The GlaStar and Sportsman aircraft kits are one of the most complete and comprehensive in the industry. In fact, it is likely the easiest, quickest assembling and highest quality kit on the market today. The GlaStar and Sportsman kits include all major airframe components, along with wheels and brakes, fuel system firewall aft, fuel tanks, adjustable seats, etc. Firewall-forward items included in the kit are: spinner, cowling and engine mount. Most importantly, because we’ve done all the difficult things like fabricating the majority of the parts for you, you’ll have fun in the process of assembling your kit. Building a GlaStar or Sportsman is more like an assembly process rather than a construction or fabrication process, which is different from many comparable kits available today.

As with most (non-ultra light) kits sold in the Experimental Aircraft Industry the GlaStar and Sportsman Kits do not come standard with Instruments, avionics, or electrical system. Raw materials and instructions to fabricate a flat aluminum panel are included in the standard kit. A molded fiberglass instrument panel and glare shield are available as an option. The following list includes other items not included in the Sportsman kit purchase price. They are available as options from Glasair Aviation.

Lycoming Engine  
Engine Control cables  
Hartzell, McCauley, MT, or Sensenich Prop  
Prop Governor  
Shock Bushings for Lycoming Engines  
Engine Baffling  
Oil Cooler  
Induction System  
Exhaust System  
Fuel Pump Cooling Shroud  
Vacuum System  
Landing Light  
Aileron Electric Trim  
Pitot Static System

The following items are now included in Standard Kits in 2007

Tow Bar-Trike  
Seat Belt Front Right  
Seat Belt Front Left  
Low Profile Molded Instrument Panel  
Glare Shield  
Door Lock Ignition switch Installation  
Control Cable Cabin Heat  
Cabin Heat Installation  
Cabin Air Vent Installation
Fuel Level Sending Units
Stainless Steel Brake line Upgrade
Firewall Blanket 8 feet
Dual Brake Installation
Drain Pan Installation
Rear Seat Base

The design goal of the GlaStar and Sportsman was to not only create a highly versatile airplane, but also to make an airplane kit that is easy to assemble, with exceptional value for your money. The GlaStar and Sportsman design is a revolutionary new concept that combines aluminum, fiberglass composite and steel tube materials all in one package, which drastically reduces assembly time. The wings and tail group are all aluminum with pre-formed and pre-drilled parts. You Cleco the aluminum parts together, drill the pilot holes up to full size and rivet them together. It’s that simple. We’ve eliminated all the time involved with typical aluminum construction (the setup and measuring), by using pre-drilled, pre-punched and pre-formed parts. The fuselage combines a steel safety cage combined with an aerodynamic fiberglass composite exterior shell. The fuselage shells are bonded together and bolted to the steel cage. Our customers are raving about the kit quality and how quick and easy it is to build.

The idea was to use the appropriate material in different areas of the structure that would make for a cost effective and production-efficient design. Fiberglass composite is great for the compound curves needed on the fuselage surfaces. With constant chord wings and tail surfaces, aluminum makes sense because it combines lightweight and low cost manufacturing processes. Most importantly, the steel safety cage is an excellent way to resolve all major load paths into one strong rigid structure and provide for the highest occupant protection and survivability as evidenced by the fact that nearly every racecar in all classes use similar steel safety cages.

The GlaStar and Sportsman can be purchased as a single complete kit or in what we’ve termed our System 3 kits. The System 3 plan breaks the kit down into three sub-assembly kits consisting of a Tail Group kit, a Wing Group kit and a Fuselage Group kit as described in the following lists.

We’re confident that if you compare the quality and completeness of the GlaStar and Sportsman kit to any other on the market, you’ll find it to be far above the rest. With outstanding performance, unmatched versatility and utility, a comfortable cockpit with safety cage and a quality kit all in one package, you simply will not find this much value for your money anywhere else. And when finished, you’ll possess an enjoyable airplane, one you’ll be proud to own. Why settle for less?

As improvements to the GlaStar and Sportsman kit occur frequently, minor changes to exact specifications and kit contents occur without notice.
TAIL KIT DESCRIPTION

The tail group or empennage kit consists of the rudder; horizontal stabilizer, elevator and elevator trim tab assemblies. All components are made from aluminum materials. The exterior skins are 2024-T3 Alclad and the interior parts are all 6061-T6. All parts are highly finished and ready for assembly, with only minimal additional forming, trimming and drilling needed. The standard tail group kit crate is 70" by 8" by 26". Also included is a 125"-long, 4"-diameter cardboard tube, which houses the spars for the horizontal stabilizer and the elevator. The Jumpstart tail comes in a crate 115” by 35” by 16”

The optional Pre-built Tail assemblies are provided with a uniform coat of acid-etch primer on all inside surfaces and professionally assembled and riveted to the following stages:

Stabilizer- fully assembled with the exception of the tips.
Elevator- fully assembled with the exception of the elevator counterweights and tips.
Remaining tasks for the builder include trim tab assembly and installation
Rudder-Fully assembled.

This option reduces the assembly time for the average builder by 100-150 hours.

DESIGN FEATURES

The horizontal stabilizer uses a 34" constant chord NACA 0010 section with a 10', 9" span and is easily removable for trailering similar to the way a glider’s horizontal tail is removed. The stabilizer attaches with two bullet pins, which index into two self-aligning bearings housed in a machined attach fitting mounted to a bulkhead in the fuselage. Four bolts fasten the stabilizer’s rear spar to the aft fuselage bulkhead. Tighten one bolt for the control linkage, hook up the trim cable for manual trim or a connector for electric trim, fasten the tail cone and rudder fairings in place and you’re ready to go (only a five minute job!). The elevator is nearly 50 percent of the chord, which gives plenty of flare power during landing with just about any engine/prop combination. The elevator trim tab is actuated manually and is included as standard equipment, with electric trim available as an option.

TAIL GROUP KIT CONTENTS

Metal Parts
Rudder Yoke Weldment
Rudder Forward Spar
Rudder Aft Spar
Rudder Root Rib
Rudder Counterweight Rib
Rudder Tip Rib
Rudder Forward Spar/Counterweight Rib Bracket
Rudder Forward Spar/Hinge Bracket
Rudder Aft Spar/Counterweight Rib Bracket
Rudder Aft Spar/Root Rib Bracket
Rudder Hinge Mounting Plate
Rudder Hinge
Rudder Hinge Shim
Rudder Skin
Forward Rudder Skin
Stabilizer Forward Spar
Stabilizer Aft Spar
Stabilizer Left-flange Main Ribs
Stabilizer Right-flange Main Ribs
Stabilizer Nose Ribs
Stabilizer Forward Spar Caps
Stabilizer Front Forward Spar Doublers
Stabilizer Rear Forward Spar Doublers
Stabilizer Main Rib Flange
Stabilizer Left Skin
Stabilizer Right Skin
Stabilizer Aft Attach Bracket
Stabilizer Forward Attach Bracket Assembly
Stabilizer Alignment Pins
Elevator Forward Spar
Elevator Aft Partial Spar
Elevator Inboard Ribs
Elevator Outboard Ribs
Elevator Tip Ribs
Elevator Center Forward Spar/Hinge Doublers
Elevator Outboard Forward Spar/Hinge Doublers
Elevator Upper Left Skin
Elevator Upper Right Skin
Elevator Lower Left Skin
Elevator Lower Right Skin
Elevator Control Horn
Elevator Control Horn Attach Angles
Elevator Rib/Control Horn Stiffener
Elevator Trim Cable Bracket Angle
Elevator Trim Cable Bracket Sheet
Elevator Trim Tab Skin
Elevator Trim Tab Rib Angle
Elevator Trim Tab Ribs
Elevator Trim Tab Counterweight Arm
Aluminum Tee
Sheet Lead
Sheet Metal for Riveting Practice

All Necessary Hardware and Miscellaneous Material
Extruded Piano Hinge with Pin
Rolled Piano Hinge with Pin
Bolts
Screws
Plain Nuts
Nylon Self-Locking Nuts
Nut plates
Aluminum Washers
Large Steel Washers
Universal-Head Rivets
Flush-Head Rivets
Blind Rivets
Aluminum Tape

WING KIT DESCRIPTION

The wing group kit consists of the wings, ailerons and flaps, all made from high quality aluminum components, ready for assembly. They are pre-formed, pre-punched and pre-drilled, (literally pre-made for you). The skins are Alclad 2024-T3 and internal parts are 6061-T6. The standard wing group is shipped in two crates, one measuring 120" by 34" by 20" and the other 192" by 6" by 6". The Pre-Built wing comes in a crate 185" by 42" by 22”

With the optional Pre-Built Wing Installation, the wing and the control surfaces come ready to hang on the airplane! Not only is the basic wing structure assembled but also all flight control brackets, bell cranks and pulleys are installed, the leading edge D-section is complete, and all the lower wing skins, stiffeners and lift strut beam structures are riveted and bolted in place. The upper skins and stiffeners are match drilled to the spar/rib structure and primed on the inside surface- you simply rivet them in place after drilling the wing struts, rigging the flight controls and completing the wing fuel tank plumbing and wiring. The ailerons and flaps are complete and ready to hang. Interior surfaces of all components are acid-etch primed for anti-corrosion protection. The assembly of Pre-Built wings, flaps, and ailerons is accomplished by professional sheet-metal mechanics to high factory standards. This option reduces the assembly time for the average builder by 400-600 hours.

Design Features

The wing uses a very high lift LS (1)-0413 airfoil with a 44" constant chord and employs Frise type ailerons and Fowler flaps. Wing area is 128 square feet for the GlaStar and 131 square feet for the Sportsman, since the Sportsman flaps are 2” wider in cord length.
The Frise ailerons reduce adverse yaw, minimizing rudder input at low airspeeds, and the Fowler flaps create high lift during landing, eliminating the need for a larger wing. Fowler flaps actually increase wing area when deployed. Another added benefit of the high lift LS (1)-0413 airfoil is a little higher wing loading per square foot which provides a smoother ride in flight when encountering turbulence. Spanwise loading with the 35-foot long wing creates very nice handling qualities, which is a desirable feature seen on new designs such as the Piper Malibu. After flying the GlaStar or Sportsman you’ll see why this is such a great feature. The fiberglass wing tips have a Hoerner-type shape for improved effective span.

A very simple jig, consisting of a bench with a 4” by 4” wood post at each end, is required to begin assembly of the wing. We’ve discovered when working with aluminum structures that riveting is the easy part—it’s getting an assembly to the riveting stage that takes the time. By pre-forming, pre-punching, and pre-drilling the parts for you, much of the setup and jigging time is eliminated. Aluminum construction is easy, especially when we’ve done all the hard parts for you. The main and rear spars are made of extruded 6061-T6 aluminum. This also saves time because not only are they pre-made for you, they also come pre-drilled for all rib and bracket locations. The trailing edge of the pre-formed front D-section wing skin is riveted behind the C-shaped main spar shearweb, as is the leading edge of the aft wing skins. This makes the rivets easily accessible when bucking. The self-contained aluminum fuel tanks in the wing are independent of the wing skins and eliminate the problems associated with sealing integral tanks. It is the sum of many of these unique design features that makes building a GlaStar or Sportsman an enjoyable and easy project.

**WING GROUP KIT CONTENTS**

**Metal Parts**
- Left Wing Forward Spar
- Right Wing Forward Spar
- Left Wing Forward Spar Front Root Doublers
- Right Wing Forward Spar Front Root Doublers
- Wing Forward Spar Root Doublers Angles
- Wing Forward Spar Rear Root Doublers
- Wing Forward Spar Strut Beam Doublers
- Left Wing Aft Spar
- Right Wing Aft Spar
- Wing Aft Spar Front Root Doublers
- Wing Aft Spar Root Doublers Angles
- Wing Aft Spar Rear Root Doublers
- Wing Aft Spar Strut Beam Doublers
- Left Wing Main Root Rib
- Right Wing Main Root Rib
- Left-flange Outboard Main Wing Ribs
- Right-flange Outboard Main Wing Ribs
Glasair

Left Wing Root Nose Rib
Right Wing Root Nose Rib
Left-flange Outboard Nose Wing Ribs
Right-flange Outboard Nose Wing Ribs
Left Wing Root Flap Cove Rib
Right Wing Root Flap Cove Rib
Left-flange Flap Cove Wing Ribs
Right-flange Flap Cove Wing Ribs
Left-flange Aileron Cove Wing Ribs
Right-flange Aileron Cove Wing Ribs
Wing Upper Hat Sections
Wing Lower Hat Sections
Left Inboard Leading Edge Wing Skin
Right Inboard Leading Edge Wing Skin
Left Center Leading Edge Wing Skin
Right Center Leading Edge Wing Skin
Left Outboard Leading Edge Wing Skin
Right Outboard Leading Edge Wing Skin
Left Upper Inboard Wing Skin
Right Upper Inboard Wing Skin
Left Upper Center Wing Skin
Right Upper Center Wing Skin
Left Upper Outboard Wing Skin
Right Upper Outboard Wing Skin
Left Lower Inboard Wing Skin
Right Lower Inboard Wing Skin
Left Lower Center Wing Skin
Right Lower Center Wing Skin
Left Lower Outboard Wing Skin
Right Lower Outboard Wing Skin
Wing Lower Center Skin Stiffener Channels
Wing Forward Spar Cap Strips, 72"
Wing Forward Spar Cap Strips, 36"
Wing Lower Inboard Skin Doublers
Wing Upper Left Root Rib Doublers
Wing Upper Right Root Rib Doublers
Wing Lower Left Root Rib Doublers
Wing Lower Right Root Rib Doublers
Wing Lower Center Skin Gussets
Flap Bellcrank Brackets
Upper Flap Bellcrank Bracket Attach Angles
Lower Flap Bellcrank Bracket Attach Angles
Upper Aileron Bellcrank Brackets
Lower Aileron Bellcrank Brackets
Left Aileron Bellcrank Upper Attach Bracket
Right Aileron Bellcrank Lower Attach Bracket
Lower Aileron Bellcrank Attach Brackets
Wing Left-flange Strut Beams
Wing Right-flange Strut Beams
Wing Forward Strut Beam Attach Angles
Wing Aft Strut Beam Attach Angles
Left Wing Strut Attach Arm
Right Wing Strut Attach Arm
Flap Tracks
Left-flange Flap Track Ribs
Right-flange Flap Track Ribs
Flap Bellcrank Pulleys
Upper Left/Lower Right Flap Bellcrank Arms
Lower Left/Upper Right Flap Bellcrank Arms
Flap Bellcrank Bearing Housings
Flap Bellcrank Spacers
Aileron Hinge Arms
Aileron Hinge Arm Bearing Doublers
Left-flange Aileron Hinge Ribs
Right-flange Aileron Hinge Ribs
Left-flange Aileron Hinge Attach Angles
Right-flange Aileron Hinge Attach Angles
Left Inboard Aileron Hinge Attach Angle
Right Inboard Aileron Hinge Attach Angle
Flap Pulley Bracket Angle
Outboard Aileron Pulley Bracket Angle
Aileron Bellcrank Halves
Opposite Aileron Bellcrank Halves
Left Aileron Spar
Right Aileron Spar
Left-flange Aileron Nose Ribs
Right-flange Aileron Nose Ribs
Left-flange Aft Aileron Ribs
Right-flange Aft Aileron Ribs
Left Aileron Skin
Right Aileron Skin
Inboard Aileron Hinge Brackets
Outboard Aileron Hinge Brackets
Aileron Inspection Hole Doublers
Aileron Inspection Hole Covers
Left-flange Aileron Counterweight Nose Ribs
Right-flange Aileron Counterweight Nose Ribs
Flap Spars
Left-flange Flap Nose Ribs
Right-flange Flap Nose ribs
Left-flange Aft Flap Ribs
Right-flange Aft Flap Ribs
Flap Skins
Flap-track Guide Arms
Flap Deployment Arms
Aluminum Sheet
Aluminum Angle Stock
All Necessary Hardware
Bellcrank Bearings
Ball Bearings
Bushings
Spacers
Pulleys
Bolts
Castle Nuts
Nylon Self-Locking Nuts
Nut plates
Round-Head Machine Screws
Aluminum Washers
Thin Aluminum Washers
Cotter Pins
Universal-Head Rivets
Flush-Head Rivets
Blind Rivets
Flush-Head Blind Rivets

FUSELAGE KIT DESCRIPTION

The fuselage group kit contains all components necessary to complete the fuselage structure aft of the firewall, including the landing gear, wheels and brakes, control systems, seat assemblies, cockpit doors and windows, and wing and tail surface final assembly and installation. Firewall Forward items included in the kit are Spinner, Cowling and Engine Mount. It includes all fiberglass materials for lamination. All fiberglass work is accomplished in the fuselage and final assembly sections of the Assembly Manual. The wing tanks are installed in the wing during final assembly. The fuselage crate is 234" by 56" by 67”.

With the optional Pre-built Fuselage, the composite shells are delivered having already been precisely jigged and fitted to the cage, with the dorsal and belly seam laminates in place and the exterior seams filled, sanded, primed and ready for final preparation and paint. All cage attach hard points are injected in the shells and most of the cage to shell attach hardware is installed. In addition, all five bulkheads are prefabricated and installed. The Pre-Built fuselage also includes a high performance, zero drag COM antenna bonded into the vertical fin.
All Pre-Built fuselages come with the top deck installed with exterior leading edge and aft seams filled, primed and ready for final preparation and paint. Also the cabin area of the fuselage and top deck are pre-painted with a lightly textured, gray Zolatone finish, so as to provide the builder with a nice looking, completed interior straight from the factory. This feature provides builders with the opportunity to save weight, cost and difficulty associated with installing unneeded, bulky interior cover panels. And at the same time, further reduces build time.

We estimate the Pre-Built Fuselage option will save the average builder from 150-200 hours or more of assembly and finish labor.

**DESIGN FEATURES**

The fuselage assembly consists of a steel tube safety cage in the cockpit area surrounded by fiberglass composite shells. The steel safety cage is the backbone of the entire kit. The cage is a welded structure made of 4130 aircraft-grade tubing. It is made in a very exact weld jig tool so you need no jigging or setup during assembly. This feature saves a tremendous amount of time because everything is just bolted to it. In many other types of kits the structure for all these items has to be fabricated. All welds are quality inspected using primarily a tungsten inert gas (TIG) process, which creates consistent, high strength, uniform welds. The fuselage composite panels in the cockpit area act as fairings, whereas the cage is the main structural component, which also gives the added benefit of superior occupant protection in a mishap. The main landing gear legs are held in place with one bolt each. Consider this: all of the items listed below are simply bolted to the cage. Those who have constructed other types of kitplanes can appreciate these timesaving features.

- main tricycle or taildragger landing gear legs
- float attach points
- float hoist attach points
- nose gear leg
- engine mount
- wing struts
- wing spars
- control cable guides
- pulley brackets
- door latches
- door hinges
- flap handle and ratchet plate
- control sticks/torque tube
- wing folding mechanism
- seat adjustment rails
- seat backs
- instrument panel
- structural attach points
The seats are adjustable and fold forward for easy access to the large baggage area, and are also removable. Bicycles and anything imaginable can be put into the baggage area through the large doors and by folding the seat backs forward. The baggage door is lockable and the cabin doors employ a unique four-point latching mechanism that seals out moisture and noise, something not found on many comparable kits. The side windows in the doors come standard with a convex shape that gives great shoulder width (46”) and allows visibility nearly straight down. The Sportsman rear cargo door measures 26” x 31” allowing ease of ingress and egress for rear seat passengers or large, bulky cargo.

The fiberglass composite shells for the fuselage consist of two main halves and an upper deck panel in the wing root area. Besides bonding the center seams between the fuselage shell halves, you will install structural bulkheads in the tail for stiffness and for mounting the horizontal stabilizer. The flanges for the windshield, windows and doors are all pre-molded and factory-trimmed to net size. The firewall consists of a riveted, .016” stainless steel assembly.

All controls use stainless steel cables for actuation and at least one end of each cable assembly is pre-swaged. The cable controls for the ailerons and flaps provide an important safety feature—when folding the wings, nothing needs to be disconnected! The cables, securely held with cable guards and fairleads, go slightly slack when the wings fold and return to full tension when the wing is extended and pinned. The flexible fuel lines, electrical wiring and static system all rotate around the aft spar pivot points. There’s nothing to unhook. Two pins are used to lock the forward spars into place and two pre-made composite panels in the wing root area are easily removed to allow clearance for the flaps when the wings are folded.

Several powerplant options are offered for the GlaStar. The first is the fuel-injected Continental IO-240- B engine. This engine produces 125 h.p. swinging a Sensenich fixed-pitch metal prop and delivers exceptional performance in an economical package. An optional exhaust system provides unusually quiet operation as well. For builders who desire even better climb and cruise performance, we also offer the popular, normally aspirated 180/160/150 h.p. Lycoming models with either a Sensenich fixed-pitch metal prop or a Hartzell constant-speed prop. The Sportsman was designed to use the popular and reliable 180 h.p. 0-360 engine and limited models of the 200 h.p. Lycoming engine (with forward facing injectors).

**FUSELAGE GROUP KIT CONTENTS**

The following list is for a Tricycle Gear GlaStar or Sportsman. The tail dragger kit is similar except, of course, that it includes all the necessary tail wheel gear components instead of the nose gear components.

**Fiberglass Parts**
Left Fuselage Shell
Right Fuselage Shell
Upper Cowling Half
Lower Cowling Half
Spinner
Top Deck
Lower Left Wing-Fold Hatch Half
Lower Right Wing-Fold Hatch Half
Upper Left Wing-Fold Hatch Half
Upper Right Wing-Fold Hatch Half
Baggage Door
Lower Left Horizontal Stabilizer Strake Half
Lower Right Horizontal Stabilizer Strake Half
Upper Left Horizontal Stabilizer Strake Half
Upper Right Horizontal Stabilizer Strake Half
Left Cabin Door
Right Cabin Door
Lower Left Wingtip Fairing Half
Lower Right Wingtip Fairing Half
Upper Left Wingtip Fairing Half
Upper Right Wingtip Fairing Half
Main Gear Wheel Pant Left Halves
Main Gear Wheel Pant Right Halves
Nose Gear Wheel Pant Left Half
Nose Gear Wheel Pant Right Half
Nose Gear Leg Fairing Left Half
Nose Gear Leg Fairing Right Half
Tail Cone
Rudder Base Fairing
Rudder Tip Fairing
Horizontal Stabilizer Tip Fairings
Elevator Tip Fairings
Left Seat Pan
Right Seat Pan

Plexiglas Parts
Windshield
Left Door Window
Right Door Window
Left Quarter Window
Right Quarter Window
Skylights

Fabrication Materials
DBM Cloth
Bi-directional Cloth
All Necessary Foam Sheet
Mill Fibers
Q-cells
Cabosil
Vinyl Ester Resin
MEKP Catalyst
Cobalt Promoter
DMA Accelerator

Metal Parts
Fuselage Safety Cage
Engine Mount
Wing Pivot Brackets
Left Fuselage Strut
Right Fuselage Strut
Vertical Fin Spar
Upper Rudder Hinge
Lower Rudder Hinge
Upper Elevator Bellcrank Bracket
Lower Elevator Bellcrank Bracket
Upper Elevator Bellcrank Half
Lower Elevator Bellcrank Half
Wing Struts
Fuselage Wing Strut Attach Fittings
Forward Spar Attach Pins
Inspection Hole Doubler, 4.45"
Inspection Hole Cover, 4.45"
Inspection Hole Doubler, 5.75"
Inspection Hole Cover, 5.75"
Inspection Hole Doubler, 6.2" X 4.7"
Inspection Hole Cover, 6.2" X 4.7"
Left Fuel Tank
Right Fuel Tank
Note: Sportsman also includes Aux Fuel Tank Installation Standard PN 933-01000-03
Fuel Tank Filler Necks
Fuel Filler Caps
Left Rudder Control Weldment
Right Rudder Control Weldment
Rudder Pedal Pivot Angle
Rudder Pedal Brake Actuator Angle
Elevator/Aileron Control Yoke
Control Stick Pivot Brackets
Control Stick Interconnect Rod
Flap Handle Ratchet Plate
Flap Handle
Flap Handle Plunger Extension
Flap Handle Plunger
Flap Pushrods
Aileron Pushrods
Cable Retainer Clips
Control Cable Attach Tabs
Cable Retainer Strap Stock
Rod End Inserts
Left Aft Lower Door Hinge Half
Right Aft Lower Door Hinge Half
Left Aft Upper Door Hinge Half
Right Aft Upper Door Hinge Half
Left Forward Door Hinge Halves
Right Forward Door Hinge Halves
Left Forward Upper Door Latch
Right Forward Upper Door Latch
Left Center Door Latch
Right Center Door Latch
Exterior Door Handles
Inboard/Outboard Flap Cove Skins
Center Flap Cove Skins
Aileron Cove Skins
Wing Trailing Edge Doublers
Left Aileron Counterweight
Right Aileron Counterweight
Control Sticks
Seat Backs
Seat Bases
Inboard Seat Tracks
Left Outboard Seat Track
Right Outboard Seat Track
Aft Control Cable Cover Angles
Forward Control Cable Cover Angles
Threaded Steel Rod
Stainless Steel Rod
Aluminum Sheet
Steel Sheet
Stainless Steel Sheet
Formed Aluminum Angle
Extruded Aluminum Angle
Aluminum Tubing
Aluminum Tee Stock
Landing Gear and Brake Parts
Main Gear Legs
Main Gear Axle Spacers
Main Gear Axle Washers
Main Gear Axle Nuts
Brake Mounting Flanges
Main Wheel and Brake Kit (GlaStar main wheels and tires are 5.00 x 5, the Sportsman has 6.00 x 6 standard)
Main Gear Tires and Tubes
Nose Gear Leg
Spring washers
Nose Gear Axle Nut
Laminated Washer
Lower Nose Gear Trunnion
Upper Nose Gear Trunnion
Nose Gear Pivot Stop Assembly
Nose Wheel Axle Spacer
Nose Wheel Axle
Nose Gear Fork
Nose Wheel Assembly (GlaStar nose wheel and tire is a 5” wheel with 11.4 x 5 tire, the Sportsman has 5” wheel with 5.00 x 5 tire standard)
Nose Gear Tire and Tube
Brake Master Cylinders
Brake Fluid Reservoir

Control Cables
Forward Rudder Cables
Empennage Cables
Down Elevator Cable
Up Elevator Cable
Primary Flap Cables
Primary Flap Retraction Cable
Final Flap Deployment Cables
Final Flap Retraction Cables
Primary Aileron Actuation Cables
Secondary Aileron Actuation Cables
Left Aileron Crossover Cable
Right Aileron Crossover Cable

Fittings and Fuel System Components
Brass Elbows
Brass Unions
Brass Union Tees
Reducer Bushing
Aluminum Elbows
Plugs
Swagelok Union Tee
Swagelok Female Branch Tee
Fuel Shut-Off Valve
Nylon Male Tubing Connector
Nylon Tubing Connector Inserts
Drain Valves
Finger Screens

Miscellaneous
UHMW Polyethylene Sheet
Polyethylene Block
Phenolic Sheet
Cable Fairleads
Cable Ties
Control Yoke Bearing Blocks
Flap Handle Button
Door Seal
Door Latch Knobs
Spiral Wrap
Rubber Grommets
Nylon Tubing
Rubber Hose
Hose Clamps
Rudder Control Springs
Flap Handle Spring
Aft Door Latch Over-Center Springs
Forward Door Latch Over-Center Springs
Seat-Back Locking Springs

All Necessary Hardware
Bellcrank Bearing
Roller Bearings
Rod-End Bearings
Plain Steel Bushings
Flanged Steel Bushings
Flanged Bronze Bushings
Clamp-Up Bushings
Rolled Hinge with Pin
Aluminum Spacers
Steel Spacers
Pulleys
Cable Shackles
Cable Thimbles
NicoPress Sleeves
Turnbuckle Locking Clips
Roll Pins
Dowel Pins
Lock Pins
Cotter Pins
Clevis Pins
Clevis Forks
Turnbuckle Barrels
Cable Eyes
Strap Shackles
Bolts
Drilled-Shank Bolts
Drilled-Head Bolts
Thin Nylon Washers
Thick Nylon Washers
Lock Washers
Steel Washers
Thin Steel Washers
Aluminum Washers
Thin Aluminum Washers
Large Steel Washers
Tinnerman Washers
Acorn Nuts
Rivnuts
Push Nuts
Jam Nuts
Castle Nuts
High-Temperature Self-Locking Nuts
Nylon Self-Locking Nuts
Nutclips
Nut plates
Floating Nut plates
Flush-Head Machine Screws
Round-Head Machine Screws
Universal-Head Rivets
Flush-Head Rivets
Aluminum Blind Rivets
Monel Blind Rivets