Prices listed in this manual are not current.

Most current prices are listed at

www.rans.com

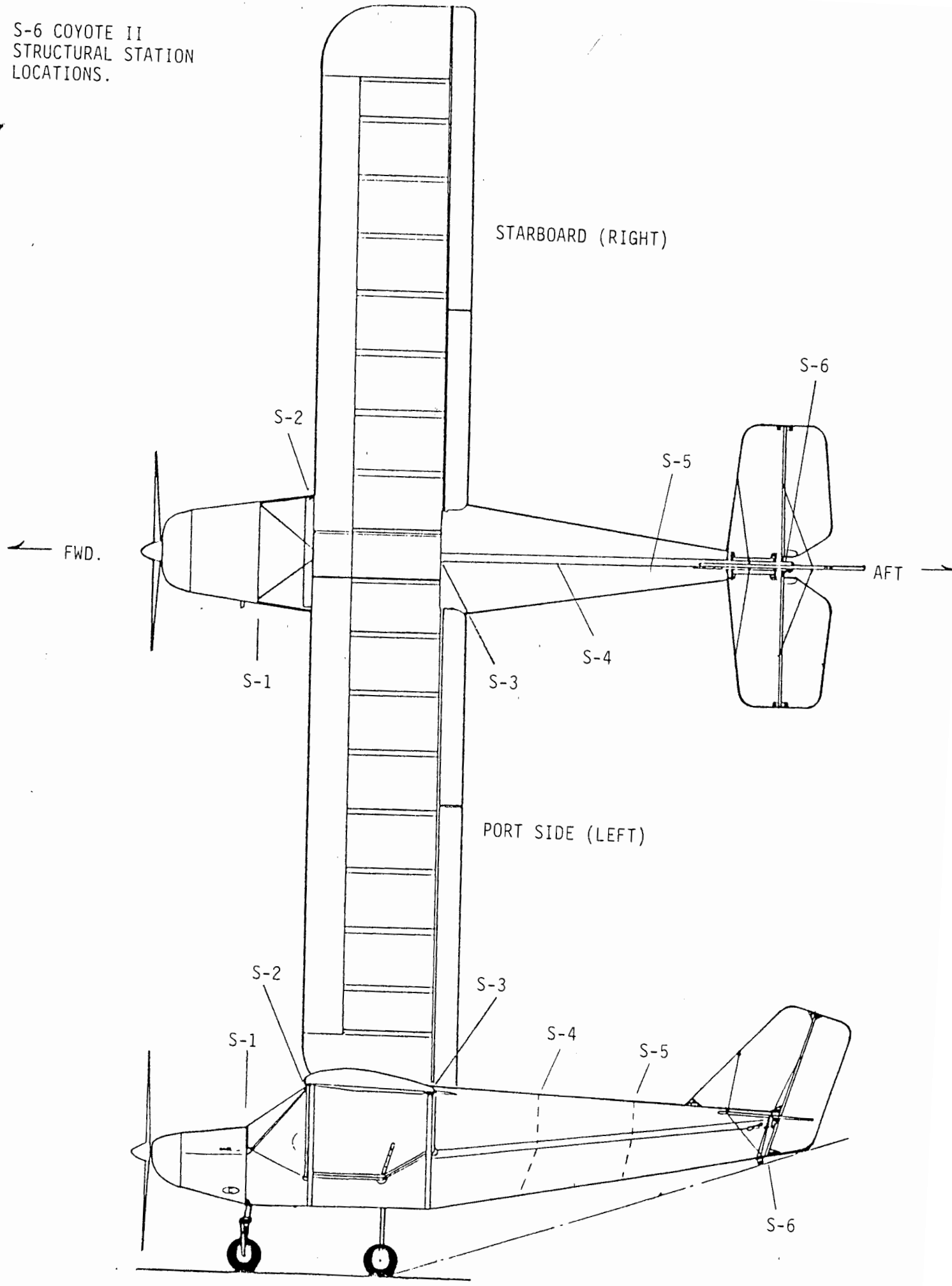
S-6 COYOTE II ASSEMBLY SEQUENCE

YOUR ASSEMBLY MANUAL IS IN THE ORDER SHOWN TO AUTOMATICALLY TAKE YOU THROUGH THE PROPER ASSEMBLY SEQUENCE. PLEASE NOTE HOWEVER SOME SECTIONS APPEAR TWICE. THESE ARE REFERRED TO IN THE PRECEDING SECTION.

1. FUSELAGE (01)
2. MAIN GEAR (02)
3. NOSE GEAR/TAILWHEEL (03)
4. FLOORBOARD/RUDDER PEDALS (04)
5. CONTROL STICK (05)
6. S-1 FIREWALL (06)
7. AILERONS/FLAPS (07)
8. SEAT/SEAT BELT (08)
9. TAILCONE (09)
10. DOORS (010)
11. TAIL (011)
12. MAIN GEAR (02)
13. BRAKES (012)
14. NOSE GEAR (03)
15. ENGINE MOUNT (013)
16. ENGINE (014)
17. ENGINE COOLING SYSTEM (015)
18. INSTRUMENT PANEL/ELECTRICAL (016)
19. THROTTLE (017)
20. FUEL SYSTEM (018)
21. INSTRUMENT PANEL/ELECTRICAL (016)
22. WINDSHIELD (019)
23. COWLING (020)
24. RUDDER (021)
25. WINGS (022)
26. COVERING (023)
27. STRUTS (022)
28. AILERONS/FLAPS (07)
29. CG/OPERATIONS (024)
30. OPTIONS (025)

REVIEWED 2-91

S-6 COYOTE II
STRUCTURAL STATION
LOCATIONS.



S-6 COYOYE II
GENERAL INFORMATION

BEFORE BEGINNING:

PLEASE READ the manual cover to cover. This will speed up your build time considerably.

GET ORGANIZED! Prepare your workshop and be sure that what goes in the shop door will be able to come out!!!!!

KEEP IT CLEAN! The pre-sewn skins can soil easily!

After drilling holes they will need to be deburred. This is an IMPORTANT step and must be performed. Assembly of parts with burrs can cause stress risers and eventual part failure. Various tools can be used. An official deburring tool is nice but a 1/2" drill bit can do a good job on most holes. Radius and smooth sharp corners with files or fine grit sanders and grinders. Edges of certain parts also need deburring.....a good file works here.

A few special tools will be needed: A power drill, wrenches and a pop riveter. "Clecos" make trial fitting and assembly go smooth on assemblies such as windows, cowling and firewall.

FABRICATED PARTS: You can build these simple parts ahead of time by turning to the fabricated parts section or building as they are called out.

STRUCTURAL STATIONS: Throughout the manual references will be made to the structural stations. These are locations of formers or bulkheads from the nose to tail of the aircraft. Observe the planview diagram on the following page for locations.

CLECOS: Included in your kit is a supply of clecos. These are temporary fasteners that will be used to hold things together while fitting and drilling. A pliers is also included to install and remove the clecos. The clecos are colored coded as to hole size.

(4)	Silver	#40
(12)	Copper	#30
(12)	Gold	#11

To use simply set cleco in the special pliers, squeeze closed, insert into the hole and release. (Reverse for removal) You'll find the clecos to be extremely useful throughout assembly.

PLACARDS AND MARKINGS

Included in your S-6 kit is the passenger warning, Experimental decals and the external identifier plate. Affix the passenger warning decal to the instrument panel.

The Experimental decal is best applied along either door's bottom edge. Rivet the metal identifier plate to the tail channel with (2) 1/8" pop rivets just above the lower cinch strap.

For the "N" number use 3" vinyl letters. We use Cole brand, available at most hardware stores. These just stick on to the tail cone, about midway above or below the strap. Make sure the skin is clean before applying. If you aerothane your aircraft, apply the "N" number AFTER painting.

This is a sample of labels we use on our aircraft. We make them up by typing on mailing labels, then taping over them with clear contact paper. Cut them to size, peel off the backing and apply.

S-6 COYOTE II STANDARD MARKINGS

(1)
FUEL CAPACITY 5 GAL. U.S.
APPROVED FUELS 80 TO 100 OCTANE
MIX 2 CYCLE OIL 50:1

(1)
IGNITION UP ON
DOWN OFF

(1)
STARTER
PULL TO START

(1)
FLAPS MAXIMUM EXTENSION
SPEED 65 MPH

(1)
THROTTLE
PUSH FOR OPEN

(1)
BAGGAGE
MAXIMUM WEIGHT 50 LBS.

(2)
MAXIMUM DOOR OPENING
SPEED 65 MPH

(1)
FUEL SHUT OFF

(1)
FUEL SUMP DRAIN
UNDER LEFT SEAT

FAA PROCEDURES

--Obtaining An "N" Number
--Registration
--Obtaining An Airworthiness Certificate

OBTAINING AN "N" NUMBER

In order to register your plane, it will be necessary to obtain an identification number for your plane. This number is referred to as an "N" number.

If any number is acceptable to you, write to the FAA Aircraft Registry, Dept. of Transportation, P.O. Box 25504, Oklahoma City, OK. 73125 and ask them to assign you a free U.S. identification number of their choice.

If you prefer a number of your own choosing or a smaller number, you may be able to obtain the exact number you want by asking the FAA registry to assign you a specific number of your choice.

NOTE: U.S. identification numbers do not exceed 5 symbols in addition to the prefix "N". These symbols may be all numbers (N55555), one to four numbers and a suffix letter (N5555A or N5A), or one to three numbers and two suffix letters (N555AB).

If you request a special "N" number it would be best to list at least five choices in case your first choice is not available. A special number of your own choosing will cost $10.00 and you should enclose that fee with your letter.

--When to Obtain Your "N" Number

If you plan to complete your kit within a very short time, it is recommended that you obtain your "N" number right away. If your project will be fairly lengthy, you will not need to obtain your number until the last several months of construction. Keep in mind that if you request a special "N" number it can be reserved for no longer than one year. If this number has not been affixed to the fuselage within this time and the registration completed, it will be necessary to pay an additional $10.00 to reserve that number for another year.

AFFIDAVIT OF OWNERSHIP FORM

Enclosed you will find an Affidavit of Ownership Form. This form should accompany your letter requesting the assignment of an "N" number.

This form must be notarized as it establishes your ownership to the airplane even though you know you did build it. It will be used by the FAA to create a file on your aircraft and will serve as a legal document and a substitute for the Bill of Sale (AC Form 8050-2) that a buyer gets when he buys any existing airplane.

REGISTERING YOUR AIRCRAFT

After you have written the Aircraft Registry requesting an "N" number, you will receive a form letter giving your number assignment. You will also receive a blank Aircraft Registration Form. (Sample enclosed). Complete the Application for Aircraft Registration (Form 8050-1) and return it to the Aircraft Registry along with the $5 registration fee.

Retain the PINK copy of the Registration and mail both the WHITE original and the GREEN copy. Your pink copy is your authority to operate the aircraft, when carried in the aircraft with an appropriate and current airworthiness certificate.

RECEIVING AUTHORITY TO FLY YOUR AIRCRAFT

Registration alone does not authorize you to fly your aircraft. The aircraft must, after it has been properly registered, also obtain an Airworthiness Inspection by an inspector of the FAA, at which time the necessary Airworthiness Certificate may be issued. Then, and only then, is your aircraft ready for flight.

WHAT IS THE PROCEDURE FOR OBTAINING AN AIRWORTHINESS CERTIFICATE

Since the final step in obtaining an Airworthiness Certificate is to obtain an inspection of your airplane by an official of the FAA, it is a good idea to make an early contact with the FAA inspector's office nearest your home. Members of a local EAA chapter or a local flying service may be able to help direct you to this office. The purpose of such an early contact would be to discuss with the FAA representative, your proposed homebuilt project and to generally familiarize yourself with the procedures established by the FAA for homebuilt projects. At this time you can establish a tentative plan for inspection of the aircraft upon completion. The typical FAA inspector is interested in your project and wants to help you do a good job.

The FAA requires that everyone building an airplane must maintain a construction log of the work he does on his airplane. You can use a notebook of conventional size and keep a daily diary of the work done on your aircraft. Since all our planes come with assembly manuals, it is a good idea to also make notes in the manual as well as listing dates when certain procedures were done. It is a very good idea to take photographs of work on your plane in various stages. This helps to document that you, the builder, actually completed 51% of this kit. (Advisory Circular 20-27C available from the FAA or EAA describes the procedure used so that your logbook will be a verification of having completed at least 51% of the aircraft yourself.)

WHAT ARE THE SPECIAL REQUIREMENTS AS FAR AS ATTACHING NUMBERS AND PLACARDS TO A HOMEBUILT AIRCRAFT?

10-1 DISPLAY OF MARKS (Reference is FAR Part 45.23)

After you obtain the registration for your aircraft, the Registration numbers or marks must be affixed to the aircraft in some permanent fashion. The marks must be legible and have no ornamentation. They must contrast in color with the background.

The marks displayed on the aircraft shall include the letter "N" signifying U.S. Registry, followed by the registration number issued for the aircraft.

In addition, amateur-built (Experimental) aircraft must have displayed on that aircraft near each entrance to the cabin or cockpit, in letters not less than 2" nor more than 6" in height, the word, "EXPERIMENTAL".

10-2 LOCATION OF MARKS ON FIXED WING AIRCRAFT (Reference is FAR Part 45.25)

(b)(1) If displayed on the vertical tail surfaces, horizontally on both surfaces, horizontally on both surfaces of a single vertical tail or on the outer surfaces of a multivertical tail. However, an aircraft on which marks at least 3" high may be displayed and in accordance with 45.29(b)(1), the marks may be displayed vertically on the vertical tail surfaces.

(2) If displayed on the fuselage surfaces, horizontally on both sides of the fuselage between the trailing edge of the wing and the leading edge of the horizontal stabilizer. However, if engine pods or other appurtenances are located in this area and are an integral part of the fuselage side surfaces, the operator may place the marks on those pods or appurtenances.

10-3 SIZE OF MARKS

FAR 45.29(b)(1)(iii) states "Marks at least 3" high may be displayed on an aircraft for which an experimental certificate has been issued under 21.191(d) or 21.191(g) for operating as an exhibition aircraft or as an amateur-built aircraft when the maximum cruising speed of the aircraft does not exceed 180 knots Calibrated Air Speed (CAS).

And (c) characters must be two-thirds as wide as they are high except "1" which must be one-sixth as wide as it is high and the letters "M" and "W" which may be as wide as they are high.

(d) Characters must be formed by solid lines one-sixth as thick as the character is high.

(e) Spacing. The space between each character may not be less than one-fourth of the character width.

10-5 IDENTIFICATION PLATE (Reference is FAR Part 45.11)

In addition to affixing the aircraft's registration number to the sides of the fuselage, the builder must also identify his aircraft by attaching an identification plate to the aircraft's structure.

This identification data required to be inscribed on the plate for amateur-built aircraft shall include the following information:

a. Builder's name and address
b. Model designation
c. Builder's serial number
d. Date of manufacture

The identification plate containing these essential elements must be of fireproof material and must be secured in such a manner that it will not likely be defaced or removed during normal service, or lost or destroyed in an accident. It must be secured to the aircraft at an accessible location near an entrance, except that if it is legible to a person on the ground it may be located externally on the fuselage near the tail surfaces.

The identification plate information must be marked thereon by etching, stamping, engraving, or other acceptable fireproof marking.

Metal plates which comply with these requirements may be purchased from the Experimental Aircraft Association for the very nominal fee of $5.00 per each set.

Aircraft Instrument Markings And Cockpit Placards

Your reference is FAR Part 91.31 Civil Aircraft Operating Limitations and Marking Requirements.

8-1 GENERAL

To insure that each person operating an aircraft does so within the operating limitations prescribed for it, the FAA requires that there is available in it a current Flight Manual, appropriate instrument marking and placards, **or any combination thereof.**

The purpose of the flight manual, markings and placards is to detail for the operator of the aircraft, the operational limitations prescribed for the aircraft.

In lieu of a flight manual most amateur builders prefer to mark their instruments and to affix the necessary placards to the instrument panel as the primary means for complying with these requirements.

8-2 MARKINGS AND PLACARDS

The markings and placards necessary for the safe operation and handling of the aircraft should be displayed in a conspicuous place and may not be easily erased, disfigured or obscured. Such placards and markings should include but not necessarily be limited to the following criteria: special emphasis on fuel system markings are very important; such as fuel valves — on-off, fuel octane quantity, unuseable fuel, minimum fuel for take-off, minimum fuel for inverted flight, etc.

8-3 POWERPLANT INSTRUMENT MARKINGS

Each required powerplant instrument should be marked to indicate the maximum and, if applicable, minimum safe operating limit with a red radial line.

Each normal operating range is to be marked with a green arc not extending beyond the maximum and minimum continuous safe operating limits.

Each engine speed range that is restricted because of excessive vibration should be marked with a red arc.

8-4 AIRSPEED INSTRUMENT MARKINGS

The airspeed indicator should be marked with a **radial red line** to establish the never-exceed speed (Vne).

The takeoff and any precautionary range should be marked with a **yellow arc.** The normal range is marked with a **green arc.** The flap actuation range is marked with a **white arc.**

8-5 AIRSPEED PLACARDS

There should be an airspeed placard in clear view of the pilot and as close as practicable to the airspeed indicator listing:

The design maneuvering speed.

The maximum landing gear operating speed (if applicable).

The maximum flap extension operating speed (if applicable).

8-6 LANDING GEARS

If a retractable landing gear is used, an indicator should be marked so that the pilot can, at any time, ascertain that the wheels are secured in their extreme positions.

Each emergency control should be red and must be marked as to method of operation and identity.

8-7 CONTROL MARKINGS

Each fuel tank selector should be marked to indicate the position corresponding to each tank and to existing cross feed position.

If safe operation requires the use of any tanks in a specific sequence, that sequence must be identified.

8-8 POWERPLANT FUEL CONTROLS

Each fuel tank selector should be marked to indicate the position corresponding to each tank and to existing cross feed position.

If safe operation requires the use of any tanks in a specific sequence, that sequence must be identified.

8-9 FLIGHT MANEUVER PLACARD

For non-acrobatic category airplanes, there should be a placard in front of and in clear view of the pilot stating: "No acrobatic maneuvers, including spins, approved."

For acrobatic category airplanes, there should be a placard in clear view of the pilot listing the approved acrobatic maneuvers and the recommended entry airspeed for each. If inverted flight maneuvers are not approved, the placard must have a notation to this effect.

8-10 BAGGAGE PLACARD

The maximum baggage load permitted should be displayed in a conspicuous place adjacent to the baggage area.

8-11 PASSENGER WARNING PLACARD

A placard must be affixed to the aircraft so that it is readily seen in the cockpit. It will state: "Passenger Warning — This aircraft is amateur built and does not comply with the Federal Safety Regulations for "Standard Aircraft". This placard is part of a set available from EAA. See Section 10-5.

MY AIRCRAFT IS COMPLETED, ALL MARKINGS AND PLACARDS ARE IN PLACE, WHAT ELSE MUST I DO TO MY AIRCRAFT BEFORE I AM READY FOR MY PRE-CERTIFICATION INSPECTION?

--Included in your manual is a weight and balance sheet. This will need to be completed before the inspection.

--You will need to purchase a logbook for the aircraft, engine and propeller. These can be separate books or just one.

--Have handy a copy of your Sales Invoice from us.

I FEEL I AM READY FOR INSPECTION BY THE FAA INSPECTOR, WHAT DO I DO

If you have had prior contact with your FAA inspector, you will probably be familiar with the procedures used by that office. Different offices have slightly different procedures. Some inspectors will help you fill out the paperwork at the time of inspection. Others require that you submit the paperwork prior to inspection. If you are not sure and there are no other builders in your area to ask, you could call and ask the local office. Or, you can submit the following to the Inspector's Office.

(1). A letter requesting a final inspection.
(2). Form 8130-12 Eligibility Statement (Sample follows)
(3). Form 8130-6 Application for Airworthiness Certificate (Sample follows)
(4). A 3-view drawing of the aircraft or photos of topside and front view. Include with this the following;
--Horsepower rating of engine and type of prop
--Empty weight and maximum weight at which the aircraft will be operated.
--Number of seats and their arrangement (Tandem, side by side)
--Whether single or dual controlled
--Fuel Capacity
--Maximum speed at which you expect to operate the aircraft.
(5). Estimated time or number of flights required. (Usually 25 hours for aircraft equipped with certified aircraft engine and prop combinations and 40 hours for those with non-aircraft engine propeller combinations).
(6). The area over which you will be testing. (Request an area encompassing a 25 mile radius for day VFR operations. Exclude congested areas and airways, but try to include nearby airports even if a few miles beyond the 25 mile radius.

Upon satisfactory completion of the necessary final FAA inspection of the aircraft and whatever ground tests may be required, the FAA Inspector will issue your amateur-built "Experimental" Airworthiness Certificate. Along with the certificate you will be given certain "OPERATING LIMITATIONS" under which you must operate the aircraft.

Operating Limitations

13-1 MANDATORY TEST FLIGHT PROVING PHASE

All amateur-built sport aircraft as well as standard aircraft have federally imposed operating limitations.

Upon satisfactory completion of the necessary final FAA inspection of the aircraft and whatever ground tests may be required, the FAA Inspector will issue your amateur-built "Experimental" Airworthiness Certificate.

He will also issue a form letter establishing the operating limitations applicable to your aircraft during its mandatory flight proving period. These Special Airworthiness Experimental Operating Limitations must be displayed in the aircraft at all times. (See sample Operating Limitations, Figure 13-1).

The operating limitations imposed on the aircraft during its flight proving period will be more stringent than those issued later after the mandatory flight testing phase has been completed.

This phase may begin with the issuance of the aircraft's initial airworthiness certificate and the original operating limitations. At this time the FAA Inspector will acquaint you with the requirement for a mandatory flight test and proving period. This flying will be confined to an assigned flight area approved by the FAA Inspector.

The presence of the FAA Inspector is not required, by regulation, at the initial flight of the experimental amateur-built aircraft. If time permits, however, it is not unusual for him to attend.

If he deems necessary, the inspector could issue a permit for a single flight within the boundaries of the airport and, upon witnessing the safe completion of the test, issue a further permit for more extended flights within the permissible area.

A tremendous responsibility for the safe operation of the experimental aircraft rests on the FAA Inspector. If the plane has any new and unusual features he will naturally tend to treat its first flights with care. Also pilot qualification and skill is a consideration.

13-2 PURPOSE OF THE FLIGHT TEST PERIOD

A flight test period is necessary to show to the FAA that the aircraft is controllable throughout its normal range of speeds and throughout all the maneuvers to be executed. It will also serve to prove that the aircraft has no hazardous operating characteristics or design features.

13-3 DURATION OF MANDATORY FLIGHT TEST PERIOD

For standard aircraft type engines: When an FAA approved aircraft engine/propeller combination is installed the flight test period is usually limited to 25 hours of flight time.

For non-aircraft type or automotive engines: An aircraft equipped with such an engine is required to be flown for a longer test period, usually at least 40 hours, to prove its reliability.

NOTE: It should be understood that the local FAA Inspector has the prime responsibility in determining the extent of the flight test period to be required for your aircraft. He is permitted to exercise considerable discretion in extending or in reducing the number of hours required to be flown during this period.

13-4 FLIGHT TEST AREA

The FAA Inspector will authorize the flight tests to be carried out in a designated and limited test area, usually, within a 25 mile radius of the aircraft's base of operations.

He will insure that the area selected is not over densely populated areas or in a congested airway.

In assigning the flight test area the FAA Inspector may modify the size and shape of the area to suit the best purposes of the flight test program. In some locations, particularly around bigger cities where air traffic is heavy, a flight test area may not be practical. The builder must be prepared to expect that an approved flight test area may not be the one chosen by him as the most convenient.

13-5 OTHER LIMITATIONS DURING THE FLIGHT TEST PERIOD

As a rule, the carrying of passengers or other crew members will not be permitted unless necessary to the safe operation of that aircraft.

13-6 AIRCRAFT FLIGHT LOG

During the flight test period, the pilot should record the aircraft flight history in an appropriate log book. This should be in addition to any engine tachourmeter or engine hourmeter that may be installed in the aircraft.

Specifically, the duration of each individual flight should be recorded including the number of landings made.

A full description of any mishaps, however minor, or any experiences not entirely normal that occur during the flight experience period should also be duly recorded.

Although not required, it is strongly recommended that all operating data be recorded flight by flight. Such information as airspeeds, cylinder head temperatures, oil temperatures and pressures, altitudes and free air temperatures, etc., will be very valuable and may be used to determine or establish the various performance figures and operating characteristics of the aircraft.

Although the FAA Inspector is required by law to apply certain basic restrictions permanently to the amateur-built aircraft he is certificating, he can apply whatever other limitations he deems necessary at his own discretion. Unfortunately, nothing in the regulations states that the initial restrictions are required to be removed after successful completion of the test period . . . they only may be modified.

After the mandatory flight test period . . . then what?

Repairman's Certification

The Repairman's Certificate is applied for using the application from 8610-2, available from the local FAA offices. You should ask for this when you apply for your final inspection on your aircraft. You should also be familiar with the Appendix D of FAR part 43. (Items included in the Annual Condition Inspection.)

The Repairman's Certificate is only available to those who have built 51% or more of the specific aircraft they are having inspected.

Every twelve calendar months a condition inspection is performed in accordance with Appendix D of FAR part 43. The repairman has to include the aircraft total time in service, the name, the signature and the certificate type number of the repairman or A & P, who does the examination.

A&P mechanics must do the Annual Condition Inspection for those who are non-builders who own an amateur-built aircraft. On those aircraft where the builder has a Repairman's Certificate, it is **recommended** that from time to time the Annual Condition Inspection of those aircraft be done by an A&P simply as a check on the builder/repairman's work. One legal representative recommends that every other Annual Condition Inspection for a builder holding a repairman's certificate be done by an A&P mechanic.

AFFIDAVIT OF OWNERSHIP FOR AMATEUR-BUILT AIRCRAFT

U.S. Identification Number _____

Builder's Name _____

Model _____ Serial Number _____

Class (airplane, rotorcraft, glider, etc.) _____

Type of Engine Installed (reciprocating, turbopropeller, etc.)

_____

Number of Engines Installed _____

Manufacturer, Model, and Serial Number of each Engine Installed _____

_____

_____

Built for Land or Water Operation _____

Number of Seats _____

The above-described aircraft was built from parts by the undersigned and I am the owner.

_____
(Signature of Owner-Builder)

State of _____

County of _____

Subscribed and sworn to before me this ____ day of _____, 19____.

My commission expires _____.

_____
(Signature of Notary Public)

UNITED STATES OF AMERICA DEPARTMENT OF TRANSPORTATION
FEDERAL AVIATION ADMINISTRATION MIKE MONRONEY AERONAUTICAL CENTER
AIRCRAFT REGISTRATION APPLICATION

CERT. ISSUE DATE

UNITED STATES REGISTRATION NUMBER N

AIRCRAFT MANUFACTURER & MODEL
RANS S-9

AIRCRAFT SERIAL No.
1288054

FOR FAA USE ONLY

TYPE OF REGISTRATION (Check one box)

☒ 1. Individual ☐ 2. Partnership ☐ 3. Corporation ☐ 4. Co-owner ☐ 5. Gov't. ☐ 8. Foreign owned Corporation

NAME OF APPLICANT (Person(s) shown on evidence of ownership. If individual, give last name, first name, and middle initial.)

1 John Q. Amateur

TELEPHONE NUMBER: ( ) –

ADDRESS (Permanent mailing address for first applicant listed.)

Number and street: #1 Build-it Road

Rural Route: P.O. Box:

CITY	STATE	ZIP CODE
ANYTOWN USA		

☐ CHECK HERE IF YOU ARE ONLY REPORTING A CHANGE OF ADDRESS

ATTENTION! Read the following statement before signing this application.

A false or dishonest answer to any question in this application may be grounds for punishment by fine and / or imprisonment (U.S. Code, Title 18, Sec. 1001).

Sample

2 **CERTIFICATION**

I/WE CERTIFY:

(1) That the above aircraft is owned by the undersigned applicant, who is a citizen (including corporations) of the United States.

(For voting trust, give name of trustee: _____). or:

CHECK ONE AS APPROPRIATE:

a. ☐ A resident alien, with alien registration (Form I-151 or Form I-551) No. _____

b. ☐ A foreign-owned corporation organized and doing business under the laws of (state or possession) _____, and said aircraft is based and primarily used in the United States. Records of flight hours are available for inspection at _____

(2) That the aircraft is not registered under the laws of any foreign country; and
(3) That legal evidence of ownership is attached or has been filed with the Federal Aviation Administration.

NOTE: If executed for co-ownership all applicants must sign. Use reverse side if necessary.

TYPE OR PRINT NAME BELOW SIGNATURE

EACH PART OF THIS APPLICATION MUST BE SIGNED IN INK.

SIGNATURE	TITLE	DATE
John Q. Amateur	Builder/Owner	3/16/88
John Q. Amateur		

NOTE: Pending receipt of the Certificate of Aircraft Registration, the aircraft may be operated for a period not in excess of 90 days, during which time the PINK copy of this application must be carried in the aircraft.

AC FORM 8050-1 (1-83) (0052-00-628-9005)

This is a 3-part form.

US Department of Transportation
Federal Aviation Administration

ELIGIBILITY STATEMENT
AMATEUR-BUILT AIRCRAFT

10

Instructions: Print or type all information except signature. Submit original to an authorized FAA representative. Applicant completes Section I thru III. Notary Public completes Section IV.

I. APPLICANT INFORMATION

Name: Mr. John Q. Amateur

Address: #1 Build-it Road (No. & Street) Anytown (City) (State) (Zip)

Telephone No. (Residence) (Business)

II. AIRCRAFT INFORMATION

Model: RANS S-9

Engine(s) Make: Rotax 503

Assigned Serial No.: 1288054

Engine(s) Serial No.(s): 3572333

Registration No.: N1234Y

Prop./Rotor(s) Make: Sterba

Aircraft Fabricated: Plan ☐ Kit ☒

Prop./Rotor(s) Serial No.(s):

III. MAJOR PORTION ELIGIBILITY STATEMENT OF APPLICANT

The major portion of the aforementioned aircraft was fabricated and assembled for education and/or recreation. I have evidence to support this statement and will make it available to the FAA upon request.

Statement: 3-16-88

Applicant's Signature: John Q Amateur

IV. NOTARIZATION STATEMENT

SAMPLE

This must be Notarized!

29

FAA Form 8130-12 (11 83)

Figure 9-6

U.S. Government Printing Office 1985—461 823/21541

No certificate may be issued unless a completed application form has been received (14 C.F.R.-21)

Form approved
O.M.B. No. 04-R0058

11

U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL AVIATION ADMINISTRATION

APPLICATION FOR AIRWORTHINESS CERTIFICATE

INSTRUCTIONS — Print or type. Do not write in shaded areas, these are for FAA use only. Submit original only to an authorized FAA Representative. If additional space is required, use an attachment. For special flight permits complete Sections II and VI or VII as applicable.

I. AIRCRAFT DESCRIPTION

1. REGISTRATION MARK	2. AIRCRAFT BUILDER'S NAME (Make)	3. AIRCRAFT MODEL DESIGNATION	4. YR MFG.	FAA CODING
N1234Y	John Q. Amateur	RANS S-9	88	
5. AIRCRAFT SERIAL NO.	**6. ENGINE BUILDER'S NAME (Make)**	**7. ENGINE MODEL DESIGNATION**		
1288054	Rotax	503		
8. NUMBER OF ENGINES	**9. PROPELLER BUILDER'S NAME (Make)**	**10. PROPELLER MODEL DESIGNATION**		**11. AIRCRAFT IS:**
1	Sterba	Wood 64 x 44		X NEW ☐ USED ☐ IMPORT

II. CERTIFICATION REQUESTED

APPLICATION IS HEREBY MADE FOR: (Check applicable items)

A (1) ☐ STANDARD AIRWORTHINESS CERTIFICATE (Indicate category) ☐ NORMAL ☐ UTILITY ☐ ACROBATIC ☐ TRANSPORT ☐ GLIDER ☐ BALLOON

B (2) X SPECIAL AIRWORTHINESS CERTIFICATE (Check appropriate items)

- (2) ☐ LIMITED
- (5) ☐ PROVISIONAL (Indicate class)
  - (1) ☐ CLASS I
  - (2) ☐ CLASS II
- (3) ☐ RESTRICTED (Indicate operation to be conducted)
  - (1) ☐ AGRICULTURE AND PEST CONTROL
  - (2) ☐ AERIAL SURVEYING
  - (3) ☐ AERIAL ADVERTISING
  - (4) ☐ FOREST (Wildlife conservation)
  - (5) ☐ PATROLLING
  - (6) ☐ WEATHER CONTROL
  - (0) ☐ OTHER (Specify)
- (4) X EXPERIMENTAL (Indicate operation(s) to be conducted)
  - (1) ☐ RESEARCH AND DEVELOPMENT
  - (2) X AMATEUR BUILT
  - (3) ☐ EXHIBITION
  - (4) ☐ RACING
  - (5) ☐ CREW TRAINING
  - (6) ☐ MKT. SURVEY
  - (0) ☐ TO SHOW COMPLIANCE WITH FAR
- (8) ☐ SPECIAL FLIGHT PERMIT (Indicate operation to be conducted, then complete Section VI or VII as applicable on reverse side)
  - (1) ☐ FERRY FLIGHT FOR REPAIR, ALTERATIONS, MAINTENANCE OR STORAGE
  - (2) ☐ EVACUATE FROM AREA OF IMPENDING DANGER
  - (3) ☐ OPERATION IN EXCESS OF MAXIMUM CERTIFICATED TAKE-OFF WEIGHT
  - (4) ☐ DELIVERING OR EXPORT
  - (5) ☐ PRODUCTION FLIGHT TESTING

C (6) ☐ MULTIPLE AIRWORTHINESS CERTIFICATE (Check ABOVE "Restricted Operation" and "Standard" or "Limited," as applicable.)

III. OWNER'S CERTIFICATION

A. REGISTERED OWNER (As shown on certificate of aircraft registration) — IF DEALER, CHECK HERE → ☐

NAME	ADDRESS
John Q. Amateur	Anytown

B. AIRCRAFT CERTIFICATION BASIS (Check applicable blocks and complete items as indicated)

- ☐ AIRCRAFT SPECIFICATION OR TYPE CERTIFICATION DATA SHEET (Give No. and Revision No.)
- ☐ AIRWORTHINESS DIRECTIVES (Check if all applicable AD's complied with and give latest AD No.)
- ☐ AIRCRAFT LISTING (Give page number(s))
- ☐ SUPPLEMENTAL TYPE CERTIFICATE (List number of each STC incorporated)

C. AIRCRAFT OPERATION AND MAINTENANCE RECORDS

CHECK IF RECORDS IN COMPLIANCE WITH FAR 91.173	TOTAL AIRFRAME HOURS (Enter for used aircraft only)	(3) EXPERIMENTAL ONLY (Enter hours flown since last certificate issued or renewed)
☐		-0-

D. CERTIFICATION — I hereby certify that I am the owner (or his agent) of the aircraft described above; that the aircraft is registered with the Federal Aviation Administration in accordance with Section 501 of the Federal Aviation Act of 1958, and applicable Federal Aviation Regulations; and that the aircraft has been inspected and is airworthy and eligible for the airworthiness certificate requested.

DATE OF APPLICATION	NAME AND TITLE (Print or type)	SIGNATURE
3-16-88	John Q Amateur	John Q Amateur

SAMPLE

IV. INSPECTION AGENCY VERIFICATION

A. THE AIRCRAFT DESCRIBED ABOVE HAS BEEN INSPECTED AND FOUND AIRWORTHY BY: (Complete this section only if FAR 21.183 (d) applies)

- (2) ☐ FAR PART 121 OR 127 CERTIFICATE HOLDER (Give Certificate No.)
- (3) ☐ CERTIFICATED MECHANIC (Give Certificate No.)
- (6) ☐ CERTIFICATED REPAIR STATION (Give Certificate No.)
- (5) ☐ AIRCRAFT MANUFACTURER (Give name of firm)

DATE	TITLE	SIGNATURE

V. FAA REPRESENTATIVE CERTIFICATION

(Check ALL applicable blocks in items A and B)

A. I find that the aircraft described in Section I or VII meets requirements for:
- ☐ THE CERTIFICATE REQUESTED
- (4) ☐ AMENDMENT OR MODIFICATION OF CURRENT AIRWORTHINESS CERTIFICATE

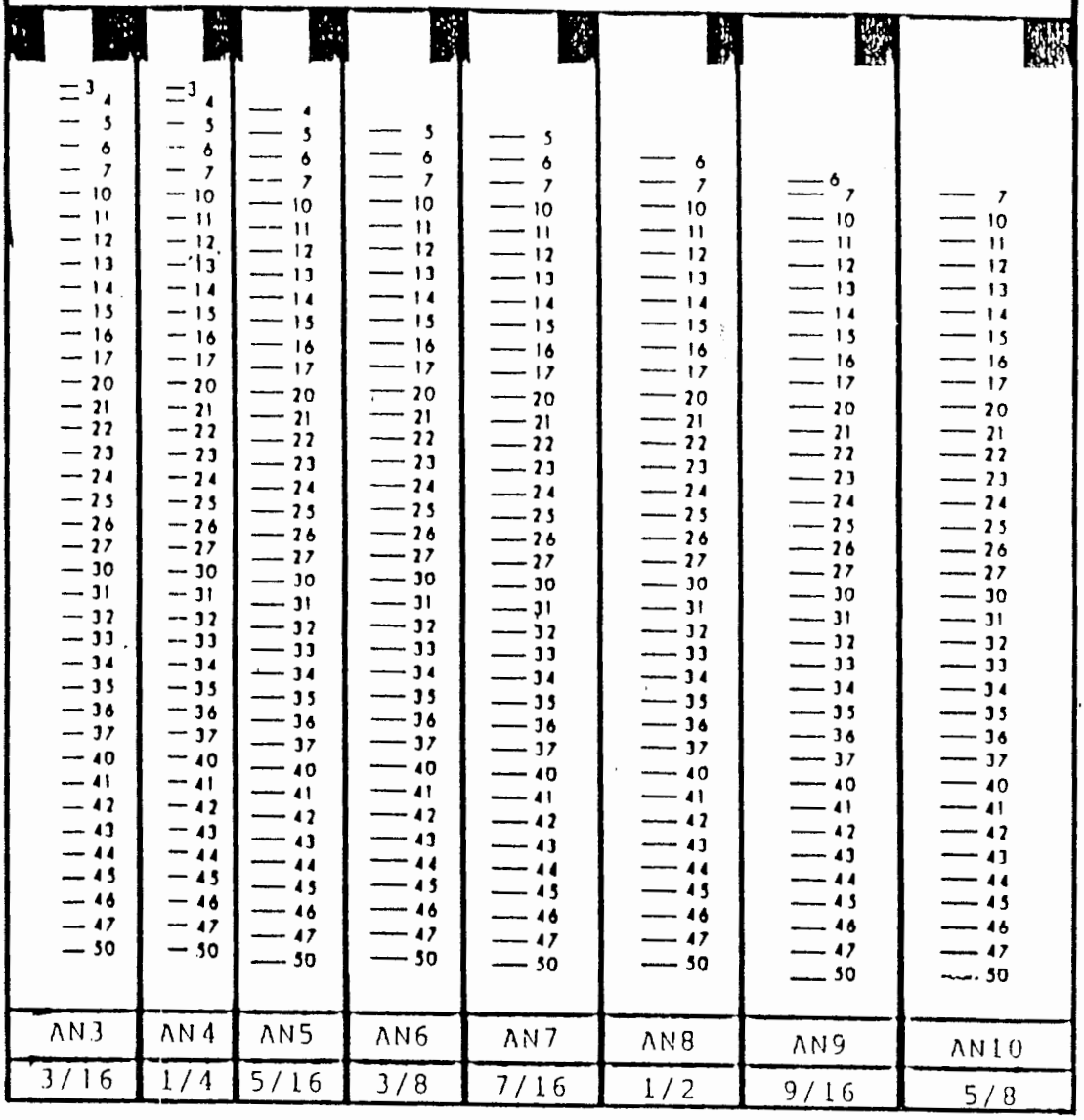
B. Inspection for a special flight permit under section VII was conducted by:
- ☐ FAA INSPECTOR
- ☐ CERTIFICATE HOLDER UNDER ☐ FAR 65 ☐ FAR 121 OR 127 ☐ FAR 145

DATE	DISTRICT OFFICE	(4) DESIGNEE'S SIGNATURE AND NO.	(1) FAA INSPECTOR'S SIGNATURE

FAA Form 8130—6 (4-80) SUPERSEDES PREVIOUS EDITION

☆ U.S. GOVERNMENT PRINTING OFFICE: 675 964/147

AN BOLT GAUGE

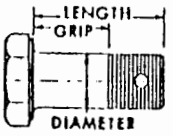


CLECO SIZES AND QUANTITY

QUANTITY	SIZE
12	NO. 40 SILVER (3/32)
24	NO. 30 COPPER (1/8)
6	NO. 11 GOLD (3/16)

AN3-AN8 AIRFRAME BOLTS

AN3-AN8 CADMIUM-PLATED STEEL BOLTS (DRILLED AND UNDRILLED)



A non-corrosion-resistant steel machine bolt which conforms to Specification MIL-B-6812. Cadmium plated to Specification QQ-P-416.

Available with or without single hole through shank and/or single hole through head. Examples of part members for a cadmium plated steel bolt having a diameter of 1/4" and nominal length of 1".

AN4-6 (For drilled shank)
AN4-6A (Designates undrilled shank)
AN4H6 (Drilled head, drilled shank)
AN4H6A (Drilled head, undrilled shank)

NUT AND COTTER PIN SIZES

AN NUMBER	DIAMETER	PLAIN NUT AN NUMBER	CASTLE NUT AN NUMBER	COTTER PIN MS NUMBER
AN3	3/16	AN315-3R	AN310-3	MS24665-132
AN4	1/4	AN315-4R	AN310-4	MS24665-132
AN5	5/16	AN315-5R	AN310-5	MS24665-132
AN6	3/8	AN315-6R	AN310-6	MS24665-283
AN7	7/16	AN315-7R	AN310-7	MS24665-283
AN8	1/2	AN315-8R	AN310-8	MS24665-283

HOW TO DETERMINE GRIP For Steel and Aluminum Aircraft Bolts

(Subtract Fractions Shown Below From Length Of Bolt) *Formula does not apply for AN4-3. Grip for AN4-3 is 1/16

AN 3 TO AN 8	AN NUMBER, Diameter, and Threads per Inch	AN3 10-32	AN4 1/4 -28	AN5 5/16 -24	AN6 3/8 -24	AN7 7/16 -20	AN8 1/2 -20
	Grip = Length Less	13/32	13/32 *	11/32	41/64	31/32	31/32

DASH NUMBER — NOMINAL LENGTH

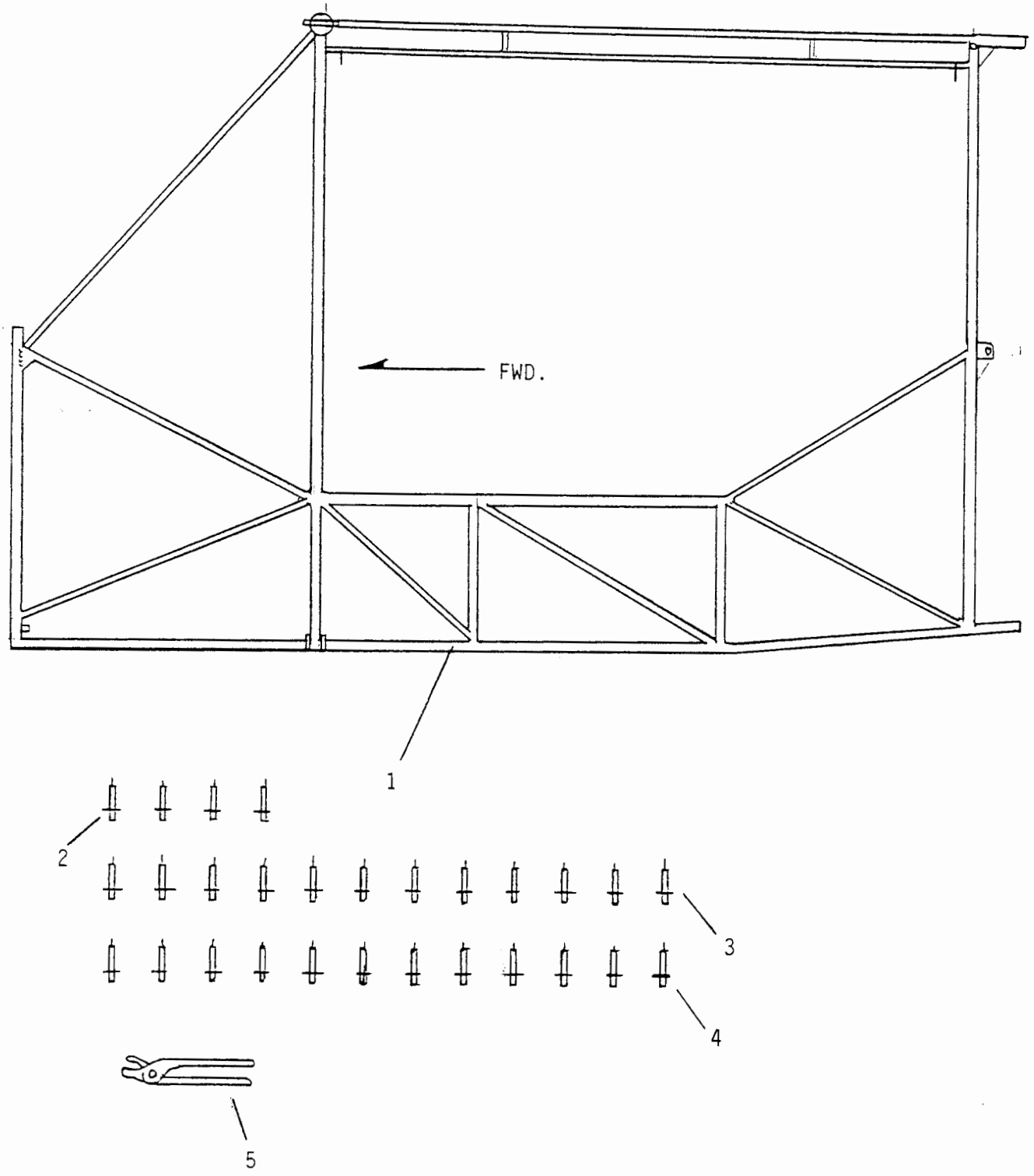
-3 ... 3/16	-6 ... 3/4	-11 .. 1 1/16	-14 .. 1 1/2	-17 .. 1 7/8	-22 .. 2 1/4	-25 .. 2 5/8
-4 ... 1/4	-7 ... 7/8	-12 .. 1 1/4	-15 .. 1 15/16	-20 .. 2	-23 .. 2 3/8	-26 .. 2 3/4
-5 ... 5/16	-10 .. 1	-13 .. 1 3/8	-16 .. 1 3/4	-21 .. 2 1/8	-24 .. 2 1/2	-27 .. 2 7/8
						-30 .. 3

PART IDENTIFICATION

Use the above chart to determine lengths of bolts. Diameters are as follows:

AN3 = 3/16" AN4 = 1/4" AN5 = 5/16" AN6 = 3/8"

Use the parts catalog for other part identification. The drawings depict a fairly accurate likeness of the real thing. Other parts such as tubes and certain brackets are labeled by part number. Again, reference the code to catalog to conifm part identity.



S-6 COYOTE II

FUSELAGE

S-6 COYOTE II FUSELAGE

#	PART NAME	PART NO	QTY	PRICE
1.	Fuselage	F-FUS	1	$1,750.00
2.	Silver Clecos #40	#40CLECOS	4	.85
3.	Copper Clecos #30	#30CLECOS	12	.85
4.	Gold Clecos #11	#11CLECOS	12	.85
5.	Cleco Pliers	CLECO PLIERS	1	10.00

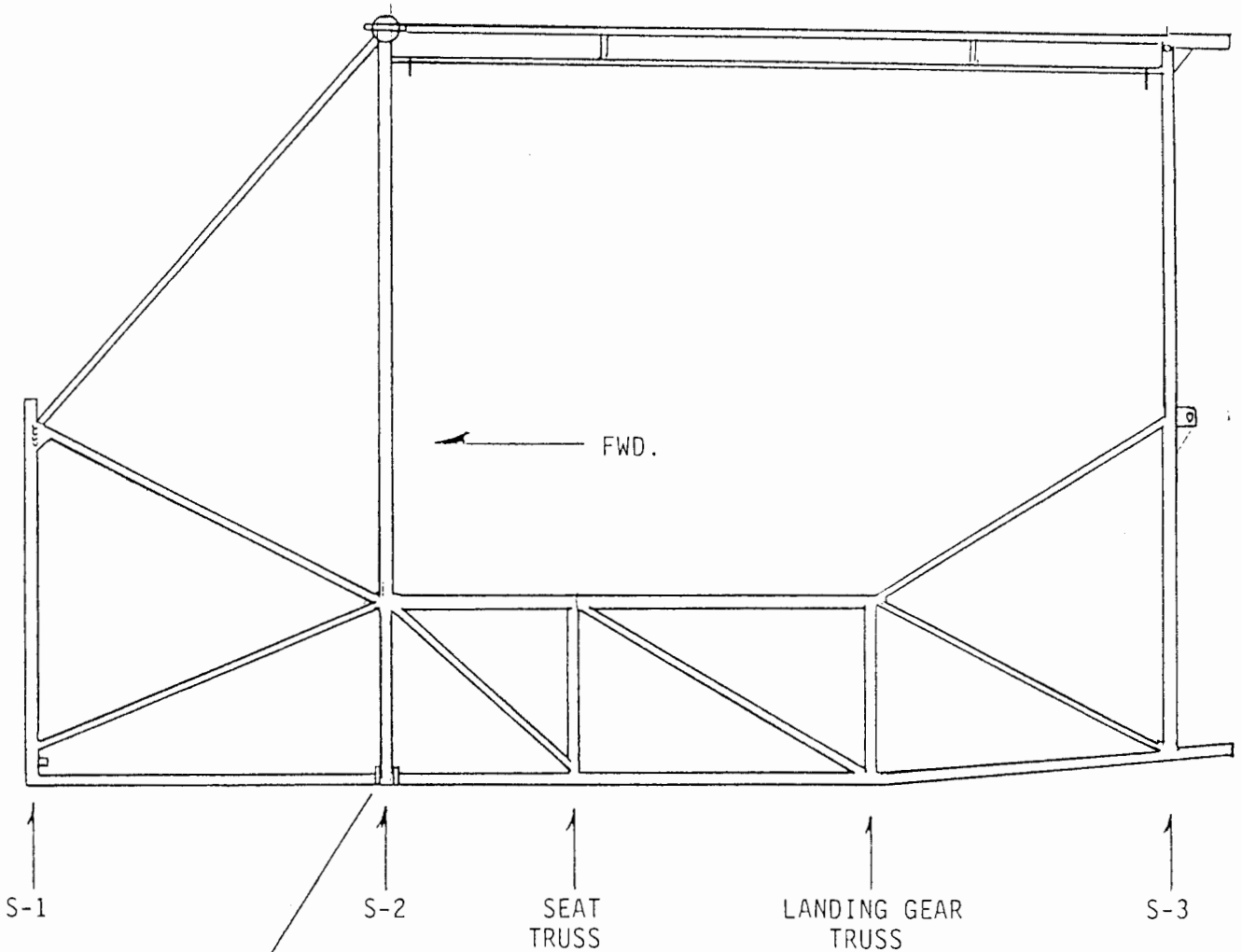
RANS S-6 COYOTE II FUSELAGE ASSEMBLY

1. The fuselage comes pre-welded and painted ready for assembly. Attaching nut plates to the various tabs is the only assembly required. The exact location of these nut plates will be called out where applicable.

2. Inspect the forward strut attach tangs at the lower S-2 location. (See Figure 01-02). These should be drilled 5/16".

3. Before proceeding to the next section inspect the fuselage cage for damage.

4. The fuselage tailcone assembly will be completed after sub-assembly of the following sections.

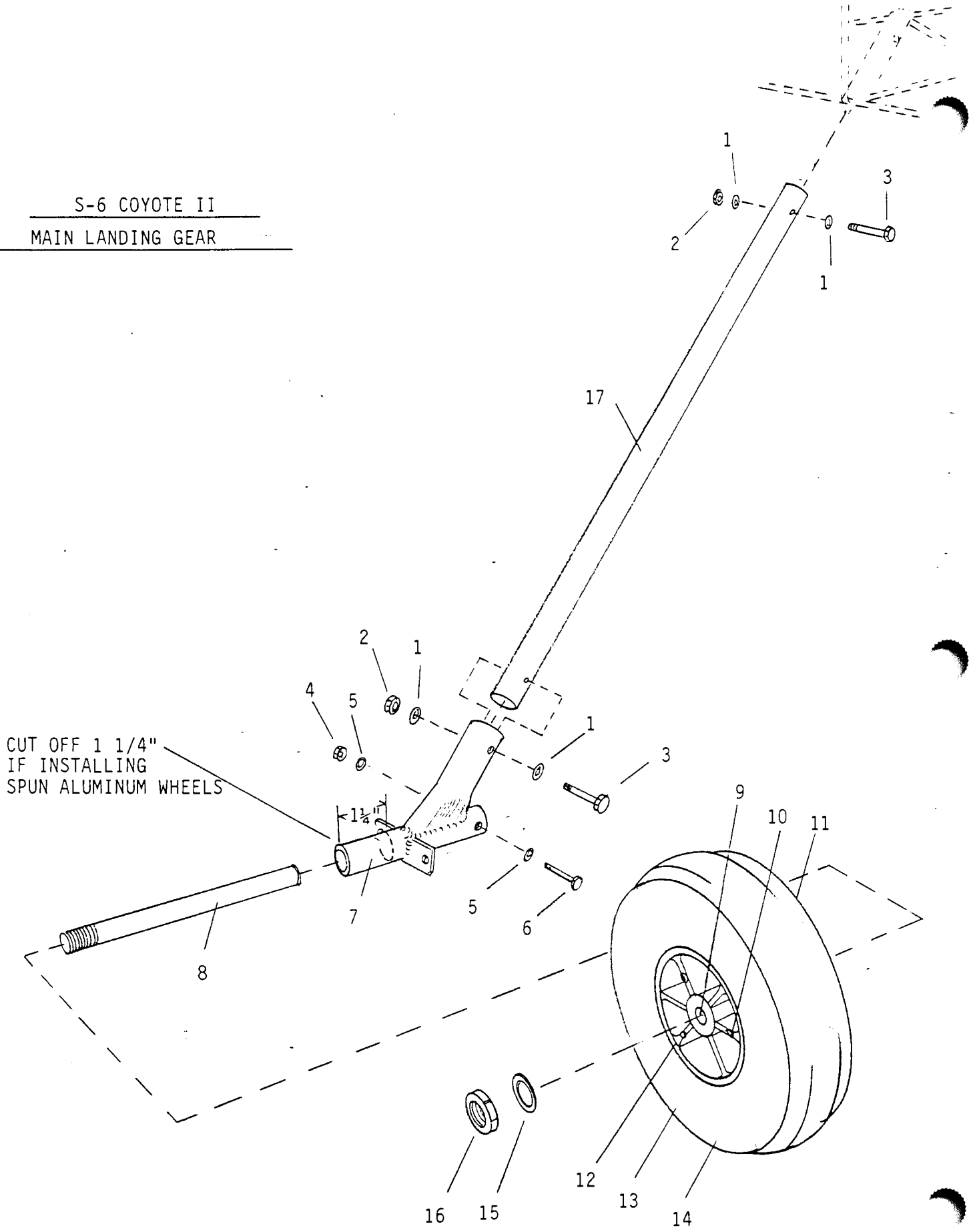


FUSELAGE SIDE VIEW

FIGURE 01-02

S-6 COYOTE II

MAIN LANDING GEAR



S-6 COYOTE II MAIN GEAR

#	PART NAME	PART NO	QUAN	PRICE
1.	1/4" Thick Washer	AN960-416	8	.03
2.	1/4" Shear Nut	AN364-428A	4	.20
3.	1/4" Bolt	AN4-16A	4	.45
4.	3/16" Shear Nut	AN364-1032A	2	.15
5.	3/16" Thin Washer	AN960-10L	4	.03
6.	3/16" Bolt	AN3-11A	2	.25
7.	Main Gear Axle Socket	LG-A-SOC	2	25.00
8.	Axle	LG-AXLE	2	10.00
9.	5/8" Wheel Bearing (W/Wheel)	5/8-BEARING	4	3.00
10.	5/16" Bolt (W/Wheel)	BOLT-5/16	6	1.00
11.	5/16" Nut (W/Wheel)	NUT-5/16	6	.20
12.	6" Wheel Half (W/Wheel)	LG-W1/2	4	36.00
13.	6" Tube (W/Wheel)	LG-TU	2	7.00
14.	6" Tire (W/Wheel)	LG-T	2	12.00
15.	5/8" Shim	5/8-SHIM	4	.50
16.	5/8" Loc Nut	5/8-LOC NUT	2	1.20
17.	Gear Leg	LG-GL	2	35.00

S-6 COYOTE II MAIN GEAR ASSEMBLY

NOTE: It is recommended to assemble the gear prior to any assembly or covering. PLEASE NOTE: If you are assembling the Hegar aluminum wheels you will need to cut off the axle socket 1 1/4". Trim off axle as required. See parts drawing.

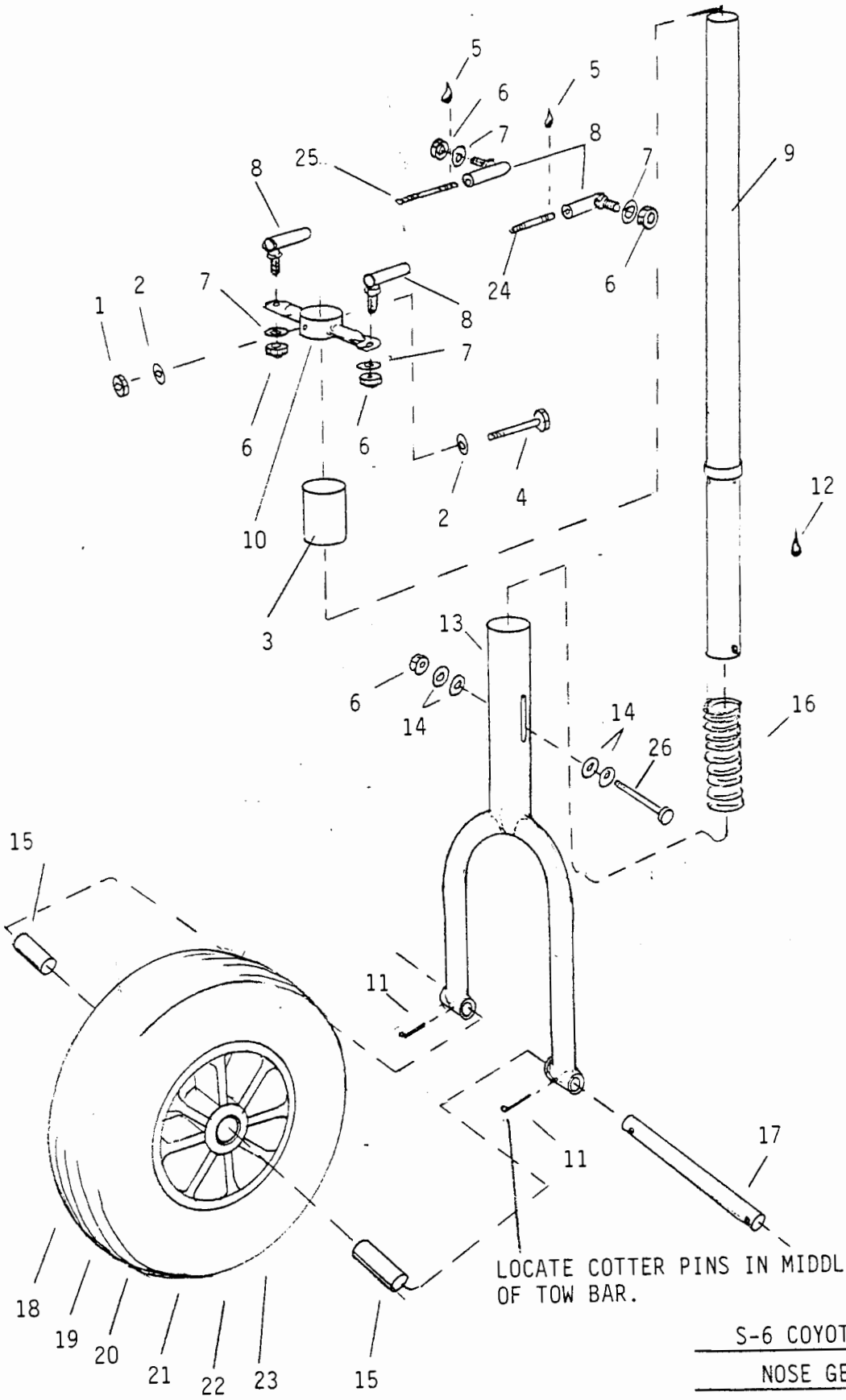
1. From the parts drawing and list collect the required components for the main gear assembly.

2. Observe the gear legs very closely. You will notice a slight curve to the tubes. This curve must be placed so it is up. To help mark the tubes, lay on a flat surface and affix a strip of masking tape to the curved out side. This will assure proper orientation. Also mark one LH and one RH. After they are drilled you won't get them mixed up.

3. With the fuselage cage upside down insert the gear legs into each socket (with the curves to the plane's top). Measure each gear leg, they should be of equal length to assure complete insertion. Mark from each side, remove and drill through the gear legs with a 1/4" bit. Use the pre-drilled holes in the sockets for location and guides. Drill from each side and bolt. NOTE: During final assembly apply a "ring" of clear silicon to the opening of the fuselage gear socket.

4. Insert the main gear axle sockets onto the gear legs. Measure the total length to assure each socket is equally inserted. If the legs are not of equal extension it is oaky to move in/out the main gear axle sockets accordingly. Before drilling and bolting the sockets must be aligned. Temporarily insert the wheel axles into the inner ends of the axle sockets. Clamp a straight board or angle of 62" length on the sides of the axles to align the two axle sockets. Install the wheels, brake assembly onto the axle and cut off excess inboard. Mark and remove to drill through 3/16". Disassemble the sockets from the legs, apply a ring of silicon to the inside of each socket, insert onto legs and bolt with 1/4" bolts with the heads facing forward. NOTE: Apply the silicon after covering fuselage.

This completes the main gear assembly. For wheels and brake assembly turn to BRAKES.



LOCATE COTTER PINS IN MIDDLE TO ALLOW USE OF TOW BAR.

S-6 COYOTE II

NOSE GEAR

S-6 COYOTE II NOSE GEAR

#	PART NAME	PART NO	QUAN	PRICE
1.	3/16" Shear Nut	AN364-1032A	1	.15
2.	3/16" Thin Washer	AN960-10L	2	.03
3.	Stop Ring, 1 5/8" x 2 7/16"	NG-SR-1 5/8x2 7/16	1	1.00
4.	3/16" Bolt	AN3-20A	1	.30
5.	Loc-Tite, Blue	LOC-TITE BLUE	1	5.00
6.	1/4" Shear Nut	AN364-428A	5	.20
7.	1/4" Thin Washer	AN960-416L	4	.03
8.	Steering Linkage	NG-SL	4	9.30
9.	Nose Gear Strut	NG-STRUT	1	55.00
10.	Steer Horn	NG-SH	1	8.00
11.	Large Cotter Pin	MS24665-285	2	.10
12.	Grease	----------	Supplied By Builder	
13.	Fork	NG-FORK	1	40.00
14.	1/4" Plastic Washer	PW-4	4	.20
15.	Wheel Bushing* 3/4" x .058 x See Below	NG-WB*	2	1.00
16.	Spring	4259	1	8.00
17.	Axle, 4130 6 1/4" x 5/8" x .058	NG-AXLE	1	5.00
18.	6" Tire (W/Wheel)	LG-T	1	12.00
19.	6" Tube (W/Wheel)	LG-TU	1	7.00
20.	6" Rim (W/Wheel)	LG-W1/2	2	10.00
21.	5/16" Bolt (W/Wheel)	BOLT-5/16	3	1.00
22.	5/16" Nut (W/Wheel)	NUT-5/16	3	.20
23.	5/8" Wheel Bearing (W/Wheel)	5/8-BEARING	2	3.00
24.	Steer Rod, LH, 1 1/2"	NG-ROD/LH1 1/2	1	2.00
25.	Steer Rod, RH, 2"	NG-ROD/RH2	1	2.00
26.	1/4" Bolt	AN4-22A	1	.50

*Fabricate by cutting ~~to length~~ from 3/4" x .058 aluminum stock. Provided
~~If Using The Stock Wheel Use A Length Of 1 3/8".~~
~~If Using The Spun Aluminum Wheel Use A Length~~ Of 1 3/4". x 3/4 x .058

RANS S-6 COYOTE II NOSE GEAR ASSEMBLY

NOTE: Keep fuselage upside down for nose gear assembly.

1. Select all the parts for the nose gear except for parts 5, 6, 8, 24 and 25. These will be used during rudder pedal assembly.

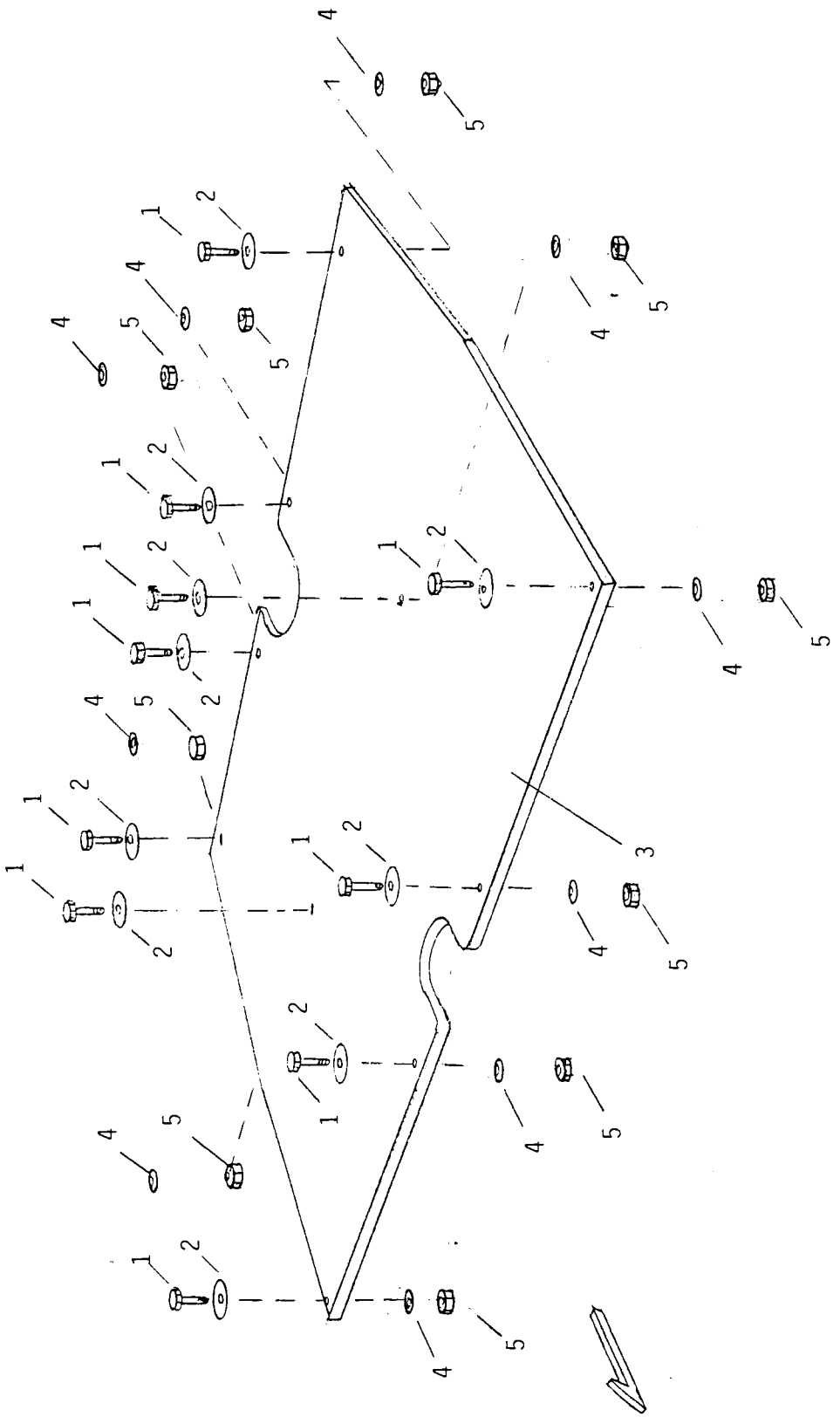
2. Using a light oil or grease lubricate the nose gear column from the welded on bearing ring up.

3. Slip the column into the lower swivel bushing on the fuselage. Push it in at least 6". Slip on the 1 5/8" x 2 1/4" stop ring followed by the steering horn. Push in the column until it inserts into the top swivel bushing and bottom out the bearing ring on the lower swivel bushing. NOTE: The steer horn and bushing will be positioned after the fork assembly.

4. Assemble a wheel to the fork by first checking axle insertion into wheel bearings. If the axle will not easily slide into the wheel, spin sand it on a belt sander or 7" disc sander until it does. Oil and insert with the 3/4" x 1 7/16" aluminum bushings on each side. NOTE: If you are using the optional aluminum mag wheels cut the bushings to a length of 1 3/4".

5. Turn the fuselage right side up. Push the column tight against the lower swivel bushing. Push down the stop ring and steer horn. View the fork top and steer horn from above. Line them up parallel and drill through from each side of the steer horn with a #11 drill bit. Bolt with an AN3-20A. NOTE: If the stop ring and horn do not slide over the column easily the paint may need to be removed. This can be done with lacquer thinner. Re-paint as required.

6. While rotating the nose column, oil the swivel bushings with a light machine oil. This will be required at least every 30 to 50 hours of operations. Disassemble and clean and re-lube the spring every 100 hours or as required. If nose spring becomes "sticky" it will most likely be from dirt and lack of grease. To service, weight tail and tie with nosewheel off ground. Remove, clean and re-assemble. Use weight of aircraft to depress spring for bolt insertion. Inspect bolt every pre-flight for wear. Replace if bolt shows signs of "grooving".



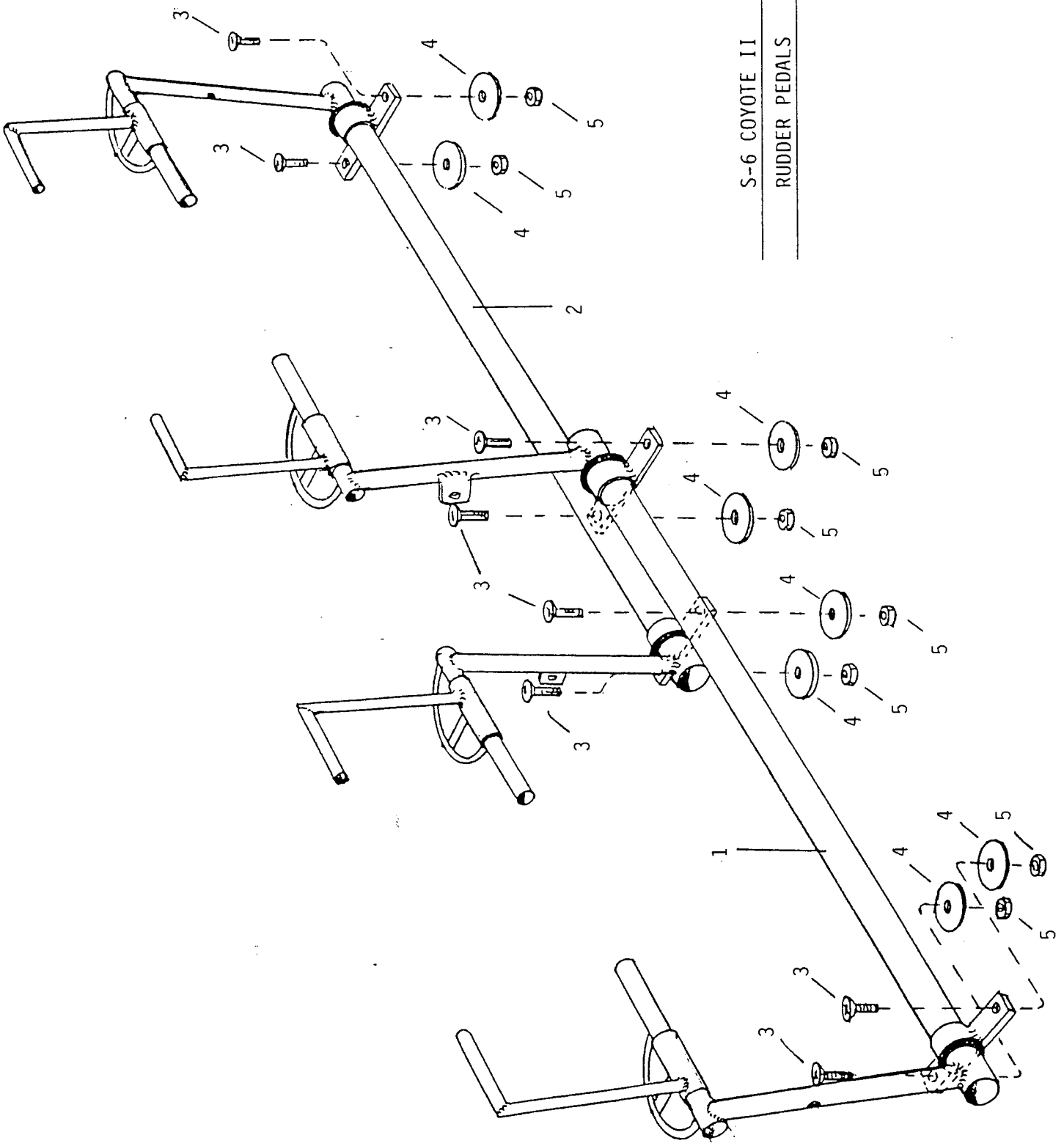
S-6 COYOTE II

FLOORBOARD

S-6 COYOTE II FLOORBOARD

#	PART NAME	PART NO.	QTY	PRICE
1.	3/16" Bolt	AN3-5A	10	.15
2.	3/16" Wood Washer	AN970-3	10	.20
3.	Floorboard	FB-FB	1	28.00
4.	3/32" Aluminum Pop Rivet	40APR1/8	20	.10
5.	3/16" Nut Plate	K-1000-3	10	.40

S-6 COYOTE II
RUDDER PEDALS



S-6 COYOTE II RUDDER PEDALS

#	PART NAME	PART NO	QUAN	PRICE
1.	Left Pedal Assembly	RP-ASSY-L	1	60.00
2.	Right Pedal Assembly	RP-ASSY-R	1	60.00
3.	3/16" Bolt	AN3-6A	8	.20
4.	3/16" Large Washer	AN970-3	8	.20
5.	3/16" Shear Nut	AN364-1032A	8	.15

FLOORBOARD INSTALLATION

1. Rivet the 3/16" nut plates to the top side of the two tabs located on the bottom of the S-1 bottom crossing tube. These serve as cowl tabs. (See Figure 04-02)

2. The floorboard comes pre-cut and finished, ready to position and bolt in place. Locate and clamp the floorboard as shown in Figure 04-02. **HINT:** Pull the nose gear out enough to slip the floorboard in from the top. Turn floorboard 90 degrees to insert then rotate into position. The floorboard front edge will be attached to the firewall floorboard attach angle. This is done **AFTER** the firewall is installed.

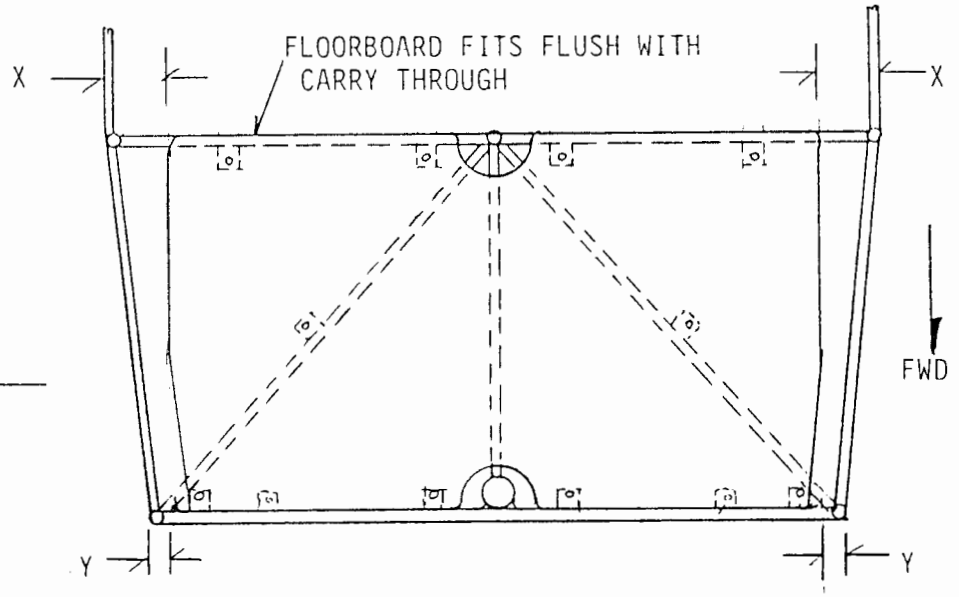


FIGURE 04-02

Drill up from the bottom with a #11 drill bit. **HINT:** Use a wood block placed over the top to prevent splinters. Be sure to drill the two tabs out in the middle of the floorboard. Bolt the floorboard as per the parts drawing.

RUDDER PEDAL INSTALLATION

3. Determine the left and right rudder pedal assembly. The left unit will have the link rod tab pointing forward and welded to the outside of the inside pedal.

4. Locate the rudder pedals as per Figure 04-04 and drill and bolt. Check the position for center alignment with the nose strut and parallel alignment with the fuselage forward bottom crossing tube. **NOTE:** Check that the bolts will not interfere with diagonal fuselage braces under the floorboard.

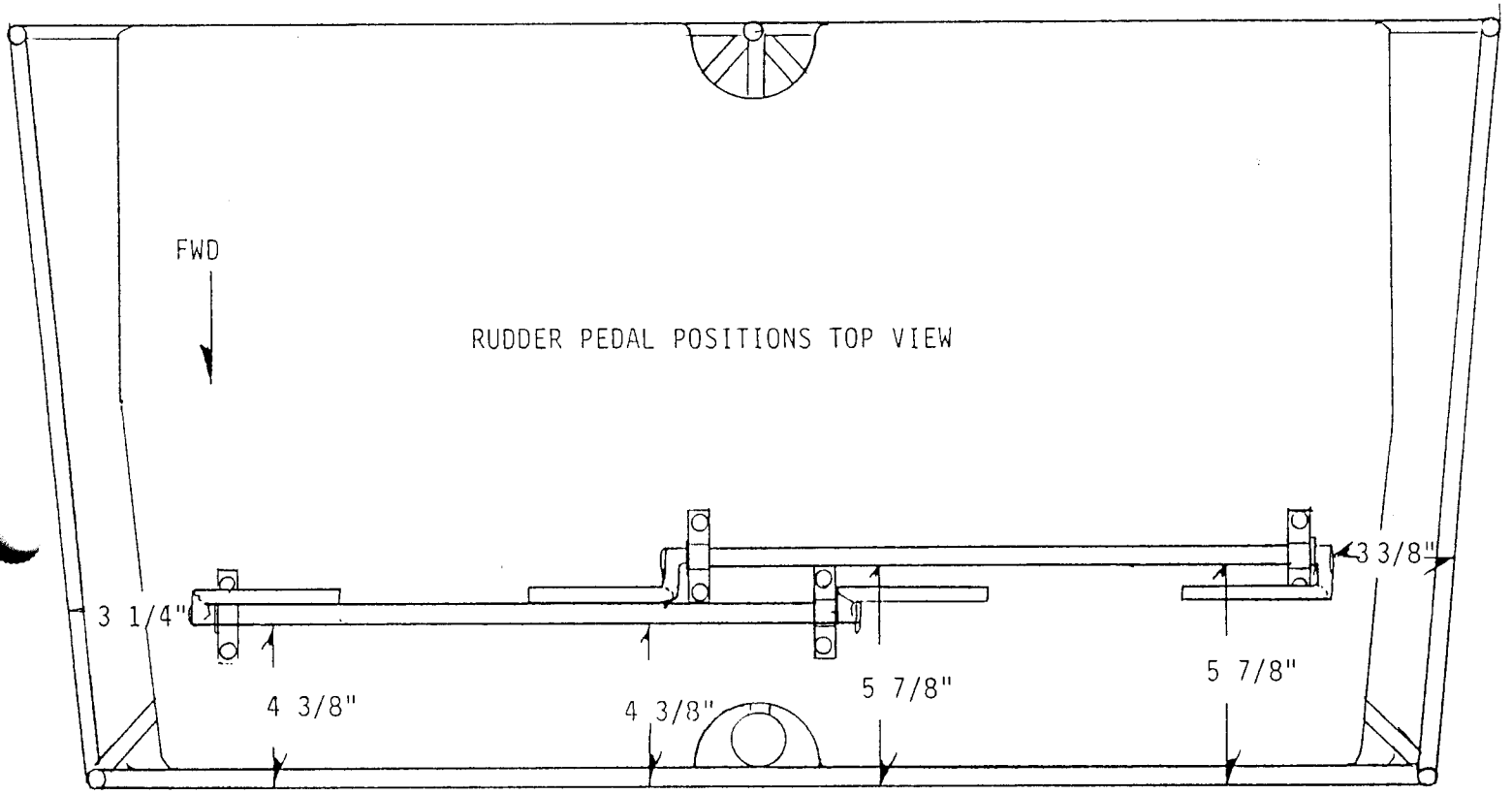
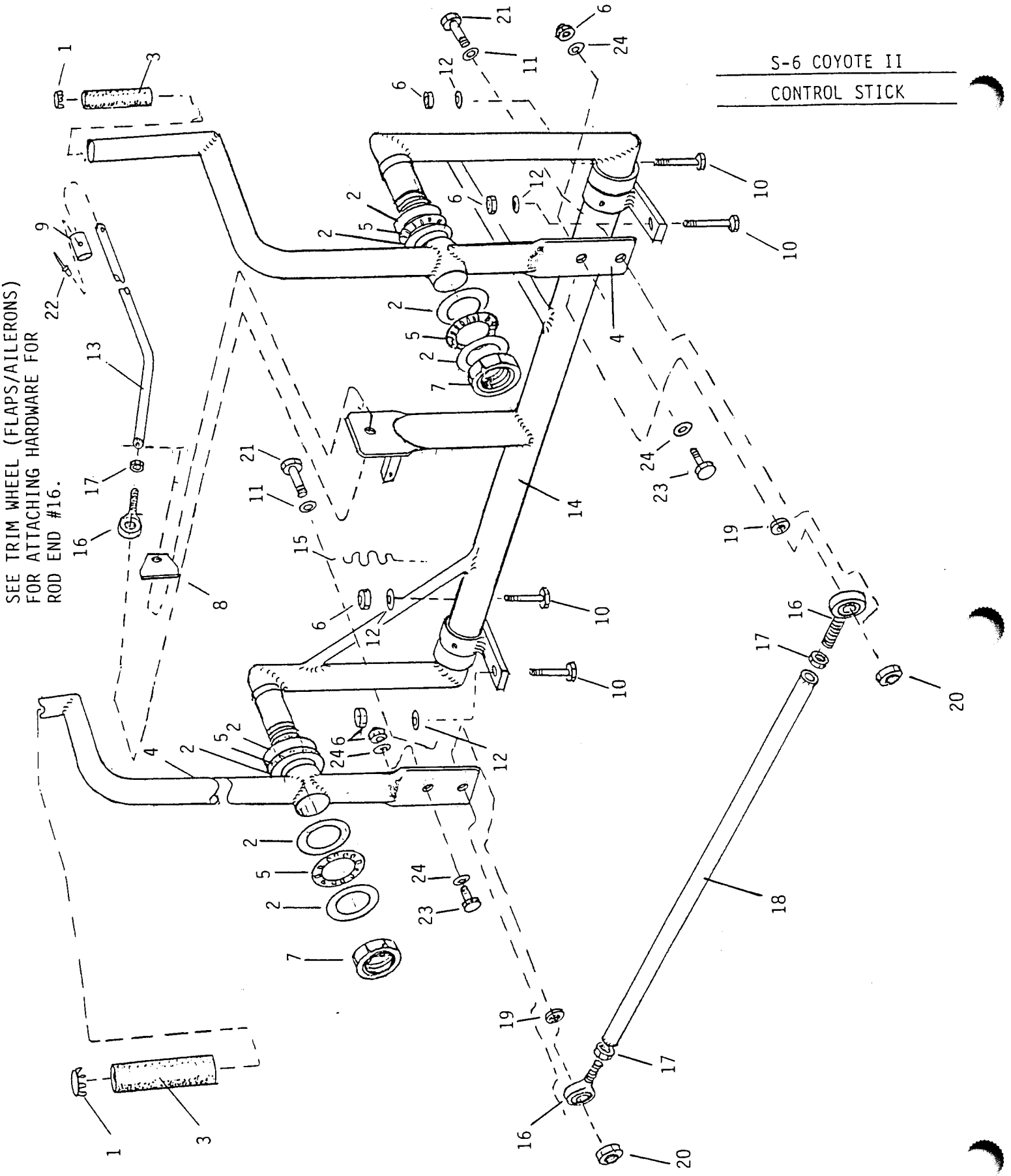


FIGURE 04-04

NOTE: See nose gear for parts selection.

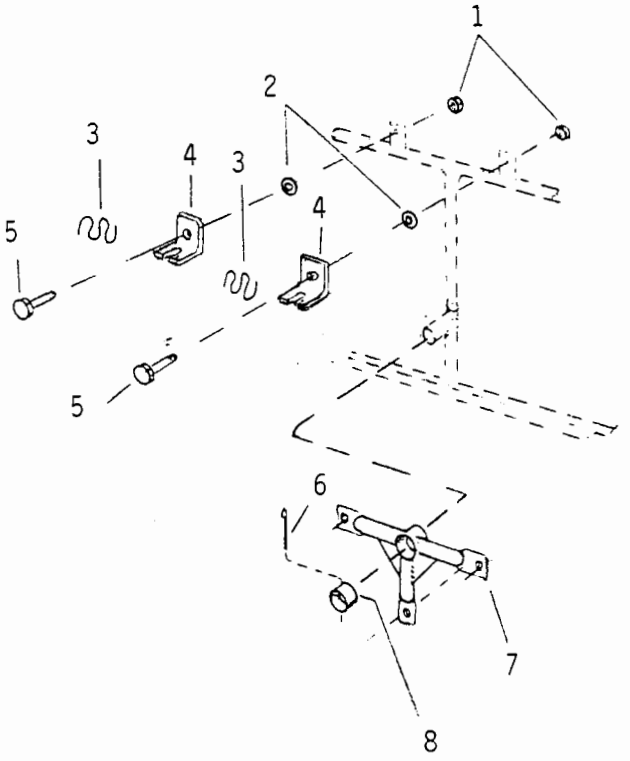
5. Screw together with a small drop of Loctite the steer rods and steering linkage. The LH steering rod and linkage assembly should be adjusted to an approximate total length of 3 1/2" and 3 7/8" for the RH. Assemble the rod linkage assemblage to the **TOP** of the steer horn and **INSIDE** of the rudder pedal tabs. Final adjustments will be made upon rudder installation.

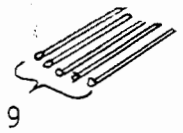
S-6 COYOTE II
CONTROL STICK



S-6 COYOTE II

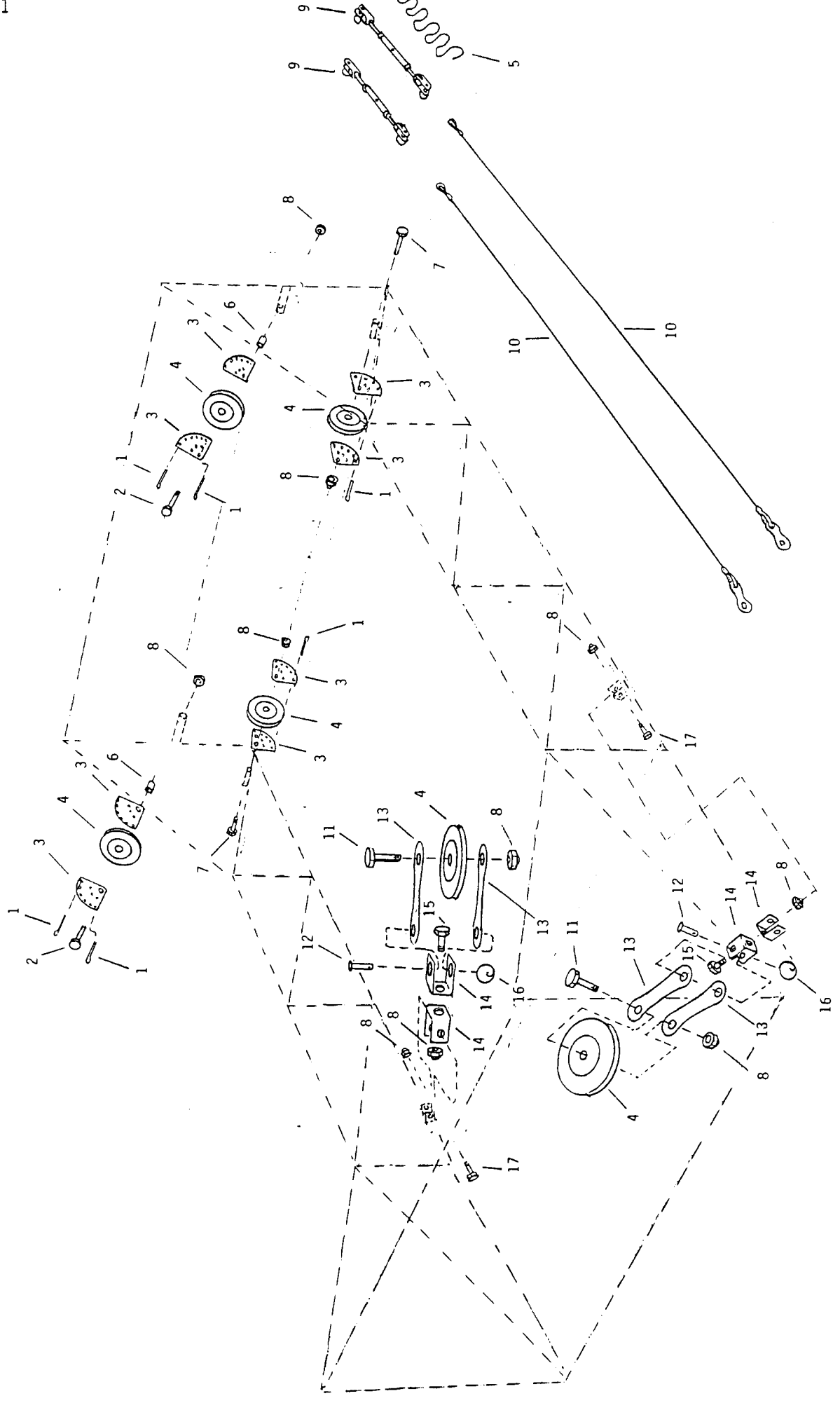
CONTROL STICK TEE ASSEMBLY





S-6 COYOTE II CONTROL STICK TEE ASSEMBLY

#	PART NAME	PART NO	QUAN	PRICE
1.	3/16" Shear Nut	AN364-1032A	2	.15
2.	3/16" Thin Washer	AN960-10L	2	.03
3.	Safety Wire	SAFETY WIRE	1	5.00
4.	Teleflex Retainer	W-TEL-R	2	2.50
5.	3/16" Bolt	AN3-4A	2	.20
6.	Large Cotter Pin	MS24665-285	1	.10
7.	Control Stick Tee	CS-TEE	1	10.00
8.	Aluminum Sleeve 3/4" x .058 x 1/2"*	3/4x1/2-SLEEVE*	1	1.00
9.	Zip Ties	N-TIES	5	.20



S-6 COYOTE II AILERON CONTROL CABLE SYSTEM

#	PART NAME	PART NO	QTY	PRICE
1.	Small Cotter Pin	MS24665-134	6	.10
2.	3/16" Bolt	AN3-13A	2	.30
3.	Cable Keeper	C-KU	8	1.50
4.	Pulley	AN210-2A	6	7.50
5.	Safety Wire	SAFETY WIRE	-	---
6.	Spacer Bushing, 1/4" x 1/4"*	SB-1/4X1/4*	2	1.00
7.	3/16" Bolt	AN3-16A	2	.40
8.	3/16" Shear Nut	AN364-1032A	10	.15
9.	Turnbuckle	RL-335-AT	2	25.00
10.	Aileron Cable	CS-AILCAB	2	5.00
11.	3/16" Bolt	AN3-5	2	.45
12.	3/16" Clevis Pin	COMES W/#14	2	.50
13.	Hummertang	T12-HT6	4	.75
14.	Shackle	RL-205-T	4	1.00
15.	3/16" Bolt	AN3-4A	2	.20
16.	Small Loc Ring	COMES W/#14	2	.20
17.	3/16" Bolt	AN3-7A	2	.20

*Builder Fabricates From The 3" Length Of Aluminum 1/4" X .035 Stock Provided.

S-6 COYOTE II CONTROL STICK ASSEMBLY

1. Refer to the parts catalog and select the required components for assembly.

2. Install the control stick torque tube aft of floorboard on the square tubes with one hole pre-drilled. Use the pillow block to locate the other hole. Drill the LOWER hole of each control stick connect tube to 1/4" diameter.

3. Grease the inside of the connect tube pivot bushing, the bearings and the outside of the control stick torque tube's pivot stubs. Slip the control sticks onto the torque tube with the washers and bearings in the order shown in the parts drawing. Run the on the 3/4" nut until it takes out all the play in the stick but is not to tight to cause binding.

4. Assemble the control stick link tube as per the parts page. Assemble the unit to the control stick connector tubes. Adjust so the sticks will be parallel. Include the aileron cable as per Figure 05-04.

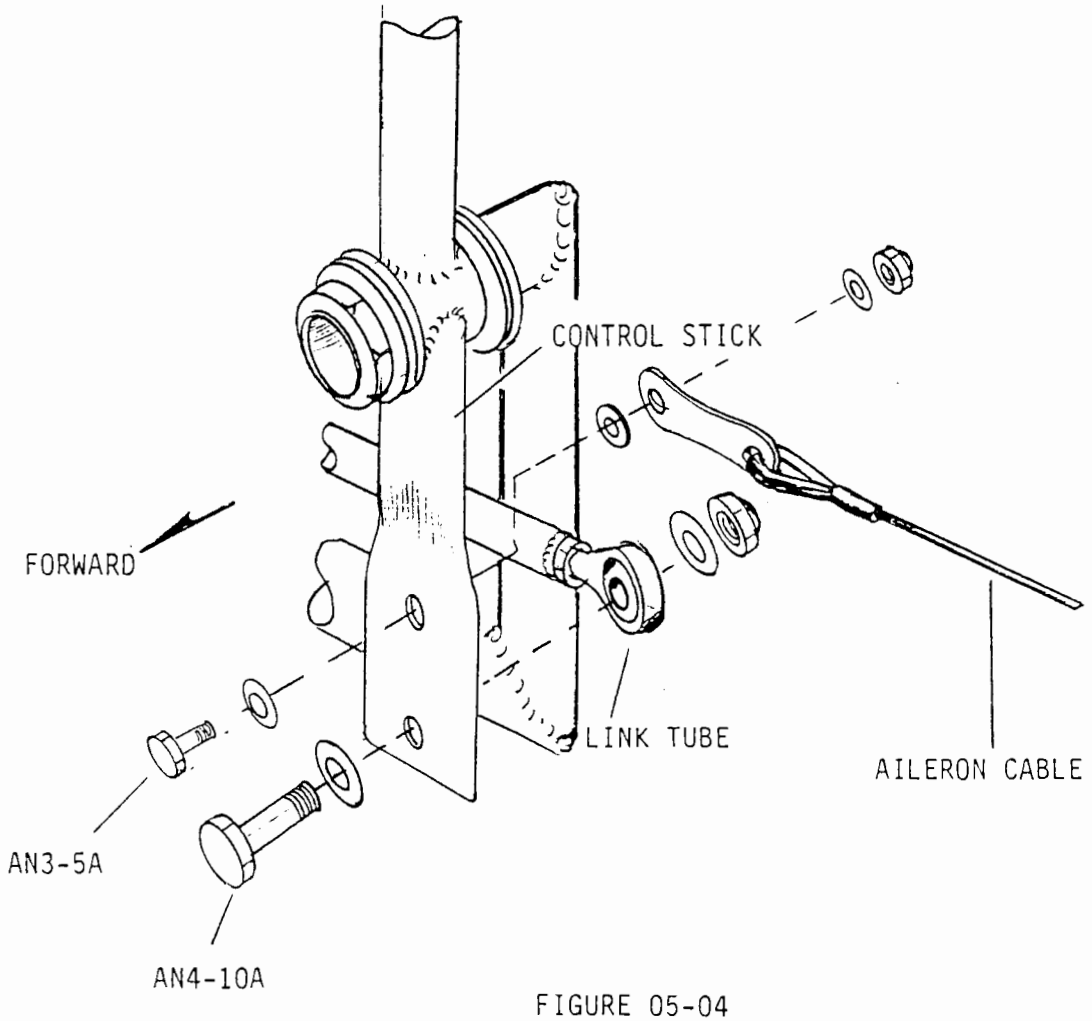


FIGURE 05-04

5. Grease the inside of the control tee and pivot stub and slip it onto the stub. Bolt the (2) teleflex retainers in place as per the parts page.

6. Fabricate a bushing 3/4" x .058 x 1/2" long and install by slipping on firm against the control stick tee. Drill vertically through the bushing and stub with a #40 drill, debur and cotter pin to retain.

7. Assemble the six pulley assemblies to the proper locations as shown in the parts drawing. Position the cable keepers as depicted, do not tighten the bolt until the keepers are in the final position. Cable keepers are not required on the forward pulley assemblies. Do not insert the cotter pins until after the cables are installed. NOTE: It will be required to unbolt the pulley from the assembly to install the cable.

8. With the pulley assemblies in place, route the cables as per Figure 05-08 and test run the system. Attach the turnbuckles directly to the control tee and the cables to the turnbuckle using the clevis pins installed on the turnbuckle shackles. Squeeze together the shackle of one of the turnbuckles so it will slip inside the other. Pin the two turnbuckles to the control stick tee. The cables must run smooth without binding or twisting the brackets.

9. Line up the cable keepers to allow insertion of the cotter pins. The purpose of the keeper is to retain the cables if slack occurs in the system. The cotter pins should not be allowed to rub against the cable. Rotate the position of the keeper to accomplish this.

10. For quick removal of aileron teleflex from retainers make (2) clips from 1/16" brass wire. See Figure 05-010.

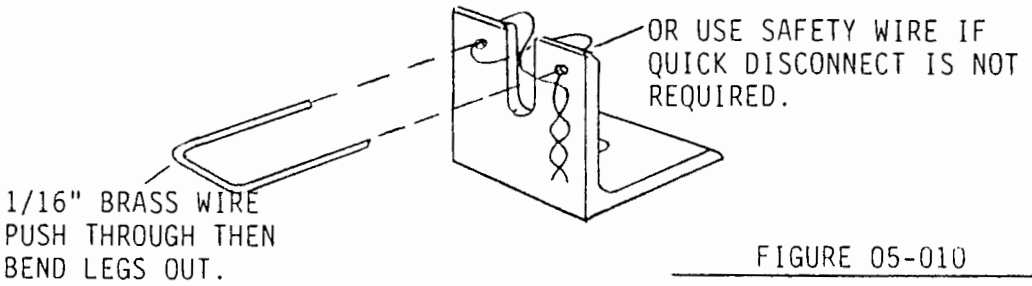
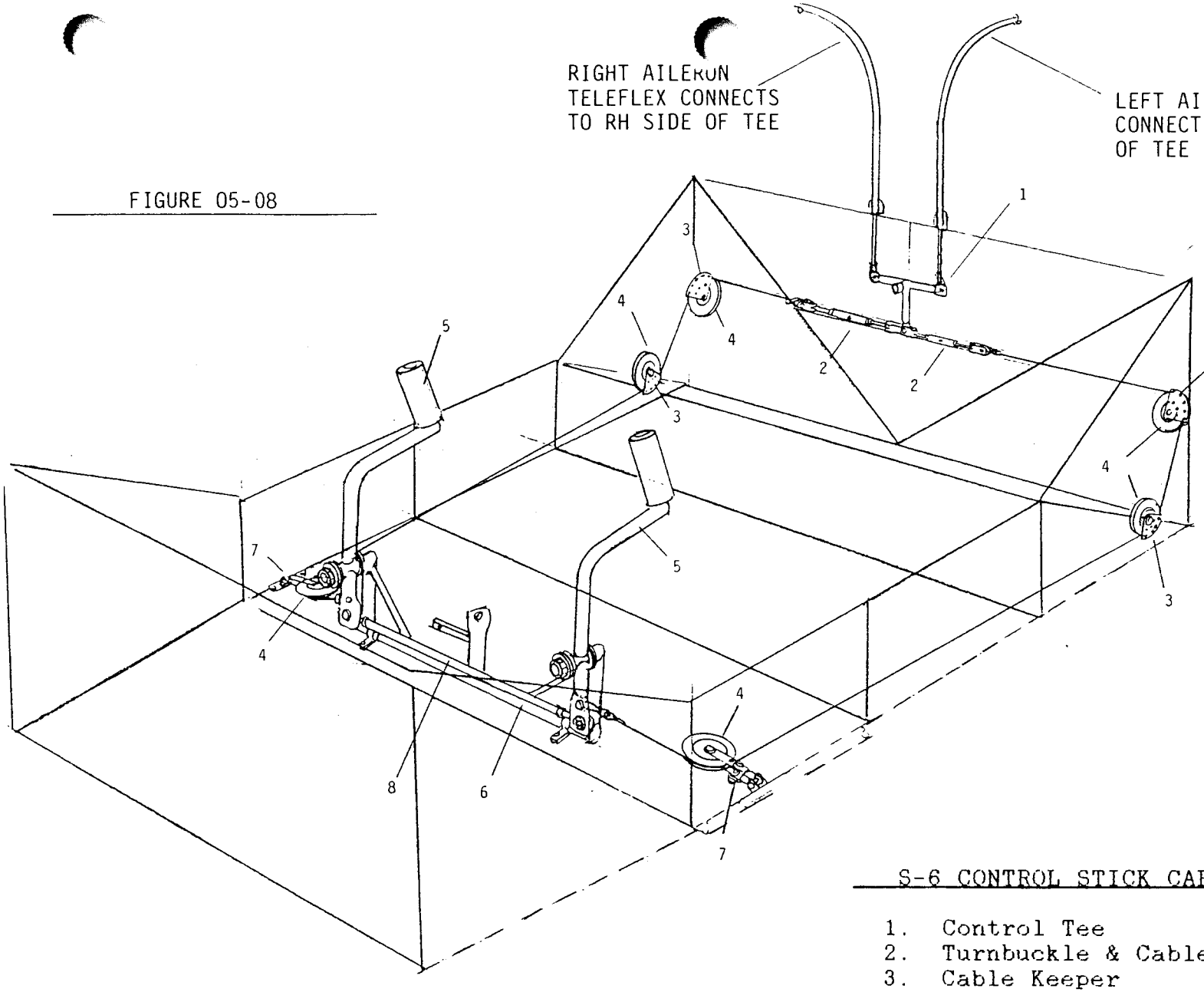


FIGURE 05-010

11. Test the system for even smooth movement by moving the control stick side to side and back and forth. If the cables are to tight they will tend to not allow full side to side movement. The full movement of 3" is equal to the travel of the former teleflex cable. To much tension is acceptable over to little, be very careful that the cables are tight enough to prevent slipping out of the pulleys. The system will most likely stretch and need re-tightening after a few hours. Safety wire the turnbuckle once it is rigged. Always check cables before flight for proper tension and control displacement. Get in the habit during pre-flight to check for proper aileron movement. If your control stick points RH the RH aileron should be UP. It sounds obvious but is also easy to get mixed up. Flying with crossed ailerons is bad news!!

FIGURE 05-08



DO NOT CROSS

THE AILERON
TELEFLEXES

S-6 CONTROL STICK CABLE ROUTING

1. Control Tee
2. Turnbuckle & Cable
3. Cable Keeper
4. Pulley
5. Control Stick
6. Control Stick Torque Tube
7. Forward Pulley Shackle Assembly
8. Control Stick Link Tube

12. Fabricate the elevator up stop sleeve from the 3/4" x .058 aluminum tube provided. See Figure 05-012 and slip it over the unbent end of the 5/8" PPT. Location and riveting of this stop sleeve will be covered in the tail assembly. Slip the unbent end of the 5/8" PPT through the guide welded to the lower S-3 carry through. Be sure the guide is positioned below its pivot tube. Bolt the 5/8" PPT to the RH side of the torque tube arm using a 1/4" male rod end. Include the forward elevator stop under the 1/4" nut when bolting on the rod end to the torque tube horn. NOTE: The rod end must be at least 6 threads into the 5/8" push pull tube. Oil the guide for smooth operation.

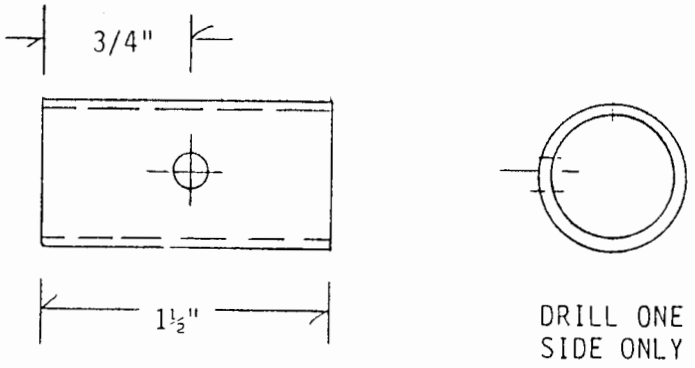
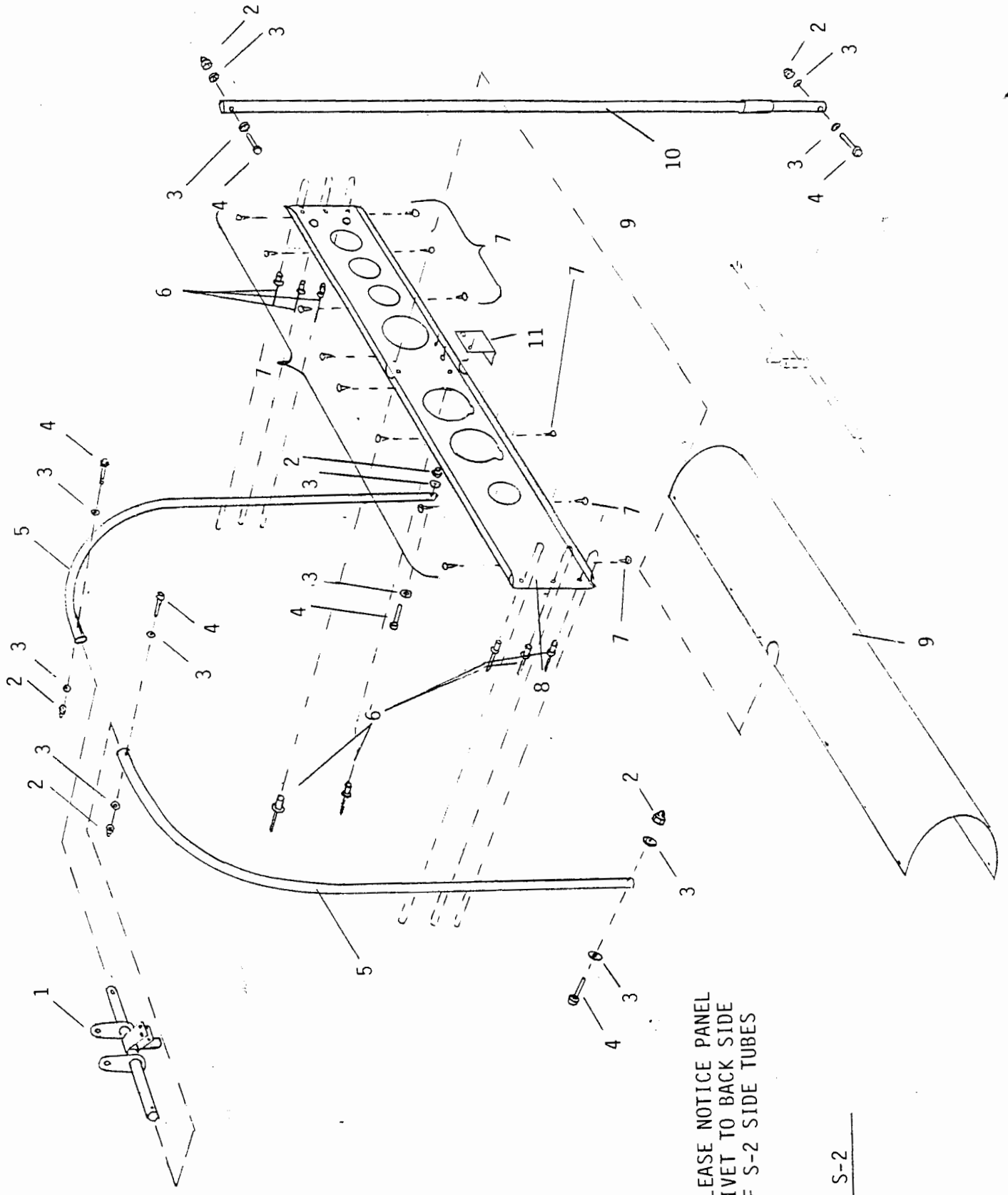


FIGURE 05-012



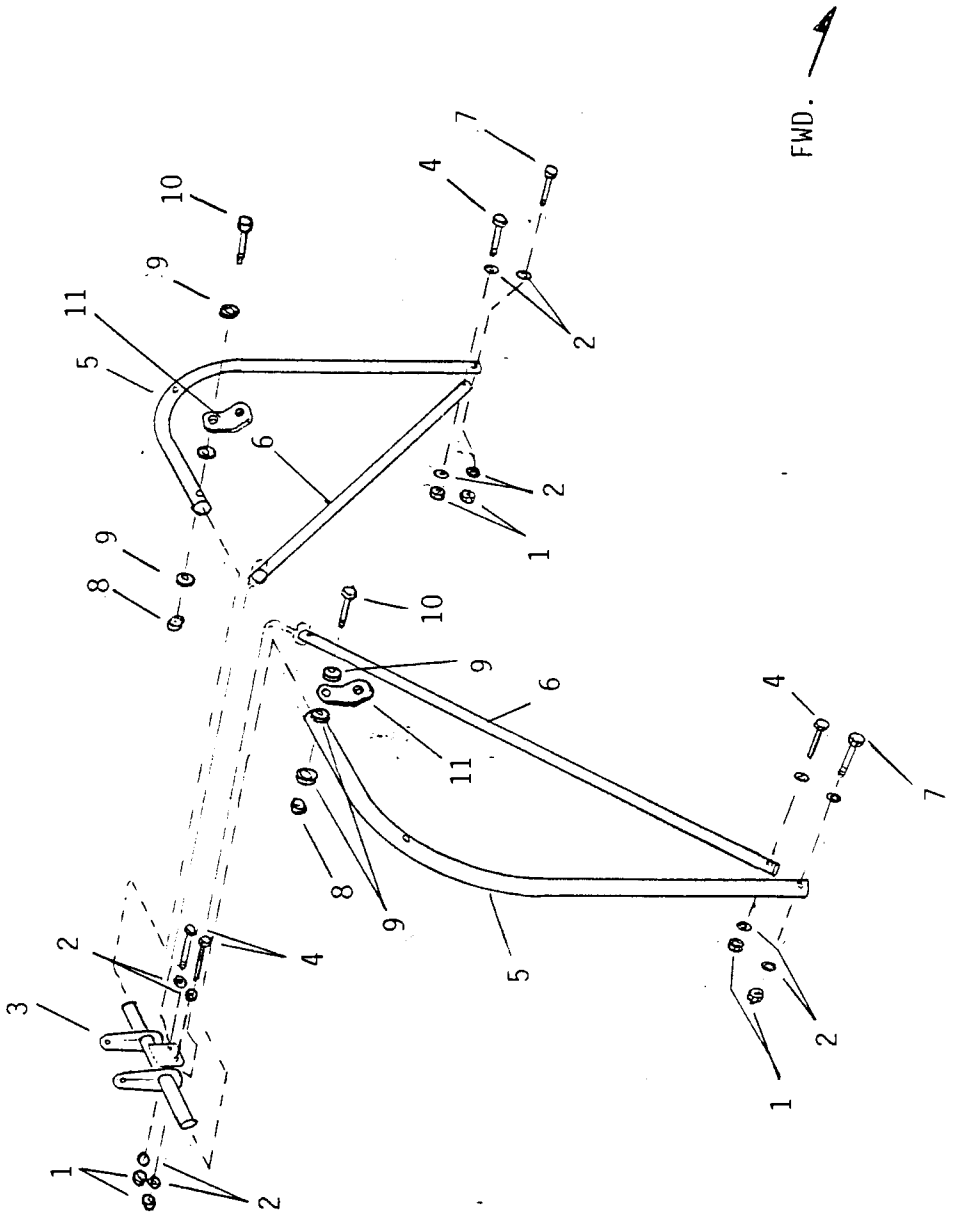
S-6 COYOTE II

S-2

S-6 COYOTE II S-2

#	PART NAME	PART NO.	QUAN	PRICE
1.	S-2 Top Cluster	S2-TCUL	1	25.00
2.	3/16" Acorn Nut	22NKMO2	6	.40
3.	3/16" Thick Washer	AN960-10	12	.03
4.	3/16" Bolt	AN3-12A	6	.25
5.	S-2 Side Tube	S2-ST	2	35.00
6.	1/8" SS Pop Rivet	30SSPR	10	.20
7.	#8 Pan Head Screw	8x1/2 PHS	14	.05
8.	Instrument Panel	IP-IP	1	50.00
9.	Instrument Panel Cover	IP-COV	1	15.00
10.	S-2 Center Post	S2-CP	1	8.50
11.	Starter Handle Hook	S2-SHH	1	2.00

S-6 COYOTE II



S-3

S-3

3-6 COYOTE II S-3

#	PART NAME	PART NO.	QUAN	PRICE
1.	3/16" Shear Nut	AN364-1032A	6	.15
2.	3/16" Thin Washer	AN960-10L	12	.03
3.	S-3 Top Cluster	S3-TCUL	1	25.00
4.	3/16" Bolt	AN3-10A	4	.25
5.	S-3 Side Tube	S3-ST	2	32.50
6.	S-3 Diagonal Brace	S3-DB	2	6.00
7.	3/16" Bolt	AN3-12A	2	.25
8.	1/4" Tensile Nut	AN365-428A	2	.20
9.	1/4" Thick Washer	AN960-416	6	.03
10.	1/4" Bolt	AN4-14A	2	.40
11.	Shoulder Belt Tang	FAT-4	2	1.50

S-6 COYOTE II S-2 ASSEMBLY

1. Select the parts as shown on the parts page.

2. Insert the S-2 top cluster fully onto the S-2 cp (center post). Position the center post so the pre-drilled hole will be 90 degrees to the aircraft's center line and the elevator stop sleeve (a 2" long tube riveted near one end) is down. Drill from one side, cleco or bolt, then drill the other side. Remove cleco and bolt. HINT: Clamp the tube with a vise grip to assure against slippage, tape the jaws to prevent damage to the finish. Use this vise grip idea on other tubes such as the S-2 and S-3 side tubes.

3. Insert the post cluster and assembly onto the stub welded to the center of the lower S-2 carry through. Install each S-2 side tube onto the cluster and fuselage stubs. Measure from the very BOTTOM of the S-2 carry through to the top of the cluster (include sleeves of the firewall brace brackets but not the keel tangs). It should be 42". Raise or lower the center post as required. Clamp in the 42" position and drill the bottom of the center post from each side #11 and bolt.

4. Set back the (2) S-2 side tubes 1/4" from the tangs (See Figure 06-04). They will almost touch the welds. Locate and drill #11 holes from each side 1/2" from the SIDE TUBE ENDS and bolt.

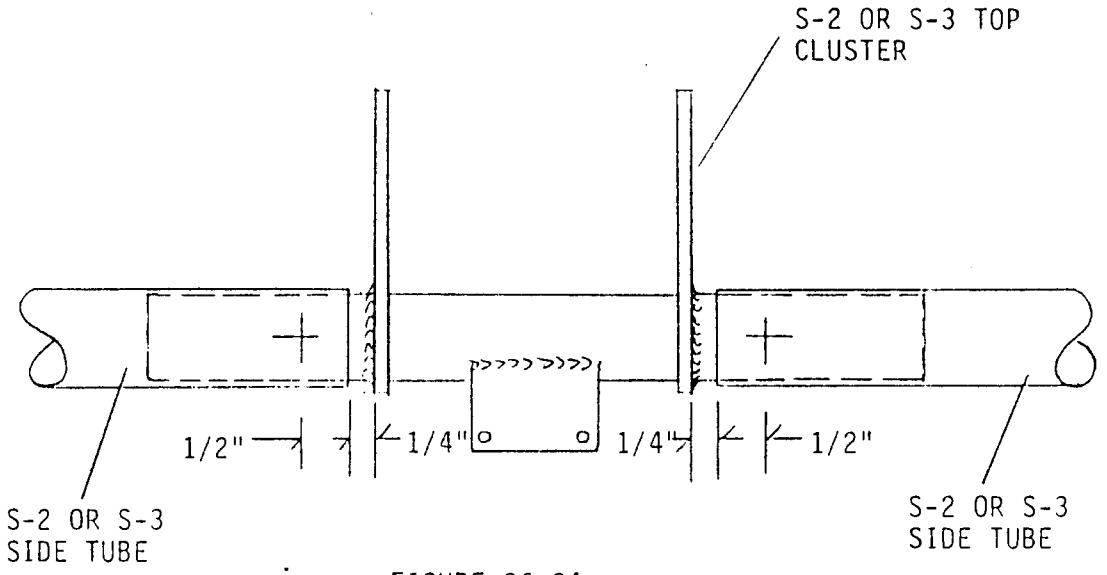


FIGURE 06-04

5. Measure from the top longeron just aft of the S-2 tube to the top cluster. See Figure 06-05. It should measure the same on each side. This will align the center post vertically. Re-measure, adjust and clamp when you're satisfied the post is straight. HINT: Check vertical alignment by eyeballing center post side tubes with fuselage vertical tubes. Once the tubes are correctly clamped in place, locate and drill a #11 hole 1 1/4" from the top of the longeron. Drill from each side (front and back) and bolt.

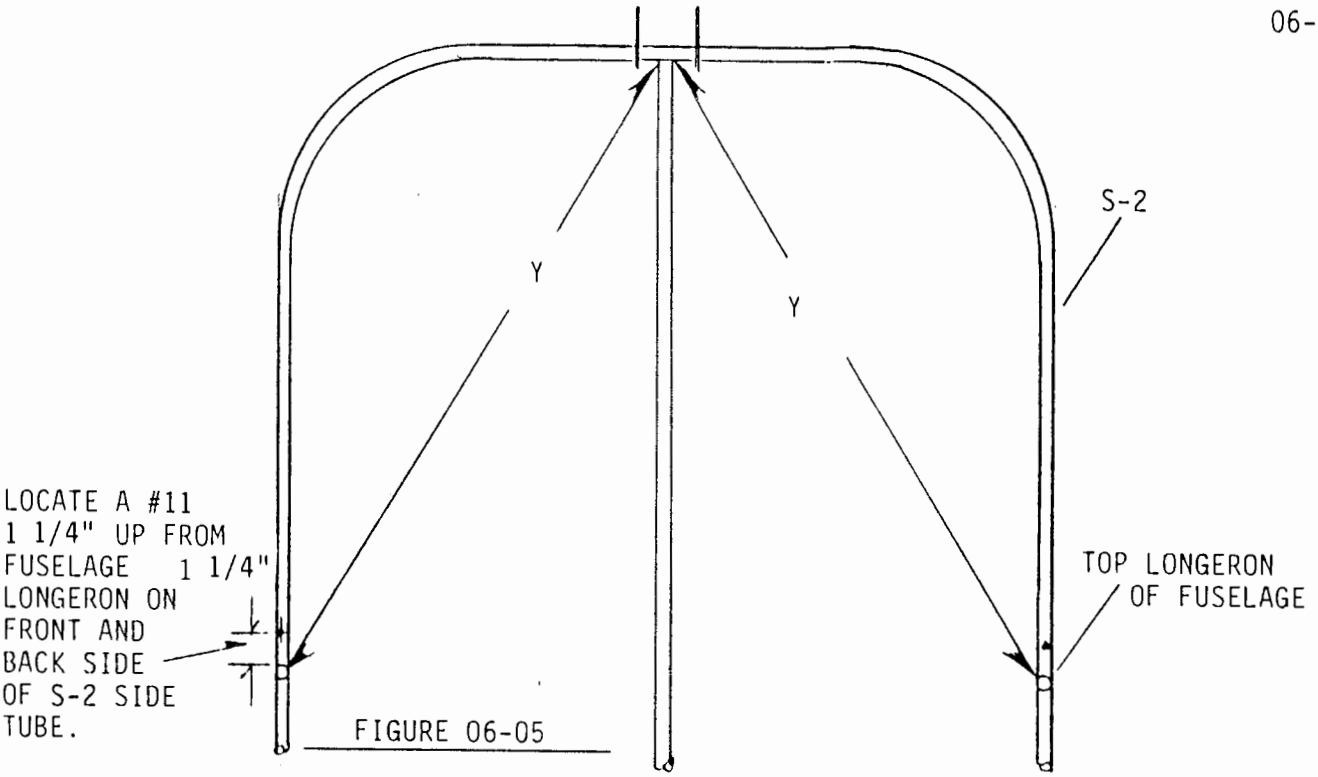


FIGURE 06-05

6. Clamp the Instrument Panel to the back side of the S-2 as in Figure 06-06. Drill out the punch marks to #30, debur and rivet with 1/8" stainless steel pop rivets, (3) on each side. Locate, drill and rivet (with stainless steel pop rivets) the panel to the center post. Locate (2) rivets 1" from the panel's top and bottom on center and rivet to center post. Locate the starter handle hook 1 1/2" to left of center tube on the aft side of the panel. Position the hook so it opens to the aft.

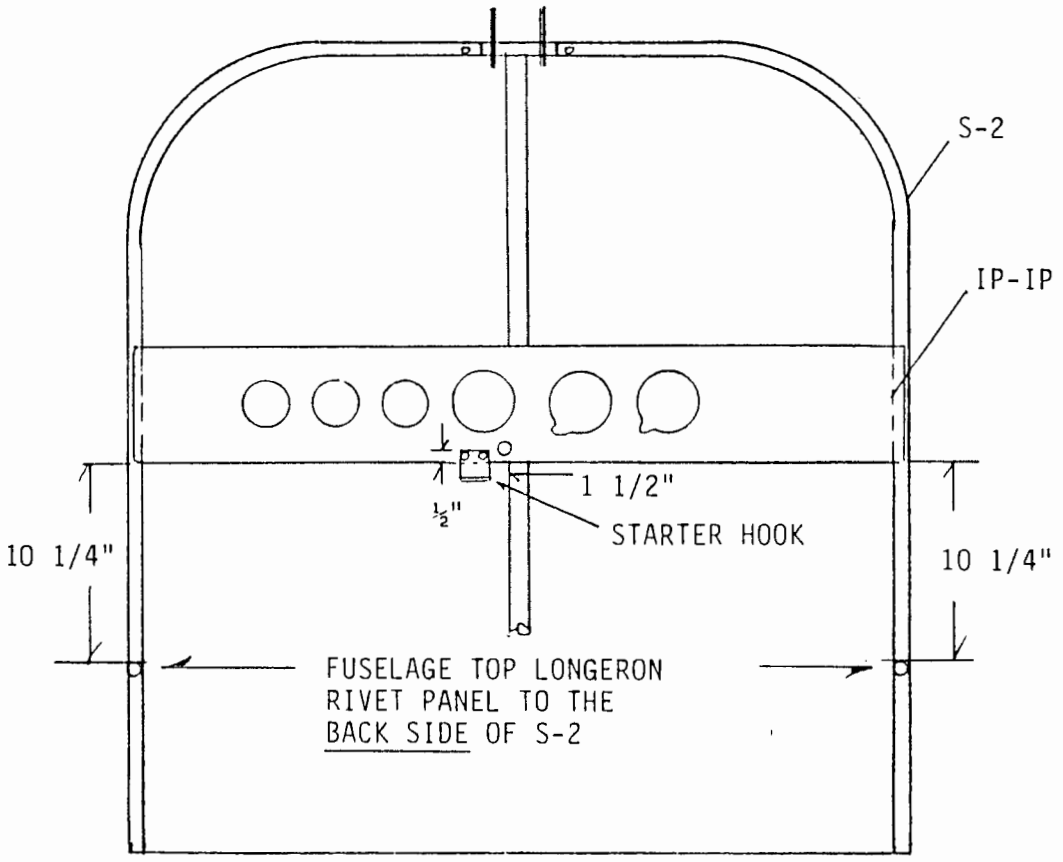


FIGURE-06-06

7. Cut and file a 7/8" diameter by 7/8" deep notch in the center of the dust cover (See Figure 06-07) and install onto the front side of panel.

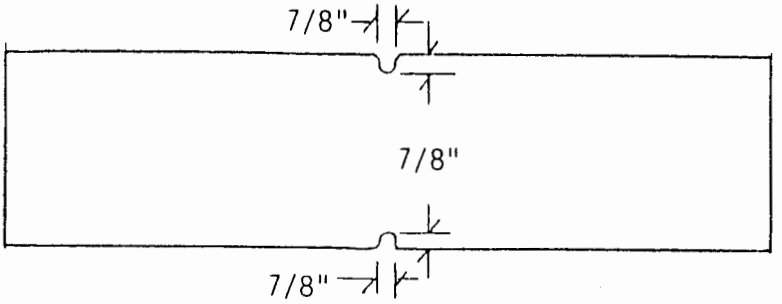


FIGURE 06-07

8. Support the cover from the inside with a wood block pressed against the flanges while drilling through the cover. Drill #30 and cleco as you go. Remove cover and drill out #30 pilot hole in panel to 5/32". Reassemble with #8 pan head screws.

9. The S-2 is complete with the exception of the instruments and electric wiring. This will be covered under Instrument Panel/Electrical.

S-6 COYOTE II S-3 ASSEMBLY

10. Select all the components and hardware required for the S-3 assembly shown on the parts page.

11. Assemble the (2) S-3 side tubes and S-3 top cluster to the fuselage. IMPORTANT: Clamp the cluster in a perfect vertical alignment with the S-3 side tubes. HINT: Install the S-3 diagonal braces to align vertically. Locate and drill a 1/4" hole on each side of the S-3 side tubes at the cluster as in Figure 06-011. Install the bolts after deburring. NOTE: The 1/4" bolts will be used to retain the shoulder straps so it is important to use the 1/4" tensile nuts shown.

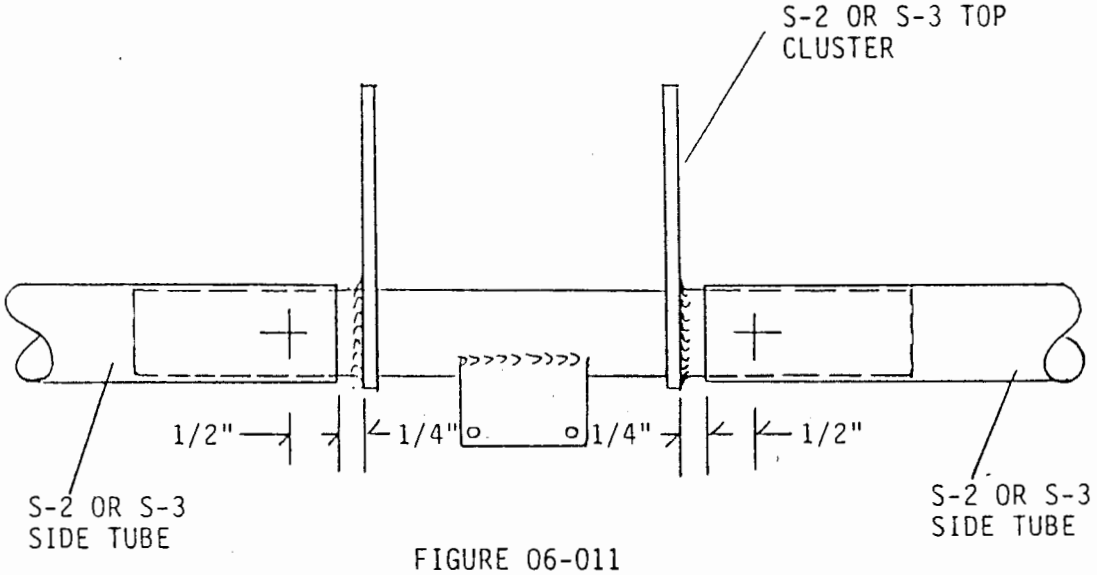


FIGURE 06-011

12. Measure at the S-3 cluster's top center, adjust by raising or lowering the side tubes until the top of the cluster (Not inclusive of the keel tangs) is 40 7/8" to the bottom of the S-3 bottom carry through. Check for vertical alignment by eyeballing the S-3 side tubes against the S-2 side tubes. Check the tops of both S-2 and S-3 formers for parallel alignment also. Adjust and clamp the lower ends. Locate and drill a #11 hole on the front and aft side of the S-3 side tubes. See Figure 06-012.

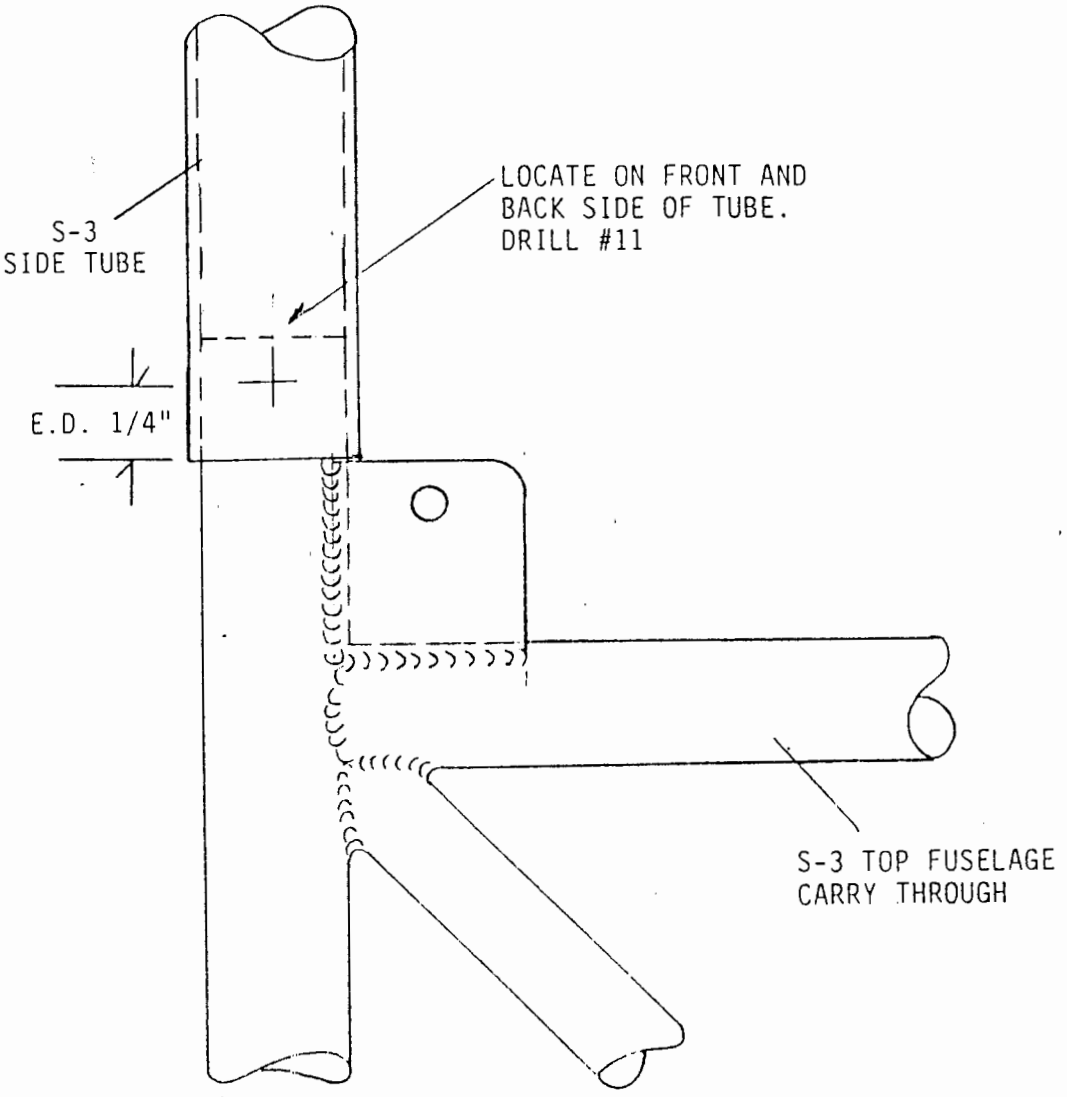
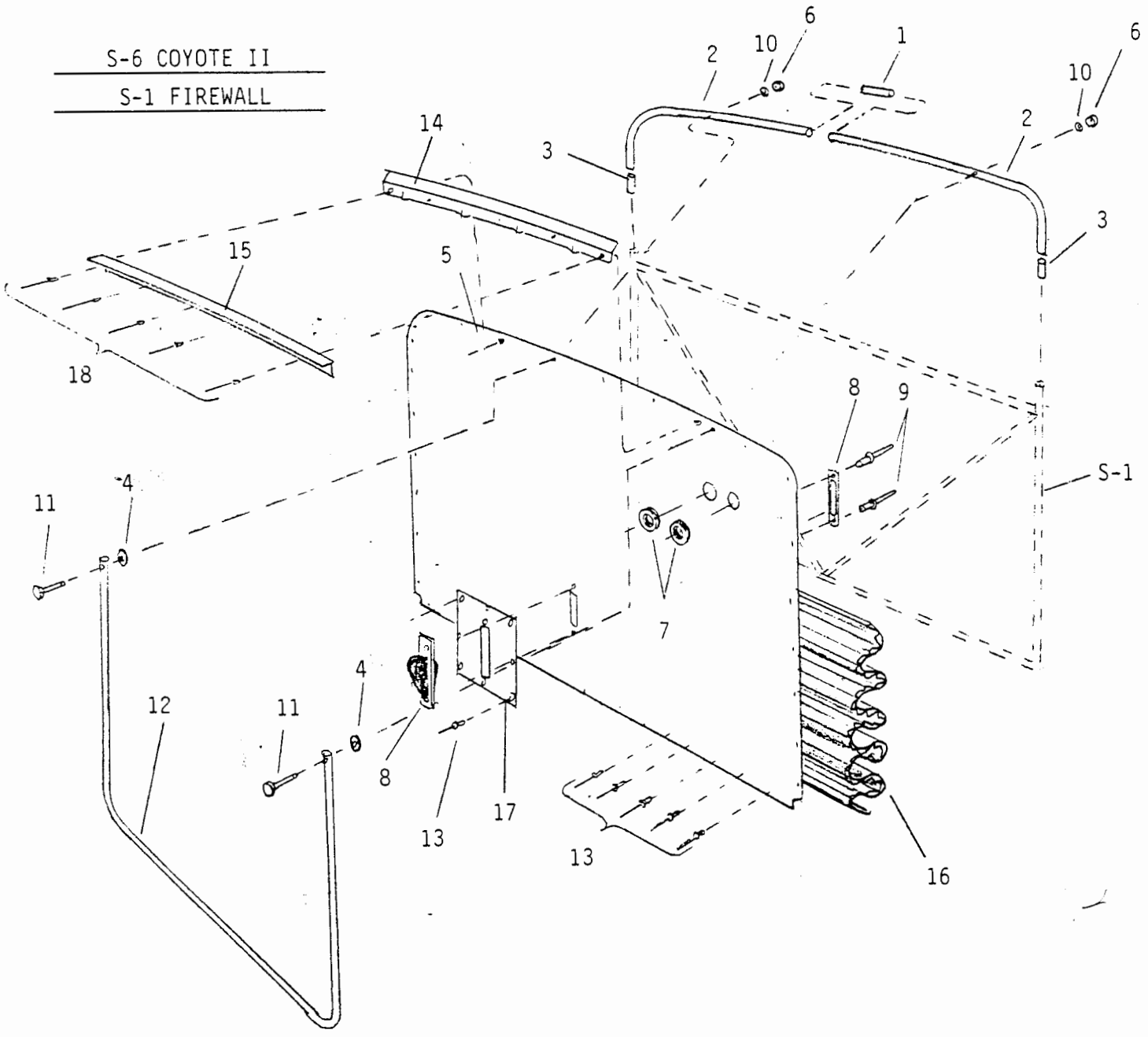


FIGURE 06-012

13. Bolt the (2) S-3 diagonal braces to the top cluster. Make sure the other ends are inserted between the tabs on each side. Using the tabs as guides drill through the brace tube and bolt. NOTE: It will be necessary to file to fit the brace tubes undrilled end.

S-6 COYOTE II

S-1 FIREWALL



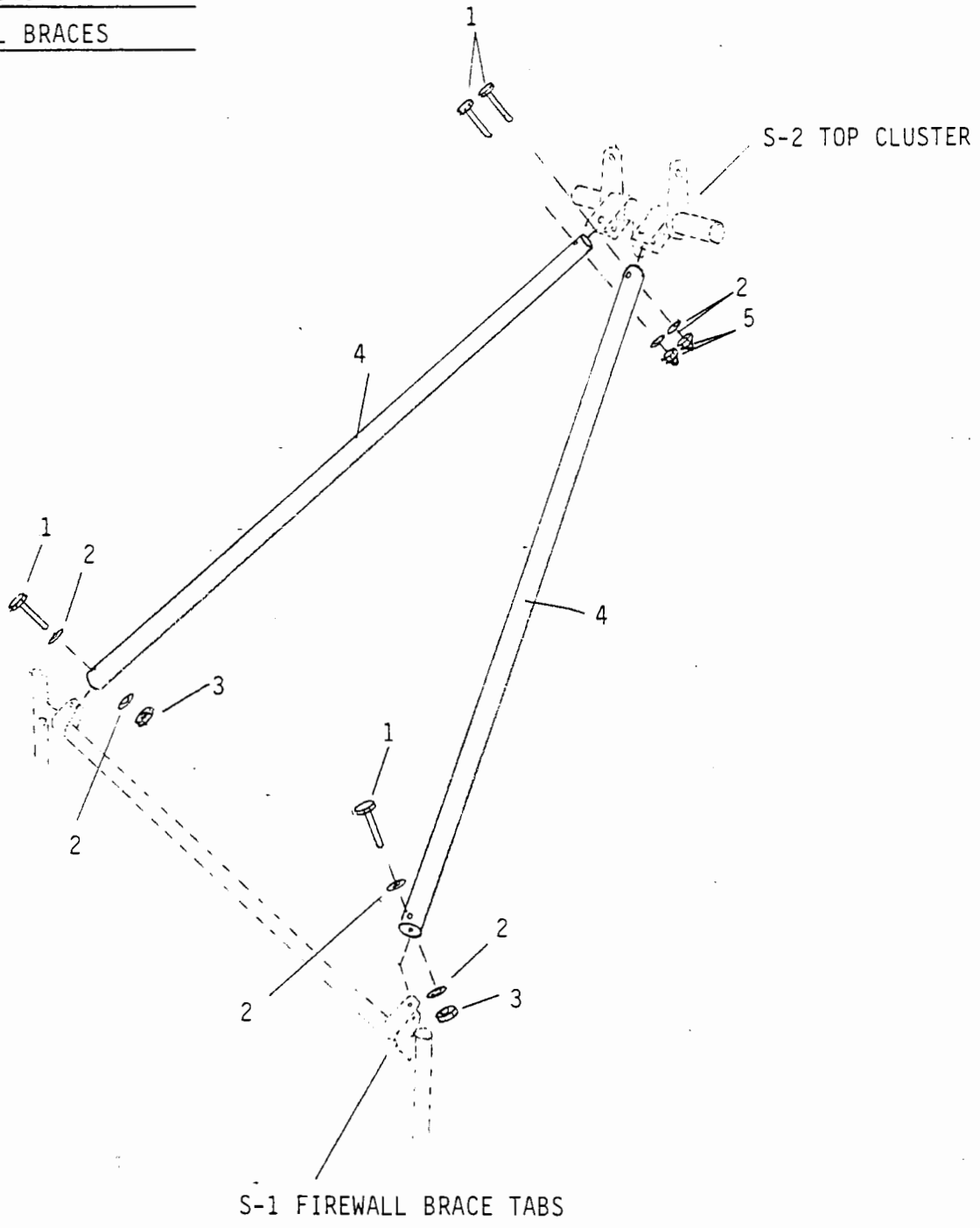
S-6 COYOTE II S-1 FIREWALL

#	PART NAME	PART NO	QUAN	PRICE
1.	Splice Tube 3/4" x .058 x 4"*	S1-SPT*	1	1.00
2.	S-1 Top Former	S1-TF	2	8.00
3.	Reducer 3/4" x .058 x 1"*	S1-R	2	1.00
4.	3/16" Thick Washers	AN960-10	4	.03
5.	Firewall	FW-FW	1	40.00
6.	3/16" Shear Nut	AN364-1032A	2	.15
7.	Rubber Grommet	MS35489-17	2	.80
8.	Firewall Pulley	106	1	12.00
9.	3/16" Aluminum Pop Rivet	12APR1/4	2	.10
10.	3/16" Thin Washer	AN960-10L	2	.03
11.	3/16" Bolt	AN3-16A	2	.40
12.	Lace Up Tube	S1-LUT	1	8.00
13.	1/8" Aluminum Pop Rivet	30APR1/8	40	.10
14.	Windshield Hold Down Strip	S1-WHDS	1	5.00
15.	Cowling Hold Down Strip	S1-CHDS	1	5.00
16.	Firewall Soundproofing	S1-FWSP	1	10.00
17.	Firewall Pulley Plate** 4" x 4" x .032	S1-FPP	1	1.00
18.	1/8" Aluminum Pop Rivet	30APR1/4	5	.10

*Fabricate From 3/4" x .058 Aluminum Tube Stock Or See Instruction This Section For Item 17.

**Fabricate From 4" x 4" x .032 Aluminum Stock Provided.

S-6 COYOTE II
FIREWALL BRACES



S-6 COYOTE II FIREWALL BRACES

#	PART NAME	PART NO	QUAN	PRICE
1.	3/16" Bolt	AN3-11A	4	.25
2.	3/16" Thin Washer	AN960-10L	6	.03
3.	3/16" Shear Nut	AN364-1032A	2	.15
4.	Firewall Brace	FW-FB	2	8.00
5.	3/16" Acorn Nut	22NKM02	2	.40

S-6 COYOTE II FIREWALL BRACE & FIREWALL ASSEMBLY

FIREWALL BRACE

1. Select the parts depicted in the parts drawing.

2. Bolt the drilled ends of each firewall brace to the S-2 top cluster.

3. Set the undrilled end into the tabs welded to the S-1. NOTE: The lower ends may need to be filed to fit. Check the distance between the S-2 top and the S-1 (welded tube) top crossing. It should be 90 degrees (See Figure 07-03). Drill #11 and bolt once properly aligned.

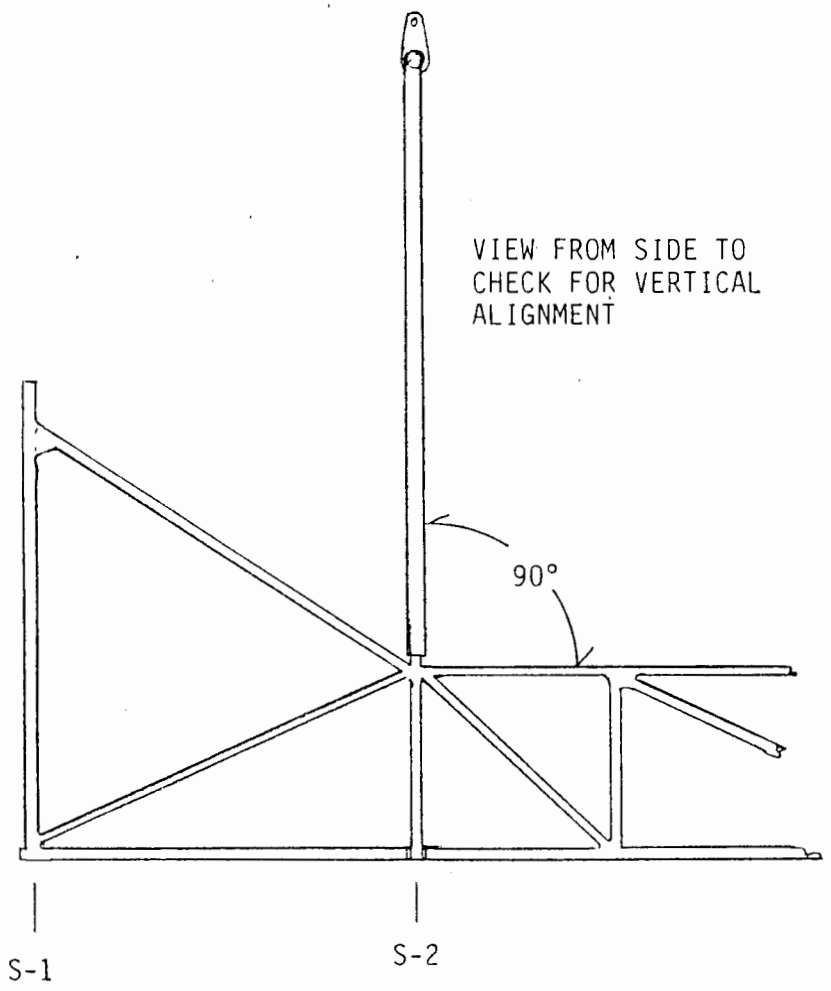


FIGURE 07-03

FIREWALL ASSEMBLY

1. Select the required parts for the firewall assembly shown on the parts page.

2. Fabricate (2) 3/4" x .058 x 1" reducers and (1) 3/4" x .058 x 4" splice tube. HINT: Oval the splice tube slightly (use a mallet) to assure it stays in position. The firewall rivets will hold the tube in place.

3. Slip the reducers over the stubs on top of the S-1. Insert the splice tube halfway into a S-1 top former, then assemble with the other former. Set the assembly onto the stubs and reducers. Measure from the very bottom S-1 crossing tube to the very top of the S-1 former. It should measure 26", adjust accordingly.

4. Clamp the firewall to the front of the S-1. Position so it is on the tubes with equal overhangs. Lay out, center punch, drill and cleco (DO NOT rivet) as per Figure 07-04. Do Not DRILL the top until step 9.

5. Locate and drill the holes as shown in Figure 07-04A. Make the slots by drilling 1/4" diameter holes in each corner then jig saw or tin snip between. HINT: An alternate method is to drill a series of 3/32" holes as close to each other in a row outlining the slot. Then force the drill sideways hole to hole. File to fit the starter pulley. Cleco the plate to the firewall with the pulley on the FRONT side with the rope feed end down. (See Figure 07-05).

6. Drill through the firewall with a 1/4" drill at the two top engine mount bushings. HINT: Use a wood block pressed against the front side of the firewall to gain support and prevent burring. Bolt the engine mount to the top two locations. Clamp the lower mount attach points firmly against the frame. Drill through the lower attach points with a 1/4" bit using the engine mount as a guide. Remove mount for future installation.

7. Uncleco the firewall, remove it to clean out shavings and debur holes. Position the firewall soundproofing with the dark fabric facing inside against the S-1. Re-cleco in place the firewall. Poke through with an ice pick and rivet the firewall in place. Rivet the pulley plastic face plate on the inside over the soundproofing. Trim off excess soundproofing and heat seal with a soldering iron. HINT: Use soldering iron or hot knife to melt open the holes for the grommets. PLEASE NOTE: Use the longer 1/8" aluminum pop rivets to attach the windshield and cowling hold down strips.

8. Bolt the S1-LUT to the #11 holes drilled through the top of the S-1.

9. Snap in place the rubber grommets in their respective holes working in the soundproofing.

10. Lay out the windshield and cowling hold down strips as per Figure 07-10. Set these against the firewall's top with the proper space (as in Figure 07-10) and rivet to complete the firewall installation. HINT: Temporarily set the windshield in place to set up proper thickness spacing off of S-1.

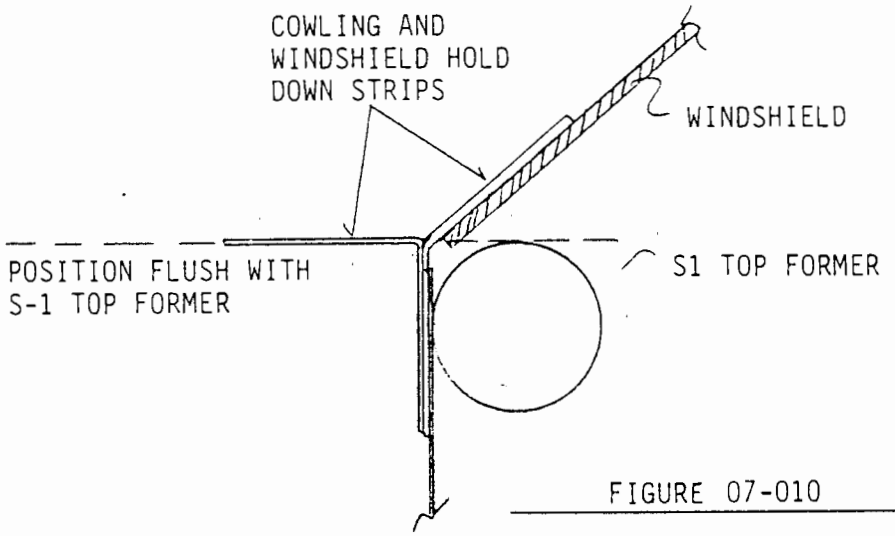
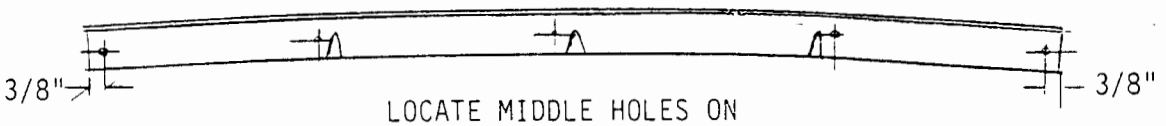
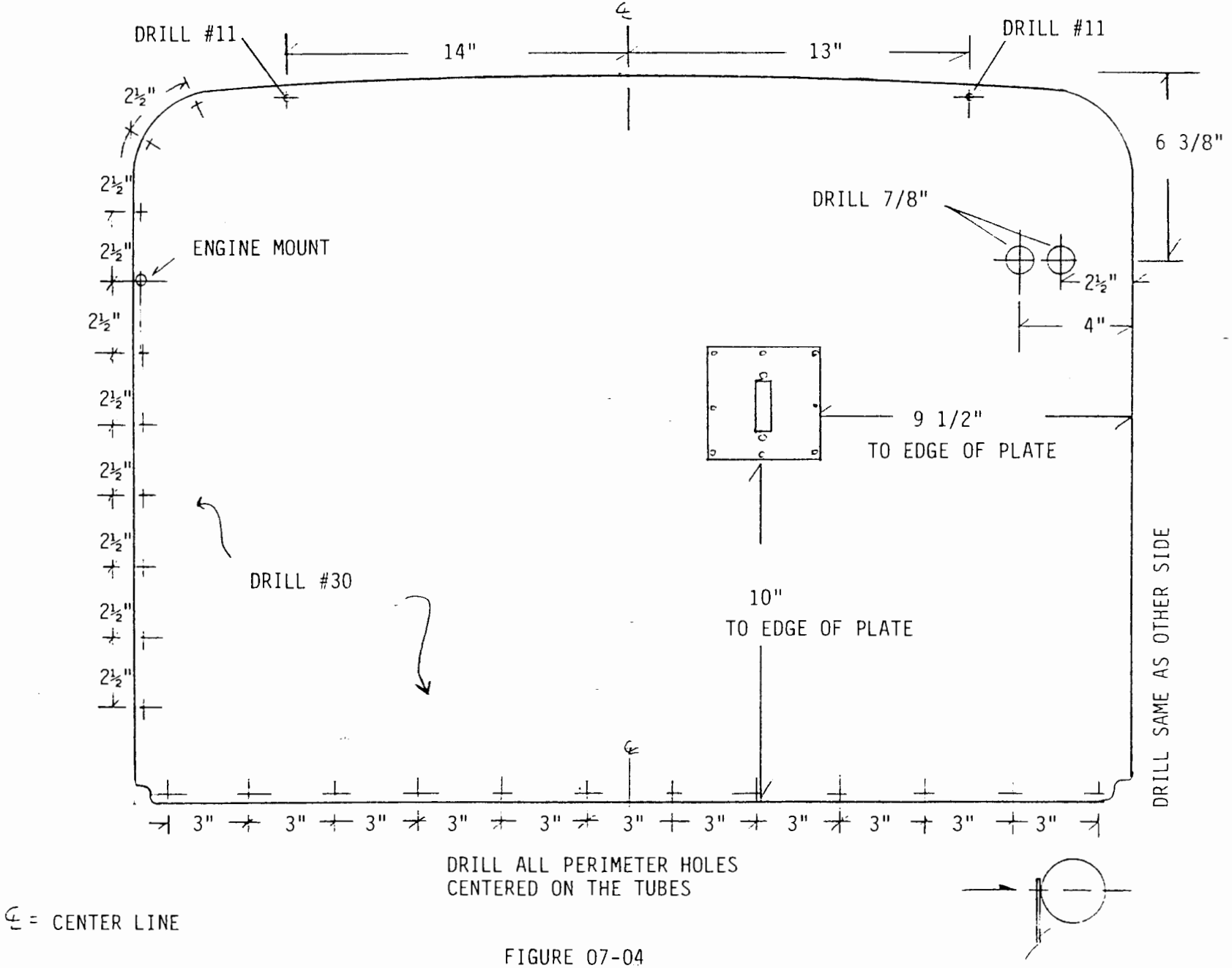


FIGURE 07-010

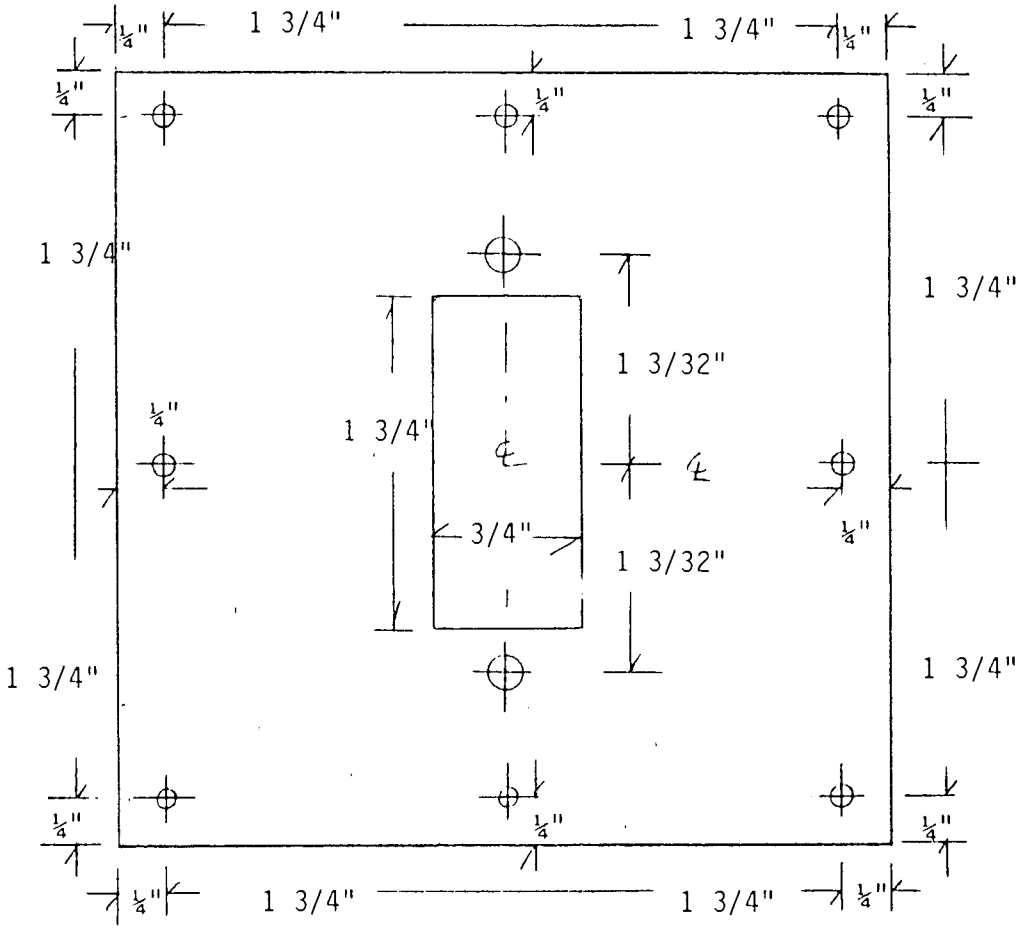


LOCATE MIDDLE HOLES ON
EITHER SIDE OF PLEATS. DRILL #30



℄ = CENTER LINE

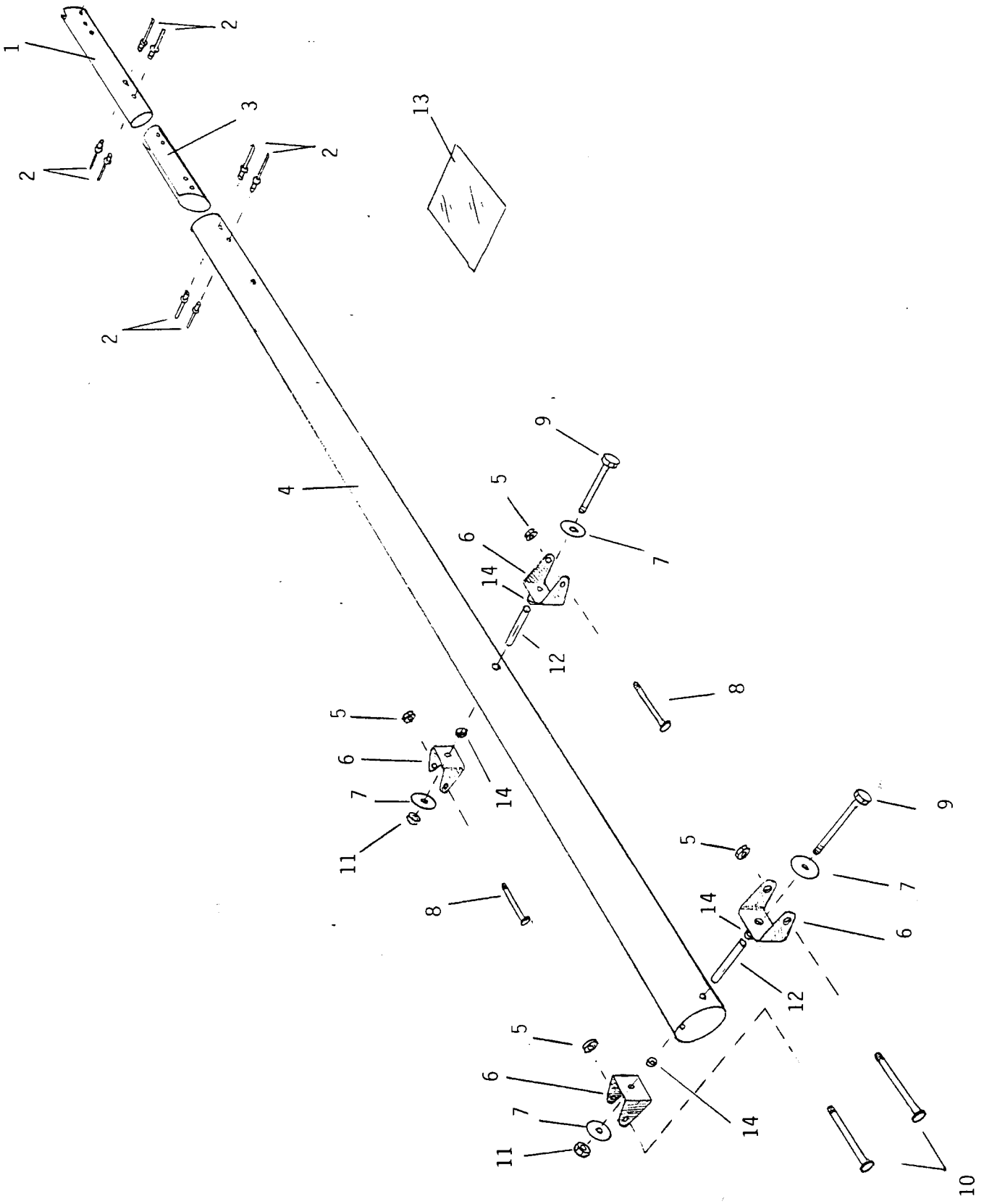
FIGURE 07-04



DRILL ALL PERIMETER HOLES 1/8"
DRILL PULLEY RIVET HOLES #11

FIGURE 07-04A

S-6 COYOTE II
KEEL TUBE



S-6 COYOTE II KEEL TUBE

#	PART NAME	PART NO	QUAN	PRICE
1.	Keel Extension	K-EXT	1	15.00
2.	3/16" SS Pop Rivet	12SSPR	8	.20
3.	Keel Tube Splice	K-KTS	1	10.00
4.	Keel Tube	K-K	1	85.00
5.	1/4" Shear Nut	AN364-428A	4	.20
6.	U-Bracket	SU-218	4	4.00
7.	1/4" Large Diameter Washer	AN970-4	4	.20
8.	1/4" Bolt	AN4-27A	2	.60
9.	1/4" Bolt	AN4-40A	2	1.45
10.	1/4" Bolt	AN4-34A	2	.80
11.	1/4" Tensile Nut	AN365-428A	2	.20
12.	Spacer Bushing, 3/8" x 3"	SB3/8X3	2	.50
13.	Thin Lexan, 6" x 6"	LEX6X6	1	1.00
14.	Spacer Bushing, 3/8" x 1/8"	SB-3/8X1/8	4	1.00

S-6 COYOTE II KEEL ASSEMBLY

1. Collect all the parts depicted in the parts catalog.

2. Set the keel between the tangs on the S-2 and the S-3 clusters. Set an 1/8" thick spacer, such as one of the aileron horns, between the keel and cluster. NOTE: On the S-2 cluster the 1/8" spacer must not rest on top of the sleeved brackets. The keel must also be lined up flush with the tang or establish the 1/4" hole at 1/2" from the keel end. See Figure 08-02. Clamp with small vise grips (tape the jaws to protect the finish). Drill through 1/4" from each side using the tangs as a guide. Slip the AN4-37A temporarily in place to hold the keel while drilling the S-3 cluster. (See next step).

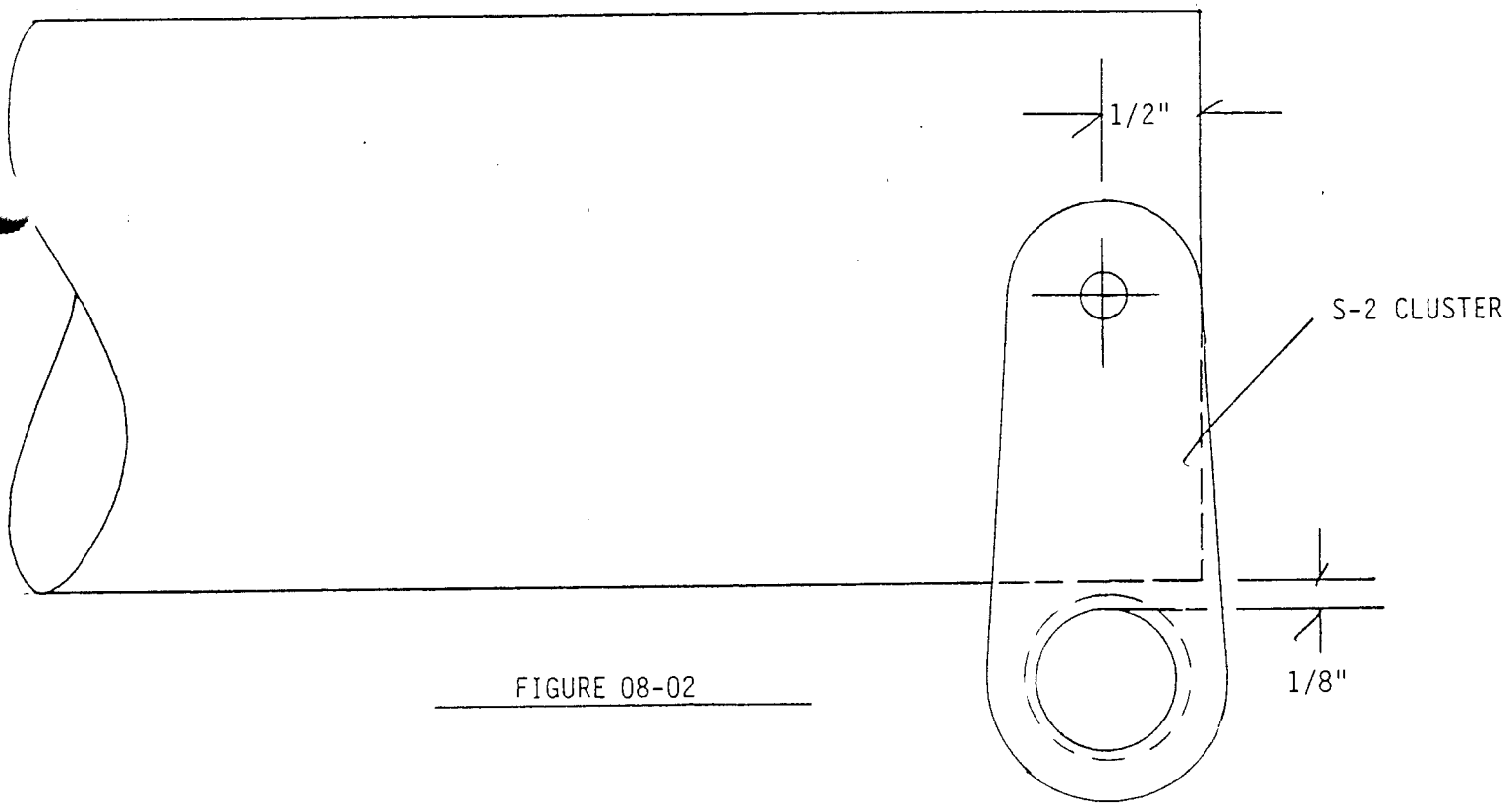


FIGURE 08-02

3. Again space off the keel 1/8" from the cluster as in step 2. Move the S-3 cluster fore or aft until there is exactly 43 1/2" between 1/4" hole centers and drill 1/4" from each side. See Figure 08-03.

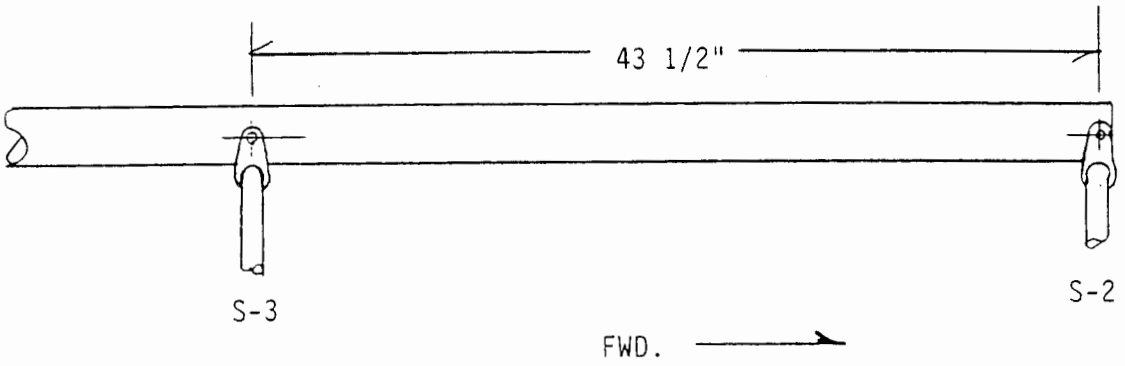


FIGURE 08-03

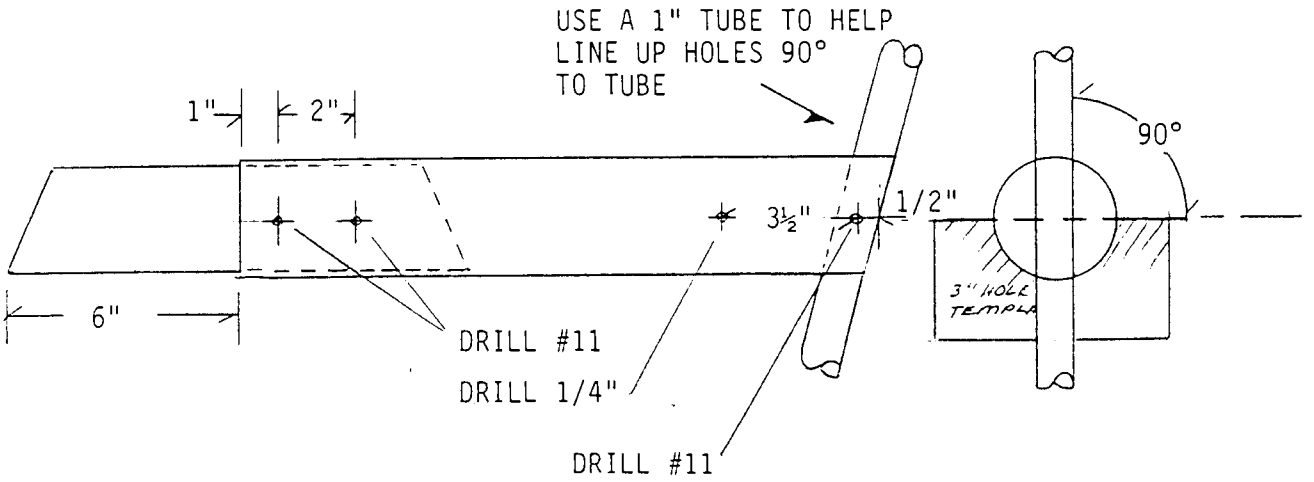
4. Remove the keel from the clusters and drill the 1/4" holes out to 3/8" diameter and debur. Locate (2) bushings, 3/8" x .058 x 3", from the 3/8" x .058 aluminum tube stock. Insert these into the 3/8" holes and bolt the keel and "U" brackets to the keel as depicted in the parts drawing. IMPORTANT: Make sure the 1/4" nuts are TENSILE and that large diameter 1/4" washers are used under the bolt heads and nuts. NOTE: U Brackets must be drilled out to 3/8" on the hole that goes against the cluster. Install the 3/8" x 1/8" spacer bushing to this hole, then assemble to keel.

5. Mark the halfway point on the keel tube splice. Lubricate the splice keel extension and keel with WD-40 or a similar spray lubricant. Insert the splice with the split to the top into the keel extension tube. HINT: Use a large hose clamp to squeeze the splice together to fit into the 3" tube. Locate, drill and rivet with 3/16" stainless steel rivets as shown in Figure 08-05 and 08-05A. Make sure and use the template in 08-05 to locate holes in the 3" tube exactly across or vertically from each other. Save this template as it will be used on other locations on the keel.

6. Insert the splice and keel extension assembly into the keel. Insert the vertical stabilizer spar tube into the keel extension to align vertically with the aircraft. Sight from the front of the aircraft to see if this 1" tube is in line with the nose column and center post. Once you are satisfied with the alignment locate (4) rivets exactly as done on the keel extension.

7. Measure 17" from the 1/4" hole (3 1/2" from the #11 aft most hole) and locate (use template) and drill from each side another 1/4" hole. These will be used to mount the horizontal stabilizer so take care to locate accurately.

8. Turn to tailcone for continued assembly of keel and tailcone.


USE A 1" TUBE TO HELP
LINE UP HOLES 90°
TO TUBE
1"
2"
3½"
1/2"
90°
6"
DRILL #11
DRILL 1/4"
DRILL #11
3" HOLE
TEMPLA

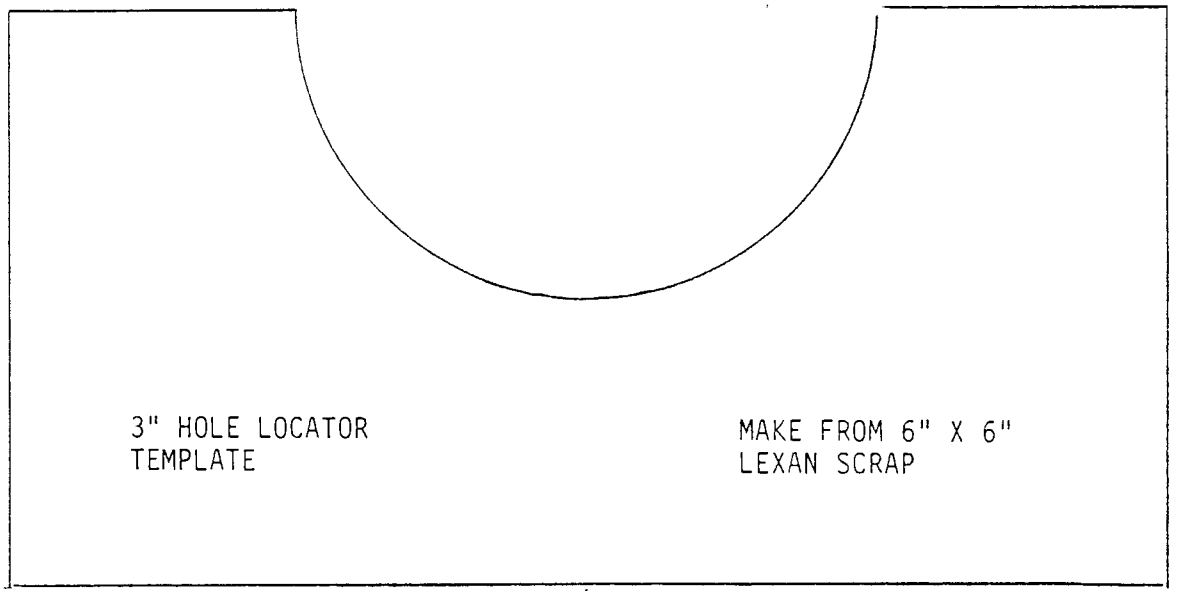
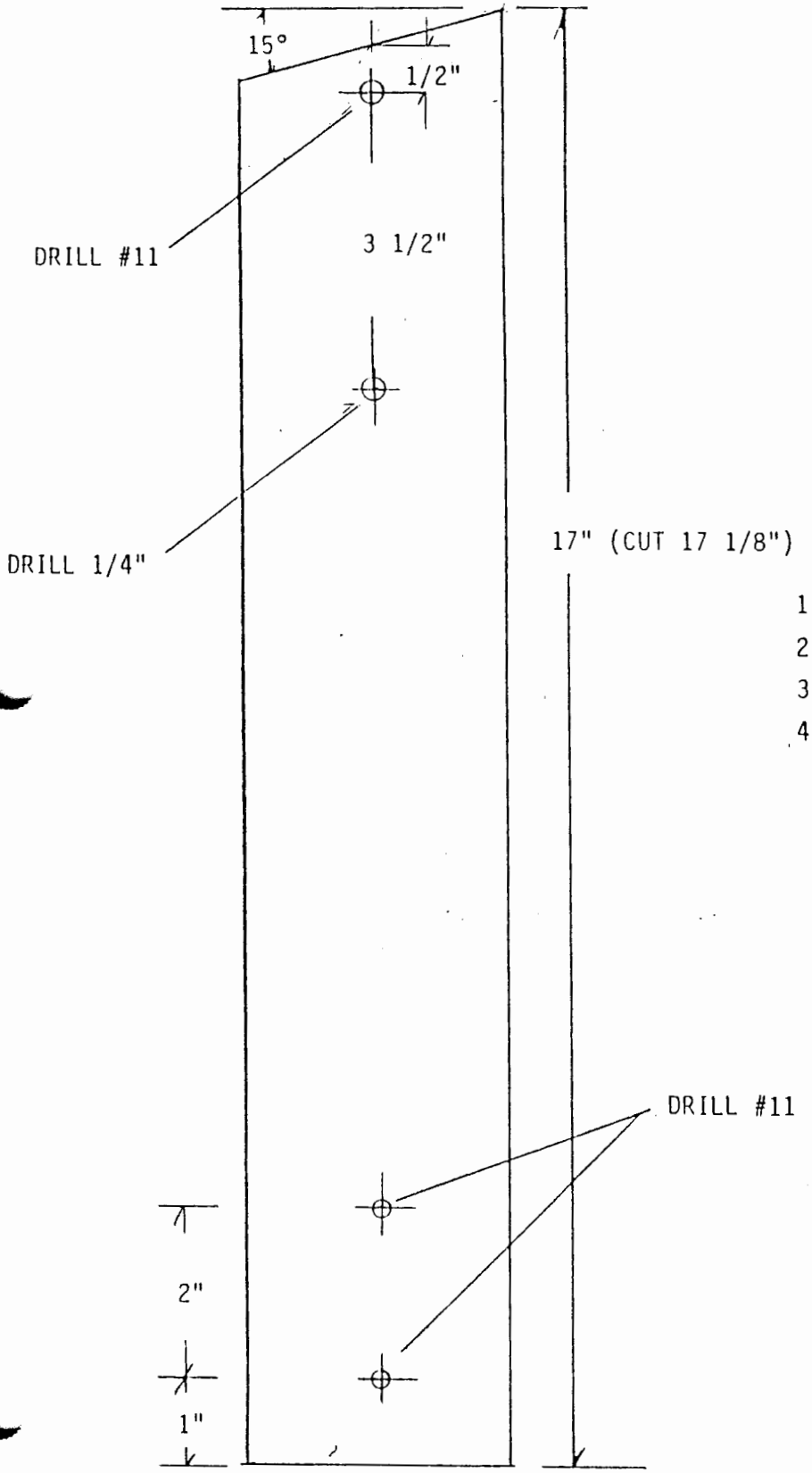

3" HOLE LOCATOR
TEMPLATE
MAKE FROM 6" X 6"
LEXAN SCRAP

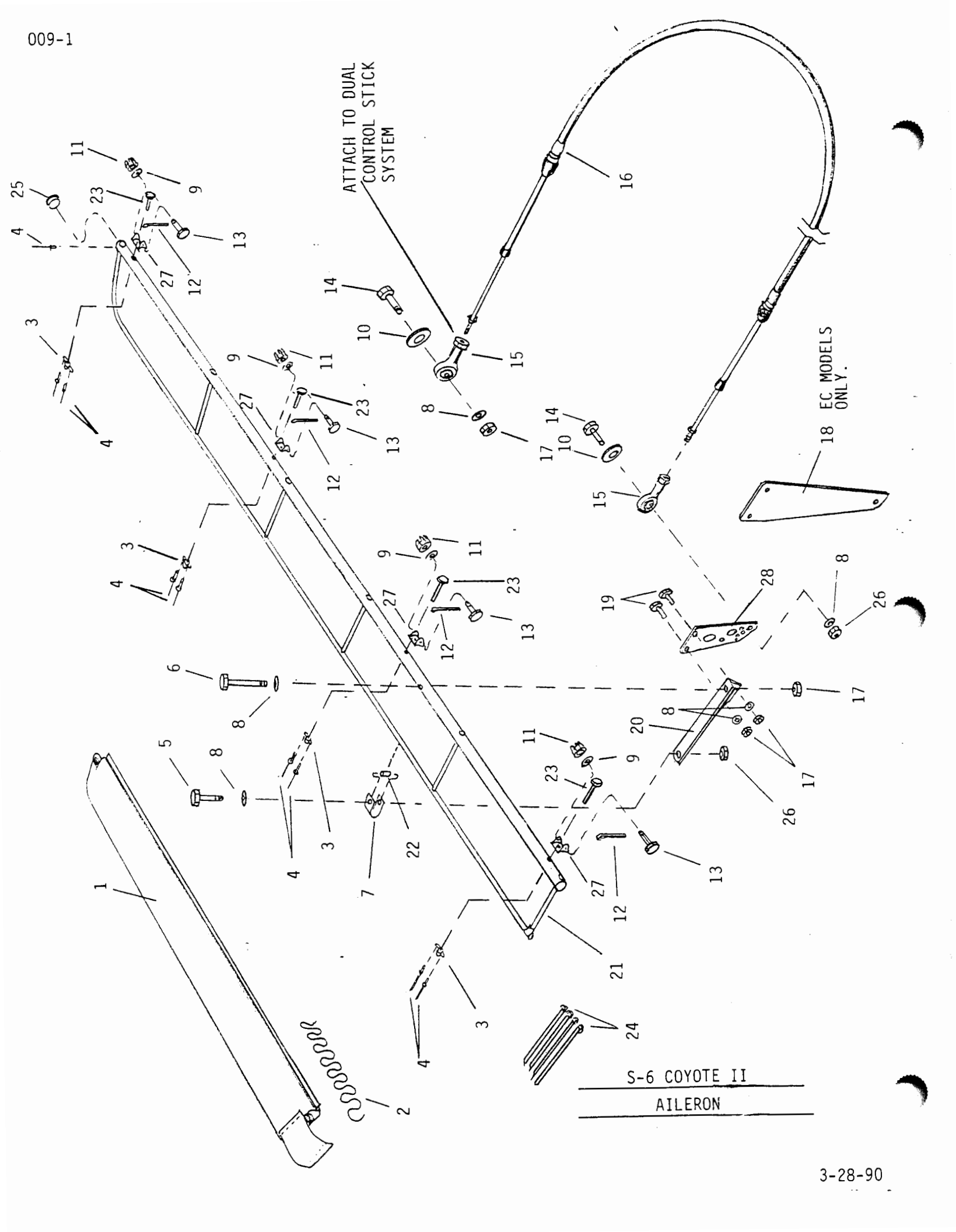
FIGURE 08-05



1. CUT TO LENGTH, 17 1/8"
2. CUT ONE 15° FINISH LENGTH, 17"
3. DRILL #11 1/4" HOLES
4. DRILL 1" HOLES 1/2" IN ON SLANTED END CUT OUT AS SLOT.

1/AC

FIGURE 08-05A



S-6 COYOTE II

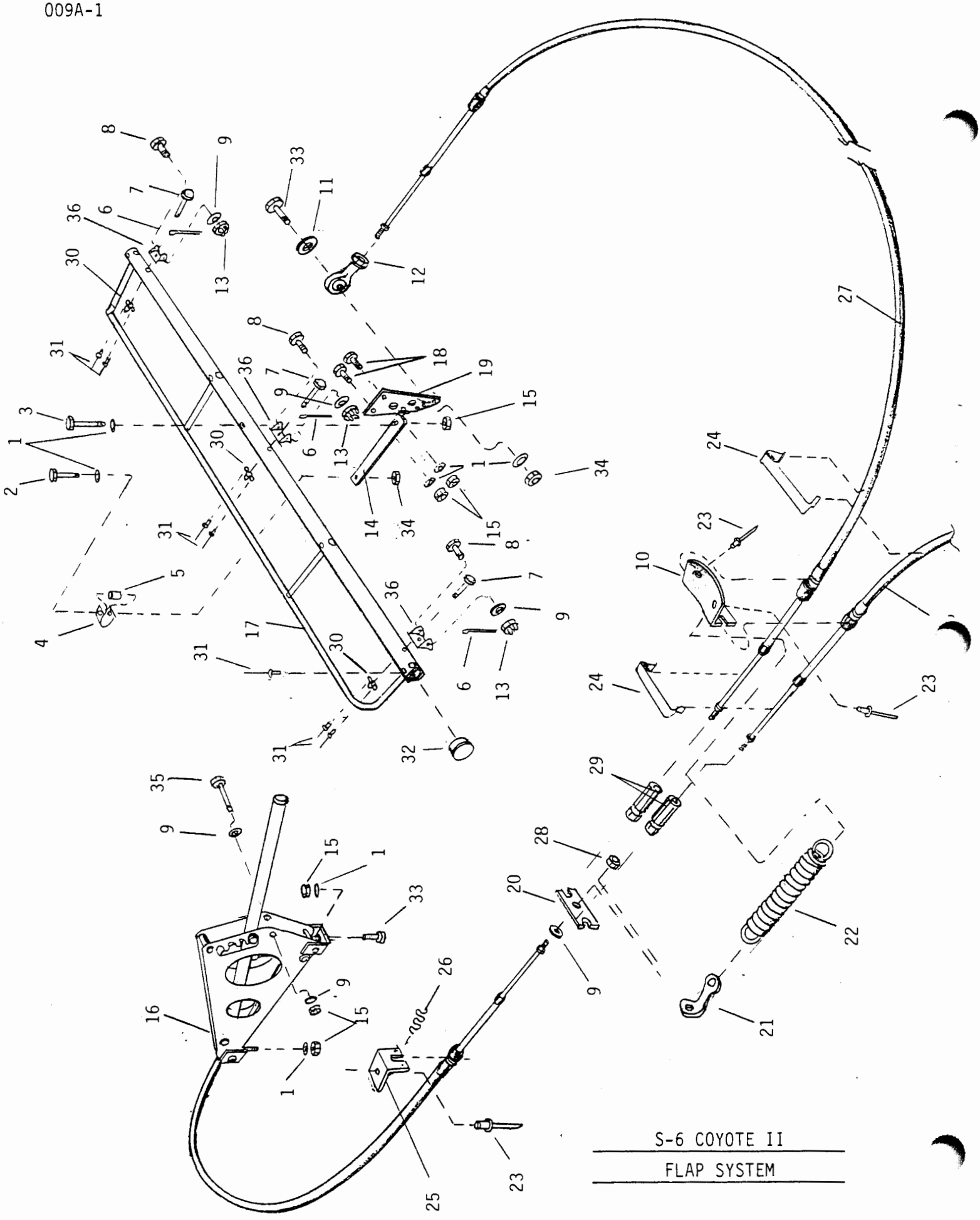
AILERON

S-6 COYOTE II AILERON

#	PART NAME	PART NO	QUAN	PRICE
1.	Aileron Cover	See Wing Covering	2	45.00
2.	Aileron Lace Up Rope, 48"	W-AR	2	.50
3.	3/16" Nut Plate	K-1000-3	8	.40
4.	3/32" Aluminum Pop Rivet	40APR1/8	18	.10
5.	3/16" Bolt	AN3-10A	2	.25
6.	3/16" Bolt	AN3-14A	2	.30
7.	Aileron Clip	W-A-CLIP	2	1.00
8.	3/16" Thin Washer	AN960-10L	12	.03
9.	3/16" Thick Washer	AN960-10	10	.03
10.	3/16" Plastic Washer	PW-3	4	.20
11.	3/16" Castle Nut	AN310-3	8	.30
12.	Small Cotter Pin	MS24665-134	8	.10
13.	3/16" Bolt	AN3-15	8	.45
14.	3/16" Bolt	AN3-7A	4	.20
15.	Female Rod End	NF-3	4	5.50
16.	Aileron Teleflex, 14 Ft.	W-A-TELFX-14'	2	39.00
17.	3/16" Shear Nut	AN364-1032A	12	.15
18.	Aileron Horn (For EC Models)	EC-AH	2	5.00
19.	3/16" Bolt	AN3-4A	4	.20
20.	Aileron Horn Attach Angle	S6-W-AHAA-L/R	1 each	6.00
21.	Aileron Frame	S6-W-AF	2	120.00
22.	Spacer Bushing*, 1/4" x 1/2"	SB-1/4x1/2	2	.50
23.	3/16" Bolt	AN3-13A	8	.30
24.	Zip Ties	N-TIES	4	.30
25.	1" End Cap	1"CAP	2	.60
26.	3/16" Acorn Nut, Shear	22NKMO2	4	.40
27.	Stainless Steel Hinge	W-HB	8	1.60
28.	Aileron Horn	UNI-HORN	2	4.00

*Fabricate From 1/4" Aluminum Tube Provided.

NOTE: I.D. Will Need To Be Drilled Out To 3/16". Do So BEFORE Cutting To Length.

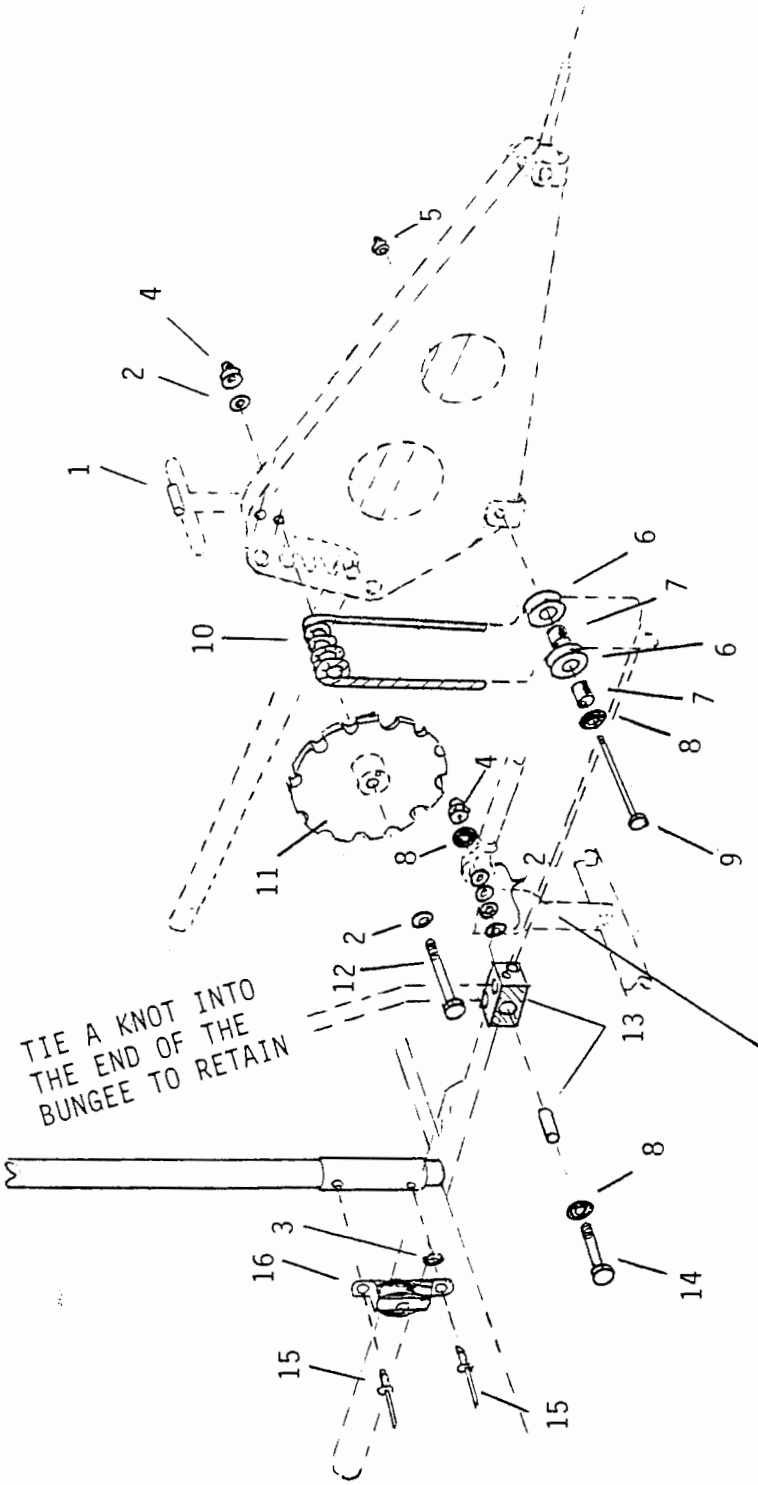


S-6 COYOTE II

FLAP SYSTEM

S-6 COYOTE II FLAP SYSTEM

#	PART NAME	PART NO	QUAN		PRICE
1.	3/16" Thin Washer	AN960-10L	14		.03
2.	3/16" Bolt	AN3-10A	2		.25
3.	3/16" Bolt	AN3-14A	2		.30
4.	Aileron Clip	W-A-CLIP	2		1.00
5.	Spacer Bushing*, 1/4" x 1/2"	SB-1/4x1/2	2		.50
6.	Small Cotter Pin	MS24665-134	6		.10
7.	3/16" Bolt	AN3-13A	6		.30
8.	3/16" Bolt	AN3-15	6		.45
9.	3/16" Thick Washer	AN960-10	17		.03
10.	Flap Dual Teleflex Retainer Forward	FL-DTR-FWD	1		5.00
11.	3/16" Plastic Washer	PW-3	4		.20
12.	Female Rod End	NF-3	4		5.50
13.	3/16" Castle Nut	AN310-3	6		.30
14.	Flap Horn Attach Angle	S6-W-AHAA-L/R	1	Each	6.00
15.	3/16" Shear Nut	AN364-1032A	9		.15
16.	Flap Lever Assembly (8 Ft. Telefelx)	FL-FLAP-M	1		125.00
17.	Flap Frame	S6-W-FF	2		100.00
18.	3/16" Bolt	AN3-4A	4		.20
19.	Flap Horn	UNI-HORN	2		4.00
20.	Flap Dual Teleflex Retainer Aft	FL-DTR-AFT	1		5.00
21.	Hummertang Bent 90	T12-HT6-BEND	1		1.00
22.	Flap Return Spring	FL-FLAP-SPR	1		5.00
23.	3/16" SS Pop Rivet	12SSPR	17		.20
24.	Flap Teleflex Clip	FL-CLIP	2		2.00
25.	Telefelex Retainer	W-TEL-R	1		2.50
26.	Safety Wire	------	-		---
27.	Flap Teleflex, 8 Ft.	W-F-TELFX-8'	2		25.00
28.	3/16" Tensile Nut	AN365-1032A	1		.15
29.	Retainer Nut	FL-NUT	2		3.00
30.	3/16" Nut Plate	K-1000-3	6		.40
31.	3/32" Aluminum Pop Rivet	40APR1/8	14		.10
32.	1" End Cap	1"CAP	2		.60
33.	3/16" Bolt	AN3-7A	3		.20
34.	3/16" Shear Acorn Nut	22NKMO2	4		.40
35.	3/16" Bolt	AN3-14A	1		.30
36.	Stainless Steel Hinge	W-HB	6		1.60


TIE A KNOT INTO
THE END OF THE
BUNGEE TO RETAIN
ELEVATOR HORN ON CONTROL STICK
TORQUE TUBE. PLEASE INSTALL (4)
THICK 1/4" WASHERS ON RH SIDE OF
HORN BETWEEN ROD END ON PUSH PULL
TUBE.

S-6 COYOTE II PITCH TRIM SYSTEM

#	PART NAME	PART NO	QTY	PRICE
1.	Spacer Bushing 3/8" x 7/8"	PT-SB3/8X7/8	1	1.00
2.	1/4" Thick Washer	AN960-416	6	.03
3.	3/16" Thick Washer	AN960-10	1	.03
4.	1/4" Acorn Nut, Shear	52NKTE-048	2	.40
5.	3/16" Acorn Nut	22NKM02	1	.40
6.	Plastic Pulley	PT-TRPUL	2	1.00
7.	Pulley Bushing	PT-PULBUSH	2	1.00
8.	1/4" Plastic Washer	PW-4	3	.20
9.	3/16" Bolt	COMES ON FLAP LEVER		
10.	Bungee, 3/16" X 48"	PT-BUNGEE	1	1.00
11.	Trim Wheel	PT-WHEEL	1	20.00
12.	1/4" Bolt	AN4-23A	1	.60
13.	Trim Block	PT-TBLOC	1	6.00
14.	1/4" Bolt	AN4-22A	1	.50
15.	3/16" Aluminum Pop Rivet	12APR1/2	2	.10
16.	Pulley	109	1	12.00

S-6 COYOTE II AILERON AND FLAP ASSEMBLY

1. Select the components shown on the parts pages for the Ailerons and Flaps then turn to covering for the skins.

2. Bolt the flap lever unit in between the seat to the mount provided. PLEASE NOTE: The forward bolt inserts from below for elevator push tube clearance.

3. Locate the single and double slot teleflex retainers in the locations shown in Figure 09-03.

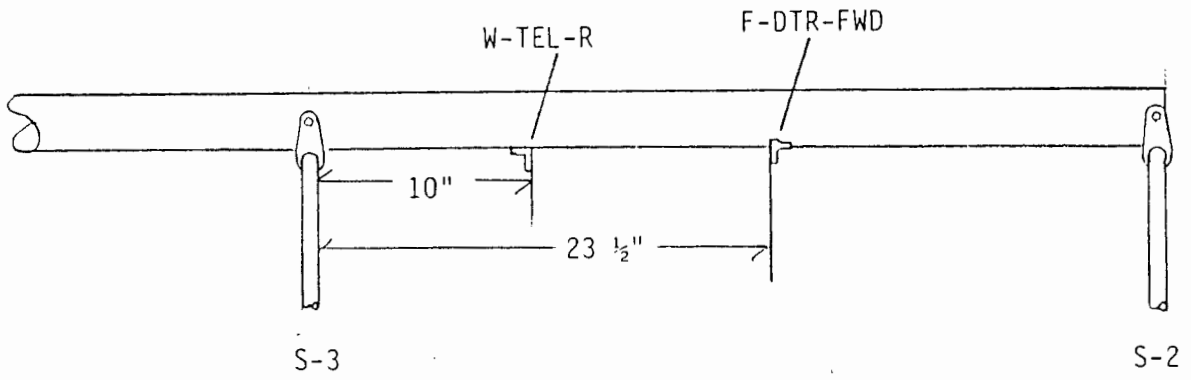


FIGURE 09-03

4. Route the teleflex from the flap lever so it loops up between the S-3 diagonal braces and into the retainer. Safety wire it in place with a figure 8 loop of wire. Bolt the dual teleflex retainer aft to the teleflex. Include the bent 90 degree hummertang (bolt to teleflex with long end out).

5. Drill out the small hole in the double teleflex retainer to #30. Hook the flap retainer spring between the double teleflex retainer and the teleflex.

6. Rivet the 3/16" nut plates to all hinge holes in the flaps and ailerons (4 in each aileron, 3 in each flap).

7. Slip the pre-sewn skins over their respective frames. The skins will fit tight but they will go on. Some helpful methods;

8. Brace the opposite end against a wall to push against as you pull on the skin. (A). After about half way on pull skin down from the top. This will scrunch it up but now you will have less tension to pull against. (B). In extreme cases where the skin is too tight (it will be evident by the bowing in of the trailing edge between ribs) file off the ribs at the buttons a little. CAREFUL it is real easy to remove too much.

S-6 COYOTE II AILERON AND FLAP ASSEMBLY

1. Select the components shown on the parts pages for the Ailerons and Flaps.

2. Bolt the flap lever unit in between the seat to the mount provided. PLEASE NOTE: The forward bolt inserts from below for elevator push tube clearance.

3. Locate the single and double slot teleflex retainers in the locations shown in Figure 09-03.

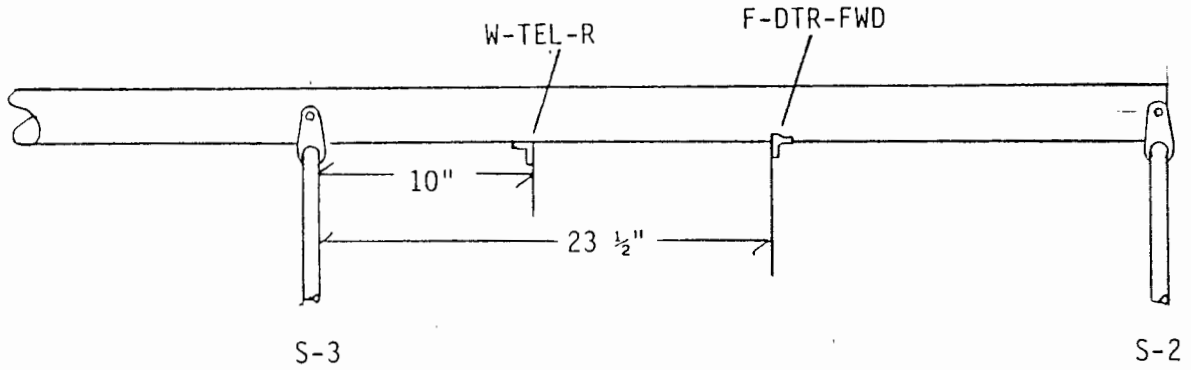


FIGURE 09-03

4. Route the teleflex from the flap lever so it loops up between the S-3 diagonal braces and into the retainer. Safety wire it in place with a figure 8 loop of wire. Bolt the dual teleflex retainer aft to the teleflex. Include the bent 90 degree hummertang (bolt to teleflex with long end out).

5. Drill out the small hole in the double teleflex retainer to #30. Hook the flap retainer spring between the double teleflex retainer and the teleflex.

6. Rivet the 3/16" nut plates to all hinge holes in the flaps and ailerons (4 in each aileron, 3 in each flap).

7. Slip the pre-sewn skins over their respective frames. The skins will fit tight but they will go on. Some helpful methods;

8. Brace the opposite end against a wall to push against as you pull on the skin. (A). After about half way on pull skin down from the top. This will scrunch it up but now you will have less tension to pull against. (B). In extreme cases where the skin is too tight (it will be evident by the bowing in of the trailing edge between ribs) file off the ribs at the buttons a little. CAREFUL it is real easy to remove too much.

9. Once the fabric is pulled on, lace the ends with 4 ft. cords cut from the rope provided. Use a hot knife to cut the cords to avoid frayed ends. Pull the cord tight after lacing through all the grommets. The proper amount of tension is reached when the skin appears smooth and taut. BE CAREFUL it is possible to rip out a grommet. This usually is from applying too much tension to one grommet. Work the tension in evenly. Close with the cover flap to complete skinning. See Figure 09-09 for lacing details.

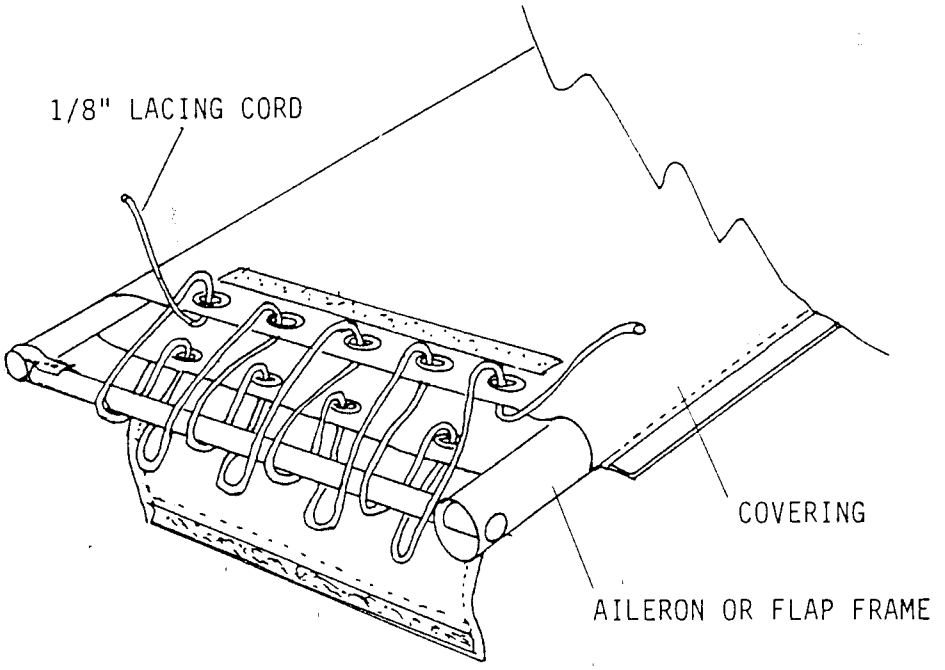


FIGURE 09-09

10. Melt through the hinge points and horn attach angle bolt holes. At each hinge point cut out as shown in Figure 09-010. BE CAREFUL not to cut into the stitching.

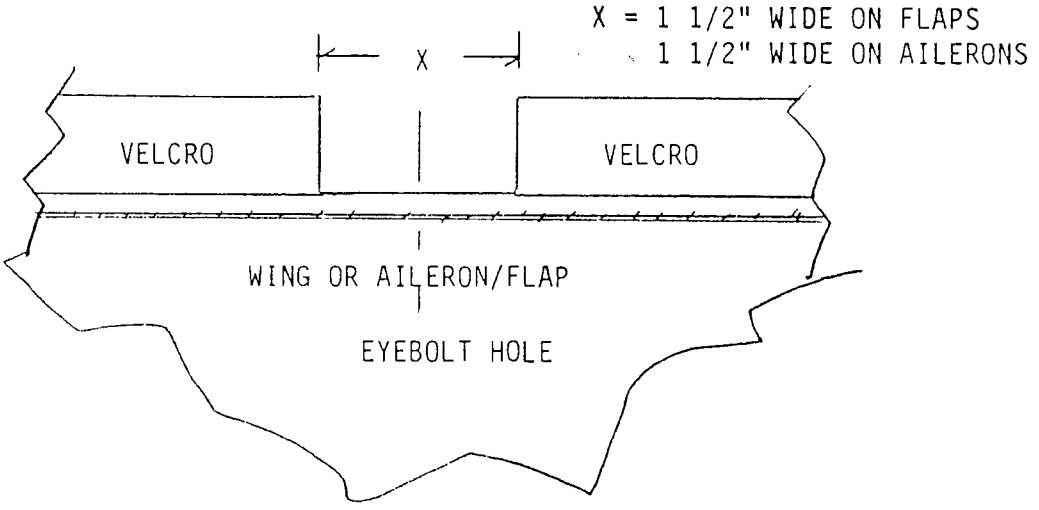


FIGURE 09-010

ATTACHING FLAPS AND AILERONS TO THE WINGS

PLEASE NOTE: Do this section after wings are attached, rigged and covered.

11. Install the hinges to the ailerons, flaps and trailing edge of spars. The velcro gap seal should be cut out for the hinges the same as the ailerons and flaps.

12. Bolt the surfaces to the wing shimming as required with washers. The hinges should work freely without excessive play. Safety with cotter pins. Snip off the pins and roll them back over the nuts.

13. On the stock S-6 uni-horns are used for both the flap and aileron horns. On the EC version a longer horn is required to gain the proper leverage over the larger aileron and flap. Refer to Figure 09-013 for location of teleflex rod ends. The uni-horn can be cut down on the flaps for a small weight savings. Refer to Figure 09-013 for cut off pattern for the flap horn.

14. Attach the teleflexes to each horn via the rod end connectors. Use small fuel line scraps split lengthwise and plastic tied in place for anti-chafe wherever the teleflex cable contacts a sharp edge.

RIGGING

15. Adjust the flaps and ailerons to be flat across the bottom of the wing or the bottom surface of each control is level with the keel tube with an up load applied. A slight amount of droop may be required to achieve this setting. Most likely the rod ends will be screwed in all the way. It may be necessary to cut off the aileron teleflex at the ailerons as much as a 1/4". Check the ailerons for full movement. This means the teleflexes should be making full travel stop to stop. If not try adjusting the rod ends. If that doesn't work consider moving the teleflex retainer angle out on the wing. Do so by drilling #11 holes on either side of the TG-EH bracket. The ailerons should have approximately two times the up travel to down. Flying the aircraft will further reveal rigging problems. There may be a tendency to pull to the right. This is usually remedied by adjusting the engine offset. However, the flaps may cause this also by being lower or higher. Check this while flight testing.

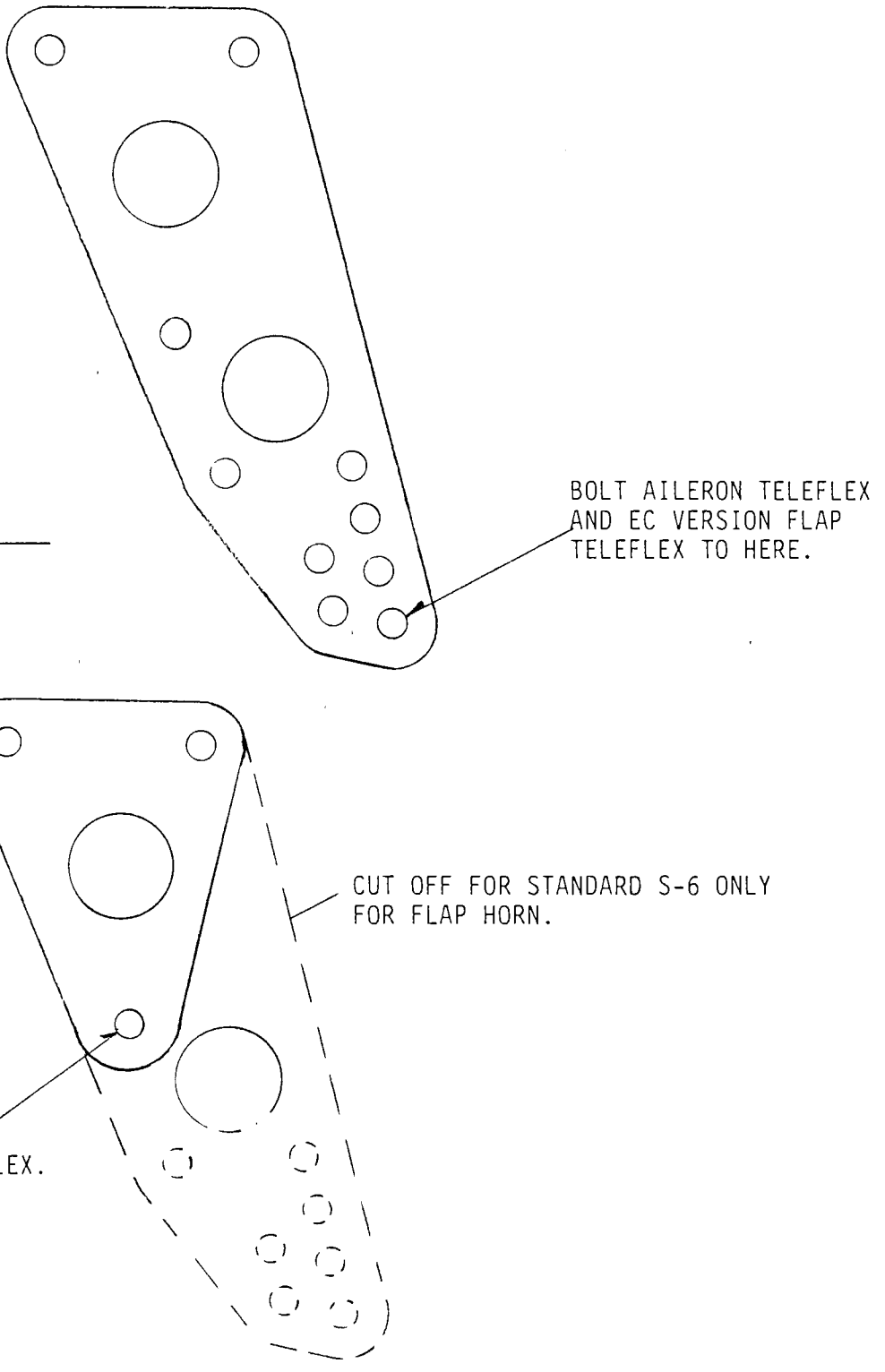


FIGURE 09-013

S-6 COYOTE II PITCH TRIM SYSTEM

1. Locate and drill a 1/4" diameter hole through the flap lever side plates 1/2" below the existing #11 hole. See Figure 09B-01.

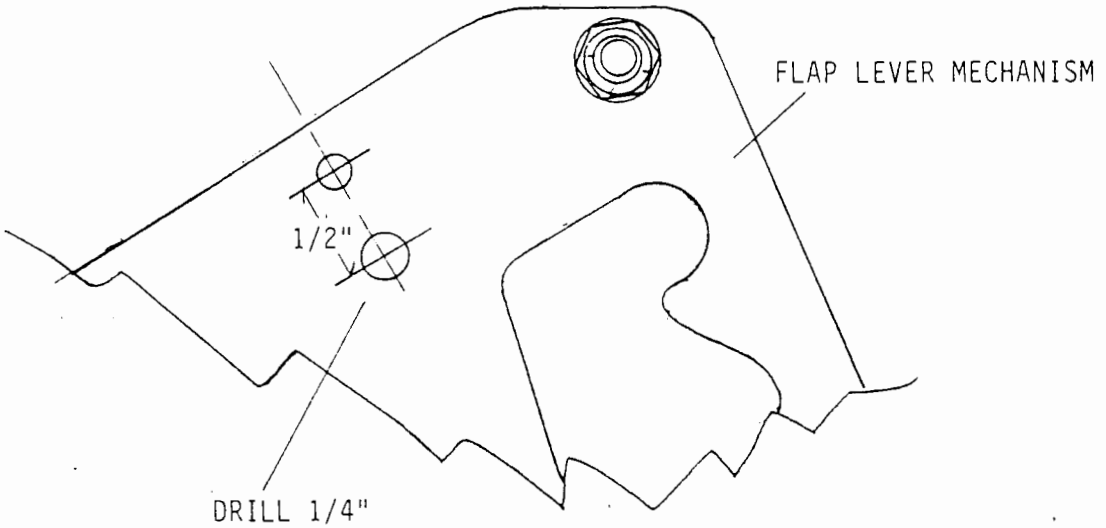


FIGURE 09B-01

HINT: Use the trim wheel's center hole as an alignment jig to accurately locate the 1/4" hole across the side plates.

2. Bolt the trim wheel to the left side of the flap lever through newly drilled 1/4" hole. Install the 7/8" x 3/8" x .058 aluminum spacer bushing between the flap lever side plates. The amount of torque on this bolt will vary according to what it takes to hold the bungee and what is comfortable to you. Adjust accordingly.

3. Bolt the trim block to the left side of the elevator horn on the control stick. Refer to Figure 09B-03. Look very closely at this figure to correctly position the trim block.

4. Bolt the two small plastic pulleys to the flap lever as shown in the parts drawing. Carefully tighten the bolt so the pulleys are not bound.

5. Drill a #11 hole on the left side of the center post 4" up from the bottom crossing tube. Locate the center post pulley as shown in Figure 09B-05.

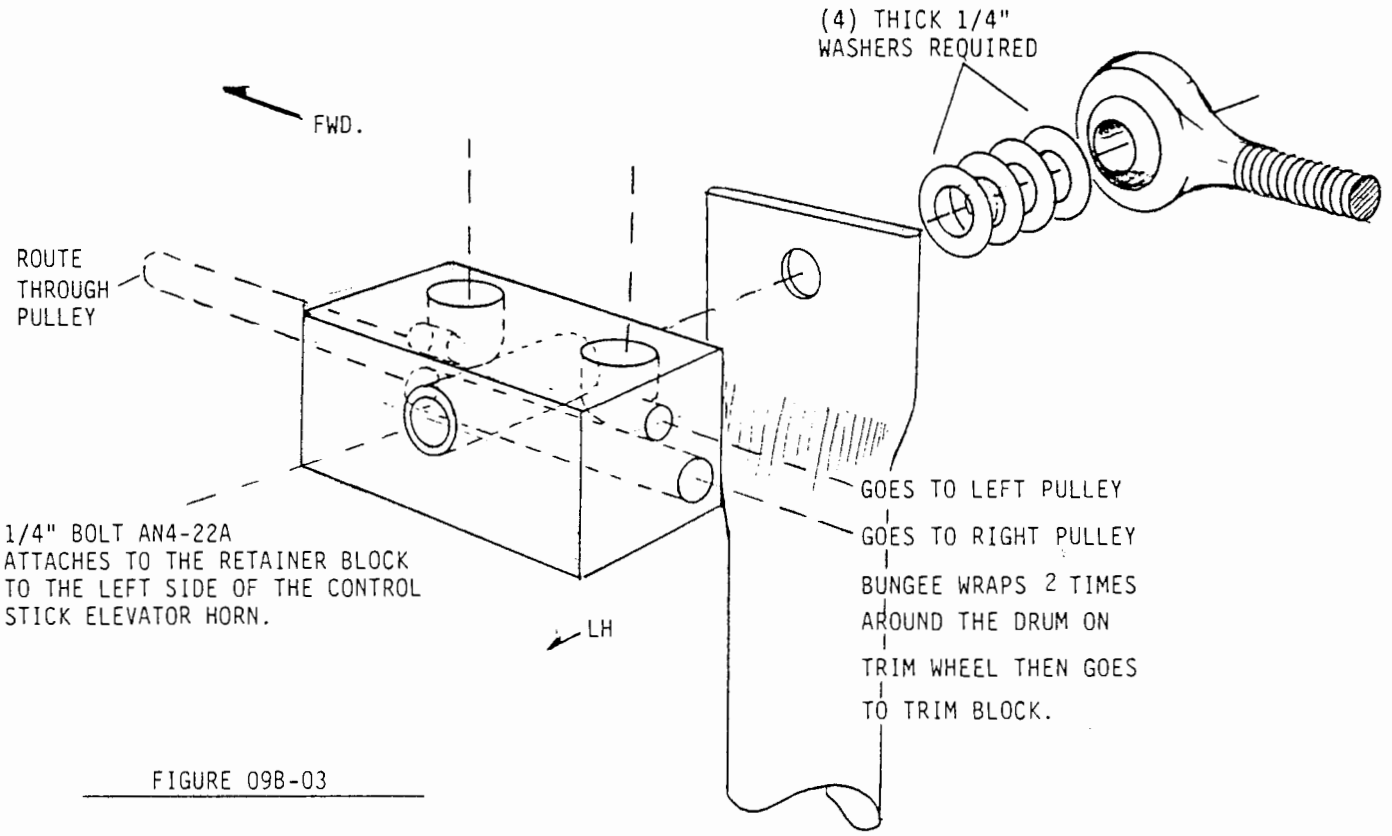


FIGURE 09B-03

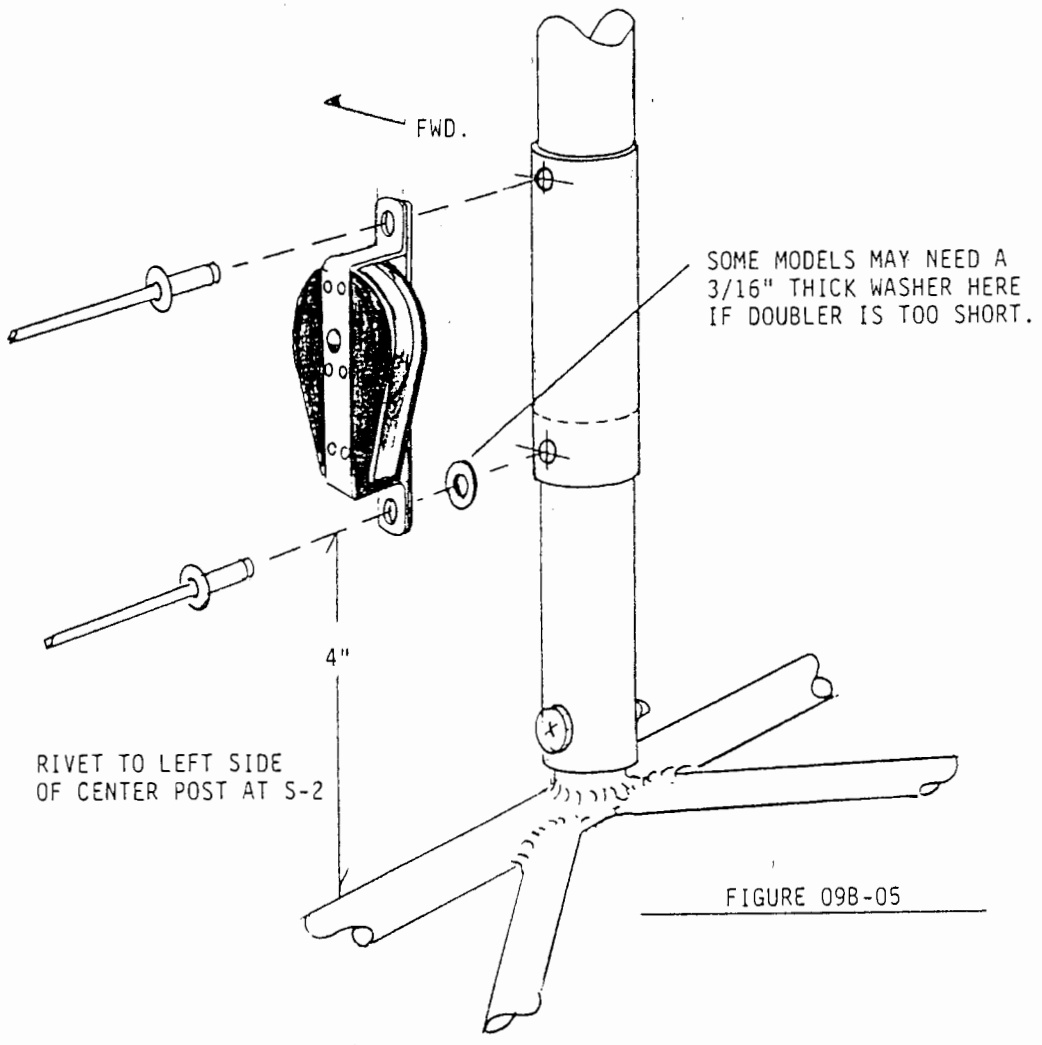
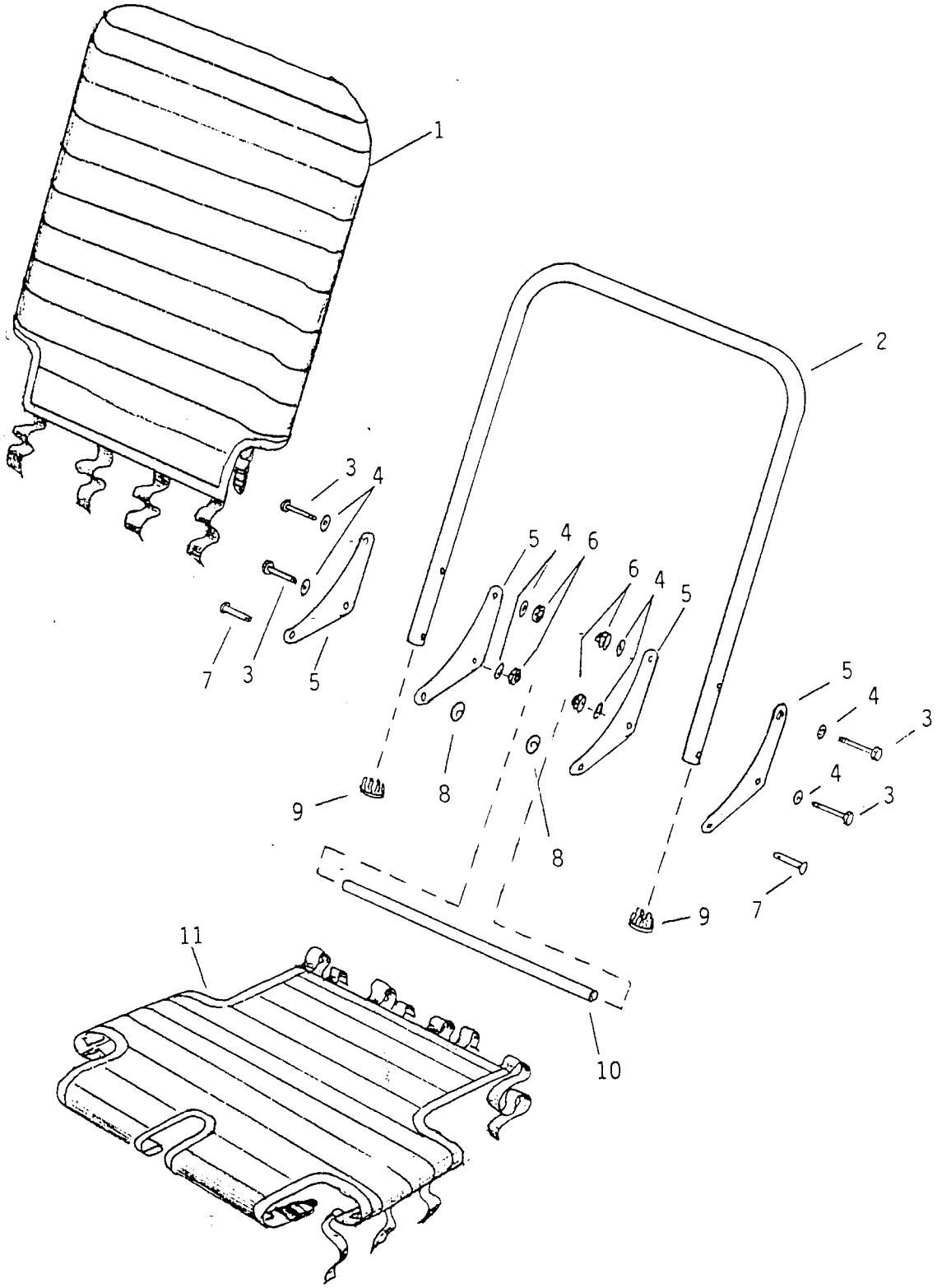


FIGURE 09B-05

6. Slip one end of the bungee through the 3/16" hole on the aft end of the trim block and pull it up through the 3/8" hole. Tie this off with a single knot. Run the other end of the bungee to the left pulley, then wrap it around the drum two times. The bungee cord should come around the drum on the FRONT side, this will tighten the bungee when the trim wheel is rolled back causing up trim. Run the end of the bungee over the other pulley to the trim block. This bungee should run clear through the trim block to the pulley on the center post. Route the bungee into the pulley from the bottom, then back to the trim block. Slip the bungee into the 3/16" hole on the front side of the trim block, then up through the 3/8" hole. Tie off in a single knot to retain.

7. The trim system works by exerting tension on either side of the elevator horn on the control stick torque tube. The bungee loops around the trim wheel drum and must be tight in order to work. Tension the system enough so the bungee is not slipping on the drum. The bolt that holds the trim wheel to the flap lever must be tight enough to hold against the bungee at any setting. Cut off the extra bungee at the trim block with a hot knife.

8. Other factors effect trim, such as. C.G. and horizontal stabilizer incidence. See tail section for setting incidence and CG/Operations for C.G.


1
2
3
4
5
6
7
8
9
10
11

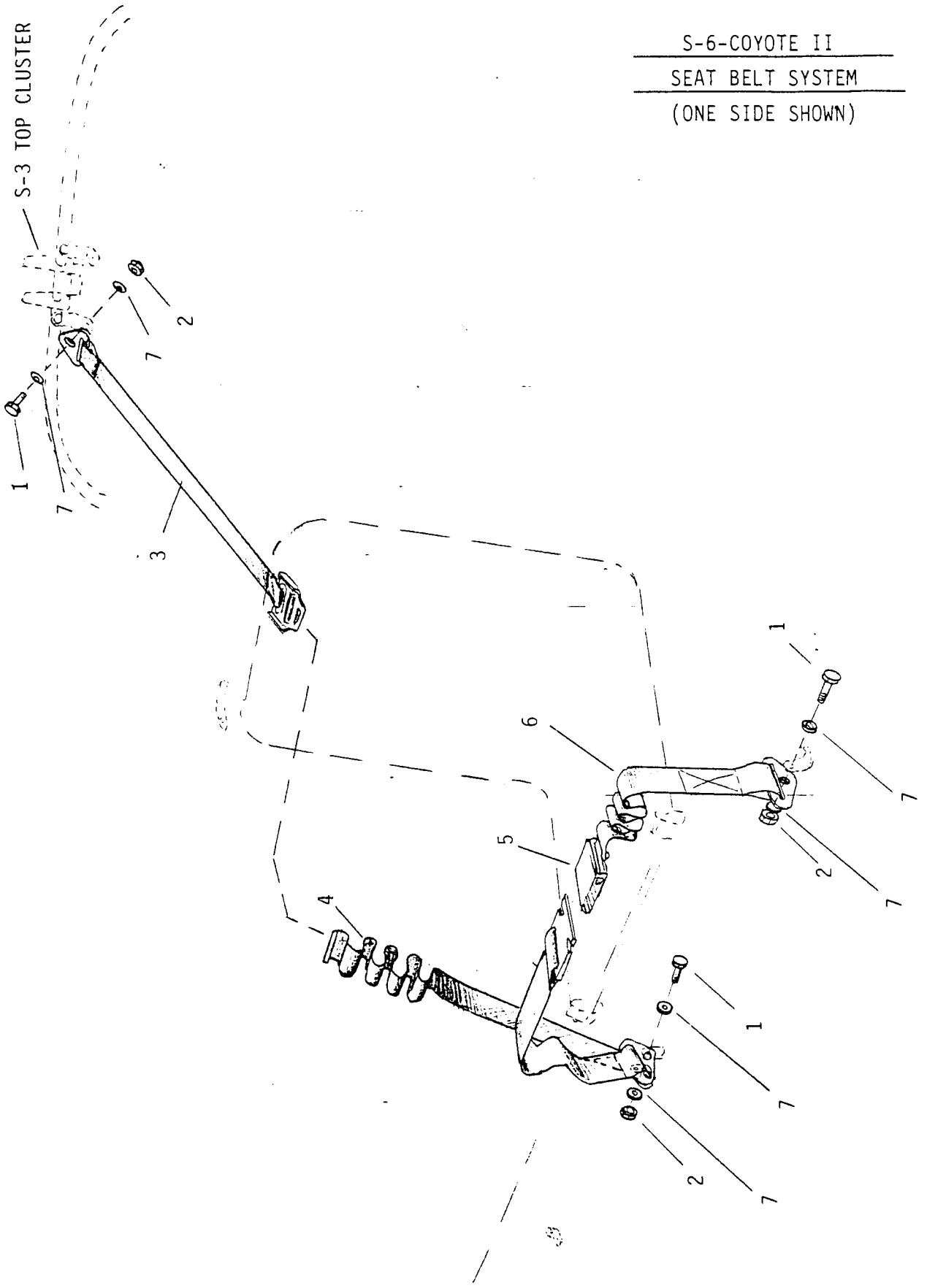
S-6 COYOTE II SEAT

#	PART NAME	PART NO	QTY	PRICE
1.	Seat Back Cover	ST-SBC	2	15.00
2.	Seat Back Frame	ST-SBF	2	20.00
3.	3/16" Bolt	AN3-14A	8	.40
4.	3/16" Thin Washer	AN960-10L	16	.03
5.	Seat Back Gusset	ST-GUS	8	5.00
6.	3/16" Shear Nut	AN364-1032A	8	.15
7.	1/4" Clevis Pin	AN394-39	4	1.50
8.	Loc Ring	RL-27 1/4	2	.20
9.	7/8" End Cap	CS-EC	4	.50
10.	Seat Back Lower Tube	ST-SBLT	2	3.00
11.	Seat Bottom Slotted	ST-SBOT-SLOT	2	12.00

S-6-COYOTE II

SEAT BELT SYSTEM

(ONE SIDE SHOWN)



S-6 COYOTE II SEAT BELT SYSTEM

#	PART NAME	PART NO	QUAN	PRICE
1.	1/4" Bolt	AN4-5A	6	.20
2.	1/4" Shear Nut	AN364-428A	6	.20
3.	Shoulder Belt	ST-SHLD-B	2	10.00
4.	Shoulder Adjust, Lap Clip	ST-SHLD-ADJ-LAP-C	2	14.00
5.	Belt Buckle	ST-BUC	2	8.00
6.	Lap Belt Adjust Side	ST-LB-ADJ	2	10.50
7.	1/4" Thick Washers	AN960-416	12	.03

S-6 COYOTE II SEAT ASSEMBLY

1. Select the parts as shown in the S-6 parts drawing.

2. Before inserting the 7/8" end caps into the ends of the seat back frame, bend over two across from each other. This will allow the bolt to pass through.

3. Bolt together a set of seat back gussets to each seat back frame. Please orientate bolts so the nuts are facing inward towards each other.

4. Set the seat back frame assembly onto the fuselage seat frame. Position the frame assembly so the gusset's lower open hole is lined uo with the bushings welded to the bottom of the built in seat frame. Drill out the gusset and welded on bushing to 1/4" diameter. Take a 1/4" clevis pin and test fit through the newly drilled hole. Repeat this step for the rest of the bushings and the other seat.

5. The protruding nut and bolt serve as a stud for mounting the seat back lower tube. Install the seat back lower tube to the seat frame assembly by spreading the frame apart just enough to slip the tube over the lower bolts and nuts. If the tube does not bottom out against the washers lay the assembly on its side and tap it gently with a mallet. If you find the seat back lower tube rubbing against your lower back you try wrapping a length of pipe installation around the tube.

6. Remove the seat back frames assembly from the fuselage. Slip the seat back cover over the frame with the map pocket to the back. Lace the straps through the buckles and pull them tight.

7. Take the seat bottom and position it on the fuselage frame. Lace the crossing straps first followed by the front to back straps. Pull these straps as tight as possible without tearing them. NOTE: You may need to tighten these straps after a few hours of flying. Loop the extra strap back into the buckle and trim off the excess so only 2" to 3" remain.

8. Attach the seat back to the fuselage frame in the desired location using the 1/4" clevis pins provided.

IMPORTANT: SOLO FLIGHT OPERATION WARNING!

The unoccupied seat can be tilted forward and jam the control stick. Please check the position of the unoccupied seat prior to take off and make sure it is in the upright position with the shoulder belt tight against the seat back.

S-6 COYOTE II SEAT BELT ASSEMBLY

1. Use the parts list to select the parts for the seat belt assembly.

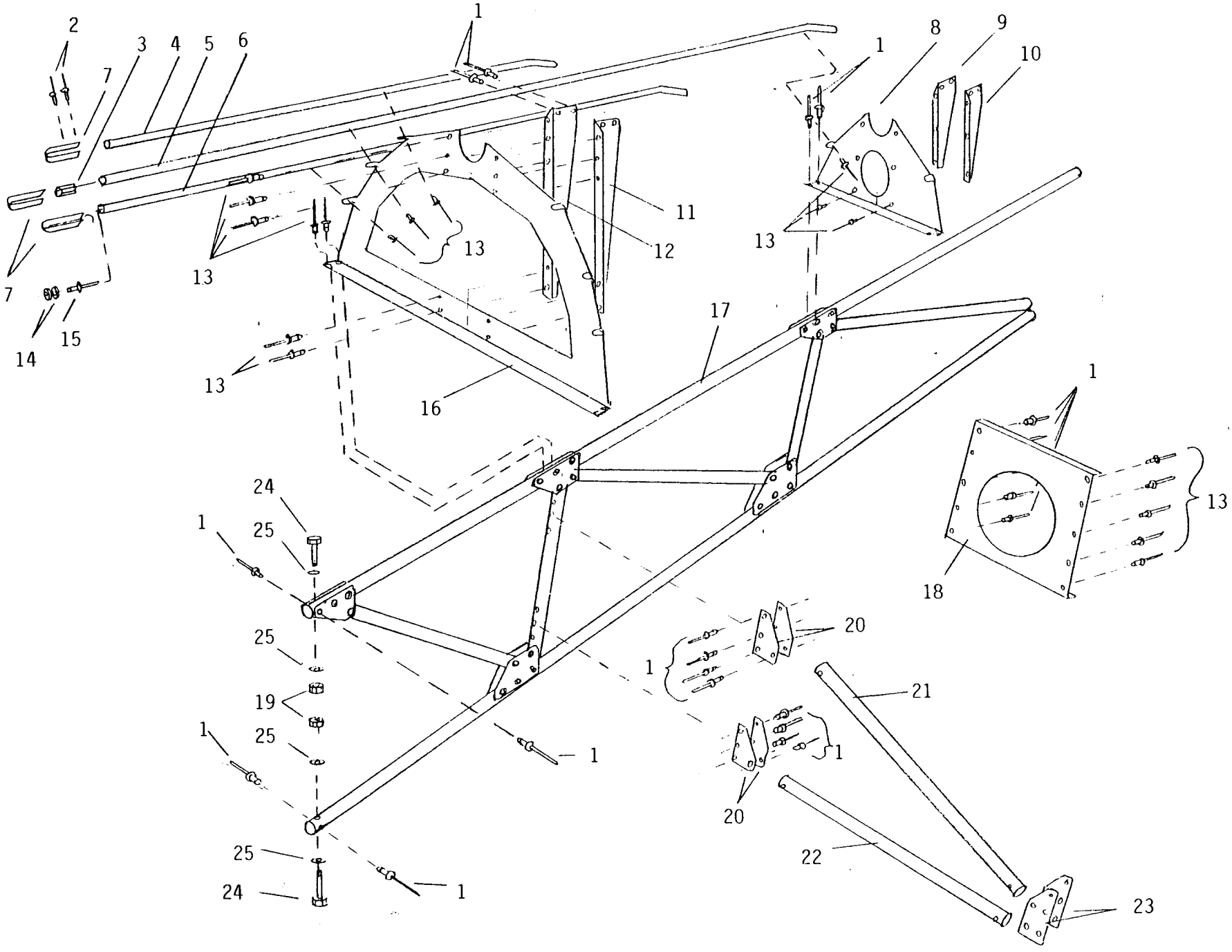
2. Drill the (4) tabs out to 1/4" diameter that are welded below the seats.

3. Bolt a ST-SHLD-ADJ-LAP-L to the lower left outside tang. So the shoulder strap is aft and the clip is forward. Do the same on the right.

4. Bolt the shoulder belts to the tabs attached to the top of the S-3 cluster, so the adjustor will be right side up.

5. Bolt the lap adjustor belts to the inside tabs between the seats.

6. To use simply pull belts over lap and shoulder and adjust. NOTE: To exit loosen the shoulder belt so it can pass over your head. Unclip lap belt. IMPORTANT: The shoulder belt must pass over your INSIDE shoulder (in either seat) then diagonally across your chest to the lower OUTER attach point.



S-6 COYOTE II

TAIL CONE SIDE TRUSS

3-6 COYOTE II TAIL CONE SIDE TRUSS

#	PART NAME	PART NO	QTY	PRICE
1.	3/16" SS Pop Rivet	12SSPR	56	.20
2.	3/32" Aluminum Pop Rivet	40APR1/8	24	.10
3.	Aluminum I-Nut*	ALUM-I-NUT*	2	1.40
4.	Stringer, 48"	TC-S48	2	2.00
5.	Stringer, 80"	TC-S80	2	3.50
6.	Stringer, 64"	TC-S64	2	2.80
7.	Stringer Retainer Strip**	TC-SRS-1/2X5"	6	1.00
8.	Former B	TC-FB	1	25.00
9.	Keel Attach Angle, RH	TC-S5-KAA/RH9	1	5.00
10.	Keel Attach Angle, LH	TC-S5-KAA/LH9	1	5.00
11.	Keel Attach Angle, LH	TC-S4-KAA/LH16	1	5.00
12.	Keel Attach Angle, RH	TC-S4-KAA/RH16	1	5.00
13.	1/8" Stainless Steel Pop Rivet	30SSPR1/8	42	.20
14.	3/16" Thick Washer	AN960-10	12	.03
15.	3/16" Aluminum Pop Rivet	12APR1/8	6	.10
16.	Former A	TC-FA	1	45.00
17.	Side Truss	TC-STRUSS	2	135.00
18.	Station 5 Bulkhead	TC-S5BULK	1	25.00
19.	3/16" Shear Nut	AN364-1032A	4	.15
20.	Gusset Plate, 4-Hole	G-4	4	2.40
21.	Station 4 Diagonal Tube	TC-S4DT	1	7.00
22.	Station 4 Bottom Crossing Tube	TC-S4BCT	1	7.00
23.	Gusset Plate, 5-Hole	G-5	2	2.40
24.	3/16" Bolt	AN3-13A	4	.30
25.	3/16" Thin Washer	AN960-10L	8	.03

* Sent If Optional Doors Are Ordered.

**Fabricate From 1/2" X 36" x .020 Strip By Cutting To 5" Lengths.

S-6 COYOTE TAIL CONE ASSEMBLY

Before building the tailcone we recommend going to the vertical fin assembly. The vertical fin can be used as a gauge for the correct tail channel angle. See TAIL.

1. Select the parts shown on the parts pages for both tail channel and side truss.

2. Make a stand approximately 49" high to be used to hold up the tail. Also put about 20 lbs. of weight on the floorboard to prevent tipping back of the tail cone.

3.. Slip a side truss onto each of the stubs on the aft side of the S-3.

4. 3/16" Cleco the tail channel to the truss and keel extension. DO NOT rivet the tail until step 9. PLEASE NOTE: The vertical fin assembly should be installed (Use a 1/4" eyebolt to retain the spar to the tail channel. This will require a 1/4" nut plate to be riveted to the spar. See the section on TAIL.) Use the vertical fin as an angle gauge to set the tail channel. There is no hole in the lower longeron's aft end. This hole is drilled only after the tail channel is at the proper angle. When drilling through the longeron be sure the tube is placed centered over the hole.

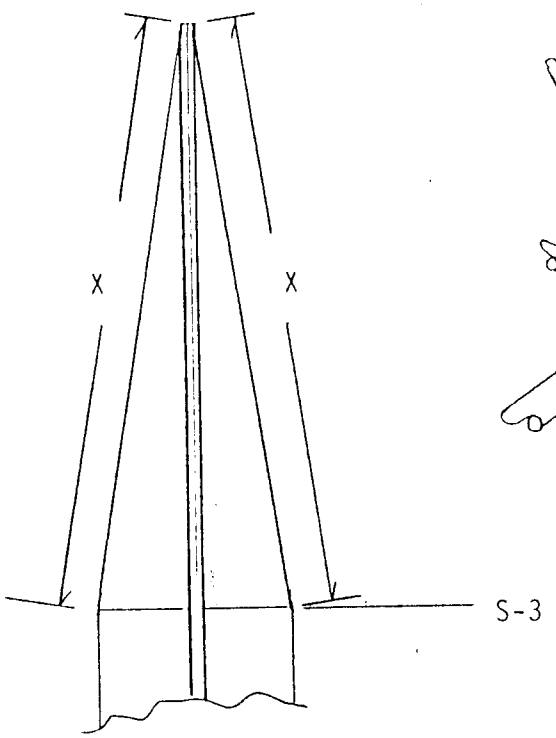
5. Using the tail stand, set the keel tube straight. Without support it should be slightly bowed down due to its own weight. Raise the keel, tail channel and truss assembly until the keel tube is perfectly straight. Keep the tail supported with the stand. With the tail and keel held straight we need to check the tail cone for symmetry from the top plan view. Do so by measuring from the end of the keel tube to the back side of the S-3 on each side. Adjust side to side as needed to get equal measurements. Clamp, locate and drill holes through the side truss longerons top and bottom as per Figure 011-05. Bolt with 3/16" bolts.

6. Locate the bottom gusset flush with the ends of the bottom longeron tubes. Drill (4) #11 holes as per Figure 011-06 and rivet with 3/16" stainless steel pop rivets.

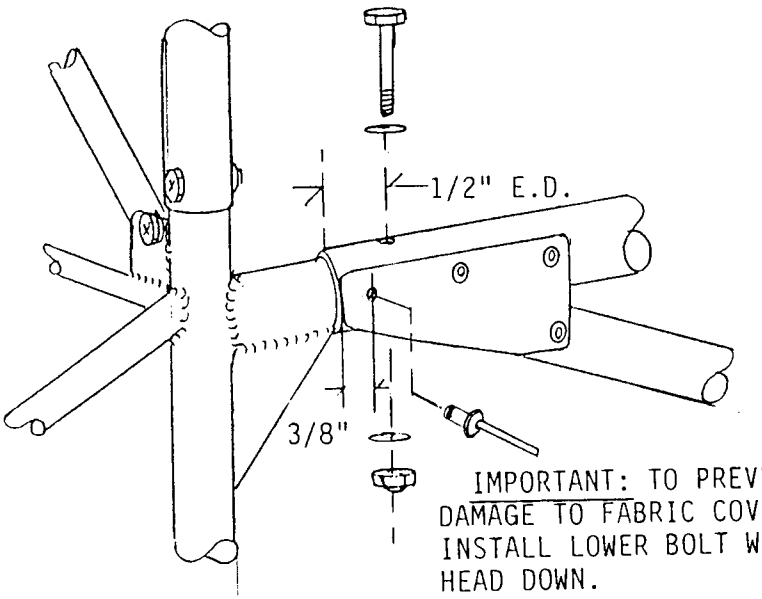
7. Locate the lower cable tang on the bottom gusset plate approximately 5/8" from the ends of the bottom 1" tubes or where the 1/4" holes lay directly under the top of each tube. See Figure 011-07. Drill up through the longerons with 1/4". NOTE: This hole should be square through the tube both from side and front. Use a 90 degree guide such as an angle or square. HINT: Pin the first hole with a 1/4" bolt after drilling to prevent slippage.

8. Remove the stand, uncleco the tail channel and remove. Pivot the aft diagonals up. This will expose the top side of the bottom longerons. Debur the 1/4" holes and rivet 1/4" nut plates to each.

9. Reassemble the tail channel to the keel using 3/16" stainless steel rivets. Locate, drill and rivet the remaining rivets as per Figure 011-09.



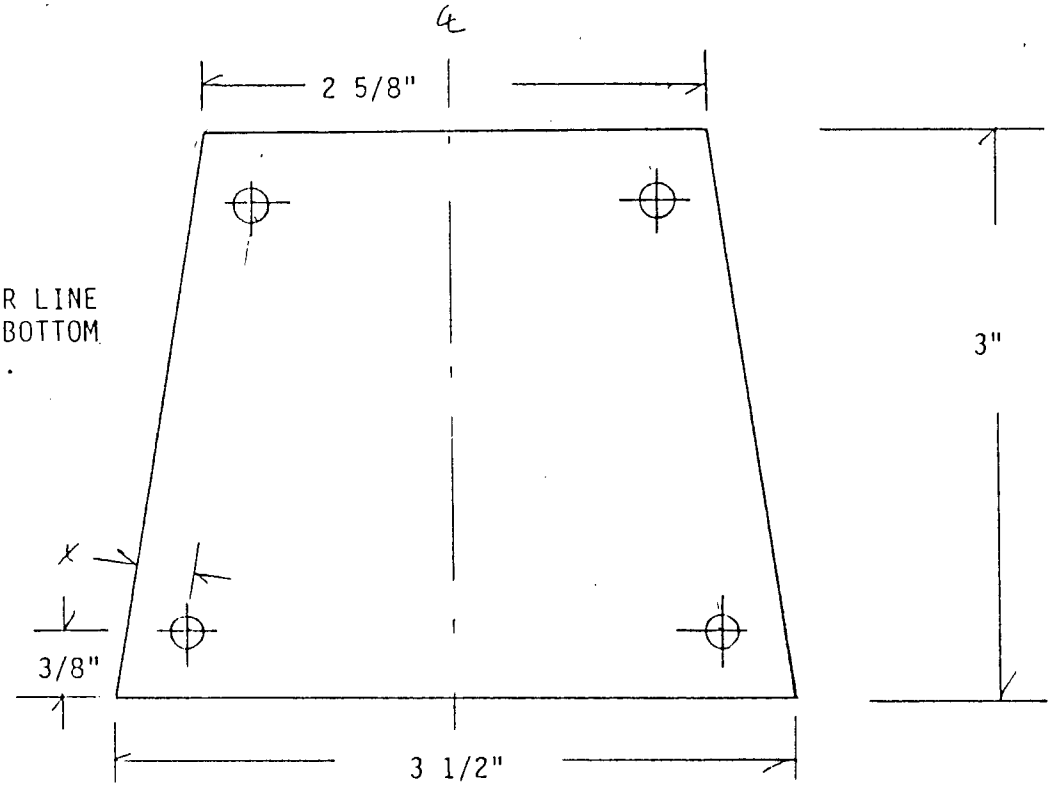
TAIL CONE FROM TOP VIEW
X MUST BE EQUAL ON EACH SIDE.



IMPORTANT: TO PREVENT DAMAGE TO FABRIC COVERING INSTALL LOWER BOLT WITH HEAD DOWN.

S-3 TOP LH CLUSTER SHOWN
SAME E.D. APPLIES TO ALL
OTHER S-3 CLUSTERS.

FIGURE 011-05



X = IN CENTER LINE WITH 1" BOTTOM LONGERON.

BUILDER CAN RADIUS CORNERS

FIGURE 011-06

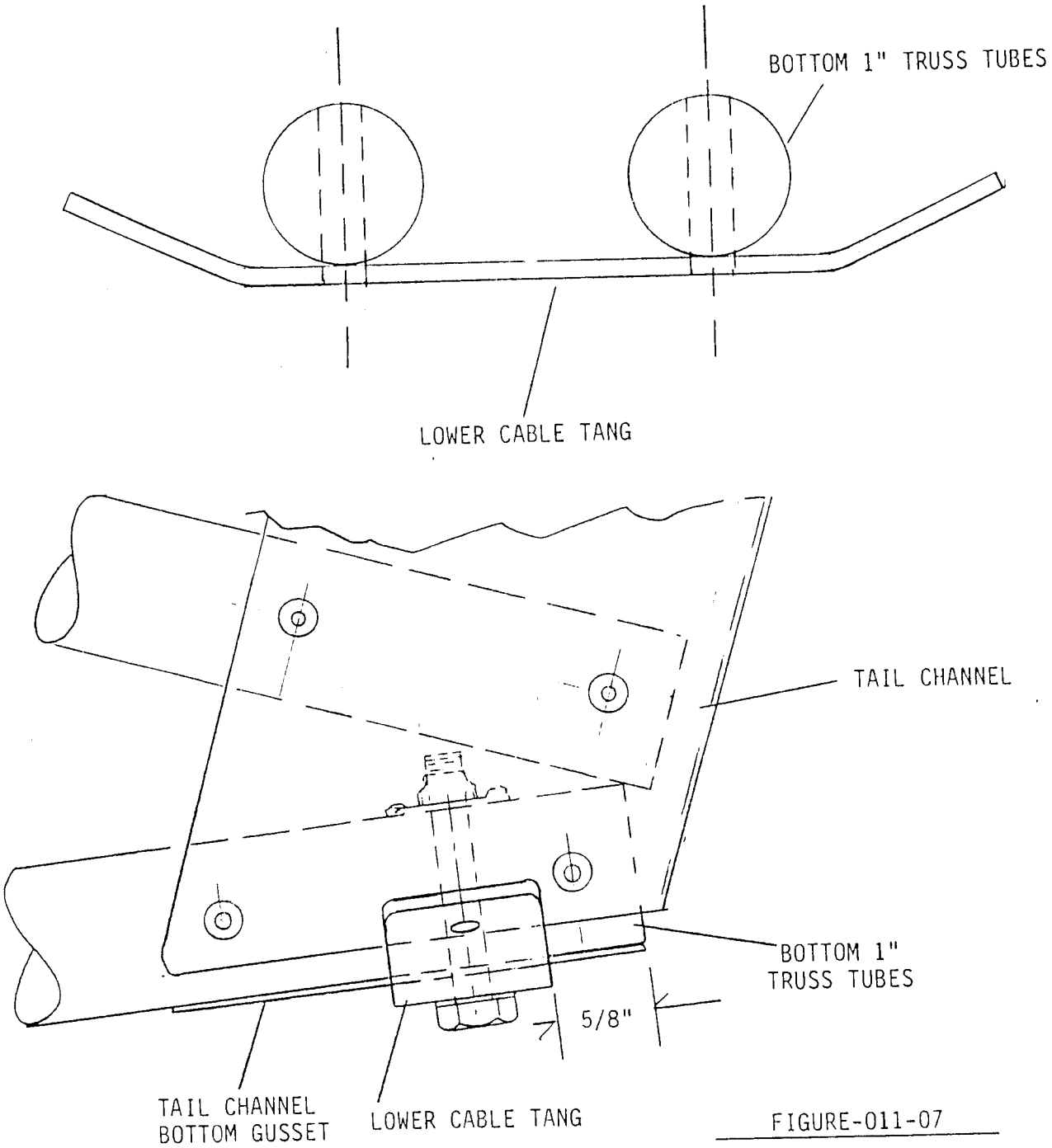


FIGURE-011-07

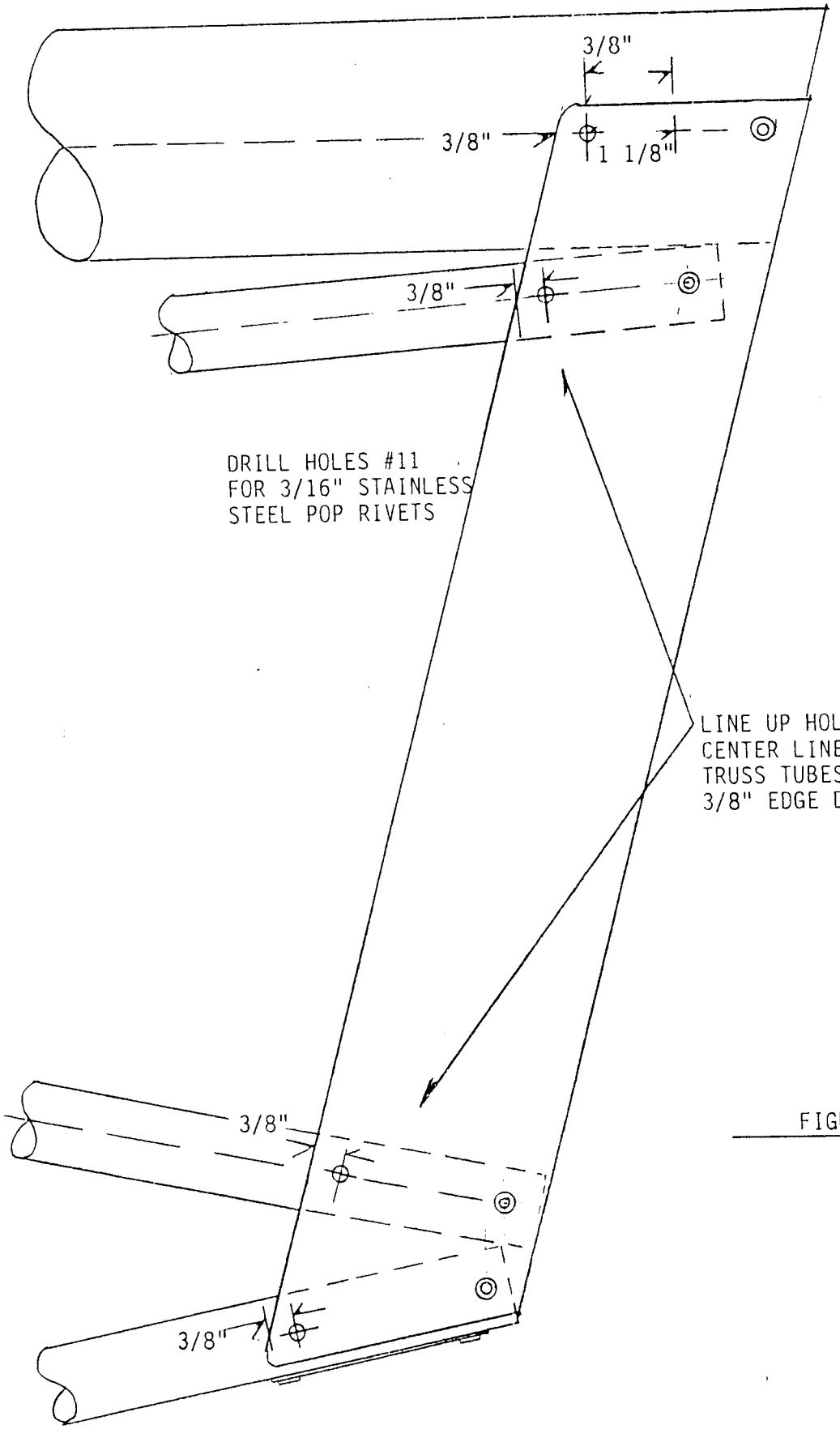


FIGURE 011-09

10. Reinstall the tail stand and check the keel for trueness. Keep the stand in place during the next steps. (Attaching the formers A and B).

11. Mark, drill and rivet the "buttons" (a button is a 3/16" thick washer and a 3/16" aluminum pop rivet) to the aft side of the S-3 side tubes. If you have the optional door kit, look ahead to that parts drawing and select and install the 3/16" nut plates on the aft side of the S-3 at the pre-drilled holes. Otherwise rivet a button in the door hinge hole. Locate a button 6" to each side of the door hinge hole. See Figure 011-011.

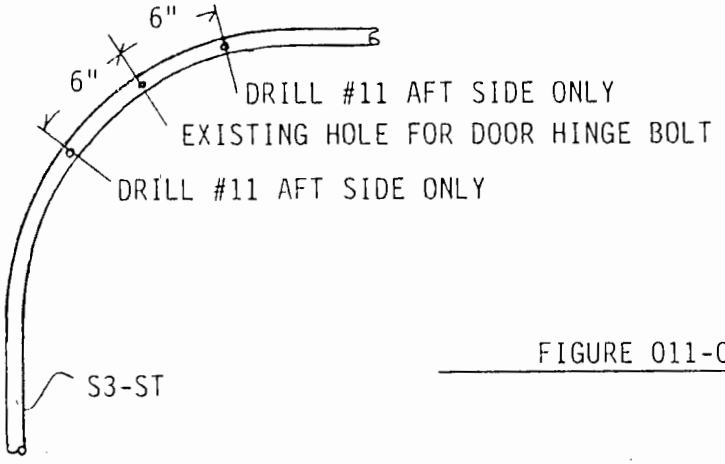


FIGURE 011-011

12. Mark and drill #30 the former A and B tabs as shown in Figure 011-012.

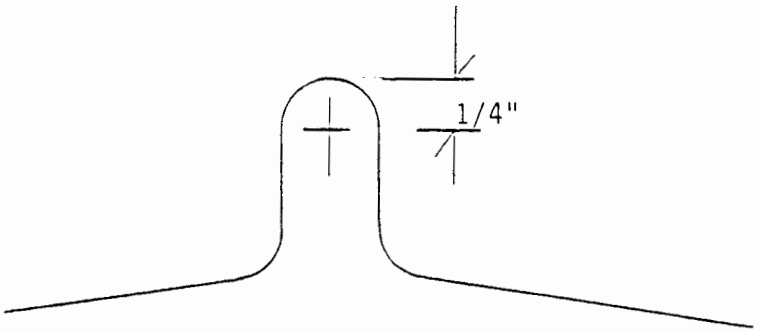
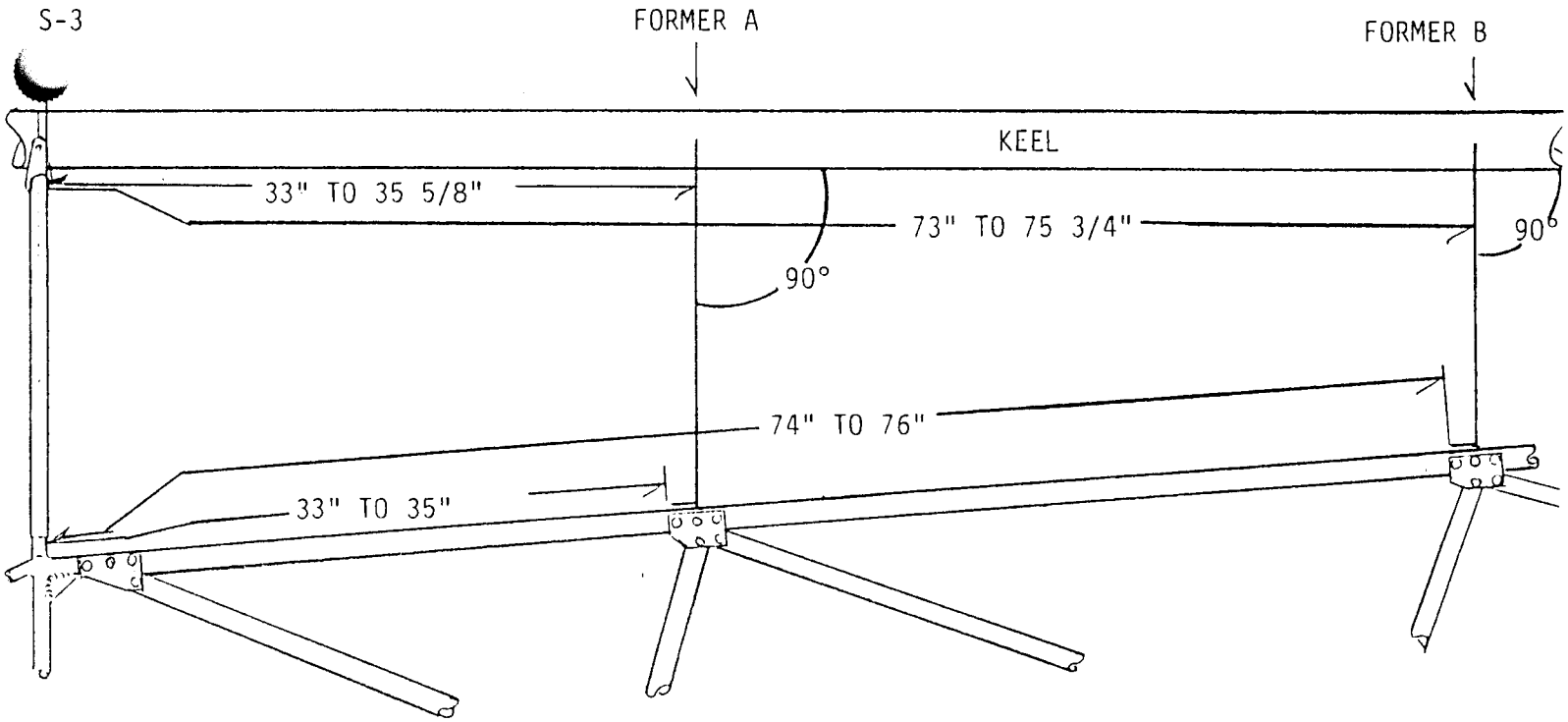


FIGURE 011-012

13. Use a tape measure to mark off the locations of formers A and B. PLEASE NOTE: How parts are located on the marks. See Figure 011-013.



SIDE VIEW OF TAIL CONE

FIGURE 011-013

14. Set former "A" on top of the longerons, mark and drill through #11 and rivet with a 3/16" stainless steel pop rivet (12SSPR). Line up the former A on the lower marks. Check for even overhang onto each longeron. Check the width at the former. It should measure 28 3/4" from truss side gussets at the fwd. edge of the former "A" flange. IMPORTANT: The width measurement is critical to skin fit. Adjust position of formers to maintain. Locate a #11 hole in the flange against the longeron 1/4" from each edge. Rivet with a 12SSPR on each side. Measure back 1/2" from this rivet and locate a second one on each side. Attach the LH and RH keel attach angles as per Figure 011-014. Profile the tops. Repeat this same procedure for former "B" except use 15 5/8" as the width measurement. PLEASE NOTE: Both former A and B width measurements are to outside to outside of the side gusset plates.

15. If your craft is equipped with doors, insert an aluminum I-Nut into the unbent end of the two long stringers. Note the location of the groove will be 5/16" in from the end when inserted flush with the stringer. After insertion use a center punch to dimple the stringer over the groove to lock the I-Nut in place. Also the unbent ends of the other stringers may need reaming to fit over the "buttons". Bend all former tabs to point forward. Bend with hands only! DO NOT use a pliers or similar tool. Use a rat tail file or a cone shaped rotary file. Install the tail cone stringers inserting them onto the buttons. NOTE: Temporarily tape them to the buttons with a wrap of masking tape. Be sure the stringers are turned with the bent ends pointing inward. Drill through the stringer at each tab and rivet with #30APR1/8 rivets. Keep formers lined up, do not force them. Check from the side to view any distortion.

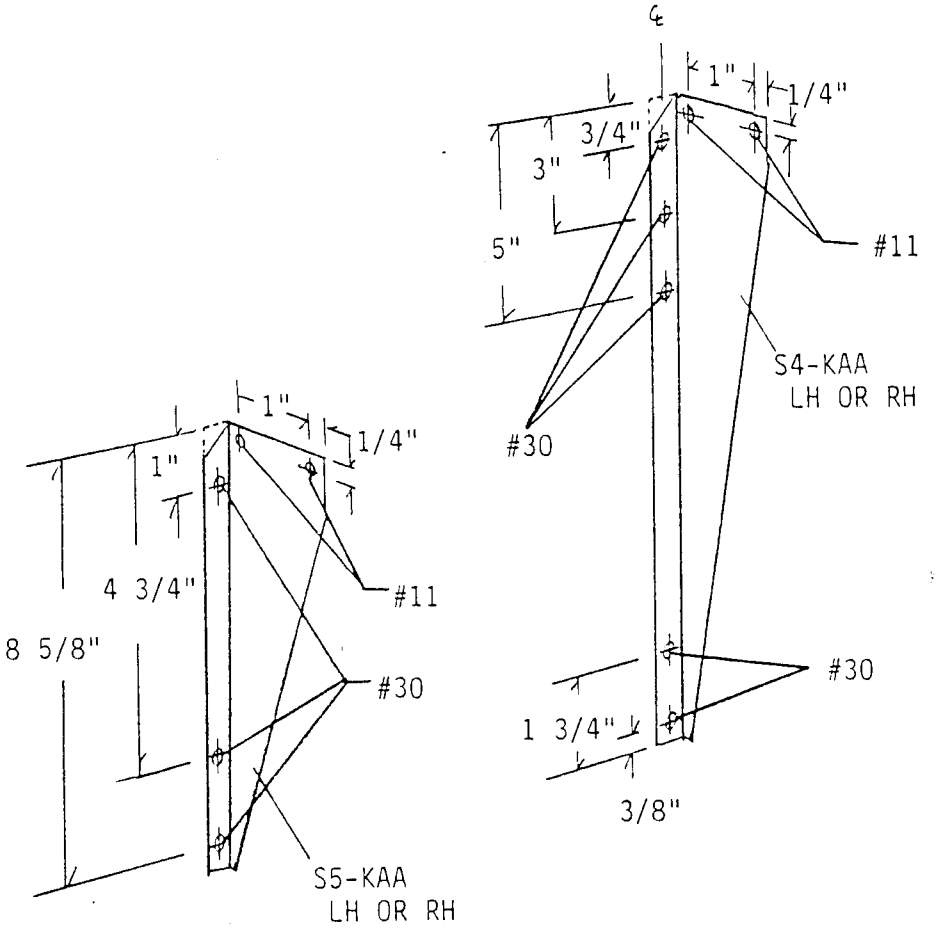


FIGURE 011-014

16. Using the 36" x 1/2" x .020 aluminum strip cut (with a scissors) four (4) strips 5" long. (Six (6) if you don't have doors). Wrap these around the S-3 tube and rivet to each stringer with (4) 3/32" pop rivets each. See Figure 011-016.

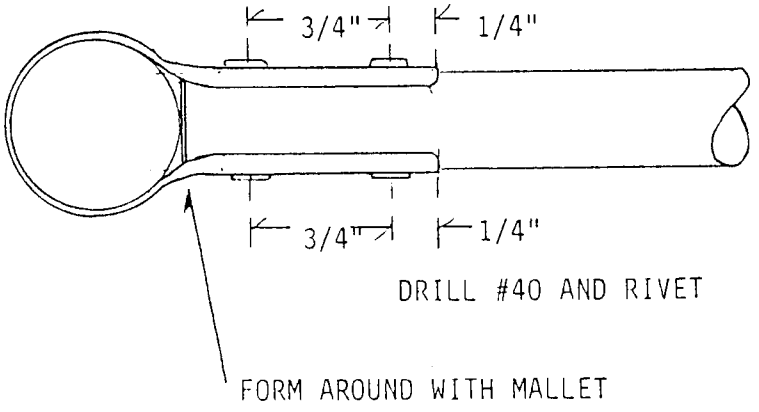


FIGURE 011-016

17. Position the S-5 bulkhead on the aft side of the S-5 (1" vertical truss tubes) so it is almost touching the side truss top gusset plates. Center the bulkhead on the 1" tubes and mark off and rivet (5) #30 stainless steel pop rivets to each side. See Figure 011-017.

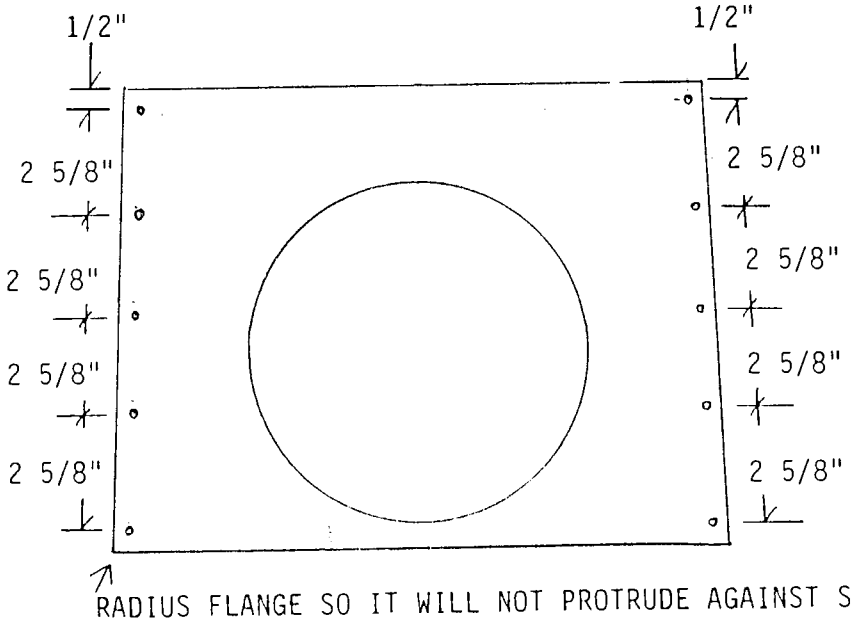


FIGURE 011-017

18. Rivet (2) G-5's and (2) G-4's to each end of the S-4 bottom crossing tube. See Figure 011-018. Position the crossing tube on the S-4 so the gussets are just above the side truss gussets. Rivet to the side truss with the gusset plate holes centered on the vertical tubes. Add the diagonal tube after riveting in the crossing tube.

19. Turn to tail and assemble the vertical fin without the skin. Bolt it in place and mark the location of the 3/16" nut plate hole in the channel bracket. Loacte the hole on the keel's bottom and drill #11 from each way. Use Figure 011-019 to help locate the hole. Do not use it as an exact location.

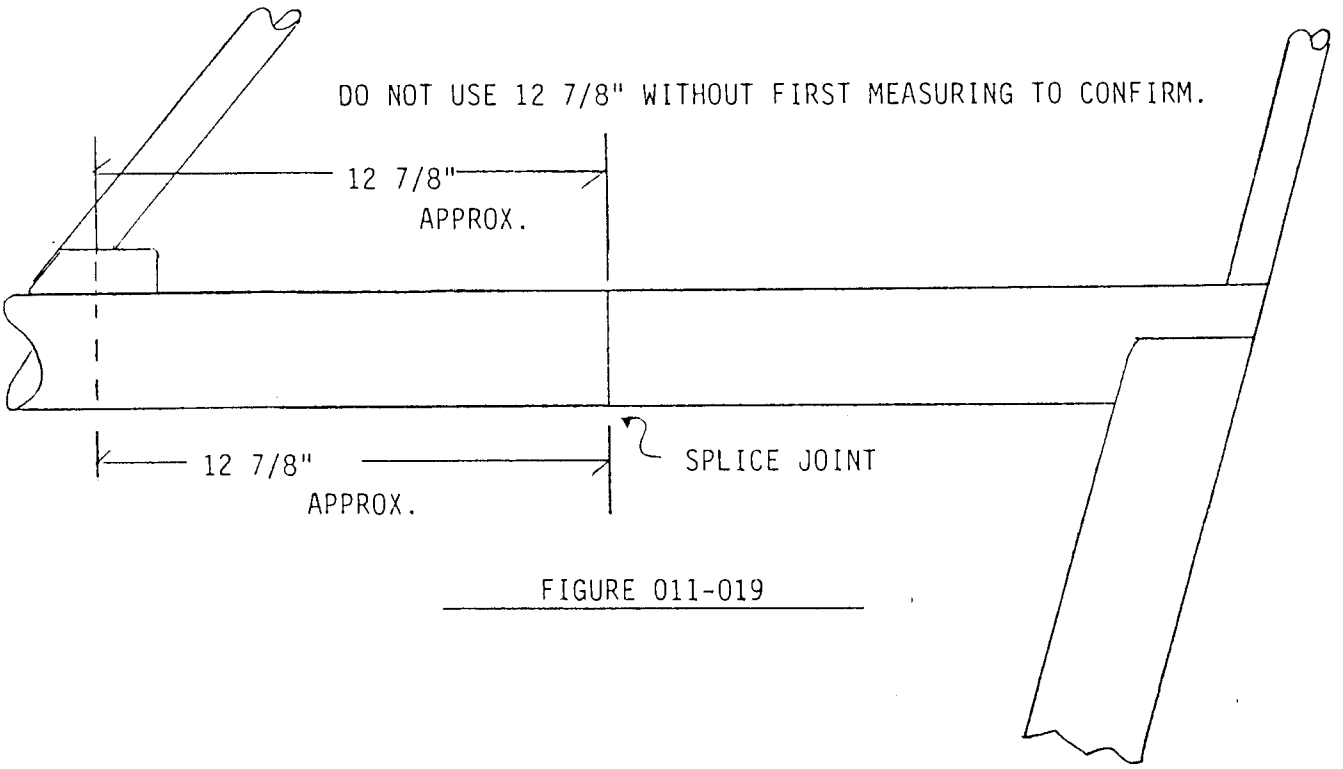
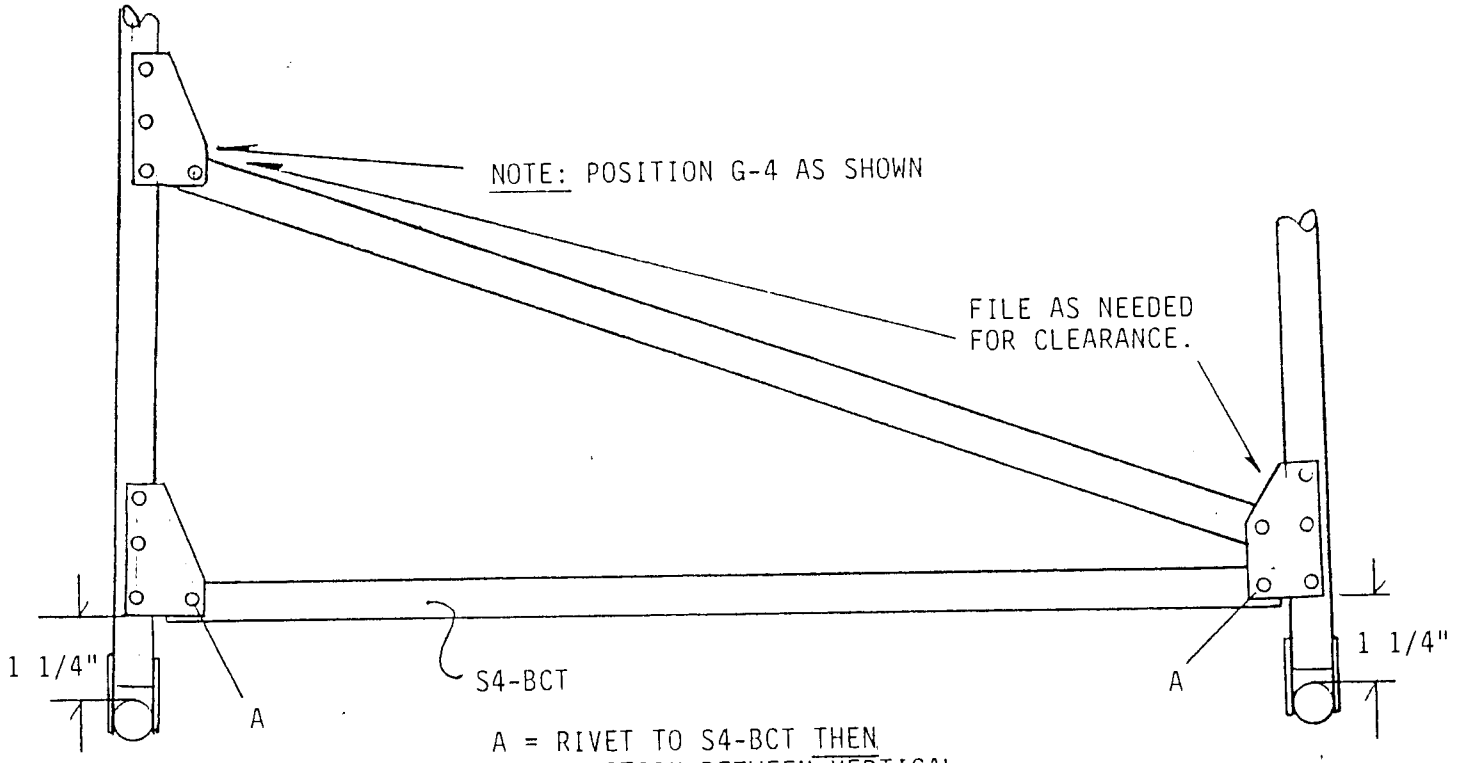


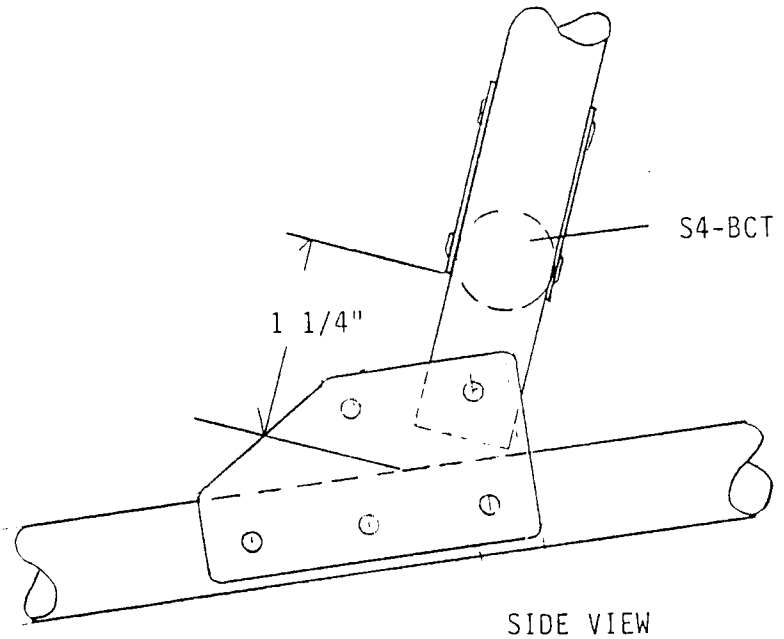
FIGURE 011-019

20. Re-check the tail for accuracy and alignment.



A = RIVET TO S4-BCT THEN POSITION BETWEEN VERTICAL TRUSS TUBES.

FRONT VIEW

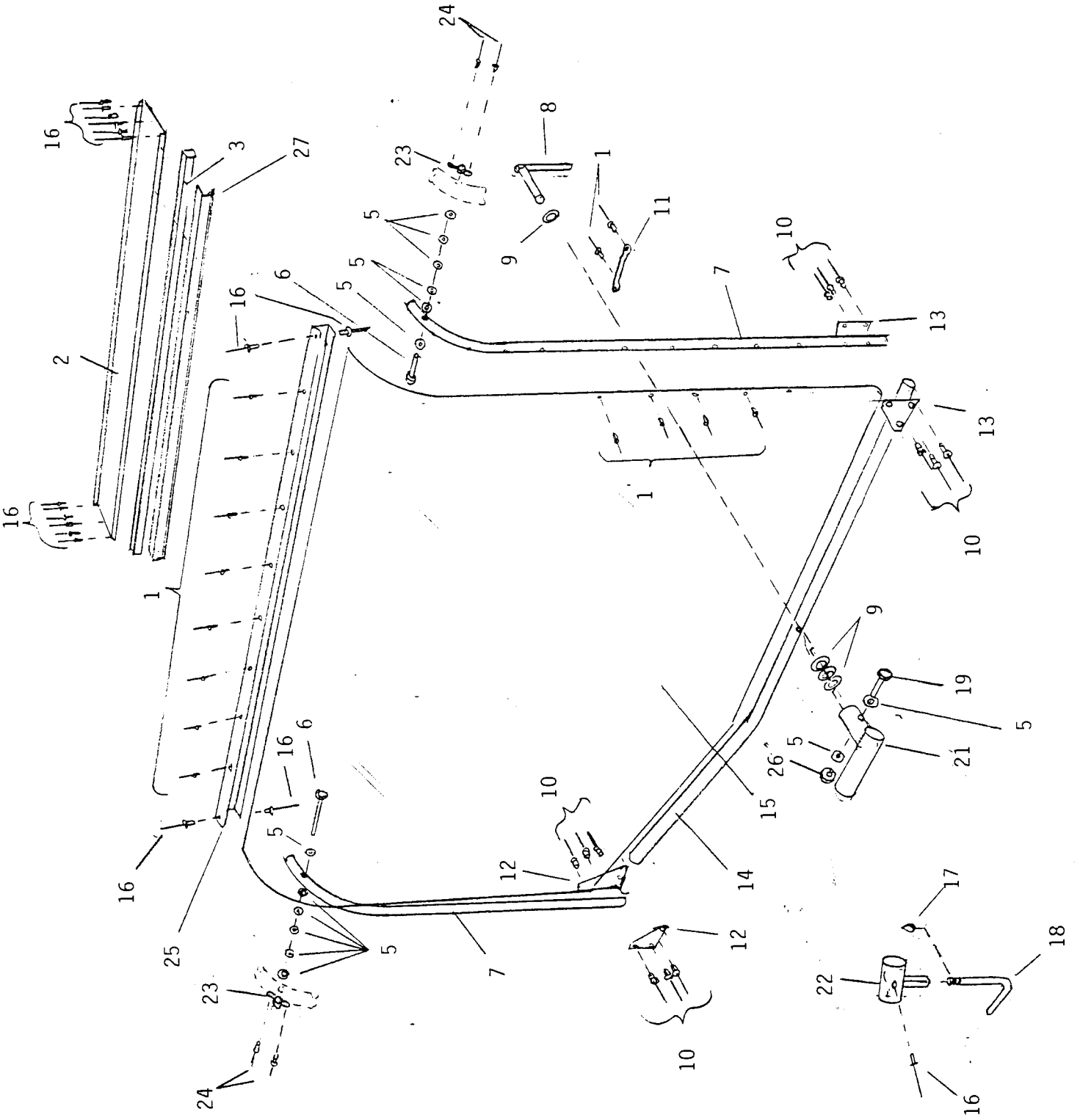


SIDE VIEW

FWD.

FIGURE 011-018

S-6 COYOTE II DOOR



S-6 COYOTE II DOOR

#	PART NAME	PART NO	QUAN	PRICE
1.	1/8" Aluminum Pop Rivet	30APR1/8	100	.10
2.	Upper Cabin Panel	D-UCP	2	15.00
3.	Trim Loc, 24'	TRIM-LOC	1	3.00
4.	3/16" Shear Nut	AN364-1032A	2	.15
5.	3/16" Thick Washer	AN960-10	18	.03
6.	3/16" Bolt	AN3-23A	4	.40
7.	Door Frame Side	D-DFS	4	35.00
8.	Inner Door Handle	D-IDH	2	6.00
9.	3/8" Thick Washer	AN960-616	8	.05
10.	3/16" SS Pop Rivet	12SSPR	28	.20
11.	Rub Block	D-RB	2	5.00
12.	Aft Lower Gusset	D-ALG	4	1.00
13.	Fwd Lower Gusset	D-FLG	4	1.00
14.	Lower Tube	D-LT	2	5.00
15.	Lexan Panel, 48" x 32"	D-LEX	2	60.00
16.	1/8" SS Pop Rivet	30SSPR	56	.20
17.	Loc-Tite	LOCTITE		5.00
18.	Door Up Catch	D-UPC	2	15.00
19.	3/16" Bolt	AN3-6A	2	.20
20.	1/4" Plain Nut	AN345-416	2	.10
21.	Door Outer Handle	D-OH	2	2.50
22.	Door Up Catch Socket	D-UCS	2	7.00
23.	3/16" Nut Plate	K-1000-3	4	.40
24.	3/32" Aluminum Pop Rivet	40APR1/8	8	.10
25.	Door Top Channel	D-TC	2	10.00
26.	3/16" Acorn Nut	22NKMO2	2	.40
27.	Upper Cabin Seal	D-CABS	2	2.00

S-6 COYOTE II DOOR ASSEMBLY

1. Select all the necessary components for the door assembly. Use the parts list and drawing.

2. Make (12) 1/4" thick plywood scraps (or similar) for spacing out frames.

3. The (4) door frame vertical tubes will need to be trimmed to length. Bolt them in place, mark and trim to exact fit and joint type as shown in Figure 012-03 and 012-03A. NOTE: The tube scrap cut off the rear door side tube can be used for a "push in" tube for the wing ribs.

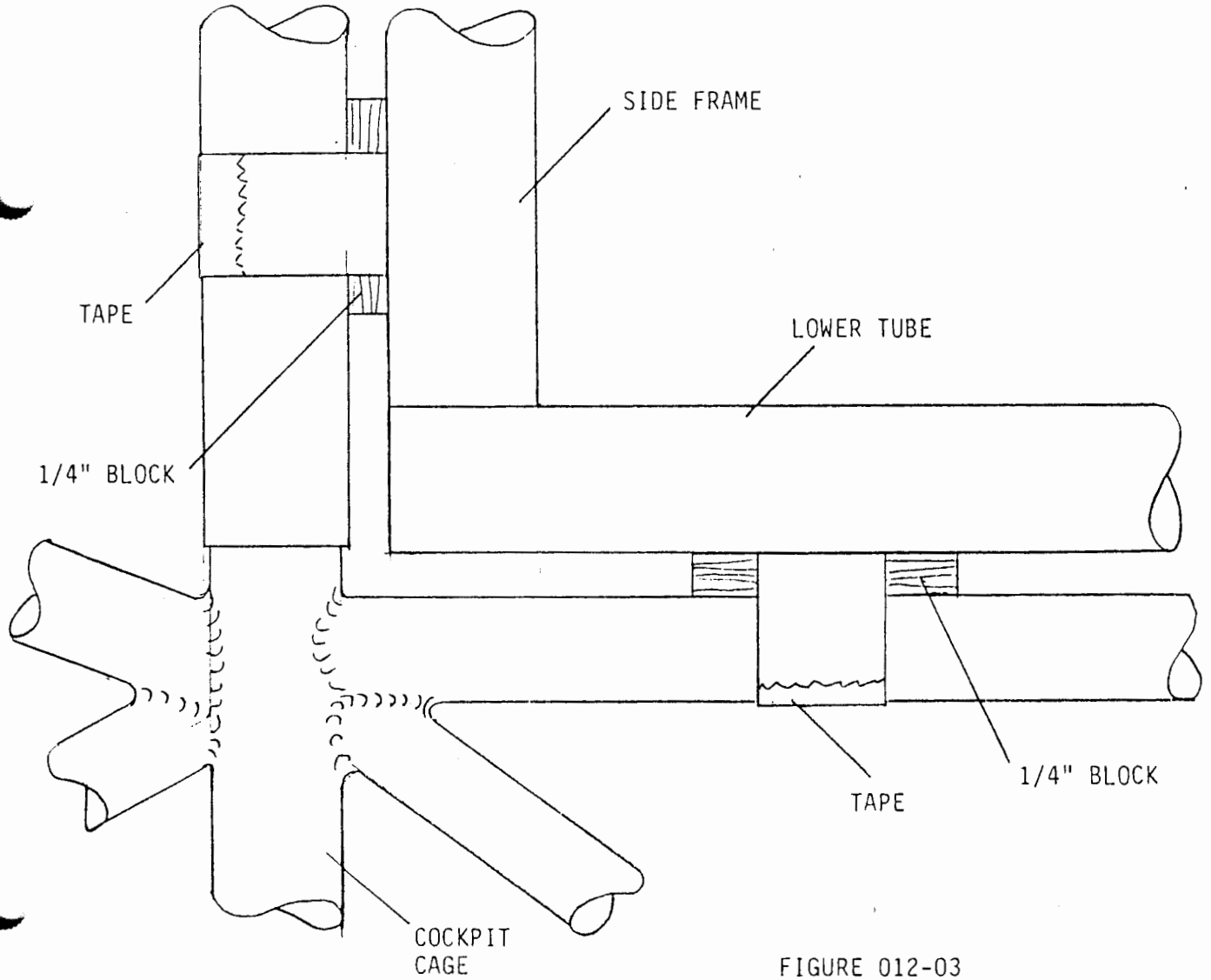


FIGURE 012-03

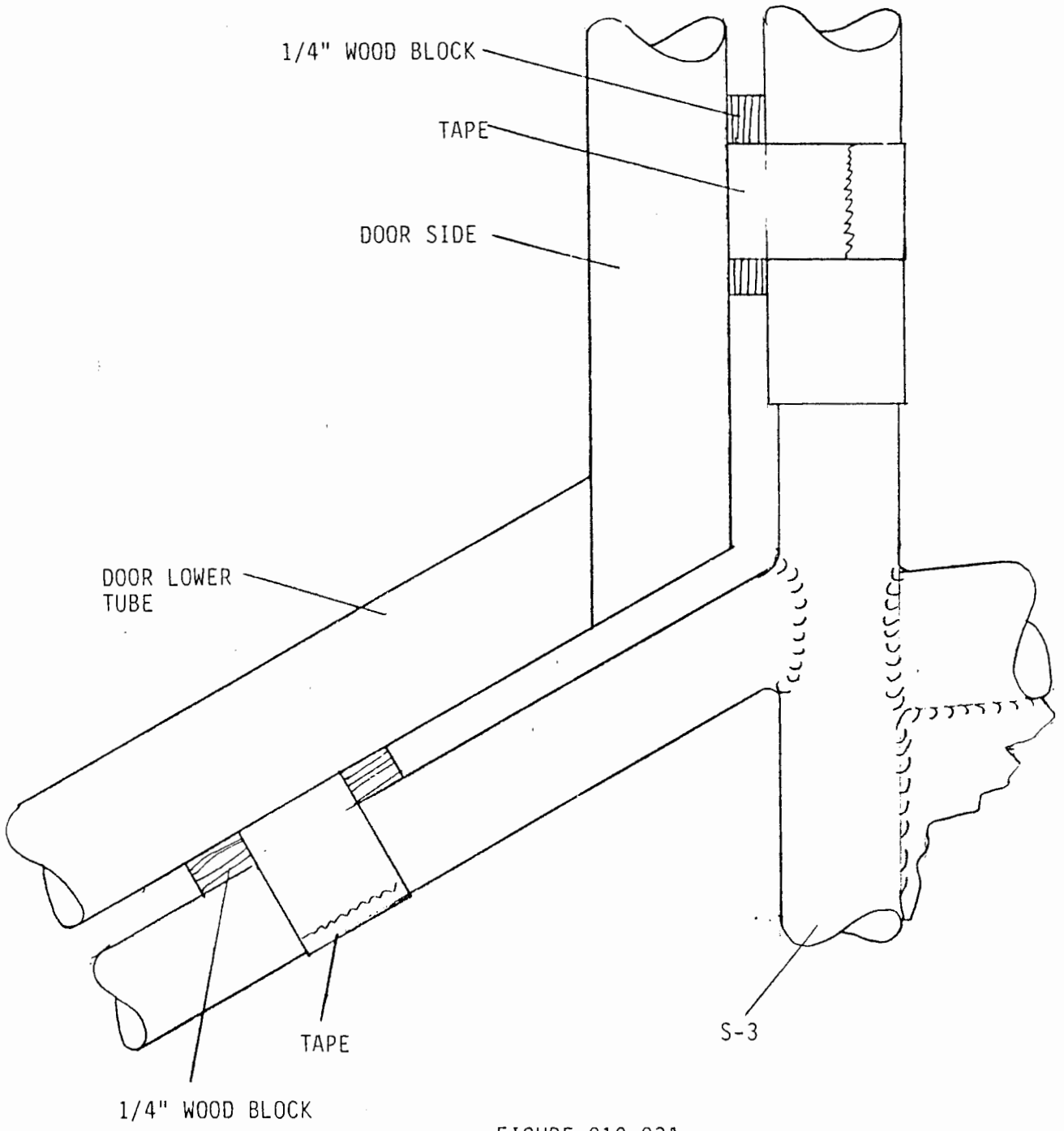


FIGURE 012-03A

4. After trimming the length and joints to fit, bolt the side and lower tubes in place. Hold in position with tape and 1/4" spacers. Clamp gussets in place and drill and cleco. Remove and debur. Rivet <u>INSIDE</u> gussets only. Outside gussets go on <u>AFTER</u> Lexan is installed.

5. Clamp top channel and Lexan in place. Overhang the Lexan so it is flush with the front side of the S-2 side tube. Drill #30 and cleco the top channel. Locate a #30 hole through each side tube. This hole on each side of the channel will be drilled out and riveted with 1/8" stainless steel pop rivets. Then find the center of the channel and space out from the center 5" each way for a total of (9) 1/8" rivets on the top. See Step 12.

6. Press the Lexan against the door frame and mark from the inside with a flair, an outline of where the door tubes lay against the Lexan. This will show where you need to peel off the paper (both sides) to see where to drill into the door frames.

7. Remove the top clecos, clean away debris, debur and rivet. NOTE: Use 1/8" stainless steel rivets in each corner. Use aluminum pop rivets elsewhere.

8. Starting at the top rivet on each side tube, mark off every 3" down to the bottom. Keep the Lexan pushed in at the middle. DO NOT drill and cleco all the way down one tube, drill a #30 hole in each side working down alternately. Rotate clecos so you'll have enough.

9. Drill #30 across the bottom of the door every 3". Keep holes located on center of the tube.

10. Look through the Lexan and drill the gusset holes on each corner.

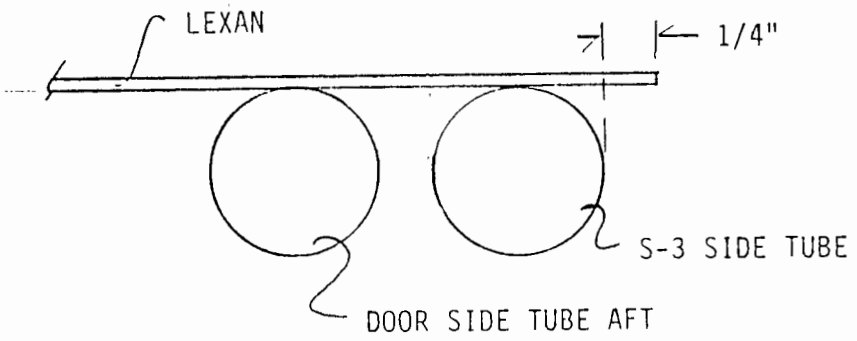
11. Drill from the inside the 3/8" hole in the door lower tube. Back up with a wood block or clecos on either side.

12. Remove the cleco, debur and clean away the debris. Rivet the Lexan to the door frame. Use stainless steel rivets in the lower corner gussets and through the top channels. See parts drawing for exact rivet size and type.

13. Peel the paper off from the frame to the edges. Leave the middle protected until ready to fly.

14. With the paper removed from the edges, use masking tape to mark where the windshield and door Lexan meet. The other edges can be taped to allow overlaps as shown in Figure 012-014. Also mark out the hinge clearance notch shown in Figure 012-014A for all hinge points.

15. Remove the doors and lay flat on a table. Score the masking tape line with a sharp razor type knife (a sheetrock knife works great). Score repeatedly until a definite groove is made. Snap off the excess after scoring and file smooth. Alternate method: Snip off excess with a good tin snips and sand or file smooth.



CROSS SECTION VIEWS

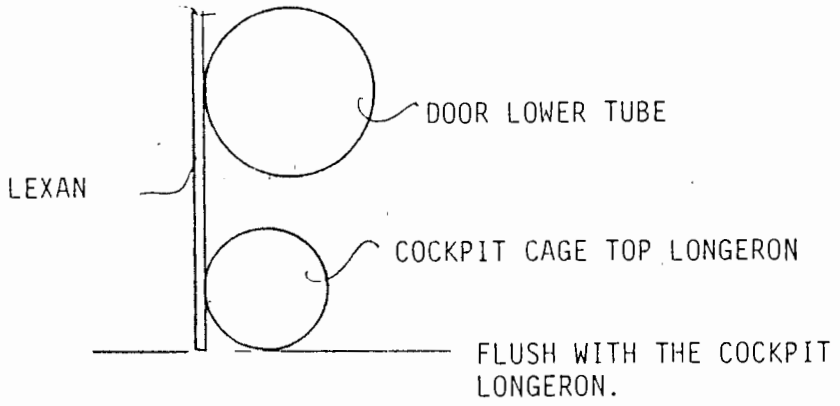


FIGURE 012-014

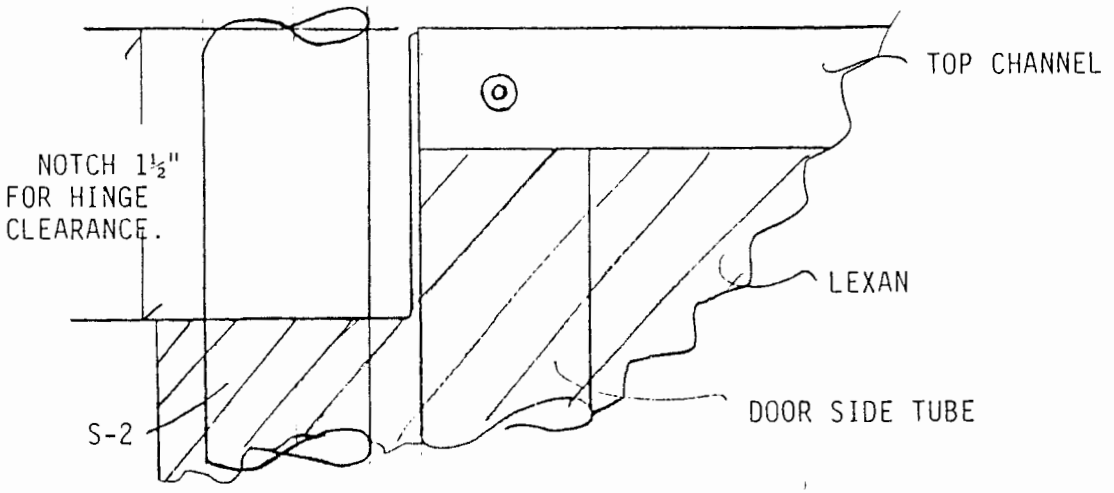


FIGURE 012-014A

16. Install the trim lock to the door's top channels inside edge. Set doors aside until the fuselage is covered. Continue with the following steps after fuselage is covered.

IMPORTANT: DO NOT PROCEED UNTIL AFTER COVERING THE FUSELAGE.

17. Install the doors to the covered fuselage. Assemble the door handles to each side. Refer to Figure 012-017 for proper handle orientation prior to drilling bolt holes. Refer to Figure 012-017A for proper spacing.

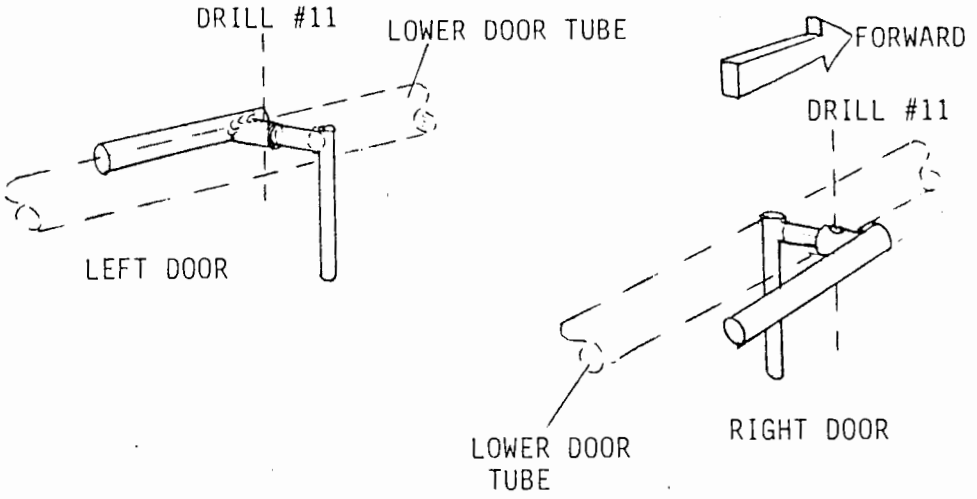


FIGURE 012-017

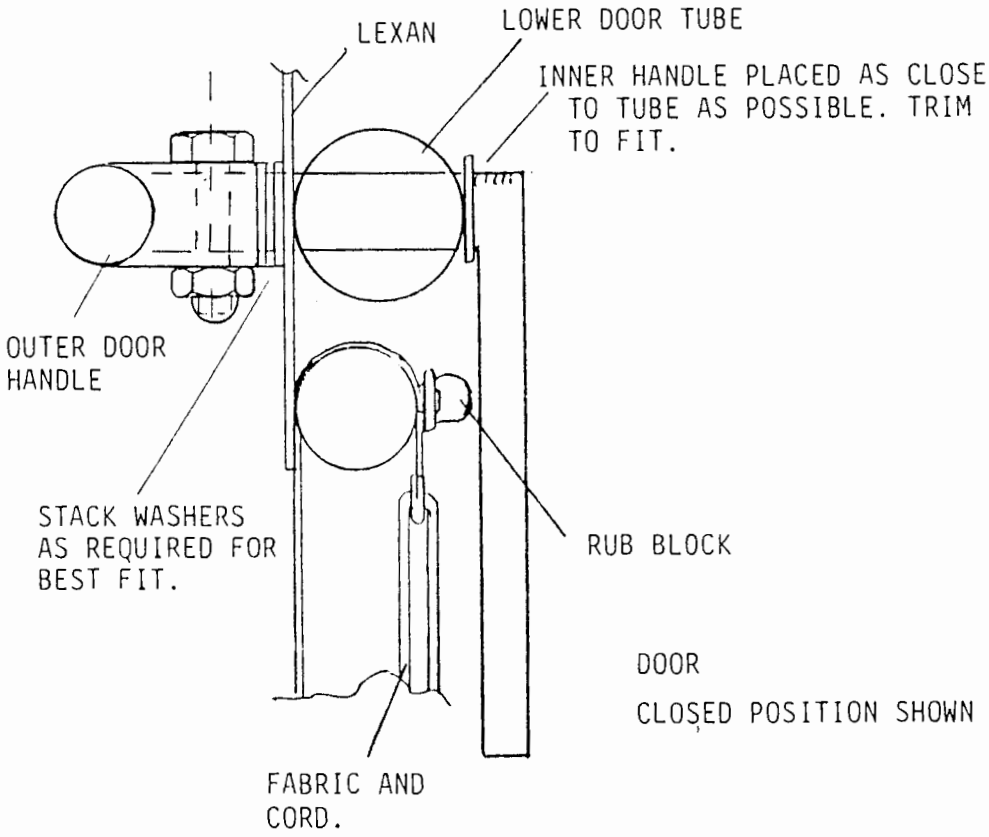


FIGURE 012-017A

18. With the door closed and the inner door handle positioned straight down, place the rub block (small 1/4" aluminum tube) with its detent under the handle and centered and level on the cockpit cage top longeron. Drill #30 into each flattened end of the rub block and rivet. Repeat for other door.

19. Close the doors. (Wings should NOT be installed at this time). Set the upper panels on top of the cabin so they overlap the door top channels by 1/8". Locate and rivet (6) stainless steel pop rivets into each end of the upper panels once you're satisfied with its location. Locate the rivet nearest the top channel with a 1" set back. This will allow the panel to flex up and down and stay tight against the door. See Fig. 012-019.

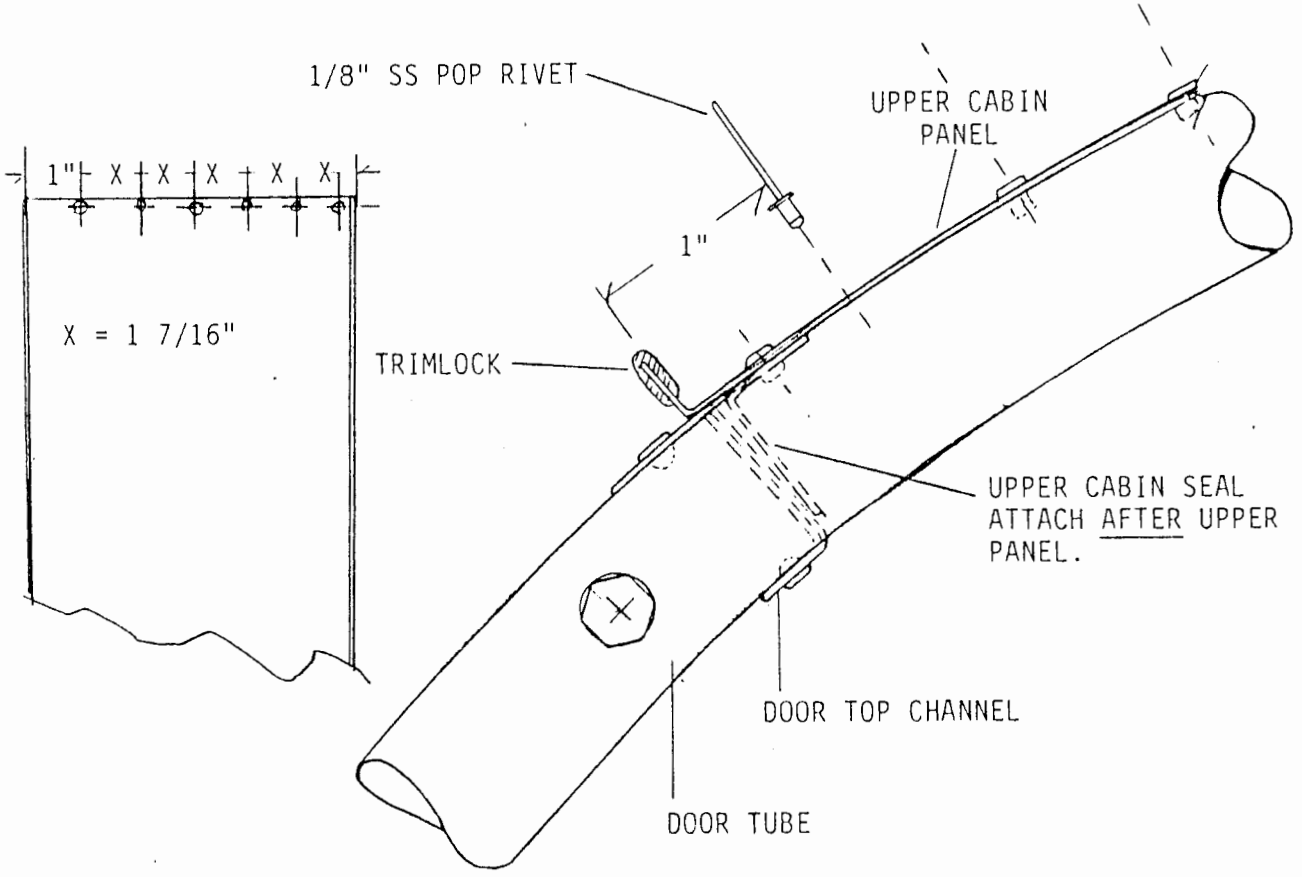
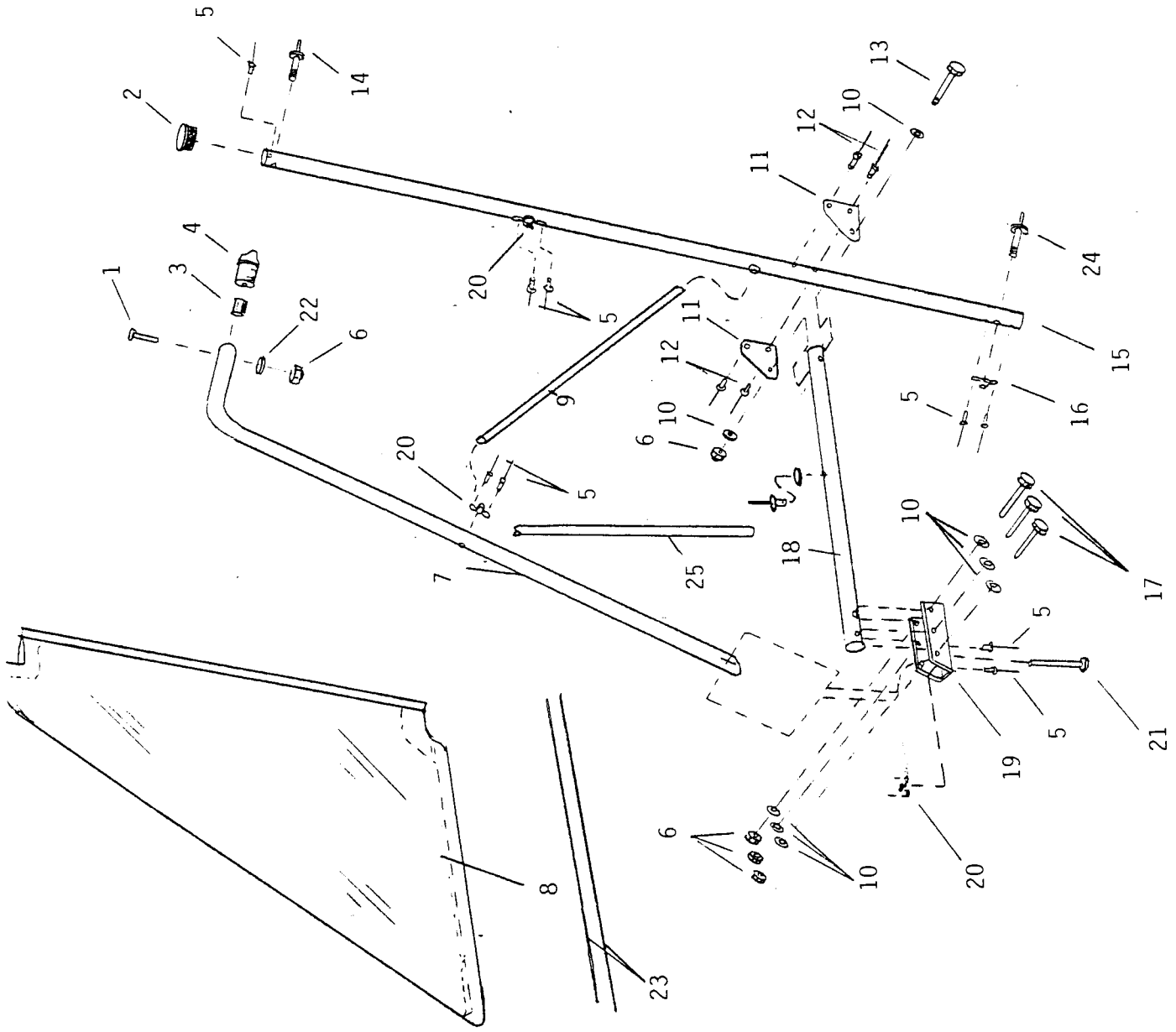


FIGURE 012-019

20. Locate and mark the upper cabin seals with #30 holes every 5 1/4" along the 1/2" flange. Pre-drill and debur. With the door closed and latched position the seal against the door's top channel. Drill up through the pre-drilled holes in the seal into the upper cabin panel. (Cleco #30) Remove, debur and clean. Rivet from the top side with 1/8" aluminum pop rivets.

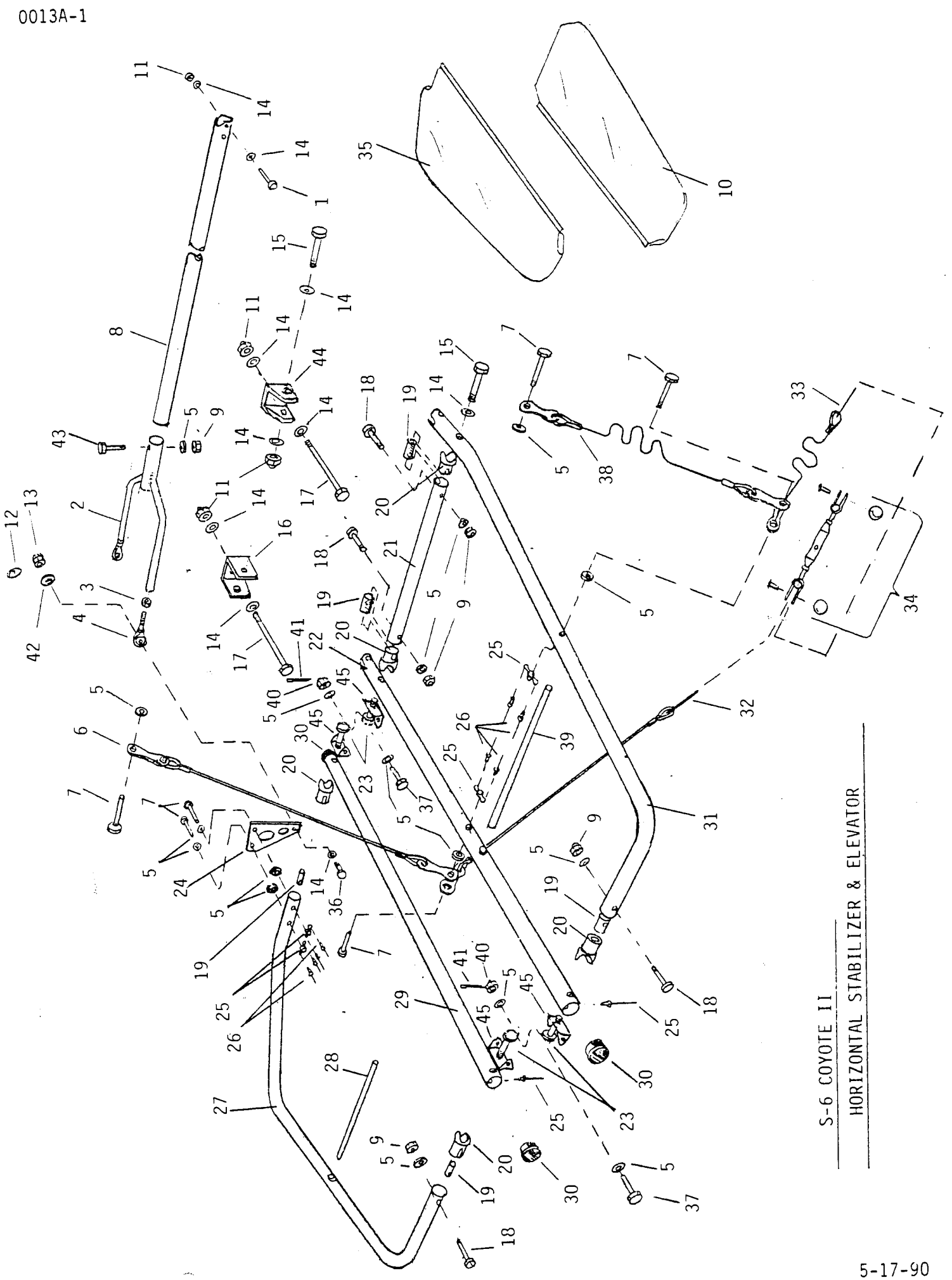
21. The door installation is complete with the exception of the up catch. This will be installed after the wings are on and covered. Simply hot knife through the fabric to the socket and Loctite the threads on the up catch and screw in. Position up catch to streamline aft.

S-6 COYOTE II
VERTICAL STABILIZER



S-6 COYOTE II VERTICAL STABILIZER

#	PART NAME	PART NO.	QUAN	PRICE
1.	3/16" Bolt	AN3-13A	1	.30
2.	1" End Cap	1-CAP	1	.60
3.	Insert Nut	I-NUT	1	1.40
4.	1" Compression Fitting	TC-1	1	1.10
5.	3/32" Aluminum Pop Rivet	40APR1/8	7	.10
6.	3/16" Shear Nut	AN364-1032A	5	.15
7.	Vertical Stabilizer Leading Edge	TG-VSLE	1	17.00
8.	Vertical Stabilizer Skin	TG-VS	1	45.00
9.	Vertical Stabilizer 1/2" Internal Brace, 19"	TG-IB-V-19"	1	2.40
10.	3/16" Thin Washer	AN960-10L	9	.03
11.	Gusset, 3-Hole	G-3	2	2.50
12.	3/16" SS Pop Rivets	12SSPR	4	.20
13.	3/16" Bolt	AN3-14A	1	.30
14.	1/4" Eyebolt	AN43B-14A	1	3.00
15.	Vertical Stabilizer Spar	TG-VSS	1	15.00
16.	1/4" Nut Plate	MS21047-4	1	.60
17.	3/16" Bolt	AN3-15A	3	.30
18.	Vertical Stabilizer Spreader Tube	TG-VSST	1	6.75
19.	Vertical Stabilizer Fwd. Bracket	TG-VSFB	1	6.00
20.	3/16" Nut Plate	K-1000-3	3	.40
21.	3/16" Bolt	AN3-34A	1	.80
22.	3/16" Thick Washer	AN960-10	1	.03
23.	Lacing Wires, 36" x 1/8" (Stainless Steel)	TG-LW	2	2.50
24.	1/4" Eyebolt	AN43B-13A	1	3.00
25.	Vertical Stabilizer 1/2" Internal Brace, 17 3/8"	TG-IB-V-17 3/8"	1	2.40



S-6 COYOTE II

HORIZONTAL STABILIZER & ELEVATOR

S-6 COYOTE II HORIZONTAL STABILIZER & ELEVATOR

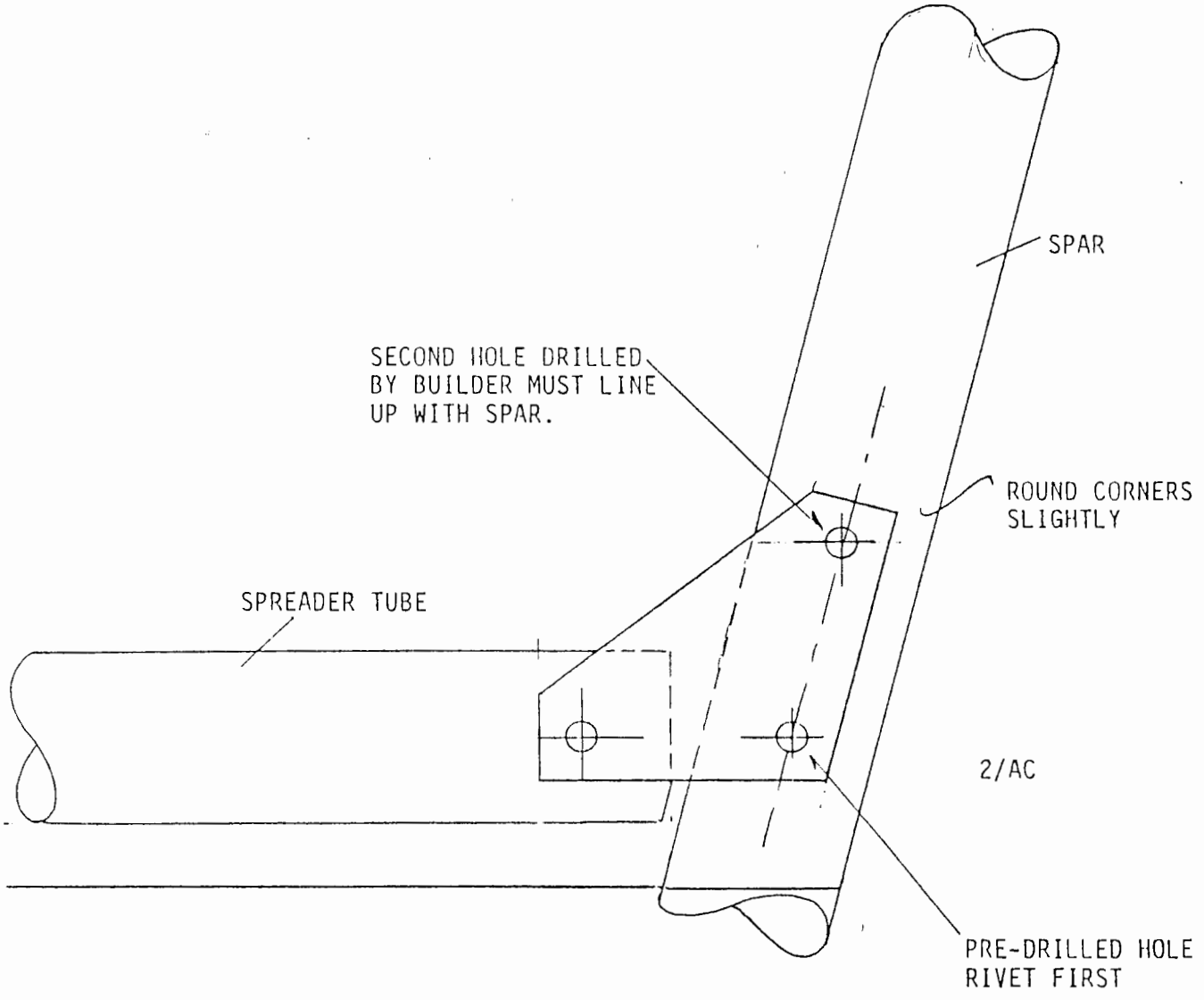
#	PART NAME	PART NO	QTY	PRICE
1.	1/4" Bolt	AN4-15A	1	.40
2.	Elevator Yoke	TG-EY	1	22.00
3.	1/4" Plain Nut	AN345-416	2	.10
4.	Male Rod End	NM-4	2	8.00
5.	3/16" Thick Washer	AN960-10	26	.03
6.	Top Aft Cable	TG-TAC	2	8.00
7.	3/16" Bolt	AN3-14A	11	.30
8.	1 1/4" Push Pull Tube	TG-1 1/4"PPT-108	1	35.00
9.	3/16" Shear Nut	AN364-1032A	9	.15
10.	Horz. Stab. Skin	TG-HSSKIN	2	42.00
11.	1/4" Shear Nut	AN364-428A	7	.20
12.	Loc Ring	RL-27 1/4	2	.20
13.	1/4" Castle Nut	AN310-4	2	.30
14.	1/4" Thick Washer	AN960-416	16	.03
15.	1/4" Bolt	AN4-15A	6	.40
16.	Horz Stab Attach Bracket	S2-SAB	2	3.50
17.	1/4" Bolt	AN4-36A	2	1.25
18.	3/16" Bolt	AN3-13A	8	.30
19.	Insert Nut	I-NUT	10	1.40
20.	1" Compression Tube	TC-1	10	1.10
21.	Horz Stab Spreader Tube	TG-HSST	2	6.00
22.	Horz Stab Spar	TG-HSS	2	16.80
23.	1/4" Bolt	AN4-14A	8	.40
24.	Elevator Horn	TG-EH	2	6.00
25.	3/16" Nut PLates	K-1000-3	8	.40
26.	3/32" Alum. Pop Rivets	40APR1/8	16	.10
27.	Elevator Trailing Edge	TG-ETE	2	27.00
28.	Elevator 1/2" Internal Brace	TG-IB-E	2	2.40
29.	Elevator Spar	TG-ESPAR	2	14.40
30.	1" End Cap	1-CAP	6	.60
31.	Horz Stab Leading Edge	TG-HSLE	2	20.00
32.	Lower Aft Cable	TG-LAC	2	8.00
33.	Lower Fwd Cable	TG-LFC	2	8.00
34.	Turnbuckle	RL-335-AT	2	25.00
35.	Elevator Skin	TG-ES	2	42.00
36.	1/4" Bolt	AN4-7	2	.40
37.	3/16" Bolt	AN3-15	4	.45
38.	Top Fwd. Cable	TG-TFC	2	8.00
39.	Horz. Stab. Internal Brace	TG-IB-H	2	2.40
40.	3/16" Castle Nut	AN310-3	4	.30
41.	Small Cotter Pin	MS24665-134	4	.10
42.	1/4" Plastic Washer	PW-4	2	.20
43.	3/16" Bolt	AN3-15A	1	.30
44.	Horz Stab Attach Bracket Forward	TG-HSAB	2	6.00
45.	Stainless Steel Hinge	W-HB	8	1.60

G-6 VERTICAL STABILIZER ASSEMBLY

1. Refer to Parts Drawing for parts required for assembly. The vertical fin is assembled as a bare frame. It will be used as a way to check the tailcone channel angle. Refer to tailcone assembly concerning tailcone channel

2. Rivet the 3/16" nut plate to bracket using the 3/32" aluminum pop rivets. Use a 3/16" bolt to hold the nut plate in place to drill for the rivets. Rivet from the BOTTOM SIDE. Rivet the other 3/16" nut plate and a 1/4" nut plate to the same side of the spar as shown. This will become the forward side of the spar. Also install 3/16" nut plates to the leading edge tube and spar as per parts drawing.

3. Assemble the vertical stabilizer as shown in the parts drawing. PLEASE NOTE: The G-3 bolts to the spreader tube and rivets to the spar. The pre-drilled hole in the spar is drilled 90 degrees to the other holes and is 18" from the bottom end. Rivet the G-3 to the pre-drilled hole first, then line up with the spar to drill and rivet the second. See Figure 013-03.



DRILL ALL HOLES #11
USE PRINT AS TEMPLATE

FIGURE 013-03

4. The vertical stabilizer leading edge is transfer drilled through the bracket. Make sure the leading edge tube is touching the spreader tube and the bottom of the bracket before drilling and bolting. To finish the vertical stabilizer frame, insert the 1" black plastic cap, then drill and rivet in place with a 3/32" pop rivet.

5. Fit the internal brace tubes to the vertical fin frame by cutting to the approximate length and test fitting. Fit the longer one first. The second internal brace should run from the upper intersection of the longer brace straight down to the spreader bar. It should intersect the spreader bar at 90 degrees. Refer to Figure 013-05 for button location. Drill a 3/16" hole and pop rivet a 3/16" thick washer in place. Cut a fish mouth shape in the second tube to help it fit the upper intersection.

6. At this point you can cover the vertical stabilizer. For cleanest results wash your hands and dust off the vertical fin frame prior to covering.

7. Slip the cover over the top gently pulling it into place. The cover will not go all the way down until the small rope is laced and drawn tight.

Slip the lacing wire into the pockets sewn into the bottom of the covering from the front. Trim the wires after the lacing is complete. With the wires in place mark out where to melt through as shown in Figure 013-07. Use a flat tipped soldering iron to make holes about 1/16" X 5/16" placed vertically and just touching the wire as it rests in the bottom of the sleeve. Lace the rope as shown in Figure 013-07A. HINT: Use the soldering iron to melt the ropes' tip into a flat shape for easier insertion into the slots. Once the rope is laced you can start pulling out the wrinkles and working the skin into its proper position. The skin should end up smooth and wrinkle free with about a 1/16" to 1/8" space at the bottom. Once you are happy with the position of the skin tie off the rope ends and trim. Close the flap to protect lacing.

8. Assemble the vertical fin to the tailcone by inserting the spar's lower end into the keel and tailcone channel. Bolt the lower end with the 1/4" eyebolt. Drill from each side through the spar using the hole pre-drilled in the keel and channel and bolt.

*Cut and file internal brace to fit from leading edge nut plate to "button" near lower spar gusset. Use the 1/2" x .035 x 19" aluminum tube provided. PLEASE NOTE: For a good fit over the nut plate flatten the tube to just slip onto nut plate.

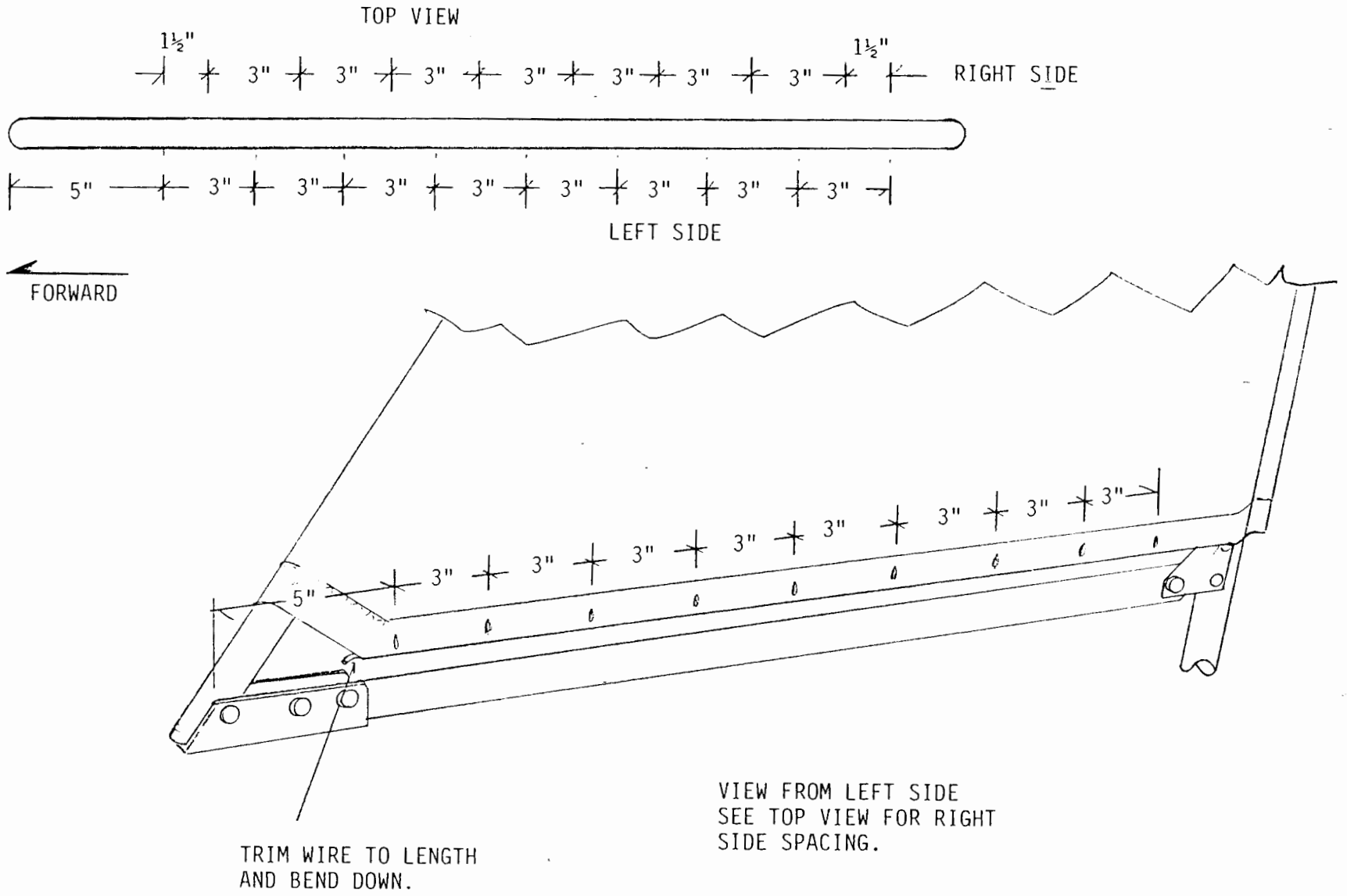


FIGURE 013-07

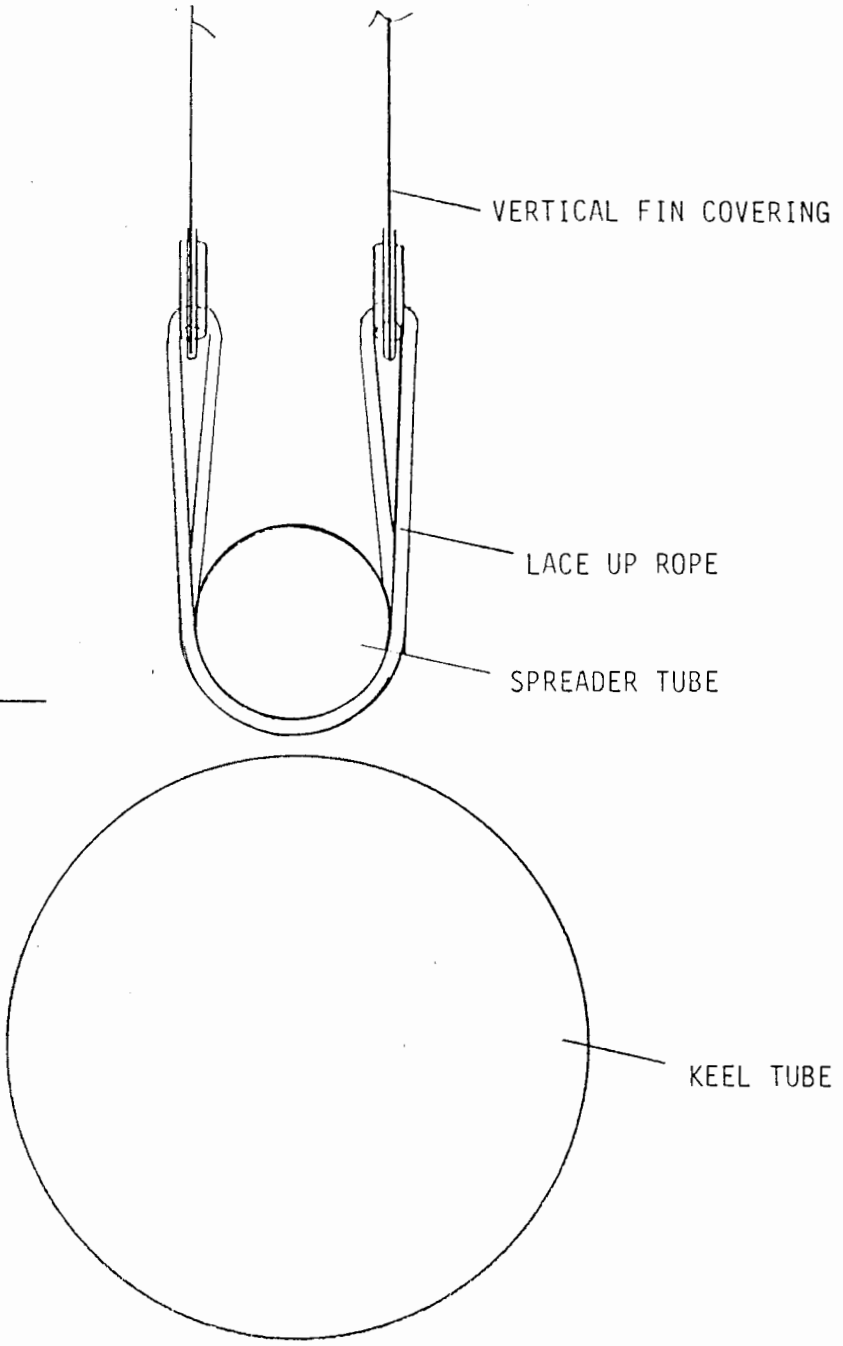


FIGURE 013-07A

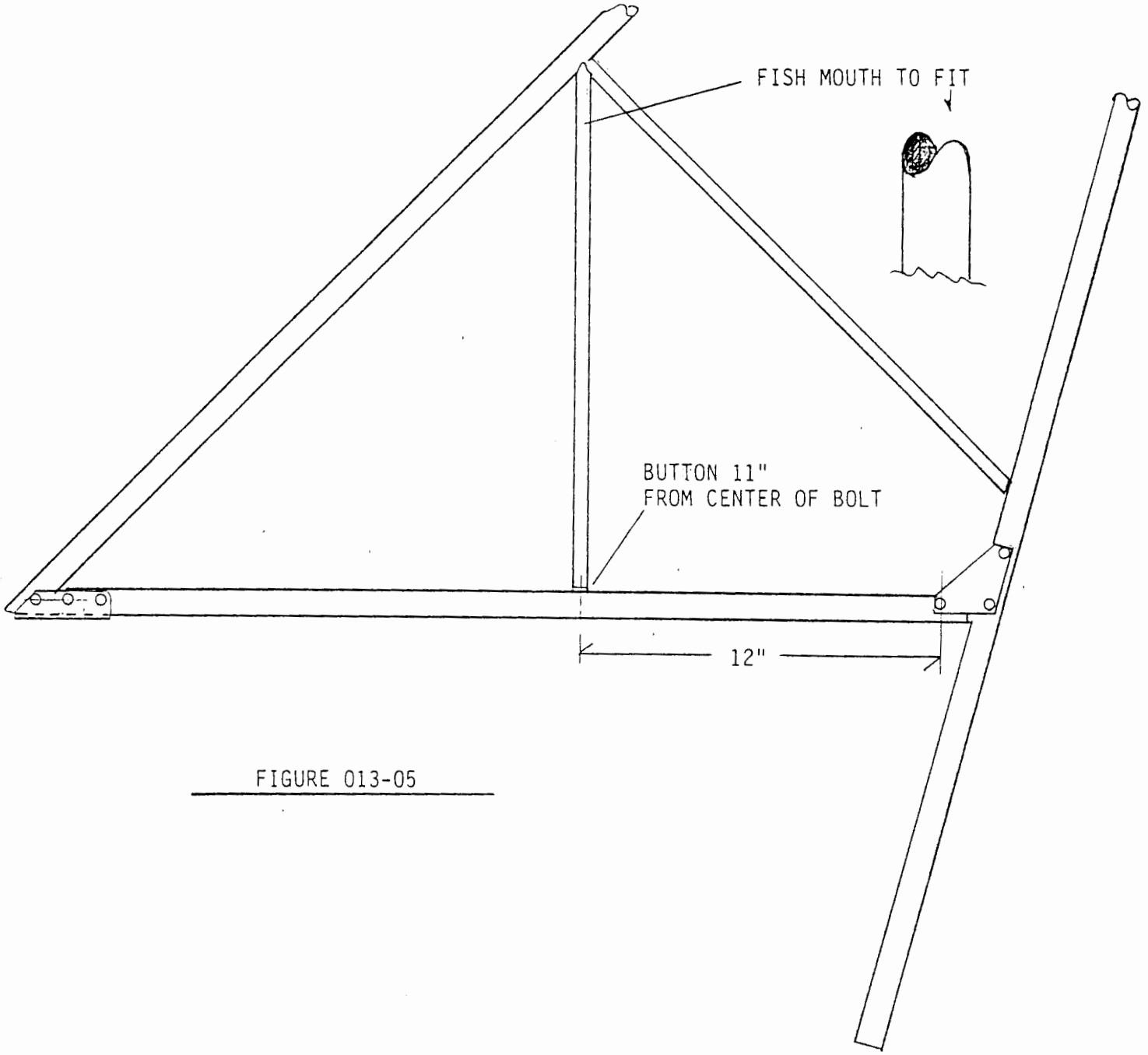


FIGURE 013-05

S-6 COYOTE II HORIZONTAL STABILIZER & ELEVATOR ASSEMBLY

1. Select the parts depicted on the parts page for assembly.

2. Rivet 3/16" nut plates to the elevator trailing edge (for the horn attachment) and to the horizontal stabilizer spar and leading edge.

3. Pre-assemble the TC-1's to their respective locations. Pay close attention to the bolt head orientation.

4. Clean everything, your tools, the table and your hands. Use a carpeted floor or work bench for tail covering. Cover the elevator using the same methods shown for the rudder. See pages 023-5 through 023-8. Use the same method to cover the horizontal stabilizer as described for the vertical fin. NOTE: Be sure to install elevator horns LH and RH with the correct edge forward.

5. Poke through the fabric with a hot knife at the cable bolt locations. The tail should be complete and ready for assembly to the fuselage. Set them aside and come back to step 6 after covering the fuselage. NOTE: It is assumed the fuselage is covered and the vertical fin is installed.

6. Poke through the fabric with a hot knife where the (2) 1/4" holes are for bolting on the horizontal stabilizer brackets.

7. Bolt the brackets in place. Be careful not to over tighten the bolts and distort the keel tube.

8. Assemble the horizontal stabilizer to the brackets. NOTE: It is allowable to slot the brackets (use a 1/4" round file) if they do not match well with the stabilizer. The forward bracket (TG-HSAB) is designed to set the negative incidence in the tail. **IMPORTANT:** This bracket must be placed so the leading edge of the horizontal stabilizer is **LOWER** than the aft in respect to the keel tube. Installing this bracket upside down will result in a severe **DIVE** tendency in flight and will not trim properly or be safe. Negative incidence is designed into the S-6 horizontal tail so it will recover from a dive at 75 mph. If your aircraft does not have the start to recover from a dive at 75 mph please consult the factory.

9..Attach the cables to their respective locations and apply only slight tension with the turnbuckle. Fine tune and safety wire the turnbuckles after the wings are installed. The tension should be enough so when you strum the cables they have a nice low tone. Do not over tighten or distortion of the horizontal stabilizer will result. To set the tail level to the wings view it from the rear and adjust until equal space appears on each side. IMPORTANT: Be sure to safety the turnbuckles!!!

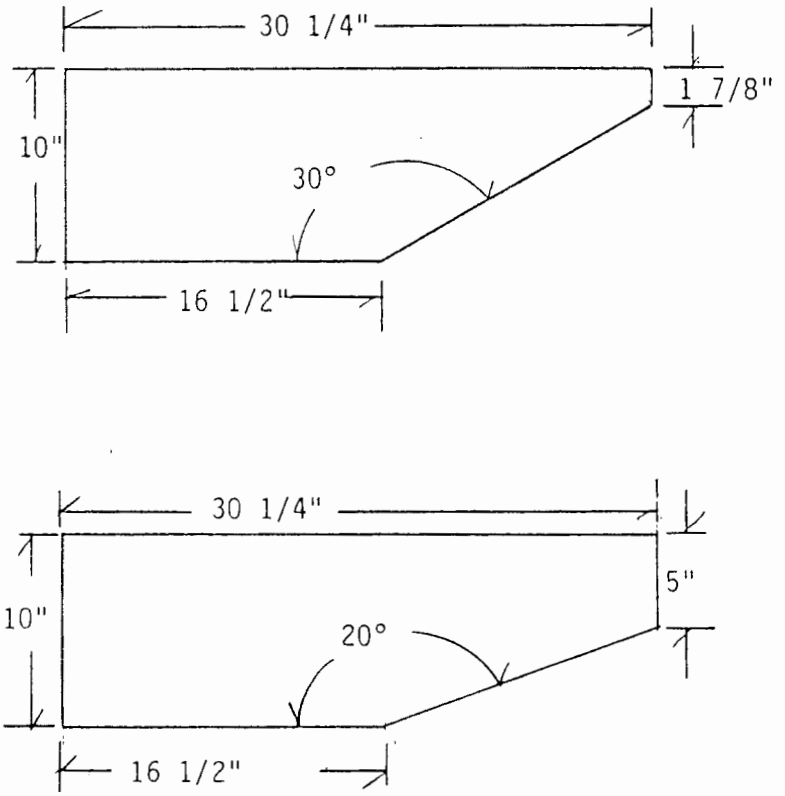
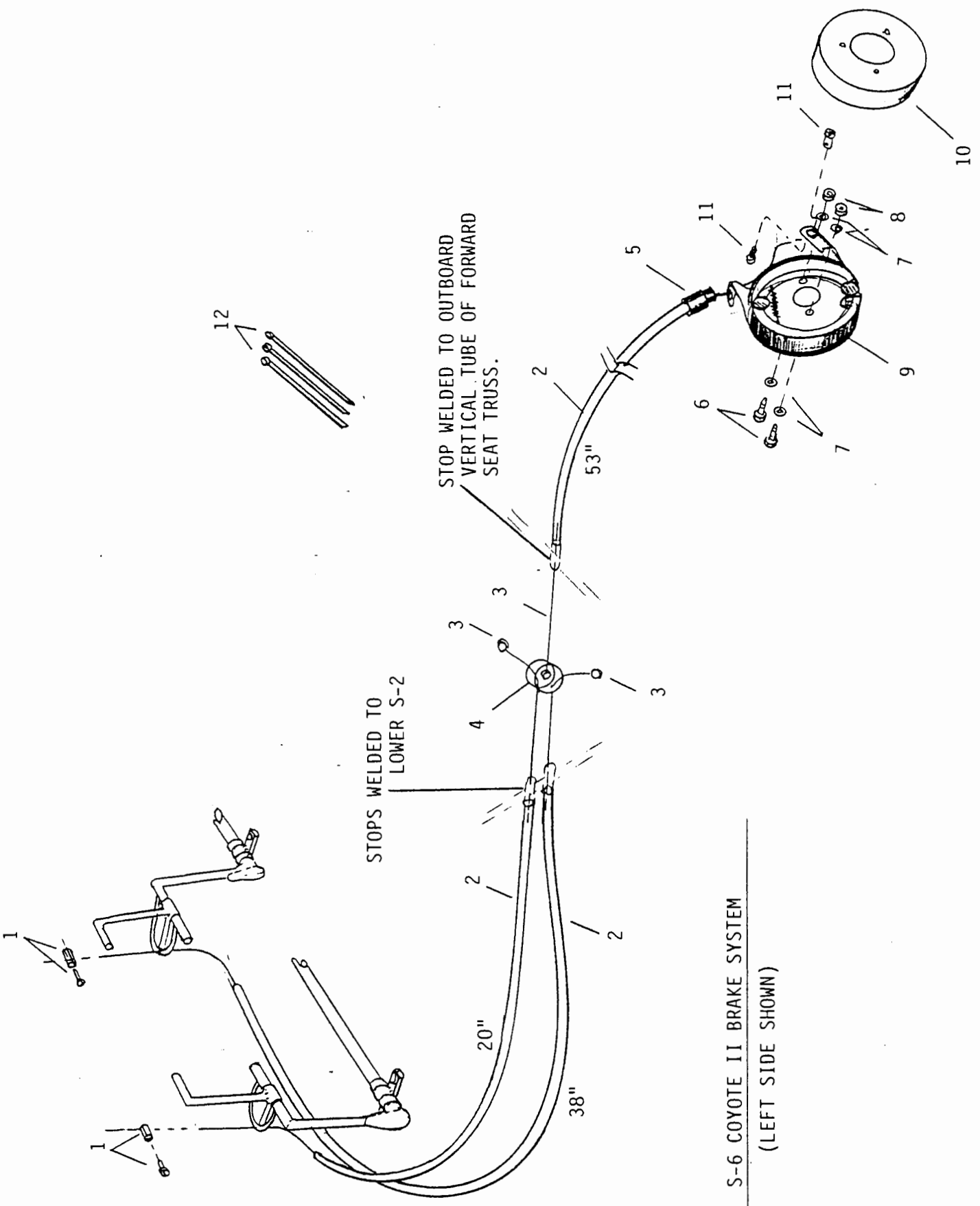


FIGURE 013-12

13. Hold the 20 degree template under the elevator flat against the horizontal stabilizer (be sure the control stick is against the stop). Adjust the rod ends until the template fits with both horizontal stabilizer and elevator flat against the template. Check for evenness of the elevators. They should be flat across each other and not one lower or higher than the other.

14. The 3/4" x .058 x 1 1/2" aluminum tube that was slipped over the 5/8" push pull tube during step 12 of the control stick assembly will now be used as an up elevator stop. Using the 30 degree template hold the elevator in position with the safety belts. Slide the stop against the swivel tube (built into the S-3) and drill and rivet with the rivet positioned top side. IMPORTANT: Please use a 3/16" stainless steel rivet. Check the system for proper movement. Be sure the loc rings are through the 1/4" bolt attaching the horns to the yoke. (Check this prior to each flight).



S-6 COYOTE II BRAKE SYSTEM

(LEFT SIDE SHOWN)

S-6 COYOTE II BRAKE

#	PART NAME	PART NO	QUAN	PRICE
1.	Wire Stop/Screw	2360	4	.40
2.	Large Cable Housing, 20 Ft.	B-CH20	1	20.00
3.	Brake Cables, 105"	B-C105"	6	4.50
4.	Brake Line Mixer Ring	B-MIX-R	2	6.00
5.	Cable Conduit Ferrule	2394	2	2.00
6.	3/16" Bolt	AN3-5A	4	.15
7.	3/16" Thick Washer	AN960-10	8	.03
8.	3/16" Shear Nut	AN364-1032A	4	.15
9.	4 1/2" Brake (LH/RH)	2269	2	39.00
10.	4 1/2" Brake Drum	2211	2	7.50
11.	Wire Swivel/Screw	2361	2	.45
12.	Small Plastic Zip Ties	N-TIES	6	.30

S-6 COYOTE II BRAKE ASSEMBLY

1. Select the parts depicted in the brake parts drawing. If you are assembling the spun aluminum wheel option refer to step 2. If you are using stock wheels go to step 3.

2. Assemble the nose and main wheels, tires and drums to the wheels. Look closely at the main wheel hubs, there is a small machined edge where the drum will rest against. Install the valve stems to three of the wheel halves. Mount the drums to the hubs with the tire in place. Inflate the tires to the recommended pressure of 30 PSI. CAUTION: Make sure all bolts are secure before inflating the tires.

3. Deflate the tires before loosening the wheel bolts. Bolt the drums to the wheels by removing the bolts and thread them through the drum. The bolt heads must be in the inside in order to clear the pads. Re-inflate the tires to 30 PSI.

4. Cut the cable housing to the length that will best fit between the stops. Consult the parts drawing for cable housing locations. A good side cutters can be used to cut the cable and cable housing to length. The cut should be clean so no burrs will cause wear and eventual failure of the cable. To clean up the end of a poorly cut housing grind the end on a bench grinder or similar tool. Look closely at the end of the cables. The end with the pill shaped stop is the end that will insert into the mixer ring. Cut off the other end and insert the cables through the holes in the ring.

5. The brake pad assembly will need to be located on the tabs welded to the axle socket. The assembly should ride with the cable stop about 90 degrees to the gear leg, this will allow the brake cable to run into the stop with the least bending. The brake pad assembly must be located centered on the axle to allow the drum assembly to spin freely when the brakes are not applied. To accomplish this you will have to improvise a centering device. The hole in the brake pad assembly is 1" and the wheel axle is 5/8". We use a bushing 1" in O.D. with a 5/8" I.D. This is slipped over the axle then the brake pad assembly is positioned on over the bushing and against the tabs. Clamp it in place and drill through the tabs to locate the holes. Debur and bolt on the brake pad assembly.

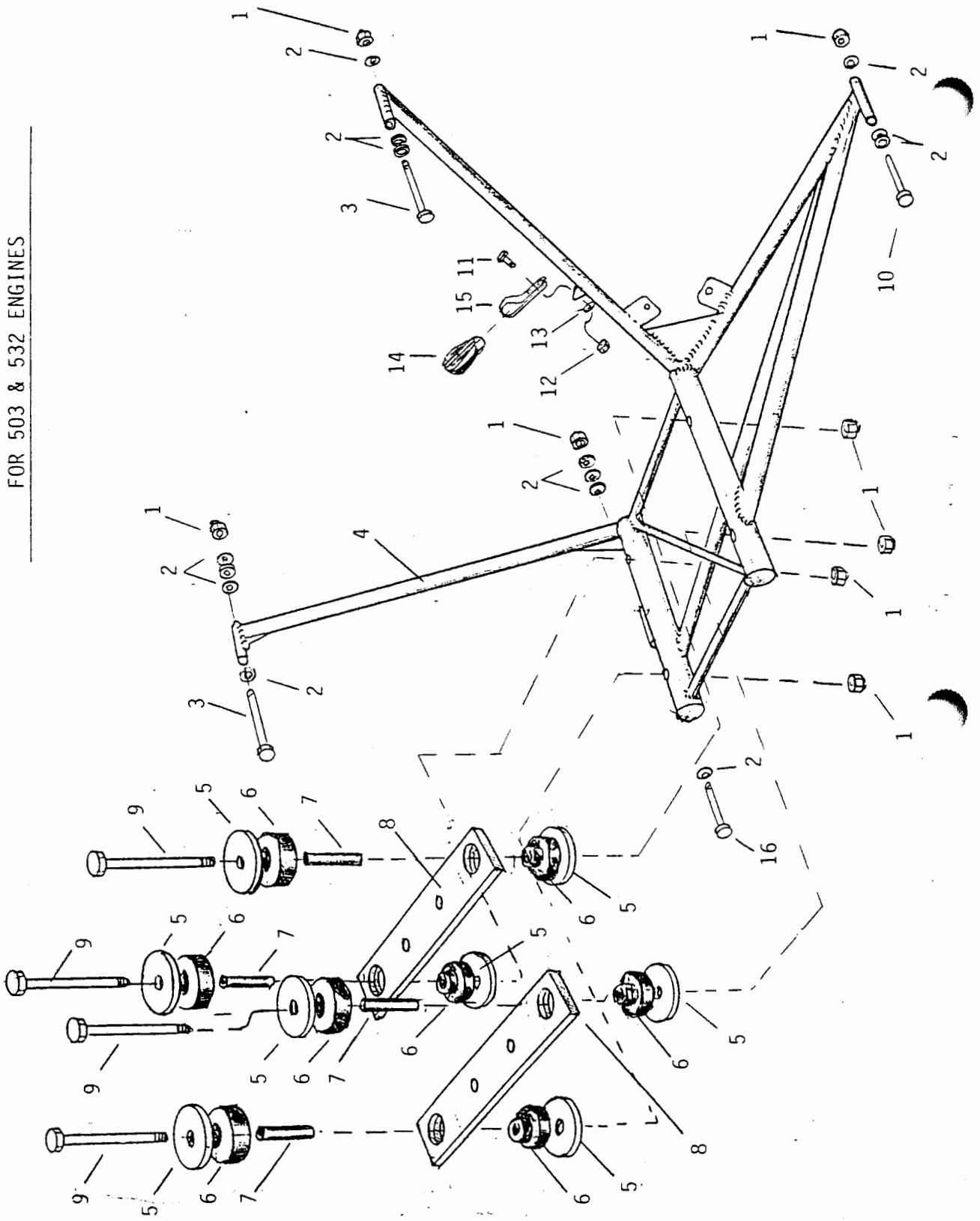
6. Fit the wheel and drum assembly over the brake pads. The drum should spin freely if the pads are centered. If this is not the case a little work with a file can free up the drum. Force the drum over the pads and rotate the wheel several times. This action will mark where the high spots are on the pads. File these down with a metal file until the wheel spins freely. CAUTION: Wear a dust particle mask when filing on the brake pads. The pads may contain asbestos.

7. Install the cable housing into the stops on the frame and route them to the toe pedals and wheels. Feed the cables into the housing and extend them through the toe levers and actuator arms on the brakes. Use the proper hardware to fix the ends and adjust the tension.

8. The brake system will need fine tuning after the aircraft is complete. Adjustments to the cables can be made at each stop and at the adjusting barrel on the brake. Adjust the brakes so the pedals feel even without excessive travel before actuation.

S-6 COYOTE II ENGINE MOUNT

FOR 503 & 532 ENGINES



S-6 COYOTE II 503 AND 532 ENGINE MOUNT

#	PART NAME	PART NO	QTY	PRICE
1.	1/4" Tensile Nut	AN365-428A	8	.20
2.	1/4" Thick Washer	AN960-416	14	.03
3.	1/4" Bolt	AN4-33A	2	1.00
4.	Engine Mount	EG-MT-503/532-36	1	195.00
5.	Aluminum Washer	EG-AW	8	.85
6.	Barry Mount	22001	4	22.00
7.	Spacer Bushing 1 1/8" x 3/8" x .058	EG-Bx3/8x.058	4	.50
8.	Mount Plate	EG-MP	2	10.00
9.	1/4" Bolt	AN4-27A	4	.60
10.	1/4" Bolt	AN4-22A	1	.50
11.	3/16" Bolt	AN3-4A	1	.20
12.	3/16" Shear Nut	AN364-1032	1	.15
13.	3/16" Thin Washer	AN960-10L	1	.03
14.	Pulley	098	1	8.50
15.	Jib Strap	RL-319	1	3.50
16.	1/4" Bolt	AN4-23A	1	.60

S-6, S-7, S-9 & S-10 ENGINE MOUNT

INSTALLING THE ENGINE MOUNT AND ENGINE

NOTE: Install engine mount prior to painting mount.

1. Select the proper hardware and components depicted on the parts page.

2. Debur the (2) mount plates and smooth the edges on each end with a file and sandpaper.

3. Debur the 1 1/4" x 3/8" x .058 bushings.

4. Lightly oil the (4) 1/4" bolts used to hold the mount to the firewall. Insert these with a single thick washer under head into the mount lugs. Line up the mount in its proper position and insert the (4) bolts into the receivers on the fuselage. PLEASE NOTE: The mount may need some "encouraging" in order to fit. Hold the mount in position over the receiver bushing in the fuselage and tap the bolts in with a mallet. The lower mount points on the S-6 will need to be drilled through the tabs on the fuselage. Use the engine mount's bushings as a drill guide.

5. Install nuts and washers and tighten to 5 to 7 ft. lbs..

6. Assemble the barry mounts and plates as illustrated. Torque these bolts to 15 to 20 ft. lbs..

SPECIAL INSTRUCTIONS FOR INSTALLING S-10 MOUNT PLATES

7. Look closely at the mount plates you will notice the two holes in the center are not located in the center of the plate. The plate is installed with the holes to the front. This will move the engine approximately 1/4" forward. If the plates are installed the wrong way the muffler will not fit.

8. Set the engine into the mount with the proper number of washers between the engine and plates (if required). See Chart 011-07. Torque the four metric engine stud nuts to 20 to 25 ft. lbs.

	S-6		S-7		S-9		S-10	
	FWD	AFT	FWD	AFT	FWD	AFT	FWD	AFT
Number of 3/8" Washers Between Engine and Mount Plates	BD	BD	BD	2	2			
	RH	LH	RH	LH	RH	LH	RH	LH
Number of 1/4" Thick Washers Between RH Side Of Mount and Firewall	3	0	2	0	2	0	2	0

NOTE: More may be required. Consult Manual. BD = Builder Determines

CHART 011-07

9. Bolt on the propeller (see ENGINE for correct hardware). NOTE: Some installations have large spinners refer to SPINNER INSTALLATION for details to complete prop attachment. Use 10 ft. lbs. for proper propeller torque.

10. Level the aircraft, the level reference for each model is given below.

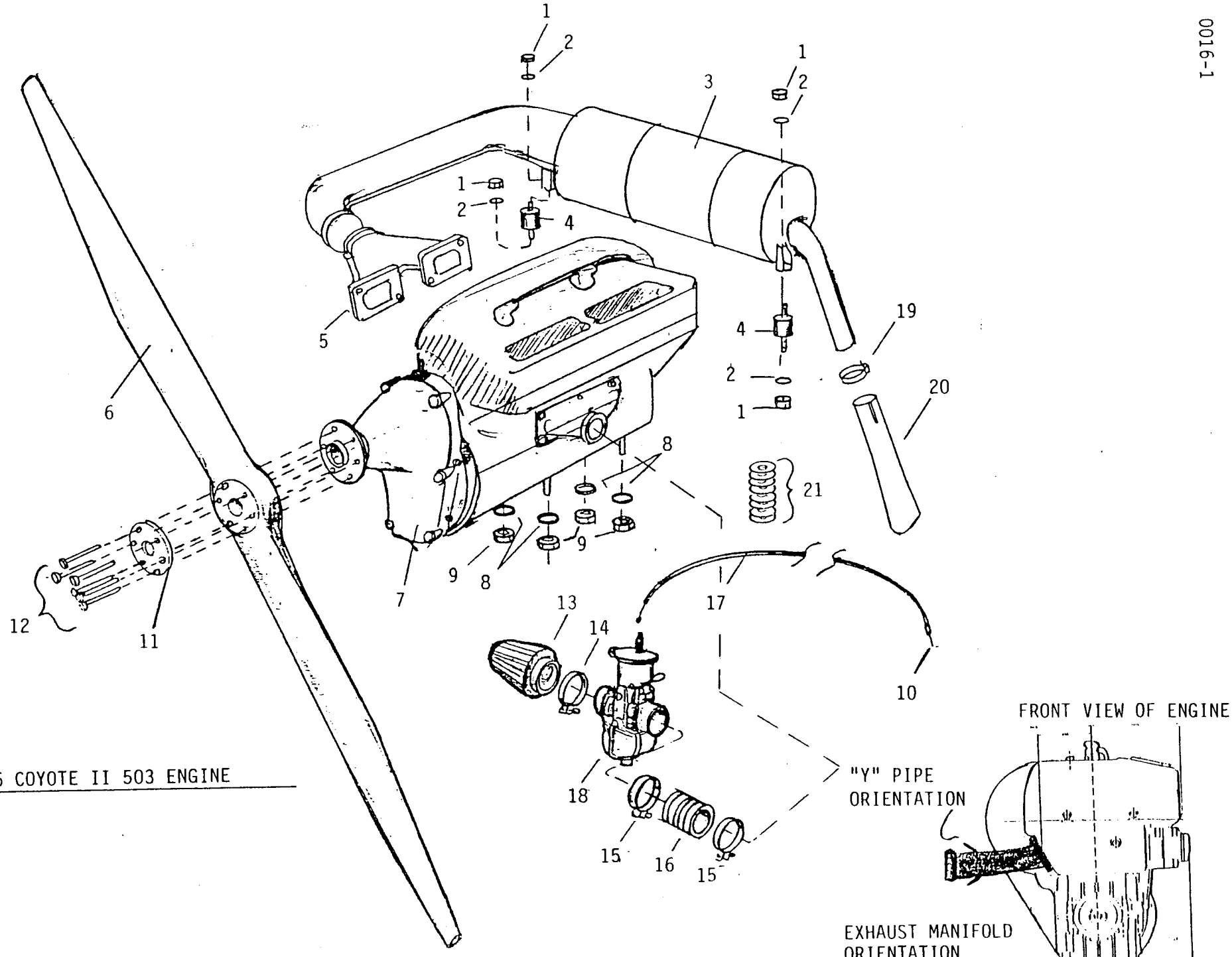
S-6 Top of door openings longeron.
S-7 Bottom of wing root gap seal 3" outboard from fuselage.
S-9 & S-10 Top longerons in the cockpit.

Check the face of the prop with a protractor and level. 0 degrees of down thrust is used on S-6, S-7, S-9 and S-10's. This means with the prop straight up it will be 90 degrees to the aircraft's level reference. Adjust by adding or removing the shims between the engine and mount plates.

11. Next check prop tracking by measuring from a reference point on the fuselage to the prop tip. Have the prop positioned level when measuring. Turn through the prop (ignition off?) and check the other tip. Both should read the same distance from the reference point. If they don't try re-torquing the prop bolts until the prop is in track.

12. Check for offset by using a reference point on each side of the fuselage such as the wing's leading edge on the S-9 or S-10 or the strut attachments on the S-6 or S-7. The right side should measure 1/4" MORE than the left to add a little left thrust. The exact amount can only be determined by flight testing. Start out with 1/4", add washers between the mount and firewall on the RH side to adjust. The right amount is when the plane flies straight in level flight at its normal cruise speed.

Other factors such as wing set (wash out), aileron, flap and tail rigging will effect the aircraft's ability to fly straight. Consider these factors when rigging offset. You'll know it's not the engine angle if the offset exceeds 5/8 of an inch. IMPORTANT: The firewall engine bolts must have (3) threads or more showing after torquing to be acceptable.



S-6 COYOTE II 503 ENGINE

S-6 COYOTE II ENGINE

#	PART NAME	PART NO	QTY	PRICE
1.	1/4" Coarse Thread Nut	EG-1/4NC	4	.15
2.	1/4" Loc Washer	AN935-416L	4	.10
3.	Muffler	Comes W/Engine		
4.	Rubber Isolater	EG-RI	2	5.00
5.	Exhaust Y Pipe	Comes W/Engine		
6.	Propeller	EG-PROP	1	160.00
7.	503 Engine	EG-EG-503	1	On Request
8.	Loc Washer	Comes W/Engine		
9.	Nut	Comes W/Engine		
10.	Throttle Cable, 105"	EG-T-CAB	1	3.00
11.	Prop Plate	Comes W/Engine		
12.	1/4" Bolts	AN4H-27A (STD)	6	.60
	(With Opt 9" Spinner Only)	AN4H-31A	6	1.40
13.	Air Filter, K & N	EG-AF	1	20.00
14.	Air Filter Clamp	Comes W/Filter		
15.	Carb Clamp	Comes W/Engine		
16.	Carb Boot	Comes W/Engine		
17.	Cable Housing, 54"	EG-T-CAB-H	1	3.00
18.	Carb	Comes W/Engine		
19.	Hose Clamp, 1 1/2"	5-5228	1	.80
20.	Muffler Extension	EG-MEXT	1	5.00
21.	3/8" Plain Washers	3/8-WASH	8	.20

S-6, S-7, S-9 & S-10 ENGINE INSTALLATION

CARBURETION AND EXHAUST FOR 503'S AND 532'S, DUAL AND SINGLE CARBS.

1. The carbs should come with a primer nipple installed. However, if not, drill and tap the carbs for the small brass nipple. Locate the nipple on the filter side of the carb at about a 3:00 o'clock position on the side to the rear. Be careful not to get aluminum particles in the carbs.

2. Remove the choke levers from the carbs. (Leave the plunger assembly intact).

3. Install carbs to the engine. Secure 90 degrees to the crankcase split line.

4. Route primer lines to nipples, pump and "T's" as required. Keep all fuel lines away from heat sources such as the muffler. Safety all connections to prevent leakage. Plastic tie lines to prevent movement.

5. Bolt the fuel pump in close to the engine so the impulse line is no longer than 15". S-7's and S-9's use tube clamps, the S-10's have tabs welded to the mounts. Run fuel lines in a manner so they are far from heat sources and secured but not crimped to prevent shifting or kinking. Clamp or safety all fuel line connections.

6. Follow the Rotax manual for throttle and other carburetion installation tips.

MUFFLERS

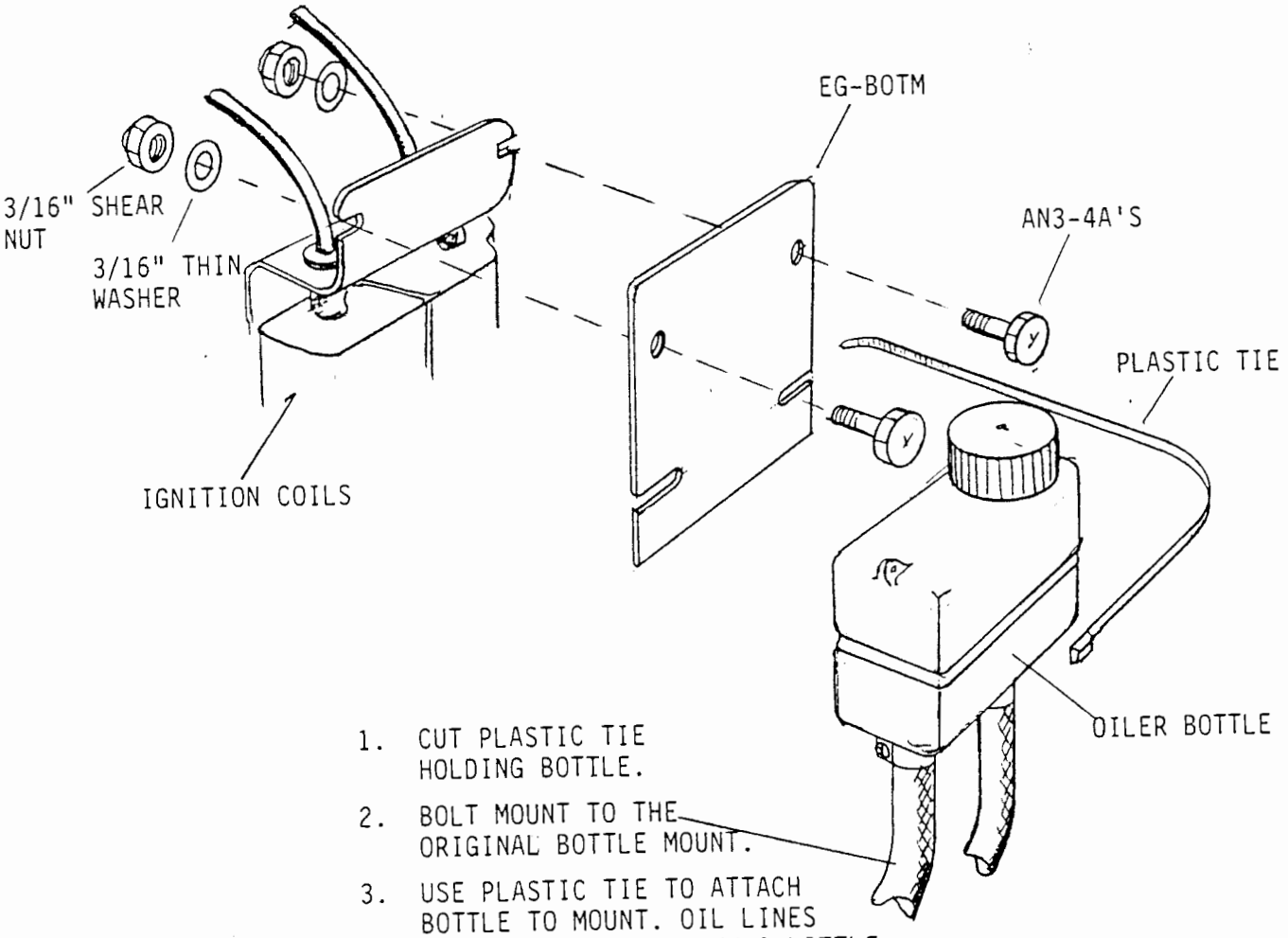
7. Install the muffler and manifolds appropriate to model type and cowling cut outs. Torque down the exhaust "Y" pipe evenly. Adjust spring tension by bending the loops wider or narrower. Try not to over tension the springs or they will break. Safety wire the springs to the loops. If spring breakage becomes evident first try less tension, then run a bead of silicon lengthwise along the springs.

The muffler's rubber mountings vary from model to model but the concept is the same. To allow enough freedom of movement so the engine vibration is absorbed without damaging the muffler. Regular inspections of the muffler should be conducted. Cracks may develop and should be welded. A severe loss in performance may occur when a muffler comes apart!

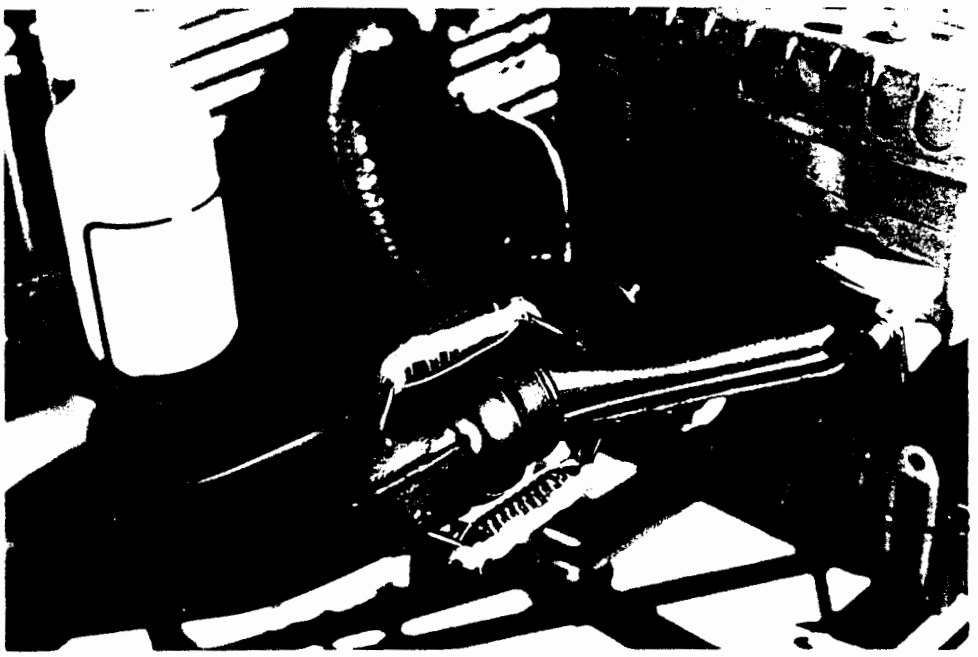
Keep the engine compartment clean! New sources of dirt, oil and grime can be early warnings of trouble. EXAMPLE: Fuel oil mix on the engine could mean a split crankcase seal which eventually could cause a seizure. Look for trouble and correct it ASAP!!!!

SPECIAL INSTRUCTIONS FOR 582 ENGINE INSTALLATIONS FOR S-10'S ONLY
(ALL OTHER MODELS DO NOT REQUIRE MOVING OF THE OILER BOTTLE)

The oiler bottle must be moved on the 582 in order to allow cowling clearance. This is done by removing the bottle and installing the bottle mount as shown in the figure below. This will lower the bottle enough to gain cowling clearance.



1. CUT PLASTIC TIE HOLDING BOTTLE.
2. BOLT MOUNT TO THE ORIGINAL BOTTLE MOUNT.
3. USE PLASTIC TIE TO ATTACH BOTTLE TO MOUNT. OIL LINES WILL SIMPLY PUSH DOWN A LITTLE. CHECK FOR KINKING IN LINES. IF KINKS OCCUR, SHORTEN LINES.



THIS PHOTO ILLUSTRATES HOW TO SAFETY AND SILICON THE MUFFLER SPRINGS. THE SILICON WILL ABSORB VIBRATION THAT CAN CAUSE SPRING BREAKAGE. THE LOOP OF SAFETY WIRE IS THERE IN CASE OF SPRING BREAKAGE. ALSO PLEASE NOTE THE EXHAUST GAS TEMPERATURE PROBE LOCATION.

PROPELLER INSTALLATION FOR MODELS S-4, S-5, S-6, S-7, S-9 & S-10

1. Check the propeller for balance by inserting a 1" tube through the prop center. Open a bench vise slightly wider than the prop. Position the prop horizontal with tube resting on the vise's jaws. If it is balanced it will remain level or any position it is set at. (Provided your vise is level across the prop and the jaws are smooth.) If the prop drops at tip balance by coating the light tip with a urethane spray varnish. PLEASE NOTE: According to the F.A.A. a propeller is still within acceptable balance if the difference is no more than the weight of a nickel. If you tape a nickel to the light end and the other tip still drops, the prop needs balancing.

2. Bolt the prop to the engine using the (6) drilled head bolts called out on the parts page. Get all the bolts started before tightening.

3. Torque the bolts in a crossing pattern to 10 ft. lbs. Re-check the torque.

4. Check for prop tracking by measuring from a reference point on the fuselage such as the fwd. strut attachment to the prop tip (prop horizontal). Turn the prop over and check the other tip. If there is a difference loosen the bolts and re-torque. Check again. If you cannot get it to "track" equal check first: Was prop positioned the same each time?
Debris between the prop and flange?
Are you measuring to the same place on each prop tip?

5. Safety the bolts with the wire provided in the kit. The method shown is the simplest way to safety and is recommended if you plan on experimenting with different props. PLEASE NOTE: In order for a safety wire job to work the wire must be "turning" the bolt clockwise.

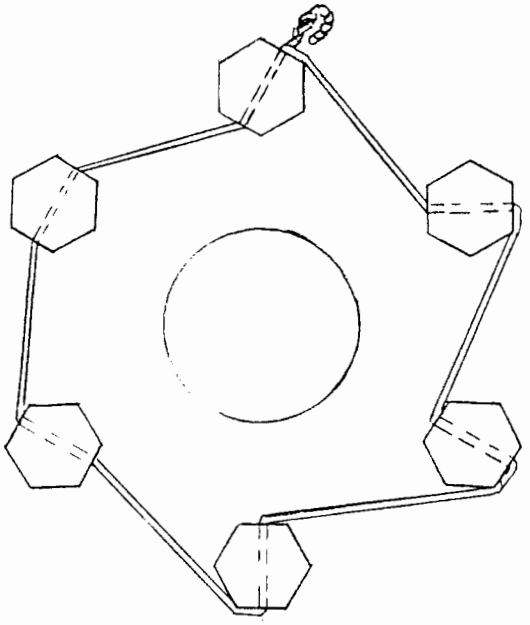
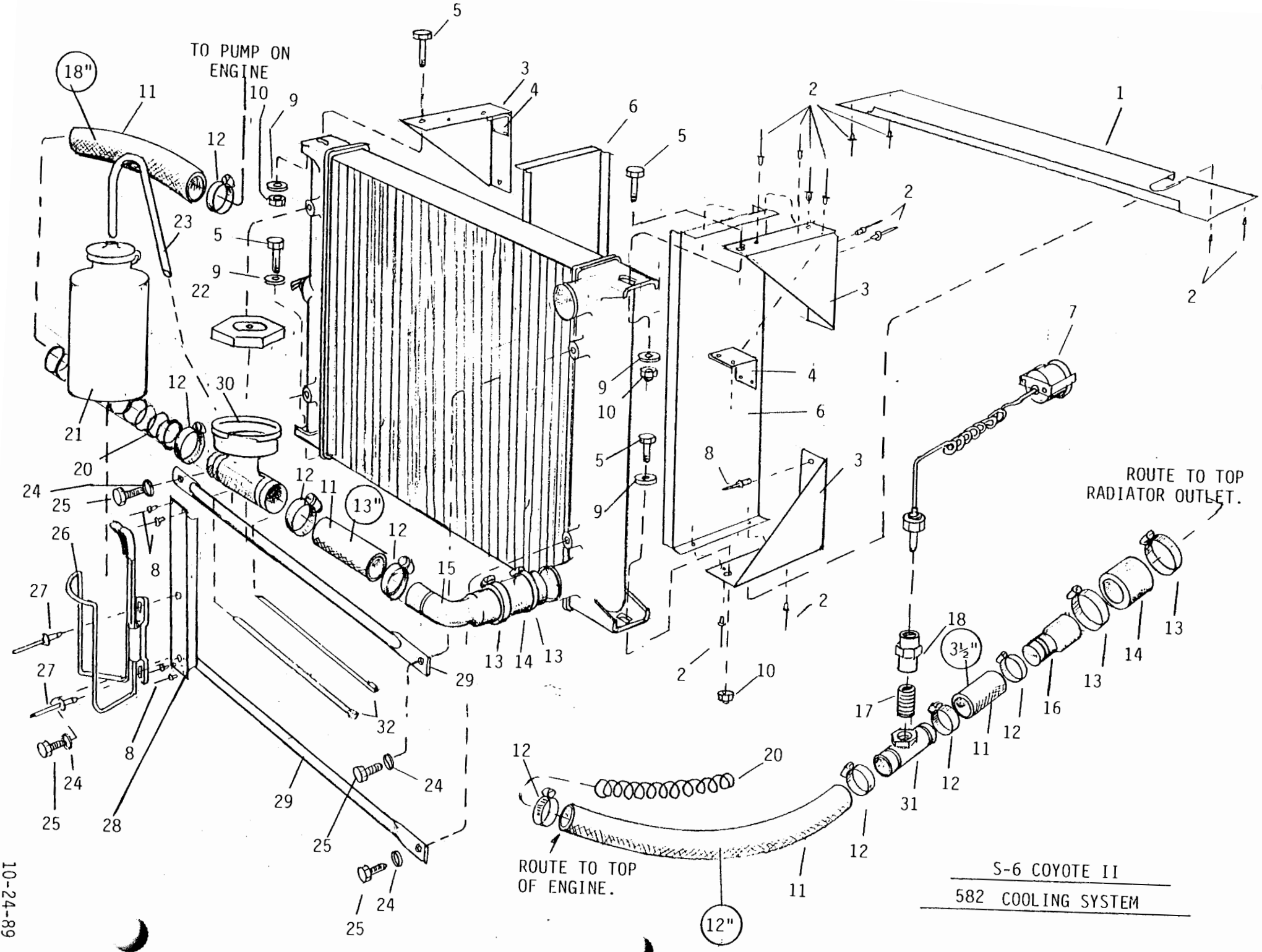


FIGURE 05



S-6 COYOTE II

582 COOLING SYSTEM

S-6 COYOTE II 582 COOLING SYSTEM

#	PART NAME	PART NO	QTY	PRICE
1.	Bottom Baffle	EGCS-RBB	1	10.00
2.	1/8" Aluminum Pop Rivet	30APR1/8	18	.10
3.	Radiator Mount Bracket	EGCS-RMB	4	10.00
4.	Mount Bracket Corner Angle	EGCS-B-ANGLE	4	1.00
5.	3/16" Bolt	AN3-4A	4	.20
6.	Side Baffles	EGCS-RSB	2	10.00
7.	Water Temp Guage	EGCS-TEMP	1	38.00
8.	1/8 Stainless Steel Pop Rivet	30SSPR	12	.20
9.	3/16" Plastic Washer	PW-3	4	.20
10.	3/16" Shear Nut	AN364-1032A	4	.15
11.	Radiator Hose, 4 ft.	EGCS-RADH	1	24.00
12.	Hose Clamp, 1 1/4"	5-5212	8	.60
13.	Hose Clamp, 1 3/4"	5-5236	4	.80
14.	Rubber Hose	EGCS-RHOSE	2	2.00
15.	Reducer Elbow	EGCS-RCELBOW	1	5.60
16.	Reducer Coupler	EGCS-RC	1	5.60
17.	Brass Nipple	EGCS-BN	1	2.60
18.	Brass Coupler	EGCS-BC	1	3.50
19.	Radiator	EGCS-RAD	1	153.00
20.	Hose Spring	EGCS-HS	3	1.00
21.	Coolant Recovery Bottle & Retainer	EGCS-CRB	1	3.00
22.	Filler Tank Cap*	EGCS-CAP*	1	---
23.	Overflow Hose	EGCS-OFH	1	.80
24.	1/4" Loc Washer	AN935-416L	4	.10
25.	6 MM Bolt x 1/2"	6MMx1/2BOLT	4	1.00
26.	See #21	-------	--	---
27.	3/16" Aluminum Pop Rivet,1/2"	12APR1/2	2	.10
28.	Mounting Channel, 8"**	EGCS-CHAN**	1	3.00
29.	Radiator Mounting Tubes	EGCS-RADT	2	3.00
30.	Filler Cap Tee	EGCS-FCT	1	36.00
31.	Temp Probe Tee	EGCS-TEMP-T	1	6.00
32.	Heavy Duty Plastic Ties		2	.30

*Comes With #30
**Fabricate From Channel Provided.

S-6 COYOTE II COOLING SYSTEM

1. Select the parts depicted in the cooling system drawing.

2. Unpack and lay the radiator on a table with inlets facing up. Use the box the radiator came in to make a protective cover for the fins during assembly. Lay the two mounting tubes across the studs projecting from the end manifolds. Determine hole locations through the flattened ends of the tubes by placing them with an even overhang on the studs. Mark and drill 1/4". Bolt the tubes in place with the (4) 6mm bolts and 1/4" loc washers. NOTE: The radiator may or may not have threaded inserts in some of the mounting studs. Make the 6mm into self tapping bolts by grinding a flat spot on the threaded side. See Figure 017-02. This will now self tap into the plastic stud.

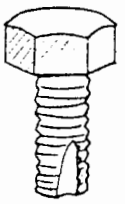


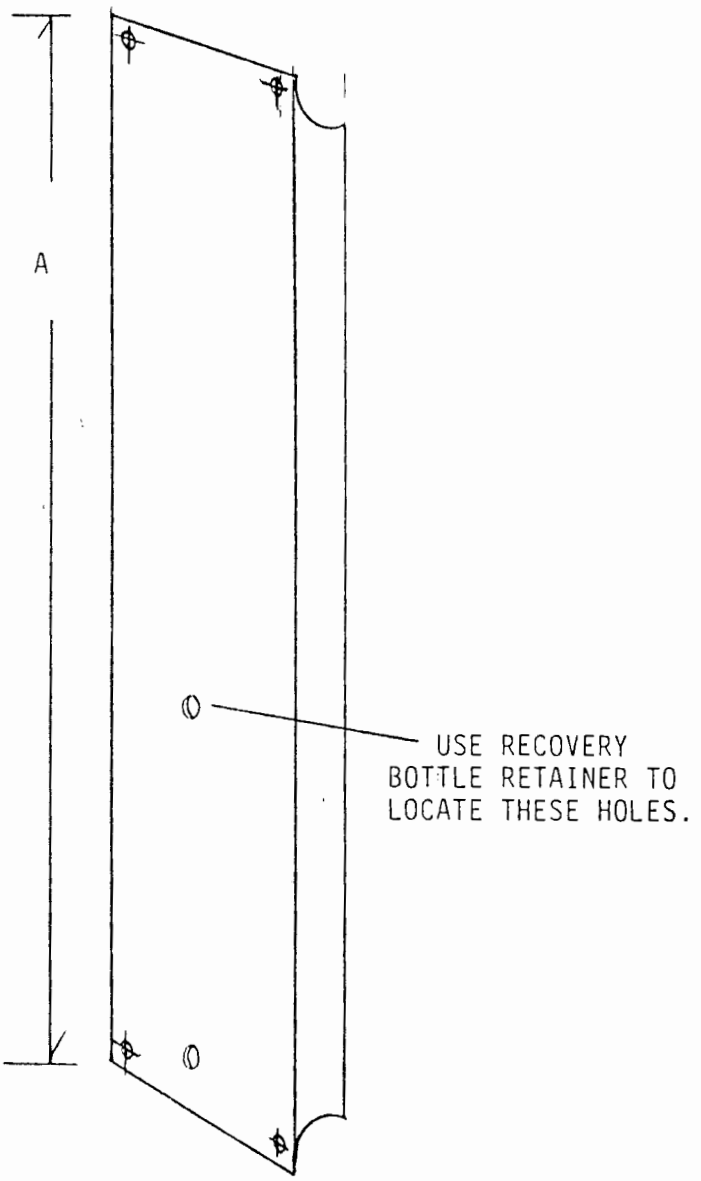
FIGURE 017-02

3. Measure, cut, drill and rivet the mounting channel as shown in Figure 017-03. Rivet to the tubes with 1/8" SSPR's. Locate the recovery bottle channel to the far RH side. HINT: Remove the tubes from the radiator to prevent cooling fin damage while riveting on the channel. Make sure to file the notch for the hose clamp on the channel.

4. Re-bolt the tube/channel assembly to the radiator after riveting the channel to the tubes.

5. Mark, drill and cleco the (4) mounting brackets as shown in Figure 017-05 and Figure 017-05A. Do not rivet the corner angles until the side and bottom baffles are installed.

6. After the corner angles are pre-drilled, bolt the brackets to the radiator as per the parts drawing. Set the radiator assembly with the brackets down on your work table. Set the side baffles in place so the top and bottom flanges point to the bracket and the long flanges seal against the radiator. Drill and rivet with 1/8" aluminum pop rivets, the side baffles to the mounts. Put (2) rivets in each end.



A = THE DISTANCE BETWEEN CENTERS
ON MOUNTING TUBES PLUS 3/8". SHOULD BE 7 1/2".

FIGURE 017-03

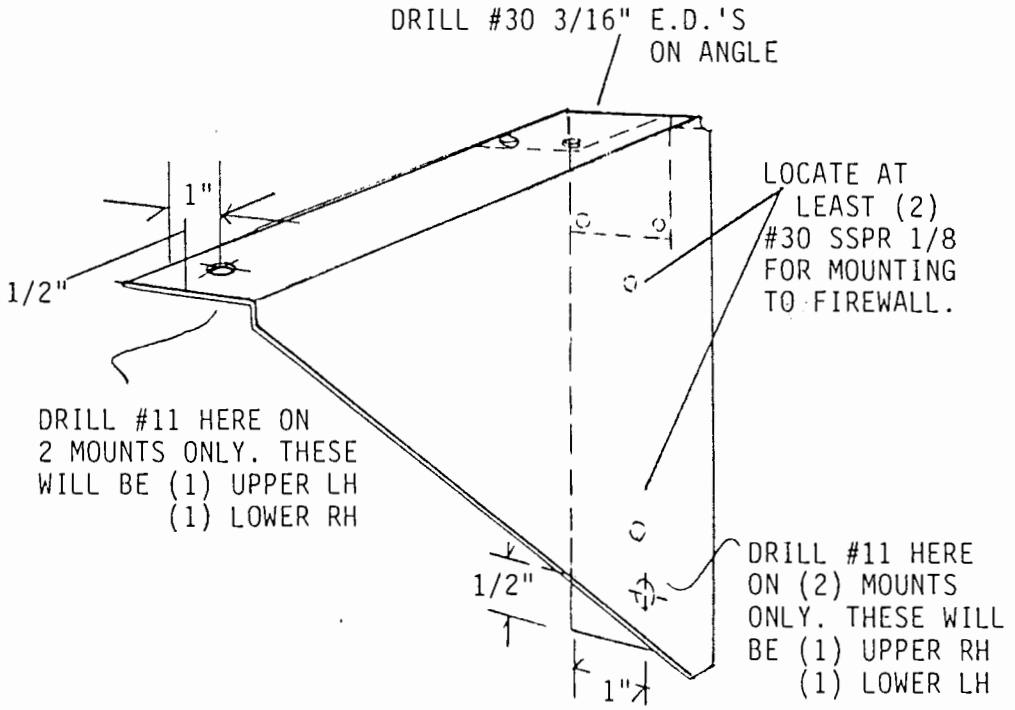
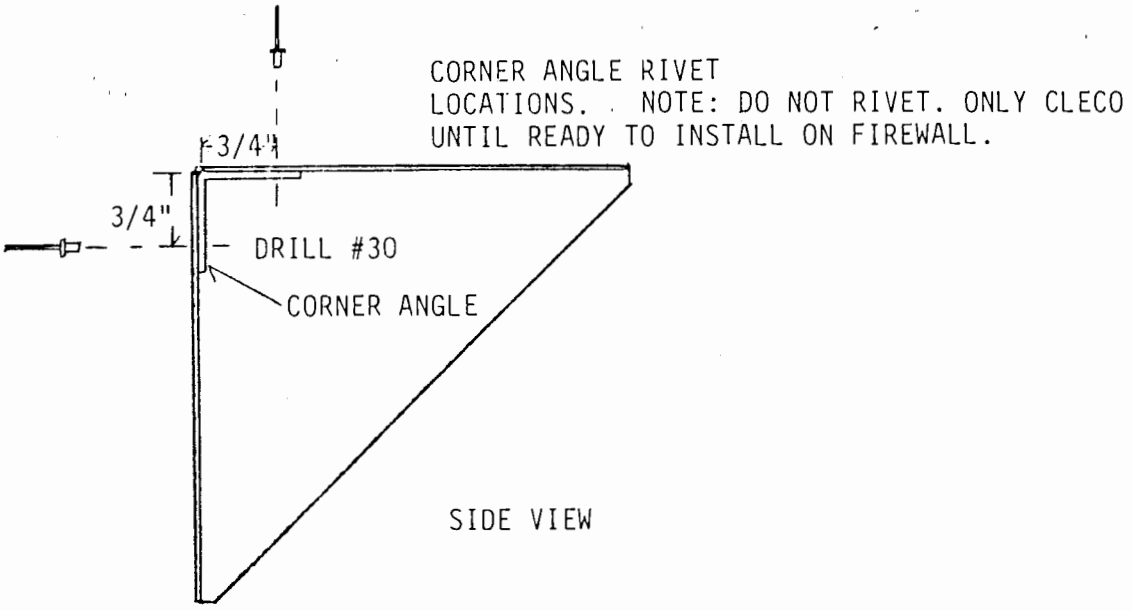
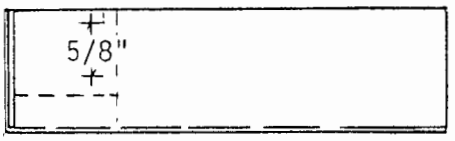


FIGURE 017-05



NOTE: DO NOT RIVET CORNER TO VERTICAL UNTIL LOCATED ON FIREWALL.



TOP VIEW

FIGURE 017-05A

7. Locate the bottom baffle (see parts drawing) so the slot for the starter rope is open to the back and to the left side. Rivet to the mounts with (2) 1/8" aluminum pop rivets in each end.

8. Mark off the firewall as shown in Figure 017-08. This locates the two top mounts. Hold the radiator up to the firewall on these marks. If the fit checks out, mark the location of the lower mounts before removing.

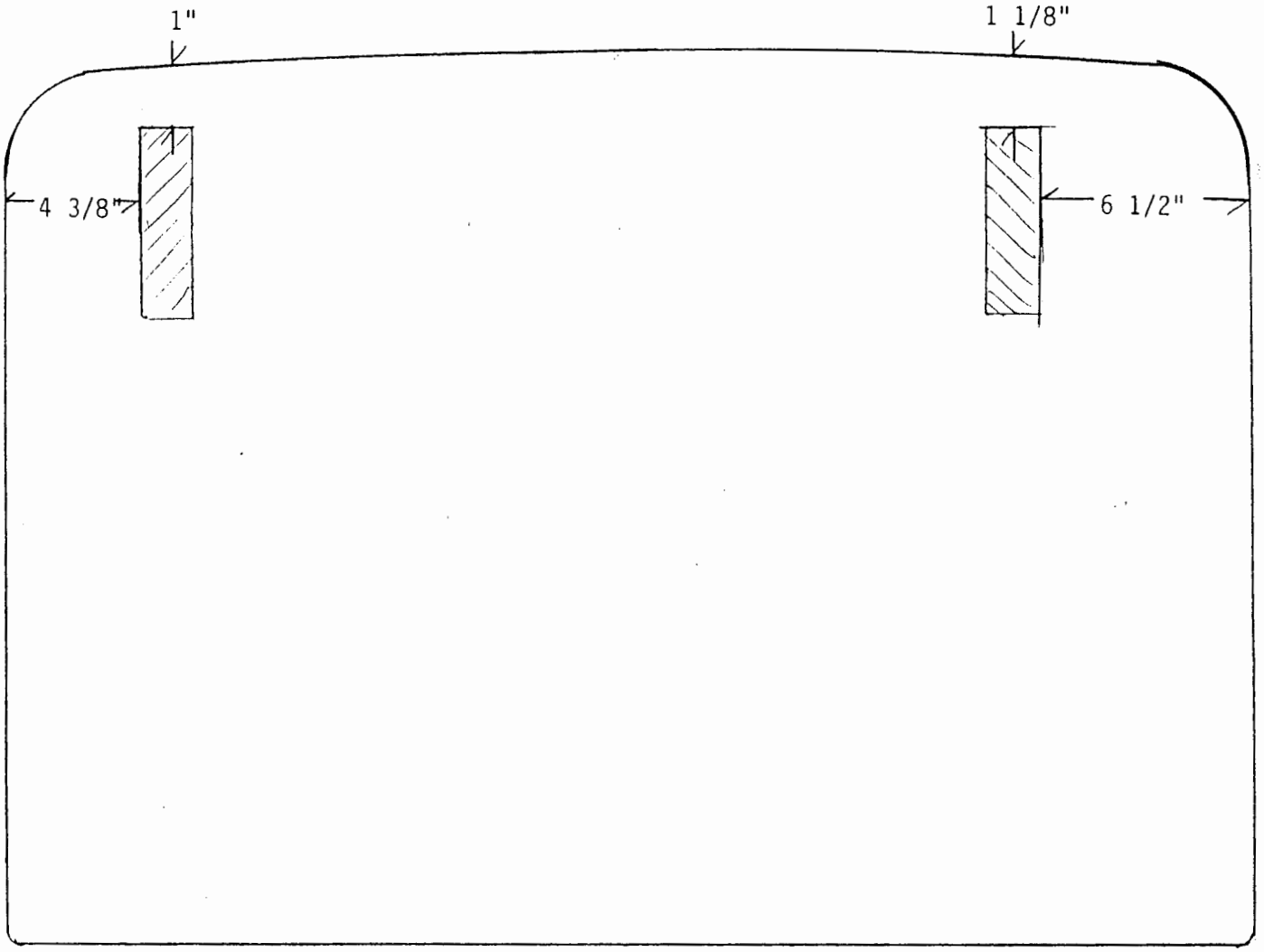


FIGURE 017-08

9. Unbolt the radiator from the mounts leaving the baffles and mounts as a unit. Hold this up to the firewall marks and drill through #30 and cleco. After all (4) mounts have been drilled for at least (2) #30 holes, debur and rivet with 30SSPR's.

10. Bolt the radiator to the mounts. If the baffles do not seal well against the firewall or radiator apply silicon caulking to fill voids or similar material or small weather stripping. The idea of course is to have the sides and bottom seal so the air will move through the radiator. The top cowling has the seals installed at the factory. These must seal the top edges. Check for this once the top cowling is installed.

11. Once the radiator is installed (and so is the engine!) route the hoses as shown in the photos. Use the photos for installation completion details for the parts page drawing. Use the photos and captions plus the following information to complete the system.

NOTE: On units with filler cap tees and not filler tanks (as in photo) use the large plastic cable ties to secure the "Tee" to the radiators top half aluminum tube.

COOLANT SYSTEM GENERAL NOTES

A. Before installing the cooling system remove the head outlet fitting and pump housing on the engine. File and sand the casting ridges smooth and re-install. See Figure A.

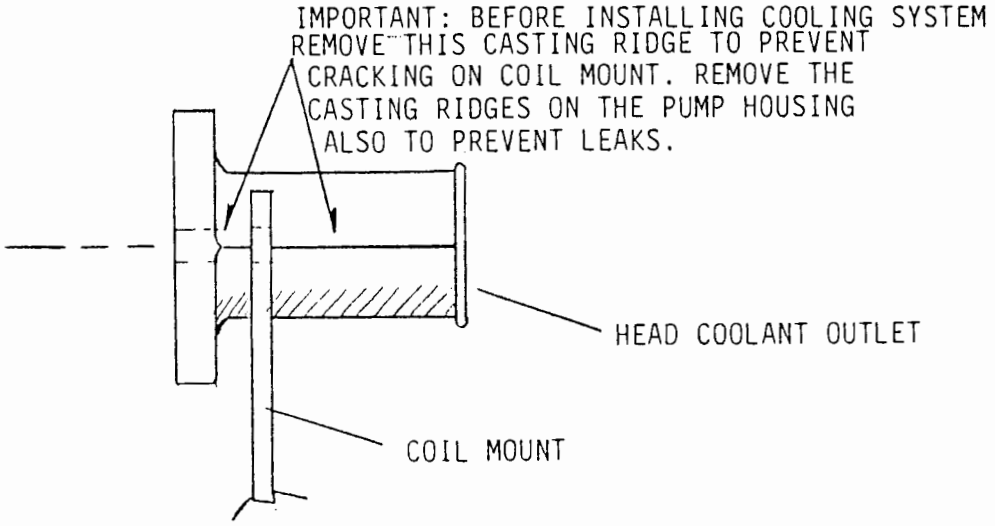


FIGURE A

B. Make sure all hose clamps and fittings are tight prior to adding coolant.

C. Add a 50-50 mixture of "For Aluminum Engines" anti-freeze and water. Fill through filler tank opening.

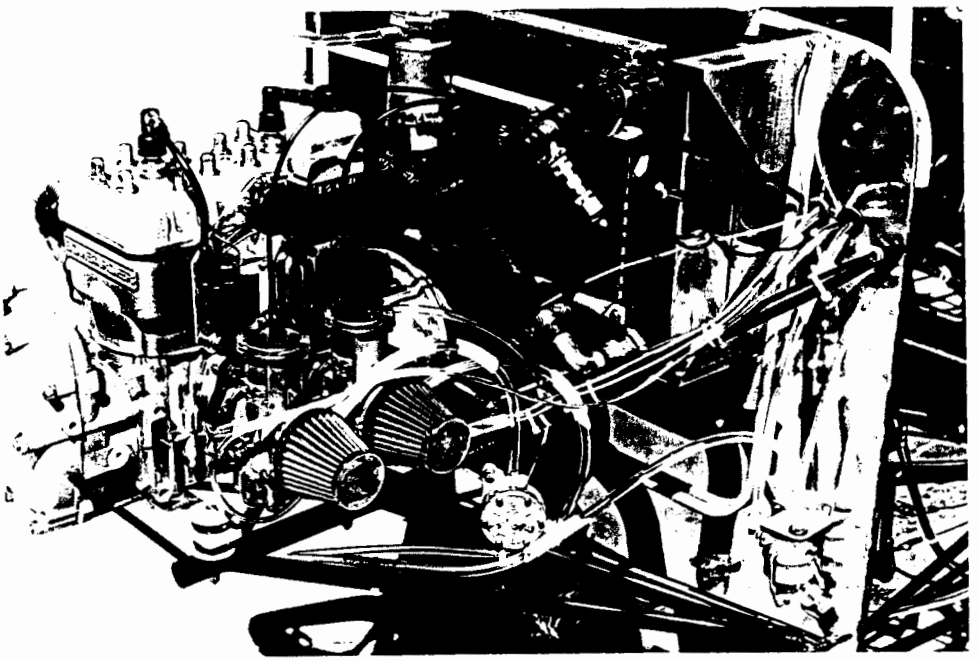
D. Remove the set screw on top of the engine to fill system to engine level. (Apply Loctite to the set screw when re-installing). HINT: A piece of fuel line will "screw" right into this hole and allow a no mess overfill.

E. Open the line at the upper reducer elbow fitting and tilt up nose. (A 5 gallon pail placed under the nosewheel is about perfect). Continue filling the system until coolant runs out at the high most point of this fitting. Re-tighten and install the radiator cap. Lower the nose.

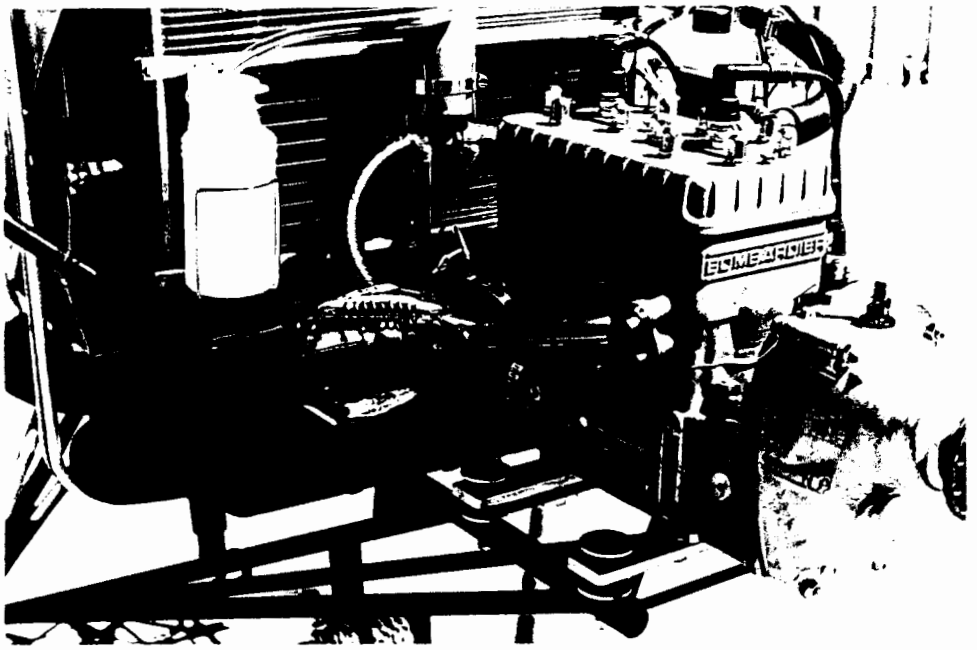
F. The recovery bottle does not need any fluid. If your system ever gets warm enough some fluid may overflow into the recovery vessel.

G. Add more coolant after engine break-in. Re-tighten all the clamps and fittings.

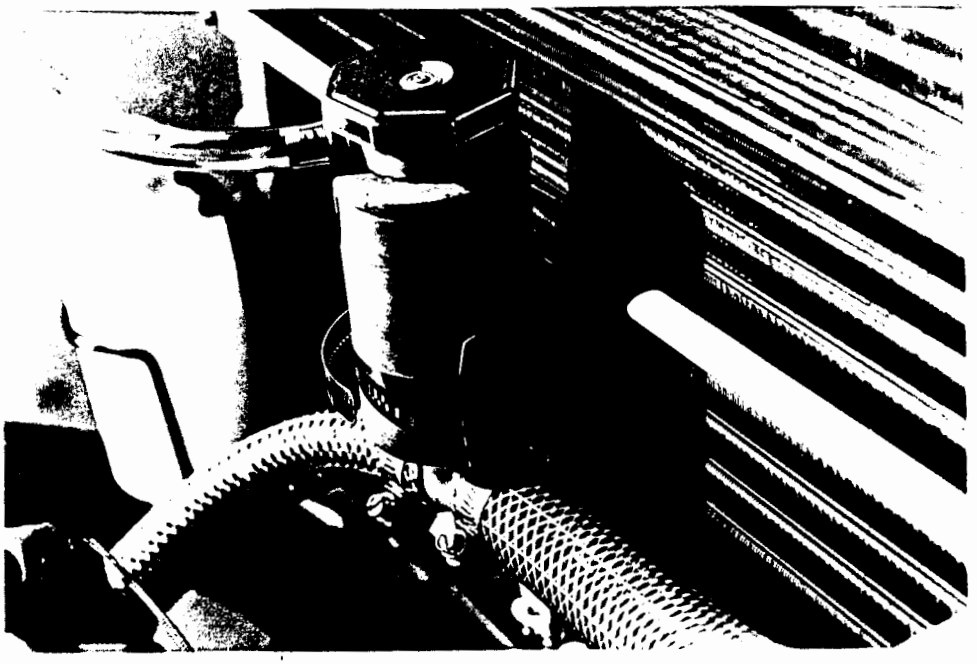
H. Replace the coolant annually and inspect the system for wear. Replace hoses every 2 years.



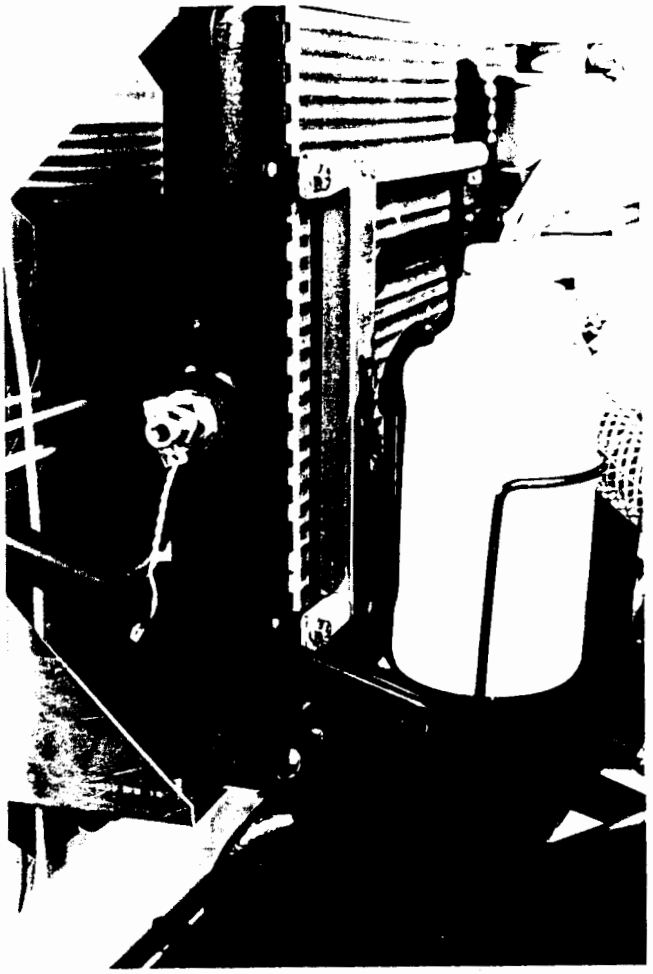
VIEWED FROM THE LEFT FRONT QUARTER THIS PHOTO REVEALS THE COOLANT HOSE ROUTING. PLEASE NOTE THE INSTALLATION SHOWN WAS NOT EQUIPPED WITH THE SIDE AND BOTTOM BAFFLES. ALSO NOTE THE LACING CORD ROUTING.



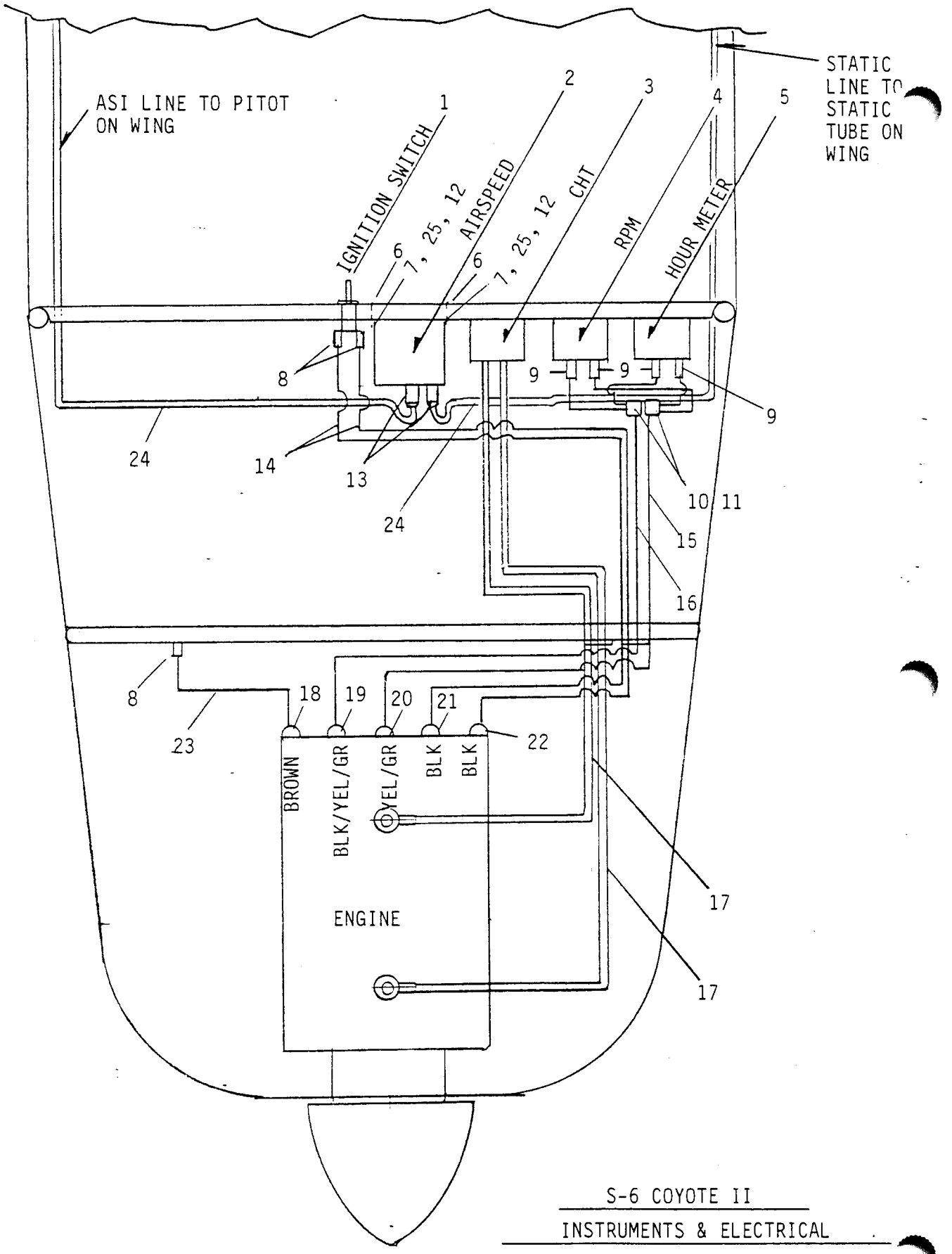
VIEWED FROM THE RH FRONT QUARTER THIS PHOTO ILLUSTRATES MUFFLER AND COOLING SYSTEM DETAILS.



THIS FILLER TANK CLOSE UP SHOWS THE USE OF THE RUBBER FABRIC TO PREVENT CHAFING BETWEEN THE TANK AND CRADLE.



THIS CLOSE UP OF THE RECOVERY BOTTLE SHOWS ITS MOUNT AS WELL AS HOW TO SAFETY THE RADIATOR DRAIN.


ASI LINE TO PITOT ON WING
STATIC LINE TO STATIC TUBE ON WING
1
2
3
4
5
IGNITION SWITCH
AIRSPEED
CHT
RPM
HOUR METER
6
7, 25, 12
6
7, 25, 12
8
9
9
9
24
14
13
24
10
11
15
16
8
23
18
19
20
21
22
BROWN
BLK/YEL/GR
YEL/GR
BLK
BLK
ENGINE
17
17

S-6 COYOTE II INSTRUMENTS & ELECTRICAL

#	PART NAME	PART NO	QUAN	PRICE
1.	Ignition Switch	IP-IS	1	6.00
2.	Airspeed, 0-120	ASI	1	155.00
3.	Dual Cylinder Head Temp.	CHT	1	80.00
4.	RPM	RPM	1	60.00
5.	Hour Meter	HR-M	1	30.00
6.	Brass Bolt	IP-BB	4	.20
7.	Brass Washer	IP-BW	4	.10
8.	Eye Terminal, Blue	IP-7102	3	.75
9.	Male Terminal, Blue	IP-7126	2	.75
10.	"Y" Connector, Brass	IP-YC	2	1.00
11.	Female Terminal	IP-7128	4	.75
12.	Brass Nut	IP-BN	4	.10
13.	Fitting	8330	2	1.00
14.	Black Or Blue Wire, 70"	EG-IW-BLK	2	1.50
15.	Red Lighting Wire, 70"	EG-LW-RED	1	1.50
16.	Green Lighting Wire, 70"	EG-LW-GR	1	1.50
17.	CHT Lead	CHT-LEAD	2	10.00
18.	Brown Wire	ON ENGINE		
19.	Black/Yellow/Green Wire	ON ENGINE		
20.	Yellow/Green Wire	ON ENGINE		
21.	Black Wire	ON ENGINE		
22.	Black Wire	ON ENGINE		
23.	White Ground Wire, 24"	EG-GW-WHT	1	1.50
24.	ASI Line (Fuel Line) 40 ft.	FS-FL	1	17.50
25.	Loc Washer	AN935B4	4	.10

S-6 COYOTE II INSTRUMENT PANEL & ELECTRICAL

NOTE: Use of solderless, electrical terminal swedge tool is required.

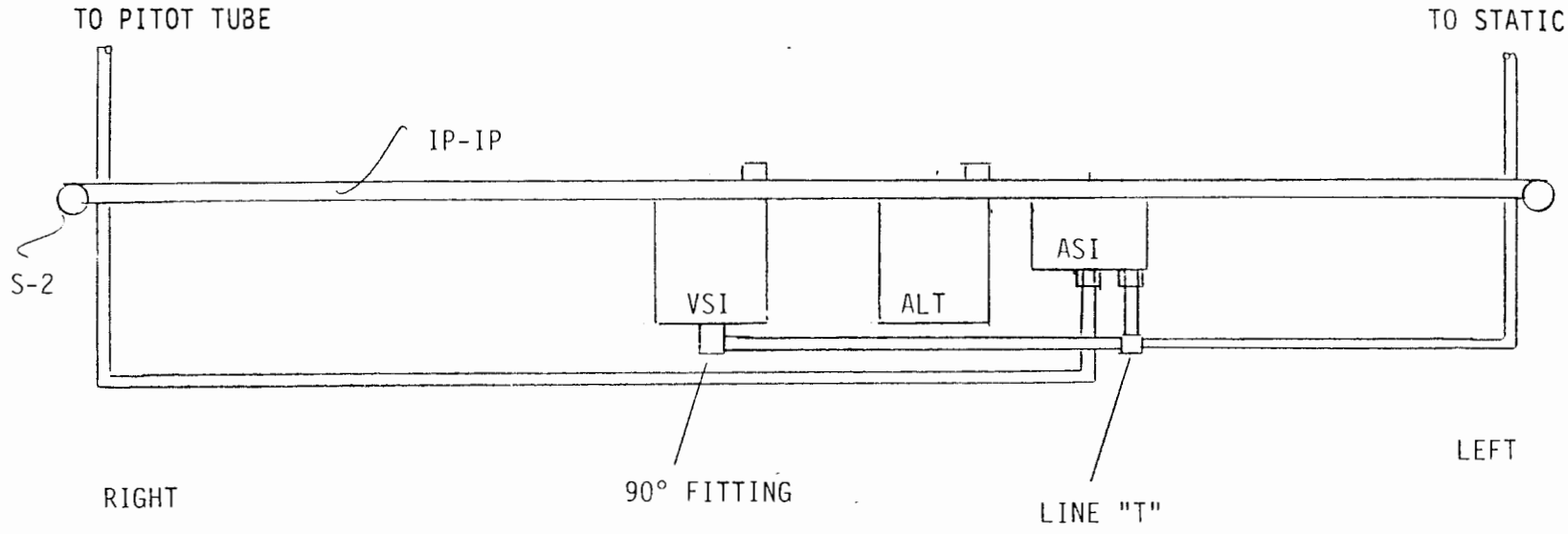
1. Select the parts needed to complete the instrument panel.

2. Install the standard instruments provided in the order shown in the parts catalog.

3. Before installing the ignition switch, swedge an eye terminal to the end of each blue or black wire and attach to the switch. Install the switch with Loctite. Position the switch so it is actually off when flipped up. Ignition circuits work when there is an opening. When the switch closes it grounds out the spark.

4. Attach the wire terminals to the proper wire and connect the circuits as shown on the parts page. Route the wire bundle down the LH S-2 inside the 18" of the black fabric wire harness cover. Use the other 18" for the fuel line. Route between the skin lacing to the firewall grommets to keep the wires, throttle cables and fuel line from interfering with the foot pedals. Plastic zip tie as required to keep things neat.

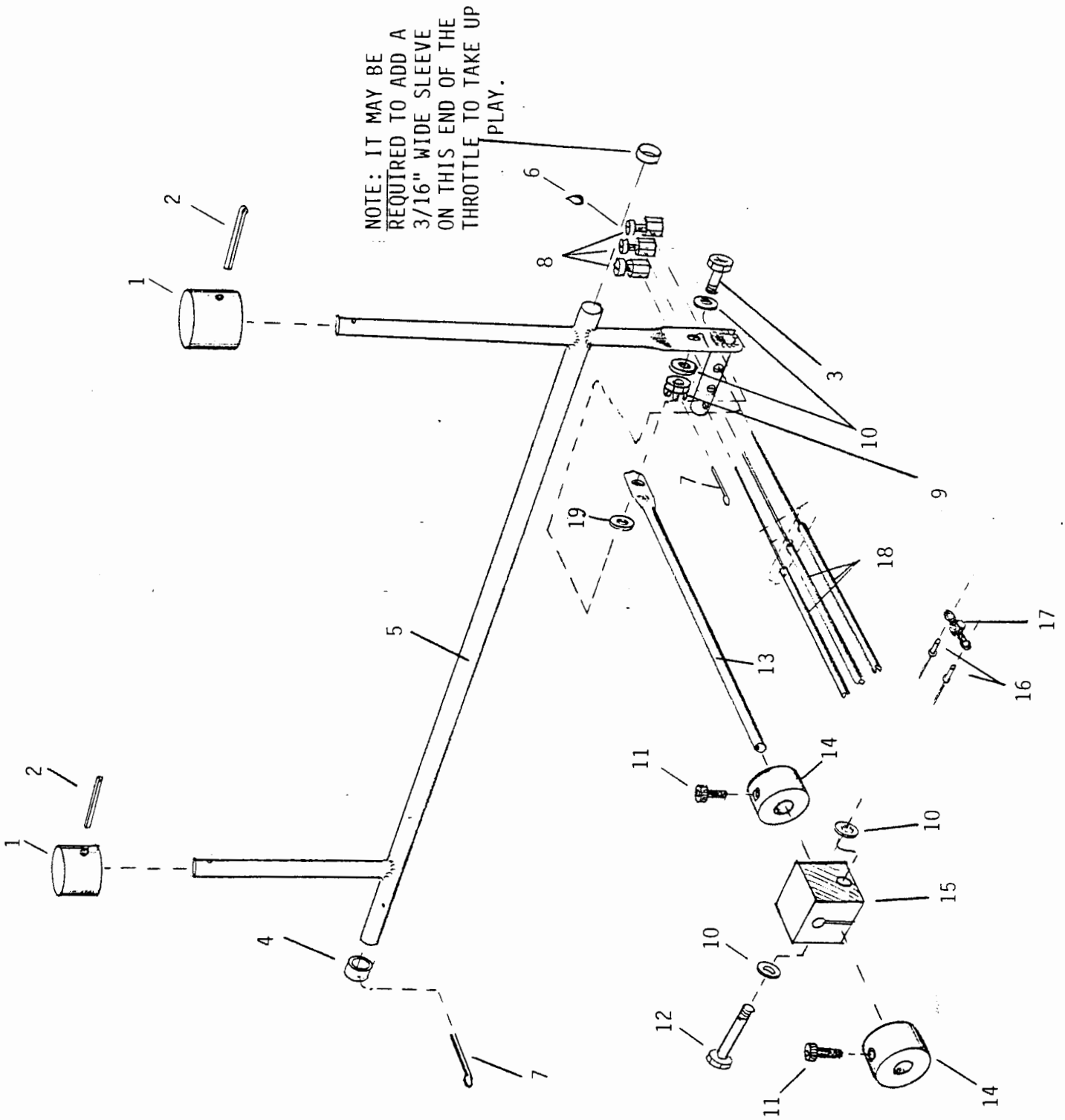
5. Follow Figure 018-05 for static and pressure system for ASI and optional VSI or ALT's. Install line clamps on all fittings to assure a sealed system.



STATIC SYSTEM WITH VSI

TOP VIEW

FIGURE 018-05



S-6 COYOTE II THROTTLE

S-6 COYOTE II THROTTLE

#	PART NAME	PART NO	QUAN	PRICE
1.	Throttle Knob	T-KNOB	2	3.00
2.	1/8" Roll Pin, 1"	20032446	2	.25
3.	3/16" Bolt	AN3-5	1	.45
4.	Stop Ring 5/8" x .058 x 1/2"*	T-SR-5/8"	1	1.00
5.	Throttle Lever	T-TL	1	20.00
6.	Loctite	LOCTITE	1	5.00
7.	Small Cotter Pin	MS24665-134	2	.10
8.	Wire Stop/Screw**	2360	3	.40
9.	3/16" Castle Nut	AN310-3	1	.30
10.	3/16" Thick Washer	AN960-10	4	.03
11.	Set Screw	T-SC	2	.25
12.	3/16" Bolt	AN3-14A	1	.30
13.	Friction Rod	T-FR	1	2.75
14.	Throttle Stop	T-STOP	2	2.75
15.	Friction Block	T-FB	1	5.00
16.	3/32" Aluminum Pop Rivet	40APR1/8	2	.10
17.	3/16" Nut Plate	K-1000-3	1	.40
18.	Throttle Cable Or Cables	See Engine		
19.	3/16" Thin Washer	AN960-10L	1	.03

* Fabricate From 5/8" x .058 Stock
**One (1) Used On 503's, Two (2) Used On 532's.

CONNECTING THE S-6 THROTTLE

1. To hook up the throttle cable you need to unscrew the carb's top plate. Take care not to let the spring inside jettison the plate onto the floor. Remove the spring and cap and place aside. Look closely at the slider...see the white plastic fitting on the bottom? Underneath this should be the cer-clip that holds the fuel metering pin. Be sure when re-assembling, the cer-clip is UNDER the white plastic. Close examination will reveal where the cable terminates but before hooking up the throttle cable, slip that little rubber boot over the end first. See Figure 019-01. During re-assembly note where the throttle exits the cap is not on center. Position the cap so the cable is directly over its slider position.

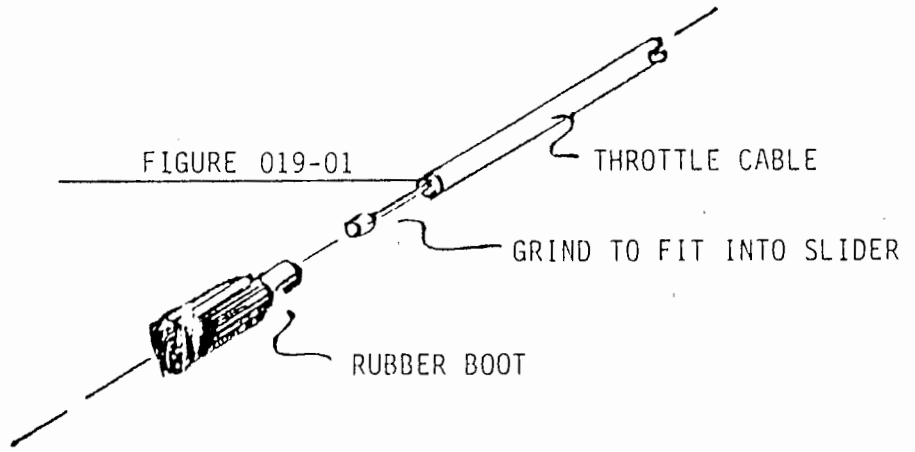


FIGURE 019-01

2. Pull on the free end of the cable to seat the housing into the fitting on top of the carb plate. Then route the cable as follows: Out the top of the carb and down over the forward side under the carb straight back to the firewall; gently curve along the firewall and into the upper outer grommet; down along the inside of the forward cockpit and into the throttle stop. (Located on the LH side of S-2). Drill front side of stop tube to 3/16" diameter. See Figure 019-02. Double check to see if everything is curving gently, no sharp turns allowed..... that will bind the cable. Check to see if the housing is into the carb's top plate fitting. Then pull the housing away from the carburetor so the cable's free end will be inside past your cut off mark. Now cut off the excess housing and push the cable back out.

IMPORTANT: Check closely the housing where you've cut it. A clean cut is a must...the metal coil inside the housing can rub the cable and cause it to break. An unclean cut of the throttle cable housing can also result in sticking of the controls due to the added friction.

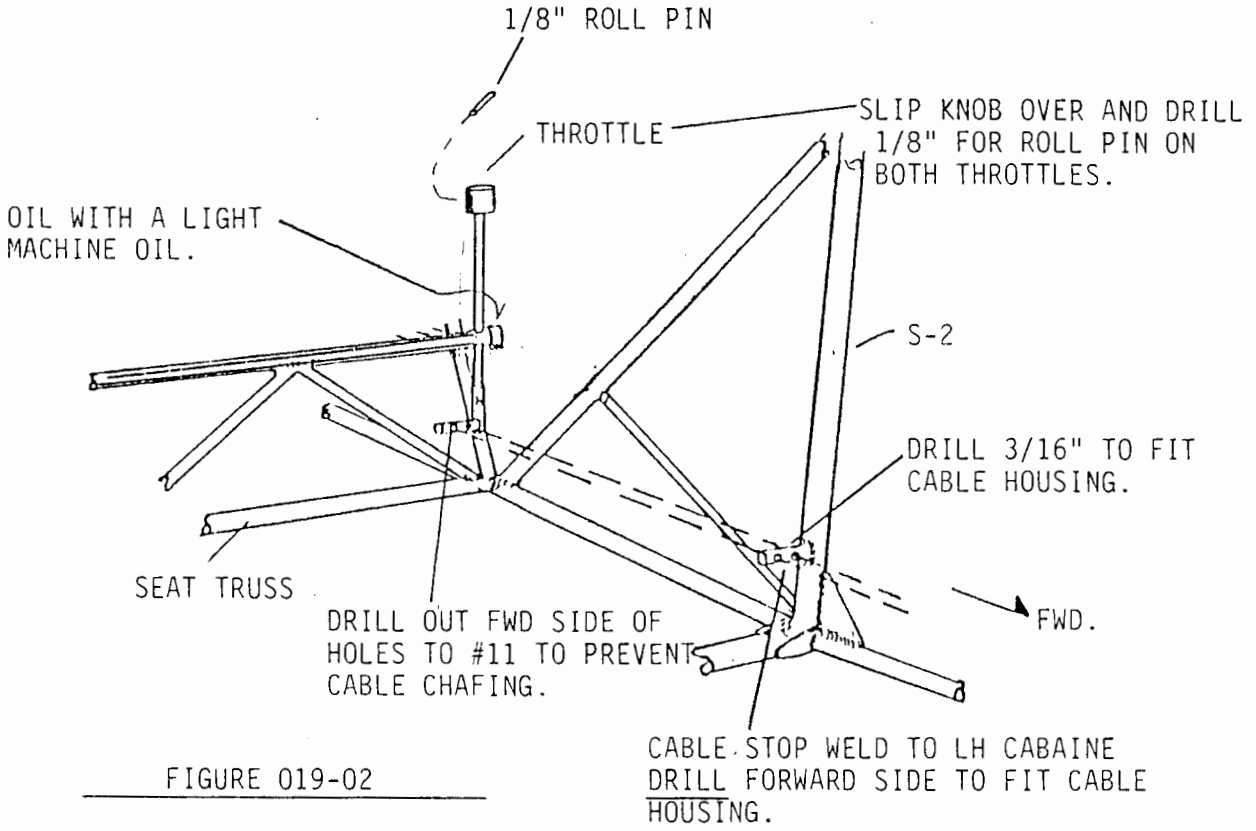


FIGURE 019-02

3. Next slide the cable through the stop then insert the housing. Insert cable through throttle lever (NOTE the big hole is on the throttle's forward stop side to eliminate wear) and attach a wire stop (#15). Use Loctite to safety. Adjust throttles to be in perfect sync. They must move exactly the same to assume smooth operations.

Assemble friction rod assembly to the throttle lever as shown in the parts drawing. Rivet a 3/16" nut plate to the OUTSIDE of tab for stop friction block. Set stops to allow full carb slider travel but no more. IMPORTANT: It may be required to cut a step into the friction block to allow the bolt head to clear the throttle cables. See Figure 019-03.

NOTE: The throttle may need 1/4" spacer between the LH throttle and the bearing sleeve welded into the fuselage in order to clear the door handle.

Run double cables for duel carb equipped engines.

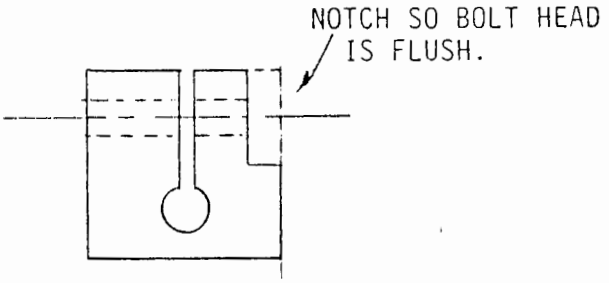
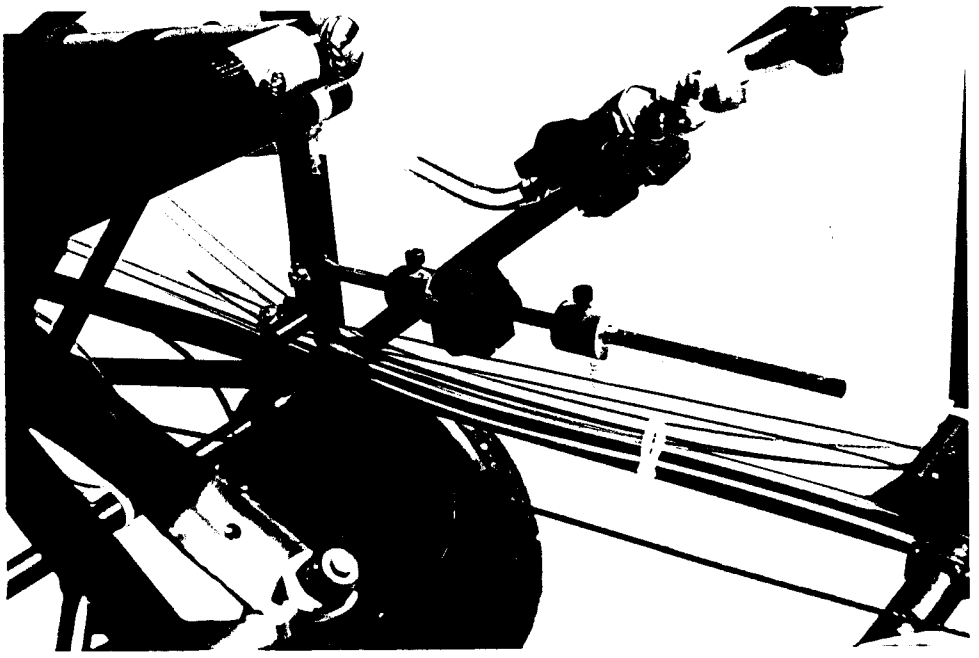
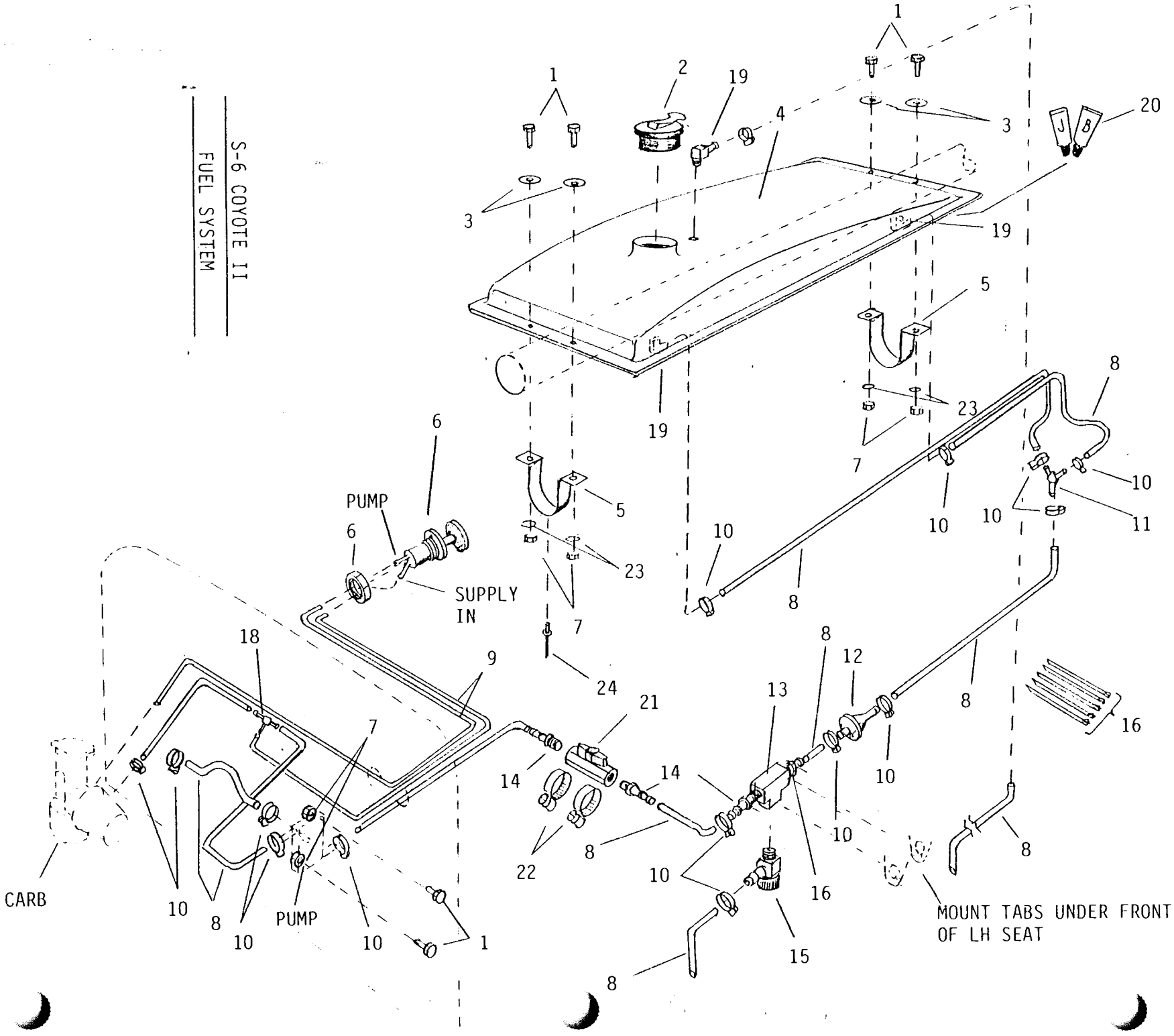


FIGURE 019-03



S-6 COYOTE II THROTTLE SHOWS DUAL CABLES. NOTE THE NOTCH MADE IN BLOCK FOR BOLT/CABLE CLEARANCE. EXCESS FRICTION ROD CAN BE TRIMMED ONCE STOPS ARE SET.


1
2
19
4
3
20
J
B
5
23
7
8
10
11
6
PUMP
SUPPLY
IN
24
9
18
21
13
12
16
14
22
15
CARB
PUMP
MOUNT TABS UNDER FRONT
OF LH SEAT

S-6 COYOTE II 5 AND 10 GALLON FUEL SYSTEM

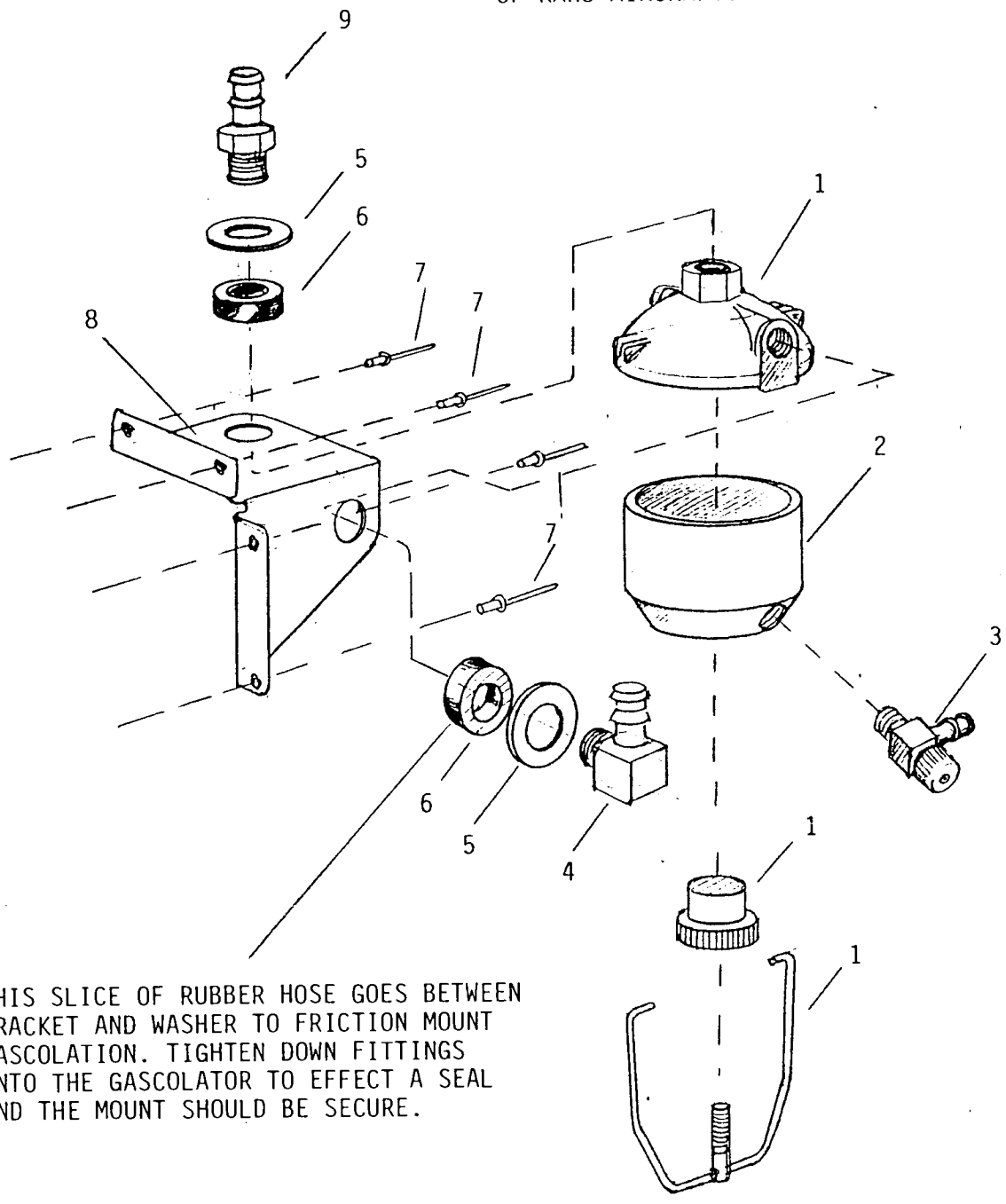
#	PART NAME	PART NO	QUAN	PRICE
1.	3/16" Bolt	AN3-5A	6	.15
2.	Fuel Cap, Venting	1705	1	6.75
3.	3/16" Wood Washer	AN970-3	4	.10
4.	Fuel Tank, 5 Gal.	FS-TANK/5 GAL.	1	100.00
	Fuel Tank, 10 Gal.	FS-TANK/10 GAL	1	160.00
5.	Tank Clamp	FS-TCL	2	3.00
6.	Primer Pump*	FS-P	1	
7.	3/16" Shear Nut	AN364-1032A	6	.10
8.	Fuel Line, 35 ft.	FS-FL	1	37.00
9.	Primer Line, 12 ft.*	Comes In Primer Kit		
10.	Line Clamp**	FS-LCL	16	1.00
11.	"Y" Connector	FS-Y	1	1.00
12.	Fuel Filter	FS-FIL	1	2.00
13.	Sump Drain Body	3-20120	1	6.00
14.	Withdrawal Fitting	8330	4	.50
15.	Sump Drain	8336	1	3.00
16.	Small Plastic Ties	N-TIES	15	.20
17.	Line "T"*	Comes In Primer Kit		
18.	1/8" Nipple*	Comes In Primer Kit		
19.	90 Withdrawal Fitting**	8342	25	
20.	J & B Weld Epoxy	J&B	1	5.00
21.	Fuel Shut Off Valve	FS-S-OFF	1	10.00
22.	Hose Clamps, 1 1/4"	5-5212	2	.60
23.	3/16" Thin Washer	AN960-10L	4	.03
24.	1/8" Stainless Steel Pop Rivet	30SSPR	1	.20

*Parts are packed in primer kit.
**2 Extra of each packed for 532 of 10 gallon tank system.

FUEL SYSTEM GASCOLATOR FOR ALL MODELS OF RANS AIRCRAFT.

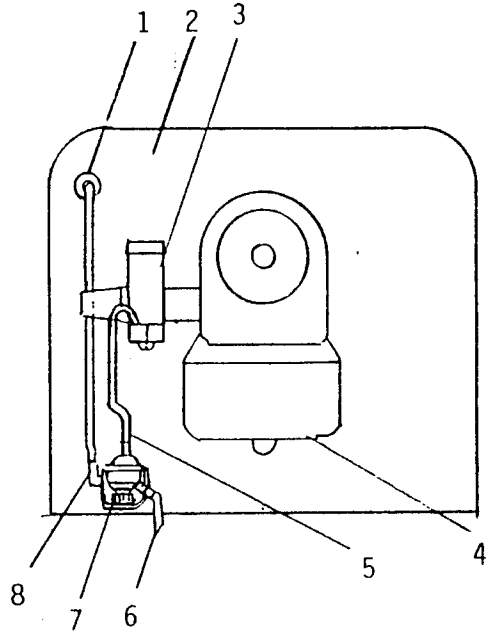
THE GASCOLATOR IS OPTIONAL EQUIPMENT AND THE PRICE IS $45.

0020A-1



THIS SLICE OF RUBBER HOSE GOES BETWEEN BRACKET AND WASHER TO FRICTION MOUNT GASCOLATION. TIGHTEN DOWN FITTINGS INTO THE GASCOLATOR TO EFFECT A SEAL AND THE MOUNT SHOULD BE SECURE.

TYPICAL GASCOLATOR INSTALLATION MOUNT VIA RIVETS AT LOW POINT ON FIREWALL. ALLOW ACCESS THROUGH COWLING FOR DRAINING PRIOR TO FLIGHT.



1. FIREWALL GROMMET
2. FIREWALL
3. CARBURETOR(S)
4. ENGINE
5. FUEL OUTLET FROM GASCOLATOR
6. FUEL DRAIN
7. GASCOLATOR
8. FUEL FEED FROM TANKS

GASCOLATOR

#	PART NAME	PART NO.	QTY	PRICE
1.	Gascolator	GAS-LAT	1	16.00
2.	Gascolator Bowl	GAS-BOWL	1	16.00
3.	Sump Valve	8336	1	3.00
4.	90 Withdrawl Fitting	8342	1	1.50
5.	3/8" Washer	AN960-616	2	.85
6.	Rubber Hose 3/8" I.D. X 1/4" Long	GAS-RH-3/8X1/4	2	.50
7.	1/8" SS Pop Rivet	30SSPR	4	.20
8.	Gascolator Mount	GAS-MT	1	6.00
9.	Straight Withdrawl Fiting	8330	1	1.00

S-6 COYOTE II FUEL SYSTEM

1. Collect all the parts as pictured on the parts page for the fuel system.

2. Trim the fuel tank's edges so a 1" wide flange remains. Use a hand saw for the easiest trimming. If using a portable jig saw mark the trim lines on the tank's bottom and trim from the bottom. (Works for the 5 gallon tanks only). FOR YOUR PROTECTION wear a 3-M or similar particle mask while trimming the tank.

3. Trim the filler neck so 3/4" to 1" extends above the tank. HINT: Wrap a piece of 3/4" wide masking tape around the neck to give a trim line that will be flat across the top. Use a sanding disk attached to a drill or hand saw it into tolerance after trimming with a hacksaw. Vacuum out the inside of the tank after trimming the filler neck.

4. Drill 3/8" diameter holes in the locations shown for the type of tank for your aircraft. Sand the area around the hole for better bonding. Mix a small portion of the J & B Weld, 50/50. Apply the epoxy to the threaded portion of the 90 degree fuel withdrawal fittings and screw them into the 3/8" holes. Point fittings as shown in Figure 020-04. Figure 020-04A shows the location for the 90 degree vent fitting. Be sure to point this fitting directly aft. Let the epoxy cure with the tank laid upside down. The correct amount of epoxy will form a nice ring completely around the fitting approximately 1/4" wide....Apply more if required.

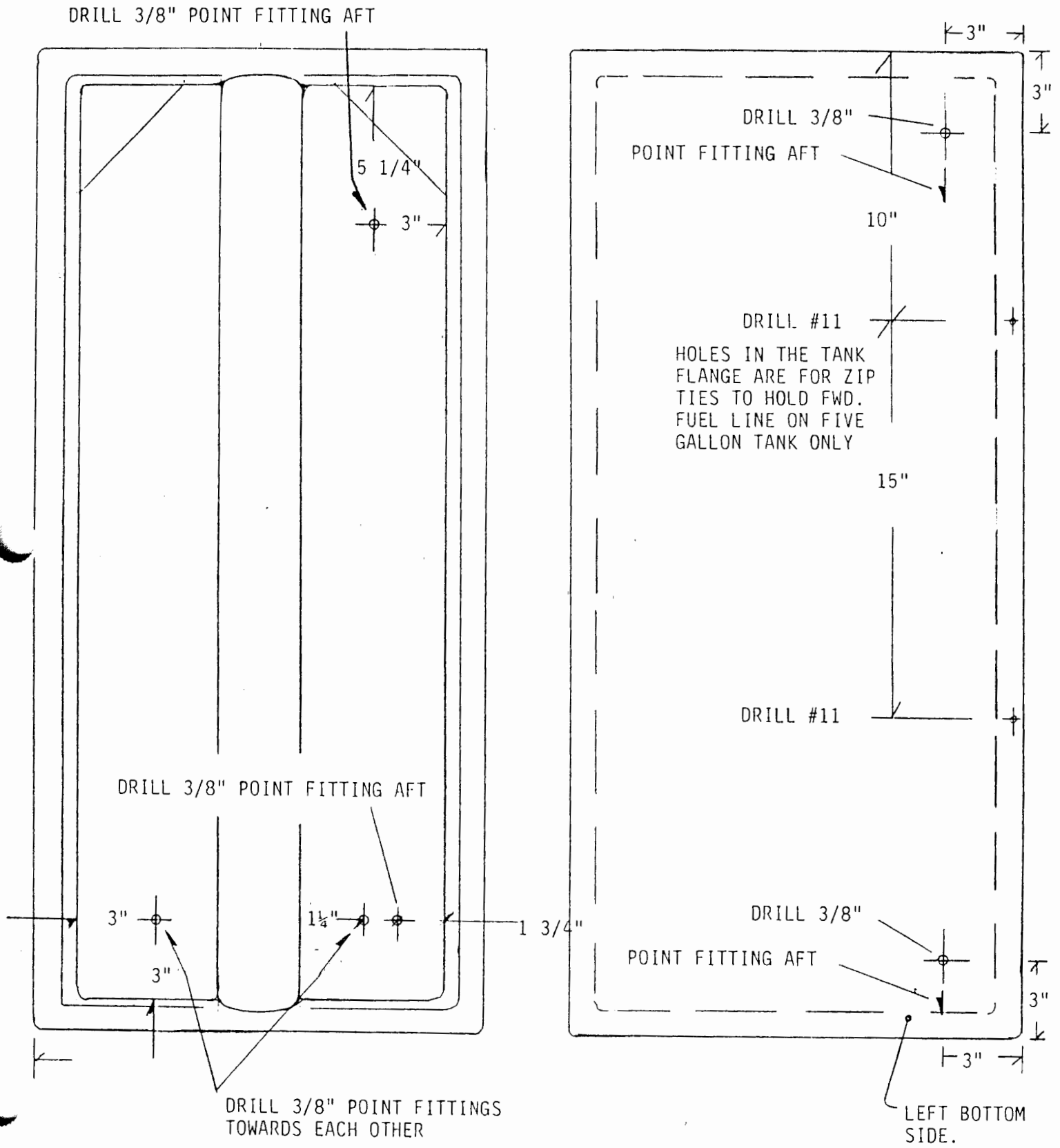
5. After the epoxy has cured set the tank on the keel tube. If you're installing a 10 gallon tank apply 2 beads of silicon caulking lengthwise along the top of the keel about 1" off of the top center on each side. Position and clamp the brackets flush on each end with the tank edges. Drill #11 up from the bottom using the brackets as hole locaters and bolt. Level the tank in reference to the Instrument Panel or other horizontal tubes in the fuselage. Check for fore and aft positioning, the tank's forward bracket should be 2 1/2" from the end of the keel. See Figure 020-05. Drill through the bracket from the bottom and rivet it with a 1/8" SSPR.

6. Refer to Figures 020-06, 020-06A and 020-06B (Photos) for fuel line routing information. Follow these general guide lines for a safe fuel system installation.

   (A). Route lines to curve without kinks or chafing against structure.
   (B). Hold lines in place with the plastic zip ties provided. DO NOT over tighten and kink lines.
   (C). Keep lines away from sources of heat and electricity.
   (D). Safety wire or clamp all connections.
   (E). Firewall exit of the fuel line should be on the side the carburetor is on.
   (F). Tank vent and overflow line must face into slipstream to prevent siphoning fuel.
   (G). One Operational Note: Fill tanks to within 1/2" of bottom of filler necks. This will reduce overflow.

(H). Remember water doesn't flow uphill and neither does fuel. Avoid running lines with routings above a fuel source.

(I). Put teflon tape or blue Loctite on all fittings.



BOTTOM VIEWS OF 10 AND 5 GALLON TANKS

FIGURE 020-04

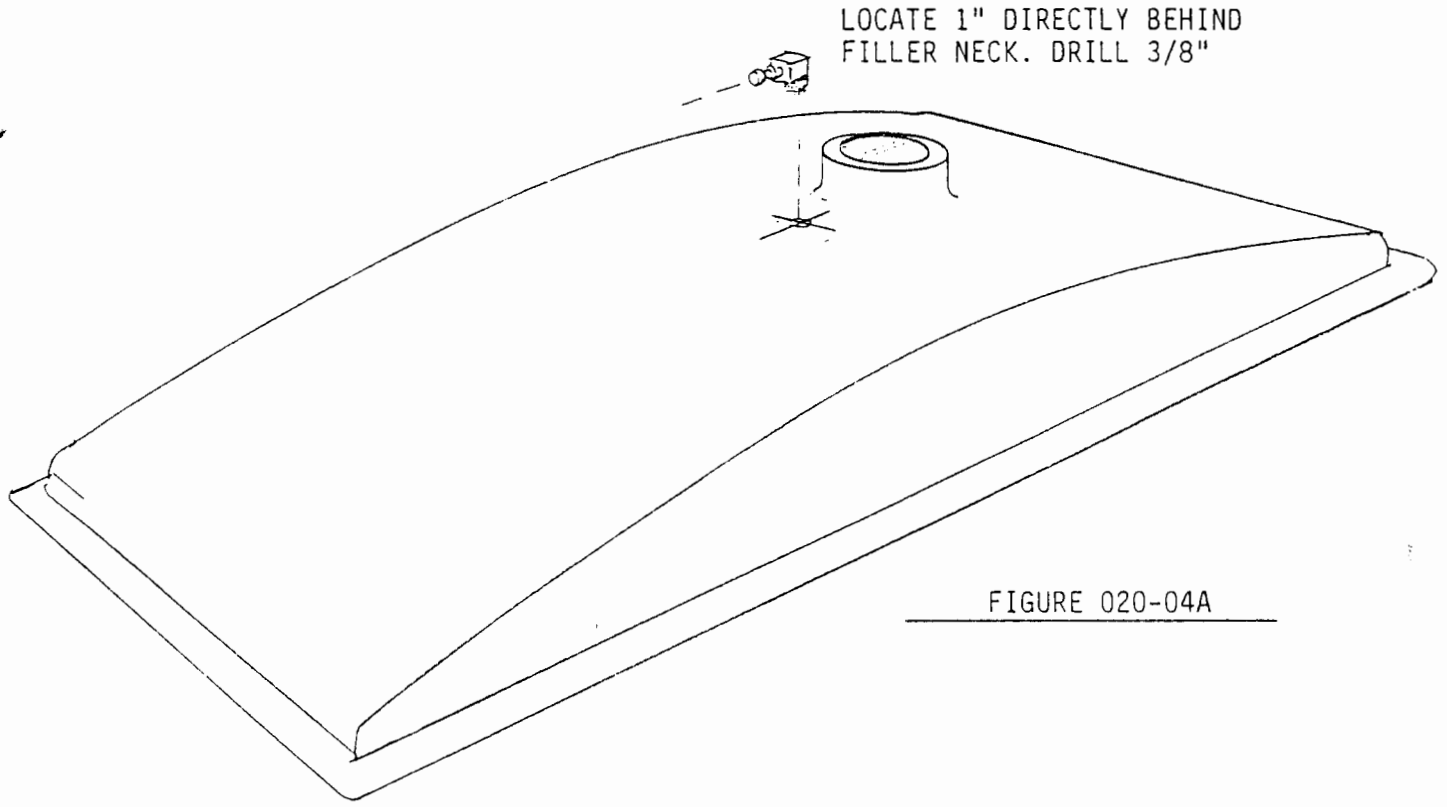


FIGURE 020-04A

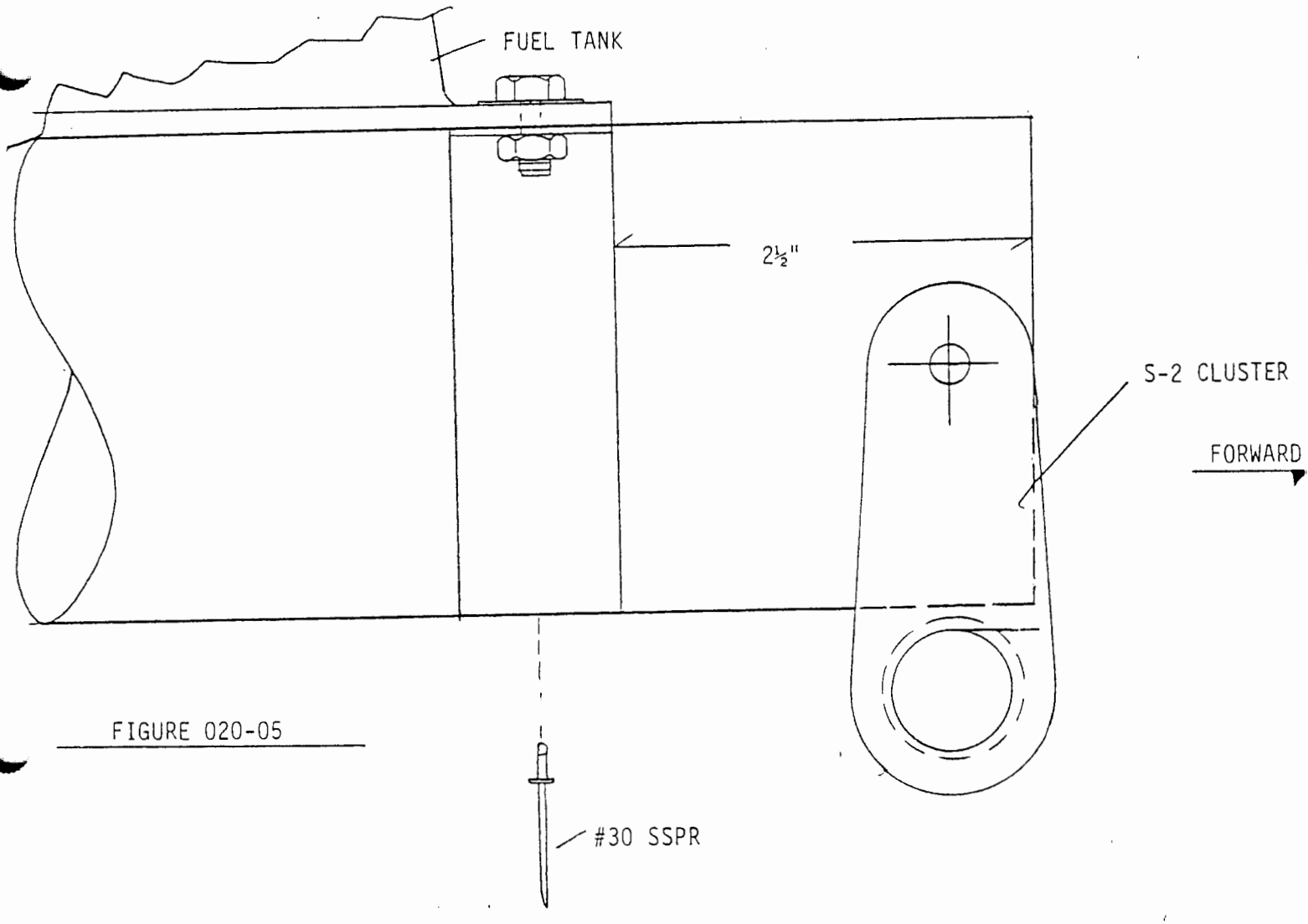
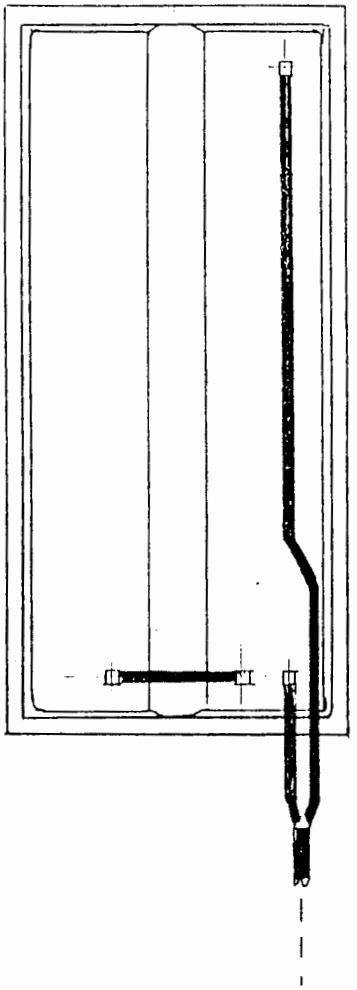
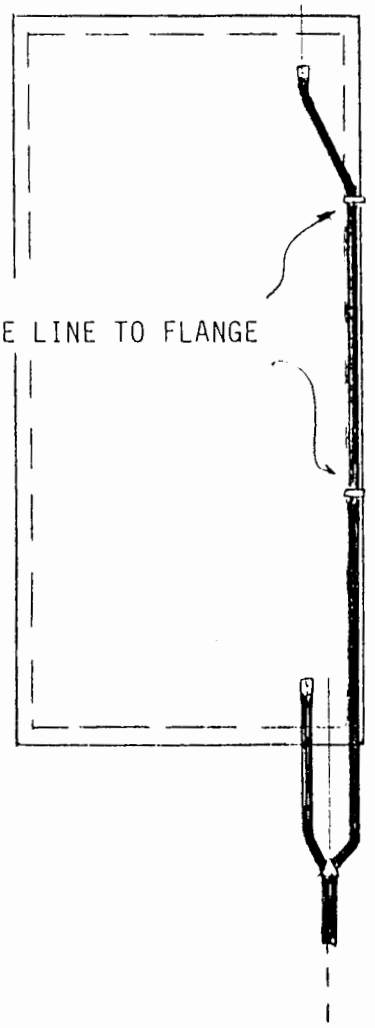


FIGURE 020-05

10 GALLON TANK ROUTING



5 GALLON TANK ROUTING



BOTTOM VIEW

FIGURE 020-06

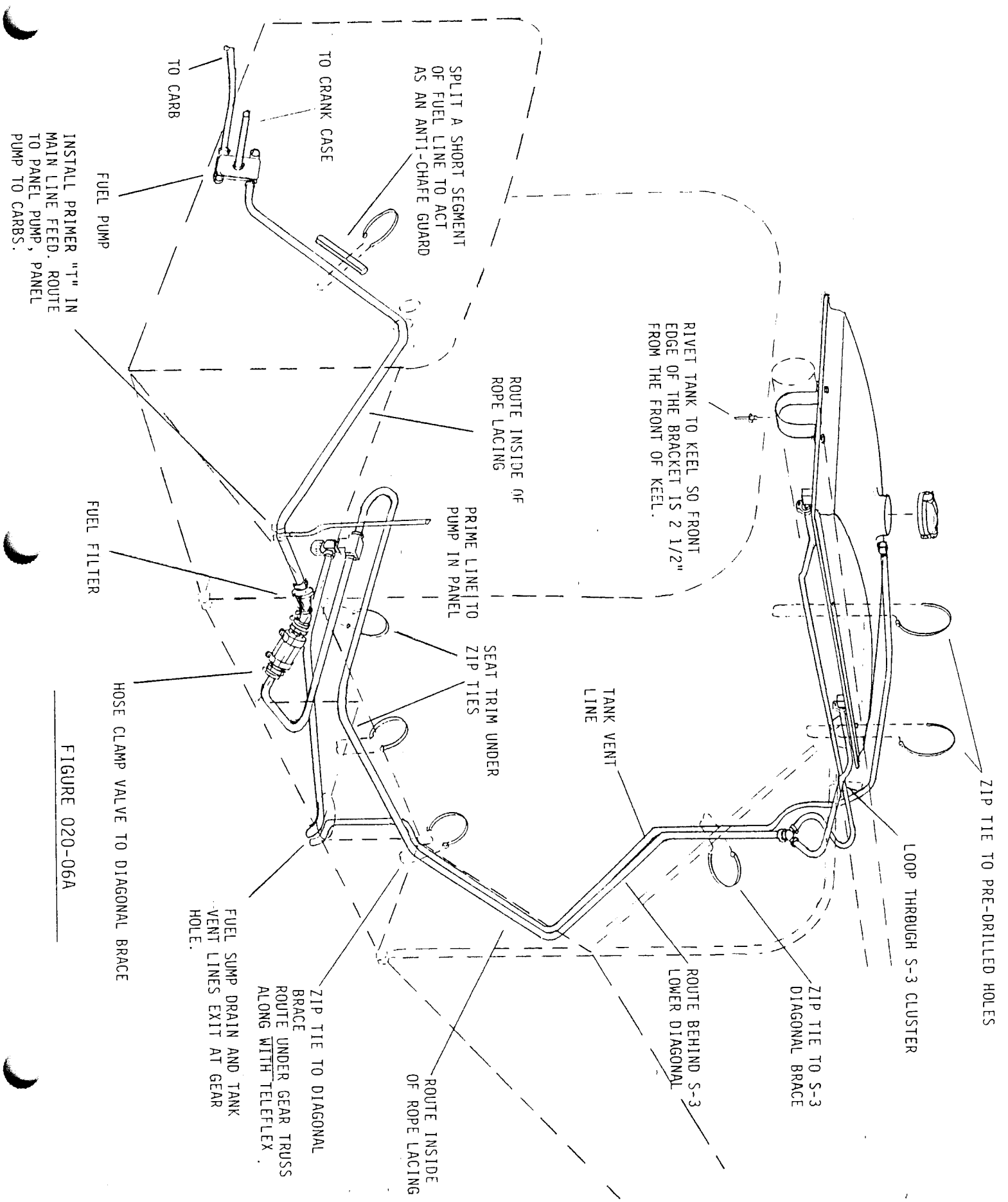
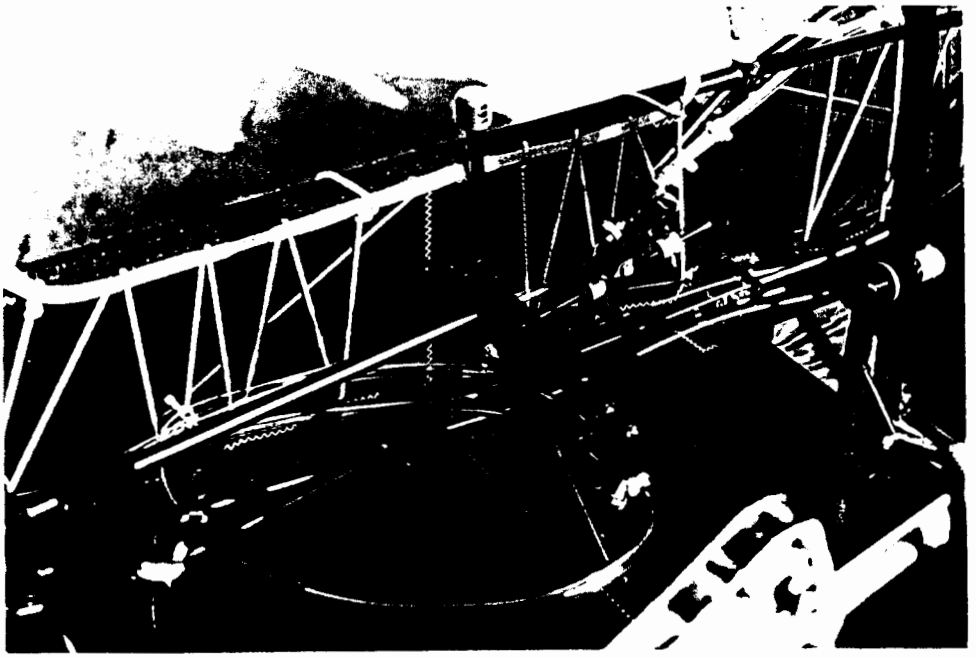
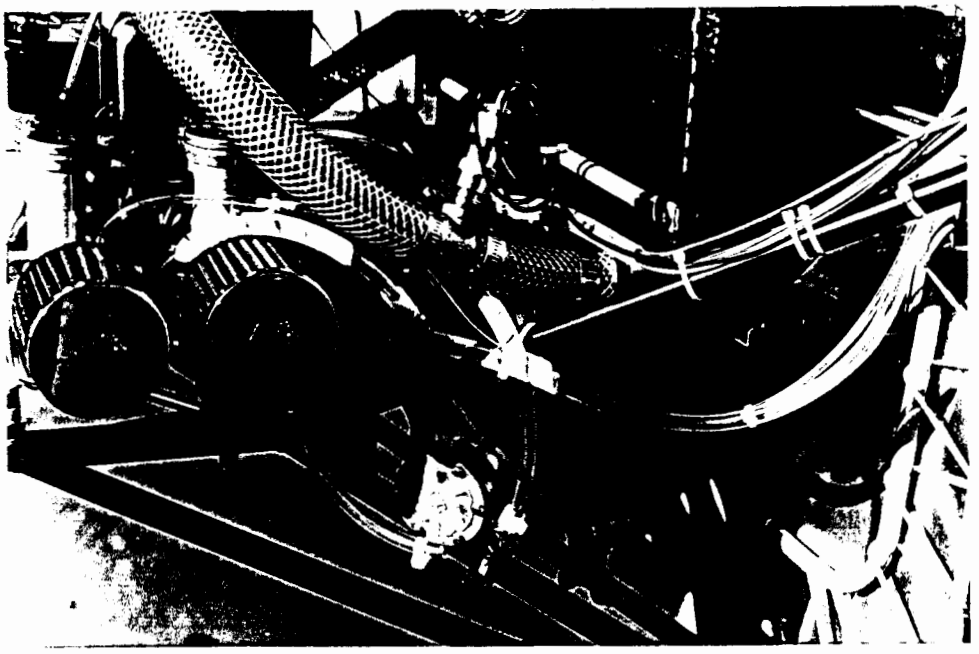


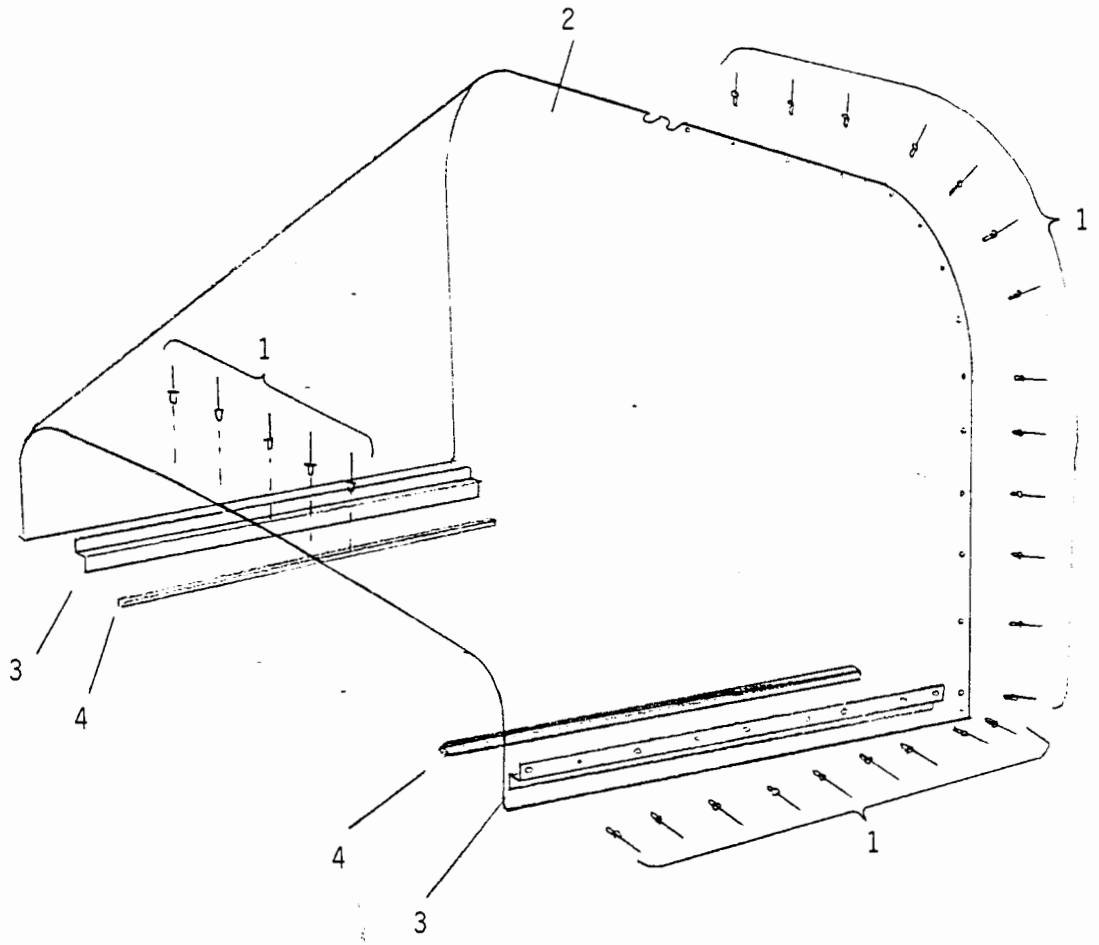
FIGURE 020-06A



NOTE HOW THE FUEL LINE "LOOPS" AROUND UNDER LH SEAT TO SUMP DRAIN. OBSERVE CLOSELY THE LOCATIONS OF LINES AND PLASTIC TIES. ALSO PLEASE OBSERVE THE FUEL SHUT OFF INSTALLATION. POSITION THE HOSE CLAMPS SO THE SCREW FITTING IS UNDERNEATH. LOOKING REAL CLOSE IN THE UPPER RH CORNER YOU CAN SEE THE SMALL "T" THAT FEEDS THE PRIMER PUMP. THIS IS A GOOD LOCATION BECAUSE OF THE NEED TO ROUTE TO THE INSTRUMENT PANEL.



THIS PHOTO SHOWS THE FUEL PUMP POSITION AND LINE ROUTING. THE WHITE PLASTIC SHIELDS CAN BE PURCHASED AT MOST AUTOMOTIVE PARTS STORES. IT IS CALLED SPIRAL CUT TUBING. A SIMILAR AND JUST AS EFFECTIVE ANTI-CHAFE SHIELD CAN BE MADE WITH FUEL LINE BY SIMPLY SPLITTING IT LENGTHWISE AND TYING IN PLACE. NOTE HOW THE PRIMER LINES ARE RUN WITH THE MAIN FUEL LINE FORM THE FIREWALL.



S-6 COYOTE II

WINDSHIELD

S-6 COYOTE II WINDSHIELD

#	PART NAME	PART NO	QUAN	PRICE
1.	1/8" Aluminum Pop Rivets	30APR1/8	49	.10
2.	Lexan Windshield (Clear)	WS-WS	1	100.00
3.	"Z" Strip	WS-ZS	2	5.00
4.	Foam Strip 3/16" x 3/8" x 4 feet	WS-FS	1	3.00

S-6 COYOTE II WINDSHIELD ASSEMBLY

1. Collect all the parts shown on the parts pages for the windshield. Do not peel off the protective paper except the edge against the S-2. Peel this back about 2" so the S-2 side tubes will be visible.

2. The windshield comes pre-cut, slightly oversized to create an overlap on the S-2 formers. Snap the windshield in place between the S-2 top cluster and the windshield hold down strip. Pull the sides down to contour around the structure and clamp in place. (Vise grip welder's clamps work great!) Check for an even amount of overhang on each side and if the Lexan is down against the S-2. Re-position and clamp if required.

3. Start at 1" out from the S-2 top cluster and locate and drill #30 holes every 3" all the way down to the bottom edge. Cleco every 4th one.

4. Lay out and pre-drill #30 holes in the "Z" strips as shown in Figure 021-04.

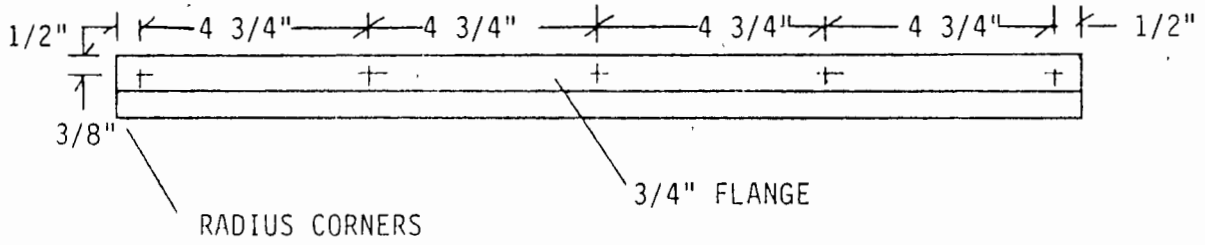


FIGURE 021-04

5. Hold the "Z" strips in position on the inside top longerons. Hold with an even amount of space on the front and aft end of the "Z" strip. Press the windshield flat against the "Z" strip with a board and drill from the inside and cleco. Drill through the Lexan the remaining holes. Repeat for the other side. Use at least 2 clecos per "Z" strip. NOTE: You can do the windshield with the dozen copper clecos provided if you retain the windshield to the S-2 with only 2 per side and 2 per "Z" strip.

6. Mark off the windshield hold down strip as shown in Figure 021-06 and drill #30 and cleco. with 3 or 4 clecos.

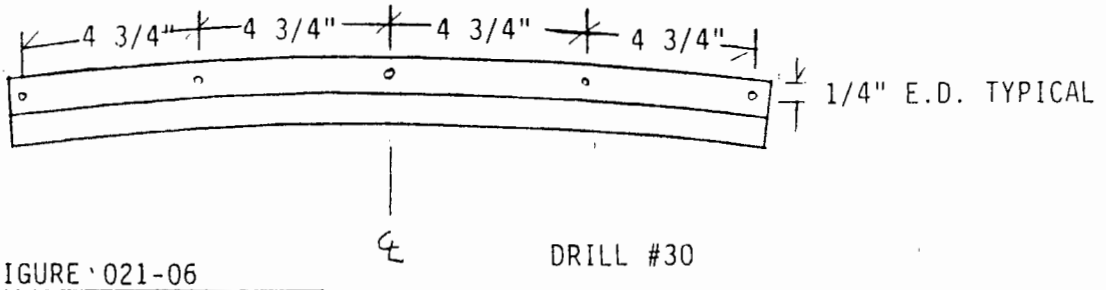


FIGURE 021-06

7. Mark with masking tape or a razor knife the trim line on the aft edge of the windshield at the S-2. Trim it back so the Lexan sets on the S-2 tube as in Figure 021-07. NOTE: Trim so the door will fit flush, also so the door Lexan will rest on the S-2 tube. The door will be re-installed to be trimmed in the next step.

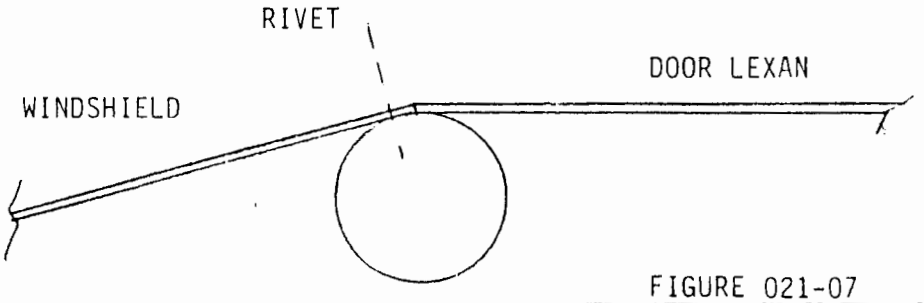


FIGURE 021-07

8. Bolt the doors in place with the proper washer spacing between the door frame and the S-2 and S-3 formers. Observe the overlap of Lexan on each edge. Cut the forward edge to meet with a match flush fit with the windshield. Do so by marking with the door closed. Trim all other edges to have an even overlap with the edges. NOTE: The door upper cabin panels and seal will be installed after covering the fuselage.

9. Remove the door and windshield. Apply the foam rubber seals to the "Z" strip. See Figure 021-09. Re-install with rivets after covering. NOTE: Clean off any burrs or debris prior to re-installing.

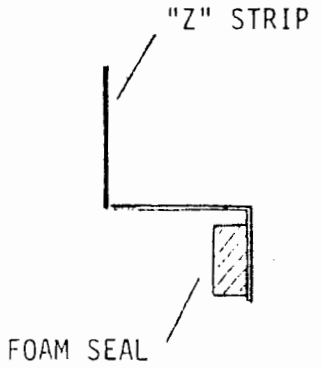
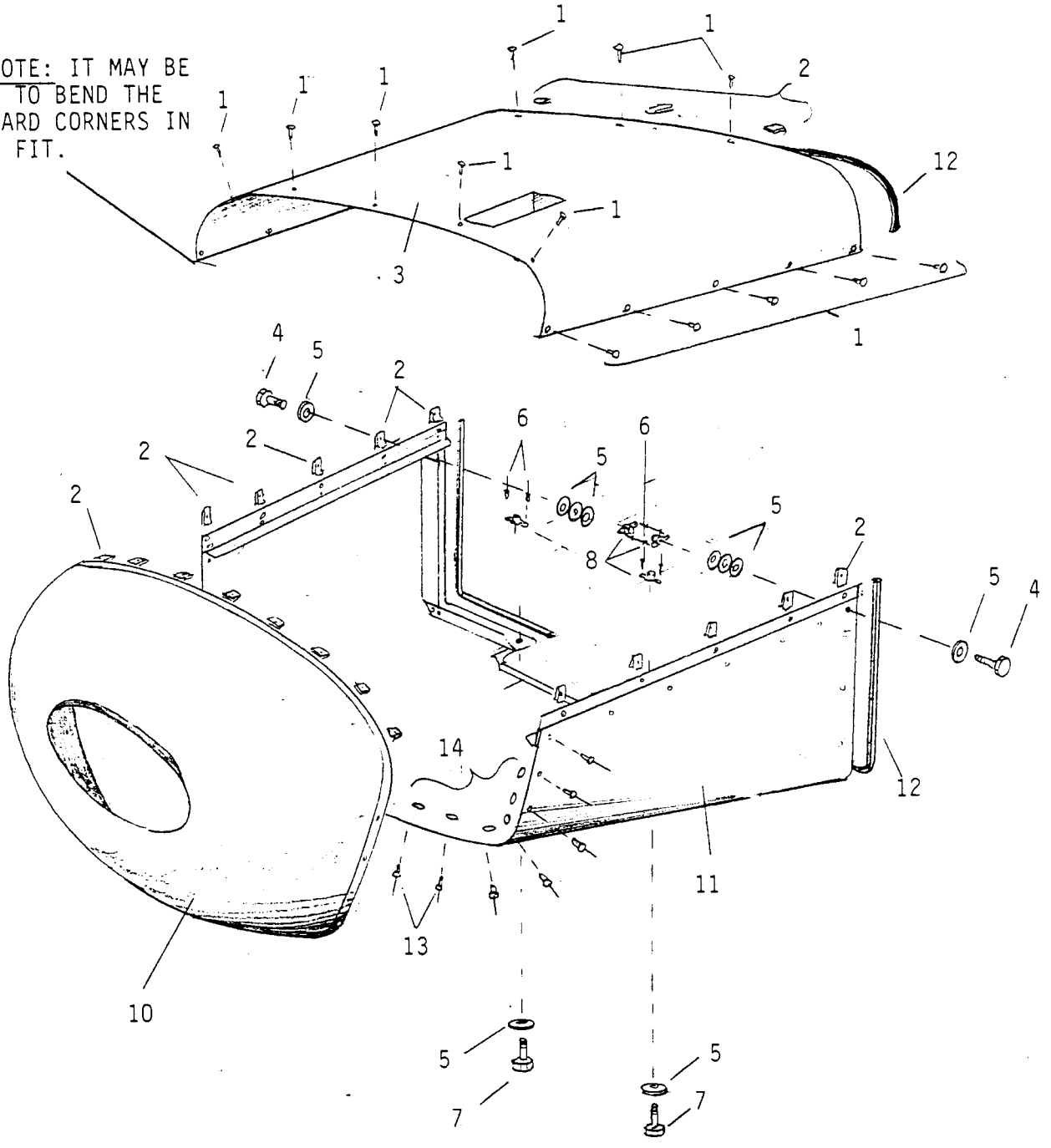


FIGURE 021-09

PLEASE NOTE: IT MAY BE REQUIRED TO BEND THE TWO FORWARD CORNERS IN FOR BEST FIT.



S-6-COYOTE II COWLING

S-6 COYOTE II COWLING

#	PART NAME	PART NO	QUAN	PRICE
1.	#8 Pan Head Screw	8X1/2-PHS	27	.05
2.	Clip On Tinnermans	A1789-8Z-1	27	.25
3.	Cowling Top	C-TOP	1	60.00
4.	3/16" Bolt	AN3-6A	2	.20
5.	3/16" Plastic Washer	PW-3	10	.20
6.	3/32" Aluminum Pop Rivet	40APR1/8	8	.10
7.	3/16" Bolt	AN3-4A	2	.20
8.	3/16" Nut Plate	K-1000-3	4	.40
9.	3/16" Shear Nut	AN364-1032A	4	.15
10.	Cowl Nose Bowl	C-NB	1	85.00
11.	Cowling Bottom	C-BOT	1	90.00
12.	Trimlock, 14 ft.	TRIM-LOC	1	6.00
13.	1/8" Aluminum Pop Rivet	30APR1/8	17	.10
14.	1/8" Brass Washers	IP-BW	15	.10

S-6 COYOTE II COWLING ASSEMBLY

1. Select the parts depicted on the parts page.

2. Carefully wrap the painted cowling components (nose bowl, top and bottom halves). CAUTION: When working with sheet metal be careful of sharp edges. Also handle with care to avoid buckling and permanently deforming parts.

3. Install trim lock to the aft edge of each top and bottom half. Trim to length after installing. HINT: Lay the part on a flat table with the edge you are applying the trim lock to over hanging slightly.

4. Find the center smaller rivet hole of both the nose bowl's (bottom half) and the cowling bottom's front edge. Cleco these parts together. (Copper Clecos). PLEASE NOTE: The sheet metal fits to the outside of the nose bowl.

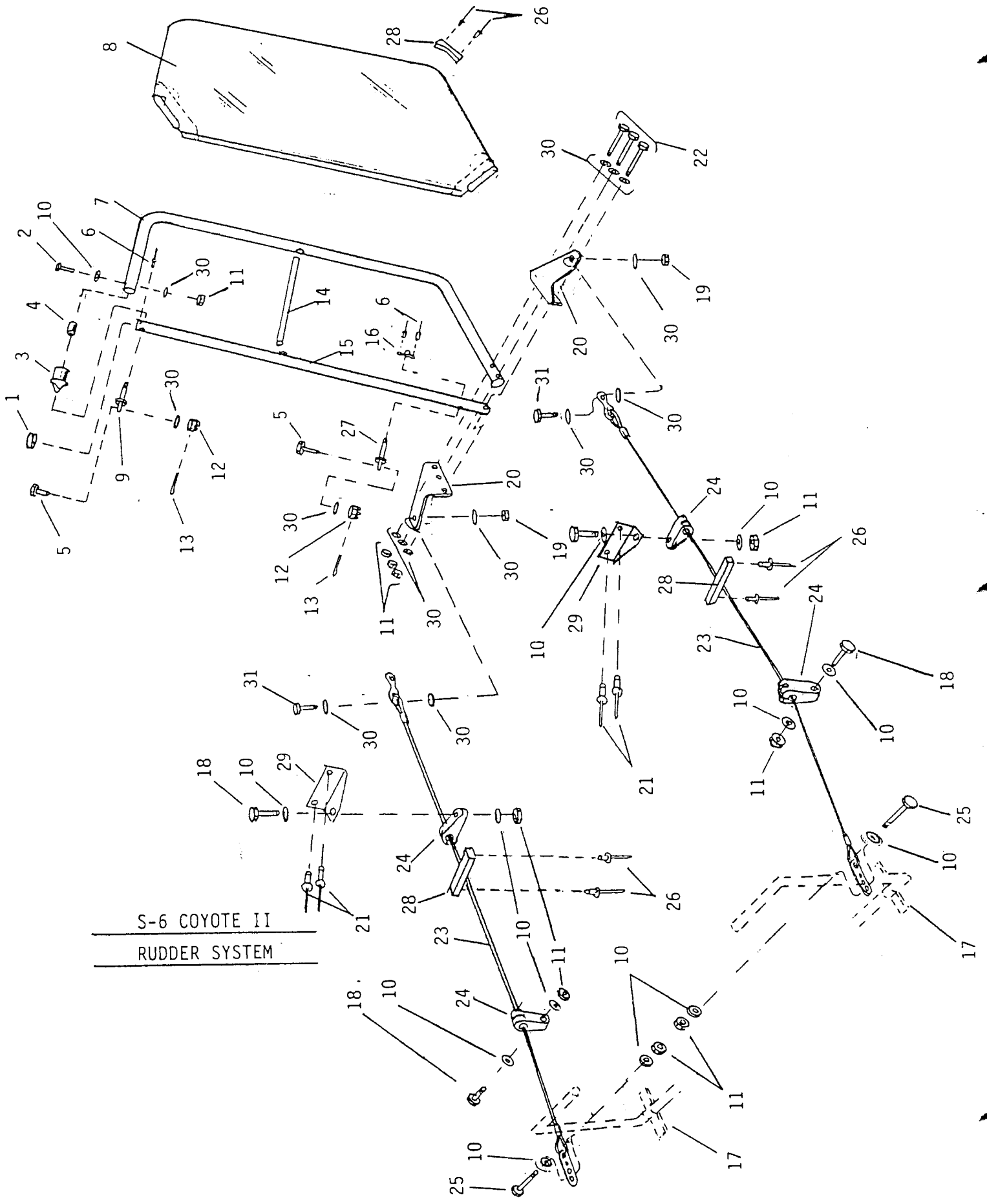
5. Bolt the cowling to the firewall (It is assumed the engine, firewall, windshield and nut plates are installed) as per parts page. HINT: Super glue the 3 stack of washers together and to the cowling inside.

6. Slip the tinnermans over the edges corresponding to the holes on the nose bowl, sides and firewall flanges.

7. Place the top half centered and install the screws.

8. Check for alignment by viewing it from the front and side. The prop flange should be approximately centered (a 1/4" to 3/8" variation either way won't matter). If you have the 9" spinner install it for a better idea of the up and down position. If it looks okay, remove the clecos one at a time and rivet as you go. Put the 1/8" brass washers against the inside of the fiberglass to back up the rivets. If not see step 9.

9. If for some reason your cowling does not line up properly the nose bowl can be shifted by slotting the screw holes and re-positioning the rivet holes on the lower half. Also the bolting holes on the sides and bottom can be slotted for corrective movement.



S-6 COYOTE II

RUDDER SYSTEM

S-6 COYOTE II RUDDER SYSTEM

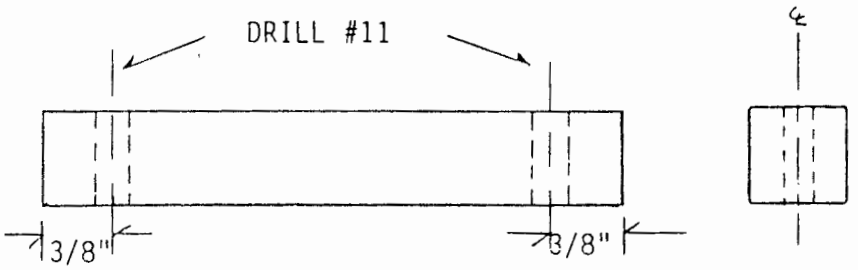
#	PART NAME	PART NO	QUAN	PRICE
1.	1" End Cap	1-CAP	1	.60
2.	3/16" Bolt	AN3-13A	1	.30
3.	1" Compression Fitting	TC-1	1	1.10
4.	Insert Nut	I-NUT	1	1.40
5.	3/16" Bolt	AN3-5	2	.45
6.	3/32" Aluminum Pop Rivet	40APR1/8	3	.10
7.	Rudder Trailing Edge	TG-RTE	1	30.00
8.	Rudder Skin	TG-RSKIN	1	50.00
9.	1/4" Eyebolt	AN43B-14A	1	3.00
10.	3/16" Thin Washer	AN960-10L	15	.03
11.	3/16" Shear Nut	AN364-1032A	10	.15
12.	3/16" Castle Nut	AN310-3	2	.30
13.	Small Cotter Pin	MS24665-134	2	.10
14.	Rudder 1/2 Internal Brace	TG-IB-R	1	2.40
15.	Rudder Spar	TG-RS	1	16.00
16.	1/4" Nut Plate	MS21047-04	1	.60
17.	Rudder Pedals	SEE FLOORBOARD	-	---
18.	3/16" Bolt	AN3-6A	4	.20
19.	3/16" Tensile Nut	AN365-1032A	2	.15
20.	Rudder Horn, LH/RH	TG-RHR/TG-RHL	1 each	6.00
21.	1/8" SS Pop Rivets	30SSPR	4	.20
22.	3/16" Bolt	AN3-15A	3	.30
23.	Rudder Cable	S-6-R-CAB	2	12.00
24.	Cable Guide	HA-144	4	2.50
25.	3/16" Bolt	AN3-10A	2	.25
26.	3/16" Aluminum Pop Rivet 1/2	12APR1/2	6	.10
27.	1/4" Eyebolt	AN43B-13A	1	3.00
28.	Rub Block, 3" x 1/2" x 1/2"*	TG-RB	3	5.00
29.	Cable Guide Angle	TG-RGA	2	2.00
30.	3/16" Thick Washer	AN960-10	32	.03
31.	3/16" Bolt	AN3-6A	2	.20

*Fabricate From 3" x 1/2" x 1/2" PVC Plastic Blocks.

S-6 COYOTE II RUDDER ASSEMBLY

1. Refer to parts page to select the required parts for assembly.

2. Fabricate (2) rub blocks from the (2) 1/2" x 1/2" x 3" PVC (gray plastic) blocks and drill the rudder guide angles as per Figure 023-02.



RUDDER CABLE RUB BLOCK
1/2" X 1/2" X 3" PVC (2) REQUIRED

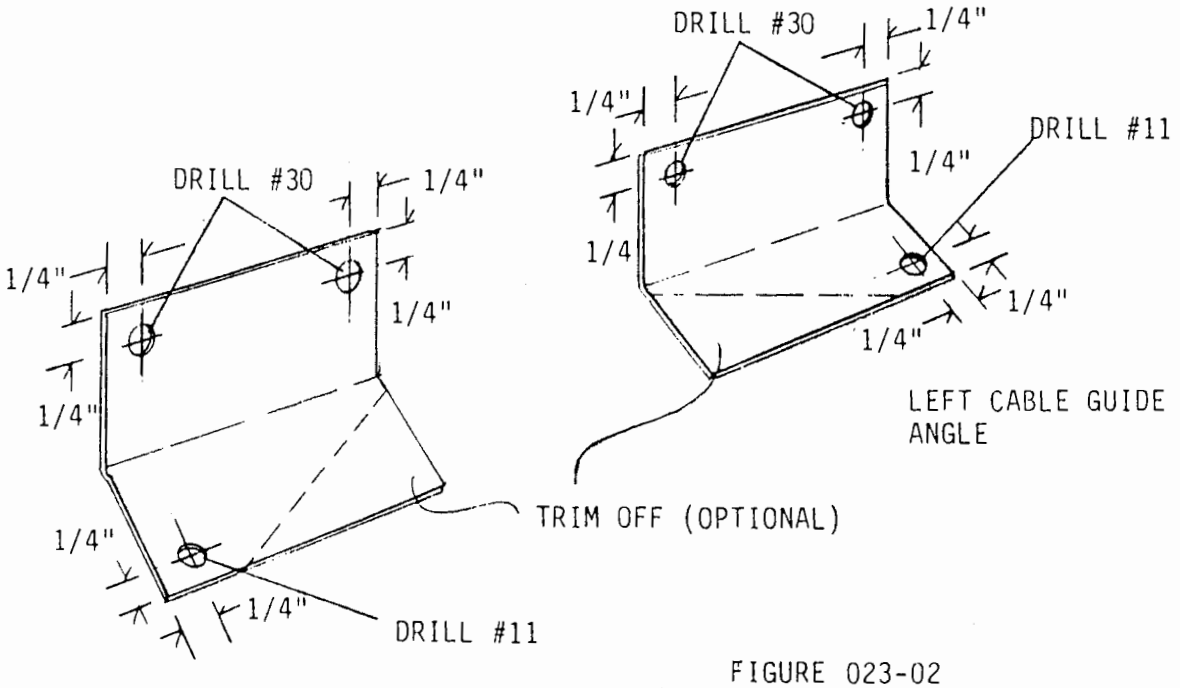


FIGURE 023-02

3. Rivet the 1/4" nut plate to the "button" side of the rudder spar. (A "button" is a 3/16" rivet with a thick 3/8" washer).

4. Assembly and skinning of the rudder is shown in the following diagrams. The tool illustrated on page 4 can be very helpful in assembly. Build these if you plan on doing more than one aircraft. Otherwise sticks, ropes and whatever can be used to the same effect. Shape and attach a rub block to the bottom of the rudder as shown in Figure 023-04.

5. Assemble the completed rudder to the vertical stabilizer AFTER it is attached to the tailcone.

6. Bolt the cable guides to the vertical tabs approximately 7 1/2" aft of the gear truss. Install so the guides are held upright, bolt hole down and to the inside.

7. Locate and rivet the cable rub blocks as in Fig 023-07.

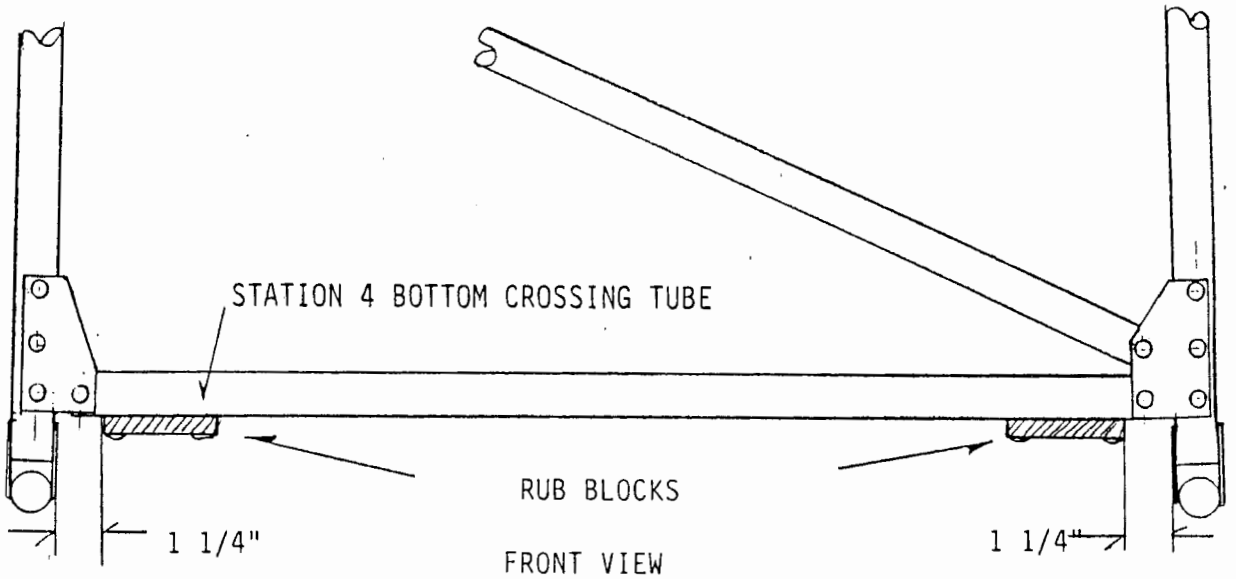


FIGURE 023-07

8. Locate and rivet to the FRONT side of station 5 bulkhead the cable guide angles. Use 1/8" stainless steel pop rivets. See Figure 023-08. Bolt the guides in place as shown.

9. Bolt the adjusting tang end of the rudder cables to the very outside of the pedals (through the hole provided). Route the cable through the gear truss to the cable guide (just aft of the gear truss). Continue aft UNDER the S-4 bottom crossing tube to the aft most cable guides and bolt to each rudder horn. Bolt cables to horn so cable tangs can still pivot but not be loose. IMPORTANT: The cables do not cross they run direct from the pedals through the guides to the rudder horns. Always check rudder action prior to flight.

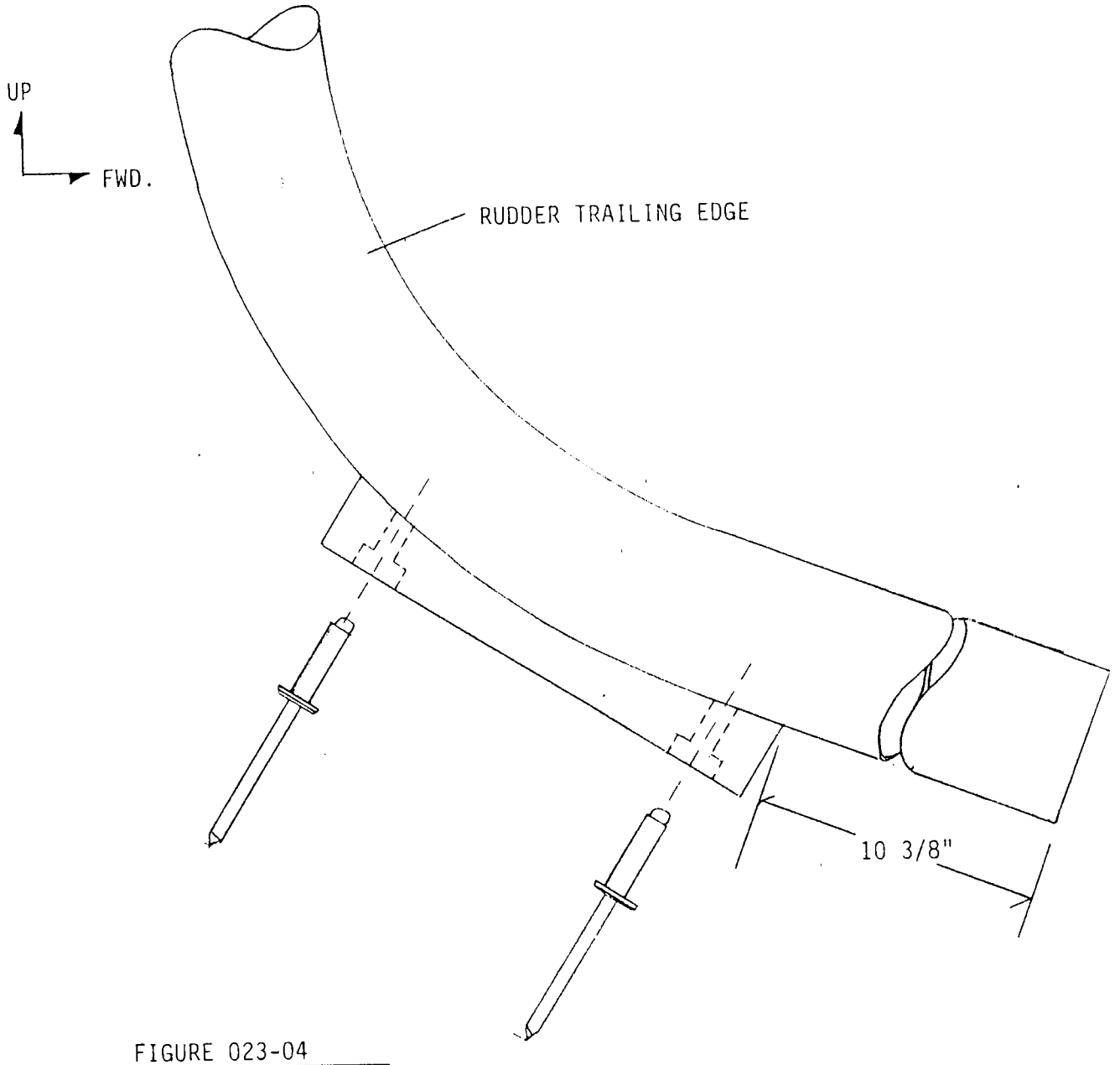


FIGURE 023-04

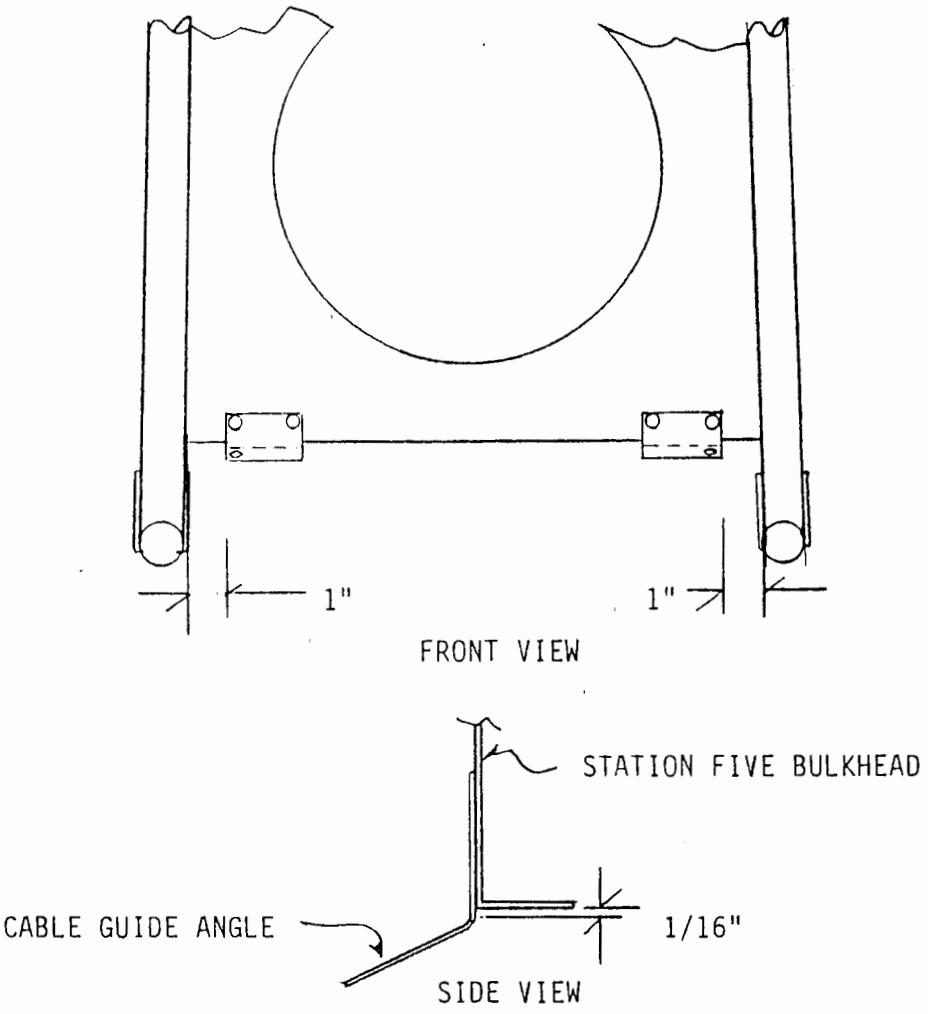
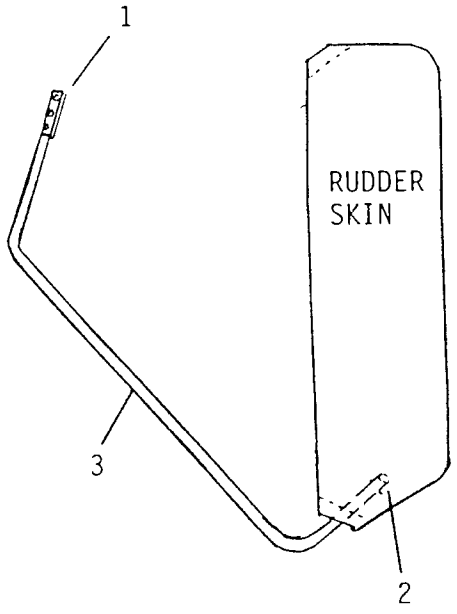


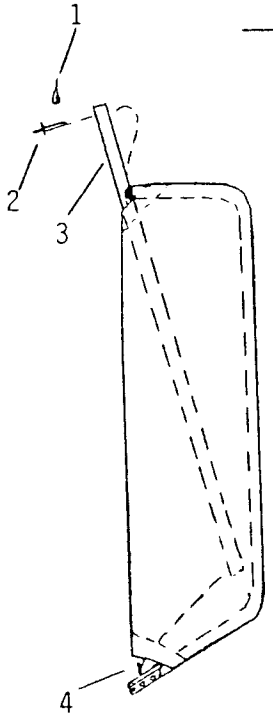
FIGURE 023-08

1



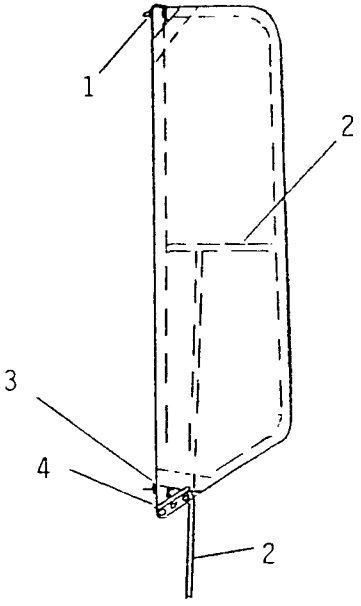
1. ASSEMBLE ONE HALF OF RUDDER HORN.
2. ASSEMBLE END FITTING TC-1.
3. RUDDER TRAILING EDGE

2



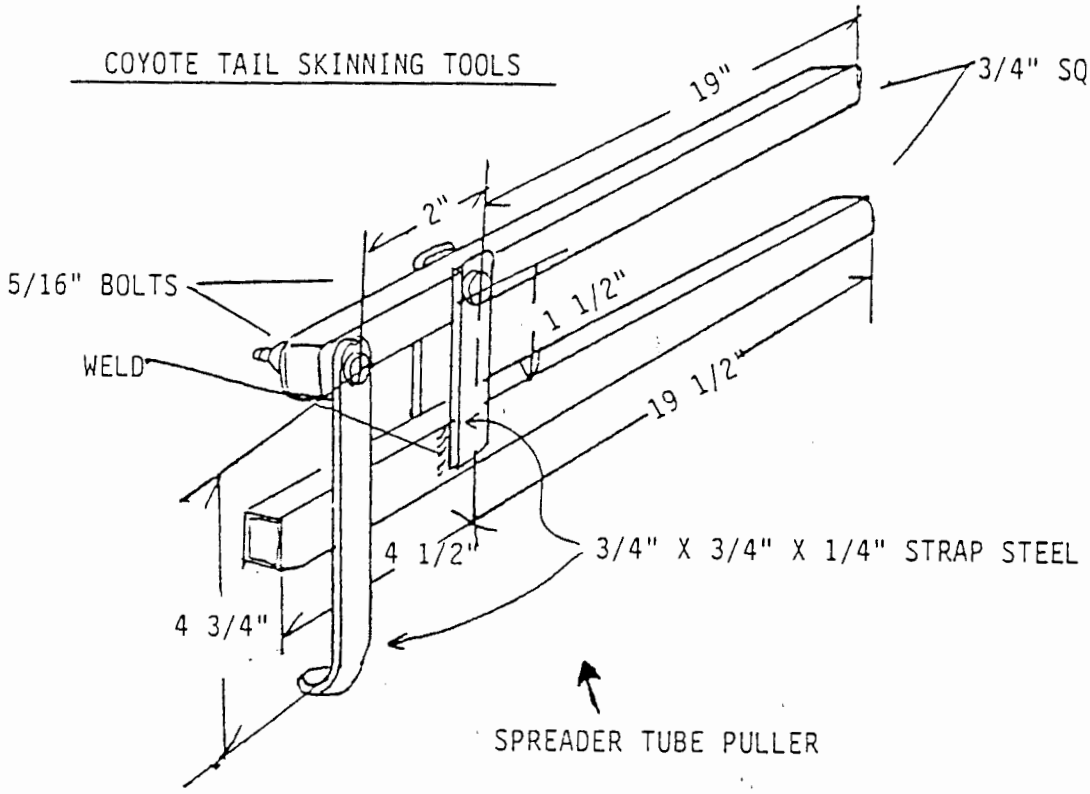
1. LOCTITE EYEBOLT
2. EYEBOLT
3. RUDDER SPAR
4. INSERT SPAR, POP OVER LOWER END OF TRAILING EDGE USING A LARGE FLAT HEAD SCREWDRIVER FOR A LEVER.

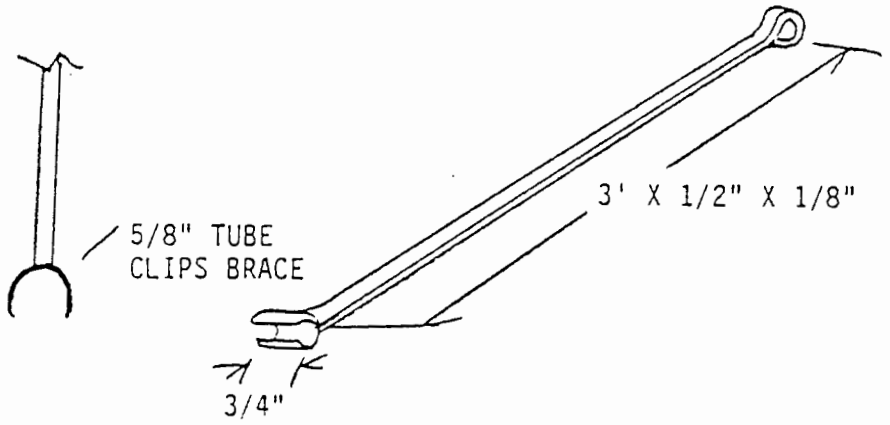
3



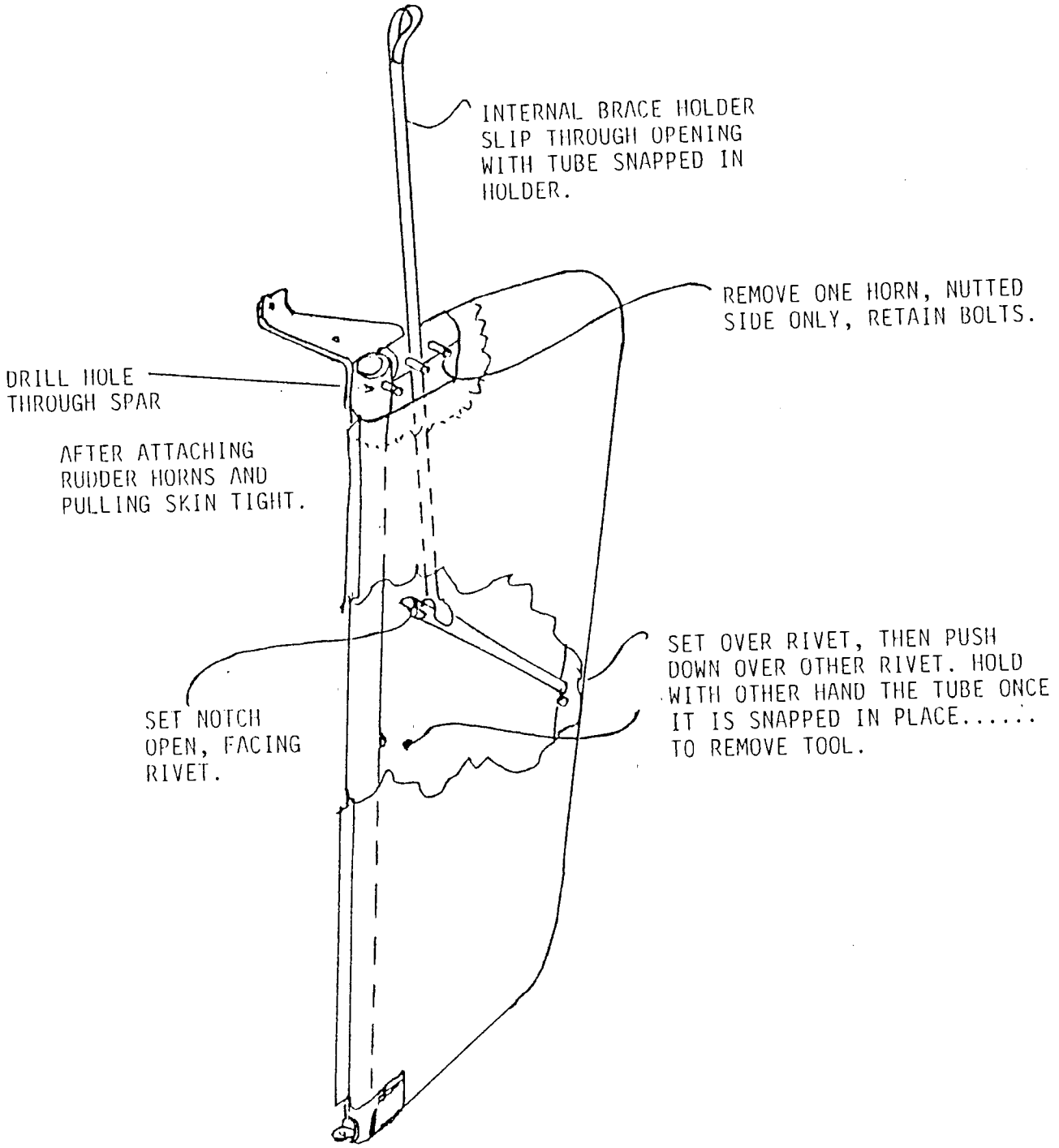
1. TIGHTEN TOP EYEBOLT.
2. PUSH THE INTERNAL BRACE IN PLACE WITH THE NOTCHED END OPEN TO THE "BUTTON". TAPE THE BRACE TO A STICK OR METAL STRAP TO AID INSTALLATION.
3. INSTALL LOWER EYEBOLT.
4. POSITION SPAR FLUSH WITH TRAILING EDGE TUBE AND DRILL. USE HORN AS A GUIDE. INSTALL BOLT TO COMPLETE.

COYOTE TAIL SKINNING TOOLS





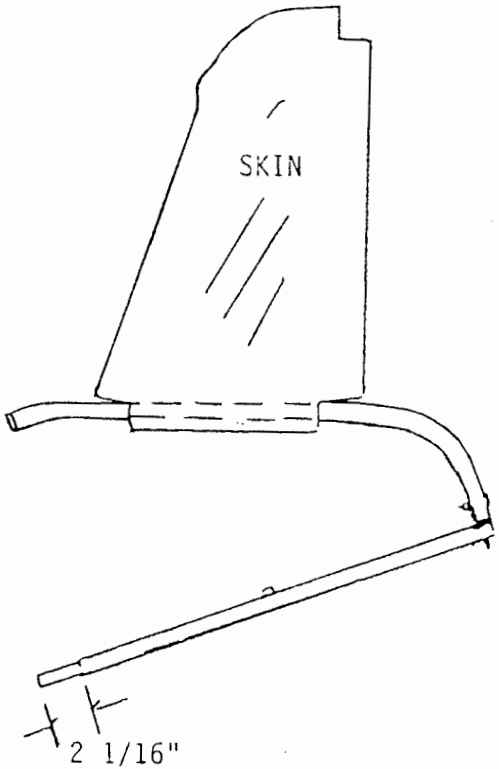
INTERNAL BRACE HOLDER
CLIP IS AT 20° ANGLE TO STRAP
CLIP IS BRAZED ON 5/8" X .058 TUBE
CUT A LITTLE LESS THAN 1/2" OFF SO IT BARELY
CLAMPS THE 1/2" TUBES.



RUDDER AND ELEVATOR: INSTALLING BRACES

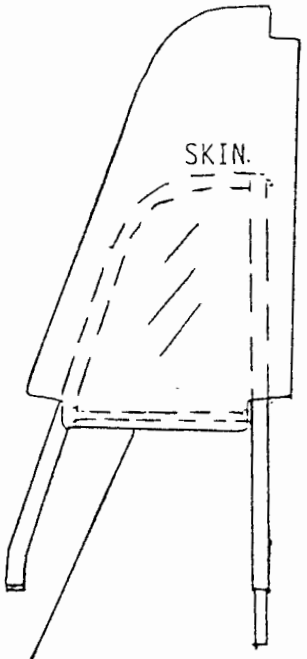
FOR COYOTE I AND II. COYOTE I RUDDER SHOWN.

1



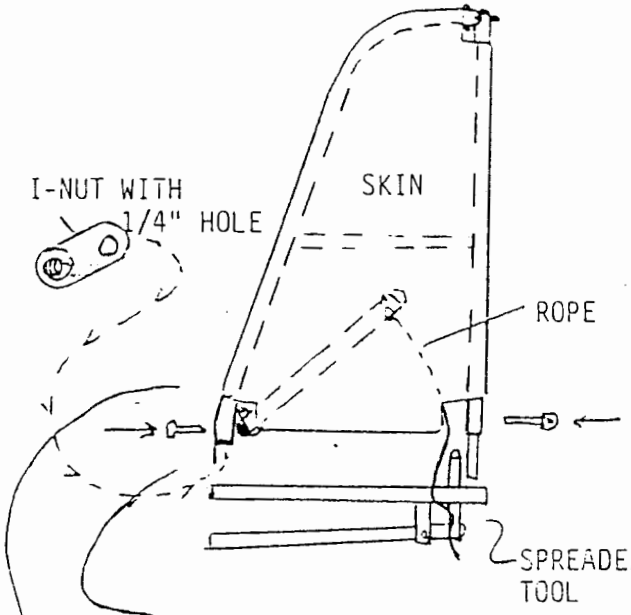
2 1/16"
TG-VAT MUST BE
PROJECTING 2 1/16".

2



INSTALL INTERNAL
BRACE AT THIS POINT.

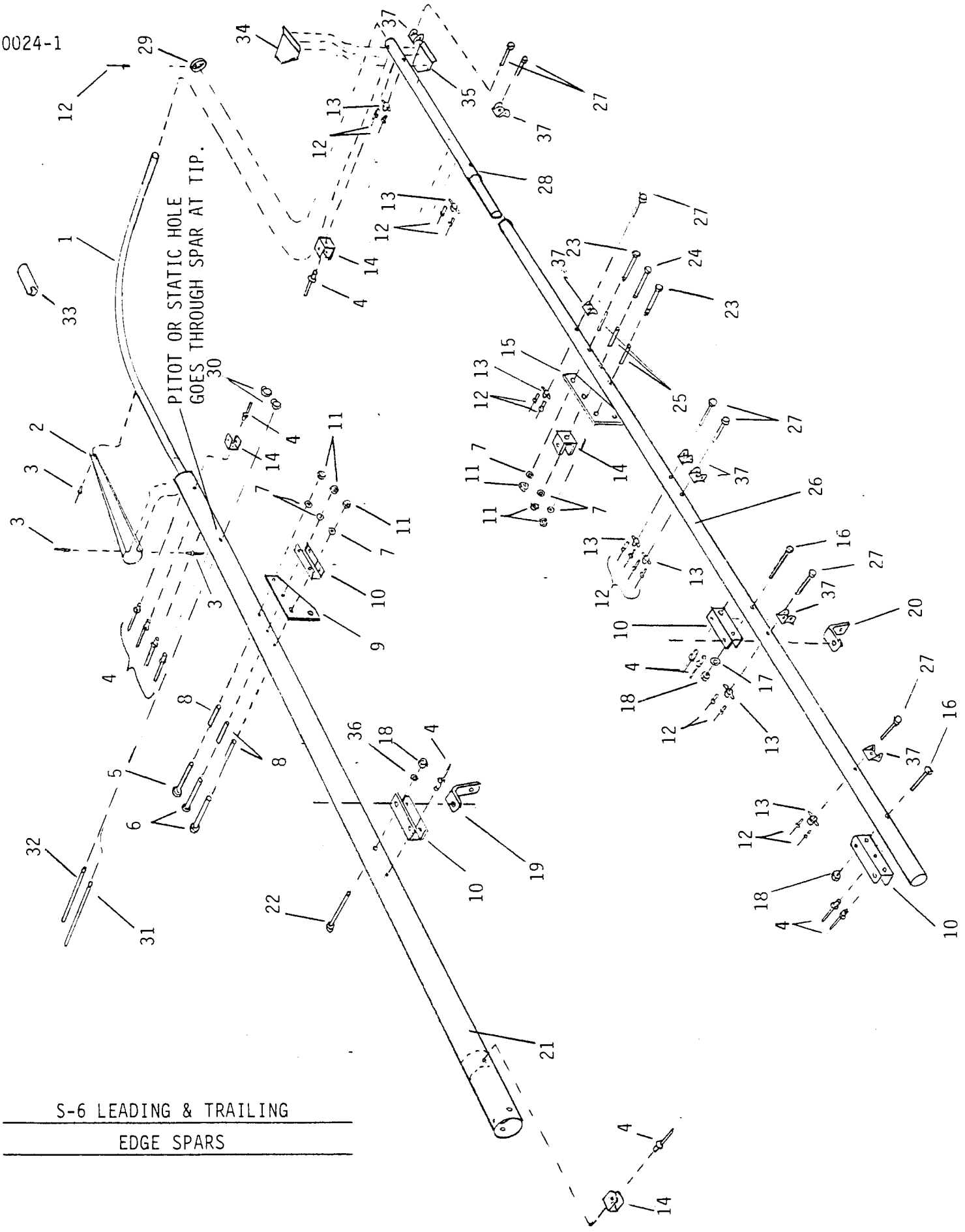
3



EXTEND BOLT INTO SPREADER
ENOUGH TO "HOOK" IT. THREAD
IN AFTER PULLING IN OTHER.

IMPORTANT!! POSITION BOLT HEADS DOWN,
OR NUTS INWARD, FOR MAXIMUM
CLEARENCE.

SUGGESTED METHOD OF ASSEMBLY FOR
COYOTE I AND II HORIZONTAL STABILIZER
AND VERTICAL FINS.



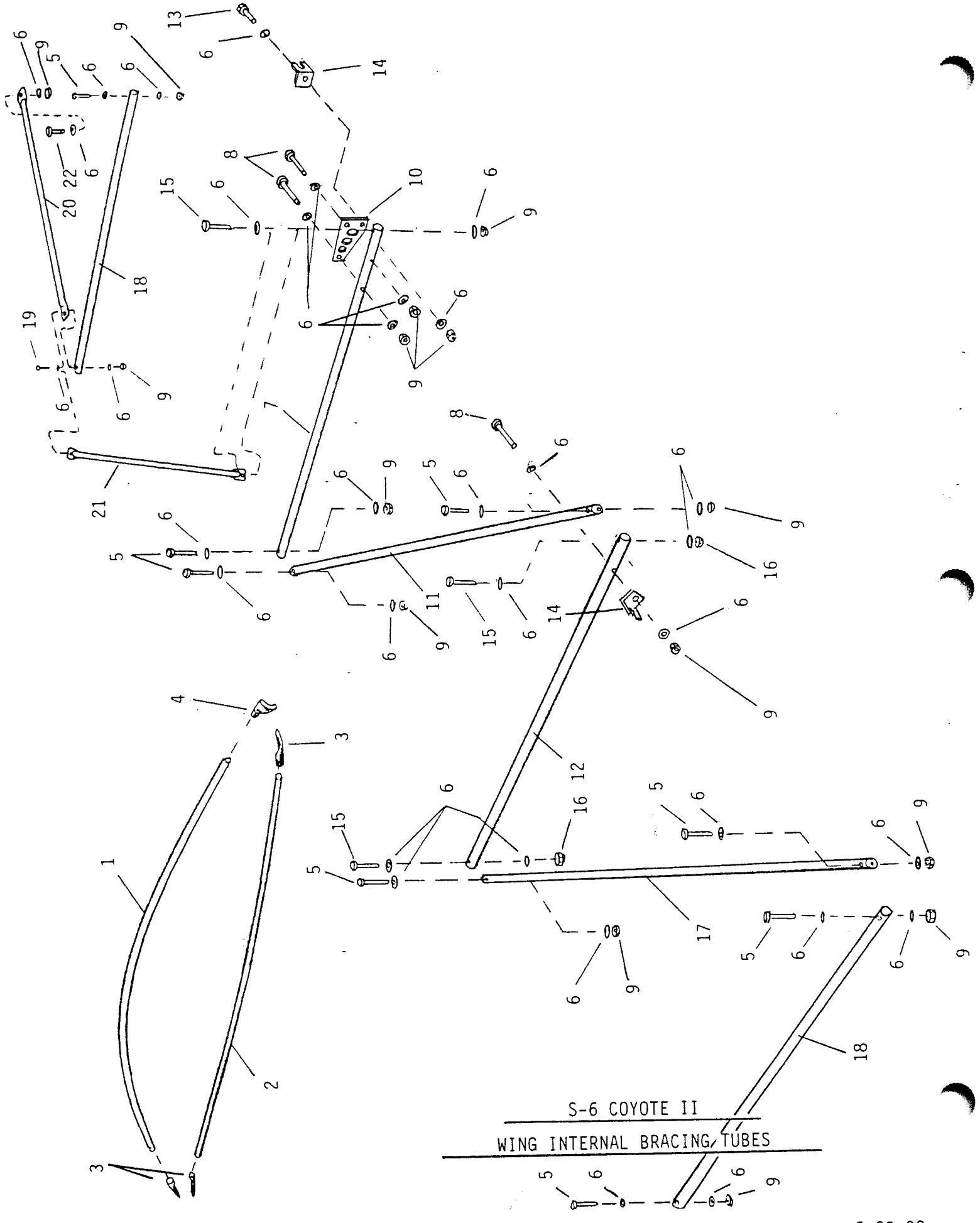
S-6 LEADING & TRAILING

EDGE SPARS

S-6 COYOTE II LEADING & TRAILING EDGE SPARS

#	PART NAME	PART NO	QUAN	PRICE
1.	Tip Bow	W-TIP	2	45.00
2.	Tip Wrap	W-TW	2	7.00
3.	1/8" SS Pop Rivet	30SSPR1/8	20	.20
4.	3/16" SS Pop Rivet	12SSPR	16	.20
5.	1/4" Bolt*	AN4-35A/LP	2	1.80
6.	1/4" Bolt*	AN4-36A/LP	4	1.80
7.	1/4" Thin Washer	AN960-416L	12	.03
8.	Spacer Bushing, 3/8" x 3"	SB-3/8x3	6	.50
9.	Fwd. Strut Plate	W-SAP-LE	2	8.75
10.	Long Wing Channel	W-WCL	8	4.00
11.	1/4" Shear Nut	AN364-428A	12	.20
12.	3/32" Aluminum Pop Rivet	40APR1/8	28	.10
13.	3/16" Nut Plate	K-1000-3	14	.40
14.	Attach Bracket	S2-SAB	8	3.50
15.	Aft Strut Plate	W-SAP-TE	2	8.75
16.	3/16" Bolt	AN3-23A	4	.40
17.	3/16" Thin Washer	AN960-10L	2	.03
18.	3/16" Tensile Nut	AN365-1032A	6	.15
19.	Fwd Jury Strut Attach Tab	W-FSTAT	2	3.00
20.	Aft Jury Strut Attach Tab	W-ASTAT	2	3.00
21.	Leading Edge Spar	W-LES	2	115.00
22.	3/16" Bolt	AN3-34A	2	.80
23.	1/4" Bolt*	AN4-25A/LP	4	1.50
24.	1/4" Bolt*	AN4-26A/LP	2	1.50
25.	Spacer Bushing, 3/8" x 2"	SB-3/8x2	6	.50
26.	Trailing Edge Spar	W-TES	2	95.00
27.	3/16" Bolts	AN3-23A	14	.40
28.	Trailing Edge Spar Tip	W-TES-TIP	2	25.00
29.	2" End Cap	EC-10	2	1.50
30.	Line Clamps	FS-LCL	2	1.00
31.	Static Tube		1	4.00
32.	Pitot Tube		1	2.00
33.	Tip Bow Marking Tool	W-T-MT	1	2.00
34.	Tip Gusset Top	W-TG-T	2	2.00
35.	Tip Gusset Bottom	W-TG-B	2	2.00
36.	3/16" Thick Washer	AN960-10	2	.03
37.	Stainless Steel Hinge	W-HB	14	1.60

*These bolts have a special thin head painted flat black. They must be used to allow the wing skins to slide on.



S-6 COYOTE II

WING INTERNAL BRACING TUBES

S-6 COYOTE II WING INTERNAL BRACING TUBES

#	PART NAME	PART NO	QUAN	PRICE
1.	Top Rib	W-T-RIB	18	7.25
2.	Bottom Rib	W-B-RIB	18	7.25
3.	Rib Tip	RIB-TIP	54	.75
4.	Contour Fitting	CON-1 5/8	18	1.40
5.	3/16" Bolt	AN3-15A	18	.30
6.	3/16" Thin Washer	AN960-10L	68	.03
7.	Middle Compression Tube	W-MC	2	12.00
8.	3/16" Bolt	AN3-14A	6	.30
9.	3/16" Shear Nut	AN364-1032A	36	.15
10.	Teleflex Bracket	TG-EH	2	5.00
11.	Drag Brace	W-DB	2	13.00
12.	Flap Compression Tube	W-FCT	2	10.00
13.	3/16" Bolt	AN3-5A	2	.15
14.	Teleflex Retainer	W-TEL-R	4	2.50
15.	3/16" Bolt	AN3-16A	6	.40
16.	3/16" Tensile Nut	AN365-1032	4	.20
17.	Drag Brace Root	W-DBR	2	13.00
18.	Outer Inner Compression Tube	W-IO	4	10.00
19.	3/16" Bolt	AN3-17A	2	.40
20.	Wing Tip 1/2" Brace Tube, 50"	W-WT-50	2	10.00
21.	Wing Tip 1/2" Brace Tube 58 3/8"	W-WT-58	2	10.00
22.	3/16" Bolt	AN3-3A	2	.20

S-6 COYOTE II WING ASSEMBLY

LEADING EDGE SPAR ASSEMBLY: NOTE: Assemble both spars the same but make a LH and a RH.

1. Select the necessary parts as shown in the catalog.

2. The leading edge spar comes with all but one of the holes pilot drilled. The final hole sizes are called out during assembly. PLEASE NOTE the front side of the spar has four (4) holes for the tip bow rivets. The 5th hole goes through the spars and serves to hold the static and pitot tubes. Also the rivet retaining the root doubler denotes front side.

3. Bolt the long wing channel to the first hole 55" outboard of the root. Position the channel so the unbolted end points to the root. Line up the channel parallel with the spar, drill and rivet with a 3/16" stainless steel pop rivet through remaining hole. (Only drill through the one side of the spar).

4. Drill out the root hole to 1/4" to accept the wing attach bolts. (See Keel).

5. Drill out the three (3) in a row holes to 3/8". For best accuracy, drill from each side not from one side through to the other. Debur and install the 3/8" x 3" bushings, 1/4" bolts, strut attach plate and wing channel as shown in the parts catalog.

6. Locate a #11 hole on the leading edge spars inside (or aft side) 3 3/4" inboard of the tip end of the spar. Drill this hole so it is radially in line with the other holes. Rivet an S2-SAB to the spar using a single 3/16" stainless steel pop rivet. NOTE: The outboard compression tube (W-10) will bolt to this bracket and another S2-SAB rivets to the aft spar's forward side in the same location after the tip extension is installed. Locate a #11 hole of the leading edge spars inside (or aft side) 5 3/4" out from the center of the ROOT hole. Drill this hole so it is radially in line with the other holes. Rivet an S2-SAB to the spar with a single 3/16" stainless steel pop rivet.

TRAILING EDGE SPAR ASSEMBLY (SPARS HAVE A FRONT & BACK)

7. Bolt a long wing channel to the #11 drilled through the spar, 8 11/16" from the root end. The unbolted end should point inboard. Line up the channel parallel and drill and rivet with #12SSPR's.

8. Bolt a long wing channel to the trailing edge spar at the hole 55" outboard of the root on the same side as the inboard channel. Position the unbolted end to the TIP side. Line up the channel parallel and drill and rivet with a 3/16" stainless steel pop rivet.

9. Drill the three (3) in a row holes out to 3/8". Debur and install the 3/8" x 2" bushings, 1/4" bolts, strut attach plate and S2-SAB as shown in the parts catalog.

10. From the parts drawing determine the location of each eyebolt and rivet on the front side of the spar a 3/16" nut plate. Position these nut plates parallel with the spar. Also rivet two (2) nut plates to each trailing edge spar tip on the side with the 1 3/8" hole.

11. Slip the trailing edge spar tip into the spar but DO NOT rivet. Assembly of the wing tip bow is required before riveting the tip.

WING ASSEMBLY

12. Refer to wing internal bracing tubes and select the parts for assembly.

13. Bolt the compression tubes between the spars with the holes for mounting the teleflex brackets closest to the trailing spar. PLEASE NOTE the shorter tube (W-MC) bolts to the outer position.

14. Install the drag braces. NOTE: Install the W-DBR at root with double notched end to trailing edge spar. Slip the door up catch* on prior to bolting in place. This up catch should be located 13 1/2" from the W-DBR's 3/16" bolt center to the center of the up catch. See Figure 024-014. *See door parts drawing for part I.D. and number.

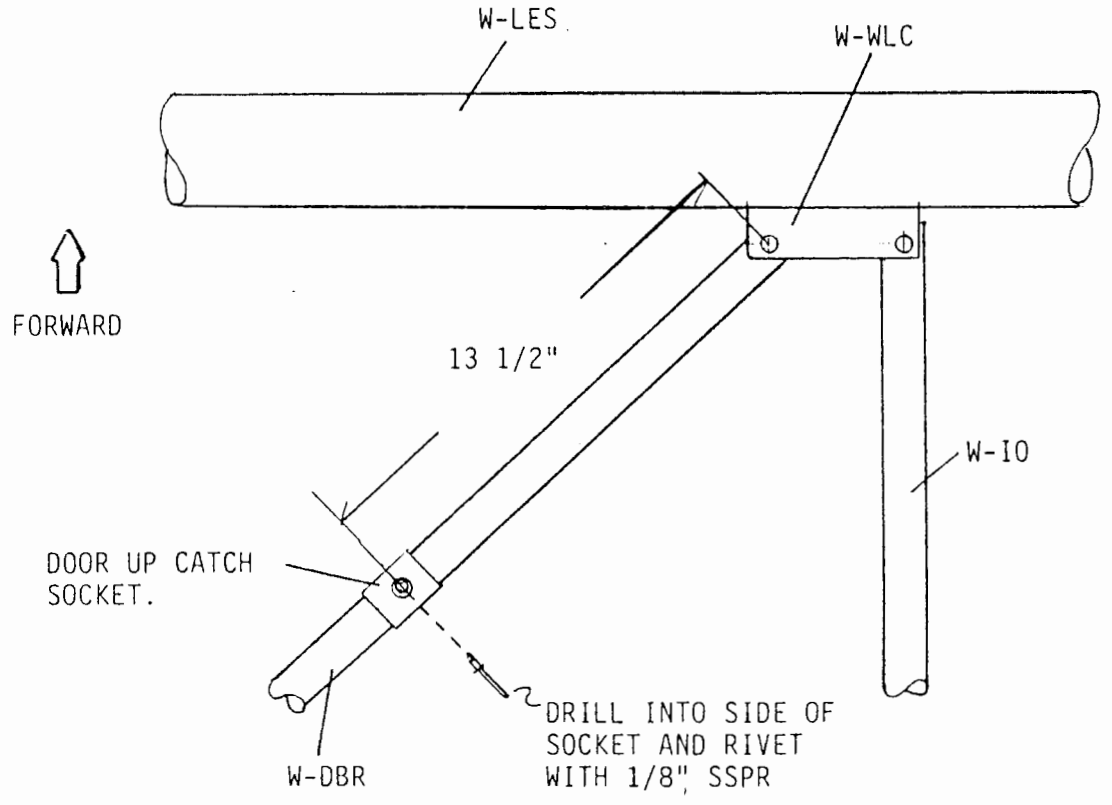


FIGURE 024-014

15. Install the jury strut tabs. The tab is attached to the long wing channel's outboard hole on the LES and the long wing channel's inboard hole on the TES. Look closely at the drawing of the spars for location and position. Both tabs are positioned with the bend to the tip.

16. Install the teleflex bracket to the WCM compression tube on the outboard side. Install the teleflex retainer on the W-FCT tube to the inside. (See parts drawing).

17. Do not install the teleflex retainer (small angle on the WCM parts) until wing is covered.

18. Insert the tip bow's drilled end into the leading edge spar so the tip bow's hole lines up with the fourth inboard hole and cleco. IMPORTANT: The tip bow must be flat against the spar on the inside. See Figure 024-018.

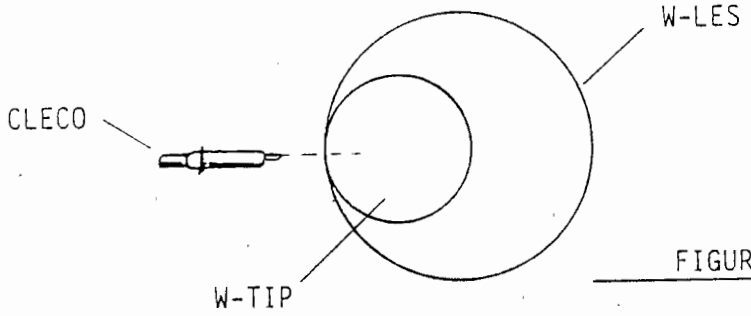
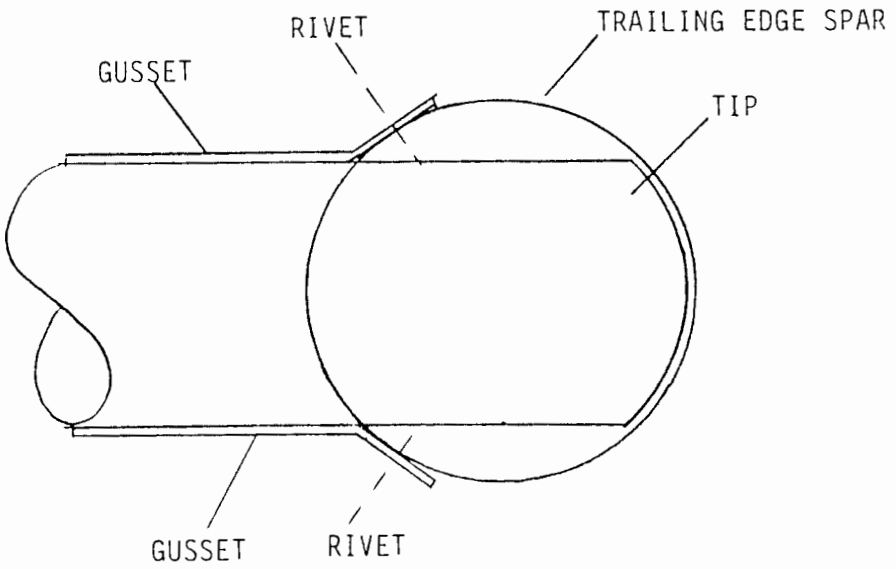


FIGURE 024-018

19. Line up the bow parallel to the spar and drill through the remaining three (3) holes and cleco.

20. File and fit the tip bow's other end into the trailing edge spar's extension. See Figure 024-020. Use the 2" tube with the 1 3/8" half hole to mark the tip end. The tip should exit the rear spar approximately 90 degrees. About 1 1/2" of it will have to be trimmed off the fitted end of the tip. Rivet with (3) 1/8" stainless steel pop rivets in the narrow flange through the spar and wide flange through the tip tube.

21. Once the tip bow is secure, rivet the tip extension to the spar with two (2) 3/16" stainless steel pop rivets. Locate them on the FRONT side of the spar.
CAUTION: These rivets must be stainless steel pop rivets. DO NOT use aluminum pop rivets. Install rivets as shown in Fig. 024-021.
NOTE: After the extension is riveted, drill through the doubler and rivet the S2-SAB's trailing edge spar on the spar's FRONT side. There should be a #11 hole located 3 3/4" inboard of the TES splice.



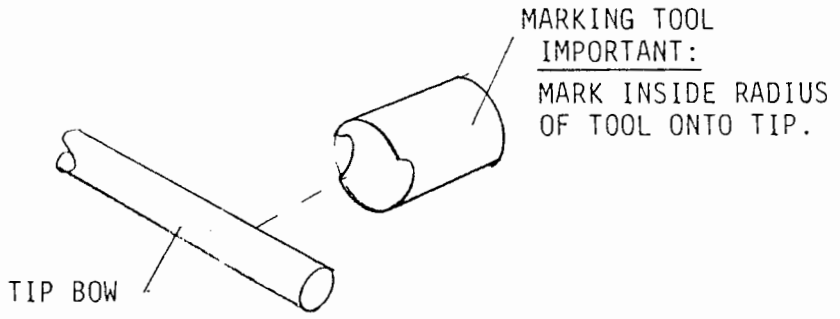
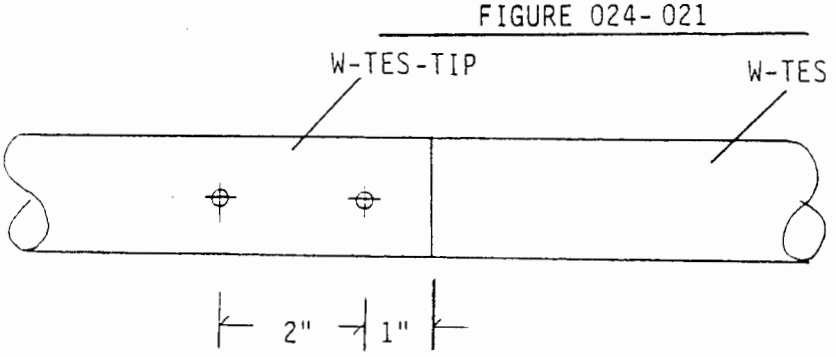


FIGURE 024-020

FIGURE 024-021



22. Form the tip wraps into 1/2" round curves by pressing them over the 3" and 1 3/8" tubes where they are to be installed. Rivet the tip wraps to the leading edge spar and tip bow with three (3) 1/8" aluminum pop rivets. Overlap the tip wrap onto the spar about 3/8".

23. 8 7/8" from the outer end of the 3" spar is a #11 hole. Drill these out to 1/4" diameter. One side will be the static tube, the other the pitot. It does not matter which is LH or RH. The tubes can be inserted through the spar after covering using the access zipper sewn into the wings bottom. However, it is best to run the lines to ASI, VSI and Altimeter prior to covering. Secure the lines to the wing structure with zip ties. For easy knockdown make a splice using 1/4" diameter aluminum tubes 2" long. Locate this splice where the tubes exit the wing root. Line clamp the splice tube to the lines coming out of the wing. If your aircraft is equipped with Altimeter and VSI, run lines from these to the static source on the ASI, then to the static tube.

24. At this point the wing structure is virtually complete with the exception of the 50" and 58 3/8" half tubes used to stabilize the wing tip's last two bays. These are installed by bolting to the aft spar's long wing channel and the S2-SAB. Bolt these tubes to the TOP of the brackets as shown in Figure 024-024. Attach the loose end of the 58 3/8" tube to the UNDERSIDE of the wing tip's corner gusset. Use the tube to locate and drill the hole by first laying it on the gusset's topside. Bolt with an AN3-3A bolt.

25. Assemble the end fittings into each rib and dimple the tubes end with a punch to hold the contour fittings in place.

26. The wing frames should now be complete. They will be covered once assembled to the fuselage.

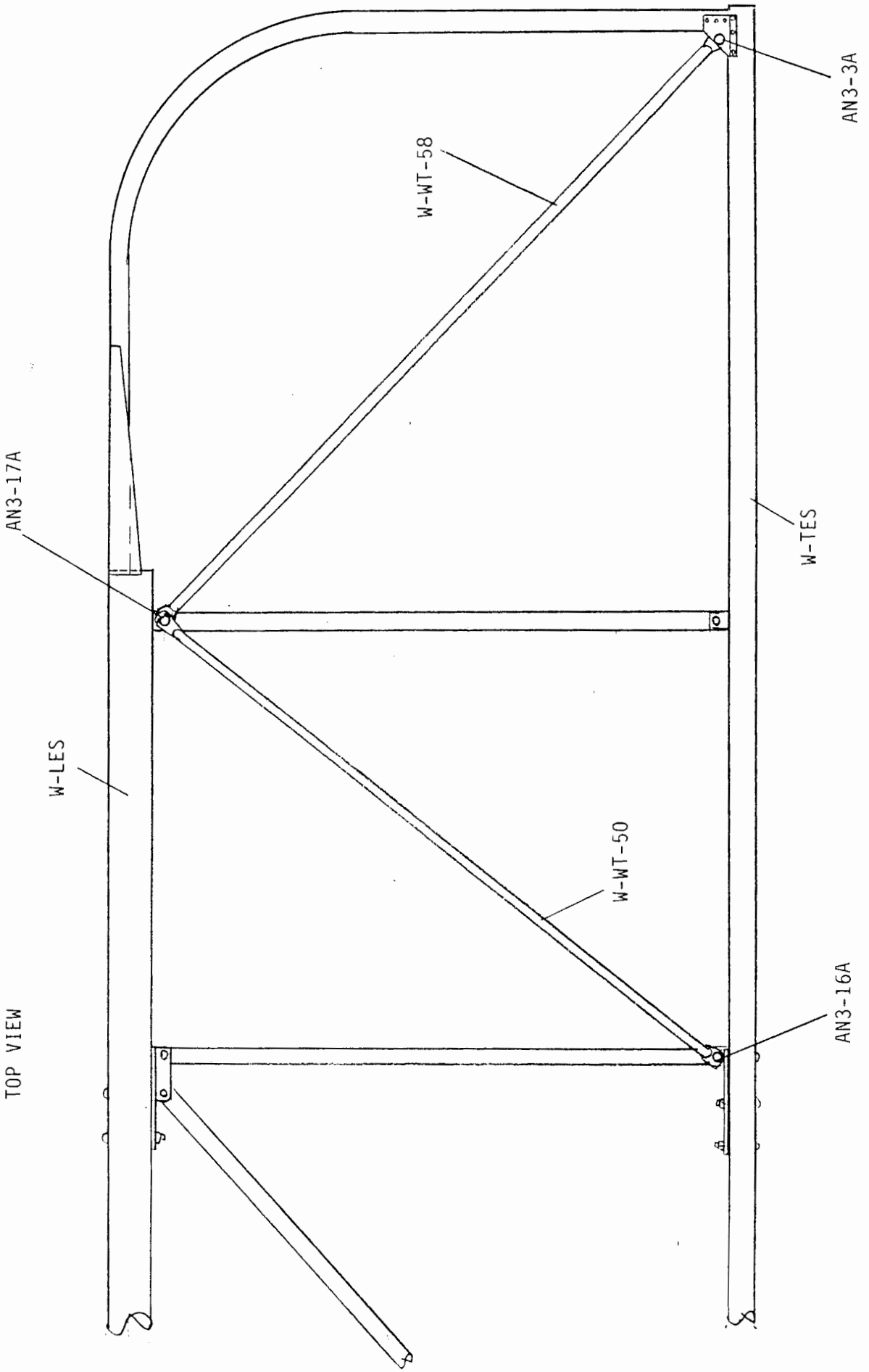
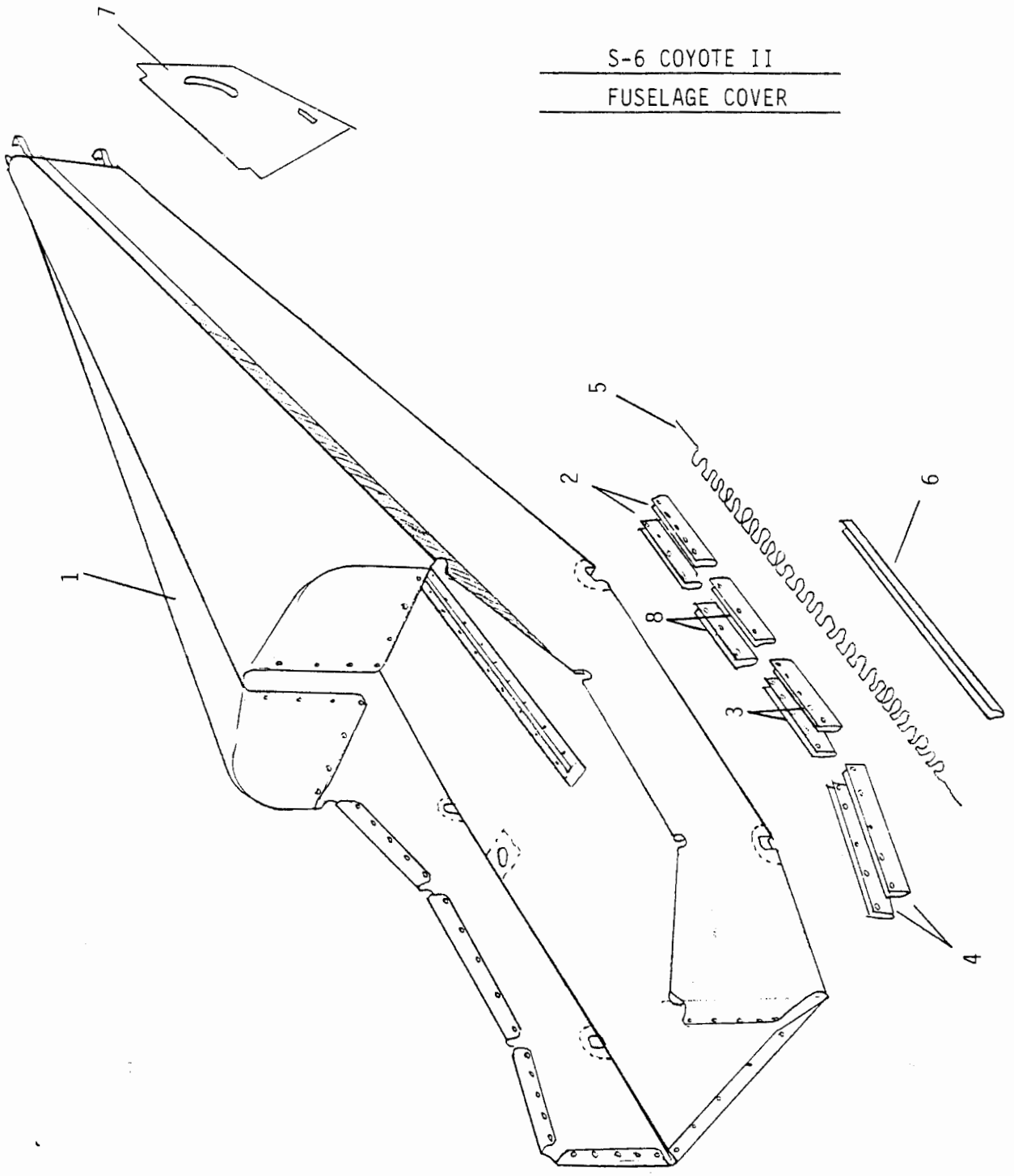


FIGURE 024-024

S-6 COYOTE II

FUSELAGE COVER



S-6 COYOTE II FUSELAGE COVER

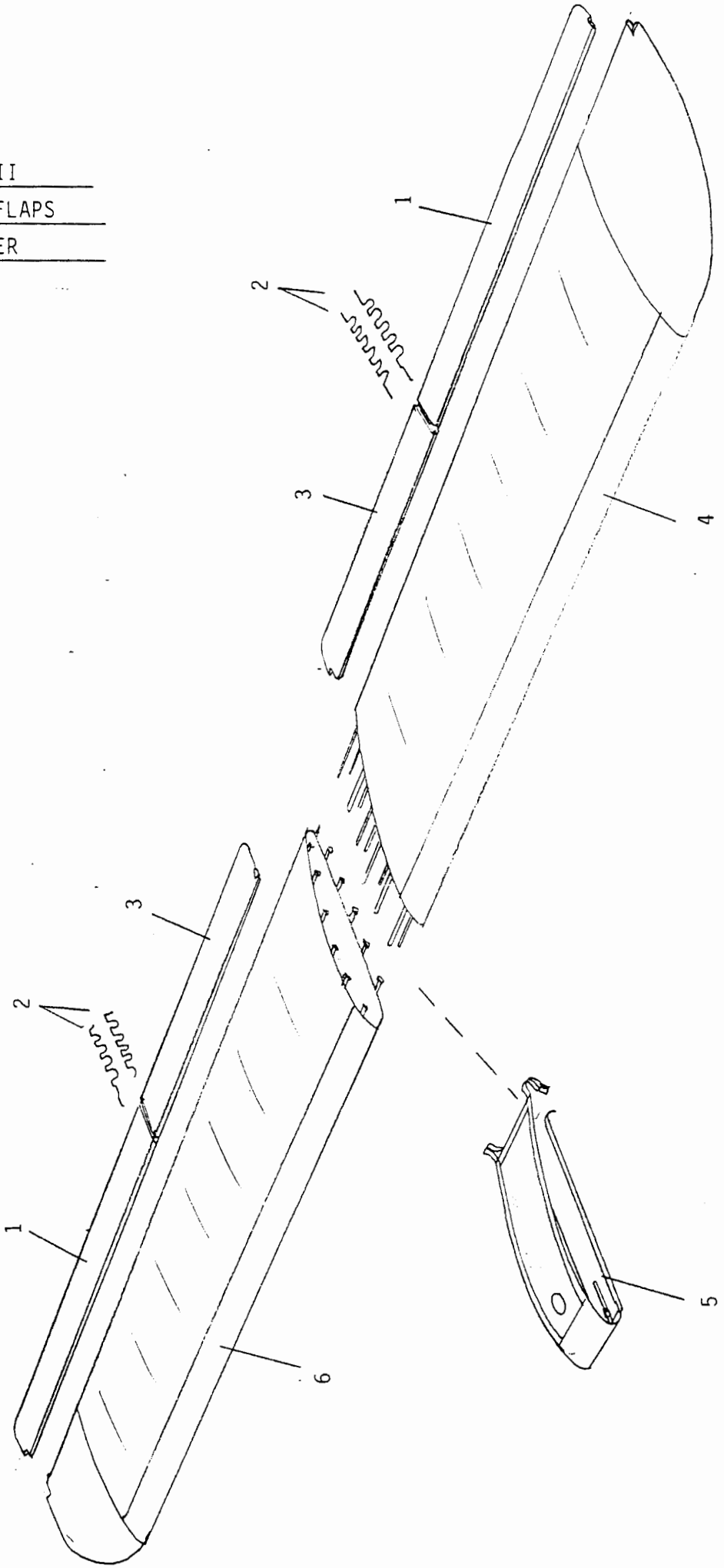
#	PART NAME	PART NO	QTY	PRICE
1.	Fuselage Cover	FC-FC	1	580.00
2.	13", Lace Up Strip	FC-13LS	2	6.00
3.	8", Lace Up Strip	FC-8LS	2	6.00
4.	16", Lace Up Strip	FC-16LS	2	6.00
5.	Lace Up Cord, 140 Ft.	CORD-140'	1	80.00
6.	Wire Harness Cover	FC-WHC	1	6.00
7.	Cut Out Template	FC-TP	1	.25
8.	10", Lace Up Strip	FC-10LS	2	6.00

0025A-1

S-6 COYOTE II

WING, AILERONS, FLAPS

AND CENTER COVER



S-6 COYOTE II WING, AILERONS, FLAPS & CENTER COVER

#	PART NAME	PART NO	QUAN	PRICE
1.	Aileron Skin, LH or RH	WC-AS-LH/RH	1 ea.	45.00
2.	Lace Up Rope	W/Fuselage		
3.	Flap Skin, LH or RH	WC-FS-LH/RH	1 ea.	45.00
4.	Left Wing Cover	WC-LHWC	1	375.00
5.	Center Cover	WC-CC	1	65.00
6.	Right Wing Cover	WC-RHWC	1 ea.	375.00

PLEASE NOTE: Tail Skins Shown With Frames

S-6 COYOTE II FUSELAGE COVERING

IMPORTANT: Wash your hands and keep the work area clean. At this point the aircraft should have the wings, tail and cowling removed. The engine should be installed (or a ballast weight) to allow the aircraft to set on its gear. HINT: For a smoother bottom longeron line use a mallet or brass hammer to tap the truss gussets down flat against the longeron tube.

1. Remove the 1/4" bolts at the inside gear truss and disconnect the brake lines on the main gear.

2. Slip the fuselage cover over the fuselage starting at the tailcone. Have a friend hold the covering off the floor as you slide it forward. Pull the bottom between the gear and have your assistant hold the cover while you tilt the fuselage, unplug one gear. Position the pre-cut hole over the gear socket and re-insert the gear. Repeat for the other side. Continue forward with the covering, wrapping the sides over the cockpit edges. Use clothes pins to hold the sides in place.

3. Mark off the lacing hole locations as shown in Figure 025-03. Use a light colored flair or a similar marker. Use a soldering iron or hot knife with a point to melt through to make holes for the lacing rope. PLEASE NOTE: These holes should be as close to the binding as possible but not melt the binding. The grommet strips should have their holes located at least 3/4" from the edge. See photo page at the end of this section.

4. Lay out and mark the hole locations on the belly split as per Figure 025-04. PLEASE NOTE: These holes are to be staggered 1 1/2" to evenly pull together the bottom.

BELLY SPACING AND LACING

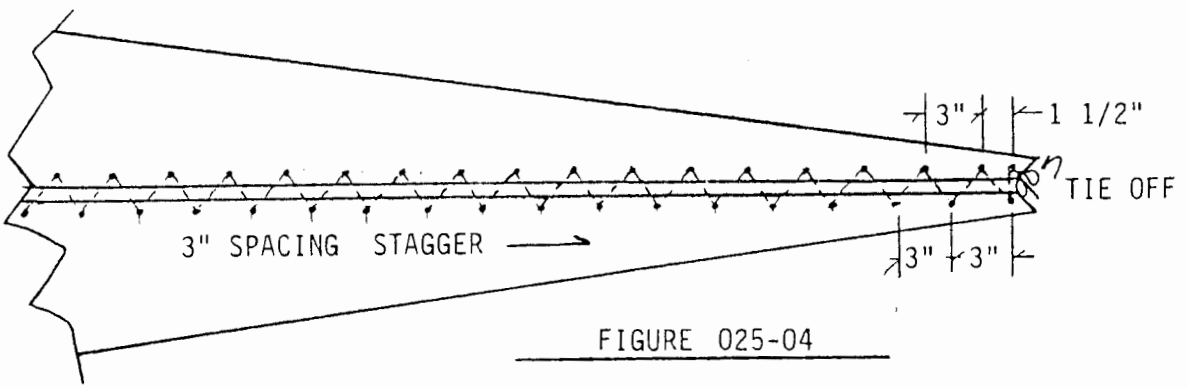
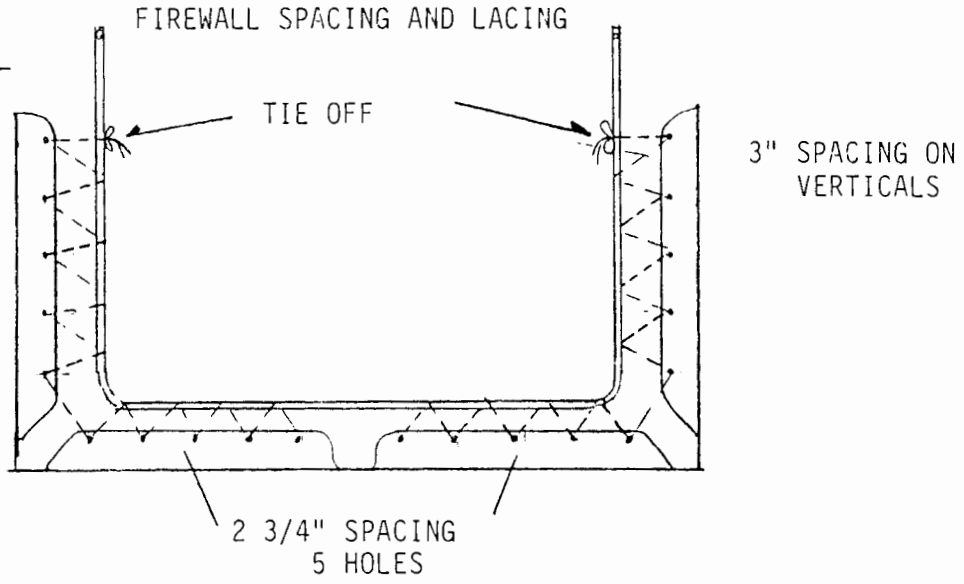
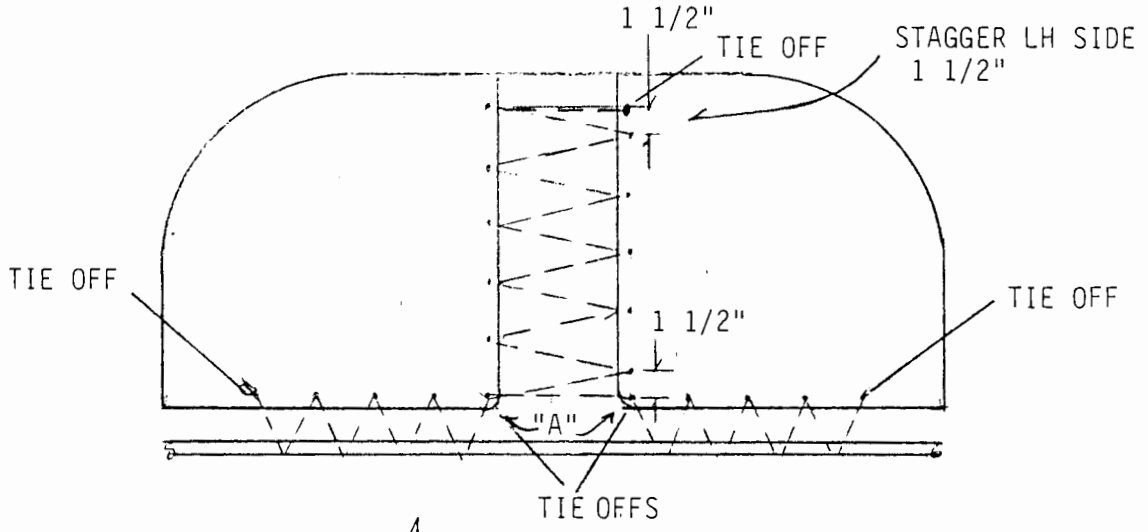


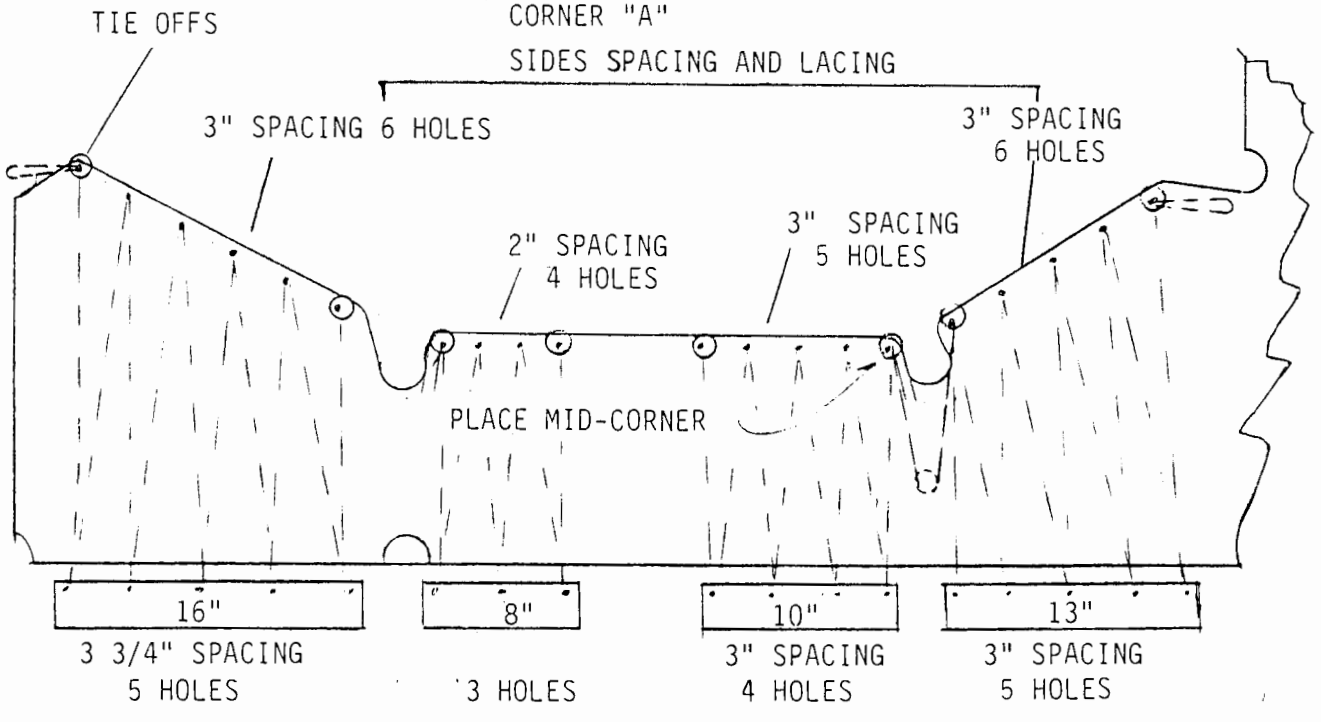
FIGURE 025-04

FIGURE 025-03





S-3 ALL HOLES 3" SPACING START IN CORNER "A"



5. Cut the rope provided into the lengths specified for each lacing area. See chart below. Use a hot knife. HINT: Roll the molten nylon into a point to help with lacing.

		QTY.
Belly Rope	20 ft.	1
S-1 Rope	17 ft.	1
S-3 Vertical	12 ft.	1
S-3 Horizontal	4 ft.	2
16" Grommet Strip	11 ft.	2
13" Grommet Strip	12 ft.	2
10" Grommet Strip	6 ft.	2
8" Grommet Strip	5 ft.	2
Aileron & Flap Rope	5 ft.	4

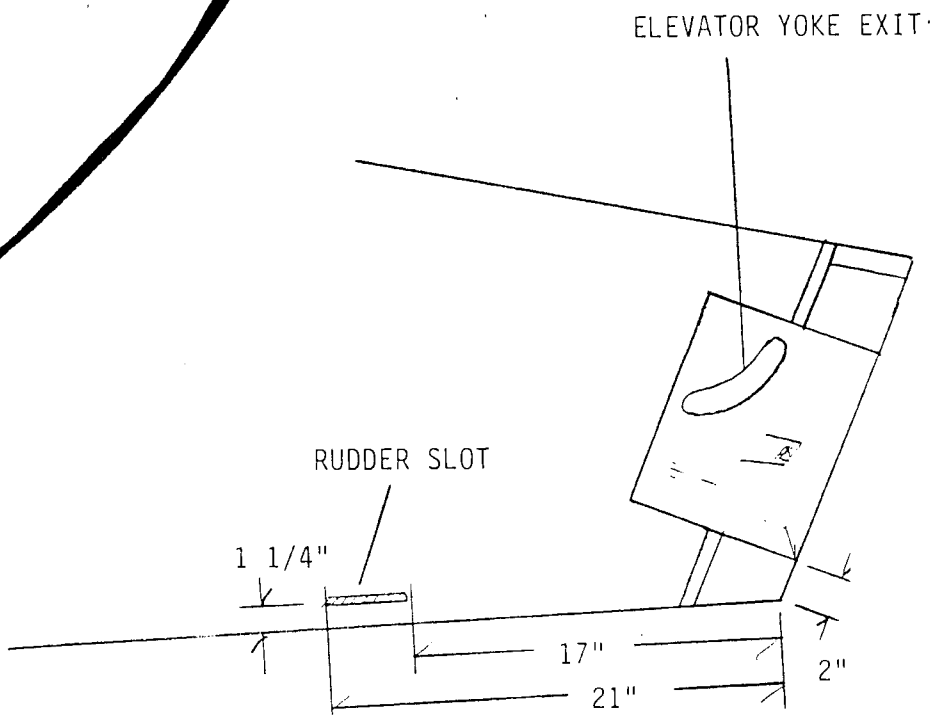
6. What we are working towards in covering the fuselage is a perfectly smooth and tight finish. This is achieved by applying even tension everywhere, that's the theory! In practice it will vary but localized excessive tension can induce wrinkles. To get the best fit it is recommended you lace up the cockpit areas first. DO NOT try tightening one area to final tension, work around (much like torquing prop bolts cross over to the other side.) By working each lace up a little it will even out the tension. The fore and aft tension will smooth out the side panels. This is set by the firewall lacing and cinch straps at the tail. No more than a 3/8" gap should appear between the tail channel and fabric. Lace up the firewall and sides as shown in Figure 025-03 by the dotted lines.

7. The belly lacing is done after you have completed the cockpit area. HINT: Wax the rope to facilitate lacing. Pull the belly together slowly by tying off the front end and pulling the slack out towards the tail. DO NOT pull excessive tension, work it out in multiple pulls. If you have over tightened the tailcone the bottom longerons will be warped and wrinkles will be apparent.

8. With the skin in place and stretched tight, hot knife the holes in the locations for bolting on the tail. Use the template included for the elevator yoke and rudder cable exit to locate and cut out openings.

9. The fuselage cover should be complete. Minor looseness or wrinkles can be ironed out. However, be careful over 350 degrees will melt the fabric. Also some colors will show ironing marks. A hot air gun works to but again be careful of melting. If you plan to clear coat the aircraft be careful not to soil the fabric during the rest of the assembly process. Clear coating the fuselage at this point is wise only if the rest of the aircraft is coated within 30 days. The aerothane may set up in the can after 30 days of being opened even though no catalyst has been added.

ELEVATOR YOKE AND RUDDER CABLE EXIT LOCATION TEMPLATE



LOCATE 2" UP FROM BOTTOM

S-6 COYOTE II COVERING THE WINGS

1. Make or improvise two stands (or step ladders) to hold the wings in the approximate level and set under each outer torc box.

2. Run the aileron and flap teleflexes. DO NOT attach them to the retainers or they will protrude and inhibit slipping on the covering. Instead remove the teleflex retainer angle from the mount bracket (TG-EH) for the aileron and simply insert the end of the aileron teleflex into one of the TG-EH lighting holes. Route the aileron teleflex from the TG-EH OVER the compression tube and into the fuselage. They should CROSS and install to each retainer angle. DANGER!! Make sure the aileron teleflexes CROSS. RH goes to LH and vise versa. Double check before flight for proper movement, stick RH, RH aileron up, vice versa.

3. Retain the flap teleflex to the retainer and the compression tube with a loosely cinched plastic zip tie. NOTE: The plastic tie should be slack enough to allow the teleflex cable to drop into the retainer. After the skin is on the wing frames an opening will be cut into the fabric to allow the teleflex to exit. If the plastic tie is too tight it will be very difficult to install the teleflex. Check before covering to assure proper slack. Route the flap teleflex UNDER the root compression tube to the dual retainer.

4. Drill out the #11 holes through the leading edge spar near the tip to 1/4". Insert the static and pitot into each hole. NOTE: It does not matter which side is used for static or pitot. Route the plastic tubing (fuel line) to each of the tubes and secure with a fuel line clamp. The lines should run on TOP of the internal bracing tubes, over the TOP of the root compression tube with approximately a foot of line into the cabin. Route the pressure and static lines out of the ASI to the appropriate tubes. Run the lines from the panel down to the RH side between the rope lacing, behind the S-3, come out at the top and connect to each line from each wing with a 2" long 1/4" aluminum tube. These will be used to disconnect the lines when knocking down for storage.

5. Assemble the top and bottom ribs by inserting the tips as shown in Figure 025-05 on the top ribs. Insert the contour fittings to point away from the curve of the rib. Insert tips into both ends of bottom ribs. Dimple the tube with a prick punch to lock the contour and tip fittings in place. Reshape the top ribs contour fitting as shown in Figure 025-05A. This will greatly ease the rib insertion and removal process.

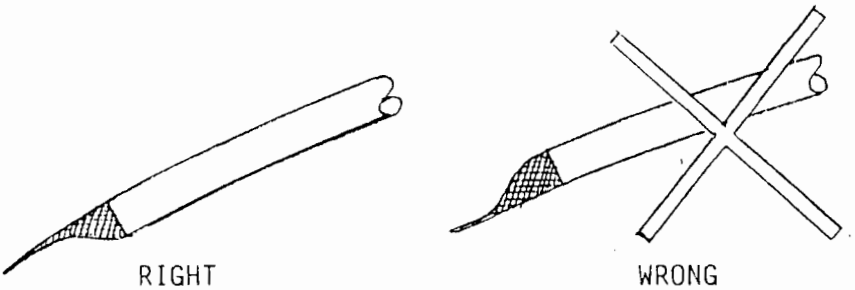


FIGURE 025-05

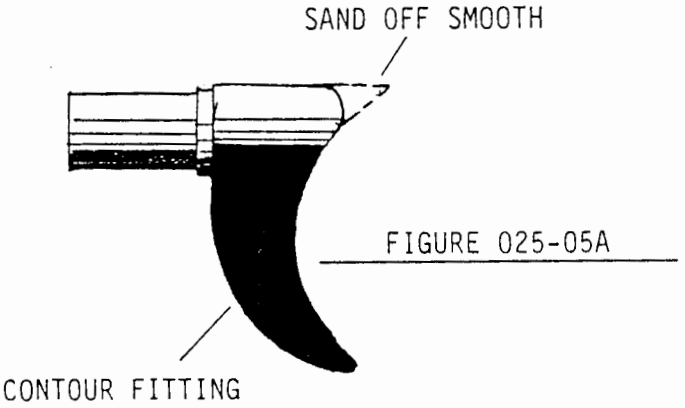


FIGURE 025-05A

6. Tape over all bolt heads with scotch tape. See Figure 025-06. This will make it easier to slip on the wing covers.

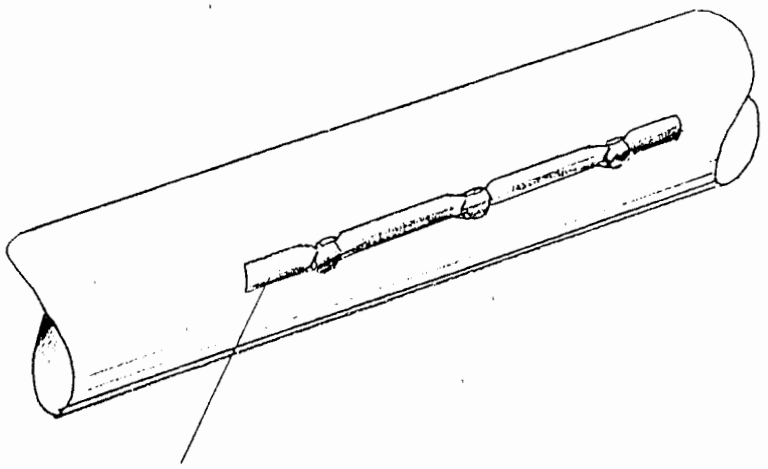


FIGURE 025-06

7. Remove the wing cover (LH or RH) from the box and lay it on top of the wing frame, bottom side up, leading edge forward and the root end at the tip. Pull the open end over the frame. Have a helper feed it over the end while you pull it on. Go slowly DO NOT force it on. If it becomes stopped or hard to pull look to see where it is hung up. Stop 12" from the root. At this point hot knife slits into the bottom of each rib pocket as shown in Figure 025-07. Insert the top and bottom ribs into the first inboard rib pocket only. Continue pulling wing covering on until tip fabric is against the bow. HINT: It may be difficult to pull the coverings on the last few inches. Proper placement and spanwise tension of the wing is accomplished by lacing the tension straps. See Figure 025-07A. Pull these straps moderately tight. Have a helper lift one wing 3 to 4' feet high. Re-tighten the top straps. Slowly lower the wing to as low as possible without pressing against the cabin. Tighten the bottom straps. Repeat this procedure until the skin is tight spanwise. The tip fabric should be tight against the bow and a space of 15 3/4" between wing fabric at the center.

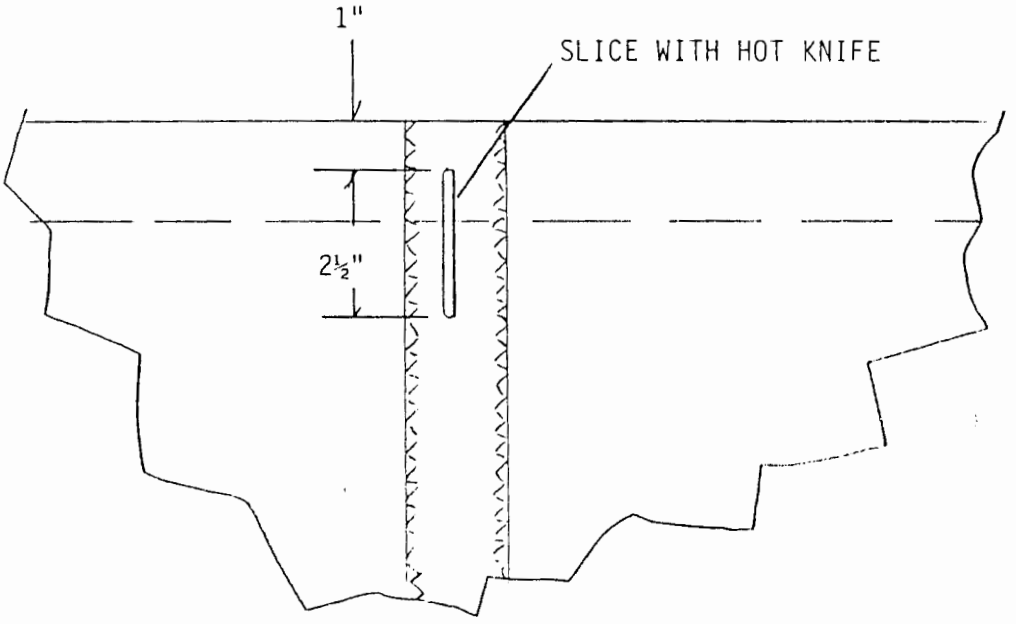
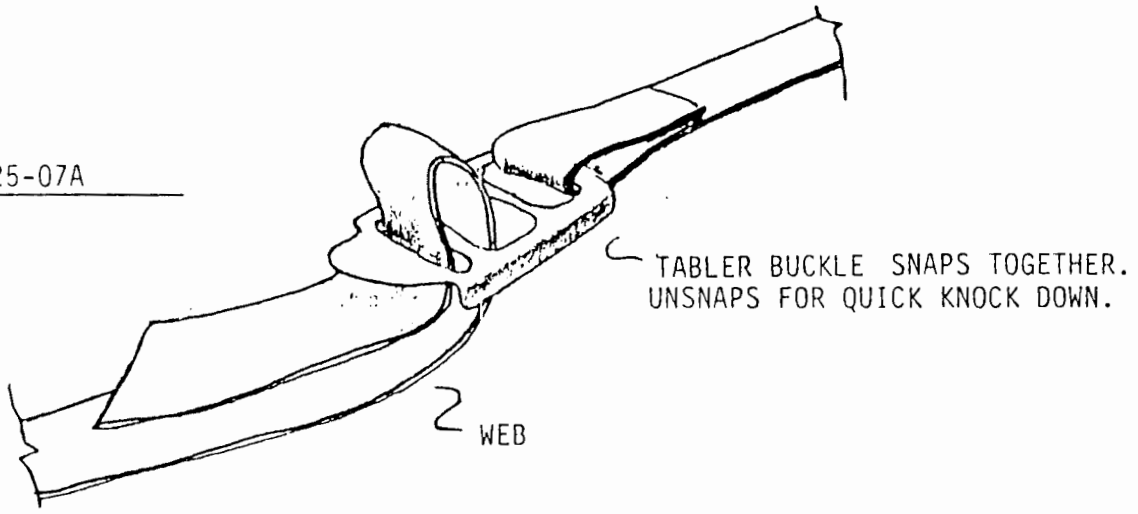
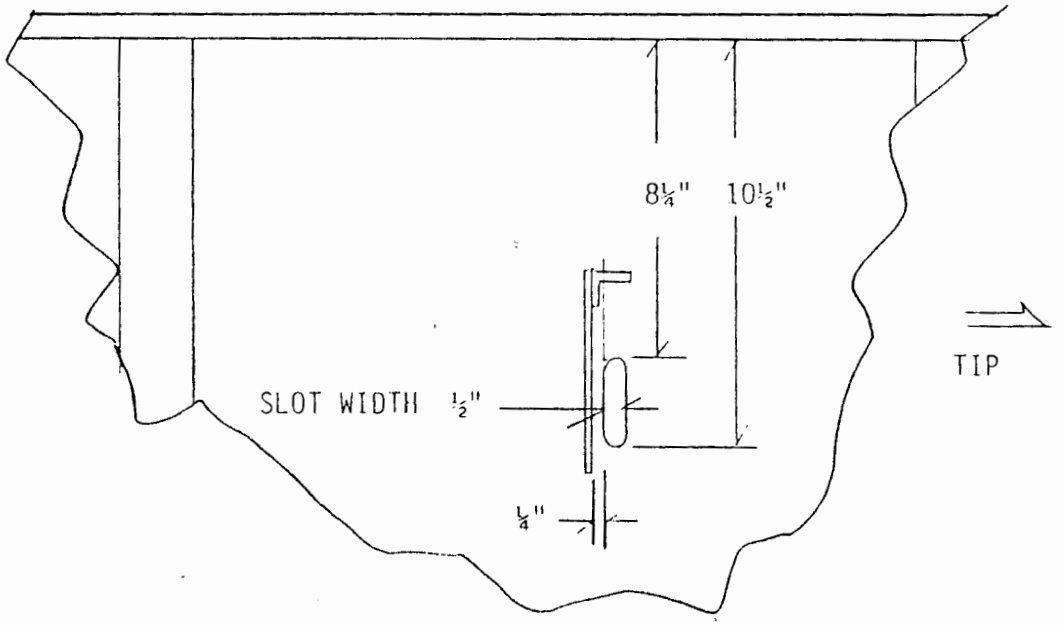


FIGURE 025-07

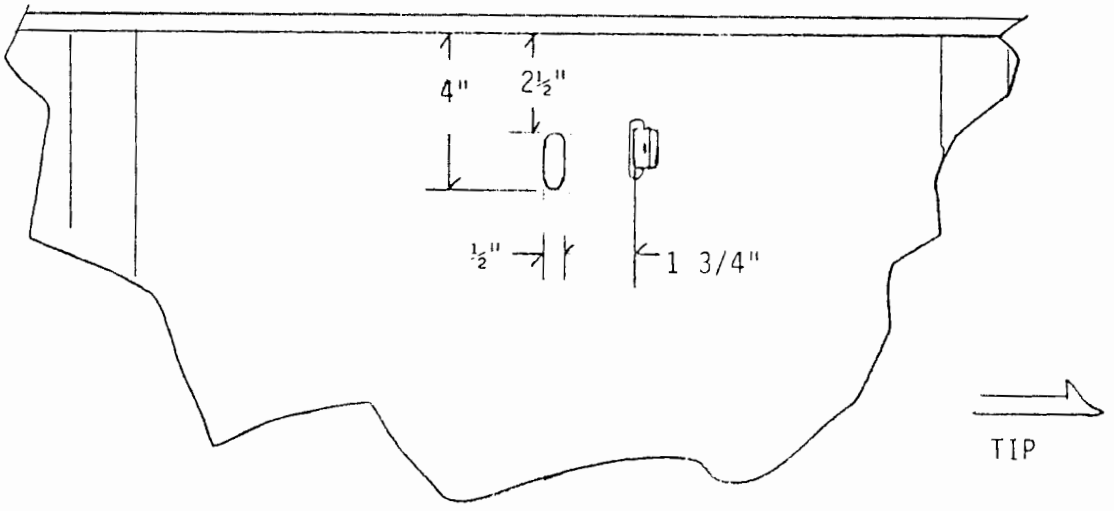
FIGURE 025-07A



8. Make cut outs around the strut attach plates, aileron teleflex retainer bracket and jury strut tabs by following around the protrusion with a hot knife. Locate and cut additional holes for the flap and aileron teleflex exits as shown in Figure 025-08. Cut open each zipper.



AILERON TELEFLEX EXIT



FLAP TELEFLEX EXIT

FIGURE 025-08

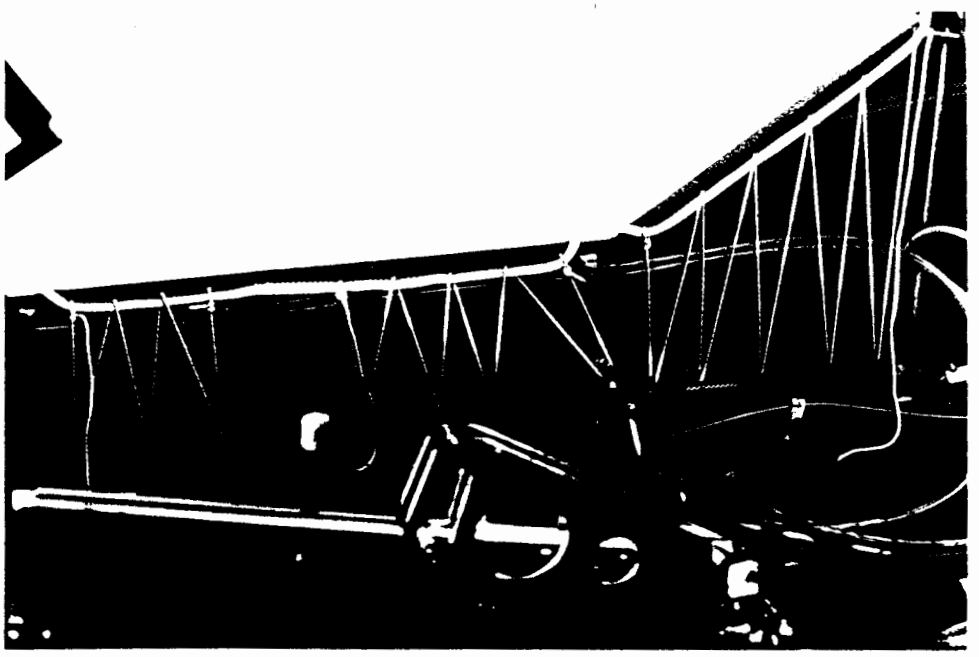
9. Install the top ribs through the slits made in the bottom pockets. NOTE: They should push in with a good degree of pressure. Use a mallet and gently tap in place. A short scrap of lumber works as an excellent driving ram. That sound you're hearing is not the stitches ripping but the 2-way tape popping loose. This is perfectly normal and does not effect the strength of the skins. The ribs do drive in hard but be careful of the last one near the wing tip. It may try to jam under the tip wrap. It it does push the fabric from the bottom at the leading edge to help it line up. Install the bottom ribs the same except to get them started insert the rib upside down, this will help the tip slip into the pocket, then turn it right side up (curve down). The bottom rib tip will lay against the bottom of the trailing edge spar sealing shut the slit made for rib insertion. PLEASE NOTE: In some places rivets or nut plates will hang up the rib contour fittings. Simply move the rib to either side to clear. Rib removal is done by making a tool from an old screwdriver. Heat and bend the end into a 90 degree hook. Use the tool to reach up inside the slit to grab a rib and pull it out. Always remove the bottom rib first. Melt holes for the static and pitot tubes. Push them out by reaching inside through the zippers. Poke holes with the hot knife for aileron and flap hinge bolts. Cut away the velcro gap seals the same as it was done on the flaps and ailerons. Make a slot for the center cover straps through the velcro at the root. The slot should align with the velcro and be at least 1" long by 1/8" wide. DO NOT CUT into the stitching.

10. Attach the lift struts and remove the stands.

11. Install the center cover by placing the round opening over the gas cap with the longer end to the rear. Thread the rear straps through the slots previously cut in the velcro. Pull the front section around and poke the two middle straps into the cabin. Cinch these around the second from the front wing strap. Make sure the center cover is placed evenly on the velcro with no wrinkles. Hook up the front outer long straps to the rear buckles and pull tight. Press down the top edges to lock onto the wing velcro. Check the front where it rolls around the leading edge, this should be smooth with the middle edge tucked under the keel tube. Check the long straps for tightness, also after flying these may need re-tightening. DO NOT fly this aircraft without the center cover. Severe performance loss can occur.

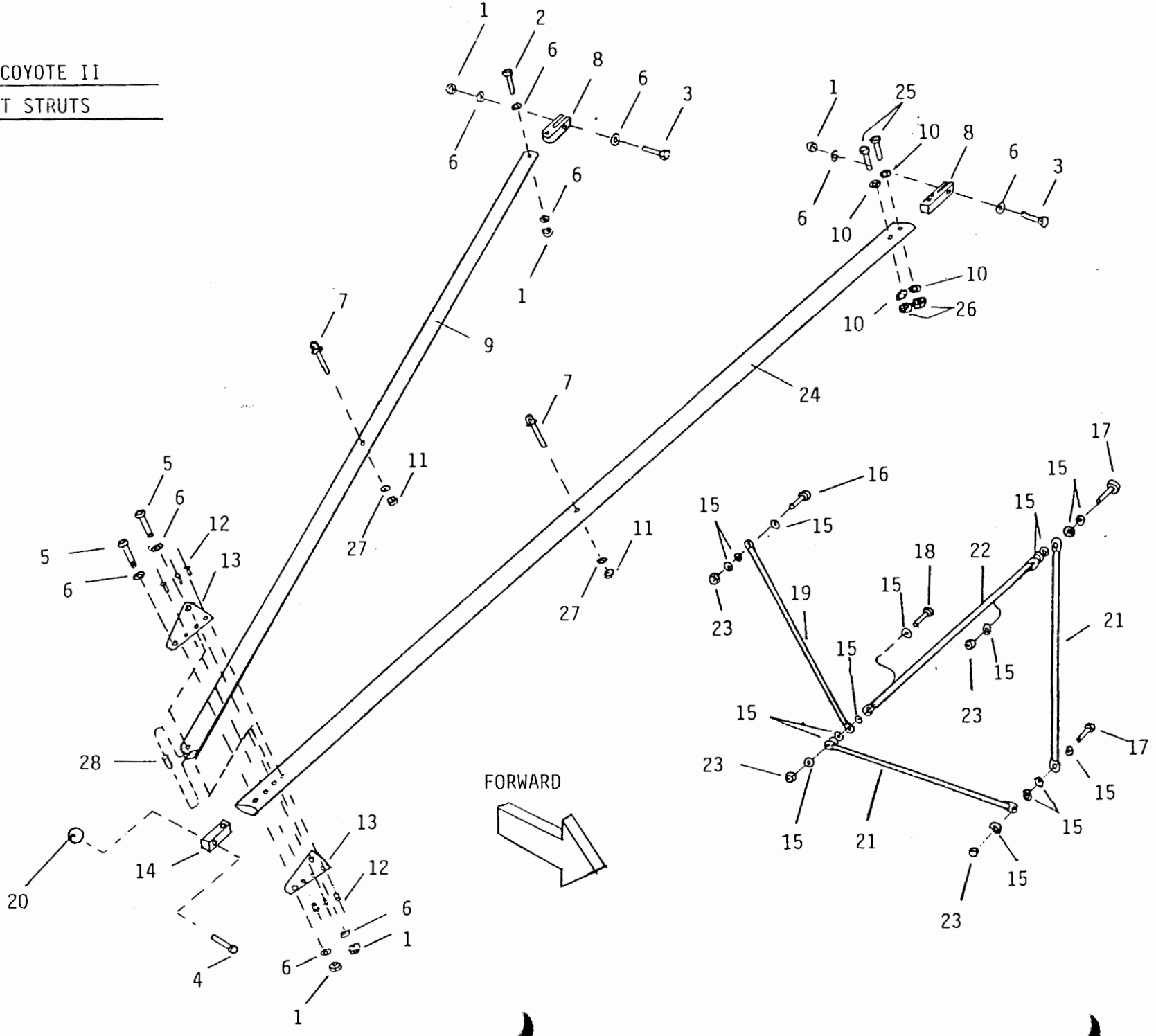
12. You can smooth out any wrinkles or fold lines in the wing skins with a hot air gun. Be careful not to melt the skins. 350 degrees is the maximum temperature used. After 350 degrees the cloth will stop shrinking and start stretching. A model airplane heat gun used for shrinking mono-coat works great. An electric iron works also but can leave areas discolored. Also be careful of the heat setting.

THIS PHOTO SHOWS THE PROPER LACING OF THE S-3. PLEASE NOTE THE HOLE FOR THE DOOR HINGE BOLT SHOULD BE MELTED THROUGH AFTER SKIN IS IN PLACE.



ILLUSTRATED HERE IS THE SIDE LACING OF THE FUSELAGE. NOTE THE LACING WRAPS AROUND THE S-3 VERTICAL TUBE (FAR RH OF PICTURE). ALSO NOTE THE CORD WRAPPING AROUND THE GEAR TRUSS TOP TUBE.

S-6 COYOTE II
LIFT STRUTS



S-6 COYOTE II LIFT STRUTS

#	PART NAME	PART NO	QUAN	PRICE
1.	5/16" Shear Nut	AN364-524A	10	.30
2.	5/16" Bolt	AN5-13A	2	.50
3.	5/16" Bolt	AN5-12A	4	.50
4.	5/16" Clevis Pin	MS20392-4C33	2	.85
5.	5/16" Bolt	AN5-15A	4	.50
6.	5/16" Thin Washer	AN960-516L	20	.10
7.	1/4" Eyebolt	AN43B-14A	4	3.00
8.	Lift Strut Connector	LS-ACU	4	14.75
9.	Aft Lift Strut, 100 3/4"	LS-ALS100 3/4"	2	55.00
10.	1/4" Thin Washer	AN960-416L	4	.03
11.	1/4" Acorn Nut, Tensile	42NKE-048	4	.50
12.	3/16" SS Pop Rivet	12SSPR	16	.20
13.	Aft Lift Strut Gussets	W-ALS-G	4	5.00
14.	Strut Connector	LS-SC-A	2	6.00
15.	3/16" Thick Washer	AN960-10	34	.03
16.	3/16" Bolt	AN3-6A	2	.20
17.	3/16" Bolt	AN3-10A	4	.25
18.	3/16" Bolt	AN3-12A	2	.25
19.	Jury Strut	W-JSRV	2	6.75
20.	Loc Ring	RL 27 1/4	2	.20
21.	Jury Strut	W-JSFCV	4	6.75
22.	Jury Strut	W-JSD	2	6.75
23.	3/16" Shear Nut	AN364-1032A	8	.15
24.	Forward Lift Strut, 97 1/8"	LS-FLS97 1/8"	2	55.00
25.	1/4" Bolt	AN4-13A	4	.40
26.	1/4" Acorn Nut, Shear	52NKTE-048	4	.40
27.	1/4" Thick Washer	AN960-416	4	.03
28.	Anti-Crush Bushing	W-ANTI-CB	2	1.00

S-6 STRUT INSTALLATION AND SETTING WING WASH OUT

PLEASE NOTE: It is assumed the wings are assembled but not covered and the fuselage is sufficiently complete.

With the help of a friend and two step ladders or similar devices about the height of the main spar carry through, bolt the wings to the fuselage. Hold up the tips with the ladders.

1. Drill radius and debur the (4) aft lift strut gussets as per Figure 026-01.

2. Cut out a Lexan template (use the thin Lexan) as shown in Figure 026-02. This will be used to locate the holes chordwise on the struts.

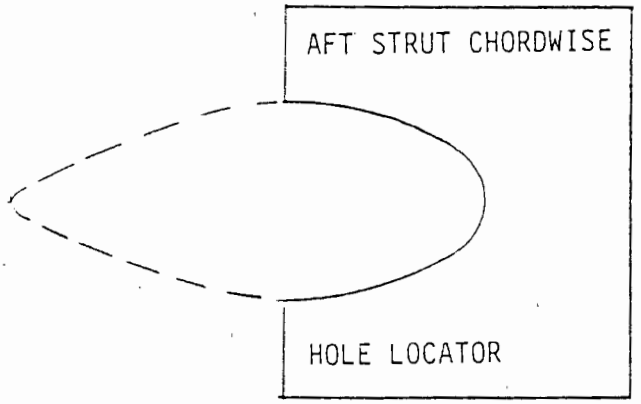


FIGURE 026-02

3. Take two of the 97 1/8" lengths of strut material and locate and drill a 5/16" hole 5/8" in from one end and a 1/4" hole 5/8" from the other. Drill a 1/4" hole for the jury strut 49" from the 5/16" hole end. Use the template to locate and drill from each side. See Figure 026-03. Assemble the fittings to each end as per the parts drawing. NOTE: Drill out the fitting 5/16" as required. Bolt the struts to the wings and fuselage. Assemble the strut as shown in Figure 026-03A.

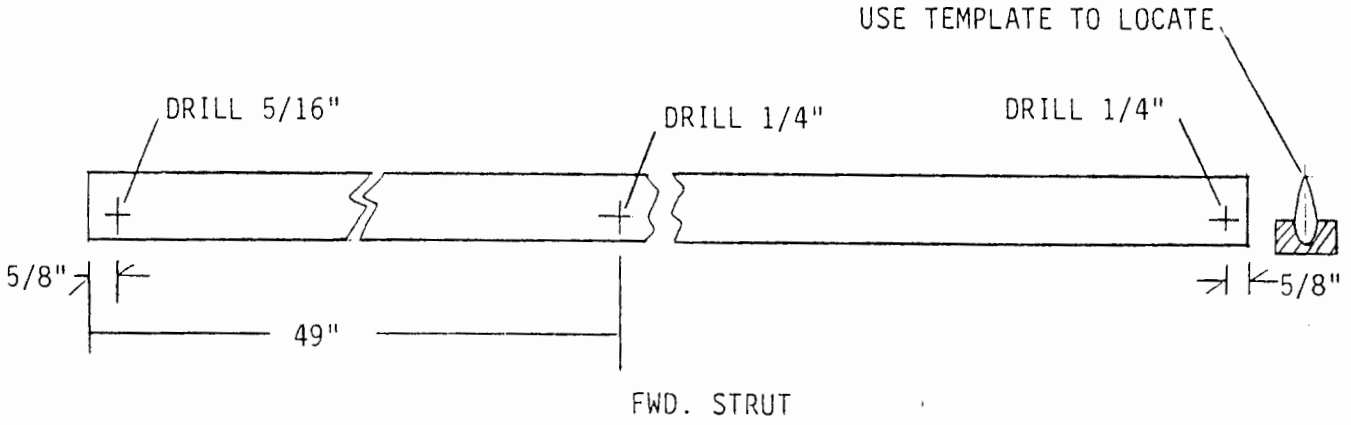


FIGURE 026-03

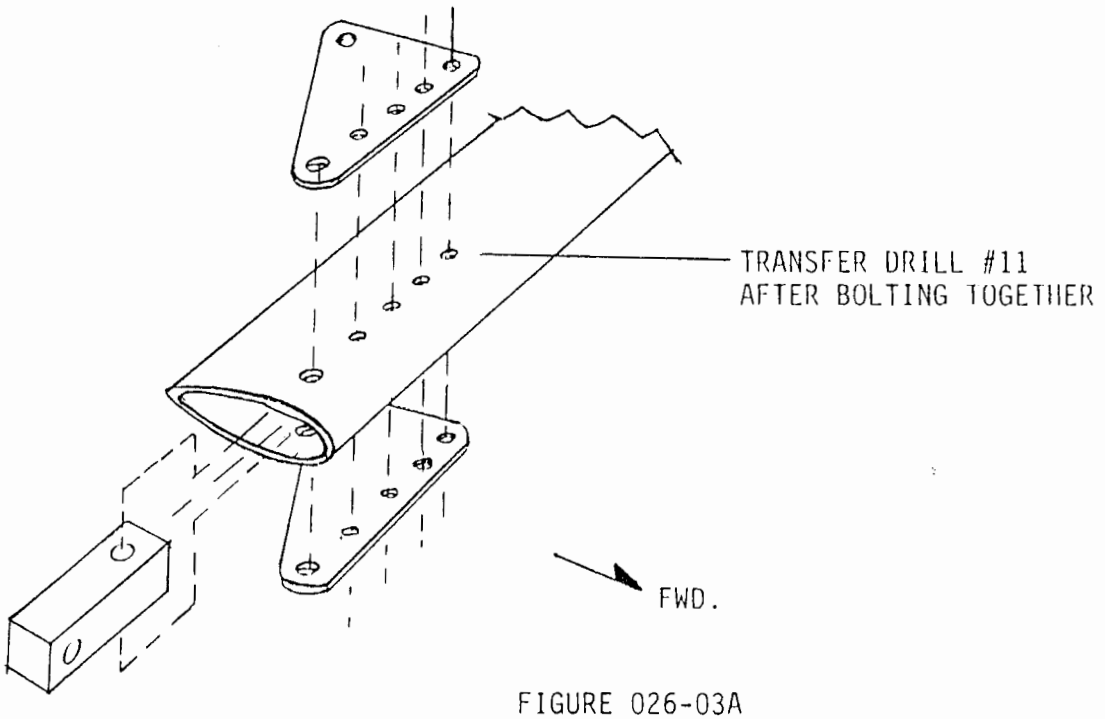


FIGURE 026-03A

4. Cut, profile and drill the aft lift struts on one end only to the TOP end profile as per Figure 026-04.

5. Take the remaining (2) slotted lift strut connectors and cut off 7/8" from the unslotted end. File clearance into the fitting as required to fit into strut at the required angle. Angle line is shown in Figure 026-05. Drill the holes in the fitting out to 5/16".

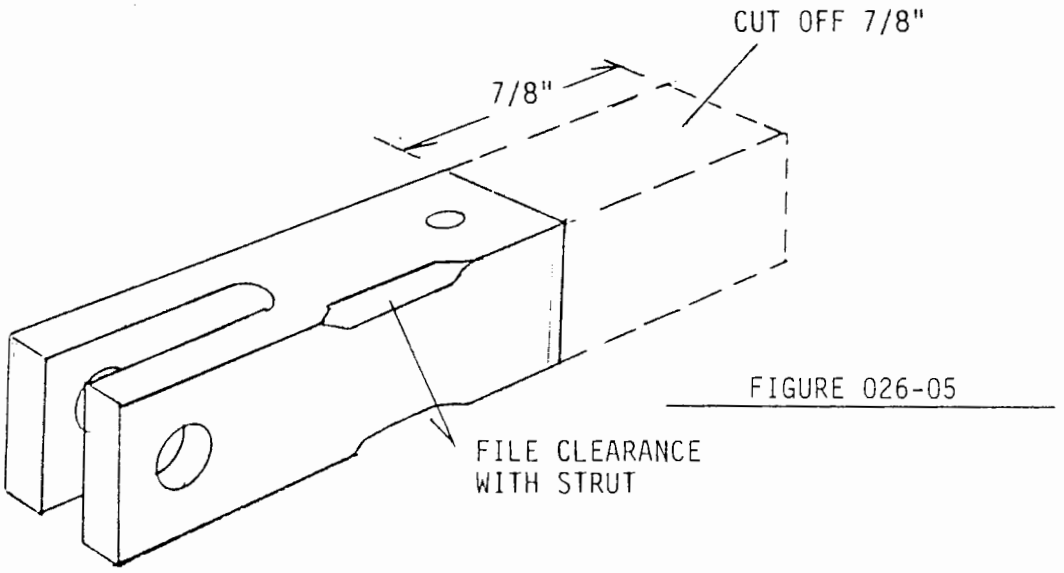
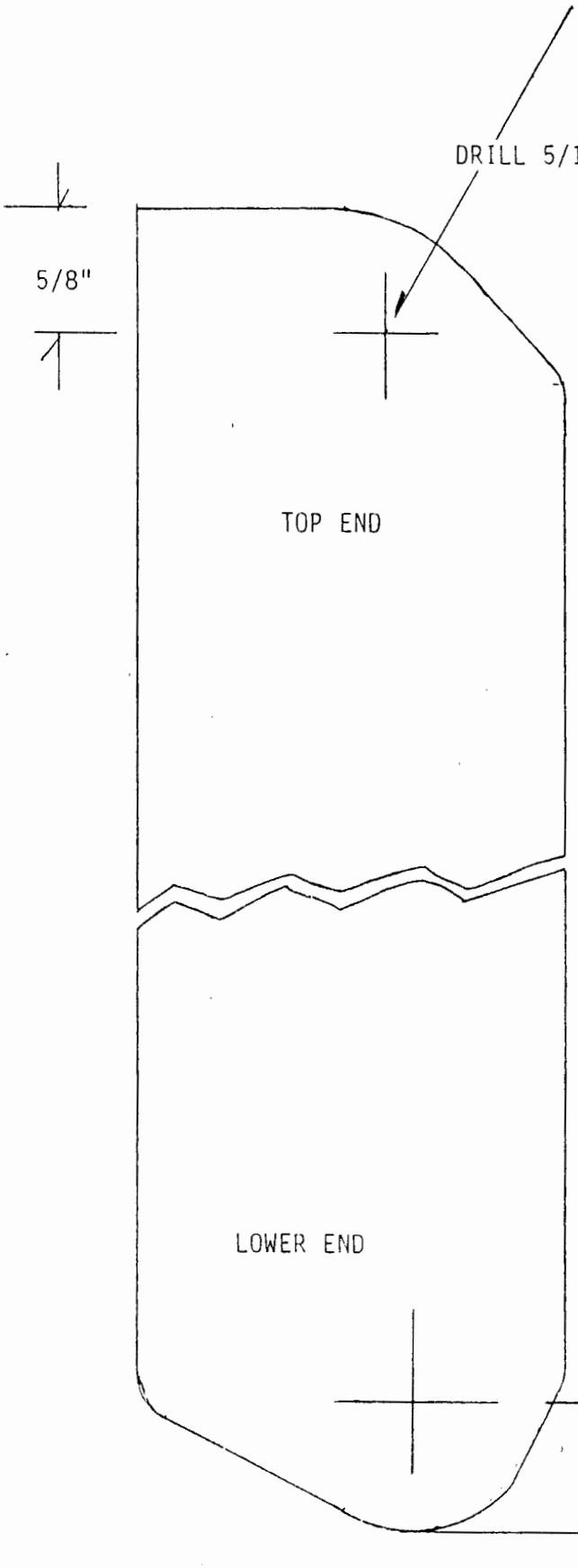


FIGURE 026-05

6. Bolt the fittings into the aft lift strut top ends. Bolt to the wing and check for clearance. The strut must angle to the forward strut without binding the fitting.
HINT: If the connectors fit loose in the ends of the strut, gently tap the strut ends with a mallet to eliminate gap.



CUT AND PROFILE TOP
END ONLY! AS PER STEP 4

FIGURE 026-04

IMPORTANT!

DO NOT SHAPE OR DRILL
LOWER END UNTIL WASH
OUT IS SET.

7. Bolt the forward lift struts in place with the aft lift strut gussets pointing aft. This will automatically set the dihedral.

8. Bolt the aft lift struts to the wing and place the unshaped and undrilled end between the gussets. PLEASE NOTE: The wash out will be set by twisting the wing. The aft strut will be clamped and drilled at the gusset once the wash out is set. The gusset will act as drill guide. Mark a line for several inches at the strut's lower end showing chordwise location for the hole.

9. Make a rigging level by taping a 2 foot level to a straight 50" long, 1" x 3/4" board. Place the level on the wing's underside at the root. The level should be held against each spar. Raise the main gear until it reads level. CAUTION: Block wheels to prevent rolling. Double check the level prior to step 10.

10. Cut out a scrap of 1/4" plywood 6' x 2" and nail or screw it to one end of the straight edge. Place the rigging device just outboard of the right wings' struts with the 1/4" block under the rear spar. This will set the "wash out". Move the aft spar up or down as required to obtain a level reading. Use a vise grip type "C" clamp to hold the setting. Check for accuracy before drilling. Mark on the fitting with a pencil* where the lower end of the strut is. Use the gusset fitting to line up on the mark and the chordwise marks to drill the bolt hole. Drill 5/16", then assemble. *Remove the pencil marks afterwards or the graphite will cause corrosion.

11. Go directly to the other wings' outboard strut location and set the wing. It is not required and can even result in an improper setting if another level reference is taken from the other wing root.

12. If everything was done accurately the aircraft will not have any tendency to drop a wing in a stall or not hold heading. If these bad manners are prevalent and it is discovered, the wings are not set properly. It's a simple matter of installing and drilling a new aft lift strut connector. Otherwise it could be unequal flap or aileron settings. Raise or lower the flaps as required. (Example: If the plane pulls to the right lower the RH flap slightly or raise the left). Do not forget to consider engine alignment if the plane does not fly straight. (See engine).

13. Locate a 1/4" hole through the aft lift strut for the jury struts eyebolt 47 1/8" from the 5/16" bolt center. Use the template to locate chordwise on the strut. See Figure 026-013.

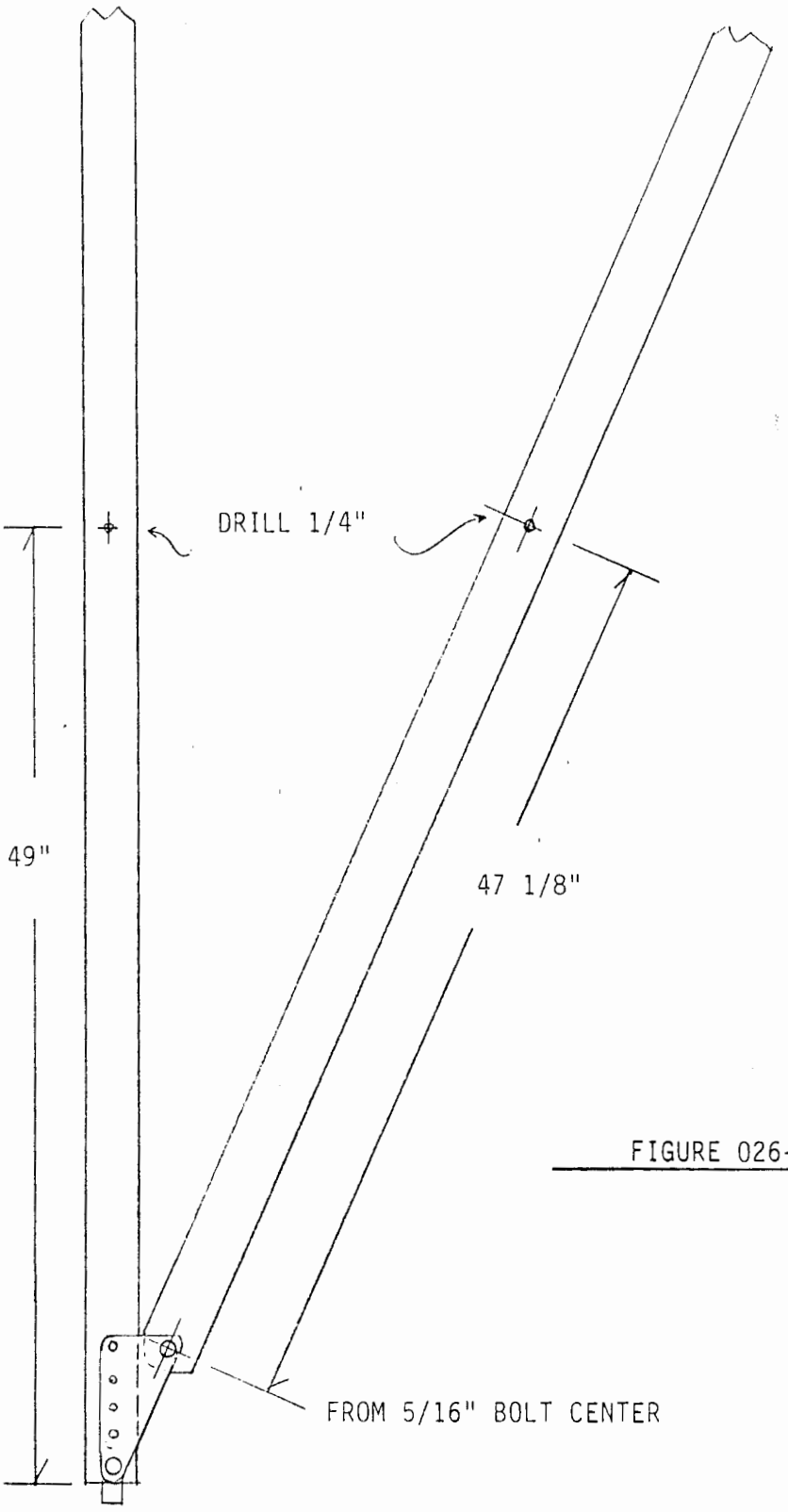


FIGURE 026-013

14. Bolt the 1/4" eyebolt in place and turn them edge to slipstream. Bolt the jury struts to the wing tabs as shown in Figure 026-014. The lower ends are not drilled or bent. The forward and aft jury struts will need to bend to line up with the eyebolts. Use an adjustable wrench opened just enough to slip over the smashed end. Once the jury struts are lined up, transfer drill through the eyebolts. NOTE: Pre-mark and move aside to drill (struts will be in the way otherwise. Be sure you don't force the fit of the jury struts or bowing of the lift struts may result. Use the parts drawing for bolt up pattern to eyebolts. File the ends of the jury struts as required to make fit. For quick part reference the shortest struts are the crossing strut, the second shortest are the forward verticals. The 29 1/2" is the diagonal and the 29" is the aft vertical.

15. Turn to covering the wings in the covering section.

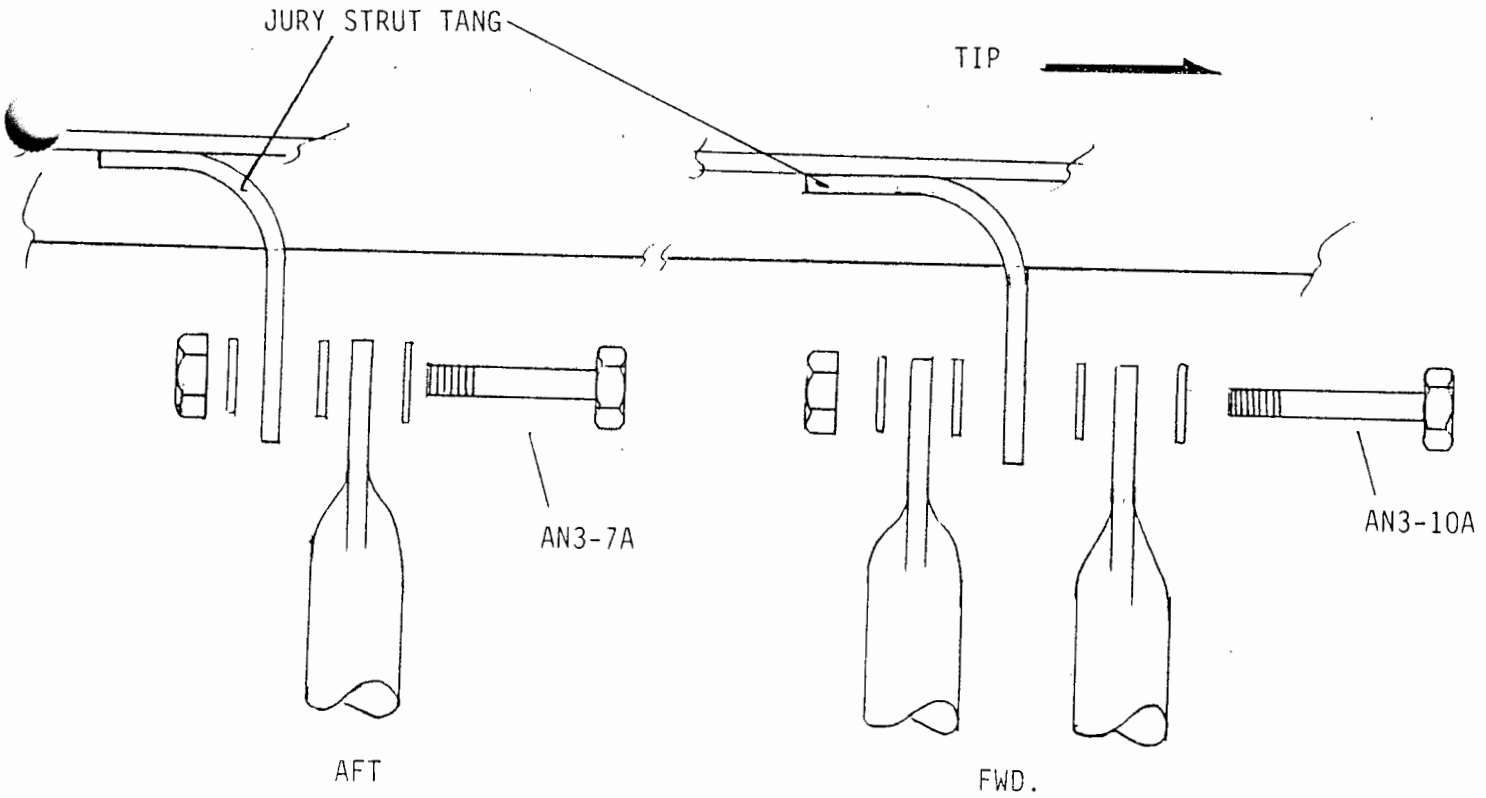


FIGURE 026-014

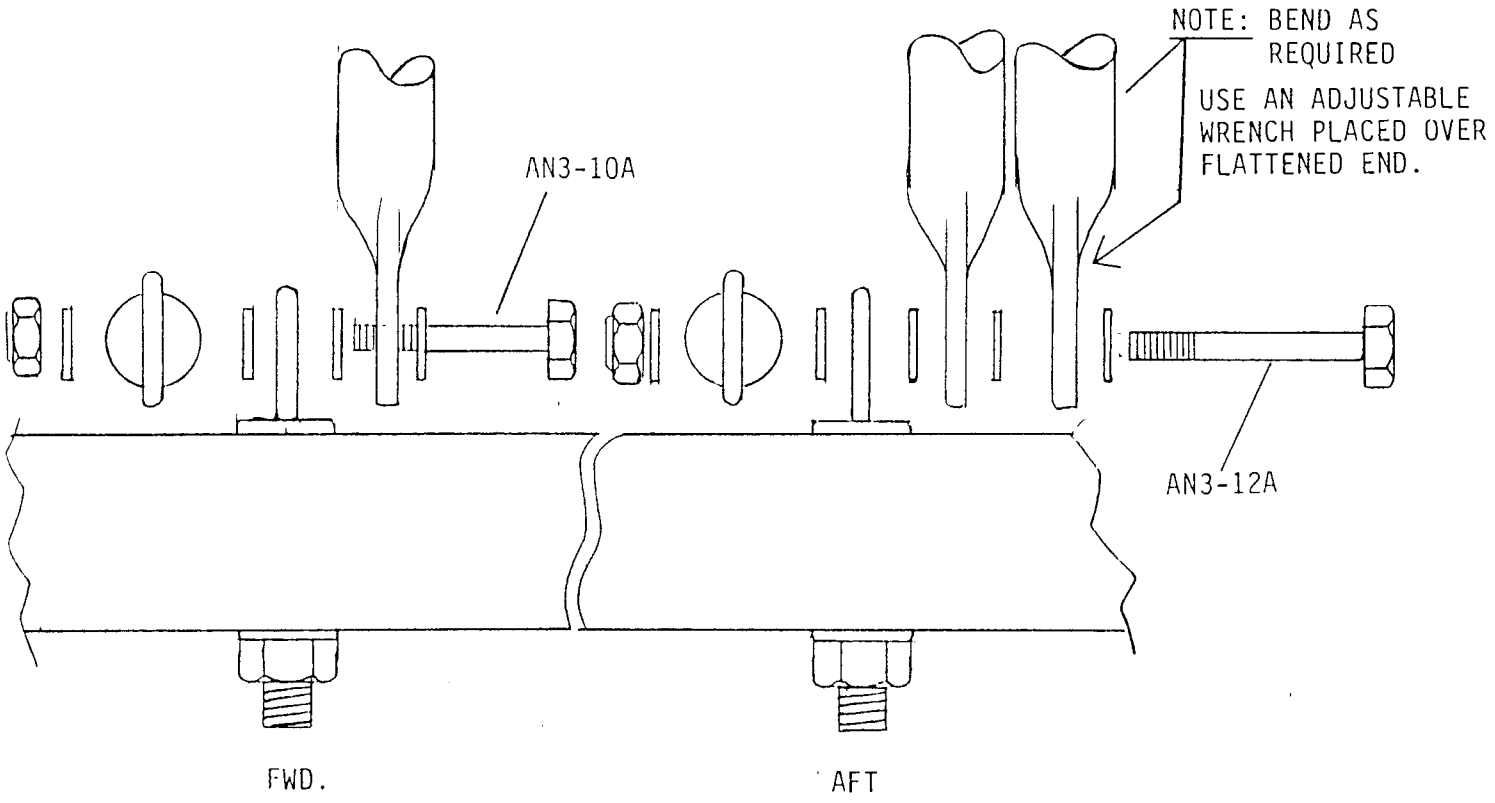
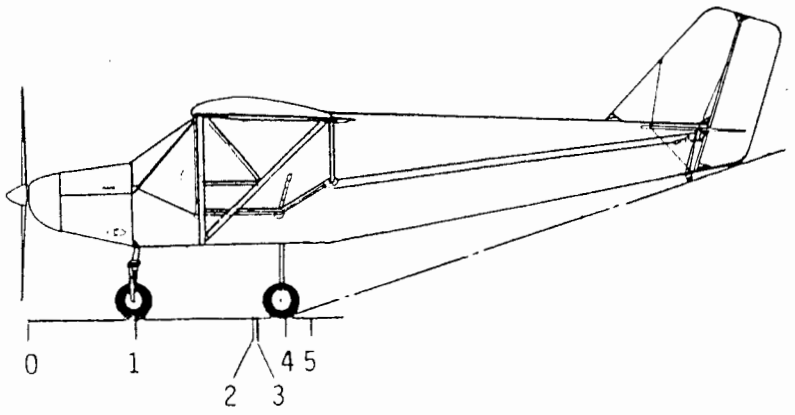


FIGURE 026-014A



S-6 COYOTE II WEIGHT AND BALANCE

ACCEPTABLE C.G. 59" TO 70" FROM DATUM 0. DATUM = BACKSIDE OF PROP; AIRCRAFT IN LEVEL ATTITUDE.

SAMPLE PROBLEM

#	ITEM	WEIGHT	ARM	MOMENT
1	NOSE WHEEL	90	30"	2700
2	FUEL	30	65"	1950
3	PILOT/S	340	71"	24140
4	MAIN WHEEL	141 + 142	79"	22357
5	BAGGAGE	50	88"	4400
	TOTAL =	793	TOTAL =	55547

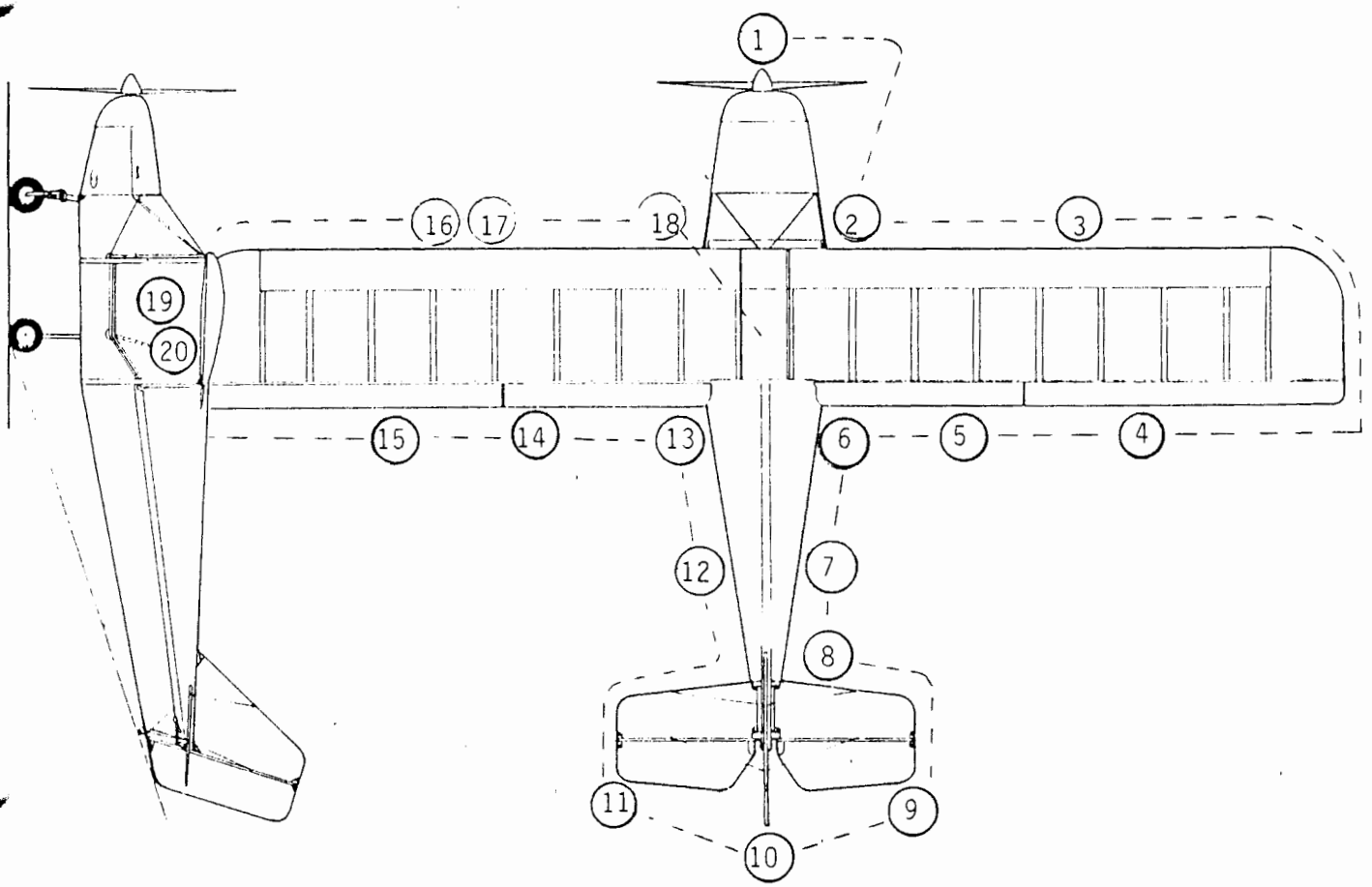
$$\frac{\text{TOTAL MOMENT}}{\text{TOTAL WEIGHT}} = \text{C.G.} \qquad \frac{55547}{793} = 70"$$

#	ITEM	WEIGHT	ARM	MOMENT
1	NOSE WHEEL		30"	
2	FUEL		65"	
3	PILOT/S		67"	
4	MAIN WHEEL		79"	
5	BAGGAGE		88"	
	TOTAL =		TOTAL =	

$$\frac{\text{TOTAL MOMENT}}{\text{TOTAL WEIGHT}} = \text{C.G.} \qquad \frac{\qquad}{\qquad} =$$

*50 LBS. MAXIMUM BAGGAGE

COYOTE II PRE-FLIGHT INSPECTION



1. Inspect the engine, mount, propeller, prop bolts, gear reduction system, gear box oil for leaks, cowling security, plug wire, air filter, carburetor position and clamp tightness.

2. Check the wing connections. Are all pins and bolts in place? Any signs of wear, cracks or bent tubing?

Look over the landing gear. Tires inflated? Brakes secure?

3. Inspect the strut connections. Be sure the clevis pin is safetied. Look down the wing spar for bends. Is the covering taut? Open the zipper and look inside. Check the controls and inner wing structure.

4. Pre-flight the ailerons and flaps. Are the ribs in place? Hinge points secure? Does the control system operate freely? Do the flaps operate correctly?

5. Look over the jury struts. Are they bolted properly? Ribs in place? Is the trailing edge spar straight and intact?

6. Check the center cover for proper fit. Are the cinch straps laced and tight? Is the keel intact? Any dings, bends or skin abrasions?

7. Look over the tail cone area. Check for bent tubes, holes or tears in the fabric.

8. Inspect the tail surface connections to the tail cone. Are the fittings intact? All the bolts in place and secure?

9. Pre-flight the elevator. Move it up and down checking hinge points.

10. Move the rudder. Inspect as in step 9. Look over the nosewheel. Is it properly inflated? Check the steering rods. Does the nosewheel move freely when the rudder moves? Are all control surface hinge points well lubricated and moving freely?

11. Repeat step 9.

12. Repeat step 7.

13. Repeat step 6 plus check both fuel valves for on position (screw out) and is the filler cap closed?

14. Repeat step 5.

15. Repeat step 4.

16. Repeat step 3.

17. Repeat step 3.

18. Repeat step 2.

19. Check the cockpit over. Are the seats adjusted? Move the sticks. Is everything moving as it should? Check main bulkhead bolts and nuts.

20. Climb aboard and go through the cockpit check list.

--Buckled in?
--Helmet on and head, too?
--Move the controls.
--Set altimeter.
--Note fuel quantity.
--Note Hour Meter reading and time.
--Set engine controls.
--Switch on ignition.
--Prime 3 pumps if a cols start.
--Pull the starter.
--Have you checked the weather, the traffic?
--HAVE FUN!!

ENGINE OPERATIONS

Provided with the aircraft is an engine manual authorized by the engine distributor. This is a well written manual explaining many specifics for continued safe and reliable operation of your engine. We urge you to read and fully understand this manual. In addition please find the data below helpful in obtaining the most out of your aircraft.

STARTING

Position the aircraft into the wind and check the main wheels to prevent rolling. To maneuver the aircraft into position lift the tail at the strut connect points. Avoid lifting at the tips of control surfaces. CAUTION: Winds above 15 mph may cause the aircraft to lift off when empty. Have an assistant sit in the plane or help hold it down at the wing strut connect points. Never hold a strut in the middle!

It is best to start the plane from inside the cockpit. The S-6 COYOTE II can be entered easily by first sitting on the seat then pulling up your knees and rotating into position.

Drain the fuel sump (under LH seat). Prime (if first start or if it's been 30 minutes since the last start) 3 pumps. Close the throttle (pull back to close). Flip ignition switch up for on. Move the control stick to the left. Grab the start handle and pull briskly. Several pulls may be needed. Be sure the ignition is on (switch up). Let it idle a moment and then advance the throttle slowly. NOTE: After the engine warms up, 2 minutes, close the throttle. It should idle at 2,000 RPM. If not refer to the engine manual for details on setting the idle. If you encounter starting difficulties refer to the engine manual for probable causes and solutions. CAUTION: In cold weather allow at least a 2 minute warm-up before applying take-off power.

Check throttle action. There should be no sluggish response from mid range to top end. Don't rapidly pump the throttle. This is not a motorcycle! It is an airplane with a big fly wheel, the propeller. Jockeying the throttle will only accelerate wear on the engine and make its reliability questionable. Be smooth with the throttle and it will respond when you need it!!

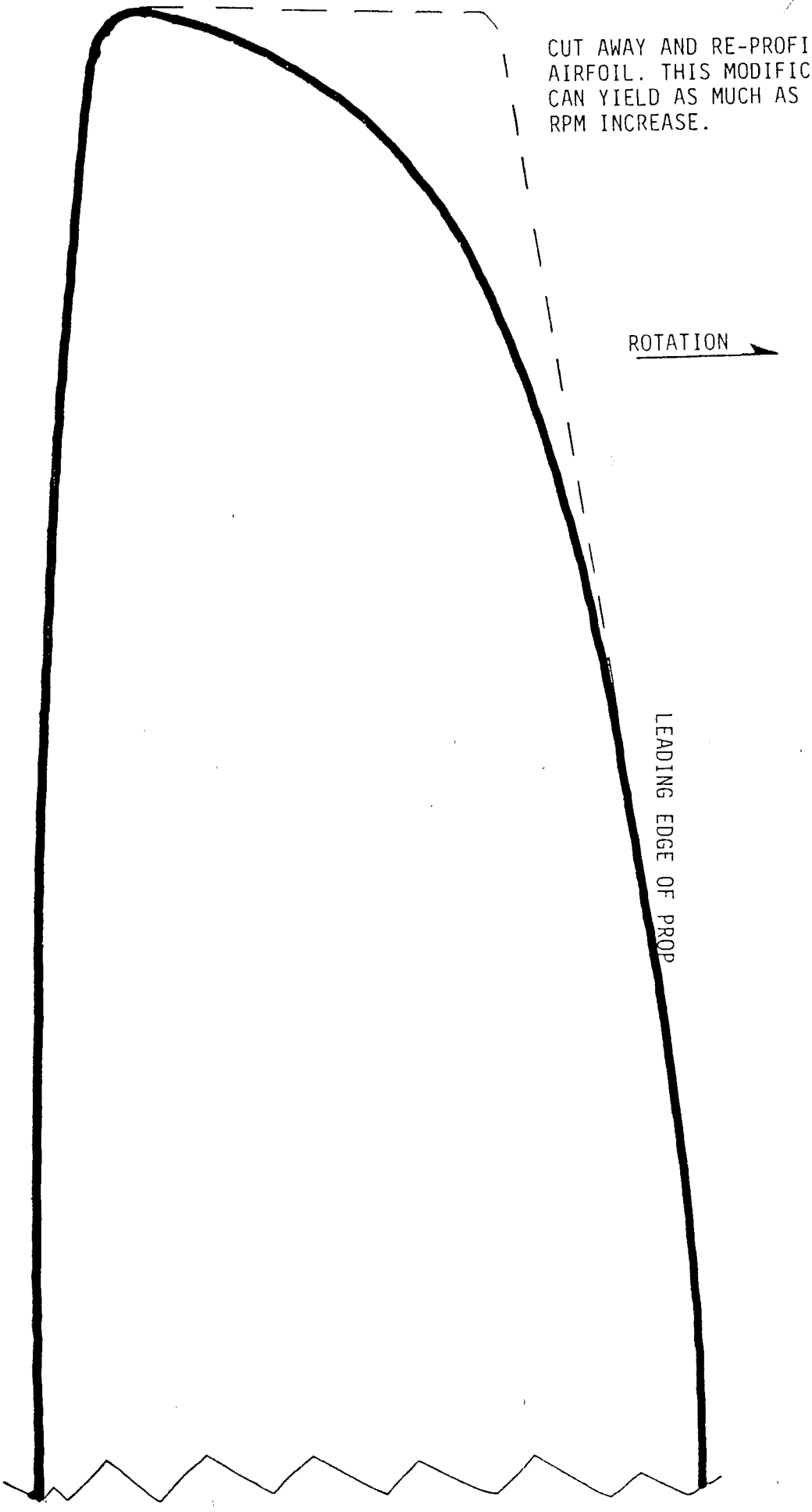
REASONS FOR POWER LOSS

Never take off if a PLUG IS FOULED. This will be indicated by sluggish throttle and lack of RPM and rough running. Two strokes don't unfoul their plugs. They only get worse. So flying to "clear it out" may result in a power loss and a forced landing.

WORN PLUG. Again throttle and RPM are not normal. Replace with a fresh properly gapped plug. Plugs should be replaced every 25 hours.

CLOGGED AIR FILTER. Spit back, the tendency at low RPM's for the engine to throw fuel out of the carb and into the air filter causes the engine oil to eventually clog the filter. The situation worsens rapidly because the more clogged the air filter becomes the more fuel that spits back. This can occur on a COYOTE II about every 40 hours. Therefore it is recommended to clean and re-oil (with air filter oil only) the filter on a periodic basis. Soak the filter in clean, raw gas. Then rinse and let dry thoroughly. Re-oil when dry as per the air filter oil instruction. NOTE: The filter oil is K & N brand and is available at most motorcycle shops.

OBTAINING MORE RPM. Due to variations in propellers and engines you may not obtain proper T.O. rpm's. We recommend at least 6000 plus rpm's. If this is not the case a simple modification to the prop can be made which will usually gain 300 rpm. Cut the tip profile to the shape shown in the tip modification pattern.


CUT AWAY AND RE-PROFILE AIRFOIL. THIS MODIFICATION CAN YIELD AS MUCH AS A 300 RPM INCREASE.
ROTATION
LEADING EDGE OF PROP

INSPECTION OF ENGINE SYSTEMS

---Cowling:
Check for:
- Missing Screws
- Loose Bolts
- Cracked Glass
- Cracked Mating Flange
- General Condition

---Remove the Cowling and Inspect the Following:
Check for:
- Cracked Welds
- Missing or Bent Bolts and Loose Nuts
- Elongated Holes or Cracks at Mount Plates
- Deteriorated Rubber Mounts
- General Condition

---Carburetor and Throttle Quad:
Check for:
- Position (90 degrees to Cylinder)
- Clamp Tightness
- Throttle and Choke Cable Wear
- Smooth Throttle and Choke Action
- Loose or Missing Bolts or Screws
- General Condition

---Muffler:
Check for:
- Spring Tension
- Cracks in Manifold and Welds
- Worn or Broken Hanger Bracket
- Clearance From Airframe and Gear Cables
- General Condition

---Fuel System:
Check for:
- Leakage Anywhere in the System
- Cracked, Worn or Ruptured Fuel Lines
- Firm Connections
- Fuel Pump Integrity
- Leaky Primer Pump/Lines
- Fuel Tank Integrity
- Fuel Filter Clogs
- General Condition

COYOTE II OPERATIONS

PRE-FLIGHT: Refer to the pre-flight section of this manual.

STARTING: Refer to the engine operations section of this manual.

TAXIING: Taxiing the COYOTE II is easy even in a 25 mph wind. The direct linkage to the steerable nosewheel enhances the ground handling making tight turns a snap.

If the wind is strong learn to use it to your advantage. Taxiing into the wind with forward stick will increase nosewheel traction and enhance steering. Taxi slow or you may start flying.

During downwind taxiing hold the stick neutral. Make small steering corrections and taxi slow.

In the hands of a skillful pilot the COYOTE II can taxi in winds up to 25 mph. Operations in 35 mph winds have been conducted with two on board.

Flying in high winds above 35 mph is also possible. However, this capacity should be used only as a means to get out of a situation not to invite one.

TAKE-OFFS: The COYOTE II becomes airborne easily with rotation at 35 mph (average gross weight 800 lbs.). Naturally rotation will vary with the gross weight. Normal, short field and soft field take-offs are possible using conventional techniques.

LANDINGS: Special attention to airspeed on approach is vital to making smooth landings. As with any aircraft too little speed and power and the COYOTE II will sink out of the sky. The sink can be controlled and must be controlled during a deadstick landing. Naturally, to arrest sink, the pilot flares to land. The point at which to flare is critical.

A good way to land the first time is to plant the mains first. Get established over the runway at 50 mph plus at about 2 feet off the ground. Once things are stabilized, wings level, pitch smoothed out and flying straight down the runway, slowly reduce the power while gradually easing back on the stick, letting the plane settle onto the runway. IMPORTANT: Hold the nose off during landing. Avoid letting it drop once the mains are on. Swerving side to side may result when the nosewheel is dropped on in cross winds or high speeds. This will familiarize you with the flare point.

Deadstick landings are done safely and smoothest if at least 50 to 60 mph can be maintained on approach. This gives you extra inertia and float, provided you flare at the right time. Lowering the flaps 2 notches in ground effect can give an extra boost to stretch the glide.

AIRWORK: The COYOTE II will perform like a conventional plane with the exception of a more rapid speed decay when power is reduced. The COYOTE II will tell you what it needs....if you are listening. Flight characteristics of the COYOTE II are nearly identical to planes like the J-3 Cubs, Super Cubs and T-Craft, etc. Although all have their distinguishing manners none do anything strange or unpredictable.

STALLS: Stalls have a warning buffet due to turbulent air from the wing root flowing over the elevator. The stall occurs with a definite break. Rudder may be needed to hold the wings level due to the "P" factor. Recovery is instant with the release of back pressure. Turning, accelerated power on and power off stalls all demonstrate the slight buffet and quick recovery.

TURNS: The COYOTE II banks quite easily with a minimum of adverse yaw. Lead into turns using a little rudder. Avoid steep banks until comfortable with the ship. Due to the quick turn rate, steep 360 degrees or 720 degree turns can be disorientating. Attempt these only after you are familiar with the airplane.

FLYING WITH THE DOORS OPEN OR REMOVED: The S-6 can be flown with the doors open up to and including 65 mph. The S-6 doors should not be opened at airspeeds above 65 mph. The S-6 can be flown with one (1) or both doors removed up to 65 mph. A loss in L & D, climb and cruise speed is to be expected with doors open or off operations.

APPROVED MANEUVERS

---Stalls, all types except Whip Stalls
---Falling Leaf at low power settings (below 4,000 RPM)
---Chandelles
---Lazy Eights
---Spins up to 3 turns at low power settings and without flaps only!

ALL AEROBATIC MANEUVERS EXCEPT THOSE APPROVED ARE PROHIBITED

ASI MARKINGS

Paint the appropriate colored arcs on your ASI for the following speeds:

White Arc	28 mph To 65 mph (Stall to Maximum Flap Extension Speed)
Green Arc	40 mph To 70 mph
Yellow Arc	70 mph To 100 pmh
Red Line	100 mph

SPECIAL OPERATIONAL CONSIDERATIONS

Position Ignition Switch. Up is for on, down for off.

The Fuel Cap May Pop Open during unusual flight maneuvers such as abrupt negative loads. Avoid free fall 0 G's flight.

Flight Maneuvers That Induce Negative Load may cause fuel leakage through the vent cap and momentary fuel starvation due to the negative G's on the float style carburetor. Avoid low level abrupt pull ups followed by an abrupt dive.

WARNING: Secure Any Form of Cargo and be careful of clothing articles falling into any part of the aircraft's working mechanisms. Jamming of the controls may result. Always wear the safety belt and shoulder harness to be sure these also do not interfere with the controls.

Check the Carburetor during pre-flight for clamp security. After a few hours the fuel/oil mix will lubricate the rubber intake manifold. It is then possible for the carburetor to rotate into a position that may cause fuel overflow and possible fuel starvation. Remove, clean and reclamp.

Fuel Shut-Off Valve must be on for flight. Always check it. There's enough fuel retained in the system past the valve to permit a take-off followed by a deadstick landing!

Slow to 70 MPH in severe turbulence. Avoid descending at high rates of speed from high altitudes into unknown conditions. A shear layer may be present at a lower level causing turbulence. Remember, high speeds and severe turbulence may accelerate airframe fatigue and shorten your aircraft's effective service life.

AIRSPEEDS:

Maximum tubulent air penetration speed is 70 mph.
Maximum flap extension speed is 65 mph.
(55 mph for S-6EC version)
Maximum door opening speed is 75 mph.

Keep All Control surface hinge points and other moving parts well oiled.

SPECIAL SECTION ON FLAP OPERATIONS

IN GENERAL

The flap equipped COYOTE II has a wider speed envelope but this is only realized through proper flap usage. Please take the time to become thoroughly familiar with the aircraft and procedures before attempting any maximum performances, take-offs or landings. The aircraft functions well without using flaps only take-off/landing distances are longer and speeds are higher. Pay close attention to the recommended flight speeds called out in this section.

The first notch of flaps is 11 degrees used to moderately shorten take-off rolls. The max flap extension speed is 65 mph. Although it is allowable to extend to full flaps at 65 mph, it is actually better technique to extend a notch at a time. EXAMPLE: 65 mph - 1st notch, 55 mph - 2nd notch, 45 mph - 3rd notch. You'll find this gives you much smoother approaches with less flap lever pressure. For your reference 1st notch/11 degrees, 2nd notch/30 degrees, 3rd notch/43 degrees.

The second flap setting is used again to shorten take-offs and to smoothly decelerate to approach speed. The third notch of flaps is going to yield the shortest take-off with the least distance over a fifty foot obstacle. Also this setting allows steeper, slower approaches. Typically a 45 mph approach speed in a 20 degree nose low attitude is desired. CAUTION: It is very easy to exceed 65 mph, the maximum flap extension (vfe) speed during such approaches...be wary of this.

MAX PERFORMANCE TAKE-OFFS

Prior to executing a max performance take-off it is recommended to have performed several take-off and landings with no flaps, 1 notch and 2 notches. PROCEDURE: Flaps 43 degrees, brakes on full, briskly apply full power holding stick slightly back to raise the nose. Ease back pressure once breaking ground as needed maintain 40 to 45 mph (best angle of climb speed) to 50 ft., then start slowly easing off the flaps and maintain 55 mph for best rate of climb speed. Set power as needed. CAUTION: Do not "dump" the flaps when retracting...always bleed them off slowly and let the airspeed increase.

This procedure has proved to yield the shortest possible take-off. Also it is recommended for soft fields. The technique is not fool proof, however, and requires a fair amount of piloting skill.

LANDING WITH FLAPS

Maintain at least 45 to 50 mph with full flaps and a constant glide slope in a nose low attitude. Fly down to the runway, then level off at 2 to 3 feet to start the flair. CAUTION: Low power and a nose high point attitude during the glide slope is to be avoided with or without full flaps. The aircraft may develop high sink and not recover.

POWER OFF STALLS

FLAPS	BANK 0	30	60
0	33	39	45
11	34	38	44
30	32	36	42
43	27	35	40

POWER ON STALLS

FLAPS			
0	22	25	27
11	20	23	26
30	20	23	24
43	20	23	24

Performance based on standard day gross weight of 875 lbs.

CAUTION: Inspect flap lever catches for wear every 100 hours. Keep roller lubricated.

PROHIBITED: Spins with flaps extended any degree but 0.

Avoid prolonged flight at high power settings and slow speeds. This flight mode causes violent, turbulent airflow over the tail with associated "tail buffet". This can be felt in a stick shake. This is a warning of an impending stall and to decrease the angle of attack and increase airspeed.

TRAILERING & TOWING PRECAUTIONS

When towing long distances on an open trailer remove the tail surfaces. Highway speeds and gust loads can cause undue loads on the tail group.

Make certain the wings and tail components are secure and will not catch the wind underneath. Tie down the wing at the ends about 2 ft. in and in the middle.

CAUTION: If you must tow tail first with the tail group assembled lock the rudder and the elevators with a control lock. Haul like this only in moderate surface winds and drive below 35 mph. This method works fine for a few miles like to the flying site but is not suited for long hauls.

DISASSEMBLY FOR TRANSPORT

The distance, terrain, weather and type of trailer will determine how much disassembly you must do to transport your COYOTE II. Usually we simply remove the wings and hang them on the wall of an enclosed trailer.

Naturally, disassembly is reverse of the assembly with the exception of those items you decide to leave assembled (tail group, etc.).

CAUTION: Be VERY careful when disassembling and transporting your craft not to gouge, scratch or bend the wing struts. The bolts that retain the jury struts can gouge the struts if no packing is used between them. Avoid any method of dismantling or packing that can cause such damage to any part.

MAINTAINANCE

COVERING: The COYOTE II is covered with a 3.9 oz. per square yard Dacron Sailcloth. This dyed to color material will last several years if the plane is stored out of direct sunlight while not in use. Ultraviolet light is the main reason for loss of skin strength. The telltale signs of an aging skin are; 1. Color fading, 2. Embrittlement and 3. Easily torn with rips likely to enlarge.
To preserve your covering there is now a clear coating (Stits Aerothane) that can be sprayed on. The effectiveness on life span extension is considerable. However, the best preservative is indoor storage out of weather and sunlight.

CLEANING: For a major cleaning we've used power washers that spray hot, soapy water and have achieved excellent results. This is mainly for the exterior, although if you are willing to wipe dry the intricate interior details and avoid directing the spray on the instrument panel it works well for the inside. For small gas spills and other isolated stains, we use acetone. The aluminum tubing needs little more than a damp cloth followed by a dry cloth to prevent water spotting.

IMPORTANT: If you conduct flight operations near or on salt water such as landing on beaches or float activity a thorough fresh water washing is a must after each final flight of the day. This should be done as soon after the flight as possible. Saltwater can be cause serious corrosion problems for key structural elements. Internal rinsing of spars, struts and fuselage members with fresh water is required if the plane has been excessively wetted or submerged in salt water.
During cleaning of any type inspect the craft for signs of corrosion and any other abnormalities.

AIRFRAME UP KEEP

The aluminum and steel structure is designed to last for many years. However, constant abuse through hard landings and high speed flight in rough air could fatigue key structural elements. To inspect the airframe, look for cracks, hole elongation, flecking of anodizing (indicating bends or overloads), bent, dented or corroded tubing and any signs of misalignment or distortion. Consult your dealer or the factory if your inspection reveals trouble or in the event of accidental damage beyond your capabilities of repair.

RANS COYOTE II
GENERAL DESCRIPTION AND FLIGHT PROPERTIES

DESCRIPTION: The COYOTE II is a high wing, tractor, mono plane with tricycle landing gear. It is strut braced with aluminum tubing and welded 4130 steel construction. It has Dacron sailcloth pull-on covers.

The design features a roll cage construction, an enclosed cabin when side doors are installed, shock absorbing "Cub" type gear, steerable nosewheel, ailerons and flaps.

FLIGHT PROPERTIES: The COYOTE II flight properties are conventional in respect to general aviation aircraft in the areas of control and response, with the exception of a greater speed decay rate due to its light but "large" nature. This is typical of any lightweight plane, where little kinetic energy is to be had.

STALLS: Are preceded by an easily distinguishable buffet caused by the turbulence over the horizontal stabilizer from the inboard wing stall. During this root stall, there is sufficient lift and control to maintain flight. Once the entire wing stalls the nose falls through very slightly and a high sink rate develops (approximately 1,000 to 1,500 fpm). The craft can be held wings level with the rudder. (NOTE: During this "falling leaf" condition we assume full up elevator is applied.) The plane may make a couple of gentle 10 degree pitch ups if the deep stall was entered from an exceptionally nose high attitude. Nonetheless, it will rapidly settle into a slightly nose high mush until back pressure is released.

If, during a deep stall (falling leaf) the pilot's feet are removed from the rudder pedals, the COYOTE II will begin to dip each wing alternately until finally making a gentle spiral to the right or left. (NOTE: This is not a spin!) At this point it could be argued that it is spinning. However, rotation is not through the plane's center of mass. Instead it's as if it were riding down the sides of a vertical cylinder. Thus, I maintain it's a spiral. To further support this, the spin properties are very conventional. Entry requires full deflection of elevator and rudder and must be held in full deflection.

The spin's rotation is approximately 80 degrees nose down with rotation through the center mass, almost through the aircraft centerline (10 degrees from it). Rotation speed is 3 seconds per turn. This is reached after the second rotation and will not increase. Flight tests show no rotation increase even after 10 turn spins. Sink rates average 1500 to 2000 fpm, with 200 to 400 feet lost per turn depending on density altitude.

This spiral and spin difference is easily recognized as well as controlled. Stall and spin testing in all configurations has been done with no unusual characteristics revealed.

In conclusion, the COYOTE II will spin only if fully stalled and ruddered. Recovery can be effected in 1/4 turn using opposite control or in a 1/4 turn by neutralizing. Given the pronounced stall warning with quick recovery rates from either stalls or spins, the COYOTE II can be flown safely and predictably by the low time pilot.

As a result of the excellent stall warning and positive control ability, the COYOTE II can be used as a S.T.O.L. aircraft. With the 47 hp engine, take offs can be as short as 150 feet in no wind. Angle of climb can be 25 degrees to 35 degrees at 40 mph, 600 fpm and full flaps. (R.O.C. increase with retraction of flaps.)

Testing has shown complete control can be maintained during S.T.O.L. take offs and landings even when "hanging it on the prop". In this mode an engine failure could result in a stall since airspeeds are in the 30 mph range. Therefore, it should be used by the experienced and only when needed, for example, when landing on an exceptionally short runway (800 feet with 50 foot or higher obstacles on each end).

TAKE OFFS: Begin with a small amount of left rudder to counteract the P factor. This diminishes once the speed is up. Rotation generally occurs at 35 mph with climb out at 55 to 60 mph.

Cruise configurations will vary with loading, an average payload being 400 lbs. This average condition with the 47 hp engine yields a 3.75 gallons per hour fuel consumption at 78 mph and 6000 rpm.

KEEPING YOUR ROTAX CARBON FREE

The Rotax manual as well as the following information outlines some excellent procedures to assure reliable operations. However, in the real world the method suggested for carbon removal is only a half-way measure. True removing the cylinder heads and scraping the dome and piston top will prevent carbon from fouling the plugs. But we go one step further by removing the cylinders and then the pistons. Why? To clean the ring groves. Yes, for the first 200 hours it is VERY important to clean the rings and pistons every 50 hours. Sounds tough but it's not bad if you're careful (and easier than fixing airframes). Use an aluminum scraper and be careful when removing the rings not to bend them or get them mixed up. Do one piston and reassemble it to the rod THEN do the other. You'll be surprised at the carbon build! Now if you don't see stuck rings or carbon DON'T clean it! Your a lucky one but do inspect it regardless. After 200 hours you may opt to go to 65 hours instead of 50. You will know by the condition of the engine from previous inspections. A ring stuck by carbon build can cause seizures because of blow by and localized hot spots. The piston skirt heats and swells until it sticks. Carbon free rings will assure this potential failure is eliminated.

ROTAX GENERAL FACTS

9) EXHAUST. The exhaust system is tuned to the engine to give the correct performance and should not be modified. If you do have to make changes the length of the pipe between the exhaust manifold and the muffler must be maintained. If changes are necessary, call LEAF for technical assistance. The exhaust system must remain flexible. If the joints do not maintain freedom they may weld together because of high temperature. Also some should use a high temperature lube, LEAF part # to keep flexibility.

The propeller and engine generate noise; (the propeller from shape, tip speed and distance from the engine.) The air intake silencer (p# 999-510) and exhaust silencer (p# 999-505) help reduce engine noise.

Leaf recommends the use of a lighting coil type tachometer. For checking engine temperature the EGT probe is located 3.92 inches from the center of the probe to the piston face exhaust port. The probe on a liquid cooled is mounted between the heads.

MAIN TORQUING SPECIFICATIONS	NM	In.Lbs	Ft.Lbs
Cylinder head nuts M8	24	210	17
Crankcase screws M6	10	88	7
Crankcase screws M8	24	210	17
Magneto housing nut: M18 x 1.5	80	700	58
Magneto housing nut: M22 x 1.5	90	800	66
Fan nut: M16 x 1.5	70	620	51
Crankcase nuts (or screws) M10	40	354	29
Exhaust manifold screws M8	24	210	17

*Specifications subject to change without notice.

NOTE: M8 refers to the diameter of the shank of the fastener

TROUBLE SHOOTING. In trouble shooting your engine the most important questions to ask yourself are:

a) Is the engine running at the proper RPM?
b) Is the jetting correct?
c) Have the heads been retorqued after the break-in period?
d) Have you retimed the engine after 25 hours?
e) Are you mixing gas and oil at 50-1 ratio?
f) Did you tighten the fan belt before 10 hours running time?
g) Did you clean the air cleaner after every 10 hours of operation?

MAX RPM. It is important to know the maximum RPM's for your engine: 277 - 6,250; 377, 447, 532 - 6,500; 503 - 6,250, 503DC - 6,500. NOTE: Idle is 1,800 RPM to 2,000 RPM

MAX TEMPERATURES. The CHT Temperature range is 325 to 425 degrees; maximum is 482 degrees. The EGT range is 1,100 to 1,225 for all engines. The maximum is 1,225. NOTE: It is very important to get the proper reading form the calibration of the probe which should be 3.92 inches from the piston edge.
Water temp- 140\ to 195\ normally, 205\ max.

MAINTAINING INTERNALS. The cylinder heads should be retorqued after the break-in period or a maximum of 10 hours. On the 532 LC, retorqued the top nuts only WITH THE ENGINE COLD.

MAINTAINING FAN. Do tighten the fan belt after the engine break-in or a maximum of 25 hours.

MAINTAINING TIMING. Also re-time your engine after break-in or a maximum of 25 hours.

FUEL OIL REQUIREMENTS. The fuel must be unleaded or 85 octane or better regular. You should use a lubricant designed for premixed fuel suitable for running in air cooled engine under sever operation, mixed at 50 to 1 or better with low carbon production. Do not add more oil during break-in period or anytime. Do not use ratio mix designed for liquid cooled engine in air cooled engines. Do not use a ratio mix other than 50 to 1. Do not use any 100\ synthetic oil. If you use synthetic oil it must be 80\ synthetic and 20\ mineral oil to leave a film of oil. (AV2,Bel-Ray Ultra I) Do not use pre-diluted type oils.

STORAGE. If the engine is left for more than 30 days, the fuel system should be drained. Refer to storage procedure in the Operator's Manual.

AIR CLEANERS. You must always pre-oil the K & N non-polyester type air cleaner. This type of air cleaner is hydroscopic. It absorbs moisture as air passes, collecting water. The velocity of air passing through the filter freezes the water vapor causing a complete shut-down or loss of power.

RESISTOR PLUGS & CAPS. Use B8ES spark plugs on all models of Rotax engines. Do not use resistor plugs with resistor plug protectors or resistor plug wires. The plug gap should be .015 to .020. Torque it down to 240 inch lbs. or 20 feet lbs.

FUEL LEVEL IN CARB. The fuel level in the carburetor should be less than half way up the flat portion of the bowl wall with the floats removed.

SHROUDS 377FA & 447FA. Free air engines require a shroud or a cowl, if one has not been provided by Rotax. The air should come in at the exhaust side front, and out at the intake side rear.

GEAR BOX. On 447's, 503's and 532's current boxes are supplied with 12 heavy washers, part numbers 939-020.

532LC. If the 532LC engine boils over you must replace the o-rings in the heads.

FUEL PUMP. You should isolate the fuel pump from heat and vibration, but the pulse line should not be over 15" long. Fuel pump pressure is 3 lbs.

BREAK IN COMPLETE. Your engine should be completely broken in after approximately 50 hours.

IMPROPER ENGINE OPERATION. If gas spits-back through the carburetor under load (6500) the engine is improperly tuned (incorrect jetting) or the load is incorrect and not turning the correct RPM's. HIGH OR LOW RPM.

JET CORRECTION. The main jet correction with altitude is not as affected because as altitude increases the temperature decreases.

LEAN BURN. Lean-burn, long, fast descents where the windmill effect of the propeller at 100 to 200 mph will overheat the engine because of the partial throttle setting. You can cure this problem by backing off the throttle more or cycling the throttle on decent.

PISTON WALL TOLERANCES. The standard piston to wall tolerance is 2 1/2 thousands to 6 thousands maximum. If it is 6 to 8 thousands, you must re-bore.

COIL OPERATION. Short the lighting coils together when not in use. Typically wired the yellow (110 watts) is the tachometer, strobe or any other a/c requirement. The green (30 watts) wire is the regulator rectifier.

LIQUID COOLED ENGINES. The header tank filler must be above the cylinder head (engine up right) and on the inlet side of the engine (for air evacuation). On a 532 it must be above the base of the engine when the engine is inverted.

ANTIFREEZE LIQUID COOLED. High quality anti-freeze should be used with the aluminum block at a 50/50 mixture of antifreeze and water.

INVERTED 532 ENGINE. If the 532 is running upside down (heads down) the receiver tank must be elevated 2" above the base of the engine to create head pressure. Rotate tube (924-240) 45\ counter clockwise. (This eliminates mild trap that burns up engine).

GENERAL TROUBLE SHOOTING. Rotax engines require two essentials to run: spark and correct fuel/air mixture. Most problems relate to one of the two!

a) Fuel: Check tank, fittings, filter, float chamber.
b) Spark: Ensure switch functions properly on and off. Check the ground wire on the coil.
c) Proper Engine Load: Check maximum RPM.

RING GAP. .008 to .010 min., .035 max. Decarbon only if build up is .040 or more. Use something soft like aluminum to scrape it off.

TROUBLE SHOOTING

Some people think Trouble shooting is an art, but in fact, it is a logical step-by-step procedure that should be followed to determine the cause of trouble before performing any service work. This procedure is "TROUBLE-SHOOTING." When servicing a Rotax engine to correct a problem, this "Trouble shooting" procedure should be followed, such as, engine will not start, is hard to start, etc. The following procedures, as related to problems with Rotax engines, have proven to be a satisfactory method for quickly determining the cause of trouble in most situations.

IF THE ENGINE WILL NOT START OR IS HARD TO START

1. Pull the engine through slowly with the pull starter rope. As the engine piston is coming up on the compression stroke, definite resistance to turning should be felt on the rope. This resistance should be noted on every revolution of a two-cycle engine crankshaft. If alternate hard and easy tuning is noted, the engine compression is not the cause of trouble at this time.

   On engines having electric starters, remove the spark plug and check the engine compression with a gauge: if a gauge is not available, hold your thumb so that the spark plug hole is partly covered. An alternating blowing and suction action should be noted as the engine is cranked.

   If very little or no compression is noted, we recommend you take your engine to a Rotax Service Center to be repaired. If engine is developing compression, proceed to step 2.

2. Remove the spark plug wire and hold the wire terminal about 1/8" away from cylinder. While cranking the engine, a bright blue spark should snap across the 1/8" gap. If the spark is weak or yellow, or if no spark occurs while cranking the engine, refer to IS THERE A SPARK AT THE SPARK PLUG PROTECTOR in our Trouble-Shooting guide.

   If the spark is satisfactory, remove and inspect the spark plug. If in doubt about the spark plug condition, install a new plug. NOTE: Before installing the plug, be sure to check the electrode gap with a proper gauge, and if necessary adjust to .015 to .020 (.018 is optimum). Do not guess or check the gap with a "thin dime", a few thousandths variation from the correct spark plug electrode gap run unsatisfactorily, or under some conditions, not start at all. SEE FIGURE 1.

   If the ignition spark is satisfactory and the engine will still not start with the new plug, then proceed to step 3.

3. If the engine compression and ignition spark seem to be ok, trouble within the fuel system should be suspected. Remove and clean or replace the air filter. Check the fuel tank and be sure it is full of fresh gasoline and two cycle oil mixed 50 to 1. Refer to FIGURE 2 for the proper fuel-oil mixture. If equipped with a fuel shut-off valve, be sure the valve is open.

   If the engine has a remote choke, check to be sure that when the choke is engaged it is fully closed.

   If not, then adjust the control linkage so that choke will fully close; then, try to start engine. If the engine does not start after several turns, remove the air filter. The carburetor throat should be wet with gasoline. If not, try to determine why the fuel is not getting to carburetor.

   Remove the fuel line at the carburetor and crank the engine through several turns; fuel should spurt from open line. If not, disconnect the fuel line from the tank to the fuel pump at the pump connection. If the fuel will not run from the open line, remove and clean the fuel tank, line and if so equipped, fuel filter and/or shut-off valve. If the fuel runs from the open line, then remove and overhaul or replace the fuel pump.

   After making sure that clean, fresh fuel is available at the carburetor, again try to start the engine. If the engine will not start, then refer to the recommended initial adjustments for the carburetor in the ROTAX Operators manual and adjust the carburetor idle and/or main jets.

   If the engine will not start when the compression and the ignition test ok and clean, fresh fuel is available to the carburetor, then remove and clean or over haul the carburetor.

LEADING EDGE AIR FOILS, INC.
331 South 14th Street, Colorado Springs, Colorado 80904 Phone (719) 632 4959

TROUBLE SHOOTING

4. The preceding troubleshooting techniques are based on the fact that to run, an engine must develop compression, have an ignition spark and receive the proper fuel-air mixture. In some instances, there are other factors involved. Refer to the special Trouble-shooting sequence following this section for service hints on finding common causes of engine trouble that may not be discovered in normal troubleshooting procedure. All these components can be checked with LEAF's buzz box.

IF ENGINE STARTS, THEN STOPS

This complaint is usually due to fuel starvation, but may be caused by a faulty ignition system. Recommended Troubleshooting procedures follow:

1. Remove and inspect the fuel tank cap; The fuel tank is vented through a breather in the fuel tank so that air can enter the tank as fuel is used. If the engine stops after running several minutes, a closed breather should be suspected. If it is possible to let the engine run with the fuel tank cap removed and if this permits the engine to run without stopping, open or replace the cap. Caution: Be sure to observe safety precautions before attempting to run engine without the fuel tank cap in place. If there is any danger of fuel being spilled on engine or spark entering the open tank, do not attempt to run engine without fuel tank cap in place. If in doubt, try a new cap.
2. If the closed breather in the fuel tank cap is eliminated, a partially clogged fuel filter or fuel line should be suspected. Remove and clean the fuel tank and line and if so equipped, clean the fuel shut-off valve.
3. After cleaning the fuel tank, line, filters, etc., if trouble is still encountered, a sticking or faulty carburetor inlet needle valve, or float may be the cause of the trouble. Remove, disassemble and clean the carburetor.
4. If the fuel system is eliminated as the cause of the trouble by performing the procedure outlined in steps 1, 2, and 3, then run a tester on the ignition coil if this equipment is available. If not, check for ignition spark immediately after engine stops. Replace the coil, condenser and breaker points if no spark is noted.

Once your ROTAX engine starts and runs fine, you will have to do some routine preventative maintenance, such as torquing the heads, tightening the fan belt and check and setting the timing to keep it running this way. Should a problem develop, it needs to be corrected immediately. What follows is a logical sequence to follow that covers the most common ROTAX problems. If after using this Troubleshooting Sequence you still can not isolate your problem please feel free to give us a call on our customer service line.

CUSTOMER SERVICE 1-719-632-4959

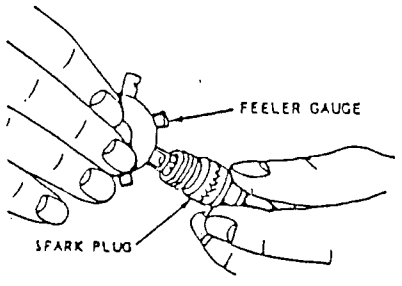


FIG. 1

FIG. 1-Be sure to check SPARK PLUG electrode gap with proper size FEELER GAUGE and adjust gap to .015 to .020.

MIXING RATIO

50:1 RATIO OF GAS TO OIL

FOR 1 GALLON OF GAS USE 2.56 OZ (75.6 CC) OEL-RAY ULTRA 1
• 2 • • • • • 5.12 OZ (151.6 CC) • • • •
• 3 • • • • • 7.68 OZ (227.4 CC) • • • •
• 4 • • • • • 10.24 OZ (303.2 CC) • • • •
• 5 • • • • • 12.80 OZ (379.0 CC) • • • •
• 6 • • • • • 15.36 OZ (454.8 CC) • • • •
• 7 • • • • • 17.92 OZ (530.6 CC) • • • •
• 8 • • • • • 20.48 OZ (606.4 CC) • • • •
• 9 • • • • • 23.04 OZ (682.2 CC) • • • •
• 10 • • • • • 25.6 OZ (758.0 CC) • • • •

FIG. 2

TROUBLE SHOOTING SEQUENCE—ROTAX ENGINES

OPEN THE FUEL COCK

DOES GASOLINE REACH THE CARBURETOR? — no →
1. Gasoline tank empty
2. Blockage in tank cap
3. Blockage in fuel cock
4. Blockage in fuel line
5. Needle valve blocked
6. Blockage in fuel filter
7. Inoperative or improperly installed fuel pump

yes ↓

DOES GASOLINE REACH THE ENGINE? — no →
1. Blockage in carburetor

yes ↓

DOES THE CARBURETOR KEEP FLOODING? — yes →
1. Float stuck
2. Float leaks
3. Needle valve does not seat properly

no ↓

HAS THE ENGINE BECOME WET WITH FUEL? — yes →
1. Too much use of choke or primer
2. Faulty ignition system
3. Incorrect fuel mixture

no ↓

IS THERE A SPARK AT THE SPARK PLUG PROTECTOR? — no →
1. Poor contact between ignition coil and ignition cable
2. Ignition cable broken or short-circuiting
3. Faulty ignition coil
4. Ignition switch in off position or faulty wiring

yes ↓

IS THERE A SPARK AT THE SPARK PLUG? — no →
1. Spark plug gap too large
2. Bridging between electrodes
3. Insulator broken or wet
4. Spark plug oily

yes ↓

Change the spark plug

IS THE ENGINE DIFFICULT TO START? — yes →
1. Faulty ignition timing
2. Float needle does not seat properly
3. Air cleaner blocked
4. Fault in carburetor
5. Defective spark plug
6. Water in fuel
7. Engine flooded
8. Choke lever is not on
9. Throttle lever should be closed if using choke circuit
10. Improper adjustment or pilot air regulating screw
11. Air leaks in crankcase or intake system
12. Leaking or blown head gasket
13. No compression
14. Spark plug is fouled, inoperative, or has improper gap
15. Excessive propeller loading
16. Improper preload in gear box

no ↓

DOES THE ENGINE KICK BACK AND BACK FIRE AND WILL NOT START? — yes →
1. The flywheel key is missing or sheared
2. Improper ignition timing

no ↓

DOES THE ENGINE HAVE GOOD SPARK BUT ONLY RUNS ON ONE CYLINDER? — yes →
1. Faulty ignition timing
2. Broken spark plug cap
3. Spark plug is fouled, improperly gapped
4. Low or no crankcase pressure
5. Blown head gasket
6. Leaking cylinder head
7. Cylinder wall-cracked
8. Low or no compression
9. Air leak in crankcase or intake system

no ↓

DOES THE ENGINE CRANK OVER EASILY ON ONE OR BOTH CYLINDERS? — yes →
1. Scored piston
2. Blown head gasket
3. Spark plug is loose
4. Head bolts not torqued
5. Excessive ring end gap

no ↓

WILL THE ENGINE NOT CRANK OVER AND THE FLYWHEEL NOT ROTATE? — yes →
1. Piston seized
2. Engine was improperly assembled after repair
3. Foreign material in crankcase
4. Connecting rod broken
5. Crankshaft seized to bearing
6. Piston rings rusted to cylinder
7. Flywheel seized to stator plate

no ↓

AFTER ENGINE STARTS WILL IT NOT IDLE OR DOES IT MISS AT LOW SPEED? — yes →
1. Spark plugs improperly gapped (15 - 20 degrees) fouled or inoperative
2. Improper fuel mixture (50 to 1)
3. Dirty carburetor or plugged jets
4. Carburetor improperly adjusted. Idle speed too low 1800 - 2000 and pilot air regulating screw out of adjustment
5. Worn piston, rings, or cylinder which cause low or loss of compression
6. Blown or leaking head gaskets
7. Air leaks in crankcase or air intake
8. Improper ignition timing

no ↓

DOES THE ENGINE IDLE WELL BUT DIE DOWN WHEN APPLYING THROTTLE, NO ACCELERATION? — yes →
1. Improper slide without notched window and drilled bottom
2. Fuel level in float bowl is set too low
3. Improper ignition timing
4. Spark plugs improperly gapped fouled, or inoperative
5. Improper adjustment of pilot air regulating screw too lean
6. Fuel line obstructed
7. The fuel pump is inoperative due to punctured diaphragm check valve inoperative or impulse line leaking

no ↓

IS THE ENGINE SLOW TO ACCELERATE/LOW TOP RPM? — yes →
1. Improper slide without notched window and drilled
2. Spark plugs improperly gapped, fouled or inoperative
3. Main jet is too rich
4. Excessive propeller loading
5. Float level is too high
6. Scored piston and cylinder
7. Blown or leaking head gasket

no ↓

DOES THE ENGINE SURGE, SLOW DOWN, COUGH OR SPIT, RUN LEAN AT ALL SPEEDS? — yes →
1. Float level is too low
2. Carburetor is dirty
3. Pilot jet or main jet is too lean
4. Carburetor inlet needle and the seat are obstructed
5. Carburetor is loose on flange or the rubber flange leaks
6. Fuel line is obstructed
7. Fuel line is obstructed
8. Air leaks in the fuel lines
9. The fuel pump is inoperative due to punctured diaphragm check valve inoperative or impulse line leaking
10. Crankcase or intake system has air leaks.

no ↓

DOES THE ENGINE RUN ROUGH, VIBRATES EXCESSIVELY AND SMOKES? — yes →
1. Main jet is too rich
2. Chokes is not fully off
3. Water in fuel
4. Float level is too high
5. Carburetor is obstructed
6. Exhaust system obstructed
7. Engine mount or engine mount bolts not secured
8. Propeller out of balance

(continued on next column)

(continued on next page)

LEADING EDGE AIR FOILS, INC.
331 South 14th Street, Colorado Springs, Colorado 80904 Phone (719) 632 4959

TROUBLE SHOOTING SEQUENCE - ROTAX ENGINES

DOES THE ENGINE RUN WELL AT HIGH R.P.M.?

no ---->

1. Engine "four-stroking"
   a) Air cleaner dirty
   b) Needle jet worn
   c) Jets too large
   d) Too much oil in the gasoline
   e) Improper ignition timing
   f) Exhaust port and exhaust pipe blocked
   g) Needle position too high
2. "Spitting" in carburetor
   a) Fuel filter blocked
   b) Dirt in carburetor
   c) Dirt in needle valve
   d) Carburetor not secured properly
   e) Needle position too low
   f) Improper ignition timing
   g) Spark plug loose or dirty
   h) Incorrect spark plug gap
   i) Incorrect heat range of spark plug
   j) Ignition cable loose or poorly insulated
   k) Piston rings stuck
   l) Crankshaft oil seal worn
3. Engine "knocks"
   a) Improper ignition timing
   b) Poor fuel supply
   c) Heavy carbon deposits in cylinder ports (glow ignitions)
   d) Play in gudgeon pin
   e) Big-end bearing or cylinder bore worn
4. Engine misses under load
   a) Spark plugs improperly gapped, fouled or inoperative
   b) Improper ignition timing
   c) Spark plug heat range to cold
   d) Spark plug connector broken
   e) Carburetor either too rich or too lean
   f) Excessive propeller loading

yes

DOES THE ENGINE OVERHEAT?

yes ---->

1. Fan belt loose
2. Excessive propeller loading
3. Improper engine timing
4. Fuel mixture too lean
5. Fuel octane rating too low
6. Fuel line or fuel filter obstructed or dirty
7. Carbon build up on combustion chamber, exhaust port, or piston dome

no

8. Carburetor out of adjustment
9. Engine is dirty or cooling fan is clogged
10. Engine monitoring instrument are defective

DOES THE ENGINE LOSE POWER IMMEDIATELY AFTER TAKE OFF (5 MINUTES) OR WILL NOT ACCELERATE BACK TO FULL AFTER THE THROTTLE IS REDUCED?

yes ---->

1. Improper slide in carburetor without notched window or drilled bottom
2. Piston mini seizure
3. Main jet is too rich
4. Excessive propeller load

no

DOES THE ENGINE ALL OF A SUDDEN JUST STOP?

yes ---->

1. Piston seizure
2. Carburetor icing

no

DOES THE ENGINE CONTINUE TO RUN AFTER THE SWITCH IS SHUT OFF?

yes ---->

1. Improper wiring
2. Spark plug heat range is too hot
3. Carbon combustion chamber, exhaust port or piston dome

ROTAX GENERAL FACTS AND OPERATIONAL INFORMATION

The information in this section is intended to help the ultralight aircraft owner to achieve the correct operating conditions for the best performance and reliability of the Rotax Engine. These engines have been specifically developed for ultralight aircraft. Leaf, an authorized Rotax service center offers accessories and service recommended by Rotax. Correct installation will help to prevent problems and help insure safe operation. For any operational limitations or questions call Customer Service. In addition to these installation instructions please refer to the Operators Manual, the engine data sheet, and the power torque and fuel consumption curves. Page MG, 08 CAT.

(continued on next column)

1) INSTALLATION. For standard installation, the crankshaft of the engine must be in a horizontal position with the cylinders up putting the spark plugs at the top. For installation with the cylinder down and the spark plugs at the bottom please refer to the Operators Manual. If you are not sure, contact Leaf for technical advice to install the engine. If crankshaft is in a vertical position, contact Leaf for more information.

2) MOUNTING. There are four bosses with 10 mm thread on, the bottom of the crankcase. We recommend a Rotax reduction gear box; however, if you don't use a gear box there are additional bosses available on the PTO end of the engine. These bosses can only be used as additional mounting points, but not by themselves. For mountings on the cylinder head contact Leaf for technical assistance. It is very important to have rubber anti-vibration mountings between the engine and the fuselage to absorb vibrations which can cause a great deal of damage to the airframe.

3) PROPELLER REDUCTION DRIVE. Do not mount the propeller directly on crankshaft. We recommend a propeller reduction drive. If the reduction drive is not supplied with the engine it can be ordered as a separate item. Refer to page 5 for more information. Note: If the gear box is supplied with the engine, there is no oil in it! — See operator's manual for filling instructions. You must balance the propeller to prevent vibration problems and over- working of the drive system. You must match the propeller to the engine power curve for full power in take off climb. If the RPM is too high there will be a power loss that will result in engine overspeed and possible damage to the engine. If matching RPM, it too can cause power loss (low RPM at ground full load test) and problems in acceleration.

4) COOLING. Fan cooling of the engine provide sufficient cooling as long as the air has free access and the hot air is not recirculated. If the engine has a cowling the exit must be 1/3 larger than the entrance which creates a flow of air.

With the tractor propeller the air is being forced over the engine for cooling. On two-cylinder engines the air stream must be directed from the Exhaust side toward the Carburetor side with suitable ducting. Note: Refer to cowling for the 377 and 447 Free Air Engines

5) TEMPERATURE MAXIMUM. Maximum cylinder head temperature must not exceed 480 degrees, for twin cylinder engines, each cylinder must not vary by more the 20 degree F. Note: Pusher propellers should not be used with free air cooled engines.

Liquid cooled engines must have a water pump. The cooling circuit must be arranged as shown on the diagram on page 23. The radiator must be large enough and the air stream of sufficient force to maintain the cooling liquid temperature below the maximum of 95 degrees C - under the most severe conditions such as in the summer of full load operation. Note: A pusher propeller will require a larger radiator than a tractor type. Do keep in mind that antifreeze additives considerably reduce the cooling effect. The cooling system must be under pressure to avoid pump cavitation. Use a pressure cap with and opening pressure of 7 - 9 lbs. Note: The radiator must be as close to the propeller as possible. The close proximity draws air through the radiator at an improved rate. The water head tank must be installed so that steam bubbles can escape from a point in the system towards the expansion chamber or header tank.

6) AIR CLEANER. The carburetor air intake must be protected against the ingestion of water. Equal air pressure must prevail in the vicinity of the carburetor air intake and the carburetor float chamber vent pipes. If you have an intake silencer you can not operate without it unless the carburetor is recalibrated. Note: Refer to Jetting chart and catalog page #29.

7) FUEL PUMP. The carburetor(s) are supplied with fuel by the fuel pump provided with the engine. This pump is activated pneumatically by an impulse line leading form the connection on the crankcase to the fuel pump. This line should not be longer than 15 inches. To check the fuel system for free flow, fit a piece of transparent tube in the fuel system and do a check run. At full load operation and high all around temperature only a few gas bubbles should be seen. The fuel pump must be installed in a cool place (not on the engine); it should also be located below the fuel tank. An electric pump can be used if the fuel tank is considerably lower than the engine. The pump must produce a minimum of 3 pounds psi. Fuel level should be checked in the carburetor bowl.

8) ELECTRICAL. Connect the wires as shown on the wiring diagram on page #58. Make sure the ignition starting wire is connected to the switch and working. The ignition and lighting cables, as well as all engine cables must not touch the cylinder or cylinder head to avoid chafing or burning. It is important to have a kill switch; we recommend this on all twin cylinder engines. To ground ignition shorting wire, ground through a double pole single throw switch (DPST) and the brown wire on the engine wiring harness.

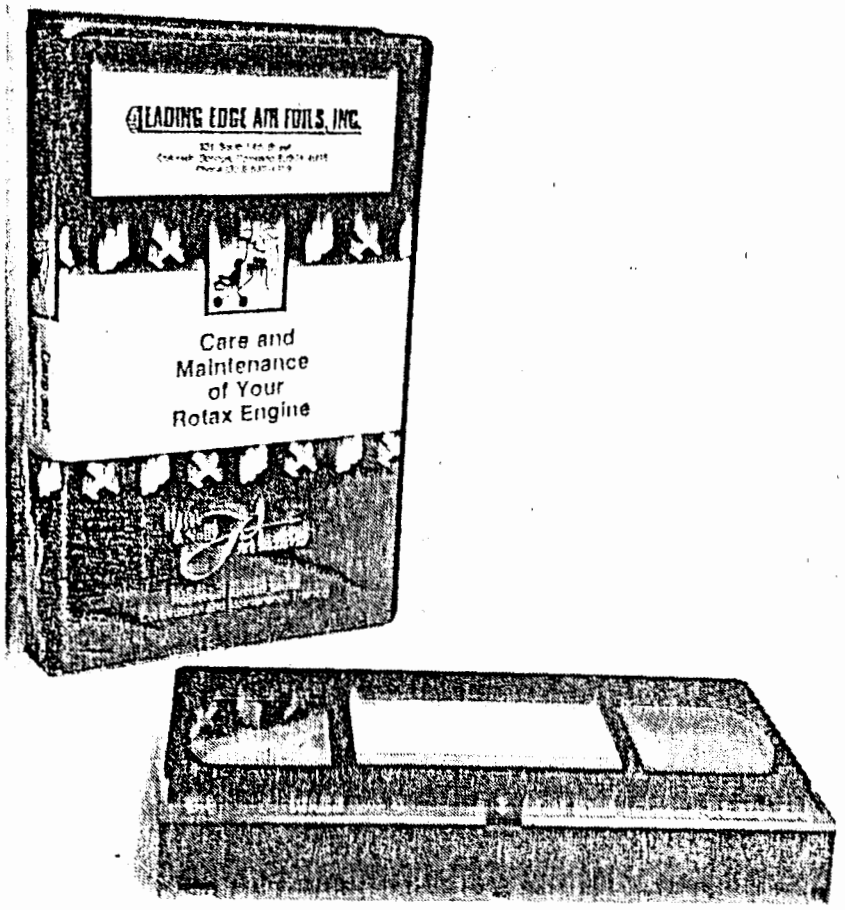
(continued on next page)

NEW IN '88

027-21

Preventive Maintenance Video for Rotax Operators

Leading Edge Air Foils has a 2-hour video that takes the Rotax user through the operators manual and preventive maintenance procedures.



According to LEAF, the purpose of this video is to help the customer get acquainted with his/her engine. It covers the three manuals for the five Rotax engines. The first manual covers the Rotax 277, which is a 2-stroke, 2-cycle, single cylinder, light aircraft engine. The second manual covers the Rotax 377, 447, and 503 engines. These engines are twin cylinder and all but the 503 are available in both a fan-cooled and free air version. Single or dual carbs are also available. The last manual is for the Rotax 532 which is a 2-stroke, 2-cycle, twin cylinder, available as liquid-cooled either single or dual carburetor.

In the video, LEAF shows how to break in the engine, set the idle, starting procedures, check and set the timing, torque the heads, trouble-shooting, tightening the fan belt, and much more.

LEAF recommends the video to any Rotax engine owner to help maintain the engine in proper running condition and prolong its life.

A 2-hour video from Leading Edge Air Foils takes the Rotax user through the operator's manual and preventive maintenance of his engine.

B3100.....VHS
B3101.....BETA

$45.00 each

LEADING EDGE AIR FOILS, INC.

331 South 14th Street • Colorado Springs, Colorado 80904
(719) 632-4959 — 1-800 LEAF INC — Telex #9102500419

MAINTENANCE SCHEDULE FOR ROTAX ENG 377, 447, 503, 532

ACTION TO BE DONE			First 2	Every 12	25	50	75	100	125	150	175	200	225	250	275	300	325	350	375	400
Ignition timing	check	(1	X		X	X	X		X	X	X		X	X	X		X	X	X	
Cylinder head & manifuld	retorque	(2	X																	
Spark plugs	clean			X	X		X		X		X		X		X		X		X	
Spark plugs	replace					X		X		X		X		X		X		X		X
Fan belt tention	check				X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Fuel filter	check				X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Fuel line	check				X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Fuel pump	check				X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Carborator	check & abjust				X		X		X		X		X		X		X		X	
Carborator	clean					X		X		X		X		X		X		X		X
Air filter	clean & oil				X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
Cylinder	remove & check	(4				X		X		X		X		X		X		X		X
Pistones	remove & clean	(5				X		X		X		X		X		X		X		X
Small & bearings	replace											X								X
Ignition point set and condencer	replace							X				X				X				X
gear drive oil	change	(3						X				X				X				X
Gear tortional shook spring	replace											X								X
Engine overhaul		(7																		X

(6.

1. After every point set replacment.
2. After every head or Cylinder removing.
3. First 12 hrs of new gear
4. Cylinder check A. condition B. taper: max 0.08 m.m C. out of round max 0.05 m.m
5. Piston check A. ring end gap: new ring: min 0.20 m.m
   max 0.35 m.m. used ring 1.00 m.m
   B. ring / piston groove clearance (rectangular ring only): min 0.04 m.m
   max 0.11 m.m wear limit: 0.20 m.m
6. piston / cylinder clearance: min 0.08 m.m max 0.10 m.m - wear limit 0.20 m.m
   (measured at cylinder 5/8" below top. measured at piston 1/4" above buttom for piston skirt)
7. on 532 eng"s overhaul at 500 hrs.

027-23

K&N SERVICE INSTRUCTIONS

ENGLISH

IMPORTANT!
READ BEFORE USING YOUR K&N AIR FILTER. K&N AIR FILTERS MUST BE OILED BEFORE USE

NEW FILTER PREPARATIONS

For maximum filter life and protection of your engine, use K&N Air Filter Oil Part No 99-0504 or 99-0516 Aerosol or 99-0533 Squeeze Bottle

With Aerosol: Spray along the full length of each pleat. Wait 5-10 minutes for oil to wick, yielding a uniform, red color

With Squeeze Bottle: Lay one bead of oil along the full length of each pleat. Wait 15-20 minutes for oil to wick, yielding a uniform, red color. Retouch any white spots

Note: Excessive over oiling is not recommended

Optional: To assure proper filter sealing apply K&N Air Filter Sealing Grease Part No 99-0702

Note: Do not use on hose clamp type filters

CLEANING REUSABLE K & N FILTER

First, lightly tap off surface dirt and wet with cold water

Roll filter in a shallow amount of K & N Filter Cleaner & Degreaser (Part No 99-0621) 1/3/4 the depth of one pleat! Do not let dirty solution run to inside of filter. Let filter sit for 5 minutes to dissolve dirt

From the inside out rinse your K&N Filter with cold water. Shake and allow to air dry. Do not use air hose! And

Re-oil as a new installation

CAUTION: DO NOT BLOW DRY WITH AIR HOSE

ESPAÑOL

¡IMPORTANTE!
LEA LAS INSTRUCCIONES ANTES DE USAR SU FILTRO DE AIRE K&N. LOS FILTROS DE AIRE K&N TIENEN QUE SER ACEITADOS ANTES DE USARSE

PREPARACIONES PARA UN NUEVO FILTRO

Para máxima vida del filtro y protección de su motor use aceite para filtros K&N Parte No 99-0504 y 99-0516 en aerosol y botella plástica No 99-0533

Con aerosol: Aplique aceite a lo largo de cada pliegue. Espere de 5-10 minutos hasta que el aceite se riegue por la superficie del filtro y se observe un color rojo uniforme

Con la botella plástica: Aplique una capa de aceite a lo largo de cada pliegue. Espere de 15-20 minutos para que el aceite se riegue mostrando un color rojo uniforme. Retoque cualquier mancha blanca que aparezca

Nota: No se recomienda aceitar en exceso

Opcional: Para asegurar un buen sellado aplique Grasa para Sellar los Filtros de Aire K&N Parte No 99-0702

Nota: Nunca use la grasa en filtros equipados con mangueras con grampas

LIMPIEZA DE FILTROS K & N REUSABLES

En primer lugar golpeé suavemente el filtro para sacudir el polvo, luego humedezca la superficie con agua fría

Haga rodar el filtro en una pequeña cantidad de líquido limpiador y desgrasador para filtros K&N (Parte No 99-0621) 1/3/4 partes de profundidad de un pliegue! No permita que la solución sucia penetre en el interior del filtro. Deje reposar el filtro por 5 minutos para que la suciedad se disuelva

De adentro hacia afuera, enjuague su filtro K&N con agua fría. Sacúdalo y déjelo secar al aire. ¡No use la manguera de aire! Y

Acéitelo otra vez como si fuera una nueva instalación

FRANCAIS

IMPORTANT!
LISEZ LES INSTRUCTIONS SUIVANTES AVANT D'UTILISER LE FILTRE À AIR K&N. LES FILTRES À AIR K&N DOIVENT ÊTRE GRAISSÉS AVANT UTILISATION

COMMENT PRÉPARER UN FILTRE NEUF

Pour vous assurer de longue durée de votre filtre et pour la protection de votre moteur, utilisez l'huile à filtre à air K&N Pièce numéro 99-0504 ou 99-0516 avec aérosol, ou 99-0533 avec bouteille plastique

Avec aérosol: vaporisez le long de chaque pli du filtre. Attendez 5-10 minutes pour permettre à l'huile d'imprégner et pour le filtre de prendre une couleur rougeâtre uniforme

Avec la bouteille plastique: appliquez une quantité modeste d'huile le long de chaque pli. Attendez 15 à 20 minutes pour permettre à l'huile d'imprégner et pour le filtre de prendre une couleur rougeâtre uniforme. Retouchez les taches blanches s'il y en a

Notez qu'un graissage excessif n'est pas recommandé

Facultatif: pour garantir l'étanchéité parfaite de votre filtre, faites une application de Graisse Étanche K&N pour Filtre à Air. Pièce numéro 99-0702

Notez qu'il ne faut pas utiliser cette graisse sur les filtres équipés d'un tuyau en caoutchouc avec pinces

COMMENT NETTOYER LE FILTRE K & N AVANT DE LE RÉUTILISER

Tapotez tout d'abord le filtre de façon à le débarasser des poussières et saletés, puis mouillez le filtre avec de l'eau froide

Roulez le filtre dans un peu de dégraisseur à filtre K&N. Pièce numéro 99-0621, environ trois quarts de la profondeur du pli. Ne permettez pas à la solution sale d'imbiber l'intérieur du filtre. Attendez 5 minutes jusqu'à dissolution complète de la saleté

Rinsez votre filtre à l'eau froide en laisant couler l'eau de l'intérieur vers l'extérieur. Secouez et laissez sécher. N'utilisez p... de tuyau à air Et

Graissez à nouveau comme un filtre neuf

ITALIANO

IMPORTANTE!
LEGGERE PRIMA DI UTILIZZARE IL VOSTRO FILTRO ARIA K&N. I FILTRI ARIA K&N DEVONO ESSERE LUBRIFICATI PRIMA DELL'USO

COME PREPARARE UN FILTRO NUOVO

Per la massima durata del vostro filtro K&N e per la protezione del vostro motore, usate l'Olio Filtro Aria K&N No 99-0504 oppure 99-0516 Aerosol oppure 99-0533 Bottiglia Plastica a Pressione

Con Aerosol: Applicate una piccola quantità per tutta la lunghezza di ogni piega. Attendete 5-10 minuti finché l'olio si stende, assumendo un colore rosso uniforme

Con Bottiglia Plastica: Applicate una goccia di olio lungo tutta la lunghezza di ogni piega. Attendete 15-20 minuti finché l'olio assume un colore rosso uniforme. Ritoccate qualsiasi punto bianco

Attenzione: Si sconsiglia una eccessiva lubrificazione

Facoltativo: Per assicurare una perfetta sigillatura del filtro, applicate Grasso per Sigillatura Filtro Aria K&N No 99-0702

Attenzione: Non utilizzare su filtri del tipo con fascetta stringitubo

COME PULIRE IL FILTRO K & N RINNOVABILE

Prima di tutto scrollate lo sporco dalla superficie e bagnate con acqua fredda

Rotolate il filtro in una piccola quantità di Pulitore e Sgrassatore K&N No 99-0621, 3/4 della profondità di una piega. Non permettere che la soluzione sporca entri nell'interno del filtro. Lasciare il filtro fermo per 5 minuti perché la sporcizia si dissolva

Dal dentro verso il fuori risciacquate il filtro K&N con acqua fredda. Scuotete e lasciate asciugare all'aria. Non usare manica d'aria

Lubrificate di nuovo come per nuovo montaggio

DEUTSCH

WICHTIG!
VOR GEBRAUCH DES K&N LUFTFILTER MUESSEN DIE FOLGENDEN GEBRAUCHSANWEISUNGEN BEACHTET WERDEN. DER K&N LUFTFILTER MUSS VOR GEBRAUCH GEOELT WERDEN

VORBEREITUNG FUER NEUEN LUFTFILTER

Fuer groessere Lebensdauer des Filters und maximalem Motorenschutz soll nur K&N Luftfilteroel benutzt werden No 99-0504 oder 99-0516 Aerosol oder No 99-0533 in Druckflaschen

Mit Aerosol: Jede Filterrippe muss mit Oel bespritzt werden. 5-10 Minuten werden gebraucht um das Oel aufzusaugen. Anschliessend hat der Filter eine gleichmaessig rote Farbe

Mit Druckflasche: Man legt eine Spur von Oel ueber die Ganze Laenge jeder Rippe. In 15-20 Minuten nachdem das Oel aufgesaugt ist soll eine gleichmaessige rote Farbe auf der Filteraussenseite entstehen. Eventuelle weisse Stellen muessen nachgeoelt werden

Zur Beachtung: Zuviel Oel ist nicht ratsam

Nach Wahl kann der K&N Luftfilter noch weiter abgedichtet werden durch Benutzung von No 99-0702 Filterfett. Dieses Fett soll nicht an Schellenverschluss-Filtern benutzt werden

REINIGUNG FUER GEBRAUCHTE K & N LUFTFILTER

Erst muss der Oberflaechen-Schmutz leicht abgeklopft werden, dann mit kaltem Wasser anfeuchten

Man rollt den Filter in K&N Filterreinigungs und Entfettungsfluessigkeit (No 99-0621). Die Hoehe der Reinigungsfluessigkeit soll ungefaehr 3/4 der Filterrippengroesse sein. Die schmutzige Fluessigkeit darf nicht in die Innenseite des Filters laufen. Zur Aufloesung des Schmutzes soll man den Filter 5 Minuten in der Reinigungsfluessigkeit stehen lassen

Mit kaltem Wasser wird der K&N Filter von innen nach aussen ausgespuehlt. Ausschuetteln und an der Luft trocknen lassen. Druckluft darf zum Trocknen nicht benutzt werden

Vor dem Wiedereinbauen muss der Filter erneut wie No 1 eingeoelt werden

NEDERLANDS

BELANGRIJK!
LEES DEZE INSTRUCTIES VÓÓR HET GEBRUIK VAN DE K&N LUCHTFILTER. K&N LUCHTFILTERS MOETEN VÓÓR GEBRUIK GEOLIED WORDEN

VOORBEREIDINGEN VOOR EEN NIEUWE FILTER

Om verzekerd te zijn van een lange levensduur van uw K&N filter en ter bescherming van uw motor, gebruik luchtfilterolie K&N No 99-0504 of 99-0516 in aerosol-spuitbus of 99-0533 in zacht plastic flacon

Met Aerosol-spuitbus: Sproei langs de volle lengte van iedere vouw in de filter. Wacht 5 tot 10 minuten zodat de olie volledig kan worden geabsorbeerd waardoor de filter een gelijkmatige roodachtige kleur krijgt

Met zacht Plastic flacon: Spuit een kleine hoeveelheid olie langs de volle lengte van iedere vouw in de filter. Wacht 15 tot 20 minuten zodat de olie volledig kan worden geabsorbeerd en de filter een gelijkmatige roodachtige kleur krijgt. Eventuele witte plekken met een klein beetje olie bewerken

N.B. Teveel olie gebruiken is niet aanbevolen

Naar keuze kan de K&N luchtfilter nog beter afgesloten worden door gebruik van K&N luchtfilter afsluitvet No 99-0702

N.B. Niet te gebruiken op filters die met een klem bevestigd worden

HET SCHOONMAKEN VAN DE K & N FILTER VÓÓR HERGEBRUIK

Begin met het vuil voorzichtig kloppende van de buitenkant te verwijderen. Dan de filter met koud water nat maken

Rol de filter in een ondiep bakje met K&N filter reiniger No 99-0621 tot ongeveer 3/4 van de diepte van de vouw. Zorg ervoor dat de vuile oplossing niet in de binnenkant van de filter komt. Wacht 5 minuten tot al het vuil volkomen is opgelost

Spoel de filter af met koud water van de binnenkant naar de buitenkant. Uitschudden en laten drogen. Vooral geen luchtslang gebruiken! En

Opnieuw olien als een nieuwe filter

SVENSKA

VIKTIGT!
LÄS INNAN ANVÄNDNING AV K&N FILTER. K&N FILTER MÅSTE OLJAS FÖRE ANVÄNDNING

FÖRBEREDELSEN FÖR DET NYA FILTRET

För maximalt filterliv och beskydd av motorn använd K&N luftfilterolja Del Nr 99-0504 eller 99-0516 aerosol eller 99-0533 plastflaska

Med Aerosol: Spruta över hela längden av varje veck. Vänta 5-10 minuter tills oljan uppsugs och man ser en jämn röd färg

Med plastflaskan: Klämm oljan ut över hela längden av varje veck. Vänta 15-20 Minuter tills oljan uppsugs och man ser en jämn röd färg. Retuschera eventuella vita fläckar

Obs! Onödig påoljning rekommenderas inte

Valfritt: För att försäkra att filtret tätas ordentligt använd K&N:s tätningsfett för luftfilter Del Nr 99-0702

Obs! Använd den inte på filter med slangklämmor

RENGÖRNING OCH ÅTERANVÄNDNING AV K & N FILTER

Först slå lätt bort yttersmutsen och fukta med kallt vatten

Rulla filtret i en grund mängd K&N filterrenare och avsmörjare (Del Nr 99-0621) 3/4 djupet av ett veck! Låt inte den smutsiga lösningen rinna in i filtrets insida. Låt filtret stå i 5 minuter så att smutsen kan upplösas

Från insidan ut skölj K&N-filtret med kallt vatten. Skaka det och låt det torka i luften. Använd inte någon luftslang! Och

Olja om filtret som vid en remontering

日本語

新しいエア フィルターの使用方法

御使用前に必ず下記をお 読み下さい。

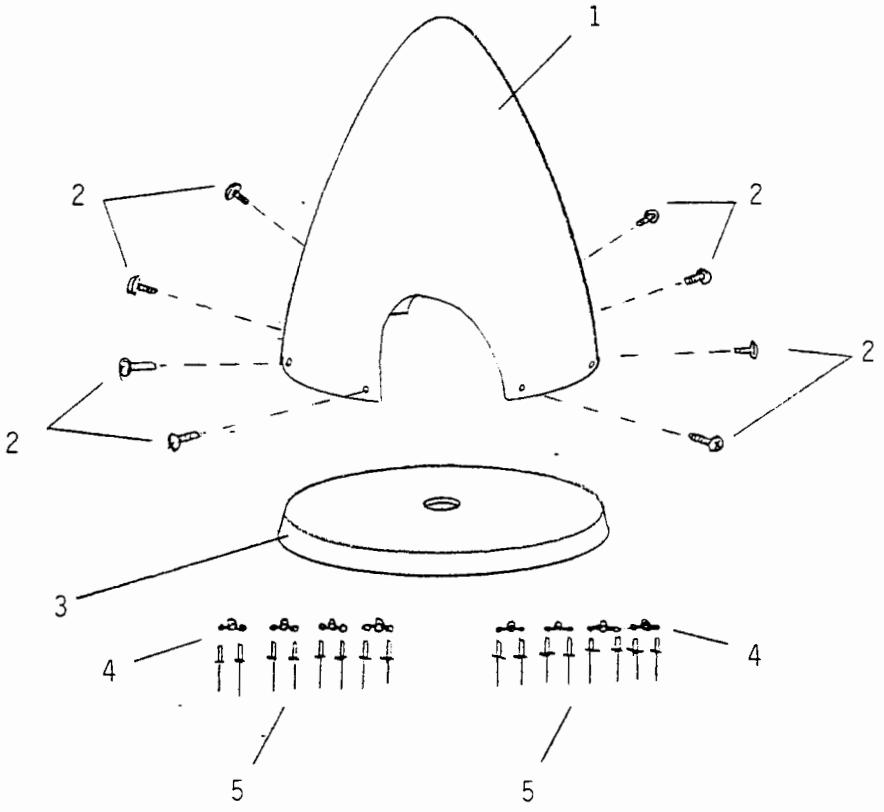
K&Nエア フィルターを再使用する場合

F-234

K&N ENGINEERING, INC., RIVERSIDE, CALIFORNIA 92502, U.S.A.

Printed in U.S.A.

9" SPINNER



S-6 COYOTE II SPINNER

#	PART NAME	PART NO	QTY	PRICE
1.	Spinner Dome, 9"	SPIN-9"	1	72.00
2.	3/16" Truss Head Screw	AN526-C1032R12	8	.10
3.	Spinner Backing Plate, 9"	SPIN-BC9	1	60.00
4.	3/16" Nut Plate	K-1000-3	8	.40
5.	3/32" Aluminum Pop Rivet	40APR-1/4	16	.20

NOTE: This Is Untrimmed And Unpainted. Add $45.00 For Trimming And Painting.

9" SPINNER ASSEMBLY

Refer to the Cowling parts page for selection of components and hardware.

1. The spinner and backing plate comes ready to trim and drill. Observe the scribe lines and trim to these lines. Be especially careful to trim and sand the edges evenly. Check for trueness by setting on a flat surface. Drill the backing plates center with a 1" hole saw. It may need a little sanding to fit over the prop flange. Test fit as you go. Wet sand with 350 grit paper.

2. Insert the 1" aluminum tube scrap into the prop then install on the backing plate. Prop MUST be flat against the plate. Drill six (6) 1/4" holes through the backing plate using the prop as a drill guide. IMPORTANT: After drilling the first hole insert a 1/4" bolt to prevent shifting. NOTE: The slight dip in the plate is used to "pre-load" the plate against the prop.

3. Set the prop and backing plate on a flat surface. NOTE: To assure accuracy bolt the backing plate to the prop with (3) bolts. (AN4-32A will work if washers are used).

4. Set the spinner on the prop/backing plate assembly. Set it so an even amount of space is on either side of the prop openings. Mark the hole locations on the spinner's perimeter every 3" with (5) screws evenly spaced on each side. Drill through at these locations with a #30 bit, cleco as you go. Be sure spinner and backing plate are flat against the table.

5. Disassemble and drill out the #30 holes to #11. Install the nut plates using a bolt to hold the nut plate in place and drilling from the inside. The rivets heads need to be "counter sunk", do so by drilling a slight depression with a #11 bit. See Figure 032A-05. Set the rivets by resting the head against a vise and tapping the driven end with a small hammer and check for tightness. The nut plates must be snug.

NOTE: Some spinner kits may use 3/32" aluminum pop rivets.

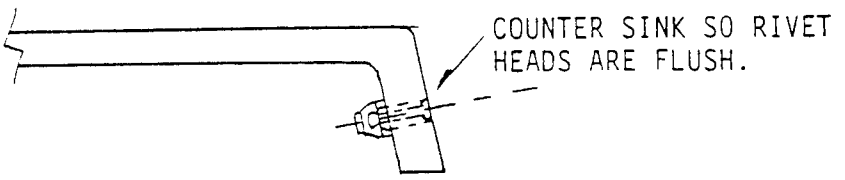
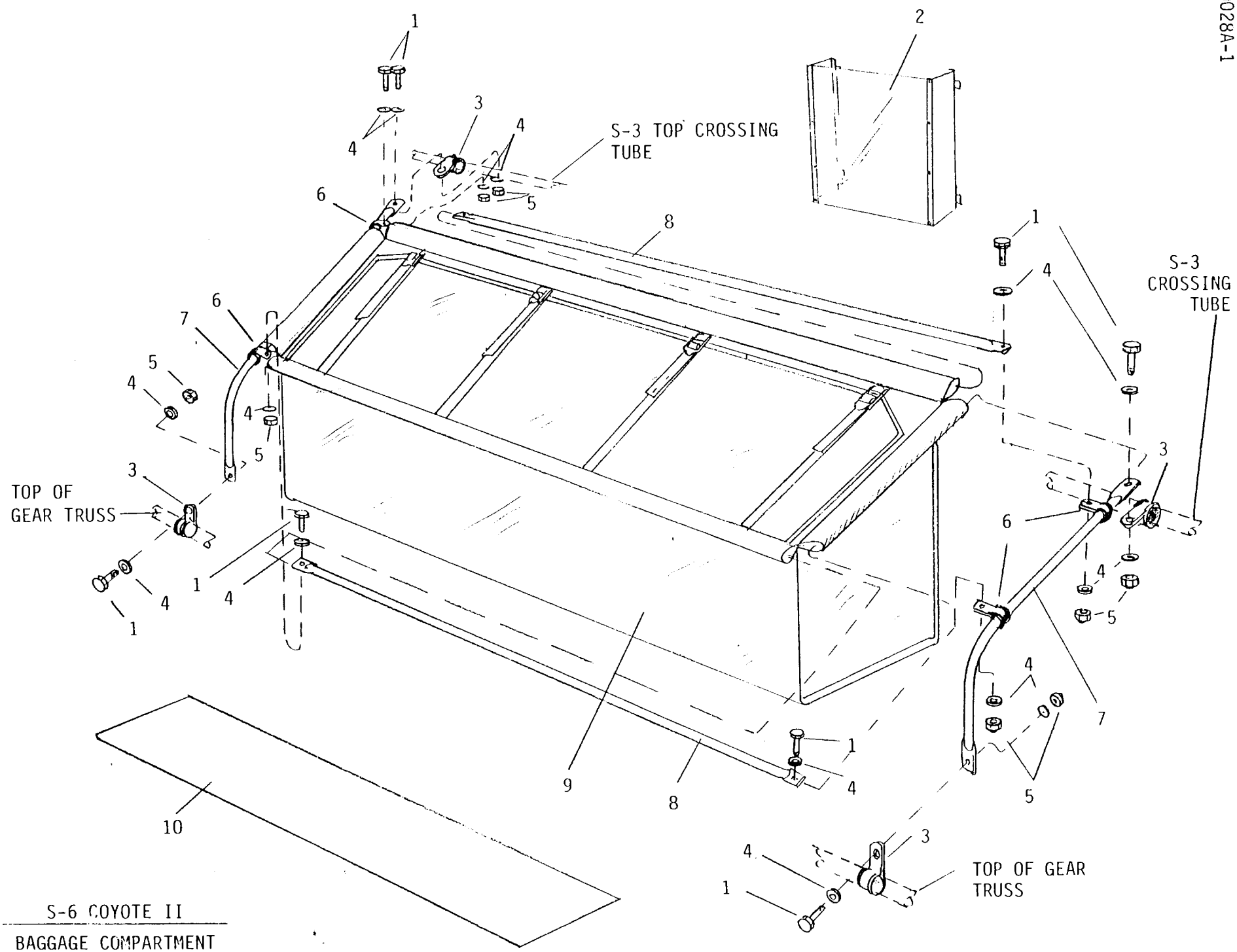


FIGURE 032-05

6. Sand the spinner with 350 wet/dry paper. Paint to match aircraft.

7. The spinner and prop should be balanced and no adjustment required. However, the ultimate test is in the running. If you have a lot of vibration it could be caused by out of balance or misalignment. Use a good prop balancer such as the one LEAF sells. (Available through them or us for $20) Check both the prop and backing plate, if the misalignment is not correctable then a new spinner may be required. Misalignment occurs through improper trimming of the parts. A slight amount of "wobble" is acceptable and may disappear at higher RPM's. Always pre-flight your spinner. Although our test shows great promise it is still an experiment so be watching for cracks. Every 50 hours remove the spinner and prop to inspect the backing plate where it contacts the prop flange.



S-6 COYOTE II

BAGGAGE COMPARTMENT

S-6 COYOTE II BAGGAGE COMPARTMENT

#	PART NAME	PART NO.	QTY	PRICE
1.	3/16" Bolt	AN3-5A	8	.15
2.	Control Tee Guard	BAG-GUARD	1	30.00
3.	5/8" Tube Clamp	MS21919-DG10	4	.80
4.	3/16" Thick Washer	AN960-10	16	.03
5.	3/16" Shear Nut	AN364-1032A	8	.15
6.	1/2" Tube Clamp	MS21919-DG8	4	.60
7.	Side Brace	BAG-SB	2	10.00
8.	Cross Brace	BAG-CB	2	9.00
9.	Baggage Compartment	BAG-BAG	1	150.00
10.	Baggage Compartment Bottom	BAG-BOT	1	15.00

S-6 COYOTE II BAGGAGE COMPARTMENT ASSEMBLY

1. Select all the parts depicted in the parts drawing.

2. Lace the baggage bag ends through the side braces. Bolt the side braces in place to the S-3 top and the gear truss top crossing tubes as shown in the parts drawing.

3. Slip the cross braces into the baggage bag's long pockets and bolt them to the side braces via 1/2" tube clamps.

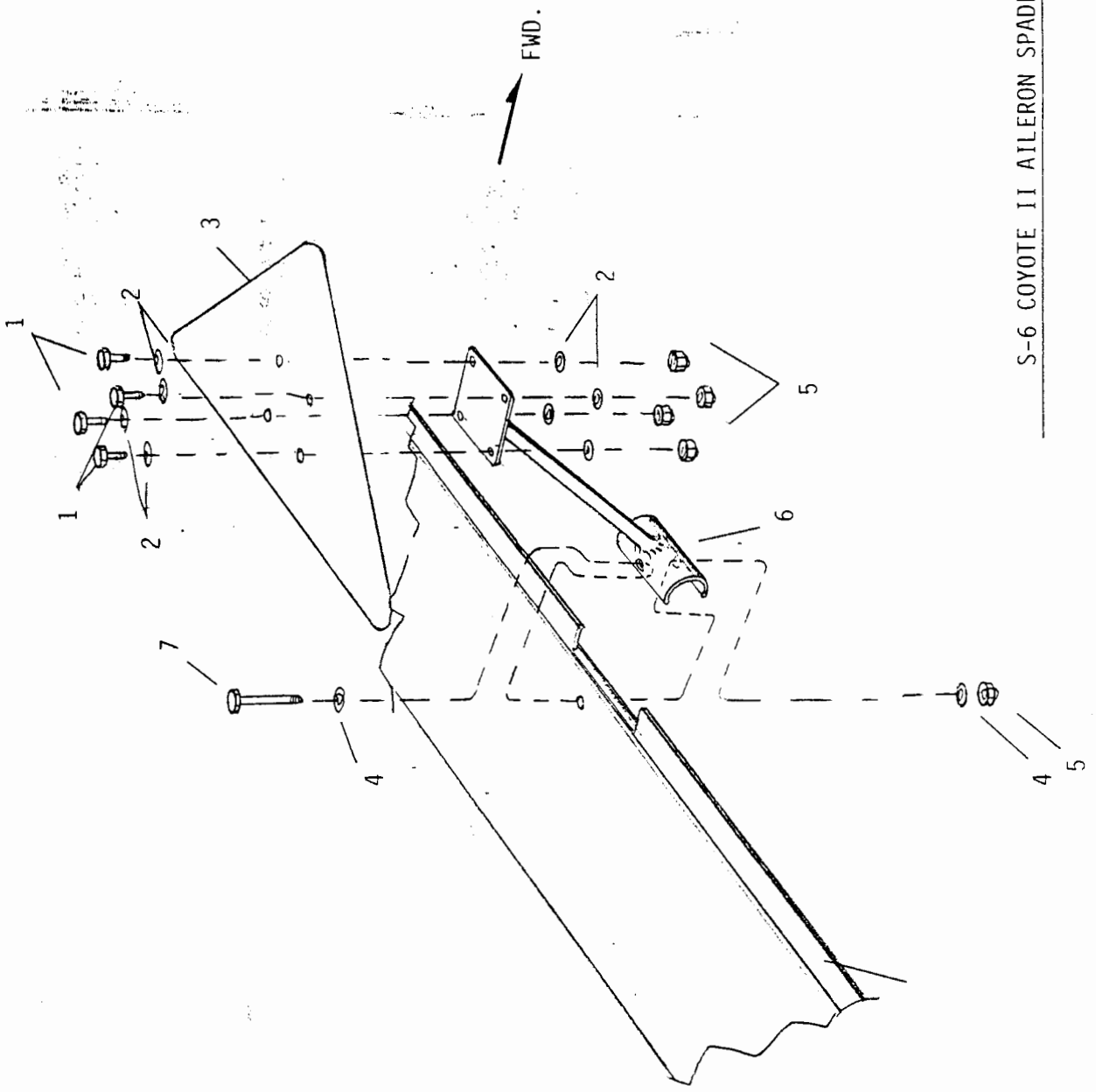
4. Slip the bottom Lexan into the bags floor pocket. (Peel the paper off if you like).

5. Install the control tee guard by simply snapping it over the S-3 cross tube and over the 1/2" square tube below.

6. Adjust the cross braces so they just touch the guard and allow the seat to move into its rear most position.

7. Maximum baggage allowable is 50 lbs. CAUTION: Do not load cargo that exceeds the floor's bearing capability. Avoid small heavy objects. Always use the flap and straps when hauling baggage to retain the load.

S-6 COYOTE II AILERON SPADE



S-6 COYOTE II AILERON SPADE

#	PART NAME	PART NO	QTY	PRICE
1.	3/16" Bolt	AN3-4A	8	.20
2.	3/16" Thick Washer	AN960-10	16	.03
3.	Spade	AIL-SPADE	2	6.00
4.	3/16" Thin Washer	AN960-10L	4	.03
5.	3/16" Shear Nut	AN364-1032A	10	.15
6.	Spade Arm	AIL-SARM	2	18.00
7.	3/16" Bolt	AN3-14A	2	.30