WARNING

YOU HAVE JUST WASTED A LOT OF MONEY UNLESS YOU FIRST FOLLOW THESE INSTRUCTIONS.

CLAIMS FOR DAMAGED OR MISSING PARTS

1. Completely inventory the kit using the supplied packing list. Do not remove any parts from the blister-packed boards until you have finished counting everything. The exception is parts such as nuts, washers and pop rivets which you may have to remove for accurate counting.

2. If you believe you are missing any parts or have damaged parts, inspect the boxes for holes or damage. Actually, you should have inspected the boxes prior to opening. For lost or damaged parts, you must file a claim with the freight carrier.

3. Your kit was double quality control inspected in our factory to ensure the accuracy of its contents. However, if you believe some parts were omitted at our factory, you need to do the following:
   a. Itemize the part number, quantity and description of each part.
   b. Note the aircraft model, serial number and date received.
   c. Report the claim to your dealer. All claims must be processed through your dealer. Upon receipt of claim, we will compare it to our original packaging records.

4. Only one claim per kit will be reviewed. "**DO NOT**" begin assembly until you have completed your inventory. The packing list is the most accurate representation of the parts required. Making a list during assembly will not work and will not be accepted. People have been known to use the wrong size bolt as compared to what is called for by the assembly instructions. This leads you to think parts are missing. Also, bits and pieces tend to roll under countertops, are borrowed, or inadvertently disappear. You best protection to build a complete airplane is to make sure you have all the parts before you start.

YOU HAVE 30 DAYS FROM RECEIPT OF KIT TO FILE A CLAIM.

If you do not adhere to the above procedures, the company reserves the right to dismiss any claim. Replacement parts would then be treated as a normal spare parts order.

We hope you enjoy building your kit, and thank you for your patronage. If you have any questions, please contact your dealer. If they are unable to answer your questions, the dealer can contact our customer service department for assistance.

INTRODUCTION

This manual is designed to provide the GT pilot and/or owner with Aircraft descriptions, data, Assembly Instructions, maintenance procedures, maintenance schedules, service, handling and Airworthiness Limitations in order to operate and maintain the GT in reasonable and proper manner.

Section 1 is the GT 400 Basic Aircraft Information and Data.

Sections 2-7 are the Initial Assembly Instructions, and Basic Maintenance and Service Disassembly and Reassembly instructions. These sections also are to be used for Replacement Part idenification and specific part descriptions.

Section 8 is the Basic Maintenance Instructions with maintenance schedules. It also Includes information on Aircraft Handling and Service.

Section 9 is the Airworthiness Limitations.

**********IMPORTANT NOTICE**********

The Preceding page is the revision form to record all revisions and admendments. Upon receiving revisions and admendments remove obselete pages and insert new pages where applicable.

TABLE OF CONTENTS

PAGE

Introductory Pages.....i-v

SECTION 1: Aircraft Information and Data.....1-1

SECTION 2: Forward fuselage.....2-1

SECTION 3: Empennage 3-1

SECTION 4: Engine.....4-1

SECTION 5: Wings.....5-1

SECTION 6: Ailerons Flaps.....6-1

SECTION 7: Final Assembly.....7-1

SECTION 8: Maintenance.....8-1

SECTION 9: Airworthiness Limitations.....9-1

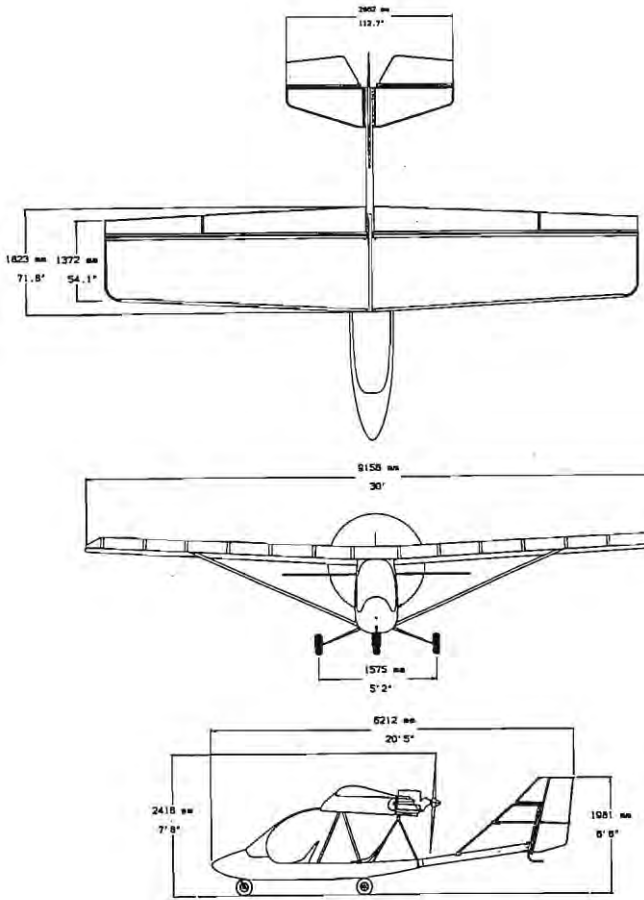
SECTION 10: Options And Accessories.....10-1

AIRCRAFT INFORMATION AND DATA

TABLE OF CONTENTS

PAGE

Introduction....1-4
Three-View....1-2
Descriptive Data....1-4
Airframe....1-6
Flight Controls....1-6
Ground Control (Taxi)....1-7
Flap System....1-7
Landing Gear System....1-7
Seat....1-7
Engine....1-8
  Throttle Control....1-8
  Choke Control....1-8
  Engine Break-in and Operation....1-8
  Fuel/Oil Mixture....1-8
  Ignition-Starter System....1-9
  Carburetor and Priming System....1-9
  Engine Instruments....1-9
Propeller....1-9
Fuel System....1-10
Brake System....1-10
Airspeed Indicator....1-10
Labels and Placards....1-11
Construction Notes....1-14
  Parts List Interpretation....1-15
  Nuts and bolts....1-18
  Bolt and Nut Torque Specification....1-19
Propeller....1-22
Tool Requirement....1-24
Bolt Idenification....1-25


2902 mm
114.7"
1823 mm
71.8"
1372 mm
54.1"
6158 mm
30'
1575 mm
5'2"
6212 mm
20'5"
2418 mm
7'8"
1981 mm
6'8"

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INTRODUCTION

This manual is divided into 9 sections. It contains all information and data as required by the Professional Ultralight Manufactures Association (PUMA) as approved by the Federal Aviation Administration (FAA) and/or other agencies. Quicksilver Enterprises Inc., has included additional information that will assist you in the operarion of the Quicksilver GT. For safety, a thorough understanding of this manual is essential.

DESCRIPTIVE DATA AND SPIECIFICATIONS

ENGINE :	GT500
Manufacturer:	Bombardier-Rotax
Model:	582/40
Displacement:	582/40 cc
Type:	Twin cyl.

two-cycle, air-cooled, single magneto ignition

Spark Plug: NGK B8ES, gap- .016-.020 in. (.04-.05 cm.)
Horsepower: 65 hp @ 6500rpm
Recommended Time Before Overhaul: (TBO) 250 hrs.

REDUCTION DRIVE SYSTEM :	GT500
Type:	Helical Gear
Number of Belts:	N/A
Belt Type:	N/A
Gear Oil:	SAE 85W90 (400cc)
Reduction Ratio:	2.58 to 1

PROPELLER:	GT500
Type:	Fixed pitch, two blade, wooden Quicksilver Part# 30251
Diameter:	68 in. (1727 mm)
Pitch:	38in (965 mm)-RH
Maximinum Speed:	2800 rpm

AILERON TRAVEL
- UP.....27 degrees
- DOWN.....16 degrees

WING FLAP TRAVEL
- UP.....0 degerees
- DOWN.....38 degrees

RUDDER TRAVEL (Measured Perpendicular to Hinge Line)
- RIGHT.....25 degrees
- LEFT.....25 degrees

ELEVATOR TRAVEL
- UP.....39 degrees
- DOWN.....25 degrees

STABILIZER INCIDENCE
- UP. (Top).....1 degree negative
- DOWN. (Bottom).....5 degrees negative

FUEL

Approved Fuel: Automobile gasoline (83 octane or higher)
Fuel Capacity: 8.5 gallons (32.2 litres
Useable Fuel: 8.25 gallons (31) litres
Unuseable Fuel: .25 gallons (.007) litres

OIL

Fuel Mixture
Approved Type of Oil: BIA-TC-W-2 two-cycle oil
Fuel/Oil Ratio: 50:1
Gearbox - GT500
Gear Oil: SAE 85W90 (400cc)

GT WEIGHTS:	GT500	(METRIC)
Maximum Takeoff Weight:	850 lbs.	(385 kilograms)
Maximum Landing Weight:	850 lbs.	(385 kilograms)
Empty Weight: Strut Braced:	420 lbs *	(190 kilograms)
Maximum Useful Load: Strut Braced:	430 lbs	(194 kilograms)

* The empty weight is shown with a pilot/vehicle recovery system. When computing weight values, the actual weight of the aircraft, as equipped, should be determined. For accurate computation, refer to WEIGHT and BALANCE (SECTION 6).

SPECIFIC LOADINGS :

	GT500	
Wing Loading:	5.34 lbs/sq ft	(8.0 kg/sq m)
Power Loading:	17 lbs/hp	(7.7 kg/hp)

TIRE PRESSURE

Main Wheel Tires: 25 - 30 PSI * (172-206 kpa)
Nose Wheel Tire: 25 - 30 PSI * (172-206 kpa)
* Check raised lettering on tire sidewall for maximum allowable PSI (lbs/in2).
Ground Turning Clearance.....78 ft. (26.52 meters)
(Wing tip to Wing tip)

** SPECIFICATIONS ARE SUBJECT TO CHANGE WITHOUT NOTICE **

AIRCRAFT AND SYSTEMS DESCRIPTION
This section provides a general description and operation of the aircraft and its systems. Only equipment that is considered standard as detailed in this section.

AIRFRAME

Note:For Servicing as precribed by Legend 1 in the Maintenance Schedules for all hinged points and movable connections use General Purpose Oil Mil-l-7078-A or equivalent.

The primary construction material of the airframe is of tubular aircraft grade aluminum. Major items of struture are the forward fuselage and tail boom tubes. The flight controls, nose wheel, and seat are attached to the forward fuselage tube. The mounting structure for the root tube is attached to the aft section of the forward fuselage tube and the forward section of the tail boom tube. The main landing gear carry-thru is the jointing structure of the two boom tubes. The empennage (tail assembly) is attached to the aft section of the tail boom tube.

The externally braced wings are constructed of a front (leading edge) and rear (trailing edge) spar held in place by compression and diagonal struts. The airfoil shape is maintanined by formed tubular ribs contained in upper and lower pockets in the Dacron wing covering. The leading edge and trailing edge spars are equipped wih wing-to-root tube and wing-to-strut attachment fittings. Conventional hinged ailerons are attached to the outboard section of the trailing edge of the wings. Conventional flaps are attached to the inboard trailing edge of the wings.

The tail assembly consists of a conventional vertical stabilizer, rudder, adjustable horizontal stabilizer, and elevator. The tail assembly flight surfaces are covered with Dacron. An adjustable cockpit trim is incorporated into the horizontal stabilizer (refer to the SECTION 4 for proper adjustment procedures).

FLIGHT CONTROLS

The aircraft's flight control system consists of conventional aileron, rudder, and elevator control surfaces. The control surfaces are manually operated through mechanical linkage using the control wheel for the ailerons and elevator, and rudder pedals for the rudder. The elevator control system is equipped with a balance spring which provides improved stability in flight. There are front and rear seat controls for aileron, rudder, elevator and trim.

Trim System

Throughly inspect the trim system starting at the trim lever positions at the front and rear pilot seat positons. Check for free movement while observing the stabilizer moving down while pushing the lever forward, and up while pulling the lever aft. Inspect lever and pushpull connections through the 1" inspection holes on the left side of the forward fuselege tube directly behind the trim lever.

Inspect the Rear pushrods and bellcranks of the trim system at stabilizer. Un sip the vertical stabilizer cover to lower rod and bellcrank. Inspect push pull tube connection through the 1" hole in the left side of rear fuselage tube. Check to see that the horizantial stabilizer is moving the full travel of the upper trim slide plates.

GROUND CONTROL (TAXIING)

Effective ground control while taxiing is accomplished through the rudder pedals. Nose wheel steering and the propeller wash over the rudder will cause the aircraft to turn in the desired direction (i.e.- Left rudder pedal to steer Left and Right rudder pedal to steer Right). When a rudder pedal is depressed, a steering spring (which is connected from the rudder pedal to the nose wheel) will turn the nose wheel through an arc of approximately 15 degrees each side of center.

FLAP SYSTEM

The flaps are conventional and are extended or retracted by positioning the flap selector lever, located over the front pilot's head only, to the desired flap deflection position. The flap lever moves forward or aft under a metal plate that provides mechanical stops at the 0, 10, 20, and 30 degree positions. The flap selector lever must be pulled forward slightly, then gently down before moving it into a new position. As the lever begins to move, release the downward pressure. When the new flap position is reached, ensure that the lever is securely seated in the new position.

LANDING GEAR SYSTEM

The landing gear is of the tricycle type with a steerable nose wheel and two main wheels. Shock absorbtion is provided by the tapered aluminum alloy main landing gear legs. The nose wheel is equipped with a friction plate brake.

SEAT

Both seats are attached to the forward fuselage tube by the seat rails. They are adjustable fore and aft. The seat should be adjusted while standing to the right of the seat. In order to allow the seat to move, pull the seat locking pin located under the right side of the seat and move the seat to the desired position. Ensure that the locking pin locks into the seat rail. Ensure that the seat will not move either forward or aft by exerting pressure in both directions.

The aircraft is equipped with a pilot restraint system. At any time the pilot is seated in the aircraft with the intent of moving it, the pilot restaint system must be securely fastened. The rear seat restraint system must be secured even when not in use.

ENGINE

The GT 500 is powered by a twin cylinder, water cooled two-cycle Otto engine. The engine is a Rotax 582/40 - 580.7 cc Displacement, rated at 65 horsepower at 6500 RPM. Major components include Helical Gear reduction drive system, exhaust system, and a mechanical rewind manual starter.

THROTTLE CONTROL

The throttle is a cable controlled system with the throttle control lever located to the right side of both pilot's seats. Moving the lever forward increases RPM; moving the lever aft decreases RPM. For Servicing the throttle cable as prescribe by Legend 1 of the Powerplant Maintenance Schedule use Oil specification VV-L-800A or Equivalent.

CHOKE CONTROL

The choke system is a cable controlled system. The choke control knob is located to the right of the front pilot's seat. The choke is used to enrichen the fuel/air mixture to aid in cold engine starts.

ENGINE BREAK-IN AND OPERATION

It is required that the proper engine break-in procedures be followed exactly as described in the Rotax Operator's Manual. Any deviation from this procedure could cause engine malfunction and/or failure. It is also suggested that continuous engine operation at RPM's above 6300 RPM for periods in excess of 5 minutes be avoided.

FUEL/OIL MIXTURE

The fuel to oil mixture ratio is 50:1. The fuel must have a minimum rating of 83 octane. The oil must meet or exceed B.I.A. or T.C.W. specifications. The oil container must be marked BIA-TCW-2 cycle. The mixing procedure should be followed as described in the Rotax Operator's Manual.

Air Filter

The Air Filters for the carburators should be cleaned as prescribled by Legend 1 of the Powerplant Maintenance Schedule with regular gasoline.

IGNITION-STARTER SYSTEM

The ignition is a dual CDI type; twin spark plugs per cylinder. The spark plug used is an NGK B8ES (or equivalent). The ignition switch is a key type switch located to the right side of the of the instrument panel. the switch must be in the "both positon while operating, the "L" and "R" postions are for checking to see if both cdi systems are working. Do not fly if rpm drop exceeds 300 rpm at 3000 rpm during run up prior to flight. The starter is a manual mechanical rewind starter. The starter cord condition must be checked every 10 hours and replaced when worn or frayed. DO NOT operate the engine if the rewind starter is defective. Refer to the Rotax Operator's Manual for specific information. Electric start is optional.

CARBURETOR AND PRIMING SYSTEM

A Bing carburetor is used on the engine. This is a piston type carburetor with float chamber. The carburetor is fed by an engine driven vacuum fuel pump. Refer to the Rotax Operator's Manual for specific information on carburetor adjustment and care. When Servicing the Carburator as precribed in Legend 1 of the Powerplant Maintenance Schedule remove the fuel bowl; drain, clean and replace.

ENGINE INSTRUMENTS

The aircraft is equipped with a Tachometer, Water Temperature and Hour meter located in the instrument panel in the front seat only. The instruments displays engine RPM and water temperature in degrees Fahrenheit, and an approximation of engine time in hours. . The maximum authorized RPM is 6500 RPM (GT500) and must never be exceeded. . The water temperature is actually a result of the throttle setting, carburetor fuel/air mixture, air flow over the engine, outside air temperature, engine timing, and general engine condition. If a higher than normal temperture is indicated, the throttle should be retarded to a position that causes a decrease in the instrument reading. In any case, the water temperture must not be allowed to exceed 180f(80C) degrees.

PROPELLER

The aircraft has a wooden, two-bladed, fixed pitch propeller. The diameter is 68 inches(1727mm) and the designated pitch is; 38in.(965mm) (GT500). The GT500 uses a Helical Gear reduction drive. The engine-to-propeller reduction ratio of 2.58 to 1.

FUEL SYSTEM

The fuel system consists of a 8.5 gallon(32.2 litres) fuel tank, fuel filter, carburetor and engine driven vacuum fuel pump. A fuel shut off valve is located on the rear of the tank. The fuel tank is mounted in the root of the wing and is secured by adjustable straps to permit . The tank is vented at the top. The vent must be unobstructed to allow for proper operaton of the fuel system. CAUTION: Failure to ensure fuel tank venting will result in Engine Failure! The see- through fuel filter is located in the fuel line between the fuel tank and the fuel pump. It should be inspected prior to each flight to ensure that it does not obtain contaminents. The see-through fuel line must also be inspected for contaminents. If contaminents exist, the fuel system must be drained and flushed prior to running the engine. A fuel drain valve is located in the bottom of the tank. Drain a small amount of fuel before each flight to inspect for water and contaminents. Make sure fuel valve is shot off before flight.

BRAKE SYSTEM

The aircraft is equipped with a nose wheel brake. The brake pedal is located slightly below and to the right of the right rudder pedal. When depressed, a friction plate is pressed on the nose wheel tire. The braking effectiveness is determined by the amount of pressure applied to the brake pedal, the amount of weight on the nose wheel, and the type of surface on which the nose wheel tire is rolling. Braking should be kept to a minimum since it imposes higher than normal loads on the nose gear structure. The use of proper taxi speeds and the selection of proper runway lengths will extend the service life of the landing gear system.

AIRSPEED INDICATOR

The aircraft is equipped with an airspeed indicator located in the instrument panel. It is calibrated in miles per hour. Limitation and range markings. The airspeed indicator operates by displaying the difference in pressure of ram air entering through the pitot tube located on he nose of the aircraft, and static air pressure inside the instrument. In order to operate properly, the pitot tube located on the nose of the aircraft and static port (on the left side of the forward fusalage must be free of obstructions. The airspeed indicator MUST NOT be used as the SOLE reference of actual airspeed since it is subject to variation and error. The feel and sound of the aircraft should also be considerated in the determination of actual airspeed.

LABELS AND PLACARDS

The following Labels and Placards contain important information needed for proper operation of the Quicksilver GT.

CAUTION

THOROUGH PREFLIGHT INSPECTION REQUIRED. USE GUIDELINES SUPPLIED IN THE PREFLIGHT SECTION OF YOUR OWNERS MANUAL AND YOUR OWN GOOD JUDGMENT. FLY AT YOUR OWN RISK.

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NOTICE

For this vehicle to qualify as an ultralight (ref. FAR part 103) it must be equipped with a pilot recovery system approved by Quicksilver Enterprises.

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CAUTION

Monitor your fuel level to ensure an adequate reserve for a safe landing.

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PASSENGER WARNING

This aircraft is amateur-built and does not comply with the Federal Safety Regulations for "standard aircraft."

NOTICE

THE MARKINGS AND PLACARDS INSTALLED IN THIS VEHICLE CONTAIN OPERATING LIMITATIONS WHICH MUST BE COMPLIED WITH WHEN OPERATING THIS VEHICLE. OTHER OPERATING LIMITATIONS WHICH MUST BE COMPLIED WITH WHEN OPERATING THIS VEHICLE ARE CONTAINED IN THE OWNER'S MANUAL.

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IMPORTANT

50:1

GASOLINE/OIL MIXTURE ONLY

DANGER

PROPELLER ARC

WARNING

ULTRALIGHT AND EXPERIMENTAL AIRCRAFT FLIGHT
CAN BE DANGEROUS. FLY AT YOUR OWN RISK.

FLIGHT LIMITATIONS OF QUICKSILVER ENTERPRISES PRODUCTS

A complete ground school and flight instruction program through an authorized Quicksilver Dealer and thorough review of the owners manual is required before attempting flight. For safety, it is essential to follow the owner's manual recommendations pertaining to the assembly, maintenance and operation of this aircraft. Operation not in strict accordance with the owner's manual may be unsafe, dangerous, or even fatal.

THIS VEHICLE IS NOT APPROVED FOR AEROBATIC MANEUVERS. PITCH MAY NOT EXCEED 30° AND THE ANGLE OF BANK MAY NOT EXCEED 60°. SPINS ARE PROHIBITED. STEEP LOW LEVEL TURNS SHOULD BE AVOIDED. ALWAYS FLY WITHIN POWER OFF GLIDING DISTANCE OF A SAFE LANDING AREA. OPERATION IN ACCORDANCE WITH FEDERAL AVIATION ADMINISTRATION REGULATION REQUIRED. ALWAYS EXERCISE DUE CARE AND REASONABLE JUDGMENT. FLIGHT SHOULD ONLY BE ATTEMPTED IN ACCEPTABLE AND SAFE WEATHER CONDITIONS AND WHEN YOU AND YOUR VEHICLE ARE IN AN AIRWORTHY CONDITION.

Ultralight and experimental aircraft flight involves travel in three dimensions. Such activity is subject to mishap, injury and even death. The pilot acknowledges these dangers and attempts flight strictly at his/her own risk. Aluminum and other material components will conduct electricity. DO NOT FLY in the vicinity of power lines, electrical storms, ground cables, or other obstructions. Contacting and/or coming near such obstacles or storms is extremely hazardous and can cause serious or fatal injury.

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DOC #946-18-B

CHOKE

PULL-RICH
TURN TO LOCK

THROTTLE OPEN — CLOSE

Copyright © 1989, Quicksilver Enterprises DOC #946-22 'C'

EXPERIMENTAL
AMATEUR-BUILT AIRCRAFT

MODEL

SERIAL NO. EMPTY WT.

DATE OF MFG. GROSS WT.

ENGINE H.P.

BUILT BY

NAME

ADDRESS

CITY & STATE

IMPORTANT

Vehicle Owner

If you are not the original owner of this vehicle, write to "SERVICE BULLETIN INFORMATION"

P.O. Box 1572, Temecula, CA 92390 U.S.A.
(714) 676-6886 Telex: 499-0565
FAX: (714) 676-4883

QUICKSILVER ENTERPRISES, INC.

Model QUICKSILVER GT500

Serial No. GT500

P.O. Box 1572, Temecula, CA 92390 USA
(714) 676-6886 Telex: 499-0565 FAX: (714) 676-4883

EXPERIMENTAL

WARNING

SOLO FLIGHT FROM FRONT SEAT ONLY

Do Not Fly Pilot In Command or Give Flight Instruction From Rear Seat Unless Equipped With Rear Seat Airspeed Indicator.

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FLIGHT SPEEDS

QUICKSILVER GT500

CONDITION	FLAP SETTING	SPEED MPH	SPEED KNOTS
Minimum Climb to 100' AGL	0-30	43	37
Va Maneuvering	0	80	69
Vne Never Exceed	0	103	89
Vfe Never Exceed	10-30	54	47
Minimum Approach Below 100' AGL	0-30	43	37

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INTRODUCTION

Welcome to the world of Light Recreational Aircraft. We wish to thank you for choosing the QUICKSILVER GT 500 , a product we feel represents the State of the Art in this field of aviation.

In construction of your QUICKSILVER GT 500 , it is ESSENTIAL that you build the aircraft in strict accordance with these Assembly Instructions. We have prepared it in a step-by-step form to assist your construction process. PLEASE pay close attention to detail and the sequence of assembly while allowing plenty of time to complete each sequence.

CONSTRUCTION NOTES

These Assembly Instructions descibe and illustrate the recommended sequence of assembly of your QUICKSILVER GT 500.

In each sequence we will show sub-assemblies FIRST, usually in order of construction. There is a reason for this. Each sub-assembly will incorporate more and more complex operations.

Please read COMPLETELY through the Assembly Instructions at least once to familiarize yourself with our terminology and method of construction.

Whenever possible, the illustrations show the relative position of the part you will be working on. In some instances we will show a part with correct orientation (the right way up) when it's relative position is upside-down. In those particular instances you will be notified on the illustration.

Pay particular attention to the "NOTES" and sections marked "CAUTION", "IMPORTANT" or "ESSENTIAL", as well as "AS ILLUSTRATED". Please follow these instructions. We have specific reasons for assembling something that particular way.

We have Factory Assembled some of the major components leaving you with relatively little drilling, riveting, filing and shaping to complete the assembly of this kit.

While it is possible to complete this kit in a relatively short period of time, accuracy and thoroughness are factors more important than the time spent constructing this aircraft. Care and patience will be rewarded by better control response, higher reliability and a better looking QUICKSILVER GT 500 which will be a credit to both of us.

We sincerely hope you enjoy the experience of constructing your own QUICKSILVER GT 500 aircraft.

* PARTS LIST INTERPRETATION *

In each sequence, when we call out an item in the text we will give it an Item Number which is repeated on the illustration and keys with the Parts List.

Text Example: "Lay out the Left Wing Cover (1).."

If that item is NEW in the sequence it will have a Part Number in the List which matches the part to be used.

Parts List Example:

Pt.	P.N.	Description.
1.	45674	LEFT Wing Cover.

If the Part has been:

1. Previously Sub-assembled in an earlier sequence.
2. Factory Installed.
3. Called out for identity .
4. Is an integral piece of another item.

Then it will appear in the Parts List with a dotted line after the Item number.

Example:

Pt.	P.N.	Description.	
1.....		LEFT Wing Cover.	(previously sub-assembled).
2.....		Nut Plate.	(factory installed).
3.....		Aileron T.E.	(identifies a part).
4.....		Knurled Nut.	(an integral part of the Ignition Switch).

Note also that while a Part may be identified (1) on the page which you are reading, it may be identified differently three pages later as (16), ten pages later as (5) and so on - for the same Part .

REMINDER: Each page, in each sequence, is an independent unit.

CONSTRUCTION NOTES - CONT.

NICO SLEEVE GUAGE PROCEDURE

****
ESSENTIAL PROCEDURE!
****

The Nico Sleeve Gauge (1) supplied with the kit, is used during initial Parts Inventory to verify the accuracy of the Wire Swages (2) on all flying and control Wires on the aircraft.

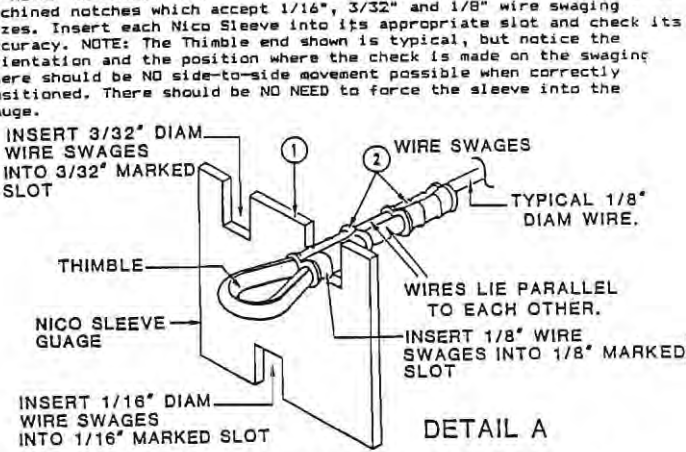
ALL Wire Swages (2) whether ending in Cable Bushings, Flat or angled Tangs or Thimbles MUST be checked with this Gauge.

You must ensure that where a wire passes around a Thimble (a typical example of which is shown below) its captured-end lies parallel to and side-by-side with the rest of the Wire and be untwisted within the Swages (2) and that the shape of each Swage (2) is symmetrical. Additionally you must check the whole length of the Wires for "nicks" or cuts in their jackets.

DO NOT USE Wires which show signs of transit damage, or that have broken or untwisted individual wires which make up a cable!

If you have questions about either this procedure or the results of your inspection - contact your Eipper Dealer.

1. Refer to Detail 'A'. The Nico Sleeve Gauge (1) has three precision machined notches which accept 1/16", 3/32" and 1/8" wire swaging sizes. Insert each Nico Sleeve into its appropriate slot and check its accuracy. NOTE: The Thimble end shown is typical, but notice the orientation and the position where the check is made on the swaging. There should be NO side-to-side movement possible when correctly positioned. There should be NO NEED to force the sleeve into the Gauge.



****
WARNING! NEVER USE SUBSTITUTES. FIT WIRES ONLY IN THEIR DESIGNATED POSITIONS!
****

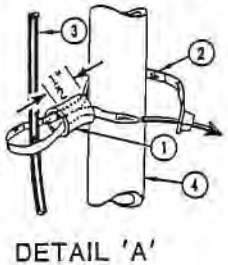
CONSTRUCTION NOTES - CONT.

STAND-OFF ASSEMBLY

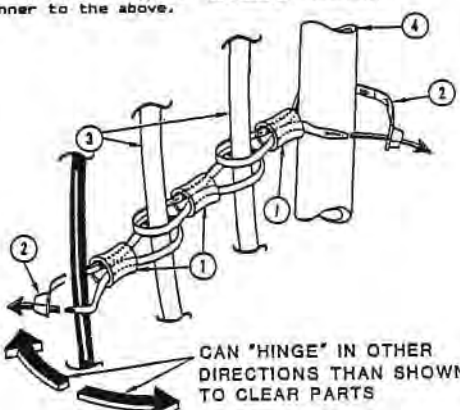
This is an anti-vibration fitting used to isolate Gas Lines, Throttle Cable, Teleflex Cable and some Electrical Wires throughout the aircraft. The exact locations and numbers used are detailed in the relevant sequence.

1. Refer to Detail 'A', which shows a <u>single</u> Stand-off in a typical application. Cut a 1/2" (12.7mm) piece of Fuel Line (1). Thread a 7" Nylon Tie-Wrap (2) around a typical part (3), thru the Fuel Line (1) and around the Airframe tube (4) as shown. Pull tight, cut off the excess and touch the cut end with the hot knife to remove sharp edges.

2. Refer to Detail 'B', which shows a typical <u>multiple</u> Stand-off. Fabricate in a similar manner to the above.



DETAIL 'A'



DETAIL 'B'

Pt.	P.N.	Description.
1.	30223	Fuel Line 35".
2.	30480	7" Nylon Tie-wrap.
3.....		Typical part.
4.....		Typical Airframe Tube.

*** NOTE: The 35" Fuel Line is used in the Forward Fuselage. Use the remaining piece for "Stand-Off" assembly.

THE NUTS & BOLTS OF THE GT

All Bolts used in the airframe of this kit are Aircraft Quality and are either "Graded" to military specification or they conform to the standards of the S.A.E. (Society of American Engineers).

The most commonly used bolts in this kit are fine-thread "AN" bolts. Coarse Thread Bolts in this kit are refered to as "Grade 5" Bolts and are used in specific locations throughout the aircraft, their positions will be shown in the text. IT IS DANGEROUS to substitute them for any other Bolt.

BOLT TIGHTENING

NEVER overtighten a Bolt. Tighten ONLY when and as instructed. Particular care is necessary when tightening bolts which pass through aluminum tubes with no solid internal support.

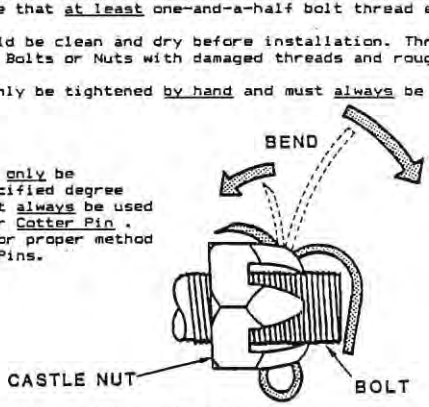
Be particularly careful when installing all Forkbolts or Eyebolts in the Wing, Aileron, Elevator, Stabilizer or Rudder tubes.

Before installing bolts, check that the grip-length is correct. When using Washers, ensure that at least one-and-a-half bolt thread extends out of the nut.

Bolts and Nuts should be clean and dry before installation. Threads should not be oiled. Bolts or Nuts with damaged threads and rough ends should NOT be used.

Wing Nuts should only be tightened by hand and must always be used with a Safety Ring.

Castle Nuts should only be tightened to the specified degree of tightness and must always be used with a Safety Ring or Cotter Pin . SEE Illustration for proper method of bending Cotter Pins.



NOTE: When Castle Nuts are tightened, the Safety Ring or Cotter Pin Holes may not line up with the slots in the nuts when the Torque setting is reached. BACK OFF to the nearest slot. The Castle Nut must NEVER be overtightened to permit lining up the Safety Hole with the next tighter slot!

****

WARNING!

BOLTS WHICH ARE SUBJECT TO ROTATION IN FLIGHT WILL USE "CASTLE" NUTS. A CASTLE NUT RELIES ON A SAFETY RING OR COTTER PIN TO PREVENT IT BACKING OFF. ALWAYS ENSURE CASTLE NUTS ARE SECURED WITH A SAFETY RING OR COTTER PIN!

****

BOLT TIGHTENING - CONT.

SPECIFIED TORQUE VALUES

	in.lbs.	ft.lbs.	Newton Meter
3/16"....(AN3)..4.4mm	20-25	1.5-2.0	2.25-2.75
" with thin locknut	12-15	1.0-1.25	1.25-1.75
1/4" ....(AN4)..6.35mm	50-70	4.0-5.75	5.5-8.0
" with thin locknut	30-40	2.5-3.25	3.5-4.5
1/4"-20 thread (Coarse) 6.35mm	40-50	3.25-4.0	4.5-5.5
5/16"....(AN5)...7.94mm	100-140	8.25-11.5	11.25-15.75
" with thin locknut	60-85	5.0-7.0	6.75-9.5
7/16"....(AN7)...11.11mm	450-500	37.5-41.5	51.0-56.5

RUN-ON TORQUE and PROPER TORQUE.

Run-on Torque is the amount of resistance encountered when you thread a nut onto a bolt until the bolt threads appear through the nut.

When you thread a new Nut onto a Bolt, resistance is felt due to minute machining differences. It is sometimes possible to reach the Torque Values in the above chart even before the Bolt threads appear through the Nut, particularly when working with Locknuts. The effect is that the Torque Wrench shows you the "correct" torque, yet this can be a completely false reading and the nut and bolt will not be correctly tightened!

Therefore, when reading any Torque Specification in this manual we will expect you to use Proper Torque.

FORMULA

PROPER TORQUE = RUN-ON TORQUE + TORQUE VALUE

EXAMPLE

Using the Torque Wrench, run a 3/16" (AN3) Locknut onto a (AN3) Bolt until the threads just begin to appear past the nut. Note the reading on the Torque Wrench - (Lets say, it reads 8 in/lbs.). That reading is the "Run-on Torque".

In the Specified Torque Value chart above, you will see that the Torque Value for AN3 is 20-25 in./lbs. ADD that to the Torque Wrench reading (8 in./lbs). Therefore, this AN3 bolt will be correctly tightened when the Torque Wrench shows a reading of 28-33 in./lbs. This is PROPER TORQUE.

IMPORTANT: Nylock Nuts and Locknuts should never be used more than twice as they become less vibration resistant with each removal.

When using the Torque Wrench, apply a smooth, even pull. If chattering or a jerking motion occurs during final torque, back off and re-torque.

ROTAX ENGINES: TORQUE SPECIFICATIONS

	in.lbs.	Newton Meters
Cylinder Head Nuts.....M8.....	210	24
Crankcase Screws.....M8.....	210	24
Magneto Housing Nut.....M18x1,5	700	80
Fan Nut.....M16x1,5	620	70
Crankcase Nuts (or screws) M10....	354	40
Exhaust Socket Screws.....M8.....	210	24

Formula : To convert (in.lbs) to (ft.lbs): Divide by 12

SAFETY WIRING

Certain Bolts on this aircraft must be Safety Wired. The wiring is arranged so that if a Nut or Bolt begins to loosen, the force applied to the wire is in the tightening direction.
CAUTION: Use only Aircraft-quality Safety Wire!

The following is the recommended method:
Tighten the Bolts to the Torque values specified in the relevant text. Ensure that the Safety Wire holes are aligned as shown. NEVER overtighten or loosen a torqued Bolt to align Safety Wire holes. Careful study of the illustration shows that:

Example 1 shows Safety Wiring thru Springs - as on the Exhaust System.
Example 2 shows Wiring to certain Castle Nuts and studs - NOTE: There is no loop around the Nut.
Example 3 shows several Bolts wired together - as on the Propeller.
Example 4 shows a single threaded component wired to a housing or lug.



1



2



3



4

AN BOLT GAUGE

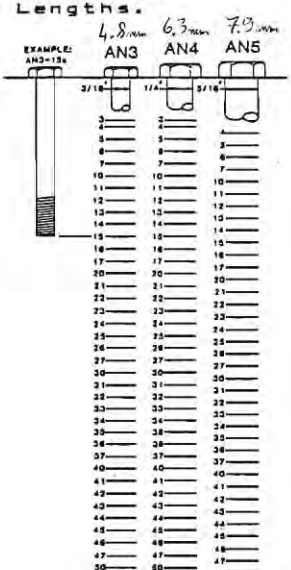
Use this Gauge to determine AN Bolt Sizes and Lengths.

DO NOT USE Substitutes!
Call your Eipper Dealer for replacements, whenever necessary.

AN3 = 3/16" diameter Shank.

AN4 = 1/4" diameter Shank.

AN5 = 5/16" diameter Shank.



CAUTION: This Gauge is inappropriate for measuring Grade 5 Bolts.

PROPELLER

****
CAUTION: It is DANGEROUS to work on a Propeller with the High Tension Lead connected to the Spark Plug of the Engine!!
****

The Propeller supplied with this kit is a precision-made component incorporating the highest standards of manufacture. While it is extremely strong, reliable and well balanced as supplied, it is recommended that before mounting, it should be fine-balanced using Professional balancing techniques.

It must be emphasised that the mounting procedure must be followed closely and carefully.

The Propeller - Which way around?

When looked at end-on, you will see that the Propeller blades are airfoil-shaped - curved one side, flat the other. On this aircraft, the FLAT SURFACE of the Propeller blade FACES AFT!!

Propeller Mounting Bolts

There are six special Bolts for use only on the Propeller. They are AN4H-21a (GT 400) and 1/4" x 20 Coarse Thread (GT 280). The heads of the Bolts are cross-drilled. Push each Bolt in turn thru the holes in the Propeller and then remove them again. They should be a tight fit. DO NOT use excess force.

IF the Bolts will not pass thru the Propeller - perhaps due to local humidity - the holes may be Reamed to 1/4". USE EXTREME CAUTION.

HOT KNIFE

Use extreme care when using the Hot Knife to cut the Template holes in flying surface Covers. A good Hot Knife at the correct temperature will cut the material as easily as soft butter. Mistakes cannot be corrected! Try cutting Template holes smaller than needed at first, then gradually enlarge to the correct size. In this way, you'll get neater as you gain experience. CAUTION— Don't step on or brush against a Hot Knife when wearing sneakers, it can be very painful!!

CUSTOM PAINTING

If you wish to custom paint the Pilot Fairing, Seat and Wheel Pants, do it after they have been assembled in sequence; then disassemble, paint and reassemble according to the instructions.

LOCATING HOLES

When predrilled Tubes have been inserted into Wing and Tail Covers, find the holes as instructed in each sequence. Final locate them with your fingers and push a stick-pin thru the fabric to mark their position.

GETTING READY

NOTE:
The Assembly & Installation Instructions for the ENGINE (Section 4) will be packaged with the Engine Kit. Locate them and insert them into the Assembly Manual. ** CAUTION ! DO NOT attempt to Mount the Engine onto the Airframe until instructed to do so in Final Assembly (Section 7).

Once you have thoroughly read the instructions:

1. Inventory and inspect the component parts of the kit, leaving them in their clear-wrap packaging until ready for use.
2. Assemble the tools required and ensure that they are clean and sharp (See "Tools Needed").
3. Clean your workspace so that it is as dust-free as possible.
4. Always use the specified components and Bolts. NEVER use substitutes. NEVER use non-Zipper Parts (See "AN Bolt Gauge").
5. Check all flying and control Wires with the Nico Sleeve Gauge provided (See "Nico Sleeve Gauge Procedure").
6. Use extreme care when using the Hot Knife to cut the Template holes in flying surface Covers. Mistakes cannot be corrected! (See "Hot Knife").

SPACE REQUIREMENTS

*NOTE: Throughout this Assembly Manual we have presumed that your work area is about the size of the average Garage - 25'0" long x 15'0" wide x 8'0" high (7.6m x 4.5m x 2.4m).
With careful space management, you should easily be able to separately assemble the Fuselage, Tail Boom and one Wing at a time, then Final Assemble them outside.
If you have more space, it is possible to build both Wings simultaneously - just remember that the full Wing Span on the "Wing Jig" exceeds 30'0" (9.14m) and the overall length of the Quicksilver GT exceeds 20'0" (6.1m).

TOOLS NEEDED FOR ASSEMBLY

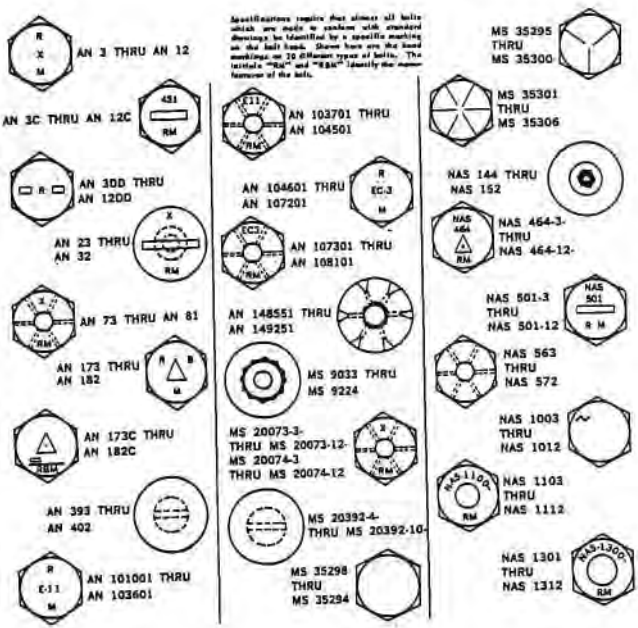
* Allen Hex Bits: 6mm - 1/4" - 1/8"- to fit Torque Wrench.
* Angle Finder (Universal Protractor).
* Awl.
* Bench Vice.
* Cleaning Brush, 1".
* Center Punch.
* Cleaning Fluid.
* Drill Motor or Hand Drill with 1/8"-3/16"-3/8"-5/8"-1/2" Bits.
* Files: Fine Flat,
  : 1/2 Round,
  : Rat Tail.
* Hacksaw with normal and Tube-cutting Blades.
* Hammers: Steel,
  : Leather.
* Hot Knife (or Soldering Iron with Blade Edge).
* Marking Pencil or Pen.
* Pliers: Regular,
  : Long Nose.
* Razor Knife.
* Riveting Tool for 1/8" and 3/16" Rivets.
* Rope, 1/4" Nylon.
* Sandpaper - Medium Grit.
* Scissors.
* Screwdrivers: set of Flat Blade,
  : " " Phillips.
* Sidecutters - one pair.
* Spark Plug Gapping Tool.
* Straight Edge, 6' feet long (2m.).
* Tape Measure - 10'feet (3m.).
* Tape: Electricians,
  : Masking.
* Torque Wrench that registers in.lbs.(or Newton Meters if you work in Metric).
* Torque Wrench that registers ft.lbs (or Newton Meters).
* Vice Grips.
* 3 Weighing Scales each having a capacity of 200lbs.(90 Kg.).
* Wire Crimper.

GT 280 - ONLY:
* Artists Paint Brush & small amount of White Paint. (to number 'V' Belts).
* Socket: 1-1/8" to fit torque wrench.

Wrenches : Open End and Socket - 3/16"-1/4"-5/16"-3/8"-7/16"-1/2" - 9/16"-11/16"
: Metric (for Engine) - 5mm.- 6mm.- 8mm. - 10mm - 11mm.- - 13mm.- 16mm.- 17mm.
: Allen Wrench.....- 6mm. - 1/8" - 1/4".

Also some strips of old Carpet, or old Bed Sheets, Painters' Drop Sheets or similar protective cover will be useful to keep wings and other parts clean and free from scratches during assembly.

BOLT HEAD MARKINGS



Our SAE Grade 6 line of cap screws is manufactured from SAE 1038 steel to provide a tensile strength of approximately 135,000 PSI as compared to the 120,000 PSI minimum called for by the SAE Specifications. In actual tests, our Bowma-Torq (formerly SAE Grade 6) cap screws produced tensile strength which met the 150,000 PSI requirement for SAE Grade 8. Finally, our Bowmalloy offers a proof load which is 37 1/2% greater than Grade 8, the highest SAE rating established for cap screws.

SAE GRADE MARKINGS FOR STEEL BOLTS AND SCREWS

Grade Marking	Specification	Material	Bolt and Screw Size, In.	Proof Load, Psi.	Tensile Strength min., psi.	Rockwell Hardness Min.	Rockwell Hardness Max.
	SAE–Grade 0	Steel	1/4 thru 1 1/2	—	—	—	—
	SAE–Grade 1	Low Carbon Steel	1/4 thru 1 1/2	33,000	60,000	—	B 95
	SAE–Grade 2	Low Carbon Steel	1/4 thru 3/4 Over 3/4 thru 1 1/2	55,000 33,000	74,000 60,000	— —	B 100 B 95
	SAE–Grade 3	Medium Carbon Steel, Cold Worked	1/4 thru 1/2 Over 1/2 thru 5/8	85,000 80,000	110,000 100,000	B 95	B 104
	SAE–Grade 5	Medium Carbon Steel, Quenched and Tempered	1/4 thru 3/4 Over 3/4 thru 1 Over 1 thru 1-1/2	85,000 78,000 74,000	120,000 115,000 105,000	C 25 C 22 C 19	C 32 C 32 C 30
	SAE–Grade 5.1	Low or Medium Carbon Steel, Quenched and Tempered with Assembled Lock Washer	Up to 3/8 incl.	85,000	120,000	C 25	C 40
	Formerly SAE–Grade 6	Medium carbon steel. Quenched and tempered.	1/4 thru 5/8 Over 5/8 thru 3/4	110,000 105,000	140,000 133,000	C 30 C 28	C 36 C 36
	SAE–Grade 7	Medium Carbon Alloy Steel, Quenched and Tempered, Roll Threaded After heat treatment	1/4 thru 1 1/2	105,000	133,000	C 28	C 36
	SAE–Grade 8	Medium Carbon Alloy Steel, Quenched and Tempered	1/4 thru 1 1/2	120,000	150,000	C 33	C 38
	Exceeds SAE–Grade 8	Special Ultra Hi-Strength Alloy Steel Quenched and Tempered	1/4 thru 1 1/2	145,000	183,000	C 37	C 43

Simplified AN Chart

AN 3 THRU 20 BOLT-AIRCRAFT

AN 21 THRU 36-BOLT-CLEVIS

AN 40 THRU 49-BOLT-HEX HD.

AN 70 BOLT - CARRIAGE

AN 73 THRU 81-BOLT-DBLE. HD.

AN 173 THRU 186-BOLT, CLS. TOL.

AN 196 SHACKLE - SCREW PIN

AN 173 THRU 186-BOLT, CLS. TOL.

AN 320 NUT - CASTLE (AIR FRAME)

AN 315 NUT - PLAIN (AIR FRAME)

AN 316 NUT - CHECK

AN 320 NUT - CASTLE, SHEAR

AN 325 NUT - HEX, PLAIN (NF)

AN 330 NUT - CASTLE (NC)

AN 335 NUT - PLAIN HEX (USS)

AN 340 - LIGHT HEX (HEX)

AN 341 NUT - HEX, LIGHT, BRASS (ELEC)

AN 345 NUT - HEX, LIGHT (SAE)

AN 350 NUT - WING

AN 355 NUT - HEX, PLAIN (ENGINE)

AN 363 NUT - HEX, SELF LOCKING (HI TEMP)

AN 364 NUT - HEX, SELF LOCKING, THIN

AN 365 NUT - HEX, SELF LOCKING

AN 380 PIN - COTTER

AN 381 PIN - COTTER, STAINLESS

AN 420 THRU 470 RIVETS, VARIOUS

AN 500 SCREW - FILL. HD. (USS)

AN 501 SCREW - FILL. HD (SAE)

AN 502 SCREW - FIL. HD. MCH. ALLOY STL. (SAE)

AN 503 SCREW - FIL. HD. MCH. ALLOY STL. (USS)

AN 504 SCREW - RD. HD. SELF TAP MCH.

AN 505 SCREW - .82° FL. HD. MCH. (USS)

AN 506 SCREW - 82° FL. HD. SELF TAP MCH.

AN 507 SCREW - 100° FL. HD MCH. (USS & SAE)

AN 508 SCREW - RD. HD. MCH. BRASS (ELEC)

AN 509 SCREW - 100° FL. HD. MCH. ALLOY STL. (SAE)

AN 110 SCREW - 82° FL. HD. MCH. (SAE)

AN 515 SCREW - RD. HD. MCH. (USS)

AN 520 SCREW - RD. HD. MCH. (SAE)

AN 525 SCREW - WASHER HD. MCH. ALLOY STL.

AN 526 SCREW - TRUSS HD. MCH. (USS & SAE)

AN 530 SCREW - RD. HD. TAPPING TYPE "B"

AN 531 SCREW - FL. HD. TAPPING TYPE "B"

AN 535 SCREW - RD. HD. DRIVE TYPE "U"

AN 540 SCREW - LAG

AN 545 SCREW - WOOD RD. HD.

AN 550 SCREW - WOOD, F. H.

AN 560 SCREW - SQ. HD. SET

AN 565 SCREW - HEADLESS SET

AN 570 PLUG - PIPE

AN 935 WASHER - SPRING LOCK

AN 936 WASHER - EX. & INT. TEETH LOCK

AN 960 WASHER - FLAT, SURF

AN 965 WASHER - FLAT PLAIN (COMMERCIAL)

AN 960 WASHER - FLAT, AIRCRAFT

AN 966 WASHER - FLAT, BRASS (ELEC)

AIRCRAFT INFORMATION AND DATA

TABLE OF CONTENTS

PAGE

Introduction.....1-4
Three-View.....1-2
Descriptive Data.....1-4
Airframe.....1-6
Flight Controls.....1-6
Ground Control (Taxi).....1-7
Flap System.....1-7
Landing Gear System.....1-7
Seat.....1-7
Engine.....1-8
  Throttle Control.....1-8
  Choke Control.....1-8
  Engine Break-in and Operation.....1-8
  Fuel/Oil Mixture.....1-8
  Ignition-Starter System.....1-9
  Carburetor and Priming System.....1-9
  Engine Instruments.....1-9
Propeller.....1-9
Fuel System.....1-10
Brake System.....1-10
Airspeed Indicator.....1-10
Labels and Placards.....1-11
Construction Notes.....1-14
  Parts List Interpretation.....1-15
  Nuts and bolts.....1-18
  Bolt and Nut Torque Specification.....1-19
Propeller.....1-22
Tool Requirement.....1-24
Bolt Idenification.....1-25

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FUEL

Approved Fuel: Automobile gasoline (83 octane or higher)
Fuel Capacity: 8.5 gallons (32.2 litres
Useable Fuel: 8.25 gallons (31) litres
Unuseable Fuel: .25 gallons (.007) litres

OIL

Fuel Mixture
Approved Type of Oil: BIA-TC-W-2 two-cycle oil
Fuel/Oil Ratio: 50:1
Gearbox - GT500
Gear Oil: SAE 85W90 (400cc)

GT WEIGHTS:	GT500	(METRIC)
Maximum Takeoff Weight:	850 lbs.	(385 kilograms)
Maximum Landing Weight:	850 lbs.	(385 kilograms)
Empty Weight:		
Strut Braced:	420 lbs *	(190 kilograms)
Maximum Useful Load:		
Strut Braced:	430 lbs	(194 kilograms)

* The empty weight is shown with a pilot/vehicle recovery system. When computing weight values, the actual weight of the aircraft, as equipped, should be determined. For accurate computation, refer to WEIGHT and BALANCE (SECTION 6).

SPECIFIC LOADINGS :

	GT500	
Wing Loading:	5.34 lbs/sq ft	(8.0 kg/sq m)
Power Loading:	17 lbs/hp	(7.7 kg/hp)

TIRE PRESSURE

Main Wheel Tires: 25 - 30 PSI * (172-206 kpa)
Nose Wheel Tire: 25 - 30 PSI * (172-206 kpa)
* Check raised lettering on tire sidewall for maximum allowable PSI (lbs/in2).
Ground Turning Clearance.....78 ft. (26.52 meters)
(Wing tip to Wing tip)

**** SPECIFICATIONS ARE SUBJECT TO CHANGE WITHOUT NOTICE ****

AIRCRAFT AND SYSTEMS DESCRIPTION

This section provides a general description and speration of the aircraft and its systems. Only equipment that is considered standard as detailed in this section.

GROUND CONTROL (TAXIING)

Effective ground control while taxiing is accomplished through the rudder pedals. Nose wheel steering and the propeller wash over the rudder will cause the aircraft to turn in the desired direction (i.e.- Left rudder pedal to steer Left and Right rudder pedal to steer Right). When a rudder pedal is depressed, a steering spring (which is connected from the rudder pedal to the nose wheel) will turn the nose wheel through an arc of approximately 15 degrees each side of center.

FLAP SYSTEM

The flaps are conventional and are extended or retracted by positioning the flap selector lever, located over the front pilot's head only, to the desired flap deflection position. The flap lever moves forward or aft under a metal plate that provides mechanical stops at the 0, 10, 20, and 30 degree positions. The flap selector lever must be pulled forward slightly, then gently down before moving it into a new position. As the lever begins to move, release the downward pressure. When the new flap position is reached, ensure that the lever is securely seated in the new position.

LANDING GEAR SYSTEM

The landing gear is of the tricycle type with a steerable nose wheel and two main wheels. Shock absorbtion is provided by the tapered aluminum alloy main landing gear legs. The nose wheel is equipped with a friction plate brake.

SEAT

Both seats are attached to the forward fuselage tube by the seat rails. They are adjustable fore and aft. The seat should be adjusted while standing to the right of the seat. In order to allow the seat to move, pull the seat locking pin located under the right side of the seat and move the seat to the desired position. Ensure that the locking pin locks into the seat rail. Ensure that the seat will not move either forward or aft by exerting pressure in both directions.

The aircraft is equipped with a pilot restraint system. At any time the pilot is seated in the aircraft with the intent of moving it, the pilot restaint system must be securely fastened. The rear seat restraint system must be secured even when not in use.

IGNITION-STARTER SYSTEM

The ignition is a dual CDI type; twin spark plugs per cylinder. The spark plug used is an NGK B8ES (or equivalent). The ignition switch is a key type switch located to the right side of the of the instrument panel. the switch must be in the "both positon while operating, the "L" and "R" postions are for checking to see if both cdi systems are working. Do not fly if rpm drop exceeds 300 rpm at 3000 rpm during run up prior to flight. The starter is a manual mechanical rewind starter. The starter cord condition must be checked every 10 hours and replaced when worn or frayed. DO NOT operate the engine if the rewind starter is defective. Refer to the Rotax Operator's Manual for specific information. Electric start is optional.

CARBURETOR AND PRIMING SYSTEM

A Bing carburetor is used on the engine. This is a piston type carburetor with float chamber. The carburetor is fed by an engine driven vacuum fuel pump. Refer to the Rotax Operator's Manual for specific information on carburetor adjustment and care. When Servicing the Carburator as precribed in Legend 1 of the Powerplant Maintenance Schedule remove the fuel bowl; drain, clean and replace.

ENGINE INSTRUMENTS

The aircraft is equipped with a Tachometer, Water Temperature and Hour meter located in the instrument panel in the front seat only. The instruments displays engine RPM and water temperature in degrees Fahrenheit, and an approximation of engine time in hours. . The maximum authorized RPM is 6500 RPM (GT500) and must never be exceeded. . The water temperature is actually a result of the throttle setting, carburetor fuel/air mixture, air flow over the engine, outside air temperature, engine timing, and general engine condition. If a higher than normal temperture is indicated, the throttle should be retarded to a position that causes a decrease in the instrument reading. In any case, the water temperture must not be allowed to exceed 180f(80C) degrees.

PROPELLER

The aircraft has a wooden, two-bladed, fixed pitch propeller. The diameter is 68 inches(1727mm) and the designated pitch is; 38in.(965mm) (GT500). The GT500 uses a Helical Gear reduction drive. The engine-to-propeller reduction ratio of 2.58 to 1.

LABELS AND PLACARDS

The following Labels and Placards contain important information needed for proper operation of the Quicksilver GT.

CAUTION

THOROUGH PREFLIGHT INSPECTION REQUIRED. USE GUIDELINES SUPPLIED IN THE PREFLIGHT SECTION OF YOUR OWNERS MANUAL AND YOUR OWN GOOD JUDGMENT. FLY AT YOUR OWN RISK.

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NOTICE

For this vehicle to qualify as an ultralight (ref. FAR part 103) it must be equipped with a pilot recovery system approved by Quicksilver Enterprises.

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CAUTION

Monitor your fuel level to ensure an adequate reserve for a safe landing.

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PASSENGER WARNING

This aircraft is amateur-built and does not comply with the Federal Safety Regulations for "standard aircraft."

NOTICE

THE MARKINGS AND PLACARDS INSTALLED IN THIS VEHICLE CONTAIN OPERATING LIMITATIONS WHICH MUST BE COMPLIED WITH WHEN OPERATING THIS VEHICLE. OTHER OPERATING LIMITATIONS WHICH MUST BE COMPLIED WITH WHEN OPERATING THIS VEHICLE ARE CONTAINED IN THE OWNER'S MANUAL.

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IMPORTANT

50:1

GASOLINE/OIL MIXTURE ONLY

DANGER

PROPELLER ARC

IMPORTANT

Vehicle Owner

If you are not the original owner of this vehicle, write to "SERVICE BULLETIN INFORMATION"

P.O. Box 1572, Temecula, CA 92390 U.S.A.
(714) 676-6886 Telex: 499-0565
FAX: (714) 676-4883

QUICKSILVER ENTERPRISES, INC.

Model QUICKSILVER GT500

Serial No. GT500

P.O. Box 1572, Temecula, CA 92390 USA
(714) 676-6886 Telex: 499-0565 FAX: (714) 676-4883

EXPERIMENTAL

WARNING

SOLO FLIGHT FROM FRONT SEAT ONLY

Do Not Fly Pilot in Command or Give Flight Instruction From Rear Seat Unless Equipped With Rear Seat Airspeed Indicator.

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FLIGHT SPEEDS

QUICKSILVER GT500

CONDITION	FLAP SETTING	SPEED MPH	SPEED KNOTS
Minimum Climb to 100' AGL	0-30	43	37
Va Maneuvering	0	80	69
Vne Never Exceed	0	103	89
Vfe Never Exceed	10-30	54	47
Minimum Approach Below 100' AGL	0-30	43	37

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✱ PARTS LIST INTERPRETATION ✱

In each sequence, when we call out an item in the text we will give it an Item Number which is repeated on the illustration and keys with the Parts List.

Text Example: "Lay out the Left Wing Cover (1).."

If that item is NEW in the sequence it will have a Part Number in the List which matches the part to be used.

Parts List Example:

Pt.	P.N.	Description.
1.	45674	LEFT Wing Cover.

If the Part has been:

1. Previously Sub-assembled in an earlier sequence.
2. Factory Installed.
3. Called out for identity .
4. Is an integral piece of another item.

Then it will appear in the Parts List with a dotted line after the Item number.

Example:

Pt.	P.N.	Description.	
1.....		LEFT Wing Cover.	(previously sub-assembled).
2.....		Nut Plate.	(factory installed).
3.....		Aileron T.E.	(identifies a part).
4.....		Knurled Nut.	(an integral part of the Ignition Switch).

Note also that while a Part may be identified (1) on the page which you are reading, it may be identified differently three pages later as (16), ten pages later as (5) and so on - for the same Part .

REMINDER: Each page, in each sequence, is an independent unit.

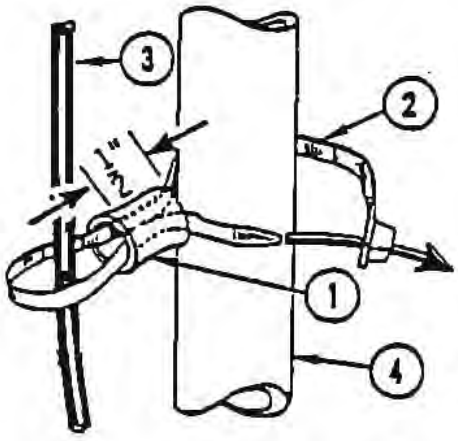
CONSTRUCTION NOTES - CONT.

STAND-OFF ASSEMBLY

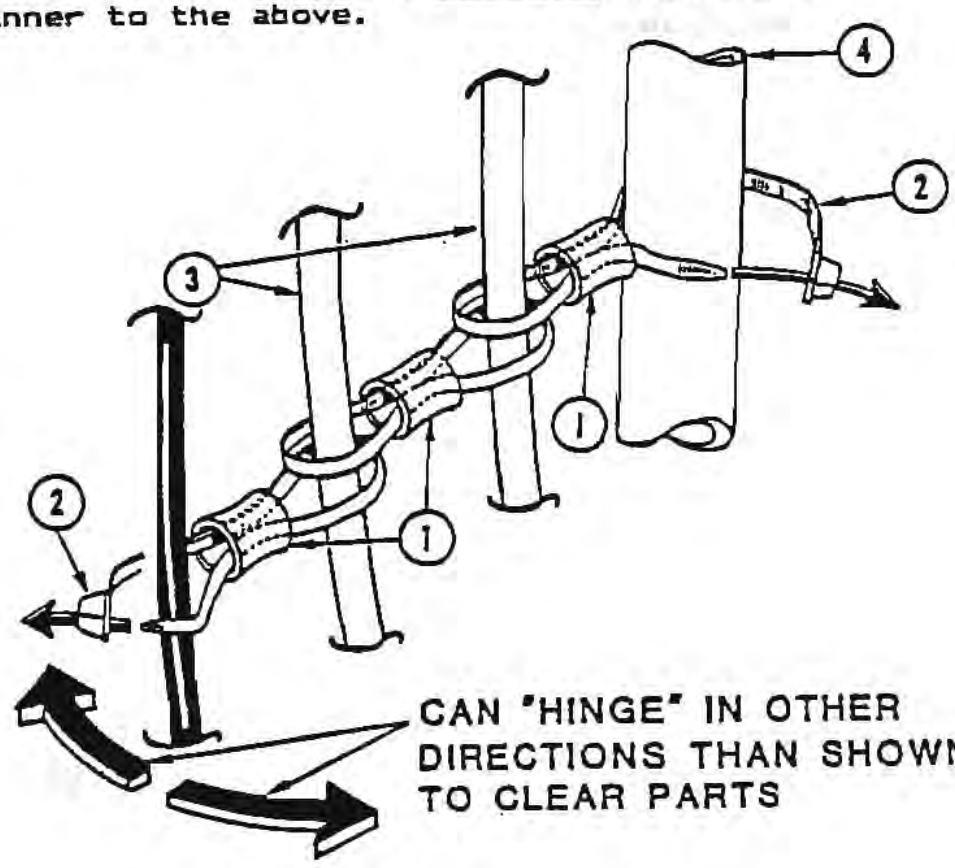
This is an anti-vibration fitting used to isolate Gas Lines, Throttle Cable, Teleflex Cable and some Electrical Wires throughout the aircraft. The exact locations and numbers used are detailed in the relevant sequence.

1. Refer to Detail 'A', which shows a <u>single</u> Stand-off in a typical application. Cut a 1/2" (12.7mm) piece of Fuel Line (1). Thread a 7" Nylon Tie-Wrap (2) around a typical part (3), thru the Fuel Line (1) and around the Airframe tube (4) as shown. Pull tight, cut off the excess and touch the cut end with the hot knife to remove sharp edges.

2. Refer to Detail 'B', which shows a typical <u>multiple</u> Stand-off. Fabricate in a similar manner to the above.



DETAIL 'A'



DETAIL 'B'

Pt.	P.N.	Description.
1.	30223	Fuel Line 35".
2.	30480	7" Nylon Tie-wrap.
3.	.....	Typical part.
4.	.....	Typical Airframe Tube.

*** NOTE: The 35" Fuel Line is used in the Forward Fuselage. Use the remaining piece for "Stand-Off" assembly.

BOLT TIGHTENING - CONT.

SPECIFIED TORQUE VALUES

	in.lbs.	ft.lbs.	Newton Meter
3/16"....(AN3)....4.8mm	20-25	1.5-2.0	2.25-2.75
" with thin locknut	12-15	1.0-1.25	1.25-1.75
1/4" ....(AN4).....6.35mm	50-70	4.0-5.75	5.5-8.0
" with thin locknut	30-40	2.5-3.25	3.5-4.5
1/4"-20 thread (Coarse) 6.35mm	40-50	3.25-4.0	4.5-5.5
5/16"....(AN5)....7.94mm	100-140	8.25-11.5	11.25-15.75
" with thin locknut	60-85	5.0-7.0	6.75-9.5
7/16"....(AN7).....11.11mm	450-500	37.5-41.5	51.0-56.5

RUN-ON TORQUE and PROPER TORQUE.

Run-on Torque is the amount of resistance encountered when you thread a nut onto a bolt until the bolt threads appear through the nut.

When you thread a new Nut onto a Bolt, resistance is felt due to minute machining differences. It is sometimes possible to reach the Torque Values in the above chart even before the Bolt threads appear through the Nut, particularly when working with Locknuts. The effect is that the Torque Wrench shows you the "correct" torque, yet this can be a completely false reading and the nut and bolt will not be correctly tightened!

Therefore, when reading any Torque Specification in this manual we will expect you to use Proper Torque.

FORMULA

PROPER TORQUE = RUN-ON TORQUE + TORQUE VALUE

EXAMPLE

Using the Torque Wrench, run a 3/16" (AN3) Locknut onto a (AN3) Bolt until the threads just begin to appear past the nut. Note the reading on the Torque Wrench - (Lets say, it reads 8 in/lbs.). That reading is the "Run-on Torque".

In the Specified Torque Value chart above, you will see that the Torque Value for AN3 is 20-25 in./lbs. ADD that to the Torque Wrench reading (8 in./lbs). Therefore, this AN3 bolt will be correctly tightened when the Torque Wrench shows a reading of 28-33 in./lbs. This is PROPER TORQUE.

IMPORTANT: Nylock Nuts and Locknuts should never be used more than twice as they become less vibration resistant with each removal.

When using the Torque Wrench, apply a smooth, even pull. If chattering or a jerking motion occurs during final torque, back off and re-torque.

AN BOLT GAUGE

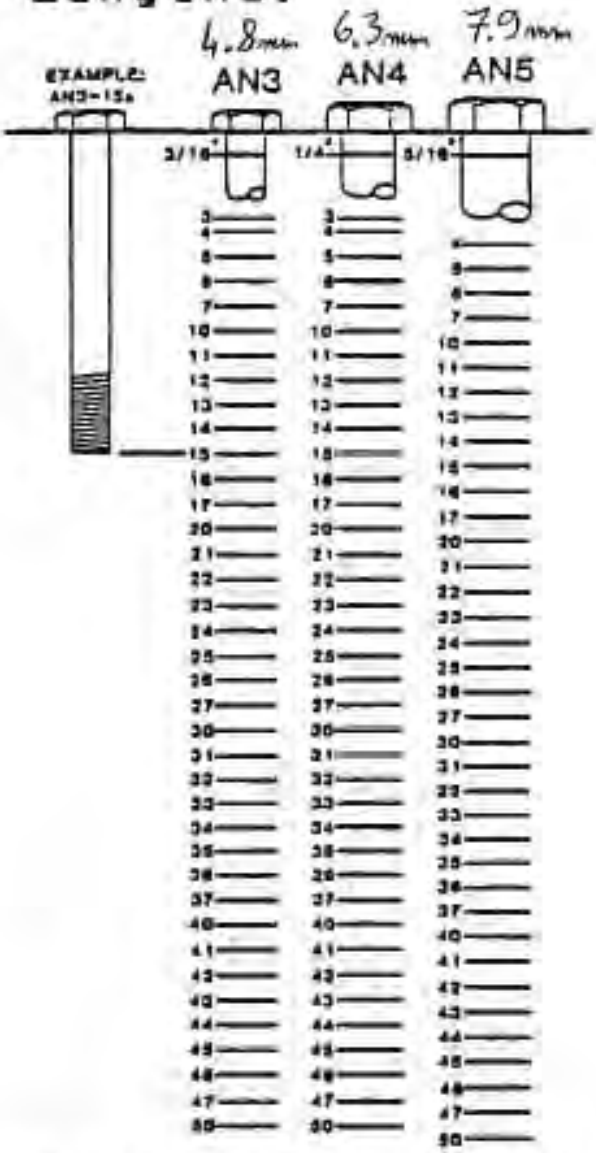
Use this Gauge to determine AN Bolt Sizes and Lengths.

DO NOT USE Substitutes!
Call your Eipper Dealer for replacements, whenever necessary.

AN3 = 3/16" diameter Shank.

AN4 = 1/4" diameter Shank.

AN5 = 5/16" diameter Shank.



CAUTION: This Gauge is inappropriate for measuring Grade 5 Bolts.

GETTING READY

NOTE:
The Assembly & Installation Instructions for the ENGINE (Section 4) will be packaged with the Engine Kit. Locate them and insert them into the Assembly Manual. ** CAUTION : DO NOT attempt to Mount the Engine onto the Airframe until instructed to do so in Final Assembly (Section 7).

Once you have thoroughly read the instructions:

1. Inventory and inspect the component parts of the kit, leaving them in their clear-wrap packaging until ready for use.
2. Assemble the tools required and ensure that they are clean and sharp (See "Tools Needed").
3. Clean your workspace so that it is as dust-free as possible.
4. Always use the specified components and Bolts. NEVER use substitutes. NEVER use non-Eipper Parts (See "AN Bolt Gauge").
5. Check all flying and control Wires with the Nico Sleeve Gauge provided (See "Nico Sleeve Gauge Procedure").
6. Use extreme care when using the Hot Knife to cut the Template holes in flying surface Covers. Mistakes cannot be corrected! (See "Hot Knife").

SPACE REQUIREMENTS

*NOTE: Throughout this Assembly Manual we have presumed that your work area is about the size of the average Garage - 25'0" long x 15'0" wide x 8'0" high (7.6m x 4.5m x 2.4m).

With careful space management, you should easily be able to separately assemble the Fuselage, Tail Boom and one Wing at a time, then Final Assemble them outside.

If you have more space, it is possible to build both Wings simultaneously - just remember that the full Wing Span on the "Wing Jig" exceeds 30'0" (9.14m) and the overall length of the Quicksilver GT exceeds 20'0" (6.1m).

BOLT HEAD MARKINGS



AN 3 THRU AN 12



AN 3C THRU AN 12C



AN 3DD THRU
AN 12DD



AN 23 THRU
AN 32



AN 73 THRU AN 81



AN 173 THRU
AN 182



AN 173C THRU
AN 182C



AN 393 THRU
AN 402



AN 101001 THRU
AN 103601

Specifications require that almost all bolts which are made to conform with standard drawings be identified by a specific marking on the bolt head. Shown here are the head markings on 28 different types of bolts. The initials "RM" and "RBM" identify the manufacturer of the bolt.



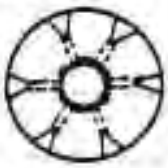
AN 103701 THRU
AN 104501



AN 104601 THRU
AN 107201



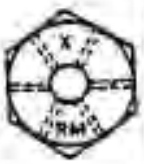
AN 107301 THRU
AN 108101



AN 148551 THRU
AN 149251



MS 9033 THRU
MS 9224



MS 20073-3-
THRU MS 20073-12-
MS 20074-3
THRU MS 20074-12



MS 20392-4-
THRU MS 20392-10-



MS 35298
THRU
MS 35294



MS 35295
THRU
MS 35300



MS 35301
THRU
MS 35306



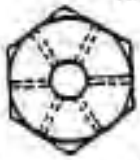
NAS 144 THRU
NAS 152



NAS 464-3-
THRU
NAS 464-12-



NAS 501-3
THRU
NAS 501-12



NAS 563
THRU
NAS 572



NAS 1003
THRU
NAS 1012



NAS 1103
THRU
NAS 1112



NAS 1301
THRU
NAS 1312

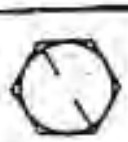
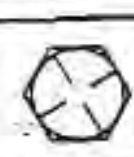
Simplified AN Chart





Our SAE Grade 5 line of cap screws is manufactured from SAE 1038 steel to provide a tensile strength of approximately 135,000 PSI as compared to the 120,000 PSI minimum called for by the SAE Specifications. In actual tests, our Bowma-Torq (formerly SAE Grade 6) cap screws produced tensile strength which met the 150,000 PSI requirement for SAE Grade 8. Finally, our Bowmalloy offers a proof load which is 37 1/2% greater than Grade 8, the highest SAE rating established for cap screws.

SAE GRADE MARKINGS FOR STEEL BOLTS AND SCREWS

Grade Marking	Specification	Material	Bolt and Screw Size, in.	Proof Load, Psi.	Tensile Strength min., psi.	Rockwell Hardness	
						Min.	Max.
	SAE–Grade 0	Steel	1/4 thru 1 1/2	—	—	—	—
	SAE–Grade 1	Low Carbon Steel	1/4 thru 1 1/2	33,000	60,000	—	B 95
	SAE–Grade 2	Low Carbon Steel	1/4 thru 3/4 Over 3/4 thru 1 1/2	55,000 33,000	74,000 60,000	— —	B 100 B 95
	SAE–Grade 3	Medium Carbon Steel, Cold Worked	1/4 thru 1/2 Over 1/2 thru 3/8	85,000 80,000	110,000 100,000	B 95	B 104
	SAE–Grade 5	Medium Carbon Steel, Quenched and Tempered	1/4 thru 3/4 Over 3/4 thru 1 Over 1 thru 1-1/2	85,000 78,000 74,000	120,000 115,000 105,000	C 23 C 22 C 19	C 32 C 32 C 30
	SAE–Grade 5.1	Low or Medium Carbon Steel, Quenched and Tempered with Assembled Lock Washer	Up to 3/8 incl.	85,000	120,000	C 27	C 40
	Formerly SAE–Grade 6	Medium carbon steel, Quenched and tempered.	1/4 thru 5/8 Over 5/8 thru 3/4	110,000 105,000	140,000 133,000	C 30 C 28	C 36 C 36
	SAE–Grade 7	Medium Carbon Alloy Steel, Quenched and Tempered, Roll Threaded After heat treatment	1/4 thru 1 1/2	105,000	133,000	C 28	C 34
	SAE–Grade 8	Medium Carbon Alloy Steel, Quenched and Tempered	1/4 thru 1 1/2	120,000	150,000	C 33	C 38
	Exceeds SAE–Grade 8	Special Ultra Hi-Strength Alloy Steel Quenched and Tempered	1/4 thru 1 1/2	145,000	185,000	C 37	C 41

TOOLS NEEDED FOR ASSEMBLY

* Allen Hex Bits: 6mm - 1/4" - 1/8"- to fit Torque Wrench.
* Angle Finder (Universal Protractor).
* Awl.
* Bench Vice.
* Cleaning Brush, 1".
* Center Punch.
* Cleaning Fluid.
* Drill Motor or Hand Drill with 1/8"-3/16"-3/8"-5/8"-1/2" Bits.
* Files: Fine Flat,
  : 1/2 Round,
  : Rat Tail.
* Hacksaw with normal and Tube-cutting Blades.
* Hammers: Steel,
  : Leather.
* Hot Knife (or Soldering Iron with Blade Edge).
* Marking Pencil or Pen.
* Pliers: Regular,
  : Long Nose.
* Razor Knife.
* Riveting Tool for 1/8" and 3/16" Rivets.
* Rope, 1/4" Nylon.
* Sandpaper - Medium Grit.
* Scissors.
* Screwdrivers: set of Flat Blade,
  : " " Phillips.
* Sidecutters - one pair.
* Spark Plug Gapping Tool.
* Straight Edge, 6' feet long (2m.).
* Tape Measure - 10'feet (3m.).
* Tape: Electricians,
  : Masking.
* Torque Wrench that registers in.lbs.(or Newton Meters if you work in Metric).
* Torque Wrench that registers ft.lbs (or Newton Meters).
* Vice Grips.
* 3 Weighing Scales each having a capacity of 200lbs.(90 Kg.).
* Wire Crimper.

GT 280 - ONLY:

* Artists Paint Brush & small amount of White Paint. (to number 'V'Belts).
* Socket: 1-1/8" to fit torque wrench.

Wrenches	: Open End and Socket	- 3/16"-1/4"-5/16"-3/8"-7/16"-1/2" - 9/16"-11/16"
	: Metric (for Engine)	- 5mm.- 6mm.- 8mm. - 10mm - 11mm.- - 13mm.- 16mm.- 17mm.
	: Allen Wrench.....	- 6mm. - 1/8" - 1/4".

Also some strips of old Carpet, or old Bed Sheets, Painters' Drop Sheets or similar protective cover will be useful to keep wings and other parts clean and free from scratches during assembly.

PROPELLER

****
CAUTION: It is DANGEROUS to work on a Propeller with the High Tension Lead connected to the Spark Plug of the Engine!!
****

The Propeller supplied with this kit is a precision-made component incorporating the highest standards of manufacture. While it is extremely strong, reliable and well balanced as supplied, it is recommended that before mounting, it should be fine-balanced using Professional balancing techniques.

It must be emphasised that the mounting procedure must be followed closely and carefully.

The Propeller - Which way around?

When looked at end-on, you will see that the Propeller blades are airfoil-shaped - curved one side, flat the other. On this aircraft, the FLAT SURFACE of the Propeller blade FACES AFT!!

Propeller Mounting Bolts

There are six special Bolts for use only on the Propeller. They are AN4H-21a (GT 400) and 1/4" x 20 Coarse Thread (GT 280). The heads of the Bolts are cross-drilled. Push each Bolt in turn thru the holes in the Propeller and then remove them again. They should be a tight fit. DO NOT use excess force.

IF the Bolts will not pass thru the Propeller - perhaps due to local humidity - the holes may be Reamed to 1/4". USE EXTREME CAUTION.

HOT KNIFE

Use extreme care when using the Hot Knife to cut the Template holes in flying surface Covers. A good Hot Knife at the correct temperature will cut the material as easily as soft butter. Mistakes cannot be corrected! Try cutting Template holes smaller than needed at first, then gradually enlarge to the correct size. In this way, you'll get neater as you gain experience. CAUTION— Don't step on or brush against a Hot Knife when wearing sneakers, it can be very painful!!

CUSTOM PAINTING

If you wish to custom paint the Pilot Fairing, Seat and Wheel Pants, do it after they have been assembled in sequence; then disassemble, paint and reassemble according to the instructions.

LOCATING HOLES

When predrilled Tubes have been inserted into Wing and Tail Covers, find the holes as instructed in each sequence. Final locate them with your fingers and push a stick-pin thru the fabric to mark their position.

ROTAX ENGINES: TORQUE SPECIFICATIONS

	in.lbs.	Newton Meters
Cylinder Head Nuts.....M8.....	210	24
Crankcase Screws.....M8.....	210	24
Magneto Housing Nut.....M18x1,5	700	80
Fan Nut.....M16x1,5	620	70
Crankcase Nuts (or screws) M10....	354	40
Exhaust Socket Screws.....M8.....	210	24

Formula : To convert (in.lbs) to (ft.lbs): Divide by 12

SAFETY WIRING

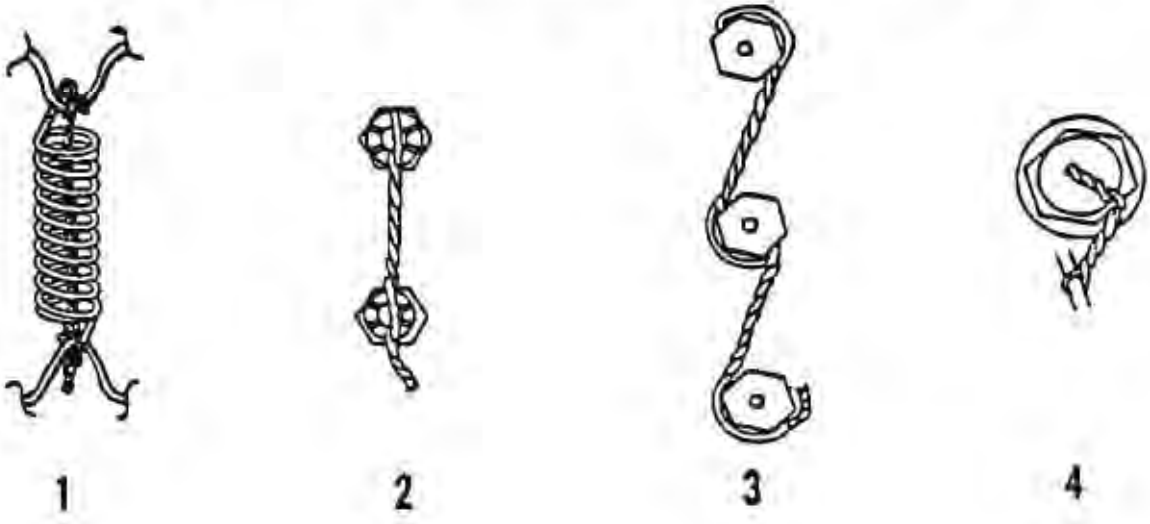
Certain Bolts on this aircraft must be Safety Wired. The wiring is arranged so that if a Nut or Bolt begins to loosen, the force applied to the wire is in the tightening direction.

CAUTION: Use only Aircraft-quality Safety Wire!

The following is the recommended method:

Tighten the Bolts to the Torque values specified in the relevant text. Ensure that the Safety Wire holes are aligned as shown. NEVER overtighten or loosen a torqued Bolt to align Safety Wire holes. Careful study of the illustration shows that:

Example 1 shows Safety Wiring thru Springs - as on the Exhaust System.
Example 2 shows Wiring to certain Castle Nuts and studs - NOTE: There is no loop around the Nut.
Example 3 shows several Bolts wired together - as on the Propeller.
Example 4 shows a single threaded component wired to a housing or lug.



THE NUTS & BOLTS OF THE GT

All Bolts used in the airframe of this kit are Aircraft Quality and are either "Graded" to military specification or they conform to the standards of the S.A.E. (Society of American Engineers).

The most commonly used bolts in this kit are fine-thread "AN" bolts.

Coarse Thread Bolts in this kit are refered to as "Grade 5" Bolts and are used in specific locations throughout the aircraft, their positions will be shown in the text. IT IS DANGEROUS to substitute them for any other Bolt.

BOLT TIGHTENING

NEVER overtighten a Bolt. Tighten ONLY when and as instructed. Particular care is necessary when tightening bolts which pass through aluminum tubes with no solid internal support.

Be particularly careful when installing all Forkbolts or Eyebolts in the Wing, Aileron, Elevator, Stabilizer or Rudder tubes.

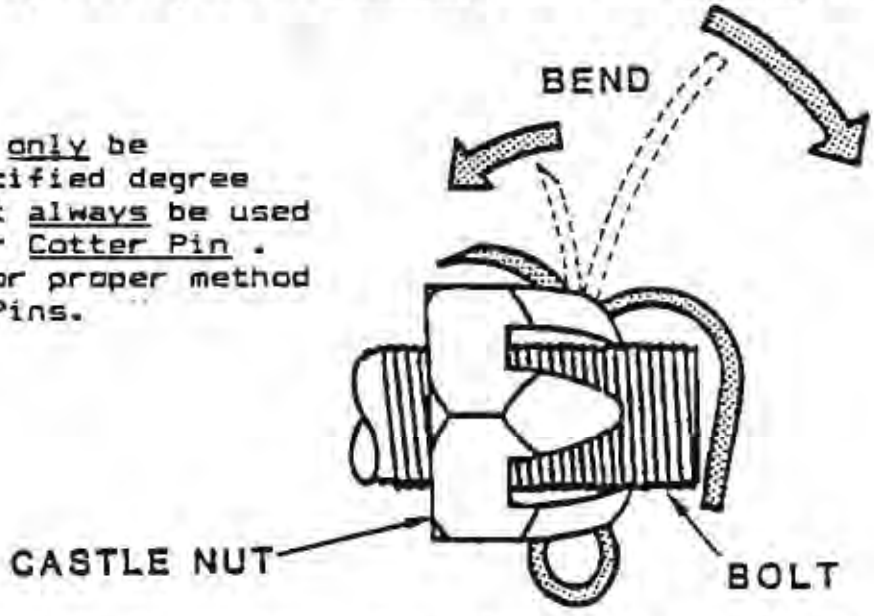
Before installing bolts, check that the grip-length is correct. When using Washers, ensure that at least one-and-a-half bolt thread extends out of the nut.

Bolts and Nuts should be clean and dry before installation. Threads should not be oiled. Bolts or Nuts with damaged threads and rough ends should NOT be used.

Wing Nuts should only be tightened by hand and must always be used with a Safety Ring.

Castle Nuts should only be tightened to the specified degree of tightness and must always be used with a Safety Ring or Cotter Pin .

SEE Illustration for proper method of bending Cotter Pins.



NOTE: When Castle Nuts are tightened, the Safety Ring or Cotter Pin Holes may not line up with the slots in the nuts when the Torque setting is reached. BACK OFF to the nearest slot. The Castle Nut must NEVER be overtightened to permit lining up the Safety Hole with the next tighter slot!

****

WARNING!

BOLTS WHICH ARE SUBJECT TO ROTATION IN FLIGHT WILL USE "CASTLE" NUTS. A CASTLE NUT RELIES ON A SAFETY RING OR COTTER PIN TO PREVENT IT BACKING OFF. ALWAYS ENSURE CASTLE NUTS ARE SECURED WITH A SAFETY RING OR COTTER PIN!

****

CONSTRUCTION NOTES - CONT.

NICO SLEEVE GUAGE PROCEDURE

****
ESSENTIAL PROCEDURE!
****

The Nico Sleeve Gauge (1) supplied with the kit, is used during initial Parts Inventory to verify the accuracy of the Wire Swages (2) on all flying and control Wires on the aircraft.

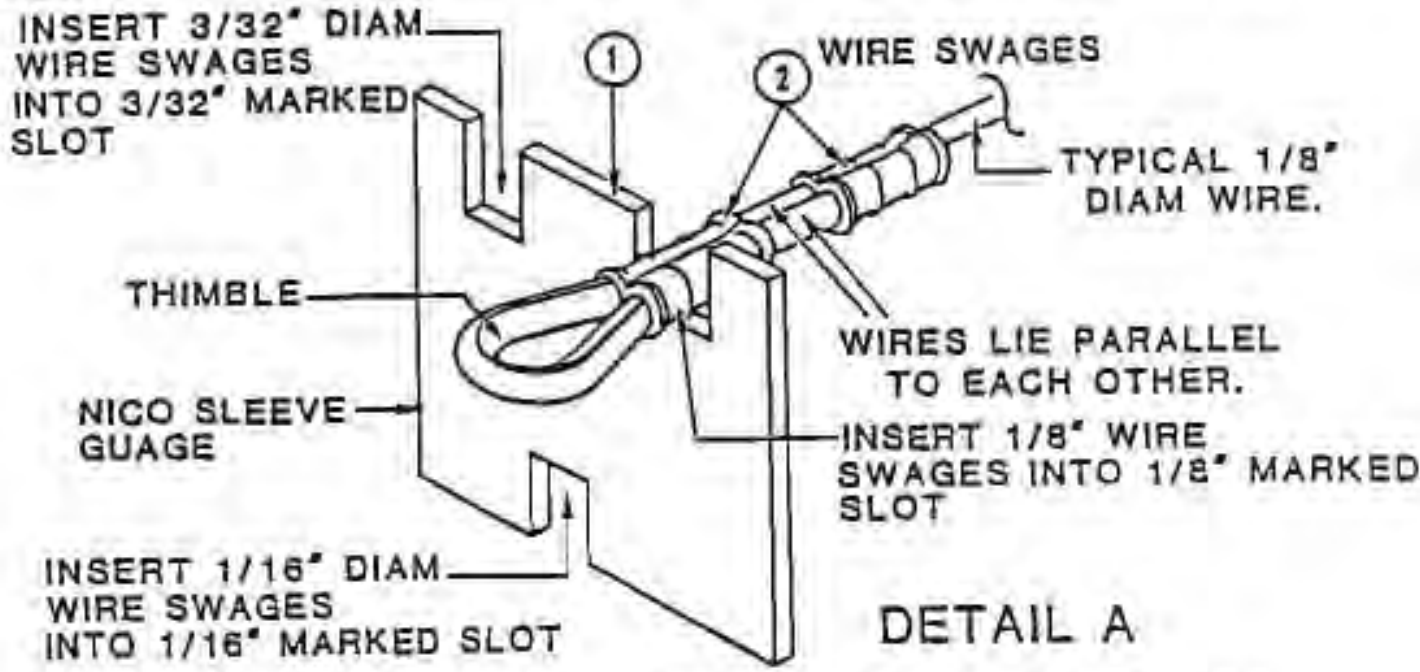
ALL Wire Swages (2) whether ending in Cable Bushings, Flat or angled Tangs or Thimbles MUST be checked with this Gauge.

You must ensure that where a wire passes around a Thimble (a typical example of which is shown below) its captured-end lies parallel to and side-by-side with the rest of the Wire and be untwisted within the Swages (2) and that the shape of each Swage (2) is symmetrical. Additionally you must check the whole length of the Wires for "nicks" or cuts in their jackets.

DO NOT USE Wires which show signs of transit damage, or that have broken or untwisted individual wires which make up a cable!

If you have questions about either this procedure or the results of your inspection - contact your Eipper Dealer.

1. Refer to Detail 'A'. The Nico Sleeve Gauge (1) has three precision machined notches which accept 1/16", 3/32" and 1/8" wire swaging sizes. Insert each Nico Sleeve into its appropriate slot and check its accuracy. NOTE: The Thimble end shown is typical, but notice the orientation and the position where the check is made on the swaging. There should be NO side-to-side movement possible when correctly positioned. There should be NO NEED to force the sleeve into the Gauge.



DETAIL A

****
WARNING! NEVER USE SUBSTITUTES.
FIT WIRES ONLY IN THEIR DESIGNATED POSITIONS!
****

INTRODUCTION

Welcome to the world of Light Recreational Aircraft. We wish to thank you for choosing the QUICKSILVER GT 500 , a product we feel represents the State of the Art in this field of aviation.

In construction of your QUICKSILVER GT 500 , it is ESSENTIAL that you build the aircraft in strict accordance with these Assembly Instructions. We have prepared it in a step-by-step form to assist your construction process. PLEASE pay close attention to detail and the sequence of assembly while allowing plenty of time to complete each sequence.

CONSTRUCTION NOTES

These Assembly Instructions describe and illustrate the recommended sequence of assembly of your QUICKSILVER GT 500.

In each sequence we will show sub-assemblies FIRST, usually in order of construction. There is a reason for this. Each sub-assembly will incorporate more and more complex operations.

Please read COMPLETELY through the Assembly Instructions at least once to familiarize yourself with our terminology and method of construction.

Whenever possible, the illustrations show the relative position of the part you will be working on. In some instances we will show a part with correct orientation (the right way up) when it's relative position is upside-down. In those particular instances you will be notified on the illustration.

Pay particular attention to the "NOTES" and sections marked "CAUTION", "IMPORTANT" or "ESSENTIAL", as well as "AS ILLUSTRATED". Please follow these instructions. We have specific reasons for assembling something that particular way.

We have Factory Assembled some of the major components leaving you with relatively little drilling, riveting, filing and shaping to complete the assembly of this kit.

While it is possible to complete this kit in a relatively short period of time, accuracy and thoroughness are factors more important than the time spent constructing this aircraft. Care and patience will be rewarded by better control response, higher reliability and a better looking QUICKSILVER GT 500 which will be a credit to both of us.

We sincerely hope you enjoy the experience of constructing your own QUICKSILVER GT 500 aircraft.

WARNING

ULTRALIGHT AND EXPERIMENTAL AIRCRAFT FLIGHT
CAN BE DANGEROUS. FLY AT YOUR OWN RISK.

FLIGHT LIMITATIONS OF QUICKSILVER ENTERPRISES PRODUCTS

A complete ground school and flight instruction program through an authorized Quicksilver Dealer and thorough review of the owners manual is required before attempting flight. For safety, it is essential to follow the owner's manual recommendations pertaining to the assembly, maintenance and operation of this aircraft. Operation not in strict accordance with the owner's manual may be unsafe, dangerous, or even fatal.

THIS VEHICLE IS NOT APPROVED FOR AEROBATIC MANEUVERS. PITCH MAY NOT EXCEED 30° AND THE ANGLE OF BANK MAY NOT EXCEED 60°. SPINS ARE PROHIBITED. STEEP LOW LEVEL TURNS SHOULD BE AVOIDED. ALWAYS FLY WITHIN POWER OFF GLIDING DISTANCE OF A SAFE LANDING AREA. OPERATION IN ACCORDANCE WITH FEDERAL AVIATION ADMINISTRATION REGULATION REQUIRED. ALWAYS EXERCISE DUE CARE AND REASONABLE JUDGMENT. FLIGHT SHOULD ONLY BE ATTEMPTED IN ACCEPTABLE AND SAFE WEATHER CONDITIONS AND WHEN YOU AND YOUR VEHICLE ARE IN AN AIRWORTHY CONDITION.

Ultralight and experimental aircraft flight involves travel in three dimensions. Such activity is subject to mishap, injury and even death. The pilot acknowledges these dangers and attempts flight strictly at his/her own risk. Aluminum and other material components will conduct electricity. DO NOT FLY in the vicinity of power lines, electrical storms, ground cables, or other obstructions. Contacting and/or coming near such obstacles or storms is extremely hazardous and can cause serious or fatal injury.

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EXPERIMENTAL
AMATEUR-BUILT AIRCRAFT

MODEL

SERIAL NO. EMPTY WT.

DATE OF MFG. GROSS WT.

ENGINE H.P.

BUILT BY

NAME

ADDRESS

CITY & STATE

FUEL SYSTEM

The fuel system consists of a 8.5 gallon(32.2 litres) fuel tank, fuel filter, carburetor and engine driven vacuum fuel pump. A fuel shut off valve is located on the rear of the tank. The fuel tank is mounted in the root of the wing and is secured by adjustable straps to permit . The tank is vented at the top. The vent must be unobstructed to allow for proper operaton of the fuel system. **CAUTION: Failure to ensure fuel tank venting will result in Engine Failure!** The see- through fuel filter is located in the fuel line between the fuel tank and the fuel pump. It should be inspected prior to each flight to ensure that it does not obtain contaminents. The see-through fuel line must also be inspected for contaminents. If contaminents exist, the fuel system must be drained and flushed prior to running the engine. A fuel drain valve is located in the bottom of the tank. Drain a small amount of fuel before each flight to inspect for water and contaminents. Make sure fuel valve is shut off before flight.

BRAKE SYSTEM

The aircraft is equipped with a nose wheel brake. The brake pedal is located slightly below and to the right of the right rudder pedal. When depressed, a friction plate is pressed on the nose wheel tire. The braking effectiveness is determined by the amount of pressure applied to the brake pedal, the amount of weight on the nose wheel, and the type of surface on which the nose wheel tire is rolling. Braking should be kept to a minimum since it imposes higher than normal loads on the nose gear structure. The use of proper taxi speeds and the selection of proper runway lengths will extend the service life of the landing gear system.

AIRSPEED INDICATOR

The aircraft is equipped with an airspeed indicator located in the instrument panel. It is calibrated in miles per hour. Limitation and range markings. The airspeed indicator operates by displaying the difference in pressure of ram air entering through the pitot tube located on he nose of the aircraft, and static air pressure inside the instrument. In order to operate properly, the pitot tube located on the nose of the aircraft and static port (on the left side of the forward fusalage must be free of obstructions. The airspeed indicator MUST NOT be used as the SOLE reference of actual airspeed since it is subject to variation and error. The feel and sound of the aircraft should also be considerated in the determination of actual airspeed.

ENGINE

The GT 500 is powered by a twin cylinder, water cooled two-cycle Otto engine. The engine is a Rotax 582/40 - 580.7 cc Displacement, rated at 65 horsepower at 6500 RPM. Major components include Helical Gear reduction drive system, exhaust system, and a mechanical rewind manual starter.

THROTTLE CONTROL

The throttle is a cable controlled system with the throttle control lever located to the right side of both pilot's seats. Moving the lever forward increases RPM; moving the lever aft decreases RPM. For Servicing the throttle cable as precribe by Legend 1 of the Powerplant Maintenance Schedule use Oil specification VV-L-800A or Equivalent.

CHOKE CONTROL

The choke system is a cable controlled system. The choke control knob is located to the right of the front pilot's seat. The choke is used to enrichen the fuel/air mixture to aid in cold engine starts.

ENGINE BREAK-IN AND OPERATION

It is required that the proper engine break-in procedures be followed exactly as described in the Rotax Operator's Manual. Any deviation from this procedure could cause engine malfunction and/or failure. It is also suggested that continuous engine operation at RPM's above 6300 RPM for periods in excess of 5 minutes be avoided.

FUEL/OIL MIXTURE

The fuel to oil mixture ratio is 50:1. The fuel must have a minimum rating of 83 octane. The oil must meet or exceed B.I.A. or T.C.W. specifications. The oil container must be marked BIA-TCW-2 cycle. The mixing procedure should be followed as described in the Rotax Operator's Manual.

Air Filter

The Air Filters for the carburators should be cleaned as precribled by Legend 1 of the Powerplant Maintenance Schedule with regular gasoline.

AIRFRAME

Note:For Servicing as precribed by Legend 1 in the Maintenance Schedules for all hinged points and movable connections use General Purpose Oil Mil-1-7078-A or equivalent.

The primary construction material of the airframe is of tubular aircraft grade aluminum. Major items of struture are the forward fuselage and tail boom tubes. The flight controls, nose wheel, and seat are attached to the forward fuselage tube. The mounting structure for the root tube is attached to the aft section of the forward fuselage tube and the forward section of the tail boom tube. The main landing gear carry-thru is the jointing structure of the two boom tubes. The empennage (tail assembly) is attached to the aft section of the tail boom tube.

The externally braced wings are constructed of a front (leading edge) and rear (trailing edge) spar held in place by compression and diagonal struts. The airfoil shape is maintanined by formed tubular ribs contained in upper and lower pockets in the Dacron wing covering. The leading edge and trailing edge spars are equipped wih wing-to-root tube and wing-to-strut attachment fittings. Conventional hinged ailerons are attached to the outboard section of the trailing edge of the wings. Conventional flaps are attached to the inboard trailing edge of the wings.

The tail assembly consists of a conventional vertical stabilizer, rudder, adjustable horizontal stabilizer, and elevator. The tail assembly flight surfaces are covered with Dacron. An adjustable cockpit trim is incorporated into the horizontal stabilizer (refer to the SECTION 4 for proper adjustment procedures).

FLIGHT CONTROLS

The aircraft's flight control system consists of conventional aileron, rudder, and elevator control surfaces. The control surfaces are manually operated through mechanical linkage using the control wheel for the ailerons and elevator, and rudder pedals for the rudder. The elevator control system is equipped with a balance spring which provides improved stability in flight. There are front and rear seat controls for aileron, rudder, elevator and trim.

Trim System

Throughly inspect the trim system starting at the trim lever positions at the front and rear pilot seat positons. Check for free movement while observing the stabilizer moving down while pushing the lever forward, and up while pulling the lever aft. Inspect lever and pushpull connections through the 1" inspection holes on the left side of the forward fuselege tube directly behind the trim lever.

Inspect the Rear pushrods and bellcranks of the trim system at stabilizer. Un zip the vertical stabilizer cover to lower rod and bellcrank. Inspect push pull tube connection through the 1" hole in the left side of rear fuselege tube. Check to see that the horizantial stabilizer is moving the full travel of the upper trim slide plates.

INTRODUCTION

This manual is divided into 9 sections. It contains all information and data as required by the Professional Ultralight Manufactures Association (PUMA) as approved by the Federal Aviation Administration (FAA) and/or other agencies. Quicksilver Enterprises Inc., has included additional information that will assist you in the operarion of the Quicksilver GT. For safety, a thorough understanding of this manual is essential.

DESCRIPTIVE DATA AND SPECIFICATIONS

ENGINE :	GT500
Manufacturer:	Bombardier-Rotax
Model:	582/40
Displacement:	582/40 cc
Type:	Twin cyl.
	two-cycle, air-cooled, single magneto ignition
Spark Plug:	NGK B8ES, gap- .016-.020 in. (.04-.05 cm.)
Horsepower:	65 hp @ 6500rpm
Recommended Time Before Overhaul:	(TBO) 250 hrs.

REDUCTION DRIVE SYSTEM :	GT500
Type:	Helical Gear
Number of Belts:	N/A
Belt Type:	N/A
Gear Oil:	SAE 85W90 (400cc)
Reduction Ratio:	2.58 to 1

PROPELLER:	GT500
Type:	Fixed pitch, two blade, wooden
	Quicksilver Part# 30251
Diameter:	68 in. (1727 mm)
Pitch:	38in (965 mm)-RH
Maximinum Speed:	2800 rpm

AILERON TRAVEL
- UP.....27 degrees
- DOWN.....16 degrees

WING FLAP TRAVEL
- UP.....0 degerees
- DOWN.....38 degrees

RUDDER TRAVEL (Measured Perpendicular to Hinge Line)
- RIGHT.....25 degrees
- LEFT.....25 degrees

ELEVATOR TRAVEL
- UP.....39 degrees
- DOWN.....25 degrees

STABILIZER INCIDENCE
- UP. (Top).....1 degree negative
- DOWN. (Bottom).....5 degrees negative

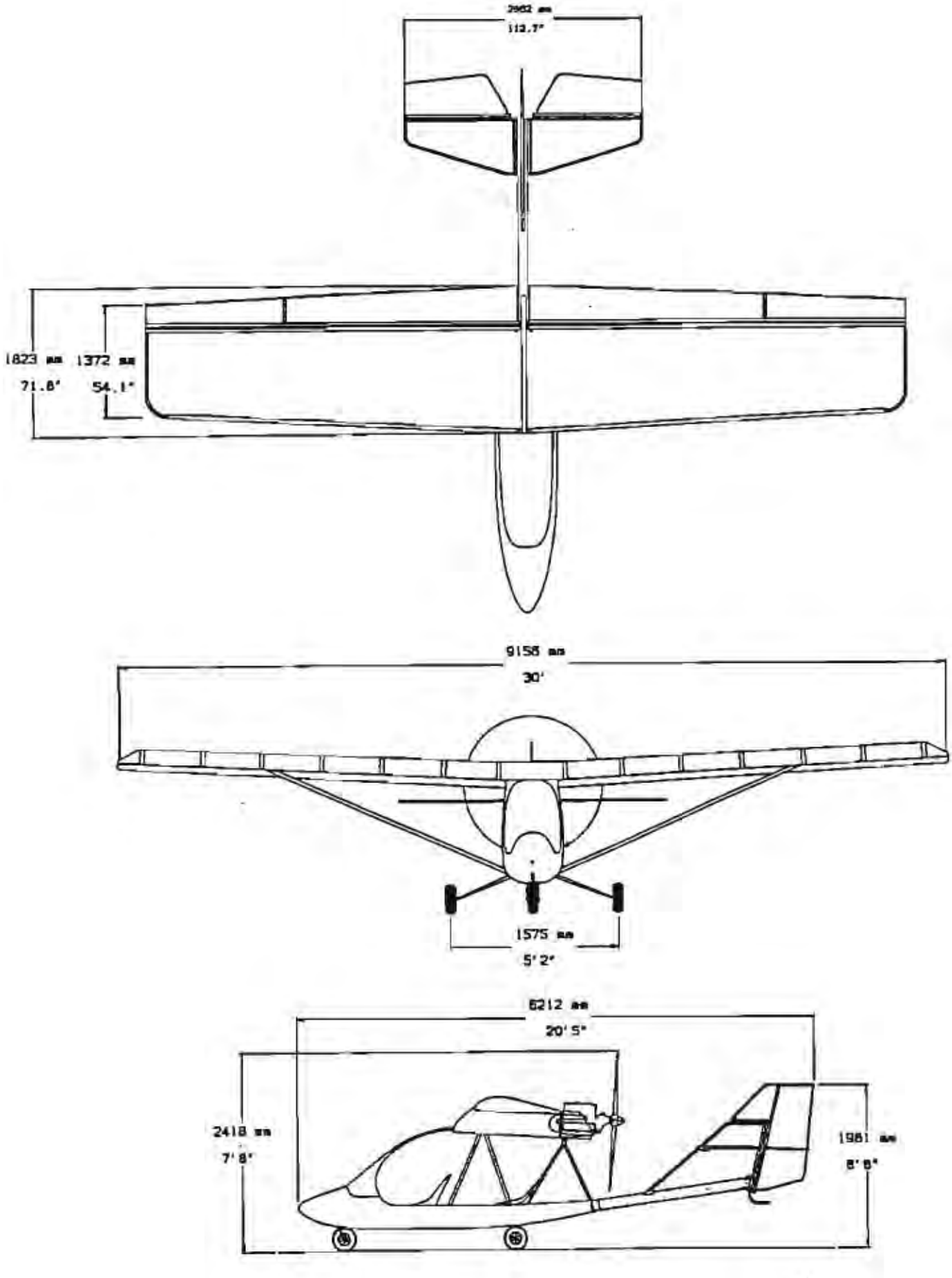
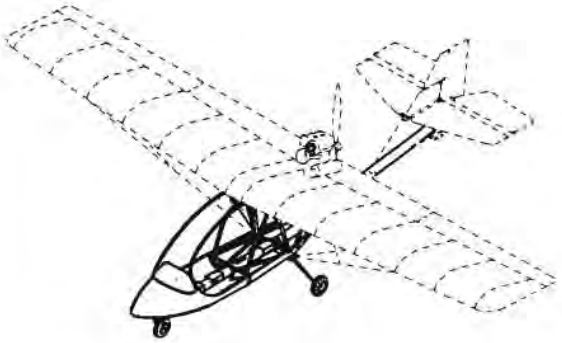


Figure 1-2: Strut Braced BT - Three View

SECTION 2 - FWD.FUSELAGE



SECTION 2

FORWARD FUSELAGE

INBOARD FORWARD SIDE STRUT ASSEMBLY.....2-8

OUTBOARD FORWARD SIDE STRUT ASSEMBLY.....2-10

FORWARD FUSELAGE DOWNTUBE ASSEMBLY.....2-12

FORWARD DOWNTUBE ASSEMBLY.....2-14

AFT DOWNTUBE ASSEMBLY.....2-16

AFT SIDE STRUT AND TAIL BOOM DOWN STRUT ASSEMBLY.....2-18

FORWARD AND CENTER ELEVATOR PUSH/PULL TUBE ASSEMBLY.....2-20

FORWARD AND CENTER TRIM PUSH/PULL TUBE ASSEMBLY.....2-22

AFT RUDDER BELLCRANK AND RUDDER PEDAL PUSHROD ASSEMBLY.....2-24

FORWARD RUDDER PEDAL ASSEMBLY AND ATTACHMENT.....2-26

FORWARD CONTROL WHEEL
SUPPORT TUBE (YOKE) ASSEMBLY AND ATTACHMENT.....2-28

AFT CONTROL WHEEL
SUPPORT TUBE (YOKE) ASSEMBLY AND ATTACHMENT.....2-30

AFT ELEVATOR TRIM LEVER ATTACHMENT.....2-34

FORWARD ELEVATOR TRIM LEVER ATTACHMENT.....2-36

ROLLER MOUNT CHANNEL AND LANDING GEAR DRAG
BRACKET ATTACHMENT TO LANDING GEAR CARRY THRU.....2-38

LANDING GEAR CARRY THRU ASSEMBLY AND
ATTACHMENT TO FORWARD FUSELAGE TUBE ASSEMBLY.....2-40

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FORWARD FUSELAGE (CONT'D.)

LANDING GEAR LEG AND STRUT PLATE ATTACHMENT.....2-42

MAIN WHEEL / NOSE WHEEL AND TIRE ASSEMBLY.....2-44

INBOARD FORWARD SIDE STRUT ATTACHMENT.....2-46

RUDDER PEDAL ASSEMBLY AND ATTACHMENT.....2-48

AFT RUDDER PEDAL AND PEDAL MOUNT CHANNEL ATTACHMENT.....2-50

AFT RUDDER PEDAL PUSHROD ASSEMBLY
TO FOOT PEDAL ATTACHMENTATTACHMENT.....2-50A

FORWARD FUSELAGE DOWNTUBE ATTACHMENT.....2-52

OUTBOARD FORWARD SIDE STRUT ATTACHMENT.....2-54

FORWARD RUDDER PEDAL AND RUDDER PEDAL PUSHROD ATTACHMENT...2-56

NOSE WHEEL ASSEMBLY AND ATTACHMENT.....2-58

FORWARD AND AFT DOWNTUBE ATTACHMENT
TO LANDING GEAR CARRY THRU ASSEMBLY.....2-60

FORWARD FUSELAGE DOWNTUBE /
FORWARD DOWNTUBE AND AFT DOWNTUBE TO ROOT TUBE ATTACHMENT..2-62

FORWARD SEAT BELT BRACKET AND
DOWNTUBE ATTACH PLATE ATTACHMENT.....2-64

FLAP HANDLE ASSEMBLY AND ATTACHMENT.....2-66

ROOT TUBE BELLCRANK AND
TAIL BOOM DOWN STRUT UPPER ATTACHMENT.....2-68

FORWARD AND AFT CONTROL WHEEL ATTACHMENT.....2-70

AILERON PUSH/PULL CABLE TO
ROOT TUBE BELLCRANK ATTACHMENT.....2-72

PUSH/PULL CONTROL CABLE ADJUSTMENT.....2-74

AFT ELEVATOR AND AFT TRIM PUSH/PULL TUBE ASSEMBLY.....2-76

AFT ELEVATOR PUSH/PULL TUBE INSTALLATION.....2-78

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FORWARD FUSELAGE (CONT'D.)

PUSH/PULL ROLLER ATTACHMENT.....2-80

TAIL BOOM ATTACHMENT TO LANDING GEAR CARRY THRU/
AFT ELEVATOR AND TRIM PUSH/PULL TUBE ATTACHMENT.....2-82

AFT SIDE STRUT AND TAIL BOOM DOWN TUBE ASSEMBLY.....2-84

FLAP BELLCRANK AND
BELLCRANK BRACKET ASSEMBLY AND ATTACHMENT.....2-84A

FLAP PULL ROD ATTACHMENT.....2-84B

FORWARD SEAT ATTACHMENT.....2-86

AFT SEAT ATTACHMENT.....2-88

FORWARD SEAT BELT AND SEAT LOCK PIN ATTACHMENT.....2-90

AFT SEAT LOCK PIN ATTACHMENT.....2-92

AFT SEAT BELT AND SHOULDER BELT ATTACHMENT.....2-94

FORWARD SHOULDER BELT
AND STARTER ROPE PULLEY ATTACHMENT.....2-96

FORWARD THROTTLE LEVER ASSEMBLY AND ATTACHMENT.....2-98

THROTTLE LINK TUBE ATTACHMENT.....2-100

AFT THROTTLE KNOB ASSEMBLY AND ATTACHMENT.....2-102

FUSELAGE SUPPORT TUBE ATTACHMENT.....2-104

PILOT ENCLOSURE LOWER MOUNTING BRACKET ATTACHMENT.....2-106

PILOT ENCLOSURE ATTACHMENT.....2-108

PILOT ENCLOSURE ATTACHMENT (CONT'D.).....2-110

LOWER CENTER FAIRING ATTACHMENT.....2-112

LOWER CENTER FAIRING ATTACHMENT (CONT'D.).....2-114

LOWER CENTER FAIRING AFT ATTACHMENT.....2-116

LOWER AFT FAIRING ATTACHMENT.....2-118

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LOWER AFT FAIRING ATTACHMENT (CONT'D.).....2-120

INSTRUMENT PANEL TO PILOT ENCLOSURE ATTACHMENT.....2-122

INSTRUMENT PANEL TO PILOT ENCLOSURE ATTACHMENT (CONT'D.)..2-124

AIRSPEED ATTACHMENT TO INSTRUMENT PANEL
AND PITOT TUBE / STATIC PORT ATTACHMENT.....2-126

"THIS PAGE INTENTIONALLY LEFT BLANK".....2-128

"THIS PAGE INTENTIONALLY LEFT BLANK".....2-130

FUEL TANK SUB-ASSEMBLY.....2-132

FUEL TANK ASSEMBLY AND ATTACHMENT.....2-134

PYLON BULKHEAD ATTACHMENT.....2-136

ALUMINUM PYLON COVER ATTACHMENT.....2-138

ALUMINUM PYLON COVER ATTACHMENT (CONT'D.).....2-140

FORWARD THROTTLE LEVER ASSEMBLY.....2-142

AFT THROTTLE LEVER ASSEMBLY.....2-144

THROTTLE LINK TUBE ASSEMBLY.....2-146

FORWARD THROTTLE MOUNT PLATE ATTACHMENT.....2-148

AFT THROTTLE MOUNT PLATE AND
DUAL THROTTLE LINK TUBE ATTACHMENT.....2-150

"THIS PAGE INTENTIONALLY LEFT BLANK".....2-152

TEMPLATE "F-1" HOLE CUT-OUT FOR FORWARD FLAP PULL ROD.....2-153

INBOARD FORWARD SIDE STRUT ASSEMBLY

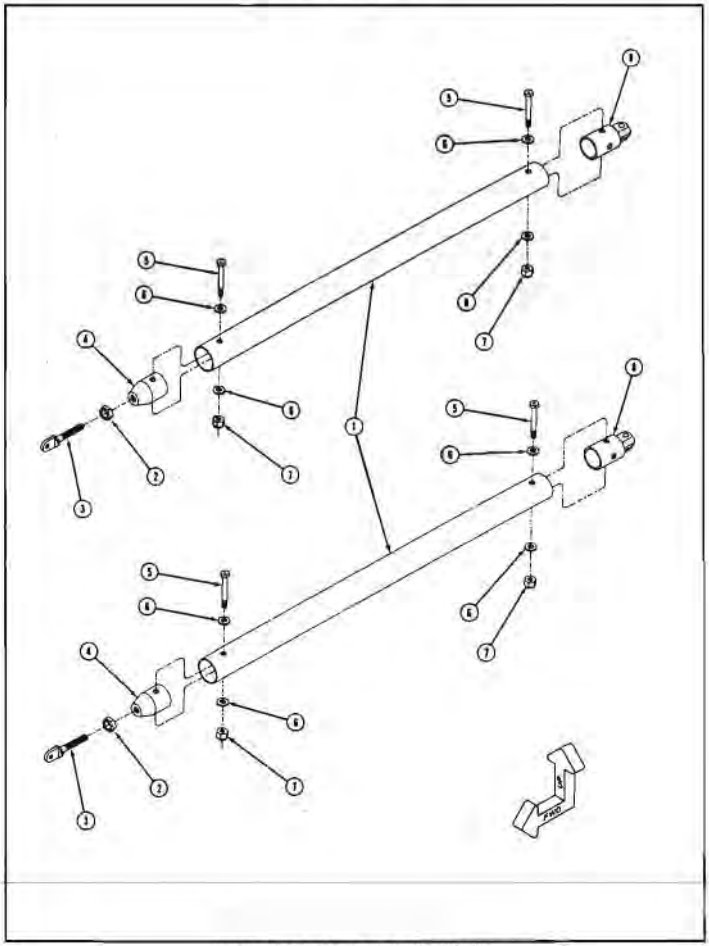
1. Thread a Jam Nut (2) ALMOST ALL THE WAY onto the Eyebolt (3).

2. Insert the Eyebolt (3) NEARLY ALL THE WAY into the Tail Boom Strut Fitting (4).

NOTE: Leave THREE to FOUR Threads showing as a Final Adjustment will be made later.

3. Assemble ONE Strut (1) as illustrated. Assemble another Strut (1) in "mirror image". Tighten to proper torque.

Item	P/N	Qty	Description
1	45430	2	Inboard Forward Side Strut
2	10542	2	5/16" Jam Nut
3	10377	2	5/16" x 1 3/32" Full Thread Eyebolt
4	45468	2	Tail Boom Strut Fitting
5	10120	4	AN4-15A Bolt
6	10560	8	1/4" Washer
7	10510	4	1/4" Locknut
8	45470	2	1" Aluminum Fork


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OUTBOARD FORWARD SIDE STRUT ASSEMBLY

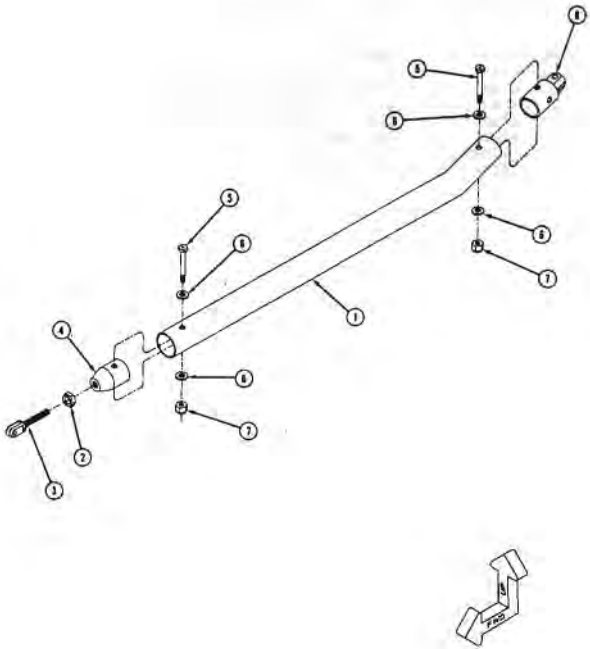
1. Thread a Jam Nut (2) ALMOST ALL THE WAY onto the Forkbolt (3).

2. Insert the Forkbolt (3) NEARLY ALL THE WAY onto the Tail Boom Strut Fitting (4).

NOTE: Leave THREE to FOUR Threads showing as a Final Adjustment will be made later.

3. Assemble ONE Strut (1) as illustrated. Assemble another Strut (1) in 'mirror image'. Tighten to proper torque.

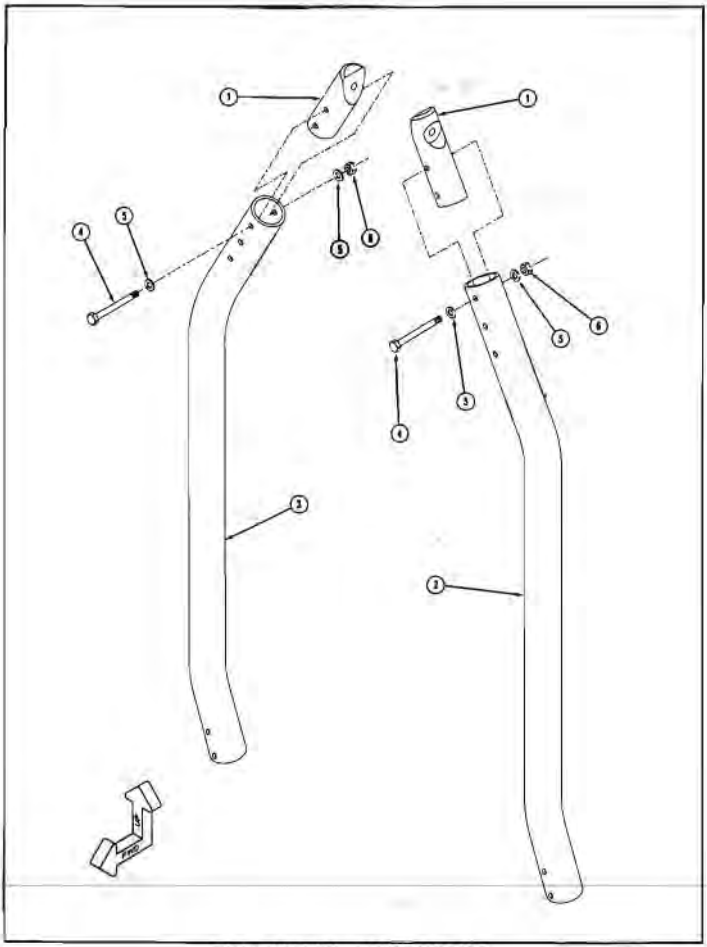
Item	P/N	Qty	Description
1	45431	2	Outboard Forward Side Strut
2	10631	2	1/4" Jam Nut
3	10388	2	1/4" x 1" Full Thread Forkbolt
4	45827	2	1/4" - 28 Fuselage Strut Fitting
5	10120	4	AN4-15A Bolt
6	10560	8	1/4" Washer
7	10510	4	1/4" Locknut
8	45470	2	1" Aluminum Fork


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FORWARD FUSELAGE DOWNTUBE ASSEMBLY

1. Assemble the Forward Fuselage Downtubes (2) and (3) as illustrated. Tighten to proper torque.

Item	P/N	Qty	Description
1	45456	2	28 Degree Downtube Fitting
2	45471	1	Left Forward Fuselage Downtube
3	45469	1	Right Forward Fuselage Downtube
4	10170	2	AN4-20A Bolt
5	10560	4	1/4" Washer
6	10510	2	1/4" Locknut


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FORWARD DOWNTUBE ASSEMBLY

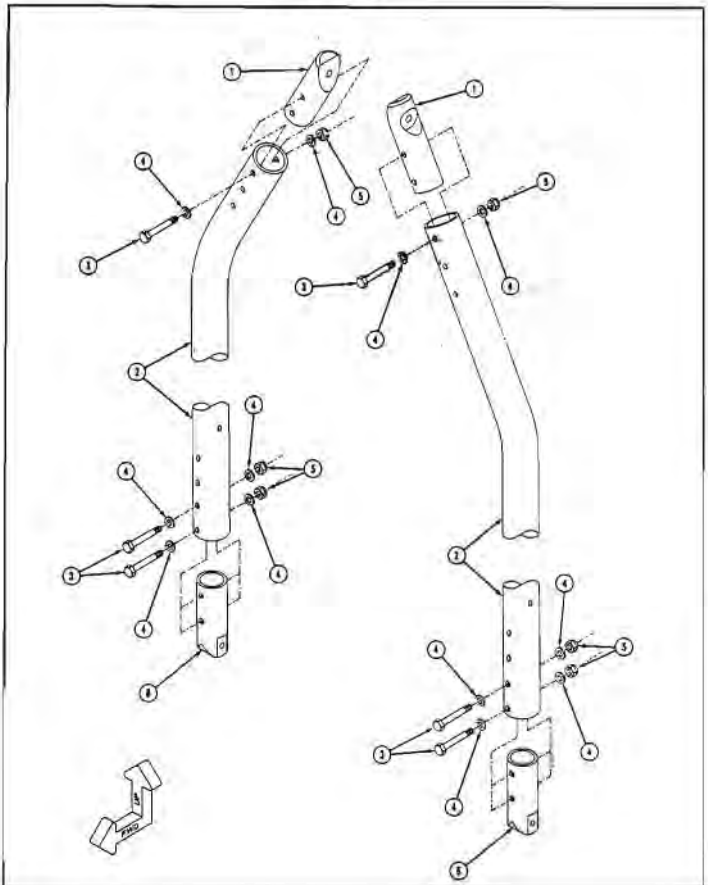
1. Identify the UPPER end of each Forward Downtube (2).

NOTE: The UPPER end has THREE (3) 1/4" (6.4 mm) holes.

2. Assemble BOTH Downtubes (2) and (3) as illustrated. Tighten to proper torque.

NOTE: Align the UPPER hole in the Downtube Fitting (1) with the UPPER hole in the Forward Downtube (2).

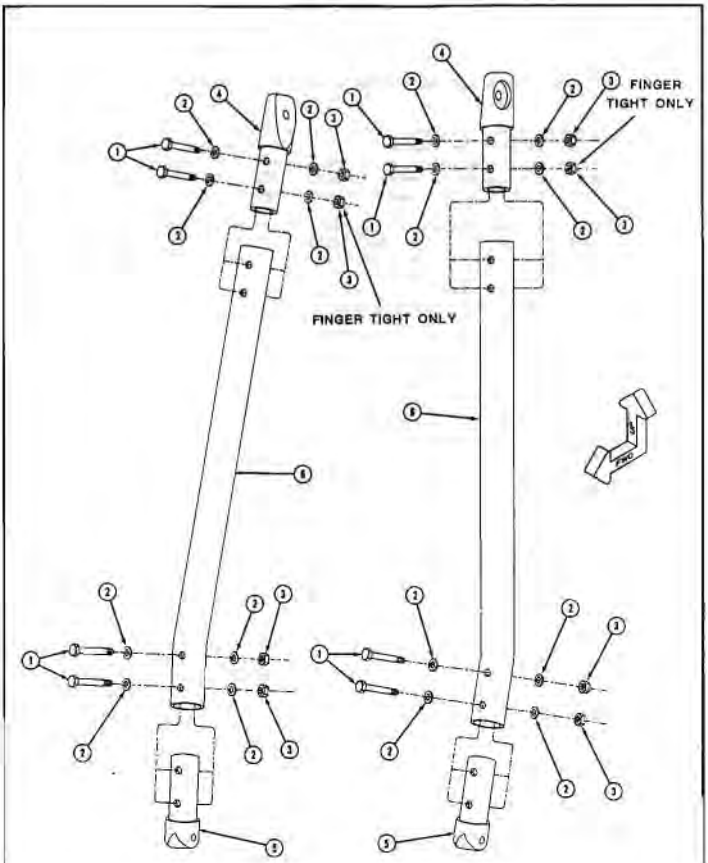
Item	P/N	Qty	Description
1	45456	2	28 Degree Downtube Fitting
2	45467	2	Forward Downtube
3	10170	6	AN4-20A Bolt
4	10560	12	1/4" Washer
5	10510	6	1/4" Locknut
6	45496	2	1.5" x .125" Downtube Base Fitting



AFT DOWNTUBE ASSEMBLY

1. Assemble as illustrated. Tighten ALL Locknuts to proper torque.

Item	P/N	Qty	Description
1	10120	8	AN4-15A Bolt
2	10560	16	1/4" Washer
3	10510	8	1/4" Locknut
4	45458	2	13 Degree, 1.125 x .095 Downtube Fitting
5	45453	2	1.1.25 x .095 Downtube Base Fitting
6	45465	2	Aft Downtube

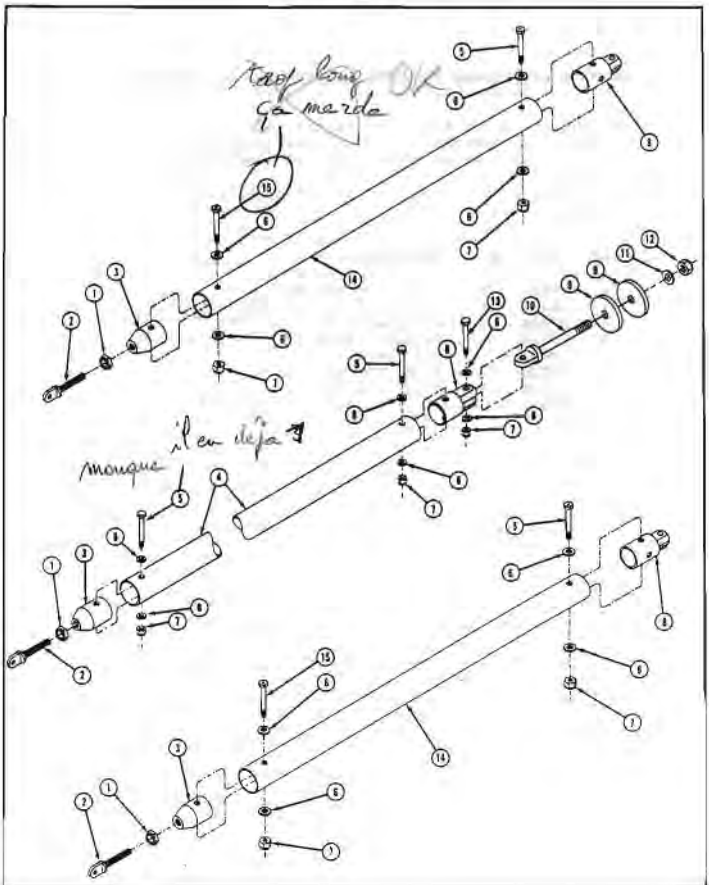

FINGER TIGHT ONLY
FINGER TIGHT ONLY

AFT SIDE STRUT AND TAIL BOOM DOWN STRUT ASSEMBLY

1. Assemble as illustrated. Tighten ALL Locknuts to proper torque EXCEPT the Locknut (12) on the Eyebolt (10) as it will be attached in a later sequence. Leave the Locknuts (7) on the Bolts (15). Leave these FINGER TIGHT ONLY as they will be tightened in a later sequence on pages 2-104 and 2-105.

NOTE: ALL Eyebolts with Jam Nuts (1) should be installed into the Fittings (3) with APPROXIMATELY THREE to FOUR Threads showing as they will be adjusted in a later sequence.

Item	P/N	Qty	Description
1	10542	3	5/16" Jam Nut
2	10377	3	5/16" x 1 3/32" Full Thread Eyebolt
3	45468	3	Tail Boom Strut Fitting
4	45541	1	Tail Boom Down Strut
5	10120	4	AN4-15A Bolt
6	10560	14	1/4" Washer
7	10510	7	1/4" Locknut
8	45470	3	1" Aluminum Fork
9	10600	2	5/16" Fender Washer
10	10381	1	AN44B-24A Eyebolt
11	10570	1	5/16" Washer
12	10540	1	5/16" Locknut
13	10064	1	AN4-11A Bolt
14	45443	2	Aft Side Strut
15	10185	2	AN4-21A Bolt

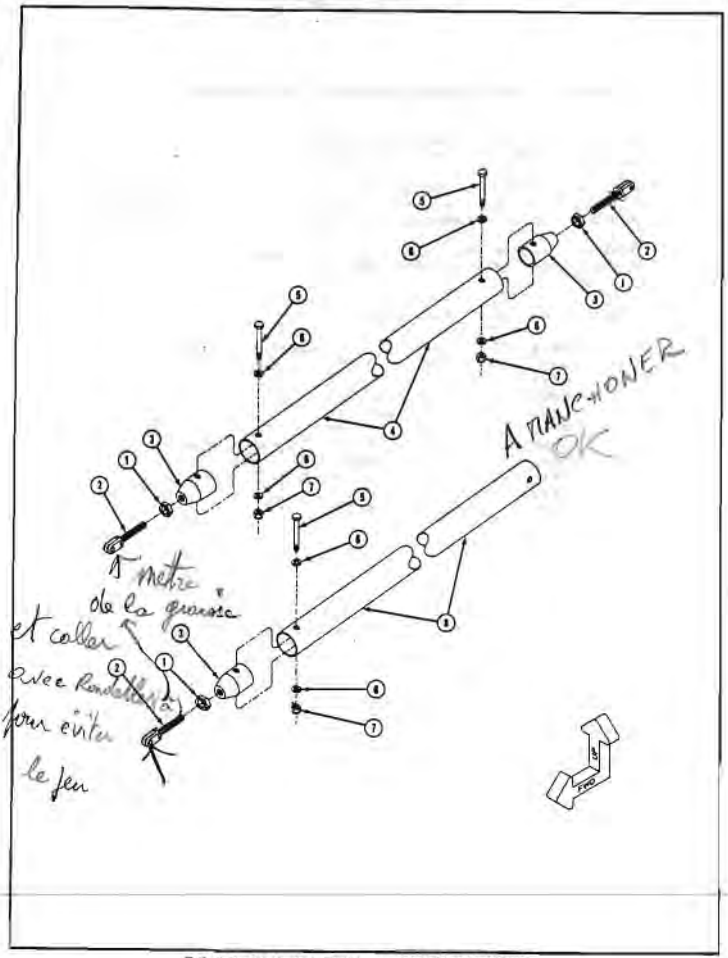

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FORWARD AND CENTER ELEVATOR PUSH/PULL TUBE ASSEMBLY

1. Thread a Jam Nut (1) "all the way" onto the Eyebolt (2). Thread the Eyebolt (2) "nearly all the way" into the Fitting (3). This will be adjusted in a later sequence.

2. Assemble as illustrated. Tighten ALL Locknuts (7) to proper torque.

Item	P/N	Qty	Description
1	10631	3	1/4" - 28 Jam Nut
2	10388	3	1/4" x 1" Full Thread Forkbolt
3	45464	3	Elevator Push/Pull Tube Fitting
4	45438	1	Forward Elevator Push/Pull Tube
5	10030	3	AN3-13A Bolt
6	10550	6	3/16" Washer
7	10500	3	3/16" Locknut
8	45439	1	Center Elevator Push/Pull Tube


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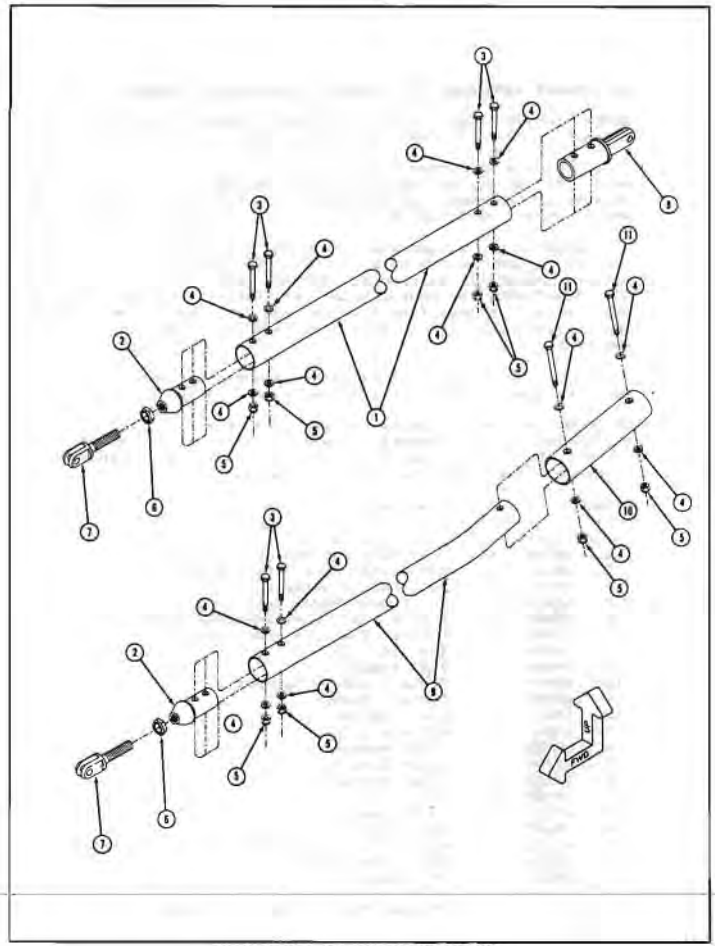
FORWARD AND CENTER TRIM PUSH/PULL TUBE ASSEMBLY

1. Assemble as illustrated. Tighten ALL Locknuts (5) to proper torque. DO NOT DISTORT THE TUBES (9) and (10).

NOTE 1: Thread the Forkbolts (7) nearly "all the way" into the Fitting (2) but allowing TWO to THREE [2-3] threads to be visible for adjustment if necessary in a later sequence.

NOTE 2: Attach the Locknut (5) attached to the AFT Bolt (11) FINGER TIGHT ONLY AT THIS TIME.

Item	P/N	Qty	Description
1	45445	1	Forward Trim Push/Pull Tube
2	45494	2	1/4" - 28 .75" x .035" Tube Fitting
3	10025	6	AN3-11A Bolt
4	10550	14	3/16" Washer
5	10500	7	3/16" Locknut
6	10631	2	1/4" - 28 Jam Nut
7	10388	2	1/4" x 1" Full Thread Forkbolt
8	45421	1	.75" x .035" Tube Clevis
9	45446	1	Center Trim Push/Pull Tube
10	45493	1	Trim Coupler Tube
11	10027	2	AN3-12A Bolt


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AFT RUDDER BELLCRANK AND RUDDER PEDAL PUSHROD ASSEMBLY

NOTE: BEFORE starting the following assembly sequence, drill and deburr FOUR [4] Contour Washers (11) to 1/4 (6.4 mm).

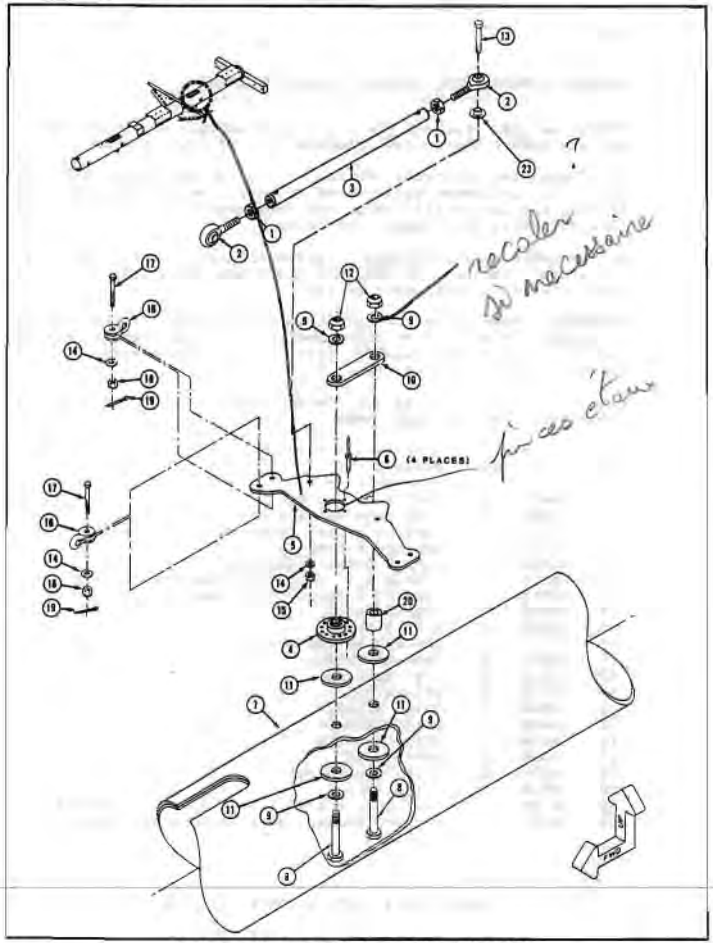
1. Clamp the Bellcrank Bearing (4) to the Bellcrank (5). Using FOUR [4] of the perimeter holes at 90 degrees to each other back-drill through the Bellcrank FOUR [4] places. Deburr the holes. Attach as illustrated.

2. Assemble as illustrated. Tighten ALL Locknuts to proper torque. Thread the Jam Nuts (1) "ALL THE AWAY" onto the Bearing (2) and insert the Bearing ALL THE WAY into the Pushrod (3). DO NOT OVER-TORQUE the Castle Nuts (18). Bend the Cotter Pins (19) ONLY enough to keep them from falling out. The Rudder Cables (not illustrated) will be added and adjusted in a later sequence.

NOTE: Only ONE [1] side attachment is shown for clarity. Attach the LEFT Pushrod (3) on the opposite side of Bellcrank (5).

OPTIONAL: Attach the Hardware (17,16,14,18 and 19) at this time or during Final Assembly (pages 7-4 and 7-5 / 7-6 and 7-7). DO NOT bend the Cotter Pins (19) until the Rudder Cables (not illustrated) are attached to the Shackles (16).

Item	P/N	Qty	Description
1	10631	4	1/4" - 28 Jam Nut
2	10700	4	1/4" Male Rod End Bearing
3	45484	2	Aft Rudder Pedal Pushrod Assembly
4	10702	1	Bellcrank Bearing
5	45474	1	Aft Rudder Pedal Bellcrank
6	20201	4	1/8" x 1/4" Grip Stainless Steel Rivet
7	45545		Forward Fuselage Tube Assembly
8	10080	2	AN4-13A Bolt
9	10560	4	1/4" Washer
10	45444	1	Forward Rudder Bracket
11	45095	4	Contour Washer
12	10510	2	1/4" Locknut
13	10025	1	AN3-11A Bolt
14	10550	6	3/16" Washer
15	10500	2	3/16" Locknut
16	20320	4	3/16" Shackle
17	10009	4	AN3-5 Bolt
18	10517	4	3/16" Castle Nut
19	10635	4	Cotter Pin
20	45572	1	1/2" O.D. x 1/4" I.D. x 5/8" Long Bushing
21	45110	2	Aft Rudder Cable
22	20241	4	"T" Bushing



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FORWARD RUDDER PEDAL ASSEMBLY AND ATTACHMENT

NOTE: BEFORE starting the following assembly sequence, drill out and deburr the Contour Washers (11) to 1/4" (6.4 mm).

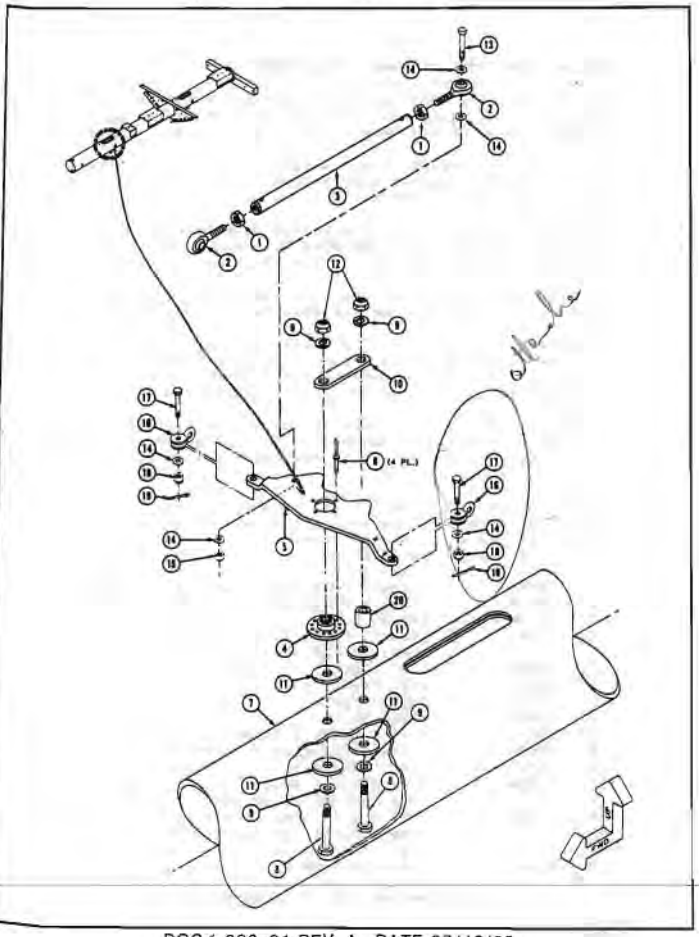
1. Clamp the Bellcrank Bearing (4) to the Bellcrank (5). Use FOUR (4) perimeter holes at 90 degrees to each other in the Bearing and back-drill thru the Bellcrank (5) with a 1/8" (3.2 mm) drill bit. Deburr the holes.

2. Assemble as illustrated. Tighten ALL Locknuts (12) and (15) to proper torque. DO NOT bend the Cotter Pins (19) at this time. (Refer to "Optional" below).

OPTIONAL: Some parts are NOT shown for clarity. You may refer to pages 7-4 and 7-5 at this time if you would like to attach the Forward Rudder Cables (21) (not illustrated on the opposite page) at this time.

Attach the Forward Rudder Pedal Pushrod Assembly (3) as illustrated for the RIGHT side.

Item	P/N	Qty	Description
1	10631	4	1/4" - 28 Jam Nut
2	10700	4	1/4" Male Rod End Bearing
3	45498	2	Forward Rudder Pedal Pushrod Assembly
4	10702	1	Bellcrank Bearing
5	45476	1	Rudder Pedal Bellcrank
6	20201	4	1/8" x 1/4" Grip Stainless Steel Rivet
7	45545		Forward Fuselage Tube Assembly
8	10080	2	AN4-13A Bolt
9	10560	4	1/4" Washer
10	45444	1	Forward Rudder Bracket
11	45095	4	Contour Washer
12	10510	2	1/4" Locknut
13	10020	2	AN3-7A Bolt
14	10550	4	3/16" Washer
15	10500	2	3/16" Locknut
16	20320	2	3/16" Shackle
17	10009	2	AN3-5 Bolt
18	10517	2	3/16" Castle Nut
19	10635	2	Cotter Pin
20	45572		1/2" O.D. x 1/4" I.D. x 5/8" Long Bushing
21	45108	2	Forward Rudder Cable (not illustrated)


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FORWARD YOKE TUBE ASSEMBLY ATTACHMENT

Before starting the following assembly sequence, ensure the the Bolt (8) will fit thru the hole in the Tab (16). If necessary enlarge and deburr the hole to 3/16" (4.8 mm).

1. Refer to Figure 1 and Detail 'A'. Insert the Forward Control Wheel Support Tube Assembly (1) as illustrated. Bend ALL Cotter Pins (7) correctly.

IMPORTANT: Cycle the Forward Yoke Tube Assembly (1) FORWARD and AFT. Verify the Tube DOES NOT contact the SIDES of the "Slot" (14). File the SIDE of the "Slot" if necessary.

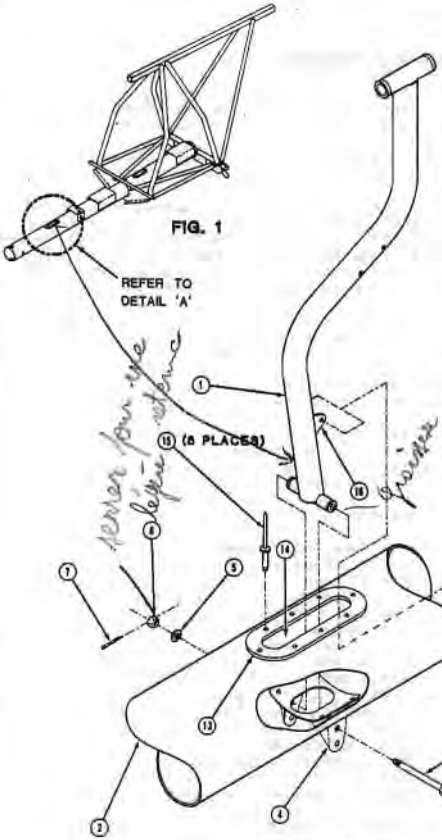
2. Slip the Guide (13) over the top of the Yoke Tube (1) and position it directly over the Yoke Control Guide Slot (14).

3. Refer to Figure 2 and 3. Drill and deburr EIGHT (8) 1/8" (3.2 mm) diameter holes through the Yoke Control Guide (13) at ALTERNATE "dimple" locations. Attach the Guide (13) to the Forward Fuselage Tube Assembly (2) with Rivets (15).

OPTIONAL: Attach the Forkbolt (9) to the Tab (16) on the AFT side of the Yoke Tube Assembly (1) with hardware (8,7 and 12). Align the Forkbolt with the Forward Elevator Push/Pull Tube (10) and thread the Tube onto the attached Forkbolt.

NOTE: Thread the Jam Nut "all the way" onto the Forkbolt. Thread the Forkbolt "nearly all the way" into the Fitting (18).

Item	P/N	Qty	Description
1	45548	1	Forward Yoke Tube Assembly
2	45545		Forward Fuselage Tube Assembly
3	10260	1	AN4-27 Bolt
4	45501		Control Stick Attach Bracket (part of P/N 45545)
5	10560	1	1/4" Washer
6	10521	1	1/4" Castle Nut
7	10635	2	Cotter Pin
8	10009	1	AN3-5 Bolt
9	10388		1/4" x 1" Full Thread Forkbolt
10	45438		Forward Elevator Push/Pull Tube
12	10517	1	3/16" Castle Nut
13	45550	1	Yoke Control Guide
14			Yoke Control Guide Slot
15	20200	8	1/8" x 1/4" Grip Aluminum Rivet (AAP-44)
16			Yoke Support Tab (part of P/N 45548)
17	10631		1/4" - 28 Jam Nut
18	45464		Elevator Push/Pull Tube Fitting


FIG. 1
REFER TO DETAIL 'A'
(15) (8 PLACES)
(13) DRILL 1/8" (3.2 MM) (8 PLACES) AS ILLUSTRATED.
FIG. 2
TOP VIEW
FIG. 3
90°
END VIEW

DETAIL 'A'

AFT YOKE TUBE ASSEMBLY ATTACHMENT

Before starting the following assembly sequence, ensure the the Bolt (8) will fit thru the hole in the Tabs (19) and (20). If necessary enlarge and deburr the hole to 3/16" (4.8 mm).

1. Refer to Figure 1 and Detail 'A'. Insert the Aft Yoke Tube (1) as illustrated. Bend ALL Cotter Pins (7) correctly.

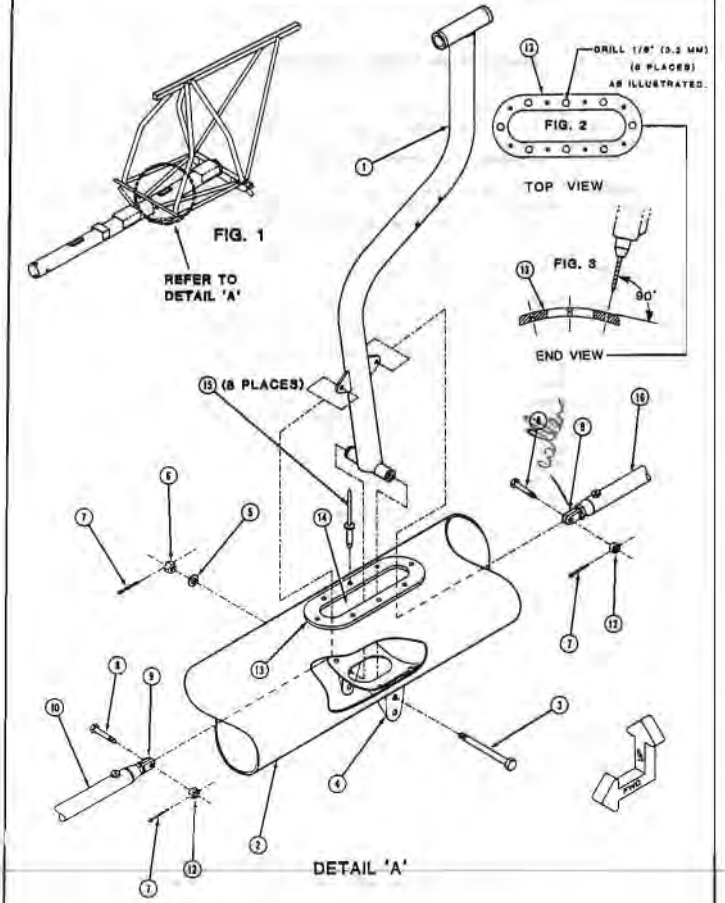
NOTE: Adjust the Forkbolt (9), ONE (1) located at each end of the Forward Elevator Push/Pull Tube (10), as required to achieve the APPROXIMATELY the SAME amount of travel between the Forward and Aft Yoke Tube Assemblies. Both Yokes should be adjusted so they come into contact with the AFT edge of the Yoke Guide (13) when each Yoke is in the AFT position.

IMPORTANT: Cycle the Aft Yoke Tube Assembly (1) FORWARD and AFT. Verify the Tube DOES NOT contact the edge of the "Slot" (14). File the edge of "Slot" if necessary.

2. Slip the Yoke Control Guide (13) over the top of the AfT Yoke Tube (1) and position it over the Guide Slot (14).

3. Refer to Details 'A' and 'B '. Drill and deburr EIGHT (8) 1/8" (3.2 mm) diameter holes through the Yoke Control Guide (13) at ALTERNATE "dimple" locations. Attach the Guide (13) to the Forward Fuselage Tube Assembly (2) with the Rivets (15).

Item	P/N	Qty	Description
1	45558	1	Aft Yoke Tube Assembly
2	45545		Forward Fuselage Tube Assembly
3	10260	1	AN4-27 Bolt
4	45501		Control Stick Attach Bracket (part of P/N 45545)
5	10560	1	1/4" Washer
6	10521	1	1/4" Castle Nut
7	10635	2	Cotter Pin
8	10009	1	AN3-5 Bolt
9	10390		1/4" x 1 1/2" Forkbolt
10	45438		Forward Elevator Push/Pull Tube
12	10517	2	3/16" Castle Nut
13	45550	1	Yoke Control Guide
14			Yoke Control Guide Slot
15	20200	8	1/8" x 1/4" Grip Aluminum Rivet (AAP-44)
16	45439		Center Elevator Push/Pull Tube
17	10631		1/4" - 28 Jam Nut
18	45464		Elevator Push/Pull Tube Fitting
19			Forward Tab (part of P/N 45558)
20			Aft Tab (part of P/N 45558)

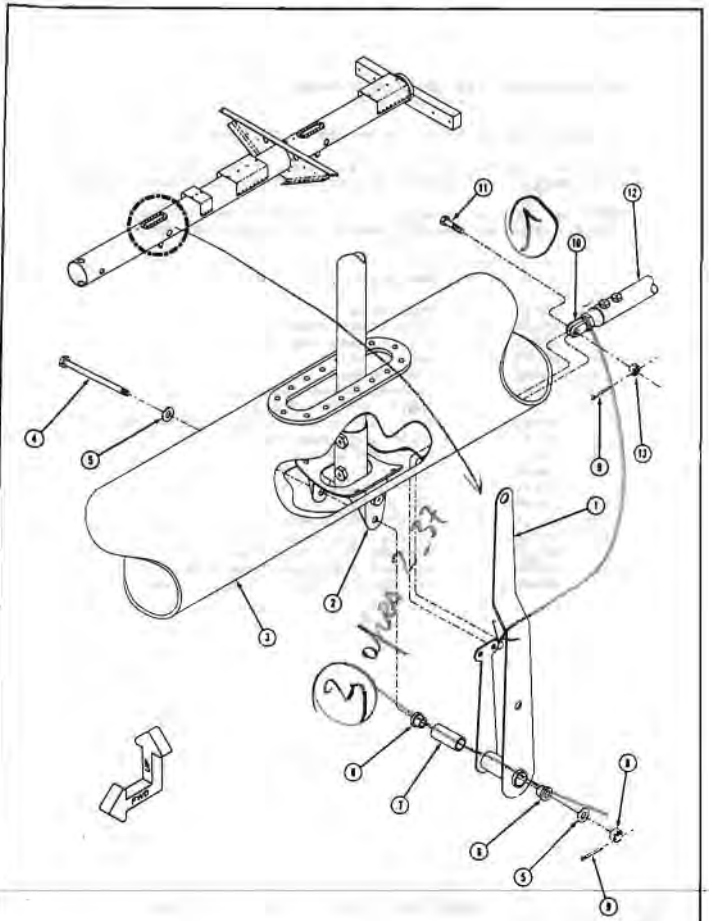

FIG. 1
REFER TO DETAIL 'A'
DRILL 1/8" (3.2 MM) (8 PLACES) AS ILLUSTRATED.
FIG. 2
TOP VIEW
FIG. 3
90°
END VIEW
(8 PLACES)
DETAIL 'A'

FORWARD ELEVATOR TRIM LEVER ATTACHMENT

1. Assemble as illustrated. Bend the Cotter Pin (9) attached to Bolt (11) correctly. DO NOT bend the Cotter Pin (9) attached to Bolt (4). This Cotter Pin is to be bent in a later assembly sequence on pages 2-26 and 2-37.

NOTE: If the Bearing (6) requires "pressing" into place use a Rubber Hammer or Leather Hammer ONLY on ONE (1) end and a block of wood against the opposite end.

Item	P/N	Qty	Description
1	45525	1	Trim Lever Assembly
2	45501		Control Stick Attach Bracket (part of P/N 45545)
3	45545		Forward Fuselage Tube
4	10295	1	AN4-46 Bolt
5	10560	4	1/4" Washer
6	30003	2	3/8" I.D. x 1/2 O.D. Flanged Bearing
7	45521	1	Trim Lever Bushing
8	10521	1	1/4" Castle Nut
9	10635	2	Cotter Pin
10	10388		1/4" x 1" Full Thread Forkbolt
11	10009	1	AN3-5 Bolt
12	45445		Forward Trim Push/Pull Tube
13	10517	1	3/16" Castle Nut



2-34

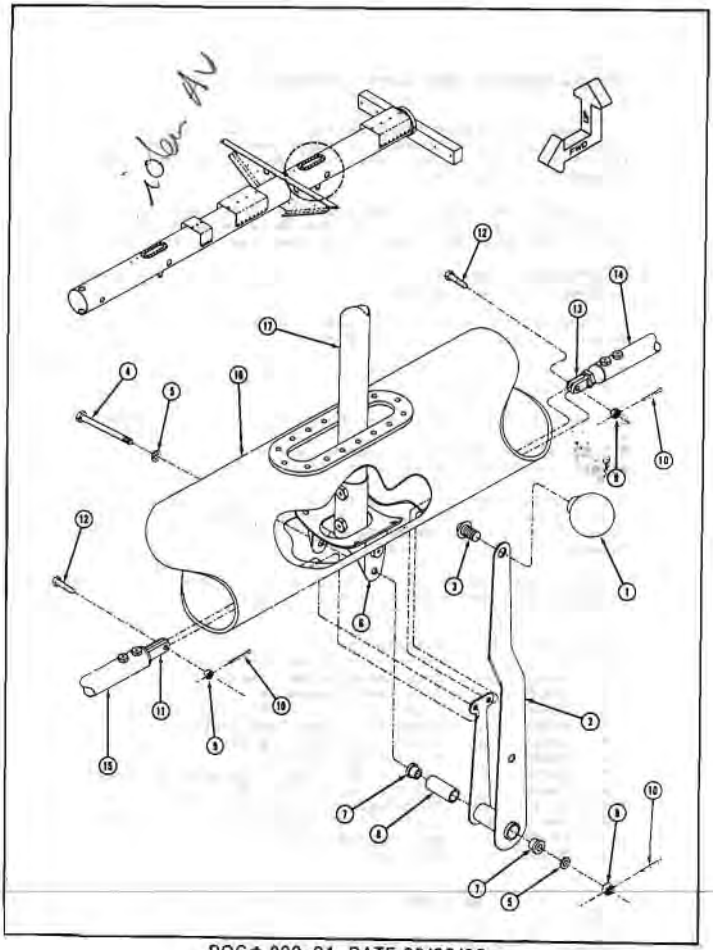
AFT ELEVATOR TRIM LEVER ATTACHMENT

1. Assemble as illustrated. Bend ALL Cotter Pins correctly.

NOTE 1: Use a 7/32" (5.5 mm) Allen or Hex Wrench to attach the Ball Grip (1). Tighten the Cap Screw (3) to proper torque.

NOTE 2: If the Bearing (6) needs to be "pressed" into place use a Rubber or Leather Hammer or a block of wood.

Item	P/N	Qty	Description
1	90499	1	Ball Grip
2	45525	1	Trim Lever Assembly
3	10391	1	Button Head Cap Screw
4	10295	1	AN4-46 Bolt
5	10560	2	1/4" Washer
6	45581		Control Stick Attach Bracket (part of P/N 45545)
7	30003	2	3/8" I.D. x 1/2" O.D. Flanged Bearing
8	45521	1	Trim Lever Bushing
9	10521	1	1/4" Castle Nut
10	10635	3	Cotter Pin
11	45421		.75" x .035" Tube Clevis
12	10009	2	AN3-5 Bolt
13	10517	2	3/16" Castle Nut
14	45446	1	Center Trim Push/Pull Tube
15	45445		Forward Trim Push/Pull Tube
16	45545		Forward Fuselage Tube Assembly
17	45539		Aft Control Wheel Support Tube


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FORWARD ELEVATOR TRIM LEVER ATTACHMENT

1. Refer to Figure 1 and Detail 'A'. Align the "slit" in the Trim Lever Guide Bracket (1) OVER the Trim Lever (2). Insert the TOP of the Trim Lever through the Bracket. Slide the Bracket into position.

2. Insert the Bolt (3) through the Trim Lever (2) as illustrated. You will need to use the hole located in the SIDE of the Forward Fuselage Tube (4) to position the Bolt properly.

3. Thread a Jam Nut (5) onto the Bolt (3) "all the way". Tighten to proper torque.

4. Remove the protective paper covering from the Plastic Washer (7) and slide on the Washer.

5. Align the Bolt (3) with the "Cut Out Slot" in the side of the Bracket (1).

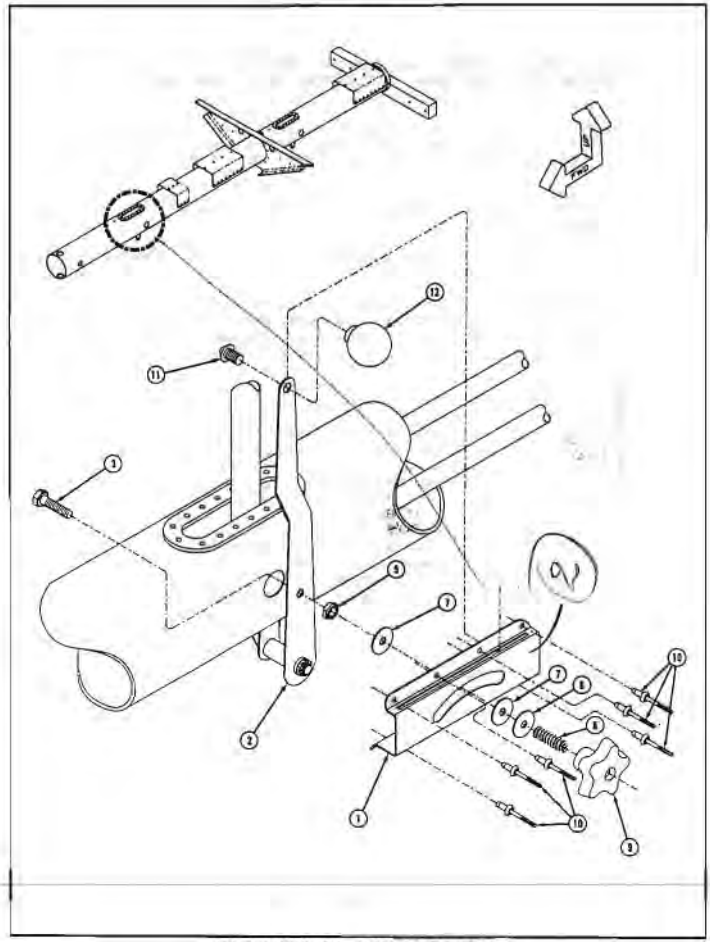
6. Add another Plastic Washer (7) then a Fender Washer (6).

7. Slide the Spring (8) OVER the end of the Bolt (3) and attach the Trim Friction Knob (9).

8. Position the Bracket (1) as to allow FULL Travel of the Trim Lever (2). Back-drill thru the EXISTING 3/16" (4.8 mm) diameter attachment holes in the Bracket (1) and install the Rivets (10) SIX [6] places.

9. Bend the Cotter Pin (not illustrated) previously installed on pages 2-32 and 2-33 correctly.

Item	P/N	Qty	Description
1	45529	1	Trim Lever Guide Bracket
2	45525	1	Trim Lever Assembly
3	10433	1	5/16"-18 x 1 1/2" Full Thread Bolt
4	45545	1	Forward Fuslage Tube Assembly
5	10544	1	5/16" - 18 Thin Jam Nut
6	10600	1	5/16" Fender Washer
7	20338	2	.38 x 1.25 x .06 Thick Plastic Washer
8	10825	1	.42 O.D. x .69 Long Spring
9	45549	1	Trim Friction Knob
10	20214	6	3/16" x 1/8" Aluminum Rivet (AAPQ-62)
11	10391	1	Button Head Cap Screw
12	90499	1	Ball Grip



ROLLER MOUNT CHANNEL AND LANDING GEAR DRAG BRACKET ATTACHMENT TO LANDING GEAR CARRY THRU

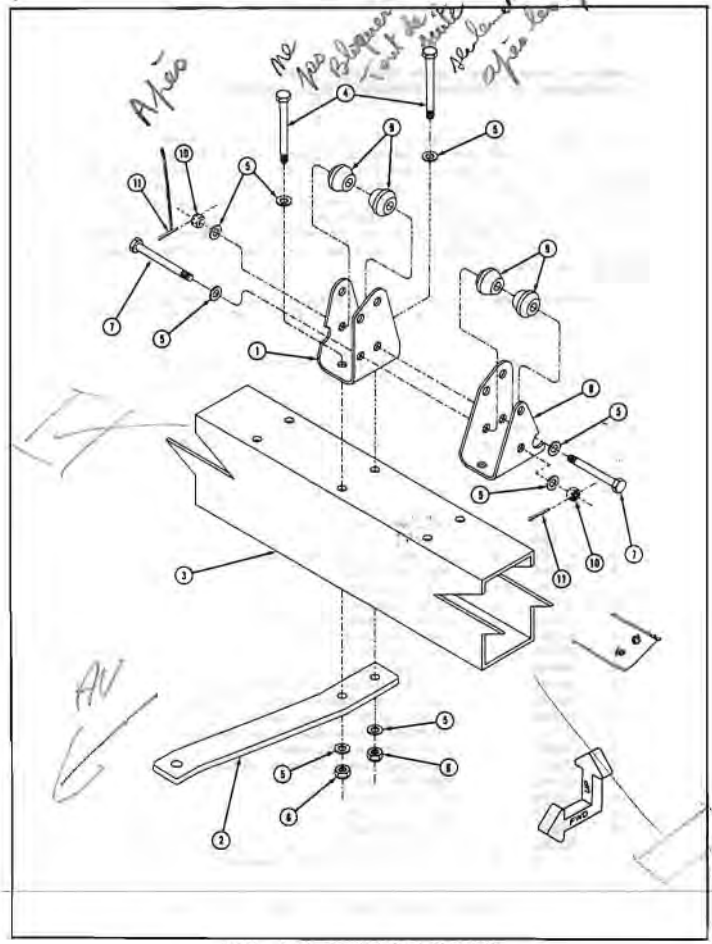
IMPORTANT: Before starting the following sequence positive identification of the TOP side of the Landing Gear Carry Thru (3) must be made. The TOP side has TEN (10) holes drilled in it.

1. Assemble as illustrated. Tighten Locknuts (6) to proper torque.

NOTE: You will be attaching the Roller Mount Channels (1) and (8) to each other.

IMPORTANT: DO NOT OVER TORQUE the Castle Nuts (10). Verify ALL Rollers (9) rotate freely BEFORE securing the Cotter Pins (11). DO NOT Bend the Cotter Pins at this time as they will be secured in a later sequence on pages 2-80 and 2-81.

Item	P/N	Qty	Description
1	45499	1	Roller Mount Channel
2	45413	1	Landing Gear Drag Bracket
3	45487	1	Landing Gear Carry Thru
4	10291	2	AN4-35A Bolt
5	10560	8	1/4" Washer
6	10510	2	1/4" Locknut
7	10160	2	AN4-17 Bolt
8	45497	1	Trim Roller Mount Channel
9	45551	4	Push/Pull Roller
10	10521	2	1/4" Castle Nut
11	10635	2	Cotter Pin


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LANDING GEAR CARRY THRU ASSEMBLY AND ATTACHMENT TO FORWARD FUSELAGE TUBE ASSEMBLY

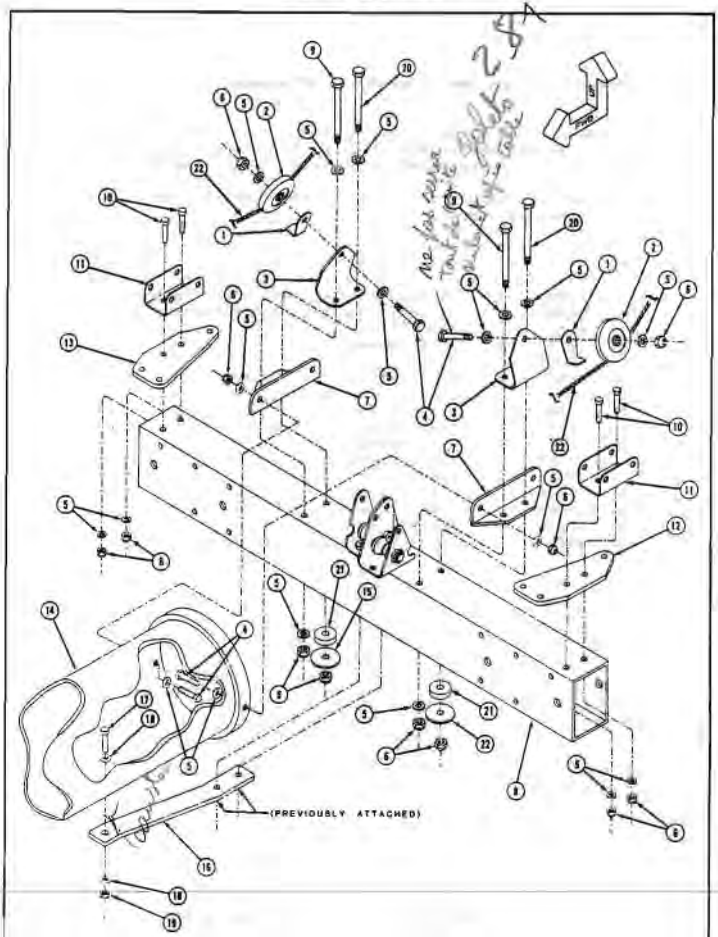
IMPORTANT: Position each of the Aft Rudder Cables (22) properly into the BOTTOM groove of each Pulley (2) and ensure the Pulley Guard (1) is properly positioned, as illustrated, to keep the Rudder Cables from "popping" out of the Pulley. Tighten the Locknuts (6) to the proper torque. Do not allow the Pulley Guard to rotate past the VERTICAL position as it would rub on the Rudder Cables after final attachment. After attachment coil each end of the Rudder Cables as the ends will be attached in a later sequence.

1. Assemble as illustrated. Tighten ALL Locknuts to proper torque EXCEPT for the following which should be FINGER TIGHT ONLY.

The Locknuts (6) on Bolts (20) as the Lower Center and Lower Aft Fairings will be attached at this location in a later sequence.

NOTE: The Landing Gear Drag Bracket (16) has been previously installed. It is illustrated in exploded view for clarity.

Item	P/N	Qty	Description
1	91110	2	Pulley Guard
2	91108	2	1 3/4" Pulley
3	45417	2	Rudder Pulley Bracket
4	10066	4	AN4-10A Bolt
5	10560	14	1/4" Washer
6	10510	10	1/4" Locknut
7	45416	2	Boom Attach Bracket
8	45487		Landing Gear Carry Thru
9	10291	2	AN4-35A Bolt
10	10060	4	AN4-6A Bolt
11	45500	2	1 1/8" Double Channel
12	45401	1	Left Side Strut Attach Plate
13	45402	1	Right Side Strut Attach Plate
14	45545		Forward Fuselage Tube Assembly
15	10565	2	1/4" Fender Washer
16	45413	1	Landing Gear Drag Bracket
17	10305	1	AN5-10A Bolt
18	10570	2	5/16" Washer
19	10540	1	5/16" Locknut
20	10296	2	AN4-40A Bolt
21	20346	2	1/4" Thick x 1" O.D. Nylon Washer
22	45110	2	Aft Rudder Cable Assembly

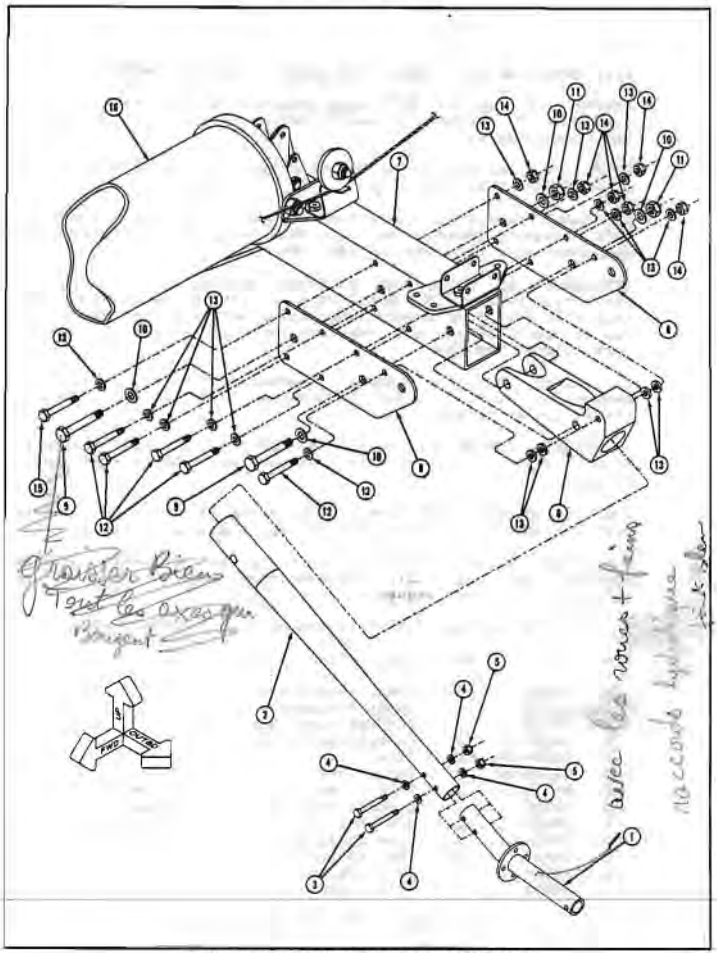

(PREVIOUSLY ATTACHED)

LANDING GEAR LEG AND STRUT PLATE ATTACHMENT

1. Assemble as illustrated. Tighten ALL Locknuts to proper torque EXCEPT the Locknut (14) on Bolt (15). The Aft Seat Belt (LEFT half) will be attached at this location later.

2. Assemble the opposite side of the Landing Gear Carry Thru (7) in "mirror image".

Item	P/N	Qty	Description
1	45369	2	20 Degree, 3/4" Axle Shaft Assembly
2	45365	2	Landing Gear Leg w/.75" Socket
3	10027	4	AN3-12A Bolt
4	10550	8	3/16" Washer
5	10500	4	3/16" Locknut
6	45455	2	Landing Gear Leg Fitting
7	45463		Landing Gear Carry Thru
8	45403	4	Strut Plate
9	10397	6	AN6-27A Bolt
10	10575	12	3/8" Washer
11	10547	6	3/8" Locknut
12	10240	10	AN4-26A Bolt
13	10560	24	1/4" Washer
14	10510	12	1/4" Locknut
15	10270	2	AN4-30A Bolt
16	45545		Forward Fuselage Tube Assembly



MAIN WHEEL AND NOSE WHEEL/TIRE ASSEMBLY AND ATTACHMENT

BEFORE starting the following sequence run the Nuts (1) onto the Bolts (2) SEVERAL times to reduce friction in the Nut and ease installation.

NOTE: This is one of the few EXCEPTIONS to the DO NOT USE A LOCKNUT MORE THAN ONCE RULE.

OPTIONAL: Remove ALL Sharp Edges around BOTH Hubs (3) and (4) with a file to prevent the Tube from being pinched by the Hubs and creating a slow leak in the Tube.

OPTIONAL: Lay a bead of silicone sealant around the TWO contacting edges of the Wheel Hubs (3) and (4) as it is rumored this will retard or prevent additional damage of the Tube (6) due to ozone. If you bead the Hubs you will be UNABLE to hear them "click" together.

2. Inflate the tire slightly. Assemble THREE (3) Wheel/Tire assemblies as illustrated. Tighten ALL Bolts (2) and Locknuts (1) to proper torque.

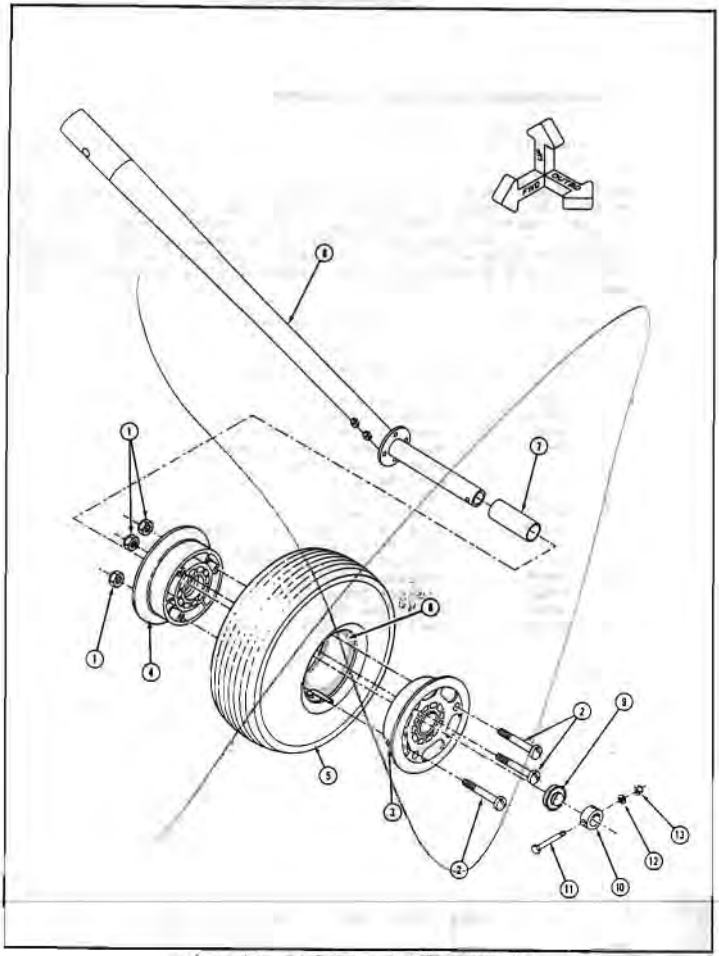
IMPORTANT: BEFORE tightening the BOLTS (2) ensure the Wheel Hubs "click" togther as this assures the Tube is NOT being pinched.

CAUTION: DO NOT OVER-TORQUE the Bolts (2) as it WILL "strip out" the seat in the Wheel Hub (4) for the Locknut (1).

3. Attach a Wheel/Tire Assembly to the opposite (RIGHT) Landing Gear Leg (12). The remaining Nose Wheel will be attached in a later sequence.

4. Inflate the each Tube/Tire Assembly to a MAXIMUM of 30 psi.

Item	P/N	Qty	Description
1	10396	6	Wheel Hardware Nut
2	10395	6	Wheel Hardware Bolt
3	20460	2	NOTCHED Wheel Hub
4	20461	2	Un-Notched Wheel Hub
5	20390-01	2	Tire
6	20390-02	2	Inner Tube
7	91273	2	7/8" x .049" x 2.43" Long Spacer
8	45365		Landing Gear Leg w/.75" Socket
9	20455	2	3/4" I.D. x 1.375 " O.D. Sealed Bearing
10	20031	2	Axle Shaft Collar
11	10027	2	AN3-12A Bolt
12	10550	2	3/16" Washer
13	10500	2	3/16" Locknut


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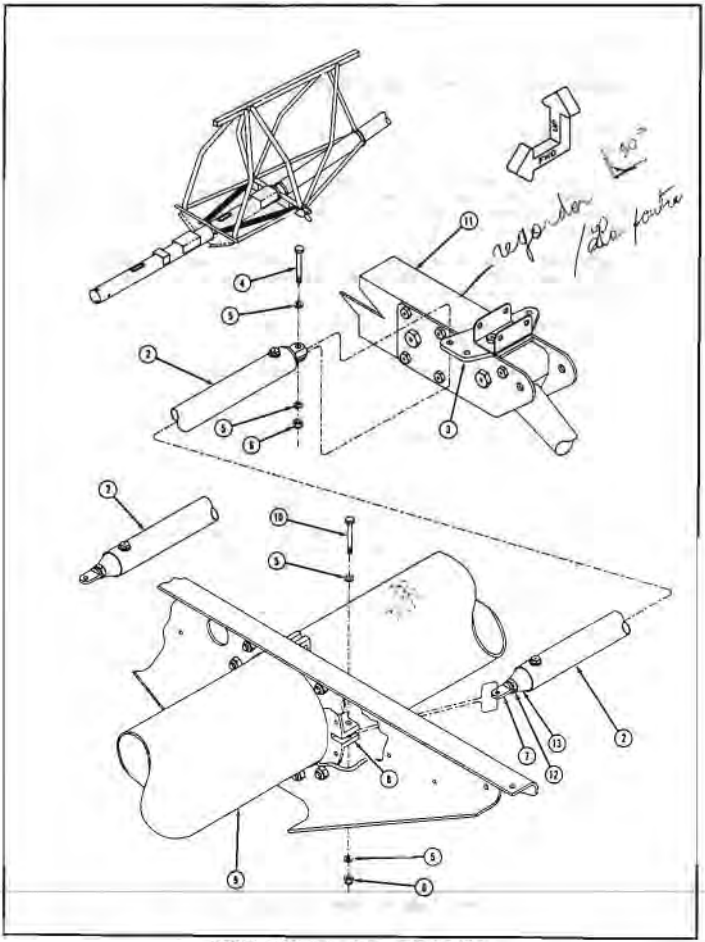
INBOARD FORWARD SIDE STRUT ATTACHMENT

1. Assemble as illustrated. Tighten ALL Locknuts to proper torque.

NOTE: Ensure the Landing Gear Carry Thru (11) is positioned EXACTLY 90 DEGREES to the Forward Fuselage Tube. Adjust Eyebolt (7) as required. A MAXIMUM of TWO to THREE Threads of the Eyebolt (7) may be visible during attachment. The distance between FORWARD and AFT Strut attach points should be IDENTICAL between BOTH Struts (2). After adjustment tighten Jam Nut (12) against the Fitting (13).

2. Assemble the opposite (RIGHT) side in "mirror image".

Item	P/N	Qty	Description
1	45470		1" Aluminum Fork
2	45430	2	Inboard Forward Side Strut
3	45401	1	Left Side Strut Attach Plate
	45402	1	Right Side Strut Attach Plate (not illustrated)
4	10066	4	AN4-10A Bolt
5	10560	8	1/4" Washer
6	10510	4	1/4" Locknut
7	10377		5/16" x 1 3/32" Full Thread Eyebolt
8			Tail Boom Flange (part of P/N 45545)
9	45545		Forward Fuselage Tube Assembly
10	10070	2	AN4-12A Bolt
11	45463		Landing Gear Carry Thru
12	10542		5/16" Jam Nut
13	45468		Tail Boom Strut Fitting


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RUDDER PEDAL ASSEMBLY AND ATTACHMENT

NOTE: Details 'B', 'C' and 'D' illustrate the RIGHT FORWARD Pedal (1) ONLY.

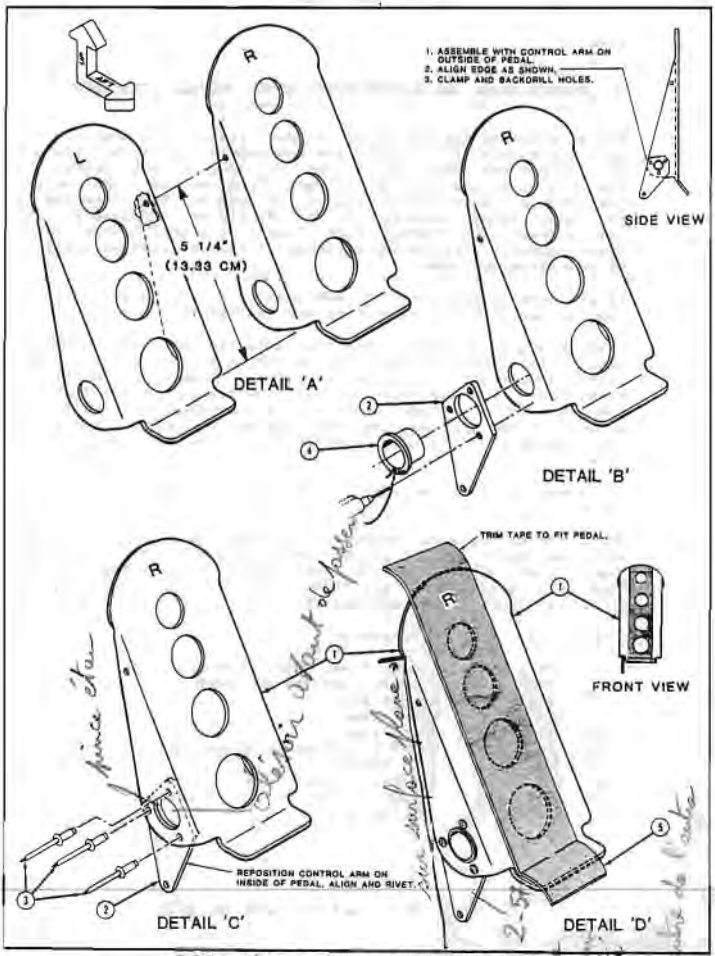
1. Use the Bearing (4) to position the Arm (2). Clamp the Arm and Pedal (1) together. Drill and deburr FOUR 3/16" (4.7 mm) diameter holes in the RIGHT FORWARD Pedal (1) ONLY as illustrated in Detail 'B'.

IMPORTANT: The Nose Wheel Control Arm (2) is NOT symmetrical. Look closely. The 1" (25.4 mm) diameter hole offsets toward the AFT end or rearward.

2. Assemble the LEFT FORWARD Pedal in "mirror image" of Details 'B','C' and 'D'.

3. Assemble BOTH AFT Pedals EXCEPT refer to Details 'A' and 'D' ONLY.

Item	P/N	Qty	Description
1	70231	4	Foot Pedal
2	45486	2	Nose Wheel Control Arm
3	20193	6	3/16" x 1/4" Grip Steel Rivet (BSPQ-64)
4	70250	2	7/8" I.D. Plastic Flange Bearing
5	20190	4	2" x 10" Non-Skid Tape


1. ASSEMBLE WITH CONTROL ARM ON OUTSIDE OF PEDAL.
2. ALIGN EDGE AS SHOWN.
3. CLAMP AND BACKDRILL HOLES.
SIDE VIEW
R
L
5 1/4"
(13.33 CM)
DETAIL 'A'
R
2
4
DETAIL 'B'
TRIM TAPE TO FIT PEDAL.
R
1
FRONT VIEW
R
1
REPOSITION CONTROL ARM ON INSIDE OF PEDAL, ALIGN AND RIVET.
3
2
DETAIL 'C'
R
1
3
DETAIL 'D'

AFT RUDDER PEDAL AND RUDDER PEDAL MOUNT CHANNEL ATTACHMENT

BEFORE starting the following sequence install the Bearings (6) into the Pedals (7). Install the Bearings (6) into the Channels (1). Insert the Pedal Mount Tube (8) through each Pedal, one one at a time, and rotate the each Pedal on the Tube. Verify the Pedals rotate freely. Repeat the same for the Bearings in the Pedal Mount Channels. If the Pedals or Channels DO NOT rotate freely the Rudder (Foot) Pedals will feel "stiff" after Final Assembly. The INSIDE diameter of the Bearings may need to be additionally reamed.

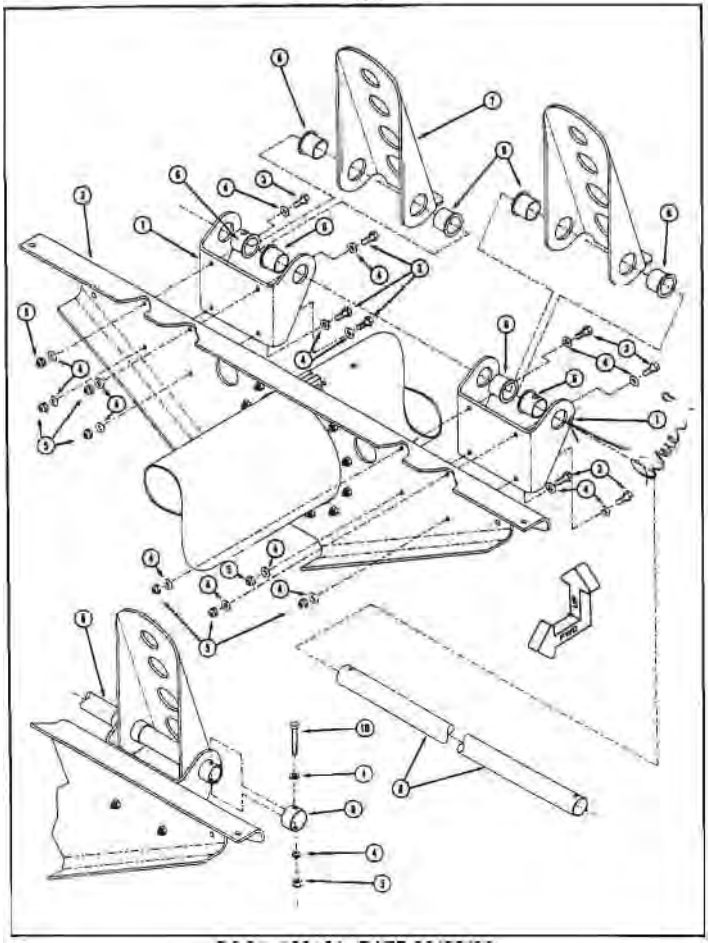
If you need to ream and DO NOT have 7/8" (22.22 mm) ream or reaming tool you can substitute the following:

Find a small diameter tube that will fit into your Electric Drill. Slot ONE end only long enough to fit a piece of Emery Cloth. Insert the tube into the Drill. Insert one end of the Emery Cloth into the Slot and continue wrapping a small amount (as required) of Emery Cloth around the tube in the direction of Drill rotation. Ream the Bearings as necessary as the allow the Pedals and Channels to ROTATE FREELY on the Pedal Mount Tube.

1. Assemble as illustrated. Tighten ALL Locknuts to proper torque.

NOTE: AFTER the Pedal Mount Tube (8) and Pedals (7) have been attached insert the Collar (9) OVER the end of the Pedal Mount Tube. ALIGN the holes in the Pedal Mount Tube and the Collar. Back-drill through the EXISTING 3/16" (4.7 mm) holes in the Collar and through the Bearing (6).

Item	P/N	Qty	Description
1	45411	2	Rudder Pedal Mount Channel
2	45404		Forward Fuselage Bulkhead
3	10010	8	AN3-5A Bolt
4	10550	16	3/16" Washer
5	10500	8	3/16" Locknut
6	70250	8	7/8 " I.D. Plastic Flange Bearing
7	70231	2	Foot Pedals
8	45432	1	Aft Pedal Mount Tube
9	45478	2	1 1/8" x .049" x .50" Collar
10	10035	2	AN3-14A Bolt



AFT RUDDER PEDAL PUSHROD ASSEMBLY TO FOOT PEDAL ATTACHMENT

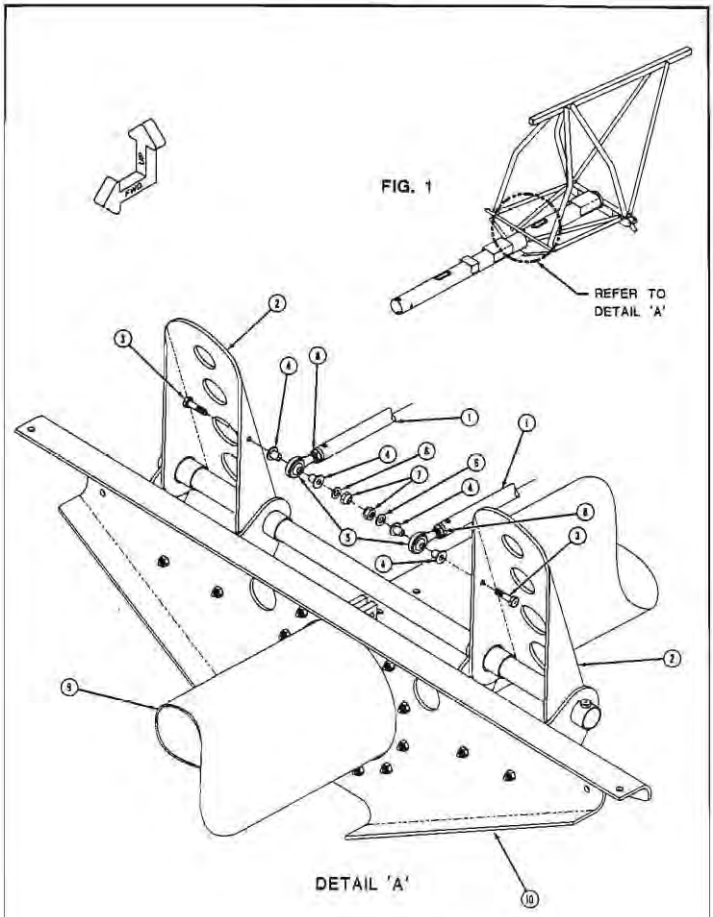
1. Refer to Figure 1 and Detail 'A'. Assemble as illustrated. Tighten ALL Locknuts (7) to proper torque.

OPTIONAL: You may tighten the Jam Nuts (8) against the Aft Rudder Pedal Pushrods (1) at this time or they may be tightened during the final assembly sequence.

NOTE: Adjustment for the AFT Foot Pedals (2) is provided by rotating the Aft Rudder Pedal Pushrod Assembly (1) on the Male Rod End Bearing (5) located at each end of the Pushrod. The angle of the Pedals may be adjusted for comfort by adjusting the Pushrod. Tighten the Jam Nut (8) when adjustment is complete.

IMPORTANT: Each Male Rod End Bearing (5) must have a MINIMUM of TEN (10) threads INSIDE each end of the Aft Rudder Pedal Pushrod Assembly (1).

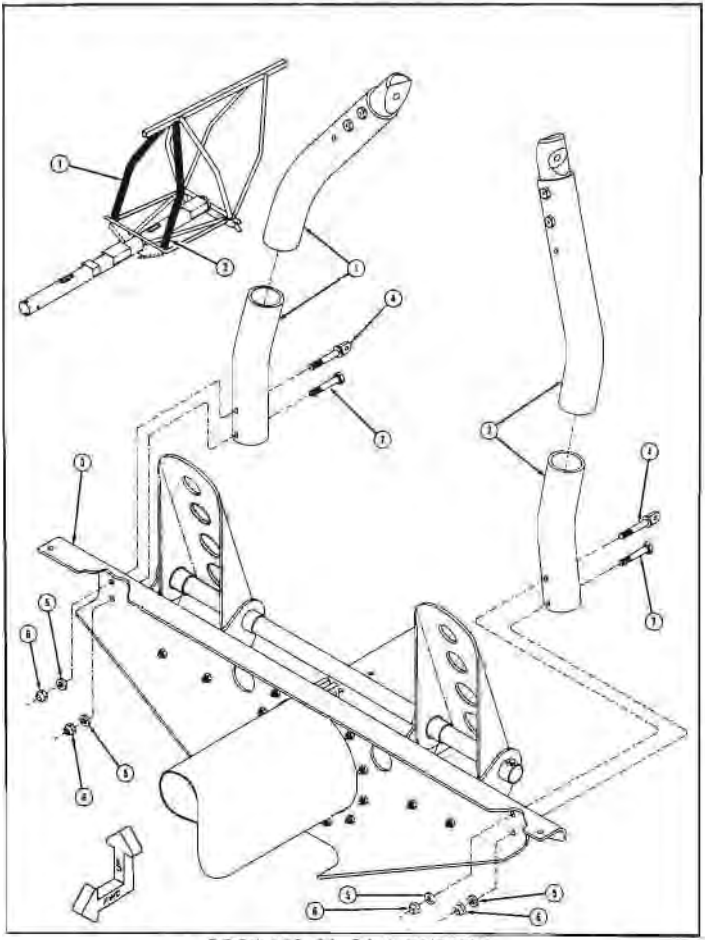
Item	P/N	Qty	Description
1.	45484	2	Aft Rudder Pedal Pushrod Assembly
2.	70231		Foot Pedal
3.	10027	2	AN3-12A Bolt
4.	20241	4	"T" Bushing
5.	10700		1/4" - 28 Male Rod End Bearing
6.	10550	2	3/16" Washer
7.	10500	2	3/16" Locknut
8.	10631		1/4" - 28 Jam Nut
9.	45545		Forward Fuselage Tube Assembly
10.	45404		Forward Fuselage Bulkhead (part of P/N 45545)


FIG. 1
REFER TO
DETAIL 'A'
DETAIL 'A'

FORWARD FUSELAGE DOWNTUBE ATTACHMENT

1. Assemble as illustrated. Tighten ALL Locknuts to proper torque.

Item	P/N	Qty	Description
1	45469	1	Right Forward Fuselage Downtube
2	45471	1	Left Left Forward Fuselage Downtube
3	45404		Forward Fuselage Bulkhead
4	10372	2	AN43B-20A Eyebolt
5	10560	8	1/4" Washer
6	10510	4	1/4" Locknut
7	10170	2	AN4-20A Bolt
8	45545		Forward Fuselage Tube Assembly



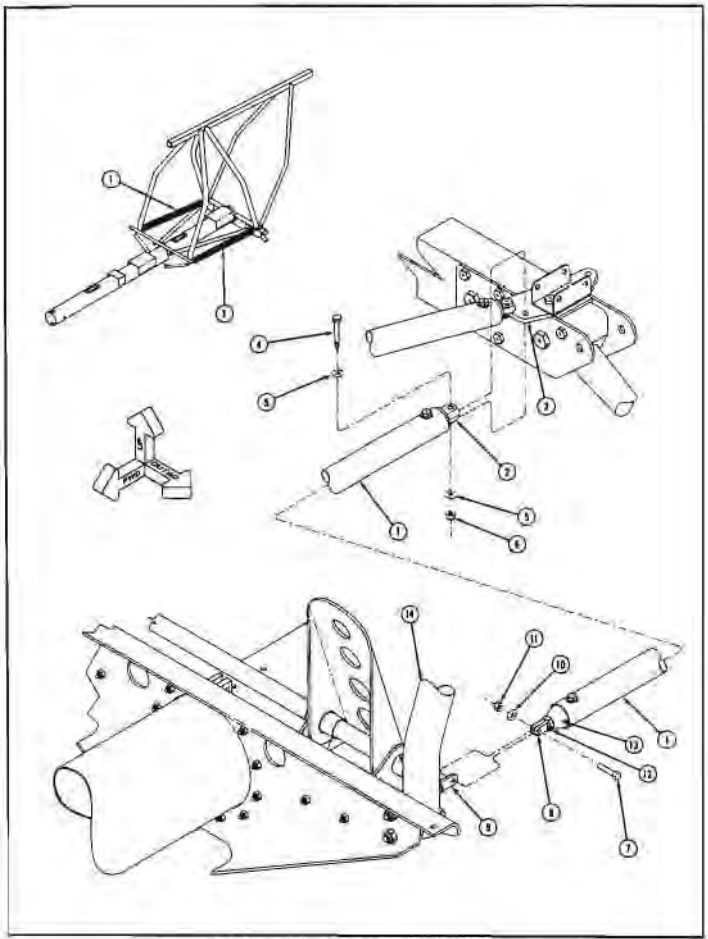
OUTBOARD FORWARD SIDE STRUT ATTACHMENT

1. Assemble as illustrated. Tighten ALL Locknuts to proper torque.

NOTE: Adjust the Forkbolt (8) as required for proper alignment. Tighten the Jam Nut (12) against the Fitting (13) when alignment is complete.

2. Attach the opposite side in 'mirror image'.

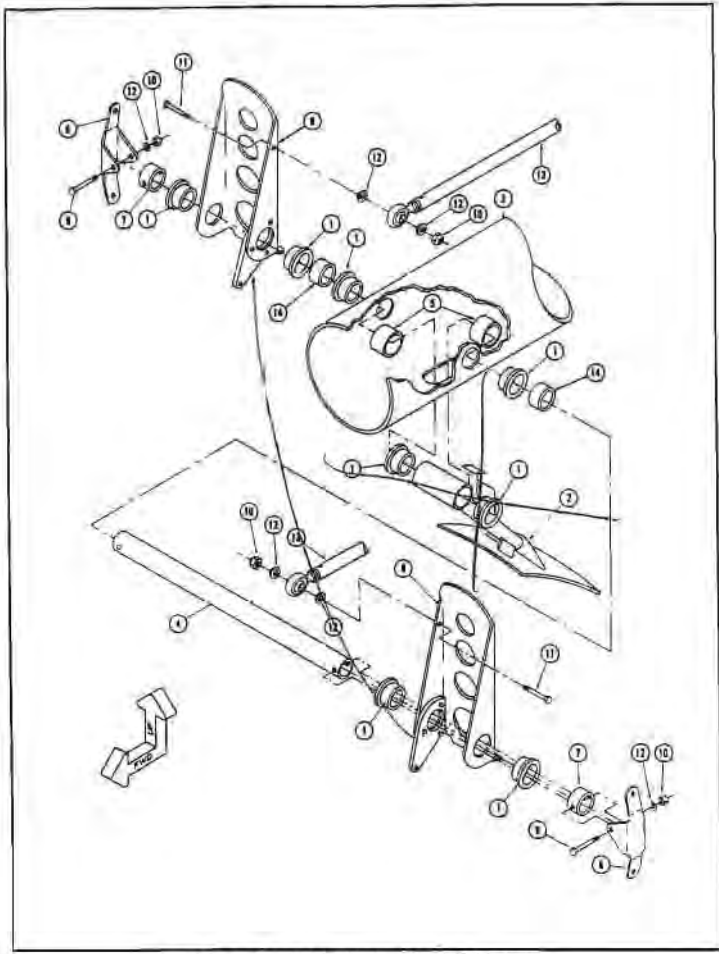
Item	P/N	Qty	Description
1	45431	2	Outboard Forward Side Strut
2	45470		1" Aluminum Fork
3	45401		Left Side Strut Attach Plate
	45402		Right Side Strut Attach Plate (not illustrated)
4	10066	2	AN 4-10A Bolt
5	10560	4	1/4" Washer
6	10510	2	1/4" Locknut
7	10010	2	AN3-5A Bolt
8	10388		1/4" x 1" Full Thread Forkbolt
9	10372		AN43B-20A Eyebolt
10	10550	2	3/16" Washer
11	10500	2	3/16" Locknut
12	10631		1/4" Jam Nut
13	45827		1/4" - 28 Fuselage Strut Fitting
14	45471		Left Forward Fuselage Downtube


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14
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12
13
1
8
9
7

FORWARD RUDDER PEDAL AND RUDDER PEDAL ATTACHMENT

1. Assemble as illustrated. Tighten ALL Locknuts to proper torque.

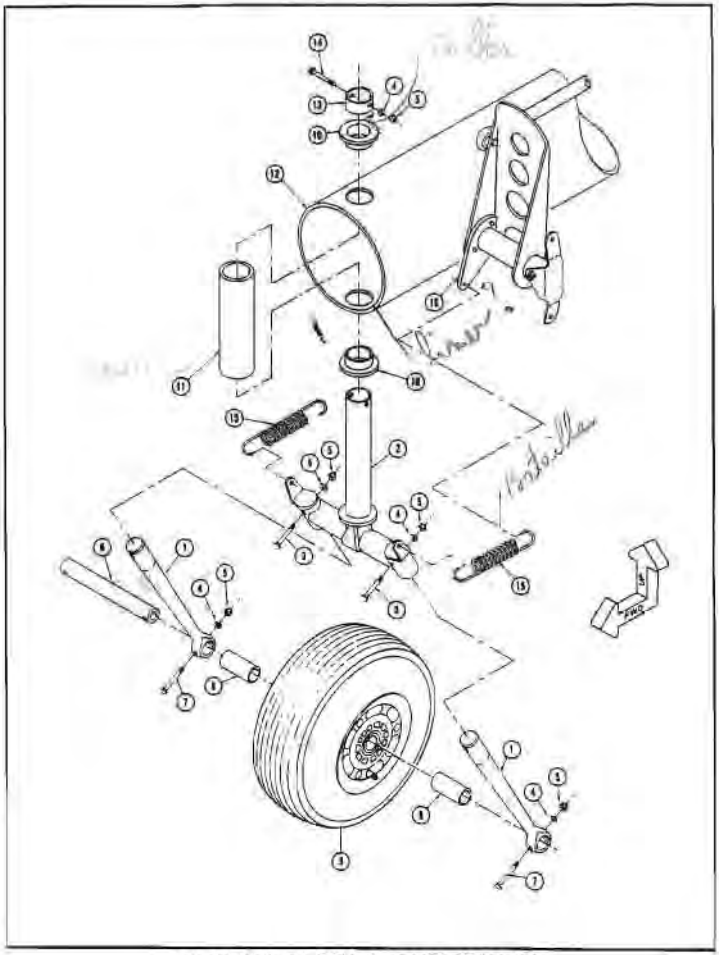
Item	P/N	Qty	Description
1	70250	8	7/8" I.D. Plastic Flange Bearing
2	45530	1	Nose Wheel Brake Assembly
3	45545		Forward Fuselage Tube Assembly
4	45433	1	Forward Pedal Mount Tube
5	45481	2	1" x .058" x 1/2" Spacer
6	70231		Rudder (Foot) Pedal
7	45435	2	Rudder Bar Sleeve
8	45450	2	Forward Pilot Fairing Mount
9	10035	2	AN3-14A Bolt
10	10500	4	3/16" Locknut
11	10024	2	AN3-10 Bolt
12	10550	6	3/16" Washer
13	45498	2	Forward Rudder Pedal Pushrod Assembly
14	45481	2	1" x .058" x 1/2" Spacer



NOSE WHEEL ASSEMBLY AND ATTACHMENT

1. Assemble as illustrated. Tighten ALL Locknuts to proper torque.

Item	P/N	Qty	Description
1	45460	2	Nose Fork Strut
2	45512	1	Nose Fork Assembly
3	10027	2	AN3-12A Bolt
4	10550	5	3/16" Washer
5	10500	5	3/16" Locknut
6	45480	1	GT Nose Axle
7	10030	2	AN3-13A Bolt
8	45479	2	GT Nose Axle Spacer
9	.....	.....	Wheel/Tire/Tube Assembly
10	30006	2	Oilite Bearing
11	45505	1	Nose Fork Spacer
12	45545	.....	Forward Fuselage Tube Assembly
13	45478	1	Nose Fork Retaining Ring
14	10035	1	AN3-14A Bolt
15	10802	2	Pedal Hinge Spring
16	45477	.....	Nose Wheel Control Arm

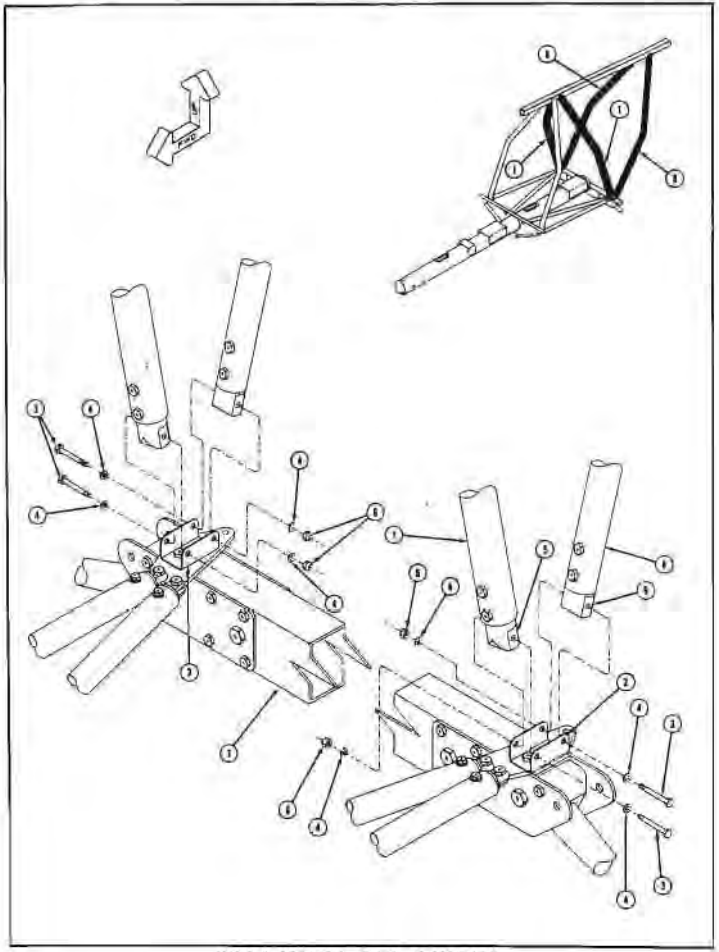


2-60

FORWARD AND AFT DOWNTUBE ATTACHMENT TO LANDING GEAR CARRY THRU ASSEMBLY

1. Assemble as illustrated. Tighten ALL Locknuts (6) to proper torque.

Item	P/N	Qty	Description
1	45467		Forward Downtube
2	45500		1 1/8" Double Channel
3	10140	4	AN4-16A Bolt
4	10560	8	1/4" Washer
5	45496	1	.5" x .125" Downtube Base Fitting
6	10510	4	1/4" Locknut
7	45463		Landing Gear Carry Thru
8	45465		Aft Downtube
9	45453	1	.125" x .095" Downtube Base Fitting

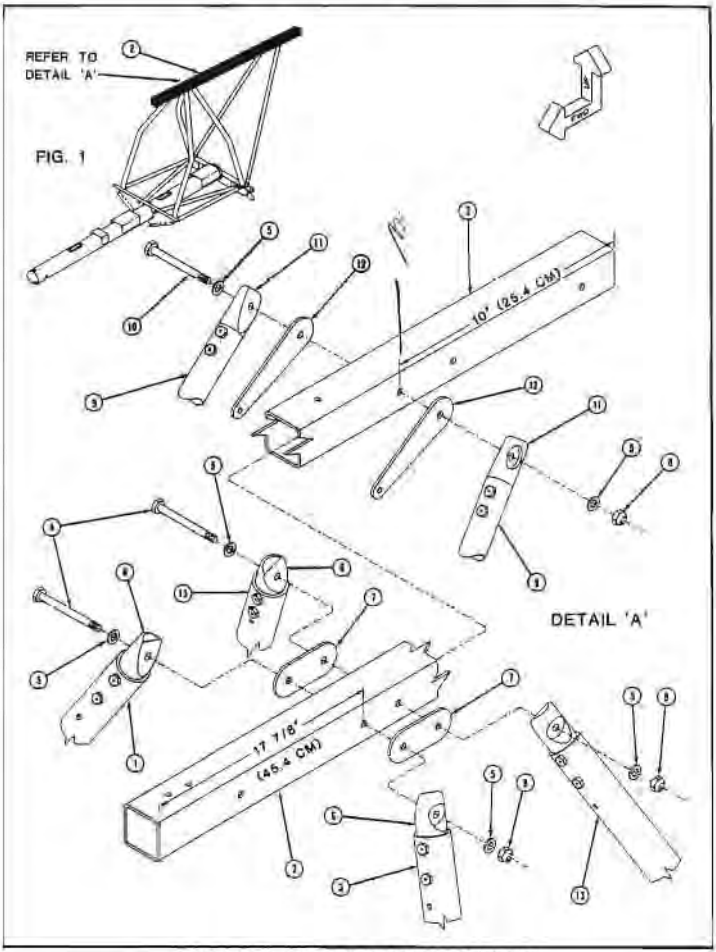


FORWARD FUSELAGE DOWNTUBE/
FORWARD DOWNTUBE AND AFT DOWNTUBE TO ROOT TUBE ATTACHMENT

1. Identify the TOP of the Root Tube (2).

2. Assemble as illustrated. Tighten ALL Locknuts to proper torque.

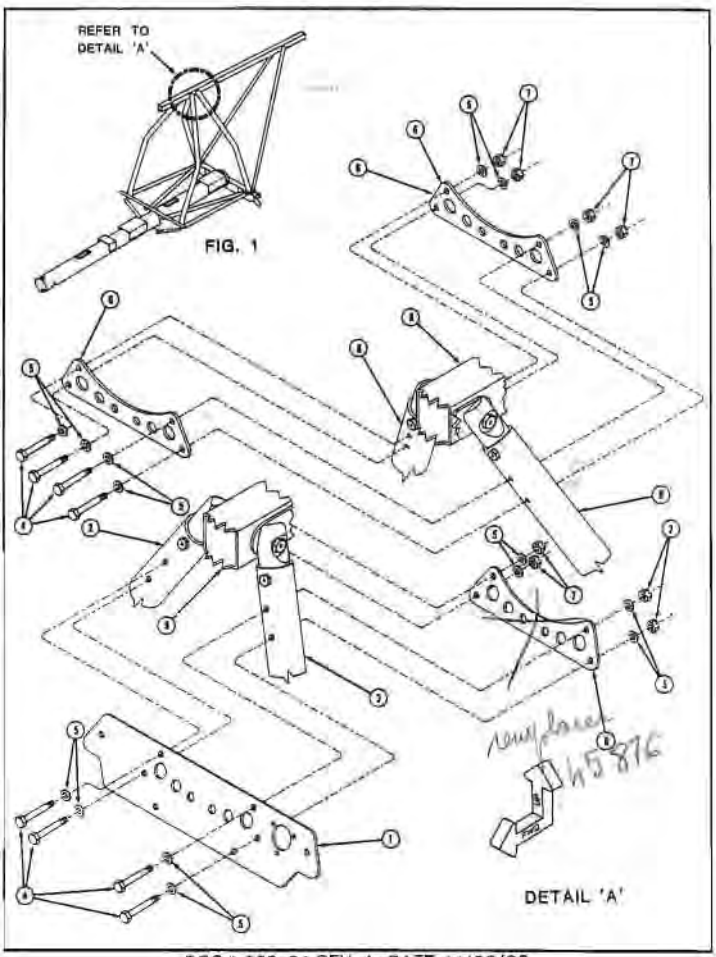
Item	P/N	Qty	Description
1	45469		Right Forward Fuselage Downtube
2	45668		Root Tube
3	45471		Left Forward Fuselage Downtube
4	10340	2	AN3-40A Bolt
5	10570	6	5/16" Washer
6	45456		28 Degree Downtube Fitting
7	45693	2	Forward Root Tube Gusset Plate
8	10540	3	5/16" Locknut
9	45465		Aft Downtube
10	10339	1	AN3-36 Bolt
11	45458		13 Degree Downtube Fitting
12	45695	2	Aft Shoulder Belt Attach Plate
13	45467		Forward Downtube


REFER TO DETAIL 'A'
FIG. 1
10" (25.4 CM)
DETAIL 'A'
17 7/8" (45.4 CM)

FORWARD SEAT BELT BRACKET AND DOWNTUBE ATTACH PLATE ATTACHMENT

1. Assemble as illustrated. Tighten ALL Locknuts to proper torque.

Item	P/N	Qty	Description
1	45429	1	Forward Seat Belt Bracket
2	45469		Right Forward Fuselage Downtube
3	45471		Left Forward Fuselage Downtube
4	10190	8	AN4-22A Bolt
5	10560	16	1/4" Washer
6	45826	3	Downtube Attach Plate
7	10510	8	1/4" Locknut
8	45467		Forward Downtube
9	45668		Root Tube


REFER TO
DETAIL 'A'
FIG. 1
DETAIL 'A'

FLAP HANDLE ASSEMBLY AND ATTACHMENT

1. Ensure the Flap Handle (1) is orientated correctly. Attach the Grip (6) and the Hardware (2,3,4 and 5) to the Flap Handle as illustrated. Tighten the Locknuts (5) to proper torque.

2. Attach the Flap Handle Assembly (from Step 1) to the Flap Detent Bracket (9) with Hardware (7,8,10,11,12 and 13) as illustrated. Bend the Cotter Pin (13) correctly.

3. Add the Hardware (14,15,16 and 17) as illustrated. Tighten ALL Locknuts (17) to proper torque.

4. Measure 3/8" (9.5 mm) AFT from the AFT edge of the Yoke Control Guide (18) and mark the location 1/8" (3.2 mm) to the OPPOSITE SIDE or "OFF CENTER" from the TOP CENTERLINE on the Forward Fuselage Tube Assembly (19) as illustrated. Drill and deburr a 3/16" (4.8 mm) diameter hole at this location. Slide the Bracket (9) into place. Pin the FORWARD hole with a Rivet (20). Back-drill through the EXISTING holes in the Bracket and attach with Rivets THREE (3) places on the TOP of the Tube (14). Back-drill thru the THREE (3) holes on the BOTTOM of the Bracket (9) in "mirror image". Attach with THREE (3) Rivets (20).

Item	P/N	Qty	Description
1	45267	1	Flap Handle
2	11075	2	AN525-10R10 Washer Head Screw
3	45139	1	Flap Detent Pawl
4	10500	2	3/16" Washer
5	10550	2	3/16" Locknut
6	70580	1	Control Stick Grip
7	10121	1	AN4-15 Bolt
8	10565	3	1/4" Fender Washer
9	45226	1	Flap Detent Bracket
10	20344	1	2" x 1/8" Nylon Washer
11	10630	1	Flap Spring
12	10521	1	1/4" Castle Nut
13	10635	1	Cotter Pin
14	10064	2	AN4-11A Bolt
15	10560	6	1/4" Washer
16	40428	2	3/8" x .058" x 1/2" Aluminum Spacer
17	10510	2	1/4" Locknut
18	45550		Yoke Control Guide
19	45545		Forward Fuselage Tube Assembly
20	20192	6	3/16" x 1/8" Grip Rivet (BSPG-62)

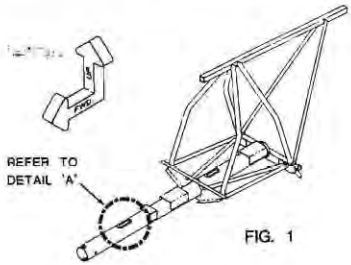
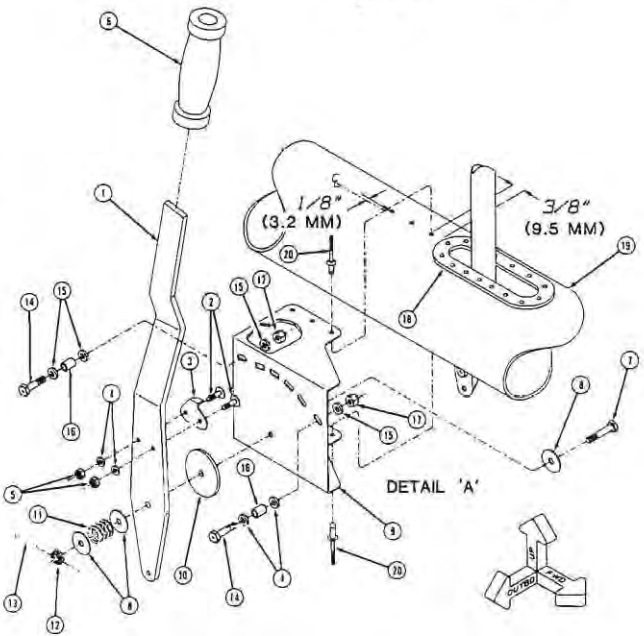


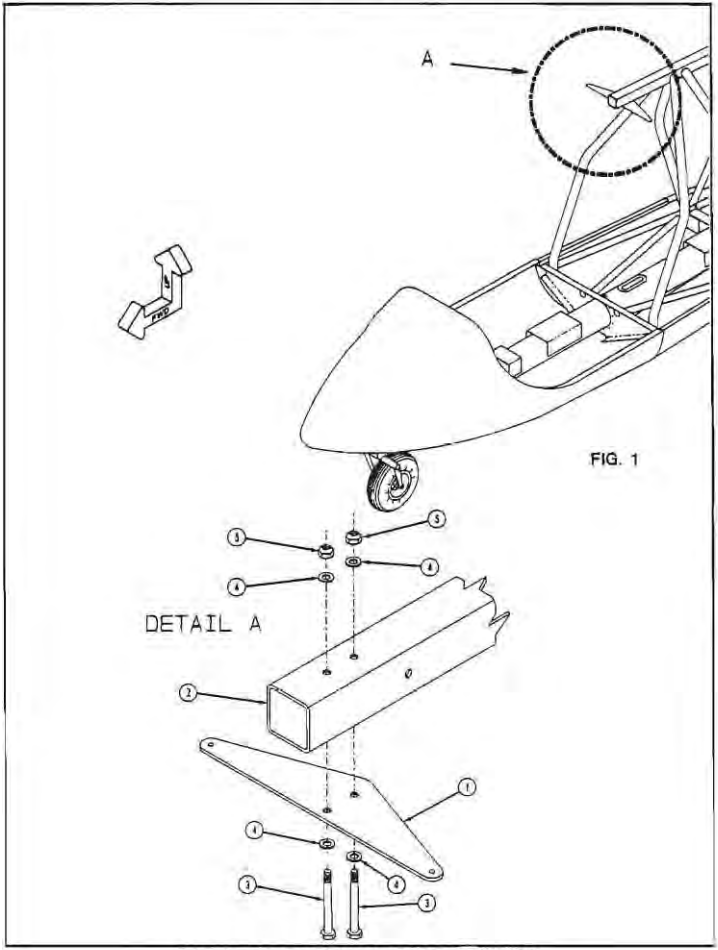
FIG. 1



WINDSHIELD FRAME BRACKET ATTACHMENT

1. Assemble as illustrated. Tighten ALL Locknuts to proper torque.

Item	P/N	Qty	Description
1	46002	1	Windshield Frame Bracket
2	43545		Boot Tube
3	10235	2	AN4-25A Bolt
4	10360	4	1/4" Washer
5	10510	2	1/4" Locknut


A
FIG. 1
DETAIL A
1
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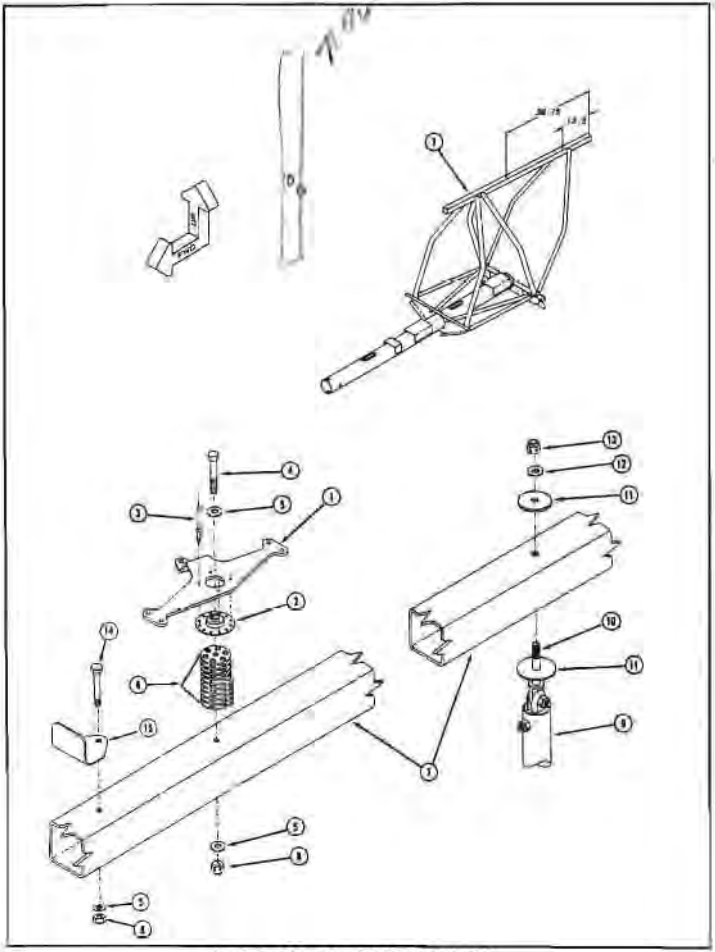
ROOT TUBE BELLCRANK AND TAIL BOOM DOWN STRUT UPPER ATTACHMENT

1. Clamp the Bellcrank Bearing (2) to the Bellcrank (1). Back-drill through the Bellcrank FOUR 1/8" (3.2 mm) perimeter holes at 90 degrees to each other. Deburr ALL holes. Assemble as illustrated.

2. Attach the Bellcrank Assembly to the Root Tube (7) with TEN Spacers (6) as illustrated.

3. Assemble as illustrated. Tighten ALL Locknuts to proper torque.

Item	P/N	Qty	Description
1	46005	1	Root Tube Aileron Bellcrank
2	10702	1	Bellcrank Bearing
3	20201	4	1/8" x 1/4" Grip Stainless Steel Rivet
4	10297	1	AN4-37 Bolt
5	10560	3	1/4" Washer
6	45057	10	Seat Plate Spacer
7	45660		Root Tube
8	10510	3	1/4" Locknut
9	45541		Tail Boom Down Strut
10	10381		AN44B-24A Eyebolt
11	10600	2	5/16" Fender Washer
12	10570	1	5/16" Washer
13	10540	1	5/16" Locknut
14	10235	1	AN4-25A Bolt
15	45543	1	Fuel Tank Stop Bracket



FORWARD CONTROL WHEEL ATTACHMENT

1. Assemble as illustrated. Tighten ALL Locknuts to proper torque EXCEPT Locknut (25) attached to Bolt (28). Tighten FINGER TIGHT ONLY at this time as some adjustments to the Bearing (19) may be made in a later sequence.

NOTE 1: Add a drop of Thread Adhesive (11) to the threads at the end of the Push/Pull Control Cable (17) and run the Jam Nut (18) on until it "bottoms out".

NOTE 2: Add Wave Washers (8). Torque the Locknut (12). Add additional Washers as required to eliminate any "end play" or "slop" in the control system without creating excessive friction in the system.

Item	P/N	Qty	Description
1	10402	1	AN6-37A Bolt
2	10575	2	3/8" Washer
3	30003	1	FF520-15 Oilite Bearing
4	45555	2	Control Wheel
5	10506	1	.33" I.D. x .88" O.D. Flat Washer
6	45584	1	.5" x .058" x 2.72" Steel Bushing
7	45548		Forward Yoke Tube Assembly
8	10606	A/R	1/2" I. D. Wave Washer
9	10506	1	.33" I.D. x .88" O.D. Flat Washer
10	45508	1	Control Wheel Horn
11	60591	A/R	Loctite 290 Thread Adhesive/Sealant
12	10547	1	3/8" - 24 Locknut
13	10294	2	AN4-36A Bolt
14	45556	2	Control Wheel Stand-Off
15	10560	2	1/4" Washer
16	10510	2	1/4" Locknut
17	70470		Forward Push/Pull Control Cable (14 ft)
18	10495	1	10-32 Jam Nut
19	10701	1	3/16" Female Rod End Bearing
20	10015	2	AN3-6A Bolt
21	70511	1	Push/Pull Cable Clamp
22	10550	7	3/16" Washer
23	70512	1	Push/Pull Cable Clamp Shim
24	45415	1	Push/Pull Cable Attach Bracket
25	10500	5	3/16" Locknut
26	10018	1	AN3-7A Bolt
27	10495		10-32 Jam Nut (Part of P/N 70470)

28 ?

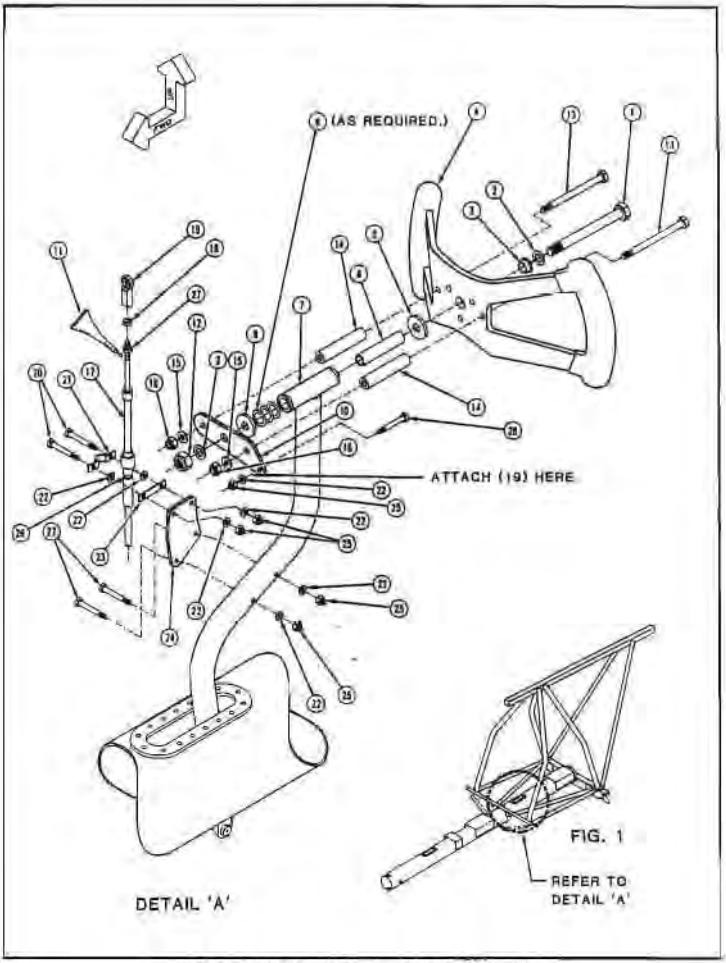


FIG. 1

AILERON PUSH/PULL CABLE TO ROOT TUBE BELLCRANK ATTACHMENT

1. Assemble as illustrated. Ensure there is a Washer (11) BETWEEN the Clamp (6) and Shim (8). Tighten to proper torque ONLY, the TWO (2) Locknuts (12) attached to Bolts (5).

CAUTION: Position the Bar on the INSIDE of Clamps (6) INTO the Slot (7) in each Push/Pull Cable (2) and (3). Ensure each Clamp is "seated" properly in the appropriate Slot.

NOTE: Add a drop of Thread Adhesive (15) to the AFT end of the Threads on Cables (2) and (3). Add a Jam Nut (1) to each Cable (2) and (3) until it "bottoms out". Add another Jam Nut to each Cable then a Female Rod End Bearing (4) but only thread each on "half way" as they will be adjusted in a later sequence.

Item	P/N	Qty	Description
1	10495	4	10-32 Jam Nut
2	70472	1	Aft Push/Pull Cable (12 ft)
3	70470	1	Forward Push/Pull Cable (14 ft)
4	10701	2	3/16" Female Rod End Bearing
5	10056	2	AN3-27A Bolt
6	70511	2	Push/Pull Cable Clamp
7			Slot (part of P/N's 70470 and 70472)
8	70512	1	Push/Pull Cable Clamp Shim
9	20240	2	Pulley Bushing
10	45668		Root Tube
11	10550	10	3/16" Washer
12	10550	3	3/16" Locknut
13	10027	2	AN3-12A Bolt
14	46005		Root Tube Aileron Bellcrank
15	60591		Thread Adhesive

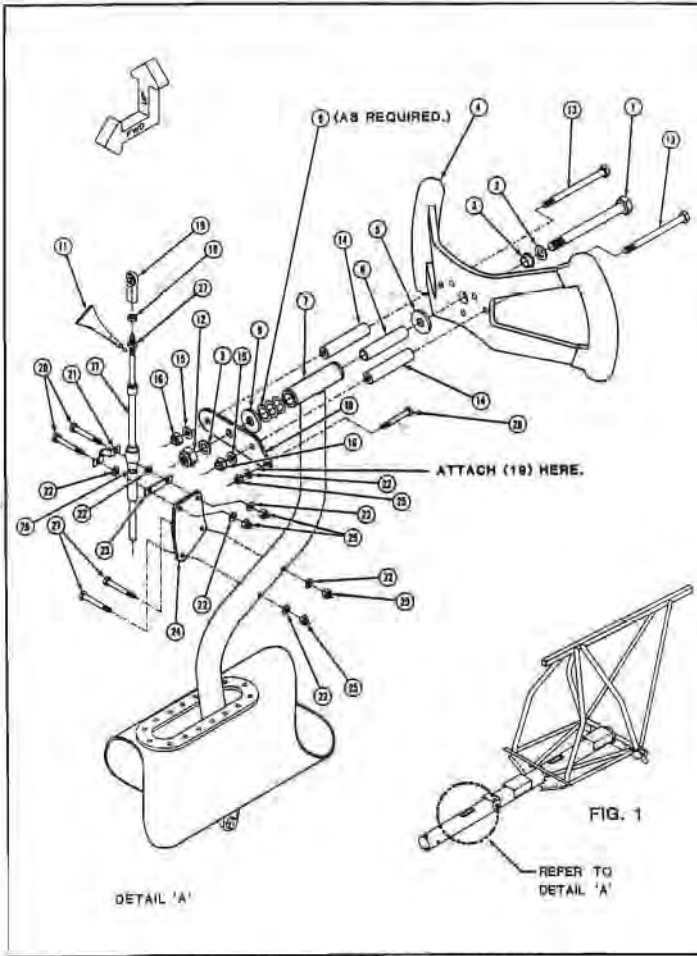


FIG. 1

AFT CONTROL WHEEL ATTACHMENT

1. Assemble as illustrated. Tighten ALL Locknuts to proper torque EXCEPT Locknut (25) attached to Bolt (28). Tighten FINGER TIGHT ONLY at this time as some adjustments to the Bearing (19) may be made in a later sequence.

NOTE 1: Add a drop of Thread Adhesive (11) to the threads at the end of each Push/Pull Control Cable (17) and run the Jam Nut (18) on until it "bottoms out".

NOTE 2: Add Wave Washers (8). Torque the Locknut (12). Add additional Washers as required to eliminate any "end play" or "slop" in the control system without creating excessive friction in the system.

Item	P/N	Qty	Description
1	10402	1	AN6-37A Bolt
2	10575	2	3/8" Washer
3	30003	1	FF520-15 Oilite Bearing
4	45555	2	Control Wheel
5	10506	1	.33" I.D. x .88" O.D. Flat Washer
6	45584	1	.5" x .058" x 2.72" Steel Bushing
7	45558		Aft Yoke Tube Assembly
8	10606	A/R	1/2" I. D. Wave Washer
9	10506	1	.33" I.D. x .88" O.D. Flat Washer
10	45508	1	Control Wheel Horn
11	60591	A/R	Loctite 290 Thread Adhesive/Sealant
12	10547	1	3/8" - 24 Locknut
13	10294	2	AN4-36A Bolt
14	45556	2	Control Wheel Stand-Off
15	10560	2	1/4" Washer
16	10510	2	1/4" Locknut
17	70472		Aft Push/Pull Control Cable (12 ft)
18	10495	1	10-32 Jam Nut
19	10701	1	3/16" Female Rod End Bearing
20	10015	2	AN3-6A Bolt
21	70511	1	Push/Pull Cable Clamp
22	10550	7	3/16" Washer
23	70512	1	Push/Pull Cable Clamp Shim
24	45415	1	Push/Pull Cable Attach Bracket
25	10500	5	3/16" Locknut
26	10018	2	AN3-7A Bolt
27	10495		10-32 Jam Nut (part of P/N 70472)

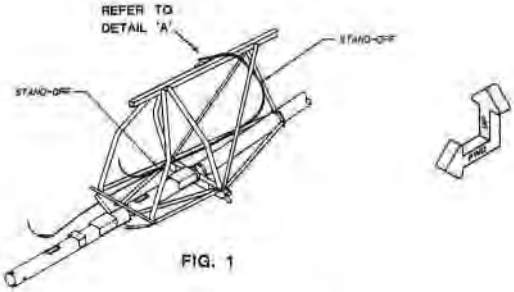
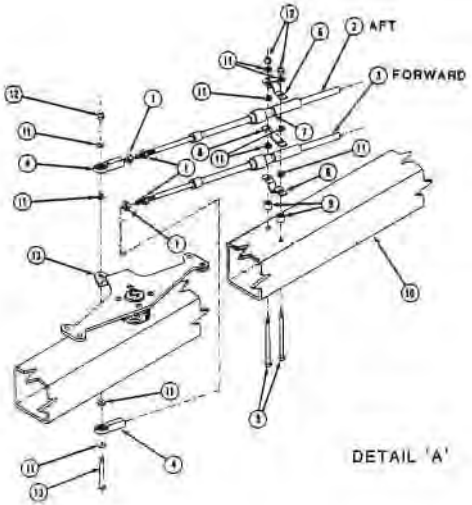


FIG. 1



DETAIL 'A'

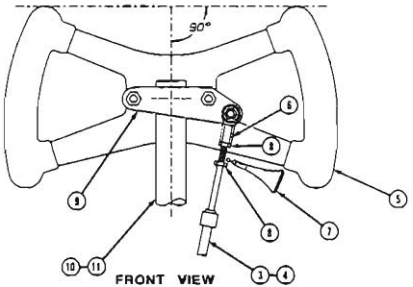
PUSH/PULL CONTROL CABLE ADJUSTMENT

1. Adjust each Push/Pull Control Cable (3) and (4) SEPARATELY for each Forward and Aft Control Wheel (5). REMOVE the attachment Bolt and ROTATE the Bearing (6) in the appropriate direction to achieve Bellcrank (1) alignment with the Root Tube (2) and a LEVEL Control Wheel (5) simultaneously.

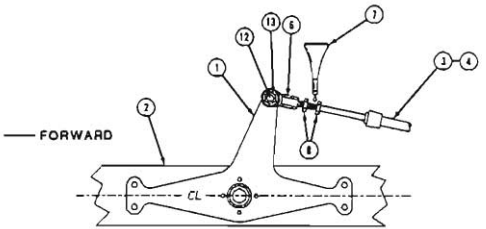
2. When adjustment is complete for EACH Control Cable (3) and (4) and each FORWARD and AFT Control Wheel (5) add a drop of Thread Adhesive (7) to the threads. Tighten ALL Jam Nuts (8) either against the Bearing (6) or "BOTTOM OUT" the Jam Nut at the OPPOSITE end of the threads as illustrated.

3. Tighten the Locknut (13) to proper torque. DO NOT OVER TORQUE.

Item	P/N	Qty	Description
1	46005		Root Tube Aileron Bellcrank
2	45668		Root Tube
3	70470		Forward Push/Pull Control Cable (14 ft)
4	70472		Aft Push/Pull Control Cable (12 ft)
5	45555		Control Wheel
6	10701		Female Rod End Bearing
7	60591		Thread Adhesive
8	10495		10-32 Jam Nut
9	45508		Control Wheel Horn
10	45548		Forward Yoke Tube Assembly
11	45558		Aft Yoke Tube Assembly
12	10027		AN3-12A Bolt
13	10500		3/16" Locknut



FRONT VIEW



TOP VIEW

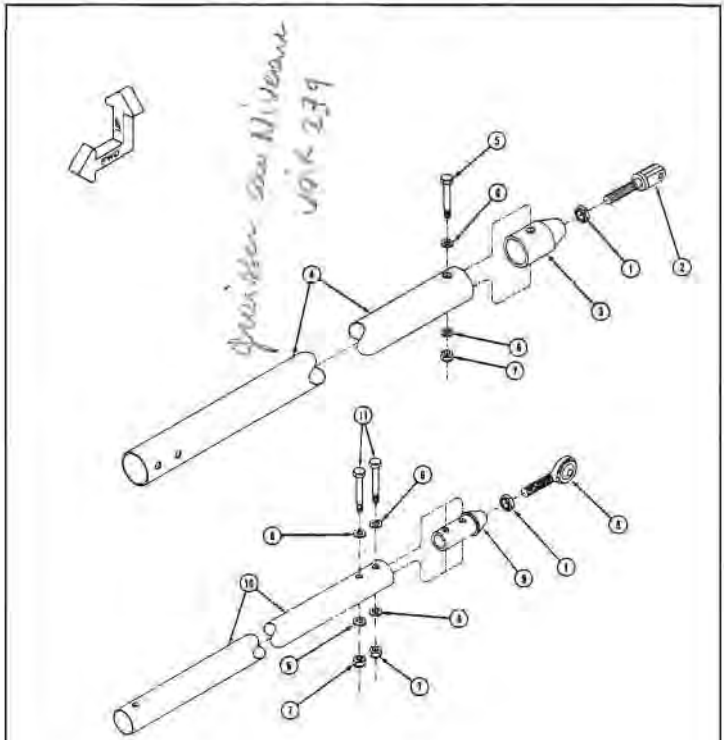
AFT ELEVATOR AND AFT TRIM PUSH/PULL TUBE ASSEMBLY

1. Thread a Jam Nut (1) THREE to FOUR threads from the FORK end of the Forkbolt (2). Attach the Forkbolt.

2. Thread a Jam Nut (1) THREE to FOUR threads from the BEARING end of the Male Rod End Bearing (8). Attach the Bearing.

3. Assemble as illustrated. Tighten ALL Locknuts to proper torque.

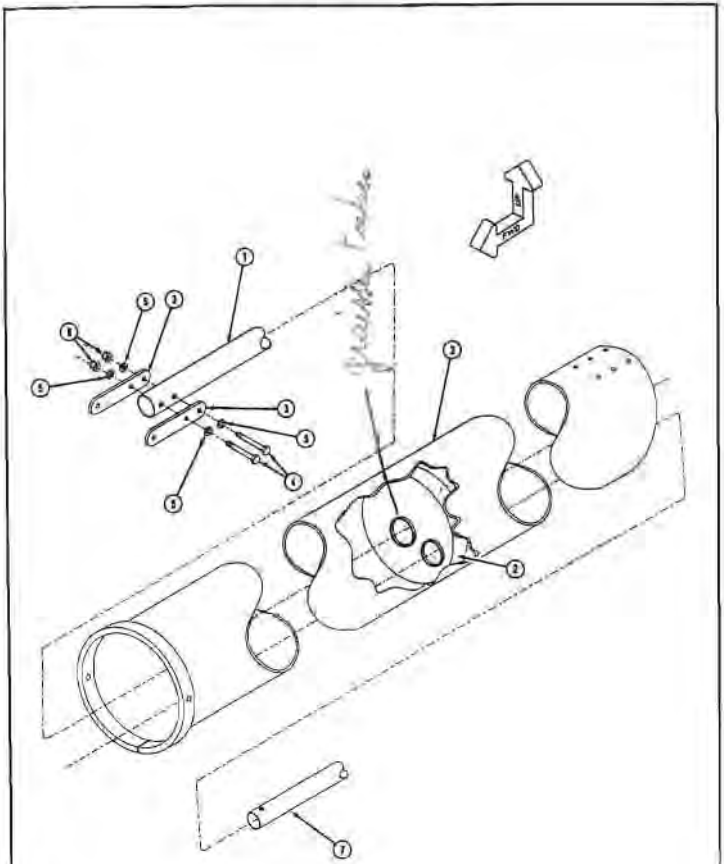
Item	P/N	Qty	Description
1	10631	2	1/4" - 28 Jam Nut
2	10388	1	1/4" x 1" Full Thread Forkbolt
3	45464	1	Elevator Push/Pull Tube Fitting
4	45013	1	Aft Elevator Push/Pull Tube
5	10030	1	AN3-13A Bolt
6	10560	6	3/16" Washer
7	10500	3	3/16" Locknut
8	10700	1	1/4" Male Rod End Bearing
9	45494	1	1/4" - 28,.75" x .035" Tube Fitting
10	45447	1	Aft Trim Push/Pull Tube
11	10025	2	AN3-11A Bolt



AFT ELEVATOR AND AFT TRIM PUSH/PULL TUBE INSTALLATION

1. Assemble as illustrated. Tighten to proper torque. DO NOT DISTORT THE TUBE.

Item	P/N	Qty	Description
1	45013	1	Aft Elevator Push/Pull Tube
2	45012		Tail Boom Assembly
3	45692	2	Diagonal Attach Plates
4	10040	2	AN3-15A Bolt
5	10350	4	3/16" Washer
6	10500	2	3/16" Locknut
7	45447		Aft Trim Push/Pull Tube



PUSH/PULL ROLLER ATTACHMENT

IMPORTANT: The Bolts (7) must be orientated and installed EXACTLY as illustrated.

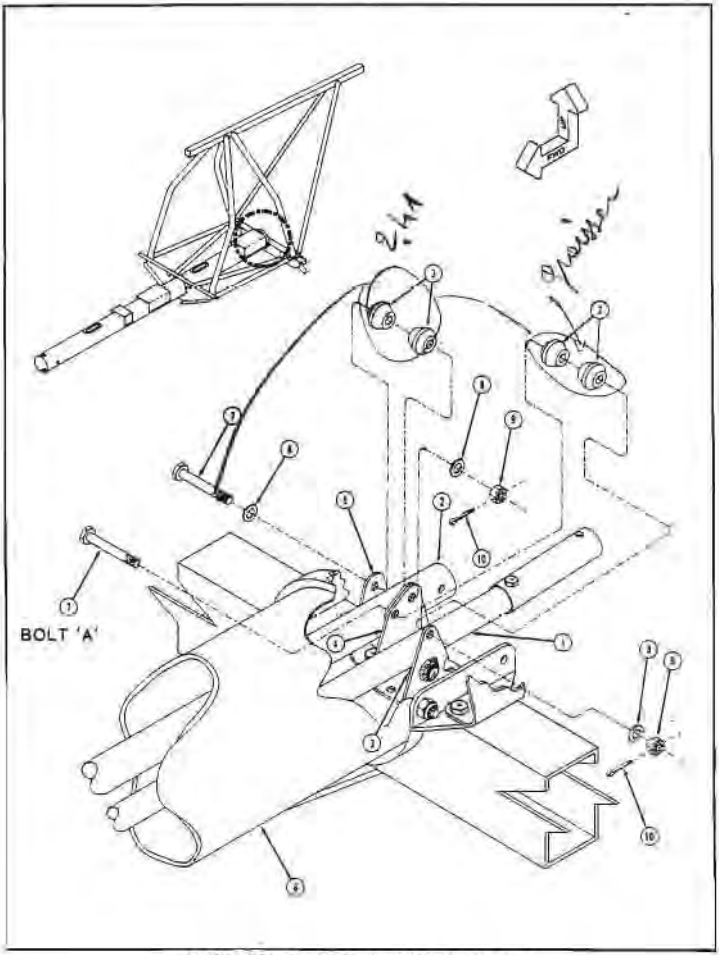
NOTE 1: The Lower Rollers previously installed with Hardware FINGER TIGHT will need to be TEMPORARILY removed at this time then reinstalled after the UPPER Bolts (7) have been installed.

1. Assemble as illustrated installing Bolt (7) 'A' FIRST. Bend ALL Cotter Pins (10) correctly.

IMPORTANT: DO NOT OVER TORQUE the Castle Nut (9). Verify the Push/Pull Rollers (3) rotate freely.

NOTE 2: Tighten the Castle Nut (9) on Bolt (7) 'A' "snug" as to remove any slack.

Item	P/N	Qty	Description
1	45446		Center Trim Push/Pull Tube
2	45439		Center Elevator Push/Pull Tube
3	45551	4	Push/Pull Rollers
4	45497		Trim Roller Mount Channel
5	45499		Roller Mount Channel
6	45545		Forward Push/Pull Tube Assembly
7	10160	2	AN4-17 Bolt
8	10560	3	1/4" Washer
9	10521	2	1/4" Castle Nut
10	10635	2	Cotter Pin

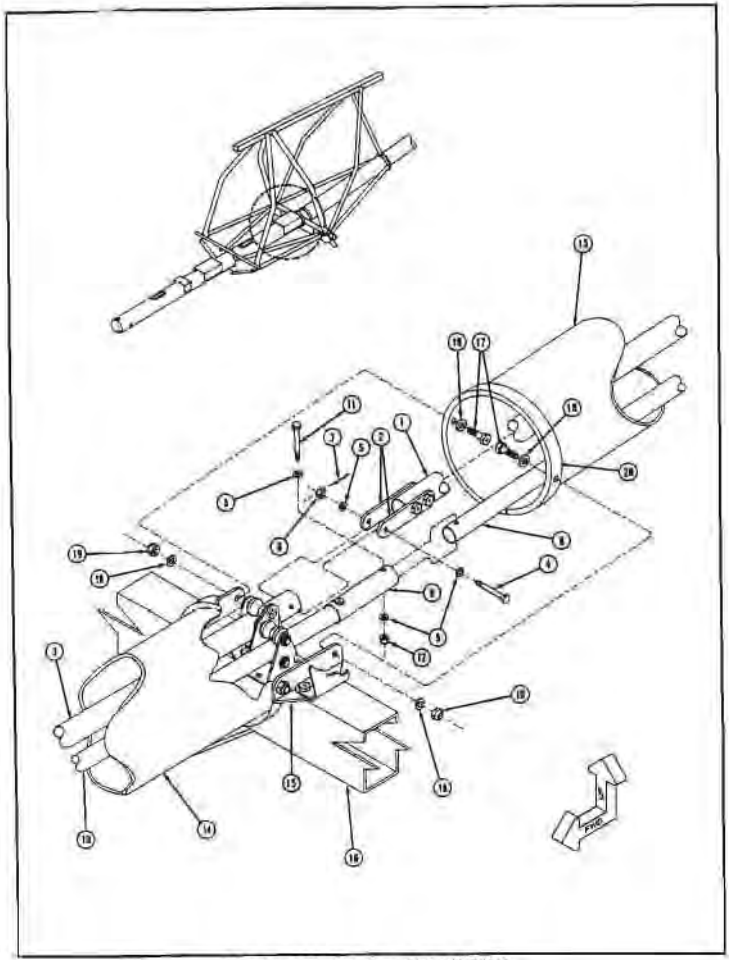

BOLT 'A'

TAIL BOOM ATTACHMENT TO LANDING GEAR CARRY THRU/ AFT ELEVATOR AND TRIM PUSH/PULL TUBE ATTACHMENT

1. Assemble as illustrated. Tighten to proper torque. Bend the Cotter Pin (7) correctly.

NOTE: Connect the Elevator Push/Pull Tubes (1) and (3) FIRST. Connect the Trim Push/Pull Tubes (8) and (10) SECOND.

Item	P/N	Qty	Description
1	45013		Aft Elevator Push/Pull Tube
2	45692		Diagonal Attach Plate
3	45439		Center Elevator Push/Pull Tube
4	10042	1	AN3-15 Bolt
5	10550	4	3/16 " Washer
6	10517	1	3/16" Castle Nut
7	10535	1	Cotter Pin
8	45447		Aft Trim Push/Pull Tube
9	45493		Trim Coupler Tube
10	45446		Center Trim Push/Pull Tube
11	10027	1	AN3-12A Bolt
12	10500	1	3/16" Locknut
13	45012		Tail Boom Tube Assembly
14	45545		Forward Fuselage Tube Assembly
15	45416		Boom Attach Bracket
16	45463		Landing Gear Carry Thru
17	10066	2	AN4-10A Bolt
18	10560	4	1/4" Washer
19	10510	2	1/4" Locknut
20			Torque Ring (part of P/N 45012)



AFT SIDE STRUT AND TAIL BOOM ATTACHMENT

1. Adjust the Eyebolts (2) on BOTH Aft Side Struts (9) ONLY as required for hole alignment. Tighten the Jam Nuts (8) against the Fittings (3).

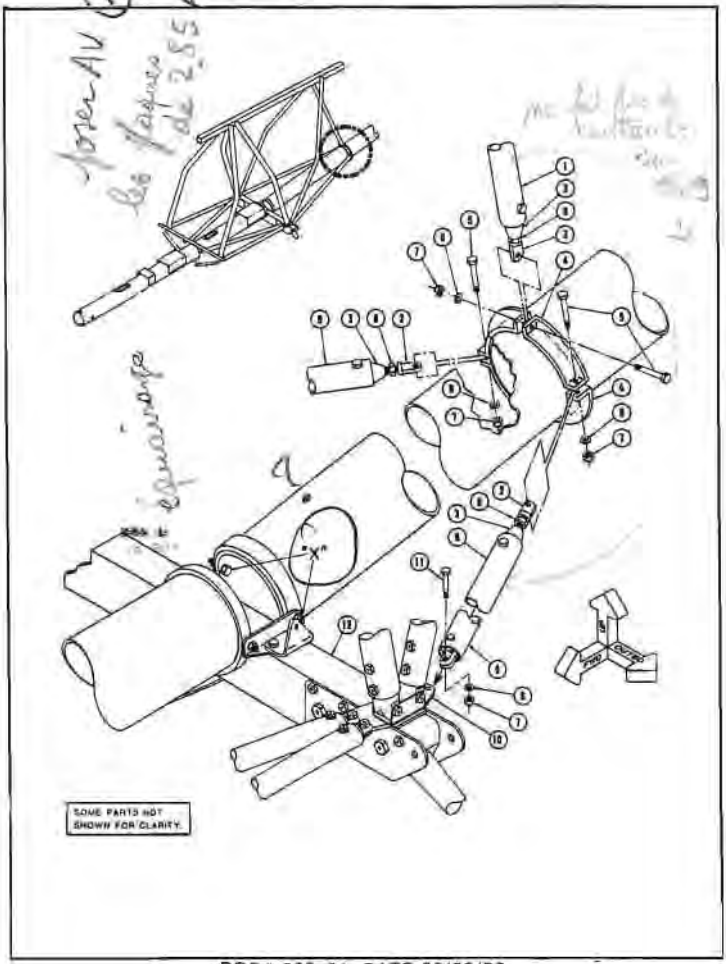
NOTE: Thread the Eyebolt (2) attached to the BOTTOM end of the Tail Boom Down Strut (1) into the Fitting (3) far enough to allow a wrench access to tighten the Jam Nut (8).

2. Assemble as illustrated. Tighten ALL Locknuts to proper torque EXCEPT the Locknuts (7) on Bolts (5) attaching BOTH of the AFT ends of the Aft Side Struts (9) as additional hardware will be attached to these Bolts in a later sequence.

NOTE: Attach Bolts (11) with Hardware (6) and (7) FIRST.

IMPORTANT: A MAXIMUM of THREE [3] to FOUR [4] threads should be visible AFTER Eyebolt adjustment.

Item	P/N	Qty	Description
1.	45541		Tail Boom Down Strut
2.	10377		5/16" - 24 x 1 3/32" Full Thread Eyebolt
3.	45468		Tail Boom Strut Fitting
4.			Tail Boom Flange (part of P/N 45012)
5.	10070	3	AN4-12A Bolt
6.	10560	10	1/4" Washer
7.	10510	5	1/4" Locknut
8.	10542		5/16" Jam Nut
9.	45443		Aft Side Strut
10.	45401		Left Side Strut Attach Plate
11.	10066	2	AN4-10A Bolt
12.	45463		Landing Gear Carry Thru
13.	10070	1	AN4-12A Bolt
14.	20360	2	Flat Tang


"X"
SOME PARTS NOT SHOWN FOR CLARITY.

FLAP BELLCRANK AND BELLCRANK BRACKET ASSEMBLY AND ATTACHMENT

IMPORTANT: If you have previously installed an Electric Starter Kit on your aircraft you will have to move the Battery Box to a NEW location further AFT. Consult your Assembly Instructions or your QUICKSILVER Dealer for the EXACT location.

NOTE: Complete the following sequence by either attaching the Flap Bellcrank Bracket (1) to the Forward Seat Track Channel (2) then attach the assembly to the Tail Boom Tube (7) OR you may attach the Seat Track Channel (2) to the Tail Boom Tube FIRST then attach the Flap Bellcrank Bracket to the Forward Seat Track Channel (2). The SECOND option is described below.

1. Measure 1/2" (12.7 mm) AFT from the AFT edge of the factory installed Forward Seat Track Channel (6) on the Tail Boom Tube Assembly (7). Mark this location. Align the FORWARD edge of the Seat Track Channel (2) with the 1/2" (12.7 mm) mark. Position the CENTER of the Seat Track Channel (2) over the TOP CENTERLINE of the Tail Boom (7). Ensure the Seat Track Channel is LEVEL. CAREFULLY back-drill and deburr THREE (3) 3/16" (4.8 mm) diameter holes thru the TOP of the Tail Boom Tube using the THREE (3) EXISTING CENTERLINE holes in the Seat Track Channel as a guide. CAUTION: DO NOT damage the internal components of the Tail Boom with the drill bit. Secure with THREE (3) Rivets (8). Ensure the Rivets are correctly "seated".

2. Back-drill FOUR (4) 3/16" (4.8 mm) diameter holes thru the Forward Seat Track Channel (2) using the EXISTING holes in the Flap Bellcrank Bracket (1) as a guide. Deburr ALL holes. IMPORTANT: There is a RIGHT (10) and a LEFT (11) Flap Bellcrank Assembly. Ensure each is orientated correctly BEFORE attached. Tighten ALL Locknuts to proper torque.

Item	P/N	Qty	Description
1.	45138	1	Flap Bellcrank Bracket
2.	45407	1	Forward Seat Track Channel
3.	10010	4	AN3-5A Bolt
4.	10550	4	3/16" Washer
5.	10500	4	3/16" Locknut
6.	45407		Fwd Seat Track Channel (factory installed)
7.	45012		Tail Boom Tube Assembly
8.	20192	11	3/16" x 1/8" Grip S.Steel Rivet (BSPQ-62)
9.	70250	2	7/8" I.D. Plastic Flange Bearing
10.	45268	1	Right Flap Bellcrank Assembly
11.	45269	1	Left Flap Bellcrank Assembly
12.	45131	1	Flap Bellcrank Pivot Tube
13.	10080	2	AN4-13A Bolt
14.	10560	2	1/4" Washer

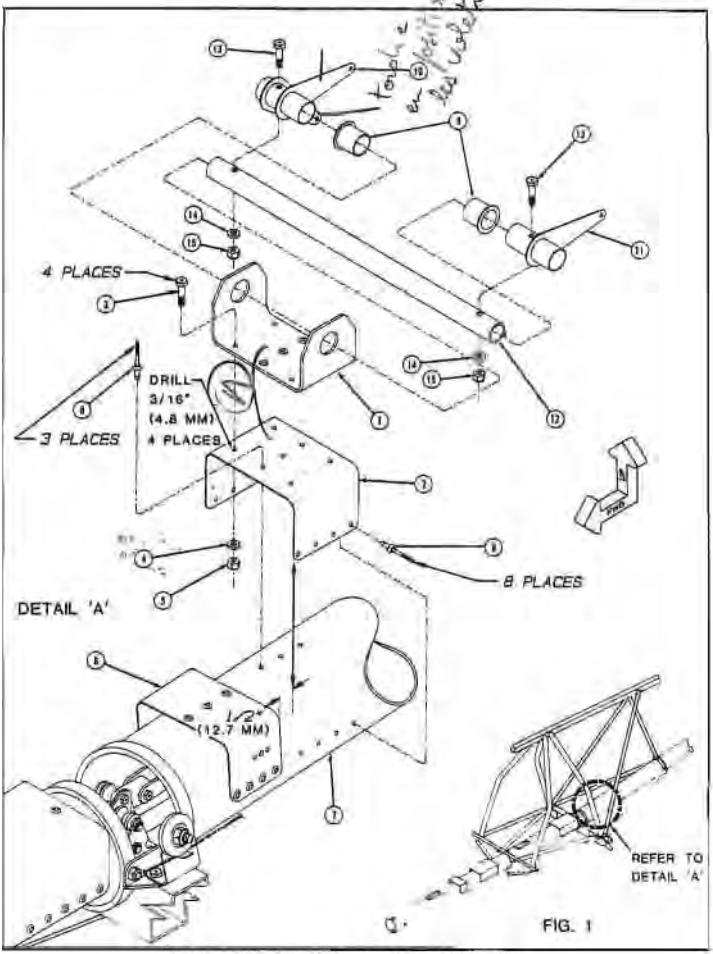

4 PLACES
DRILL
3/16"
(4.8 MM)
4 PLACES
3 PLACES
8 PLACES
DETAIL 'A'
1/2"
(12.7 MM)
REFER TO
DETAIL 'A'

FIG. 1

2-848

FLAP PULL ROD ATTACHMENT

NOTE: Drill and deburr a 1 1/4" (32 mm) diameter hole in the Bulkhead (17), using a hole saw, for the Forward Flap Pull Rod (1) if necessary. Refer to Template "F-1" on Page 2-153.

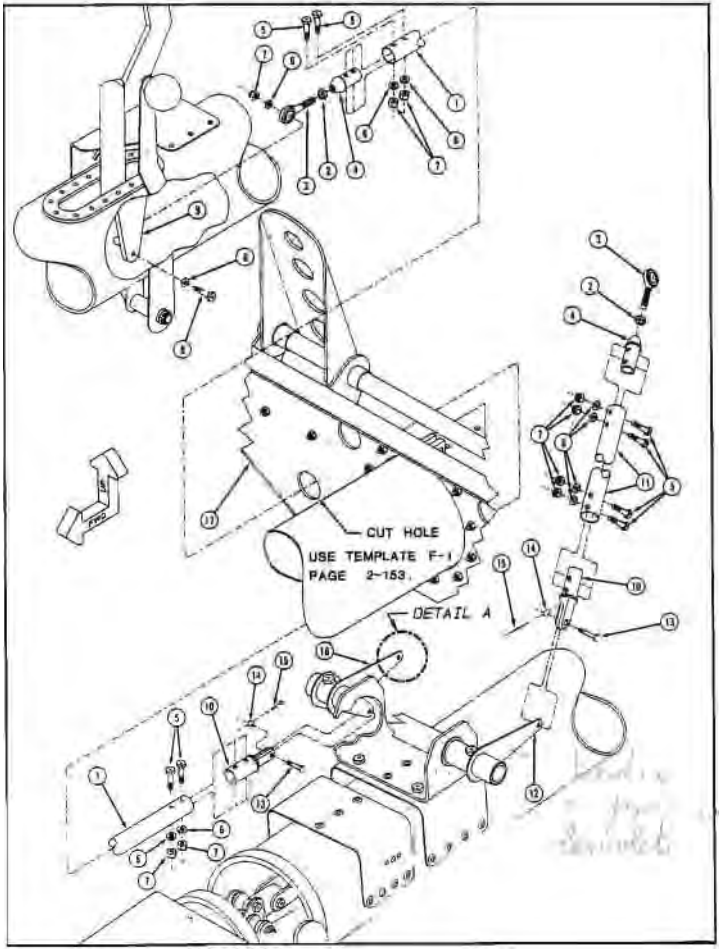
CAUTION: There MUST be a MINIMUM of TEN (10) threads INSIDE the Fitting (4) Use the FORWARD Bearing for additional adjustment later if needed.

1. Thread the Jam Nut (2) APPROXIMATELY 1/2 - 3/4 of the way onto the Bearing (3). Thread the Bearing (3) into the Fitting (4) to the Nut (2). Complete the assembly of the Forward Pull Rod (1). DO NOT tighten until Final Adjustment is made later.

2. Route the Forward Pull Rod (1) thru the appropriate hole in the Bulkhead (17) as illustrated. Attach the Forward Pull Rod to the Flap Handle (9) use Hardware (8, 6 and 7). DO NOT tighten to proper torque until Final Adjustment has been made on Pages 7-24 and 7-25. Attach the AFT end of the Forward Pull Rod Assembly to the BOTTOM "Horn" or "Leg" of the RIGHT Bellcrank (16) as illustrated. Use Hardware (13, 14 and 15). Bend the Cotter Pin (15) correctly.

3. Assemble TWO (2) Aft Pull Rods (11) as illustrated. NOTE: Only ONE (1) Aft Pull Rod is shown for clarity. Thread the Jam Nut (2) APPROXIMATELY 1/2 - 3/4 of the way onto the Bearing (3). Thread the Bearing into the Fitting. Complete the assembly of the Aft Pull Rod (11). DO NOT tighten the Jam Nut (2) at this time. Final Adjustment will be made on page 7-24 and 7-25. Bend ALL Cotter Pins (15) correctly. Assemble and attach the RIGHT Aft Pull Rod in "mirror image" (not shown).

Item	P/N	Qty	Description
1	45336	1	Forward Flap Pull Rod
2	10631	3	1/4" Jam Nut
3	10700	3	1/4" Male Rod End Bearing
4	45494	2	1/4" - 28 x .75" x .035" Tube Fitting
5	10025	12	AN3-11A Bolt
6	10550	14	3/16" Washer
7	10540	13	3/16" Locknut
8	10024	1	AN3-10A Bolt
9	45267		Flap Handle
10	45421	3	.75" x .035" Tube Clevis
11	45137	2	Aft Flap Pull Rod
12	45269		Left Flap Bellcrank Assembly
13	10009	2	AN3-5 Bolt
14	10517	2	3/16" Castle Nut
15	10635	2	Cotter Pin
16	45268		Right Flap Bellcrank Assembly
17	45404		Fwd Fuselage Bulkhead (part of P/N 43545)

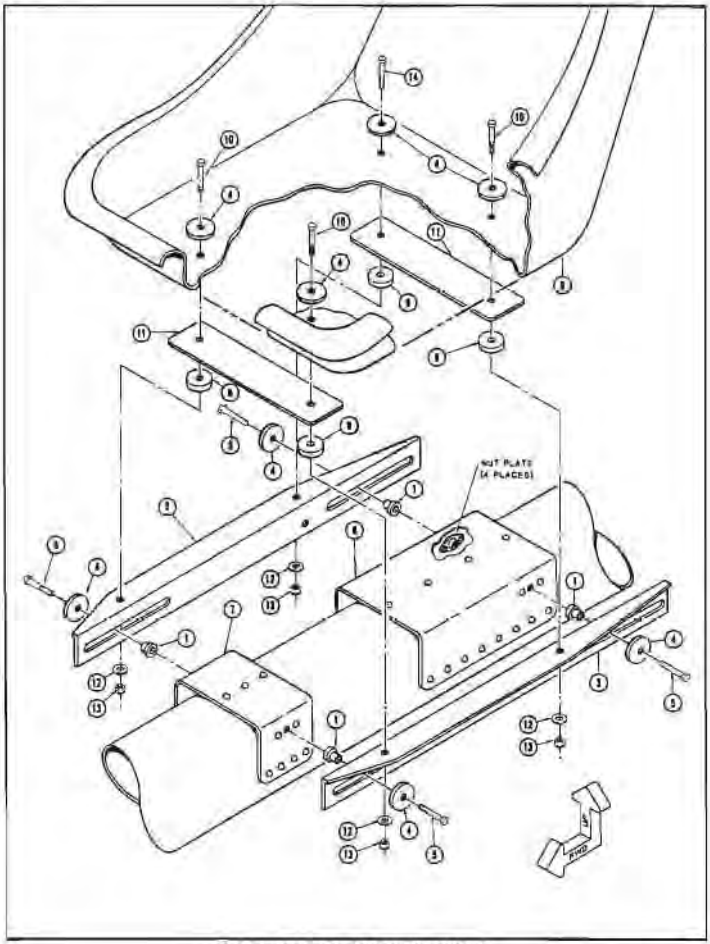

CUT HOLE
USE TEMPLATE F-1
PAGE 2-153.
DETAIL A

FORWARD SEAT ATTACHMENT

OPTIONAL: Drill THREE 1/4" (6.4 mm) holes just FORWARD of the Seat Back in the Seat (8) for water drainage BEFORE attachment should it ever become necessary.

1. Align the FORWARD Lip of the Seat with the FORWARD edge of the BOTH Seat Tracks (2) and (3). Ensure the BOTH Seat Tracks are in the FORWARD position. Drill FOUR 1/4" (6.4 mm) holes in the Seat (8) and attach as illustrated. Tighten ALL Locknuts to proper torque.

Item	P/N	Qty	Description
1	30005	4	FF312 Oilite Bearing
2	45418	1	Right Seat Track
3	45419	1	Left Seat Track
4	10565	8	1/4" Fender Washer
5	10060	4	AN4-6A Bolt
6			Aft Seat Track Channel (part of P/N 45545)
7			Forward Seat Track Channel (part of P/N 45545)
8	70366	1	Light Weight Seat
9	20345	4	1/8" Thick x 1" O.D. Nylon Washer
10	10066	3	AN4-10A Bolt
11	45473	2	Seat Track Spacer Plate
12	10560	4	1/4" Washer
13	10510	4	1/4" Locknut
14	10064	1	AN4-11A Bolt

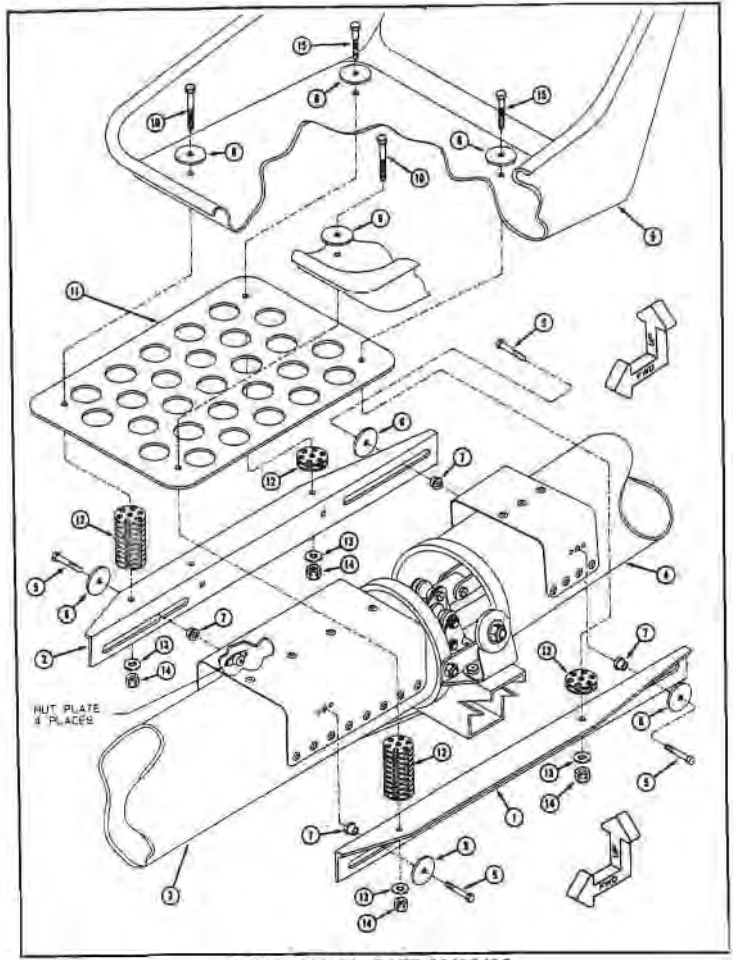

NUT PLATE
(4 PLACES)

AFT SEAT ATTACHMENT

1. Assemble as illustrated. Tighten ALL Locknuts to proper torque.

NOTE: Use EIGHTEEN (18) Spacers (12) at each FORWARD attachment location and TWO (2) Spacers at each AFT location.

Item	P/N	Qty	Description
1	45419	1	Left Seat Track
2	45418	1	Right Seat Track
3	45545		Forward Fuselage Tube Assembly
4	45012		Tail Boom Tube Assembly
5	10060	4	AN4-6A Bolt
6	10565	8	1/4" Fender Washer
7	30005	4	Oilite Bearing
8			Anchor Nut (Nut Plate) (factory installed)
9	70366	1	Lightweight Seat
10	10190	2	AN4-22A Bolt
11	45298	1	Aft Seat Plate
12	45857	40	Seat Plate Spacer
13	10560	4	1/4" Washer
14	10510	4	1/4" Locknut
15	10066	2	AN4-10A Bolt
16			Aft Seat Track Channel (part of P/N 45545)
17			Fwd Seat Track Channel (part of P/N 45012)


NUT PLATE
4 PLACES

FORWARD SEAT/SHOULDER HARNESS AND SEAT LOCK PIN ATTACHMENT

1. Refer to Figure 1 and Detail 'A'. Assemble as illustrated. Tighten ALL Locknuts (5) to proper torque.

2. Refer to Figure 1 and Detail 'B'. Install the Tube Cap (13) in the FORWARD end of the Root Tube (12) as illustrated. Round the corners of the Tube Cap to match the radius of the Root Tube (12). Drill and deburr TWO (2) 1/8" (3.2 mm) diameter holes in the FORWARD end of the Root Tube. Attach with TWO (2) Rivets (14).

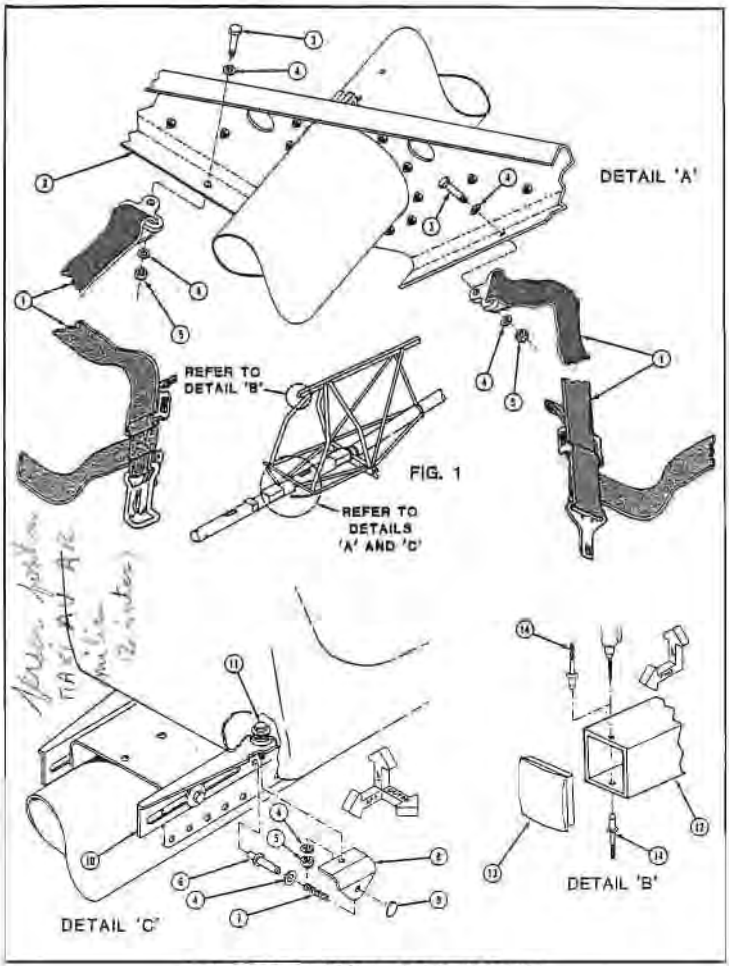
3. Refer to Figure 1 and Detail 'C'. Position the Seat (15) into the FULLY AFT position. Using a 1/4" (6.4 mm) drill bit, back-drill through the EXISTING hole in the Right Seat Track (10) and into the Aft Seat Track Channel (16) ONLY for the Seat Lock Pin (6). Deburr the hole. DO NOT drill into the Forward Fuselage Tube (17). Move the Seat FORWARD in 1/2" (12.7 mm) increments and continue to drill a series of 1/4" (6.4 mm) diameter holes AT LEAST 1/2" (12.7 mm) apart (edge of hole to edge of the next hole) as required for Seat adjustment.

IMPORTANT: AFTER the holes have been drilled, ensure you can achieve FULL UP or Stick AFT from the Control Wheel in the FORWARD MOST Seat position.

4. Assemble as illustrated. Tighten ALL Locknuts (5) to proper torque.

NOTE: Assemble Items (6, 4, 7, 8 and 9) FIRST as illustrated.

Item	P/N	Qty	Description
1	70347	1	Seat/Shoulder Harness Assembly
2	45404		Forward Fuselage Bulkhead
3	10060	2	AN4-6A Bolt
4	10560	4	1/4" Washer
5	10510	2	1/4" Locknut
6	45544	1	Seat Lock Pin
7	10803	1	Seat Lock Spring
8	45428	1	Seat Lock Bracket
9	20309	1	Seat Lock Pull Ring
10	45418		Right Seat Track
11	10064		AN4-11A Bolt (previously installed)
12	45668		Root Tube
13	20245	1	Root Tube Cap
14	20200	2	1/8" x 1/4" Grip Aluminum Rivet
15	70366		Light Weight Seat
16			Aft Seat Channel (part of P/N 45545)
17	45545		Forward Fuselage Tube Assembly


DETAIL 'A'
REFER TO DETAIL 'B'
REFER TO DETAILS 'A' AND 'C'
FIG. 1
DETAIL 'C'
DETAIL 'B'

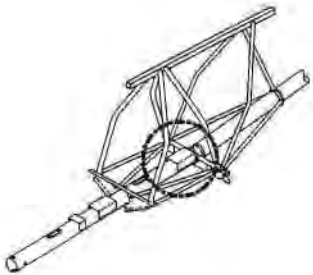
AFT SEAT LOCK PIN ATTACHMENT

1. Refer to Figure 1 and Deatil 'A'. Position the AFT Seat (9) into the FULLY AFT position. Back-drill a 1/4" (6.4 mm) diameter hole through the EXISTING hole in the RIGHT Seat Track (3) and into the Aft Seat Track Channel (10). DO NOT drill into the Forward Fuselage Tube Assembly (11). Deburr the hole.

2. Slide the AFT Seat (9) FORWARD as was done previously for the FORWARD Seat and drill additional holes as required for the Seat Lock Pin (5) a MINIMUM of 1/2" (12.7 mm) apart. Deburr ALL holes drilled.

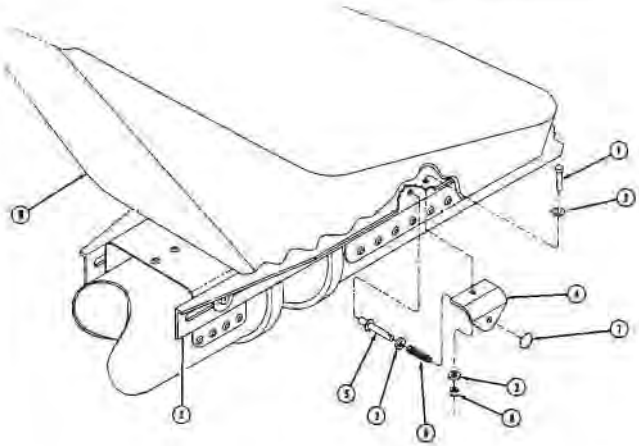
3. Assemble Items (5,2,6,4 and 7) FIRST as illustrated before attaching the Seat Lock Bracket (4) to the Right Seat Track (3). Tighten the Locknut (8) to proper torque.

Item	P/N	Qty	Description
1	10060	1	AN4-6A Bolt
2	10560	3	1/4" Washer
3	45418		Right Seat Track
4	45428	1	Seat Lock Bracket
5	45544	1	Seat Lock Pin
6	10803	1	Seat Lock Spring
7	20309	1	Seat Lock Pull Ring
8	10510	1	1/4" Locknut
9	70366		Light Weight Seat
10			Aft Seat Track Channel Assembly (part of P/N 45545)
11	45545		Forward Fuselage Tube Assembly
12	45012		Tail Boom Tube Assembly





CERTAIN PARTS NOT SHOWN FOR CLARITY



AFT SEAT/SHOULDER HARNESS AND SHOULDER BELT ATTACHMENT

1. Refer to Figure 1 and Details 'A' and 'B'. Assemble as illustrated. Tighten ALL Locknuts (6) to proper torque.

Item	P/N	Qty	Description
1	45668		Boot Tube
2	70347	1	Seat/Shoulder Harness Assembly
3	45695		Aft Seat Belt Attach Plate
4	10060	2	AN4-6A Bolt
5	10S60	4	1/4" Washer
6	10S10	2	1/4" Locknut
7	70343	1	Seat Belt Set
8	45463		Landing Gear Carry Thru
9	10270		AN4-30A Bolt (previously installed w/Hardware)

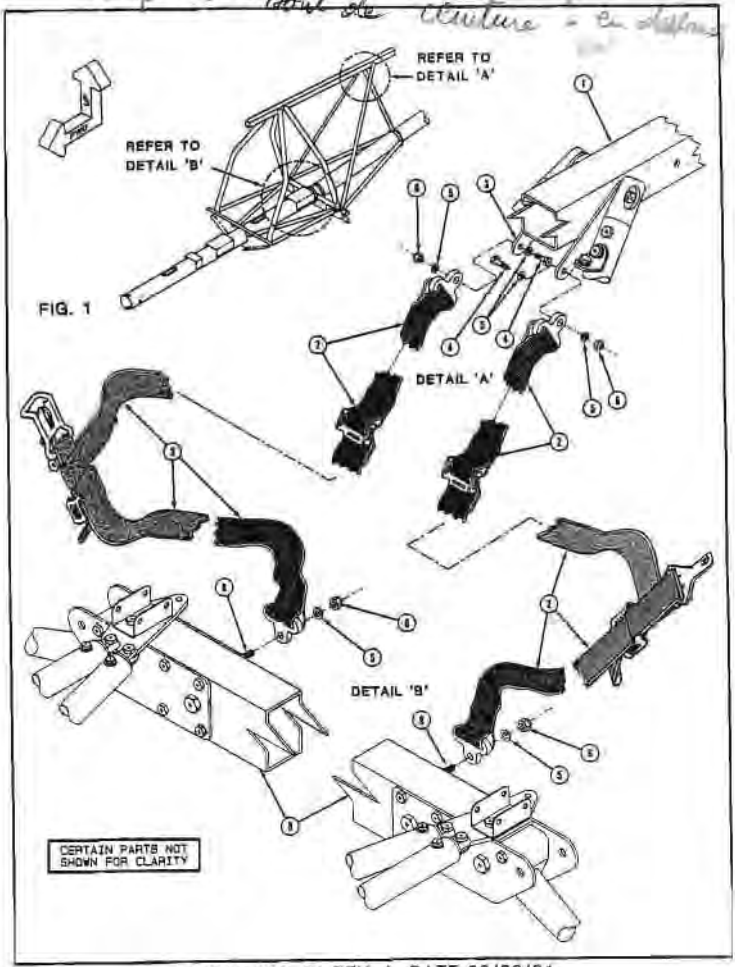

REFER TO DETAIL 'A'
REFER TO DETAIL 'B'
DETAIL 'A'
DETAIL 'B'
CERTAIN PARTS NOT SHOWN FOR CLARITY

FIG. 1

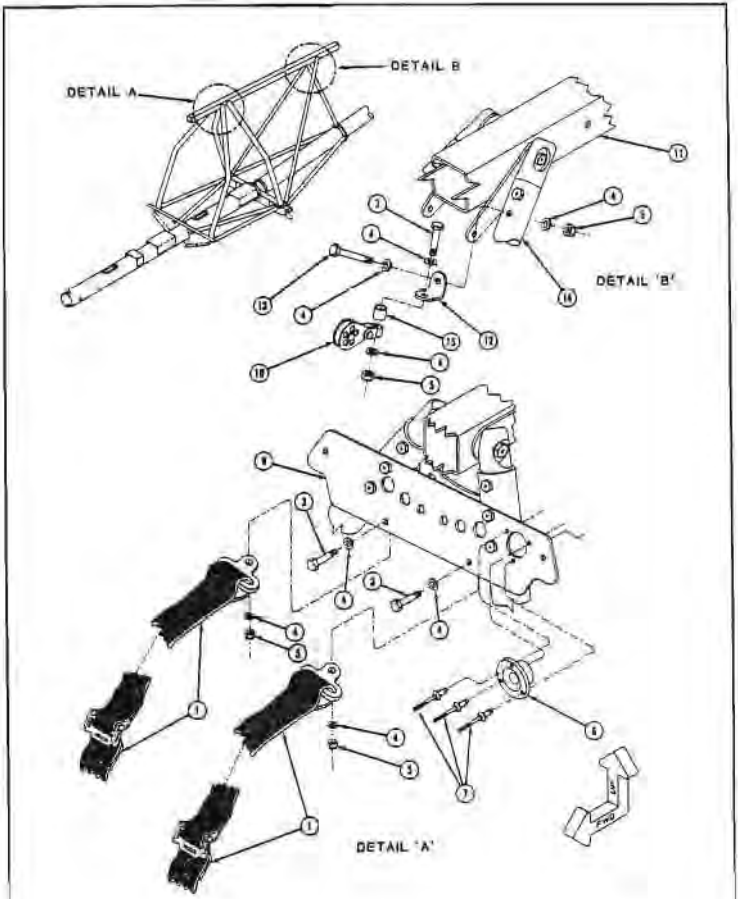
FORWARD SEAT/SHOULDER HARNESS ASSEMBLY AND STARTER ROPE PULLEY ATTACHMENT

1. Refer to Figure 1 and Details 'A' and 'B'. Assemble as illustrated. Tighten ALL Locknuts (5) to proper torque.

OPTIONAL: Refer to Detail 'B'. Cut a piece of Fuel Line (15) APPROXIMATELY 3/8" (9.5 mm) long. Slip the Fuel Line onto the Bolt (3) AFTER the Bolt has been inserted thru the 90 Degree Tang (12). This will remove any "slop" in the Pulley attachment.

OPTIONAL: The THREE (3) Rivets (7) may be installed from the opposite (AFT) direction for cosmetic reasons only. The Rivet itself will stay neatly formed inside the attachment holes of the Fairlead (6) after it has been "popped" into place.

Item	P/N	Qty	Description
1	70347	1	Seat/Shoulder Harness Assembly
2	45429	1	Forward Shoulder Belt Bracket
3	10060	3	AN4-6A Bolt
4	10560	7	1/4" Washer
5	10510	4	1/4" Locknut
6	20236	1	1/2" I.D. Aluminum Fairlead
7	20193	3	3/16" x 1/4" Grip S. Steel Rivet (BSPQ-64)
8	45471		Left Forward Fuselage Downtube
9	45469		Right Forward Fuselage Downtube
10	20228	1	Swivel Eye Pulley
11	45668		Root Tube
12	20365	1	90 Degree Tang
13	10120	1	AN4-15A Bolt
14	45465		Aft Downtube
15	30220	A/R	Fuel Line


DETAIL A
DETAIL B
DETAIL 'B'
DETAIL 'A'

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FUSELAGE SUPPORT TUBE ATTACHMENT

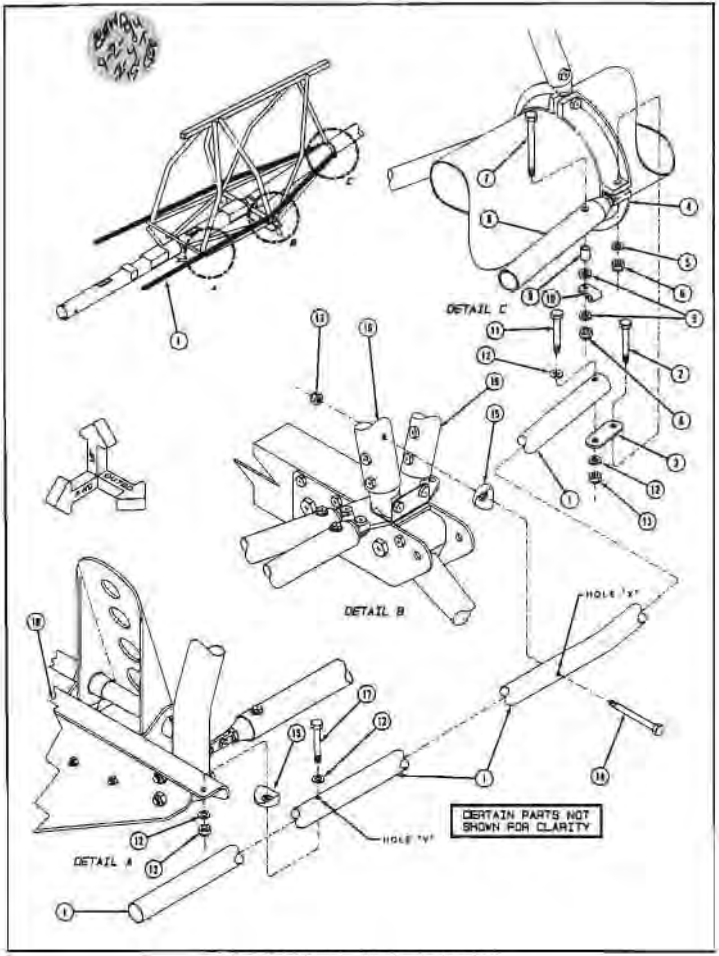
1. Assemble the AFT end of Tube (1) as illustrated FIRST. Tighten ALL Locknuts to proper torque. DO NOT DISTORT THE TUBE.

2. Align, drill and deburr a 3/16" (4.7 mm) diameter hole through the SIDE CENTERLINE of the Forward Downtube (16) for hole "X".

3. Back-drill and deburr using the SAME drill bit through the Forward Fuselage Bulkhead (18) and through the TOP CENTERLINE in the Fuselage Support Tube (1) for hole "Y".

4. Assemble the opposite (RIGHT) side in "mirror image"

Item	P/N	Qty	Description
1	45856	2	Fuselage Support Tube
2	10080		AN4-13A Bolt (previously installed)
3	20361	2	Light Weight Flat Tang
4			Tail Boom Flange (part of P/N 45012)
5	10560		1/4" Washer
6	10510		1/4" Locknut
7	10185	2	AN4-21A Bolt
8	45443		Aft Side Strut
9	20240	2	Pulley Bushing
10	91118	2	Cable Guide
11	10035	2	AN3-14A Bolt
12	10550	8	3/16" Washer
13	10500	4	3/16" Locknut
14	10056	2	AN3-27A Bolt
15	20265	4	7/8" x .25 H x.15 Thick Saddle
16	45467		Forward Downtube
17	10040	2	AN3-15A Bolt
18	45404		Forward Fuselage Bulkhead
19	45465		Aft Downtube

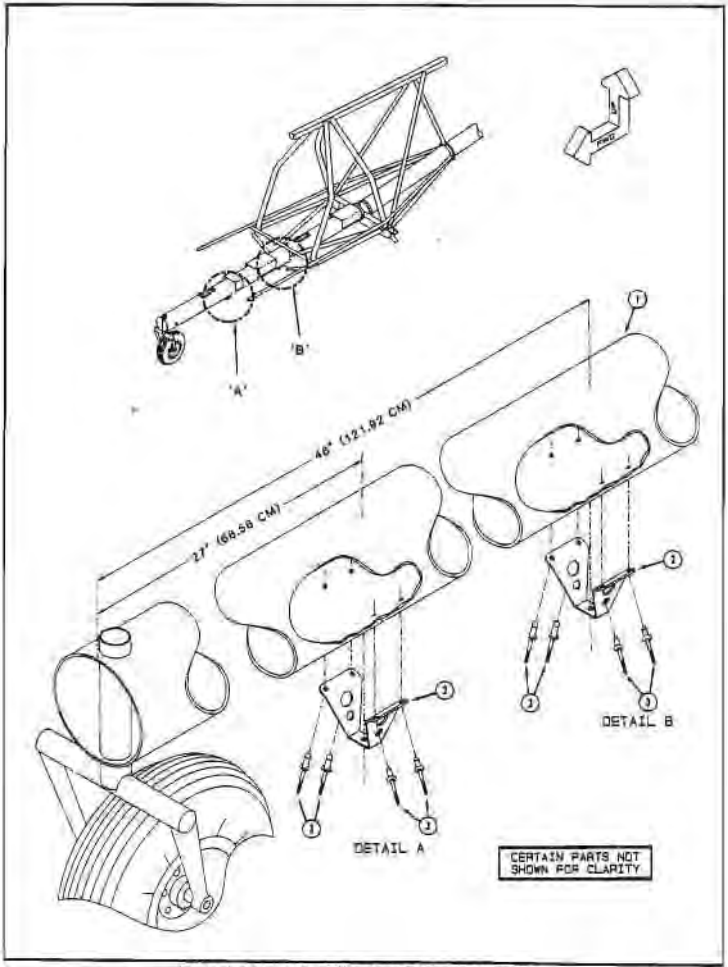

DETAIL C
DETAIL B
DETAIL A
HOLE TYP
HOLE TYP
OBTAIN PARTS NOT SHOWN FOR CLARITY

PILOT ENCLOSURE LOWER MOUNTING BRACKET ATTACHMENT

1. Measure AFT on the BOTTOM surface ONLY of the Forward Fuselage Tube Assembly (1). Mark BOTH locations on the BOTTOM CENTERLINE of the Tube. Ensure the Brackets (2) are ALIGNED VERTICALLY. Align the 1/4" (6.4 mm) CENTER hole in the Mount (2) EXACTLY OVER this location. Mark the FOUR 3/16" (4.7 mm) hole locations per Mount. Drill and deburr.

2. Assemble as illustrated.

Item	P/N	Qty	Description
1	45543		Forward Fuselage Tube Assembly
2	45454	2	Aft Pilot Pod Mount
3	20210	8	3/16" x 3/8" Grip Aluminum Rivet(AAP-66)


'A'
'B'
FWD
46" (121.92 CM)
27" (68.58 CM)
DETAIL A
DETAIL B
CERTAIN PARTS NOT SHOWN FOR CLARITY

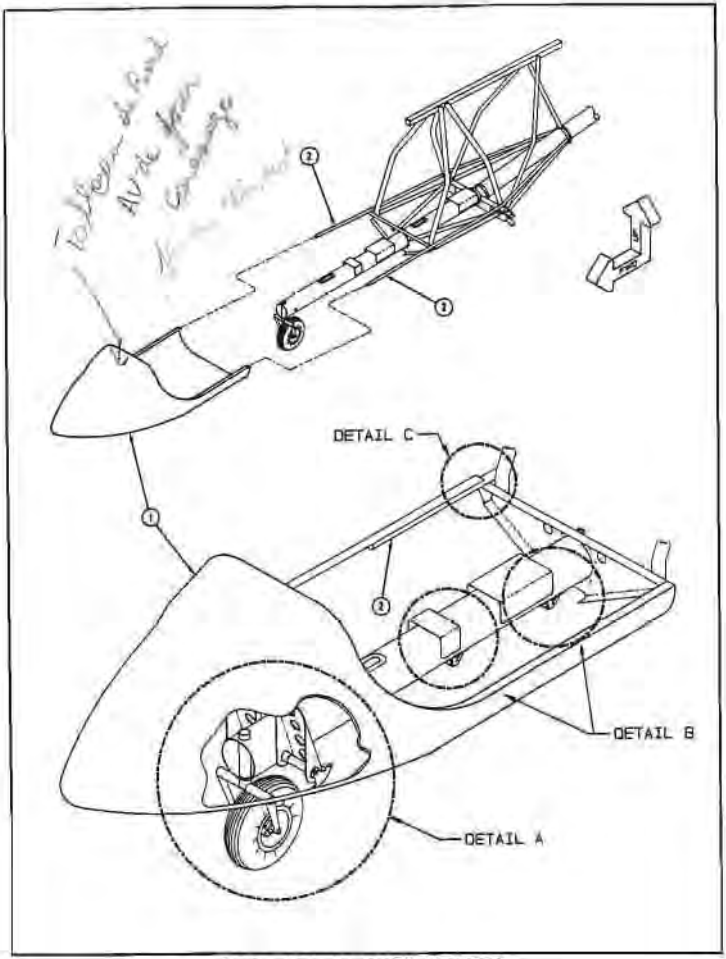
PILOT ENCLOSURE ATTACHMENT

NOTE 1: Before starting the following sequence the Rudder Pedal Pushrods (not illustrated) attached to the Rudder Pedals will either have to be TEMPORARILY disconnected or you may refer to pages 2-122 and 2-123 and prepare the Pilot Enclosure as illustrated as to allow the Pilot Enclosure to be "slipped on" as illustrated.

NOTE 2: You may wish to position the Pilot Enclosure, drill the holes and mount it TEMPORARILY then later remove it to paint it or paint it AFTER it is PERMANENTLY attached.

1. Refer to the following Pages 2-110 and 2-111 for Details 'A', 'B' and 'C'.

Item	P/N	Qty	Description
1	45578	1	Pilot Enclosure
2	45856		Fuselage Support Tube


DETAIL C
DETAIL B
DETAIL A

PILOT ENCLOSURE ATTACHMENT (CONT'D.)

1. Trim the Nipples off SIX (6) Rubber Shock Grommets (4).

2. Position the Pilot Enclosure (1) as illustrated. When it is positioned correctly there should be APPROXIMATELY 2 3/8" (6.03 cm) clearance between Pilot Enclosure (Instrument Panel cut-out area) and the FORWARD edge of the Bolts attached to the Control Wheel when the Control Wheel Support Tube is in the FORWARD (FULL DOWN) position.

The AFT edge of the Pilot Enclosure should be located APPROXIMATELY 1" - 1 1/4" (25.4 mm - 31.8 mm) AFT of the FORWARD edge ("Lip") of the Forward Fuselage Tube Bulkhead.

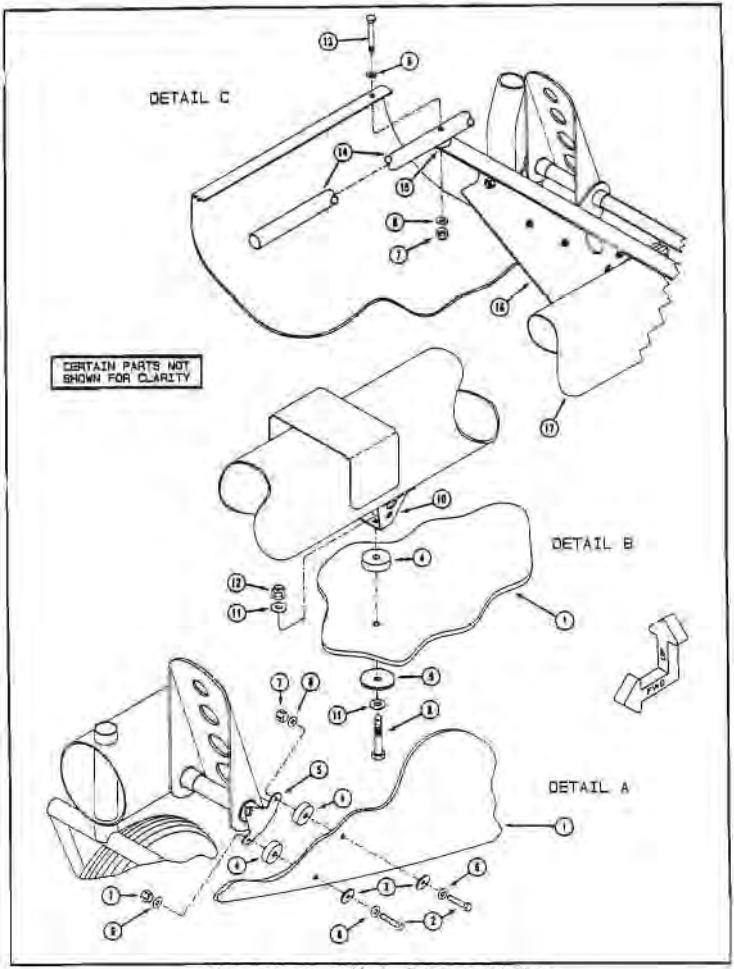
2. Refer to Detail 'C', Drill a 3/16" (4.7 mm) hole in the UPPER AFT ("lip") edge of the Enclosure (1). Refer to Detail 'B'. Drill a 1/4" (6.4 mm) diameter hole on the BOTTOM CENTERLINE ALIGNED with the Aft Fairing Mounts.

3. Assemble as illustrated. Tighten ALL Locknuts to proper torque.

NOTE 1: The remaining Aft Mount (10) with Hardware is NOT shown for clarity. Attach Hardware and tighten to proper torque.

NOTE 2: The RIGHT side FORWARD attachment Pilot Enclosure (1) Hardware is NOT shown for clarity. Attach the RIGHT side in "mirror image".

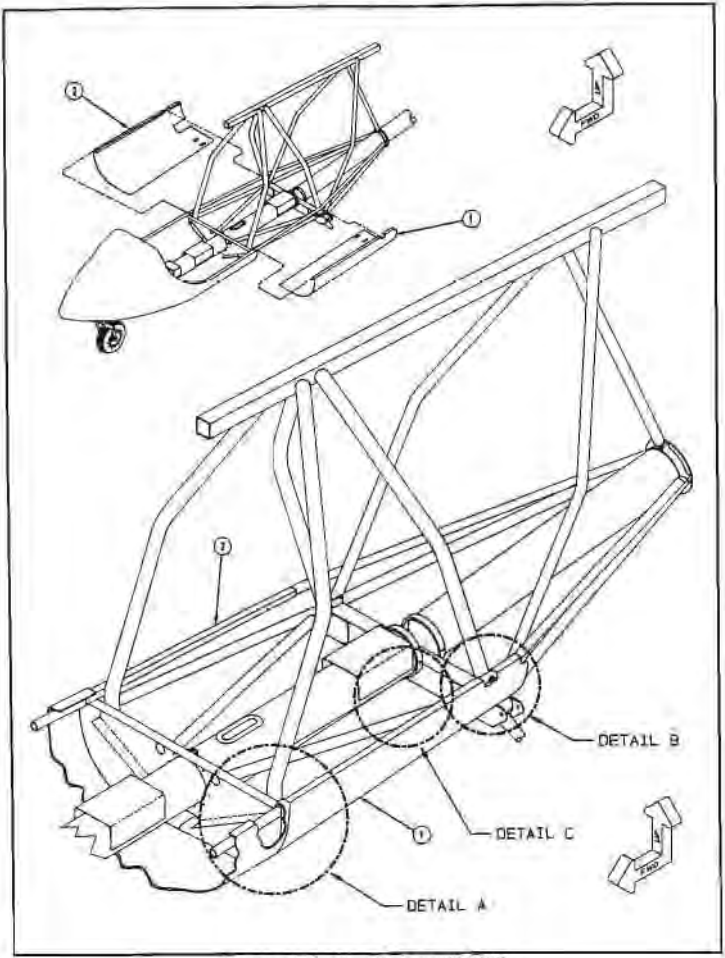
Item	P/N	Qty	Description
1	45578		Pilot Enclosure
2	10079	4	AN3-7A Bolt
3	10563	4	3/16" Fender Washer
4	30380	6	Soft Rubber Shock Grommet
5	45450		Forward Pilot Fairing Mount
6	10550	12	3/16" Washer
7	10500	6	3/16" Locknut
8	10066	1	AN4-10A Bolt
9	10563	1	1/4" Fender Washer
10	45454		Aft Pilot Pod Mount
11	10560	1	1/4" Washer
12	10510	1	1/4" Locknut
13	10045	2	AN3-16A Bolt
14	45856		Fuselage Support Tube
15	20265	2	7/8" x .25H x .15 THK Saddle
16			Forward Fuselage Bulkhead (part of P/N 45545)
17	45545		Forward Fuselage Tube Assembly


DETAIL C
CERTAIN PARTS NOT SHOWN FOR CLARITY
DETAIL B
DETAIL A

LOWER CENTER FAIRING ATTACHMENT

1. Refer to Details 'A', 'B' and 'C' on this and the following pages.

Item	P/N	Qty	Description
1	46105		Left Lower Center Fairing
2	46106		Right Lower Center Fairing


1
1
1
1
DETAIL B
DETAIL C
DETAIL A

LOWER CENTER FAIRING ATTACHMENT (CONT'D.)

1. Backdrill a 3/16" (4.7 mm) diameter hole through the Forward Fuselage Bulkhead (5) into and through the CENTERLINE of the Fuselage Support Tube (2). Assemble as illustrated. Tighten ALL Locknuts to proper torque. DO NOT DISTORT THE TUBE.

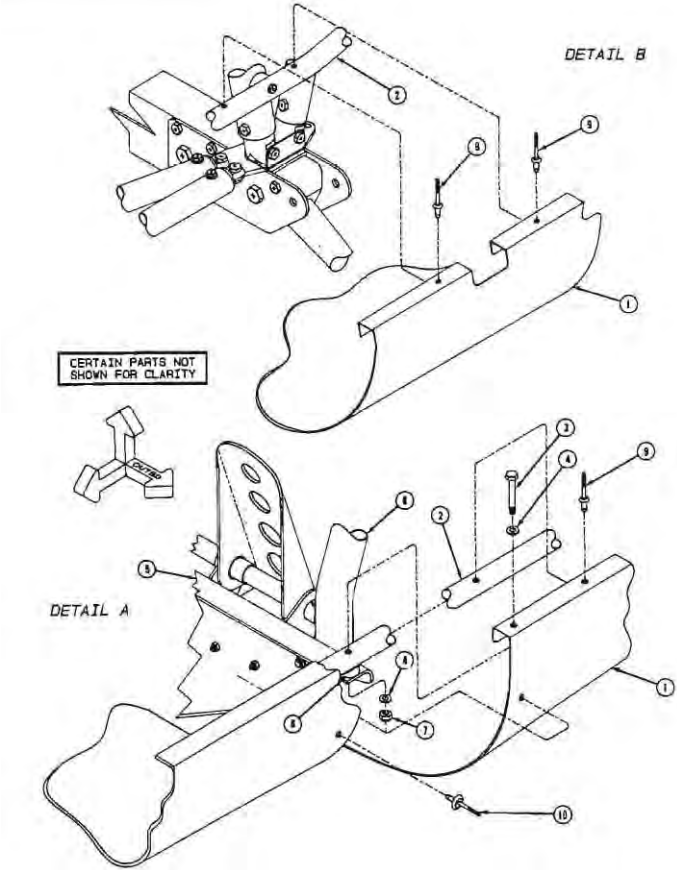
IMPORTANT: BOTH Lower Center Fairings (1) are to be attached to the INSIDE of the Pilot Enclosure (11) or allow the Pilot Enclosure to OVERLAP the OUTSIDE of the FORWARD edge of BOTH Center Fairings (1).

2. Drill and deburr 1/8" (3.2 mm) diameter holes for Rivets (9) as required [APPROXIMATELY every THREE inches (7.62 cm)].

IMPORTANT: The "General Rule"when working with this Fiberglass Pilot Enclosure is to ALWAYS use the Large Head Rivets (10) to secure the Pilot Enclosure to the Forward Fuselage.

3. Repeat on the opposite (RIGHT) side in 'mirror image'.

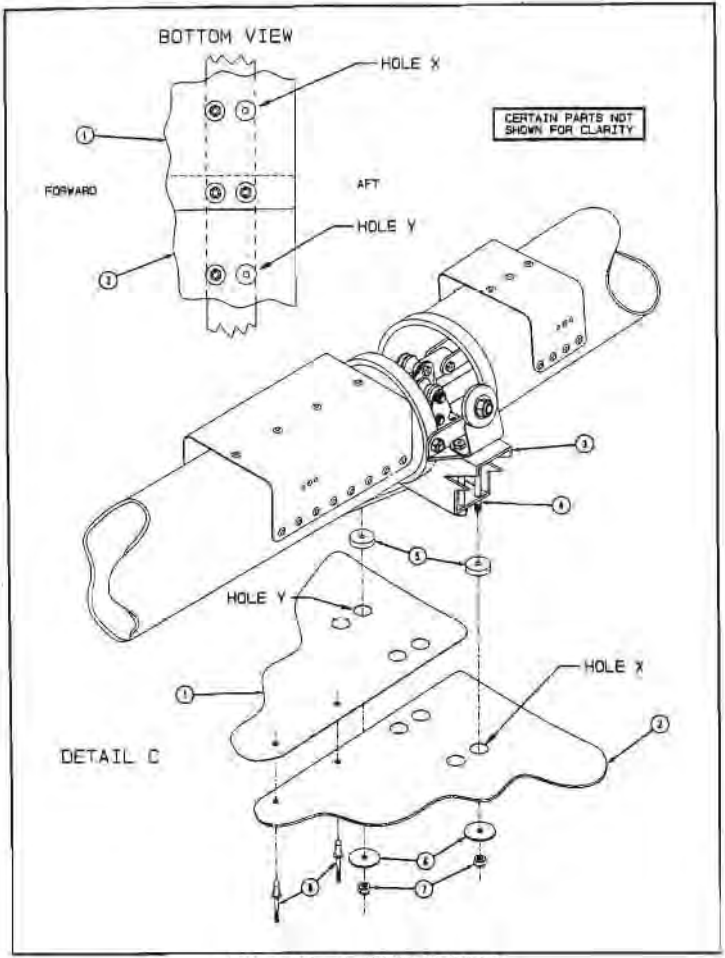
Item	P/N	Qty	Description
1	46105	1	Left Lower Center Fairing
	46106	1	Right Lower Center Fairing (not illustrated)
2	4S856		Fuselage Support Tube
3	1004S	2	AN3-16A Bolt
4	10SS0	4	3/16" Washer
5	43404		Forward Fuselage Bulkhead
6	20263	2	7/8" x .25"H x .1S" THK Saddle
7	10S00	2	3/16" Locknut
8	45471		Left Forward Fuselage Downtube
9	20200		1/8" Aluminum Rivet (AAP-44)
10	20194		3/16" x 1/4" Grip Aluminum "L" Flange Rivet


DETAIL B
CERTAIN PARTS NOT SHOWN FOR CLARITY
DETAIL A

LOWER CENTER FAIRING AFT ATTACHMENT

1. Assemble as illustrated. Tighten ALL Locknuts to proper torque.

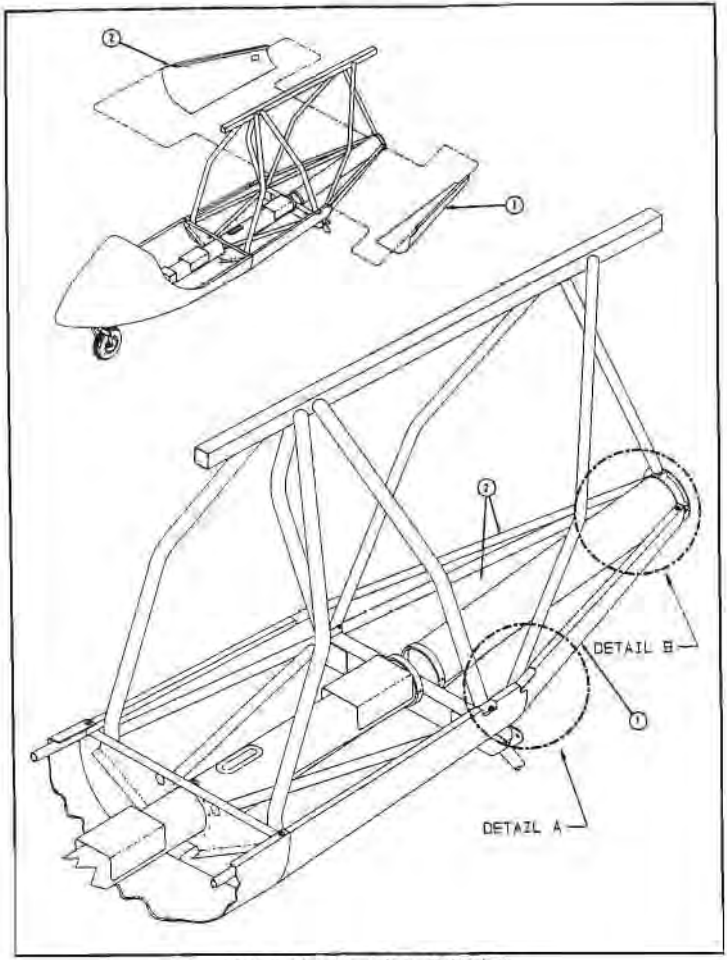
Item	P/N	Qty	Description
1.	46106		Right Lower Center Fairing
2.	46105		Left Lower Center Fairing
3.	45463		Landing Gear Carry Thru
4.	10296		AN4-40A Bolt
5.	20346		1/4" Thick x 1" O.D. Nylon Washer
6.	10565		1/4" Fender Washer
7.	10560		1/4" Locknut
8.	20200		1/8" Aluminum Rivet (AAP-44)


BOTTOM VIEW
HOLE X
CERTAIN PARTS NOT SHOWN FOR CLARITY
FORWARD
AFT
HOLE Y
1
2
3
4
5
6
7
8
HOLE Y
HOLE X
DETAIL C

LOWER AFT FAIRING ATTACHMENT

1. Refer to Details 'A' and 'B' and the following pages.

Item	P/N	Qty	Description
1	46110		Lower Left Aft Fairing
2	46111		Lower Right Aft Fairing

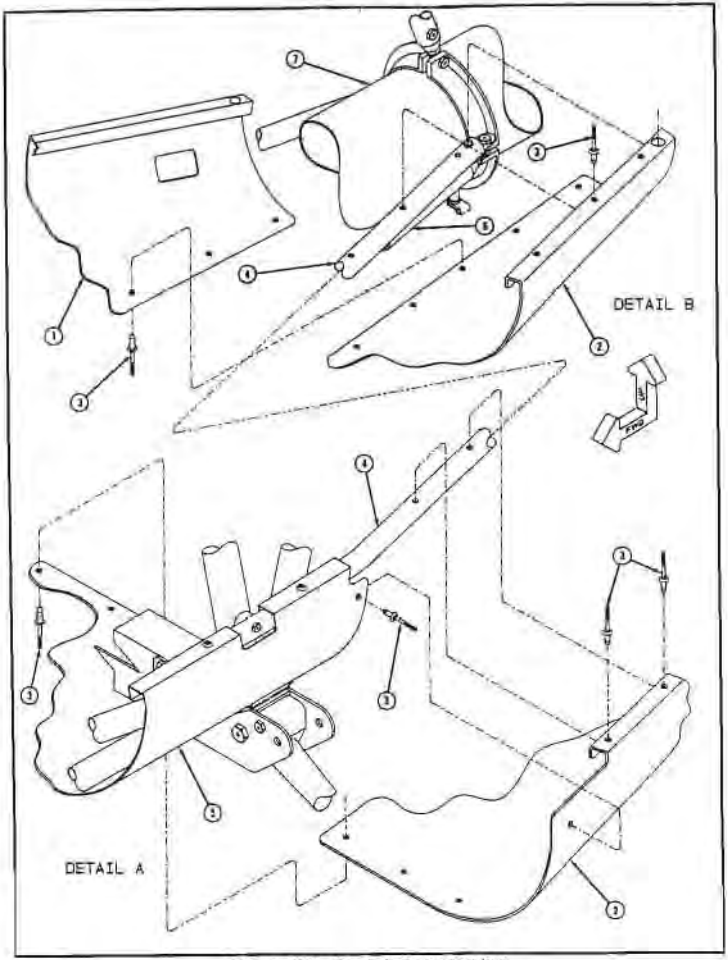

2
1
2
DETAIL B
1
DETAIL A

LOWER AFT FAIRING ATTACHMENT (CONT'D.)

1. Assemble as illustrated.

IMPORTANT: The Lower Aft Fairings are to be attached INBOARD or on the INSIDE of the Lower Center Fairings.

Item	P/N	Qty	Description
1	46111	1	Right Aft Lower Fairing
2	46110	1	Left Aft Lower Fairing
3	20200		1/8" Aluminum Rivet (AAP-44)
4	45856		Fuselage Support Tube
5	46105		Left Lower Center Fairing
6	45443		Aft Side Strut


DETAIL B
DETAIL A

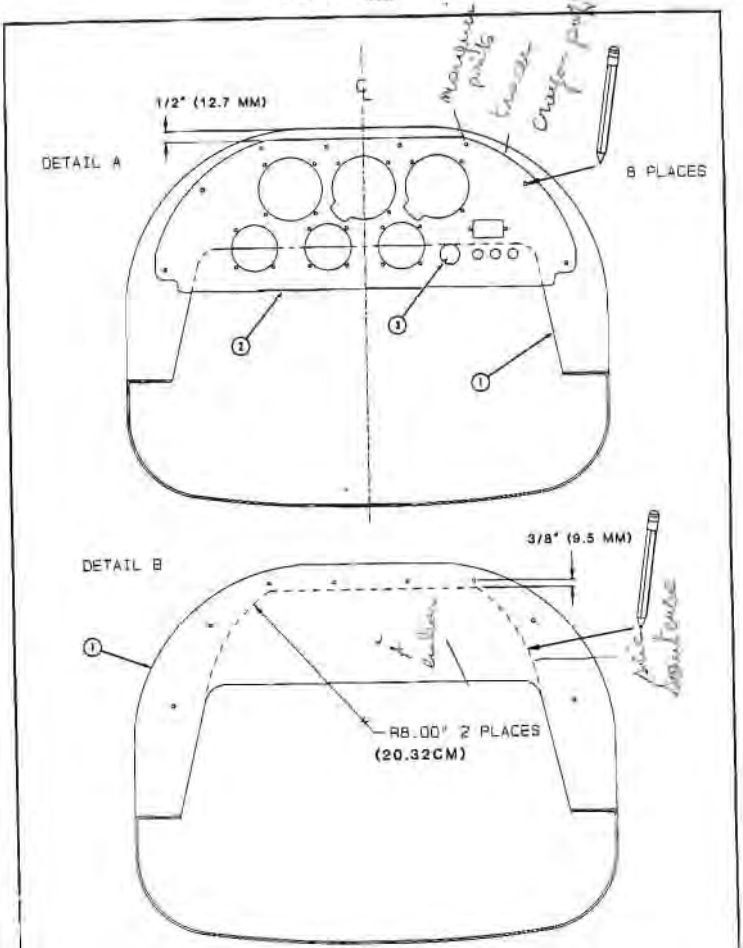
INSTRUMENT PANEL TO PILOT ENCLOSURE ATTACHMENT

1. Follow the Instructions on the opposite page. Using the mounting holes in the Instrument Panel (2) as a Template Drill EIGHT 5/32" (4 mm) diameter holes in the Pilot Enclosure (1) at the locations illustrated for the Instrument Panel.

IMPORTANT: The Ignition Switch Index Locator (3) is there to keep the Ignition Switch (not illustrated) from rotating. DO NOT file the off!

OPTIONAL: You may wish to paint your Instrument Panel to match your Pilot Enclosure color scheme or use Black "Wrinkle" Paint BEFORE the instruments are installed.

Item	P/N	Qty	Description
1	45578		Pilot Enclosure
2	45574	1	Instrument Panel
3			Ignition Switch Index Locator


1/2" (12.7 MM)
DETAIL A
8 PLACES
3/8" (9.5 MM)
DETAIL B
R8.00" 2 PLACES
(20.32CM)

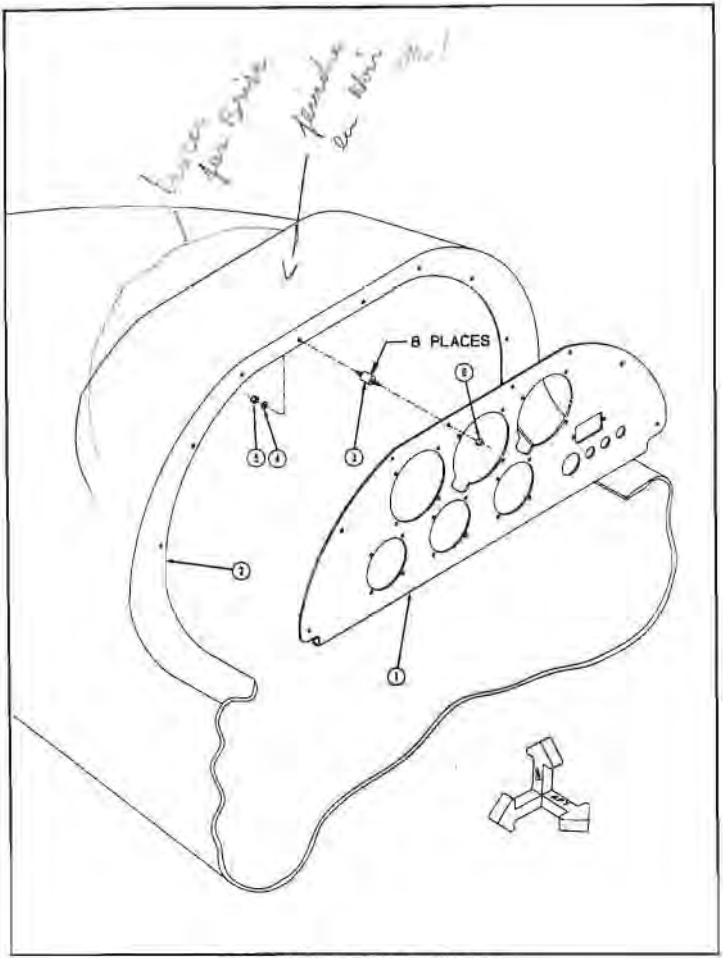
INSTRUMENT PANEL TO PILOT ENCLOSURE ATTACHMENT (CONT'D.)

1. Follow the instructions on the opposite page.

NOTE 1: Use the Instrument Panel (1) as a Template ONLY. DO NOT attach the Panel to the Pilot Enclosure at this time.

NOTE 2: It is more preferable to mount the Instrument Panel to the Pilot Enclosure (2) AFTER the Instruments have been installed.

Item	P/N	Qty	Description
1	45574		Instrument Panel
2	45578		Pilot Enclosure
3	45576	8	8-32 x 1.25 Shock Mount
4	10550	8	3/16" Washer
5	11002	16	8-32 Locknut


8 PLACES
8
5
4
3
2
1

AIRSPEED ATTACHMENT TO INSTRUMENT PANEL
AND PITOT TUBE / STATIC PORT ATTACHMENT

1. Follow the Instructions on the opposite page.

2. Measure 6" (15.24 cm) AFT (on the TOP CENTERLINE) from the NOSE of the Pilot Enclosure. Mark this location. Drill a 1/4" (6.4 mm) diameter hole and FOUR 3/16" (4.8 mm) holes to mount the Pitot Tube Assembly (5).

NOTE: Use the FOUR attachment holes in the Pitot Tube (5) as a guide.

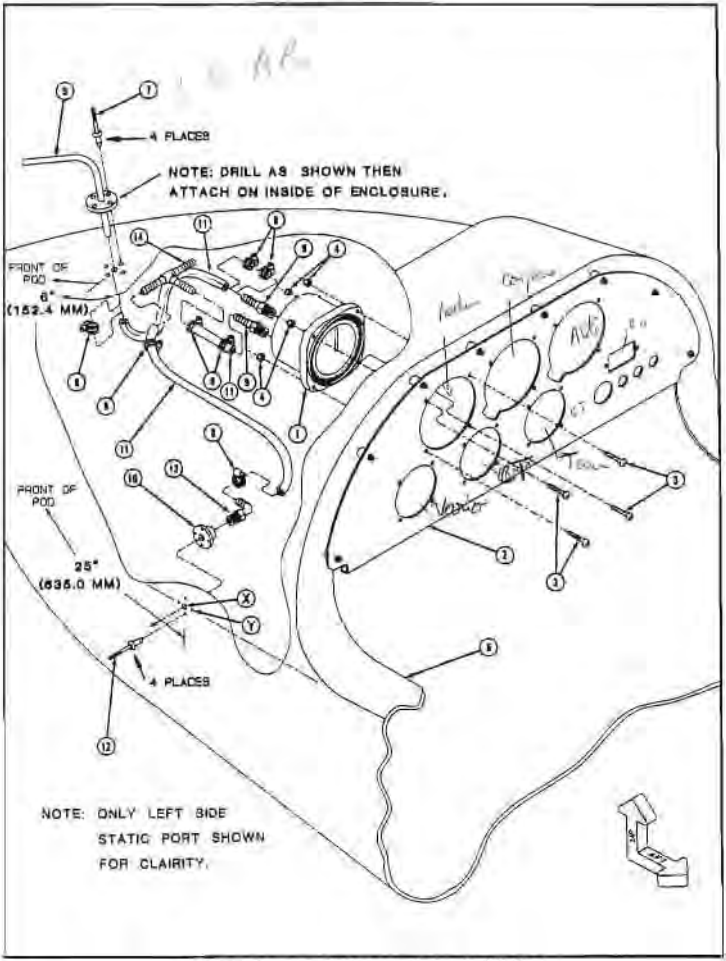
IMPORTANT: Mount the Pitot Tube (5) facing STRAIGHT FORWARD.

3. Measure and Mark the Static Port location at 34" (86.36 cm) AFT of the NOSE on the LEFT side of the Pilot Enclosure as illustrated. Drill HOLE "X", ONE 1/4" (6.4 mm) diameter hole, and FOUR 1/8" (3.2 mm) diameter holes "Y" as required to attach the Static Port.

4. Thread the Adapters (9) into the BACK of the Airspeed Indicator (1). Install as illustrated using Hardware (3) and (4).

5. Cut the lengths of Tubing (11) as required.

Item	P/N	Qty	Description
1	90134	1	Airspeed Indicator
2	45574		Instrument Panel
3	11065	4	Mounting Screws (part of P/N 90134)
4	11067	4	Locknuts (part of P/N 90134)
5	90140	1	Pitot Tube Assembly
6	45578		Pilot Enclosure
7	20210	4	3/16" Alumunum Rivet (AAP-64)
8	30230	4	Fuel Line Clamps
9	90150	2	1/8" NPT x 1/4" Hose Adapter
10	90159	1	Static Port
11	39980	A/R	3/16" Vinyl Tubing
12	20200	4	1/8" Aluminum Rivet (AAP-44)
13	90155	1	1/4" NPT x 1/4" Hose Elbow


4 PLACES
NOTE: DRILL AS SHOWN THEN ATTACH ON INSIDE OF ENCLOSURE.
FRONT OF POD
6"
(152.4 MM)
FRONT OF POD
25"
(635.0 MM)
4 PLACES
NOTE: ONLY LEFT SIDE STATIC PORT SHOWN FOR CLAIRITY.

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FUEL TANK SUB-ASSEMBLY

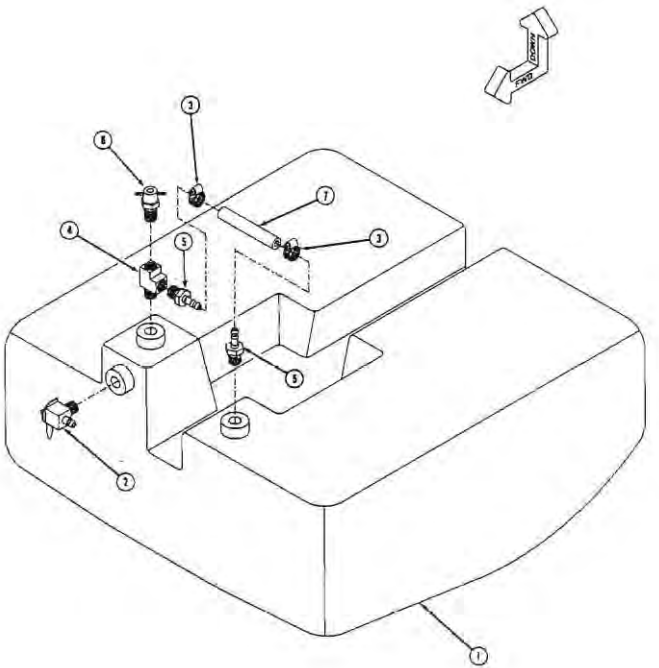
IMPORTANT: Verify the INSIDE of the Fuel Tank (1) is CLEAN and free of any foreign objects that would "clog" the flow of fuel. Remove ALL foreign objects from the INSIDE the Tank if present.

NOTE: Wrap a SMALL amount of Teflon Tape (not illustrated) around the threads of the On/Off Valve (2), Elbow (3) and Fittings (4,5 and 6) in the proper direction of installation.

1. Assemble as illustrated but DO NOT attach the Fuel Line (7) until AFTER the Fuel Tank has been attached to the Root Tube on pages 2-134 and 2-135. Cut the Fuel Line as required. Ensure the Fuel Line is NOT "kinked". DO NOT OVER TORQUE the Fuel Line Clamps (3).

NOTE: Refer to your aircraft OWNERS MANUAL Pre-Flight Section regarding proper use of the Drain Valve (6) in removing contaminates from the Fuel Tank.

Item	P/N	Qty	Description
1	30254	1	8.5 Gallon Fuel Tank Assembly (Includes Fuel Tank Cap)
2	30282	1	Cut-Off Valve
3	30230	2	Fuel Line Clamps
4	30272	1	Street Tee
5	30274	2	1/4" NPT x 1/4" Fuel Hose Adaptor
6	30273	1	Drain Valve
7	30220	A/R	Fuel Line

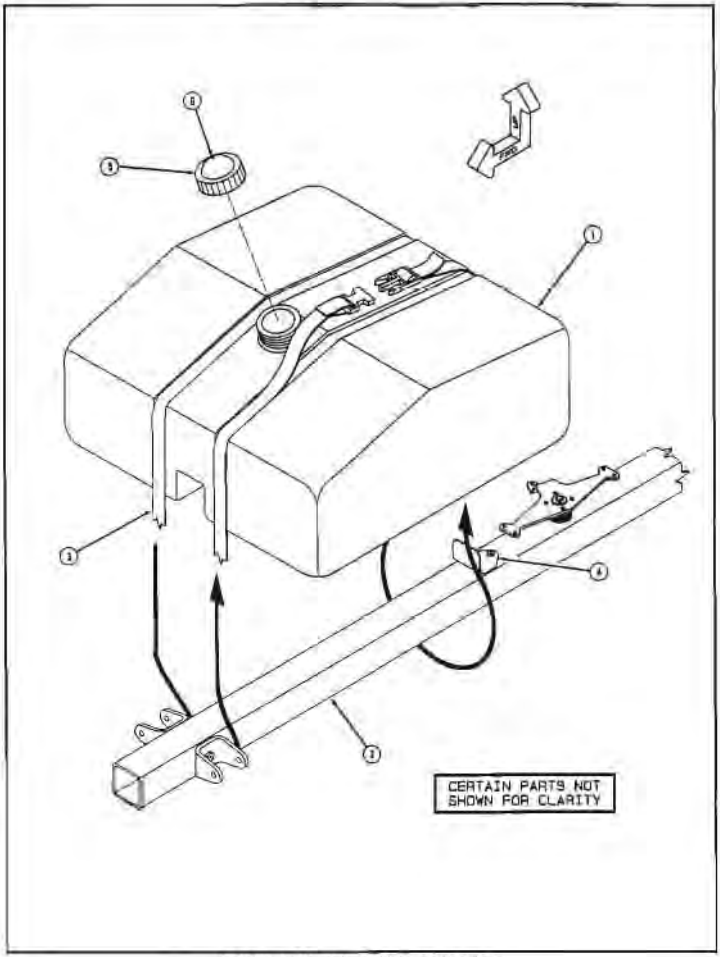

UP
DOWN
8
3
7
4
3
5
6
2
1

FUEL TANK ASSEMBLY AND ATTACHMENT

1. Attach the Fuel Tank (1) with the Strap (3) as illustrated.

IMPORTANT: Verify the Fuel Tank Cap (5) Vent Hole (6) is UNOBSTRUCTED BEFORE attaching the Fuel Tank Cap to the Fuel Tank (1).

Item	P/N	Qty	Description
1	30254	1	8.5 Gallon Fuel Tank Assembly
2	45545		Root Tube
3	45490	1	Fuel Tank Attach Strap
4	45543		Fuel Tank Stop Bracket
5	30260		Fuel Tank Cap (part of P/N 30254)
6			Vent Hole


CERTAIN PARTS NOT SHOWN FOR CLARITY

PYLON BULKHEAD ATTACHMENT

1. Locate the 3/16" (4.8 mm) diameter (factory punched) holes in the Pylon Bulkhead (1) that align with the Clamps (5). There should be TWO (2) sets (a set consistes of TWO (2) holes) located at the TOP, TWO (2) sets located in the MIDDLE and TWO (2) sets located on the BOTTOM edges of the Bulkhead. The attachment holes correspond with the Aft Downtube (2).

2. LIGHTLY attach the Clamps (5) (so that you may position the Bulkhead as required for alignemnt) to the Bulkhead (1) with Hardware (3,4,6 and 7) as illustrated

3. Position BOTH the LEFT and RIGHT sides of the Pylon Bulkhead (1) 1/8" (3.2 mm) ABOVE the Left Aft Lower Fairing (8) as illustrated. Assemble as illustrated. Tighten ALL Locknuts to proper torque.

Item	P/N	Qty	Description
1	45583	1	Pylon Bulkhead
2	45465		Aft Downtube
3	10015	12	AN3-6A Bolt
4	10550	24	3/16" Washer
5	45052	6	1 1/8" Bulkhead Tube Clamp
6	10563	12	3/16" Fender Washer
7	10500	12	3/16" Locknut
8	46110		Left Aft Lower Fairing
9	46111		Right Aft Lower Fairing

2-136A

LOWER PYLON COVER DOUBLER ATTACHMENT

1. Using the Lower Pylon Cover Doubler (1) as a template, TEMPORARILY position it as illustrated against the OUTSIDE of the Aluminum Pylon Cover (2) by aligning the TWO EXISTING 3/16" (4.8 mm) diameter holes on the LOWER edge of the Doubler with the TWO matching holes in the Pylon Cover. TEMPORARILY insert a TWO Rivets (4) (not illustrated) to hold the Doubler in place. DO NOT 'pop' the Rivet.

NOTE 1: Refer to pages 2-140 and 2-141 if necessary.

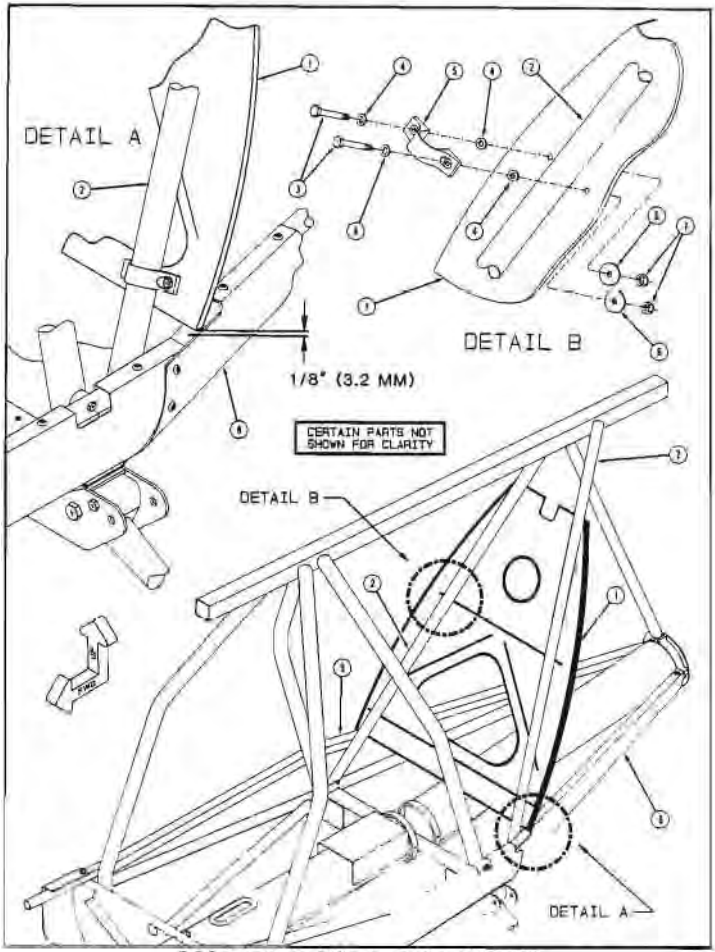
NOTE 2: The Doubler (1) is to be attached later to the INSIDE of the Pylon Cover (2) as illustrated.

2. Using the EXISTING 1/8" (3.2 mm) diameter holes as a guide, back-drill thru the ELEVEN holes in the Doubler (1) and thru the Aluminum Pylon Cover (2). TEMPORARILY insert Rivets (as necessary) to hold it in place while you drill the remaining holes.

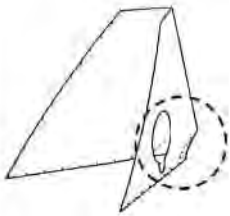
3. After all ELEVEN holes are drilled, remove the Rivets (3) and (4) (not illustrated) TEMPORARILY holding the Doubler (1). Attach the Doubler as illustrated to the INSIDE of the Pylon Cover (2). Ensure all Rivets (3) are 'popped' correctly.

4. Repeat Steps 1-3 on the opposite side of the Aft Pylon in mirror image.

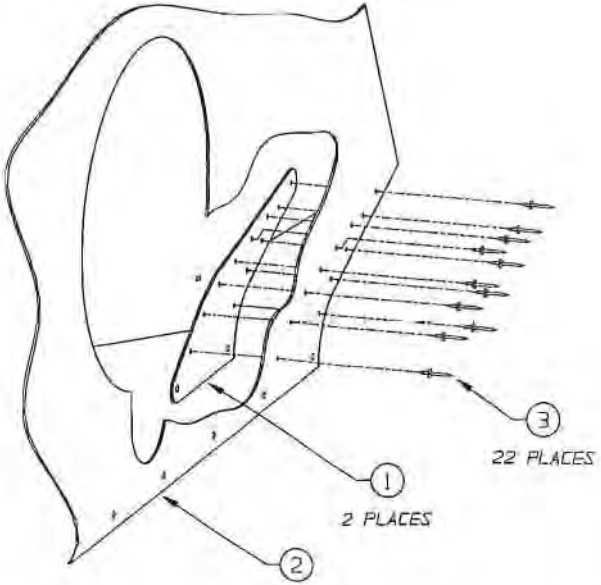
Item	P/N	Qty	Description
1	46342	2	Lower Pylon Cover Doubler
2	46340		Aluminum Pylon Cover
3	20199	22	1/8" x 1/4" Grip Aluminum Rivet (AAP-44)
4	20195		3/16" x 1/4" Grip Aluminum Rivet (AAP-64) (not illustrated)


DETAIL A
DETAIL B
1/8" (3.2 MM)
CERTAIN PARTS NOT SHOWN FOR CLARITY
DETAIL B
DETAIL A

LOWER PYLON COVER DOUBLER ATTACHMENT





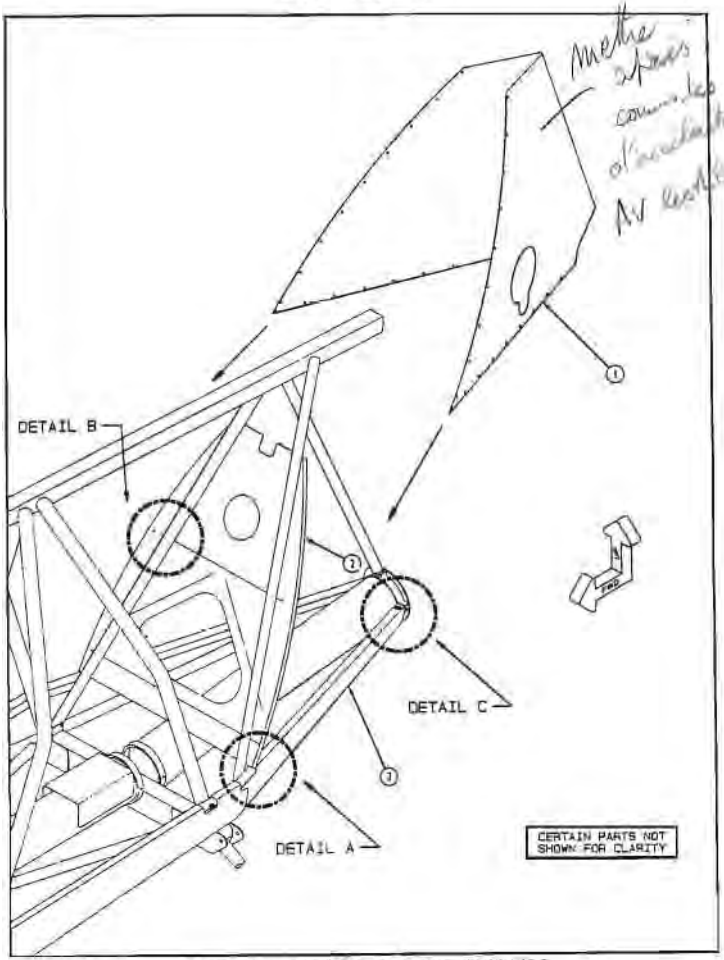


ALUMINUM PYLON COVER ATTACHMENT

1. Position the Aluminum Pylon Cover (1) onto the Fuselage as illustrated. Refer to the following pages 2-140 and 2-141 for Details 'A', 'B' and 'C'.

NOTE: You may wish to use masking tape to TEMPORARILY position the Aluminum Pylon Cover as per the following page.

Item	P/N	Qty	Description
1	46340	1	Aluminum Pylon Cover
2	45583		Pylon Bulkhead
3	46110		Left Aft Lower Fairing
4	46111		Right Aft Lower Fairing


DETAIL B
DETAIL C
DETAIL A
CERTAIN PARTS NOT SHOWN FOR CLARITY

ALUMINUM PYLON COVER ATTACHMENT (CONT'D.)

OPTIONAL: The Illustration shows the installation of the Aluminum Pylon Cover (1) with the use of Rivets (4). It may be advantageous to substitute Riv-Nuts (5) and Phillips Head Screws (6) (not illustrated) for the Rivets (4) as this would allow the Aluminum Pylon Cover (1) to be removeable if necessary for inspection, maintenance or future modifications.

NOTE: You may want to use masking tape to temporarily hold the Aluminum Pylon Cover (1) in place during the following sequence.

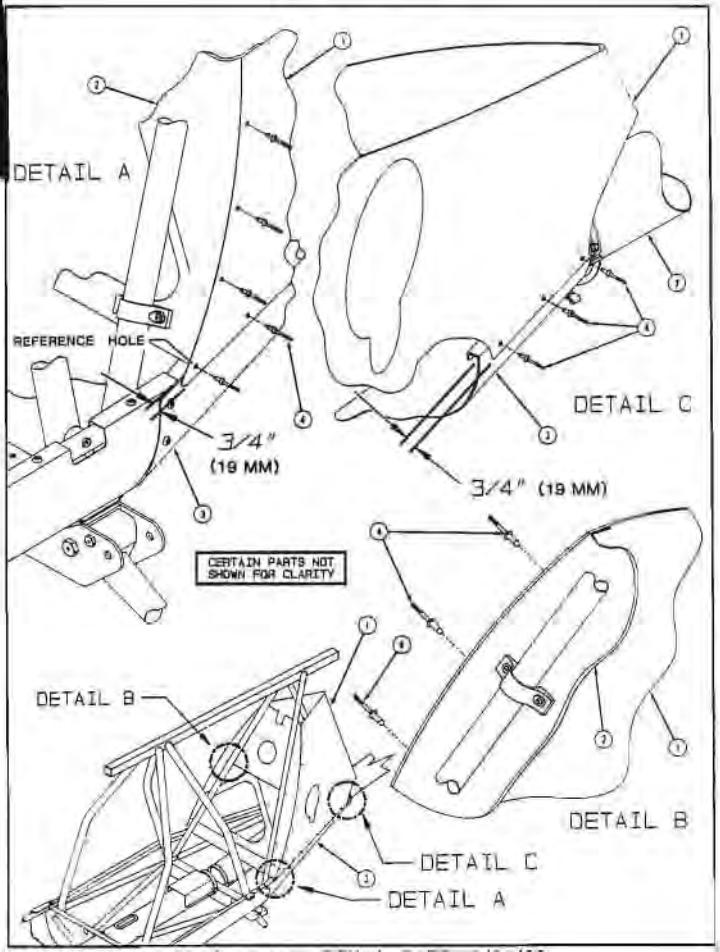
1. Refer to Figure 1 and Details 'A' and 'B'. Position the FORWARD edge of the Aluminum Pylon Cover (1) "EVEN" or "FLUSH" with the Pylon Bulkhead. Ensure the Pylon Cover "OVERLAPPING" the Lower Fairing (3) by 3/4" (19 mm) as illustrated.

NOTE: Refer to Detail 'C'. Ensure the AFT edge of the Pylon Cover (1) DOES NOT "rub" or come into direct contact with the Tail Boom Tube (7). Ensure there is adequate clearance.

2. Refer to Detail 'A'. Attach the Aluminum Pylon Cover (1) to the Pylon Bulkhead (2) and the Aft Lower Fairing (3) by referencing off of the factory punched 3/16" (4.8 mm) attachment hole located at the BOTTOM FORWARD edge of the LEFT side of the Pylon Cover. Back-drill thru the pre-punched attachment holes and thru the SIDE of the Bulkhead (2) and Lower Aft Fairing (3) and work your way UPWARD and AFT along the perimeter of the Pylon Cover.

3. Attach the opposite (RIGHT) side in "mirror image".

Item	P/N	Qty	Description
1.	46340		Aluminum Pylon Cover
2.	45383		Pylon Bulkhead
3.	46110		Left Aft Lower Fairing
4.	20195	40	3/16" x 1/4" Aluminum Rivet (AAP-64)
5.	20227	40	8-32 Riv-Nut (A8-7S)
6.	11078	40	8-32 Phillips Head Screw (AN526-832R8)
7.	45012		Tail Boom Tube Assembly


DETAIL A
REFERENCE HOLE
3/4"
(19 MM)
DETAIL C
3/4" (19 MM)
CERTAIN PARTS NOT SHOWN FOR CLARITY
DETAIL B
DETAIL B
DETAIL C
DETAIL A

FORWARD THROTTLE LEVER ASSEMBLY

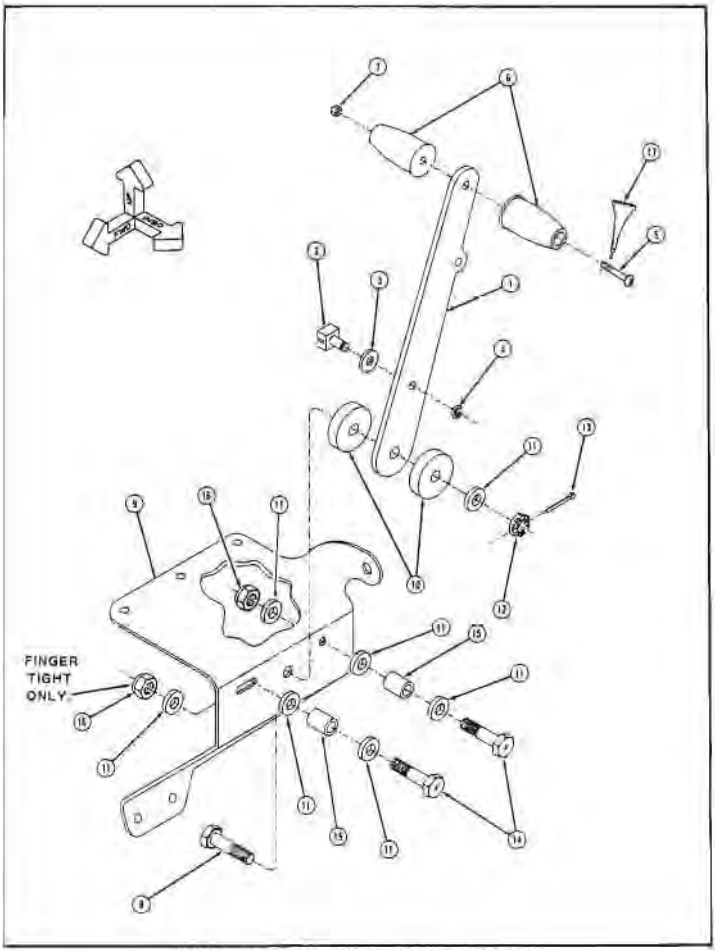
IMPORTANT: Note the correct orientation of the Throttle Lever (1) **BEFORE** attachment.

1. Assemble as illustrated. Tighten ALL Locknuts to proper torque **EXCEPT** the Locknut (16) attached to Bolt (14) comprising the FORWARD Throttle Lever Stop. (Note the notched cut-out). Leave this Locknut **ONLY FINGER TIGHT** to be tightened in a later sequence on page 4-30 and 4-31.

NOTE 1: Add a drop of Thread Adhesive (17) to the threads of the Screw (5). DO NOT OVER TORQUE the Screw which may damage the Knobs (6). Tighten the Castle Nut (12) tight enough to apply suffient friction on the Throttle Lever (1) to keep it from rotating freely.

NOTE 2: Ensure the "E" Clip Retainer (4) is secured correctly. Verify the Cable Swivel (2) is allowed to rotate freely. If not you may have to ream the "E" Clip attachment hole with a 3/16" (4.8 mm) Drill Bit.

Item	P/N	Qty	Description
1	90215	1	Throttle Lever w/.191 hole
2	90250	1	Cable Swivel
3	20343	1	#10 Nylon Washer
4	90260	1	"E" Clip Retainer
5	10479	1	4 mm x 25 mm Screw
6	90235	2	Throttle Knob
7	10496	1	4 mm Hex Nut
8	10068	1	AN4-11 Bolt
9	45482	1	Forward Throttle Mount Plate
10	20346	2	1/4" Thick x 1" O.D. Nylon Washer
11	10560	7	1/4" Washer
12	10521	1	1/4" Castle Nut
13	10635	1	Cotter Pin
14	10064	2	AN4-11A Bolt
15	40428	2	3/8" x .058" x 1/2" Aluminum Spacer
16	10510	2	1/4" Locknut
17	60591	A/R	Thread Adhesive


FINGER
TIGHT
ONLY

AFT THROTTLE LEVER ASSEMBLY

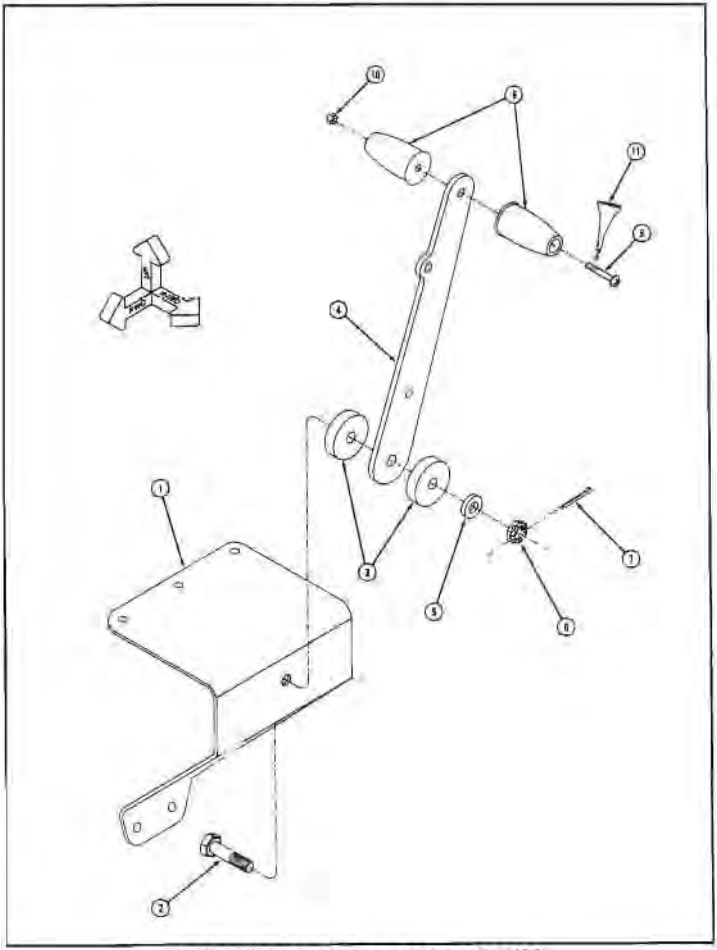
IMPORTANT: Note the correct orientation of the Throttle Lever (4) BEFORE attachment.

1. Assemble as illustrated. Tighten the Castle Nut (6) only tight enough to create a MINIMUM amount of friction for the Throttle Lever (4). It may even be able to rotate freely when adjusted as the FORWARD Throttle Lever is to be used to tension the Throttle Lever system properly. Bend the Cotter Pin (7) correctly.

NOTE 1: If the Castle Nut (6) tensioning the Aft Throttle Lever is over torqued it may produce too much friction in the Throttle Lever system as it would be working against the Forward Throttle Lever.

NOTE 2: Add a drop of Thread Adhesive (11) to the threads of the Screw (9).

Item	P/N	Qty	Description
1	45542	1	Aft Throttle Mount Plate
2	10068	1	AN4-11 Bolt
3	20346	2	1" x 1/4" Nylon Washer
4	90215	1	Throttle Lever w/.191 hole
5	10560	1	1/4" Washer
6	10521	1	1/4" Castle Nut
7	10635	1	Cotter Pin
8	90235	2	Throttle Knob
9	10479	1	4 mm x 25 mm Phillips Head Screw
10	10496	1	4 mm Hex Nut
11	60591	A/R	Thread Adhesive

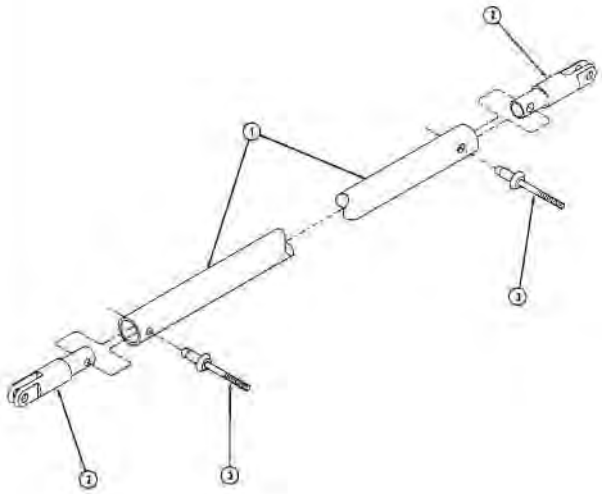

10
6
11
9
4
1
3
5
8
7
2

THROTTLE LINK TUBE ASSEMBLY

1. Assemble as illustrated. Ensure the Rivets are installed correctly.

NOTE: The Rivets (3) may be more difficult to install or "pop" into place as compared to the Aluminum Rivets (previously installed).

Item	P/N	Qty	Description
1	43347	1	Dual Throttle Link Tube
2	42006	2	Pushrod Fork End w/.187" hole
3	20222	2	3/16" x 1/2" Grip Rivet (BSPQ-68)


1
1
3
1
3

FORWARD THROTTLE MOUNT PLATE ATTACHMENT

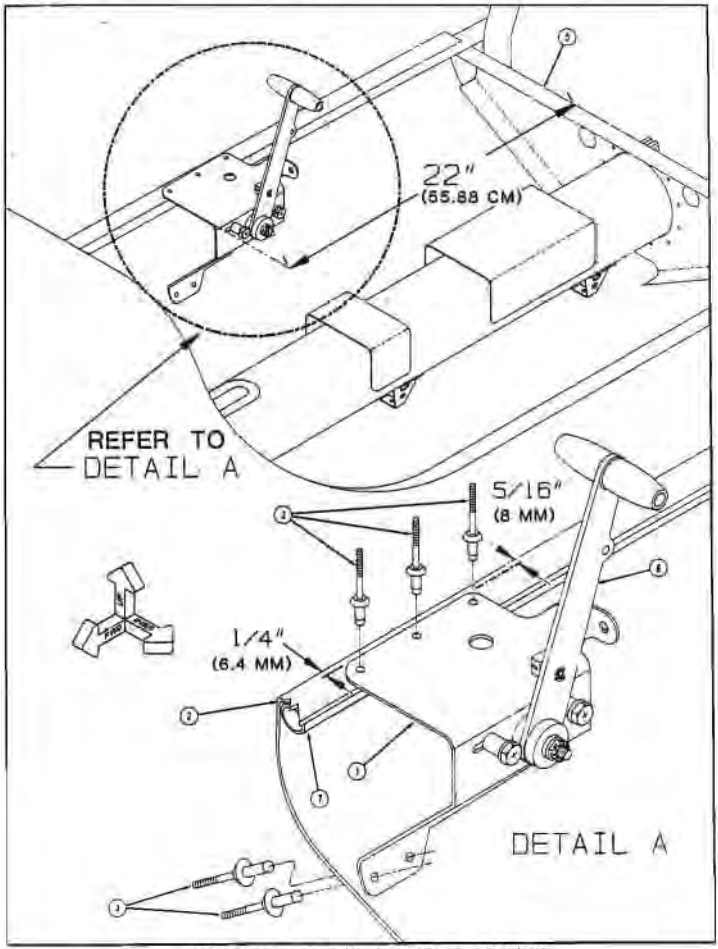
IMPORTANT: Ensure the Forward Throttle Mount Plate (1) is attached to the Pilot Enclosure (2) at the proper angle. Note the difference between the FORWARD and AFT dimensions.

1. Refer to Figure 1 and Detail 'A'. Measure 22" (55.88 cm) FORWARD from the AFT edge of the Forward Fuselage Bulkhead (5) along the RIGHT UPPER surface or lip (flange) of the Pilot Enclosure (2) and mark this location.

2. Align the FORWARD edge of the Forward Throttle Mount Plate (1) as illustrated. CAREFULLY back-drill thru the EXISTING 3/16" (4.8 mm) diameter holes in the Mount Plate and thru the TOP of the Pilot Enclosure (2) and Fuselage Support Tube (7). Secure with Rivets (3).

3. CAREFULLY back-drill thru the SIDE of the Pilot Enclosure from the INSIDE OUT using the TWO (2) EXISTING 3/16" (4.8 mm) holes in the Mount Plate as a guide. Secure with TWO (2) Rivets (4) as illustrated.

Item	P/N	Qty	Description
1	45482		Forward Throttle Mount Plate
2	45578		Pilot Enclosure
3	20214	3	3/16" x 1/8" Grip Aluminum Rivet (AAPQ-62)
4	20194	2	3/16" x 1/4" Grip Aluminum Large Flange Rivet (AAL-64)
5	45404		Forward Fuselage Bulkhead (part of P/N 45545)
6	90215		Throttle Lever
7	45856		Fuselage Support Tube


22"
(55.88 CM)
REFER TO
DETAIL A
5/16"
(8 MM)
1/4"
(6.4 MM)
DETAIL A

AFT THROTTLE MOUNT PLATE AND
DUAL THROTTLE LINK TUBE ATTACHMENT

1. Refer to Figure 1 and Detail 'A'. Position the Forward Throttle Lever (1) in the FULLY AFT or CLOSED position resting against the Throttle Stop (9). Ensure it stays in this position for this assembly sequence.

2. Attach the FORWARD end of the Dual Throttle Link Tube (2) to the FORWARD Throttle Lever with Hardware (3,4 and 5). Bend the Cotter Pin (5) correctly.

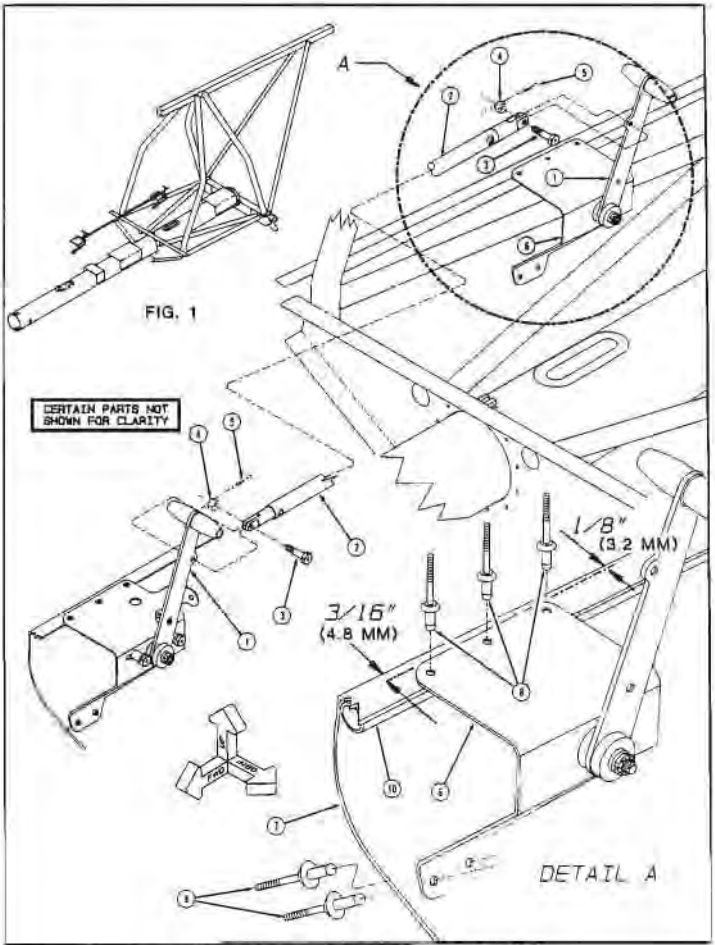
3. TEMPORARILY attach the AFT end of the Dual Throttle Link Tube (2) to the AFT Throttle Lever (1) with Hardware (3) and (4). The goal is to establish the SAME angle in BOTH (FORWARD and AFT) Throttle Levers for the CLOSED position using ONLY the FORWARD Lever for reference. Position the AFT Throttle Mount Plate Assembly OVER the "lip" of the RIGHT Lower Center Fairing (7) until BOTH Levers are angled APPROXIMATELY the SAME. Mark the FORWARD edge of the Throttle Mount Plate on the Fairing. Ensure the Aft Throttle Mount Plate is ANGLED as illustrated. The FORWARD edge should be 3/16" (4.8 mm) INBOARD and the AFT edge should be 1/8" (3.2 mm) from the OUTBOARD edge of the Right Lower Center Fairing.

4. CAREFULLY back-drill THREE [3] 3/16" (4.8 mm) diameter holes thru the Fairing (7) and Fuselage Support Tube (10) using the EXISTING holes in the TOP of the AFT Throttle Mount Plate (6) as a guide. Secure with THREE [3] Rivets (8).

5. CAREFULLY back-drill thru the TWO [2] BOTTOM 3/16" (4.8 mm) diameter attachment holes in the AFT Throttle Mount Plate (6) from the INSIDE OUT using the EXISTING holes in the Aft Throttle Mount Plate as a guide. Secure with TWO [2] Rivets (9).

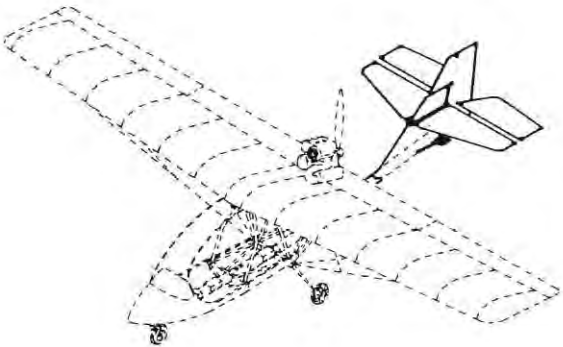
6. Secure the AFT end of the Dual Throttle Link Tube (2) to the Throttle Lever (1) on the Aft Throttle Mount Plate (6) with the Cotter Pin (5). Bend the Cotter Pin (5) correctly.

Item	P/N	Qty	Description
1.	90215.		Throttle Lever w/.191" hole
2.	45547.		Dual Throttle Link Tube
3.	10009.	2.	AN3-5 Bolt
4.	10317.	2.	3/16" Castle Nut
5.	10635.	2.	Cotter Pin
6.	45542.		Aft Throttle Mount Plate
7.	46106.		Right Lower Center Fairing
8.	20214.	3.	3/16" x 1/8" Grip Aluminum Rivet (AAPQ-62)
9.	20194.	2.	3/16" x 1/4" Grip Large Flange Aluminum Rivet (AAL-64)
10.	45856.		Fuselage Support Tube


A
FIG. 1
CERTAIN PARTS NOT SHOWN FOR CLARITY
1/8" (3.2 MM)
3/16" (4.8 MM)
DETAIL A

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SECTION 3 - EMPENNAGE



SECTION 3 3-1

EMPENNAGE

VERTICAL STABILIZER COVER ATTACHMENT.....3-2

AFT TRIM PUSH/PULL TUBE TO TRIM BELLCRANK ATTACHMENT.....3-4

UPPER AND LOWER RUDDER POST
ATTACH BRACKET AND ELEVATOR HORN BRACKET ATTACHMENT.....3-6

ELEVATOR BELLCRANK ATTACHMENT TO
AFT ELEVATOR PUSH/PULL TUBE AND TAIL BOOM TUBE ASSEMBLY...3-8

TAIL SKID TO VERTICAL STABILIZER
TRAILING EDGE ASSEMBLY ATTACHMENT.....3-10

VERTICAL STABILIZER LEADING EDGE AND
TRAILING EDGE INSERTION INTO VERTICAL STABILIZER COVER....3-12

VERTICAL STABILIZER LEADING EDGE ATTACHMENT.....3-14

UPPER TRIM ASSEMBLY ATTACHMENT.....3-16

VERTICAL STABILIZER TRAILING EDGE AND TAIL SKID ATTACHMENT
TO TAIL BOOM / TRIM PUSHROD ATTACHMENT TO TRIM BELLCRANK..3-18

HORIZONTAL STABILIZER
LEADING EDGE AND COMPRESSION STRUT ASSEMBLY.....3-20

HORIZONTAL STABILIZER ASSEMBLY.....3-22

ELEVATOR ASSEMBLY.....3-24

RUDDER ASSEMBLY.....3-26

RUDDER ASSEMBLY (CONT'D.).....3-28

RUDDER BELLCRANK ATTACHMENT.....3-30

HORIZONTAL STABILIZER STRUT ASSEMBLY AND ATTACHMENT.....3-32

STABILIZER DRAG STRUT AND
TAIL SUPPORT STRUT TO TAIL BOOM ASSEMBLY ATTACHMENT.....3-32A

HORIZONTAL STABILIZER ATTACHMENT.....3-34

RUDDER ATTACHMENT.....3-36

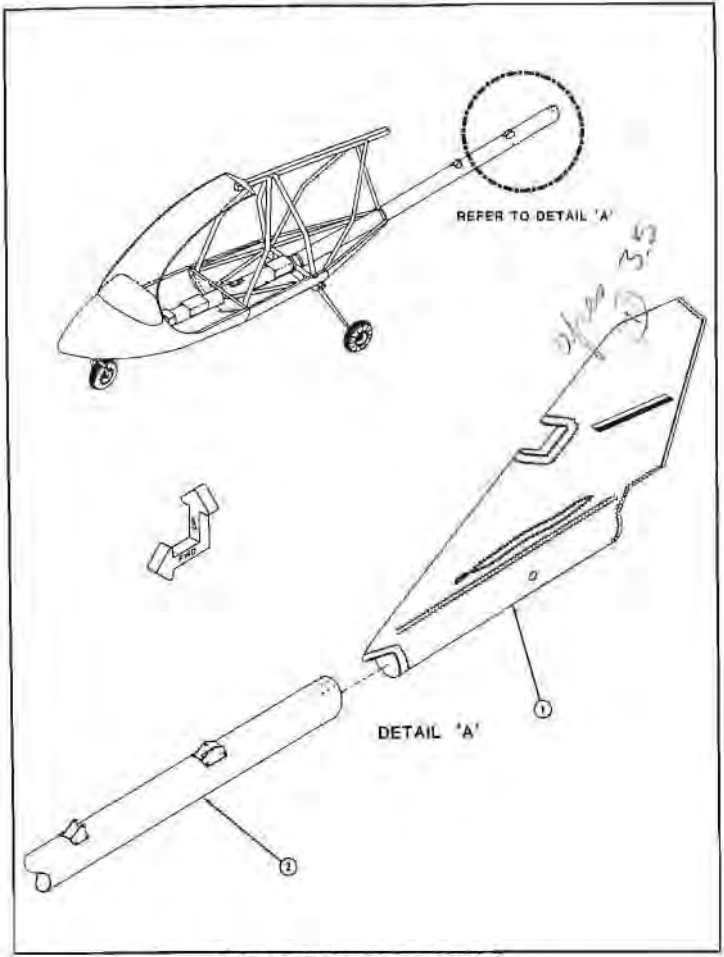
ELEVATOR ATTACHMENT.....3-38

ELEVATOR PUSHROD ATTACHMENT.....3-40

VERTICAL STABILIZER COVER ATTACHMENT

1. Assemble as illustrated.

Item	P/N	Qty	Description
1	45642	1	Vertical Stabilizer Cover
2	45012		Tail Boom Assembly


REFER TO DETAIL 'A'
DETAIL 'A'
1
2

AFT TRIM PUSH/PULL TUBE TO TRIM BELLCRANK ATTACHMENT

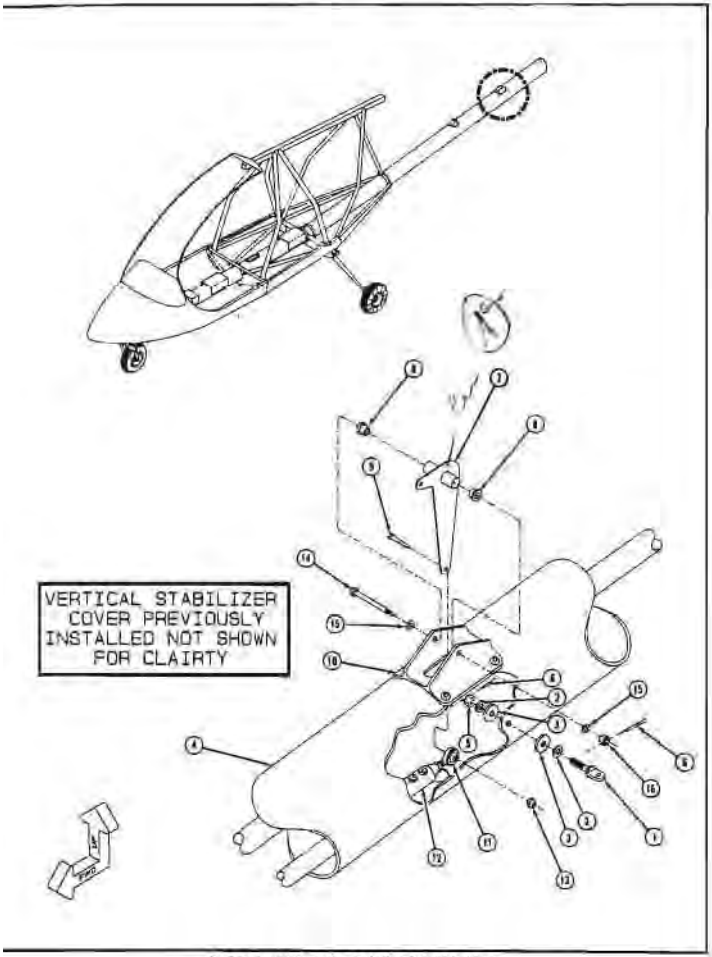
1. Assemble as illustrated. Bend ALL Cotter Pins correctly.

IMPORTANT: DO NOT OVER TORQUE the Castle Nut (16) attached to Eyebolt (1) as it must be allowed to rotate FREELY.

NOTE: RIGHT side Eyebolt (1) attachment not shown for clarity.

2. Attach Items (1,2,3,5 and 6) on the opposite (RIGHT) side in 'mirror image'.

Item	P/N	Qty	Description
1	11080	2	AN42B-4 Eyebolt
2	10550	1	3/16" Washer
3	45095	4	Contour Washer
4	45012		Tail Boom Tube Assembly
5	10517	2	3/16" Castle Nut
6	10635	3	Cotter Pin
7	45097	1	Aft Bellcrank Trim Assembly
8	30005	2	FF312 Oilite Bearing
9	10020	1	AN3-7A Bolt
10			Aft Bellcrank Trim Bracket (part of P/N 45012)
11	10700	1	1/4" Male Rod End Bearing
12	45447		Aft Trim Push/Pull Tube
13	10500	1	3/16" Locknut
14	10180	1	AN4-20 Bolt
15	10560	2	1/4" Washer
16	10521	1	1/4" Castle Nut


VERTICAL STABILIZER
COVER PREVIOUSLY
INSTALLED NOT SHOWN
FOR CLAIRTY

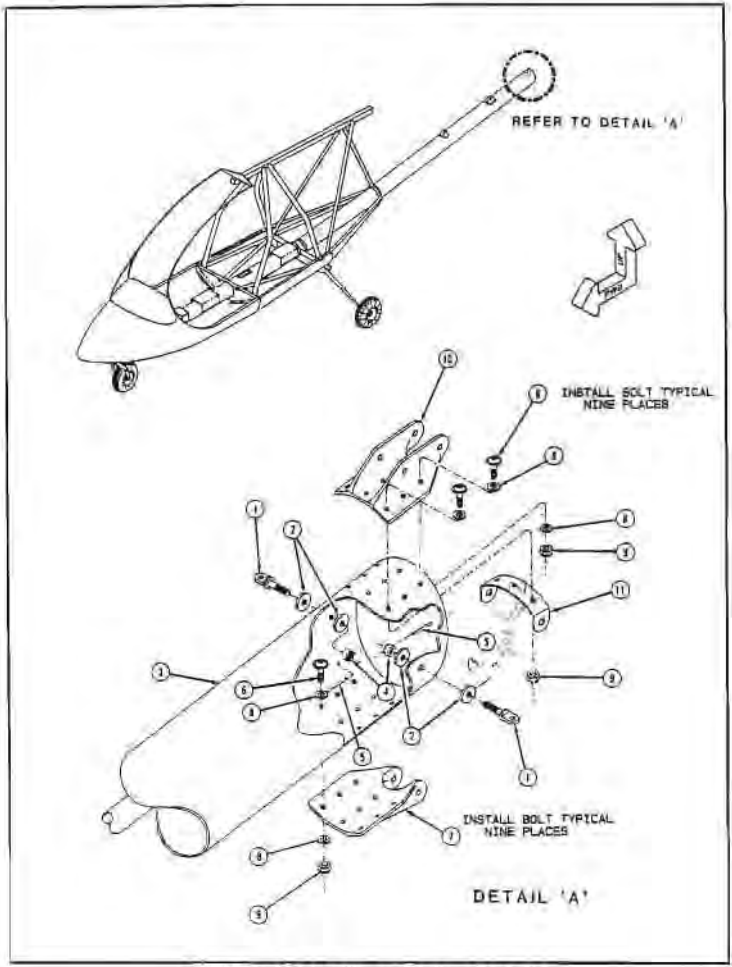
UPPER AND LOWER RUDDER POST
ATTACH BRACKET AND ELEVATOR HORN BRACKET ATTACHMENT

1. Assemble as illustrated. Tighten ALL Locknuts to proper torque.

IMPORTANT: DO NOT OVER TORQUE the Castle Nuts (4) as the Eyebolts (1) MUST be allowed to rotate FREELY.

NOTE: Attach the Elevator Horn Bracket (11) THREE places. DO NOT torque the Washer Head Screws (6) during installation. Torque the Locknuts (9).

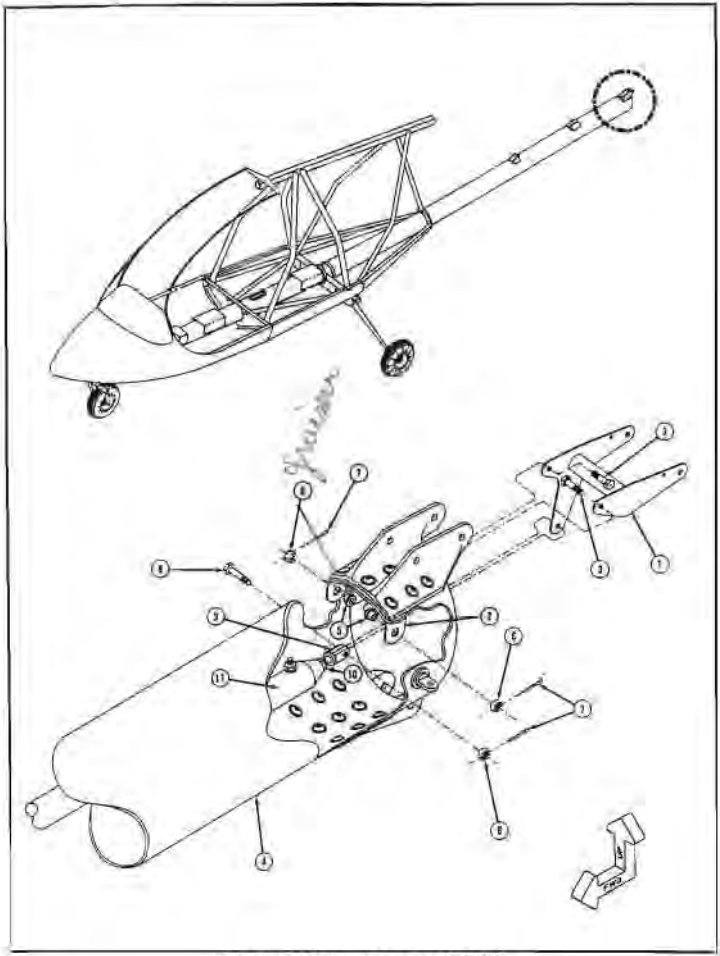
Item	P/N	Qty	Description
1	11080	2	AN42B-4 Eyebolt
2	45095	4	Contour Washer
3	45012		Tail Boom Tube Assembly
4	10517	2	3/16" Castle Nut
5	10635	2	Cotter Pin
6	11075	18	AN525-10R10 Washer Head Screw
7	45072	1	Lower Rudder Post Attach Channel
8	10550	36	3/16" Washer
9	10500	18	3/16" Locknut
10	45071	1	Upper Rudder Post Attach Bracket
11	45076	1	Elevator Horn Bracket


REFER TO DETAIL 'A'
INSTALL BOLT TYPICAL NINE PLACES
INSTALL BOLT TYPICAL NINE PLACES
DETAIL 'A'

ELEVATOR BELLCRANK ATTACHMENT TO
AFT ELEVATOR PUSH/PULL TUBE AND TAIL BOOM TUBE ASSEMBLY

1. Assemble as illustrated. DO NOT OVER TORQUE. Bend ALL Cotter Pins (7) correctly.

Item	P/N	Qty	Description
1	45074	1	Elevator Bellcrank Assembly
2	45076		Elevator Horn Bracket
3	10007	2	AN3-4 Bolt
4	45012		Tail Boom Tube Assembly
5	30004	2	.31 O.D. x .191 I.D. Flange Bearing
6	10317	2	3/16" Castle Nut
7	10635	2	Cotter Pin
8	10009	1	AN3-5 Bolt
9	10388		1/4" x 1" Full Thread Forkbolt
10	10631		1/4" - 28 Jam Nut
11	45013		Aft Elevator Push/Pull Tube



3-10

TAIL SKID TO VERTICAL STABILIZER TRAILING EDGE ASSEMBLY ATTACHMENT

1. Refer to Detail 'A'. Use an Eyebolt (3) to position and align the Anchor Nut (3) on the TOP end of the FORWARD side of the Vertical Stabilizer Trailing Edge Assembly (2). The TOP end has TWO (2) 3/16" (4.8 mm) diameter holes. The FORWARD side has the factory installed rivets.

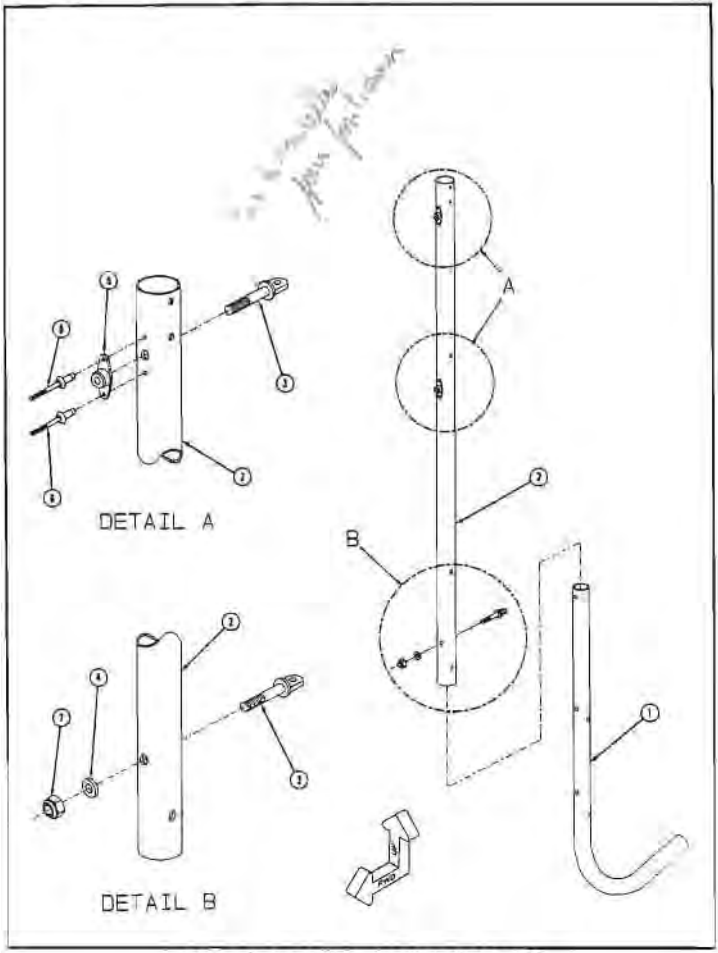
2. Drill and deburr FOUR (4) 1/8" (3.2 mm) diameter holes as illustrated. Refer to Detail 'A' TWO (2) places. Attach the Anchor Nuts (3) as illustrated.

3. Slide the Tail Skid (1) into the Vertical Stabilizer Trailing Edge Assembly (2) and align the holes.

4. Refer to Detail 'B' and attach the LOWER Eyebolt (3) ONLY at this time. Align the Eyebolt (3) as illustrated. DO NOT OVER TORQUE the Eyebolt and DISTORT the tube.

IMPORTANT: DO NOT attach the Eyebolts (3) in the Detail 'A' locations at this time. They are to be used for Anchor Nut (5) alignment ONLY. They are to be installed in a later sequence AFTER the Vertical Stabilizer Cover (not illustrated) has been attached. Neat cut as required at these hole locations at the appropriate time and attach the Eyebolts (3) as illustrated in Details 'A'. DO NOT OVER TORQUE the Eyebolts and DISTORT the tube.

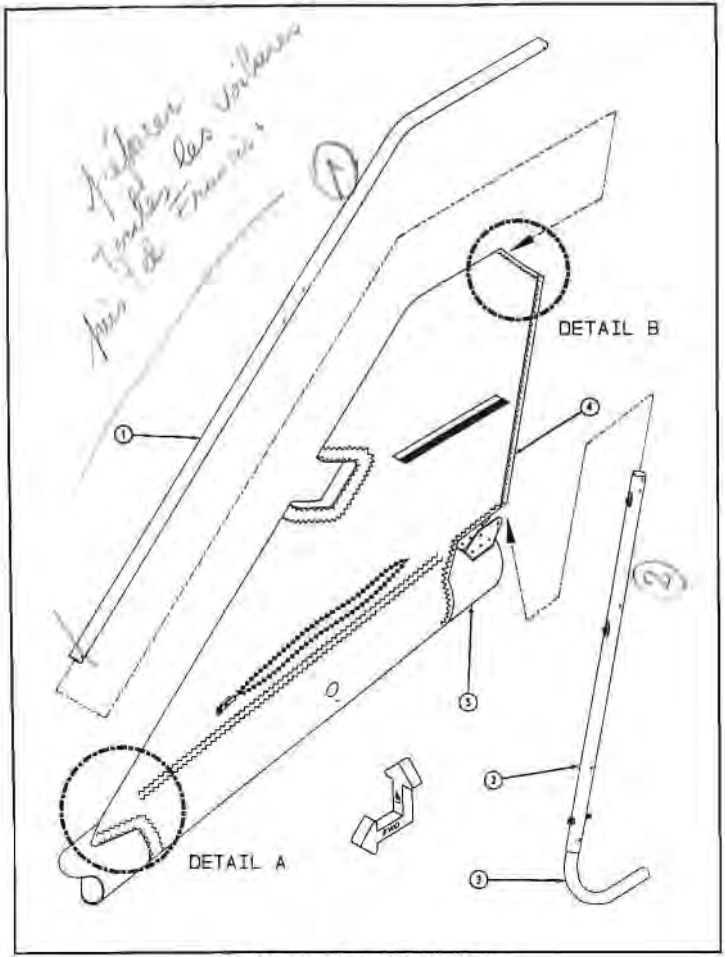
Item	P/N	Qty	Description
1	45060	1	Tail Skid
2	45063	1	Vertical Stabilizer Trailing Edge Assembly
3	10370	3	AN43B-15A Eyebolt
4	10560	1	1/4" Washer
5	10530	2	1/4" - 28 Anchor Nut
6	20201	4	1/8" x 1/4" Grip Stainless Steel Rivet (CCPQ-44)
7	10560	1	1/4" Locknut


A
B
DETAIL A
DETAIL B

VERTICAL STABILIZER LEADING EDGE AND
TRAILING EDGE INSERTION INTO VERTICAL STABILIZER COVER

1. Assemble as illustrated.

Item	P/N	Qty	Description
1	45066	1	Vertical Stabilizer Leading Edge
2	45063		Vertical Stabilizer Trailing Edge Assembly
3	45060		Tail Skid
4	45642	1	Vertical Stabilizer Cover
5	45012		Tail Boom Tube Assembly

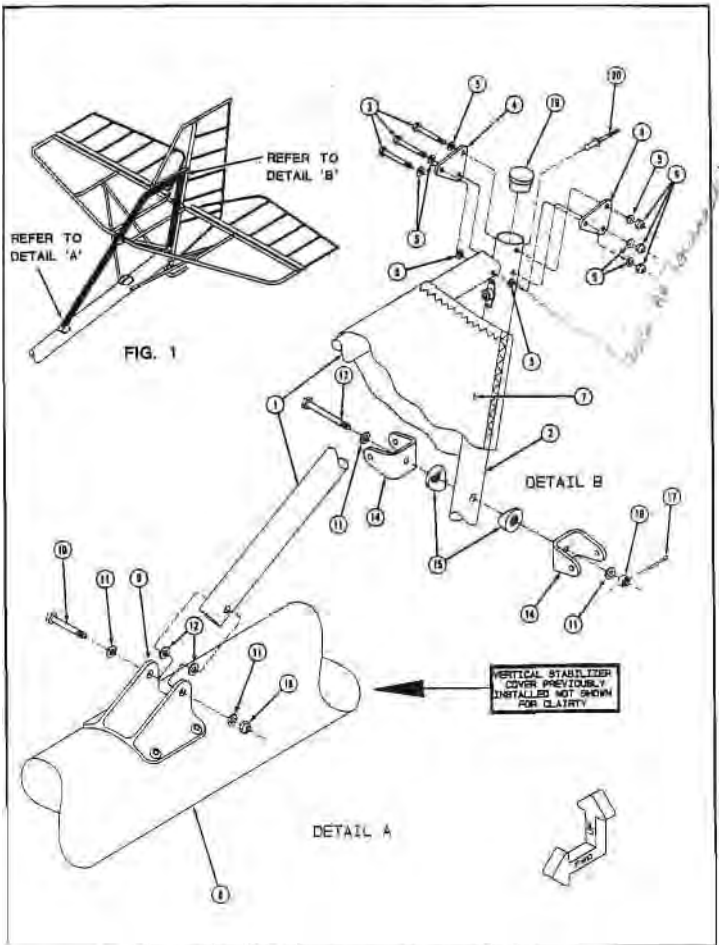

DETAIL B
DETAIL A
1
2
3
4
5

VERTICAL STABILIZER LEADING EDGE ATTACHMENT

1. Assemble Bolt (3) with hardware FIRST then Bolt (10) with Hardware SECOND as illustrated. Tighten ALL Locknuts to proper torque.

2. Push UPWARD on the Tail Skid to tension the Cover (7). Measure DOWNWARD from the TOP edge of the Stabilizer Trailing Edge Assembly (2) APPROXIMATELY 12" (30.48 cm) and locate the 1/4" (6.4 mm) diameter hole. Reveal and heat-seal the hole through the Stabilizer Cover (7). DO NOT BREATHE THE FUMES. Attach the Bolt (13) with the Hardware (11,14,15,16 and 17) as illustrated. Bend the Cotter Pin (17) correctly.

Item	P/N	Qty	Description
1.	45066	1	Vertical Stabilizer Leading Edge Assembly
2.	45063		Vertical Stabilizer Trailing Edge Assembly
3.	10050	3	AN3-17A Bolt
4.	45083	2	#1 Rudder Gusset Plate
5.	10530	8	3/16" Washer
6.	10500	3	3/16" Locknut
7.	45642		Vertical Stabilizer Cover
8.	45012		Tail Boom Tube Assembly
9.			Leading Edge Vertical Stabilizer Channel (part of P/N 45012)
10.	10170	1	AN4-20A Bolt
11.	10560	4	1/4" Washer
12.	20340	2	S/8" x 1/16" Nylon Washer
13.	10205	1	AN4-23 Bolt
14.	20060	2	S-1.125 Channel
15.	20289	2	1 1/2" x .25 H x .20 THK Saddle
16.	10521	1	1/4" Castle Nut
17.	10635	1	Cotter Pin
18.	10560	1	1/4" Locknut
19.	20415	1	1 1/4" x .035 Tube Cap
20.	20200	1	1/8" x 1/4" Grip Aluminum Rivet (AAP-44)


REFER TO DETAIL 'B'
REFER TO DETAIL 'A'
FIG. 1
DETAIL B
VERTICAL STABILIZER COVER PREVIOUSLY INSTALLED NOT SHOWN FOR CLARITY
DETAIL A

UPPER TRIM ASSEMBLY ATTACHMENT

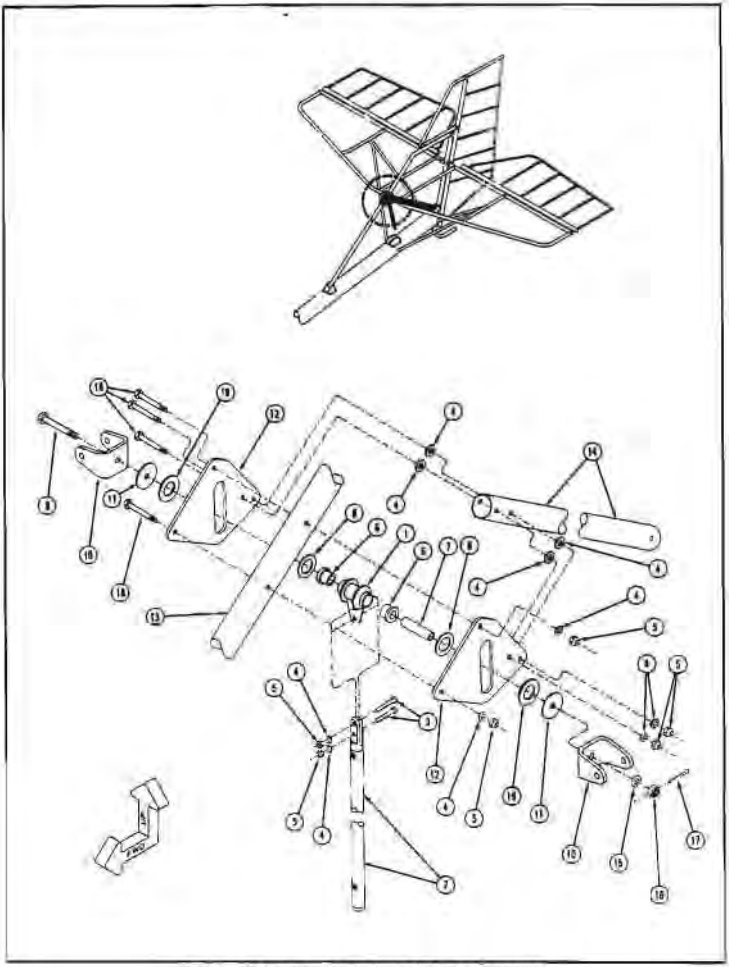
1. Assemble as illustrated. Tighten the Castle Nut (16) only "snug" to eliminate any "slop". DO NOT OVER TORQUE with will allow excess friction in the Trim System. Tighten ALL remaining Locknuts to proper torque. Bend the Cotter Pin (17) correctly.

IMPORTANT: Install the Bolts (3) EXACTLY as illustrated.

NOTE 1: Attach the Vertical Stabilizer Compression Strut with the "notched" end DOWN and AFT.

NOTE 2: Remove the protective paper from the Washers (8) and (19).

Item	P/N	Qty	Description
1	45041	1	Trim Component Slider Assembly
2	45040	1	Trim Pushrod Assembly
3	10010	2	AN3-5A Bolt
4	10550	10	3/16" Washer
5	10500	6	3/16" Locknut
6	30003	2	FF520-15 Oilite Bearing
7	45042	1	Aft Trim Component Bushing
8	20336	2	.63" x 1" x .06" Thick Plastic Washer
9	10205	1	AN4-23 Bolt
10	20060	2	S-1.125 Channel
11	10565	2	1/4" Fender Washer
12	45085	2	Slotted Incidence Adjust Plate
13	45066		Vertical Stabilizer Leading Edge Assembly
14	45065		Vertical Stabilizer Compression Strut
15	10580	1	1/4" Washer
16	10521	1	1/4" Castle Nut
17	10635	1	Cotter Pin
18	10045	4	AN3-16A Bolt
19	20338	2	.375" x 1" x .06" Plastic Washer

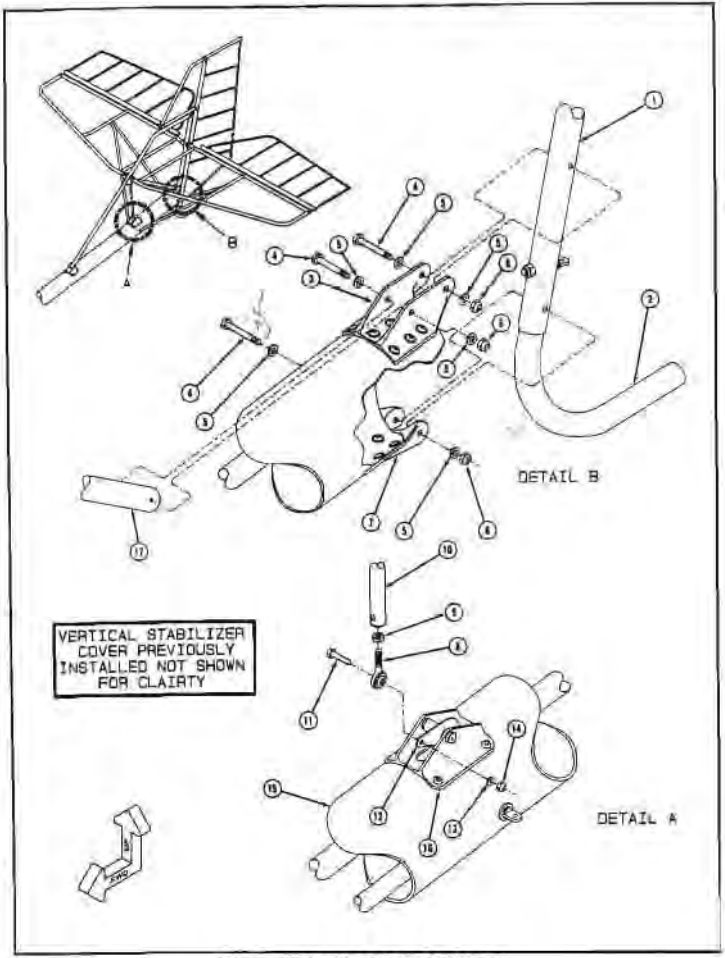


VERTICAL STABILIZER TRAILING EDGE AND TAIL SKID ATTACHMENT TO TAIL BOOM TUBE / TRIM PUSHROD ATTACHMENT TO TRIM BELLCRANK

1. Assemble as illustrated. Tighten ALL Locknuts to proper torque.

2. Refer to pages 3-10 and 3-11, Detail 'A'. Locate the holes for the Eyebolts through the Vertical Stabilizer Cover and reveal them with a Hot Knife. Attach the Eyebolts. DO NOT OVER TORQUE the Eyebolts and DISTORT the tube. Align the Eyebolts HORIZONTALLY as illustrated.

Item	P/N	Qty	Description
1	45063		Vertical Stabilizer Trailing Edge Assembly
2	45060		Tail Skid
3	45071		Upper Rudder Post Attach Bracket
4	10170	3	AN4-20A Bolt
5	10560	6	1/4" Washer
6	10510	3	1/4" Locknut
7	45072		Rudder Post Attach Channel
8	10700	1	1/4" Male Rod End Bearing
9	10631	1	1/4" Jam Nut
10	45040		Trim Pushrod Assembly
11	10015	1	AN3-6A Bolt
12	45097		Aft Trim Bellcrank Assembly
13	10550	1	3/16" Washer
14	10500	1	3/16" Locknut
15	45012		Tail Boom Tube Assembly
16			Trim Bellcrank Bracket (part of P/N 45012)
17	45065		Vertical Stabilizer Compression Strut


A
B
DETAIL B
VERTICAL STABILIZER COVER PREVIOUSLY INSTALLED NOT SHOWN FOR CLAIRTY
DETAIL A

HORIZONTAL STABILIZER
LEADING EDGE AND COMPRESSION STRUT ASSEMBLY

1. Assemble as illustrated. Tighten ALL Locknuts to proper torque. DO NOT DISTORT THE TUBE.

2. Repeat for the opposite side 'mirror image'.

Item	P/N	Qty	Description
1	45014	2	Horizontal Stabilizer Leading Edge
2	20446	2	1" x 1" Tube Connector
3	10030	2	AN3-13A Bolt
4	10530	20	3/16" Washer
5	10500	10	3/16" Locknut
6	45027	2	Outboard Stabilizer Compression Strut
7	20445	8	7/8" x 1" Aluminum Tube Connector
8	10027	8	AN3-12A Bolt
9	10359	2	AN43B-13 Eyebolt
10	10560	4	1/4" Washer
11	10521	2	1/4" Castle Nut
12	45026	2	Inboard Stabilizer Compression Strut
13	10635	2	Cotter Pin

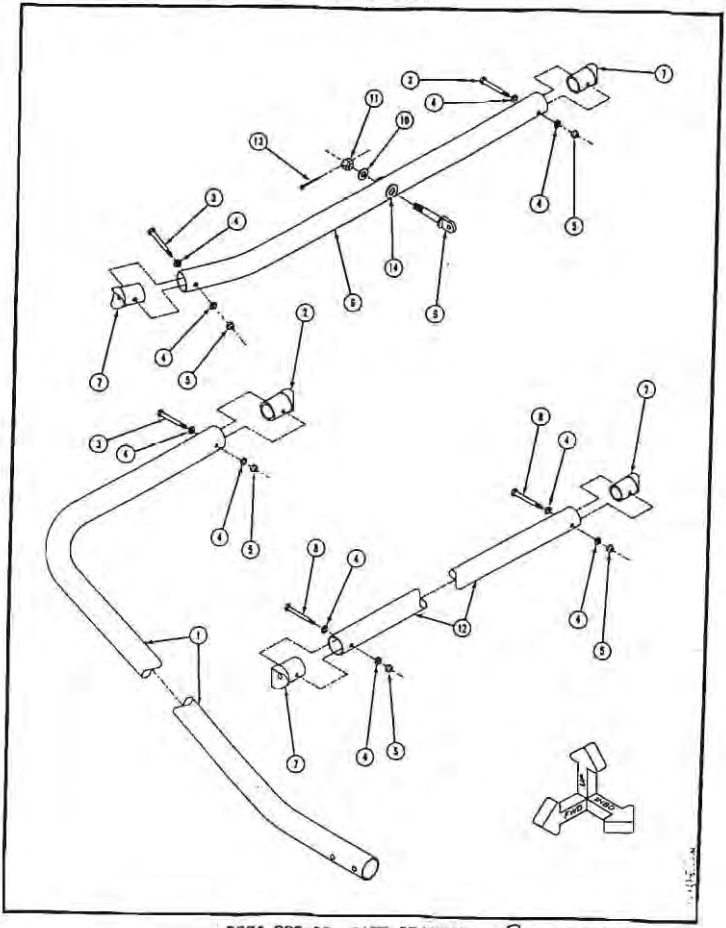
HORIZONTAL STABILIZER
LEADING EDGE AND COMPRESSION STRUT ASSEMBLY

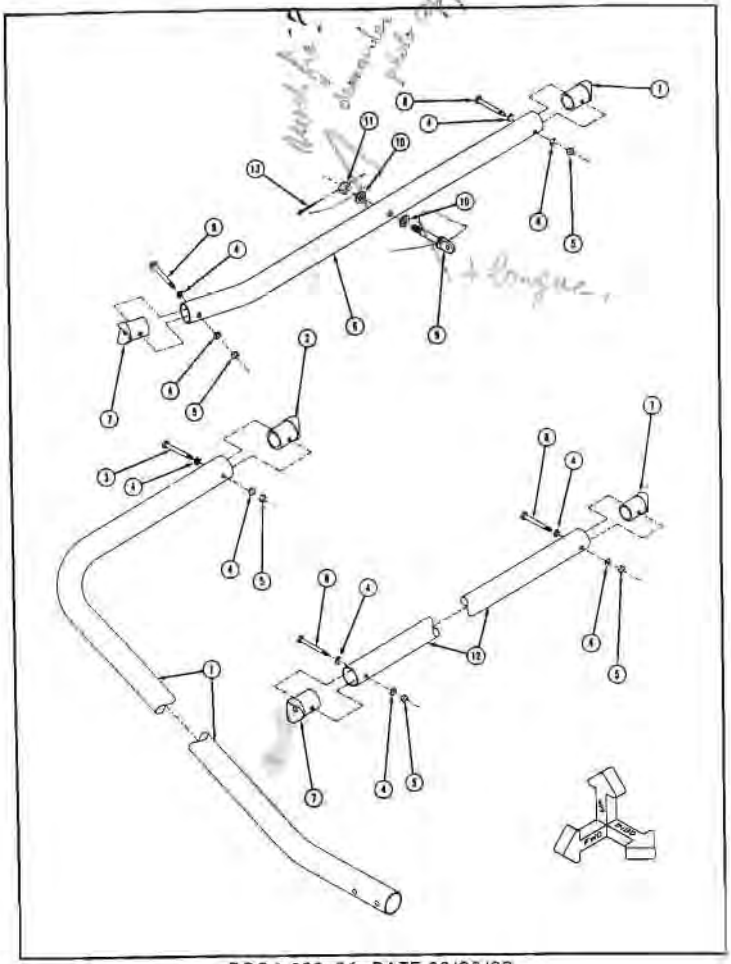
1. Assemble as illustrated. Tighten ALL Locknuts to proper torque. DO NOT distort the tube.

NOTE: Tighten the Castle Nut (11) until snug. DO NOT over torque. The Eyebolt (9) must be allowed to rotate freely. Secure the Castle Nut with a Cotter Pin (13) bent corectly.

2. Repeat for the opposite side in "mirror image".

Item	P/N	Qty	Description
1	45014	2	Horizontal Stabilizer Leading Edge
2	20446	2	1" x 1" Tube Connector
3	10030	6	AN3-13A Bolt
4	10550	20	3/16" Washer
5	10500	10	3/16" Locknut
6	45027	2	Outboard Stabilizer Compression Strut
7	20445	8	7/8" x 1" Aluminum Tube Connector
8	10027	4	AN3-12A Bolt
9	10360	2	AN43B-14 Eyebolt
10	10560	2	1/4" Washer
11	10521	2	1/4" Castle Nut
12	45025	2	Inboard Stabilizer Compression Strut
13	10635	2	Cotter Pin
14	30001		FF310-2 Oilite Bearing (factory installed) (part of P/N 45027)




PORT
STBD

HORIZONTAL STABILIZER ASSEMBLY

Before starting the following sequence drill out the TWO (2) attachment holes in the SIX (6) Anchor Nuts (1) (THREE (3) per Stabilizer Assembly) to 1/8" (3.2 mm).

1. Locate the Stabilizer Trailing Edge (2). Ensure the INBOARD end of the tube has a 1/4" (6.4 mm) diameter hole at 3/8" (9.5 mm) and 1 1/2" (3.81 cm). A factory installed Rivet is located at 2 1/2" (6.35 cm). Refer to Detail 'A'. TEMPORARILY insert an Forkbolt (11) to align the Anchor Nuts (1). Attach the Anchor Nuts with Rivets (3) to the FORWARD edge of the Trailing Edge (2) at the following locations as measured from the INBOARD end of the tube: 6 3/8" (16.19 cm), 29 3/4" (75.56 cm) and at 52 1/8" (132.39 cm). NOTE: The factory installed "existing" Rivets should be located on the FORWARD edge of the tube.

2. Assemble as illustrated. Add a drop of Thread Adhesive to the threads of ALL of the Grade 5 Bolts (8) and (10). Tighten the Bolts (8) to correct torque. DO NOT DISTORT THE TUBE.

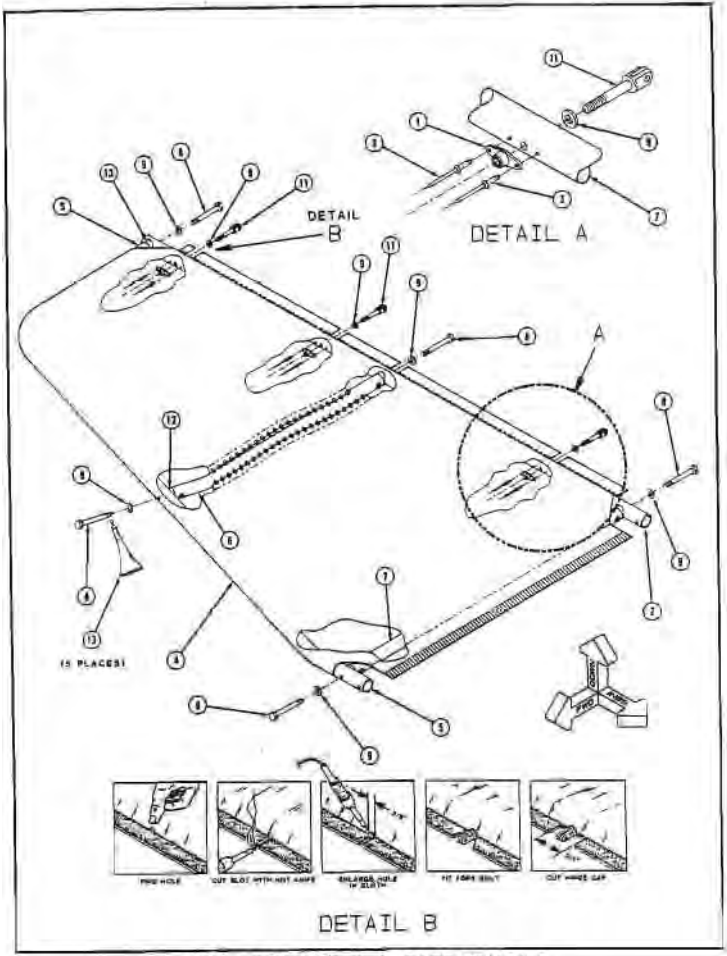
3. Tighten the Forkbolts (11) to correct torque. Align the Forkbolts as illustrated. DO NOT DISTORT THE TUBE.

IMPORTANT: If the Forkbolt CANNOT reach the VERTICAL position at correct torque "back-off" on the Forkbolt to the NEXT VERTICAL position.

4. Repeat on the opposite (RIGHT) Stabilizer in "mirror image".

Metric Conversion: 3/8" = (9.5 mm), 3/4" = (19.05 mm)

Item	P/N	Qty	Description
1	10530	3	1/4" - 28 Anchor (Plate) Nut
2	45016		Stabilizer Trailing Edge
3	20201	6	1/8" x 1/4 Grip Stainless Steel Rivet
4	45646	1	Left Horizontal Stabilizer Cover
	45647		Right Horizontal Stabilizer Cover (not illustrated)
5	45014		Stabilizer Leading Edge
6	45027		Outboard Stabilizer Compression Strut
7	45026		Inboard Stabilizer Compression Strut
8	10400	5	1/4" x 1 3/4" Grade 5 Bolt
9	10560	8	1/4" Washer
10	60591		Thread Adhesive
11	10390	3	1/4" x 1 1/2" Forkbolt
12	20445		7/8" Tube Connector


DETAIL B
DETAIL A
DETAIL B
A
(5 PLACES)
FWD
AFT
PORT
STBD

ELEVATOR ASSEMBLY

NOTE 1: Before attaching each of the Elevator Covers (15) and (16) onto the Elevator Frame you may wish to remove ALL part number labels and any reside left by the labels with some cleaning solvent. The labels will bleed thru if you have a light colored Wing Cover and will be visible thru the Cover if an ultra violet inhibitor such as 'Stits' is applied later.

NOTE 2: To ease installation if the Elevator Covers apply a thin coat of Silicone Spray to the Elevator Frame.

1. Refer to Figure 1 and Detail 'A'. Attach the Anchor Nuts (1) to the AFT side of the LEFT Elevator Leading Edge (2) as illustrated. Align the Anchor Nut with an Eyebolt (4). Drill TWO (2) 1/8" (3.2 mm) diameter holes per Anchor Nut. Deburr the holes. Assemble as illustrated.

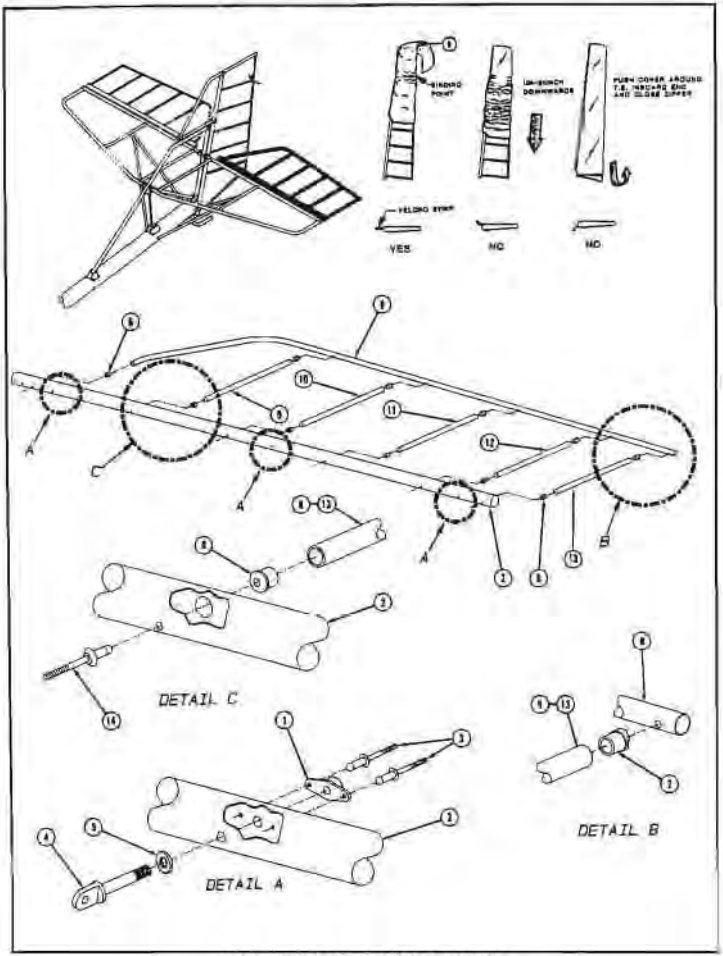
2. Repeat for the opposite (RIGHT) side.

3. Slide the Left Elevator Cover (15) onto the Elevator Frame.

NOTE: Both Elevator Frames are symetrical. Zippers are located on the BOTTOM or LOWER surface.

4. Slide the Right Elevator Cover (16) onto the remaining Elevator Frame.

Item	P/N	Qty	Description
1	10530	6	1/4" - 28 Anchor Nut
2	45017	2	Elevator Leading Edge
3	20201	12	1/8" x 1/4" Stainless Steel Rivet
4	10370	6	AN43B-15A Eyebolt
5	10560	6	1/4" Washer
6	71001	12	Forward Aileron Compression Strut Tip
7	71002	10	Aft Aileron Compression Strut Tip
8	45019	2	Elevator Trailing Edge
9	45028	2	Elevator Compression Strut 19.94" Long
10	45029	2	Elevator Compression Strut 18.92" Long
11	45031	2	Elevator Compression Strut 18.09" Long
12	45032	2	Elevator Compression Strut 17.02" Long
13	45033	2	Elevator Compression Strut 16.26" Long
14	20225	12	3/16" x 1/2" Grip Aluminum Rivet (AAP-68)
15		1	Left Elevator Cover (not illustrated)
16		1	Right Elevator Cover (not illustrated)

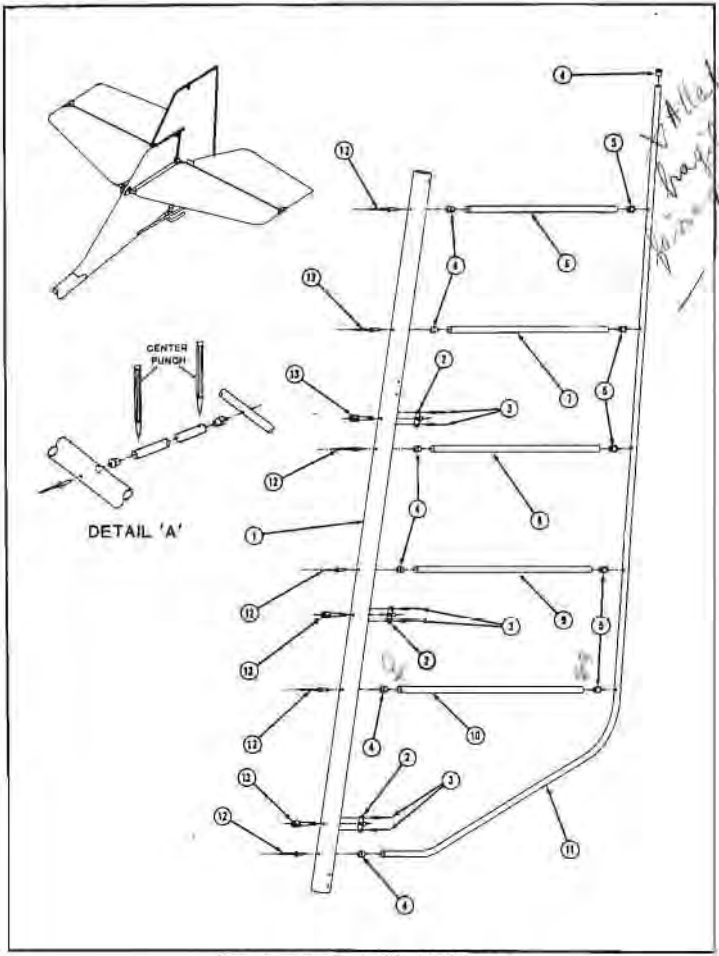

BINDING POINT
YES
NO
NO
DETAIL C
DETAIL A
DETAIL B

RUDDER ASSEMBLY

1. Assemble as illustrated.

NOTE: DO NOT Install the Forkbolts (13) at this time. Use ONLY for alignment of Anchor Nuts (2).

Item	P/N	Qty	Description
1	45001	1	Rudder Leading Edge
2	10530	3	1/4" - 28 Anchor Nut
3	20201	6	1/8" x 1/4" Grip Stainless Steel Rivet
4	71001	7	Forward Aileron Compression Strut Tip
5	71002	5	Aft Aileron Compression Strut Tip
6	45053	1	Rudder Compression Strut 17.02
7	45056	1	Rudder Compression Strut 18.04
8	45057	1	Rudder Compression Strut 19.02
9	45058	1	Rudder Compression Strut 20.04
10	45059	1	Rudder Compression Strut 21.04
11	45003	1	Rudder Trailing Edge
12	20225	6	3/16" x 1/2" Grip Aluminum Rivet (AAP-68)
13	10390	3	1/4" x 1 1/2" Forkbolt


CENTER PUNCH
DETAIL 'A'

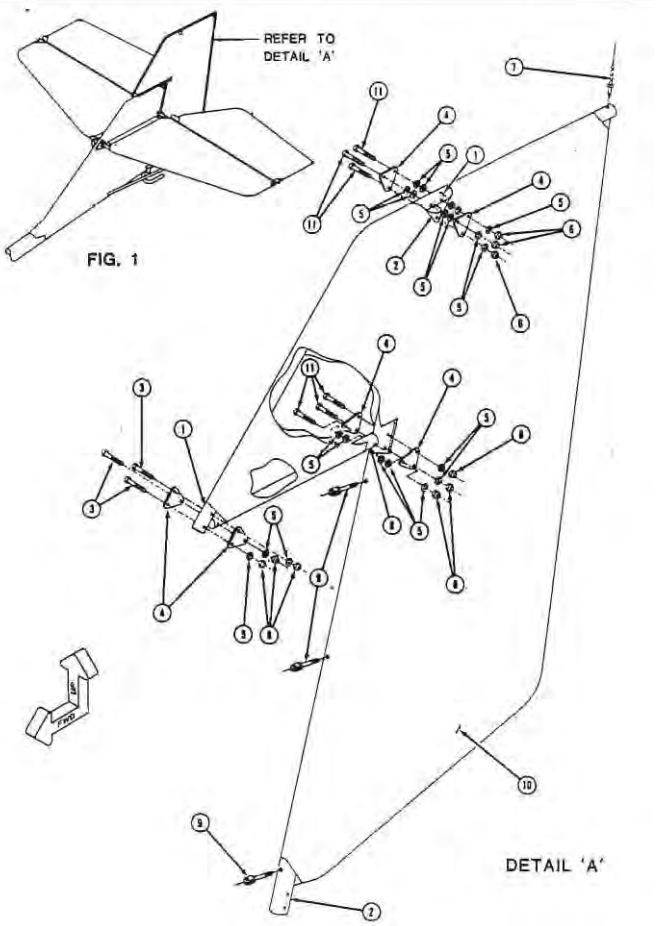
RUDDER ASSEMBLY (CONT'D.)

1. Insert the sub-assembly from the previous Pages (3-26 and 3-27) into the Rudder Cover (10).

2. Assemble as illustrated. Tighten ALL Locknuts to correct torque. DO NOT DISTORT THE TUBES.

3. Heat cut the holes as required and install the Forkbolts (9) AFTER the assembly is complete. DO NOT BREATHE THE FUMES.

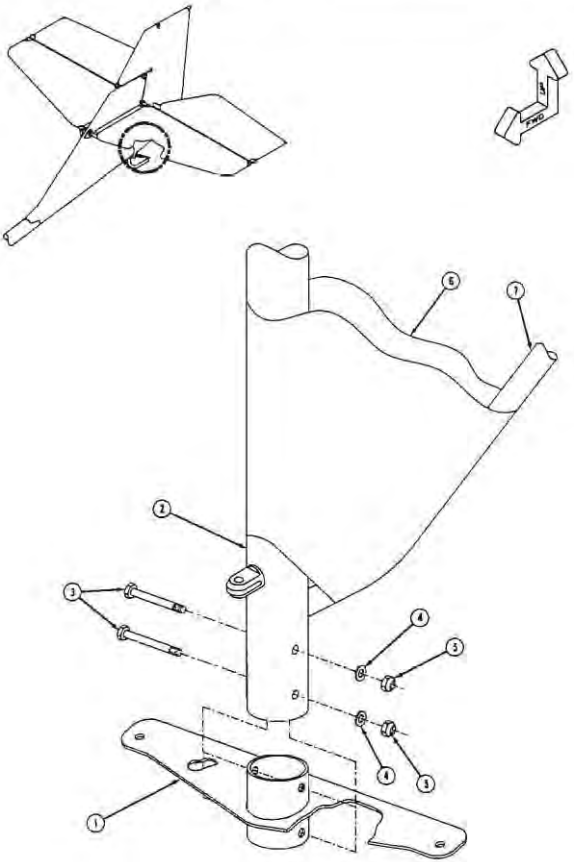
Item	P/N	Qty	Description
1	45004	1	Rudder Top Tube
2	45001		Rudder Leading Edge
3	10030	3	AN3-13A Bolt
4	45083	6	#1 Rudder Gusset Plate
5	10550	21	3/16" Washer
6	10500	9	3/16" Locknut
7	20225	1	3/16" x 1/2" Grip Aluminum Rivet (AAP-68)
8	45002	1	Balance Strut
9	10390	3	1/4" x 1 1/2" Forkbolt
10	45643	1	Rudder Cover
11	10040	6	AN3-15A Bolt


REFER TO
DETAIL 'A'
FIG. 1
DETAIL 'A'
FWD

RUDDER BELLCRANK ATTACHMENT

1. Assemble as illustrated. Tighten ALL Locknuts to correct torque.

Item	P/N	Qty	Description
1	45087	1	Rudder Bellcrank Assembly
2	45001		Rudder Leading Edge Assembly
3	10040	2	AN3-15A Bolt
4	10550	2	3/16" Washer
5	10500	2	3/16" Locknut
6	45643		Rudder Cover
7	45003		Rudder Trailing Edge


6
7
2
3
4
5
5
4
3
1

HORIZONTAL STABILIZER STRUT ASSEMBLY

1. Refer to Figure 1. Thread a Jam Nut (2) "ALL THE WAY" onto the Forkbolt (2). Assemble as illustrated. Tighten ALL Locknuts (7) to proper torque.

2. Refer to Figure 2. Assemble the Strut (10) as illustrated.

3. Repeat for the opposite (LEFT) side in "mirror image".

NOTE: All Locknuts (7) should be facing DOWNWARD.

Item	P/N	Qty	Description
1	10631	6	1/4" - 28 Jam Nut
2	10388	6	1/4" x 1" Full Thread Forkbolt
3	45658	6	1/4" - 28 x .75" Streamlined Tube Fitting
4	45118	2	Streamlined Horizontal Stabilizer Drag Strut
5	10025	8	AN3-11A Bolt
6	10550	12	3/16" Washer
7	10500	12	3/16" Locknut
8	10027	4	AN3-12A Bolt
9	45125	4	42 Degree Gusset Plate
10	45119	2	Streamlined Horizontal Stabilizer Support Strut

FIG. 1

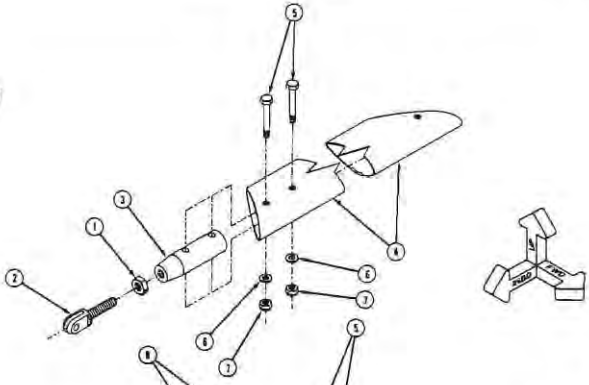
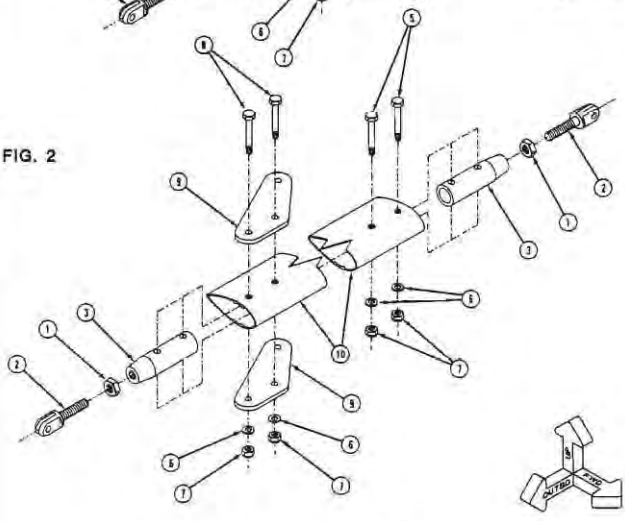


FIG. 2



3-32A

STABILIZER DRAG STRUT AND
TAIL SUPPORT STRUT TO TAIL BOOM ASSEMBLY ATTACHMENT

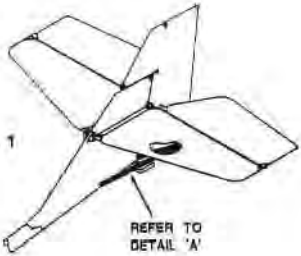
1. Refer to Figure 1 and Detail 'A'. Assemble as illustrated however tighten only the Locknut (6) to correct torque. DO NOT DISTORT THE TUBE. DO NOT tighten the Jam Nuts (13) or bend the Cotter Pins (11) at this time as they will be secured in a later sequence.

NOTE: Slip a Washer (5) INSIDE each Forkbolt (8) BEFORE attaching them to the Eyebolts (9), if necessary, to remove any sloppiness or "slack" in the system.

2. Repeat on the opposite (RIGHT) side in "mirror image".

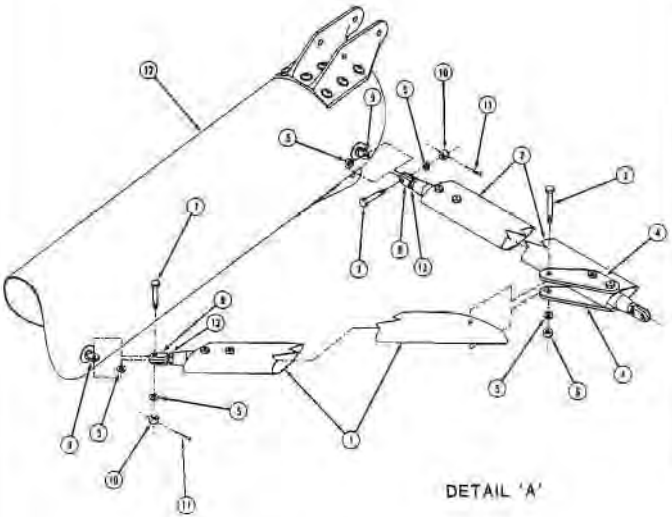
Item	P/N	Qty	Description
1	45118		Streamlined Horizontal Stabilizer Drag Strut
2	45119		Streamlined Horizontal Stabilizer Support Strut
3	10027	2	AN3-12A Bolt
4	45125		42 Degree Gusset Plate
5	10550	10	3/16" Washer
6	10500	2	3/16" Locknut
7	10009	4	AN3-5 Bolt
8	10388		1/4" x 1" Full Thread Forkbolt
9	11080		AN42B-4 Eyebolt
10	10517	4	3/16" Castle Nut
11	10635	4	Cotter Pin
12	45012		Tail Boom Tube Assembly
13	10631		1/4" - 28 Jam Nut

FIG. 1





CERTAIN PARTS NOT SHOWN FOR CLARITY



DETAIL 'A'

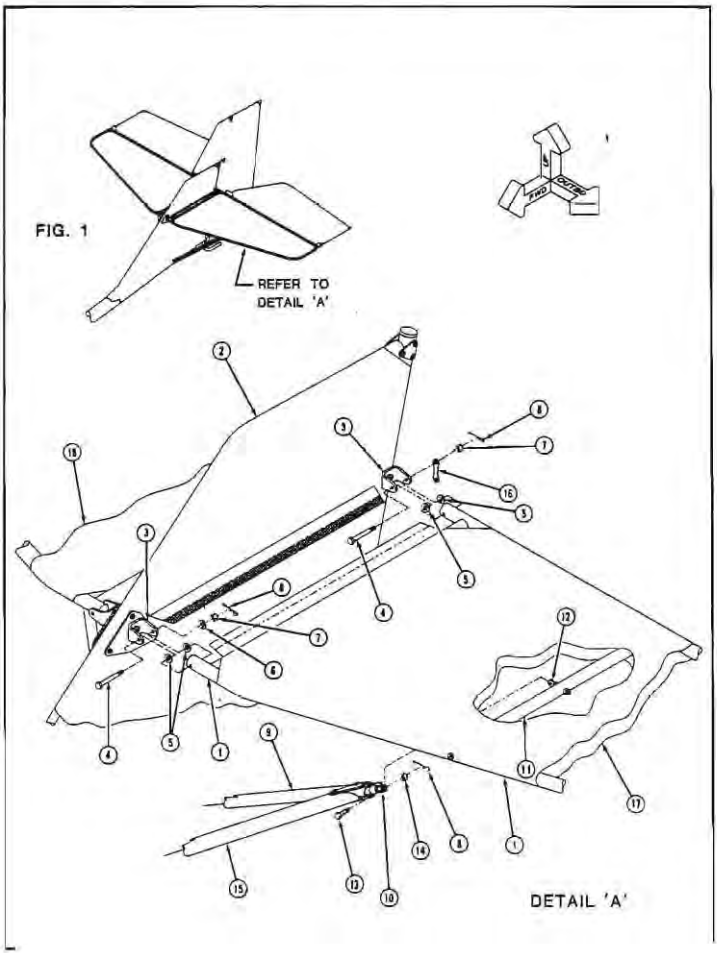
HORIZONTAL STABILIZER ATTACHMENT

1. Assemble as illustrated. Bend ALL Cotter Pins (13) correctly.

NOTE: You will need to heat-cut a SMALL hole (not illustrated) in the BOTTOM or LOWER surface of each Stabilizer Cover (17) and (18) large enough to attach the Fork (10) at the end of the Streamlined Horizontal Stabilizer Support Strut (9) to the Eyebolt (12). The Stabilizer Covers are reinforced at this location. DO NOT BREATHE THE FUMES.

2. Attach the opposite (RIGHT) side in "mirror image".

Item	P/N	Qty	Description
1	45014		Horizontal Stabilizer Leading Edge
2			Vertical Stabilizer
3	20060		S-1.25 Channel
4	10160	4	AN4-17 Bolt
5	20340	8	1/16" Thick x 5/8" O.D. Nylon Washer
6	10560	2	1/4" Washer
7	10521	4	1/4" Castle Nut
8	10635	6	Cotter Pin
9	45119		Streamlined Horizontal Stabilizer Support Strut
10	42006		Pushrod End Fork with 3/16" hole
11	45027		Outboard Horizontal Stabilizer Compression Strut
12	10359		AN43B-13 Eyebolt
13	10009	2	AN3-5 Bolt
14	10517	2	3/16" Castle Nut
15	45118		Streamlined Horizontal Stabilizer Drag Strut
16	20361	2	Light Weight Flat Tang
17	45646		Left Horizontal Stabilizer Cover
18	45647		Right Horizontal Stabilizer Cover

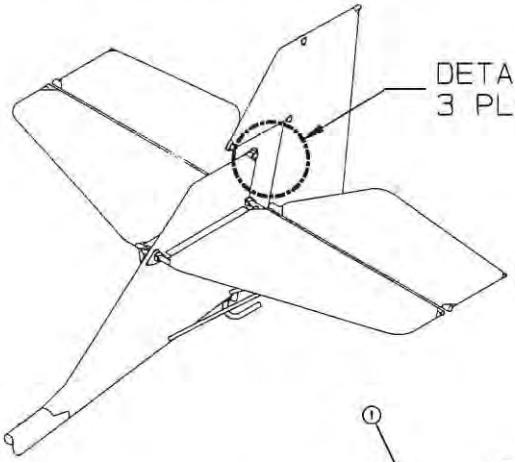

FIG. 1
REFER TO DETAIL 'A'
DETAIL 'A'

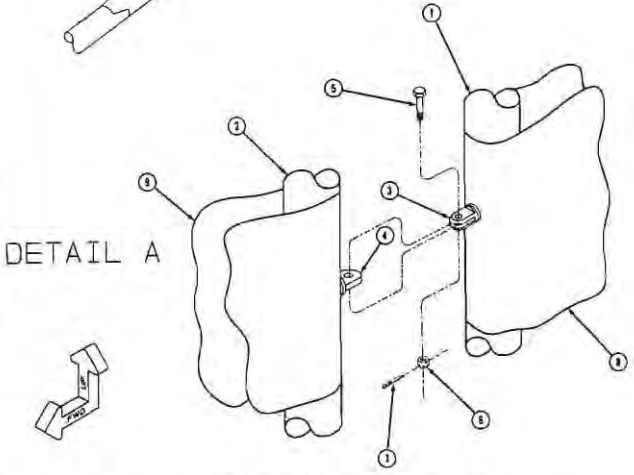
RUDDER ATTACHMENT

1. Assemble as illustrated. Bend ALL Cotter Pins correctly.

NOTE: Align the Eyebolt (4) and the Forkbolt (3) holes VERTICALLY.

Item	P/N	Qty	Description
1	45001		Rudder Leading Edge
2	45063		Vertical Stabilizer Trailing Edge Assembly
3	10390		1/4" x 1 1/2" Forkbolt
4	10370		AN43B-15A Eyebolt
5	10009	3	AN3-5 Bolt
6	10517	3	3/16" Castle Nut
7	10635	3	Cotter Pin
8	45643		Rudder Cover
9	45642		Vertical Stabilizer Cover


DETAIL A
3 PLACES

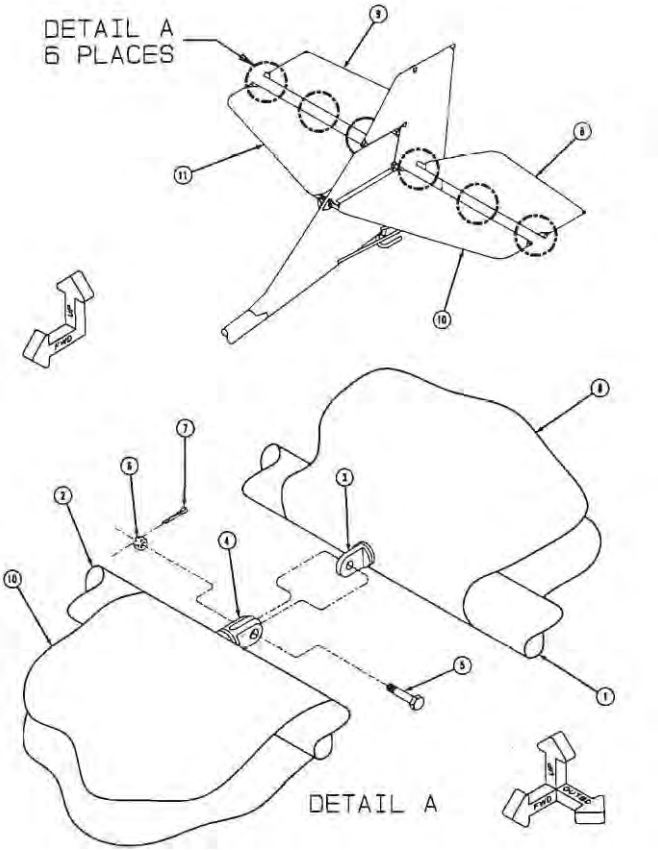

DETAIL A
1
2
3
4
5
6
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9
TWO

ELEVATOR ATTACHMENT

1. Assemble as illustrated. Bend ALL Cotter Pins correctly.

NOTE: Align the holes in the Eyebolts (3) and the Forkbolts (4) HORIZONTALLY.

Item	P/N	Qty	Description
1	45017		Elevator Leading Edge
2	45016		Stabilizer Trailing Edge
3	10370		AN43B-13A Eyebolt
4	10390		1/4" x 1 1/2" Forkbolt
5	10009	6	AN3-5 Bolt
6	10517	6	3/16" Castle Nut
7	10635	6	Cotter Pin
8	45644		Elevator Cover (Left)
9	45645		Elevator Cover (Right)
10	45646		Horizontal Stabilizer Cover (Left)
11	45647		Horizontal Stabilizer Cover (Right)


DETAIL A
6 PLACES
9
11
8
10
7
6
2
4
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1
5
DETAIL A

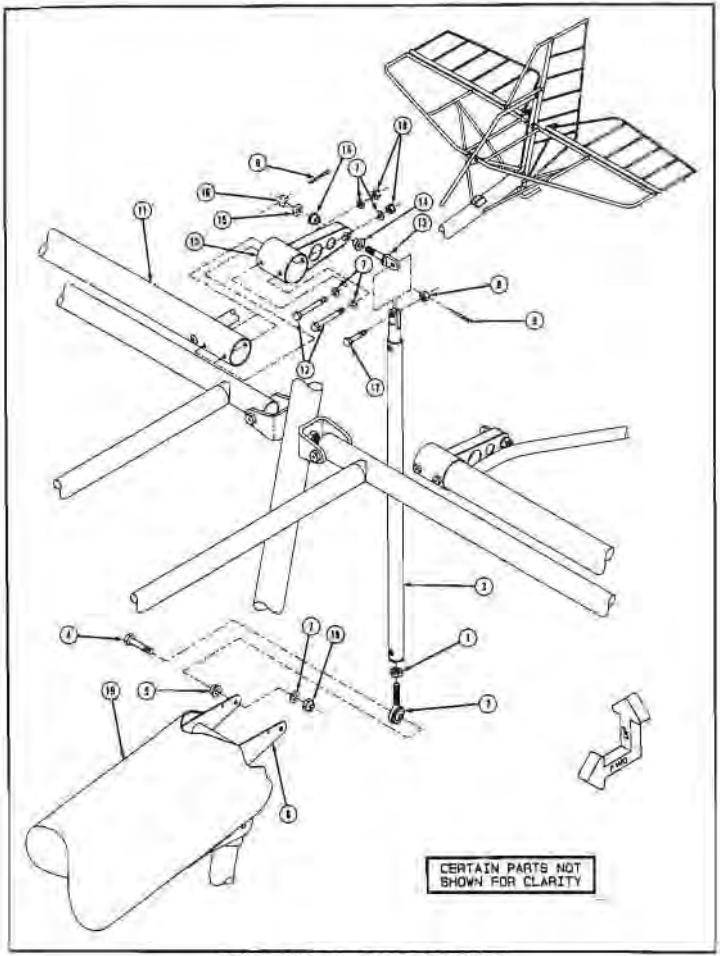
ELEVATOR PUSHROD ATTACHMENT

1. Assemble as illustrated. Bend ALL Cotter Pins correctly. DO NOT OVER TORQUE the Castle Nuts (8).

IMPORTANT: The Elevator Assembly MUST pivot FREELY.

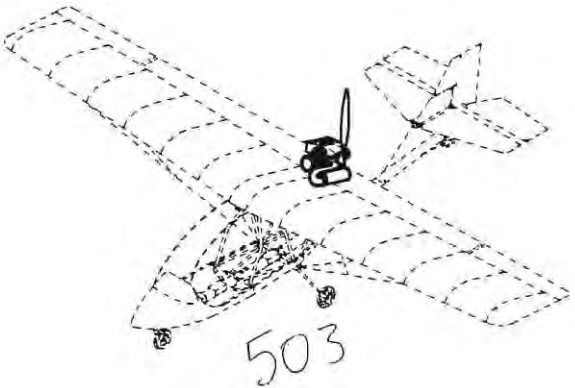
NOTE: The Horizontal Stabilizer Cover, Elevator Cover and LEFT side attachment are NOT shown for clarity. Attach the LEFT side Elevator Pushrod in 'mirror image'.

Item	P/N	Qty	Description
1.	10631	2	1/4" - 28 Jam Nut
2.	10700	2	1/4" Male Rod End Bearing
3.	45039	2	Elevator Pushrod Assembly
4.	10024	2	AN3-10A Bolt
5.	20241	2	"T" Bushing
6.	45074		Elevator Bellcrank
7.	10550	1	3/16" Washer
8.	10517	2	3/16" Castle Nut
9.	10635	4	Cottter Pin
10.	45089	2	Elevator Control Arm
11.	45017		Elevator Leading Edge
12.	10045	4	AN3-16A Bolt
13.	10361	2	AN43B-10 Eyebolt
14.	30005	4	FF312 Oilite Bearing
15.	10560	2	1/4" Washer
16.	10521	2	1/4" Castle Nut
17.	10009	2	AN3-5 Bolt
18.	10550	4	3/16" Locknut
19.	45012		Tail Boom Tube Assembly


CERTAIN PARTS NOT SHOWN FOR CLARITY

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SECTION A4 - ENGINE



FOR ROTAX (503) POWERPLANT

DOC # 902-1 DATE 03/28/90

SECTION A4

POWERPLANT (ROTAX 503)

ENGINE MOUNT ATTACHMENT.....A4-2

MUFFLER ATTACH BRACKET AND
EXHAUST MANIFOLD (HEADER) ATTACHMENT.....A4-4

MUFFLER ATTACHMENT.....A4-6

FUEL PUMP ATTACHMENT.....A4-8

CARBURETOR ATTACHMENT.....A4-10

AIR FILTER SECUREMENT.....A4-10A

GEAR OIL INSTALLATION AND SPARK PLUG ATTACHMENT.....A4-12

POWERPLANT TO ROOT TUBE ATTACHMENT.....A4-14

RECTIFIER/REGULATOR ATTACHMENT AND POWERPLANT WIRING.....A4-16

WIRING HARNESS ROUTING AND ATTACHMENT.....A4-18

FUEL LINE AND FUEL FILTER ROUTING AND ATTACHMENT.....A4-20

THROTTLE CABLE AND CHOKE CABLE
TO SPLITTER BRACKET ATTACHMENT.....A4-22

THROTTLE CABLE TO CARBURETOR ATTACHMENT.....A4-24

CHOKE CABLE TO CARBURETOR ATTACHMENT.....A4-26

THROTTLE AND CHOKE CABLE STAND-OFF ASSEMBLY ATTACHMENT...A4-28

THROTTLE AND CHOKE CABLE TO THROTTLE LEVER ATTACHMENT....A4-30

PULL STARTER ROPE ROUTING/
PULL STARTER HANDLE ATTACHMENT.....A4-32

PROPELLER ATTACHMENT AND TRACKING ADJUSTMENT.....A4-34

KEYED IGNITION SWITCH/HOUR METER WIRING AND ATTACHMENT...A4-36

TACHOMETER/CYLINDER HEAD TEMPERATURE GAUGE INSTALLATION..A4-38

INSTRUMENT PANEL COVER PLATE ATTACHMENT.....A4-40

SPARK PLUG WIRE ATTACHMENT.....A4-42

ENGINE MOUNT ATTACHMENT

1. Remove the Powerplant (17) from the Shipping Container. Using Vise Grips remove and discard the FOUR (4) Shipping Studs (1).

2. Attach the Upper Engine Mounts (2) to the Powerplant with Bolts (3) and Washers (4). Use Thread Adhesive (19) as required.

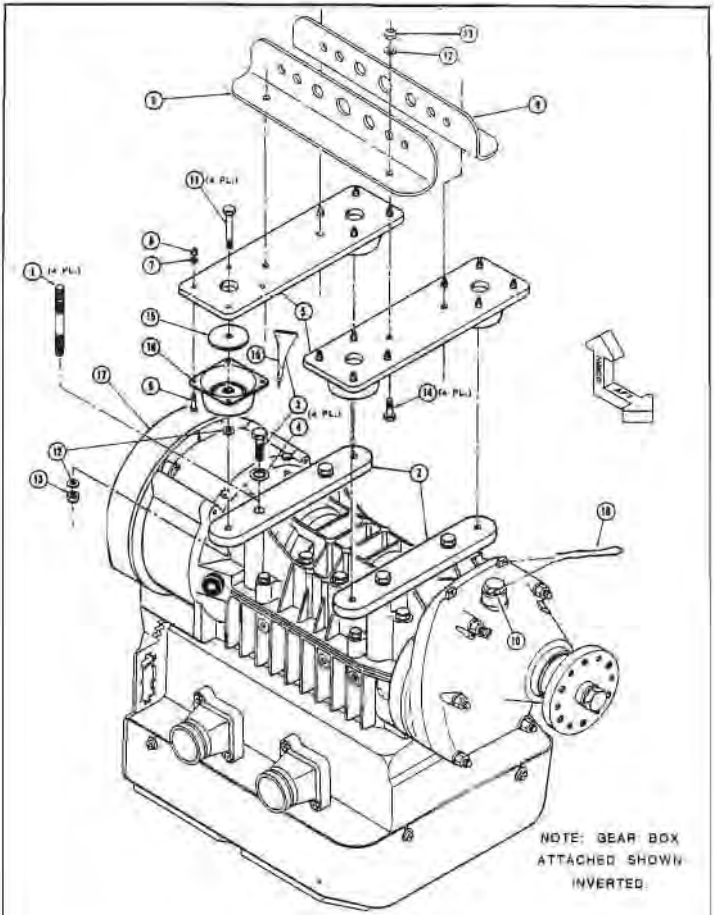
3. Attach FOUR Engine Shock Mounts (16) and Snubbing Washers (15) to the Lower Engine Mounts (5) using Hardware (6, 7 and 8) FOUR Places. Tighten ALL Locknuts to proper torque.

4. Attach BOTH Engine Mount Angles (9) to the Lower Engine Mount (5) with Hardware (14, 12 and 13) as illustrated. Leave the Hardware SLIGHTLY loose as to allow mounting on the Root Tube (not illustrated) in a later sequence.

5. Attach the Lower Engine Mounts (5) to the Upper Engine Mounts (2) with Hardware (11, 15, 12 and 13) FOUR Places. Tighten ALL Locknuts to proper torque.

6. Use Safety Wire (18) as required to secure the Gear Case Drain Plug (10) to either Tab on the Gear Case as illustrated.

Item	P/N	Qty	Description
1		4	Shipping Stud (Remove and Discard)
2	45837	2	Upper Engine Mount
3	10492	4	10 mm x 30 mm Bolt
4	10437	4	7/16" Star Washer
5	45839	2	Lower Engine Mount
6	10010	16	AN3-5A Bolt
7	10550	16	3/16" Washer
8	10500	16	3/16" Locknut
9	45836	2	Engine Mount Angle
10			Gear Case Drain Plug (part of P/N 61080)
11	10185	4	AN4-21A Bolt
12	10560	16	1/4" Washer
13	10510	8	1/4" Locknut
14	10062	4	AN4-7A Bolt
15	10564	4	Snubbing Washer
16	61035	4	Engine Shock Mount
17	61080	1	Rotax 503 Powerplant
18	20467	A/R	Safety Wire, .041"
19	60591	A/R	Thread Adhesive


NOTE: GEAR BOX
ATTACHED SHOWN
INVERTED.

MUFFLER ATTACH BRACKET AND
EXHAUST MANIFOLD (HEADER) ATTACHMENT

1. Remove and discard FOUR (4) 8 mm Bolts (SAVE THE WASHERS) on the TOP of the Powerplant Shroud. Install the Muffler Attach Bracket (2) using Hardware (1, 8 and 3) as illustrated.

IMPORTANT: DO NOT use Thread Adhesive!

Torque to 130 in/lbs (15 nm).

2. Attach the Exhaust (Header) Manifold (6) and Gaskets (5) with Hardware (7) and (8). Torque to 195 in/lbs (22 nm).

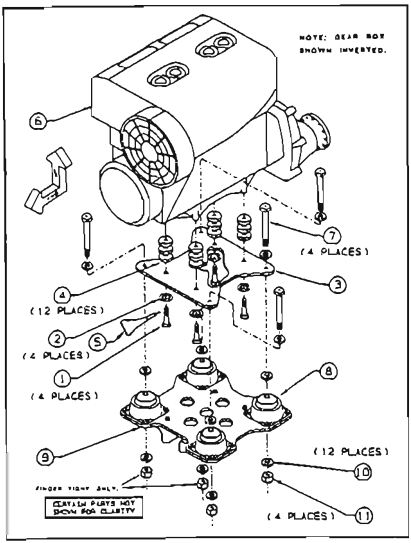
NOTE: The Gaskets (5) and Hardware (7) and (8) are located in the Carburetor Box packaged with your Powerplant.

Item	P/N	Qty	Description
1	00240275	4	8 mm x 25 mm Bolt
2	45821	1	Muffler Attach Bracket (R-503)
3	10579	8	5/16" x 3/4" x .125 Thick Aluminum Washer
4	61080		Rotax 503 Powerplant w/Dual Carb, Dual Ignition and Reduction Drive (as received)
5	00831841	2	Exhaust Manifold Gasket (in Carb Box)
6	61045	1	Exhaust (Header) Manifold (R-503)
7	00840991	4	8 mm x 30 mm Allen (Hex) Head Screw (located in Carb Box)
8	00945752	8	8 mm Lock Washer (in Carb Box)

QUICKSILVER ENTERPRISES, INC.
A Pure Corporation

ROTAX 503 POWERPLANT MOUNTING INSTRUCTIONS

(for Quicksilver GT 400 and 500 aircraft)



DOC# 912-05 DATE 09/01/91

TABLE OF CONTENTS

POWERPLANT (ROTAX 503)

LOWER ENGINE MOUNT PLATE TO
LOWER ENGINE MOUNT ANGLE ATTACHMENT.....2

UPPER AND LOWER ENGINE MOUNT PLATE
TO POWERPLANT ATTACHMENT.....4

MUFFLER ATTACH BRACKET AND EXHAUST MANIFOLD ATTACHMENT.....6

MUFFLER ATTACHMENT.....8

FUEL PUMP ATTACHMENT.....10

CARBURETOR ATTACHMENT.....12

GEAR OIL INSTALLATION AND SPARK PLUG ATTACHMENT.....14

THROTTLE CABLE AND CHOKE CABLE
TO SPLITTER BRACKET ATTACHMENT.....16

POWERPLANT TO ROOT TUBE ATTACHMENT.....18

FUEL FILTER / FUEL LINE ROUTING AND ATTACHMENT.....20

THROTTLE CABLE TO CARBURETOR ATTACHMENT.....22

CHOKE CABLE TO CARBURETOR ATTACHMENT.....24

THROTTLE CABLE AND CHOKE CABLE "STAND-OFF" ASSY. ATTACHMENT..26

THROTTLE CABLE TO THROTTLE LEVER ATTACHMENT
AND CHOKE CABLE (FORWARD) ATTACHMENT.....28

AIR FILTER ATTACHMENT.....30

RECTIFIER/REGULATOR ATTACHMENT
AND POWERPLANT WIRING.....32

KEYED IGNITION SWITCH AND HOUR METER INSTALLATION.....34

TACHOMETER AND CYLINDER HEAD TEMPERATURE GAUGE INSTALLATION..36

INSTRUMENT PANEL AND COVER PLATE ATTACHMENT.....38

PULL STARTER ROPE ROUTING / PULL STARTER HANDLE ATTACHMENT...40

PROPELLER ATTACHMENT AND TRACKING ADJUSTMENT.....44

SPARK PLUG WIRE ATTACHMENT.....46

POWERPLANT BREAK-IN PROCEDURE.....48

2

LOWER ENGINE MOUNT PLATE TO
LOWER ENGINE MOUNT ANGLE ATTACHMENT

NOTE: Before starting the following assembly sequence, remove the Powerplant (17) from the shipping container. Use 'vise grips' to remove and discard the FOUR shipping studs attached to the powerplant (not illustrated).

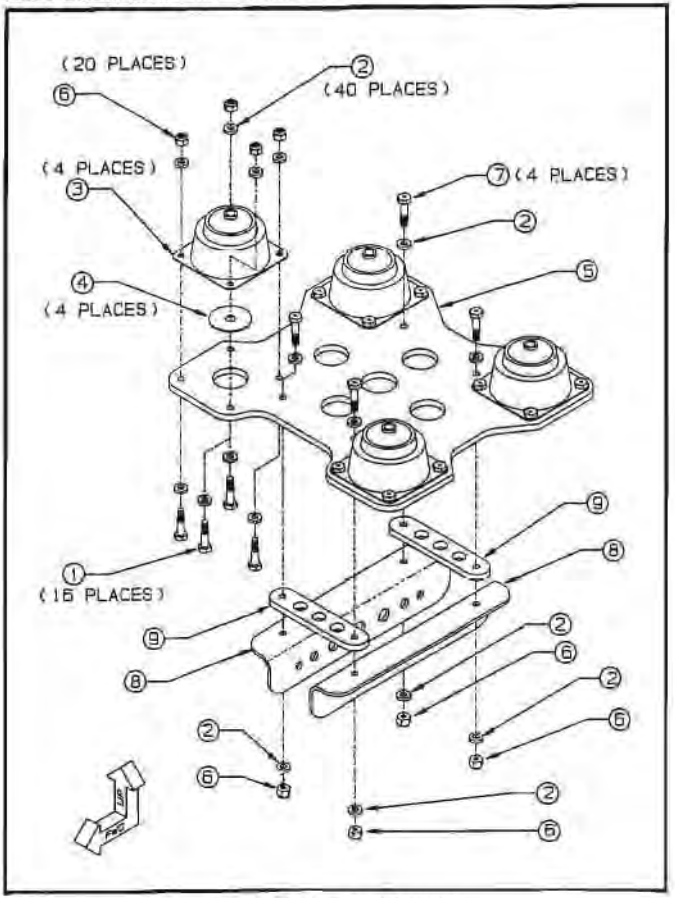
1. Attach FOUR Engine Shock Mounts (3) and Snubbing Washers (4) to the Lower Engine Mount Plate (5) with the hardware (1, 2 and 6) FOUR Places as illustrated. Tighten ALL Locknuts to proper torque.

NOTE: Position each of the Snubbing Washers (4) BETWEEN the Engine Shock Mount (3) and the Lower Engine Mount Plate (5).

2. Attach BOTH Engine Mount Angles (8) and BOTH Engine Mount Spacer Plates (9) to the Lower Engine Mount Plate (5) with hardware (7, 2 and 6) as illustrated. Leave the hardware SLIGHTLY loose as to allow mounting on the Boat Tube (not illustrated) in a later sequence.

Item	P/N	Qty	Description
1	10060	16	AN4-6A Bolt
2	10560	40	1/4" Washer
3	61036	4	Engine Shock Mount
4	61037	4	Snubbing Washer
5	60268	1	Lower Engine Mount Plate
6	10510	8	1/4" Locknut
7	10064	4	AN4-11A Bolt
8	46636	2	Engine Mount Angle
9	60267	2	Engine Mount Spacer Plate

LOWER ENGINE MOUNT PLATE TO
LOWER ENGINE MOUNT ANGLE ATTACHMENT



4

UPPER AND LOWER ENGINE MOUNT PLATE TO POWERPLANT ATTACHMENT

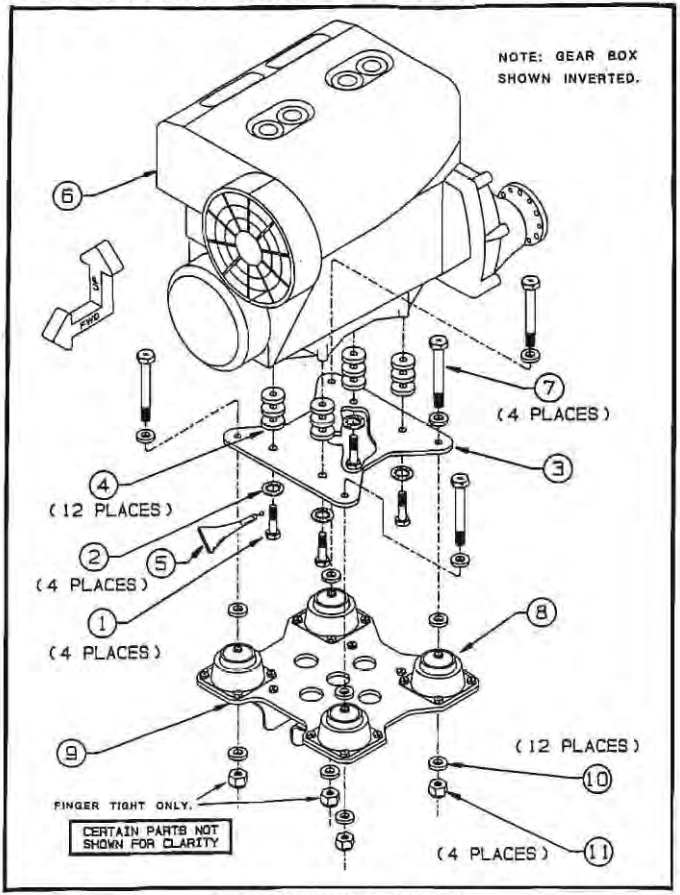
1. Assemble as illustrated attaching the Upper Engine Mount Plate (3) to the Powerplant (6) with the hardware (1, 2 and 4) FIRST. Apply Thread Adhesive (5) to the threads of ALL Bolts (1) FOUR places. Tighten ALL Bolts to proper torque.

2. Attach the Lower Engine Mount Plate (9) to the Upper Engine Mount Plate (3) with the hardware (7, 10, and 11) as illustrated. Tighten All Locknuts (11) to proper torque.

NOTE: Tighten the TWO Locknuts (11) on the intake side of the powerplant FINGER TIGHT ONLY at this time as the Fuel Pump Mount Plate (not illustrated) will be attached in a later sequence on pages 10 and 11.

Item	P/N	Qty	Description
1	10489	4	10 mm x 50 mm Bolt
2	10437	4	7/16" Lock Washer
3	60269	1	Upper Engine Mount Plate
4	45866	12	.43" I.D. x 1.25" O.D. x .25" Thick Spacer
5	60591	A/R	Thread Adhesive (Loctite 290)
6	61080		Rotax 503 Powerplant (w/ Dual Carb, Dual CDI and Reduction Drive)
7	10399	4	AN6-20A Bolt
8	61036		Engine Shock Mount
9	60268		Lower Engine Mount Plate
10	10575	12	3/8" Washer
11	10547	4	3/8" - 24 Locknut

UPPER AND LOWER ENGINE MOUNT PLATE TO POWERPLANT ATTACHMENT



MUFFLER ATTACH BRACKET AND EXHAUST MANIFOLD ATTACHMENT

1. Remove and discard the FOUR (4) 8 mm Bolts (SAVE THE WASHERS) on the TOP of the Powerplant Shroud. Install the Muffler Attach Bracket (2) using the hardware (1, 8 and 3) as illustrated. Torque to 130 in/lbs (15 nm).

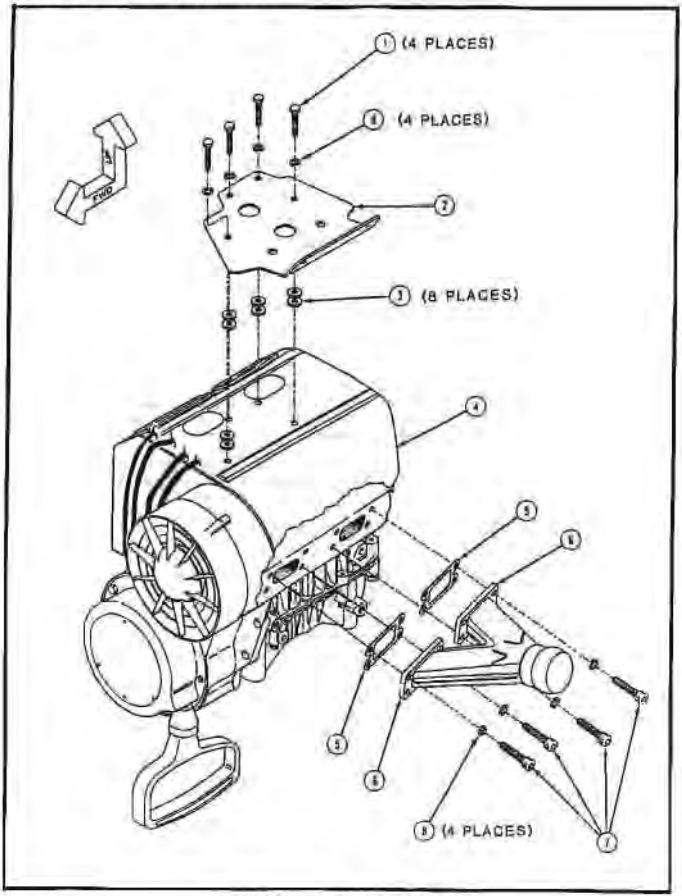
IMPORTANT: DO NOT use Thread Adhesive!

2. Attach the Exhaust Manifold (6) and Gaskets (5) with the hardware (7) and (8). Torque to 195 in/lbs (22 nm).

NOTE: The Gaskets (5) and hardware (7) and (8) are located in the Carburetor Box packaged with your Powerplant.

Item	P/N	Qty	Description
1	00240275	4	8 mm x 25 mm Bolt
2	45821	1	Muffler Attach Bracket
3	10379	8	5/16" x 3/4" x .125 Thick Aluminum Washer
4	61080		Rotax 503 Powerplant w/Dual Carb, Dual Ignition and Reduction Drive
5	00831841	2	Exhaust Manifold Gasket
6	61045	1	Exhaust Manifold
7	00840991	4	8 mm x 30 mm Socket Head Screw
8	00945752	8	8 mm Lock Washer

MUFFLER ATTACH BRACKET AND
EXHAUST MANIFOLD ATTACHMENT



MUFFLER ATTACHMENT

1. Attach the 90 Degree Exhaust Elbow (1) with THREE (3) Muffler Springs (2) as illustrated.

OPTIONAL: Apply Loctite "Anti-Seize" (Not supplied) to the OUTER surface of the Exhaust Manifold Ball Joint (11). This will reduce the likelihood of corrosion (rust) from forming and allow the Elbow to pivot or rotate freely around the joint.

2. Attach the Muffler Assembly (1) with THREE (3) Springs as illustrated.

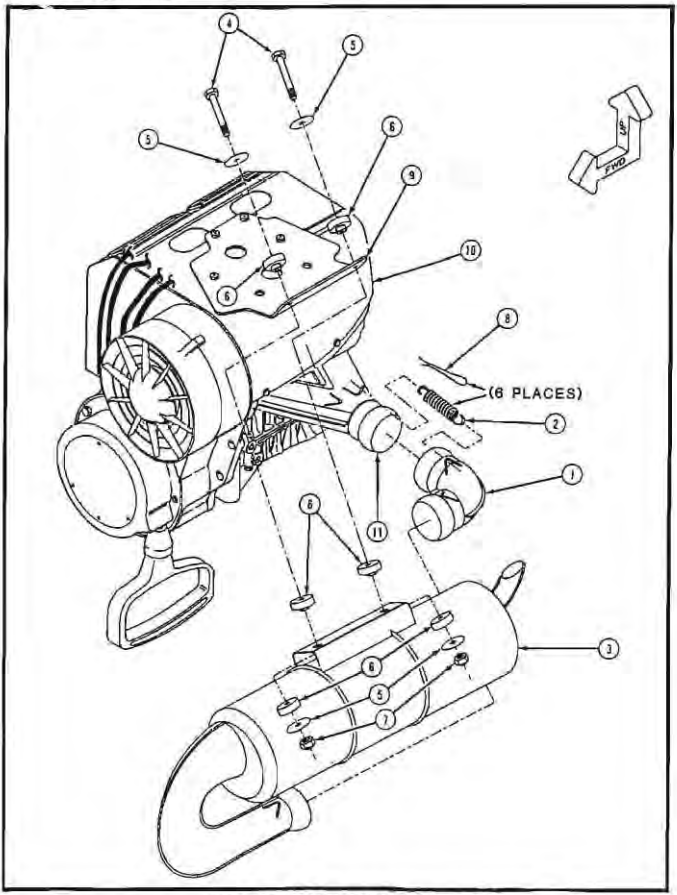
3. Cut the "Nipples" off of the LOWER TWO Shock Grommets (6) ONLY and assemble as illustrated. Tighten the Locknuts (7) however leave THREE to FOUR Bolt threads visible. DO NOT OVER TORQUE AND CRUSH THE GROMMETS (6).

4. Secure ALL Springs (2) with Safety Wire (8) as required. Pass ONE (1) end of the Safety Wire through the MIDDLE (INSIDE) of the Muffler Spring and bend it back around the corresponing attachment tab. Route the Spring back along the OUTSIDE of the Spring and secure the ends.

CAUTION: DO NOT USE ANY TOOL WHICH MAY SCRATCH OR SCORE THE SURFACE OF THE SAFETY WIRE DURING INSTALLATION AS THIS WILL COMPROMISE THE INTEGRITY OF THE SAFETY WIRE.

Item	P/N	Qty	Description
1	61082	1	90 Degree Exhaust Elbow
2	00938790	6	Muffler Spring
3	61066	1	Muffler Assembly
4	10320	2	AN5-15A Bolt
5	10600	4	5/16" Fender Washer
6	30380	6	Soft Rubber Shock Grommet
7	10540	2	5/16" Locknut
8	20467	A/R	.041" Safety Wire
9	45821	1	Muffler Attach Bracket
10	61080		Rotax 503 Powerplant, Dual Carb, Dual Ignition, w/Reduction Drive
11			Exhaust Manifold "Ball Joint"
12	61045		Exhaust Manifold (R-503)

MUFFLER ATTACHMENT



FUEL PUMP ATTACHMENT

1. Remove the Dual Carb Fuel Pump (1) from the powerplant carburetor box.

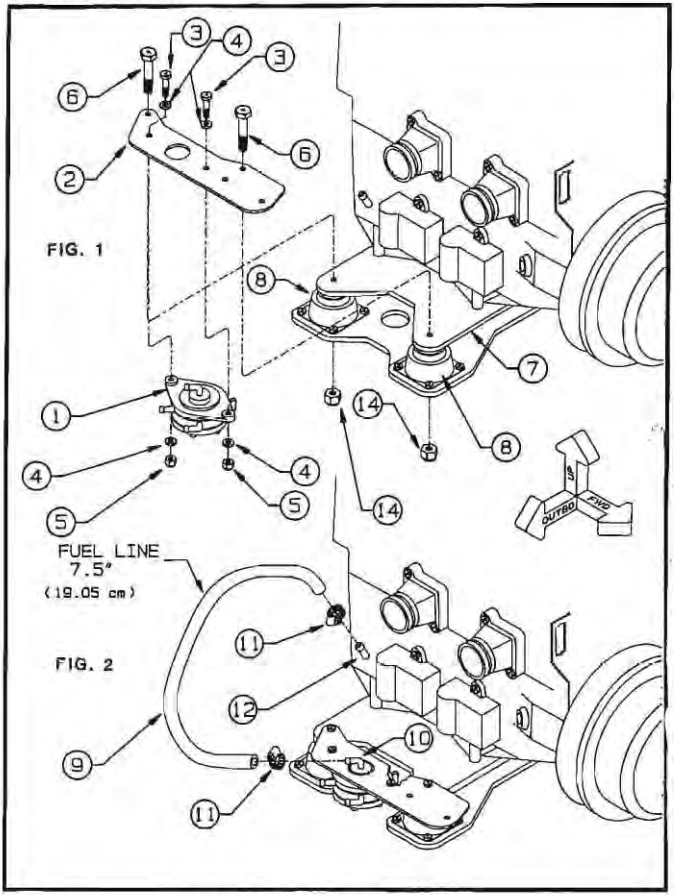
2. Refer to Figure 1. Attach the Fuel Pump (1) to the Fuel Pump Mount Plate (2) as illustrated with the hardware (3,4 and 5). Tighten to proper torque.

3. Attach the Fuel Pump Mount Plate (2) to the Upper Engine Mount (7) and the Shock Mounts (8) with the hardware (6) (previously installed) and (5) as illustrated. Tighten to proper torque.

4. Refer to Figure 2. Measure and cut a piece of Fuel Line (9) 7 1/2" (19.05 cm). Attach one end of the Fuel Line to the Pulse Port (10) located on the Fuel Pump (1). Slide on TWO Clamps (11). Attach the opposite end of the Fuel Line on the Pulse Port (12) of the Powerplant (13). CAREFULLY tighten the Clamps (11). DO NOT OVER TORQUE.

Item	P/N	Qty	Description
1.	00994485	1	Dual Carburetor Fuel Pump
2.	45858	1	Fuel Pump Mount Plate (R-503)
3.	10066	2	AN4-10A Bolt
4.	10560	4	1/4" Washer
5.	10510	4	1/4" Locknut
6.	10399		AN6-20A Bolt
7.	60269		Upper Engine Mount
8.	61036		Engine Shock Mount
9.	30220	A/R	Fuel Line, 7 1/2" (19.05 cm)
10.			Pulse Port on Fuel Pump
11.	30230	2	Fuel Line Clamp
12.			Pulse Port on Powerplant
13.	61080		Rotax 503 Powerplant (w/ Dual Carb, Dual Ignition and Reduction Drive)
14.	10547		3/8" Locknut

FUEL PUMP ATTACHMENT



CARBURETOR ATTACHMENT

1. Push the LARGER (INSIDE diameter) end of the Rubber Sockets (2) onto the Intake Sockets (8) of the powerplant (10). Press them on until the "bead" on the INSIDE of the Rubber Socket "seats" with the "recesses" on the Intake Sockets. Loosen and slide the Clamps (3) onto the Sockets (2). Position the Screws (9) on the Clamps (3) so they can be tightened later. Assemble as illustrated.

NOTE: Notice the arrow on the Rubber Socket. The ARROW points TOWARD THE ENGINE.

2. Push the Carburetors (1) into the Rubber Sockets (2) until the "beads" seat with the "recesses". Ensure the TOP of each Carburetor is LEVEL with the TOP of the powerplant. You may wish to consult the powerplant (ROTAX) Operators Manual for additional information regarding Carburetor alignment. Tighten the Clamps (3) securely.

3. Cut a piece of Fuel Line (5) 18 1/2" (47 cm) in length, to be attached to the FORWARD Carburetor. Cut another piece 17" (43.18 cm) long to be attached to the AFT Carburetor.

4. Route the FORWARD Fuel Line AFT and OUTBOARD and BETWEEN the Carburetors. Route the AFT Fuel Line INBOARD or BEHIND the AFT Carburetor. Attach the Fuel Line (5) with Fuel Line Clamps (4) as illustrated. Secure the Clamps. DO NOT OVER TORQUE.

5. Tie Wrap the AFT Fuel Line together with the Fuel Pump Pulse Line (11) located at the TOP CENTER of the Fuel Pump using a "stand-off".

Item	P/N	Qty	Description
1	00995578	2	Bing Carburetor
2	00867484	2	Rubber Socket
3	00951510	4	Hose Clamp
4	30230	4	Fuel Line Clamp
5	30220	A/R	Fuel Line, 18 1/2" (47 cm), 17" (43.2 cm)
8	00867400		Intake Socket
9			Hose Clamp Screw
10	61080		Rotax 503 Powerplant
11			Fuel Pump Pulse Line
12			Pulse Line

CARBURETOR ATTACHMENT

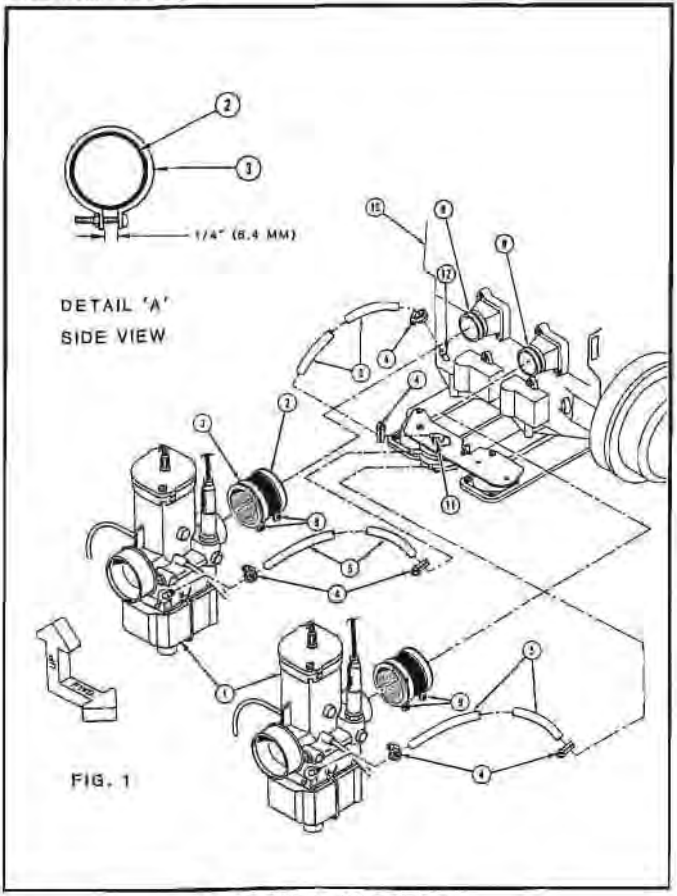


FIG. 1

GEAR OIL INSTALLATION AND SPARK PLUG ATTACHMENT

1. Refer to Figure 1 and remove and retain the Oil Vent Plug (2) at the TOP of the Gear Box (4). Remove and retain the Lower Level Cap Stan Screw (2).

2. Fill the Gear Box (4) through the UPPER Vent Plug hole with the SPECIFIED GEAR OIL (3) up to the LOWER LEVEL Oil Plug (1). IMMEDIATELY install the LOWER Level Cap Stan Screw (1) and Vent Plug (2). Secure UPPER and LOWER Oil Plug (1), Vent Plug (2), and BOTTOM Drain Plug with Safety Wire (15).

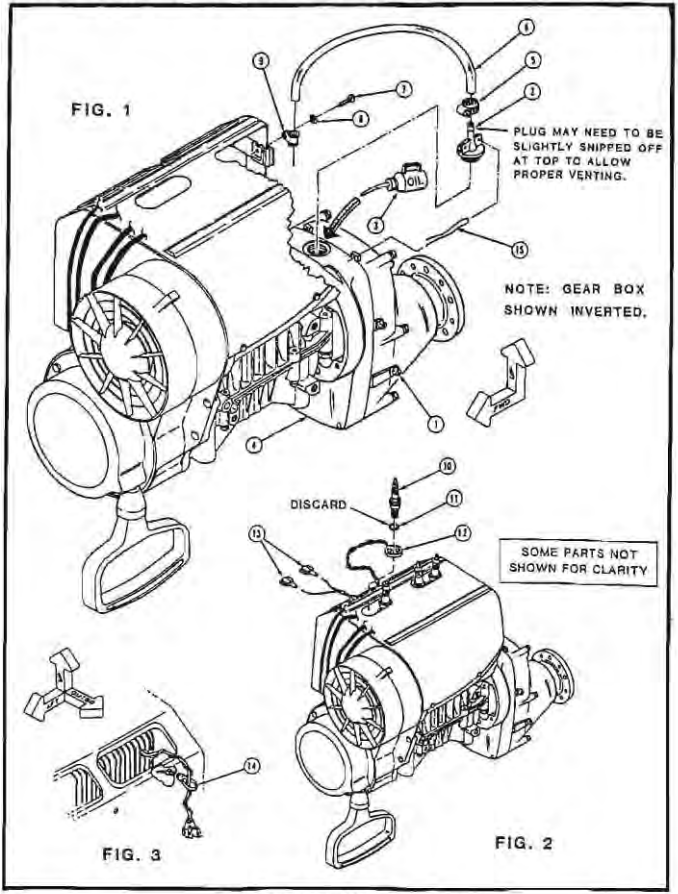
3. Measure and cut a 9" (22.86 cm) piece of Fuel Line (6). Use a Fuel Line Clamp (5) to secure it to the Vent Plug (2). Attach the opposite end using the hardware (7, 8 attached to the Powerplant Shroud and 9) Tighten the Screw (7) securely.

4. Refer to Figure 2. Locate the FOUR (4) Spark Plugs (10) in the Powerplant Carburetor Box. Set the Gap to .020" (.05 mm). Install THREE (3) ONLY into the powerplant as illustrated. Torque to 240 in/lbs. Install the FOURTH (4th) and FORWARD Plug by removing the Washer (11) and installing the Temperature Sensor (12). Torque to 240 in/lbs. DO NOT attach the spark plug wires at this time.

5. Refer to Figure 3. Thread the Temperature Sensor Wires past the Cylinder Head Cooling Fins (UNDER the Shroud). Fasten the Electrical Connectors (13). Secure as illustrated with a Tie Wrap (14) and a Fuel Line "Stand-Off" Assembly.

Item	P/N	Qty	Description
1	00841781	1	6 mm x 10 mm Cap Stan Screw (Oil Plug)
2	00241925	1	18 mm x 1.5 mm Vent Plug
3			API-GL5 or GL6SAE 140, 85W-140EP or SAE 90 Hypoid Gear Oil (ONE Pint required - not supplied)
4			Gear Box (part of P/N 61080)
5	30230	1	Fuel Line Clamp
6	30220	A/R	Fuel Line
7	00841490	1	4.8 mm x 16 mm Self Tapping Screw
8	00845270	1	4.9 mm x 15.5 mm x 0.5 mm Washer
9	20432	1	3/8" Cushioned Clamp
10	00897050	4	NGK B8ES Spark Plug (in Carb Box)
11			Compression Washer (part of Item 10)
12	90129	1	Cylinder Head Temperature (CHT) Sensor (in box with Instrument P/N 90126)
13	30075	2	Female Q.D. Connectors
14	30480	1	7" Tie-Wrap
15		A/R	.041" Safety Wire
16			Rotax 503 Powerplant

GEAR OIL INSTALLATION AND SPARK PLUG ATTACHMENT



THROTTLE CABLE AND CHOKE CABLE TO SPLITTER BRACKET ATTACHMENT

1. Remove and disassemble the Recoil Starter Housing (10) as per the Rotax Manual. Tools are located in your Rotax tool kit.

2. Locate the CENTER of the Recoil Starter Housing. Measure 1 1/2" (38.1 mm) OUTBOARD (to your LEFT when facing the Housing) from the VERTICAL CENTERLINE. Mark this location. Measure 1" (25.4 mm) ABOVE and BELOW the HORIZONTAL CENTERLINE. Mark these locations. These hole locations should be 2" (50.8 mm) apart (CENTER to CENTER).

3. Position the Splitter Bracket (1) VERTICALLY against the Starter Housing (10) with the EXISTING holes in the Splitter Bracket CENTERED OVER your marks as illustrated.

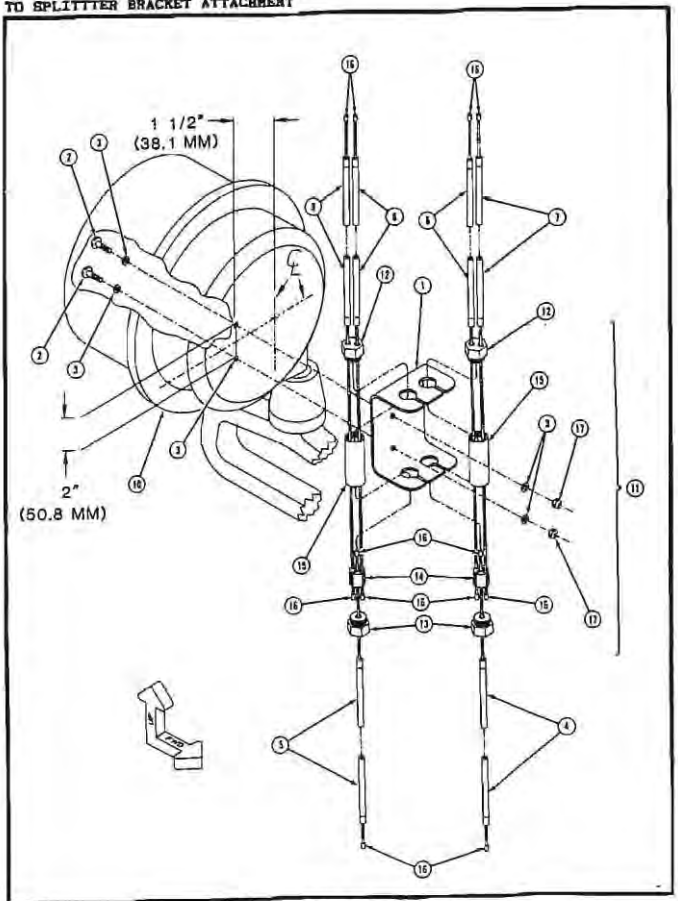
NOTE: Ensure the Splitter Bracket (1) is orientated with the edge of the Bracket CLOSEST to the attachment holes positioned OUTBOARD and that the 3/16" holes will be OUTBOARD of the Recoil Spring area.

4. Drill and deburr TWO (2) 3/16" (4.8 mm) diameter holes into the Starter Housing (10) using the EXISTING holes in the Splitter Bracket (1) as a guide or template. Attach with Hardware (2, 16 and 17). Tighten to proper torque.

5. Connect the Throttle and Choke Cables (4) thru (9) as illustrated. Ensure ALL Cable Ferrules (16) seat completely or "all the way" down into the Cable Couplings (14).

Item	P/N	Qty	Description
1	46811	1	Splitter Bracket
2	11074	2	AN525-10R9 Washer Head Screw
3	10550	4	3/16" Washer
4	45811		Throttle Cable
5	45814		Choke Cable
6	90286	1	20" Throttle Cable Extension
7	90287	1	24" Throttle Cable Extension
8	90288	1	20" Choke Cable Extension
9	90289	1	24" Choke Cable Extension
10	0090107		Recoil Starter Housing (part of P/N 61085)
11	90285	1	1 into 2 Cable Splitter (consists of Items 12, 13, 14, and 15)
12		2	2 Hole Splitter End (part of P/N 90285)
13		2	1 Hole Splitter End (part of P/N 90285)
14		2	Cable Coupling (part of P/N 90285)
15		1	Splitter Housing (part of P/N 90285)
16			Cable Ferrule
17	10500	2	3/16" Locknut

THROTTLE CABLE AND CHOKE CABLE
TO SPLITTER BRACKET ATTACHMENT



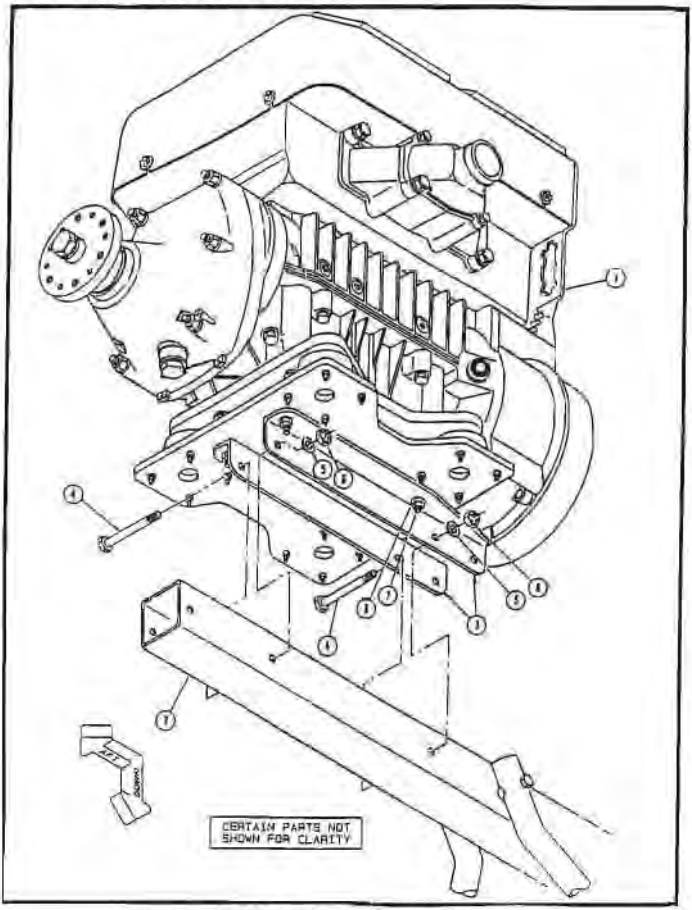
POWERPLANT TO ROOT TUBE ATTACHMENT

1. Assemble as illustrated. Tighten ALL Locknuts to proper torque.

NOTE: Bolts (7) and Locknuts (8) were previously installed only LOOSELY on Pages 2 and 3. Tighten the Locknuts (8) to proper torque at this time.

Item	P/N	Qty	Description
1	61080	1	Rotax 503 Powerplant (with Dual Carburetor, Dual CDI Ignition and Reduction Drive)
2			Root Tube
3	45836	2	Engine Angle Mount
4	10325	2	AN3-26A Bolt
5	10570	4	5/16" Washer
6	10540	2	5/16" Locknut
7	10062		AN4-7A Bolt
8	10510		1/4" Locknut

POWERPLANT TO ROOT TUBE ATTACHMENT



FUEL FILTER / FUEL LINE ROUTING AND ATTACHMENT

(GT 300)

IMPORTANT: Note the direction of the Fuel Flow Arrow on the Fuel Filter (4). The Fuel Filter MUST be installed EXACTLY as illustrated.

1. Attach a piece of Fuel Line (3) to the Fuel Tank Cut-Off Valve (1) with clamp (2). DO NOT OVER TORQUE the Fuel Line Clamps.

2. Add a Fuel Filter (4) and Secure with FOUR Tie Wraps (5) (Two attached together end to end) at TWO locations. Cut TWO Stand-offs (as required to space the Fuel Filter adequately) as illustrated.

3. Attach a Cushioned Clamp (10) to the Fuel Line and Root Tube (11) with a Bolt (7).

4. Slide a Cushioned Clamp (10) over the Fuel Line and attach to the previously attached Bolt (13). Tighten Locknut (15).

(GT 400)

1. Refer to Detail 'A' and attach the Fuel Line (3) from Fuel Filter to the Fuel Pump similarly.

IMPORTANT: ALWAYS route fuel lines AWAY from moving parts, sharp edges, and extreme temperatures.

Item	P/N	Qty	Description
1	30282		Cut-Off Valve
2	30230	4	Fuel Line Clamp
3	30220	A/R	Fuel Line
4	30210	1	Fuel Fiter
5	30480	4	7" Tie Wrap
6		2	Stand-Off (made from P/N 30220)
7	10235	1	AN4-25A Bolt
8	10560	2	1/4" Washer
9	10510	1	1/4" Locknut
10	20432	1	3/8" Cushioned Clamp
11	45668		Root Tube
12	30254	1	8.5 Gallon Fuel Tank Assembly
13	10010		AN3-5A Bolt
14	10550		3/16" Washer
15	10500		3/16" Locknut

FUEL FILTER / FUEL LINE ROUTING AND ATTACHMENT

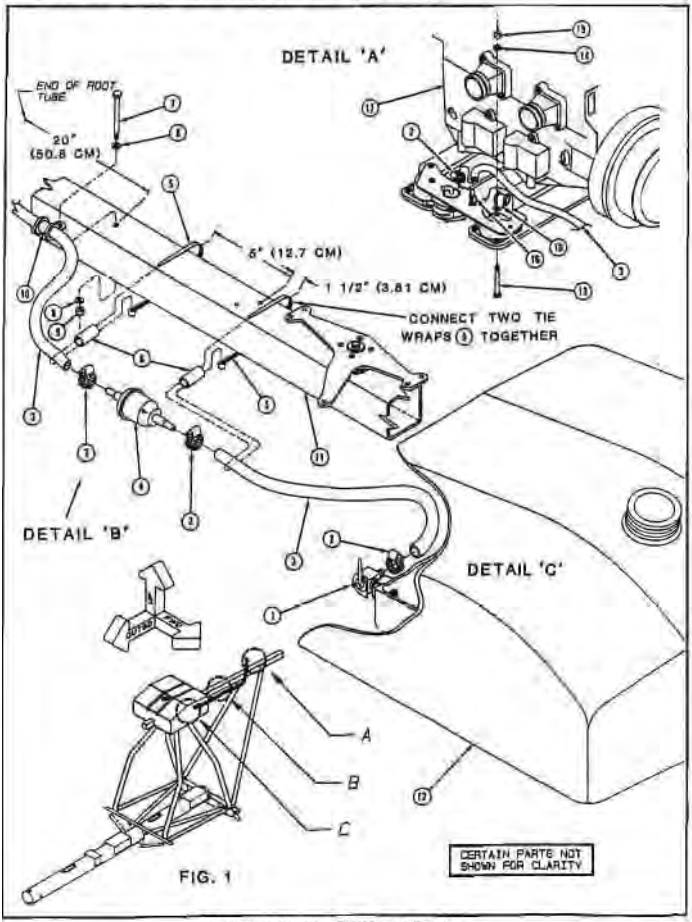


FIG. 1

THROTTLE CABLE TO CARBURETOR ATTACHMENT

ESSENTIAL: Ensure your hands are CLEAN and your work area is free from dirt, dust and grit BEFORE proceeding.
CAUTION: The Jet Needle (10) and Needle Clip (11) are EXTREMELY delicate. DO NOT USE FORCE!
IMPORTANT: BEFORE proceeding, Refer to Figure 2. Use a Marking Pen and draw a line crossing the SIDE of the Cover Plate (1) of the Carburetor (2) and the TOP of the Housing (3). These marks will be realigned during reassembly.

1. Refer to Figure 3. Remove the Rubber Boot (4) and slip it onto the Throttle Cable (5), positioned as illustrated. While holding DOWN on the Cover Plate (1) of the Carburetor (2) LOOSEN the TWO Hex Screws (6). REMOVE the Cover Plate and the INTERNAL Spring (7).

2. Refer to Figure 3 , Details 'A' and 'B'. Note the seating position of the Jet Needle (10) and the location of the Needle Clip (11). Ensure the Needle Clip is properly located in the CORRECT position or slot # 1. Pass the END of the Throttle Cable (5) through items (1,7 and 8) and the "keyhole" slot in the base of the Piston (9). Position or "seat" the Cable (5) as illustrated. CAUTION: DO NOT BEND THE JET NEEDLE (10)!

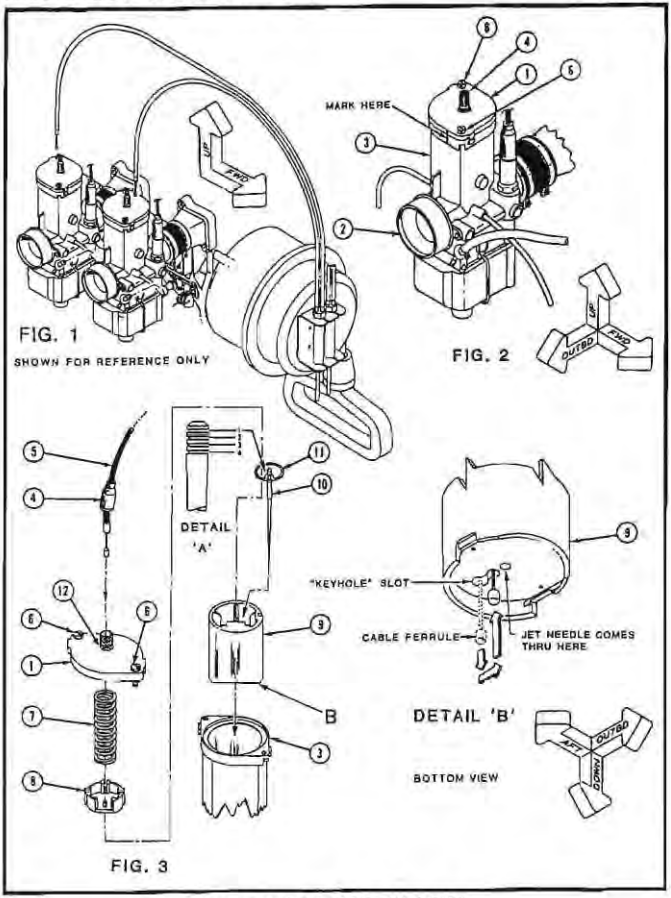
3. Refer to Figures 1 and 2. Release the Spring (7) and allow the Spring Cup (8) to re-seat on the TOP of the Jet Needle (10) and it is "all the way" down in Carburetor Piston (9). Ensure the Jet Needle is correctly re-seated. Allow the Piston to LOCK back into the Carburetor Body (3). Ensure the Jet Needle is positioned correctly. DO NOT USE FORCE!

4. Refer to Figure 2. Ensure the pen marks align. Re-attach the Cover Plate (1). Tighten until "snug".

5. Repeat Steps 1-4 on the remaining Carburetor.

Item	P/N	Qty	Description
1	00963721		Cover Plate
2	00996415		Carburetor, Bing Model 54 x 36 mm
3			Carburetor Housing
4	00260370		Rubber Boot
5	90281		Throttle Cable
6	00241430		5 mm x 12 mm Hex Screw
7	00938655		Piston Spring
8	00827345		Spring Cup
9	00963679		Carburetor Piston
10	00963714		BL2 Jet Needle (position #1)
11	00963500		Needle Clip
12			Adjustment Nut

THROTTLE CABLE TO CARBURETOR ATTACHMENT



CHOKE CABLE TO CARBURETER ATTACHMENT

NOTE: The following sequence must be completed on esc Carburetor. Use the LONGER (24") Choke Cable Extension on th AFT Carburetor.

1. Refer to Detail 'B'. Locate the Choke Plunger 12). Pus the Rubber Boot (6) onto the Choke Cable (7). Pass he Cabl (7) through the Items (9,8,4,5 and 10).

2. Thread the Jam Nut (8) ALL THE WAY onto the Cable Adjuste (9). Thread the Cable Adjuster (9) into the Remote Closur Screw (4) up to the Jam Nut (8). DO NOT tighten. Compress th Spring (5) into the Closure Screw (4) by pushing on the Bras Sleeve (10).

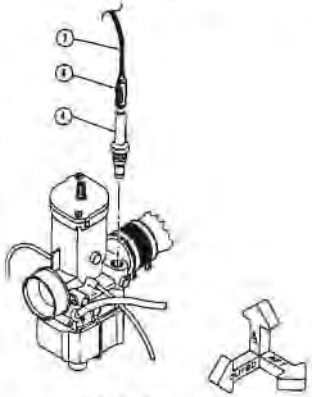
3. Refer to Detail 'C'. Attach the Piston (11) to the Ferrul (13) on the END of the Cable (7).

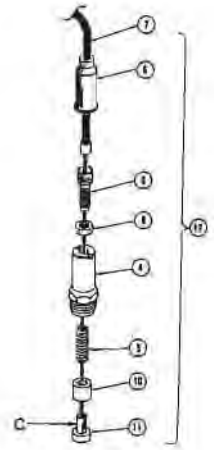
4. Screw the Choke Plunger Assembly into the SAME threads fro which the Choke Plunger Assembly was removed. Tighten unti "snug". Unscrew the Cable Adjuster (9) to eliminate th "slack" from the Cable Extension (7). Tighten the Jam Nut (8 against the Closure Screw (4). Reposition the Rubber Boot (6 OVER the Cable Adjuster (9).

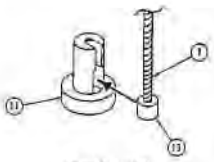
5. Repeat the sequence for the remaining Carburetor.

Item	P/N	Qty	Description
4	00963750		Closure Screw
5	00661090		Starting Piston Spring
6	00260370		Rubber Boot
7	90288		20" Choke Cable Extension
	90289		24" Choke Cable Extension
8	00942541		6 mm x .75 mm Hex Nut
9	00241440		6 mm Cable Adjustment
10	00268450		Brass Sleeve
11	00963740		Remote Staring Piston
12	60216		Remote Plunger Kit
13			Cable Ferrule

CHOKE CABLE TO CARBURETER ATTACHMENT







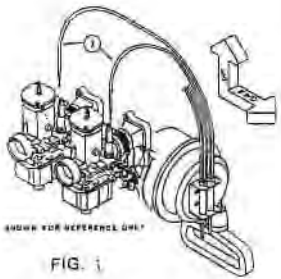


FIG. 1

THROTTLE CABLE AND CHOKE CABLE "STAND-OFF" ASSEMBLY ATTACHMENT

1. Cut THREE Fuel Line Stand-offs (1) and attach as illustrated.

Item	P/N	Qty	Description
1	30220	3	Fuel Line "Stand-Off"
2	30480	1	7" Tie Wrap
3	90286		20" Throttle Cable Extension
4	90287		24" Throttle Cable Extension
5	90288		20" Choke Cable Extension
6	90289		24" Choke Cable Extension

THROTTLE CABLE AND CHOKE CABLE "STAND-OFF" ASSEMBLY ATTACHMENT

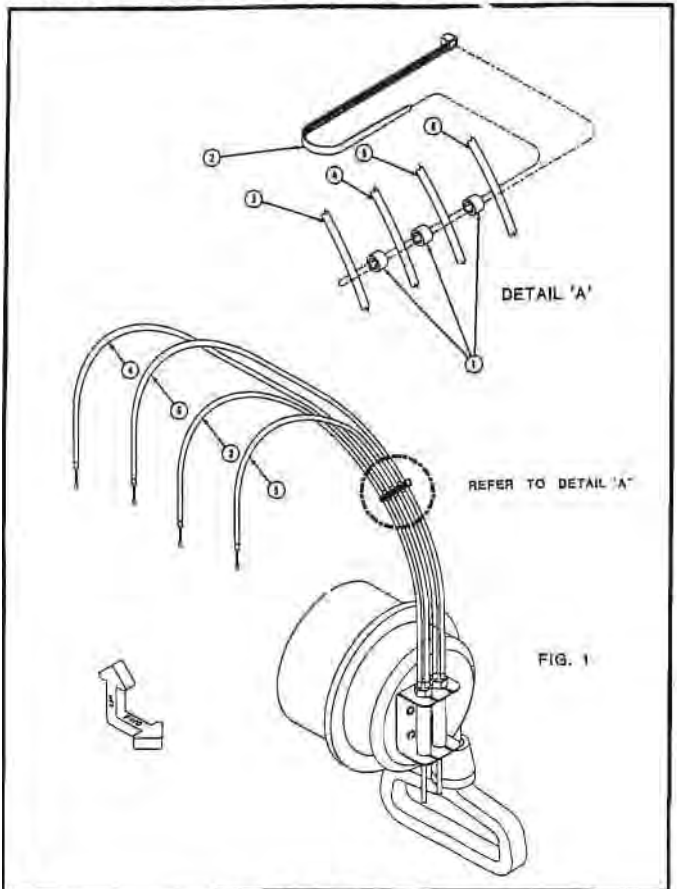


FIG. 1

THROTTLE CABLE TO THROTTLE LEVER ATTACHMENT AND CHOKE CABLE FORWARD ATTACHMENT

IMPORTANT: Refer to Figure 5. Route the throttle cable and choke cable from the powerplant to the throttle mount plate CAREFULLY as not to 'kink' the cables. Secure the cables with tie wraps, as illustrated in section 1, away from moving parts, sharp edges, and extreme temperatures.

1. Refer to Figure 1 and Detail 'A'. Attach the Throttle Cable (2) to the Throttle Mount Plate (7) as illustrated. Slide the end of the Throttle Cable (2) into the Cable Swivel (3). Ensure the Cable Ferrule (16) is properly 'seated'.

2. Refer to Figures 1, 3 and 4. Rotate the Throttle Lever (1) FORWARD. Adjust the Jam Nuts (12) on the Conduit Thread Adjuster (13) and/or the Adjusters (14) on the TOP of each of the Carburetors as to ensure the BOTTOM of the Carburetor Pistons (17) are LEVEL with the TOP of the Carburetor Throats at FULL THROTTLE. When adjustment is complete tighten the 'FULL THROTTLE' Stop Bolt (18). NOTE: You should hear a 'click' as the Pistons (17) come into contact with with each of the Idle Screws (11) when the Throttle Lever (1) is rotated into the AFT or 'CLOSED' position. Adjust the idle screws EVENLY (if necessary).

3. Insert the Choke Cable (6) through the Throttle Mount Plate (7) and install items (4, 5, 8, 9 and 10) as illustrated.

Item	P/N	Qty	Description
1	90215		Throttle Lever
2	45811		Throttle Cable
3	90250		Cable Swivel
4			Washer (part of P/N 45814)
5			Jam Nut (part of P/N 45814)
6	45814		Choke Cable
7	45475		Throttle Mount Plate (GT 400)
	45482		Forward Throttle Mount Plate (GT 500)
8			Washer (part of P/N 45814)
9			Choke Cable Nut (part of P/N 45814)
10			Choke Cable Knob (part of P/N 45814)
11			Idle Screw
12			1/4" Jam Nut (part of 45811)
13			Conduit Thread Adjuster part of P/N 45811
14			Carburetor Trottle Cable Adjuster
15			Rubber Boot
16			Cable Ferrule
17			Carburetor Piston
18			'Full Throttle' Stop Bolt

THROTTLE CABLE TO THROTTLE LEVER ATTACHMENT AND CHOKE CABLE FORWARD ATTACHMENT

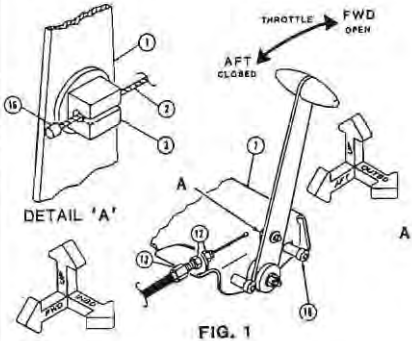


FIG. 1

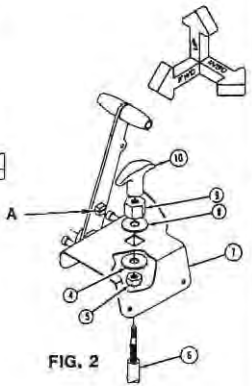


FIG. 2

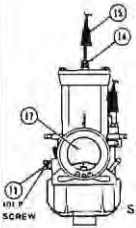


FIG. 3



FIG. 4

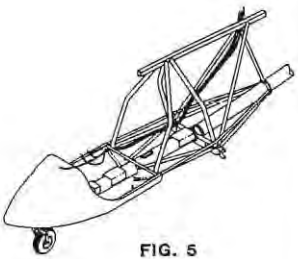


FIG. 5

SOME PARTS NOT SHOWN FOR CLARITY.

AIR FILTER ATTACHMENT

IMPORTANT: Before starting the following assembly sequence cover ALL openings of the Carburetor (3). DO NOT allow any metal filings from drilling and deburring to get into the carburetor.

1. Refer to Figures 1 and 2 and locate the Carburetor Tab (6) attached to the side of the Carburetor (3). Drill and deburr a 1/8" (3.2 mm) diameter hole thru the Carburetor Tab (6) as illustrated.

2. Refer to Figure 1. Cut a 12" (304.8 mm) piece of Safety Wire (1). Insert ONE end thru the TOP side of the Air Filter (just OUTBOARD) of where the Air Filter Clamp (4) will be located). Wrap the safety wire around ONE coil of the Internal Spring (3) then route the safety wire so it is CENTERED with EQUAL amounts of Wire on each side of the Spring.

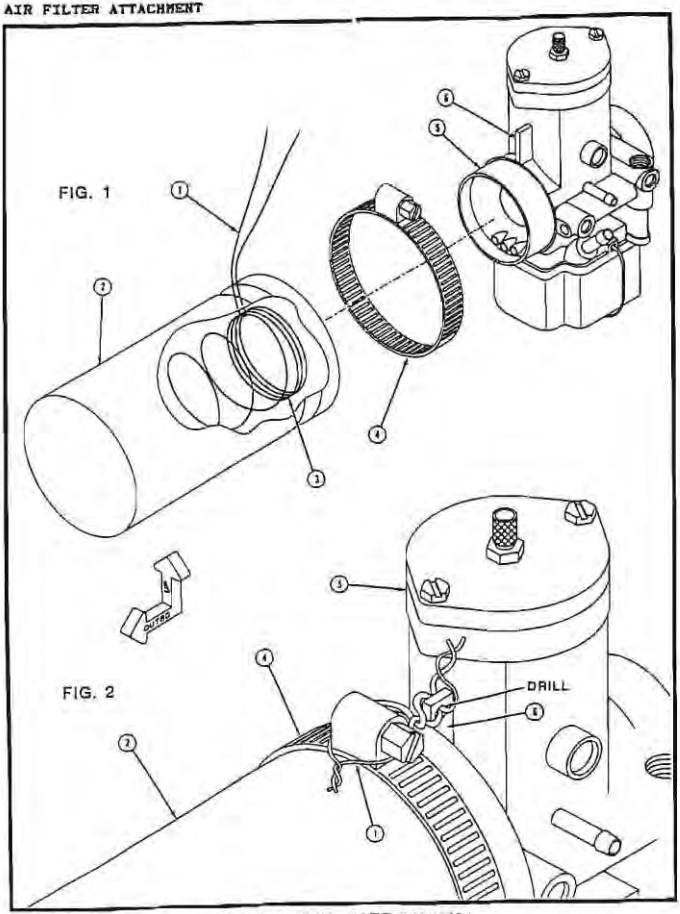
3. Refer to Figure 2. twist the Safety Wire (1) as illustrated. Loosen the Clamp (4) if necessary and slide it over the end of the Air Filter (2). Ensure the Screw/Nut assembly is at the UPPER side. Pull the end of the Spring SLIGHTLY out of the Air Filter and ensure there are a MINIMUM of SIX coils of the Spring (3) wrapped around the 'throat' or inlet side of the Carburetor. Position the clamp directly over the SIX springs and butted up against or touching the Tab (6) on the Carburetor. Tighten the screw on the Clamp (3) until TIGHT.

4. Twist the Safety Wire (1) ONE AND A HALF to TWO turns as illustrated and route it around the Screw/Nut at the UPPER side of the Clamp. Twist the safety wire again BEFORE inserting it thru the previosly drilled hole in the Carburetor Tab. Insert each end of the safety wire thru the hole. Secure the safety wire. Refer to 'Safety Wire' in SECTION 1 of your aircraft assembly instructions if necessary.

5. Repeat Steps 1-4 on the remaining Carburetor.

Item	P/N	Qty	Description
1.	20467	A/R	.041" Safety Wire
2.	60000	2	Air Filter
3.			Internal Spring (part of P/N 60000)
4.			Air Filter Clamp (part of P/N 60000)
5.	00996417	1	Bing Model 54/36 mm Carburetor (part of P/N 61085)
6.			Carburetor Tab

AIR FILTER ATTACHMENT



RECTIFIER/REGULATOR ATTACHMENT AND POWERPLANT WIRING

1. Attach the Rectifier/Regulator (1) as illustrated. Tighten ALL Locknuts (5) to proper torque.

2. Refer to Detail 'A'. Identify the YELLOW and the YELLOW/BLACK wires from the powerplant. Cut off the EXISTING FEMALE connectors and install (by crimping) the Insulated Female Wire Connectors (6). LIGHTLY pull on the Wire Connectors to verify the Wire Connectors are secure.

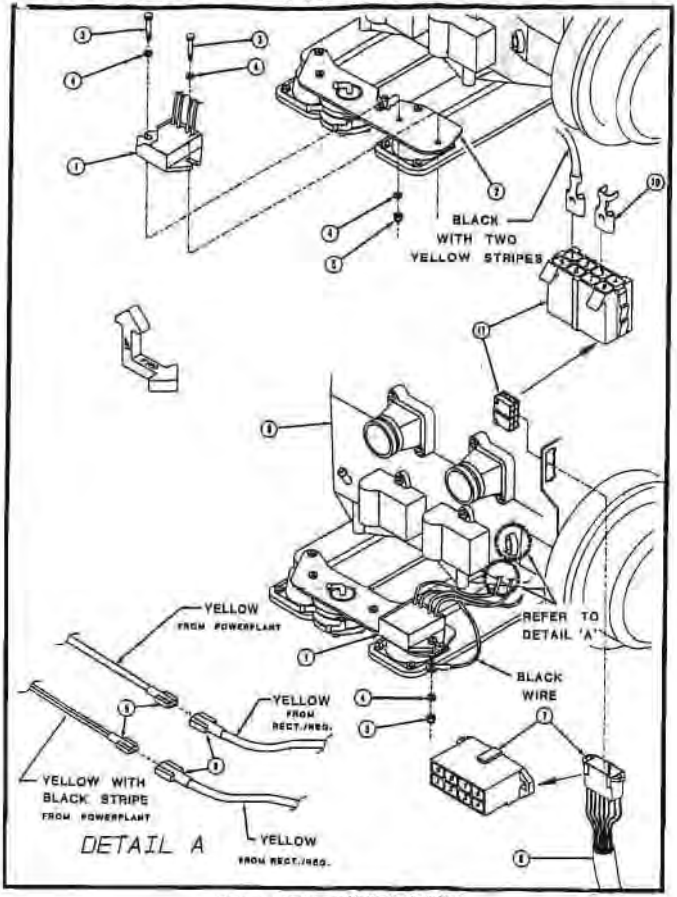
3. Install (by crimping) the Insulated Male Wire Connectors (3) on the YELLOW Wires from the Rectifier/Regulator (7).

4. Identify the FEMALE Connector Housing (1). CAREFULLY determine which side is the TOP by comparing it to the illustration. Insert the wires from the powerplant direction. Wires without connectors (10) install as required.
1 - BLACK with TWO (2) YELLOW Stripes (1 of 2 from Powerplant)
2 - RED from Regulator/Rectifier
3 - BLACK (from the Temperature Sensor)
4 - BLANK (leave empty)
5 - BLACK with TWO YELLOW Stripes (1 of 2 from the Powerplant)
6 - BROWN (from the powerplant)
7 - WHITE (from the Temperature Sensor)
8 - GREY (from the powerplant)

5. Identify the MALE Connector Housing (2). CAREFULLY determine which side is "as illustrated" and insert the MALE Connectors from the Wiring Harness (11) as follows:
1 - BLUE (LEFT Magneto)
2 - RED (DC POSITIVE)
3 - BLACK (Temperature Gauge)
4 - ORANGE (Electric Start)
5 - YELLOW (RIGHT Magneto)
6 - BROWN (DC NEGATIVE)
7 - WHITE (Temperature Gauge)
8 - GREEN (Tachometer)
5. Connect BOTH of the Housings (1) and (2) together at the powerplant as illustrated. Secure ALL wiring AWAY from ANY SHARP edges, MOVING parts, or EXTREME temperatures.

Item	P/N	Qty	Description
1	00866080	1	Rectifier/Regulator
2	45858		Fuel Pump Mount Plate
3	10020	2	AN3-7A Bolt
4	10530	4	3/16" Washer
5	10500	2	3/16" Locknut
6	45631	1	Wiring Harness
7	00866010	1	Male Connector Housing
8	30080	2	Male Snap Connector
9	30070	2	Female Snap Connector
10	30075	1	Female Locking Wire Connector
11	00866025	1	Female Connector Housing

RECTIFIER/REGULATOR ATTACHMENT AND POWERPLANT WIRING

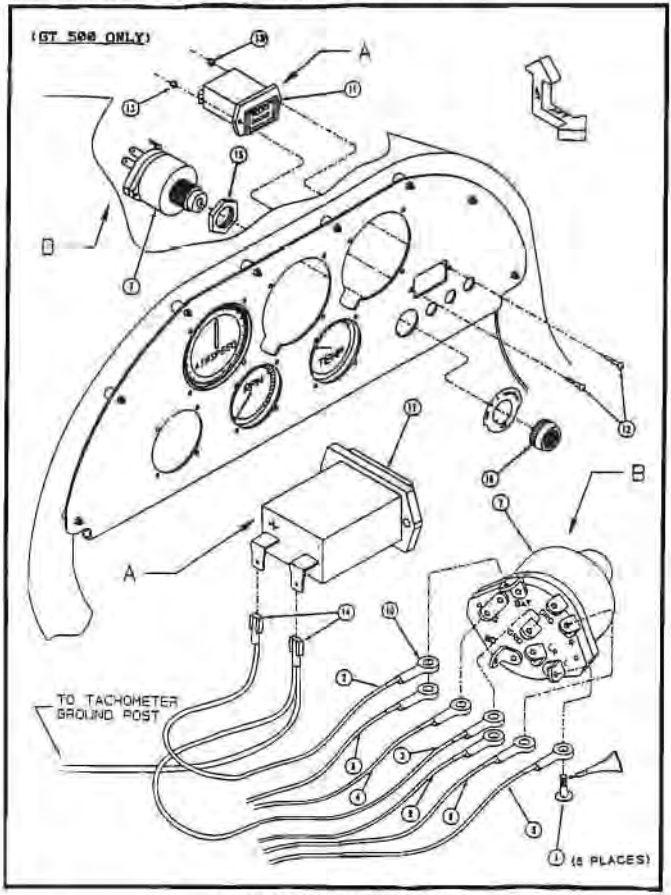


KEYED IGNITION SWITCH AND HOUR METER INSTALLATION

1. Locate the wiring for the Temperature Gauge (not illustrated) and remove the RED wire (2) from its package. Cut an 8" (20.32 cm) piece with the EXISTING "Molex" Wire Connector on ONE end. Cut a 4" (10.16 cm) piece and splice the 8" (20.32 cm) piece together with a Female Wire Connector (14) on the opposite end as the Connector. Install a Ring Connector (10) to the opposite end of the 4" (10.16 cm) piece.
2. Install the RED wire (8) from the Wiring Harness and the RED wire (2) (Ring End) to the "BAT" terminal on the BACK of the Ignition Switch (7). Install the RED wire (2) FEMALE Connector onto the POSITIVE (+) post on the Hour Meter (11). The RED wire (2) with Connector will be installed later.
3. Locate the wiring for the Temperature Gauge (not illustrated). REMOVE the BLACK wire from its package. Cut a 4" piece. Install a Ring Connector (10) to ONE end. Remove the "Molex" Connector from remaining BLACK wire (approx. 10") (25.4 cm). Splice the 4" and 10" (3) BLACK wire with a Female Wire Connector (14). Install a Female Wire Connector (14) onto the opposite end of the 10" BLACK wire (3).
4. Refer to Detail 'B', Attach the Ring Connectors from the BROWN wire (9) from the Wiring Harness and the BLACK wire (3) (4"piece) to the "GRD" (GROUND) post on the BACK of the Ignition Switch (7) as illustrated. Refer to Detail 'A', Attach the BLACK wire (3) (Female Connector end) to the (-) Post of the Hour Meter. The 10" BLACK wire will be installed onto the Tachometer Ground Post later.
5. Connect the ORANGE (4) wire from the Wiring Harness to the "S" Post of the Ignition Switch (7) and the BLUE wire (5) from the Harness to the "L" post of the Switch. Connect the YELLOW wire (6) from the Harness to the "R" post of the Switch.
6. Install the Hobbs (11) into the panel as illustrated. Install the Switch (7) as illustrated. Adjust the Jam Nut (15) appropriately to allow Ignition Cover Nut (16) to tighten.

Item	P/N	Qty	Description
1		3	#4 Screw (part of P/N 30315)
2			RED Jumper Wire (part of P/N 90125)
3			BLACK Jumper Wire (part of P/N 90125)
4		1	ORANGE Wire (part of Wiring Harness)
5		1	BLUE Wire (part of Wiring Harness)
6		1	YELLOW Wire (part of Wiring Harness)
7	30315	1	Keyed Dual Ignition Switch
8		1	RED Wire (part of Wiring Harness)
9		1	BROWN Wire (part of Wiring Harness)
10	30073	2	Ring Connector (for #4 Screw)
11	90120	1	Hour Meter, (Hobbs)
12	11065	2	6-32 x 1" Phillips Hd Screw (w/ P/N 90120)
13	10057	2	Locknut (part of P/N 90120)
14	30070	3	Female Wire Connector
15		1	Jam Nut (part of P/N 30315)
16		1	Cover Nut (part of P/N 30315)

KEYED IGNITION SWITCH AND HOUR METER INSTALLATION



TACHOMETER AND CYLINDER HEAD TEMPERATURE GUAGE INSTALLATION

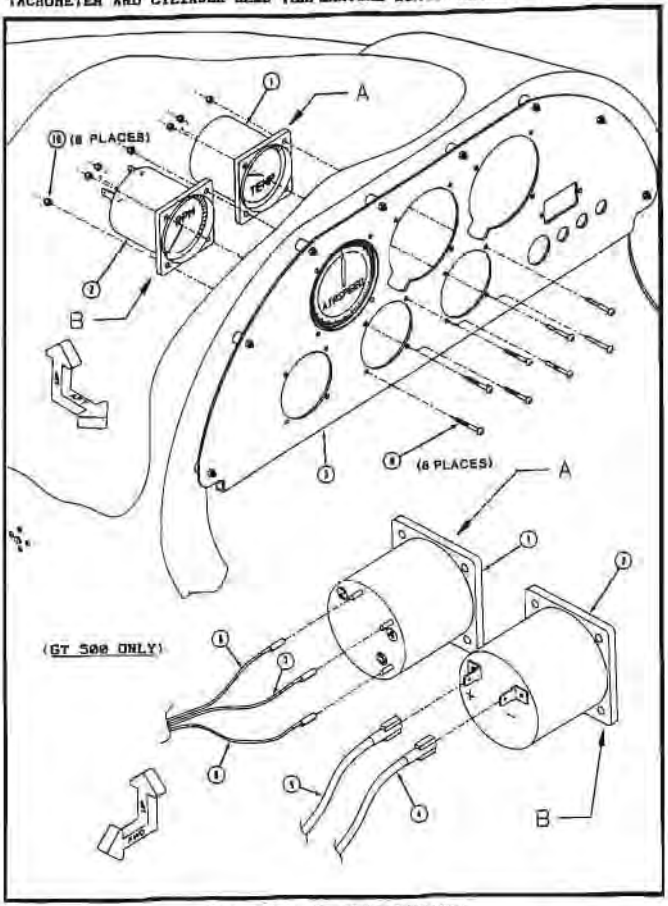
1. Install the RED wire (7) from the POSITIVE (+) side of the Hour Meter (not illustrated) to the #4 post of the Temperature Gauge (1). Connect the BLACK wire (8) form the Wiring Harness to the #3 post of the Temperature Gauge. Connect the WHITE wire (6) from the Wiring Harness to the #2 post on the Temperature Guage.

2. Connect the GREEN Wire (5) to the POSITVE (+) side of Tachometer (2). Connect the BLACK Wire (4) from the Hour Meter (not illustrated) to the NEGATIVE (-) post on the Tachometer.

3. Install the Instruments (1) and (2) using the hardware (9) and (10). Secure the hardware properly.

Item	P/N	Qty	Description
1	90126	1	Cylinder Head Temperature (CHT) Guage
2	90128	1	Tachometer
3	43574		Instrument Panel
4			Tachometer Negative Wire (BLACK)
5			Tachometer Positive Wire (GREEN)
6			Temperature Guage Wire (WHITE)
7			Temperature Guage Wire (RED)
8	11067	8	6-32 Locknut [with Instruments (1) and (2)].
9	11065	8	6-32 x 1" Phillips Head Screw [with Instruments (1) and (2)].

TACHOMETER AND CYLINDER HEAD TEMPERATURE GUAGE INSTALLATION



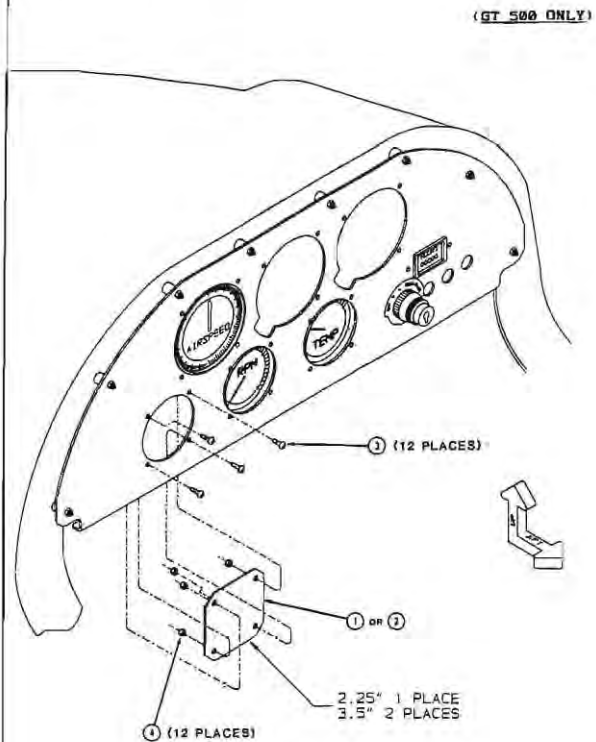
INSTRUMENT PANEL COVER PLATE ATTACHMENT

1. Attach ONE Cover Plate (1) to the instrument Panel (5) as illustrated. Tighten ALL Locknuts.

2. Attach TWO Cover Plates (2) to the remaining TWO Instrument cut-out holes in the Panel as illustrated.

Item	P/N	Qty	Description
1	90148	1	2 1/4" Cover Plate
2	90149	2	3 1/8" Cover Plate
3	11066	12	6-32 x 1/2" (PPH) Screw
4	11067	12	6-32 (Nylock) Locknut
5	43374		Instrument Panel

INSTRUMENT PANEL COVER PLATE ATTACHMENT



PULL STARTER ROPE ROUTING
AND PULL STARTER HANDLE ATTACHMENT

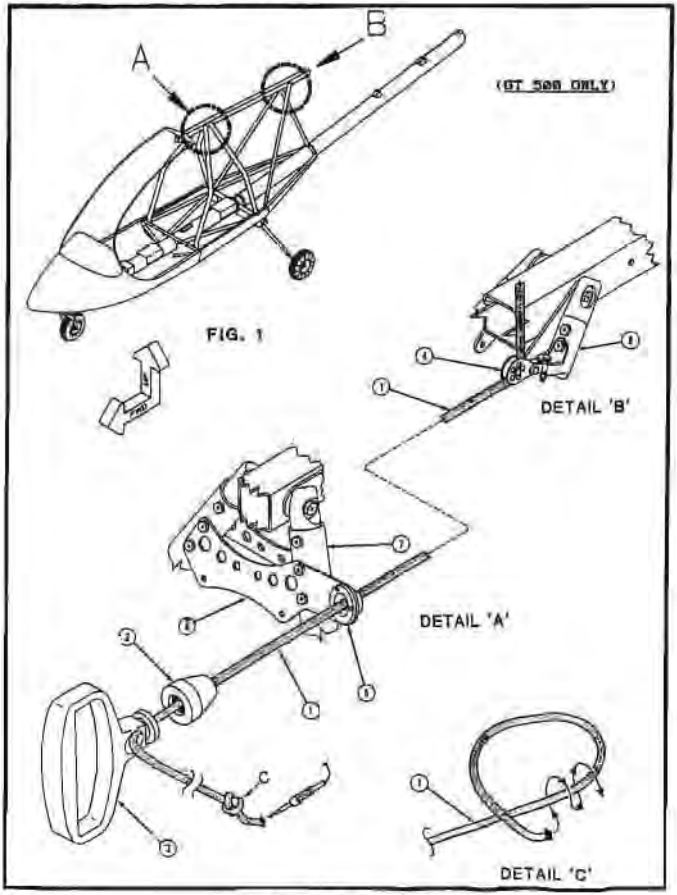
1. Slide the Boot (2) up the Starter Rope (1) exposing the knot in the end of the Rope. Pull the knot out of the indentation in the Handle (3) and heat-cut the knot off the end of the Starter Rope. DO NOT BREATHE THE FUMES.

2. Re-route the Starter Rope (1) as illustrated. Tie the end as illustrated in Detail 'C'.

3. Heat seal the end of the Rope and "re-seat" the knot in the Handle indentation. Pull the Boot OVER the end of the Handle and Secure the Boot.

Item	P/N	Qty	Description
1	00952799		Pull Starter Rope (part of P/N 61085)
2	00960415		Boot (part of P/N 61085)
3	00852715		Handle (part of P/N 61085)
4	20228		Swivel Eye Pulley
5	20236		1/2" Aluminum Fairlead
6	43429		Forward Seat Belt Bracket
7	43471		Left Forward Fuselage Downtube
8	43463		Aft Downtube

PULL STARTER ROPE ROUTING
AND PULL STARTER HANDLE ATTACHMENT



PULL STARTER ROPE ROUTING
AND PULL STARTER HANDLE ATTACHMENT

1. Refer to Detail 'A'. Measure 5-1/2" (14 cm) from the top of the LEFT Forward Downtube (1). Mark and drill a 3/16" dia hole thru the tube (1). Lightly attach the Fairlead (2) thru its UPPER hole, using hardware (3) and (4) shown. Align the Fairlead (2) with the VERTICAL centerline of the tube (1). Backdrill thru the Lower Fairlead hole and attach with hardware (3) and (4). Tighten CAREFULLY, as not to crack the Fairlead (1).

2. Refer to Detail 'B'. Measure 4-1/4" (11.4 cm) from the TOP of the LEFT Aft Downtube (5). Mark the tube and attach the Pulley (6) to the Downtube (5) using the Half Clamps (7) and the hardware (8,9 and 10) as illustrated. Align the Pulley (6) so that the Rope travels STRAIGHT through. Tighten the hardware (8,9 and 10).

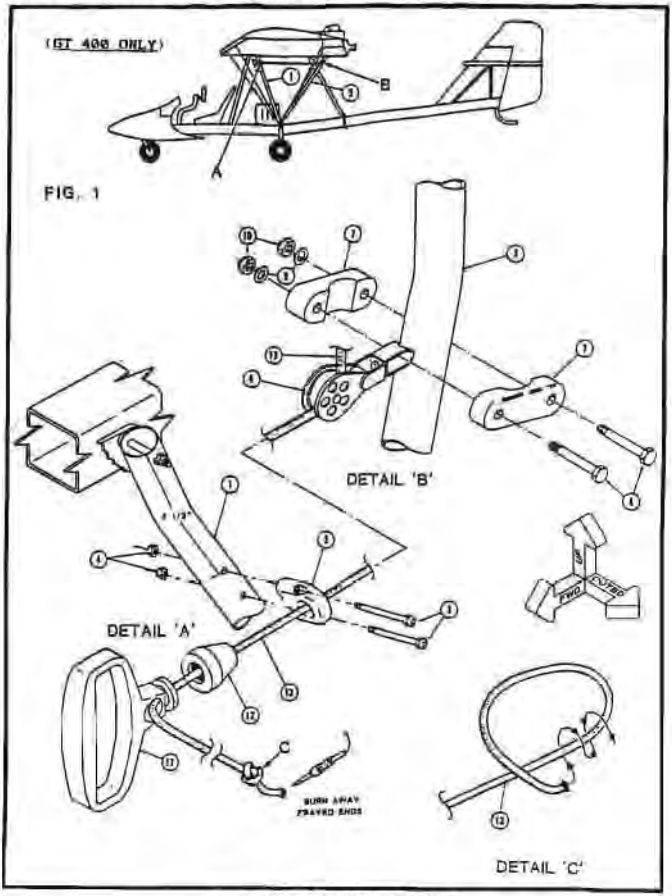
3. Slide the Boot (2) up the Starter Rope (1) exposing the knot in the end of the rope. Pull the knot out of the indentation in the Handle (3) and heat-cut the knot off the end of the Starter Rope. DO NOT BREATHE THE FUMES.

4. Re-route the Starter Rope (1) as illustrated. Tie the end as illustrated in Detail 'C'.

5. Heat seal the end of the rope and "re-seat" the knot in the handle indentation. Pull the Boot OVER the end of the handle and secure the Boot.

Item	P/N	Qty	Description
1	45440		Forward Downtube
2	20239	1	Fairlead
3	10392	2	10-32 x 2" Socket Head Cap Screw
4	10516	2	3/16" Thin Locknut
5	45441		Aft Downtube
6	20228	1	Swivel Eye Pulley
7	91120	2	1-1/8" Diameter Half Clamp
8	10140	2	AN4-16A Bolt
9	10560	2	1/4" Washer
10	10510	2	1/4" Locknut
11			Starter Handle
12			Starter Handle Boot
13			Pull Starter Rope

PULL STARTER ROPE ROUTING
AND PULL STARTER HANDLE ATTACHMENT



PROPELLER ATTACHMENT AND TRACKING ADJUSTMENT

ESSENTIAL: Read 'Propeller' in SECTION 1 BEFORE PROCEEDING. ALWAYS ASSUME THE PROP IS 'HOT'! LABEL THEN DISCONNECT ALL SPARK PLUG WIRES BEFORE ROTATING THE PROPELLER.

NOTE: The AFT side of the Propeller (4) is the FLAT side of the blades.

1. Refer to Figure 1. Assemble as illustrated. Tighten ALL SIX (6) Bolts (2) until the Propeller fits 'snuggly'. Use up to a MAXIMUM of THREE (3) Washers (1) on each side of the bolt to ensure proper grip length if necessary.

2. Refer to Figure 2 and Detail 'A'. Tighten the Bolts (2) CAREFULLY and ALTERNATELY, 'A LITTLE AT A TIME'. DO NOT CRUSH THE WOOD. DO NOT OVERTIGHTEN.

3. Rotate the Propeller (4) into a HORIZONTAL position. Measure the distance from the tip of the propeller blade to the Trailing Edge Wing Spar (7). Rotate the Propeller 180 degrees and measure the OPPOSITE blade at the SAME location. **IMPORTANT:** The difference MUST be within 1/8" (3.2 mm). You can 'fine tune' the tracking by SLIGHTLY LOOSENING ONLY THREE Bolts (2) on ONE SIDE ONLY and by SLIGHTLY TIGHTENING ONLY THREE bolts on the OPPOSITE side of the propeller as required.

EXAMPLE: Loosen the bolts (2) on the side of the propeller closest to the RIGHT blade only and tighten the Bolts on the side of the LEFT blade. DO NOT over tighten and crush the wood.

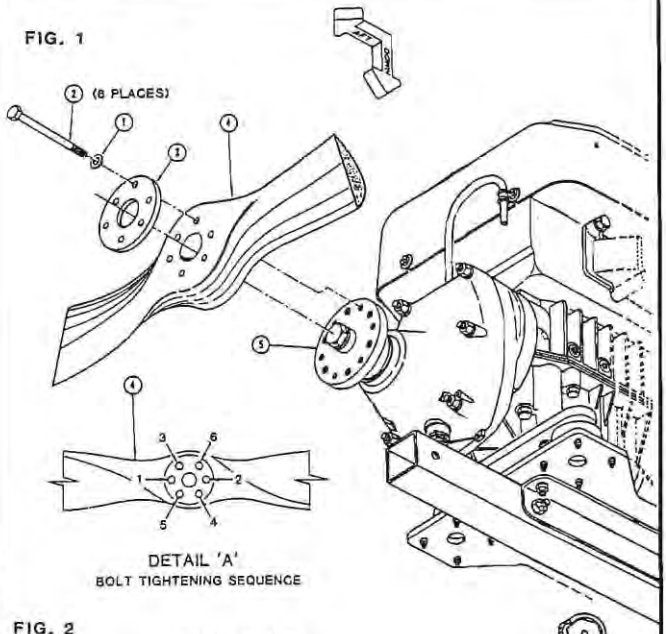
IMPORTANT: If the measurements DIFFER by MORE THAN 1/8" (3.2 mm), Consult your QUICKSILVER Dealer for 'Propeller Tracking Procedure'.

4. Refer to Figure 3. Use Safety Wire (6) as required and safety wire the heads of only THREE consecutive prop Bolts (2) together. Saftey wire the remaining THREE bolts together. DO NOT use any object that will score the safety wire during installation as this may cause the safety wire to fail.

Item	P/N	Qty	Description
1	10560	A/R	1/4" Washer
2	11090	6	AN4H27A Bolt
3	45852	1	Propeller Face Plate (part of P/N 61080)
4	30350	1	68 x 30 Propeller
5			Reduction Drive Hub (part of P/N 61080)
6	20467	A/R	.041" Safety Wire
7	80201		Trailing Edge Wing Spar Assembly

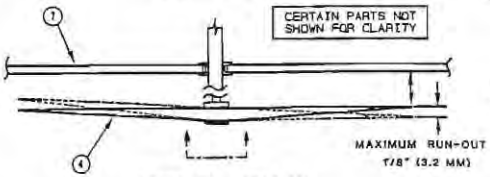
PROPELLER ATTACHMENT AND TRACKING ADJUSTMENT

FIG. 1



DETAIL 'A'
BOLT TIGHTENING SEQUENCE

FIG. 2



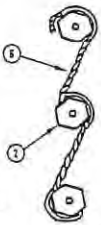


FIG. 3

SPARK PLUG WIRE ATTACHMENT

1. Attach ALL FOUR [4] spark plug wires to their repective spark pluge.

EXAMPLE: The LONGEST plug wires attach to the AFT Spark Plug. The SHORTEST plug wires attach to the FORWARD spark plug.

NOTE: Refer to your powerplant (Rotax 503) Operators Manual for proper attachment of ALL FOUR spark plug wires to the appropriate spark pluge if neccesary.

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NOTES:

POWERPLANT BREAK-IN PROCEDURE

NOTE: A tachometer (RPM) and temperature sensing gauge MUST be attached to the powerplant during the break-in procedure. You may order both from your Quicksilver dealer.

VERY IMPORTANT: STUDY AND UNDERSTAND THE ROTAX OPERATORS MANUAL THOROUGHLY BEFORE STARTING THE POWERPLANT!!!

1. The powerplant break-in procedure takes APPROXIMATELY ONE HOUR and SEVENTEEN MINUTES which should be completed WITHOUT INTERRUPTION. The break-in procedure must be done with the POWERPLANT ON THE AIRCRAFT AND LOADED WITH THE PROPELLER ATTACHED PROPERLY.

2. SECURE THE TAIL OF THE AIRCRAFT CAREFULLY BY TYING THE VERTICAL STABILIZER TRAILING EDGE (RUDDER POST) TO A FIXED OBJECT.

Refer to the graph for break-in time and R.P.M. correllation.

IMPORTANT: Use a BIA/TCW rated TWO-CYCLE oil with the fuel only! The fuel to oil mixture ratio should be 50 to 1.
(U.S.): 3 U.S. gallons of fuel to 12.8 oz. of oil.
(Metric): 20 liters of fuel to 400 ml. of oil.

CAUTION: If at any time during the engine break-in procedure the RPM accelerates suddenly or the ENGINE TEMPERATURE approaches the powerplant manufacturers' limits, THROTTLE BACK SMOOTHLY to a low RPM setting and allow the engine to cool.

IMPORTANT: After the break-in procedure and the powerplant cools completely:

1. Re-Torque the exhaust manifold bolts to 210 in/lbs (24 Nm).

2. Re-Torque and re-track the propeller.

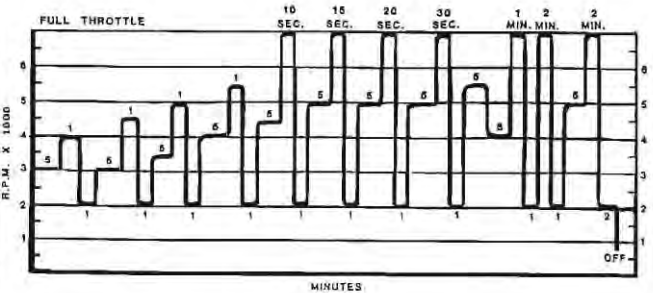
3. Adjust the idle (large screws) on the carburetors for idle speed (approximately 1800 R.P.M.).

4. Adjust the air screw (small screws) on the carburetors for a smooth idle.

5. After the powerplant has been 'normalized' (heated and cooled) THREE times, re-torque the cylinder head nuts to 220 in/lbs (24.5 Nm).

ENJOY FLYING YOUR NEW QUICKSILVER AIRCRAFT.

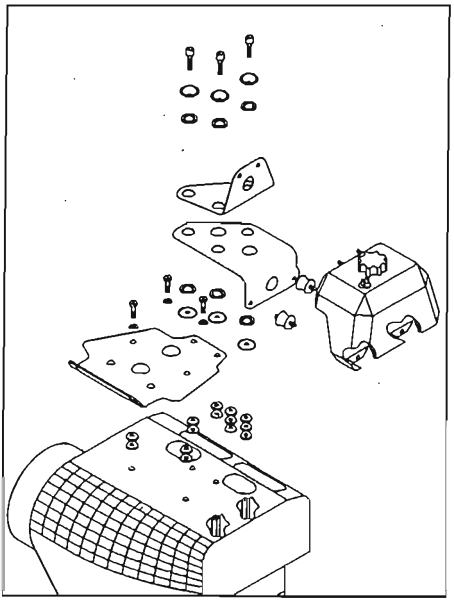
POWERPLANT BREAK-IN PROCEDURE



QUICKSILVER

ROTAX 503 OIL TANK KIT

(KIT # 61205)



DOC # 952-01 DATE 03/06/95

OIL TANK INSTALLATION

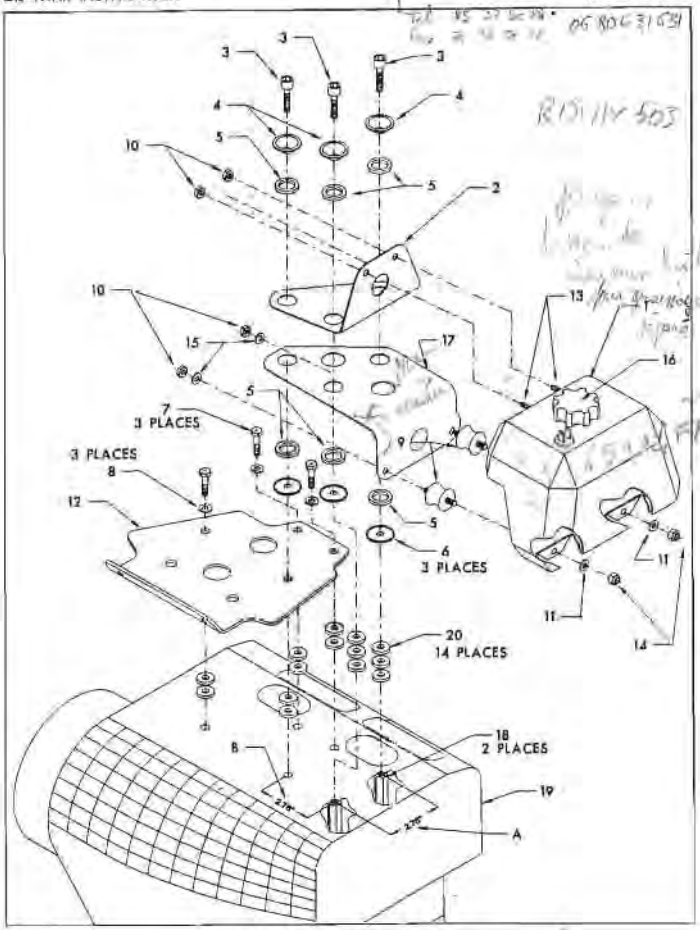
1. Remove the Engine Shroud (19) from the engine. Remove the TWO REAR nuts on the REAR Cylinder Head. Install TWO 8 mm x 37 mm Distance Nuts (18) on the TWO REAR head Bolts. Re-torque the heads as per the Rotax 503 Owner's and Maintenance Instructions.

2. Drill TWO 5/16" (.316") diameter holes in the Engine Shroud as per the dimensions shown in Details 'A' and 'B'. Deburr the holes. Re-install the Engine Shroud.

3. Install the Oil Tank, Oil Tank Brackets and Muffler Attach Bracket as illustrated.

4. Secure all the hardware.

PARTS LIST			
ITEM	P/N	QTY	DESCRIPTION
1	00881460	1	Oil Tank
2	61652	1	Oil Tank Bracket, Upper
3	10461	3	Screw, 8 mm x 25 mm SHCS
4	00827817	3	Distance Cap
5	00960865	6	Rubber Shim
6	00944092	3	8.4 Shim
7	00240275	3	8 mm x 25 mm Bolt
8	00945752	3	8 mm Lock Washer
9	00260657	Two	Shock Mount, 6 mm (part of P/N 00881460)
10	00242211	2	6 mm Nut
11	00244211	2	6 mm Washer (part of P/N 00881460)
12	45821	1	Muffler Attach Bracket
13	----------	Two	6 mm Stud (part of Oil Tank P/N 00881460)
14	00874105	Two	6 mm Locknut (part of P/N 00881460)
15	10560	2	1/4" Washer
16	00874105	One	Oil Cap (part of P/N 00881460)
17	61662	1	Oil Tank Bracket, Lower
18	00842050	2	8 mm x 37 mm Distance Nut
19	----------	One	Engine Shroud
20	10579	14	5/16" x 3/4" x .125 Thick Aluminum Washer


3
4
5
10
2
13
15
17
16
7
3 PLACES
9
3 PLACES
8
12
5
6
3 PLACES
11
11
14
20
14 PLACES
18
2 PLACES
8
19
A

OIL INJECTION PUMP CONTROL CABLE INSTALLATION

1. Install Conduit Thread Adjuster (3) onto Oil Injection Pump Control Cable Adjust Plate (6) with TWO Jam Nuts (4) as illustrated. Adjust Conduit Thread Adjuster (3) and Jam Nuts (4) to MIDDLE of threads on the Conduit Thread Adjuster (3). FINGER TIGHT ONLY. (Pump Final adjustment is made in later sequence.)

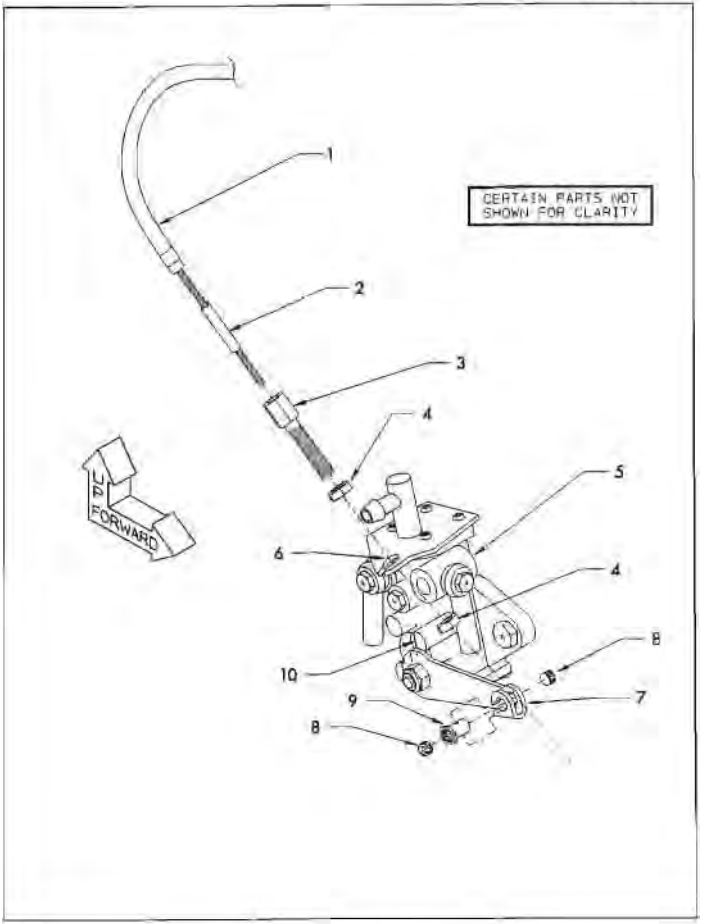
2. Insert Sleeve (2) onto Control Cable (1) as illustrated.

3. Insert Control Cable (1) into Conduit Thread Adjuster (3) and Control Cable Hex Nut (9) as illustrated. Sleeve (2) should be centered in the Cable Hex Nut (9). Screw in Allen Hex Screws (8) into Control Cable Hex Nut (9). Adjust Hex Screws (8) FINGER TIGHT ONLY.

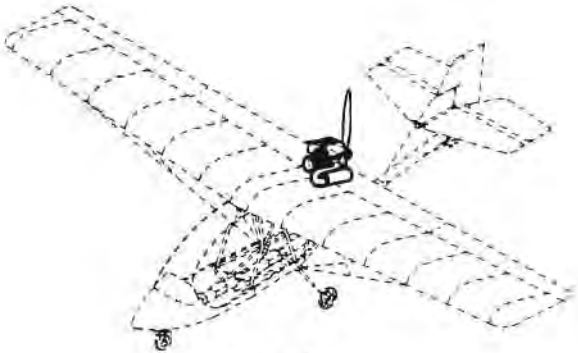
4. Carefully review and understand the Oil Injection Adjustment information in the Rotax Operators Manual. Adjust the Cable Accordingly. Secure all hardware.

PARTS LIST

ITEM	P/N	QTY	DESCRIPTION
1	90294	One	Oil Injection Pump Cable, 28"
2	.....	1	Sleeve (Part of P/N 90294)
3	90272	1	Conduit Thread Adjuster
4	10631	2	1/4 - 20 Jam Nut
5	00995527	.....	Oil Injection Pump (Part of Engine)
6	.....	.....	Oil Injection Pump Control Cable Adjust Plate
7	.....	.....	Oil Injection Pump Control Arm
8	.....	2	10-32 x 1/4" Allen Set Screw, (Part of P/N 91297)
9	91297	1	Adjustable Barrel, Wire, 1/4" O.D.
10	.....	.....	Oil Injection Pump Adjust Mark
11	.....	.....	Oil Pump Vent Screw


CERTAIN PARTS NOT SHOWN FOR CLARITY
1
2
3
4
5
6
4
8
10
9
7
8
UP
FORWARD

SECTION 4 - ENGINE



582

FOR ROTAX (582) POWERPLANT

DOC # 902-1 DATE 03/28/90

SECTION 4

POWERPLANT (ROTAX 582)

LOWER ENGINE MOUNT PLATE TO
LOWER ENGINE MOUNT ANGLE ATTACHMENT.....4-2

SPARK PLUG INSTALLATION / UPPER AND LOWER
ENGINE MOUNT PLATE TO POWERPLANT ATTACHMENT.....4-4

EXHAUST MANIFOLD TO POWERPLANT ATTACHMENT.....4-6

MUFFLER ATTACHMENT.....4-8

FUEL PUMP AND RECTIFIER/REGULATOR ATTACHMENT.....4-10

CARBURETOR AND FILTER ATTACHEMNT.....4-12

AIR FILTER SECUREMENT.....4-12A

LOWER ENGINE MOUNT TO ROOT TUBE ATTACHMENT.....4-14

WIRING TO CONNECTOR HOUSING ATTACHMENT.....4-16

WIRING HARNESS TO PILOT ENCLOSURE ATTACHMENT.....4-18

FUEL LINE ATTACHMENT.....4-20

THROTTLE AND CHOKE CABLE SPLITTER BRACKET.....4-22

THROTTLE CABLE TO CARBURETOR ATTACHMENT.....4-24

REMOTE CHOKE TO CARBURETOR ATTACHMENT.....4-26

THROTTLE CABLE & CHOKE CABLE STANDOFF.....4-28

THROTTLE AND CHOKE CABLE TO THROTTLE MOUNT PLATE.....4-30

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SECTION 4

POWERPLANT (ROTAX 582) (CONT'D.)

COOLANT TEMPERTURE SENSOR & OIL BREATHER LINE.....4-32

PULL STARTER ROPE ATTACHMENT.....4-34

PROPELLER ATTACHMENT.....4-36

IGNITION SWITCH & HOUR METER INSTALLATION.....4-38

TACHOMETER AND WATER TEMPERTURE INSTRUMENT.....4-40

INSTRUMENT PANEL COVER PLATE ATTACHMENT.....4-42

COOLANT HOSE ATTACHMENT.....4-44

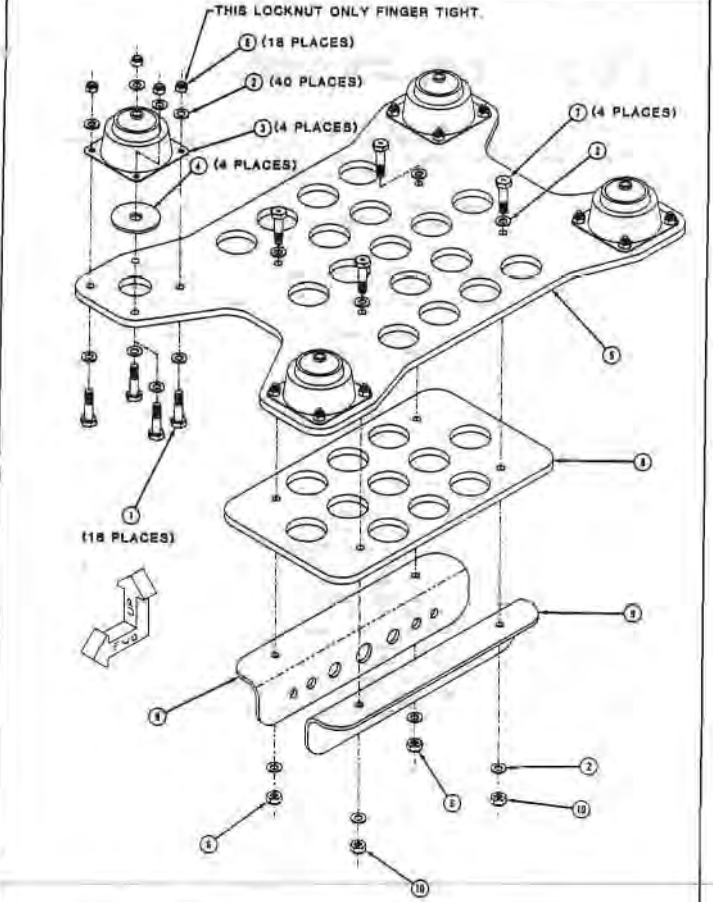
SPARK PLUG WIRE ATTACHMENT.....4-46

LOWER ENGINE MOUNT PLATE TO
LOWER ENGINE MOUNT ANGLE ATTACHMENT

1. Assemble as illustrated. Tighten ALL Locknuts to proper torque EXCEPT the ONE [1] Locknut (6) which should be installed FINGER TIGHT at that location only. It will be secured in a later sequence. DO NOT TIGHTEN the Locknuts (10) "ALL THE WAY" at this time. Leave them SLIGHTLY loose as they will be secured in a later sequence.

NOTE: Install the Snubbing Washer (4) BETWEEN the Engine Shock Mount (2) and the Lower Engine Mount Plate (5).

Item	P/N	Qty	Description
1	10860	16	AN4-6A Bolt
2	10550	40	1/4" Washer
3	61036	4	Engine Shock Mount
4	61037	4	.39" x 1.88" x .06" Snubbing Washer
5	45868	1	Lower Engine Mount Plate
6	10510	18	1/4" Locknut
7	10864	4	AN4-11A Bolt
8	45867	1	582 Engine Mount Spacer Plate
9	45836	2	Engine Mount Angle
10	10510	2	1/4" Locknut


THIS LOCKNUT ONLY FINGER TIGHT.
1 (18 PLACES)
2 (40 PLACES)
3 (4 PLACES)
4 (4 PLACES)
7 (4 PLACES)
1 (18 PLACES)

SPARK PLUG INSTALLATION / UPPER AND LOWER ENGINE MOUNT PLATE TO POWERPLANT ATTACHMENT

1. Assemble as illustrated attaching the Upper Engine Mount Plate (3) to the Powerplant (6) with Hardware (1, 2 and 4) FIRST. Use Thread Adhesive on Bolt (11), FOUR (4) places. Tighten ALL Locknuts to proper torque.

2. Attach the Lower Engine Mount Plate (9) to the Upper Engine Mount Plate (3) as illustrated. Tighten ALL Locknuts (11) to proper torque.

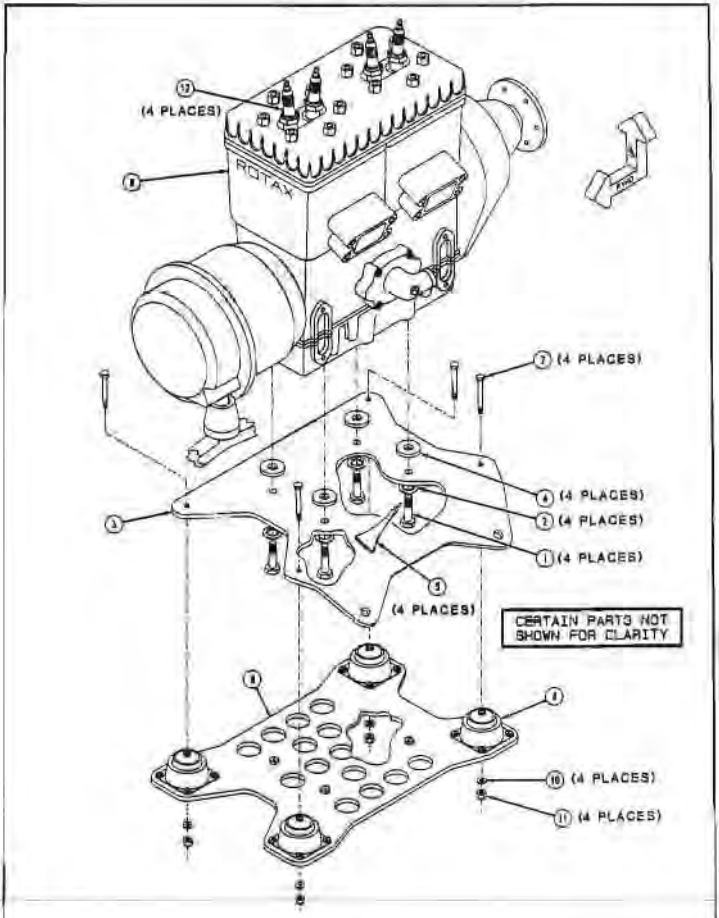
3. Using a proper Spark Plug Gapping Tool, Gap FOUR (4) Spark Plugs (12) to .020" (.51 mm). Install the Spark Plugs with a 13/16" (21 mm) Socket. Torque to 240 in/lbs, (27 nm).

NOTE: DO NOT attach the FOUR (4) Spark Plug Wires (not illustrated) to the Spark Plugs at this time. They are to be attached AFTER the Propeller has been installed in SECTION 7, "Final Assembly".

IMPORTANT: Use ONLY the recommended Spark Plugs for your Powerplant. Consult your Powerplant (Rotax) Operators Manual.

Item	P/N	Qty	Description
1	10492	4	10 mm x 30 mm Bolt
2	10437	4	7/16" Star Washer
*3	45869	1	Upper Engine Mount Plate
4	45866	4	.43" I.D. x 1.25" O.D. x .25" Thick Spacer
5	60591	A/R	Thread Adhesive
6	61085	1	Rotax 582 Powerplant
7	10399	4	AN6-20A Bolt
8	61036		Engine Shock Mount
*9	45868	1	Lower Engine Mount Plate
10	10575	4	3/8" Washer
11	10547	4	3/8"-24 Locknut
12		4	NGK B8ES Spark Plug (Located in Carb box with Powerplant)

* As Required


(4 PLACES)
ROTAX
(4 PLACES)
(4 PLACES)
(4 PLACES)
(4 PLACES)
(4 PLACES)
CERTAIN PARTS NOT SHOWN FOR CLARITY
(4 PLACES)
(4 PLACES)

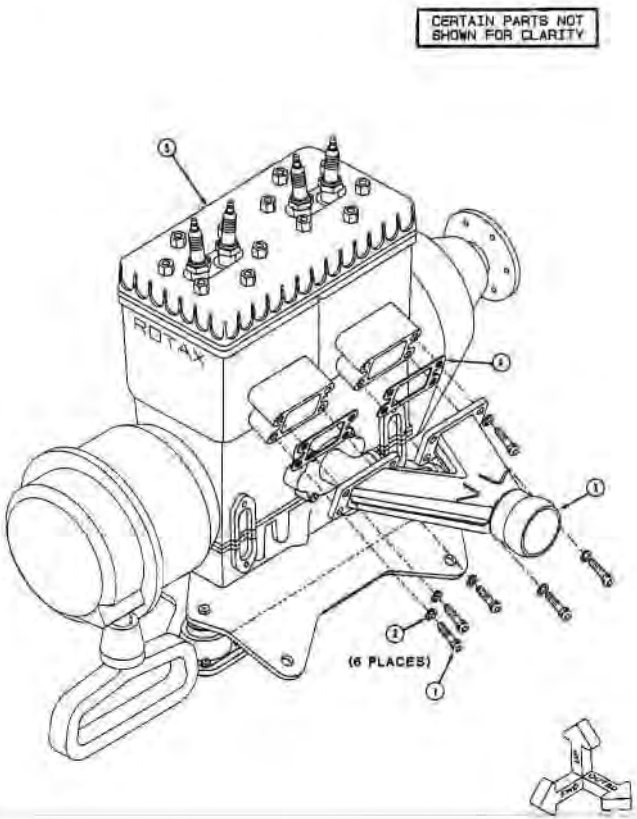
EXHAUST MANIFOLD ATTACHMENT TO POWERPLANT

NOTE 1: You will need a 6 mm Allen or Hex Head Wrench to complete the following sequence.

NOTE 2: If you are supplied with Split Ring Washers (2) install them with the curved split facing or in contact with the head of the Bolt (1).

1. Assemble as illustrated. The Exhaust manifold (3) should be mounted with manifold angle oriented toward the top of the engine. Torque ALL Bolts (1) ALTERNATELY and "a little at a time" until 210 in/lbs (24 nm) has been reached.

Item	P/N	Qty	Description
1	00840941	6	8 mm Socket Head Cap Screw
2	00945752	6	8 mm Lock Washer
3	61086	1	Rotax 582 Exhaust Manifold
4	00850300	2	Rotax 582 Exhaust Manifold Gasket
5	61085		Rotax 582 Powerplant


CERTAIN PARTS NOT SHOWN FOR CLARITY
ROTAX
3
4
1
2
1
(6 PLACES)
AFT
PORT
STBD

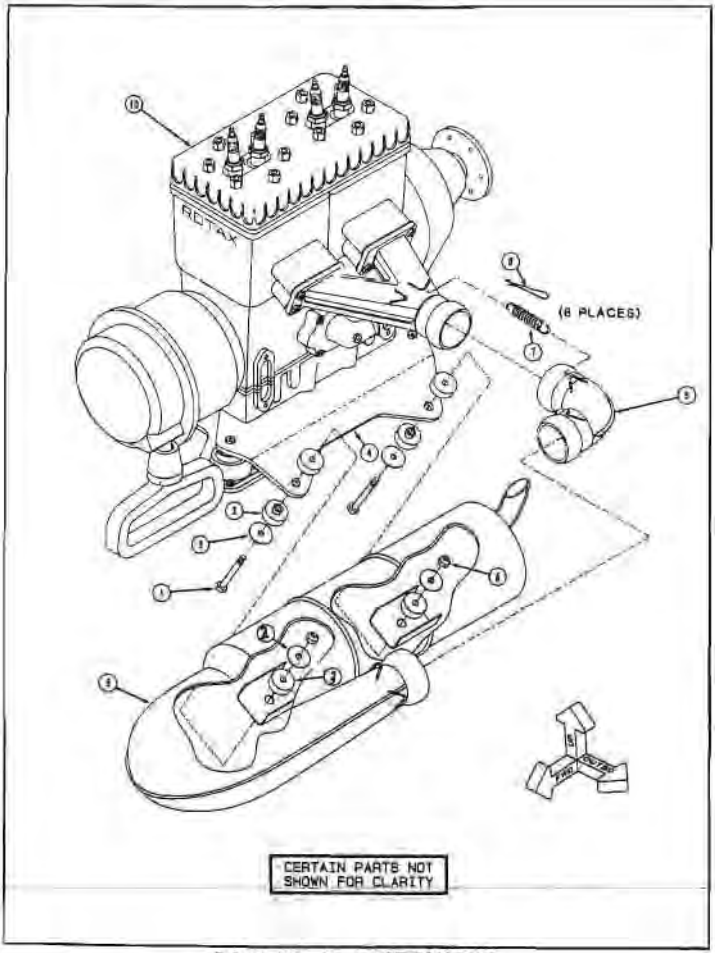
MUFFLER ATTACHMENT

1. Assemble as illustrated. Tighten ALL Locknuts to proper torque.

NOTE: Safety Wire ALL Muffler Springs (7) correctly as required. Refer to Section 1, "Safety Wiring",.

CAUTION: DO NOT USE ANY METAL OBJECT such as pliers to attach the Muffler Springs (7). If the Springs are "scored" or "nicked" they may break. You may use a piece of rope or the shaft of a Screwdriver to pull the Springs onto the appropriate tabs. The Safety Wire (8), when attached correctly, would then keep the Muffler Springs from going into the Propeller.

Item	P/N	Qty	Description
1	10331	2	ANS-21A Bolt
2	10600	4	5/16" Fender Washer
3	30380	6	Rubber Shock Grommet
4	45869	1	Upper Engine Mount Plate
5	61067	1	Muffler Assembly
6	10540	2	5/16" Locknut
7	00838790	6	Muffler Spring
8	20467	A/R	.041" Safety Wire
9	61082	1	90 Degree Exhaust Elbow
10	61085		Rotax 582 Powerplant



CERTAIN PARTS NOT SHOWN FOR CLARITY

FUEL PUMP AND RECTIFIER/REGULATOR ATTACHMENT

1. Drill hole "X" to 5/16" (8 mm) diameter. Attach Fuel Pump (21) and Rectifier/Regulator (17) to Fuel Pump Mount Plate (1). Attach Fuel Line (5) to Fuel Pump (21) and Powerplant (22).

2. Disconnect the BROWN (Ground) Wire (24) attached to the Bracket (16) located on the SIDE of the Powerplant.

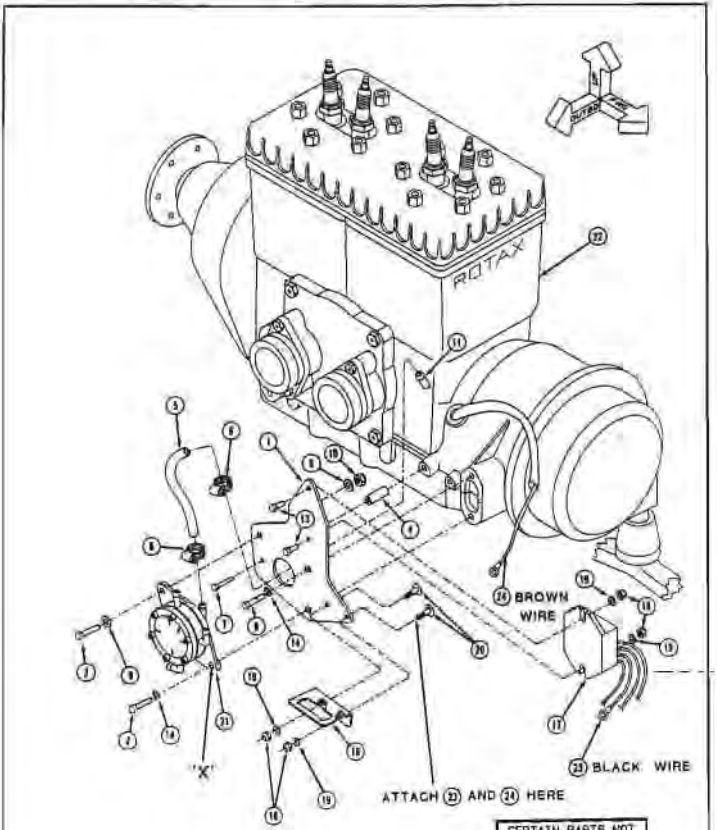
3. Locate and REMOVE the Connector Housing Bracket (16) from the SIDE of the Powerplant.

4. Attach the Connector Housing Bracket (16) to the Fuel Pump Mount Plate (1) using Hardware (20, 19 and 18). FINGER TIGHTEN ONLY.

5. Attach (by crimping) a Ring Connector (12) to the BLACK Wire (23) on the Rectifier/Regulator and attach with the BROWN Wire (24) to Screw (20).

6. Attach the Fuel Pump Mount Plate (1) to Powerplant as illustrated. Tighten ALL Locknuts to proper torque. DO NOT OVER TORQUE THE CLAMPS (6).

Item	P/N	Qty	Description
1	45859	1	Fuel Pump Mount Plate
2	00240275	1	8 mm x 25 mm Bolt
3	10062	1	AN4-7A Bolt
4	40343	1	3/8" x .058" x 7/8" Long Spacer
5	30220	A/R	Fuel Line
6	30230	2	Fuel Line Clamp
7	00240415		5 mm x 32 mm Bolt
8	00940581		8 mm x 16 mm Bolt
9	10560		1/4" Washer
10	10510		1/4" Locknut
11			Pulse Fitting (part of P/N 61085)
12	30074		Ring Connector
13	10015	4	AN3-6A Bolt
14	00845310		8 mm Lock Washer
15	60591		Thread Adhesive
16			Connector Housing Bracket (part of P/N 61085)
17	00866080		Regulator/Rectifier
18	10500		3/16" Locknut
19	10550		3/16" Washer
20			BROWN Wire (from Powerplant)
21	00994465		Dual Carburetor Fuel Pump
22	61085		Rotax 582 Powerplant
23			BLACK Wire (from Rectifier/Regulator)


ROTAX
24 BROWN WIRE
23 BLACK WIRE
'X'
ATTACH 22 AND 24 HERE
CERTAIN PARTS NOT SHOWN FOR CLARITY

CARBURETOR AND AIR FILTER ATTACHMENT

1. Attach BOTH Carburetors to the Rubber Intake Sockets (6). Ensure the Carburetors are LEVEL. Tighten the Clamps (7). Attach ONE end of the Fuel Line (5) as illustrated. Cut the Fuel Line to the required length for proper attachment. Ensure the Fuel Line is NOT pulled too tight or "kinked".

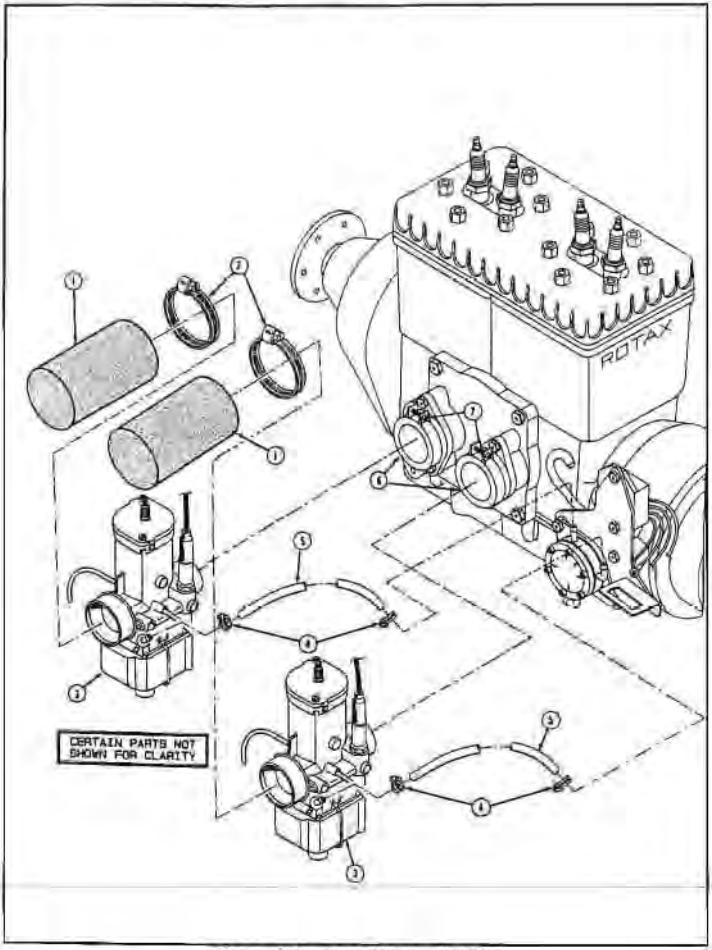
CAUTION: The Carburetor Clamps (7) MUST be tightened properly. If the Clamps are NOT torqued tight enough and air is allowed to be sucked into the Powerplant it WILL have an ADVERSE effect. This WILL change the Fuel/Air ratio thus forcing the Powerplant to run DANGEROUSLY LEAN. This WILL seize and/or damage the Powerplant.

2. Pull the Air Filter INTERNAL Spring (not illustrated) partially out from the Air Filter (1) and wrap A MINIMUM of SIX FULL turns onto the Carburetor Inlet.

3. Slide the Air Filter (1) UP and OVER the INTERNAL Spring and secure it into place with the Air Filter Clamp (2). Ensure the Clamp is tight enough to prevent the Air Filter from vibrating off into the Propeller.

4. Repeat for the remaining Air Filter (1).

Item	P/N	Qty	Description
1	60000	2	Air Filter
2	.....	2	Air Filter Clamp (part of P/N 60000)
3	.....	2	Carburetor (part of P/N 61085)
4	30230	4	Fuel Line Clamp
5	30220	A/R	Fuel Line
6	.....	.....	Rubber Intake Socket (part of P/N 61085)
7	.....	.....	Carburetor Clamp (part of P/N 61085)


ROTAX
CERTAIN PARTS NOT SHOWN FOR CLARITY

AIR FILTER SECUREMENT

IMPORTANT: Before starting the following assembly sequence cover ALL openings of the Carburetor (5). DO NOT ALLOW ANY METAL FILINGS FROM DRILLING AND DEBURRING TO GET INTO THE CARBURETOR.

1. Refer to Figures 1 and 2 and locate the Carburetor Tab (6) attached to the side of the Carburetor (5). Drill and deburr a 1/8" (3.2 mm) diameter hole thru the Carburetor Tab (6) as illustrated.

2. Refer to Figure 1. Cut a 12" (30.48 cm) piece of Safety Wire (1). Insert ONE (1) end thru the TOP side of the Air Filter (just OUTBOARD of where the Air Filter Clamp (4) will be located). Wrap the Safety Wire around ONE (1) coil of the Internal Spring (3) then route the Safety Wire back thru the Foam Air Filter. Position the Safety Wire so it is CENTERED with EQUAL amounts of Wire on each side of the Spring.

3. Refer to Figure 2. Twist the Safety Wire (1) as illustrated. Loosen the Clamp (4) if necessary and slide it over the end of the Air Filter (2) Ensure the Screw/Nut assembly is at the UPPER side. Pull the end of the Spring SLIGHTLY out of the Air Filter and ensure the are a MINIMUM of SIX (6) coils of the Spring (3) wrapped around the "throat" or inlet side of the Carburetor. Position the Clamp over the SIX (6) Springs and "butted up" against or touching the Tab (6) on the Carburetor. Tighten the Screw on the Clamp (3) as tight as possible.

4. Twist the Safety Wire (1) ONE AND A HALF to TWO (1 1/2 to 2) turns as illustrated and route it around the Screw/Nut at the UPPER side of the Clamp. Twist the Safety Wire again BEFORE inserting it thru the previously drilled hole in the Tab. Insert each end of the Safety Wire thru the hole. Secure the Safety Wire. Refer to "Safety Wire" in SECTION 1 of your Assembly Instructions if necessary.

5. Repeat Steps 1-3 on the remaining Carburetor if applicable.

Item	P/N	Qty	Description
1	20467	A/R*	.041" Safety Wire
2	60000		Air Filter
3			Internal Spring (part of P/N 60000)
4			Air Filter Clamp (part of P/N 60000)
5	00996417		Bing Model 54/36 mm Carburetor (part of P/N 61085)
6			Carburetor Tab

* As Required

FIG. 1

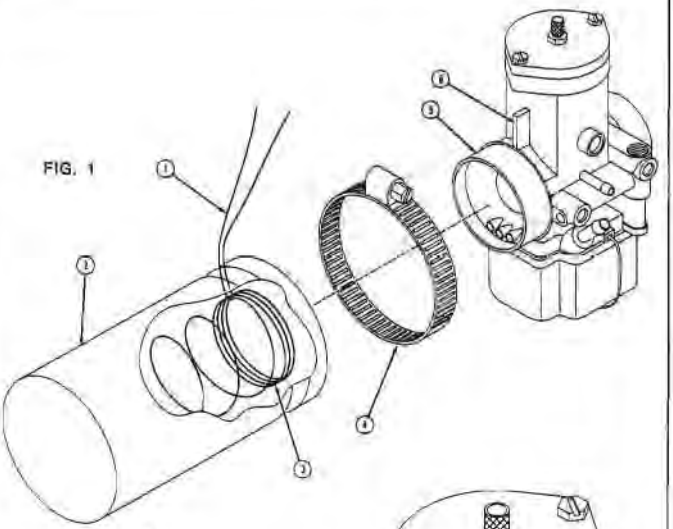
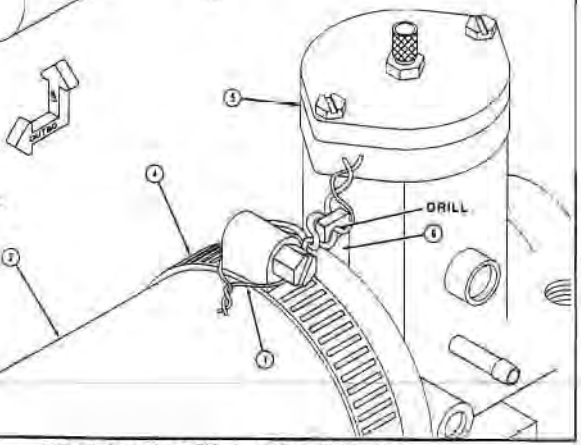


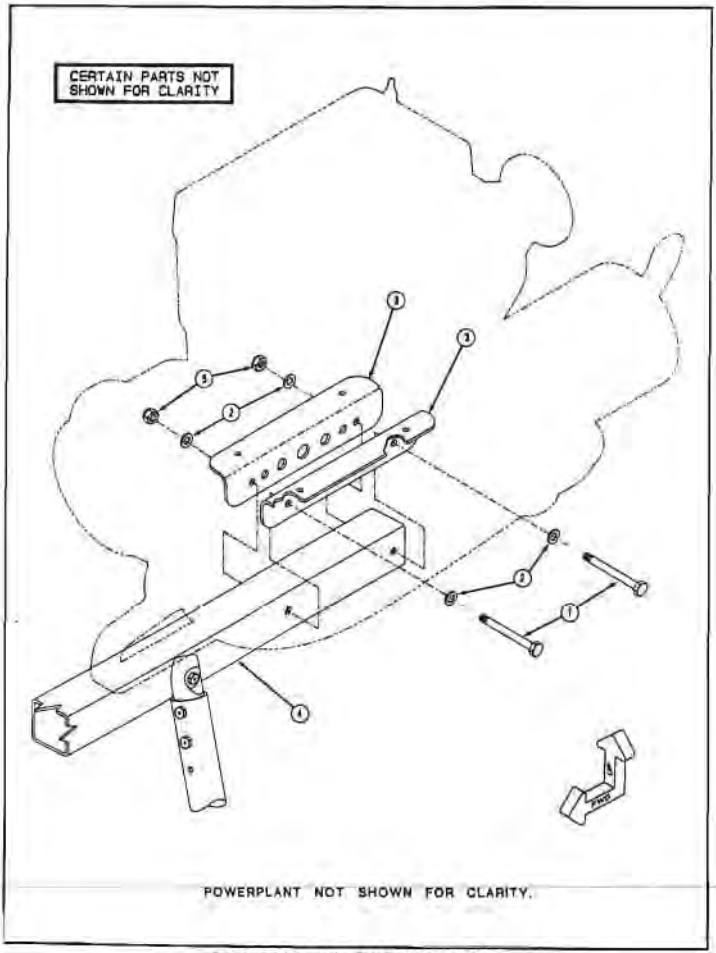
FIG. 2



LOWER ENGINE MOUNT TO ROOT TUBE ATTACHMENT

1. Assemble as illustrated. Tighten ALL Locknuts to proper torque.

Item	P/N	Qty	Description
1	10325	2	AN5-26A Bolt
2	10570	4	5/16" Washer
3	45836	2	Engine Mount Angle
4	45668		Root Tube
5	10540	2	5/16" Locknut


CERTAIN PARTS NOT SHOWN FOR CLARITY
POWERPLANT NOT SHOWN FOR CLARITY.

WIRING TO CONNECTOR HOUSING ATTACHMENT

1. Remove the existing protective housing (4) from the Powerplant wires. Refer to Detail 'A'. Indentify the YELLOW and the YELLOW/BLACK Wires from the side of the Powerplant. Cut off the existing FEMALE connectors and install (by crimping) the Insulated Female Wire Connectors (6).
2. Install (by crimping) the Insulated Male Wire Connectors (5) on the YELLOW Wires from the Rectifier/Regulator (7). LIGHTLY pull on the Wire Connectors and verify there is a "good crimp" and the Wire Connector is secure.
3. Identify the FEMALE Connector Housing (1). CAREFULLY determine which side is the TOP by comparing it to the illustration. Insert the Wires from the Powerplant direction. Wires without connectors (12) install as required.

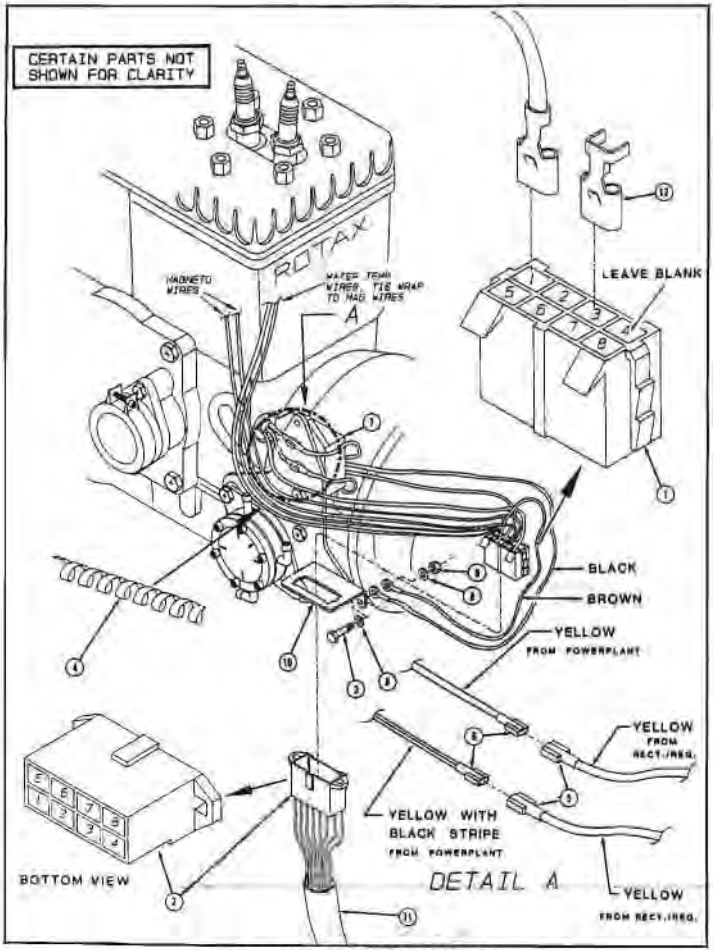
1 - BLACK with TWO (2) YELLOW Stripes (1 of 2 from Powerplant)
2 - RED from Regulator/Rectifier
3 - BLACK (from the Temperature Sensor)
4 - BLANK (leave empty)
5 - BLACK with TWO (2) YELLOW Stripes (2 of 2 from Powerplant)
6 - BROWN (from connector Housing Bracket)
7 - WHITE (from Temperature Sensor)
8 - GREY (from Powerplant)

4. Identify the MALE Connector Housing (2). CAREFULLY determine which side is "as illustrated" and insert the MALE Connectors from the Wiring Harness (11) as follows: (NOTE: if wiring is preassembled with Male Connector varify wire positions)

1 - BLUE (LEFT Magneto)
2 - RED (DC POSITIVE) (+)
3 - BLACK (Temperature Guage)
4 - ORANGE (Electric Start)
5 - YELLOW (RIGHT Magneto)
6 - BROWN (DC NEGATIVE) (-)
7 - WHITE (Temperature Guage)
8 - GREEN (Tachometer)

5. Connect BOTH of the Housings (1) and (2) together at the Bracket (10). Secure ALL Wiring AWAY from ANY SHARP edges, MOVING Parts or EXTREME temperatures. Reinstall prtective housing (4).

Item	P/N	Qty	Description
1	00866025	1	Female Connector Housing
2	00866010	1	Male Connector Housing
3	10015		AN3-6A Bolt (previously assembled)
4			Protective Housing
5	30080	2	Male Wire Connector
6	30070	2	Female Wire Connector
7	00866080		Rectifier/Regulator
8	10550		3/16" Washer (previously assembled)
9	10500		3/16" Locknut (previously assembled)
10			Bracket (part of P/N 61085)
11	45631	1	Wiring Harness
12	30075	A/R	Female Locking Wire Connectors


CERTAIN PARTS NOT SHOWN FOR CLARITY
ROTAX
MAGNETO WIRES
WATER TRAP WIRES. TIE WRAP TO MAG WIRES
A
LEAVE BLANK
BLACK
BROWN
YELLOW
FROM POWERPLANT
YELLOW
FROM RECT./REG.
YELLOW WITH BLACK STRIPE
FROM POWERPLANT
YELLOW
FROM RECT./REG.
BOTTOM VIEW
DETAIL A

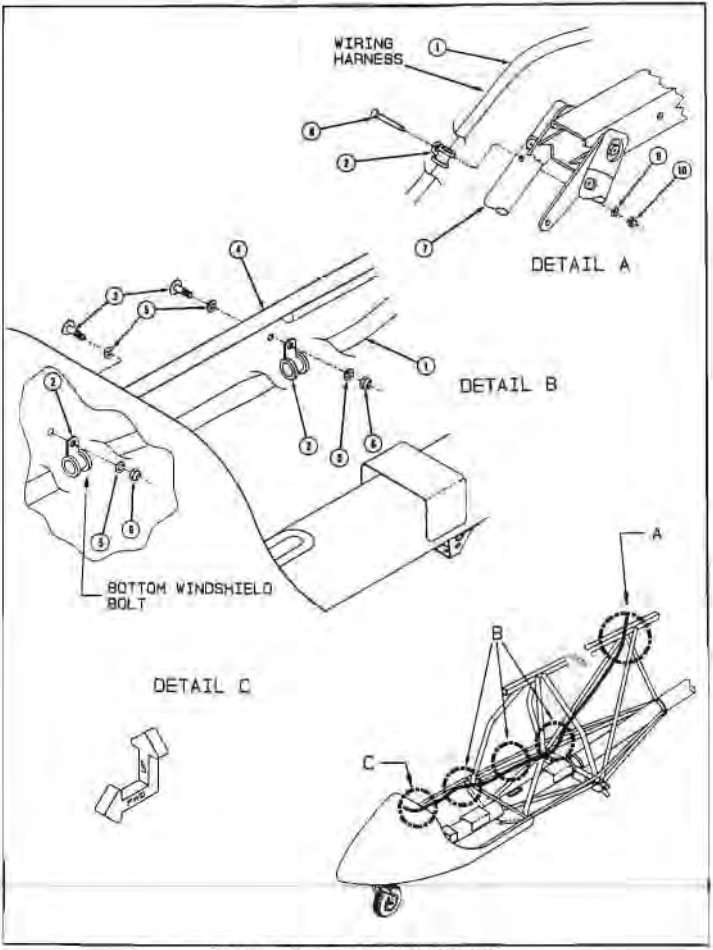
WIRING HARNESS TO PILOT ENCLOSURE
AND RIGHT CENTER FAIRING ATTACHMENT

1. Slide the Cushioned Clamps (2) onto the Wiring Harness (1). Drill a TOTAL of THREE 3/16" (4.7 mm) diameter holes in the RIGHT SIDE of the Pilot Enclosure and the Right Center Fairing as required to secure the Wiring Harness. Tighten ALL Locknuts to proper torque. Make sure the wiring harness has appropriate slack between the Engine and the cushion clamp (2) in Detail A.

NOTE 1: The Screw (3), Washer (5) and Locknut (6) in Detail 'C' have been previously attached FINGER TIGHT ONLY on Pages 2-130 and 2-131. Add the Clamp (2) with the Wiring Harness (1) and tighten to proper torque at this time.

NOTE 2: The Bolt (8) was previously installed FINGER TIGHT ONLY on Pages 2-16 and 2-17. Tighten to proper torque at this time.

Item	P/N	Qty	Description
1	45631		Wiring Harness
2	20432	5	3/8" Cushioned Clamp
3	11075	4	AN525 10R10 Washer Head Screw
4	45578		Pilot Enclosure
5	10550	6	3/16" Washer
6	10500	3	3/16" Locknut
7	45465		Aft Downtube
8	10120		AN4-15A Bolt
9	10560		1/4" Washer
10	10510		1/4" Locknut


WIRING HARNESS
DETAIL A
DETAIL B
BOTTOM WINDSHIELD BOLT
DETAIL C
A
B
C

FUEL LINE ATTACHMENT

IMPORTANT: Note the direction of the Fuel Flow Arrow (16) on the Fuel Filter (4). The Fuel Filter MUST be installed EXACTLY as illustrated.

1. Attach a piece of Fuel Line (3) to the Fuel Tank Cut-Off Valve (1).

IMPORTANT: DO NOT OVER TORQUE the Fuel Line Clamps (2).

2. Add a Fuel Filter (4) and Secure with FOUR Tie Wraps (5) (attached together end to end) at TWO locations. Cut TWO Stand-offs (as required to space the Fuel Filter adequately) as illustrated.

3. Attach a Cushioned Clamp (10) to the Fuel Line and Root Tube (11) with a Bolt (7).

4. Slide a Cushioned Clamp (10) over the Fuel Line and attach to the previously attached (FINGER TIGHT ONLY) Bolt (13). Tighten Locknut (15) to proper torque.

Item	P/N	Qty	Description
1	30282		Cut-Off Valve
2	30230	4	Fuel Line Clamp
3	30220	A/R	Fuel Line
4	30210	1	Fuel Fiter
5	30480	4	7" Tie Wrap
6		2	Stand-Off (made from P/N 30220)
7	10295	1	AN4-25A Bolt
8	10560	2	1/4" Washer
9	10510	1	1/4" Locknut
10	20432	1	3/8" Cushioned Clamp
11	45668		Root Tube
12	30254	1	8.5 Gallon Fuel Tank Assembly
13	10010		AN3-5A Bolt
14	10550		3/16" Washer
15	10500		3/16" Locknut
16			Fuel Flow Arrow

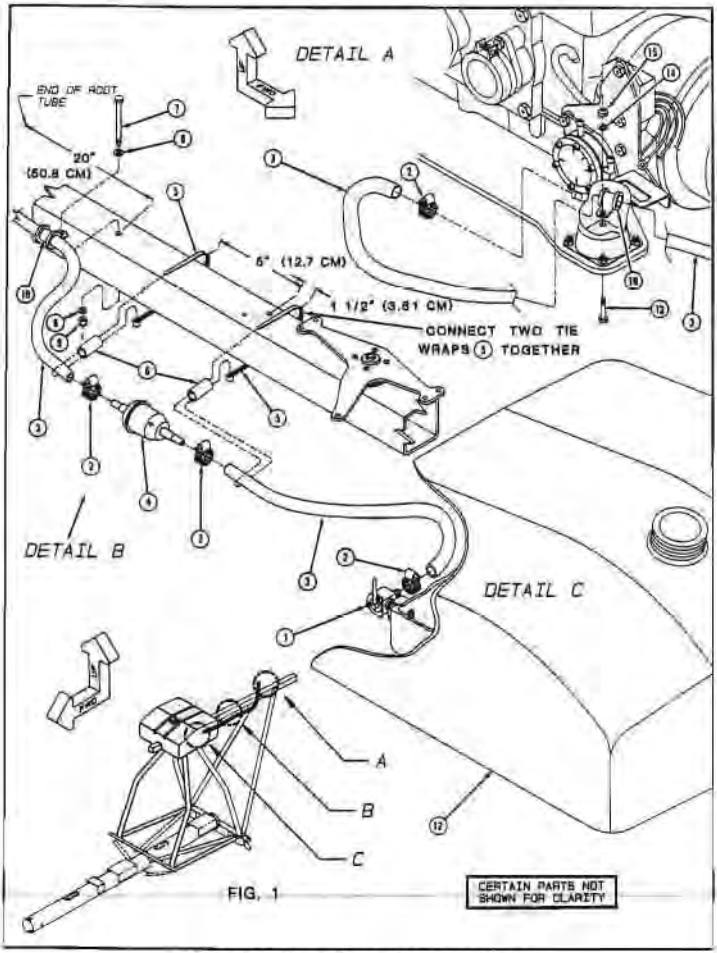

DETAIL A
END OF ROOT TUBE
20" (50.8 CM)
6" (12.7 CM)
1 1/2" (3.81 CM)
CONNECT TWO TIE WRAPS (3) TOGETHER
DETAIL B
DETAIL C
A
B
C
CERTAIN PARTS NOT SHOWN FOR CLARITY

FIG. 1

THROTTLE CABLE AND CHOKE CABLE
TO SPLITTTER BRACKET ATTACHMENT

1. Remove and disassemble the Recoil Starter Housing (10) as per the Rotax Manual. Tools are located in your Rotax Tool Kit.

2. Locate the CENTER of the Recoil Starter Housing. Measure 1 1/2" (38.1 mm) OUTBOARD (to your LEFT when facing the Housing) from the VERTICAL CENTERLINE. Mark this location. Measure 1" (25.4 mm) ABOVE and BELOW the HORIZONTAL CENTERLINE. Mark these locations. These hole locations should be 2" (50.8 mm) apart (CENTER to CENTER).

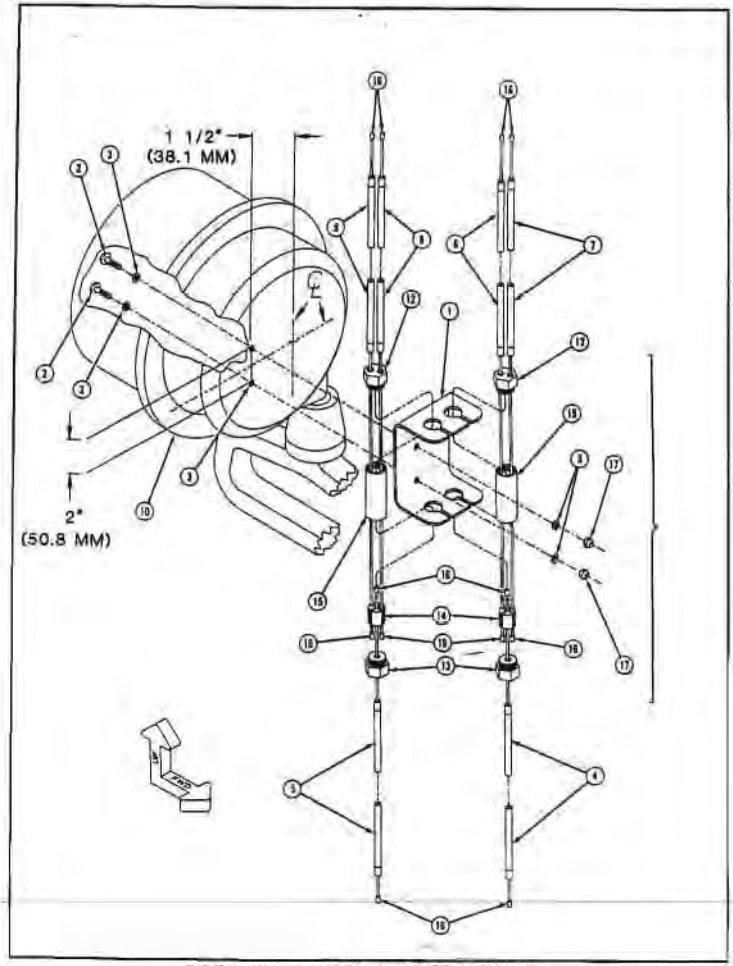
3. Position the Splitter Bracket (1) VERTICALLY against the Starter Housing (10) with the EXISTING holes in the Splitter Bracket CENTERED OVER your marks as illustrated.

NOTE: Ensure the Splitter Bracket (1) is orientated with the edge of the Bracket CLOSEST to the attachment holes positioned to your LEFT.

4. Drill and deburr TWO (2) 3/16" (4.8 mm) diameter holes into the Starter Housing (10) using the EXISTING holes in the Splitter Bracket (1) as a guide or template. Attach with Hardware (2, 16 and 17). Tighten to proper torque.

5. Connect the Throttle and Choke Cables (4) thru (9) as illustrated. Ensure ALL Cable Ferrules (16) seat completely or "all the way" down into the Cable Couplings (14).

Item	P/N	Qty	Description
1	46011	1	Splitter Bracket
2	11074	2	AN525-10R9 Washer Head Screw
3	10550	4	3/16" Washer
4	45811		Throttle Cable
5	45814		Choke Cable
6	90286	1	20" Throttle Cable Extension
7	90287	1	24" Throttle Cable Extension
8	90288	1	20" Choke Cable Extension
9	90289	1	24" Choke Cable Extension
10	00910107		Recoil Starter Housing (part of P/N 61085)
11	90285	1	1 into 2 Cable Splitter (consists of Items 12,13,14,15)
12		2	2 Hole Splitter End (part of P/N 90285)
13		2	1 Hole Splitter End (part of P/N 90285)
14		2	Cable Coupling (part of P/N 90285)
15		1	Splitter Housing (part of P/N 90285)
16			Cable Ferrule
17	10500	2	3/16" Locknut


1 1/2"
(38.1 MM)
2"
(50.8 MM)

THROTTLE CABLE TO CARBURETOR ATTACHMENT

ESSENTIAL: Ensure your hands are CLEAN and your work area is free from dust and grit BEFORE proceeding.

CAUTION: Some Parts in this assembly sequence are EXTREMELY delicate. DO NOT USE FORCE!

IMPORTANT: BEFORE proceeing, Refer to Detail 'A'. Use a Marking Pen and draw a line crossing the SIDE of the Cover Plate (1) of the Carburetor (2) and the TOP of the Housing (3). These marks will be realigned at re-assembly.

1. Remove the Rubber Boot (4)(Detail A) and slip it onto the Throttle Cable (5)(Detail C) positioned as illustrated. While holding DOWN on the Cover Plate (1) of the Carburetor (2) LOOSEN the TWO Hex Screws(6). REMOVE the Cover Plate (1) and the INTERNAL Piston Spring. (7). Compress the Spring with your thumb.

2. Note the seating position of the Jet Needle (10). Pass the END of the Throttle Cable (5) through (1),(7),(8) and the "keyhole" slot in the base of the Piston (9). Seat the Cable (5) as illustrated (See Detail B).

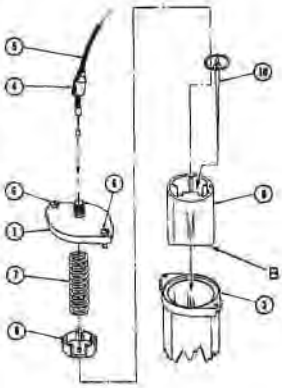
CAUTION: DO NOT BEND THE NEEDLE (10)!

3. Release the Spring and allow the Spring Cup (8) to re-seat on the TOP of the Jet Needle (10) and is all the way down in Carburetor Piston (9). Ensure the Needle is correctly re-seated. Allow the Piston to LOCK back into the Carburetor Body (3). Ensure the Jet Needle locates correctly. Do NOT use force!

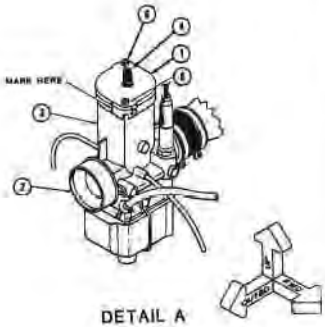
4 Ensure the pen marks align. Re-attach the Cover Plate (1). Tighten until "snug".

5. Repeat Steps 1-4 on the remaining Carburetor.

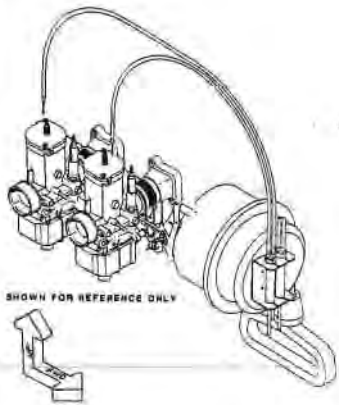
Item	P/N	Qty	Description
1	00963721		Cover Plate
2			Carburetor
3			Carburetor Housing
4	00260370		Rubber Boot
5	45811		Throttle Cable
6	00241430		5 mm x 12 mm Hex Screw
7	00938655		Piston Spring
8	00827345		Plastic Spring Cup
9	00963679		Carburetor Piston
10			Jet Needle

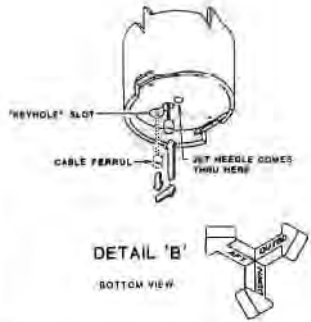


DETAIL C



DETAIL A





DETAIL 'B'

BOTTOM VIEW

REMOTE CHOKE CABLE ASSEMBLY TO CARBURETER ATTACHMENT

1. Refer to Detail 'A'. Remove the EXISTING Rubber Cap (1), Manual Closure Screw (2), Manual Starting Piston and Spring Assembly (3) and DISCARD them.

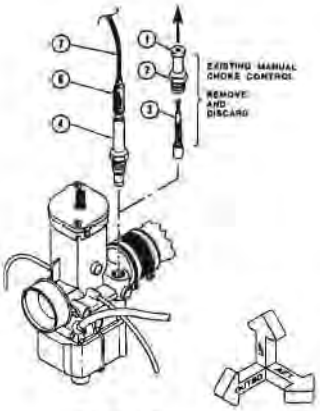
2. Refer to Detail 'B'. Locate the NEW Choke Plunger Kit (12). Push the NEW Rubber Boot (6) onto the Choke Cable (7). Pass the Cable (7) through the Items (9,8,4,5 and 10).

3. Thread the Jam Nut (8) APPROXIMATELY "HALF-WAY" onto the Cable Adjuster (9). Thread the Cable Adjuster (9) into the Remote Closure Screw (4) up to the Jam Nut (8). DO NOT TIGHTEN. Compress the Spring (5) into the Closure Screw (4) by pushing on the Brass Sleeve (10).

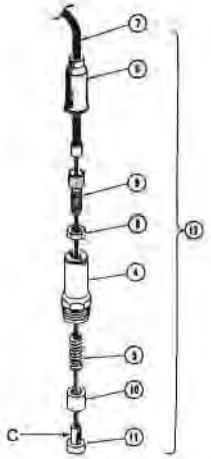
4. Refer to Detail 'C'. Attach the Piston (11) to the Ferrule (13) located at the END of the Cable (7).

5. Screw the NEW Assembly into the SAME threads from which the OLD Choke Plunger Assembly was removed. Tighten until "snug". Tighten the Jam Nut (8) against the Closure Screw (4). Replace the Rubber Boot (6) OVER the Cable Adjuster (9).

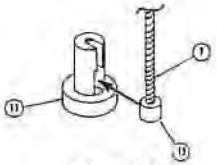
Item	P/N	Qty	Description
1	260990		Rubber Cap (Manual Choke)
2	261770		Closure Screw (Manual Choke)
3	268847		Piston (Manual Choke)
4	00963750		Closure Screw
5	661090		Starting Piston Spring
6	00260370		Rubber Boot
7			Choke Cable Assembly
8	00942541		6 mm x .75 Hex Nut
9	00241440		6 mm Cable Adjustment
10	00268450		Brass Sleeve
11	00963740		Remote Staring Piston
12	60216		Remote Plunger Kit
13			Cable Ferrule



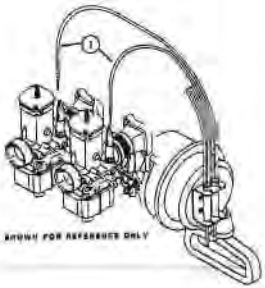
DETAIL 'A'



DETAIL 'B'



DETAIL 'C'

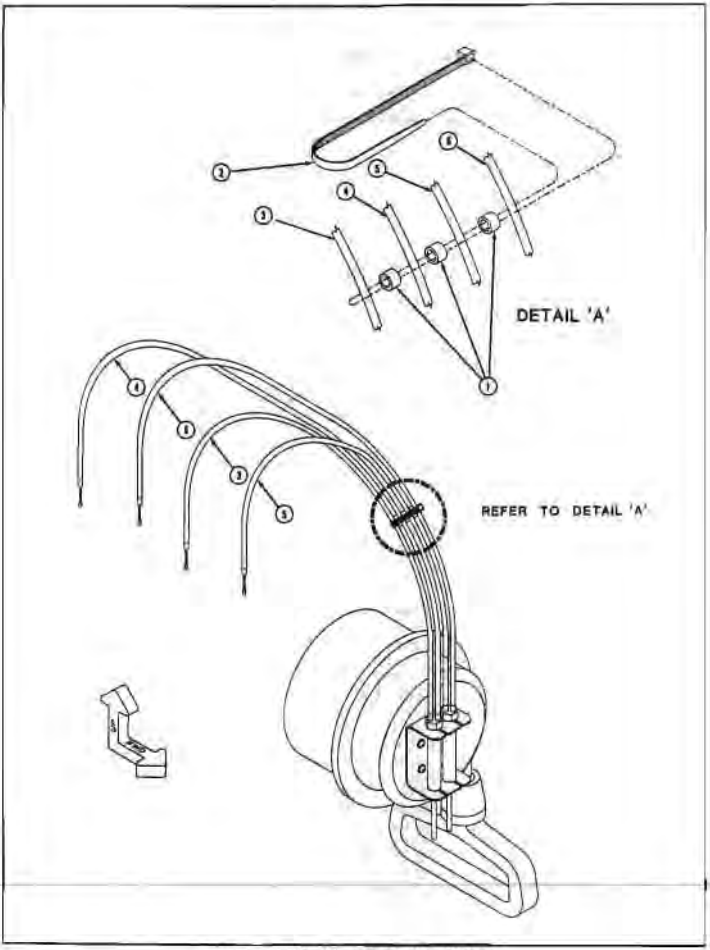


SHOWN FOR REFERENCE ONLY

THROTTLE CABLE AND CHOKE CABLE "STAND-OFF" ASSEMBLY ATTACHMENT

1. Cut THREE Stand-offs and attach as illustrated. Refer to SECTION 1, "Stand-Off" Assembly, if necessary.

Item	P/N	Qty	Description
1	30220	3	Fuel Line "Stand-Off"
2	30480	1	7" Tie Wrap
3	90286		20" Throttle Cable Extension
4	90287		24" Throttle Cable Extension
5	90288		20" Choke Cable Extension
6	90289		24" Choke Cable Extension


DETAIL 'A'
REFER TO DETAIL 'A'

THROTTLE AND CHOKE CABLE TO THROTTLE LEVER ATTACHMENT

NOTE: ROUTE THROTTLE CABLE AND CHOKE FROM ENGINE ALONG THE WIRING HARNESS (SEE DETAIL D) TO THE TROTTLE MOUNT PLATE AND ATTACH TO THE WIRING HARNESS WITH TIE-WRAPS AS PRECRIBED IN SECTION I.

1. Refer to Detail 'A'. Attach the Throttle Cable (2) to the Throttle Mount Plate (7) as illustrated.

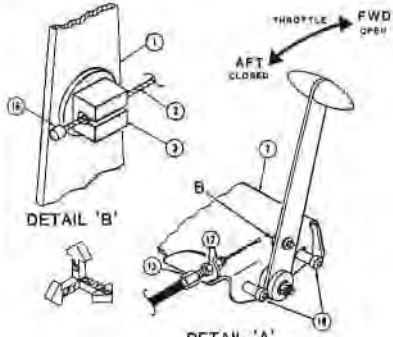
2. Refer to Detail 'B'. Slide the end of the Throttle Cable into the Cable Swivel (3). Ensure the Cable Ferrul (16) is properly "seated".

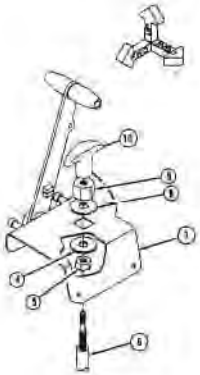
3. Refer to Detail 'A' and Detail 'C'. Rotate the Throttle Lever FORWARD. Adjust the Jam Nuts (12) on the Conduit Thread Adjuster (13) and/or the Adjuster (14) on the TOP of the Carburetor so that the BOTTOM of the Carburetor Piston (17) is LEVEL with the TOP of the Carburetor Throat at FULL Throttle.When adjustment is complete tighten the "FULL Throttle Stop"Shoulder Bolt (18).

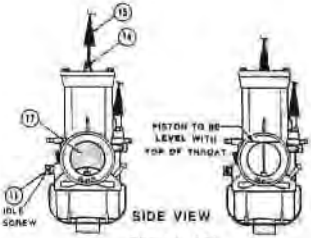
4. Refer to Detail 'A' and of Detail 'C'. When the Throttle Lever is rotated into the AFT or to the "CLOSED" position you should hear a "click" as the Piston (17) comes into contact with
the BOTTOM of the Carburetor Body. Adjust the Idle Screw (11) as required ,if necessary to allow the Piston to be positioned properly.

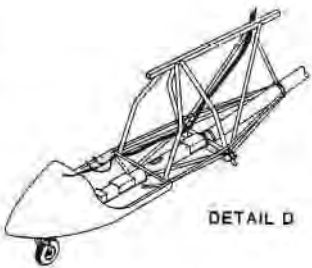
5. Insert the Choke Cable (6) through the Trottle Mount Plate (7) and install (4),(5),(8),(9), and (10) as illustrated.

Item	P/N	Qty	Description
1	90215		Throttle Lever
2	45811		Throttle Cable
3	90250		Cable Swivel
4			Washer (part of P/N 45814)
5			Jam Nut (part of P/N 45814)
6	45814		Choke Cable
7	45474		Throttle Mount Plate
8			Washer (part of P/N 45814)
9			Choke Cable Nut (part of P/N 45814)
10			Choke Cable Knob (part of P/N 45814)
11			Idle Screw
12		2	1/4" Jam Nut
13			Conduit Thread Adjuster part of P/N 45811
14			Carburetor Trottle Cable Adjuster
15			Rubber boot
16			Cable Ferrul
17			Carburetor Piston
18	90300		Shoulder bolt(Throttle Stop)









SOME PARTS NOT SHOWN FOR CLARITY.

COOLANT TEMPERATURE SENSOR AND OIL BREATHER LINE ATTACHMENT

1. Refer to Figures 1 and 2. Unscrew the LOWER Level Oil Plug next to the Line (13). Fill the Gear Box with the specified Gear Oil (API-GL5 , GL6SAE 140 or 85W-140EP) to this Line Level until it flows out of the LOWER Plug hole. The Gear Box Oil capacity is APPROXIMATELY ONE U.S. PINT DO NOT OVER FILL.

2. Refer to Figure 1. Assemble the Vent Plug (4), Line (5) and Hardware (6,7 10,11 and 12) as illustrated. Tighten the Locknut (12) to proper torque.

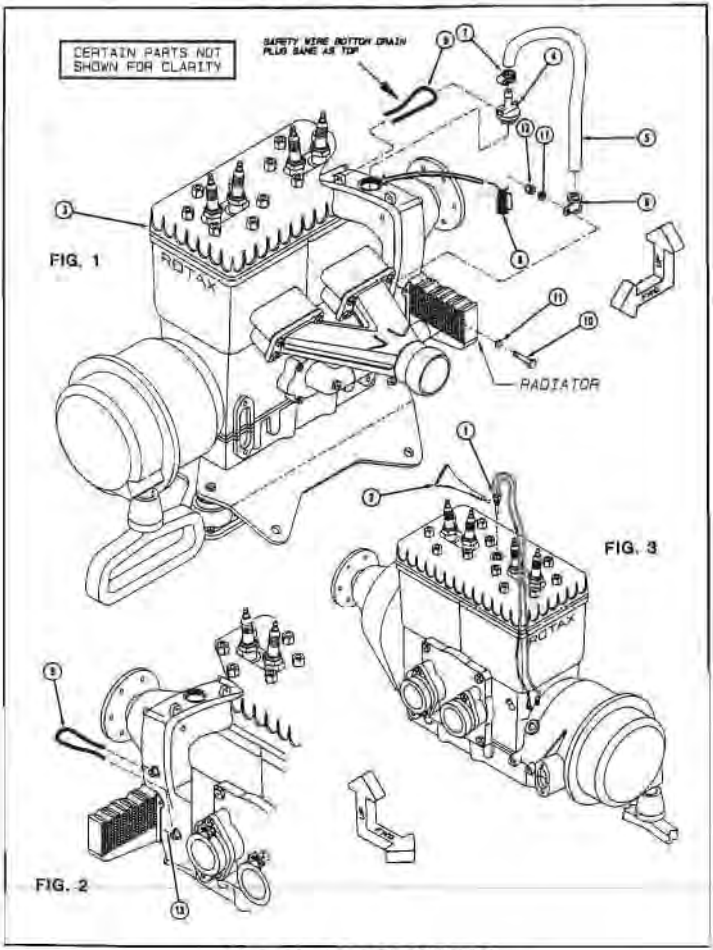
NOTE 1: Thread Sealant (2) is NOT Thread Adhesive (P/N 60591). Teflon Tape may be substituted for Sealant. Neither Silicone Thread Sealant or Teflon Tape is supplied.

NOTE 2: DO NOT OVER TORQUE the Fuel Line Clamps (7).

3. Secure the LOWER Plug. Secure the UPPER Plug (Screw). Safety Wire BOTH Plugs together as illustrated in "Safety Wire" Section 1.

4. Install the coolant temp sensor (1) and apply thread sealant as illustrated in Fig. 3. DO NOT OVER-TORQUE

Item	P/N	Qty	Description
1	90124	1	Coolant Temperature Sensor (part of P/N 90125)
2		A/R	Pipe Thread Sealant or Teflon Tape (not supplied)
3	61085		Rotax 582 Powerplant
4		1	Vent Plug (part of P/N 61085)
5	30220	A/R	Fuel Line
6	20432	1	3/8" Cushioned Clamp
7	30230	1	Fuel Line Clamp
8		A/R	Gear Oil (API-GL5,GL6SAE140 or 85W-140EP) (ONE U.S. Pint- not supplied))
9	20467	A/R	.041 Safety Wire
10	10008	1	AN3-4A Bolt
11	10550	2	3/16" Washer
12	10500	1	3/16" Locknut
13			LOWER Level Oil Plug Line


CERTAIN PARTS NOT SHOWN FOR CLARITY
SAFETY WIRE BOTTOM DRAIN PLUG SAME AS TOP
RADIATOR
ROTAX
FIG. 1
FIG. 2
FIG. 3

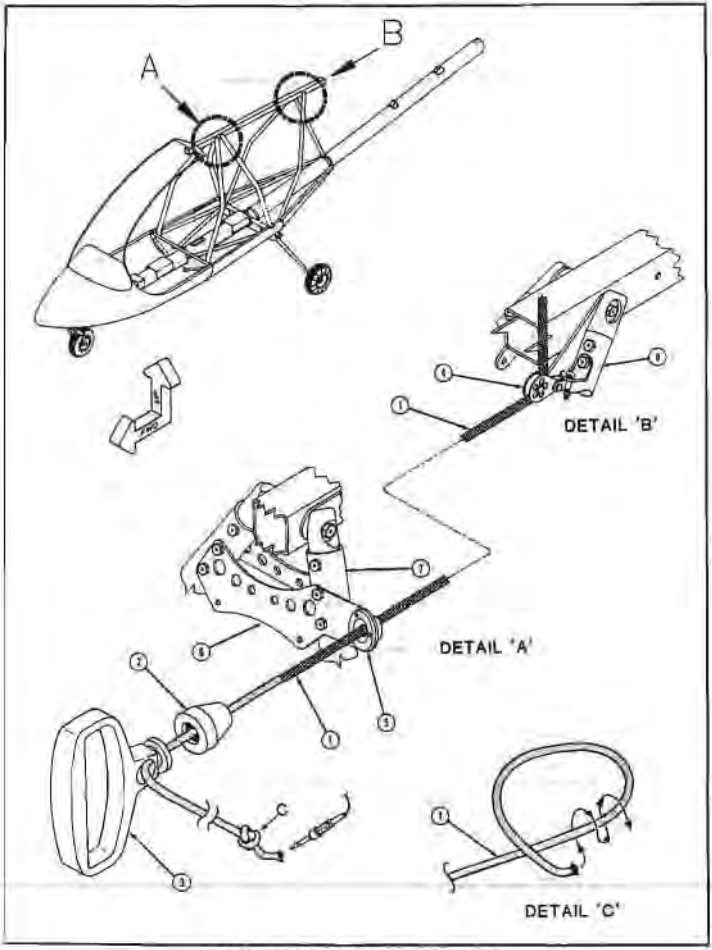
PULL STARTER ROPE ROUTING
AND PULL STARTER HANDLE ATTACHMENT

1. Slide the Boot (2) up the Starter Rope (1) exposing the knot in the end of the Rope. Pull the Knot out of the indentation in the Handle (3) and heat-cut the knot off the end of the Starter Rope. DO NOT BREATHE THE FUMES.

2. Re-route the Starter Rope (1) as illustrated. Tie the end as illustrated in Detail 'C'.

3. Heat seal the end of the Rope and re-seat the Knot in the Handle indentation. Pull the Boot OVER the end of the Handle and Secure the Boot.

Item	P/N	Qty	Description
1	00952799		Pull Starter Rope (part of P/N 61085)
2	00960415		Boot (part of P/N 61085)
3	00852715		Handle (part of P/N 61085)
4	20228		Swivel Eye Pulley
5	20236		1/2" Aluminum Fairlead
6	45429		Forward Seat Belt Bracket
7	45471		Left Forward Fuselage Downtube
8	45465		Aft Downtube


A
B
DETAIL 'B'
DETAIL 'A'
C
DETAIL 'C'

PROPELLER ATTACHMENT AND TRACKING ADJUSTMENT

ESSENTIAL: Read "Propeller" in SECTION 1 BEFORE PROCEEDING. Refer to Page 1-22.

NOTE: The AFT side of the Propeller (4) is the FLAT side of the blades.

1. Drill out the holes in Reduction Drive Hub (5) to .250" (6.35 mm). Assemble as illustrated. Tighten ALL SIX (6) Bolts (2) until the Propeller fits "snuggly". Use up to a MAXIMUM of THREE (3) Washers on each side of Bolt to ensure proper grip length.

2. Refer to Detail 'A'. Tighen the Bolts (2) CAREFULLY and ALTERNATELY, "A LITTLE AT A TIME". DO NOT CRUSH THE WOOD. DO NOT OVERTIGHTEN.

3. Rotate the Propeller (4) into a VERTICAL position. Measure the distance from the LOWER Propeller Blade to the Tail Boom Flange (6) where the Aft Down Strut (7) attaches. Rotate the Propeller 180 Degrees and measure the OPPOSITE Blade.

4. If the difference is within 1/8" (3.2 mm) you can "fine tune" the tracking by SLIGHTLY LOOSENING ONLY THREE of the Bolts (2) on ONE (1) SIDE ONLY and by SLIGHTLY TIGHTENING ONLY THREE (3) of the Bolts on the OPPOSITE side of the Propeller ONLY as required.

EXAMPLE: Loosen the side of the Propeller CLOSEST to the Flange attaching the Aft Downtube and TIGHTEN the Bolts (2) on the side FURTHEST from the Flange attaching the Aft Downtube. DO NOT OVER TIGHTEN AND CRUSH THE PROPELLER.

NOTE: If the measurements DIFFER by MORE THAN 1/8" (3.2 mm). Consult your **QUICKSILVER** Dealer for "Propeller Tracking Procedure".

Item	P/N	Qty	Description
1	10560	6+	1/4" Washer
2	10283	6	AN4-33 A Bolt
3	61062	1	Propeller Backing Plate
4	30351	1	70" x 36" Propeller
5			Reduction Drive Hub
6			Tail Boom Flange
7	45541		Tail Boom Down Strut
8	10510	6	1/4" Locknut

* or As Required

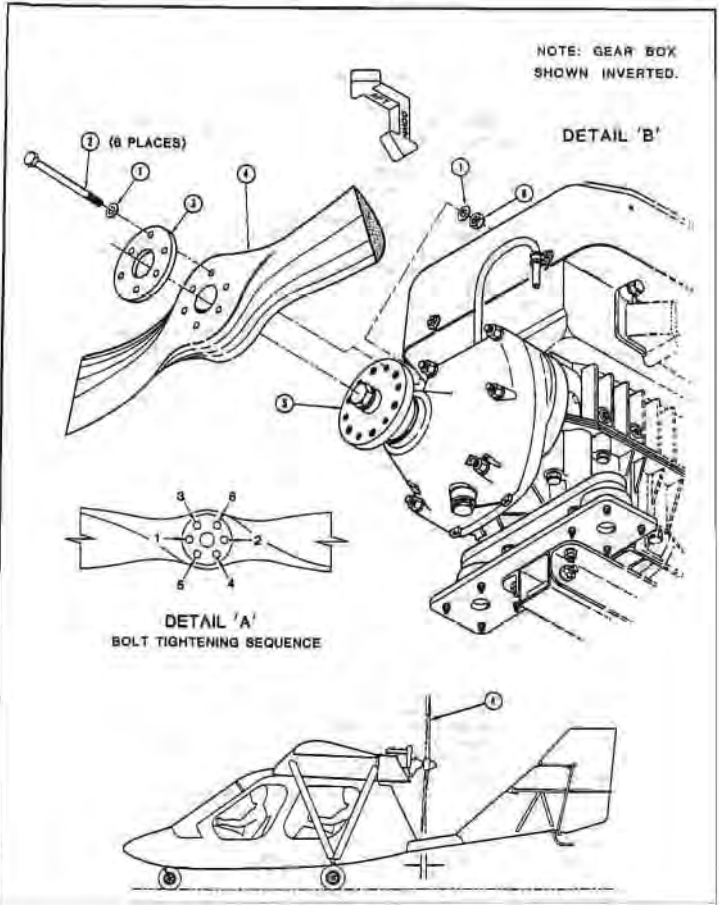
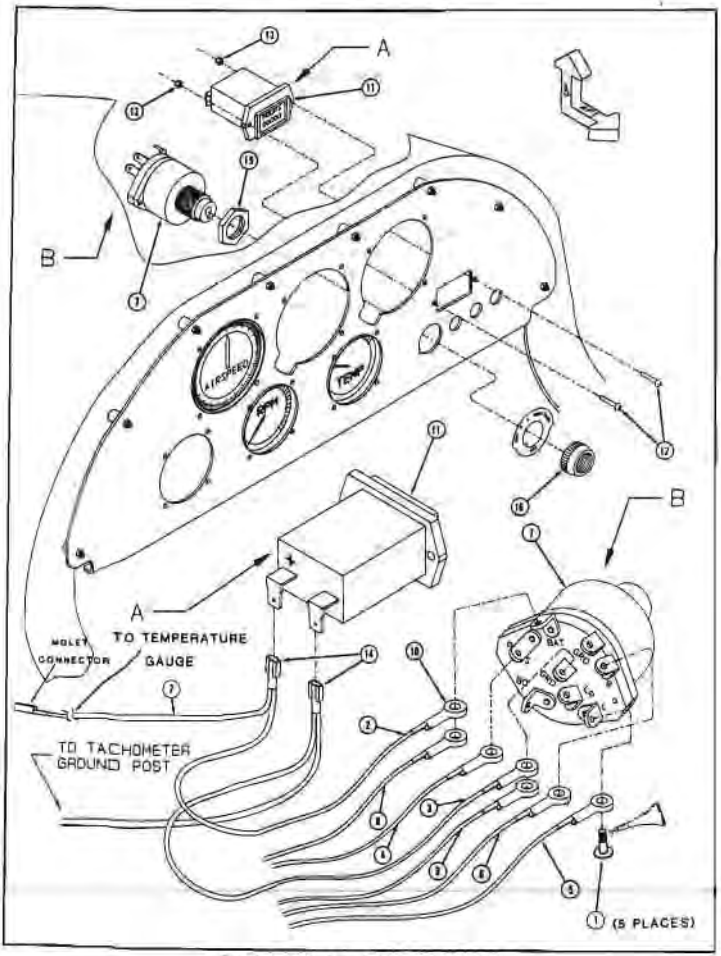

NOTE: GEAR BOX
SHOWN INVERTED.
DETAIL 'B'
(6 PLACES)
DETAIL 'A'
BOLT TIGHTENING SEQUENCE

FIG. 1

IGNITION SWITCH AND HOUR METER INSTALLATION

1. (Detail A) Locate the wiring for the Temperature Guage (not illustrated). REMOVE the RED Wire (2) from its package and cut a 8" piece with Existing Molet wire connector on one end. Cut a 4" piece and splice the 8" piece together with a Female Wire Connector (14) on the opposite end as Molet Connector. Install a Ring Connector (10) to the other end of the 4" Piece.
2. Refer to Detail 'B', Install the RED Wire from the Wiring Harness (8) and the RED Wire Assembly (2) (Ring End) to the "BAT" terminal on the BACK of the Ignition Switch (7). Install the RED Wire Assembly (2) FEMALE Connector onto the "+" (POSITIVE) post on the Hour Meter (11). The RED Wire (2) with the "Molet" Connector will be install later.
3. Locate the wiring for the Temperature Guage (not illustrated). REMOVE the Black Wire from its package and cut a 4" piece Install a Ring Connector (10) to ONE end. Remove Molete Connector from remaining Black wire (approx. 10"). Splice the 4" and 10"(3) black wire with a Female Wire Connector(14). On the other end of the 10" Black wire (3) install a Female Wire Connector(14).
5. (Detail B) Attach the ring connectors from the BROWN wire from the Wiring Harness (9) and the black wire (3)(4"piece) to the "GRD" (GROUND) post on the BACK of the Ignition Switch (7) as illustrated. Attach the Black wire (3) (Female Connector end) to the "-" Post of the Hobbs Meter (Detail A). The 10" black wire will be installed in later sequence.
6. Connect the ORANGE (4) Wire from the Wiring Harness to the "S" Post of the Ignition Switch (7). Connect the BLUE Wire (5) from the Harness to the "L"Post of the Ignition Switch (7). Connect the YELLOW Wire (6) from the Wiring Harness to the "R" post of the Ignition Switch (7).
7. Install Hobbs (11) into instrument panel as illustrated. Install Ignition (7) as illustrated. Adjust Jam nut (15) appropriately to allow Ignition Cover Nut (16) to tigthen.

Item	P/N	Qty	Description
1		5	#4 Screw (part of P/N 30315)
2			RED Jumper Wire (part of P/N 90125)
3			BLACK Jumper Wire (part of P/N 90125)
4		1	ORANGE Wire (part of wiring harness)
5		1	BLUE Wire (part of wiring harness)
6		1	YELLOW Wire (part of wiring harness)
7	30315	1	Dual Ignition Switch
8		1	RED Wire (part of Wiring Harness)
9		1	BROWN Wire (part of Wiring Harness)
10	30073	2	Ring Connector, #4 Screw
11	90120	1	Hour Meter (Hobbs)
12	10065	2	11065 (part of P/N 90120)
13	10067	2	Lock Nut (part of P/N 90120)
14	30070	3	Female Wire Connetor
15		1	Jam Nut (part of P/N 30315)
16		1	Cover Nut (part of P/N 30315)


A
B
A
B
MOLEX CONNECTOR
TO TEMPERATURE GAUGE
TO TACHOMETER GROUND POST
(5 PLACES)

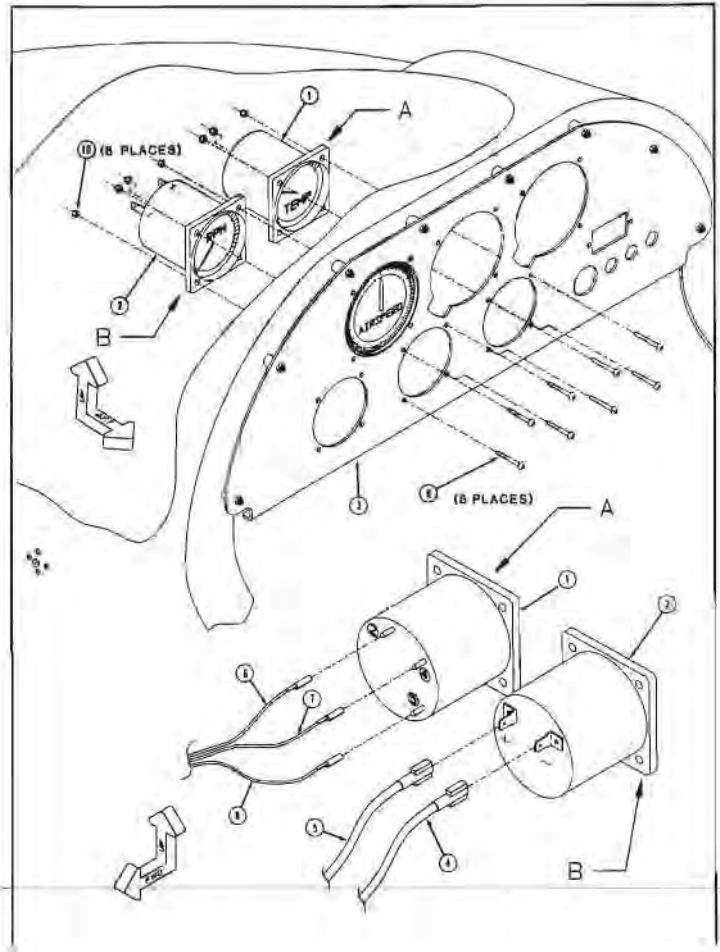
TACHOMETER AND WATER TEMP GAUGE INSTALLATION

1. Install the RED wire (7) from the [+] side of the Hour Meter (not illustrated) to the #4 post on the Temperture Gauge (1). Connect the BLACK wire (8) form the Wiring Harness (not illustrated) to the #5 post of the Temperture Gauge. Connect the WHITE wire (6) from the Wiring Harness to the #2 post on the Temperture Guage.

2. Connect the GREEN wire (5) to the [+] side of Tachometer (2). Connect the BLACK Wire (4) from the Hour Meter (not illustrated) to the [-] NEGATIVE post the Tachometer.

3. Install Water Temperature Gauge (1) and Tachometer (2) using Hardware (9) and (10).

Item	P/N	Qty	Description
1	90125	1	Water Temperature Gauge
2	90128	1	Tachometer
3	45574		Instrument Panel
4			Tachometer Negative [-] Wire (BLACK)
5			Tachometer Positive [+] Wire (GREEN)
6			Temperature Gauge Wire (WHITE)
7			Temperature Gauge Wire (RED)
8			Temperature Gauge Wire (BLACK)
9	11065	8	6-32 x 1" Phillips Head Screw (with Instruments (1) and (2))
10	11067	8	6-32 Locknut (with Instruments (1) and (2))

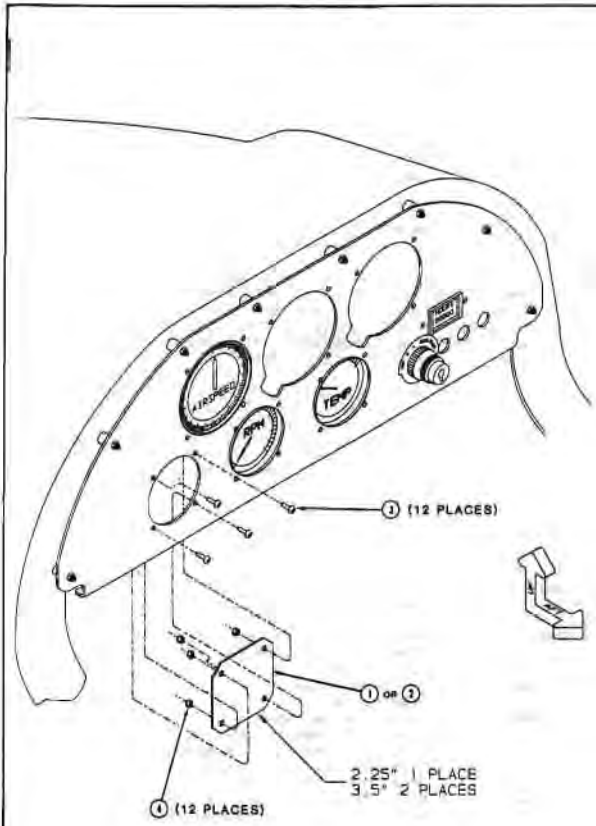

A
10 (6 PLACES)
TACH
2
B
AIRSPEED
3
9 (6 PLACES)
A
1
2
6
7
8
5
4
B

INSTRUMENT PANEL COVER PLATE ATTACHMENT

1. Attach ONE (1) Cover Plate (1) to the Instrument Panel (5) as illustrated. Secure ALL Locknuts (4).

2. Attach TWO (2) Cover Plates (2) to the remaining TWO (2) Instrument cut-out holes in the Panel as illustrated. Secure ALL Locknuts (4).

Item	P/N	Qty	Description
1	90148	1	2 1/4" Cover Plate
2	90149	2	3 1/8" Cover Plate
3	11066	10	6-32 x 1/2" (PPH) Screw (Phillips Pan Head) (Black)
4	11067	10	6-32 (Nylock) Locknut
5	45574		Instrument Panel


AIR SPEED
RPM
TEMP
FUEL
1 (12 PLACES)
1 OR 3
2.25" 1 PLACE
3.5" 2 PLACES
4 (12 PLACES)

COOLANT HOSE ATTACHMENT

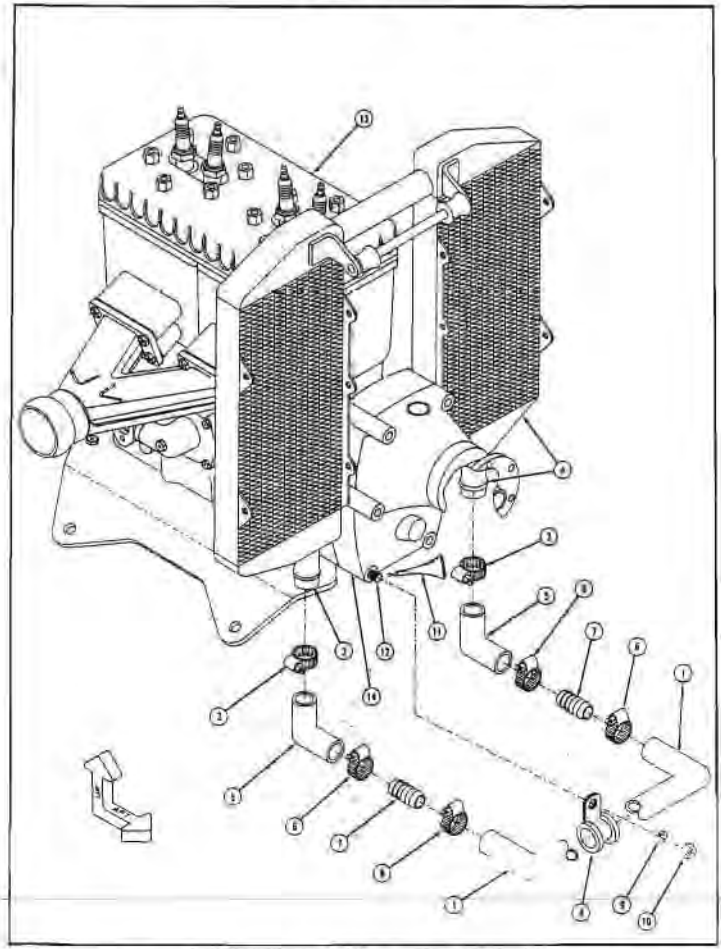
1. Loosen BOTH Hose Clamps (2) attaching the Coolant Hose (1) to the Radiators (3) and (4). Temporarily remove the Coolant Hose (1). Attach an Elbow (5) to the Radiator (3) and (4) (orientated as illustrated). Re-attach and secure the Hose Clamps (2).

2. Install the Hose Connectors (7) HALF WAY into the Elbows (5). Slide a Clamp (6) onto each Elbow. Tighten the Clamps (6).

3. Slide the Cushioned Clamp (8) onto the Coolant Hose (1) previously removed (orientated as illustrated) then slide TWO (2) Hose Clamps (6) onto the Coolant Hose (ONE (1) at each end). Slide each end of the Coolant Hose onto the remaining exposed halves of the Hose Connectors (7) Tighten the TWO (2) remaining Clamps (6) on the Coolant Hose.

4. Use a 13 mm wrench or socket and temporarily remove the Nut (10) and Lock Washer (9) from the Stud (12) located on the Gear Box (14) at the rear of the Powerplant (13). Add a drop of Thread Adhesive (11) to the threads of the Stud. Position the Cushioned Clamp (8) onto the Stud. Replace the Lock Washer (9) and Nut (10). Torque the Nut to 195 in/lbs or 16.25 ft/lbs (22 nm).

Item	P/N	Qty	Description
1	00922190		Coolant Hose (part of P/N 61085)
2	00951870	2	Hose Clamp (part of P/N 61085)
3	00995912		Radiator without Filler Cap (part of P/N 61085)
4	00995917		Radiator with Filler Cap (part of P/N 61085)
5	61210	2	Elbow Hose
6	20426	4	#10 Hose Clamp
7	61215	2	Hose Connector
8	20435	1	1" Cushioned Clamp
9	00945752	1	8 mm Lock Washer (part of P/N 61085)
10	00242201	1	8 mm Nut (part of P/N 61085)
11	60591	A/R	Thread Adhesive (Loctite)
12	00940766		Stud (part of P/N 61085)
13	61085		Rotax 582 Powerplant (w/ Dual Carb, Dual Ignition, and Reduction Drive as received)
14			Gear Box (Reduction Drive) (part of P/N 61085)



SPARK PLUG WIRE ATTACHMENT

NOTE: For safety reasons it is HIGHLY recommended that the Spark Plug Wires NOT be attached to the Spark Plugs until the Powerplant "Break-In Procedure" especially if the Electric Starter Kit (optional) and Battery are to be installed in a later sequence.

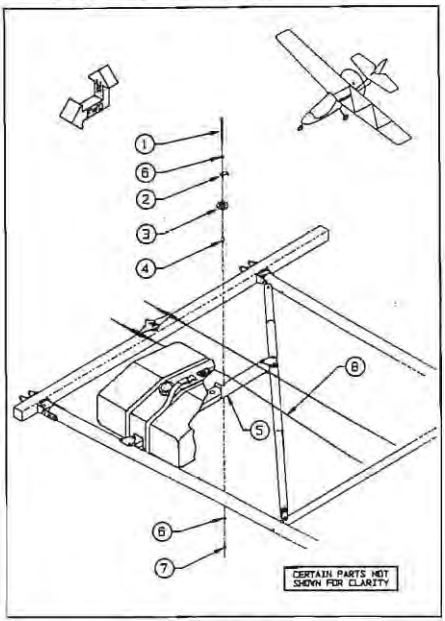
1. Refer to your Powerplant (Rotax 582) Operators Manual for proper attachment of ALL FOUR [4] Spark Plug Wires to the appropriate Spark Plugs.

QUICKSILVER ENTERPRISES, INC.
A Public Corporation

GT500

LONG RANGE FUEL TANK KIT ASSEMBLY INSTRUCTIONS

FOR USE WITH KIT # 91430



DOC # 922-03 DATE 10/15/92

LONG RANGE FUEL TANK INSTALLATION INSTRUCTIONS

TABLE OF CONTENTS

INTRODUCTION....3

FUEL TANK SUB-ASSEMBLY....4

INBOARD DIAGONAL STRUT SLEEVE INSTALLATION....6

FUEL TANK SUPPORT TUBE INSTALLATION....8

FUEL TANK CHANNEL INSTALLATION....10

WING TANK GUSSET PLATE TO
LEADING EDGE WING SPAR ATTACHMENT....12

FUEL TANK TO FUEL TANK SUPPORT TUBE ATTACHMENT....14

CABLE PULLEY INSTALLATION....16

FUEL VALVE ATTACH BRACKET INSTALLATION....18

FUEL LINE TO FUEL CUT OFF VALVE ATTACHMENT....20

FUEL LINE ROUTING....22

FUEL TANK CUT-OUT INSTRUCTIONS....24

NOTES:

QUICKSILVER GT 500 LONG RANGE FUEL TANK KIT

INTRODUCTION

The Quicksilver GT 500 Long Range Fuel Tank Kit (P/N* 91430) utilizes the same high quality parts used throughout the Quicksilver line of aircraft.

The Long Range Fuel Tank Kit includes all of the necessary parts required to convert the standard GT 500 to the Long Range model.

Please note this conversion kit utilizes the existing Fuel Tank and some of the existing hardware.

The Quicksilver GT 500 aircraft is designed to use either a single 8.5 U.S. gallon Fuel Tank mounted on the Root Tube or two 8.5 gallon Fuel Tanks, one mounted in each inboard wing section.

The use of any other combination is NOT approved by Quicksilver Enterprises at this time.

Before starting the conversion process, complete the following steps:

NOTE: Refer to the GT 500 Assembly Instructions (DOC# 902-01) as required.

1. Remove the Gap Cover. Unbuckle and separate the wing covers. Remove any INBOARD upper wing ribs as required in order to separate the wing covers sufficiently to allow installation of the Fuel Tanks. Use a large flathead screwdriver to lever each Rib into position to be removed. Cover each plastic aft Rib Tip with a shop cloth then carefully pull out each Rib as necessary using a pair of Vise Grips.

2. Remove the EXISTING Fuel Tank and Fuel Tank Restraint Strap. Set them aside, as they will be installed later as part of the the RIGHT Wing Fuel Tank Assembly. The EXISTING fittings will be utilized as required.

* Part Number

FUEL TANK SUB-ASSEMBLY

1. Before continuing with the following assembly sequence, ensure BOTH the NEW and EXISTING Fuel Tanks (1) are clean and free of any contaminants or particles which may evenually restrict or block the flow of fuel. Use an air hose if one is available to blow out any foreign particles if present.

2. Carefully trim BOTH ridges off of the FOUR internally threaded fuel tank nipples with a razor blade to ensure the Clamps (2) are installed correctly.

3. Slide a Clamp (2) over each nipple.

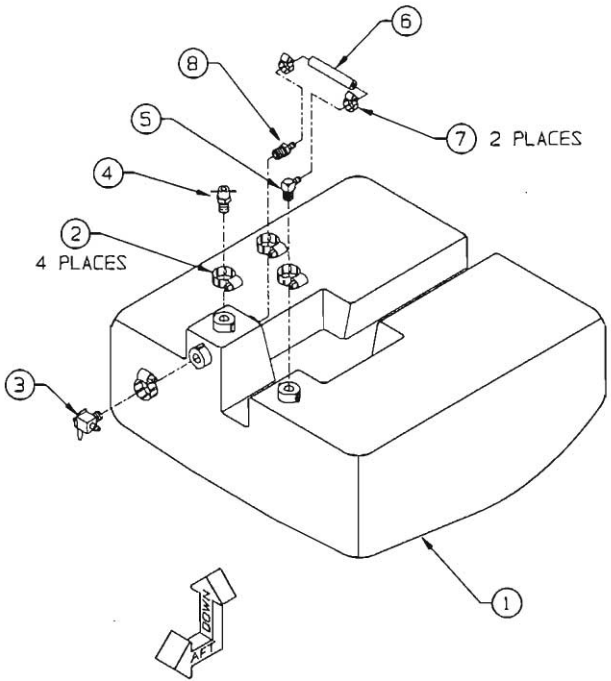
4. Assemble as illustrated. Install, but DO NOT overtighten the threaded fittings (3, 4, 5, and 8). After positioning the fittings as illustrated. Tighten the Clamps (2) but DO NOT over tighten.

5. Repeat Steps 2 thru 4 on the EXISTING Fuel Tank. Remove any fittings as required to install THREE Clamps (2) correctly. Trim the ridges off of the THREE nipples on the EXISTING Fuel Tank if the aircraft's Fuel Tank is so equipped. Reinstall the fittings with the Clamps installed. Tighten the Clamps securely but DO NOT overtighten.

NOTE: The quantity (Qty) indicated below reflects installation of ONE Fuel Tank only EXCEPT for Item #2, which reflects BOTH Fuel Tanks.

Item	P/N	Qty	Description
1.	30254.	1.	8.5 Gallon Fuel Tank Assembly
2.	20426.	7.	#10 Stainless Steel Hose Clamp
3.	30282.	1.	Fuel Cut Off Valve
4.	30273.	1.	Fuel Tank Drain Valve
5.	30275.	1.	1/4" Hose I.D., 1/4" MNPT Elbow
6.	30220.	A/R*	Fuel Line
7.	30230.	2.	Fuel Line Clamp
8.	30274.	1.	1/4" MPT x 1/4" Fuel Hose Adaptor

* As Required


6
8
5
7 2 PLACES
4
2
4 PLACES
3
1
FWD
AFT

INBOARD DIAGONAL STRUT SLEEVE INSTALLATION

1. Refer to SECTION 7 (Final Assembly) or SECTION 8 (Field Assembly) of the GT 500 Assembly Instructions (DOC# 902-01) if necessary. Remove the Gap Cover. Unbuckle the Wing Cover. Pull the Wing Cover halves OUTBOARD, APPROXIMATELY to the INBOARD Compression Strut or enough to allow access to install each of the Fuel Tanks (not illustrated).

2. Loosen the TWO Locknuts at the FORWARD end of the Diagonal Strut (2). Remove the Bolt located at the AFT end of the Diagonal Strut Fitting. Remove the Diagonal Strut.

3. Slide the Inboard Diagonal Strut Sleeve (3) over the Inboard Diagonal Strut (2).

NOTE: The end with the TWO 3/16" (4.8 mm) diameter holes closest toward the end of the Sleeve goes AFT. Position the AFT end of the Sleeve EXACTLY 10" (25.4 cm) from the AFT END of the Diagonal Strut (2) and **NOT the end of the Diagonal Strut Fitting**.

4. Make a pencil mark on the TOP of the INBOARD Diagonal Strut at the AFT end of the Diagonal Strut Sleeve (3). Align the TWO 3/16" (4.8 mm) diameter holes VERTICALLY with the TOP CENTERLINE of the Inboard Diagonal Strut.

5. Use the EXISTING holes in the Inboard Diagonal Strut Sleeve as a guide and back-drill thru BOTH locations with a 3/16" (4.8 mm) diameter drill bit. Deburr the holes in the Strut.

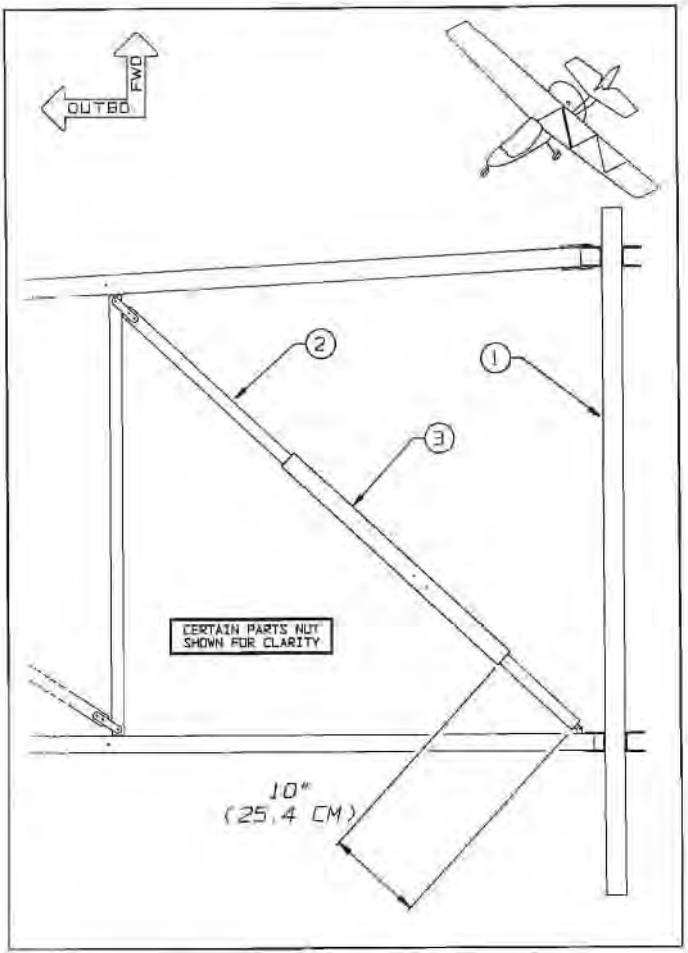
IMPORTANT: The holes must be drilled 'in line' with the EXISTING holes at the FORWARD end of the Diagonal Strut. Use the TWO holes in the FORWARD end of the Diagonal Strut and the hole in the Eyebolt installed into the Diagonal Strut Fitting at the AFT end as a guide.

6. Reinstall the Sleeved Strut (3) as illustrated with NEW Locknuts (4) (not illustrated) which are supplied with this kit. Tighten BOTH Locknuts at the FORWARD end of the Diagonal Strut to CORRECT torque. AFT end to PROPER torque. DO NOT distort the Diagonal Strut.

7. Repeat on the opposite (RIGHT) wing in 'mirror image'.

NOTE: The quantity (Qty) indicated below reflects installation of BOTH Fuel Tanks.

Item	P/N	Qty	Description
1	45668		Root Tube
2	45670		Inboard Diagonal Strut
3	45671	2	Inboard Diagonal Strut Sleeve
4	10500	6	3/16" Nylock Nut (not illustrated)



DOC # 922-03 DATE 10/15/92

FUEL TANK SUPPORT TUBE INSTALLATION

1. Attach the Gusset Plates (2) to the Inboard Diagonal Strut (12) using the hardware (1, 3, 4, 6, and 7) as illustrated. Tighten to CORRECT torque. DO NOT distort the strut.

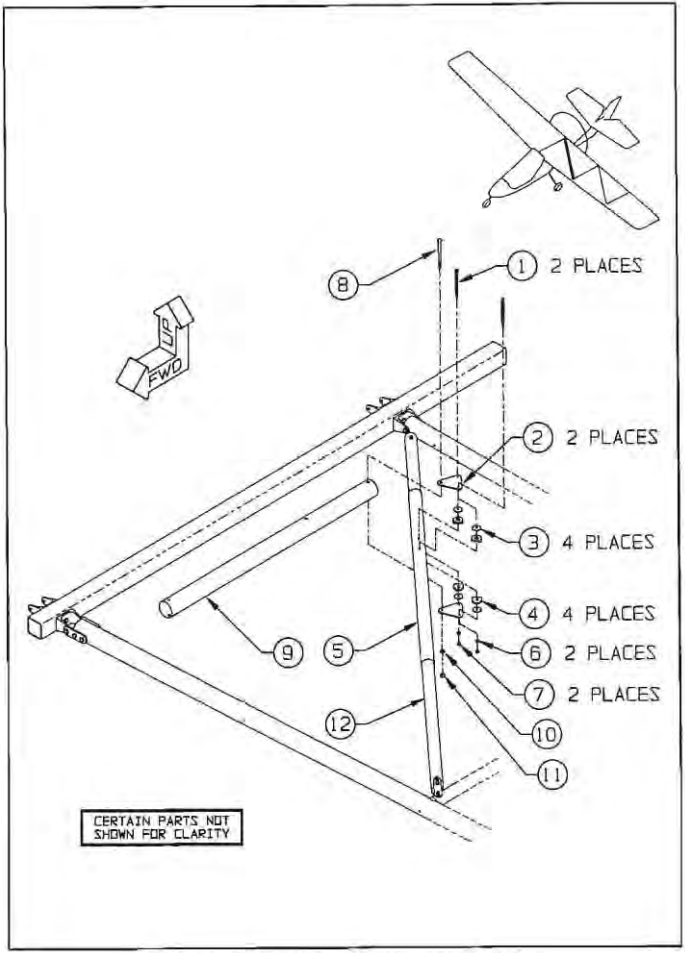
2. Attach the Fuel Tank Support Tube (9) to the Inboard Diagonal Strut (12) with the hardware (8, 10, and 11) as illustrated. Tighten to CORRECT torque. DO NOT distort the tube.

NOTE: The Fuel Tank Support Tube (9) has a hole drilled near the middle of the tube. Install the tube with this hole closest to the AFT end.

3. Repeat steps 1 and 2 on the opposite (RIGHT) wing in 'mirror image'.

NOTE: The quantity (Qty) indicated below reflects the installation of BOTH Fuel Tanks.

Item	P/N	Qty	Description
1	10055	4	AN3-24A Bolt
2	46510	4	Wing Tank Gusset Plate
3	10563	8	3/16" Fender Washer
4	20289	8	1 1/2" x .25 H x .20 THK Saddle
5	45671		Inboard Diagonal Strut Sleeve
6	10330	4	3/16" Washer
7	10500	4	3/16" Nylock Nut
8	10220	2	AN4-24A Bolt
9	46525	2	Fuel Tank Support Tube
10	10560	2	1/4" Washer
11	10510	2	1/4" - 28 Locknut
12	45670		Inboard Diagonal Strut


8
1 2 PLACES
UP
FWD
2 2 PLACES
3 4 PLACES
4 4 PLACES
9
5
6 2 PLACES
7 2 PLACES
12
10
11
CERTAIN PARTS NOT SHOWN FOR CLARITY

FUEL TANK CHANNEL INSTALLATION

1. Position the Wing Tank Support Channel (4) onto the Fuel Tank Support Tube (5) as illustrated. Use the EXISTING 1/4" (6.4 mm) diameter hole in the Channel as a guide and align it with the pre-drilled hole in the Fuel Tank Support Tube.

2. Temporarily position the Channel (4) on to the Fuel Tank Support Tube (5) as illustrated using a Bolt (1) only. Ensure the Channel is contacting the tube correctly. Using the EXISTING holes in the side of the Channel as a guide, hold pressure on the TOP of the Channel and drill FOUR 3/16" (4.8 mm) diameter holes into the Fuel Tank Support Tube for Rivets (7). Temporarily remove the Channel and deburr the holes with an oversized drill bit. Reposition the Channel. Temporarily insert a Rivet after drilling each hole. DO NOT 'pop' the Rivets at this time.

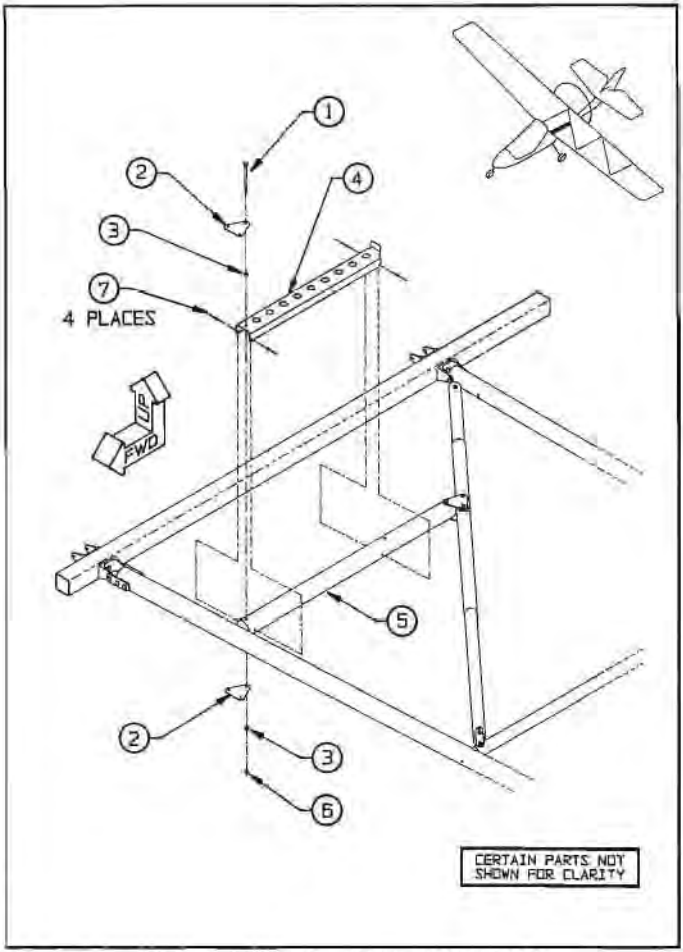
3. After all FOUR holes have been drilled, CAREFULLY remove the Rivets (7) and Bolt (1). LIGHTLY deburr the FOUR holes in the tube with an oversized drill bit.

4. Position the Wing Tank Support Channel (4) onto the Fuel Tank Support Tube (5) and attach the Gusset Plates (2) to the Fuel Tank Support Tube with the hardware (1, 3, and 6). Install the Rivets (7) as illustrated.

5. Repeat on the opposite (RIGHT) wing in 'mirror image'.

NOTE: The quantity (Qty) indicated below reflects the installation of BOTH Fuel Tanks.

Item	P/N	Qty	Description
1	10235	2	AN4-25A Bolt
2	45610	4	Wing Tank Gusset Plate
3	10560	4	1/4" Washer
4	46520	2	Wing Tank Support Channel
5	46525		Fuel Tank Support Tube
6	10510	2	1/4" - 20 Locknut
7	20192	8	3/16" x 1/8" Grip Stainless Steel Rivet (BSPQ-62)


1
2
4
3
7
4 PLACES
UP
FWD
5
2
3
6
CERTAIN PARTS NOT SHOWN FOR CLARITY

WING TANK GUSSET PLATE TO LEADING EDGE WING SPAR ATTACHMENT

1. Refer to Figure 1. Position the Fuel Tank Support Tube as illustrated to allow the TWO remaining holes in the Gusset Plate (4) to be located on the TOP CENTERLINE of the Leading Edge Wing Spar (2). Make a LENGTHWISE pencil mark on the TOP CENTERLINE of the Leading Edge Wing Spar at the APPROXIMATE location where the Gusset Plate will be located.

2. Position the holes in the Gusset Plate (4) over the pencil mark on the Leading Edge Wing Spar (2).

3. Refer to Detail 'A' and Drill Step illustrations 1, 2, and 3. Using the EXISTING OUTBOARD hole in the Gusset Plate (4) as a guide, back-drill a 3/16" (4.8 mm) diameter hole in the Leading Edge Wing Spar (2) as illustrated. TEMPORARILY 'pin' the Gusset Plate with a Bolt (3). CAREFULLY finish drilling the hole thru at the opposite side of the spar. Remove the bolt and ensure the hole is 'clean'.

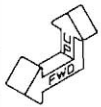
4. Repeat Drill Step 3 for the the remaining hole. Align the remaining hole in the Gusset Plate (4) with the CENTERLINE of the Wing Spar (2) and drill the SECOND hole. Swing the Fuel Tank Support Tube (1) to one side TEMPORARILY and CAREFULLY deburr the holes with an oversized drill bit.

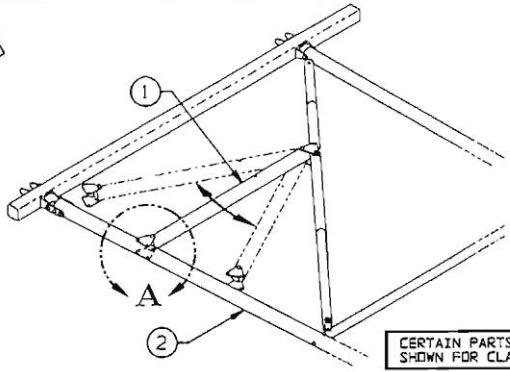
5. Refer to Detail 'A', Drill Step 4. Reposition the Fuel Tank Support Tube and attach the Gusset Plate (4) to the Leading Edge Wing Spar (2) with the hardware (3, 5, and 6) TWO places. Tighten to CORRECT torque. DO NOT over tighten and distort the Spar.

6. Repeat the assembly sequence steps 1 thru 5 above on the opposite (RIGHT) wing in 'mirror image'.

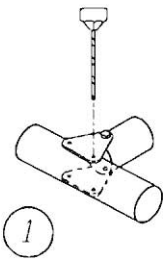
NOTE: The quantity (Qty) indicated below reflects the installation of BOTH Fuel Tanks.

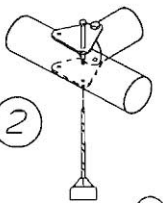
Item	P/N	Qty	Description
1	46525		Fuel Tank Support Tube
2	45623		Left Leading Edge Wing Spar Assembly
	45624		Right Leading Edge Wing Spar Assembly (not illustrated)
3	10231	4	AN3-25A Bolt
4	46510		Wing Tank Gusset Plate
5	10550	4	3/16" Washer
6	10500	4	3/16" Nylock Nut

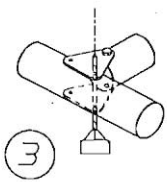


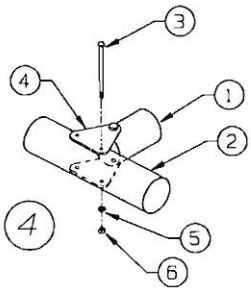


DRILL STEPS:









DETAIL A

FUEL TANK TO FUEL TANK SUPPORT TUBE ATTACHMENT

1. Position the Fuel Tank (1) onto the Wing Tank Support Channel (2) and Fuel Tank Support Tube (3). Slide the Tank AFT until it contacts the 'stop' located at the AFT end of the Channel allowing the Tank to 'seat' correctly.

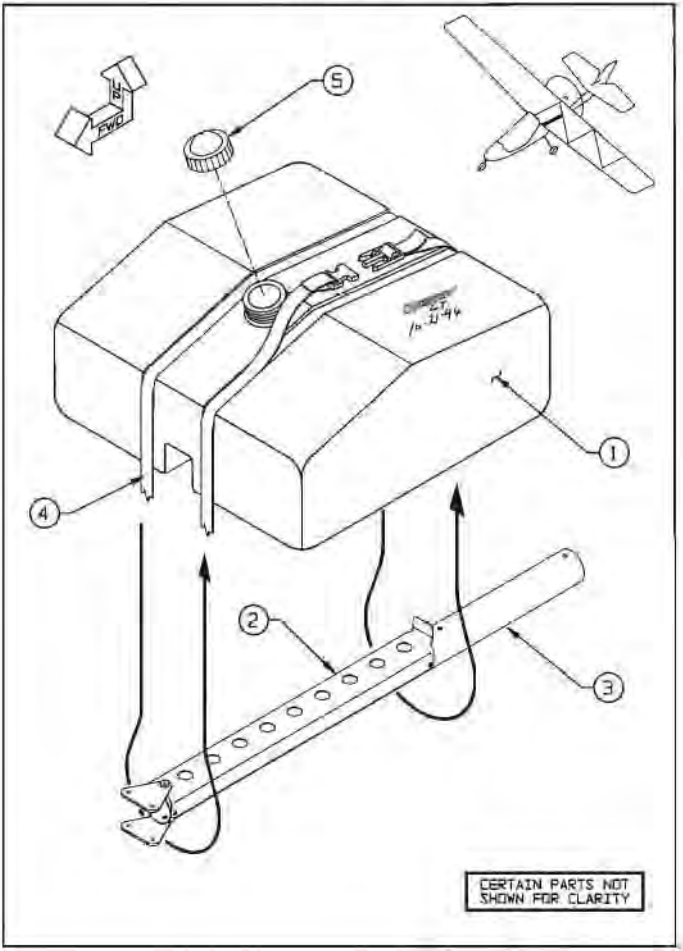
2. Route the Restraint Strap (4) around the Fuel Tank (1) as illustrated. Contact the Male and Female Buckles at the ends of the strap. Pull the strap tight.

3. TEMPORARILY install the Fuel Tank Cap (5) at this time to keep unnecessary contamination out of the Fuel Tank during installation.

4. Repeat on the opposite (RIGHT) wing in 'mirror image' with the EXISTING Fuel Tank Assembly previously installed on the Root Tube.

NOTE: The quantity (Qty) indicated below reflects the installation of ONE Fuel Tank.

Item	P/N	Qty	Description
1	30254		8.5 Gallon Fuel Tank Assembly
2	46520		Wing Tank Support Channel
3	46525		Fuel Tank Support Tube
4	45490	1	8.5 Gallon Tank Strap Restraint
5			Fuel Tank Cap (part of P/N 30254)


FWD
5
1
4
2
3
CERTAIN PARTS NOT SHOWN FOR CLARITY

CABLE PULLEY INSTALLATION

1. TEMORARILY attach the hardware (1, 3, 4, 6, and 7) as illustrated, FINGER TIGHT only. Position the LEFT FORWARD Aileron Cable (8) (previously installed) into the Pulley (3).

2. Turn the Control Wheel FULL LEFT. Notice where the Aileron Cable travels thru the Pulley (3). Mark this location with a small piece of tape.

3. Turn the Control Wheel FULL RIGHT. Again, notice where it passes thru the Pulley. Mark this location with tape.

4. CAREFULLY strip off the plastic coating on the FORWARD LEFT Aileron Cable (8) only where the cable will pass thru the Pulley (3).

CAUTION

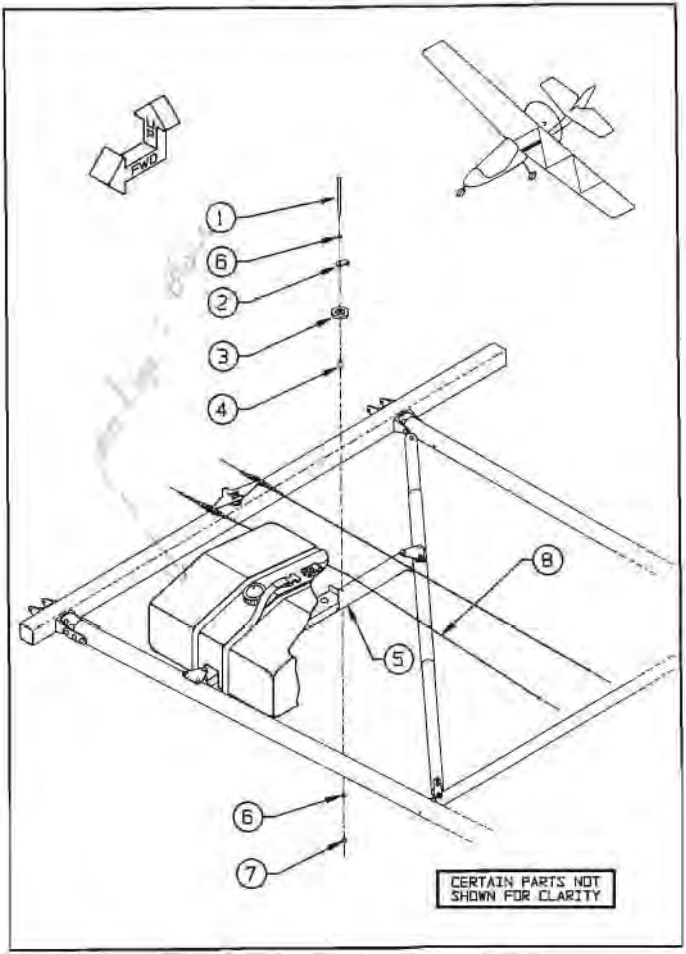
Each FORWARD Aileron Cable (8) must be exposed (stripped) where it makes contact with the Pulley (3) to operate correctly. If a coated Cable contacts the Pulley, 'binding' in the Aileron control system may occur.

5. AFTER the Aileron Cable (8) coating has been stripped, TEMPORARILY disassemble the hardware (1, 3, 4, 6, and 7). Insert the Aileron Cable into the Pulley (3) then add and position the Cable Pulley Guard (2) as illustrated. Ensure the Cable Pulley Guard is not making contact with the Aileron Cable. Tighten to CORRECT torque. DO NOT over tighten and distort the tube.

NOTE: The Pulley Cable Guard (3) is designed to keep the Aileron Cable (8) from 'popping' off or out of the Pulley. Cycle the Aileron Cable back and forth to ensure the Guard is working correctly.

6. Repeat Steps 1 thru 5 on the opposite (RIGHT) wing in 'mirror image'.

Item	P/N	Qty	Description
1	10291	2	AN4-35A Bolt
2	91110	2	Cable Pulley Guard
3	91108	2	1 3/4" Pulley
4	71003	2	Aileron Bushing
5	46525		Fuel Tank Support Tube
6	10560	4	1/4" Washer
7	10510	2	1/4" - 28 Locknut
8	45713		Aileron Cable


FWD
1
6
2
3
4
8
5
6
7
CERTAIN PARTS NOT SHOWN FOR CLARITY

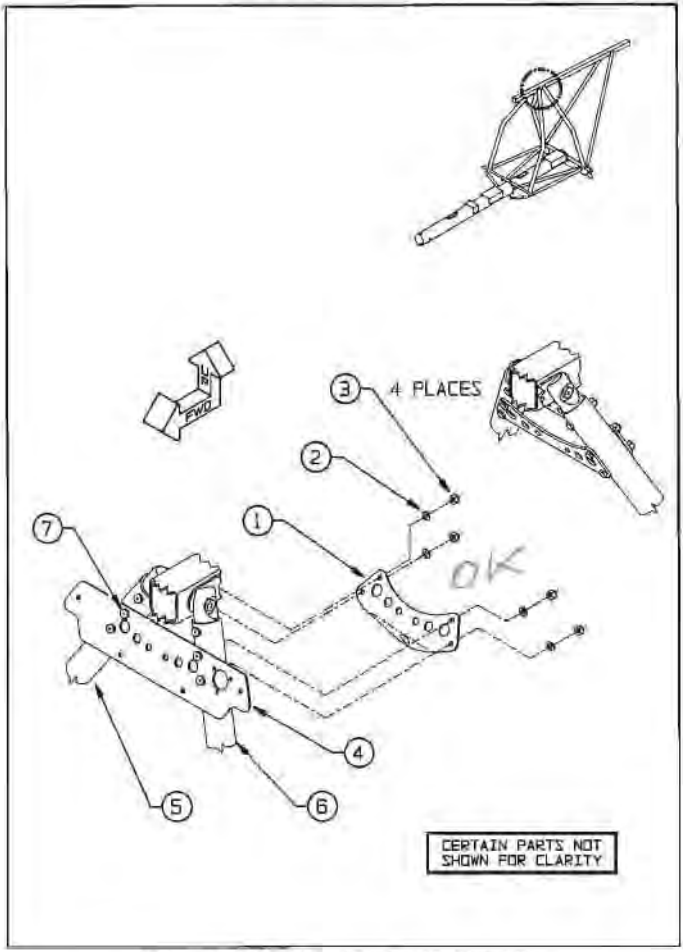
FUEL VALVE ATTACH BRACKET INSTALLATION

1. Locate the EXISTING Downtube Attach Plate (not illustrated) on the AFT side of the Right and Left Forward Fuselage Downtubes (5) and (6) respectively. Remove the EXISTING Downtube Attach Plate.

2. Install the Fuel Valve Attach Bracket (1) as illustrated using the EXISTING Washers (2) and NEW Locknuts (3). Tighten all Locknuts to PROPER torque. DO NOT distort the Downtubes.

NOTE: The bend at the BOTTOM of the Fuel Valve Attach Bracket (1) faces AFT.

Item	P/N	Qty	Description
1	45876	1	Fuel Valve Attach Bracket
2	10560		1/4" Washer
3	10510	4	1/4" Locknut
4	45429		Forward Seat Belt Bracket
5	45469		Right Forward Fuselage Downtube
6	45471		Left Forward Fuselage Downtube
7	10190		AN4-22A Bolt


3
4 PLACES
2
1
7
OK
4
5
6
CERTAIN PARTS NOT SHOWN FOR CLARITY

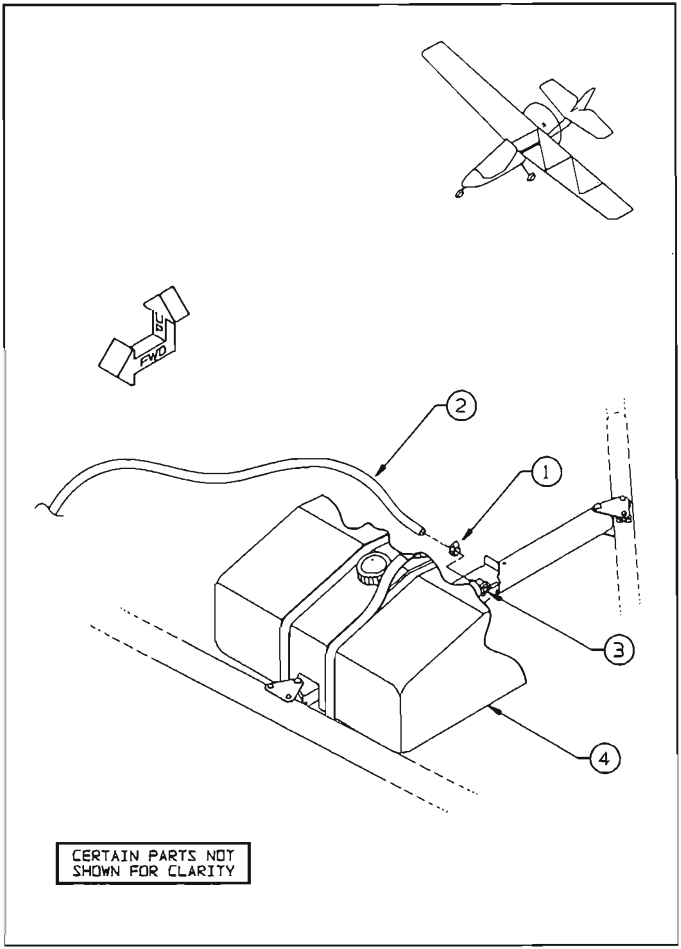
FUEL LINE TO FUEL CUT OFF VALVE ATTACHMENT

1. Slide a Fuel Line Clamp (1) over the end of the Fuel Line (2) and attach the end of the Fuel Line to the Fuel Line Cut Off Valve (3) located at the BOTTOM of the LEFT Wing Fuel Tank (4) as illustrated. Tighten but DO NOT overtighten the Clamp (1).

2. Repeat on the opposite (RIGHT) wing in 'mirror image'.

NOTE: The quantity (Qty) indicated below relects the installation of ONE Fuel Tank only. Use the EXISTING Clamp on the RIGHT Wing Tank.

Item	P/N	Qty	Description
1	30230	1	Fuel Line Clamp
2	30220	A/R	1/4" I.D. Fuel Line
3	30282		Fuel Cut Off Valve
4	30254		8.5 Gallon Fuel Tank Assembly


UP
FWD
2
1
3
4
CERTAIN PARTS NOT SHOWN FOR CLARITY

FUEL LINE ROUTING

1. Install the Fuel Valve (3) to the Fuel Valve Attach Bracket (4) (previously installed) as illustrated. Tighten the Ring Nut (5) securely.

2. Remove the EXISTING length of Fuel Line (1) from the Fuel Filter (7) FORWARD. Refer to SECTION 4 of the GT 500 Assembly Instructions (DOC# 902-01) if necessary.

3. Route a NEW piece of Fuel Line (1) as required with AFT from the Valve (3) as illustrated.(i()

4. Secure all Fuel Lines (1) from the LEFT and RIGHT Fuel Tanks and to the Fuel Filter with the THREE Clamps (2) but DO NOT overtighten.

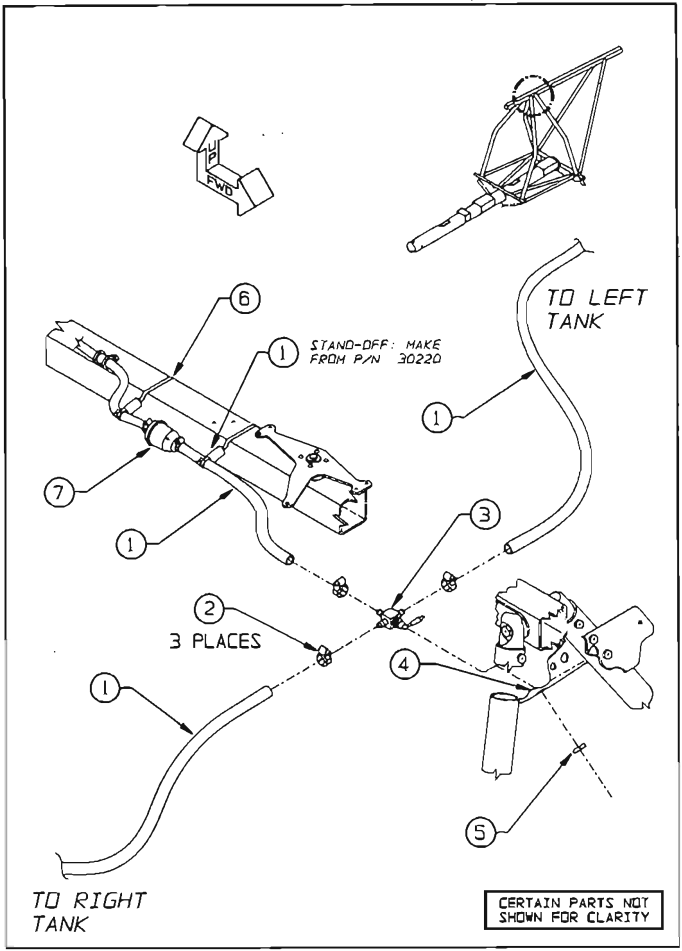
NOTE: One of the THREE Clamps (2) illustrated will be retained from the EXISTING fuel system previously installed.

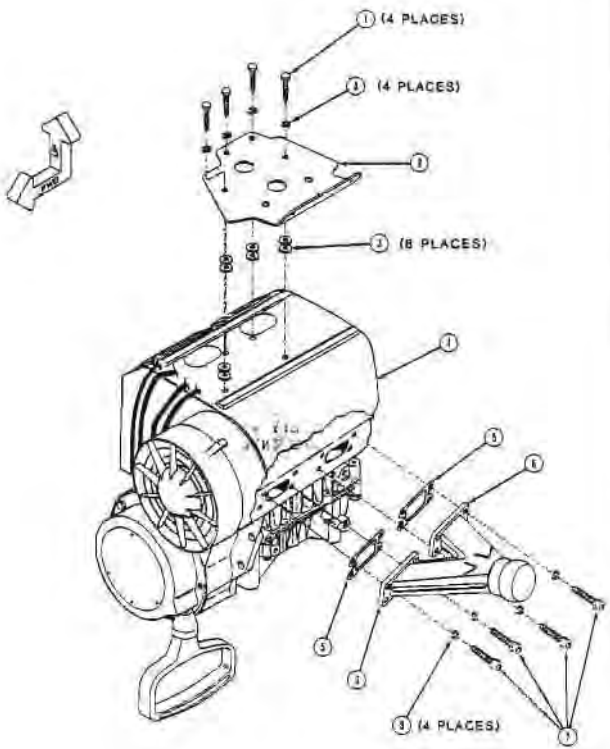
5. Secure the Fuel Lines (1) with Fuel Line Stand-Offs and Tie Wraps (6) as previously attached. Secure each of the Fuel Lines from the LEFT and RIGHT Fuel Tanks to the Root Tube with Stand-Offs and Tie wraps at TWO locations (not illustrated) as required.

NOTE: Attach TWO Tie Wraps (6) together to go around the Root Tube properly at THREE locations.

Item	P/N	Qty	Description
1	30220	A/R*	Fuel Line (from the Fuel Filter)
2	30230	3	Fuel Line Clamp
3	30285	1	3 Port Fuel Valve
4	45876		Fuel Valve Attach Bracket
5			Ring Nut (Part of P/N 30285)
6	30480	6	7 " Tie Wrap
7	30210		Fuel Filter

* As Required


FWD
TO LEFT TANK
6
1
STAND-OFF: MAKE FROM P/N 30220
7
1
3
2
3 PLACES
1
4
5
TO RIGHT TANK
CERTAIN PARTS NOT SHOWN FOR CLARITY


1 (4 PLACES)
4 (4 PLACES)
3
2 (8 PLACES)
1
5
6
5
3
5 (4 PLACES)
7

MUFFLER ATTACHMENT

1. Attach the 90 Degree Exhaust Elbow (1) with THREE (3) Muffler Springs (2) as illustrated.

OPTIONAL: Apply Loctite "Anti-Seize" Spray to the OUTER surface of the Exhaust Manifold (Header) Ball Joint (11). This will reduce the likelihood of corrosion (rust) from forming and allow the Elbow to pivot or rotate freely around the joint.

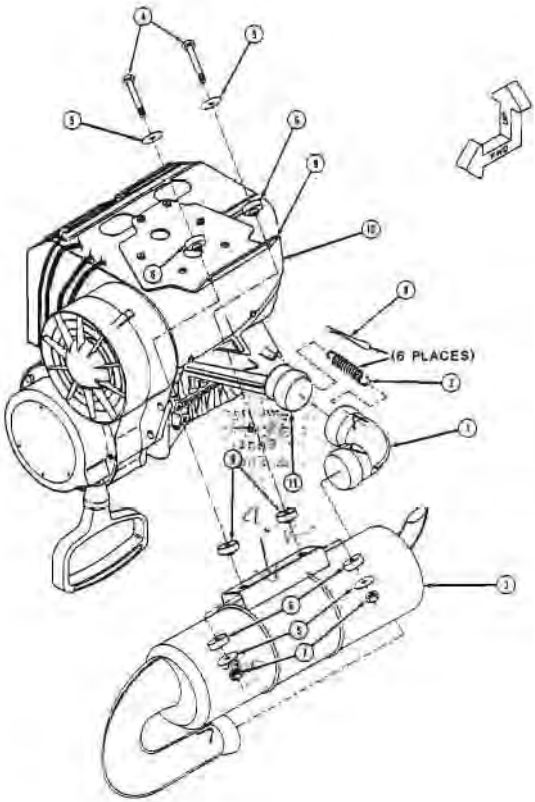
2. Attach the Muffler Assembly (1) with TWO (2) Springs as illustrated.

3. Cut the "Nipples" off of the LOWER TWO Shock Grommets (6) ONLY and assemble as illustrated. Tighten the Locknuts (7) however leave THREE to FOUR Bolt threads visible. DO NOT OVER TORQUE AND CRUSH THE GROMMETS (6).

4. Secure ALL Springs (2) with Safety Wire (8) as required. Pass ONE (1) end of the Safety Wire through the MIDDLE (INSIDE) of the Muffler Spring and bend it back around the corresponing attachment tab. Route the Spring back along the OUTSIDE of the Spring and secure the ends. Refer to the illustration on page 1-20 if necessary.

CAUTION: DO NOT USE ANY TOOL WHICH MAY SCRATCH OR SCORE THE SURFACE OF THE SAFETY WIRE DURING INSTALLATION AS THIS WILL COMPROMISE THE INTEGRITY OF THE SAFETY WIRE.

Item	P/N	Qty	Description
1.	61082.	1.	90 Degree Exhaust Elbow
2.	00838790.	6.	Muffler Spring
3.	61066.	1.	Muffler Assembly
4.	10320.	2.	AN5-15A Bolt
5.	10600.	4.	5/16" Fender Washer
6.	30380.	6.	Soft Rubber Shock Grommet
7.	10540.	2.	5/16" Locknut
8.	20467.	A/R.	Safety Wire, .041"
9.	45821.	1.	Muffler Attach Bracket
10.	61080.	.	Rotax 503 Powerplant, Dual Carb, Dual Ignition
11.	.	.	Exhaust Manifold "Ball Joint"
12.	61045.	.	Exhaust Manifold (Header) (R-503)


(6 PLACES)

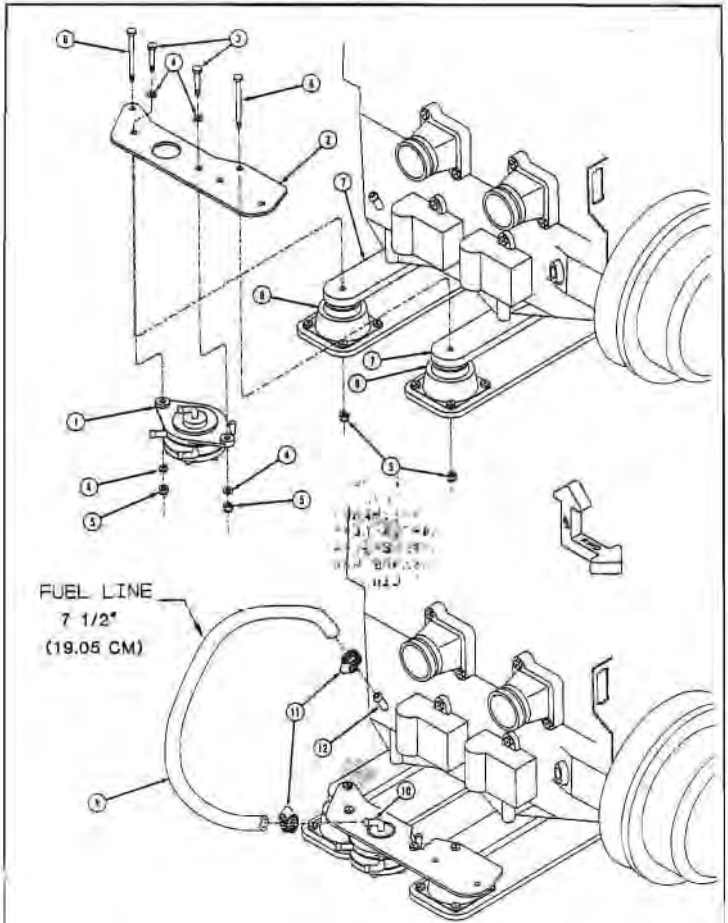
FUEL PUMP ATTACHMENT

1. Remove the Dual Carb Fuel Pump (1) from the Powerplant Carburetor Box and attach the Fuel Pump (2) to the Fuel Pump Mount Plate (2) as illustrated with Hardware (3,4 and 5). Tighten to proper torque.

2. Attach the Fuel Pump Mount Plate (2) to the Upper Engine Mounts (7) and the Shock Mounts (8) with Hardware (6) and (5) as illustrated. Tighten to proper torque.

3. Measure and cut a piece of Fuel Line (9) 7 1/2" (19.05 cm). Attach one end of the Fuel Line to the Pulse Port (10) located on the Fuel Pump (1). Slide on TWO Clamps (11). Attach the opposite end of the Fuel Line on the Pulse Port (12) of the Powerplant (13). CAREFULLY tighten the Clamps (11). DO NOT OVER TORQUE.

Item	P/N	Qty	Description
1	00994485	1	Dual Carburetor Fuel Pump (in Carburetor box)
2	45858	1	Fuel Pump Mount Plate (R-503)
3	10066	2	AN4-10A Bolt
4	10560	4	1/4" Washer
5	10510	4	1/4" Locknut
6	10185	2	AN4-21½ Bolt
7	45837		Upper Engine Mount
8	61035		Engine Shock Mount
9	30220	A/R	Fuel Line, 7 1/2" (19.05 cm)
10			Pulse Port on Fuel Pump
11	30230	2	Fuel Line Clamp
12			Pulse Port on Powerplant
13	61080		Rotax 503 Powerplant w/ Dual Carb. Reduction Drive, Dual Ignition (as received)


FUEL LINE
7 1/2"
(19.05 CM)

CARBURETOR ATTACHMENT

1. Push the LARGER (INSIDE diameter) end of the Rubber Sockets (2) onto the Intake Sockets (8) of the Powerplant (10). Press them on until the "head" on the INSIDE of the Rubber Socket "seats" with the "recesses" on the Intake Sockets. Loosen and slide the Clamps (3) onto the Sockets (2). Position the Screws (9) on the Clamps (3) so they can be tightened later.

2. Push the Carburetors (1) into the Rubber Sockets (2) until the "heads" seat with the "recesses". Ensure the TOP of each Carburetor is LEVEL with the TOP of the Powerplant. You may wish to consult the Powerplant (ROTAX) Operators Manual for additional information regarding Carburetor alignment. Tighten the Clamps (3) securely. There should be a gap of APPROXIMATELY 1/4" (6.4 mm) when tightened correctly.

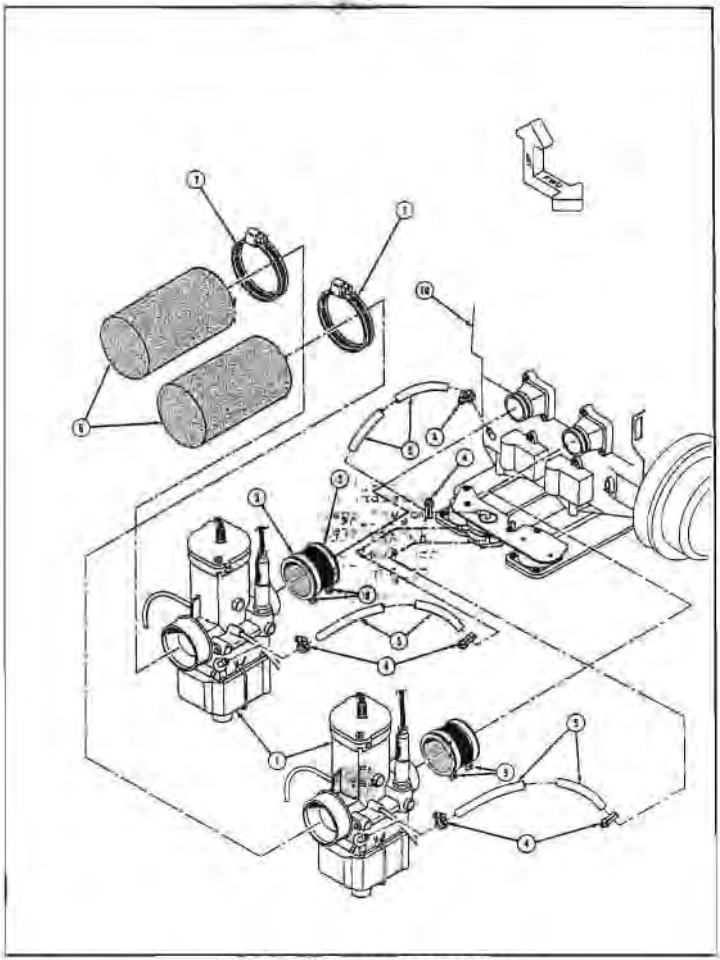
3. Wrap the Air Filter Spring (INSIDE the Air Filter) around the end of the Carburetor AT LEAST THREE OR FOUR TIMES. Attach the Air Filters (6) and Air Filter Clamps. Ensure the each Air Filter Clamp is positioned OVER the Previously wrapped Spring BEFORE Tightening the Clamp. Tighten the Clamps securely.

4. Cut a piece of Fuel Line (5) 18 1/-2 " (47 cm) to be attached to the FORWARD Carburetor. Cut another piece 17" (43.18 cm) to be attached to the AFT Carburetor.

5. Route the FORWARD Fuel Line AFT and OUTBOARD and BETWEEN the Carburetors. Route the AFT Fuel Line INBOARD or BEHIND the AFT Carburetor. Attach the Fuel Line (5) with Fuel Line Clamps (4) as illustrated. Secure the Clamps. DO NOT OVER TORQUE.

6. Tie Wrap the AFT Fuel Line together with the Fuel Pump Breather Line (11) located at the TOP CENTER of the Fuel Pump using a "stand-off". Refer to page 1-17 if necessary.

Item	P/N	Qty	Description
1	00995578	2	Bing Carburetor
2	00867484	2	Rubber Socket
3	00951510	4	Hose Clamps
4	30230	4	Fuel Line Clamp
5	30220	A/R	Fuel Line, 18 1/2" (47 cm), 17" (43.18 cm)
6	59999	2	Air Filter
7		2	Air Filter Clamp (part of P/N 59999)
8	00867400		Intake Socket
9			Hose Clamp Screw
10	61080		Rotax 503 Powerplant w/ Dual Carb, Dual Ignition, Reduction Drive (as received)
11			Fuel Pump Pulse Line
12			Pulse Line



AIR FILTER SECUREMENT

IMPORTANT: Before starting the following assembly sequence cover ALL openings of the Carburetor (5). DO NOT ALLOW ANY METAL FILINGS FROM DRILLING AND DEBURRING TO GET INTO THE CARBURETOR.

1. Refer to Figures 1 and 2 and locate the Carburetor Tab (6) attached to the side of the Carburetor (5). Drill and deburr a 1/8" (3.2 mm) diameter hole thru the Carburetor Tab (6) as illustrated.

2. Refer to Figure 1. Cut a 12" (30.48 cm) piece of Safety Wire (1). Insert ONE (1) end thru the TOP side of the Air Filter (just OUTBOARD of where the Air Filter Clamp (4) will be located). Wrap the Safety Wire around ONE (1) coil of the Internal Spring (3) then route the Safety Wire back thru the Foam Air Filter. Position the Safety Wire so it is CENTERED with EQUAL amounts of Wire on each side of the Spring.

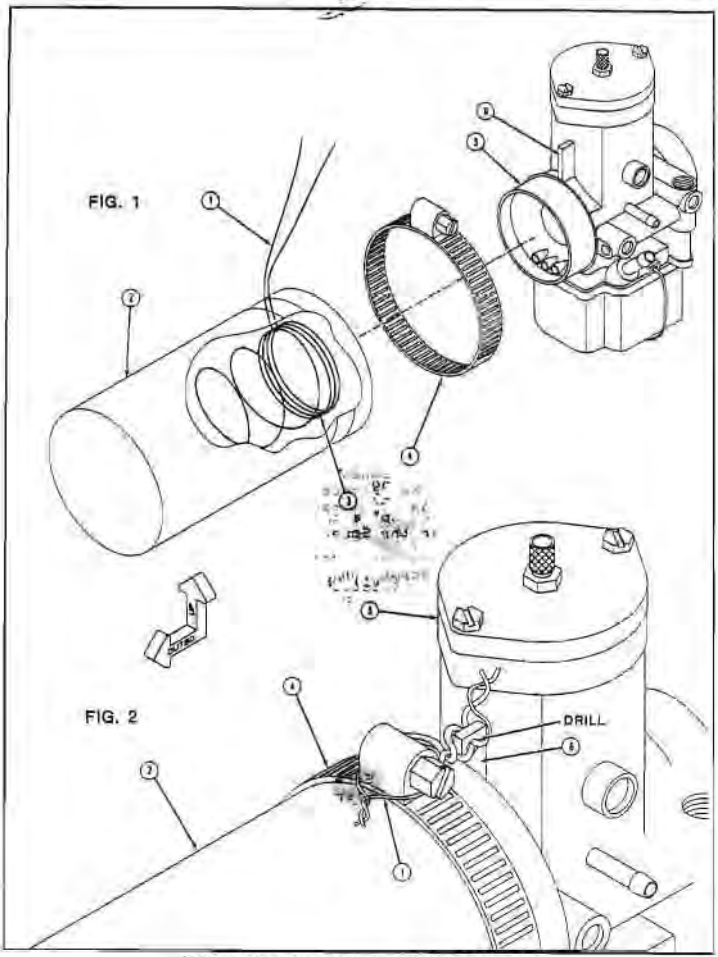
3. Refer to Figure 2. Twist the Safety Wire (1) as illustrated. Loosen the Clamp (4) if necessary and slide it over the end of the Air Filter (2) Ensure the Screw/Nut assembly is at the UPPER side. Pull the end of the Spring SLIGHTLY out of the Air Filter and ensure the are a MINIMUM of SIX (6) coils of the Spring (3) wrapped around the "throat" or inlet side of the Carburetor. Position the Clamp over the SIX (6) Springs and "butted up" against or touching the Tab (6) on the Carburetor. Tighten the Screw on the Clamp (3) as tight as possible.

4. Twist the Safety Wire (1) ONE AND A HALF to TWO (1 1/2 to 2) turns as illustrated and route it around the Screw/Nut at the UPPER side of the Clamp. Twist the Safety Wire again BEFORE inserting it thru the previously drilled hole in the Tab. Insert each end of the Safety Wire thru the hole. Secure the Safety Wire. Refer to "Safety Wire" in SECTION 1 of your Assembly Instructions if necessary.

5. Repeat Steps 1-3 on the remaining Carburetor if applicable.

Item	P/N	Qty	Description
1	20467	A/R*	.041" Safety Wire
2	60000		Air Filter
3			Internal Spring (part of P/N 60000)
4			Air Filter Clamp (part of P/N 60000)
5	00996417		Bing Model 54/36 mm Carburetor (part of P/N 61085)
6			Carburetor Tab

* As Required


FIG. 1
FIG. 2
DRILL

GEAR OIL INSTALLATION AND SPARK PLUG ATTACHMENT

1. Remove and retain the Oil Vent Plug (2) at the TOP of the Gear Box (4). Remove and retain the Lower Level Cap Stan Screw (2).

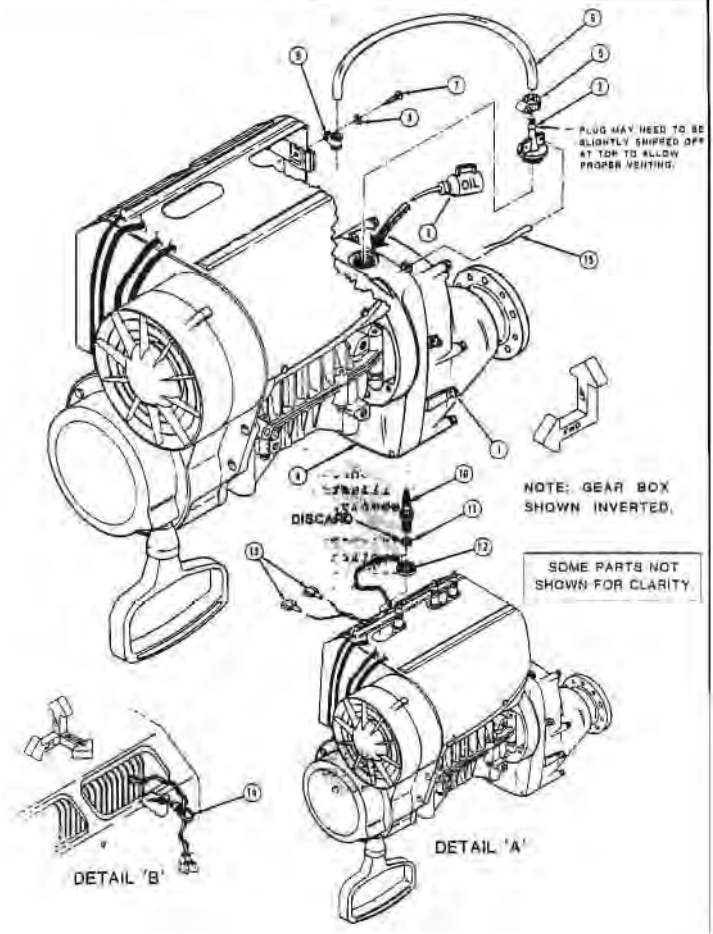
2. Fill the Gear Box (4) through the UPPER Vent Plug hole with the SPECIFIED GEAR OIL (3) up to the LOWER LEVEL Oil Plug (1). IMMEDIATELY install the LOWER Level Cap Stan Screw (1). Install and secure the Vent Plug (2) with Safety Wire (15).

3. Measure and cut a 9" (22.86 cm) piece of Fuel Line (6). Use a Fuel Line Clamp (5) to secure it to the Vent Plug (2). Attach the opposite end using Hardware (7, 8 attached to the Powerplant Shroud and 9) Tighten the Screw (7) securely.

4. Locate the FOUR (4) Spark Plugs (10) in the Powerplant Carburetor Box. Set the Gap to .020" (.05 mm). Install THREE ONLY into the Powerplant as illustrated . Torque to 240 in/lbs. Install the FOURTH (4th) and FORWARD Plug by removing the Washer (11) and installing the Temperature Sensor (12). Torque to 240 in/lbs. DO NOT ATTACH THE SPARK PLUG WIRES AT THIS TIME.

5. Thread the Temperature Sensor Wires past the Cylinder Head Cooling Fins (Under the Shroud) . Fasten the Electrical Connectors (13). Secure as illustrated with a Tie Wrap (14) and a Fuel Line "Stand-Off" Assembly.

Item	P/N	Qty	Description
1.	00841781	1	6 mm x 10 mm Cap Stan Screw (Oil Plug)
2.	00241925	1	18 mm x 1.5 mm Vent Plug
3.			API-GL5 or GL6SAE 140, 85W-140EP or SAE 90 Hypoid Gear Oil (ONE Pint required - not supplied)
4.			Gear Box (part of P/N 61080)
5.	30230	1	Fuel Line Clamp
6.	30220	A/R	Fuel Line
7.	00841490	1	4.8 mm x 16 mm Self Tapping Screw
8.	00845270	1	4.9 mm x 15.5 mm x 0.5 mm Washer
9.	20432	1	3/8" Cushioned Clamp
10.	00897050	4	NGK B8ES Spark Plug (in Carb Box)
11.			Compression Washer (part of Item 10)
12.	90129	1	Cylinder Head Temperature (CHT) Sensor (in box with Instrument P/N 90126)
13.	30075	2	Female Q.D. Connectors
14.	30480	1	7" Tie-Wrap
15.		A/R	Safety Wire, .041"
16.	61080		Rotax 503 Powerplant


PLUG MAY NEED TO BE SLIGHTLY SNIPPED OFF AT TOP TO ALLOW PROPER VENTING.
OIL
DISCARD
NOTE: GEAR BOX SHOWN INVERTED.
SOME PARTS NOT SHOWN FOR CLARITY.
DETAIL 'A'
DETAIL 'B'

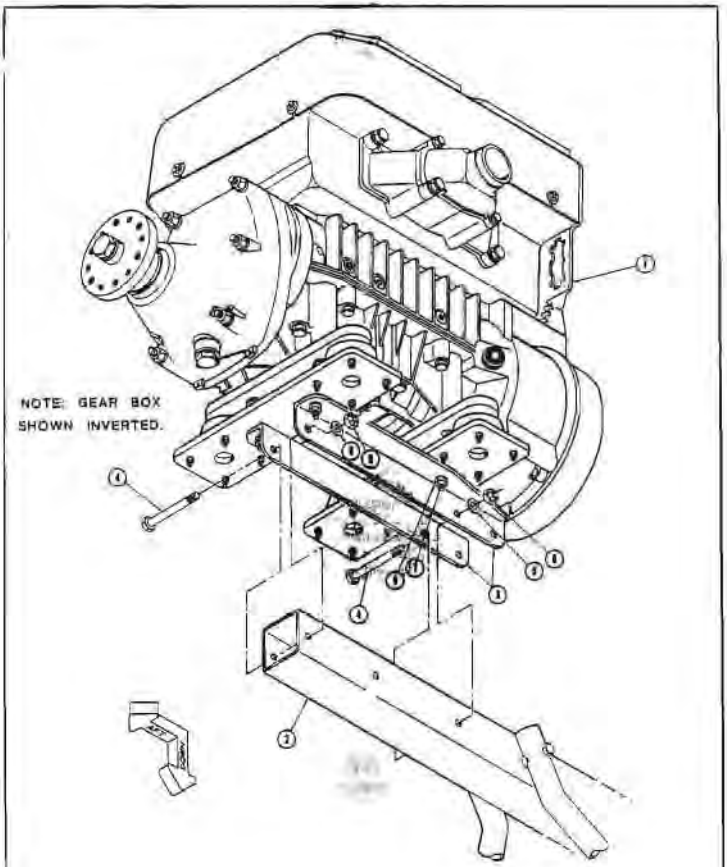
POWERPLANT TO ROOT TUBE ATTACHMENT

1. Assemble as illustrated. Tighten ALL Locknuts to proper torque.

NOTE: Bolts (7) and Locknuts (8) were previously installed only LOOSELY on Pages 4-2 and 4-3. Tighten the Locknuts (8) to proper torque at this time.

Item	P/N	Qty	Description
1	61080	1	Rotax 503 Powerplant (with Dual Carburetor, Dual Ignition and Reduction Drive) (as received)
2	45658		Root Tube
3	45836	2	Engine Angle Mount
4	10325	2	AN5-26A Bolt
5	10570	4	5/16" Washer
6	10540	2	5/16" Locknut
7	10052		AN4-7A Bolt
8	10510		1/4" Locknut



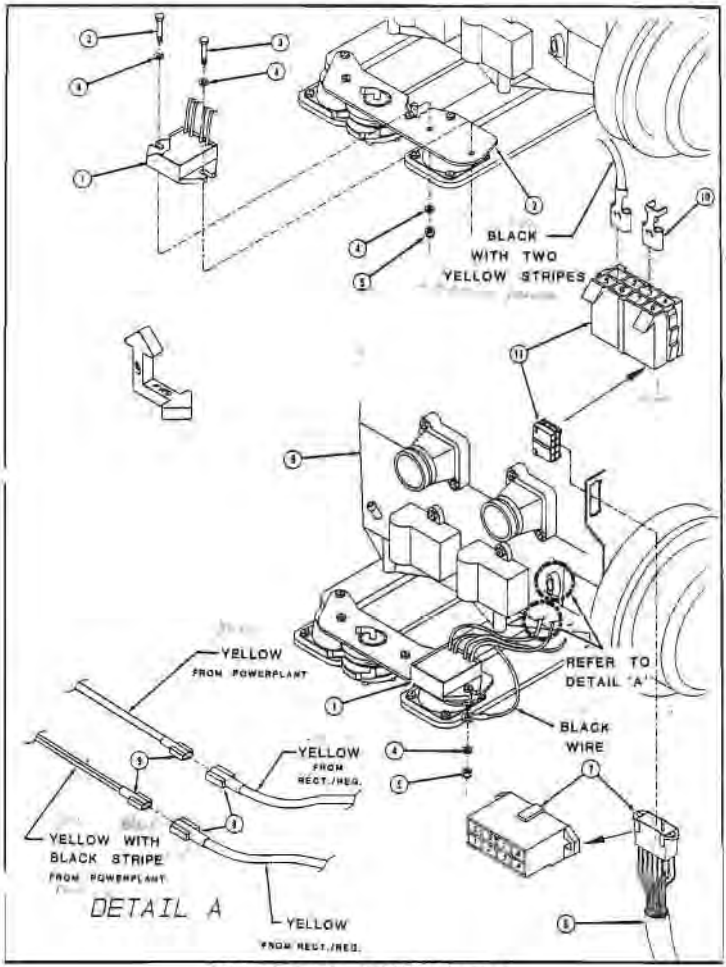

NOTE: GEAR BOX
SHOWN INVERTED.

RECTIFIER/REGULATOR ATTACHMENT AND POWERPLANT WIRING

1. Attach the Rectifier/Regulator (1) as illustrated. Tighten ALL Locknuts (5) to proper torque.
2. Refer to Detail 'A'. Identify the YELLOW and the YELLOW/BLACK Wires from the Powerplant. Cut off the EXISTING FEMALE connectors and install (by crimping) the Insulated Female Wire Connectors (6). LIGHTLY pull on the Wire Connectors and verify there is a "good crimp" and the Wire Connector are secure.
3. Install (by crimping) the Insulated Male Wire Connectors (5) on the YELLOW Wires from the Rectifier/Regulator (7).
4. Identify the FEMALE Connector Housing (1). CAREFULLY determine which side is the TOP by comparing it to the illustration. Insert the Wires from the Powerplant direction. Wires without connectors (12) install as required.
1 - BLACK with TWO (2) YELLOW Stripes (1 of 2 from Powerplant)
2 - RED from Regulator/Rectifier
3 - BLACK (from the Temperature Sensor)
4 - BLANK (leave empty)
5 - BLACK with TWO YELLOW Stripes (1 of 2 from the Powerplant)
6 - BROWN (from the Powerplant)
7 - WHITE (from Temperature Sensor)
8 - GREY (from the Powerplant)

5. Identify the MALE Connector Housing (2). CAREFULLY determine which side is "as illustrated" and insert the MALE Connectors from the Wiring Harness (11) as follows
1 - BLUE (LEFT Magneto)
2 - RED (DC POSITIVE)
3 - BLACK (Temperature Gauge)
4 - ORANGE (Electric Start)
5 - YELLOW (RIGHT Magneto)
6 - BROWN (DC NEGATIVE)
7 - WHITE (Temperature Gauge)
8 - GREEN (Tachometer)
5. Connect BOTH of the Housings (1) and (2) together at the Powerplant as illustrated. Secure ALL Wiring AWAY from ANY SHARP edges, MOVING Parts or EXTREME temperatures.

Item	P/N	Qty	Description
1	00866080	1	Rectifier/Regulator
2	45858		Fuel Pump Mount Plate
3	10020	2	AN3-7A Bolt
4	10550	4	3/16" Washer
5	10500	2	3/16" Locknut
6	45631	1	Wiring Harness
7	00866010	1	Male Connector Housing
8	30080	2	Male Snap Connector
9	30070	2	Female Snap Connector
10	30075	1	Female Locking Wire Connector
11	00866025	1	Female Connector Housing


BLACK WITH TWO YELLOW STRIPES
YELLOW FROM POWERPLANT
REFER TO DETAIL "A"
BLACK WIRE
YELLOW FROM RECT./REG.
YELLOW WITH BLACK STRIPE FROM POWERPLANT
DETAIL A
YELLOW FROM RECT./REG.

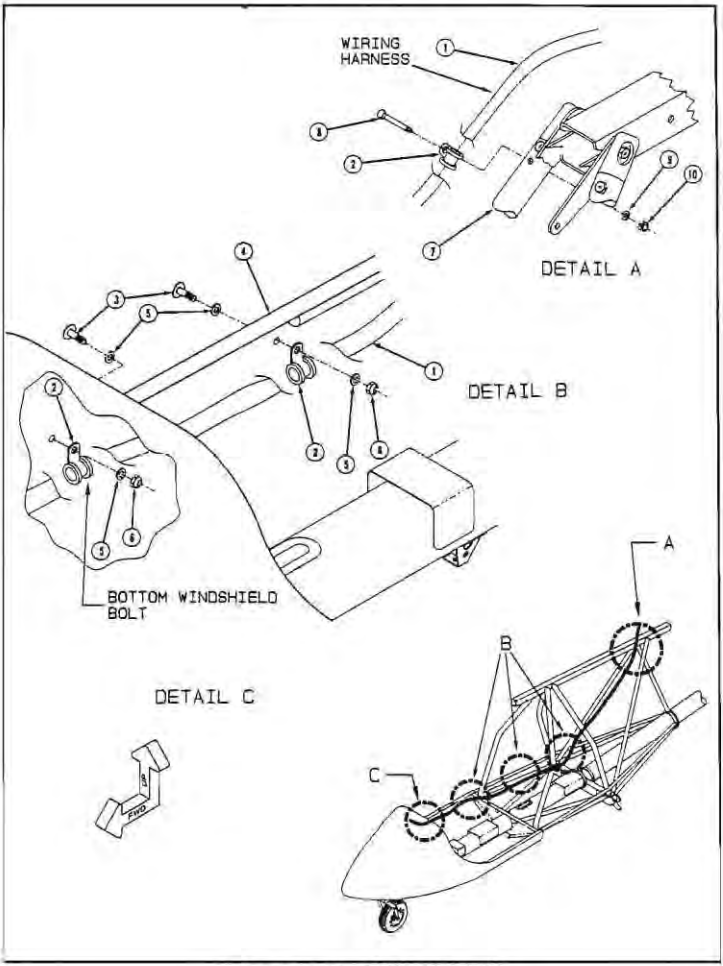
WIRING HARNESS ROUTING AND ATTACHMENT

1. Slide the Cushioned Clamps (2) onto the Wiring Harness (1). Drill a TOTAL of THREE 3/16" (4.7 mm) diameter holes in the RIGHT SIDE of the Pilot Enclosure and the Right Center Fairing as required to secure the Wiring Harness. Tighten ALL Locknuts to proper torque. Make sure the wiring harness has appropriate slack between the Engine and the cushion clamp (2) in Detail A.

NOTE 1: The Screw (3), Washer (5) and Locknut (6) in Detail 'C' have been previously attached FINGER TIGHT ONLY on Pages 2-130 and 2-131. Add the Clamp (2) with the Wiring Harness (1) and tighten to proper torque at this time.

NOTE 2: The Bolt (8) was previously installed FINGER TIGHT ONLY on Pages 2-16 and 2-17. Tighten to proper torque at this time.

Item	P/N	Qty	Description
1.	45631.		Wiring Harness
2.	20432.	5.	3/8" Cushioned Clamp
3.	11075.	4.	AN525 10R10 Washer Head Screw
4.	45578.		Pilot Enclosure
5.	10550.	6.	3/16" Washer
6.	10500.	3.	3/16" Locknut
7.	45465.		Aft Downtube
8.	10120.		AN4-15A Bolt
9.	10560.		1/4" Washer
10.	10510.		1/4" Locknut


WIRING HARNESS
DETAIL A
DETAIL B
BOTTOM WINDSHIELD BOLT
DETAIL C
A
B
C

FUEL LINE AND FUEL FILTER ROUTING AND ATTACHMENT

IMPORTANT: Note the direction of the Fuel Flow Arrow on the Fuel Filter (4). The Fuel Filter MUST be installed EXACTLY as illustrated.

1. Attach a piece of Fuel Line (3) to the Fuel Tank Cut-Off Valve (1).

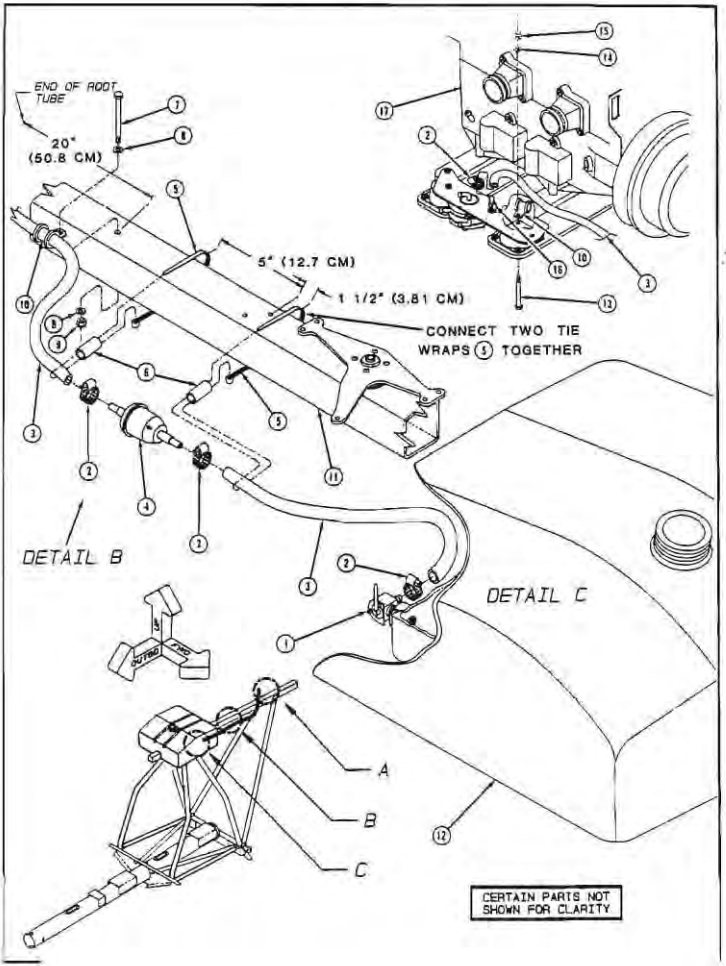
IMPORTANT: DO NOT OVER TORQUE the Fuel Line Clamps (2).

2. Add a Fuel Filter (4) and Secure with FOUR Tie Wraps (5) (attached together end to end) at TWO locations. Cut TWO Stand-offs (as required to space the Fuel Filter adequately) as illustrated.

3. Attach a Cushioned Clamp (10) to the Fuel Line and Root Tube (11) with a Bolt (7).

4. Slide a Cushioned Clamp (10) over the Fuel Line and attach to the previously attached (FINGER TIGHT ONLY) Bolt (13). Tighten Locknut (15) to proper torque.

Item	P/N	Qty	Description
1	30262		Cut-Off Valve
2	30230	4	Fuel Line Clamp
3	30220	A/R	Fuel Line
4	30210	1	Fuel Fiter
5	30480	4	7" Tie Wrap
6		2	Stand-Off (made from P/N 30220)
7	10235	1	AN4-25A Bolt
8	10560	2	1/4" Washer
9	10510	1	1/4" Locknut
10	20432	1	3/8" Cushioned Clamp
11	45668		Root Tube
12	30254	1	8.5 Gallon Fuel Tank Assembly
13	10010		AN3-5A Bolt
14	10550		3/16" Washer
15	10500		3/16" Locknut


END OF ROOT TUBE
20" (50.8 CM)
5" (12.7 CM)
1 1/2" (3.81 CM)
CONNECT TWO TIE WRAPS (5) TOGETHER
DETAIL B
DETAIL C
A
B
C
CERTAIN PARTS NOT SHOWN FOR CLARITY

THROTTLE CABLE AND CHOKE CABLE
TO SPLITTTER BRACKET ATTACHMENT

1. Remove and disassemble the Recoil Starter Housing (10) as per the Rotax Manual. Tools are located in your Rotax Tool Kit.

2. Locate the CENTER of the Recoil Starter Housing. Measure 1 1/2" (38.1 mm) OUTBOARD (to your LEFT when facing the Housing) from the VERTICAL CENTERLINE. Mark this location. Measure 1" (25.4 mm) ABOVE and BELOW the HORIZONTAL CENTERLINE. Mark these locations. These hole locations should be 2" (50.8 mm) apart (CENTER to CENTER).

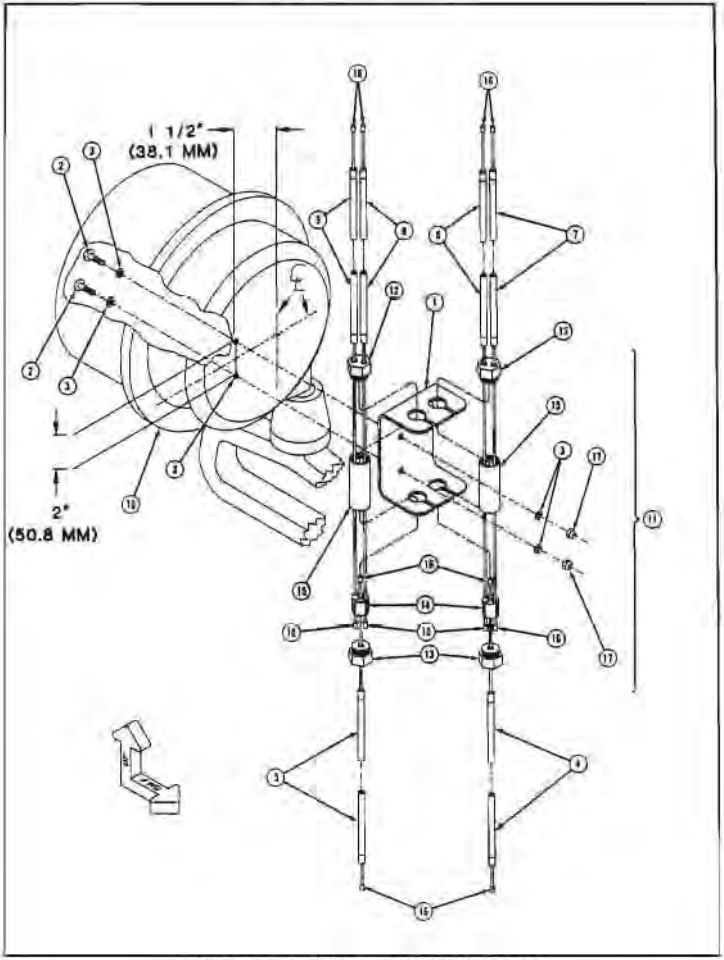
3. Position the Splitter Bracket (1) VERTICALLY against the Starter Housing (10) with the EXISTING holes in the Splitter Bracket CENTERED OVER your marks as illustrated.

NOTE: Ensure the Splitter Bracket (1) is orientated with the edge of the Bracket CLOSEST to the attachment holes positioned to your LEFT.

4. Drill and deburr TWO (2) 3/16" (4.8 mm) diameter holes into the Starter Housing (10) using the EXISTING holes in the Splitter Bracket (1) as a guide or template. Attach with Hardware (2, 16 and 17). Tighten to proper torque.

5. Connect the Throttle and Choke Cables (4) thru (9) as illustrated. Ensure ALL Cable Ferrules (16) seat completely or "all the way" down into the Cable Couplings (14).

Item	P/N	Qty	Description
1	4601	1	Splitter Bracket
2	11074	2	AN525-10R9 Washer Head Screw
3	10550	4	3/16" Washer
4	45811		Throttle Cable
5	45814		Choke Cable
6	90286	1	20" Throttle Cable Extension
7	90287	1	24" Throttle Cable Extension
8	90288	1	20" Choke Cable Extension
9	90289	1	24" Choke Cable Extension
10	00910107		Recoil Starter Housing (part of P/N 61085)
11	90285	1	1 into 2 Cable Splitter (consists of Items 12,13,14,15)
12		2	2 Hole Splitter End (part of P/N 90285)
13		2	1 Hole Splitter End (part of P/N 90285)
14		2	Cable Coupling (part of P/N 90285)
15		1	Splitter Housing (part of P/N 90285)
16			Cable Ferrule
17	10500	2	3/16" Locknut


1 1/2"
(38.1 MM)
2"
(50.8 MM)

THROTTLE CABLE TO CARBURETOR ATTACHMENT

ESSENTIAL: Ensure your hands are CLEAN and your work area is free from dust and grit BEFORE proceeding.

CAUTION: Some Parts in this assembly sequence are EXTREMELY delicate. DO NOT USE FORCE!

IMPORTANT: BEFORE proceeing, Refer to Detail 'A'. Use a Marking Pen and draw a line crossing the SIDE of the Cover Plate (1) of the Carburetor (2) and the TOP of the Housing (3). These marks will be realigned at re-assembly.

1. Refer to Details 'A'and 'C'. Remove the Rubber Boot (4) and slip it onto the Throttle Cable (5) , positioned as illustrated. While holding DOWN on the Cover Plate (1) of the Carburetor (2) LOOSEN the TWO Hex Screws(6). REMOVE the Cover Plate (1) and the INTERNAL Piston Spring. (7). Compress the Spring with your thumb.

2. Note the seating position of the Jet Needle (10). Pass the END of the Throttle Cable (5) through (1),(7),(8) and the "keyhole" slot in the base of the Piston (9). Seat the Cable (5) as illustrated (See Detail B).

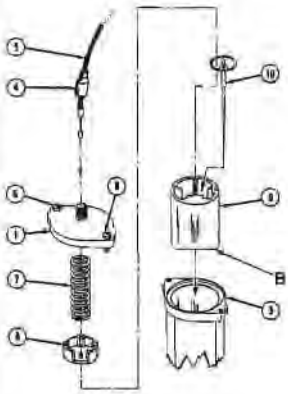
CAUTION: DO NOT BEND THE JET NEEDLE (10)!

3. Release the Spring and allow the Spring Cup (8) to re-seat on the TOP of the Jet Needle (10) and is all the way down in Carburetor Piston (9). Ensure the Jet Needle is correctly re-seated. Allow the Piston to LOCK back into the Carburetor Body (3). Ensure the Jet Needle locates correctly. DO NOT USE FORCE!

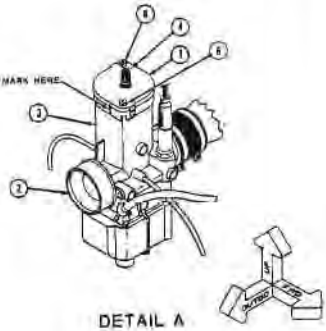
4 Ensure the pen marks align. Re-attach the Cover Plate (1). Tighten until "snug".

5. Repeat Steps 1-4 on the remaining Carburetor.

Item	P/N	Qty	Description
1	00963721		Cover Plate
2	00996415		Carburetor, Bing Model 54 x 36 mm
3			Carburetor Housing
4	00260370		Rubber Boot
5	45811		Throttle Cable
6	00241430		5 mm x 12 mm Hex Screw
7	00938655		Piston Spring
8	00827345		Plastic Spring Cup
9	00963679		Carburetor Piston
10			Jet Needle



DETAIL C



DETAIL A

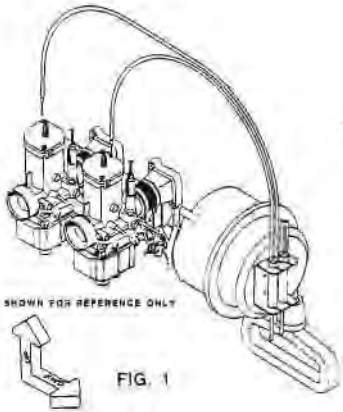
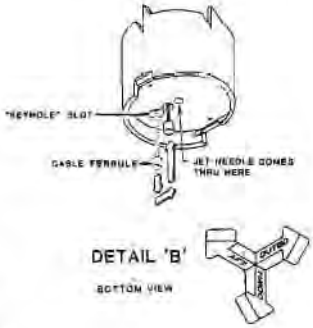


FIG. 1



DETAIL 'B'

BOTTOM VIEW

CHOKE CABLE TO CARBURETER ATTACHMENT

NOTE: The following sequence must be completed on each Carburetor. Use the LONGER (24") Choke Cable Extension on the AFT Carburetor.

1. Refer to Detail 'A'. Remove the EXISTING Rubber Cap (1), Manual Closure Screw (2), Manual Starting Piston and Spring Assembly (3) and DISCARD them.

2. Refer to Detail 'B'. Locate the NEW Choke Plunger Kit (12). Push the NEW Rubber Boot (6) onto the Choke Cable (7). Pass the Cable (7) through the Items (9,8,4,5 and 10).

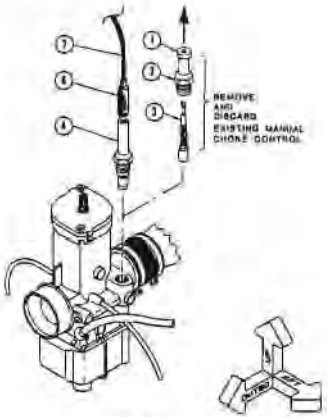
3. Thread the Jam Nut (8) APPROXIMATELY HALF-WAY onto the Cable Adjuster (9). Thread the Cable Adjuster (9) into the Remote Closure Screw (4) up to the Jam Nut (8). DO NOT Tighten. Compress the Spring (5) into the Closure Screw (4) by pushing on the Brass Sleeve (10).

4. Refer to Detail 'C'. Attach the Piston (11) to the Ferrule (13) on the END of the Cable (7).

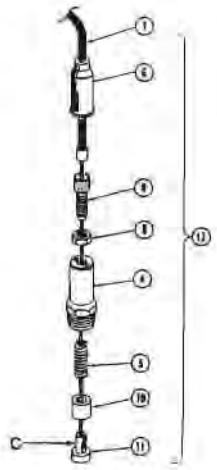
5. Screw the NEW Assembly into the SAME threads from which the OLD Choke Plunger Assembly was removed. Tighten until "snug". Tighten the Jam Nut (8) against the Closure Screw (4). Reposition the Rubber Boot (6) OVER the Cable Adjuster (9).

6. Repeat the sequence for the remaining Carburetor.

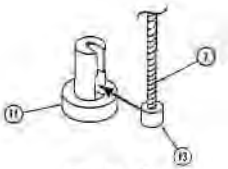
Item	P/N	Qty	Description
1	00260990		Rubber Cap (Manual Choke)
2	00261770		Closure Screw (Manual Choke)
3	00268847		Piston (Manual Choke)
4	009637S0		Closure Screw
5	00661090		Starting Piston Spring
6	00260370		Rubber Boot
7	90288		20" Choke Cable Extension
	90289		24" Choke Cable Extension
8	00942541		6 mm x .75 mm Hex Nut
9	00241440		6 mm Cable Adjustment
10	00268450		Brass Sleeve
11	00963740		Remote Staring Piston
12	60216		Remote Plunger Kit
13			Cable Ferrule



DETAIL 'A'



DETAIL 'B'



DETAIL 'C'

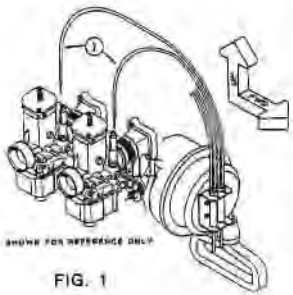


FIG. 1

THROTTLE CABLE AND CHOKE CABLE "STAND-OFF" ASSEMBLY ATTACHMENT

1. Cut THREE Stand-offs and attach as illustrated. Refer to SECTION 1, page 1-17, "Stand-Off" Assembly, if necessary.

Item	P/N	Qty	Description
1	30220	3	Fuel Line "Stand-Off"
2	30480	1	7" Tie Wrap
3	90286		20" Throttle Cable Extension
4	90287		24" Throttle Cable Extension
5	90288		20" Choke Cable Extension
6	90289		24" Choke Cable Extension

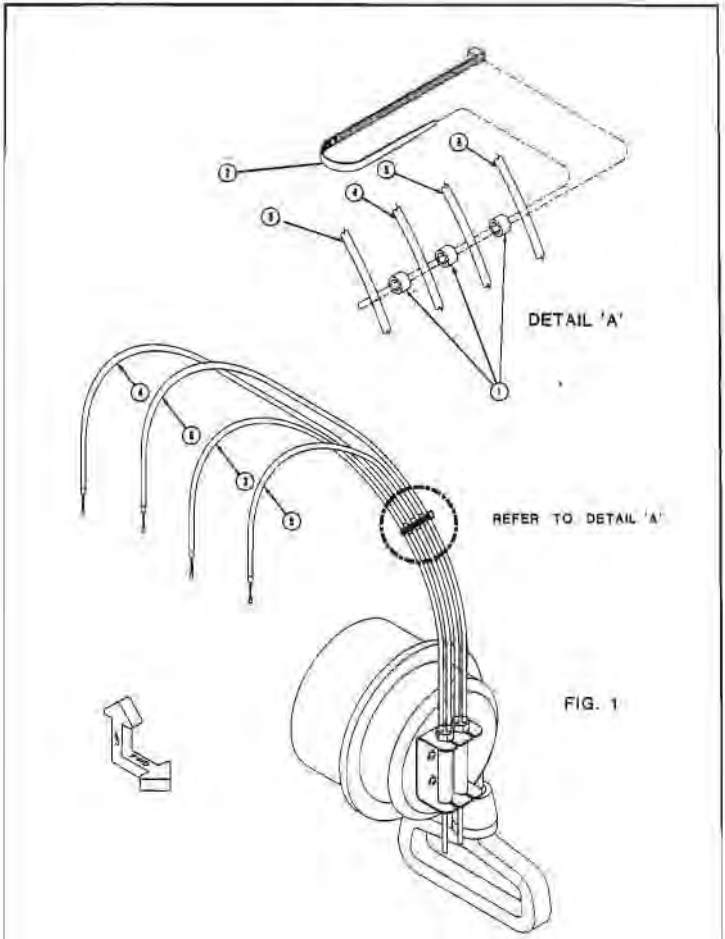


FIG. 1

THROTTLE AND CHOKE CABLE TO THROTTLE LEVER ATTACHMENT

NOTE: ROUTE THROTTLE CABLE AND CHOKE FROM ENGINE ALONG THE WIRING HARNESS (Refer to Figure 3) TO THE TROTTLE MOUNT PLATE AND ATTACH TO THE WIRING HARNESS WITH TIE-WRAPS AS PRESCRIBED IN SECTION 1, Page 1-17.

1. Refer to Figure 1. Attach the Throttle Cable (2) to the Throttle Mount Plate (7) as illustrated.

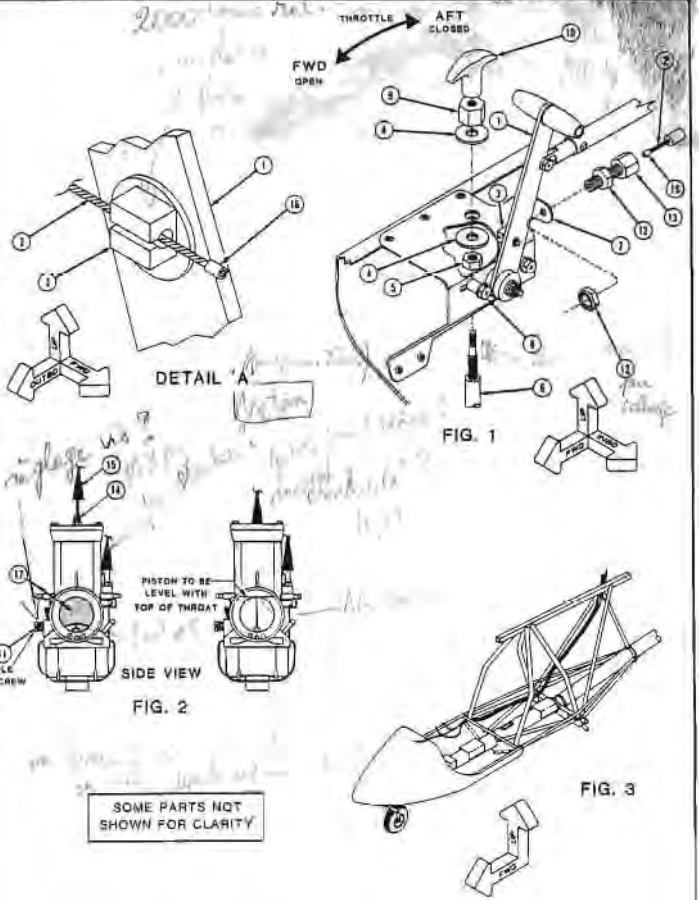
2. Refer to Detail 'A'. Slide the end of the Throttle Cable (2) into the Cable Swivel (3). Ensure the Cable Ferrule (16) is properly "seated".

3. Refer to Figures 1 and 2. Rotate the Throttle Lever FORWARD. Adjust the Jam Nuts (12) on the Conduit Thread Adjuster (13) and/or the Adjuster (14) on the TOP of the Carburetor so that the BOTTOM of the Carburetor Piston (17) is LEVEL with the TOP of the Carburetor Throat at FULL Throttle. When adjustment is complete tighten the Locknut (not illustrated) attached to the "FULL Throttle Stop" Bolt (18).

4. Refer to Figures 1 and 2. When the Throttle Lever is rotated into the AFT or to the "CLOSED" position you should hear a "click" as the Piston (17) comes into contact with the BOTTOM of the Carburetor Body. Adjust the Idle Screw (11) as required ,if necessary to allow the Piston to be positioned properly.

5. Insert the Choke Cable (6) through the Throttle Mount Plate (7) and attach the Hardware (4,5,8,9 and 10) as illustrated.

Item	P/N	Qty	Description
1	90215		Throttle Lever
2	45811		Throttle Cable
3	90250		Cable Swivel
4		2	Washer (part of P/N 45814)
5		1	Jam Nut (part of P/N 45814)
6	45814	1	Choke Cable
7	45474		Throttle Mount Plate
8	10064		AN4-11A Bolt (Throttle Stop)
9		1	Choke Cable Nut (part of P/N 45814)
10		1	Choke Cable Knob (part of P/N 45814)
11			Idle Screw
12		2	1/4" Jam Nut
13			Conduit Thread Adjuster (part of P/N 45811)
14			Carburetor Throttle Cable Adjuster
15			Rubber Boot
16			Cable Ferrule
17			Carburetor Piston


THROTTLE
AFT
CLOSED
FWD
OPEN
DETAIL 'A'
FIG. 1
PISTON TO BE LEVEL WITH TOP OF THROAT
IDLE SCREW
SIDE VIEW
FIG. 2
FIG. 3
SOME PARTS NOT SHOWN FOR CLARITY

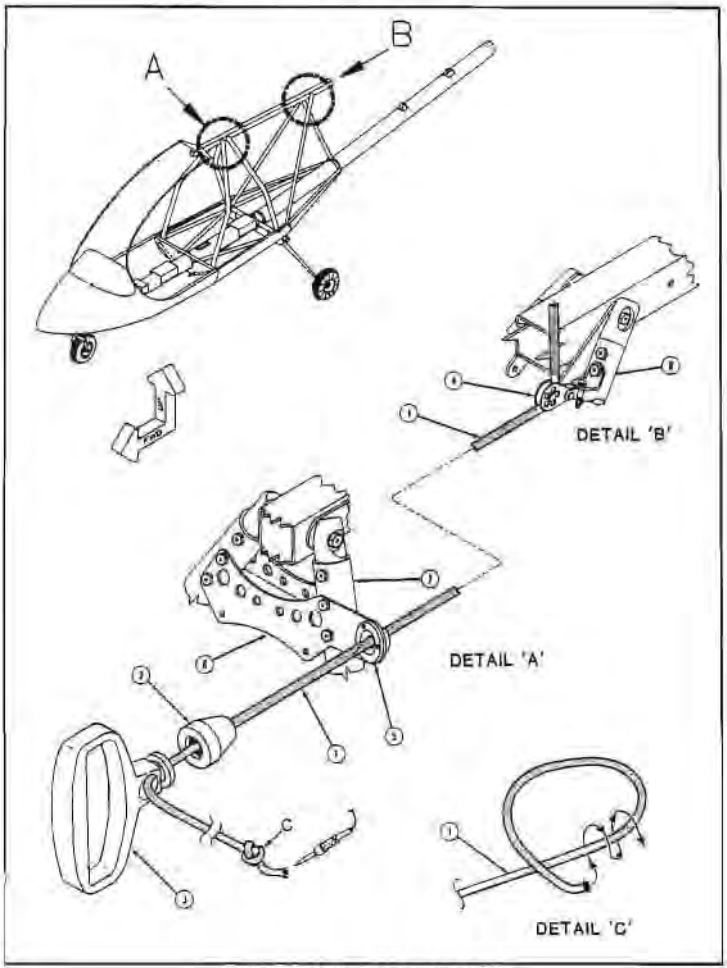
PULL STARTER ROPE ROUTING
AND PULL STARTER HANDLE ATTACHMENT

1. Slide the Boot (2) up the Starter Rope (1) exposing the knot in the end of the Rope. Pull the Knot out of the indentation in the Handle (3) and heat-cut the knot off the end of the Starter Rope. DO NOT BREATHE THE FUMES.

2. Re-route the Starter Rope (1) as illustrated. Tie the end as illustrated in Detail 'C'.

3. Heat seal the end of the Rope and "re-seat" the Knot in the Handle indentation. Pull the Boot OVER the end of the Handle and Secure the Boot.

Item	P/N	Qty	Description
1	00852799		Pull Starter Rope (part of P/N 61085)
2	00960415		Boot (part of P/N 61085)
3	00852715		Handle (part of P/N 61085)
4	20228		Swivel Eye Pulley
5	20236		1/2" Aluminum Fairlead
6	45429		Forward Seat Belt Bracket
7	45471		Left Forward Fuselage Downtube
8	45465		Aft Downtube


A
B
DETAIL 'B'
DETAIL 'A'
C
DETAIL 'C'

PROPELLER ATTACHMENT AND TRACKING ADJUSTMENT.

ESSENTIAL: Read "Propeller" in SECTION 1 BEFORE PROCEEDING. ALWAYS ASSUME THE PROP IS "HOT"! LABEL THEN DISCONNECT ALL SPARK PLUG WIRES BEFORE ROTATING THE PROPELLER.

NOTE: The AFT side of the Propeller (4) is the FLAT side of the blades.

1. Enlarge the SIX (6) EXISTING holes in Reduction Drive Hub (5) to .250". Assemble as illustrated. Tighten ALL SIX Bolts (2) until the Propeller fits "snuggly". Use up to a maximum of THREE (3) Washers on each side of the Bolt to ensure proper grip length.

2. Refer to Detail 'A'. Tighten the Bolts (2) CAREFULLY and ALTERNATELY, "A LITTLE AT A TIME". DO NOT CRUSH THE WOOD. DO NOT OVERTIGHTEN.

3. Rotate the Propeller (4) into a VERTICAL position. Measure the distance from the LOWER Propeller Blade to the Tail Boom Flange (6) where the Aft Down Strut (7) attaches. Rotate the Propeller 180 Degrees and measure the OPPOSITE Blade.

4. If the difference is within 1/8" (3.2 mm) you can "fine tune" the tracking by SLIGHTLY LOOSENING ONLY THREE (3) Bolts (2) on ONE SIDE ONLY and by SLIGHTLY TIGHTENING ONLY THREE (3) Bolts on the OPPOSITE side of the Propeller ONLY as required.

EXAMPLE: Loosen the side of the Propeller CLOSEST to the Flange attaching the Aft Downtube and TIGHTEN the Bolts (2) on the side FURTHEST from the Flange attaching the Aft Downtube. DO NOT OVER TIGHTEN AND CRUSH THE PROPELLER.

NOTE: If the measurements DIFFER by MORE THAN 1/8" (3.2 mm). Consult your QUICKSILVER Dealer for "Propeller Tracking Procedure". Re-attach ALL FOUR (4) Spark Plug Wires CORRECTLY.

Item	P/N	Qty	Description
1	10560	6*	1/4" Washer
2	10283	6	AN4-33 A Bolt
3	61062	1	Propeller Backing Plate
4	30350	1	68 x 30 Propeller
5			Reduction Drive Hub
6			Tail Boom Flange
7	45541		Tail Boom Down Strut
8	10510	6	1/4" Locknut

* NOTE: Additional Washers (1) may be required.

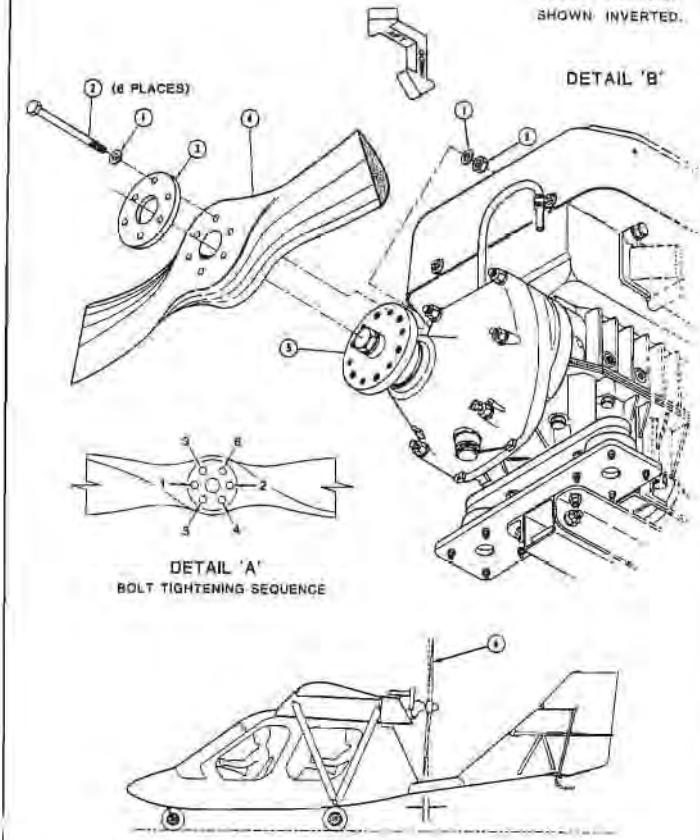
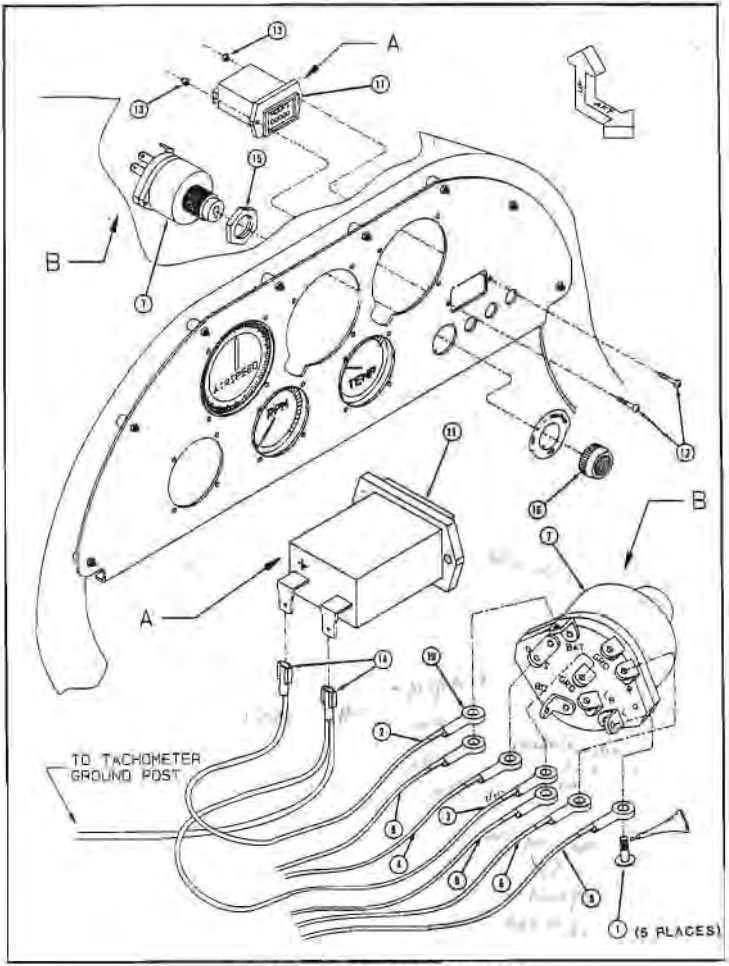

NOTE: GEAR BOX SHOWN INVERTED.
DETAIL 'B'
2 (6 PLACES)
1
3
4
5
3
6
1
2
5
4
DETAIL 'A'
BOLT TIGHTENING SEQUENCE
4

FIG. 1

A4-36
KEYED IGNITION SWITCH AND HOUR METER INSTALLATION

1. Refer to Detail 'A'. Locate the wiring for the Temperature Gauge (not illustrated). REMOVE the RED Wire (2) from its package and cut a 8" (20.32 cm) piece with Existing Molet Wire Connector on ONE (1) end. Cut a 4" (10.16 cm) piece and splice the 8" (20.32 cm) piece together with a Female Wire Connector (14) on the opposite end as the Molet Connector. Install a Ring Connector (10) to the other end of the 4" (10.16 cm) piece.
2. Refer to Detail 'B'. Install the RED wire from the Wiring Harness (8) and the RED wire Assembly (2)(Ring End) to the "BAT" terminal on the BACK of the Ignition Switch (7). Install the RED Wire Assembly (2) FEMALE Connector onto the POSITIVE (+) post on the Hour Meter. (11) The RED wire(2) with "Molet" Connector will be installed later.
3. Locate the wiring for the Temperature Gauge (not illustrated). REMOVE the BLACK Wire from its package. Cut a 4" piece. Install a Ring Connector (10) to ONE end. Remove Molet Connector from remaining BLACK wire (approx. 10") (25.4 cm). Splice the 4" and10" (3) BLACK wire with a Female Wire Connector (14). On the opposite end of the 10" BLACK wire (3) install a Female Wire Connector (14).
5. Refer to Detail B. Attach the Ring Connectors from the BROWN wire from the Wiring Harness (9) and the BLACK Wire (3)(4"piece) to the "GRD" (GROUND) post on the BACK of the Ignition Switch (7) as illustrated. Attach the BLACK wire (3) (Female Connector end) to the (-) Post of the Hobbs Meter, refer to Detail 'A'. The 10" BLACK wire will be installed in later sequence.
6. Connect the ORANGE (4) wire from the Wiring Harness to the "S" Post of the Ignition Switch (7). Connect the BLUE wire (5) from the Harness to the "L" post of the Ignition Switch (7). Connect the YELLOW Wire (6) from the Wiring Harness to the "R" post of the Ignition Switch (7).
7. Install Hobbs (11) into Instrument Panel as illustrated. Install Ignition (7) as illustrated. Adjust the Jam Nut (15) appropriately to allow Ignition Cover Nut (16) to tighten.

Item	P/N	Qty	Description
1		5	#4 Screw (part of P/N 30315)
2			RED Jumper Wire (part of P/N 90125)
3			BLACK Jumper Wire (part of P/N 90125)
4		1	ORANGE Wire (part of Wiring Harness)
5		1	BLUE Wire (part of Wiring Harness)
6		1	YELLOW Wire (part of Wiring Harness)
7	30315	1	Keyed Dual Ignition Switch
8		1	RED Wire (part of Wiring Harness)
9		1	BROWN Wire (part of Wiring Harness)
10	30073	3	Ring Connector, #4 Screw
11	90120	1	Hour Meter, (Hobbs)
12	11065	2	6-32 x 1" Phillips Hd Screw (w/ P/N 90120)
13	10067	2	Lock Nut (part of P/N 90120)
14	30070	3	Female Wire Connector
15		1	Jam Nut (part of P/N 30315)
16		1	Cover Nut (part of P/N 30315)


A
B
TO TACHOMETER GROUND POST
(5 PLACES)

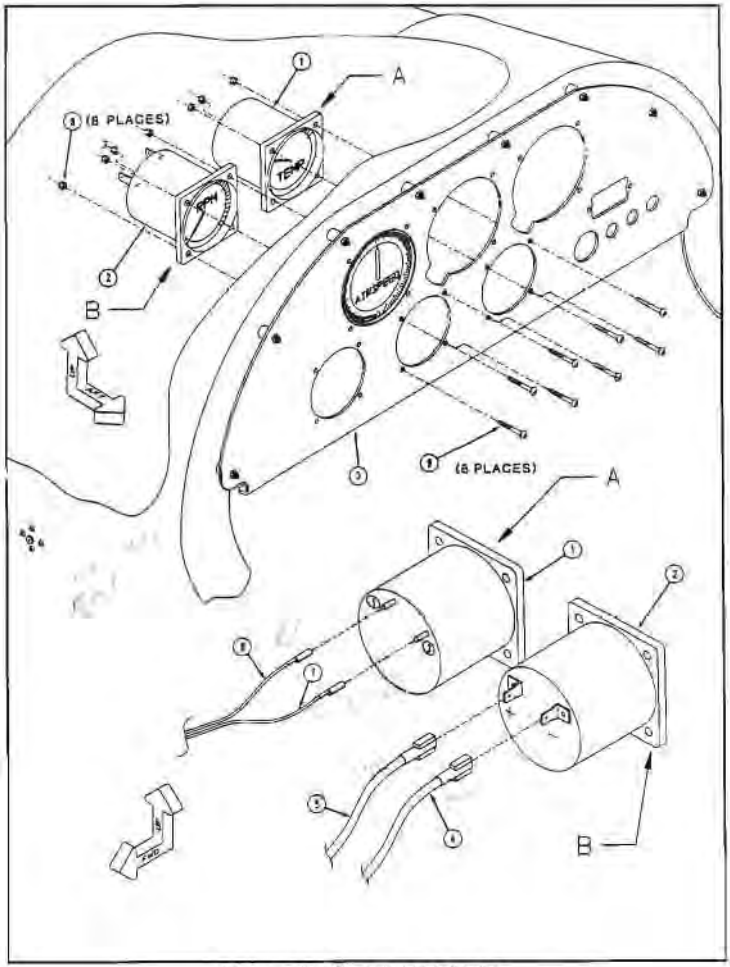
TACHOMETER AND CYLINDER HEAD TEMPERATURE GUAGE INSTALLATION

1. Install the RED Wire (7) from the POSIVE (+) side of the Hour Meter (not shown) to the #4 post of the Temperture Gauge (1). Connect the BLACK Wire (8) form the Wiring Harness to the #5 post of the Temperture Gauge. Connect the WHITE Wire (6) from the Wiring Harness to the #2 post on the Temperture Guage.

2. Connect the GREEN Wire (5) to the POSITVE (+) side of Tachometer (2). Connect the BLACK Wire (4) from the Hour Meter (not shown) to the NEGATIVE (-) post on the Tachometer.

3. Install the Instruments (1) and (2) using Hardware (9) and (10). Secure the Hardware properly.

Item	P/N	Qty	Description
1	90126	1	Cylinder Head Temperature (CHT) Guage
2	90128	1	Tachometer
3	45574		Instrument Panel
4			Tachometer Negative Wire (BLACK)
5			Tachometer Positive Wire (GREEN)
6			Temperature Guage Wire (WHITE)
7			Temperature Guage Wire (RED)
8	11057	8	6-32 Locknut (with Instruments (1) and (2)).
9	11065	8	6-32 x 1" Phillips Head Screw (with Instruments (1) and (2)).

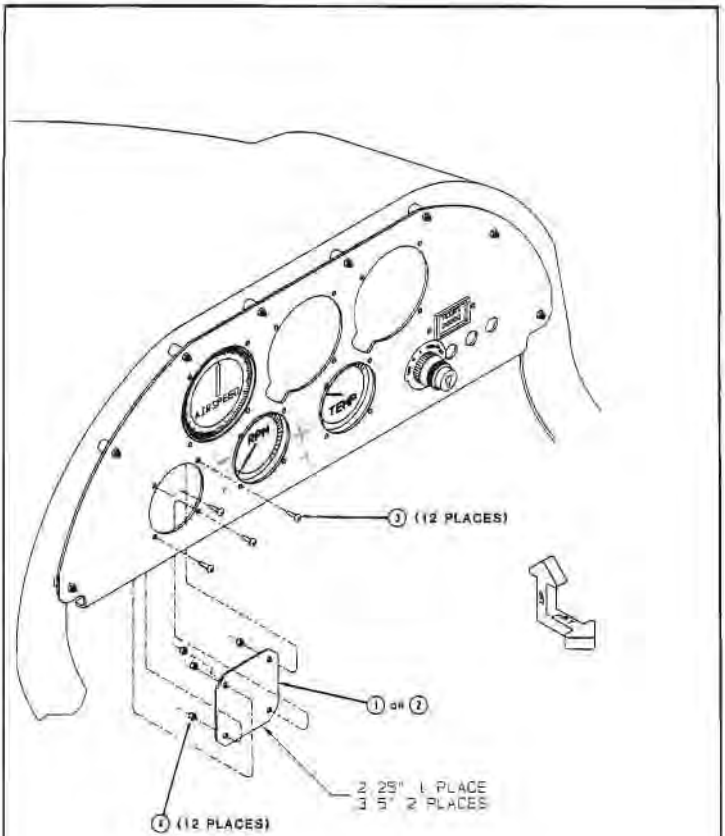

A
(6 PLACES)
B
(6 PLACES)
A
B

INSTRUMENT PANEL COVER PLATE ATTACHMENT

1. Attach ONE Cover Plate (1) to the Instrument Panel (5) as illustrated. Tighten ALL Locknuts.

2. Attach TWO Cover Plates (2) to the remaining TWO Instrument cut-out holes in the Panel as illustrated.

Item	P/N	Qty	Description
1	90148	1	2 1/4" Cover Plate
2	90149	2	3 1/8" Cover Plate
3	11066	12	6-32 x 1/2" (PPH) Screw (Phillips Pan Head) (Black)
4	11067	12	6-32 (Nylock) Locknut
5	45574		Instrument Panel


MPH
RPM
TEMP
3 (12 PLACES)
1 OR 2
2 25" 1 PLACE
3 5" 2 PLACES
4 (12 PLACES)

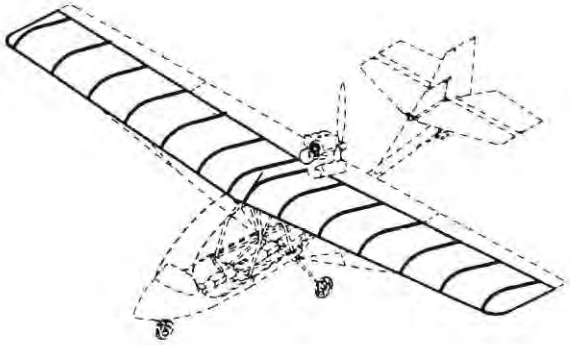
SPARK PLUG WIRE ATTACHMENT

1. Attach ALL FOUR 14I Spark Plug Wires to their repective Spark Pluge.

EXAMPLE: The LONGEST Plug Wire attaches to the AFT Spark Plug. The SHORTEST Plug Wire attaches to the FORWARD Spark Plug.

NOTE: Refer to your Powerplant (RotaX 503) Operators Manual for proper attachment of ALL FOUR Spark Plug Wires to the appropriate Spark Pluge if necessary.

SECTION 5 - WINGS



SECTION 5

WINGS

WING JIG ASSEMBLY.....5-2

WING SPAR ASSEMBLY.....5-4

OUTBOARD COMPRESSION STRUT ASSEMBLY.....5-6

AILERON BELLCRANK ASSEMBLY AND ATTACHMENT.....5-8

INBOARD COMPRESSION STRUT ASSEMBLY AND ATTACHMENT.....5-10

DIAGONAL STRUT ATTACHMENT.....5-12

RIGHT WING ORIENTATION.....5-14

LEFT WING (GENERAL CONSTRUCTION).....5-16

WING SPAR INSERTION INTO WING COVER.....5-18

WING COVER ATTACHMENT.....5-20

COMPRESSION STRUT AND
DIAGONAL STRUT INSERTION/RIB POCKET CUT-OUT LOCATIONS.....5-22

RIB INSERTION.....5-24

FORKBOLT ATTACHMENT/
AILERON AND FLAP HINGE POINT LOCATIONS.....5-26

INBOARD AND OUTBOARD COMPRESSION STRUT ATTACHMENT.....5-28

LIFT STRUT FITTING ATTACHMENT TO WING SPARS.....5-30

LEADING EDGE LIFT STRUT ASSEMBLY.....5-32

TRAILING EDGE LIFT STRUT ASSEMBLY.....5-34

JURY STRUT ASSEMBLY.....5-36

TEMPLATE # W-1 RIB INSERT SLOT TEMPLATE.....5-39

TEMPLATE # W-2 AILERON PUSHROD CUT-OUT.....5-41

TEMPLATE # W-3 STRUT FITTING CUT-OUT (LEADING EDGE).....5-43

TEMPLATE # W-4 STRUT FITTING CUT-OUT (TRAILING EDGE).....4-45

WING JIG ASSEMBLY

1. Assemble as illustrated. The distance between the Channels MUST BE EXACTLY the SAME as they would be on the Root Tube.

NOTE: This Jig is designed to ease Wing construction. The main objective is to locate the Channels (1) should be EXACTLY 4' 1 5/16" (125.25 cm) apart CENTER to CENTER and APPROXIMATELY 3' 0" (91.44 cm) off the floor. If you have a carpenters saw-horse attach the crossbeam which simulates the Root Tube to it. The Jig then becomes unneccessary. Maybe your workbench is high enough and wide enough to construct a Wing ? As long as you can adequately tighten the Wing Covers it should work. You can even suspend the crossbeam from the ceiling. Otherwise construct the Jig as illustrated

We have given American sizes for lumber required with EXACT metric equivalents. Materials will vary in size from country to country. Adapt our sizes to suit.

In the following sequence we assume your work area is the about the SAME size as the AVERAGE garage: 25'0" x 15'0" x 8'0" (7.62 m x 4.57 m x 2.43 m) - in which you can build ONE Wing at a time. If you have the space it is easier to build BOTH Wings at the SAME time. The Full Wing Span on the Jig EXCEEDS 30 Feet (9.14 m). Detail 'C' illustrates the cross beam set up for the FULL span.

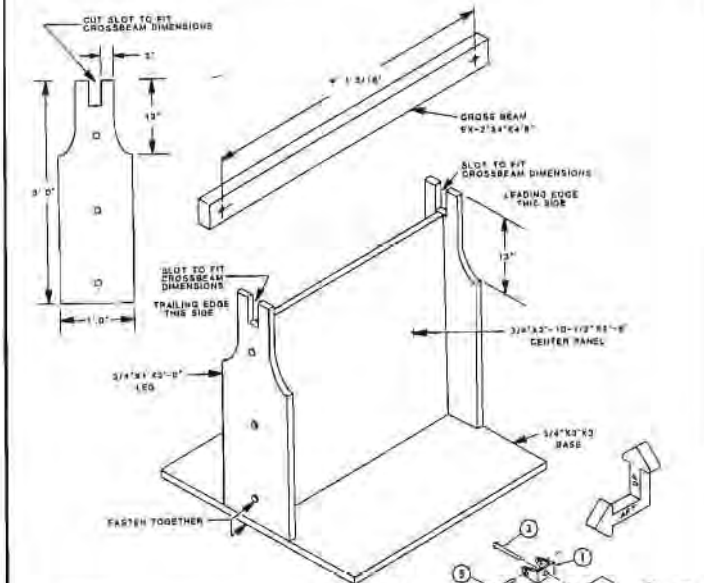
The Channels (1) and Hardware (3,4,5, and 6) will be attached to the REAL Root Tube in a later sequence.

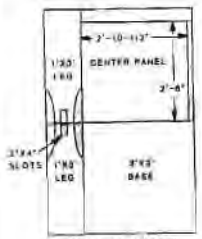
FORMULA: To convert inches (") to centimeters (cm): Multiply by 2.54. There are 12 inches (") in ONE foot (').

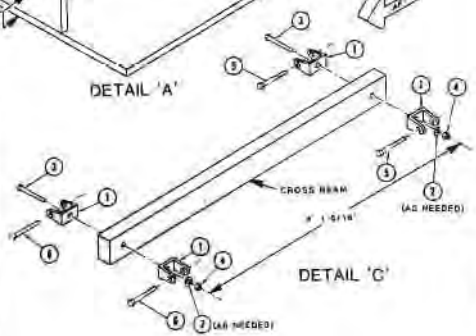
Crossbeam: 2" x 4" x 4'6" (5.08 cm x 10.16 cm x 137.16 cm)
Support: Plywood or Particle Board. Cut as per Detail "B". 3/4" x 4'0" x 6'0" (1.9 cm x121.9 cm x 182.8 cm)

Plus: Wood Glue and APPROXIMATELY 20 Wood Screws.

Item	P/N	Qty	Description
1	20050	4	S-1.75 Channel
2	10560	2	1/4" Washer
3	10250	2	AN4-27A Bolt
4	10521	2	1/4" Castle Nut
5	10260	2	AN4-27 Bolt (Leading Edge)
6	10205	2	AN4-23 Bolt (Trailing Edge)


CUT SLOT TO FIT CROSSBEAM DIMENSIONS
3"
13"
3'-0"
1'-0"
4' 1-3/16"
CROSS BEAM
SLOT TO FIT CROSSBEAM DIMENSIONS
LEADING EDGE THIS SIDE
13"
SLOT TO FIT CROSSBEAM DIMENSIONS
TRAILING EDGE THIS SIDE
CENTER PANEL
LEG
BASE
FASTEN TOGETHER
DETAIL 'A'


2'-10-1/2"
CENTER PANEL
1/32" LEG
2'-6"
3"X4" SLOTS
1"X3" LEG
3"X3" BASE
3/4"X4'X6' PLYWOOD OR PARTICLE BOARD
DETAIL 'B'


CROSS BEAM
4' 1-3/16"
(AS NEEDED)
(AS NEEDED)
DETAIL 'C'

WING SPAR ASSEMBLY

1. Assemble as illustrated. Tighten Locknuts (9) to proper torque. Tighten Locknuts (17) to correct torque. DO NOT DISTORT THE TUBE.

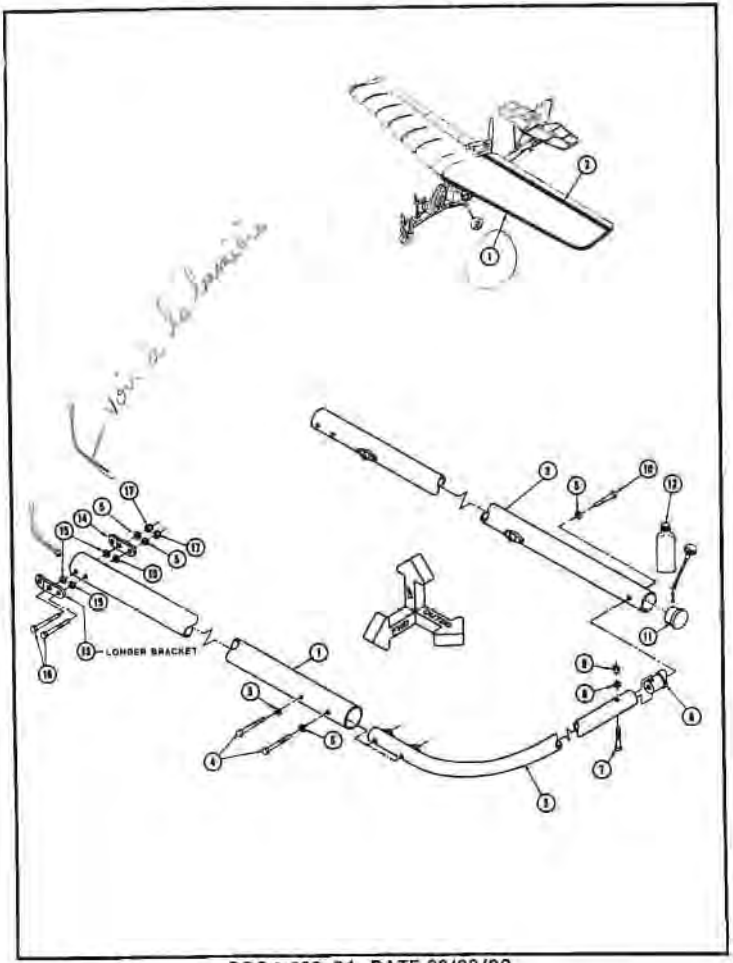
2. The Leading Edge Bracket (FORWARD) (13) and the Leading Edge Bracket (AFT) (14) are bent to slightly different angles.

IMPORTANT: Ensure they are correctly oriented.

OPTIONAL: You may attach the Bolt (7) with Hardware and at this time and heat cut a hole around the Bolt in a later sequence (refer to pages 5-20 and 5-21) or you may wait to attach the Bolt (7) with Hardware (8) and (9) until pages 5-20 and 5-21. As is may be installed AFTER the Wing Cover has been attached. Refer to pages 5-20 and 5-21.

NOTE 2: DO NOT attach the Tube Cap (11) at this time. It is shown for reference only . It is be attached AFTER the Wing Cover has beeen attached. Refer to pages 5-20 and 5-21.

Item	P/N	Qty	Description
1	45623	1	Left Leading Edge Wing Spar Assembly
	45624		Right Leading Edge Wing Spar Assembly (not illustrated)
2	45625	1	Left Trailing Edge Wing Spar Assembly
	45626		Right Trailing Edge Wing Spar Assembly
3	45666	1	Wing Tip Tube Assembly
4	10140	2	AN4-16A Bolt
5	10560	5	1/4" Washer
6	45751	1	90 Degree 1.25 to 1.75 Tube Connector
7	10040	1	AN3-15A Bolt
8	10550	1	3/16" Washer
9	10500	1	3/16" Locknut
10	10420	1	1/4" x 2 1/4" Grade 5 Bolt
11	20422	1	1 3/4" Tube Cap
12	60592		Contact Cement (Optional-not supplied)
13	45690	1	Forward Leading Edge Spar Root Bracket
14	45691	1	Aft Leading Edge Spar Root Bracket
15	20340	4	5/8" x 1/16" Nylon Washer
16	10250	2	AN4-27A Bolt
17	10510	2	1/4" Locknut
18	20200	1	1/8" x 1/4" Grip Aluminum Rivet (AAP-44)


LONGER BRACKET

OUTBOARD COMPRESSION STRUT ASSEMBLY

CAUTION: POSITIVE IDENTIFICATION OF THE LEADING EDGE TUBE CONNECTORS (2) MUST BE ESTABLISHED BEFORE PROCEEDING! THERE ARE TWO ON EACH WING. THEY ARE NOT SYMETRICAL. DAMAGE TO THE WING SPARS (10) WILL RESULT IF THE TUBE CONNECTORS (2) ARE INSTALLED INCORRECTLY.

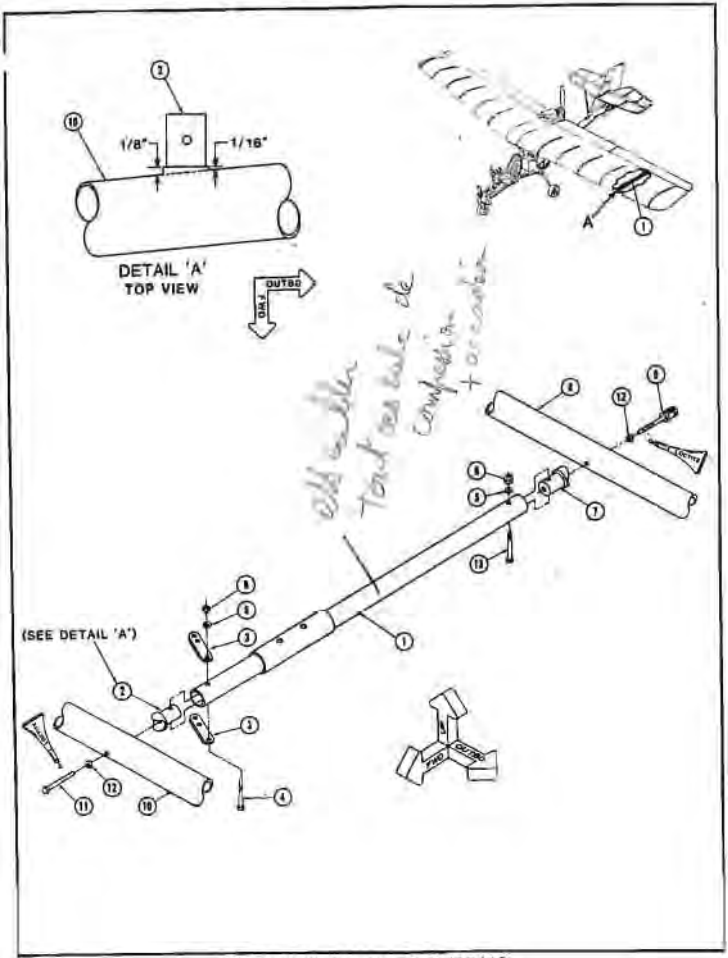
1. Assemble ONLY Hardware (4,2,3,5,6 and 7) as illustrated. Tighten Locknuts (6) to CORRECT torque. DO NOT DISTORT THE TUBE. NOTE: DO NOT INSTALL Bolt (11) and Forkbolt (9) as they will be installed in a later sequence. The illustration is to familiarize yourself with the proper attachment location ONLY!!!

IMPORTANT: DO NOT OVER TORQUE the Bolt (11) or the Forkbolt (9) when they are attached. Use CORRECT torque. NEVER OVER TORQUE. If correct torque CANNOT be obtained then back off to the NEXT VERTICAL position (as illustrated) when installing the Forkbolt (9).

2. Measure 66" (1.68m) from the outboard end of the T.E. Spar (8) and find the predrilled hole. Lightly attach the AFT end of the Outboard compression Strut (1) to the T.E. Spar (8) using a Forkbolt (9) and Washer (12). DO NOT TIGHTEN.

3. Measure 55-3/4" (1.46m) from the OUTBOARD end of the L.E. Spar (10) and find the hole. Position the Forward end of the Outboard cpompression Strut (1) in line with the hole. Push the L.E. Spar (10) up against the Strut (1). If the (87 Degree) Tube connector (2) is positioned in accordance with Detail 'A' it should be a perfect snug fit. LIGHTLY attach using the Hardware (11,12) - oriented as shown. DO NOT TIGHTEN.

Item	P/N	Qty	Description
1	45679	1	Outboard Compression Strut
2	45750	1	87 Degree Leading Edge Tube Connector
3	45692	2	Diagonal Attach Plate
4	10050	1	AN3-17A Bolt
5	10550	2	3/16" Washer
6	10500	2	3/16" Locknut
7	45751	1	90 Degree Trailing Edge Tube Connector
8	45625	1	Left Trailing Edge Wing Spar Assembly
	45626		Right T.E. Wing Spar Assy. (not illustrated)
9	10387	1	1/4" x 2 1/4" Forkbolt
10	45623	1	Left Leading Edge Wing Spar Assembly
	45624		Right L.E. Wing Spar Assy. (not illustrated)
11	10428	1	1/4" x 2 1/2" Grade 5 Bolt
12	10560	2	1/4" Washer
13	10040	1	AN3-15A Bolt
14	60591		Thread Adhesive


1/8"
1/16"
DETAIL 'A'
TOP VIEW
OUTBD
(SEE DETAIL 'A')
A
OUTBD
PORT

AILERON BELLCRANK ASSEMBLY AND ATTACHMENT

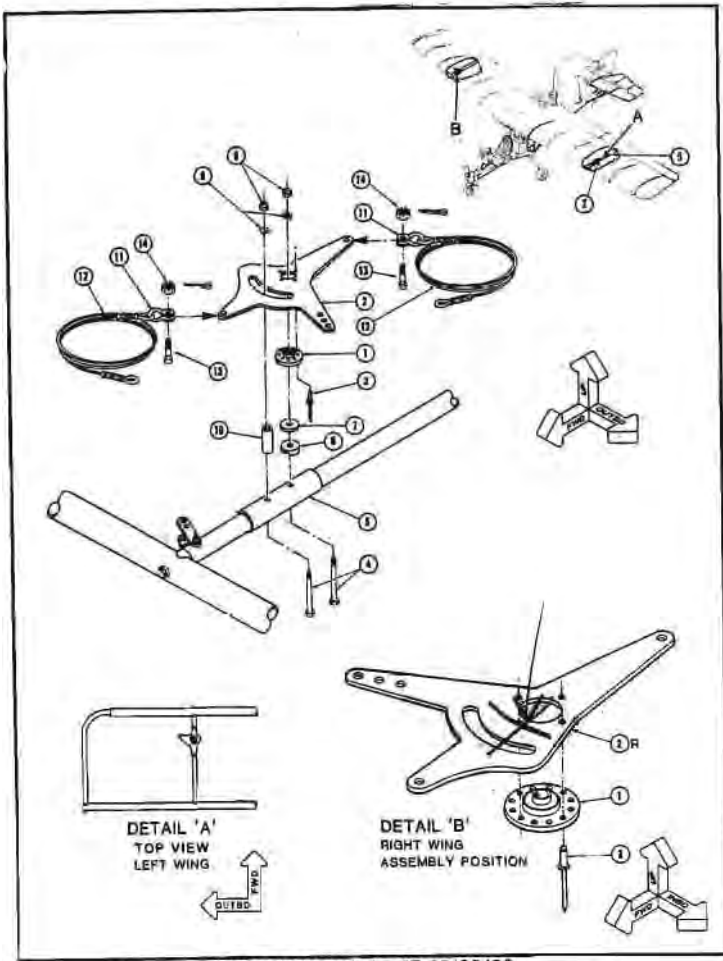
IMPORTANT: Verify the correct position of the LEFT and RIGHT Bellcrank/Bearing assembly BEFORE the Bearing (1) attachment. Attach the Bearing EXACTLY as illustrated.

1. Back-drill and deburr FOUR 1/8" (3.2 mm) diameter holes (at 90 Degrees to each other), as illustrated, using the EXISTING perimeter holes in the Bearing (1) as a guide.

2. Assemble as illustrated. Tighten ALL Locknuts to correct torque. Bend the Cotter Pins (14) correctly.

3. Coil the Aileron Cables (12) as illustrated.

Item	P/N	Qty	Description
1	10702	1	Bellcrank Bearing
2	42009	1	Aileron Bellcrank
3	20201	4	1/8" x 1/4" Grip Stainless Steel Rivet
4	10235	2	AN4-25A Bolt
5	45679		Outboard Compression Strut
6	20289	1	1 1/2" Saddle
7	10565	1	1/4" Fender Washer
8	10560	2	1/4" Washer
9	10510	2	1/4" Locknut
10	71003	1	Aileron Bushing
11	20320	2	3/16" Shackle
12	45713	2	Aileron Cable
13	10009	2	AN3-5 Bolt
14	10517	2	3/16" Castle Nut
15	10635	2	Cotter Pin


B
A
5
2
8
4
14
11
12
13
3
10
1
2
7
10
9
5
4
OUTBD
FWD
DETAIL 'A'
TOP VIEW
LEFT WING
FWD
OUTBD
2R
1
3
DETAIL 'B'
RIGHT WING
ASSEMBLY POSITION
FWD
OUTBD

INBOARD COMPRESSION STRUT ASSEMBLY AND ATTACHMENT

1. Refer to Detail 'A'. Add a (87 Degree) Leading Edge Tube Connector (2) - oriented as shown - to one end of the Inboard Compression Strut (1).

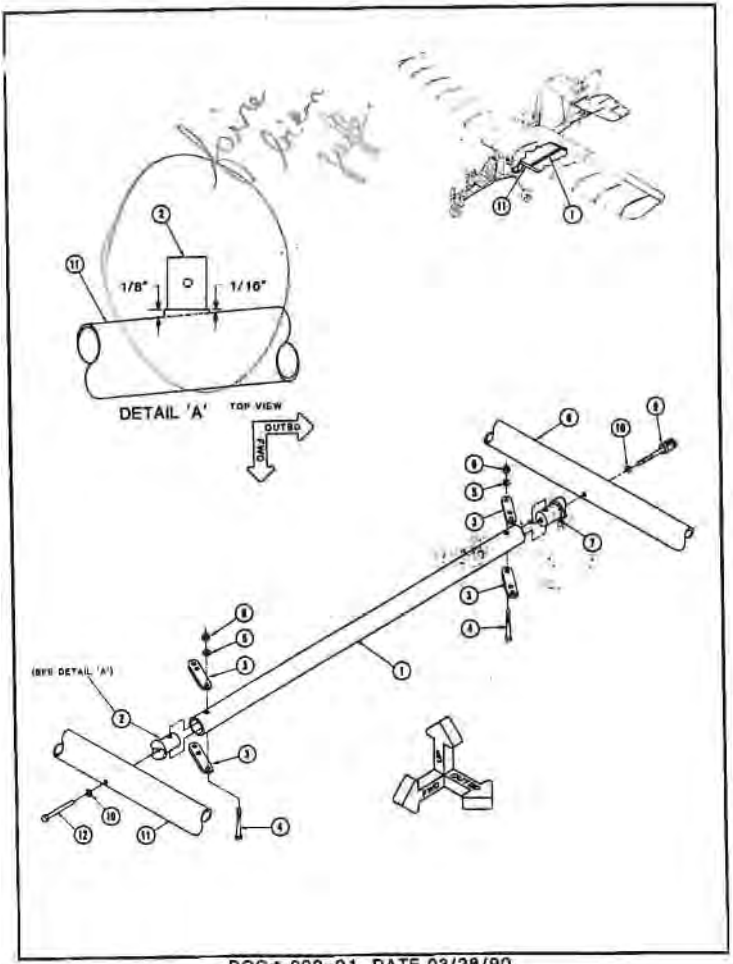
2. Add a Diagonal Attach Plate (3) - to a Bolt (4) - oriented as shown. Push the Bolt (4) thru the Strut (1) and the (87 Degree) L.E. Tube Connector (2). Add another Diagonal Attach Plate (3) - oriented as shown - and the Hardware (5,6). This is now the Forward end. DO NOT TIGHTEN.

3. Attach a (90 Degree) Tube Connector (7) and TWO more Diagonal Attach Plates (3) - oriented as shown - to the AFT end of the Strut (1) in a similar manner, using the SAME Hardware. Verify Bolt orientation.

4. Measure 49" (124.46 cm) from the inboard end of the Trailing Edge Spar (8) and locate the hole. LIGHTLY attach the (90 Degree) Tube Connector (7) to the Trailing Edge Spar (8) using a Forkbolt (9) and a Washer (10). DO NOT TIGHTEN.

5. Measure 47 1/2" (121.6 cm) from the inboard end of the L.E. Spar (11) and find the hole. Push the forward end of the Inboard Compresson Strut (1) up against the L.E. Spar (11), in line with the hole. It should be a perfect snug fit - if the (87 Degree) Tube Connector (2) is positioned according to Detail A. LIGHTLY attach the (87 Degree) Tube connector to the L.E. Spar using a Bolt (12) and a Washer (5). DO NOT TIGHTEN.

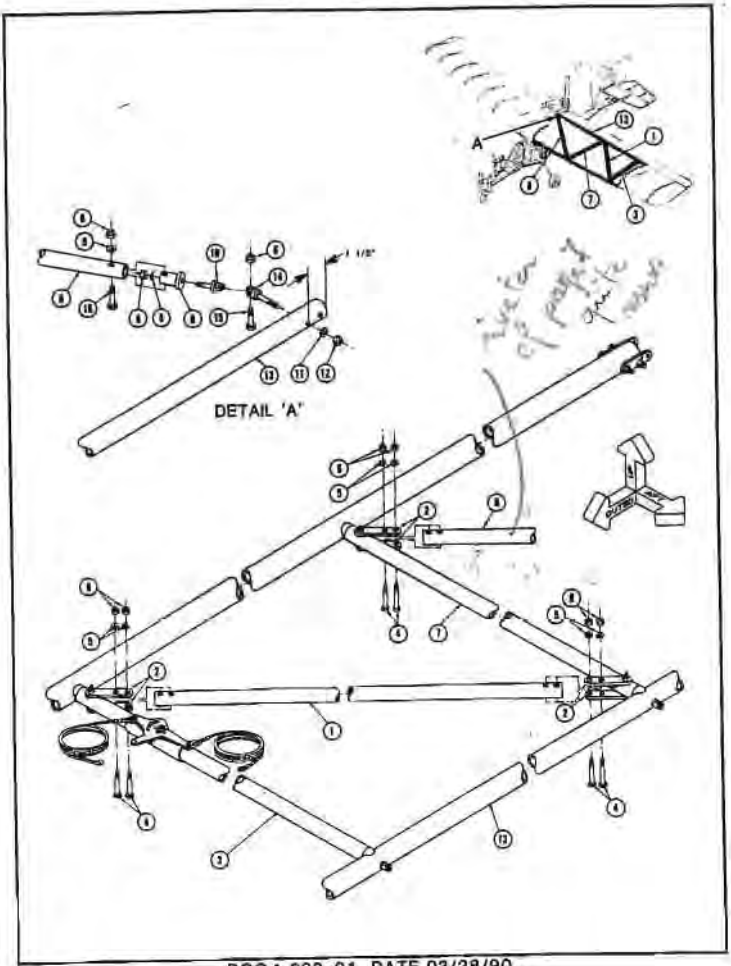
Item	P/N	Qty	Description
1	45676	1	Inboard Compression Strut
2	45750	1	87 Degree Tube Connector
3	45692	4	Diagonal Attach Plate
4	10050	2	AN3-17A Bolt
5	10550	2	3/16" Washer
6	10500	2	3/16" Locknut
7	45751	1	90 Degree Tube Connector
8	45625		Left Trailing Edge Wing Spar Assembly
	45626		Right Trailing Edge Wing Spar Assembly (not illustrated)
9	10387	1	1/4" x 2 1/4" Forkbolt
10	10560	2	1/4" Washer
11	45623		Left Leading Edge Wing Spar Assembly
	45624		Right Leading Edge Wing Spar Assembly (not illustrated)
12	10428	1	1/4" x 2 1/2" Grade 5 Bolt
13	60591		Thread Adhesive


1/8"
1/16"
DETAIL 'A'
TOP VIEW
OUTBD
FWD
(BY) DETAIL 'A'

DIAGONAL STRUT ATTACHMENT

1. Attach the Outboard Diagonal Strut (1) to the Attach Plates (2) on the FORWARD end of the O. B. Comp. Strut (3), with TWO Bolts (4) and Hardware (5) and (6) as oriented. DO NOT TIGHTEN.
2. Attach the OPPOSITE end of the O.B Diagonal Strut (1) to the Attach Plates (2) on the AFT end of the I.B. Comp. Strut (7) using Hardware (4,5 and 6) as illustrated. DO NOT TIGHTEN.
3. Connect the OPPOSITE end of the O.B. Diagonal Strut (1) to the Diagonal Attach Plates (2) on the AFT end of the Inboard Compression Strut (7). Attach using the Hardware (4,5 and 6) as illustrated. DO NOT TIGHTEN.
4. Refer to Detail 'A'. Attach an Eyebolt (10) - oriented as shown- to the Inboard Diagonal Strut Fitting (9) using Hardware (5) and (6) as illustrated. Tighten to proper torque ensuring that the " eye" of the Eyebolt (10) is PARALLEL with the cross-drilled hole in the barrel of the Fitting (9).
5. Insert the Inboard Diagonal Strut Fitting, Assemble (9) into the AFT end (ONE hole) of the Inboard Diagonal Strut (8) and attach using the Hardware (16,5, and 6) oriented as shown. Tighten to proper torque.
6. Measure 1-1/2" (3.81 cm) from the INBOARD end of the T. E. Spar (13) and find a pre-drilled hole. Attach a Forkbolt (14) with the Hardware (11) and (12) shown. Tighten until snug. DO NOT DISTORT the tube, LIGHTLY attach the Eyebolt in the Inboard Diagonal Strut Fitting (9) to the Forkbolt (14) using the Hardware (15) and (6) as illustrated. DO NOT TIGHTEN.
7. Tighten Hardware (4,5,6) until snug. DON'T CRUSH THE TUBES.
8. Tighten the Bolts (4) that attach the Diagonal Struts (1,8) to the compression Struts (3,7) to proper torque - (3 places).

Item	P/N	Qty	Description
1	45673	1	Outboard Diagonal Strut
2	45692		Diagonal Attach Plate
3	45679		Outboard Compression Strut
4	10050	6	AN3-17A Bolt
5	10550	8	3/16" Washer
6	10500	8	3/16" Locknut
7	45676		Inboard Compression Strut
8	45670		Inboard Diagonal Strut
9	45720		Inboard Diagonal Strut Fitting
10	11080	1	AN428-4 Eyebolt
11	10560	1	1/4" Washer
12	10511	1	1/4" - 20 Nylock Nut
13	45625		Left Trailing Edge Wing Spar Assembly
14	10387	1	1/4" x 2 1/4" Forkbolt
15	10010	1	AN3-5A Bolt
16	10040	1	AN3-15A Bolt
17	45623		Left Leading Edge Wing Spar Assembly
18	45624		Right L.E. Wing Spar Assy. (not illustrated)

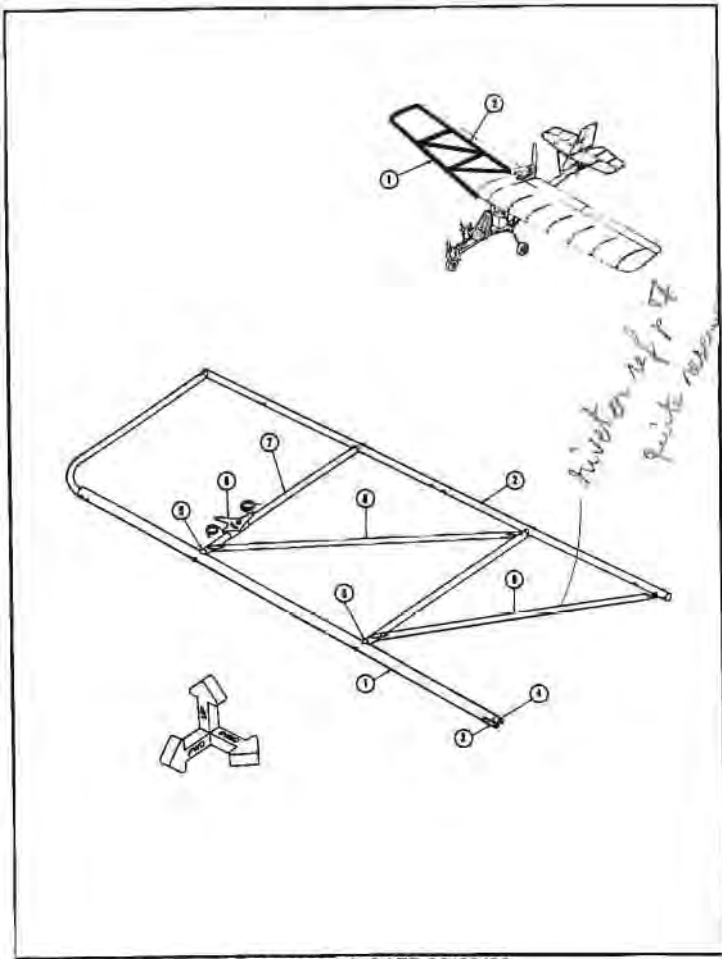

A
DETAIL 'A'

RIGHT WING ORIENTATION

NOTE: The Sub-assembly of the LEFT Wing Compression and Diagonal Struts is now complete. Tag the Sub-assembly "LEFT-Wing" at the Bellcrank and store for further work in a later sequence.

Now complete the Sub-assembly of the RIGHT Wing in the SAME manner, in "mirror image". In the illustration, notice especially the "handing" LEFT-to-RIGHT of the Leading Edge (1) and Trailing Edge (2) Spars, the Leading Edge Brackets, Forward (3) and Aft (4), the (87 Degree) Leading Edge Tube Connectors (5), the (previously sub-assembled) Bellcrank (6) on the Outboard Compression Strut (7), the Diagonal Struts (8) and (9) and the orientation of ALL Bolts and Nuts. When you've completed the RIGHT Wing Sub-assembly, Tag and store for futher work in a later sequence.

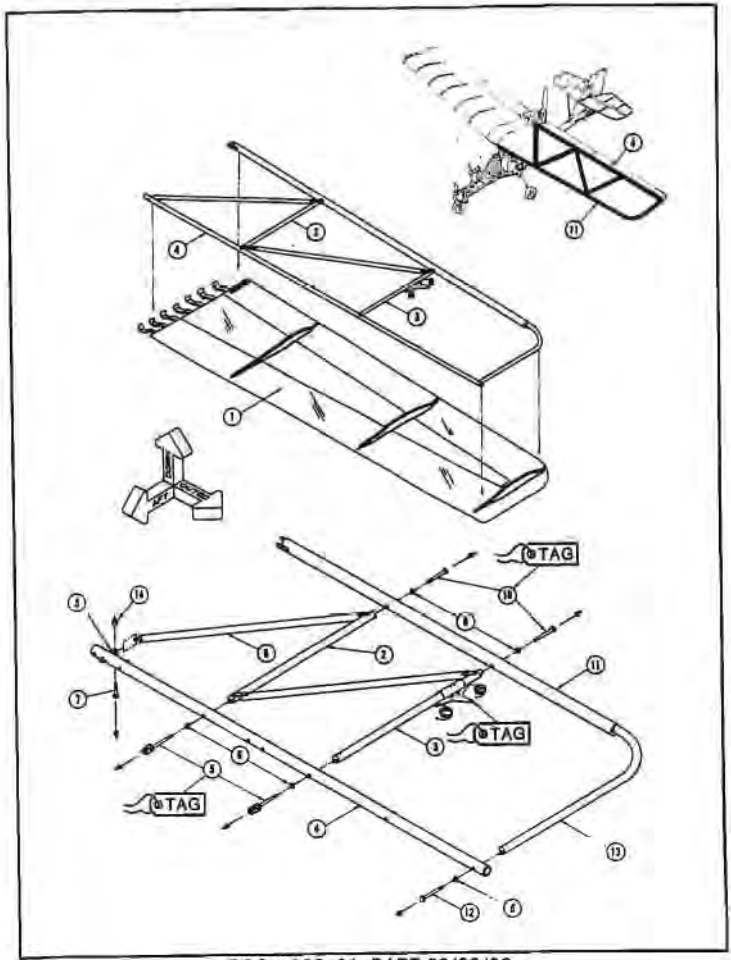
Item	P/N	Qty	Description
1.	45624		Right Leading Edge Wing Spar Assembly
2.	45626		Right Trailing Edge Wing Spar Assembly
3.	45690		Forward Leading Edge Bracket
4.	45691		Aft Leading Edge Bracket
5.	45750		87 Degree Tube Connector
6.	42009		Aileron Bellcrank
7.	45679		Outboard Compression Strut
8.	45673		Outboard Diagonal Strut
9.	45670		Inboard Diagonal Strut



LEFT WING [GENERAL CONSTRUCTION]

1. The illustration shows how the internal structure of the Wing will be attached AFTER it has been slipped into the Wing Cover. DO NOT ATTACH AT THIS TIME. Tag the Bolts (10) and Forkbolts (5) if necessary to identify them later.

Item	P/N	Qty	Description
1	45640		Left Wing Cover
2	45676		Inboard Compression Stut
3	45679		Outboard Compression Strut
4	45625		Left Trailing Edge Wing Spar Assembly
5	10387		1/4" x 2 1/4" Forkbolt
6	10560		1/4" Washer
7	10010		AN3-5A Bolt
8	60591		Thread Adhesive
9	45670		Inboard Diagonal Strut
10	10428		1/4" x 2 1/2" Grade 5 Bolt
11	45623		Left Leading Edge Wing Spar Assembly
12	10420		1/4" x 2 1/4" Grade 5 Bolt
13	45666		Wing Tip Tube Assembly


TAG
TAG
TAG

WING SPAR INSERTION INTO WING COVER

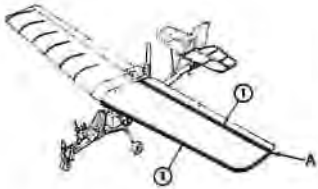
1. Refer to Detail 'A'. Slide the Trailing Edge Spar (1) - Nut Plates facing **inwards** - into the **outboard** Zipper of the Left Wing cover (2) and through **all aft** Tension sleeve Pockets (seen into the INSIDE of the Wing cover), until only the OUTER 6" (15.2 cm) of the Trailing Edge Spar (1) shows out of the Zipper.

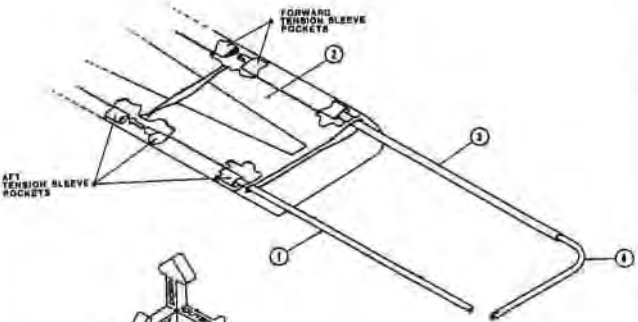
2. Slide the Leading Edge Spar (3) into the **outboard** Zipper of the Left Wing cover (2) and through **all forward** Tension Sleeve Pockets (as in Detail 'A'), being careful not to snag the Leading Edge Brackets (on the end of the Leading Edge Spar (3)) on the pockets, until only the Wing Tip Tube (4) attached to the Leading Edge Spar (3) is visible out of the Zipper.

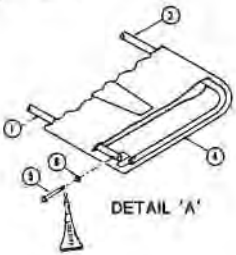
3. Refer to Detail 'A'. Maneuver the Leading Edge Spar (3) and the Trailing Edge Spar (1) until the Tube connector in the **aft** end of the Wing Tip Tube (4), aligns with its hole in the Trailing Edge Spar (1). Add a drop of Thread Adhesive (7) and reinsert the Bolt (5) and Washer (6). Be careful not to cross-thread the Bolt. Tighten until snug. DO NOT CRUSH THE TUBE.

4. Slide the Leading Edge Spar/Trailing Edge Spar/ Wing Tip sub-assembly into the Zipper and pull it back until it is fully housed in position INSIDE the Left Wing Cover (2).

Item	P/N	Qty	Description
1	45625		Left Trailing Edge Wing Spar Assembly
	45626		Right Trailing Edge Wing Spar Assembly (not illustrated)
2	45640		Left Wing Cover
	45641		Right Wing Cover (not illustrated)
3	45623		Left Leading Edge Wing Spar Assembly
	45624		Right Leading Edge Wing Spar Assembly (not illustrated)
4	45666		Wing Tip Tube Assembly
5	10420	1	1/4" x 2 1/4" Grade 5 Bolt
6	10560	1	1/4" Washer
7	60591		Thread Adhesive


1
3
A


FORWARD TENSION SLEEVE POCKETS
2
3
AFT TENSION SLEEVE POCKETS
1
4


2
1
4
5
6
DETAIL 'A'

WING COVER ATTACHMENT

1. With the help of a volunteer "from the studio audience", positon the L.E. Spar (3) and the T.E. Spar (4) each into a Channel (5) on the "Wing Jig" (2). Insert the Bolts (6) and (7) through their respective Channels and Spars to hold their positions. Weight-down the "Wing Jig" to prevent it from moving. Pad the Wing Tip to prevent damage to the Wing Cover (1).

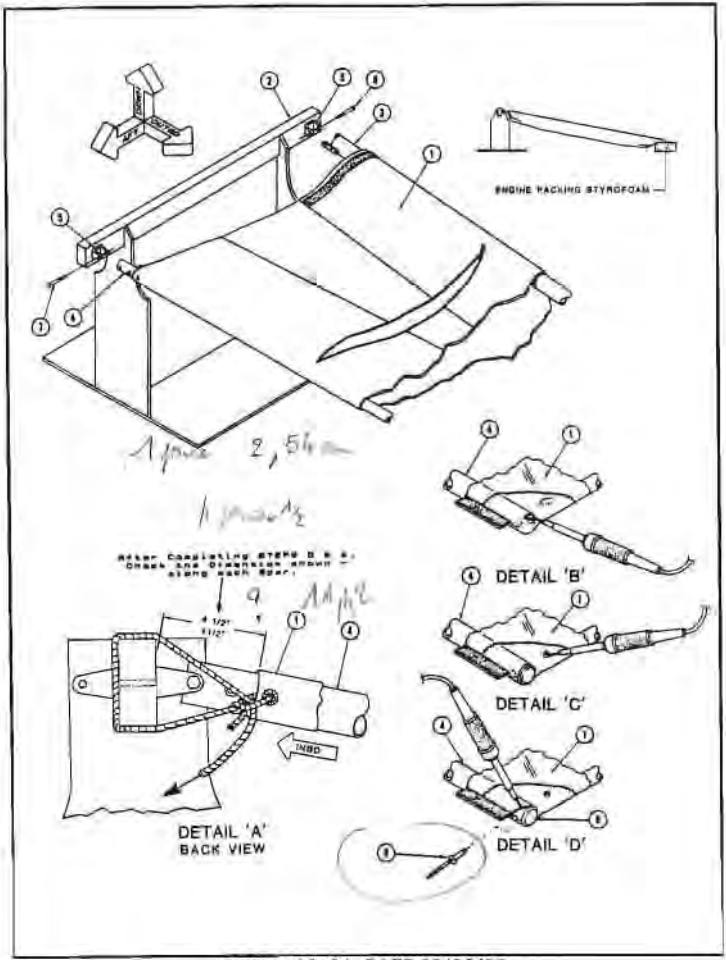
2. Refer to Detail 'A'. Pass a length of Nylon Rope thru the round, Brass Grommets sewn into the INBOARD ends (Leading Edge and Trailing Edge) of the Wing Cover (1). Pull the Wing Cover toward the Channels (5) until "snug". Hold the tension. Tie off the Leading Edge rope to the Jig. Tighten the Trailing Edge rope until "snug", DO NOT OVER TIGHTEN.

3. Refer to Detail 'B'. Using a Hot Knife, VERY CAREFULLY cut around the INSIDE diameter of the OUTBOARD end of the Trailing Edge Spar (4). The tension will begin to pull the Cover OVER the end of the Tube. Install the Tube Cap (8) with a Rivet (9). Refer to Pages 5-4 and 5-5 if necessary.

4. Locate the hole (UNDER the Wing Cover) which attaches the Tube Connector to the Wing Tip Tube. Neatly trim the Cover (1) around the T.E. Spar (4). Re-tension the Cover (1) at the L.E. and T.E. end of the "Wing Jig" until "snug". Check the Measurement shown in Detail 'A' and adjust as necessary.

IMPORTANT: Position the Wing Tip with proper dihedral and Wing Washout. The Leading Edge Spar MUST be positioned NINE inches (9") (22.86 cm) LOWER than the attachment height at the Wing Jig. The Trailing Edge Spar MUST be positioned TEN and ONE-HALF inches (10 1/2") (26.67 cm) LOWER than the attachment height at the Wing Jig. Refer to pages 7-14 and 7-15 for Wing Washout.

Item	P/N	Qty	Description
1	45640		Left Wing Cover
	45641		Right Wing Cover (not illustrated)
2			Wing Jig
3	45623		Left Leading Edge Wing Spar Assembly
	45624		Right Leading Edge Wing Spar Assembly (not illustrated)
4	45625		Left Trailing Edge Wing Spar Assembly
	45626		Right Trailing Edge Wing Spar Assembly (not illustrated)
5	20050		S-1.75 Channel
6	10260		AN4-27 Bolt
7	10205		AN3-23 Bolt
8	20422		1 5/8" x .035 Tube Cap
9	20200		1/8" W 1/4" Grip Aluminum Rivet (AAP-44)


ENGINE PACKING STYROFOAM
DETAIL 'A'
BACK VIEW
DETAIL 'B'
DETAIL 'C'
DETAIL 'D'
INBD

COMPRESSION STRUT AND
DIAGONAL STRUT INSERTION/RIB POCKET CUT-OUT LOCATIONS

IMPORTANT: Due to manufacturing tolerances, slight variations of Rib pocket positions will occur. Use the measurements shown as a guide to find the Rib Pockets in your Wing covers, then position Template W-1 on your Rib Pocket **centerlines**.

1. Position the - previously assembled - Compression Strut/Diagonal Strut Sub-assembly (1) **down-side up** and insert it - oriented as shown - INSIDE the Wing Cover (2).

2. The Outboard Compression Strut (6) will position just INSIDE the **second** Zipper INBOARD from the Wing Tip. Spread the L.E. Spar (7) and the T.E. Spar (5) apart until the Outboard Compression Strut (6) "snaps" between them. DO NOT ATTACH!!!

3. Position the Inboard Compression Strut (8) in the SAME way. DO NOT ATTACH!!!

4. Refer to Detail 'A'. LIGHTLY re-attach the Inboard Diagonal Strut (3) to the Forkbolt/Eyebolt sub-assembly (4) at the INBOARD end of the Trailing Edge Spar (5). DO NOT TIGHTEN!!!

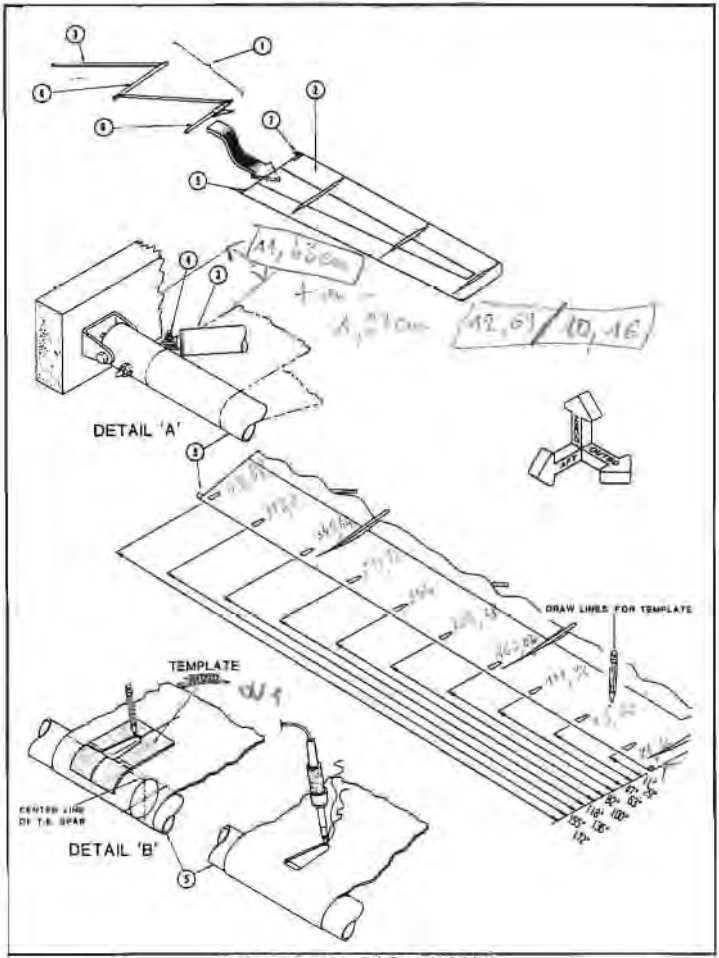
5. Measure as shown form the **outboard** tip of the Trailing Edge Spar (5) Tube Cap. Draw a pencil line on the Wing cover (2) at each point, 90 degrees to the Trailing Edge Spar (5).

6. Refer to Detail 'B'. Position Template W-1 on the pencil lines and Mark for the Rib Pocket holes, as shown. (Reminder: Slight position adustments to align with internal Rib Pockets may be necessary due to Wing cover manufacturing tolerances). Neatly cut with the Hot Knife. Use the SAME sequence, in "mirror image" for the RIGHT Wing.

METRIC CONVERSION:

Formula: Multiply inches x 2.54 to give equivalent centimeters.

Item	P/N	Qty	Description
1			Compression/Diagonal Strut Sub-assembly
2	45640		Left Wing Cover
3	45670		Inboard Diagonal Strut
4			Forkbolt/Eyebolt Sub-assembly
5	45625		Left Trailing Edge Wing Spar Assembly
6	45679		Outboard Compresson Strut
7	45623		Left Leading Edge Spar Assembly
8	45676		Inboard Compression Strut


DETAIL 'A'
DRAW LINES FOR TEMPLATE
TEMPLATE
DETAIL 'B'

RIB INSERTION

IMPORTANT: The TWO OUTBOARD UPPER WING RIBS are packaged SEPARATELY in the kit. These are reinforced with INNER Sleeves. They are to be used ONLY in the UPPER OUTBOARD Rib Pockets CLOSEST to the Wing Tips. (ONE per Wing). NOTE: They are HEAVIER than the standard Upper Rib.

CAUTION: Use of EXCESSIVE force can damage the Forward Rib Tips.

1. Refer to Detail 'A'. CAREFULLY cut the lenghts illustrated from ONE (1) OUTBOARD Upper Wing Rib (1) and NINE (9) of the CURVED Upper Wing Ribs (2). Cut EIGHT (8) of the STRAIGHT Lower Ribs (3). Tag each Rib for position if necessary. Ensure ALL cuts are ACCURATE and DEBURRED. Insert the Rib Tips (4) into the AFT end of the Ribs. Refer to Detail 'B'. LIGHTLY center-punch ("dimple") each Rib Tip (4) to prevent it from falling out.

Note the DIFFERENT orientation of the Rib Tips (4) in the UPPER and LOWER Ribs. The Pockets tend to stick together. Work the Rib GENTLY back and forth in the Pocket until it slides in easily.

2. Remove ALL Labels and residue from the Ribs with Solvent.

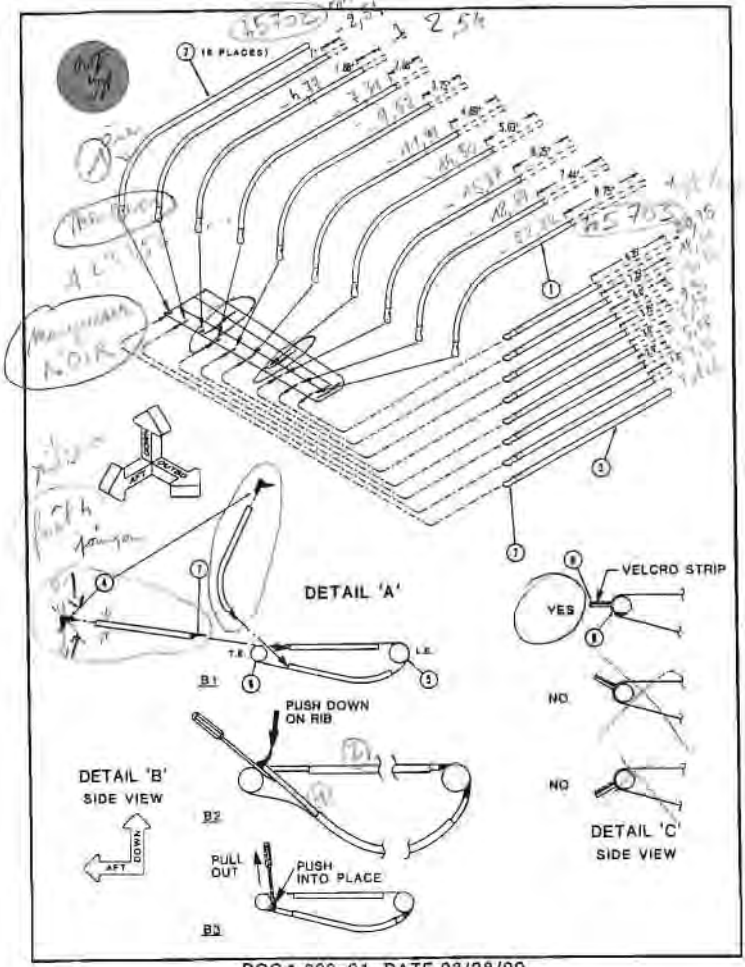
OPTIONAL: Spray Ribs with a DRY Silicone Lubricant Spray such as "Fabriglide" by Dow Corning.

3. Install the Upper Ribs (2). "Pop" them into place using a towel to protect the heel of your palm. Ensure the Forward Rib Tips (7) are positioned correctly around the Leading Edge Spar (5) and the Rib Tip has NOT curled back.

4. Use a LARGE Screwdriver ONLY if the Ribs CANNOT be inserted with the palm of your hand. Use a cloth or towel to protect your hand.

5. Ensure the Velcro Gap Seal (8) is aligned correctly.

Item	P/N	Qty	Description
1	45703	1	Upper Tip Rib
2	45702	9	Upper Rib
3	45707	8	Lower Rib
4	20262	18	Aft Rib Tip
5	45623		Leading Edge Wing Spar Assembly (Left)
6	45625		Trailing Edge Wing Spar Assembly (Left)
7			Forward Rib Tip
8			Velcro Gap Seal


(2) (8 PLACES)
(1)
(3)
(7)
DETAIL 'A'
T.E.
L.E.
B1
(4)
(5)
PUSH DOWN ON RIB
B2
DETAIL 'B'
SIDE VIEW
AFT
DOWN
PULL OUT
PUSH INTO PLACE
B3
(6)
VELCRO STRIP
YES
NO
NO
DETAIL 'C'
SIDE VIEW

FORKBOLT ATTACHMENT/
AILERON AND FLAP HINGE POINT LOCATIONS

1. Refer to Figure 1. Locate the 1/4" (6.4 mm) attachment holes in the Trailing Edge Wing Spar (1) at the dimensions illustrated.

2. Refer to Detail 'A'. Heat cut the Gap Seal and the Wing Cover as illustrated to reveal the holes.

NOTE: Trailing Edge Hole Locations (Hinge Points) as measured OUTBOARD from the INBOARD end of the Trailing Edge Wing Spar.

SAE	METRIC	Forkbolt attachment to:
4 1/2"	(11.43 cm)	Nylock Nut
48 7/8"	(124.14 cm)	Inboard Compression Strut
107 3/8"	(272.73 cm)	Nylock Nut
111 7/8"	(284.16 cm)	Outboard Compression Strut
161 7/8"	(411.16 cm)	Nylock Nut

3. Refer to Detail 'B'. Attach as illustrated. Tighten ALL Locknuts to correct torque. DO NOT DISTORT THE TUBE.

NOTE: Align ALL Forkbolts (2) VERTICALLY as illustrated AFTER tightening.

Item	P/N	Qty	Description
1	45625		Left Trailing Edge Wing Spar Assembly
	45626		Right Trailing Edge Wing Spar Assembly (not illustrated)
2	10387		1/4" X 2 1/4" Forkbolt
3	10560		1/4" Washer
4	10511		1/4" - 20 Nylock Nut
5			Gap Seal
6	45670		Inboard Diagonal Strut
7	45640		Left Wing Cover
	45641		Right Wing Cover (not illustrated)
8	45676		Inboard Compression Strut
9	45679		Outboard Compression Strut

QUICKSILVER
ENTERPRISES, INC.
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SUPPLEMENT

(DOC# 913-06)

AFT RIB TIP CHANGE

AIRCRAFT AFFECTED: GT 400 (P/N 99602-R447)
(P/N 99602-R503)
GT 500 (P/N 99702-R503)
(P/N 99702-RS82)

DOCUMENTS AFFECTED: DOC # 892-02
GT 400 Assembly Instructions
Pages 5-24 and 5-25

DOC # 902-01
GT 500 Assembly Instructions
Pages 5-24 and 5-25

The Aft Rib Tip P/N 20262 has been replaced by Aft Rib Tip P/N 20261. Aft Rib Tip P/N 20262 is currently not available.

Follow the instructions contained in this supplement to modify the Aft Rib Tips P/N 20261 appropriately for proper fit and function.

NOTE: The Packing List for your Kit has been revised to reflect this change.

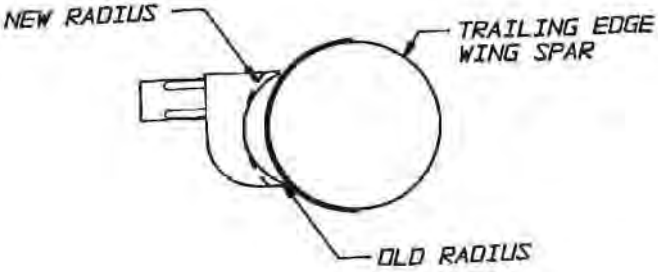
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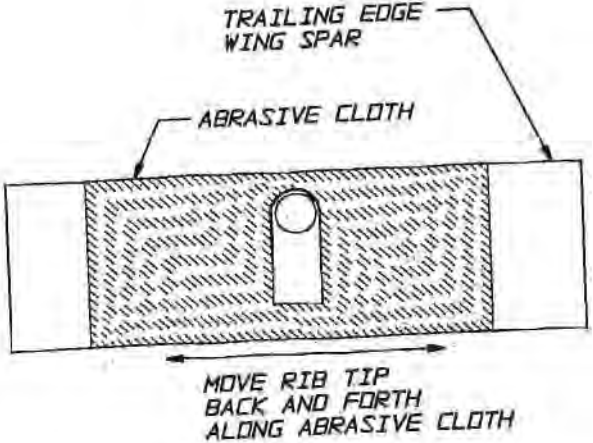
AFT RIB TIP CHANGE (DOC# 913-06)

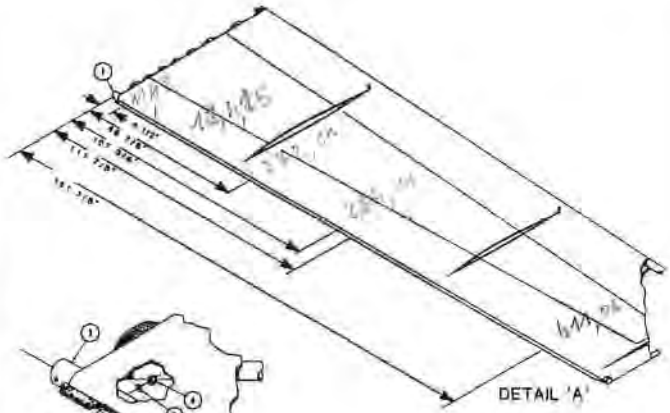
1. Refer to the illustrations on the following page.

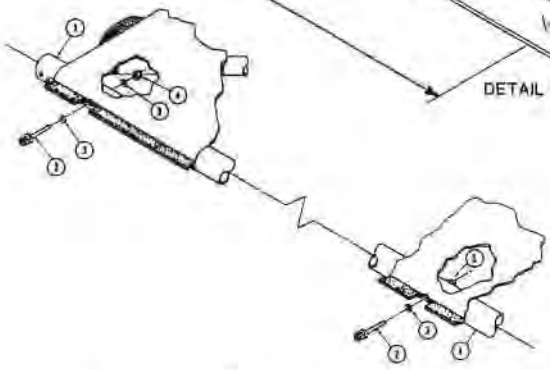
2. Wrap a piece of Sandpaper or Emery Cloth (150 Grit recommended) around the Trailing Edge Wing Spar (Or any 1 3/4" dia tube). Rub the Aft Rib Tip back-and-forth along the Abrasive Cloth only enough to match the radius of the Trailing Edge Wing Spar.

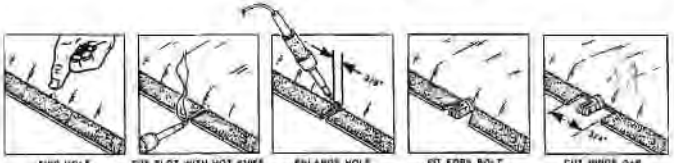
3. Continue on with the assembly of your aircraft following the instructions provided.


NEW RADIUS
TRAILING EDGE
WING SPAR
OLD RADIUS


TRAILING EDGE
WING SPAR
ABRASIVE CLOTH
MOVE RIB TIP
BACK AND FORTH
ALONG ABRASIVE CLOTH







DETAIL 'B'

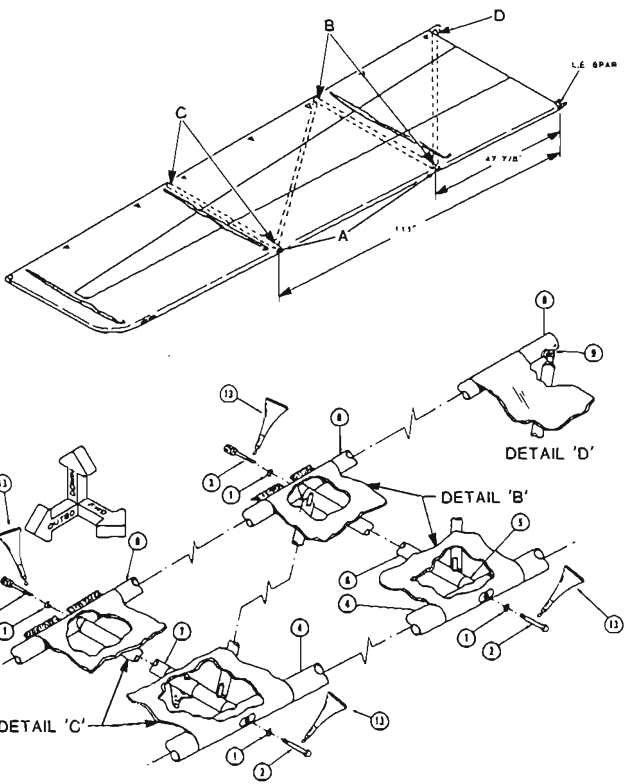
DOC# 902-01 DATE 03/28/90

INBOARD AND OUTBOARD COMPRESSION STRUT ATTACHMENT

1. Locate the holes for Bolts (2) and Forkbolts (3). Heat-cut and reveal the holes.

2. Assemble as illustrated. Tighten ALL Locknuts to correct torque. Position the Forkbolts (3) in a VERTICAL position AFTER torqing. DO NOT OVER TORQUE AND DISTORT THE SPAR.

Item	P/N	Qty	Description
1	10360	4	1/4" Washer
2	10428	2	1/4" x 2 1/2" Grade 5 Bolt
3	10387	2	1/4" x 2 1/4" Forkbolt
4	43623		Left Leading Edge Wing Spar Assembly
	45624		Right Leading Edge Wing Spar Assembly (not illustrated)
5	45750		1 1/4" to 2" 87 Degree Tube Connector
6	45676		Inboard Compression Strut
7	45679		Outboard Compression Strut
8	45625		Left Trailing Edge Wing Spar Assembly
	43626		Right Trailing Edge Wing Spar Assembly (not illustrated)
9	10010		AN3-5A Bolt
10	45670		Inboard Diagonal Strut
11	45673		Outboard Diagonal Strut
12	45751		1 1/4" to 1 3/4" 90 Degree Tube Connector
13	60591		Thread Adhesive


B
D
L.E. SPAR
C
47 7/8"
A
111"
DETAIL 'D'
DETAIL 'B'
DETAIL 'C'

LIFT STRUT FITTING ATTACHMENT TO WING SPARS

NOTE: This illustration shows the LEFT Wing BOTTOM SIDE UP or UPSIDE DOWN.

1. Refer to Page S-43 and locate Template W-3. Remove and follow the instructions on the Template and remove it.

2. Refer to Figure 1 and Detail 'B'. Measure OUTBOARD from the INBOARD end of the Leading Edge Spar (2) APPROXIMATELY 107 1/2" (273.05 cm) and locate the INBOARD-MOST of the THREE 3/16" (4.7 mm) attachment holes in the LEFT L.E. Spar Assembly (2).

3. Heat cut and reveal the holes. Using Template W-3. Follow the placement instructions on the Template.

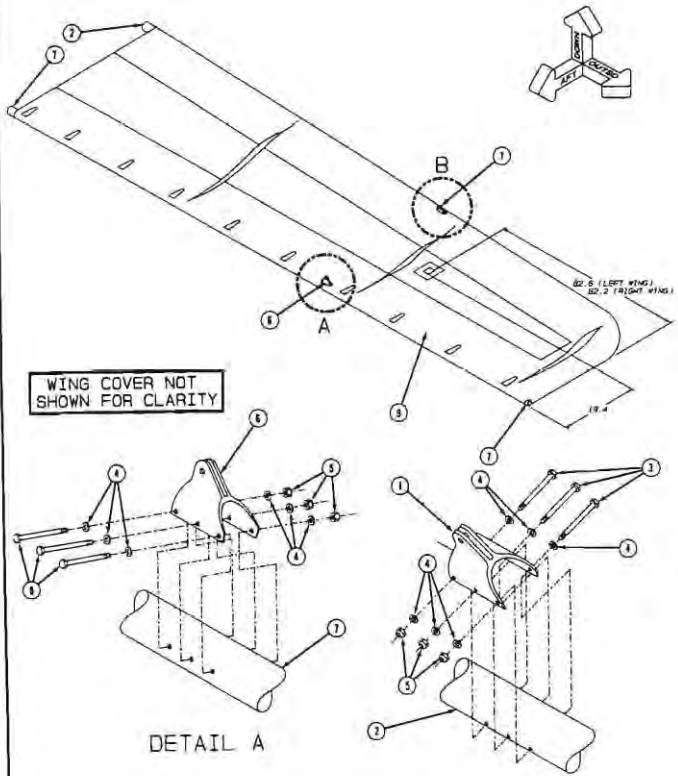
4. Assemble as illustrated. Tighten ALL Locknuts to correct torque. DO NOT DISTORT THE SPAR.

5. Refer to Detail 'A'. Assemble the Trailing Edge (7) the SAME as above. Use Template W-4 Page S-45. Locate the THREE 3/16" (4.7 mm) holes located OUTBOARD at APPROXIMATELY 108 3/8" (275.27 cm).

6. On the BOTTOM surface of the LEFT Wing Cover (9) ONLY Measure 62 5/8" (159.06 cm) INBOARD from the OUTBOARD edge of the LEFT Wing Tip Tube and make a pencil mark. Measure 19 3/8" (49.21 cm) FORWARD from the AFT edge of the Trailing Edge Spar. (91. Refer to page S-41. Remove and use Template W-2.

7. Repeat the SAME sequence in "mirror image" for the RIGHT Wing EXCEPT the Aileron Pushrod cut-out will be made at a SLIGHTLY DIFFERENT location. Measure from the Wing Tip INBOARD 62 3/16" (157.96 cm).

Item	P/N	Qty	Description
1	45721	1	Leading Edge Wing Strut Fitting
2	45623	1	Left Leading Edge Wing Spar Assembly
	45624		Right Leading Edge Wing Spar Assembly (not illustrated)
3	10055	3	AN3-24A Bolt
4	10550	12	3/16" Washer
5	10300	6	3/16" Locknut
6	45722	1	Trailing Edge Wing Strut Fitting
7	45625		Left Trailing Edge Wing Spar Assembly
	45626		Right Trailing Edge Wing Spar Assembly (not illustrated)
8	10054	3	AN3-22A Bolt
9	45640		Left Wing Cover
	45641		Right Wing Cover (not illustrated)

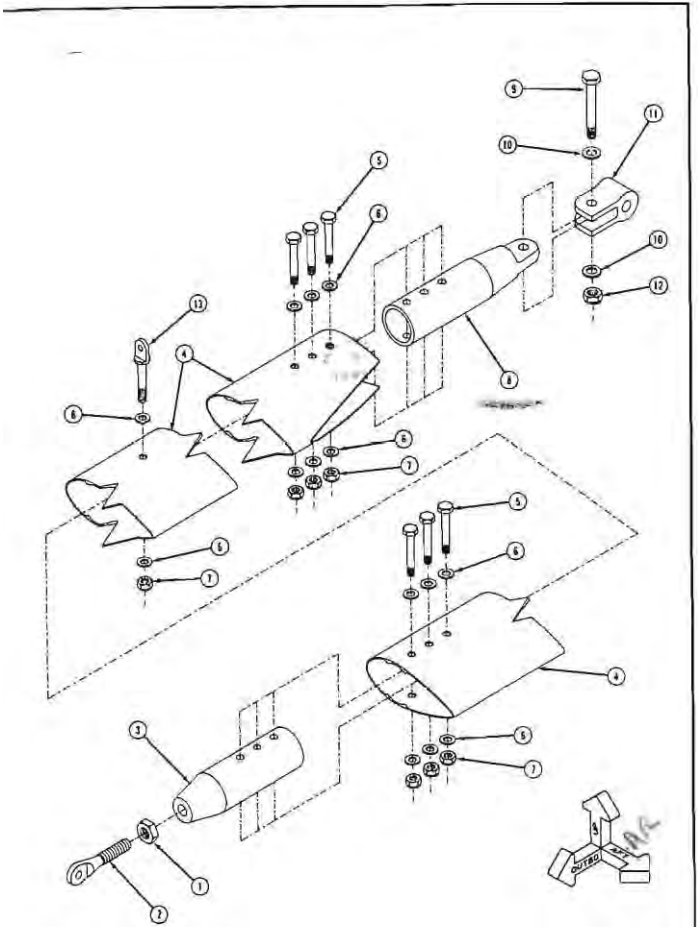

B
A
WING COVER NOT SHOWN FOR CLARITY
DETAIL A
DETAIL B

LEADING EDGE LIFT STRUT ASSEMBLY

1. Assemble as illustrated. Tighten ALL Locknuts to proper torque EXCEPT the Locknut (7) attached to Eyebolt (13). Tighten this Locknut ONLY "snug". DO NOT DISTORT THE STRUT.

2. Repeat Step 1. for the opposite (RIGHT) Strut (4) in "mirror image".

Item	P/N	Qty	Description
1	13132	1	3/8" Jam Nut
2	10382	1	3/8" - 24 Eyebolt
3	45696	1	Threaded Lift Strut Fitting
4	45620	1	Streamlined Leading Edge Lift Strut
5	10150	6	AN4-17A Bolt
6	10560	14	1/4" Washer
7	10515	7	1/4" Thin Locknut
8	45688	1	Lift Strut Fitting
9	10307	1	AN5-12A Bolt
10	10570	2	5/16" Washer
11	45689	1	Lift Strut Clevis
12	10540	1	5/16" Locknut
13	10372	1	AN43B-20A Eyebolt

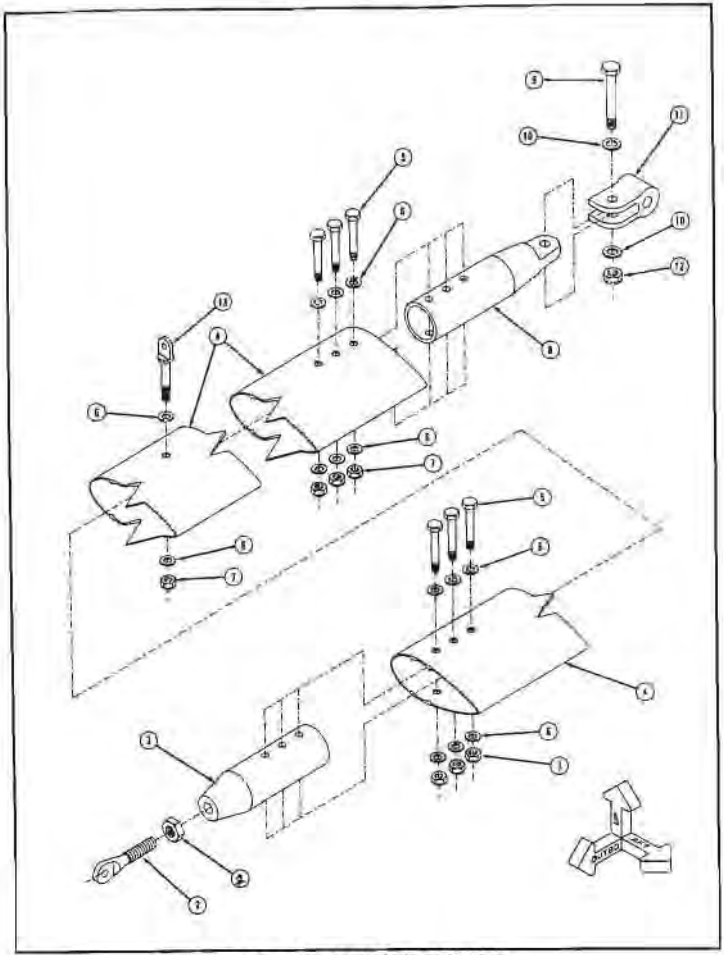

9
11
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4
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7
6
7
5
6
4
3
5
7
1
2

TRAILING EDGE LIFT STRUT ASSEMBLY

1. Assemble as illustrated. Tighten ALL Locknuts to proper torque EXCEPT the Locknut (7) attached to Eyebolt (13). Tighten this ONLY to correct torque. DO NOT DISTORT THE STRUT.

2. Repeat Step 1. for the opposite (RIGHT) Strut (4) in "mirror image".

Item	P/N	Qty	Description
1	13132	1	3/8" - 24 Jam Nut
2	10382	1	3/8" - 24 Eyebolt
3	45696	1	Threaded Lift Strut Fitting
4	45621	1	Streamlined Trailing Edge Lift Strut
5	10150	6	AN4-17A Bolt
6	10560	14	1/4" Washer
7	10515	7	1/ 4" Thin Locknut
8	45688	1	Lift Strut Fitting
9	10307	1	AN5-12A Bolt
10	10570	2	5/16" Washer
11	45689	1	Lift Strut Clevis
12	10540	1	5/16" Locknut
13	10372	1	AN43B-20A Eyebolt



JURY STRUT ASSEMBLY

NOTE: The Leading Edge Jury Strut (4) is LONGER than the Trailing Edge Jury Strut (8).

1. Refer to Figure 1. Thread the Jam Nut (1) " all the way" onto the Forkbolt (2) FINGER TIGHT ONLY. Insert the Forkbolt "all the way" into the Tube Fitting (3).

NOTE: Leave enough space to get a wrench onto the Jam Nut (1) later for final adjustment.

2. Assemble the Leading Edge Jury Strut (4) as illustrated. Tighten to ALL Locknuts (7) to proper torque.

3. Repeat for the remaining Leading Edge Jury Strut (4).

4. Refer to Figure 2. Assemble BOTH Trailing Edge Jury Struts (8) the SAME as the Leading Edge Struts (4) as illustrated. Tighten to ALL Locknuts (7) to proper torque.

Item	P/N	Qty	Description
1	10631	8	1/4" - 28 Jam Nut
2	10388	8	1/4" x 1" Full Thread Forkbolt
3	45658	4	1/4" - 28 x .75" Streamlined Tube Fitting
4	45728	2	Streamlined Leading Edge Jury Strut
5	10025	16	AN3-11A Bolt
6	10550	32	3/16" Washer
7	10500	16	3/16" Locknut
8	45729	2	Streamlined Trailing Edge Jury Strut
9	45295	4	.75" x .035" Jury Strut Clevis

FIG. 1

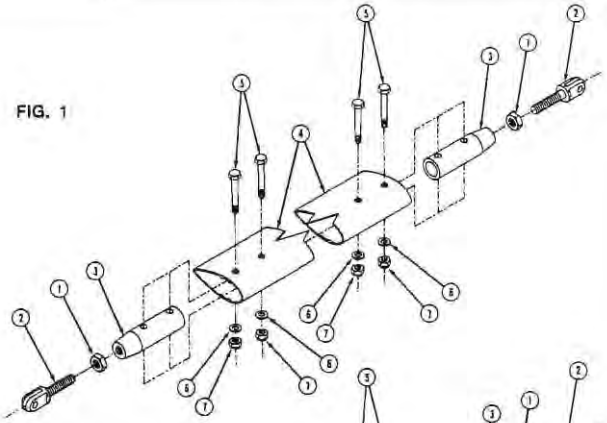
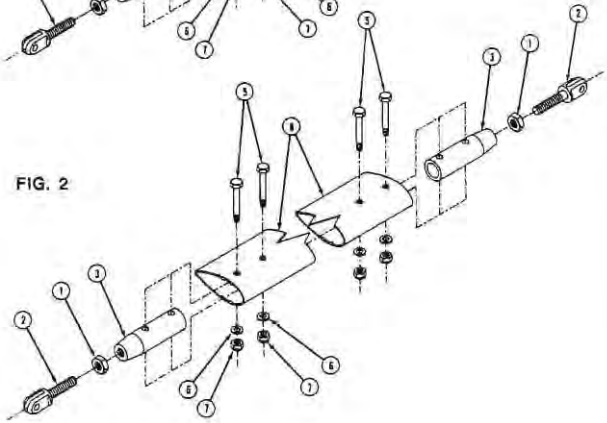


FIG. 2



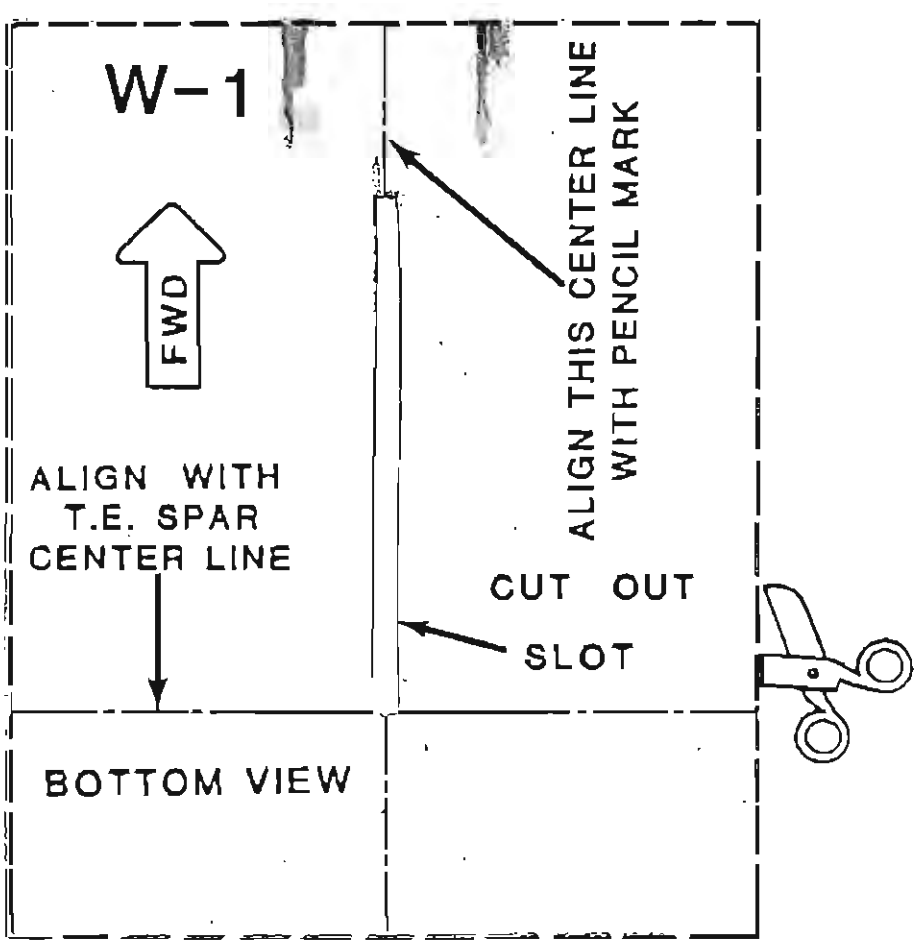
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RIB INSERT SLOT TEMPLATE

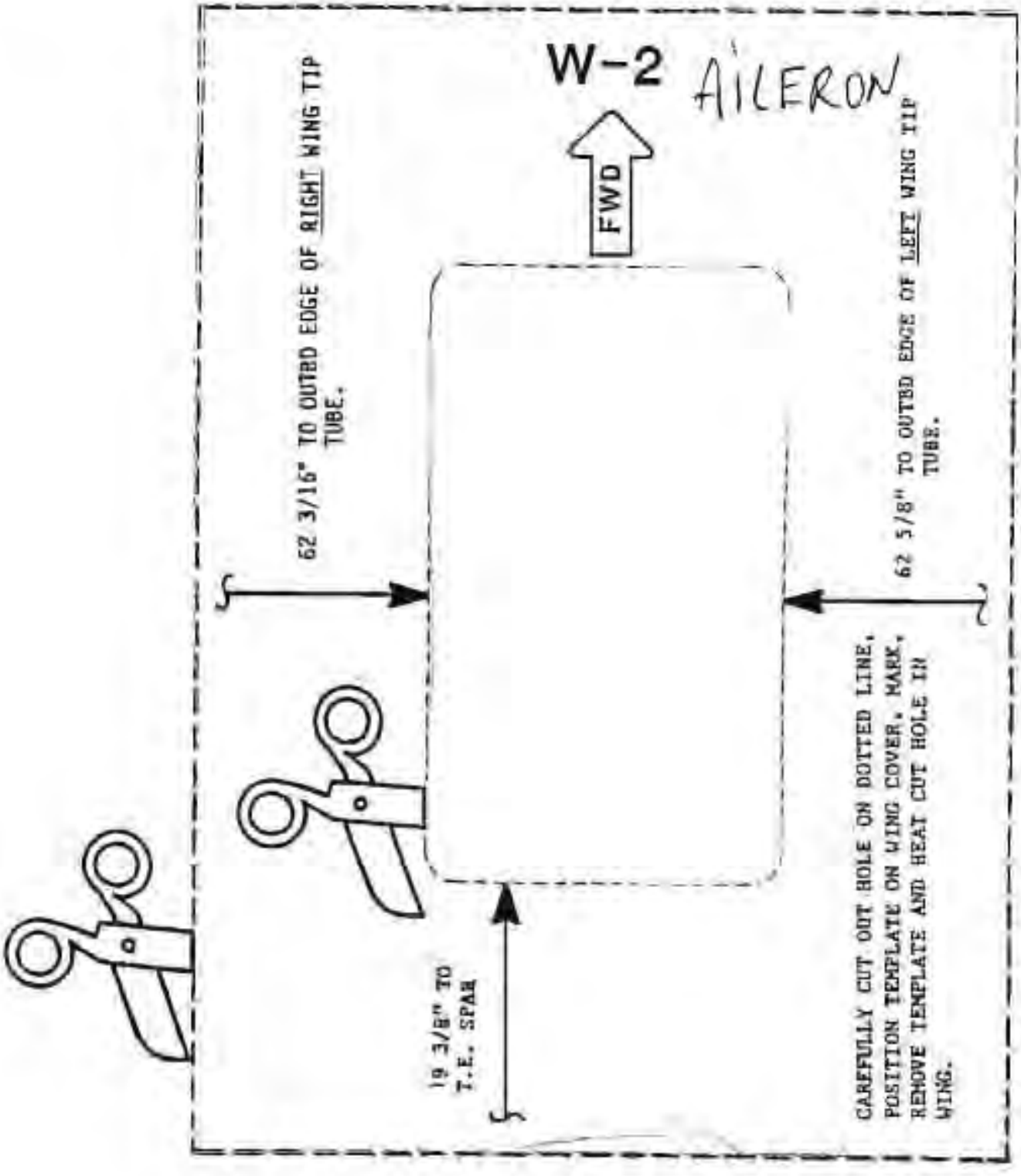
1. Follow the Instructions on the Template and remove it from the Assembly Instructions.

Align the cut-out 'SLOT' with the CENTERLINE of the Applied Rib Pocket or SEAM at a total of TEN locations the BOTTOM surface of each Wing.

WING TEMPLATES



AILERON PUSHROD CUT-OUT TEMPLATE



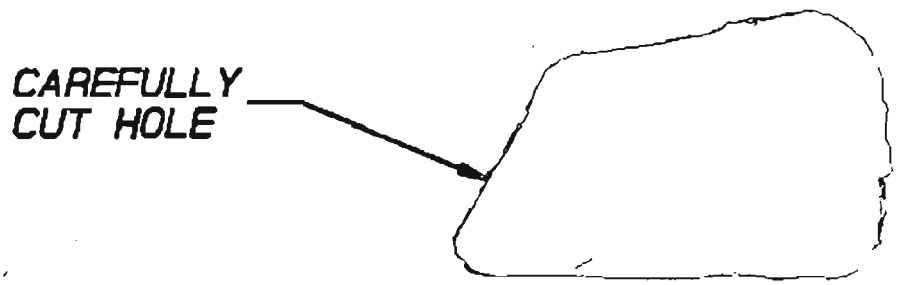
STRUT FITTING - L. E.

TEMPLATE- WING LEADING EDGE SPAR

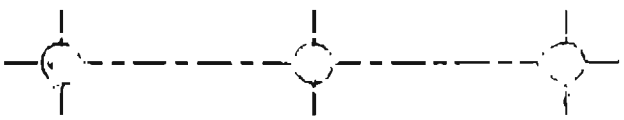
STRUT FITTING LE

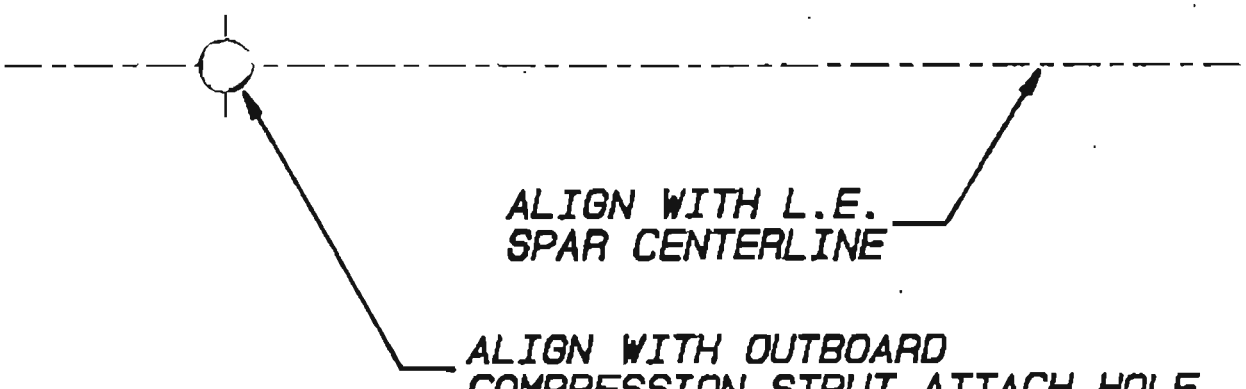
W-3

THIS SIDE OF TEMPLATE FOR BOTTOM SURFACE OF LEFT WING- TURN TEMPLATE OVER FOR RIGHT WING



INBOARD



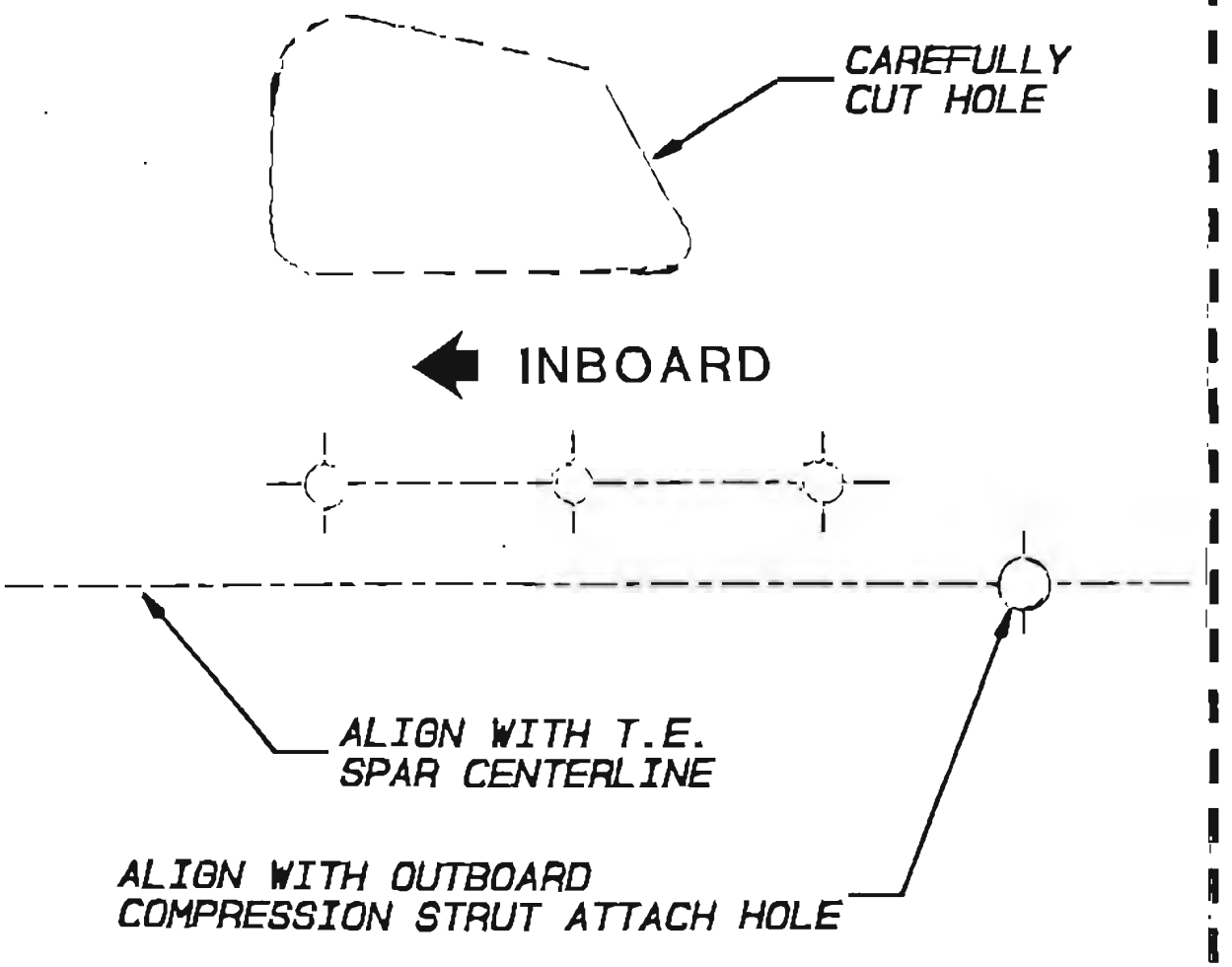


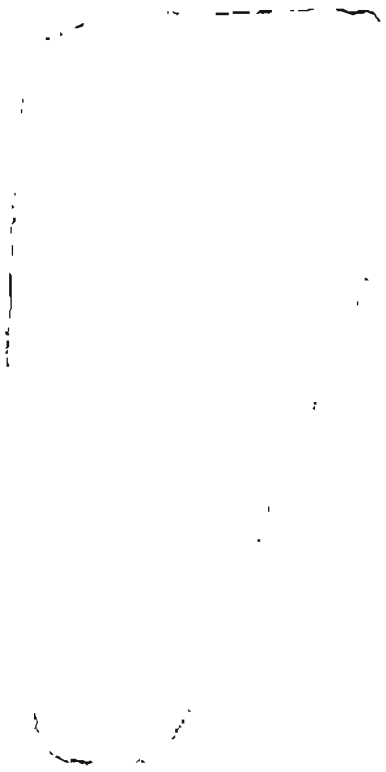
STRUT FITTING – T. E.

TEMPLATE- WING TRAILING EDGE SPAR
STRUT FITTING T. E

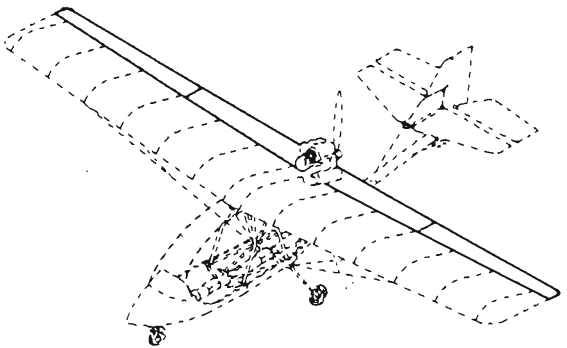
W-4

THIS SIDE OF TEMPLATE FOR BOTTOM SURFACE OF LEFT WING- TURN TEMPLATE OVER FOR RIGHT WING





SECTION 6 - AILERONS/FLAPS



DOC # 902-1 DATE 03/28/90

SECTION 6

AILERONS/FLAPS

AILERON ASSEMBLY.....6-2

FLAP ASSEMBLY.....6-4

FLAP AND AILERON COMPRESSION STRUT ASSEMBLY/FLAP AND AILERON COVER ATTACMENT.....6-6

FLAP HORN AND EYEBOLT ATTACHMENT TO FLAPS AND AILERONS....6-8

AILERON PUSHROD ASSEMBLY.....6-10

AILERON ASSEMBLY

NOTE: Before starting the following assembly sequence, notice the INBOARD end of the Aileron Leading Edge Spar (2) has TWO (2) 3/16" (4.8 mm) diameter holes. One hole located at 5 1/2" (13.97 cm) and another at 7" (17.78 cm) from the end of the tube. The LONGEST Compression Strut (7) is to be located at the INBOARD end of the tube.

1. Assemble as illustrated attaching the Anchor "Plate" Nuts (1) FIRST. Use the Eyebolt (4) to align the Anchor Nut (1). Position the Nut on the INSIDE CENTERLINE of the Leading Edge Spar (2). The INSIDE edge has the 1/2" (12.7 mm) holes. Drill and deburr TWO (2) 1/8" (3.2 mm) diameter attachment holes. DO NOT attach the Eyebolts and Washers (14) at this time.

NOTE: If the Forward or Aft Tips (5) and (6) DO NOT fit "snuggly" into each end of the Compression Struts then install the Tips and "Dimple" near the end of the Struts with a Center-Punch APPROXIMATELY 3/8" (9.5 mm) from each end of the Tube.

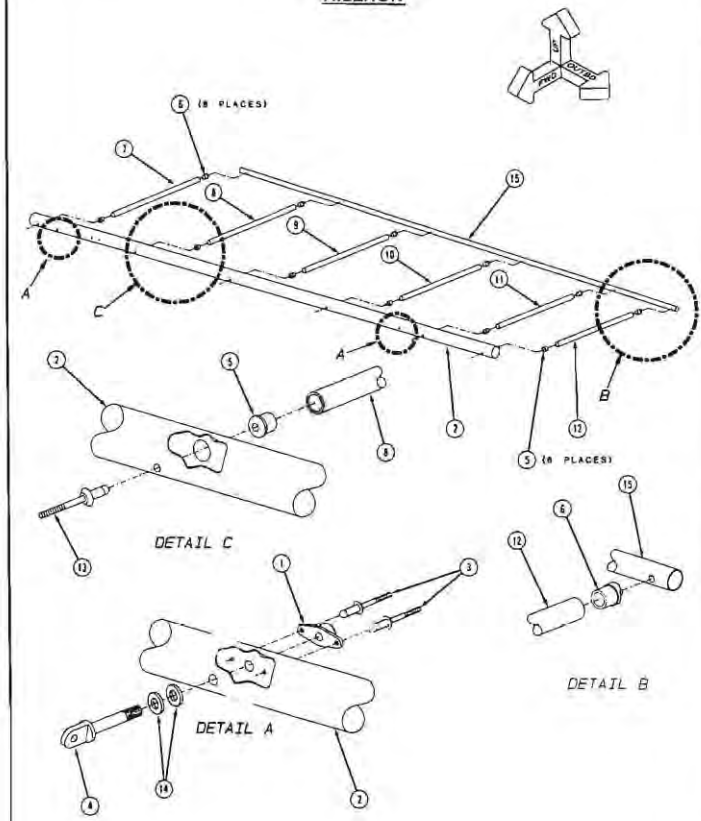
OPTIONAL: Use LARGE Rubber Bands or Masking Tape to hold the Frame into place.

IMPORTANT: If you use Masking Tape you will have to remove ALL residue left by the Tape BEFORE slipping on the Aileron Covers.

2. Assemble the opposite Aileron EXACTLY the SAME.

Item	P/N	Qty	Description
1	10530	2	1/4" - 28 Anchor (Plate) Nut
2	45207	1	Aileron Leading Edge Spar Assembly
3	20201	4	1/8" x 1/4" Grip Stainless Steel Rivet (CCPQ-44)
4	10372	2	AN43B-20A Eyebolt
5	71001	6	Forward Compression Strut Tip
6	71002	6	Aft Compression Strut Tip
7	45270	1	Aileron Compression Strut (12.46)
8	45271	1	Aileron Compression Strut (11.84)
9	45272	1	Aileron Compression Strut (11.21)
10	45273	1	Aileron Compression Strut (10.58)
11	45274	1	Aileron Compression Strut (9.96)
12	45275	1	Aileron Compression Strut (9.33)
13	20225	6	3/16" x 1/2" Grip Aluminum Rivet (AAP-68)
14	10566	4	1/4" Washer
15	45208	1	Aileron Trailing Edge Spar

AILERON


UP
FWD
OUTBD
6 (8 PLACES)
7
8
9
10
11
15
A
C
A
B
2
5
8
7
12
5 (8 PLACES)
13
DETAIL C
15
6
12
DETAIL B
1
3
DETAIL A
4
14
14
2

FLAP ASSEMBLY

IMPORTANT: BEFORE starting the following sequence POSITIVE IDENTIFICATION of the RIGHT and LEFT Flap MUST BE ESTABLISHED.

1. Assemble the LEFT Flap as illustrated EXCEPT DO NOT ATTACH the Eyebolts (4) at this time. They are for alignment of the Anchor Nut (1). Attach the LONGEST Compression (7) Strut INBOARD and the SHORTEST (1S) OUTBOARD.

NOTE: If the Forward or Aft Tips (5) and (6) DO NOT fit "snuggly" into each end of the Compression Struts then install the Tips and "Dimple" near the end of the Struts with a Center-Punch APPROXIMATELY 3/8" (9.5 mm) from each end of the Tube. Refer to Pages 6-6 and 6-7 if necessary.

OPTIONAL: Use LARGE Rubber Bands to hold the Frame into place or Masking Tape.

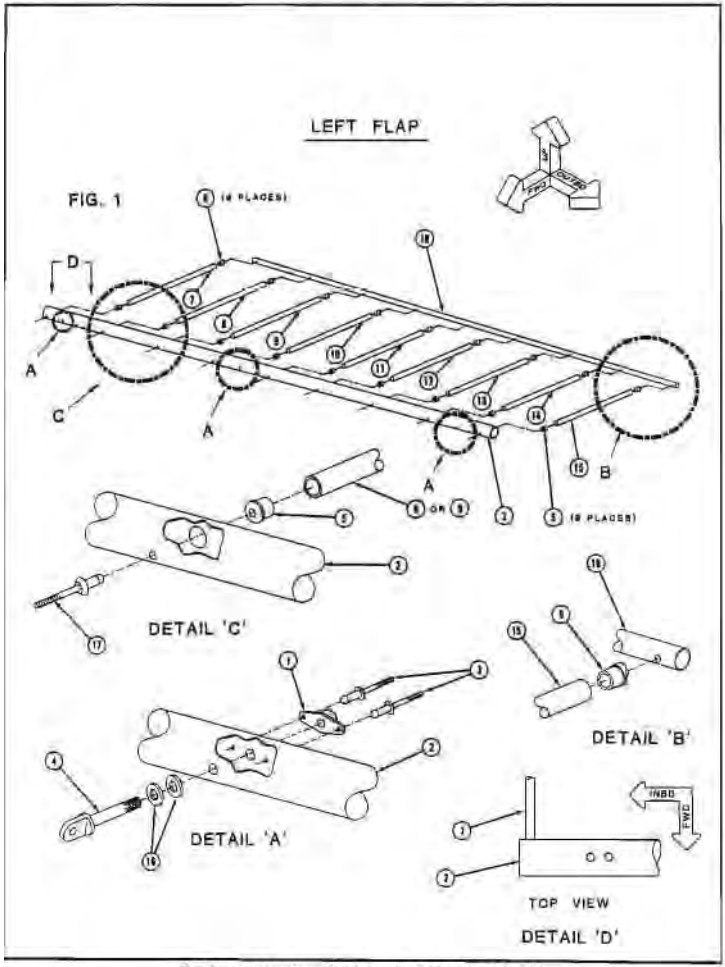
IMPORTANT: If you use Masking Tape you will have to remove ALL residue left by the Tape BEFORE slipping on the Aileron Covers.

2. Assemble the opposite (RIGHT) Flap in "mirror image".

3. Remove ALL the Part Number Labels and ANY residue left by them with a cleaning solvent.

4. Repeat Steps 1-3 for the opposite (RIGHT) Flap.

Item	P/N	Qty	Description
1	10530	3	1/4" - 28 Anchor (Plate) Nut
2	45235	1	Left Flap Leading Edge Spar
	45230		Right Flap Leading Edge Spar (not illustrated)
3	20202	6	1/8" x 1/4" Grip Stainless Steel Rivet
4	10372	3	AN43B-20A Eyebolt
5	71001	6	Forward Compression Strut Tip
6	71002	6	Aft Compression Strut Tip
7	45280	1	Flap Compression Strut (17.57)
8	45281	1	Flap Compression Strut (16.94)
9	45282	1	Flap Compression Strut (16.31)
10	45283	1	Flap Compression Strut (15.68)
11	45284	1	Flap Compression Strut (15.05)
12	45285	1	Flap Compression Strut (14.42)
13	45286	1	Flap Compression Strut (13.79)
14	45287	1	Flap Compression Strut (13.16)
15	45288	1	Flap Compression Strut (12.53)
16	10560	4	1/4" Washer
17	20225	6	3/16" x 1/2" Grip Aluminum Rivet (AAP-68)
18	45233		Flap Trailing Edge Spar


LEFT FLAP
FIG. 1
(8 PLACES)
D
A
C
A
A
B
(8 PLACES)
DETAIL 'C'
DETAIL 'B'
DETAIL 'A'
INBD
PORT
TOP VIEW
DETAIL 'D'

FLAP AND AILERON COVER ATTACHMENT

1. Refer to Figure 1. LIGHTLY "dimple" the ends of the Compression Struts (3) and (4) as required, if necessary to hold the Tips (1) and (2) into place with a Centerpunch.

NOTE: If the Forward or Aft Tips (5) and (6) DO NOT fit "snuggly" into each end of the Compression Struts then install the Tips and "Dimple" near the end of the Struts with a Center-Punch APPROXIMATELY 3/8" (9.5 mm) from each end of the Tube. "Dimple" AFTER the Tips (1) and (2) are installed.

OPTIONAL: Remove ALL Part Number Labels from the parts and clean ALL residue from the Labels with a Cleaning Solvent. ESPECIALLY if the aircraft is going to be sprayed with an Ultra-violet inhibiter such as "STITS" as the Labels will bleed through AFTER the "Stits" has been applied and be CLEARLY visible through LIGHT colored Wing and Tail surfaces.

HELPFUL HINT: The use of a Dry Silicone based spray such as (Dow-Corning) "Fabriglide" sprayed onto the Frames BEFORE the Covers are 'slipped on' will ease installation of the Flap and Aileron Covers dramatically.

Item	P/N	Description
1	71001	Forward Aileron Compression Strut Tip
2	71002	Aft Aileron Compression Strut Tip
3	45280 thru 45288	Flap Compression Strut
4	45270 thru 45275	Aileron Compression Strut
5	45235	Left Flap Leading Edge Spar
	45230	Right Flap Leading Edge Spar
6	45207	Leading Edge Aileron Spar
7	20225	3/16" x 1/2" Grip Aluminum Rivet (AAP-68)
8	45233	Flap Trailing Edge Spar
9	45208	Aileron Trailing Edge Spar
10	45639	Left Flap Cover
	45638	Right Flap Cover (not illustrated)
11	45637	Left Aileron Cover
	45636	Right Aileron Cover (not illustrated)

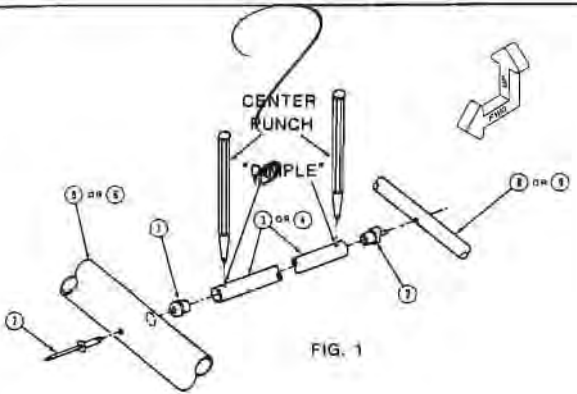
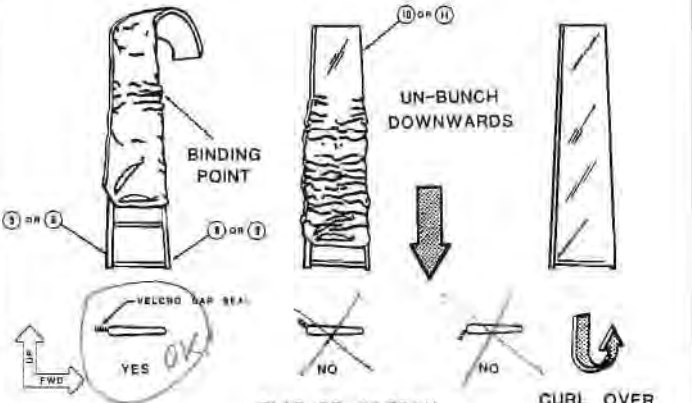

CENTER
PUNCH
"DIMPLE"
FWD
5 OR 6
1
3 OR 4
8 OR 9
7
2

FIG. 1


10 OR 11
BINDING
POINT
5 OR 6
8 OR 7
UN-BUNCH
DOWNWARDS
VELCRO GAP SEAL
UP
FWD
YES
OK
NO
NO
FLAP OR AILERON
CURL OVER
AND
CLOSE ZIPPERS

FLAP HORN AND EYEBOLT ATTACHMENT TO FLAPS AND AILERONS

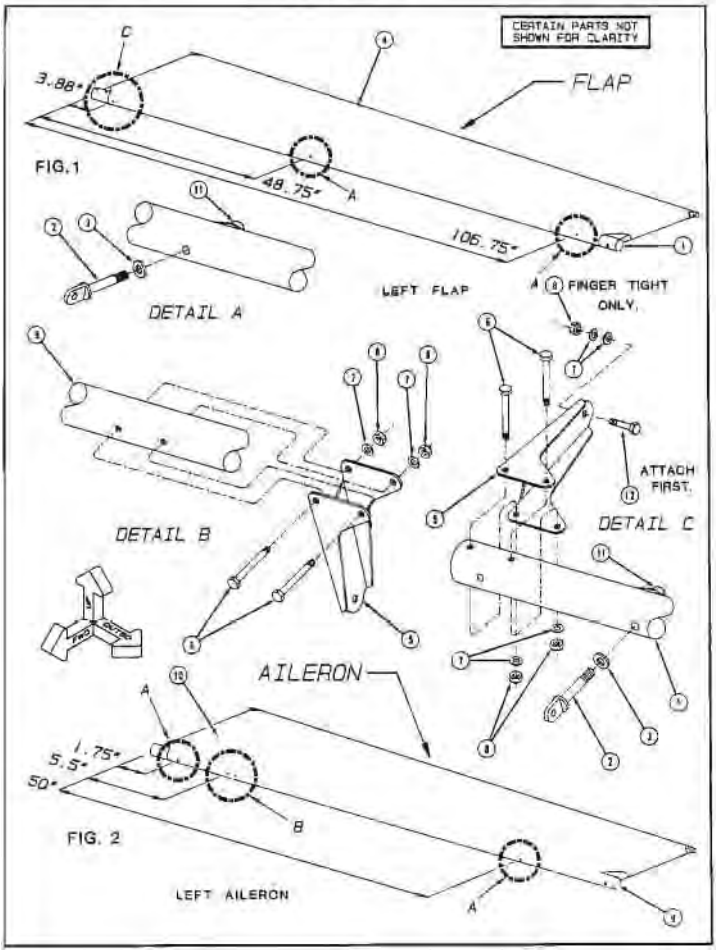
1. Refer to Figure 1. Measure OUTBOARD from the INBOARD edge of the Flap Leading Edge (1) and locate the 1/4" (6.4 mm) Eyebolt (2) [hinge point] attachment locations. Heat-cut and reveal the holes at the THREE (3) following locations: 3 7/8" (9.84 cm), 48 3/4" (123.8 cm), and 106 3/4" (271.15 cm).

2. Heat-cut the Gap Seal as required for Eyebolt (2) attachment. Tighten ALL Eyebolts to correct torque. DO NOT OVER TORQUE AND DISTORT THE TUBE. If correct torque CANNOT be reached without damaging the Flap Leading Edge (1) then back off the Eyebolt to the NEXT VERTICAL position. Repeat Steps 1. and 2. on the opposite (RIGHT) Flap in "mirror image".

3. Refer to Figure 1 and Detail 'C'. Locate the TWO (2) 3/16" (4.7 mm) diameter holes in the Flap Leading Edge. The INBOARD MOST hole is located at 5 1/2" (14.0 cm). Reveal and heat seal the hole. Attach the Bolt (12) to the Horn (5) orientated as illustrated BEFORE attaching the Flap Horn (5) as illustrated. Attach the Locknut (8) FINGER TIGHT ONLY. Heat cut around the Horn if required to facilitate attachment of the Horn (5). Use correct torque. DO NOT DISTORT THE TUBE.
NOTE: Horn (5) to be angled AFT when attached to the Aileron.

4. Refer to Figure 2. Repeat Steps 1-2 for the Aileron as illustrated. Measure OUTBOARD from the INBOARD edge of the Aileron Leading Edge. Heat-cut and reveal the TWO (2) 1/4" (6.4 mm) diameter holes at the following locations: 1 3/4" (4.44 cm) an 50" (127.0 cm). Attach the Horn (5) at 5 1/2" (14.0 cm). Use correct torque. Heat-cut the Gap Seal in the Aileron as required for Eyebolt attachment. Tighten the Eyebolts to correct torque. DO NOT OVER TORQUE AND DISTORT THE TUBE. Repeat on the opposite (RIGHT) Aileron in "mirror image".

Item	P/N	Qty	Description
1	45225		Flap Leading Edge Spar Assembly
2	10372	10	AN43B-20A Eyebolt
3	10560	10	1/4" Washer
4	45639		Left Flap Cover
	45638		Right Flap Cover (not illustrated)
5	45260	4	Flap Horn
6	10053	8	AN3-20A Bolt
7	10550	12	3/16" Washer
8	10500	10	3/16" Locknut
9	45207		Aileron Leading Edge Spar Assembly
10	45637		Left Aileron Cover
	45636		Right Aileron Cover (not illustrated)
11	10530		1/4" - 28 Anchor (Plate) Nut
12	10020	2	AN3-7 Bolt


CERTAIN PARTS NOT SHOWN FOR CLARITY
C
3.88"
4
FLAP
FIG.1
48.75"
A
106.75"
11
3
2
DETAIL A
LEFT FLAP
A
8
FINGER TIGHT ONLY.
9
7
6
ATTACH FIRST.
12
DETAIL B
DETAIL C
AILERON
10
A
1.75"
5.5"
50°
B
FIG. 2
LEFT AILERON
A

AILERON PUSHROD ASSEMBLY

1. Refer to Figure 1 and Detail 'A'. Assemble as illustrated.

NOTE: Thread a Jam Nut (1) ALL THE WAY onto the Male Rod End Bearing (2). DO NOT Tighten the Jam Nut against the Pushrod at this time as it will be tightened in a later sequence AFTER it has been properly adjusted.

2. Assemble the remaining Aileron Pushrod Assembly (3) (not illustrated) as illustrated for the opposite side.

Item	P/N	Qty	Description
1	10631	4	1/4" Jam Nut
2	10700	4	1/4" - 28 Male Rod End Bearing
3	45699	2	Aileron Pushrod Assembly

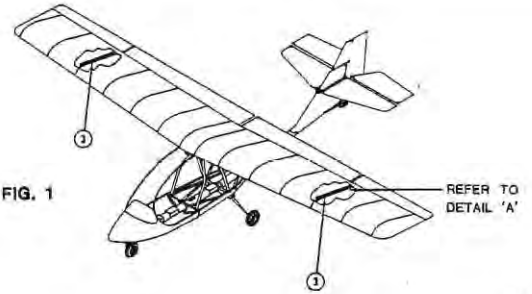
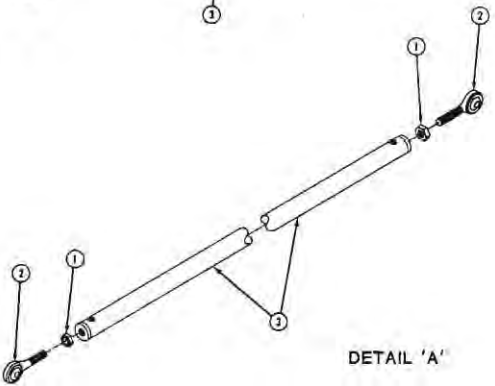
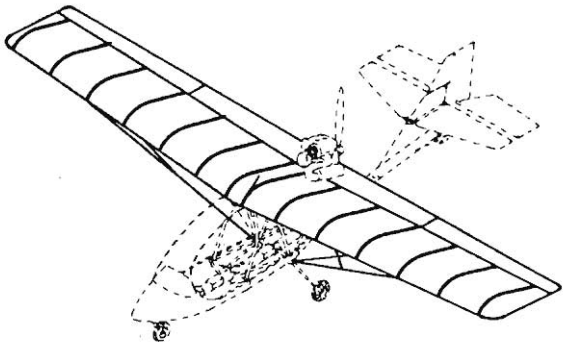


FIG. 1



DETAIL 'A'

SECTION 7 - FINAL ASSEMBLY



SECTION 7

FINAL ASSEMBLY

ELEVATOR PUSHROD TO ELEVATOR BELLCRANK ATTACHMENT.....7-2

FORWARD RUDDER CABLE ATTACHMENT.....7-4

AFT RUDDER CABLE ATTACHMENT.....7-6

RUDDER PEDAL ADJUSTMENT.....7-8

WING ATTACHMENT.....7-10

LIFT STRUT ATTACHMENT.....7-12

WING WASHOUT ADJUSTMENT.....7-14

JURY STRUT ATTACHMENT.....7-16

AILERON AND FLAP ATTACHMENT.....7-18

AILIERON AND FLAP PUSHROD ATTACHMENT.....7-20

AILERON DEFECTION ADJUSTMENT.....7-22

FLAP HANDLE TENSION AND FLAP PULLROD ADJUSTMENT.....7-24

GAP COVER ATTACHMENT.....7-26

LABEL PLACMENT.....7-28

WINDSHIELD ATTACHMENT.....7-28A

WINDSHIELD ATTACHMENT (CONT'D.).....7-28B

WINDSHIELD ATTACHMENT (CONT'D.).....7-28C

WINDSHIELD ATTACHMENT (CONT'D.).....7-28D

UPPER WINDSHIELD ATTACHMENT.....7-28E

WEIGHT AND BALANCE.....7-30

POWERPLANT BREAK-IN.....7-36

PREFLIGHT CHECKLIST.....7-38

INDEX.....7-42

ELEVATOR PUSHROD TO ELEVATOR BELLCRANK ATTACHMENT

1. Assemble as illustrated. Tighten ALL Locknuts to proper torque. Bend ALL Cotter Pins (12) correctly.

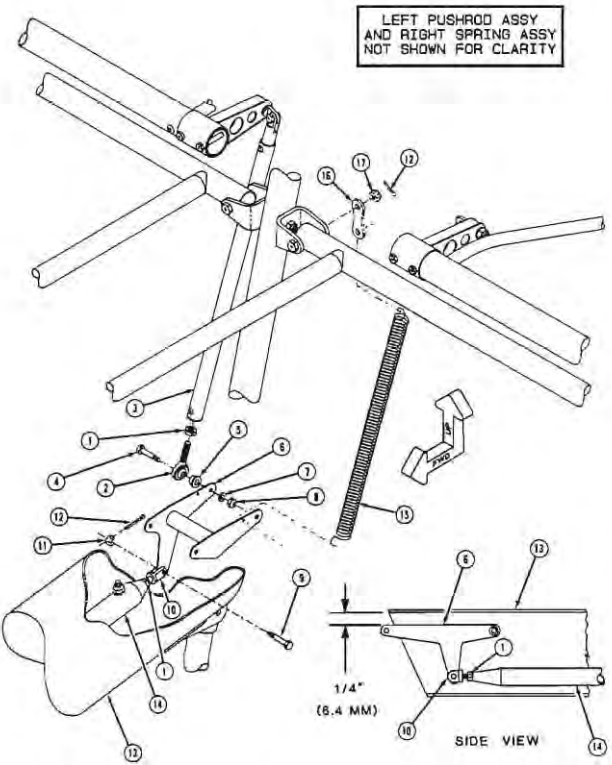
NOTE: Adjust the Eyebolt (10) as illustrated to allow 1/4" (6.4 mm) clearance between the Elevator Bellcrank (6) and the Tail Boom Tube (13). Tighten the Jam Nut (13) as illustrated AFTER adjustment is complete.

2. Attach the opposite (Left) side in "mirror image".

3. Adjust the Evevator linkage so that BOTH Elevator halves deflect EQUALLY in BOTH UP and DOWN directions. Refer to Section I for correct angle deflection. There must be AT LEAST TEN threads of the Rod End Bearing (2) INSIDE the Elevator Pushrod (3). Be sure to retighten Jam Nut (1).

4. Attach BOTH Elevator Balance Springs (15) as illustrated.

Item	P/N	Qty	Description
1	10631		1/4" -28 Jam Nut
2	10700		1/4" Male Rod End Bearing
3	45039		Elevator Pushrod
4	10020		AN3-7A Bolt
5	20241		"T" Bushing
6	45074		Elevator Bellcrank Assembly
7	10550		3/16" Washer
8	10500		3/16" Locknut
9	10009		AN3-5 Bolt
10	10388		1/4" x 1" Full Thread Forkbolt
11	10517		3/16" Castle Nut
12	10635	2	Cotter Pin
13	45012		Tail Boom Tube Assembly
14	45013		Elevator Push/Pull Tube
15	10801	2	Elevator Balance Spring
16	20361	2	Light Weight Flat Spring
17	10521	2	1/4" Castle Nut

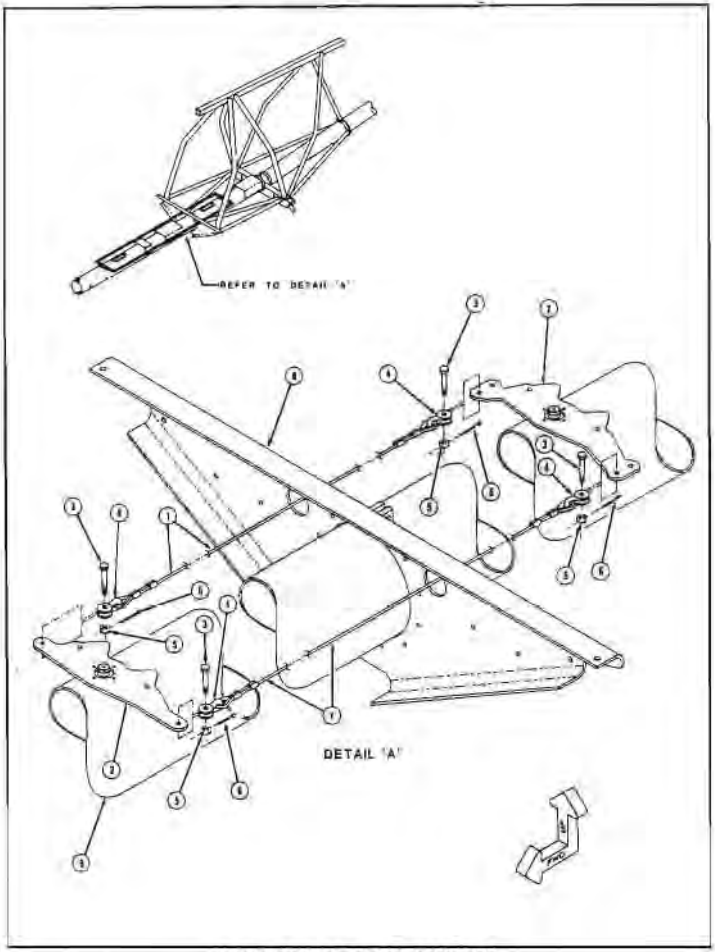

LEFT PUSHROD ASSY
AND RIGHT SPRING ASSY
NOT SHOWN FOR CLARITY
1/4"
(6.4 MM)
SIDE VIEW

FORWARD RUDDER CABLE ATTACHMENT

1. Assemble as illustrated. Bend ALL Cotter Pins correctly.

NOTE: Twist the Rudder Cables (1) in the direction as required, if necessary, to LENGTHEN or SHORTEN (remove any slack in the system).

Item	P/N	Qty	Description
1	45108	2	Forward Rudder Cable
2	45476		Forward Rudder Pedal Bellcrank
3	10009	4	AN3-5 Bolt
4	20320	4	3/16" Shackle
5	10517	4	3/16" Locknut
6	10635	4	Cotter Pin
7	45474		Aft Rudder Pedal Bellcrank
8	45404		Forward Fuselage Bulkhead
9	45545		Forward Fuselage Assembly


REFER TO DETAIL 'A'
DETAIL 'A'

AFT RUDDER CABLE ATTACHMENT

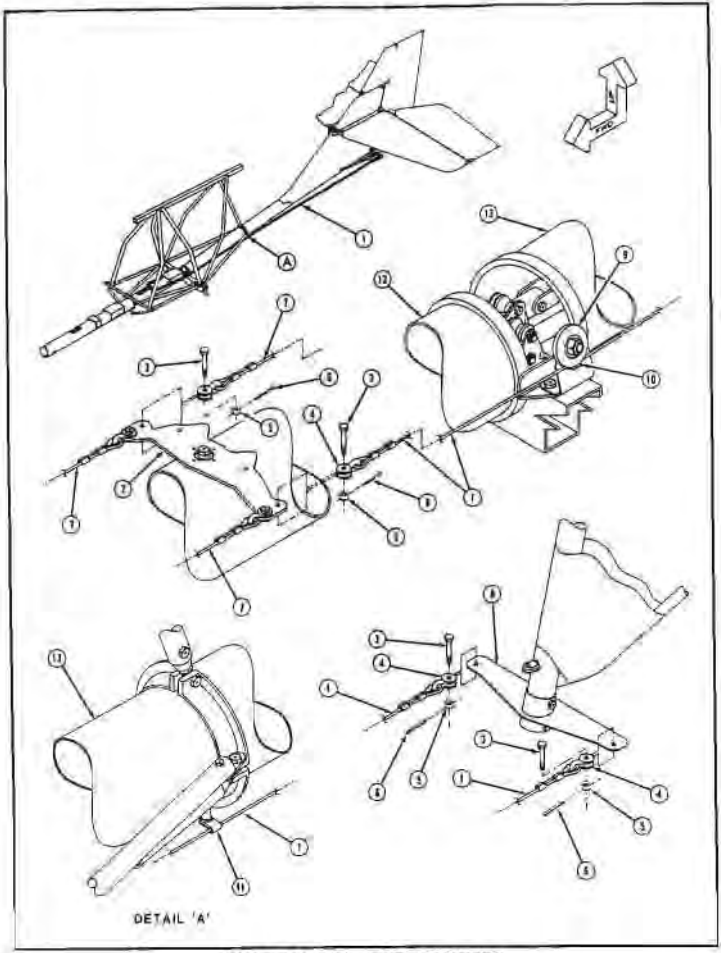
1. Assemble as illustrated. Bend ALL Cotter Pins correctly.

2. Loosen the Bolt holding Pulley (9) and slide the Cable (1) onto the Pulley between the Cable Guard (10) as illustrated.

3. Remove the Cable Guide (11) and install the Rudder Cable (1) as illustrated.

NOTE: Twist the Rudder Cables (1) and (7) in the appropriate direction as required to LENGTHEN or SHORTEN them if necessary to remove any slack in the system.

Item	P/N	Qty	Description
1.	45110.	2.	Aft Rudder Cable
2.	45474.		Aft Rudder Pedal Bellcrank
3.	10009.	4.	AN3-5 Bolt
4.	20320.	4.	3/16" Shackle
5.	10517.	4.	3/16" Castle Nut
6.	10635.	4.	Cotter Pin
7.	45108.		Forward Rudder Cable
8.	45087.		Rudder Bellcrank Assembly
9.	91008.		1 3/4" Pulley
10.	91110.		Cable Pulley Guard
11.	91118.		Cable Guide
12.	45545.		Forward Fuselage Tube Assembly
13.	45012.		Tail Boom Tube Assembly


DETAIL 'A'

RUDDER PEDAL ADJUSTMENT

1. The Rudder Pedals may be changed to a comfortable angle by adjusting the Male Rod End Bearings (1) in the Rudder Pedal Pushrods (2). Note: Only ONE set of Pedals are illustrated.

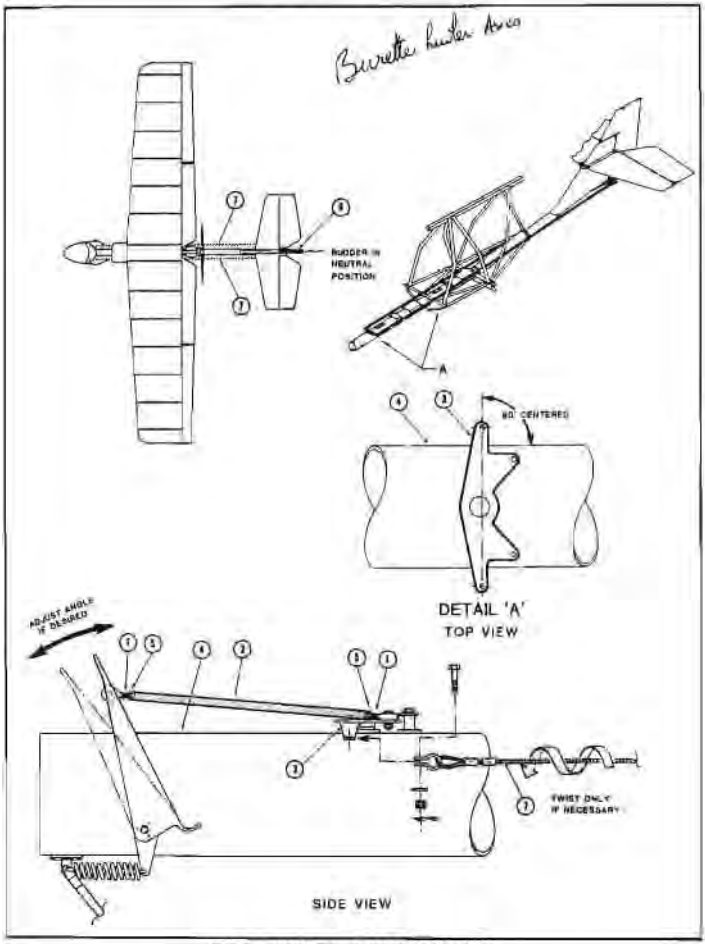
2. Refer to Detail A. Ensure that the Pedals are adjusted EVENLY with the Rudder Pedal Bellcrank (3) at 90 degrees to the Forward Fuselage Tube (4) and a least ten threads of the Bearings (1) are still INSIDE the Pushrods. Adjust BOTH FORWARD and AFT Bellcranks.

3. When properly adjusted, ensure the Rudder (6) is in the EXACT NEUTRAL positon and that the Bellcranks (3) are still 90 degrees to the Fuselage (4). Tighten the Jam Nuts (5) back up against the Pushrods (2).

4. Check BOTH Rudder Cables (7) for any slackness along their length. If there is slack, disconnect the AFT Rudder Cable (7) at the AFT Bellcrank (3) and CAREFULLY twist the Cable (7) as shown. Little, if any, twisting should be necessary - a HALF-TURN to FOUR FULL turns at the most.

5. Reconnect the AFT Cable (7) to the AFT Bellcrank (3). Check for slack. Ensure there are NO kinks in the Cable (7). Check Rudder Position. Check BOTH Bellcrank positions. Readjust as necessary. Retighten ALL hardware.

Item	P/N	Qty	Description
1.	10700		Male Rod End Bearings
2.	45448		Rudder Pedal Pushrod
3.	45476		Rudder Pedal Bellcrank
4.	45545		Forward Fuselage Tube
5.	10631		Jam Nut
6.			Rudder
7.	45110		Aft Rudder Cable


Burette Rudder Area
RUDDER IN NEUTRAL POSITION
90° CENTERED
DETAIL 'A'
TOP VIEW
ADJUST ANGLE IF DESIRED
TWIST ONLY IF NECESSARY
SIDE VIEW

WING ATTACHMENT

BEFORE starting the following sequence you will need to lay some protective material on the ground to protect the Wing Tips from becoming damaged.

NOTE: To complete the following sequence you will need the help of TWO (2) volunteers from the "studio audience" and an area AT LEAST 34 feet (10.4 meters) in width.

1. Remove the FOUR (4) Channels (1) and the Hardware (3, 4, 8, 9 and 11) previously attached to the Wing Jig.

2. Measure 5 7/16" (13.84 cm) along the SIDES, AFT from the FORWARD edge of the Root Tube (2) and locate the factory drilled 1/4" (6.4 mm) hole. Attach the Leading Edge Channels (1) as illustrated. Tighten ALL Locknuts to proper torque.

3. Measure 15 1/4" (38.79 cm) along the SIDES, and FORWARD from the AFT edge of the Root Tube (2) and locate the factory drilled 1/4" (6.4 mm) hole. Attach the Leading Edge Channels (1) as illustrated. Tighten ALL Locknuts to proper torque.

4. Attach the LEFT Wing as illustrated. DO NOT OVER TORQUE the Castle Nut (9) and DISTORT the Channels (1). Bend ALL Cotter Pins (10) correctly.

5. Attach the opposite (RIGHT) Wing in "mirror image".

Item	P/N	Qty	Description
1	20050	4	S-1.75 Channel
2	45668		Root Tube
3	10270	2	AN4-30A Bolt
4	10560	4	1/4" Washer
5	10510	2	1/4" Locknut
6	45690		Forward Leading Edge Spar Root Bracket
7	45625		Left Trailing Edge Wing Spar Assembly
	45626		Right Trailing Edge Wing Spar Assembly (not illustrated)
8	10260	1	AN4-27 Bolt
9	10521	2	1/4" Castle Nut
10	10635	2	Cotter Pin
11	10205	1	AN4-23 Bolt
12	45691		Aft Leading Edge Spar Root Bracket



FIG. 1



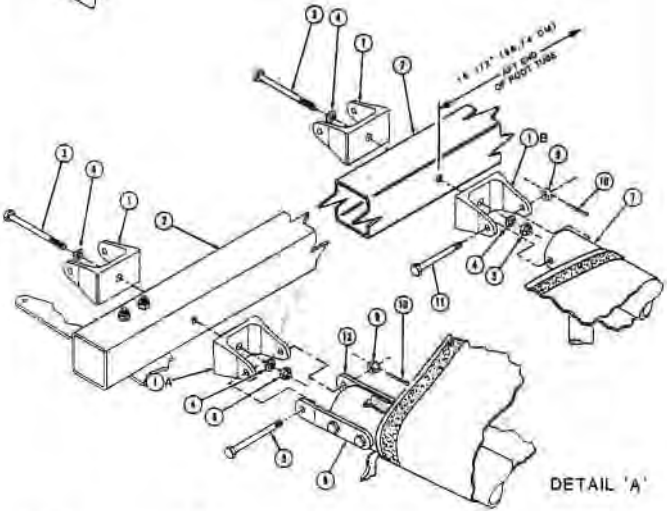


FIG. 2

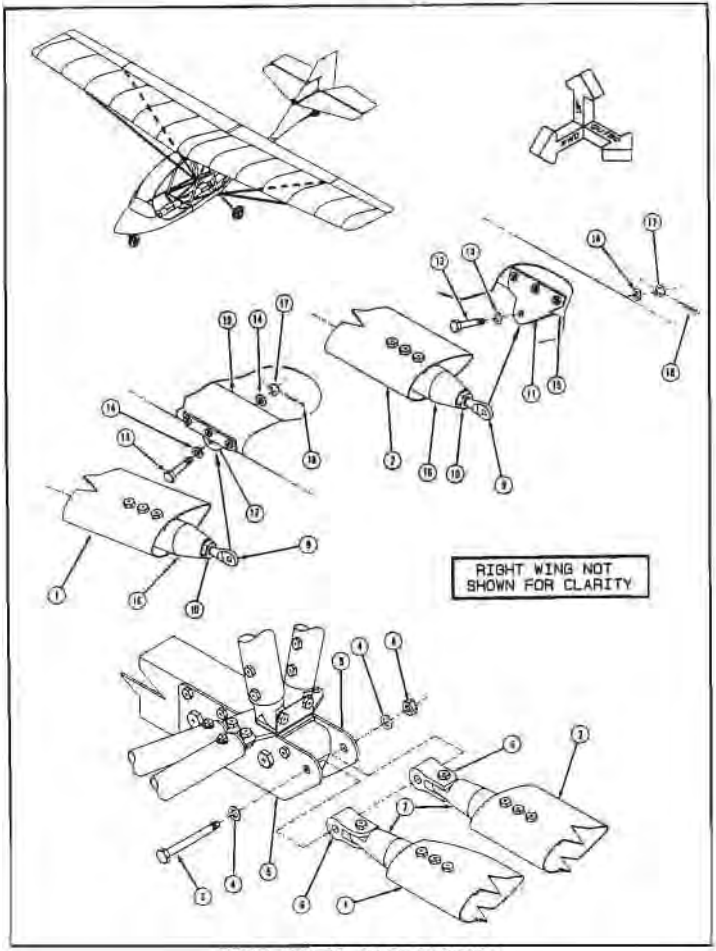


LIFT STRUT ATTACHMENT

1. Attach the Clevis Fittings (6) to the Strut Attach Plates (5) using Hardware (3,4 and 8). Tighten until "snug".

2. Attach the Eyebolts (9) to the respective Spar Fittings (11 and 12). TEMPORARILY install the Hardware (13,14 and 17).

Item	P/N	Qty	Description
1	45620		Leading Edge Lift Strut
2	45621		Trailing Edge Lift Strut
3	10397	4	AN6-27A Bolt
4	10575	4	3/8" Washer
5	45403		Strut Attach Plate
6	45689		Lift Strut Clevis
7	45688		Lift Strut Fitting
8	10547	2	3/8" Locknut
9	10382	4	3/8" - 24 Eyebolt
10	10549		3/8" - 24 Jam Nut
11	45722		Trailing Edge Lift Strut Fitting
12	45721		Leading Edge Lift Strut Fitting
13	10063	2	AN4-10 Bolt
14	10560	8	1/4" Washer
15	45625		Left Trailing Edge Wing Spar Assembly
	45626		Right Trailing Edge Wing Spar Assembly (not illustrated)
16	45696		Threaded Lift Strut Fitting
17	10521	4	1/4" Castle Nut
18	10635	4	Cotter Pin
19	45623		Left Leading Edge Wing Spar Assembly
	45624		Right Leading Edge Wing Spar Assembly (not illustrated)


RIGHT WING NOT
SHOWN FOR CLARITY

WING WASHOUT ADJUSTMENT

IMPORTANT: The following procedure MUST be done on a LEVEL surface. Preferably INSIDE a building to avoid errors caused by wind. DO NOT ROTATE the Angle Finder 180 Degrees between the LEFT and RIGHT Wing Tips.

Refer to Detail 'A'. Wing Washout is correct when the Trailing Edge Wing Spar is HIGHER than the Leading Edge Wing Spar and the Wing Tip Angle is ONE to TWO Degrees LOWER than the Root Tube Angle.

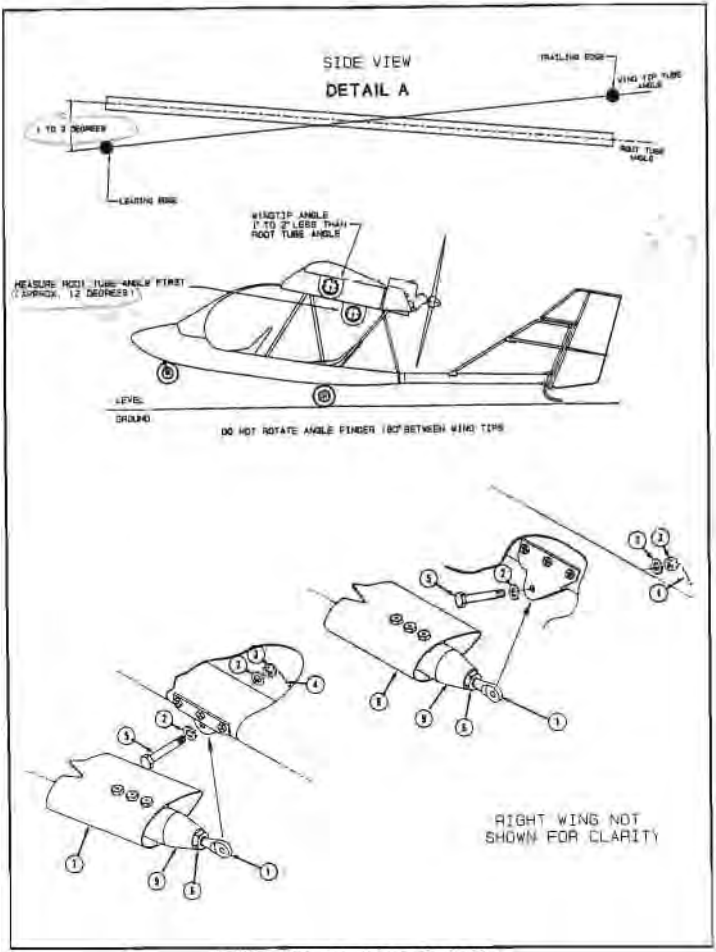
With the Aircraft resting on its Tail Skid, the Root Tube angle will be APPROXIMATELY TWELVE Degrees. The Wing Tip angle must read TEN to ELEVEN Degrees. As a guide, the Threaded Clevis (1) in the Leading Edge (FORWARD) Lift Strut (7) will indicate APPROXIMATELY 1/2 a thread and the Threaded Clevis (1) in the Trailing (AFT) Edge Lift Strut (8) will indicate APPROXIMATELY FIVE (5) threads. Adjust as required for accuracy.

1. Using the Angle Finder measure the Root Tube angle as illustated. Note the measurement.

2. Position the Angle Finder in the MIDDLE of the Wing Tip Tube (on the BOTTOM surface) as illustrated and measure the angle at the Wing Tip. Note the measurement. Adjust the Threaded Clevis (1) in the Leading Edge (FORWARD) Lift Strut (7) and the Trailing Edge (AFT) Lift Struts (8) until the Angle Finder indicates a Wing Tip angle of ONE to TWO Degrees LESS than that of the Root Tube angle. When the correct Wing Washout is achieved, attach the Hardware (2, 3 and 4) to the Bolt (5) which attaches the Eyebolt (1) to Spar Fittings (9). Tighten until "snug". Secure with a Cotter Pin (4). Bend ALL Cotter Pins correctly. Tighten the Jam Nut (6) back AGAINST the Strut Fitting (9) on BOTH Struts.

3. Repeat Steps 1 and 2 for the opposite (RIGHT) Wing.

Item	P/N	Qty	Description
1	10382		3/8" - 24 Eyebolt
2	10560	8	1/4" Washer
3	10521	4	1/4" Castle Nut
4	10535	4	Cotter Pin
5	10063	4	AN4-10 Bolt
6	10549		3/8" - 24 Jam Nut
7	45620		Leading Edge Lift Strut
8	45621		Trailing Edge Lift Strut
9	45696		Threaded Lift Strut Fitting


SIDE VIEW
DETAIL A
TRAILING EDGE
WING TIP TUBE ANGLE
1 TO 3 DEGREES
ROOT TUBE ANGLE
LEADING EDGE
WINGTIP ANGLE 1° TO 2° LESS THAN ROOT TUBE ANGLE
MEASURE ROOT TUBE ANGLE FIRST (APPROX. 12 DEGREES)
LEVEL GROUND
DO NOT ROTATE ANGLE FINDER 180° BETWEEN WING TIPS
RIGHT WING NOT SHOWN FOR CLARITY

JURY STRUT ATTACHMENT

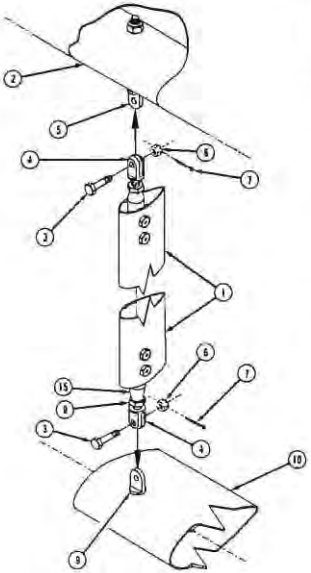
1. Attach the Jury Struts (1) and (11) as illustrated. Adjust the Forkbolts (4) at each end of the Jury Struts to allow the Forkbolt holes to align. Keep the SAME amount of threads showing at each end of the Struts. When adjustment is complete tighten the Jam Nuts (8) against the Fittings (15). Bend ALL Cotter Pins (7) correctly.

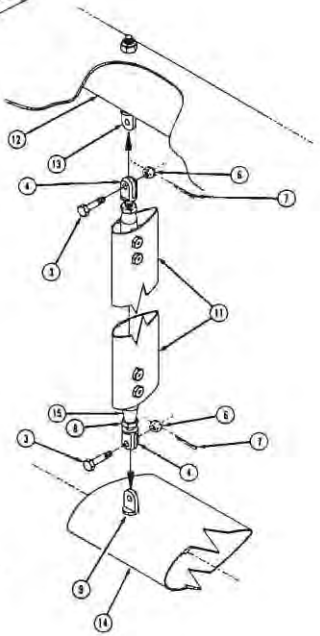
2. Attach the opposite (RIGHT) side in 'mirror image'.

Item	P/N	Qty	Description
1	45628	2	Leading Edge Jury Strut
2	45623		Left Leading Edge Wing Spar Assembly
	45624		Right Leading Edge Wing Spar Assembly (not illustrated)
3	10009	8	AN3-5 Bolt
4	10388		1/4" x 1" Full Thread Forkbolt
5	10368		AN43B-24 A Eyebolt
6	10517	8	3/16" Castle Nut
7	10635	8	Cotter Pin
8	10631		1/4" Jam Nut
9	10372		AN43B-20 A Eyebolt
10	45620	2	Left Leading Edge Lift Strut Assembly
			Right Forward Lift Strut Assembly (not illustrated)
11	45629	2	Trailing Edge Jury Strut
12	45625		Left Trailing Edge Wing Spar Assembly
	45626		Right Trailing Edge Wing Spar Assembly (not illustrated)
13	10373		AN43B-22A Eyebolt
14	45621	2	Trailing Edge Lift Strut Assembly
15	45494		75 x .035 1/4"-28 Tube Fitting




FWD
OUTER


2
5
4
6
7
3
1
15
8
3
4
10
9


12
13
4
6
7
3
11
15
8
6
3
7
4
9
14

AILERON AND FLAP ATTACHMENT

1. Refer to Detail 'A'. Attach the LEFT Aileron (1) to the LEFT Wing (2) using Hardware (3,4 and 5) as illustrated. Bend ALL Cotter Pins (5) correctly.

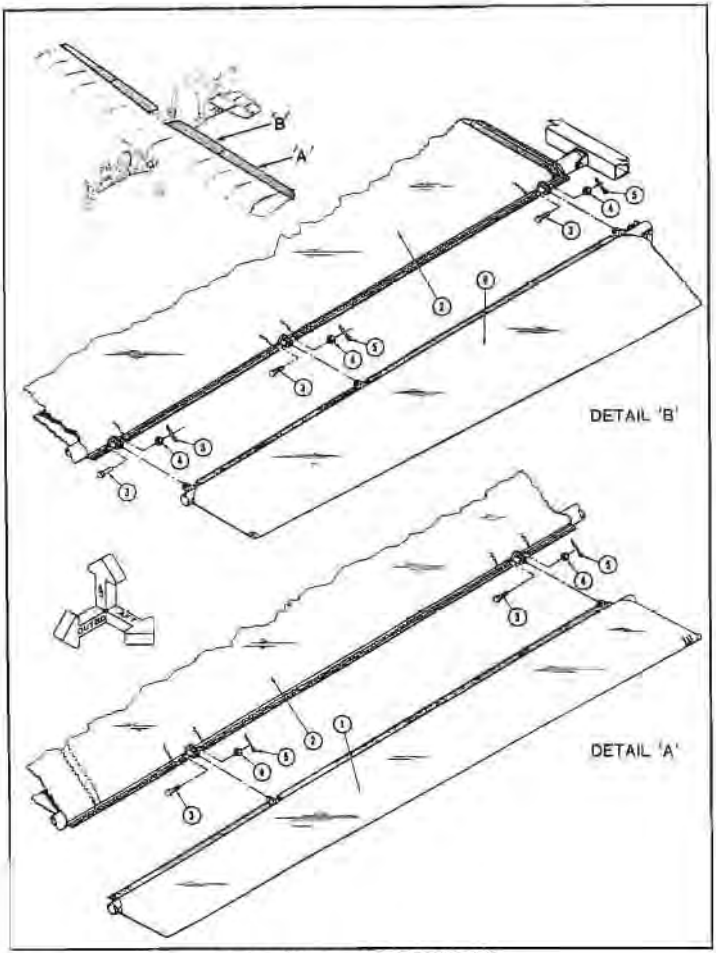
2. Repeat Step 1 in "mirror image" on the opposite (RIGHT) Wing.

3. Refer to Detail 'B'. Attach the LEFT Flap (6) to the Wing using Hardware (3,4 and 5) as illustrated. Bend ALL Cotter Pins (5) correctly.

4. Repeat Step 3 in "mirror image" on the opposite (RIGHT) Wing.

5. Compress the Velcro Gap Seal together along the length of the Wing (2) and each Aileron (1) and Flap (6).

Item	P/N	Qty	Description
1			LEFT Aileron Assembly
2			LEFT Wing
3	10009	10	AN3-5 Bolt
4	10517	10	3/16" Castle Nut
5	10635	10	Cotter Pin.
6			LEFT Flap Assembly


'B'
'A'
DETAIL 'B'
DETAIL 'A'

AILERON AND FLAP PUSHROD ATTACHMENT

1. Refer to Figure 1 and Detail 'A'. Insert the Aileron Pushrod (1) through the previously cut-out hole in the BOTTOM surface of the LEFT Wing.

2. Attach the Aileron Pushrod as illustrated. DO NOT TIGHTEN the remaining Locknut (8) attached to Bolt (5) as the Aileron Pushrod (1) will be adjusted in a later sequence on Pages 7-22 and 7-23.

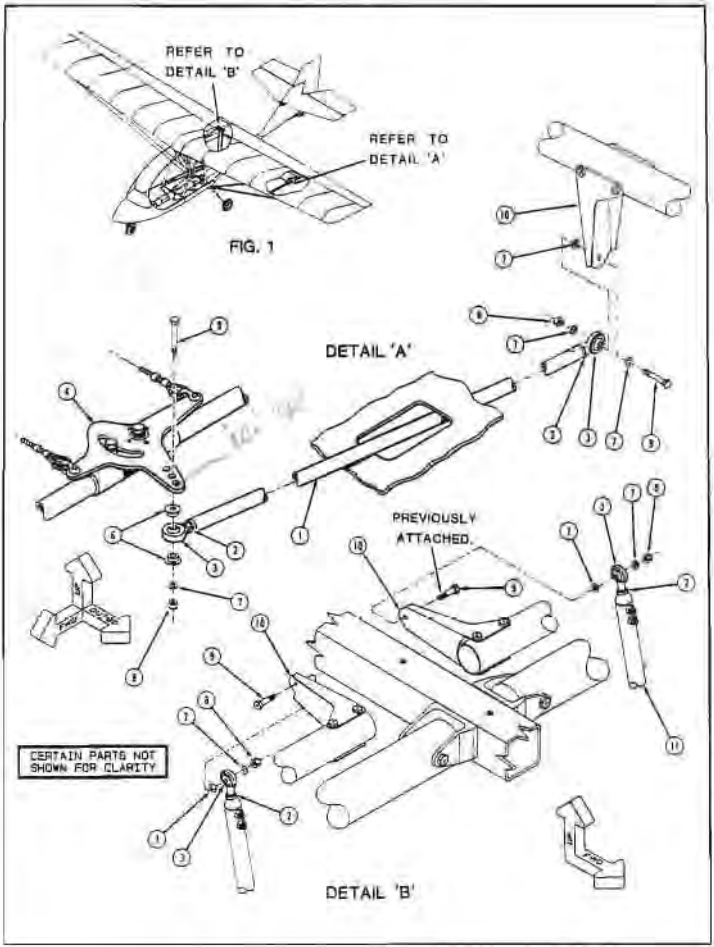
NOTE: Attaching the FORWARD end of the Aileron Pushrod (1) to the INBOARD most attachment hole of the Aileron Bellcrank (4) will give you LESS Aileron deflection and LOWER Aileron Control pressures. Attaching the Pushrod to the OUTBOARD most hole will give you MORE Aileron deflection and HIGHER Aileron pressures.

3. Attach the opposite (RIGHT) Aileron Pushrod with Hardware (5,6,7, and 8) in "mirror image".

4. Refer to Figure 1 and Detail 'B'. Attach the Flap Pull Rods (11) with Hardware (9,7 and 8) previously installed as illustrated. The LEFT Flap Pull Rod (14) must pass ABOVE the Forward Seat Belt Attach Brackets and between the Forward Down Tubes. Tighten ONLY Locknut (8) attached to Bolt (16) to proper torque. The Pull Rods will be adjusted in a later sequence on Pages 7-24 and 7-25.

NOTE: Refer to Detail 'B' only. You may wish to substitute an AN3-7 Bolt (P/N 10018) for item # 9 and a 3/16" Castle Nut (P/N 10517) for item # 7 if you plan on breaking down your aircraft for transport as the Flap Pull Rods will need to be disconnected. You may obtain these parts from your QUICKSILVER Dealer.

Item	P/N	Qty	Description
1	45699		Aileron Pushrod Assembly
2	10631		1/4" - 28 Jam Nut
3	10700		1/4" Male Rod End Bearing
4	42009		Aileron Bellcrank
5	10025	2	AN3-11A Bolt
6	20241	2	"T" Bushing
7	10550	8	3/16" Washer
8	10500	4	3/16" Locknut
9	10020	2	AN3-7A Bolt
10	45260		Aileron/Flap Horn
11	45225		Aft Flap Pull Rod


REFER TO DETAIL 'B'
REFER TO DETAIL 'A'
FIG. 1
DETAIL 'A'
PREVIOUSLY ATTACHED.
CERTAIN PARTS NOT SHOWN FOR CLARITY
DETAIL 'B'

AILERON DEFLECTION ADJUSTMENT

1. Uncoil the LEFT Aileron Cables (1). Ensure that the Aileron Bellcrank (2) is orientated as illustrated and that the Cables are NOT twisted and PARALLEL to each other. Attach the Cables (1F) and (1A) to the Root Tube Bellcrank (3) using the Hardware (4, 10, 5 and 12). Bend ALL Cotter Pins (5) correctly.

2. Refer to Detail 'A'. Disconnect the Male Rod End Bearing of the Aileron Pushrod Assembly (6) at the LEFT Aileron Horn (7). Position a STRAIGHT Edge on the UNDER SIDE of the LEFT Wing as illustrated. Tie it in that position.

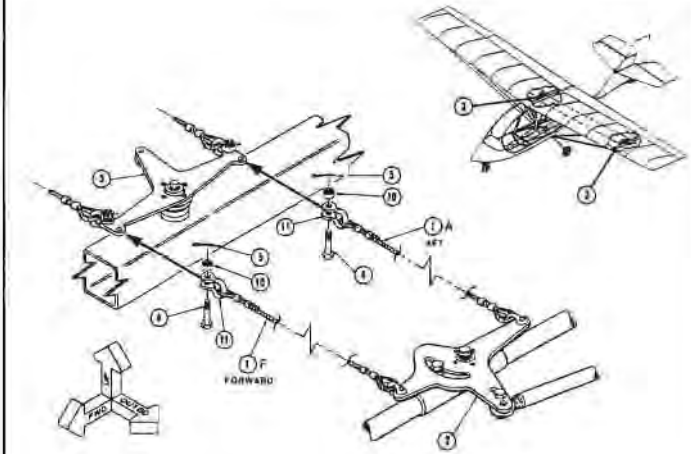
3. Have a "volunteer from the studio audience" sit in the FRONT Seat and hold the Control Wheel (not illustrated) EXACTLY "LEVEL" or "NEUTRAL".

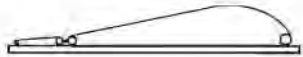
4. Refer to Detail 'B'. Thread the Jam Nut (8) up to the shoulder of the Male Rod End Bearing (9). Rotate the Pushrod (6) "ALL the WAY" onto the Bearing (9). "Back-off" the Pushrod until the Holes in the AFT Rod End Bearing and the Horn (7) align EXACTLY. Reinsert the Hardware, it should slip back in easily, without moving the Horn (7). Adjust as necessary. Retighten the Hardware until "snug". Bend the Cotter Pin (5) Correctly. Always make sure there is AT LEAST TEN threads of the Rod End Bearing INSIDE the Pushrod.

5. Refer to Detail 'C'. Tighten the Jam Nut (8) back AGAINST the Pushrod (6).

6. Repeat on the opposite (RIGHT) Aileron.

Item	P/N	Qty	Description
1	45713		Aileron Cable
2	42009		Aileron Bellcrank
3	46005		Root Tube Bellcrank
4	10009	4	AN3-5 Bolt
5	10635	4	Cotter Pin
6	45699		Aileron Pushrod Assembly
7	45620		Aileron/Flap Horn
8	10631		1/4" - 28 Jam Nut
9	10700		1/4" Male Rod End Bearing
10	10517	4	Castle Nut
11	20320	4	3/16" Shackle

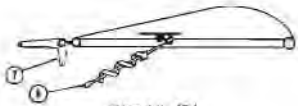




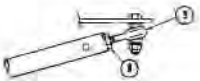
DETAIL 'A'



SIDE VIEW



DETAIL 'B'



DETAIL 'C'

FLAP PULL ROD ATTACHMENT AND FLAP HANDLE STOP ADJUSTMENT

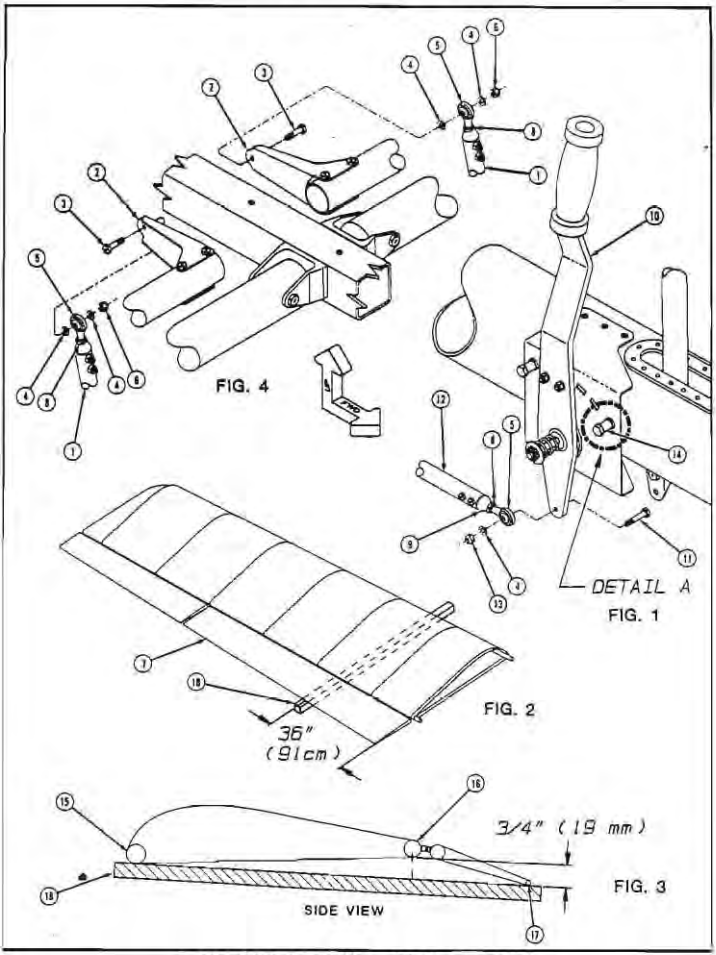
1. Refer to Figure 1. Set the Flap Handle (10) in the FULLY "AFT" or "RETRACTED" position. Assemble Hardware (11,5,4 and 13) FINGER TIGHT ONLY. Refer to Figure 4. Temporarily remove the Hardware (4) and (6) from the Bolt (3) which attaches the LEFT Flap Horn (2) to the LEFT Flap Pull Rod (1).
Refer to Figures 2 and 3. Position a Staight Edge UNDER the Left Flap (15) as illustrated.
Preload the Flap by raising it UPWARD with the Staight Edge.

2. Adjust the Bearing (5) attached to the LEFT Flap Pullrod (1) until there is 3/4" (19 mm) between the BOTTOM edge of the Trailing Edge Wing Spar (16) and the TOP of the straight edge. Replace the Hardware (3,4 and 6). Ensure there is a MINIMUM of TEN (10) threads of the Rod End Bearing INSIDE the Pullrod (1). **NOTE:** If more adjustment is needed adjust the Bearing (5) attached to the Forward Flap Pullrod (12). When adjustment is completed tighten the Locknut (6) to proper torque. Tighten the Jam Nut (8) against the Fitting (9).

3. Repeat on the opposite (RIGHT) side in "mirror image".

4. Refer to Figure 1. Secure Locknut (13) and the Jam Nut (8). AFTER BOTH Flaps have been adjusted set the Flaps into the FOURTH (4th) detent position which is "FULLY FORWARD" or "FULLY EXTENDED". Refer to Detail 'A'. Ensure the Flap Handle Stop (14) is positioned as to allow the Flap Handle (10) to rest or make contact against the Stop when the Flaps are "FULLY" extended. Tighten the Locknut on the Flap Handle Stop.

Item	P/N	Qty	Description
1	45225		Aft Flap Pull Rod
2	45260		Flap Horn
3	10020		AN3-7A Bolt
4	10550		3/16" Washer
5	10700		1/4" Male Rod End Bearing
6	10500		3/16" Locknut
7			Left Flap Assembly
8	10631		1/4" - 28 Jam Nut
9	45494		1/4" - 28 x 3/4" x .035" Fitting
10	45267		Flap Handle
11	10024		AN3-10A Bolt
12	45136		Forward Flap Pull Rod
13	10500		3/16" Locknut
14			Forward Flap Handle Stop
15			Leading Edge Wing Spar
16			Trailing Edge Wing Spar
17			Flap Trailing Edge
18			Straight Edge


FIG. 4
DETAIL A
FIG. 1
FIG. 2
36"
(91cm)
3/4" (19 mm)
FIG. 3
SIDE VIEW

GAP COVER ATTACHMENT

1. Attach the LOWER Gap Cover (1) between the Wings LOWER surface with the Velcro UP, clear portion FORWARD (to allow view of the Fuel Tank).

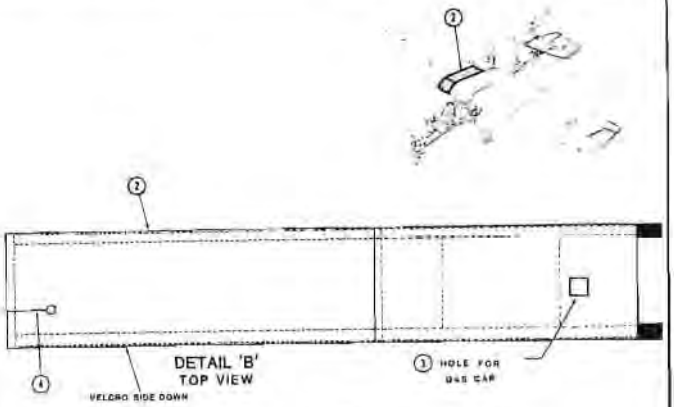
NOTE: The Upper Gap Cover (2) has Velcro Fasteners on the FORWARD end.

2. Attach the UPPER Gap Cover (2) by placing the TWO Velcro Fasteners on the FORWARD end of the Gap cover (2) on the LOWER Gap cover (1) already attached.

3. Position the cut-out for the Fuel Tank Cap CENTERED OVER the Cap. Finish attaching the Gap Cover along the UPPER surface of the Wing to the rear.

4. Cut slit (4) and hole for Throttle and Choke Cables coming from the Powerplant as required.

Item	P/N	Qty	Description
1	45649	1	Lower Gap Cover
2	45648	1	Upper Gap Cover
3			Fuel Cap cut-out (factory made)
4			Cable Slit and Hole


1
2
DETAIL 'B'
TOP VIEW
3 HOLE FOR GAS CAP
4
VELCRO SIDE DOWN
7
DETAIL 'A'
2
DETAIL 'C'

LABEL PLACEMENT

1. Refer to Figures 1, 2 and 3. Attach Labels as illustrated.

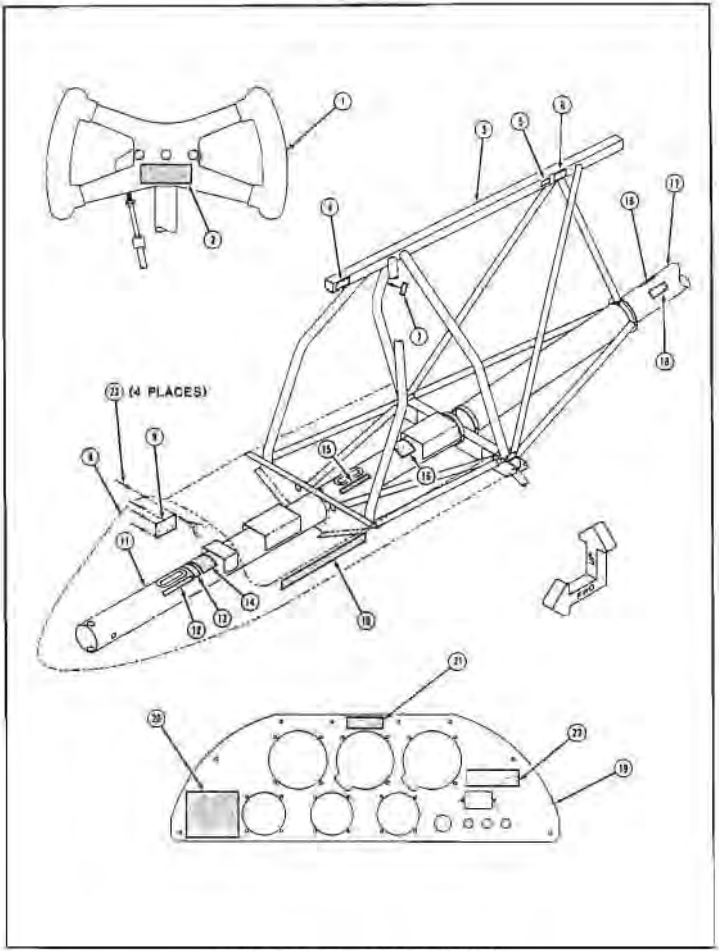
NOTE: Attach a Passenger Warning Label (2) to BOTH FORWARD and AFT Control Wheels (1). Position the Propeller Arc Labels (18) on the each SIDE and CENTERED on the Arc of the Propeller on the Tail Boom Tube (17) as illustrated.

2. Attach the FAA Nameplate (9) to the SIDE of the Pilot Enclosure (8) as illustrated. Position the Nameplate in the desired location. Using the EXISTING attachment holes in the Nameplate CAREFULLY drill FOUR 1/8" (3.2 mm) diameter holes through the side of the Pilot Enclosure and attach the Nameplate with FOUR Rivets (24) with the heads of the Rivets located on the OUTSIDE of the Pilot Enclosure (8).

NOTE 1: When drilling through Fiberglass, it tends to splinter on the back side as the drill bit comes through it. You may wish to drill from the OUTSIDE of the Enclosure.

NOTE 2: Attach the "EXPERIMENTAL" Label (10) to the OUTSIDE of the Pilot Enclosure AFTER the Enclosure has been painted.

Item	P/N	Qty	Description
1	45555		Control Wheel
2	50420-17	2	Passenger Warning Label
3	45668		Boot Tube
4	90601	1	50:1 Fuel Mixture Label
5	50420-09	1	Service Bulletin Label
6			GT 500 Serial Number Label (Factory Installed)
7	846-17	1	Monitor Fuel Level Label
8	45578		Pilot Enclosure
9	50420-18	1	FAA Nameplate
10	50420-16	1	"Experimental" Label
11	45545		Forward Fuselage Tube Assembly
12	50420-15	1	Trim Label
13	846-21	1	Read Markings and Placards Label
14	846-18A		Warning Label (Factory Installed)
15	50420-15	1	Trim Label
16	906-05	1	Solo Front Seat Only Label
17	45012		Tail Boom Tube Assembly
18	50420-05	2	Propeller Arc Label
19	45574		Instrument Panel
20	906-03	1	GT 500 Flight Speeds Label
21	846-17	1	Monitor Fuel Level Label
22	846-01A	1	Preflight Check Label
23	20200	4	1/8" x 1/4" Grip Aluminum Rivet (AAP-44)


(23) (4 PLACES)

WINDSHIELD ATTACHMENT

1. Refer to Figure 1. and Detail 'A'. Clamp or tape (clamps are preferred) the LEFT Windshield Frame Tube (1) to the Windshield Frame Bracket (2) CENTERED over the 3/16" (4.8 mm) diameter attachment hole in the Bracket with the AFT end of the tube located APPROXIMATELY 1" (25.4 mm) AFT from the CENTER of the hole as illustrated.

2. Refer to Figure 1 and Detail 'B'. Position the FORWARD end of the Windshield Frame Tube (1) against the Pilot Enclosure (3). **DO NOT** allow the Windshield Frame Tube (1) to make contact or rub against the Instrument Panel (not illustrated).

3. Repeat Steps 1 and 2 on the opposite (RIGHT) side in "mirror image".

Item	P/N	Qty	Description
1	46310	2	Windshield Frame Tube
2	46002		Windshield Frame Bracket
3	45578		Pilot Enclosure

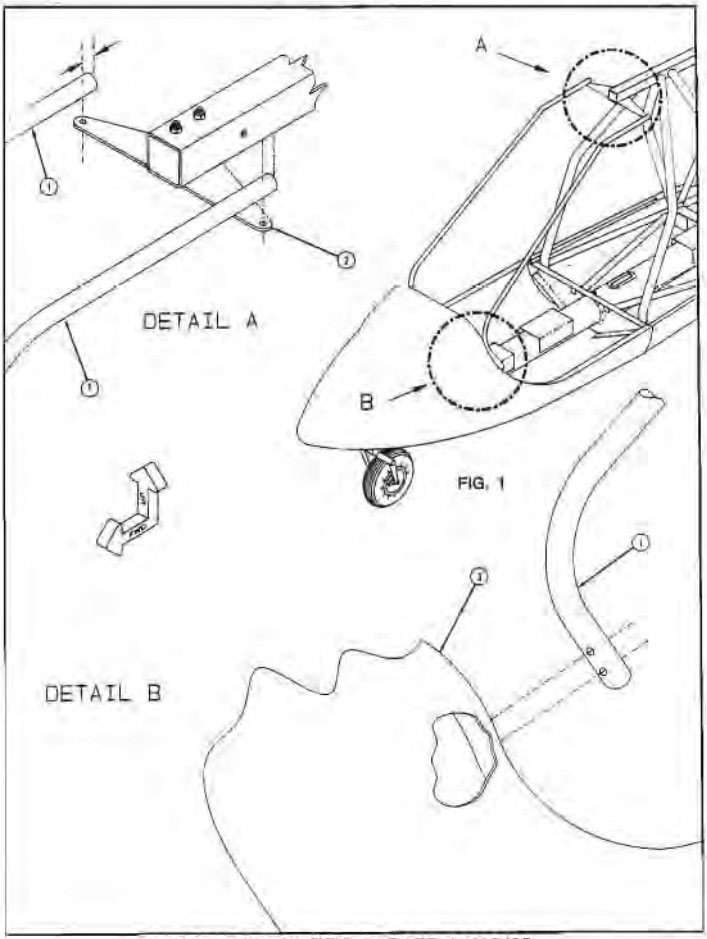


FIG. 1

WINDSHIELD ATTACHMENT (CONT'D.)

NOTE: If you plan on painting the Pilot Enclosure (1). You may wish to TEMPORARILY attach the Windshield then remove it after all the required holes are drilled.

1. Refer to Figure 1 and Detail 'A'. Locate the CENTERLINE of the Pilot Enclosure (1) and TEMPORARILY mark this location.

2. Locate the factory punched 3/16" (4.8 mm) diameter hole on the CENTERLINE, at the FORWARD end of the Windshield (2), as illustrated.

3. Locate the 1 1/2" (3.81 cm) wide flattened area around the UPPER surface of the Pilot Enclosure (1). Position the FORWARD edge of the Windshield (2) at FORWARD edge of this location.

4. Using the EXISTING 3/16" (4.8 mm) diameter hole punched in the Windshield (2), back-drill thru the CENTER hole in the Windshield and into the Pilot Enclosure (1) on its CENTERLINE.

NOTE: The hole drilled in the Pilot Enclosure should be located APPROXIMATELY 9 3/4" (24.76 cm) FORWARD of the FLAT portion of the Pilot Enclosure supporting the Instrument Panel.

5. Align the CENTER hole of the Windshield and Pilot Enclosure Attach them with a Washer Head Screw (3) TWO Washers (4) and Locknut (5). Tighten the Locknut FINGER TIGHT ONLY.

NOTE: Slip a Washer (4) BETWEEN the Windshield (2) and the Pilot Enclosure (1). This will allow you to more easily remove (by washing away) any dirt or debris which may become trapped between the Windshield and Pilot Enclosure at this location.

Item	P/N	Qty	Description
1	45578		Pilot Enclosure
2	45568	1	Curved Windshield
3	11075	1	AN525-10R10 Washer Head Screw
4	10550	2	3/16" Washer
5	10500	1	3/16" Locknut

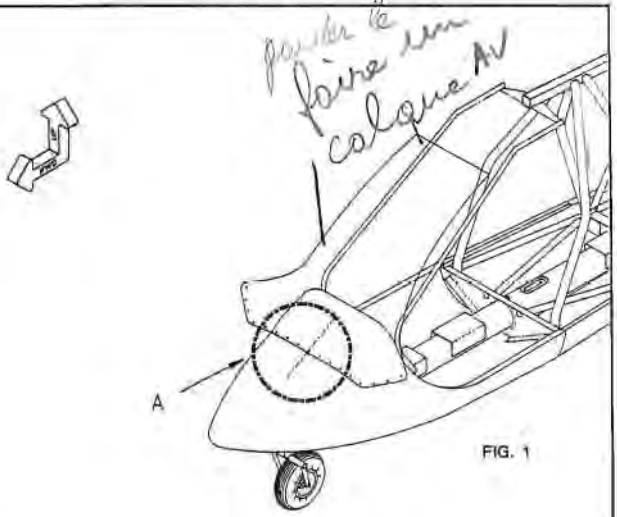
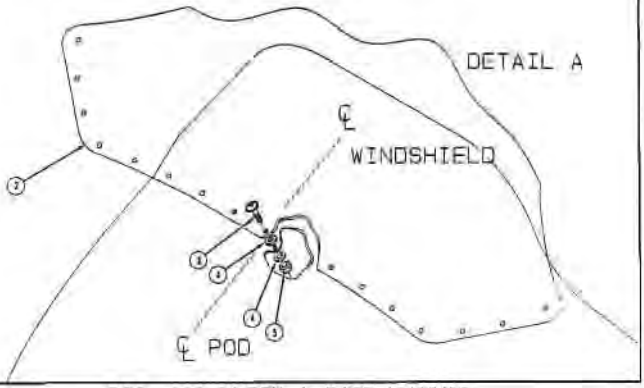


FIG. 1



WINDSHIELD ATTACHMENT (CONT'D.)

NOTE: There must be enough Windshield (1) wrapped around the Windshield Frame Tube (8) to install Rivets (not illustrated) in a later sequence on Pages 7-28E and 7-28E.

1. Refer to Figure 1 and Detail 'A'. Drill a 3/16" (4.8 mm) diameter hole in the TOP of the Windshield (1) on the VERTICAL CENTERLINE APPROXIMATELY 5/16" (8 mm) FORWARD from the AFT end.

2. Locate the CENTERLINE in BOTH directions on the Windshield Curve Bracket (2). Mark this location on the Bracket.

3. Align the AFT edge of the Windshield with the HORIZONTAL CENTERLINE on the Windshield Curve Bracket (2). Back-drill thru the 3/16 (4.8 mm) hole in the Windshield (1) and thru the Windshield Curve Bracket (2). Deburr the hole.

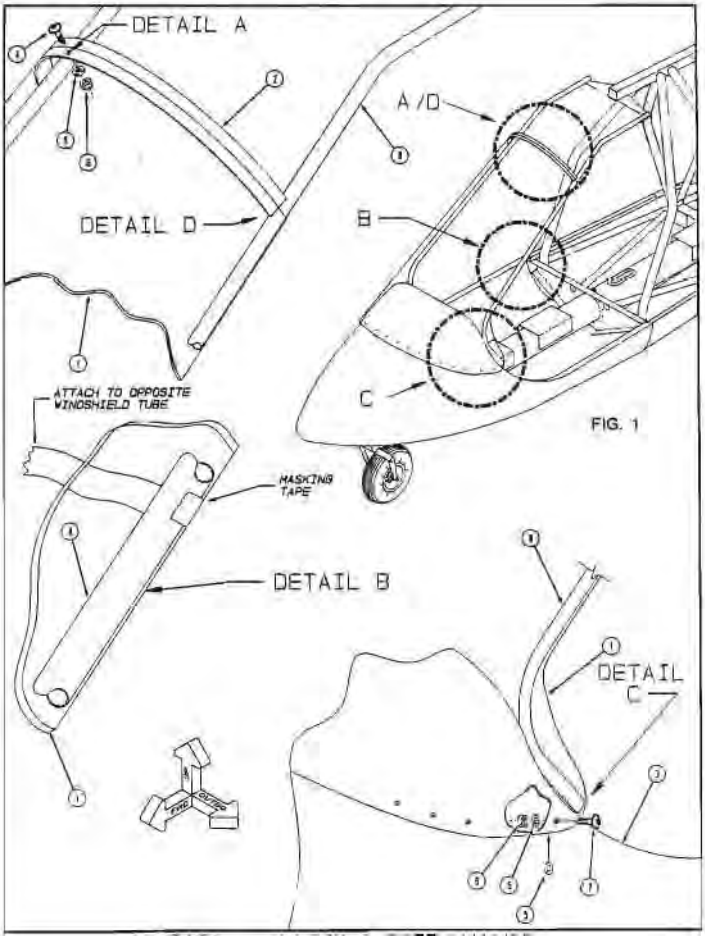
4. Attach the Windshield (1) to the Bracket (2) with hardware (4,5 and 6) as illustrated. Tighten to proper torque.

5. Refer to Detail 'D'. Wrap the TOP edge of the Windshield (1) around the Windshield Curve Bracket (2) and drill one (1) hole at each end of the Windshield as was done previously for the CENTER hole location. Attach with hardware (4,5 and 6).

6. Refer to Figure 1 and Detail 'B'. Use masking tape to shape the Windshield curve. Move the Windshield Frame Tubes (8) at BOTH ends as required until the Windshield is PARALLEL with the tubes and the edge distance is EVEN on BOTH sides. Note where the Tubes (8) make contact with the Pilot Enclosure (3) DO NOT allow the Windshield Frame Tube to come into contact with the Instrument Panel (not illustrated). Clamp the FORWARD end of the Windshield Frame Tube to the Pilot Enclosure.

7. Refer to Detail 'C'. Back-drill thru the EXISTING 3/16" (4.8 mm) hole in the Windshield (1) and attach it to the Pilot Enclosure (3) with Hardware (7,5 and 6) (as illustrated). Tighten to proper torque. Work from the CENTER hole OUTBOARD ALTERNATING sides. NOTE: End location shown for clarity ONLY.

Item	P/N	Qty	Description
1	45568		Curved Windshield
2	46003		Windshield Curve Bracket
3	45578		Pilot Enclosure
4	11074	13	3/16" Washer Head Screw (ANS25-10R9)
5	10550	35	3/16" Washer
6	10500	19	3/16" Locknut
7	11075	16	3/16" Washer Head Screw (ANS25-10R10)
8	46310		Windshield Frame Tube


DETAIL A
DETAIL D
A/D
B
C
ATTACH TO OPPOSITE WINDSHIELD TUBE
MASKING TAPE
DETAIL B
DETAIL C
FIG. 1

WINDSHIELD ATTACHMENT (CONT'D.)

1. Refer to Figure 1 and Detail 'A'. Verify the AFT end of the LEFT Windshield Frame Tube (1) is CENTERED over the 3/16" (4.8 mm) diameter attachment hole on the LEFT side of the Windshield Frame Bracket (2).

NOTE: There should be APPROXIMATELY 1" (25.4 mm) from the AFT end of the Windshield Frame Tube (1) and the CENTER of the Windshield Frame Bracket (2) attachment hole.

2. Back-drill thru the EXISTING 3/16" (4.8 mm) diameter attachment hole in the LEFT side of the Windshield Frame Bracket (2) and thru BOTH walls of the Windshield Frame Tube (1). Deburr the hole. Attach the Windshield Frame Tube to the Windshield Tube Bracket (2) with Hardware (3,4 and 5) as illustrated. Tighten to correct Torque. DO NOT DISTORT THE TUBE.

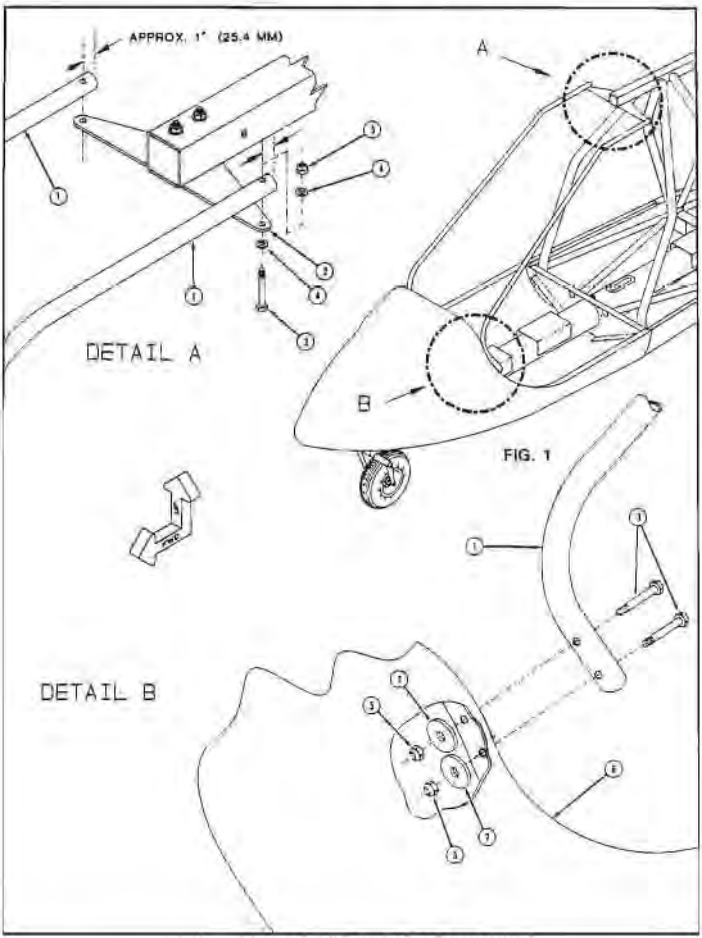
NOTE: Before completeing the next step, ensure the Wineshield Frame Tube (1) does NOT come into contact or rub against the Instrument Panel (not illustrated).

3. Refer to Figure 1 and Detail 'B'. Back-drill thru the EXISTING holes at the LOWER end of the LEFT Windshield Frame Tube with a 3/16" (4.8 mm) diameter Drill Bit the LEFT Windwhield Frame Tube (1)

4. Attach the LEFT Windshield Frame Tube (1) to the Pilot Enclosure (6) with Hardware (3,7 and 5) as illustrated. Tighten to correct torque. DO NOT DISTORT THE TUBE.

5. Repeat Steps 1 thru 4 for the opposite (RIGHT) Windshield Frame Tube.

Item	P/N	Qty	Description
1	46310		Windshield Frame Tube
2	46002		Windshield Frame Bracket
3	10030	6	AN3-13A Bolt
4	10550	4	3/16" Washer
5	10500	6	3/16" Locknut
6	45578		Pilot Enclosure
7	10563	4	3/16" Fender Washer


APPROX. 1" (25.4 MM)
DETAIL A
A
B
FIG. 1
DETAIL B

UPPER WINDSHIELD ATTACHMENT

1. Refer to Figure 1 and Detail 'A'. Temporarily position the Upper Formed Windshield (1) over the Windshield Frame Tube (2).

2. Refer to Detail 'D'. Move the FORWARD edge of the Upper Formed Windshield (1) as to allow contact with the AFT edge of the Windshield (4).

3. Refer to Detail 'C'. Trim the AFT edge of the Upper Formed Windshield (1) as required to match the angle of the Wing Leading Edge. Ensure the Upper Windshield DOES NOT come into contact or rub against the Wing Cover (5).

NOTE: The Upper Formed Windshield (1) should be positioned LOWER than the TOP of the Fuel Tank Cap (not illustrated) when positioned correctly.

4. Align the edges of the Upper Formed Windshield (1) with the Windshield Frame Tubes (2) the SAME as was previously done for the Windshield (4). Use Masking Tape to hold it into position.

5. Trim any EXCESS Upper Formed Windshield (1) material if required.

6. Refer to Detail 'B'. Drill 1/8" (3.2 mm) diameter holes thru ONE (1) wall ONLY and attach the Upper Formed Windshield (1) and Windshield (4) to the Windshield Frame Tube (2) with Rivets (6) at APPROXIMATELY 4" (10.16 cm) intervals.

7. Refer to Detail 'C'. Cut and attach a piece of Edge Trim (7) (not illustrated) as required to the AFT edge ONLY of the Upper Formed Windshield (1).

IMPORTANT: Secure the Edge Trim (7) to the AFT edge of the Upper Windshield (1) with THREE (3) Rivets (6). One (1) at each end and ONE (1) in the CENTER of the Upper Formed Windshield.

Item	P/N	Qty	Description
1	45567		Upper Formed Windshield
2	46310	2	Windshield Frame Tube
3	46003		Windshield Curve Bracket
4	45568		Curved Windshield
5			Wing Cover
6	20200	A/R*	1/8" x 1/4" Grip Aluminum Rivet (AAP-44)
7	90475	A/R*	Edge Trim (not illustrated)

* As required.

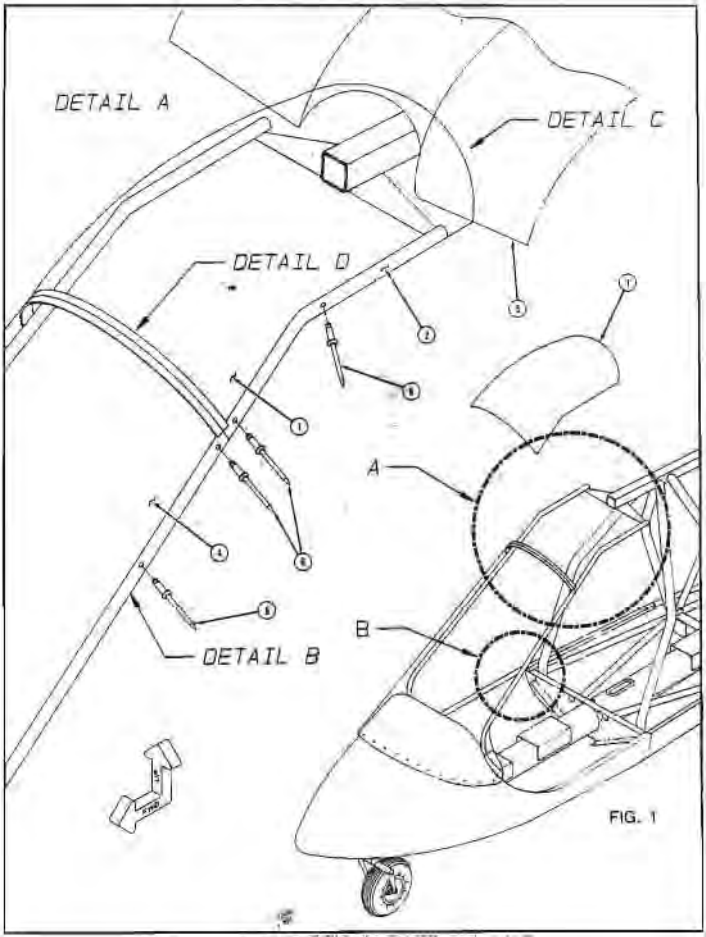


FIG. 1

INTRODUCTION

To achieve the balance your aircraft was designed to have, your **QUICKSILVER DEALER** will use the following procedure when you've completed the assembly of the kit. Thereafter, if you change the weight of an existing part or position any other weight on the aircraft (such as a Ballistic Recovery System) or the weight of the Pilot or his equipment (Winter/Summer Flight Gear) changes significantly, it is ESSENTIAL that the resulting change in the Center of Gravity (CG) is established within the design limits **BEFORE THE AIRCRAFT IS FLOWN.**

THE FORMULA
To determine the location of the CG for this aircraft:

TOTAL MOMENT OF AIRCRAFT
---------- = DISTANCE OF CG FROM DATUM
GROSS WEIGHT OF AIRCRAFT

NOTE: The following calculations are in inches. The Formula to convert inches to millimeters is : Inches x 25.4
Weighing Points

Empty Weight.....Main Landing Gear and Tail Skid

Weight & Balance Procedure

Note A loading sytem is not required.

1. The aircraft should be weighed inside a closed building to avoid errors caused by wind.
2. The floor MUST BE LEVEL, or the scales must be securely wedged and accurately levelled.
3. The accuracy of the three Weighing Scales must be established.
4. First weigh the Pilot, including his complete flying equipment, helmet, parachute, etc. and any baggage which he will use in normal flight when strapped in seat (Such as a Wrist-Altimeter). Record the weight for use in Chart 2.
5. Place the two Scales so that their top surfaces are 6" (152.4 mm) above ground level, in the Main Wheel position. Place the third Scale so that its top surface is 35" (889 mm) above floor level, in the Tail Skid position.
6. With the assistance of a friend, lift the aircraft so that its Main Wheels are CENTERED on the Scales and the Tail Skid is centered on its Scale.

NOTE: If it is necessary to wedge the wheels to prevent the aircraft from rolling off the Scales, then those wedges must be weighed separately and entered as "Tare Weight".

WEIGHT AND BALANCE PROCEDURE (CONT'D.)

7. Refer to Figure 6-1. Using the Angle Finder Tool measure the angle of the Root Tube. It must read ZERO (0) degrees. If it doesn't, shim as necessary between the boxes and the Scales or between the floor and the Tail Skid scale, until it does.
8. Mark the LATERAL CENTERLINE of the Main Wheels on the floor.

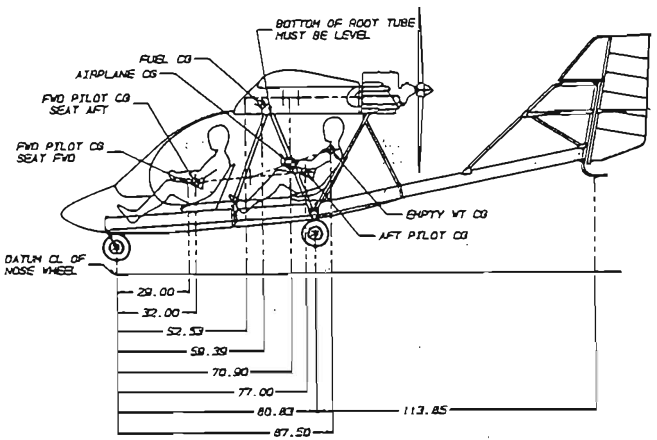


Figure 7-1 : WEIGHT AND BALANCE CONFIGURATION.

Aircraft on boxes. Angle Finder reads ZERO (0) degrees. Moment Arm of Seat, Fuel Tank, Wheels and Tail Skid accurately shown.

EQUIPMENT LIST:

1) Airspeed Indicator
2) Tachometer
3) Water Temperture Gauge
4) Hour Meter

DETERMINATION OF EMPTY WEIGHT CG LOCATION (CONT'D.)

9. Measure the distance from the "datum" (front edge of the Forward Fuselage Tube) to the middle of the lateral centerline of the Main Wheels. This establishes the "moment arm" and should read 77.0"(1955mm)(see CHART 1).
10. Record the individual weight on each wheel and the tail skid into CHART 1 under "Gross Weight". Subtract the "Tare" from each weight and record the results under "Net Weight". Add the weights in the Net Weight column and record the total in "Total Empty Weight".
11. Multiply the Net Weight of the left wheel by the "left wheel moment arm". The result is the left wheel Moment (in.lbs.). Record this result in the right-hand column.
12. Repeat (11) above for the right wheel and the tail skid.
13. Add and record the result of the above Moments to find the "Total Moment (Empty)".
14. Divide the Total Moment by the Total Empty Weight. The result is the Empty Weight CG "Moment Arm".

CHART 1

Weight includes: ALL instruments & accessories, ARS installed
Weight DOES NOT include: fuel, pilot and/or pilot equipment.

EMPTY WEIGHT CALCULATION

ITEM	GROSS WEIGHT		TARE WEIGHT		NET WEIGHT		MOMENT ARM (inches to Datum) (millimeters to Datum)		MOMENT (in.lbs.) (kg/mm)
Left Wheel		-		=		X	77.0"(1955 mm)	=	
Right Wheel		-		=		X	77.0"(1955 mm)	=	
Tail Skid		-		=		X	194.7"(4945 mm)	=	
TOTAL EMPTY WEIGHT:					_____		TOTAL MOMENT: (EMPTY)		_____

TOTAL MOMENT (EMPTY) _____
---------- = ------- = _____ EMPTY WEIGHT CG
TOTAL EMPTY WEIGHT _____ (Moment Arm)

DETERMINATION OF LOADED WEIGHT CG LOCATION (CONT'D.)

15. Record the "TOTAL EMPTY WEIGHT" from CHART 1 into CHART 2 under "AIRCRAFT EMPTY WEIGHT" on the following page.
16. Add the Weight of the pilot/pilots and pilot equipment (as recorded earlier).
17. Add any "OTHER *" normally carried weight and enter in CHART 2.
18. Refer to the results of the calculations in CHART 1 and ensure that the TOTAL EMPTY WEIGHT, EMPTY WEIGHT CG (Moment Arm), and the TOTAL MOMENT (EMPTY) are recorded accurately in CHART 2.
19. Refer to Figure 6-1. Note that the Fuel Tank Moment Arm is 53.53" (1508 mm), the Forward Seat Moment Arm in the FORWARD position is 29.0" (736 mm), and the Forward Seat Moment Arm in the AFT position is 32" (812 mm).
20. If you have positioned the Forward Seat in the FORWARD position the PILOT and EQUIPMENT MOMENT ARM is 29.0" (736 mm); in the AFT position, it is 32" (812 mm). IMPORTANT: The calculation in CHART 2 MUST be made for BOTH seat positions to determine if it is possible to exceed the MAXIMUM FORWARD or REARWARD CG LIMITS for a given PILOT and EQUIPMENT Weight.
21. Refer to (17) above and calculate the Moment Arm of the "OTHER" weight and record the results on CHART 2.
NOTE: "OTHER" refers to additional fuel, baggage, non-standard equipment (such as radios, etc.). Their Moment Arms are measured from the Datum to their respective center of mass.
22. Multiply the AICRAFT EMPTY "WEIGHT" by its "MOMENT ARM" (verification of step (18) above). The result is the AIRCRAFT EMPTY "MOMENT (in.lbs.)"
23. Multiply the FUEL Weight by 53.53" (1508 mm) and record its "MOMENT (in.lbs.)". For this procedure assume 8.5 gal. which will weigh 51 lbs. (21.3 kg) Weight of Fuel (approx.) 6 lbs/gal (27.3 L).
24. Multiply the PILOT and EQUIPMENT Weight by 29.0" (736 mm) (for the first Weight & Balance computation) and record its "MOMENT (in.lbs.)(kpa)". If the rear seat is occupied repeat same procedure as the front seat.
25. Multiply "OTHER" weight by its respective MOMENT ARM and record the resultant "MOMENT (in.lbs.)(kpa)" for each.
26. Add all the Weights in the WEIGHT column and record the "TOTAL GROSS WEIGHT". Add all the Moments in the MOMENT column and record the "TOTAL MOMENT (LOADED).
27. Divide the "TOTAL MOMENT (LOADED)" by the "TOTAL GROSS WEIGHT". The result is the "GROSS WEIGHT CG" in inches from the Datum. Check the Value with the LIMITS on the following page.
28. Repeat STEPS 24, 25, 26 and 27 using the Moment Arm for the AFT seat position - 32" (812 mm).

CHART 2

LOAD DATA SHEET

ITEM	WEIGHT	MOMENT ARM (in. to Datum)	MOMENT (in. lbs)
Aircraft Empty Weight		x	=
Fuel Tank	130.5 lbs(13.8kg)	x 53.53"(1508mm)	=2107.55(14531kg/mm)
Pilot and Equipment		x 29.0"(736mm) (FWD) 32.0"(812mm) (AFT)	=
Rear Pilot and Equipment		x 77.0"(1955mm) (AFT)	=
Other *		x	=

TOTAL GROSS WEIGHT: _____ TOTAL MOMENT (LOADED): _____

(850 lbs (385kg) - MAX.)

* "Other" means additional Fuel, Baggage or non-standard equipment such as Radio's etc. Their Moment Arms must be measured from the Datum to their center of mass.

TOTAL MOMENT (LOADED) / TOTAL GROSS WEIGHT = _____ = _____ in. GROSS WEIGHT C.G.

LIMITS

DO NOT EXCEED THESE SPECIFICATIONS!

Quickeilver GT 500

Maximum Gross Weight.....850 lbs. (385 kg)
Maximum Forward CG.....68.25" (1733 mm) Aft of Datum
Maximum Rearward CG.....74.5" (1892 mm) Aft of Datum

**********ESSENTIAL**********
IF YOUR MAXIMUMS ARE EXCEEDED DO NOT ATTEMPT TO FLY YOUR AIRCRAFT! CONSULT YOUR Quickeilver DEALER IMMEDIATELY.

CG LIMITS ACCORDING TO SEAT POSITION:

At a given weight distribution, if the Aircraft is within CG Limits in one seat position, but it is outside the Limits at another seat position; it is the Pilot's responsibility to ensure that the Aircraft isnotflown in the "Out-of-CG Limit" position. This procedure is ESSENTIAL.

POWERLANT BREAK-IN

1. Consult your Rotax Owner's Manual.

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OPERATIONAL CHECKLISTS

PREFLIGHT INSPECTION

NOTES:

ATTACHMENT HARDWARE includes ALL fasteners, such as: Bolts, Nuts, Clevis Pins, Cotter Pins, Safety Rings, etc.

All Nuts attached to Bolts must have at least TWO (2) Bolt threads exposed thru the Nut. All Locknuts must be replaced if loosened and retightened more than twice.

All hardware and corresponding attachments and safety devices, MUST be thoroughly inspected during each preflight. At periodic intervals, the attachment hardware must be removed from the aircraft and inspected, as prescribed in the maintenance section.

Checking the INTEGRITY of a tube means to check for bends, dents, scratches, cracks, etc. Checking the "integrity" of a wire means to check the wire for broken strands, kinks, abrasion, proper tension, etc. Inspect the wire ends for secure swages, twisted or jammed thimbles, and bolts and/or fasteners for security.

SECURITY means that all attachment hardware is free from bends, scratches, cracks, etc. and are attached in a manner that would make it impossible for the attachments to come apart in flight.

Visually check aircraft for general condition during walkaround. In addition to items on the preflight checklist, look for signs of visible moisture or ice. The presence of moisture on the aircraft will adversely affect its performance. In all cases, remove the moisture before commencing any flight operations. Always exercise due care and good judgement. Flight should only be attempted in acceptable and safe weather conditions and when you and your vehicle are in an airworthy condition.

WARNING:

The wing covering must be removed and a complete wing inspection performed if one of the following conditions exist.

1. Hard landing.
2. Ground loop in which a wing makes contact with the ground
3. Any flight or ground operation in which a wing, strut, or cable receives a strong blow.
4. Any time it is suspected that the aircraft was over streased in flight, on the ground, or during storage or transport.
5. At periodic intervals, as prescribed in the maintenance schedule (SECTION 10).

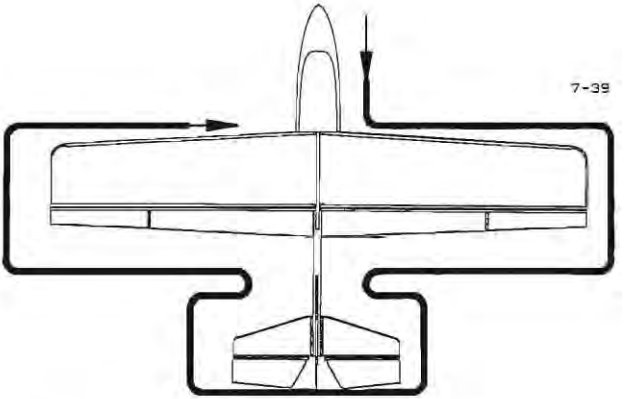


Figure 7-1 : Preflight Inspection Sequence.

CHECKLIST

[ ] Indicates procedure for Cable Braced GT ONLY.

(1) Check Ignition - OFF
(2) Inspect Pilot Seat and attachment hardware for integrity and security.
(3) Place Helmet Bag on Pilot Seat.
(4) Adjust Pilot Seat for position.
(5) Inspect Seat Tracks. Ensure Seat Track locking pins are locked.
(6) Check Seat Belts for security.(rear seat belt must be secured even if not occupied.
(7) Flap Selector - Full Down.
(8) Remove Wing Gap Cover, inspect Spar Channels and attachment hardware. [Inspect King Posts, King Post Tracks, and Locking Pins for security. Ensure King Posts are properly adjusted.]
(9) Inspect Flap Selector assembly, forward section of Root Tube, Forward Downtubes and attachment hardware.
(10) Inspect Control Wheel, Control Wheel Support Tube, Aileron Teleflex Cable and attachment hardware.
(11 Check both Control Wheels for movement (forward, aft, right, left) for free travel in all directions. Visually check that all Flight Control surfaces move in the correct corresponding directions.

(12) Inspect Elevator Push/Pull Tubes and Pivot Bolts.
(13) Inspect Forward Fuselage Tube.
(14) Inspect Rudder Pedals, Cables, Bellcranks and Pushrods, Brake Pedal and attachment hardware.
(15) Move Rudder Pedals and ensure that the Rudder moves in the corresponding direction.
(16) Inspect the Nose Gear assembly - Struts, Axle, Wheel, Tire, Steering Springs, Brake Plate and attachment hardware.
(17) Inspect Pilot Fairing for security. Inspect Pitot Tube - ensure it is clear and correctly aligned.
(18) Run your hand along the right Leading Edge Spar checking for bends and kinks in the Spar. Inspect exterior Wing L.E. attachment points.
(19) Inspect Right Wing Tip. Sight down the Leading Edge Spar to insure it is straight.
(20) Move under the Right Wing. Unzip Wing inspection ports. At each port, thoroughly inspect the interior of the Wing. Inspect each Compression Strut and Diagonal Strut for security and integrity. Visually and physically inspect the junction of each Strut at the Leading and Trailing Edge Spar. Inspect the Aileron Bellcrank, Pushrods, Cables, Clevis Pins, Safety Rings and all related hardware. (Check the Upper Wing Wires attached to the Leading Edge for security.)
(21) Close the Right Wing inspection ports and stow zipper handles.
(22) At the Right Wing root, Inspect the Wing Cover Tension Buckles. Ensure they are properly tensioned and locked.
(23) Inspect the Root Tube Bellcrank, Teleflex Cable integrity, Aileron Cables, Clevis Pins, Safety Rings and all related hardware.
(24) Inspect center section of Root Tube.
(25) Inspect Right Main Landing Gear assembly, including: Landing Gear Carry-thru, Lift Struts (Lower Wing Wires), Landing Gear Leg, Wheel, Tire, and attachment hardware.
(26) Return to the Right Wing Tip and sight down the Trailing Edge to ensure that the Trailing Edge Spar is straight.
(27) Run your hand along the Right Trailing Edge Spar and check integrity. Inspect the exterior Wing T.E. attachment points, related hardware and Safety Rings.
(28) Inspect the Right Aileron, Hinges, Horn, Pushrod and related hardware for integrity.
(29) Inspect the Right Flap, Hinges, Tension Rods, related hardware and Safety devices.

(30) Inspect T.E. Spar Channels for integrity. (Inspect King Posts and attachment hardware.)
(31) Inspect Aft Downtubes for integrity.
(32) Inspect AFT section of Root Tube.
(33) Inspect the Engine, Mounts, Gear Reduction Drive, Propeller, Exhaust System, Fuel Lines and connections, Electrical system, Throttle and Choke Cables, Starter Rope & Pulleys, all attachment hardware and Safety devices.
(34) Inspect the Tail Boom for integrity.
(35) Inspect the Horizontal Stabilizer Angle of Incidence setting and attachment hardware.
(36) Inspect the forward portion of the Rudder and its hinges.
(37) Inspect the Right Horizontal Stabilizer, Support Struts and attachment hardware.
(38) Inspect the Elevator, Hinges, Stops, Balance Springs and attachment hardware.
(39) Inspect the Elevator Bellcrank, Push/Pull Tube and attachment hardware inside the Tail Boom Tube.
(40) Inspect the Rudder Cables, Horn, Hinges and attachment hardware. Inspect trim system pushrods and bellcranks top and bottom(unzip vertical cover)

(41) Inspect the LEFT SIDE of the Aircraft using the same Checklist.!

(42) At the Inboard Section of the Left Wing, Unzip the Wing Pylon Cover (if installed).
(43) Inspect the Fuel Tank, Restraint Strap Assembly, Filter, Primer Bulb, all Fuel Lines and related hardware. Check for contamination and correct Fuel quantity. Squeeze Primer Bulb and observe the Fuel flow.
(44) Inspect the AFT end of the Forward Fuselage Tube.
(45) Inspect the Elevator Push/Pull Tubes and roller guides.
(46) Inspect the Rudder Cable Guides, Pulleys and attachment hardware.
(47) Inspect Root Tube, all Downtubes, Side Struts, Flap Tension Rods and attachment hardware.
(48) Close all Zippers at inspection ports.
(49) Replace the Wing Gap Cover.

AIRCRAFT HANDLING, SERVICE AND MAINTENANCE

TABLE OF CONTENTS

FIELD ASSEMBLY PAGE
Introduction....8-3

STRUT BRACED FIELD ASSEMBLY
Figure 8-1S: Positioning Wings....8-4
Figure 8-2S: Elevating Wings....8-4
Figure 8-3S: Installation of Wing Spar Bolts....8-4
Figure 8-4S: Elevating Wing Tips....8-5
Figure 8-5S: Attaching Lift Struts To Lower Hinge...8-5
Figure 8-6S: Attaching Lift Strut to Wing....8-5
Figure 8-7S: Attaching Forward Jury Strut....8-6
Figure 8-8S: Attaching Aft Jury Strut....8-6
Figure 8-9S: Installation of Flap Tension Rods....8-6
Figure 8-10S: Connecting Aileron Cables....8-7
Figure 8-11S: Connecting Wing Buckles....8-7
Figure 8-12S: Stabilizer/Elevator in Stowed Position.8-7
Figure 8-13S: Attachment of Stabilizer Strut....8-8
Figure 8-14S: Securing Drag Strut....8-8
Figure 8-15S: Positioning Gap Cover....8-8
Figure 8-16S: Final Position of Gap Cover....8-9
Figure 8-17S: Position Bottom Gap Cover....8-9
Figure 8-18S: Disassemble Aircraft Reverse Order....8-9

SAFETY HINTS PAGE

Introduction....8-10
Airworthiness....8-10
Winds....8-10
Wind Associated Turbulence....8-11
Ground Handling....8-11
Cross-Country Flight....8-11
Emergency Landings....8-12
Aerobatic Flight....8-13
Night Flying....8-13
Safety Equipment....8-13
Courtesy....8-14

MAINTENANCE

Introduction.....8-15

POWER PLANT

Introduction..... 8-15
Engine.....8-15
Reduction Drive System.....8-16
Propeller.....8-16
Carburetor Calibrations.....8-17
Transport/Storage.....8-17
Engine Logbook.....8-17
Maintenance.....8-17

AIRFRAME

Introduction.....8-19
Tubing.....8-19
Bolts.....8-19
Wing Covering.....8-20
Cables.....8-23
Hardware.....8-24
Airframe Logbook.....8-24
Maintenance.....8-24

INTRODUCTION

The field assembly procedures outlined in this section are accompanied by photographs generally depicting the assembly sequence. When assembling (or disassembling) your aircraft, use the photos for reference only since detailed components and sequencing may vary. Follow the written description of the procedures as outlined. If you are unsure of any portion of the procedure REFER to Section 7 Final Assembly for detailed instructions. Consult your Quicksilver Dealer or contact Quicksilver Enterprises for further assistance.

Additional details that will aid in the assembly procedures can be found in the aircraft's Assembly Instructions. Pay particular attention to such details as torque values to be used on attachment hardware. For example, over-torquing a nut could damage the nut, bolt, or structure that they are used on, thus causing that part of the structure to be unairworthy.

It is also possible to cause damage to the aircraft by using improper or careless assembly/disassembly techniques. Even though the aircraft can be assembled/disassembled by one person, it is highly recommended that at least three people are used to mount, dismount, and handle the Wings. If a Wing is dropped, it is possible that structural damage could occur. In such a case, it is MANDATORY that a thorough Wing inspection be performed (refer to SECTION 4 Normal Procedures, Preflight Inspection).

NEVER attempt to assemble the aircraft in winds that exceed 15 MPH(13KNH). If it is necessary to disassemble the aircraft in high winds, always have at least two people available to handle each wing. It is recommended that assembly/disassembly be accomplished with the aircraft positioned with the tail directly into the wind. When handling a Wing, always have the wing tip or trailing edge positioned directly into the wind.

STRUT BRACED
FIELD ASSEMBLY!

(1). Setup should be performed on a smooth, clean non-abrasive surface -- TAIL INTO THE WIND.

(2). Position Wings beside Fuselage.! Fig. 8-1S



Fig. 8-1S: Positioning Wings.

(3). Remove Nuts from wing attachment bolts in leading edge andtrailing edge channels.

(4). Elevate INBOARD end of each Wing and position leading edge and trailing edge Spars into appropriate channels.! Fig. 8-2S



Fig. 8-2S: Elevating Wings.

(5). Install 1/4" Bolts in the leading and trailing edge Spar Channels and Spars. Secure with Nuts and Cotter Pins or Locknuts. Note: Bolts face AFT.! Fig. 8-3S!

(6). Repeat STEP 5 on other Wing.!



Fig. 8-3S: Installation of Wing Spar Bolts.

(7). Elevate Wing Tip high enough to allow Lift Struts to be attached.

Fig. 8-4S



Fig. 8-4S: Elevating Wing Tips.

(8). Attach Fore and AFT Lift Strut with 3/8" Bolt, Locknut at the Lower Hinge point.

Fig. 8-5S

(9). Repeat STEPS 7 & 8 for the other Wing.



Fig. 8-5S: Attaching FORWARD & Aft Lift Strut.

(10) Connect Fore and Aft Wing Strut to Spar Fittings.

Fig. 8-6S



Fig. 8-6S: Attach Wing Struts

(11). Attach FORWARD Jury Strut to INBOARD leading edge Eyebolt with bolt and nut.

Fig. 8-7S



Fig. 8-7S: Attaching FORWARD Jury Strut.

(12). Position the AFT Jury Strut on the INBOARD trailing edge Eyebolt.

Fig. 8-8S



Fig. 8-8S: Attaching AFT Jury Strut.

(13). Repeat STEPS 11 & 12 for other Wing.)

(14). Connect Left & Right Flap Tension Rods to Flap Horns with a 3/16" Bolt, Nut.

Fig. 8-9S



Fig. 8-9S: Installation of Flap Tension Rods.

(15). Connect Aileron Cables to Root Tube Bellcrank. Secure with Bolts, Washers , nuts and cotter pins.! Fig. 8-10S!

NOTE: Install Bolts UP thru the Bellcrank with the Washer and nut on TOP.!



Fig. 8-10S: Connecting Aileron Cables.!

(16). Connect Wing Buckle halves and pull taught. Tie off excess straps.! Fig. 8-11S



Fig. 8-11S: Connecting Wing Buckles.!

(17). Lower the Stabilizer/ Elevator and Stabilizer Struts from their stowed position.! Fig. 8-12S



Fig. 8-12S: Stab./Elevator in stowed position.

(18). Attach Stabilizer Struts to Eyebolt on OUTBOARD Compression Strut. Secure with bolt Nut, & cotter pin.(Fig. 8-13S)

(19). Repeat STEPS 17 & 18 for other side.(



Fig. 8-13S: Attachment of Stabilizer Strut.

(20). Tighten Jam Nut on Stabilizer Drag Strut Forkbolt (Both Sides).(Fig. 8-14S)

(21).(PREFLIGHT AIRCRAFT(

Refer to SECTION 4 - Normal Procedures, for Preflight Inspection Checklist and Amplified Procedures.(



Fig. 8-14S: Securing Drag Strut.

(22). Position Gap Cover around Flap Handle and Flap Handle Stop Bracket.(Fig. 8-15S



Fig. 8-15S: Positioning Gap Cover.

(23). Position Gap Cover over top surface of Wing.) Fig. 8-16S



Fig. 8-16S: Final Position of Gap Cover.

(24). Position Bottom Gap Cover. Fig. 8-17S



Fig. 8-17S: Positioning of Gap Lower Gap Cover.

(25). Disassemble Aircraft in the reverse order of assembly.

During disassembly:

(26). Secure Aileron Cables to Wing Buckle Straps. Fig. 8-17S



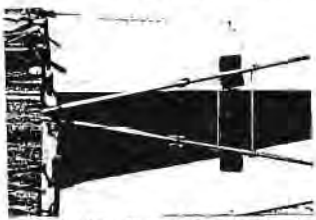


Fig. 8-18S: Stowed Position of Aileron Cables.

SAFETY HINTS

INTRODUCTION

This section describes operating practices associated with safe and courteous flying. It must be remembered that the ultralight pilot is the pilot-in-command of an aircraft and is therefore solely responsible for the performance and outcome of each and every flight. This section is intended to aid the pilot in making some of the decisions required to ensure the successful performance and conclusion of an ultralight flight. This information, together with the other sections of this manual, must be used as basic flight operations procedures. To this, one must add: Authorized Quicksilver ground and flight training, experience, and good pilot judgement.

AIRWORTHINESS

NEVER fly your aircraft unless YOU and the AIRCRAFT are in an airworthy condition. Follow the maintenance schedule. The key to preventive maintenance is thorough preflight inspections performed prior to each flight according to the preflight checklist. Preflight inspections are as much a part of flying as takeoffs and landings. If you are the one who is going to do the flying, you are the one who must do the preflight. NEVER allow anyone to do the preflight for you.

Make sure you, the pilot-in-command, are also in an airworthy condition. Good health, adequate sleep, and an alert mind are essential to flight safety. NEVER attempt to fly if you have consumed alcohol or drugs of any kind within eight hours of the intended flight.

WINDS

Experience has shown that wind is one of the major factors involved in causing or contributing to accidents. There are three main considerations in determining wind safety values. The first is velocity, the second is gust differential, and the third is pilot experience and compentency. The inexperienced ultralight pilot (less than 15 hours of "ultralight" flight time) should confine flying to winds of less than 8 MPH. This helps reduce the associated problems of crosswind takeoffs and landings, misjudging wind drift during turns, downwind stalls, wind gradients on approach, etc.

Gust differential is the wind speed difference between the lulls and the peak gusts. For example, assume that you are flying at an airspeed of 37 MPH(32 KNOTS) into a 15 MPH(13KNOTS) wind. Suddenly the wind velocity reduces to 5 MPH(4 KNOTS). The immediate result will be a 10(9 KNOTS) MPH reduction of airspeed. In other words, the airspeed will suddenly reduce from 37 MPH(32 KNOTS) to 27 MPH(23 KNOTS). If the stalling speed of the aircraft is 27 MPH(23 KNOTS) or higher, a stall will result. This creates obvious dangers when flying close to the ground and/or obstacles.

Vertical wind gusts from the side will cause the aircraft to bank away from the gust. The amount of bank displacement will be determined by the gust velocity. For these reasons, wind speed; wind direction; and gust differential must be checked for several minutes prior to flight.
Pilot experience and competency, along with aircraft capability, must be considered prior to attempting any flight. Experience and competence is gained through meaningful and carefully planned practice. Always practice in areas and conditions that allow for gross errors in judgement and emergency situations. Above all, NEVER attempt flight if the capability of either YOU or the AIRCRAFT is in question.

WIND ASSOCIATED TURBULENCE
Turbulence near the ground is usally associated with the flow of wind over trees, buildings, hills, and other obstructions. This localized turbulence becomes increasingly dangerous as the wind velocity exceeds 10 MPH(9 KNOTS). Just as the disturbance by obstructions of water in a moving stream can be seen, visualize and flow over various obstructions in a similar manner and void flight in areas that appear to be hazardous. Stay upwind of wind blocking sources. If you must fly in the downwind area of an obstruction, pass as far downwind of the obstruction as possible. Rotors and turbulence can continue downwind for miles if the obstruction is large enough and the wind velocity is sufficiently high.

GROUND HANDLING
Taxiing in winds over 10 MPH(9 KNOTS) can present problems, particularly for lighter pilots. As wind speed increases, the aircraft must be taxied more directly into the wind. If you must turn crosswind in winds over 10 MPH(9 KNOTS), have a bystander hold down the upwind wing. NEVER place your feet on the ground while the aircraft is moving -for any reason.
Never leave the aircraft unattended if the wind is expected to exceed 6 or 7 MPH(5 OR 6 KNOTS). If the wind is expected to be between 8 and 15 MPH(7 AND 13 KNOTS), the nose should be pointed directly into the wind with the aircraft securely tied down. NEVER leave the aircraft set-up outdoors if the wind exceeds, or is expected to exceed 25 MPH(22 KNOTS).

CROSS-COUNTRY FLIGHT
Before attempting any cross-country flight, you must be completely familiar with FAR (Federal Aviation Regulation) Part 103 - Ultralight Vehicles, and FAR Part 91B - General Flight Rules. You should also have sectional charts covering the area of intended flight and familiarize yourself with the various symbols and other information on them. Copies of the FAR's and sectional charts are available at any airport facility that offers flight instruction.

If at all possible, it is advisable to take a private pilot ground school course. The course will aid you in understanding established methods and procedures in planning and executing a cross-country flight. Additionally, it will inform you of the many FAA flight services available to all pilots. These services include flight briefing information, such as airport weather and surface winds, in-flight weather and winds aloft, Notices to Airmen, etc. The first step in any cross-country flight is preflight planning. SECTION 5 of this manual will be particularly helpful. Plan a flight route that will allow for ample emergency landing sites. Avoid mountainous or remote areas that would be difficult to walk out of in the event of an unplanned landing. A good rule-of-thumb is: NEVER fly over anything you do not want to land on! If you must fly alone, carry plenty of drinking water and signalling devices such as a mirror, flashlight, flares, etc. It is also advisable to carry a spare spark plug(s), spark plug wrench and a small tool kit containing items used for assembly/disassembly of the aircraft. Ensure that all equipment is secured in a manner that will not endanger the aircraft, or persons or property on theground.
Before leaving on any cross-country flight, ALWAYS notify at least one person of your intended flight. Include such information as your intended route of flight, estimated time of departure, and estimated time of arrival.

EMERGENCY LANDINGS
During flight training the pilot should practice simulated emergency landings. The practice should be performed in a large, open, unobstructed area. The advisable procedure for practice is to reduce the power to idle to simulate an engine-out condition rather than actually turning the engine off. The pilot should strive to perfect his or her ability to safely and accurately land the aircraft from any point around a suitable landing site in an engine out condition.
Emergency landings normally present little or no problem in an ultralight since they can be landed in a relatively small area. However, it is imperative that you remain within gliding distance of a suitable landing site at all times. This is particularly true while flying over tree covered terrain or other obstacle riddled areas. Land directly into the wind whenever possible. Learn to determine wind direction and velocity from the air by using your flight crab angle, blowing smoke, ripples on water, leaves on trees, etc. Select a landing site with the largest area, smoothest surface, and clearest approach path. Be extremely careful to recognize the existence of power lines, telephone wires, and other low visibility obstructions that might exist in and around a possible approach and landing area. Avoid such areas.

The best procedure to be followed for inflight emergencies is to prevent them before they happen. Preventive measures such as: preflight planning that allows for the prescribed 30 minute fuel reserve; checking for water in the fuel system and draining impurities as necessary; monitoring engine instruments in-flight for signs of overheating or over-revving; following the procedures as outlined in the aircraft's owners manual; and always fly in a manner that would commonly be considered as safe and sensible.
As far as the possibility of engine failure is concerned, always fly by these basic rules:)
(1) THE ENGINE CAN STOP RUNNING AT ANY TIME.
(2) NEVER FLY OUTSIDE OF GLIDING DISTANCE OF A SAFE LANDING AREA.
(3) NEVER FLY OVER ANYTHING YOU DO NOT WANT TO LAND ON.

AEROBATIC FLIGHT:

Aerobatic flight is not recommended or approved in the GT.! The FAA defines aerobatic flight as "intentional maneuver involving an abrupt change in an aircraft's attitude, an abnormal attitude, or abnormal acceleration not necessary for normal flight." Do not exceed 60 degrees of bank angle or 30 degrees of pitch attitude. Additionally, spins are not recommended or approved in the GT. Avoid flight conditions or control inputs that may result in a spin or spin entry.

NIGHT FLYING

With proper aircraft lighting, you are allowed by law to operate an ultralight during the twilight periods as stated in FAR 103.11. It is illegal to fly an ultralight vehicle at night. Due to the nature of two-cycle engines, their reliability is not as great as the dual ignition, detuned, four stroke certificated aircraft engines used on modern light planes. A forced landing in darkness contains obvious dangers. It is also important to recognize that a pilot's depth perception and ability to recognize obstructions is reduced while flying during the twilight period and proper caution should be exercised.

SAFETY EQUIPMENT

For safety and comfort while flying, you should wear the following items: a lightweight helmet; ear plugs; eye protection in the form of a face shield, goggles, or glasses suitable for sport activities; footwear with low heels; and gloves. Consider the outside air temperature before each flight and dress accordingly. Remember, the temperature will usually decrease with an increase in altitude.

Another optional piece of safety equipment is an Aircraft Recovery System (parachute). Even if you and your aircraft perform properly, the possibility of a mishap, such as a mid-air collision, still exists. Be sure you receive proper instructions from your dealer on the following points: (1) When to deploy the parachute; (2) How to properly deploy the parachute; (3) How to ensure the parachute is secured properly to the aircraft and/or you; (4) How and when to have a professional rigger repack your parachute; (5) How to handle and store your parachute. If you are unsure of any of these points, contact your dealer or Quicksilver Enterprises, before flying.
If your parachute ever gets wet or damp, IT MUST BE REPACKED immediately or damage to the parachute pack contents may result. If you choose to wear a hand-deployed type parachute that is strapped to you, it is necessary to remove the parachute pack PRIOR to touchdown in an emergency ditching in deep water. In water, the weight of the parachute pack could be sufficient enough to prevent you from reaching the surface.

COURTESY
Common courtesy dictates that you fly well away from populated areas, and stay well clear of structures, vehicles, etc. People on the ground have a right to peace and quiet, and this should be respected by all pilots (see Noise Abatement. SECTION 4). Any violation of these guidelines can result in complaints to the FAA, which in time could bring about strict restraints on ultralight flying as well as legal action against the pilot. Parts of the FAR's listed below are an excellent example, as well as a legal guide, to safe and courteous flight:

Except when necessary for takeoff or landing, no person may operate an aircraft below the following altitudes:
(a) ANYWHERE . An altitude allowing, if a power unit fails, an emergency landing without undue hazard to persons or property on the surface.
(b) Operations over congested areas. No person may operate an ultralight vehicle over any congested area of a city, town, or settlement, or over any open area assembly of persons.
(c) Over other than congested areas. An altitude of 500 feet above the surface, except over open water or sparsely populated areas. In that case, the aircraft may not be operated closer than 500 feet to any person, vessel, vehicle, or structure.

Safe, proper, and courteous flying habits will help to ensure the continued growth of ultralight flying and will add to your personal enjoyment of the sport. Strive to be the best pilot that you can be and enjoy the sky.!

MAINTENANCE

INTRODUCTION

This section is provided to assist the aircraft owner/operator in the application of a "preventive" maintenance program. As with any aircraft, it is extremely important that periodic maintenance be performed at regular intervals as specified by the manufacturer. Such a program must be strictly adhered to.
The maintenance schedules provided for the powerplant and the airframe are based on normal field use of the aircraft in accordance with all sections of this manual. It might be necessary to perform maintenance on specific components prior to the suggested time in the appropriate schedule. The need for such maintenance can be identified by following the preflight checklist and procedures as outlined in SECTION 4.

POWERPLANT

INTRODUCTION

The powerplant requires a minimum of maintenance. Included are some helpful procedures for maintenance of the powerplant system. Your Quicksilver Dealer is available to assist you or answer questions regarding service of your aircraft. For additional powerplant maintenance information, refer to the Rotax Operator's Manual and the aircraft Assembly Instructions.

ENGINE

Be sure to read through the entire Rotax Operator's Manual, and appropriate sections of the Assembly Instructions and this manual prior to operating your engine. Refer to the above manuals for: Engine Specifications, Break-In Procedure, Mixing Fuel, Starting Procedures, Spark Plug Replacement, Trouble Shooting, and Service for All Engine Components.
Use your Dealer as a source of current maintenance information. Be aware of 'Service Bulletins' regarding powerplant components.

CAUTION: DO NOT exceed a WATER temperature of 180 degrees F or the Maximum Recommended RPM.

The fuel mixture is 50 parts Gasoline to 1 part Oil. Use only BIA-TCW approved two-cycle oil and a good brand of regular or premium grade gasoline of at least 83 octane rating.

REDUCTION DRIVE SYSTEM

The GT500 engine is equipped with a Gear Reduction Drive utilizing Helical Gears lubricated with gear oil. During every preflight inspection, inspect the Gearbox for any signs of excess oil leakage. Check for the correct oil level every 10 hours as follows: Remove the safety wire from the two oil level screws on the Left side of the Gearbox; Remove the lowest oil level screw; Fill the Gearbox with SAE 85W90 Gear Oil until the oil begins to flow out of the lower hole; Replace the oil level screw and safety wire the two screws together. Change the Gear Oil every 100 hours.

PROPELLER

When installing the propeller on the Hub, tighten the bolts in the sequence shown in Figure 10-1. Lightly snug the bolts the first time around the sequence. Use the sequence a second time for final tightening. Ensure that you do not distort the wood when tightening. When inspecting the propeller, look for cracks and abrasions. All cuts must be removed by sanding or filing until smooth. The surface should be refinished and balanced. If you are not thoroughly familiar with the proper techiniques of balancing a propeller, consult your Quicksilver Dealer.

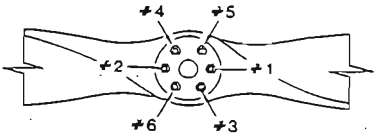


Figure 10-1 : Propeller Bolt Tightening Sequence.

CARBURETOR CALIBRATIONS

Identify the carburetor type, mount type, main jet, needle jet, needle, throttle valve, pilot jet, and air screw. Obtain current information from your Dealer or Quicksilver Aircraft or Rotax service center. The calibration may be periodically updated.
The air filter type furnished by Quicksilver must be used on the carburetor at all time, and kept clean and dry. Clean the filter by soaking in gasoline.
Carburetor jetting can be affected by changes in altitude, temperature, and humidity. The fuel mixture will richen in the following conditions: a gain of altitude, an increase in temperature, and high humidity. The fuel mixture will become leaner in the following conditions: a loss of altitude, a decrease in temperature, and low humidity.
Incorrect carburetor adjustment can cause engine failure and severe engine damage. DO NOT make any carburetor adjustments unless you are totally familiar with the correct procedure (see Rotax Operators Manual). Consult your Quicksilver Dealer for answers to any questions.

TRANSPORT/STORAGE

When you transport the aircraft, exercise care as not to damage vulnerable engine components. The propeller should be padded and the fuselage must be ridigly secured to the trailer platform to avoid stress from bouncing.
If the aircraft remains in storage for any length of time, run the engine periodically. A two-cycle engine must not be allowed to sit for months without use as damage can result, unless the interior of the engine is thoroughly coated with two-cycle oil.

ENGINE LOGBOOK

Always keep the engine's logbook entries up to date. As the suggested maintenance schedule is followed, fill in the Ultralight Aircraft & Engine Log to ensure that an organized maintenance performed on the powerplant components, is current and available.

MAINTENANCE

Review the Powerplant Maintenance Schedule, Figure 10-2, and become familiar with all other powerplant components. Pay particular attention to the type of maintenance prescribed and how long you may operate between service checks.

POWERPLANT MAINTENANCE SCHEDULE — 503 & 582 ROTAX ENGINE

Component	Hours	25	50	75	100	125	150	175	200	225	250	275	300	325	350	375	400
Engine Overhaul											3						
Engine Rubber Mountings					2				3				2				3
*Spark Plugs		3			3				3				3				3
Throttle Cable		1			2		1		2		1		2			1	3
Throttle Lever									2								2
Air Filter		1	1	1	1	1	1	1	2	1	1	1	1	1	1	1	3
Fuel Filter		3			3				3				3				3
Fuel Pump																	3
All Fuel Lines		2			2				2				2				3
1 "V" Belts		1	2	1	2	1	1	1	3	1	1	1	2	1	1	1	3
1 Reduction Pulleys									2								3
* Gearbox Oil					3				3				3				3
Muffler		2			2				3				2				3
Muffler Springs					3				3				3				3
All Engine Hardware		4			4				4				4				4
Propeller					2				2				2				2
Carburetor		1			1				1				1				1

Figure 10-2 : Powerplant Maintenance Schedule.

LEGEND

1. Oil, Lube, Clean or Service.
2. Remove, Inspect & Replace if necessary.
3. Replace or Overhaul.
4. Check Bolt or Nut Tension.
5. Replace all components every 1000 hours of operation.

- * Clean Spark Plugs every 10 hours.
- * GTS00 Only. Check Gearbox Oil Level every 10 hours.

AIRFRAME

INTRODUCTION

The following suggested maintenance is provided to assist in maintaining the Quicksilver GT in an airworthy condition.

It recommended that the aircraft be stored in a protected, dry enclosure when not in use.
If the aircraft is subjected to salt water, it must be rinsed with fresh water and dried as soon as possible.
Your Quicksilver dealer is available to perform routine maintenance, replace parts, and provide advice on servicing Components

TUBING

Removal and Installation
When removing tubing, DO NOT bend or force tubes. When installing tubes, DO NOT distort the tubes from their original shape.

Inspection
Inspect tubing for scratches, cracks, damage from abrasion, elongated holes, and distortion. Never attempt to repair damaged tubing. Always replace damaged tubing with a new Quicksilver factory part. Inspect tubing for corrosion in and out. If corrosion is present, replace with a new Quicksilver factory part.

BOLTS:

Installation & Removal:

1) After proper tightening, all bolts must have at least 2 threads showing thru the nut.
2) All self-locking nuts must not be installed more than 2 times.
3) If grip length is too long, no more than 3 washers may be added.
4) A washer must always be installed under the nut.
5) Ensure not to over-torque bolts when installing.
6) Check Assembly Instructions for correct bolt tightening and placement.

When inspecting bolts, check bolts for worn threads, bad threads, cracl bends, and corrosion.

WING COVERING

Removal and Installation
When removing or installing flight surface coverings, ensure that there are no sharp edges or burrs that might tear the sail. See the Assembly Instructions for complete details.

Inspection
Check for tears in the sail cloth, and for any loose or unravelled seams. Check all inspection port zippers to ensure that they function smoothly and close completely. Inspect the velcro stripe on the inboard sections and trailing edge for wear or frayed edges.
The sail may be repaired with sewn-on patches. Tears of less than 1"(2.5cm) may be repaired with appropriate sail tape. Keep the sail clean of oil and dirt by washing the sail with a non-alkaline soap and water.
Keep the sail covered when not in use. Continued exposure to the sun dramatically shortens the serviceable life of the wing, tail and flight control surface covers. The sail must be puncture tested every 3 months with the Fabric Tension Tester included in the GT Kit. The coverings must be replaced if they fail the puncture test, or every 4 years, which ever comes first. (Refer to following pages for instructions on use of the Fabric Tension Tester.

QUICKSILVER FABRIC TESTER KIT

PURPOSE: To use an established standard as a minimum value for for evaluation of dacron sailcloth.

TESTING INTERVAL: Use every 2 months or if stored for an extended period before use of the aircraft.

TEST LOCATIONS: Any testing should be done in non-critical areas (i.e. away from the Leading Edges, Trailing Edges, Reinforcements and Rib locations). Testing on the FOURTH (4th) or FIFTH (5th) Wing Panel (refer to Figure 2 on page 2) from the Root Tube, or Gap Cover are suitable locations. DO NOT test the OUTBOARD Tip Panels on DOUBLE surface Wing Covers. ALL testing must be conducted on the TOP surface ONLY.

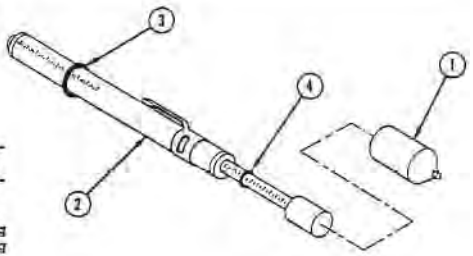
HOW TO USE THE TESTER: Refer to Figure 1 on page 2. Affix the tester adaptor (1) to the tester (2) with a small amount of silicone (if desired). Notice the small diameter shaft has graduations in lbs. and kgs. Determine the value required to test the particular aircraft or part of aircraft (refer to the chart on page 2). Set the small o-ring (4) over the determined value. The tester is now ready for use.

Position the adaptor end of the tester on the fabric or sail cloth and the large diameter shaft in the palm of your hand. In a continuous movement, at right angles to the fabric surface, push with significant force to telescope the SMALL shaft into the LARGE shaft to the pretermined value. If the Adaptor DOES NOT punch thru the fabric at the pre-determined value the fabric has passed the test at that particular location. A punch thru indicates the fabric strength is NOT adequate for safe flight. It is recommended that the aircraft be grounded until a replacement cover is installed.

Item	P/N	Qty	Description
	60100	1	Quicksilver Fabric Tester Kit

QUICKSILVER FABRIC TESTER KIT (CONT'D.)

Fig. 1



Item	Description
1.	Adaptor
2.	Large Shaft
3.	Large O-Ring
4.	Small O-Ring

Fig. 2



DO NOT test Tip Panels

MINIMUM TEST VALUE STANDARDS*

Single Surface Wing: 12 lbs. or 5.4 kgs.
Single Surface Tail: 10 lbs. or 4.5 kgs.
Double Surface Wing: 10 lbs. or 4.5 kgs.

* Values apply to the QUICKSILVER Fabric Tester only.

CABLES

Installation
When installing cables, insure that they are not twisted or kinked. Never install cables with the thimble "popped" out of place.

Inspection
Inspect cables for frays, nicks or cuts in the vinyl covering. If abrasions are found, remove the cover around the affected area, and inspect the cable for broken strands or kinked wires. Always replace a cable with a new Quicksilver factory part if damage is present.
Check all thimbles for correct shape. If a thimble does not have a teardrop shape or is flattened, replace wih a new Quicksilver factory part. Damage of this type could indicate that another part of the structure has been overloaded. A more thorough inpection should be performed.

HARDWARE

Plastic Hardware
Ensure that plastic saddles are seated correctly and inspect for cracks or wear.

Formed Channels
When installing a tube to a formed channel, ensure that a washer is placed between the nut and the channel. Never overtighten bolts, as that may cause the channel to distort. Never turn a channel while removing a tube from the channel. Inspect channels for cracks or distortion. NEVERreshape a bent or distorted hannel. Always replace any damaged part with a new Quicksilver factory part.

Shacklee
Ensure that shacklee are retained by the correct bolt size. Never spread or bend a shackle. Inspect shacklee for cracks, elongated holes, and stretching.

Other Hardware
Check all other hardware for normal wear or damage. After hard landings, the airframe must be inspected carefully. The wing pylon structure, and landing gear fittings and tubes must be inpected for damage and replaced if neceeeary.
If the aircraft is ground looped (a wingtip contacts the ground), the wing covers must be removed and a thorough inspection of the total wing structure performed.

AIRFRAME LOGBOOK

Always keep the aircraft's logbook up to date by making current entries as the Airframe Maintenance Schedule is followed. The Ultralight Aircraft & Engine Log is designed to help organize proper servicing of the airframe while supplying written records of airworthiness.

MAINTENANCE

Review the Airframe Maintenance Schedule, Figure 10-3, and become familiar with all the airframe components. Pay particular attention to the type of airframe maintenance prescribed and when service must be performed.

AIRFRAME MAINTENANCE SCHEDULE — GT 500

Component	Hours	25	50	75	100	125	150	175	200	225	250	275	300	325	350	375	400
• Boot Tube									2								3
• All Spars									2								2
Compression Struts									2								2
Diagonal Struts									2								2
A King Post Tubes									2								3
A King Post Fittings		1		1		1		1		1		1		1		1	
Tail Boom									2								2
Aft Downtubes									2								3
Fwd Downtubes									2								3
Fwd Fuselage Down Strut									2								2
Tail Boom Down Strut									2								2
Rudder Frame					4				2&4				4				2&4
Elevator Frame					4				2&4				4				2&4
Tail Skid		2		2		2		2		2		2		2		2	
Ribs		2		2		2		2		2		2		2		2	
All Cables/Lift Struts					2				2								2
• Wing & Tail Covers									2								2
• All Landing Gear Parts		4		2		4			2		4		2		4		2
Elevator Push/Pull Tube		2		2		2			2		2		2		2		2
Control Yoke		1&4		2&4		1&4			2&4		1&4		2&4		1&4		2&4
Rudder Pedals									2								2
Side Struts				2					2				2				2
Strut Fittings									2								2
Teleflex Cable					2				2				2				3
All Control Cables					2				2				3				2
Wheel Bearings					1				2				1				2
All Formed Channels					2				2				2				2
All Other Bolts		4		4		4			2		4		4		4		1
Grade 5 Bolts		4		2		4			2		4		2		4		3
All Other Hardware		4		4		4			2		4		4		4		2
• Wheel Parts					2				2				2				2
Seat																	2
All Hinge Assemblies		1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2

Figure 10-3 : Airframe Maintenance Schedule.

LEGEND

1. Oil, Lube, Clean or Service.
2. Remove, Inspect & Replace if necessary.
3. Replace or Overhaul.
4. Check Bolt or Nut Tension.
5. Check Holes for Ovality - replace as necessary.
   - Closely inspect after any hard landing.
   - Check Fabric every 1000 hours of exposure to the Sun. (Approx. 85 days of 12 hour exposure each day). Replace the fabric every four years or in accordance with the procedures of the fabric test kit which ever comes first.

   @ Cable Braced GT Only.
6. Replace all componets every 1600 hours of operation.

AIRWORTHINESS LIMITATIONS

The following schedules are mandatory replacement time schedules and structual inspection intervals. They are identical to the schedules in Section 8 under maintenance. Refer to Section 2 thru 8 for related structual inspection procedures.

Due to Aircraft Structure Durability and Aircraft Structual Fatique Life the Aircraft Maintenance Schedules in this manual must be adhered to.

POWERPLANT MAINTENANCE SCHEDULE — 503 & 582 ROTAX ENGINE

Component	Hours	25	50	75	100	125	150	175	200	225	250	275	300	325	350	375	400
Engine Overhaul											3						
Engine Rubber Mountings					2				3				2				3
Spark Plugs		3		3		3		3		3		3		3		3	
Throttle Cable		1		2		1		2		1		2		1		2	
Throttle Lever								2								2	
Air Filter		1	1	1	1	1	1	1	2	1	1	1	1	1	1	1	1
Fuel Filter		3		3		3		3		3		3		3		3	
Fuel Pump																	3
All Fuel Lines		2		2		2		2		2		2		2		2	3
1 "V" Belts		1	2	1	2	1	1	1	3	1	1	1	2	1	1	1	1
1 Reduction Pulleys									2				3				3
1 Gearbox Oil					3				3				3				3
Muffler		2		2		2		3		2		2		2		3	
Muffler Springs				3				3				3				3	
All Engine Hardware		4		4		4		2		4		4		4		2	
Propeller				2				2				2				2	
Carburetor		1		1		1		1		1		1		1		1	

Figure 10-2 : Powerplant Maintenance Schedule.

LEGEND

1. Oil, Lube, Clean or Service.
2. Remove, Inspect & Replace if necessary.
3. Replace or Overhaul.
4. Check Bolt or Nut Tension.
5. Replace all components every 1000 hours of operation.

- Clean Spark Plugs every 10 hours.
- GTS00 Only. Check Gearbox Oil Level every 10 hours.

AIRFRAME MAINTENANCE SCHEDULE — GT 500

Component	Hours	25	50	75	100	125	150	175	200	225	250	275	300	325	350	375	400
Root Tube									2								3
* All Spars									2								2
Compression Struts									2								2
Diagonal Struts									2								2
@ King Post Tubes									2								3
@ King Post Fittings		1		1		1		1		1		1		1		1	3
Tail Boom									2								2
Aft Downtubes									2								5
Fwd Downtubes									2								5
Fwd Fuselage Down Strut									2								2
Tail Boom Down Strut									2								2
Rudder Frame					4				264			4					264
Elevator Frame					4				264			4					264
Tail Skid		2		2		2		2		2		2		2		2	2
Ribs		2		2		2		2		2		2		2		2	2
All Cables/Lift Struts				2					2				2				2
* Wing & Tail Covers									2								2
* All Landing Gear Parts		4		2		4		2		4		2		4		2	2
Elevator Push/Pull Tube		2		2		2		2		2		2		2		2	2
Control Yoke		144		264		144		264		144		264		144		264	264
Rudder Pedals									2								2
Side Struts				2					2				2				2
Strut Fittings									2								2
Teleflex Cable					2				2				2				3
All Control Cables				2					2				2				2
Wheel Bearings				1					2				1				2
All Formed Channels				2					2				2				2
All Other Bolts		4		4		4		2		4		4		4		4	2
Grade 5 Bolts		4		2		4		2		4		2		4		4	3
All Other Hardware		4		4		4		2		4		4		4		4	2
* Wheel Parts				2					2				2				2
Seat																	2
All Hinge Assemblies		1		2		1		2		1		2		1		2	2

Figure 10-3 : Airframe Maintenance Schedule.

LEGEND

1. Oil, Lube, Clean or Service.
2. Remove, Inspect & Replace if necessary.
3. Replace or Overhaul.
4. Check Bolt or Nut Tension.
5. Check Holes for Ovality - replace as necessary.
   - * Closely inspect after any hard landing.
   - * Check Fabric every 1000 hours of exposure to the Sun. (Approx. 85 days of 12 hour exposure each day). Replace the fabric every four years or in accordance with the procedures of the fabric test kit which ever comes first.
   - @ Cable Braced GT Only.
6. Replace all componets every 1600 hours of operation.

SECTION 10

OPTIONS AND ACCESSORIES

ELECTRIC STARTER KIT:

ELECTRIC STARTER ATTACHMENT:
ELECTRIC STARTER TO POWERPLANT ATTACHMENT.....10-4

ELECTRIC STARTER ATTACHMENT:
STARTER MOTOR AND STARTER RELAY TO POWERPLANT ATTACHMENT..10-6

ELECTRIC STARTER ATTACHMENT:
ELECTRICAL WIRING TO THE POWERPLANT.....10-8

ELECTRIC STARTER ATTACHMENT:
BATTERY INSTALLATION.....10-10

ELECTRIC STARTER ATTACHMENT:
ELECTRICAL WIRING TO THE INSTRUMENT PANEL.....10-12

DOOR ENCLOSURE KIT:

DOOR ENCLOSURE KIT:
DOORPOST DOWNTUBE ATTACHMENT.....10-16

DOOR ENCLOSURE KIT:
DOORPOST DOWNTUBE ATTACHMENT (CONT'D.).....10-18

DOOR ENCLOSURE KIT:
FORWARD AND LOWER REINFORCEMENT STRIP INSERTION.....10-20

DOOR ENCLOSURE KIT:
CONNECTING BUCKLE ROUTING AND ATTACHMENT.....10-22

DOOR ENCLOSURE KIT:
DOOR ENCLOSURE ATTACHMENT.....10-24

DOOR ENCLOSURE KIT:
DOORPOST CROSSTUBE ATTACHMENT.....10-26

DOOR ENCLOSURE KIT:
DOOR ENCLOSURE ATTACHMENT.....10-28

DOOR ENCLOSURE KIT:
DOOR ENCLOSURE ATTACHMENT (CONT'D.).....10-30

DOOR ENCLOSURE KIT:
RIB INSERTION.....10-34

ALUMINIUM MAIN WHEELS 10-37
MAIN WHEELS BRAKE KIT 10-43

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OPTIONS AND ACCESSORIES (CONT'D.)

ALUMINUM WHEELS:

ALUMINUM MAIN WHEEL ASSEMBLY.....10-38

ALUMINUM MAIN WHEEL TO AXLE SHAFT ATTACHMENT.....10-40

ALUMINUM WHEELS WITH MAIN WHEEL BRAKES:

BRAKE CALIPER ASSEMBLY.....10-44

ALUMINUM MAIN WHEEL AND BRAKE CALIPER ATTACHMENT.....10-46

MASTER BRAKE CYLINDER/ FORWARD AND
AFT BRAKE LEVER AND BRAKE LINK TUBE ATTACHMENT.....10-48

BRAKE RESERVOIR ATTACHMENT.....10-50

PARKING BRAKE ATTACHMENT.....10-52

HYDRAULIC BRAKE LINE ROUTING AND ATTACHMENT.....10-54

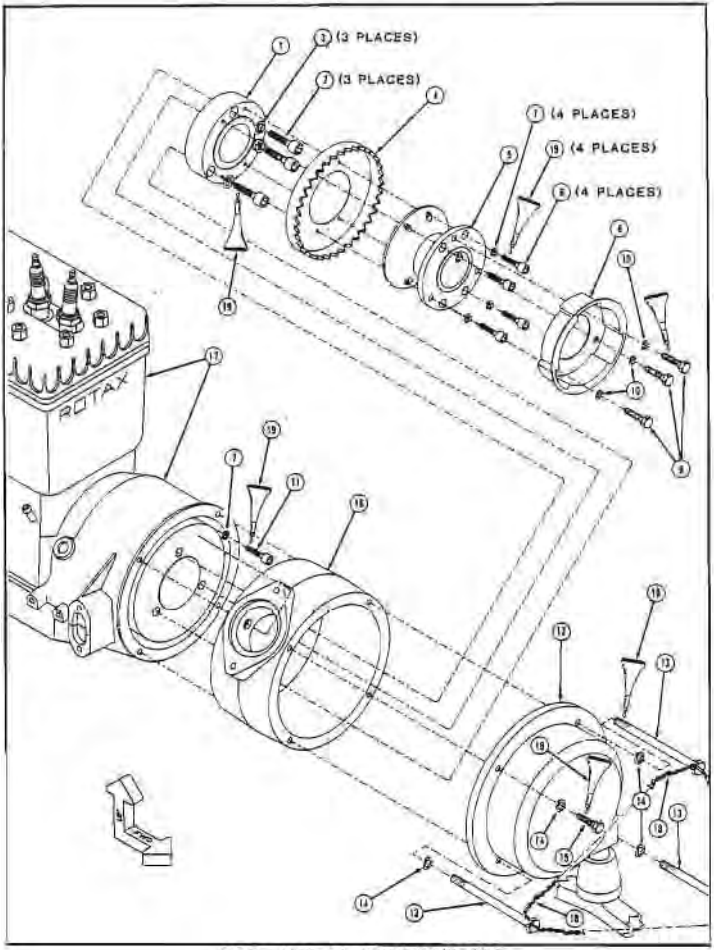
ELECTRIC STARTER ATTACHMENT:
ELECTRIC STARTER TO POWERPLANT ATTACHMENT

1. Remove the Pull Starter (12) and the Starter Pulley (8). Assemble the Starter Mount Ring (16) and the Pull Starter (12) LAST.

NOTE: Ensure the Pull Starter (12) is oriented as illustrated. Assemble the remaiing components as illustrated. Torque ALL Bolts to proper specifications. Use Thread Adhesive (Loctite) on ALL Bolts and Screws.

2. Use Safety Wire (18) to secure the Bolts (13) to each other.

Item	P/N	Qty	Description
1	61420	1	Inner Hub Spacer, Dual CDI
2	10461	3	8mm x 25mm Socket Head Cap Screw
3	10584	3	8mm Lock Washer (Hi-Collar)
4	61430	1	Cranking Ring Gear
5	61450	1	Outer Hub Spacer
6	10394	4	1/4-20 x 1.0 Socket Head Cap Screw
7	10583	4	1/4" Hi-Collar Lock Washer
8	00832322	1	Starter Pulley
9	00940850	3	8mm x 16mm Hex Screw
10	00945752	3	8mm Lock Washer
11	10463	1	6mm x 20mm Socket Head Cap Screw
12	00994872	1	Rewind Starter Assembly
13	10642	3	6mm x 100mm Hex Bolt, Drilled Head
14	00945751	4	6mm Lock Washer
15	00240911	1	6mm x 14mm Hex Screw
16	61440	1	Starter Mount Ring (Main Casting)
17			PowerPlant
18	20467	A/R	Safety Wire, 48" (121.92 cm)
19	60591	1	Thread Adhesive (Loctite)


(3 PLACES)
(3 PLACES)
(4 PLACES)
(4 PLACES)
(4 PLACES)
ROTAX

ELECTRIC STARTER ATTACHMENT:
STARTER MOTOR AND STARTER RELAY TO POWERPLANT ATTACHMENT

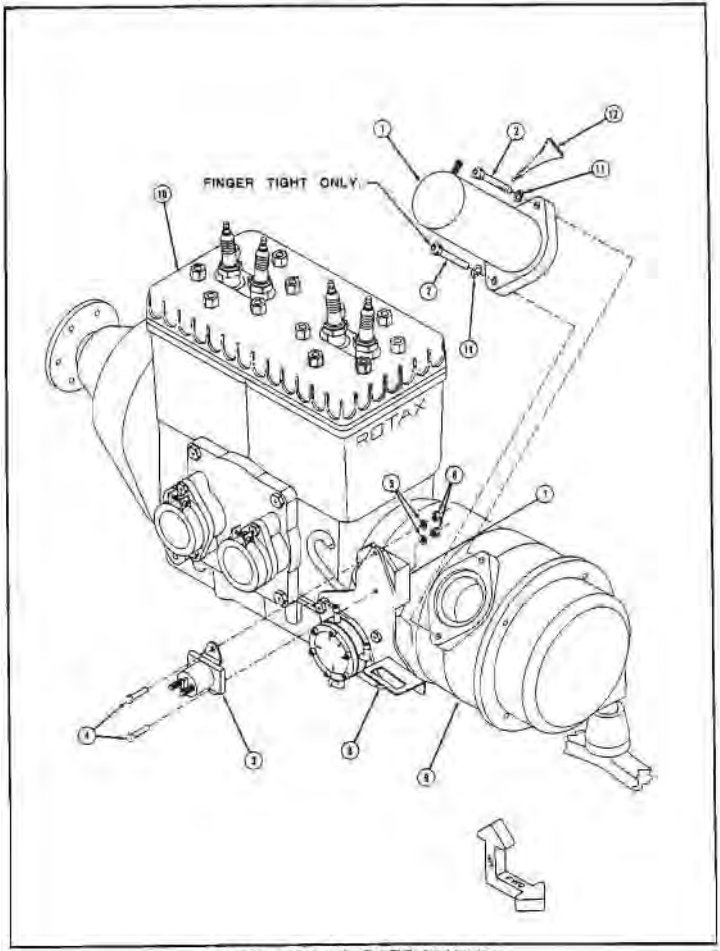
NOTE: The following assembly sequence requires a 6 mm Allen or Hex Head Wrench.

1. Position the Starter Motor (1) onto the Powerplant with the "Stud" located UPWARD. Ensure the Starter Motor (1) is mounted with the electrical post UP.

NOTE: The LOWER Socket Head Cap Screw (2) should be installed FINGER TIGHT ONLY! Install the UPPER Cap Screw (2) with Thread Adhesive (Loctite). Remove the EXISTING Bolts (4) and re-install as illustrated. The Bolts (4) are located in the Powerplant Kit.

2. Torque ALL Bolts to proper specificatons.

Item	P/N	Qty	Description
1	61410	1	Starter Motor
2	10460	2	8mm x 25mm Machined Socket Head Cap Screw
3	61411	1	Starter Relay
4	10015	2	AN3-6A Bolt
5	10550	2	3/16 Washer
6	10500	2	3/16 Locknut
7	00866080	1	Rectifier/Regulator
8	45859	1	Fuel Pump Mount Plate
9	61440		Starter Mount Ring
10			Powerplant
11	10584	2	5/16" Hi-Collar Lock Washer
12	60591	A/R	Thread Adhesive (Loctite)


FINGER TIGHT ONLY
ROTAX

ELECTRIC STARTER ATTACHMENT:
ELECTRICAL WIRING TO THE POWERPLANT

1. Cut THREE (3) 12" (30.48 cm) pieces of Wire (6). Slide a 1" (25.4 mm) piece of Heat Shrink Tubing (13) on BOTH ends of ALL THREE (3) pieces (6). Install Female Q.D. Connectors (7) on ONE end of TWO (2) pieces (6). Install a Ring Connector (10) to ONE end of the 3rd piece (6). Install a piece of Heat Shrink Tubing (13) to ends with the Connectors.

NOTE: Ensure the Heat Shrink Tubing covers only the round shank part of connectors (7) and NOT the "plug-in" portion.

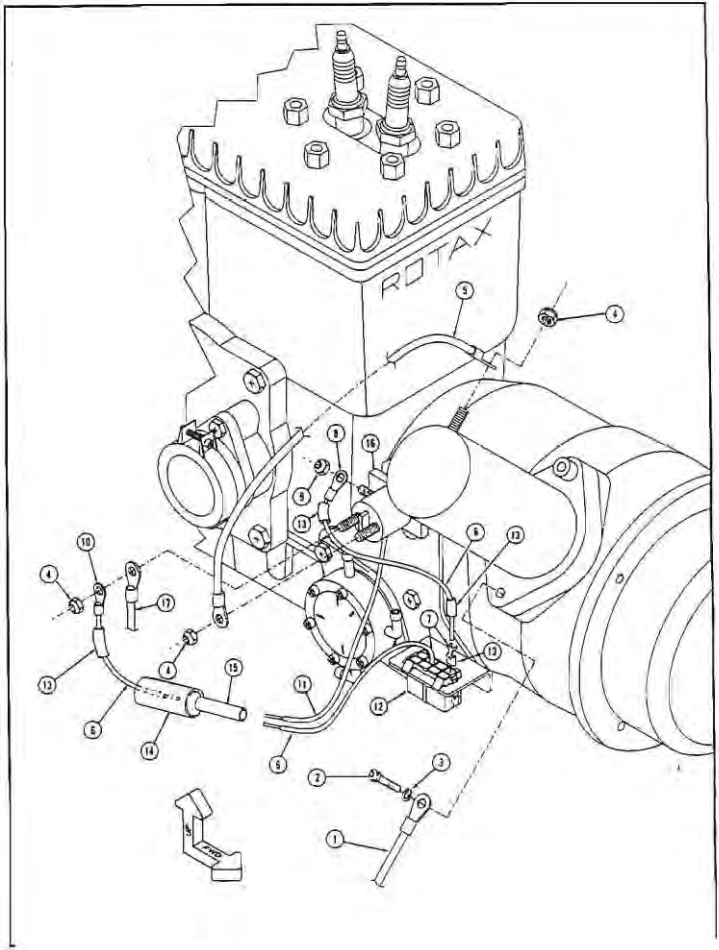
2. Take ONE Wire (6) with a Female Q.D. Connector (7) on ONE end and install a Ring Connector (8). Install Heat Shrink (13). Connect the Ring Connector to the Starter Relay (16) (SMALL post) as illustrated and insert the other end into item (12) as illustrated.

3. Join the RED Wire (11) from the Regulator/Rectifier with the RED Wire (6) with the Q. D. Connector as illustrated. Connect BOTH to the THIRD Wire (6). Attach as illustrated.

4. Slide Heat Shrink Tubing (14) OVER the Butt Connector (15) and Wires (6) and (11). Install the LAST Wire (6) with the Ring Connector (10) to the Butt Connector (15). Install Heat Shrink OVER the Wires and the Butt Connector.

5. Install Cables (5,10,17 and 1) as illustrated.

Item	P/N	Qty	Description
1	61416	1	Battery Ground Cable (BLACK)
2	10460	1	8mm x 25mm Machined Socket Head Cap Screw
3	10584	1	8mm Lock Washer (Hi-Collar)
4	10511	3	1/4-20 Nylock Nut
5	61413	1	Positive Starter Cable #1
6	81502	A/R	16 Amp Red Wire, 36" (91.44 cm)
7	30075	2	Female Q.D. Connectors
8	30073	1	Ring Connector with #10 Hole
9	11002	1	8-32 Nylock Nut
10	30077	1	Ring Connector with 1/4" Hole
11			Red Wire From Regulator/Rectifier
12	00866025	1	Female Connector Housing
13	20105	6"	3/16" Heat Shrink Tubing
14	20103	6"	3/8" Heat Shrink Tubing
15	30076	1	Butt Connector
16	61411		Starter Relay
17	61414	1	Battery Positive Cable 50" (127.0 cm)


ROTAX

ELECTRIC STARTER ATTACHMENT:
BATTERY INSTALLATION

NOTE: Step 1. DOES NOT APPLY to GTS00 aircraft Serial Numbers 0001 thru 00S2. Those aircraft have a factory installed Forward Seat Track Channel (1) located where the Aft Seat Track Channel (2) (which is LONGER) is presently located.

1. Position the Aft Seat Track Channel (1) CENTERED and LEVEL OVER the Tail Boom Tube (13) "butted" up against the factory installed Aft Seat Track Channel (2) as illustrated. Drill THREE (3) 3/16" diameter holes thru the BOTTOM of the Battery Mount (3) to match the Channel (1). Deburr the holes. Measure, mark, drill and deburr the Tail Boom Tube as illustrated for the Channel (1). Attach with the Rivets (12) as illustrated.

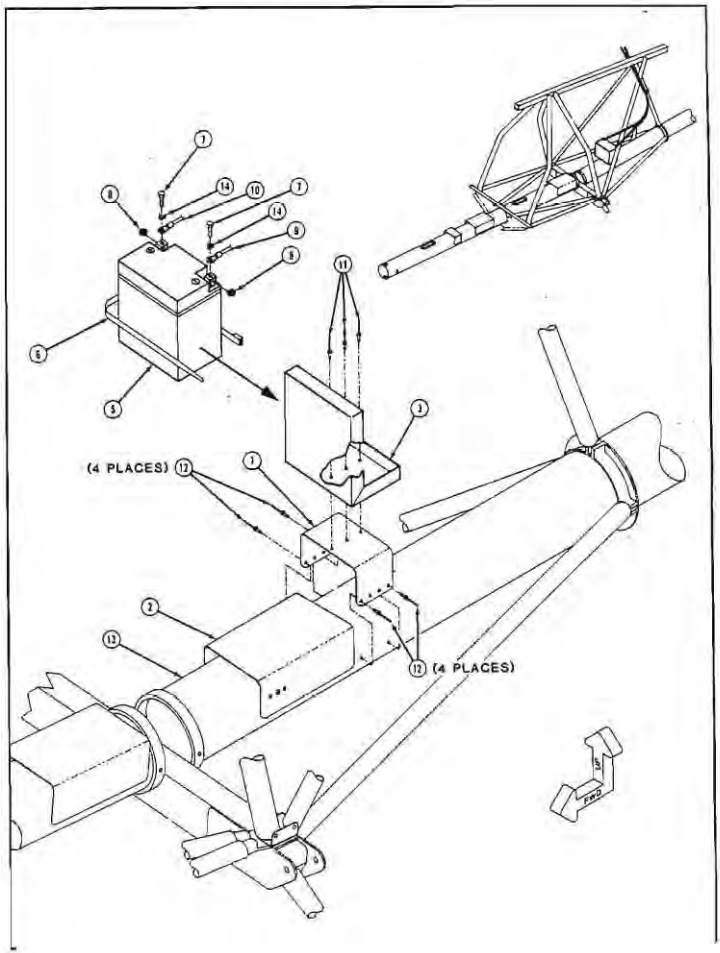
2. Place the Battery Lining (4) (cut to fit) in the BOTTOM, FORWARD, and SIDE areas of Battery Mount (3). Drill, deburr and attach the Battery Mount as illustrated.

3. Install the Battery (5) as illustrated and secure with TWO Tie Wraps (6) attached to each other. Make sure the Tie Wraps are properly installed so that they LOCK and WILL NOT release.

4. Install the Battery Cables (9) and (10) (previously installed to the Starter and Relay) with the Hardware as illustated.

NOTE: Ensure the POSITIVE and NEGATIVE Cables are installed to the POSITIVE and NEGATIVE posts of the Battery accordingly.

Item	P/N	Qty	Description
1	45407	1	Forward Seat Track Channel
2	45410		Aft Seat Track Channel Assembly (factory installed)
3	61417	1	Battery Mount
4	61418	A/R	Battery Mount Lining, 28 sq.in.
5	30330	1	12 Volt Battery ,11 Amp
6	30490	2	Tie Wrap 15"
7		2	Screws in Battery Box
8		2	Nuts in Battery Box
9	61416		Battery Ground Cable (BLACK)
10	61414		Battery Positive Cable (RED)
11	20193	3	3/16" x 1/4" Grip Stainless Steel Rivet (BSPQ-64)
12	20214	8	3/16" x 1/8" Grip Aluminum Rivet (AAPQ-62)
13	45012		Tail Boom Tube Assembly


7
8
14
10
7
14
9
6
11
6
5
3
(4 PLACES) 12
1
2
13
12 (4 PLACES)

ELECTRIC STARTER ATTACHMENT:
ELECTRICAL WIRING TO THE INSTRUMENT PANEL

IMPORTANT: Verify ALL Female Snap Connectors (9) are securely attached and that they have been attached ("crimped") to the "bare" wire and NOT the insulation around the Wire. To check the security of the Snap Connectors "crimp" GENTLY tug on the Connector AFTER it has been "crimped" with the proper "crimping tool.

Identify the "ON" and "OFF" positions on the Toggle Switch (1) with a Continuity Checker (Ohm Meter) if the positions ARE NOT indicated on the Switch as Switches may vary. "ON" should be the "UP" position. DO NOT INSTALL THE FUSE (4) UNTIL STEP 4.

1. Identify the RED Wire in the Wiring Harness (10). Cut off the Ring Connector. Attach a Female Snap Connector (9). Attach the RED Wire to the BOTTOM post of the Toggle Switch (1).

2. Cut an EIGHT inch (8")(20.32 cm) piece of RED Wire (11). Attach a Female Snap Connector (9) to ONE end. Push this end onto the TOP of the post of the Toggle Switch (1). Solder the opposite end to the Fuse Holder (3).

3. Cut a TWELVE inch (12") piece of RED Wire (14). Attach a Ring Connector (16). Attach to the "Batt" terminal on the Ignition Switch. Join the opposite end with ONE Wire from the Light (13). Solder to the other post on the Fuse Holder (3).

4. Take the remaining wire from the Light (15) and attach it to the BLACK Wire from the Hour Meter (not illustrated) by attaching a Connector (16) to BOTH. Attach these wires to the "GROUND" post on the Ignition Switch (12). Install Fuse (4).

Item	P/N	Qty	Description
1	30312	1	Switch Toggle
2		1	Ring Nut for Toggle Switch
3	30307	1	Fuse Holder
4	30308	1	15 Amp Fuse
5		1	Fuse Holder Cap
6		1	Ring Nut for Fuse Holder
7	30306	1	Master Indicator Light
8	45574		Instrument Panel
9	30070		Female Snap Connector
10			Red Wiring from Wiring Harness
11	81502	A/R	Red Wire, 16 AGW insulated, 8" (20.32 cm)
12	30315	1	Ignition Switch
13			Wire from Light
14	81502	A/R	Red Wire, 16 AGW igulated, 12" (30.48 cm)
15			Wire from Light
16	30073	2	Ring Connector with #6 hole

FIG. 1

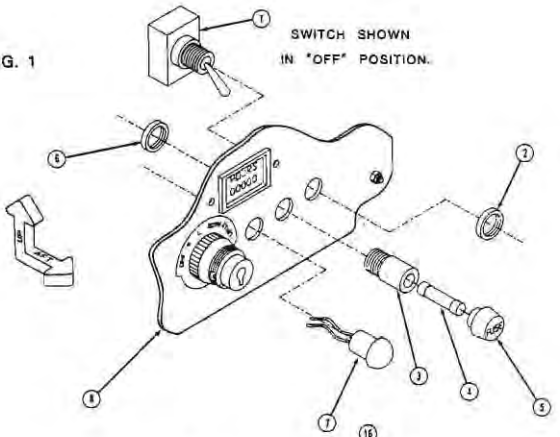
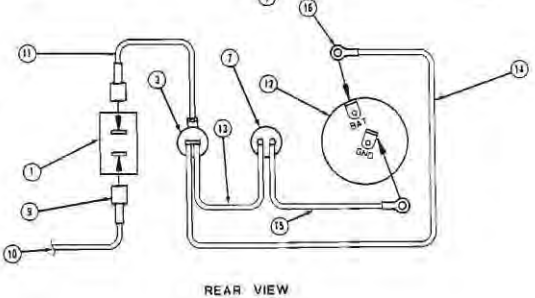


FIG. 2



REAR VIEW

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SECTION 10

OPTIONS AND ACCESSORIES

DOOR ENCLOSURE KIT

10-16

DOOR ENCLOSURE KIT:
DOORPOST DOWNTUBE ATTACHMENT

1. Refer to Page 2-115, Detail 'A'. Locate the AN3-16A Bolt (3). Remove the previously installed Bolts (3), Washers (4) and Locknuts (7) from each side of the Fuselage and discard them.

2. Enlarge and deburr the EXISTING hole thru (3,4 and 6) to 1/4" (6.4 mm) on each side of the Fuselage.

3. Refer to Pages 10-16 and 10-17, Figure 1 and Detail 'A'. Attach the Channel (2) to the Pilot Enclosure (3) with Hardware (1,7 and 8) as illustrated. Tighten to correct torque. DO NOT DISTORT THE TUBE.

4. Attach the LOWER end of the LEFT Doorpost Downtube (10) to the Channel (2) with Hardware (1,7 and 8) as illustrated. Tighten to correct torque. DO NOT DISTORT THE TUBE.

5. Refer to Figure 1 and Detail 'B'. Align the CENTERLINE of the LEFT Doorpost Downtube (10) over the 1/4" (6.4 mm) attachment hole in the Shoulder Belt Attachment Plate (12) as illustrated. Using the EXISTING hole in the Shoulder Belt Attachment Plate as a guide, back-drill thru BOTH walls of the Doorpost Downtube. Deburr the holes. Attach the UPPER end of the Doorpost Downtube (10) to the Shoulder Belt Attachment Plate (12) with hardware (9,11,7 and 8) as illustrated. Attach FINGER TIGHT ONLY at this time.

NOTE: The LEFT Door Enclosure is NOT shown for Clarity.

4. Repeat the assembly sequence on the opposite (RIGHT) side in "mirror image".

Item	P/N	Qty	Description
1	10140	4	AN4-16A Bolt
2	20080	2	I-75 Channel
3	45378		Pilot Enclosure
4	45856		Fuselage Support Tube
5	20265		7/8" x .25" H x .15" Thick Saddle
6	45404		Forward Fuselage Bulkhead
7	10360	14	1/4" Washer
8	10510	10	1/4" Locknut
9	10120	2	AN4-15A Bolt
10	46320	2	Doorpost Downtube
11	20270	2	1" x .125" Thick Saddle
12	45429		Shoulder Belt Attachment Plate

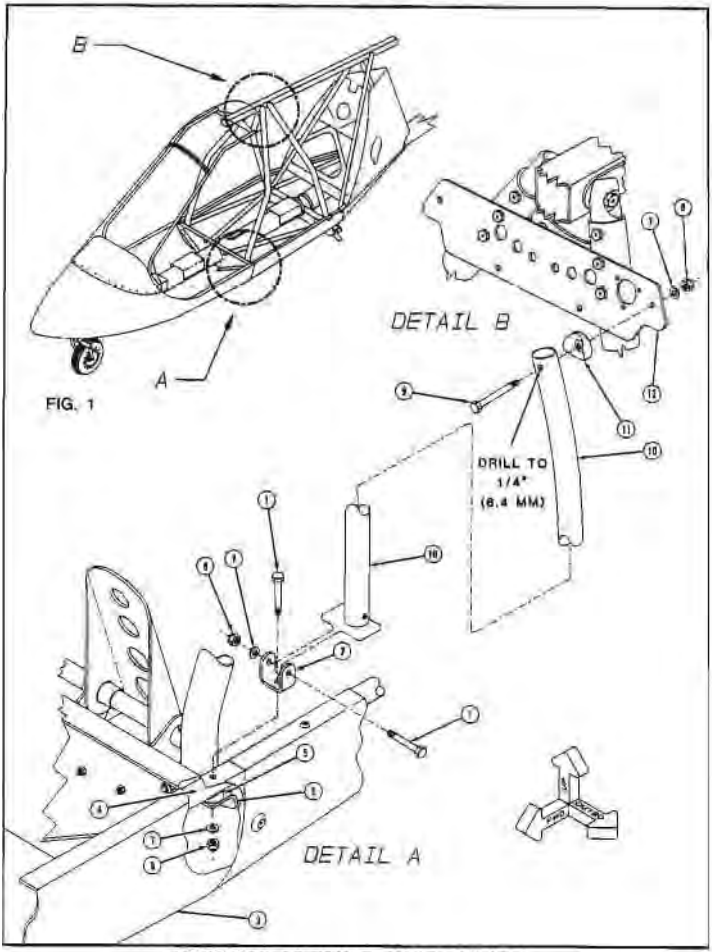


FIG. 1

DOOR ENCLOSURE KIT:
DOORPOST DOWNTUBE ATTACHMENT (CONT'D.)

NOTE: Before starting the following sequence note the correct orientation of the LEFT and RIGHT Doorpost Downtubes (1). The Doorpost Downtubes are bowed OUTWARD.

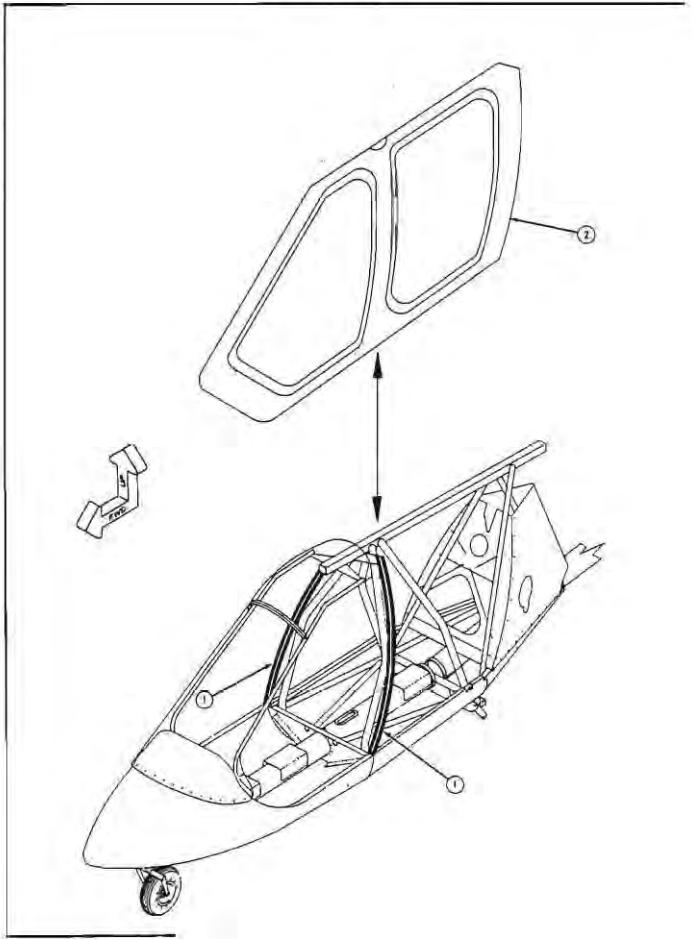
1. Remove the UPPER Doorpost Bolt (previously attached and not illustrated) and slide the LEFT Doorpost Downtube (1) INSIDE the CENTER VERTICAL pocket of the Left Door Enclosure (2).

2. Repeat on the opposite (RIGHT) side.

3. Reinstall the UPPER Doorpost Bolt and tighten to correct torque. DO NOT DISTORT THE TUBE.

4. Repeat for the opposite (RIGHT) side.

Item	P/N	Qty	Description
1	46320	2	Doorpost Downtube
2	46330	1	Left Door Enclosure
	46331	1	Right Door Enclosure (not illustrated)


2
1
1
FWD

DOOR ENCLOSURE KIT:
FORWARD AND LOWER REINFORCEMENT STRIP INSERTION

1. Refer to Figure 1 and Detail 'A'. Locate the "slit" or opening (1) on the INBOARD side of the FORWARD Pocket (2) of the Left Door Enclosure (3). TEMPORARILY insert a Reinforcement Strip (5) into the Pocket (2) as far as it will go. Mark and trim off the EXCESS Reinforcement Strip. File any sharp edge.

2. Repeat Step 1 for the LOWER Door Enclosure Pocket (2) and Reinforcement Strip (4).

3. Insert the Reinforcement Strips (4) in Details 'B' thru 'E' in the SAME manner as Detail 'A'.

4. Repeat Steps 1 thru 3 for the opposite (RIGHT) side in "mirror image".

Item	P/N	Qty	Description
1			"Slit" or opening in Pocket
2			Door Enclosure Pocket
3	46330		Left Door Enclosure
	46331		Right Door Enclosure (not illustrated)
4	43734	A/R*	Reinforcement Strip

* As Required

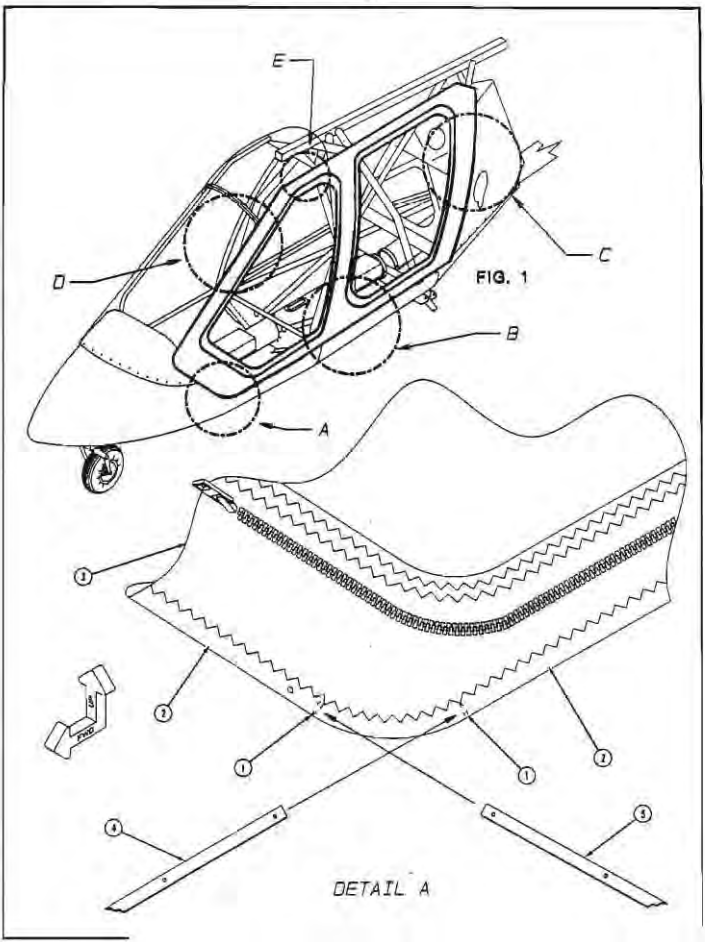


FIG. 1

DOOR ENCLOSURE KIT:
CONNECTING BUCKLE ROUTING AND ATTACHMENT

1. Refer to Figure 1 and Detail 'A'. Align and attach the Velcro (hook) on the UPPER edge of the Left Door Enclosure (1) to the Velcro (loop) on the BOTTOM or UNDERSIDE of the Wing (2).

2. Route the connecting Buckles (3 and 4) attached to the Straps (5) of the Door Enclosure UNDER BOTH of the Push/Pull Control Cables (7) at this location on the Root Tube (6).

IMPORTANT: Ensure ALL Buckles DO NOT interfere with the operation of any part of the Flight Control System AFTER they are connected.

Item	P/N	Qty	Description
1.	46330	1	Left Door Enclosure
	46331	1	Right Door Enclosure (not illustrated)
2.	45640		Left Wing Cover
	45641		Right Wing Cover (not illustrated)
3.			Male Connecting Buckle
4.			Female Connecting Buckle
5.			Nylon Webbing (Connecting Strap)
6.	45668		Root Tube
7.			Push/Pull Control Cable

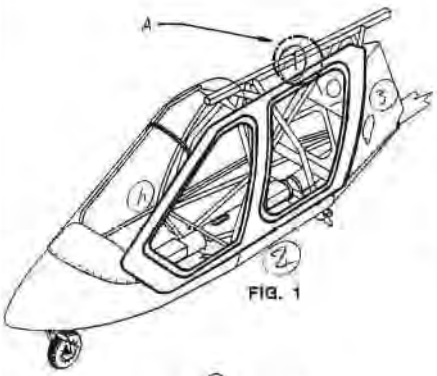
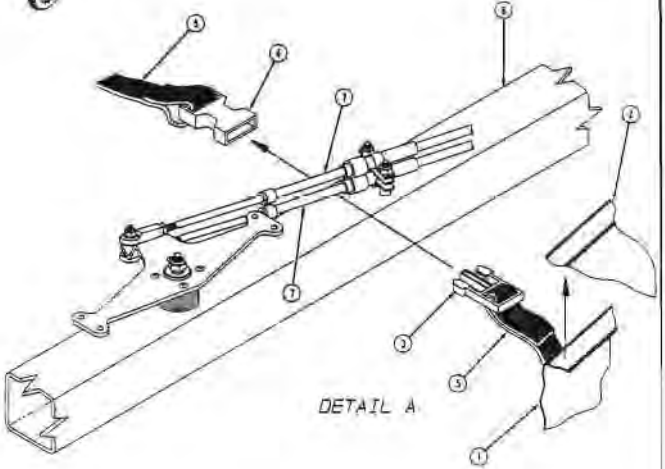


FIG. 1



DOOR ENCLOSURE KIT:
DOOR ENCLOSURE ATTACHMENT

1. Refer to Figure 1 and Detail 'A'. Insert a Reinforcement Strip (not illustrated) into the LOWER Door Enclosure Pocket (1). Trim the EXCESS. Insert another piece of Reinforcement Strip into the AFT Pocket (2). Trim the excess. Locate the 3/16" (4.8 mm) diameter holes in the Reinforcement Strip thru the pocket. Heat cut and reveal the holes.

2. Thread some 1/8" (3.2 mm) diameter Nylon Leech Line (3) thru the attachment holes as illustrated. Pull DOWNWARD on the Line removing any wrinkles which may be present.

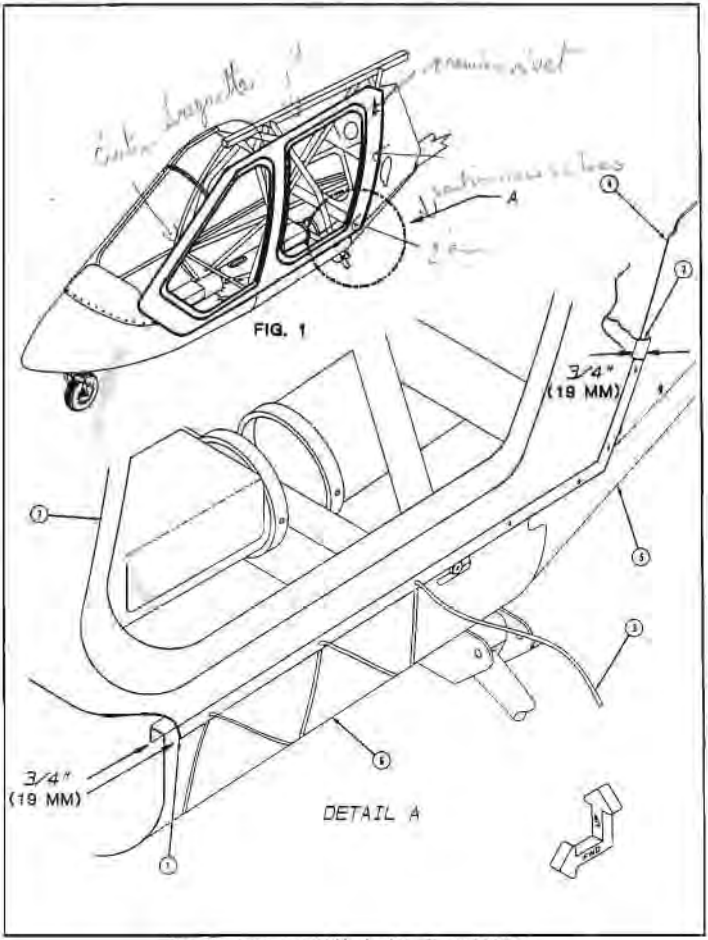
NOTE: A good technique is to thread the Line (3) as illustrated to the opposite Door Enclosure as this will ensure BOTH Door Enclosures are pulled or tensioned EVENLY.

Another method is to heat-cut a piece of Nylon Line (3) APPROXIMATELY 12" (30.48 cm) and tie a knot at ONE (1) end only. Thread the Line thru a hole in the Reinforcement Strip until it reaches the knot at the end of the Line. Now you have a "handle" with which to pull the Door in the direction desired to remove any wrinkles before attachment. For best results pull DOWNWARD on the next hole FORWARD of the hole you wish to use for attachment.

3. Allow the Left Door Enclosure to OVER LAP the LEFT side of the Left Lower Center Fairing (6) by 3/4" (19.1 mm). Allow the AFT edge of the Left Door Enclosure (7) to overlap the FORWARD edge of the Aluminum Pylon Cover (4) 3/4" (19.1 mm) as illustrated.

4. Repeat Steps 1 thru 3 for the opposite (RIGHT) side.

Item	P/N	Qty	Description
1.			Lower Door Enclosure Pocket
2.			Aft Pocket
3.			Nylon Leech Line
4.	46340		Aluminum Pylon Cover
5.	46110		Lower Aft Left Fairing
	46111		Lower Aft Right Fairing (not illustrated)
6.	46105		Left Lower Center Fairing
	46106		Right Lower Center Fairing (not illustrated)
7.	46330		Left Door Enclosure
	46331		Right Door Enclosure (not illustrated)


A
FIG. 1
3/4"
(19 MM)
3/4"
(19 MM)
DETAIL A

DOOR ENCLOSURE KIT:
DOORPOST CROSSTUBE ATTACHMENT

1. Insert an Expansion Plug (1) into each Tube Connector (3) orientated as illustrated. Ensure that the Plug is securely in place.

2. Ensure the Velcro (not illustrated) located at the TOP of the Door Enclosure and the BOTTOM of the Wing is attached securely. Pull DOWNWARD on the Door Enclosure at this CENTER location. The Door Enclosure should OVERLAP the edge of the Pilot Enclosure by APPROXIMATELY 3/4" (19.05 cm).

3. Position the Doorpost Crosstube (2) BETWEEN BOTH Doorpost Downtubes (6). Pull DOWNWARD on BOTH Door Enclosures to remove excess wrinkles. Locate the 1/4" (6.4 mm) diameter attachment hole. Reveal and heat-seal the hole.

4. TEMPORARILY remove the Doorpost Crosstube (2). Reveal the INBOARD most holes thru the Pocket of the Door Enclosure as to allow the Doorpost Crosstube to be attached.

5. Reattach the Doorpost Crosstube (2) BETWEEN BOTH Doorpost Downtubes (6).

6. Add a Washer (5) to Bolt (4). Add a drop of Thread Adhesive (8) to the Threads of Bolt. Tighten to correct torque. DO NOT DISTORT THE TUBE.

7. Repeat Step 6 on the opposite (RIGHT) side in "mirror image".

Item	P/N	Qty	Description
1	20130	2	1" Expansion Plug
2	46325	1	Doorpost Crosstube
3	20450	2	1" Tube Connector
4	10400	2	1/4" - 20 X 1 3/4" Grade 5 Bolt
5	10560	2	1/4" Washer
6	46320	2	Doorpost Downtube
7	45471		Left Forward Fuselage Downtube
	45469		Right Forward Fuselage Downtube (not illustrated)
8	60591	A/R*	Thread Adhesive (Loctite)

* As Required

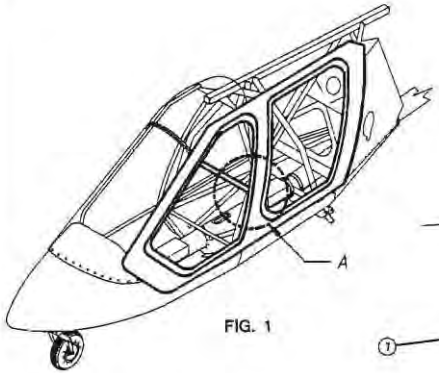
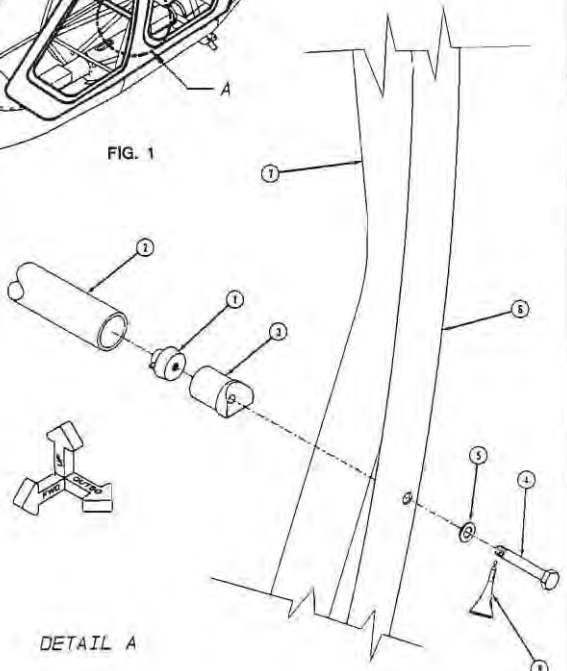


FIG. 1



DETAIL A

DOOR ENCLOSURE KIT:
DOOR ENCLOSURE ATTACHMENT

NOTE: Before starting the following assembly sequence ensure the Velcro is attached on the UPPER edge of the Left Door Enclosure (1) and the Right Door Enclosure (not illustrated) to the Velcro on the BOTTOM edge of the Wing (INBOARD edge) as illustrated on Page 10-23.

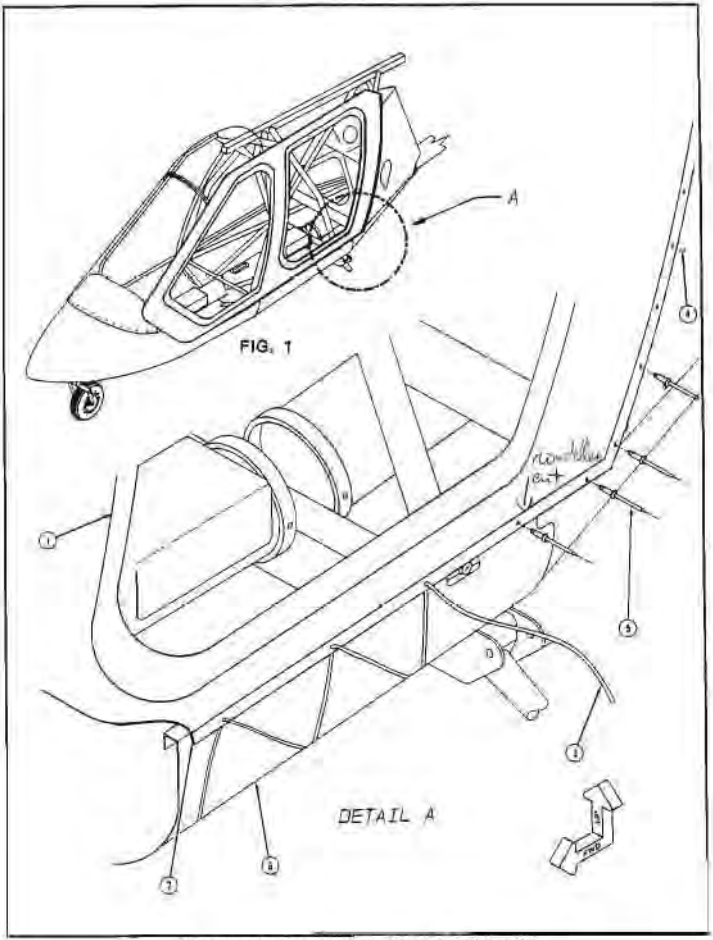
1. Refer to Figure 1 and Detail 'A'. Locate the 3/16" (4.8 mm) diameter attachment holes in the Reinforcement Strip in the AFT and LOWER Door Enclosure Pockets (2). Using the Nylon Leech Line (3), pull DOWNWARD and FORWARD, if necessary on the Door Enclosure (1) keeping it TIGHT as required to remove any wrinkles.

2. Attach the AFT end of the LEFT Door Enclosure (1) to the Aluminum Pylon Cover (4) with Rivets (5) as illustrated.

3. Attach the BOTTOM of the Left Door Enclosure (1) to the Lower Left Center Fairing (6) with Rivets (5) as illustrated. Working from the AFT end moving FORWARD. Stop when you reach the Doorpost Downtube (not illustrated).

Item	P/N	Qty	Description
1	46330		Left Door Enclosure
	46331		Right Door Enclosure (not illustrated)
2			Door Enclosure Pocket
3			1/8" Nylon Leech Line
4			Aluminum Pylon Cover
5	20195	A/R*	3/16" x 1/4" Grip Aluminum Rivet (AAP-64)
6	46105		Left Lower Center Fairing
	46106		Right Lower Center Fairing (not illustrated)

* As Required


A
FIG. 1
DETAIL A

DOOR ENCLOSURE KIT:
DOOR ENCLOSURE ATTACHMENT (CONT'D.)

NOTE: The end of the UPPER Reinforcement Strip should NOT stick out past the Door Enclosure Pocket.

1. Locate the 3/16" (4.8 mm) diameter holes thru the dacron. Reveal the holes and heat seal.

2. Keeping the UPPER edge of the Left Door Enclosure (3) ALIGNED and PARALLEL with the Windshield Frame Tube (5). Use a 3/16" (4.8 mm) drill bit and back-drill thru the EXISTING holes in the Reinforcement Strip (1) and thru ONE (1) wall ONLY of the Windshield Frame Tube working your way FORWARD. Attach the UPPER edge of the Left Door Enclosure with Rivets (4) as illustrated.

3. Repeat Steps 1 and 2 for the opposite (RIGHT) side.

Item	P/N	Qty	Description
1	45754	A/R*	Reinforcement Strip
2			Upper Pocket
3	46330		Left Door Enclosure
	46331		Right Door Enclosure (not illustrated)
4	20195	A/R*	3/16" x 1/4" Grip Aluminum Rivet (AAP-64)
5			Windshield Frame Tube

* As Required

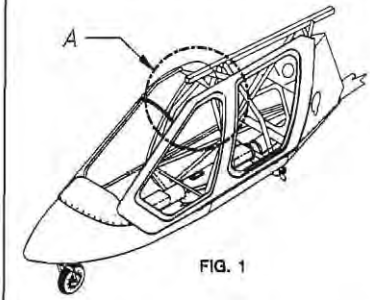
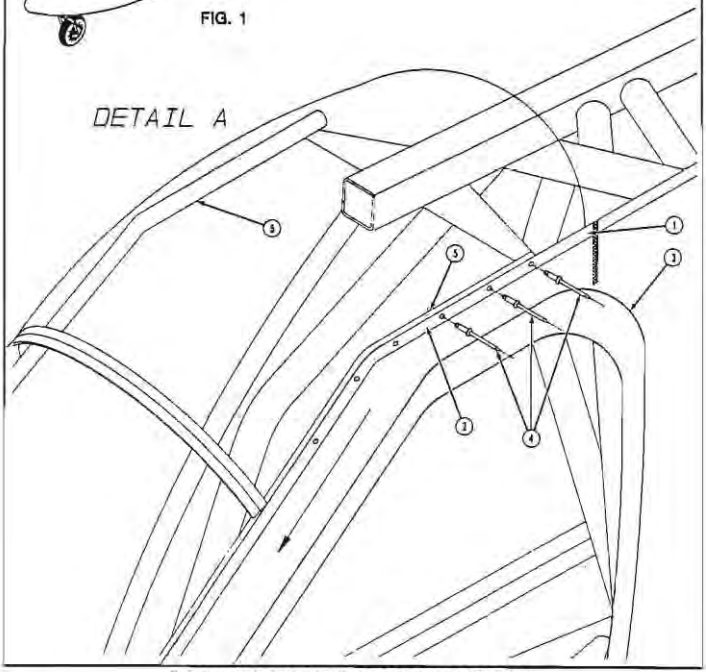


FIG. 1



DOOR ENCLOSURE KIT:
DOOR ENCLOSURE ATTACHMENT (CONT'D.)

1. Pull the Left Door Enclosure (1) DOWNWARD and FORWARD to correctly tension the Door and remove any wrinkles which may occur.

2. Refer to Figure 1 and Detail 'A'. Starting at the Doorpost Downtube, work your way FORWARD and attach the Left Door Enclosure (1) to the Left Lower Center Fairing (3) and Pilot Enclosure (4) with Rivets (5) as illustrated.

Item	P/N	Qty	Description
1	46330		Left Door Enclosure
	46331		Right Door Enclosure (not illustrated)
3	46105		Left Lower Center Fairing
	46106		Right Lower Center Fairing (not illustrated)
4	45578		Pilot Enclosure
	45734		Reinforcement Strip
			Door Enclosure Pocket
5	20195	A/R*	3/16" x 1/4" Grip Aluminum Rivet (AAP-64)

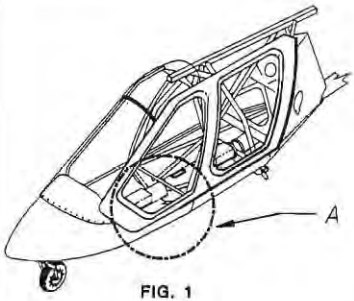


FIG. 1

DOOR ENCLOSURE KIT:
RIB INSERTION

---

1. Refer to Figure 1. and Detail 'A'. Temporarily slide a Rib (1) into the FORWARD Door Enclosure Rib Pocket (2) as far as it will go.

2. Measure and mark the end of the Rib (1) that protrudes past the Rib Pocket (2). Remove the Rib. Cut off the EXCESS Rib material. Deburr the tube.

3. Reinsert the Rib (1) and secure it in place with a Rivet (4) (not illustrated) from the INBOARD side of the Door Enclosure at the AFT end of the Rib.

4. Repeat the sequence for the Left FORWARD Door.

5. Repeat Steps 1 thru 4 on the opposite (RIGHT) side.

Item	P/N	Qty	Description
1	45707	4	Rib
2			Rib Pocket
3	46330		Left Door Enclosure
	46331		Right Door Enclosure (not illustrated)
4	20195	4	3/16" x 1/4" Grip Aluminum Rivet (AAP-64) (not illustrated)

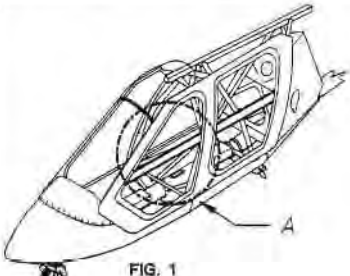
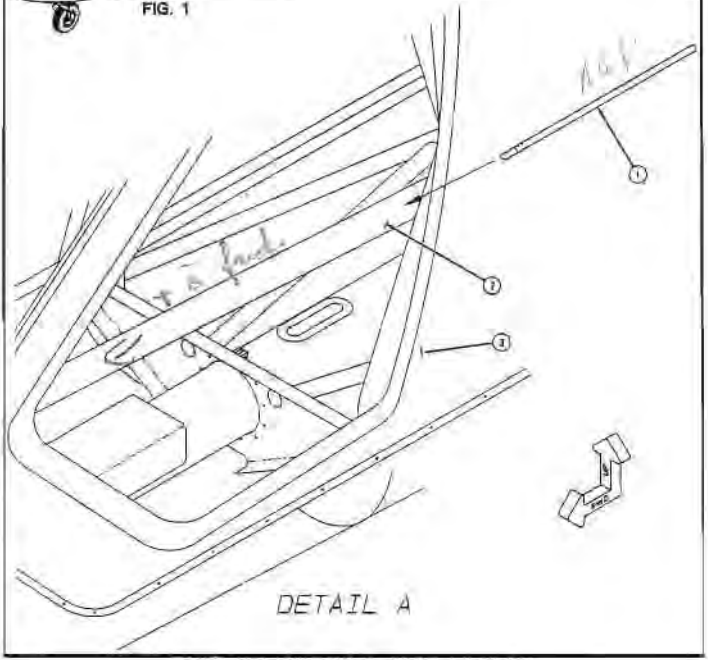


FIG. 1



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OPTIONS

ALUMINUM MAIN WHEELS

ALUMINUM MAIN WHEEL ASSSEMBLY.....10-38
ALUMINUM MAIN WHEEL TO AXLE SHAFT ATTACHMENT.....10-40

ALUMINUM MAIN WHEEL ASSSEMBLY

NOTE: During the following assembly sequence you will need a 1/4" (6.4 mm) Allen or Hex Wrench.

1. Insert the Inner Tube (1) into the Tire (2) with the Valve Stem (2) orientated OUTBOARD.

2. Roll an O-Ring (11) (not illustrated) onto the OUTER Wheel Rim (4) to the location indicated.

3. Insert the Valve Stem (3) thru the hole in the OUTER Rim (4).

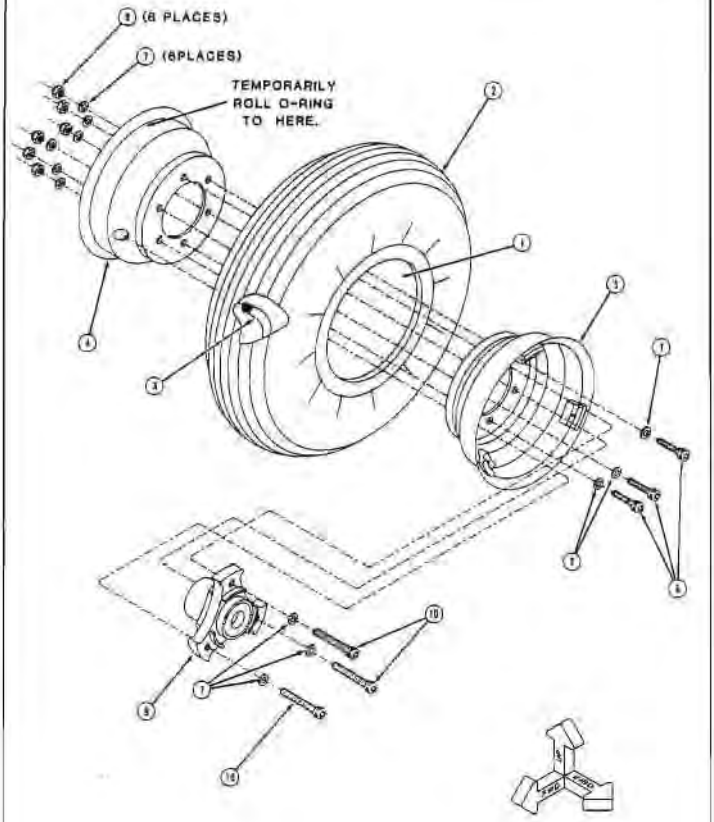
4. After BOTH Wheel Rims (4) and (5) are together reposition the O-Ring so that it rides on TOP of the groove BETWEEN the Rims (4) and (5) and NOT BETWEEN the Rims.

5. Assemble BOTH Rims (4 and 5) together with Hardware (6,7 and 8). Tighten to proper torque.

6. Thread the Socket Head Cap Screw (10) completely thru the Hub Assembly (9) and attach the Hub Assembly to the Rims (4) and (5) with Hardware (10,7 and 8). Torque to proper torque.

7. Repeat for the opposite (LEFT) side in "mirror image".

Item	P/N	Qty	Description
1	20394	2	4.10/3.50 - 6 Inner Tube
2	20393	2	4.00 - 6 Tire
3			Valve Stem (part of P/N 20394)
4	91260	2	Outer Wheel Rim
5	91259	2	Inner Wheel Rim with Disc Mounts
6	11006	6	5/16" - 18 x 3/4" Socket Head Cap Screw
7	10576		5/16" Thin Washer
8	10396	12	5/16" - 18 Thin Lock Nut
9	91261	2	Hub Assembly with 3/4" Bearing
10	11005	6	5/16" - 18 x 1 1/4" Socket Head Cap Screw
11	91267	2	6" Wheel O-Ring (not illustrated)


8 (8 PLACES)
7 (6PLACES)
TEMPORARILY ROLL O-RING TO HERE.
2
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7
6
10
9
7
10
FWD
PORT
STBD

10-40

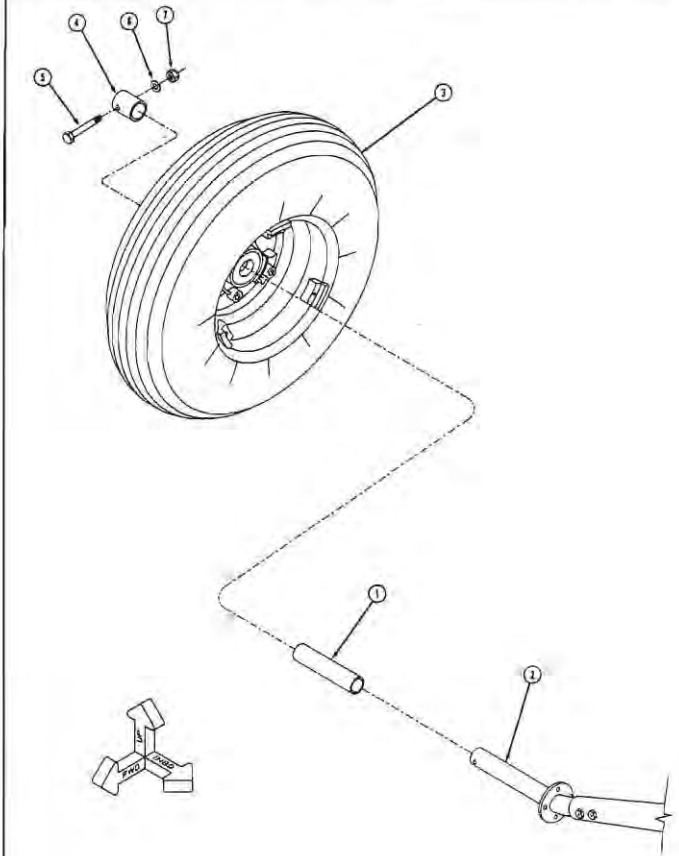
ALUMINUM MAIN WHEEL TO AXLE SHAFT ATTACHMENT

1. Assemble as illustrated. Tighten ALL Locknuts to proper torque.

2. Repeat for the opposite (LEFT) side.

NOTE: Quantity below reflects attachment of ONE (1) side only.

Item	P/N	Qty	Description
1	91269	1	7/8" x .049" x 1.80" Long spacer
2	45369		3/4" Axle Shaft Assembly
3			Main Wheel/Tire Assembly
4	91263	1	7/8" x .049" x .75" Long Collar
5	10027	1	AN3-12A Bolt
6	10530	1	3/16" Washer
7	10500	1	3/16" Locknut


4
6
7
5
3
1
1
2
PRO
SPEED

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OPTIONS

MAIN WHEEL BRAKE KIT

BRAKE CALIPER ASSEMBLY.....10-44

ALUMINUM MAIN WHEEL AND BRAKE CALIPER ATTACHMENT.....10-46

MASTER CYLINDER/FORWARD AND
AFT BRAKE LEVER AND BRAKE LINK TUBE ATTACHMENT.....10-48

BRAKE RESERVOIR ATTACHMENT.....10-50

PARKING BRAKE ATTACHMENT.....10-52

HYDRAULIC BRAKE LINE ROUTING AND ATTACHMENT.....10-54

BRAKE CALIPER ASSEMBLY

NOTE: You will need a 5/32" (4 mm) Allen or Hex wrench to complete the following assembly sequence.

1. Carefully disassemble the RIGHT Brake Caliper Assembly. Insert the Spacer (4) BETWEEN the Stationary Brake Lining (3) and the Caliper Piston Housing (6). Reassemble the Brake Caliper Assembly. Tighten ALL Locknuts (12) to proper torque.

NOTE: The complete Brake Caliper Assembly is listed as P/N 91256.

2. Locate the holes in the head of each Socket Head Cap Screw (1). AFTER the Socket Head Cap Screws (1) are properly torqued Safety Wire (11) (not illustrated) each of the heads to each other.

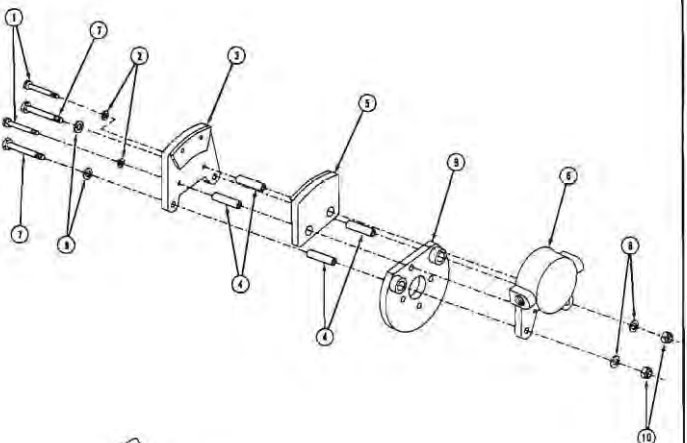
3. Insert the remaining TWO (2) Spacers (4) through Item (9) orientated as illustrated. Attach with Hardware (7,8 and 10).

4. Repeat for the remaining (LEFT) Brake Caliper Assembly. Assemble in "mirror image".

NOTE: The quantity below is for ONE (1) Brake Caliper Assembly.

Item	P/N	Qty	Description
1		2	10-24 Socket Head Cap Screw (part of P/N 91256)
2		2	3/16" Thin Washer (part of P/N 91256)
3			Stationary Brake Lining (part of P/N 91256)
4		4	Steel Spacer (part of P/N 91256)
5			Movable Brake Lining (part of P/N 91256)
6			Brake Caliper Piston Housing (part of P/N 91256)
7	10030	2	AN3-13A Bolt
8	10550	4	3/16" Washer
9	91265	1	Brake Plate w/.75" hole
10	10500	2	3/16" Locknut
11	20467	A/R*	.041" Safety Wire

* As Required


1
7
2
3
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9
6
8
7
8
4
4
10


UP
PORT
STBD
AFT

10-46

ALUMINUM MAIN WHEEL AND BRAKE CALIPER ATTACHMENT

1. Refer to Figure 1. Use Teflon Tape or Thread Sealant (not illustrated) and attach the Fittings (2) and (3) to the Brake Caliper (1).

2. Slide the Brake Caliper Assembly (1) onto the Axle Shaft Assembly (4). Secure it with Hardware (6, 7 and 8) as illustrated. Tighten to proper torque.

3. Position the Brake Disc (9) between the Brake Linings (10) on the Brake Caliper Assembly (1). Add a Spacer (11) to the Axle Shaft Assembly (4) seated AGAINST the Brake Plate (12). Add the Wheel/Tire Assembly (14) and (16).

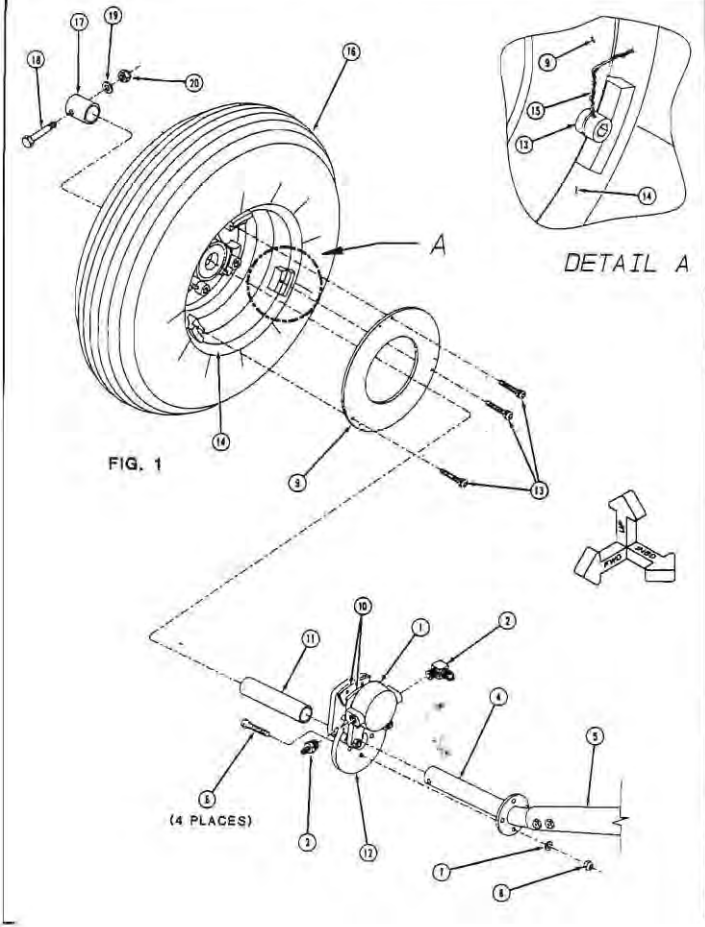
4. Refer to Figure 1 and Detail 'A'. Attach the Brake Disc (9) to the Inner Rim (14) with THREE (3) Socket Head Cap Screws (13) as illustrated. Tighten to proper torque. Secure each Socket Head Cap Screw to the Brake Disk with Safety Wire (15) as illustrated THREE (3) places. Rotate the Wheel/Tire Assembly to ensure the Safety Wire clears the Brake Linings (10).

5. Refer to Figure 1. Attach the Collar (17) with Hardware (18, 19 and 20). Tighten to proper torque.

6. Repeat on the opposite (LEFT) side in "mirror image".

Item	P/N	Qty	Description
1	91256	2	Brake Caliper Assembly (complete)
2	91271	2	90 Degree Hydraulic Tube Fitting
3		2	Brake Caliper Bleeder Valve
4	45369		20 Degree, 3/4" Axle Shaft Assembly
5	45365		Landing Gear Leg with .75" Socket
6	11019	8	10 - 24 x 3/4" Socket Head Cap Screw
7	10572	8	3/16" Thin Washer
8	10532	8	10 - 24 Locknut
9	91257	2	Brake Disc
10			Brake Lining
11	91262	2	7/8" x .049" x 1.54" Long Spacer
12	91265		Brake Plate w/ .75" hole
13	11020	6	10 - 24 x 3/4" Drilled Head Socket Head Cap Screw
14	91259		Inner Rim with Disc Mounts
15	20476	A/R*	.041" Safety Wire
16	20393	2	4.00 - 6 Tire
17	91263	2	7/8" x .049" Collar
18	10027	2	AN3-12A Bolt
19	10550	2	3/16" Washer
20	10500	2	3/16" Locknut

* As Required


A
DETAIL A
FIG. 1
(4 PLACES)

10-48

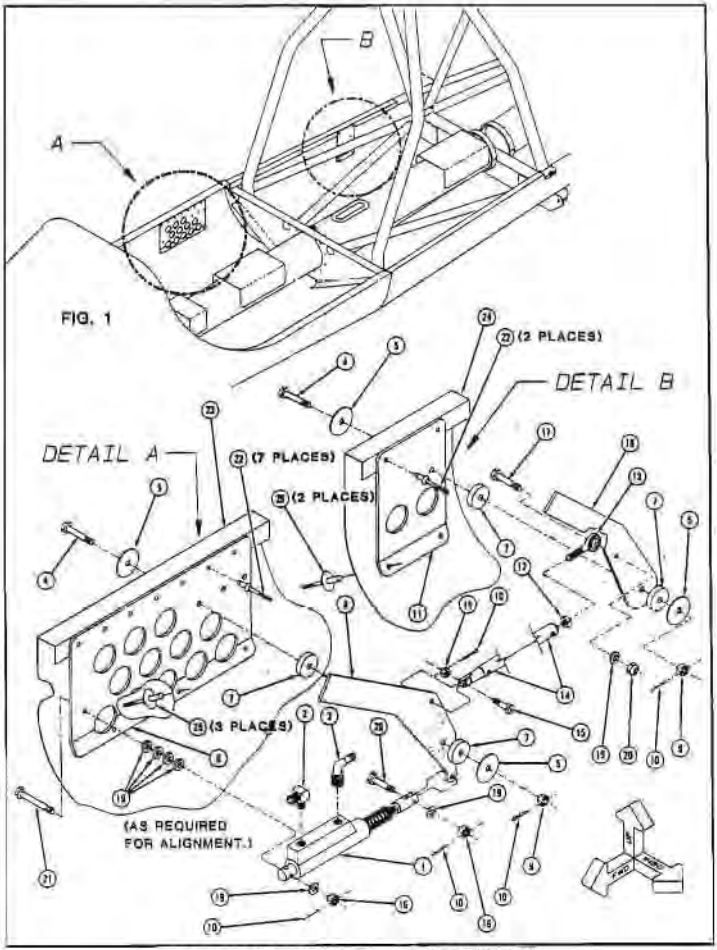
MASTER BRAKE CYLINDER/
FORWARD AND AFT BRAKE LEVER AND BRAKE LINK TUBE ATTACHMENT

1. Sub-assemble the following items as per the illustration: Master Brake Cylinder (1), attach the Forward and Aft Brake Levers (8) and (18) to the Forward and Aft Brake Mount Plates (6) and (11), assemble the Brake Link Tube Assembly (14). NOTE 1: Thread the Bearing (13) APPROXIMATELY "HALF WAY" into the Brake Link Tube Assembly (14).

2. Position the Forward Brake Lever Mount Plate (6) such that the Handle of the Forward Brake Lever (8) is just AFT of the FORWARD Throttle Lever when the Throttle Lever is in the "CLOSED" position. Attach the Link Tube (14). This will determine the location of the Aft Brake Handle Mount Plate (11). Using the Mount Plates (6) and (11) as guides, drill 3/16" (4.8 mm) diameter holes for the Rivets (22) along the TOP edge of the Plates and for Rivets (25) along the LOWER edge.

3. Refer to Figure 1 and Details 'A' and 'B'. Assemble the remaining items as illustrated. Tighten ALL Locknuts to proper torque. Bend ALL Cotter Pins (10) correctly.

Item	P/N	Qty	Description
1	91255	1	Master Brake Cylinder
2	91271	1	90 Degree Elbow Fitting for Hydraulic Tubing
3	91275	1	90 Degree Elbow Fitting for 5/16" Hose
4	10065	2	AN4-12 Bolt
5	10365	4	1/4" Fender Washer
6	91253	1	Forward Brake Handle Mount Plate
7	20346	4	1/4" Nylon Washer
8	91252	1	Forward Brake Lever
9	10521	2	1/4" Castle Nut
10	10635	5	Cotter Pin
11	91254	1	Aft Brake Handle Mount Plate
12	10631	1	1/4" Jam Nut
13	10700	1	1/4" Male Rod End Bearing
14	91264	1	Brake Link Tube Assembly
15	10009	1	AN3-5 Bolt
16	10517	2	3/16" Castle Nut
17	10020	1	AN3-7A Bolt
18	91251	1	Aft Brake Lever
19	10550	A/R*	3/16" Washer
20	10500	1	3/16" Locknut
21	10026	1	AN3-11 Bolt
22	20193	9	3/16" x 1/4" Grip Rivet (BSPQ-64)
23	45578		Pilot Enclosure
24	46106		Right Lever Center Fairing
25	20194	5	3/6" x 1/4" Al. Large Flange Rivet (AAL-64)
26	10018	1	AN3-7 Bolt


B
A
FIG. 1
DETAIL B
DETAIL A
(2 PLACES)
(7 PLACES)
(2 PLACES)
(3 PLACES)
(AS REQUIRED FOR ALIGNMENT.)

BRAKE RESERVOIR ATTACHMENT

1. Refer to Figure 1 and Details 'A' and 'B'. Assemble as illustrated. Tighten ALL Locknuts (9) to proper torque.

NOTE: DO NOT drill any holes thru the side of the Pilot Enclosure (13). Insert the Bolts (6) from INSIDE the Pilot Enclosure (13) and from the OUTBOARD side of the Brake Lever Mount Plate (8).

IMPORTANT: Ensure the Reservoir Fluid Filter (1) is properly located UNDER the Reservoir Cap (3) and in the Reservoir (2).

CAUTION: ALL BRAKE COMPONENTS CONTAIN BUNA-N O-RINGS, AND ARE NOT COMPATIBLE WITH AUTOMOTIVE GLYCOL BASED BRAKE FLUID. A PETROLEUM BASED RED AIRCRAFT BRAKE FLUID OR AUTOMOTIVE AUTOMATIC TRANSMISSION FLUID MUST BE USED OR THE INSTALLED O-RINGS WILL SWELL UP AND BE DESTROYED.

IMPORTANT: Remove any part number label attached to the Reservoir Fluid Filter (1) BEFORE adding any Brake Fluid to the Reservoir.

Item	P/N	Qty	Description
1	91278	1	Reservoir Fluid Filter
2	91266	1	Reservoir
3	91279	1	Reservoir Cap
4	91276	1	Clamp
5	91277	1	Reservoir Bracket
6	10060	2	AN4-6A Bolt
7	10560	4	1/4" Washer
8	91253	1	Forward Brake Lever Mount Plate
9	10515	2	1/4" Thin Locknut
10	70580	2	Control Stick Grip
11	91252		Forward Brake Lever
12	91251		Aft Brake Lever
13	45578		Pilot Enclosure

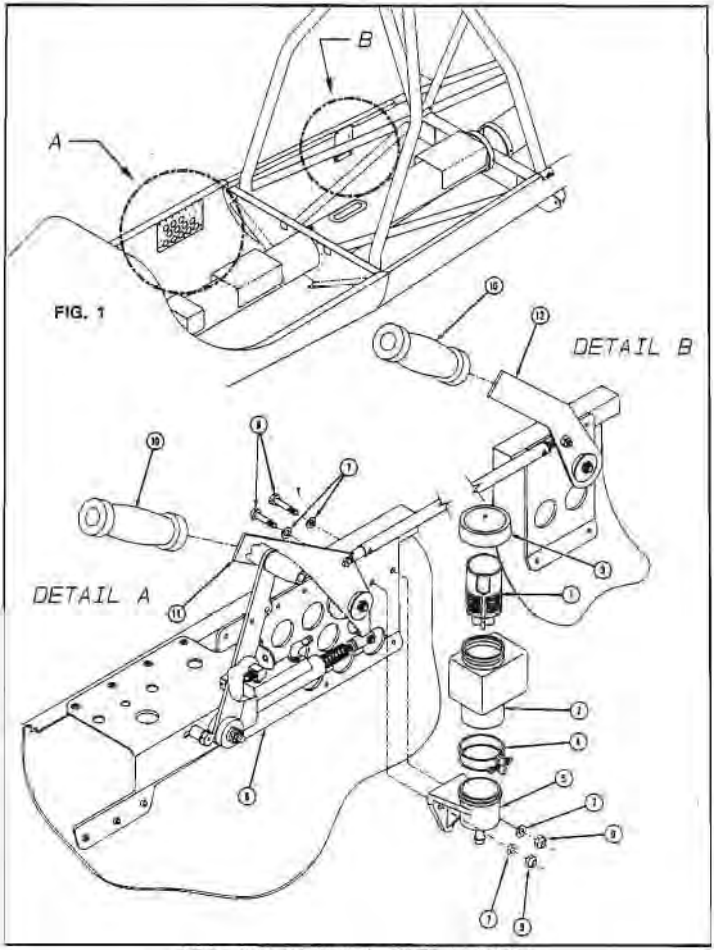


FIG. 1

PARKING BRAKE ATTACHMENT

1. Disassemble the EXISTING Parking Brake (1) as required for proper installation. Discard the EXISTING Fittings and reassemble as illustrated.

NOTE: Apply a small amount of Teflon Tape (not illustrated) around the threads of the 90 Degree Elbow Fittings (2) in the direction of thread rotation.

IMPORTANT: In ALL cases, DO NOT use Teflon Tape on the Hydraulic Tubing end of the Fittings (2).

2. Add Washers (5) as required for proper alignment of the Parking Brake Handle (3) and the appropriate attachment hole in the Forward Throttle Mount Plate (6). Assemble as illustrated. Tighten ALL Locknuts (7) to proper torque.

NOTE: Ensure the direction arrows on the side of the Parking Brake (1) are pointing in the proper direction.

CAUTION: DO NOT OVERTIGHTEN the Elbows to attempt proper alignment.

Item	P/N	Qty	Description
1	91274	1	Parking Brake
2	91271	2	90 Degree Elbow for Hydraulic Tubing
3			Parking Brake Handle (part of P/N 91274)
4	10120	2	AN4-15A Bolt
5	10560	A/R*	1/4" Washer
6	45482		Forward Throttle Mount Plate
7	10510	2	1/4" Locknut
8	30230	2	Fuel Line Clamp
9	91272	8"	5/16" I.D. Hydraulic Fluid Hose
10	91277		Hydraulic Fluid Reservoir Bracket
11	91275		90 Degree, 1/8" NPT x 5/16" Hose Fitting
12	91258	9"	Hydraulic Brake Line

Metric Conversion

8" = (203.2 mm)
9" = (228.6 mm)

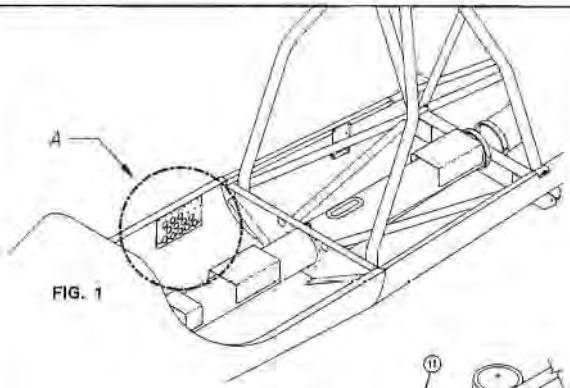
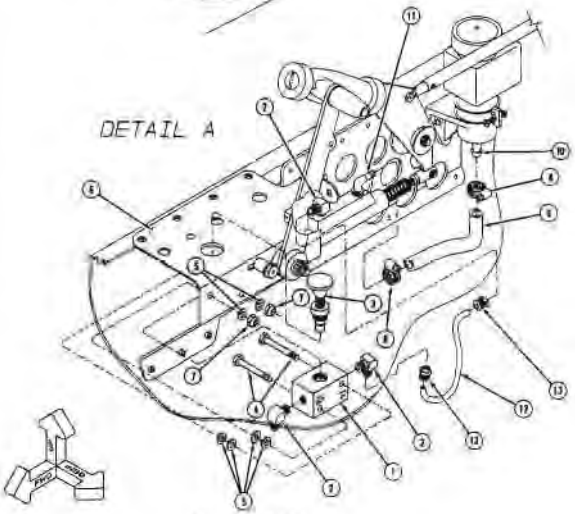


FIG. 1



HYDRAULIC BRAKE LINE ROUTING AND ATTACHMENT

1. Refer to Figure 1 and Details 'A', 'B' and 'C'. Assemble as illustrated. Route the Hydraulic Brake Lines (1) in Details 'B' and 'C' to the Main Wheels AFT or BEHIND the Landing Gear Carry Thru (5) and Landing Gear Leg (8).

NOTE 1: Cut TWO (2) pieces of Fuel Line (6) 6" (152.4 mm) in length and slide each piece over each of the Hydraulic Brake Lines (1) BEFORE attaching the ends to the Fittings (3) to keep the Brake Line from coming into direct contact or rubbing against the any sharp edges on the Aluminum Fairings.

IMPORTANT: Always keep the Brake Line (1) away from direct contact with any sharp edges, moving parts and/or extreme temperature.

2. Add Hydraulic Brake Fluid (not illustrated).

CAUTION: ALL BRAKE COMPONENTS CONTAIN BUNA-N O-RINGS, AND ARE NOT COMPATIBLE WITH AUTOMOTIVE GLYCOL BASED BRAKE FLUID. A PETROLEUM BASED RED AIRCRAFT BRAKE FLUID OR AUTOMOTIVE AUTOMATIC TRANSMISSION FLUID MUST BE USED OR THE INSTALLED O-RINGS WILL SWELL UP AND BE DESTROYED.

3. Bleed the Brake system accordingly. Bleeding the location FARTHEST from the Master Brake Cylinder (not illustrated) FIRST.

4. Verify BOTH Main Wheel Brakes are operating correctly.

Item	P/N	Qty	Description
1	91258	A/R*	Hydraulic Brake Line
2		6	Knurled Nut (part of P/N 91271 or P/N 91270)
3	91271	3	90 Degree Elbow Fitting
4	91270	1	"T" Fitting
5			Landing Gear Carry Thru
6	30220	12"	Fuel Line (304.8 mm)*
7	91256		Brake Caliper Assembly
8	45365		Landing Gear Leg with .75" Socket
9		A/R	Fuel Line Stand-Off
10	30480	4	7" Tie Wrap

* As Required

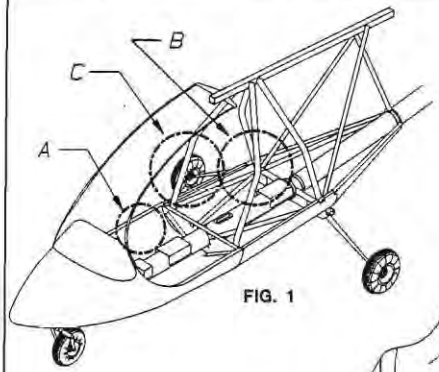
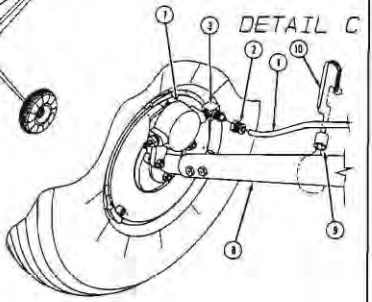
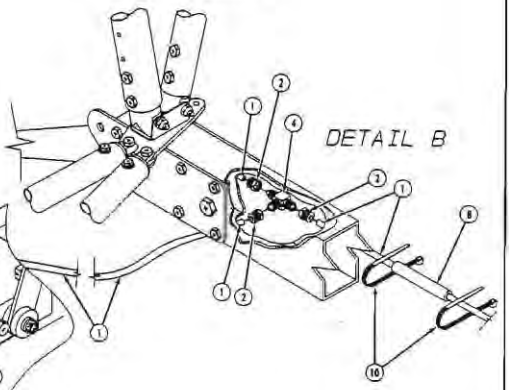
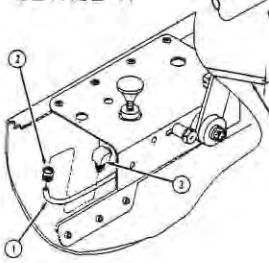


FIG. 1









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QUICKSILVER ENTERPRISES, INC.
A Public Corporation

QUICKSIVER GT 500 ASSEMBLY MAINTENANCE AND PARTS MANUAL

(DOC# 902-01)

This manual contains revised pages or updates necessary for construction of the current production model of the QUICKSILVER GT 500 aircraft.

The aircraft and Assembly Manual may be updated from time to time as changes to the aircraft and/or the Assembly, Maintenance and Parts Manual occur.

It is recommended that the changes shown on the revised pages from the GT 500 REVISION PACKAGE (DOC# 913-01) (which may be ordered from your QUICKSIVER dealer) be used to update your aircraft.

NOTE: Some changes are subtle. Replace the original pages with the revised pages even if the changes are not obvious.

Upon receiving the REVISION PACKAGE (DOC# 913-01) remove the appropriate pages in your Assembly, Maintenance and Parts Manual (DOC# 902-01) and insert the revised pages where applicable.

A page with a revision level of 'A' (REV. A), at the bottom of the page after the document number (DOC#), will supercede a non-revised page (a page with no revision letter). A page with a revision level of 'B' (REV. B) would supercede a page with a Revision level of 'A' and so on.

EXAMPLE: If you have a new page from this revision package labeled DOC# 902-01 REV. A, followed by the date of that revision at the bottom of the page, remove and discard the existing non-revised page and replace it with the page labeled DOC# 902-01 REV. A.

A page numbered with a letter 'A' after the page number at the top of the page such as 4-30A should be inserted AFTER page 4-30 and before 4-32. (Text pages are usually even numbered pages and illustrations are usually odd numbered pages). DO NOT discard page 4-30. Page 4-30A is an addition.

EXAMPLE: A new page labeled 3-10A (upper left hand corner) would be added to your Assembly Instructions and page 3-10 would be retained as well.

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Revision	Pages Affected	Date of Revision	Quality Assurance	Agency Approval	Date Entered
A	ii,iia,iib	01/02/91			
	iic,iid	01/02/91			
	2-3	07/13/90			
	2-5	10/01/90			
	2-7	11/16/90			
	2-8,2-14,2-15	07/13/90			
	2-18,2-19	07/13/90			
	2-20,2-21	03/22/91			
	2-22	12/14/90			
	2-24,2-25	07/13/90			
	2-26	11/16/90			
	2-27 thru 2-32	07/13/90			
	2-34	12/14/90			
	2-36	07/11/90			
	2-38	07/13/90			
	2-40 thru 2-44	07/13/90			
	2-45	02/20/91			
	2-46	12/07/90			
	2-48 thru 2-50	07/13/90			
	2-50A,2-51A	03/14/91			
	2-56 thru 2-59	07/13/90			
	2-60	11/16/90			
	2-62,2-63	07/13/90			
	2-65	11/26/90			
	2-66	07/13/90			
	2-66A,2-67A	10/01/90			
	2-67,2-70	07/13/90			
	2-70A	03/22/91			
	2-71	07/13/90			
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	2-76,2-77	07/13/90			
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	2-84A,2-84B	10/01/90			
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	2-86	07/13/90			
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	2-97	11/26/90			

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A	2-98 thru	12/14/90			
	2-103	12/14/90			
	2-104,2-107	07/13/90			
	2-108,2-110	07/13/90			
	2-111,2-122	07/13/90			
	2-123	07/13/90			
	2-126,2-127	02/20/91			
	2-128,2-129	10/01/90			
	2-130	11/16/90			
	2-131	07/13/90			
	2-132,2-133	07/13/90			
	2-136,2-137	10/01/90			
	2-138,2-139	10/01/90			
	2-140,2-141	10/01/90			
	2-142,2-143	10/01/90			
	2-144,2-145	10/01/90			
	2-146,2-147	10/01/90			
	2-148,2-149	10/01/90			
	2-150,2-151	10/01/90			
	2-152	10/01/90			
	3-1	12/07/90			
	3-6	12/14/90			
	3-7,3-10,3-11	07/13/90			
	3-14 thru 3-18	07/13/90			
	3-22,3-23	07/13/90			
	3-24	12/14/90			
	3-28	07/13/90			
	3-29,3-32,3-33	12/07/90			
	3-32A,3-33A	12/07/90			
	3-34,3-35	07/13/90			
	4-1,4-1A,4-1B	01/02/91			
	4-2,4-3,4-4	10/10/90			
	4-5,4-10,4-12	10/10/90			
	4-11A,4-12A	01/02/91			
	4-13A	01/02/91			
	4-16,4-20	10/10/90			
	4-21	12/07/90			
	4-22	11/01/90			
	4-23	02/20/91			
	4-26,4-36	12/07/90			
	4-37	03/22/91			
	4-40,4-42	12/18/90			
	4-44,4-45,4-46	10/01/90			

REVISION FORM

Upon receiving revisions for this manual remove the obsolete pages and insert the revised pages where applicable.

Revision	Pages Affected	Date of Revision	Quality Assurance	Agency Approval	Date Entered
A	A4-1	01/02/91			
	A4-10, A4-11A	01/02/91			
	A4-22, A4-23	02/20/91			
	A4-35	03/22/91			
	5-24, 5-26	10/10/90			
	5-32, 5-34	10/10/90			
	5-36, 5-37	12/07/90			
	6-1	02/20/91			
	6-2	12/07/90			
	6-5	03/22/91			
	6-8, 6-9	10/01/90			
	6-10, 6-11	02/20/91			
	7-1	11/16/90			
	7-10, 7-11, 7-12	12/07/90			
	7-14	12/14/90			
	7-20, 7-21	10/01/90			
	7-24, 7-25	01/02/91			
	7-28A, 7-28B	11/16/90			
	7-28C, 7-28D	11/16/90			
	7-28E, 7-29A	11/16/90			
	7-29B, 7-29C	11/16/90			
	7-29D, 7-29E	11/16/90			
	7-30 thru 7-34	11/01/90			
	7-38	11/01/90			
	8-21	12/21/90			
	8-22	12/20/90			
	10-1	11/26/90			
	10-3	01/25/91			
	10-14 thru	11/26/90			
	10-35	11/26/90			
	10-36 thru	01/25/91			
	10-56	01/25/91			

REVISION FORM

Upon receiving revisions for this manual remove the obsolete pages and insert the revised pages where applicable.

Revision	Pages Affected	Date of Revision	Quality Assurance	Agency Approval	Date Entered
B	ii, iia	03/22/91			
	iib	01/22/91			
	iic	03/22/91			
	2-3	10/01/90			
	2-14, 2-24	12/14/90			
	2-28 thru 2-31	03/22/91			
	2-32	11/16/90			
	2-36, 2-38	12/14/90			
	2-40	12/14/90			
	2-42, 2-43, 2-44	02/20/91			
	2-50	12/14/90			
	2-56	12/12/90			
	2-63	12/07/90			
	2-66, 2-67	10/01/90			
	2-70	12/12/90			
	2-71, 2-74, 2-90	03/22/91			
	2-94	03/22/91			
	2-96, 2-97	03/22/91			
	2-131	11/16/90			
	3-14, 3-15	12/07/90			
	3-16	12/14/90			
	3-28	03/22/91			
	3-34, 3-35	12/07/90			
	4-1, 4-2, 4-3	01/22/91			
	4-10	01/22/91			
	4-22	02/20/91			
	5-34	12/07/90			
	10-16, 10-17	02/20/91			
C	iib	03/22/91			
	2-3	03/14/91			
	2-70, 2-96	03/22/91			
	2-131	11/16/90			

WARNING

YOU HAVE JUST WASTED A LOT OF MONEY UNLESS YOU FIRST FOLLOW THESE INSTRUCTIONS.

CLAIMS FOR DAMAGED OR MISSING PARTS

1. Completely inventory the kit using the supplied packing list. Do not remove any parts from the blister-packed boards until you have finished counting everything. The exception is parts such as nuts, washers and pop rivets which you may have to remove for accurate counting.

2. If you believe you are missing any parts or have damaged parts, inspect the boxes for holes or damage. Actually, you should have inspected the boxes prior to opening. For lost or damaged parts, you must file a claim with the freight carrier.

3. Your kit was double quality control inspected in our factory to ensure the accuracy of its contents. However, if you believe some parts were omitted at our factory, you need to do the following:
   a. Itemize the part number, quantity and description of each part.
   b. Note the aircraft model, serial number and date received.
   c. Report the claim to your dealer. All claims must be processed through your dealer. Upon receipt of claim, we will compare it to our original packaging records.

4. Only one claim per kit will be reviewed. "**DO NOT**" begin assembly until you have completed your inventory. The packing list is the most accurate representation of the parts required. Making a list during assembly will not work and will not be accepted. People have been known to use the wrong size bolt as compared to what is called for by the assembly instructions. This leads you to think parts are missing. Also, bits and pieces tend to roll under countertops, are borrowed, or inadvertently disappear. You best protection to build a complete airplane is to make sure you have all the parts before you start.

YOU HAVE 30 DAYS FROM RECEIPT OF KIT TO FILE A CLAIM.

If you do not adhere to the above procedures, the company reserves the right to dismiss any claim. Replacement parts would then be treated as a normal spare parts order.

We hope you enjoy building your kit, and thank you for your patronage. If you have any questions, please contact your dealer. If they are unable to answer your questions, the dealer can contact our customer service department for assistance.