side for precision cutting, solid on opposite for general cutting. 1.5mm thick for a variety of applications. Store flat.

24" x 36" .....P/N 12-02403 ..... **$39.75**
23" x 70" - with clip set (RM-clips/2) .....P/N 12-02404 ..... **$79.25**
35" x 70" - with clip set (RM-clips/3) .....P/N 12-02405 ..... **$133.95**

ROTARY CUTTER

Ergonomic 45mm rotary cutter features a unique comfortable handle design for both left- and right-handed use. Features include the dual-action safety lock that allows the blade to be locked open for comfort and closed for safety. Accommodates the Olfa straight, wave & pinking blades. The cutter is a rolling razor blade used to cut fabrics into shapes, strips and pieces. Guaranteed forever. Suggested uses: cut fiberglass, composite materials, delicate cloth, fabric, paper, leather, etc.
Rotary Cutter .....P/N 01-00302 ..... **$23.50**
RB45-1 Replacement Blade only .....P/N 01-00300 ..... **$6.95**
RB45-1 Replacement Blade pk of 5.....P/N 01-00301 ..... **$27.75**
Rotary Pinking Blade.....P/N 12-01709 ..... **$9.75**
Good For: general quilting, sewing and craft projects. Great for cutting out patterns, reduces fraying. Can be used in industrial applications.

STAINLESS STEEL SCISSORS

The OLFA stainless steel scissors (7" overall length) are rapidly growing in popularity in both consumer and industrial applications. Extremely high quality stainless steel blades meet perfectly for precision cutting. The material being cut is held in place by one blade which is serrated, providing positive control. Ideal for use on such varied materials as paper, fabrics, plastic, rubber, & aircraft composites. .....P/N 01-00303 ..... **$19.00**

CUTTING TOOLS

L-2 CUTTER - 18MM heavy-duty cutter features a ratchet wheel blade lock, heavy gauge stainless steel blade channel, highest grade carbon tool steel blade and anti-slip rubber grip insert. Guaranteed Forever. P/N 12-00258..... **$8.50**

NOL-1 CUTTER - Heavy-duty 18mm "HandSaver" Acetone resistant cushion grip with ratchet wheel blade lock and high-carbon tool steel snap-off OLFA blade. Guaranteed Forever
.. Cutter .....P/N 12-00257 ..... **$8.50**
Replacement Blades (5 pack).....P/N 12-00261 ..... **$4.45**

SNAP IT 'N' TRAP IT CUTTER - 18mm heavy duty cutter features an innovative design for performance and functionality. Developed for professionals looking for a convenient way to snap-off and securely store their dull blade segment for increased on-the-job productivity. Features a convenient detachable built-in blade snapper/disposal container in a heavy-duty ABS plastic handle. Cutter.....P/N 12-02696 ..... **$10.95**
10 Pack Blade .....P/N 12-02697 ..... **$7.75**

ULTRAMAX CUTTER - Heavy-duty utility knife / cutter is an auto lock cutter includes a stainless steel blade channel with a unique cushion handle provides a comfortable and positive grip.
P/N 12-02367..... **$8.65**

H-1 CUTTER - 25mm Extra heavy-duty cutter features largest blade available, ratchet lock to prevent slipping, rubber grip insert for positive control, and a rope loop to secure cutter to belt or work table. Cutter.....P/N 12-00259 ..... **$13.75**
Replacement blades (5 pack) .....P/N 12-00260 ..... **$6.60**

AUTO-LOCK STAINLESS PROFESSIONAL KNIFE - Accomodates both left- and right-handed users. Features locking slide blade, stainless steel handle and built-in pocket clip/blade snapper. A perfect steel cutter where rust is a concern. Lifetime Guarantee.

Cutter .....P/N 12-00339..... **$7.50**
Replacement blades (10 pack)...P/N 12-00340..... **$4.65**

EXTRA HEAVY DUTY RACHET LOCK CUTTER - 25mm Extra heavy-duty cutter features: *anti-slip cushion handle for exceptional comfort and safety *chemical resistant handle for easy cleaning * Heavy guage stainless steel blade channel holds blade tight * ratchet wheel blade lock *rope loop * high-quality carbon tool steel snap-off blades for sharpness and durability.

P/N 12-02368..... **$14.75**

EXTRA HEAVY DUTY SNAP-OFF BLADE, 20 PACK - Snap-off black blades, are made from high quality carbon tool steel. Blade container locks for safety. Fits most Extra Heavy-Duty handles. 7 cutting edges per blade. 20 blades per pack. P/N 12-02369..... **$23.75**

EXTRA HEAVY DUTY RATCHET LOCK CUTTER - Anti-slip grip cutting tool. Features an automatic blade lock, cushion grip for maximum comfort and control, and a heavy gauge stainless steel blade channel that holds blade tight. Chemical resistant handle for easy cleaning. Includes a pocket clip for convenience, and the premium, ULTRAMAX® ultra sharp durable snap-off blade.
P/N 12-02370..... **$5.75**

GENERAL SPECIALTY TOOLS

CIRCULAR HOLE CUTTER

General's circle cutters produce precision circles in sheet metal, brass, copper, soft steel, aluminum, plastic, wood and composition materials. Bodies are constructed of heat treated tool steel for durability. All Circle Cutters have replaceable pilot points. The replaceable cutter blades are made of high-speed steel for precise and clean cuts. Circle Cutters are adjustable for cutting variable diameter holes. A hex wrench is included for diameter and depth adjustments.

#4 Cutter..... P/N 12-10600 ... **$13.75**
Extra 3/16" Blade..... P/N 12-10700 ..... **$3.75**
Pilot Drills for #4 Cutter ..... P/N 12-10800 ..... **$3.45**

JEWELERS' SCREWDRIVER KITS

The Screwdriver and Hobby Kit includes five interchangeable blades and a heavy duty knurled handle. Loaded with the most popular jeweler's-sized Slotted and Phillips tips and a scratch awl, this modestly priced set is great for model making and other small-scale applications.

P/N 12-19600 .....**$5.95**

SWIVEL HEAD PIN VISE

The Swivel Head Pin Vise provides fingertip control of small tools when working with jewelry, electronics or models. The double-ended collet offers two distinct sizes for holding a variety of drill bits, reamers and taps. For added control, this Pin Vise has been design with a knurled aluminum body for a sure grip while the swivel head turns smoothly against your palm. P/N 92.....**$9.95**

STEEL PROTRACTORS

General's heavy duty steel protractors are trusted by machinists and draftsmen worldwide to deliver crucial measurements with unwavering accuracy. The 6" adjustable arm is ideal for setting bevels, taking measurements and transferring angles. Ultra-fine etched graduations read from 0 to 180 degrees in forward and reverse directions, and will not wear or rub off. Made of ground stainless steel for precision and durability. P/N 17.....**$13.75**

POCKET CALIPERS

Although small in stature, these 4" Slide Calipers deliver the same accuracy and precision as some of our larger models. The rugged, stainless steel construction, coupled with a compact design makes these Slide Calipers a great addition to any workbench or toolbox. This item provides inside and outside readings in both 1/16" and 1/32" graduations. In addition, there is a decimal equivalents chart on the caliper's back side for help in making measurement calculations.16ths & 32nds

P/N 729 ..... **$11.75**
16ths & MM.....P/N 12-01633 . **$12.25**

WIRE STRIPPERS & CUTTERS

Just dial the size and avoid damaging wire, especially when used repetitively. Spring opening jaws can be locked in closed position to protect cutting edges. Made of tool steel, equipped with vinyl cushion grip handles. Individually carded. P/N 69 .....**$9.75**

FEELER GAGES

Blades are made of tempered steel of exacting tolerances. Each blade has its size etched in both decimals of an inch and millimeters. Nickel plated case has knurled locking nut. No. 230 has 26 3x1/2 in. leaves of the following sizes: .0015, .002, .0025, .003. .004, .005, .006, .007, .008, .009, .010, .011, .012, .013, .014, .015, .016, .017, .018, .019, .020, .021, .022, .023, .024 and .025 in. P/N 230 .....**$7.75**

REVOLVING PUNCH

General's revolving punch plier is a convenient spring tension, self-opening tool for punching round holes in leather, plastic, rubber, canvas, cardboard and similar materials. The snap ring pliers are used for the installation or removal of exterior and interior snap rings. Revolving turret with six hardened steel punches: 5/64", 3/32", 7/64", 1/8", 5/32", and 3/16" P/N 72 .....**$9.90**

6 INCH ELECTRONIC DIGITAL CALIPER

The Thread Repair Files help breathe life back into bolts, screws or fittings that have been damaged due to cross-threading or corrosion. Made of high carbon steel, the Repair Files offer eight different thread pitches. In addition, the Thread Repair Files can also be used as a screw pitch gage. P/N 12-01880 .....**$77.50**

STEEL RULES

General's industrial quality Steel Rules are precision made with etched fine black graduations for easy reading and long life. The two finishes available are polished stainless steel or satin chrome. Front graduated in 10ths, and 100ths, back in 32nds and 64ths. Quality 12 inch (30cm) flexible stainless steel rule. Precision made. Fine black etched graduations. 6" Long, 15/32" Wide .....P/N 616 .....**$5.25**
12" Long, 15/32" Wide .....P/N 1216 .....**$8.95**

PERMANENT ALNICO MAGNETS

These industrial grade Alnico (Aluminum/Nickel/Cobalt) Magnets are built for heavy duty use and will not naturally demagnetize over time like other magnets. They are handy in a plethora of applications and work settings. The horseshoe-shaped Power Alnico Magnets are available in 2 distinct sizes with extraordinarily strong pull capacities ranging up to 13 lbs.No. 370-1 Pocket Magnet, 3/4 oz., approx. 1 lb. pull

P/N 370-1 .....**$5.95**

No. 370-2 Power Magnet, 2 oz., approx. 13 lb. pull

P/N 370-2 .....**$12.95**

WIRE & SHEET METAL GAUGES

#20 WIRE GAUGE - The Wire Gage helps you to accurately determine the thickness of American Standard wire from 0 to 36. The Gage works with all non-ferrous wires, metals and rods such as copper, brass and aluminum. This heavy duty tool is made from hardened and tempered steel, and is stamped with wire sizes on the front and their decimal equivalents on the back

#20 American Standard Wire Gauge - For gauging non-ferrous wire & metal like copper, brass, aluminum, etc.

P/N 12-02384.....**$22.65**

#21 U.S. STANDARD SHEET METAL GAUGE - The Sheet Metal Gage is for gauging uncoated sheet, plate iron and steel, based on weights in ounces per square foot. gauge numbers are in U.S. Standard. Numbers 0-36 (.325"-.007"). Made of hardened steel, with a satin finish for easy reading. Decimal equivalents on the back side. Measures 3-1/4" in diameter. P/N 21.....**$22.25**

SCREWDRIVER HANDLE SCRATCH AWL

If you're looking for a quality, yet economic awl, then check out our Screwdriver Handle Scratch Awl. Featuring a 3-5/8" steel blade and a durable plastic handle, this Scratch Awl makes a great addition to any workbench of toolbox.

P/N 12-01873 .....**$5.95**

UTILITY AUTOMATIC CENTER PUNCH

The Utility Automatic Center Punch is our most economical model, offering a lightweight aluminum body and a hardened steel point. The punch is great for use on various metals and woods, and is impact adjustable. P/N 12-01874 .....**$11.85**

TRAMMEL POINTS

General's adjustable trammels accurately measure and mark distances that are too great for conventional compasses and dividers. Trammels will accurately transfer measurements, scribe arcs and lay out circles. Points can be replaced with pencils, ballpoint pens, crayons or soap- stone sticks for marking various materials. P/N 520.....**$34.75**

DRILL GAUGES

General's Drill Gages help you to quickly and accurately identify the sizes of stray drill bits in your workshop. These gages can be extremely useful with older, unmarked bits or ones that are too small for markings. Each heat treated, heavy steel gage is machined to close tolerance for spot-on accuracy. The bit sizes and decimal equivalents are permanently etched to the face to provide years of dependable use.

Part No.	No.	Description	Price
12-00518	13	Number size drills 61 to 80	$15.75
12-00519	14	Fractional size drills 1/16" – 1/2" x 64ths	$12.75
12-00378	15	Number size drills 1 to 60	$13.25

TO

GENERAL SPECIALTY TOOLS

COTTER PIN PULLER

General's Cotter Pin Puller helps you to easily and safely remove steel cotter pins from confined areas. The compound bend design facilitates use of the tool with either a pull or a twist motion. In addition, the heavy duty screwdriver handle provides a familiar, comfortable grip.

P/N 12-01892 ..... **$7.25**

PRECISION MAGNETIZER/DEMAGNETIZER

Our Precision Magnetizer and Demagnetizer transforms standard screwdrivers, tweezers and tool bits into powerful magnetic pickups. This dual-sized device can magnetize screwdrivers for installing small screws in jewelry, or demagnetize a set of tweezers for working with sensitive electronics. In addition, the innovative step design allows you to control the level of magnetism that is imposed upon your tools. P/N 12-01890 ..... **$3.45**

ARCH PUNCH SET

Our extensive selection of Arch Punches are machined to close tolerances for creating precise holes in gasket material, rubber and soft metals. These industrial-quality tools are hand forged to ensure the longevity and accuracy of the cutting edge. This seven-piece set includes some of our most popular punch sizes and is conveniently packaged in a vinyl storage pouch. P/N 12-01891 ..... **$73.75**

INSPECTION MIRRORS

General's Inspection Mirrors are known for their seemingly limitless uses both around the home and in the shop. For instance, an Inspection Mirror can be used to check behind an armoire for lost keys or beneath an engine block for a missing bolt. The Inspection Mirrors come in a variety sizes and lengths, and feature dual ball-and-socket joints for infinite angle adjustments of the mirror.

1-1/4 Diam.....P/N 12-01887 ..... **$6.75**
2-1/4 Diam.....P/N 12-01888 ..... **$9.75**
3-1/2 Oblong.....P/N 12-01889 ..... **$10.75**

3-PIECE TELESCOPING SPEED-CHUCK INSPECTION SET

Our Speed-Chuck Inspection Sets feature a 26" telescoping wand and an assortment of interchangeable tools including mirrors, magnifiers, LED lights, clips and magnets. Simply pull back on the Speed-Chuck's spring-loaded collar for effortless swapping of attachments. What's more, every Speed-Chuck Inspection Kit comes in a molded zipper case for simple storage.

P/N 12-01885 ..... **$29.25**

TELESCOPING ALLIGATOR CLIP

The Telescoping Alligator Clip is often used as a third-hand tool in electrical repair for holding and positioning wires. It is also commonly employed around the home for lighting pilot lights and barbeques. The extendable shaft reaches up to 24-1/2" for working in cramped areas, or to provide a safety buffer for lighting a gas grill or furnace. The tool condenses to 5-1/2" and is equipped with pocket clip for those on the go.

P/N 12-01884 ..... **$5.75**

DECAL ERASER WHEEL

For quick and easy removal of decals, pinstripes, bumper stickers, reflective tapes etc from glass and OEM painted surfaces without any damage. Also very effective in removing adhesive tapes and glue from the back of moldings. Best result at 1500 - 3000 rpm. Let the wheel do the work, apply light pressure only. Start at the top of the decal and move side to side. For faster results, use entire width of the wheel, do not tilt on angle. Remove any residue with appropriate mild solvent. Natural Rubber. Diameter: 4 Inch. Width: 1 Inch. Max RPM: 4000 Universal arbor, no special tool needed. Use with electric or pneumatic tools

P/N 12-02401 ..... **$14.85**

CESSNA COWLING FASTENER DRIVER

Slotted type cowling fasteners are not easy to fit with generic common screwdrivers. To overcome this, driver has a broad hollow cut tip that accurately engages the drive slot. Additionally, a no mar, spring loaded, plastic sleeve simultaneously guides the tip by fitting around the outside diameter of the fastener head. .....P/N 12-17615 ..... **$22.85**

5PC EXTRA LONG DRIVE PIN PUNCH SET

Our Drive Pin Punches have been machined to exacting tolerances for accurate driving without damaging the pin or hole. The punch ends are ground square to sit flush on the top of the pin. Made of hardened tool steel with a knurled body, General's Drive Pin Punches can either be held by hand or with our Punch and Chisel holder. This five-piece set features extra-long 3-1/2" shafts for reaching deeply recessed pins. P/N 12-01875 ..... **$29.85**

5-PC PRECISION ULTRAREACH STAR SCREWDRIVER SET SLOTTED & PHILLIPS

Our UltraTech Precision Screwdriver Sets were assembled in conjunction with industry tradesmen to offer the most comprehensive and reliable solutions. This five-piece set includes Slotted and Phillips screwdrivers in two distinct handle sizes. The color-coded ring on each screwdriver helps you to easily identify the blade type when working arduously in the field.

P/N 12-01881 ..... **$17.95**

5-PC PRECISION ULTRAREACH STAR SCREWDRIVER SET

Our UltraTech Precision Screwdriver Sets were assembled in conjunction with industry tradesmen to offer the most comprehensive and reliable solutions. This five-piece Torx set features a great assortment of blades in two distinct handle sizes. The color-coded ring on each screwdriver helps you to easily identify the blade type when working arduously in the field.

P/N 12-01882 ..... **$20.75**

PICK AND HOOK 4 PIECE SET

Get into tight places to retrieve small parts, "O" rings, and gaskets. Great for household and hobby use. Includes straight pick, 90° pick, 120° hook, and round angle hook. High-visibility handles. Screwdriver-style handles give better control. Specifications: Includes straight pick, 90° pick, 120° hook, and round angle hook, High-visibility handles, Screwdriver-style handles give better control, 5-1/4" average length, Handle: 5/8" square, 2-1/2" L, Approximate weight: 0.20 lbs.

P/N 12-02642 ..... **$3.60**

BULLSEYE PICKS

The bullseye pick was originally used in the dent repair/collision trade, but also works great for restoration work. These are ideal to reach in around the edge of a panel, around a gusset, or into a blind area to repair the dent from the backside. By sighting the low area through the open sight, the tool will deliver accurate light blows to raise the low area. This tool includes both a regular pick and a blunt tip. The blunt tip works great for aluminum and prevents unattractive pick marks in the metal.

15" .....P/N 12-02292 ..... **$89.50**
25" .....P/N 12-02293 ..... **$99.75**

THREAD REPAIR FILE

The Thread Repair Files help breathe life back into bolts, screws or fittings that have been damaged due to cross-threading or corrosion. Made of high carbon steel, the Repair Files offer eight different thread pitches. In addition, the Thread Repair Files can also be used as a screw pitch gage. P/N 12-01879 ..... **$10.95**

PRECISION PENCIL COMPASS

The Precision Pencil Compass is a robust scribing and marking tool with a jaw capacity of up to 9". The fulcrum spring handle makes this tool great for making contours, circles and edge marks. A carpenter's favorite. P/N 12-01872 ..... **$5.95**

CESSNA SEAT RAIL GAGE

Allows for quick limit checking of seat rail hole and wear dimensions Gage elements are made from heat treated blue tempered steel Each element is marked to correspond to the limits set forth in the relevant ad The three gage elements are linked together on a universal spiral key ring.

P/N 12-01056 ..... **$24.65**

TO

AIRCRAFT SPRUCE WEST
CORONA, CA • (877) 4-SPRUCE
AIRCRAFT SPRUCE EAST
PEACHTREE CITY, GA • (877) 477-7823
Prices Subject to Change Without Notice

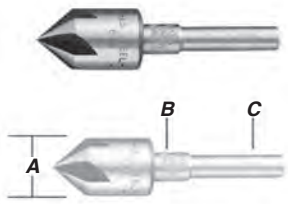
PIPER CONTROL YOKE TAPER PIN TOOL

Sweating the Piper Control Wheel AD? Relax, this patent pending M-4 tool makes the hardest part of compliance with this AD easy. This specialty tool was designed to counter the frustration of removing the Piper control wheel taper pin.

With the aid of the M-4 tool even the most stubborn taper pin can be removed in minutes, not hours, without vibration or stress being induced on your aircraft or the surrounding delicate instruments and avionics. The tool is self-indexing, locking the taper pin in position and securing itself in place for easy pin removal.

Quality made in the USA and precision milled from bar stock for maximum strength, the body is Cad Plated for corrosion resistance and the press screw is Grade 8 to assure long life. The tool is shipped with detailed instructions. P/N 12-02620 ..... **$249.00**

5 FLUTE ROSE PATTERN COUNTERSINKS



Designed with the perfectionist in mind, our Rose Pattern Countersinks are a must have for any close-tolerance woodworking or machinist project. The 5-flute design reduces chatter and easily pierces steel, brass, aluminum, plastic and wood. The stepped shank can be used with either a 1/4" or 3/8" chuck.

A	B	C	PN	Price
1/2"	3/8"	1/4"	12-01863	**$3.75**
5/8"	3/8"	1/4"	12-01864	**$4.95**
3/4"	3/8"	1/4"	12-01865	**$4.25**

6 INCH CONTOUR GAGE

General's 6" Contour Gage is designed for precise surface duplication in woodworking, fine carpentry and other professional genres. The 35 ultra-thin leaves per inch assure that you are getting an exact replication of your copied shape. The Contour Gage is capable of duplicating surfaces up to 3-1/2" deep. Instructions: 1. Press Contour Gage against surface to be copied. 2. Trace the formed contour gage onto your cutting material. 3. Cut the material. 4. Fit into place. P/N 12-01870 ..... **$8.95**

UTILITY TUNGSTEN CARBIDE TIP SCRIBER/ETCHING PEN

The power of our Utility Scriber and Etching Pen is eclipsed only by its affordability. This durable scriber is a terrific pickup for making quick and accurate marks in the hardest work pieces. In addition, the Utility Scriber includes a permanent magnet affixed to the cap for retrieving and cleaning loose metal shavings. P/N 12-01876 ..... **$3.60**

PLAIN TAP WRENCHES

The standard Tap Wrenches are perfect for creating straight and accurate thread holes in your work piece. The fixed T-Handle provides a large gripping surface for generating maximum leverage. This versatile tool can also be used with reamers, drill bits, screw extractors and other hand-turned tools.

Tap Capacity	Length	Part No.	Price
NO. 0 TO 1/4" (1.6 TO 6.3mm)	2-1/4" (57mm)	12-01877	**$12.25**
NO. 12 TO 1/2" (6 TO 12mm)	3-3/4" (95mm)	12-01878	**$14.75**

RATCHET OFFSET SCREWDRIVER

An Offset Ratchet Screwdriver is a useful tool to have on hand as it provides greater leverage compared to a traditional screwdriver. The swift ratcheting motion allows you to remove and install screws with ease, and the offset head provides odd-angle access in obstructed areas. This item features two Slotted screwdriver blades and a reversible ratchet.

P/N 12-01883 ..... **$8.90**

PRECISION OILER

Our Precision Oiler is a highly accurate lubrication tool intended for anyone working with small mechanical parts. The needlepoint tip allows for the precise placement of oil in confined areas. The smooth thumb actuator lets you control the release of lubricant from the reservoir in small droplets. In addition, the Precision Oiler includes a screw-on cover and pocket clip for use on the go. P/N 12-01894 ..... **$9.75**

LONG NEEDLE NOSE PLIERS

The Needle Nose Pliers are long and slender in construction, allowing access into both remote and crowded areas. A great retrieval and positing tool, the Needle Nose Pliers are a staple of hands-on professionals world wide.

P/N 12-01886 ..... **$4.15**

6 INCH FLEX ECONOMY RULER 3/4 WIDE

Our Economy Steel Rules are ideal for a variety of home and office uses, offering the same accuracy you've come to expect from any General tool. Each rule is 6" in length and is offered in five distinct sets of Metric and English graduations. In addition, several of our Economy Steel rules are equipped with pocket clips for use in the field.

P/N 12-01133 ..... **$3.35**

REPLACEMENT BLADE OIL CAN CUTTER

General Tool's Gold Standard Cutting Wheels are made from tempered, bearing tool steel for smooth, exact pipe cuts. The slim-line surface geometry ensures fewer inner surfaces burrs and less chance for outer surface distortion. The RW122 is designed for larger capacity cutters on iron pipe and other tough surfaces

P/N 12-01159 ..... **$6.50**

CUTTER PLUG WOODWORKING

General's Plug Cutters produce accurate plugs for covering screw holes in decking, flooring and fine furniture. Plug cutters are great for creating a decorative effect in any woodworking project and can also be used to repair nicks, scratches and dents. Each cutter is made from hardened alloy steel and will fit in both hand-held power drills and drill presses.

3/8.....P/N12-01866 ..... **$4.60**
1/2.....P/N 12-01867 ..... **$4.70**
5/8.....P/N 12-01868 ..... **$4.85**

JOGGLE-360 FABRICATION TOOL

Noah Industries has introduced the Joggle-360 into its lineup of innovative metal aircraft fabrication tools. The Joggle-360 will joggle round openings for inspection plates with joggle widths up to 0.562 inch and straight joggle offsets up to 0.625 inch. The tool features hardened steel rollers that form the joggle while gliding around the opening or along the edge by ball bearings that eccentrically adjust for joggle width.

Instruction:

1. Adjust the guide rollers to the desired set back or width of joggle by rotating the Eccentric Guide Roller Adjustment Screws with an Allen wrench.
2. Place the Joggle-360 onto the work that you are going to joggle and tighten the Tension Knob.
3. For straight joggles, run the Joggle-360 back and forth along the work tightening the Tension Knob as required until you achieve the desired joggle depth. Joggling a hole is the same process. Be sure to keep the Guide Rollers in contact with the edge of your work.
4. When the joggle is finished, loosen the Tension Knob and remove the tool from from your work.

Note: You may need to tighten the Eccentric Lock Screws from time to time in order to keep the Eccentric Guide Rollers from rotating during use. P/N 12-02252 ..... **$99.00**

TO

DRILLS - TAPS - DIES

AIRCRAFT GRADE SUPER COBALT DRILLS

These super cobalt hi-speed jobber length aircraft drill bits feature heavy duty construction to Type J aircraft specifications. Use to drill hard, tough metals, stainless steels, iron based and titanium alloys, and certain plastics. Hardness of cobalt permits speeds 30% over regular H.S.S. drills. Cobalt drills demand rigidly held, positive feed drilling equipment.

Part No.	Drill Size	Price Ea.
12-04212	42	$1.35
12-04213	41	$1.37
12-04214	40	$1.30
12-04215	36	$1.55
12-04216	33	$2.45
12-04217	30	$1.65
12-04218	28	$1.75
12-04219	27	$1.90
12-04220	23	$2.05
12-14221	21	$1.95

Part No.	Drill Size	Price Ea.
12-04221	19	$2.10
12-04222	12	$2.65
12-04223	10	$2.65
12-04224	"D"	$4.15
12-04225	1/8"	$1.75
12-04226	5/32"	$1.95
12-04227	3/16"	$1.65
12-04228	1/4"	$3.50
12-04229	5/16"	$5.25
12-04235	#35	$1.65

12" LONG DRILL BITS

These 12" long drill bits are for use with standard electric drills for the hard to reach jobs.

Drill	Size	Part No.	Price
3/32"	(.094")	12-05200	$5.50
1/8"	(.125")	12-05300	$5.75
3/16"	(.188")	12-05400	$6.95
#10	(.194")	12-05500	$7.75
1/4"	(.250")	12-05600	$8.50

MALE THREADED DRILL BITS

Male threaded drill bits of high speed steel screw into female spindle of angle drill or snake drill.

Drill Size	10-32 Thread Part No.	10-32 Thread Price	1/4-28 Thread Part No.	1/4-28 Thread Price
#10	12-05701	$10.95	12-05702	$2.80
#20	12-05801	$11.85	12-05802	$2.95
#21	12-05901	$12.25	12-05902	$2.95
#30	12-06001	$11.75	12-06002	$2.50
#40	12-06101	$11.95	12-06102	$2.25

ANGLE DRILL ATTACHMENT

Quickly connects to any drill chuck. Makes a convenient, inexpensive close-quarter tool. 3/16 drill capacity.
Specify threaded spindle size: 5/16-24 (P/N 12-18503), 1/4-28 (P/N 12-18501) or 10-32 (P/N 12-18502) **$72.85**

Angle Drill w/ Key Chuck (1/4-28 Only).....P/N 12-18511 ..... **$104.95**

ANGLE DRILL KIT - Includes tool case, 24" flexible attachment, 4 threaded drills, collet adapter, 90° angle drill, straight drill attachment, 4 collet drills. P/N 12-18505 ..... **$313.95**

SNAKE DRILL ATTACHMENT

Heavy-duty 90° flexible drilling attachment. Overall length 26". 3 Female threaded spindle sizes.
1/4-28 .....P/N 12-06500 ..... **$108.95**
10-32 .....P/N 12-06600 ..... **$159.95**
W/Key Chuck (5/32"cap.) .....P/N 12-06800 ..... **$136.95**

CONE JAW CHUCK

Heavy duty yet mini size fits any angle drill or attachment with 1/4" x 28 threads. It's just what you need for close quarter drilling. Features: •Capacity from 1/16" to 1/4" 3/4" length, 0.13 lbs •Wrench included.
P/N 12-00245 ..... **$18.75**

ANGLE DRILL COLLET & CHUCK KIT

This 10-piece kit gives you 3 different methods of drilling in tight spots. Each shank is 1/4" x 28 which will thread into most drill spindles that angle attachments and angle drills are supplied with. 0.25 lb. KIT INCLUDES: • (4) #200 collets & adapters - drill sizes 11, 21, 30, & 40 • (4) threaded drill bits (1-1/4" length) - drill sizes: 10,21,30,40 • (1) Cone jaw chuck
Model TP258 .....P/N 12-00368 ..... **$32.85**

HAND THREAD TAPS

There are three basic types of straight thread taps:
PLUG TAPS – used for ordinary threading and have a 3 to 5-thread chamfer, or relief, at the point.
TAPER TAPS – have 8 to 10 threads chamfered for easy starting and are used for tough threading jobs.
BOTTOMING TAPS – with their short chamfer (1 to 1-1/2 threads),are used where the thread must go to the bottom of the hole.
Specify Plug, Taper or Bottoming Tap.

PLUG TAPS

Die Size	Left-Hand		Right-Hand	
6-32	12-07601	$4.40	12-07701	$2.60
8-32	12-07801	$5.25	12-07901	$2.90
10-32	12-08001	$5.25	12-08101	$2.85
1/4-28	12-08201	$6.50	12-08301	$2.85
5/16-24	12-08401	$6.50	12-08501	$3.60
3/8-24	12-08601	$6.50	12-08701	$3.90

TAPER TAPS

Die Size	Left-Hand		Right-Hand	
6-32	12-07602	Call for price and availability special order	12-07702	$2.60
8-32	12-07802		12-07902	$2.70
10-32	--		12-08102	$2.85
1/4-28	12-08202		12-08302	$2.85
5/16-24	12-08402		12-08502	$3.60
3/8-24	--		12-08702	$3.95

BOTTOMING TAPS (HIGH-SPEED STEEL)

Die Size	Left-Hand		Right-Hand	
6-32	--	Call for price and availability special order	12-07703	$2.60
8-32	--		12-07903	$2.70
10-32	12-08003		12-08103	$2.85
1/4-28	--		12-08303	$2.85
5/16-24	--		12-08503	$3.45
3/8-24	--		12-08703	$3.90

DRILLING & TAPPING SETS

13-Piece drilling and tapping set made from special high speed steel. Contains 6 screw machine length drill bits (Nos. 43, 35, 29, 25, 21 and 7), 16 NC taps (4-40, 6-32, 8-32, 10-24, 10-32 and 1/4-20) and one tap wrench. Choice of 135° split point or spiral point drill bits. Set with Split-Point Drill Bits. P/N 41095 ..... **$48.50**

ADJUSTABLE ROUND SPLIT DIES

Die Size	Left-Hand		Right-Hand	
6-32	12-07001	$10.75	12-07002	$7.95
8-32	12-07101	$10.75	12-07102	$7.95
10-32	12-07201	$10.75	12-07202	$7.95
1/4-28	12-07301	$12.50	12-07302	$7.95
5/16-24	12-07401	$12.50	12-07402	$7.95
3/8-24	12-07501	$13.75	12-07502	$8.75

ROUND "KNOCK-OUT" PUNCHES & DIES

Save hours of tedious drilling, sawing, filing and hand-fitting. Produce clean, true holes for sockets, controls, instruments. Cut clean, burr-free holes with these easy-to-use tools. Can be operated by ordinary wrench. One punch required for each hole size.

Punch Size	Model 730 P/N	Price	Model 730 P/N	Punch Size	Price
1/2"	12-20905	$46.75	12-20945	1-3/8"	$67.25
5/8"	12-20910	$41.50	12-20950	1-1/2"	$77.50
3/4"	12-20915	$42.75	12-20955	1-5/8"	$84.50
7/8"	12-20920	$38.85	12-20925	1"	$49.75
2"	12-20970	$134.95	12-20975	2-1/4" w/ 304AVBB	$129.75
1-1/8"	12-20930	$56.75	3-1/8"	12-20980	$336.95
1-7/32"	12-20935	$65.50			
1-1/4"	12-20940	$69.85			

Additional Sizes Available.Drive punches with a ball bearing drive for faster, easier hand operation are available for the 2-1/4" & 3-1/8" knock-out punches.
Drive for 2-1/4" Punch .....P/N #304AVBB.....**$29.90**
Drive for 3-1/8" Punch .....P/N #1433AVBB.....**$80.75**

TAP EXTRACTOR SET NO.1 6PC

Remove broken taps and save the threads! Walton Tap Extractors let you remove broken taps without drilling, lasers, damaged threads, scrapped parts or repair inserts. The hardened steel fingers of Walton Tap Extractors fit in the flutes of a broken tap to back it out simply and safely. This effective method has been used since 1908. They are available in every tap size, both inch and metric, as handy sets or individual pieces. The Tap Extractors will fit both NC and NF taps. Sizes: 3/16", 1/4",5/16",3/8",7/16",1/2"
P/N 12-02352.....**$74.50**

TO

AIRCRAFT SPRUCE WEST
CORONA, CA • (877) 4-SPRUCE
AIRCRAFT SPRUCE EAST
PEACHTREE CITY, GA • (877) 477-7823

Prices Subject to Change Without Notice

DRILL BIT SETS - CARBIDE DRILLS & BURS

DRILL BIT SET – SIZES 1-60

This jobber length drill bit set includes high speed steel (HSS) drill bits in sizes 1-60. The set comes complete with a steel storage box. Ideal as a pre-drill for tapping of holes and for many other aircraft building applications.

P/N 12-00227 ..... **$58.85**

29-PC BRITE FLUTE DRILL SET

This 118° point, high speed steel (HSS) drill set performs well in a wide variety of drilling applications. It is recommended for non-ferrous metals, wood, and plastics. Set includes 29 pcs (1/16 to1/2" in 64ths) in metal index.

P/N 12-00537 ..... **$94.00**

115-PC HSS JOBBER LENGTH DRILL SET

This 118° point, high speed steel (HSS) drill set performs well in a wide variety of drilling applications. It is recommended for non-ferrous metals, wood, and plastics. Set includes 115 pcs (1/16 to1/2" by 64ths and #1-60 and A-Z in metal index).

P/N 12-00536 ..... **$189.00**

STRAIGHT FLUTE CARBIDE DRILLS

For use on hardened, treated, and abrasive materials, stainless steel, cryogenic alloys.

P/N	Cutting Dia.	Decimal Equiv.	Flute Length	Overall Length	Price
12-00538	13/64	.2031	1-3/16	2-1/4	**$18.75**
12-00539	7/32	.2188	1-1/4	2-3/8	**$18.75**
12-00540	1/4	.2500	1-3/8	2-1/2	**$21.75**
12-00541	9/32	.2812	1-1/2	2-11/16	**$26.90**
12-00542	5/16	.3125	1-5/8	2-13/16	**$29.75**
12-00543	3/8	.3750	1-13/16	3-1/8	**$45.25**
12-00544	1/2	.5000	2-1/4	3-3/4	**$37.10**
12-00545	1/8	.1250	7/8	1-7/8	**$21.75**
12-00546	9/64	.1406	15/16	1-15/16	**$12.75**
12-00547	5/32	.1562	1	2-1/16	**$13.95**
12-00551	3/16	.1875	1-1/8	2-3/16	**$16.95**

CARBIDE TWIST DRILLS

For use on non-ferrous alloys, cast iron, plastics, aluminum, and highly abrasive materials

P/N	Cutting Dia.	Decimal Equiv.	Flute Length	Overall Length	Pice
12-00579	1/16	.0625	3/4	1-1/2	**$8.95**
12-00580	5/64	.0781	7/8	1-3/4	**$8.75**
12-00581	3/32	.0938	1	2	**$7.50**
12-00582	7/64	.1094	1-1/4	2-1/4	**$9.25**
12-00583	1/8	.1250	1-1/4	2-1/4	**$9.75**
12-00584	9/64	.1406	1-3/8	2-1/2	**$10.75**
12-00585	5/32	.1562	1-3/8	2-1/2	**$11.75**
12-00586	11/64	.1719	1-5/8	2-3/4	**$14.25**
12-00547	3/16	.1875	1-5/8	2-3/4	**$13.95**
12-00548	13/64	.2031	1-3/4	3	**$15.50**
12-00549	7/32	.2188	1-3/4	3	**$18.25**
12-00552	15/64	.2344	2	3-1/4	**$19.75**
12-00553	1/4	.2500	2	3-1/4	**$22.00**
12-00554	17/64	.2656	2-1/8	3-1/2	**$24.25**
12-00557	9/32	.2812	2-1/8	3-1/2	**$26.50**
12-00558	5/16	.3125	2-3/8	3-3/4	**$30.50**
12-00561	11/32	.3438	2-1/2	4	**$35.25**
12-00563	3/8	.3750	2-3/4	4-1/4	**$45.25**
12-00564	7/16	.4375	2-7/8	4-1/2	**$62.00**
12-00567	1/2	.5000	3	4-3/4	**$68.50**

CARBIDE ROTARY - RADIUS END

Rotary files have a 1/4" shank and a double-cut (self-cleaning) burrs for quicker cutting speed and less chip build-up. Style: Cylindrical Radius End (SC-5). Diameter of cut: 1/2". Length of cut: 1". P/N 12-02917 ..... 2.95

CARBIDE ROTARY FILE - BALL END

Rotary files has a 1/4" shank and a double-cut (self-cleaning) burrs for quicker cutting speed and less chip build-up. Style: Round ball (SD-1). Diameter of cut: 1/4". Length of cut: 7/32"

P/N 12-02918 ..... 2.95

SPIRAL FLUTE CHUCKING REAMER

High speed steel straight shank spiral flute chucking reamer. Diameter tolerance thru 1/2 diameter + .0002.0000. Decimal Equivalent: 0.0980. Shank Type: Straight Shank. Flute Type: Spiral Flute. Size Type: Wire Gage Size. Flute Length: 7/8. Overall Length: 3-1/2. Material: High Speed Steel. Size: 40. Type: Straight Shank / Spiral Flute. Number of Flutes: 4 Flute. Brand Name: Quality Import.

Size 30 ..... P/N 12-02930 ..... **$7.50**
High Speed, Size 30 ..... P/N 12-02931 ..... **$5.50**

ALUMINUM CUT

Designed for use on aluminum, non-ferrous metals, soft steel, reinforced plastics, and other soft materials.

CYLINDRICAL BALL NOSE CARBIDE BURS

Aluminum Cut. 1/4" shank.

Part No.	Dia.	Flute Length	Price
12-00588	1/4	5/8	**$12.95**
12-00589	3/8	3/4	**$17.75**
12-00590	1/2	1	**$27.50**

CYLINDRICAL CARBIDE BURS

Aluminum Cut. 1/4" shank.

Part No.	Dia.	Flute Length	Price
12-00591	1/4	5/8	**$11.75**
12-00592	3/8	3/4	**$16.75**
12-00593	1/2	1	**$24.75**

ROUND NOSE TREE CARBIDE BURS

Aluminum Cut. 1/4" shank.

Part No.	Dia.	Flute Length	Price
12-00594	1/4	5/8	**$13.90**
12-00595	3/8	3/4	**$17.75**
12-00596	1/2	1	**$24.75**

MEDIUM TOUGH CUT

Engineered specifically for tough applications. Tough cut insures faster, splinter-free cutting in weld & alloy castings with increased tool life.

CYLINDRICAL BALL NOSE CARBIDE BURS

Medium Tough Cut. 1/4" shank. 6" Long.

Part No.	Dia.	Flute Length	Price
12-00597	3/8	3/4	**$17.95**
12-00598	1/2	1	**$25.50**

ROUND NOSE TREE CARBIDE BURS

Medium Tough Cut. 1/4" shank. 6" Long.

Part No.	Dia.	Flute Length	Price
12-00599	3/8	3/4	**$17.50**
12-00601	1/2	1	**$25.25**

14° INCLUDED ANGLE CARBIDE BURS

Medium Tough Cut. 1/4" shank. 6" Long.

Part No.	Dia.	Flute Length	Price
12-00602	3/8	1-1/16	**$21.50**
12-00603	1/2	1-1/8	**$27.75**

CARBIDE ROTARY FILE - 8 PIECE SETS

8 Piece Carbide Rotary File Set. 1/4" or 1/8" shaft available.

1/8" Set ..... P/N 12-02916 ..... **$26.95**
1/4" Set ..... P/N 12-02915 ..... **$58.95**

DRILL DOCTOR TRADESMAN BIT SHARPENER

The DD500X Pro Kit combines the Drill Doctor Tradesman sharpener with heavy duty carrying case. Sharpen bits either 118°. or the high performance 135° setting and it can turn standard drill bits into self-centering, split point bits. Sharpens bits from 3/32" to 1/2" diameter in about 60 seconds and includes the patented E-Z align system and diamond grinding wheel for sharp precise results. Includes: Sharpener, 1/2" chuck, 110V power cord, carrying case, free video and easy to follow instructions.

P/N 12-00673 ..... **$129.95**

TO

ABRASIVE TOOLS & KITS

HAND PADS

Faster, cleaner, and more durable than wire brushes, scrapers and sandpaper. Non-woven nylon pads are pre-cut. They provide conformable, consistent finishes. General Purpose and Ultra Fine Pads may be used with lubricants and solvents. General Purpose - Clean up dirty parts in solvent tank • Light corrosion removal on steel and aluminum parts. Commercial - An aggressive hand pad for waterbased products only. •Not to be used with solvents. •Heavy duty rust removal and general cleanup Ultra Fine - For scuffing in new rod and main bearings. • Light corrosion removal on steel and aluminum parts.

Description	Size	Grain	Color	Qty.	Part No.	Price
General Purpose	6" x 9"	A/O	Maroon	1 each	12-00861-1	**$0.81**
Ultra Fine	6" x 9"	S/C	Gray	1 each	12-00862	**$0.82**
Heavy Duty	6" x 9"	A/O	Tan	40 pack	12-00864	**$79.95**
Hand Pad Holder	-	-	Orange	1 Hand Pad Holder, 4 Sanding Pads	12-00865	**$15.90**

BENCH GRINDER DISCS

Quickly remove carbon from pistons and valve stems. Great for light deburring head bolts and studs. One disc is flexible when run alone. Stack as many discs on at a time for the desired finish and removal rate. Safer than a wire wheel, with a much better finish. The very fine grade Bench Grinder Discs are packaged 10 to a pack, and the medium grade Bench Grinder Discs are packaged 5 to a pack.

Size	Grain	Grade	Max RPM	Part No.	Price
6" x 1/2"	A/O	Very Fine	3,600	12-00847	**$42.00**
8" x 1/2"	A/O	Very Fine	3,000	12-00849	**$39.50**

METAL POLISHING KIT

Not Actual Size.

Save time and money with this generous assortment of our most popular types and grits of Straight Cartridge Rolls, in Coarse, Medium and Fine grades. Keep these Cartridge Rolls in your shop for a variety of hard-to-reach applications. Essential tools for engine porting, including intake manifold, heads and exhaust manifold. Kit includes 1/4", 3/8" and 1/2" cartridge rolls, in 40 and 80 grit, and mandrels.... Metal Polishing Kit (3" Dia.)
P/N 12-00846 ..... **$48.25**

7"CUTTING WHEEL 1/2" X BRE 1/16"

Oxide abrasive wheel - fine abrasive for burr-free cutting of thin wall tubing and applications which require a fine finish.
•Wheel Size: 7" x 1/16" x 1/2" • Max RPM: 8,700 • Weight: 6lbs • Standard Grades: A60TBE 3C14
P/N 09-02564 ..... **$4.55**

TO

BLASTER KIT (F-50)

Use dry abrasives only. Hose length - 7ft. Tank capacity - 50lbs.. Free standing open top tank. Maximum 125 psi. 7 CFM@80 psi minimum. Lightweight and portable. Easy setup. Steel nozzles - 13/64", 1/4", 5/16"

P/N 12-02548..... **$141.95**

BLASTER KIT (F-90)

Use dry abrasives only. Hose length - 10 ft.. Tank capacity - 90 lbs.. Strong tubular steel cart. Wheels - 6". Maximum 125 psi. 7 CFM@80 psi minimum. Lightweight and portable. Easy setup. Steel nozzles -13/64", 1/4", 5/16".

P/N 12-02549..... **$172.95**

AIRCRAFT SPRUCE WEST **AIRCRAFT SPRUCE EAST**
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Prices Subject to Change Without Notice

VISE GRIPS - UNIBITS

Locking Pliers, two straight jaws

Locking Pliers, two curved jaws

Locking Nose Jaw with wire cutter

"C" Clamps

12 LC Large Jaw Locking Pliers

Vise-Grip Style	Size	Part No.	Price
Locking Pliers with Two Straight Jaws	7"	12-00196	**$10.95**
Locking Pliers with Two Curved Jaws and Wire Cutter	4"	4WR	**$11.25**
	5"	12-00194	**$13.50**
	7"	12-00189	**$11.00**
Long Nose Jaws with Wire Cutter	4"	12-00190	**$12.75**
	6"	12-00192	**$13.75**
	9"	12-00198	**$14.85**
Locking "C" Clamps	6"	12-00188	**$13.75**
	11"	12-00195	**$20.75**
Large Jaw Locking Pliers, Opens to 3-1/8"	12"	12-00197	**$18.75**

TIGHT-FIT DRILL KIT

Space, every inch of it, is at a premium in aircraft design as shape and weight is critical to function. Also, airplanes are riveted together which requires thousands of holes to be drilled in difficult locations without scratching or marring the work surface. So, engineers needed to design a versatile "chuck-less" drill attachment that could reach into very confined areas. The answer was found in putting threads on the shanks of drill bits. The benefits are significant. Threaded drill bits eliminate the need for a chucking mechanism. Freed of this restriction, it is possible to do a wide variety of jobs in places with extreme space limitations (less than 1" x 2"). Chuck slippage is all but eliminated while the precision mating angle between threaded drill and drive spindle insures concentricity. Drill bit change times are reduced, an exact working drill bit length is insured and the chance of marring or scratching the work surface is greatly reduced. The Model 00105 Kit includes: a versatile close-quarter Right Angle Drill Attachment capable of drilling up to 1/4" diameter holes and compatible with all standard power drills, a 6" Threaded Extension for those deep hard-to-reach spots, a Chucking Spud which allows direct use of threaded TightFit® drill bits and extensions with your standard drill motor, five aircraft quality threaded TightFit® drill bits (Short Drill Bit Set, 00133), a Tight Fit® 3-Way Wrench, and is packaged in a red, heavy-duty, blow-molded storage case. Features: Attaches to any power drill; Recommended operating speed not to exceed 2500 rpm. • Light weight; Right angle drill weighs 1/3 of a pound and rotates 360 degrees for tight-spot access. • Threaded components allow for fast, easy tool changes; Drill over, under or around obstructions. • Design allows "deep reach" in confined areas; Provides utility of extension drill bit set.

P/N 12-01334 ..... **$44.60**

ACCESSORIES

Stub Drill Kit - 5 Drills 9/16" long in 3/32", 1/8",5/32",3/16",1/4" Dia.
P/N 12-20310 ..... **$16.70**

Short Drill Kit - 5 Drills 1-1/8" long, in same diameters as above
P/N 12-20320 ..... **$16.70**

Long Drill Kit - 5 Drills 2" long in same diameters as above.
P/N 12-20330 ..... **$16.70**

Screwdriver Set - #1 & #2 Phillips bits, small & large slotted bits.
P/N 12-20340 ..... **$2.95**

Extension Set - 4 Extensions in 1/2", 3" 6" & 9" (can be combined for a work length of 18") P/N 12-20350 ..... **$16.70**

Collet Adapter - Designed to hold all 1/4" shank accessories (countersinks, rotary files, sanding drums). P/N 12-20360 ..... **$6.70**

DELUXE TIGHT FIT TOOL KIT

PROFESSIONAL MODEL

Includes right angle drilling attachment, 6" extension rod, chucking spud, threaded countersink, (6) stub drill bits (9/16" long) & (6) short drill bits (1-1/2" long) in the following diameters: 1/16", 3/32", 1/8", 5/32", 3/16", 1/4". (1) threaded apex socket adapter to fit the angle head & extension rod. (4) screwdriver bits Number 1 & 2 slotted and Number 1 & 2 Phillips. (1) 1/4" threaded collet adapter to fit the angle head, extension rod or spud adapter. (1) 5/16" combination wrench. All above items are packed in a hard blow molded "everything in its place" aircraft mechanic style carrying case. The case even floats when fully packed. There is also a special internal tray for other drills or accessories.

P/N 12-11215 ..... **$57.85**

CARBIDE TIPPED HOLE CUTTERS

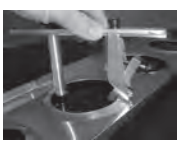
Multiple tungsten carbide tips for long life and smooth cutting. Cut fast, accurate, high quality holes in stainless steel, copper, aluminum, steel. Flange stop prevents over drilling. Replaceable cobalt steel pilot drill, with split point tip design, to improve performance and resist walking; eliminates need for "center punch." Size :7/8in. 22.2mm Min. Chuck Size:1/4in. 6.4mm PG 13 Coduit Size :1/2'' Maximum Cutting Depth: 8 Ga. (4 mm)

P/N 12-03715 ..... **$27.25**

BLAIR HOLE CUTTER

The Blair hole cutter fits any 1/4" drill and set includes 7 blades (1/4" to 5/8" arbor), pilot and holder. The blades are threaded onto arbor and precise control of the depth of cuts is provided by adjusting screws. Over 3000 holes in sheet metal can be cut by each blade.

Model TP147 .....P/N 12-00243 ..... **$79.75**



FLANGING-360 TOOL

This is a companion tool to the ARC-360 lightning hole cutter. The Flanger-360 will form a 30 degree flange on 2024-T3 aircraft aluminum up to .032" thick and in diameters from 2 to 6 inches. Its polished hardened steel rollers gently and effortlessly form the flange as the operator rotates the tool around the lightning hole. Unlike other flanging tools that rely on the skill and eye of the operator, the Flanger-360 stays in constant position with the lightning hole via guide rollers as it progressively forms the flange.

P/N 12-02030 ..... **$149.95**

UNIBIT STEP DRILL

The UNIBIT Step Drill uses a unique single flute design to drill perfectly round holes in thin materials quickly and with less effort than any other bit on the market today. UNIBIT incorporates cutting steps of progressively larger diameter, making it possible to drill up to 13 different hole sizes with a single bit. Once the desired hole diameter is obtained, the hole is automatically deburred by the cutting edge of the next larger step. UNIBIT #1 drills 13 holes in 1/32" increments from 1/8" through 1/2" and has a shank size of 1/4". UNIBIT #2 drills 6 sizes of holes from 3/16" through 1/2" and has a 3/8" step thickness with a 1/4" shank. UNIBIT #3 drills 9 sizes of holes from 1/4" to 3/4" and has a step thickness of 1/8" with a 3/8" shank. UNIBIT #5 drills holes 1/4" - 1-3/8". 10 steps.

UNIBIT #1 Step Drill .....P/N 12-03700 ..... **$22.85**
UNIBIT #2 Step Drill .....P/N 12-03800 ..... **$22.85**
UNIBIT #3 Step Drill .....P/N 12-03900 ..... **$45.25**
UNIBIT #4 Step Drill .....P/N 12-03164 ..... **$48.75**
UNIBIT #5 Step Drill .....P/N 12-03750 ..... **$94.65**

LOCKING C-CLAMP WITH SWIVEL 6 INCH

Locking C-Clamp W/Swivel Pad, 6 In, Specifications: Size: 6", Capacity (In.): 2, Throat Depth (In.): 1 1/8, Clamping Force (Lb.): 500, Locking Mechanism : Release Lever, Screw Mechanism: Adjusts Clamping Pressure, Pliers Length (In.): 7 11/16, Finish: Nickel Plated, Material: Hardened Carbon Steel, Standards: ASME B107.36-2002 P/N 12-02422..... **$18.65**

TO

CLAMPS – SHEARS - NIBBLERS

INDUSTRIAL FABRIC SHEARS

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

Right Hand Shears.....P/N 01-00397 ..... **$32.95**
Left Hand Shears.....P/N 01-00398 ..... **$32.50**

FISKARS 9" PINKING SHEARS

These orange handled pinking shears keep your projects from unraveling at the seams. Ergonomic handles give comfort and control, extended lower blade to help lift fabric while cutting. Adds functional pinking edge to prevent fabric fraying. Tested to ensure clean cutting even through multiple layers of cloth to the tip. P/N 12-02942..... **$7.65**

OFFSET KEVLAR CUTTING SHEARS

Although Kevlar has many advantages over conventional fiberglass weaves, it is very difficult to cut. Special scissors have been developed to facilitate cutting. These scissors have a wear -resistant coating which is metallurgically bonded to the steel substrate. The coating will not chip or peel off and can be sharpened.

Model WR-10E-4 Shears ..... P/N 01-00341 ..... **$72.50**

ECONOMY KEVLAR SCISSORS - GINGHER® Scissors cut Kevlar exceptionally well. Lightweight, extremely sharp and comfortable, these 2 1/2 oz. scissors are perfect for use during the lay-up. Soak in acetone for easy clean-up. We recommend saving one pair for only cutting Kelvar®, and keep ing a second pair for general use. P/N 01-00342..... **$44.65**

QUICK GRIP BAR CLAMPS

From the makers of Vise-Grip tools comes the amazing new Quick-Grip bar clamp. The unique pistol-grip handle lets woodworkers hold the clamp and adjust jaw pressure with just one hand. One finger unlocks the Quick-release trigger. Features include positive locking action to hold work tight, strong, lightweight high-tech construction, instant adjustable clamping pressure, large, pliable pads that won't mar work, and a variety of jaw openings. It will "single-handedly" change the way you think about bar clamps!

Part No.	Jaw Opening Size (mm)	Price
12-03910	6"/150	**$21.50**
12-03920	2"/305	**$29.75**
12-03930	18"/455	**$35.75**

Part No.	Jaw Opening Size (mm)	Price
12-03940	24"/610	**$35.95**
12-03950	36"/915	**$35.75**

ADEL HAND "NIBBLING" TOOL

Cuts sheet metal like punch and die. Cuts holes to any size and shape. Start with 7/16" hole then "nibble" to size required. Capacity 18 Ga. steel. Wt. 8 oz. ..... P/N 12-10400 ..... **$28.65**
Replacement Punch ..... P/N 12-10500 ..... **$14.75**

CUSHIONED CABLE CLAMP (ADEL CLAMP) INSTALLATION PLIERS

These special pliers allow for greatly simplified installation of single or multiple Adel type cushioned clamps. The pliers securely hold the aligned clamps in position, allowing for easy installation of securing hardware. Each kit includes special plier, alignment awl, and simple instructions.

P/N 12-02017..... **$34.75**

ADEL CLAMP KEEPER

Precision slots on this spring steel tool slide onto and capture #8 or #10 screw threads while assembling Adel type clamps. Use two tools to butterfly one clamp on top of another. ..... P/N 12-02588 ..... **$12.65**

KETT PORTABLE POWER SHEARS

ELECTRIC MODEL K-200 – Extra-powerful 115V, 50/60 cycle AC/DC motor. Heavy-duty bearings & die-cast aluminum cutting head. Tool is UL and CSA approved. 2300rpm. Maximum cutting speed, 180 inches/minute. Wt. 5 lbs. Over-all length, 11.75". Ampere rating, 2.2 amps.

P/N 12-01137 ..... **$218.95**

ELECTRIC MODEL K-442 – Kett's all-purpose 16 gauge power sheers cut up to 16 gauge mild steel, cleanly and easily, without burring or buckling the material. These lightweight shears, designed for durability, feature a variable speed motor and fill the gap between Kett's light duty and heavy duty power shears.

P/N 12-01153 ..... **$257.95**

PNEUMATIC MODEL P-500 – Equipped with air-metering trigger for variable-speed cutting, so that initially the blade can be operated slowly to prevent chattering at start of cut. 2600rpm. Maximum cutting speed, 180" per min. Wt. 3 lbs. Over-all length, 9". P/N 12-01158 ..... **$199.85**

KETT KB-301 CORDLESS 18GA SHEAR

High torque 2300 SPM motor lets you easily cut 18 gauge mild steel or up to 20 gauge stainless at over 150"/minute. The swivel head gives you precise control as you make straight or contour cuts. The double-cut shearing action leaves a clean burr free edge and won't warp or bend the piece. Extended run time NiCad battery recharges quickly and there's room for a spare, and the charger unit, in the handy carrying case. Length: 12-3/4", Weight: 7 lbs. The kit includes the KB-301 power shear, KB-302 14.4 volt NiCad High Performance battery. KB-303 battery charger and KB-304 carrying case.

Model No.	Description	Part No.	Price
KB-301-K	Cordless Shear Kit #300	12-00117	**$314.95**
KB-302	14.4 volt NiCad Battery	12-00118	**$61.25**
KB-303	One Hour Battery Charger	12-00119	**$62.00**
KB-304	Carrying Case	12-00121	**$26.30**

KETT KD440 14GA POWER SHEARS

Cuts 14 gauge mild steel and most grades of stainless to 16 gauge. Cuts over 150 inches/minute, leaving a clean, flat sheet, ready to fabricate. Distortions are absorbed in an easily disposed of waste curl, leaving the sheet cool and free of burn, chips, and burrs. The cutting blades are finest high speed steel. (Also cuts sheet metal, Stainless and Plastics) P/N 12-00676.....**$229.95**

KETT KD-446R PROFILE SHEARS

Cuts profile and flat materials up to 18 gauge, spiral duct, wire mesh and many other materials. Can cut tight curves at a radius of three inches. The blades are made of high quality steel, heat treated and precision ground. The motor is variable speed up to 2500 RPM and cuts up to 28 feet per minute.

Features: • 5.0 amp pistol grip • Replaceable A-2 tool steel shear blades.• These snips cuts C.R. mild steel 18 gauge and lighter, wire mesh to 18 gauge, spiral pipe, metal studs and corrugated metal

Right Hand ..... P/N 12-02507..... **$259.85**
Left Hand..... P/N 12-02509..... **$259.85**

MINI-CUTTERS ELECTRIC SHEARS

The Mini-Electric Cordless Cutter is perfect for all-purpose cutting needs. It slices through all fabric, paper, and leather materials easily. It features a cordless, rechargeable system and can also operate with AC power. The shear is a lightweight and easy-to-use industrial cutting tool. Great for cutting materials like Kevlar®, Carbon fiber, glass fiber, Zylon® and other composite materials up to 1/8" thick. Kit Includes: All-purpose blade, AC Adapter, Rechargeable DC Battery, Charger / Power Cord, Shoe base head

P/N 12-02525..... **$145.95**

CORDLESS ELECTRIC KEVLAR SCISSOR KIT

The USATCO cordless electric kevlar scissor kit cuts aramid fibers, kevlar and other tough materials! Lightweight and maneuverable with superior ergonomic design. Requires much less effort than cutting manually. Short rapid strokes for intricate work. This can be operated with cord and adapter for unlimited cutting time. P/N 12-02630 ..... **$149.95**

TO

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

Prices Subject to Change Without Notice

COMPARTMENT BOXES – TOOLS

16 COMPARTMENT STORAGE BOX

Easy glide large and small racks are designed to accommodate large and small compartment boxes and create convienent, compact storage systems. Boxes can be removed and tranported to the job site. Rugged plastic inserts and scoop bottoms fit neatly into steel outer shell boxes. Optional bases raise racks off the floor.
•Compartment: 16 •Weight: 8 lbs • Material: Prime cold rolled steel • Interlocking and Welded Construction • Colors: Durable gray powder coat finish • Depth: 12" • Height: 3" • Width: 18" P/N 12-02623 .....**$24.25**

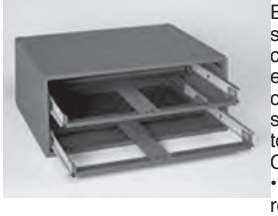
21 COMPARTMENT STORAGE BOX

Easy glide large and small racks are designed to accommodate large and small compartment boxes and create convienent, compact storage systems. Boxes can be removed and tranported to the job site. Rugged plastic inserts and scoop bottoms fit neatly into steel outer shell boxes. Optional bases raise racks off the floor.
• Compartment: 21 • Weight: 8 lbs • Material: Prime cold rolled steel • Interlocking and Welded Construction • Colors: Durable gray powder coat finish • Depth: 12" • Height: 3" • Width: 18" P/N 12-02622 .....**$24.25**

32 COMPARTMENT STORAGE BOX

Easy glide large and small racks are designed to accommodate large and small compartment boxes and create convienent, compact storage systems. Boxes can be removed and tranported to the job site. Rugged plastic inserts and scoop bottoms fit neatly into steel outer shell boxes. Optional bases raise racks off the floor.
• Compartment: 32 •Weight: 8 lbs • Material: Prime cold rolled steel • Interlocking and Welded Construction • Colors: Durable gray powder coat finish • Depth: 12" • Height: 3" • Width: 18" P/N 12-02621 .....**$24.25**

EZ GUIDE DRAWER RACKS



Easy glide large and small racks are designed to accommodate large and small compartment boxes and create convienent, compact storage systems. Boxes can be removed and tranported to the job site. Rugged plastic inserts and scoop bottoms fit neatly into steel outer shell boxes. Optional bases raise racks off the floor.
• Weight: 20 lbs • Material: Prime cold rolled steel • Interlocking and Welded Construction • Colors: Durable gray powder coat finish • Depth: 15" • Height: 8-1/8" • Width: 20" P/N 12-02624 .....**$81.75**

EASY GLIDE RACK BASE

Rack base (20 5/8" W X 15 5/8" H X 12 5/8" D; weight 13 lbs.) is available for use with PN# 12-02626.
• Weight: 13 lbs. • Material: Prime cold rolled steel • Colors: Durable gray powder coat finish • Depth: 12-1/8" • Height: 15-1/8" • Width: 20-3/8"
P/N 12-02627 .....**$42.75**

PIG® FORM-A-FUNNEL® DRAINING TOOLS

The innovative Form-A-Funnel has literally hundreds of uses. For aircraft owners, it makes aircraft oil servicing a breeze. The larger model (18611) was designed to be formed into a channel that can be easily inserted into your engine compartment, weaving its way past engine accessories and into a snug position under your oil filter. After loosening the filter, the oil drains to a position outside your cowl, preventing the messes that usually occur, and keeping oil off the inside of your cowling (and off the hangar floor).
The flexible material holds its shape -- you can bend it around the surrounding structures in your engine compartment and it will support itself. The Form-A-Funnel's flexible lip seals against the engine case or drain port, ensuring that not a drop is spilled. No more improvised cardboard channels, and no more bulky and hard-to-clean plastic funnels!
The smaller model (18609) is perfect for small engine repair or servicing, automotive work, changing the oil in your air compressor, draining and pouring fluids or granular material, creating all kinds of funnels, and making improvised pans and fluid channels.
Form-A-Funnel is constructed of a thin layer of flexible metal covered with a tough outer layer of Nitrile rubber. It's reusable and will last for years. It cleans up with just a wipe, and you can store it rolled up or flat. No other funnel can go in your pocket or in the drawer of your toolbox! It resists all common aviation and household chemicals, including oil, fuel, hydraulic fluid, transmission fluid, antifreeze, battery acid and solvents. Form-A-Funnel is one of the most clever tools you'll ever own!
14.5" X 6.5"..... P/N 12-03147 ..... **$19.95**
29" X 5"..... P/N 12-03148 ..... **$29.95**

CLAMPTITE TOOLS

With stainless steel components and an aluminum body, this tool was designed for the outdoors man, fisherman and farmer who would have it around a corrosive environment. The stainless steel components are stronger and you can just toss it in the tool box that is in the truck, boat or tractor. The tool is great for emergencies and tough wire jobs. This is the original marine grade tool.
4 3/4" Long - 7" Fully Extended
P/N 12-02633 ..... **$39.95**

Plated steel components with aluminum body. This tool was designed with the mechanic in mind who would have it around grease, oil and a controlled environment (non corrosive). Great for the CV boots, fuel line, thermostat housing, radiator hose and air hose type repairs.
4 3/4" Long - 7" Fully Extended
P/N 12-02634 ..... **$29.95**

This tool is machined stainless steel with a one piece body and nose and bronze nut. The tool was designed with the detailed craftsman who need a long lasting tool able to hold up to extremely tough wire while clamping, binding and pulling the wire until the job is complete.
4 3/4" Long - 7" Fully Extended
P/N 12-02632 ..... **$69.95**

TOGGLE CLAMPS

Easier to use than regular C-clamps. Quick-release style. Removable rubber pads on each screw. Gap: 1"
1-1/2" Reach.....P/N 12-02863.....**$14.65**
1-1/8" Reach.....P/N 12-02864.....**$17.95**
1-3/4" Reach.....P/N 12-02865.....**$22.50**

SCREW & BOLT SHEAR

The Screw & Bolt Shear is a bolt cutting device manufactured from very high quality tool steel which is hardened, tempered & machined to very close precision tolerances. The action of this tool is similar in nature to a "guillotine" design and is quite effective in cutting screws/bolts to specific lengths. The cutting body of the SBS-1 will accommodate screws or bolts in sizes of 4-40, 6-32, 8-32, 10-32, 10-24, 1/4-20 & 1/4-28. P/N 12-14250.....**$98.90**

QUICK ANGLE - MEASURING ANGLES & PITCHES

A multi-functional revolutionary new tool for measuring angles and pitches. It's rare to find one tool that will accomplish so much (miter cuts for one and duplications for another). Use this one-in-all tool to compliment and enhance your tool box. P/N 12-02458.....**$28.95**

TO

AMP PRO CRIMPER II HAND TOOL

The PRO-CRIMPER II Hand Tool provides the versatility of general-purpose service of general-purpose service tools along with the reliability and ease of use of many premium-grade tools For versatility, 75 die sets (available separately) are interchangeable, including those for open-barrel contacts and terminals. Additionally, many of these die sets have multiple cavities for crimping a variety of contact or terminal sizes. For reliability, the tool is constructed of durable high carbon steel with extra-strength pivot pins. And, for user convenience, the PRO-CRIMPER II Hand Tool particularly excels. Ratchet control is provided for complete crimp cycling; this helps eliminate partial crimps. Also, an emergency ratchet release allows the user to open the tool jaws at any time during the crimp cycle.To reduce handle force, the linkage was designed to match the forces required to crimp our largest insulated terminal. The result is dramatically less hand force than comparable tools. Also, the angled had and specially designed handles provided comfortable operation. Locator are mounted on pin-and-socket style tools They help properly locate the contact in the die set, provide a wire stop, and help minimize contact rotation and bending during crimping.

PROCRIMPER II 58433-3.....P/N 12-01379..... **$174.95**
O-CRIMP DIE 58435-1.....P/N 12-01380..... **$173.95**
HEX CRIMP DIE 58436-1.....P/N 12-01381..... **$188.95**
PIN & SOCKET 58495-2.....P/N 12-01382..... **$169.95**

KOUL SINGLES STAINLESS BRAIDED HOSE ASSEMBLY TOOLS

Since the invention of stainless braided hose, racers and mechanics have been fighting the problem of installing it into the socket part of the assembly. If your lucky and get a clean cut on the end of that hose, you might get it in. Most of the time a little fuzz appears on the hose end and the battle begins. It is not only time consuming, it can get bloody. This tool is the solution that makes the assembly a snap. Manufactured of a high tech composite, it is virtually indestructible. No need to worry about vise marks or wearing out. Just insert the socket into the tool, twist the hose in, and in less than 10 seconds you have it assembled. You can repeat this several times without recutting the hose end. The tool can pay for itself the first time you don't have to scrap some hose because it got too short trying to clean up the end. You'll be amazed at the amount of time you'll save.

SMALL KIT - The Small kit contains the capsules to install -4, -6, -8 hose into their respective sockets. To accommodate all the different manufacturer's fittings, spacers and sleeves are required to tighten up the some of the sockets within the capsule. For the tool to perform at its best, the socket needs to be a snug fit in the funnel. The two spacers are used in some -6's and 8's. If the socket seems loose in the tool, use a spacer to tighten it up. In the small kit, only the Russell -4 needs a sleeve. Not for use with Teflon-style hose. PN 12-01061 ..... **$73.95**

LARGE KIT - The Large kit contains the capsules to install -10, -12, -16 hose into their respective sockets. To accommodate all the different manufacturer's fittings, spacers and sleeves are required to tighten up some of the sockets within the capsule. For the tool to perform at its best, the socket needs to be a snug fit into the funnel. In the 1016 kit, all the -16's except Russell's require the sleeve and a rear spacer. See the instructions in the case for the proper spacer number. Most of the -10's and 12's* will use a spacer. Not for use with Teflon-style hose. * -12 is a stainless washer.
PN 12-01062 ..... **$88.85**

HOT ROD KIT - The Hot Rod kit contains the capsules to install -6, -8, -10 hose into their respective sockets. To accommodate all the different manufacturer's fittings, spacers and sleeves are required to tighten up some of the sockets within the capsule. For the tool to perform at its best, the socket needs to be a snug fit into the funnel. Spacers are used in some -6's, -8's, and most -10's. If the socket seems loose in the tool, use a spacer to tighten it up. See the instructions in the case for the proper spacer number. Not for use with Teflon-style hose.
PN 12-01898 ..... **$110.95**

THE PRO COMBO - The Pro Combo is a special offer of BOTH the #468 and #1016 kits listed above. Pros need both kits to handle all the hose sizes in a race car. Ordering this combination will save $15.00. Not for use with Teflon-style hose.
PN 12-01897 ..... **$147.50**

KOUL SINGLES

6 Koul Single..... PN 12-01928 ..... **$29.50**
8 Koul Single..... PN 12-01929 ..... **$29.50**
10 Koul Single ..... PN 12-01930 ..... **$29.50**

AMP RIGHT ANGLE DUAL CRIMP TOOL

Amp right angle dual crimp tool. Features: • RF Connector, Gender Plug. Dual Crimp, Right angle body, Waterproof, Without Solder Terminal, without Military Grade, Teflon material, Without Mechanical Attachment Panel Mount. Connector Impedance (Ohm) is 50. Coaxial Cable Termination Type is Crimp. Body Plating is Silver. Center Contact Plating is Gold. Coaxial Cable Type (RG/U or Mfg.) is 214, 9, 9A. Government/Industry Qualification - No. RoHS/ELV Compliance is Not ELV/RoHS compliant. Lead Free Solder Processes is not relevant for lead free process.

P/N 11-10006.....**$148.75**

EXPRESS PORTABLE AIRCRAFT VACUUM

The Express Toner/ESD Vacuum provides .3 micron filtration which captures particles that are less than one one-hundredth the thickness of a human hair. This means these vacuums will do a thorough job of cleaning planes of the smallest particulates like mold spores, chemicals, foreign substances or any other microscopic particles that could be hazardous on a plane. Additionally its light weight (about 6 pounds) makes the Express Vacuum easy to move into and around the interior of an airplane. Plus it is the only product in the market of this nature which is ESD safe, this is of great importance given all the delicate electronic equipment which is found on today's airplanes. Note: Bag is optional and may be purchased separately. Features: 600 Watt Flow Through Motor • 6' ESD safe hose • Crevice tool and brush • 12" Flexneck tool • .3 micron toner cartridge filter • Line filter • 12' power cord • ESD SAFE

Toner/ESD Vacuum 110V.....P/N 12-01058.....**$143.95**
Toner Toner Filters 2 Pk. .....P/N 12-01059.....**$23.25**
Vacuum Carring Bag.....P/N 12-01454.....**$23.25**

PORTA-TEST FUEL INJECTION TEST KIT

Now you can solve Continental fuel injection problems for both naturally aspirated and turbocharged engines right on your customer's airplane. With the patented Porta-Test Testing Unit from Approved Aircraft Accessories, Inc., you can accurately and easily comply with the manufacturer's service bulletins relative to fuel pressures, flow, and turbo components.

Porta-Test is the only approved testing unit available for the calibration of fuel injection systems. As a result, you can quickly perform fuel metering maintenance to improve the service life, performance and dependability of engines equipped with Continental fuel injection systems.

Actual flow meter readings provide exact indication of engine fuel consumption as well as pressure. Indications covering unmetered and metered fuel pressure, turbocharger upper deck and lower deck pressures can be easily checked for correct operation. All troubleshooting can be accomplished with the engine running and without removing components to save valuable man hours and downtime. Complete operator's manual contains necessary specifications and troubleshooting.

The 20 ATM consists essentially of a patented high-accuracy fuel pressure gauge to measure both metered and unmetered fuel pressure; two flowmeters, one with a range to cover idling - low flow - and the other to cover power settings; a dual absolute pressure gauge indicates manifold and turbo discharge operations; and the appropriate valves, hoses, and fittings. P/N 08-07225 .....**$5,375.00**

FULLY RELEASING TORQUE DRIVER

The MD1F35H is an adjustable driver with a range of 5 to 35 lb. in. Body is constructed of steel and anodize aluminum, has a CNC machined knurled grip and 1/4" male drive and comes packaged in a plastic box. The MDP1F35 is is a preset model ideal for repetitive assembly operations. P/N 12-00530 ..... **$209.00**

DIAL TYPE TORQUE WRENCH

Dial Type Wrenches provide unmatched reliability, accuracy and durability for applications where torque measurement is extrememly critical. Models feature a memory pointer that indicates the highest torque achieved during application of torque. 2% accuracy clockwise and counter-clockwise. All wrenches are made in the USA of all steel construction for the highest quality. Both models come with a plastic storage box and a calibration compliance certificate.

3/8" sq.dr. / 300 lb.in.....P/N 12-00531 .....**$199.95**
3/8" sq.dr. / 600 lb.in.-50 lb. ft. .....P/N 12-00532 .....**$199.95**

MICROMETER ADJUSTABLE CLICK WRENCH

Engineered, precision bearing surfaces extend the calibrated life of these micrometer torque wrenches to as many as 60,000 cycles or more and ensure the most reliable performance possible. In addition to flawless operation at release, calibration is completely external, unlike traditional mechanism that require disassembly and the replacement of blocks and shims. Both models come with a plastic storage box and a calibration compliance certificate. 3/8" sq.dr. / 30-200 lbs. ft.....P/N 12-00533 ..... **$197.00**
3/8" sq.dr. / 20-100 lbs. ft.....P/N 12-00534 ..... **$197.00**

TWISTED STRIPPER TWISTED SHIELDED PAIR WIRE PREPARATION TOOL

There is FINALLY a tool to quickly strip the shielded twisted pair wires in your avionics installations!

STP Wire Stripping Problem Background: From the beginning, Mil-Spec Tefzel Shielded Twisted Pair wire has defied every wire stripper available to installers, leaving a razor blade or knife as the best option for removing the outer jacket. This time consuming method is imprecise, and it can easily lead to internal shorts between the center conductors and the shield, especially when solder sleeves are used for shield termination. With the increased use of RS-232, ARINC 429, and other types of data busses in todays aircraft electronics, this type of wire is now a major component of many avionics installations. Stop the Razor's Hidden Damage Ring and slit. That has been the standard way to remove twisted pair jackets since the introduction of this type of wire. This time consuming and innacurate process has obvious disadvantages when compared to the TS-7000: P/N 12-02031 .....**$1,237.00**

ACCU-TAP PRECISION SET

Accu-Tap delivers professional results with every use. Align Accu-Tap using the specially designed sight gauge. The high visibility cross hairs ensure that you will not miss your mark. The v-block makes it easy to drill round stock and tubing and also works on any flat surface. With a flip of a switch, 180 pounds of force is activated in the unique magnetic base securing the guide in the exact location that you need.

Simply select the desired drill bushing and insert into Accu-Tap's locking liner. Grab your favorite drill and see the results unfold. Accu-Tap delivers results within .001". P/N 12-01871..... **$248.95**

LONG REACH COMPOUND JOINT PLIERS

Easily access long narrow openings with minimal handle movement. Longest narrow reach available

13.00" ..... P/N 12-01339..... **$28.75**
12.75" ..... P/N 12-01340..... **$21.75**
12.62" ..... P/N 12-01341..... **$21.75**
All 3 Set..... P/N 12-01342..... **$72.25**

FEIN MULTIMASTER SPEED START

For beginners, who do not want to sacrifice professionalism in spite of being price conscious.

Includes: 1 FEIN MULTIMASTER FMM 250, 1 universal E-CUT saw blade (29mm), 5 of each type of sanding sheet, grain 80, 120 and 180, 1 universal E-CUT saw blade (29mm), 1 rigid stopping knife, 1 key and mounting bolts.

Features: FEIN MultiMaster Start - a fully-fledged FEIN MultiMaster, suitable for all applications, featuring the most important accessories for grinding, sawing and scraping. In the lead through oscillation technology: unsurpassed versatility. Optimum handling thanks to ergonomical design and low weight. Chuck with form-fitting mount provides high torque transfer. Powerful 250 Watt motor with electronic speed control. Integrated interface for adaptation of additional system accessories. Extensive range of accessories available

P/N 12-01853..... **$238.95**

FEIN MULTIMASTER START PLUS

The universal system for interior construction and renovation with the basic accessories for the most common applications.

Kit Includes: 1 FEIN Multimaster FMM 250, 1 backing pad, 20 sanding sheets (5 each of grits 60, 80, 120, 180), 1 Universal E-CUT saw blade (1 3/4 in), 1 HSS segment saw blade, 1 rigid scraper blade, 1 wrench and mounting bolts, and 1 tool case. Weight: 2.6 lbs.

P/N 12-02962..... **$248.00**

SKYBOLT 4P3-SP5 COMBO TOOL

SK-4P3 CLoc® Pliers (PN# SK-4P3)
A must to install CLoc® or Camloc® 4000 Series studs into grommets. Also handy to install 2000 Series Studs, including winged studs. Cushioned grip handles. Grip jaws are milled precisely to fit 4000 Series cups perfectly!
P/N 08-07224.....**$74.85**

SK-SP5 SKYBOLT CLOC TOOL (PN# 08-07210) - Specifically designed to preset and adjust CLoc® 4000 Series Adjustable Receptacle and Mounts. Locking Sleeve can be set for known panel thickness to preset SK215, SK245, and SK2003 Dash 5 Series receptacles. With stud removed from grommet in outer panel, tool may be inserted into the receptacle to unlock and adjust insert without even seeing the insert. Positioning sleeve to the opposite end of tool, it becomes a "T26" Tool for installing grommet retainers.

SK-SP5 CLoc Tool .....P/N 08-07210 .....**$39.90**

HOSE PINCH-OFF PLIERS

Great for radiator and heater hose, vacuum and fuel lines. Tested to 50,000 cycles without failure for reliable performance. Patented clamping mechanism - No adjustment needed -- Simply squeeze to lock Cushion handgrips for comfort and control. Available in three sizes. Made in U.S.A.

Hose Pinch-off Pliers 1-1/4" OD Cap. .....P/N 12-00524 .....**$19.50**
Hose Pinch-off Pliers 2-1/2" OD Cap. .....P/N 12-00525 .....**$25.75**
Hose Pinch-off Pliers 3/4" OD Cap. .....P/N 12-00526 .....**$13.95**

HOSE CLAMP PLIERS

Specially designed for applying and removing spring hose clamps.The recesses in the jaws grip the ends of the spring so it cannot slip or twist. Grips with either end or side of jaws for reaching into tight places.

P/N 12-01154 .....**$18.95**

BOLT INSERTION TOOL

This tool allows you to put bolts in tight areas. The tool was designed to install the bolts in an aircraft elevator, however this tool has many other uses. The tool is 1/2" wide 5-3/4" long with a 3-1/2" reach. It can be used for fasteners from #6 to 5/16" diameter. The tool is made of 100% stainless steel for strength and appearance. P/N 05-04384 .....**$28.75**

TO

SAFETY WIRE TWISTERS - SAF-T-BLOKS

MILBAR SAFETY WIRE TWISTERS

Three-In-One Tool: Pliers, twisters and cutters. Used on wire sizes .060" or less. Grips wire into 30° slip proof angle. One-hand operation. Squeeze, press button and it locks. Squeeze again and it unlocks. Made in USA.

Description	Part No.	Price
With Manual Return		
Standard Nose - 9" Long	12-00915	**$56.50**
Diagonal Nose - 9" Long	12-02019	**$68.95**
Tapered Nose - 6" Long	12-00917	**$57.85**
Diagonal Nose - 6"Long	12-00914	**$62.50**
With Automatic Return		
9" Long	12-00916	**$59.95**

MILBAR WIRE TWISTERS MODEL 25W & 26W

Milbar is the world's leading brand of Wire Twister Tools and Kits. Designed for the professional mechanic, Milbar forgings are made from high carbon alloy steel and are controlled throughout the manufacturing process to exacting engineering specifications. Each tool passes a series of rigorous quality assurance tests which ensure function and reliability under the most demanding environments. (Black oxide finish) TYPES AND STYLES - Wire Twisters come in 6" Diagonal Configuration. The 25W model incorporate a Cushion Throat to catch clipped wire ends, preventing FOD (foreign object damage). The Spring Return feature automatically retracts the twist rod to ease and speed the work.

25W-NOM Size 6" ..... P/N12-01631 ..... **$71.85**
26W-NOM Size 9" ..... P/N 12-02018 ..... **$76.50**

ECONOMY SAFETY WIRE TWISTERS

These top quality twisting lock pliers with automatic return are economically priced and extremely durable. Features a sharp cutting edge and will twist up to .060" dia. safety wire. Length 6"& 9". Foreign made.

6"..... P/N 12-01472 ..... **$19.90**
9"..... P/N 12-01473 ..... **$19.75**

ECONOMY REVERSIBLE SAFETY WIRE TWISTERS

These top quality twisting lock pliers with automatic return are reversible, economically priced, and extremely durable. Features a sharp cutting edge and will twist up to .060" dia. safety wire.

6-INCH ..... P/N 12-02828 ..... **$48.75**
9-INCH ..... P/N 12-02829 ..... **$49.85**

SAFETY WIRE TWISTER KIT M300

Contains 6" Safety Wire Twister and 19" Chrome Adjustable Safety Twister Tool.

P/N 12-01680 ..... **$99.95**

MILBAR 105W PROFESSIONAL WIRING KIT

The most versatile kit available. Contains three different SafetyTwist® Pliers to cover almost any application: 9" Automatic (1W393), 6" Mini (9W) and a 19" Deep Reach Twister (13W). Includes three 1/4 lb. spools of stainless steel safety wire (.020, .032, .041). Durable plastic storage case. Kit weight 4 lbs.

P/N 12-02020 ..... **$173.95**

SAFETY WIRE TWISTER KIT

• 04-134SR - Safety Wire Twister • 04-134SR6 - Safety Wire Twister - Mini • 43-025 - Stainless Steel Aircraft Safety Wire • 43-032 - Stainless Steel Aircraft Safety Wire • 43-041 - Stainless Steel Aircraft Safety Wire• Kit Box 13" P/N 12-02350 ..... **$64.75**

SPECIALTY TWISTER

An excellent tool for different access situations, this twister provides a deep reach and access to close quarters. Made in U.S.A. P/N 13W **$35.85**

SAFETY WIRE TOOL

Easy one-hand operation. Reaches into tight places, makes a fast, neat twist. Shatterproof plastic handle. P/N 12-01072 ..... **$16.50**

SAFETY WIRE STARTER KIT

This handy kit enables you to safety wire any nuts or bolts on an airframe or engine. Just place the special washers under the bolt or nut, bend up the small flanges to hold the bolt or nut in place, and then use the tab of the washer to attach the wire to a solid point so the bolt cannot move. This kit works on the same principle as drilled bolts do and is very handy for those flying with an engine that does not have safety wired nuts and bolts. Excellent for use on 2 stroke engines. Package of spare washers includes 6 ea. of: 6, 8, & 10 mm sizes.

Safety Wire Starter Kit ..... P/N 12-16625 ..... **$18.75**
Package of 18 Spare Washers ..... P/N 12-16626 ..... **$6.75**

AERO SAF-T-BLOKS

Since the introduction of Saf-T-Bloks in 1981, they've helped thousands of mechanics by taking the headaches and hassle out of drilling safety wire holes in bolts and nuts. This easy to use Saf-T-Blok holds the bolt steady after you thread it in to the required depth. You then drill the hole through the center with no risk of misalignment. Saf-T-Blok is available in 4 sizes:

Description	Part No.	Price
Standard: (6 Thread Size) 1/4, 5/16, 3/8 USS & SAE	12-15345	**$28.70**
Metric: (5 Thread Size) 6x1, 8x10, 8x1.25, 10x1.25, 10x1.5	12-15346	**$28.80**
Aero: (5 Thread Size) 8-32,10-32, .25x20, .25x28, 5/16 x 24	12-15347	**$28.70**

NUT SAF-T-BLOKS

Designed to enable safety wire holes to be drilled through the head of bolts or through nuts, across the diagonal. Designed to accept up to 3/4" dia. nut. Easy to use. Nut Saf-T-Blok requires that the nut or bolt be placed into the "V" groove, tighten down the holding screw, drill & deburr. P/N 12-15349 ..... **$31.50**

ALLEN II SAF-T-BLOK STANDARD

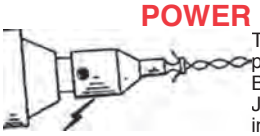
New from MTE industries the Allen Saf-T-Blok2. Design for all socket head cap screws Metric and SAE. With an added plus can be used as a tubing drill guide. As with all the Saf-T-bloks, this takes the headache and hassle out of drilling safety wire holes. P/N 12-02407 ..... **$29.95**

SAFETY WIRE KITS

These kits include professional safety wiring kit for all applications. Contains 9" automatic standard twister, 6" safety wire twister, made of hardened alloy steel-black oxide finish plus (3) 1/4 lb. spools of annealed stainless steel safety wire. (Sizes: 020, 032, 041). Model 100 also includes 19" chrome adjustable safety wire twister (for cavity and deep access applications.

Model 200 ..... P/N 12-16650 ..... **$93.75**
Model 100 ..... P/N 12-00336 ..... **$129.00**

POWER TWIST ADAPTER



This new tool attachment provides quick and precise twisting of safety wire using Skill or Black & Decker type cordless screwdrivers. Just attach the adapter to the screwdriver, insert wire and you will have a neat, tight, easy wire twist. Works perfectly in a wide variety of applications (particularly twists in tight spaces). Available exclusively from Aircraft Spruce & Specialty Co. P/N 12-20800 ..... **$21.95**

SAFETY WIRE DRILLING JIG

This tool provides a fast, simple way to drill bolt heads with virtually no broken drill bits. The tool is made of 6061T6 hard anodized aluminum for durability. Fits 3/16" to 5/8" dia. bolts and works on hex head bolts, header bolts, 12 point countersink and Allen head cap screws. Includes drill bushings and two cobalt drills. Made in U.S.A.

P/N 12-16600 ..... **$59.95**

TO

STRIPPER/CUTTERS

Klein wire strippers and cutters cut, strip, gauge and loop a wide range of wire types and sizes. Made of strong, hardened steel with comfortable handles, these tools are durable and long lasting.

11055 KLEIN-KURVE™ WIRE STRIPPER/CUTTER

Solid and Stranded. Double-dipped comfort grips with curved handles, cuts, strips, loops and gauges 10-18 AWG solid wire and 12-20 AWG stranded wire, cleanly shears 6-32 & 8-32 screws, coil spring provides fast, self-opening action. P/N 12-00235 ..... **$19.75**

11057 KLEIN-KURVE™ WIRE STRIPPER/CUTTER

Solid and Stranded. Double-dipped comfort grips with curved handles, cuts, strips, loops and gauges 20-30 AWG solid wire and 22-32 AWG stranded wire, cleanly shears 6-32 & 8-32 screws, coil spring provides fast, self-opening action. ..... P/N 12-00236 ..... **$18.90**

11045 KLEIN 10-18 WIRE STRIPPER/CUTTER

Strips 10 to 18 AWG solid wire, easy-to-read wire gauge markings, comfortable handles with cushion ridges. ..... P/N 12-00233 ..... **$14.75**

11046 KLEIN 16-26 WIRE STRIPPER/CUTTER

Strips 16 to 26 AWG stranded wire, easy-to-read wire gauge markings, comfortable handles w/cushion ridges ..... P/N 12-00234 ..... **$12.95**

KLEIN WIRE STRIPPERS 6-12

This lightweight Klein-Kurve wire stripper-cutter strips large gauge 6-12 AWG stranded wire and eliminates the need for a skinning knife. The tool clearly shears 6-32 and 8-32 screws and has a serrated pliers nose, which allows the user to pull, grip, and twist wire design adn double-dipped textured grips provide control and comfort.
P/N 12-01456 ..... **$9.25**

63020 KLEIN-KURVE MULTI CABLE CUTTER

Designed with 3 different cutting blades; anvil cutter, a copper curved cutter & a steel cutter. Cleanly shears 6-32 & 8-32 screws, double-dipped comfort grips with curved handles, coil spring provides fast self-opening action. P/N 12-00496 ..... **$22.85**

KLEIN TOOLS CABLE STRIPPER / CUTTER

Klein Tools added its new QTR-Turn NM cable stripper/cutter with Klein-Kurve handles to its existing line of strippers and cutters. The QTR-Turn technology allows users to place cable in the upper jacket strippers, squeeze the handle, and turn one-quarter to completely sever the outer jacket. It utilizes spring-loaded action for self-opening. ..... P/N 12-01770 ..... **$17.95**

63030 KLEIN 8-1/4" CABLE CUTTER

Cuts up to 1" diameter aluminum and copper coaxial cable, curved jaws firmly grasp cable, shear-type cutting blades, precision, one-hand shearing action. ..... P/N 12-00497 ..... **$39.25**

CRIMPING/CUTTING TOOL

This tool is designed to crimp insulated and non-insulated 10 to 20 AWG solderless terminals & connectors. It has easy-to-read tool markings to identify the insulated or noninsulated crimping dies. Its tapered nose design works well in tight places and has specially hardened cutter in th nose for quick, clean cuts. Size: 9.75". Lifetime warranty..... P/N 12-00698 ..... **$36.50**

KLEIN SCREW-HOLDING SCREWDRIVERS

Unique screw-holding design in which screws are held at the tip of drivers for precise placement in tight, hard-to-reach places and allows both torquing and tightening of screws. Starts and drives screws with one hand when working in hard-to-reach spaces.
1/4" Slotted ..... P/N 12-02702 ..... **$9.85**
1/4" Phillips ..... P/N 12-02701 .... **$10.80**

KLEIN HIGH-TENSION HACKSAW

Adjustable blade tension of up to 30,000 PSI for fast, precise cuts, along with soft touch grips for comfort. The alternative 45-degree mounting is perfect for flush cutting, and there's a front mount for reciprocating saw blade. There's a space to store your blade in the handle, and it comes with a 12" x 24 TPI bi-metal hacksaw blade and 6" x 24TPI bi-metal reciprocating saw blade..... P/N 12-02641 ..... **$23.25**
6" Replacement Blade..... P/N 12-02705 ..... **$17.35**
24" Replacement Blade..... P/N 12-02706 ..... **$23.95**

PLIERS

Designed and built with exceptional quality standards in a tradition that dates back to 1857. Klein specializes in the making of the world's finest pliers, for the professional. What makes Klein pliers different is induction hardening of cutting edges, pliers head hardness, hot riveting and special handle hardness.

D228-8 KLEIN 8" DIAGONAL-CUTTING PLIERS - High-leverage, standard-bevel cutting knives, with hand-form style plastic-dipped handles.
P/N 12-00228 ..... **$24.85**

D203-6 KLEIN 65/8" LONG-NOSE SIDE-CUTTING PLIERS - Standard cutting knives at hinge, wraps, loops, and cuts, plastic-dipped handles.
P/N 12-00229 ..... **$21.50**

D203-6 KLEIN 85/16" HEAVY-DUTY LONG-NOSE SIDE-CUTTING PLIERS - Induction hardened cutting knives, greater cutting power, hot-riveted joint, plastic-dipped handles.
P/N 12-00230 ..... **$27.50**

D252-6 KLEIN 6" DIAGONAL-CUTTING PLIERS - All-purpose, heavy duty, tapered nose, induction hardened cutting knives, hot riveted joints, plastic-dipped handles.
P/N 12-00231 ..... **$27.50**

D202-5 KLEIN 85/16" DIAGONAL-CUTTING PLIERS - With tapered nose, standard bevel cutting knives, plastic-dipped handles.
P/N 12-00232 ..... **$23.50**

5139 KLEIN CANVAS ZIPPER BAG

White canvas bag with strong zipper, convenient storage for tools, 7.5" x 12" overall size.
P/N 12-00239 ..... **$10.75**

NUT DRIVERS

The professional requires a number of nut drivers in a variety of sizes and types. Klein drivers feature convenience, comfort and efficiency in use, plus exceptional strength and durability. All Klein nut drivers are made of the highest quality tempered steel, carefully heat-treated for maximum strength.

631 KLEIN 7-PC. CUSHION-GRIP NUT DRIVER SET - Contains 3/16", 1/4", 5/16", 11/32", 3/8", 7/16", & 1/2" hollow-shaft nut drivers, roll-up plastic storage pouch.
P/N 12-00238 ..... **$51.25**

610 STUBBY NUT DRIVERS - The #610-1/4 & #610-5/16 stubby nut drivers are designed for use in tight spaces and on hard-to-reach fasteners. The tools have cushion grip handles for greater torque and user comfort. Drivers are made for 1/4" & 5/16" hex nut and hex screw sizes. The tool shafts measure 1.5" long and overall 3.5" long.
#610-1/4 ..... P/N 12-00694 ..... **$8.25**
#610-5/16 ..... P/N 12-00695 ..... **$7.25**

KLEIN TIP NUT DRIVER SET 7 -PC SET - Full Hollow Shaft design with Rare Earth magnetic tip. (Only with P/N 12-01594). Full hollow shafts facilitate work on long bolt applications. Cushion Grip handles allow for greater torque and comfort. Handle domes are color coded for easy identification. Internal flanges provide solid, twist-resistant shaft anchor. Chrome plated shaft helps prevent corrosion. Set contains Cat. No. 646-3/16M, 646-1/4M, 646-5/16M, 646-11/32M, 646-3/8M, 646-7/16M, 646-1/2M.

Klein nut driver 7pc. set..... P/N 12-00306 ..... **$49.95**
Klein driver 7pc Magnetic Set..... P/N 12-01594 ..... **$88.75**

TO

KLEIN HOLE SAW KITS

Klein Hole Saws feature bimetal cobalt construction which allows for heavy-duty cutting; they can cut through studs in one pass. They also have multiple knock-out slots and holes for easy core removal. Carbide grit hole saws work well for cutting abrasive materials and offer a smooth cut with minimal tear-out.

Electrician's Hole Saw Kit -
Contains the most popular sizes for basic electrical work. Hole Saws: 7/8", 1-1/8", 1-3/8", 1-3/4", 2", 2-1/2" Arbors: 7/16" (qty.2) P/N 12-00969..... **$88.75**

JOURNEYMAN'S HOLE SAW KIT - The most frequently used sizes and an arbor extension for hard to reach spots. Hole Saws: 3/4", 7/8", 1-1/8", 1-3/8", 1-1/2", 1-3/4", 2", 2-1/4", 2-1/2" Arbors: 1/4", 7/16" (qty.2), arbor extension P/N 12-00970..... **$129.95**

MASTER ELECTRICIAN'S HOLE SAW KIT - Includes the most commonly used saws and arbors. Hole Saws: 7/8", 1-1/8", 1-3/8", 1-3/4", 2", 2-1/2", 3", 3-5/8", 4-1/8", 4-1/2" Arbors: 1/4", 7/16" (qty.2)
P/N 12-00971..... **$172.95**

LARGE SIZE HOLE SAW KIT - Contains necessary sizes to upgrade a basic hole saw kit into a master set. Hole Saws: 3", 3-5/8", 4-1/8", 4-1/2" Arbors: 7/16" P/N 12-00972..... **$109.95**

KLEIN ELECTRICIAN TOOL SETS

Designed for beginner and experienced wirers, these tool sets range in size from a basic 14-piece assortment to the 41-piece comprehensive collection. Each set contains Klein premium products, such as wire stripper/cutters, screwdrivers, and pliers, plus protective eye wear and a pouch or tool bag for toting and storage. Each set offers a cost savings when compared to buying the tools separately. Tools in Electricians sets have standard handles. Tools in Journeyman sets have state of the art dual-material handles which provide a superior grip without sacrificing tool strength or durability.

14-Piece Electrician Tool Set.....P/N 12-00819 ..... **$218.95**
18-Piece Journeyman Tool Set.....P/N 12-00821 ..... **$298.95**
28-Piece Electrician Tool Set.....P/N 12-00820 ..... **$355.95**
41-Piece Journeyman Tool Set.....P/N 12-00822 ..... **$663.00**

KEARNEY SWAGER

This portable, hand-operated roll type swaging machine will swage MS type terminals onto galvanized and stainless steel cables from 1/16" diameter up to and including 3/16" diameter. Includes machine, a full set of roll dies, terminal gauges and feed guide adapters & instructions in a steel carrying case. Wt. 95 lbs. New manufacture. All replacement parts available. Special order
P/N 12-01188 ..... **$6,397.00**

FLYING WIRE TENSIOMETER

This tool is used for setting the tension on flying wires from 1/4" - 1/2". Tension ranges from 200 lbs. to 2400 lbs. Can also be used for setting drag, anti-drag wire tension. Ideal for use on Stearmans, Wacos, and Pitts, etc. To use this tool you will need a torque wrench.
P/N 12-12500 ..... **$244.50**

SOFT JAW PLIERS

This new tool is suitable for loosening and tightening threaded locking collars of electrical connectors without marring the gripping surfaces of the collars. Excellent for use on AN and MS connectors, plated pipe and fittings, plastics, glass and ceramics. The soft jaws will not crack or chip plating. Ideal for rod, tube or sheet. Grip Range: 3/4" to 2-1/2" dia. Made from heat-treated steel with black oxide finish. Meets government. Specs. American Made. P/N 12-16800.....**$21.50**

GREASE JOINT REJUVENATOR - PROFESSIONAL MODEL

Have you ever tried to push grease in through a grease fitting and couldn't? The Grease Joint Rejuvenator opens clogged grease joints and fittings effortlessly in less than a minute!

- Opens clogged grease fittings & joints
- Cleans and replenishes old and dirty grease fittings
- Loosens dried grease in joints
- Cleans ways and stays in milling machines and lathes
- Lubricates bearings on farm, lawn & construction equipment.

How it works: Remove the piston end and fill the tool with penetrating oil. Then place the end over the grease fitting and tap on the piston head with a hammer until it starts to move down into the tool body. The hydraulic pressure created by tapping on the piston forces the penetrating oil into the grease joint where the blockage is and loosens the old hardened grease (or dirt), flushing the blockage and clearing the way for new grease

Grease Joint Rejuvenator (Pro Model).....P/N 12-01038 ..... **$34.95**

COMPRESSION WHISTLE ALERT

No more burning your fingers and hands! Just Listen! Insert Whistle Alert™ into any 14mm spark plug hole and bump the engine until you hear the whistle. You are now on the compression stroke!

- Easily find Top Dead Center compression stoke
- Turn engine over from inside the car and listen for the whistle.
- Made of steel and aluminum
- Made and assembled in the USA.

Whistle Alert (Rigid).....P/N 12-01039 ..... **$15.75**
Whistle Alert (Flex).....P/N 12-01041 ..... **$12.65**

ENGINE CALIBRATION & SET-UP KIT

The Engine Calibration & Set-up Kit gives you innovative tools that help eliminate mistakes when setting up mechanical engine timing sequences, timing chains, timing belts, balance shafts and belts, distributor installations and general engine set-up.

Kit includes: •Standard 6" (14mm) and Extended 10.75" (14mm) •TDC Indicators
•Compression Gauge Extension
•Compression Whistle Alert™
•Crank Stopper
•18mm & 12mm Spark Plug Hole Adapters, extra nipple for compression tube to whistle conversion.

Engine Calibration & Set-Up Kit..... P/N 12-01040 ..... **$111.95**

TO

STEELMAX POWER TOOLS - 3M™ SANDERS

STEELMAX METAL CUTTING SAW 9 INCH

More efficient than any portable metal cutting process you are using now! • Increase Productivity - No Milling or de-burring with near surgical dry-cut technology. • Cuts a Variety of Metals, Plastic and Wood - Bring your saw to the work-piece while cutting mild steel, stainless steel and aluminum as easy as it cuts plywood. • Cool-to-the-Touch - No waiting for your work-piece to cool down. Just cut it and handle it. • Precise Cutting - With integrated laser sighting system. P/N 12-01716 ..... **$412.95**

Accessories	Teeth	Arbor	Part No.	Price
9" Mild Steel Blade	48T	1.0"	12-01803	**$54.95**
9.25" Mild Steel Blade	48T	1.0"	12-01804	**$59.95**
9" Stainless Steel Blade	80T	1.0"	12-01805	**$76.95**
9" Thin Steel Blade	80T	1.0"	12-01806	**$76.95**
9" Alluminum Blade	80T	1.0"	12-01807	**$61.95**

STEELMAX DRYCUT SAW S14

Utilizing a 14" carbide tipped blade, the Steelmax S14 cuts through metal faster, safer and cleaner than abrasive chop saws in a fraction of the time and cost. Powered with a 15 amp motor and geared to turn slower than a chop saw, the S14 dry cutter cuts like a cold saw, but at a fraction of the cost. Sold standard with a 14" carbide tipped mild steel blade attached, heavy duty, industrial strength cast iron base and two position locking vise, this saw is ready for immediate action! Cuts solid mild steel up to 1"thickness; cut profiles: pipe, angles, channel with a depth of cut up to 4-3/4". Bevels to 45 degrees. Saves time and money giving cool cuts that need little to no finishing, eliminating any need for grinding or cool down time. P/N 12-01717 ..... **$569.00**

Accessories	Teeth	Arbor	Part No.	Price
14" Mild Steel (Less Than 1")	66T	1.0"	12-01808	**$94.50**
14" Stainless Steel (Less Than 1/4")	90T	1.0"	12-01809	**$164.95**
14" Thin Mild Steel (Less Than 1/4")	90T	1.0"	12-01810	**$142.95**

MAGNETIC BASE DRILL

SteelMax® brand drills maintain rigidity and accuracy throughout the life of the drill. The rail system eliminates the need to adjust or maintain traditional gibs. In addition to saving on maintenance, cutter life is increased by reducing movement at the cutter tips. When cutters last longer, you save money every day you use SteelMax!

Magnetic Base Drill.....P/N 12-01718 ....**$1,398.85**

Portable Magnetic Drill .....P/N 12-01811 .....**$999.95**

CUTTERS FOR MAGNETIC BASE BRILL

Dia.	D.O.C.	Part No.	Price
7/16"	1"	12-01813	**$25.66**
1/2"	1"	12-01814	**$25.97**
9/16"	1"	12-01815	**$26.26**
5/8"	1"	12-01816	**$26.66**
11/16"	1"	12-01817	**$27.17**
3/4"	1"	12-01818	**$28.68**
13/16"	1"	12-01819	**$29.94**
7/9"	1"	12-01829	**$32.70**
1"	1"	12-01831	**$38.49**
1-1/16"	1"	12-01832	**$41.27**
7/16"	1"	12-01833	**$35.29**

Dia.	D.O.C.	Part No.	Price
1/2"	2"	12-01834	**$35.29**
9/16"	2"	12-01835	**$39.75**
5/8"	2"	12-01836	**$36.29**
11/16"	2"	12-01837	**$36.79**
3/4"	2"	12-01838	**$40.29**
13/16"	2"	12-01839	**$44.29**
7/8"	2"	12-01840	**$48.95**
15/16"	2"	12-01841	**$51.95**
1"	2"	12-01842	**$58.75**
1-1/16"	2"	12-01843	**$59.90**

Accessories for Base Drill	Part No.	Price
1" Center Pin For SM4374	12-01845	**$11.75**
1" Center For1" DOC Cutters	12-01844	**$11.75**
2" Center Pin For SM437L Only	12-01847	**$7.95**
2" Center For 2" DOC Cutters	12-01846	**$7.95**

1/2 INCH CHUCK & ADAPTER

With this optional industrial arbors and 2MT-1/2"Drill Chuck now you can! SteelMax industrial arbors let you easily adapt our premium m2AL cutters to a variety of machinery, including CNC, lathe's, stationary drill presses and similar equipment. With our integrated coolant collar, cutter performance and cutter life is assured!

P/N 12-01812.....**$98.85**

6 AND 13 PIECE CUTTER SETS

Description	Includes	Part No.	Price
6 Piece Set 1" DOC	9/16", 11/16", 13/16", 15/16", 1-1/16", Cutter Case, and 1" Pilot 9/16"-1-1/16"	12-01848	**$149.95**
6 Piece Set 2" DOC	9/16", 11/16", 13/16", 15/16", 1-1/16", Cutter Case, and 2" Pilot 9/16"-1-1/16"	12-01849	**$199.95**
13 Piece Set 1" DOC	7/16", 1/2", 9/16", 5/8", 11/16", 3/4", 13/16", 7/8" 15/16", 1", 1-1/16", Cutter Case, and1" Pilot 7/16", 1" Pilot9/16"-1-1/16"	12-01850	**$299.95**
13 Piece Set 2" DOC	7/16", 1/2", 9/16", 5/8", 11/16", 3/4", 13/16", 7/8" 15/16", 1", 1-1/16", Cutter Case, and1" Pilot 7/16"-1/2", 1" Pilot9/16"-1-1/16"	12-01851	**$399.95**

3M™ ORBITAL SANDERS

The all new line of 3M™ air-powered finishing tools includes innovations designed to optimize performance and productivity. 3M™ Tools are designed for smooth operation, and are packed with horsepower. Multiple grip sizes are designed to provide advanced operator comfort, and color-coded levers allow for easy orbit identification.

RANDOM ORBITAL SANDERS

Non-Vacuum Model

Self-Generated Vacuum Model

The 3M's NEW dust management system featuring Clean Sanding Abrasives and Accessories is revolutionizing the dust evacuation process. Discs are designed to cut more and last longer. The patented multi-hole pattern captures and remove more dust compared to 5- or 6-hole products.

Model	Tool Dia. Inch (mm)	Vacuum	Orbit Dia Inch	Max RPM	Motor HP (W)	Airflow Rate SCFM (LPM	PN	Price
20316	3"(77)	Yes	3/32"	12,000	.28(209)	17(481)	05-03482	**$192.95**
20319	5"(127)	Yes	3/16"	12,000	.28(209)	17(481)	05-03483	**$228.95**
20314	3"(77)	No	3/32"	12,000	.28(209)	17(481)	05-03485	**$229.00**
20317	5"(127)	No	3/16"	12,000	.28(209)	17(481)	05-03484	**$211.95**

Accessories	PN	Price
Clean Sanding Filter Bag	05-03486	**$5.50**

3M™ CLEAN SANDING 236U DISCS

An aluminum oxide Hookit™ disc with precise hole design for improved dust extraction constructed on a C weight, intermediate paper backing. CW Array Hole Pattern.

Model	Part No.	Price
6"P120	05-03576	**$0.58**
5"P500	05-03577	**$0.62**
5"P400	05-03578	**$0.62**
5"P320	05-03579	**$0.62**
5"P240	05-03580	**$0.62**
5"P220	05-03581	**$0.62**
5"P180	05-03582	**$0.62**
5"P150	05-03583	**$0.62**
5"P120	05-03584	**$0.63**
3" P80	05-03585	**$0.34**
3"P500	05-03586	**$0.34**
3"P400	05-03587	**$0.34**
3"P320	05-03588	**$0.34**
3"P240	05-03589	**$0.34**
3"P220	05-03590	**$0.34**
3"P180	05-03591	**$0.34**
3"P150	05-03592	**$0.34**
3"P100	05-03594	**$0.34**

TO

CABLE CUTTERS - SWAGERS

FELCO CABLE CUTTERS

A cable when crushed or deformed is difficult to use with fittings. These fine quality Swiss made cutters, with unique triangular jaws, never leave a frayed end.

#C-7F CUTTER - Capacity 3/16" diameter and smaller. Length 8". Wt, 10 oz.
P/N 12-01135 .....**$48.50**

#C-9 CUTTER - Cuts 1/4" steel cable
P/N 12-00179 .....**$142.95**

#C-12 CUTTER - Capacity 3/8" diameter and smaller. Length 19". Wt. 3 lbs.
P/N 12-01174 .....**$198.75**

#C2A CUTTER - Snub nose for loose cuts. 10% harder blade than C7 for long life and cutting of very hard wire or cable. Opening of tool cuts up to 2mm wire & stranded cable. P/N 12-00223 ..... **$56.50**

S & F CABLE CUTTERS

A fine tool made from high quality alloy steel and heat treated for best cutting action and long life of cutting edges. Handles shaped for comfortable grip and minimum cutting effort. Max. capacity 3/16" dia. 1 x 19 cable.
No. 316 Cable Cutter.....P/N 12-18600 ..... **$18.50**

BENCH MOUNT FOR #316 CABLE CUTTER

This bench mount adds to the versatitlity of the #316 cable cutter. Mounts with 2 screws to a bench or plate. Fingers can still grip the tool. Easily removed. P/N 12-00674.....**$3.50**

S & F HARD WIRE CUTTER

These quality cutters feature a unique handle design with thick "T" shaped vinyl handle grips for maximum comfort while cutting. Cuts 3/32" maximum diameter music wire, heat treated steel spring wire, stainless or galvanized cable. Produces clean square cuts. Gold iridite finish for maximum rust protection. Length: 6". Wt. 7 oz.
Model No. 093. ..... P/N 12-18605 ..... **$17.95**

CABLE TENSIOMETER

This precision instrument gives accurate readings over a wide range of cable tensions. No preliminary adjustments are necessary. May be used continuously without resetting or checking. Extreme heat or bitter cold does not affect the accuracy of the readings. One instrument is usable on many cable sizes with absolute accuracy. The small size permits entry through small openings and permits accurate readings on cable located in confined areas. The entire operation of testing cable tensions can be done with one hand in a matter of seconds. Range in Lbs.: 10-100 on 1/16", 3/32", 1/8"; 15-150 on 5/32", 3/16"; 25-150 on 7/32", 1/4" .....T5-2002-101-00 ..... **$838.00**

BURROUGHS CABLE GAUGE

Easy to use - just squeeze ball handle, put gauge on cable, release handle and read tension on rotation dial. No conversion charts necessary. Tension range: 10–70lbs. for 1/16" cable, 15 - 70 lbs. for 3/32 & 1/8" cable. 50-350 lbs. on 5/32" & 3/16" cable. Only 3-1/4" wide. Fits through inspection hole.
For 1/16", 3/32", 1/8" .....P/N 12-19200 ..... **$182.95**
For 5/32", & 3/16".....P/N 12-19210 ..... **$167.50**

TENSITRON CABLE TENSION METERS

Standard Features of all models: • Easy one-hand operation • No interchangeable parts are needed to adapt to different cable sizes • Memory Lock Pointer holds readings until cleared • Calibration chart affixed to back of meter • Durable and made of non-corrosive materials • Weigh approximately 21 oz. Compact design allows engagement of meter onto cables closely routed along floors, flat surfaces and other minimum clearance areas. Models ACM-100, ACM-200, ACM-300, ACM-400 are compact enough to allow use in limited access panels as small as 4" dia.

Model	Part No.	Price
ACM-100 - Designed to measure from 5-100 lbs tension in 1/16", 3/32", 1/8", 5/32" diameter cables.	12-01050	**$769.00**
ACM-200 - Designed to measure 20-200 lbs tension in 1/16", 3/32", 1/8", 5/32", 3/16", and 1/4" diameter aircraft cables.	12-01051	**$769.00**
ACM-300 - Designed to measure from 40-300 lbs tension in 3/32", 1/8", 3/16" and 1/4" diameter standard cables.	12-01052	**$835.00**
ACM-400 - Designed to measure from 40-400 lbs tension in 3/32", 1/8", 5/32" and 3/16" diameter standard cables.	12-01053	**$769.00**
ACM-600 - Measures tension from 40-600 lbs in 1/8", 5/32", 3/16" and 1/4" diameter aircraft cables.	12-01362	**$839.00**

ECONOMY SWAGING TOOLS

NO. 2 SWAGE-IT - For use with sleeves for 1/16", 3/32" and 1/8" cable. Swaging pressure applied by using a wrench to tighten bolts. Size: 1/2" x 1" x 7". Wt. 1 lb. Cadmium plated. P/N 12-12000 ..... **$19.50**

NO . 3 SWAGE- IT - For use with sleeves for 1/8", 5/32", 3/16" and 1/4" cable . Same design as No. 2 tool but larger. Size: 3/4" x 1-1/2" x 14". Wt. 3-1/2 lb.
P/N 12-12100 ..... **$38.75**

SWAGE-IT RIGGING KIT

This Swage-It rigging kit contains everything you will need for rigging and emergency repairs of Nicopress sleeves on cables. Includes the #2 Swage-It tool for 1/16", 3/32" and 1/8" sleeves, 1/2" extension wrench for use on the #2 tool and a #316 cable cutter. Size: 4-1/2" x 9". Packaged in a clear plastic tube with vinyl caps to better protect tools.
P/N 12-12200 ..... **$49.50**

LOCOLOC® HAND SWAGER NO. 1-SC

Designed for swaging copper and aluminum 1/16, 3/32, 1/8, 5/32 and 3/16 oval and stop sleeves, plus 7/32 stop sleeves, total of 11 sizes plus the ability to cut up to 7/32 diameter aircraft quality steel cable. A multi cavity hand cable swaging tool with a dozen functions. 26 inches long, weighs 6.5 pounds. Parts list included with each cable swaging tool. To assure proper swaging of Locoloc® aluminum, copper and stainless steel sleeves there is a Locoloc "Go" "No Go" gauge with each cable swaging tool. P/N 12-12400 ..... **$234.95**

LOCOLOC HANDSWAGING TOOL

LocoLoc #1-3-SBHS Hand Swager – This tool is an outstanding small hand tool, and it does a great job of swaging small sleeves. This is a (4) cavity tool, swaging sleeve sizes 1/32", 3/64", 1/16", 3/32" and #12 SEISMIC.
Ratchet mechanism will not release until swage is complete. Swages copper and aluminum sleeves only. Usage instructions and swage gauge included in each tool. Each LOCOLOC Swager is supplied with a gauge. Application: Copper Oval Sleeves, Copper Oval Plated Sleeves and Aluminum Oval Sleeves P/N 12-00222..... **$109.50**

GO-NO GO SLEEVE GAUGE

When the proper slot in the gauge slips over the compressed area of the sleeve after swaging then your swage is satisfactory. If the proper slot does not fit over the compressed area of the sleeve after swaging then your tool is out of adjustment and your cable assembly will not hold the rated breaking strength of the cable which should be the result when oval sleeves are used to form a loop or eye in a cable assembly. GA-1P: Gauges all swages performed on 1/32", 3/64", 1/16" 3/32", 1/8", 5/32", and 3/16" oval and stop sleeves. P/N GA-1P **$10.90**

NO-GO GAGE

The No-Go gage requires inspection of rollers; roller housings, seat rails, engagement pin, and attaching hardware. There are five measurements required for each pilot and co-pilot seat, these two tools will shorten the time to make these five measurements to minutes. Tool A measures pin engagement, roller tang width, and roller tang thickness. Tool B measures seat rail hole wear and opening of roller housing tangs. P/N 12-02861.....**$39.95**

NICOPRESS SWAGING TOOLS - 64-CGMP

The 64-CGMP has four grooves and is used for Oval Sleeve in the range of cable sizes from 1/16" through 5/32". The "C" groove is also used for the No. 871-1-C Stop Sleeve. The No. 63V-XPM has three grooves and is used only with Oval Sleeves. For cable sizes 1/8", 5/32" and 3/16".

Cable Dia	Sleeves				Swaging Tools	
	Plain Copper		Zinc Coated Copper		64-CGMP	63V-XMP
1/16	MS51844-42	18-1-C	MS51844-22	28-1-C	X	
3/32	MS51844-43	18-2-G	MS51844-23	28-2-G	X	
1/8	MS51844-44	18-3-M	MS51844-24	28-3-M	X	X
5/32	MS51844-45	18-4-P	MS51844-25	28-4-P	X	X
3/16	MS51844-46	18-6-X	MS51844-26	28-6-X		X

64-CGMP ..... P/N 12-02560.....**$284.50**
63V-XMP ..... P/N 12-02561.....**$289.75**

TO

TENSITRON ACX-SERIES DIGITAL AIRCRAFT CABLE TENSION METER

* Indicate Cable Tensions in Lbs, KG, or Newtons. * Small space access. One-hand operation. Memory storage features. ACX Screen Callouts :Display shows tension, battery charge level, name of calibration selected, and stores and displays up to 5 separate tension readings and their average. * Large, easy to read backlit, graphic display with adjustable backlighting and contrast. * Select cable size from menu. Instrument automatically adjusts calibration to correct setting. * Accuracy is +/- 2% full-scale for all menu-selectable calibrations. Accuracy for custom calibrations is material specific. * Up to 10 calibrations can be entered into instrument. (All calibrations password protected to provide due diligence). * Adjustable LCD refresh rates allow for stable digital readings. * All models factory-calibrated and ready for use on aircraft. * Calibration values traceable to National Standards. Calibration certificate included. Input Real-Time Serial Data into any Windows® application using any number of software wedge programs, such as WinWedge Pro® for Windows, or configure your Windows® operating system to capture the data via HyperTerminal®.

Model	Range	Res.	Cable Selections	Part No.	Price
ACX-100	5-100 lbs	0.5 lb	1/16", 3/32", 1/8", 5/32"	12-02103	**$834.00**
ACX-250	20-250 lbs	0.5 lb	1/16", 3/32", 1/8", 5/32"	12-01549	**$834.00**
ACX-500	40-500 lbs	1 lb	3/32", 1/8", 5/32"	12-01052	**$835.00**
ACX-CWT	20-250 lbs	0.5 lb	CWT-5,CWT-10, CWT-15,CWT-20,CWT-25	12-02104	**$833.00**
ACX-CMB	20-250 lbs	0.5 lb	1/16",3/32", 1/8",5/32", CWT-5 thru CWT-25	12-02105	**$938.00**

COMPASS FILLING AID

The compass filling aid is designed to be used for filling most standard aircraft compasses. The standpipe is simply attached to the compass with a supplied special rubber band. The compass is then filled and purged through the standpipe. When all air is removed, and the level in the standpipe is constant, the plug is then installed through the filled standpipe. Thus the need for submerging for proper filling is eliminated.....P/N 12-17604 .....**$21.90**

TURNBUCKLE WRENCH CABLE RIGGING

This tool consists of two clamps joined by a 12" length of sprocket type (bicycle) chain. It will accommodate all sizes of aircraft cable. When clamped to cable and fittings at each side of the turnbuckle, anchor the cable to allow free adjustment of the turnbuckle. The adjustment becomes a two hand instead of three hand adjustment.....P/N 12-00833 ..... **$19.85**

THE TOOL GRIP - TOOL AND CRAFT HOLDER

The Craft Grip is designed to hold tools or other items in the same manner as the Pen Grip. It differs only in the method of attachment. The attachment device is a u-shaped clip that fits over the edge of many surfaces and holds the organizer in place. These cups snap firmly onto the gripping unit. Its most popular uses are car and truck visors, tool boxes, painting easels and many other locations without harming or being permanently attached to the surface Available in Black or White.

Get a Grip Tool Grip (Black).....PN 12-00953..... **$6.95**
Get a Grip Tool Grip (White) .....PN 12-00954..... **$6.95**

THE PEN GRIP - PEN AND TOOL HOLDER

The Pen Grip attaches to almost any surface with double stick tape. Just peel off the backing on the attached double stick adhesive, press firmly onto the surface to which you want it attached and insert your tools. The unique gripping fingers hold all sorts of pens, pencils, & tools in many different positions, even upside down. Like the Tool Grip, The Pen Grip is available in White and Black.

Get a Grip Pen Grip (Black)
PN 12-00961..... **$5.95**
Get a Grip Pen Grip (White)..... PN 12-00962..... **$5.95**

WIRE SPOON

Features: • Wire threader designed for threading wires into an already tied harness • 300 Series stainless steel construction • Made in America for superior quality
P/N 12-01801 ..... **$8.75**

VAN SANT MULTITOOL ATTACHMENTS

The Multitool belt and disc grinding attachments for your bench grinder are must-have tools for any fabricator! These versatile tools remove material up to 5 times faster than with the equivalent grit grinding wheel. Belts change in seconds from grinding, to sand deburr or polish. Quality construction is backed by a 3-year warranty. The attachments are all available with motor options to suit the hobbyist or the professional. Includes 1 belt and 1 disc.
Visit our website for a Compatability Template in PDF

M362 MULTITOOL GRINDER ATTACHMENT -
(2"X36" Belt and one disc)
P/N 12-02064 ..... **$199.95**

M362-075 MULTITOOL GRINDER ATTACHMENT - (2"X36" Belt and one disc with industrial motor)
P/N 12-02065 ..... **$299.95**

M482 MULTITOOL GRINDER ATTACHMENT -
(2"X48" Belt and one disc)
P/N 12-02068 ..... **$279.95**

M462 MULTITOOL GRINDER ATTACHMENT -
(4"X36" Belt and one disc)
P/N 12-02066 ..... **$249.95**

M462-075 MULTITOOL GRINDER ATTACHMENT - (4"X36" Belt and one disc with industrial motor)
P/N 12-02067 ..... **$349.95**

M462 MULTITOOL GRINDER ATTACHMENT -
(4"X48" Belt and one disc)
P/N 12-02070 ..... **$349.95**

DISC GRINDER MITER ATTACHMENT -
The Multitool disc grinding attachment for your bench grinder are must-have tools for any fabricator! These versatile tools remove material up to 5 times faster than with the equivalent grit grinding wheel. P/N 12-02071 ..... **$74.95**

TO

STRUT PUMPS – DEBURRING TOOLS

THE GRIPPER - ALL DIGITAL CABLE TENSIOMETER

There are no extra parts to worry about. The Gripper can adapt to 5 Cable sizes 1/16, 3/32, 1/8, 5/32, and 3/16. From 5 to 150lb's. 1%-2% Accuracy. An instrument that will pay for it self quickly. The time savings compared to your current tool will amaze you. Electronically measured readings, assures accurate, reliable and repeatable measurements every time you use the "Gripper". The Gripper heads small size (1 1/8" square by 4 1/8" long) lets you access tight areas as it will go where other just will not go. It comes to you calibrated and ready for use. ***Features***: • Unique Remote Head Fits in to tight areas • Backlit Controller for easy reading . ***Specifications***; • Cable sizes: 1/16, 3/32, 1/8, 5/32, and 3/16. • From 5 to 150lb's • 1%-2% Accuracy

P/N 12-01722.....**$1,295.00**

DEBURRING TOOL

Utilizes a twist-of-the-wrist action for deburring holes and radii. Curved blade automatically follows all contours. Telescoping blade holder extends to reach deep internal holes. Supplied with one #10 and one #20 deburring blade. P/N 12-00700 .....**$16.95**

Item	Description and Application	Part No.	Price
#10 Deburring Blade	High-speed steel. For steel, aluminum & smaller holes	12-00800	**$2.20**
#20 Deburring Blade	High-speed steel. For brass, Bronze, cast iron, larger holes.	12-00900	**$2.40**
#40 Scraper Blade	High-speed steel. Small triangular blade.	12-01000	**$7.50**
#42 Scraper Blade	High-speed steel. Large triangular blade.	12-01100	**$11.60**
#48 Scraper Blade Holder	Holder has 10-32 threads. Accepts #40 & #42 blades. Extends to 3-1/2".	12-01200	**$7.85**
#50 Scriber	Carbide-tipped scriber.	12-01300	**$7.90**
#60 Deburring Blade	For backside deburring & for restricted positions	12-01400	**$4.95**
#70 Deburring Blade	Carbide-tipped blade for deburring edges of sheet metal.	12-01500	**$7.30**

SPEEDY BURR

Speedy Burr is designed to take the fatigue out of deburring. The wrist support makes the job easier. This tool is great for deburring spars and extrusions. The light weight, aluminum, hand-grip formed frame is comfortable and helps to maintain continuity in angle and depth of deburr. The wrist support is rubber lined to prevent skin abrasion.

P/N 12-00650..... **$22.95**

SPEEDY BURR II

Speedy Burr II is designed for deburring outside corners, sheet metal, machined parts, extrusions, castings, and plastic parts. This lightweight easy grip tool has a durable plastic coating on the handle for comfort and a sure grip. The burring tip is made from hardened steel and is replaceable.

Speedy Burr II ..... P/N 12-00651..... **$23.65**
Replacement Burr Tip ..... P/N 12-00652..... **$12.00**

PRO SERIES STRUT SERVICE TOOL

The Pro Series Strut Service Tool has all the great attributes of the original Strut Service Tool, with the addition of a dual tank and dual check valve design. The longer service hose makes it easy to attach. Strut pressure, fluid and foam is captured in one tank. Clean, foam-free fluid is drawn back into the strut from the second tank. Simplicity, cleanliness and less waste make this tool a must-have. The strut valve core is not removed. P/N 12-00677 .....**$139.95**

TIRE BALANCER AND BEARING PACKER

For 500-5 & 600-6 Bearings and Tires. Package Includes: Set of 500-5 & 600-6, Bearing Cones, Aluminum Balance Shaft, Set of Balance Shaft Bearings, 1/4 oz. Lead Balancing Weights, Aluminum Bearing Packing Tool that, removes old grease and abrasives, A great Stainless Tool Box using the shaft as a handle P/N 12-02309.....**$399.00**

BOGERT PRESSURIZED STRUT FILLER

Highly productive and a money maker for the shop! Add strut fluid to struts without jacking up the aircraft or removing the valve core and Schrader valve. Do the whole job in a few minutes. This is a huge time saver and is absolutely safe for both the plane and the maintenance technician because the aircraft tire never leaves the ground. Features: • USA Built-Machined Aluminum • Power load base plate • Externally adjustable pressure relief up to 10,000 psi • Compatible with most fluids • Large reservoir • Easy pumping and lightweight • Clean system, no spilled fluids, no wasted time • Use in conjunction with the standard Strut Service Tool to relieve the extra oil. • This saves time and eliminates the need to take one plane off jacks to lift another P/N 13-11204 ..... **$498.00**

PORTABLE STRUT / TIRE PUMP

This pump is constructed of aluminum and nylon. It's overall dimensions are 29.5" (750 mm) long, with a body of approximately 1" diameter and a "T" handle and base 8" (200 mm) long. It weighs 1.65 lb (.75 kg), has a nylon hose with 2000 P.S.I. burst pressure and a strut valve fitting on the end that doesn't depress the valve so that no pressure can escape from the strut. The pump is capable of pumping up to 650 P.S.I. without any compressed air required for the inlet, which is more than adequate for most light aircraft, e.g.: Piper Cherokee PA28-235 needs 450 P.S.I. for the main struts with the weight of the Aircraft on the strut. The pump can also be used as a tire pump as a backup. The main use for the strut pump is for the individual aircraft owner that operates from remote areas and don't have access to a compressor, however they are popular with maintenance organizations as well. The pump is small and light enough to fit in the luggage compartment and have with you all the time ready for that moment when your Oleo goes flat. P/N 12-16714 ..... **$382.50**

HX STRUT PUMP

Boost air to 1000psi without an air compressor.

- Very portable. No air compressor needed!
- Use air bottle, spare tire, tire pump for source air.
- Can also use with air compressor for air source.
- Detailed instructions.
- Equipped with 7 foot hose

P/N 12-16710..... **$309.00**

15X STRUT PUMP

Boost air or nitrogen to 2250psi.

- More than enough pump for most aircraft.
- Built for shop use or for a discriminating do-it-yourselfer.
- Weighs less than 7 pounds.
- Equipped with a 36" hose.
- Comparable to pumps priced in the thousands.
- Nitrogen adapter makes it easy to use bottled nitrogen.

15X Strut Pump..... P/N 12-16700..... **$409.00**
Nitrogen Adapter Kit..... P/N 12-02016..... **$28.85**

STRUT SERVICE TOOL

Service Strut in your Sunday Suit.

- Clean way to service struts.
- Strut valve core is NOT removed.
- Hose fitting releases pressure & fluid into the bottle.
- Raise & lower strut a few times, then apply the charge.

P/N 12-16792..... **$19.95**

BOGERT PRESSURIZED STRUT FILLER 16M-PSF

Finally a real time and money saver! This tool changes the way landing gear struts are serviced. No longer do you have to put an aircraft up on jacks to add fluid to and fill Oleo type landing gear. This is a totally clean and safe process. No oil is spilled. The strut valve is not disturbed and the plane is sitting on the ground the whole time. This is safe for the technician and the aircraft.

Features: • It is a convenient, small, compact system, easy to use, and neat to store • Two tank system. One tank contains clean Strut fluid and the other collects the excess • Built in pump forces fluid into the strut to top it off and the excess is drained off controlled right from the unit • Large capacity 5 qt storage tanks are big enough for just about any strut • Can be used on struts requiring up to 3000 psi strut pressure • Made in the USA.

Strut Filler..... P/N 12-03166..... **$769.00**
Strut Filler Tool..... P/N 12-03167..... **$594.00**

TO

WORK LIGHTS - INSPECTION MIRRORS

CONDUCT-A LITE INSPECTION KIT

Kit consists of aluminum 2-cell holder, 1-cell holder for use in small areas, 6" straight Lucite conductor, 4" curved Lucite conductor for lighting around corners, 2-1/2" straight conductor for pin-point lighting, and clip on mirror which attaches to any of the Lucite conductors. When used with curved conductor it can virtually make light available around a corner in a full 360° arc. Operates on penlight batteries (not included). P/N 12-14900 ..... **$19.60**

FLUORESCENT WORK LITE

Lights a greater area than a 150 W bulb for 1/10 the electricity. Throws a glare-free light. Hold it or hang it. Cool, insulated, shatter-resistant. Does not get hot - safe to handle. For 110V AC. Furnished with 25-ft. yellow oil-resistant cord. P/N 12-00909 ..... **$41.75**

FLEXIBLE MICROLIGHTS

This Super-Bright Micro 360 Flexible LED Light is 10 times brighter than standard flashlights and lasts up to 100 hours on a single set of batteries! Features: •Stainless Steel • Lifetime Warranty • Focused lens power beam • Shock proof, water resistant and cold burning • LED-"Light-Emitting Diode" • White beam • 100 hours of light without a battery change •Diode-charge system • Easy on/off-switch • 6" in length • Batteries included.

Micro Flex ..... P/N 13-02846 ..... **$26.75**
Mega Flex ..... P/N 13-02847 ..... **$44.95**

HEADLIGHTS

The Brighteyes Pro Headlights is a hands-free flashlight worn like eyeglasses to provide light for reading maps, instruments, repair work, and more. Excellent for work on aircraft, automotive applications, around the house, camping, & fishing. Headlights can be used with or without eyeglasses, and the lights will swivel to direct the light where you need it. (4) AAA batteries included.

P/N 12-00242 ..... **$12.85**

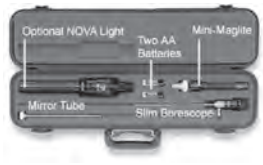
BEND-A-LIGHT

Bend-A-Light flexible brass–alloy high intensity light tools bend to any configuration and illuminate hard-to-reach areas where conventional lighting cannot go. The incredibly brilliant light beam penetrates anywhere! Bend-A-Light is a must for electronics, automotive, maintenance, repairs, locksmiths, industrial, hobbies, around the house and more. You bend it… and it holds! Bend-A-Light is the only complete line of professional quality high intensity flexible light tools. Available in 3 lengths and 3 different lamps to choose from. All Bend-A-Light models are made in USA and come with batteries installed.

Part No.	Description	Length Flex Shaft	Length Overall	Batt.	Bulb	Price
12-15005	Mini Pro	6"	11.5"	2-AAA	12100	**$18.75**
12-15150	Pro	15.75"	24"	3-AA	12110	**$36.75**
12-10250	Removable Shaft	9.5"	15.75"	2-AA	12100	**$19.95**

Part No.	Description	Dia	Bulb Life	Price
12-15020	12100 - Replacement Lamp	5/32"	4 Hours	**$6.75**
12-12110	12110- Krypton Lamp	5/32"	20 hours	**$8.50**

HAWKEYE PRECISION FLEXIBLE BORESCOPES

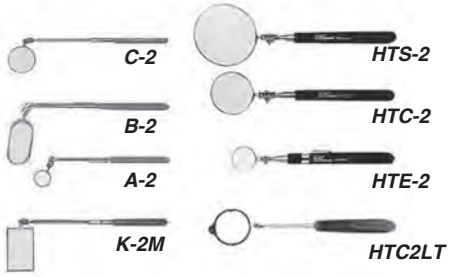


Hawkeye Rigid Borescopes feature the patented endoGRINS(r) lens technology that provides a sharp view inside engine cylinders, wings, under seats, and other remote areas. Includes a mirror tube which allows you to look sideways in a 360 degree arc as well as straight ahead. Packed in a lockable metal case with die-cut foam to protect the borescope. The heavy duty Mini-NOVA light source is highly recommended in aircraft applications. All Hawkeye Slim borescopes have a 0° direction-of view and 42° field-of-view. A rotating 90° direction-of view is achieved by sliding a Slim Mirror Tube onto the scope. Hawkeye

7" Hawkeye Hardy Kit ..... P/N 12-00337 ..... **$796.00**
12" Hawkeye Hardy Kit ..... P/N 12-00338 ..... **$839.00**

NOTE: ALL BORESCOPES ARE NON-RETURNABLE

INSPECTION MIRRORS AND MAGNIFYING MIRRORS FOR ALL-ANGLE VIEWING



Double ball-joints of tempered spring steel move freely, hold desired position for viewing to 360°. Mirrors have brushed stainless steel backs and insulating vinyl grips. Refill mirrors available.

Description	Size	Length	Part No.	Price
A-2 Circular Pocket mirror	7/8" Dia.	7.5"	12-01080	**$4.90**
A-2M Circular Magnifying Pocket mirror	7/8" Dia.	7.5"	12-01081	**$7.50**
B-2 Oval Pocket mirror	1" x 2"	8.5"	12-01169	**$5.50**
C-2 Circular Telescoping Mirror	2-1/4" Dia.	10" to 14"	12-01175	**$7.85**
C-2M Circular Magnifying Telescoping Mirror	2-1/4" Dia.	10" to 14"	12-01176	**$11.95**
K-2M Rectangular Magnifying Telescoping Mirror	2-1/8" x 3-1/2"	11.25" to 14.25"	12-01152	**$12.95**

Description	Part No.	Price
HTE-2 with 1.25" mirror for viewing in tight areas telescopes from 6.5" to 35"	12-01090	**$10.75**
HTC-2 with 2.25" mirror for viewing in less restricted areas telescopes from 6-1/2" to 36-3/8".	12-01089	**$10.50**
HTS-2 with 3.25" mirror for brightest clearest viewing with room tomaneuver telescopes from 6.5" to 36-3/8".	12-01091	**$12.50**
HTC-2LTwith 2.25 LED case illuminates darkened areas - two lithium batteries included. All-angle ball joint holds lighted mirror head firmly for perfect viewing textured cushion grip will not slip in wet or oil hands. Stainless steel handle telescopes from 6-3/4" to 37"	12-01979	**$16.50**

Accessories	Part No.	Price
Mirror Size: Dual 1"x2" Weight: 2oz	12-01084	**$1.19**

THE INSPECTOR ADJUSTABLE LIGHTED INSPECTION MIRROR

No more trying to aim a flashlight at the old style mirror. Inspector is a one–hand tool that comes with a very bright light that illuminates the total inspection area. Easy to adjust the mirror angle. Once inserted into the inspection area, simply push or pull the thumb knob for a 90° mirror angle adjustment. The product is constructed of non-conductive materials for safety. The mirror, lamp, and 2–AA batteries (included) are easily replaceable.

Inspector ..... P/N 12-15105 ..... **$23.90**
Inspector Replacement Lamp ..... P/N 12-15110 ..... **$3.65**
Inspector Replacement Mirror ..... P/N 12-15115 ..... **$5.75**

BINOCULAR MAGNIFIERS

The Binocular Magnifiers offer powerful, crisp magnification of your detailed projects while simultaneously leaving both of your hands free to work. The ground and polished optical lens is mounted to a tilt-up frame, allowing you to disengage the magnifier without removing the entire assembly from your head. This item is equipped with a cushioned headband which rests as comfortably as a baseball cap and is likewise adjustable for a snug fit.

Features: • 1.75x magnifying lens. • Great for assembly and inspection applications. • Used commonly by toolmakers, machinists, engravers, jewelers and hobbyists. •Leaves hands free to work. • Tilt-up lens frame instantly removes magnifying lens from sightline. • Ground and polished optical lens eliminates eyestrain. • Fits over prescription glasses. • Adjustable, cushioned headband for comfort fit.
14" focal length.

Description	Power	Focal Length	Part No.	Price
Binocular Magnifiers	2.25X	10"	950-5	**$29.50**

TO

SPRAY SYSTEMS

GRACO HVLP SPRAY SYSTEMS

Virtually eliminates mist. Requires less maintenance. Blows less heat up the stack. Uses up to 50% less material. Delivers better pattern control. Reduces overspray up to 90% Eliminates high-pressure "flop" and tiger stripes.

GTS-3800 HVLP SPRAYER - The GTS-3800 is highly productive for nearly all fine finish applications. Easily spray stains, lacquers, oils, enamels, urethanes and automotive finishes. Plus, it atomizes many water-based latex and acrylic coatings, multi-color and other higher viscosity coatings.

- Turbine Stages – 3
- Turbine Air Working Pressure – 6 psi (.414 bar, 41.4 kPa) max.
- Turbine Air Outlet Flow Rate – 80 cfm (2265 lpm) max.
- Gun – GTS-980 Non-Bleeder Style with Fluid Set #3
- Cup – 1 qt (1 liter)
- High-Flex Turbine Air Hose Length – Standard units incl. 30 ft (9 m). Use 60 ft (18 M) max.
- Power Cord – No. 16 AWG, 3 wire, 6 ft (1.8 m)
- Electrical Rating – 12A at 120 VAC
- Weight: Complete – 34 lb
- Dimensions: 18 in. x 15-1/2 in. x 16 in.

P/N 12-15780..... **$954.00**

GTS-4900 HVLP SPRAYER - Our most powerful and versatile sprayer offers everything you need on the job for high productivity. This unit is loaded with features and can spray the broadest range of materials.

- Turbine Stages – 4
- Weight: Complete – 39 lb
- Turbine Air Working Pressure – 8 psi (.552 bar, 55.2 kPa) max.
- Turbine Air Outlet Flow Rate – 82 cfm (2321 lpm) max.
- Gun – GTS-980 Non-Bleeder Style with Fluid Set #3, #4 and #5
- Cup – 1 qt (1 liter)
- High-Flex Turbine Air Hose w/Quick disconnects – Standard units include 30 ft (9 m). Use 60 ft (18 M) max.
- Power Cord – No. 12 AWG, 3 wire, 15 ft (4.6 m)
- Electrical Rating – 14A at 120 VAC
- Dimensions: 18 in. x 15-1/2 in. x 16 in.

P/N 12-15950..... **$1,652.00**

GRACO ACCESSORIES

Description	Part No.	Price
30 ft. Replacement Hose	12-00016	**$92.25**
Superflex Hose 54"	12-74660	**$32.75**

AXIS HVLP PAINT SPRAYERS

The Axis series of paint sprayers is designed to take the guesswork out of choosing a spraying system which can be confusing for the home-builder who is going to paint for the first time. Rather than offer a wide variety of sprayers, Axis has selected the best turbine for each type of product normally used to finish an airplane. This is the SP 2003 (three stage turbine) which is furnished with 30 feet of air delivery hose and the Lexair spray gun. Select one of the three systems shown below based on type of material you will be spraying. If waterborne materials are going to be used, we can furnish systems for this process on a special order basis.

Sys. 1 to paint aircraft covered in fabric.....P/N 12-15920 ..... **$819.00**
Sys. 2, to paint composite structure.....P/N 12-15930 ..... **$770.00**
Sys. 3, to paint over metal or wood .....P/N 12-15940 ..... **$795.00**

ACCESSORIES

Lexair Gun.....12-01385 ..... **$385.95**
Hose 40.....12-01386 ..... **$59.90**

CITATION 240

PAINT SPRAYER/RESPIRATOR SYSTEM

The Citation HVLP 'twin turbine' system provides both a 'professional quality' paint spray system and the HobbyAir supplied-air respirator in one portable package. This system comes complete with everything you will need to spray exceptionally fine finishes with practcally any material and to breathe in safety and comfort while you work. The basic system includes two 40' airlines (one for breathing and one for painting) and a half face mask. Available options include: A larger two-person Citation system with 3 airlines (two for breathing and one for spraying), Full face masks, and air-supplied hoods. This system comes with an unconditional 1-year warranty..... P/N 12-15900 ..... **$997.00**
Optional 4 ft. whip hose..... P/N 12-15910 ..... **$19.75**

SUNEX SX-10 TOUCH-UP GUN

Ideal for tight areas. Holds approximately one pint of paint. P/N 12-01121 ..... **$38.95**

PROFESSIONAL AIR BRUSH KIT

Gravity air brush, double action trigger for air-paint control, precision machined nozzles -air and fluid . Color Applied-watercolors,acrylics,dyes and inks.
Contains: 1 x Airbrush, 1 x 8.6'Hose, 1 x Wrench, Fluid Nozzle - 1 x 0.3mm, 1 x 0.5mm, 1 x 0.7mm, Metal cups - 1 x 2cc, 1 x 5cc w/lid, 1 x 13cc w/lid.
P/N 12-02566 ..... **$174.95**

TO

AIRCRAFT SPRUCE WEST
CORONA, CA • (877) 4-SPRUCE
AIRCRAFT SPRUCE EAST
PEACHTREE CITY, GA • (877) 477-7823
Prices Subject to Change Without Notice

SPRAY EQUIPMENT

BINKS SPRAY EQUIPMENT

MODEL 2001 AIR SPRAY GUN - This new gun incorporates the best features found in most heavy-duty production guns. The new grip will reduce operator fatigue and improve control. It utilizes the new style fluid nozzle with six air passages. It weighs only 24 oz. and is perfectly balanced. The head is forged brass and the body is anodized forged aluminum alloy. Spray pattern is adjustable from round to fan with a full range of intermediate settings. Air Flow: 8.1 CFM @ 50 PSI with No. 66 fluid nozzle and No. 66SA air nozzle. Air connections - Fluid inlet - 3/8" NPS (m), Air inlet 1/4" NPS (m). All parts replaceable. Made in U.S.A. Furnished with Model 81-350 DRIP-PROOF 1 Qt. attachable siphon cup. Wt. 3.25 lbs.

Model 2001 Gun and Cup..... P/N 12-04000..... **$328.00**
Gun Only..... P/N 12-04100..... **$266.95**
Cup Only..... P/N 81-350..... **$64.85**

BINKS AIR HOSE

5/16" Dia. hose with standard 1/4" NPS connection at both ends.

5/16" Dia. x 25' Long..... P/N 71-1205..... **$49.50**
5/16" Dia. x 50' Long..... P/N 71-1206..... **$98.50**

A 5/16" diameter hose is recommended for efficient operation.

STAINLESS STEEL PRESSURE ASSISTED 1 QUART CUP

Bink stainless steel pressure assisted 1 quart cup & attachment.

80-500 cup/lid assembly ... P/N 12-01332..... **$174.95**
82-367 cup gasket (poly) .. P/N 82-367..... **$9.75**

BINKS MACH 1 HVLP

The Binks Mach 1 HVLP is a siphon-fed refinishing system that performs like your favorite conventional outfit but produces far superior transfer efficiency. A unique arrangement of air nozzle, fluid nozzle, and needle enable the Mach 1 to draw material from a standard siphon feed cup and avoid the need for a pressure cup. Eliminates the need for the operator to set fluid pressures. Delivers lower emissions for compliance with environmental regulations.

P/N	Description	Price
12-04410	MACH 1 Siphon Gun Only	**$414.95**
98-1176	MACH 1 HVLP Siphon outfit -Spray Gun, 81-375 'No-Drip' Siphon Cup, &83-469 gun brush.	**$492.95**

1 QUART CUP ASSEMBLE MODEL 81-810

One Quart drip proof cup - clamp type - with a extra vent tube. Shipping weight 16 oz. Fulid inlet: 3/8" nps (f) P/N 12-02457..... **$69.50**

DISPOSABLE PAPER CUPS

Utilizes disposable paper cups as paint reservoirs making color changes possible in seconds. Package of 50 cups.

P/N 01-00325 ..... **$6.75**

BINKS MODEL 95 SIGNATURE SERIES SPRAY GUN

Model 95 spray gun employs the best features of Binks' most popular conventional air spray guns. This gun delivers higher quality finish, faster production, less operator fatigue, greater fluid compatibility, and more application versatility than any spray gun currently available. Model 95 is a high production gun with stainless steel fluid passages which may be used with most coatings. This new gun replaces Models 18, 62, and BBR spray guns, incorporating the best features of all 3: drop-forged anodized aluminum body, stainless steel fluid passages, adjustable floating needle valve, hardened steel or stainless steel fluid nozzle, plated drop-forged bronze self-centering air nozzle, brass air valve cartridge, adjustable spray pattern, 3/8" NPS (m) fluid inlet, 1/4" NPS (m) air inlet. Weight 1 lb., 11 oz.

Model 95 Hand Gun.....P/N 12-14150 ..... **$308.95**
Model 95 gravity feed hand gun with 1-1/3" alum. pint cup
P/N 12-04155 ..... **$370.95**

THE BEUGLER STRIPER PROFESSIONAL PINSTRIPING TOOL

The Beugler tool makes accurate lines consistently, without gravity or pressure, eliminating the need for tape. The unique serrated wheel and wheel head design are the secret to the striper's success. Ideal for any art project, the Beugler Striper is a professional tool used by auto, truck and motorcycle painters around the world. Beugler's magnetic guide securely holds to any steel surface, allowing the striper's guide arm to slide smoothly along its recessed groove for long, accurate, straight, or arced lines. To ensure customer satisfaction, Beugler also offers a 40 minute video tape or DVD with instructions, tips and demonstrations. The Beugler Striper works well with any "creamy" consistency paint. You can stripe at any angle, as the tool is not gravity fed. Both Professional and Deluxe Kits are of the same quality and include guides, clean up brush, 2/3 oz. paint barrel (which stripes 250 to 1750 feet, depending on stripe size) and complete instructions. Length 4-1/4", O.D. 3/4".

Description	PN	Price
Deluxe Kit (Includes 3 Srtiping Heads)	12-01696	**$121.95**
Professional Kit (Includes 7 Srtiping Heads)	12-01695	**$168.95**

WREN AIR BRUSH SET

Model No. 59-10005 includes 1/4, 1/2 and 2-1/2 fl. oz. color bottle assemblies, and 6 ft. plastic air hose with connections, packed in a durable styrene case. The Wren Air Brush is a "must" for retouching, special effects spraying and small parts finishing. Ship Wt. 20 oz

P/N 59-10006..... **$159.00**

MINI-AIR POWERED VACUUM

Runs off of an air compressor and is simple to use. Just plug it into the air hose using the adapter (included) & start cleaning. The body of the unit is plastic or cast aluminum construction with an 18" clear plastic flex tube that can easily get into tiny spaces to clean. The canvas bag is easily removed. Wt. 8.5 oz.

Mini-Air Vacuum - plastic .....P/N 12-16820 ..... **$31.50**
Mini-Air Vacuum - aluminum.....P/N 12-16821 ..... **$54.75**
Spare Bag and Clip.....P/N 12-16825 ..... **$7.85**
36" Clear Flex Hose.....P/N 12-16830 ..... **$10.75**

TO

AOM SPRAY EQUIPMENT

AOM X SERIES GUNS - MAX 29 PSI

6008SSPXX - HVLP Water Base Spray gun, die cast aluminum body, low cfm [4-6], SS fluid passages. Tip sizes available: 1.0, 1.3, 1.4, 1.5, 1.8, 2.0, 2.5
P/N 12-02136 ..... **$199.00**

66-110 - 1 Qt aluminum cam-lock cup (Order Separate) P/N 12-02137 ..... **$23.85**

6008 - HVLP Spray gun, drop forged body, for use with pressure pots
P/N 12-02138 ..... **$199.00**

600817 - HVLP Spray gun, drop forged body, with #66-110 cam-lock siphon cup P/N 12-02139 ..... **$233.60**

77SSXX - Conventional spray gun with #66-110 camlock siphon cup replace xx with 1.8 or 2.0
1.5 ..... P/N 12-02140 ..... **$175.00**
2.0 ..... P/N 12-02141 ..... **$175.00**

6008XX - Fluid nozzle, air nozzle and needle
P/N 12-02142 ..... **$90.00**

6008RK - Repair Kit ..... P/N 12-02143 ..... **$23.85**

AOM R 200 - MAX 45 PSI SPRAY GUN

662XX - Low pressure HVLP spray gun only for high efficiency low cfm at 5-7 (Tip sizes available: 1.3, 1.4, 1.5, 1.7, 2.0 2.5)

1.3	P/N 12-02166	**$98.75**
1.4	P/N 12-02167	**$98.75**
1.5	P/N 12-02168	**$98.75**
1.7	P/N 12-02169	**$98.75**
2.0	P/N 12-02170	**$98.75**
2.5	P/N 12-02171	**$98.75**

663XX - Low air consumption HVLP gun with syphon cup low cfm at 5-7. (Replace xx with tip size: 1.7, 2.0, 2.5)

1.7	P/N 12-02172	**$113.95**
2.0	P/N 12-02173	**$113.95**
2.5	P/N 12-02174	**$113.95**

66-110 - 1 qt Cam- Lock Cup
2.0 ..... P/N 12-02137 ..... **$23.85**

67999 - Seals and springs repair kit ..... P/N 12-02161 ..... **$23.85**

67-100 - 1 qt Pressurized aluminum cup with check valve and regulator
P/N 12-02177 ..... **$92.25**

AOM SX SERIES - MAX 30 PSI SPRAY GUN

Gravity spray gun kit 600 cc. aluminum cup, 5 CFM @ 30 PSI

ECO/SX HVLP 62-400 - Spray gun kit includes 3 needle/nozzle sets 1.0, 1.4, 1.7mm, 1 - 600cc aluminum cup, 2 cleaning brushes and wrench in carrying case
P/N 12-02130 ..... **$295.00**

ECO/SX N/N - aircap kit 1.0,1.2,1.3,1.4,1.7,2.0 (replace xx with tip size)
P/N 12-02131 ..... **$90.00**

K1/SX HYBRID 62-450- high transfer efficiency Spray gun kit. Includes same as above
P/N 12-02132 ..... **$295.00**

K1/SX N/N - aircap kit 1.0,1.2,1.3,1.4,1.7,2.0 (replace xx with tip size)
P/N 12-02133 ..... **$89.95**

REPAIR KIT -
P/N 12-02134 ..... **$18.50**

ALUMINUM GRAVITY CUP - 1000 cc (35 oz)
P/N 12-02135 ..... **$28.50**

AOM ECO/MINI HVLP GUN KIT - MAX 43 PSI

61- 210 - HVLP Mini Gravity Gun Kit includes 200cc aluminum cup, 4 glass jars, 5' air hose with quick disconnect, filter, 2 adapters, cleaning brush and wrench in carrying case.
This unique kit has all the necessary parts to convert from a Mini Gun to an Air Brush
P/N 12-02144 ..... **$190.95**

61-2006XX - Fluid nozzle, air nozzle and needle -(replacexx with 0.8, 1.0, or 1.2 for tip size)

0.8	P/N 12-02145	**$51.75**
1.0	P/N 12-02146	**$51.75**
1.2	P/N 12-02147	**$51.75**

61-210SE - 200cc Nylon Cup ..... P/N 12-02148 ..... **$18.90**

61-220SE - 200cc. Aluminum Cup ..... P/N 12-02149 ..... **$19.50**

61-2000R - Repair kit ..... P/N 12-02150 ..... **$18.50**

828-GTXX - Glazing nozzle kit c/o fluid nozzle, air nozzle and needle. (Complete for both sprayable and non sprayable materials) replace xx with 1.0 or 1.5
1.0 ..... P/N 12-02153 ..... **$84.60**
1.5 ..... P/N 12-02154 ..... **$84.60**

AOM F1/S CONVENTIONAL SPRAY GUN

This Gravity Gun is ideal for applying a wide range of materials such as Primers, Fillers, and Virtually all Wood Coatings

28XX - Gravity Gun with 750 cc. aluminum cup with nylon cover P/N 12-02228 ..... **$126.95**

29XX - Fluid nozzle, air nozzle and needle replace xx with 1.0, 1.2, 1.4, 1.5, 1.6, 1.8, 2.0, 2.2, 2.5MM
P/N 12-02225 ..... **$40.00**

28-RK - Seals and springs repair kit for E70
P/N 12-02231 ..... **$27.50**

ANI-CUPA - 750 cc. Aluminum cup with nylon cover P/N 12-02234 ..... **$26.00**

AOM 1 QUART PRESSURIZED CUP (HVLP)

RP-XX - R200 HVLP spray gun, pressurized aluminum camlock cup, regulator and check valve (replace xx with tip size. 1.3, 1.4, 1.5, 1.7, 2.0, 2.5) This outfit is perfect for small painting jobs that require precise fluid control. Can spray thicker material. Maximum cup pressure 10 PSI

1.3	PN 12-02180	**$267.95**
1.4	PN 12-02181	**$267.95**
1.5	PN 12-02182	**$267.95**
1.7	PN 12-02183	**$267.95**
2.0	PN 12-02184	**$267.95**
2.5	PN 12-02185	**$267.95**

AOM F1/I CONVENTIONAL SPRAY GUN

30XXSSP - Pressure fed spray gun only with 3/8:" fluid inlet P/N 12-02224 ..... **$115.00**

31XX - Fluid nozzle, air nozzle and needle replace xx with 1.0, 1.2, 1.4, 1.5, 1.6, 1.8, 2.0, 2.2, 2.5, 3.0mm.
P/N 12-02225 ..... **$40.00**

66-110 - 1 Qt. Cam-lock cup
P/N 12-02137 ..... **$23.85**

28RX - Seals and spring repair kit for G70/A or SSP (Sold Separately) P/N 12-02227 ..... **$15.50**

AOM 77 CONVENTIONAL SPRAY GUN

Ultra compact and light spray gun featuring a reduced air consumption. 1 qt. cam-lock cup

77SXX - 77S Spray gun with standard cam-lock cup replace xx with 1.5, 2.0 mm
P/N 12-02236 ..... **$185.00**

77SSPXX - 77 SSP Spray gun only. Replace xx with 1.5, 2.0mm P/N 12-02237 ..... **$175.00**

77XX - Fluid nozzle, air nozzle and needle for 77 (replace xx with nozzle size)
P/N 12-02238 ..... **$90.00**

77SRK - Seals and springs repair kit for 77
P/N 12-02239 ..... **$18.50**

66-110 - 1 qt. aluminum cup with cam-lock
P/N 12-02137 ..... **$23.85**

WATER BASE HVLP GRAVITY FEED SPRAY GUN

Water base HVLP Gravity Feed spray gun with 600cc Nylon cup. Features: High transfer efficiency with low air consumption. Provides wide fan pattern with superior atomization. Environmentally friendly. Die cast aluminum gun body. Stainless steel fluid nozzle & needle. Stainless steel fluid passages
P/N 12-02712 ..... **$276.95**

AOM PQ CUP GUN

99518 - PQ Cup Gun Economical high pressure air spray gun P/N 12-02242 ..... **$49.75**

THE Q SERIES HVLP TURBINE SPRAYER

PRO 3 - 110V, 3 Stage turbine unit, 101 CFM @ 6 PSI comes with gun, cup, 25' hose and coupler. Perfect for cabinet makers, furniture refinishers and most trades. Spray cabinets, furniture, autos or pianos.
P/N 12-02108 ..... **$1,049.00**

PRO 4 - 110V, 4 Stage turbine unit comes with gun, cup, 25' hose and coupler. The most powerful 4 Stage available. Perfect for paint contractors spraying Latex house paints, cabinet makers, furniture refinishers and most trades P/N 12-02109 ..... **$1,129.00**

XT 2 - Turbine spray gun & cup P/N 12-02110 ..... **$395.00**

WARRANTY: All systems 24 months -Parts & Labor

TO

AOM SPRAY EQUIPMENT

AOM DUAL ACTION AIRBUSH KIT

AB1104C WA -
* Double action trigger for air-paint control
* Precision machined nozzle and fluid cap
* Suitable for graphic artwork
* Fluid nozzle: 0.5 mm

P/N 12-02217 ..... **$94.65**

AB1117K -
* Double action trigger for air-paint control
* Precision machined nozzles-air and fluid cap
* Suitable for graphic artwork

Contains: 1 - Airbrush, 1 - Hose, 1- Wrench 1 - Jar Adapter, 1 - 5 cc. Paint cup Fluid nozzles - 1 of 0.3, 0.5, 0.7mm 2 - 22cc glass jar, 1 - 50 cc glass jar.

P/N 12-02218 ..... **$158.75**

AB1134K - Gravity air brush, double action trigger for air-paint control, precision machined nozzles -air and fluid . Color Applied- watercolors,acrylics,dyes and inks. Contains: 1 x Airbrush, 1 x 8.6'Hose, 1 x Wrench, Fluid Nozzle - 1 x 0.3mm, 1 x 0.5mm, 1 x 0.7mm, Metal cups - 1 x 2cc, 1 x 5cc w/lid, 1 x 13cc w/lid. P/N 12-02566 ..... **$174.95**

AB1117C - Double action trigger for air-paint control, precision machined nozzles -air and fluid, suitable for graphic artwork. 0.5 bottom feed with glass jar

P/N 12-02219 ..... **$109.00**

AOM MINI AIR BRUSH COMPRESSOR

AC16 1/6 HP Mini air brush compressor (Piston Type) with filter, micro switch and 10' retractable air hose (Airbrush Not Included)

P/N 12-02221 ..... **$185.00**

AOM 2-1/2 GAL PRESSURE POT OUTFITS

659126008 - 2-1/2 Gallon pressure pot outfit includes a 2-1/2 gallon pressure pot dual regulated 1.4 X series spray gun (also available in 1.3, 1.5, 1.8, 2.0) and 25' 1/4" air and fluid hose with fittings. This outfit is perfect for small to medium production facilities. Suitable for glues, lacquers, stains, water based and solvent based materials. OPTIONAL: 5/16" air hose and 3/8" fluid hose available on request at an additional cost. P/N 12-02191 ..... **$594.75**

65-914 GASKET - Replacement gasket for 2 1/2 gal. tank

P/N 12-02119 ..... **$21.75**

AOM PRESSURE TANKS 2 QT. REMOTE

75-111 - 2 qt remote pressure tank, single regulator, safety relief valve, handle, lightweight, SS pick up tube, Screw type top. Dual regulated available.

P/N 12-02111 ..... **$81.50**

75-111S - Large Mouth 2 qt. remote pressure tank, teflon coated inside, single regulator, safety relief valve, handle, lightweight, screw type top. Dual regulated available.

P/N 12-02112 ..... **$149.95**

65-424/1 - Replacement gasket for 2 qt large mouth remote pressure tank P/N 12-02114 ..... **$19.85**

75-111SS - 2 qt all stainless steel remote pressure tank, single regulator, safety releif valve, handle, lightweight, screw type top.

P/N 12-02115 ..... **$575.00**

75-112SS - Replacement gasket for 2 qt all stainless steel remote pressure tank P/N 12-02116 ..... **$19.25**

AOM PRESSURE 2-1/2 GALLON TANKS

65-911 - 2-1/2 gal. pressure tank, single regulator, Teflon coated inside and outside Safety relief valve, pick-up tube with filter, wide lid and low side walls, large wheels for easy movement. P/N 12-02117 ..... **$280.95**

65-912 - Same as above with dual regulators

P/N 12-02118 ..... **$320.00**

65-914 - Replacement gasket for 2 1/2 gal. tank

P/N 12-02119 ..... **$21.75**

AT2.5ASS - 2.5 gal pressure tank, air agitator, stainless steel inner liner, dual regulators, stainless steel fitted.

P/N 12-02120 ..... **$850.00**

65-0097 - Complete regulator assembly for 2 1/2 gal tank P/N 12-02121 ..... **$44.85**

65-0098 - Complete second regulator assembly for 2 1/2 gal tank only

P/N 12-02122 ..... **$44.85**

65-0099 - Double regulator assembly for 2 1/2 gal tank

P/N 12-02123 ..... **$89.50**

AOM ACCESSORIES

AOM AIR BRUSH HOSE MCR011 - 10' Air brush hose 1/4"F X 1/8"F P/N 12-02220 ..... **$20.85**

AOM GUN HOLDER RP 8413 - Gravity gun holder

P/N 12-02216 ..... **$14.50**

AOM DISPOSABLE LINERS - Disposable Liner round bottom fits # 65-911 & # 65-912 (10pk)

P/N 12-02124 ..... **$36.75**

Disposable Liner flat bottom fits # AT2.5ASS tank (12pk)

P/N 12-02125 ..... **$42.85**

Disposable Liner round bottom fits 5 gal pressure tanks (24pk)

P/N 12-02127 ..... **$126.95**

2 1/2 & 5 gal. bag tank liners 4 mil. (10 pk)

P/N 12-02128 ..... **$25.50**

AOM HARD CUP KITS - Can be mounted on any AOM spray gun.

DC 195-12 - Kit contains 12 Soft Liners, 12 Rings, 12 Lids w/Filters, 12 Caps, 1 Hard Cup and 1 Adapter

P/N12-02203 ..... **$51.00**

DC 195-12 - Kit contains 12 Soft Liners, 12 Rings, 12 Lids w/Filters, 12 Caps (Used with DC 191 Hard Cup)

P/N12-02204 ..... **$48.00**

DC 190-48 - Kit contains 48 Soft Liners, 48 Rings, 48 Lids w/Filters, 48 Caps (Used with DC 191 Hard Cup) P/N12-02205 ..... **$130.00**

DC 191 - Hard Cup (750 ml capacity) P/N12-02206 ..... **$16.00**

DC 192 - Adapter used with all AOM gravity guns (except Mini gun)

P/N12-02207 ..... **$14.00**

DC 193 - Adapter used with all AOM pressure guns

P/N12-02208 ..... **$14.00**

DC 194 - Shaker Cap P/N12-02210 ..... **$7.50**

12-02213

SPRAY GUN ACCESSORIES

68-9637 - Air regulator w/gauge, 1/4"F swivel connection & 1/4"M NPS connection P/N 12-02213 ..... **$15.00**

68-9638 - Mini air regulator w/gauge, 1/4" F swivel connection & 1/4"M NPS connection

P/N 12-02214 ..... **$31.80**

61-2031 - Air adjustment Valve P/N 12-02215 ..... **$9.90**

AOM QUICK COUPLERS -

41106 - 1/4" Brass Male thread

P/N 12-02196 ..... **$16.95**

41156 - 1/4" Brass Female thread

P/N 12-02197 ..... **$16.85**

AOM QUICK CONNECTORS -

42200 - 1/4" Brass High Flow male ..... P/N 12-02198 ..... **$2.50**
45600 - 1/4" Brass Std. flow male ..... P/N 12-02199 ..... **$2.50**
42300 - 1/4" Brass High Flow female .... P/N 12-02201 ..... **$2.50**
45700 - 1/4" Brass Std. flow female ..... P/N 12-02202 ..... **$2.50**

AOM MAINTENANCE KIT - Spray gun maintenance kit includes 12 special steel cleaning needles. Perfect for removing dry paint particles from air cap and nozzle as well as all difficult to reach gun parts.

P/N 12-02107 ..... **$32.75**

AOM SPRAY GUN LUBE 811-12 - Spray gun lube 12 pcs/Counter Display Box P/N 12-02211 ..... **$43.85**

AOM 22 PC DELUXE SPRAY GUN CLEANING KIT KK814 - 1 - Extra long 12" Pick-up Tube Brush 1 - 1/4" HVLP Brush 1 - 1/2" Body Cavity Brush 1 - Detail End Brush 2 - Nylon - Bristol Parts Brush 5 - Miniature Brush Set 6 - Precision Needle Set 1 - O-ring Removal Tool. P/N 12-02212 ..... **$35.85**

TO

TIG TORCHES - TIG WELDERS - WELDING CARTS

ASK MISTER TIG DVD

Learn how to tig weld with the best!! Mister Tig (Wyatt Swaim-30 years of aerospace welding experience) will teach you the fundamentals and launch your tig welding training. This 34 minute DVD will teach you the proper torch angle, tungsten preparation, tungsten stick-out, and th eproper "dabbing" of the filler rod technique. This instructional DVD will help you set up your machine for the correct procedures including aluminum (alternating current), and 4130-cro-mo (DC-).
The DVD is also packed with tig information and is designed for the beginner tig operator and will even help the intermediate operator.
P/N 13-05751 ..... **$26.75**

TIG CALCULATOR

Just tell it what material you're welding, the thickness, and type of weld (butt, lap, etc.), and it will give you information concerning your weld such as travel speed, number of passes needed, tungsten type and size, what amperage to run, and speed of welding. Slide rule style. P/N 12-00444 ..... **$8.90**

TIG TORCHES & REPLACEMENT CABLES

PTA-9F - Air-cooled TIG torch, rated 125 amps at 60% duty cycle. Includes a 12-1/2 foot Superflex Cable. Equipped with a flexible head for easy maneuverability into tight places.
P/N 12-00391 .... **$153.95**

REPLACEMENT CABLE - 12-1/2 foot Superflex replacement cable for the PTA-9F P/N 12-00399 ..... **$59.75**

PTA-17H - Air-cooled TIG torch, rated 250 amps at 60% duty cycle, heavy duty. Equipped with a 12-1/2 foot Superflex Cable P/N 12-00392 ..... **$198.00**

REPLACEMENT CABLE - 12-1/2 foot Superflex replacement cable for the PTA-17H P/N 12-00401 .... **$111.95**

TIG TORCH ACCESSORY KITS

9GL KIT - TigDepot Parts Kits provide all the torch accessories you need to start welding. Parts Kits provide collets, collet bodies, a back cap, alumina nozzles and tungstens in a variety of sizes, all packaged in an easy to carry reclosable box.
The 9GL-Kit comes with .040, 1/16, 3/32 Collets, Gas Lens Collet Bodies, Gas Lens Nozzles, (#5, #6, #7), a long Back Cap, and an assortment of 2% Thoriated and Ceriated Tungsten in a convenient plastic box. For the 9 Series torches P/N 12-00393 ..... **$63.75**

17H-GL KIT - The TigDepot 17H Gas Lens Kit is made specifically for the 210 Amp 17H Torch. ***The Kit includes One of each:*** • 2% Thoriated Tungsten .040, 1/16, 3/32 DIA. • Alumina cups #5,6,7 • Gas lens .040, 1/16, 3/32 • Collets .040, 1/16, 3/32 • Backcaps-short,medium, long • Insulator • Tool box PN 12-00394 ..... **$79.25**

TIG BUZZ BOX KIT

TIG weld Aluminum, Stainless Steel,Chrome Moly, and many other metals. Plug it directly into your standard household outlet (110 volts, 15amps). ***Kit includes:*** • CK9 Rigid Torch w/Valve and 12.5' one piece cable with male dinse connector. • Flowmeter Regulator • Adapter Plug with 1' extension cord • Female Dinse to allow you to go back and forth to stick welding. • AK-4 Accessories Kit • AMP Conversion Decal • Instruction Manual P/N 12-00389..... **$271.95**

TO

PRECISION TIG 275

With NEW patented Micro-Start II™ Technology and our New and Improved AC Auto Balance® on board, the Precision TIG® 275 delivers unrivaled starting and welding at low amperages and improved AC aluminum welding performance. Includes: Precision TIG® 275 (208/230/460/1/60), Under-Cooler Cart Water Cooler, Foot Amptrol, Harris® Argon/Helium Flowmeter Regulator and 10 ft Hose (3100338), PTW-20 Pro-Torch™, TIG Torch (250 amp, 25 ft.), Zippered Torch Cover, Parts Kit, Water Hose (2 included), 15 ft. 2/0 Work Cable and ClampWeight:397 lbs. (180 kgs.) Dimensions (in) H x W x D : 31 x 22 x 26 P/N 12-00769 .....**$2,918.00**

PRECISION TIG 275 READY-PAK PKG 208/230/460/1/60

Includes: Precision TIG® 275 (208/230/460/1/60) Under-Cooler Cart Water Cooler, Foot Amptrol, Harris® Argon/Helium Flowmeter Regulator and 10 ft Hose (3100338), PTW-20 Pro-Torch™ TIG Torch (250 amp, 25 ft.) , Zippered Torch Cover, Parts Kit, Water Hose (2 included) , 15 ft. 2/0 Work Cable and Clamp. Weight:641 lbs. (291 kgs.) Dimensions (in) H x W x D : 49.7 x 28 x 41 P/N 12-02249 .....**$4,627.00**

TIG WELDERS / WELDING EQUIPMENT

INVERTEC V155-S TIG READY-PAK - Weighing in at just under 15 lbs. (6.8 kg) it is no lightweight contender. It packs the full punch of a heavyweight professional that you can take to the most demanding jobs. With 120/230V auto reconnect operation, it can operate from a portable generator. It can also plug into a 200 foot (61 m) 230V extension cord (not included) so you can weld just about anywhere. The Dent resistant case is IP23 rated for outdoor use. P/N 12-01978..... **$1,150.00**

PRECISION TIG 225 READY PAC - Unit Includes: Precision TIG 225, Torch Parts Storage Compartment, Torch Hanger, 10 ft. Work Cable and Clamp, Removable Lift Eye, 9 ft. Input Power Cord, NEMA 6-50P Plug, NEMA 6-50R Receptacle, TIG Procedure Guide, GTAW (TIG) Handbook, PTA-17 Pro-Torch TIG Torch (12.5 ft., 1-piece), Gas Regulator with Hose, and Foot Amptrol® (K870). Shipped fully assembled. Shielding gas sold separately.....P/N 12-01634 ..... **$2,412.00**
TIG 225 With Understorage Cart.....P/N 12-01635 ..... **$2,579.00**

POWER MIG 140C - Power MIG® 140C (K2471-1)with continuous voltage control for more critical projects where precise adjustment is required. Diamond Core Technology™ and the rugged drive system aid arc performance for MIG welding on thin gauge steel, stainless and aluminum. Or, use gas-less flux-cored welding for deep penetration on thicker steel, even outdoors! With a wide 30-140 amp welding output range it is the highest output in 120 volt input power welder class. MIG weld 24 gauge up to 10 gauge (.135") sheet metal in a single pass. Includes: • Magnum 100L welding gun (K530-6) • Six spare contact tips • Gas and gasless nozzles • Work cable and work clamp • Adjustable gas regulator and hose •.025 and .035 smooth drive rolls •.030-.045 knurled drive roll •.025-.035 wire guide • 2 lb. spool .025" Super Arc® L-56 wire • 1 lb. spool .035" Innershield® NR-211-MP self-shielded flux-cored wire • 8" spool spindle adapter • How to Use DVD. P/N 12-01623 ..... **$749.95**

V205-T AC/DC INVERTEC - For TIG and Stick Welding. Ideal for critical AC or DC TIG Welding applications. Variable AC frequency allows you to focus the arc when precise arc control is required. The 115/230V auto-reconnect makes the V205-T AC/DC truly flexible. The unit comes with a 10 ft. 230V input cord and plug; a Twist-Mate Torch Adapter for 9 and 17 Series one piece torches; Twist-Mate adapter for work cable; and adjustable shoulder strap. This full featured TIG Welder is also capable of Stick Welding. P/N 12-00384 .....**$3,129.00**
One-Pak™ Package Includes: V205-T Foot Amptrol (K870) and TIG-Mate 17 Starter Kit. Assembly required. P/N 12-00776 .....**$3,665.00**

AC-225 COMPACT STICK WELDER - Produces an extremely smooth AC arc for welding a wide variety of materials including carbon, low alloy, and stainless steels as well as cast iron. Input Power - 230/1/60. Rated Output - 225A/25V/20% Duty Cycle. Input Current @ Rated Output - 50A. Output Range - 40-225 Amps (Max OCV: 79V). Weight/Dimensions (H x W x D) - 109 lbs. (49.5 kg). 24.0 x 17.25 x 12.0"
P/N 12-02683 .....**$425.85**

SP-140T WELDER - 120 Volt AC Input Compact Wire Welder. Requiring common 120 volt input power, the SP-140T can be used almost anywhere. With simple two knob tapped control, the machine is easy to set up for gas-less flux-cored welding for deep penetration on thicker steel or gas-shielded MIG welding on thin gauge steel, stainless or aluminum. Compare the precise drive, rugged construction and full list of standard accessories. Lincoln SP-140T is an excellent choice! P/N 12-02684 .....**$669.95**

TIG WELDING EQUIPMENT & ACCESSORIES

WELDING CARTS

These Welding carts are for the Invertec V-155, Invertec V-205T AC/DC, Procut 25 Plasma Cutter, and Power MIG 140C.

K520 WELDING CART - (150 cu.ft. bottle capacity) Accommodates power source, gas cylinder, tools and welding accessories. Dimensions (HxWxD): 30 (min.)/34 (max.) x 18 x 35 inches. Weight:38 lbs. (17.2 kgs.)
P/N 12-00773..... **$179.95**

K2275-1 WELDING CART - (80 cu.ft. bottle capacity) Full-featured cart is designed to store and transport a welder, 80 cubic foot gas cylinder, welding cables and accessories. Replaces K520. Weight:24.75 lbs. P/N 12-00777... **$97.50**

MAGNETIC UNI-JIGS

Magnetic holders for hands-free support in a variety of applications. Designed to last a life time. Each angle is screwed (not riveted) completely through the magnet to insure proper angles.
Small (supports up to 45 lbs.) P/N 12-05185 ..... **$7.95**
Large(supports up to 80 lbs.) P/N 12-05186 ..... **$17.95**

HARRIS MODEL 15 CLASSIC TORCH HANDLE

The Model 15 is a lightweight, aircraft style featuring a forward valve designed to permit changing flame serttings with one hand. For welding, heating and brazing with fuel gases. • Class A 3/8"-24 hose connection • Cap: Cuts 2", welds to 5/16" • UL listed • Length: 5-3/4", Wt: .5 lbs.
Torch Handle .....P/N 12-00687 ..... **$195.95**

B-15-3 Mixer .....P/N 12-00688 ..... **$83.50**

Welding Tip.....P/N 12-00689 ..... **$18.25**

Torch Handle Kit - Torch, Mixer and Tip
P/N 12-00690 ..... **$296.95**

TIG TUNGSTEN

Sold in packages of 10

2% Thoriated
1/16 .....P/N 12-00438 ..... **$14.85**
3/32 .....P/N 12-00439 ..... **$32.85**

2% Ceriated
1/16 .....P/N 12-00440 ..... **$14.95**
3/32 .....P/N 12-00441 ..... **$32.70**

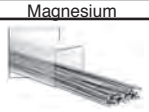
Pure
1/16 .....P/N 12-00442 ..... **$14.60**
3/32 .....P/N 12-00443 ..... **$39.90**

TIG FILLER MATERIALS

36" Cut Lengths are packaged in 1 lb. tubes to provide you the flexibility of buying only what you need for your job.

Base Material	Use Filler	Size	Part No.	Price/Lb.
4130	ER80S-D2	.035	12-00473	**$13.40**
4130	ER80S-D2	.045	12-00474	**$11.80**
4130	ER80S-D2	.062	12-00475	**$9.90**
4130	ER70S-2	.035	12-00477	**$13.60**
4130	ER70S-2	.045	12-00478	**$12.85**
4130	ER70S-2	.062	12-00479	**$10.90**
Aluminum	ER4043	.045	12-00480	**$24.20**
Aluminum	ER4043	.062	12-00481	**$15.50**
Aluminum	ER5356	.045	12-00482	**$26.40**
Aluminum	ER5356	.062	12-00483	**$13.50**
Stainless Steel	ER312	.035	12-00484	**$36.40**
Stainless Steel	ER312	.045	12-00485	**$31.40**
Stainless Steel	ER312	.062	12-00486	**$22.75**
Stainless Steel	ER308L	.035	12-00487	**$28.65**
Stainless Steel	ER308L	.045	12-00488	**$25.50**
Inconel	NICKEL 625	.035	12-00490	**$118.75**
Inconel	NICKEL 625	.045	12-00491	**$138.95**
Super Alloys	ALLOY W	MKT	Special Order	**Call**
Titanium	TITANIUM	MKT	Special Order	**Call**
Magnesium	TITANIUM	MKT	Special Order	**Call**

BRAZING AND SILICON BRONZE



.062..... P/N 12-00470..... **$20.75**

UNDERSTORAGE CART

Adds easy shop mobility and provides shielding gas bottle platform, handy storage drawer and two filler rod holders. P/N 12-00764 ..... **$198.50**

STICK ELECTRODE HOLDER AND CABLE

Includes twist-mate connector. 12.5 ft. cable length. P/N 12-00765 ..... **$50.75**

SMALL OXY-ACETYLENE KIT

With regulators. Designed for hobby, crafts, plumbing, etc. Braze and solder material from the thinnest up to 1/8" thick steel, melt up to 3 oz. silver. Provides stable and precise concentrated feather flame up to 6000°F for various materials such as metals, ceramics, and glass. P/N 12-00447 ..... **$242.95**

CUTTING TORCH ATTACHMENT

Cuts up to 3". Spiral tube mixer design optimizes the mixture of fuel and oxygen. Stainless steel tubes and lever. "A" hose fitting, 3/8"-24 thread.
P/N 12-00448 ..... **$102.50**

BOTTLES AND TOTE

STAND

"MC" ***"R"***

Plastic Stand, Oxygen and Acetylene Cylinders - Plastic Cylinder Stand holds "MC" Acetylene Cylinder and "R" Oxygen Cylinder.
Plastic Cylinder Stand
P/N 12-00449 ..... **$39.95**
"MC" Acetylene Cylinder (Empty)
P/N 12-00451 ..... **$93.75**
"R" Oxygen Cylinder (Empty)
P/N 12-00452 ..... **$91.25**

COW HIDE GLOVES

These are a good import, not too stiff.
P/N 12-05155 ..... **$4.75**

38" LEATHER WELDING APRON

Quick release buckle and cross straps make it very comfortable; it also has pockets. P/N 12-05160 ..... **$17.95**

3M SPEEDGLAS BLAZED WELDING HELMET 100

3M™ Speedglas™ 100 Welding Helmets deliver outstanding protection, comfort and performance with distinctive graphic designs. Welders can benefit from its excellent optical quality and reliable light-to-dark switching at a highly affordable price. The Speedglas 100 welding helmet can be used with most arc welding processes, such as stick (MMA), MIG/MAG and TIG applications greater than 10 amps. It's also the ideal "entry-level" auto-darkening helmet for occasional users, such as hobbyists, farmers and maintenance or construction workers. P/N 12-02695... **$228.95**

FULL FACE SHIELD

Lightweight headgear, shield flips down over prescription glasses. Good over bifocals. P/N 12-05175.....**$19.35**

WA-GOGGLE

Gas welding goggle with adjustable headrest that pulls out and down. Permits easy use of eyeglasses. 2 x 4 lens. P/N 12-05165.....**$56.50**

OXY-ACETYLENE HOSE

3/16" hose that may be used with all welding outfits.
B-B FITTING - 12'.....P/N 12-05916 ..... **$9.40**
25'.....P/N 12-05917 ..... **$16.50**
A-B FITTING - 12'.....P/N 12-05918 ..... **$11.80**
25'.....P/N 12-05919 ..... **$25.75**

TWO-IN-ONE 'R' GRADE HOSE FOR ACETYLENE

Green Hose: Oxygen. Red Hose: Acetylene. Length: 12-1/2" (3.8m). Diameter: 3/16" (5mm). Weight: 2-1/2 lbs (1.1kg). Use with AW Torch Series. "A" 3/8-24 & "B" 9/16-18 Hose Fittings. ....P/N 12-01198..... **$17.50**

HENROB 2000 IV WELDING TORCH

Ideal welding torch for aircraft construction. Allows less oxidation. minimal flux, reduced pressures and substantial materials savings. Fewer tips are required and hose fatigue is lessened. Perfect for steel and aluminum welding and cutting. Formerly known as the Dillon Mark III.
P/N 12-16000... **$468.00**
Henrob Instructional Video....P/N 12-05150..... **$16.95**

PORTASOL CORDLESS BUTANE SOLDERING TOOL KIT

Contains four different tools. Simple tip/accessory installation allows you to convert into a soldering iron, blow torch, hot blower or hot knife within seconds. Quickly cut and seal repairs on dacron, mylar and nylon. Cordless, go-anywhere versatility, 90 minute continuous use capacity, refills in 20 seconds with standard butane lighter fuel, and full 2 year warranty. P/N 12-20600 ..... **$71.50**

TIG-MATE 17 AIR-COOLED TIG TORCH STARTER PACK

One complete easy-to-order kit packaged in its own portable carrying case. Includes: PTA-17 torch, parts kit, Harris flowmeter/regulator, 10 ft. gas hose, Twist-mate™ adapter, work clamp and cable. P/N 12-00767 ..... **$308.95**

TO

WELDING EQUIPMENT – PARTS CARTS

SMITH WELDING OPTIONAL EQUIPMENT

SERIES 30™ TWO STAGE REGULATORS

H1421A-510 for Acetylene, 0-15 PSI
P/N 12-01186 .....**$195.00**
H1410A-540 for Oxygen, 0-150 PSI
P/N 12-01185 .....**$195.00**
For the professional. Heavy duty, w/check valves.

AC309 AIRLINE™ - STANDARD DUTY CUTTING ATTACHMENTS - Cutting capacity up to 3" thick (76mm) steel. Head Angle 90° USE IN: Torch Handles - AW1A, AW10A. P/N 12-01082 .....**$148.95**

CUTTING TIP - Slip-in cutting tips for general medium duty hand cutting. Use with medium pressure acetylene and oxygen. USE IN: Cutting Attachments - DG109A, MC505, MC509, CC509P (all sizes); AC309 (Maximum tip size MC12-4).
P/N 12-01192 .....**$17.85**

HUNTSMAN FACE SHIELD - Dark green plastic window 8" x 11-1/2" snaps onto lightweight plastic adjustable headband. Permits full peripheral vision during work. Protects against radiation - flip up visor when not in service.
Headband - Model K .....P/N 12-05000 .....**$15.75**
Visor .....P/N 8124D.....**$5.50**
Complete Shield .....P/N 12-05100 .....**$21.25**

HUNTSMAN ELECTRONIC WELDING HELMET
Call for prices and information on the new Huntsman Autoview Welding Filters which provide uncompromising eye protection.

WELDVIEW GOGGLES - Full protection against radiation and impact in gas welding, cutting, burning and brazing. Can be worn over personal glasses. Glass cover plate and Filterweld plate supplied. Meets requirements of American National Stds. Inst P/N 12-04910 .....**$12.25**

TIP CLEANER SET - 13 cleaners for #49 - #75 drill size orifices. P/N 12-01195 .....**$11.25**

SINGLE STAGE REGULATORS
Gas Used: Oxygen Delivery Pressure: 0-100 PSIG, 0-7 Bar.....P/N 12-19300 .....**$97.75**
Gas Used: Acetylene Delivery Pressure: 0-15 PSIG, 0-1 Bar.....P/N 12-19400 .....**$97.75**

STANDARD DUTY TORCH HANDLE - Inlet connections 3/8"- 24 right and left hand, fit "A" size hose nuts. Cuts up to 3" (76mm), welds up to 1/2" (13mm). Covered by the LIFETIME Warranty & Service Agreement. USED WITH: Cutting Attachment - AC309. Welding Tips - AW200 Series, AW400 Series. P/N AW1.....**$119.50**

AW200 AIRLINE™ SERIES OXY-ACETYLENE -
USE IN: Torch Handles - AW1A & AW10A.

For Metal Thickness Up To	Part No.	Price
1/32"	AW201	**$36.25**
1/2"	AW203	**$35.75**
1/8"	AW205	**$33.25**

ONE SINGLE FLINT LIGHTER -
P/N 12-01194 .....**$4.60**
Box of Six Extra Flints for Lighter
P/N 12-01193 .....**$4.35**

TWIN HOSE - 12-1/2 Ft. (3/16" I.D.)P/N RA921.....**$17.50**

TO

TIP CLEANERS

Quality aluminum case with rustproof stainless steel wire. The long spiral cleans a large number of tip styles. A hardened steel file included in each case.
P/N 12-05180 ..... **$2.95**

BULLDOG RED WELDING DAMAGE CONTROL CLOTH

This heavy duty red cloth is made from .015" thick fiberglass with a Hypercote finish. It resists abrasion and liquids, cuts without fraying, is electrically non-conductive and chemical resistant, and drapes easily. P/N 12-19500 .....**$14.90/lineal yd.**

SILVER PENCILS

The best way to mark tubing. Will not corrode tubing and shows up well on greasy tubing. May be used to mark exhaust system without lead cracking P/N 12-05190 ..... **$3.95**

INNOVATIVE PARTS CARTS

Keep parts and pieces from taking off. Cut clutter and down time. ..... Everyone needs one or more - at work or at home, innovative parts carts people become very attached to their parts carts. They 're virtually indestructible. Make users more efficient, productive and better organized - plus they're good looking and customizable.

INNOVATIVE PARTS CART A™

* Industry's easiest-nesting /catalog. * Perfect size for "lighter-hit" jobs. * Makes a great portable workstation. * High-carbon, heat-treated steel shelf brackets for years of trouble-free use. * All shelves have upper side rails to prevent parts slide-off. * Four industrial grade total-lock caster wheels for mobility; zero movement when locked. * Durable powder coat finish stays new-looking longer. * Shown with optional Shelf Mat. * U.S. Patent #7,314,413 * Other Patent Pending. * 42"W x 31"D x 44"H * Shelves measure 40"W x 24"D * Shelves adjust every 3" * Weight rated to 125 lbs. per shelf * Includes: * 2 adjustable shelves * 2 adjustable support arms * 2 bungee cords * 6 metal hooks * 73 lbs.
PN 12-02023.....**$288.95**

INNOVATIVE PARTS CART B™

* Industry's easiest-nesting /catalog * 30% more shelf positions that any other parts /catalog. * High-carbon, heat-treated steel shelf brackets for yeas of trouble-free use. * All shelves have upper side rails to prevent parts slide-off * Four industrial grade total-lock caster wheels for mobility; zero movement when locked. * Durable powder coat finish stays new-looking longer. * Assembles in less then 20 minutes. * U.S. Patent #7,314,413 * Other Patent Pending. * 42"W x 31"D x 75"H * Shelves measure 40"W x 24"D * Shelves adjust every 3" * Weight rated to 125 lbs. per shelf * Includes: o 3 adjustable shelves o 2 adjustable support arms o 2 bungee cords o 6 metal hooks * 92 lbs.
PN 12-02024.....**$364.00**

INNOVATIVE PARTS CART C™

* Easiest shelves in the industry to adjust. * Provides 32 sq. ft. of shelf space! * High-carbon, heat-treated shelf brackets for years of trouble-free use. * All shelves have upper side rails to prevent parts slide-off. * Durable powder coat finish stays new-looking longer. * Shown with optional RO Holder. * U.S. Patent #7,314,413 * Other Patent Pending. * 42"W x 50"D x 75"H * Shelves measure 40"W x 24"D * Shelves adjust every 3" * Weight rated to 125 lbs. per shelf * Includes: o 6 adjustable shelves o 4 adjustable support arms o 2 bungee cords o 6 metal hooks * 152 lbs..PN 12-02025 **$518.95**

BLASTING SYSTEMS

3-IN-1 HANDY BLASTER

The 3-in-1 Handy Blaster is a portable handheld blaster that allows you greater flexibility for a number of abrasive blasting applications. Features a powerful gravity-fed design, adjustable flow, vented tank, easy-squeeze trigger and hardened steel mixing chamber. What's included: (1) Handy blaster (1) Spot blaster attachment (4) Adapters (1) Blast recovery bag Specifications: Operating PSI: 110, working Pressure: 80-110 PSI Air Consumption at Load (CFM): 12 at 110 PSI, Recommended Media: fine to medium, Fitting Size: 1/4 in. NPT, Tank Capacity: .9 liter, Gun Included: Yes, Dimensions L x W x H (in.): 11 x 11 x 5, Manufacturer Warranty: 12 months parts / 12 months labor, Ship Weight: 2.0 lbs

P/N 12-02649 ..... **$52.95**

VAC BLAST PORTABLE VACUUM BLASTER

This portable 28-gallon vacuum unit blasts, removes and recycles abrasives in one operation. It works with glass beads, aluminum oxide, steel grit, garnet, plastic grit, walnut shells, corn cobs and more. Rolls easily on 6-inch wheels. What's included: (1) 28-gallon vacuum blaster (1) 8-ft. air and vacuum hose (1) Gun and brush assembly (1) 6-ft. power cord (2) Wheels (1) Replacement nozzle Specifications: Operating PSI: 115 - 140 (Max), Capacity: 28 gallons, Vacuum moter: 1100 watt, 120V, 1.5 HP, Air Consumption at Load (CFM): 15 at 80 PSI, Body Material: Steel, Body Finish: Powder-coated, Recommended Media: Glass beads, aluminum oxide, steel grit, garnet, plastic grit, walnut shells, corn cob, Hose length (ft.): 8, Nozzle Size (in.): 1/4, Tire Size (in.): 6 Dimensions L x W x H (in.): 15 x 15 x 41, Manufacturer Warranty: 1 year limited warranty, Ship Weight: 88.0 lbs

P/N 12-02647 ..... **$636.95**

MONSTER BLAST CABINET

The Monster Blast Cabinet is constructed of 14-gauge steel for strength and durability. It features a built-in dust collector and large work area to handle bigger pieces. Foot pedal control and side-mounted light switches for easy control.

What's included: (1) Blast cabinet (1) Blast Gun (4) Nozzles (two 7/32in., two 9/32in.) (1) Air regulator (2) Blast gloves (1) Foot pedal (4) Fluorescent lights (5) Extra window and (5) extra light underlayment sheets

Features: Large front door for easy loading. Heavy-duty 90 CFM dust collector improves visibility during blasting. Rear-mounted dust collector saves floor space. Convenient foot pedal operation. Large work area. Large viewing window: 30 inches x 15 inches. Heavy-duty steel grate holds up to 400 pounds! 4 fluorescent bulbs provide a very bright work area. Monster-sized 443 pounds! Heavy-duty 14 gauge steel has a resilient powder-coated finish. Gas-charged hydraulic hinges provide smooth and easy opening / closing Power controls are lighted and within easy reach on side of cabinet Blast-gun hook inside cabinet.

P/N 12-02648 ..... **$2,155.00**

CABINET BLASTERS

100 CFM dust collector included with all steel cabinets. HD 14 gauge steel - welded seams. Full width top door. Optional additional side door. Optional foot pedals or ALC pistol grip trigger gun. High quality lined 24" gloves. Cushioned foam armholes.

Specifications: Work Area: 36" or 48" or 60" W x 24"H x 24"D, Height: 60", Door Options: Double Doors, Top Door Opening: 13" x 35", Side Door Opening: 11" x 17", Gun Options: Foot Pedl, Weight: 36" - 272, 48" - 303, 60" - 333.

Cabinet 36"..... P/N 12-02563..... **$1,747.27**
Cabinet 48"..... P/N 12-02564..... **$1,795.00**
Cabinet 60"..... P/N 12-02565..... **$1,879.00**

BENCHTOP CABINET BLASTER

30x20" Bench Top Blast Cabinet

Features: • Made of tough LDPE polymer • One-piece construction (no leaks) • Self-adhesive underlay • Pistol grip trigger gun • Overside top window/door

Specifications: • Work area: 30"W x 27"H x 20"D • Height: 28" • Weight: 34 lbs.

P/N 12-02857 ..... **$465.00**

ECONOMY PORTABLE SAND BLASTING SYSTEM

A new portable blasting system for cleaning and surface preparation of metal, plastic, fiberglass or wood. Ideal for graffiti removal from brick or stone surfaces. Dee-Blast system consists of an abrasive hopper 20-1/2" high and 9-1/2" diameter molded PVC drum with tight fitting top to keep abrasive media clean. Hopper holds up to 65 lbs. of media. It has a 10 ft. long rubber hose, a full-length face shield and a trigger-operated blasting gun that completely mixes air and media to produce a uniform spray pattern.

P/N 130 ..... **$168.95**

PORT-A-BLAST SANDBLASTER

The Port-A-Blast sand blast gun is a complete sand blast unit. Fill the container with the abrasive material, connect the gun to your air line and it is ready to go to work. Will operate on air pressure as low as 60 PSI. However, for best results, pressures of 100-500 PSI are recommended. The greater the pressure the faster the cutting. The gun can be used to siphon abrasives or liquids directly from a hopper or bucket, using a flexible siphon tube, and eliminating the 1Qt. container.

Compatible Abrasives: • Silica Sand - the cheapest and most widely used for average work. • Glass Beads • Black Beauty Abrasive • Aluminum Oxide Abrasives - for fast cutting and fine texturing and etching. • Nut Shell Abrasives - for cleaning and polishing hard under surfaces without scratching. • Metal Shot - for removal of hard surfaces such as porcelain.

Port-A-Blast gun..... P/N 12-00172 ..... **$59.95**
Flexible siphon tube..... P/N 12-00173 ..... **$10.95**
Replacement Ceramic nozzle..... P/N 12-00493 ..... **$15.40**

Model 1000

DELUXE PORTABLE PRESSURE BLAST SYSTEMS

These Portable Pressure Blasters are designed to make the most efficient use of your air and abrasive supply. These are not inexpensive siphon units. The entire tank is filled with air and sand under pressure. When the nozzle and valve is opened the sand/air mixture is released under tremendous pressure to quickly remove paint, rust, scale and other coatings. These units are 3-5 times faster to use than siphon units. All units arrive complete with air gauge, pressure vessel, sandblast hood, and sandblast hose. Simply fill with abrasive and attach to your air supply and you are ready to begin blasting. Order by Part no.

ABRASIVES – Black Beauty: Economical, fast cutting abrasive. For quick removal of paint and rust. 80# bag. P/N 12-20740..... **$47.50**

Model 400

Spec. Chart	Model 400	Model 1000
Operating Pressure	60-125 psi	60-125 psi
ASME Tank	No	Yes
Sandblast Hose	7 feet	10 feet
Abrasive Capacity	40-50 lb.	100-120 lb.
Nozzle Size	3/32"	1/8"
Part Number:	12-20725	12-20735
Price:	$496.00	$785.00

TRIPLE DOOR BLAST CABINET

48x24" Triple Door Blast Cabinet

Features: • Full width top door • Two side doors • Foot pedal • Flourescent light • 90 CFM dust collector attached • Pressure regulator • Replaceable window underlays • Includes 4 nozzles • Some assembly required.

P/N 12-02858 ..... **$1,345.00**

TO

SCALES - ROTATORS - TIRE BEAD BREAKERS

PRECISION AIRCRAFT SCALES FOR ACCURATE WEIGHT & BALANCE

Checks aircraft weight and balance after modifications or fitting of new accessories. Flight safety is improved by periodic weighing to verify weight and balance is within limits. Simply roll the aircraft up the ramps onto the scales or jack the wheels and slide the pads under tires. A single high performance strain gauge load cell is in each pad. Temperature compensation prevents zero shift or sensitivity changes. Weighing pads, indicator and cables are color coded for easy match up. Include one 3 channel indicator, three colored cables, one 110V battery charger cable, three ramps, and six tire stops. Also includes a case.

Part No.	Capacity	Price
12-16711	2,500 lbs. per pad	**$6,583.00**
12-16715	6,000 lbs. per pad	**$7,699.00**
12-16721	10,000 lbs. per pad	**$8,826.00**
12-16725	15,000 lbs. per pad	**$8,921.00**
	OPTIONS	
Part No.	**Description**	**Price**
12-16730	Extra cable, colored	**$365.95**
12-16735	Extra ramps, small, set of 3	**$298.95**
12-16740	Extra ramps, large, set of 3	**$656.00**
12-16745	Extra tire stops (chocks)	**$54.85**
12-16750	220V Battery Charger Cable for overseas	**$541.00**

AIRCRAFT WIRELESS WEIGHING KIT

The Aircraft Wireless Weighing Kit is the highly portable weighing device for small to medium sized aircraft. Ideal for obtaining weight from 3 points under the aircraft to properly determine CG ratios.

Featuring standard capacities to 22,000 lbs (greater capacities available), this device will be a welcomed addition to your aircraft repair facility or regional airport.

Specifications: • Load Cell Model: WJSD-5000 • Wireless Range: 50 ft. • Capacities: 5 ton/sensor • Minimum Division: 1 kg • Maximum Tare: 4,000 kg • Built-In Rechargeable Battery • AC Adapter P/N 12-02608 ..... **$2,661.00**

TIRE BEAD BREAKER

Once the tire & wheel have been removed from the airplane, the air is let out of the tire. The "Tire Bead Breaker" is used to break the bead or bond between tire and wheel. The "TBB" let you safely break this bead almost without effort & with- out doing damage to the expensive cast wheels. One broken wheel half can easily cost more than the "Tire Bead Breaker"! The "Tire Bead Breaker" adjusts to fit tires as small as tailwheel tires and as large as those tires found on large, corporate cabin planes. Can be used on both tube and tubeless tires.

P/N 12-16790 ..... **$127.50**

TIRE BEAD BREAKER

The universal design of this tire bead breaker accommodate tube type and tubeless tires. It is easily adjustable for a wide range of tire sizes up to as large as tires for Twin Beech and Aero Commanders. Features all steel construction.

P/N 13-02360 ..... **$213.00**

ACCUGAGE PROFESSIONAL TIRE GAUGE

This very accurate bourdon tube tire gauge offers precision pressure control and a rugged steel case with rubber shock-absorbing cover. It comes complete with a 12" long flexible braided hose, a bleeder valve, and stop hand. It is easy to read the pressure on this 2" gauge with 1" psi markings and 60 lb. range. Excellent for use on aircraft tires as well as cars and trucks.

P/N 13-00437 ..... **$16.85**

TIRE PRESSURE MONITOR SYSTEM

With the flip of a switch, this battery operated, hand held unit, displays the actual tire pressure and tire temperature. Small removable electronic valve sensors transmit pressure/temperature to the LCD monitor within 25-50 feet of the aircraft. The sensors can be easily removed when adding air to the tires, and when placing the sensors back on the valve stems, will send the new pressure readings to the LCD monitor. These sensors replace the standard valve caps and stay on the tires during flight. Pressure range 0 to 80 PSI. Temperature range - 50 Centigrade to 145 Centigrade. The monitor also has an alarm setting for high or low pressure. The battery has an average life of two years. The product is warranted for 12 months from the date of purchase. Only rated to flight level 30 and 80 psi max. Not FAA Approved

P/N 05-04367 ..... **$317.00**

TIRE DOG

The Wireless Tire Pressure/Temperature Monitoring System for Trucks, Trailers, and Motor Homes. The monitoring system can measure real time tire pressure and tire temperature while the vehicle is either standing or in action. The tire pressure range is 0 to 180 psi. It will support 4 tires up to 22 tires. Installation can be accomplished by the owner/operator of the vehicle or trailer. Depending on the distance to tires or the vehicle type, a booster relay may be required. An adjustable swivel mounting bracket allows the monitor to be mounted on the dash or windshield. All items of the system are battery operated with a life span of 12 to 24 months depending on use. The system can be transferred to other vehicles if desired. The conceptual drawing displays the monitoring system up to 10 tires, by adding more sensors and relays, the system will expand up to 22 tires. ..... P/N 05-04849 ..... **$469.95**

Tire Dog Sensor ..... P/N 05-04850 ..... **$50.00**

Tire Dog Wireless Relay ..... P/N 05-04851 ..... **$75.00**

ANALOG TIRE GAUGE

Industry standards permit aircraft tires to lose as much as 1% of their pressure each day, and even mild underinflation can allow temperatures to rise exponentially, sometimes resulting in heat-induced failures even while taxiing, company officials note. Underinflation can cause poor tracking and landings or even total failure of the tire or the wheel. Underinflation lengthens the takeoff roll and reduces the brakes' predictability and effectiveness. Tool Testing Lab's backlit digital gauge reads in PSI, InHg, Oz, SqIn, Inches or Feet, H2O, Kg, sqCm, Kpa, and Bar, with ½% tolerance and as fine as 0.1PSI resolution. It also holds peak readings, and features a built-in bleeder valve. Features: 300 PSI gauge, Accuracy 1% Full Scale 300 PSI Rated Hose Rubber Boot, Dual Foot Chick, Swivel Footing on Gauge ..... P/N 12-02638 ..... **$109.85**

DIGITAL TIRE GAUGE

300 PSI Gauge, Accuracy ± ½ % of Full Scale, 4 Digit Display - Shows pressure in tenths of PSI 300 PSI Rated Hose Dual Foot Chuck (Other Chucks Available), Protective Rubber Boot, Swivel Fitting on Chuck Backlight Button for Low Light Conditions, Zero Button Reads in PSI, Bar, KPa and 5 Others Peak Hold Reading Manual and Auto Shutoff, Uses two AAA Batteries (2000 Hrs Usage Typical) Pressure Bleeder Valve, Storage Case, Fresh Certification ..... P/N 12-02637 ..... **$269.50**

DIGITAL TIRE GAUGE KIT

300 PSI Gauge Accuracy ± ½ % of Full Scale. 4 Digit Display - Shows pressure in tenths of PSI. 300 PSI Rated Hose. Quick Disconnect. Protective Rubber Boot. Swivel Fitting on Chuck. Backlight Button for Low Light Conditions. Zero Button Reads in PSI, Bar, KPa and 5 Others. Peak Hold Reading. Manual and Auto Shutoff. Uses two AAA Batteries (2000 Hrs Usage Typical) Pressure Bleeder Valve. Storage Case. Fresh Certification. 1 year Warranty

P/N 12-02639 ..... **$325.00**

TO

AIRCRAFT JACKS

MEYERS HYDRAULICS AIRCRAFT JACKS

Meyers Hydraulics have been recognized as the industry standard for aircraft jacks for over 25 years. Professional mechanics rely on the AJS Jack Set for applications requiring heavy-duty lifting capacity, smooth maneuverability, and reliability. Refer to the Application Chart below for the components required for your aircraft, and then order from the price list accordingly.

Aircraft	Jacks	Tailstand	Legs	Tubes & Caps
Aero Commander	(2) A-6	(1) ATS	(2) AJL	(2) AT-4
Beech: Model 50, King Air, Queen Air	(2) A-6	---	---	---
	(1) A-5	---	---	(1) AT-3
Beech: Bonanza, Debonair, Travelaire, Baron	(2) A-5	(1) ATS	---	---
Mooney	(2) A-5	(1) ATS	---	---
Piper: All except Navajo & Aerostar	(2) A-5	(1) ATS	---	---
Piper Navajo & Aerostar	(2) A-6	(1) ATS	---	---
Cessna: Cardinal RG	(2) A-6	(1) ATS	---	(2) AT-4
				(2) ATC-8
Cessna: All high wings RGs except Cardinal	(2) A-6	(1) ATS	(2) AJL	(2) AT-4
				(2) ATC-8
Cessna: All 300 & 400 Series	(2) A-5	---	---	(2) AT-28
				(3) ATC-4
Navion	(2) A-5	(1) ATS	---	(2) AT-28

Part No.	Description	Price
12-21405	A-5 Jack	**$596.00**
12-21410	A-6 Jack	**$698.00**
12-21415	ATS Tail Stand	**$177.95**
12-02281	A427 Jack w/ AT42727 (27"/46")	**$640.00**
12-21435	AJL Leg	**$81.25**
12-21440	AT-1 Tube	**$55.85**
12-21445	AT-2 Tube	**$66.75**
12-21455	AT-3 Tube	**$69.75**
12-21460	AT-4 Tube	**$89.75**
12-21465	AT-28 Tube	**$59.50**
12-21470	ATC-4 Cap	**$58.75**
12-21475	ATC-8 Cap	**$72.25**

AJS	Height Ranges
A-5 w/AT-1*	22"/36"
A-5 w/AT-28	28"/42"
A-5 w/AT-3	34"/58"
A-6 w/AT-2*	34"/58"
A-6 w/AT-4	54"/78"
A-6 w/AJL	Legs+10"
ATC-4 Cap	+1 to 4"
ATC-8 Cap	+1 tp 8"
ATS Tailstand	30"/51"

(*) ATC Caps will not work on these tubes.

AJS UNIVERSAL AIRCRAFT JACK SET

The AJS Universal Aircraft Jack Set from Meyer Hydraulics has served as the general aviation industry standard for over 25 years. Professional mechanics rely on the AJS Jack Set for applications requiring heavy duty lifting capacity, smooth maneuverability, and unquestioned reliability. The AJS Set lifts all retractable gear aircraft weighing up to 8000 lbs.

AJS System:

1. A-5 Jack w/ AT-3 Tube
2. A-5 Jack w/ AT-1 Tube
3. ATS Tallstand
4. A-6 Jack w/ AT-2 Tube
5. A-6 Jack w/ AT-4 Tube & AJL Leg Set
6. AT-3 tube
7. AT-1 tube
8. AT-4 caps
9. AT-2 tube
10. AT-4 tube
11. AJL Leg Set

P/N 12-21476 ..... **$2,795.00**

AJS2 DELUXE JACK SET

Includes one complete AJS Jack system (describes above) plus one A-5 Jack with AT-1 tube, one AT-28 tube, and one ATC-4 cap. A very popular Jack system for general aviation maintenance.

P/N 12-01378 ..... **$3,357.00**

A419 AND A421 VERY LOW AIRCRAFT JACKS

Designed primarily for the new class of aircraft called Very Light Jets (VLJs). Ultra low height and the maximum stroke range necessary for the large landing gear movements found on these jets. Features: (A) Steady Knobs (B) Convenient hole spacing (C) Positive safety lock prevents accidental lowering. (D) Anti-snag round tube (E) Three 3" spring loaded casters (F) Low-height leg design.

A419 - height range 19"-34" ..... P/N 12-02290 ..... **$638.00**
A421- height range 21"-38" ..... P/N 12-02291 ..... **$645.00**

JACK PADS

Jack pads provide a cradle for the main landing gear legs. The cradle design securely holds the landing gear providing a safe jack point. The adjustable jack pad fits flat spring gear. The round gear jack pad fits the models listed below. • Save time when servicing tires, wheel bearings and brakes • Lift only the wheel instead of the whole aircraft • Eliminate the unsafe practice of stacking wood blocks under a bottle jack • All parts pack away neatly into a sturdy weather resistant toolbox • Made in USA

FLAT PIVOT POINT ADJUSTABLE JACK PAD - * Adjust width, taper and angle adjustment. * Adapts to many jacks. Shown with bottle jack. * Fits: Cessna C-120, 140, 150, 170, 172, 175, 180, 185. 182, 188, 190, 195, 205, 206, 336, 337, flat gear 177RG, Piper Tomahawk, Beech Skipper, Champion, Bellanca, and similar spring steel landing gear. P/N 12-00837 ..... **$62.75**

ROUND JACK PAD ADJ-R - ack pads provide a cradle for the main landing gear legs.The ADJ-R has a half round design cradles the landing gear safely. Pivots on a machined bottle jack extension. Use with Cessna C-172RG, 177RG, 182RG, 210, T210, P210, and similar landing gear P/N 12-00679 ..... **$62.75**

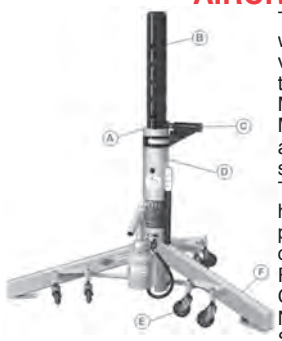
C300 JACK PAD ADJ-300 - * Cessna 300, 400 & 500 series * Perfect for the Conquest & Citation. * Sold in Singles. P/N 12-00683 ..... **$62.75**

JACK EXTENSIONS

* Bottle Jack Extensions will fit any 1-1/4" O.D. ram. * Typical 6 ton jack has a 1-1/4" O.D. ram. * Extensions are machined & slide together for easy stacking. * Use on aircraft with a jack point pin. * Not the same extensions as found in the Aero Jack Kit below. * No special jack pad needed on tubular C-152, 172, 182 etc.

1.5" extension ..... P/N 12-00156 ..... **$22.75**
3" extension ..... P/N 12-00157 ..... **$23.75**
8" extension ..... P/N 12-00158 ..... **$26.50**

MEYER HYDRAULICS A300 3-LEG SERIES AIRCRAFT JACKS



Today's jet and turbo-prop aircraft weighing up to 32,000 lbs. are too valuable to consider using anything less than the A300 Series Aircraft Jacks from Meyer Hydraulics. For over 45 years, Meyer Hydraulics has manufactured aircraft jacks that continue to set the standard for safe, dependable lifting. This line of professional lifting equipment handles aircraft weighing up to 32,000 pounds with the security and features one should demand in an aircraft jack. Features: (A) ANTI-SWAY ANTI-SNAG GUIDANCE SLEEVES (B) CONVENIENT HOLE SPACING (C) POSITIVE SAFETY LOCK: Spring loaded safety pin "pops" into the slide tube to prevent accidental lowering (D) LARGE DIAMETER ROUND FRAME TUBE (E) SIX 3" SPRING LOADED CASTERS: The steel leg pads never scuff across the hanger floor (F) LOW HEIGHT LEG DESIGN: Provides maximum gear door clearance with one section completely free of any protrusions. The three 26" legs create a wide stance insuring stability.

Meyer Model No.	Old No.	Capacity	Low	High	Lifting Range	Part No.	Price
A322B	A-10	16,000 lbs.	22"	36"	14"	12-02668	**$1,056.00**
A325B	A-2516	16,000 lbs.	25"	42"	17"	12-02669	**$1,080.00**
A328B	A-9	16,000 lbs.	28"	48"	20"	12-02670	**$1,109.00**
A330B	A-11	16,000 lbs.	30"	52"	22"	12-02671	**$1,112.00**
A334B	A-17	16,000 lbs.	34"	60"	26"	12-02672	**$1,127.00**
A334C	A-1724	24,000 lbs.	34"	60"	26"	12-02673	**$1,257.00**
A340C	A-15	24,000 lbs.	40"	71"	31"	12-02674	**$1,292.00**
A342B	A-13	16,000 lbs.	42"	75"	33"	12-02675	**$1,197.00**
A342C	A-1324	24,000 lbs.	42"	75"	33"	12-02676	**$1,306.00**
A355C	A-5524	24,000 lbs.	55"	95"	40"	12-02677	**$1,620.00**
A360A	A-60	10,000 lbs.	60"	100"	40"	12-02678	**$1,306.00**

TO

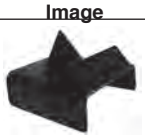
AIRCRAFT JACKS

AIRCRAFT JACKS

Constructed of welded square steel tubing. The three leg design clears close tolerance gear doors, such as Bonanzas and Barons. All models have machine jack point centering cap with casters, jack handle holder and positive locking jack point centering cap with casters, jack handle holder and positive locking collars. Oversize shipping charges apply.

Aircraft Jacks	Image	Part No.	Price
Piper and Mooney Jack and other light twins and singles Height 26"-45". Cylinder Capacity **6,000 lbs. ***Note: Mooneys require 26" clearance plus room for the cap or the Jack will not fit.***		12-99115	**$314.95**
Tail Stand 18"-35":		12-99130	**$184.95**

JACK POINTS

Aircraft Jacks	Image	Part No.	Price
Cessna Jack Points Spring Gear Type		12-01374	**$49.50**
Mooney Jack Points ***(Sold Individually)***		12-01375	**$24.50 each**

JACK LIFT PAD

This Jack Lift Pad is quality made of alloy steel and is adaptable to all bottle type hydraulic jacks. The serrated vee design provides positive holding. It is easy to install and proves a great variety of applications.

P/N 12-30270 ..... **$45.60**

REDLINE DOLLY-JACK

The Dolly-Jack is a self contained, portable system that can lift any main wheel or nose wheel with the turn of crank for routine maintenance and tire changes. It allows the plane to spin around in its own space. Made in the USA using 4130 Chromoly material. **FITS THESE PIPER**: Arrow, Lance, Saratoga (RG), Malibu, Matrix, Meridian, Seminole. **FITS THESE BEECHCRAFT** Bonanza, Baron, Travel Air, T-34 P/N 13-03380 ..... **$878.00**

LONG RAM FLAT BOTTOM JACKS

Dual Action Hydraulic Pump. Pump Handle is Included. Flat Bottom Design. Threaded Mounting Hole in Bottom. 1 Year Warranty

3 TON LONG RAM FB 22.5" JACK - Collapsed height - 22.5 inches. Stroke - 18 inches. Maximum extended height - 40.5 inches. Shaft diameter - 1.25 inches. Pin hole diameter - 5/8 inch. Weight - 20.5 pounds P/N 12-02445 ..... **$63.50**

3 TON LONG RAM FB 24.75" JACK - Collapsed height - 24.75 inches. Stroke - 20.5 inches. Maximum extended height - 45.250 inches. Shaft diameter - 1.125 inches. Pin hole diameter - 5/8 inch. Weight - 22.5 pounds P/N 12-02446 ..... **$68.75**

8 TON LONG RAM FB 24.25" JACK - Collapsed height - 24.250 inches Stroke - 20 inches. Maximum extended height - 44.250 inches. Shaft diameter - 1.250 inches. Pin hole diameter - 5/8 inch. Weight - 25.5 pounds P/N 12-02447 ..... **$72.85**

LANDING GEAR SAFETY STAND

The "Landing Gear Safety Stand" is a must! Anyone that has ever seen a plane slip off a jack knows! The stand slips on over the axle when ever the wheel is removed. Put the nut back on and the plane can't slip off the stand. It adjusts for height with a quick release pin. The wide, stable "H" base is made from heavy gauge square steel tubing for strength, safety and durability. The unique stand is finished in an attractive, bright red powder coat finish. LGSS-2, has a 12" x 12" base with adjustable axle height of 10"-15", and LGSS-3 has an 18" x 18" base with adjustable height of 14"-21.5".

9" Stand .....P/N 12-02015 ..... **$98.85**
12" Stand .....P/N 12-00255 ..... **$56.75**
18" Stand .....P/N 12-00256 ..... **$78.00**

AERO JACK KIT

The Aero Jack System saves time when changing tires or working on landing gear. Use a combination of innovative tools packed in a handy toolbox. Designed by an A&P, for do-it-yourselfers and other mechanics, three kits are available depending on your needs.

Description	Part No.	Price
Complete Aero Jack System - Service both flat and round gear from a handy toolbox.	12-00254	**$235.95**
Flat Gear Aero Jack Kit - Cessna C-120, 140, 150, 170, 172, 175, 188, 182, 190, 195, 205, 206, 336, 337, flat gear 177RG, Piper Tomahawk, Beech Skipper, Champion, Bellanca, and similar landing gear.	12-00681	**$209.95**
Round Gear Aero Jack Kit - Cessna C-172RG, 177RG, 182RG, 210, T210, P210, and similar landing gear.	12-00682	**$201.95**
Expandable Aero Jack System - Included in the tool box is: Bogert Tribal Jack with all the jack pads. (C210, RG, R, FPP, Moon, Musk, C300). Weight is 30 lbs.	12-02096	**$822.95**

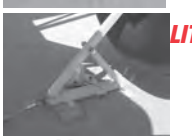
BOGERT TRIBAL JACK

Aid aircraft maintenance, such as servicing brakes, working on bearings, or changing tires. Maximum load of 2,500 pounds and can be used on Piper aircraft, Musketeer, Mooney, and many more aircraft with near-vertical landing gear. Lower clearance lifting pad which allows jack owners to begin lifting from a 2 1/2" starting position and up to 12". It can be used on main gear, nose gear and the tail wheel. Made in USA. P/N 12-00838 ..... **$186.95**

BOGERT LIL LIFTERS

LITTLE LIFTER P/N 12-00839 ..... **$124.50**
* Lightweight, 8.5 lbs
* Lift Range 2.75" to 9.5"
* 4 pivoting pads included
* Use with 800X6 tires or smaller

LITTLE LIFTER II P/N 11-06948 ..... **$154.95**
* Lightweight, 10 lbs
* Lift Range 2.75" to 13.5"
* 4 pivoting pads included
* Us with 800X6 tires or larger
* Picture shown with 2 liter bottle



LITTLE LIFTER III P/N 11-06949 ..... **$164.95**
* Lightweight, 13 lbs
* Lift Range 2.75" to 19.25"
* 4 pivoting pads included
* Use with 31" tires

RV 8 TRAVEL JACK

The RV 8 Travel Jack was designed and manufactured by RV-8 builder / pilot Steve Jackson. All steel construction, weighs less than 3 pounds. Jack mast easily removes from base plate for compact storage. Uses 3/4" wrench to operate (wrench not included). Tested to 1350 pounds. Has securing arm that positions between the gear leg & brake to stabilize the jack - works on both left and right gear leg with a simple adjustment. Base measures 3-1/2" X 8"; mast stands 10" tall. Designed for RV-8 flat spring gear legs (only -- will not work on the other RVs with round gear legs).

P/N 12-03170 ..... **$130.00**

RV JACK STAND KIT

Someday you'll need to jack up your aircraft to install new tires, clean & grease wheel bearings, or fix a flat. This nifty jack stand is safer than using an engine hoist or the wing tie down location. Requires a modification to the axle nuts (about 1 hour). Kit includes the axle jack arm, axle nut modification hardware, & directions to modify the nuts. For hollow axles (Wittman style) Gear only. Uses automotive bottle jack. Jack not included. Not for RV-8s. For RV Gear Legs with Hole in Axle. P/N 12-00634 ..... **$49.85**

PROP SLING, (BOGI-LIFT)

The tool every mechanic needs!
* Lift nose wheel without jacking up whole plane.
* Service nose wheel & strut effortlessly.
* Support a new propeller during installation.
* Use with 2 and 3 blade props.
* 4-point stability with tail & wing jacks.

P/N 12-16718..... **$83.95**

TO

AIRCRAFT JACKS

THREE TON HYDRAULIC AIRCRAFT JACKS

MODEL #324 3 TON LOW WING JACK - Eliminates the frustration of having unstable jacks that conflict with landing gear components and gear doors adjacent to your jack point. These jacks are especially appreciated by owners of Bonanza, Mooney, Comanche, & Twin Comanche Aircraft for the manner in which they may be positioned clear of the inner gear door hinge. Model #324 provides an easy slide under fit on aircraft with lower jack points. • double action 3 ton (6,000lbs) hydraulic cylinder • jack point centering cap • locking safety collar secures the load • rugged heavy gauge steel construction • stable three leg design clears gear doors • convenient handle storage.

Effective Range: 24"-40" Ram Capacity: 6000lbs
P/N 12-01724.....**$229.00**

MODEL #326 3 TON LOW WING JACK - 26" - 43" Eliminates the frustration of having unstable jacks that conflict with landing gear components and gear doors adjacent to your jack point. Owners of Beech-Craft Bonanza 33/35/36 aircraft especially appreciate these jacks for the manner in which they may be positioned clear of the inner gear door hinge. If the only plane you'll be lifting is the Bonanza… please see Model #324. • jack point centering cap to assure the aircraft stays on the jack. • double action 3 ton (6,000 lb) hydraulic cylinder. • locking safety collar secures the load. • rugged heavy gauge steel construction. • three leg design clears gear doors. • convenient handle storage

Effective Range: 26"-43" Ram Capacity: 6000lbs
P/N 13-05544.....**$229.00**

MODEL #332 3 TON LOW WING JACK - 26" - 43" & 32"- 49" Especially suited for use on Cessna 310/320 Aircraft. Supplied with a removable 6" riser to accommodate the higher jack points found on some aircrafts. Similar in design to Model #326, this unique design allows the Model #332 to be easily converted for use as a Model #326 by removing the 6" riser. Owners report this versatility to be of great benefit when aircraft of various types are housed together or the jacks are loaned out to others.•double action 3 ton (6,000 lb) hydraulic cylinder • jack point centering cap to assure the aircraft stays on the jack • 6" riser provided to accommodate higher jack points. Effective range 26"-43" & 32" - 49" • locking safety collar secures the load • rugged heavy gauge steel construction • three leg design clears gear doors • convenient handle storage

Effective Range: 26"-43" & 32" - 49" Ram Capacity: 6000lbs
P/N 12-01725.....**$269.00**

EIGHT TON HYDRAULIC AIRCRAFT JACKS

MODEL #838W 8 TON UNIVERSAL JACK - 26"-43", 32"-49", 38"-55" When the need is for a versatile jack that can accommodate the needs of a busy FBO, the Model #838W is the choice. Model #838W provides all the strength and versatility needed to accommodate larger aircraft. This unique design allows the Model #838W to easily convert from a 26" low wing jack to a 32" or 38" jack, avoiding the high cost of having to purchase model specific jacks. Now with "Tilt & Go" wheels and convenient handle storage for greater value ***• DOUBLE ACTION 8 TON (16,000LB) HYDRAULIC CYLINDER • HIGHLY VERSATILLE- SHIPPED WITH ADAPTERD FOR 26" 32" & 38"HEIGHTS • JACK POINT CENTERING CAP TO ASSURE THE AIRCRAFT STAYS ON THE JACK • LOCKING SAFETY COLLAR SECURES THE LOAD • STABRUGGED HEAVY GAUGE STEEL CONSTRUCTION • THREE LEG DESIGN CLEARS GEAR DOORS • "TILT & GO WHEELS FOR GREATER MOBILITY • CONVENIENT HANDLE STORAGE*** Height Range 26"-43", 32"-49" & 38"-55" Ram Capacity: 16,000 lbs.

P/N 12-01726.....**$369.00**

MODEL #868W 8 TON UNIVERSAL JACK - The ULTIMATE in versatile heavy duty general aviation jacks. When the need is for a versatile jack that can accommodate the needs of a busy FBO, the Model #868W is the choice. The Model #868W combines all the strength and versatility of Model #838W with the necessary fittings to accommodate High Wing Cessna Aircraft such as 172RG, 177RG, 182RG, 210 and 337. Shipped with adapters, our unique design allows the Model #868W to easily convert from a 26" low wing jack through the 32" and 38" levels to a 68" high wing jack, avoiding the high cost of having to purchase model specific jacks. ***• DOUBLE ACTION 8 TON(16,000 LBS.) HYDRAULIC CYLINDER • HIGHLY VERSATILE- SHIPPED WITH ADAPTERS FOR 26", 32", 38", & 68" HEIGHTS • DOUBLE BRACED AT THE 68" HEIGHT FOR STABILITY • JACK POINT CENTERING CAP TO ASSURE THE AIRCRAFT STAYS ON THE JACK • LOCKING SAFETY COLLAR SECURES THE LOAD • RUGGED HEAVY GAUGE STEEL CONSTRUCTION • STABLE THREE LEG DESIGN CLEARS GEAR DOORS • TILT & GO WHEELS FOR GREATER MOBILITY • CONVENIENT HANDLE STORAGE*** Height Range: 26"-43", 32"-49", 38"-55", 68-87" Ram Capacity: 16,000 lbs

P/N 12-01727.....**$497.00**

MODEL #375 TAILWEIGHT/POST - A tailweight that doubles as a tail post and can be moved easily about the shop. This unique design allows the secure anchoring of Compression or Torsion Loads without the need of numerous sand bags and anchor chains. The #375 Tailweight/Post is a safer and much more professional approach to securing the tail of an aircraft undergoing maintenance. Shipped knocked down, the Model #375 is easily assembled and weighted using Six (6) - 60 lb bag of Quickcrete - obtained locally. ***• SINGLE UNIT PROVIDES THE TAILPOST AND TAILWEIGHT FUNCTIONS • NO MORE SANDBAGS • TELESCOPING SQUARE TUBE POST PINS IN 3" INCREMENTS • RUGGED SWIVEL CASTERS • CORROSION RESISTANT GALVANIZED WEIGHT BOX • SHIPS AT 32 lbs. ~ FINISHED WEIGHT*** 375 lbs. Range of Adjustment: 17½" - 39½"

P/N 12-01728.....**$199.95**

TO

ACCESSORIES

WHEEL KIT FOR HYDRAULIC AIRCRAFT JACKS

Add Wheels to our Model #324, #326 or #332 The base that comes standard with all of our aircraft jack models is pre-drilled to easily allow for the addition of a Wheel Kit. **This Kit Includes:** 1 Left Bracket, 1 Right Bracket, 2 Wheels, Hardware Packet, Installation Instructions P/N 12-02032.....**$50.25**

TAILWEIGHT EXTENSION FOR TAILWEIGHT POST

Adds on an additional 12 inches to the Tailweight Post model 375. For higher wing aircraft. P/N 12-02033.....**$27.50**

SAFETY EQUIPMENT

HOBBYAIR RESPIRATOR

The Hobbyair Pro 1 is a fresh air breathing system specifically designed for the amateur painter which allows only fresh air to reach the user's lungs. It features a comfortable, lightweight facemask with beltline hook, simple snap together fittings, and is very affordable. Includes the pump unit with two stage, single speed, air bypass type motor, mask, belt and 40 foot delivery hose, fittings, filter, cord and case. The Buddy System Hobbyair is designed for two people and includes two 40 ft. delivery hoses. 1 yr warranty. Excellent for use in homebuilt aircraft construction and painting.

Hobbyair Pro 1 (1/2 mask) 110V .....P/N 12-15850 ..... **$397.00**
Hobbyair Pro 1 (1/2 mask) 220V .....P/N 12-15860 ..... **$499.95**
Buddy System Hobbyair (110V).....P/N 12-15870 ..... **$532.00**
Hobbyair Pro (Full mask) .....P/N 12-15851 ..... **$498.75**
Hobbyair II.....P/N 09-00633 ..... **$445.95**

HOBBYAIRE BUDDY SYSTEM AIR RESPIRATOR

Hobbyair Buddy System comes standard with an air pump, 2-40' hoses and a half facemask (HF01)for one person. Locate the intake air pump in a fresh air location and breathe HEPA filtered clean fresh air in most contaminated breathing environments. .....P/N 12-02365 ..... **$733.00**

Full Facemask Lens Protectors - Sold in package containing 25 lens protectors. Apply one at a time over full facemask lens. Clear covers protect your lens from overspray and lengthen the life of your facemask. .....P/N 12-02366 ..... **$19.95**

CITATION 4 HVLP SPRAYER/RESPIRATOR

Allows its' user to achieve 'show plane' quality results to a level never before possible with a turbine powered system. The CITATION '4' offers a much higher PSI range without sacrificing the benefits of HVLP such as lower overspray, the elimination of moisture and high transfer efficiency. This is all accomplished with a more powerful, yet quieter and cooler running turbine blower. Like the standard CITATION, this new system, of course, offers the additional benefit of a built-in supplied-air respirator to assure breathing protection for its' user.

P/N 12-00973 ..... **$1,176.00**

CITATION 3 & 4 HVLP SPRAYER/ RESPIRATOR SYSTEM

CITATION 3 STAGE HVLP PAINT SPRAYER & RESPIRATOR W/ BOTTOM FEED GUN - **Standard One man System Includes:** Citation Dual HVLP Pump, Two 40' hoses, one sprayer & one respirator, Half facemask & belt, Bottom Feed HVLP Paint Spray , Gun with Quart Cup, Complete System and Spray Gun Manual, Introductory 'How to" Spray Manual, 3 **Stage Sprayer Specs:** 110-120V VAC, 50/60HZ, Amps: 11.5, PSI: 5.5 **One Man Respirator:** 110-120V VAC, 50/60 HZ, Amps: 1.6, Cfm: 7 @ Facemask **Two Man Respirator:** 110-120V VAC, 50/60HZ, Amps: 7, Cfm: 7.5 @ Facemask

P/N 12-02372 ..... **$993.00**

CITATION 3 SPRAYER & RESPIRATOR W/ GRAVITY GUN - **Standard One man System Includes:** Citation Dual HVLP Pump, Two 40' hoses, one sprayer & one respirator, Half facemask & belt, Gravity Feed HVLP Paint Spray Gun with 1000 ml Cup, Complete System and Spray Gun Manual, Introductory 'How to" Spray Manual **3 Stage Sprayer Specs:** 110-120V VAC, 50/60HZ, Amps: 11.5, PSI: 5.5 **One Man Respirator:** 110-120V VAC, 50/60 HZ, Amps: 1.6, Cfm: 7 @ Facemask **Two Man Respirator:** 110-120V VAC, 50/60HZ, Amps: 7, Cfm: 7.5 @ Facemask

P/N 12-02373 ..... **$996.00**

CITATION 3 STAGE HVLP PAINT SPRAYER & RESPIRATOR W/ BOTTOM FEED GUN - **Standard One man System Includes:** Citation Dual HVLP Pump, Two 40' hoses, one sprayer & one respirator, Half facemask & belt, Bottom Feed HVLP Paint Spray , Gun with Quart Cup, Complete System and Spray Gun Manual, Introductory 'How to" Spray Manual **3 Stage Sprayer Specs:** 110-120V VAC, 50/60HZ, Amps: 11.5, PSI: 5.5 **One Man Respirator:** 110-120V VAC, 50/60 HZ, Amps: 1.6, Cfm: 7 @ Facemask **Two Man Respirator:** 110-120V VAC, 50/60HZ, Amps: 7, Cfm: 7.5 @ Facemask

P/N 12-00973 ..... **$1,176.00**

CITATION 4 STAGE SPRAYER & RESPIRATOR W/ GRAVITY GUN - **A standard system includes** 2-40' hoses (one breathing, one spraying), the Accuspray Professional Quality Bottom Feed Gun -71000 and Half Facemask -HF01A and belt. Any other options including a two man respirator system can be added for this unit.

P/N 12-02374 ..... **$1,349.00**

3M™ PARTICULATE RESPIRATORS

P/N 09-01496 ***P/N 09-01497***

Helps provide worker protection against certain non-oil based particles. Comfortable, easy to use, and promotes greater worker acceptance increasing wear time. Features 3M's patented filter media, nose foam, and adjustable noseclip that helps provide a secure seal and helps reduce eyewear fogging. Workplace applications: woodworking, grinding, sanding, sweeping, bagging, other dusty operations.

Description	Part No.	Price
8210 Standard dust mask	09-01496	**$0.98**
Vented dusk mask	09-01497	**$2.35**

FLYING/SAFETY GLASSES

• Meets or exceeds ANSI requirements • Provides 99.9% protection against harmful UV radiation • High impact scratch resistant polycarbonate lens • Adjustable temples for greater fit & comfort •Replacement lenses

Gray .....P/N 13-02823 ..... **$0.50**
Amber .....P/N 13-02825 ..... **$11.95**

3M™ PROTECTIVE EYEWEAR

PROFESSIONAL SAFETY GLASSES -

• For the professional or serious do-it-yourselfer
• Ideal for outdoor use (PN 13-90751)

Clear and Black ..... P/N 13-90750.....**$7.75**
Tinted grey and Black..... P/N 13-90751.....**$7.95**

CENTURION TEAR-N-WEAR PROTECTIVE LENS COVERS

Each AOSAFETY Centurion® goggle TEAR-N-WEAR replacement lens protectors stack contains seven layers of high quality optically clear film. When the outer layer is soiled, scratched, or difficult to see through, simply "tear" the soiled layer off by pulling the tab horizontally from right to left. You now have clean and clear vision again and the next tab is automatically ready for your next tear away.

P/N 12-00894 ..... **$7.25**

SAFETY SPECTACLES

These safety spectacles feature a contoured shape which offers unobstructed vision, excellent side protection and comfort fit bridge. Front color and temple color is black. Lens and sideshield color is clear

P/N 13-01310 ..... **$8.85/ea.**

IMPACT GOGGLES

Protects eyes from flying objects. Can be worn over personal glasses. Perforated mask reduces fogging. Fully adjustable elastic headband. Clear polycarbonate lens, 050" thick, is easily removed for cleaning. Meets requirements of ANSI Z87.1

Goggles ..... P/N 91200.....**$5.85**
Replacement Lens, Clear..... P/N 91202.....**$1.75**

SAFETY FACE SHIELD REPLACEMENT

Provides protection for the face and neck against chemical splash and flying particles.

Replace. Window, Clear ....P/N 90030 .....**$7.25**

SCARAB SAND BLAST HOODS

Features durable construction and large size to cover the head, face, neck and shoulders to protect against the impact of high velocity abrasives. Made with super-heavy 10.38 oz. army duck canvas treated with high water repellant and mildew resistance. Complete with an ERB Safety built-in construction type hard hat that meets ANSI Z89.1-2003 (Type 1, Class E, G & C) and complies with OSHA regulations for industrial head protection.

Scarab Sand Blast Hood.....P/N 12-01665 .....**$85.75**
Scarab Lite Sand Blast Hood..P/N 12-01666 .....**$39.95**

ACCESSORIES

Lens for Scarab Blast Hood .....P/N 12-01667 .....**$14.95**
Screen for Scarab Blast Hood.....P/N 12-01668 .....**$11.99**

TO

SAFETY EQUIPMENT

3M™ SAFETY GOGGLES

SAFETY GOGGLE BX

* BX protective eyewear are fully adjustable with three lens angles and adjustable nose bridge and temple length. Silver/Black frames. Soft adjustable nose bridge Three lens angles for cozy fit Integrated sideshields. Protect your eyes from impact and block 99.9% UV rays. Polycarbonate anti-fog lens. Meets the requirements of CSA Z94.3-2007 and the High Impact Requirements of ANSI Z87.1-2003

P/N 09-02154 ..... **$4.35**

SAFETY GOGGLE VIRTUA SPORT

* Meets ANSI Z87.1 * Sleek - Styling with both men and women * Lightweight - Less than 1 oz * Contoured flexible temples for comfortable fit * Hard Coat guards against scratching, static and chemical attack

P/N 09-02155 ..... **$2.25**

SAFETY DUST GOGGLEGEAR

* Vent channels at top and bottom for improved air flow * Lighter weight than most goggles for improved comfort * Soft foam backing seals out particulates * Meets the Impact Goggles requirements of ANSI Z87.1 * Made in U.S.A.

P/N 09-02156 ..... **$9.75**

SAFETY GOGGLE OC CHOPPER

* Extreme safety eyewear for indoor use * OCC styling * Clear anti-fog lens * Complies to ANSI Z87.1 high impact standards

P/N 09-02157 ..... **$8.50**

SAFETY LIGHTVISION 2 GOGGLE

* Hands free direct lighting; anti-fog lens; available w/reader lens * Two ultra bright, adjustable LED lights * Long-life, replaceable CR2032 3V battery; includes bag and lanyard * Flexible nose bridge fits virtually all faces * Meets ANSI Z87.1-2003 and CSA Z94.3 standards

P/N 09-02158 ..... **$11.95**

VIRTUA PROTECTIVE EYEWEAR AP

The Virtua protective eyewear line merges outstanding unisex style, protection and affordability, all while offering wearers an open, unobstructed viewing range and impact-resistant, 3-piece polycarbonate construction. Designed for indoor or outdoor use.

Clear Anti-Fog Lens..... P/N 09-03053 ..... **$2.65**
Gray Hard Coat Lens..... P/N 09-03055 ..... **$1.67**
Light Blue Hard Coat Lens ..... P/N 09-03056 ..... **$1.67**
Amber Hard Coat Lens..... P/N 09-03057 ..... **$33.50**
Indoor/Outdoor Mirror Hard Coat Lens..... P/N 09-03058 ..... **$1.73**
Clear Hard Coat Lens..... P/N 09-03059 ..... **$1.67**

3M™ PELTOR™ DIGITAL WORKTUNES

Worktunes is a self-contained AM/FM noise attenuating headset (NRR 26db) which provides hearing protection combined with an AM/FM radio to provide. Features include: • Easy finger tip controls • 5 preset stations • Volume limited to a safe 82 dB level • Gel/Foam cushions • MP3 cord included • Peltor™ stainless steel spring arm headband provides even pressure all day. • Wide, soft padded headband, flexible antenna. • Quick and easy tuning and volume adjustments P/N 11-01589 ..... **$81.75**

3M™ PELTOR™ EARMUFFS

The only muff that lets workers listen safely without removing their muffs. When workers lift their muffs, they lower their protection. Now Peltor™ puts safe listening at their fingertips. Just push the button on the PTL muff and speech & sounds "outside" the muff cup can be heard "inside"-- clearly and safely. After 30 seconds, the muff automatically returns to its full protection with an NRR of up to 26 dB. Listen again? Just push again. It's that simple. P/N 11-04310 ..... **$37.95**

3M PELTOR JUNIOR EARMUFFS

Liquid foam ear cushions and adjustable stainless steel headband. Sized for junior and smaller adults. Features • NRR 22 dB rating • NRR allows range command to be heard for added safety • Designed and sized for youth and smaller adults • Liquid/Gel filled cushions • Comfortable for extended wear • Adjustable headband P/N 12-02845 ..... **$91.25**

HEARING PROTECTOR

This 3-position ear muff offers protection from high noise levels. Lightweight comfort, effective design combine to provide high performance attenuation. Can be worn over or behind head, under chin. P/N 97030 ..... **$12.65**

3M ™ PELTOR™ PERSONAL HEARING PROTECTORS

OPTIME 105 - Over-the-head dual cup. NRR 30. Can be used for noise levels up to 105 dB. Color: Black and Red

P/N 12-00699 ..... **$23.00**

OPTIME 105 HI-VIZ - NRR 30. Can be used for noise levels up to 105 dB. Bright Hi-Viz Yellow great for recognition of workers. P/N 12-02568 ..... **$27.75**

OPTIME 101 - Over-the-head Hp. NRR 27. Can be used for noise levels up to 101 dB. Color: Green

P/N 12-16110 ..... **$17.90**

OPTIME 98 - Over-the-head Hp. NRR 25. Can be used for noise levels up to 98 dB. Color: Yellow and Black

P/N 12-02569 ..... **$14.25**

OPTIME 95 - Folding hearing protector. NRR 21. Can be used for noise levels up to 95 dB. Folding – Slim design. Color: Beige and Black. P/N 12-02570 ..... **$16.50**

3M™ E-A-R™ EARPLUGS

E-A-R CLASSIC - * Most popular earplug in the world * NRR 29dB * The E-A-R® Yellow color is your assurance of proven protection * Moisture resistant dermatologically safe foam is not irritating * Slow recovery PVC foam provides comfort with low pressure

P/N 9134 ..... **$0.35**
P/N 09-02148 w/ Cord **$0.25**

CLASSIC™ PLUS - * Classic Plus are longer than Classic earplugs to fit deeper into the ear canal and provide a higher level of protection. * Slow-recovery foam helps ensure comfort and minimize pressure. * Bright yellow color provides a quick visual compliance check. * Dermatologically safe foam is non-irritating, non flammable, and moisture-resistant. P/N 09-02149 ..... **$0.30**
P/N 09-02150 w/ Cord **$0.19**

E-A-R SOFT™ YELLOW NEONS™ - * NRR 33dB-Highest NRR available * THE WORLD'S SOFTEST EARPLUGS * Self-adjusting foam provides low pressure with excellent attenuation * Exciting designs and brilliant colors * Dermatologically safe foam is non-irritating to the skin P/N 09-02151 ..... **$0.25**
P/N 09-02152 w/ Cord **$0.26**

3M™ PISTONZ™ EARPLUGS - No need to roll down. Biaxially-stiff stem for easy insertion, yet designed to flex sideways if impacted. Tips look like metal, yet provides ultra-soft feel for all day wear. P/N 12-02571 ..... **$0.60**
P/N 12-02572 w/ cord **$0.82**

E-A-R EARBUDS 2600 HEADPHONES - * NRR 26dB * Noise Limited to 82dB * Convenient, Easy-Access Volume Control * Mp3 Compatible * Blocks out External Noise * Hear Your music while you work * Ultra Comfortable Design * Better fit for longer wear P/N 09-02153 ..... **$43.75**

DAVID CLARK DELUXE HEARING PROTECTOR

The David Clark Deluxe Model Hearing Protector provides maximum noise attenuation and optimum comfort. Features urethane covered ear seals, soft foam cushioned headband, military quality materials, finish and workmanship. P/N11-09205 ..... **$38.95**

NOISEBUSTER ANR EARMUFFS

Designed to reduce aircraft engine noise for airport ground support crews as well as aircraft maintenance and technical personnel, the NoiseBuster Active Noise Reduction (ANR) Safety Earmuff combines an ANSI-rated 26NRR passive earmuff with active noise reduction electronics that deliver up to an additional 20 db of low-frequency noise attenua Powered by a AA battery, the earmuff is resistant to water, moisture, contaminants, mechanical shock, and vibration. Perfect for users who do not mechanical shock, and vibration. Perfect for users who do not require two-way communications capability but who can benefit from protection. Includes: * NoiseBuster ANR Safety Earmuff * One AA battery * 3.5 mm audio interface cable * Warranty - 6 months

P/N 11-07369 ..... **$139.50**

TO

DRAEGER RESPIRATORS – PROTECTIVE COVERALLS

X-PLORE 3300 SERIES RESPIRATORS

The 3300 Series Mask is an economical half mask made of TPE material with a continuous grey color neck strap.

Under the new particulate filter rules, there are three series of filters: N, R, and P. The N filters are Not resistant to oil; the R filters are resistant to oil; and the P filters are oil proof.

The N series of filters is appropriate for airborne particles such as silica or lead, when there are no oil-based products also in the air.

For example, an N series filter would be recommended during the removal of old lead paint. However, for spraying an oil-based lead paint, an R or P series filter would be recommended as protection against the airborne mist of oil-based solvent.

The R series (resistant to oil) should only be used for a single shift when solvent or oil mist is present in the air. This filter resists oil but may break down in contact with oil or solvent over a long time.

When using P series filters, check the manufacturer's instructions to determine how long the filter can be used when airborne particles are present. NIOSH originally thought that P series filters were oil-proof but recent tests have found there may be some breakdown of the filter material with long-term oil exposure.

Note: N, R, and P filters do not provide protection against organic vapors.

3300/N95 RESPIRATOR KIT

Kit includes 3300 Mask, 2 each N95 filter pads, 2 each filter pad retainers, and 2 each filter pad bases. P/N 12-02261 ..... **$24.25**

3300/R95 RESPIRATOR KIT

Kit includes 3300 Mask, 2 each R95 filter pads, 2 each filter pad retainers, and 2 each filter pad bases. P/N 12-02262 ..... **$25.75**

3300/P100 RESPIRATOR KIT

Kit includes 3300 Mask, 2 each P100 filter pads, 2 each filter pad retainers, and 2 each filter pad bases. P/N 12-02263 ..... **$31.50**

X-PLORE 3300 COMBINATION CARTRIDGE KIT

The combo cartridge is a P100 filter, and also filters out organic vapor/acid, gas, formaldehyde, chlorine dioxide, and hydrogen floride. Kit includes mask and one combo cartridge.
P/N 12-02267 ..... **$21.75**

X-PLORE 3500 COMBINATION CARTRIDGE KIT

The combo cartridge is a P100 filter, and also filters out organic vapor/acid, gas, formaldehyde, chlorine dioxide, and hydrogen floride. Kit includes mask and one combo cartridge.
P/N 12-02268 ..... **$34.65**

3M™ DISPOSABLE PROTECTIVE COVERALL 4530

The 3M™ Protective Coverall 4530 is disposable safety work wear made of lightweight, breathable polypropylene with flame resistance. Designed to be worn over primary FR garments, it helps provide protection against dusts and light liquid splashes. Features: Breathable material to help reduce heat buildup and promote comfortable wear. Knit cuffs with elasticized waist and ankles for increased comfort and freedom of movement Three panel hood design for compatibility with complementary PPE. Two-way zipper with sealable storm flap Reinforced gusset for increased durability. Flame resistant treatment offering secondary protection against heat and flames Anti-static coating on both sides.

L..... P/N 12-02663 ..... **$6.25** XL ..... P/N 12-02664..... **$6.25**
2XL ..... P/N 12-02665 ..... **$6.25** 3XL ..... P/N 12-02666..... **$6.75**
4XL ..... P/N 12-02667 ..... **$6.75**

X-PLORE 3500 SERIES RESPIRATORS

The 3500 Series Mask is a premium half mask made of Draeger Flex Material. Clasped Slide-Down feature with a black neck strap.
Under the new particulate filter rules, there are three series of filters: N, R, and P. The N filters are Not resistant to oil; the R filters are resistant to oil; and the P filters are oil proof.
The N series of filters is appropriate for airborne particles such as silica or lead, when there are no oil-based products also in the air.
For example, an N series filter would be recommended during the removal of old lead paint. However, for spraying an oil-based lead paint, an R or P series filter would be recommended as protection against the airborne mist of oil-based solvent.
The R series (resistant to oil) should only be used for a single shift when solvent or oil mist is present in the air. This filter resists oil but may break down in contact with oil or solvent over a long time.
When using P series filters, check the manufacturer's instructions to determine how long the filter can be used when airborne particles are present. NIOSH originally thought that P series filters were oil-proof but recent tests have found there may be some breakdown of the filter material with long-term oil exposure.
Note: N, R, and P filters do not provide protection against organic vapors.

3500/N95 RESPIRATOR KIT

Kit includes 3500 Mask, 2 each N95 filter pads, 2 each filter pad retainers, and 2 each filter pad bases. P/N 12-02264 ..... **$34.85**

3500/R95 RESPIRATOR KIT

Kit includes 3500 Mask, 2 each R95 filter pads, 2 each filter pad retainers, and 2 each filter pad bases. P/N 12-02265 ..... **$36.95**

3500/P100 RESPIRATOR KIT

Kit includes 3500 Mask, 2 each P100 filter pads, 2 each filter pad retainers, and 2 each filter pad bases. P/N 12-02266 ..... **$42.75**

REPLACEMENT PARTS FOR 3300/3500 KITS

Description	Part No.	Price
3300 Series Mask Only	12-02253	**$11.90**
3500 Series Mask Only	12-02254	**$24.85**
N95 Filter Pad Only	12-02255	**$1.65**
R95 Filter Pad Only	12-02256	**$2.55**
P100 Filter Pad Only	12-02257	**$5.25**
Filter Pad Retainer	12-02258	**$2.10**
Filter Pad Base	12-02259	**$2.55**
P100 Combination Cartridge Sold in pairs.s	12-02260	**$10.50**

3M™ DISPOSABLE PROTECTIVE COVERALL 4520

The 3M disposable protective coverall 4520 key features include: Breathable material (SMMMS) to help reduce heat stress and comfortable wear. Elasticated waist, ankles, and wrists for convenience and freedom of movement. Three panel hood design for compatibility with complimentary PPE. Two-way zipper with storm flap for convenience and to help provide additional protection. Anti-static coating on both sides. Protect against light liquid splashes and hazardous dusts.

XL ..... P/N 12-02692 ..... **$3.90** 2XL ..... P/N 12-02693..... **$5.85**
4XL ..... P/N 12-02694 ..... **$4.75**

3M™ DISPOSABLE PROTECTIVE COVERALL 4540

The 3M™ Protective Coverall 4540 is disposable safety work wear made of a high quality laminated material with a breathable back panel for improved air circulation.Protection against light liquid splashes and hazardous dusts. Features: Constructed of a low-linting, non-woven, laminated microporous material with anti-static coating on both sides, Knit cuffs with elasticized waist and ankles for increased comfort and freedom of movement Three panel hood design for compatibility with complementary PPE Two-way zipper with sealable storm flap Reinforced gusset adds extra durability Breathable back panel to help improve air ventilation and reduce heat buildup.

L..... P/N 12-02658 ..... **$5.50** XL ..... P/N 12-02659..... **$5.50**
2XL ..... P/N 12-02660 ..... **$5.50** 3XL ..... P/N 12-02661..... **$5.75**
4XL ..... P/N 12-02662 ..... **$5.75**

TO

OXYGEN SYSTEMS

AEROX HIGH-DURATION AVIATION OXYGEN SYSTEMS

Aerox 2D system

Aerox 4M system

Add to your flying comfort by using oxygen at altitudes as low as 5000 ft. Aerox Oxygen Systems include lightweight aluminum cylinders, regulators, all hardware, flow meter, and nasal cannulas (masks available as option). Oxysaver oxygen saving cannulas & Aerox Flow Control Regulators increase the duration of oxygen supply about 4 times, and prevent nasal irritation and dryness. Complete brochure available on request.

500 SERIES REGULATOR – AN AIRCRAFT SPRUCE EXCLUSIVE!

- Low profile
- 1, 2, & 4 place
- Standard Aircraft filler for easy filling
- Convenient top mounted ON/OFF valve
- Equipped with Aerox standard plug sockets
- Over pressure safety valve
- Built in cylinder pressure gauge

COMPLETE AEROX SYSTEMS (ADJUSTABLE FLOW)

Part No.	Model	Description	Price
13-18895	1A	1 outlet, 6 Cu Ft. Cyl. w/Flow Meter & Cannula	$377.60
13-18896	1C	1 outlet, 9 Cu. Ft. Cyl. w/Flow Meter & Cannula	$385.60
13-18897	1D	1 outlet, 13 Cu Ft. Cyl. w/Flow Meter & Cannula	$396.00
13-18898	2A	2 outlet, 6 Cu. Ft. Cyl. w/Flow Meters & Cannulas	$464.80
13-18899	2C	2 outlet, 9 Cu Ft. Cyl. w/Flow Meters & Cannulas	$468.80
13-18900	2D	2 outlet, 13 Cu. Ft. Cyl. w/Flow Meters & Cannulas	$477.60
13-18901	2E	2 outlet, 22 Cu Ft. Cyl. w/Flow Meters & Cannulas	$495.20
13-18902	2M	2 outlet, 22 Cu. Ft. Cyl. w/Flow Meters & Cannulas	$513.60
13-18903	4C	4 outlet, 9 Cu Ft. Cyl. w/Flow Meters & Cannulas	$580.00
13-18904	4D	4 outlet, 13 Cu. Ft. Cyl. w/Flow Meters & Cannulas	$652.00
13-18950	4E	4 outlet, 22 Cu Ft. Cyl. w/Flow Meters & Cannulas	$663.20
13-18906	4M	4 outlet, 22 Cu. Ft. Cyl. w/Flow Meters & Cannulas	$666.40
13-18915	6M	6 outlet, 22 Cu Ft. Cyl. w/Flow Meters & Cannulas	$848.80
13-18905	6F	6 outlet, 33 Cu. Ft. Cyl. w/Flow Meters & Cannulas	$1,011.20

AEROX ACCESSORIES

P/N	Description	Price
13-18910	CC Oxysaver Cannula	$26.85
13-18960	MSK-C Rebreather Mask (Child)	$8.00
13-18920	CR-A Regular Cannula	$6.40
13-18970	Metal Clamp Bracket for 13 or 22Cft cyl	$33.75
13-18930	CR-C Reg. Cannula (Child)	$6.40
13-18940	MSK-A Rebreather Mask	$8.75
13-03271	Aerox Oxysaver Pendant	$28.00

AEROX BASIC RETRO FIT KIT

FITTING IDENTIFICATION CHART (Not Sold Separately)

AEROX RETROFIT KITS

FOR BUILT-IN SYSTEMS OR OTHER PORTABLES

The Aerox® Retrofit Kit consists of 3 parts:

1.) Oxysaver® Cannula—this comfortable device may be used in place of your mask up to 18,000 ft. MSL. It has a conserving feature which can extend your oxygen supply by up to four times. 2.) Aerox Flowmeter/indicator—this combination device conveniently reads both mask and cannula flow rates in MSL altitude. 3.) Aerox Adjustable Flow Restrictor—a thumb screw operated needle restrictor valve allows you to precisely control flow. Shown are most of the connectors for general aviation. If you want us to supply the connector, be sure to indicate which is your type.

Model	Retrofit Kits	Part No.	Price
RK-SC	Retrofit Kit plus Scott type fitting SC	13-18992	$112.00
RK-PB-1	Retrofit Kit plus Puritan-Bennett type fitting	13-18994	$89.60
RK-PB-2	Retrofit Kit plus Puritan-Bennett type fitting	13-18995	$89.60
RK-SK	Retrofit Kit plus Sky-Ox fitting (new style)SK	13-18996	$94.75
RKCPC	Kit with CPC fitting for Cirrus	13-05152	$98.50
RK-SC	RK-SC with - Flow Meter Needle Valve Option	13-05582	$104.95

AEROX GLOW IN THE DARK FLOWMETER AND GAUGE

AEROX'S PATENTED GLO-TEC FLOWMETER - Precision Adjustable, Direct inline oxygen flow indicator with photoluminescent technology for extended night-time visbility.
PN 13-05251 .....**$54.50**

AEROX'S PATENTED GLO-TEC PRESSURE GAUGE - Pressure Gauge, 0-3,000 PSI, Rear Mount, with photoluminescent technology for extended night-time visibility. PN 13-05250 .....**$29.90**

AEROX PRO-O2 EMERGENCY HANDHELD OXYGEN SYSTEMS

In the event that the primary oxygen system fails, the Pro-O2 provides oxygen until the aircraft can reach a lower altitude. And because Pro-O2 is refillable, there is no need to purchase replacement O2 cartridges.

During short flights at altitudes between 12,500ft. MSL and 14,000ft. MSL where maneuvering over mountains or turbulent weather is necessary, the Pro-O2 emergency handheld oxygen system provides oxygen to extend these brief legs. Included with the refillable Pro-O2 is a regulator with gauge, mask and a refillable cylinder.

Pro-O2-2 (2 Cu. Ft./1 mask).....P/N 13-02735 .....**$328.00**
Pro-O2-4 (2 Cu. Ft./2 masks).....P/N 13-02736 .....**$360.00**

AEROX 4110-712 SERIES OXY-GEN MASK WITH MICROPHONE

The 4110-712 Series continuous flow oxygen mask with microphone is intended for crew and passengers in the general aviation industry at a maximum altitude of 25,000 feet. Optional equipment includes industry standard fittings for connection to portable and built-in oxygen systems.

Description	Aerox No.	Part No.	Price
Small Without Microphone	4110-711-1	13-06652	$189.50
Medium Without Microphone	4110-711-2	13-06653	$189.95
Large Without Microphone	4110-711-3	13-06654	$195.95
Small	4110-712-1	13-06655	$409.00
Medium	4110-712-2	13-06656	$380.95
Large	4110-712-3	13-06657	$390.95

AEROX SMOKE GOGGLES

Aerox has introduced Smoke Goggles with face forming elastomer seals to keep smoke out. Aerox Smoke Goggles are the choice of the U.S. Special Forces. The case features reflective tape to make goggles easy to locate as well as a velcro strip on the back for mounting.
Goggles ..... P/N 13-06173.....**$96.00**
Soft Case..... P/N 13-06174.....**$80.00**

BR-M AEROX BRACKET

Bracket Assembly, SS, with Lock, or Cyl Diameter (2 needed per system) P/N: 13-04033 ..... **$37.00**

AEROX FBO-1 FILLING STATION

Whether making money or saving it, the Aerox FBO-1 Cascade Filling System makes it easy to fill all types of aviation systems, from portables to jets. The FBO-1 comes complete with 2 CGA 540 cylinder connectors, 6' high-pressure (3000 psi) braided stainless filler line, contents gauge, flow restrictor and adapters to fit Puritan-Bennett, Scott, and CGA 540 filler ports. P/N 13-04534..... **$360.00**

AEROX CGA-540 SINGLE CYLINDER FILLING STATION - Transfills between cylinders quickly and easily. 6' braided stainless line, gauge, restrictor, and CGA 540 filler. P/N 13-04535..... **$185.95**

OPTIONAL BUILT-IN ADAPTERS

Image	Description	Part No.	Price
	Aerox Scott Built-in Adapter Option (Piper, Beech, Mooney)	13-04536	$60.00
	Aerox Puritan-Bennett Built-in Adapter Option (all other makes)	13-04537	$87.00
Portable System Filling adaptors for standard CGA 540 supply cylinders:			
	Aerox Scott Portable Filling Adaptor	13-04538	$65.00
	Aerox Puritan-Bennett Portable Adapter Option	13-04540	$87.00

AEROX SEAT BACK DELUXE CARRIER

Fitted case with quick release, all point webbing. Available for "A", "C", "D", "E", and "M" cylinders. Doubles as a carrier with built in rubber handle. Webbing can remain on the seat when the case is detached. Internal velcro strap holds cylinder securely. Accessory pocket on side holds webbing for easy storage. Available in black. P/N 13-07084.....**$69.95**

NORAL OXYGEN CANNULA CARRIERS

See www.aircraftspruce.com for our full line of Noral Oxygen Canula Carriers.

PS

OXIMETERS - FACE MASKS

PULSE OXIMETER CO DETECTOR 455

CO Guardian proudly announces aviation's first built-in pulse oximeter for airplane panels. This Life Guardian Aero-455 has been designed for all aircraft with limited panel space.
This small pulse Oximeter with CO Detector mounts easily in most panels and transmits data to the MFD'S via RS232. Current MFD manufacturers include Electronics International, Advanced Flight Technologies, Grand Rapids Instruments and on upcoming releases of Avidyne Entegra Release 9.
The unit transmits the pilot's blood oxygen levels, heart rate statistics, CO Level, Cabin temperature and Cabin Altitude to the MFD's display units. The pilot inserts an index finger in the unit and quickly gets readouts so he/she can determine his/her general physical and his environmental condition. Aero-455 reminds the pilot when he/she passes 10K and every 30 minutes above 10K. P/N 11-07993.....**$899.00**

THE OWL AVIATION OXIMETER

Can detect blood oxygen concentration through the use of a small sensor placed on the tip of a finger or in a headband. The oximeter will determine if the oxygen concentration of the blood becomes too low and alert the pilot of potential hypoxia conditions. At an oxygen saturation of 90%, the OWL will alert the pilot through standard aviation headphones with an audible "caution" message. If the saturation should drop below 85%, the OWL will sound a "warning" message.Will give saturation readings on demand--at the push of a button. Will also alert the user in the event the batteries become low by an audible "caution" and a visual indication with a red LED. The only oximeter with a sensor intended for continuous monitoring. P/N 13-04284 ....**$625.00**

EDS-2IP BUILT-IN PULSE DEMAND OXYGEN SYSTEM

Complete kits that include all you need to do high flight-level cross country flying with ultimate physiological safety. Kit includes the low-profile instrument panel or overhead-mountable EDS 2ip control head unit with a 2.25" X 2.25" form factor, two (2) remote-mountable oxygen outlet distributor units, the new IPR (Intelligent Peripheral Regulator) with our light-weight carbon-fiber-wrapped cylinder with a 48 cu. ft. capacity allowing many round-trips without oxygen refills. In addtion, masks, cannulas, as well as necessary hardware and tubing are included. The pilot station comes with our, FAA-CAMI flight-level 250 tested 'Pulse-Demand' ALPS FaceMask that can be upgraded with a noise-cancelling microphone at any time. You can add the Alps face mask with or without microphone for your co-pilot as well.
EDS-4ip built-in Pulse Demand oxygen management systems are complete kits includes everything in the EDS-2IP but with the EDS 4ip control head unit with a 2.25" X 3.125" vertical form factor, and four (4) remote-mountable oxygen outlet distributor units
NOTE: The EDS ip systems automatically operate from a 12 or 24 Volt system at a mere 250 ma. of current. Therefore, if not specified, during your order the IPR will come with a 12 volt valve and the schematics will instruct that it be powered from the control head, via pin-19. The most preferred configuration. Otherwise the valve for the IPR must be specified for either 12 or 24 volt operation if you decide to power the IPR valve through system power and not from the control head.
EDS-2IP ..... P/N 13-05745 .....**$4,785.00**
EDS-4IP (Shown) ..... P/N 13-05746 .....**$6,175.00**

AEROX OXYGEN CONSERVING SYSTEM

Intended for use with current portable oxygen systems. Maximum Oxygen Duration with Minimal Effort. The device uses negative inspiration pressure to trigger pulse oxygen. Completely mechanical, no batteries required. When the user inhales, a supply of oxygen is delivered, simple, safe, and effective, reducing the demand on the users standard portable supplemental oxygen system, and increasing duration times. Includes a convenient strap for wearing around your neck. Outlet Hose with Flow Indicator, Inlet Hose with aerox® , CPC, or Skyox Plug-in Fittings.
P/N 13-09019 .....**$364.00**

OXY2GO PORTABLE OXYGEN SYSTEM

The Oxy2Go Portable Oxygen System Regulator and Cylinder Unit has a lightweight and compact ergodynamic design that fits into the palm of your hand. This is the world's smallest, most convenient portable oxygen system ever developed for personal use.
Oxy2Go..... P/N 13-09607.....**$24.95**
6 Pk Cylinder refills..... P/N 13-09608.....**$19.95**

FINGER PULSE OXIMETER

MD300 C201 is intended for noninvasive spot-check measurement of function oxygen saturation of arterial hemoglobin(SpO2). It can be used with adult and pediatric and widely used in family, clinic and hospital. Features; • SpO2%, PR are displayed on screen. • Simple and convenient operation • Light, compact (the weight is 50g including batteries) Low power consumption, two AAA batteries can be continuously Operated for 30 hours • Indication of low power consumption • Two display modes P/N 13-05666 .....**$89.95**

MOUNTAIN HIGH AVIATOR STANDARD CANNULA

The Aviators Cannula is calibrated for use with the MH-4 flowmeter or any other device calibrated to the standard protocol of 1 liter per minute per 10,000 ft. per FAA-FAR 23.1447. This Cannula works great with a headset! P/N 13-11590 .....**$5.95**

MOUNTAIN HIGH OXYMIZER CANNULA

The Mountain High Oxymizer 'M' type (mustache-style) oxygen-conserving cannula is the most popular version of MH Cannulas. The Oxymizer is standard issue with MH XCR and XCP systems and may work with almost any adjustable constant flow regulator.
P/N 13-11592 .....**$24.95**

MOUNTAIN HIGH OXY-ARM BOOM CANNULA

The new OxyArm™ boom "comfort cannula" system, which fixes onto your headset, can swivel about and slides in/out for best fit. The nasal tips and the entire feed-tube assembly are easily replaceable. The OxyArm™ boom cannula has been tested for best use with all MH EDS and XCP products. The OxyArm™ boom cannula kit from Mountain High has all the items needed to install onto almost any headset in use today.
P/N 13-11591 .....**$98.50**

MOUNTAIN HIGH ALPS FACE MASK

FAA-CAMI tested with the EDS-ip system, MH ALPS FaceMask and the MH ALPS-M (for microphone) FaceMask. Outfitted with an electronic "Clear-Speak" ambient noise-canceling microphone and is compatible with most aircraft systems. Easy to put on and exceptionally comfortable as it does not require a polyvinyl bag. The ALPS or the ALPS-M FaceMask can be used with any of the MH oxygen systems. Available in small, medium and large.
Note: Customers using the Mountain High Face Masks with EDS Pulse Systems must purchase feed tube (P/N 13-11388).

Description	Part No.	Price	Description	Part No.	Price
Facemask Med.	13-04155	**$132.95**	Facemask w/ Mic Small	13-05134	**$398.00**
FacemaskSmall	13-05136	**$126.23**	Facemask w/ Mic Med.	13-05135	**$379.95**
Facemask Large	13-05137	**$144.95**	Facemask w/ Mic Large	13-04156	**$379.00**

MH Feed Tube..... P/N 13-11388 .....**$5.95**

MOUNTAIN HIGH PORTABLE OXYGEN SYSTEMS FOR CESSNAS

"MH FDS O2D2 Pulse Demand FADOC Oxygen Delivery System" is designed for Cessna pilots. The MH EDS O2D2 is the only single unit. portable, two-place, carry-on Pulse Demand oxygen system currently available. The MH EDS O2D2, with the patented digital electronic "Pulse Demand" FADOC oxygen delivery system, enables the pilot and passenger/crew to fly at pressure altitudes up to 25,000 feet with safety and comfort. The O2D2 digital pulse demand system reduces oxygen consumption dramatically. Different from "standard" constant flow systems, the O2D2 pulse demand system wastes no oxygen during the breathing cycle. Studies show that 90% of the oxygen supplied by the O2D2 is transferred to the blood. The average user will enjoy a conservative consumption drop of four times compared to constant flow systems. The system operates, with two people, for up to 50 hours on three AA alkaline batteries. Easy to use, the two-person O2D2 reduces oxygen system workload to almost nil. There are no oxygen flow indicators to watch or manually operated constant flow valves to adjust due to altitude changes. Two push buttons cycle the O2D2 through the various modes that automatically deliver the required supplemental oxygen pulses for various altitudes. The complete standard system includes an aluminum oxygen cylinder (buyer has a choice of sizes with upgrades), a cylinder carry case, primary reducing regulator, low pressure service line, connection fittings, the MH EDS O2D2 FADOC unit, breathing cannulas, face masks, and a tote bag.
With Small (4-1/2" DIA) Cyclinder..... P/N 13-05068.....**$1,089.00**
With Large (5-1/2" DIA) Cyclinder ..... P/N 13-05069.....**$1,129.00**

PS

OXYGEN SYSTEMS

MOUNTAIN HIGH XCP SYSTEMS

The XCP is a low-cost, high-duration multi-place oxygen system. With the A3 and Oxymizer cannula each person will use at most 1.0 liter/min. at 18,000 ft. The flow rate at 18.000 ft. is typically only 3/4 (0.750) liter/minute with the Oxymizer cannula. However, 1.0 liter/minute is used as a worst-case scenario and for calculation convenience. The XCP delivery system consists of: 1 ea. XCP quad-port regulator with self-sealing outlets, 4 ea. XCP face masks (for use with the A4 flowmeter or nasal congestion), 4 ea. Nelson A3 flowmeter/regulators with 3' (three feet) of high quality tubing with CPC connectors and 4 Oxymizer® type "M" nasal cannulas, 1 ea. Oxygen cylinder (AL-415 or AL-682), 1 ea. Tuff-Pack padded fabric carry/strapping case for cylinder and equipment. It has an altitude/flow scale calibrated for the unique Oxymizer oxygen-conserving cannula. The scale is marked in 2,000 ft. increments for VFR flight levels up to 18,000 ft. You can operate the XCP in IFR flight levels with the optional A4 flowmeter/regulator and associated F1 face masks. All systems are shipped empty.

XCP carry-on systems man-hour service time with the Nelson A3 flowmeter and Oxymizer cannula

Persons	10,000 ft. MSL			14,000 ft. MSL			18,000 ft. MSL		
	XCP 180	XCP 415	XCP 682	XCP 180	XCP 415	XCP 682	XCP 180	XCP 415	XCP 682
1	10:00	23:00	37:53	05:27	12:35	22:40	03:51	08:51	14:34
2	05:00	11:30	18:56	02:43	06:17	10:20	01:55	04:25	07:16
3	03:00	07:40	12:37	01:49	04:11	06:52	01:16	02:58	04:51
4	02:30	05:45	09:28	01:22	03:08	05:10	00:57	02:12	03:38

XCP-682-4P-FP: 682 liter (24 cu.ft.) 4-pl. carry-on system w/Full-Pack padded cylinder carry/case ..... P/N 13-03657 ..... **$795.00**
XCP-682-2P-FP: 682 liter (24 cu.ft.) 2-pl. carry-on system w/Full-Pack padded cylinder carry/case ..... P/N 13-03658 ..... **$625.00**
XCP-682-1P-FP: 682 liter (24 cu.ft.) 1-pl. carry-on system w/Full-Pack padded cylinder carry/case ..... P/N 13-03659 ..... **$469.95**
XCP-415-4P-FP: 415 liter (15 cu.ft.) 4-pl. carry-on system w/Full-Pack padded cylinder carry/case ..... P/N 13-03660 ..... **$750.00**
XCP-415-2P-FP: 415 liter (15 cu.ft.) 2-pl. carry-on system w/Full-Pack padded cylinder carry/case ..... P/N 13-03661 ..... **$584.00**
XCP-415-1P-FP: 415 liter (15 cu.ft.) 1-pl. carry-on system w/Full-Pack padded cylinder carry/case ..... P/N 13-03662 ..... **$449.95**
XCP-180-1P-FP: 180 liter (6 cu.ft.) 1-pl. carry-on system w/Full-Pack padded cylinder carry/case ..... P/N 13-03653 ..... **$439.00**

MOUNTAIN HIGH HANDHELD OXYGEN SYSTEM

The Co-Pilot is an affordable, handheld oxygen system designed for supplemental breathing at high altitudes. Useful for pilots who only occasionally fly at altitudes requiring oxygen and, therefore, do not need a full-featured oxygen system for their aircraft. The Co-Pilot's oxygen regulator has an on/off and volume control knob that is adjustable from off to 2 L/min. The face mask is removable and can be replaced with an Oxymizer cannula for continuous "hands-off" use for more than 30 minutes of duration per cylinder, at 15,000ft. Built-in pressure gauge will allow you to see how much oxygen is available at all times. Can be shut off and stored with a cylinder installed for more than a year without any noticeable leakage. Comes with regulator & gauge, face mask, two 18-liter non-refillable replacement cylinders, and an instruction manual. . P/N 13-01016 ..... **$199.95**

MOUNTAIN HIGH EDS OXYGEN SYSTEMS

The EDS (Electronic Delivery System) is a supplemental breathing system specifically designed for aviation to employ the tested and well founded pulse-demand method of oxygen delivery. This reduces the amount of oxygen wasted by as much as ten times over constant-flow systems, while providing over 90% blood saturation levels at and well above pressure altitudes of 25,000 ft. The EDS senses and synchronizes itself with your breathing to provide a pulse of oxygen when you benefit from it the most: at the very beginning of your inhalation cycle and not while exhaling, pausing or talking. Measurements show that up to 90% of the oxygen delivered is absorbed directly into the blood stream. A built-in density altitude barometer responds to altitude changes automatically, adjusting the oxygen amount as needed for each breath. Current digital version, EDS-D1, is about the size of a cigarette pack, and it offers 9 modes of operation. All systems shipped empty.

• TR-95 Transfilling unit w/ variable flow transfer, fitting bleed valve and pressure/contents gauge. P/N 13-03925 ..... **$285.95**
• TR-75 Transfilling unit w/ "O" ring fittings and bleed valve ..... P/N 13-03924 ..... **$159.95**
• TR-55 Transfilling unit with hand grip knob ..... P/N 13-03923 ..... **$107.95**

Man-hour service time with cylinder @ 1,800 psig. with EDS unit(s) using cannula's or face mask(s)

Persons	10,000 ft. MSL			15,000 ft. MSL			18,000 ft. MSL		
	EDS 011	EDS 022	EDS 040	EDS 011	EDS 022	EDS 040	EDS 011	EDS 022	EDS 040
1	31:06	62:18	113:12	19:05	38:04	69:10	14:24	28:50	52:24
2	15:33	31:09	56:36	09:32	19:02	34:35	07:12	14:25	26:12
3	10:37	20:45	37:44	06:21	12:41	23:03	04:48	09:36	17:28
4	07:45	15:34	28:18	04:46	09:31	17:15	03:36	07:12	13:05

EDS-022-FP: Kevlar fiber-wound cylinder, EDS unit, XCR regulator, cannula, face mask, Full-Pack & tote bag ..... P/N 13-03665 ..... **$1,645.00**
EDS-011-FP: Kevlar fiber-wound cylinder, EDS unit, XCR regulator, cannula, face mask, Full-Pack & tote bag ..... P/N 13-03666 ..... **$1,145.00**
EDS-480-FP: Glass fiber-wound cylinder, EDS unit, XCR regulator, cannula, face mask, Full-Pack & tote bag ..... P/N 13-03667 ..... **$1,120.00**
EDS-180-FP: Aluminum cylinder, EDS unit, XCR regulator, cannula, face mask, Full-Pack & tote bag ..... P/N 13-03668 ..... **$781.95**
EDS-040-2P-TF: Kevlar fiber-wound cyl., 2 EDS units, XCR regulator, cannula, face mask,Tuff-Pack & tote bag ..... P/N 13-03669 ..... **$2,255.00**
EDS-022-2P-FP: Kevlar fiber-wound cyl., 2 EDS units, XCR regulator, cannula, face mask, Full-Pack & tote bag ..... P/N 13-03670 ..... **$2,256.00**
EDS-415-2P-FP: Aluminum cylinder, 2 EDS units, XCR regulator, cannula, face mask, Full-Pack & tote bag ..... P/N 13-03671 ..... **$1,035.00**
EDS-480-2P-FP: Glass fiber-wound cyl., 2 EDS units, XCR regulator, cannula, face mask, Full-Pack & tote bag ..... P/N 13-03672 ..... **$1,748.00**
EDS-D1: Unit only, (less regulator) ..... P/N 13-02389 ..... **$679.90**
EDS-D1: Kit with XCR regulator ..... P/N 13-02390 ..... **$656.00**
EDS-D1: Kit with XCR gauged regulator ..... P/N 13-02391 ..... **$840.00**
EDS-D1: Kit with XCR-DIN regulator ..... P/N 13-02392 ..... **$989.00**
EDS-D1: System with CFF-480 cylinder (1 place) ..... P/N 13-02387 ..... **$1,135.00**
EDS-D1: System with CFF-480 cylinder (2 place) ..... P/N 13-02388 ..... **$1,630.00**
Mountain High Feedtube For Use With 13-04156 On The EDS Pulse Demand System ..... P/N 13-11388 ..... **$5.95**

MOUNTAIN HIGH PORTABLE O2D2 UNIT KIT

The MH EDS O2D2 Pulse Demand Oxygen Delivery system is the only single unit, portable, two-place oxygen system currently available for aviation. A variety of options allow you, the pilot, to customize a system to your specific needs. The O2D2 kit comes with 3 'AA' batteries and 2 cannulas and 2 face masks each in their own handy carry bag. Various cylinder configurations of our complete ready-to-fly O2D2 systems are listed below. **NOTE**: The EDS O2D2 and O2D1 are portable systems designed and calibrated to be used with their regulators (~15 psig. dynamic to 30 MAX. psig. static). However, if you wish to operate from the outlets of a built-in system, they offer the In-Line Regulator pressure reducing and stabilizing regulator. This will allow their portable EDS systems to operate with built-in systems that supply up to 125 psig. to the outlets in the aircraft.

Description	Part No.	Price	Description	Part No.	Price
MH PORTABLE O2D2 UNIT - If you already have a cylinder and regulator, you can order just the O2D2 unit kit	13-07312	$798.00	MH O2D2 A-682 XCR REGULATOR - EDS O2D2, AL-682 Aluminum cylinder, XCR regulator & Full Pack	13-07317	$1,129.00
MH O2D2 WITH A-180 AMD XCR REGULATOR - EDS O2D2 with AL-180 Aluminum cylinder and XCR regulator	13-07313	$1,049.00	MH O2D2 AL-682 FPR REGULATOR - 2 EDS O2D2, AL-682 Aluminum cylinder, FPR regulator & Full Pack	13-07319	$2,029.00
MH PORTABLE 2-PL O2D2 OXYGEN SYSTEM - EDS O2D2 with AL-415 Aluminum cylinder, XCR regulator with Full Pack	13-05068	$1,089.00	MH O2D2 KF-011 CYL XCR REGULATOR - EDS O2D2, KF-011 Kevlar cylinder, XCR regulator & Full Pack	13-07321	$1,412.00
MH O2D2 WITH AL-415 AND FPR - 2 EDS O2D2 units with AL-415 Aluminum cylinder, FPR regulator & Full Pack	13-07315	$1,989.00	MH O2D2 CFFC-022 CYLINDER XCR REGULATOR - EDS O2D2, CFFC-022 carbon fiber cylinder, XCR regulator & Full Pack	13-07323	$1,889.00
MH PORTABLE 2-PL O2D2 OXYGEN SYSTEM - EDS O2D2, AL-647 Aluminum cylinder, XCR regulator & Full Pack	13-05069	$1,129.00	MH O2D2 CFF-480 CYLINDER XCR REGULATOR - EDS O2D2, CFF-480 cylinder, XCR regulator & Full Pack	13-07324	$1,350.00
MH O2D2 UNIT WITH AL-647 FPR - 2 EDS O2D2 units, AL-647 Aluminum cylinder, FPR regulator & Full Pack	13-07316	$2,029.00	MH O2D2 CFF-480 CYLINDER XCR DIN477 - EDS O2D2, CFF-480 cylinder, XCR DIN-477 regulator & Full Pack	13-07326	$1,437.00

PS

GROUND SUPPORT TOW BARS

CESSNA - This two piece telescoping tow bar fits all Cessnas with 5/8" lugs on nosegear. Overall length 42.5", collapsed 24".
P/N 13-01800.....**$44.75**

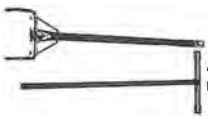
MOONEY - A simple "T" handle design for the Mooney axle. Overall length 33.5".
P/N 13-02000.....**$46.75**

CHEROKEE - This one piece tow bar has a retractable locking mechanism that gives a positive lock when installed. Overall length 31". P/N 13-01600.....**$44.75**

BEECHCRAFT - The compact design of this tow bar makes it very popular among Beech owners. Overall length 38", collapsed 21.5". P/N 13-01900.....**$46.75**

ARROW - This offset "T" handle design fits into the Arrow axle making it a simple and easy design to use. Overall length 33".
P/N 13-01700.....**$44.85**

TWIN CESSNA - The extra length provides extra nose clearance and leverage for Twin Cessnas and remains very compact. Overall length 55", collapsed 34". P/N 13-01850.....**$48.75**



TWIN PIPER - (HH-007) Piper Twin Comanche, Apache, Aztec, and Navajo Towbar. Two section until 28" collapsible, 49-1/2" overall length.
P/N 13-01778.....**$47.50**

COMANCHE - The same as our P/N HH-007 except one piece construction. Overall length 33". P/N 13-02100.....**$43.75**

DELUXE CESSNA - The deluxe Cessna towbar is very popular and designed for those who demand the ultimate in convenience and durability. Spring loaded forks allow easy one handed engagement without getting on your hands and knees. Length 45.5" extended, 26" collapsed. Wt. 3.75 lbs. Ideal for Cessna RGs Including 210 series.
P/N 13-01540.....**$72.50**

DUTCHESS/PIPER - Fits Dutchess and Piper nose gear axle. Telescoping design provides extra nose gear clearance. Overall length 48", collapsed 28". P/N 13-02210.....**$44.75**

DELUXE PIPER - The deluxe Piper towbar offers all the features of a standard Piper towbar plus the convenience of a two-piece design. When extended, this model provides additional propeller clearance and leverage. Length: 42" extended, 23" collapsed. Wt. 3.5 lbs.
P/N 13-01550.....**$52.50**

UNIVERSAL TOW BARS

CESSNA/ BEECH/ MOONEY - This universal tow bar is excellent for use with tug, tractor, or by hand. It fits most Cessna singles and twins with 5/8" lugs, Beech singles and twins with 1/4" lugs, all Mooneys, Twin Commanders, Lake and Commanche. Slide lock quickly adjusts & holds firmly.
P/N 13-02350.....**$161.95**

PIPER - Same design as the universal tow bar above, this towbar fits Piper single fork design, Arrow, Malibu, Lance, Seneca, and Seminole. Slide lock quickly adjusts and holds firmly. P/N 13-02351.....**$154.75**

SCOTT TAILWHEEL - A tow bar designed for aircraft using a Scott 3000 series tailwheel. Overall length 48", collapsed 28".
P/N 13-02205.....**$56.50**

BEECHCRAFT AXLE - This two piece tow bar is designed for use in Beechcraft axles. Overall length 48", collapsed 27".
P/N 13-02215.....**$55.95**

CHEETAH/TIGER - This tow bar is designed to fit Grumman aircraft. Its collapsible design makes it easy to fit in the baggage area. Overall length 43", collapsed 26". P/N 13-02200.....**$59.50**

ERCOUPE -Specially designed for Ercoupes. This tow bar has a spring loaded lever action for ease of operation. Overall length 46.5", collapsed 28.5". P/N 13-01580.....**$54.95**

1-1/8" AXLE - This is a universal tow bar designed for aircraft with 1-1/8" axles such as Cessna Skymaster and Piper Seneca. Overall length 56", colapsed 33". P/N 13-02110.....**$59.25**

COMMANDER - This model fits Rockwell 112 and 114. Spring loaded forks for ease of operation. Overall length 46.5", collapsed 28.5".
P/N 13-01570.....**$59.50**

DELUXE MOONEY - The deluxe Mooney towbar is a longer, two piece version of a standard Mooney towbar. Attractive black caps accentuate deluxe appearance. Length: 38", collapsed 21". Wt. 3 lbs. P/N 13-01560.....**$49.85**

UNIVERSAL - For the FBO this is an ideal hand held universal tow bar. Fits Cessna, Beech, Piper, Scott Tailwheel and many others. Overall length 57", collapsed 34". P/N 13-02250.....**$92.50**

VIKING - Designed especially for Bellanca Viking axle. Collapsible design and spring loaded fork. Overall length 46.5", collapsed 28.5".
P/N 13-02220.....**$68.50**

DELUXE BEECHCRAFT - Spring loaded forks for ease of operation. Overall length 47", collapsed 28". P/N 13-01905.....**$55.95**

FBO UNIVERSAL TOW BAR

This heavy duty universal tow bar is standard equipment for FBOs. Fits most Piper, Cessna, Beech,Mooney, AeroCommander, and many others. The adjustable fork allows you to extend the fork assembly from 3" to 10". This tow bar is extra long at 7 ft. 6 inches.

The T-100 is not made for specific aircraft. It has spring loaded adapters that will fit and 1/4" to 5/8" towpins on the aircraft axle. This will not work with aircraft that have tow pins on the landing gear. P/N 13-02355..... **$243.95**

AIRCRAFT WINCH & MOUNTING KIT

AIRCRAFT WINCH - Hook cable to tail tie-down ring and press button. Easily moves aircraft up to 3,000 lbs. rolling weight. Includes wall mount. If a floor mount is desired order P/N 13-06124. Order bracket separately. Comes with 100' of cable and 75' of control cord and has an automatic safety shut off. Cable speed is 30 feet per minute. Voltage 110 DC.....P/N 13-01764.....**$462.95**

HEAVY DUTY AIRCRAFT WINCH - Winch includes metal wind up drum, 100' of cable 125' of control cord. Moves aircraft up to 6,000lbs. Includes a wall mount. If floor mount is desired P/N 13-06124 must be ordered. Code 7
P/N 13-06125.....**$428.95**

AIRCRAFT WINCH MOUNTING KIT - Aircraft Winch Mounting Kit Everything you need to secure the winch to the floor. Mounting kit only. Can be used with P/N's 13-01764 and 13-06125 in a floor mount is desired.
P/N 13-06124.....**$51.75**

PS

TOW BARS

BOGERT TOW BARS (BOGI-BARS)

Light enough to stow Built from a combination of steel for maximum durability comfort grips on the handle and spreader bar chip resistant red bar will look great for years. Operation: extend the handle easily with high shear wick release pin apply forward pressure on the spreader bar to open the wishbone jays. Line up the Bogi-Bar attachment at the tow points or axle depending on model. Release the tension on the spreader bar and you are locked on! The tow bar will not slip off the plane. Reverse for removal.

TAIL WHEEL AIRCRAFT				
Model	**Fits**	**Extended Length**	**P/N**	**Price**
4-API	Aircraft Products Tailwheel	48"	12-02097	**$98.75**
4-ABI	Alaskan Bushwheel 3400B	48"	13-06106	**$96.50**
04M-XP	Cessna XP Modification	48"	13-06107	**$92.50**
4-TDG	Scott 3200 & 3400/ABI 3200/3400	48"	13-10000	**$92.50**
4-F24	Fairchild 24, Beech Stagger Wing	48"	13-02410	**$99.50**
4-RV	Vans RV3, RV4, RV6 & RV8	48"	13-02408	**$92.50**
NOSE WHEEL AIRCRAFT				
Model	**Fits**	**Extended Length**	**P/N**	**Price**
4-35	Beechcraft- Bonanza, Debonair, Duchess, Duke & Skipper	49"	13-10030	**$92.50**
4-19/23B	Beechcraft-Musketeer, Sport, Super, Sierra & King Air	48"	13-01808	**$92.50**
4-17/30	Bellanca-Viking Series	48"	13-01809	**$99.50**
4-172	Cessna 150, 152, 172, 175, 177, 182, 310R, RV-4	48"	13-10040	**$92.50**
4-206	Cessna 205, 206 & 207	48"	13-10060	**$94.50**
4-210	Cessna 172RG, 177RG,182RG & 210 Series	48"	13-10050	**$113.95**
4-182-XL	Cessna 182 S (1996 and up) and T (2001 and up) models with long nose.	55"	13-11389	**$104.75**
4-SR	Cirrus SR 20 &22	48"	13-06108	**$93.50**
4-AA	Gulfstream American AA1 & AA5	48"	13-02407	**$92.50**
4-Lake	Lake Amphibian	48"	13-02411	**$117.95**
4-Moon	Mooney Aircraft	48"	13-01810	**$94.50**
4-24/30	Piper Comanche PA-24, PA-30 & PA-39 Also the Cherokee Six axle w/pants if tabs above wheel are broken	48"	13-10010	**$92.50**
4-22/28	Piper PA-22, & PA-28 Series (Not PA-28R)	48"	13-10020	**$92.50**
4-28R	Piper PA-28R Series - Hand Pull for dog-leg style	49"	13-02098	**$24.95**
4-34	Piper Seneca PA34 200/220/220T, and Aerostar 601P *handle extends to 78"	78"	13-01812	**$159.95**
4-PA46	Piper Malibu & Mirage– Vehicle Pull	72"	13-06112	**$186.95**
4-28R, 4-PA46	Piper PA-28R, PA- 32R, PA-46 Hand Pull Towbar. Malibu, Mirage, Meridiam and Saratoga Aircraft.	60"	13-11203	**$184.95**
4-RVA	Vans - RV6A, RV7A, RV8A, & RV9A	48"	13-01811	**$92.50**
4-LANCE	Lance Towbar	48"	12-02099	**$178.00**
4-20	Diamond DA20	--	13-06111	**$92.50**
4-DA40	Diamond DA40	--	13-06110	**$92.50**
4-DA42	Diamond DA42	--	13-06109	**$186.95**
4-RV10	Vans - RV10	48"	13-04282	**$92.50**
4-Socata	Socata Style Bogi Bar	49"	13-06113	**$101.95**
Agusta	Agusta Helicopter.Handle extends to 70"	70"	13-01813	**$139.95**

BOGI BAR EXTENDED T-HANDLE

Includes new grips and is 7" longer than the standard Bogi Bar T-Handle. The extra length can be quite beneficial for aircraft with extra-long noses like the Cessna 182 S (1996 and up) and T (2001 and up) models. Tall customers will find this T-Handle easier on the back since it lowers that overall angle of the tow. The Extended T-Handle works with any of the standard Bogi-Bars and will increase the overall length to about 55". Model 4-TXL. P/N 13-11199.....**$34.95**

BRACKETT AIRCRAFT TOW BARS

MODEL TH-5

The TH-5 is a scaled down version of the TR-3 tractor towbar. Excellent for operators and tee hangar owners who need a towbar which is lightweight (14 lbs), has good large pulling handles, and is sturdy enough for towing Cessna 150's to 310's. Size: 74"L. Wt: 14 lbs.

Ring Hitch.....P/N 13-10110 ..... **$338.95**
Ball Hitch .....P/N 13-10111 ..... **$364.95**
Clevis Hitch .....P/N 13-01884 ..... **$334.00**

MODEL TR-6

Excellent for towing aircraft such as the T-6, P-51, Stearman, Staggerwing Beech, or any aircraft with 3/4" or larger eye bolts. Length: 12' Spread: 12 ft. Weight: 62 lbs.

Ring Hitch.....P/N 13-10131 .....**$965.00**
Ball Hitch .....P/N 13-10130 .....**$745.95**

MODEL TR-34

The TR-34 has the light weight of the TR-3, and the strength of the TR-4. It has the same universal features that fit most aircraft from C-150 through aircraft up to 14,500 lbs. Wt: 35lbs. Available in 3 hitch styles.

Ring Hitch (TR-34R) P/N 13-10085 ..... **$559.00**
Ball Hitch (TR-34B) .....P/N 13-01886 ..... **$497.00**
Clevis Hitch (TR-34C) .....P/N 13-01887 ..... **$498.00**
TWA-10 Scott Tail Wheel Adapter (2 pcs. req)
P/N 13-10089 ..... **$20.85**

MODEL TH-53 - Features a tow bar length of 80" to 94" (extended). Wt: 22 lbs., Max. aircraft Wt: 7,000 lbs.

TH-53R Towbar w/Ring hitch.....P/N 13-03338 ..... **$497.00**
TH-53B Towbar w/Ball hitch.....P/N 13-03339 ..... **$498.00**
TH-53C Towbar w/Clevis hitch.....P/N 13-03340 ..... **$497.00**

MODEL TR-71, 72, & 73

Lightweight aluminum designed for Waco, Stearman, & Cessna 195 type aircraft. Length: 100", Spread: 90", Wt: 22 lbs. Hook dia: TR-71 (.850), TR-72 (1.25)

TR-71B Towbar w/Ball hitch.....P/N 13-01907 ..... **$558.00**
TR-72B Towbar w/Ball hitch.....P/N 13-01908 ..... **$558.00**
TR-73B Towbar w/Ball hitch.....P/N 13-01909 ..... **$558.00**
TR-71R Towbar w/Ring hitch.....P/N 13-01910 ..... **$558.00**
TR-72R Towbar w/Ring hitch.....P/N 13-01911 ..... **$558.00**
TR-73R Towbar w/Ring hitch.....P/N 13-01912 ..... **$558.00**

CUSTOM TOWBARS & OPTIONS FOR UNIVERSAL TOW BARS

Model	Description	Part No.	Price
TWA-10	Scott Tail Wheel Adapter (2 pcs. req.)	13-10089	**$20.85**
T-MU2-10	Kit-Crank & head assembly for converting TR-34 to TR-44	13-01890	**$144.40**
TWA-11	Tail Wheel Adapter for DGA-Staggerwing (2 pcs. req.)	13-01891	**$18.50**
T-4W	Wheel Set (Set of 2) for TR-34	13-01892	**$99.85**
T-375	Adapter .375" for Aerospatiale-Trinidad, Tabago (2 pcs.)	13-01893	**$35.90**
T-475	Adapter .475" Outer Diameter (2 pcs. req.)	13-01894	**$35.90**
T-625	Adapter .625" for Augusta 109 & Others (2 pcs. req.)	13-01895	**$14.95**
T-750	Adapter .750" for Commander 114, S-76 & Other	13-01896	**$17.85**
T-Maule	Adapter for Maule Tail Spring (1 pc. req.)	13-01897	**$75.00**
T-34-04	Shock Absorbing Ring Hitch (1 pc. req.)	13-01899	**$158.95**
TR-PC	Towbar; Pilatus PC-12, 3 pcs., 30 lbs.	13-01686	**$569.00**
TR-PCS	Towbar; Pilatus PC-12, 1 pc., 19 lbs.	13-01903	**$422.95**
TR-S2	Towbar; Ayres; 3 pcs., 18 lbs.	13-01755	**$335.00**

PS

TOW BARS

THE TAIL-DRAGGER DRAGGER

This manual tow bar has heavy-duty solid rubber 8-inch wide tread wheels and will move most tail-draggers up to 2,000 lbs. and tail wheel tires up to 10 inches in diameter. Options Available: 3rd Wheel for heavier ships, and RV tail wheel lift pin.

Tail-Dragger Dragger™ Features:

- Patented Design
- No Winches
- No Hydraulics
- No Metal To Metal Contact
- No Adapters Required
- Superior Traction
- 5 Second Loading & Unloading
- Will fit Almost Any Aircraft
- Tail Wheel Stays In Trailing Position
- Lifting Pins Grip & Lift Tail Wheel
- Maneuver In Any Direction
- Operator Has Good View Of Wingtips

Description	Part No.	Price
Standard tail Dragger	13-01510	**$219.00**
24V Electric Tail Dragger Dragger	13-03736	**$1,695.00**
Tail Dragger Dragger Gas	13-01824	**$1,595.00**

ACCESSORIES

Descriptions	Part No.	Prices
RV Tail Wheel Lift Pin	13-04936	**$7.85**

DELUXE 24-VOLT ELECTRIC TAIL DRAGGER-DRAGGER

The deluxe model comes with charger and batteries included so the unit is ready to be used immediately.

This powerful 24-volt electric tug has heavy-duty 11 1/2 -inch air wheels and will move most tail-draggers up to 6,000 lbs., tail wheel tires up to 16 inches in diameter. It utilizes a smooth twist-grip speed control for precise forward and reverse movements. Uses 2 garden tractor batteries hooked up in series.

P/N 13-07281.....**$1,995.00**

DELUXE 24-VOLT ELECTRIC NOSE DRAGGER DRAGGER

This powerful 24-volt electric aircraft tug will fit and move any nose wheel airplane up to 6,000 lbs. without wheel fairings as well as those with wheel fairings that have 3" or greater of clearance from the fairing to the ground. It utilizes a smooth twist-grip speed control for precise forward and reverse movements. The Deluxe model (D) is shipped with batteries and a charger so the unit is ready to use immediately. Uses 2 garden tractor batteries hooked up in series. NDE-24D Deluxe Up to 6000 lbs. P/N 13-07278..... **$1,995.00**

STEARMAN TOWBAR

This towbar easily captures your tailwheel. Just push down on the bar and latch the pental hook or drawbar ball. It makes moving the Stearman from the rear quick and easy. Made with heavy duty wheels and pump up tires. Powder coated black.

P/N 13-11618..... **$358.00**

NOSE WHEEL DRAGGER DRAGGER

The Nose-Dragger Dragger features a swing gate front roller (for easy loading), 10 ball bearing rollers (which push and guide the nose wheel), and does not require the use of adapters, winches, or hydraulics. Effortless ground handling is accomplished by its lightweight design and slow walking speed. The Nose-Dragger Dragger accepts nose wheels up to 600 x 6 (with or without wheel fairings), and no metal-to-metal or metal-to-fiberglass contact. Available in gas or electric power models. The 12V electric powered Nose-Dragger Dragger will accept aircraft up to 3,000 lbs. The Nose-Dragger Dragger Gas powered model accepts aircraft up to 6,000 lbs. Please call 1-877-477-7823 for freight quote.

Gas Powered, 6.5HP (up to 12,000 lbs)..... P/N 13-05103... **$1,595.00**
Elevtric Powered, 24V (up to 6,000 lbs)..... P/N 13-04304.... **$1,695.00**
Electric Powered, 24V (up to 6,000 lbs)..... P/N 13-03205... **$1,695.00**

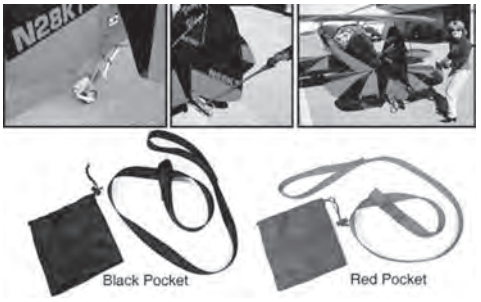
ACCESSORIES

Snow Chains ..... P/N 13-04932..... **$59.95**
Battery Charger - 12V ..... P/N 13-04933..... **$49.95**
Battery Charger - 24V ..... P/N 13-04934..... **$105.95**
Mag-Light / Head Lamp..... P/N 13-04935..... **$58.75**

HEAVY DUTY TOW BUDDY CORDLESS POWERBAR

Features:• No Flammable gasoline needed in hangar • Easy To Use • Infinite Speed Control • Versatile Applications • Push button forward and reverse controls • Nose gear quick attach for easy nose gear hook up. • The adjustable fork height fits virtually any light aircraft • Trickle charger for battery • Large 16 x 6.50 - 8 turf tire • For aircraft weight of 3500 to 4500lbs. P/N 13-04513 ..... **$1,291.00**

POCKET TOW TAILWHEEL LEASH



Pocket tow makes tail wheel aircraft maneuvering easy. Made with one-inch heavy-duty nylon webbing, the lightweight tow bar alternative is small enough to fit in your pocket and works on tail wheel aircraft with a 360-degree full-swivel tail wheel assemblies. The small end loops around the tail wheel leaf spring and cinches up tightly to pull and steer the aircraft backwards without pushing or pulling on any flight surfaces.

Tailwheel leash - Black ..... P/N 13-04681..... **$19.95**
Tailwheel leash - Red..... P/N 13-04682..... **$19.95**

BRACKETT MULTI-LINK TOW BARS

User benefits: All tow bars and heads are interchangeable with other popular tow bar systems such as tronair© warranty on all materials and workmanship money saving alternative to multiple tow bars

Brackett aircraft's multi-link tow bar line consists of tow bars that utilize changeable heads which allow you to tow a large variety of turbo prop and jet aircraft. The tyga line offers a standard multi-link system for aircraft with maximum tow weights of up to 125,000 pounds. All heads and tow bars are interchangeable with many widely used multi-head tow bar systems. You now have a high quality and competitive source for tow bars, changeable heads, and accessories.

Description	Part No.	Price
TY-TB125 Multi-Link Towbar	13-04157	**$1,395.00**
TY-TB75 Multi-Link Towbar	13-04158	**$1,175.00**
TY-TB-FTD Flat Tire Dolly T/B	13-04159	**$2,995.00**

PS

TOW BARS

ROBOTOW PORTABLE TOW BAR

Aircraft Spruce is pleased to offer the new all weather Robotow 24SL. It is lightweight (33 lbs.) and portable, making it ideal for carrying onboard your aircraft. When the Robotow's heavy duty all weather knurled drive drum is held against the nose wheel, the aircraft is easily moved. A trigger on the handle controls the speed while a switch reverses direction on command. Powerful, portable, and dependable, Robotow is an ideal motorized towbar for the aircraft listed below. Kits include Robotow, Battery, and Charger (US Charger or International Charger). Order axle adapters separately.

Description	Parts #	Price
Robotow 6420 24V Towbar Cordless Kit with International Charger	13-03896	**$1,136.00**
Robotow 6426 24V Towbar Cordless Kit with U.S. Charger	13-04222	**$1,136.00**
Robotow 6424 24SL Robotow only	13-11263	**$895.00**
Robotow 6351 corded 120V, with 80ft. extension cord.	13-03897	**$997.00**
ACCESSORIES		
Robotow 6425 24SL 5 amp Battery	13-11264	**$275.00**
Robotow 6427 24SL 3 amp Charger	13-11265	**$135.00**
Robotow 18 foot Extension Cord.	13-03901	**$54.95**
Robotow GFI	13-03902	**$71.95**
AIRPLANE ADAPTERS (SOLD SEPARATELY)		
Robotow Adapter Aero Commander	13-03904	**$188.95**
Robotow Adapter Beech 1 / Baron / Bonanza / Debonair Duke	13-03905	**$108.95**
Robotow Adapter Beech 2 / Queen Air / Twin Bonanza / Trigear 18	13-03906	**$188.95**
Robotow Adapter Cessna 1 / 150, 172, 182, 310, 340	13-03907	**$108.95**
Robotow Adapter Cessna 2/ 310R, 401, 414, 421	13-03908	**$108.95**
Robotow Adapter Cessna 3 / 182RG (Pre-1962), 206, 210 (Pre-1962)	13-03909	**$108.95**
Robotow Adapter Cessna 4 / 337, 303	13-03910	**$188.95**
Robotow Adapter Cessna 5 / 182RG and 210 (1962-1986)	13-03911	**$188.95**
Robotow Adapter Piper 1 / Apache, Comanche, Aztec, Navajo, Twin Comanche, Bellanca	13-03912	**$108.95**
Robotow Adapter Piper 2 / Colt, Cherokee, Tri-pacer	13-03913	**$188.95**
Robotow Adapter T28 Trainer	13-03914	**$188.95**
Robotow Adapter Navion	13-03915	**$188.95**
Robotow Adapter Commander 114B	13-03916	**$188.95**
Robotow Adapter Cessna Caravan	13-03917	**$188.95**
Robotow Adapter Trinidad	13-03918	**$188.95**

CESSNA TOWBAR EXTENSION

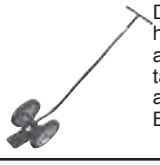
The "QUICK-FOLD COMPACT TOW-BAR" also known as the "QFC--Towbar-TM" This new to the market design was patented with you in mind…No more back breaking, bend over towing… Simply attach the QFC-TowbarTM extension to your already existent Cessna tow bar and stand up straight -away from under the propeller-for an added extension of 33". The QFC-TowbarTM has a unique compact design allowing for secure storage. It simply folds flat and is stowed securely along side the factory tow bar in the luggage compartment. P/N 13-06722 .....**$99.00**

DELUXE TAILWHEEL TOWBAR

The new Deluxe Tail wheel Towbar uses a positive locking control cable to attach to the wheel from a straight-on position. No extra maneuvering or lifting is required, and it can be adjusted for various tail wheel sizes. Towbar Weight: 26 lbs.

Note: Maximum weight to lift is 1,200 to 1,500 lbs. P/N 13-04918 .....**$249.95**

ROLLING TOWBAR FOR TAIL DRAGGERS



Designed by an aircraft mechanic for easy ground handling of his Aeronca, this new tow bar is ideal for all types of tailwheel equipped aircraft. Just place the tail wheel in holding bracket, lift up, and tow bar wheels allow aircraft to be wheeled anywhere with ease. Bracket fits all standard aircraft tailwheels.

P/N 13-04277 ..... **$271.95**

GLIDER & BANNER TOW HOOKS

GLIDER & BANNER TOW HOOK RELEASE

Bolt-on tow hook with bumper is designed to be directly bolted to a custom mounting bracket. The bumper is designed to reduce the kick-back that occurs when releasing a banner. The polyethylene bumper absorbs the force of the release and your tow hook release will last longer. P/N 13-06281.....**$527.00**

GLIDER & BANNER TOW HOOKS RELEASE

Bolt-on tow hook is designed to be directly bolted to a custom mounting bracket. This hook is similar in design to the Schweizer manufactured hook that is no longer available. Design improvements were made to increase emergency release capability at all towing loads and angles. The tow hook is not to be used on gliders. FAA approval can be obtained for the complete tow hook and release system by following the guidelines in FAA Advisory Circular 43.13-2B, Chapter 8, titled, "Glider and Banner Tow-Hitch Installations" and the included tow hook installation instructions. Tow hook release in not STC or PMA approved. P/N 13-04975.....**$458.00**

GLIDER & BANNER TOW HOOKS RELEASE

Weld-on tow hook designed to be directly welded to a custom mounting bracket. This hook is similar in design to the Schweizer manufactured hook that is no longer available. Design improvements were made to increase emergency release capability at all towing loads and angles. The tow hook is not to be used on gliders. FAA approval can be obtained for the complete tow hook and release system by following the guidelines in FAA Advisory Circular 43.13-2B, Chapter 8, titled, "Glider and Banner Tow-Hitch Installations" and the included tow hook installation instructions. Tow hook release in not STC or PMA approved.

P/N 13-04974.....**$420.95**

GLIDER & BANNER TOW RING

The tow rings is designed for use with the glider and tow hook release. The size of the tow ring is 2 ¼" OD. The material is forged steel, finished with cadmium plate with a proof load to 2500 lbs. Tow ring is for use with Wings Unlimited, Inc. tow hooks only. It is not STC or PMA approved.

P/N 13-06282.....**$19.85**

GLIDER & BANNER TOW RELEASE HANDLE

The release handle is attached to the support bracket in the cockpit of the airplane. A cable is attached to the handle and tow hook release. FAA approval can be obtained for the complete tow hook and release system by following the guidelines in FAA Advisory Circular 43.13-2B, Chapter 8, titled, "Glider and Banner Tow-Hitch Installations". The release handle is not STC or PMA approved.

PN 13-06283.....**$168.95**

GLIDER & BANNER TOW SUPPORT BRACKET

The support bracket is attached to the floor of the airplane in the cockpit and is the housing that holds the release handle. FAA approval can be obtained for the complete tow hook and release system by following the guidelines in FAA Advisory Circular 43.13-2B, Chapter 8, titled, "Glider and Banner Tow-Hitch Installations". The support bracket is not STC or PMA approved.

PN 13-06284.....**$113.95**

PS

REDLINE TOW BARS

Sidewinder attached securely to the front wheel.

Sidewinder extended.

Sidewinder collapsed.

REDLINE SIDEWINDER POWER DRIVER

Powerful and portable, the Sidewinder will forever change the way you move your aircraft. Powered by Milwaukee's top of the line 28V power unit with a long-lasting, lithium ion battery pack, Sidewinder weighs less than 22 pounds, collapses to 27" and stows easily in your baggage compartment. Made in the USA using 4130 Chromoly material. Comes with battery and charger.

BEECHCRAFT BAR FITS: Bonanza, Baron, Travel Air, T-34

CESSNA SINGLE ENGINE BAR FITS: 172RG, 177RG, 182RG, 210, P210

15 inch Extension Tube is required on all models **except** 177RG

CESSNA TWIN ENGINE BAR FITS: C-310, C-320, C-340, C-414, C-421

PIPER BAR MODELS: Arrow, Lance, Saratoga (RG), Malibu, Matrix, Meridian, Seminole.

Lance, Saratoga (RG), Malibu, Matrix,Seminole models require use of the 15 inch Extension Tube. Meridian requires the 30" Extension Tube.

MOONEY BAR FITS: All Mooney Models

ECLIPSE BAR FITS: All Eclipse Models 15 inch Extension Tube is required.

Sidewinder Application	Part No.	Price
Beechcraft	13-06838	**$1,675.00**
Cessna Single Engine	13-06855	**$1,675.00**
Cessna Twin Engine	13-06857	**$1,675.00**
Piper	13-06859	**$1,675.00**
Mooney	13-06860	**$1,675.00**
Eclipse	13-06861	**$1,675.00**
Cirrus	13-06862	**$1,675.00**
Rockwell 112/114	13-06863	**$1,675.00**
15" Extension Tube	13-06856	**$139.95**
30" Extension Tube	13-06858	**$139.95**
Sidewinder Carry Bag	13-06839	**$55.75**
Sidewinder Replacement Battery	13-06840	**$189.95**

REDLINE BE-3/BE-3XL TOWBARS

BE-3: 2-piece design for hand or powered use. Extends to 43.5", collapses to 24.5" and weighs 4 pounds. For attachment to a golf cart, tractor or other powered vehicle, please use the S-3 Vehicle Adaptor. Made in the USA using 4130 Chromoly material.

BE-3XL: 2-piece design for hand or powered use. For attachment to a golf cart, tractor or other powered vehicle, please use the S-3 Vehicle Adaptor. Made in the USA using 4130 Chromoly material.

Application	Part No.	Price
BE-3 **Beechcraft** - Fits Bonanza, Baron, Travel Air, T-34	13-06841	**$294.00**
BE-3XL **Cessna** - Fits 172RG, 177RG, 182RG, 210, P210	13-06843	**$294.00**
BE-3XL **Mooney** - Fits All	13-06846	**$294.00**
BE-3 **Piper** - Fits Arrow, Lance, Saratoga (RG)	13-06844	**$294.00**
BE-3XL **Piper** - Fits Arrow, Lance, Saratoga (RG), Malibu, Matrix	13-06845	**$294.00**

REDLINE BE-4 TOWBARS

2-piece design for hand or powered use for heavier airplanes. Extends to 61.5" and collapses to 33" and weighs 5 pounds. For attachment to a golf cart, tractor or other powered vehicle, please use the ST-1 Vehicle Adaptor. Made in the USA using 4130 Chromoly material.

Application	Part No.	Price
BE-4 **Beechcraft** - Fits Bonanza, Baron, Travel Air, T-34, Duchess	13-06849	**$389.00**
BE-4 **Cessna** - Fits 172RG, 177RG, 182RG, 210, P210	13-06850	**$394.95**
BE-4 **Piper** - Arrow, Lance, Saratoga (RG), Malibu, Matrix, Meridian, Seminole.	13-06851	**$389.00**
BE-4 **Eclipse** - Fits All	13-06852	**$389.95**
ST-1 Vehicle Adapter	13-04066	**$59.50**

REDLINE ST-1 TOWBARS

If you own models 33, 35 or 55, the ST-1 is the least expensive, most versatile option for hand or vehicle towing. With an overall length of 38.5" and 3 pound 8 ounce weight, it fits neatly on the floor of your baggage compartment. This is our recommended tow bar for the STIFFY. For attachment to a golf cart, tractor or other powered vehicle, please use the ST-1 Vehicle Adaptor. Length is 38.5" and weighs 3 pounds 8 ounces. Made in the USA using 4130 Chromoly material. **FITS THESE BEECHCRAFT MODELS:** Bonanza, Baron, Travel Air, T-34 P/N 13-06848 ..... **$209.00**

ST-1 Vehicle Adapter.....P/N 13-04066 ..... **$59.50**

REDLINE PH-1 FOR ECLIPSE

Main gear axle adapter allow the use of floor jack or bottle jack for tire maintenance. Made in the USA using 4130 Chromoly material. ***FITS ALL ECLIPSE AIRCRAFT.***

P/N 13-06853 ..... **$349.00**

REDLINE UL/UL-XT TOWBARS

UL: Very light weight, 2-piece design for hand towing only. Extends to 43.5" and stows to 25.5" and weighs 3 pounds 4 ounces. Made in the USA using 4130 Chromoly material.

U.L- XL: CESSNA Very light weight, 2-piece design for hand towing only. Extends to 48.5", collapses to 31.5" and weighs 3 pounds 6 ounces. Made in the USA using 4130 Chromoly material.

U.L. XL: MOONEY 2-piece design for hand or powered use for heavier airplanes. Extends to 61.5" and collapses to 33" and weighs 5 pounds. Made in the USA using 4130 Chromoly material.

Application	Part No.	Price
UL - **Beechcraft** - Fits Bonanza, Bonanza, Baron, Travel Air, T-34	13-01914	**$209.00**
UL-XT - **Cessna** - Fits 172RG, 177RG, 182RG, 210, P210	13-01917	**$195.00**
UL-XT **Mooney** - Fits All	13-06847	**$195.00**
UL - **Piper** - Fits Arrow, Lance, Saratoga (RG).	13-01915	**$195.00**

REDLINE STIFFY

A 1-pound, spring-loaded, reversable-ratcheting mechanism that greatly increases the "leverage" available to help move your plane. Must be used with either the ST-1 or BE-3 Towbar, purchased separately. Made in the USA using 4130 Chromoly material.

Application	Part No.	Price
Beechcraft - Bonanza, Baron, Travel Air, T-34	13-04064	**$225.00**

REDLINE WEDGE-LOC LINK

Provides a solid "link" between your airplane and other brands of tow bars or power tugs that were designed to connect to either your axle or tow pins. With the WLL, nothing touches any exterior surface of your plane -- the result is no scratching or other damage! Made in the USA using 4130 Chromoly material.

FITS THESE BEECHCRAFT MODELS: Bonanza, Baron, Travel Air, T-34 P/N 13-01913 ..... **$249.95**

REDLINE SLIDER FOR ECLIPSE

The Slider adapter inserts into the front axle and tightens securily. It provides a short "stub" on each side for any universal type tow bar attachment. With the Slider in place, nothing touches any exterior surface of the nose gear, avoiding scratching and other damage. Made in the USA using 4130 Chromoly material. ***FITS ALL ECLIPSE AIRCRAFT.*** P/N 13-06854 ..... **$149.00**

PS

AIRCRAFT TUGS – EZ FLAP

TRACE TOWBOTS REMOTE CONTROL AIRCRAFT TUG

The iTowBot's loading sequence is as easy as driving the unit directly under the nosewheel of your aircraft. It is engineered so that when the aircraft loads, the weight of the loaded aircraft does not inhibit its zero-turn capability. This allows the operator to articulate the aircraft in a manner that places it ahead of all other towing equipment. Releasing the aircraft is just as easy. A foot-operated release allows the operator to unlock the swivel carriage and merely back out from beneath the nosewheel. Can tow in any direction, allowing the user to position aircraft in close quarters with ease. It has the ability to rotate the aircraft inside of its own wingspan. The powerful 24VDC motors are regulated for smooth starts and stops while delivering the power you need to put your aircraft asset out on the ramp or back in the hangar. Specifically designed to provide adequate distance for the operator to tow an aircraft while stepping back to visually clear the areas around the aircraft. The operator should exercise caution in selecting the vantage point from which to operate the iTowBot. The front wheel remains stationery while the iTowBot is free to turn through 360°. With its hybrid zero-turn capability. The DX2.0 transmitter is designed to provide bulletproof 2.4 GHz spread spectrum radio link. There are no worries of frequency clip or radio interference from noisy motors or no reason to be concerned that someone may turn on a radio on your channel. The receiver is bound to the transmitter at the facility prior to shipment so that the receiver will only recognize its specific transmitter that comes with your iTowBot. During the binding process, the motor fail safe positions are also set to further provide another level of safety. ***Specifications:*** * Measures 38" Wide x 46" Long x 12" High * Powerful Reversible 24 Volt DC Motors * Rugged Steel Construction * Powder-Coated Frame * Virtually Zero Maintenance * Easy Ergonomic Remote Control Handset * Max Towing Speed 1.7 Feet Per Second * Overvoltage Thermally Protected * Tows Aircraft up to 15,000+ Pounds Gross Weight * Trouble Free Cast Iron Rims with Non-Marking Moldon * Solid State Heavy Duty Fully Articulating Motor Control Wheels * Hybrid Zero Turn Capability about Stationary Nosewheel * Equipped with Solid State Battery Charger/Maintainer * Also available with built-in 24V Auxiliary Power Plug (APU) & Power Cord

Descriptions	Part No.	Price
Standard Model (No APU) Up to 15,000 lbs.	13-05252	**$8,691.00**
Standard Model (With APU) Up to 15,000 lbs	13-05253	**$9,778.00**
Dual Wheel Carriage (No APU)Up to 15,000 lbs.	13-06896	**$8,675.00**
Dual Wheel Carriage (With APU)Up to 15,000 lbs.	13-06897	**$8,895.00**
Wheel Pant Unit (No APU) Compatible with many helicopters as well. Up to 15,000 lbs.	13-06898	**$8,675.00**
Wheel Pant Unit (With APU) Compatible with many helicopters as well. Up to 15,000 lbs.	13-06899	**$10,295.00**

Descriptions	Part No.	Price
Heavy Duty - Incorporates Gear Reduction and is 36V (No APU) up to 30,000 Lbs.	13-05734	**$9,234.00**
Heavy Duty - Incorporates Gear Reduction and is 36V (With APU) up to 30,000 Lbs.	13-05735	**$10,756.00**
Heavy Duty, Dual Wheel Carriage - Incorporates Gear Reduction and is 36V (No APU) up to 30,000 Lbs.	13-06901	**$9,195.00**
Heavy Duty, Dual Wheel Carriage - Incorporates Gear Reduction and is 36V (With APU) up to 30,000 Lbs.	13-06902	**$10,865.00**

LITTLE STAR VTHRUST

Vthrust aircraft mover from Littlestar Products makes quick and easy work of moving your single-engine airplane, using an off-the-shelf 18V or 24V drill/screwdriver* as its power source. The drill's sealed mechanism means that there are no belts or chains to snag, and no adjustments to make. Most applicable drill/drivers have two or even three speed ranges for precise control of the Vthrust, and supply sufficient torque to move a 3000 lb. airplane up a 3% grade. The drill/driver chucks onto the vThrust, and attaches with a simple clamp. Just attach the driver and go!

Description	Part No.	Price
M-770-N - Standard Tugger, Non-Steerable	13-06097	**$1,447.00**
M-778-S - Deluxe Tugger, Steerable	13-06098	**$1,757.00**
Accessories	**Part No.**	**Price**
Hangar Ramps (Set of 3)	13-06091	**$99.00**
Beechcraft Adapter	13-06092	**$29.95**
Diamond DA-40 Adapter (Set of 2)	13-06093	**$59.95**
Piper Adapter (Set of 2, for fixed gear with wheel pants)	13-06094	**$29.95**
Diamond DA-42 Adapter (Set of 2)	13-06095	**$59.95**
18V Dewalt 1/2" Drill Driver (2 18V Batteries included)	13-06096	**$339.00**

EZ FLAP CESSNA/PIPER FLAP HANDLE EXTENSION

Allows the pilot to easily and instantly reach the manual flap "Johnson Bar" lever without leaning forward or bending down in the cockpit. Puts the flap control at the correct distance from the pilot! Pilots can now remain upright and alert while using the flaps, keeping their focus on landing or takeoff, terrain, traffic, and without interrupting instrument scan… regardless of which type of shoulder harness (standard, "inertia reel", or no harness) is being used. Gives the pilot two correctly positioned flap control locations, so there is always a convenient, safer control within reach at all flap positions: On Cessna 170-185 manual flap aircraft, EZ Flap provides much easier access to the flaps between 0 and 20 degrees, then swings out of the way under the elbow when the original Cessna lever becomes convenient for the 30 and 40 degree positions. On Piper PA-28 aircraft, EZ Flap provides far more convenient and safe access to the flap control at the first two positions, and is still comfortable at the maximum deflection position. PA-18 Super Cub pilots will be able to concentrate on getting the most performance and safety out of their aircraft under demanding bush conditions. Access to the flap control is easily within reach, without leaning forward and inducing an unwanted forward movement of the main control stick. The original flap system remains fully functional. Pilots have the ability to use the EZ Flap handle and/or the OEM flap handle interchangeably, whichever is closest/easiest for the pilot at any part of the flap travel.

EZ Flap is STC-PMA certified on Cessna 170 -185,Piper PA-20 Pacer, Piper PA-22 Tri-Pacer PA-28 Cheroke, PA-32, Piper PA-34, Piper PA-44, Maule M-5 and later, Stinson 108, Beech 19/23/24 series. Mounts in approximately 30 minutes, requiring only two small holes. Proudly made 100% in the USA. P/N 13-06946 .....**$499.00**

EZ Flap Super Cub Handle Extension - EZ Flap FAA Approved Model List AML STC SA02246LA PMA: PA-18, PA-18S, PA-18A, PA-18S"125", PA-18AS "125", PA-18A"135, PA-18S"135". PA-18AS "135", PA-18-150, PA-18A"150", PA-18S"150" PA-18AS"150", PA-19, PA-19S P/N 13-07438 .....**$499.00**

PS

AIRTUG® 6-S GAS POWERED

The AIRTUG Model 6-S model is extremely easy to use because of its' unique "Throttle Grip Control" system utilizing a hydrostatic transmission as the heart of the Airtug, a heavy duty variable speed , 6 horsepower gas engine. They guarantee your safety with their "Return to Brake" feature that absolutely prevents any unintentional movement of the plane when the throttle grip is released. There is no metal to metal contact, no gears to shift and no jerky clutching systems to quickly wear out. Finally, its' pinpoint handling makes this unit a great choice. All of these features simply make this aircraft tug the best in the industry! **Features**: • Loading System: Winch Strap/ Strut Strap with Accessory options • Parts Warranty: 1 Year • Tow Weight: Up to 8,100 lbs. • Turning Radius: 360° with handle-mounted Caster • Construction Details **Specifications:** • 11 Gauge Heavy Steel Frame • Hydrostatic Transaxle 16"x 6" - 6 ply on 8" Drive Wheels • Drive wheels capable of handling nosewheel weights up to 2000 lbs. • Welded load platform mounted between the drive wheels for added traction.

P/N 13-07284 .....**$3,595.00**

AIRTUG® 6-H GAS POWERED

The 6-H aircraft tug model is the tug of choice for those who need to lower the tail to enter a hangar, and might also need to handle nose-wheel fairing aircraft. The nose-wheel is loaded the same as the Model 6-H, and then it can be raised by a hydraulic jack up as much as needed to a maximum of roughly 9'', thus lowering the tail by approximately double this amount. Additionally, it is easy to use because of its' unique "Throttle Grip Control" system utilizing a hydrostatic transmission and a 6HP variable speed gasoline engine. They guarantee your safety with their "Return to Brake" feature that absolutely prevents any unintentional movement of the plane when the throttle grip is released. There is no metal to metal contact, no gears to shift and no jerky clutching systems to quickly wear out. Finally, its' pinpoint handling makes this unit a great choice. **Features**: • Loading System: Hydraulic Lift Shoe with Winch Strap/ Strut Strap • Parts Warranty: 1 Year • Type of Starter: Recoil • Engine: Four Stroke 6-HP • Tow Weight: Up to 8,100 lbs. • Turning Radius: 360 degree **Specifications**: • 2 Ton Hydraulic Jack for Lift Shoe • 11 Gauge Heavy Steel Frame • Hydrostatic Transaxle • 16"x 6" - 6 ply on 8" Drive Wheels • Drive Wheels Capable of Handling Nosewheel Weights up to 2000 lbs. • Low Profile unit for avoiding low aircraft hulls and flight controls with low axle and optional 13" Drive Wheels.

P/N 13-07285 .....**$3,795.00**

AIRTUG® 10-S GAS POWERED

Extremely easy to use because of its' unique "Throttle Grip Control" system utilizing a hydrostatic transmission as the heart of the Airtug, a heavy duty variable speed gas engine, with a built in electric starter. They guarantee your safety with their "Return to Brake" feature that absolutely prevents any unintentional movement of the plane when the throttle grip is released. There is no metal to metal contact, no gears to shift and no jerky clutching systems to quickly wear out. Finally, its' pinpoint handling makes this unit a great choice. A light is built in for ease of seeing under the fuselage at night. **Features**: • Loading System: Winch Strap/ Strut Strap with Accessory options • Parts Warranty: 1 Year • Engine: Heavy Duty 10hp electric and recoil start • Tow Weight: Up to 16,000 lbs. • Turning Radius: 360° with handle-mounted Caster. Specifications: • 11 Gauge Heavy Steel Frame • Hydrostatic Transaxle • 16"x 6" - 6 ply on 8" Drive Wheels • Drive wheels capable of handling nosewheel weights up to 2000 lbs. • Welded load platform mounted between the drive wheels for added traction. P/N 13-07288 .....**$4,595.00**

AIRTUG® 10-H GAS POWERED

The 10-H aircraft tug model is the tug of choice for those who need to lower the tail to enter a hangar, and might also need to handle nose-wheel fairing aircraft. The nose-wheel can be raised by a hydraulic jack up as much as needed to a maximum of roughly 9'', thus lowering the tail by approximately double this amount. Additionally, it is easy to use because of its' unique "Throttle Grip Control" system utilizing a hydrostatic transmission, electric starter and a heavy duty variable speed gasoline engine. They guarantee your safety with their "Return to Brake" feature that absolutely prevents any unintentional movement of the plane when the throttle grip is released. There is no metal to metal contact, no gears to shift and no jerky clutching systems to quickly wear out. A light is built in to ease seeing under the fuselage at night. **Features**: • Loading System: Hydraulic Lift Shoe with Winch Strap/ Strut Strap • Parts Warranty: 1 Year • Type of Starter: Electric • Engine: Four Stroke 10-HP or greater, electric or recoil start • Tow Weight: Up to 16,000 lbs. • Turning Radius: 360 Degree **Specifications**: • 2 Ton Hydraulic Jack for Lift Shoe• 11 Gauge Heavy Steel Frame • Hydrostatic Transaxle • 16"x 6" - 6 ply on 8" Drive Wheels • Drive Wheels Capable of Handling Nosewheel Weights up to 2000 lbs. • Low Profile unit for avoiding low aircraft hulls and flight controls with low axle and optional 13" Drive Wheels

P/N 13-07289.....**$4,795.00**

AIRTUG® EL3-S ELECTRIC POWERED

Same great power and moving capacity as the larger gas powered unit, but in a QUIET electric model! Extremely easy to use because of its' unique "Throttle Grip Control" system utilizing a Hydrostatic Transmission, Heavy Duty Electric Motor, powerful Batteries, and built-in Battery Charger. They guarantee your safety with their "Return to Brake" feature that absolutely prevents any unintentional movement of the plane when the throttle grip is released. There is no metal to metal contact, no gears to shift and no jerky clutching systems to quickly wear out. Finally, its' pinpoint handling combining twist grip control with a large, handle-mounted Caster makes this walk-behind Airtug a great choice. A light is also built in for ease of of seeing under the fuselage at night. **Features**: • Loading System: Winch Strap/Strut Strap with Accessories • Parts Warranty: 1 Year • Engine: Heavy Duty 3HP Permanent Magnet Motor • Tow Weight: Up to 16,000 lbs. • Turning Radius: 360 Degree **Specifications**: • 11 Gauge Heavy Steel Frame • Hydrostatic Transaxle • 16"x 6" - 6 ply on 8" Drive Wheels • Drive wheels capable of handling nosewheel weights up to 2000 lbs. • Low Profile unit for lower axle clearances and 13" Drive Tires option

P/N 13-07286.....**$5,395.00**

AIRTUG® EL3-H ELECTRIC POWERED

Same great power and moving capacity as the larger gas powered unit, but in an electric model! The choice for those who need to lower the tail to enter a hangar, and might also need to handle nose-wheel fairing aircraft. The nose-wheel can be raised by a hydraulic jack up to a max. of 9". It is easy to use because of its' unique "Throttle Grip Control" system. They guarantee your safety with their "Return to Brake" feature that absolutely prevents any unintentional movement of the plane when the throttle grip is released. There is no metal to metal contact, no gears to shift and no jerky clutching systems to quickly wear out. A light is also built in for ease of seeing under the fuselage at night. **Features**: • Loading System: Hydraulic Lift Shoe with Winch Strap/ Strut Strap • Parts Warranty: 1 Year • Engine: Heavy duty 3HP Permanant Magnet Motor • Tow Weight: Up to 16,000 lbs. • Turning Radius: 360 Degree. **Specifications**: 2 Ton Hydraulic Jack for Lift Shoe • 11 Gauge Heavy Steel Frame • Hydrostatic Transaxle • 16"x 6" - 6 ply on 8" Drive Wheels • Drive Wheels Capable of Handling Nosewheel Weights up to 2000 lbs. P/N 13-07287 .....**$5,395.00**

PS

TIE-DOWNS

FLY TIES TIE DOWNS

FlyTies Tie Downs Rated "Top Choice" by Aviation Consumer

FlyTies® unique design allows quick insertion and quick removal using the easy-out extraction tool provided. Rugged, die-cast steel rods are 3/8" x 14" for deeper penetration into harder ground. Cumulative load capacity is 3,600 lbs. Kit includes 3 eas. Delrin hubs, 9 eas. steel rods, 3 ea. 3/8" x 12 ' ropes, easy-out extraction tool, and rugged compact canvas tote bag. Complete kit weighs only 6 lbs. (less than 1 gal of Avgas) and has a lifetime warranty. P/N 13-22751 .....**$109.95**

TIE-DOWN EYE BOLT

For non-structual applications. The 7/16" dia. threaded shaft is 7/8" long. Hole is 5/8" dia. Overall length 2-1/2". Furnished with AN365-720 elastic stop nut and wide-area AN970-7 washer P/N 13-04303 ..... **$8.65**

AIRCRAFT TIE-DOWNS

These Aircraft Tie-Downs offer strong, durable, and easy to use tie downs for any weather condition. These tie downs are rated up to 3,000lbs. and tighten up with one quick pull. A sliding cap protects the buckle from freezing during cold weather and keeps grit out during windy field conditions. Each kit comes with: * Three 9 foot long tie down straps * Choice of tie down strap colors: black, red, or royal blue * A Dupont Cordura carrying bag with choice of colors; black, forest green, red, royal blue or navy. Embroidery is available for an additional $5. Choose from Silver, Royal, Navy, or Black.

Description	Part No.	Price
Black-Black	13-06324	**$58.85**
Black-Red	13-06325	**$58.85**
Black-Royal	13-06326	**$58.85**
Red-Black	13-06327	**$58.85**
Red-Red	13-06328	**$58.85**

Description	Part No.	Price
Red - Royal	13-06329	**$58.85**
Royal-Black	13-06330	**$58.85**
Red-Royal	13-06331	**$58.85**
Royal-Royal	13-06332	**$58.85**

THE PILOT BUDDY

A pillot actuated safety and restraint system for hand propping and tail tie down.Constructed to meet and exceed the load for purpose of positive restraint. Has a Black Velour storage Pouch (4" x 5"), and a slighty smaller restraint loop ring. The entire device and storage package weighs less than 2 OZ, and fits in the palm of your hand. Both the restraint loop (Left side-4 Yards=12'); and the release lanyard (Right side -6 yards = 18') are constructed of MIL Specification, MIL-C-5040, 750 pound test line. The Swing Latch Shackle release is test certified to 800 pounds tensils strength for operating loads. The Swing Latch mating ring on the Restraint loop (Left Side), is a ring contructed to MIL Specification. MS27762, with a tensile strength of more than 750 pounds. Package comes with instructions, a checklist for use, and other increasing safety materials. P/N 13-04259 .....**$32.50**

AIRCRAFT TIE-DOWN STRAPS

Monogramming available (max 10 letters or numbers). Monogramed items are noncancellable and nonreturnable. *Note - Picture shows and example of the monograming option. Actual tie-down is blank unless monograming option is purchased.

Tie-down strap red ..... P/N 13-04344 ..... **$14.95**
Tie-down strap orange ..... P/N 13-04342 ..... **$15.50**
Tie-down strap black ..... P/N 13-04343 ..... **$14.95**
Tie-down strap blue ..... P/N 13-04341 ..... **$14.95**
Monogram Tie-down (specify color) .... P/N 13-06073 ..... **$28.45**

TIE DOWN STRAPS

MEDIUM STRAP KIT - 1500 lb. universal, 14 foot tie-down straps with 3000 lb. spring clip climbing type carabiners and 3000 lb. ground stakes.
P/N 13-11228 ..... **$101.95**

LARGE STRAP KIT - 3000 lb. universal, 14 foot tie-down straps with 3000 lb. spring clip climbing type carabiners and 3000 lb. ground stakes. ..... P/N 13-11229 ..... **$111.95**

HEAVY STRAP KIT - 5000 lb. universal, 14 foot tie-down straps with 5000 lb. spring clip climbing type carabiners and 5000 lb. ground stakes ..... P/N 13-11230 ..... **$119.95**

AEROSPOILER KIT, AEROSPOILER EXTENSION KIT

Kit contains 10 cup/receiver assemblies and 8 30"X3" inch blade assemblies. Each kit contains 20' of wing coverage. The AeroSpoiler will reduce the lift producing capability of your aircraft wing by as much as 96% on the area of wing covered by the Spoiler. Extension kits are available for aircraft requiring more than 20' of wing coverage.
Aero Spoiler Kit ..... P/N 13-06505..... **$179.00**
Extension Kit ..... P/N -13-06506..... **$99.00**

16" CORKSCREW TIEDOWN KIT

A versatile, general-purpose spiral anchor made from cold, rolled steel. Design for light-weight applications. Folding ring reduces profile to minimize obstruction in high traffic areas. Bright orange color powder coating resists corrosion and helps provide added visibility. Use to secure small tents, trees, recreational use and patio furniture. **Features**: • Strong, durable cold rolled steel •Powder Coated for long life and weather resistance • Spear end of anchor allows for easy installation into all soil types • Collapsible ring to adjust any angle • Orange color for easy detection • High pull force performance; 500 pounds per anchor (results may vary dependent on soil types) • Installs in most soils in minutes • Lightweight, individual weight of 1 lb 13 oz. or 5 lbs. 7 oz. per kit • This kit includes: three 16" corkscrew tiedown anchor, one 3/8" nylon tiedown rope, and one tiedown bag - all complete with a manual including installation instructions! P/N 13-09652 ..... **$59.95**

PIPER/BEECH TIE DOWN RINGS

FAA PMA Certified Tie Down Rings. Rated at 140+ MPH front, rear, and side wind speeds. Rings are 8 times stronger and are directly interchangeable with all OEM versions

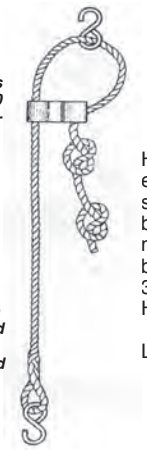
Piper Tie Down Rings..... P/N 13-11221 .... **$198.00**
Piper Tie Down Rings (plated)..... P/N 13-11220 .... **$198.00**
Beechcraft/Hawker Tie Down Rings (plated)... P/N 13-11222 .... **$198.00**
Beechcraft/Hawker Tie Down Rings..... P/N 13-11223 .... **$198.00**

PIPER/BEECH SKID & STRIKE PLATES

FAA PMA Certified BEECHCRAFT/HAWKER aluminum skid & strike plate.

Beechcraft/Hawker Skid & Strike Plate ..... P/N 13-11227..**$198.00**
Beechcraft/Hawker Skid & Strike Plate (plated) . P/N 13-11226..**$198.00**
Piper Skid & Strike Plate ..... P/N 13-11225..**$198.00**
Piper Skid & Strike Plate (plated) ..... P/N 13-11224..**$198.00**

Tie-down bar is guaranteed for 10 years under normal use.



When making your own length of tie-downs, add at least 30" for rope reversal and knots.

HOOK-N-PULL TIE DOWNS

Hook-N-Pull Tie downs feature closed end "s" hooks made from high quality steel with heavy plating, and tie down bards are made from high grade aluminum, hardened for strength and ball burnished and anodized. Furnished with 3/8" diameter nylon rope.

High wing
P/N 13-00448 ..... **$24.50**
Low wing or tail
P/N 13-00449 ..... **$23.85**

STAKE-IT TIE DOWN SYSTEM

Stake-It is a revolutionary new anchoring system that makes securing anything to the ground faster and easier than anything available today. Whether your camping, going on a picnic, putting up a soccer net or anchoring your plane at a fly in, you will see the obvious benefit to having a Stake-It.

Instructions:
Itemized List of Contents: 1-Stake Driver/Puller 6-12inch stakes, each having 2 prongs, 1-Nylon Sheath.
Each kit weighs 5-1/2 lbs.

Stake-it TieDown System ..... P/N 13-07061 ..... **$48.95**
Additional Stakes 6 pk ..... P/N 13-09851 ..... **$17.75**
Additional Stakes 12 pk ..... P/N 13-09852 ..... **$26.50**

PS

TIE-DOWNS

"THE CLAW" TIE-DOWN SYSTEM

Advanced Aircraft Anchoring System – The Claw® Aircraft Tiedown kit comes complete with three earth anchors, rope, spikes, hammer and canvas carry bag. The Harder You Pull, The More It Grips The Earth. **Features**: Easy installation...Easy removal. No more struggling with screw-in anchors The "Claw®" is designed exclusively for aircraft. The "Claw®" system has a 3600 lb. combined capacity. The last tie down you will ever have to buy - Lifetime Warranty, Tremendous holding strength. The harder you pull, the more The "Claw®" grips. Ideal for all aircraft, Works in hard clay, sandy soil or anything in between Large foot print spreads the load over a larger area for maximum holding power, Low profile will not puncture tires, Complete System weighs only 8 lbs (Including Hammer), Light-weight aircraft aluminum with hardened corrosion resistant die cast zinc plated steel spikes 25 ft 3/8" dia. solid braid polyester rope, Anchoring System hammer doubles as removal tool The "Claw®" includes: Bag that is easy to carry and store that contains: 3 Anchors; 9 spikes; 1 hammer; 25-ft rope Wt: 8 lbs.

P/N 13-02448 .....**$97.00**

JEB'S REMOTE TIE-DOWN KIT

Remote Release System - This new safety device will be appreciated by anyone who hand starts their plane.Release and retrieve without leaving the cockpit - get off to a safe start.

P/N 13-04787.....**$59.95**

THE COMPLETE TIE DOWN KIT

Includes: (9) Anchor Rods; (3) Wheel Chocks; (3) Tie-Down Straps; (1) Storage Bag Includes everything needed to tie your plane down when you must park on the grass. You can tie down both wings and the tail. You can use the wheel chock as a chock when parked on pavement, and the strap can be used to secure the plane on a tarmac with built-in tie downs. When parking overnight on grass, simply drive the 3 anchor rods through the holes in the wheel chock to create a tie down and clip your tie down strap to the wheel chock & wing.

P/N 13-03148.....**$159.95**

BAGGAGE TIE-DOWN

A very strong, light weight, and quick way to secure your baggage. The photo shows two units; One with the clamp/ring installed in the base and one with the clamp/ring removed to show more detail. The unit parts are made of anodized 6061 T-6 aluminum with a stainless ring. 2 rivnuts and 2 countersunk 10-32 cad-plated screws are furnished with each complete unit. Extra bases can be purchased individually, and include rivnuts and screws. Note: Use rivnuts to attach to surfaces with no rear access - simply drill a .25" hole and install rivnut. By installing additional bases you can tailor your baggage tie-down options to suit your current needs. P/N 13-01729 .....**$41.75**

E-Z LOCK TIE DOWNS

EZ-Lock Tie Downs feature a braid slip lock which provides excellent tie-down security without the need to tie any knots.72" fully extended P/N 13-00159.....**$13.50**

ROPELOK TIE DOWN

The Diamondback No Knot Rope lok is one of the most versatile and easiest tie-downs to use. Simply loop the rope around the load, insert the tail end into the Rope Lok, pull the rope tight and squeeze the lever down. The load is secured. To release, just lift the lever and the rope slides out easily. 250 pound capacity. Resealable bag for convenient storage. Made in the USA. Color and pattern may vary.

(Warning: Not for personal safety. This product is not intended to be used in rock climbing, rappelliing, or any similar activities. It is not to be used as a safety device or to bear the weight of an individual under any circumstance.)15 ft P/N 13-06929 ..... **$12.95**

SUPER ROPE CINCH®

The Super Rope Cinch™ is a simple handheld device that allows anyone to tie or untie rope with a simple twist. It can be used to tie or untie 1/8" to 5/8" rope, with nothing more than a simple twist.

The Super Rope Cinch® can hold a great amount of vertical or horizontal pressure, yet can be tied and untied in less than 1 second. Use the Super Rope Cinch® for tying boats, tents, luggage, backpacks, snowboards, wakeboards, tools, and everything else you fasten with a rope. The Super Rope Cinch® is considered by many to be the safer consideration to using bungee cords, which have a somewhat high rate of failure and cause thousands of injuries every year. Rope not included.

P/N 13-11641 .....**$4.90**

NELSON AIRCRAFT TIE-DOWNS

- Three 15" welded (not bent) steel anchors with sharp tips for easy installation
- Three 15' nylon ropes• Cordura, Int'l. Orange, 8"x15" case
- Wt: 4 lbs. P/N 13-00663..... **$59.95**

SECURIT TIE-DOWN

Super-strong and simple to use, Securit has a unique braid lock that provides holding action automatically, even when the line is slack. It releases quickly and easily, but positively will not release by itself. Adjustable to 100". Tensile strength of the polypropylene rope exceeds 4000 lbs. Hooks are cadmium plated. Rope is resistant to water, oil and gas. Wt. 19 oz.....P/N 13-22750 .....**$22.85**

Less 10% for 3 or more. Price shown is for one unit.

NYLON TIE-DOWN ROPE

American-made 100% duPont filament fiber nylon rope. Over twice the strength of manila. Highly resistant to sunlight, rot & mildew. Don't be fooled by foreign imitations.

3/8" Rope (4000 lb. test)

P/N 13-05400..... **$0.19 /Ft.**

1/2" Rope (6250 lb. test)

P/N 13-05500..... **$0.32 /Ft.**

15% Discount on 100 ft.

AIRCRAFT TIE DOWNS

Three 17" x 3/8" plated steel cork screw stakes. Three 10' x 3/8" polypropylene ropes. Cloth draw string bag.

P/N 13-06634 .....**$29.75**

GENUINE VELCRO

5819 Genuine Velcro Two 4 1/2" pressure sensitive hook and loop strips. P/N 13-06404 .....**$1.80**

RANS TIE DOWN SHACKLES

This stainless steel tiedown shackle will fit any 1 inch wide attach point, but is made special for most RANS aircraft that have RANS aluminum lift struts.The shackle is designed to accept chain or rope without marring the struts.

P/N 13-10435.....**$14.75**

TOUGHMAN TIE-DOWN

The Toughman™ Tie-Down is a new and unique multi-use rope based tie-down system. The Toughman™ Tie-Down incorporate the patent protected Toughman™ Rope Clamp which has only two moving parts and is manufactured from high performance engineered nylon resin. It is very easy to use, extremely lightweight, high strength and permanently corrosion proof. The Toughman™ Tie-Down product package includes one rope clamp, ten or fifteen feet of rope and one corrosion resistant steel hook. Military Tough: The Toughman™ Rope Clamp has undergone rigorous testing by the US Army Soldier Systems Center, "Natick" test labs and has been approved for use on cargo nets and rope support lines on military tents.

3/8" Camo 10'.....P/N 13-05115 .....**$12.95**
1/2" Red & Yellow 15'.....P/N 13-05116 .....**$16.95**
3/8" Red & Yellow 10'.....P/N 13-06142 .....**$11.75**

SECURENET AIRCRAFT TIE DOWNS

Aircraft Type	Net Size	Anchors	Frame Ratchets	Tie Downs	Foam Pads	Part No.	Price
Low Wing Aircraft	3-5'x 12'	10	4	12	15	13-06781	$779.00
High Wing Aircraft	2-5'x 18' 1-5'x12'	10	4	12	15	13-06782	$869.00
Amphibian Aircraft	3-5'x 18'	10	16	0	15	13-06783	$999.00

STUBAI CARIBINERS

Incredible strength, 1400 lb capacity, quick release. Order teal 3.25 in (8 cm) x 2.5 in (6 cm) x .375 in (1 cm) (approximate) Weighs 1.5 ounce (45 gm)

Teal .....P/N 10-03736 .....**$15.00**

PS

CHOCKS

ALUMINUM DIAMOND PLATE WHEEL CHOCKS FOR GA AIRCRAFT

Constructed from 1/8" thick polished aluminum diamond plate. These wheel chocks weigh approximately 3/4 of a pound and measure 8" long x 1.75' high.

P/N 13-09932 ..... **$24.95**

ALUMINUM DIAMOND PLATE WHEEL CHOCKS FOR RV AIRCRAFT

Constructed from 1/8" thick polished aluminum diamond plate. These wheel chocks weigh approximately 3/4 of a pound and measure 8" long by 1.25' high.

P/N 13-09931 ..... **$24.95**

ASA WHEEL CHOCKS

These tire stops are for keeping aircraft securely parked. A pair of black molded plastic wheel stops are connected with 22" bright yellow and black braided nylon rope that won't rot or retain water. The bottom cleats keep aircraft securely parked. Lightweight; 7-3/4" x 2-1/2" x 4-1/2"; concave design fits any aircraft tire. One pair is needed for each wheel.

P/N 13-05752 ..... **$27.50**

FOLD DOWN MINI CHOCKS

These mini chocks are so small and light you can take them with you. They work perfectly on both hard and dirt surfaces. Anodized aluminum, each wheel pair folds down to 3.75"x 2"x.5" & weighs just 4 oz. A 18" lanyard is attached.

P/N 5229 ..... **$17.95**

MOLDED WHEEL CHOCKS

The "Perfect" lightweight orange urethane aircraft wheel chocks. Oil and chemical resistant and connected by a 22-inch nylon rope. Concave design that fits into tire. Larger sizes available.

P/N 13-03550 ..... **$21.50**

CHOCK-IT ALUMINUM CHOCKS

Chock-It is made from 6061-T6 aircraft grade alumium with black anodized coating. Internal bungee retracks wheel arms for handy storage. Wheel arms snap in place while in use. Chock-It is designed for use on most front 5" tires.

Plain ..... P/N 12-02303 ..... **$49.95**
Engraved ..... P/N 12-02304 ..... **$82.00**

CHOCK-O-LITES BY WORD WORKS

These wheel chocks are made of POLYETHYLENE which makes them light weight, compact, oil resistant & durable with a self adjusting cord. **Features**: • Pilot friendly & locks in place • Totally adjustable & reversible to ground conditions • Choose between standard chocks or chocks with your N# or company name. Price per chock.

Small: 4.75" L X 4" W X 2.5" T ..... P/N 13-05776 ..... **$15.75**
Small with N# or company name ..... P/N 13-05778 ..... **$19.95**
Large: 6.5" L x 5" W x 3.25" T ..... P/N 13-05777 ..... **$27.50**
Large with N# or company name ..... P/N 13-05779 ..... **$33.75**

FLYTIES WHEEL CHOCKS

Flyties self-tensioning wheel chocks are lightweight and easy to use in safely immobilizing your aircraft. They will last longer than wooden chocks and are resistent to aircraft fuels, hydraulic fluids, and lubricants. Protected by a durable, high visibility powder coat finish. Self-tensioning design will not loosen. Fits 98% of general aviation aircraft. Specifications. Constructed of heavy gauge aluminum alloy casting with strengthened fillet radius - 2"x2"x8"x1/8"

P/N 13-04967 ..... **$18.75**

TRAVEL CHOCKS

Very light weight wheel chock designed for airplanes and other vehicles. Compact and easily stored. Powder coated in durable red, blue, or yellow finish. Available in 3 sizes.Chock set is for one wheel only. **Small -** 1 1/2" angle x 6" long x 1/8" Thick Heat Treated Alum. **Medium -** 2" x 2" x 8" 1/8 Thick Angle Heat Treated Alum. **Large -** 3 1/2" x 3 1/2" x 8" Heat Treated 3/16" Thick Alum.

Description	Part No.	Price
Sm. Bare Alum.	13-01120-A	**$21.65**
Sm. Blue	13-01120-B	**$21.50**
Sm. Red	13-01120-R	**$21.50**
Sm. Yellow	13-01120-Y	**$21.50**
Med. Bare Alum.	13-01130-A	**$23.50**
Med. Blue	13-01130-B	**$23.50**

Description	Part No.	Price
Med. Red	13-01130-R	**$23.50**
Med. Yellow	13-01130-Y	**$23.50**
Lg. Bare Alum.	13-01140-A	**$33.50**
Lg. Red	13-01140-R	**$33.50**
Lg. Yellow	13-01140-Y	**$33.50**

CUSTOM AIRCRAFT WHEEL CHOCKS

Made from 12 ga. cold rolled steel and powder coated to protect against the elements and use. Your tail number, name etc. can be cut into the steel to make these chocks totally custom for your aircraft. The chocks are connected via a lightweight, galvanized chain and are stackable for conservation of space. These chocks are made in the U.S.A. Chocks are made to order and shipped within 5 working days from approval of order. Dimensions: 8" Long X 2.25" Tall. Weight: 1.5 lb.

Description	Part No.	Price
Custom Chocks	13-06871	**$39.50**
Blank Red	13-06872	**$19.85**
Blank Orange	13-06921	**$19.85**
Red Piper	13-06960	**$31.75**
Orange Piper	13-06964	**$31.85**
Red * U S A *	13-06967	**$31.25**
Red Cessna	13-06971	**$31.85**

Description	Part No.	Price
Orange Cessna	13-06972	**$32.85**
Orange * U S A *	13-06969	**$31.25**
Red Cirrus	13-06974	**$32.85**
Orange Cirrus	13-06976	**$31.75**
Red Fly Boy	13-06978	**$31.95**
Orange Fly Boy	13-06979	**$32.85**
Red Mooney	13-06981	**$31.25**
Orange Mooney	13-06982	**$31.25**

WOOD WHEEL CHOCKS

These chocks feature heavy duty wood construction and are finished in bright safety yellow. Connected with 18" of braided nylon rope.

Standard chocks ..... P/N 13-01765 ..... **$24.50**
Chocks w/ your N# or company name ..... P/N 13-01766 ..... **$32.75**

RUBBER WHEEL CHOCKS

These ribbed rubber wheel chocks measure 4"x4"x8" and have reflective tape on all three sides. Connected with nylon rope. Very popular with corporate operations & FBOs.

P/N 13-01767 ..... **$49.95**

AIRGIZMOS WHEEL CHOCKS

These chocks are unique because they are stackable. Cuts down on the amount of space required to carry them in the plane. Durable plastic sides are lightweight, but are made to take a lot of abuse. There is space on the sides to put your airplane's n-number (you supply the vinyl lettering). The edges of these chocks are made of non-skid material, so they stay where you put them.

P/N 13-04298 ..... **$18.95**

HANDY CHOCKS

5904 "Handy Chocks"* Light Weight - 8 oz* Powder Coated Aluminum Chock* 1 Pair per Package

Red ..... P/N 13-06405 ..... **$19.90**
Yellow ..... P/N 13-06406 ..... **$23.50**

VECTOR CHOCKS

Hangar rash is the leading cause of ground handling insurance claims. Vector Chocks reduces the chance of hangar rash and will save you a considerable amount of money.

Vector Chocks cradle the wheel with their unique ramp design and the energy yellow colored industrial grade safety tape will help guide you from the hangar door to your safe parking place.

Installation is a snap with the peel-n-place feature, which sticks to asphalt as well as concrete.

Vector Chocks come as a complete kit, each kit containing two Vector Chocks and a roll of industrial grade energy yellow safety tape.

P/N 13-11694 ..... **$39.95**

PS

WINDSOCKS

SCOTT'S WINDSOCKS

Scott's windsocks are manufactured of long-life polyester fabric that is treated to resist the effects of wind and weather. All seams are double stitched with polyester thread for strength. The windsock throat is reinforced and has solid brass grommets for easy attachment and corrosion resistance. Nylon ties are included with each windsock to attach it to the frame. Windsocks are available in high visibility orange, white or alternate orange and white stripes. Fully extended at 20 MPH or 15 Knots.

BRIGHT ORANGE			
Throat Dia.	**Length**	**Part No.**	**Price**
8"	30 inches	13-04147	**$25.50**
10"	36 inches	13-02026	**$28.75**
13"	55 inches	13-04145	**$31.50**
18"	5 feet	13-20200	**$44.50**
18"	8 feet	13-20202	**$52.75**
24"	8 feet	13-20204	**$67.75**
28"	7 feet	13-20205	**$68.75**
36"	10 feet	13-20206	**$109.95**
36"	12 feet	13-20060	**$131.95**
INTENSE WHITE			
Throat Dia.	Length	Part No.	**Price**
18"	5 feet	13-20210	**$44.95**
18"	8 feet	13-20212	**$47.75**
24"	8 feet	13-20214	**$59.50**
WHITE/ORANGE STRIPE			
Throat Dia.	Length	Part No.	**Price**
18"	5 feet	13-20220	**$56.85**
18"	8 feet	13-20222	**$64.85**
24"	8 feet	13-20224	**$79.50**
28"	7 feet	13-20225	**$78.50**
36"	10 feet	13-20226	**$125.50**
36"	12 feet	13-20228	**$134.95**

SCOTT'S STANDARD WINDSOCK FRAMES

These very popular frames are constructed of welded steel for strength & durability. They have 2 ball bearings for easy swiveling and are painted for corrosion resistance. The frame is mounted to a 1-inch diameter support pipe threaded to fit a 3/4" size pipe or conduit. Order windsocks separately.

8"..... P/N 13-20229 ..... **$44.85**
24"..... P/N 13-20232 ..... **$79.85**
10"..... P/N 13-20005 ..... **$44.50**
28"..... P/N 13-20234 ..... **$79.85**
13"..... P/N 13-20231 ..... **$68.50**
36"..... P/N 13-20235 ..... **$95.50**
18"..... P/N 13-20230 ..... **$59.75**

SCOTT'S EXTENDED WINDSOCK FRAMES

The extended frame turns much easier and keeps the windsock headed into the wind like a weathervane. The frame holds the windsock open fully so it will "fly" in lighter winds. Constructed of all welded steel with 2 ball bearings. The frame is mounted to a 1-inch diameter support pipe threaded to fit a 3/4-inch size pipe or conduit. ***ORDER WINDSOCKS SEPARATELY***

18" ..... P/N 13-20244..... **$84.50**
24" ..... P/N 13-20245..... **$108.95**
36"..... P/N 13-20248....**$193.95**

MINIATURE 15" WIND SOCK

For home, office, hangar or workshop. The 15" long wind cone of Flame-Orange sailcloth material swivels on 23" high steel shaft. Wind directionals are cast aluminum with flat black finish. Furnished with mounting hardware and instructions.

Complete Kit ..... P/N 13-03747 .... **$53.75**
Replacement Sock..... P/N 13-03748 ..... **$12.50**

27" VINYL WINDSOCK

Features 27" long x 6-1/2" diameter fluorescent orange vinyl sock. Aluminum mast adjusts from 33" to 54" and up to 12 ft. with extension kit. Perfect for private strip, helicopters, or runway threshold.

Complete Windsock w/frame.....P/N 13-20015... **$56.85**
Replacement Sock.....P/N 13-20025... **$21.85**

8 FOOT VINYL WINDSOCK

18" diameter sock is double stitched, durable, fluorescent orange vinyl coated nylon. Ball bearings let sock turn easily even in light winds. Aluminum frame holds mouth open. Mount on appropriate pipe. Order frame and sock separately

8 Foot sock only....P/N 13-20035 ..... **$49.85**

NYLON WINDSOCKS

These socks are windtunnel tested and designed for conditions in which safety and wind direction are of greatest importance. They are constructed of nylon oxford cloth for strength and flyability and dyed a bright orange for higher visibility. The throat and tail bands are stitched with multiple rows of tough synthetic thread. The throat band is finished with #1 brass grommets and nylon ties are included. Unlike canvas or vinyl, these Socks fly in the slightest breeze.

Part No.	Throat Diameter	Length	Price Each
13-20040	10"	36"	**$27.50**
13-20045	18"	48"	**$33.50**
13-20060	36"	144"	**$131.95**
13-20200	18"	60"	**$44.50**
13-20202	18"	96"	**$52.75**
13-20060	36"	144"	**$131.95**

AVIATION WINDSOCKS

All Aviation Windsocks are made of heavy-weight cross-woven Aviation blend material having special Rip-Stop characteristics, flexible, chemically resistant treated, Polyurethane Coated for bonding strength and water repellancy, Ultra-violet dyed, with Nylon Web support and brass grommets. Color: Colorfast International Orange. Estimated 50% longer life and color retention. Aviation sized windsocks. FAA approved sizes per FAA Advisory Circular #AC 150/5345-27C dated 07/85. Estimated wind speeds: Fully extended shape for all sizes listed below, (wind tunnel tested) to be special cut Specification of 15 knots = 16.5 mph. 18" - 28" diameter windsocks 96" in length. 36" diameter 144" in length.

18" dia. ... P/N 13-02038.....**$66.50** 20" dia. ....P/N 13-02039 .. **$68.85**
24" dia. .. P/N 13-02040.....**$87.90** 28" dia. ....P/N 13-02041 **$114.95**
36" dia. ... P/N 13-02042... **$155.95**

EXTRA LONG LIFE WINDSOCKS

"Extra Long Life" is a heavy-duty cross-woven Aviation blend Poly./Nylon material with special Rip-Stop characteristics, Medium-weight for more flexibility, chemically resistant treated, and Polyurethane coated for bonding strength and water repellency. Ultra-violet dyed for best retention. Nylon support webbing on intake opening with brass grommets. Colorfast International Bright Orange in color. "Extra Long Life" windsocks have an estimate 50% longer life and color retention.

Size	Part No.	Price
6"X18	13-20110	**$28.85**
9X30	13-20111	**$33.25**
10X36	13-20112	**$38.75**
13X48	13-20113	**$49.95**
18X60	13-20114	**$54.75**
20X60	13-20115	**$51.75**
12"X48"	13-04316	**$46.75**

Size	Part No.	Price
15"X55"	13-04317	**$49.85**
20"X96"	13-02039	**$68.85**
18"X96"	13-02038	**$66.50**
24"X96"	13-02040	**$87.90**
28"X96"	13-02041	**$114.95**
36"X144"	13-02042	**$155.95**

PS

AIRCRAFT SPRUCE WEST
CORONA, CA • (877) 4-SPRUCE
AIRCRAFT SPRUCE EAST
PEACHTREE CITY, GA • (877) 477-7823
Prices Subject to Change Without Notice

WINDSOCKS

AIRPORT WINDSOCKS

What makes these aviation windsocks different?

Two major things make a windsock, its material and its construction. Starting off with a premium nylon fabric that is made right here in the USA to exact standards. Nylon offers unparalleled windsock durability to the elements and will not become rigid in cold weather, keeping these windsocks extremely responsive in even the slightest of wind. From there it gets urethane coated and UV protected, giving the windsock superior fade resistance and color retention. The material is subjected to a variety of tests by an independent lab to verify its structural integrity and UV resistance. This superior material is then cut and sewn. Our reinforced double stitched hems and heavy duty brass grommets, assures these windsocks long life reliability.

The added expense of a superior material and manufacturing process meets the needs of even the most demanding windsock customers. Such as: US Military, US Coast Guard, US Embassies, State Airports, Offshore Oil Rigs, Nuclear Power Plants, Medical Heliports, Government Bio Hazard Units.

ORANGE WINDSOCKS

Description	Size	Part No.	Price
Orange Windsock	4" x 15"	13-06386	**$12.00**
Orange Windsock	6" x 24"	13-06387	**$18.00**
Orange Windsock	8" x 36"	13-06388	**$23.75**
Orange Windsock	10" x 36"	13-06389	**$29.75**
Orange Windsock	13" x 54"	13-06465	**$31.95**
Orange Windsock	18" x 60"	13-06466	**$42.50**
Orange Windsock	18" x 72"	13-06467	**$49.85**
Orange Windsock	18" x 96"	13-06468	**$51.65**
Orange Windsock	20" x 96"	13-06469	**$55.25**
Orange Windsock	24" x 96"	13-06470	**$62.85**
Orange Windsock	36" x 144"	13-06471	**$130.95**

ORANGE AND WHITE WINDSOCKS

Description	Size	Part Number	Price
Orange & White Windsock	4" x 15"	13-06472	**$19.50**
Orange & White Windsock	8" x 36"	13-06473	**$27.25**
Orange & White Windsock	10" x 36"	13-06474	**$36.50**
Orange & White Windsock	13" x 54"	13-06475	**$39.50**
Orange & White Windsock	18" x 60"	13-06476	**$52.50**
Orange & White Windsock	18" x 72"	13-06477	**$56.75**
Orange & White Windsock	18" x 96"	13-06478	**$62.50**
Orange & White Windsock	24" x 96"	13-06479	**$70.75**

BALL BEARING FRAMES

The ball bearing windsock frames are a rugged design constructed of a welded steel construction and then a powder coated finish for corrosion protection. They incorporate a two bearing pivoting design for effortless pivoting. These frames are ready to be mounted on a ¾" female pipe thread for the 8", 13", 18" and 24" and a 1" pipe thread for the 36".

Description	Size	Part No.	Price
Ball Bearing Frames	8"	13-06481	**$38.50**
Ball Bearing Frames	13"	13-06482	**$52.85**
Ball Bearing Frames	18"	13-06483	**$57.95**
Ball Bearing Frames	24"	13-06484	**$68.50**
Ball Bearing Frames	36" Non Collapsible	13-06485	**$129.85**
Ball Bearing Frames	36" Collapsible	13-06486	**$269.95**

EXTENDED BALL BEARING FRAMES

These windsock ball bearing extended frames are a rugged design constructed of a welded steel construction and then a powder coated finish for corrosion protection. They incorporate the same high quality construction as our standard ball bearing frames with the added performance of an extened frame. They incorporate a two bearing pivoting design for effortless pivoting. These frames are ready to be mounted on a ¾" female pipe thread for the 13"and 18" frames. Use 1" female pipe thread for mounting the 24" and 36" frames.

Description	Size	Part No.	Price
Extended Ball Bearing Frames	13"	13-06487	**$76.85**
Extended Ball Bearing Frames	18"	13-06488	**$91.50**
Extended Ball Bearing Frames	24"	13-06489	**$114.95**
Extended Ball Bearing Frames	36"	13-06490	**$158.95**

VERTICAL SOCK KITS

These complete kits include our standard frame, windsock, windsock ties, pole, and brackets. They are a stand alone unit for mounting on a flat vertical surface or they can be installed right onto an existing 3/4" pipe thread pole.

Description	Size	Part No.	Price
Vertical Mount Windsock Kit	8" x 36"	13-06491	**$69.75**
Vertical Mount Windsock Kit	13 " x 54"	13-06494	**$76.85**
Vertical Mount Windsock Kit	18" x 60"	13-06495	**$93.50**
Vertical Mount Windsock Kit	18" x 96"	13-06496	**$103.95**

TRIPOD MOUNT WINDSOCK KIT

These complete kits include our standard frame, windsock, windsock ties, pole, and tripod. They are a stand alone unit for mounting on a flat horizontal or peaked roof surface or they can be installed right onto an existing 3/4" pipe thread pole.

Description	Size	Part No.	Price
Tripod Mount Windsock Kit	8" x 36"	13-06497	**$89.95**
Tripod Mount Windsock Kit	13" x 54"	13-06498	**$97.50**
Tripod Mount Windsock Kit	18 x 60"	13-06499	**$113.95**
Tripod Mount Windsock Kit	18" x 96"	13-06501	**$119.95**

PORTABLE WINDSOCK KIT

Our portable windsock kit is a popular choice for remote locations where knowing the wind speed and direction is vital. This rugged, stand alone unit comes complete with the pole, frame, windsock and windsock ties. These units are manufactured right here in our facility reassuring only the best in quality and performance. This free standing system measures over 7' tall in its assembled configuration.

* It features an extremely rugged design that incorporates a pole with a foot lug and handle for easy installation and removal. The two part pole disassembles for easy transportation.

* The frame conveniently screws onto the top of the pole. Its aluminum hoop and bail pivot on a stainless steel shaft for years of reliable and responsive action.

* The portable unit incorporates the same high quality windsocks we manufacture for commercial airfield use. These high quality socks are constructed from U.S. made nylon fabric that is urethane coated and UV protected. This material is made to our very strict and exacting standards and then sewn right here in our facility, producing a windsock of uncompromising quality. They are offered in (3) sizes for the portable unit. UPS only on this product due to size of package.

Description	Size	Part No.	Price
Portable Windsock Kit	6 " x 24"	13-06502	**$98.50**
Portable Windsock Kit	8 " x 36"	13-06503	**$104.95**
Portable Windsock Kit	13" x 54"	13-06504	**$111.95**

AVIATION LIGHTED WINDSOCK FRAMES

Internally lighted, heavy duty ball-bearing frame, with 1-75 to 300W lamp, extended to 30" double hoop frameworks. (3/8" round metal frameworks) FAA approved sizes per FAA Advisory Circular #AC150/5345-27C dated 07/19/85. Furnished complete with windsocks.

18" dia.....P/N 13-02043..... **$542.00**
20" dia.....P/N 13-05729..... **$562.00**
24" dia.....P/N 13-05730..... **$598.00**
36" dia.....P/N 13-05731..... **$789.00**

WINDSOCK FRAMES

Totally enclosed housing prevents heavy duty ball-bearing from lock-ups, corrosion, and excessive premature wear. Bearings are grease packed, metal shielded. Self contained unit easily attaches with 3/4" standard threaded pipe.

6" dia.....P/N 13-20120..... **$59.95**
9" dia.....P/N 13-20121..... **$66.50**
10" dia.....P/N 13-20122..... **$70.00**

PS

WINDSOCKS – RUNWAY/TAXI LIGHTS

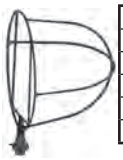
STANDARD WINDSOCKS

These windsocks are fabricated with doubly sewn seams and brass grommets for attachment. Bright red/orange nylon provides good long distance visibility.

Description	Part No.	Price
8" x 30"L Sock	05-05222	**$31.90**
13"x 55"L Sock	05-05223	**$38.95**
18" x 71"L Sock	05-05224	**$42.50**
24"x 120"L Sock	05-05225	**$73.25**
36"x 120"L Sock	05-05226	**$86.80**

STANDARD FRAMES

Internally supports the windsock for more accuracy. Frames are finished using a powder coated weather guard finish. Smooth free swiveling movement with low maintenance. Mounts on standard pipe.



Description	Part No.	Price
8" Frame requires 3/8" pipe mount	05-05227	**$42.95**
13" Frame requires 1/2" pipe mount	05-05228	**$46.95**
18" Frame requires 3/4" pipe mount	05-05229	**$70.75**
24" Frame requires 3/4" pipe mount	05-05230	**$55.00**
36" Frame requires 1-1/4" pipe mount	05-05231	**$137.00**

LIGHTED FRAME & WINDSOCK

Internally lighted frame creating super night-time visibility!

Description	Part No.	Price
13" Frame & Sock	05-06245	**$223.00**
18" Frame & Sock	05-06246	**$256.75**
13" Replacement Lighted Frame	05-06247	**$216.50**
18" Replacement Lighted Frame	05-06248	**$250.00**

REPLACEMENT WINDSOCK FOR LIGHTED FRAME

Description	Part No.	Price
13" x 55" long Sock	05-06249	**$29.95**
18" x 60" long Sock	05-06250	**$38.95**

MINI WINDSOCK & FRAME

For home, office, workshop or clubhouse. Gives wind direction and velocity. 23" steel shaft with black directional headings.

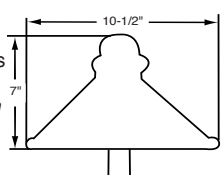
Mini Windsock & Frame, 22-1/8"H X 10"W..... P/N 05-06251.....**$58.50**

Mini Replacement Sock, 14-1/2" Length ..... P/N 05-06252.....**$26.75**

RUNWAY LIGHTS / TAXI LIGHTS

- 10 Watts
- Operates on standard 115V
- Equipped with long-life outdoor bulb
- Uses No. 8 or No. 10 standard underground cable. Check w/State & local building codes
- Uses standard 1" wood or steel stake
- Marker cone has high luster baked-on finish
- High illuminated optical lens
- Equipped with 6" attached pigtail
- Constructed of lifetime aluminum components
- Preassembled - Strip kits ready for hookup.

Excellent Quality • Economical Pricing • High Optical Output • Immediate Delivery • Lowest Operating Cost •Minimum Installation & Maintenance Cost



RUNWAY LIGHT KITS

These realistically priced lights are inexpensive to install, require little maintenance, and are economical to operate. The shield has a baked on finish equipped with high illuminating lens. Also includes 6" attach pigtail. Operates on standard 115V. Code 7

3200 FT. STRIP KIT

Includes: 18 white lamps and 4 green threshold lamps.

P/N 05-05198.....**$785.00**

2200 FT. STRIP KIT

Includes: 10 white lamps and 4 green threshold lamps.

P/N 05-05199.....**$499.50**

THRESHOLD DUAL RED/GREEN ASSEMBLY

Designed for threshold installations requiring this type of configuration. Includes 6 red/green lamps. Set of 6.

P/N 05-05201.....**$339.95**

13" WINDSOCK & FRAME

Made of bright red-orange Nylon and a white powder coated frame.

P/N 05-05232.....**$99.50**

36" COMMERCIAL/ MILITARY WINDSOCK

Designed to conform to rigid Federal Standard #595 with International Orange Mil Spec CCC-C-476 nylon. This sock has a four-fold reinforced collar, throat, and tail, with double-stitching. Incorporates precipitation drain, and has direct frame attach clinch fastener. Includes fastening hardware. 135" mounted length. Frame not included.

P/N 05-05233.....**$263.65**

INTERNATIONAL EUROSOCK™

Multi-panel sock of bright red/orange and white provides very distinctive visibility, both from air and ground. Fits the standard frames (sold separately).

13" Eurosock x 55"Length ....P/N 05-05234 .....**$49.75**

18" Eurosock x 71"Length ....P/N 05-05235 .....**$55.25**

PS

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

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

Prices Subject to Change Without Notice

MONTAGUE FOLDING BICYCLES

MONTAGUE CROSSTOWN BIKE

Color: Ghost White/Black. Frame: Custom drawn 7005 Series, Aluminum tubing with FIT System. Fork: Rigid Unicrown, with CLIX™ Rims: Alex. Alloy, 36 hole, Silver. 700c. Tires: Kenda Kwick. Spokes: 14 Gage Saddle: Performance comfort with Internal Springs and "Center Gap". Seatpost: 27.2 X 300mm Alloy. Handlebars: Riser style 30mm rise. 600mm wide. Alloy, Black. Stem: Octagon™ height adjustable stem. No tools required. Crankset: Single chainwheel. Alloy 170mm crank arm. Speeds: 7 Pedals: Trekking pedal with all-weather non-slip tread Folded Size: 36" x 28" x 12" Approx Weight: 27lbs

17in Frame: 4'8" - 5'2" 700C..... P/N 13-07241 ..... **$639.00**
19in Frame: 5'3" - 5'10" 700C..... P/N 13-07242 ..... **$639.00**
21in Frame: 5'11" - 6'4" 700 C..... P/N 13-07243 ..... **$639.00**

MONTAGUE BOSTON BIKE

Color: Matte Black Frame: Custom drawn 7005 Series. Aluminum tubing with horizontal dropouts and FIT System. Fork: Full Cro-Mo, with CLIX™ Rims: Alex. Alloy, 36 hole, Black. 700c. Tires: Kenda Kwick Roller Sport 700c x 28mm slick. Rear. Spokes: 14 Gage Handlebars: Riser style 30mm rise. 530mm wide. Crankset: SR Suntour. Alloy 42T chainwheel withIntegrated chain guard. Alloy 170mm crank arm. Speeds: Single Speed Pedals: Platform trekking pedal. Aluminum Cage. Folded Size: 36" x 28" x 12" Approx Weight: 24lbs

19 in Frame: 5'3" - 5'10" 700C..... P/N 13-07244 ..... **$699.00**
21in Frame: 5'11" - 6'4" 700C..... P/N 13-07245 ..... **$699.00**

MONTAGUE NAVIGATOR BIKE

Color: Midnight Blue/Black Frame: Custom drawn 7005 Series Aluminum with FIT System. Fork: Full Cro-Mo, with CLIX™ Rims: Alex. Alloy, 32 hole, Silver. Tires: Kenda Kwick Roller Sport 700c x 26mm semi-slick. Spokes: 14 Gage Handlebars: Alloy, 30mm rise. Stem: Octagon™ height adjustable stem. No tools required. Shifters: Shimano Rapid Fire Road for Flat Handlebar. 3-Speed Left. 9-Speed Right Crankset: SR Suntour. 48/38/28. Alloy 170mm crank arm. Black. Speeds: 27 Speeds Folded Size: 36" x 28" x 12" Weight: 27lbs

19 inch Frame..... P/N 13-07246 ..... **$899.00**
21 inch Frame..... P/N 13-07247 ..... **$899.00**

MONTAGUE FIT BIKE

Hunter: Green/Black Frame: Custom drawn 7005 Series Aluminum with FIT System. Fork: Full Cro-Mo, with CLIX™ Rims: XERO 700c. 28c hole rear, 24 hole front. Silver. Tires: Kenda Kwick Roller Sport 700c x 26mm slick. Spokes: 14 Gage Saddle: Double Density Performance, with "Center Gap" Comfort Technology. Handlebars: Kalloy. Alloy, double butted. 25mm rise, 8 degree backsweep. Stem: Octagon™ height adjustable stem. No tools required. Shifters Shimano trigger shifters. Speeds: 27 Speeds Pedals: Aluminum trekking pedal. Cro-Mo Spindle. Silver Aluminum Body. Folded Size: 36" x 28" x 12" Approx Weight: 26.5lbs

19 in Frame..... P/N 13-07248 ..... **$1,399.00**
21 in Frame..... P/N 13-07249 ..... **$1,399.00**

VATAVIO FOLDING BIKE

Up to 18 Miles per Charge and 20 MPH the Lightweight aluminum frame design (48lbs) and folding capability makes it a very versatile to store when space is an issue! Standard 8ah Lithium Ion Manganese battery, SHIMANO 6-speed w/ Revoshift, 290 watt motor with Zero Start Feature and adjustable speed controller. Additionally, it sports K-sheild puncture resistant 20" tires, giving it maximum power and torque to get you up almost any hill with ease! Features: • Frame Style: Folding (35"x17"x29" folded) • Frame Size: Fits 4'11-6'4" • Color: Raw Aluminum • Frame: 6061 Hi-Strength Aluminum • Rim: 20" Double Wall Aluminum • Tire: Kenda K-Sheild 1.75" Thorn-Resistant Tubes/Puncture-Resist Liners • Charger: AC 110V

P/N 13-05709..... **$1,499.00**

MONTAGUE PARATROOPER™

The Paratrooper is one of the many folding mountain bikes that Montague offers. Its patented folding design was developed to allow airborne soldiers to drop out of airplanes and helicopters and into combat. The Paratrooper offers advanced features with 24 speeds and front and rear mechanical disc brakes. Known for its durability and load bearing capabilities, this folding bike has also developed a following with everyday commuters and weekend warriors. The Folding Integrated Technology (F.I.T.) is based around frame construction concepts designed for serious full suspension downhill bikes.

18"..... P/N 13-01068 ..... **$799.00**
20"..... P/N 13-01069 ..... **$799.00**

MONTAGUE SWISS X50 BIKE

The Montague SwissBike X50 is designed to fold and fit anywhere. With front suspension and all terrain tires, this 18-speed folding mountain bike makes for the perfect light trail bike for weekend excursions, or a rugged commuter bike. The X50 uses all standard 26" mountain bike wheels and components serviceable at any bike shop.

Color: Gloss Black. Frame: Custom drawn 7005 Series Aluminum with FIT System. Power Angle geometry. Fork: SR Suntour. Suspension XCT V2. 80mm travel. Alloy one piece lower. Disc Compatible. Rims: Alex. Alloy, 36 hole. Tires: Kenda. Knobby. Front and Rear Specific. 26 x 1.95".

16in Frame: 4'8" - 5'2" ..... P/N 13-07250 ..... **$599.00**
18in Frame: 5'3" - 5'10" ..... P/N 13-07251 ..... **$599.00**
20in Frame: 5'11" - 6'4" ..... P/N 13-07252 ..... **$599.00**

MONTAGUE SWISS X70 BIKE

A brand new model that will be sure to keep the adventurer out on the trails. This bike is well-built to tackle rugged mountains and hidden dirt paths. The X70 has 27-speeds and features a Clix compatible Rock Shox Dart 3 fork. Like all SwissBikes, the X70 is designed to fit on the bus or train, and easily fit in your car trunk or boat. Speeds: 27 Wheel Size: 26" Folding Time: 20 sec. Folded Size: 36"x28"x12" Approx Weight: 29lbs

18in Frame: 5'3" - 5'10" ..... P/N 13-07253 ..... **$1,099.00**
20in Frame: 5'11" - 6'4" ..... P/N 13-07254 ..... **$1,099.00**

MONTAGUE SWISS XO BIKE

The Montague SwissBike XO is an aggressive 27-speed folding hardtail with a stiff frame providing both performance and portability. It is a full-size bike 26" wheels and full-size performance, but folds to fit in the trunk of a car or in a small closet. These rugged bikes are built to outlast, handle any terrain, and carry a ton a gear.

Clever integration of the patented CLIX System allows the SwissBike XO to be folded in under 20 seconds without the use of tools. A flip of the CLIX quick release lever on the top tube and the bike folds to a compact size. Color: Cardinal Red/Black Frame: Custom drawn 7005 Series Aluminum with FIT System. Power Angle geometry. Replaceable derailleur hanger and disc mount. Fork: Rockshox Recon 351 Suspension U-Turn with 85-130 travel and disc mount. Rims: WTB Dual Duty, Black, Alloy , 32 hole with eyelets Tires: Front: CST Maxis Flyweight 26 x 2.0" Kevlar Rear: CST Maxis Flyweight: 26 x 1.95" Kevlar

18 Inch Frame ..... P/N 13-07255..... **$2,849.00**
20 Inch Frame ..... P/N 13-07256..... **$2,849.00**

MONTAGUE ACCESSORIES

MONTAGUE FOLDING PEDALS - These pedals reduce the width of the folded bike by 4 inches. While not ideal for high performance riding, they do serve a purpose for those with tight space constraints.

P/N 13-03745..... **$28.95**

MONTAGUE CARRYING CASE ..... P/N 13-08406..... **$99.95**

MONTAGUE KICK STAND - We offer a traditional steel kickstand that attaches to the Montague bike like a standard kickstand without interfering with the unique folding feature. ..... P/N 13-03744..... **$18.50**

PS

DAHON FOLDING BICYCLES

DAHON SPEED UNO

The answer for no-hassle riding anytime. Last year Dahon introduced the functional, simple, stealthy-looking Mu Uno and it quickly became the favorite of all who touched it. The Speed Uno is just as stealthy and portable but even simpler and more affordable. Take one everywhere. BioLogic FreeDrive keeps chain and clothes clean. Folds completely in under 10 seconds. Luggage Socket for attaching a variety of bags and baskets. Color: Shadow Black P/N 13-10419 ..... **$399.00**

DAHON SPEED D7 FOLDING BICYCLE

The Speed combines sporty performance with terrific value. Year after year it remains Dahon's most popular bike because of this. The frame is hand-welded from custom-drawn 4130 chromoly Sonus tubing and incorporates six different patented technologies, resulting in what is probably Dahon's stiffest frame. The Neos derailleur is fast-shifting and has a nice wide, gear range – perfect for urban riding in most cities. Low profile Neos derailleur delivers super fast shifts and is protected from damage beneath the chainstay. Folds in less than 15 seconds so you can take it anywhere. The SuperLite 4130 chromoly frame is strong, light and responsive. The Radius Telescope adjustable handlepost adapts to all riders and riding styles. P/N 13-04094 ..... **$549.00**

DAHON SPEED P8

Probably the best combination of performance and value in our product line, the Speed P8 is perfect for long commutes, weekend exploring, or touring. The Speed P8 shares the same frame as the Speed Pro and combines it with our no compromise Premium component package. The Speed P8's stiff frame, rigid Radius handlepost, and plush-riding Schwalbe Big Apple tires inspire confidence on even the worst roads. Wheel Size: 20". Speed: 8. Folded Size: 30 x 77 x 64 cm (11.7" x 30" x 25"). Folding Time: 15 Seconds. Weight: 12.6 kg (27.8 lb). Max Rider Weight: 105 kg (230 lb). Colors Available: Fire Red, Obsidian.

P8 20" Fire Red ..... P/N 13-00043 ..... **$699.00**
P8 20" Obsidian ..... P/N 13-10420 ..... **$699.00**

DAHON MU P8

The Mu P8 is one of Dahon's most versatile, all-around bikes. It's wonderfully light, fast enough for long weekend rides, and stylish enough to turn heads everywhere you go. Great performance and a good value. Lighter, stronger, and faster are the goals and the Mu P8 delivers on all three. 20" Cloud White ..... P/N 13-00789 ..... **$799.00**

DAHON JACK D7

The Jack is designed to go at any pace you choose and to roll over anything in your path. Forget leaving your urban machine in that communal bike garage and getting nicked and scratched; keep it inside and safe… with you. That's how it should be, right? The Jack is designed around a beefy 7005 aluminum frame and phat Schwalbe Big Apple tires. The Jack has seven nicely-spaced gears to keep things simple, enough for most anything you're likely to encounter in the city. What kind of bike is this? It's a human powered urban machine, Jack. Color: Shadow Black.

Jack D7 16" ..... P/N 13-04795 ..... **$749.00**
Jack D7 18" ..... P/N 13-10423 ..... **$749.00**
Jack D7 20" ..... P/N 13-10424 ..... **$749.00**

DAHON ESPRESSO

The Espresso is the bike for urban adventures: to the park on a sunny weekend; down the street for a lazy Sunday brunch; or to the market for some fresh penne, tomatoes, and a bottle of wine. For 2010, the Espresso gets a complete makeover. The patented new Dahon Axis stem lets you fold the Espresso with a minimum of effort and Schwalbe Big Apple tires mean that you go faster, in a lot more comfort. The new Espresso is a shot of caffeine to your cycling lifestyle.

Espresso 16" ..... P/N 13-10421 ..... **$699.00**
Espresso 18" ..... P/N 13-10422 ..... **$699.00**
Espresso 20" ..... P/N 13-00791 ..... **$699.00**

DAHON ACCESSORIES

Description	P/N	Price
Kickstand	13-08310	**$5.95**
Rear Rack	13-08340	**$11.80**

PS

FOLDING ELECTRIC BIKES – SCOOTERS

CARRYME FOLDING BIKE

Quick release clamps are used extensively on Carryme to allow for quick and easy folding and maximum adjustability. Even the handlebar is collapsible to reduce overall folded size. Both the seatpost and headtube are telescopic and will extend to accommodate riders of all heights. The small chainwheel combination makes it extremely quick and easy to get the bike up and moving. Unique sliding front head tube clamp provides a stiff and sturdy joining system and allows the frame to be folded up to an amazingly small size. Even the pedals are collapsible, allowing the folded CarryMe to take up very little space whether being carried in a vehicle or stored in the home or office. When the bike is folded the small built-in wheels allow CarryMe to be pushed along the ground. Secure locks hold the folded structure together and keep the bike as a solid single unit, ensuring that nothing unfolds or comes loose. Not motorized. Max Rider Weight: 220 lb. Dimensions: Folded 12.6" x 9.8" x 35.8". Weight: 18.1 lb.

Tangerine ..... P/N 13-11637 ..... **$640.00**
Lime Green..... P/N 13-11638 ..... **$640.00**
Sky Blue ..... P/N 13-11639 ..... **$640.00**
Carry Bag ..... P/N 13-11640 ..... **$70.00**

WILDFIRE ELECTRIC BIKE WF24-E

The bike folds down to easily fit into a larger cabin aircraft. To fold the steel frame, flip a hasp near the pedals to fold the front half back around the aft half, and then fold handlebars down. It takes about 15 seconds.
The Wildfire 24-inch bike can be ridden like a conventional bicycle, or flip the switch on the handlebar to the "assist" mode and the bike's electric motor kicks in to help propel it while you pedal. The electric power comes from a 36 volt DC lead acid battery mounted in the frame beneath the seat. Size LxWxH: 70" x 24" x 43"

P/N 13-07428 ..... **$749.00**

WILDFIRE ELECTRIC BIKE WF20-E

The 54-pound bike folds down to easily fit into aft cabin of a Beechcraft Bonanza A36 or Piper PA-32, but will likely fit other larger cabin aircraft as well. The folded dimensions are 42x29x15 inches. To fold the steel frame, flip a hasp near the pedals to fold the front half back around the aft half, and then fold handlebars down. It takes 15 seconds
The Wildfire 20-inch bike can be ridden like a conventional bicycle, or flip the switch on the handlebar to the "assist" mode and the bike's electric motor kicks in to help propel it while you pedal. The electric power comes from a lithium ion battery mounted in the frame beneath the seat. The battery can be recharged up to 2,000 times and powers the bike in the assist mode for up to 50 miles between charges or 30 miles into auto mode. Size LxWxH: 62" x 23" x 43". Size LxWxH Folded: 42" x 29" x 15" P/N 13-07429 ..... **$899.00**

TRIKKE TRIBRED PON-E

Tribred Pon-e: transportation/ fitness/joyride all in one vehicle. Lightweight high-performance aluminum frame with lithium battery power. **Features**: • Extremely lightweight / portable for aircraft. • Compact & foldable • Aluminum frame • Disc brakes all around • Three-wheel cambering design for stability and fun • Hot-swap lithium battery • Up to 20 miles on a single charge • Average cost $0.07 per charge • Suggested Weight Limit: 250lbs • Suggested Height Range: 5' to 6'3" • Recommended Ages: 12+ **Specifications**: • WT: 38 Lbs • 10" air tire brushless • Geared hub motor 250W • Free wheel clutch • Removable 36V - 9Ah Lithium-Ion battery with Panasonic cells • Features key & lock • 2 Modes: ECONO max 12 mph / EXPRESS max 17 mph

Trikke Green ..... P/N 13-06835 ..... **$1,699.99**
Trikke Silver ..... P/N 13-06836 ..... **$1,895.00**

RIVIERA FOLDING ELECTRIC BICYCLE

Riviera folding electric bicycle is a one of kind folding electric bicycle that anyone can have fun with. You can ride this electric bike three different ways: 1. Like a regular bike in the "OFF" mode. 2. Pedal normally in the "ON" position and the pedal assist kicks in and helps you out! 3. Use the thumb throttle and NO pedaling is required! The Riviera is popular with RVers as well as private pilots. With gas prices high and with more people concerned about the environment, the electric bike is a wonderful option.

P/N 13-04070..... **$799.00**

PATMONT GSR CRUISER

Engine: 29cc two-stroke 40:1 oil ratio * Max Speed: 24mph * Transmission: chain drive w/ centrifugal clutch * Weight: (lb) 32lbs * Est. Fuel Econ. (* California Air Resource Board Legal * Dimensions: L-34" W-13" H-42 (Folded L-34" W-13" H-14") * Additional Features Frame: 4130 chromoly – lifetime warranty on the frame * Forks: 4130 chromoly - lifetime warranty on the fork * Handlebars: 6061 T6 aircraft grade aluminum with slightly wider than standard cross bar for better handling * Suspension: No suspension but the frame is designed to flex to absorb shock " Flexdynamic " * Carburator : Non adjustable/ maintenance free * Capacity: 400lbs P/N 13-06077..... **$771.00**

GO-PED LIGHTWEIGHT MOTORIZED SCOOTER

A strong chromoly frame with a lightweight folding handle system to achieve maximum strength along with portability. The sturdy frame has an electrostatic powder coat finish. Go-Ped weighs only 20lbs but can support up to 400lbs. Powered by a pre- cision 2-stroke engine that quietly propels itself at speeds of up to 20 mph, the Go-Ped has the ability to conquer steep hills. Tires are fabricated of a very resilient natural rubber which will never go flat. The Go-Ped averages well over 100 MPG on pre-mixed unleaded gas. Folds as quickly and as easily an umbrella for storage and fits in the optional carry bag, which doubles as a cargo carrying backpack. With a space displacement of only 2.5 cubic feet, the Go-Ped can be easily stored in your car, boat, motorhome or airplane. Features: * Engine Model: GPL290 * Engine Description: Single Cylinder,

Go-Ped (Sport Model) Blue..... P/N 13-08380.... **$548.00**
Go-Ped (Sport Model) Red ..... P/N 13-08381.... **$483.95**
Go-Ped Carry Bag..... P/N 13-08390..... **$26.00**

PS

PARACHUTES

SOFTIE EMERGENCY PARACHUTES

MINI-SOFTIE - Extremely small, lightweight and comfortable backpack parachute system designed for use in today's restricted cockpit enviroments, and by persons weighing up to 240 lbs. Choice of Conventional Harness or Aerobatic Harness. Container is 2.25" thick x 15" wide x 23" long. Canopy Type: Steerable Conical. Total weight: 15 lbs.
P/N 13-03505-X..... **$2,175.00**

MICRO-SOFTIE - Designed to fit and stay secure over the shoulder of smaller individuals. Used by persons weighing up to 180 lbs. Choice of the Conventional or Aerobatic harness. Container is 2.25" thick x 13" wide x 22" long. Canopy Type: Steerable Conical*. Total weight: 14 lbs. P/N 13-03510-X..... **$2,175.00**

LONG-SOFTIE - Designed to conform to and maximize the comfort of the seating found in todays high performance gliders and aerobatic aircraft. Available in either 180 lb.(13" wide) or 240 lb. (15" wide) versions. Choice of standard H harness or the unique crossover style Aerobatic Harness. Container specifications: 2.25" thick x 13" or 15" wide x 35" long. Canopy Type: Steerable Conical. Total weight: 16 lbs.
P/N 13-03515-X..... **$2,275.00**

SOFTIE-SEAT PACK - Designed for use in aircraft that have no room for a backpack style parachute. Used by persons weighing up to 240 lbs. Container is 15" wide 14" fore & aft 2 1/2" thick. Canopy Type: Steerable Conical. Total weight: 16 lbs. P/N 13-09052-X..... **$2,085.00**

WEDGE-SOFTIE - Designed specifically to add lumbar and sacral support during high, positive G maneuvers. Ideal for the upright seating found in Pitts style seating. Available in either 180 lb. or 240 lb. versions. Choice of standard H harness or our unique crossover style Aerobatic Harness. Container is 2 1/2" thick at bottom, 1/2" thick at top x 15" wide x 23" long. Canopy Type: Steerable Conical*. Total weight: 15
P/N 13-03524 ..... **$2,175.00**

WARBIRD SEAT PACK SOFTIE - Designed to fit into the older style "bucket" seats found in warbird aircraft, and for persons weighing up to 240 lbs. The container is 14" wide 11" fore & aft 6" thick. Canopy Type: Steerable Conical. Total weight: 17 lbs P/N 13-03520-1A.... **$2,085.00**

VISIT OUR WEBSITE FOR ADDITIONAL OPTIONS AND HARNESS CHOICES.

NOTE: Complete the Part Number with Color (-1) Red, (-2) Black (-3) Royal Blue, (-4) Navy Blue, (-5) Grey, (-6) Sage Green or (-7) Olive Drab. Also complete P/N with "C" for Conventional or "A" for Aerobatic. Example: P/N 13-00000-5A.

PREMIUM TRIM PARACHUTE

360/425/490" Premium Trim Emergency Back Parachutes. Includes: Snaps on legs, Snaps on thread thru adapter on the chest, free carrying bag. **Features**: * Color Choices: Black or Red or Navy Blue (Black Trim & Harness). * Hardware: B-12 Snaps on Leg Straps, Thread-thru on Chest. * Logic: Mass produce in "standard configuration" with limited colors. * Free Carry Bag Included * Same quality parachute system that performs equally as the pre-existing "Signature Series" without frills or options.

Description	Part No.	Price
Premium National 360* Flat Red	13-06263	**$1,866.00**
Premium National 425* Flat Black	13-06264	**$1,969.00**
Premium National 490* Flat Navy	13-06265	**$2,010.00**

NATIONAL EMERGENCY PARACHUTE BACK PACK

The pack design allows greater movement in and around the aircraft. Highly recommended by Aerobatic Champions Leo Loudenslager and Patty Wagstaff. Available in five standard colors: Navy blue with Gold, Navy Blue with Red, Red with Black, Royal Blue with Sky Blue and Black with Silver. Developed with the pilot in mind and is our most popular model. The teardrop shape provides flexibility and maximum comfort even in the tightest cockpits. Back Parachute Dimensions: Standard design includes a tapered width and teardrop shape that hugs the back and also provides comfortable lower lumbar support
*360 = Recommended Pilot Weight is up to 177 lbs.
*425 = Recommended Pilot Weight is up to 208 lbs.
*490 = Recommended Pilot Weight is up to 241 lbs.

Signature Series - Hardware Option of B12 Snap or Thread Thru Adapters							
Size	L	W Tp	W Btm	Upper Back	Lower Lumbar	Part No.	Price
360*	22"	13"	15"	1-3/4"	1-3/4"	13-03300	**$1,914.00**
425*	22"	13"	15"	1-3/4"	2"	13-03200	**$2,019.00**
490*	22"	13"	15"	1-3/4"	2-1/4"	13-03400	**$2,060.00**

Signature Series - Quick Ejector Strap							
Size	L	W Top	W Btm.	Upper Back	Lower Lumbar	Part No.	Price
360*	22"	13"	15"	1-3/4"	1-3/4"	13-03411	**$2,054.00**
425*	22"	13"	15"	1-3/4"	2"	13-09622	**$2,155.00**
490*	22"	13"	15"	1-3/4"	2-1/4"	13-09626	**$2,006.00**

NATIONAL'S SEAT PACK

Especially desirable when the cockpit has more vertical space than horizontal. For added comfort, the seat pad has one inch of "Astronaut Foam" above the parachute (accessible to remove or add foam/padding as required). Comes with TT adapters or two B12 snaps. Quick ejector snaps available (special order).
*360 = Recommended Pilot Weight is up to 177 lbs.
*425 = Recommended Pilot Weight is up to 208 lbs.
*490 = Recommended Pilot Weight is up to 241 lbs.

Signature Series - Hardware Option of B12 Snap or Thread Thru Adapters						
Size	Seat H	Seat W	Seat D	Thickness Back Vest	Part No.	Price
360*	2-1/2"	15"	13"	1/4"	13-09639	**$1,897.00**
425*	3"	15"	13"	1/4"	13-09643	**$1,996.00**
490*	3-1/2"	15"	13"	1/4"	13-09647	**$1,925.00**

NATIONAL FLAT PARACHUTE

The flat pack is slightly wider and more rectangular but much flatter than our original back parachute's "teardrop" shape. The National FLAT is thinner and even more supple than before. The "Flat-Pack" parachute container provides two choices in packing configuration: 1. More canopy in the upper container for the absolute thinnest beltline thickness (Taper Pack). 2.Canopy spread evenly to be one thickness (thinness!) top to bottom (Fully Flat Pack). he above two choices offer you important alternatives for your flying comfort and cockpit fit! Plus, the change for final shape / thickness (Taper verses Fully Flat) can be adjusted by the rigger any time the parachute is repacked!

Description	Part No.	Price
National Flat Signature	13-06270	**$2,018.00**
National Flat Premium	13-07290	**$1,969.00**
National Flat Bag	13-06266	**$50.00**
National B-12 Snaps	13-01959	**$72.85**
National Quick Eject Snaps	13-06268	**$170.95**

PARA-CUSHION EMERGENCY PARACHUTES

Features the patented Pop-Top type container with the externally mounted pilot chute which provides a flat profile while worn and gives a quick and positive send off when released. The canopy risers are neatly hidden in built-in channels contoured into the container. Each container is padded with a luxurious 1/2" (1cm) layer of Confor™ foam, covered with rich silver grey velour fabric. The harness utilizes a light weight fixed-dimension main lift web with individual leg strap design for ease of walking and maximum cockpit movement while saving weight and space. Fully adjustable. Deployment is ripcord actuated with the handle located at the front left side of the harness. Each system is assembled with the popular 26 ft diameter MID-LITE canopy freshly packed by an FAA licensed parachute rigger.

PARA-CUSHION BACK™ - The Model 303 parachute assembly is the most popular model and used by warbird, sailplane & aerobatic pilots. The back-mounted container conforms to the curve of your shoulders, and is only 24" (60 cm) tall by 16" (40 cm) wide and less than 3" (7 cm) thick. Weighs approximately 15 lbs. (6.5 kg.). Recommended when head space is at a minimum. P/N 13-03440.....**$2,085.00**

PARA-CUSHION CHAIR™ - The Model 305 is truly a chair-parachute, covering the back of the body from shoulders to just above the knees. It is especially popular among sailplanes pilots flying for hours in the supine position. It is 42" (105 cm) long by 16" (40 cm) wide and varies from 2.5" to less than 1" (6.5 to 2.5 cm) thick, designed specifically for use where space is minimal. The complete system weighs approximately 16.5 lbs. (7.5 kg.). P/N 13-03442.....**$2,024.00**

PARA-CUSHION SEAT™ - The Model 304 parachute assembly is designed specifically for emergency use by sport aviators flying aircraft utilizing a seat pan. The parachute container is a seat cushion 12"x16" (30cmx40 cm) and less than 3" (7 cm) thick. Because the backpad is only a half inch (1 cm) thick, the system is also especially suited to aircraft with restricted stick or rudder travel, or when head room is not restricted, such as Stearman, Great Lakes and Citabria. The complete system weighs approximately 15 lbs. (6.5 lbs. (6.5 kg.) A zip-on 3" (7 cm) Confor-foam™ padded Travel Cushion is an optional accessory
P/N13-03441 ..... **$2,499.00**

SHEEPSKIN BACK PAD 304 - Customize your Para-Cushion Model 304 seat with the Sheepskin Back Pad. Sheepskin pads keep you cool in the summer and warm in the winter.
Smoke.....P/N 13-11307..... **$179.00**
Natural .....P/N 13-11309..... **$179.00**
Black .....P/N 13-04911..... **$181.25**

OXYGEN POCKET - Zipper pocket that your oxygen tank can fit in. Available for the 303 & 305. P/N 13-04921..... **$64.28**

OPTIONS			
Aerobatic Harness Option	**FREE**	Quick ejector snaps	**$150.00**
Capewell riser releases	**$150.00**	Quick ejector snaps (Aerobatic)	**$106.67**
Oxygen pocket	**$64.28**		
Sheepskin backpad	**$181.25**	Monogram personalization	**$35.71**

PS

SURECHECK CHECKLISTS

SURECHECK CHECKLISTS

These versatile checklists cover all aspects of preflight, standard operation procedures, emergency procedures, V-speeds, ATC light signals, and include a TCA and sectional scale. Easy to read large, black on white type.

Model	Part #	Price
PIPER		
Tomahawk	13-09708	**$16.25**
Cher 140	13-09709	**$19.25**
Cadet	13-09710	**$16.25**
Warrior II	13-09711	**$16.25**
Archer II	13-09712	**$15.95**
Arrow II	13-09713	**$20.00**
Arrow III	13-09714	**$19.25**
Arrow IV	13-09715	**$19.75**
Cher "six" 260	13-09716	**$15.95**
Cher "six" 300	13-09717	**$15.95**
Saratoga	13-09718	**$15.95**
Lance	13-09719	**$19.25**
Seminole	13-09720	**$26.25**
Seneca I	13-09721	**$25.25**
Seneca II	13-09722	**$21.75**
Seneca III	13-09723	**$26.25**
Seneca IV	13-09724	**$21.75**
Aztec E	13-09725	**$21.75**
Aztec F	13-09726	**$26.25**
CESSNA		
C-150	13-09727	**$16.50**
C-152	13-09728	**$15.95**
C-172	13-09729	**$15.95**
C-172XP II	13-09730	**$16.50**
C-177	13-09731	**$15.85**
C-182	13-09732	**$15.95**

Model	Part #	Price
C-206	13-09733	**$16.25**
C-210	13-09734	**$16.25**
C-172RG	13-09735	**$16.25**
C-182RG	13-09736	**$19.25**
C-177RG	13-09737	**$16.25**
BEECH		
Debonair A33	13-09738	**$16.25**
Debonair B33	13-09739	**$14.95**
Debonair C33	13-09740	**$19.25**
Bonanza F33A	13-09741	**$19.75**
Bonanza V35	13-09742	**$19.25**
Bonanza A36	13-09743	**$15.95**
Duchess 76	13-09744	**$26.50**
Baron 55	13-09745	**$26.25**
Baron 58	13-09746	**$26.25**
OTHER		
Katana DA 20	13-09747	**$19.75**
Commander 114	13-09748	**$19.75**
Mooney M20C	13-09749	**$19.75**
Mooney 201	13-09750	**$16.25**
AA-5B Tiger	13-09751	**$15.95**
Tobago	13-09752	**$16.25**
SR20	11-10430	**$20.50**
SR22	11-10431	**$19.25**
DA20-C1	11-10432	**$20.50**
DA40-180 Diamond Star	11-10433	**$20.50**

SURECHECK ACCESSORIES

ATISPAD - Sticky posting pads for obtaining ATIS, ASOS, AWOS. Shrink wrapped in pads of (50) 3-3/4" x 4"
P/N 13-09753 ..... **$2.75**

CLEARANCE PAD - Posting pads for obtaining IFR Clearances by pilots. Provides in-flight writing for Altitude, Heading, Frequency. Shrink wrapped in pads of 50 "CRAFT" style 5-1/2" x 6-1/4"
P/N 13-09754 ..... **$4.50**

FSSPAD - Bonded legal pad for obtaining weather briefings from FSS Shrink wrapped in pads of 50 sheet 5-1/2 x 6-1/4.
P/N 13-09755 ..... **$4.50**

APPROACHPAD - Spiral Bound IFR approach chart holder. Holds up to 10 approach charts in transparent plastic. Easy Access with visible chart name in right corner. Fits on yoke clips or kneeboards for easy in-flight use.
P/N 13-09756 ..... **$18.50**

V BOOK - Small notebook with V-Speeds and approach Speeds. Perfect for Flight Schools, and Renters.
P/N 13-09757 ..... **$16.25**

PREFLITEPAD - All the information you need for weight and balance and V-speeds. Calculate center of gravity and keep other vital information at your fingertips. You'll wonder how you got through preflight without it! 4.25" x 7". Pad of 40
P/N 13-09854 ..... **$4.75**

CHECKRIDE CHECKLISTS - Unique to the SureCheck brand. Incorporates FAA PTS standards for new ratings. Also serves as a handy reference during all phases of training. Packed with a wealth of information not found anywhere else in such a complete configuration. Perfect for students and seasoned pilots to renew rating certs. Include the updates from the FAA (effective August 2002). New redesigned format with increased size to make them even easier to read.

Private pilot..... P/N 13-00051 ..... **$10.75**
Instrument..... P/N 13-00052 ..... **$10.95**
Commercial ..... P/N 13-00053 ..... **$10.95**

SURECHECK PRO CHECKLISTS

Sometimes you need all the checklist information in a quick-reference format. SureCheck PRO™ checklists offer just that. All of the checks you need from Preflight to Securing are here, including an extensive emergency section. The award-winning design makes information understandable and readable, while neatly fitting in a handy, knee-board-sized format.

The exclusive professional-grade 15 MIL low-gloss (matte) laminate will not scratch or delaminate. The lamination is the same used by commercial operations and is the strongest available in the industry! The sealed-edge construction holds up better to wear, usage, and sunlight and is impermeable to water, oil, and more.

All charts are 5.25" x 8" (13cm x 20cm). Constructed on non-glare (matte) 15 MIL, UV coated, scratch resistant, indestructible sealed card with magazine-quality 2400 DPI full-color printing, (double-sided).

Model	Part No.	Price
PIPER		
Apache PA-23-150/160	11-09027	**$10.95**
Archer II	11-09028	**$10.95**
Archer III	11-09029	**$14.50**
Arrow II	11-09031	**$10.95**
Arrow III	11-09032	**$10.95**
Arrow III Turbo	11-09033	**$14.50**
Arrow IV	11-09034	**$10.95**
Arrow IV Turbo	11-09035	**$14.50**
Arrow 180	11-09030	**$10.95**
Cherokee 140	11-09040	**$10.95**
Cherokee 150	11-09041	**$14.50**
Cherokee 160	11-09042	**$14.50**
Cherokee 180	11-09043	**$10.95**
Cherokee 235	11-09044	**$14.50**
Cherokee Dakota	11-09046	**$10.95**
Cherokee Six 260	11-09047	**$10.95**
Cherokee Six PA-32-300	11-09048	**$14.50**
Comanche 180	11-09051	**$14.50**
Comanche 250	11-09053	**$10.95**
Comanche 260 FI	11-09054	**$14.50**
Comanche 260	11-09055	**$14.75**
Lance II	11-09056	**$10.95**
Lance II Turbo	11-09057	**$10.95**
Lance PA-32R-300	11-09058	**$14.50**
Saratoga	11-09062	**$10.95**
Saratoga Turbo	11-09065	**$10.95**
Saratoga II HP	11-09060	**$14.50**
Saratoga II TC	11-09061	**$14.50**
Saratoga SP	11-09063	**$14.50**
Saratoga SP Turbo	11-09064	**$14.50**
Seminole	11-09066	**$10.95**
Seneca I	11-09067	**$14.50**
Seneca II	11-09068	**$10.95**
Seneca III	11-09069	**$10.95**
Seneca IV	11-09070	**$14.50**
Seneca V	11-09071	**$14.50**
Super Cruiser	11-09072	**$14.50**
Tomahawk	11-09074	**$10.95**

Model	Part No.	Price
Tri-Pacer	11-09075	**$10.95**
Warrior II	11-09077	**$10.95**
Warrior III	11-09078	**$14.50**
Warrior 151	11-09076	**$10.95**
CESSNA		
C-120/140	11-08948	**$14.50**
C-150	11-08949	**$10.95**
C-152	11-08950	**$10.95**
C-170A	11-08951	**$14.50**
C-170B	11-08952	**$10.95**
C-172A	11-08953	**$10.95**
C-172B-C	11-08954	**$10.95**
C-172D-H	11-08955	**$10.95**
C-172I	11-08956	**$14.50**
C-172K	11-08958	**$14.50**
C-172L	11-08957	**$14.50**
C-172M	11-08959	**$14.50**
C-172N	11-08960	**$10.95**
C-172P	11-08961	**$10.95**
C-172R	11-08962	**$10.95**
C-172RG	11-08963	**$10.95**
C-172S	11-08964	**$10.95**
C-172XP	11-08965	**$14.50**
BEECH		
Baron 55A/B	11-08922	**$14.50**
Baron 55C/D/E	11-08923	**$10.95**
Baron 58	11-08919	**$14.50**
Baron 58 Pressurized	11-08920	**$10.95**
Baron 58 Turbo	11-08921	**$14.50**
Bonanza F33A	11-08930	**$10.95**
Bonanza A36	11-08924	**$10.95**
Bonanza A36-A	11-08925	**$14.50**
Bonanza A36-B	11-08926	**$14.50**
Bonanza B36 TC	11-08927	**$10.95**
Bonanza C35	11-08928	**$14.50**
Bonanza 35E/F/G	11-08929	**$14.50**
Bonanza 35J/K/M	11-08931	**$10.95**
Bonanza 35N/P	11-08932	**$14.50**
Bonanza 35S	11-08933	**$14.50**
Bonanza 35V A/B	11-08934	**$11.25**
Skipper 77	11-10437	**$14.50**

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CHECKMATE CHECKLISTS

CHECKMATE CHECKLISTS

Checkmate is the only checklist that contains virtually all data desired by pilots to fly the airplane while excluding the extraneous information which leads to inefficiency, confusion and even refusal to use. They eliminate the tedious and cluttered 15-page flip-book that pilots quickly become discouraged from using.
Checkmate contains the most comprehensive V-speed section in the industry. V-speeds are listed in Knots and MPH. Checkmate not only makes a dramatic difference in everyday use, but also in critical situations. Emergency procedures are right there! Every time! With most of the emergencies there is no time to flip pages looking for the correct procedures.
Available for over 300 single and twin engine aircraft. All follow a standard format. Used by some of the best flight schools in the country. Checkmate Standard Checklists is 6.5" x9" size. Checkmate Compact Checklist 5"x7" size.

Description	Part No.
Alarus/Zenith CH2000	13-04627
Aviat Husky A1-B	13-05490
Aviat Husky A1-B Amphibian	13-05491
Beechcraft Baron B55 64'-76'	13-04649
Beechcraft Baron B55 77'-82'	13-04650
Beechcraft Baron 58 285 HP	13-04651
Beechcraft Baron 58 300 HP	13-04652
Beechcraft Baron 58P 310 HP	13-04653
Beechcraft Baron 58P 325 HP	13-04654
Beechcraft G58 G100	13-04655
Beechcraft Bonanza A36 '84 & On	13-08699
Beechcraft Bonanza F33A	13-04601
Beechcraft Bonanza G36 G1000	13-04608
Beechcraft Bonanza JKM35	13-04602
Beechcraft Bonanza NP35	13-04604
Beechcraft Bonanza V35	13-04605
Beechcraft Bonanza V35TC	13-04606
Beechcraft Bonanza A36 thru '83	13-04607
Beechcraft Debonair CEF33	13-08697
Beechcraft Duchess 76	13-04648
Beechcraft Bonanza S35	13-08698
Beechcraft Sundowner	13-08696
Cessna 150 D-K	13-08605
Cessna 150 '59-'63 Quickmate	13-00708
Cessna 150 '59-'63	13-07301
Cessna 150L	13-08606
Cessna 150M	13-08607
Cessna 152	13-08610
Cessna 172 F, G, H	13-08612
Cessna 172 I, K, L	13-08613
Cessna 172 M	13-08615
Cessna 172 N	13-08620
Cessna 172 P	13-08625
Cessna 172 P 6.5"x4"	13-08630
Cessna 172 R G1000	13-04575
Cessna 172 RG	13-08635
Cessna 172 S	13-04576
Cessna 172 S G1000	13-04577
Cessna 177	13-08636
Cessna 177 RG	13-08637
Cessna 182 E-M	13-08638
Cessna 182 P	13-08639
Cessna 182 Q	13-08640
Cessna 182 R	13-08641
Cessna 182 RG	13-08645
Cessna 182 S	13-04578
Cessna 182 T	13-04579
Cessna 182 T G1000	13-04580
Cessna T182T	13-04581
Cessna T182T G1000	13-04582
Cessna 206H	13-04583
Cessna 206H G1000	13-04584
Cessna T206H G1000	13-04585
Cessna T206H G1000,GFC700 S	13-05637
Cessna T206H G1000,GFC700 C	13-05638
Cessna T206H G1000 Amphibian	13-05394
Cessna 210M	13-05476
Cessna T210M	13-05483
Cessna 210N	13-05482
Cessna T210N	13-05484
Cessna 303 Turbo Crusader S	13-05635
Cessna 303 Turbo Crusader C	13-05636
Cessna 310Q	13-04629
Cessna 310R	13-04630

Description	Part No.
Cessna 340A	13-04631
Cessna 402B	13-04632
Cessna 421B	13-04634
Cessna 421C	13-04637
Cirrus SR20-Electric	13-04614
Cirrus SR22	13-04615
Citabria 7ECA	13-11858
Citabria 7KCAA	13-11859
Citabria 7KCAB	13-11860
Citabria 7GCBC	13-11861
Diamond DA20 C1	13-04621
Diamond DA20-100	13-04622
Diamond DA40-180	13-04623
Diamond DA40-180 G1000	13-04624
Diamond DA40-180 FP	13-04625
Diamond DA40-180 FP G1000	13-04626
Diamond A42 G1000	13-04656
Maule MT 7-235	13-04613
Mooney 201 (M20J)	13-08700
Mooney Encore M20K	13-05492
Mooney M20K-231	13-04616
Mooney M20K-252	13-04617
Mooney M20M/Bravo	13-04618
Mooney M20M/Ovation	13-04619
Mooney M20R/Ovation	13-05493
Mooney M20R/Ovation G1000	13-04620
Mooney M20S/Eagle	13-05494
Mooney M20TN/Acclaim	13-04714
Mooney M20TN/Acclaim Compact	13-04715
Piper 6X	13-04586
Piper 6XT	13-04587
Piper Archer II	13-08670
Piper Archer III	13-04591
Piper Archer III with Avidyne Entgra	13-05487
Piper Arrow II	13-08675
Piper Arrow III	13-08680
Piper Arrow 180	13-04592
Piper Arrow 200	13-04593
Piper Aztec E	13-04643
Piper Aztec F	13-04644
Piper Cherokee 140	13-08655
Piper Cherokee 180	13-08656
Piper Cherokee 235	13-08685
Piper Cherokee Six/26	13-05485
Piper Cherokee Six/30	13-05486
Piper Lance	13-04594
Piper Lance II Turbo	13-05488
Piper Malibu 310	13-04598
Piper Mirage 350	13-04599
Piper Navajo 310	13-04645
Piper Navajo 350 Chieftan	13-04647
Piper Saratoga FG	13-04595
Piper Saratoga SP	13-05489
Piper Saratoga II HP	13-04596
Piper Saratoga II TC	13-04597
Piper Seminole	13-08690
Piper Seneca I	13-04639
Piper Seneca II	13-08695
Piper Seneca III	13-04640
Piper Seneca IV	13-04641
Piper Seneca V	13-04642
Piper Tomahawk	13-08650
Piper Twin Comanche	13-04638
Piper Warrior	13-04588
Piper Warrior II	13-08665
Piper Warrior III	13-04590
Piper Warrior III with Avidyne Entegra	13-05640
Piper Warrior III	13-05639
Symphony SA160	13-04628

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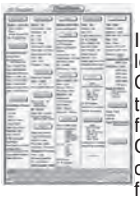
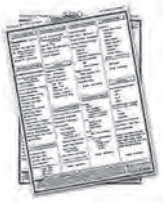
Checkmate Universal Single ..... P/N 13-08705 ..... **$15.95**



CHECKMATE IFR

In the IFR environment organization and management lead to smoother, stress-free and safer outcomes. CheckMate IFR will assist you through preflight planning to touch-down on the IFR flight. Whether you are cleared for the complete approach or radar vectored to the FAF, CheckMate IFRs format will help keep the flight business orderly and functional. It is precise & specific to the different phases of those sometimes precarious flights. You will be reminded when to prepare and look ahead to each phase. A quick review of CheckMate IFR before flight will help you determine pilot and aircraft preparedness and legalities, how to give those greatly appreciated pilot reports on icing and turbulence, and what ATC expects you to do after radio failure; Professional information in a concise and orderly manner. Standard (6" x 9.5") ..... P/N 13-08805 ..... **$15.95**
Compact (5" x 7") ..... P/N 13-08810 ..... **$13.95**



SURVIVING THE FIRST 24 HOURS CHECKMATE®

Surviving the First 24 Hours CheckMate® clearly details the procedures and equipment that you will need to survive a forced landing and the subsequent 24 hours. The preparation before a flight can easily make the difference between surviving or not surviving. This is one of the most important pieces of equipment in a pilot's pre-flight planning.
Available in three sizes.
Standard (6.5"x 9") ..... P/N 13-00444 ..... **$14.95**
Compact (5"x 7") ..... P/N 13-00446 ..... **$13.75**
Pocket (3.75"x 3.25") ..... P/N 13-00447 ..... **$8.95**

CHECKBOOK CHECKLISTS

Aviation Checkbook is a high quality, multi-page laminated checklist utilizing factory type information for FAA Part 141 and 61 schools. Designed as a primary checklist giving all details and responses needed by new students or pilots wanting a multi-page checklist without the usual bulk. Shirt pocket size with mark and erase surface for notes. The various checklists for your aircraft are stacked and color tabs allow you to locate the checklist you need.

Part No.	Description (Checkbook Checklist for:)	Price
14-02616	Universal Single Engine Fixed Gear Aircraft	**$9.95**
13-03091	Cessna150 D-K	**$17.95**
13-01262	Cessna 150M	**$9.95**
13-01264	Cessna 172FGH	**$9.95**
13-01268	Cessna 172R	**$17.95**
13-01270	Cessna 172P	**$9.95**
13-03102	Cessna 172RG	**$17.95**
13-01272	Cessna 182E-M	**$17.95**
13-01273	Cessna 182N	**$9.95**
13-01288	Piper Seminole	**$13.95**

Part No.	Description (Checkbook Checklist for:)	Price ea.
13-01291	Piper Seneca I	**$13.95**
13-01275	Cessna 182Q	**$9.95**
13-01276	Cessna 182R	**$9.95**
13-01277	Cessna 182S	**$9.95**
13-01278	Cessna 182RG	**$9.95**
13-01280	Cherokee160	**$9.95**
13-01282	Piper Warrior	**$9.95**
13-01283	Piper Warrior II	**$9.95**
13-01284	Piper Archer II	**$9.95**
13-01286	Piper Arrow II	**$17.95**
13-01287	Piper Arrow III	**$9.95**

FLYWRITE COCKPIT WRITING PAD

FlyWrite™ is not another "flight planning" layout. It is designed to give you a dedicated place for all the information that flows while in the cockpit of the aircraft. Convenient top-bound writing pad. Each pad contains 50 5" x 8" sheets and can be used with or without standard junior legal vinyl binders. IFR clearances, ATIS, AWOS, frequencies, flight times, hobbs times, tach times, airport information , frequency changes, hand-off's, altitude changes, weather, etc, now have a home. There is also an area for random information or diagrams. FlyWrite™ also contains a handy vertical scale which measures mileage for WAC, SEC, TAC, NOS, JEPP, & ELA charts, eliminating the need for that ruler you can never find.
P/N 13-03307 ..... **$5.95**

MOUNTAIN FLYING CHECKMATE

CheckMate Aviation's new Mountain Flying CheckMate™ is a full color, plastic card that is a compilation of the special knowledge required for mountain flying. Competent flying in mountainous terrain requires knowledge far beyond what is taught in standard flight courses; and as most pilots discover, sooner or later, flying in mountainous terrain is inevitable.
CheckMate Aviation's Mountain Flying CheckMate™ covers both the rules and common sense of flying that are critical when in this aspect of flight. Available in 3 sizes.
Standard (6.5"x9") ..... P/N 13-02713 ..... **$14.95**
Compact (5"x7") ..... P/N 13-02714 ..... **$12.95**
Pocket (6.75"x3.25") ..... P/N 13-02716 ..... **$8.95**

PS

CHECKLISTS

PROPILOT CHECKLISTS

Step up to professional quality with ProPilot Checklist! These handsome booklets are fully laminated and wire-bound for durability and long life, and are perfect for VFR and IFR pilots of all skill levels. All Preflight, Normal, and Emergency procedures are included. IFR checklist items are integrated into phase of flight, and IFR Approach and Departure Briefing sections are also provided. Flight planning is simplified by the inclusion of aircraft-specific performance data (V-speeds, takeoff distance, climb performance, cruise power settings, true airspeed, fuel burn, and landing distance), as well as weight and balance graphs. No more digging through a bulky POH for critical performance numbers! Additionally, a wealth of other useful information is included, such as VFR communications and weather requirements, METAR & TAF codes, IFR Holding Procedures, illustrated Airport Signs & Markings, Light Gun Signals, and Intercept Procedures. Conveniently sized at 6" wide by 9" high, ProPilot Checklist fits easily on your kneeboard. It's truly "The Last Checklist You'll Need!"™

Description	Part No.	Price
ProPilot Checklist Cessna 150M	13-06103	**$29.95**
ProPilot Checklist Cessna 152	11-05187	**$29.95**
ProPilot Checklist Cessna 172P	11-05188	**$29.95**
ProPilot Checklist Cessna 172R	11-05189	**$29.95**
ProPilot Checklist Cessna 172RG	11-05192	**$29.95**
ProPilot Checklist Cessna 172S/SP	11-05190	**$29.95**
ProPilot Checklist Cessna 172S/SP NAV	11-05191	**$29.95**
ProPilot Checklist Cessna 172M	13-05121	**$29.95**
ProPilot Checklist Cessna 182R	13-05122	**$29.95**
ProPilot Checklist Cessna 182S	13-05123	**$29.95**
ProPilot Checklist Cessna 182T	13-05124	**$29.95**
ProPilot Checklist Cessna 182T NAV III	11-05193	**$29.95**
ProPilot Checklist Cessna R182RG	13-05125	**$29.95**
ProPilot Checklist Cessna TR182RG	13-05126	**$29.95**
ProPilot Checklist Cessna Turbo T182	11-05194	**$29.95**
ProPilot Checklist Cessna 172N	13-04940	**$29.95**
ProPilot Checklist Cessna 206 NAV III	13-04941	**$29.95**
ProPilot Checklist Cessna Turbo T206H	13-04942	**$29.95**
ProPilot Checklist Cessna Turbo T206H NAV III	13-04943	**$29.95**
PropPilot Checklist Cessna A36-927 up	13-05127	**$29.95**
ProPilot Checklist Diamond DA20-C1	11-05195	**$29.95**
ProPilot Checklist Diamond DA40-180	11-05196	**$29.95**
ProPilot Checklist Piper PA28-161	13-04792	**$29.95**
ProPilot Checklist Piper PA28-181	11-05197	**$29.95**
ProPilot Checklist Piper PA28R-201	13-04794	**$29.95**
ProPilot Checklist Piper PA28-161 Warrior II	13-04944	**$29.95**
ProPilot Checklist Piper PA28R-201 Arrow	13-04945	**$29.95**
ProPilot Checklist Piper PA34-200T Seneca II	13-04946	**$29.95**

THE PRECIFLIGHT CHECKLIST

More than just a checklist, PRECIFLIGHT® will actually help pilot along all phases of flight: from preparation to tie-down and through emergencies. It is a brightly colored 18 pages booklet at is logically divided to minimize page flipping. Once used to it, it is a natural as good landings.

It regroups important information such as light gun signals, VFR minimums, weather symbols and all that with easy to interpret drawings. Even better, it has features that pilots have to look for in other publications and equipment like a built-in 1/500 000 ruler, frequently used aviation phone numbers and Internet sites and more.

PRECIFLIGHT® was also designed for convenience: it will fit in your shirt pocket or clip on the aircraft yoke where it will be available to use with one hand. Made of a sturdy waterproof paper, it will last a lifetime. It is designed to conform to FAA and Transport Canada regulations by a team of flight instructors and airline pilots

Description	PN	Price
Cessna 150/152	13-04979	**$28.50**
Cessna 172	13-04980	**$28.50**
Piper PA 28-160	13-04981	**$28.50**
Piper PA 28-180	13-04982	**$28.50**
Universal Model	13-04983	**$28.50**

ARMBAND CHECKLISTS

At some point all pilots have become tired of fumbling around looking for their checklist when they should have been concentrating on flying their airplane. Whether you're flying a Cessna, Piper, Cirrus, or even a Learjet, the ArmBand Checklist is the best way to keep your in-flight aircraft checklist accessible at all times. With this simple design, your checklist easily slides onto your wrist for convenient viewing. A must have for any pilot whether you're a student or a professional flying single pilot IFR.

BEECHCRAFT		
Musketeer	13-07375	**$24.95**
Travelair	13-07376	**$24.95**
A36 Bonanza	13-07377	**$24.95**
J35 Bonanza	13-07378	**$24.95**
V35 Bonanza	13-07379	**$24.95**
BE-55/58 Baron	13-07382	**$24.95**
BE-76 Duchess	13-07383	**$24.95**
BELLANCA		
Super Viking	13-07385	**$24.95**
Citabria	13-07386	**$24.95**
Scout	13-07387	**$24.95**
Decathlon	13-07388	**$24.95**
CESSNA		
140	13-07389	**$24.95**
150	13-07360	**$24.95**
152	13-07361	**$24.95**
172E	13-07362	**$24.95**
172	13-07363	**$24.95**
177	13-07390	**$24.95**
182	13-07391	**$24.95**
182RG	13-07392	**$24.95**
182S	13-07393	**$24.95**
182T	13-07394	**$24.95**
CIRRUS		
SR20	13-07366	**$24.95**
SR22	13-07367	**$24.95**
GRUMMAN		
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Cheetah	13-07407	**$24.95**
MOONEY		
M20A	13-07408	**$24.95**
M20C	13-07409	**$24.95**
M20F	13-07410	**$24.95**
M20J/MSE	13-07411	**$24.95**
M20K 305 Rocket	13-07412	**$24.95**
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PA-28-151/161 Warrior	13-07368	**$24.95**
PA-28-180 Cherokee Archer	13-07369	**$24.95**
PA-28-181 Archer II/III	13-07370	**$24.95**
PA-28-200R Arrow	13-07371	**$24.95**
PA-34-200 Seneca	13-07372	**$24.95**
PA-44-180 Seminole	13-07373	**$24.95**
PA24-250 Comanche	13-07416	**$24.95**
PA28-140	13-07417	**$24.95**
PA-28-235 Cherokee	13-07418	**$24.95**
PA-28R Arrow	13-07419	**$24.95**
PA-32-300 Cherokee Six	13-07422	**$24.95**

E.S.P. CHECKMATE™

E.S.P. CheckMate™ is a 1st for Aviation, and the only product of its kind available. Our new "Emergency Substitute Pilot "™ could save the lives of you and your passengers by providing the most basic and simplest of terms and procedures to the NON-PILOT, in the unfortunate event the real pilot becomes incapacitated. E.S.P. CheckMate™ assists the NON-PILOT in controlling the aircraft, reaching help on the radio, and if necessary, landing the aircraft. The graphical format makes it easy and comfortable to follow. E.S.P. CheckMate™ can easily be the difference in the outcome of this most serious type of emergency. For safety and readability, we are publishing only in 7.5" x 10" size. P/N 13-01834 .....**$15.95**

PS

PLOTTERS

FLIGHT COMPUTERS

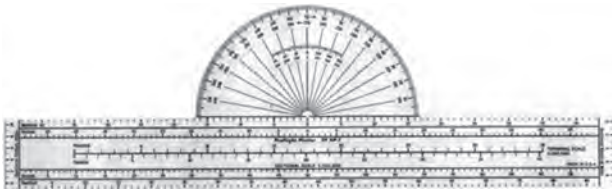
E6B METAL FLIGHT COMPUTER - The best slide-rule-style flight computer on the market, with solid aluminum construction and easy-to-read lettering. ASA's E6-B features a wind component grid and comprehensive cross-wind correction chart, and on the other side the slide computes time, speed, distance, altitude, true airspeed, and density altitude problems as well as conversions. Nautical and statute scales are included.
P/N 13-00813 .....**$25.85**

E6B PAPER FLIGHT COMPUTER - Made from solid, heavyweight fiberboard, an economical version of the aluminum model described above including all its problem-solving features. P/N 13-02298 .....**$10.85**

MICRO E6-B - This pocket-sized, brushed aluminum E6-B is a full function aviation computer. Popular among military pilots, it features a high-speed and low-speed wind correction slide, high-speed compressibility table, and instruction manual. Micro E6-B performs all the standard manual flight computer functions, and it conveniently fits in a shirt pocket or glove box.
P/N 13-02299 .....**$27.00**

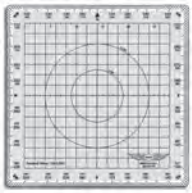
E6-B HIGH SPEED SLIDE - A companion product, this slide picks up where the traditional metal flight computer leaves off (ASA-E6B), providing calculations for the high-speed realm of flight (in the range of 220-700 knots or miles per hour). Pilots simply replace their current slide with this one, which then continues to use the circular computer from traditional E6-Bs. The slide also includes compressibility correction chart, ICAO Standard Atmosphere reference table, worldwide time conversion table, speed limits for the United States, and most frequently-used weight & balance formulas. All of the pertinent formulas & information required for high-altitude, high-speed operations. Meets both FAR & JAR (international) requirements.
P/N 13-02301 .....**$11.75**

PROFLIGHT FIXED AZIMUTH PLOTTER



The ProFlight Fixed Azimuth Plotter is: • Manufactured & Packaged in the U.S.A. • Made from Premium Clear 8010 Polycarbonate • More Flexible & Warp Resistant than Acrylic or PVC • Printed using Ultra Violet Resistant Ink • Laminated for Lifetime Scratch Protection • Clearly Distinguishable White, Sectional/Terminal Side & on Reverse, a Blue WAC Scale ProFlight PF-AP-1 Plotter - Your PF-AP-1 is a premium Fixed Azimuth Plotter designed for measuring distances and courses on VFR navigational Sectional, Terminal & World Aeronautical Charts. This plotter has been designed to exacting standards and slight variations with chart scales may exist as a result of the instability of paper charts in certain temperature and humidity conditions. P/N 13-11676.....**$8.75**

SQUARE AVIATION PLOTTER



Constructed of durable Lexan®, this plotter won't melt, warp or break in extreme temperatures. Its convenient 5-1/8" square size and ease of use make this plotter a pilot favorite for simple, accurate flight planning. Uses a 1:500,000 scale and includes 5 NM and 10 NM radius rings for quick and easy measurement. The 2 NM grid makes alignment with parallels simple. Plus, it's guaranteed for life! P/N 13-08056.....**$6.50**

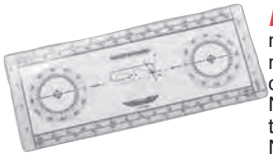
PLOTTERS

Durable Lexan® resin won't melt, warp or break in extreme temperatures - guaranteed! Each plotter features 8 scales to meet the needs of all VFR aeronautical charts - nautical on one side, statute on the flip. Nautical-Statute conversion scale also included. Made in USA.

ULTIMATE ROTATING PLOTTER - 13-1/4" long. Rotating azimuth eases flight planning with direct readout of course. Made in USA.
P/N 13-02302 ..... **$15.75**

ULTIMATE FIXED PLOTTER - 13-1/4" long. Quick scale reference is provided for both statute and nautical miles. Made in USA.
P/N 13-02424 ..... **$14.50**

ULTIMATE MICRO PLOTTER - 8" long. Convenient for flight bag, shirt pocket, or airplane storage. Made in USA.
P/N 13-02303 ..... **$8.50**

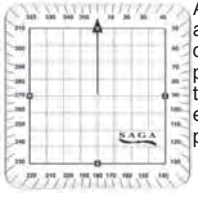


INSTRUMENT PLOTTER - ASA's instrument plotter features: 12 scales to accommodate both NOS & Jepp instrument charts, including a conversion scale for Nautical and Statute miles; holding patterns depicted for both Standard and Nonstandard entries; compass roses allowing quick course & bearing information; and professional layout enabling easy reading during en route spot checks.
P/N 13-02306 ..... **$11.75**

FIXED PLOTTER - Constructed of sturdy clear plastic with easy-to-read numbers and scales. It includes WAC, Sectional, and Terminal Area scales, and is checked and approved by the Weights and Measures Department. Quick scale reference is provided for both statute and nautical miles.
P/N 13-02304 ..... **$8.75**

ROTATING PLOTTER - Made from the same material and having the same features as the Fixed Plotter, but with the addition of a non-slip rotating azimuth to ease flight planning.
P/N 13-02307 ..... **$11.75**

NAVIGATION ANGLE PROTRACTOR



An aeronautical navigation angle protractor with alignment grill for parallels and meridians. Ideally dimensioned numbers and lines for a quick and precise reading with cardinal points clearly identified to eliminate positioning errors. Simple and easy to use it is the perfect tool for student and experienced pilots. Canadian-made quality product.
P/N 13-09555.....**$6.45**

SRP5 NAVIGATIONAL KIT - Kit contains: • SAGA SR Aeronautical navigational ruler graduated in marine and statute miles to scale 1:500 000, 1:250 000 and 1:100 000 • SAGA SP Aeronautical navigation angle protractor • Two (2) Steadtler permanent markers • One (1) Steadtler permanent retractable marker. P/N 13-09556.....**$18.95**

SAGA AVIATION SR AERONAUTICAL NAVIGATIONAL RULER

Robust plastic ruler graduated in marine and terrestrial miles. Designed for use with aeronautical maps 1:500 000, 1:250 000, and 1:100 000 clearly defined scales on each side of the rules. "Ruling" out any mistakes! Simple and easy to use it is the perfect tool for student and experienced pilots. Canadian-made quality product.
P/N 13-09554.....**$7.45**

PS

ASA PILOT SUPPLIES

APPROACH PLATE BINDER

Made of durable black vinyl with a reinforced spine, it has easy-to-open, 1-1/2" steel rings that accommodate the drill pattern of the approach plates. ASA wings tastefully silver-foiled on the front cover. Choose from either 4-ring NACO or 7-Ring design.

NACO.....P/N 13-01066 .....**$11.75**
7-Ring.....P/N 13-02316 .....**$10.95**

FLIP BINDER

Perfect for Instrument Pilots who carry a smaller number of approach charts. One-inch rings are attached to a sturdy poly backing, with a loose poly cover. Scoring on front and back covers allows you to flip charts completely around the rings and display the one you want on top. Compact, convenient, and practical. P/N 13-02321 ..... **$11.85**

7 RING BINDER KIT

Contains 1 binder, 10 sheet protectors, 5 color side dividers and a sheet of area stickers.

7-Ring .....P/N 13-02322 ..... **$19.95**

ASA DELUXE RING BINDER

The Deluxe 2" 7-Ring Binder is is made of richly-grained simulated leather with edge stitching. It's bound for maximum durability and equipped with a ring system that will keep your approach plates securely organized and easily accessible. Convenient 8.5" x 9" size makes it easy to fit in almost any flight bag.

ASA Deluxe 1" 7-Ring Binder.....P/N 13-05759 ..... **$25.75**
ASA Deluxe 2" 7-Ring Binder.....P/N 13-05760 ..... **$29.95**

ASA 1 INCH 7 RING TRIP BINDER

The 7-Ring Trip Binder is made of durable poly. It's bound for maximum durability and equipped with a ring system that will keep your approach plates securely organized and easily accessible. The three rings are spaced to match the 7-hole approach plate drill pattern. Convenient 7" x 9" size makes it easy to fit in almost any flight bag. P/N 13-05825.....**$11.75**

SHEET PROTECTORS

Made of durable, translucent plastic to protect the most frequently used approach plates. Sold in packs of 10.

NACO Vinyl Pocket pk of 10 .....P/N 13-02317 .... **$5.95**
NACO Poly Folders pk of 10 .....P/N 13-05820 .... **$4.85**
7-Ring Vinyl Pocket pk of 10 .....P/N 13-02318 .... **$5.95**
7-Ring Poly Folders pk of 10.....P/N 13-05821 .... **$4.50**

5 COLOR DIVIDERS

For quick reference of various sections of both types of approach plate charts, these five distinctly-colored dividers extend out beyond the side of the charts. Set of 5.

7-Ring ..... P/N 13-02323..... **$4.85**
4-Ring ..... P/N 13-05826..... **$4.95**

ASA 4 RING NOTEPAD

Compact, convenient writing pad that fits in your approach plate binder. 100 sheets per pad. Weight .80lbs

7-Ring..... P/N 13-05823.....**$4.85**
4-Ring..... P/N 13-05822.....**$4.85**

US APPROACH PLATE PLASTIC RING BINDER

Nylon/plastic 4-ring binders designed for the FAA-AERO NAV SERVICES Approach Plate book. The seamless closure of the plastic rings (as opposed to metal rings) keeps the pages from tearing; also plastic rings won't get hot or affect magnetic compasses as will the metal rings.

Blue ..... P/N 17-00329.....**$1.60**
Green..... P/N 17-00330.....**$1.60**
Red..... P/N 17-00331.....**$1.60**
Yellow..... P/N 17-00332.....**$1.60**

CHART WALLETS

These chart wallets organize, hold, carry, and display standard FAA charts conveniently. All styles feature black covers, silver wings logo, and clear vinyl organizer pockets so you can easily find the correct chart in a busy or turbulent cockpit environment.

Book-style Chart Wallet - 6 double-sided pockets holds up to 12 maps between the covers. P/N 13-02325 ..... **$13.95**
Large Book-style Chart Wallet - Pockets hold up to 22 charts between the covers. Riveted spine. P/N 13-00412 ..... **$21.75**

HEADING REFERENCE 1 3/4''

Heading Reference/Indicator: Clear with lime green markings. Made from a soft clear plastic with mini suction cup attached. P/N 17-00223 ..... **$6.00**

FLIGHT PLANNER SHEETS

Cross-country planning sheets contain a flight plan section, weight & balance calculation chart, special equipment suffix chart, fuel management, space for radio frequencies, & more. Sold in pads of 48. P/N 13-02331 ..... **$3.75**

STUDENT FLIGHT RECORDS

ASA Flight Record Folders provide areas to record pertinent student information, stage checks passed, lesson content, lesson performance, flight hours, instructor notes & endorsements, solo endorsements or aircraft checkout records, and are current to both Part 61 & Part 141 program requirements. Sturdy & durable, these flight records are available separately, as part of ASA's pre-packaged training kits, or as part of an ASA PACK - Personalized Aviation Custom Kit.

SFR Private ..... P/N 13-01548..... **$2.35**
SFR Commercial ..... P/N 13-01549..... **$2.40**
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SFR Helicopter ..... P/N 13-01547..... **$2.35**

CERTIFICATES AVIATION ACHIEVEMENT AWARDS

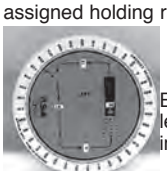
Authentic, full-color certificates are perfect for framing yet sturdy enough to slip into the student's flight record as a pleasant surprise to be discovered on their next visit to the airport. Mark progress with style, while further motivating students. 9"x12". Sold in packs of 10.

Solo Flight Certificate ..... P/N 13-02326.....**$13.50**
Private Ground School Certif. ..... P/N 13-02327.....**$10.75**
Aviation Achievement Certif. ..... P/N 13-02330.....**$18.25**
Helicopter Solo Flight Certif. ..... P/N 13-02329.....**$8.95**

HOLDING PATTERN VISUALIZER

This useful tool shows a pilot which entry is appropriate given the assigned holding radial, making it a superb learning tool.

P/N 13-06940 ..... **$13.50**



LANDING PATTERN COMPUTER

Easily helps determine appropriate headings for each leg when landing or departing the airport - great teaching aid! P/N 13-06935 ..... **$13.95**

FLIGHT PLAN AND CLEARANCE NOTEPAD

Posting pad for obtaining IFR Clearances by pilots. Provides in-flight writing for Aircraft ID, Departure Point, Route Of Flight, Destination, and more. 6" H x 4" W.

P/N 17-00328 ..... **$2.69**

YOKE CLIP

ASA's new yoke clip holds all the necessary flight paperwork right where pilots need it, leaving their hands free to fly. Simple to install, the black plastic, I-Beam construction is strong enough to serve as a pilot's third hand. The clip is higher than other yoke clips, holding sectionals, approach plates, flight logs, checklists, flight computers, and pens in easy view. The unique, over-centering cam easily adjusts to fit all general aviation aircraft yokes without modification. P/N 13-01043 ..... **$14.50**

ASA PILOT CAP

Pilot cap featuring comfort headband and classic wings logo. Stylish baseball cap. Black with classic grey trim neatly embroidered with white ASA wings. Adjustable headband for maximum comfort. No button to interfere with headset band. Long bill for sun protection. Perfect for cross-country flying, lounging with friends or on the tarmac hangar flying. Wear it proudly! P/N 13-05841.....**$11.75**

PS

FLIGHT COMPUTERS - LOG SHEETS - PLACARDS

AERO PRODUCTS RESEARCH CR COMPUTERS

CR computers are very popular with pleasure and professional pilots. They solve T/8/D and wind triangle problems for light aircraft as well as those which approach Mach 2 speeds. Corrections for errors of compressibility and temperature rise are computed with ease. The wind solution is displayed graphically using the small back-side discs. Each computer comes with fully illustrated manual.

CR-3 - 3-3/4" dia. shirt-pocket size (same as Jepp CR-5); vinyl
P/N 13-03499 .....**$22.75**

CR-4 - 4-1/4" dia. (same as Jepp CR-2); vinyl. Standard model used by the military. P/N 13-03501 .....**$23.75**

CR-6 - 6" dia. Used by navigators for maximum readability (Same as Jepp CR-3); vinyl. P/N 13-03502 .....**$24.75**

AERO PRODUCTS RESEARCH FLIGHT DESK

Folded size 8" x 9" Extends to 16" x 9" Anodized aluminum. Versatile space-saver lap desk locks in open position; folds in half for drop-in storage in your flight case. Heavy-duty clips hold charts and flight plans. Important VFR and IFR information always visible when open. Foam strips on back keep lap desk from slipping..... P/N13-03517..... **$23.95**

AERO PRODUCTS RESEARCH TIME/ SPEED/ DISTANCE COMPUTER

Time/Speed/Distance computers. "How-to-use" instructions printed right on the unit. Text printed in straight, easy-to-read lines; desired scales and windows located at a glance. Perfectly calibrated 2-color dials eliminate parallax errors. Fully illustrated instruction manual with each model. APR-303 3-3/4" dia. T/S/D computer with traffic pattern orientator; anodized alum. P/N 13-01133..... **$14.85**

THE ATIS WHEEL

Atis Wheel - Pilots and air crew now have the ability to reduce their pre-landing and pre-takeoff workload through the use of the amazing new Atis Wheel™.

The Atis Wheel™ is a mechanical device designed to help the airplane pilot in recording all ATIS information while presenting the data as a graphic depiction. The Atis Wheel™ is presented on a 5.5 "x 8.5" rectangular durable format with seven individual 1.5" wheels positioned about the perimeter of the device along with two, 3" concentric wheels positioned in the center. Each wheel's topic coincides with the sequential information reported in the airport terminal broadcast. Once the information is entered onto the Atis Wheel™, this displayed information is now available to the pilot for continued reference without the possibility of transcription error or forgetting the pertinent ATIS data. (It is recommended that the pilot listen to the pre-recorded ATIS information twice to verify that the correct information has been entered on the Atis Wheel™.) The Atis Wheel™ information coincides with the sequential layout of the Atis Wheel™, providing the pilot with all of the broadcast Atis information data. Additionally offered on the Atis Wheel™ (though not offered in the ATIS broadcast) is an input on a wheel to display the airport Field Elevation, critical for instrument approaches. The Atis Wheel™ also displays clearly the visual relationship between the wind direction and the active runway, informing the pilot as to the pending cross wind takeoff and landing situation.The ATIS Wheel is 5-1/2" x 8-1/2" and fits nicely into a Jeppesen binder. This is a large format preferred by flight instructors and students. ***Atis Wheel Pro*** - Like the ATIS Wheel, but smaller (approximately 3.5" x 5.5") for the professional pilot to conveniently fit in a shirt pocket for quick and easy reference. Note, the ATIS Wheel Pro does not contain the "Wind Velocity", Visibilty" or RWY/ Approach" wheels like its big brother

ATIS Wheel Pro - Like the ATIS Wheel, but smaller (approximately 3.5" x 5.5") for the professional pilot to conveniently fit in a shirt pocket for quick and easy reference. Note, the ATIS Wheel Pro does not contain the "Wind Velocity", Visibilty" or RWY/Approach" wheels like its big brother

ATIS wheel ..... P/N 13-06643 ..... **$26.85**
ATIS wheel Pro ..... P/N 13-05003 ..... **$19.95**

EZ ATIS REMINDER PILOT TOOL

The EZ ATIS Reminder makes it easy to communicate the ATIS identifier. No more fumbling through papers for the ATIS identifier - or worse yet, having to recall the prefix from memory! The 1-5/8" diameter knob with 1/2" pointer has a peel and stick adhesive tape on the back that can be easily mounted on your instrument panel, knee board, or anywhere you need a quick ATIS recall. P/N 13-04920 .....**$12.95**

AERO PRODUCTS RESEARCH T/S/D COMPUTER KEYCHAIN

1-1/2" diameter. Identical to the real thing, this traditional usable Time/Speed/Distance keychain has a beautiful compass star with flight plan on the back side.

The computer keychain is calibrated meaning the ability to relate the key chain to the functions of the E6-B type Time/ Speed/Distance computers. P/N 13-03505 .....**$7.95**

AERO PRODUCTS RESEARCH CR COMPUTERS

Simplify VFR or IFR navigation with these handy logs which provide for listing of intersections, radials, frequencies, clearances and complete flight plan.

EFL-100 Pad of 5-1/2" x 8-1/2" sheets; VFR Flight Logs
P/N 13-03526 .....**$3.95**

EFL-200 Pad of 5-1/2" x 8-1/2" sheets;IFR Flight Logs
P/N 13-03527 .....**$3.95**

EFL-100 Pad of 11 " x 8-1/2" sheets; organized detailed pre-planning and navigation on cross-country flights. Includes pre-flight checklists and sample instruction sheet. P/N 13-03528 .....**$5.95**

ZULUCARDS IFR SET

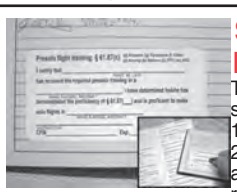
Single pilot IFR is probably the most difficult flying you can do. Every little thing you can do to double check yourself and keep your workload as low as possible is not just a good idea, it's vital. These five (5) Zulucards are designed to be a backup for what you know you know but want to make sure you remember. IFR Required Equipment - GRAB CARD, plus a bonus CRAFTV (clearance format). Card Dimensions: 5" x 8.5"
P/N 13-11673.....**$5.95**

AERO PRODUCTS RESEARCH PLACARDS

Now you can customize your cockpit with APR's easy-to-apply placards. Just cut out and press these stick-ons into place for that "factory-fresh" cockpit look. For all single and multi-engine aircraft systems, seaplanes, and gliders. Includes most-used legends (on, off, open, close, etc.), common amperage, voltage values, arrows, numbers and blanks. 8-1/2" x 10-1/2"; aircraft panel placard set; over 250 aluminum placards.
APR Instrument Panel Placard Set..... P/N 13-03522.....**$11.95**

EXPERIMENTAL AIRCRAFT CERTIFICATION KIT

A new amateur-built aircraft certification kit created by the Experimental Aircraft Association (EAA) gives builders a simplified way to complete the required FAA paperwork for their new projects. The Amateur-Built Aircraft Certification Kit includes everything you need to register and certify a new experimental amateur-built aircraft in the United States. The 15-page, step-by-step guide walks you through the entire process from getting an N-number to the aircraft inspection, and provides samples to help complete each required form. The kit includes all FAA forms, Experimental sticker (in black), data plate, and a convenient placard decal sheet. P/N 13-04244 .....**$18.95**



SPORT PILOT PRE-PRINTED LOGBOOK ENDORSEMENTS

The Instructors Endorsement Pack contains 14 sheets of labels. Each sheet of labels contains 10 copies of a specific endorsement. Each 2" x 4" endorsement label is identified by title and FAR number, has the exact wording as required by the regulations, and has data-prompted blanks for the students' name, your name, CFI cert.#, Biennial Flight Reivew Certification 61.56(a).

Description	Part No.	Price
INSTRUCTOR ENDORSMENT PK ENPAK	09-01310	$19.95
PRE-SOLO AERONATICAL KNL 6187B	09-01311	$1.95
PRE-SOLO FLIGHT TRAINING 6187C	09-01312	$1.95
PRE-SOLO TRNG & 90 DAY RENL	09-01313	$1.95
SOLO AT ANOTHER AIRPORT 6193B	09-01314	$1.95
1ST SOLO X-C 61.93(C)(1) 6193C	09-01315	$1.95
SOLO X-C 61.93 (C)(2) 6193C2	09-01316	$1.95
REPEATED SOLO X-C <=50NM6193B2	09-01317	$1.95
SOLO IN CLASS B,C &D 6194A	09-01318	$1.95
SOLO TO/FROM CLASS B,C OR D	09-01319	$1.95
TAKING KNOWLEDGE TEST 6135A	09-01320	$1.95
PROFICIENCY CHECK 61321	09-01321	$1.95
PASSING FLIGHT TEST 61309	09-01322	$1.95
TAKING SPORT PILOT PRACT 61313	09-01323	$1.95

PS

FLIGHT COMPUTERS – PLOTTERS

CX-2 PATHFINDER ELECTRONIC FLIGHT COMPUTER

ASA's new electronic flight computer is a price/performance breakthrough, resulting from advances in display and microcomputer technologies. Aviators can calculate true airspeed, ground speed, mach number, altitudes, fuel headings and courses, time/speed/distance, winds, headwind/crosswind components, gliding info and weight & balance.

P/N 13-01040.....**$72.95**

JEPPESEN CIRCULAR COMPUTERS

Dial up the answers to your navigation problems, including polar grid navigation, pressure pattern flying, crosswind components, and wind solutions. These computers automatically compensate for the temperature and compressibility factors found at high speeds. Tough laminated plastic, with carrying case.

CR-3 (6" diam.)..... P/N 8434..... **$27.95**

PN-1 NAVIGATION PLOTTER

Allows easy identification of WAC and Sectional chart scales. Calibrated in statute & nautical miles.(Size: 12.25" x 4")

P/N 13-21724.....**$11.49**

PJ-1 ROTATING AZIMUTH

Measure the true course or to determine the magnetic course. Includes scales for sectional terminal area & WAC charts in statute & nautical miles. Size: 3.25 x 13"; 3-3/8 " Dia.

P/N 13-21726 .....**$13.49**

BLIND SPOT'S ORIGINAL PILOT'S RULER

The Blind Spot's Original Pilot's Ruler has been designed to offer pilots maximum support, in the simplest way. The concept enables the pilot to solve VFR navigation problems and provide useful information, both at a glance, in only a few seconds and with only one instrument! The use of the ruler is extremely simple & fast. The pilot can concentrate more on flying, less on calculating, thus fly more relaxed and safer. Blind Spot's Original Pilot's Ruler (for USA airspace) is a two-sided pilot's ruler designed for flight preparation and use in flight. Size: 1.8" x 12". P/N 13-11733 .....**$19.95**

AERO PRODUCTS RESEARCH E6-B UNIVERSAL FLIGHT COMPUTERS

The very latest in air navigation computers include not only T/S/D and Dead Reckoning calculations, they now incorporate "Universal" features for world-wide use. Most E6-B computers include the following:

• ***Improved Instructions*** **-** The back side of the wind slide features scales for Sectional and WAC charts and new graphic instructions on how to work the computer.

• ***Formula Boxes*** **-** Designed to assist in solving problems. Enter the indicated details using a pen or pencil - then erase

• ***Fully Graduated Scales***

Wind Slides with speed ring lines representing values of one. This eliminates the need for interpolating between "every other" speed ring and reduces possibility of error.

E6-B2U **-** Deluxe, top-of-the-line quality, 5" x 9-5/8", all aluminum construction. Includes: • "Universal conversions: feet to meters, pounds to kilograms, liters to US gallons, US gallons to IMP. gallons or fuel weight or oil weight. • Patented micro-set (aligns scales to perfect accuracy).• Flush dials to eliminate parallax; answers are read with absolute accuracy. • Scales with contrasting colors for easy computation. • "Universal" conversions color-coded for quick and easy use. • Heavy gage anodized aluminum for added rigidity and non-glare surface. • 2-color fully illustrated instruction manual plus supplement on Dead Reckoning, Wind Effect Theory and Calculations ..... P/N 13-03492.....**$27.85**

E6-B4 **-** Pocket-size deluxe, all anodized aluminum; high/low wind slide. P/N 13-03960.....**$27.95**

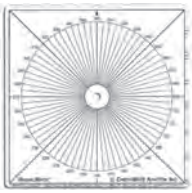
E6-B8 **-** Budget student computer, plastic body, plasticized wind slide..... P/N 13-03495.....**$14.50**

E6-B8P **-** Budget student computer, plastic body, plasticized wind slide; includes an 8"Navigation Plotter. ..... P/N 13-03496.....**$16.50**

PILOT'S WIND VISUALIZER

The Wind Visualizer takes the guesswork out of crosswind takeoffs and landings. Simply put the Wind pointer on the wind direction, the Landing Pointer on the Runway heading, and "see" the wind in relation to your direction of flight. Then read your crosswind component from the table on the back. Simple, and fast to use. Durable non-warping 3.75" diameter plastic. Includes full instructions.

P/N 13-19520 ..... **$13.95**



RADIALMATE COMPASS ROSE

RadialMate™, a 3.5" clear 20 mil plastic compass rose allows you to instantly read a desired course by placing the product over any sectional, chart, or graphic. There are no reciprocals to calculate. RadialMate™ comes with a hole in the middle, allowing additional use as a string compass. It is conveniently sized to fit in your pocket. RadialMate™ also contains Safe Flight's vertical scale which measures mileage for WAC, SEC, TAC, NOS, JEPP and ELA charts eliminating the need for that ruler you can never find.

P/N 13-08799 ..... **$4.50**

JEPPESEN STUDENT CSG COMPUTERS

This computer made of composite materials works just like an aluminum computer with all the same functions and features, but at a lower cost. Ideal for new students or as an extra to keep in your desk at home. Printed numbers are sharp, clear, and easy to read. Like all Jeppesen products, the quality is superior.

Plastic.....P/N 3866 ..... **$12.82**
Metal.....P/N 3867 ..... **$28.45**

ASA E6B METAL FLIGHT COMPUTER

The best slide-rule-style flight computer on the market, with solid aluminum construction and easy-to-read lettering. ASA's E6-B features a wind component grid and comprehensive crosswind correction chart, and on the other side the slide computes time, speed, distance, altitude, true airspeed, and density altitude problems as well as conversions. Nautical and statute scales are included.

Standard..... P/N 13-00813.....**$25.85**
Mini..... P/N 13-02299.....**$27.00**

ASA COLOR E6-B COMPUTER

ASA's color E6-B is enhanced with color for quick identification of key elements and easier readability. The new color E6-B is based on ASA's most popular model: slide-rule-style flight computer, the ASA-E6B. It's identical in size to the venerable favorite, made with the same solid aluminum construction and featuring all the functionality pilots have relied on for decades. On the circular side, black is used for the rate arrow and units to be calculated, red is used for weight and volume and blue is used for distance, time and temperature scales. On the wind side, colors are used to identify wind variation: blue identifies west (or right wind correction angle) and red identifies east (or left wind correction angle). Measures 9-3/4" x 5". In The Box: Vinyl case, and Instruction booklet. ..... P/N 13-10288.....**$32.50**

VOR FLASH CARDS

Designed to show any pilot how to look at a VOR receiver and read it at a glance. There's no time in the cockpit to spend slowly analyzing the CDI needle and To/From indicator! VOR-At-A-Glance flash cards will teach you: • The difference between VOR courses and VOR radials • What the VOR does not show you • The best way to think about the course deviation indicator • Inbound vs. outbound course indications • How to instantly know your position relative to the VOR • Tricks for reading interception courses right off the VOR • Pilots need to be able to look at a VOR and read the information off immediately. It's just like when you first learned how to read. There is a big difference between the ability to sound the words out and the ability to look at a work and just read it. Pilots need to be able to "read" the VOR!

P/N 13-05773 .....**$36.75**

PS

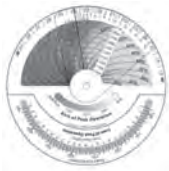
PLOTTERS - COMPUTERS

PLOT-RITE ALL METAL NAVIGATION PLOTTER

The new Plot-Rite is an all metal navigational plotter for use with VFR sectional, terminal and WAC charts. The front has both sectional and terminal area scales and the rear has WAC and sectional scales. The top edge has the familiar 180° compass rose and the open center enables you to find longitude lines easily. Outside edges have full east and west routes, inside edges have north and south. Plot-Rite is all metal and will never break, warp, crack, shrink or distort in any way if left in the sun. Measures 2.5" x 12". Plot-Rite (Nautical Scale)

P/N 13-30300 .....**$19.95**

APS POWER WHEEL HORSEPOWER COMPUTER



Only device that we know of which can calculate your aircraft engine's power based on so many important factors. Using the RPM, manifold pressure, altitude and outside air temp, the pilot can use the Power wheel to calculate horsepower (as a % of max rated hp) very quickly and easily. Its calculations are based on years of work done by the engine experts at Advanced Pilot Seminars and GAMI. Their calculations have proven their accuracy and worth to the pilot over years of use. Beyond the immediate answer to the question "How much power is my engine producing?" the information is useful in another way. Knowing how much power is being produced allows the pilot to operate the engine in a way that will reduce the stresses it sees, offering longer life and reduced operating expenses. Once the pilot uses the Power Wheel to find their % hp, they can take the next step to find the mixture setting that will be best for their engine. Built on the Red Box concept (and as seen in AOPA Pilot, Feb 2004, p 120) the mixture settings suggested by the computer will keep the engine's internal combustion pressures low, out of the Red Box region of operation.

PMC-NA-2625.....P/N 13-03131 ..... **$34.95**
PMC-NA-2700.....P/N 13-03132 ..... **$34.95**
PMC-NA-2600.....P/N 13-04213 ..... **$34.95**
PMC-NA-2600c.....P/N 13-04214 ..... **$34.95**
PMC-NA-2600.....P/N 13-04215 ..... **$34.95**

Visit www. aircraftspruce.com to specify aircraft and engine make & model and we will provide correct APS Computer.

APR PLOTTERS

Scales on white background for easy readability set on see-through "clear vision" vinyl. Statute and nautical scales are parallel, making conversion easy. One side scaled for WAC charts, one for Sectional charts. "How-to-Use" instructions printed on plotter. Includes illustrated practice problems.

Description	Part No.	Price
8" Plotter NP-7 Standard for WAC and Sectional Charts	13-19908	**$7.75**
13" Plotter NP-13 S tandard for WAC and Sectional Charts	13-19913	**$8.50**
13" Plotter WSNP-13 WAC and Sectional Charts (Lexan) Lifetime Guarantee	13-03509	**$12.50**
13" Plotter NPR-13 Rotatable Azimuth WAC and Sectional Charts	13-03511	**$10.90**
13" Plotter WSNPR-13 Lifetime Guarantee Rotatable AzimuthWAC and Sectional Charts (Lexan)	13-03512	**$14.50**
Universal IFR Plotter UIP-V (Same as Jeppesen PV-5) Jepp/NOS Charts Holding Pattern Entry (Vinyl)	13-03514	**$8.50**
Description	**Part No.**	**Price**
Universal IFR Plotter RFC-1 Jepp/NOS Holding Pattern 3-1/2" x 8"	13-03513	**$9.00**
13" Plotter FAA-170 Military WAC and Sectional Charts	13-03516	**$9.95**
INTERNATIONAL NAVIGATION PLOTTERS		
Description	**Part No.**	**Price**
Plotter/Protractor CPP-5 Douglas International Combination Plotter/Protractor	13-03506	**$5.95**
13" ICAO Plotter IP-13 Fixed Azimuth, Nautical/Kilometer Scales	13-03507	**$12.25**

PLOTTERS AND SLIDE COMPUTERS

These are specially-designed for easy use. The APR plotter has parallel statute and nautical scales, with one side scales for WAC charts and the other for sectional. Made of clean white heat-resistant hi-flex vinyl. Operating instructions are included. The slide computer is printed with speed ring lines representing values of one speed unit. Includes formula boxes added to the plate below the azimuth ring.

8" APR Plotter .....P/N 13-19908 .....**$7.75**
E6-B4 Aluminum.....P/N 13-03960 .....**$27.95**

E6-B HIGH SPEED SLIDE

Picks up where the ASA-E6B metal flight computer leaves off, providing calculations for the high-speed realm of flight (in the range of 220-700 knots or mph). Pilots simply replace their current slide with this one, which then continues to use the circular computer from traditional E6-Bs. The slide also includes a compressibility correction chart, ICAO Standard Atmosphere reference table, a worldwide time conversion table, speed limits for the U.S., and the most frequently used weight and balance formulas; all of the pertinent formulas and information required for high-altitude, high-speed operations. Comes with easy-to-follow instructions.

E6-B High Speed Slide.....P/N 13-02301 .....**$11.75**

WHIZ WHEEL HOLDING PATTERN COMPUTER

For instrument pilots, entering a holding pattern can sometimes be a challenge. The Instrument Pilots Whiz Wheel can alleviate this challenge by presenting pilots with pictorial views of both right- and left-hand holding patterns, and entry arcs for direct, parallel, and teardrop holding pattern entries. Made of sturdy plastic, the Whiz Wheel works for VOR, NDB (non-directional beacon), and localized facilities. Intercept angles are at the pilot's fingertips, and procedure turn information can readily be obtained by following the "prompts" on the device and aligning these prompts with the Whiz Wheel's compass marking. Intersection holding patterns can be pictured and coordinated using both VOR radials and cardinal headings. P/N 13-30210.....**$18.95**

DIRECTIONAL GYRO HOLDING PATTERN PROMPTER DECAL

Install this decal upon the face of your directional gyro and instantly determine entry procedures for both left-hand and right-hand holding patterns. Also includes prompts for headings used in teardrop procedures and procedure turns. Totally transparent. Includes instructional text. P/N 13-30215..... **$2.95**

PILOT'S "TIME MACHINE"

Convert the 12 hour clock to the twenty-four hour clock and to Universal Coordinated Time (UTC). Time zone chart is included. Fuel duration calculation can be determined with this new instrument. Use it to file accurate flight plans and to give position reports.

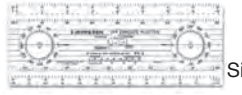
P/N 13-30225.....**$12.85**

TRAFFIC PATTERN ORIENTER & SPEED COMPUTER

Graphically displays the headings required for standard or non-standard traffic patterns. Time, speed , distance computations, fuel consumption, true airspeed, mach and true altitude conversions.

P/N 13-01133.....**$14.85**

JEPPESEN PV-5 IFR ENROUTE PLOTTER



Size 3-3/16" x 8-1/2"

P/N 13-21718.....**$9.50**

APR FCL-12 & 24 FLIGHT CHECKLIST HOLDER

Used by private, corporate, and military pilots. Adjustable lighting and viewing angle, color band isolates each item being checked. Mounts for right or left hand use. 84" pachment scroll lets you customize your specific checklists for review in flight. Designed to U.S. Military Pilots specification. 5" x 4" x 1-1/2" NSN 1680-00-489-1313

APR FCL-12 Flight Checklist Holder.....P/N 13-06714 .....**$76.85**
APR FCL-24 Flight Checklist Holder.....P/N 13-06715 .....**$79.95**

PS

AERO PRODUCTS RESEARCH PLOTTERS

APR PLOTTERS

PROTRACTOR PLOTTER PCP-202 T/S/D - APR has designed the first combination T/S/D pocket computer combined with rotatable plotter cursors. Align the airplane cursor along any appropriate meridian. PVC plastic discs, 3-3/4" dia. Plastic cursor 4-3/4"
P/N 13-06681.....**$13.75**

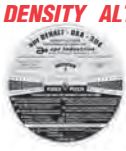
TRAFFIC PATTERN ORIENTATOR TPP-203 - The TTP-203 Traffic Pattern Orientator graphically displays all headings for left (standard) and right (non-standard) traffic patterns when the runway heading is aligned with the compass rose. Light signal "acknowledging" instructions are also shown. PVC Plastic discs, 3-3/4" dia. Cursor 4-1/4 P/N 13-06682.....**$14.50**

DENSITY ALTITUDE PERFORMANCE COMPUTER DAP-204 - Shows the aircraft's rate of climb and minimum - required takeoff distance. PVC plastic discs. 3-3/4" dia. Important: Always consult your pilot's operating handbook as their computer does not supplement or replace the manufacturer's performance data. Not applicable to turbocharged aircraft.P/N 13-06683.....**$13.75**

T/S/D PROTRACTOR PLOTTER PCA-302 - APR has designed the first combination T/S/D pocket computer combined with rotatable plotter cursor. Align the airplane cursor with the true or magnetic course. Align the arrow cursor along any appropriate meridian. Anodized aluminum discs, 3-3/4" dia. Plastic cursor 4-3/4"
P/N 13-06684.....**$15.95**

TRAFFIC PATTERN ORIENTATOR TPA-303 - The TPA-303 Traffic Pattern Orientator graphically displays all headings for left (standard) and right (non-standard) traffic patterns when the runway heading is aligned with the compass rose. Light signals and "acknowledging" instructions are also shown. Anodized aluminum discs, 3-3/4" dia. Cursor 4-1/4" P/N 13-06687.....**$16.75**

DENSITY ALTITUDE PERFORMANCE COMPUTER DAA-304 - The Density Altitude Performance computer shows the aircraft's rate of climb and minimum-required takeoff distance. Anodized aluminum discs. 3-3/4" dia. Important: Always consult your pilot's operating handbook as their computer does not supplement or replace the manufacturer's performance data. Not applicable to turbocharged aircraft. P/N 13-06688.....**$15.95**



DNP-13 - 13" Deluxe Navigation Plotter with nautical and statute scales, sawtooth graduated color-coded scales for Sectional, WAC, and Terminal Charts. PVC plastic 13-5/16" x 4"
P/N 13-06696.....**$10.75**

DNP-8 - 8 " Deluxe Pocket Navigation Plotter with sawtooth graduated color-coded, nautical, statute, and terminal area scales for Sectional, WAC, and Terminal Charts. PVC plastic 8-1/8" x 2-7/8"
P/N 11-07723.....**$8.95**

DNPR-13 - 13 " Deluxe Plotter with Rotatable Azimuth Compass Rose, nautical & statute sawtooth graduated color-coded scales for Sectional, WAC, and Terminal Charts. PVC plastic 12-5/16" x 4-1/2"
P/N 11-07724.....**$12.95**

NP-13 13 INCH NAVIGATION PLOTTER - Four precision protractor scales and fourteen nautical and statute scales for Sectional, WAC, and Terminal Charts. Plotting is easy and accurate when done with an APR plotter. Instructions are printed on the plotter. Constructed with durable plastic. Dimension: 13 5/6" x 4"
P/N 13-19913.....**$8.50**

NPR-13 13 INCH AZIMOUTH COMPASS ROSE NAVIGATION PLOTTER

Four protractor scales and fourteen nautical and statute scales for Sectional, WAC, and Terminal Charts. Instructions are printed on the plotter. Durable plastic. Dimension: 13 5/16"x 4 ½"
P/N 13-03511.....**$10.90**

HPC-206 - Holding Pattern Computer. Pocket size. Visually displays entry headings from all directions for both standard and non-standard holding patterns. Shows holding speeds and inbound time to fix. Colorful segments for easy learning and use. 4" x 5" HOLDING PATTERN COMPUTER displays entry to standard and non-standard holding patterns, maximum indicated holding speeds, and time of inbound leg to fix. Complete instructions. "Best on the market" designed by Capt. Barry Schiff P/N 11-07722.....**$12.50**

E6-B2- H/S - E6-B2 D with High Speed Wind Slide of 100 to 800 ks or miles. Compressibility "F" factor scale shows the "F" correction factors for TAS. Gives calibrated airspeed from 200 to 550 knots at pressure altitudes of 10,000 to 50,000 feet. Crosswind grid shows method to calculate crosswind and headwind components. Anodized aluminum computer, 4-7/8" x 11-1/8" P/N 13-06673.....**$39.95**

E6-B4- H/S - Pocket size wind triangle & T/S/D deluxe anodized aluminum computer with low speed slide (10 to 270 kts or miles) and high speed slide (100 to 700 kts or miles) with compressibility "F" factors scale. Calculates all necessary flight planning and enroute navigation requirements. 3-1/4" x 6-3/8" P/N 13-06674.....**$29.95**

E6-B8D - Deluxe all plastic student Pilot Wind Triangle & T/S/D navigation computer. Features the new exclusive windspeed cursor which shows the speed and drift without pencil marks. Color-Coded sawtooth scales. Calculates all necessary flight planning & enroute navigation requirements. Easy to learn and use with the instructions printed on the computer. 4-1/2" x 8-3/4" P/N 13-06675.....**$17.75**

E6-B9 - Universal Standard Wind Triangle & T/S/D Large anodized aluminum computer. calculates all necessary flight planning & enroute navigation requirements. 4-7/8" x 9-5/8"
P/N 13-03497.....**$24.75**

LOW & HIGH SPEED SLIDES - Low & High Speed Slide for E6-B9 or E6-B2 models. Low wind speeds 10 to 270, high wind speeds 100 to 800 kts or miles, compressibility "F" factors scale shows the "F" correction factors for TAS. Gives calibrated airspeed from 200 to 550 knots at pressure altitudes of 10,000 to 50,000 feet. Crosswind grid shows method to calculate crosswind and headwind components. 3-7/8" x 11-1/8"
P/N 13-06680.....**$12.50**

JNP - Enroute IFR Radio Facility Chart Plotter for NACO and Jeppesen Radio Facility Charts, 12 high visibility scales, displays entry diagrams of standard and non-standard holding pattern, compass rose plotter, km to nm and nm to km conversion scales. 8-3/4" x 3-1/4" P/N 13-06704 .....**$11.75**

DJNP - Deluxe Enroute IFR Radio Facility Chart Plotter for NACO and Jeppesen Radio Facility Charts, 12 high visibility scales, displays entry diagrams of standard and non-standard holding pattern, compass rose plotter, km to nm and nm to km conversion scales. Lifetime guarantee, LEXAN® 8-3/4" x 3-/1/4" P/N 13-06706.....**$12.95**

APR DRFC-1 POCKET IFR & RNAV FOR JEPPESEN & NACO CHARTS - Has 13 scales for Jeppesen Radio Facility and NACO Charts. Shows a compass rose and a color-coded illustration for parallel, teardrop, and direct entries to standard and non-standard holding patterns. 6" x 3 ½". Lifetime Guaranteed. P/N 13-06701.....**$10.95**

DELUXE INTERNATIONAL PROTRACTOR & PARALLEL RULE PLOTTER - Designed with high visibility color graphics, a tinted grid, and larger numbers and lines for easier positioning and reading. This plotter eliminates the need to use dividers and parallel rulers. A hole in the center of the instrument is used to conveniently mark and rotate the plotter. WAC/ONC 1:1,000,000 VIS/TERM 1:250,000 Scales, PVC plastic Dimension: 5" x 5" P/N 13-06707.....**$6.50**

E6-B8DP DELUXE STUDENT PILOT FLIGHT COMPUTER WITH NP-8 PLOTTER - Features the patent pending exclusive Wind Speed Cusor Arm that quickly tells you groundspeed, wind correction angle, and magnetic heading. Eliminates two set-ups and the need to mark dots on the plastic disc. The E6-B8DP calculates all necessary flight planning and en route navigation requirements. Color-coded sawtooth scales are user-friendly and allow for quick, accurate reading. P/N 13-06676.....**$19.75**

PS

FLIGHT ACCESSORIES - PLOTTERS

ON COURSE AVIATION PRODUCTS CHART MARKS

Customize your charts with these highly visible, self sticking, removable accents, outlines, & notes. Add a compass rose to any airport or airway intersection, outline VOR information, accent airport or communication information. 20x20nm see through notes accept pencil or pen for your special information. All are easily removable after your flight.

Note (11/package).....P/N 13-30110 .....**$3.50/ea.**
Compass Rose (11/package).....P/N 13-30111 .....**$3.50/ea.**
Outlines (17/package) .....P/N 13-30112 .....**$3.50/ea.**
Accents (16/package).....P/N 13-30113 .....**$3.50/ea.**

PILOT MARKING PENS

Perfect for marking on aluminum and steel for drilling and cutting. Permanent ink will not wipe or rub off easily after drying. Extra fine point. Packaged 3 pens per pack - (1) Red and (2) Blue.

P/N 12-00874 .....**$9.85**

MAGNIFYING SCALE

At last, an accurate nautical mile scale with a built in magnifying lens to clearly enlarge the fine print on sectional charts. Made of heavy duty, extra strong, cast acrylic, printed in two colors with easy to read sectional scale graduations (1:500,000). Available in 2 sizes, 100 NM (16") for flight planning, 60 NM (10") for cockpit use.Order both.

60 NM.....P/N 13-30120 .....**$14.95**
100 NM.....P/N 13-30121 .....**$14.95**

5-1/2 INCH ACADEMIC DIVIDER

5½" divider with selfcentering gearhead design. Replaceable and adjustable needle points. Matte nickel finish resists stains and tarnishing. P/N 13-08057..... **$9.50**

UNBREAKABLE SUPER PLOTTER

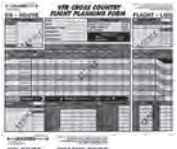
Here's a special flight planning tool we really like. A colorful little plotter with a rotating azimuth that makes it much easier to plot a courseline. Place the compass rose over your departure point and rotate the straight edge towards destination. Presto.. an instant readout of your course! Reads distance in statute miles or nautical miles for both sectional and WAC charts. Made of bullet proof Lexan. Won't crack, break, or warp in extreme heat or cold.

P/N 13-03473 ..... **$18.95**

PILOTS FREQUENCY REMINDERS

This little prompter is designed to allow the pilot (especially students) to pre-plan which frequencies will be used during a flight and hang this handy item close at hand in the cockpit. this is ideal when operating in a high density airport area. Helps eliminate cockpit clutter and searching for often used frequencies. P/N 13-04391..... **$5.50**

FLIGHT FORMS



Pilot designed for pilot use – convenient kneeboard size (5.5"x8.5"). Color coded for instant recognition. Easy to read! Easy to use! Every flight-form comes with an FAA Flight Plan form. Each COMM-AID form also includes a three leg En-Route NAV-Log.

EN-ROUTE NAV-LOG – For the more advanced VFR pilot, a nine leg En-Route NAV-log provides ample space for navigation data, time (estimated & actual) plus communication and destination sections. (25/pad). P/N 13-30119 .....**$3.85**

WX-BRIEF FORMS –WX-BRIEF - forms take the mystery out of talking to briefers or controllers. Logical arrangement in correct briefer and controller sequence eliminates confusion. The WX-Brief form is arranged in briefing format to simplify note taking and increase understanding. Simply fill in the blanks as the FSS specialist gives a standard briefing. (25/pad) ..... P/N 13-30116 .....**$3.85**

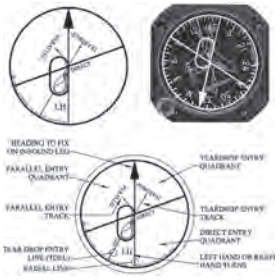
IN-BOUND OR OUT-BOUND COMM-AIDS – Inbound or outbound Comm-Aids organize your communications before takeoff. Know what to say and when to say it sections for ATIS, Clearance, Ground, Tower, Departure, & Approach. For use in class B, C, & D airspace.(25/pad)

In-Bound..... P/N 13-30117 .....**$3.85**
Out-Bound..... P/N 13-30118 .....**$3.85**

HOLDUP HOLDING SITUATION INDICATOR

The Holdup is so easy to use that directions are provided on the device only because rust can develop on a pilot's holding techniques, especially for issued, nonpublished holds. They remind you how to set up intersection holds and station holds, If you forget. (There's also a built-in way to set up station holds in a single step.) Then, in both cases, you just find your heading to the fix on the compass dial, and read the entry in the zone next to it. At a typical intersection, there are 8 (eight) possible holds that can be assigned. "Hold south of ORVIL intersection on the 340° radial, left turns?" You won't believe how easy this is with The Holdup until you try it. P/N 13-03365 .....**$15.95**

HOLDING PATTERN AID



Help yourself pass your test with this simple to use static clink overlay. Simply place the arrow on the radial that you are instructed to hold on and the holding pattern is overlaid on top of your heading indicator. The HPA helps you visualize the pattern quickly and easily while increasing necessary situational awareness. No need to shuffle in your bag for a piece of cardboard or draw a picture on your knee board, the HPA will stick to your aircraft window and easily peels off when you need it. One package includes four HPA's, two left hand holding patterns and two right hand holding patterns. Developed by a Certified Insturment Flight Instructor with the intent to decrease the failure rate of instrument students and increase the level of safety that pilots are entrusted with. Get some First Aid for your holding patterns, get the Holding Pattern Aid. Measures 3" in diameter. White lines and text on a clear background. P/N 13-04166.....**$8.95**

FLITE-TAPE

NAVPRO specifically designed the Flite-Tape for aeronautical use. Available for WAC (1:1,000,000) charts and is graduated in nautical miles. Measures up to 1,000 n.m. This practical product offers you many advantages, for instance: • Measure the distance between any two points on a typical chart with out "stepping off". • Establishes an accurate straight line course between distance points in an instant. • Flexible tape is ideal for cockpit use and on pilots lap. The Flite-Tape is pocket size (2" x 1-3/4" x 1/2"). Steel tape is housed in a high impact plastic case. The locking mechanism means you extend only as much of the Flite-Tape you need. The Flite-Tape's unique end-piece is easy to position over a check point. Flite-Tape is a quality product and comes in a vinyl storage pouch.

Flite-Tape WAC Charts .....P/N 13-06001 .....**$7.95**

ALTIMETER OR AIRSPEED POINTER

Make your flying safer and train better with this cockpit aids.

P/N 17-00221 .....**$6.75**

FLITE-TRAC

Flite-Trac is specifically designed for aeronautical use. It simplifies measuring headings from aeronautical charts by reading naturally. Flite-Trac uses a complete 360° compass rose, and avoids any confusion in determining heading. Its square shape, aided by parallel grid lines, aligns easily with the lines of latitude and longitude on the chart. This logical protractor offers you several advantages in the cockpit: • It is less awkward than a typical plotter, yet shows the complete compass rose on a larger scale. •Measures short distances in flight. Its grid is to a 5 n.m. scale on a Sectional chart and has a short distance scale for quick in cockpit use. •The magnetic variation formula is printed directly on a Flite-Trac to give you confidence in calculating a magnetic heading. Flite-Trac avoids the necessity to slip a plotter to a map grid line or the need to use parallel rules. Flite-Trac is a quality product made of lexan in the USA. It will not warp in a hot aircraft. P/N 13-01039 .....**$8.30 ea**

VFR/IFR NAVBOARD & CHARTSAVER

Hold charts between two clear plexiglass surfaces for in-flight reference. Visible from both sides, so you can use two charts. One facing in each direction. Mark plexiglass with grease pencil without defacing chart. Pilot course lines, destinations, checkpoints, headings, vectors, etc., directory on surface. Revisions can be made during flight, easy to erase after flight. Charts stay fresh and reusable many times. Measures 12" x 10".

P/N 8154 ..... **$24.85**

PS

AIRCRAFT SPRUCE WEST
CORONA, CA • (877) 4-SPRUCE
AIRCRAFT SPRUCE EAST
PEACHTREE CITY, GA • (877) 477-7823

Prices Subject to Change Without Notice

CHART CLIPS - TOOL BAGS

PUT-IT SUCTION CLIP

This clip is strong enough to hold an approach plate, chart, or checklist. Attaches by a suction cup to the instrument panel, yoke or any other nonporous surface. ..... P/N 8197 ..... **$5.85**

NO CLUTTER CLIPS

No Clutter Clips * Holds checklists, approach plates, charts, etc. * Stick on most slick surfaces * UV Resistant

1 Small clip per package ..... P/N 13-06636 ..... **$4.50**
2 Small clips per package ..... P/N 13-06408 ..... **$8.75**
1 Large clip per package ..... P/N 13-06409 ..... **$5.50**

WATCH-IT ACCESSORY HOLDER

"World's most versatile holding device". Lets you mount time pieces and calculators exactly where you want-on the wheel, the yoke tube of clipboard. An ingenious bracket, an adjustable holding loop, and a little Velcro is all it takes. Once positioned, can be mounted & removed repeatedly. Non-reflecting, black materials, weighs less than 1oz. ..... P/N 8265 ..... **$9.65**

YOKE CHART CLIP

When you want the chart or approach plate right in front of you - this clip will hold it on the yoke. Adjustable band wraps around the yoke and holds the clip firmly. Fits all general aviation aircraft controls. Non-reflective black finish... P/N 8135 ..... **$9.95**

IFR CHART CLIP

Make IFR flying simpler by keeping vital instrument approach plates and charts in place. Attached to the yoke rather than in your lap or on the floor, this chart clip comes in various models designed to install easily on the yoke of your aircraft. Insures that your navigational charts stay in front of your eyes when you need them most. Handy for VFR charts as well. We'll be happy to assist you in determining what model chart clip will best fit your aircraft.

1.5" Post Standard Clamp ..... P/N 8131 ..... **$21.75**
1.5" Post Wide Clamp ..... P/N 8487 ..... **$21.75**
2" Post Standard Clamp ..... P/N 8690 ..... **$22.75**
2" Post Wide Clamp ..... P/N 8822 ..... **$21.75**
3" Post Standard Clamp ..... P/N 8674 ..... **$33.50**
3" Post Wide Clamp ..... P/N 8915 ..... **$21.75**

HOLD-IT CHART HOLDER

Simple and effective, this handy stainless steel clip holds charts right where you need them. Elastic strap attaches securely to leg, aircraft yoke, or visor.

P/N 13-01759 ..... **$9.95**

YOKE CLIPS

Clip this yoke on your aircraft so it does not interfere with movement of controls. Spring may be adjusted for smaller diameter shafts by pinching with pliers.

Large - Used on 1" tube ..... P/N 13-04392 .... **$8.95**
Small - Used on 3/4" tube ..... P/N 13-04393 .... **$9.00**

APPROACH PLATE HOLDER

• 10 leaf • Flip-over (not accordion) • Size: 6"x 9" • Vinyl ..
P/N 13-02772 ..... **$5.95**

CARRY-IT CORDURA TOTE CASE

This multi-functional tote case is made from black Cordura fabric and features 8 pockets and velcro closures. Holds radios, flashlights, pens, pocket PC, maps, charts & more.

P/N 13-01757 ..... **$22.50**

AVIATOR'S NYLON HELMET BAG

U.S. Military issue. Size: 19"x 20". Color: Sage green
P/N 13-03476 ..... **$29.75**

PROFLIGHT BOOSTER SEAT POUCH

• End cockpit clutter • Made or durable Cordura • Stores flashlight, fuel tester, flight guides, approach plates, charts, plotter, E6-B, sunglasses and more. • Available in black, AF blue, red, gray & olive drab

Black ..... P/N 13-31871 ..... **$14.75**
Blue ..... P/N 13-03005 ..... **$24.95**
Gray ..... P/N 13-31872 ..... **$12.95**
Olive drab ..... P/N 13-03006 ..... **$24.95**
Red ..... P/N 13-31870 ..... **$18.85**

NELSON AIRCRAFT DOCUMENT CASE

• Made of Cordura
• Two compartments
• Available in blue, gray, olive drab, orange & red.

Orange.. P/N 13-03013 ..... **$17.50** Gray .... P/N 13-02933 ..... **$17.50**
Red ..... P/N 13-02934 ..... **$17.50**

23 POCKET BIGMOUTH BAG

17 Multi-use pockets inside and 6 outside organize tools and accessories. Opens wide for easy access to bag's contents. Padded reinforced web carrying handles. 12"L x 8 1/2"W x 8"H

P/N 12-00329 ..... **$18.75**

12 POCKET TRAYTOTE BAG - This bag has 2 pockets inside and 10 pockets outside with a 11"x 6" multi-compartment tray which slides securely into bottom of bag. Opens wide for easy access to contents and has reinforced web carrying handles. 12"L x 8"W x 12"H

P/N 12-00163 ..... **$34.95**

14 POCKET TRAYTOTE BAG - This bag features 2 pockets inside, 12 pockets outside, with a 13.5" x 6" multi-compartment plastic tray slides securely into bottom of bag. Opens wide for easy access. 16"L x 9"W x 12"H

P/N 12-00164 ..... **$47.85**

MILITARY STYLE TOOL BAGS

These tool bags are made of heavy-duty military-type tough 18oz./sq.yd. cotton duck with a water repellent mildew-resistant treatment. The mechanics Tool Bags have compartmentalized side pockets with flaps. Hardboard bottoms are completely sewn into each bag and are unexposed. All stitching is of heavy duty nylon thread and the handles are made from heavy military spec. webbing. All inside seams are bound to eliminate raveling of the fabric.Long-tab, self-locking slider. Color: O.D. Green. Available in 2 sizes:

O.D. Green Small: 6" x 6" x 12" Bag..... P/N 13-02500 ..... **$24.95**
O.D. Green. Large: 5" x 5" x 16" Bag..... P/N 13-02600 ..... **$54.25**

TOOL WRAP

Kennon's heavy duty soft sided tool carrier is an old style canvas tool wrap that you can't find anymore. 9 pockets. Rolls up for compact storage and closes with adjustable velcro. Also available in a larger 11 pocket version. Tools not included.

Tool Wrap 9 pockets ..... P/N 13-01746 ..... **$29.95**
Tool Wrap 13 pockets ... P/N 13-01747 ..... **$39.95**

UNIVERSAL BEVERAGE HOLDER

This Universal Beverage Holder made of billet aluminum installs easily in any thickness dash or instrument panel. Available in two styles, with square or oval face-polished surfaces, its compact design permits vast installation possibilities.

Oval Face ..... P/N 13-03792 . **$139.00**
Square Face ..... P/N 13-03793 . **$158.95**

YOKE BALL CLIPS

Allows the user to mount various objects on the aircraft yoke for easy access and hands free reading. Made heavy duty to hold more weight than other clips. Sizes given refer to a general size range only - they will work with almost any aircraft with a similar size yoke.

Part No.	Tube Size	Rise	Application	Price
17-00242	1"-1-1/2"	1"	Cessna 177, 182, 206, 210, Piper PA-28, Tomahawk, Commander	$15.95
17-00244	1"-1-1/2"	2"	177, 182, 206, 210, Piper PA-28, Tomahawk, Commander	$15.95
17-00245	3/4"-1"	2"	Cessna 150, 152, 172, BE-76, Piper Cadet, Early PA-28.	$15.95

AIRCRAFT DOCUMENT CASE

This durable, flexible blue cordura pouch is an ideal way to keep aircraft registration, insurance, log books, operating manuals, and other important documents all in one safe location. Measures 18"W x 12"H. Features top quality zipper along front side for easy access and location to mark your aircraft number on front..... P/N 13-20065..... **$18.50**

LICENSE HOLDERS

Black leatherette with clear plastic window to display ownership certificates. P/N 13-07900 only includes eyelet holes for mounting and metal plates to keep corners from fraying.

4-7/8" X 6-7/8" ..... P/N 13-07900 ... **$7.95**
7-1/2" X 8" ..... P/N 13-17904 . **$19.85**
5" X 7" ..... P/N 13-17905 ... **$5.90**
5" X 14" Double Pocket ... P/N 13-17906 ... **$9.75**

PS

KNEEBOARDS

SOFT-G PLUS KNEEBOARD

This kneeboard is originally designed for high performance fighter & attack aircraft. Standard features include: reversible clip board which allows pocket and document loops to be reversed right or left side, 1-1/2" wide adjustable plastic strap, clear plastic information pocket, removable document loops, 4 elastic pen/pencil slots, side release buckle, durable wire clip, and NEG-G strap. P/N 13-12655 ..... **$42.95**

The performance package includes: information cards, clear document protectors, removable document protectors, and releasable cable ties (holds document protectors securely to kneeboard).

P/N 13-12656 ..... **$63.75**

TRIFOLD KNEEBOARD

The standard features include: right and left light pockets that double as pen/pencil pockets, 1.5" wide adjustable plastic strap, 4 clear plastic information pocket, right & left document loops, side release buckle, durable wire clip, and padded backing

P/N 13-12660 ..... **$45.50**

The performance package includes: information cards, clear document protectors, flex light with fixed or adjustable beam, and releasable cable ties (holds document protectors securely to kneeboard) optional.

P/N 13-12661 ..... **$59.95**

9-G PLUS KNEEBOARD

This kneeboard is originally designed for high performance fighter and attack aircraft. The standard features include: right and left light pockets that double as pen/pencil pockets, 1.5" wide adjustable plastic strap, 3 clear plastic information pocket, right and left removable document loops, side release buckle, easy access pocket, durable wire clip, and padded backing. P/N 13-12650 ..... **$44.50**

The performance package includes: information cards, clear document protectors, removable document protectors, & releasable cable ties (holds document protectors securely to kneeboard).

P/N 13-12651 ..... **$55.75**

MINI TRIFOLD KNEEBOARD

This mini trifold kneeboard measures 8" x 16.5". The standard features include: reversible clip board which allows pocket and document loops to be reversed right or left side, 1-1/2" wide adjustable plastic strap, clear plastic information pocket, removable document loops, 4 elastic pen/pencil slots, side release buckle, durable wire clip, and NEG-G strap. P/N 13-12665 ..... **$39.85**

The performance package includes: information cards, clear document protectors, removable document protectors, and releasable cable ties (holds document protectors securely to kneeboard).

P/N 13-12666 ..... **$57.25**

JEPPESEN IFR THREE-RING TRIFOLD

The Jeppesen three ring trifold is great for holding approach charts and features three approach chart pockets, collapsible rings, elastic pen / pencil / penlight holders, and valuable IFR flight information the clip board. Includes free U.S. Low altitude planning chart. Size: 10"x 20" open.

Kneeboard/Clipboard .....P/N 13-06956 .....**$44.95**

VFR KNEEBOARD

This kneeboard places information at your fingertips. It holds charts, flight computers and much more. An elastic leg strap holds this unit comfortably in place with a velcro closure. The metal clipboard (also available separately) contains valuable information for your VFR flight needs. An additional strap is included allowing you to use your clip board independent of the kneeboard. You are really getting two products in one.

Kneeboard/Clipboard .....P/N 13-06955 .....**$37.95**

AERO PRODUCTS RESEARCH KNEEBOARDS

5-3/4" X 10" X 2-1/2" Deluxe kneeboard. Official Air Force and Navy models with quick-release buckles and non-slip foam strips to keep the unit in place. Each model includes 2 heavy-duty paper clamps, pencil holder This is the unlighted version of MXU-163/C. Anodized aluminum. Meets all military specs.

MK-2A/C..... P/N 13-03521 ..... **$48.00**

9" x 5-3/8" Contoured base, non-slip kneeboard. 3" positive ext. clip for approach plates, etc. Pencil holder, comfortable leg strap, sturdy, lightweight. Black, non-glare aluminum.

MK-9..... P/N 13-03520 ..... **$39.50**

6" x 8-3/4" VFR kneeboard lists flight plan sequence, tower light signals, time zones, visibility and distance-from-cloud requirements plus much more. Anodized aluminum. Includes flight logs.

0-100 ..... P/N 13-03518 ..... **$12.95**

6" x 8-3/4" IFR kneeboard lists flight plan sequence, alternate flight planning and distance-from-cloud requirements, IFR required reports, plus much more. Anodized aluminum. Includes flight logs.

0-150 ..... P/N 13-03519 ..... **$12.95**

VFR/IFR PILOT FLIGHT DESK

The PFD-3 PILOT'S FLIGHT DESK, first designed and introduced by APR Industries, puts essential VFR and IFR information right at your finger tips. The VFR side, with a small bear clip, holds flight logs and approach plates while the larger bear clip on the IFR side opens to 1" and is designed to hold aeronautical charts and radio facility approach books. Non-slip foam on the underside of the board helps to hold everything securely in place. APR's PILOT'S FLIGHT DESK is the best available! The PFD-3 has 3 clips along with all the features PFD-1 provides additional uses such as clipping long sections of flight charts, aprroach charts and log sheets (VFR-100 / IFR-200). Includes a pad of logs with sample sheets designed by Capt. Barry Schiff. Dimensions: open size: 16" x 9", folds to: 8" x 9". Anodized Aluminum, .050" thick..... P/N 13-11734..... **$27.85**

ASA IFR& VFR KNEEBOARDS

These IFR and VFR Kneeboards are an attractive, light gray, brushed aluminum. Instrument and visual information is clearly silkscreened on the boards so pilots can quickly reference rules at a glance when operating a cyclic or stick. All information on the Kneeboards match current Federal Aviation Regulations. The Kneeboards feature a comfortable, 1.5" wide elastic legband that hugs the leg without binding. Velcro fasteners can be adjusted without removing the kneeboard and fits all leg sizes. A pencil/pen holder is designed into the leg for fast note taking. The Kneeboards also feature a 4-3/4" wide metal clip that is easy to lift and strong enough to hold NOS charts and other necessary papers. Paper-protector elbows secure material, yet papers won't rip when pulled out.

VFR Kneeboards ..... P/N 13-06925..... **$15.50**

IFR Kneeboards..... P/N 13-06930..... **$14.95**

NAV-DATA IFR KNEEBOARD

Once you own a Nav-Data IFR kneeboard, you can customize it's contents with your personalized data by simply filling in the blank 5 1/2 x 8 1/2 forms which include:

* aircraft checklist
* local area NAV and Com frequencies
* navigation logs
* flight plan forms
* clearance copying pad

By placing these pre-recorded forms, approach plates, charts, etc.,into our 3-ring transparent vinyl pocket page system (8 vinyl pockets included), you will have quick access to all of your important data.

Note the retractable slider tab supporting the cover (Chart board) when open. P/N 13-06085 ..... **$66.95**

PS

KNEEBOARDS

FOLDING LAP BOARD

This 9" x 16" flying desk has 2 large clips to hold in-flight necessities such as charts, flightlogs, and approach plates. Lost communications procedures for both VFR and IFR, light gun signals, position reports, frequencies, and transponder codes are silk-screened on the brushed aluminum lapboard for quick reference during emergencies. It folds in half when less space is needed and for convenient storage. Foam strips on the back keep the lapboard comfortably in place. P/N 13-02314 .....**$25.95**

TRI-FOLD KNEEBOARD

For the pilot who has a little more to juggle, the Tri-Fold Kneeboard uses the expertly styled VFR Kneeboard in a 3-panel jacket. The high-quality construction features durable material & double-sewn seams where extra stress takes place. The color is jet black with a logo attractively embroidered in silver on the front. The left panel has ample room for small books, papers and unusually shaped items. The center panel holds the kneeboard under clear plastic. Either side of the center includes a pen/pencil holder and buttonholes that allow the pilot to fold back one or both panels of the kneeboard with the legband. This is ideal when operating a cyclic or stick.The right-hand side contains a clear pocket for easy map viewing. The elastic legband has velcro closures and will comfortably fit any leg size. Try the kneeboard that puts everything at your fingertips. .....P/N 13-06950 ..... **$32.75**

SAGA AVIATION KNEEBOARD

First flight kneeboard containing Canadian information! The SAGA flight kneeboard is the essential tool for keeping all the necessary accessories close at hand. Its three practical sections contain: A stainless steel plate with useful Canadian information, Many compartments, one with a zipper for important documents, A large transparent pocket for aeronautical charts, Two pencil holders and an elastic band that holds everything securely Please note that this kneeboard only includes useful information for flight in Canada.

Standard .....P/N 13-09563 .....**$28.45**
Long .....P/N 13-11699 .....**$29.95**

ULTIMATE PEN HOLDER

Real Velcro wrist strap with pen holder on cord keeps your pen close at hand when needed. .....P/N 13-08659 .....**$5.95**

MYCLIP THIGH

The MyClip kneeboard is the only iPad Kneeboard that works with the iPad and the iPad2. This innovative design easily transitions from portrait to landscape mode allowing easy viewing of charts and approach plates. Soft rubberized clips gently hold the iPad and even work with the Apple "Smart Cover". Light and compact, this iPad kneeboard is made for aviation.

P/N 13-09290 .....**$37.85**

ZULUCARDS STANDARD SET

These cover the basics you'll need if you're learning to fly. As we all know, in those early days when we learn to fly we're trying to cram a heck of a lot of data in to a relatively small simian skull. It's not a matter of *if* you forget something but *when*. This set of cards will help you in your time of need. Cross Wind - A colorful and easy to read way to calculate your cross wind component when coming into your destination. En Route info - Commonly used VHF frequencies, the phonetic alphabet and VFR cruising altitudes. Ground - Common airport signage. Emergency - Light Gun signals, transponder codes and Lost Procedures. Vspeeds - Write in the Vspeeds for your particular aircraft. Buy extras and keep one for each plane you fly. Card Dimensions: 5" x 8.5".

Zulu Cards Standard Set of 5 .....P/N 17-00249 .....**$4.70**

ALSO AVAILABLE:

Zulu Cards Present Weather Set .....P/N 17-00248 .....**$4.70**
Zulu Cards Bonus Set .....P/N 17-00247 .....**$4.70**

ECONOMY MINI-Z BOARD

If you've got limited space in your cockpit and you're looking for a minimalist yet stylish board, the Mini-Z is for you. Made from the same high-quality materials and superb craftsmanship as other Zulu boards, the Mini-Z is 50% smaller than the Standard. The Economy Mini-Z Board features a plain pad. Black ballistic nylon. P/N 13-04903 .....**$21.95**

STANDARD MINI-Z BOARD

If you've got limited space in your cockpit and you're looking for a minimalist yet stylish board, the Mini-Z is for you. Made from the same high-quality materials and superb craftsmanship as other Zulu boards, the Mini-Z is 50% smaller than the Standard. The Standard Mini-Z Board features the 3-in-1 Flight Plan Pad and five Mini Zulucards. Black ballistic nylon. P/N 13-04905 .....**$25.75**

Blank Flight Pad (50 Sht.) - Single Pad .....P/N 17-00251 .....**$1.78**
Blank Flight Pad (50 Sht.) - 10 Pack.....P/N 17-00323 .....**$15.00**
3 in 1 Flight pad (50 Sht.) - Single Pad.....P/N 17-00250 .....**$2.20**
3 in 1 Flight pad (50 Sht.) - 10 Pack.....P/N 17-00321 .....**$19.00**

ECONOMY ZULU BOARD

Made out of the same high-quality materials and superb craftsmanship as other Zulu boards, the Economy Zulu Board comes with a blank flight pad (no Zulucards). **Features**: • Repositioning clipboard system • Rugged ballistic exterior • Sturdy anodized aluminum back plate • Clean, low profile clip aluminum clipboard • Organizer post to keep everything on your lap • Easy grab zipper pulls • Breeze cheater elastic strap • Oversize pen pockets, or mini light • Ventilated elastic knee strap • Stable 4-point knee strap mounting • 50 Sheet Flight Pad. P/N 14-02857 .....**$34.95**

STANDARD ZULU BOARD

The Standard Zulu Board is a full featured cockpit organization tool. It includes five Zulucards and a 50 sheet pad of the Zulu 3-in-1 Flight Plan Pad. Black ballistic nylon. **Features**: • Repositioning clipboard system • Rugged ballistic exterior • Sturdy anodized aluminum back plate • Clean, low profile clip aluminum clipboard • Organizer post to keep everything on your lap • Easy grab zipper pulls • Breeze cheater elastic strap • Oversize pen pockets, or mini light • Ventilated elastic knee strap • Stable 4-point knee strap mounting • 50 Sheet Flight Pad • 5 Card Ready Reference Set • 50 Sheet 3-in-1 Flight Plan Pad P/N 13-03224 .....**$20.95**

Blank Flight Pad (50 Sht.) - Single Pad .....P/N 17-00252 .....**$1.93**
Blank Flight Pad (50 Sht.) - 10 Pack.....P/N 17-00324 .....**$16.00**
3 in 1 Flight pad (50 Sht.) - 10 Pack.....P/N 17-00322 .....**$19.75**

DELUXE ZULU BOARD

The Deluxe Zulu Board comes with a hinged storage compartment under the clipboard for storing approach plates, airport diagrams or just a place to toss the gas receipts. Black Ballistic Nylon. Includes 6 Zulu Cards and two 50 sheet pads of the 3-in-1 Zulu Flight Plan Pads. Features: • Repositioning clipboard system • Rugged ballistic exterior • Sturdy anodized aluminum back plate •Clean, low profile clip aluminum clipboard •Organizer post to keep everything on your lap • Easy grab zipper pulls • Breeze cheater elastic strap • Oversize pen pockets, or mini light • Ventilated elastic knee strap • Stable 4-point knee strap mounting • 50 Sheet Flight Pad • Two 50 Sheet 3-in-1 Flight Plan Pads • 6 Card Ready Reference Set • Compartment Style Clipboard P/N 14-02859 .....**$49.95**

FOLDOVER NAVIGATION LOG

If you're working on your private ticket you're gonna need a pack of these for sure. Other versions of navlogs are large and cumbersome and try to incorporate everything short of ordering out for pizza. The Foldover NavLog has the same dimensions as the standard Zuluboard flight pads making them easier to handle in the cockpit environment. 10-pack available.

10 Pack .....P/N 17-00325 .....**$19.00**

PS

KNEEBOARDS

FLIGHT DESK TRI-FOLD KNEEBOARD

Our Flight Desk Kneeboard greatly improves cockpit organization of charts and accessories. Unlike some other kneeboards with limited utility, our Flight Desk Kneeboard will hold sectional charts, a large E6B type computer, and has 2 elastic loops on either side of the clipboard to hold a goose-neck type flashlight. If the middle loop is not used for a computer, it can be used to hold a handheld transceiver. Made of durable black cordura. Size:19.25"x9.5" unfolded. Clipboard size: 6" x 9.5".` .....P/N 13-03474 ..... **$14.95**

ORGA-KNEE-ZER™ KNEEBOARDS

Extremely versatile, organizer/kneeboards providing a standard 7-ring binder on a very stable platform with built-in pencil sharpener, combo maglite/ pencil holder and many other unique features. Compact stowage, rugged materials and powder coat finish, add even more to their rich feature set. Use for VFR or IFR flight, using NOS or Jepp charts and see how their versatility can adapt to your demanding and varied needs as pilot. The patented design of Model A1-MC allows you to flip through your charts, checklists or other reference materials, with unobstructed access to the writing surface for jottingATC instructions or holding flight plans. It's excellent for most general aviation aircraft and is very popular with Cessna and Piper pilots. It's 9" long x 8" wide and up to 16" wide when fully open. It can also be used as a simple clipboard for preflight checks when closed (includes 3 chart pockets). P/N 13-03326 ..... **$79.95**

APR KNEEBOARDS

P-IFR - Professional Pilot's Deluxe IFR Flight Kneeboard. Essential IFR flight information printed on top of kneeboard, large clip opens to 1" for approach book, adjustable strap. Board will manually rotate to best writing angle. Anodized aluminum, 9-1/2" x 6-3/8"
P/N 13-06712.....**$14.50**

P-VFR - Professional Pilot's Deluxe VFR Flight Kneeboard. Essential VFR flight information printed on top of kneeboard, large clip opens to 1" for approach book, adjustable strap. Board will manually rotate to best writing angle. Anodized aluminum, 9-1/2" x 6-3/8"
P/N 13-06711.....**$13.95**

APR MXU-163/LL OMNI KNEEBOARD W/ LED LIGHTING

APR's MXU-163/LL is a precisely engineered aluminum kneeboard designed to meet all requirements of general aviation, commercial, law enforcement and military pilots. The LED light provides over 100,000 hours bulb life and reduces battery power requirements by 75%. Its adjustable intensity evenly illuminates the board's top surface. The contoured base with foam pads that prevent movement comfortably fit either leg. A quick-release buckle on the wide elastic adjustable leg strap provides stability and releases quickly. The kneeboard's top and bottom clips open 1" to hold flight plans, charts, maps, or an approach plate book. The MXU-163/LL has two pencil holders: one at the top, angled for quick pick-up to write clearances, and a second on the side of the board. Kneeboard comes with a pad of VFR en route flight logs and an example log showing step-by-step instructions. Lifetime, non glare anodized aluminum. Dimensions: 5 1/2" x 10 1/2" x 2 1/2". P/N 13-11490.....**$112.95**

SECURE CLIP SET

Use the Secure Clip Set to secure your GPS, keys, pen, or flash light on your clipboard or in your bag when not in use. The Secure Clip Set includes a stainless steel S-Biner that comes with six different-colored mini S-Biners and is cheap insurance to minimize your chance of losing your small GPS. Secure Clip Set shown individually and securing a GPS on a clipboard and on an iPad Flight Bag, both sold separately.
P/N 13-10433.....**$7.00**

SINGLE PANEL FL-100 KNEEBOARD

The Aeroboard FL100 has a large pocket behind the clipboard to keep these items handy. The detachable clipboard can be removed and placed inside the pocket creating a platform for a GPS. 7.5" x 11". 1 large chart pocket behind the clipboard. Detachable 6"x9" aluminum clipboard. 1-1/2" wide nylon/elastic leg strap with Velcro® fastener.
FL100 Black..... P/N 13-03703.....**$22.95**
FL100 Navy ..... P/N 13-03704 .....**$22.95**

BI-FOLD FL-200 KNEEBOARD

Aeroboard FL200 has many outstanding features which makes it one of the most useful organizational tools a pilot can have. The FL200 has a bifold design with 3-ring center binder, available in both Right & Left-hand, 10 clear page protectors(great for organizing checklists, emergency procedures, reminders, etc.), and 2 handy large storage pockets (for charts & other items of similar size). The Aeroboard FL200 has what you've been looking for. 15" x 11" open, 7.5" x 11" closed. Features: • Bifold design available in both right- & left-hand models • 3-ring binder (includes (10) 8-1/2" x 5-1/2" clear page protectors) • 2 large chart pockets • 1 small computer pocket • Detachable 6" x 9" aluminum clipboard • 1-1/2" wide nylon/elastic straps(holds charts open) • 2 elastic pen/pencil holders SureCheck FlightPad™ included • Cover made of durable Cordura®

FL200R (RIGHT) Black..... P/N 13-03698.....**$39.95**
FL200L (LEFT) Black..... P/N 13-03701.....**$39.95**
FL200R (RIGHT) Navy ..... P/N 13-03699.....**$39.95**
FL200L (LEFT) NAVY..... P/N 13-03702.....**$34.95**
FL200 (LEFT), Camo..... P/N 13-11557.....**$46.75**
FL200 (RIGHT) Camo ..... P/N 13-11555.....**$39.95**

HARPER KNEEBOARDS

FIXED RING ULTIMATE KNEEBOARD™ - The fixed-ring model is the most popular kneeboard. The convenience of the snap-open, ring binder design makes it ideal for quickly changing pages, charts and checklists. Pilots flying into multiple airports or flying a variety of planes will find the fixed-ring design perfectly suited for them. P/N 13-07022.....**$42.95**

LOOSE RING ULTIMATE KNEEBOARD™ - Our loose-ring model has seven independent rings which are not bound together. The result is a kneeboard that molds perfectly to the shape of the pilot's leg. It is ideal for pilots who primarily fly the same airplane in and out of the same airport.
P/N 13-07023.....**$42.95**

NELSON KNEEBOARDS

MILITARY TRI-FOLD - • Size: 19.5"x11.5" (open), 11.5"x7" (closed) • Holds sm E6-B, stopwatch, pencils • Supplied w/pad of 50 flight logs • Aluminum board holds approach plates

Blue..... P/N 13-06905 .....**$19.95**
Gray ..... P/N 13-06910 .....**$19.95**
Red..... P/N 13-02884 .....**$19.95**
Olive..... P/N 13-02903 .....**$19.95**
Replacement Flight Logs..... P/N 13-02888 .....**$4.00**

ARMBOARD

The ArmBoard provides agronomical, space saving writing surface as natural to wear as a wrist watch. Regardless of how large or small the cockpit is, the ArmBoard truly frees up much needed space. The product was also tested by CFIs and proved extremely useful in taking notes during flight lessons and jotting down student performance comments for follow up during ground school. A writing pad is included with a flight planer version sold separately along with various flight reference cards to be used on the inside flap of the ArmBoard. .....P/N 13-06021 .....**$31.95**

ACCESSORIES

Set of 3 blank pads for the armboard ..... P/N 13-06025 .....**$5.95**
Set of 3 mixed pads (Blank, Flight Planner & Ruled) for the armboard.
P/N 13-06024 .....**$6.99**

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Prices Subject to Change Without Notice

IPAD KNEEBOARDS – IPAD HOLDERS

IPRO AVIATOR KNEEBOARD

The all new iPro Aviator kneeboard for the Apple iPad brings added features and a new low price. Featuring: • FlipOver Writing Surface • Rubber Foam Internal Padding • Foldout Kickstand for Desktop Use • Acts as Compact Carrying Case • Accomodates both the iPad and iPad 2

Black
P/N 13-09886.....**$69.95**

SPINCLIK IPAD MOUNT

The SpinClik is a rugged, lightweight mounting system designed for the iPad. This unique design allows the iPad to be mounted in autos, trucks, aircraft, RV's and boats.
Features: • Weighs under one pound • Rotates 360 degrees with locking stops every 90 degrees • Rotates right to left and left to right • Fitted with a modified PanaVise 685-PM quick disconnect • Low cost • Fits all AMPS pattern mounting systems of different makes • Comes completely assembled ready for install
Specifications: • ABS plastic face plate of .115 thick, hair cell one side finish • UV restraint • CNC water-jet cut plastic parts • Metal spring controlled detent design • Thermo formed • Will fit with most third party iPad protective covers installed. • Fits the following sub mounts: In-Dash (make model specific), Vacuum (809-AMP), Post (Slimline 717-06, 717-09, and 717-12), Flex (797-10, 797-12 and 797-14), Wall ("J" box cover plate and Universal)

P/N 13-09885 .....**$43.75**

IPAD KNEEBOARD

The hard outer shell is excellent for keeping your iPad looking new at all times. Designed with function in mind the kneeboard has a built-in storage cubby for Mini Mag Lite, iPad stylus, and pen/pencil. It's the epitome of a virtual office. **Features**: • Constructed With High Performance Polycarbonate Material • "Comfort Curve" For Ergonomic Fit And Superior Stability • Adjustable Leg Strap For Tight But Comfortable Fit • Easy to Install With Simple Snap On/Off Design • Canted At The Top For Line Of Sight Viewing By User • Convenient Built-In Storage For A Mini Mag Lite, iPad Stylus And A Pen/Pencil • Slim Lightweight Design For Easy Storage • Built-In Standoffs To Protect Screen If Placed Face Down • Access To All Controls And Connections Including Charging While in Kneeboard. ...P/N 13-08297 .....**$69.95**

IPAD OP CASE

This iPad case is referred to as the "OP" case because it serves dual-purpose, to Operate & Protect. It provides protection from normal use, handling and transport and you don't have to remove the iPad to operate it. Open it like a book and you're ready to power-up. iPad not included. .....P/N 13-11597 .....**$44.95**

GENESIS 2 - IPAD2 / IPAD3 KNEEBOARD & CASE

The Sky High Gear Genesis 2 iPad2/iPad3 kneeboard & case has been made to fit the iPad2 or iPad3 and the new port locations. The new soft hinge design allows the front cover to fold behind flat to minimize yolk interference and allows access to the headphone port when closed. Camera holes for the forward and rear facing cameras allow access for Facetime TM, photos or video. Lastly, the new location of the microphone is accounted for and is left open for clear recording of sound during video use. The Genesis 2 is made of ultra-durable ballistic nylon material on the exterior, and lined with brushed suede microfiber to pamper the iPad surfaces. Loops on the sides are for small pens or pencils. This is an ideal case for both in and out of the cockpit! When not flying, the case converts into an iPad stand with unlimited angle adjustments for viewing. Access to the sync port is available without removing or opening the case.
Kneeboard for iPad 2.....P/N 13-11465 .....**$31.75**
Kneeboard for iPad.....P/N 13-10009 .....$42.50

IPAD KNEEBOARD PRO

iPad Kneeboard Pro is made of anodized aluminum that is strong and lightweight. It is a form fitted case that is padded with a layer of foam that holds the iPad securely in place. Its cut-out design provides access to all of the iPad's ports, buttons and controls. There are two aluminum rails on the underside of the case that frame your leg and, with the wide elasticized Velcro strap, allows the case to be held securely and comfortably to your leg. There are four rubber pads on the rails that allow the case to sit on a desk or table securely as well. The removable knee strap can be left in the plane leaving you with a beautiful, sleek case for every day use as well. The iPad and clipboard are not included. Pad Kneeboard Pro featured on Pilotmag.com!
Black Generation 1 iPad.....P/N 13-09417 .....**$169.00**
Black Generation 2/3 iPad.....P/N 13-10003 .....**$169.00**
Silver Generation 1 iPad.....P/N 13-09416 .....**$169.00**
Silver Generation 2/3 iPad.....P/N 13-10002 .....**$169.00**
Accessories
iPad Kneeboard Cool Skin .....P/N 13-09991 .....**$29.95**
iPad Kneeboard Personal Skin.....P/N 13-09992 .....**$39.95**
iPad Kneeboard Branded Skin .....P/N 13-09993 .....**$39.95**
iPad Kneeboard Custom Skin .....P/N 13-09994 .....**$89.95**

IPAD KNEEBOARD PRO C

Now you can bring an iPad with you into the cockpit of any airplane where it can be held secure on your knee and lap. iPad Kneeboard Pro C was designed for pilots by pilots. It is designed to accommodate all preferences for how you like to use it - both right and left hand, attached to the right or left leg, as a traditional kneeboard or as a lap desk. The choice is yours. Any way you choose to use it, your iPad will be secure in its place. And, you can easily slide the iPad out of the case when you want to hold it up close, turn it into landscape mode or hand it to someone else.
The Pro C includes a specialized clipboard that adheres on the outside or inside of the case. This allows you the choice and flexibility to carry and take notes in-flight. Note:The iPad is NOT included.
Black Generation 1 iPad.....P/N 13-09415 .....**$189.00**
Black Generation 2/3 iPad.....P/N 13-09996 .....**$199.00**
Silver Generation 1 iPad.....P/N 13-09414 .....**$189.00**
Silver Generation 2/3 iPad.....P/N 13-09999 .....**$199.00**

MYGOFLIGHT PRO C BUNDLE

The MyGoFlight.com Flight Bag PLC Slim and the iPad Kneeboard Pro C have been bundled together for pilots to be able to have on complete package for carrying your iPad securely into the cockpit. Have extra room for screen cleaners and cloths, pens and paper. iPad Kneeboard Pro C is made of anodized aluminum that is strong and lightweight. It is a form fitted case that is padded with a layer of foam that holds the iPad securely in place. Its cut-out design provides access to all of the iPad's ports, buttons and controls. The clipboard includes helpful reference information. Both the clipboard and the removable knee strap can be left in the plane leaving you with a beautiful, sleek case for every day use. The iPad is not included. For iPad 1, iPad 2, and iPad3.
Black Generation 1 iPad.....P/N 13-09419 .....**$229.00**
Black Generation 2/3 iPad.....P/N 13-09997 .....**$229.00**
Silver Generation 1 iPad.....P/N 13-09418 .....**$219.00**
Silver Generation 2/3 iPad.....P/N 13-10001 .....**$229.00**

PS

IPAD KNEEBOARDS

MYGOFLIGHT PRO C SYSTEM

The Pro™ C System - includes external GPS. Using the iPad in the cockpit requires a system. The iPad for access to aviation apps, charts and a wealth of information; the iPad Kneeboard Pro™ C to secure and position the iPad; an external GPS to stay connected to the satellites; The PowerDual to charge your iPad in the cockpit, or home; and the MGF iPad Flight Bag to hold the case, the accessories, the charger, pens, and paper. Included with the Pro™ C System is the Secure Clip Set, the lanyards, an iPad Anti-Glare Screen Protector and a Screen Cleaning Kit with microfiber cloth. If you would like all that the Pro™ C System contains but already have or do not want the external GPS, choose the Pro™ C System NG product instead.

Choose the iPad Kneeboard Pro™ C System in silver or black. Choose the external GPS by Bad Elf for the "Plugged" version or by Dual XGPS150 for the Bluetooth "Un-Plugged" version. Choose the iPad Flight Bag in Slim (single pocket 1" deep), Slim EX (2" deep three pocket) or Pro (largest version with room for everything a pilot needs to take with them in-flight). For iPad 1, iPad 2, and iPad 3.

For iPad 1.....P/N 13-11583 .....**$429.00**
For iPad 2.....P/N 13-11579 .....**$439.00**

MYGOFLIGHT PRO C SYSTEM NG

The Pro™ C System NG is the same as the Pro™ C System but excludes the GPS. Using the iPad in the cockpit requires a system. The iPad for access to aviation apps, charts and a wealth of information; the iPad Kneeboard Pro™ C to secure and position the iPad; an external GPS to stay connected to the satellites; and the MGF iPad Flight Bag Slim EX to hold the case, the accessories, pens, and paper. Included with the Pro™ C System is the Secure Clip Set, the lanyards, and a Screen Cleaning Kit with microfiber cloth. The Pro™ C System, a complete package at a special price to give you all that you need to make using the iPad in-flight work as smooth, safe and secure as possible. iPad Kneeboard Pro C is available in silver or black. Option will be given in cart during purchase. Pro C System designed for iPad2/3. System Includes: iPad Kneeboard Pro™ C, PowerDual charger kit, MGF iPad Flight Bag Slim EX, or Pro, Secure Clip Set and lanyards, iPad Anti-Glare Screen Protector, Screen Cleaning Kit. iPad Flight Bag Slim EX Dimensions: 12" W x 8.75" H x 2" D.

iPad 2/3.....P/N 13-11582 .....**$349.00**

MYGOFLIGHT PRO C BUNDLE / PLC SLIM EX & KNEEBOARD

Bundle designed for iPad2/3. The MyGoFlight (MGF) iPad Flight Bag and the iPad Kneeboard Pro™ C have been bundled together for pilots to be able to have a complete package for carrying your iPad securely into the cockpit. Have extra room for your charger, external GPS, screen cleaners and cloths, pens and paper. The iPad Flight Bag Slim EX is a three pocket, slim but expanded version of the iPad Flight Bag Slim. Choose the iPad Kneeboard Pro™ C in silver or black. This is a deluxe package for the ultimate in protection and carrying convenience.

Black .....P/N 13-11577 .....**$209.00**
Silver .....P/N 13-11578 .....**$206.95**

IPAD FLIGHT SLIM BAG

MyGoFlight iPad Flight Bags are perfect for carrying your iPad or your iPad with the iPad Kneeboard Pro C on and off the plane. Custom styling, durable materials, and a unique protection system combine in a custom fitted form to make a complete package. Have extra room for your charger, external GPS, screen cleaners and cloths, pens and paper. iPad Flight Bags are the ultimate in protection and carrying convenience. Features: • Soft, durable and water-resistant fabric protects and cushions your iPad • Small enough to fit inside your regular carrying case, but tough enough to use by itself • Stylish design combines form and function to create a unique carrying solution • Heavy duty, comfortable strap to carry by hand • Large front exterior pocket for AC adapter and other accessories • Front exterior pocket equipped with D ring to attach keys and other accessories • iPad Flight Bag Slim is a single pocket, slim case 12" W x 8.75" H x 1" D. P/N 13-10426.....**$46.50**

MYGOFLIGHT IPAD FLIGHT BAG PLC PRO

The Flight Bag PLC™ Pro is for the pilot wanting to move from a conventional flight bag to one for the "Paperless" cockpit. It has a specially designed, airport check-point friendly protective pouch to hold an iPad, laptop computer or many other electronic flight bag devices. All of the compartments are easy to see into, making it simple to find what you are looking for. There is room for everything a pilot needs to take with them in-flight. The Flight Bag PLC™ Pro bag is designed by pilots for pilots to be the ultimate flight bag for all aviators. This bag gives you the style, storage, organization, compact size and functionality like never offered before. P/N 13-11594.....**$148.95**

IPAD KNEEBOARD SPORT

The iPad Kneeboard Sport is designed for the pilot looking to secure their iPad on either leg, who needs the minimal case, but still wants a very secure fit. In black, soft to the touch polycarbonate, the Sport adds protection and great feel to the iPad. The iPad Kneeboard Sport was designed for pilots by pilots. It is designed to work in aircraft where space is tight or where there is a cyclic, or control stick being used between the legs. It is perfect for pilots of helicopters, sport aircraft, and when there is tight yoke clearance. Features: • The iPad Kneeboard Sport is made of black, soft-to-the-touch polycarbonate and is strong and lightweight. It is a form fitted case that holds the iPad securely in place. The cut-out design provides access to all of the iPad's ports, buttons and controls. The Sport is compatible with Apple's Smart Cover. • There are two aluminum rails on the underside of the case that frame your leg and, with the wide elasticized Velcro strap, allows the case to be held securely and comfortably to your leg. There are four rubber pads on the rails that allow the case to sit on a desk or table securely as well. • It is designed to be thin with a removable cover so as to be clear of the yoke, cyclic or control stick. It has a sleek look when used outside of the plane. • The removable knee strap can be left in the plane leaving you with a beautiful, sleek case for every day use.

iPad 1.....P/N 13-11197 .....**$99.00**
iPad 2/3.....P/N 13-11310 .....**$99.00**

ASA IPAD PORTFOLIO KNEEBOARD

The iPad Portfolio Kneeboard is the ideal stylish multitasking kneeboard, binder, and versatile cover. It is functional and durable and protects your iPad in flight and on the ground making it your favorite cockpit companion.

Fits the iPad, iPad 2, and New iPad (iPad 3). The inside sleeve holds your iPad securely on the right side with full access to iPad controls and button. The left side has pockets to store your documents and provides a writing surface. The elastic strap secures the binder-like case to your leg for inflight use and is easily removable for everyday use. The cover folds into a flap to serve as a vertical or horizontal desktop stand providing easy landscape viewing and full keyboard access. Beautiful black leatherette with embossed wings. Height: 9-11/16", Width (closed) 7-15/16", Width (open) 15-15/16". .....P/N 13-11337 .....**$49.95**

AIRGIZMO IPAD KNEEBOARD

The AirGizmo iPad Kneeboard allows accessing charts and apps on the iPad or iPad2 while flying easier and safer than ever. Molded plastic and a wide velcro strap allow for a secure, comfortable fit. Fold over tablet holder drops out of the way when not in use. Ability to adjust the angle of the iPad for best viewing angle and the ability to cut down glare. Designed to work with both the iPad and the iPad2. Width: 7.93 in.. Height: 9.79 in.. Depth: 3.75 in. Weight: 13.1 ounces. .....P/N -13-11218 .....**$133.95**

ASA IPAD KNEEBOARD WITH COVER

A multitasking kneeboard that is both functional and durable. This new iPad Kneeboard joins the iPad Portfolio Kneeboard in giving pilots greater flexibility to choose the "digital kneeboard" solution that's best suited for them. The iPad Kneeboard is a versatile case and kneeboard that helps pilots protect and use their iPad in flight and on the ground. The elastic strap secures the case to the pilot's leg for in-flight use. The unique plastic cover keeps the iPad screen safe while maintaining full viewing and complete touch-screen functionality, and opens easily to insert or remove your device. The easel folds to position the iPad at a convenient "wedged" viewing angle; alternatively, it can lay flat. The pocket on the back offers room for papers and maps. Openings are provided for charger and headphone/earbuds.

Made of durable fabric with embossed wings. Fits the iPad, iPad 2, and New iPad (iPad 3).

Features: • Easel folds up or down for optimal viewing and pocket provides access to charts and papers • Dock connector / power port accessible with the cover closed • Openings are provided for charger and headphone/earbuds • Fits both iPad, iPad 2, and New iPad (iPad 3) • Pocket on back offers room for papers and maps.

P/N 13-11701 .....**$24.95**

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Prices Subject to Change Without Notice

IPAD ACCESSORIES

OTTERBOX IPAD2 DEFENDER SERIES CASE

The Otterbox iPad2 Defender Series Case allows for complete interaction of iPad2 functions. The built-in stand provides viewing convenience and the bottom silicone grip pads keep iPad2 in place. There are 3 layers of protection and silicone plugs provide coverage for all ports. Note: iPad2 not included. Color: Black. Weight: 1.15 lbs.. Dimensions: 10.8" L x 7.8" W x 1.3" H.

P/N 13-11243 .....**$88.95**

OTTERBOX IPAD UTILITY SERIES LATCH

The Otterbox iPad Utility Series Latch has an adjustable handstrap, elastic strap, and lanyard for convenience along with an accessory storage bag.
Note: iPad not included.
For iPad 1, 2, or 3. S-Binder utility clip. Screen cover. Weight: 0.7 lbs.. Dimensions: 12.4" L x 7.5" W x 3.25" H.

P/N 13-11242 .....**$48.95**

THE APPSTRAP FOR IPAD

The Appstrap is a pilot product designed to convert the iPad or iPad2 into a pilot kneeboard. The patent pending clips are made of high-quality extruded, tumbled and anodized Aluminum. iPad™ instantly detachable from leg strap via Velcro™ joint. Great for flight crews who must share or stow device. Change between portrait & landscape effortlessly. Made of high-quality Aluminum & professional grade webbing. Allows the Apple™ case to act as a writing board. Side-release buckle on leg strap.

iPad 1 .....P/N 11-10398 .....**$49.95**
iPad 2/3 .....P/N 11-10399 .....**$49.95**

IPAD DOUBLE SUCTION CUP MOUNT

The Fat Gecko iPad Mount uses industrial grade locking suction to secure your iPad to any smooth surface in or around your cockpit View fight plans, maps, weather and more. Non damaging and 100% removable. Mounts to glass, plastics, metal and other smooth surfaces. Adjustable ball head rotation and extension. Hands free viewing & operation. Holds securely, even in turbulence.

iPad 1 Dual Mount (2 suction cups).....P/N 11-10018 .....**$89.95**
iPad 2 Dual Mount (2 suction cups).....P/N 11-10020 .....**$98.50**
iPad 1 Mini Mount (1 suction cup) .....P/N 11-10017 .....**$53.75**
iPad 2 Mini Mount (1 suction cup) .....P/N 11-10021 .....**$53.75**

HAND-E-HOLDER™

The Hand-e-holder™ allows you to hold and view your iPad™/tablet device comfortably in your hand, while providing a 360 degree rotation. The Hand-e-holder™ is the key component to using all the other accessories. The Hand-e-holder™ comes with the portable Mini Stand. The Mini Stand is clear acrylic and utilizes the Hand-e-holder™ strap and hand plate to give you 6 viewing positions. The Mini Stand still allows for the Hand-e-holder™ to rotate 360 degrees. Hand-E-Holder .....P/N 13-11553 .....**$39.99**

Accessories

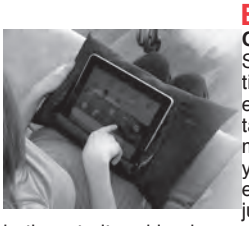
Hand-E-Holder Rectangle Stand.....P/N 13-11551 .....**$45.99**
Hand-E-Holder Leg Strap kit .....P/N 13-11548 .....**$49.75**
Hand-E-Holder Adapter Plate.....P/N 13-11549 .....**$19.99**

IPAD AVIATION ACCESSORY KITS

This affordable accessories kit contains products you will need to start using your iPad in the cockpit. Our kit includes a Dual Universal XGPS150 receiver, a Genesis iPad nylon kneeboard and case, and a Lonestar 2 amp 12V/24V charger. We supply a premium charger which charges iPads, iPhones, iPods, etc. even during heavy use.

iPad 1 Kit.....P/N 11-10452 .....**$192.40**
iPad 2 Kit.....P/N 11-10453 .....**$181.65**

EPILLOW™



Comfortable: Use your iPad or Touch Screen Tablet comfortably anywhere, anytime, even sitting in bed or on the couch. With ePillow, you won't get tired of holding your tablet and it's perfect for reading or watching movies with a friend. **Convenient**: Whether you want to play a game or do some typing, ePillow has you covered. ePillow has an adjustable viewing angle that fits your tablet in both portrait and landscape modes. **Portable**: Great for use on the go. ePillow will make using your iPad or Touch Screen Tablet comfortable in any environment. ePillow is perfect for travel whether flying or driving. Most tablets fit the ePillow with or without a case.
ePillow works with: iPad 1 and 2, Samsung Galaxy Tab, Motorola Xoom, Acer Iconia A500 Tab, LG Optimus Pad, HP Touchpad, Android Toughbook Tab, Sony Tab S, Asus Transformer Prime, ePad, and even books!

P/N 13-11567 .....**$28.95**

IPAD PLC SLIM EX BAG

The MyGo Flight iPad PLC Slim EX Bag's soft, durable and water-resistant fabric protects and cushions your iPad. Small enough to fit inside your regular carrying case, but tough enough to use by itself. Heavy duty, comfortable strap to carry by hand. Large front exterior pocket for AC adapter and other accessories. Size: 12" W x 8.75" H x 2" D. P/N 13-11324 .....**$57.95**
Secure Clip.....P/N 13-11325 .....**$7.65**

IPAD ANTI-GLARE SCREEN PROTECTOR

Protect your iPad 1 or iPad 2 from scratches and reduce glare with the MyGoFlight Screen Protector. Easy to apply and does not add any image distortion. Retains smooth feel to the touch.
NOTE: Not compatible for the iPad 3

iPad 1 .....P/N 13-11322 .....**$26.75**
iPad 2 .....P/N 13-11323 .....**$26.75**

MYGOFLIGHT SCREEN CLEANING KIT

This Screen Cleaner Kit is a special glass wax used to clean and protect the screen of your iPad. It can also be used on other glass surfaces such as eye and sun glasses, computer monitors, and aircraft avionics. It includes a microfiber cloth and a special glass wax formulated to remove fingerprints and leave a layer of protection from dust.
Kit Includes: Glass Wax, and Microfiber Cloth.

P/N 13-10427 .....**$9.95**

DUAL UNIVERSAL XGPS150 RECEIVER WITH BLUETOOTH

The XGPS150 is compatible with all iPad, iPod touch and iPhone devices with OS 3.1 or above and with other smart phones, tablets and laptops which support Bluetooth SPP (Serial Port Profile). Not Applicable for Android Use. High-sensitivity GPS receiver works with most apps that require GPS. Wirelessly connects to devices via Bluetooth. Rechargeable battery lasts up to 8.5 hours. USB charging via the included USB cable. Includes a non-slip dashboard pad. Includes an adjustable strap to attach to an arm or a backpack. Includes 12V car charger.

P/N 11-09941 .....**$99.99**

POWER IBOX FOR IPAD2

Power iBox fits like a second skin for the iPad2 all the while providing protection and power without adding bulk. Equiped with an 8,000mAh lithium polymer battery, the Power iBox packs enough charge to double iPad2's battery life. Its low profile casing provides durable protection against drops or mishaps while its silver finish and stylish design adds personality to the iPad2. iPad2 Not Included.

P/N 13-11684 .....**$129.99**

PS

IPAD ACCESSORIES – BRIGHTLINE FLIGHT BAGS

KNEE DOCK IPADS

Finally, a safe, secure and comfortable way for aviation pilots to use the Apple iPad as an Electronic Flight Bag. With usable space at a premium, and the growing number of iPad aviation apps, it's hard to overlook the benefits that an iPad can bring to your flights. So don't risk your investment. Secure your iPad with a Knee Dock iPad Holder and keep your information close and accessible.

Originally designed for aircraft pilots, the Knee Dock iPad Holder helps keep your iPad secure during flight conditions. The light and open design lets the pilot keep the iPad and their leg cool and comfortable even on long flights. The wrap-around clips securely hold the iPad so there's no worry of accidental dropping.

Everyone knows the iPad is becoming THE cockpit tool for pilots. The range of new software coming out is hard to ignore. So when you bring your iPad with you on your flights, don't risk your investment. Secure your iPad with the Knee Dock Ipad Holder. Whether you're using Foreflight Mobile 3, OzRunways EFB or the Jeppesen Mobile TC App for iPad, you want to be comfortable and confident when in flight. The Knee Dock iPad Holder secures your iPad to your leg, giving you hands-free access to all your in flight software.

Finally, with the implementation of FAA's NEXGEN Air Traffic Control System, electronic media has become a necessity rather than a luxury, due primarily to the increase in number of published charts for each airport, from RNAV STAR/SID procedures to Q-Routes to multiple GPS procedures. So it makes sense to be prepared with your iPad EFB and the Knee Dock iPad Holder. Safe and Secure iPad Holder. Light and cool means comfortable use. Soft riser provides enhanced viewing angle. Easy to Use; one hand adjustments. Can be used for backseat viewing in car.

For iPad 1 .....P/N 13-10429 .....**$32.25**
For iPad 2 .....P/N 13-10430 .....**$32.85**
For both iPad 1 and 2 - No need to purchase two.
P/N 13-10431 .....**$33.50**

AVPAD IPAD KNEEBOARD

From the FBO to the Office, the AvPad iPad Kneeboard is the only case a pilot needs.

The AvPad is completely reversible for left or right-handed pilots, and can be used on either leg. The iPad can be inserted upside down (home button on the top) to allow for a GPS to be connected to the docking port. You can make either the iPad or note pad primary surface.

You still have access to all iPad ports and buttons (slide lock is partially covered), regardless of which way the iPad is inserted into the kneeboard. Two elastic straps on inside cover will hold a note pad, chart, approach plates, checklist, or any combination. A Velcro tab on the inside cover allows you to keep the iPad open on a tabletop for viewing presentations or watching a movie.

The only iPad kneeboard and iPad case a pilot needs. Manufactured with 1000 Denier Cordura nylon for durability. Breathable elastic leg strap. Elastic strap on inside cover to hold notepad, checklist and/or backup charts in flight. Front pocket to hold aviation charts, pilot log book or approach plates. Pen loop on outside kneeboard binding. Designed, Hand Stitched, and 100% Manufactured in the U.S.A.

P/N 13-11691 .....**$75.00**

IPAD UNDERMOUNT STOWAWAY

The iPad Undermount Stowaway is for the Pilot that wants to use iPad technology in the cockpit but has little or no panel space to mount the unit without a total panel redesign. The iPad Stowaway will stow the iPad just below the panel and it can be pulled out for use and then pushed back under the panel when not needed, such as flight time when critical information is not needed from the iPad . The stowaway has a hood option that when not in use, lays down on top of the iPad and stows under the panel with the iPad . The iPad tray slides under the panel on nylon guides that have zero clearance and have adjustable resistance, thus this unit is free of any kind of slop that may cause rattle. Includes instructions for mounting and the adjustment of the friction guides

Options: Hood, Lighter Adaptor • Features: • All alum construction, no plastic • Felt liner in tray, prevents scratches and fretting • Slot in Tray for Hook-up to AC DC power sorce • Can be ordered in Portrait or landscape configuration • Teflon adjustable friction guides • Stainless steel Hardware • Alum Hood option • Cigarette lighter adaptor option.

P/N 13-11702 .....**$169.95**

BRIGHTLINE B2 COMPUTE BAG

The B2 Compute starts with the 2" Center Section, which is designed to hold 13" laptops. Add a Front and Rear End Cap and you have an extraordinary laptop bag. The Front End Cap allows you to store items such as power cords, backup drives, flash drives, digital cameras, smart phones, tools, keys, etc. Meanwhile, the Rear End Cap allows you to store your manilla folders and documents. This can be used daily or you can attach the 2" Center Section to any other FLEX module. For example, you can zip it in between the Front Bag and the Rear Bag when traveling.

This bag also includes the Portfolio Handle which can be attached to the Front End Cap. This will only be used when you decide to remove the Center Section Two and zip the Front End Cap and the Rear End Cap together to make a "Portfolio Bag". P/N 13-11848 .....**$107.00**

BRIGHTLINE B6 CONVEY BAG

The B6 Convey is perfect for VFR Pilots, but also has many uses outside aviation. For the VFR Pilot, one often needs only the essentials when going flying: Headset, sunglasses, GPS, todays charts, kneeboard, radio, etc. With the B6 Convey, you get a front bag, a rear end cap, a radio pocket and a pen pocket.

The B6 is perfect for that day trip or spending time in the pattern perfecting those landings. Why bring more bag than you need? The B6 Convey also makes a fantastic travel bag. When travelling, store your 13" laptop, power cords, smart phone, snacks, pillow, iPad, magazines, iPod, keys, DVD's etc., in a small efficient bag that fits right under the front seat. It really is the perfect carry-on bag.

P/N 13-11849 .....**$125.00**

BRIGHTLINE B10 CLASSIC BAG

The B10 Classic is the FLEX version of our award winning Brightline Bags Pilot Flight Bag. The B10 Classic is the same small, efficient, superior flight bag it was before, it is now just turbo charged with the FLEX System.

Perfect for VFR to light IFR, the B10 satisfies most pilots needs. The B10 Classic will hold two headsets, portable GPS, Glasses, charts, kneeboards, Phones, Keys, iPads, folders, multi-tools, fuel testers, flashlights, E6B's, and more.

The B10 Classic comes with a front and rear bag, a removable radio pocket and a removable pen pocket. Want a different pocket? Simply replace one of the pockets and add it to the bag.

P/N 13-11850 .....**$139.00**

BRIGHTLINE B16 CONTAIN BAG

The B16 Contain is the B10 Classic with 5" Center Section zipped in between the front and rear bag of the B10.

The B16 is designed for people who need a little more storage than the B10 will offer. It was designed primarily for IFR pilots who need the extra room for Charts and IFR Binders. The 5" Center Section affords the heavy IFR pilots the room they need. And, with the FLEX System, one can simply unzip the 5" Center Section and remove it when not in use. The idea being that why carry more bag than you need? Zip it in when you do need it. Zip it out when you don't. The B16 Contain comes with a front bag, a rear bag, a 5" Center Section, a radio pocket, a pen pocket, and a double pocket.

P/N 13-11851 .....**$220.00**

BRIGHTLINE B25 CARRYALL BAG

The B25 Carryall is designed to carry all you will ever need. Designed primarily for aviators who need to pack overnight items, such as clothes, shoes, coolers, etc., the B25 Carryall fits the bill when maximum space is required. And, like any bag in the FLEX System, the 11" Center Section can be removed by simply unzipping it and removing it, leaving you with the B10 Classic and all of your flight gear.

P/N 13-11852 .....**$265.00**

PS

FLYBOYS GEAR FOR PILOTS

FLY BOYS PUBS BAG

Ideal for keeping things “co-located” while you’re flying and mission planning. Integrates perfectly with Fly Boys kneeboards. Top opening flap gives access to the main pockets. Additional smaller external pockets are located in the front, rear as well. Handy for smaller items or for sliding enroute charts and maps for quick access. Top, front and back are secured with sturdy Velcro™. Pocket on one side for a water bottle or sunglass case. Slots on the opposite side for 2 pens or pencils. The most popular choice of most fighter and trainer pilots no matter what the airframe. Also, an excellent option for civilians looking for a no frills - priced right bag. Measures 8 1/2” x 11” x 1” empty. Fully loaded it will expand out to 8 1/2” wide!

Blue FB1020.....P/N 13-05565 .....**$24.95**
Black FB1020 .....P/N 13-05566 .....**$24.95**

FLYBOYS MISSION PUBS - BAG

Longer and wider than the FB1020 Regular PubsBag, but not as tall. Fits everything you will ever need for your mission plus some! Three main compartments comprise this model. Two large compartments and the third is divided in the middle. No external pockets on this model, however the internal capacity is awesome. Favored by F-15E, B-1, B-2, and C-130 aircrew. It’s also popular in the USAF/USN pilot training environmentOutside dimensions are 9” x 11” x 1” empty, and fully loaded it will expand to 6 1/2” wide.

Black .....P/N 13-05622 .....**$25.95**
Blue .....P/N 13-05623 .....**$25.95**
Green .....P/N 13-05624 .....**$26.50**

FLYBOYS LARGE CREW BAG

Lightweight but heavy duty bag at a fair price. Double stitching and reinforced seams are standard. Silent rubber zipper pulls. Nylon zippers are self repairing and provide a significant level of water resistance. The removeable shoulder strap has a pebbled shoulder pad unique only to Fly Boys. Keeps the bag from slipping off. All new gray interior which provides high visibility for finding items inside the bag in low light conditions. Sturdy built moveable/ removeable interior dividers. New retention sleeve for flashlights incorporated. Super tough PVC armoring incorporated into the bottom of the bag. Virtually waterproof along the bottom and provides additional protection and structure to the unit. Exterior Dimensions: 22” x 14” x 12” Main Compartment Dimensions: 16” x 11” x 11”

P/N 13-05563 ..... **$110.95**

FLYBOYS EXTREME CARGO BAG

Cargo and Tanker crews require specialized gear for every mission. To meet their needs, Fly Boys has fielded the ultimate cargo bag meeting crew-designated specifications. Designed in conjunction with active duty and reserve KC-135R, KC-10 and C-17 crewmembers, the FB4400XCB Extreme Cargo Bag is configured to exceed every expectation in every category. If you’re a crewmember on a tanker or cargo aircraft and you put your gear through extreme punishment, then you’ve found the best constructed and configured bag available. Main compartment is 16x12x12 inches. P/N 13-08081 ..... **$219.00**

FLY BOYS HELMET BAG

420 Denier Cordura Nylon with 1/2” cloth poly-fill to cushion your helmet. Heavy duty nylon zipper - resists snags. Two interior pockets WITH VELCRO CLOSURE that fit your DTC, VTR tapes, sunglasses or water bottle. This super tight knit nylon shell is extremely water resistant and provides superior protection for YOUR expensive equipment - and the interior lining is extremely soft. Oversized from standard issue versions, it is superior for helmets with with NVG or HMS mounts! Two NEW pockets for smaller items. Comes with an exact color matched, adjustable shoulder strap fitted with a gripping contouring rubber shoulder pad. Inside Dimensions (FLAT): 19 1/2” Wide 20” Tall.

Blue.....P/N 13-05571 .....**$34.95**
Black .....P/N 13-05572 .....**$34.95**
Green .....P/N 13-05573 .....**$34.95**

FLY BOYS IFR/VFR KNEEBOARD

Features seven eyelets for securing checklists, plastic checklist pages or your in-flight guide - (every base has different spacing.Includes the new flexible plastic clipboard (FB1060).Eyelets also correspond to JEPPESEN approach plates and chart protectors!!..
Folded: 6.5” X 1.5” X 9.5” Unfolded: 10” X 8.5” X 1”
Writing Surface Area: 8” X 5”

Blue ..... P/N 13-05568 ..... **$33.95**
Black ..... P/N 13-05569 ..... **$33.95**
Green ..... P/N 13-05570 ..... **$34.85**

FLYBOYS CHECKLIST PAGES

Heavy-uty plastic FlightCrew checklist pages. Sturdy construction extends the life of these pages. Easy to use at made at a thickness that helps prevent the pages from becoming brittle or tearing in cold environments. Pages are top loading and are great for protecting your local approaches or condensed aircraft checklist. No covers included. Sheet Size: 8” X 5”..... PN 13-05627.....**$0.55**
Bulk back (25 Pk.) w/ Covers... PN 13-05629....**$13.75**

OVERSIZED CHECKLIST PAGES

These are great if you are ready to start putting originals in the pages instead of shrunken copies! As you can see, a full size Jeppesen chart slides right in! Now your mission data cards fit, your target photos can get more detail in them, and your attack cards slide right in without making a trip to the copier to shrink or the paper cutter to trim! These are the same construction as the regular, just bigger. Great in extreme temperatures and long lasting. Spacing on the holes matches up with the FlyBoys KneeBoard with Eyelets and Jeppesen charts.Size is 5 1/2” X 8 1/2” - really makes a difference.

Sheet Size: 8-1/2” X 5-1/2”.....PN 13-05628.....**$0.85**

EXTRA TALL PAGES FOR BIG CHECKLIST

Heavy duty plastic FlightCrew checklist pages. Sturdy construction leads to a long life. Easy to use but heavy enough to not get brittle or tear in extremely cold environments. Pages are top loading and are excellent for protecting your local approaches or condensed aircraft checklist. USABLE interior dimensions: 5”x11”, overall width including checklist ring holes 5 7/8”

Sheet Size: 5” X 11” .....PN 13-05630.....**$0.70**
Bulk Pack (25 Pk.).....PN 13-05631.....**$16.50**

FLYBOYS HARD PLASTIC COVER SET FOR EXTRA PAGES

The new Cover Set for the FB2203 pages are great. They are perfect for protection of the pages as well as providing structure for these tall pages. Without these covers, they tend to sag due to their height. Buy as many pages as you need, as many cover sets as you need. Sheet Size: 5” X 11”....PN 13-05632.....**$5.25**

OVER SIZED FLIP CHART PAGES

Over sized top loading pages with three ring holes in the top for those checklists and situations that flow better than the normal “book format.” Dimensions: 9.25” x 6”.

Sheet Size: 8” X 5” .....PN 13-05633.....**$0.53**
Bulk Pack (25 Pk.).....PN 13-05634.....**$13.50**

FLYBOYS CHECKLIST RINGS

Durable. Unbreakable. Multi-Purpose. Safe. Opaque nylon ring to hold your checklists and in-flight guides . Or use them for outdoor use where metal rings would rust or wear out. Patented ball-lock design to prevent FOD out on the flight line. The nylon ring is very low resistance as well. Once they are closed, they stay closed. When closed, they are a 2.5” diameter ring. Opened, they stretch to 5.25”. For most applications 4 rings is plenty for keeping your checklists or inflight guides secure. Pack includes 10pieces.

Clear.....P/N 13-05621.....**$8.30/ Pack**
Black.....P/N 13-08644.....**$9.25/ Pack**
Red.....P/N 13-08643.....**$9.75/ Pack**

FLYBOYS PILOT LOGBOOK

Represents a comprehensive look at your military flying career. Special considerations were made for this book that no other logbook will provide. If you are serious about keeping track of your flight time, and operate Army or USAF rotary aircraft - this is the book you need with no question. Record your own flying history of missions, upgrades, checkrides and awards right in this beautiful and durable logbook. This book will hold at least 10 years worth of flight history.Dimensions: 9” tall x 7 7/8” wide x 1” thick

Airforce Pilots Fly Logbook.....P/N 13-05625..... **$29.99**
Army Pilots fly Logbook.....P/N 13-06410..... **$29.99**

FLYBOYS REMOVE BEFORE FLIGHT KEY CHAIN

This nylon strap streamer with the REMOVE BEFORE FLIGHT rubber patch is an instant reminder of the real warning flags that hang off of airplanes on the flight line. They’re supposed to be visible and easy to find during the walk-around inspection. Well, now you won’t have to “walk around” your house or fish through your gym bag trying to find it!..... P/N 13-05626 ..... **$4.99**

PS

KNEEBOARDS - HOODS

PILOTS LAP DESK

This top opening aluminum lap desk provides a solid smooth writing surface with a 3/8" bottom storage compartment for charts, computers, checklists, pens, etc. Can be used vertically or horizontally designed forms and is great for left or right handed use. Size: 9.5"x12"

P/N 13-00808 .....**$29.95**

FLY INFORMED KNEEBOARD/CALCULATOR

This bottom opening pilot clipboard measures 8-1/2" x 12" and features a bottom storage compartment (1-1.25" deep) for charts, computers, checklists, pens, etc. Great for vertical or horizontal forms. Heavy duty aluminum construction with solid smooth writing surface. Furnished with battery powered calculator clip for in-flight calculations. Flexible light available separately.

Clipboard/Calculator..... P/N 13-00809 .....**$42.75**
Detachable Light (clear)..... P/N 13-00811 .....**$22.30**
Detachable Light (red) ..... P/N 13-00812 .....**$22.30**

ASA IFR TRI-FOLD KNEEBOARD

Strong aluminum tooled clipboard silk-screened with important IFR information fits into black 3-panel jacket. Has room for charts, books, flight computers, etc.

P/N 13-05840.....**$28.50**

ASA VFR TRI-FOLD KNEEBOARD

This kneeboard uses the VFR Kneeboard in a three-panel jacket. The left panel has ample room for small books, papers and oddly-shaped items. The center panel holds the kneeboard under clear plastic with a pen/pencil holder and buttonholes on either side.. The right-hand panel contains a clear pocket for easy map viewing, and the elastic leg band's Velcro closures fit any leg size comfortably. Black nylon with embroidered silver wings logo. Kneeboard is 6-1/2" wide x 9-1/2" high. P/N 13-02712.....**$27.75**

BLOCKALLS TRAINING GLASSES

Designed by pilots for pilots. Blockalls™ resolve problems with existing view limiting devices. Weighing in at just under 1oz, it's easy to forget you are wearing them. Engineered to easily penetrate the seal of your headset eliminating the hassle of having to remove it first and can be worn for extended periods of time without discomfort, thanks to the soft rubber nose piece and streamlined temple tips. Tailored off center viewing also keeps more of your time inside the flight deck rather than outside. Recommended by AOPA/ Flight Training.

Color	Part Number	Price
Black	13-06240	**$22.50**
Aluminum	13-06241	**$22.50**
Pink	13-06242	**$22.50**

OLD FOGGIES™ IFR TRAINING GLASSES

IFR Glasses' Old Foggies™ brand view limiting device was developed in order to balance the training value of a view limiting device without further limiting the pilot from being able to read his/her charts. Old Foggies™blend of precision fogging and custom powered corrective lenses allows for the precise amount of the instrument panel viewing without any view of the horizon. Old Foggies™ are available in customizable powers with no need for a prescription. Available in Clear and Light Mirrored Tint (a reflective coating that eliminates glare without further limiting visibility). Available Powers: 1.5, 2.0, 2.5

Description	Part No.	Price
Clear Lens Fog 1.0	13-05004	**$29.95**
Clear Lens Fog 1.5	13-05005	**$29.95**
Clear Lens Fog 2.0	13-05006	**$29.95**
Clear Lens Fog 2.5	13-05007	**$29.95**
Clear Lens Fog 3.0	13-05008	**$29.95**
Tint Lens Light Mirrored Tint Fog 1.5	13-05009	**$32.95**
Tint Lens Light Mirrored Tint Fog 2.0	13-05010	**$32.95**
Tint Lens Light Mirrored Tint Fog 2.5	13-05011	**$34.95**
Tint Lens Tinted Fog 1.5	13-05012	**$34.95**
Tint Lens Tinted Fog 2.0	13-05013	**$34.95**
Tint Lens Tinted Fog 2.5	13-05014	**$29.85**

JIFFYHOOD

A lightweight plastic hood that does the job inexpensively, Jiffyhood stows rolled up in a flight case, or even in your pocket. Has an adjustable elastic headband for comfortable fit. P/N 13-03457.**$11.95**

FRANCIS IFR HOOD

Francis hood restricts your vision totally to your instruments & because its small, will not block any part of an instructors vision. Made of lightweight, shock-resistant plastic, and has cushioned face pad for comfort. Adjustable elastic headband. P/N 3362.....**$22.85**

JEPP SHADES

Replaces bulky, hard-to-use instrument training hoods. The improved design allows better student/instructor interaction. The Cockpit proven design works conveniently under headsets and the universal adjusting strap reduces pressure on the ears and temple. The Velcro™ strap fits comfortably and flip-up lens allows convenient IFR/VFR flight transition. The high quality polycarbonate lens is impact resistant. P/N 13-404311 .....**$29.95**

FOGGLES

A creative solution to the problems caused by wearing a large hood on your head. Foggles fit and feel like glasses, but the opaque frosting on the top and sides let you see only the instrument panel. Your out the window view is always foggy. Wear them with headsets and microphone with no interference or discomfort. They come with a protective carrying case and weigh only two ounces.

Clear .....P/N 13-06500.....**$23.50**
Yellow .....P/N 17-00039.....**$21.25**

SUPER HOOD

This Super Hood is one of the safest, most comfortable and best made instrument training hoods we've found anywhere. Ideal with eye glasses or headsets it slides in under the headset without relinquishing control of the aircraft and it can be instantly removed at any time for a safe approach or landing. Blocks outside reference but provides a full panel view to reduce vertigo. Light weight (3 oz.) and comfortable. P/N 13-30200 .....**$21.75**

VIBAN IFR TRAINING HOOD

Pilots prefer ViBAN over other view-limiting devices because it weighs only 2 oz., making it easy to put on and take off during flight. Its eye-catching design is skillfully engineered to provide a perfect view of the instrument panel while providing complete occlusion forward and to the side. Even more, ViBAN folds compactly to fit in its own durable case and is easily stored in your flight bag.

Without Nosepiece.....P/N 13-02022 .....**$38.95**
With Nosepiece.....P/N 13-02023 .....**$38.95**

OVERCASTERS

Overcasters is a unique IFR training tool which clips to glasses (sunglasses or RX) in seconds. Flip-up in one easy motion for easy transition. Feather light with no straps, helmets, or hoods. Accepted by IFR examiners for checkriders. P/N 13-33799 .....**$16.85**

ASA HOODWINK IFR TRAINING HOOD

Unique design easily and automatically springs open when removed from its pouch and packs away for storage with just a simple twist. Lightweight, yet durable enough to withstand the rigors of daily use. 4"x4" slim pouch is small enough to fit in a shirt pocket or in almost any flight bag compartment. Can be used with or without headsets. One size fits all. P/N 13-05620.....**$15.95**

CLOUD-EEZE™ IFR TRAINING GLASSES

IFR Glasses' Old Foggies™ brand view limiting device was developed in order to balance the training value of a view limiting device without further limiting the pilot from being able to read his/her charts. Old Foggies™blend of precision fogging and custom powered corrective lenses allows for the precise amount of the instrument panel viewing without any view of the horizon. Old Foggies™ are available in customizable powers with no need for a prescription. Available in Clear and Light Mirrored Tint (a reflective coating that eliminates glare without further limiting visibility). Available Powers: 1.5, 2.0, 2.5

Cloud-eeze Clear Lens.....P/N 13-05015 .....**$16.95**
Cloud-eeze Tint Lens.....P/N 13-05016 .....**$18.95**

BEST HOOD: IFR TRAINING HOOD

The 'Best Hood' is a sturdy paper hood which is amazingly simple yet very effective. Its inexpensive, it folds flat for the flight bag and is an excellent vision limiting device for instrument pilot training.Easy to use, the hood has a comfortable elastic headband and it fits easily over glasses. P/N 17-00020.....**$4.20**

PS

AIRCRAFT LOG BOOKS

AERO PRODUCTS AIRCRAFT LOGS

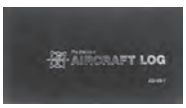
Permanent, hard cover, logs with leatherette cover printed in gold. Pages are updated to current FAA requirements. Generous line spacing. Size: 5.75"x7.75"; 74 pgs; Green cover. Comprised of 9 sections: Aircraft Description, Installed Equipment, Major Alterations, Life Limited Parts or Overhaul Requirements, AD or Factory Bulletin Compliance Record, Altimeter and Static System Checks, Radio and Electronic Checks, Maintenance Record (FAR 43.9), Inspection Record (FAR 43.11-91.217).

AF-5 Hard Cover ..... P/N 13-32385 ..... **$9.95**
AL-12P Soft Cover ..... P/N 13-04670 ..... **$8.95**

CUSTOM-BUILT AIRCRAFT OWNERS & OPERATORS MANUAL

Contains spaces for listing of aircraft description, specifications, construction data, weight and balance calculations, operating limitations, operating instructions and servicing information. (L. Pazmany) P/N 13-20100 ..... **$26.75**

ASA AIRCRAFT LOG BOOKS



Designed to keep records of the entire aircraft in order: inspections, tests, repairs, alterations, ADs, service bulletins, and equipment additions, removals or exchanges.

SA-1 soft cover-hunter green; 7.25"x 4"; 64 pgs
P/N 13-32375 ..... **$4.75**

SA-2 Hard cover-Hunter Green; 7.75"x 5-5/8"; 96 pgs.
P/N 13-32384 ..... **$8.75**

ASA AIRCRAFT FLIGHT LOG/ LOGBOOK (SP-FLT)

Spiral-bound and perfectly sized to fit in an aircraft glove box or chart pocket, this logbook is a quick reference to the recent history of the airplane so pilots have immediate access to the airplane's records without needing to dig through logbooks usually kept in the maintenance hangar. The Aircraft Flight Log fills a gap in aircraft records for pilots, and instantly allows them to know the status of the aircraft they are about to fly. P/N 13-03163 ..... **$8.95**

PLANEVIEW AIRCRAFT FLIGHT LOGS

There are several things that make this flight log useful to so many owners and operators. Its size is compact and can be easily stored in a glove box or side pocket. You only have to use the categories that are important to you. The owner of a Piper Cub would not use the logbook to the extent that a Piper Mirage owner/operator would, but it can easily accommodate the needs of both aircraft. Multiple pilots can use the book, so it can be used in an aircraft that is used in partnerships, fight schools, charter and many other operations where there are a number of different pilots flying the aircraft. A flight school or aircraft rental company could track how their aircraft is being utilized.

Single engine log ..... P/N 13-01946 ..... **$7.95**
Multi-engine log ..... P/N 13-01947 ..... **$7.95**

PILOT DATABOARDS NATURAL COLOR FRAME

The Data-Board comes in both single engine and twin engine configuration. It is built to last for years with normal usage and care.

Features: • Personalized with your Aricraft "N" Number • High quality Dry-Erase laminated surface • Dry-Erase surface laminated over metal for a "Magnetic Personality" • Comes complete with mounting hardware, dry-erase marker/eraser combination and care instruction • Marker/eraser is magnetic so will attach to board for convenience • A great gift for every pilot in your life.

Single Engine Natural Wood ..... P/N 13-08046 ..... **$36.95**
Single Engine Natural Wood with N# ..... P/N 13-08048 ..... **$39.95**
Twin Engine Black Trim ..... P/N 13-08047 ..... **$36.95**
Twin Engine Black Trim with N# ..... P/N 13-08049 ..... **$39.95**

AIRCRAFT EXPENSE & USAGE JOURNAL

This product is a compact 32 page journal, measures 4 ¼" tall by 2 ¾" wide, is assembled with 2 staples, and can easily fit into aircraft glove box or shirt pocket. Weight is approximately 1/2 oz. Printing is black on cover of white 67 lb cover stock paper and on pages of white 20 lb paper. Journal covers a full one year period, contains spaces for 20 transactions per month, and includes a monthly/yearly summary.

Expense Journal ..... P/N 13-05056 ..... **$2.95**
Usage Journal ..... P/N 13-05057 ..... **$3.95**

AERO PRODUCTS ENGINE LOGS

Permanent, hard cover, logs with leatherette cover printed in gold. Pages are updated to current FAA requirements. Generous line spacing. Overall dimensions: 5.75"x 7.75"; 74 pages; Red cover. Comprised of 8 sections: Engine Description, Installed Record, Life Limited Parts or Overhaul Requirements, AD or Factory Bulletin Compliance Record (propeller or rotor only), Repair and Inspection Record (propeller or rotor only).

EF-5 Hard Cover ..... P/N 13-32390 ..... **$10.85**
EL-13P Soft Cover ..... P/N 13-03811 ..... **$7.75**

ASA ENGINE LOG BOOKS

Keep track of engine inspections, tests, repairs and alterations, airworthiness directives, manufacturers' mandatory service bulletins & equipment removal or exchange. Color: Burgundy

Hard Cover (7.75" x 5-5/8") 96 pages ..... P/N 13-32382 ..... **$8.95**
Soft Cover (7.25" x 4"). 64 pages ..... P/N 13-32380 ..... **$4.75**

EAA LOGBOOKS

Aircraft Log ..... P/N 13-16500 ..... **$7.50**
Engine Log ..... P/N 13-02253 ..... **$7.50**
Propeller Log ..... P/N 13-02255 ..... **$4.95**

ASA AIRCRAFT FLIGHT LOG

The ASA Flight Log is the perfect tool for aircraft owners and aircraft flown by multiple pilots to keep track of the care and use of an individual aircraft. Spiral bound and perfectly sized to fit in an aircraft glove box or chart pocket. Logbook pilots will have quick reference to the recent history of the airpance without digging through those usually kept in the maintanance hangar. P/N 13-03163 ..... **$8.95**

ASA PROPELLER LOGBOOK

Record data for hub & blade inspections, repairs and alterations, airworthiness directives, & factory bulletins. Soft cover, Black, 7-1/4" x 4", 20 pages.
P/N 13-32370 ..... **$3.95**

ASA AVIONICS LOG BOOK

Includes entries for avionics equipment, VOR accuracy, transponder & ELT checks, AD & SB compliance, maintenance records. Soft cover, blue/gray, 7.25"x4", 64 pgs.
P/N 13-02315 ..... **$4.75**

ASA AMT LOG BOOK

Designed for Maintenance Technicians, IA-qualified mechanics, and students to log training and educational requirements, work performed, and experience for the purpose of tracking for future certification, recurrence, employment applications, school records, or insurance applications. Plastic coil binding stays open on current page. Soft cover, 6 1/2" X 11", 192 pages. P/N 13-02313 ..... **$13.95**

FLIGHT CREW LOG BOOK

Trip & Expense Record. The latest edition of 'The Little Red One' created and published by CrewGear founder, Capt. Richard Adams. This shirt-pocket-sized crew log has 216 pages for recording flight times, expenses, duty rigs, crew names, phone numbers, door codes, and more. 12 monthly schedule pages, plus a provision for year totals in the appendix. Meets FAA & IRS record keeping requirements. Durable high quality vinyl cover. Red. 4.25" X 3.25". P/N 14-00066 ..... **$7.25**

FLIGHT SCHEDULE LOG

Essential to smooth dispatching, features include: a replaceable perpetual aircraft/instructor entry panel; standby request section; and time in 15-minute blocks. Charcoal Gray binder is 17-1/4" x 13-5/8" with 15" x 12" pages for easy viewing. 60 pages included, refill packs available.
P/N 13-02308 ..... **$39.75**

FLIGHT SCHEDULE REFILL PACK - Can be used over and over with this 60-day refill. P/N 13-02309 ..... **$17.95**

GLEIM PILOT LOGBOOK

The Gleim Pilot Logbook provides detailed entries for all inflight information, sections for certificates, ratings, and operating privilege endorsement section, table of contents, room for up to 450 entries, and much more. High quality paper and hard cover binding. 112 pgs. 5"x9. P/N 13-01822 ..... **$7.25**

PS

PILOT LOG BOOKS

JEPPESEN PROFESSIONAL LOGBOOK

This professional log book from Jeppesen, measuring 6-1/2" x 11" is constructed of sturdy, easy-to-read ledger paper & includes an elegant cover with a gold sticker in which you can write your name on.

P/N 13-21728 ..... **$27.50**

JEPPESEN PROFESSIONAL EUROPEAN LOGBOOK

Complies with JAR 1.080 regulations for logging flight time in Europe. handles 10 years of data. Size: 17.1 x 28.6 cm P/N 13-02212 ..... **$29.75**

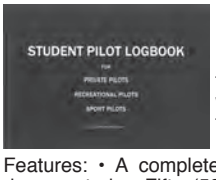
JEPPESEN PILOT LOGBOOK

Our 96-page permanent record offers large flight time category spaces, arranged according to FAA regulations. Printed on "easy-eye" green pages that resist "bleed through". Size: 8-5/16" x 5-5/16" P/N 13-21732 ..... **$12.82**

LITTLE PILOT LOGBOOK

The Little Pilot Logbook is the perfect gift for the aviation enthusiast. Record treasured stories and precious favorites, display adorable pictures and store mementos in this spiral bound 8.75" x 5.75" hard cover book that lays flat for easy entry and portable enough to carry with our on your next journey. This keepsake will be treasured not only by the parent but also by the future aviator that receives it as a record of childhood memories of flight.

P/N 13-08051 ..... **$24.95**



STUDENT PILOT LOGBOOK

Designed for use by Student Pilots and their Flight Instructors. This Student Pilot Logbook is the only thorough logbook that a Student Pilot will need from start to finish. If a Student decides to go from Sport Pilot to Recreational Pilot to Private Pilot, only one logbook will be needed.

Features: • A complete record of Flight and Ground training will be documented. • Fifty (50) critical areas of airmanship are available to be tracked per flight. • Areas of training which need to be improved are tracked on each flight. • Seventy (70) pages of flight evaluations, a flight per page, with additional space for accurate descriptions of flight activities. • Observer time is recorded when more than one student is being trained. • Discussion time is also recorded along with ground school briefing subjects. • Each flight evaluation has a space for the Student and FLight Instructor to sign. • Made in the USA.

P/N 13-11202 ..... **$24.95**

PILOT TRAINING RECORD

Official Pilot Training Record for Aeroplane to be used in conjunction with a regular logbook. This shall be used to record ground school, preparatory ground instruction, dual and solo flying for all private and commercial and Class 4 instructor rating training in Canada. Meet all the regulation of Transport Canada. *This is a bilingual PTR

P/N 13-11698 ..... **$3.75**

PS

SAGA SMALL STUDENT LOGBOOK

Designed for lifetime durability, this logbook offers large flight-time category spaces, arranged according to canadian regulations. We know that pilots demand nothing but the best and we deliver logbooks for every level of pilot! Logbook Includes: • Year (month, date) • Aircraft (make/model, registration) • Pilot in Command, Co-Pilot, Student or Passenger • Route of Flight • Remarks • Single Engine Aircraft [Day (Dual, P.I.C.), Night (Dual, P.I.C)] • Multi-Engine Aircraft [Day (Dual, P.I.C., Co-Pilot), Night (Dual, P.I.C., Co-Pilot)] • Cross Country (Dual, P.I.C., Night) • Instrument (Hood, Flight Simulator, Actual IMC and No. IFR Appr.) • Take-offs & Landings (Day, Night) • As well as two additional free columns. • Small log has 10 entries per page • Silver imprinted cover • Hard-Cover, 144 pages.

P/N 13-11696 ..... **$11.50**

POWDER PUFF PINK LOGBOOK

The Powder Puff Pilot standard logbook has a pink, protective hard cover with the Powder Puff Pilot logo on the front. It's standard size (8¼ by 6¼ inches) with 52 pages of all the record keeping, endorsements, and flight log information that every pilot needs. Inspirational quotes from the famous pioneers of women aviation sprinkled throughout to keep you motivated, inspired, and flying high. P/N 13-06342 ..... **$17.95**

POWDER PUFF PILOT AVIATRIX LOGBOOK

This logbook-scrapbook hybrid documents a youngster's early flying experiences. Its removable, cardstock pages record their First Flight Plan, First Pilot Report, and a flight log. It also has pages for listing favorite pilots, future aspirations, thoughts and quotes about flying, photos, and drawings.

Pink ..... P/N 13-11471 ..... **$19.95**
Blue ..... P/N 13-11472 ..... **$19.95**
Green ..... P/N 13-11473 ..... **$19.95**

STANDARD PILOT MASTER LOG BLACK

The finest and most verstile logbooks for aviators. ASA's logbooks have been "The Standard" of the industry for over 30 years and comply with the FAA's recordkeeping requirements. With so many options, there is a logbook that's right for you. Versatile, easy-to-use and flexible enough to fit any pilot's needs, student or ATP. Columns provide standardization, but are flexible enough to allow pilots to customize to fit their needs. Summary pages allow pilots to track experience, aircraft types, currency, medical dates, flight review, and more for quick reference. Hard cover, black, 11" x 6-1/2", 278 pages.

P/N 13-32392 ..... **$18.95**

PILOT LOGBOOK (ASA-SP-10)

This new introductory logbook is perfect for flight instructors and flight schools to start students out with an inexpensive logbook. With space for 16 separate flight entries, a ground instruction log, several solo endorsements, and a separate log for each type of aircraft flown, this logbook is great for introductory flights, first flight lessons, promotional give-aways and more.

P/N 13-05670 ..... **$2.35**

ASA FLIGHT CREW LOGBOOK POCKET SIZE

Created with the input of airline pilots and instructors, these shirt-pocket size logs are designed for long-lasting and comprehensive recordkeeping on the road. Options are provided for tracking flight time, currency requirements, expenses, duty times, layovers, and much more. Soft cover. Black. Spiral bound. 108 pages. 3-1/2" x 4-1/4". P/N 11-08801 ..... **$5.75**

ULTRALIGHT PILOT'S LOGBOOK

This small logbook is perfect for the ultralight pilot. Includes sections for flight time, airframe repairs, and engine repairs, plus metric/inch conversion table and fuel/oil ratio chart. Measures 4 1/4" x 7".

P/N 13-11509 ..... **$1.95**

LIGHTER LOG

Plugs into your aircraft's lighter receptacle and tracks each flight effortlessly. Monitors the system voltage and warns of possible generator or electrical problems. Plug it in to any 12 or 24-volt system and forget it. Up to 500 flights may be recorded and stored in the internal memory for 10 years. Attach the LighterLog to any Windows 95/98/2000/Me personal computer using the included serial cable and download the flight records to the included Lighter Logbook software. Optionally attach the LighterLog to any industry compatible GPS or LORAN digital port and the LighterLog will record departure and destination information. If no GPS/LORAN is available, the Lighter Logbook software will list all airports within cruising range of the recorded flight time. Just point and click on the destination airport. Print familiar style logbooks from the computer whenever you like.

P/N 13-03299 ..... **$129.50**

PILOT LOG BOOKS

PROFESSIONAL PILOT LEATHER LOGBOOKS

These are designed and made to last a lifetime. Available in Aviation leather and brown leather which are styled to look like a log book dating back to the early days of aviation, as well as black leather which is standard in modern log books. This logbook is bound from true leather. The log pages are designed to keep traditional logging info but to provide more flexibility. It has customary Date, Aircraft, Pilots, Route & Remarks sections. Each page is 8.5"x 9"; 20 entries per page; 288 pages which allows for 2600 entries.

Aviation Brown leather .....P/N 13-02139 ..... **$79.95**
Antique - Brown leather .....P/N 13-02141 ..... **$79.95**
Black leather .....P/N 13-02140 ..... **$84.75**

STANDARD PILOT LOG BLACK

The finest and most verstile logbooks for aviators. ASA's logbooks have been "The Standard" of the industry for over 30 years and comply with the FAA's recordkeeping requirements. With so many options, there is a logbook that's right for you. Versatile, easy-to-use and flexible enough to fit any pilot's needs, student or ATP. Includes all instructor endorsements. Hard cover, black, 8" x 4 1/2", 100 pages.
P/N 13-32365 ..... **$6.95**

STANDARD PILOT LOG BURGUNDY

The finest and most verstile logbooks for aviators. ASA's logbooks have been "The Standard" of the industry for over 30 years and comply with the FAA's recordkeeping requirements. With so many options, there is a logbook that's right for you. Versatile, easy-to-use and flexible enough to fit any pilot's needs, student or ATP. Includes all instructor endorsements. Hard cover, burgundy, 7-1/2" x 4", 100 pages.
P/N 13-32360 ..... **$9.85**

STANDARD PILOT LOG

The finest and most verstile logbooks for aviators. ASA's logbooks have been "The Standard" of the industry for over 30 years and comply with the FAA's recordkeeping requirements. With so many options, there is a logbook that's right for you. Versatile, easy-to-use and flexible enough to fit any pilot's needs, student or ATP. Includes all instructor endorsements. P/N 13-32355 ..... **$8.95**

FLIGHT CREW LOGBOOK

Created with the input of airline pilots & instructors, these shirt-pocket size logs are designed for long lasting and comprehensive recordkeeping on the road. Options are provided for tracking flight time, currency requirements, expenses, duty times, layovers, and much more. Soft cover, 108 pgs. P/N 13-04432 ..... **$8.95**

PROFLIGHT STUDENT PILOT LOG BOOK

Here is a great way to record a first flight experience for yourself or friends. The "Student Pilot Logbook' has a page for recording a name, address, airport and instructor or pilot's name. It has 4 standard pilot log book pages for recording all of the standard flight information. It has 2 pages of Instructor Endorsements and the 'Notes Section' on the last page is a great place to record first impressions. With room for 32 flight entries and a place to record Instructor Endorsements, these logbooks are great for students, flight schools, or those who like to give their guests a way to record their flight. Softcover. Size: 4"x 7 3/4".

Single.....P/N 13-10445 ..... **$3.95**
13 Pack.....P/N 13-10446 ..... **$39.95**

CLASSIC BLUE AERLOG® TRIP & EXPENSE RECORD

The Classic Blue Aerlog® is the original pocket sized, permanently sewn-bound book, much like a traditional Master Log book, only smaller. The Aerlog® Classic makes transcribing to another Master log book unnecessary. The Classic Blue Aerlog® has a separate "pay section" that is preferred by pilots who like to keep their pay time right next to their flying time.
P/N 13-20155 ..... **$6.95**

CREW FLIGHT LOG TIME & EXPENSE RECORD

With a durable high quality vinyl cover, this book is the world's most usable flight crew log. Including an upgraded calendar and unique guide to aviation info sources, Crew Flight Log meets both FAA & IRS record-keeping requirements.
P/N 13-04573 ..... **$6.95**

MASTER LOGBOOK CASE

Durable nylon logbook cover sized to hold master logbook, charts, and other aviation essentials. Loop forpen or pencil, hook and loop closure, clear pockets for license and medical certificate. 7.5"x12"; hold logbooks up to 6.5"x11". P/N 13-02311 ..... **$19.75**

LOGBOOK ENDORSEMENT STICKERS

Can be used for Flight Reviews and Instrument Proficiency Checks, and comply with FAR 61.56 and FAR 61.57 on PIC recent flight experience and flight reviews. Each sticker measures 2" H x 4"L. 10 stickers per sheet on white paper. P/N 13-06585.....**$2.35**

LOG BOOK COVERS

These nylon logbook covers are very light weight but cover and protect your logbook very effectively. The nylon material is extremely durable and is washable. The cover features a holder for two pens and a velcro pocket on the back for licenses, gas receipt, and other documents.

Color	Size	Description	PN	Price
Black	Medium	JEPP	13-04402	**$21.50**
Black	Medium	ASA	13-04403	**$21.50**
Black	Medium	Sporty's/Stafford	13-04404	**$21.50**
Blue	Medium	JEPP	13-04405	**$21.50**
Blue	Medium	ASA	13-04406	**$21.50**
Blue	Medium	Sporty's/Stafford	13-04407	**$21.50**
Red	Medium	JEPP	13-04408	**$21.50**
Red	Medium	ASA	13-04409	**$21.50**
Red	Medium	Sporty's/Stafford	13-04410	**$21.50**
Black	Large	JEPP	13-04411	**$23.95**
Black	Large	ASA	13-04411	**$23.95**
Black	Large	Sporty's/Stafford	13-04412	**$23.95**
Blue	Large	JEPP	13-04413	**$23.95**
Blue	Large	ASA	13-04413	**$23.95**
Blue	Large	Sporty's/Stafford	13-04414	**$23.95**
Red	Large	JEPP	13-04415	**$23.95**
Red	Large	ASA	13-04415	**$23.95**
Red	Large	Sporty's/Stafford	13-04416	**$23.95**

MASTER PILOT LOGBOOK BAG

Master pilot's logbook bag. Color: red. Closure: zipper. 2 holder-pockets. 2 pen holders. Dimensions: 12" x 7-1/2" x 1-3/8"
P/N 13-02931 ..... **$17.50**

PS

FLIGHT BAGS

AERO SQUADRON LEATHER BAGS

AERO SQUADRON LEATHER GARMENT BAG -
Desc:GARMENT BAG 22" Length, 18" Height, 5" Width Color: Walnut

P/N 13-07205 ..... **$315.95**

AERO SQUADRON LEATHER DUFFLE BAG -
Desc:CARRY ON BAG 19" Length, 10" Height, 9.5" Width Color: Walnut
P/N 13-07202 ..... **$229.95**

AERO SQUADRON LEATHER BRIEF CS -
Desc:SATCHEL BRIEF 16.5" Length, 12" Height, 4" Width Color: Walnut
P/N 13-07199 ..... **$269.75**

AERO SQUADRON LEATHER LT BRIEF - Desc:COMPUTER CASE Color: Walnut. 12" x 13" x 3"
P/N 13-07203 ..... **$229.95**

AERO SQUADRON LEATHER TRAVEL SLING -
Desc:TRAVEL SLING 13.5" Width 9.75" Height, 6.75D Color: Walnut
P/N 13-07204 ..... **$105.95**

AERO SQUADRON LEATHER HANDBAG -
Desc:HANDBAG COLLECTION 8.25" Length, 10.5" Height, 3" Width Color: Walnut
P/N 13-07207 ..... **$108.95**

AERO SQUADRON LEATHER SHAVE KIT -
Desc:SHAVE KIT 10" Length, 6" Height, 4" Width Color: Walnut
P/N 13-07198 ..... **$78.75**

AERO SQUADRON LEATHER SHIELD TOTE -
Desc:MAN BAG W/SHOULDER STRAP Color: Walnut P/N 13-07201 ..... **$124.95**

FLIGHTLINE FLIGHT BAGS

LARGE DELUXE FLIGHT BAG

The top of the line Flight Bag by Flightline boasts an incredible array of features for the price. This heavy-duty bag is double stitched and ideal for large loads. 12"H x 7-1/4"W x 14-1/2" L

P/N 13-04255 ..... **$56.50**

MEDIUM DELUXE FLIGHT BAG

This Flight Bag is ideal for pilots who have a lot to carry but not a lot of space to put the bag. It is currently any pilot's favorite flight gear! 10"H x 6-3/4"W x 12-1/2" L

P/N 13-04256 ..... **$48.50**

DELUXE HEADSET BAG

It is the perfect bag to protect and organize any fragile and expensive equipment. Not only will this bag hold a headset, but other necessary items as well! 10"H x 4-1/4"W x 10 " L

P/N 13-01416 ..... **$25.75**

TOP GRAIN LEATHER FLIGHT BAG

- Dimension: 18" length x 10" wide x16" height
- Designed to carry six binders
- Padded compartment for lap top computers or GPS
- 3 position telescopic handles
- 3 brass combination locks

P/N 13-04229..... **$123.95**

BISON MOUNTAIN ULTIMATE FLIGHT BAG

Taller than most bags, it makes more use of the vertical room in your narrow baggage compartment or cockpit. At 19.5 inches long, 9 inches wide, and 14 inches tall you can pack everything you need to fly with and there is enough room left over for a couple days worth of clothes. The interior compartment is 14 inches long, 7.5 inches wide, and 14 inches tall. A removable interior divider velcros in place to increase storage options. There are nine exterior pockets. Exterior pockets include a padded headset pocket, padded pocket specifically for Garmin 496 or similar GPS's (or handheld radios), cellphone pocket, pocket for magazines or newspapers, water bottle pocket, chart pocket, 8.5 inch by 7 inch pocket for logbooks or aircraft manuals and pen, pencil, flashlight holder. Large padded laptop compartment that measures 14 inches long, 12 inches high, and 1.5 inches wide.A clear plastic identification card holder. There is a place for military or civilian wings that attach with velcro. It comes with sturdy carrying handles that velcro together and a removable carrying strap.

Color	Part No.	Price
Black Curdura	13-05329	**$139.00**
Grey Curdura	13-05331	**$139.00**
Black Leather	13-05333	**$208.00**

Color	Part No.	Price
Grey Leather	13-05334	**$221.95**
Brown Leather	13-05336	**$208.00**

BISON MOUNTAIN RV FLIGHT BAG

A practical solution to organizing the cargo area of your RV-6, RV-7 or RV-9. Also makes a great overnight bag! The RV Flight Bag was designed to fit behind the pilots and co-pilots seat of the RV-6/7/9. It fits over the flap actuator bar and makes maximum use of the area behind your seat. 18 inches high and 12.5 inches wide. There are two side pockets, one 10" x 4 " and a 7" x 5.5" map pocket. The rear side of the bag has a pencil /flashlight/fuel tester pocket, a 10 inch x 7 inch headset pocket, and a 6"x 5 ¼" pocket for small tools. It has a nice carrying handle and comes with two straps that can be attached to your seat back to clip the bag to your seat to minimize movement. It also comes with a removable shoulder strap.

Color	Part No.	Price
Black Curdura	13-05321	**$114.95**
Grey Curdura	13-05323	**$126.95**
Black Leather	13-05324	**$144.95**
Grey Leather	13-05326	**$144.95**
Brown Leather	13-05328	**$179.00**

PS

NORAL FLIGHT BAGS

NORAL EXPRESS FLYER BAG

The swing hook for the adjustable shoulder strap is made of metal to ensure heavy load resistance. The shoulder strap has a soft rubber pad for your comfort and to keep the bag in fixed position while carrying on shoulder. Made of 1680 Denier Ballistic water repellant material. Its interior is fully padded and covered with the liner of water repellant taffeta.

Black ..... P/N 13-11441 ..... **$47.50**
Grey ..... P/N 13-11440 ..... **$44.75**

NORAL TRIPLE HEADSET BAG

The Noral Triple Headset Bag is made of 1680 Denier Ballistic water repellant material. Interior is fully padded and covered with the liner of water repellant taffeta.

Black ..... P/N 13-11430 ..... **$44.75**
Grey ..... P/N 13-11433 ..... **$44.75**

NORAL FLYING CLUB BAG

This bag is designed for all pilots, especially for the compact cockpit airline pilot, Military pilot and for private and student pilots. This bag can hold most essential instruments efficiently. The main compartment of this bag can hold a large headset, logbook and/or any other similar items. The rear pocket works well to hold books, boards, charts or similar items. There is also a small front pocket with zipper closure and two side pouches for Transceiver/ GPS etc. Made of 1680 Denier Ballistic water repellant material. Its interior is fully padded and covered with the liner of water repellant taffeta.

Black ..... P/N 13-11442 ..... **$42.75**
Grey ..... P/N 13-11444 ..... **$42.75**

NORAL ATTACHE FLIGHT BAG

This bag has two side pouches for large headsets. One of these side pouches has a flap pocket with zipper closure to store pens, flashlights, ID card and/ or license etc. Inside the main compartment there is two removable pouches for GPS/Transceiver and two dividers. The dividers can be adjusted to different positions and are removable. The front of the bag has a large open pocket for easy access. The back of the bag has a large zippered pouch with piano type opener and three dividers. At the bottom floor of this bag is a removable plastic board to reinforce it and to keep the bag from sagging when fully loaded. Made of 1680 Denier Ballistic water repellant material. Its interior is fully padded and covered with the liner of water repellant taffeta.

Black ..... P/N 13-11446 ..... **$140.95**
Grey ..... P/N 13-11448 ..... **$140.95**

NORAL AVIATOR FLIGHT BAG (DETACHABLE)

The main compartment of this bag has a removable divider which can be adjusted to a different position. The bottom floor has a removable plastic board to reinforce it and keep the bag from sagging when fully loaded. The swing hook for the adjustable shoulder strap is made of metal to ensure heavy load resistance. The shoulder strap has a soft rubber pad for your comfort and to keep the bag in fixed position while carrying on shoulder. Made of 1680 Denier Ballistic water repellant material. Its interior is fully padded and covered with the liner of water repellant taffeta.

Black ..... P/N 13-11428 ..... **$116.95**
Grey ..... P/N 13-11429 ..... **$116.95**

NORAL AIRCRAFT DOCUMENT HOLDER

This durable document holder is made of strong fabric with two clear pockets to hold your aircraft document secure and visible. It comes with two inches of velcro to be placed anywhere that velcro can be applied to.

Velcro ..... P/N 13-01134 ..... **$14.75**

NORAL ANGELS TOOL BAG

The Angels Tool Bag is a trauma bag to be used by Emergency Medical Responders which was designed by the request of Air Ambulance Pilots who knew about the quality of our Flight Bags but could not find a trauma bag with Noral quality. The bag has two side pouches and over one of the side pouches is an open pocket for easy access. In the front of the bag is a large zippered pocket and both the front and back of the bag have reflector bands that can be seen at night time. The back of the bag can be opened like a portfolio and there are 21 elastic loops to keep organized and clearly visible all of your medical tools for emergency needs. Also, inside this portfolio is a large zippered pocket. The main compartment has 10 more elastic loops for small tools and 3 easy access pockets for medical supplies. The main compartment also has a removable and adjustable divider to keep instruments organized. Color: Grey ..... P/N 13-11421 ..... **$113.95**

NORAL SINGLE HEADSET BAG

This bag is ideal for the pilot that wants to carry a passenger headset or his own, separate from his flying bag. It is constructed with genuine DuPont® Cordura® 1000 Deniers, water resistant, fully padded with a 1/4" foam and backed with a layer of tricot. Features separate zippered compartment along with an extra side pocket.

Grey ..... P/N 13-00286 ..... **$25.85** Black ..... P/N 13-00288 .. **$25.85**

NORAL STUDENT PILOT BAG

The Student Pilot Bag has plenty of room for everything a student pilot needs to carry and more. It has 2 extra large zippered headset pouches plus another zippered section to store pens, flashlight, fuel tester, E6B computer and more! Access to the main compartment is through a double zipper flap with a pull cord. In addition to the carrying handles, a detachable padded shoulder strap is included. Size: 11"H x 10.5"W x 12"L.

Grey ..... P/N 13-00294 ..... **$59.95** Black ..... P/N 13-00297 ... **$61.95**

NORAL PRIVATE PILOT BAG

Fits all the goodies and gadgets a pilot needs and wants to carry. It has two extra large zippered headset pouches plus another zippered section to store pens, flashlight, fuel tester, E6B computer and more! Access to the main compartment is through a double zipper flap with a pull cord. In addition to the carrying handles, a detachable padded shoulder strap is included. Size: 11"H x 10.5"W x 15.5"L.

Black ..... P/N 13-00313 ..... **$69.95**

NORAL MACH 1 FLIGHT BAG

The Mach 1 flight bag is compact yet roomy. The bag features a wide 5" double zippered access flap with a pen and pencil holder. There are two end compartments 6"X10". On the front, a zippered 11"X 6" compartment. On the back is a 4"X 8"X 8" headset compartment which will accomodate the largest of headsets. The Mach 1 is made of US Made Nylon with 1/4" Foam Padded, 1000 Denier and is water resistant. It comes equipped with a GPS/Transceiver Pouch that can be worn on your belt. Also included is a shoulder strap and carry handle. Dimensions: 15"LX11"WX10 1/2H

Black .... P/N 13-04088 ..... **$85.50** Grey ..... P/N 13-04092 .. **$85.50**

NORAL MACH 2 FLIGHT BAG

The main compartment of this bag has a removable divider which can be adjusted to a different position. The bottom floor has a removable plastic board to reinforce it and keep the bag from sagging when fully loaded. The swing hook for the adjustable shoulder strap is made of metal to ensure heavy load resistance. The shoulder strap has a soft rubber pad for your comfort and to keep the bag in fixed position while carrying on shoulder. Made of 1680 Denier Ballistic water repellant material. Its interior is fully padded and covered with the liner of water repellant taffeta.

Black .... P/N 13-11425 ... **$134.95** Grey ..... P/N 13-11424 ..... **$134.95**

AIRCRAFT SPRUCE SINGLE HEADSET BAG

Safe and convenient way to protect a single headset. Features foam padded single zipper compartment with convenient webbing handle. Made in USA. Size: 7"L x 4"W x 9"H. Color: Black. P/N 13-55010 ..... **$12.95**

NORAL HEADSET FLIGHT BAG

The main compartment of this bag can hold a large headset and another space with divider for logbook and/or any other similar item. This bag has a rear pocket with secure touch fastener. It also has a small front pouch with touch fastener and one pouch in the left side for Transceiver/GPS. The right side has holders for pen and small flash light. The main compartment is H9" X W9" X G4.5".

Black ..... P/N 13-07468 ..... **$33.95**
Grey ..... P/N 13-11356 ..... **$34.00**

VOYAGER FLIGHT ATTACHÉ FLIGHT BAG

The Voyager Attaché flight bag gives you the ability and convenience of being able to carry charts, sectionals and all the necessities without carrying around a larger flight bag. The copilot feature allows you to organize up to 6 sectionals and essential equipment. The main compartment can hold a single headset, Jeppesen chart binders and/or air charts. A kneeboard pocket is on the back for added convenience. The Voyager is made of ballistic nylon for extra durability and the color is black with green flap. P/N 13-03347 ..... **$43.75**

NORAL AIR MAP CASE 1000

The Noral Air Map Case 1000 is made of 1680 Denier Ballistic water repellant material. Interior is fully padded and covered with the liner of water repellant taffeta.

Black ..... P/N 13-11434 ..... **$22.75**
Grey ..... P/N 13-11437 ..... **$22.75**

PS

FLIGHT BAGS

ASA AIRCLASSICS FLIGHT BAG

ASA has brought pilot gear to a new level with the AirClassics series of pilot bags. Focusing on a clean, sophisticated and professional look, they have been designed and engineered to be supremely functional. Padded 600D nylon for superior durability. Comfort Grip connectable handles. Non-slip detachable carry strap. Reinforcing straps around bag for strength. #10 zippers for easy handling. Headsetn pockets on both ends. Large single-pull, zippered & dividable main compartment. 18"L x 11"H x 7"W

P/N 13-02336 ..... **$69.50**

ASA AVIATOR FLIGHT BAGS

The Pilot Flight Bag and the Trip Bag, are made of fully padded nylon for extreme durability. They feature wrap-around carry straps for strength, a non-slip detachable shoulder strap, and high-quality zippers on the main compartments.

Pilot Bag .....P/N 13-04057 ..... **$39.75**

Trip Flight Bag.....P/N 13-04058 ..... **$59.95**

ASA TECH FLIGHT BAG

ASA pilot gear bags are well known for their supreme functionality, rugged construction and professional style. The Tech Bag is ideal for the computer-toting pilot. It includes a padded laptop sleeve for safe storage of your computer or favorite EFB (up to 15" x 11") and has plenty of pockets for carrying everything from headsets to sticky notes. It's a mobile office/flight planning room in a bag! Count on your ASA Tech Bag to bring you many years of utility and pride. Dimensions: 19" wide x 8" tall x 12 1/2 " deep * Made of 600D polyester with PVC backing for extreme durability * Non-slip removable shoulder strap * Molded carry handle for strength and comfort • Rugged zippers * Outside ID pocket * Padded interior divider panels with numerous compartments * Padded interior laptop/EFB sleeve. P/N 13-06260.....**$59.95**

ASA CRM FLIGHT BAG

This "copilot in a bag" not only keeps your gear organized on the go, but in the cockpit as well. Its functional design serves double duty as a great storage apparatus and ultimate cockpit organizer. Numerous compartments and pockets keep everything secure and easily accessible in flight. There are even "hideaway" stretch mesh side pockets for water bottles. It's large enough to hold everything you need yet compact enough to easily bring along on shorter excursions. Count on your ASA CRM Bag to bring you many years of utility and pride. Dimensions: 14" wide x 12 1/2" tall x 9" deep * Made of 600D polyester with PVC backing for extreme durability * Non-slip removable shoulder strap * Padded carry handle * Rugged zippers * Interior organizer with multiple pockets * Large interior mesh pocket with toggle closure * Side zippered pocket with stretch mesh for water bottle P/N 13-06258.....**$59.95**

PROFLIGHT PREMIUM HEADSET BAG

This is a lightweight, versatile flight bag with three small individual pockets. It is made to resist water and tears. Padded protection for an individual headset with a dual zipper on top makes access very easy. Will fit most ANR headsets. Size: 10-3/4" x 11-3/4" x 5" P/N 13-06936.....**$19.95**

ASA FLIGHT BRIEFCASE

The Pilot Briefcase features an expandable, zippered main compartment with room for all ground and flight school necessities. The outer flap provides easy access to a chart pocket with multiple accessory storage areas to store everything from pencils and pens, to flashlights and flight computers. The flap buckles are rugged, as is the 600D Nylon bag for exceptional durability. This bag is included with the ASA Student Pilot kits. Also perfect for laptop computers. Each bag is black with the ASA wings logo tastefully silver-embroidered on the top. Count on ASA's AirClassics Flight Bags to bring many years of utility and pride. 15-1/2"L x 11"H x 3"W. P/N 11-08805.....**$27.75**

AEROCOAST FLIGHT CASES

PRO I FLIGHT CASE - This professional grade flight case includes many added features not present on today's flight cases. Features such as multi access folders, flashlight holder, multiple pockets, business card sleeve, and a protective base plate.

* Waterproof ballistic material
* Metal piano hinge for added strength
* Protective plastic plate

* Multi access folder compartments
* Multiple storage compartments
* Flashlight holder
* Leather wrapped handle
* Side pocket compartment
* Name card holder with clear cover
* Embroidered gold logo
* Added Velcro to both inside flaps
* Outside dimensions 18 x 13 x 8 inches.

P/N 13-06041.....**$139.00**

PRO II FLIGHT CASE - The Pro II flight case offers the same features as the Pro I. However the primary differences you will notice with the Pro II is the sturdy Saddle style handle belts and the absence of the front pocket access.

* Sturdy saddle style handle wrap
* Waterproof ballistic material
* Metal piano hinge for added strength

* Protective plastic plate
* Inside access folder compartments
* Multiple storage compartments
* Flashlight holder
* Leather wrapped handle
* Side pocket compartment
* Name card holder with clear cover
* Embroidered gold logo
* Added Velcro to both inside flaps
* Outside dimensions 18 x 13 x 8 inches.

P/N 13-06042.....**$149.00**

ASA CARGO FLIGHT BAG

ASA pilot gear bags are well known for their supreme functionality, rugged construction and professional style. The Cargo Bag is a true hauler.

ASA pilot gear bags are well known for their supreme functionality, rugged construction and professional style. The Cargo Bag is a true hauler. Its widemouth opening provides unrestricted access to a large interior suited to carrying just about anything and everything you need, and then some. The widemouth opening has a built-in metal rod frame for strength and rigidity where it's needed most. Includes a padded headset pocket accompanied by an abundance of compartments and an adjustable hook and loop divider which allows for customization of the main inside pocket. Count on your ASA Cargo Bag to bring you many years of utility and pride.

Dimensions: 16 ½" wide x 8" tall x 12" deep

* Made of 600D polyester with PVC backing for extreme durability
* Widemouth opening for unrestricted interior access
* Non-slip removable shoulder strap
* Padded carry handle
* Rugged zippers
* Exterior ID pocket
* Padded interior divider panels with many compartments
* Padded exterior pockets and side pocket for smaller items

P/N 13-06259.....**$59.95**

ASA AIRCLASSICS FLIGHT BAG PRO

The Flight Bag Pro is the best of the best when it comes to pilot gear. Along with all of the same great features found in the ASA Flight Bag, the Flight Bag Pro is made from padded 1000D Nylon for extreme durability and gear protection. Large, zippered side pockets fit multiple accessories such as flight computers, GPS units and flashlights, and our unique detachable chart wallet feature makes navigation a breeze. A zippered, mesh interior pocket allows for quick visual reference of stored items, while another smaller mesh compartment on the outside of the bag allows for safe, easy storage of keys and smaller items. Each bag is black with the ASA wings logo tastefully silver-embroidered on the top. Count on ASA's AirClassics Flight Bags to bring many years of utility and pride. Dimensions: 20"L x 10"H x 8"W. P/N 11-08804.....**$82.75**

DOUBLE HEADSET BAG

Doube-sided, 1/4" padding everywhere; can hold two headsets.....P/N 13-02334.....**$24.95**

PS

JEPPESEN CASES & FLIGHT BAGS

FLIGHT CASES

Leather Flight Cases. Rugged Samsonite, top-grain flight cases offer the ultimate in convenience and utility. Matched stitching and leather covered handle enhance the looks and carrying comfort.

FC-106 holds 6 binders (12"x9"x18")
Black .....P/N 13-01198 ..... **$198.55**
FC-104 holds 4 binders (12"x8"x18")
Black .....P/N 13-00116 ..... **$219.00**

JEPPESEN FLIGHT CASE AM621199

A rugged Premium Flight Case capable of holding more than six chart binders that offers 2 heavy duty high density PVC in-line wheels, Heavy Duty telescopic handle, 2 front zipper compartments, 2 inside pockets and storage positions for pens, flashlights and sunglasses. Includes 2 removable headset cases and removable binder dividers.
P/N 13-07308 ..... **$279.95**

JEPPESEN PILOT BACKPACK

A great backpack for the student pilot or certificated seasoned pilot. This backpack is a great option in offering convenience and flexibility. Perfect for carrying your laptop, charts, headset, and other pilot supplies. **Features**: • Padded laptop sleeve • Large center storage area • Computer accessory storage • Internal file sleeve • Fleece-lined audio pocket with headphone exit port • Digital-media pocket • Jeppesen zipper pulls 8 Sturdy neoprene grab handle **Specifications**: • 400x400 Dobby pindot nylon, 600-denier polyester • Weatherproof, fleece lined inner pockets •Overall dimensions: 21" x 14" x 9-1/2" • Laptop sleeve dimensions: 15-1/2" x 11-1/2" x 2"
P/N 13-07311 ..... **$79.95**

TUFF NUFF HEADSET CASE

A rugged built case with "clamshell" design for easy access. Your headset is well protected by a soft foam lining and tough Cordura outer shell. Fits all popular makes and models, with extra room for small accessories. Measures 9-1/2" x 10-1/2" x 3", and weighs 7 oz.
P/N 4002 ..... **$24.95**

SINGLE HEADSET BAG

For those who like to fly with minimum baggage, this holds one headset, has extra pockets, and allaround padding .....P/N 13-02333 ....**$18.75**

FLIGHT ATTACHE

Holds all the materials a student pilot needs. 15" long x 11" deep .....P/N 13-02335 .....**$13.95**

PORTABLE FOLDING LUGGAGE CART

3-Way portable luggage cart (folding cart) in black plastic with 37.5" extension handle. Load up to 66 lbs. Store flat. Makes moving items easy. Fits the Brightline Bag perfectly! To attach the bag, place the front of the bag (pocket-side) flush against the telescoping handle. Take the handle and clip it into the front buckle. Wrap the handle around the telescoping handle and reattach it to the opposite front buckle. The bag is now securely attached to the cart.
P/N 13-10007 ..... **$24.95**

THE CAPTAIN FLIGHT BAG

The most versatile bag available. Headset bags can be removed and attached together to form a dual headset bag. Removable transceiver/GPS bag can be worn on your belt. 4-way interior custom divider can hold four Jeppesen binders. One large multi-use exterior zippered pocket. Two zippered storage pockets for glasses, charts, pilot operating handbooks and other miscellaneous accessories. Wide cushioned shoulder strap. (12" x 22-1/2' x 8")
Black .....P/N 13-621214 ..... **$113.95**
Blue.....P/N 13-00994 ..... **$113.95**

THE AVIATOR BAG

Slightly smaller than the Navigator Bag, but still spacious enough for all your flight materials. Includes 1 exterior front pocket as well as detachable headset & transceiver cases. Constructed with durable PVC backed with 600 denier poly. 15"x 6.5" x 12" (black only)
P/N 13-00998.....**$75.95**

THE NAVIGATOR BAG

The ultimate choice for convenience and flexibility. Each Navigator Bag includes all of the features and benefits of the Captain Bag, except the removable transceiver/GPS bag and the two zippered exterior storage pockets. Instead it includes two exterior storage pockets for easy access to Section Charts. 12" x 22 1/2" x 8"

Black .....P/N 13-00995 ..... **$99.95**
Blue.....P/N 13-00996 ..... **$94.95**

THE STUDENT PILOT

A great first bag for the student pilot. Numerous outside pockets organize charts, flight computer, fuel tester, plotter, pens and pencils, flashlight and much more. Comfortable, wide removable shoulder strap; double zipper opening for easy access. Reinforced bottom. Constructed with durable PVC backed 600 denier poly. 10"x 5.5"x17" (black only)
P/N 13-00997..... **$33.20**

JEPPESEN STYLE FLIGHT BAG

Student/Book Bag: Same great bag Jeppesen uses for its training kits. The bag is made from heavy-duty 6000 denier Cordura for superior strength and with a PVC coating on one side for added water resistance. Includes outside pockets, removeable shoulder strap, reinforced bottom. Size 10" x 5.5" x 17"
P/N 13-06280..... **$29.95**

NAV-DATA FLIGHT BAG

Finally, an affordable flight bag with compartments for all yor flight gear and then some. Made of durable 600D nylon canvas for years of use. Overall dimensions: * 20"x10"x13". Low profile prevents tipping * Two heaset pockets * Front expandable VHF and electronics pockets * Large main compartment for kneeboard, charts, facility directory, etc
P/N 13-06090.....**$34.95**

* Adjustable shoulder strap

PS

FLIGHT BAGS – AVIATOR'S LUGGAGE

SAGA AVIATION HEADSET BAG

Avoid damage to your headset! The Saga Headset Bag offers excellent protection against exterior harm. Its sturdy and lightweight padding ensures lifelong durability. Its silky interior contains a pencil holder and storage to keep your business cards. P/N 13-09566.....**$16.95**

SAGA AVIATION FLYBY FLIGHT BAG

SAGA Aviation has created one of the most compact, lightweight, and versatile flight bags ever. Spacious enough to carry the basics, yet occupying very little space in the cockpit, the FLYBY, made of durable materials, will last you many years.

Features: Large lined storage giving maximum headset protection, Back pocket for navigational charts and flight kneeboard, Several pockets with easy access for flashlight, cell phone and other accessories Zipper pocket for important documents, Water bottle holder, pencil holder and side pocket, Large, adjustable, and padded shoulder strap

P/N 13-09565.....**$42.95**

SAGA AVIATION X-COUNTRY FLIGHT BAG

The SAGA X-COUNTRY was specifically designed for pilot's needs. It allows you to carry all the basics on your trips and travels. Entirely padded, it protects your most valuable objects against possible damage. Equipped with an extra-large central opening to facilitate storage, along with dividers and many pockets, you will appreciate its versatility.

Features: Exterior pockets for headset storage, GPS, and portable radio, Large central pocket with an extra-large opening, silky lining and equipped with dividers, Front pockets for aeronautical charts, pencil holders, cell phone holder and other accessories, Large, adjustable, and padded shoulder strap P/N 13-09564.....**$56.95**

STEALTH COMPUTER BRIEF BAG

The Computer Brief features a padded compartment with a rigid plastic frame for storing a laptop computer. It also has a removable zippered pocket for storage of the battery pack and accessories. Additional compartments accommodate folders and needed papers. The front of the bag contains a U-shaped pocket as well as a gusseted side-entry pocket. A back pocket provides easy access to important papers.

Features a sleeve in the back to slide over the handle of a rolling bag. Removal is easy and convenient while keeping extra bags securely fastened as you navigate today's busy airport terminals. H-13.5" x W-16.5" x D-6" P/N 14-00599.....**$59.95**

SAGA AVIATION LICENSE AND PASSPORT HOLDER

This license holder keeps your document handy while protecting its cover. With added pockets, you also get the full benefit of extra storage space for the license extras such as your passport, business cards, driver's ID and more. This license case is a handsome gift for frequent flyer. P/N 13-09562.....**$28.45**

VINYL FLIGHT KIT

This economical flight kit features two external end pockets, two internal dividers, a pen holder and two small sleeves for business cards, etc. The exterior is made of durable vinyl with brass combination locks and hardware. H13.5"xW18"xD8"6.75 lbs.

P/N 14-00554.....**$68.75**

LUGGAGEWORKS STEALTH 22 INCH SUITER

This bag is an enhanced version of our original metal frame Stealth Bag and offers a combination of durability and functionality as well as first class looks. It comes with two front pockets, three side pockets and two back pockets. Internally, a shirt shelf and a movable divider are provided. Enhancements include a stainless steel retractable handle, redesigned top and bottom casting and modified zippers. As before, the handle extends to a comfortable height, always with top quality sealed bearing in-line skate wheels. It also features our innovative attachment system, and a stabilizer strap. No logo is featured on this item. Specifications: (H) 22 in. x (W)14 in. x (D) 8 in., 15.0 lbs.

Part No.	Logo	Price
14-02485	No Logo	$275.00
14-02479	Horizon Air	$344.95
14-02480	JetBlue	$344.95
14-02481	KittyHawk	$344.95
14-02482	Midwest Airlines	$344.95
14-02483	FedEx	$344.95
14-02484	Flight Options	$344.95
14-02486	AfterBurner	$344.95
14-02487	AeroTexas	$344.95
14-02488	Alaskain	$344.95
14-02489	Alpha	$344.95
14-02490	American West	$344.95
14-02491	APA	$289.00

Part No.	Logo	Price
14-02492	ATA	$344.95
14-02493	ATI	$344.95
14-02494	Capjet	$344.95
14-02495	Southwest	$344.95
14-02496	United	$344.95
14-02497	US Airways	$344.95
14-02498	Net Jets	$344.95
14-02499	Prime Jet	$344.95
14-02500	SkyWest	$344.95
14-02501	AirTran	$344.95
14-02502	Comair	$344.95
14-02503	Continental	$344.95
14-02504	Delta	$344.95

EXECUTIVE ROLLING BAG

The Executive Rolling Bag has an ABS metal frame. It also has several external pockets for storage of your travel necessities. The innovative attachment system is also a key feature of this bag. The stabilizer strap is featured on the 26" only.

22" Bag - Legal Carry-on. H-22" x W-14" x D-8"

26" Bag - Not Legal Carry-on H-26" x W-14" x D-8"

22" BAGS

Part No.	Logo	Price
14-02409	No Logo	$195.00
14-02410	AfterBurner	$212.95
14-02411	Aerotexas	$212.95
14-02412	Alaskan	$212.95
14-02413	ALPA	$212.95
14-02414	American West	$212.95
14-02415	APA	$212.95
14-02416	ATA	$212.95
14-02417	ATI	$212.95
14-02418	Capjet	$212.95
14-02419	FedEx	$212.95
14-02420	Flight Options	$212.95
14-02421	Horizon Air	$212.95
14-02422	JetBlue	$212.95
14-02423	KittyHawk	$212.95
14-02424	Midwest Airlines	$212.95
14-02425	NetJets	$212.95
14-02426	Prime Jet	$212.95
14-02427	Skywest	$212.95
14-02428	Southwest	$212.95
14-02429	United	$212.95
14-02430	US Airways	$212.95

26" BAGS

Part No.	Logo	Price
14-02431	No Logo	$231.95
14-02432	AfterBurner	$243.95
14-02433	Aerotexas	$243.95
14-02434	Alaskan	$243.95
14-02435	ALPA	$243.95
14-02436	American West	$243.95
14-02437	APA	$243.95
14-02438	ATA	$243.95
14-02439	ATI	$243.95
14-02440	Capjet	$243.95
14-02441	FedEx	$243.95
14-02442	Flight Iptions	$243.95
14-02443	Horizon Air	$243.95
14-02444	JetBlue	$243.95
14-02445	KittyHawk	$243.95
14-02446	Midwest Airlines	$243.95
14-02447	NetJets	$243.95
14-02448	Prime Jet	$243.95
14-02449	Skywest	$243.95
14-02450	Southwest	$243.95
14-02451	United	$243.95
14-02452	US Airways	$243.95

737 STEALTH PILOT BAG

The original "Stealth Pilot Bag" is built on a 13" wide frame, which works well in those instances when storage space is limited. The pocket configuration is the same as with the Stealth NG. It has our innovative attachment system and has been upgraded by adding a stainless steel handle. The "Stealth" is the rolling bag of choice for thousands of Boeing 737 pilots. Dimensions: H-22" x W-13" x D-8"

Part No.	Logo	Price
14-02383	No Logo	$308.95
14-02384	AfterBurner	$320.95
14-02385	AeroTexas	$320.95
14-02386	Alaskan	$320.95
14-02387	ALPA	$320.95
14-02388	American West	$320.95
14-02389	APA	$320.95
14-02390	ATA	$320.95
14-02391	ATI	$320.95
14-02392	Capjet	$320.95
14-02393	FedEx	$320.95
14-02394	Flight Options	$320.95
14-02395	Horizon Air	$320.95

Part No.	Logo	Price
14-02396	JetBlue	$320.95
14-02397	KittyHawk	$320.95
14-02398	Midwest Airlines	$320.95
14-02399	NetJets	$320.95
14-02400	Prime Jet	$320.95
14-02401	Skywest	$320.95
14-02402	Southwest	$320.95
14-02403	United	$320.95
14-02404	US Airways	$320.95
14-02405	Airtran	$320.95
14-02406	Comair	$320.95
14-02407	Continental	$320.95
14-02408	Delta	$320.95

PS

FLIGHT BAGS

SKY HIGH DISCOVERY DUFFLE BAG

The Discovery flight duffle is a fully padded duffle designed to protect all of your important gear. The Discovery is designed with full sized compartment flaps to allow easy access to all of your gear, before, during and after flight. The spacious end compartments and innovative closure flaps make putting away or getting out your ANR headsets and other gear a breeze. The center compartment has a double zipper opening with a padded divider to segment the compartment for easy access and storage. P/N 13-03280 ..... **$88.50**

SKY HIGH FREEDOM VII DAY DUFFLE BAG

Freedom VII is the flight bag for those who want to pack light for a short day flight or a CFI who needs just the minimum requirements for a lesson. This flight bag comes with their patent pending CoPilot feature. This allows you to organize 4 sectionals, extra batteries and other miscellaneous equipment. The main compartment has plenty of room for a headset or two 2" Jepp Chart binders with a pocket on the back for your kneeboard, A/FD or other materials. If you need a small flight bag this is the bag for you.

Blue ..... P/N 13-03277 ..... **$19.99**

SKY HIGH GEMINI

The Gemini flight bag is a fully padded duffle designed to protect the pilot's important gear. It is made with full sized compartment flaps, allowing easy organization of flight materials and access during flight - there is even a special stow-a-way pocket designed to hold most kneeboards. Everything is right where it should be - especially important during IFR flights. The center compartment has a double zipper opening with a padded quad-modular divider to segment the compartment for custom organization and easy access.

P/N 13-04254 ..... **$83.95**

SKY HIGH VOYAGER FLIGHT ATTACHE

The Voyager Attaché flight bag gives you the ability and convenience of being able to carry charts, sectionals and all the necessities without carrying around a larger flight bag. The CoPilot feature allows you to organize up to 6 sectionals and essential equipment. The main compartment can hold a single headset, Jepp chart binders and/or Air Charts. A kneeboard pocket is on the back for added convenience. The Voyager is made of ballistic nylon for extra durability.

Blue..... P/N 13-03278 ..... **$59.85**

SKY HIGH EXPLORER PRE FLIGHT POUCH

Our preflight pouch is made of durable 600D Polyester. It is designed to organize and hold your basic items for your preflight – Mini Mag size flashlight, fuel tester, pen/pencil, tire pressure gauge, and pliers or wrench. We have also included a grommet on the corner so you can attach a towel for wiping your hands clean. The Explorer will fit easily into any bag and has a Velcro strap to attach to your waist belt for convenience during the preflight. P/N 13-03276..... **$9.95**

PROFLIGHT STUDENT PILOT BAG

The ProFlight Student Pilot bag is a great value! Black Cordura type material, carry strap. Great for students; use alone or as an accompaniment to your travel luggage. This bag is similar to the Jeppesen Student Pilot Bag in style and materials with multi side pockets. Size: (L)17" x (W)6" x (H)10" P/N 13-06280..... **$29.95**

USAC KIT BAG

This rugged kit bag is made from durable 20 oz twill, with heavy cotton webbing straps, will stand up to the toughest of journeys, either on land on in the air. Other details include antiqued brass zipper and detailing, screen print stencils, felt patch appliqué and handy interior pockets. 16 1/2" L x 9" W x 12" H P/N 13-07431..... **$117.95**

WWP-102 HEADSET BAG

This padded carry bag provides inexpensive insurance against headset damage. Featuring dual zipper openings, inside pocket sectionals, computers, glasses, etc. Bag is constructed of black waterproof nylon with carry handle.

P/N 17-00231..... **$11.75**

WEEKENDER COMBO FLIGHT BAG

The swing hook for the adjustable shoulder strap is made of metal to ensure heavy load resistance. The shoulder strap has a soft rubber pad for your comfort and to keep the bag in fixed position while carrying on shoulder. This bag is made of 1680 Denier Ballistic water repellant material. Its interior is fully padded and covered with the liner of water repellant taffeta.

Grey ..... P/N 13-11385 ..... **$69.95**
Black ..... P/N 13-01434 ..... **$69.85**

NORAL EXTRA PADDED HELMET BAG

The swing hook for the adjustable shoulder strap is made of metal to ensure heavy load resistance. The shoulder strap has a soft rubber pad for your comfort and to keep the bag in fixed position while carrying on shoulder.

This bag is made of 1680 Denier Ballistic water repellant material. Its interior is fully padded and covered with the liner of water repellant taffeta.

Grey ..... P/N 13-11382 ..... **$86.75**
Black ..... P/N 13-00262 ..... **$86.75**

CFI / IFR PILOT FLIGHT BAG

This bag has two side pouches equipped for large sized headsets. One of these side pouches has a flap pocket with a zipper closure to store pens, flashlight, ID card and/ or license etc. Inside the main compartment is two removable pouches for GPS/Transceiver. The dimension of main compartment is H11" X W14.5" X G10". In the front of the bag is a large open pocket for easy access. The back of the bag has two open pockets and the bottom floor of the bag is a removable plastic board to reinforce it and to keep the bag from sagging when fully loaded. Also has two dividers in the main compartment that can be adjusted to a different position and can be removed if desired. The swing hook for the adjustable shoulder strap is made of metal to ensure heavy load resistance. The shoulder strap has a soft rubber pad for your comfort keeps the bag in fixed position while carrying on shoulder. This bag is made of 1860 Denier Ballistic water repellant material. Its interior is fully padded and covered with the liner of water repellant taffeta. Size: 11" x 23" x 12"

Black ..... P/N 13-00186 ..... **$134.95**
Grey ..... P/N 13-11375 ..... **$134.95**

BALLISTIC NYLON FLIGHT CASE 18''

Many RJ pilots requested a flight case design to fit the RJ cockpit. Using input from RJ pilots, CrewGear® created an RJ specific flight case. It has been flight tested by RJ line pilots who rated it an A+. Outside dimensions: 18.75" x 14.25" x 8.75" Color: Black. Fits most RJ flight case compartments..... P/N 13-11599 ..... **$114.95**

ROLLING BALLISTIC NYLON FLIGHT CASE

Now roll your way through airports, crew parking lot, and down those eternally long concourses easily with CrewGear®'s Rolling Ballistic Nylon flight case. This flight case is loaded with unique features. Best of all, IT ROLLS! Color: Black. Inside dimensions: 18" x 13 1/2" x 8". Outside dimensions: 19 1/2" x 15 1/2" x 10 1/2".

P/N 14-00831 ..... **$229.95**

ULTIMATE ''MULTI-TASKER'' FLIGHT BAG PLUS

It's a Flight Case, an Overnight Bag, a Brief Case and Computer Bag all in one! Proudly designed by CrewGear®, this bag will accommodate a 2" JEP binder, pilot headset and all related work gear. There is a padded compartment for your Laptop Computer (14" or less), Net Book or iPad. The clothing compartment is perfectly sized for one pair of slacks, one shirt, and all your undergarments. The file-folder compartment is perfectly sized to hold documents, magazines and newspapers. That's not all; this bag also comes with a flight case organizer, toiletry pouch, hard-pocket sunglass/organizer case and a shock-absorbing shoulder strap. Weight: 5.15 lbs. (Empty) 6.10 lbs. (w/Accessories). Exterior Dimensions: 18" x 13.5" x 9.5". Color: Black

P/N 13-11598 ..... **$242.95**

PS

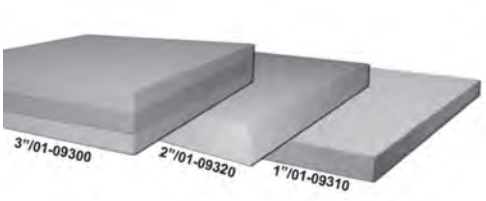
SEAT FOAM - FLIGHT SEATS

BACKSAVER FOAM

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

BACKSAVER FOAM 16" X 18"..... P/N 01-09325 .....**$92.50**
BACKSAVER 36" X 80" FOAM..... P/N 01-09330 .....**$541.00**

CONFOR FOAM SEAT CUSHION



Temperfoam is the conforming foam cushion that was developed for the "Astronaut's Couch" back in the Apollo space program. Seat foam has the capability of absorbing a tremendous amount of impact shock compared to common polyfoam and it is flame resistant. It is an excellent product that will give your seats enduring comfort that you never thought possible. It is not a soft seat, but it adapts to you for pressure- point-free comfort that is really incredible. The best universal cushion for aircraft use is a 3" T/38/ T41/T47 laminate. Temperfoam is not currently FAA approved for certificated aircraft but is excellent for homebuilts. Some special sizes in 1", 2" or 3" thicknesses are available on special request.

1" x 16" x 18" .....P/N 01-09310 .....**$23.50 ea.**
2" x 16" x 18" .....P/N 01-09320 .....**$45.75 ea.**
3" x 16" x 18" .....P/N 01-09300 .....**$74.75 ea.**

INFLATABLE LUMBAR SUPPORT

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

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

SKWOOSH™ PILOT SEAT

Fly with SKWOOSH™ and say goodbye to numbness in your legs and rear. TekPad® gel technology delivers pressure relief for long flight comfort. The compact SKWOOSH™ Pilots's seat is designed specifically for flight personnel. It folds to fit in a chart case, carry on or just hang it from a roll-on. It has a durable 300 denier top fabric for comfort and convenient attached cord loops for hanging. The non-skid bottom makes SKWOOSH™ stay put, insuring no movement during use, while it's low profile allows you to maintain normal seat position. So when you have to sit for a long time, in the cockpit or passenger cabin, count on SKWOOSH™ for comfort. Specifications: • Model# P5544 • Weight: 8 oz. • Open Dimensions: 15" x 10½" x ½" • Folded Dimensions: 7½" x 10½" x 1" • Color: Black •Non-Skid bottom • Convenient cord loops for hanging • Made in USA - Guaranteed Performance and Guaranteed Workmanship. P/N 13-05827.....**$39.50**

SKWOOSH™ PRO TRAVELER

The SKWOOSH™ Pro Traveler with AIR-FLO3D™ breathable fabric uses patented TekPad® gel to relieve pressure on the sitz bones. Relieving pressure helps reduce numbness and discomfort in the lower back, legs and rear caused by long hours of traveling while the AIR-FLO3D™ fabric's unique three dimensional structured keeps you cooler. AIR-FLO3D™ is durable, lightweight, washable and performance proven. The Pro Traveler with AIR-FLO3D™ features built-in handles to make it more convenient to carry or hang. It weighs only 8 ounces and when folded, is smaller than a magazine. The SKWOOSH™ Pro Traveler with breathable AIR-FLO3D™ delivers more comfort in a convenient, compact package than any other cushion of its size. Weight: 8 oz. Open Dimensions: 10½" x 15" x ½". Folded Dimensions: 10½" x 7½" x 1". Color: Black.

P/N 13-10284.....**$49.50**

PROFLIGHT FLIGHT SEATS

Sit higher, and sit softer on 2 or 3 inches of high-density foam covered with durable, "breathable" Cordura. Made of USAF specifications, with segmented backrest. Really makes a difference on a long flight. Also available: 3 or 4-inch thick child's cushion that finally lets kids see outside, keeps them interested as well as comfortable during long trips. Both seat and cushion are available in either Air Force blue or red. Add B (blue), or R (red) after part number to indicate color.

Dimensions for all Seats: Back: Width - 16" Height - 17" Seat: Width -15" Depth - 12"

Description	Part No.	Price
Blue 2" Booster seat w/ 1-1/2" back	13-02916	**$49.95**
Red 2" Booster seat w/ 1-1/2" back	13-02917	**$49.95**
Blue 3" Booster seat w/ 1-1/2" back	13-02918	**$49.95**
Red 3" Booster seat w/ 1-1/2" back	13-02919	**$49.95**
Blue 3" Booster seat w/ 3" back	13-02920	**$49.95**
Red 3" Booster seat w/ 3" back	13-02922	**$51.75**
Child's Blue 3" Booster cushion	13-02923	**$24.95**
Child's Red 3" Booster cushion	13-02924	**$24.94**
Child's Blue 4" Booster cushion	13-02925	**$24.95**
Child's Red 4" Booster cushion	13-31861	**$23.95**
Blue - 4" Seat x 3" back	13-31845	**$49.95**
Red - 4" Seat x 3" back	13-31850	**$49.95**
Red - 4" x 1-1/2" back	13-31860	**$51.75**
Gray - 3" Seat x 3" back	5204G	**$49.95**
Red - 2" Seat x 4" back	13-02863	**$51.75**
Red - 3" Seat x 4" back	13-02864	**$49.95**
Green - 4" Seat x 1-1/2" back	13-02866	**$51.75**
Blue - 4" Seat x 1" back	13-02867	**$49.85**
Green - 2" Seat x 1-1/2" back	13-02868	**$58.95**
Green - 3" Seat x 1" back	13-02869	**$51.75**
Green - 3" Seat	13-02871	**$24.25**

NORAL SEATS

This cushion is made with the finest materials available. It features a high back with a Lumbar Support for added comfort. The foam inside meets FAA FAR regarding fire materials. A strap is present for easy carrying and securing the cushion to the back of the seat when installed. Available in 2 sizes marked Type 'A' & Type 'B'.

Label 'A' fits Cessnas 172/182/172 Cutlas /210 and other larger seats.

Label 'B' fits Cessnas 150/152, Piper, Archer, Warrior, Cherokee, and similar seats.

Available only in Black, Navy Blue, & Smoke Grey.

Color	Part No.	Price
2" Seat Cushion - Type B		
Black	13-00323	**$62.75**
Grey	13-00326	**$62.75**
3" Seat Cushion - Type B		
Black	13-00331	**$73.95**
Grey	13-00333	**$74.85**
4" Seat Cushion - Type B		
Black	13-00338	**$86.75**
Grey	13-00341	**$86.75**
Color	**Part No.**	**Price**
2" Seat Cushion - Type A		
Black	13-00327	**$66.75**
Grey	13-00329	**$66.75**
3" Seat Cushion - Type A		
Black	13-00334	**$75.85**
Grey	13-00337	**$75.85**
4" Seat Cushion - Type A		
Black	13-00342	**$87.75**
Grey	13-00344	**$87.75**

Color	Part No.	Price
2" Seat Cushion only		
Black	13-00346	**$37.50**
Grey	13-00348	**$37.50**
4" Seat Cushion only		
Black	13-00224	**$43.95**
Grey	13-00227	**$43.95**
Color	**Part No.**	**Price**
3" Seat Cushion only		
Black	13-00221	**$42.75**
Grey	13-00223	**$42.75**

BLACK MAX COMFORTLITE SEAT

* 18" Wide X 19" Deep x 26" High
* 6061-T6 Aluminum Base and tubing.
* Assembled with AN Hardware.
  Material made from durable cordura nylon
* Includes a large storage pocket in the back
* Additional storage between pan and seat
* Pivots down to make it easier to get in behind the seat on a tandem

P/N 13-05554.....**$218.95**

PS

OREGON AERO® SEATING SYSTEMS

Oregon Aero® VK SmartCushion™ Systems for Experimental and Homebuilt aircraft offer maximum-comfort seating designed for your particular aircraft. The VK SmartCushion™ System shifts the hips, pelvis and back into a comfortable sitting position. At the same time, the seat cushions support occupants over as large an area of the seat surface as possible, preventing painful "hot spots." Pilot and passengers fly in comfort-no matter how long the flight. Simply put, Oregon Aero® offers the most comfortable seat in the industry **All Oregon Aero® Seating Systems are 100% Satisfaction Guaranteed.**

OREGON AERO® SEAT CUSHION GLASAIR I, II, III

GlasAir I (Pilot), II, III Left or Right Cushion Set un-upholstered cushion core.

Description	Part No.	Price
GlasAir I Pilot Left or Right Cushion Set	13-07474	**$357.95**
GlasAir II or III Left or Right Cushion Set	13-07475	**$364.00**

OREGON AERO® SEAT CUSHION GLASTAR

Glastar Left & Right Front Cushion Set un-upholstered cushion core.

Description	Part No.	Price
Glastar Left Front Cushion Set	13-07476	**$453.95**
Glastar Right Front Cushion Set	13-07477	**$453.95**

OREGON AERO® SEAT CUSHION LANCAIR 320/360/IV PILOT/LEGACY

Lancair 320/360/IV Pilot/Legacy Left or Right Cushion Set un-upholstered cushion core.

Description	Part No.	Price
Lancair 320/360 Left Front Cushion Set	13-07478	**$498.00**
Lancair 320/360 Right Front Cushion Set	13-07479	**$498.00**
Lancair IV Pilot or Co-Pilot Cushion Set	13-07480	**$321.95**
Lancair Legacy Left or Right Cushion Set	13-07481	**$575.00**

OREGON AERO® SEAT CUSHION RV-4

RV-4 Front & Rear Cushion Set un-upholstered cushion core

Description	Part No.	Price
RV-4 Front Cushion Set	13-07482	**$321.95**
RV-4 Rear Cushion Set	13-07483	**$429.95**

OREGON AERO® SEAT CUSHION RV-6

RV-6 Left or Right Cushion Set un-upholstered cushion core.

Description	Part No.	Price
RV-6 Left or Right Cushion Set 2"	13-07484	**$321.95**
RV-6 Left or Right Cushion Set 3"	13-07485	**$321.95**

OREGON AERO® SEAT CUSHION RV-7/RV-9

RV-7/RV-9 Pilot and Co-Pilot Cushion Set un-upholstered cushion core.

Description	Part No.	Price
RV-7 Pilot or Co-Pilot Cushion Set	13-07486	**$321.95**
RV-9 Pilot or Co-Pilot Cushion Set	13-07487	**$321.95**

OREGON AERO® SEAT CUSHION RV-8

RV-8 Front and Rear Cushion Set un-upholstered cushion core.

Description	Part No.	Price
RV-8 Front Cushion Set	13-07488	**$362.95**
RV-8 Rear Cushion Set	13-07489	**$453.95**

1 INCH PORTABLE UNIVERSAL SOFTSEAT® CUSHION SYSTEMS

Shifts your hips, pelvis and back into the proper, pain-free position. Helps minimize lower back pain from prolonged sitting. Eliminates pain from "hot spots." Can raise or move you forward. Zippered and interchangeable parts. 100% satisfaction guaranteed.

Two anchor options available: (1) Non-Skid Strips (most popular option) Two 1" wide x 10" long strips of black webbing with black non-skid rubber are hand sewn to the bottom of the cushion. (2) Straps - Best option if using Cushion Base for one purpose, such as in an aircraft. One-inch straps with adjustable buckle are hand sewn from side-to-side. Two hook and loop fasteners are hand sewn to the back.

1" Cushion is the most commonly used thickness. 1/2" Cushion is available for individuals with limited headroom. 2" Cushion available for individuals who need raised up. See www.aircraftspruce.com for additional sizes.

Color	Non-Skid Strips	Price	Straps	Price
Burgundy	13-08611-1	**$198.95**	13-08614-1	**$198.95**
Blue	13-08611-2	**$198.95**	13-08614-2	**$198.95**
Teal	13-08611-3	**$198.95**	13-08614-3	**$198.95**
Beige	13-08611-4	**$198.95**	13-08614-4	**$198.95**
Gray	13-08611-5	**$198.95**	13-08614-5	**$198.95**
Charcoal	13-08611-6	**$198.95**	13-08614-6	**$198.95**
Black	13-08611-7	**$198.95**	13-08614-7	**$198.95**

OREGON AERO® SEAT CUSHION VELOCITY

Velocity Cushion Set un-upholstered cushion core.

Description	Part No.	Price
Velocity Cushion Set	13-07490	**$352.95**

OREGON AERO® SEAT CUSHION ZENITH/ZENAIR

Zenith/Zenair Left and Right Cushion Set un-upholstered cushion core.

Description	Part No.	Price
Un-upholstered CH701 Left cushion	13-07491	**$298.00**
Un-upholstered CH701 Right cushion	13-07492	**$298.00**
Un-upholstered CH601 Left cushion	13-07493	**$301.95**
Un-upholstered CH601 Right cushion	13-07494	**$301.95**

PS

SEAT COVERS - AIRCRAFT SPRUCE APPAREL

BLUE RIBBON SHEEPSKIN SEAT COVERS: NATURES OWN THERMOSTAT

The magic of 100% genuine sheepskin is quite simply that it will keep you cool in summer and warm in winter. No other natural or man-made fiber possesses the qualities of sheepskin. Whatever the temperature in your cockpit, sheepskin covers remain almost the identical temperature. Additionally, each hollow fiber absorbs up to 30% of its own weight in moisture. It keeps you dry, yet never feels wet itself. You avoid the heat and clamminess of vinyl, or even leather, because there's free flow of air between you and seat. Every cover is hand-made by master craftsmen from the finest chrome-tanned pelts, in colors to match or coordinate with any interior. Sold in pairs only, in 11 colors (request color samples when ordering). FAA Approved.

Available for the following planes: Beechcraft: Baron B-55, E-55, B-58, Bonanza V-35 (A or B), A-33, A-36, F-33A, A36TC. Cessna: 150, 152, 172, 177, 180, 182, 185, 210, 310, 340, 402, 414, 421. Aero Commander: 500, 600, 900, Piper: Archer, Cherokee, Warrior Tomahawk.

Specify year, make model and color choice when ordering. Car seat covers also available in same colors. Call for a price.

Superlamb Sheepskin Seat Covers (pair).....P/N 7736 .....**$475.00**

Sheepskin Samples - Order a sample then return it for a full credit after you have selected a color and ordered your seat cover.....P/N 13-05553 .....**$50.00**

AIRCRAFT SPRUCE T-SHIRTS

Top quality 100% cotton shirt available in white or navy blue. These shirts feature Aircraft Spruce logo on the back and a small Aircraft Spruce Logo on the front left chest. A great looking shirt that will last for years. Order size by part no.:

Size	White	Price	Navy	Price
Small	13-02810	**$8.95**	13-02047	**$8.95**
Med.	13-02910	**$8.95**	13-02048	**$8.95**
Large	13-03010	**$8.95**	13-02049	**$8.95**
XL	13-03110	**$8.95**	13-02050	**$8.95**
XXL	13-03120	**$8.95**	13-02051	**$8.95**

SPRUCE POLO SHIRT

SPRUCE POLO SHIRT - These are the same high quality polo shirts worn by the Aircraft Spruce Staff at Oshkosh, Sun 'N Fun and other airshows. Made from Dry-Excel™ close-hole Micromesh, polyester knit, with a fine gauge rib-trim collar. Three button front, open hem sleeves, and split side welts make these polos great for everyone. These polos feature the Aircraft Spruce logo on the left chest. Machine washable.

MEN'S BLACK			WOMEN'S BLACK		
Size	**Part No.**	**Price**	**Size**	**Part No.**	**Price**
Small	13-04729	**$29.95**	Small	13-06507	**$29.95**
Med.	13-04731	**$29.95**	Med.	13-06508	**$29.95**
Large.	13-04732	**$29.95**	Large.	13-06509	**$29.95**
X-LRG	13-04733	**$29.95**			
2XLG	13-04734	**$29.95**			
MEN'S WHITE			**WOMEN'S WHITE**		
Size	**PN**	**Price**	**Size**	**Part No.**	**Price**
Small	13-04730	**$29.95**	Small	13-06513	**$29.95**
Med.	13-01985	**$29.95**	Med.	13-06514	**$29.95**
Large.	13-01982	**$29.95**	Large.	13-06515	**$29.95**
XLRG	13-01979	**$29.95**			
2XLG	13-01976	**$27.95**			
MEN'S LIGHT BLUE			**WOMEN'S NAVY BLUE**		
Size	**PN**	**Price**	**Size**	**Part No.**	**Price**
Small	13-04728	**$29.95**	Small	13-06516	**$29.95**
Med.	13-01986	**$29.95**	Med.	13-06517	**$29.95**
Large.	13-01983	**$29.95**	Large.	13-06518	**$29.95**
XLRG	13-01980	**$27.95**			
2XLG	13-01977	**$29.95**			

AIRCRAFT SPRUCE PATCH

This is an embroidered patch, oval in shape, and approximately 3-1/2", colors are Red/White/Blue.

P/N 13-02709 .....**$19.00**

COLORS AVAILABLE

Black	**Navy**	**Charcoal**	**Metallic Blue**
Oyster	**Natural**	**Bamboo**	**Beige**
Honey Tan	**Oak**	**Mushroom**	**Creme**
Silver	**Mid Grey**		

AIRCRAFT SPRUCE WINDBREAKER

These high quality, golf style pullover windbreakers are perfect for those chilly days on the course or at the airport. Color: Navy blue w/khaki trim and "Aircraft Spruce & Specialty Co" on left chest.

Medium.....P/N 13-01987.....**$39.95**
Large .....P/N 13-01988.....**$39.95**
X-Large.....P/N 13-01989.....**$39.95**
2XL .....P/N 13-01990.....**$29.95**

AIRCRAFT SPRUCE CAP

Our heavyweight 100% brushed cotton hat is perfect for aviators. Unlike other caps, ours features a no-button construction for comfort while wearing your headset. Low profile cap has aircraft design on front panel and Aircraft Spruce logo on back. A great looking top quality cap Stretch fit, one size fits all.

Black .....P/N 13-03895.....**$17.95**
Navy.....P/N 13-11715.....**$17.95**

AIRCRAFT SPRUCE WATER BOTTLE

BPA free 20 oz. reusable aluminum Aircraft Spruce water Bottle. Features a leak proof lid and a clip to conveniently attach the bottle to a backpack or belt loop. Size: 8 1/2" x 2 3/4 diameter .....P/N 13-11326.....**$4.95**

PILOT ARMOR™ GENERAL PURPOSE SUNSHADES

This general purpose sunshade provide "spot relief" on windows of any size. They are easily attached and removed to provide sun and glare protection wherever you need it. Made of commercial grade exterior polyester blended Sun Protection screen that has been treated and sealed with a reflective polymer which gives the fabric its protective features. It is very durable, will not mildew, or fade. Tear and dirt resistant, the fabrics stand up to tough conditions and continue to look fresh for years. It is easily maintained with a mild detergent or a cockpit "wet-nap".

These fabrics are maintained under tension during the entire production process, resulting in superb dimensional stability that helps it to maintain its shape without bagging or sagging. Warranted for use inside and out.

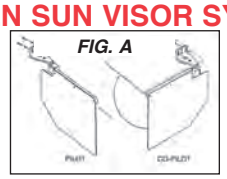
- Excellent solar protection-eliminates up to 86% of the sun's rays, excellent thermal reflective features
- Ideal compromise between solar protection and light transparency
- Provides significant external visibility
- For use on the ground or in the air
- Will not damage acrylic windows
- Full custom sets available, call us at 877-477-7823 for a quote.

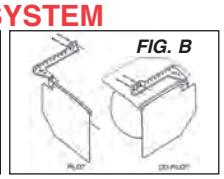
Size	Part No.	Price
9.5"x6"	13-09666	**$17.75**
11"x6"	13-09665	**$19.95**
16"x9"	13-09664	**$24.95**
15"x22"	13-09662	**$34.95**
16"x16"	13-09663	**$29.95**

PS

SUN VISORS

ROSEN SUN VISOR SYSTEM





Don't fly blind! Give yourself and your passengers that extra margin of safety. These transparent sun visors rotate and extend to offer complete cockpit protection form the sun. The oversize, tinted lens filters out 95% of the ultraviolet rays, reduces glare by 94% and heat by 86%. Distortion free. Fully STC'd and PMA'd. The system, which includes pilot and co-pilot visors, installs in minutes. (Exceptions: C-210 non-pressurized requires 1.5 hrs, C-152 requires rivnut installation by an A&P, C-177 req. 6-8 hrs.). Available for these aircraft. Visit or website for specs., installation, and application data.

BEECH - Bonanza/Baron, standard ..... P/N 7568 ..... **$328.95**
Bonanza/Baron,3rd Axis option ..... P/N 7311 ..... **$397.95**
Duke ..... P/N 7738 ..... **$328.95**
King Air ..... P/N 13-01927 ..... **$386.95**
King Air Visor Rail Mount ..... P/N 13-09856 ..... **$386.95**
MOONEY - 1968 and later models original visors mounted on right or left side (not on center post) ..... P/N 7762 ..... **$397.95**
PIPER
Comanche, All models,standard ..... P/N 7809 ..... **$356.00**
Comanche, Third Axis option ..... P/N 7924 ..... **$418.95**
Arapaho Comanche ..... P/N 13-07454 ..... **$397.95**
Cherokee, Center mount ..... P/N 13-01315 ..... **$397.95**
Cherokee, swivel stud ..... P/N 13-01316 ..... **$397.95**
Seneca ..... P/N 13-01317 ..... **$397.95**
CESSNA
1980 and later - 170's to 206's (except 177's) Center Mount
P/N 7629 ..... **$296.00**
All 150's and 152's. Prior to 1980 - 170's - 206's (except 177's) Side Mount
P/N 7006 ..... **$328.95**
Cessna 180 3rd axis (1981 & later) ..... P/N 13-03174 ..... **$350.95**
210's w/o air cond. (Older 210's, see above) ..... P/N 7152 ..... **$356.00**
P210's and 210's w/air conditioning ..... P/N 7426 ..... **$355.95**
177's ..... P/N 7582 ..... **$389.00**
T303 ..... P/N 13-01928 ..... **$452.95**
310s & 340s, special order to replace units with ball-joint cover style visor only (shown) ..... P/N 7687 ..... **$418.00**
337 ..... P/N 13-01308 ..... **$452.95**
320 ..... P/N 13-01311 ..... **$452.95**
350/400 ..... P/N 13-06044 ..... **$514.00**
400 ..... P/N 13-01312 ..... **$452.95**
412B ..... P/N 13-05180 ..... **$452.95**
GRUMMAN - Cheetah ..... P/N 13-01313 ..... **$426.95**
RV-10
Rosen Sun Visor Set - RV-10 ..... P/N 13-05695 ..... **$397.95**
Rosen Sun Visor - Pilot Side ..... P/N 13-05696 ..... **$199.95**
Rosen Sun Visor Set - Copilot Side ..... P/N 13-05697 ..... **$199.95**
MAULE ..... P/N 13-02471 ..... **$397.95**
Rockwell Commander 114 ..... P/N 13-03328 ..... **$397.95**
OTHERS*
Cirrus SR20 / SR22 ..... P/N 13-03258 ..... **$397.95**
Lancair IV ..... P/N 13-01934 ..... **$418.00**
Homebuilders Universal surface mount ..... P/N 13-03175 ..... **$397.95**
Homebuilders Universal tube mount ..... P/N 13-03176 ..... **$397.95**
Homebuilders Universal systems are specific order & built to your specs

ROSEN THIRD AXIS UPDATE KIT: This update kit will fit any Rosen system that does not come standard with third axis option (Piper systems, for examples, come with third axis stanard). P/N 13-04014 ..... **$72.85**

ROSEN CREW SUNSHADES

A highly effective solution to excessive heat build-up in the cockpit. CrewShade is easily fixed to the side windows with (2) attached suction cups. Suction release tabs make repositioning quick and simple. The CrewShade folds and stores in the included 6" diameter carrying pouch when not in use. Shade dimensions: 14 ½" x 17 ½" P/N 13-06271 ..... **$14.00**

BONANZA/BARON ADJUSTABLE SUN VISORS

Aerospace construction means they work flawlessly, plus they are very adjustable. Rotate them up and down, turn to cover the side windows and slide them in and out for coverage where you want. P/N 05-03434 .... **$397.50**

SUNGUARD SLAP ON SUN VISOR

Sunguard is a transparent polymer, that will statically attach to any smooth surface (windows in cars, boats, aircraft, RV's and homes). It is available in "olive green" tinted shade and absorbs approximately 78% of the light spectrum.
6X9 ..... P/N 13-08666 ..... **$3.95**
9X12 ..... P/N 13-08667 ..... **$6.95**

DIM-IT MOVEABLE VISOR

You can keep moving your head to stay in the shade of your visor, or you can get a DIM-IT visor and move it to where you want it. It's a 6"x12" sheet of tinted Lexan that can be positioned on any window in the cockpit by means of the attached vinyl suction cup. (An optional self-adhesive adapter plate lets you attach it to porous surfaces as well.) Completely transparent and distortion-free.
DIM-IT Moveable Visor ..... P/N 7172 ..... **$7.95**
Adapter (for porous surfaces) ..... P/N 7113 ..... **$4.65**

MINI DIM-IT

Diminishes the intensity of direct sunlight, glare, and reflections. This little visor is made of high strength tinted Lexan and is distortion-free. Place the suction cup on window/windshield and press. P/N 13-01758 ..... **$6.95**

ADJUSTAVISOR

The Adjustavisor, a clip-on unit that virtually doubles the effective range of stock visors, adds contrast, and reduces glare and fatigue. Available with smoke polycarbonate lens with UV protection. There's also a suction cup model for aircraft with canopies. The cups are strong enough and the visor assemblies light enough that they stay attached to any window through most any maneuver. Size:3.5"x 12".
Clip-on (smoke) ... P/N 13-03263 ... **$121.95**
Suction (smoke) ... P/N 13-03261 ... **$107.95**

RV-10 SUN VISOR

Blue Sky Sun Visors were specifically designed for the RV-10. The RV-10 visors retain all of the features of those that have been produced for certified aircraft since 2001. The visors provide improved visibility in hazy or cloudy conditions while still being out of the pilot's view when not in use. In addition to retaining the superior functionality, durability, and strength of the original Blue Sky Sun Visor, they provide sun and heat screening, whether coming from the front or side for both pilot and co-pilot. Installation is quick and requires only basic tools and mechanical ability.
P/N 13-07444 ..... **$198.00**

UNIVERSAL SUNVISOR FOR HOMEBUILT AIRCRAFT

Universal Swivel Mounts - simplify installation into most homebuilt aircraft! Lightweight hardware and optical quality bronze acrylic visor. Designed, and visor tint specified, by eye doctor/pilot Dr. Steven DeGroff, to reduce, high-altitude and ocular media small-particle scatter and enhance vision at dusk, after sunset, when scotopic vision is used. Hundreds of same class visors are field-approved and in use in the Comanche fleet.
P/N 13-07443 ..... **$222.95**

CLEAR VIEW SUN VISORS

ClearView aviation sun visors provide outstanding sun protection to pilots of homebuilt and certificated aircraft. These visors are STCd & PMAd for Bonanza, Barons, and Travelairs. All the visors have 3 axis movements, thumb screw adjustable extenders, & UV protection. Component parts include brass and stainless steel fittings to assure non-binding operation. Clear View visors provide improved visibility, enhanced aircraft interior, and can be used as a sunshade when not in use as a sun visor. These visors are easily adjustable with extended coverage and precise placement. STC for Beech, Bonanza, Baron, and Travelair. Please specify aircraft make and model when ordering.
P/N 13-00102 ..... **$289.95**

SUN SPOTS

* Front & Side Windows, Passenger side Windows. Also place onto Existing Transparent Sun Visors for extended coverage & darker shade "D" * Two 5-1/2" dia. disks, easy handling & storage * Suction cup attachment, lightweight, 4 mills thick * Disk rotate 306° "B", for total of a 10" diameter * 2 disks overlap for double shade strength "A" * Separate disks for single shade strength "B" * Split disks for half & half shade strength "C" P/N 13-06774 ..... **$13.95**

PS

SUN SHIELDS – CANOPY COVERS

KENNON SUPER SUN SHIELDS

The most durable sun shield on the market has a clear polyester coating to protect the plexiglass windows. Heat can permanently damage the interior and avionics in your aircraft. The secret is a material with two surfaces of aluminum separated by trapped air. This combination reflects 97% of radiant heat, an insulation value of R-9 equivalent to two inches of fiberglass. Kennon Extra Firm shields fit snugly, and maintain their shape for a tight fit. They install in no time, and roll up for storage in compact, water-repellent bags. Weight is 1Lb. Available for most aircraft, specify year, make and model. For custom shields, specify exact size of windshield & windows. Also available for cars. Fabric edging insures snug fit & durability.

P/N 7672 ..... **$195.00**

PIPER SUNVISOR CATCHES

Many Piper aircraft have the same problem. The sun visor catches lose to stability, because the UV effect allows the plastic to become porous. These Piper Sunvisor Catches are made from a blended poly-plastic with a UV additive that will prevent UV corrosion. A set contains two pieces with the required plastic rivets. They are available in white and black (used in Piper PA-38 Tomahawk). The set for the Piper Tomahawk contains two extra rivets.

White P/N 13-04187 ..... **$33.85**
Black P/N 13-04188 ..... **$33.85**

KENNON COWL PLUGS

Kennon cowl plugs are constructed from red Aqualon over 2" thick foam and feature a binding around the outer edge of each plug so there is a tight seal which fits snugly in the cowl. This lip prevents the plugs from slipping inside the opening. A safety strap goes around the prop so if by chance you forget to remove the plugs, the prop will remove them for you. These cowl plugs install easily and comes with their own storage bag. Specify aircraft make, model & year when ordering. Include aircraft registration number to be printed on plugs at no extra charge.

Single engine plugs ..... P/N 13-14111 ..... **$95.00**
Twin engines plugs ..... P/N 13-06212 .... **$190.00**

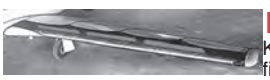
CUSTOM FIT COWL PLUGS

These cowl plugs are tailored to fit popular Cessna and Beech single engine aircraft. High visibility yellow closed cell foam will not retain moisture. Printed on one side is "Remove Before Starting Engine", and the other is blank for the N#. They are joined by a nylon strap with a fluorescent orange Remove Before Flight flag. Please use following part no's. to specify aircraft.

C-150 (2 Hole Only).... P/N 13-02620 ..... **$36.95**
C-172 (1965+) ..... P/N 13-02625 .... **$34.95**
C-182 (1972.5 - 1989) ..... P/N 13-02630 .... **$36.95**
B33-35 ..... P/N 13-02637 .... **$34.50**

Universal kit w/square inlets (Sqr blocks you cut to fit)

P/N 13-02645 .... **$29.95/pr**



KENNON WIND SPOILERS

Kennon Wind Spoilers are a strip of soft fiber filled tubes that attach to the wing to slow airflow over the top and to prevent lift. An airplane was built to fly, given a strong wind, the plane will fly without you and no tie down will restrain a flying airplane for long. During the stormy winter of 1998, over 200 airplanes were picked up and destroyed by strong winds. Kennon Wind Spoilers could have saved many of these aircraft. The wind spoilers cover the leading edge of the wings but not the tips, and most are about 14.5 ft long (per wing). Specify aircraft make, model, year when ordering.

P/N 13-14180 ..... **$148.95/pr**

KENNON COWL CAP COVERS

This small cover goes over the inlets and back onto the cowl about 12 inches. It closes under the spinner with Velcro. There are bungees with hooks on the two rear corners that keep the cover pulled back in place. The material used is Red Sunbrella: UV resistant, water resistant and yet breathable. This is a great alternative to plugs that often slide out of the opening or do not wedge straight in the opening due to the inside shape. Covers are available with Tail Number identification through a sewn on embroidered patch. Please specify aircraft year, make and model.

Single Engine ..... P/N 13-09884 ..... **$195.00**
Single Engine with small embroidery ..... P/N 13-11958 ..... **$210.00**
Single Engine with large embroidery..... P/N 13-11959 ..... **$220.00**
Twin Engine..... P/N 13-09884-2 ..... **$390.00**

PROPPASTIE

A ground-use only cover that will minimize snow, ice, and water from lying on your propeller hub bearings and freezing inside your spinner. Made of the highest quality UV-stabilized materials, designed to withstand all but the most extreme temperatures. Tested to remain in place in up to 51 mph wind gusts. Velcro, holds the PropPastie in place.

P/N 13-10282 ..... **$34.95**

KENNON CABIN COVER - LOW WING

Kennon's Low Wing Cabin Cover covers the top of the cabin, the antennae and the entire window area. Made from Sunbrella which is designed to withstand the sun's ultra violet rays. Sunbrella is the award winning UV resistant outdoor fabric. It is very soft and breathable so it is safe to use as a year round cover on any aircraft. Each cover is custom built for the specific year, make and model of aircraft. You will be asked for aircraft year,make, model, and registration number when ordering this item. There is an additional cost for the microfiber lining, and the cost varies based on aircraft. Color of cover and trim is standard silver weathermax, custom colors available for additional fee: of **$75.00**

P/N 13-04047 ..... **$449.00**

KENNON DUST COVERS

The Kennon Dust Covers keeps dust, birds, and bird droppings off aircraft stored in hangars. Made from 210 Denier Nylon, the cover is soft, lightweight, and machine washable. Will not scratch the aircraft. It is easy to put on, with the elastic hem fitting around the nose, wing, and tail. Stores in its own storage bag and weighs only 10lbs. Available in sizes to fit any aircraft from homebuilt to military. Specify year, make & model of aircraft when ordering. Color: Black or Blue. ***Stock Color is Black. For Special order color (blue or red) add $28.95***

Small for aircraft up to 21 ft long, wingspan to 31 ft.
P/N 13-14145 ..... **$405.95**
Med. for aircraft up to 30 ft long, wingspan to 37 ft.
P/N 13-14146 ..... **$524.95**
Light Twin up to 35 ft long w/wingspan to 40 ft.
P/N 13-14147 ..... **$615.95**
Red or blue color covers ..... P/N 13-06411 ..... **$28.95**

Other aircraft - Custom Made - Call for price

KENNON SUN BLOCKER AIRCRAFT COVERS

Kennon's Canopy Cover is constructed from silver WeatherMax. Provide Kennon with antenna measurements and we will tailor the cover so it fits neatly around antenna, OAT boot and ADF wires at no additional charge. Kennon's deluxe canopy cover is constructed with polyester WeatherMax and lined with anti-grit to prevent sand and dirt from adhering to the fabric and later scratching your windows.

Weathermax is an engineered polymer material uniquely designed specifically for constant outdoor use. It is extremely UV resistant and extremely resistant to fading and color loss. This fabric is breathable, abrasion resistant and eliminates sagging. Static charged acrylic windows attract dust and dust scratches. Kennon's new Anti-Grit lining helps reduce static and further helps prevent scratching.

Choice of Trim Color.

See www.aircraftspruce.com for Kennon Color Chart.

HIGH WING WRAP-AROUND COVER – Cessna120-210, Cessna 337; L-19; PA10, PA22 including Pacer, Tripacer, Cub, Super Cub, Colt, Luscombe, Stinson 108, Aeronca, Citabria, Maule, Rockwell 685/690/980, Aviat, Christian Husky, Lake Renegade

Deluxe ..... P/N 13-04450-D **$395.95**
Deluxe ..... P/N 13-14146-D **$474.95**

LOW WING WITH 2 SIDE WINDOWS- This is for a 4 seat plane

Deluxe ..... P/N 13-04451-D **$427.95**
Standard..... P/N 13-14149-A..... **$425.95**

LOW WING WITH 3 SIDE WINDOWS – Earlier than 1971 Piper Cherokee VI,Piper, PA28 181, 200, 235 incl. Arrow, Archer & Warrior, Dakota, Aerospatiale, Trinidad, Tobbago, Piper Commanche (Some but not all...ASK), Aztec, Apache, Cessna 310 (exception to 2 window rule)

Deluxe ..... P/N 13-14148-D **$475.95**

LOW WING WITH 4 SIDE WINDOWS – Piper Cherokee VI, Lance, Saratoga, Malibu, Seneca, Aerostar, Beech Baron 58, Beech 33, 36, Beech King , Air (Cockpit), Lear 2500, 3500 (Cockpit)

Deluxe ..... P/N 13-14149-D **$590.00**

LOW WING WITH 4 TO 5 SIDE WINDOWS – Piper Navajo Chiefton, Cheyenne, Cessna 340, 402, 414, 425, 441, Citation, Beech Duke

Deluxe ..... P/N 13-14150-D **$665.00**

LANCAIR & ZENAIR CANOPY COVERS

These custom designed covers for the Lancair 235/320 & the Zenair Zodiac canopy are made of acrylic Sunbrella fabric and are available in blue, grey, or white. The 100% acrylic fabric wont shrink, fade, or rot. Nylon webbed straps assure secure fit while snap together buckles permit fast adjustment, fastening, and release. Side adjustments provide tight fit. These covers will protect your avionics and interior from sunlight and heat damage. Color: Blue

Lancair Blue Canopy Cover ..... P/N 13-14110 ..... **$551.00**
Kennon ZenairBlue Canopy Cover ..... P/N 13-14140 ..... **$398.00**

PS

AIRCRAFT SPRUCE WEST
CORONA, CA • (877) 4-SPRUCE
AIRCRAFT SPRUCE EAST
PEACHTREE CITY, GA • (877) 477-7823
Prices Subject to Change Without Notice

CHADD PADD FUEL MAT

The multi-purpose (Aviation/Marine) 15"x20" Chadd Padd® is the best choice for use where high fuel volumes or high flow rates of fuel are in play - they were originally invented for the high flow rate of aviation refuelers and definitely provide a little more piece of mind.
Each padd is anti-static treated, hydrophobic (repels water & floats), and holds approx 11 fl.oz. of petroleum; which means the 1 Roll of 18 Padds in its own compact dispenser box will absorb an approx. total of 198 fl.oz. or 6.1 quarts." 15" X 20" P/N 13-08161 .....**$33.25**

CHADD PADD FUEL MAT DISPENSER

The Chadd Padd Dispenser is a must-have for any fueling operation serious about refueling safety! Made from ultra-white PVC; this convenient, water proof dispenser makes sure your Chadd Padds® will stay clean, dry, and most importantly, readily available for daily fuelings or should there be an immediate need for a petroleum absorbent Padd.
The Chadd Padd® Dispenser accommodates the larger, duel-port Chadd Padds® Refill Roll 18 that are 15 inches wide.
Chadd Padds® pictured in the dispenser are not included; however, mounting hardware is included. Size: 9"x17"x9" Weight: 5.5lbs P/N 13-08163 .....**$58.25**

CHADD PADD WIND CHOCKS

The Wind Chocks™ are used to hold the Chadd Padd® down during use in windy conditions and help to also give the Padds rigidity, form, and the traditional "roll n fold" feel. Rated for use in winds up to 20kts, the Wind Chocks™ crimp onto the Padd as to not allow anything to touch the craft's surface except the soft, clean, and dry Chadd Padd®.
They're made from a soft and flexible material that helps them to conform to the surface being fueled while still allowing for versatility in their placement on the Padd as they can be applied in almost any configuration that is best for the refueler. The Wind Chocks™ are also surprisingly heavy for their size and weigh almost 2 lbs for the pair; ensuring your Chadd Padd® will stay "chock'd" or "anchored" in place. 2"x13.75"x2". Weight: 1lbs, 6oz P/N 13-08162 .....**$49.95**

WICKSHIELD

Warning type cover for aircraft, wire/rod & "whisker" type, Static Wicks. These are very simple to use, economical, and conveniently packaged in 8 packs. They offer practical protection for the wicks, charter/corporate passengers, crew, and maintenance staff! They have been well received by corporate fleets. Features: One size fits all static wicks. Lightweight- will not stress static wicks - will not scratch airplane finish. Quick "Attach - Release" Clasp - will not stick to wicks - will not freeze in place. P/N 13-11708 .....**$38.50**

GLARE BAN STATIC CLING SUN SHIELD BRONZE

Make your flying safer and more comfortable with the Glare-Ban Sun Shields. Vee-Gee products uses a high quality solar bronze polycarbonate to cut glare and haze. This makes flying safer by allowing you to see better and helps you avoid the fatigue by cutting down on tiresome squinting. Glare-Bans are made in the U.S.A!

5-1/2" x 12" Bronze Static Cling..... P/N 17-00225.....**$2.50**
11" x 15-1/4" Bronze Static Cling..... P/N 17-00226.....**$6.95**
10" x 12" Bronze Suction Cup ..... P/N 17-00219.....**$10.75**
10" x 16-1/2" Bronze Suction Cup ..... P/N 17-00220.....**$13.25**
5" x 10" Bronze Suction Cup ..... P/N 17-00224.....**$6.25**

FUELING / ENGINE ACCESS WING MATS

Please specify color when ordering: Red, Light Blue, Royal Blue, Black, Green, Yellow and Safety Orange. Features: • Protective and durable impact absorbing Urethane-polymer • UV · Fuel · Chemical resistant • Non-marking · Non-abrasive • Exceeds FAA and military standards • -20° F to 200° F service integrity • Standard 5-inch diameter service port • Special design and private labeling available • Approved by all major oil companies, airlines, military and fuel service operations • 3 year warranty

Part No.	Color	Size	Price
13-11206	Red	18" x 24"	**$89.95**
13-11207	Royal Blue		**$89.95**
13-11208	Orange		**$89.95**
13-11209	Yellow		**$89.95**
13-11210	Black		**$89.95**
13-11211	Green		**$89.95**
13-11212	Red	18" x 36"	**$123.95**
13-11213	Royal Blue		**$123.95**
13-11214	Orange		**$123.95**
13-11215	Yellow		**$123.95**
13-11216	Black		**$123.95**
13-11217	Green		**$123.95**

WING MAT

This navy blue carpet can be placed on the wing prior to boarding which will protect both the wing and the aircraft interior. This mat rolls up easily for storage in the aircraft and an attached elastic band keeps it rolled up. The rubber backing is perfect for use on low wing aircraft. Two sizes available.

Small Wing 10.5" x 36" .....P/N 13-07195 .....**$14.25**
Large Wing 21" x 48" .....P/N 13-07196 .....**$28.50**

STEARMAN COCKPIT DUST AND RAIN COVER

One of the problems with traveling in your Stearman is the lack of space to haul necessities. This Cockpit Cover weighs about 1 pound in it's storage bag, which is the size of a quart carton.
The cover is made from back-packing tent material which is rain proof and light weight. Installs with two Velcro straps and four elastic cords using plastic fasteners. There is no metal to scratch your finish. Available in Federal Yellow. .....P/N 13-11616 .....**$159.00**

CESSNA HIGH-WING FUEL VENT SCREEN

Fuel flow to your aircraft's engine can be compromised by insects or debris entering fuel tank vents. This remove-before-flight Fuel Vent Screen prevents contaminants from obstructing or contaminating the fuel system. The attached foot-long, florescent, and weather-resistant reflective streamer stands out equally well in daylight or darkness under all weather conditions, so it won't be forgotten during your pre-flight. Fits Cessna piston engine aircraft. Inside diameter of PVC sleeve is 0.365"
P/N 13-10437 .....**$19.95**

PS

COWL PLUGS - AIRCRAFT COVERS

COWL PLUGS

Cowl Plugs with attached "remove before flight" streamer for general aviation aircraft. Prevents bird and foreign objects from entering through the cowl. Comes complete with a linking lanyard and remove before flight streamer. Heavy duty cross linked construction and durable nylon hand sewn stitching complete the set. Please specify aircraft make, model, & serial number when ordering. Plugs are furnished with free embroidery and pitot tube cover.

Single engine.....P/N 13-01742 .....**$64.95**
Twin engine .....P/N 13-01743 .....**$135.95**

PROPELLER SLINGS EXHAUST COVERS

Propeller Slings & Exhaust Covers keep your propeller secure and in place, eliminating any bearing damage caused by a free-spinning propeller with no lubrication. The integral exhaust covers protect the costly turbine wheel from debris & birds. Simple, quick one man operation. Please specify aircraft make, model, serial no. when ordering. P/N 13-01744 ..... **$166.95**

INLET PLUGS

These protect your engine form foreign object damage, blowing dust and sand, birds and debris. Complete with remove before flight flag and easy pull handle for insertion and removal. Please specify aircraft make, model, & serial no. when ordering. P/N 13-01745 ..... **$92.95/eng**

JET ENGINE COVERS

Made of extremely durable, water-proof and fire resistant Herculite, our covers are guaranteed for 10 yrs. Each set is hand crafted and sewn to order. Complete with storage bag and remove before flight flags. Please specify aircraft make, model, & serial no. when ordering.

P/N 05-04077 .....**CALL FOR QUOTE**

ENGINE INTAKE COVER

Protect your engine from natural hazards which could cause serious in-flight problems. This economical design fits practically every single or twin, even homebuilts. The lightweight, fire-retardant mesh fabric will not blister or melt. After simple one-time installation of mounting hardware, cover snaps into place and secured with Velcro. Folds for easy storage. Complete with mounting hardware & "Remove Before Starting Engine" streamers. Also available: Bib that allows you to cover additional intakes.

Engine Intake Cover ..... P/N 7148.....**$44.90**

KUVR**IT WHEEL COVERS

A vinyl-coated polyester that is fade resistant and California State Fire Marshall approved (#F-2310). The weave breathes and yet provides 85% shade factor from the suns damaging ultra violet rays. It is easy to care for. Simply machine wash and just hang it to dry. The KUVR*IT II Wheel Cover is easy to use. Simply place the cover over your tires and adjust the strap to the desired tightness and lock into place. There are 3 sizes for your convenience:

Small fits tire size: 5.00 – 5/15 x 00-6.....P/N 13-03158 .....**$28.95**
Medium fits tire size: 6.00 - 6/7.00-6.....P/N 13-03159 .....**$29.85**
Large fits tire size: 6.50 - 8/8.50-10 .....P/N 13-03160 .....**$34.75**

REDWING TRAILING EDGE PROTECTIVE FOAM

RedWing helps prevent aircraft damage and head injuries. Just slide the foam onto the trailling edges of ailerons, elevators, rudders or flaps to protect these surfaces while tied down or in the hangar.. RedWing is also ideal for proecting landing gear doors, aviionics antennas, and winglets. The bright red color reminds the pilot to remove RedWing before flight, and RedWing is reuseable and unaffected by UV, water, or oils. Furnished in 3ft. sections which can by easily cut to smaller sections. P/N 13-02566.....**$24.85**

THE SKULL SAVER PROPELLER COVERS

Helps protect personnel from propeller head bumps, and it helps protect the propeller from ground equipment bumps. Thickly padded and has a bright yellow shell made of reinforced rip-stop vinyl that is waterproof and mildew resistant. 23 inches long and fits blades that are over 8 inches wide. It is easy to install and is secured in place with a 36-inch long adjustable strap.

2 Blade ..... P/N 13-07188.....**$148.50**
3 Blade ..... P/N 13-07189.....**$217.95**

BRUCE'S CUSTOM COVERS

Canopy Covers protect the glass, upholstery and avionics from the elements, stop leaky seals and keep the cabin cool. Canopy Covers also prevent vandalism and theft.

Bruce's Custom Covers makes canopy/cabin, engine, empennage, propeller, wing and pitot covers as well as engine inlet plugs for virtually every model jet, airplane and helicopter. Covers generally cost $350 - $425, are 100% lined, and can be imprinted with your aircraft tail number. Each cover is custom made to order and lead time is generally three weeks.

For a complete technical sheet including prices, photos and information about covers for your aircraft, please call us at 1-877-477-7823.

Bruce's Custom Covers ordering Package ..... P/N 13-04693 .....**FREE**

KOGER SUNSHADES

The Koger Sunshade was developed to provide protection from the sun while flying an airplane that has a large bubble plastic canopy like the RV-6, RV-7, RV-8, RV-9 and many other types of aircraft.

Key Benefits

- Retractable to front or rear.
- Lightweight (9oz. for side by side RV models)
- Install in 1/2 to 1-1/2 hours depending on the model.
- Makes instruments more visible, and the cockpit more comfortable.

Fits	Description	Part No.	Price
RV-8	Size of shade: 15" wide by 46" long	13-05657	**$243.00**
RV-6, 6A, 7, 7A, 9, 9A	Standard TIP-UP model Size of shade: 30" wide by 25" long	13-05658	**$157.00**
RV-6, 6A, 7, 7A, 9, 9A	Standard SLIDER model Size of shade: 30" wide by 25" long	13-05659	**$157.00**
RV-6, 7, 9	Standard SLIDER model Size of shade: 34" wide by 35" long	13-09609	**$229.00**
Zodic 600XL, Legacy, Cirrus SRS, Falco, Sport Crusier, EuroStar, Sting, Europa, etc.	LARGE TIP-UP model for larger bubble canopies	13-05660	**$229.95**
Built to Order	LARGE SLIDER model with top center structure canopies are built to order. Size of shade: 34" wide by 35" long	13-05661	**$219.00**

TRISOFT WINGTIP BUMPER

Trisoft Bumpers provide protection for the trailing edge of the wing, delta fins and ventral fins. Each Trisoft Bumper is made of chemical resistant EVA foam and provides ultimate aircraft protection. The Trisoft Bumpers also work great as wing edge indentifiers. This helps protect your employees while they are working or walking under the wing. P/N 13-08263 .....**$24.95**

TRISOFT WINGTIP/PROP TIP COVERS

* Avoid Accidents * Protect Employees and Aircraft * Reduce Insurance Claims * Remain In Compliance Trisoft Aircraft Covers * Can Be Used As a Safety and Warning Device on Prop Tips. Trisoft is a simple foam triangular cover that slips onto the corners of the prop tips, gear doors, wing flaps (in the lowered position), wing tips, and dorsal antennas. Trisoft can be used on personal aircraft, corporate aircraft, commercial aircraft, military aircraft and helicopters. P/N 13-06003 .....**$18.75**

SAFETY PROP TIPS

Reduce the risk of injury from a stationary aircraft prop by covering the tips with the Safe Prop Tip. This new safety device is made of thick form covered in a bright red fabric. While the bright color calls attention to the prop to help prevent an accident bump, the thick padding adds protection in case someone does walk into the prop. Reflective tape on the front of the guard improves awareness at night, and an elastic ribbon, which holds the unit together, is a perfect place to hang the "Remove Before Starting Engine" streamer.

2 Blade..... P/N 13-03594.....**$39.85**
3 Blade..... P/N 13-03595.....**$59.50**

PS

PLANE SIGHTS REMOVE BEFORE FLIGHT

PLANE SIGHTS PITOT TUBE COVERS

Extremely obvious, very durable, and weather resistant pitot tube covers for every aircraft.

ANGLED PITOT TUBE COVER - Aircaft Type: Piston Powered Plane This durable, weather-resistant orange and yellow reflective cover fits virtually any size pitot tube. It stands out in daylight or darkness under all weather conditions, so it can't be missed. Large sewn-on Velcro tabs keep it securely in place under all conditions. Weight: 0.14 kg If length of the tube exceeds 6.75" and the diameter exceeds 7/8", then the Universal Pitot tube cover would be a better choice. As seen on the 2009 AOPA 'Let's Go Flying' Cirrus SR22 P/N 13-05611 .....**$13.95**

UNIVERSAL PITOT TUBE COVER - Aircaft Type: Piston Powered Plane. This durable, weather-resistant orange and yellow reflective cover fits virtually any size pitot tube. It stands out in daylight or darkness under all weather conditions, so it can't be missed. Universal covers fit any length of tube from the smallest home built ¼" tubes up to 7/8" jet probes. The versatile hook/loop Velcro strap with sewn-in rubberized trim allows the cover to be quickly and securely fastened to the pitot tube. Weight: 0.00 kg The inside diameter of the cover is 7/8". Guaranteed to work on any Cessna, Beechcraft, Cirrus, Diamond, Grumman or Mooney aircraft, as well as most Pipers and many light sport aircraft.

P/N 13-05610.....**$13.95**

BLADE PITOT COVER - Aircaft Type: Piston Powered Plane Forgetting to remove a faded, dull and worn-out pitot tube cover can jeopardize the safety of you and your passengers. And when cold weather prevents you from installing your pinch-and-insert style blade pitot cover, ice and snow can contaminate your pitot system. Some blade pitot covers also cause damage to paint when the sleve is being forced on and off. The highly conspicuous and very durable Plane Sights Blade Pitot Cover is a perfect fit for any aircraft with a blade-type pitot tube or piper gear extension mast.. Properly installed, it's guaranteed not to blow off, fade in the sun or wear out for at least two years. Fits Piper, Katana, some Rockwell, late Grumman, Lake 250, and all other aircraft with a blade-type pitot tube. (As seen on the 2008 AOPA "Get Your Glass" sweepstakes aircraft) Weight: 0.15 kg Fits Piper, Katana, some Rockwell, late Grumman, Lake 250, and most other aircraft with a blade type of pitot tube.

P/N 13-06016.....**$15.95**

PITOT TUBE PLUG (5/8") - Aircaft Type: Piston Powered Plane 5/8" inside diameter vented pitot plug with its unmistakably conspicuous Remove-before-Flight Streamer. ANSI-compliant and weather-resistant reflective streamer stands out equally well in daylight or darkness under all weather conditions. The plug is attached to the streamer's rugged black oxide coated zinc grommet with a galvanized steel ring, and is vented to prevent pressurization damage. This 5/8" Plug Fits Aero Commander, Twin Beach, Bonanza, Cessna 300/400/500, Conquest Series, Grumman, Lear, Mooney, Piper Cheyenne and Navajo aircraft. Weight: 0.04 kg 5/8"/ 0.625" (15.875mm) ID x 1.85" (38.10mm) P/N 13-06019 .....**$13.95**

PITOT TUBE PLUG (3/4") - Aircaft Type: Piston Powered Plane. 3/4" inside diameter vented plug with its unmistakable Remove-before-Flight Streamer provides a perfect easy-on, easy-off solution. ANSI-compliant and weather-resistant reflective streamer stands out equally well in daylight or darkness under all weather conditions. The poly plug is attached to the streamer's rugged black oxide coated zinc eyelet with a stainless steel ring. This ¾"plug Fits Cessna 150, 152, 172, 177, 182, 200 series, and 337 models. Weight: 0.04 kg 3/4"/0.75" (19.05mm) ID x 2" (50.80mm) useable length P/N 13-06018.....**$13.95**

LIGHT SPORT PITOT PLUG KIT - Aircaft Type: Piston Powered Plane. Light Sport/Homebuilt Pitot Plug Kit provides a perfect fit for many homebuilt pitot tubes, light sport pitot tubes, and aircraft fuel vents. The kit includes several vented plugs so it even works with double-tube systems and is guaranteed not to pressurize your pitot static system. ANSI-compliant and weather-resistant reflective remove-before-flight streamer stands out equally well in daylight or darkness under all weather conditions. The kit comes complete with three different-sized pitot tube plugs, a unique streamer, and two rust-resistant coated triangle rings. WARNING: CHECK WITH YOUR AME AND CONSULT YOUR OWNER'S MANUAL BEFORE USING A FUEL VENT PLUG. P/N 13-06020.....**$13.95**

PLANE SIGHTS AIRCRAFT MARKERS & STATIC WICK COVERS

Prevent hangar rash and broken static wicks

STATIC WICK COVER SET (TUBE STYLE 7") - Aircaft Type: Jet. A lower priced alternative to Static Wick Markers. They protect static wicks from damage on the ground and make wing/elevator tips more obvious, preventing hangar rash. Slide these round style covers on for a tight weather resistant fit on Citations and other jets. Weight: 0.04 kg Round, tubular poly cover, 0.310" x 0.450" x 7.000"Long. *Shock cord lanyard not included P/N 13-06888.....**$48.95**

STATIC WICK COVERS (SMALL ID X7") - Aircaft Type: Jet. Installed and removed in seconds, Static Wick Covers help prevent delays and inconvenience due to hangar rash. Extremely obvious and very durable Static Wick Covers make these vulnerable parts highly visible by day or night. Slide these round style covers on for a tight weather resistant fit on your Bombardier (Challenger & Global Express) or Hawker/Beechcraft and many other jets. If necessary cut with scissors to desired length. Weight: 0.20 kg Fit's over static wick part #'s: Chelton 2-17SC-1,Chelton 2-11SC-1, MIL-9129D, DG17770. Fits Bombardier, Hawker/Beachcraft and others

P/N 13-06777.....**$65.95**

STATIC WICK COVER (SQUARE STYLE) - Aircaft Type: Jet These Square Style Static Wick Covers protect, usually yellow pronged static wicks from damage on the ground and make wing/elevator tips more obvious, thereby preventing hangar/ramp rash. Slide these rectangle covers on for a tight weather resistant fit on Falcon, Hawker, Beechjet, older Lear Jet and many other static wicks. Weight: 0.21 kg Includes three (3) Static Wick Covers per package Square Poly, 0.75"x0.25"ID x 3.50" Long, (in stock) (also available by special request, 5.25" length sleves) Standard two year warranty applies. *Shock cord lanyard not included

P/N 13-06776.....**$48.95**

UNIVERSAL AIRCRAFT MARKER - Aircaft Type: Piston Powered Plane. Highly reflective markers make vulnerable wing and elevator tips clearly visible under all conditions, and their projecting "proximity fuses" warn that something is too close before damage occurs. Fit all aircraft from Airliners to light sport aircraft, including models with static wicks and strobe lights. For aircraft with tip tanks, the wing marker opening fits over one end of the tank. A full set stows easily under most aircraft seats. Once initial fitting is done, the markers can be installed and removed in seconds during routine pre- and post-flight walk-arounds. Weight: 0.08 kg Package Contents: Two (2) corner marker pieces, two (2) harness pieces, two (2) marker fuses, four (4) 54" lengths of shock cord with cord hook ends, and four shock cord hook ends for assembly.

P/N 13-05603.....**$159.95**

TURBO PROP TIE - Aircaft Type: Turboprop. Fits most Turbo Props including Caravans, Beech 1900s, King Airs and others. An adjustable heavy duty ½" shock cord and metal hook allows the versatile design to work on so many turbo prop aircraft. Also allows our Prop Tie to Integrate with existing cowl plugs and exhaust covers. For any Turbo-Prop up with to 10" wide blade. Comes with 36" of HD 1/2" size adjustable shock cord and two stainless clips. ...

P/N 13-06778.....**$59.95**

REMOVE BEFORE FLIGHT STREAMER - Aircaft Type: Piston Powered Plane. ANSI-compliant and weather-resistant reflective streamer stands out equally well in daylight or darkness under all weather conditions. The cord is attached to the streamer with a rugged black oxide coated zinc eyelet. T Package Contents: Streamer - 12.25" long x 2" wide, Comes with two metal rings included) ..... P/N 13-05612.....**$12.95**

DIAMOND STALL WARNING PLUG - Aircaft Type: Piston Powered Plane Diamond recommends that operators of their DA40 and DA20 aircraft plug the stall warning air inlet holes on these aircraft while they're parked on the ground. Fits any Diamond DA40 or DA20, one way or the other. ANSI-compliant and weather-resistant reflective remove-before-flight streamer stands out equally well in daylight or darkness under all weather conditions. ..... P/N 13-06830.....**$39.95**

RESCUE STREAMER™ DISTRESS SIGNAL

This bright orange streamer, visible from 1.3 miles away at 1,500 ft. altitude, leads Search & Rescue teams right to you. The patented high-strength polyethylene Streamer design, tested and used by the U.S. Military and Coast Guard, is marked with the international distress symbol. Features sealed air-filled struts that keep it afloat on water and open on land to pinpoint your exact location to rescuers. RescueStreamers™ start at the size of a cell phone when stored and unroll in seconds. Always ready for use anywhere; land, water, and snow. Does not require chemicals, batteries, or electronics to signal continuously. Patented design approved for US Military & Coast Guard use. Furnished in a mesh bag for storage in a 1-2 person raft. Weight: 6.7 oz. Display size: 6" x 40 ft; Stored size: 3.5" x 7.5" P/N 13-03767.....**$43.75/ea.**

PS

BANNERS – PITOT TUBE COVERS

AIRCRAFT FOR SALE BANNERS

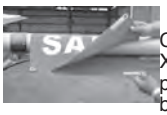
Designed specifically for aircraft use, these banners slip right over your prop blades, moving in the breeze to attract attention-but will not rub against painted surfaces. Each banner is 9" x 23", made of heavyweight rubberized Nylon that is weather-repellent and resists tearing. Sold as a set of 2. P/N 5412.....**$18.95**

PROPELLER MOUNTED BANNERS

Two 28" x 8", white printing on red reinforced vinyl. Yellow, blue and white pennants, slides over prop, fastens with velcro.

For Sale .....P/N 13-06402 .....**$29.75**
For Rent.....P/N 13-06635 .....**$34.75**

FOR SALE PROP BANNER



Consists of three pieces. Each prop banner is 11" high X 22" long when mounted. Made of RED vinylized polyester with BOLD WHITE lettering. Unlike prop banners that are a sleeve which must be slipped over the prop blade only, these banners are split at the bottom and are held together with velcro. This allows the banner to be opened up and then wrapped around virtually ANY structural member of the aircraft

P/N 13-06014.....**$28.75**

PITOT TUBE COVERS

Durable leather-like provides optimum protection. Velcro strap attaches booty to 5/8" or 11/16" dia. L-shaped pitot tube. Red "Remove Before Flight" streamer. Made of flame- proof and weather-resistant National Aerospace material.

P/N 15210.....**$5.95**

SLIP ON PITOT COVER - Slip fit over 1/4"or 1/2" dia. pitot. Red Remove Before Flight streamer attached. Made of flame-proof/ weather-resist. National Aerospace material. P/N 15220.....**$6.95**

ROUND CESSNA PITOT COVER - This yellow urethane pitot cover fits round, high-wing Cessna pitot tubes. Grooved fitting releases air pressure as the barometer changes.

P/N 5139.....**$8.95**

PIPER PITOT COVER - This pitot cover is designed to fit the blade style pitot commonly found on piper aircraft. Small vent hole prevents pressurizing system..... P/N 5740.....**$14.85**

REMOVE BEFORE FLIGHT RIBBON

This 3"x24" bright orange streamer with black letters features a grommet for a C ring to attach to anywhere on the aircraft. High visibility, fire resistant material. P/N15200 .....**$6.85**

DO NOT TOW STREAMER

17" Streamer, attach with Velcro, Color international orange.

P/N 13-02004.....**$12.85**

ASA REMOVE BEFORE FLIGHT BANNER

A bright red heavy nylon banner that can be fastened to anything that needs removing before flight. Comes with a grommet and wire ring that can be attached to everything from gear pins to gust locks and pitot covers. Heavy duty vinyl is tear resistant.

P/N 13-02380.....**$6.75**

ASA PITOT TUBE COVERS

Fit snugly over standard aircraft pitot tubes, and are vented to avoid pressurizing the pitot static system. Critical to safe operations, the cover keeps dirt, contamination, and insects from entering the pitot tube. A "remove before flight" streamer hangs off the cover as a prominent preflight reminder to pilots. Molded in the United States, the cover uses a heavy duty plastic material. Pitot Tube Cover 5/8" (small) ..... P/N 13-02378 .....**$8.95**
(Fits: Cessna 300/400 series, Citation & Conquest, Beech singles & twins, Piper Navajo & Cheyenne, Mooneys, Mitsubishi, Lear Jets & Cirrus)
Pitot Tube Cover 3/4" (large)..... P/N 13-02377 .....**$8.95**
(Fits: Cessna 150,152,172,177,182, 200 series, Skymaster & the Falcon Jet)

FUEL CAP COVER

The STAY SEALED cap is a patented fuel cap cover that locks onto the existing factory cap and seals to the surface of the wing. Designed and tested against heavy rains, strong winds, high temperatures, and extreme cold. It sealed out melring snow and ice, blowing rain and water from aircraft washing. *To be used anytime the aircraft is stored outside. The device MUST be REMOVED BEFORE FLIGHT.

Model SSCC fits the following: Cessna Series: 152, 172, 182, 206, 207, 210. Fitted with the raised metal fuel cap.....P/N 05-03662 ..... **$47.75**
Model SSCP fits the following: Cessna 120,140,150,172 with recessed fuel filler opening .....P/N 05-03668 ..... **$47.75**
Model SSPC fits the following: Piper Series: PA-28-140,PA-28-160,PA-28-180, PA-28-200, PA-32-260, PA-32-300 fitted with the raised metal fuel cap. .....P/N 05-03669 ..... **$47.75**

"REMOVE BEFORE FLIGHT" PITOT COVERS

Universal cover.....P/N 13-04396 .**$11.85**
Piper blade cover .....P/N 13-02946 ...**$9.95**
3/4 pitot cover.....P/N 13-04395 ...**$8.50**
5/8 pitot cover.....P/N 13-04394 ...**$8.95**
Sm RBF streamer ....P/N 13-02818 ...**$3.75**
Lrg RBF streamer.....P/N 13-02819 ...**$5.75**
Nelson RBF Streamer .....P/N 13-04397 ...**$6.75**

FUEL VENT COVER

The fuel vent cover is designed to fit most fuel vents, and will not pressurize the fuel system. The ribbon is nylon with a vinyl coating and silkscreened letters. P/N 13-02817.....**$10.95**

REMOVE BEFORE FLIGHT STREAMER

Red "REMOVE BEFORE FLIGHT" Streamer with white lettering. Measures 2" wide and 17-1/2" long

2" X 17" .....P/N 13-06238.....**$5.85**
3" X 31".....P/N 13-11731.....**$8.50**

KEY CHAINS

Remove before flight key chain with white letter REMOVE BEFORE FLIGHT on red banner

P/N 13-02836 ..... **$3.95**

Key ring with a white printed "I'D RATHER BE FLYING" on blue banner.

P/N 13-02949 ..... **$2.95**

Key ring with blue writing "I LOVE FLYING" on off-white banner

P/N 13-02950 ..... **$2.95**

REMOVE BEFORE FLIGHT KEYCHAIN

Red, "REMOVE BEFORE FLIGHT" is 11-1/2" in length. Great for your keys, ID, or badge. The "REMOVE BEFORE FLIGHT" is silk screened in white on red nylon..... P/N 13-03822 .....**$2.95**

PROFLIGHT AIRCRAFT KEY CHAINS

ProFlight aircraft personal streamer with attached ring and slogan "I'D RATHER BE FLYING". P/N 13-10450 ..... **$1.95**

ProFlight aircraft personal streamer with attached ring and slogan "I LOVE FLYING".

P/N 13-10448 ..... **$1.95**

ProFlight aircraft personal streamer with attached ring and slogan "REMOVE BEFORE FLIGHT". P/N 13-10447 ..... **$0.95**

ProFlight aircraft personal streamer with attached ring and slogan "HAVE YOU CLOSED YOUR FLIGHT PLAN".

P/N 13-10449 ..... **$1.99**

PS

REMOVE BEFORE FLIGHT STREAMER

2-1/4" wide, 17" long red polyester fabric with white writing: "Remove Before Flight"
P/N 13-01458 .....**$4.35**

UNIVERSAL STATIC PORT COVERS

SPC-101

SPC-102

An inexpensive, yet very effective alternative to other covers and plugs. The SPC-101 is designed to fit an aircraft with one static port on each side of the aircraft and the SPC-102 is designed to fit an aircraft with two static port on each side of the aircraft.
Features: • Universal design to fit most aircraft • Lightweight entire assembly weighs less than 1/2 pound • Attaches with heavy duty lever cups designed to lift up to 40 pounds each • No fuselage modification required • Prevents the possibility of any damage to static ports by being and externally mounted cover • Malleable lightgauge red anodized aluminum easily conforms to virtually any surface contour • Adjustable to allow for attaching lever cups on or around decals and pin striping • Installed at temperatures from -20°F to 110°F

SPC-101 .....P/N 13-06723 .....**$143.50**
SPC-102 .....P/N 13-06724 .....**$155.00**

PITOT COVERS

Avoid costly damage to your pitot-static system. Protects from dust, insects, wind and other foreign matter. Will not pressurize pitot-static system.

MODEL 4602 - Fits Piper, Katana, some Rockwell, and late Grumman aircraft.
P/N 13-06395 .....**$9.85**

MODEL 4935 - Bootie Type, all Naugahyde, white boot, red with white printing, 2" x 16". ..... P/N 13-06397 .....**$10.50**

STREAMERS

5811 "OUT OF SERVICE" - 3" x 24". yellow printing on red reinforced vinyl with grommet and ring. 2" securing strap with grommet and velcro.
P/N 13-06399 .....**$9.85**

5813 "DO NOT TOW" - 3" x 16". yellow printing on red reinforced vinyl with grommet and ring. 2" securing strap with grommet and velcro.
P/N 13-06401 .....**$10.95**

4604 "REMOVE BEFORE FLIGHT" - 2" x 16". white printing on red reinforced vinyl with grommet and ring.
P/N 13-06396 .....**$4.95**

PITOT TUBE COVER INSTALL TOOL

This tool was developed, in response to fleet owner and FBO requests. They were having experienced difficulty installing Covers onto high wing Pitot Probe locations, e.g., Cessna Caravans, Bush aircraft with Tundra tires, float planes and amphibians. In field trials it was found that this tool is also very useful to install-remove the same Covers onto over-the-nose Pitot Probes, of Very Lite and commercial jet aircraft!
Features: * View-Through cover grippers for easy install * Low mass for control in windy conditions * Ergonomic shape to reach high wing, and most over-the-nose mounted probes * All weather non-slip handle grip ..... P/N 13-06672 .....**$78.50**

NELSON AILER-LOCKS

• 2 Sizes
• 13" RBF streamer
• Locks flaps, ailerons, elevators, or rudder
Ailer-Lock standard (4.25").... P/N 13-02829.... **$16.85**
Ailer-Lock Large (10")..... P/N 13-22705.... **$26.95**

AIRCRAFT WINDLOCK

The Wind-Lock is designed to attach to an aircraft's controls inside the cockpit. The none-ridged mechanism keeps tension on the Elevators, holding them in the full down position. This position also allows moisture to drain from inside the control surface. It also holds the Ailerons in a streamlined position. As the wind gusts, resistance is applied. The harder the wind blows, the more resistance is applied to the controls. When the wind dies down, the Wind-Lock allows the Ailerons to return to their normal position. As the load is reduced, the tensioning mechanism reduces pressure on the control yoke. P/N 05-04044 .....**$72.75**

AMC AIRPLANE CONTROL LOCK

Rather than tying your seat belt to your controls, try AMC's new Airplane Control Lock. This lightweight control lock will stop your control surfaces from moving with the winds and will also prevent damage to your controls such as bending. This new Control Lock is lightweight and easily stored.
Airplane control lock cessna or any aircraft with control spacing of 14"-19" ..... P/N 13-02851 ..... **$77.95**
Mooney..... P/N 13-03164..... **$77.95**
Cessna 210 ..... P/N 13-03165..... **$77.95**
Cessna 206 ..... P/N 13-03166..... **$77.95**
Skymaster..... P/N 13-03167..... **$77.95**

KENNON GUST LOCKS

Locks flaps, ailerons, elevator or rudder securely. Made from special weather resistant, high density, closed cell foam with a nylon eyebolt! Won't scratch.
P/N 07-01329.....**$23.50**

PAD-LOK CONTROL SURFACE LOCK

Like it says, a padded lock. Effectively locks control surfaces while the padding compresses to the proper configuration and protects the surface finish. Padding won't absorb water. Hard-to-miss Dayglo color, plus yarn streamers. Wt. 10 oz.
P/N 13-22700.....**$18.95**

SAF-T-STOP

Saf-T-Stop is an auxiliary seat stop mechanism approved by the FAA for use with Cessna seat track A.D. #87-20-03. Installs easily, sliding over seat track. Approved for: Cessna 150, 152, 172, R172, 175, 180, 182, 185, 190, 205, 206, 207, 210, 303, 337. Not a seat lock, Saf-T-Stop is designed to restrict rearward motion if the seat lock fails. P/N 13-18510..... **$37.85/pr**

AILERON & RUDDER SOFT LOCK

The Aileron & Rudder Soft Lock is made out of a durable foam that will not scratch your paint. Slides in gap between rudder and vertical stab. Keeps rudder from moving while plane is on the ground. Comes with "Remove Before Takeoff" flag. Patent Pending.
P/N 13-11615.....**$25.95**

RANS CONTROL LOCK

RANS has developed a control lock that attaches to most models. The lock consists of a bungee cord, a couple of hooks and cap that slips over the top of the control stick. It installs in seconds and the hooks feature adjusters that allow the bungee tension to be set for a particular model. One nice aspect of the control lock is that it is not hard bolted so if an outside force against the control surfaces occur, the bungees will absorb the load and still prevent the surface from hitting against the stops.
P/N 13-10434.....**$17.85**

PS

AIRCRAFT LOCKS

PROP LOCK CHAIN

The THEX50 is a "T-HEX" maximum security chain 5 ft in length with hardened 10mm hexagon shaped links. Hexagon shaped case hardened trip heat treated super chain. This heavy duty Prop Lock Chain is the perfect way to insure the security of your aircraft, particularly at remote or foreign airports. The hexagon shaped, heat treated heavy duty chain can endure over 10 tons of cutting force, insuring your aircraft against theft. A black nylon cover over the chain protects your aircraft from the chain when in place. The Prop Lock Chain is 5 feet long and weighs 12lbs. P/N 13-05182..... **$46.85**

WHEEL CHOCK LOCK

This innovative aircraft security device clamps to the wheel which prevents theft of the aircraft, while the built-in chock prevents the wheel from rolling forward when parked. The lock and chock are yellow, while the red rubber coated arms protect the finish of the wheel. Fits any type of wheel up to 12" wide. Lifetime warranty. P/N 13-06141..... **$69.95**

YORK GUST-LOK™

The York Gust Loks the ultimate protection for your plane from wind and theft. It locks the control surfaces in a neutral position and prevents damage to control surfaces and tail caused by wind gust loads. It is welded steel, fully adjustable, is lightweight, and features a powder coat finish. The York Gust Lok is compact for easy storage and is quick and easy to use. Wt: 2.2 lbs.

CONTROL WHEEL AIRCRAFT

Aircraft	Part No.	Price
PA-28, PA-32, PA-24, PA-30 & PA-39, PA-32R, PA-34 & PA-44	13-00855	**$198.95**
Commander 112 / 114	13-32730	**$191.95**
Mooney, Grumman Goose, Maule (Tricycle gear & Seaplane) PA-23, & Grumman American, Myers 200 & Commander200	13-00863	**$209.00**
Cessna Single engine 150'&172's, Helio Courier, 295/395	13-00864	**$219.00**
Cessna Single engine 180, 206 & 210's fixed & retract gear & Cessna 337	13-00865	**$233.95**
Cessna Twins except 337 & 310	09-00329	**$251.95**
Aerostar, Commander 500, Beech Baron, Bonanza, Duke & 18/C-45, Lake L-A-4 (except Renegade)	13-32790	**$199.00**
Cessna Tailwheel, Stinson, Beech Staggerwing	13-32800	**$149.95**
Lake Amphibian	13-32820	**$112.95**
Beech King Air	13-32830	**$223.95**
Cessna 310's	13-32840	**$223.95**
Aeronca Chief 508, Taylorcraft BC 12-D, Stinson 108 & 108-1	13-32850	**$191.95**
PA-38	13-32860	**$191.95**
Maule (Tailwheel)	13-32871	**$189.00**
Piper PA-31, Chieftain, Navajo, Cheyenne	13-32880	**$223.95**
Socata (Trinidad), Grumman Widgeon	13-32890	**$207.95**
Seawind	13-32885	**$191.95**
Dehaviland Beaver	13-00866	**$251.95**
Cessna Twins (except 337 & 310)	13-00867	**$251.95**
Piper Malibu	13-00868	**$251.95**

STICK CONTROL AIRCRAFT

Aircraft	Part No.	Price
J3 w/Shin Knocker Tubes	13-00871	**$239.95**
J-4	13-11870	**$239.95**
Piper PA-12	13-00872	**$239.95**
Piper PA-16	13-00873	**$239.95**
Piper PA-14	13-00875	**$239.95**
Piper PA-15/17	13-00876	**$239.95**
Piper PA-18 & J3 Shin knockers	13-00877	**$239.95**
Piper PA-20	13-00878	**$167.98**
Champ & Citabria	13-00879	**$269.95**

Aircraft	Part No.	Price
Husky, Pitts	13-00880	**$269.95**
Micco	13-00881	**$269.95**
Nanchang CJ-6	13-11872	**$239.95**
Swift	13-00883	**$269.95**
RV-6	13-00884	**$239.95**
RV-8	13-11868	**$239.95**
Kit Fox	13-00886	**$239.95**
Waco	13-00887	**$239.95**
Lancair IV	13-00888	**$239.95**
Luscombe	13-11869	**$239.95**
Bellanca	13-06114	**$239.95**
YAK 52	13-11871	**$239.95**

YORK ACCESSORIES

Do not throw away warning flag (included with each Gust-Lok™, but also sold separately) .....P/N 13-00869 ..... **$15.00**

AIRGIZMO UNIVERSAL GUST LOCK

The AirGizmos Gust Locks are designed to quickly lock virtually any control surface securely. Its bright color and integrated flag reminds you to remove before flight. The rubber cushions ensure that your finish will be protected. They are lightweight and portable. Perfect for carrying in the plane wherever you go.

P/N 13-06139.....**$33.75**

AVIATION PROP LOCK

The Prop Club® inhibits flight by creating an out-of-balance condition. Made of tempered steel, The Prop Club® is an anti-theft device that locks securely onto the propeller at the hub via a four-digit combination. The small Prop Club® has a compressed opening range of 4-1/4" to 5-1/2"(wt: 2.4 lbs) and the large Prop Club® has a compressed opening range of 6" to 8"(wt: 2.8 lbs). As long as the Prop Club® can attach to the base of the prop within this range, and the closed dimensions are smaller than the widest part of the prop, The Prop Club® will remain securely attached to the propeller hub. It will not work on props that maintain the same width from base to tip.

Small Prop Club .....P/N 13-03378..... **$183.00**
Large Prop Club .....P/N 13-03379..... **$189.00**

THE ALPHA WHEEL LOCK 2000

The Alpha Lock 2000 adjusts to virtually any wheel size in seconds and completely immobilizes the aircraft or vehicle wheel from rotating or turning. The lock is pick and drill resistant and cannot be frozen with freon. Soft, coated arms will not mar or scratch wheels and rims. Furnished in bright red color to warn thieves, weather resistant, and carries a 2-year warranty. Excellent for locking aircraft, autos, trucks, trailers, boat trailers, motorcycles, RV's, etc. Locks anything on wheels! Wt: 8 lbs.

P/N 13-00436 ..... **$98.95**

THE PLANE LOCK

For Cessna C-172-210s, except for the C-177. Prevents the wind from popping your doors open and provides an added measure of security against break-ins. No tools or STC required. From outside the aircraft, the pilots door is locked by reaching through the window (prior to closing it) and pushing down the door safety handle. Then, slip the Plane Lock over the window sill and lock the window shut. P/N 13-03386 ..... **$98.95**

AIRCRAFT THROTTLE LOCK

Protect your aircraft from theft! This throttle lock is recommended by the International Aviation Theft Bureau, Avemco Insurance Co., AOPA and other insurance companies. Available for vernier or non-vernier throttle.

Vernier Lock.....P/N 13-08000 ..... **$86.75**
Non-Vernier Lock....P/N 13-08100 ..... **$86.75**

SKYLOK

Skylock is an inexpensive throttle lock for aircraft with Cessna type push-pull throttles. The device will accept shafts up to .375" diameter, and is made of heavy-gauge cadmium plated steel. Skylock affords great peace of mind to aircraft owners at very little cost. Just put in place after every flight, secure with your own favorite padlock, and your throttle cannot be moved! Simple, but it works. P/N 13-18500 ..... **$13.95**

ANTI-THEFT LOCK FOR BONANZAS

Built for those incomparable Beechcraft. All have FAA STC/PMA as applicable. The rugged, locksmith quality key lock combines forces with hardened steel pins embedded in the lock body that roll to defeat cutting. Bright red color, easy to use, installs in just seconds. Patent Pending.

P/N 05-03435 .....**$279.00**

PS

CONTROL LOCKS – SURVIVAL GEAR

LIGHT SPORT CONTROL LOCKS

These control lock is easy to install and positively locks the ailerons and elevator of the aircraft models listed below.
Gust lock is manufactured using 6061T3 aluminum.
The control stick clamping portion has a protective sleeve to prevent damage to special control handles.
The latching mechanism is tow locking buttons that cannot come loose until released by the pilot which insures the owners that their ailerons and elevators are safe from wind damage.
The control lock is red anodized with a "Remove Before Flight" decal, and each unit comes complete with instructions in a 4" x 4" x 12" box.
Only weighs 3 1/2 ounces.

VANS RV CONTROL LOCK CL200

Eligible Aircraft Models:

Carbon Cub SS
Cessna SkyCatcher
Comet FK-12
Diamond DA40
Highlander
J-3 Cub
Legend Cub
Peregrine FK-04
Renegade Falcon
Savage Cub
Stearman PT-17
Tecnam P92 & P2008
Van's RV4, RV6/6A, RV7/7A, RV9/9A, RV10

P/N 13-11304.....**$49.50**

VANS RV CONTROL LOCK CL212

Eligible Aircraft Models: Vans RV12 only.

P/N 13-11319.....**$44.00**

VANS RV CONTROL LOCK CL100

Eligible Aircraft Models: PiperSport and SportCruiser only.

P/N 13-11269.....**$51.25**

VANS RV CONTROL LOCK CL110

Eligible Aircraft Models:

Aerotrek A220 & A240
AirCam
Alto 100
Breezer ELSA
Bristel
Champion Scout, Citibria, Decathlon
Diamond DA20 & TC100
Evector Harmony & Sportstar
KitFox Super Sport 7
Lightning LS1
Luscombe
Peregrine FK-9
Phoenix
Ran's SL-19, Coyote 2, S-7LS
Remos LSA
SeaRay
Spirit
Sting S4
Tecnam P2002

P/N 13-11318.....**$49.50**

B.A.S.E.™ SURVIVAL KIT

This amazingly light kit weighs just 2.4 oz. The water-tight aLokSak® will keep everything extra dry to 200 ft. under the water and is strong enough to be used many times over.
Sparkie™ FireStarter: This lightweight emergency fire starter boasts one-handed operation! It generates intensely hot sparks and works in any weather. Sparkie™ weighs only 0.8 of an ounce.
WetFire™ Tinder (2 cubes): You will love this amazing fire starting tinder is non-toxic, odorless, smokeless, and you can start a fire even in the driving rain. In fact, WetFire™ tinder actually burns longer when its WET! A small pile of tinder shavings is all you need to start a roaring fire.
StarFlash® Signal Mirror: This signal mirror is unbreakable, can be aimed precisely, floats and can signal for communications up to 100 miles away. You can use it hiking, camping, or backpacking to apply first aid or camouflage. StarFlash® was chosen as the premier signal mirror of the U.S. Air Force and other government agencies 10 years ago.
JetScream™ Whistle: This whistle is one of the loudest in the world, any louder and it would cause physical pain, literally. You can hear JetScream's™ amazing 122Db ear-piercing shriek, above most natural or man-made noises. It is equivalent to the sound of a rock concert or a jet at take off. You can use JetScream™ in the city or woods for communication and personal protection.
aLOKSAK Waterproof Storage Bag: This lightweight bag is waterproof to 200 feet!
Kit Includes: 1 Orange Sparkie™ Fire Starter, 2 WetFire™ Tinder Cubes, 1 StarFlash® Signal Mirror, 1 Orange JetScream™ Whistle, Clear plastic flexible aLokSak® pouch (watertight to 200 ft.)
Specifications: Dimensions: 6 1/2" x 3 7/8" x 1 5/8" (16.5 x 9.8 x 4.1 cm) Weight: 2.4 oz. (168g). P/N 11-10515.....**$26.75**

ION FLASHLIGHT FIRESTARTER™

During outdoor adventures, flights over remote areas, or in any emergency survival situation, there are two pieces of equipment that you never want to be without, a flashlight and a firestarter. Solo Scientific combined the two into one lightweight, compact, powerhouse of a product called the ion Flashlight Firestarter™!
The ion Flashlight Firestarter™ is a flashlight, a firestarter, a magnetic tool, has a safety mechanism, is knurled for grip, water proof, shock resistant, and can even be used to cauterize wounds in the field (by qualified medical personnel only).
The energy efficient ion Flashlight Firestarter™ will work in any environment that will support life and uses a super bright (but energy efficient) white LED for illumination. P/N 13-11695.....**$118.75**

WATERPROOF NOTEBOOK

Durable waterproof, tear-proof notebook with handy survival essentials checklist on back cover. Great for keeping logs in wet environments and pocket-sized to fit anywhere. Pencil included.
Specifications: 50 page count, Dimensions: 3" x 5", Weight: 2.6 oz.
P/N 11-10522.....**$3.95**

PILOT CHEWS - ENERGY FOR PILOTS

THE FUEL FOR PILOTS : Your aircraft burns premium fuel so it can operate at peak performance. Why shouldn't you? Pilot Chews have been designed to give you more energy, increase your alertness, give you faster reflexes, improve your memory and cognition, maximize your night vision, help transport that much needed oxygen to your blood cells, help prevent motion sickness and help prevent the negative effects of being at higher altitudes including headaches and dizziness.
Pilot Chews 20 Flights.....P/N 13-11488.....**$29.95**
Pilot Chews Single Flight .....P/N 13-11635.....**$2.75**

PS

FIRE EXTINGUISHERS – RESCUE EQUIPMENT

H3R AVIATION FIRE EXTINGUISHERS

The FAA recommends and/or requires Halon fire extinguishers on aircraft. H3Rs Halon fire extinguishers are the extinguishers of choice in the aviation industry. They cause no mess or damage, and do not require taking a plane out of service for clean-up; a costly process for both the aircraft owner and insurance carrier. The heat-seeking quality of the Halon gas makes it a superior fire fighting agent.

DISPOSABLE, LOW-MAINTENANCE HALON 1211-1301 BLEND - Contain a proprietary blend of the "liquid streaming agent," Halon 1211, and the gaseous "total flooding agent," Halon 1301. The blend's power lies in the Halon 1301, which is both a firefighting agent and a propellant. Low maintenance and non-rechargeable. Lightweight aluminum canister Disposable. Tested to ANSI/UL 711 and UL 1093. Meets DOT requirements Meets the requirements in Advisory Circular 20-42C , "Hand Held Extinguishers for Aircraft" and/or NFPA 408, "Standard for Aircraft Hand Portable Fire Extinguishers" 12-year shelf life. Fire extinguishers include a mounting bracket.

RECHARGEABLE, STURDY INDUSTRY-STANDARD HALON 1211 - Required on commercial transport aircraft. Although classified a "liquid streaming agent," Halon 1211 also performs remarkably well as a "total flooding agent," seeking out and extinguishing fires in inaccessible places. A 6-year maintenance and 12-year hydrostatic test are required.Rugged steel cylinder. Pressure gauge enables easy confirmation of charge. Tested to ANSI/UL 711 and UL 1093. Meets DOT requirements. Meets the requirements in Advisory Circular 20-42C , "Hand Held Extinguishers for Aircraft" and/or NFPA 408, "Standard for Aircraft Hand Portable Fire Extinguishers". Fire extinguishers include a mounting bracket or a wall hook.

HALON 1211-1301 BLEND UNITS	Part No.	Range	Price
RT A400 - 14 oz. (UL Rating 2B:C)	13-07650	4-6 ft	**$124.95**
RT A600 - 1.2 lb. (UL Rating 2B:C)	13-07655	6-8 ft	**$169.95**
RT A1200 - 2.5 lb. (UL Rating 5B:C)	13-07660	7-9 ft	**$299.00**

HALON 1211 UNITS	Part No.	Range	Price
A344T - 1.3 lb. (UL Rating 2B:C)	13-01993	9-12 ft	**$107.50**
A344TC - 1.3 lb. (UL Rating 2B:C)	13-02546	9-12 ft	**$133.95**
C352TS - 2.5 lb. (UL Rating 5B:C)	13-01966	9-15 ft	**$186.95**
C352TSL - 2.5 lb. (UL Rating 5B:C)	13-02547	9-15 ft	**$199.85**
C354TS - 3.0 lb. (UL Rating 5B:C)	13-02548	9-15 ft	**$219.00**
A1600 - 3.5 lb. (UL Rating 1A:5B:C)	13-07665	8-10 ft	**$433.95**
B355T - 5.0 lb. (UL Rating 10B:C)	13-02545	9-15 ft	**$271.95**
B369 - 15.7 lb.(UL rating 1A:10B:C)	13-02557	12-18 ft.	**$534.00**
B371 - 19.9 lb. (UL rating 2A:40B:C)	**13-02558**	**12-18 ft.**	**$633.00**

FIRE EXTINGUISHER BRACKETS

BKT400 - Brackett for the RT-A400 Fire Extinguisher
P/N 13-06166.....**$9.50**

BKT600 - Brackett for the RT-A600 Fire Extinguisher
P/N 13-06167.....**$10.50**

BKT1200 - Brafkett for the RT-A1200 fire Extinguisher
P/N 13-06168.....**$12.50**

845 - Brackett for the A344T Fire Extinguisher
P/N 13-06170.....**$8.95**

845 - Brackett for the A344TC Fire Extinguisher
P/N 13-06171.....**$13.25**

817S - Brackett for the C352TS, C352TSC, C354TS Fire Extinguisher
P/N 13-06172.....**$15.85**

BKT1600 - Brackett for the A1600 Fire Extinguisher
P/N 13-06169.....**$10.95**

H3R BILLET MOUNTS

H3R Performance hand held 1 lb. and 2.5 lb. fire extinguishers come standard with aviation style mounting brackets. Stylish and versatile billet mounting accessories are also available. Band clamps fit 2.6" or 3.0" diameter fire extinguishers, and can be combined with the flat surface mount or either of the two roll bar mounts. Available in polished and brushed finishes. One year limited warranty.

Brushed - Band clamp for 1.0/1.4 lb. fire extinguishers
P/N 13-06065.....**$59.95**

Brushed - Band clamp for 2.5 lb. fire extinguishers
P/N 13-06067.....**$79.85**

Brushed -Flat surface mount ..... P/N 13-06069.....**$34.95**

RECHARGEABLE, DURABLE EPA-APPROVED HALOTRON 1™

While it is less powerful pound for pound than Halon 1211, Halotron 1 offers all of Halon 1211's clean agent benefits, and Halotron 1 is less damaging to the ozone layer. H3R Aviation offers two Halotron 1 fire extinguishers: one FAA-approved unit for aircraft use and one wheeled unit for the flight line/ramp. These rechargeable extinguishers have pressure gauges and require a 6-year maintenance and a 12-year hydrostatic test.P/N 13-02562 .... **$6,800.00**

FIREFLY PLUS FLASHLIGHT/STROBE

The Firefly Plus is a flashlight/emergency locator strobe which is visible for over one mile. The operating life of the strobe is 10 hours, and 2 hours for the flashlight (continuous). Firefly Plus operates on 2 AA batteries (not included) and made of durable ABS plastic. Waterproof & weighs 4 oz. Size: 2" dia. x 5-3/8"h. Excellent addition to any aircraft or home emergency kit.
P/N 13-54050 **$38.25**

C-STROBE LIGHT

The C-Strobe Light is a life preserver signaling emergency strobe which attaches to a life jacket or life vest with a steel pin or Velcro straps. The omni-directional strobe light is visible up to 2 miles. C-Strobe features a slim, lightweight, waterproof case and operates more than 8 hrs (continuous). Operates on 2 AA alkaline batteries (not included).
P/N 13-54020.....**$28.50**

MINI B 300 PERSONAL RESCUE TRANSMITTER

• In-line speaker emits audio warble to confirm activation and transmission of distress signal or to notify of accidental activation • Exclusive ACR audio indication of transmission allows effective self-test • User-replaceable battery; unit uses inexpensive, easy-to-obtain common lithium camera battery, Duracell DL223A (or equivalent) •Frequency stability exceeds ETS 300 152 standard; meets rules for satellite detection • Perfect for use as Crew-Overboard system when combined with Vecta2™ Direction Finder • Floats if dropped overboard • 121.5 MHz (SAR frequency) provides rescue forces with pinpoint homing • Antenna maximizes peak effective radiating power when fully extended. Compact size with antenna folded; durable double-braided antenna resists distortion when packed for extended periods • LED indicator confirms transmission • Battery installation instructions included Operating life: 24 hours @ -20°C (-4°F) P/N 13-02416.....**$209.95**

RESCUE LASER FLARE MAGNUM™

Ahand-held nighttime laser signaling device that provides a convenient, effective way to signal a rescue party up to 20 miles (32 km) away, depending on atmospheric conditions. It's ease of operation, long life and waterproof design makes it the perfect survival signaling device. Unlike conventional pyrotechnic flares, the Rescue Laser Flare™ is non-flammable, non-hazardous and can operate continuously for 72 hours on two replaceable AA batteries.
72 Hour ..... P/N 13-01924.....**$79.95**
15 Hour ..... P/N 13-01923.....**$89.95**

EMERGENCY STROBE

• Waterproof • USCG approved • Operates up to 60 hours
• Uses D battery • Red lens available
Strobe .....P/N 13-02811 ..... **$24.75**
Mounting Tri-pod .....P/N 13-14016 ..... **$65.00**

ACTIVE EXTINGUISHING LINE

Active Extinguishing Line is totally independent, 1kg, fire extinguishing system from any power source. Its main secret lies in the heat detector in a form of a line made out of special laser predriller polymer, shich will react instantly to any source of heat or fire. This line (heat detector) is connected to reservoir containing fire-extinguishing agent: hexafluoropropane FE-36. Inside of the protected device (equipment) a loop made out of the heat detector breaks, creating a mini sprinkler, directly over source of fire or heat, extinguishing it instantly. In a moment of activation the system closed circuit switch collapsses sending a signal informing of fire. For experimental aircraft only. Ask for status of pending STCs.....P/N 13-03266 ..... **$698.00**

PS

SMOKE HOODS - LIFE VESTS

PARAT C EMERGENCY SMOKE HOOD

The PARAT C is a lightweight, portable easy to don smoke escape hood designed for selfrescue in the event of a fire. The PARAT C protects the wearer for a minimum of 15 minutes from smoke, carbon monoxide and toxic gases normally present during a fire. It is ideal as a personal escape device which can be used in emergency situations occurring in homes, office or apartment buildings, schools, hospitals, plant facilities and hotels. ***FEATURES***:Hood made from flame-retardant, selfextinguishing PVC material. Bright orange hood with high visibility and excellent reflective properties. One universal size. Can be worn with glasses, long hair and beards. Large visor treated with anti-misting agent provides wide range of vision for quick escape. Elastic collar makes hood easy to don and adjust. Comfortable, soft, inner mask allows wearer to breath normally through nose or mouth, Perfect for frequent travelers.

Parat C Smoke Hood ..... P/N 13-04232..... **$169.95**
Parat C Wall Holder ..... P/N 13-06642..... **$20.75**

PROVITA SMOKE HOOD

The Provita Smoke Hood provides 20 vital minutes of life-saving evacuation time. It is proven to protect from smoke and 98% of toxins created by fire, including: Chlorine, Ammonia, Acrolein, Hydrogen Chloride, and Hydrogen Sulfide. Lightweight and compact. One size fits all. Smoke hood easily comes out of its 8" x 6" x 1" vacuum sealed bag - ready for use in seconds. There is no front or back which allows the smoke hood to be put on quickly for panic situations. The rubber seal easily slips over your head and seals - not allowing any smoke through. The smoke hood provides 360 degree vision and 20 vital minutes to escape a smoke-filled room.

P/N 13-11343..... **$189.00**

EAM TWIN CELL CREW LIFE VEST

This twin-cell vest comes with 35 lbs.of buoyancy for adults of all sizes. This model is designed with back panels and has received approvals from countries around the globe. Comes with water-activated light, like all EAM life vests. 5 years frequency of inspection

P/N 12-02573..... **$79.50**

TWIN CELL LIFE PASSENGER VEST

This twin-cell, single attachment, single adjustment vest has become the industry standard. 5 year frequency of inspection. TSO-C13e Approved. Inflated Buoyancy: 35 lbs. minimum. Temperature: Functional Range: -40 to 140°F (-40 to 60°C),Storage Range: 0 to 120°F (-17.8 to 48.9°C) Humidity: Functional Range: Up to 95% Relative Humidity, Storage Range: Up to 70% Relative Humidity Altitude: -2000 to 45,000 feet above sea level CO2 Gas Charge: 2 x 0.035 lbs. (2 x 16 grams). Frequency of Inspection: Every 60 months

P/N 12-06909..... **$78.75**

EAM XF-35 LIFE VEST

Only 1.13 lbs. (513 grams). The XF-35 offers significant fuel savings to operators wishing to stay with the added security of a twin-cell vest. 5 year frequency of inspection standard. Inflated Buoyancy: 35 lbs. minnimum. Approvals: USA FAA TSO-C13f; German LBA Approval No. 40.321/33; United Kingdom CAA Approval No. AR01445. Storage Range: 0 to 120°F (-17.8 to 48.9°C) Humidity: Functional Range: Up to 95% Relative Humidity; Storage Range: Up to 70% Relative Humidity Altitude: -2000 to 45,000 feet above sea level

Passenger Yellow..... P/N 12-02353..... **$69.95**
Crew Orange ..... P/N 12-02354..... **$74.85**

EAM UXF-35 LIFE VEST

This single cell vest is the lightest weight aviation vest in the world, weighing only .9 lbs (410 grams). 5 year frequency of inspection comes standard, 10 year version available. TSO-C13f Approved. Inflated Buoyancy: 35 lbs. min. Temperature: Functional Range: -40 to 140°F (-40 to 60°C); Storage Range: 0 to 120°F (-17.8 to 48.9°C) Humidity: Functional Range: Up to 95% Relative Humidity; Storage Range: Up to 70% Relative Humidity Altitude: -2000 to 45,000 feet above sea level

UXF-35 ..... P/N 12-02355..... **$62.50**
UXF-35 (10 year)..... P/N 12-02947..... **$67.50**

EAM BRAVO LIFE VEST

This continuous wear, yoke style life vest is ideal for helicopter pilots or anyone flying long distances over open water. Includes a 2-inch, extra wide, waist strap for comfort and security. Equipped with water-activated light, retro-reflective tape and a whistle. Optional storage pouches attach to the waist strap to hold signal kit or EPIRB. Easy fold lines for repackaging. Functional Range: -40 to 140 oF (-40 to 60 oC);Storage Range: 0 to 120 oF (-17.8 to 48.9 oC) Humidity Functional Range: Up to 95% Relative Humidity Storage Range: Up to 70% Relative Humidity Altitude -2000 to 45,000 feet above sea level

P/N 12-02356..... **$234.95**

EAM GA12 SINGLE CELL LIFE VEST

Ideal for inland and near shore operations where an FAA approved life preserver is not required. Provides 17lbs. buoyancy. Functional Range: -40 to 140 oF (-40 to 60 oC);Storage Range: 0 to 120 oF (-17.8 to 48.9 oC) Humidity: Functional Range: Up to 95% Relative Humidity Storage Range: Up to 70% Relative Humidity Altitude: -2000 to 45,000 feet above sea level

P/N 12-02359..... **$36.50**

EAM INFANT LIFE VEST

This specially designed and affordable life vest is made exclusively for children less than 35 lbs. (16 kg). EAM infant vests come in USA and European versions, for the constantly changing safety markets of commercial carriers.

With Co2..... P/N 12-02358..... **$93.75**
Without Co2..... P/N 12-02448..... **$92.50**

SURVIVAL PRODUCTS LIFE RAFTS

Perfect for general aviation. Small and compact it fits in a lightweight valise 4" x 12" x 14" and weighs only 12 lbs. But don't be fooled by its size, price or weight. This raft will do the job for you under the most adverse condition. It provides a fresh water buoyancy of 190 lbs. per person and a deck area of 3.6' per person which exceeds all Govt. standards. Inflated, the raft is 46' inside and 68' outside and every square inch has been meticulously made from raw materials and components tested for their durability and life expectancy. Every raft is pressure tested and all seams and adhesive bonds rigorously checked prior to release. Raft includes sea anchor, bailing bucket, hand inflation pump, and CO inflation system. Optional survival equipment shown below. 6-13 person raft is 5' x 12' x 14' and weighs 18 lbs. Available in non-TSO'd and TSO'd versions.

Non-TSO'd 4-6 Person Life Raft..... P/N 13-31610. **$1,435.00**
Non-TSO'd 6-13 Person Life Raft..... P/N 13-31660. **$1,685.00**
Non-TSO'd 4-6 Person Basic Raft w/o canopy .. P/N 13-31670. **$1,695.00**
TSO'd 4-6 Person Raft w/canopy only ..... P/N 13-31680. **$2,165.00**
TSO'd 4-6 Person Raft w/91 equip..... P/N 13-31690. **$2,195.00**
TSO'd 4-6 Person Raft w/121 equip..... P/N 13-31700. **$2,395.00**
TSO'd 4-6 Person Raft w/135 equip..... P/N 13-31710. **$2,988.00**
Non-TSO'd 8-12 Person Basic Raft w/o canopy P/N 13-31715. **$2,395.00**
TSO'd 8-12 Person Raft w/canopy only ..... P/N 13-31725. **$2,495.00**
TSO'd 8-12 Person Raft w/91 equip..... P/N 13-31735. **$3,275.00**
TSO'd 8-12 Person Raft w/121 equip..... P/N 13-31745. **$3,195.00**
TSO'd 8-12 Person Raft w/135 equip..... P/N 13-31755. **$3,695.00**
TSO raft with FAR91 kit 6M..... P/N 13-05861. **$3,995.00**

SURVIVAL RAFT ACCESSORY EQUIPMENT KITS

Far 91 Kits includes: canopy with inflatable mast, equipment container, signal flag, 3 signal flares, two cell flashlight with alkaline batteries, first aid kit, raft repair kit, sea dye marker, signal mirror, food rations, water rations, and signal whistle. Far 121 Kits includes: All of above plus: utility knife, survival manual and sponge. Far 135 Kits included: all of above plus: magnetic compass, eight pint desalter, fishing kit, 75 ft. retaining line, two paddles and radar reflector.

Far 91 Emergency Kit..... P/N 13-31620.... **$476.95**
Far 121 Emergency Kit..... P/N 13-31630.... **$578.00**
Far 135 Emergency Kit..... P/N 13-31650. **$1,072.00**

REVERE COASTAL COMPACT RAFT

Double 200 lb. SuperRev™ ballast pockets, it enhances stability in rough sea conditions. Its light weight allows for easy deployment and the compact size makes stowage easy in the smallest of spaces. Operation is easy. Just open the red flap on the valise and extend the painterline. Give a hard pull and the raft inflates automatically in less than 30 seconds. Coastal Compact Raft is not recommended for offshore use.

Raft	Part No.	Price	With Canopy	Price
2	11-07471	**$948.00**	---	---
4	11-07472	**$1,148.00**	11-07473	**$1,295.00**
6	11-07474	**$1,390.00**	11-07475	**$1,487.00**

PS

LIFE RAFTS – LIFE VESTS

REVERE AERO COMPACT LIFE RAFTS

Our lightest and most compact liferaft...ever! Ideal for general aircraft, the Aero Compact series offers an enhanced level of safety for over-water flights. With double 200 lb. ballast pockets, the Aero Compact enhances stability in the roughest of sea conditions. Its light weight allows for easy deployment, and the compact size makes stowage easy, even in the smallest of spaces. Equipment Pack Contains: 2 Red Hand Flares - USCG/SOLAS, Bailer, Signal Mirror, Paddles, Repair Kit, Seasick Tablets, Water Tight Flashlight, Extra Flashlight Batteries, Whistle, Sponges, Floating Knife. Specifications: Weight: 13 lbs • Dimensions - Packed (L"xW"xH"): 14 x 9 x 5.

2 Person ..... P/N 11-09399 ..... **$1,049.00**
4 Person ..... P/N 11-09401 ..... **$1,295.00**
4 Person Canopy ..... P/N 11-09402 ..... **$1,485.00**
4 Person Canopy and Standard Kit ..... P/N 11-09403 ..... **$1,585.00**
4 Person Canopy and Standard Kit Plus ..... P/N 11-09404 ..... **$1,698.00**
4 Person Canopy and Deluxe Kit ..... P/N 11-09405 ..... **$2,125.00**

REVERE AERO ELITE LIFE RAFTS

Look no further. The Revere Aero Elite has every bell and whistle possible and is the lightest weight raft in its class starting at just 45 lbs! The Aero Elite offers both crew and passengers easy usage when facing the stress of a life threatening situation as opposed to other liferafts that can be difficult to lift and transport at the time of need. Vertical bulkheads inside divide the tube into two independent air-holding compartments. If one compartment is punctured, the other keeps you afloat.

The Aero Elite includes one large oversized tube 13" round as well as an automatically inflated canopy. Offering a spacious 4 square feet per person, the Aero Elite also includes a heavy duty boarding ladder for entry assistance. The Aero Elite also includes an inflatable floor, stowage pockets, zippered windows, flashing strobe, extra large ballast pockets, an extensive equipment pack including USCG/SOLAS flares plus much more. A training DVD comes with the raft to help you and your crew prepare for use in an emergency situation. The Aero Elite is vacuum-packed to add greater protection against the environment and minimize servicing costs as service is required just once every three years. If serviced according to manufacturer's specs, the Aero Elite offers a 12 year warranty. Equipment Pack Contains: 2 Red Hand Flares - USCG/SOLAS, Bailer, Signal Mirror, Paddles, Repair Kit, Seasick Tablets, Water Tight Flashlight, Extra Flashlight Batteries, Whistle, Sponges, Floating Knife Aero Elite Liferaft Data Sheet. Features: Highest quality, lightest weight coastal liferaft available today. Large, oversized tube 13 inches in diameter. Spacious 4 square feet per person interior Automatically Inflating Canopy. Heavy duty boarding ladder. Insulated Inflatable Floor. Stowage Pockets. Zippered Windows Flashing Strobe Extra Large Ballast pockets for stabilization in rough seas Extensive Equipment Pack including USCG/SOLAS pyrotechnics. Training DVD to help crew prepare for use in an emergency situation. Vacuum packed to add greater protection against environment and minimize servicing costs. Service required just once every three years. 12 year limited warranty.

4 Person ..... P/N 11-09409 ..... **$2,617.00**
6 Person ..... P/N 11-09411 ..... **$2,739.00**
8 Person ..... P/N 11-09412 ..... **$2,884.00**

REVERE SURVIVOR DITCH BAG

The Survivor is the ultimate survival ditch bag made of 100% waterproof PVC fabric with 100% waterproof welded seams. For added water resistance, the Survivor uses a single YKK water resistant zipper. Included are internal pockets sized for hand flares, parachutes flares, smokes, mirrors and other various survival gear. Also included is an external pouch designed to fit an EPIRB inside its bracket (to eliminate the chance of accidental activation from water spray). The Survivor exceeds 40 lbs. of buoyancy! Features: Made of 100% waterproof PVC fabric. 100% waterproof welded seams. Single YKK water resistant zipper. Internal pockets for pyrotechnics and other survival gear. External pouch for EPIRB. Over 40 lbs. of buoyancy capacity (will float with just over 40 pounds of content). Dimensions: 15.5 x 9.5 x 12 (L x W x H").

Ditch Bag ..... P/N 13-08832 ..... **$82.50**

COMFORT MAX INFLATABLE LIFE-VEST

Features: •USCG approved for persons at least 16 years of age weighing 80 lbs. and above with a chest size between 30" and 52" •Dual waist belt stainless steel adjusters. Provides for easy adjustment with both hands and a more custom fit •Exterior inflation system access flap. Allows for clear, direct access to the CO2 cylinder for rearming. CO2 cylinder can be replaced without opening and unfolding the entire PFD •Waist strap and back strap attachment points fully connected and reinforced from inside for added strength •Heavy duty 420 denier nylon packcloth outer cover •Twin 2" wide back straps for comfort and security •Comfortable neck. The neck area has no Velcro or edge binding to cause chafing or abrasion for all-day comfort.

Red ..... P/N 13-04373 ..... **$126.95**

REVERE RE-ARMING KIT MANUAL COMFORT MAX VEST

Our Comfortmax Inflatable PFDs offer manual and automatic inflation systems, combining comfort with the convenience of instant CO2 inflation technology. Color: Red. P/N 13-08831 ..... **$17.95**

REVERE COMFORT MAX MANUAL BELT PACK

Specifications: Model: 45-61098-101N. Sizing: Adult Universal. User Weight: More than 90 lbs (> 41kg) Chest Size: 30"-52". Buoyancy: 35 lbs (156 Newtons). Approx. Unit Dimension: 10"x4"x3". Appro. Weight: 2 lbs. Color: Navy.

P/N 13-08826 ..... **$78.85**

REVERE SPORT MAX MANUAL REARM KIT

Color: Red P/N 13-08829 ..... **$16.75**

WORLD CLASS LIFE JACKET

Features of this life jacket include a tailored off-the-neck fit that will not limit your range of motion, reflective tape on cover and bladder for greater visibility, and a safety whistle (attached to bladder). Adult universal size. Halkey-Roberts 3F inflator. Manual inflation by pulling lanyard or by oral tube. Over 35 lbs. (150 Newton) buoyancy. Clear window to view arming status of mechanism. 2" encircling body belt with buckle. USCG Approved Type III.

P/N 14-00682 ..... **$169.95**

INFLATABLE BELT

Features include reflective tape on the bladder for greater visibility, 2" deluxe web belt with buckle, and single point indicator window. Inflates in seconds to over 35 lbs. of buoyancy. One size fits adults over 80 lbs. with 30 - 52" chest size. Will not inhibit your range of motion while hunting or fishing. U S Coast Guard approved Type III. Rearm kit 38MRK.

Specifications:35 lbs. of buoyancy (over 150 newton) • Equipped with single point indication of arming status • Reflective tape on cover and bladder for greater visibility • Safety whistle attached to bladder • 2" deluxe web belt with buckle • USCG Approved Type III • One size fits adults over 80 lbs. ..... P/N 14-00681 ..... **$149.50**

PS

MUSTANG SURVIVAL PRODUCTS

MUSTANG INFLATABLE LIFE PRESERVERS

CLASSIC INFLATABLE PFD (MANUAL ACTIVATION) - A perfect choice for any boater interested in a lightweight design with high mobility, the Mustang Survival MD3003 Classic Inflatable PFD can be easily worn over a t-shirt in warm weather or over a jacket in colder conditions. The simple construction makes it is easy to wear and maintain, the durable nylon shell makes it suitable for a variety of activities and the inflated cell features a safety whistle and SOLAS reflective tape for high visibility.

P/ (Red) **$139.95**
P/N 13-06371 (Blue) **$139.75**

INFLATABLE BELT PACK PFD - A perfect choice for any boater interested in a lightweight design with high mobility, the Mustang Survival MD3003 Classic Inflatable PFD can be easily worn over a t-shirt in warm weather or over a jacket in colder conditions. The simple construction makes it is easy to wear and maintain, the durable nylon shell makes it suitable for a variety of activities and the inflated cell features a safety whistle and SOLAS reflective tape for high visibility.

P/N 13-06372..... **$114.95**

DELUXE INFLATABLE PFD (MANUAL ACTIVATION) - The Deluxe Inflatable PFDs combine the advanced safety of inflatable technology with product enhancements such as comfort-improvement features and a safety inspection window to easily tell users if the inflator is ready for use. The Velcro(TM) closure makes it easy to wear and maintain while closing to the outside to reduce chafing around the neck and chest; the neoprene Comfort Collar(TM) eliminates neck irritation. Made for recreational enthusiasts and professionals alike, the MD3085 sports a manual inflation system and is lightweight and close-fitting to ensure it doesn't interfere with daily activities.

P/N 13-06373 (BLUE)..... **$152.95**
P/N 13-06381 (RED)..... **$149.95**

MD3085/MD3087 RE-ARM KIT - The Manual Inflatable Re-Arm Kit contains everything necessary to re-arm your Mustang Survival Manual Inflatable PFDs after deployment.
Contains: one 33gram CO2 cylinder, one re-arming instruction manual.
For model numbers: MD3085 - Deluxe PFDs 3F Manual - USA, MD3087 - Deluxe PFDs 3F Manual with Harness - USA
MD3051 - Deluxe PFDs 3F Manual - Canada
MD3052 - Deluxe PFDs 3F Manual with Harness - Canada
Use only Mustang Survival re-arm kits. Use of other re-arm kits may result in improper operation or failure to operate and will void the product's warranty.

P/N 13-06374..... **$19.65**

MANUAL INFLATABLE RE-ARM KIT: MA7170 - The Manual Inflatable Re-Arm Kit contains everything necessary to re-arm your Mustang Manual Inflatables after deployment. Contains: one 33gram CO2 cylinder, one green inflator pin, one re-arming instruction manual.
For model numbers: MD1166, MD3000, MD3003, MD3004, MD3020, MD3025, MD3091 Use only Mustang Survival re-arm kits. Use of other re-arm kits may result in improper operation or failure to operate and will void the product's warranty.

P/N 13-06375..... **$16.75**

CLOSED CELL NEOPRENE HOOD

BREATHABLE CONSTANT WEAR AVIATION COVERALL

The MA7348 Closed Cell Neoprene Hood offers increased protection against the elements when worn with Mustang Survival anti-exposure gear. Designed for easy integration with the MSD900, MSD901, MSD585, MAC200 and MAC300, the hood provides exceptional head and neck insulation and includes a lanyard to tether hood to suit, an adjustable mouth guard for protection from spray and a velcro attachment point for an emergency light. Sizes: N/A or Universal Colors: RED

P/N 13-06380 ..... **$58.00**

WORK SUITS

CONSTANT WEAR AVIATION COVERALL - The MAC10 is a close fitting, anti-exposure suit for pilots and passengers flying over marine environments. Designed to replace multiple garments used to protect aircrew from individual operational hazards, the integrated three layer suit offers protection from fire and its radiant heat, cold exposure, cold water immersion and drowning. A durable, flame resistant Nomex® anti-static outer layer provides protection for the inherently buoyant, thermal protective wetsuit. An inner layer of Nomex® provides further fire protection and comfort. Even after being significantly marred by fire or puncture, the suit maintains its flotation and hypothermia protection. Rugged leather abrasion panels are integrated into the knees and seat offering protection from petroleum, fuel oils and soiling. Multiple pockets provide storage for notepads, pens and survival equipment. An insulated thermal protective hood, stored in the right leg pocket, minimizes heat loss and provides additional fire protection for the head.
The MSF300 comes ready to wear with included universally sized dry socks, trim to fit wrist seals and CCS™ adjustable neck seal.
Sizes: 13, 10, 7, 4, 1, 15, 12, 9, 6, 3, 14, 11, 8, 5, 2, 12A, 9A
Colors: ORANGE, ROYAL BLUE, SAGE GREEN

P/N 13-06378 ..... **$895.00**

BREATHABLE CONSTANT WEAR AVIATION COVERALL - The MAC100 is a breathable flight coverall that provides anti-exposure protection without sacrificing comfort during prolonged missions. Engineered for maximum mobility during marine aircraft operations, this three layer integrated suit provides protection against fire, radiant hear, cold weather, cold-water immersion and drowning. The breathable foam liner features a moisture permeable membrane that allows excess moisture to escape while providing a thermal barrier against the dangers of outside elements. Durable, flame-resistant Nomex aramid, anti-static fabric provides external protection for the inherently buoyant, flame resistant, thermally protective, integral wetsuit. Even after being significantly marred by fire or puncture, the suit maintains its flotation and hypothermia protection. Rugged leather abrasion panels are integrated into the knees and seat offering protection from petroleum, fuel oils and soiling. Multiple pockets provide storage for notepads, pens and survival equipment. An insulated thermal protective hood and inflatable mitts are stored in the ankle pockets. Sizes: 7, 6, 5, 4, 15, 14, 13, 12A, 12, 11, 10, 9A, 9, 8, 3, 2, 1 Colors: ORANGE, ROYAL BLUE, SAGE GREEN

P/N 13-06377 ..... **$1,195.00**

AVIATION DRY SUIT

CONSTANT WEAR AVIATION DRY SUIT SYSTEM (2 LAYER)

The MSF300 is a two-layer Aircrew Dry Suit that combines the performance of the 3 layer MAC300 into two layers allowing greater mobility with reduced bulk and lower thermal burden. The outer shell uses a blended GORE-TEX ®/NOMEX® fabric that is waterproof, breathable, flame-retardant and anti-static. High-wear areas are strategically reinforced to enhance the suit's durability and prevent abrasion damage that could compromise the suit's integrity. The breathable thermal liner provides both insulation and emergency flotation and features Mustang's aerated closed-cell foam quilted with a wicking fabric that pulls excess moisture away from the body. An adjustable neck seal using Mustang's patented Closed Comfort System (CCS™) can be worn loose to provide comfort out of the water and can quickly be drawn tight to keep the water out and trim to fit neoprene wrist seals provide watertight integrity. The thermal liner can be easily removed from the outer shell to reduce thermal protection where not operationally required. An ergonomically designed rear entry allows for self donning and doffing. Integral pockets are designed for a variety of uses and facilitate access even when wearing a survival vest over the suit. The MSF300 comes ready to wear with included universally sized dry socks, trim to fit wrist seals and CCS™ adjustable neck seal. Sizes: XXL, XXXL, M, S, SX, L, XL Colors: ORANGE, SAGE GREEN

P/N 13-06376 ..... **$1,195.00**

PS

PROFORCE SURVIVAL PRODUCTS

SNUGPAK SOFTIE ELITE 2 SLEEPING BAG

An all round two season sleeping bag. Supplied with its own compression stuff sack. Temp. Rating: 36°F / 27°F (0°C / -5°C). Weight: 46oz. Length: 86". Chest: 65" + EPS. Color: Olive. Pack Size: 8" x 8" (fully compressed) P/N 13-08778 ..... **$152.15**

SNUGPAK SOFTIE ELITE 3 SLEEPING BAG

Equipped with the unique easy to deploy EPS Expanda Panel System and its own sturdy compression stuff sack. A layer of the exclusive Reflectatherm metalized barrier helps to reflect heat back inside. Temp. Rating: Comfort 23°F / Low 14°F (-5°C / -10°C). Weight: 56oz. Length: 86". Chest: 65" + EPS. Pack Size: 9" x 9" (fully compressed)

Black ..... P/N 13-08780 ..... **$194.65**
Olive ..... P/N 13-08779 ..... **$194.65**

SNUGPAK SOFTIE ELITE 4 SLEEPING BAG

A generous fill weight of insulation combined with a layer of the exclusive Reflectatherm metalized barrier places this sleeping bag high in the thermal stakes, giving excellent all round protection Easy to deploy EPS Expanda Panel System. Supplied with its own compression stuff sack. Temp. Rating: Comfort 14°F / Low 5°F (-10°C / -15°C). Weight: 69oz. Length: 86". Chest: 65" + EPS. Color: Olive. Pack Size: 10" x 10" (fully compressed) P/N 13-08781 ..... **$211.65**

SNUGPAK SOFTIE 9 HAWK SLEEPING BAG

The Softie® 9 Hawk is a multifunctional true three season sleeping bag that covers most US temperatures and can be easily up rated to a four season bag by adding a Snugpak® liner. Temp. Rating: Comfort 23°F / Low 14°F (-5°C / -10°C). Weight: 53oz. Length: 86" Chest: 60". Color: Olive. Pack Size: 9" x 9" (fully compressed) P/N 13-08777 ..... **$239.25**

SNUGPAK JUNGLE BAG SLEEPING BAG

The Jungle Bag is an ideal sleeping bag for tropical conditions. Travelsoft Insulation was selected and chosen for its exceptional performance in hot and humid conditions. Can be opened out into a blanket for more versatility. Concealed roll away mosquito netting which can be zipped over the face. Temp. Rating: Comfort 45°F / Low 36°F (7°C / 2C). Weight: 27oz. Length: 86". Chest: 60". Pack Size: 6" x 6" (fully compressed)

Black ..... P/N 13-08783 ..... **$75.65**
Olive ..... P/N 13-08782 ..... **$75.65**
Desert Tan ..... P/N 13-10258 ..... **$75.65**
Red ..... P/N 13-10259 ..... **$75.65**

PROFORCE DRI-SAK

Store your sleeping bag, clothing, and any other items you want to keep dry in a Dri-Sak™. They are seam taped, nylon with a TPU Film Lamination to ensure protection if your gear takes an unexpected dive into the water. They are a great addition that can be used in conjunction with any of the Snugpak® backpacks or any other backpacks. Not intended to be submerged for extended periods of time. Roll-top closure must be closed correctly (recommended rolling 3 times and buckled to keep contents dry). Contact with abrasive or sharp objects can damage and/or compromise the integrity and waterproofness of our Dri-Sak bags. D-Rings for securing if necessary.

Medium - Dimensions: 6.75" x 18.125" / 17 x 46 cm. Volume: 8 liters. Weight: 2.29 oz. / 60 g

Olive ..... P/N 13-08784 ..... **$13.60**
Black ..... P/N 13-08785 ..... **$13.60**
Coyote ..... P/N 13-08786 ..... **$13.60**

Large - Dimensions: 8.5" x 20.75" / 22 x 53 cm. Volume: 13 liters. Weight: 3.17 oz. / 90 g.

Olive ..... P/N 13-08787 ..... **$17.00**
Black ..... P/N 13-08788 ..... **$17.00**
Coyote ..... P/N 13-08789 ..... **$17.00**

MULTIMAT SUPERLITE MAT

Offering the lightest and most compact options, using the very latest ultra light materials, meeting the highest standards for quality and reliability. Ultra-lightweight 20D rip-stop polyester top and base fabric. Quality ultra-lightweight, vertically drilled 14kg/m3 PU foam core for lasting performance and full inflation. TPU membrane for air-tight seal. Easy valve can be locked while adding air by mouth. Mats supplied with stuff sack matching upper fabric, retaining band and repair kit. Size: 72" x 20" x 1" (1830 x 510 x 25mm). Weight: 18 oz (530g). Temp Range: 5ºF to 130ºF (-15°C to +55°C). Color: Olive/Black (reversible). Compactness: 10.25" x 4.75" mid-folded (260 x 120mm) ..... P/N 13-10253 ..... **$84.15**

PROFORCE EMERGENCY SURVIVAL BAG

Made of strong insulating materials which reflects 90% of body heat. Provides emergency protection in all weathers. Prevent and assists treatment of Hypothermia. Measures 36" x 84". Individually packaged. Size: 36" x 84" P/N 13-08798 ..... **$6.80**

PROFORCE COMBAT CASUALTY BLANKET

Reversible from Olive Drab to a bright Silver. Made of strong insulating materials that reflects 90% of radiant body heat. Provides emergency protection in all weathers. Can also be used as a signaling device for easy identification. Prevents and assists treatment of Hypothermia. Blanket measures 56" x 84" when opened out. Individually packaged. Size: 56" x 84"
P/N 13-08797 ..... **$3.40**

PROFORCE BACKPACKER MOSQUITO NET

Supplied with hanging kit and stuff sack, very compact, single point net for occasional use when backpacking space is at a premium. Fits snugly over single bed. The double strength valance with tent peg loops makes it ideal for outside use with a sleeping bag and pad. Treated with Deltamethrin as recommended by the World Health Organization, for added protection against insect borne diseases such as Malaria, Dengue Fever and Encephalitis. Color is Olive. Weight: 8 oz
P/N 13-08791 ..... **$33.15**

SNUGPAK® IONOSPHERE

The Ionosphere 2™ by Snugpak® is an extremely small and compact 1 person tent. The Ionosphere™ has a very low profile and is great for those looking for a 1 person tent to keep out of the elements. Just like The Bunker™, the Scorpion 3™ and Scorpion2™ the Ionosphere™ also too has a 5000mm PU Coated Fly. The Ionosphere™ has a single entry point, No-See-Um-Mesh and all seams are seam taped. A very impressive small compact tent by anyones standard. 1 Door, All seams are taped sealed Alloy Stakes (14 + 2 Spare Stakes), Comes with a Repair Kit to allow for repairs while on the move if needed. ..... P/N 13-10260 ..... **$194.65**

SNUGNUT

The Snugnut is an insulated hat and earmuffs in one. Constructed from the same high performance fabrics and Softie insulation used in our high performance sleeping bags this UK made deerstalker style hat is the ultimate in both day and night cold weather protection for your nut (AKA, Head) and ears.

Black ..... P/N 13-10267 ..... **$44.25**
Olive ..... P/N 13-10266 ..... **$44.25**

PILE PANTS

Temperature:: 23°F / 14°F -5°C / -10°C. Team up these pile lined Paratex Light pants with either the Snugpak® Pile Smock or Pile Elite Smock for an exceptionally warm wicking base layer system. Designed to be worn next to the skin to maximize the moisture management properties. Weights: 23oz to 27oz (Depending on Size).

Size	Olive	Price	Black	Price
Small	13-10264	**$179.25**	13-10265	**$179.25**
Medium	13-10264-M	**$179.25**	13-10265-M	**$179.25**
Large	13-10264-L	**$179.25**	13-10265-L	**$179.25**
X-Large	13-10264-XL	**$179.25**	13-10265-XL	**$179.25**
XX-Large	13-10264-XXL	**$179.25**	13-10265-XXL	**$179.25**

PS

PROFORCE SURVIVAL PRODUCTS – FLIGHT SUITS

PROFORCE SURVIVAL MATCHES 2PK

Wind & Waterproof safety matches. These matches will burn in the strongest winds and rain for approximately 12 seconds. 25 Matches per sealed plastic tube with striker. Proudly made in England and has an assigned NATO Stock Number 9920-00-966-9432 P/N 13-08792.....**$8.50**

PROFORCE ARMY FIRE STEELS & STRIKER

Easy and safe to use – Used by Swedish Special Forces – Will light a fire or ignite the fuel in a camping stove in rain or snow – Generates a 3000 C spark – Approved, preferred and recommended by Survival Experts Worldwide. Approx. 12,000 Strikes
P/N 13-08794.....**$10.20**

TURBOFLAME RANGER

The new Turboflame® Ranger is the ideal windproof lighter essential for any outdoor enthusiast's. With its double-power jets flames that can reach temperatures up to 1300oc. Also there is Gas level indicator a lanyard attachment point and safety cap.
P/N 13-10268.....**$21.25**

PROFORCE COMMANDO WIRE SAW

The strongest (over 100 lbs breaking strain) and most effective wire saw available. Cuts through wood, plastic, bone and even soft metals. Constructed using 8 strands of interwoven stainless steel wire, will easily reach inaccessible places. Attach rope to split rings on each end to cut higher branches. 24" sawing edge. Can also be used as a snare. Many uses for the outdoor and house. Retail Packaged. P/N 13-08795 .....**$6.80**

PROFORCE MARINE SAFETY WHISTLE

High pitched signaling whistle. NATO approved. One piece construction with lanyard hole. Bright Orange. Made in the UK. Ideal for Survival Kits.
P/N 13-08801.....**$0.85**

PROFORCE HEAVY DUTY BUNGEE CORDS

Ideal for securing cargo, packs and just about anything. Great for shelter building. Heavy duty 30" long x 5/16" in diameter with black plastic coated hooks. Sold in 4 packs. Color: Olive
P/N 13-08803.....**$6.80**

PROFORCE EMERGENCY SIGNAL MIRROR

Robust high impact plastic. Easy to use with one hand. Suns reflection can be seen for many miles. Floats if accidentally dropped in water. Retail Packaged. Measures 2" x 3"
P/N 13-08796.....**$6.80**

PROFORCE COMBAT SURVIVAL TIN

Originally designed for the British SAS. Tightly packed in a useful metal tin. Contents include compass, whistle, candle, fishing kit, waterproof survival instructions, wind & waterproof matches, pencil, sewing kit, multi use flexible wire saw w/ split rings (can be used as a bow saw or snare wire), water tablets, safety pins, fire lighting flint and striker and multifunctional knife w / fold out scissors. Assembled in the US. Contents may vary.
P/N 13-08802.....**$29.75**

PROFORCE MICROFIBER ANTI-BACTERIAL TRAVEL TOWEL

Quick drying and bacteria resistant, packs to the fraction of the size of your traditional bath towel. Dr. Bacty® Antibacterial treated. Easy care, machine washable. It also comes with a dual pouch stuff sack, for drying and storage when wet.36" x 48". Olive Green.
P/N 13-08804.....**$27.20**

US AIR FORCE SURVIVAL HANDBOOK

Written for use in formal United States Air Force survival training courses, the U.S. Air Force Survival Handbook is the bible for pilots who want to stay alive—no matter what. 592 Pages. 8.5" x 11" P/N 13-08790.....**$12.71**

RESPONSE PACK

When travelling light, or when you may need to move out in a hurry, it pays to keep all your essential items together, with a place for everything this multifunctional carry case also doubles as a fanny pack, or as the British would call it, a bum bag. We use the same heavy duty materials in the Response Pak as we do in our series of backpacks. The Response Pak has a multitude of hidden internal storage pockets. The Response Pak has quickly become a favorite among military members as a great little med bag, perfect for those vital items each soldier needs. Supplies are NOT included

Olive.....P/N 13-10261.....**$24.65**
Black.....P/N 13-10262.....**$24.65**
Coyote.....P/N 13-10263.....**$24.65**

FLIGHT SUIT XFIRE

Those who fly, service aircraft, carry out tactical assignments, or search for victims and survivors all encounter risks in the performance of their duties. These easy to wear 27-P flight suits simply slip on over street clothes, zip up the front and they're ready to go. They combine high comfort with field tested and laboratory certified protection. Made from INTERLOCK, a fire resistant Nomex blend, provides an extra measure of assurance that you'll complete your mission safely time after time - and sets a new standard in comfort and safety. The new XFIRE Interlock fabric meets or exceeds the requirements of NFPA 2112-2007 standards on flame resistant garments for protection of industrial personnel against flash fires.

The suit is fashioned after the US military CWU27-P flight suit and comes with the standard design features you've become familiar with such as a bi-swing back, reinforced shoulders, vertical zipper pocket with bellowed pen/pencil stalls on flap with hook & loop closure, 2 large upper chest pockets, ook & loop waist adjustments, name tape on above chest pocket, double pull full length front zipper with inside protective flap, safety knife pocket, 2 cargo pockets with covered zipper opening, extra large calf pocket with covered zipper opening, zipper expansion opening with curtain at cuff, double needle felled joining seams and more!

Color	Part No.	Prices starting at
Sage	Call or vistit our website for sizes and part numbers	$169.95
Army Digital		$169.95
Navy		$169.95
Khaki		$169.95

NOMEX FLIGHT SUITS

This Nomex flight suit is built to military specification FNS/PD 96-17 (MIL-C-83141A) as worn by all U.S. flight crews. Constructed of 92% Meta Aramid, 5% Para Aramid and 3% conductive fiber fabrics, which makes this garment flame-resistant. Features a two-way zipper with pull, six primary pockets, adjustable waist belt with VELCRO® brand fasteners, knife pocket on the left inseam, pencil pocket on the left sleeve and a gusseted back.

Features:

- Made with DuPont™ Nomex® N303 Fiber: Its thermal technology helps protect against hazards associated with electric arcs and flash fires including intense heat and flame. It is protection that's built into the fiber itself. So, it can never be washed out or worn away.
- Sewn to Military Specification FNS/PD96-17 (MIL-C-83141A)
- As Worn By All US Flight Crews
- Flame-Resistant Material
- Two-Way Zipper with Pull
- Six Primary Pockets
- Adjustable Waist Belt with Velcro Fastener
- Knife Pocket on Left Inseam
- Pen/Pencil Pocket on Left Sleeve
- Gusseted Back
- Sage Green and Tan Flight Suits are Near Infrared (NIR) Compliant

Color	Part No.	Prices starting at
Sage	Call or vistit our website for sizes and part numbers	$159.99
Black		$159.99
Tan		$159.99

PS

GLOVES – UNDER ARMOUR

GENERAL UTILITY PLUS GLOVES

All-purpose and abrasion-resistant. This is the ideal performance work glove. Heavy duty non-slip reinforcement on the palm, fingers and thumb ensures lasting durability and grip. The ergonomic design reduces hand fatigue while enhancing wrist support. Features a terry cloth brow wipe on the thumb. This glove is ideal for any number of rugged applications.

Large ..... P/N 13-09814..... **$20.85**
X-Large ..... P/N 13-09815..... **$20.85**

TACKMASTER PLUS GLOVES

TackMaster Plus is designed to provide superior grip along with dexterity, comfort and durability. The palm is coated with an extra tacky silicone pattern for a secure grip on tools, boxes and windows. The index finger and thumb saddle is reinforced with non-slip in this critical wear area. The terry cloth thumb is made for comfortably wiping away sweat and debris.

Medium ..... P/N 13-09816..... **$20.85**
Large ..... P/N 13-09817..... **$20.85**
X-Large ..... P/N 13-09818..... **$20.85**

PRO XT GLOVES

Pro XT is an extra heavy duty glove designed for rugged applications and total hand protection. The non-slip reinforced palm, fingers and thumb ensures lasting durability and grip. The unique 'one-piece saddle' reinforces this critical wear area. The top of hand features double knuckle protection and moisture wicking fabrics. It also features a terry cloth thumb wipe and supportive, velcro cuff and closure. If you are doing heavy duty work like logging, landscaping, demolition or farming - this is the glove for you.

Medium ..... P/N 13-09819..... **$23.85**
Large ..... P/N 13-09820..... **$23.85**
X-Large ..... P/N 13-09821..... **$23.85**

WATERPROOF WINTER PLUS GLOVES

Waterproof Winter Plus is the ultimate winter work glove. 100% Waterproof and windproof, this glove is designed to keep your hands warm and dry without sacrificing dexterity. Triple layer technology of micro-fleece liner, waterproof membrane, and form-fit outer shell. Durable, dexterous, comfortable and warm - if you work or live in cold, wet winters you need this glove.

Medium ..... P/N 13-09822..... **$33.85**
Large ..... P/N 13-09823..... **$33.85**
X-Large ..... P/N 13-09824..... **$33.85**

SAFETY ORANGE WATERPROOF WINTER GLOVES

Safety Orange Waterproof Winter is a waterproof, windproof high visibility winter work glove. Features triple layer waterproof technology along with reflective 3M Scotchlite™ on knuckle and wrist along with blaze orange coloring. Ideal for those in cold, wet working conditions in high traffic areas.

Medium ..... P/N 13-09825..... **$33.85**
Large ..... P/N 13-09826..... **$33.85**
X-Large ..... P/N 13-09827..... **$33.85**

MAGID ROC GP110 GREY GLOVES

Made from an ultra-soft, grey, high-density, 13-gauge, seamless machine knit nylon blend, the ROC GP110 Work Gloves feature a full black micro foam coating offering exceptional comfort, flexibility, dexterity and added protection to the palm and back of the hand.

Micro foam nitrile coating improves upon the softness of standard nitrile while delivering a superior grip in dry or oily conditions. The nylon blended shell is ultra-soft and breathable. In addition to its comfort-enhancing properties, the ROC GP110 Gloves provide protection against cuts and abrasions, offering ANSI Cut Level 1 protection and ANSI Level 4 abrasion resistance. ROC GP110 Gloves have color coded knit wrists with matching color overcasts for easy sorting and dispensing and incorporate a rubber band edge finish to help prevent unraveling.

Size 9..... P/N 13-09636..... **$29.95**
Size 10..... P/N 13-09637..... **$29.95**
Size 11..... P/N 13-09638..... **$29.95**

PS

Warning! These products are flame-retardant, fire-retardant protection is available only where the flame-retardant fabric covers the skin and is intended to supplement – not replace - standard flame-retardant or ballistic protective equipment. Never use any Under Armour product as a substitute for ballistic protective equipment. Exposure of the skin to fire or flame can cause injury.

UNDER ARMOUR TACTICAL HOODS

Durable, moisture wicking Under Armour® comfort, engineered with fire retardant technology for added protection in the battlefield or on the streets. Ensures odor-free moisture transport. 100% 4.2 oz. Nomex®. Imported.

Fabric Teach: HeatGear			Fabric Teach: ColdGear		
Color	**Part No.**	**Price**	**Color**	**Part No.**	**Price**
MOD Green/ Silver	13-09271	**$23.99**	MOD Green/ Silver	13-09275	**$24.99**
Black/Silver	13-09269	**$23.99**	Black/Silver	13-09273	**$24.99**
Desert Sand	13-09270	**$23.99**	Desert Sand	13-09274	**$24.99**
Dark Navy	13-09272	**$23.99**	Dark Navy	13-09276	**$24.99**

UNDER ARMOUR FIRE RETARDANT HOOD

Engineered for the field: The latest evolution in UA Tactical HeatGear® performance. Durable, moisture wicking Under Armour® comfort, engineered with fire retardant technology for added protection in the battlefield or on the streets. ArmourBlock™ construction ensures odor-free moisture transport. 100% 4.2 oz. Nomex®. Imported.

Small..... P/N 13-09140..... **$59.99**
Medium..... P/N 13-09139..... **$59.99**
Large ..... P/N 13-09138..... **$59.99**
X-Large..... P/N 13-09141..... **$59.99**

UNDER ARMOUR FIRE RETARDANT MOD TEES

Signature UA moisture transport. Modacrylic FR fabric Stealth logos. Anti-odor technology. FABRIC TECH: 75% Modacrylic 25% Tencel

See our website for lonsleeve part numbers and prices.

ShortSleeve			
Color	**Size**	**Part No.**	**Price**
Desert Sand	Small	13-09087	**$49.99**
	Medium	13-09086	**$49.99**
	Large	13-09084	**$49.99**
	X-Large	13-09088	**$49.99**
	XX-Large	13-09089	**$49.99**
	XXX-Large	13-09083	**$49.99**
Black	Small	13-09079	**$49.99**
	Medium	13-09078	**$49.99**
	Large	13-09077	**$49.99**
	X-Large	13-09081	**$49.99**
	XX-Large	13-09082	**$49.99**
	XXX-Large	13-09076	**$49.99**
Marine OD Green	Small	13-09099	**$49.99**
	Medium	13-09098	**$49.99**
	Large	13-09097	**$49.99**
	X-Large	13-09100	**$49.99**
	XX-Large	13-09101	**$49.99**
	XXX-Large	13-09096	**$49.99**
Floiage Green	Small	13-09093	**$49.99**
	Medium	13-09092	**$49.99**
	Large	13-09091	**$49.99**
	X-Large	13-09094	**$49.99**
	XX-Large	13-09095	**$49.99**
	XXX-Large	13-09090	**$49.99**
Dark Navy Blue	Small	13-09105	**$49.99**
	Medium	13-09104	**$49.99**
	Large	13-09103	**$49.99**
	X-Large	13-09106	**$49.99**
	XX-Large	13-09107	**$49.99**
	XXX-Large	13-09102	**$49.99**

UNDER ARMOUR BLACKOUT TACTICAL GLOVE

Never use any Under Armour product as a substitute for ballistic protective equipment. The new Tactical glove ensures quick response with combined lightweight and durability. HeatGear® flex zones and moisture management. Two piece Cabretta leather palm. Foam injected cushion to decrease shock and vibration. Elastic and Velcro wrist Closure for fit. Comes in pairs. Imported **$34.99**

Color	Sm.	Med.	Large	X-Large	XX-Large
Black	13-09250	13-09249	13-09248	13-09251	---
Desert Sand	13-09254	13-09253	13-09252	13-09255	13-09256

VISIT WWW.AIRCRAFTSPRUCE.COM FOR ADDITIONAL UNDER ARMOUR APPAREL

SURVIVAL KITS - FIRST AID KITS

TWO-MAN V.I.P. SURVIVAL PACK

It's staggering just how much useful equipment comes out of this 10"h x 11"w x 4"d backpack. Everything arranged logically and available the way you'd want it. Organized into 6 major divisions: medical/first aid, food & water, shelter & protection, fire & cooking, signals & lights, & "emergency devices," Wt; 20 lbs P/N 9217 ..... **$268.95**

NYLON CASE FIRST AID KITS

MODEL A FIRST AID KIT - International Orange Case Velcro Hold-Downs 10 FA Unit Kit Contents: • 1" X 3" Adhesive Bandages (16 Bandages) • First Aid Instruction Book • Adhesive Tape (2 Rolls) 1/2" x 2-1/2" yards each • 24" X 72" Gauze Compress • 4" Bandage Compress • Scissors • 2 Triangular Bandages 40" x 40" x 56" • Ammonia Inhalants (10 Capsules) • 6 Burn Gel Packets • Wire Splints 3-3/4" x 27" • PVP Iodine Wipes (10 Wipes) • Orange First Aid Case P/N 13-02944 ..... **$37.75**

MODEL B FIRST AID KIT - International Orange Case Velcro Kit Contents: • Burn Gel Packets • Aluminized Thermal Blanket • Sissors • Emergency Strobe • Hema-Flex 4" Bandage Compress • 36" X 48" Gauze Compress • 1" X 3" Adhesive Strips • 1/2" Adhesive Tape (2 Rolls) • 2 Triangular Bandages • Ammonia Inhalants • Wire Splints • PVP Iodine Wipes.
P/N 13-02945 ..... **$67.50**

MOTION EAZE

Motion Eaze is the most effective motion sickness treatment on the market today. Whether you want to prevent occasional motion sickness or relieve its symptoms, after the fact, Motion Eaze does the job. No matter, if it's sea sickness, car sickness, air sickness or any activity where motion sickness poses a problem, Motion Eaze really works. Contains no drugs, artificial additives, or stimulants of any kind. Only the freshest, highest quality, natural oils are used in its production. Motion Eaze is an oil that is applied to, and absorbed through, the skin, just behind the ear. Relief arrives in minutes and lasts for hours. It's perfect for children that have trouble taking pills. Motion Eaze is safe, having no known side effects. P/N 13-02732 .....**$15.95**

ACUPRESSURE WRIST BAND

Fast, effective motion sickness control without drugs, drowsiness, or other side effects. Can be used by adults or children. Exerts a carefully-controlled pressure on acupressure point of both wrists. Takes 2 to 5 minutes to become effective. Used successfully by physicians & the military.. P/N 9411 .....**$8.75/pr**

SIC-SAC™

Use these for air sickness emergencies. Moisture proof and tear resistant even under extreme temperature changes. 10 sacks, individually packaged, each with attached tie band. Pack of 10 P/N 9296.....**$4.95**

OZIUM AIR SANITIZER / FRESHENER

Eliminates smoke and offensive malodors caused by airborne bacteria. OZIUM is a product that sanitizes the air you breathe. It is clinically proven to eliminate odors, unlike current products that just mask odors. OZIUM combats airborne contaminants and eliminates odors with glycol-ized action…dispensing micron sized particles that linger in the air, attach to airborne bacteria and malodors to drastically reduce air pollution, purify and sanitize the air. P/N 14-00061 ....**$7.95**

PUMA METHOD FOR PREVENTION OF MOTION SICKNESS

The Puma Method is a series of simple conditioning exercises, taught on VHS or interactive DVD, that effectively prevents the nausea, vomiting, lightheadedness and other unpleasant symptoms experienced by over 50% of the population while traveling. Sam C. Puma MD, president of Puma Applied Science and former Air Force Flight Surgeon at NASA, developed these revolutionary new exercises to totally eliminate carsickness, seasickness, airsickness, and even spacesickness. The Puma Method is unique in that it uses the body's own mechanism to actually master motion sickness, so there is never a need for drugs, devices or herbs. This means no unexpected or unpleasant side effects. The mild head, neck and upper body exercises take only about 15 minutes a day to do. DVD ..... P/N 13-03675.....**$42.50**
VHS..... P/N 13-03676.....**$42.95**

QUEASE EASE MOTION SICKNESS RELIEF

QueaseEASE contains 100% pure and natural therapeutic grade essential oils formulated to relieve the queasiness associated with post-operative recovery, chemotherapy, morning sickness and motion sickness. (spearmint, peppermint, ginger and lavender) Works by simple olfaction: The molecules from the oils travel the olfactory track to the central nervous system where they interrupt the nausea cycle. Inhalation can be repeated as often as necessary. Immediately effective and safe for all ages. product will not interact with drugs P/N 13-07194.....**$14.99**

ACR FLOATING SURVIVAL BAG

Holds all the equipment needed to abandon ship in an emergency. Floats; buoyant closed cell foam construction. East-fit attachment for locator light (light not included). Internal pockets and elastic daisy chain organizer. Customize with survival equipment for your sailing/boating conditions. Record equipment inventory on external, waterproof card for quick reference. Durable, self-repairing zipper Shoulder strap functions as tether, leaving hands free in an emergency. P/N 13-07067 .....**$94.50**

ACR SIGNAL MIRROR

Sighted signaling mirror with float and whistle. Designed to provide optimum sighting "spot" with holographic red dot viewing window. When target image, mirror & sun are in proper alignment, red dot on target ensures mirror reflection is on target. Telescope quality second surface reflective mirror is bright, provides focused image. Buoyant float for easy recovery if dropped overboard. Patented whistle (meets USCG) for audible alerting in low visibility conditions. Signal Mirror has lanyard for securing to person or liferaft. Size: 4.25x2.75x0.19 in. (10.8x7x0.5cm); Wt: 1.8 oz (51 g) P/N 13-03177 ..... **$12.50**

SURVIVAL BLANKET

Often called the "space blanket." NASA thought of everything when they came up with this metal-coated nylon design. Waterproof and windproof, it retains 80% of body heat, it's colored to be seen from more than 4 miles away (although it measures just 4' x 7'), it's radar-reflective, and it folds down into a water-proof pouch 8.5"x9"; wt:10 oz. P/N 9145.....**$27.85**

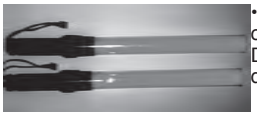
SPACE EMERGENCY BLANKETS

This "two ounces of protection that fits in the palm of your hand" is about the size of a deck of cards when folded, but opens into a 56" (142cm) by 84" (214cm) tough and durable thermal reflective blanket. The Space Emergency Blanket has helped save countless lives, by providing needed personal protection from the harsh elements of Mother Nature. Available in orange on one side and silver on the other, a combination providing greater air-to-ground visibility, particularly against a snow or water background. P/N 13-06933 .....**$3.95**

TRAFFIC WAND

This lighted traffic directing wand comes with 6 colored lense discs that change the color glow of the white tapered top. Features: GSA compliant for US military use • Made in the USA of sturdy gray plastic • O-ring sealed for waterproof operation in rainy weather • Lenses (2-red, 1 ea. amber, white, blue, & green), as well as a spare light bulb are conveniently stored in the end cap. P/N 14-00902..... **$18.50**

LIGHTED LINEMAN WANDS



• Used by US Air force • Up to 400 hours operation • 17" long • Waterproof •Uses 2 D batteries (not incl.) • Fluorescent coated diffuser enhances red light output.
P/N 13-08959..... **$29.75**

AIRCRAFT EMERGENCY SURVIVAL KIT

This is an ideal emergency support kit for plane, boat, home, office or school. This kit will sustain a person for 3 days. Includes: 2400 calories of ready-to-eat US Coast Guard approved food, sterile Coast Guard approved water, a lightweight (54' x 48") durable, waterproof blanket, & assorted first aid supplies, matches etc.
P/N 9641 ..... **$29.60**

3M™ ULTRATHON INSECT REPELLANT

Unique, time-release technology allows you to enjoy the outdoors longer. Provides lasting protection — up to eight hours against mosquitoes, gnats, chiggers, biting flies and ticks. Helps reduce the risk of contracting West Nile Virus and Lyme Disease.
2 oz. Lotion..... P/N 09-01723..... **$6.95**
6 oz. Aerosol ..... P/N 09-01724..... **$5.75**

PS

SURVIVAL KITS – FIRST AID KITS

CANADIAN-ALASKAN SURVIVOR PAK

Originally designed for pilots flying within Alaskan and Canadian airspace, the CA-20 offers protection against harsh climates in the event of an emergency. It contains over 150 medical and general supply items to help sustain two people for up to 14 days. The space saving design combined with its ample supply of food and water makes the CA-20 a popular choice on board fixed wing, rotor craft, and corporate jets. It's also used extensively by Search & Rescue units! P/N 13-03596.....**$387.95**

EMERGENCY SURVIVAL KIT

Specially designed by a focus group, the ESK-02 makes it easy to be prepared for life's little surprises. Each kit contains over 40 medical and general supply items including a guidebook that offers survival tips and basic information. Designed to support one person for up to three days, the ESK-02 carries a five-year shelf life on food and water. Its affordable price makes it a great choice as a premium/incentive item, corporate gift, or employee award.

P/N 13-03606.....**$32.85**

THE TRAVELER KIT

The Traveler Kit - Personal Care Package is appreciated by everyone from busy executives to sports enthusiasts. It's the perfect addition to any car as the "other spare" to have on hand for life's unexpected moments. Designed to support one person for up to three days, it contains over 50 support items in a custom nylon carrying bag with reinforced straps. "The Traveler" is ready to go anywhere P/N 13-03607.....**$54.00**

2-PERSON EMERGENCY SURVIVAL KIT

This deluxe 2 PERSON EMERGENCY SURVIVOR KIT could mean the difference between disaster and survival in an emergency situation. It contains a complete 3-day supply of food, water, medical & other emergency supplies for 2 people.

Over 60 Emergency Items! • Emergency Drinking Water Metallic Sachets • 2400 Calorie Emergency Food Rations • Instant Cold Pack • Medical Kit • Disposable Flashlights • Thermal Blankets • AM/FM Portable Radio w/ Batteries • The Wallace Emergency Guidebook P/N 13-03608.....**$69.95**

EMERGENCY BLANKET

This Emergency Blanket (52" x 82.5", 1.5 oz.) provides personal protection from rain, wind, heat, and cold. It's manufactured from extremely lightweight, flexible, space-age material, and retains up to 90% body heat in cold weather. It even deflects heat in hot climates and can be used to offset hypothermic reactions. The Emergency Blanket is waterproof, reusable, and portable. It's perfect for camping trips and sporting events in addition to emergencies. Keep several on hand for the unexpected!

P/N 13-03604.....**$2.95**

SNOW BROOM

The SNO BRuM offers pilots a way to quickly sweep snow off aircraft wings and away from the user. Great for high wing aircraft. The durable molded polyethylene foam head has been lab-tested for non-abrasiveness, freeze resistance, center load stress and durability to achieve the highest ratings in all tests. The oversized head (6" x 17") is the largest snow remover available. The high-impact plastic face plate is recessed into the foam to prevent contact with the aircraft. The aluminum telescoping handle has special cold resistant nylon threads and extends from 27" to 46". Also great for cars, trucks, SUV's, and awnings. P/N13-04055..... **$19.65**

FIRST AID 'N TRAVEL KIT

Finally—a compact, complete travel unit for the person on the go! This kit fits perfectly in a purse, briefcase, or glove compartment, and is ready when you need it in first aid situations. This kit is very special because it's the only one of its kind to include a 4 oz. sterile water packet with a five-year shelf life. Ask us about using this kit for fundraisers or corporate promotions! We can customize the kit to include your company's logo.

P/N 13-03605.....**$8.50**

COCOON SLEEPING BAG

The All Weather Pocket Size Sleeping Bag The Cocoon Sleeping Bag (84" x 36") provides personal protection from rain, wind, heat, and cold. It's manufactured from extremely lightweight, flexible, space-age material, and retains up to 90% body heat in cold weather. It even deflects heat in hot climates and can be used to offset hypothermic reactions. The Cocoon is waterproof,reusable, and portable. Keep several on hand for the unexpected!. P/N 13-03603.....**$3.65**

EMERGENCY FOOD RATIONS

MAINSTAY™ FOOD PACKAGE - Mainstay™ has emerged as a food product unlike any other. Before it came into the picture, emergency food bars were only being made for short-term use. Survivor Industries changed all that when it created a great-tasting, non-thirst provoking product with an extraordinary five-year shelf life. Mainstay™ is specially formulated for land-based high stress situations. Each package contains 9 pre-measured 400 calorie meals, which allows a person to get their full nutrition in a challenging situation. Mainstay™ is Kosher and it meets the dictates for Halal.

Mainstay™ 3600 ..... P/N 13-03599 .....**$6.95**
Mainstay™ 2400..... P/N 13-03601.....**$5.25**
Mainstay™ 1200..... P/N 13-03602.....**$4.75**

EMERGENCY WATER PACKETS

Mainstay™ Water Packets - All water is not created equal! Here at Survivor Industries we have spent years perfecting our Mainstay™ Water Packets. The final result is a portable product with a 5-year shelf life. Other Key Benefits: • U.S. Coast Guard approved • No Oxygen Transfer (In other words, no chance of bacterial contamination) • Pre-Measured Packets make the water easy to dispense, and potential for loss is minimized. If a packet is destroyed, only 4.224 ounces (125 ml) would be lost. • Easy to Transport - just 18 lbs. (8.17 kg) per case of 60 packets. • No special storage required - it can withstand temperatures from (-40°F to 210°F) (-40°C to 99°C) •Very Low Cost. • No Cups Needed!

P/N 13-03598.....**$15.50**

THE WALLACE GUIDEBOOK

For Emergency Care & Survival - When you're faced with a disaster, you can often face physical and psychological strain. It's often hard to remember what to do in an emergency situation, and this is exactly why we've written the Wallace Guidebook. This book is specifically designed to present the basics of survival in an extremely easy-to-understand manner. This book discusses the following topics, plus many more: Choking, Heart Attack, CPR, Shock, Burns, Emotional Trauma, Bleeding, Fainting, Wounds, Broken Bones, Fractured Bones, Back Injury, Childbirth, Auto Breakdown, Temperature Extremes, and the 1st and 2nd Rules of Survival. It's not fun to be in one of these situations, but having a book like this nearby gives you a better chance of a happy ending. P/N 13-03597.....**$4.65**

CANOPY BREAKER TOOL

The Piranha Canopy Breaker Tool is a robust device with a sharp edge on one end. The tool is secured inside the aircraft cockpit to a frame member or seat frame, within easy reach of the pilot. A plastic cover is over the blade end for tactile and visual identification and protects the pilot from the blade end. In an emergency situation the pilot locates the Canopy Breaker Tool, removes the safety pin / lanyard which secures the tool to the aircraft and the red cap. The pilot firmly grasps the tool with one hand and places the other hand underneath the tool, then positions the blade parallel to the canopy side frame, near the frame and uses very strong upward thrusts aiming one of the blade points at the Plexiglas. The unit is made from industrial strength aluminum, weights 10 oz and the lanyard has a 35# break strength. P/N 12-02269.....**$39.75**

PS

SURVIVAL KITS

Crashkit Personal and Professional Flight Line Series aviation survival kits are quickly becoming an industry leader in top quality aviation survival kits. Numerous kits are available to suit you piloting and survival needs.

CRASHKIT ALPHA SURVIVAL KIT

The "Alpha' personal aviation survival kit is designed for the pilot with general knowledge of survival techniques. This kit should only be purchased by experienced and skilled individuals. This kit includes 24 of the most essential items packed into the smallest kit practical. Weighing in at only 1.54lbs, the general kit is small enough to fit in any flight bag, purse, glove compartment, map pouch or cargo pocket.

Every item included in this kit has been thoroughly tested and approved to insure it performs flawlessly when needed (we've even sharpened the knife!) and meets or exceeds Transport Canada's Canadian Aviation Regulations to facilitate survival and rescue. Dimensions : 6.37" x 4.75" x 2.12"(16.9 x 12.06 x 5.4 cm) Weight : 1.54 lbs Contents : 24 items covering food, fire, water, shelter, and first aid Case : Pelican 1020 case - yellow - tough, watertight, polycarbonate case Optional Acc's : Parachute deployment system; Warranty : Lifetime

P/N 13-04684 .....**$149.95**

CRASHKIT BRAVO SURVIVAL KIT

The 'Bravo' Personal Aviation Kit is designed for you. The Bravo Crashkit is small and compact, and includes 76 of the most essential items needed to survive. Kit includes basic first aid, light, fire, signal, shelter and methods for providing clean water and food procurement.

The kit is slightly thicker than the Crashkit 'Alpha', but still small enough to be carried easily in small flight bags, jacket pocket, glove compartment, map pouch or cargo pants pocket. Crashkit 'Bravo' weighs in a 1.6 Kilos or 3.52lbs.

While water resistant, crushproof and relatively small, this kit still exceeds all Transport Canada requirements for aviation survival. And with every item tried and tested to ensure it will work flawlessly for you when you need it most, you can count on the tools you need, when you need them. P/N 13-04685 .....**$239.95**

CRASHKIT CHARLIE SURVIVAL KIT

Including 71 of the most essential items, this kit is extensive in its coverage of necessary tools and supplies. Packaged in a Pelican 1120 case, 'Charlie' is still compact and lightweight enough for easy transport and storage. Every item in this kit has been thoroughly tested and approved to ensure it performs flawlessly when needed, as well as to ensure the ease of use for each individual piece. This kit meets or exceeds Transport Canada's Canadian Aviation Regulations to facilitate survival and rescue. This kit now contains Aquatabs Water Purification and The Spark-Lite Flint and Tinder Kit. Each package of Mainstay Food Rations contains premeasured 400 calorie individualized portions,non-thirst provoking lemon flavor daily meals, and suitable from -40F to 300F and ready to eat. The tasty bars contain no cholesterol or tropical oils. Meets all guidelines set by the Department of Defense(SOLAS 74/83). Exceeds the RDA requirements. In an emergency situation, ration to one portion per day or less. Dimensions : 20.6 x 16.7 x 9 cm (8.12" x 6.56" x 3.56") Weight : 1.85 kg (4.07 lbs) P/N 13-04686 .....**$312.74**

CRASHKIT 2-7 SURVIVAL KIT

As a pilot with a professional responsibility to others, we know you will want only the best survival options. The 'Crashkit 2:7' has been designed for use in a typical GA light aircraft and contains over 200 essential items needed to sustain two people for seven days. This Aviation kit contains multiple options for the provision of food, fire and water, including Aquatabs Water Purification Tablets and the Spark-Lite Flint and Tinder kit.The kit is packaged in a Pelican 1200 case and remains lightweight and compact for ease of storage. As with all Crashkits, all products have satisfied rigorous testing to ensure they surpass Transport Canada regulations for aviation. Crashkit 2:7 exceeds all Transport Canada and Federal Aviation Administration regulations for both survival and first aid, 1-6 person. Dimensions : 27 x 24.6 x 12.4 cm (10.62" x 9.68" x 4.87") Weight : 4.31 kg or 9.50 lbs

P/N 13-04690 .....**$390.95**

CRASHKIT 4-7 SURVIVAL KIT

The Crashkit 4-7, designed for use in typical GA light aircraft and commercial aircraft, contains the materials necessary to sustain four people for seven days in the event of a crash. The variation of items within the kit allows for multiple options for food, fire, water and shelter; for example, in addition to the Mainstay packaged food, a fishing kit and snare are also included. This kit contains 232 of the most essential items needed in a survival situation, packaged within an indestructible Pelican 1400 case.

Every item included in this kit has been thoroughly tested and approved to ensure it performs flawlessly when needed, and meets or exceeds Transport Canada's Canadian Aviation Regulations to facilitate survival and rescue. Dimensions :13.37" x 11.62" x 6.00 " (34 x 29.5 x 15.2 cm) Weight : 17.55lbs Contents : 232 items covering food, fire, water, shelter, and first aid Case : Pelican 1400 case - tough, watertight, polycarbonate case Kit Coverage : 4 people for 7 days (or longer dependent on situation) Optional Acc's : Parachute deployment system; Warranty : Lifetime.

P/N 13-04691 .....**$972.00**

CRASHKIT 6-7 SURVIVAL KIT

Intended for commercial aircrafts, our Crashkit 6-7 has enough materials to sustain six people for seven days in the event of a crash. Various means of food, fire, water and shelter allow for multiple options; for example, this kit includes not only Mainstay water, but the means for purification, as well as hot chocolate or tea. Within this indestructible, crushproof and waterproof Pelican 1450 case, 261 of the most essential items needed in a survival situation are packaged and ready for easy use. Every item included in this kit has been thoroughly tested and approved to ensure it performs flawlessly when needed, and meets or exceeds Transport Canada's Canadian Aviation Regulations to facilitate survival and rescue. Dimensions : 16" x 13" x 6.88 " (40.6 x 33 x 17.5 cm) Weight : 22.80lbs Contents : 261 items covering food, fire, water, shelter, and first aid Case : Pelican 1450 case - tough, watertight, polycarbonate case Kit Coverage : 6 people for 7 days (or longer dependent on situation) Optional Acc's : Parachute deployment system; Warranty : Lifetime.

P/N 13-04692 .....**$1,209.00**

MILITARY PILOT SURVIVAL KITS

SURVIVAL TOOL KIT **-** Total weight is 3 lbs. Custom designed, adjustable carrier pouch holds equipment. Can be worn around waist, used as tourniquet or with wooden dowels as splint. Dowels help with fire-starting. Blunt-tipped Meyerco Rescue One knife prevents injury, cuts seat belts and harnesses. Handle includes carbide glass breaker. Two emergency blankets. Emergency signaling mirror. Victorinox SwissTool includes: pliers, screwdrivers, wire cutter, cap lifter, blades, metal file and saw, wood saw, reamer and punch, chisel/scraper, crate opener, wire bender, stripper and scraper, can opener, ruler, electrical crimper. Two-sided screw bit holder with six bits and belt holder. Whistle. MINI MAG-LIGHT® flashlight. Knipex adjustable plier wrench. Magnesium fire-starting tool from Doan Machinery and Equipment.

PN 13-05676 ..... **$299.95**

MILITARY PILOT SURVIVAL KIT **-** Designed by Oregon Aero for the U.S. Navy. The durable carrier pouch is hand sewn by Oregon Aero with pockets for each item. Knife, fire starter and flashlight lanyards attached to carrier. Special zipper permits access to folding knife without opening the carrier. 6.5" high, 5.5" wide, 2" thick. Kit includes: • Gerber® Multi-Tool created especially for this kit by Gerber and Oregon Aero • Gerber® Harsey Air Ranger II Folding Knife • Nexus™ 26DNL Compass • LED Task Light™ Flashlight • Sunscreen Packets • Vacuum sealed Balaclava • Strike Force™ Fire Starting System. Custom designed Multi-Tool includes pliers, wire cutter, file, awl, serrated sheep's foot blade, knife/fish hook sharpener, assorted screwdrivers.

PN 13-05675 ..... **$471.95**

PS

SURVIVAL EQUIPMENT

AERO COMPACT SURVIVAL KITS

Revere provides different types of storage containers to hold safety and survival equipment such as pyrotechnics. Designed to keep survival equipment dry and in one location for quick access in an emergency. Aero Compact Standard Survival Kit Contents: 1- Food Ration (1,000 kCal/Package) 8- Drinking Water (4.23 oz./package) 1- Canopy Assembly 1- Canopy Arch Assembly 1- Flashlight, 2xAA size 2- Batteries, size AA 1- First Aid Kit 1- Whistle and Lanyard Assembly 1- Signal Mirror 1- Signal Flare Kit 1- Distress Signal Flag 1- Sea Dye Marker 1- Repair Kit 1- Survival Kit Valise Assembly.

Standard Kit.....P/N 11-09406 .....**$400.95**
Standard Kit Plus.....P/N 11-09407 .....**$482.95**
Deluxe Kit .....P/N 11-09408 .....**$1,013.00**

SEE WWW.AIRCRAFTSPRUCE.COM FOR A LISTING OF THE CONTENTS OF EACH KIT.

E-GEAR SUVIVAL KITS

Expect the unexpected and carry an eGear Survival Essentials™ Kit on every adventure. Kits are designed with practical, no-nonsense essentials to keep you safe and get you found. Practical kits with the essentials you need to survive. Handy case keeps everything together. Room to personalize with additional items. Reflective material on backside for signaling and drawing attention to your position

KIT 100 INCLUDES: Small Pouch, Orange Front/Mylar Back, 2oz Emergency Food Bar, Button Compass, Emergency Blanket, Emergency Marine Whistle, Light Stick, Small Camping Mirror, Survival Towel 1pk, Tea Candle, and Pocket Survival Guide. P/N 11-10469.....**$19.95**

KIT 200 INCLUDES: Medium Pouch, Orange Front/Mylar Back, 2oz Emergency Food Bar, 4oz Emergency Water Pouch, Button Compass, Emergency Blanket, Emergency Marine Whistle, Emergency Poncho, Light Stick, Magnesium Fire Starter (w/Striker), Small Camping Mirror, Survival Towel 1pk, Tea Candle, and Pocket Survival Guide.
P/N 11-10470.....**$29.95**

KIT 300 INCLUDES: Large Pouch, Orange Front. Mylar Back, 2oz Emergency Food Bar, 4oz Emergency Water Pouch, Button Compass, Emergency Blanket, Emergency Marine Whistle, Emergency Poncho, Light Stick, Magnesium Fire Starter (w/Striker), Paracord, Small Camping Mirror, Duct Tape, Survival Towel 1pk, Tea Candle, Wire Saw, and Pocket Survival Guide. P/N 11-10471.....**$34.95**

REVERE SEE-ME LIGHT

Revere's See-Me Water-Activated Emergency Locator Lights feature long-lasting LED technology and a faceted octagonal design that is easy to use in wet conditions. Shatterproof and fungus-resistant globe and body make the See-Me light and strobe very tough and durable. Brightness and run time are microprocessor controlled to maximize visibility.
P/N 10-04579 .....**$16.50**

REVERE SEE-ME STROBE

Revere's See-Me Water-Activated Emergency Locator Lights feature long-lasting LED technology and a faceted octagonal design that is easy to use in wet conditions. Shatterproof and fungus-resistant globe and body make the See-Me light and strobe very tough and durable. Brightness and run time are microprocessor controlled to maximize visibility.
P/N 10-04580 .....**$24.50**

AQUAMIRA FRONTIER EMERGENCY WATER FILTRATION SYSTEM

Emergency water filtration system for hiking, camping & emergency preparedness. Effective on protozoan cysts (Giardia & Cryptosporidium). Economical-filters up to 20 gallons. Ultra light & compact (only weighs 1 oz & is less than 5" long). Perfect for emergency kits, foreign travel & outdoor activities. Essential part of your 72 hour emergency kit. Use when drinking from a bottle, cup or directly from a water source. EPA EST.NO. 071766-UT-001.
P/N 14-02699 .....**$10.99**

PERSONAL SIGNALING REFLECTOR

The "Automatic Personal Signaling Reflector" works continuously and automatically 24-7, day and night. You can work on your shelter, gather food/water or rest if injured. Rescuers will not walk by you if you're asleep or if you are unable to respond. The highly reflective silver-coated plastic works with Sunligh, Search Lights and Flashlights. It's always working .
P/N 13-08662 .....**$13.95**

AURORA FIRE STARTER

Made in the U.S.A. Self contained fire starter. Made of knurled anodized aluminum. Includes a cylinder with built in stainless steel blade at the outside base which is struck by the 1/4" thick ferro-magnesium rod, creating a spark. The cylinder and rod screw together and meet at an o-ring creating a waterproof seal to protect the rod from corrosion.
P/N 14-02701 .....**$25.99**

G.I. AVIATION SURVIVAL FIRE STARTER

Magnesium shaving edge and sparking insert. Government issue.
P/N 14-02700 .....**$10.99**

GOGIRL SINGLE TUBE

Includes re-usable tube, baggie and tissue. It's a kit in a tube ready to go! Made from Medical Grade Silicone.
Lavender with Pink Tube
P/N 13-08566 .....**$9.99**
Khaki with camo Tube
P/N 13-08567 .....**$9.99**

HYLAND'S MOTION SICKNESS TABLETS

Hyland's Motion Sickness is a traditional homeopathic formula for relieving symptoms of nausea and dizziness associated with or aggravated by motion. This product is also useful for relief of car sickness and sea sickness. Working without contraindications or side effects, it stimulates your body's natural healing response to relieve symptoms. Motion Sickness is safe for adults and children, and can be used in conjunction with other medications.
P/N 13-08646 .....**$7.75**

PS

EAR PLUGS - PORTABLE RESTROOMS

PILOT RELIEF TUBES

HORN - Black molded plastic horn fits into horizontal or vertical brackets. Measures 2-3/8" diameter and weighs 1.3 oz .
P/N 13-04168 .....**$14.65**

HORIZONTAL BRACKET - Black molded plastic bracket for underseat installation.
P/N 13-04169 .....**$17.50**

VERTICAL BRACKET - Black molded plastic bracket for vertical installation.
P/N 13-04170 .....**$15.50**

VENTURI - Black molded plastic venturi mounts on fuselage bottom and produces required suction to horn and outlet tubes for fluid ejection.
P/N 13-04171 .....**$23.50**

HORN AND VALVE ASSEMBLY - Dimensions: Length: 8-31/64"; Top opening: 2-21/64"; Bottom opening: 3/16"; Weight: 4 ounces
P/N 13-04167 .....**$79.85**

TEE AN8019-1 - The material is RTP 152 black. 2-1/32" wide and 1" length.
P/N 13-04172 .....**$7.90**

ULTRAFIT™ UNCORDED EARPLUGS 340-4001 IN CARRYING CASE

• Patented, premolded, triple-flange design inserts easily. • No rolling or sizing needed to get a comfortable, protective fit. • Hypoallergenic polymer is washable and reusable. • Carrying case keeps plugs clean and accessible for re-use. • NRR 25dB. • ANSI S3.19-1974; CSA Z94.2; CSA Class AL..... P/N 13-02194 ..... **$1.32**

CLASSIC™ UNCORDED EARPLUGS 312-1201 IN A POLY BAG

• Slow-recovery foam helps ensure comfort and minimize pressure. • Bright yellow color provides a quick visual compliance check. • Dermatologically safe foam is non-irritating, nonflammable, and moisture-resistant. • NRR 29dB. • ANSI S3.19-1974; CSA Class AL P/N 9134 ..... **$0.35/pair**

PELTOR 30 CALIBER EAR PLUGS *(CASE OF 10)*

The unique shape of the Peltor 30 Caliber Plugs is concave at the base to help wearers achieve easy, deep insertions for optimum protection. The Easy-Grip Handles on each plug allows for quick and easy removal. The Peltor 30 Caliber plugs are packaged in a 10 pair ammo case like actual bullets.
P/N 13-04287.....**$8.25**

PRESSURE REGULATING EAR PLUGS FOR CHILDREN

EarPlanes are a patented pressure-regulating earplug inserted in the ear to help reduce discomfort often associated with air travel. They were developed by Cirrus Healthcare Products LLC in conjunction with the House Ear Institute in Los Angeles, and have been tested by US Navy aviators at the Miramar Naval Air Station in San Diego.
P/N 14-02837.....**$7.95**

LITTLE JOHN

Positively the least expensive accessory you can buy to extend your range. One authenticated case reports a Piper Malibu's range extended by 500 miles. Durable plastic, won't crack under any normal handling and temperature conditions. A tight screw-on cap makes it spill proof. Standard issue in hospitals for years. P/N 9741 ..... **$7.95**

LADY J ADAPTER

The anatomically designed funnel snaps in and out of the little John. It can be used sitting or even standing. Clean white plastic.
P/N 9745 ..... **$6.95**

G FUNNEL ADAPTER

The G-Funnel is a portable urinal adapter which simply screws on to any plastic pop or water bottle that will be uses as a container for those situations where a washroom facility is not available. The appeal to this adapter is that it can be attached and used together with any sized plastic pop or water bottle that most people have on hand. The plastic pop or water bottle is to be used as liquid container and then can later be emptied for reuse or just thrown in the trash when available. We think you'll agree that this is a very useful relief device for those emergency situations. P/N 13-01974 ..... **$7.50**

RESTOP DISPOSABLE URINAL

The anatomically designed Restop is the disposable urine bag that combines a unique blend of polymers, enzymes, & deodorizer to turn urine into an odorless gel on contact. The funnel design prevents accidental spills. Restop is sanitary, non-toxic, spillproof & odorless, safe and convenient, trash container safe, and small enough to fit in pocket. Easy to use by men & women. 2 pack.
P/N 13-00794 ..... **$4.50**

TRAVEL JOHN

Absorbent pouch turns urine into gel instantly while destroying bacteria and odor. Specially designed collar works for men women and children; spill guard prevents back guard during use. Convenient, sanitary and compact, TravelJohn is easy to use while sitting or standing. Will not leak or spill, even if punctured. Holds 28 fl. oz. Includes antiseptic hand wipe.
3-pack .....P/N 13-00894 ..... **$5.95**

CONVENIENCE BAG

Disposable urine & vomit bag.• Wide mouth.• No spill, cleanup, or odors• One-hand use
P/N13-02821 ..... **$1.95**

SAGA AVIATION SPIN KNIFE

Light and compact, it is the tool for all situations. It's ergonomic, housing contains 7 essential tools. Made of stainless steel, it's ruggedness will help you during your trips for years to come. Features: Stainless steel blade. Scissor. Corkscrew. Bottle opener with large screwdriver. Nail file. Key ring. Philips screwdrivers.
P/N 13-09561 .....**$8.45**

SAGA AVIATION THRUST

Fully equipped, the Thrust has 2 LED lights at each extremities to allow working in dark places. Made of stainless steel. Features: Sharp 3.0" blade, Pliers with wire cutter, 2 LED flashlights (each end, batteries included), Scissor, Bottle opener, Philips and flat head screwdrivers, Strong hook, High quality sheath with belt strap. P/N 13-09560.....**$46.95**

STAINLESS STEEL CARABINER

Stainless steel karabiner for the best flying performance guaranteed load 26kN extremely high tensile strength qualified for tandem flying each single piece is tested with 1700kg
Specifications: Weight: 138.0g
P/N 10-04494.....**$32.50**

PS

CO DETECTORS

CO GUARDIAN CARBON MONOXIDE DETECTORS

MODEL AERO-152WD - Features: • Max power consumption = Less than 1W • Wt: approx. 2.5 oz • Works from 10V to 30V sys. • Product shielded to prevent RMI (Radio Magnetic Interference) with Aircraft systems • Audible alarm with varying pitch depending at 85DB • Front panel lighting (Green, Amber and Red) • CO Sensor tested to 13,500 ft • Built in temperature compensating circuit • Built in Humidity compensating circuit. P/N 13-01640 ..... **$149.00**

MODEL AERO 553 - Replaces the 2.25" clock and provides the latest CO protection that displays 30 to 999 ppm in the cockpit, as well as aircraft high and low voltage alarms, pressure density altitude readout for takeoff. Cabin altitude alerts to remind you to go on oxygen. CO level, cabin pressure and temperature to be displayed on the UPS AT CNX80.....P/N 13-02569 ..... **$699.00**
Aero 553 OAT Probe.....P/N 13-06165 ..... **$125.00**

MODEL AERO-452 - Input Power-14 / 28 V DC. Power Usage-Less than 1 Watt, 10 Watts with heater ON. Temp Range - -20 deg C to 55 deg C. Inspection - Each Unit 100 % tested. Humidity - 5 % to 95 % RH (non-condensating). Circuit Breaker-2 Amp. Design-Meets TSO-C48A. Weight-3.5 Oz. Sensor-Tested to 25,000 Ft. Calibration-100 and 500 PPM. Ouput-Dual Relay Output for, Panel Warning light / Annunciator. WARRANTY :The Aero 452 comes with a 1 year limited warranty. The warranty will be void if the unit has been opened or tampered with. P/N 13-07102..... **$499.00**

AERO 452-201-011 - Aero 452-201-011 is the first TSO certified remote-mountable Carbon Monoxide detector for use in General Aviation. This unit is a derivative of Aero 452 (Panel Mount). This unit comes standard with remote re-set switch and a remote light and can be installed behind a panel. This unit is pre-wired for connecting to an external annunciator warning lamp on your panel. Different light models can be purchased separately.
P/N 13-06918 ..... **$499.00**

AERO-551 - Is fast responding to CO threat detector that is designed to standard 2 1/4 hole. This unit is our most sophisticated CO detector that has an extremly fast response when CO is present. The 551 unit shows continous CO Level from 10PPM to 999 PPM.
P/N 13-06919 ..... **$599.00**

DIGITAL CO2 DETECTOR

The extremely affordable DCO 1001 has a measuring range of 0-1000 ppm and comes complete with a soft case, a wrist strap, 3 "AAA" batteries and an instruction manual. Features: • Adjustable co warning level • LCD dual digital display • Bright backlight • self test • Low battery indication • °F/°C selectable • Auto power off • Auto zero • Co range: 0~999ppm • Resolution: 1ppm • Battery life is 250 hours when the backlight is off and 35 hours with the backlight on. P/N 12-01895.....**$145.95**

MODEL 300 POCKET CO

Pocket CO Model 300 is the world's smallest and most affordable carbon monoxide detector, alarm and dosimeter. About the size of a key fob weighs less than 1 oz. Range: 0 – 500ppm; first alarm at 50ppm, second at 125ppm, third at 400ppm. Also has an 8-hour TWA warning alarm at 25ppm. Self-checks upon start and carries a 2 year warranty. P/N 13-06639 .....**$124.95**

ACCESSORIES

Replacement/Spare Battery .....P/N 13-06640 .....**$4.50**
Pocket CO Calibration Kit.....P/N 13-07258 .....**$38.75**

FLIGHT DATA SYSTEMS GD-40 CARBON MONOXIDE DETECTOR

Integrates with most EFIS Systems - Connect via RS232 or a Switched Input. Audio Voice Alerts. LED and Discrete Warning/Status Outputs - Two color LED included. Monitors Cabin Altitude - Aural Alerts to remind you to don your Oxygen Mask. Calibrated Using Precision Gas - Each unit is individually calibrated and tested before shipping. Built in Self Test Monitors Sensor Quality - Continuous self testing for reliability. Altitude and Temperature Compensated - Has an internal Altimeter and Thermometer. Remote Mounting Takes No Panel Space Dimensions: 4.7 X 3.1 X 1.0 inches. Weight:4.1 oz.....P/N 11-09843 .....**$295.00**

DRAGER PAC SINGLE GAS MONITORS

Dräger Pac® 3500 - Workplace safety devices need to be fast and accurate. That is why the Dräger Pac 3500 is ideal for the personal monitoring of industrial carbon monoxide, hydrogen sulphide, along with being maintenance-free for up to two years.
P/N 13-07016.....**$198.00**

Dräger Pac® 5500 - Long-lasting quality is key when it comes to workplace safety. The Dräger Pac 5500 has no lifetime limitation and is ideal for fast and accurate personal monitoring and detection of carbon monoxide, hydrogen sulphide or oxygen.
P/N 13-07017.....**$297.00**

GASALERT CLIP EXTREME CARBON MONOXIDE MONITOR TWO YEAR BATTERY LIFE

Simply press the start/test button and the GasAlertClip Extreme is ready to use, providing continuous, reliable protection. This carbon monoxide detector requires no calibration, sensor replacement, battery replacement or battery charging. The simplicity of the GasAlertClip Extreme combined with minimal training requirements and negligible maintenance costs make the GasAlertClip Extreme one of the most cost-effective gas detection solutions for facility workers and onsite contractors.
Standard Package Contents: Detector complete with specified sensor, stainless steel alligator clip and concussion-proof housing, Test cap and hose, Manual, Multi-language CD manual.
Gas Alert Clip Extreme II CO (2 Years).....P/N 13-09667.....**$156.25**
Gas Alert Clip Extreme III CO (3 Years).....P/N 13-09668.....**$271.95**
Gas Alert Clip Extreme CO 0-1000PPM.....P/N 13-09669.....**$294.95**

LONG LIFE CARBON MONOXIDE DETECTOR

No longer do you have to replace that Carbon Monoxide Detector every 28 days, the new Quantum Eye Carbon monoxide detector offers a minimum 18 months of sensor life.
P/N 09-35601 ..... **$6.50**

STANDARD CARBON MONOXIDE DETECTOR

Carbon monoxide is odorless and colorless, but this economical little stick-up pad gives you a visible warning it it's present in the cockpit (or car or garage). A little graying of the color spot means a little gas: if it turns black, the concentration is dangerous. Adhesive backed. Spot returns to normal color after being exposed to fresh air.
P/N 09-35600 .....**$3.50**
Discount on 5 .....**$15.75**

ASA CARBON MONOXIDE DETECTOR

Carbon Monoxide (CO) is a toxic, odorless, and tasteless gas produced by the incomplete combustion of gasoline, kerosene, natural gas, butane, propane, fuel oil, wood, coal, and other fossil fuels. Dangerous levels of CO can be produced by internal combustion engines or from any poorly vented or improperly adjusted fuel-burning appliance. Exposure to CO may cause sickness, headaches, or even death.
P/N 13-05755 .....**$4.75**

PS

PROTECTIVE GEAR FOR PETS

MUTT MUFFS

- Over-the-Head Hearing Protector for animals.
- Specially Designed Wide Foam Filled Ear Seals for Maximum Comfort.
- Engineered specifically to properly meet the contour of a dog's head
- Comfortable and Lightweight
- Adjustable Straps for Optimum Fit.
- Inner sound-deadening foam is the same density found in pilot's high-end headsets
- Made entirely in the United States of America
- Patent Pending

Muff Size	Typical Dog Weight	Head Circum-ference	Maximum Inner Shell Width	Maximum Inner Shell Height
X-Small	5-10 lbs	7-9"	1.5"	1.625"
Small	9-25 lbs	9-13"	1.75"	1.75"
Medium	20-50 lbs	13-18"	2.5"	2.5"
Large	50-95 lbs	18-23"	3.25"	3.25"
X-Large	95+ lbs	23+	4"	4"

SIZE CHART - The overall circumference measurement of your dog's noggin at the largest point is the best determination of size, because if you choose a size too large, the muffs won't seal well against his head, and you lose all the sound-reducing properties you were shooting for. Your dog's weight is also a good indicator of which size to choose.

Size	Weight	Part No.	Price
X-Small	1.5 oz	13-05536	**$64.25**
Small	1.7 oz	13-05537	**$64.25**
Med	3.0 oz	13-05538	**$65.50**
Large	4.0 oz	13-05539	**$65.50**
XL	5.8 oz.	13-05540	**$65.50**

CUSTOM COLORS - Ever-classic "Mutt Muff® Black". But now, Mutt Muffs® are available in three additional colors! Red! Blue! and Pink!
P/N 13-05541.....**$73.00**

CO-PILOT - TRIANGLE BANDANA FOR DOGS

The proper uniform for the distinguished canine aviator. Sewn on all three sides. Finished Sizes: Large:21.5" x 21.5" x 29", Small: 14" x 14" x 20"
Large..... P/N 13-05547 ..... **$5.75**
Small..... P/N 13-05548 ..... **$5.75**

HYDRO-BOWL FOR DOGS

Next time your pooch is pantin' for a drink, pull out the convenient, collapsible Hydro Bowl. Waterproof and made of a high-tech, durable plastic canvas, the Hydro Bowl folds up and snaps closed into a compact triangle for storage. Attach it to a leash, backpack, bicycle, or a variety of other places for easy storage. Hold 5 cups
P/N 13-05546 ..... **$8.75**

DOG IS MY CO-PILOT - BUMPERSTICKER

"Dog Is My Co-Pilot" is the trademarked motto of Bark magazine - accept no substitute. As seen on dog-friendly cars from coast to coast!.... P/N 13-05545 ..... **$2.85**

BARK BAGS

If you take passengers, sooner or later, you're going to need one. 9-3/4" x 4-1/4" to hold alot of chunks. Sold in a package of 3... There could be sympathy heaves. P/N 13-05543 ..... **$4.75**

4 PAWS K-9 EAR MUFFS

4 Paws Aviation has come out with new hearing protection for your pet. Average of 15 dBHL greater sound reduction than what's on the market today. These Ear Muffs hearing protection is made of nylon, aircraft approved sound deadening foam, non-toxic "gel" cups, webbing, and a safety "break a way" clip.
Small and medium Ear Muffs are available now. Large coming soon! They can be used with the only oxygen hood delivery system for your pet also offered by 4 Paws Aviation.
Small- 5 to 25 pounds 7" and 13" head size..... P/N 13-08288..**$56.00**
Medium- 20 to 85 pounds 9" and 19" head size... P/N 13-08289..**$59.95**

4 PAWS K-9 OXYGEN HOODS

Fight the effects of Hypoxia on your four legged family members by using the only oxygen delivery hood for animals when flying at high altitudes. Keep your pets safe and healthy when flying high.
Hood comes with 7-foot long oxygen supply tubing with a common push on female end. Attaches to a stand-alone bottle or in place oxygen system.
Oxygen hoods are available in five sizes, measurements' include the collar (around the neck) and the length from the nap of the neck to the end of the nose, then add two more inches for clearance.

Size	Collar Size	Hood Depth	Part No.	Price
Small	7.5" To 9.5"	8.5"	13-08290	**$123.95**
Medium	9.5" To 13.25"	10"	13-08291	**$123.95**
Large	13.25" To 15.75"	12"	13-08292	**$123.95**
X-Large	15.75" To 20"	14"	13-08293	**$123.95**
XX-Large	20" To Over	17"	13-08294	**$123.95**

AEROX PET MASK

Now you can take your pet with you at altitude thanks to AEROX and their new line of Canine 02 Mask supplemental oxygen system certified to 25,000 feet. The Aerox® Canine 02 supplemental oxygen system is currently available in 5 sizes:
Small - (Poodles, Shelties, Yorkies, Cavalier, Bichon Frise)
Medium - (Beagles, Keeshounds, Jack Russels, Standard Poodle)
Large - (Cockers Spaniels, Springers, Beagles, Boston Terriers)
X-Large - (Huskies, Labradors, Retrievers, Dobermans)
Giant - (Great Danes, Newfies, St Bernards, 90-160 LBS)
The muzzle incorporates a medium concentration continuous flow oxygen mask and frontal mesh area for best ventilation and oxygen delivery to your pets mouth and nose.

Size	Part No.	Price
Small	13-07460	**$102.75**
Medium	13-07461	**$101.95**
Large	13-07462	**$104.50**
X-Large	13-07463	**$101.95**
Giant	13-07464	**$101.95**

PS

WINDMETERS - WEATHER STATIONS

WINDSCRIBE HANDHELD WIND METER

WindScribe is a precise, handheld wind meter (anemometer). In addition to registering the current wind speed, the WindScribe also measures maximum headwind, maximum tailwind, a five-second average wind, and a running average wind. Speeds can be displayed in both U.S. and metric units, and the unit also records temperature - useful for figuring out whether fog may form soon - and wind chill. The WindScribe weighs 3.5 ounces and comes with a lanvard. A velcro strap and mounting bracket are included. P/N 13-04019 .....**$135.00**

WIND WIZARD WIND SPEED INDICATOR

ECONOMY MODEL – ACCURATE & COMPACT

A single scale eliminates the need to shift back and forth between two scales when wind conditions are variable or gusty. Conveniently calibrated in miles/hour, meters/ second and Beaufort. Expanded in the lower wind speed range of 0-20 MPH (0-8.9 meters/sec). Slips easily into a shirt or coat pocket. Safety wrist strap gives added security in stronger winds, and stores out of the way in the folding handle. Constructed of high impact plastic and corrosion resistant metals. It comes with leather-like carrying case. No Batteries needed. P/N 13-18520 .....**$49.99**

SKYWATCH GEOS 11 HANDHELD WEATHER STATION

With features never before found on a handheld weather instrument, the GEOS 11 was designed specifically for the demanding needs of many markets:Aviation; reading of the Flight Level, height, finesse, pressure, altitude, altitude variation, etc.. Features: Electronic Compass: • analogical and digital Three Data Recording Modes: •manual recording by pressing two buttons •automatic recording at selected intervals, when unit is off or on •automatic recording at selected intervals, when unit is on only. Bright LED Light: • operates on separate battery. Replaceable Ball Impeller: • rotates to protect impeller blades. Exposed Sensors for instant reading P/N 13-04757.....**$479.00**

SKYWATCH HANDHELD WIND METERS

Designed for consumer and professional use, the Xplorer does not include complicated and seldom-used features such as downloading and storing. Press one button, and instant readings are at your fingertips. Dimension: 3.5 x 1.5 x 0.75 in, 2 oz. (41 x 93 x 17 mm, 50 g) One button operation, EL Backlight Completely sealed; internal sensors, Weatherproof (can be submerged 6 feet), Replaceable Lithium battery (included and installed) , Stainless steel back, Auto-off after one minute (can be disabled to remain on), Included lanyard One year warranty.

Handheld Weather 1 ..... P/N 13-04760 .....**$49.00**
Handheld Weather 4 ..... P/N 13-04762 .....**$139.00**

WINDLINQ WIND METER

Most compact electronic anemometer available. Features: * Displays wind speed in MPH, Km/Hr, Knots, Met/Sec, and Ft/Sec * Displays Current Wind Speed * Displays Maximum Wind Speed * Features back light * Includes Replaceable Lithium Battery (CR2032) * Water Resistant to 3 feet (1 m) * Great gift item Specifications * Size:3.6"H x 1.6"W x 0.6"D, 1.8 oz * Lithium battery * 4 year warranty on battery * Measuring range: 0 to 99.99 * Resolution: 0.1 units * Case: Rugged polycarbonate, waterproof to 10 feet * Precision: ±4% from 16° F to 122°F (10° to 50°C) P/N SKWWIND.....**$52.95**

SM-19 SKYMATE PLUS WIND METER

* Current, maximum windspeed * Average windspeed over 5, 10, or 13 seconds * Current temp & windchill * Relative Humidity & Dewpoint * Choose any measurement unit * Reads in tenths * Replaceable 400 hour lithium battery * Data Hold to freeze most recent display * Replaceable plastic impeller won't corrode * Comes with lanyard * Threaded for tripod mounting * Unique pocket-knife design to protect unit when not in use * Auto shutoff 20 minutes after last key is pressed * Water resistant housing High visibility case Floats. ..... P/N 13-01960.....**$144.00**
Carring Case ..... P/N 13-02202.....**$19.00**

VANTAGE VUE WIRELESS WEATHER STATION

Station Includes: - Integrated Sensor Suite: Wireless, Rain Collector, Anemometer, Weather Proof Cover, Radiation Shield, Wind Direction, Solar Panel, Bubble Level. - Console: Time & Date, Moon Phase, Forecast Icons, Temperature Icons, Temperature & Humidity, Retansmits, Barometer, Variable Display Options, Rain Totals, "Change in Weather" Feature, Weather Center, User-Friendly Keypad, Graphs, "This Time Yesterday" Feature, Alarms, Wind Speed - Mounting hardware (mounting pole sold separately).

Weather Station..... P/N 13-11572.....**$375.00**
Mount Pole Kit ..... P/N 13-11576.....**$29.00**
Mounting Tripod..... P/N 13-04569.....**$67.25**

See www.aircraft spruce for aditional options.

SPEEDTECH INSTRUMENTS

SKYMASTER WEATHERMETER SM-28 - Pocket-size weather station features complete wind speed functions and includes a severe weather audio alarm. The relative humidity, barometer, and altimeter functions can be recalibrated, if required. Skymaster is water resistant, floats, threaded for tripod mounting and comes with a lanyard. One year warranty. Features:• Windspeed• Relative Humidity & Dew Point • Altitude •Current barometric Pressure • 16-HR Pressure Graph • Severe Weather Audio Alarm • Temperature/Windchill/Heat Index. P/N 13-02957 .....**$178.00**

SKYMATE WINDMETER - Convenient pocket-knife design, accuracy, features, and price make this the best value in handheld wind meters! It is water resistant, it floats, and it has a high visibility case. Average wind speed over 5, 10, or 13 seconds. Current temp & wind chill. Choose any measurement unit. Reads in tenths. Replaceable 400 hour lithium battery. Data lock feature. Replaceable plastic impeller won't corrode. Easy to read LCD. Threaded for tripod mounting. Unique pocket-knife design to protect unit when not in use. Water resistant to 3 ft. High visibility case. One year warranty. Features: • Windspeed • Temperature • Widchill • Water Resistant to 3 Feet. • Floats • Safety Yellow case

P/N 13-00086..... **$98.00**

WM-100 WINDMATE 100 - Current, Average (5,10,13 secs) Maximum wind speed all use a wind vane to ensure most accurate measurements. For long-range shooting, use the tripod fitting and add the optional wind tunnel accessory. All wind functions in user selected units * Reads in tenths * Backlight * Tripod fitting * Rugged water-resistant case * Comes with adjustable lanyard. Features: Current wind speed • Average wind speed(5, 10, 13 seconds) • Maximum wind speed Mph, Kt, Kp/h, BF, FPM, M/Sec. Wind vane assures you are on the wind's axis • Tripod fitting • Fits wind tunnel accessory • Rugged water-resistnat case meets U.S. military specifications • Auto shutoff • Comes with adjustable lanyard P/N 13-04292 ..... **$84.00**

WM-200 WINDMATE 200 - Offers the most popular features in a handheld device, wind speed and temperature, with wind chill calculation. Single button operation, easy measurements, and the display has a backlight; handy for lowlight conditions. Each unit is water resistant, and has a tripod fitting. ***Features***: * Digital wind direction in degree & compass points * Cross and head/tail wind readings * Temperature * Windchill * Backlight ***Specifications***: * Windspeed accuracy +/- 3% from .8-89Mph * Wind speed range to 135Mph * Digital compass/wind direction accuracy +/- 2° * Temp/Windchill accuracy +/- 1.8° F * Optional Units: Mph, km/h, kt, ft/min, m/s, BF (Beaufort) * F or C * Avg windspeed over 10 secs * Max windspeed 2 sec gust since power on * Auto shutdown * POWER: CR2032 replaceable Lithium battery (included) * Measures: 5.5" x 1.75" x .75" closed * Weighs 3.2oz with battery * 2-yr warranty

P/N 13-04293 .....**$118.00**

WM-300 WINDMATE 300 - Wind speed and digital wind direction, relative humidity, dewpoint, wet bulb & Delta T make this a comprehensive tool for forestry, agriculture and emergency management professionals. Humidity sensor does NOT require adjustment; it is self-calibrating. This unit is equipped with a backlight. Accuweather.com® patented Comfort Index™ gives the effect of temp, relative humidity, wind speed, & sun intensity on the human body. Unit can be tripod mounted. ***Features***: * Relative Humidity (self-calibrating sensor) * Dewpoint * Delta T * Accuweather.com patended * Jackknife case allows most accurate temp & RH readings * Wind speed range to 135Mph * Optional Units: Mph,km/h,ft/min,m/x,BF (Beaufort) * F or C * Avg wind speed over 10 secs * Max wind speed 2 sec gust since power on * Auto shutdown * POWER: CR2032 (400-Hr) replaceable Lithium battery (included) * Measures: 5.5" x 1.75" x .75" closed * Weighs 3.2 oz with battery * Comes with breakaway lanyard * 2-yr warranty. P/N 13-04294.....**$198.00**

WM-350 WINDMATE 350 - • Time • Date • Alarm • 48-HR history for all functions Digital Hr-By-Hr & Bar Graph • Current, Avg., Max wind speed in Mph, Kt, Kp/h, FPM, M/Sec, Beaufort • Digital wind direction in degrees & compass points • Cross and head/tail wind readings • Wind vane improves accuracy • Relative humidity • Wet Bulb (°F/°C) • Dewpoint (°F/°C) • Delta T • Barometric pressure (inHg/hPa) • Density Altitude (Ft/m) • Weather forecast • Audio storm alarm • Temperature (°F/°C) • Windchill • Altimeter to 29,000 Ft/9000m • AccuWeather.com® patented Comfort IndexTM • Backlight • Tripod fitting • Fits wind tunnel accessory • Case meets military specifications • Comes with adjustable lanyard.Replaceable Lithium battery (included) MEASURES: 5.5) x 1.75) x .75) closed 9) x 1.75) x .75) open WEIGHS: 3.2 ounces with battery. P/N 13-05763 .....**$254.00**

SKYMATE ACCESSORIES

Adjustable nylon case (fits all models)..... P/N 13-02202 ....**$19.00**
Wind tunnel (maximize wind meter accuracy) ..... P/N 13-02201 ....**$30.00**
Speedtech Rail Mount(AP-15)..... P/N 13-02204 ....**$12.50**
Speedtech Back Stay Mount (AP-16) ..... P/N 13-02203 ....**$16.75**
WM-350 Replacement Impeller..... P/N 13-07259 ....**$36.00**
SM-28 Replacement Impeller..... P/N 13-07260 ....**$21.00**

PS

WIRELESS VANTAGE PRO2 WEATHER STATION

Uses frequency hopping spread spectrum radio technology to transmit data wirelessly up to 1000' (300 m). Console/receiver, integrated sensor suite, and mounting hardware. Integrated sensor suite includes rain collector, temperature and humidity sensors, anemometer, 40' (12 m) anemometer cable, and solar panel. Sensor suite is solar powered. AC-power adapter included for console, or use with three C batteries (not included). Wireless range is up to 1000' outdoors, line of sight. Typical range through walls 200' to 400' . Add wireless repeaters for distances up to 1.7 miles. Not available in EU (Europe).

Vantage Pro2 (U.S.) ..... P/N 13-05532 ... **$595.00**
Vantage Pro2 Plus with UV & Solar Radiation . P/N 13-05586 ... **$892.00**
Mounting Tripod ..... P/N 13-04569 ..... **$67.25**

MAGLITE LED FLASHLIGHTS

MAG-LED™ Technology known for their obsession with precision engineering, craftsmanship and commitment to perfection, was not satisfied with the performance of a "regular" LED as a usable light source. They set their sights on producing a light source that would not only incorporate longer battery life, but would also have the kind of durability, reliability, and performance Maglite® flashlights are known for. With an emphasis on uncompromising performance, MAG-LED™ Technology is the result of that quest.

LED Mini Maglight 2-cell AA - Black ..... P/N 13-04722 .. **$18.95**
LED Mini Maglight 2-cell AA, w/Holster - Grey Pewter P/N 13-04917 .. **$18.75**
LED Maglight 2 Cell D hang pack- Black..... P/N 13-04724 .. **$24.50**
LED Maglight 2 Cell D hang pack- Grey Pewter P/N 13-04880 .. **$34.95**
LED Maglight 3 Cell D hang pack- Black..... P/N 13-04725 .. **$26.50**
LED Maglight 3 Cell D hang pack- Grey Pewter P/N 13-04881 .. **$28.50**

ACCESSORIES PACK - Includes: Pocket clip, lanyard wrist strap with key ring, anti-roll device, red, clear, and blue lenses.
P/N 13-04727 .... **$3.68**

MAGLITE D CELL ACCESSORY PACK

Mounting Brackets (Fit D-Cell Only)
Mount your Mag-Lite® flashlight on a wall, in a vehicle, boat, airplane or home. Lens Holder / Anti-Roll Device This item both retains a colored lens and helps prevent the flashlight from rolling off irregular surfaces. Note: The Lens Holder and Lenses may also be used on "C" cell Mag-Lite® flashlights
P/N 13-04886 ..... **$7.30**

MAGLITE FLASHLIGHTS

Mini Maglight AA - Black..... P/N 13-04913 ..... **$10.95**
Maglight 2 Cell D - Black ..... P/N 13-04915 ..... **$18.75**
Maglight 3 Cell D - Black ..... P/N 13-04916 ..... **$18.95**

MAGLITE XL100 LED FLASHLIGHT

Features a rear push-button tail cap switch coupled with five selectable modes, plus variable strobe rates and intensity level memory recall. Rugged, machined aluminum construction. Anodized inside and out for improved corrosion resistance. Water and Shock Resistant. Sealed at both ends with high-grade rubber o-rings and lip seals. Overall Length: 4.8". Barrel Diameter: 1". Head Diameter: 1". Batteries Required: (3) AAA Size Alkaline (included)

Black..... P/N 13-07270 .... **$32.95** Red ..... P/N 13-07271 .... **$32.95**
Grey..... P/N 13-07272 .... **$32.95** Blue ..... P/N 13-07274 .... **$32.95**

MAGLITE XL50 LED FLASHLIGHT BLACK

Features: Compact, pocket sized design (every day carry). Adjustable LED Beam (Spot-to-Flood). Durable, rugged, machined aluminum case
Anodized for corrosion resistance and durability. Intelligent energy source management - continuously monitors the balance between high brightness and efficient power usage allowing for prolonged battery life. Powered by three (3) AAA alkaline batteries (included). Individually serial numbered

Color	Part No.	Price
Black	13-08982	**$27.85**
Red	13-08989	**$27.85**
Gray	13-08990	**$27.85**
Silver	13-08991	**$27.85**
Blue	13-08992	**$27.85**

FLIGHTLIGHT™ - PILOT FLASHLIGHT

This AirClassics™ flashlight has both white and red lenses for preflight and night flying, extra Krypton bulb stored within, is water-tight, corrosion resistant, and features a clicking ON/OFF for maximum battery life. Focuses from spot to flood light. Black machined aluminum with ASA wings logo. Two AA batteries and PR-1 bulb included.

Flashlight: ..... P/N 13-01067 .... **$15.75**
Bulb: ..... P/N 13-02320 ..... **$4.85**

BEND-A-LIGHT

Bend to any configuration and illuminate hard-to-reach areas where conventional lighting cannot go. The incredibly brilliant light beam penetrates anywhere! A must for electronics, automotive, maintenance, repairs, locksmiths, industrial, hobbies, around the house and more. The only complete line of professional quality high intensity flexible light tools. Available in 3 lengths and 3 different lamps to choose from. Made in USA and come with batteries installed.

Part No.	Description	Length Flex Shaft	Length Overall	Batt.	Bulb	Price
12-15005	Mini Pro	6"	11.5"	2-AAA	12100	**$18.75**
12-15150	Pro	15.75"	24"	3-AA	12110	**$36.75**
12-10250	Removable Shaft	9.5"	15.75"	2-AA	12100	**$19.95**

Part No.	Description	Dia	Bulb Life	Price
12-15020	12100 - Replacement Lamp	5/32"	4 Hours	**$6.75**
12-12110	12110- Krypton Lamp	5/32"	20 hours	**$8.50**

AVIATOR'S QUIQLITE

Extra Bright LED, available with Red, Green, White or Blue Light. Handy pocket clip and rotating arm. Rotating "light arm" allows you to place the light where you need it. Push-button On-Off switch with convenient 7 minute Auto-Off feature. Over 40 hours of light using replaceable lithium watch batteries (included). Fits easily into shirt or uniform pocket.

Blue LED QuiqLite ..... P/N 13-02719 ..... **$15.85**
Green LED QuiqLite..... P/N 13-02728 ..... **$15.95**
Red LED QuiqLite ..... P/N 13-02729 ..... **$10.95**
White LED QuiqLite ..... P/N 13-02730 ..... **$15.95**

MASTERVISION CAP LIGHT

The best hands free flashlights available! Bright lightweight LED flashlight that clips to a regular cap. Water resistant!, Great for night flying! Weighs only 1.24 ounces! 3 LED bulbs with 10,000 hour burn time! 4 lithium coin cell batteries for approximately 24 hours of life!

G1 Original Caplight ..... 13-03723 ..... **$12.95**
G1 Stalker Caplight ..... 13-03724 ..... **$12.95**
Battery for Caplight..... 13-03726 ..... **$4.85**

SURE CHECK FUEL LIGHT

Will assist in ensuring your safety every time you strain test your fuel prior to flight. At night, it's safe & easy to use. The Sure Check Fuel Light, when used with your fuel test tube, will light up all the water and debris that might be present. The case is made of durable aluminum, weighs only 2.2 ounces, is 3" long, and uses a 12 volt battery to power a high intensity white LED light build. The casing is sealed with a strong neoprene rubber seal to keep any fuel from leaking into the case. Color: Red. Made in USA.
P/N 13-04207 ..... $17.95

SAFE-LIGHT SUPER BRIGHT FLASHLIGHTS

Lightweight and palm-size yet powerful, with ultra-long battery life(9v battery included). Emergency Strobe plus other essential safety modes: Constant Glow, Power-Save, High Beam, L.E.D., Power-Save mode . Also available with blue, green or red LED.

White LED ... P/N 13-04151 .. **$14.85** Blue LED .. P/N 13-04152 .. **$14.85**
Green LED .. P/N 13-04153 .. **$14.85** Red LED .. P/N 13-04154 .. **$14.85**

ASA LED FLIGHTLIGHT

Ideal for the flight bag where space and convenience are priority. The flashlight has both white and green bulbs, making this an effective tool for preflight, night flying and chart reading. ASA wings logo imprinted in silver. . Typical battery life is a solid 10 hours.
P/N 13-06426 ..... **$29.50**

PS

PILOT FLASHLIGHTS

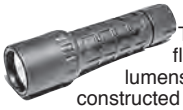
SUREFIRE AVIATION FLASHLIGHTS

Long known as a major supplier of quality flashlights to law enforcement and the military, Surefire has just made available a new flashlight built for aviators that combines two widely different light sources in a single compact illumination tool providing dual power and variable output. Surefire flashlights feature the finest beams, reflectors, switches and powerful tungsten lamps available on the market today. They are not inexpensive but for the pilot looking for a truly unique, high quality, reliable flashlight, Surefire is the answer.Surefire flashlights carry a lifetime warranty (excluding batteries and lamps).

The ***A2 Aviator*** features a high-output incandescent lamp producing 50 lumens surrounded by 35mm LED's set in a specially designed parabolic reflector. The Aviator's digitally controlled two-stage switch allows the pilot to choose LED's for soft light illumination in the cockpit or high output lamp for bright illumination during preflight inspection of your aircraft. The high beam on the A2 Aviator can illuminate the tail of a 747 from the ground. That's over 63 ft high! Not bad for a flashlight that measures only 5.6" in length and weighs only 4 oz. The A2 Aviator comes standard with a gray-green super-tough Type III hard anodized finish to military specifications, because it is the best and the toughest. It is powered by 2 lithium batteries, is shock-proof, water-resistant and comes with a lifetime guarantee (excluding batteries and lamps). Length: 5.9"

The ***A2 LED Aviator*** is a compact dual-output flashlight that provides two distinct beam types and optional output colors. It uses virtually indestructible power-regulated LED emitters and a precision micro-textured reflector to produce both spot and flood beams Press for a momentary-on 10-lumen long-runtime flood beam for general night use, close work, or where you need to preserve your night vision; press further for a momentary-on 120-lumen white spot beam—six times the light of a big two-D-cell flashlight; twist for constant-on low beam, twist further for constant-on high beam.

The ***L1 Lumamax*** features a 1W Luxeon LED which produces 15 lumens from one Surefire 3V lithium battery, which is three times brighter than a conventional mini light running on two AA alkaline. For the pilot needing only the soft light of LED lighting for cockpit illumination, the L1 Lumimax is an excellent choice. Length: 4.6"



The ***G2 Nitrolon*** is Surefire's most economical flashlight, and uses 2 lithium batteries to produce 65 lumens of diamond bright light for 60 minutes. The G2 is constructed of Black Nitrolon, a polymer compound that is lightweight, corrosion-proof, and non-conductive. Depress the tailcap on the G2 for momentary illumination or rotate fully inward for constant-on illumination. Length: 4.9"

A2 Aviator with green LEDs ..... P/N 13-02017 ..... **$189.00**
A2 Aviator with white LEDs ..... P/N 13-02018 ..... **$221.20**
A2 Aviator with red LEDs ..... P/N 13-03254 ..... **$213.50**
A2 Aviator with blue LEDs..... P/N 13-03255 ..... **$199.50**
A2L Dual Aviator with white LEDs ..... P/N 13-07086 ..... **$221.20**
L1 Lumamax with white LED..... P/N 13-02019 ..... **$159.00**
G2 Nitrolon flashlight (Plastic Body)..... P/N 13-02021 ..... **$41.30**

SUREFIRE ULTRA U2 FLASHLIGHT

Compact (palm size) high-intensity variable-output LED flashlight for tactical, duty, and general use. Uses a virtually indestructible light-emitting diode (LED) to provide six output levels, from a long-running low beam to a brilliant white tactical-level high beam almost seven times the light of a big two D-cell flashlight. Ring selector provides instant output control. Electronic current regulation maintains a more consistent level of light output for the useable life of the batteries. Variable output, compact size, extended-runtime low beam and high-output beam capability, and 10-year battery shelf life also make it perfect for backpacking or camping and for disaster preparedness kits. P/N 13-04710 ..... **$250.00**
123 Lithium Battery for the U2 Ultra..... P/N 13-04711 ..... **$3.75**

SUREFIRE G2X™ PRO

A polymer-body version of the 6PX Pro, uses a high-efficiency LED—virtually immune to failure since there's no filament to burn out or break—that provides two light output levels: a brilliant, penetrating, perfectly pre-focused 200-lumen beam, and a 15-lumen low-output setting that lets you greatly extend the runtime per set of batteries, an invaluable option when you find yourself miles from civilization. Press the tailcap switch for momentary-on low, press further to click constant-on low, return to off and press or click on again within two seconds for high. A polycarbonate micro-textured reflector delivers a comparatively wider beam with generous peripheral light. ..... P/N 13-10290 ..... **$65.50**

See www.aircraftspruce.com for a complete selection of Surefire Flashlights.

SUREFIRE REPLACEMENT BULB MA02

The MA02 lamp assembly fits A2 Aviator flashlights and produces 50 lumens of light for 1 hour.P/N 13-04438 ..... **$18.20**

PELICAN AVIATION LIGHTS VERSABRITE

This is the world's brightest swivel head pocket flashlight. The adjustable head swivels 180 degrees, enabling the pilot to direct the beam where he needs it. It is water resistant and mounts directly on the adhesive pad of yoke chart holders. Provides 6000 candlepower Xenon laser beam spot beam, and comes standard with clear, red, and blue-green lenses. Clips easily on shirts, belts, and caps for hands free use. Comes with multi-use velcro fasteners and 2 AA batteries.
P/N 13-00561 ..... **$22.95**

Versabrite mounting clips (1 top, 1 side mount)

MICRO ONE WATT LED FLASHLIGHT

Has a 1-Watt, 80-Lumen LED chip that emits over 4,300 End-foot candles (4300cd) of bright, cool white (8000 Kelvin) light that's powerful enough and lasts long enough to light your way — all the way home. * One Year Warranty * Focusable Lens: Narrow and Wide Beam * Puts out over 4,300 End-Foot Candles of light * Retains 50% of its light output after 1 hour of continuous use * Visibility approx. 2 miles, depending on atmospheric conditions and line of sight * Lights for 4 days (96 hours) at a diminishing light output rate * Uses 3 standard AAA batteries * Rugged Anodized Aluminum Body Finish * Push button on/off switch * Weight: 3.5 oz. without batteries, 4.8 oz. with batteries. Furnished with nylon holder.
P/N 13-07470 ..... **$37.85**

PILOT'S HANDY LANYARD LIGHT

This emergency light with a break-away neck lanyard is great for use around any aircraft. Ideal for pre-flight inspections after dark, providing you with a small, powerful flashlight which you can simply hang around your neck as you preflight the aircraft. Also makes the perfect cockpit light in an emergency. Furnished with blue-green and red lenses for night flying as well as a standard clear lens. Includes lanyard & 1 AAA battery.
P/N 13-00571 ..... **$17.25**

MINI LED FLASHLIGHTS

Only 3.5 inches long. NOT water resistant. DUAL Ultra-bright LEDs with lifetimes of 100,000+ hours, never break, and provide smoooth illumination. •Thumbwheel Brightness Control • Energy Efficient -- Up to 320+ hours at the dimmest setting, 12+ hours at the brightest, from one 9V Alkaline. •Exclusive brightness regulation circuitry -- keeps the LEDs shining bright as batteries age, unlike competitors LED flashlights which start bright but quickly fade. • 9 Volt Battery & 20 inch neck strap included

White & Red..... P/N 13-04696 ..... **$22.95**
Red & Green..... P/N 13-04697 ..... **$22.95**

MYGRIPLIGHT (LED)

Multi purpose product that performs as an organizational tool as well as a multi purpose light. The organizational tool organizes writing instruments, cell phones, eyeglasses, flight charts and other documents by means of a patented polyester snap-in-lock structure to secure these items. The patented multi purpose light is connected to the organizational tool by means of a flex-arm. The light has 360 degree rotation and can be removed from the organizer to act as an independednt lighting instrument. The light offers both white and red light illumination on demand. MyGripLight mounts to most any surface by use of Velcro® fasteners that is supplied with the product.

Attaches with Suction ..... P/N 11-09665 ..... **$19.95**
Attaches with Velcro ..... P/N 11-09669 ..... **$19.95**

FLITELITE FINGER LIGHT

A simple light that attaches to the finger. Attaches to your flight glove with Velcro One-Wrap, and has integrated, battery saving 10-minute auto-off. Simple touch the button and light will shine wherever the pilot points. Perfect for complicated lower panels, radio tuning, and searching for circuit breakers.

Green..... P/N 13-07275 ..... **$6.50**
White ..... P/N 13-07276 ..... **$6.50**
Red..... P/N 13-07277 ..... **$6.50**

STREAMLIGHT FLEXIBLE FLASHLIGHT

The Streamlight has a 6.21" flexible, insulated cable extension allows 14 inches for hard-to-reach areas. Made of silver aircraft aluminum casing and a tough PVC shieled cable. Unbreakable, 100,000-hour white LED that never needs replacing. It has a runtime of up to 60 hours. (4) AAA batteries included. Wt: 1.1 oz. P/N 13-03142 ..... **$49.75**

PS

FLASHLIGHTS

XEVISION PERSONAL LED FLASHLIGHTS

The compact LED flashlights are so small that they fit in the palm of a hand comfortably. They are so bright, even die-hard HID Xenon lighting technology purists can not resist. ***Super-bright white light from one small but powerful LED*** Our LED flashlights feature the latest commercial Cree LED 7090 XR-E, which delivers unprecedented levels of bright white light. The legendary 7090 XR-E is tested to the highest standards in the LED industry. The white light generated is as cool as HID with around 4000ºK to 5000ºK. The current draw is quite small while the LED is very efficient with a luminous flux of up to 100 lm min. @ 350 mA, and a luminous efficacy up to 75 lumens/watt.

XeVision personal LED flashlight models - The compact LED flashlights are so small that they fit in the palm of a hand comfortably. They are so bright, even die-hard HID Xenon lighting technology purists can not resist.

XV-C1C - Is their most compact LED flashlight using one long-lasting 3 VDC Lithium CR123A battery. The XV-C1C features six settings, 4 of them being output levels. This flexibility not only allows the user to select the best compromise between brightness and runtime for any given task but also has the ability to aid in an emergency. The XV-C1C offers a remarkably compact size and is extremely solid and reliable with its digitally regulated brightness. One 3 VDC CR123A Lithium battery

XV-C1C (Black) ..... PN 13-05144 ..... **$84.95**
XV-C1C (Iridium) ..... PN 13-05147 ..... **$86.75**

XV-C2C- Features six settings, 4 of them being output levels. This flexibility not only allows the user to select the best compromise between brightness and runtime for any given task but also has the ability to aid in an emergency. The XV-C2C offers a remarkably compact size and is extremely solid and reliable with its digitally regulated brightness. Two 3 VDC CR123A batteries (Lithium), not rechargeable.

XV-C2C (Black) ..... PN 13-05145 ..... **$87.95**
XV-C2C (Iridium) ..... PN 13-05148 ..... **$89.95**

XV-C2A - Features six settings, 4 of them being output levels. This flexibility not only allows the user to select the best compromise between brightness and runtime for any given task but also has the ability to aid in an emergency. The XV-C2A offers a compact size and is extremely solid and reliable with its digitally regulated brightness. Two 1.5 VDC AA (Alkaline, Lithium) or 1.2 V NiMH batteries.

XV-C2A (Black) ..... PN 13-05146 ..... **$87.95**
XV-C2A (Iridium) ..... PN 13-05149 ..... **$89.95**

ACCESSORIES

Model	Description	Part No.	Price
WF-138C Charger for XeVision XV-C2C	Charger for a single or pair of over-discharge protected R-CR123A rechargeable Li-Ion cells. Comes with 2 R-CR123A cells.	13-05141	**$47.95**
WF-138 Charger only	Just the charger - for the WF-123 combo package	13-05140	**$21.95**
ICR123 Rechargeable Lithium Batteries	These ICR123 rechargeable 3 V batteries used for the XV-C2V LED flashlight. Note that the standard CR123A batteries must not be recharged!	13-05139	**$25.95**
CR123A Single Cell Lithium Technology	1 Titanium 3 V CR123A battery. For the XV-C1C LED flashlight. Prevents excessive discharge that can damage lithium cells and may lead to catastrophic incidents.	13-05142	**$1.95**
CR123AX2 Twin Cell Lithium Batteries	2 Titanium CR123A batteries are carefully matched and form one single sealed unit, 3 V but double capacity). Used for the XV-C2C LED flashlight. Prevent excessive discharge that can damage lithium cells and may lead to catastrophic incidents.	13-05143	**$3.95**

SAFE-LIGHT'S L.E.D. PALIGHT SURVIVAL

Approved USA GSA Vendor. Contract # GS-07F-9512S Supplied to the Military, Law Enforcement Agencies, F.E.M.A. Embassies & Special Forces **Features**: Power in a Palm-size, 4 Most Needed Light Modes Including Its Unique Fast-find Glow Plus Power-save * High Beam Locator & Assistance Seeking Strobe Strong Focused High Beam, Rugged Non-slip Rubber Casing (Meets Military 'Drop-on-concrete' Spec), Extra-ordinary Long Battery Life.

Green ..... P/N 13-02751 ..... **$12.95**
Red ..... P/N 13-02928 ..... **$19.95**

AIRCRAFT SPRUCE LED PILOT'S FLASHLIGHT

The Aircraft Spruce LED pilots flashlight comes with a lifetime guarantee. Ultra-Bright light is provided with 12 energy saving LED bulbs. Made of aircraft aluminum, the flashlight casing is tough and durable. Attractive presentation box included. Size: 4-5/8" Long. Water and Shock Resistant. Push Button Sealed Rubber Switch. Battery Included

P/N 13-06922 ..... **$7.95**

PILOTS 2 COLOR FLASHLIGHT

2 color LED flashlight. 12 bright white LEDs and 7 red LEDs in aheavy duty aluminum flashlight. Ideal for pilots and flight crew. Anodized aluminum housing with 26 LEDs. 12 super-bright white LEDs, and 7 red LEDs. 7 bright red color LEDs for use when preserving night vision.. Two push button On/Off switches. Each controls a separate color LED.. Uses 3 common AAA cells (included) for over 20 hours of use. LEDs rated over 100,000 hours.

P/N 13-05664 ..... **$18.50**

AEROCOAST LED FLASHLIGHT

Led Flashlight with 12 high intensity white LED bulbs. * Single color 12 led flashlight * 80 Lumens 100 hr battery life * Light weight aluminum casting * Battery type: 3 x AAA * Size: 42 x 147 mm P/N 13-06043..... **$14.95**

LED CAP LIGHT

5 Bright White LED Cap Light - Perfect for hand-free illumination during maintenance or trouble-shooting • Lightweight, compact 5 LED hat light clips onto baseball caps • Great for hands-free light during maintenace or troubleshooting • Uses two (2) lithium coin cells for up to 96 hours of illumination • Blister packaged with batteries • Five extra-bright White LEDs with a life of over 100,000 hours P/N 13-05662 **$7.95**

THE LIGHTED PILOT PEN

Professional LED Writing Instrument for Pilots, Flight Crews, Law Enforcement and Military Use. Features:• Aircraft aluminum housing with on/off LED lighting and rotating top cap ink cartridge retraction. • Works as either a standard pen or for writing in low light or dark conditions. • Uses one common AAA cell for up to 20 hours of illumination •Gift box packaged with an extra ink cartridge and extra AAA cell • Two extra-bright White LEDs with a life of over 100,000 hours P/N 13-05278..... **$19.50**

PILOT'S COCKPIT UTILITY & EMERGENCY LIGHT

See all your panel control settings, maps, charts, compass, and log books. Use red light for night vision, or bright white light. Designed to travel anywhere, the Navigation Light can be clipped to most surfaces or used free-standing. * Two red LEDs in one head and two white LEDs in a second allow for lighting versatility * Dual flexible arms provide infinite maneuverability * Sensor switches on each lighting head require just a tap to turn on one or both LEDs * Optical grade lens provides evenly distributed light with no hot spots * Offers 20 hours of continuous use on 3 AAA batteries (included) P/N 11-05821..... **$12.50**

ASA TRI-LITE NAVIGATOR

The Tri-Lite flashlight is equipped with red, green, and white LEDs providing maximum flexibility and everything the pilot needs to maintain night vision while also providing the true-color options necessary for accurate chart, fuel, and oil color interpretation. Hands-free operation is made possible by 3 Velcro®-like (3M Dual Lock) mounting strips. The light can be snapped onto headsets, kneeboards or other flat surfaces, and can be quickly removed and re-attached. When attached to a headset, a focused beam of light is directed wherever the pilot looks. P/N 13-05753 ..... **$17.95**

PICO NV™ RED NIGHT VISION LED LIGHT

Designed specifically for nighttime situtations when maintaining night vision is critical. Excellent for use on boats and for reading maps. The Pico NV maintains the same quality as the standard Pico, plus: • Red LED light to preserve night vision • Black case with red bezel • Easy twist on/off operation • Water resistant IPX4 • Size HxD: 1.5" x .5" • Weight w/batteries: < 1 oz.

P/N 11-10516 ..... **$7.95**

PS

FLASHLIGHTS

GLOVE LITE - THE FLASHLIGHT YOU CAN'T DROP

The perfect tool for flying at night, GloveLite allows you to juggle tasks without needing an extra hand. With long-lasting batteries and a water resistant, comfortable neoprene shell, you'll hardly notice it's there. Once you fly with GloveLite, you'll never fly without one again! Perfect night-flight kneepad illumination. Dual 5,000 mcd LEDs. Flashlight you can't drop. Durable! Machine-washable and waterproof!! Light where you need it: for pilots, mechanics, crew members, etc! Lifetime Satisfaction Guarantee. Comfortable fit with 0.5mm black neoprene

Description	Red		White		Green	
Medium Left	13-10137	**$26.95**	13-10123	**$31.50**	13-10129	**$26.95**
Medium Right	13-10134	**$31.50**	13-10119	**$31.50**	13-10126	**$31.75**
Large Left	13-10138	**$31.50**	13-10124	**$31.50**	13-10132	**$31.50**
Large Right	13-10135	**$31.50**	13-10121	**$31.50**	13-10127	**$31.50**
Over-Glove Left	13-10139	**$26.95**	13-10125	**$26.95**	13-10133	**$26.95**
Over-Glove Right	13-10136	**$26.95**	13-10122	**$26.95**	13-10128	**$31.50**

LED-CAP

The LED Lighted Cap illuminates the cockpit without having to hold a flashlight or put on a bulky headlamp. These LED Lighted Hats use patent pending C.U.B. (Concealed Under Brim) Technology™ with 4 Ultra bright LED's in the center of the brim, (2 red and 2 white). You will find these lighted hats are perfect for flying at night and they are also indispensible for emergencies like power outages and automobile breakdowns. With just a quick click of the on/off switch hidden on the underside of the brim, the light from these LED Lighted Caps illuminates an area from reading distance all the way out to 50 feet. For pilot convenience, the white LEDs have a separate switch to avoid inadvertent night blindness (three clicks to operate). And since the LED's are built right into the brim, they provide Lights Where You Look™ for the ultimate in hands-free lighting in the cockpit or out and about. Stone Color Hat ..... P/N 13-07472 .... **$18.95**

FLITELITE A1 TACTICAL AVIATOR SERIES FLASHLIGHT

Specially designed for the aviator and tactical operations to avoid being blinded by a flashlight that is too bright in the cockpit. The light starts in a programmable memory mode, which is user programmable to any brightness level desired. P/N 13-11259..... 2.95

FLITELITE L1 TACTICAL AVIATOR SERIES LED FLASHLIGHT

Specially designed for the tactical aviator that requires a rugged, easy to control light that delivers CREE LED light through a MOON (the exact spot desired) lens.
Green..... P/N 13-11260.... **$12.95** White .....P/N 13-11261 ...**$35.25**

SAGA AVIATION SG5 POCKET FLASHLIGHT

Has a LED chip having 100,000 hours life expectation. This technology produces an unbelievably bright beam of light coupled with incomparable energy efficiency. Features: Protection IP-63 (wheather resistant), "One hand" technology focus, Robust aluminum housing, Three (3) intensity modes (low intensity, high intensity and stroboscopic mode), Luminous beam of 200 lumens with a projection of 220m, Operates on three (3) AAA batteries (batteries not included)
P/N 13-09557..... **$22.95**

SAGA AVIATION SG7 POCKET FLASHLIGHT

Slim profile allows easy storage in the plane, in your flight bag or your pocket. Due to it's advanced "Cree LED" technology it will provide an unbelievably bright beam of light. It can be used with lithium batteries to reduce the weight and allow the use of the flashlight in cold weather. Features: Protection IP-63 (wheather resistant), "One hand" technology focus, Robust aluminum housing, Operates on three (3) AAA batteries (batteries not included) ..... P/N 13-09558 .... **$17.95**

THE ASHLIGHT

13-04347

13-04348

13-04349

The ASHLIGHT has been designed and tested by pilots. The super-bright red LED light provides the ultimate in hands-free cockpit lighting with a flip of the switch. The ASHLIGHT is designed with a stainless steel spring that duplicates the original ashtray clip for easy snap-in installationThe majority of aircraft manufacturers (Cessna, Beech, Bellanca, Grumman, Mooney, Piper, etc.) all used a standard ashtray opening of 1.5h x 2.125w or 1.6h x 4.7h side panel mounted ashtray. Smaller planes used the Standard Size while larger planes such as KingAir, Chieftian, later model Barons and Bonanzas, etc. use the Large size. If your aircraft does not have an ashtray, the Visor Clip Model is an excellent alternative!

Standard Ashlight ..... P/N 13-04347 ..... **$29.95**
Large 5" Ashlight ..... P/N 13-04348 ..... **$29.95**
Visor Ashlight..... P/N 13-04349 ..... **$31.50**

ICON SOLO LED FLASHLIGHT

A high-efficiency LED and deep reflector create a smooth beam on either low or high. A sleek, pen-shaped aluminum body is durable, easy to carry, and features a sturdy pocket clip that keeps Solo securely in place. Because losing a flashlight this stylish and functional is not something you'll get over easily. Features: High-strength aluminum body with sturdy pocket clip, Durable power-regulated LED maximizes output and runtime; never needs replacing, Ergonomic "clickie" tailcap switch allows for easy switching between two output levels Micro-textured reflector creates a smooth, powerful beam Powered by two AAA alkaline batteries; included, Sealed with O-rings; weatherproof.
P/N 13-08072..... **$21.25**

ICON LINK LED FLASHLIGHT

A high-output LED and TIR lens produce a brilliant beam that's tightly focused at the high or low setting. And Link's compact, modern body is machined from durable, high-strength aluminum and features an integrated carabiner clip that permits multiple carry options. Because how you choose to carry your light, says as much about you as the light you choose to carry. Features: High-strength aluminum body with carabiner* clip provides secure carry options. Durable power-regulated LED maximizes output and runtime; never needs replacing. Solid Total Internal Reflection (TIR) lens creates a smooth, focused beam. Ergonomic "clickie" tailcap switch allows for easy switching between two output levels. Sealed with O-rings; waterproof to one meter for 30 minutes. Powered by one AA alkaline battery included P/N 13-08077..... **$23.95**

ICON ROGUE 1 LED FLASHLIGHT GREEN

Serious light output from a compact, sculpted aluminum body that's rugged and features two output levels. It's nearly impossible to relegate this beauty to the junk drawer. Features: High-strength aluminum body with open architecture design; effectively dissipates heat and fits comfortably in the hand. Durable power-regulated LED maximizes output and runtime; never needs replacing Micro-textured reflector creates a smooth, powerful beam. Ergonomic "clickie" tailcap switch allows for easy switching between two output levels. Powered by one AA alkaline battery; included. Sealed with O-rings; waterproof to one meter for 30 minutes.
Green Housing ..... P/N 13-08074..... **$32.75**
Black Housing ..... P/N 13-08073..... **$28.75**

ICON ROGUE 2 LED FLASHLIGHT - BLACK

Stratospheric light output from a dual-output flashlight that features a sculpted body that's rugged yet beautiful. You just might consider storing this one on your mantle. Features: High-strength aluminum body with open architecture design; effectively dissipates heat and fits comfortably in the hand. Durable power-regulated LED maximizes output and runtime; never needs replacing. Ergonomic "clickie" tailcap switch allows for easy switching between two output levels. Micro-textured reflector creates a smooth, powerful beam. Sealed with O-rings; waterproof to one meter for 30 minutes.. Powered by two AA alkaline batteries; included. Specifications: Length: 6.5 inches. Weight: 5.8 ounces. Battery: two AA alkalines.
Black Housing ..... P/N 13-08075..... **$37.95**
Green Housing ..... P/N 13-08076..... **$37.95**

SMITH & WESSON GALAXY 12 LED FLASHLIGHT

The Galaxy 12 LED Flashlight showcases our latest developments in flashlight versatility. This dual switch flashlight utilizes two buttons, one giving its user 6 White LEDs and the second provides a choice of 2 Blue/2 Red/2 Green LED modes. The shatterproof LED diodes last over 110,000 hours, are visible for over one mile, and will NEVER need replacing. Coupled with a limited lifetime warranty, these flashlights will protect you for a lifetime. Black Matte Aluminum. Includes 3 (AAA) batteries and deluxe nylon holster with extra battery storage. ..... P/N 14-02199..... **$27.50**

SMITH & WESSON ALUMINUM CARABEAMER CLIP LIGHTS

A bulb life of up to 100,000 hours and operates on CR1220 lithium batteries, which last up to 10x longer than standard lithium batteries. The shatterproof LED diodes and the anodized aluminum casing keep the Clip Lights protected from everyday wear and tear. Has a constant on/off switch and a momentary on/off switch. Clip easily attaches to jackets, purses, backpacks, pockets, key rings and more.
Blue ..... P/N 14-02126 ..... **$4.65**
Red..... P/N 14-02127 ..... **$4.65**
Green ..... P/N 14-02128 ..... **$4.65**

SEE OUR WEBSITE FOR MORE SMITH AND WESSON AVIATION FLASHLIGHTS.

PS

PETZL HEADLAMPS

PETZL HEADLAMPS

In 1972, when Petzl invented the first headlamp, the idea of attaching a light and its battery case to a headband was quite innovative. A hands free light source that can be directed where needed, allows the user to perform almost any activity. Headlamps have now become an important factor in safety and efficiency. Thought innovative use of technology (LED's and current regulators), impact-resistant of headlamps that can be used in many situations...from the simplest tasks to the most demanding work and rescue applications. All headlamps include batteries.

TACTIKKA PLUS/FLIP FILTER RED (E49P)

TacTikka Plus 4 LED Headlamp with red or white light, 3 power settings & flash, alternates easily between white and red light simply by moving the pivoting filter over the reflector. Features: •3 power settings & Flash •Tilt focus •Long battery life up to 110 hours •Lightweight and comfortable to wear: ergonomically designed elastic headband. •Water-resistant for all-weather use •Operates with three AAA-LR03 batteries (supplied) •Weighs 78g •Includes batteries.

P/N 11-05096 .....**$46.75**

TIKKA LED TILT HEAD LAMP

46P2- LED headlamp with red flip down filter, and tilting head. 3 LED array produces long-lasting and even light. Features: •Produces diffuse, proximity lighting. •Red filter for discrete light and preservation of user's night vision. •Flip-down filter makes it easy to switch between red and white light. •Light beam can be easily aimed where desired. •Adjustable and comfortable elastic headband. •Water resistant for all-weather use. •Black lamp and headband. P/N 11-04990 .....**$38.20**

TACTIKKA CAMO BAND RED FLIP UP E46PC

TacTikka LED alternates easily between white and red light simply by moving the pivoting filter over the reflector. Long battery life up to 110 hours. Lightweight and comfortable to wear: ergonomically designed elastic headband. Water-resistant for all-weather use. Elastic headband and lamp head in camouflage color. P/N 11-04988 .....**$39.95**

MYO HEADLAMP 3 BLACK 3 LED 1 HALOGEN E27PN

Features: •4 hour burn time Xenon bulb - 180 hour burn time for the 3 LEDs •Lightweight, compact, and extremely versatile this one light can do it all. •Switch lock mechanism prevents the light from draining your batteries when stored •Tilting head mechanism allows you aim the light where it is needed most •Spare Xenon Halogen bulb included with headlamp. Water resistant - won't short out even if submerged .....P/N 11-05099 **$57.50**

SAGA AVIATION HANDS-FREE LIGHT

Offers three modes of lights. The first mode, a high density beam supplied by 4 ultra brilliant LED so that nothing escapes you. A second lower density beam mode, that utilizes 2 of the 4 LED in order not to dazzle you. Finally, 3 mini red LED that offer you glare free night vision. The Hands-Free can be used with lithium batteries to reduce the weight and allow the use of the flashlight in cold weather. Adjustable elastic headband for added comfort. Hands-Free has 7 different titling positions. Operates on three (3) AAA batteries (batteries included)

P/N 13-09559 .....**$18.95**

FOCUS CONTROL 200 HEADLAMP

Powerful long-life LED headlamp features eGear's focus control Spot-to-Flood beam, three night vision LEDs and a rear battery pack. Modes: CREE White LED (High, Low, Flashing). Night Vision Modes: Blue, Green, Red, Red Flashing. Rear Red Light: On, Flashing Rubberized, soft grip case.

Features: • Revolutionary FOCUS CONTROL LED Illumination - Spot to Flood • CREE LED Bulb up to 185 lumens • 3 Night Vision LEDs: Red, Blue, and Green • Smart switch allows independent control of CREE & 5 mm bulbs • Red Rear Light on Battery Pack for safety indication • Instant Off at any mode • Water Resistant • Lasts up to 300h.

P/N 11-10521.....**$39.95**

MYO 5 HEADLAMP LED/HALOGEN E28P

Features: •4 hour burn time Xenon bulb - up to160 hour burn time for the 5 LEDs which also have three brightness settings •Lightweight, compact, and extremely versatile this one light can do it all. •Switch lock mechanism prevents the light from draining your batteries when stored •Tilting head mechanism allows you aim the light where it is needed most •Spare Xenon Halogen bulb included with headlamp. Water resistant - won't short out even if submerged

P/N 11-04994 .....**$59.25**

MYO HEADLAMP XENON HALOGEN E32P

The Myo is Petzl's simplest headlamp, featuring a super bright Xenon halogen bulb. Its compact design has a tilt features as well as focusable beam. An ideal light for times when you need a bright light with your hands free. Features: •Maximum range 100 m •Supplied with spare 6 V standard bulb • Operates with 4 AA alkaline batteries (included) •LEDs available, providing brilliant white light for over 100,000 hours of continuous burn time - they will never need to be replaced. P/N 11-04992 .....**$59.25**

DUO 5 HEADLAMP PETZL LIGHTS E69

The DUO lamps are ideal for use in wet environments, but are not designed for prolonged submersion (i.e. diving). Features: • Waterproof with dual light source: focusable halogen bulb and an LED module. • Switching on & off, brightness selection, zooming • The DUO lamps allow the light to be optimized (distance, duration) according to your needs. • Simultaneous use of both bulbs is not possible. • Unlocking/locking the bezel P/N 11-04996 .....**$104.95**

ZIPKA PLUS/PUSH BUTTON SWITCH E48P

Ultralight 4-LED headlamp with 3 lighting levels and retractable cord. Retractable cord can be used to attach lamp to the head, the wrist, wrapped around a pipe, etc. Features; •Very lightweight. •Three lighting levels (maximum, optimum, economy) and a blinking mode. •Long light duration up to 150 hours. •Water-resistant for all-weather use.

P/N 11-04989 .....**$37.75**

PILOT LED HEADLAMP

The Pilot LED Headlamp is designed specifically for pilots operating in nighttime conditions, and offers reliable, convenient, hands-free illumination. The triple 10,000+ hr LED bulbs and 50 to 160+ hr battery life (vs. approx. 6 hours for a Mini Mag-Lite) promise reliability far in excess of normal flashlights, and practically eliminate burned-out bulbs and dead batteries. The Pilot is a compact, ultra-lightweight, waterproof, hands-free lighting system thats comfortable to wear (even with headphones), is furnished with a hard clamshell case, and comes with a 3yr warranty. P/N 12-00719 .....**$32.50**

BELT BATTERY PACK MYO 5 E33P

Belt Mounted Battery Pack for MYOSB5. Maximum level: ideal for climbing or moving quickly on technical ground. Economy level: ideal for reading maps, setting up a tent. Operates with 4 AA/LR6 batteries (included) Weight: headlamp (155 g) + batteries (100 g) = 255 g Weight worn on head: 105 g Spare Xenon halogen 6 V bulb included P/N 11-04991 .....**$85.95**

PS

FLASHLIGHT HOLDERS - ARM RESTS

MERCURY CLAMP FLASHLIGHT HOLDER

Astro Arm is the perfect device when you need your flashlight directed precisely while having both hands available to perform a task. These holders are great for aviation, marine, automative, racing, and emergency lifesaving applications. Available in Mercury models for smaller flashlights and Gemini models for largers flashlights. P/N 13-04005 ..... **$19.75**

MERCURY-MAGNETIC FLASHLIGHT HOLDER

Astro Arm is the perfect device when you need your flashlight directed precisely while having both hands available to perform a task. These holders are great for aviation, marine, automative, racing, and emergency lifesaving applications. P/N 13-04006 ..... **$19.75**

GEMINI CLAMP FLASHLIGHT HOLDER

Astro Arm is the perfect device when you need your flashlight directed precisely while having both hands available to perform a task. These holders are great for aviation, marine, automative, racing, and emergency lifesaving applications. Available in Mercury models for smaller flashlights and Gemini models for largers flashlights. P/N 13-04007 ..... **$29.95**

GEMINI MAGNETIC FLASHLIGHT HOLDER

Astro Arm is the perfect device when you need your flashlight directed precisely while having both hands available to perform a task. These holders are great for aviation, marine, automative, racing, and emergency lifesaving applications. Available in Mercury models for smaller flashlights and Gemini models for largers flashlights.

P/N 13-04008..... **$29.95**

GUPPIE MULTI-TOOL

The adjustable wrench jaw opens to 1/2" so you can use it for all kinds of light repair and assembly jobs. Thanks to the carabiner gate, the Guppie is easy to carry on a belt loop, D-ring, pack or rope. (But it is not a weight-bearing carabiner.) The high-carbon stainless steel blade with a Razor-Sharp edge can be opened and closed with one hand using the blade slot. The removable bit carrier is also a high-intensity LED light. It has two strong magnets to hold it securely to the Guppie's left side. The stainless steel clip will hold the Guppie in your pocket or on gear, which gives a lot of versatility. One more trick: The Guppie carabiner detent will open bottle caps and metal jar lids. Specifications: Blade Length: 2.0" (5.1 cm) Blade Steel: 3Cr13, 52-55 HRC Handle Length: 3.5" (8.9 cm) Tool Weight: 4.1 oz. (116 g) Bit Carrier Weight: 1.2 oz. (34 g) Batteries: Two CR327 3V Lithium

P/N 13-07358..... **$38.95**

PS

SIDESTICK CONTROL ARM RESTS

The side stick control arm rests will steady the hand, wich improves flying and reduces wrist and arm fatigue. The arm rests were designed by an orthopedic specialist to reduce wrist and hand carpel tunnel syndrome. They can also be used for throttle rests. Color: Black. ABS plastic. Furnished as right/left set. P/N 13-03265 ..... **$25.85**

COCKPIT COMPANION ORGANIZERS

The Cockpit Companion provides a convenient organizer for the loose items pilots shuffle in the cockpit. It is easily installed with Velcro between the front seats and features clean out windows at bottom of the storage areas. Holds fire extinguisher, charts, books, transceiver, headsets, glasses, wallet, fuel strainer, flashlight, pens, highlighters, and more. Attractive and durable, the Cockpit Companion is built from top-grade smoked acrylic. Made in USA.

STYLE #172 - Fits most Cessna 172's plus any other aircraft with this available space.Top portion dimensions: 22" Long (plus 4" headset post) 8" Tall (12" total w/bottom), 3" Wide Bottom extinguisher dimension: 22" Long 4" Tall (12" total w/top), 4-1/4" Wide. Features removable pencil "divider" for easy cleaning. All are outside dimensions!

P/N 13-02710 ..... **$304.95**

STYLE #182 - Fits most 182's, 206's, 210's & other aircraft with this available space. Dimensions: 18" long plus (4" headset post) 12" Tall 4-1/4" Wide All are outside dimensions! Be sure to measure your available space prior to ordering!

P/N 13-02715 ..... **$299.00**

CIGPEN

Old Ashtray CigPen

CIGPEN HOLDER - CigPen installation is as easy as 123. Pull the nasty ashtray out, peel the double stick tape, insert and press in CigPen. CigPen was designed to hold two standard pencils or pens along with a Mini Mag Lite AAA. For a very low cost, you can easily turn your existing ashtray into a useful device. Fits C-150, 172, 182 Cardinal.

DOOR LOCK HANDLE - When you order the CigPen, you will also receive the Cessna 150 door lock. The door lock is made from ABS Plastic. It is engraved with lock, un-lock, and indicating arrows. Fits C-150 airplanes. P/N 13-06913 ..... **$18.75**

MAP, CHECKLIST & LOG BOOK HOLDERS

These holders come in three sizes to store your maps, checklists and log books. They are thermoformed from ABS plastic, and come in either black or gray.

Description	Size	Color	Part No.	Price
Map/Checklist	9"x10"x 5/8"	Black	13-03085	**$27.50**
Aircraft Log	4-1/2"x7"x1/4"	Black	13-03086	**$15.95**
Engine Log	6-1/2"x7"x1/2"	Black	13-03087	**$15.95**
Map/Checklist	9"x10"x 5/8"	Gray	13-03088	**$27.50**
Aircraft Log	4-1/2"x7"x1/4"	Gray	13-03089	**$17.95**
Engine Log	6-1/2"x7"x1/2"	Gray	13-03090	**$15.80**

UNCLE MIKES SEAT ORGANIZER

Designed to keep paperwork, clipboards, books, notepads, radios, phones, water bottles, thermos bottles, pens and pencils in reach and in place and not sliding around the cabin or rolling around on the floor, the sturdy, water repellent 1200 Denier nylon fabric Seat Organizer is loaded with compartments and pouches and secures to the passenger seat headrest with a dual purpose strap designed to be used as a shoulder strap when outside of the aircraft or vehicle. P/N 13-04034 ..... **$34.85**

PLANE POCKETS

Nine pockets protect and organize your cockpit and keep your equipment like new. Three large pockets with drawstrings hold POH Charts, Approach Plates, Sectionals. An additional three more pockets are designed to hold your handheld radio, cameras, manuals, batteries, oxygen mask, and many other items. Top pockets will hold paper, sunglasses, water, flashlights and cables. Lightweight, rip-stop nylon, easy to install. Your headrest must be able to be removed to install pockets. Must supply number of inches between the centers of headrest post. With Headrest ... P/N 13-04160 ... **$72.75**
W/O Headrest ... P/N 13-04161 ... **$67.50**

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AIRCRAFT SPRUCE EAST
PEACHTREE CITY, GA • (877) 477-7823
Prices Subject to Change Without Notice

LEATHERMAN POCKET TOOLS

LEATHERMAN SQUIRT PS4

The Leatherman Squirt PS4 is the first miniature pliers multi-tool tough enough to be a Leatherman. Now the Squirt also sports a scissors, making it even more useful than before. The key ring attachment offers the flexibility to place it on your key chain, backpack or even a zipper. Just two ounces, it's light enough to take anywhere. Fits nicely on a key ring. Color: Blue.Weight: 1.9 oz Length (Closed): 2.25 inches / 5.72 cm (Closed) Material: Stainless Steel with anodized aluminum scales

Features: • Needlenose Pliers • Regular Pliers • Scissors • 420HC Knife • Wire Cutters • Wood/Metal File • Medium Screwdriver • Flat/Phillips Screwdriver • Bottle Opener • Key Ring Attachment

LEATHERMAN SQUIRT ES4

The E4 sets you up with 20GA, 18GA, 16GA, 14GA and 12GA wire strippers and electrical wire cutters. The gripping edges on the ES4's spring-action pliers help you get a firm grasp on fuses, small cables, and many hard-to-reach items. P/N 13-09289.....**$25.75**

JUICE® S2

Features: • Needlenose Pliers • Straight Knife • Wire Cutters • Hard-Wire Cutters • Extra-Small Screwdriver • Small Screwdriver • Med/Lrg Screwdriver • Phillips Screwdriver • Lanyard Attachment • Can/Bottle Opener. Length: 3.25"/ 8.25cm closed, Weight: 4.3 ounces / 122 grams, Materials: Stainless steel with anodized aluminum scales. Color: Orange

PN 13-05559.....**$45.95**

JUICE® C2

Features: • Needlenose Pliers • Straight Knife • Wire Cutters • Hard-Wire Cutters • Extra-Small Screwdriver • Small Screwdriver • Med/Lrg Screwdriver • Phillips Screwdriver • Lanyard Attachment • Can/Bottle Opener • Scissors. Length: 3.25"/ 8.5cm closed, Weight: 4.3 ounces / 122 grams, Materials: Stainless steel with anodized aluminum scales. Color: Red PN 13-05560.....**$45.95**

JUICE® XE6

Features: • Needlenose Pliers • Straight Knife • Wire Cutters • Hard-Wire Cutters • Extra-Small Screwdriver • Small Screwdriver • Med/Lrg Screwdriver • Phillips Screwdriver • Lanyard Attachment • Can/Bottle Opener • Corkscrew with Assist • Scissors • Saw • Awl • Serrated Knife • Diamond File. Length: 3.2"/ 8.25cm closed, Weight: 6.8 ounces / 190 grams, Materials: Stainless steel with anodized aluminum scales. Color: Purple PN 13-05562.....**$69.95**

E33B EXPANSE KNIFE

This Leatheman knife offers everything you'd expect from a traditional lock back knife and 2 screwdrivers. Stainless-steel and nylon handle protects blade. 154CM steel straight-edge blade provides years of dependable use. 1-hand Blade Launcher™ with thumb stud easily opens and locks blade; lock release on the outside of handle disengages blade safely. Features Phillips and straight screwdrivers. Convenient carabiner/bottle cap lifter and removable pocket clip complete the details P/N 13-07072.....**$59.85**

LEATHERMAN SKELETOOL, CX

Needlenose Pliers. Regular Pliers. Wire Cutters. Hard-wire Cutters. Bit Storage in Handle. 420HC Stainless Steel Blade. Universal Bit Driver. Carabiner/Bottle Opener. Removable Pocket Clip. Included Bits: Phillips #1 and #2. Screwdriver 3/16" and 1/4". Length: 4 in. / 10 cm closed. Weight: 5 ounces / 142 grams. Materials: 420HC Stainless Steel, Hard-Anodized Aluminum Handle Insert

Skeletool Cx.....P/N 13-07070 .....**$89.85**
Skeletool Cx with sheath.....P/N 13-07071 .....**$89.85**

LEATHERMAN SKELETOOL

420HC Stainless Steel Clip Point Combo Straight/Serrated Knife. Needlenose Pliers. Regular Pliers. Wire Cutters. Hard-wire Cutters. Large Bit Driver. Bottle Opener. Carabiner Clip. INCLUDED BITS: Phillips #1 and #2 Bit, Screwdriver 3/16" and 1/4" Bit. Stainless Steel with 6061-T6 Aluminum Handle Insert. Stainless Steel body. Outside-accessible Blade for One-handed Opening. All Locking Blades and Tools. Removable Pocket Clip. Nylon Sheath Sold Separately. 25-year Warranty. 4 in l 10 cm (closed). 5.0 oz l 142 g. 2.6 in l 6.60 cm (blade length)

Skeletool.....P/N 13-07068 .....**$49.75**
Skeletool with sheath.....P/N 13-07069 .....**$51.85**

CRUNCH TOOL

Locking Pliers, Wire Cutters, Hard-Wire Cutters, Serrated Knife, Metal/Wood File, Ruler (Inch/Metric), Bottle Opener, Small Screwdriver, Medium Screwdriver, Large Screwdriver, Phillips Screwdriver (#1/#2), Hex Bit Driver, Wire Stripper, Lanyard Attachmen P/N 13-02727 .....**$98.00**

WAVE TOOL

Needlenose Pliers, Regular Pliers, Wire Cutters, Hard-Wire Cutters, Clip-Point Knife, Serrated Knife, Saw, Scissors, Wood/Metal File, Diamond-Coated File, Large Bit Driver, Small Bit Driver, Large Screwdriver, Ruler (8 inch/19 cm), Bottle/Can Opener, Wire Stripper, Lanyard Attachment, Two Double-Ended Bit P/N 13-03289 .....**$68.50**

BLAST

Needlenose Pliers, Regular Pliers, Wire Cutters, Hard-Wire Cutters, Clip-Point Knife, Wood/Metal File Saw, Scissors, Large Screwdriver Small Screwdriver, Phillips Screwdriver Small Bit Driver, Ruler (8 inch/19 cm) Bottle/Can Opener, Wire Stripper Lanyard Attachment One Double-Ended Bit P/N 13-03286 .....**$49.85**

SIDEKICK

Stainless Steel Body, Leather Sleeve, Spring-action Needlenose Pliers, Spring-action Regular Pliers, Spring-action Wire Cutters, 420HC Combo Knife, 420HC Serrated Knife, Saw, Wood/Metal File, Small Screwdriver, Medium Screwdriver, Phillips Screwdriver, Ruler (1 in / 2.54 cm), Bottle Opener, Can Opener, Wire Stripper, Removable Pocket Clip, Lanyard Ring, Carabiner Bottle Opener Accessory

P/N 13-11703 .....**$32.75**

FUSE BLACK OXIDE

Black Oxide handles with Zytel® Comfort-grip Inserts. Stainless Steel Body. All-locking Blades and Tools. Lanyard Ring. Leather or Nylon Sheath. 25-year Warranty. 420HC Clip Point Knife. Needlenose Pliers. Regular Pliers. Wire Cutters. Hard-wire Cutters. Wire Stripper. Small Screwdriver. Large Screwdriver. Phillips Screwdriver. Scissors. Bottle Opener. Can Opener. 8 in / 19 cm Ruler. 4 in / 10 cm (closed)6 oz / 170 g. P/N 13-07083 .....**$39.85**

KICK BLACK OXIDE

Needlenose Pliers, Regular Pliers, Wire Cutters, Hard-Wire Cutters, Clip-Point Knife, Large Screwdriver, Small Screwdriver, Phillips Screwdriver Ruler (8 inch/19 cm), Bottle/Can Opener, Wire Stripper, Lanyard Attachment

Black Oxide.....P/N 13-03288 .....**$31.59**

SUPER TOOL 300

Stainless Steel 420HC Handles, All locking blades and tools, Comfort-sculpted Handles w/ Cutouts for Access with Gloves On, 420HC Clip Point Knife with Straight Edge, 420HC Sheepsfoot Serrated Knife, Needlenose Pliers, Regular Pliers, 154CM Removable Wire Cutters, 154CM Removable Hard-wire Cutters, Stranded-wire Cutters, Wire Stripper, Electrical Crimper, 5/16" Screwdriver, 7/32" Screwdriver, 1/8" Screwdriver, Phillips Screwdriver, Wood/Metal File, Saw, Bottle Opener, Can Opener, Ruler (9 inch/22 cm), Awl with Thread Loop

P/N 13-11704 .....**$59.50**

CHARGE TTI

The Charge TTi features a cutting hook, scissors, outside-accessible blades, bit drivers, crimpers and more. But we had to give the TTi its own claim to fame. That's where the comfort-sculpted titanium handles and the S30V® stainless steel clip-point knife come in. Grab a hold of one today and you'll quickly see why the Charge models are the pinnacle of our multi-tool collection. PN 13-04514 .....**$115.95**

LEATHERMAN MICRA

Spring-action scissors and personal care features that fit on your key chain are just part of what makes the Micra truly unique. Features: Scissors, Clip-Point Knife, Tweezers, Nail File / Cleaner, Flat Phillips, Screwdriver, Extra Small Screwdriver, Medium Screwdriver, Bottle Opener, Ruler (Inch / Metric), Lanyard Attachment, Length: 2.5 in. / 6.35 cm closed, Weight: 1.75 ounces / 50 grams, Materials: 100% stainless steel (Optimum grade hardness for each tool/blade). Color: Blue

P/N 13-07079.....**$22.75**

AIRCRAFT SPRUCE POCKET TOOL

Stainless steel with anodized aluminum handles. Includes screwdrivers, bottle opener, needle nose pliers and more Every pocket tool comes with a FREE Nylon Holder with belt loop. 2-5/8" x 1-1/4". P/N 13-09855.....**$5.85**

PS

VISIT OUR WEBSITE TO VIEW OUR COMPLETE LISTING FOR LEATHERMAN TOOLS.

PILOT WATCHES

T5 TORGOEN WATCH

24 hour additional hand for dual time military format. High Grade Stainless Steel case. Screwed Down Stainless Steel Back. K1 Super Hardened Mineral Crystal. Italian Leather Strap with Heavy Duty Stainless Steel Buckle. Swiss Quartz with 24 hours Dual Time hand Movement by Ronda. Water Resistant for 10 ATM (330 feet). Non Radioactive long lasting Luminescence Hands and Indexes Weight - 3.2 oz. (91 gm) Dimensions: Case diameter (w/o crowns and pushers) – 42mm (1 21/32") Case Thickness – 14.6mm (9/16") Crystal Diameter – 38mm (1 1/2")

P/N 13-02507 ..... **$266.95**

TORGOEN T06 SERIES WATCHES

TORGOEN WATCH - T06101 - 24 hour additional hand for dual time military format. High Grade Stainless Steel case. Screwed Down Stainless Steel Back. Mineral Crystal. Italian Leather Strap with Heavy Duty Stainless Steel Buckle. Swiss Quartz with 24 hours Dual Time hand Movement by Ronda. Water Resistant for 10 ATM (330 feet). Non Radioactive long lasting Luminescence Dial. Weight - 3.2 oz. (91 gm) Dimensions: Case diameter (w/o crowns and pushers) – 42mm (1 21/32"). Case Thickness – 14.6mm (9/16"). Crystal Diameter – 38mm (1 1/2")

P/N 13-03489 ..... **$275.00**

TORGOEN T10 SERIES WATCHES

Swiss quartz 3 hand calendar movement. Screw down stainless steel back. Solid high grade stainless steel case Solid links high grade stainless steel braelet or Italian leather strap. Mineral crystal. Italian leather strap, Stainless Steel, or Polyurethane Band. Water Resistant for 10 ATM (300 feet). Non radioactive long lasting luminescence dial Dimensions: Case diameter – 45mm Case thickness – 14mm Crystal diameter – 40mm

Brown Leather Band / Brown Face..... P/N 13-07151 ..... **$215.00**
Stainless Steel Band / Black Face..... P/N 13-07152 ..... **$259.00**
Stainless Steel Band / White Face ..... P/N 13-07153 ..... **$325.00**
Polyurethane Band / Black Face ..... P/N 13-07154 ..... **$215.00**

TORGOEN T16 SERIES WATCHES

Swiss quartz chronograph movement. Screw down stainless steel back. Solid high grade stainless steel case. Mineral crystal. Italian leather strap, Stainless Steel, or Polyurethane Band. Water Resistant for 10 ATM (300 feet). Non radioactive long lasting luminescence dial. Dimensions: Case diameter – 45mm Case thickness – 14mm Crystal diameter – 40mm

Black Leather Band / Black Face ..... P/N 13-07167 ..... **$365.00**
Brown Leather Band / Tan Face..... P/N 13-07169 ..... **$345.00**
Stainless Steel Band / Black Face..... P/N 13-07170 ..... **$450.00**
Stainless Steel Band / Tan Face ..... P/N 13-07171 ..... **$450.00**
Polyurethane Band / Black Face ..... P/N 13-07172 ..... **$425.00**
Polyurethane Band / Carbon Fiber Face..... P/N 13-07173 ..... **$395.00**

TORGOEN T15 WATCHES

24 hour additional hand for dual time military format. High Grade Stainless Steel case. Screwed Down Stainless Steel Back. K1 Super Hardened Mineral Crystal. Italian Leather Strap with Heavy Duty Stainless Steel Buckle, or Solid Stainless Steel 5 Link Bracelet. Swiss Quartz with 24 hours Dual Time hand Movement by Ronda. Water Resistant for 10 ATM (330 feet). Non Radioactive long lasting Luminescence Hands and Indexes. Dimensions: Width w/o crown – 33mm Crystal Diameter – 27mm Thickness – 10mm Weight w/ strap – 1.8 oz. Weight w/ bracelet – 4.4 oz.

Brown Leather Band / Brown Face..... P/N 13-07163 ..... **$285.00**
Black Leather Band / White Face ..... P/N 13-07164 ..... **$239.00**
Black Leather Band / Black Face ..... P/N 13-07165 ..... **$239.00**
Stainless Steel Band / Black Face..... P/N 13-07166 ..... **$239.00**

TORGOEN T23 SERIES WATCHES

GMT Function. 20 ATM (200 Meters). 45 MM Case size. Uni-Directional Rotating Bezel Screw down crown. Extra long polyrethane straps with strainless steel inserts. Swiss movement.

Blue Band / Blue/Orange Face..... P/N 13-07177 ..... **$450.00**
Black Band / Black Face..... P/N 13-07179 ..... **$450.00**
Brown Band / Brown Face..... P/N 13-07176 ..... **$450.00**
Black Band / White Face ..... P/N 13-07178 ..... **$450.00**
Olive Band / Olive Face..... P/N 13-07180 ..... **$450.00**
Black Band / Black/Silver Face..... P/N 13-07175 ..... **$450.00**

TORGOEN T08 SERIES WATCHES

TORGOEN T8 WATCH T08101 - 3 time zones - 12 hour format. High Grade Stainless Steel case. Screwed Down Stainless Steel Back. Carbon Fiber dial. Mineral K1 hardened crystal. Italian leather strap with White Thread. Swiss Quartz with 12 hours Dual Time hand Movement by Ronda.. Water Resistant for 10 ATM (330 feet). Non Radioactive long lasting Luminescence Dial. Dimensions: Case diameter (w/o crowns and pushers) – 45.5mm (1 3/4") Case Thickness – 13.5mm (1/2") Crystal Diameter – 41mm (1 5/8")

P/N 13-07144 ..... **$450.00**

TORGOEN T8 WATCH T08102 - 3 time zones - 12 hour format. High Grade Stainless Steel case. Screwed Down Stainless Steel Back. Carbon Fiber dial. Mineral K1 hardened crystal. Italian leather strap with Yellow Thread. Swiss Quartz with 12 hours Dual Time hand Movement by Ronda. Water Resistant for 10 ATM (330 feet). Non Radioactive long lasting Luminescence Dial. Dimensions: Case diameter (w/o crowns and pushers) – 45.5mm (1 3/4") Case Thickness – 13.5mm (1/2") Crystal Diameter – 41mm (1 5/8")

P/N 13-07145 ..... **$450.00**

T7 TORGOEN FLIGHT COMPUTER WATCHES

P/N 13-05045

Torgoen's line of Flight Computer Watches can be used to calculate time, distance and speed equations. It also can perform a variety of calculations from currency conversions to multiplication and division problems. With the watch you can calculate any conversion of linear nature with a constant ratio such as ounces to grams, kilograms to pounds, miles to kilometers etc.

P/N 13-05048

Description	Part No.	Price
Stainless Steel Black Dial, Band is Black PU, Water Resistance100 meters	13-05044	**$450.00**
Stainless Steel Black Dial, Stainless Steel Band, Water Resistance100 meters	13-05047	**$565.00**
Stainless Steel Yellow Dial, Band is Black PU, Water Resistance100 meters	13-05045	**$450.00**
Stainless Steel Yellow Dial, Stainless Steel Band, Water Resistance100 meters	13-05048	**$565.00**
Stainless Steel Green Dial, Band is Black PU, Water Resistance100 meters	13-05046	**$515.00**

T8 TORGOEN ZULU TIME WATCHES

P/N 13-05051

- 3 time zones - 12 hour format
- High Grade Stainless Steel case
- Screwed Down Stainless Steel Back
- Mineral K1 hardened crystal
- Solid Links Stainless Steel Bracelet or PU Strap
- Swiss Quartz with 12 hours Dual Time hand Movement by Ronda.
- Water Resistant for 10 ATM (330 feet).
- Non Radioactive long lasting Luminescence Dial
- Weight - 7.4 oz. (210 gm)

P/N 13-05050

Description	Part No.	Price
Stainless Steel Black Dial, Band is Black PU, Water Resistance100 meters	13-05028	**$395.00**
Stainless Steel Yellow Dial, Band is Black PU, Water Resistance100 meters	13-05051	**$395.00**
Stainless Steel Yellow Dial, Stainless Steel Band, Water Resistance100 meters	13-05050	**$399.00**

VISIT OUR WEBSITE FOR OUR COMPLETE TORGOEN PRODUCT LISTING.

PS

PILOT WATCHES

SUUNTO WATCHES

Suunto watches are world-renowned for their high quality construction and design. The Suuno brand name means precision and durability - so whatever you use your Suunto watch for, you'll have the peace of mind that comes with wearing an accurate instrument that you can trust under any circumstances. The timeless design of Suunto's watches make them wearable in any casual situation, and because of their moderate size, they are perfectly suitable for both men and woman.

SUUNTO VECTOR WATCHES

An instrument that you cannot leave home when planning any kind of outdoor activity. Features: * Altimeter: Altitude, vertical speed, altitude alarm, logbook, vertical difference measurement, automatic 24h altitude memory, temperature compensation. Logbook capacity 8 kB, recording intervals 20s, 1min, 10min and 60min, with respective times 10h, 12h, 7 days and 10 days * Barometer: Sea level pressure, absolute pressure, pressure difference, pressure trend indicator, 4-day barometric memory, temperature * Compass: Cardinal bearing, North-South arrow, bearing tracking, declination setting * Chronograph: Stopwatch, countdown timer, calendar, three daily alarms * Water resistant to 30 m (100 ft) * Temperature resolution 1°C/1°F * Weather memory 4 days * Temperature range -20°C - +60°C/-5°F - +140°F * Weight 54 g * Operating temperature -20°C - +60°C/-5°F - +140°F * Water resistance 30m/100ft * Storage temperature -30°C - +60°C/-22°F - +140°F

Black/Black ..... P/N 10-19325 ..... **$199.00**
X-Black/Black with Negative Face .... P/N 13-04420 ..... **$199.00**

SUUNTO X-LANDER WATCHES

An accurate altimeter, a complete barometer, a precise electronic compass and a multi-functional sports watch in a one elegant package. Extremely user-friendly and has easy-to-use logic, a large display with big numerals and an electro-luminescent backlight for dimly lit conditions. Non-allergenic aluminum casing, carbon fiber back, a durable mineral crystal glass, and a water resistant fabrik strap

Stainless Case and Negative Face ..... P/N 13-06558 ..... **$299.00**
Stainless Case and Military Black Face ..... P/N 13-06559 ..... **$350.00**

BLUE ANGELS SKYHAWK AT

* Atomic Timekeeping with Radio-Controlled Accuracy * World Time in 43 Cities * 2 Alarms * 99 Minute Countdown Timer * Perpetual Calendar and more.

Stainless Steel band ..... P/N 13-06459 ..... **$379.95**
Blue Polyurethane Band .... P/N 13-06460 ..... **$375.95**
Titanium band ..... P/N 13-06461 ..... **$447.95**

P/N 13-06461

CITIZEN SKYHAWK A-T WATCHES

* Atomic Timekeeping with Radio-Controlled Accuracy * World Time in 43 Cities * 99 Minute Countdown Timer * Perpetual Calendar * Digital Display Light * Greenwich Mean Time Display * Rotating Slide Rule Bezel * Power Reserve Indicator

Stainless Steel Band ..... P/N 13-05581 .... **$368.00**
SS Black Ion Plating ..... P/N 13-06458 .... **$379.95**
Polyurethane Band Blk..... P/N 13-05587 .... **$439.95**
Titanium Band ..... P/N 13-05588 .... **$497.95**

P/N 13-05587

SUUNTO OBSERVER WATCHES

Features: •Altimeter: Altitude, vertical speed, logbook function with quick-access button, memory capacity 99 logs, history memory, alti/baro lock, temperature compensation •Barometer: Sea level pressure, absolute pressure, weather trend indicator, temperature, automatic 4-day barometric memory, alti/baro lock •Compass: Bearing, cardinal bearing, bearing tracking, •North-South arrow, declination setting •Chronograph: Calendar, 3 alarms, dual time, stopwatch with 99 split/lap times Material options: Suunto Observer Sr - stainless steel housing with elastic strap (80 g), Suunto Observer St - stainless steel housing with stainless steel elastomer strap (100 g), Suunto Observer Tt - top-of the-line model - titanium housing with titanium elastomer strap (75 g), Suunto Observer Black - stainless steel case with stainless steel strap, and Suunto Observer St Black - stainless steel case with elastomer straps

Observer TT ..... P/N 13-06552 ..... **$500.00**
Observer SR..... P/N 13-06554 ..... **$299.00**

SUUNTO CORE WATCHES

Suunto Core keeps you informed with an accurate altimeter, barometer, digital thermometer, Weather Trend Indicator and digital compass. The pressure gauge operates in four distinct modes, including an automatic setting that senses your movement or lack thereof, switching between altimeter and barometer accordingly. The compass features a rotating bezel for traditional use, or a one-touch function that allows you to sight, lock and follow a bearing. Daily functions include dual time, date, alarm, sports chronograph and predicted times for sunrise and sunset. *** Standard strap style is pictured.**

Core Standard Strap Alum./Brown Leather..... P/N 13-06599 ..... **$500.00**

SUNNTO ACCESSORIES

Suunto Battery Kit SS0S4700000 ..... P/N SUNBATT **$6.95**
Sunnto Bike Mount ..... P/N SUN51BIKE **$9.85**
Sunnto Core Leather Black Strap ..... P/N 13-06614 ..... **$65.85**
Sunnto Core Flat Black Strap..... P/N 13-06615 ..... **$45.85**
Sunnto Core Flat Orange Strap ..... P/N 13-06616 ..... **$45.85**

VISIT OUR WEBSITE FOR OUR COMPLETE SUUNTO PRODUCT LISTING.

CITIZEN NIGHTHAWK WATCHES

• Pilot's Slide Rule Dial Ring Operated by Crown at 8 O'Clock Position • Large Luminous Markers for Easy Readability • Non-Reflective Crystal • Dual Time

Stainless Steel Band ..... P/N 13-11780 ..... **$236.95**
Black Steel ..... P/N 13-11779 ..... **$250.95**

P/N 13-11780

ABINGDON WATCHES

P/N 13-11392

P/N 13-11394

P/N 13-11393

P/N 13-11396

P/N 13-11395

P/N 13-11398

P/N 13-11399

P/N 13-11397

In this collection, the function of a rotating bezel slide rule comes together with the classic analog face to present a timeless purity of curves and lines. An elegant chronograph.

Description	Part No.	Price
Jackie Dreamy White Watch	13-11392	**$413.00**
Jackie Sunset Pink Watch	13-11394	**$413.00**
Jackie Seaplane Green Watch	13-11393	**$413.00**
Amelia Cloud White Watch	13-11396	**$269.00**
Amelia Runway Black Watch	13-11395	**$269.00**
Elise Anthenian Silver Watch	13-11398	**$296.00**
Elise Egyptian Gold Watch	13-11399	**$359.00**
Elise Tahitian Two Tone Watch	13-11397	**$314.00**

PS

PILOT WATCHES

VIBRALITE3 VIBRATION WATCHES

Great for Private and Confidential Reminders! Has auto-reset countdown timer. The vibration on your wrist from VibraLITE3 will remind you to do any important thing without annoying others. What's really great is that you don't have to hear the alarm to know that it's signalling you.

This watch is especially nice for pilots, students (taking exams), and of course the deaf and hard of hearing. Since the watch also features an Auto Reload Countdown Timer, it can be the ideal answer for those who need reminding of times to take medicine, scheduled daily activities and more.

With stainless steel band .....P/N 13-02541 ..... **$74.95**
With leather band .....P/N 13-02542 ..... **$62.95**

VIBRALITE 8 VIBRATION WATCHES

8 MODEL VL8A-BK - Black Polyurethane Band .
EIGHT VIBRATION ALARMS for variable reminders up to 8 alarms can be preset
COUNTDOWN TIMER with Auto Repeat Feature for interval reminders. set when wanting the same alarm time to repeat automatically each time the countdown timer reaches zero.
USER ALARM OPTIONS: Vibration, Sound, and Hourly Alert ON or OFF choices are set and Secure in separate Option Mode.
EL LIGHT: turns on by a twist of the wrist or the push of a button. Light stays on while any button is pushed, for settings in the dark..
3 TIME ZONES can be set for reference
STOPWATCH counts up to 23 hours, 59 minutes, and 59.99 seconds
12 OR 24 Hour CLOCK SELECTION
• One Year Warranty.....P/N 13-04892 ..... **$75.00**

MODEL VL8SL-BK - Genuine black leather band .
EIGHT VIBRATION ALARMS for variable reminders up to 8 alarms can be preset
COUNTDOWN TIMER with Auto Repeat Feature for interval reminders. set when wanting the same alarm time to repeat automatically each time the countdown timer reaches zero.
USER ALARM OPTIONS: Vibration, Sound, and Hourly Alert ON or OFF choices are set and Secure in separate Option Mode.
EL LIGHT: turns on by a twist of the wrist or the push of a button. Light stays on while any button is pushed, for settings in the dark..
3 TIME ZONES can be set for reference
STOPWATCH counts up to 23 hours, 59 minutes, and 59.99 seconds
12 OR 24 Hour CLOCK SELECTION.....P/N 13-04947 ..... **$129.95**

MODEL VL8SS-GT - Stainless Steel Band with genuine gold trim.
EIGHT VIBRATION ALARMS for variable reminders up to 8 alarms can be preset
COUNTDOWN TIMER with Auto Repeat Feature for interval reminders. set when wanting the same alarm time to repeat automatically each time the countdown timer reaches zero.
USER ALARM OPTIONS: Vibration, Sound, and Hourly Alert ON or OFF choices are set and Secure in separate Option Mode.
EL LIGHT: turns on by a twist of the wrist or the push of a button. Light stays on while any button is pushed, for settings in the dark..
LARGE DIGITS ON THE DISPLAY for easy viewing.
3 TIME ZONES can be set for reference
STOPWATCH counts up to 23 hours, 59 minutes, and 59.99 seconds
12 OR 24 Hour CLOCK SELECTION P/N 13-04948 ..... **$169.95**

REVUE THOMMEN WATCHES

At the beginning of the 1920s, the company Revue Thommen started manufacturing aircraft instruments. It is for this reason that it has more familiar with special needs of pilots than any other watch manufacturer. The Airspeed Classic self-winding wrist-watches and chronographs were inspired by the instrument panels of commercial and military aircraft that are equipped with Revue Thommen precision instruments.

REVUE THOMMEN SWISS WATCH X-L - Airspeed Line Xlarge. CalibDD 2824-A2 Chronograph (automatic watch with date indication). All stainless steel case, screw-in steel case back, anti-reflective double-faced sapphire crystal, water-resistant to 50m/160 feet. Assorted dials. Diameter 41mm.
PN 13-05160 ..... **$2,390.00**

AIRCRAFT SPRUCE WALL CLOCK

Aircraft Spruce wall clock with a black frame. The quality quartz movement is made in the USA and comes with a lifetime guarantee. Imprint size: approximately 4-1/2" diameter. Attractive presentation box included. ..... P/N 13-06209..... **$7.85**

SKAGEN DUAL TIME ZONE WATCH

Masterfully crafted by Skagen. Dual-time movement is remarkable on this leather strap timepiece in black and silver. Superior functionality and technology make this watch superior for any collection.

Black Leather band / Black Dial
P/N 13-09614 ..**$135.00**
Silver Band / Chrome Dial
P/N 13-09613 ..**$135.00**

SKAGEN DUAL TIME WATCH

Masterfully crafted by Skagen. Keep in time - coast to coast - with this innovative dual-time design. The signature Skagen mesh band connects to modern time movement housed in a matte silver dial. Silver Band.
P/N 13-09612 ..**$145.00**

SKAGEN MULTIFUNCTION WATCH

Masterfully crafted by Skagen. The Titanium case houses a genuine carbon fiber dial in black. Modern meets function in this edgy design, with a multi-function movement and luminous accented hands and hour markers. The streamlined mesh design adds uniqueness to the wearer.

Black Band / Black Dial
P/N 13-09619 .....**$185.00**
Black Band / Gold Case
P/N 13-09620 .....**$185.00**
Mesh Band / Grey Case
P/N 13-09621 .....**$185.00**

SKAGEN DUAL TIME WATCH

Masterfully crafted by Skagen. Keep in time with this innovative dual-time design. The signature Skagen mesh band connects to modern time movement housed in a beautiful dial.

Mesh Band / Black Dial
P/N 13-09610 .....**$195.00**
Mesh Band / Silver Dial
P/N 13-09611 .....**$195.00**

PS

SUNGLASSES

RAY-BAN AVIATION SUNGLASSES

Ray-Ban is the leading brand in the high quality sunwear market segment and by far the best-selling sunwear brand in the world. It is an all American Brand created 1937 with the Aviator style, developed fpr use by the pilots of the U.S Air Force.

Style	Frame	Lens Color	PN	Price
RB 3025	ARISTA	G-15 XLT 62mm	13-04984	**$99.95**
RB 3025	ARISTA	Light Polarized Natural Green 1,8mm	13-04985	**$138.95**
RB 3025	BLACK	G-15 XLT 62mm	13-04986	**$101.95**
RB 3025	BLACK	Light Polarized Natural Green 1,8mm	13-04987	**$130.95**
RB 3025	GUNMETAL	Light Polarized Natural Green 1,8mm	13-04989	**$144.95**
RB 3025	ARISTA	G-15 XLT 58mm	13-04990	**$104.95**
RB 3025	BLACK	G-15 XLT 58mm	13-04991	**$106.95**

G-15XLT is a Grey Color

Style	Frame	Lens Color	PN	Price
RB 3026	BLACK	G-15 XLT	13-04992	**$106.95**
RB 3026	ARISTA	G-15 XLT	13-04993	**$106.95**

G-15XLT is a Grey Color

Style	Frame	Lens Color	PN	Price
RB 3030	ARISTA	G-15 XLT	13-04994	**$106.95**
RB 3030	BLACK	G-15 XLT	13-04995	**$106.95**

G-15XLT is a Grey Color

RANDOLPH ENGINEERING

Randolph Engineering has been a leading supplier of military sunglasses to the U.S.Armed Forces since 1982. These sunglasses are the choice of America's Top Gun pilots and NASA astronauts. They meet demanding U.S. military specifications, provide superior glare protection and UV absorption and can be converted to prescription lenses. All of the sunglasses below feature 23K gold plated, hand polished frames and come with a crush resistant case.

AVIATOR – Standard issue for military pilots worldwide. (MIL.SPEC. 25948). These lenses sharpen detail and show colors evenly, making them ideal for flying. Bayonet temples provide optimum fit for use with a headset or helmet.

Size	Lens	Part No.	Price
52mm	Tan	13-05775	**$109.00**
52mm	Gray	13-00679	**$109.00**
52mm	Grey/Green	13-00680	**$109.00**
55mm	Gray	13-00681	**$109.00**
55mm	Tan	13-00682	**$109.00**
55mm	Gray/Green	13-00683	**$109.00**
58mm	Gray	13-00684	**$109.00**
58mm	Tan	13-00685	**$109.00**

CONCORDE – The Concorde features the world famous tear drop aviator lens design, monoblock hinge design, skull temple bars, and non-slip silicone nose pads. A very popular sunglass style with lenses that are convertible for prescription lenses.

Size	Lens	Part No.	Price
57mm	Gray	13-00687	**$119.00**
57mm	Tan	13-00688	**$119.00**
57mm	Gray/Green	13-00689	**$119.00**
61mm	Gray	13-00690	**$119.00**
61mm	Gray/Green	13-00691	**$119.00**

CREW CHIEF – An updated version of traditional Randolph sunglasses. Crew Chief sunglasses has all the features of the American Pilot above in a slightly more tear drop shape lens design. Excellent for flying & driving.

P/N13-00698.....**$139.00**

SCHEYDEN CLASSIC FLIP-UP SUNGLASSES

Scheyden patented FlipUp & locking mechanism, allows you to instantly adapt to constantly changing cockpit light conditions with the flip of a finger. Fabricated in titanium i tweighs mere ounces. Offers 100% UVA & UVB protection. , and crystal clear, distortion free vision. Backside Triple Anti-Reflective coating acts to diffuse ambient light from behind. Includes a Deluxe Case Pack with a luxurious microfiber cleaning cloth and glasses bag along with an aluminum hard case and leather flip sport case. Lifetime warranty on all titanium frames and the best lens replacement warranty in the eyewear industry.

Model	Lens	Frame	Part No.	Price
El Capitan	High Contrast Bronze CR39	Natural Titanium	13-06947	**$395.00**
El Capitan	Neutral Grey CR39	Natural Titanium	13-06948	**$395.00**
Avalon	High Contrast Bronze CR39	Natural Titanium	13-06949	**$395.00**
Avalon	Neutral Grey CR39	Natural Titanium	13-06951	**$395.00**
Sonoma	High Contrast Bronze CR39	Natural Titanium	13-06952	**$395.00**
Sonoma	Neutral Grey CR39	Natural Titanium	13-06953	**$395.00**
Avalon Small	High Contrast Bronze CR39	Natural Titanium	13-06957	**$395.00**
Avalon Small	Neutral Grey CR39	Natural Titanium	13-06961	**$395.00**

Lenses are non-polarized as standard. This ensures that there is no distortion or "blacking-out" of glass cockpit instruments or LCD screens. Polarized lenses are available.

SCHEYDEN DUAL RX SUNGLASSES

The ability to instantly & effortlessly adapt to changing light conditions while keeping your prescription lenses in place. Supplied with a lens template which is all your local optician needs to fabricate your prescription lenses. Comes standard with the Deluxe Case Pack. Frame colors below are Natural Titanium. See photos above for frame styles.

Model	Lens	Part No.	Price
El Capitan	High Contrast Bronze CR39	13-06962	**$445.00**
El Capitan	Neutral Grey CR39	13-06965	**$445.00**
Avalon	High Contrast Bronze CR39	13-06966	**$445.00**
Avalon	Neutral Grey CR39	13-06968	**$445.00**
Sonoma	High Contrast Bronze CR39	13-06970	**$445.00**
Sonoma	Neutral Grey CR39	13-06973	**$445.00**
Avalon Small	High Contrast Bronze CR39	13-06975	**$445.00**
Avalon Small	Neutral Grey CR39	13-06977	**$445.00**

SCHEYDEN FIXED GEAR SUNGLASSES

The thin titanium ear-pieces fit comfortably under a headset and are small enough that they won't interfere with the ANR seal. Fixed Gear Mavericks are the choice of the US Air Force Thunderbirds. High Contrast Light Bronze lens offers 100% UVA & UVB protection and is recommended for low light conditions.

Model	Frame	Lens	Part No.	Price
El Capitan	Natural Titanium	High Contrast Bronze Glass	13-06998	**$269.00**
El Capitan	Natural Titanium	Neutral Grey Glass	13-06999	**$269.00**
El Capitan	Natural Titanium	High Contrast Lt. Bronze Glass	13-07001	**$309.00**
Avalon Wrap	Natural Titanium	High Contrast Bronze Glass	13-07002	**$269.00**
Avalon Wrap	Natural Titanium	Neutral Grey Glass	13-07003	**$269.00**
Avalon Wrap	Natural Titanium	High Contrast Lt. Bronze Glass	13-07004	**$309.00**
Sonoma Wrap Sm	Natural Titanium	High Contrast Bronze Glass	13-07005	**$269.00**
Sonoma Wrap Sm	Natural Titanium	Neutral Grey Glass	13-07006	**$269.00**
Sonoma Wrap Sm	Natural Titanium	High Contrast Lt. Bronze Glass	13-07014	**$309.00**
Sonoma Wrap	Natural Titanium	High Contrast Bronze Glass	13-07011	**$269.00**
Sonoma Wrap	Natural Titanium	Neutral Grey Glass	13-07010	**$161.40**
Sonoma Wrap	Natural Titanium	High Contrast Lt. Bronze Glass	13-07009	**$309.00**
Mustang	Natural Titanium	Bronze Polarized	13-11479	**$349.00**
Mustang	Natural Titanium	Bronze Non-Polarized	13-11478	**$309.00**
Mustang	Natural Titanium	Gray Polarized	13-11481	**$349.00**
Mustang	Natural Titanium	Gray Non-Polarized	13-11480	**$309.00**
Albatross	Natural Titanium	Bronze Polarized	13-11483	**$349.00**
Albatross	Natural Titanium	Bronze Non-Polarized	13-11482	**$309.00**
Albatross	Natural Titanium	Gray Polarized	13-11476	**$349.00**
Albatross	Natural Titanium	Gray Non-Polarized	13-11477	**$309.00**

SCHEYDEN FIXED HYBRID COMPOSITE SUNGLASSES

Stylish composite frames have been combined with HiNiHg (High Nickel Silver) temples enabling full wrap frames that fit comfortably under a headset without disturbing the ANR seal. The frames will easily slide down the wearers nose and back up again to adapt to changing light conditions with the push of a finger. Scheyden Deluxe Case Pack is included.

Model	Frame	Lens	Part No.	Price
Panorama	Gloss Black	High Contrast Bronze CR39	13-06980	**$259.00**
Panorama	Gloss Black	Neutral Grey CR39	13-06983	**$259.00**
Panorama	Havana Tortoise	High Contrast Bronze CR39	13-06984	**$259.00**
Panorama	Havana Tortoise	Neutral Grey CR39	13-06986	**$259.00**
Jet-A	Gloss Black	High Contrast Bronze CR39	13-06987	**$259.00**
Jet-A	Gloss Black	Neutral Grey CR39	13-06988	**$259.00**
Jet-A	Havana Tortoise	High Contrast Bronze CR39	13-06989	**$259.00**
Jet-A	Havana Tortoise	Neutral Grey CR39	13-06990	**$259.00**
Revelstoke	Gloss Black	High Contrast Bronze CR39	13-06991	**$259.00**
Revelstoke	Gloss Black	Neutral Grey CR39	13-06992	**$259.00**
Revelstoke	Havana Tortoise	High Contrast Bronze CR39	13-06993	**$259.00**
Revelstoke	Havana Tortoise	Neutral Grey CR39	13-06994	**$259.00**

PS

SUNGLASSES

SERENGETI AVIATOR SUNGLASSES

Serengeti Aviators protect your vision while eliminating glare and sharpening details better than other sunglasses. Cloud boundaries are more easily delineated and oncoming traffic is more visible. Unique photochromic spectral controls improve your ability to see in marginal VFR and IFR conditions. In bright sunlight, you'll see the instruments better and ghost images will be eliminated from the cockpit. Wear them late in the day or at sunset to preserve your night vision.

LARGE AVIATOR - Base Curve: 6; Temple Length: 140mm
Lens Size: 61.75 x 55.5 x 68mm, Dbl 10.5mm Black
P/N 2121.....**$99.00**

RAVISION HIGH PERFORMANCE SUNGLASSES

These high performance sunglasses are specifically designed for use with helmets and headsets. The frames are made of lightweight and flexible titanium metal that easily slide through the ear pad of the helmet or headset. The frames contour the head and allow for the seal of noise canceling earpieces to be maintained. The lack of pressure points on the head allow the user to wear the glasses for extended periods without fatigue and discomfort.
P/N 13-09660 ..... **$229.00**

AMERICAN OPTICAL SUNGLASSES

Performance-tested sunglasses with classic aviator styling. The Original Pilot Sunglass® has been a favorite of US military pilots for more than 40 years.
Engineered to rigid military specifications and issued to millions of US soldiers, sailors, marines and airmen since 1958.
The rugged and sturdy structure and high quality finishing of the steel alloy frame coupled with distortion free, toughened and polished True Color® glass lens have made the AO Flight Gear® Collection the standard bearer of all fine military sunglasses.

ORIGINAL PILOT (SQUARED)

52MM..... P/N 13-03212..... **$49.95**
54MM..... P/N 13-03213..... **$49.95**

GENERAL (OVAL)

52MM..... P/N 13-03214... **$56.95**
58MM..... P/N 13-03215... **$56.95**

BELT LOOP EYE GLASS CASE

Safe and secure way to make sure your glasses, cell phones and other items are always available. The case has a pen pocket and accessory strap to attach a pager, a small flashlight or clip item. 1000 dernier cordura exterior, soft padded durable lining. Black color. P/N 13-00699 ..... **$12.95**

OPTX 20/20 HYDROTAC STICK-ON READING LENSES

These stick-on lenses instantly turn any brand of sunglasses into sharp, clear reading glasses! They can be cut to the shape of any sunglass lens, and are removable & reusable; they adhere to the sunglass lenses by molecular attraction. Excellent for pilots using Ray Ban, Serengeti, Randolph and other aviation sun glasses, as well as outdoorsmen and anyone needing inexpensive corrected sunglasses. Available from 1.25 to 3.0 diopters in .25 diopter increments. Please specify magnification at time of order.

Description	P/N	Price
Optx 20/20 1.25	13-06301	**$12.95**
Optx 20/20 1.50	13-06302	**$13.25**
Optx 20/20 1.75	13-06303	**$12.95**
Optx 20/20 2.00	13-06304	**$12.95**
Optx 20/20 2.50	13-06306	**$12.95**
Optx 20/20 3.00	13-06308	**$12.95**

LIVE EYEWEAR COCOONS SUNGLASSES

Cocoons were designed to fit over glasses; however our smaller styles make them extremely popular as solo sunglasses. Cocoons feature PolarTx® polarized lenses to eliminate harsh glare, allowing your eyes to remain focused on the task at hand. The optical grade lenses and side shields precisely regulate light transmission, reducing eye fatigue and strain. They block 100% of damaging UV A&B light, providing 40% more protection than conventional sunglasses. Cocoons offer a virtually unbreakable frame with soft touch finish, adjustable temples, lifetime warranty, 3 contemporary shapes and sizes, and are accessorized with floating neoprene case and lens cloth. Color: Black.

Sizing Guide: Measure the width (w) and height (h) of your prescription eyewear to determine which Cocoons sunglasses will fit best.

SLIMLINE (MEDIUM)
RX frame sizes: up to 5-3/8"w X 1-5/8"
P/N 13-02967 ..... **$49.95**

PILOT (LARGE)
RX frame sizes: up to 5-3/8"w X 1-5/8"
P/N 13-02968.....**$49.95**

AVIATOR (EXTRA LARGE)
RX frame sizes: up to 5-3/8"w X 1-5/8"
P/N 13-02969 ..... **$49.95**

WIDELINE(MEDIUM LARGE)
RX frame sizes: up to 5-5/8"w X 1-3/8"
P/N 13-04719 ..... **$49.95**

MINI SLIM(MEDIUM SMALL)
RX frame sizes: up to 4-7/8"w X 1-3/8"
P/N 13-04720.....**$49.95**

STREAM LINE(SMALL)
RX frame sizes: up to 4-7/8"w X 1-3/8"
P/N 13-04721 ..... **$49.95**

COCOONS OVER X - Cocoons are the only sunglasses in the world that will completely isolate your eyes from the elements. The collection features patented designs that deliver 360° of Advanced UV Protection and are available in a range of styles and sizes that can be worn over prescription eyewear or as conventional sunglasses. After wearing Cocoons for a short period of time, your eyes will begin to relax. The polarized UV400 front and side lenses treat incoming light, eliminating distracting glare and allowing you to focus on the task at hand. The patented frames protect your eyes from all angles, blocking sunlight, UV, glare, wind, rain and airborne debris. C427C Features: • Polarized UV400 • Scratch Resistant • Flex2fit® Temples • Soft Touch Finish • 360° of UV Protection • Ultra Lightweight • Case and Cloth • Lifetime Warranty P/N 13-05550 ..... **$49.95**

VISTANA OVER X - Vistana's proprietary lens system delivers a distortion-free, panoramic line of sight not available in any other over prescription sunglass. With traditional designs, the wearer will experience a gap in peripheral vision when scanning from the front to the sides due to a section of frame that separates the front and side lenses. Vistana's patented designs use continuous full wrap lenses that eliminate the section frame between the front and side lenses, creating a more open and uninterrupted view. Encourage your customer a traditional over prescription sunglass to the evolutionary Vistana design and they will immediately notice the difference in both performance and style. W412G Features: • Polarized UV400 • Scratch Resistant • Flex2fit® Temples • Dynamic Base Technology • Ultra Lightweight • Case and Cloth • Lifetime Warranty P/N 13-05551 ..... **$49.95**

COCOONS QUALITY IN A FLIP-UP

World renowned Cocoons quality is now available in the Cocoons Flip-Up sunwear collection. The Polaré lens system delivers enhanced visual acuity with a choice of polarized gray, amber or copper. Each clip includes a protective case and is backed by the Live Eyewear limited lifetime warranty. LF40
Copper..... P/N 13-05552 .....**$17.95**
Gray..... P/N 13-11346 .....**$17.95**
Amber..... P/N 13-11347 .....**$17.95**
Yellow..... P/N 13-11348 .....**$17.95**

SEE OUR WEBSITE FOR COCOONS 3D AVIATOR SUNGLASSES

PS

SUNGLASSES

VEDALOHD™ PERFORMANCE SUNGLASSES

High-Definition Lens Technology (HDL-3C™), built into new sunglasses offer improved sight definition for pilots, using color, clarity and comfort. These lenses filter the visible spectrum to improve color contrasts; decentered lenses increase visibility and eliminate distortion; visual health is improved and eye fatigue is reduced thanks to lightweight frames. Visibility is said to be increased through tri-stimulus color contrast enhancing techniques; other color tinting techniques improve color simulation but only improves one basic color type in the color spectrum.

These non-polarized (important for pilots!) lenses come in two lens types: rose (for low light conditions), and smoke (for bright light conditions). The sunglasses are very lightweight and comfortable. We offer a 30-day money back guarantee if you're not satisfied. Several choices for frames are available.

FRAME STYLES

ROSSO2 (HINGED)
Astonishing light Weight

AZZURRO2
Fashion Rectangle

ARGENTO2
Ultra Light Aviator

CARBONE
Teardrop Aviator

VERONA
Ultra Light

ROMA
Contemporary Aviator

BERGAMO
Flush-fitting, wrap-around

Description	Part No.	Price
Rosso2 Ultra Lite Frames Smoke	13-04022	**$149.95**
Rosso2 Ultra Lite Frames Rose	13-06102	**$149.95**
Azzurro2 Ultra Lite Frames Smoke	13-04026	**$208.95**
Azzurro2 Ultra Lite Frames Rose	13-04027	**$195.00**
Argento2 Ultra Lite Frames Rose	13-04028	**$195.00**
Argento2 Ultra Lite Frames Smoke	13-04029	**$208.95**
Carbone Rose	14-00993	**$208.95**
Carbone Smoke	14-00994	**$208.95**
Verona Ultra Lite Frames Rose	14-01005	**$142.95**
Verona Ultra Lite Frames Smoke	14-01006	**$142.95**
Roma Ultra Lite Frames Rose	14-01002	**$142.95**
Bergamo Ultra Lite Frames Rose	14-00989	**$142.95**

V:ONE MAGNETO RANGE PILOT SUNGLASSES

The V:ONE Classics Collection currently consists of the Magneto & Altitude ranges which pefectly fuse practicality with contemporary fashion. Remarkably strong, their slender metal frames utilise narrow sidearms and hi-grip rubber temple tips to reduce blindspots and maximise comfort.
The frame's curvature ensures that the eye's entire field-of-vision is protected from every angle.

Features: Polycarbonate lens with 5 step technology for comfort, protection, clarity, definitioin and durability. Streamline metal alloy frame reduce blind spots. Hi-Grip rubber temple tips enhance comfort. Spring hinges keep frame in position. Non-slip adjustable nose pads. Free V:One protective case and cleaing cloth. Prescription lenses available.

Silver ..... P/N 13-09068 ..... **$157.95**
Black ..... P/N 13-09067 ..... **$157.95**
Brown ..... P/N 13-09069 ..... **$184.95**

V:ONE ALTITUDE RANGE PILOT SUNGLASSES

The V:ONE Classics Collection currently consists of the Magneto & Altitude ranges which pefectly fuse practicality with contemporary fashion. Remarkably strong, their slender metal frames utilise narrow sidearms and hi-grip rubber temple tips to reduce blindspots and maximise comfort. The frame's curvature ensures that the eye's entire field-of-vision is protected from every angle.

Features: Polycarbonate lens with 5 step technology for comfort, protection, clarity, definitioin and durability. Streamline metal alloy frame reduce blind spots. Hi-Grip rubber temple tips enhance comfort. Spring hinges keep frame in position. Non-slip adjustable nose pads Free V:One protective case and cleaing cloth. Prescription lenses available.

Silver ..... P/N 13-09072 ..... **$157.95**
Black ..... P/N 13-09071 ..... **$184.95**
Brown ..... P/N 13-09073 ..... **$184.95**

RA VISION HIGH PERFORMANCE SUNGLASSES

These high performance sunglasses are specifically designed for use with helmets and headsets.
The Frame: The frames are made of lightweight and flexible titanium metal that easily slide thru the ear pad of the helmet or headset. The frames contour the head and allows for the seal of noise canceling earpieces to be maintained. The light weight and lack of pressure points on the head allow the user to wear the glasses for extended periods without fatigue and discomfort.
The "wrap" or curvature of the frames and lens allows sun protection for the wearer's peripheral vision as well as forward facing.
The Lens: The lens is made of a revolutionary Trivex® material that features optical qualities similar to glass and surpasses the light weight and scratch resistance of polycarbonate lenses while providing 100% protection against UVA and UVB rays.
The lenses are optimized for moving-fast, looking-at-gauges, or thru a windshield. Uncommon to today's upscale sunglasses, Ra Vision Gear's are non-polarized. Polarization interferes with gauges, windshields and computer screens creating blank spots, totally "darking-out" the gauge or making a rainbow effect on windshields. The FAA strongly recommends against pilot use of polarized sunglasses. Additionally, polarization can mask slick spots and standing puddles of water for any type of road riding/driving application.

Gray Lens ..... P/N 13-11671 ..... **$229.95**
Brown Lens ..... P/N 13-09660 ..... **$229.00**

MAUI JIM PILOT SUNGLASSES

Full frame. These are the styles that embody the Maui Jim life. Each makes a fashion-forward yet timeless statement reflecting a confident inner vibe. And all feature PolarizedPlus 2 - for the exquisite color, contrast and acuity only Maui Jim delivers. Case and Cleaning Cloth Included. SuperThin (ST) Glass Lens. PolarizedPlus®2 Technology. Available Lens Hues. Cellulose Propionate Frame. Adjustable Metal Core Temples. Flawless Finishes. Nickel/Silver Alloy Hinges. Rx Availability Saltwater Effectiveness. Spring Hinges.

Grey ..... P/N 13-07230 ..... **$245.95**
Bronze ..... P/N 13-07554 ..... **$247.95**

MAUI JIM BANYANS SUNGLASSES

Rimless. Think of Maui as a floating playground. And we love to play. On it's mountains. Roiling ocean. Maui Jim Rimless is equally performance-minded. PolarizedPlus 2 gives those who wear them the freedom to achieve their best.

Benefits: Case and Cleaning Cloth. PolarizedPlus®2 Technology. Maui Evolution®. Available Lens Hues Grilamid Frame Adjustable Nose Pads. Flawless Finishes. Saltwater Effectiveness. Rx Availability.

Grey ..... P/N 13-07236 ..... **$188.95**
Bronze ..... P/N 13-07560 ..... **$199.95**
Rose ..... P/N 13-07561 ..... **$199.95**

PS

FLIGHT JACKETS

Classic. Authentic. Quality. Established in 1959 as a defense contractor for the US Government, Alpha Industries remains one of the largest manufacturers of cold weather outerwear. For over 35 years, Alpha Industries has continuously supplied the US Government and military forces throughout the world. Alpha is now recognized as the original and leading manufacturer of authentic military-inspired outerwear. Some jackets are made in the USA and some are imported.

TO ORDER FLIGHT JACKETS: Choose jacket style and color desired and order by basic part number shown. Complete the part number with size by adding -1 (Small), -2 (Medium), -3(Large), -4 (X Large), or -5 (XX Large).

MA-1 INTERMEDIATE FLIGHT JACKET

The most popular flying jacket in the world, supplied by Alpha Industries to the U.S. Military for over 40 years. 100% nylon flight satin outer shell with nylon flight lining and polyester batting interlining for warmth. Front closure storm flap. Knit collar, waistband and cuffs. Combination utility pocket on sleeve. Pilot's MA-1 reverses to high visibility Indian Orange for use in emergencies. Colors: Black, Navy, Sage Replica Gray, Titanium, Stratos.

Black ..... P/N 13-00544 ..... **$98.00**
Navy ..... P/N 13-00546 ..... **$98.00**
Sage ..... P/N 13-00547 ..... **$98.00**

LEATHER MA-1 FLIGHT JACKET

Premium cowhide leather winter-weight flying jacket styled as the classic MA-1. Quilted lining with polyester interlining. Snap closure front flap pockets and inside pocket. Antiquated brass zippers and snaps. Leather zip pull, embossed logo. Wool ribbed waistband, cuffs and collar. Colors: Black and Brown

Black ..... P/N 13-00552 .... **$322.95**
Brown .... P/N 13-00553 .... **$269.95**

CWU - 45/P FLIGHT JACKET

A nylon version of the U.S. Air Force current issue flight jacket. 100% nylon flight satin outer shell. Fully lined with quilted flight nylon and polyester fill. Water repellent. Knit cuffs and wristband. Storm flap. Two fully-lined cargo pockets and combination utility pocket on sleeve. Removable Velcro logo patch.

Black ..... P/N 13-00559 ..... **$98.00**
Gun Metal Grey..... P/N 13-09482 ..... **$98.00**
Teal ..... P/N 13-00569 ..... **$98.00**
Replica Blue..... P/N 13-05585 ..... **$98.00**
Airforce Green..... P/N 13-00572 ..... **$98.00**

LEATHER CWU-45/P FLIGHT JACKET

Premium cowhide leather winter-weight flying jacket styled as the classic U.S. Air Force 45/P. Quilted lining with polyester interlining. Velcro closure front flap cargo pockets and inside pocket with snap fastener. Antiquated brass front zipper. Leather zip pull. Wool ribbed waistband and cuffs. Colors: Black and Brown

Black..... P/N 13-00555 ..... **$288.95**
Brown ..... P/N 13-00556 ..... **$322.95**

AERO SQUADRON LEATHER JACKET

Color: Brown Antique Lamb

Small ..... P/N 13-07208..... **$349.95**
Medium ..... P/N 13-07209..... **$349.95**
Large ..... P/N 13-07210..... **$373.95**
XL..... P/N 13-07211..... **$349.95**
XXL ..... P/N 13-07212..... **$349.95**

CHILDREN'S JACKETS

CHILDRENS MA-1 JACKETS WITH PATCHES - This is a well made reproduction of the famous MA-1 green nylon quilted. Same patches as our childrens bomber jacket.

Description	Size	Part No.	Price	Description	Size	Part No.	Price	Description	Size	Part No.	Price
MA1 Toddler	Small	13-06443	**$34.75**	MA1 Youth	Small	13-06437	**$39.85**	MA1 Boys	Small	13-06439	**$37.50**
MA1 Toddler	Medium	13-06442	**$32.85**	MA1 Youth	Medium	13-06436	**$39.85**	MA1 Boys	Medium	13-06438	**$31.75**
MA1 Toddler	Large	13-06444	**$44.95**	MA1 Youth	Large	13-06440	**$49.95**	MA1 Boys	Large	13-06441	**$37.50**

YOUTH BOMBER JACKETS - These are a Flightline original. They're a reproduction of a classic bomber, complete with simulated fleece collar. They are sturdily made with many special touches that make it unique, such as an airplane zipper pull, authentic aviation patches & colorful graphic map liner.

Description	Size	Part No.	Price	Description	Size	Part No.	Price	Description	Size	Part No.	Price
Bomber Toddler	Small	13-06432	**$29.95**	Bomber Boys	Small	13-06429	**$38.75**	Bomber Youth	Small	13-06427	**$36.75**
Bomber Toddler	Medium	13-06428	**$32.50**	Bomber Boys	Medium	13-06430	**$36.70**	Bomber Youth	Medium	13-06431	**$36.75**
Bomber Toddler	Large	13-06433	**$34.75**	Bomber Boys	Large	13-06435	**$38.95**	Bomber Youth	Large	13-06434	**$36.75**

CHILDRENS MA-1 JACKETS WITH PATCHES AND A HOOD - This is a well made reproduction of the famous MA-1 green nylon quilted childrens jackets with patches and a hood. Same as our childrens bomber jacket but with faux fur trimmed hood and a velcro closure at top.

Description	Size	Part No.	Price	Description	Size	Part No.	Price	Description	Size	Part No.	Price
MA1 Toddler	Small	13-06447	**$32.95**	MA1 Youth	Small	13-06448	**$38.75**	MA1 Boy	Small	13-06454	**$33.85**
MA1 Toddler	Medium	13-06446	**$32.95**	MA1 Youth	Medium	13-06453	**$36.50**	MA1 Boy	Medium	13-06451	**$34.85**
MA1 Toddler	Large	13-06445	**$35.95**	MA1 Youth	Large	13-06452	**$38.95**	MA1 Boy	Large	13-06449	**$34.85**

PS

NOMEX AVIATOR'S SUMMER FLYING GLOVES

GLOVE SIZING

Hold your hand out with your fingers together and thumb extended out. Start measuring palm from between the index finger and thumb, continue around the outside of the palm and back around on the inside of the palm making a complete circle with the measuring tape. Total inches around entire palm determines the size glove you will need.

- 6 inches or less, order Size 7
- 6 to 6 1/2 inches, order Size 8
- 6 1/2 to 7 inches, order Size 9
- 7 to 7 1/2 inches, order Size 10
- 7 1/2 to 8 inches, order Size 11
- 8 inches or more, order Size 12

Size	Part No.	Price	Size	Part No.	Price
Sage Green			*Desert Tan*		
9	13-02056	**$19.95**	7	13-03621	**$19.95**
10	13-02057	**$19.95**	8	13-03622	**$19.95**
11	13-02058	**$26.85**	9	13-03623	**$19.95**
			10	13-03624	**$19.95**
			11	13-03625	**$19.95**
Black			*Olive Drab*		
7	13-03615	**$19.95**	9	13-03629	**$19.95**
8	13-03616	**$19.95**	10	13-03630	**$19.95**
9	13-03617	**$19.95**	11	13-03631	**$19.95**
10	13-03618	**$19.95**	12	13-03632	**$19.95**
11	13-03619	**$19.95**			
12	13-03620	**$19.95**			

BARMITTS FOR YOUR TRIKE

Extend your flying season and enjoy it more with these barmitts. The sides zip open to fit around the bar. The cozy insulation and wind-proof exterior keep your hands comfortable in the coldest wind. Sized to fit over your gloves.

BatMitts - Red.....P/N 13-07304 ..... **$68.50**
BatMitts - White.....P/N 13-07305 ..... **$89.75**
BatMitts - Reflective Green .....P/N 13-07306 ..... **$89.75**
BatMitts - Blue with Map window .....P/N 13-07339 ..... **$75.50**

MARK 4 SILVER CROSS GOGGLES

All leather face mask, colour matched head bands, Split lenses, bright polished and chrome plated frames, Sliding Nose Bridge Adjustment. P/N 13-06000 ..... **$89.50**

Replacement Lenses for Silver Cross Goggles

Clear, set of 2..... P/N 13-06100 ..... **$32.50**
Smoke, Set of 2..... P/N 13-06200 ..... **$37.75**

WORLD WAR II RAF FLYING GOGGLES

A faithful Replica incorporating dark brown soft leather face mask stitched to the RAF blue painted solid brass frames. The traditional Split Lenses

P/N 13-05860 ..... **$83.75**

VINTAGE AVIATOR GOGGLES

Soft Brown or Black Leather face Mask, Hand Stitched to silver or black painted solid brass frames. Screw adjustment on nose bridge. P/N 13-06310 ..... **$83.25**

HAND SEWN EPAULETS

These tapered, hand sewn epaulets are produced by the finest tailors using the highest quality material. Available with Gold or Silver Stripes.

Stripe	Color	GOLD Stripe		Silver Stripe	
		Part No.	Price	Part No.	Price
1	---	---	---	13-06576	**$8.95**
1	---	---	---	13-06577	**$8.95**
2	Navy Blue	13-06570	**$11.85**	13-06578	**$11.85**
2	Black	13-06571	**$11.85**	13-06579	**$11.85**
3	---	---	---	13-06580	**$14.75**

Aircraft Spruce is pleased to be an official distributor for EAA merchandise. Order these EAA caps, shirts, and jackets direct from Aircraft Spruce and support the Experimental Aircraft Association.

EAA POCKET T-SHIRTS

EAA logo above pocket. 100% Cotton. Limited quantities and sizes.

Color	Size	PN	Price
Gray	Med.	13-04751	**$18.95**
Gray	Large.	13-04758	**$18.95**
Gray	X-LRG	13-04759	**$23.75**
Gray	2XLG	13-04761	**$20.95**
Navy	Large	13-04763	**$15.00**
Navy	XL	13-04789	**$18.95**
Navy	2XLG	13-04764	**$20.95**

EAA GOLF SHIRTS

Port Authority, 100% cotton pique, knit golf shirt in ivory and navy.

Color	Size	PN	Price
Ivory	Medium	13-04765	**$29.95**
Ivory	Large	13-04766	**$19.95**
Ivory	X-LG	13-04767	**$22.49**
Ivory	2XLG	13-04768	**$26.00**
Navy	Medium	13-04769	**$29.95**
Navy	2XLG	13-04764	**$20.95**
Navy	Large	13-04770	**$23.00**
Navy	XLG	13-04771	**$18.20**
Navy	2XLG	13-04772	**$25.49**

EAA CREWNECK SWEATSHIRTS

Sueded finish, crewneck sweatshirt in navy.

Color	Size	PN	Price
Navy	Medium	13-04773	**$29.99**
Navy	Large	13-04774	**$29.99**
Navy	XLG	13-04775	**$29.99**
Navy	2XL	13-04776	**$26.70**

EAA MICROFIBER JACKET

Water repellent, two tone, micro fiber jacket in navy/sand.

Color	Size	PN	Price
Navy	Medium	13-04777	**$59.95**
Navy	Large	13-04778	**$44.99**
Navy	XLG	13-04779	**$46.00**
Navy	2XL	13-04780	**$47.99**

EAA NYLON JACKETS

Water repellent, fleece lined, two tone nylon jacket in navy/putty.

Color	Size	PN	Price
Navy/Off White	Medium	13-04782	**$69.00**
Navy/Off White	Large	13-04783	**$69.00**
Navy/Off White	XLG	13-04784	**$69.00**
Navy/Off White	2XL	13-04785	**$69.00**

PS

PILOT SHIRTS

Aircraft Spruce stocks a full line of authentic airline pilot shirts in Aviator, Pilot, and Commander styles. Aviator style is available in short and long sleeve, in white or blue. Pilot and Commander are available in short and long sleeve, in white. Available in a complete selection of sizes for men and women pilots.

VISIT WWW.AIRCRAFTSPRUCE.COM FOR A COMPLETE LISTING OF SIZES AND COLORS.

COCKPIT COOLERS - FUEL GAUGES – WIRE MARKERS

POL-AIR B310 PORTABLE AIR CHILLER SYSTEM

The pump is powered by an ultra-efficient high speed DC brushless motor and can produce up to 3.5 inches of water pressure at 14.3 CFM in the 12vDC units, and 4.5 inches of water pressure at 20.5 CFM in the 24vDC units. This pressure delivers cool dry airflow through 1.25" diameter featherweight EPE hoses to the front edge of passenger seats or directly under your shirt, making microenvironmental cooling possible for up to four people.

Portable and Easy to Place in Your Aircraft, the B310 Never Has to Be Removed Once Strapped In. There is no mechanical or electrical installation. The B310 is classified as a carry-on device as it requires no permanent attachment to the airframe or electrical system. You simply strap the B310 to the airframe in your baggage compartment or onto an empty seat using the secure handles that are built onto the unit. In addition to safety, strapping the unit and cover avoids the potential of spilling ice in your aircraft during turbulent flight.

Once you strap down the unit, you have the option of leaving the entire unit permanently strapped in. Just pick up ice on the way to your aircraft, remove the cover, and drop the ice in.

Physical Dimensions: B310 Case & Turbine - 26" high x 14" wide x 14 deep. 10.1 lbs. Water Drain Basin - 6" high x 14" wide x 14" deep. 2.3 lbs Hoses: 3.63 ounces each. Extend to 8' but can use an adaptor to lengthen to 16' Seat Slide: 4.8 oz. Electrical: 12vDC=3.9 amps. 24vDC-2.6 amps Maximum Ice Load: 25 lbs rough crushed ice or 35 lbs fine crushed ice ("peanut crush") Air Flow below 70F: 75 to 90 minutes in 110 F cabin. Depending on humidity. Lasts longer in cooler cabins.

12V ..... P/N 13-05074 .....**$865.95**
24V ..... P/N 13-05075 .....**$865.95**

CROSSWIND COOLER 12 VOLT

The Crosswind Portable Air Conditioning Cooler is based on a 38 quart polystyrene cooler box which is powered through the craft's cigarette lighter receptacle or other on-board 12volt receptacle. All pumps and blowers in the coolers are marine-grade proven hardware devices.

Features: • Electrical connections are marine grade and sealed in waterproof epoxy • The supplied power cord is detachable from the unit and can be kept in the cooler box when not in use • 24 volt power can be converted to 12 volt easily with a portable convertor that attaches to the 24 volt outlet if necessary.

P/N 13-11233 .....**$499.00**

GO COOL PORTABLE AIR CONDITIONER

The patented, portable air conditioner is made for cooling small, enclosed spaces using ice water. Use your GO COOL to cool down your aircraft's cabin before boarding and enjoy an air conditioned cabin while waiting on a hot tarmac before take-off and after landing. Cooling your aircraft's cabin couldn't be easier. With the extra drainage tubing included, you never have to remove GO COOL from your aircraft. The battery pack (available Fall, 2009) can be removed and recharged as needed, or purchase two battery packs and change them out as needed. No other unit on the market can match the cooling power, durability, reliability, affordability or convenience of the patented GO COOL! **Features**: Uses ice and water. Adjustable thermostat & fan speed. Draws less than two amps. 17.3" W x 20" L x 24" H. 12V, 1.6 amp. Includes 6 feet of drainage tubing and two power cords - electrical & vehicle lighter. Holds 4 one gallon jugs, 9 two liter bottles, or 40 lbs. of bagged iced. Optional filters. Rechargeable battery pack and dust & allergy filters coming soon.

P/N 13-07018 .....**$425.00**

GO COOL 8 HOUR RECHARGEABLE BATTERY PACK - The 8-hour, rechargeable battery pack is perfect for the user who needs true portability. Using this battery pack with the GO COOL means you no longer have to be confined to an electrical outlet or vehicle lighter receptacle. The battery pack makes it ideal for outdoor use, those unexpected power outages, and more!

P/N 13-07449 .....**$164.95**

PS

DIRECT FUEL LEVEL INDICATORS

These Direct Fuel Level Indicators are quality made of acrylic PVC tube with an aluminum scale. They are available calibrated to individual tanks or uncalibrated for custom calibration to home built tanks. These Indicators allow an accurate check of on board fuel level indicators and eliminate the guess work.

Description	Part No.	Price
Fuel Level Indicator C-150/C-152 +	12-21200	**$15.95**
Fuel Level Indicator C-150 LONG 19	12-21205	**$16.95**
Fuel Level Indicator C-170 / C-172	12-21210	**$15.95**
Fuel Level Indicator C-172 34G	12-21215	**$16.95**
Fuel Level Indicator 1958+ C182 32 GAL	12-21225	**$16.95**
Fuel Level Indicator C-182 42G	12-21230	**$15.95**
Fuel Level Indicator C-210 45G	12-21240	**$15.95**
Fuel Level Indicator PA-24 30G	12-21245	**$16.95**
Fuel Level Indicator 7KCAB	12-21250	**$16.95**
Fuel Level Indicator PA-28	12-21255	**$15.95**
Home Built Universal Fuel Level Indicator CK Rod	12-21260	**$16.95**

FUEL HAWK FUEL GAUGES

The Fuelhawk is just 11" long, clear lightweight and unbreakable. It's easy to use and gives an instant readout in gallons usable. No more guessing. These handy devices offer the answers to these very important questions: 1.How many gallons of usable fuel are remaining in the tank? 2.How much fuel can be added without going over gross weight? 3. Are the aircraft fuel gauges working & accurate?

Part No.	Application	Price
13-00443	Cessna 152 (standard 12 gal. tanks)	**$8.75**
13-00442	Cessna 172 (standard 19 gal. tanks)	**$9.85**
13-01468	New Cessna 172 Skyhawk (26.5 gal.)	**$9.85**
13-01469	New Cessna 182 Skylane (43.5 gal.)	**$9.85**
13-00441	Cessna 182LR (42 gal. Long range tanks)	**$10.75**
13-00439	Universal for any aircraft, w/graph & calibration chart	**$9.95**
13-00949	Universal XL Fuel Gauge (16" long)	**$15.95**
13-11189	Universal Gauge 26"	**$16.75**

TANA WIRE MARKERS

Tana Wire Markers are large fiberglass balls which can be attached to power lines to warn aircraft of the location of the wires. They meet FAA specifications, feature easy installation and universal attachment, withstand the elements for over 10 years, require no maintenance, do not slip, chafe, oscillate, or cause electrolysis or vibration. Stocked in 9", 12", and 24" sizes. Larger sizes available on request. Color: international orange. Stocked in Tana marker style JX.

12" diameter with Tape .....P/N 13-00057 ..... **$115.95**
20" diameter with Tape .....P/N 13-00058 ..... **$164.95**
24" diameter with Tape .....P/N 13-00059 ..... **$258.95**
12" diameter w/o Tape .....P/N 13-00054 ..... **$96.50**
20" diameter w/o Tape .....P/N 13-00055 ..... **$119.95**
24" diameter w/o Tape .....P/N 13-00056 ..... **$224.95**

WIRE MARKERS

CPS-S STANDARD MOUNTING MARKER - The Standard power line Marker is made of ABS plastic & fits wires up to 1" using two neoprene bushings

CSP-EZS RECESSED MOUNTING AREA & CSP-EZC RECESSED MOUNTING AREA W/ CLAMP - The EZ line of Markers is made of ABS plastic & is new & improved with a larger recessed area around the four bolts making it easier to install with linemen gloves. The EZ-S still uses two neoprene bushings & fits wires up to 1". The CSP-EZC comes with an aluminum clamp with stainless steel bolts & fits wires up to 1". Both of these styles use 1" nuts.

CSP-SAR STANDARD MARKER WITH ARMOR ROD - This marker is equipped with two sets of armor rod set into a bracket & can be bolted to the inside or outside of the marker All Markers can be made to fit larger diameter wires.

Diam.	CSP-S		CSP-EZS		CSP-EZC		CSP-SAR	
	Part No.	Price	Part No.	Price	Part No.	Price	Part No.	Price
9 inch	-	-	13-06725	**$61.95**	13-06741	**$91.95**	13-06748	**$103.95**
12 inch	-	-	13-06727	**$76.95**	13-06742	**$103.95**	13-06749	**$125.95**
20 inch	13-06731	**$91.95**	13-06728	**$103.95**	13-06743	**$140.95**	13-06750	**$166.95**
24 inch	13-06737	**$170.95**	13-06729	**$188.95**	13-06744	**$218.95**	13-06751	**$240.95**
30 inch	13-06738	**$205.95**	-	-	13-06745	**$266.95**	13-06752	**$294.95**
36 inch	13-06739	**$269.95**	-	-	13-06746	**$421.95**	13-06753	**$443.95**

SOFTWARE – STEP STOOLS

VFLITE CFI ITOOLS INSTRUCTORS GUIDE - WINDOWS

CFI iTools is a growing software set that enables live training and student practice. Each one of the tools has a specific purpose, and when used together help to focus training, reducing the time that it takes to understand key topics. These tools take Flight Instructor led training to the next level. All of the software can operate as a stand alone program, or integrate into a Power Point presentation. Windows compatible only.
Features: • Navigation Tool • Holding Tool • VFR Plotter • Circular Flight • Lighting and Glideslope Trainer P/N 17-00210 .....**$23.50**

VFLITE WEIGHT AND BALANCE VISUALIZER - WINDOWS

Using the new VFLITE Weight & Balance Visualizer, pilots can learn to quickly calculate the weight and balance of their favorite aircraft and save configurations for later use. The system allows pilots to visualize the loading condition from a profile view, arm, and moment charts. The software uses input boxes to select exact weights, and includes weight and balance references and training tutorial. The "My Presets" feature allows you to store weights for passengers, baggage, and favorite fuel levels. Once they're stored, simply drag them from the list and drop them on the seats or fuel slider.
The Windows program comes with a free weight and balance tutorial to help you master the fundamentals. Simply enter the aircraft data using intuitive input buttons or typed text, and the program provides: Total Weight, Moment View, Arm View, and Aircraft Profile View. If the aircraft is out of limits, simply click on the fields to change the weights. The chart of aircraft arm or moment is graphically displayed.
P/N 17-00217 .....**$23.50**

BIRD DETERRENT BIRDXPELLER PRO VOL.1

The BirdXPeller Pro uses actual species-specific distress cries and can be set for any or all of a variety of birds including pigeons, sparrows, starlings and gulls. Volume, time-off periods, and random calls can be varied to keep the birds away. The unit measures 10" x 3" x 10" and weighs 4 lbs. The directional speakers cover up to an acre in an oval pattern. The unit comes with an AC adapter cord but can run off a 12 volt DC battery if needed. NOTE:Vol.1 is only for pigeons, starlings,sparrows and gulls.
P/N 13-00091.....**$258.95**

PRO PILOT LANYARD KIT

Black heavy duty detachable nylon lanyard is 20 inches in length from the top of the lanyard to the bottom of the J-hook. The detachable portion is short in length (approximately 2 ½ inches) Flashlight: The black and silver Garrity Lithium L.E.D. is the brightest, whitest single light available. It features an L.E.D. light. It provides years of intermittent light or more than 23 hours of continuous light. The Diode lasts 100,000 hours. The flashlight attaches to the J-hook. Badge clip/ universal grabber: The alligator-type badge clip has a black strap (snaps open and closed) permanently fixed to it that swivels. Connected to the strap withstanding up to 5 pounds. Earplugs: The Howard Leights NRR (Noise Reduction Rate) is 33 decibels. Highest rated disposable ear plugs on the market P/N 13-06336.....**$19.95**

FOLDING AIRCRAFT STEP STOOL

This sturdy step stool is made of oak veneer over hardwood and provides a spacious 11"x11" square standing area. The stool is 16" high and features nonskid strips on the standing area. The precision crafted stool opens and closes easily and measures only 2"D x 12"W x 19"L when folded for storage in baggage compartment or under the seat of your aircraft. Weighs only 4lbs. Lightweight, compact, and very strong, this stool is idea for use around general aviation aircraft. P/N -13-04281 .....**$42.95**

SHURE-STEP® II

The Shure-Step II is a 10 inch high step stool that will not tip or slip during use for aircraft maintenance. This step stool is rated for 500 pounds yet only weighs 10 pounds. Rubber pads on bottom prevent the step from scratching the paint on an aircraft. Color: Yellow
Features: • 6 large rubber pads on bottom • Very rough top surface to keep mechanics safe • Ice cleats keep the step from sliding during icy winter conditions • The Shure-Step II is a stackable step stool • Weight: 10 pounds P/N 13-11219 .....**$98.50**

SHURE-STEP® 2-STEP STOOL

The 2-Step stool is 10 inches high, half is 6 inches high.
Features: • Durable, lightweight, and stackable • Shure-Step® will float • All Shure-Step® products are rated at holding 500 lbs.
P/N 13-11585.....**$114.95**

SHURE-STEP® SENIOR STEP

The Senior Step is 6 inches tall, weighs 9 lbs., rated at 500 lbs. and measures 24" x 14". Step has a large, 10" x 20" black non-slip sandpaper surface on top of it.
Features: • Durable and lightweight • Senior Step can be stacked on top of the Shure-StepII® • Shure-Step® will float • All Shure-Step® products are rated at holding 500 lbs. P/N 13-11584.....**$94.50**

ARROWPROP DECORATOR PROP CLOCKS

Quartz Clock

Weather Station

Choose from:
Quartz Clock (Q)
Weather Station (W)
Weather station contains a thermometer, hygrometer, & barometer in 1 instrument.

PIPER CUB PROPELLERS

Laminated hardwood reproduction of the propeller used on the Piper Cub airplane. With a high gloss finish, red tips, and cub decals. Quartz Clock Face (Q) or Weather Station Clock Face (W).
52" Prop w/Q .... 13-32170-Q ....**$249.95** 65" Prop w/Q ..... 13-32171-Q **$336.95**
52" Prop w/W.... 13-32170-W ....**$267.95** 65" Prop w/W..... 13-32171-W**.... $369.95**

AIRCRAFT PROPELLER

Beautiful reproduction of an early day aircraft propeller like those used on the Piper Cub, Aeronca, Taylorcraft and others. Constructed of laminated hardwood with clear finish, red tips and simulated brass tipping on the propeller blades. Quartz Clock (Q) or Weather Station (W).
52" Prop w/Q .....13-32175-Q ....**$261.95** 65" Prop w/Q 13-32176-Q **$379.95**
52" Prop w/W..... 13-32175-W ....**$369.95** 65" Prop w/W 13-32176-W **$401.95**

LINDBERGH PROPELLER

This 50" propeller is a scaled reproduction of the propeller used by Colonel Lindbergh on his Sperry Messenger airplane. With Quartz Clock (Q) or Weather Station (W). Available in clear(C) or beautifully stained (S) finish.
50" Prop W/CQ..... 13-32180-CQ.....**$217.95**
50" Prop w/SQ..... 13-32180-SQ.....**$263.95**
50" Prop w/CW ..... 13-32180-CW **$267.95**
50" Prop w/SW ..... 13-32180-SW **$260.95**

REPLICA PROPELLER LETTER OPENER

Own a bit of aviation history with our unique letter opener. A mini replica of the Hamilton Standard steel propeller used on Charles Lindbergs "Spirit of St. Louis". 9" long, it has a chromed hand polished handle, is cast to highest quality metal standards with authentic Hamilton Standard decals on the blade. Shipped in elegant gift box
P/N 9925..... **$29.95**

PS

CD-ROMS - SOFTWARE

PRIVATE PILOT LESSON PLANS CD-ROM

Jeppesen Private Pilot Lesson Plans on CD-ROM. State-of-the-art graphics, animation, and aerial photography helps students master complex concepts such as the principles for airplane systems and performance to the maneuvers required to become a private pilot.
System Requirements: 486 SX or faster IMB PC or compatible, Microsoft PowerPoint 97 Software or newer, 16 BIT High Color Monitor, 800 x 600 or Higher Resolution 4X CD-ROM drive or faster, Restrictions on Use:, With respect to the copyrighted images contained in the Lesson Plans you may: Project the date electronically, Reproduce the data into conventional overheads, Incorporate the date into customized tests and/or instructional handouts. P/N 17-00055 ..... **$50.00**

FLIGHT SOUND X - AVIATION HEADSET/USB ADAPTER

Just plug and play ... and you're ready to go! Flight Sound X is designed to be as easy to use as possible - no additional software, no batteries, no external power sources - just one standard USB cable. Just 'plug and play'! When users have finished with the device, simply unplug it, and the computer will revert to its original audio settings. The Flight Sound X adapter is a great accessory for any pilot! Features: USB 1.1 and 2.0 compatible. Plug and Play with Windows 7/Vista/XP and Mac OS X. Uses standard General Aviation headset connectors (PJ-068 and PJ-055B). Supports headset impedances of 100 to 600 Ohms. Supports Mono and Stereo Headsets. Compatible with standard microphone types (electret, dynamic and powered dynamic) Specifications: Powers microphone bias (+9V) from USB port (no external power needed). Zero delay voice feedback/sidetone feature (PC/Mac only). Output frequency response (20Hz-20KHz). Weight: 100g. Size: 65mm(L), 55mm(W), 25mm(D). Compact, robust, anodised aluminium enclosure.
Pilots Headset USB Adapter .....P/N 13-09050 ..... **$89.95**
Chopper / Military Pilots UCB adapter .....P/N 13-09051 ..... **$86.95**

GPS TRAINING SOFTWARE FROM ASA

GPS Trainer Version 2 is a tutorial to help pilots master GPS from their desktop. For the renter confronted with one brand of GPS one day and another the next; for the instructor who teaches in multiple aircraft; for the aircraft owner who is trying to master the nuances of a favorite navigational tool; for the consumer wanting to search the options before making the buying decision; for fleet and Part 135 & 121 of operators who are required to provide GPS instruction to their pilots. GPS Trainer makes time spent in the Aircraft more effective by providing the appropriate tools to learn the GPS receiver on the ground.• The most popular GPS units are included, pilot scan learn the Bendix/King KLN 89B by AlliedSignal, Garmin GNS530, GPSMap 430, 295 or Apollo GX50/60 all on a single CD • Manufacturers' simulators and operating manuals included • FAA GPS reference materials included •Tutorial runs on both PC & Macintosh systems. P/N 13-01074 ..... **$48.75**

MY KIT AIRPLANE SOFTWARE CD

Written for XP and VISTA

Consists of several modules for individual functions. These modules include the Main Menu, Project Entry, Primary Project Selection, Construction Information Entry, Expense Entry, Flight Information Entry, Maintenance Information Entry, and Weight & Balance Tool. Also included are forms for entering Advisor and Category Information. The unique Suppliers Information form contains fields for just about any information you wish to keep track of. There is also a very complete FAA page that contains all the FAA information necessary for you to build, certify, and get your FAA Airworthiness Certificate for your Experimental or Light Sport Aircraft. In addition there is a very comprehensive file of information on Light Sport Aircraft and their construction and operation.Fully tested in XP and VISTA! Does require XP to have SP2 installed.
P/N 13-04694 .....**$64.50**

MECHANIC'S TOOLBOX CD

Software for the mechanic to help make youre job easier! Also includes the Engineering Manual Companion, Part number cross-references Torque Wrench Extension Calculator Continental and Lycoming engine troubleshooting, Battery Tester, Slick magneto, Aircraft bolts, screws and rivets. P/N 13-03463 .....**$39.95**

THE NAVIGATION CD-ROM

The Navigation CD-ROM is an interactive CD-ROM that teaches how to navigate with VOR, NDB, GPS, HSI, RMI, and Airspace! You'll be prepared for action in the cockpit! Animation, sounds, quizzes and interactivity allow you to visualize navigation concepts while using simulations of actual aircraft equipment. To make learning easy, each tutorial features an easy-to-use point-and-click environment. During each tutorial, you're prompted where to click, when to proceed and what information to provide during quizzes. If you need more time learning a concept, it is easy to review the section at hand. This CD-ROM features a logical progression, clearly written lessons, quizzes, interactive equipment simulation, colorful graphics and animation. System Requirements: Windows Vista, Windows XP, Windows 98, or Windows 95. 4MB RAM (8MB recommended). CD-ROM drive. 2MB hard drive space. Video supporting 256-color mode (minimum). Sound card (not required, but recommended).
P/N 13-00892 .....**$99.00**
Download Version .....P/N 13-11401 .....**$95.00**

VOR/NDB SIMULATOR V2.0

On-screen instructions are fully-voice-narrated. There's only one Simulator Module—you can choose any array of instruments to use, from the Instrument Manager. Instruments are draggable, allowing you to arrange them as they exist on your aircraft's instrument panel. VOR and NDB navigation can be performed simultaneously on the same screen. "Random" buttons generate random aircraft heading, navaid positions, aircraft position, and wind speed and direction Hide and show the aircraft, course lines, path flown, and heading vectors. The instruments and map area can be printed by the default printer configured on your computer. Grid lines on the map area represent square miles. ADF instrument allows fixed-card and rotatable-card methods of use. Precision movement of the course needle on the Course Deviation Indicators and Horizontal Situation Indicator allows greater navigation accuracy. Compass rose symbol on VOR navaids now remains stationary when the course is changed P/N 13-01437 .....**$69.00**
Download Version .....P/N 13.-11402 .....**$64.95**

GETTING AROUND ON THE GROUND

Teaches types of airport markings, signage and lighting. Goes beyond simple technical knowledge by outlining hazards, safely tips & procedures that will help keep you aware, knowledgeable & safe on the ground. Full sound narration to make learning easy. 3D graphics that show the airport environment from ground view. Skills for preventing runway incursions Complete descriptions and visuals of airport markings, signs, and lighting. Methods of incorporating knowledge of markings, signs, and lighting in your flight operations Ground procedures. Safety "Quick Tips" that you can use immediately. Case Studies of real-world runway incursion incidents and accidents. Printable documents from NASA and the FAA. Contains: 3 hours of narrated instruction, 15 instructional sections, 125 original 3D graphics and animations, 40 quiz questions, 17 "Quick Tips"
P/N 13-01438 .....**$29.00**
Download Version .....P/N 13-11403 .....**$28.50**

AIRBORNE RADAR ONLINE TRAINING

Airborne-Radar.Com is an online course that teaches how to use airborne weather radar. But, it goes beyond the use of airborne radar, teaching thunderstorm theory, hazards of thunderstorms, airborne radar theory, and airborne radar techniques. A Final Exam concludes the course, enabling the user to test their knowledge. Airborne-Radar.Com is available to PC and Mac users. Most seasoned professional pilots will admit that there has always been a lack of adequate weather radar training. The mantra has always been, "fly the airplane, and figure it out as you go." But there's no reason to continue with that mindset. Now Airborne-Radar.Com provides the only source of thorough, interactive online training for airborne weather radar. .....P/N 13-10296 .....**$99.00**
Download Version .....P/N 13-11405 .....**$95.00**

FLIGHT OF VOYAGER CD (DICK RUTAN)

This is a recount of the horrific, horrendous, heroic & humorous moments of the Voyager project through the eyes of the pilot Dick Rutan. On Dec. 14, 1986 Voyager took off from Edwards AFB in California and 9 days later landed at the Edwards, completing the first ever non-stop, unrefueled world flight. This 3-CD set (3.5 hrs) includes a mini journal map of the flight, historic photos, fun facts, & more. P/N 13-01163 .....**$35.00**

PS

PANEL PLANNER
INSTRUMENT PANEL DESIGN SOFTWARE

Panel Planner software gives you the power to design and build instrument panels in record time. Simply drag full-color, photo-realistic instruments, avionics, and cockpit controls into place on an aircraft panel template or photograph. Panel Planner tracks total cost, total weight, and peak current, generates and equipment list, and even prints actual-size hole-cutting templates and color mock-ups. Panel Planner is easy to install and use with its continuous context-sensitive help to guide you every step of the way. The updatable database includes equipment from King, Narco, Sigma-Tek, David Clark, P.S. Engineering, Insight, Garmin, IFR, II Morrow, UMA, Mitchell, Trimble, Arnav, S-Tek, Century, Vision Microsystems, Avidyne, Digifly, Skyforce, and many more; PLUS switches, lights, control cables, vents, circuit breakers, trim indicators, etc. Create labels, color-coded annunciators, or placards.

PANEL PLANNER PRO (2.9 VERSION)

Our largest update yet! Over 120 megabytes of updated instruments and panels. Panel Planner Pro is designed for the aircraft owner and the homebuilder. Panel Planner gives you the power to design and build instrument panels in record time. Simply drag full-color, photo-realistic instruments, avionics, and cockpit controls into place on an aircraft panel template or scanned photograph. Panel Planner tracks total cost, total weight, and peak current, generates an equipment list, and even prints actual-size hole-cutting templates and color mock ups with your desktop printer.

Panel Planner Pro for Windows..... P/N 13-44415 ... **$249.95**
Panel Planner Pro for Macintosh ..... P/N 13-06210 ... **$249.95**

JEPPESEN FLITESTAR FLIGHT PLANNING SOFTWARE

The current version of FliteStar calculates the optimum altitude based on total distance, winds aloft and your aircrafts performance. Experiment with different temperatures, power settings & altitudes and see their effects on performance. Comes with many popular aircraft already installed, including light piston, turbo-prop and jet aircraft. Do "what if" simulations, calculate weight & balance with graphic feedback. The only flight planner with the accuracy of a Jeppesen NavData database. You get every navigational chart at your fingertips. Zoom from continent-wide overviews down to half mile details. Roam across charts with a mouse, select way points by pointing and clicking. View victor airways, VORs, NDBs, intersections, airports, and frequencies. Enter winds for each flight leg, or retrieve them over your modem from Jeppesen. Do weight and balance, speeds, performance, and fuel burn with graphic feedback. Exclusive flight engineer module lets you do "what if" aircraft performance analysis. Optional subscriptions database updates from Jeppesen Sanderson. Change your route by "stretching" it to any other waypoints on the chart. Create user waypoints on the fly by just pointing at the area of the chart and holding Atl key. Find distance and radial from any point on chart to another point by simply pointing at each point on chart. Compute airway and MEAs between VORs for any route manually or automatically. Find common airways between any VOR and/or intersection. Enter winds for each flight leg, or retrieve them over your modem from Jeppesen. Minimum System Requirements: Computer & Processor: 1 GHz processor or faster. Memory: 1 GB. Hard Disk Space: 5 GB. Operating System: Windows XP SP3 or Vista 32-bit. Display: VGA 1280 x 1024, 24-bit color display. 600 dpi Windows compatible printer

Jeppesen Flitestar VFR North America..... P/N 68273 ..... **$141.00**
Jeppesen Flitestar IFR North America..... P/N 6120 ..... **$284.05**
Jeppesen Flitestar VFR Europe..... P/N 69383 ..... **$141.55**
Jeppesen Flitestar IFR North America..... P/N 6006 ..... **$279.30**
Jeppesen Flitestar IFR Worldwide ..... P/N 65703 ..... **$899.00**
Jeppesen Flitestar Corp North America..... P/N 13-07309 .. **$569.05**

COMM 1 VFR/IFR RADIO SIMULATOR

Windows based instructional CD-ROM is the closest thing to talking on the radio in the cockpit youll find anywhere. Comm1 has over 6 linear hrs of interactive communication training. Learn to locate frequencies quickly. Always be a step ahead of the next radio call. Comm1s curriculum takes you through progressively more complex airspace so that you can feel confident in any environment. Practice selecting and saying the correct radio announcements and responses in all types of flight settings. Specifications: 486/66 MHz PC processor, 16 MB RAM, 6 MB hard drive space, Windows 95 or above, 4x speed CD-ROM drive, Sound Blaster-compatible sound card, Microphone and speakers (or headset), 800 x 600 resolution display with 256 colors.

Comm1 - VFR Radio Simulator..... P/N 13-32221 .... **$78.95**
Comm1 - IFR Radio Simulator..... P/N 13-00093 .... **$94.85**
Comm1 - Clearances on request..... P/N 13-00741 .... **$92.75**
Headset with Boom M/C ..... P/N 13-33331 .... **$24.95**
Plug & Play Combo VFR (Includes: COMM1 Multimedia headset / Mic & COMM1 VFR Radio Simulator)..... P/N 13-34441 .. **$102.95**
Audio Pilot Adapter..... P/N 13-03249 .... **$59.75**

MAX TRESCOTTS G1000 CD-ROM COURSE

There is a revolution sweeping through general aviation. All new aircraft ship with advanced glass cockpits and pilots are faced with the challenge of transitioning to these new systems. The most popular system is the Garmin G1000, and now you can master the system yourself with this new CD-ROM set produced by the author of the popular Max Trescott's G1000 Glass Cockpit Handbook.This course includes: More than six hours on two CD-ROM's, Large, full screen views of displays, Movie screen captures of operating knobs, Printable G1000 front panel displays, Tips from factory and Master CFI's, Narration by two CFI's for easy listening, Keyword searchable slides and transcripts, Optional quizzes to reinforce key points, Files that run on Windows, Macintosh and Linux. PN 13-05534 ..... **$87.50**

GARMIN G1000 GLASS COCKPIT BOOK - Learn about all Garmin G1000 features & differences Get the single source of information that educates pilots about all of the features and benefits of flying the Garmin G1000, and how features vary among aircraft manufacturers. Whether you fly a Beechcraft, Cessna, Columbia, Diamond, or Mooney, you'll learn which Garmin G1000 features apply to your particular aircraft. Or, if you're planning to buy a new Very Light Jet (VLJ) like the Cessna Mustang or Diamond D-Jet, this book will help you prepare while you wait for delivery.
PN 13-05533 ..... **$34.95**

MAX TRESCOTT CD-ROM COURSE

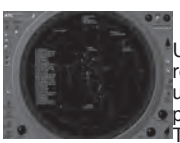
Makes it easy to learn all of the details of flying with WAAS. Designed for the Garmin 430W, 530W, 480, G900X and G1000, the course leads you step-by-step through flying these approaches. Videos demonstrate the flying of actual approaches, and software simulators let you practice loading and flying these approaches. The course is taught by Master CFIs Max Trescott and Susan Parson, who say it covers the "gotchas" that can trick even experienced GPS pilots. P/N 13-05067..... **$89.95**

KITLOG PRO SOFTWARE

KitLog Pro is an organizational tool that allows the builder of any type of aircraft to create, archive, maintain, and display the entire building process. Whether your experimental aircraft is a plans-built EAA bi-plane, a Van's RV, a Glastar, or even a Lancair IV-P, KitLog Pro is the most efficient way to ensure that you meet the requirements of a builder's log for the certification of your homebuilt aircraft.
Features: • Complete Builder's log to satisfy FAA requirements
Detailed Expense Log •Test Flight Log • Maintenance Log • Weight & Balance Calculator P/N 13-03705 ..... **$49.95**

REX 2 FLIGHT SIMULATOR X SOFTWARE

Announcing Real Environment Xtreme™! A first of its kind product... a complete photo-realistic, hi-definition professional graphics package for Microsoft's Flight Simulator series created entirely from state-of-the-art photography. INCLUDES their NEW built-in Weather Engine and Flight Planner! The texture sets within Real Environment Xtreme™ coupled with the powerful NEW Weather Engine and Flight Planner provides for an exhilarating and realistic experience. Real Environment Xtreme™, code named REX, has taken almost two years of research & development to reach the level of detail that exists today. P/N 13-08039 ..... **$52.50**



ATC SIMULATOR 2

Unlike other ATC sims, ATCsimulator®2 does NOT require an internet connection, nor is it dependent upon another application, and/or another user. This product is completely, unequivically stand-alone! The way software should be! ATCsimulator®2 is the premier Air Traffic Control simulation on the market for the PC. ATCsimulator® has been at the forefront of ATC simulation since Feb/2001, and is still going strong. ATCsimulator®2 allows you to immerse yourself in the mysterious world of air traffic control. This is as close to the REAL THING! as you can get. ATCsimulator®2 allows you to take on the role as Approach or Departure controller at your choice of over 120 Terminal Radar Approach Control facilities of the United States National Airspace System (NAS), or TRACONs as they are more commonly called. Your goal is to allow for the "safe and expeditious" flow of air traffic. It is your job to assist the pilots arriving at airports inside your airspace boundaries by lining them up for an approach (preparing for a landing). It is also your job to assist pilots departing your airspace by handing them over to the Air Route Traffic Control Center (ARTCC) controller at the appropriate time or fix location.

Standard Version..... P/N 17-00019 ..... **$41.75**
Pro Version..... P/N 17-00018 ..... **$66.75**

PS

AVIATION SOFTWARE

VFLITE WEIGHT & BALANCE VISUAL

With our easy to use system, pilots can learn to quickly calculate the weight and balance of their favorite aircraft and save configurations for later use. The system allows pilots to visualize the loading condition from a unique profile view, arm, and moment charts. The intuitive software uses easy input boxes to select exact weights, and includes weight and balance references and training tutorial. Perfect for all pilots from student to seasoned professional. The unique "My Presets" feature allows you to store weights for passengers, baggage, and favorite fuel levels. Once they're stored, simply drag them from the list and drop them on the seats or fuel slider. Will a spreadsheet do that?

ExpandablePurchase additional aircraft modules for all of the aircraft that you fly! Contact us if you do not see your aircraft. This is it! The easiest to use weight and balance application available. The program comes with a free weight and balance tutorial to help you master the fundamentals. This tutorial makes it easy to use the program. Simply enter the aircraft data using intuitive input buttons or typed text, and the program provides: Total Weight, Moment View, Arm View, and Aircraft Profile View. If the aircraft is out of limits simply click on the fields to change the weights. Unlike other programs, there are no complicated instructions or data points to build. The chart of aircraft arm or moment is graphically displayed.

SEE www.aircraftspruce.com for a list of supported aircraft.

P/N 11-04767.....**$41.75**

GARMIN G1000 TRAINING: IFR PROCEDURES

The Jeppesen Garmin G1000 - IFR Procedures training is a new and advanced, extensive computer-based training program developed with input from Garmin that teaches the skills required to master the operation and confidently fly the G1000 in IFR conditions. Learn how to pull up and fly instrument procedures, load and activate approaches including RNAV and GPS approaches, new WAAS-enabled approaches such as LNAV, LNAV/VNAV, and LPV approaches, departures and arrivals, as well as performing course reversals, holding patterns, and executing missed approaches. The Jeppesen scenario-based, guided simulation system provides complete and comprehensive training allowing the pilot to become proficient in all advanced functions and tasks required for IFR flight and greatly facilitates the transition to flying the Technically Advance Aircraft and the Garmin glass cockpit.

Garmin G1000 Training IFR Procedures.....P/N 13-06279 .....**$192.95**
Garmin G1000 PDF & MFD Basics.....P/N 13-05787 .....**$199.95**
Garmin G1000 PFD & MFD Advanced.....P/N 13-05788 .....**$212.95**

WEATHER STATEMENT GROUNDSCHOOL

Weather Statement Groundschool is a CD-ROM-based course on METAR's and TAF's. Nearly 2 hours of stunning, interactive training is provided. Weather Statement Groundschool promotes learning through human interaction—not just rote memorization. A remarkable feature is the interactive weather controls, which enable the user to "control the weather." For example, the user can specify wind speed, gust factor, direction, and other variables, and can then view how the weather statement displays this information. Since weather codes are confusing to interpret, the user can click the "Speak-It" button to hear a verbal translation. This allows the user to correlate codes with a true, visual picture and understanding of the weather. This tutorial CD is perfect for all pilots, from students to rated pilots who wish to remain sharp and proficient. It's also ideal for airport personnel, dispatchers, and anyone else who needs to view aviation weather information.

Software ..... P/N 13-05575..... **$59.00**
Download Version ..... P/N 13-11404..... **$55.00**

MULTIMEDIA SOFTWARE FLITESCHOOL

In terms of speed, graphics, clarity, and learning value, FliteSchool from Jeppesen Software is unequaled in its class. Much more than a series of "flash cards" that help you memorize the answers to FAA exams, FliteSchool provides programmed learning modules and Hypertext referencing that leads through a series of associated references to learn more, faster! Flite School's Dynamic Cybernetic Learning enhances your training by analyzing your responses and leading you to new subject areas. You'll find studying with FliteSchool to be more interesting and more effective than other software programs and many video tapes. Material is organized into 20 categories and monitored by topic. The software takes you step-by step through each subject area and returns to areas where you need more work. When you've mastered enough material to pass the FAA exam, you receive a graduation certificate for your instructor to sign off.

Private Pilot.....P/N 13-100507 .....**$151.95**
Instrument.....P/N 13-100519 .....**$151.95**

WINN BALANCE

This software was originally designed for the Ultraligh / Experimental aircraft builder/ designer to assist in weight and balance calculations, it also works well on conventional aircraft. It is Great everyday flight planning as well. It will run on Win95/98/ Me/2000/XP. The program interface is designed so that the CG and weight of your aircraft is automatically calculated with a minimum of effort.

MAIN SCREEN - This main screen contains all calculation input and dynamically displays real-time results. Hint screens are also of valuable assistance on this screen.

HELP SCREEN - Help is never far away, This help screen gives you all the information you will need to perform an initial weight and balance. It describes the entire process of how to weigh your qaircraft and some of the formulas to help you along the way.

SECONDARY INFORMATION SCREEN - This screen stores all your aircraft's installed equipment which forms a portion of your empty weight. This information is retained until you remove each item. It serves as a reminder as to what exactly was installed in the aircraft at the time of weighing. P/N 13-05599.....**$19.95**

JEPPESEN AVIONICS KNOWLEDGE LIBRARY

Master you GPS unit with Jeppesen's interactive e-learning for Garmin® GPS systems and Lowrance® Handheld GPS Systems. Jeppesen's advanced, self-paced digital learning programs provide training on all operational aspects of you GPS unit. It's the easy, proven way to get confident with all that you GPS has to offer. Key Features include: • Scenario-based, guided simulation • Realistic Emulator • Detailed, narrated demonstrations. • O-screen help and feedback systems. Discover te best way to use the full power of your avionics system compared to heads-down, in cock-pit training

Description	Part No.	Price
Garmin® 430/530 VFR & Core IFR Procedures	13-05644	**$159.95**
Garmin® 430/530 Advanced IFR Procedures	13-05645	**$109.95**
Garmin® 430/530 WAAS Procedures	13-05646	**$139.95**
Lowrance® AIRMAP 2000C	13-05647	**$53.95**

ASA INSPECTION AUTHORIZATION PREPWARE

This software includes more than 400 example FAA questions and answer choices, supported with comprehensive explanations. The same reference material applicants will have access to during the actual test is included as a PDF (the "CT-8080-8D"). This way applicants can become familiar with these documents and learn how to glean the information they need to answer the questions, from such FAA publications as the Airworthiness Directives, Advisory Circulars, Type Certificate Data Sheets, FAA Order 8130.21D, and FAA Form 8130-3. System Requirements: Internet connection is required for product registration and updates. IBM compatible PC with Pentium-class processor, Windows 2000, XP with Service Pack 2, or Vista. 128 MB RAM minimum for Windows 2000 and XP (512 MB for Vista). 150 MB available hard drive space, 1024 x 768 SVGA compatible display, CD-ROM drive, mouse or other compatible pointing device. Macintosh computer with PowerPC G3, G4, G5, or Intel-Mac processor, OS X Tiger (10.5 or higher), 128 MB Ram minimum, 150 MB available hard drive space, 1024 x 768 SVGA compatible display, CD-ROM drive, mouse or other compatible pointing device. For both Windows and Macintosh, Adobe Acrobat Reader is required.

P/N 13-06663 .....**$53.85**

JEPPESEN 530/430 VFR & ADVANCED IFR CD

A bundle that includes both the Jeppesen Garmin GNS530 Training - VFR & Core IFR Procedures CD and the Jeppesen Garmin GNS530/430 Advanced IFR Training CD.

Features: This bundle includes both the VFR & Core IFR Procedures and the Advanced IFR Procedures which teaches the basics and provides comprehensive training on almost all operational aspects of your GPS, including advanced IFR procedures. These training products are great refresher tools for recurrent training and helps minimize the "highly perishable skills syndrome" that occurs from infrequent use of your Garmin navigator. It is the safe way to discover and understand your GNS 530 & 430, compared to heads down in-cockpit training. P/N 13-07780.....**$197.95**

PS

ANDROID APPS – SOFTWARE

ANDROID APP VFR SECTIONALS

PHONE NOT INCLUDED

Digital VFR Sectionals on your Android device! dVFR allows you to fly with GPS moving map over the same sectional charts you learned to fly with! You get complete coverage including all 54 US Sectionals, from Nome to Miami and Hawaii to Halifax. And with dVFR you'll never have to worry about whether that new cell tower is on your old chart – charts are updated automatically with every cycle change with a valid license.

Digital VFR Sectionals.....P/N 13-09585 .....**$9.99**
28 Day Renewal .....P/N 13-09586 .....**$4.99**
1 Year Renewal .....P/N 13-09587 .....**$49.99**

ANDROID APP APPROACH PLATES

PHONE NOT INCLUDED

dTPP – digital Terminal Procedure Publications contains over 21,000 publications covering nearly 3,000 US airports and facilities. With dTPP you'll always have the charts you need when you need them – without the weight of paper charts! Carry dTPP when you fly for reference or as a backup to your selected paper charts, or use them as a legal replacement for paper charts! Easily select charts to download to your memory card for viewing in the air. Save more than $10 per month over what the FAA charges.

DTPP Approach Plates ....P/N 13-09582 .....**$19.99**
28 Day Renewal .....P/N 13-09583 .....**$4.99**
1 Year Renewal .....P/N 13-09584 .....**$49.99**

ANDROID APP WEIGHT AND BALANCE

PHONE NOT INCLUDED

Professional W&B graphical calculator by pilots for pilots! Supports multiple profiles for multiple aircraft. Comes with a sample template accurate for a Cirrus SR22 Calculates fuel burn and takeoff and landing weights, with warnings for low fuel or overweight conditions. Easily set up an individual profile for your airplane, then just enter the trip length, amount of fuel, and any changed weights (passengers, etc.) and get a graphical indication along side your GG, Weight, and Moment for both takeoff and landing.

P/N 13-09580 .....**$7.99**

ANDROID APP E6B FLIGHT COMPUTER

PHONE NOT INCLUDED

The Professional E6B with a polished interface. Easily calculate wind correction, density altitude, crosswinds, and more. With a cleaner interface that's easily controlled with one thumb, the E6B Flight Computer is completely cockpit friendly and requires no internet connection to work. Android Flight Director's E6B is 16 calculators in one – all in the palm of your hand!

P/N 13-09588 .....**$4.99**

ANDROID APP AIRPORT FACILITY DIRECTORY

PHONE NOT INCLUDED

The complete Airport / Facility Directory for your Android device! The Airport / Facility Directory by Android Flight Director contains detailed information on nearly 20,000 airports in the United States. With details such as hours of operation, radio frequencies, and runway setup you'll have all the information you need to land anywhere in the country. As a bonus, view an airport's directory page while connected to the internet (i.e. on the ground or with airborne WiFi) to see a satellite view of the airport! Unlike paper directories, the Android Flight Director AFD always has the latest data by downloading the most current cycle database as long as your license is valid.

AFP App .....P/N 13-09581 .....**$5.99**
28 Day Renewal .....P/N 13-09592 .....**$4.99**
1 Year Renewal .....P/N 13-09593 .....**$49.99**

ANDROID APP N-NUMBER LOOKUP

PHONE NOT INCLUDED

Search the complete FAA Registry from your phone. See the model, year of manufacture, engine details, owner information, and more! Perfect for airshows - find out all about the airplane you just saw.

P/N 13-09589 .....**$4.99**

For technical help on Android Apps please email support@androidflightdirector.com

FIRST SOLO SOFTWARE: PRIVATE PILOT ORAL EXAM PREP

The Private Pilot Oral Exam Prep, Version 2.0, features: 469 typical questions asked in the oral part of the practical exam many with graphical illustrations. Records questions learned and repeatedly drills on unlearned questions. Tracks progress both overall and within each of the twelve main topics. Content created by an ATP-CFII with over 35 years of flight experience Question topics include: Federal Aviation Regulations, Airspace, VFR Charts, Principles of Flight, Aircraft Engines & Systems, Aircraft Performance, Flight Instruments, Avionics & Navigation, Airport Operations, Weather, Emergencies, and Human Factors. System Requirements: Windows 7, Vista, XP (SP3), Server 2003, or Server 2008 1 GHz or higher processor Approx. 50 MB hard disk space Screen resolution of 1024 x 600 or better Microsoft .NET Framework 4.0 Client (included in setup.exe if not present on your system)

P/N 13-09495 .....**$39.95**

FIRST SOLO SOFTWARE: INSTRUMENT PROFICIENCY PREP

The Instrument Proficiency Prep, Version 2.0, features: 180 typical IPC questions asked during the instrument proficiency check, many with graphical illustrations. Records questions learned and repeatedly drills on unlearned questions. Tracks progress both overall and within each of the eight main topics. Content created by an ATP-CFII with over 35 years of flight experience. Question topics include: Federal Aviation Regulations, Airspace, IFR Charts & Approach Plates, IFR Procedures, Flight Instruments, Avionics & Navigation, Airport Operations and Emergencies. System Requirements: Windows 7, Vista, XP (SP3), Server 2003, or Server 2008. 1 GHz or higher processor. Approx. 50 MB hard disk space Screen resolution of 1024 x 600 or better Microsoft .NET Framework 4.0 Client (included in setup.exe if not present on your system).....P/N 13-09499 .....**$29.95**

FIRST SOLO SOFTWARE: INSTRUMENT RATING ORAL EXAM PREP

The Instrument Rating Oral Exam Prep, Version 2.0, features: 455 typical questions asked in the oral part of the practical exam many with graphical illustrations. Records questions learned and repeatedly drills on unlearned questions. Tracks progress both overall and within each of the eleven main topics. Content created by an ATP-CFII with over 35 years of flight experience. Question topics include: Federal Aviation Regulations, Airspace, IFR Charts & Approach Plates, IFR Procedures, Aircraft Engines & Systems, Flight Instruments, Avionics & Navigation, Airport Operations, Weather, Emergencies and Human Factors.

System Requirements: Windows 7, Vista, XP (SP3), Server 2003, or Server 2008. 1 GHz or higher processor. Approx. 50 MB hard disk space Screen resolution of 1024 x 600 or better. Microsoft .NET Framework 4.0 Client (included in setup.exe if not present on your system) .....P/N 13-09497 .....**$39.95**

FIRST SOLO SOFTWARE: FLIGHT REVIEW PREP

The Flight Review Prep, Version 2.0, features: 213 typical questions asked during a flight review, many with graphical illustrations. Records questions learned and repeatedly drills on unlearned questions. Tracks progress both overall and within each of the eleven main topics. Content created by an ATP-CFII with over 35 years of flight experience. Question topics include: Federal Aviation Regulations, Airspace, VFR Charts, Principles of Flight, Aircraft Engines & Systems, Aircraft Performance, Flight Instruments, Avionics & Navigation, Airport Operations, Weather, Emergencies. System Requirements: Windows 7, Vista, XP (SP3), Server 2003, or Server 2008. 1 GHz or higher processor. Approx. 50 MB hard disk space Screen resolution of 1024 x 600 or better Microsoft .NET Framework 4.0 Client (included in setup.exe if not present on your system).....P/N 13-09498 .....**$29.95**

VTS MULTIMEDIA TRAINING SOFTWARE

VTS training tools are priced affordably to allow each student to own a personal copy of the software.Each aircrafts systems are covered in detail far surpassing th general information provided in Pilots Information Manual. For example, the electrical schematic is presented on-screen just as it appears in the information manual. But instead of just sitting there looking mysterilous and intimidating, this virtual schematic comes to life with a click of the mouse. Controls and indicators from the cockpit are also available on-screen, creating an animated simulation of the entire system.

Aircraft Systems - Skyhawk .....P/N 13-03387 .....**$89.95**
Aircraft Systems - Warrior .....P/N 13-03388 .....**$148.95**
Aircraft Systems Seminole. .....P/N 13-03389. .....**$149.00**

PS

ASA IFR SIMULATORS

IP TRAINER VERSION 7.0

IFR Procedures Course

IP Trainer is the only IFR simulator with a foundation of artificial intelligence in the form of a virtual instrument flight instructor (CFII), the only interactive courseware designed exclusively for instrument students, and the only program that can compare its knowledge of the Instrument Practical Test Standards against a student's real-time flight simulation performance. Most importantly, while you're using IP Trainer to build a solid foundation of instrument skills, you'll also be saving money. IP Trainer users consistently attain their Instrument Rating with less dual time and with less expense than students who rely on traditional methods alone, saving an average of $1,000 in their total training costs for the rating. With a built-in CFII, spoken ATC guidance, the comprehensive Instrument Flying textbook by Trevor Thom, and a full complement of IFR lessons, IP Trainer is the single best way to bring instrument training home.

IP Trainer version 7.0.....P/N 13-50100 ..... **$169.95**
IP Trainer V7.0 bundled w/ On Top™ .....P/N 13-00656 ..... **$269.95**
Demo On top/IP Trainer, prepware, GPS Trainer, Flight Library & CX-2

ON TOP™ IFR PROFICIENCY SIMULATOR

Inside On Top you'll find five of the most popular aircraft ever built. There's a Cessna C172, C182 and C182RG, and Piper's Warrior and Arrow. Also included are the Lancair Columbia 300, the Mooney MSE, and Beechcraft's Bonanza V-35, Beechcraft Baron 58, and Beech's 1900D twin-turboprop. Each model utilizes precise flight dynamics algorithms, right down to the deadly assymetrical thrust you'll experience should you lose an engine in the Baron. Now, you can test your skills against the reality of single-engine IMC in a light twin, or a twin-engine turboprop. This and other aircraft setup parameters are available for all aircraft. Each aircraft panel is rendered with a next-generation graphics technology that makes every gauge, pointer, tick-mark and knob on your panel as true-to-life as a computer can create. Couple the "Photo-realistic" graphics effect with On Top's precise mimicry of real aircraft instrumentation and you're as immersed in your simulated flights as you are in your actual flights. There's realistic sound effects, like radio idents, marker beacons, gear and flap extension, and tire sounds. You'll find panoramic out-the-window views, accurate runway lighting and haze layering. You'll even see the rivets across your wings as you look right or left on a circling approach, all with enough realism to make you sweat. Full instrumentation, like programmable GPS, HSI, RMI, Moving Map and auto pilot is just half of it. In On Top, you decide what instruments you fly with, and you decide where they'll go. Some IFR sim makers decide years before you ever get your copy what kind of equipment you'll fly with and where it will go in your panel, but in On Top you can change it every time. On Top's Real-World Weather is as variable as tomorrow's weather. Define winds aloft and then surface winds, then dial in degree of swing and speed of gusts. Create turbulence, cloud bases and visibility with as much variability as you can handle, so you'll never know if you'll have to fly the missed approach until you get to the bottom of the funnel. And best of all, make your virtual conditions stable, deteriorating, improving or randomly changing, over any given time frame. In the real world, getting your procedures down pat with a methodical and practiced scan is just the beginning, and there's always more to learn.

On Top™ version 9.5.....P/N 13-06175.....**$129.95**
On Top™ V. 9.5 bundled w/IP Trainer ....P/N 13-00656.....**$269.95**

THE COMPLETE G1000 COURSE FROM ASA

The Complete G1000 Course will help you transition from steam-gauge "round dials" to the Technically Advanced Aircraft (TAA) glass cockpit environment. This interactive software allows you to practice becoming proficient in operating the G1000 from the safety and privacy of your home or office computer.

The intuitive software interface makes this as easy to use as reading a book. Computer learning tools in the form of cockpit representations and demonstrations of the tasks combine with a Part 141 and and FITS-compliant G1000 course, which is given by Skyline Aeronautics and in forums around the country. In this way the software teaches you how to safely and efficiently use the G1000 without running up the Hobbs! P/N 13-04346 ..... **$47.95**

ASA INSTRUMENT REFRESHER SIMULATOR

Instrument Refresher is specifically designed for instrument-rated pilots to get some dual on the maneuvers required to maintain currency. Everything necessary to be fully prepared for your next Instrument Proficiency Check (IPC) is here. Build confidence in your instrument skills and get over the refresher hurdle with the guidance of our qualified and knowledgeable virtual CFII. Intercept / track NAVAIDS, holding procedures and approaches are all supported with interactive lessons. Use Instrument Refresher to stay fresh on the 6-month instrument currency requirements! PN 13-04264 ..... **$77.65**

HARDWARE OPTIONS FOR ON TOP AND IP TRAINER

FLIGHT SIM YOKE USB - Top of the line yoke features 15 button functions, throttle, prop, mixture controls, X&Y trims, gear and flap switches. Requires USB computer connection and Windows 98®. Prop and mixture controls work only with Fly and FlightSim 2000 software.

P/N 13-00737 ..... **$114.95**

CH ECLIPSE YOKE - Fully programmable fingertip paddles, ideal for flight and racing sims. Programmable trim / scroll wheels with center push function. Two backlit push buttons and a third traditional push button. Two 8-way hat with rocker switch and trigger on both sides of handle. Configurable POV hat for either left or right hand use. Colored handles for throttle / prop / fuel mixture. Three color LED selector dial giving you a total of 240 programmable functions with CH Control Manager software. Six analog 10 bit axes for aileron, elevator, throttle, propeller pitch, fuel and rudder. New and improved industrial grade material / components; indestructible robust plastic, free floating shaft and clamp extenders for the thinnest of desks P/N 13-06127 ..... **$189.95**

CH PRO RUDDER PEDALS USB - Features forward/backward slide motion for real simulation flying. Also works well as gas and brake controls for racing simulators. These 3 axes pedals are ideal with the 5 axes USB Flight Sim yoke. P/N 13-00738 ..... **$109.95**

Kit #1 - Yoke and Rudder Pedals.....P/N 13-06766 ..... **$209.95**
Kit #2 - Yoke, Rudder Pedals, & Throttle Quadrant, & Microflight Simulator Software (PN 13-04958) .....P/N 13-06765 ..... **$262.95**

CH THROTTLE QUADRANT USB - TWIN ENGINE. Fully programmable and featuring six physical dent axis' and up to 350 buttons. Throttle Quandrant USB takes you from the computer to the cockpit. Features: 6 Axis 12 Buttons (24 Button functions w/Control Manager Software (included), 6 Physical Detents, Fully Programmable with CH Control manager, Compatible with Windows 98, Windows ME, Windows 2000 & Windows XP. Compatible with all Windows based Games.

P/N 13-03377 ..... **$115.95**

VRTR400 CONSOLE SIMULATOR

The VR Aircraft VRTR400 Console Simulator offers the ultimate in realism, flexibility, mobility, reliability, and cost effective flight training! This high quality instrument panel simulation system represents what you would find in a real single engine aircraft. The VRTR700 is as real as it gets! With today's rapidly escalating operating costs, you can keep flying without burning a drop of fuel, or worrying about the weather. With a small 42" x 18" footprint, the VRTR400 Console simulator will fit in very compact areas, on a desk or small table. Built to rugged specifications, VR simulators will give years of trouble free service. VR simulators are built tough enough to let big kids and non-pilots fly it HARD! Not supplied: PC Computer system capable of operating Microsoft flight simulator 2004 or FSX. Suggest 2.2ghz or higher 2Mb ram Video card(s) capable of having three video outputs. Microsoft flight simulator program Rudder pedals (USB)
VRTR400 Standard Radios..... P/N 13-06760.....**$8,750.00**
VRTR400-G Dual Screen Glass(G1000)... P/N 13-06761.....**$9,150.00**

MICROSOFT FLIGHT SIMULATOR AS A TRAINING AID

Microsoft® Flight Simulator has inspired many thousands of young "gamers" to pursue flight training in real life and has provided certificated pilots with countless hours of entertainment. And even though there is an awareness that PC-based simulations—and Microsoft Flight Simulator in particular—are helpful as aids in flight training and pilot proficiency, for many it is still unclear how best to benefit from the experience of virtual flying. P/N 13-04937..... **$19.95**

MICROSOFT FLIGHT SIMULATOR X DELUXE EDITION

"Flight Simulator X" is the culmination of nearly 25 years of the landmark "Flight Simulator" franchise and the most significant addition to date. The 10th addition to the highly successful "Flight Simulator" franchise, this newest addition will immerse players in a beautifully rich and realistic world, offering a completely new and innovative gaming experience with dozens of new aircrafts to choose from, including the AirCreations Kiss Ultralight and Maule M7-260C Orion with wheels and skis. Gamers of all ages, types and skills levels will experience firsthand what it's like to be an aviator traveling the globe either alone or online with others. FEATURES: Immersive World., Mission-based Gameplay, New Aircraft, Connected World, Interactive Airports. ***DVD-ROM for the Microsoft© Windows © 98, Windows 2000, Windows Millennium Edition (Windows Me), WindowsXP and Windows Vista™ operating systems*** P/N 13-04958..... **$49.85**

PS

FLIGHT SIMULATORS

CH VIDEO GAME JOYSTICKS

Your pulse quickens, your muscles tighten, adrenaline surges through your veins as you engage enemy aircraft in gut wrenching aerial combat. With CH Products simulation controllers, the realism of your next combat mission ascends to new heights.

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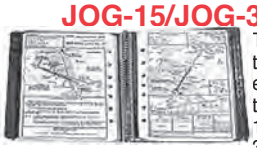

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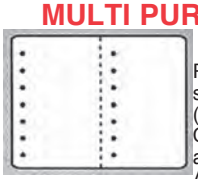

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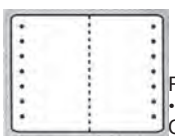

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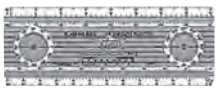

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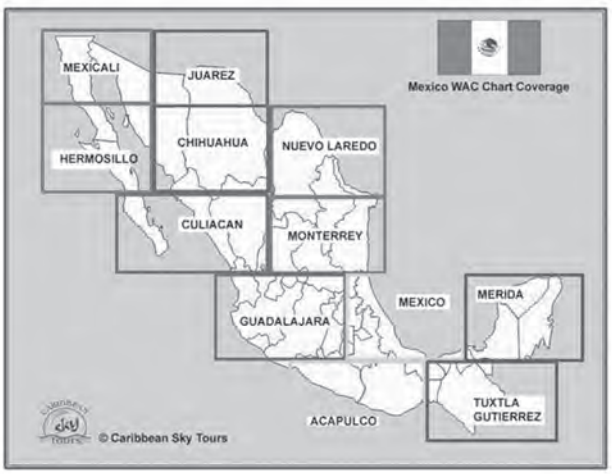
REFERENCE MAPS – AIR MAPS

MEXICO VFR WAC CHARTS



Published by INEGI - Mexico's National Institute of Statistics, Information & Geography. These World Aeronautical Charts (WAC) were released in 2008 and contain topographical, airport and navaid information. Mexico is divided into 12 regions and 2 regions are printed on each chart for a total of 6 individual charts. Updated every 4 years. SCALE 1:1,000,000. Note that aircraft landing in Mexico that departed from Central America, South America or the Caribbean are subject to special AOE requirements and can only use the Cozumel and Tapachula airports as AOE's. Detailed airport information and fuel availablilty can be found in the Pilot's Guide.

Description	Part No.	Price
Monterey-N.Laredo	13-06079	**$14.95**
Acapulco-Mexico	13-06080	**$14.95**
Tuxtla Gutierz-Merida	13-06081	**$14.95**
Chihuahua-Juarez	13-06082	**$14.95**
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Guadalajara-Culiacan	13-06084	**$14.95**

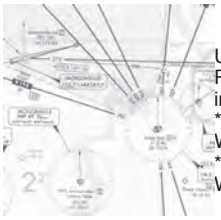
PILOTS FREE FLIGHT ATLAS - USA

Base cartography is the US Road-Atlas 1: 2.000.000 which includes mountain ranges, lakes, rivers, etc. . As well, all other elements such as, cities, towns. Parks and points of interest or historic value and of course, the railways and motor-ways themselves.
To this, they have added all airports in USA (over 5,500) and colour coded them by runway length /surface and category ,ie. International, Regional, Civil/Military, etc.. VOR/DME , Reporting points, Waypoints), Volmet frequencies and special Use Airspace are also shown making our new "Pilots' Atlas" the first of it's kind. Keymap for 106 pages cartography. Scale 1:2.000.000. Distance, Pilot Metro and Weather Radar Map Satellite Photo. Political Map. Cartography Captains Corner Airport Directory with over 5,500 airports. Captains Corner Conversion tables + crosswind component P/N 13-07299.....**$31.95**

PILOTS FREE FLIGHT ATLAS - EASTERN HEMISPHERE (EUROPE, MIDDLE EAST, & SOUTHEAST, ASIA)

JNC scale, topographical charts are used showing over 4,500 airports Waypoints, VOR/DME, NDB´s and special use airspace are included, plus weather frequencies, points of interest, landmarks, airport-directory with ICAO-codes, railways, rivers, major highways, just to name a few. Airports are colour coded by runway length and surface. International/ regional Aerodromes are coded by symbol shape. Pilots now have the ability to point out objects on the ground or know immediately where they are in relation to surrounding airports or points of interest: an all-in-one source of information for pre-flight or during flight. P/N 13-07300.....**$38.75**

IFR AREA CHARTS - U.S.



United States Government Flight Information Publication IFR Area Charts - U.S. Area consisting part of: * **A-1** Minneapolis/St. Paul * Detroit * St. Louis * Atlanta * Jacksonville * Miami * Washington * **A-2** San Francisco * Los Angeles * Phoenix * Denver * Kansas City * Dallas/Fort Worth * Chicago/Milwaukee
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Flight Case Map - US 5th Edition
This is the map that actually started it all and launched our business in 1988. The Aviators' Quick Reference Map has become standard equipment in the flight bags of thousands of professional pilots all over the world and is standard issue to the pilots of several major airlines.
Colorful and accurate, these maps clearly depict state boundaries, time zones, major cities and towns, rivers, lakes, mountain ranges, national parks and points of interest. Also listed are major airports and VOR's (with frequencies for easy identification). Hundreds of interesting state by state facts and figures are listed on the back side. Two finishes: laminated or tearproof. The laminated version has a write-on/wipe-off surface. Either is durable enough to with stand years of use. A great aid for making more interesting PA's. When folded, laminated map measures 10.5" x 16" and tearproof is 8" x 10.75". Both fit perfectly in a flight case. Scale 1"= 90 miles.

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Pilot's Laminated Wall Map.....P/N 13-11248.....**$18.75**

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Packed with useful information on cities, parks, highways, and other points of interest from California to Maine.
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MAPS – CHARTS

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A critical reference tool for any navigator, the ninth edition of the Aeronautical Chart User's Guide presents the most up-to-date information on charts adhering to Visual Flight Rule (VFR) and Instrument Flying Rule (IFR). Hundreds of color images throughout the book are paired with easy-to-understand explanations and definitions. This concise guide allows pilots and students to successfully pre-plan flight paths through any type of environment from man-made obstacles to natural terrain. This updated edition is a great study aid for current pilots who are preparing for additional certification and for potential pilots who are interested in applying for their first license. Number of Pages: 80 Dimensions: 8.5 x 11 x 0.8 in. P/N 13-11595.....**$19.95**

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The Canada Flight Supplement is a joint civil/military publication. It contains information on Canadian and North Atlantic aerodromes and is used as a reference for the planning and safe conduct of air operations. Features: •General: Tables, legends and associated information pertinent to interpretation of the supplement. •Aerodrome Directory •Planning •Radio Navigation and Communications •Military: Flight procedures and data, including sections on procedures for flight in the USA, North Atlantic and Alaska, air/ground communications and military training routes/areas. • Emergency procedures. •The Canada Flight Supplement, measuring 5 1⁄4 by 8 1⁄4 inches, is available in English or a bilingual format. Data for the province of Quebec and the National Capital Region are presented in French in the bilingual edition.

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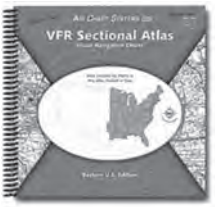
VFR SECTIONAL ATLAS



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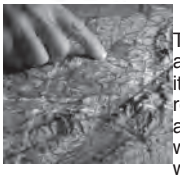

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Great Falls	Cheyenne	Wichita	Memphis	Miami	Juneau	Anchorage
Billings	Omaha	St. Louis	Atlanta	Hawaii	Ketchikan	Salt Lake City
Twin Cities	Chicago	Cincinnati	El Paso	Kodiak	Cape Lisburn	Kansas City
Green Bay	Detroit	Washington	San Antonio	Dutch Harbor	Point Barrow	Charlotte
Lake Huron	New York	Los Angeles	Houston	Aleutian Islands	Fairbanks	Cold Bay
Montreal	San Francisco	Phoenix	New Orleans	Western	Dawson	
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AERONAV VFR TERMINAL AREA CHARTS

Terminal Area Charts depict the airspace designated as Class B Airspace. The information found on these charts, while similar to that found on Sectional Charts, is shown in much more detail because of the larger scale. These charts should be used by pilots intending to operate from airfield within or near a Terminal Control Area or an Airport Radar Service Area. Locations of Terminal Area Charts are indicated by a • on the Sectional Chart indexes. (Scale 1 inch = 3.43nm/1:250,000. 25 x 20 inches folded to 5 x 10 inches.) Revised semi-annually, except Puerto Rico/Virgin Islands is revised annually.

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Boston	Honolulu	New Orleans	Seattle
Charlotte	Houston	New York	St. Louis
Chicago	Kansas City	Philadelphia	Orlando/Tampa
Cincinnati	Las Vegas	Phoenix	Washington
Cleveland	Los Angeles	Pittsburgh	Anchorage/
Dallas	Memphis	Salt Lake City	Fairbanks
Denver	Miami	San Diego	

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The Airport/Facility directory is a pilot's manual which contains data on public and joint use airports, seaplane bases, heliports, VFR airport sketches, NAVAIDs, communications data, weather data sources, airspace, special notices, VFR waypoints and operational procedures. The seven volumes cover the conterminous United States, Puerto Rico, and the Virgin Islands. Includes data that cannot be readily depicted in graphic form; e.g., airport hours of operation, types of fuel available, runway data, lighting codes, etc. **$4.50 ea.**

Area	Part No.
Southwest U.S.	AFD-SW
Northwest U.S.	AFD-NW
So. Central U.S.	AFD-SC
No. Central U.S.	AFD-NC

Area	Part No.
East Central U.S	AFD-EC
Southeast U.S.	AFD-SE
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Large Book-Style Chart Wallet.....P/N 13-00412 .....**$21.75**

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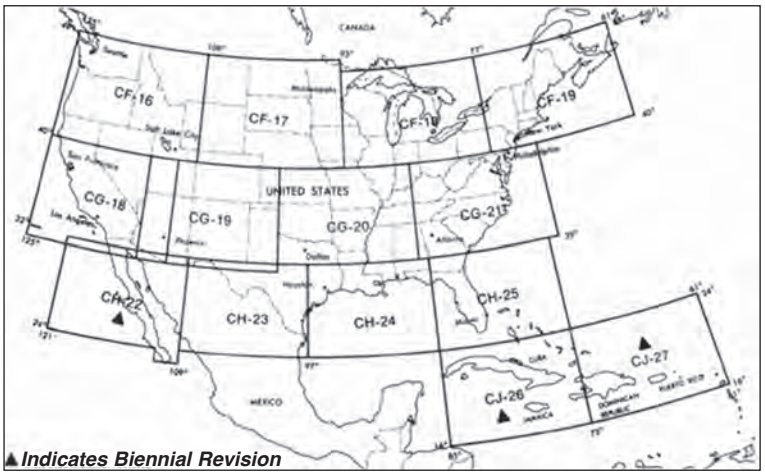
AERONAV VISUAL NAVIGATION CHARTS



▲ *Indicates Biennial Revision*

World Aeronautical Charts for the conterminous U.S., Mexico, & Caribbean Areas

WORLD AERONAUTICAL CHARTS

World Aeronautical Charts by NOS are designed to provide standard for the land areas of the world in a size and scale convenient for navigation by moderate-speed aircraft. Topographic information includes cities and towns, principle roads, railroads, distinctive landmarks, drainage, and relief. Aeronautical information includes visual and radio aids to navigation, airports, airways,restricted areas, obstructions, and other data considered pertinent. Scale 1:1,000,000 or 1" to 13.7 nautical miles, less detailed than Sectional & Terminal Area Charts, but useful for longer distance planning. Revised annually. 12 charts cover the US

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Example: WAC chart CF-17 is P/N 8567CF-17.

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New York Helicopter Route Chart	P/N 13-30713	**$12.95**

World Aeronautical Charts for Alaska

CHART MASTER

Chart Master
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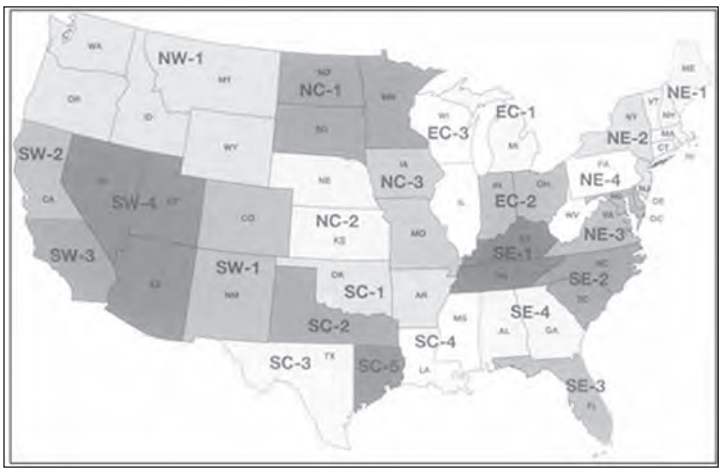

TERMINAL PROCEDURES COVERAGE OF THE CONTERMINOUS U.S.

Includes: • Instrument Approach Procedure (IAP) Charts •Departure Procedure (DP) Charts • Standard Terminal Arrival (STAR) Charts • Charted Visual Flight Procedures (CVFP) • Airport Diagrams

IAP Charts are designed to provide an IFR descent from the enroute environment to a point where a safe landing can be made. DP charts are Air Traffic Control (ATC)-coded departure procedures which have been established at certain airports to simplify clearance delivery procedures. STAR charts are ATC-coded IFR arrival routes established for certain airports to simplify clearance delivery procedures. CVFPs are an operational technique designed to move air traffic safely and expeditiously. In addition to conventional visual approach procedures, it has been necessary to specify routes/altitudes to enhance noise abatement at some locations. CVFPs have been developed to provide a pictorial display of these visual arrival routes. Airport Diagrams are specifically designed to assist in the movement of ground traffic at locations with complex runway/taxiway configurations and provide information for updating geodetic position navigational systems aboard aircraft.

Bound Volumes **$4.25**
Loose Leaf Volumes.....**$4.25**

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South Central Vol.2	13-01332	13-01365
South Central Vol.3	13-01333	13-00774
South Central Vol.4	13-01334	13-00105
South Central Vol.5	13-01545	13-02002
Southeast Vol. 1	13-01335	13-01366
Southeast Vol. 2	13-01336	13-01367
Southeast Vol. 3	13-01337	13-01368
Southeast Vol. 4	13-01338	13-00106
Southwest Vol. 1	13-01339	13-01369
Southwest Vol. 2	13-01340	13-01370
Southwest Vol. 3	13-01445	13-01446

Description	Bound P/N	Loose Leaf P/N
Southwest Vol. 4	13-00814	13-01546
East Central Vol. 1	13-01341	13-01354
East Central Vol. 2	13-01342	13-01355
East Central Vol. 3	13-01343	13-01356
North Central Vol. 1	13-01344	13-01357
North Central Vol. 2	13-01345	13-01358
North Central Vol. 3	13-01346	13-01359
Northeast Vol. 1	13-01347	13-01360
Northeast Vol. 2	13-01348	13-01361
Northeast Vol. 3	13-01349	13-01362
Northeast Vol. 4	13-02062	13-02063
Northwest Vol. 1	13-01350	13-01363

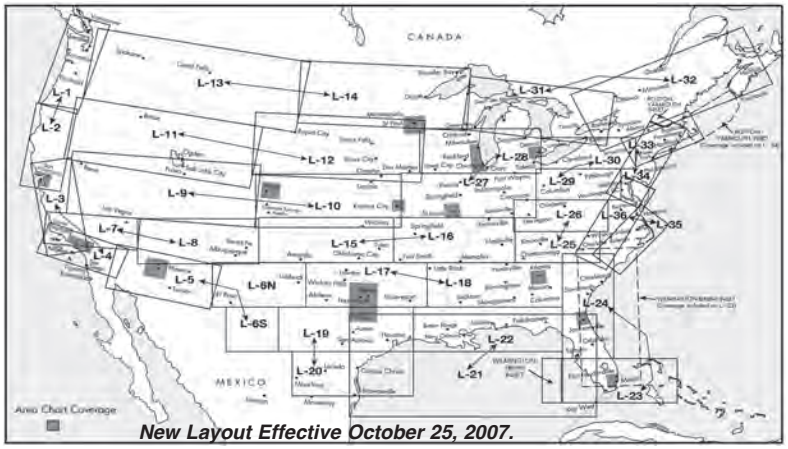
CALIFORNIA AERONAUTICAL CHART

If you are planning a flight within the state of California, check out the 2002-2003 California Aeronautical Chart,which covers the entire state on one page and also include 5 sectional charts (Klamath Falls, San Francisco, Los Angeles, Phoenix and Las Vegas) The chart is designed for planning purposes, not for navigation.

P/N 13-30800..... **$11.95**

INSTRUMENT NAVIGATION CHARTS

AERONAV ENROUTE LOW ALTITUDE CHARTS



New Layout Effective October 25, 2007.

Enroute low altitude charts for conterminous U.S. (includes area charts)

Enroute Low Altitude charts (Conterminous U.S. and Alaska) provide aeronautical information for navigation under instrument flight rules below 18,000 feet MSL. Information includes: airways; limits of controlled airspace; position, identification, and frequencies of radio aids to navigation (Alaska 4-color series includes geographic coordinates); airports with terminal air/ground communications; minimum enroute and obstruction clearance altitudes; airway distances; reporting points; special use airspace areas; military training routes. Scales vary from 1 inch = 5nm to 1 inch = 20nm. 50 x 20 inches folded to 5 x 10 inches. Revised every 8 weeks. Area charts, which show congested terminal areas at a large scale, are included with subscriptions to any conterminous U.S. Set Low (Full set, East or West sets). Chart L-28 covers the Washington-Boston corridor at a scale similar to an Area Chart. Charts are revised every 8 weeks.

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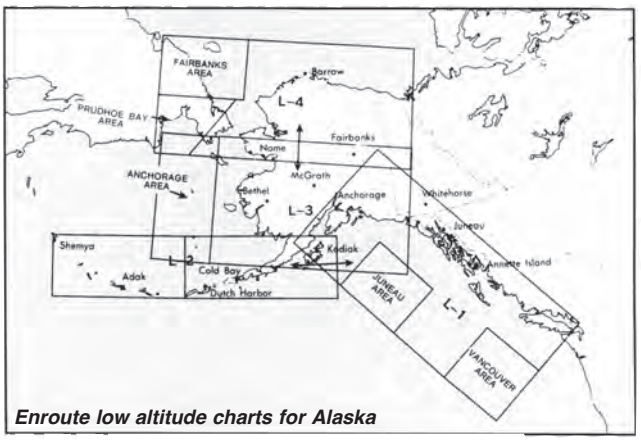

Enroute low altitude charts for Alaska

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FAA Aeronautical Chart User's Guide is designed to be used as a VFR/IFR teaching aid, reference document, and an introduction to the wealth of information provided on FAA's aeronautical charts and publications.
It includes explanations of chart terms and symbols, and a comprehensive display of aeronautical charting symbols organized by chart type. The publication is 8-1/2 x 11 inches.
P/N 13-08053.....**$4.25**

NOTE: When ordering individual charts, complete part number with the chart number. Example: Enroute Low Altitude Chart L-10 is P/N 8070L-10. For SUBSCRIPTION service, add -SUB (example: 8070L-10-SUB) and a new chart will be shipped and billed to you automatically at every revision until you cancel the subscription. Subscription chart orders require a credit card number on file.

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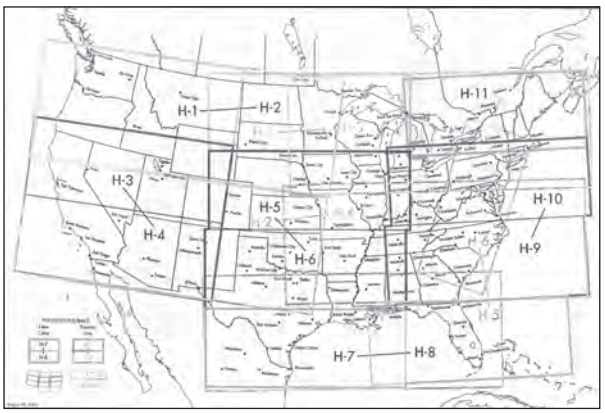

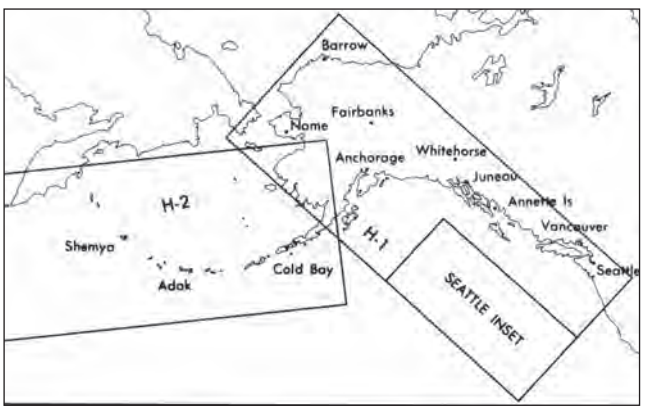

PS

CANADIAN AIA CHARTS

CANADIAN VNC (VFR) CHARTS

The VNC is used by VFR pilots on short to extended cross-country flight at medium altitudes and at low to medium airspeeds. These charts show aerodrome data, airspace information, radio aids to navigation, air/ground communications, and elevation with contour lines, tints and shaded relief.

VNC

Item	Title	Part No.	Price
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5001	VNC Sault Ste Marie	13-04434	$18.75
5002	VNC Montreal	13-04433	$18.75
5003	VNC Moncton	13-04466	$18.75
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5005	VNC Calgary	13-04468	$18.75
5006	VNC Regina	13-04469	$18.75
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5009	VNC Timmins	13-04435	$18.75
5010	VNC Chicoutimi	13-04471	$18.75
5011	VNC Anticosti	13-04472	$19.75
5012	VNC Gander	13-04473	$18.75
5013	VNC Kitimat	13-04474	$18.75
5014	VNC Prince George	13-04475	$18.75
5015	VNC Edmonton	13-04476	$18.75
5016	VNC Flin Flon	13-04477	$18.75
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5018	VNC James Bay	13-04479	$18.75
5019	VNC Wabush	13-04480	$18.75
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5021	VNC Atlin	13-04482	$18.75
5022	VNC Fort Nelson	13-04483	$18.75
5023	VNC Athabasca	13-04484	$18.75
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5029	VNC Ft Simpson	13-04490	$18.75
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5031	VNC Rankin	13-04492	$18.75
5032	VNC Coats Isl.	13-04493	$18.75
5033	VNC Frobisher	13-04494	$18.75
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5037	VNC Baker Lake	13-04498	$18.75
5038	VNC Foxe Basin	13-04499	$18.75
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5040	VNC MacKenzie	13-04502	$18.75
5041	VNC Amundsen	13-04503	$18.75
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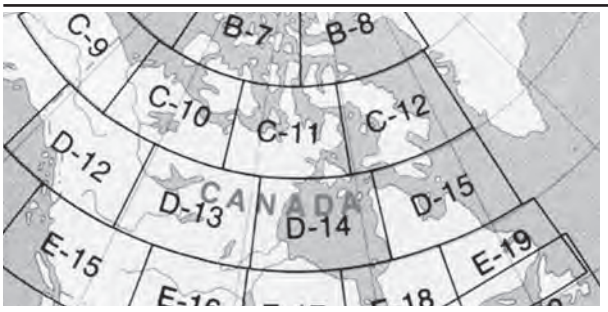
5046	VNC Resolute	13-04508	$18.75
5047	VNC Devon Island	13-04509	$18.75
5048	VNC Hazen Strait	13-04510	$18.75
5049	VNC Ellesmere	13-04511	$18.75
5050	VNC Alert	13-04512	$18.75
5099	VNC Alaska Highway	13-04516	$18.75



WAC

CANADIAN WAC CHARTS

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WACB7	C-WAC B-7	13-04518	$13.75
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Coverage Area	Description	Part No.	Price
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British Columbia	Canada Air Pilot - CAP 2	13-04554-1	$17.50
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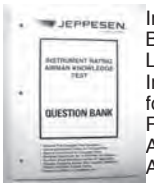

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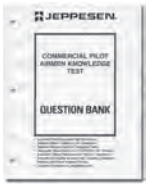

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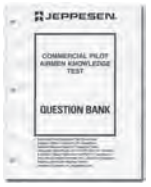

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AVIATION WEATHER

BY PETER LESTER Often when I write a book review the reader is able to deduce from the way I write it, whether or not it is an item which I truly believe is exceptional, or just something which is here simply because it is "supposed to be". This is one of those exceptional books and although it is a little more expensive than other weather books, it is truly a good example of getting what you pay for. This 3rd edition of Aviation Weather is Jeppesen at its best. It is also, without a doubt, the best and clearest book on weather as it pertains to pilots that I have seen. Aviation Weather is designed to help the student of aviation understand ther atmosphere in which he or she operates. It also serves as a valuable reference source for pilots at all levels. Whether your connection to flying is as a new student, a certified pilot, controller, dispatcher, scientist, engineer, or an interested passenger, Aviation weather will help you understand the strong interdependence of aviation and meteorology through over 300 full color illustrations, a minimum of mathematics, and a maximum of practical information. P/N 13-19385 ..... **$69.95**

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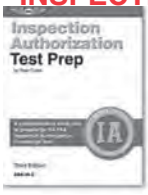

This book is an important reference source for all Aviation Maintenance Technicians (AMTs) seeking to add Inspection Authorization to his or her qualifications, as well as AMT schools preparing students for this test. All Inspection Authorization candidates must take and pass the FAA's IA Knowledge Test. The IA Test Prep provides readers with all the information needed to pass the IA Knowledge Test and helps candidates become familiar with the privileges and limitations of the highest level of maintenance certification. This book provides more than 350 sample questions, all of which are based on history and experience with the IA testing process. Example FAA questions and answer choices are supported with explanations, and FAA references from which the questions are derived are identified for students who wish to study them further. The IA Test Prep conveniently compiles the reference materials necessary to prepare for the IA Knowledge Exam into one volume, for an organized study program that AMT schools, instructors, and individuals alike can use to streamline their studies. P/N 13-01297 .....**$26.95**

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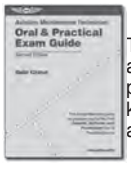
More than 10 hrs of high-quality DVD presentation meets all FAA Part 61 home study requirements. All the information needed to ace the FOI, CFI, BGI and AGI exams through exciting in-flight video and dynamic instructional aids and interactive quizzes. Includes 2012 Test Prep book and Computer Testing Supplement. A bonus DVD, Flight Review is included which covers the required specifics for a Biennial Flight Review.

P/N 13-01081 .....**$43.95**



ORAL & PRACTICAL EXAM GUIDE

This book prepares the AMT for the general, airframe, and powerplant exams with information on the certification process, typical projects and required skill levels, practical knowledge requirements in a question and answer format, and reference materials for further study.

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Bob Gardner's series of textbooks has been in publication since 1985 and is continually updated and expanded. Mr. Gardner writes in a conversational manner that is readable, comprehensive, and more importantly, will lead the reader to a greater understanding of the material. All his books are reinforced by the caliber of personal experience that integrates "technique" and "procedures" with mastery.

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ASA FAR/FC

Parts 1, 63, 65, 91 Subpart K, 119, 120 New!, 121, 135, and 49 CFR 175 (Hazmat), and New! 1544 (TSA). Part 25 is available as a free download! Free Updates available online for instant access to regulation and procedural changes. Free Update email subscription service – ASA will email you when a new Update is available. Unabridged FAR Parts from Titles 14 and 49 of the Code of Federal Regulations (14 and 49 CFR) Changes and updates since last edition clearly marked. Comprehensive FAR index. Softcover, 496 pages.

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BV

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ASA TEST PREPARATION SOFTWARE PREPWARE.COM

The experts in FAA Knowledge Exam preparation bring you a website dedicated to practice tests. Practice gives you the confidence you need before heading to the testing center, and saves you money on test retakes. You have the option to use these tests to acquire your test sign-off from ASA staff, or print your results to show your flight or ground instructor for their endorsement. Aviation Maintenance Technician applicants can use the Certificate of Completion to obtain an endorsement from their local FSDO. Practice exams are available for: General, Airframe, Powerplant, Sport, Private, Instrument, Commercial, Flight Instructor, Ground Instructor, Fundamentals of Instructing, Flight Engineer, and Airline Transport Pilot (all aircraft category and test types are available). P/N 13-10191 .....**$13.95**

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21st Century Flight Training teaches all the primary flight training maneuvers from the perspective of an examiner with countless checkride insights, guiding readers from initial flight instructor lessons to conducting flight reviews on their own. Flight instructor candidates are led through the development of a complete set of lesson plans, learning how to teach maneuvers, navigate oral exams and practical tests, and on to operating as twenty-first century flight instructors.
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ASA AUDIO SET PRIVATE PILOT CHECKRIDE

A narrator explains what you can expect during the checkride and then takes you into the briefing room where you are invited to listen in as a checkride gets underway. This program contains one example of a typical practical test on audio track. You should study the printed Private Oral Exam Guide book to obtain a complete understanding of all the different types of questions that might be asked during your checkride. P/N 11-08846 .....**$22.25**

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ASA TEST SUPPLEMENT - SPORT PILOT, INSTRUCTOR, EXAMINER

This is the same book issued during the Sport Pilot/Instructor/Examiner FAA Knowledge Exams at the computer testing centers. These "figures books" are exactly as printed by the FAA, with all charts reproduced in full color.
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BV

ASA FLIGHT TRAINING

STUDENT KITS

Complete, comprehensive packages for pilot training. Flexibility will always be the best feature of ASA Student Kits. If a school or training program needs to swap out the fiberboard flight computer in The Complete Private Kit for our aluminum E6-B, that's okay! If everything in The Aviator Commercial Kit is just right for your school's curriculum, but you're using the commercial syllabus you created, that's alright, too. Your ASA Distributor can create a Personalized Aviation Custom Kit for you that leaves out our Syllabus, but still guarantees easy ordering, easy shipping, and easy delivery.

THE COMPLETE PRIVATE KIT

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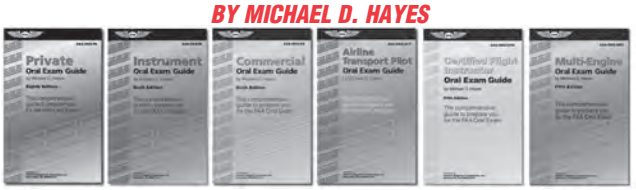
ORAL EXAM GUIDES

BY MICHAEL D. HAYES



These exam guides are written to help prepare applicants for their oral exams with FAA examiners. Using a question and answer format, each guide takes the questons most likely to be asked by examiners and provides easy to follow responses. Pilots will find these guides indispensable tools in both planning for what to expect and mastering the subject matter. Instructors rate these as excellent preparation for students, as well as preps for Instrument Proficiency Checks (IPCs), aircraft transitions, and as general refresher material.

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Complete Advanced Pilot..... P/N 13-01714..... **$19.95**

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With Virtual Test Prep, you can learn the material you need to ace the FAA Knowledge Exam right from your TV or computer DVD player. Animated and 3D graphics, special effects, expert instructors and terrific inflight footage make Virtual Test Prep a thoroughly entertaining and motivating learning experience that helps you prepare for the exams. Learn from the DVD, take the interactive onscreen subject quiz, then use the included ASA Test Prep book to work through the questions, for a comprehensive aviation ground school. Graduation certificate and instructor endorsement (sign-off) available from ASA for no additional cost upon completion of the course. Package also features 2 complete printed sample tests, and the Bonus DVD Ramp Check.

DVD program contents: Basic Aerodynamics, Aircraft Systems, Flight Instruments, Regulations, Procedures and Airport Operations, Weather, Weather Services, Aircraft Performance, Navigation, IFR Operations, and Test Tips, and Review questions. ..... P/N 11-09091 ..... **$109.95**

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Flight Engineer..... P/N 13-01082..... **$44.95**
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ASA AMT GENERAL PREPWARE 2012

Announcing Prepware 2012, the FAA Knowledge Exam software that allows users to take true-to-form practice exams and get immediate feedback on the test areas that need more work. Tailor-made practice sessions improve your performance in the areas you need to concentrate on the most to pass the test with flying colors! Questions are supported by study guides and comprehensive explanations for correct and incorrect answers. Instructors can create pop quizzes of any length, on any subject matter, to supplement the study sessions. You tell the software which test you're preparing for, and it generates your study sessions and practice tests accordingly. Prepware 2012 includes the new FAA Knowledge Exams effective July 2010. Use Prepware 2012 - AMT General for the following Knowledge Exams: AMT - General P/N 13-08679..... **$26.85**

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ASA VIRTUAL TEST PREP 2012 CFI

Virtual Test Prep–An Aviation Ground School brings an advanced classroom to any home TV or computer DVD player. Certified Flight Instructor test, 2012 Edition. DVD program contents: Fundamentals of Instructing, Aerodynamics and the Principles of Flight, Aircraft Systems, Aircraft Performance, Weather and Weather Services, Enroute Flight and Navigation, Procedures and Airport Operations, Regulations, Flight Instruction and Maneuvers, Flight Physiology, Test Tips, and Review questions. Total running time 10:33:38. System Requirements: Television or computer DVD player. Compatible with both PC and Macintosh DVD systems. P/N 13-07469..... **$119.50**

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This bundle combines ASA's popular Test Prep book and Prepware Download for the ultimate in flexibility and savings. Today's hectic lifestyles demand efficient use of what limited study time is normally available. This bundle give test applicants the convenience of choosing whichever test preparation method is most convenient at any given time or location. ASA's Prepware Download combines all the information found in the Test Prep, with the benefits of computer-based training—including performance graphs, realistic practice tests, study and review modes, and built-in timers. The instructor utility, QuizMaker, generates pop quizzes or full-length tests, using FAA Knowledge Exam questions.

Description	Part No.	Price	Description	Part No.	Price
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This PTS includes both the FAA-S-8081-29 for Airplane and FAA-S-8081-31 for Weight-Shift Control and Powered Parachute (effective December 2004), applicable to both Sport Pilots and Sport Instructors. Includes Change 1 (effective June 2006) and Change 2 (effective February 2008).

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The manual breaks down each maneuver required on the Private Practical Test in six parts: FAA objective for the maneuver. FAA completion standards. General description of the maneuver. Detailed step by step textual description on how to execute the maneuver as recommended by the FAA. References to FAA publications where the information was compiled from. Detailed graphic profiles summarizing the procedure in a visual format. Also included are airspeeds, pitch attitudes, bank angles, power settings and configurations for a Cessna 172P plus room to add the same information for up to three additional aircraft.

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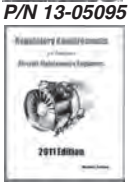
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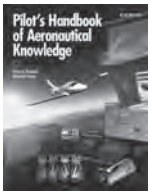

Created by the Federal Aviation Administration, is the official reference manual for pilots at all levels. An indispensable and invaluable encyclopedia, it deals with all aspects of aeronautical information. Flight manuals and documentation are also covered, as is specialized information on such matters as weight and balance, aircraft performance, weather, navigation, airport operations, aeromedical factors, and decision-making while flying. A detailed index and full glossary make this book easy to navigate and useful in quick reference situations. 352 pages Paperback. Published: October 2009
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Bahamas VFR chart.....P/N 13-02216 ..... **$8.95**
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The industry's original directory for connecting flight planners to aviation service providers for over 25 years. This annual publication provides airport, FBO, ground transportation, charter, caterer, handlers, and maintenance listings for the United States, Canada, Mexico and the Caribbean.

Description	Part No.	Price
Acukwik North American Edition	13-06384	**$32.95**
Acukwik Managers World Edition	13-06383	**$97.95**
Acukwik International Edition	13-06385	**$37.50**

AIRPORTS OF MEXICO

First complied by Baja Bush Pilot founder Arnold Senterfitt, Airports of Mexico is based on hundreds of hours of flying throughout Mexico. Rewritten by Jack McCormick, this new 20th edition includes both Baja and mainland Mexico, features over 1100 airports/ airstrips, all seaports and heliports, border crossing information, all international airports, information on flying in Mexico, discounts on hotels, Mexican insurance, group trips and fees. Over 150 airports are fully diagramed and are listed alphabetically. All in a convenient light weight, smaller, snap-ring binder designed for easy to use in the cockpit. A must for every pilot flying trips to Mexico.
P/N 13-01028..... **$58.50**

PILOT'S GUIDE TO MEXICO

Based on current Mexican and US regulations, as well as years of actual flying experience, Caribbean Sky Tours (CST) updates this popular guide yearly with detailed procedures for flying to Mexico and back as well as information on many interesting destinations in Mexico. CST reviews Mexican airport databases with Mexican authorities to select only those airports that are useable by visiting private aircraft. CST also includes important telephone numbers for each airport included in the guide so that pilots may obtain updated information on airport status. Printed entirely in color, the Pilot's Guide now includes ALL Mexican international airports as well as many popular secondary airports throughout Mexico. Any pilot needing information for an airport not included in the guide can contact CST and they will verify the status of the airport and if it is operational, CST will provide you with the data. To supplement the Pilot's Guide, we also recommend the Mexican VFR WAC Charts for your navigation needs.
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Showcases Rutan's herculean efforts to do just that. Smithsonian's Air and Space Museum displays his most celebrated achievements, including SpaceShipOne, which won the coveted $10 million Ansari X Prize for private spaceflight; Voyager, which hangs with SpaceShipOne in the Milestones of Flight gallery; the Virgin Atlantic GlobalFlyer; and the VariEze. . Rutan's X Prize triumph and subsequent spacecraft designs are not a beginning, nor an end, but are steps in Burt Rutan's continuing adventure to expand humanity's presence beyond the Earth and into space. P/N 13-11195..... **$29.95**

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SPORT PILOT TRAINING – FLIGHT TRAINING

ASA

SPORT PILOT: CHOOSING THE LIGHT-SPORT AIRCRAFT THAT'S RIGHT FOR YOU - This DVD production and booklet compare the LSA types as well as their ultralight cousins to help pilots make a truly informed decision on which light-sport aircraft is right for them. It explains what ultralights and LSA are, provides parameters to evaluate the viewer's situation and factors to consider (including cost, athletic ability, previous aviation experience, time to learn, transportation, storage, and airfield options), and provides an overview and introduction to each of the light-sport aircraft types. Includes beautiful full-color booklet with aircraft photo and comparison tables. Total running time 00:41:00.....P/N 13-03467 ..... **$21.75**

PRACTICAL TEST STANDARDS: SPORT PILOT - This is ASA's Sport Pilot Practical Test Standards for Airplane, Weight-Shift Control, Powered Parachute and Flight Instructor. The FAA Practical Test Standards are used by instructors, students, and examiners to prepare for, review, take, or issue the checkride. Includes both the FAA-S-8081-29 for Airplane and FAA-S-8081-31 for Weight-Shift Control and Powered Parachute (effective December 2004), applicable to both Sport Pilots and Sport Instructors. 296 pages.
P/N 13-05855.....**$6.95**

SPORT PILOT DVDS FROM ASA - Two new DVDs by sport pilot expert Paul Hamilton are available that explore the flying of light sport aircraft. Preflight a Fixed-Wing Light-Sport Aircraft for Sport Pilots takes pilots through the preflight inspection of a light sport aircraft (LSA). Be a Sport Pilot: Learning to Fly a Fixed-Wing Light-Sport Aircraft takes the lessons a step further by introducing the pilot to what it takes to obtain a sport pilot certificate. Hamilton and instructor Jeff Reynolds discuss pilot training, from first flight to solo to sign-off. The two DVDs are available separately or in a kit that also includes Weather to Fly for Sport Pilots and the Sport Pilot Logbook

Learn to Fly DVD..... P/N 13-04191 ..... **$42.95**
Preflight Fixed Wing DVD..... P/N 13-04192 ..... **$42.95**
Fixed Wing Sport Pilot..... P/N 13-04193 ..... **$78.95**

WEATHER TO FLY FOR SPORT PILOTS WITH PAUL HAMILTON -

Sport pilots fly lower and slower than General Aviation pilots. As a result, weather plays a critical factor in flying. The straightforward and beautiful presentation features time-lapsed cinematography of cloud formations, in-air footage, and animations. This DVD simplifies complex weather concepts as well as illustrates consequences of pilot judgment, in a 5-step system specific to Sport Pilots and light-sport aircraft operations. Pilots will learn to forecast local conditions, interpret weather information accurately, make better dec sions about "whether to fly", and learn to recognize trends. Includes booklet with worksheets for an interactive learning experience. Companion product to ASA's Sport Pilot Logbook (ASA-F2F-LOG). Total running time 01:20:12..... P/N 13-03468 ..... **$42.95**

SPORT PILOT LOGBOOK - Specifically designed for all Sport Pilots who fly ultralights and light-sport aircraft including hang gliders, paragliders, powered parachutes, trikes (weight-shift control), and fixed wing (three-axis control) aircraft. 7.25" x 5.25", 98 pages. P/N13-03385.....**$14.95**

ASA START FLYING! DVD

Understand what's involved in learning to fly with this informational DVD. Encourages would-be fliers by providing answers to frequently asked questions about flight training. Perfect for anyone interested in earning a pilot's license, student pilots, and pilots who are upgrading to advanced ratings.
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ASA ROTAX 912 ENGINE INTRODUCTION

This DVD by Paul Hamilton introduces the use and maintenance on Light-Sport Aircraft (LSA) of the ROTAX 912 engine. Many engine problems seen in the field are preventable with proper operation and maintenance and the 912 is no exception. This DVD is particularly useful to maintenance professionals, pilots and flight instructors operating ROTAX-powered Light Sport Aircraft. Answers frequently asked questions based on years of operational and maintenance experience and outlines typical procedures every owner, operator and mechanic should know. This DVD is the only one of its kind in the rapidly growing LSA market, and it caters to the do-it-yourself experience of flying this category of aircraft P/N 13-04747..... **$42.95**

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Flyabout tells the autobiographical story of Monika Petrillo's journey piloting a small single-engine airplane around the continent of Australia. Her father, a pilot with limited experience himself, is riding shot As the only women pilot in a group of eleven people, Monika sets out to experience the true freedom of flight above one of the most untouched places on earth. But what impacts her most is the unexpected conflict that arises between her father and herself. P/N 13-06638 ..... **$19.95**

CHRIS & TED'S FLYING IN ALASKA VIDEO

When they planned their trip to Alaska, they encountered a startling lack of visual information for much of the state, in particular those areas less travelled and less well known. The prospect of flying in Alaska can be intimidating when your imagination is forced to fill in the blanks. Exactly how big are the mountains, rivers and glaciers? How bad does the weather get? Is an emergency landing a death sentence? If we camp out will we end up as bear lunch? One look at the map and you'll see that they covered alot of ground. During 5 weeks of mostly great weather they made a lazy clockwise loop around the state, stopping for a few hours or a few days along the way. They hiked, backpacked, kayaked, fished and stalked big game with their cameras.
P/N 13-05272.....**$24.95**

ALASKANS FLY ALASKA DVD

Join the fun as Alaska pilots sharpen their skills in vast and varied Southwest Alaska, an uninhabited, untamed, and undeveloped wilderness. Experience the excitement of the possibilities open to the small plane pilot, flying low and slow through western Canada and Alaska. Come along as they fly though Canada, following the popular routes preferred by experienced small plane pilots. Explore Alaska's back country, where there are no roads and no people for hundreds of miles. Touch down on remote beaches, sandbars, and fields, in places only the bush pilot can go. Marvel at the breathtaking views of spectacular glaciers, ancient canyons, sun-bathed seascapes, and unsurpassed mountain ranges. Enjoy an enthusiastic look at possibilities open to the small plane pilot flying in Canada and Alaska. P/N 13-07374.....**$24.95**

RED BULL DVD

Take the top 12 pilots in the world to 8 of the most stunning cities around the globe. Add tight twisting race tracks, planes flying close to 400 km/h, chuck in 12G s for good measure and you've got the 2008 Red Bull Air Race World Championship another spectacular season of high drama and amazing skill. Watch the very best moments from the opening race in Abu Dhabi to the first ever double header taking place at San Diego and Detroit in the United States. The pilots battled against the elements in Rotterdam and London and came out on top before heading to Budapest. In Porto a new champion came of age before the finale in Perth where the winner of the 2008 Red Bull Air Race World Championship was crowned. Picture Format: NTSC P/N 13-06889 ..... **$19.95**

BACKCOUNTRY IDAHO DVD

Pilots of all skill levels will truly enjoy the exhilaration and adventure of Idaho backcountry flying at its best with ... Backcountry Idaho. Visit some of the best backcountry airstrips in the Rocky Mountains. Explore scenic wilderness, vast pine forests, and steep canyons in search of pristine beauty and the next runway challenge. Fly right seat on the actual approaches and departures of these spectacular backcountry airstrips with Todd at the controls of his high-performance, custom designed, King Katmai.
P/N 13-06298 ..... **$24.95**

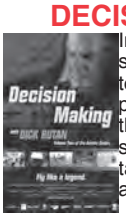
IDAHO GOLD, RETURN TO THE BACKCOUNTRY DVD

Join Todd Peterson as he explores strips not covered in his immensely popular Backcountry Idaho DVD. He'll take you north of the Salmon River with his wife, Jo, and fellow King Katmai owner, Jay Minor, to visit some truly remarkable backcountry gems. Their odyssey is based in historic Dixie Town, where the runway parallels Main Street right in town. P/N 13-11200 ..... **$24.95**

UTAH OUTBACK DVD

Visit some of the best backcountry airstrips of the American West. Discover ancient Anasazi cliff dwellings or squeeze through a thousand-foot-deep canyon in search of incredible beauty and the next runway challenge. Take a journey with expert pilot Todd Peterson as he explores some of the remote and beautiful country featured in Galen Hanselman's "Fly Utah" pilot's guide. P/N 13-06309 ..... **$24.95**

DECISION MAKING WITH DICK RUTAN



In Decision Making with Dick Rutan, you'll fly shoulder-to-shoulder with Dick Rutan, one of the most renowned aviators of all time. Discover how human factors affect your performance and influence your decision making. Explore the brain, and learn how the mind responds and processes stimulus during in-flight emergencies. And learn the importance of channeling reactive, emotional responses into proactive, positive decisions that can literally save your life.
P/N 13-06868.....**$29.95**

ATTITUDE FLYING WITH DICK RUTAN "FLY LIKE A LEGEND"- For serious pilots only. Conceived and designed to take you above and beyond other aviation training programs, the Aviator Series captivates and educates like no other training video you've seen before. Puts you shoulder-to-shoulder with the world's foremost aviators as they share leading edge skills and techniques that made them legends.
DVD ..... P/N 13-05858 ...**$29.95**
Attitude &Decision Flying Set... P/N 13-10297 ...**$49.95**
BluRay Disc..... P/N 13-05859 ...**$34.95**

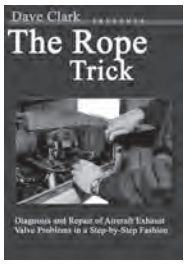
FLIGHT OF VOYAGER CD (DICK RUTAN) – This is a recount of the horrific, horrendous, heroic and humorous moments of the Voyager project through the eyes of the pilot Dick Rutan. On December 14, 1986 Voyager took off from Edwards AFB in California and 9 days later landed at the Edwards, completing the first ever non-stop, unrefueled world flight. This 3-CD set (3.5 hrs) includes a mini journal map of the flight, historic photos, fun facts, and more. P/N 13-01163 ..... **$35.00**

EAA AIRVENTURE OSHKOSH DVDS

Relive all the excitement of EAA AirVenture Oshkosh, the World's Greatest Aviation Celebration, with the souvenir videos.
Oshkosh 2010..... P/N 13-11627.....**$13.95**
Oshkosh 2009..... P/N 13-10011.....**$13.95**
Oshkosh 2008..... P/N 13-06225.....**$13.95**
Oshkosh 2007..... P/N 13-05650.....**$13.95**
Oshkosk 2006..... P/N 13-04059.....**$13.95**

BV

AVIATION VIDEOS & DVDS



THE ROPE TRICK DVD

The diagnosis and repair of aircraft exhaust valve problems in a step-by-step fashion. Watch as Dave Clark walks you through the steps for inspecting valve clearances, reaming valve guides, and freeing stuck valves. This video can save you a lot of time and money. P/N 13-10141 .....**$24.95**

MOUNTAIN FLYING BIBLE REVISED

Learn the basic, intermediate and advanced techniques of mountain flying. Arranged in the sequence of an actual flight for ease of use in finding the information you need. It covers Preflight, Take off, En route, Arrival and Landing. Move into advanced operations with ease and safety. Learn to anticipate how your airplane will perform in the mountains. Discover simple rules-of-thumb to enhance safety and simplify operations. Learn the weather information required for peace of mind and increased pleasure. 16 pages of color photos of backcountry strips covering the approach, landing and takeoff procedures. P/N 13-04035 ..... **$35.85**

THE SHIRT POCKET MOUNTAIN FLYING GUIDE

Let's face it. Flying in the mountains takes specialized procedures and techniques. Safety demands that you have the facts and knowledge. This pocket Guide provides you the information you need to know. This is not a rehash of the Mountain Flying Bible. It includes new material and color photos throughout. There are 129-color pages of the 208 pages. What is Covered: Section 1 - Do's and Don'ts • Section 2 - Basic Premises • Section 3 - Flying Canyons • Section 4 - Crossing Ridges • Section 5 - Turbulence & Va • Section 6 - Maximum Lift Flap Setting • Section 7 - How to Land an Airplane • Section 8 - Visual Illusions • Section 9 - Spot Method for Landing • Section 10 - Mountain Airstrip Operations • Section 11 - Mountain Weather.

Book.....P/N 13-04051 ..... **$15.85**
E-Book .....P/N 13-09987 ..... **$16.95**

PRIMARY AEROBATIC FLIGHT DVD

This entertaining and informative video presents to new student pilots, veteran pilots, prospective pilots and to Parents and Grandparents of the above, a critical phase of training completely ignored by the FAA, most flight schools and CFIs. Yet, during WWII this phase was given top priority in primary flight schools to instill confidence, mastery over the airplane and proficient and safe flying!. This prevue shows what the aerobatic phase is all about. Ground and air shots and pilot eye-views show how easily the maneuvers can be performed which lead to more confident flying by Lt. Col. Art Medore, USAFR, Ret. P/N 13-04231.....**$22.90**

FORMATION FLYING, THE ART DVD

The Art in DVD format. "Formation Flying, The Art " DVD was originally introduced to the Warbird community in 1993 as a integral part of the FAA Mandated Civilian Formation Training and Credential Program. Currently the video is now the "F.A.S.T." standard and endorsed by all major Warbird flying organizations such as the EAA / Warbirds of America, North American Trainer Association, T-34 Association and others world wide.

DVD .....P/N 13-04572.....**$69.95**
VHS.....P/N 13-15150.....**$69.95**

TAILWHEEL BASICS

Skip Degan, a flight instructor with airplane single-engine land, instrument, and ground instructor ratings, has developed a 15 minute video to introduce pilots to basics of tailwheel airplanes. Tailwheel Basics explores the difference between conventional and tricycle-geared aircraft and explains the basic concepts needed to earn a tailwheel endorsement. Included is a three-page booklet explaining the tailwheel transition. The video is available in DVD format. P/N 13-04283 ...**$19.95**

TAILWHEEL ESSENTIALS DVD

Simultaneous, multiple point of view, gyro-stabilized camera footage puts you in the cockpit,on the ramp or runway and alongside the aircraft while in-flight maneuvers are dissected anddiscussed. Whether you are considering tailwheel training, or have been flying tailwheel aircraft for years, this video will provide you the knowledge and a plan to become a more skilled, safe, and confident pilot of tailwheel aircraft.

P/N 13-08038 .....**$44.95**

TAILWHEEL 101 DVD

Tailwheel: 101 will help you get there. This video is the premiere study guide for all pilots wishing to get their tailwheel endorsement, or for any tailwheel pilot who'd like to learn a thing or two from the most widely recognized tailwheel expert in America, Damian DelGaizo. Ride along with Damian and his student Jill as she gets her tailwheel endorsement. Each ground segment is immediately followed by its real-world airplane demonstration to reinforce the material and make pre-flight study sessions easy and efficient.

P/N 13-06023 .....**$49.95**

TAILWHEEL: 201 BEYOND THE BASICS DVD

Tailwheel: 201 goes beyond the tailwheel checkout, building on the tailwheel basics introduced in Damian's first DVD, Tailwheel 101. Teaches advanced techniques from short field operations, to advanced slips, to precautionary off airport landings. Like Tailwheel: 101, this DVD includes ground school and in-flight instruction both inside and outside the cockpit. Whether you are new to the world of tailwheel flying or a seasoned aviator, Tailwheel: 201 will help you become a more proficient pilot. P/N 13-09653 .....**$39.95**

MOUNTAIN FLIGHT VIDEO

Mountain Flight, filmed in part in the Idaho Primitive Area, includes in-flight footage of some of the most beautiful, rugged and demanding mountain terrain in the U.S. It covers flight planning, accident causes, weather, density altitude, approaches, landings, departures, and survival. The weather section includes time lapse sequences of thunderstorms, mountain waves, lenticular and rotor clouds. Graphics are used to clarify, explain and demonstrate the ground and flight procedures for safe operation in the mountains. Color, approximately 80 minutes. P/N 13-04052 .....**$27.85**

ALASKA'S BUSH PILOTS THE REAL DEAL DVD

The story is interlaced with in-depth and exciting interviews of these courageous pilots as they recall many different stories of their experiences in the remote wilderness. Some are quite hilarious and others are serious and heart-pounding. They tell stories about rescues of stranded fellow pilots, taking their families 40 miles from their already remote bush homes to go fishing at "a better spot" to encounters with vast herds of caribou and the huge bears. You will "fly" in the seat right next to these men in the cockpit and witness wingtip-to-wingtip aerial HD photography that Jim Oltersdorf shot during filming as he is known nationally for. Its about where they fly, how they fly and why they fly. If you've even known what excitement is, step aside, this one is going to blast you off your seat! P/N 13-06937 ..... **$18.95**

ALASKA'S BUSH PILOTS (THE REAL DEAL) COMMERCIAL OPERATION - DVD

In-depth knowledge of commercial bush pilots who fly the bush in Alaska. Provides an insight into the world of advanced technologies of aviation equipment for the viewers. After analyzing the first documentary it became apparent that a presentation of commercial pilot activities was warranted. There is no duplication for any footage or any information from "Alaska Bush Pilots....The Real Deal: it is all brand new! The pilots who use this equipment on a daily basis explain in detail the components of G-1000 glass cockpits and relative avionics devices. Without question, it's a pilots movie made by pilots. Although not rated it is suitable for general audiences and family viewing. P/N 13-09481..... **$19.95**

60 DEGREE NORTH AT 500 FEET DVD

The DVD plays like a Warren Miller film or a variant of Endless Summer, made just for pilots. There's some great fishing, great people in the film. This hour long video encapsulated an entire summer of flying in British Columbia, Yukon, Northwest Territories and Alaska. Needless to say, you get a view of the North that only pilots get to see.

P/N 13-07038 ..... **$23.75**

THE GREAT ARCTIC AIR ADVENTURE (DVD)

Take to the world's northernmost skies and explore the planet's "last imaginary place"-the enigmatic Arctic. The Great Arctic Air Adventure is the story of Seattle's Mark Schoening and Doug DeVries, who piloted their de Havilland Beaver seaplanes around Canada via the famed Northwest Passage. Over six weeks battling miserable weather, frozen tundra and inaccessible terrain in one of the least populated places on earth, the pair builds a lasting bond and discovers that in the unyielding Arctic, adaptation is key.

P/N 13-11552 ..... **$24.95**

BV

AVIATION VIDEOS & DVDS

HOW TO LICENSE YOUR HOMEBUILT AIRCRAFT

This DVD will walk you through each step to successfully license your experimental amateur homebuilt aircraft. The actual FAA forms required are displayed on screen, and where to obtain them and how to fill them out.

P/N 13-03609.....**$29.95**

HOMEBUILT HELP ELECTRICAL WIRING TUTORIAL DVD

Explains and demonstrates the common procedures, tools and components required for the basic wiring of a homebuilt aircraft. Demonstrations of crimping, soldering, wire selection and wiring design with simple schematics that are applicable to a homebuilt electrical system. Video length is 1 hour and 20 minutes.

P/N13-03578.....**$29.95**

AIRFRAME CONSTRUCTION TECHNIQUES

Potter, who is an A&P I/A, commercial pilot, and parachute rigger, has worked in the aircraft maintenance field for 25 years. The DVD focuses on modern techniques and tools that are available to a new generation of builders. Some topics covered include: setting-up shop, shop safety, purchasing tools and steel, building and leveling your jig table, lay-out and jigging, cutting and fitting, welding with an emphasis on TIG, completing the fuselage box, bending-in the sides, fitting the tail post, vertical jigging, bending and flattening tubing, building fittings, builders groups and support. This 1 hour and 18 minute DVD takes you step-by-step through the entire building process.

P/N 13-06833.....**$44.99**

AIRCRAFT PAINTING 101 DVD

An excellent 2 hour video in which Sam James takes you, in detail, through the finishing, priming, and painting of his RV-4 with the Dupont Veriprime and Chromabase systems. This video is not as finely produced as some others, but the vast quantity of practical information it contains more than makes up for it. Takes you through the complete process of working an metal wing, a fiberglass wheel pant, and detailed custom design on a horizontal stabilizer. Run Time: 120 min by Sam James P/N 13-06567 .....**$24.95**

METALWORKING 101 INSTRUCTIONAL DVD

Targeted to the beginning student of pop-riveted metal kit plane construction. Ideal for the person who is contemplating the undertaking of a metal kit plane project. Takes you thru the actual construction of a Zenith rudder, from start to finish. While it can be used to supplement the construction guide supplied by the manufacturer with this rudder (a CH701 or CH601), it is actually intended to demonstrate to the beginning builder just what tasks and skills are required. General metal building procedures are explained and demonstrated. P/N 13-03369 .....**$28.95**

WEIGHT & BALANCE 101 FOR HOMEBUILT

Completing a homebuilt requires you to calculate and document the weight & balance figures for your plane and present them to the inspector...and for many homebuilders this task is confusing and complicated -- however, this video makes this task simple and easy to understand. The video makes it easy for you to understand the concepts required to perform your own weight and balance analysis on your aircraft and then document the findings for the inspection process. P/N 13-04184 .....**$32.95**

CANARD AIRCRAFT DVD

The DVD has 3 hours of video on canard aircraft only, truly a one of a kind DVD. It covers the Cozy MkIV, LongEZ, Berkut, ERacer, StaggerEZ, Bateleur, Defiant, LongEZ Jet and a custom LongEZ. Want to know what it's like to build a Cozy aircraft? Or see what it looks like to do a high speed fly-by from the cockpit? Then you'll want to see this DVD. You'll get lot's of encouragement from every builder for you to continue on your journey to complete your canard aircraft. 60 minutes of air to air shots, high speed fly-bys, take offs and landings. With all the natural sounds as they fly right over head at more than 200 miles per hour!

P/N 13-04260.....**$42.50**

SKYWARD TECH AIRCRAFT ENGINE REBUILDING

De-mystify the overhaul procedures on selected Continental & Lycoming engines. Videos begin with a dismantled engine, show the crankshaft being mounted on a stand and then proceed through complete assembly. These videos effectively present the step-by-step procedures of re-assembly.

Description	DVD P/N	Price
Cont. 0-200 Rebuild	13-03208	**$29.95**
Lyc. 0-320 Rebuild	13-04465	**$29.95**
Lyc. 0-360 Rebuild	13-03210	**$29.95**
Lyc. I0-360 Rebuild	13-03209	**$29.95**

SCRATCH BUILDING BASICS FOR METAL AIRCRAFT

An excellent way to determine if building a homebuilt aircraft from scratch is right for you... you will obtain a full understanding of the trials, tribulations, joys and successes that this type of building process entails. You can't watch these guys at work and not learn something that might change the way you think about the process and people that build their own planes from scratch! Approximately 3.5 hours in length and is divided into 10 video chapters to make navigation and review of desired sections fast and easy. The DVD set includes web links to plans for building your own sheet metal brake and other tools used in this video (you can print the plans on your own printer). P/N 13-04185.....**$38.95**

RV-12 EMPENNAGE TAILCONE DVD

This double disk DVD is the first in a series of videos being developed to cover the entire build process for the Van's RV-12 aircraft kit. It covers the complete empennage/tailcone kit as supplied by Van's Aircraft. It is a great starting place to begin your project – there are no prerequisite assemblies that need to be completed before starting. All in the exact sequence of building as specified by the construction manual. Approximately 2.5 hours in length and is divided into various video chapters to make navigation and review of desired sections fast and easy. They are completing production on the subsequent volumes of the RV-12 build (that are also sequenced to the sub-kits as provided by Van's Aircraft).

P/N 13-09590.....**$49.00**

COMPLETE COMPOSITE & FIBERGLASS LIBRARY ON DVD

All five of our How-To videos on a convenient 2 DVD set. A total of 190 minutes of the most complete guide for using composite materials available anywhere! The Complete Fiberglass and Composite Library contains The Basics of Fiberglass, A Step-By-Step Guide to Molding Fiberglass, Advanced Moldmaking and Plug Construction, Vacuum Bagging and Sandwich Core Construction and The Art of Moldless Composites. P/N 13-06551.....**$161.95**

DEEP INSIDE YOUR ROTAX INSTRUCTIONAL DVD

You can now see and understand what procedures are involved with the 150 and 300 hour inspection/rebuild services. Alan points out the places carbon accumulates, where the common areas of wear occur, and other signs indicating the possibility of potential failures. The specialized Rotax engine tools are demonstrated as to their function in removing various internal components. Installation and maintenance tricks are also demonstrated and explained for the purpose of heading off future engine failures that can lead to disaster. And More. P/N 13-03370 .....**$34.95**

ROTAX 912 INSTALLATION TIPS & TECHNIQUES

This presentation explains the most important details of preparing and installing th epopular Rotax 912 family of four stroke engines in your experimental homebuilt aircraft. This reliable, high performance engine will only perform safely if installed properly as specified by the Rotax installation guide. The important details in this guide are often misunderstood or even ignored completely resulting in catastrophic engine failures and dangerous flying situations. DVD Running time: 1.5 hours

P/N 13-04183 ..... **$35.95**

BUILDING A GLASS PANEL FOR HOMEBUILT AIRCRAFT

Mark Townsend of CanZac Aviation takes you step-by-step from the planning stages through the actual fabrication procedures and wiring for a combination glass/conventional instrument panel for an experimental aircraft. 80-minute DVD.

P/N 13-04969 ..... **$23.95**

RV RUDDER WORKSHOP

This instructional video has 2 major sections: The first section contains an overview and demonstration of the tools and techniques that are required for building an RV aircraft. These specialized building techniques center around riveting with solid rivets - essential for the RV aircraft. Many specialized tools are required for this type of construction and are discussed and demonstrated. Techniques that are shown include: dimpling, countersinking, deburring, drilling, back riveting and pop riveting. A full discussion of the types of rivets that are used along with their important characteristics is included in this first section of the video. The tools for measuring proper rivet setting (rivet gauges) are shown and demonstrated. Some of the tools that are featured include: hand squeezer, pneumatic rivet gun, flush and universal rivet sets, dimple dies, back rivet sets, scotch-brite polishing wheel and deburring tools. P/N 13-04791 .....**$27.95**

BV

AVIATION VIDEOS & DVDS

INSTRUCTIONAL VIDEO TAPES

BUILDING THE RUTAN COMPOSITES – This step-by-step instructional program features Burt Rutan and Mike Melvill proceeding through the complete foam-epoxy-fiberglass composite construction procedure as used on the VariEze, Long-EZ, Quickie, Q2, Dragonfly, Sea Hawk, Polliwagen and other composite aircraft. Also included is a formation flight by the Long-EZ, Defiant and VariViggen. A must for all composite aircraft builders. 1hr, 36 mins.

DVD .....P/N 13-04809 ..... **$26.95**

FIBERGLASS 101 – This tape shows aircraft builders how to make molds, fairings, and parts from fiberglass. It takes you step by step through the phases of glass work so that you can build parts yourself. Produced by fiberglass expert Sam James. 2 hrs. Note: The quality of this DVD may not be standard for DVDs due to format conversion technique used.

DVD .....P/N 13-03875 ..... **$23.50**

BASIC COMPOSITES AIRCRAFT CONSTRUCTION DVD - Demonstrates the various types of materials and techniques used in basic composite aircraft instruction including: laminating systems, types of foams, fillers, fiberglass and various other cloth types, simple lay-ups, joining molded parts, use of peel ply. 54 Minutes. P/N 13-40785..... **$26.95**

BASIC AIRCRAFT SHEET METAL TECHNIQUES & TOOLS – George Orndorff, a noted aircraft builder, demonstrates 13 sheet metal techniques and offers many helpful hints to save time and help motivate the homebuilder. Segments include shop organization and safety, cutting, polishing, deburring, drilling, dimpling, countersinking, riveting, fluting, bending, circle cutting, and more. A sample control surface is constructed using these techniques. (58 min.) DVD P/N 13-15120-1... **$42.50**

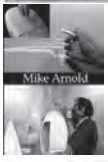
MIKE ARNOLDS AR-5 WORLD RECORD AIRCRAFT DVDS

DVD 1, "WHY IT GOES SO FAST" - Documents the efficient AR-5's record runs and clearly explains the simple drag reduction concepts used to achieve its surprising performance on such low power. With comments by aerodynamicist, Bruce Carmichael.

P/N 13-15130 ..... **$32.50**

DVD 2, "HOW IT'S MADE" - Details the engine installation and the airframe's structural design, and completely demonstrates the easy moldless, hot-wired, foam and fiberglass construction process used on the fuselage, wing and tail services. Almost 2 hours.

P/N 13-15135 ..... **$39.95**



DVD 3, "MOLDLESS, LOW DRAG WHEELPANTS" - Details the engine installation and the airframe's structural design, and completely demonstrates the easy moldless, hot-wired, foam and fiberglass construction process used on the fuselage, wing and tail services. Almost 2 hours.

P/N 13-06277 ..... **$29.95**

DVD 4, "MAKING FIBERGLASS MOLDS" - This DVD chronicles development of a beautiful six piece, modled fiberglass aircraft cargo pod to show the simple design and fabrication techniques used to produce low cost, professional quality, production molds. From first sketches, through master patterns, to finished parts. Over an hour.

P/N 13-15125 ..... **$29.95**

AR-5 HOW TO DVD SET - This four-part DVD set includes the following: Making Fiberglass Molds, How It's Made, Why It Goes So Fast, Moldless, Low-Drag Wheelpants.

P/N 13-09990 ..... **$108.95**

COSMETIC GELCOAT AND FIBERGLASS REPAIR AND FINISHING DVD

This program takes you step-by-step through every type of cosmetic repair that can and should be done by any boat owner. You'll learn the proper techniques, materials, tools and tricks of the trade from one of the best fiberglass repairman in the country. This program continues with the repair instructions for those hollow areas under the gelcoat called "Air Voids" and then explains the causes and proper repair of Stress Cracks. 100 mins.

P/N 13-04810..... **$26.95**

STEWART SYSTEMS 6 DVD SET

FABRIC COVERING, METAL AND OTHER SUBSTRATE PREP, MIXING PAINT AND PAINTING - 6 Disc Stewart Systems Combination Package Covering & Painting Videos. Most everything you need to know about our covering system, including complete information using the Stewart Systems Covering Process. It includes product application, painting instructions, STC and more. Well over 2 hours of video.

P/N 13-09411..... **$19.95**

"TIN MAN" METAL WORKING VIDEOS

These videos provide excellent instruction for the aircraft builder. Ken White, The Tin Man, is a master craftsman and instructor for the Experimental Aircraft Associations metal working workshops at Oshkosh.

BASIC DAMAGE REPAIR ON ALUMINUM – Take an axe and drive it through the nose of an RSK Porsche. now we're ready to begin by bumping, smoothing, gas welding, planishing, and metal finishing. All work completed on camera. Complete and very detailed. Color, 63 min.

DVD..... P/N 13-04377 ..... **$34.99**

EDGE THOSE PANELS – Learn to make flanges, hems wired edges, and flares. With just a hammer, dolly, and some simple tools you can make, you'll be able to easily edge lots of panels. Wing rib construction is also shown. Then a rotary machine (bead roller) is used to do really fancy artwork! Color, 126 min.

DVD P/N 13-04378..... **$33.50**

AN AMERICAN'S VIEW OF THE ENGLISH WHEEL – Shrink on the wheel? You bet! Analyze frame design, tracking patterns, layering, pressure measurement, rapid high crown development, nearly flat panels, and much more. Last segment shows air hammer shaping and shrinking on the Pullmax. Color, 126 minutes. DVD..... P/N 13-40302 ..... **$32.50**

SHRINKING MAGIC – The art of shrinking (crimping or compression) is demonstrated using both the Lancaster machine and the torch and hammer method. Hot work demonstrations include steel, aluminum, copper, stainless, titanium, and magnesium. An excellent segment on form block work is shown as well. Color, 84 minutes. DVD..... P/N 13-04381 ..... **$39.99**

SHAPING ALUMINUM WHEEL PANTS-WITH 7 SIMPLE HAND TOOLS – Using a torch, mallet, stump, forming bag, slapper, dolly, and clamp you can make a really nice pair of pants (fenders or tank). This video includes buck development, pattern work, and hot shrinking. Air hammer shaping and Pullmax shrinking segment at the end. Color, 125 minutes.

DVD..... P/N 13-04380 ..... **$39.99**

HOW TO GAS WELD ALUMINUM – Learn the professional methods of setting the torch, regulator pressures, and secrets of the flux. Filmed with two cameras through the finest eyewear available to show tacking, distortion control, flat and vertical welds. Many 30-year veteran welders have benefited from this video. Color, 105 minutes.

DVD..... P/N 13-04379 ..... **$34.99**

4130 CHROMOLY AIRFRAME CONSTRUCTION – This video is highly recommended for anyone considering a steel tube fuselage aircraft. It covers the whole process: Workflow, welding rod selection, jigging, fitting, and welding. (Note: The discussions and advice are almost exclusively about oxyacetylene welding. TIG, GTAW, is mentioned only in passing.)

DVD..... P/N 13-04375 ..... **$54.25**

BASIC AIRCRAFT WOODWORKING – Woodworking knowledge is essential to any homebuilding project. Power tool safety is also discussed. A great starter tape (30 min.).

P/N 13-23355 ..... **$19.95**

BUILDING YOUR OWN ZENAIR FLOAT

Zenair now offers their popular experimental aircraft floats as a kit which can be built with relatively simple construction techniques. This provides a substantial reduction in the cost of ownership making floats now affordable for many aircraft owners. (See www.ZenairFloats.com for product information and prices) While this video demonstrates the construction of a Zenair float, it does not show: the rigging of floats to an aircraft, spreader bars, mounting tires, nor other repetitive tasks such as painting, priming, riveting, etc. The effort was to keep the content of the video restricted to the unique tasks of float construction. P/N 13-09049..... **$42.95**

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AVIATION VIDEOS & DVDS

FROM THE GROUND UP DVD VOL 1-13

EAA, in conjunction with Discovery Channel International, presents all 13 episodes of the television series From the Ground Up on 3 DVDs. TV's first how - to aviation program. Enter the exciting world of airplane homebuilding and restoration. P/N 13-07442 ..... **$49.95**

BIG ROCKS AND LONG PROPS VOLUME I

50 thrilling minutes of water assisted landings, big rocks, big tires, and great flying in a Super Cub and Experimental Maule (A.K.A. Bushwacker) Alaska and Northwest bush pilot Loni Habersetzer and Northwest bush pilot Greg Miller take you into their incredible playground of rock bars and water landings - on tires! P/N 13-04018 ..... **$30.95**

BIG ROCKS & LONG PROPS - VOLUME II

You will go from Greg's training ground to the desert and on to the mountains. The main movie is 40+ minutes long and includes a commentary track. There is a section on field repair and a section on the STOL competition for the bush class in Valdez Alaska for 2006. In all, almost 90 minutes of playing time. It has Greg Miller flying "Bushwacker" and also the 5 place Sherpa, which is basically a Super Cub on steroids. It also features Doug Keller and his amazing. Husky Cub

P/N 13-04384 ..... **$30.95**

BIG ROCKS AND LONG PROPS VOLUME III

See the culmination of 30 years of bush flying experience as Paul flies his Turbine Otter and Super Cub in the rugged wilderness of the Wrangell-St. Elias National Park. Watch Greg as he learns the ins and outs of ski-flying in one of the most challenging places in Alaska, where the margin between life and death can be extremely thin. P/N 13-05728 ..... **$30.95**

BIG ROCKS & LONG PROPS VOL. 4

Join Greg Miller on his Alaskan Adventure. Greg flies his experimental Maule a.k.a. Bushwacker to Alaska in the winter of 2008. The setting for this adventure is the Wrangell-St.Elias National Park. You'll see Greg landing his ski-equipped airplane on snow, ice, rock, and water. Come along as he climbs an ice fall, skins up mountain peaks, and skis down virgin snow-covered mountains. Running Time: 121 minutes P/N 13-06275 ..... **$30.95**

HOODRIVER BASIN COZY DVD

In this DVD they'll fly you around the luscious green Hood River Basin in Oregon. During this scenic flight, you'll fly so close to Mt Hood, Mt Rainier, Mt St Helens and Mt Jefferson, it'll seem like you can reach out and just touch the snow covered peaks. Along the way, they will pass through the majestic Columbia River Gorge. The DVD length is 25 minutes. ..... P/N 13-08044 ..... **$19.95**

HOW TO BUY A USED AIRPLANE DVD

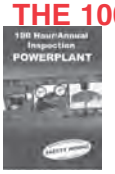
Bill Cox, noted aviation authority, journalist and SeniorEditor of Plane & Pilot magazine, shows you in this step-by-step DVD: •How to make the right decision in buying a used airplane •What specifically to look for and what to avoid •Gives you a checklist that dealers use in buying, selling and evaluating used airplanes .. P/N 13-03444 ..... **$19.95**

THINGS MY FLIGHT INSTRUCTOR NEVER TOLD ME

Topics like fuel management, flight planning, reluctant passengers, dealing with weather, the FAA, buying and owning an aircraft, as well as moving up to bigger and faster aircraft, are all discussed with humor and whit. He also discusses the people in aviation he has met that have had an influence on his flying career.

Book..... P/N 13-03381 ..... **$19.95**
E-Book..... P/N 13-09969 ..... **$17.95**

THE 100 HOUR INSPECTION POWERPLANT



Step by step demonstration of a 100 hour inspection of the powerplant section of a Lycoming 0-360 powered Piper Arrow. Explains every segment of the inspection process from an initial AD search to the final log entries. It details each procedure along with the techniques, tool and material usage, and plenty of professional hints and tips. Covers safety wiring techniques..... P/N 13-03883 ..... **$24.95**

PROFICIENT FLYING 3 DVD BOX SET

Disc 1 examines takeoff techniques, spins, engine failure after takeoff, control surface failures, weight & balance and measuring airspeed. Disc 2 covers rejected take off & landings, slips, power off glides, pitot static pitfalls, how to fly a taildragger and accident investigations utilization through computer generation. Disc 3 features aircraft ditching, how to swing one's compass, engine operating hints, unusual approaches, how to fly a seaplane, & how it all works. P/N 13-03647 ..... **$68.95**

"121.5" EMERGENCY DVD/VHS

Real life emergencies, actual ATC recordings! Hosted by TV personality and flight instructor MayCay Beeler, this unforgettable DVD features the actual ATC recordings of pilot and ground communications in real emergencies, brought to life with stunning animation and graphics. Listen, learn, and live.

"121.5" DVD ..... P/N 13-02854 ..... **$28.95**
"121.5" VHS ..... P/N 13-02855 ..... **$29.95**

ONE SIX RIGHT - THE STORY OF HISTORIC VAN NUYS AIRPORT

An exhilarating documentary film that celebrates the unsung hero of aviation - the local airport by tracing the life, history, and struggles of an airport icon: Southern California's Van Nuys Airport. Featuring thrilling aerial photography and a sweeping original score, the film dispels common misconceptions and opposes criticism of General Aviation airports. Through the love story of one airport, past to present, the film shares the timeless romance of flying with all ages.

One Six Right DVD ..... P/N 13-04218 ..... **$19.95**
One Six Left (the companion DVD)..... P/N 13-04288 ..... **$12.95**
One Six Right International Version ..... P/N 13-04571 ..... **$19.95**
One Six Right CD (soundtrack)..... P/N 13-04219 ..... **$14.95**
One Six Right Piper Cub Model ..... P/N 13-04295 ..... **$125.95**
One Six Right Flex Fit Hat ..... P/N 13-04296 ..... **$19.95**

CHASING LEWIS & CLARK ACROSS AMERICA - DVD

Climb into the cockpit to get a different, low-altitude perspective on America. Set to stirring music, selected photographs from the Chasing Lewis & Clark Across America book provide a view of our country that will nourish one's patriotic soul. From the virgin wilderness that Lewis and Clark discovered, to cities with the creations of man, this collection of photographs is like a tightly woven tapestry of America. The other half of the DVD provides a behind the scenes look at the trip including plane construction. DVD total 45 min., Wide screen, Stereo. Book (P/N 13-04562) and Book/DVD Combo (P/N 13-04564) available.

DVD ..... P/N 13-04563 ..... **$19.95**
Book ..... P/N 13-04562 ..... **$37.95**
Book/DVD Combo ..... P/N 13-04564 ..... **$57.50**

CUBDRIVER 749ER ALASKA DVD

Join Cubdriver749er and friends as we travel across the Alaskan frontier showcasing the off-runway capabilities of the Piper Supercub. Whether an expert aviator or novice pilot, Cubdriver: Alaska™ will certainly entertain with over 2 1/2 hours of Supercub action! P/N 13-05736 ..... **$33.95**

CUBDRIVER: NO SECOND CHANCES DVD

Cubdriver is back....and better then ever. Join professional bush-pilot, Loni Habersetzer, and Alaskan guide, Donald C. Martin, on a real-life adventure as they challenge the rugged Alaskan Range in their newest installment to the popular "Cubdriver" series. Focusing specifically on One-way landings, this is their most challenging adventure yet. Once committed to land, there's no going around, and "No Second Chances." Filmed in 16.9 HD DVD Stereo Run time is: 2 hours 1 min.

P/N 13-09883 ..... **$33.95**

WONDERFUL WORLD OF FLYING

Due to overwhelming request, the Wonderful World of Flying is now available on DVD. The Wonderful World of Flying is the only general aviation video magazine, featuring stories on safety, travel, warbirds, and fun places to fly.

P/N 13-03649 ..... **$195.00**

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AVIATION VIDEOS & DVDS

RICHARD TAYLOR ON INSTRUMENT FLYING DVD

Here is the DVD that pilots have been waiting for. Richard Taylor, Author of the best selling book "Instrument Flying", now offers "Plain Talk About IFR Efficiency". Whether you're new to instrument flying or a seasoned professional, you'll find this video a helpful tool for making you a safer and more proficient Instrument Pilot. 33 minutes. P/N 13-01025 ..... **$45.00**

FLYING SINGLE PILOT IFR

If you fly single pilot IFR, this video is for you. Explains risks involved and how to minimize them. Explores equipment requirement, organization, getting real time weather, staying ahead of the airplane, copilot selection and situational awareness. (60 min)

P/N 13-23850 ..... **$35.00**

HOW TO GET A FLIGHT REVIEW

Recommended for anyone preparing for a flight review. Covers the relevant areas of FAR 61.56. and what you need to know for the flight review. Includes the new airspace & weather reporting changes. (50 min)

P/N 13-23860 ..... **$35.00**

BOB HOOVER AERIAL SUITE DVD

Now on DVD and in stock! With over a half century of flying in every type of aircraft, Bob Hoover is most recognizable for thrilling and beautiful performances in his Shrike Aero Commander and yellow P-51 Mustang. With Hoover's retirement from the air show circuit, this is one of the few sources to see why he has earned the undisputed title of "the pilot's pilot."

P/N 13-08676 ..... **$17.95**

STALL, UPSET, AND SPIN RECOVERY DVD

Are you anxious during slow flight and stalls because you are apprehensive about spins? Do not fear the spin; understand it. Spins are just another thing airplanes do, and you should train for spin recovery. Proper spin training begins with an introduction to stall and unusual attitude recovery. You need to understand that a heavy hand or misuse of the controls, during an unusual attitude, can stall the wing and begin a spin event. P/N 13-11864 ..... **$19.95**

BREAKING THROUGH THE CLOUDS DVD

Breaking Through the Clouds is nearly 2 hours long and includes actual footage of the 1929 air race. In addition, there are aerial recreations in the film, using planes like the women flew in the derby including: Travel Air, Waco, Monocoupe and Fleet.

Over 13 years of research went into the making of this film. There are images of the women in the race that have rarely been seen before. In addition, there are interviews with Elinor Smith Sullivan, legendary pilot, Patty Wagstaff, national aerobatic champion, Julie Clark, aerobatic pilot, family members of the pilots in the derby, aviation historians and people who knew the women racers personally.

P/N 13-08619 ..... **$29.95**

THE AVIATORS DVD SERIES

This wildly popular DVD set of all 13 episodes of the complete first season of the hit PBS television series The Aviators. The DVDs are NOW SHIPPING.

The Aviators is a new and exciting magazine-style series featuring interesting people, the latest aircraft, the coolest technology and the best fly-in destinations of North American aviation. You'll hear national heroes like Jeff Skiles of The Miracle on the Hudson; they go behind the scenes to show you how air traffic control works; and they'll take you in the cockpit of everything from a Cessna to a fighter jet! And that's just the beginning. The Aviators is truly for everyone who has ever gazed skywards. Each episode is comprised of 3 or 4 segments. This format ensures that the show remains fast-paced, capturing and holding the viewer's interest from beginning to end.

P/N 13-08262 ..... **$29.95**

CREW RESOURCE MANAGEMENT: EXPLORING THE HUMAN ELEMENT DVD

Become an expert on important aviation topics when you explore them in depth with CRM - Exploring the Human Element (DVD) by Jeppesen. This video explores United Airline's human factors training program. Whether you are operating in a Part 121, 135, or 91 environment, you can benefit. P/N 13-07840 ..... **$12.50**

AEROBATIC PHASE OF FLIGHT TRAINING

This information and entertaining video, by Col. Art Medore, presents a variety of primary aerobatic maneuvers from the pilot's eye view with an explanation of the execution procedure. Based on Col. Art Medore's best selling manual "primary Aerobatic Flight Training." Running time 30 minutes. VHS format only P/N 13-04231 ..... **$22.90**

THE GREAT CIRCLE AIR SAFARI DVD

FLYING THE OUTBACK - Experience an exhilarating flight through the vast Australian Outback with nine vintage aircraft. In the fall of 2005, two Americans, Doug DeVries and Rob Richey, shipped their 1942 Stearman biplane all the way to Australia, joining up with their Aussie mates for a 4,000 mile flight through some of the most remote areas in the country. Stunning high definition footage by Oscar winning director of photography Eric Thiermann coupled with the story of two pilots on a quest of discovery yields a compelling film.

P/N 13-05079..... **$24.95**

THE COMPLETE AIRLINE PILOT INTERVIEW COURSE DVD

This DVD from Flightdeck Consulting has been produced and developed by airline pilots for airline pilots. This DVD includes: Eight Virtual Interviews to help you perfect your interview technique. Access to the "Airline Pilot Interview Work Booklet", an essential tool covering all aspects of your interview including psychometric testing, simulator check ride and panel interview. Simulator Assessment Guide. Psychometric Testing Information. Complimentary Email Support from professional airline interview consultants. Make an investment in your future and be "The Standout Candidate" at your interview. P/N 13-08754..... **$69.00**

ON THE WINGS OF DREAMS (DVD)

ON THE WINGS OF DREAMS (Flight Around the World in a Homebuilt Airplane) is an adventurous and romantic documentary film that celebrates friendship and flying around the world. Featuring thrilling aerial photography and sweeping original score through the love story of two pilots and their passion for flying and adventure. Flying joined two strangers from two different countries: a man and a woman. A common dream was the spark of a challenge, a flight around the world, and love for each other made them husband and wife in the middle of their adventure. P/N 13-11468..... **$26.95**

WONDERFUL WORLD OF WARBIRDS DVD SET

Hosted by Jeff Ethell, these DVDs explore the ins and outs of some of World War II's most loved (and feared) military aircraft. From the P-51 Mustang to the A-26 Invader, fighter planes to bombers, this set makes a great gift! Over 3.5 hours (216 min). 4 DVD set.

Includes: Volume I: P-51 Mustang , Volume II: P-40 Warhawk, Volume III: A-26 Invader, Volume IV: Spotlights Grumman Wildcat. P/N 13-04713..... **$79.95**

GETTING STARTED IN AEROBATICS DVD

Produced in co - operation with the International Aerobatic Club, Getting Started in Aerobatics is a valuable introduction to the dynamic world of aerobatics. During the course of this program, you'll hear six legendary aerobatics pilots relate their years of experience and address topics that include the benefits of aerobatics, its history and background, training options, selecting the right instructor and equipment, and more. You'll also experience the thrill of an aerobatics flight lesson at the renowned Pompano Air Center. Getting Started in Aerobatics contains information to consider before you begin - or continue - your aerobatics training. (55 minutes) P/N 13-40505..... **$13.95**

WELDING AND CORROSION DVD

Take the mystery out of aircraft welding! Join Host Gregg Ewert and instructor Bill Roerig as they take you step-by-step through the process of oxyacetylene welding. Whether you've never held a torch before or if you haven't welded in years and want to brush up on your skills, this video will provide you with the background to get you started. Corrosion is not just a problem unique to floatplanes. Corrosion is a threat to any aircraft exposed to humid conditions, including acid rain. Join corrosion expert Geo Hindall in an hour-long examination of the problem. Learn to recognize, prevent and protect your airplane against the effects of corrosion!

P/N 13-10013..... **$18.95**

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ROD MACHADO FLIGHT TRAINING

FAA PRIVATE PILOT eKIT

The FAA Private Pilot eKit is a private pilot groundschool training kit based on the official FAA Curiculla. eBooks in this kit are compatible with Windows, Macintosh, iPad, iPhone, Kindle Fire, and all Android type eReaders. Each eBook in this kit is provided as an open file. They may be transfered between your various computers and reading devices, printed, and used with all Adobe .pdf functions including search, copy/paste, bookmarking, note taking, voice transcription, etc...

Kit Includes: • Pilots Handbook of Aeronautical Knowledge, eBook • Airplane Flying Handbook, eBook • Risk Management Handbook, eBook • Private Pilot Flight Maneuvers, eBook • PTS - Private - Airplane, eBook • FAR/AIM 2012, eBook, by FAA • ASA-SP-57: Pilot Log Book, Book, by ASA • ASA-SP-57: Plotter - Lexan 13-inch, by Aircraft Technical Book Co. • ASA-E6B: ASA METAL E6B, by ASA • ASA-TW-PVT-12 Private Pilot PrepWare 2012, CD, by ASA. P/N 13-11709.....**$159.95**

PRIVATE PILOT eKITS

Rod Machado's Private Pilot Handbook is a different kind of Private Pilot's textbook. Very thorough, very detailed, very complete, highly illustrated - but taught in a way that makes you remember what you're supposed to be learning. Even the meteorology section is enjoyable and intriguing. Rod Machado has done an excellent job presenting a vast amount of required information. Many major flight schools, including Embry Riddle, have switched to this book from those of the major publishers. Since doing so, they have reported their student pass rate up 15-20%. It's easy to see why. Highly recommended. The matching workbook contains questions and answers from the FAA private pilot written test along with additional student study aides and for instructors, an FAA approved Part 141 ground school syllabus.

Note: eKits are a packaged product containing pre-paid download codes for eBooks plus additional physical training tools. eBooks are in .pdf format and are compatible with all Windows, Mac, iPad, iPhone, and Android type devices.

Basic Kit..... P/N 13-11633.....**$119.95**
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INSTRUMENT RATING eKIT

A combination of convenient eBooks and physical training tools make up this deluxe Instrument Rating training package. Centered around the Rod Machado Instrument Handbook, this kit offers a unique and effective teaching style with proven results to instrument students of all levels. In addition, this complete kit includes an Instrument Manuevers Manual detailing required flight skills; The Instrument Procedures Guide, giving established and current guidelines for in-cockpit procedures; the latest edition of the FAA Chart Users Guide detailing all symbols and terminology of FAA/NACO type VFR and IFR publications; IFR Principles and Practices, providing practical exersizes and a human factors perspective to instrument flight; the official Instrument Pilot Practical Test Standards; a fresh and current copy of the FAR/AIM; and physical items including an IFR enroute chart plotter, a Foggles type view limiting device, and the ASA Instrument test Prepware CD.

P/N 13-11682.....**$218.95**

FAA INSTRUMENT RATING eKIT

A combination of convenient eBooks and physical training tools make up this deluxe Instrument Rating training package. Centered around FAA textbooks and publications, this kit offers the actual and "official" curricula prescribed by FAA and from which all knowledge and practical test questions are derived. In addition, this complete kit includes a fresh and current copy of the FAR/AIM, and physical items including an IFR enroute chart plotter, a Foggles type view limiting device, and the ASA instrument test Prepware CD. P/N 13-11683.....**$145.95**

ROD MACHADO'S SPORT PILOT HANDBOOK

Rod Machado's Sport Pilot Handbook. A serious text written in a fun and witty style. More than 1,000 original illustrations and photos in a softbound, full color, 582 page book.

This book is a one-of-a-kind manual. You can learn or review by just looking at the pictures. However, the text is laced with Machado's humor and practical training insights, so you will want to read every last word on each page. Written in the first person, it's as if Rod is sitting next to you, personally explaining all the necessary aspects of flying to make you an informed, confident and competent sport pilot. It is the first book of its kind completely written and illustrated by one instructor. P/N 17-00017.....**$65.00**

ROD MACHADO'S PRIVATE PILOT HANDBOOK 2ND EDITION - A serious text written in a fun and witty style. More than 1,200 original illustrations & photos with 50 pgs in full color, ensures this to be a one-of-a-kind manual. You can learn or review by just looking at the pictures. However, the text is laced with Machado's humor, so you will want to read every last word of the 572 pages. Written in the first person, it's as if Rod is sitting next to you, personally explaining all the necessary aspects of flying to make you an informed, confident and competent pilot. Flight instructors will love using the great illustrations with their students. It will also be a favorite for its readability. A book only has value if it's read and understood. For years pilots at Oshkosh, Sun n' Fun and seminars across the country have asked Rod to write a fun and easy to understand book for pilots. Well, here it is folks, perfect to refresh for a flight review, catch up on new rules or for student pilots to pass their FAA knowledge and oral exams.

Description	Part No.	Price
2nd Edition Rod Machado's Private Pilot Handbook	13-05698	**$48.95**
Private Pilot Handbook in Audio MP3 Format	13-08658	**$89.95**

ROD MACHADO'S PRIVATE PILOT WORKBOOK - As a programmed learning guide, this book will help prepare you for the FAA Private Pilot Knowledge Exam. The questions are organized to follow the presentation of material, section, as found in the Handbook. It will help you understand and absorb the knowledge necessary for you to fly safely. You can test your knowledge and comprehension in each subject area with numerous weight and balance, performance, and flight planning problems. P/N 13-01502 ..... **$19.95**

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DEFENSIVE FLYING - Rod Machado discusses how pilots can learn to think defensively. Learn about acknowledging your own limitations and a pilot's psychological predators as well as never underestimating aerial enemies. Listen to an actual, hair-raising, in-flight emergency as two professional pilots exercise one of the most important skills in Defensive Flying. This presentation contains many new stories and humor not previously heard on Rod's audio tapes.DVD P/N 13-04567 ..... **$23.95**

AVIATION HUMOR - Laugh along with over 2,000 pilots as Rod Machado entertains his audience with some of the best of his aviation stories. After so many requests for a video version of his very popular audio tapes, this video of Rod's is sure to be a popular addition to your library.

VHS.....P/N 13-40310 ..... **$16.00**
DVD .....P/N 13-04568 ..... **$23.95**

IFR FLYING - Rod has incorporated six of his most popular IFR segments into this educational video. And, for comic relief, Rod has interspersed live, humorous clips from one of his popular seminars between each story segment. This is a valuable tape for beginners as well as seasoned pros. You're sure to laugh and learn as Rod shows you: A unique, multi-step instrument scan, Single pilot IFR cockpit management, How to really use the approach lighting system, techniques to make safe IFR departures, & more. P/N 13-40315..... **$22.50**

ROD MACHADO'S INSTRUMENT PILOT SURVIVAL MANUAL - This book is unlike any other book on instrument flying that you have encountered. 232 pages, Illustrated with humorous drawings. Excellent for IFR students or as IFR refresher.

Book .....P/N 13-40330 ..... **$28.95**
E-Book.....P/N 13-09976 ..... **$29.95**

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ENGINE & AIRCRAFT MANUALS

ENGINE & ACCESSORY OVERHAUL & PARTS MANUALS

Continental Engine Manuals	Model	Part No.	Price
A-65, A-75 Overhaul, Maintenance & Parts Manual	A-A40	13-03751	**$14.50**
C-85, C-90, 0-200 Overhaul Manual	X30010	13-03799	**$92.00**
C-85,C-90,0-200 Parts Catalog (W/Revision Service)	X30011A	13-03930	**$69.50**
C-125, C-145, 0-300 Overhaul Manual	X30013	13-03931	**$69.00**
C-125, C-145, 0-300 Parts Catalog	X30014	13-03998	**$63.50**
E-165, E-185, E-225 Overhaul Manual	X30016	13-03999	**$69.00**
E-165, E-185, E-225 Parts Catalog	X30017	13-04000	**$62.00**
A65, A75 Overhaul & Parts	X30008	13-03997	**$89.50**
GO-300 Overhaul Manual	X30019	13-04001	**$89.95**
IO-360 Overhaul Manual	X30594A	13-03943	**$92.00**
O-470 Overhaul Manual	X30586A	13-04002	**$91.85**
IO-470 Overhaul Manual	X30588A	13-04003	**$92.00**
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TSIO-520 Permold Overhaul Manual	X30574A	13-03937	**$92.00**
TSIO-520 Sandcast Overhaul Manual	X30575A	13-03938	**$89.50**
IO-550 Overhaul Manual	X30568A	13-03935	**$69.50**
GTSIO-520 Overhaul Manual	X30045A	13-03933	**$89.50**

Lycoming Engine Manuals	Model	Part No.	Price
Overhaul Manual, Reprint of Direct Drive Manual (Incl. Table of Limits)	60294-7	13-15500	**$17.85**
Overhaul Manual, Direct Drive (W/Revisions)	60294-7	60294-7	**$134.95**
Integral Accessory Drive Overhaul Manual	60294-6	60294-6	**$121.95**
"76" Series, Overhaul Manual	60294-9	60294-9	**$123.95**
Vertical, Overhaul Manual	60294-8	60294-8	**$81.25**
0-290-E, D-2 Parts Catalog	PC-102	13-03968	**$57.95**
0-320A,B,D,E,IO-320B,E,LIO-320 Parts Catalog	PC-103	13-03829	**$58.50**
0 & H0-360 Parts Catalog	PC-106	13-03969	**$73.50**
0-235C,L2C Parts Catalog	PC-302	13-03830	**$58.50**
0-540 Parts Catalog (-1 - 0-540-A, -2 - 0-540-B, E, G)	PC-115-1	13-03971	**$65.75**
0-540 Parts Catalog (-1 - 0-540-A, -2 - 0-540-B, E, G)	PC-115-2	13-03970	**$67.25**
IGO & IGSO-540 Series Parts Catalog	PC-116	13-03972	**$65.75**
0-320 A & E Parts Catalog	PC-203-1	13-03973	**$69.95**
0-320 B & D Parts Catalog	PC-203-2	13-03974	**$56.95**
IO-540 Series Parts Catalog (Specify -1 or -2)	PC-215-1	13-03975	**$66.25**
IO-540 Series Parts Catalog (Specify -1 or -2)	PC-215-2	13-03976	**$65.75**
IO, AIO, LIO, AEIO-320 Series Parts Catalog	PC-303	13-03977	**$56.25**
0-360-A Parts Catalog (for wide flange, suffix A models)	PC-306-1	13-03831	**$59.50**
0-360-B,-C,-F; LO & TO-360 Series Parts Catalog	PC-306-2	13-03978	**$56.25**
IO-360 Wide Deck Parts Manual (Specify Engine Model)	13-02052	13-02052	**$68.95**
Lyc. I-0360 Wide Deck Parts Manual (Specify Engine Model)	PC-406-2	13-03833	**$74.50**
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O-360,HO-360,IO-360, AIO-360, HIO-360 & TIO-360	13-60297-12	13-60297-12	**$39.75**
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AEIO-320,-360 and -540 Series	13-60297-21	13-60297-21	**$38.50**
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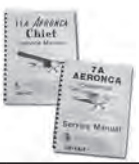
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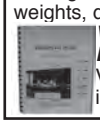

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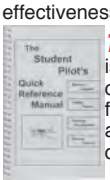

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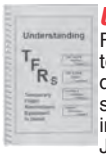

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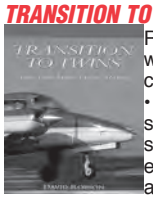

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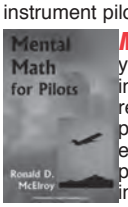

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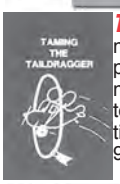

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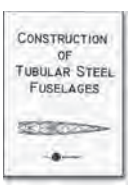

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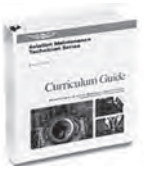

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THE AEROELECTRIC CONNECTION - A Guide to Theory, Operation, Design and Fabrication of Aircraft Electrical Systems, Revision 12. Written by Bob Nuckolls with over 50 years of hands-on experience in electronics and aircraft electrical systems. 304 pages of 18 chapters plus Appendix are topped off with a discussion of the poor man's approach to system reliability. Appendix Z offers dozens of variations for tailoring an electrical system to the builder's project and mission requirements.
P/N AEC001 .....**$20.00**

THEY CALLED ME MR. BONANZA – How it all started in 1944; the original Bonanza design team and their early efforts to find the ideal airplane for the postware market; how and why the V-tail was chosen; Experimental power plants, first flight wind tunnel testing; Staggerwing influence; birth of the Debonair; why the "straight" tail, airplane geneology chart. Specs on all models from 1946-1972.
P/N13-04102.....**$41.25**

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BOOKS

AVIATION RADIO COMMUNICATIONS MADE EASY – Hugh Ward has designed a VFR communications "script" that a pilot can fill out during preflight and use in flight. Provided is a variety of templates that the pilot assembles and completes for each type of communications that might be needed. The 272-page spiral-bound workbook includes 32 different templates ranging from operations at nontowered fields to initial call-up of an approach control facility to requesting VFR traffic advisories, also known as flight following.
VFR.....P/N13-04089 .....**$17.75**

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P/N 13-21600 .....**$34.95**

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SEVERE WEATHER FLYING (DENNIS NEWTON) - This book is not about flying in severe weather, but about how to detect and therefore avoid it, with advice on how to escape it if your become caught in it accidentally. Meteorologist, weather research pilot, engineering test pilot, flight instructor and author Dennis Newton speaks pilot to pilot in this valuable guide on how not to fly in severe weather. Newton says that given the knowledge, pilots can truly lessen their chances in being caught in thunderstorms and other extreme weather conditions. Soft Cover, 208 pgs, illustrated, 3rd edition. P/N 13-02014 .....**$14.95**

MUSIC'S BROKEN WINGS: FIFTY YEARS OF AVIATION ACCIDENTS IN THE MUSIC INDUSTRY - Covering the 50 year period between 1935 and 1985, this 540-page book analyzes 34 aviation accidents, which affected the music in our world in some way. From the most famous American artists, such as Buddy Holly, Patsy Cline, Rick Nelson and Lynyrd Skynyrd, to the lesser-known international performers Carlos Gardel, Anna Jantar, Tamara and Kyu Sakamoto, this text covers many types of music and the talents who were affected by adverse aviation events. Concentrating mainly on the aviation accident itself, the text also touches on some personal aspects of the artists' lives. From chamber music, big band, opera and tango, to country, folk, gospel and rock and roll, this book has something of interest for everyone. It also holds some surprises for many readers. J. P. Richardson, son of the "Big Bopper" (who was killed in the Holly accident) wrote the Foreword for the book. Written by professional airline pilot, William P. Heitman, the author successfully intertwines each story to keep the pilot, and non-pilot alike, interested in the history of the event, while providing as much factual documentation as possible to unravel the devastation that sometimes resulted. Complete with illustrations, photographs, airplane statistics and actual government accident reports. P/N 13-02711 .....**$34.95**

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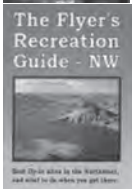

THE FLYER'S RECREATION GUIDE: NORTHWESTERN STATES – Contains descriptions of Western America's most exciting sites, all within convenient access of landing strips. Included are tips and current costs for transportation, lodging, restaurants, hiking, fishing, swimming, evening entertainment, and more. The Guide tells how to find trailheads, hot springs, raft trips, and items of interest. Airport information is included to help pilots determine if their aircraft and skills are compatible with the destination. This compact, perfect-bound 352-pg book has rounded corners & slips easily into a jacket pocket. Its high-quality paper provides maximum clarity for the the books 250 maps & photos.
P/N 13-17590 .....**$15.95**

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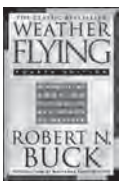

WEATHER FLYING - Weather Flying is regarded in the industry as the bible of weather flying. Robert Buck, a general aviation and commercial pilot with tens of thousands of hours of flight time, explains weather in a nontechnical way, giving pilots useful understanding of weather and practical knowledge of how to judge it and fly it. Covers weather flying psychology, en route weather changes, radar and how to use it, taking off in bad weather, and much more. Winner of the Flight Safety Foundation's Publication Award; recommended by the FAA.
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Details the formations, struggles & successes of the Piper Aircraft Corporation during aviation's Golden Age. Includes particulars of the original Taylor Brothers Aircraft Corporation and of C.G. Taylor (the father of the light plane) & his brother, Gordon. It explains the move to Lock Haven, Pennsylvania, the bankruptcy of the company during the Depression, and the ultimate split of Taylor & Piper, and the beginning of the Piper Aircraft name. Included are the Taylor Chummy, Taylor E-2 Cub, Taylor/Piper J-2 Cub, Piper J-3 Cub, J-4 Cub Coupe, J-5 Cruiser, the Grasshoppers (military observations & liaison airplanes), Piper TG-8 Training Glider, Piper Experimentals, PA-12 Super Cruiser, PA-11 Cub Specials, PA-14 Family Cruiser, PA-15 Vagabond, PA-16 Clipper and PA-18 Super Cub. 90 pgs, softbound, 11 pgs of 3-view drawings, 130 photos. P/N 13-01536 ..... **$22.95**

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Traces G.M. Bellanca coming from Sicily to America as a teenager in 1911 through his 42 years of continuous airplane manufacturing operations. He did more for aviation than any other single individual during aviation's first 100 years, bar none! This is the ONLY BOOK that has ever captured Bellanca's complete and lengthy story. Details the beginnings of the air transportation system over great distances. Details the first ten flights over the Atlantic and the first flight over the Pacific. Tells never-before-told stories of Charles Lindbergh, Clarence Chamberlin and many other Golden Age personalities. Tells the complete story of the greatest airplane of the 1920s — Bellanca's Columbia (the plane Lindbergh wanted but didn't get). In the 1930s the government tested 209 different airplanes and found that Bellanca's was the best regarding "efficiency." 148 pages and 175 plus photos. P/N 13-03337 ..... **$24.95**

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By: John C. Swick. This is the history of the Stinson 108 series airplane (the Voyager), although the 105, 10 and 10A, as well as the L-5, are also covered in great detail. It begins in Volume 1 with the three-place 105 in 1938 and concludes in Volume 2 with the sale of the last Stinson 108-3 from Willow Run in 1950. Production figures, the disposal of surplus military aircraft, the all-Piper Apache and the chronicle of two Stinson dealers are included to give the reader a better sense of the era. 173 pgs, SB, 8.5 x 11, over 200 B&W photos, tables, illustrations & technical drawings.

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BY ALAN ABEL A young Sherman Fairchild quit college in 1917 to start a company to build aerial cameras. After 3 years, Fairchild built the first successful large, high-speed between-the-shutter camera that was a major breakthrough in aerial photographic technology. Fairchild found airplanes of the day not suitable for the photographic mission. Sherman decided to build one himself. During the design of the plane, Fairchild decided to build a multi-purpose plane suitable for other piloting needs and to market these airplanes to the public. P/N 13-06177 ..... **$26.95**

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After building four of the most successful and famous air racers in the world, in the 1930s, Pete, Mike, Ike and Mr. Mulligan, Benny Howard's fame increased with each passing year. With such notoriety, Benny was able to realize his dream -- that of manufacturing and selling commercial aircraft to the flying public throughout the world. Howard was also a highly acclaimed test pilot, having test flown many aircraft for several aircraft manufacturers during his career. This Benny Howard story is a story of struggle, fame, fortune, love, depression, failure and success. P/N 13-06178 ..... **$26.95**

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C.G. Taylor, Taylor/Piper business, Taylor/Piper split, and the Taylorcraft airplanes. Story opens with the December 1935 separation when Wm. T. Piper forced Taylor out of the company that bore his name, Taylor Aircraft Company, manufacturer of the "Cub." Name was changed to Piper Aircraft Corporation when Piper moved his reorganized business to Lock Haven, Pennsylvania in mid-1937. Traces C.G. Taylor's design and manufacture of the various Taylorcraft airplanes.

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During the Great Depression Bernard Pietenpol wanted desperately to fly, but could not afford to buy a plane. So he built his own, a simple wood and fabric monoplane powered by a Model A Ford engine. When the "Experts" in the Modern Mechanics magazine declared such a plane could not fly, he piloted his home-made masterpiece to their Minneapolis headquarters and proved them wrong. Impressed by the plane's clever design and gentle flying characteristics, they subsequently published his plans in their Flying and Glider Manual. Over the next years thousands of copies were built, and they are still being crafted worldwide today.

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Are you ready to buy a new or pre-owned Piper? This updated second edition includes the original in-depth info about Piper models along with purchasing advice on ADs, inspections, the importance of logbooks, and how to choose the right Piper aircraft for your wants and needs. This informative narrative includes information on models from the Piper Cub, to the various Piper Indians such as the Cherokee, the Cheyenne, the Comanche, and the agricultural Pawnee. P/N 13-06181 ..... **$19.95**

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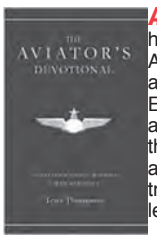
The Continental A-40 Engine was the answer to the continuing problem of finding suitable and inexpensive powerplants for lightplane manufacture during the Golden Age. The Aeronca E-113 of 36-hp was close, but the next generation, the Continental A-40 filled the bill. It was light, could power a 2-place airplane, and cost less than $500.

P/N 13-06194 ..... **$21.95**

AVIATOR'S DEVOTIONAL -



The Aviator's Devotional, has been one of the top selling books at the Oshkosh AirVenture two years consecutively. It was the second and fourth best seller respectively in 07 and 08 at the EAA Author's Corner among books by over 40 popular aviation authors. The Aviator's Devotional is unique, as the only inspirational book of its kind exclusively for aviators. The book presents adventurous stories, aviation trivia, and practical flying pointers to illustrate valuable lessons on life from a Christian prospective.

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BOOKS

FLYING & LEARNING: BASICS FOR EVERY PILOT (WILLIAM HEITMAN) - Heitman uses simple terms and personal experiences to lay basics which students can use to get their feet wet. By keeping things simple, he also keeps the new student interested, which can be difficult when teaching something as complicated as flying. This is an excellent primer for students who are just beginning their flight training or pilots who have been away from flying for a while. P/N 13-15129 ..... **$14.95**

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AVIATION eBOOKS FROM AIRCRAFT SPRUCE

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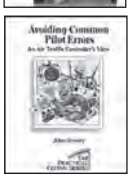
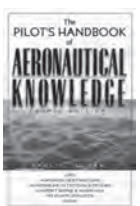


AVOIDING COMMON PILOT ERRORS: AN AIR TRAFFIC CONTROLLER'S VIEW (JOHN STEWART) - This important book brings an air traffic controller's perspective to the mistakes pilots commonly make in controlled airspace. Veteran controller John Stewart has spent years observing pilots display their lack of education, lack of flight preparation, inability to communicate effectively, ignorance of or resistance to regulations, and other dangerous flaws. This book is his attempt to help pilots fly more safely in controlled airspace and to introduce them to new & coming air traffic control technology. 226 pgs, 21 illust., paperback. P/N 3033 ..... **$17.50**



THE PILOT'S HANDBOOK OF AERONAUTICAL KNOWLEDGE, 4TH EDITION (PAUL E. ILLMAN) - Studying for the private pilot tests or upgrading to a commercial license will be easier with this valuable, thoroughly illustrated guide to principles, instruments, aircraft and engines, the airspace system, flight planning, navigation, and much more. 416 pages, 230 illust., paperback. P/N 13-29918 ..... **$49.95**

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U.S. AND METRIC SYSTEM EQUIVALENTS

LENGTH EQUIVALENTS

Unit	Millimeters	Centimeters	Inches	Feet	Yards	Meters
1 Millimeter=	1	.1	.03937	.003281	.001094	.001
1 Centimeter=	10	1	.3937	.032808	.010936	.01
1 Inch=	25.4001	2.54001	1	.083333	.027778	.025400
1 Foot=	304.801	30.4801	12	1	.333333	.304801
1 Yard=	914,402	91.4402	36	3	1	.914402
1 Meter=	1000	100	39.37	3.28083	1.09361	1

Unit	Feet	Yards	Meters	Rods	Furlongs	Miles (Statute)
1 Rod=	16.5	5.5	5.02921	1	.025 (1/40)	.003125 (1/320)
1 Furlong=	660	220	201.168	40	1	.125(1/8)
1 Mile (Statute)=	5280	1760	1609.35	320	8	1

1 Nautical Mile = 6080.2 feet = 1.15155 statute miles = 1/3 league.
1 Light Year = 5.879 trillion miles = 9.46 trillion kilometers.

WEIGHT EQUIVALENTS

Unit	Grains	Grams	Ounces (Troy)	Ounces (Avoir.)	Pounds (Troy)	Pounds (Avoir.)	Kilo-grams
1 Grain=	1	.064799	.002083	.002286	.000174	.000143	.000065
1 Gram=	15.4324	1	.032151	.035274	.002679	.002205	.001
1 Ounce (Troy) =	480	31.1035	1	1.09714	.083333	.068571	.031104
1 Ounce (Avoir.) =	437.5	28.3495	.911458	1	.075955	.0625	.028350
1 Pound (Troy) =	5760	373.242	12	13.1657	1	.822857	.373242
1 Pound(Avoir.) =	7000	453.592	14.5833	16	1.21528	1	.453592
1 Kilogram =	15432.4	1000	32.1507	35.2740	2.67923	2.20462	1

Unit	Kilograms	Pounds (Troy)	Pounds (Avoir.)	Metric Tons	Net (Short)	Gross (Long Tons
1 Metric Ton =	1000	2679.23	2204.62	1	1.10231	.984206
1 Net (Short) Ton=	907.185	2430.56	2000	.907185	1	.892857
1 Gross (Long) Ton=	1016.05	2722.22	2240	1.01605	1.12	1

VOLUME AND CAPACITY EQUIVALENTS

Unit	Cubic CM	Cubic In	Liters	Qts (Liq.)	Qts (Dry)	Gals. (Liq.)	Gals. (Dry)	Cubic Feet
1 Cu. Centimeter=	1	.06102	.001	.00106	.00091	.00026	.00023	.00004
1 Cu. Inch=	16.387	1	.01639	.01732	.01488	.00433	.00372	.00058
1 Gill=	118.29	7.2188	.125	.10742	.03125	.02686	.02686	.00418
1 Pint (Liquid)=	473.18	28.875	.47318	.5	.42968	.125	.10742	.01671
1 Pint (dry)=	550.62	33.600	.55062	.58182	.5	.14546	.125	.01945
1 Liter=	1000	61.023	1	1.0567	.90808	.26417	.22702	.03531
1 Quart (Liquid)=	946.36	57.75	.94636	1	.85937	.25	.21484	.03342
1 Quart (dry)=	1101.2	67.201	1.1012	1.1637	1	.29091	.25	.03889
1 Gallon (Liquid)=	3785.4	231	3.7854	4	3.4375	1	.85937	.13368
1 Gallon (dry)=	4404.9	268.80	4.4049	4.6546	4	1.1636	1	.15556
1 Pack=	8809.8	537.61	8.8098	9.3092	8	2.3273	2	.31111
1 Cu. Foot=	28317.0	1728	28.317	29.922	25.714	7.4805	6.4285	1
1 Bushel=	35239.3	2150.4	35.239	37.237	32	9.3092	8	1.2445
1 Barrel=	119241.2	7276.5	119.24	126	108.28	31.5	27.070	4.2109
1 Cu. Yard=	764559.4	46656	764.56	807.90	694.28	201.97	173.57	27
1 Cu. Meter=	1000000	61023.4	1000	1056.7	908.08	264.17	227.02	35.314

AREA EQUIVALENTS

Unit	Square Inches	Square Feet	Square Yards	Square Meters
1 Square Foot=	144	1	.1111	.09290
1 SquareYard=	1296	9	1	.83613
1 Square Meter =	1550	10.7639	1.19599	1
1 Square Rod=	39204	272.25	30.25	25.293
1 Are=	155000	1076.39	119.599	100
1 Acre=	6272640	43560	4840	4046.86
1 Square Mile (640 Acres)=	-	27878400	3097600	2589999
1 Square Kilometer=	-	10763867	1195985	1000000

MISCELLANEOUS LIQUID MEASURE CONVERSIONS

1 Fl. Oz. = 1.805 Cu. In.	1 Quart = 946 Cu. Cm.
1 Fl. Oz. = 29.6 Cu. Cm.	1 Gallon = 8 Pints
1 Pint = 16 Fl. Oz.	1 Gallon = 4 Quarts
1 Quart = 32 Fl. Oz.	1 Firkin = 9 Gallons
1 Quart = 2 Pints	1 Hogshead = 63 Gallons

METRIC SYSTEM

LENGTH

1 Meter (m) = 10 decimeters (dm); 100 centimeters (cm); 1,000 millimeters (mm)

1 dekameter (dkm) = 10 meters (m)
1 hectometer (hm) = 100 meters (m)
1 kilometer (km) = 1,000 meters (m)

WEIGHT

1 gram (g) = 10 decigrams (dg); 100 centigrams (cg); 1,000 milligrams (mg)

1 dekagram (dkg) = 10 grams (g)
1 hectogram (hg) = 100 grams (g)
1 kilogram (kg) = 1,000 grams (g)

1 metric ton = 1,000 kilograms (kg); 1,000,000 grams (g)

VOLUME & CAPACITY

1 liter (l) = 1 cubic decimeter (dm^3); 10 decileters (dl); 100 centiliters (cl); 1,000 milliliters (ml); 1,000 cubic centimeters (cm^3 or cc)

1 dekaliter (dkl) = 10 liters (l)
1 hectoliter (hl) = 100 liters (l)

1 kiloliter (kl) = 1 cubic meter (m^3); 1 stere (s); 1,000 liters (l)

AREA

1 centare (ca) = 1 square meter (m^2); 100 square decimeters (dm^2); 10,000 square centimeters (cm^2); 1,000,000 square millimeters (mm^2)

1 are (a) = 1 square dekameter (dkm^2); 100 square meters (m^2)

1 hectare (ha) = 100 ares (a); 10,000 square meters (m^2)

1 square kilometer (km2) = 1,000,000 square meters (m^2)

Other prefixes occasionally used:
micro—one millionth • myria—10,000 times
• deca—10 times (same as deka) • mega—1,000,000 times

AN/MS O-RING EQUIVALENTS

The AN6227B, AN6230B and MS28775 O-Rings have the same composition. For use in aircraft hydraulic systems using MIL-H-5606 petroleum base hydraulic fluid.

AN6227B/MS28775 Equivalents

AN6227B Dash No.	MS28775 Dash No.	Nominal Size Width	I.D.	O.D.
1	6	1/16	1/8	1/4
2	7	1/16	5/32	9/32
3	8	1/16	3/16	5/16
4	9	1/16	7/32	11/32
5	10	1/16	1/4	3/8
6	11	1/16	5/16	7/16
7	12	1/16	3/8	1/2
8	110	3/32	3/8	9/16
9	111	3/32	7/16	5/8
10	112	3/32	1/2	11/16
11	113	3/32	9/16	3/4
12	114	3/32	5/8	13/16
13	115	3/32	11/16	7/8
14	116	3/32	3/4	15/16
15	210	1/8	3/4	1
16	211	1/8	13/16	1-1/16
17	212	1/8	7/8	1-1/8
18	213	1/8	15/16	1-3/16
19	214	1/8	1	1-1/4
20	215	1/8	1-1/16	1-5/16
21	216	1/8	1-1/8	1-3/8
22	217	1/8	1-3/16	1-7/16
23	218	1/8	1-1/4	1-1/2
24	219	1/8	1-5/16	1-9/16
25	220	1/8	1-3/8	1-5/8
26	221	1/8	1-7/16	1-11/16
27	222	1/8	1-1/2	1-3/4
28	325	3/16	1-1/2	1-7/8
29	326	3/16	1-5/8	2
30	327	3/16	1-3/4	2-1/8

AN6230B/MS28775 Equivalents

AN6230B Dash No.	MS28775 Dash No.	Nominal Size Width	I.D.	O.D.
1	223	1/8	1-5/8	1-7/8
2	224	1/8	1-3/4	2
3	225	1/8	1-7/8	2-1/8
4	226	1/8	2	2-1/4
5	227	1/8	2-1/8	2-3/8
6	228	1/8	2-1/4	2-1/2
7	229	1/8	2-3/8	2-5/8
8	230	1/8	2-1/2	2-3/4
9	231	1/8	2-5/8	2-7/8
10	232	1/8	2-3/4	3
11	233	1/8	2-7/8	3-1/8
12	234	1/8	3	3-1/4
13	235	1/8	3-1/8	3-3/8
14	236	1/8	3-1/4	3-1/2
15	237	1/8	3-3/8	3-5/8
16	238	1/8	3-1/2	3-3/4
17	239	1/8	3-5/8	3-7/8
18	240	1/8	3-3/4	4
19	241	1/8	3-7/8	4-1/8
20	242	1/8	4	4-1/4
21	243	1/8	4-1/8	4-3/8
22	244	1/8	4-1/4	4-1/2
23	245	1/8	4-3/8	4-5/8
24	246	1/8	4-1/2	4-3/4
25	247	1/8	4-5/8	4-7/8

No MS28775 Equivalent for AN6230B-31 and Larger

CONVERSION CHARTS

FRACTIONAL INCHES CONVERTED TO DECIMAL MILLIMETERS

Fraction of Inch	Decimal Inch	Decimal MM.	Fraction of Inch	Decimal Inch	Decimal MM.	Fraction of Inch	Decimal Inch	Decimal MM.	Fraction of Inch	Decimal Inch	Decimal MM.
1/64	.015625	0.39688	17/64	.265625	6.74689	33/64	.515625	13.09690	49/64	.765625	19.44691
1/32	.03125	0.79375	9/32	.28125	7.14376	17/32	.53125	13.49378	25/32	.78125	19.84379
3/64	.046875	1.19063	19/64	.296875	7.54064	35/64	.546875	13.89065	51/64	.796875	20.24067
1/16	.0625	1.58750	5/16	.3125	7.93752	9/16	.5625	14.28753	13/16	.8125	20.63754
3/64	.078125	1.98438	21/64	.328125	8.33439	37/64	.578125	14.68440	53/64	.828125	21.03442
3/32	.09375	2.38125	11/32	.34375	8.73127	19/32	.59375	15.08128	27/32	.84375	21.43129
7/64	.109375	2.77813	23/64	.359375	9.12814	39/64	.609375	15.47816	55/64	.859375	21.82817
1/8	.125	3.17501	3/8	.375	9.52502	5/8	.625	15.87503	7/8	.875	22.22504
9/64	.140625	3.57188	25/64	.390625	9.92189	41/64	.640625	16.27191	57/64	.890625	22.62192
5/32	.15625	3.96876	13/32	.40625	10.31877	21/32	.65625	16.66878	29/32	.90625	23.01880
11/64	.171875	4.36563	27/64	.421875	10.71565	43/64	.671875	17.06566	59/64	.921875	23.41567
3/16	.1875	4.76251	7/16	.4375	11.11252	11/16	.6875	17.46253	15/16	.9375	23.81255
13/64	.203125	5.15939	29/64	.453125	11.50940	45/64	.703125	17.85941	61/64	.953125	24.20942
7/32	.21875	5.55626	15/32	.46875	11.90627	23/32	.71875	18.25629	31/32	.96875	24.60630
15/64	.234375	5.95314	31/64	.484375	12.30315	47/64	.734375	18.65316	63/64	.984375	25.00318
1/4	.25	6.35001	1/2	.5	12.70003	3/4	.75	19.05004	1	1.	25.40005

MILLIMETERS CONVERTED TO DECIMAL INCHES

	INCH EQUIVALENTS									
Millimeters	0	1	2	3	4	5	6	7	8	9
	0.00000	0.03937	0.07874	0.11811	0.15748	0.19685	0.23622	0.27559	0.31496	0.35433
10	0.39370	0.43307	0.47244	0.51181	0.55118	0.59055	0.06299	0.66929	0.70866	0.74803
20	0.78740	0.82677	0.86614	0.90551	0.94488	0.98425	1.02362	1.06299	1.10236	1.14173
30	1.18110	1.22047	1.25984	1.29921	1.33858	1.37795	1.41732	1.45669	1.49606	1.53543
40	1.57480	1.61417	1.65354	1.69291	1.73228	1.77165	1.81102	1.85039	1.88976	1.92913
50	1.96850	2.00787	2.04724	2.08661	2.12598	2.16535	2.20472	2.24409	2.28346	2.32283
60	2.36220	2.40157	2.44094	2.48031	2.51968	2.55905	2.59842	2.63779	2.67716	2.71653
70	2.75590	2.79527	2.83464	2.87401	2.91338	2.95275	2.99212	3.03149	3.07086	3.11023
80	3.14960	3.18897	3.22834	3.26771	3.30708	3.34645	3.38582	3.42519	3.46456	3.50393
90	3.54330	3.58267	3.62204	3.66141	3.70078	3.74015	3.77952	3.81889	3.85826	3.89763
100	3.93700	3.97637	4.01574	4.05511	4.09448	4.13385	4.17322	4.21259	4.25196	4.29133
110	4.33070	4.37007	4.40944	4.44881	4.48818	4.52755	4.56692	4.60629	4.64566	4.68503
120	4.72440	4.76377	4.80314	4.84251	4.88188	4.92125	4.96062	4.99999	5.03936	5.07873
130	5.11810	5.15747	5.19684	5.23621	5.27558	5.31495	5.35432	5.39369	5.43306	5.47243
140	5.51180	5.55117	5.59054	5.62991	5.66928	5.70865	5.74802	5.78739	5.82676	5.86613
150	5.90550	5.94487	5.98424	6.02361	6.06298	6.10235	6.14172	6.18109	6.22046	6.25983
160	6.29920	6.33857	6.37794	6.41731	6.45668	6.49605	6.53542	6.57479	6.61416	6.65353
170	6.69290	6.73227	6.77164	6.81101	6.85038	6.88975	6.92912	6.96849	7.00786	7.04723
180	7.08660	7.12597	7.16534	7.20471	7.24408	7.28345	7.32282	7.36219	7.40156	7.44093
190	7.48030	7.51967	7.55904	7.59841	7.63778	7.67715	7.71652	7.75589	7.79526	7.83463
200	7.87400	7.91337	7.95274	7.99211	8.03148	8.07085	8.11022	8.14959	8.18896	8.22833
210	8.26770	8.30707	8.34644	8.38581	8.42518	8.46455	8.50392	8.54329	8.58266	8.62203
220	8.66140	8.70077	8.74014	8.77951	8.81888	8.85825	8.89762	8.93699	8.97636	9.01573
230	9.05510	9.09447	9.13384	9.17321	9.21258	9.25195	9.29132	9.33069	9.37006	9.40943
240	9.44880	9.48817	9.52754	9.56691	9.60628	9.64565	9.68502	9.72439	9.76376	9.80313
250	9.84250	9.88187	9.92124	9.96061	9.99998	10.03935	10.07872	10.11809	10.15746	10.19683
260	10.23620	10.27557	10.31494	10.35431	10.39368	10.43305	10.47242	10.51179	10.55116	10.59053
270	10.62990	10.66927	10.70864	10.74801	10.78738	10.82675	10.86612	10.90549	10.94486	10.98423
280	11.02360	11.06297	11.10234	11.14171	11.18108	11.22045	11.25982	11.29919	11.33856	11.37793
290	11.41730	11.45667	11.49604	11.53541	11.57478	11.61415	11.65352	11.69289	11.73226	11.77163

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2) C.O.D. - Orders may be shipped COD via United Parcel Service within the United States. Please note some restriction may apply to COD shipments. A handling fee is added to all COD orders to cover special documentation required.

3) Check - Customers may choose to pay by check by mailing in their order and enclosing a check. Customers may call ahead of time for current pricing and freight estimates.

4) Bank Transfer - International customers may wish to pay by bank transfer. Contact us for bank information to arrange transfer of funds.

HOW TO ORDER TOLL-FREE "877" ORDER LINE & FAX

Call the Aircraft Spruce toll-free order line (877) 4-SPRUCE, servicing the continental United States and portions of Canada. We have an experienced order desk staff who are pleased to assist you with your order. You may also fax your order in toll-free at (800) 329-3020.

CONVENIENT ORDER DESK HOURS

Monday – Friday: 6:00AM to 6:00PM (Pacific Time)
Saturday: 7:00AM to 3:30PM (Pacific Time)

EASY ORDERING 24-HOURS A DAY

Communicating with us has never been easier. Place your orders, request quotations and submit your inquiries 24 hours a day by fax, e-mail or via the Aircraft Spruce Website.

Fax: Aircraft Spruce West: (951) 372-0555
E-mail: info@aircraftspruce.com
Internet: www.aircraftspruce.com

SAME DAY SHIPMENT

We strive to ship all orders placed by 4:00 p.m. warehouse local time, the same day the order is placed. Our experienced staff can offer various shipping options that will insure delivery of the order within your time requirements. Freight charges are invoiced based upon the warehouse from which the order is shipped. Same day shipment can be guaranteed on in stock, off-the-shelf products and not on orders for wood, metals, foams, fabrics and other products requiring cutting, as well as special order items. Count on Aircraft Spruce to provide immediate shipment of the aircraft parts or pilot supplies you need.

FREE SHIPPING ON ORDERS OVER $500.00

Most orders over $500.00, shipping within the 48 contiguous United States, will be shipped prepaid, with Aircraft Spruce paying the shipping costs! This only applies to orders shipped UPS ground and which are more economical shipping by UPS than by motor freight. Aircraft Spruce pays the freight, but any additional fees assessed by UPS (such as COD fees, hazardous materials, additional handling, etc) will be billed at time of shipment. Please refer to the UPS Service Guide for further details of additional charges that may apply. Orders that contain 5 gallon containers, cases of oil, and packages measuring more than 84 inches length and girth or 60 inches long are excluded. Core charges, hazardous materials fees, box charges, and insurance are not considered part of the $500.00 value of an order. Our Free shipping offer does apply to orders for tires and batteries! Please inquire at time of order for clarification on whether an order will qualify for the new prepaid policy. Our exclusive prepaid policy is one more advantage you have in placing your order with Aircraft Spruce & Specialty Co.

FREE TRUCK FREIGHT ON ORDERS OVER $5,000 - Effective immediately Aircraft Spruce will offer free UPS freight on truck orders over $5,000. See our website for details.

ALASKAN PILOTS - Aircraft Spruce pays freight to Seattle. Aircraft Spruce has expanded its popular UPS Prepaid policy to cover a portion of the freight costs from Aircraft Spruce West to Alaska. See our website for details.