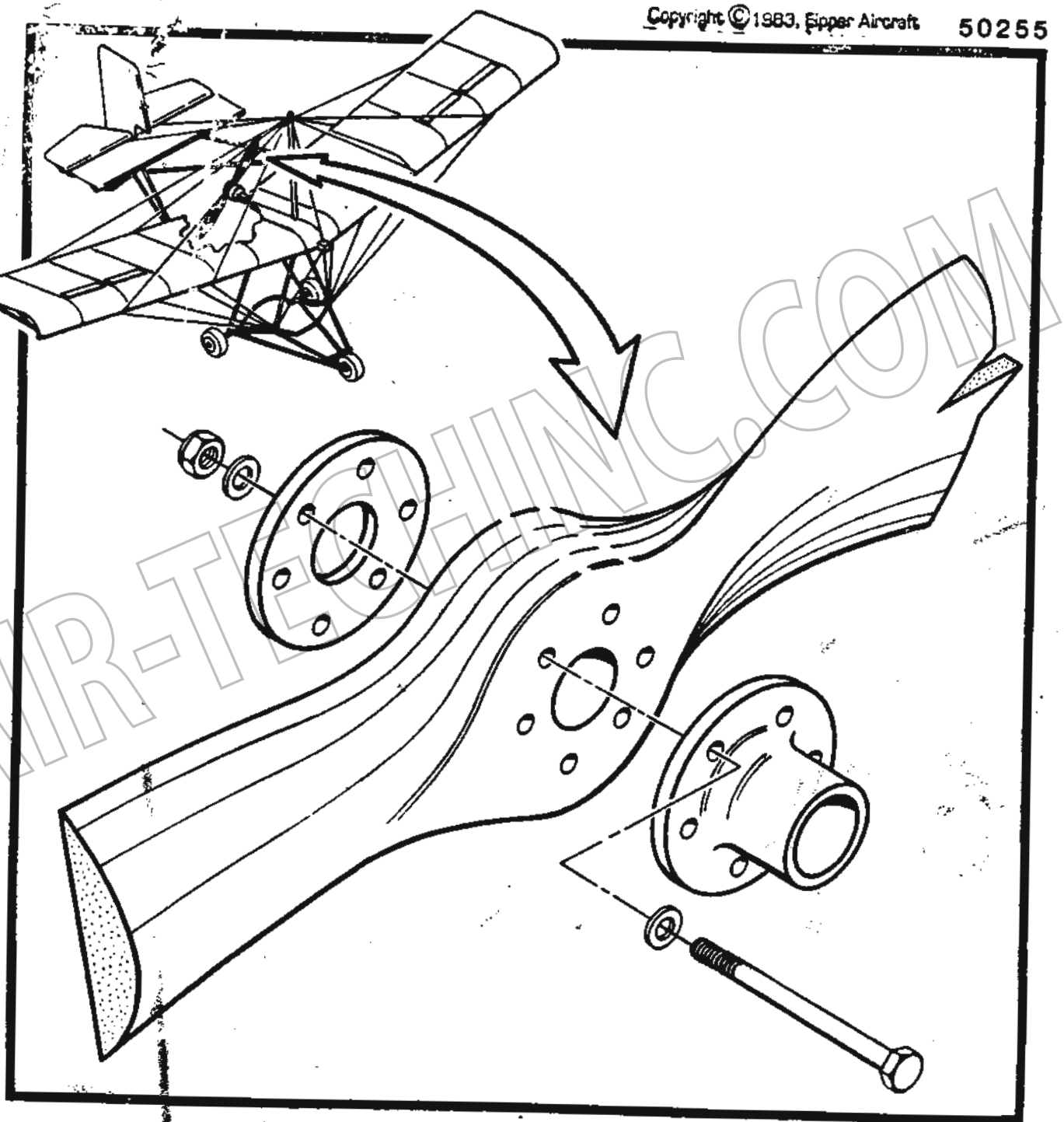
QUICKSILVER® MX III

"THE ORIGINAL"

ASSEMBLY MANUAL

 50255



Eipper aircraft inc.

World's Largest Manufacturer of Ultralight Aircraft

QUALITY ASSURANCE ACCEPTED
DATE 5-19-83
E.C.O. # 194 REV. A

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IMPORTANT!

All Eipper aircraft are in a state of constant testing and modification. These on-going efforts are carried out to further improve already proven designs, engineering, testing and manufacturing operations. Do not assume, therefore, that a particular model of an aircraft you build today will be identical to the one you built yesterday. The possibility exists that it WILL NOT be the same.

Stated briefly, pay attention not only to the aircraft's assembly instructions, but also to the supplemental instructions supplied with each plane ON AN INDIVIDUAL BASIS.

ABOUT THIS MANUAL

THIS MXII ASSEMBLY MANUAL PROVIDES BASIC ASSEMBLY INSTRUCTIONS FOR BOTH THE MXII AND THE INTERCEPTOR VERSIONS.

If you are assembling an MXII AIRCRAFT, follow these instructions as written.

If you are construction the INTERCEPTOR, READ THE INSTRUCTIONS PROVIDED WITH THE INTERCEPTOR KIT (packaged separately) FIRST. IT WILL BE UP TO YOU TO DETERMINE (via the interceptor instructions) WHAT PART OR PARTS OF THIS MANUAL ARE SUPERSEDED BY THE INTERCEPTOR INSTRUCTIONS.

INTRODUCTION

Assembly of your Quicksilver can easily be accomplished in approximately 40 hours. All of the difficult fabrication details have been prefinished at the factory, including drilling, anodizing, cable swaging, sewing of wing and tail surfaces, etc. Work carefully and follow instructions closely. If you have any construction problems or questions, please feel free to call your dealer or the factory for help.

CONSTRUCTION NOTES

BASIC TOOLS NEEDED FOR ASSEMBLY

1). Two each: (ENGLISH) 3/8", 7/16", 1/2", 5/8", 11/16" & (METRIC) 9.5mm, 10mm, 11mm, 12.7mm, 16mm, & 17.5mm wrenches
2). Torque wrench (optional)
3). Fine flat and 1/2 round or rat-tail files
4). Hacksaw
5). Electric drill and 1/8", 3/16", 1/4", 5/16" (METRIC) 3.2mm, 4.8mm, 6.4mm, 8mm drill bits
6). Hammer
7). Tape measure, marking pencil
8). Scissors, razor knife
9). Allen wrenches: 1/8" & 7/32" (METRIC) 6mm 7 3.2mm
10). Sailmaker's hot knife or blade edge soldering iron
11). Lubricant (3 in 1 oil or equiv.)
12). C-Clamp
13). Duct tape or equiv.
14). Pop rivet puller
15). Phillips & straight slot screwdriver
16). Safety wire or "tie wire"

WING NUTS when called out should be backed up with washers (as req.) so that they are as tight as possible while still allowing the safety ring to pass thru the hole in the bolt. WING NUTS MUST ALWAYS BE SECURED WITH A SAFETY RING. If you do not have to "totally" break down your aircraft on a regular basis, wing nuts may be replaced by locknuts using washers as required.

Bolts that pass thru tubes with no solid internal support should be tightened until the tube shows just a "slight" distortion, then back off nut slightly. Be particularly careful when installing coarse thread grade 5 or 8 bolts.
Loctite all grade 5 or 8 bolts upon final assembly.

CASTLE NUTS are used where bolt and nut assembly is subject to "rotation." Tighten castle nut accordingly, line up slot(s) in nut with hole in bolt and secure with safety ring (except where cotter key is spaecified). DO NOT REPLACE CASTLE NUTS WITH LOCKNUTS UNLESS SPECIFICALLY ALLOWED IN ASSEMBLY MANUAL. CASTLE NUTS MUST BE SECURED WITH SAFETY RING (cotter key) OR THEY WILL VIBRATE LOOSE AND OFF.

After installing bolts, check that grip length is correct. Using washers as shown, at least one bolt thread should extend out of nut. One or more washers may be added to prevent bolt from bottoming out before producing a snug fit. As a general rule, a washer under the nut will prevent bolt from turning and digging aluminum.

IMPORTANT! Before assembly check all swaged Nicos with Nico Sleeve Gauge provided. Procedure is diagrammed on tool. See page III.

Un-twist wires before final attachment. A twisted wire will also be more prone to jamming or twisting a wire thimble during field assembly of your plane.

Check engine owner's manual for proper torque values of engine bolts.

Enjoy building your new Eipper Aircraft.

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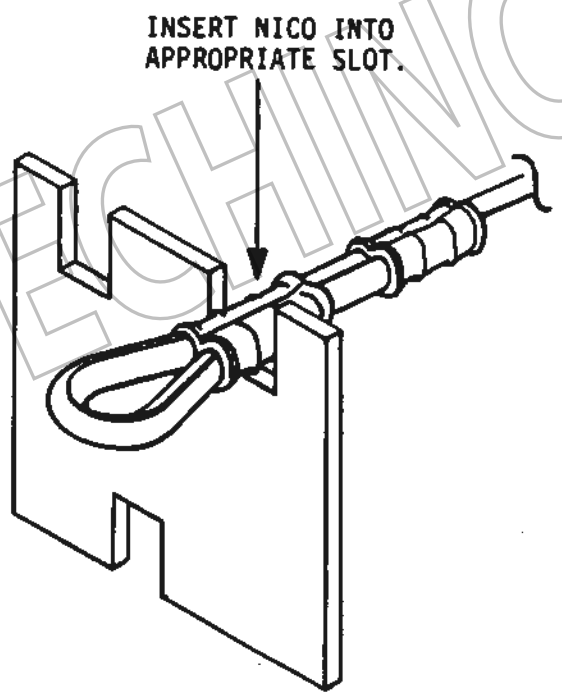
NICO SLEEVE GAUGE PROCEDURE

The Nico Sleeve Gauge (20447) is a measuring device which determines the size accuracy of sleeves swaging various dimension cables to thimbles, cable bushings, tangs, etc.

The gauge has precision machined notches for measuring swaged nico sleeves having 1/8" (3.2 mm), 1/16" (1.6 mm), and 3/32" (2.4 mm) sizes. It should be used when making a cable inventory upon receipt of your aircraft assembly kit.

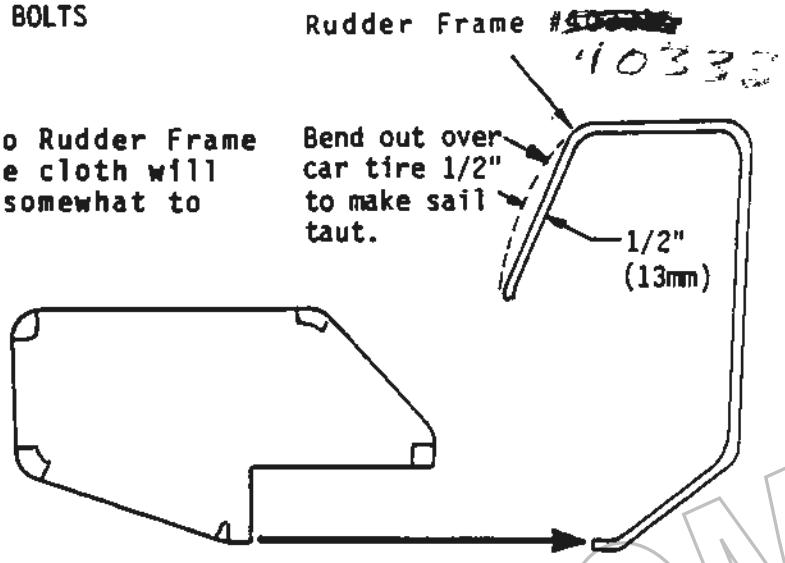
TO USE...

1. Insert the swaged portions of the sleeve into the appropriate notch on the sleeve gauge.
2. Inability to insert the swaged part of the sleeve indicates improper swage. REPLACE THROUGH YOUR DEALER.
3. In addition, check the positioning of the cables swaged within the sleeve. Cables are properly swaged when they lie directly side-by-side and the sleeve opening has a symmetrical shape.



RUDDER ASSEMBLY

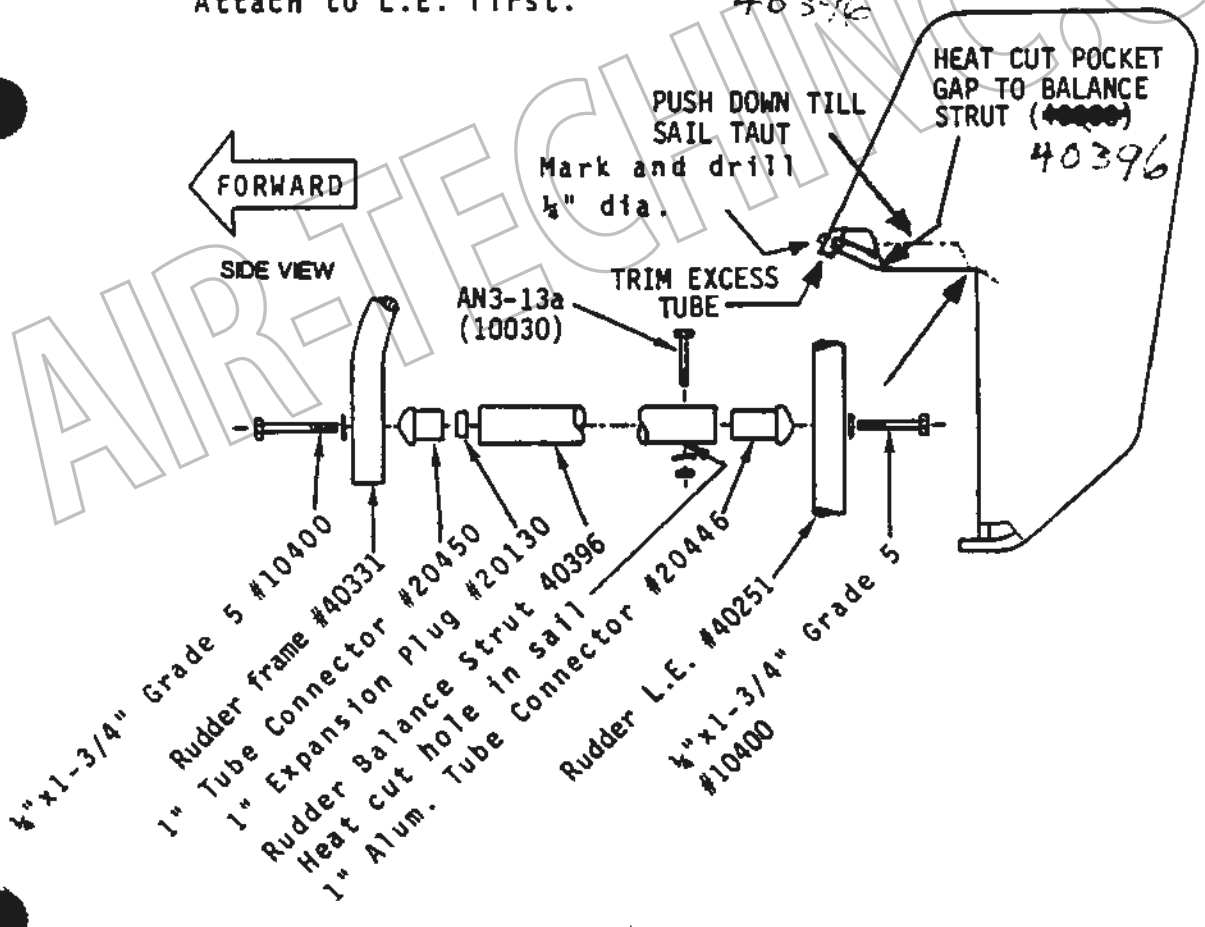
NOTE: LOCTITE ALL COARSE THREAD BOLTS ON FINAL INSTALLATION.



1). Slide Rudder Cover onto Rudder Frame as shown at right. The cloth will have to be bunched up somewhat to slip onto the frame.

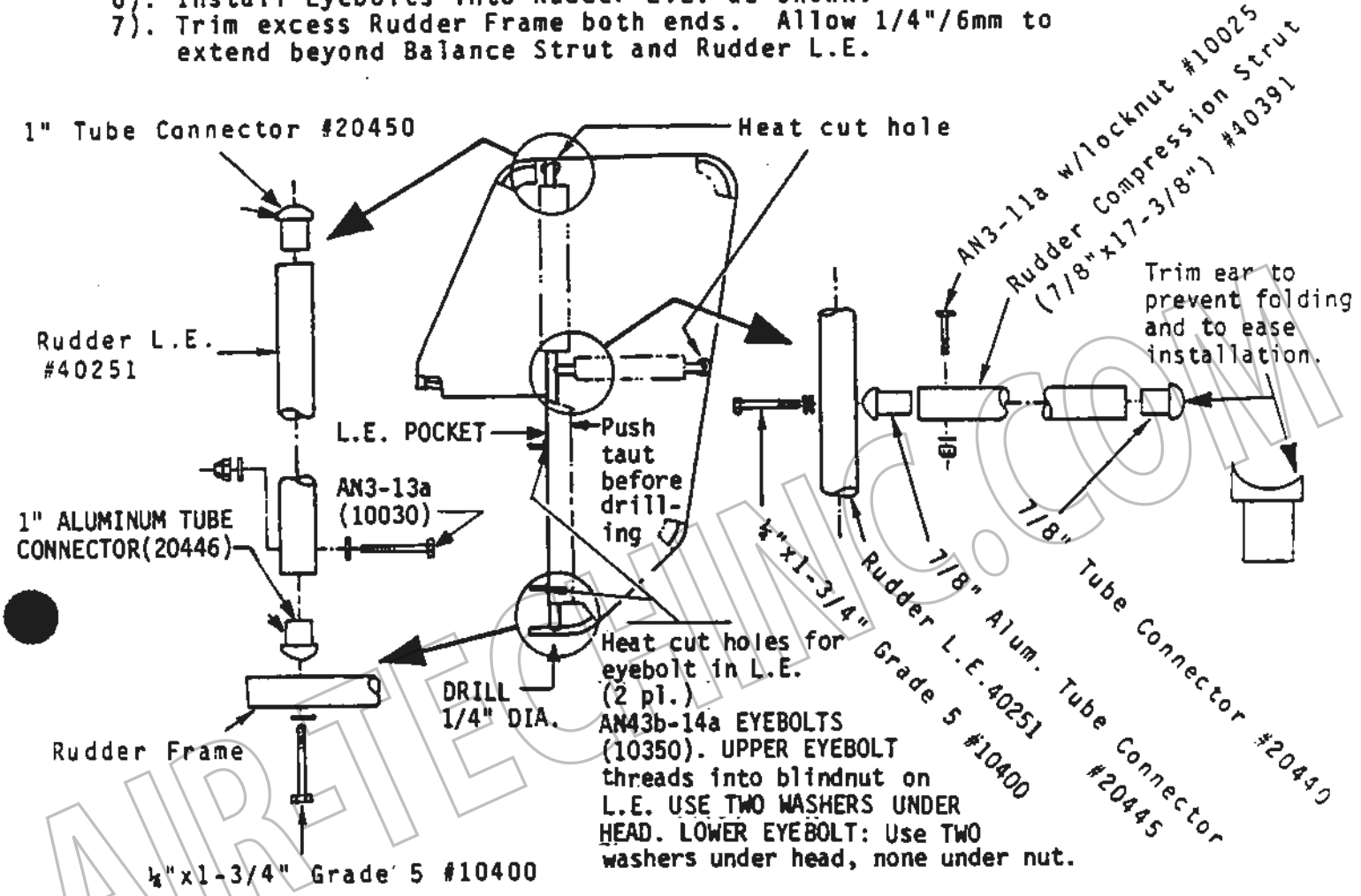
2). Slip Rudder Leading Edge Tube into L.E. pocket on Rudder Cover. Holes in the tube are at bottom of rudder.

3). Install Rudder Balance Strut ([redacted]) as shown. Attach to L.E. first. 40396

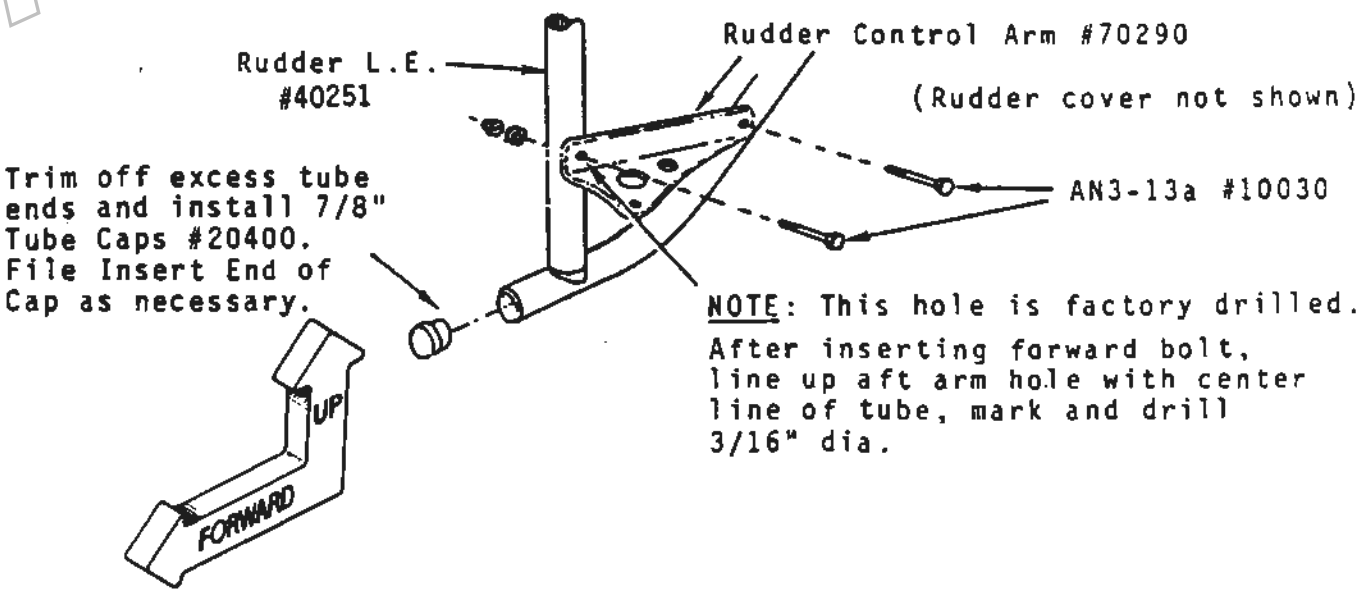


RUDDER ASSEMBLY CON'T.

4). Install 7/8" Alum. Tube Connector in Rudder Compression Strut, slip into the pocket and then to L.E. and "pop" aft part of tube into place.
5). Fasten ends of L.E. as shown.
6). Install Eyebolts into Rudder L.E. as shown.
7). Trim excess Rudder Frame both ends. Allow 1/4"/6mm to extend beyond Balance Strut and Rudder L.E.

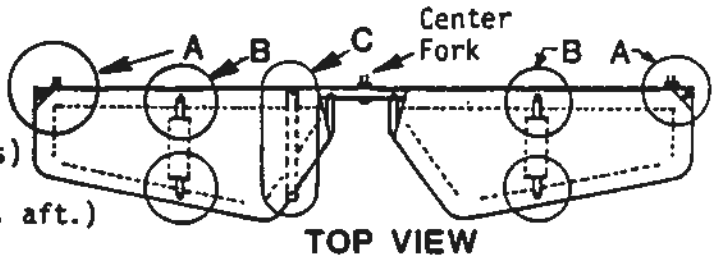


8). Install Rudder Control Arm as shown below.

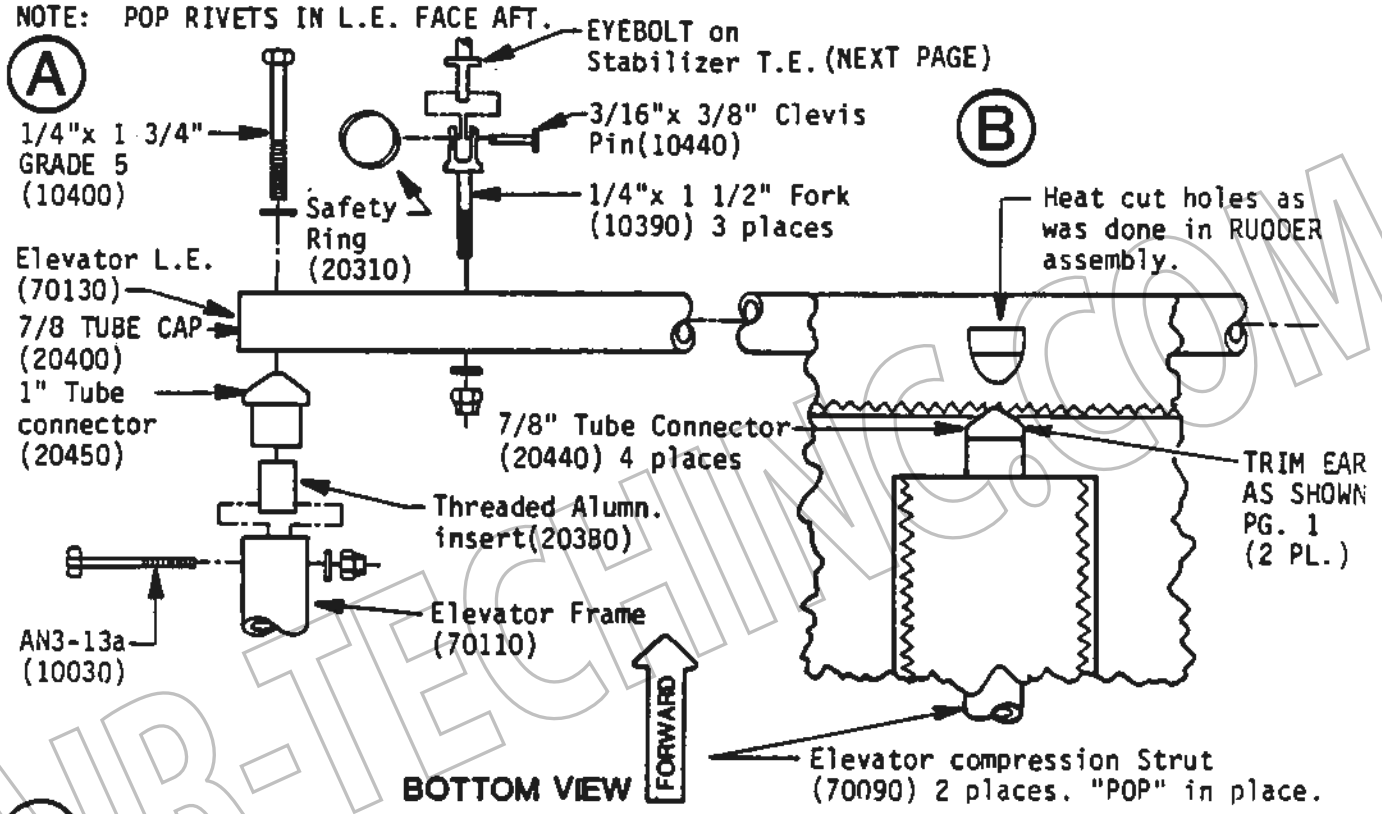


ELEVATOR ASSEMBLY.

DRAWING "A". Slip ELEVATOR covers over ELEVATOR FRAMES (Pockets on bottom).
Install TUBE CONNECTOR hardware(4 places) then slide ELEVATOR L.E. into sail.
(ELEVATOR ARM hole on right & POP rivets aft.)
Install GRADE 5's and FORKS as shown.
Do DRAWINGS "B" and "C" as shown.
NOTE: POP RIVETS IN L.E. FACE AFT.



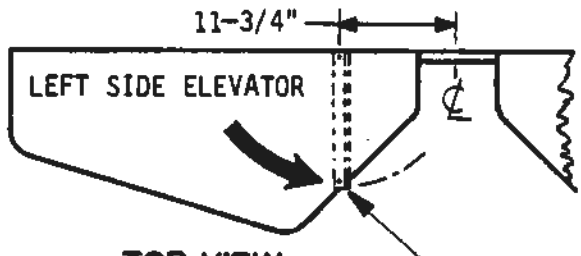
TOP VIEW



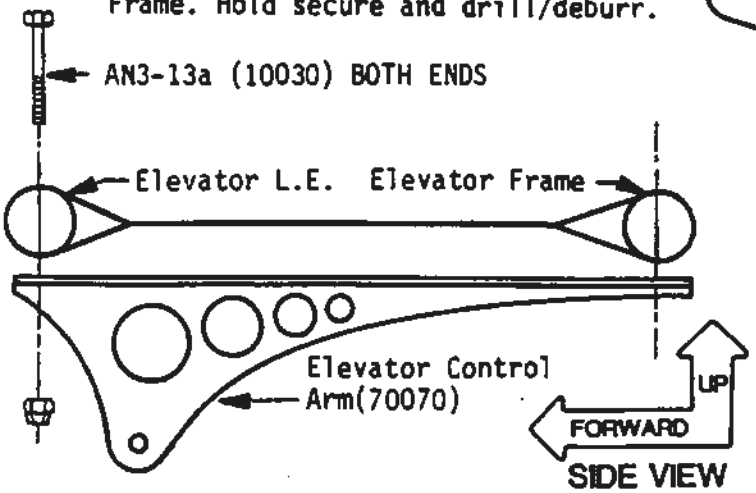
BOTTOM VIEW

C

MEASURE AND DRILL 3/16" DIA. (4.8mm) in L.E. as shown at right. Mount Control Arm and "swing" so that rear hole lines up with center of Elevator Frame. Hold secure and drill/deburr.



TOP VIEW



SIDE VIEW

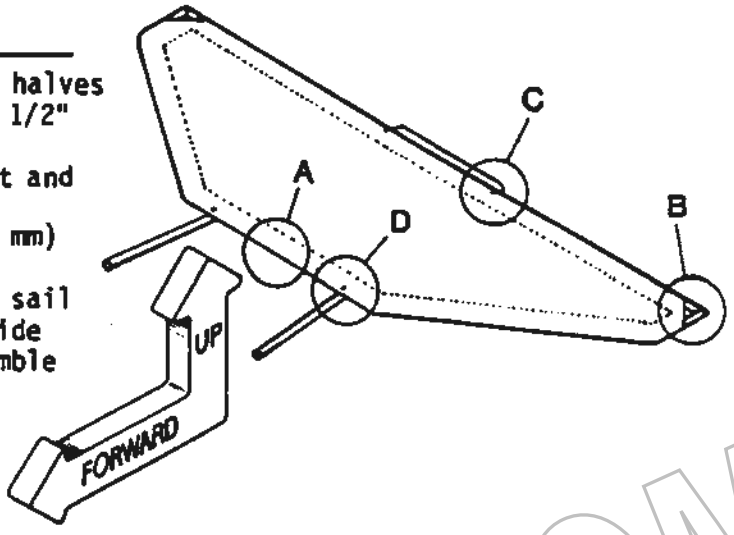
Line up aft hole of arm with center of Elevator Frame.

IMPORTANT! DO NOT USE FACTORY DRILLED HOLE AT 10.5" FROM CENTERLINE L.E.

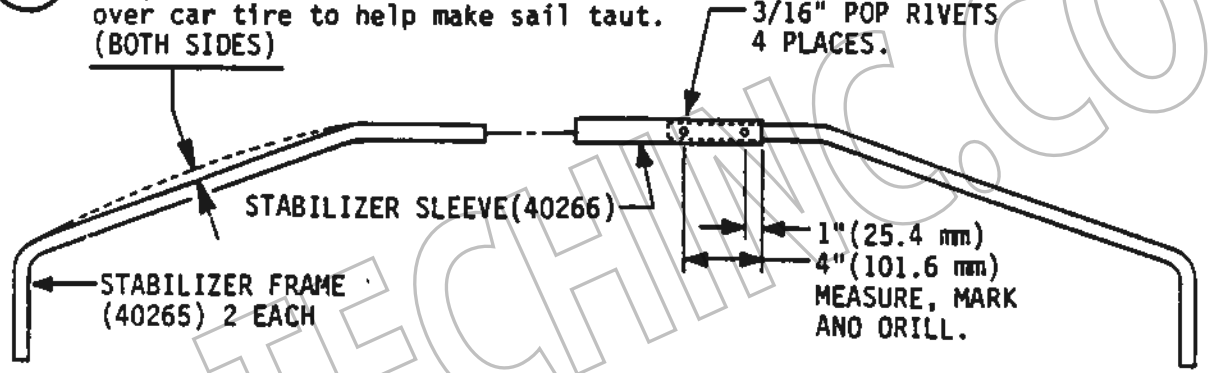
HEAT CUT HOLES IN SAIL FOR CONTROL ARM.

STABILIZER ASSY.

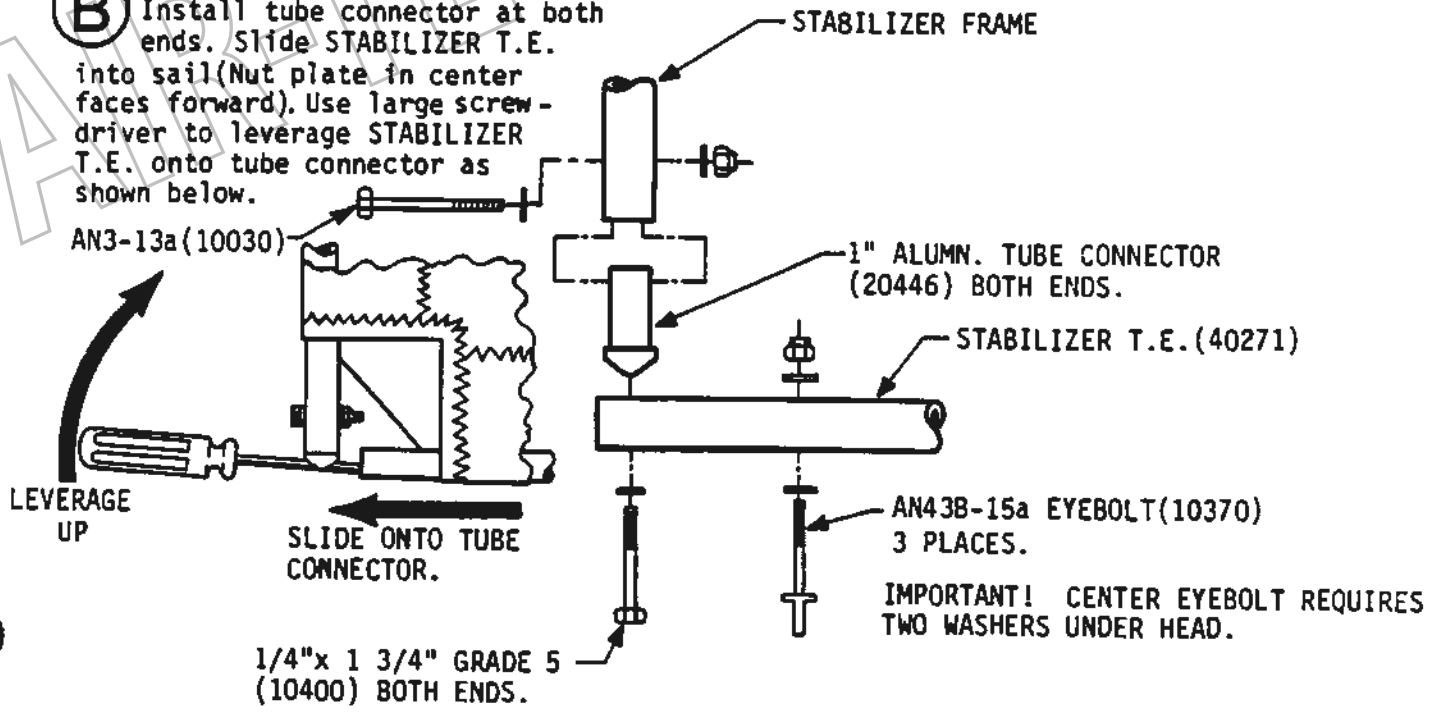
DRAWING"A". Take stabilizer frame halves and bend "SLIGHTLY" over car tire 1/2" (12.7 mm) to help make sail taut. Lay the frame halves on floor flat and insert into STABILIZER SLEEVE. Measure, mark and drill 3/16"(4.8 mm) holes for both halves as shown. Install 3/16" Rivets (20225). Slip sail onto frame(SEAM of sail on same side as rivets.) DRAWINGS "B"-"D" assemble as shown.



A Slightly bend frame out 1/2" (12.7 mm) over car tire to help make sail taut. (BOTH SIDES)

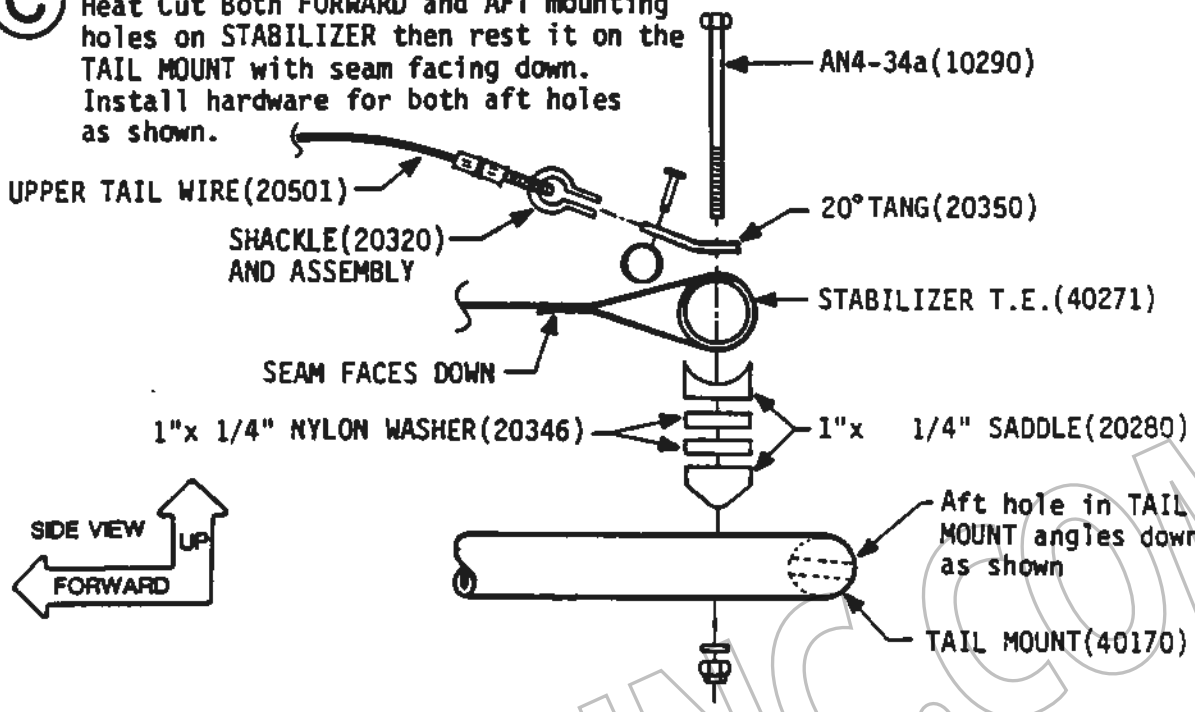


B Install tube connector at both ends. Slide STABILIZER T.E. into sail(Nut plate in center faces forward). Use large screw-driver to leverage STABILIZER T.E. onto tube connector as shown below.

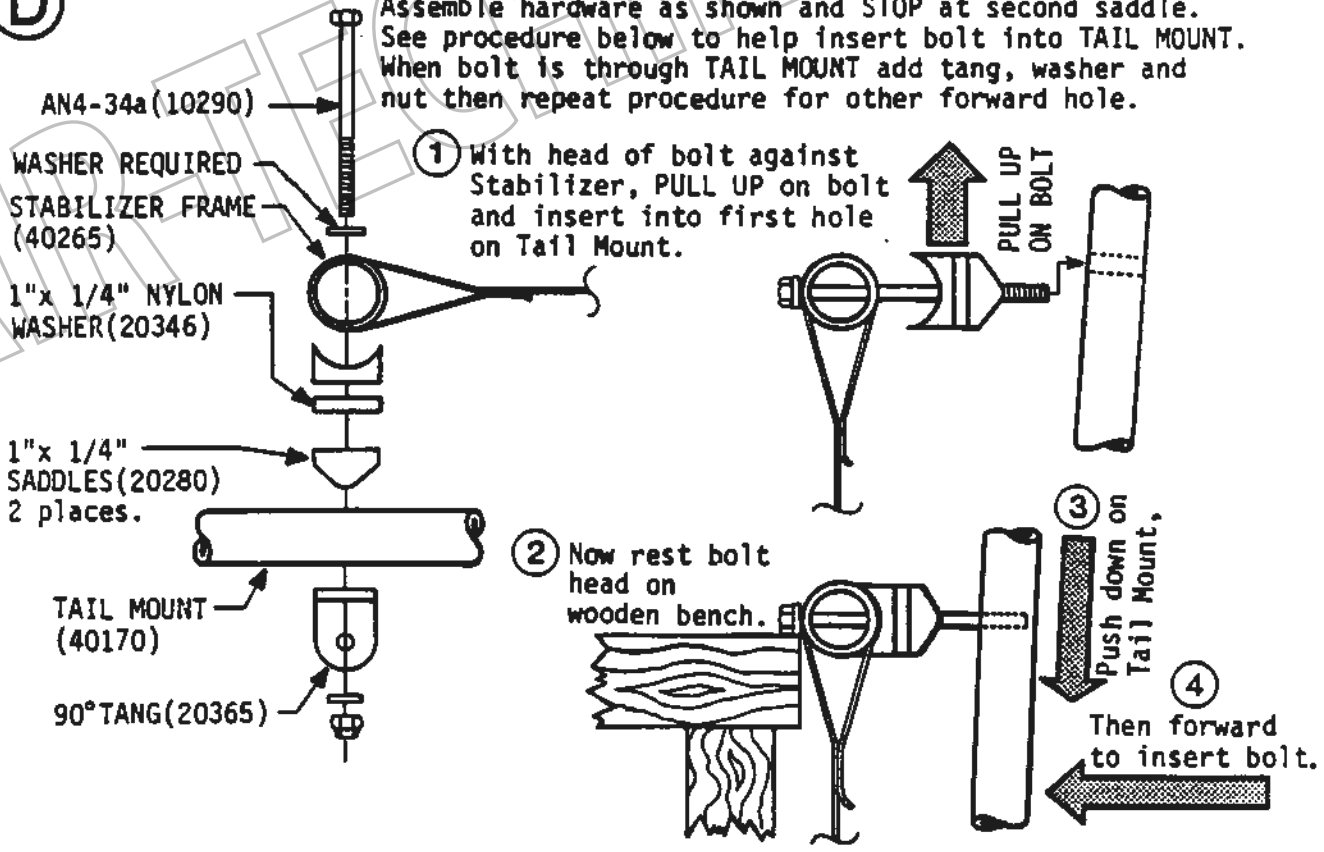


STABILIZER ASSEMBLY CON'T.

C Heat Cut Both FORWARD and AFT mounting holes on STABILIZER then rest it on the TAIL MOUNT with seam facing down. Install hardware for both aft holes as shown.



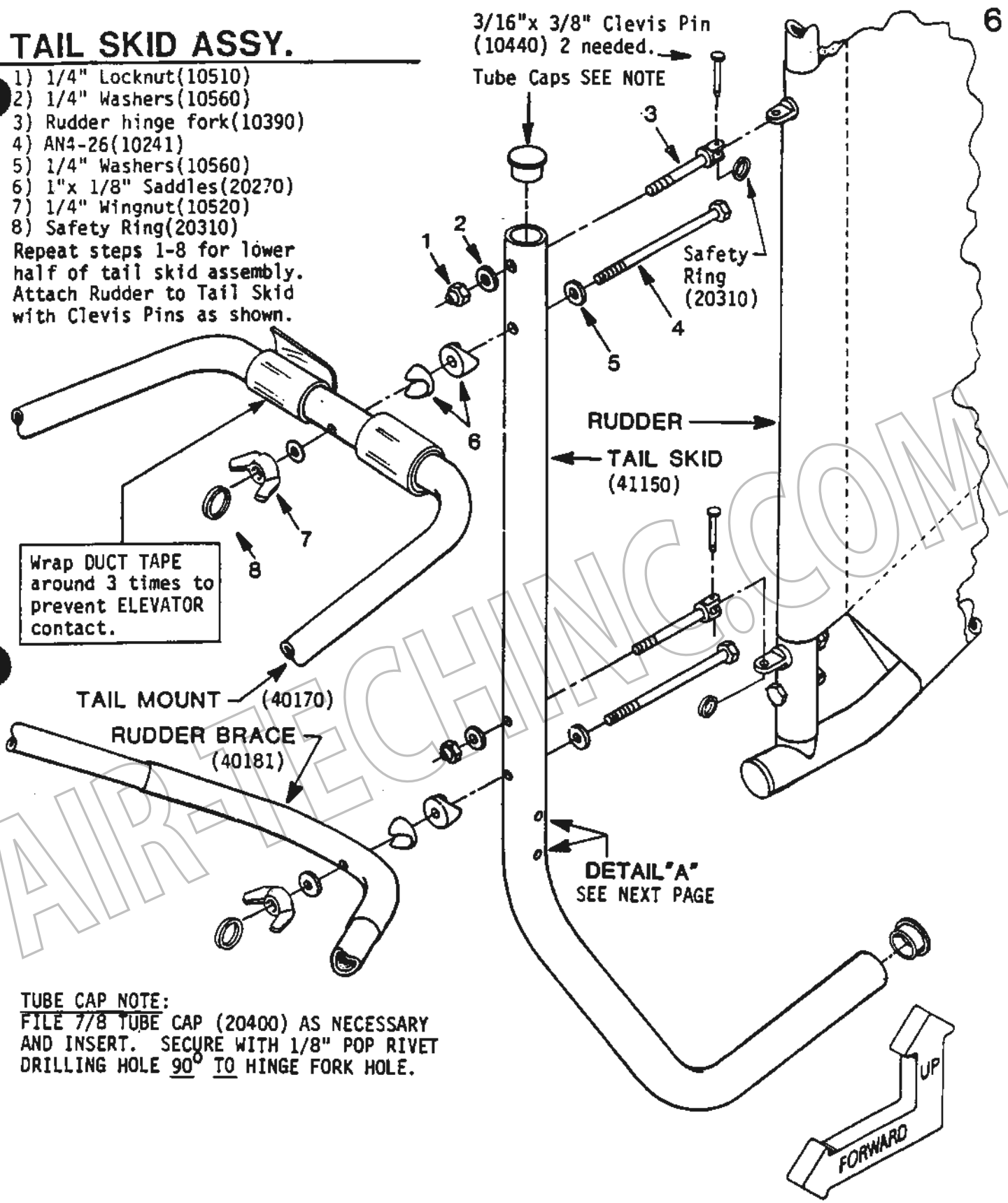
D Assemble hardware as shown and STOP at second saddle. See procedure below to help insert bolt into TAIL MOUNT. When bolt is through TAIL MOUNT add tang, washer and nut then repeat procedure for other forward hole.



TAIL SKID ASSY.

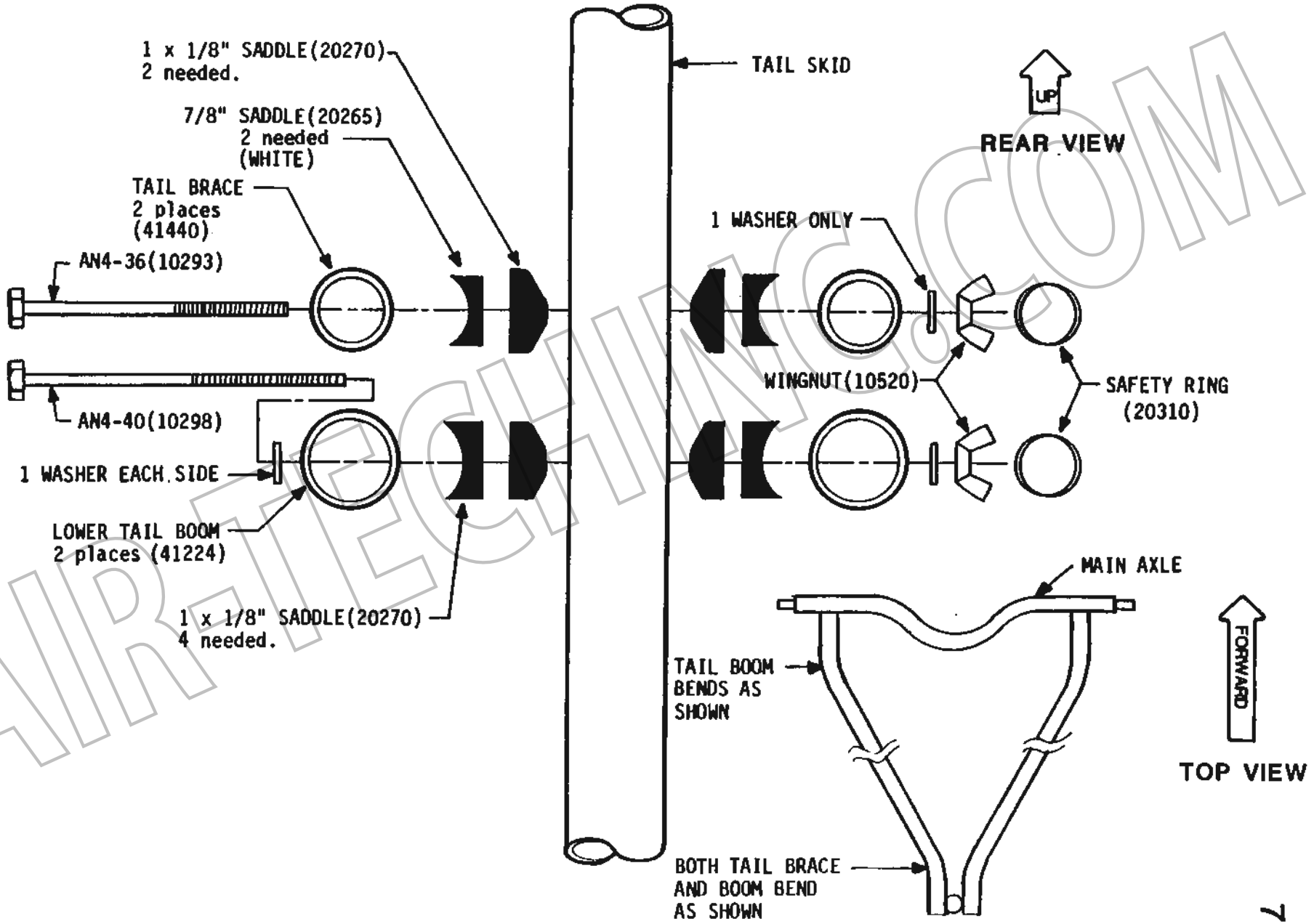
1) 1/4" Locknut(10510)
2) 1/4" Washers(10560)
3) Rudder hinge fork(10390)
4) AN4-26(10241)
5) 1/4" Washers(10560)
6) 1"x 1/8" Saddles(20270)
7) 1/4" Wingnut(10520)
8) Safety Ring(20310)

Repeat steps 1-8 for lower half of tail skid assembly. Attach Rudder to Tail Skid with Clevis Pins as shown.



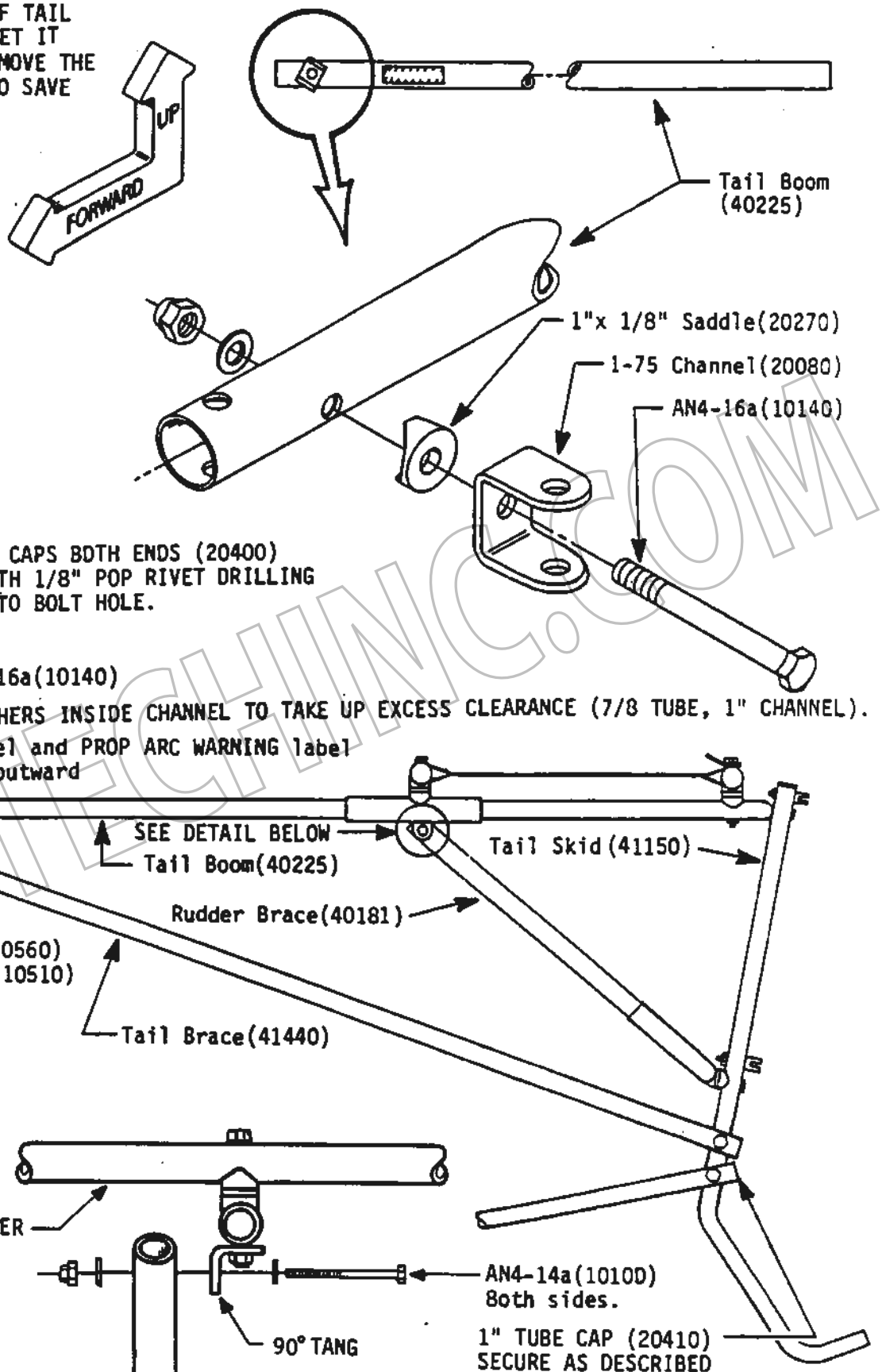
TUBE CAP NOTE:
FILE 7/8 TUBE CAP (20400) AS NECESSARY AND INSERT. SECURE WITH 1/8" POP RIVET DRILLING HOLE 90° TO HINGE FORK HOLE.

TAIL SKID ASSEMBLY



TAIL GROUP ASSY.

AFTER COMPLETION OF TAIL GROUP SUB-ASSY., SET IT ASIDE. YOU CAN REMOVE THE LOWER TAIL BOOMS TO SAVE SPACE.



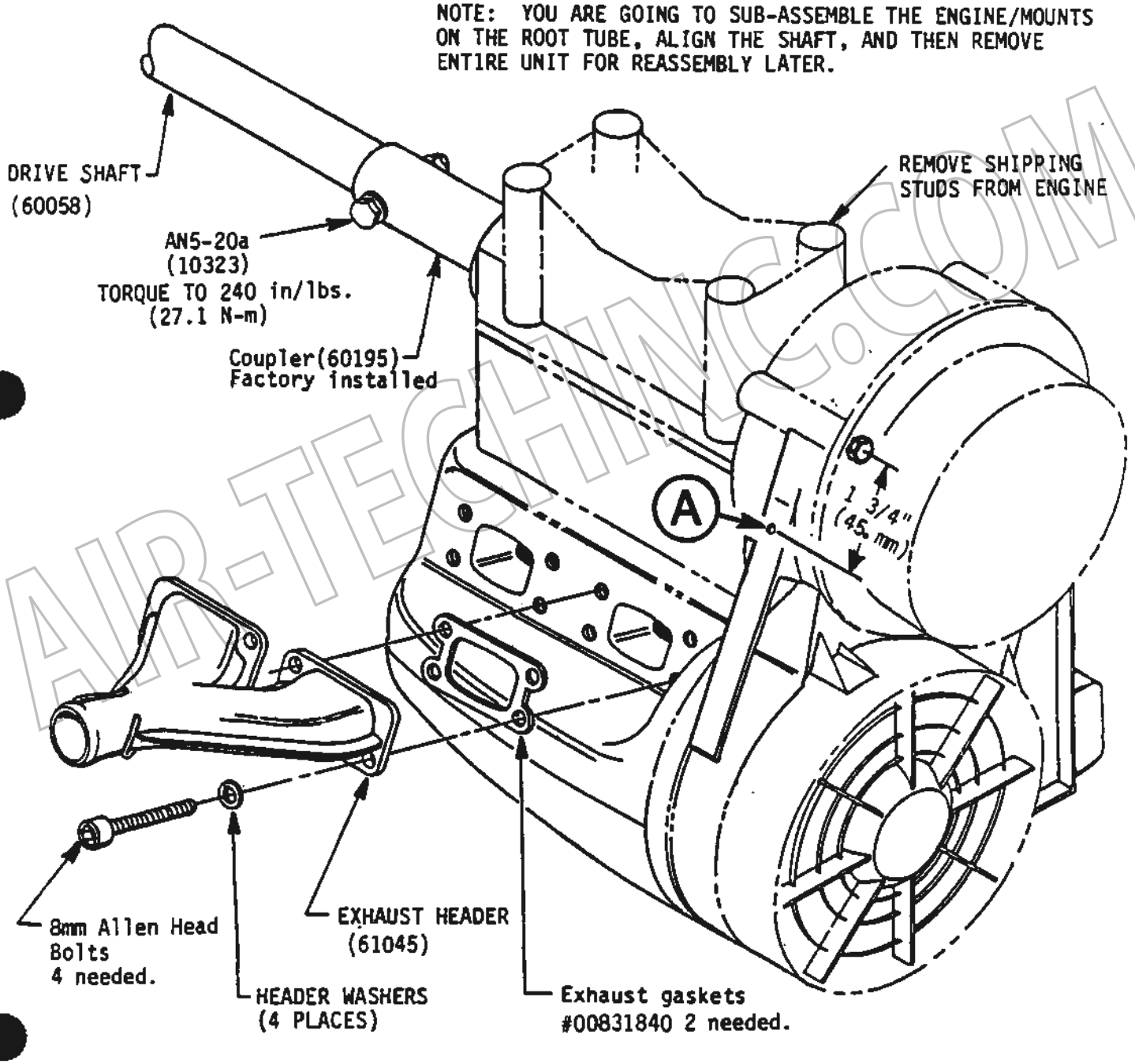
EXHAUST HEADER ASSY.

INSTALL EXHAUST HEADER AND DRIVE SHAFT AS SHOWN BELOW.

WHEN INSTALLING DRIVE SHAFT, HOLE SPACED 3/4" FROM END GOES INTO ENGINE COUPLER.

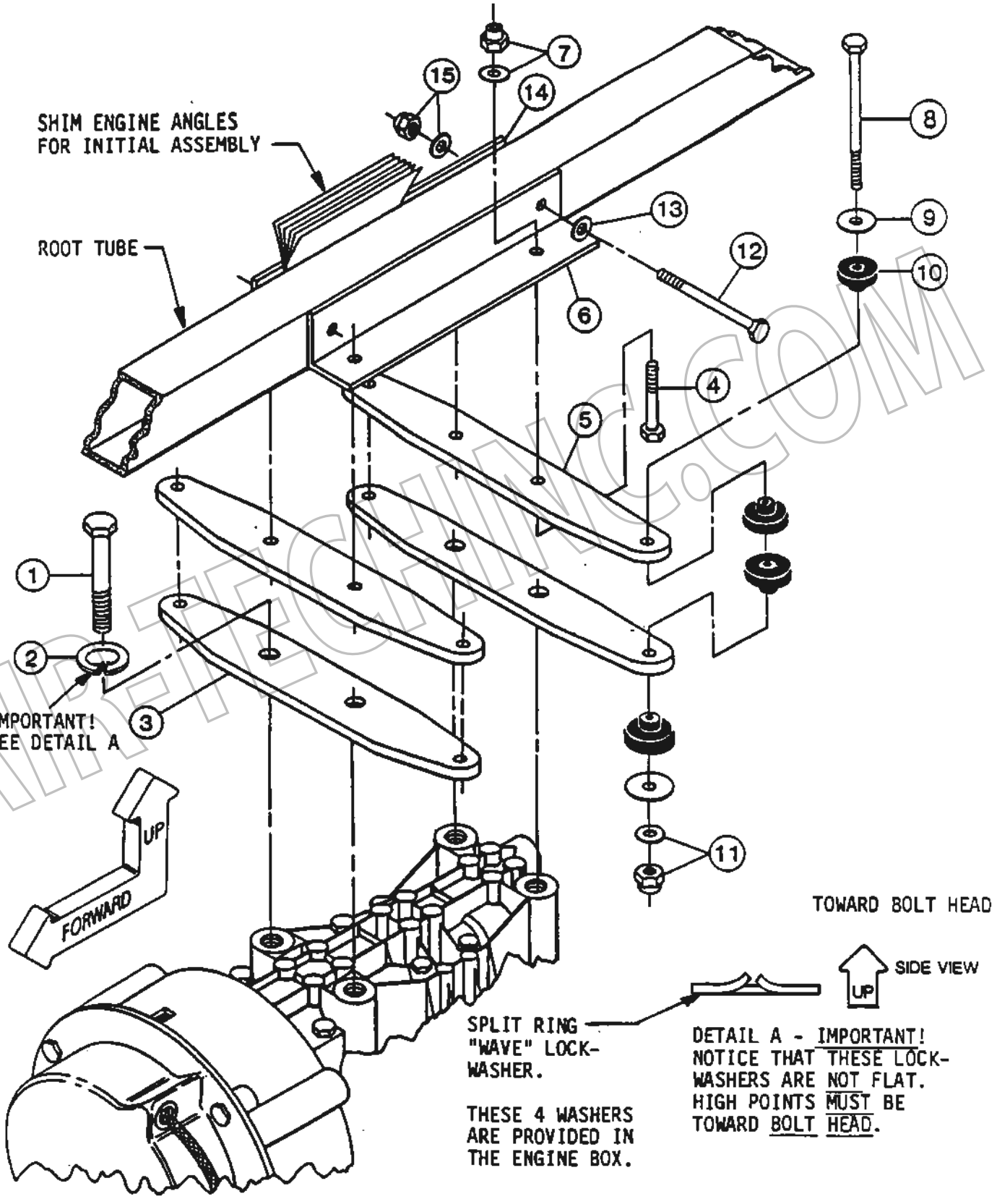
Ⓐ Measure and drill 3/16"(5 mm) hole in engine casing as shown for FUEL LINE STAND_OFF which will be installed on the ENGINE RE-INSTALLATION page.

NOTE: YOU ARE GOING TO SUB-ASSEMBLE THE ENGINE/MOUNTS ON THE ROOT TUBE, ALIGN THE SHAFT, AND THEN REMOVE ENTIRE UNIT FOR REASSEMBLY LATER.



ENGINE MOUNT ASSY.

SEE NEXT PAGE FOR NOMENCLATURE



ENGINE MOUNT NOMENCLATURE.

Follow the sequence and notes carefully as shown. DO NOT final tighten any bolts(unless noted) until later steps for drive shaft alignment.

1) 10mm x 30mm coarse thread bolt. (10492) 4 needed.
2) SPLIT RING "WAVE" WASHER. (4 req.)
3) Lower engine mount.(60082) 2 needed.
4) AN5-10a(10305) 4 needed.
5) Upper engine mounts.(60071) 2 needed.
6) Left engine mount angle(60091) Also Right engine mount angle (60092)callout # (14) in illustration.
7) 5/16" Washer(10570) 5/16" Locknut (10540)
8) AN5-24a(10322) 4 needed.
9) Fender washer (10600) 2 per assembly.
10) Rubber grommet (30380) 4 per assembly. Note direction of nipples.
11) 5/16" Washer(10570) 5/16" Locknut (10540)
12) AN5-30a(10328) 2 needed.
13) 1/4" Washer(10560)
14) Right engine mount angle(60092)
15) 5/16" Washer(10570) 5/16" Locknut (10540)

NOW REFER TO SHAFT ALIGNMENT BELOW.

SHAFT ALIGNMENT

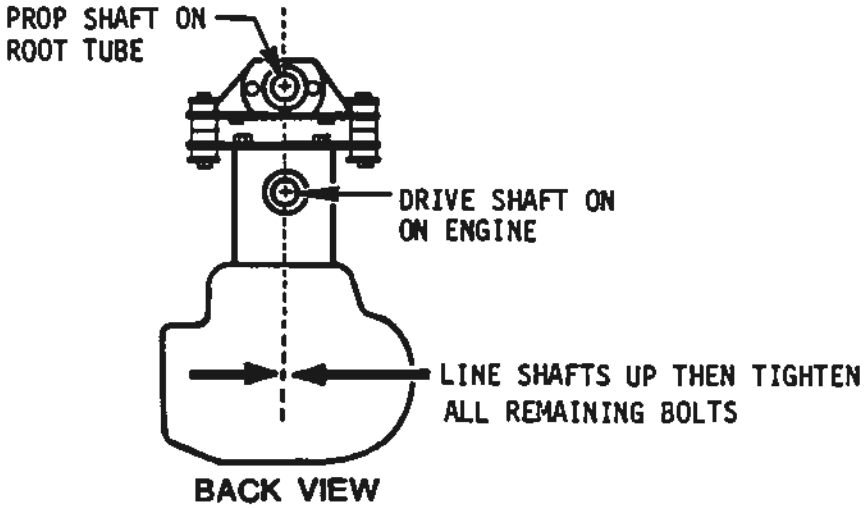
(1) SHIM ONE OF THE ENGINE ANGLE MOUNTS WITH SIX SHEETS OF ORDINARY WRITING PAPER AS SHOWN ON PREVIOUS PAGE.

(2) NOW TIGHTEN THE TWO AN5-30a BOLTS THAT ATTACH ENGINE ANGLE MOUNTS TO ROOT TUBE.

(3) WITH ALL THE OTHER BOLTS STILL LOOSE, LINE UP DRIVE SHAFT WITH PROP SHAFT AS SHOWN BELOW.

(4) NOW THAT SHAFTS ARE ALIGNED, TIGHTEN ALL REMAINING BOLTS SO THE COMPLETE ASSEMBLY IS SECURE.

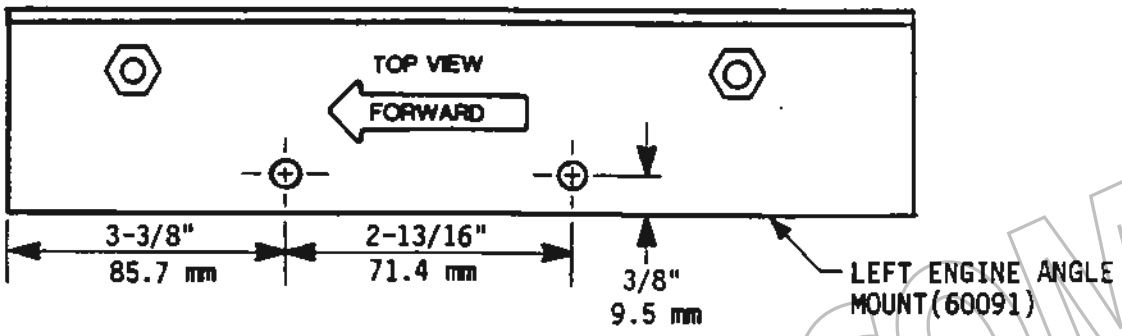
(5) REMOVE ENGINE ASSEMBLY FROM ROOT TUBE BY TAKING OFF THE TWO AN5-30a BOLTS AND SETTING ENGINE ASSEMBLY OFF TO THE SIDE UNTIL RE-INSTALLATION IN LATER STEP.

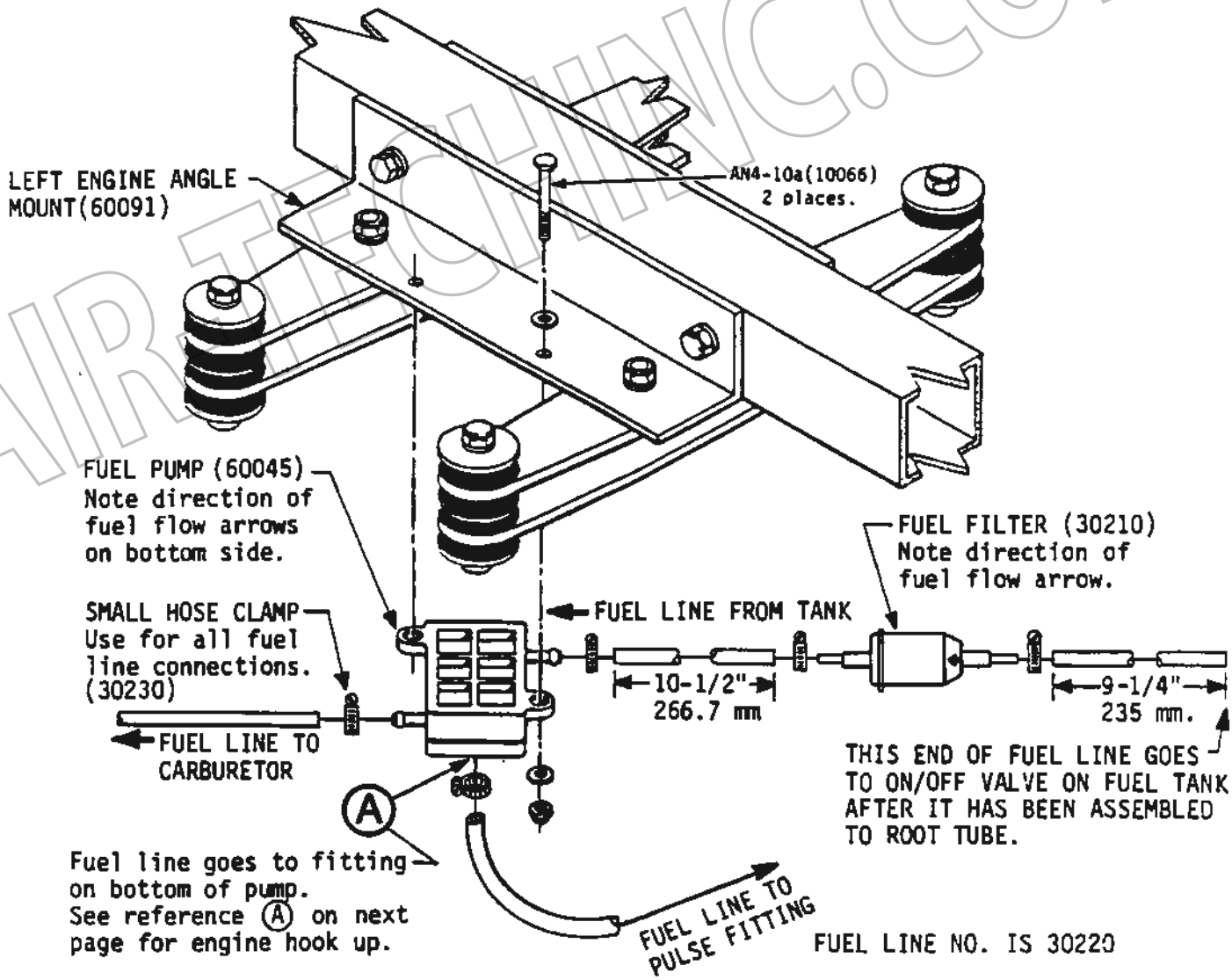


FUEL PUMP MOUNTING

Measure, mark and drill two 1/4"(6.4 mm) holes on LEFT ENGINE ANGLE MOUNT as shown.

Mount FUEL PUMP to ENGINE ANGLE MOUNT as described below.

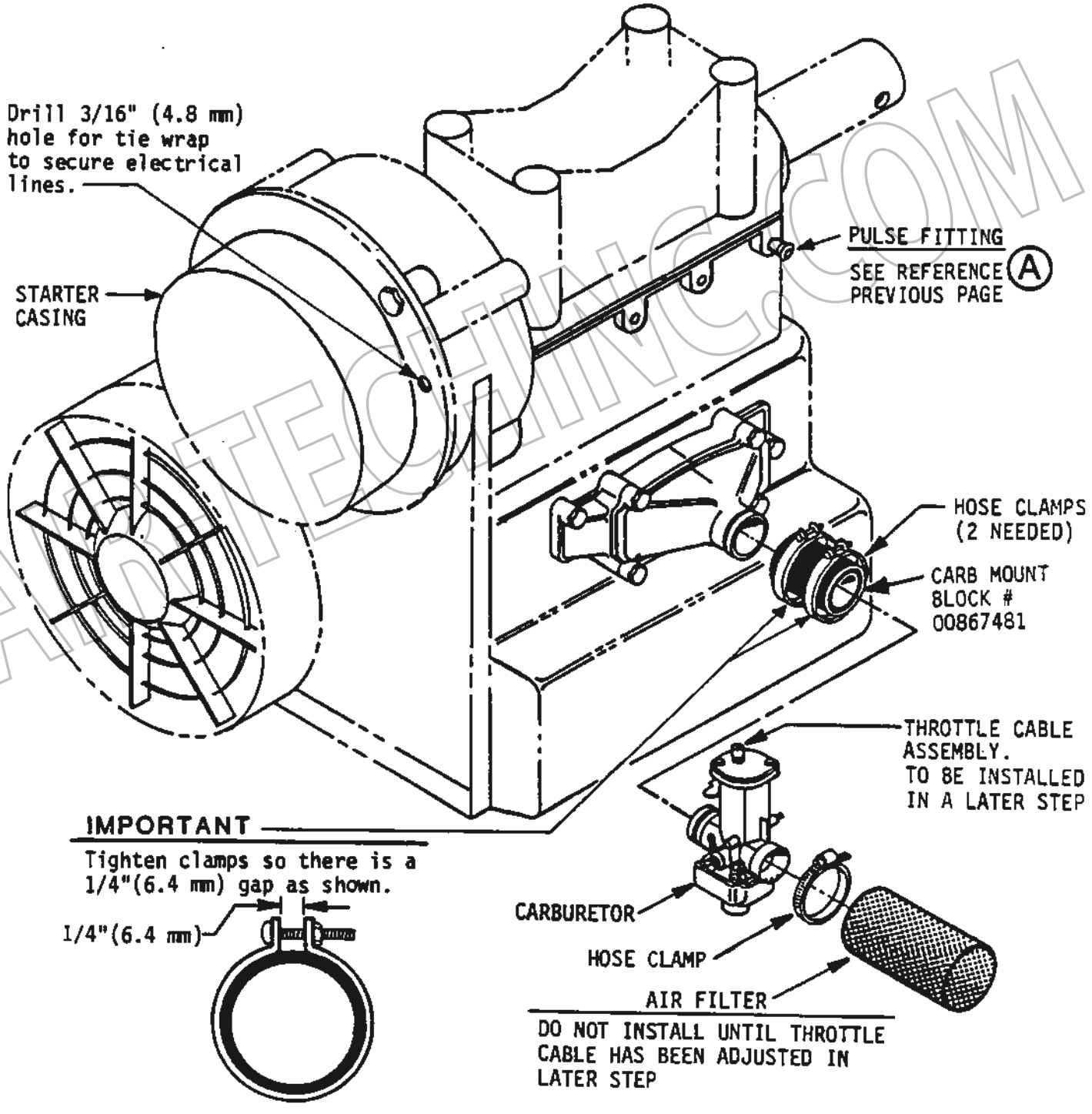




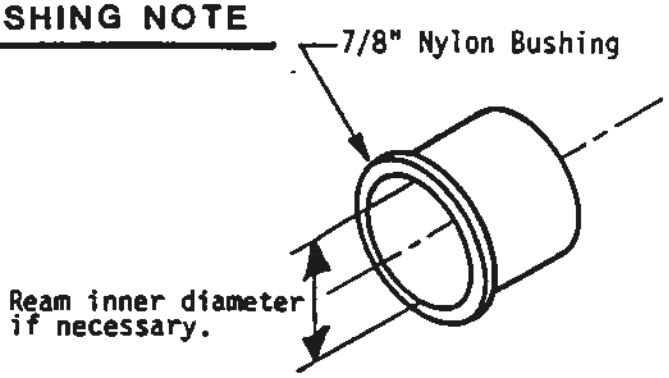
CARBURETOR ASSY.

NOTE: THIS PAGE CAN BE DONE POST-ENGINE RE-INSTALLATION, IF YOU PREFER.

Mount CARBURETOR as shown below. Drill out STARTER CASING HOLES as shown for routing of electrical lines shown later.



NYLON BUSHING NOTE



The NYLON BUSHINGS may need some reaming out to rotate freely on the PEDALS, THROTTLE and STICK ATTACH TUBE.
After the bushings have been put in there respective places, see if rotation is easy. If this is not the case then REAM out inner diameter with rat tail file or 3/4"dia. wood dowel with sand paper wrapped around it until bushings move freely.

When mounting pedals onto pedal mount tube, DO NOT bolt into place until NYLON BUSHINGS rotate freely on tube.

TRIKE SUB-ASSEMBLIES

IN THE FOLLOWING SECTION YOU WILL BE SUB-ASSEMBLING COMPONENTS FOR THE TRIKE ASSY. IT WILL NOT BE COMPLETELY ASSEMBLED AT THIS TIME.

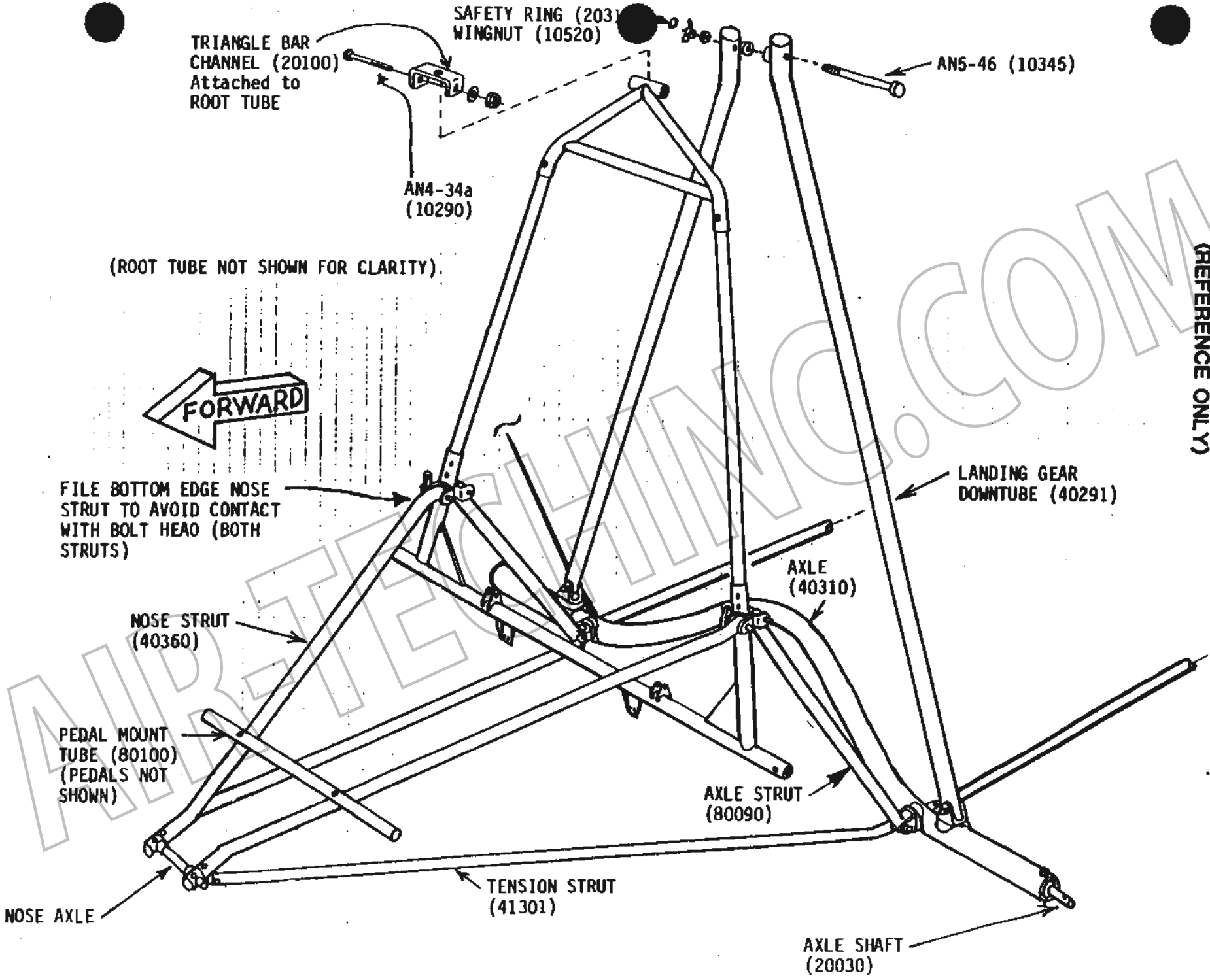
STEPS:

1. Refer to the "Trike Arrangement" Drawing for an overall view.
2. Sub-assemble main wheels/tires and nose wheel/tire. NOTE THE DIFFERENCE.
3. Sub-assemble the main axle adding all saddles, channels, wires, tangs, axle stubs, etc. as called out.
4. Sub-assemble nose forks/nose wheel. Add tension struts and completed rudder pedal assy.
5. Sub-assemble tri-bar adding sheath bracket, pulleys and nose wires.
6. Attach channels, hardware, and wires to root tube as shown.

DO NOT ASSEMBLE TRIKE AT THIS TIME. INSTEAD, SET SUB-ASSEMBLIES ASIDE AND CONTINUE ON WITH WING CONSTRUCTION.

TRIKE ARRANGEMENT

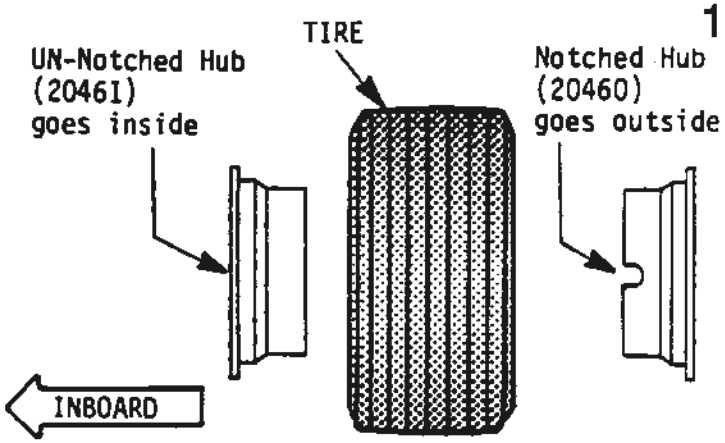
(REFERENCE ONLY)



MAIN WHEEL ASSEMBLY

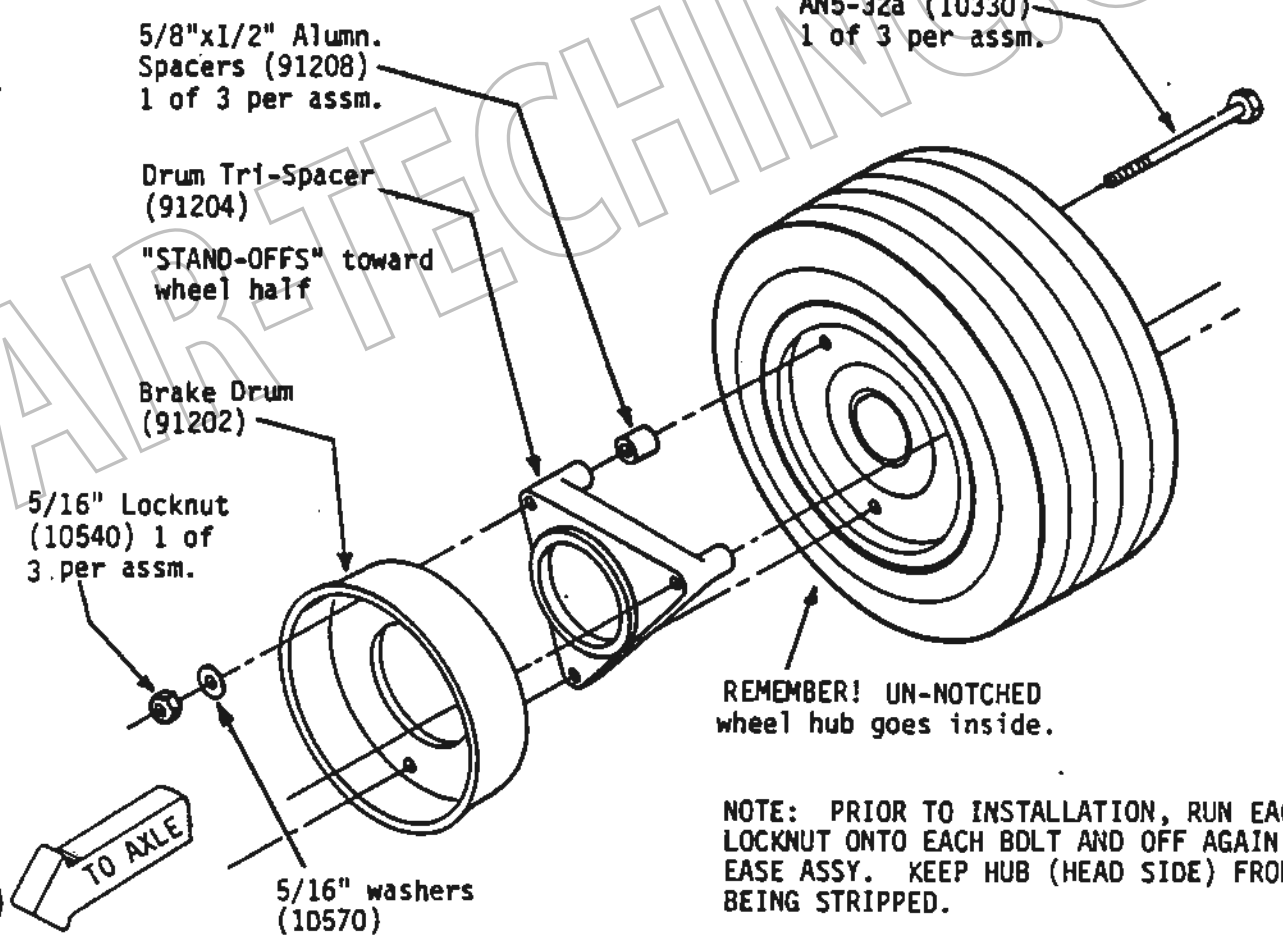
Take the two wheel halves, notched (20460) and UN-notched(20461) and assemble as shown in drawing on right. (Make sure air valve stem on inner tube comes out of notch on notched hub.)

NOTE: See next page for nose wheel.



Start one of the three NEW AN5-32a (10330) bolts through the outside wheel half (valve stem side) and add alum. spacer then the DRUM TRI-SPACER (91204) and the BRAKE DRUM (91202) as shown (again, pay attention to proper "wheel halves"). Put on the 5/16" LOCKNUT (10540) and WASHER "finger tight". ADD the two remaining BOLTS/WASHERS/LOCKNUTS as you did the first and as shown in the drawing. Now TIGHTEN all the nuts accordingly.

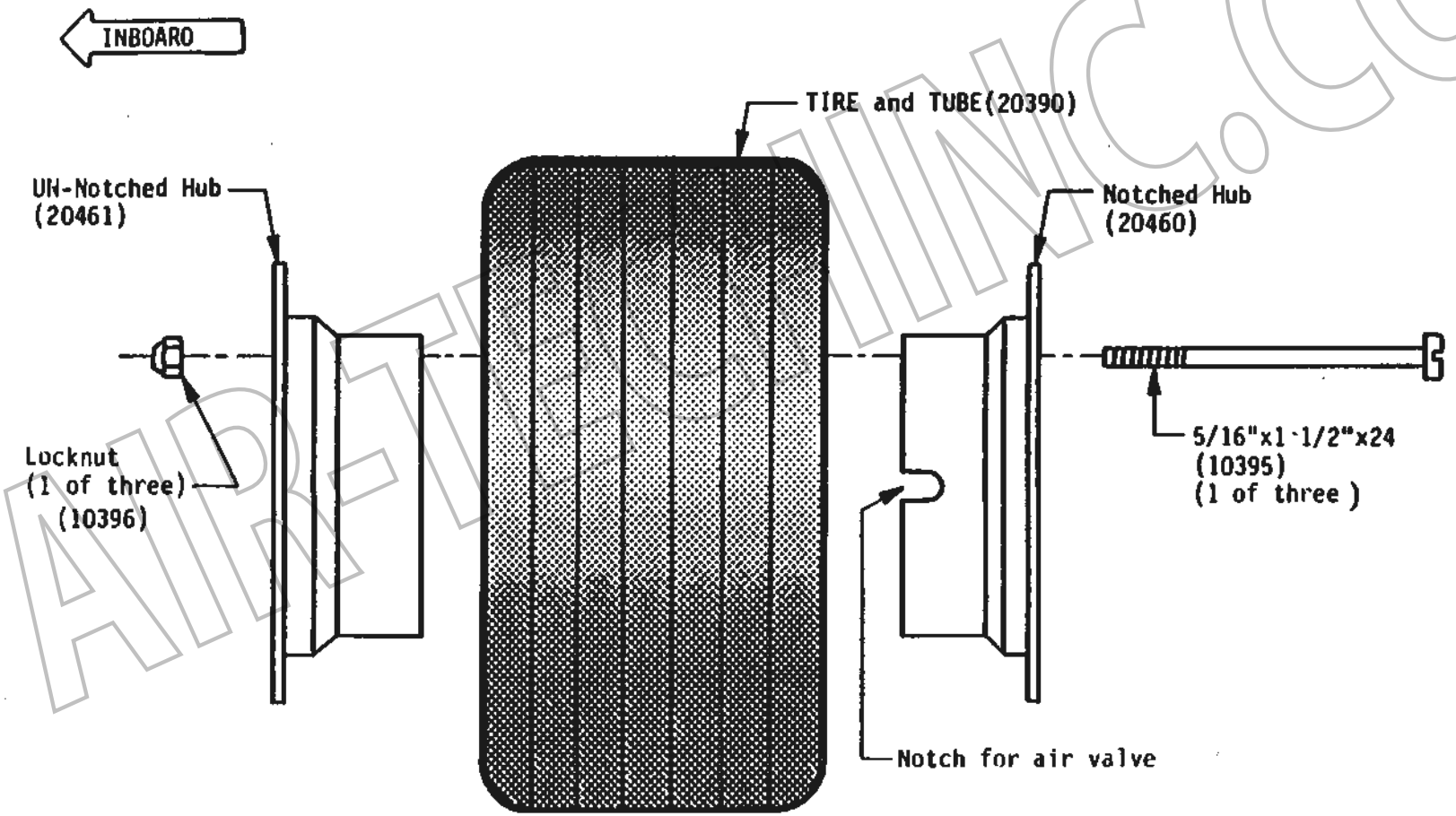
Inflate tires 25-30 p.s.i. but do not mount to axle yet.



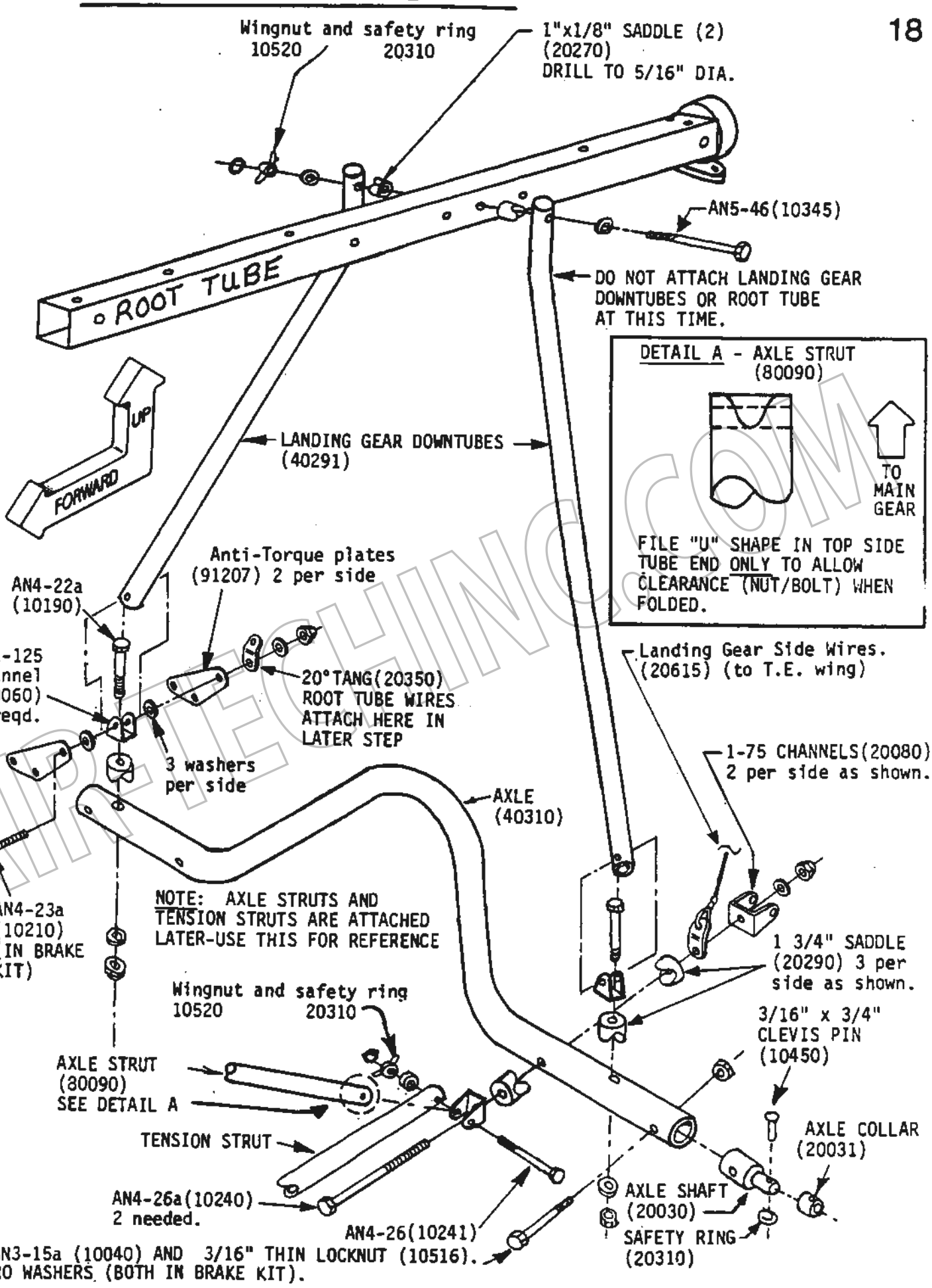
NOTE: PRIOR TO INSTALLATION, RUN EACH LOCKNUT ONTO EACH BOLT AND OFF AGAIN TO EASE ASSY. KEEP HUB (HEAD SIDE) FROM BEING STRIPPED.

NOSE WHEEL ASSEMBLY

Assemble hubs to tire with the hardware shown.



LANDING GEAR ASSEMBLY



AXLE BRAKE ARM ASSM.

NOTE: THE STEPS BELOW TAKE PLACE ONLY AFTER DOWNTUBES ARE BOLTED INTO PLACE.

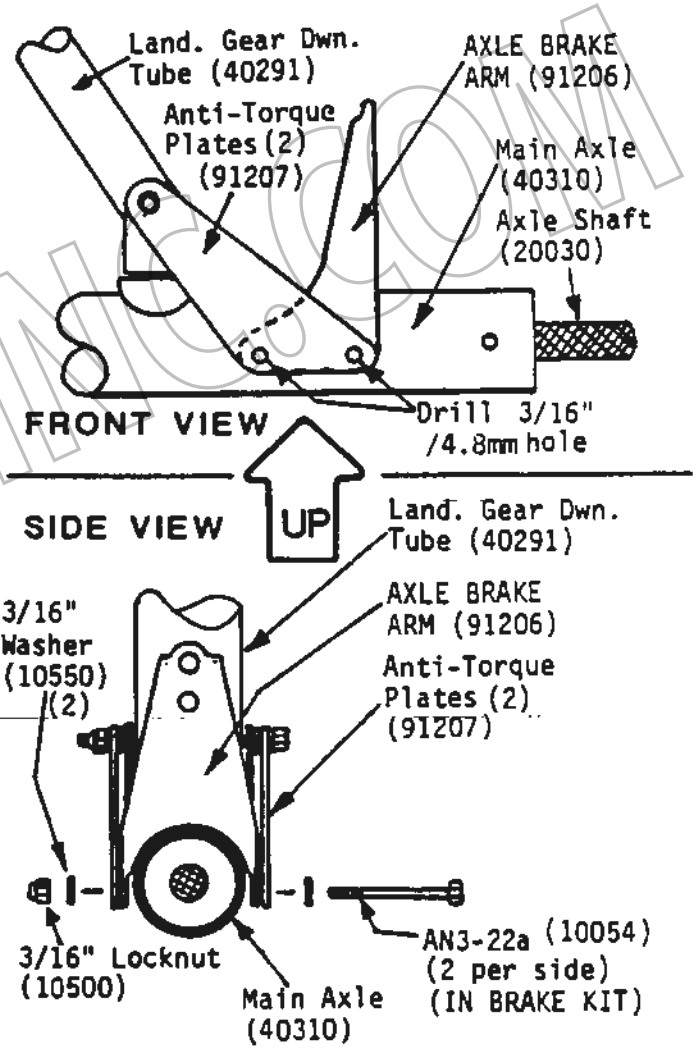
a. Push the AXLE BRAKE ARM (91206) (1 of 2) between the two ANTI-TORQUE PLATES until the TOP of its "cutout radius" is flush with the MAIN AXLE.

b. Now "MATCH UP" the four holes in the AXLE BRAKE ARM with the cooresponding holes in the two ANTI-TORQUE PLATES as shown. When ALL HOLES LINE UP and the TOP of the AXLE BRAKE ARM'S "cutout radius" is flush with the main axle, the BRAKE ARM/TORQUE PLATES are properly aligned for drilling. Add a "C" CLAMP to help hold the parts in place.

c. DRILLING. Use 3/16" /4.8mm DRILL BIT. DOUBLE CHECK ALIGNMENT and then drill ONE of the four holes through the MAIN AXLE (one side of tube only) using the AXLE ARM/PLATES HOLES as a "guide." When finished drilling the 1st hole, put in a 3/16" BOLT (any) to act as an "alignment pin". REPEAT DRILLING PROCEDURE AS DESCRIBED ON REMAINING HOLES.

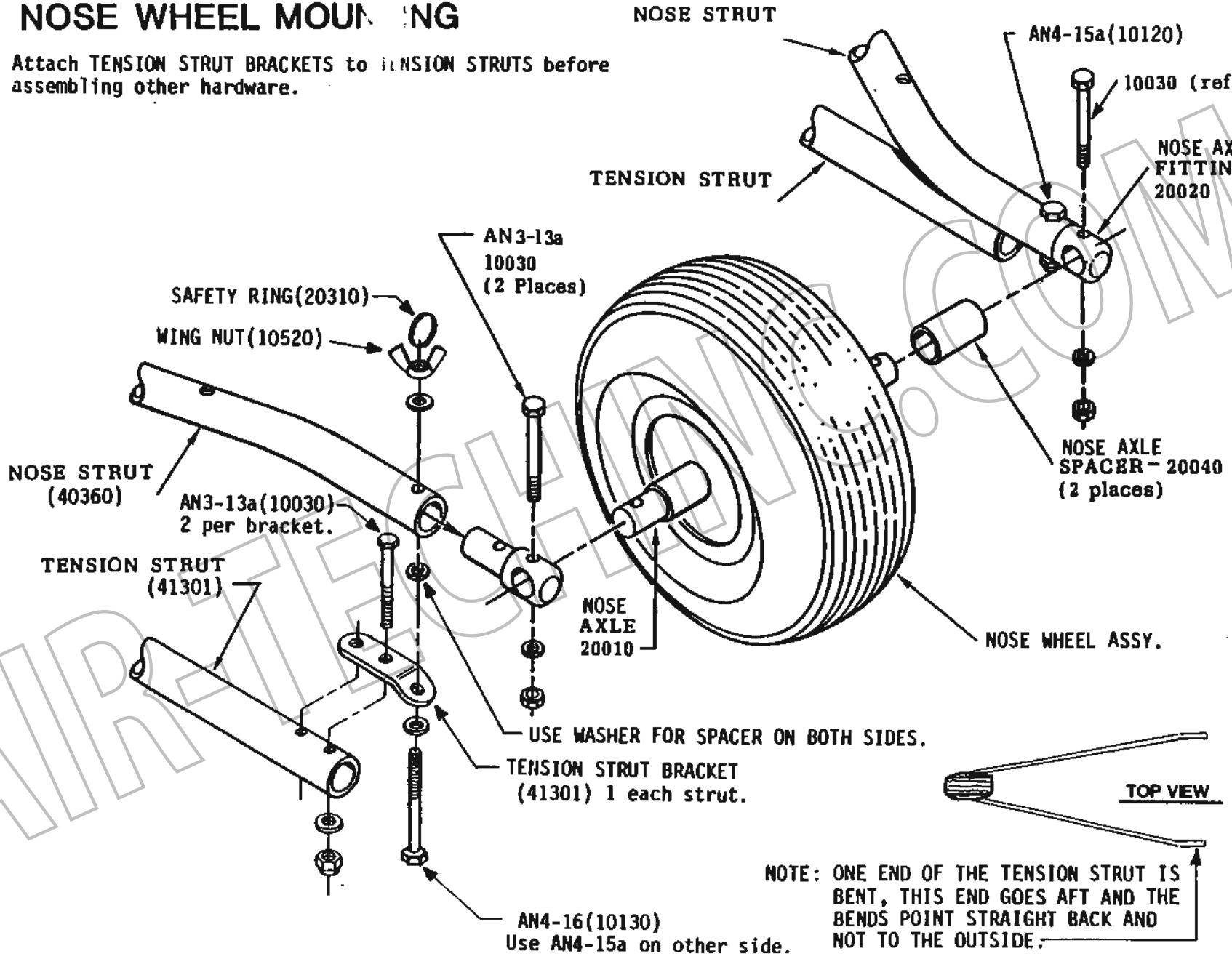
d. Now drill (from either side) through each "set" of holes to duplicate the bolt path and add the AN3-22a BOLT/WASHERS/NUT as shown to each of the two bolt holes.

Repeat above steps for other side.



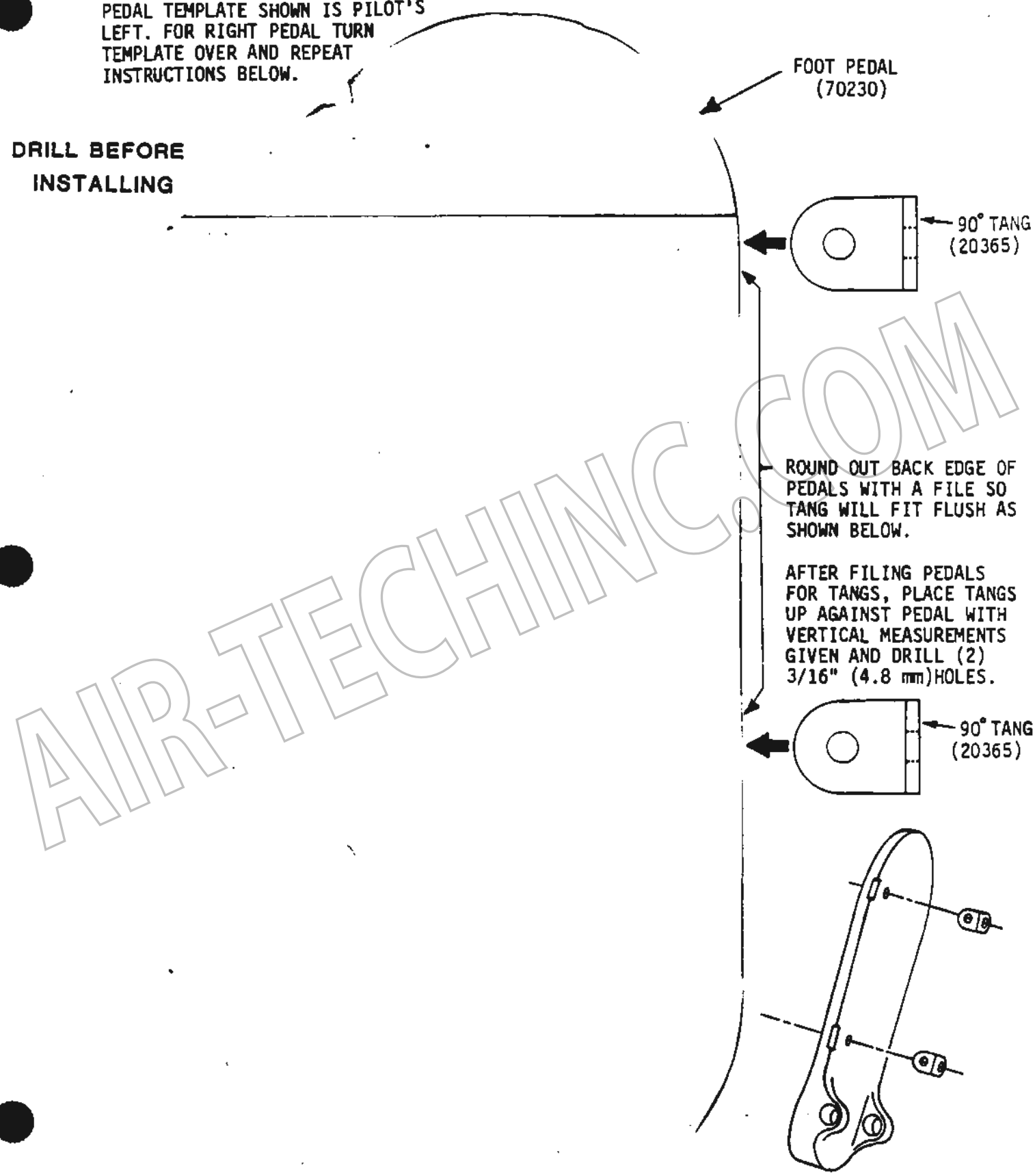
NOSE WHEEL MOUNTING

Attach TENSION STRUT BRACKETS to TENSION STRUTS before assembling other hardware.

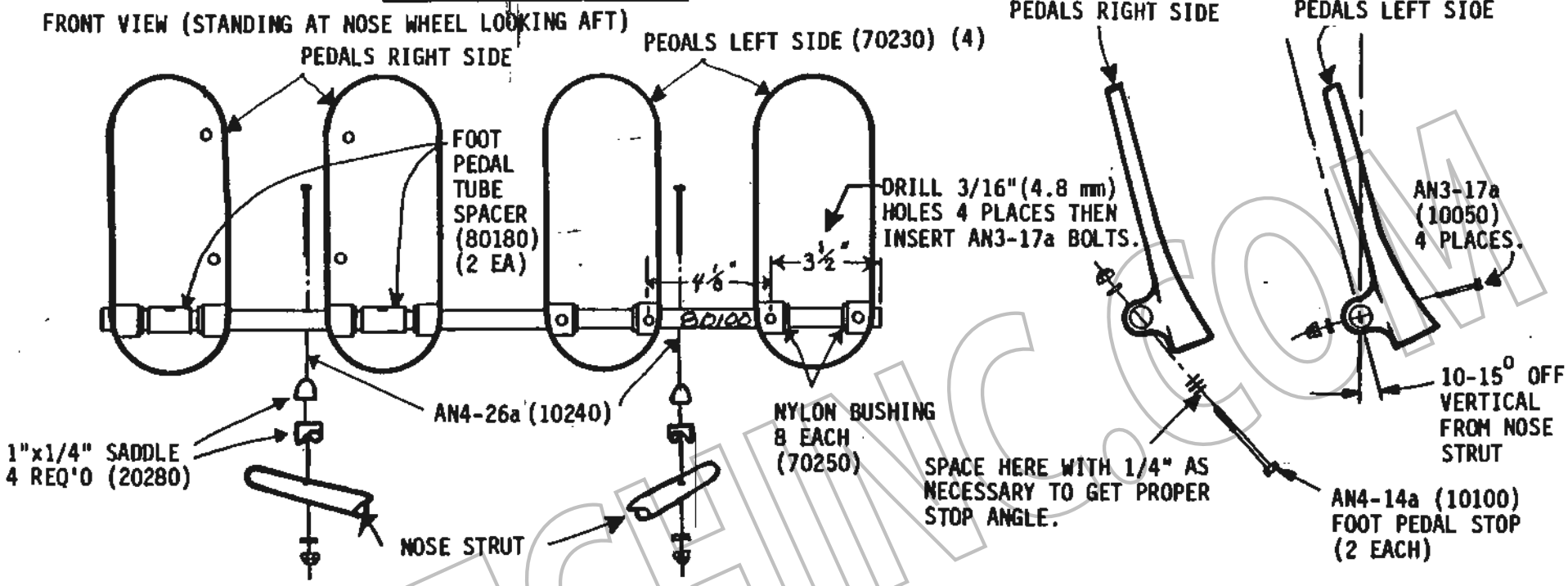


RUDDER PEDAL TEMPLATE

PEDAL TEMPLATE SHOWN IS PILOT'S LEFT. FOR RIGHT PEDAL TURN TEMPLATE OVER AND REPEAT INSTRUCTIONS BELOW.



PEDAL ASSY.



NOTE: Make sure NYLON BUSHINGS rotate freely before bolting pedals into place.

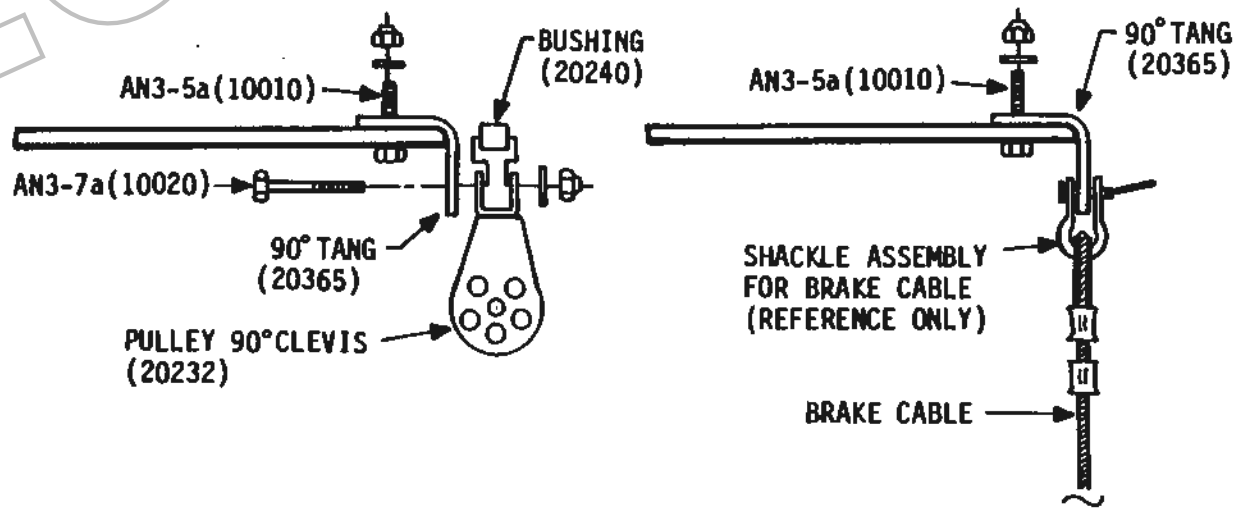
1 Insert NYLON BUSHINGS(70250) on inside of pedals.(8 each)

2 Slide pedals onto PEDAL MOUNT TUBE as shown above. NOTE: While sliding pilot's pedals on, slip on FOOT PEDAL TUBE SPACERS as shown. Now insert AN4-14a bolts for pilot's pedals.

3 Drill holes for pedals on left and insert AN3-17a bolts as shown.

4 Assemble hardware for pilot's LEFT PEDAL as shown at right, then repeat process for pilot's RIGHT PEDAL.

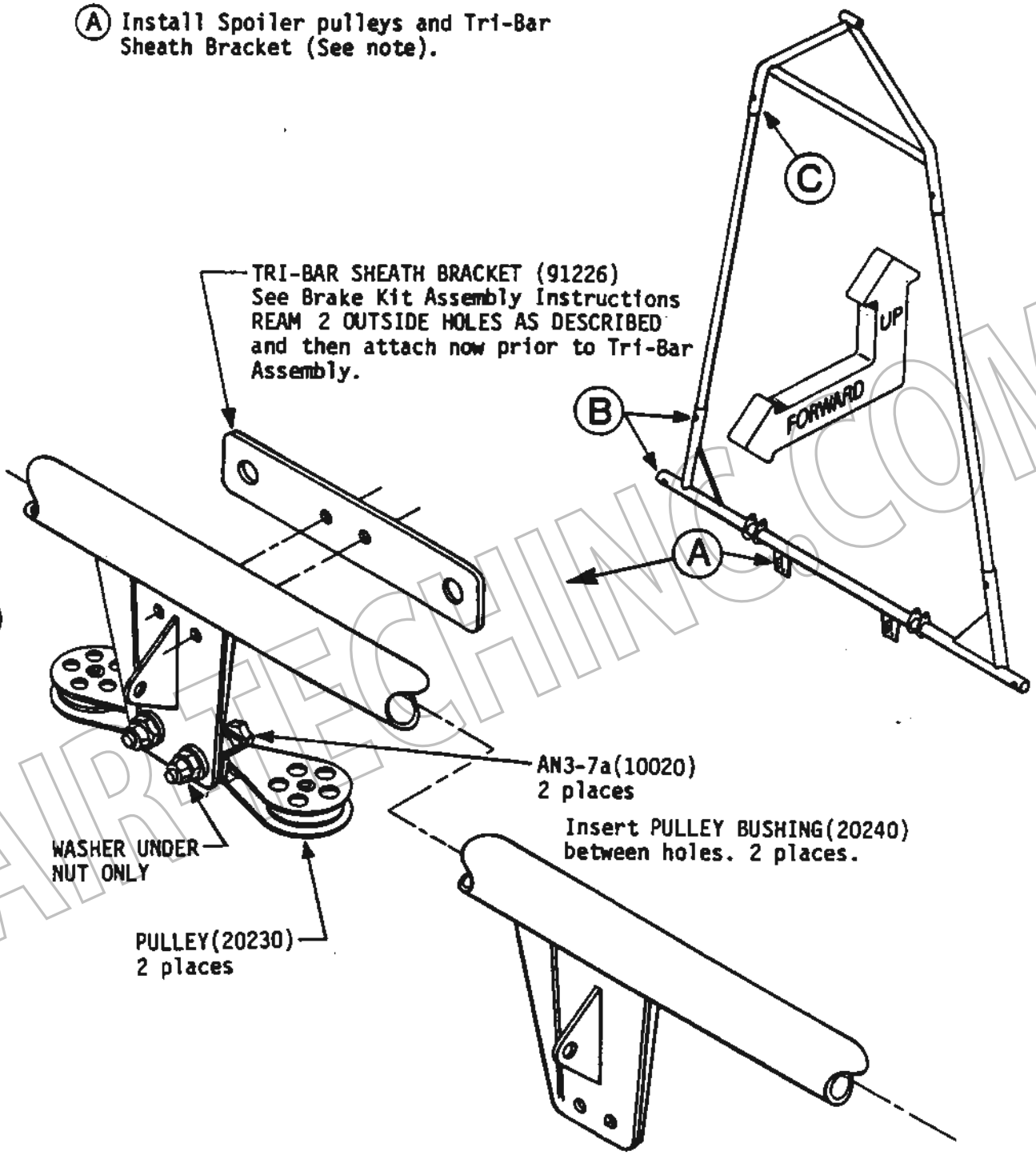
BOTH DRAWINGS ARE PILOTS LEFT PEDAL (TOP VIEW)



TRI-BAR ASSEMBLY

Put TRI-BAR together by drawing sequence.

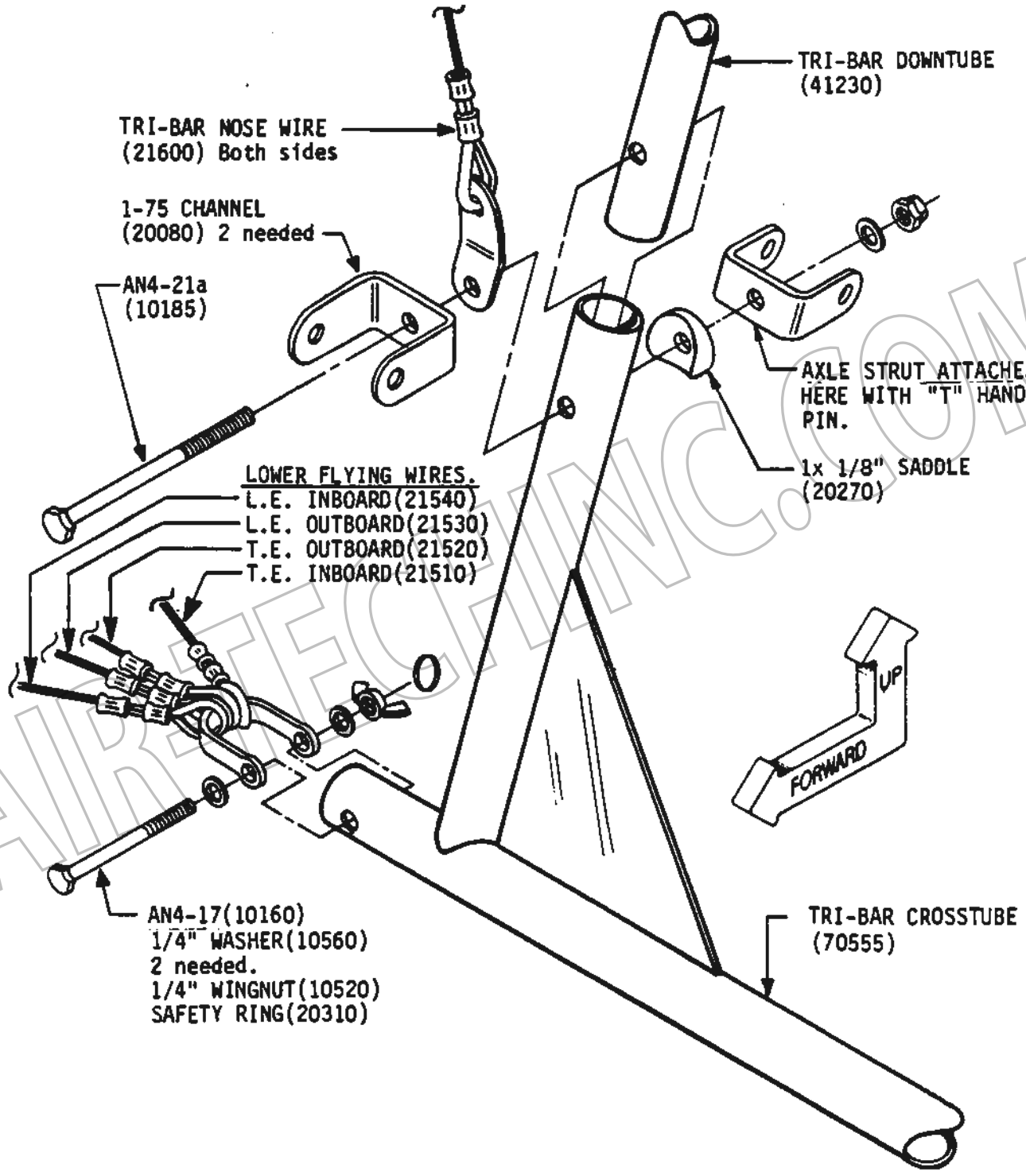
(A) Install Spoiler pulleys and Tri-Bar Sheath Bracket (See note).



NOTE: DO NOT FINAL TIGHTEN PULLEYS UNTIL ENTIRE ROUTING OF LINE HAS BEEN COMPLETED TO DETERMINE PROPER ANGLE FOR EACH (SO LINE RUNS ON NYLON PULLEY ONLY). AT THAT TIME FINAL TIGHTEN.

(B) TRI-BAR ASSEMBLY CONTINUED.

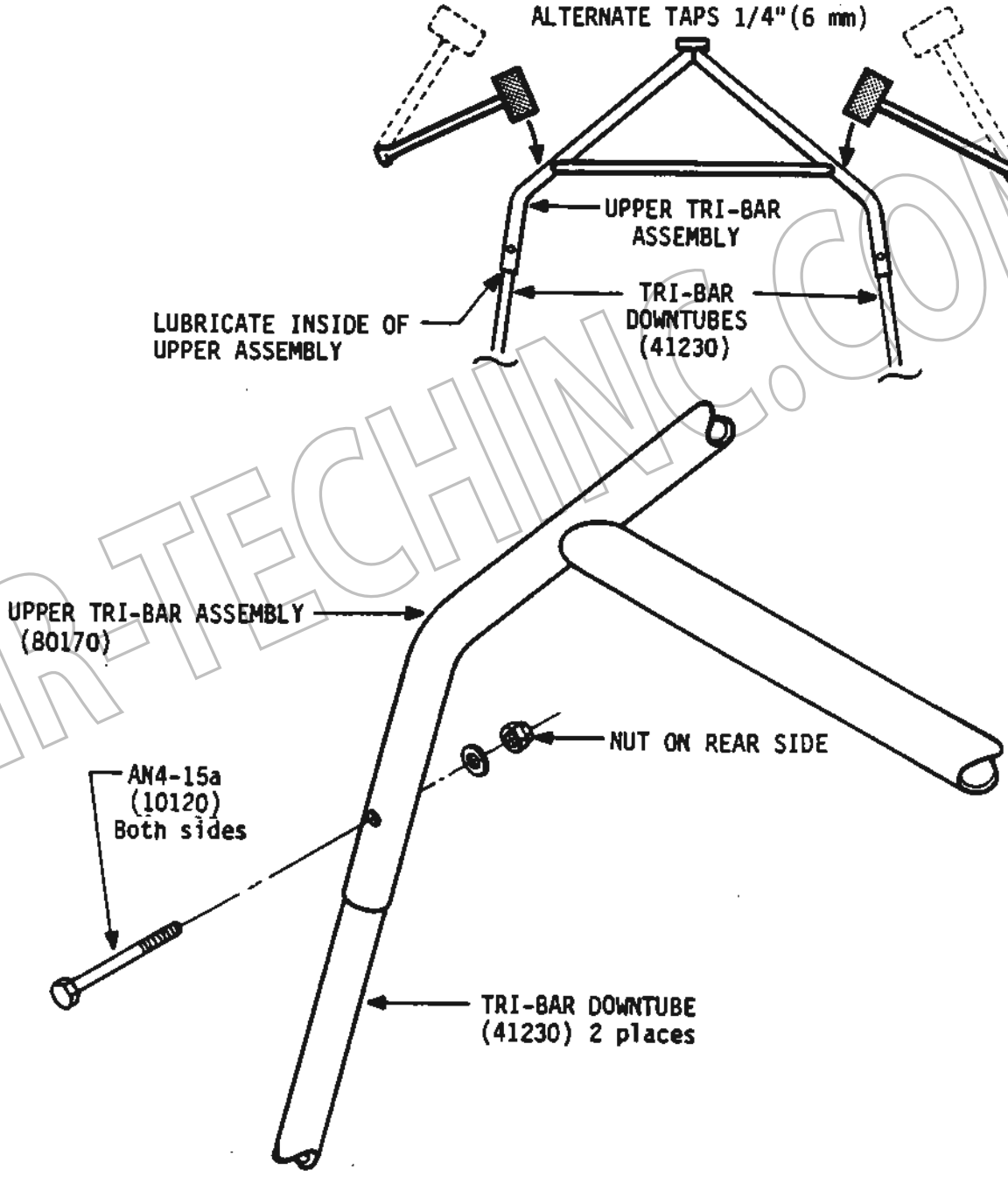
Assemble hardware as shown below for right half of TRI-BAR CROSSTUBE then repeat assembly for left side.



NOTE: LOWER FLYING WIRES ATTACH FOR REF. ONLY. ATTACHED TO TRI-BAR LATER.

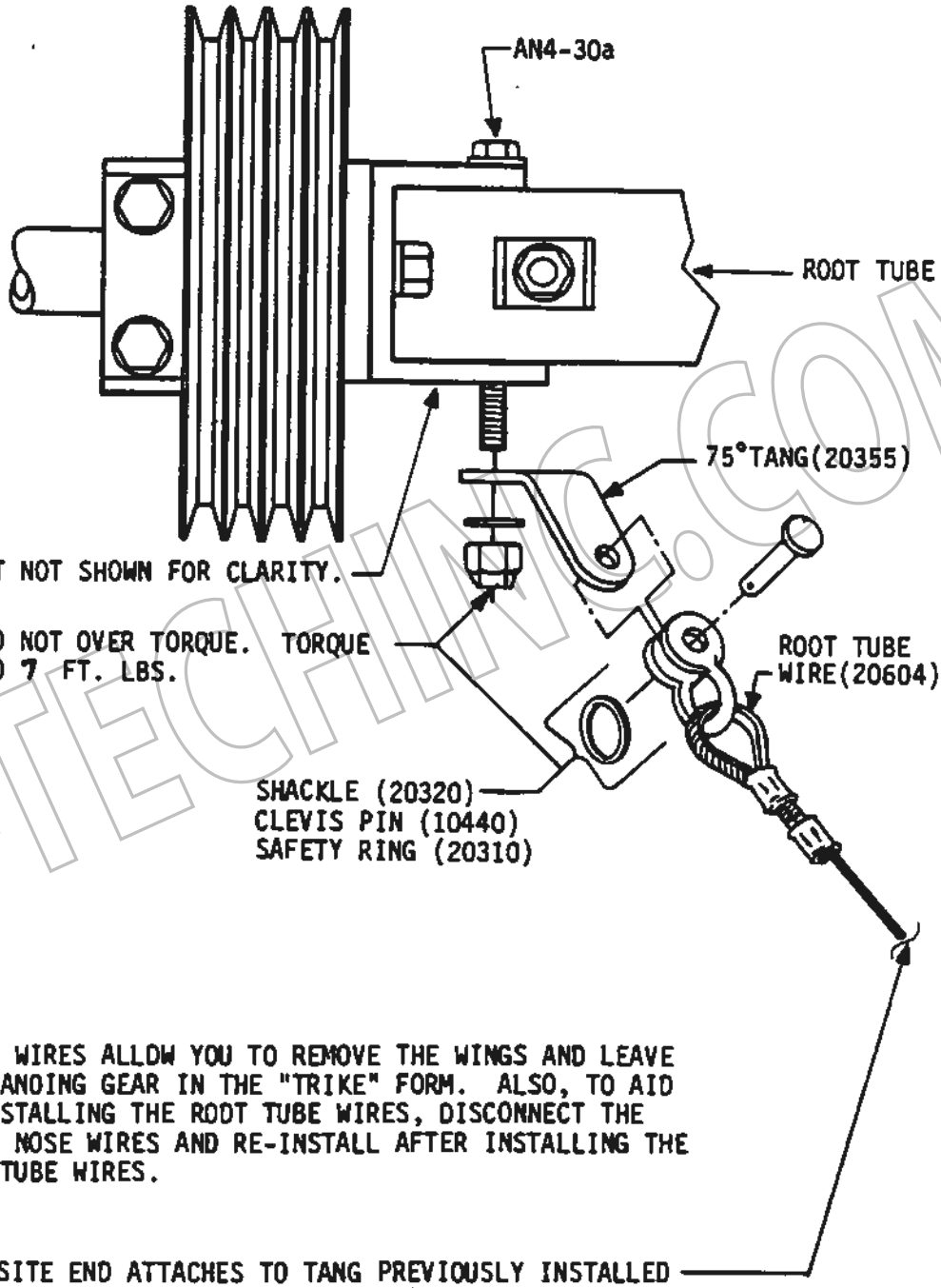
© TRI-BAR ASSEMBLY CONTINUED.

To ease installation, lightly lubricate the inside of UPPER TRI-BAR ASSEMBLY where TRI-BAR DOWNTUBES will be inserted. Insert one of TRI-BAR DOWNTUBES into UPPER TRI-BAR ONLY 1/4"(6 mm). Bend other TRI-BAR DOWNTUBE out and again insert into UPPER ASSEMBLY only 1/4"(6 mm). Use a RUBBER MALLET (Not a metal hammer) to tap UPPER TRI-BAR down onto DOWNTUBES. Alternate taps from side to side and only tap in 1/4" (6 mm) increments. If you tap one side too far it will bind. Line up holes and insert hardware as shown below for both sides.



ROOT TUBE WIRE ASSY.

Remove nuts from AN4-30a bolts, take one washer off bottom and re-assemble 75° TANG with just one washer on bottom.
IMPORTANT! Work on just one washer at a time so the PULLEY UNIT will stay in line.



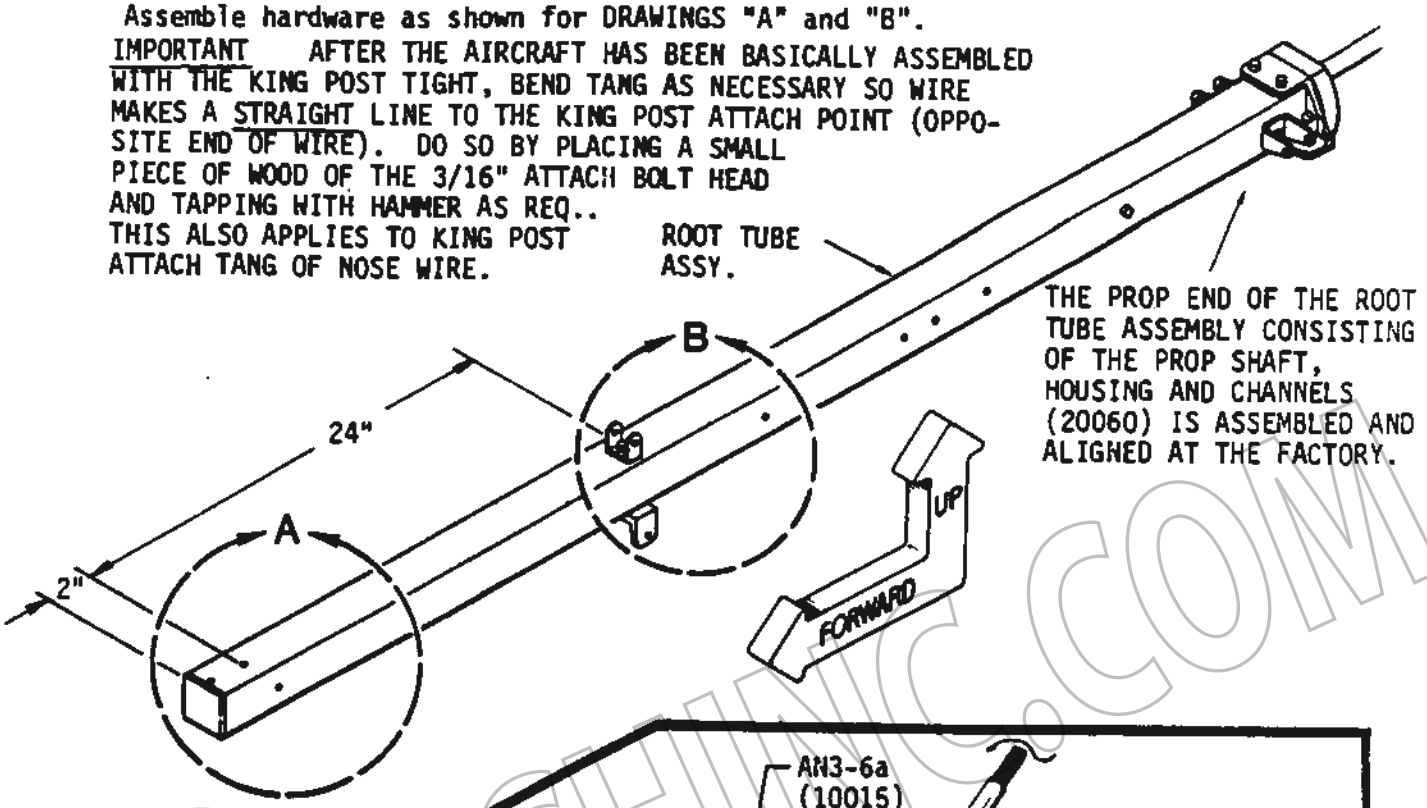
NOTE: THESE WIRES ALLOW YOU TO REMOVE THE WINGS AND LEAVE THE LANDING GEAR IN THE "TRIKE" FORM. ALSO, TO AID IN INSTALLING THE ROOT TUBE WIRES, DISCONNECT THE LOWER NOSE WIRES AND RE-INSTALL AFTER INSTALLING THE ROOT TUBE WIRES.

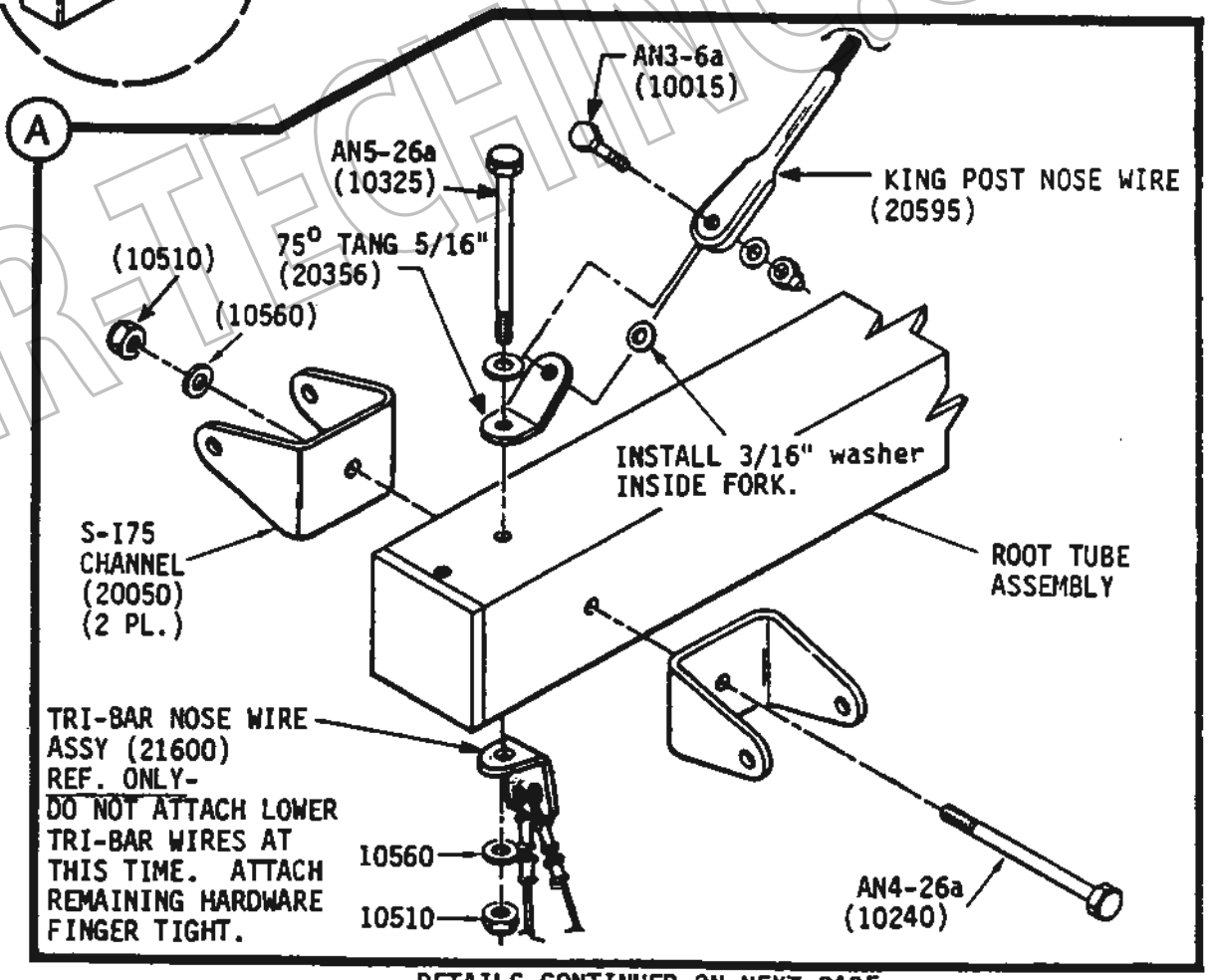
OPPOSITE END ATTACHES TO TANG PREVIOUSLY INSTALLED ON MAIN AXLE (ANTI-TORQUE PLATES). USE SAME SHACKLE, CLEVIS, AND RING ARRANGEMENT.
NOTE: PUSH/PULL SAFETY (20627)ALSO ATTACHES HERE VIA SAME SHACKLE (THIMBLE END). ATTACH AFTER PUSH/PULL INSTALLATION.

ROOT TUBE ASSY.

Assemble hardware as shown for DRAWINGS "A" and "B".

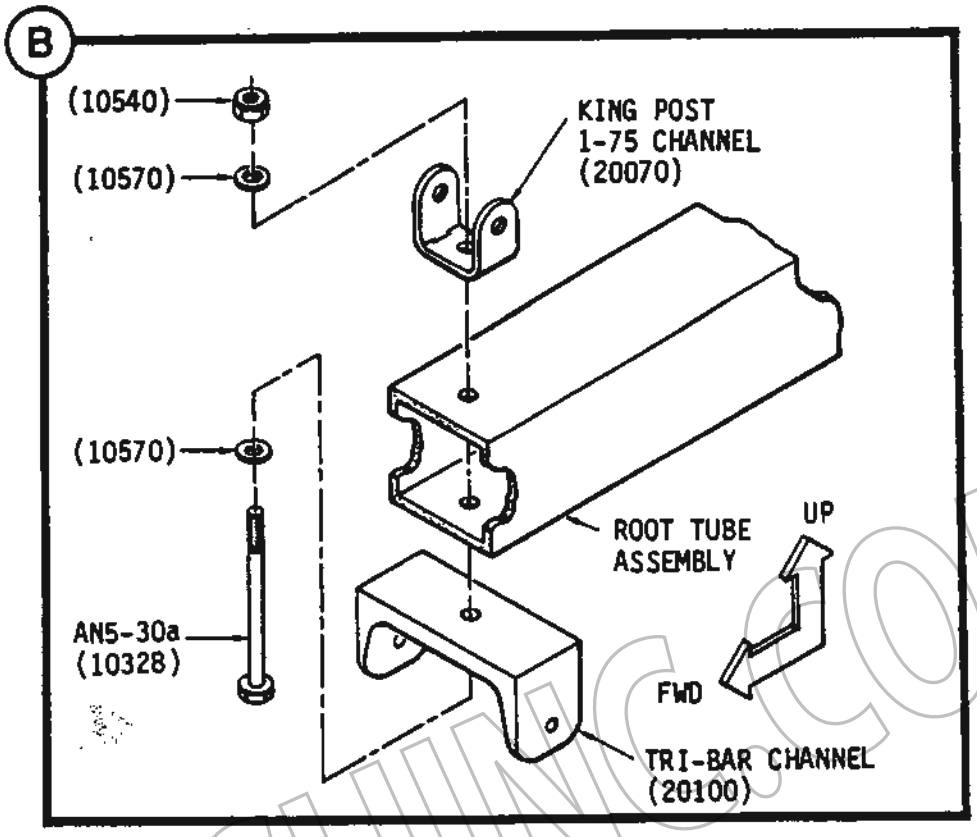
IMPORTANT AFTER THE AIRCRAFT HAS BEEN BASICALLY ASSEMBLED WITH THE KING POST TIGHT, BEND TANG AS NECESSARY SO WIRE MAKES A STRAIGHT LINE TO THE KING POST ATTACH POINT (OPPOSITE END OF WIRE). DO SO BY PLACING A SMALL PIECE OF WOOD OF THE 3/16" ATTACH BOLT HEAD AND TAPPING WITH HAMMER AS REQ.. THIS ALSO APPLIES TO KING POST ATTACH TANG OF NOSE WIRE.





DETAILS CONTINUED ON NEXT PAGE

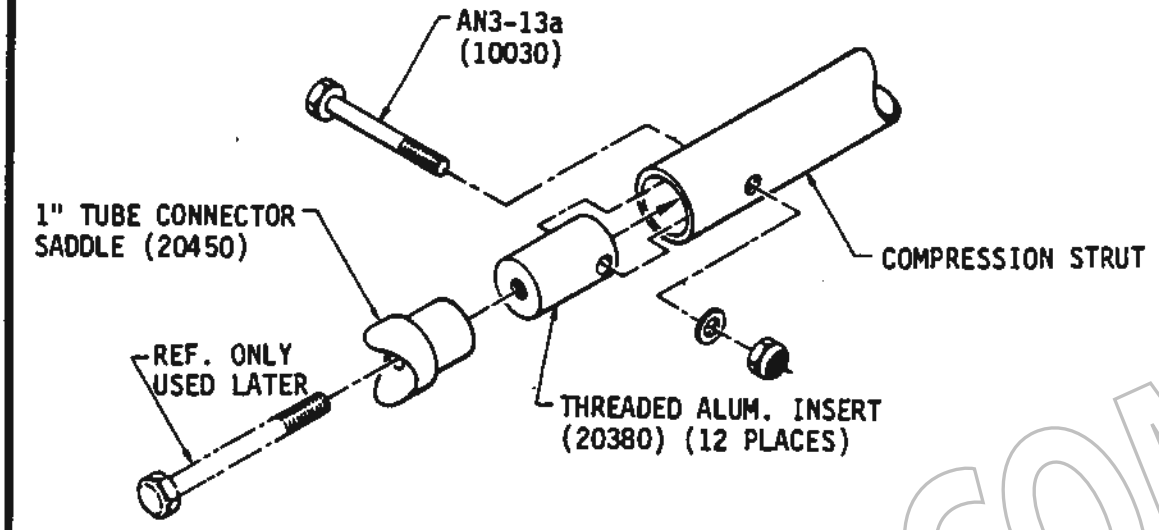
ROOT TUBE ASSY. CON'T.



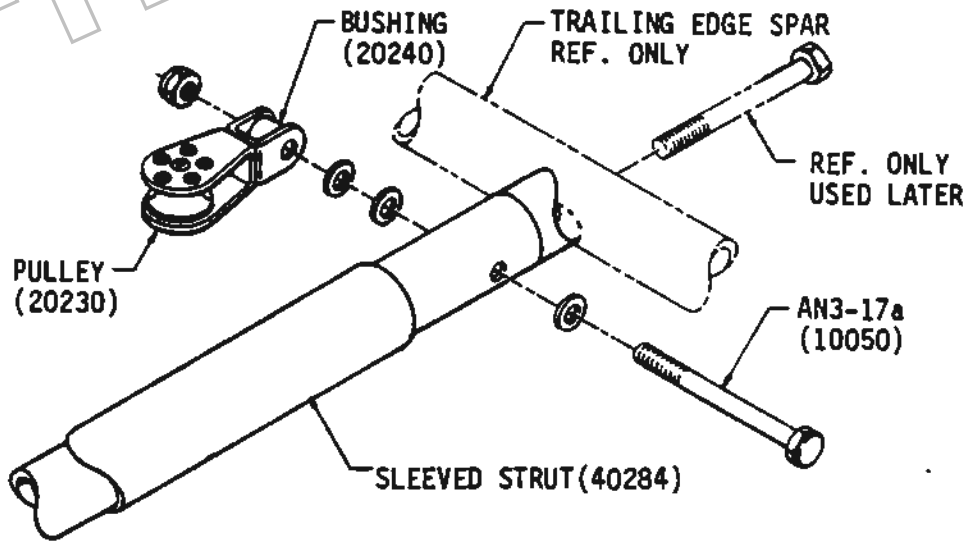
FINGER TIGHTEN ONLY AS ASSEMBLY MAY BE TEMPORARILY REMOVED FOR LATER CONSTRUCTION.

IN THE NEXT SECTION YOU WILL BE BUILDING THE WINGS. FOLLOW THE STEPS CAREFULLY, ESPECIALLY WHEN FITTING AND CUTTING THE WING COVERS.

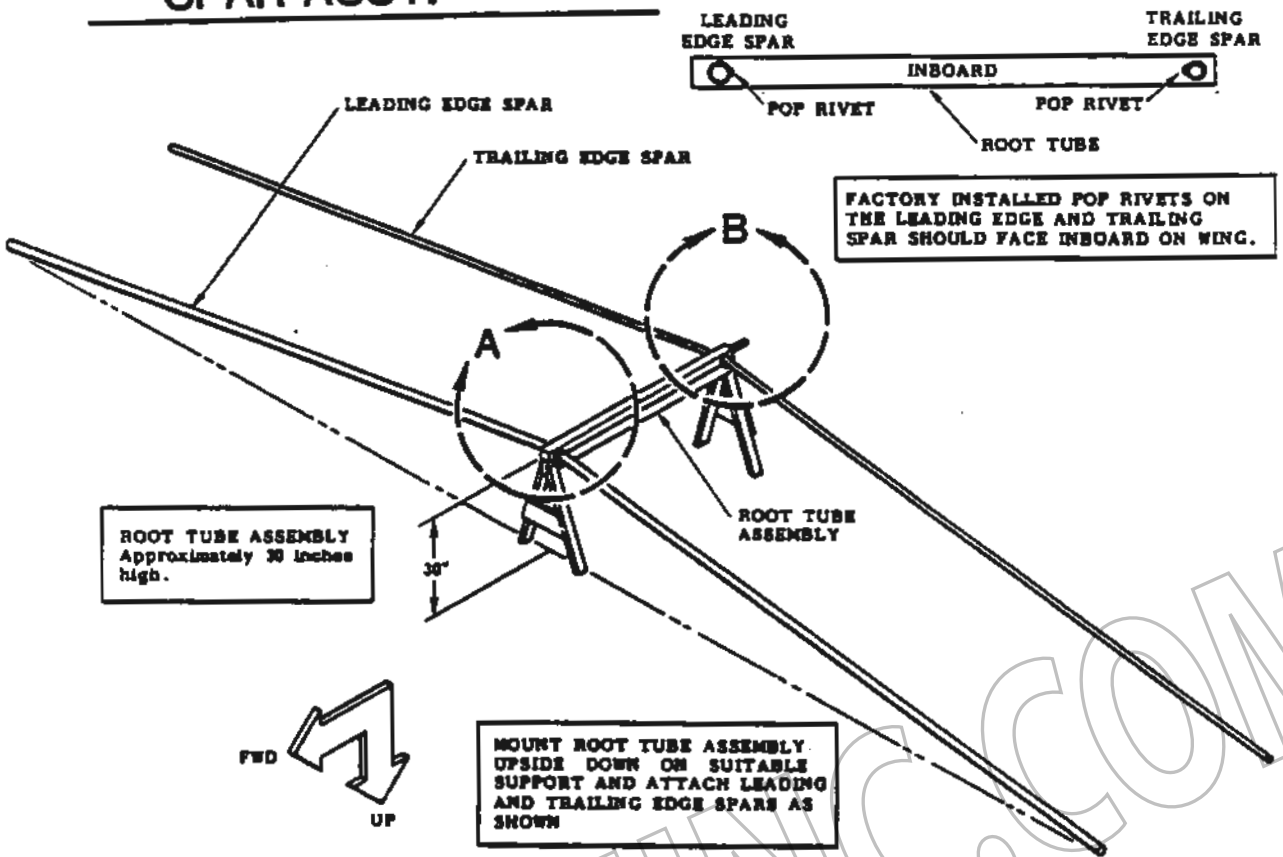
COMPRESSION STRUT ASSY.



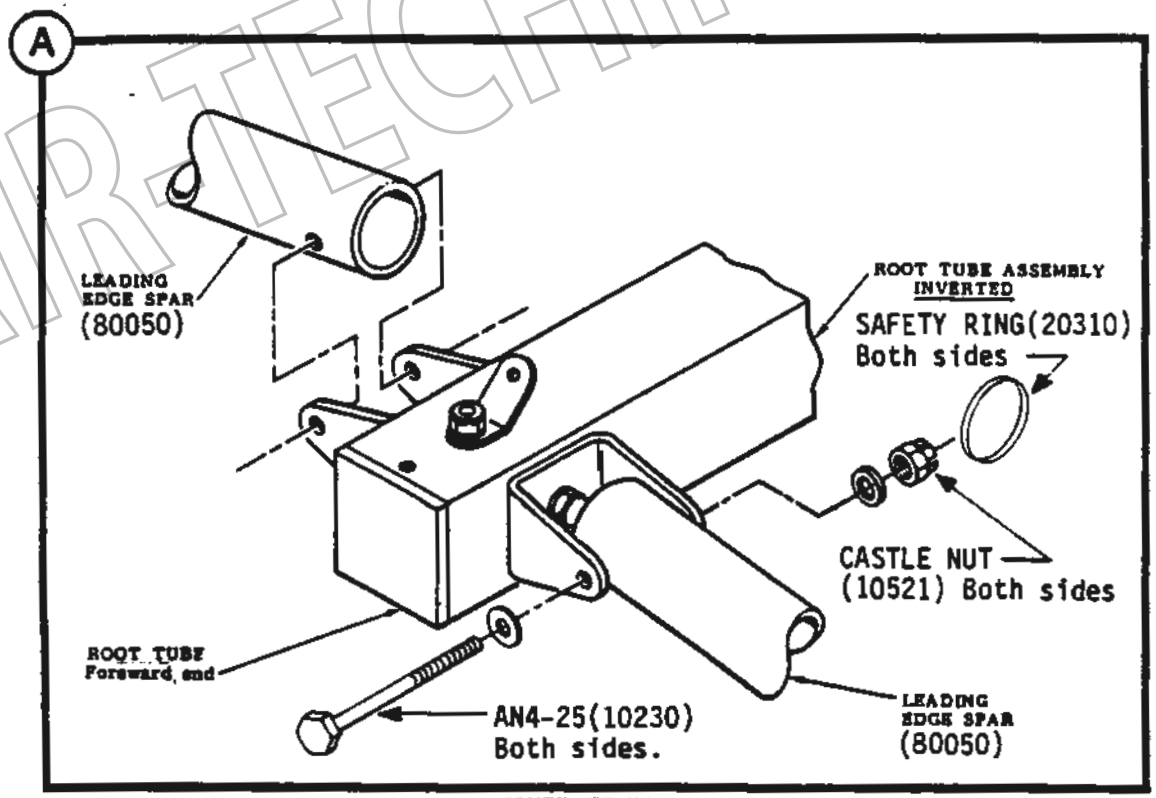
Assemble all compression struts as shown above.
NOTE: There are two types of compression struts:
six SLEEVED(40284) and two UN-SLEEVED(40280)
On two of the SLEEVED COMPRESSION STRUTS add
PULLEY ASSEMBLY as shown below.



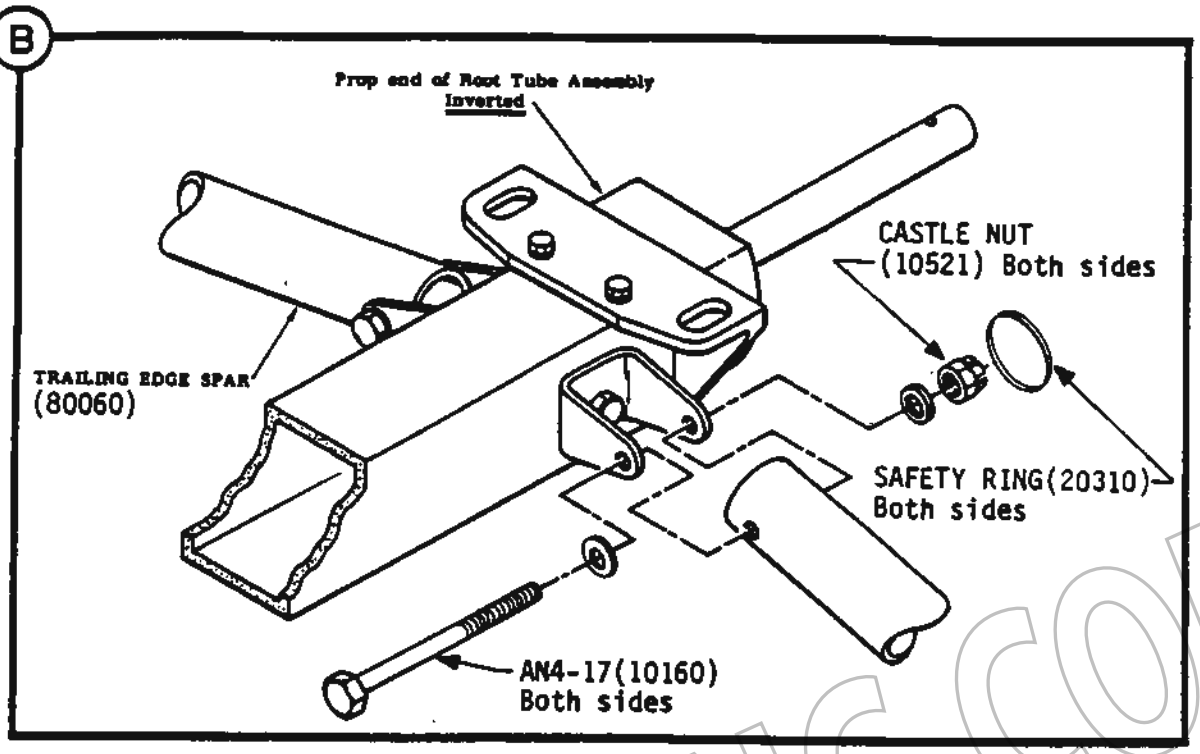
SPAR ASSY.



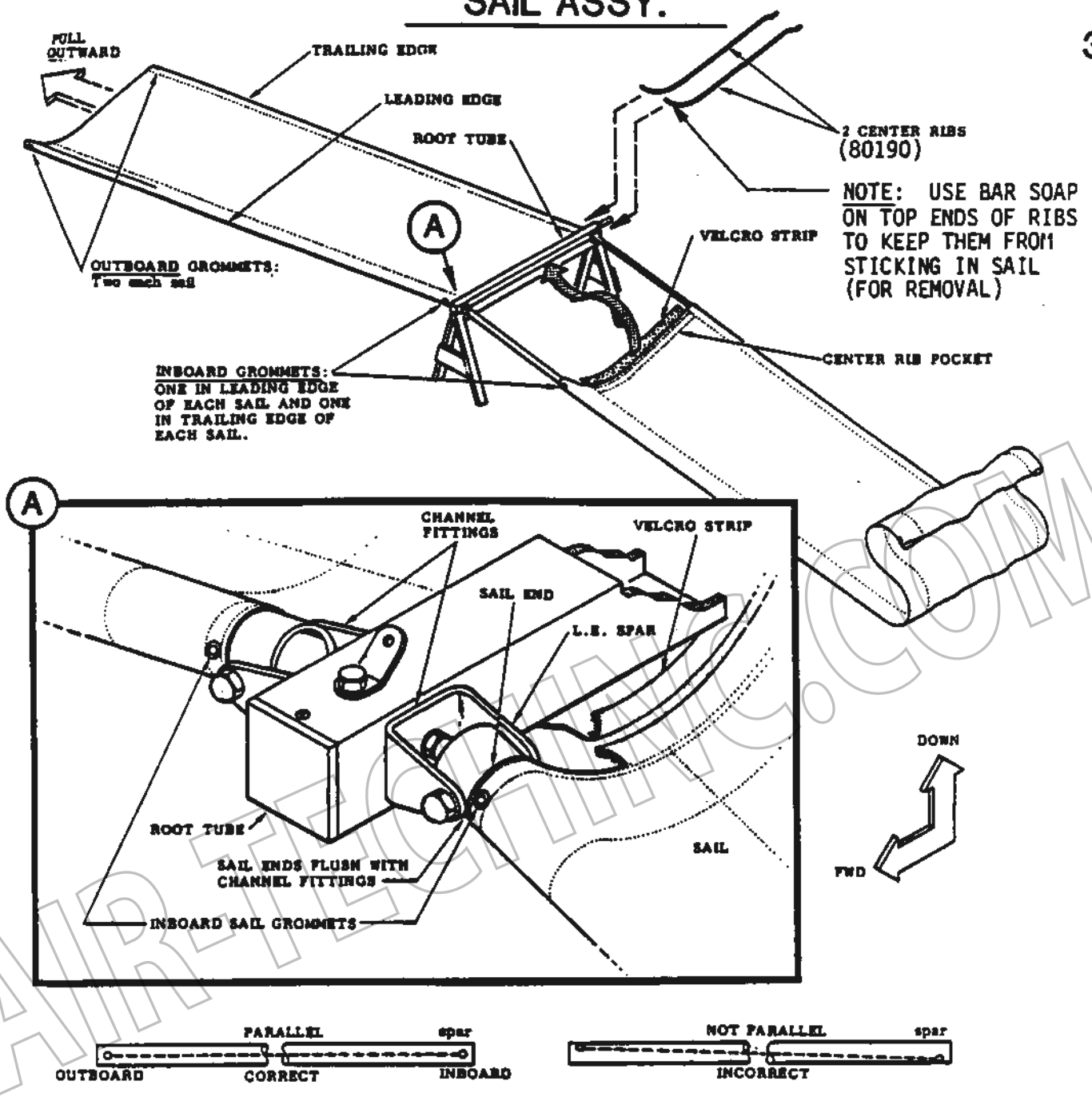
NOTE: REMOVE TRI-BAR CHANNEL IF USING SAW HORSE, SO IT LIES FLAT.



DETAILS CONTINUED NEXT PAGE



SAIL ASSY.



(1) WITH ROOT TUBE AND SPAR ASSEMBLY INVERTED AND SUPPORTED AS SHOWN, SLIDE SAILS OVER SPARS AND ATTACH VELCRO STRIP.

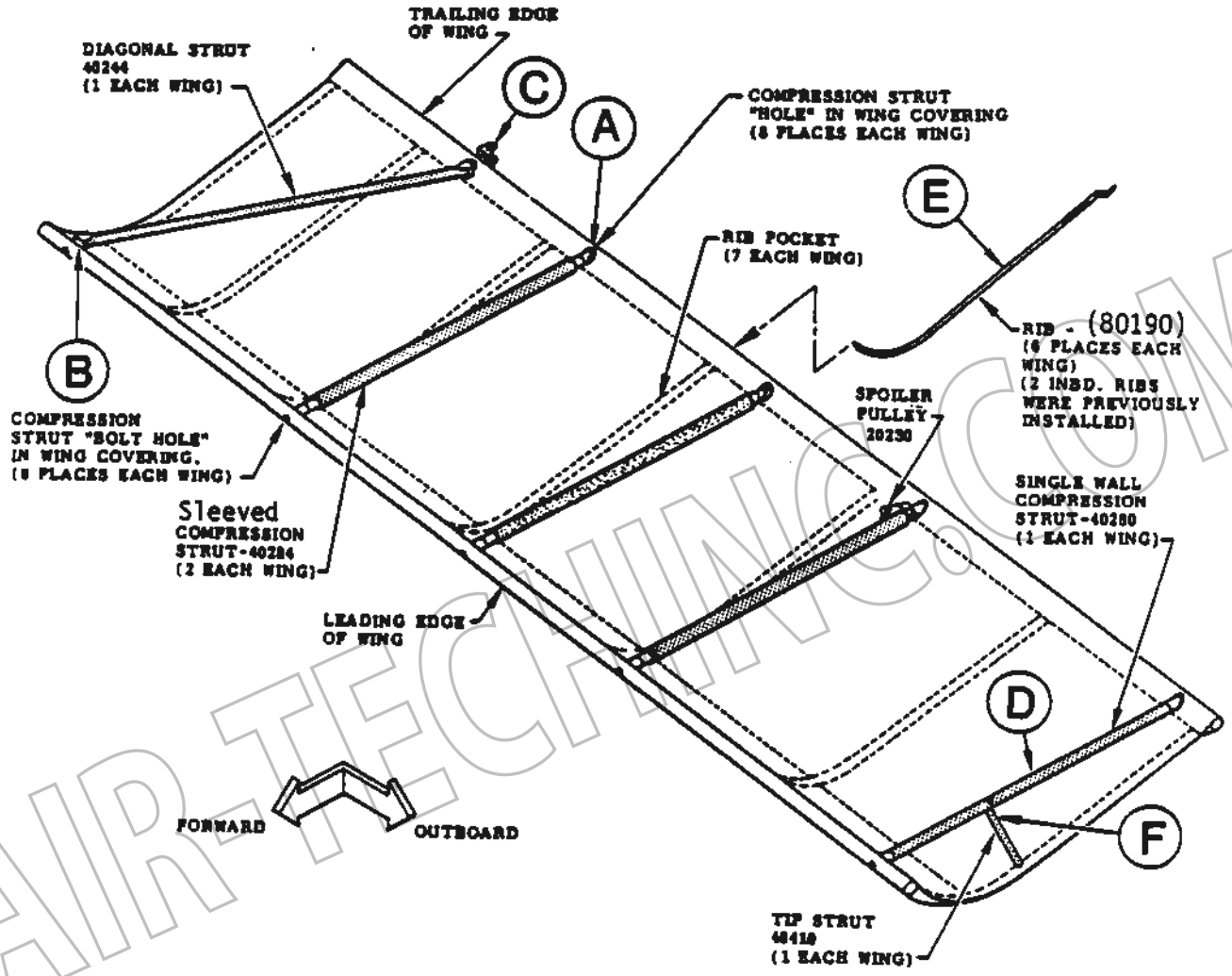
(2) INSERT THE 2 CENTER RIBS IN RIB POCKETS. (ONE RIB IN EACH SAIL).

(3) PULL INBOARD SAIL ENDS (4 PLACES) UP FLUSH WITH CHANNEL FITTINGS ON ROOT TUBE. (2 CHANNEL FITTINGS ON LEADING EDGE SPARS AND 2 CHANNEL FITTINGS ON TRAILING EDGE SPARS.

(4) USING THE FACTORY INSTALLED SAIL GROMMETS AS LOCATORS, DRILL FOUR 3/16" (4.8 mm) HOLES THRU GROMMET HOLES INTO THE INBOARD ENDS OF THE LEADING AND TRAILING EDGE SPARS. POP RIVET SAILS IN PLACE. Be correct-only one hole in this area can be drilled.

(5) WITH THE FOUR INBOARD RIVETS SECURED (2 EACH SAIL) PULL SAIL ENDS OUTWARD APPROXIMATELY 30-40 LBS (13.63-18.8 kg) AND MARK OUTBOARD GROMMET LOCATION. (USE PENCIL OR SHARP POINTED SCRIBER THRU GROMMET HOLES) SLIDE BACK SAILS AND DRILL 3/16" (4.8 mm) HOLES IN SPARS WHERE INDICATED: NOTE: MAKE SURE THE INBOARD AND OUTBOARD GROMMET HOLES ALIGN PARALLEL ON SPARS (SEE DIAGRAM) POP RIVET SAILS INTO PLACE.

STUDY THIS GENERAL WING ARRANGEMENT, THEN START ASSEMBLY WITH DETAIL "A". REMEMBER THE WING IS UPSIDE DOWN.



REF. DRAWING--START ASSEMBLY ON NEXT PAGE WITH (A).

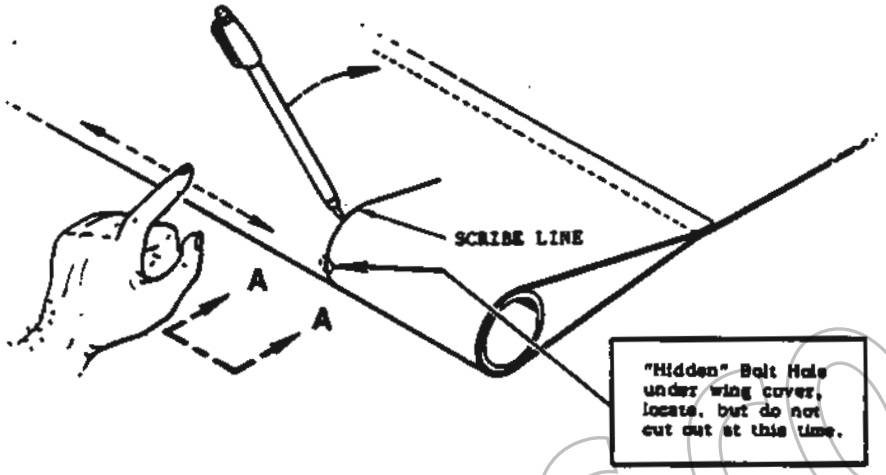
DETAILS CONTINUED NEXT PAGE

(A)

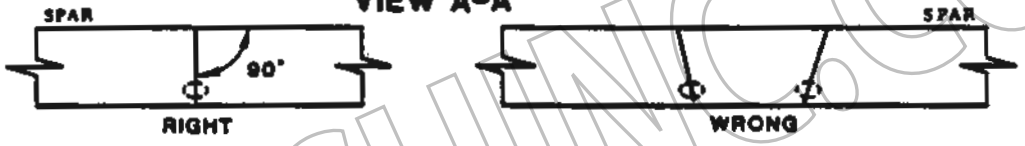
USE THE TEMPLATE PATTERN ON THE NEXT PAGE, DETAIL (A-CONTINUED), TO LOCATE THE HOLES IN THE WING COVER FOR THE DIAGONAL AND COMPRESSION STRUTS.

(1) LOCATE THE "HIDDEN" FACTORY PREDRILLED BOLT HOLES IN SPAR BY RUNNING FINGER OVER SPAR AS SHOWN.

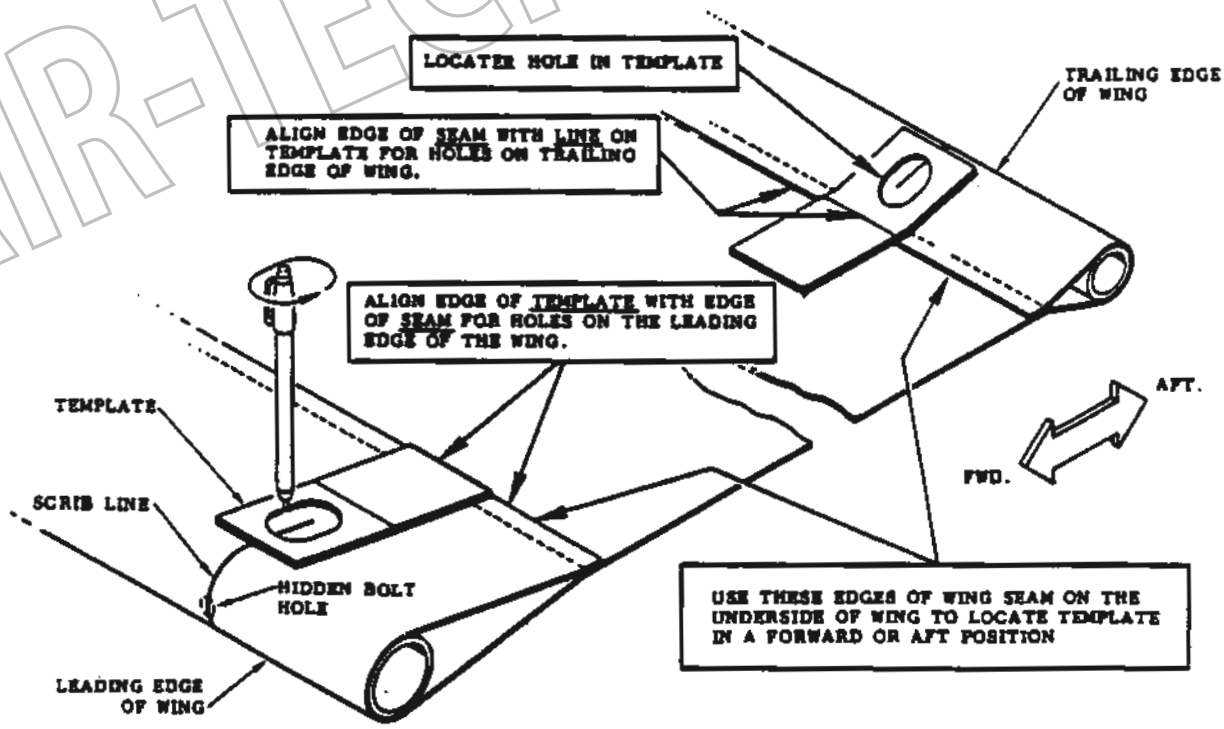
(2) MARK THE CENTER OF THE "HIDDEN" BOLT HOLE AND SCRIBE A LINE AT RIGHT ANGLE TO SPAR WITH A PENCIL. SEE VIEW "A-A" BELOW.



VIEW A-A

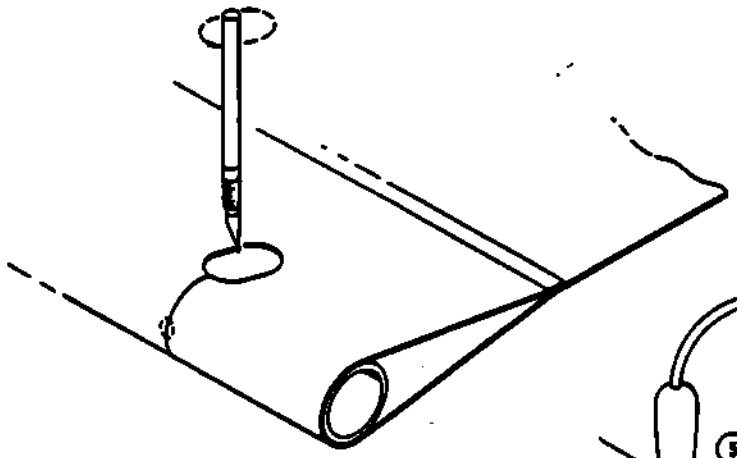


(3) CENTER THE LOCATER HOLE IN THE TEMPLATE OVER THE SCRIBED LINE. MOVE THE TEMPLATE FORWARD OR AFT AS INDICATED BELOW AND MARK LOCATION ON THE WING COVER THRU HOLE IN THE TEMPLATE WITH A PENCIL. NOTICE THAT THE USE OF THE TEMPLATE IS DIFFERENT ON THE LEADING EDGE SPAR AND THE TRAILING EDGE SPAR. REPEAT AT 8 PLACES ON EACH WING.

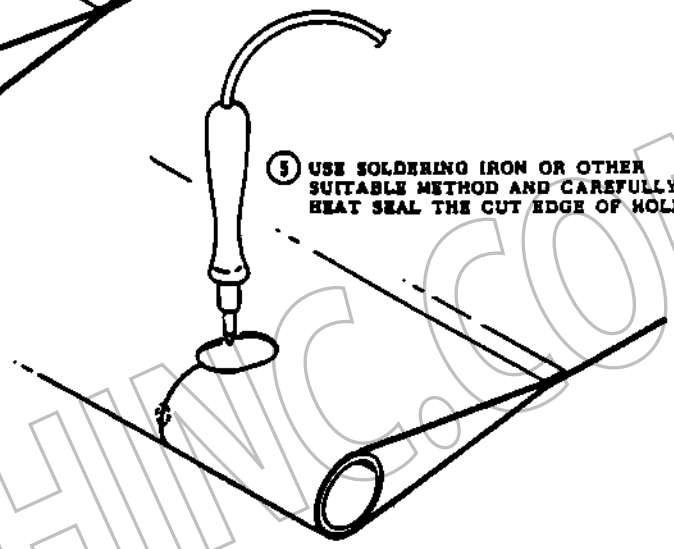


DETAILS CONTINUED NEXT PAGE

(A) CONTINUED

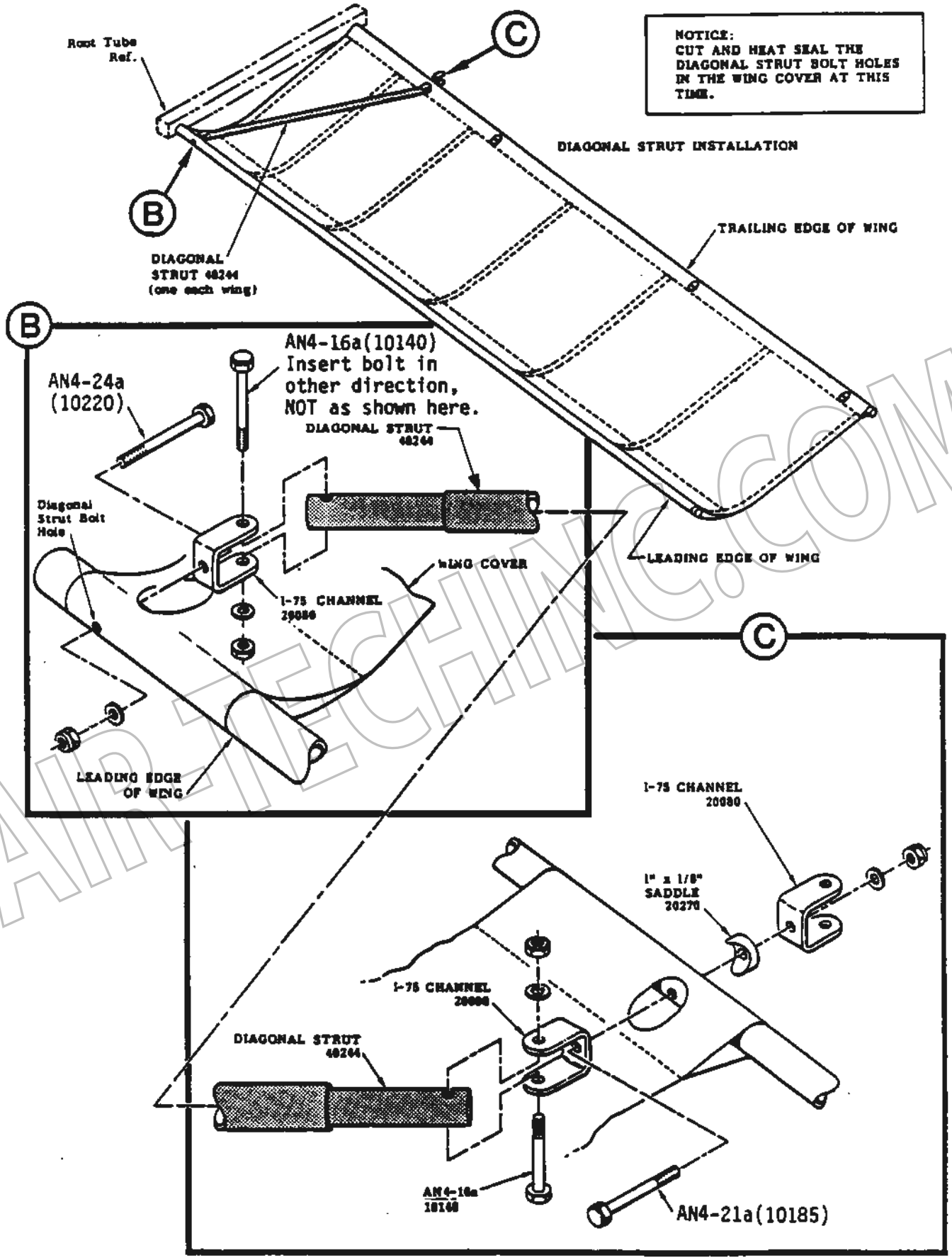


(4) CUT OUT HOLE IN WING COVER

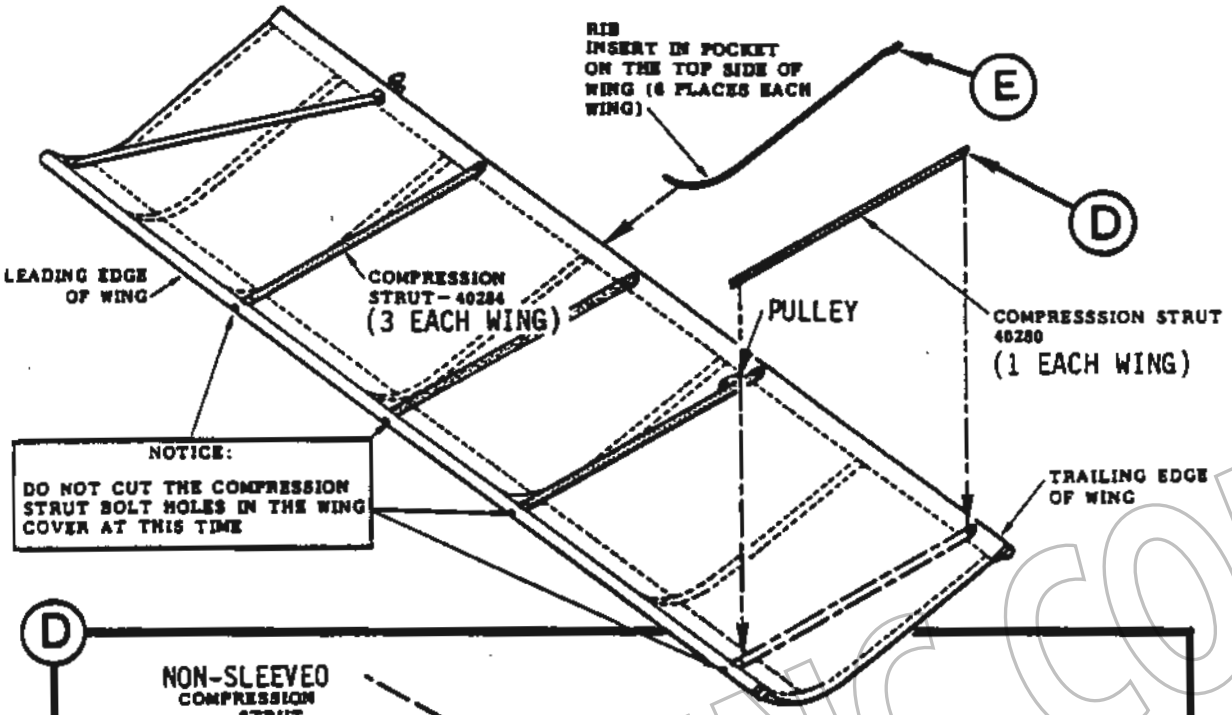


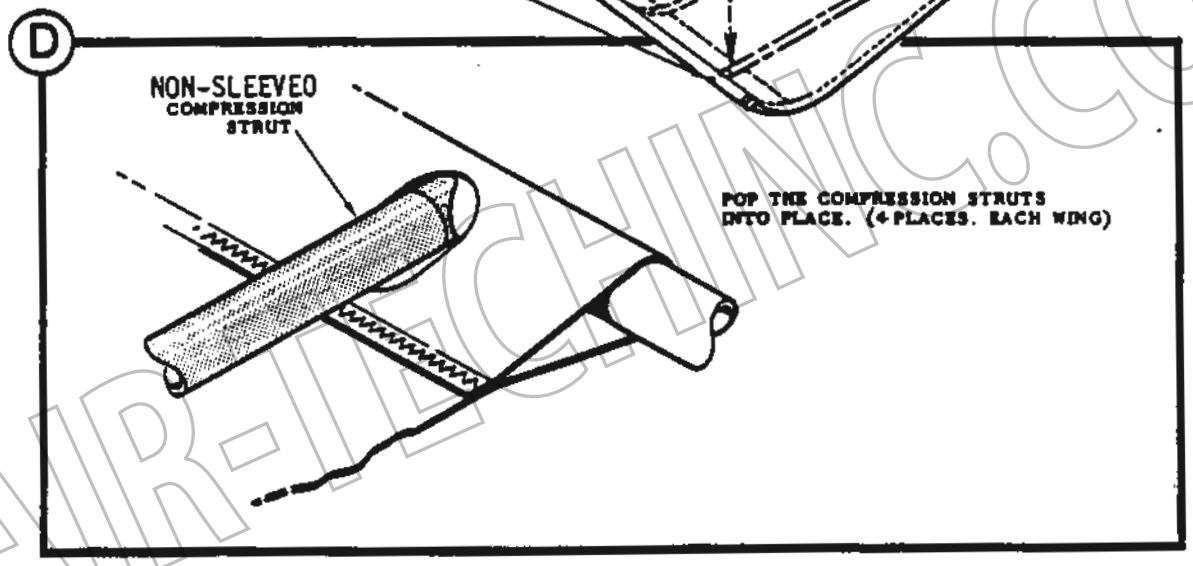
(5) USE SOLDERING IRON OR OTHER SUITABLE METHOD AND CAREFULLY HEAT SEAL THE CUT EDGE OF HOLE.

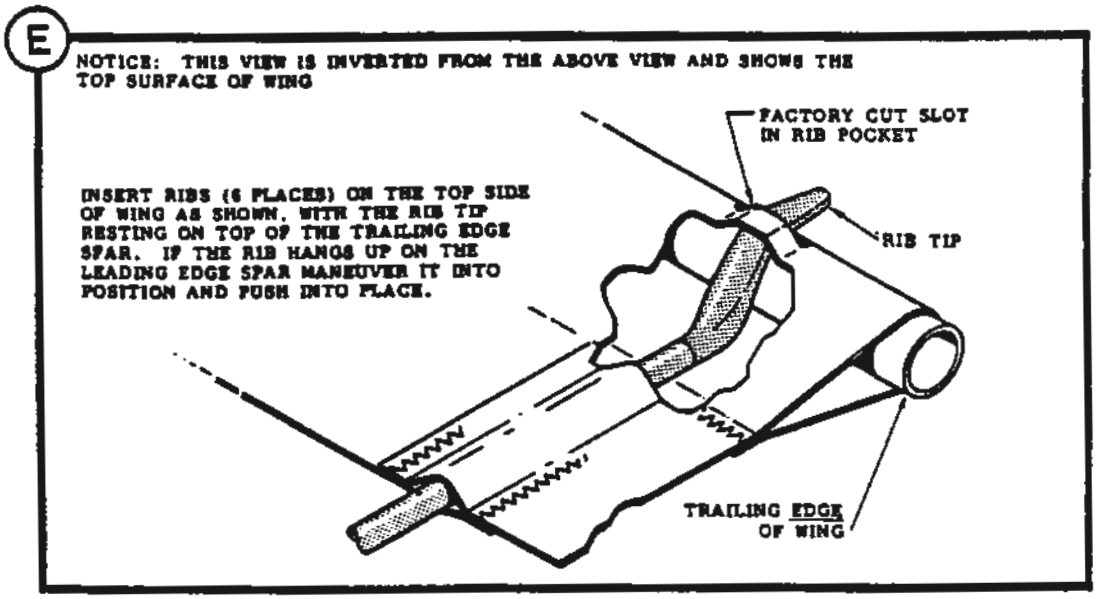
REPEAT THE ABOVE OPERATIONS 10 PLACES ON EACH WING.



SEE PAGE 33 FOR MORE DETAILED OVERALL VIEW.

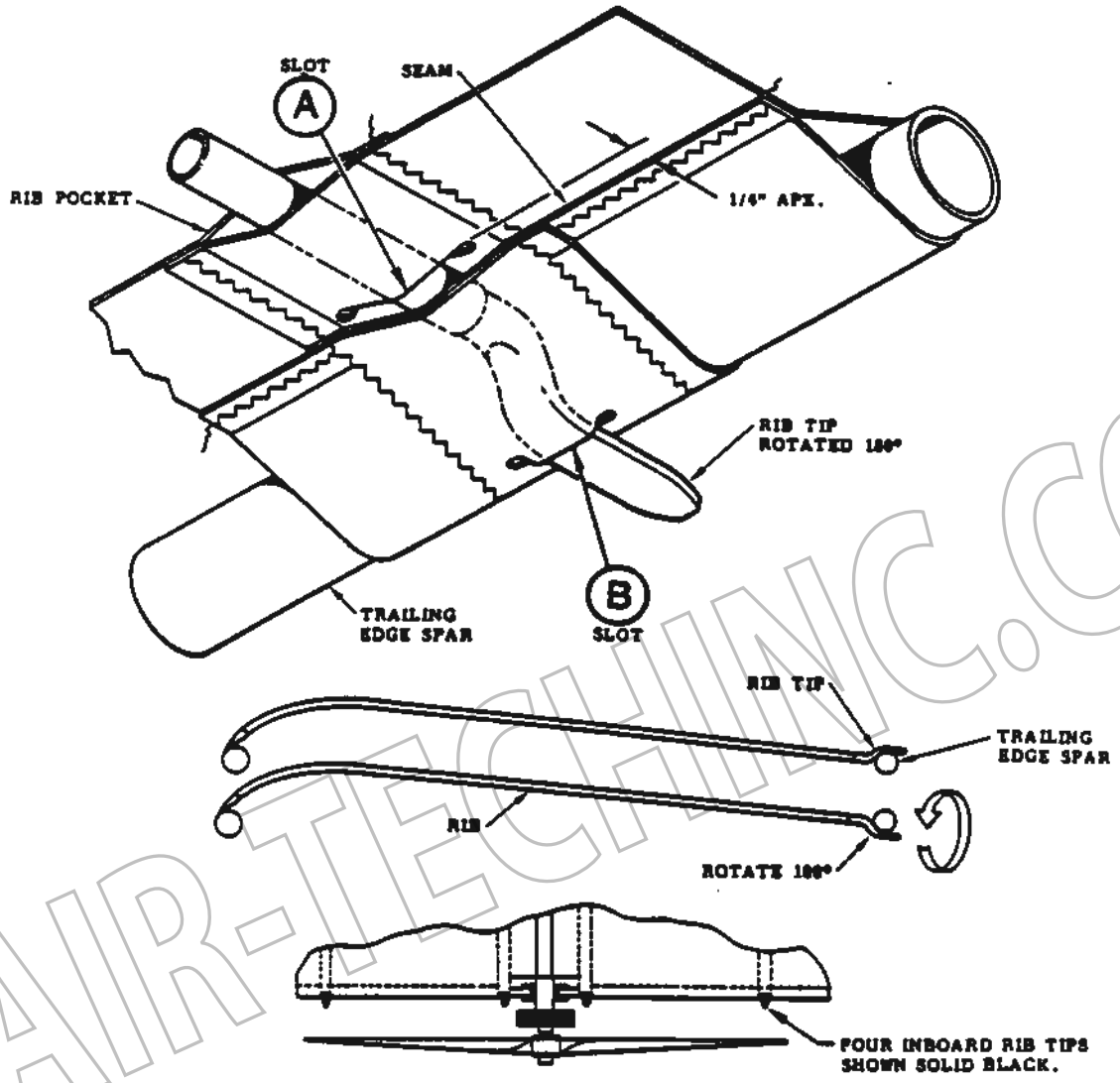






RIB INVERTING - IMPORTANT

UNDERSIDE VIEW OF RIB POCKET



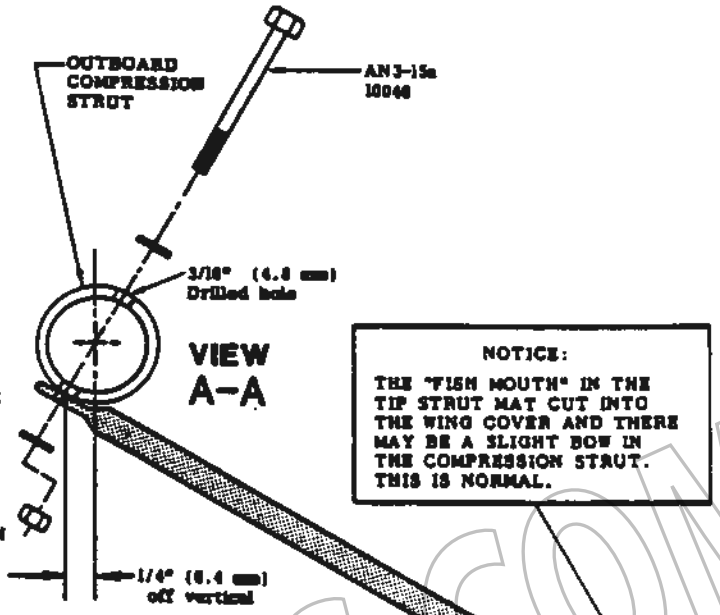
WITH RIB INSERTED IN RIB POCKET ON TOP SIDE OF WING, CUT AND HEAT SEAL TWO SLOTS IN THE RIB POCKET ON THE UNDERSIDE OF WING AS FOLLOWS.

1. CUT "A" THRU ONE LAYER OF CLOTH ONLY, APPROXIMATELY 1/4" FORWARD OF THE SEAM. CUT SLOT "B" 180° OPPOSITE ORIGINAL SLOT ON TOP SIDE OF SPAR THRU TWO LAYERS OF CLOTH.
2. REMOVE RIB FROM POCKET AND TURN THE RIB TIP 180° AS SHOWN.
3. RE-INSTALL RIB THRU THE TWO NEW SLOTS SO THAT THE RIB TIP NOW RESTS ON THE BOTTOM OF THE TRAILING EDGE SPAR.
4. REPEAT THIS PROCEDURE ON THE 4 INBOARD RIBS.

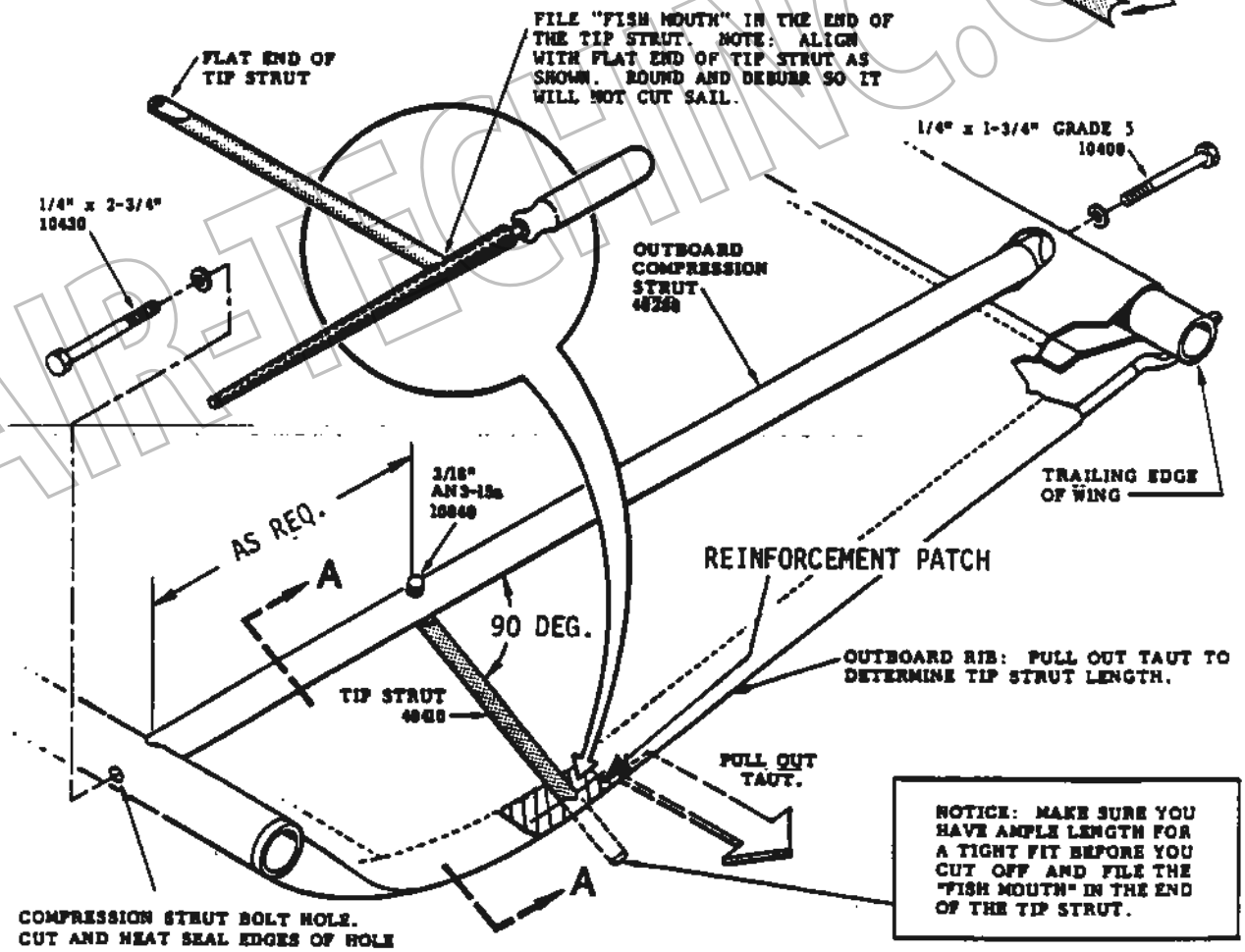
THIS OPERATION WILL HELP TO KEEP THE 4 INBOARD RIBS FROM VIBRATING OUT OF THE RIB POCKETS AND INTO THE PROPELLAR. ANOTHER METHOD IS TO DRILL A SMALL HOLE IN THE TIP END AND SAFETY WIRE IT TO THE TRAILING EDGE SPAR.

F

1. CUT COMPRESSION STRUT BOLT HOLES IN THE WING COVER FOR THE OUTBOARD STRUT ONLY.
2. SECURE OUTBOARD STRUT WITH BOLTS AND WASHERS AS SHOWN.
3. DRILL A 3/16" HOLE IN THE OUTBOARD COMPRESSION STRUT AFTER LOCATING TIP STRUT BLANK AS SHOWN. NOTE TIP STRUT IS 90 DEG. TO COMP. STRUT.
4. ATTACH TIP STRUT TO OUTBOARD COMPRESSION STRUT TO FINGER TIGHT ONLY.
5. THE TIP STRUT HAS EXCESSIVE LENGTH. TO DETERMINE THE PROPER LENGTH, PULL THE OUTBD RIB OUT TAUT AS SHOWN, MARK AND REMOVE.
6. CUT OFF EXCESSIVE LENGTH AND USE A RAT TAIL FILE TO FORM A "FISH MOUTH" ON THE END OF THE TIP STRUT. NOTE: FILE IN THE SAME PLANE AS THE FLAT ON THE OTHER END OF THE TIP STRUT.
7. REINSTALL THE TIP STRUT ON THE COMPRESSION STRUT AND SADDLE THE "FISH MOUTH" ON THE OUTBOARD RIB AT A 90° ANGLE TO THE OUTBD. COMPRESSION STRUT AS SHOWN BELOW. (TENSION WILL HOLD IN PLACE)
8. REPEAT STEPS 1-7 ON OPPOSITE WING.

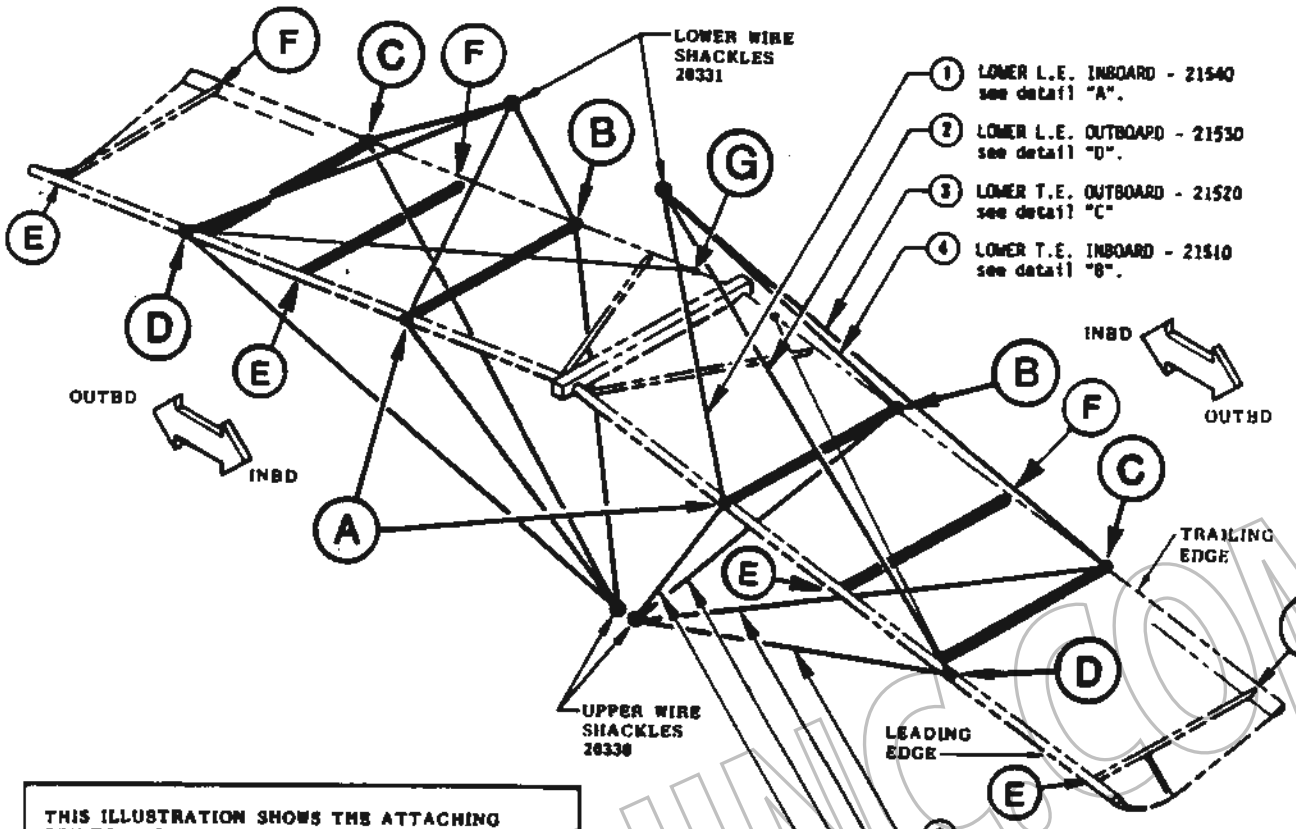


NOTICE:
THE "FISH MOUTH" IN THE TIP STRUT MAT CUT INTO THE WING COVER AND THERE MAY BE A SLIGHT BOW IN THE COMPRESSION STRUT. THIS IS NORMAL.



NOTICE: MAKE SURE YOU HAVE AMPLE LENGTH FOR A TIGHT FIT BEFORE YOU CUT OFF AND FILE THE "FISH MOUTH" IN THE END OF THE TIP STRUT.

WIRE ASSY.

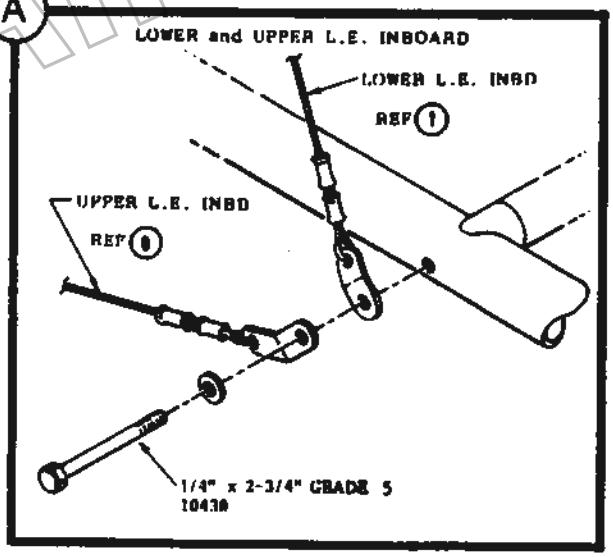


THIS ILLUSTRATION SHOWS THE ATTACHING POINTS AND HARDWARE FOR BOTH THE UPPER AND LOWER WING WIRES. STUDY IT THOROUGHLY AND BECOME FAMILIAR WITH THE TERMINOLOGY SUCH AS "UPPER LEADING EDGE INBOARD""LOWER TRAILING EDGE OUTBOARD ETC."

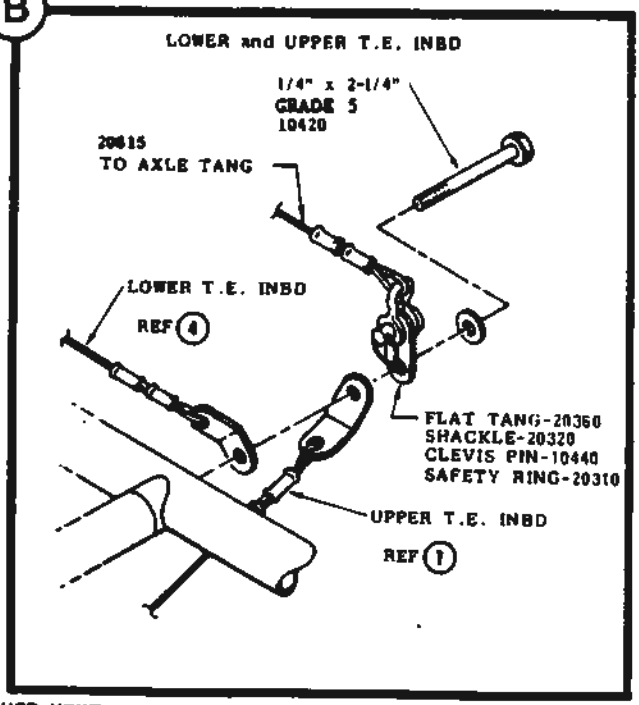
WIRES ARE ATTACHED AS MIRROR OPPOSITES ON BOTH SIDES OF WING.

EACH WIRE CARRIES A SLEEVE THAT INDICATES ITS PART NUMBER. DO NOT REMOVE THIS SLEEVE.

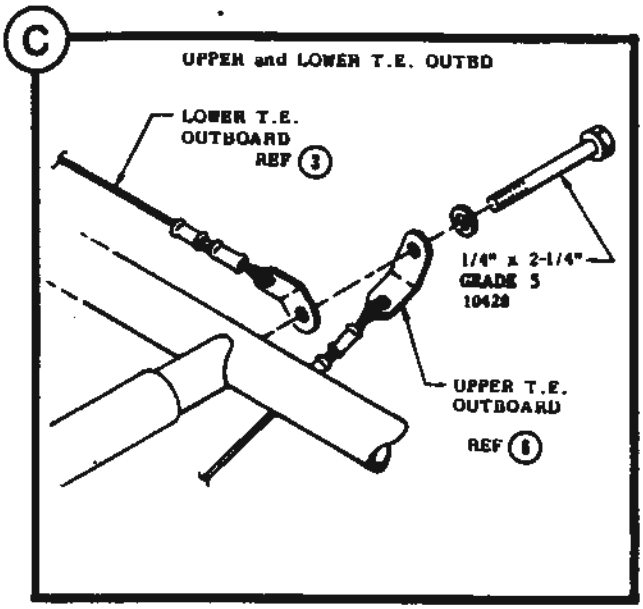
A

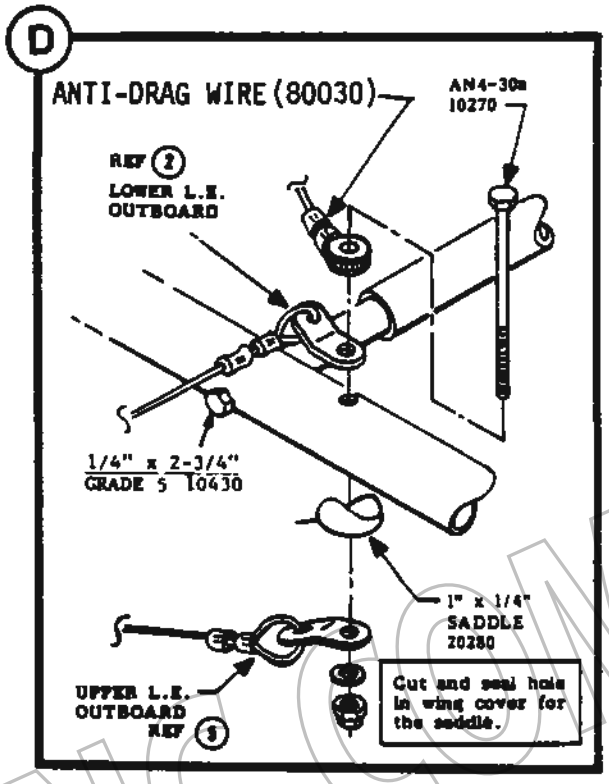


B

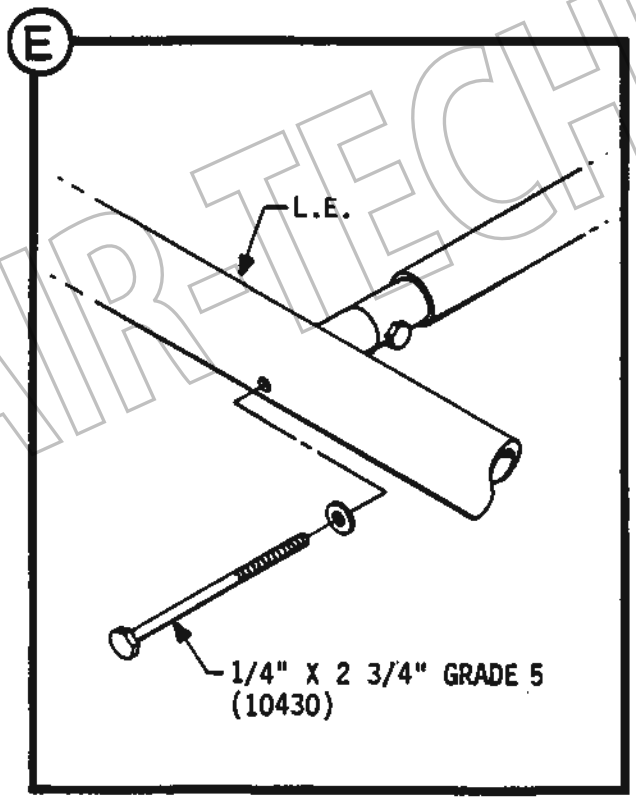


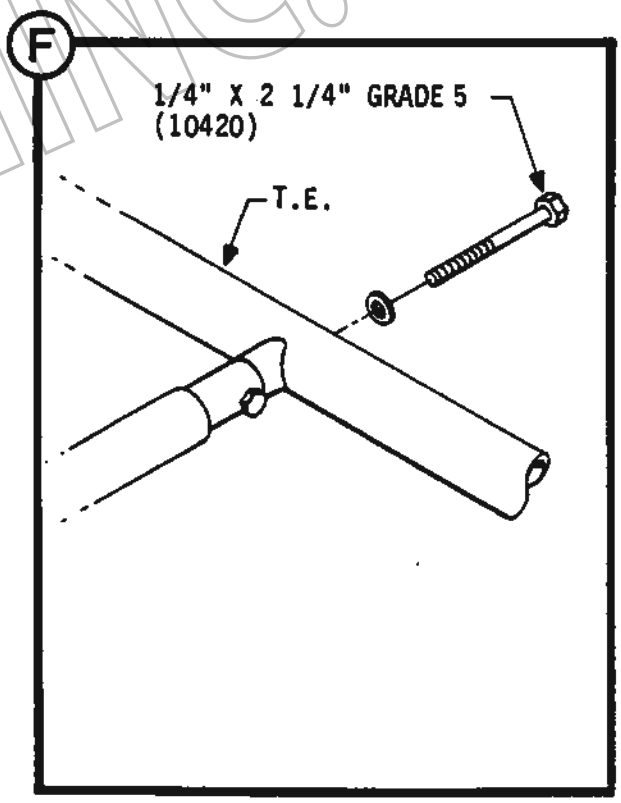
DETAILS CONTINUED NEXT PAGE



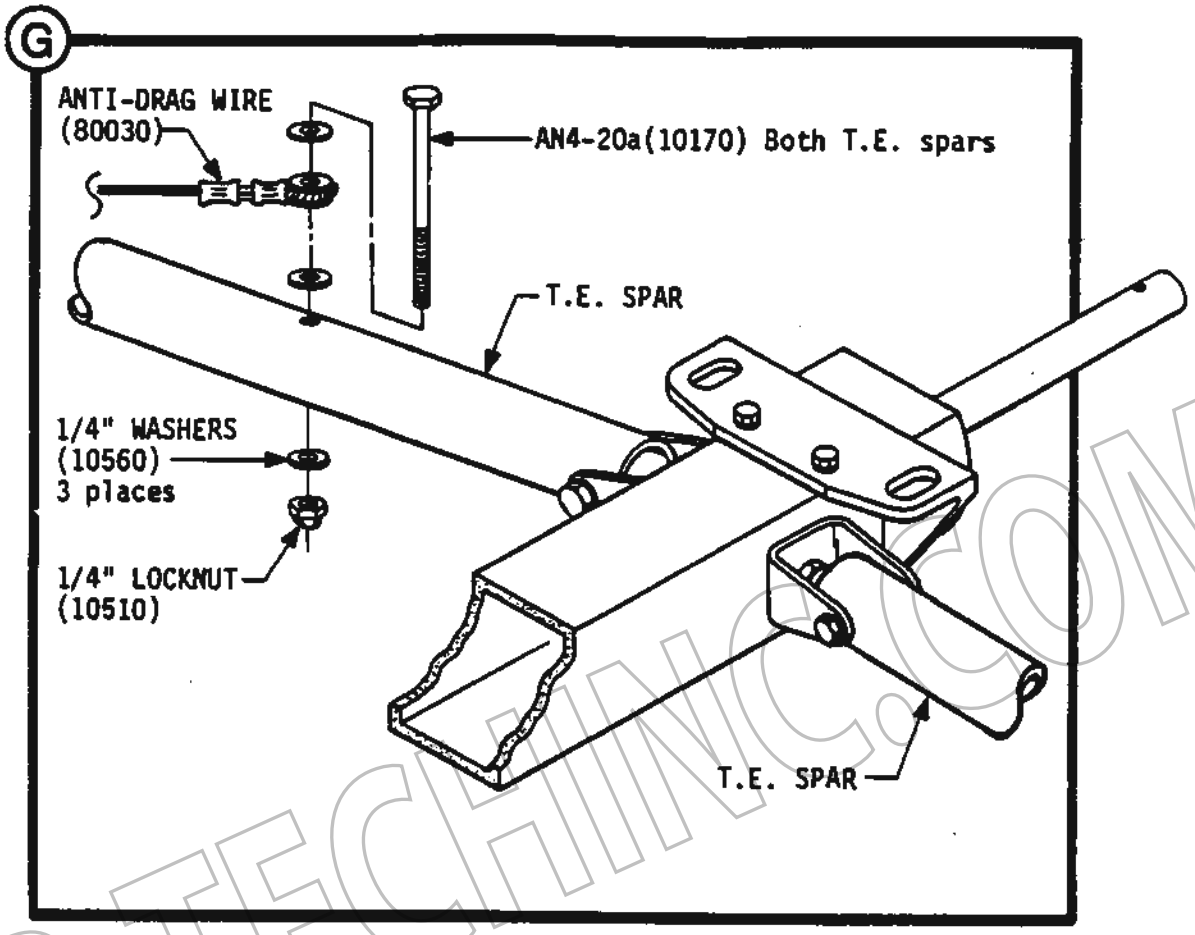


REMINDER! ALL VIEWS ARE SHOWN UPSIDE DOWN.



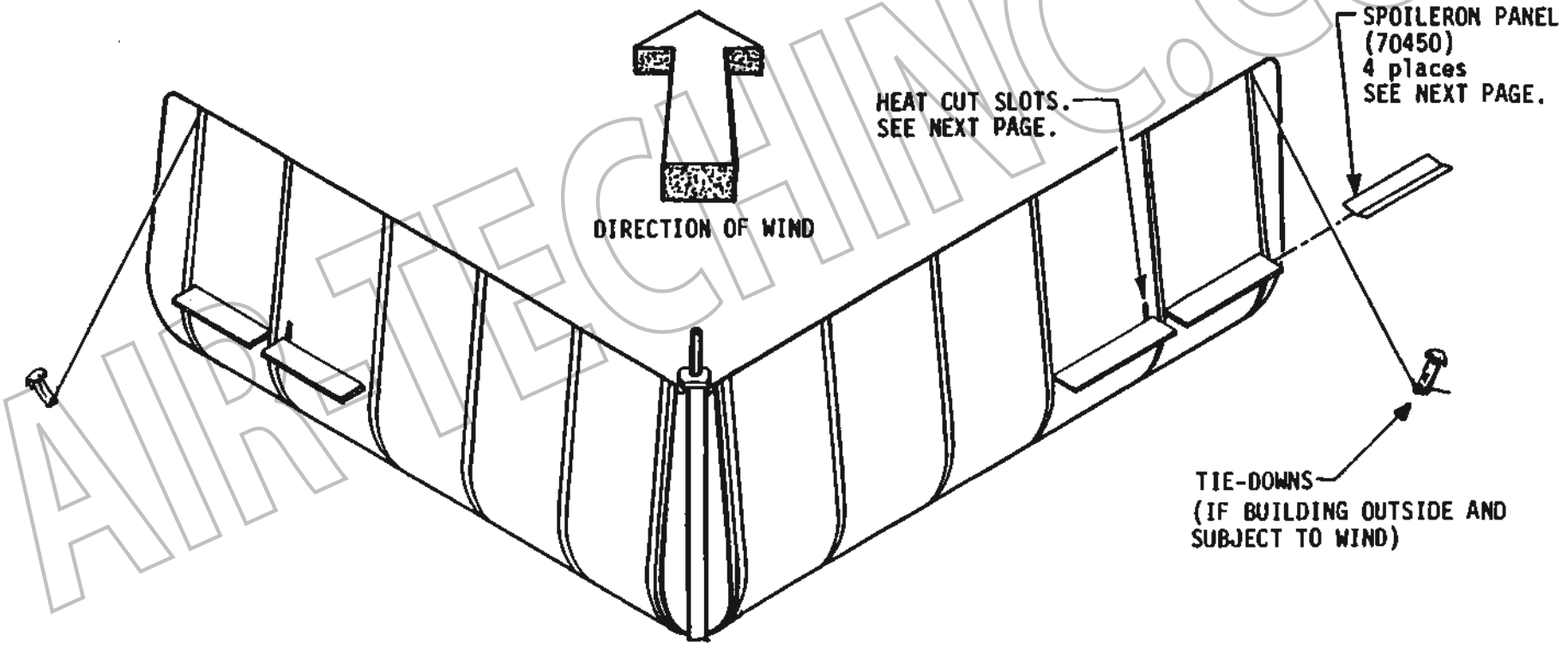


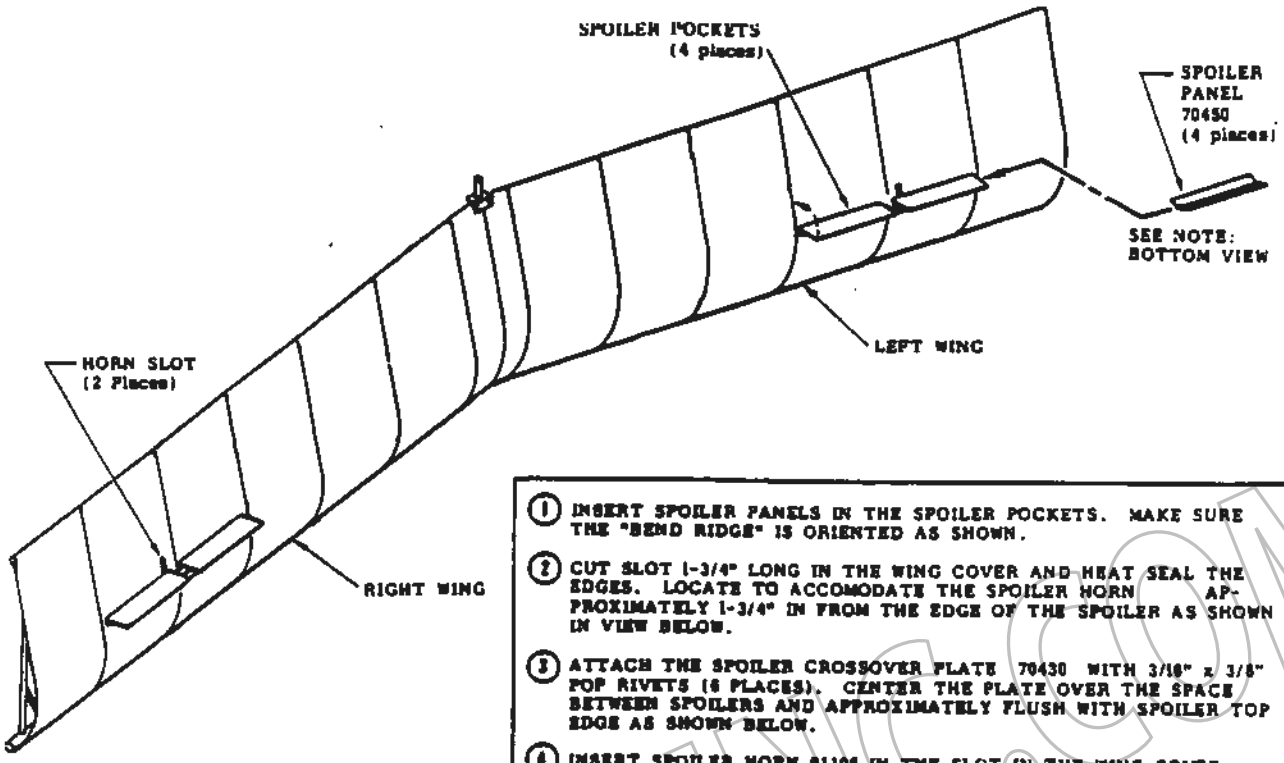
Assemble ANTI-DRAG WIRE on both trailing edge spars as shown.



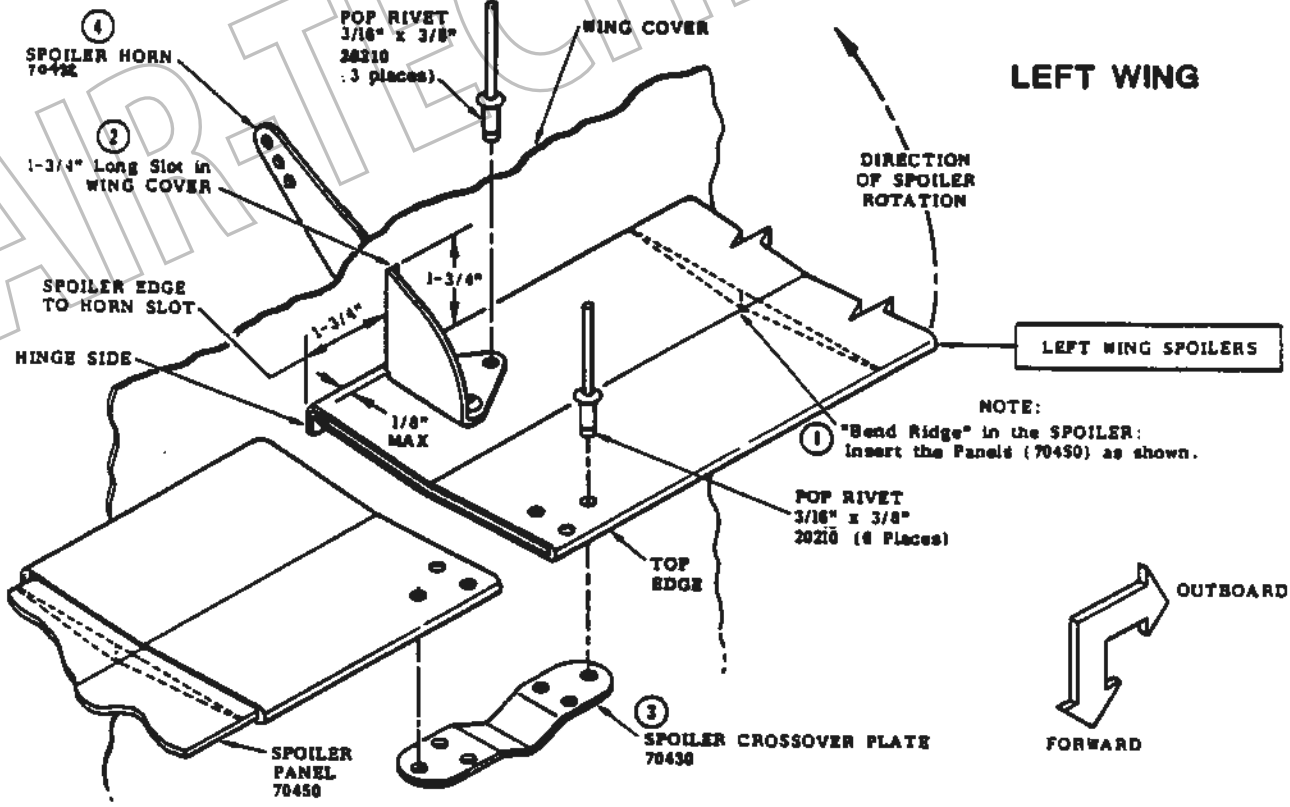
SPOILER ASSEMBLY

The wings should now be tipped up onto the nose for the next series of assemblies. Face wings into wind and at about a 90° angle so they will not blow over. Tie-downs are recommended to keep wings in place.



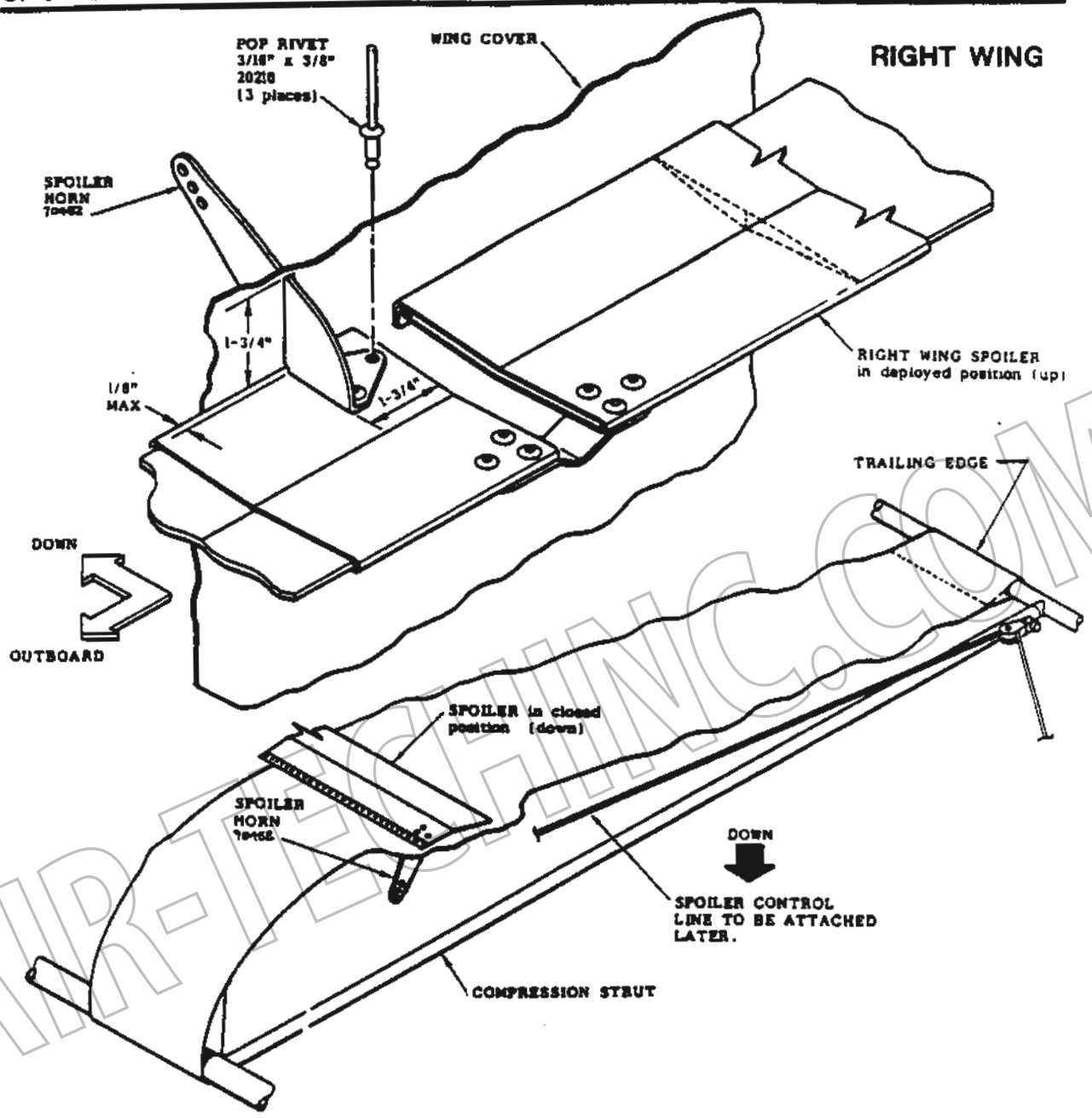


1. INSERT SPOILER PANELS IN THE SPOILER POCKETS. MAKE SURE THE "BEND RIDGE" IS ORIENTED AS SHOWN.
2. CUT SLOT 1-3/4" LONG IN THE WING COVER AND HEAT SEAL THE EDGES. LOCATE TO ACCOMODATE THE SPOILER HORN AP-PROXIMATELY 1-3/4" IN FROM THE EDGE OF THE SPOILER AS SHOWN IN VIEW BELOW.
3. ATTACH THE SPOILER CROSSOVER PLATE 70430 WITH 3/16" x 3/8" POP RIVETS (6 PLACES). CENTER THE PLATE OVER THE SPACE BETWEEN SPOILERS AND APPROXIMATELY FLUSH WITH SPOILER TOP EDGE AS SHOWN BELOW.
4. INSERT SPOILER HORN 81105 IN THE SLOT IN THE WING COVER AND LOCATE ON THE SPOILER AS PER DIMENSIONS SHOWN. POP RIVET TO SPOILER (3 PLACES). SEE NEXT PAGE FOR HORN IN-STALLATION ON RIGHT WING SPOILERS.

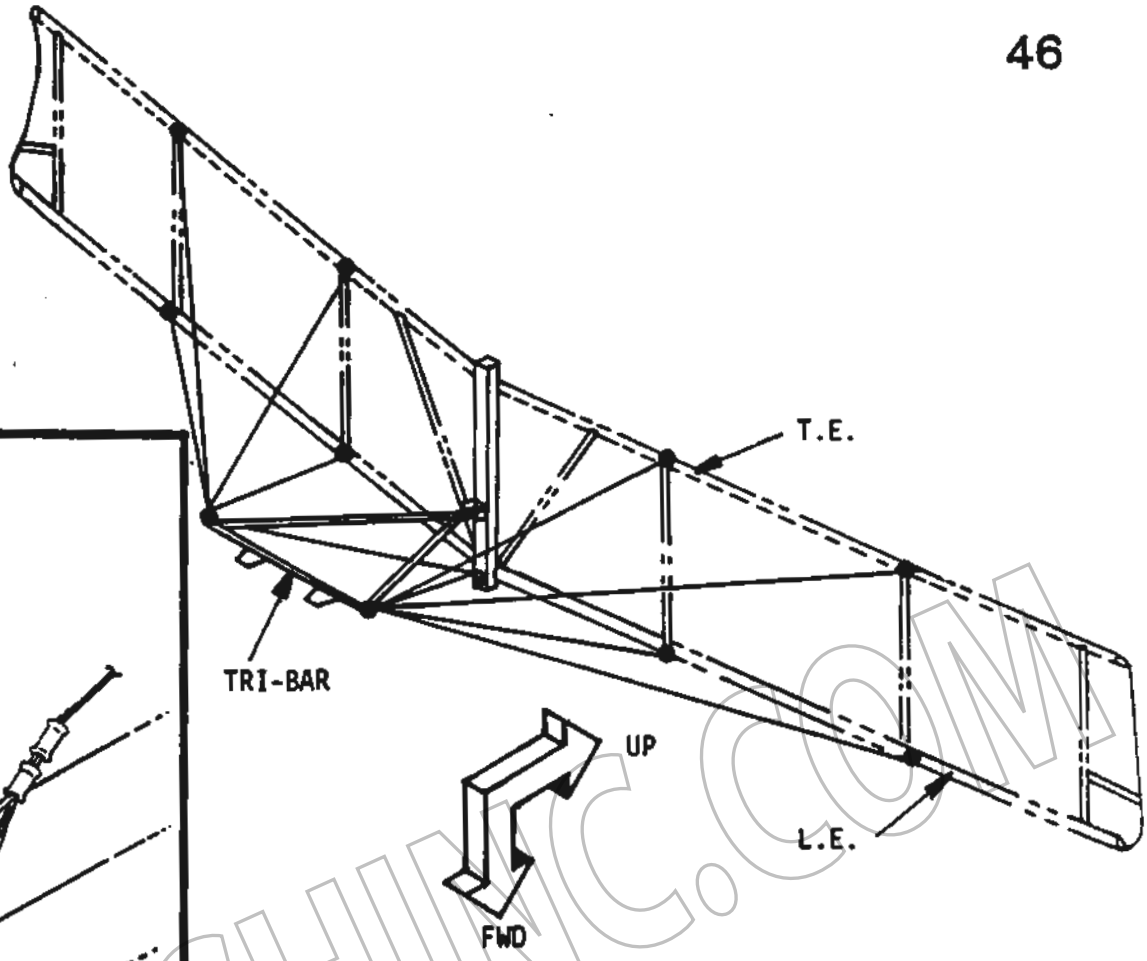


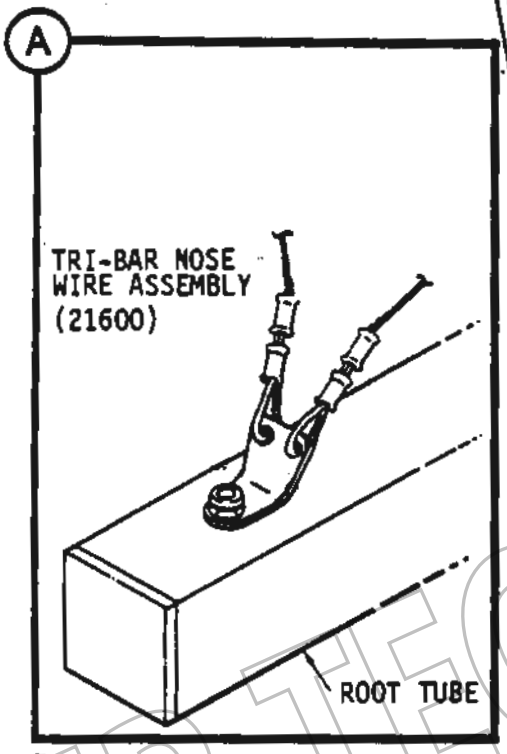
DETAILS CONTINUED ON NEXT PAGE

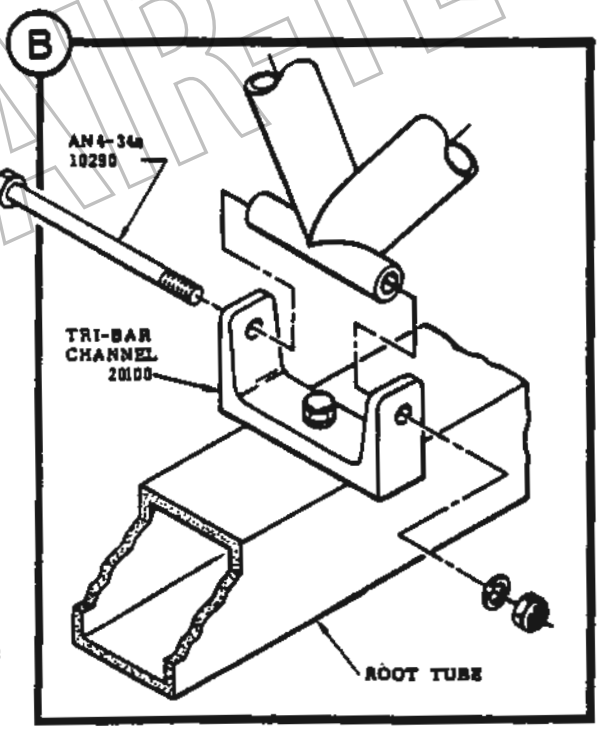
SPOILER ASSEMBLY CON'T.



ASSEMBLE RIGHT WING SPOILERS THE SAME AS THE LEFT WING SPOILERS EXCEPT FOR THE SPOILER HORN. THE ATTACHING RIVET HOLE LOCATION WILL BE DIFFERENT AS NOTED DUE TO THE HORNS NOT BEING BENT IN RIGHT AND LEFT HAND PAIRS.
NOTE: WHEN ATTACHING HORN AND CROSSOVER PLATES IT IS ADVISABLE TO DRILL AND RIVET ONE HOLE AND ALIGN UNITS BEFORE INSTALLING THE REMAINING RIVETS.

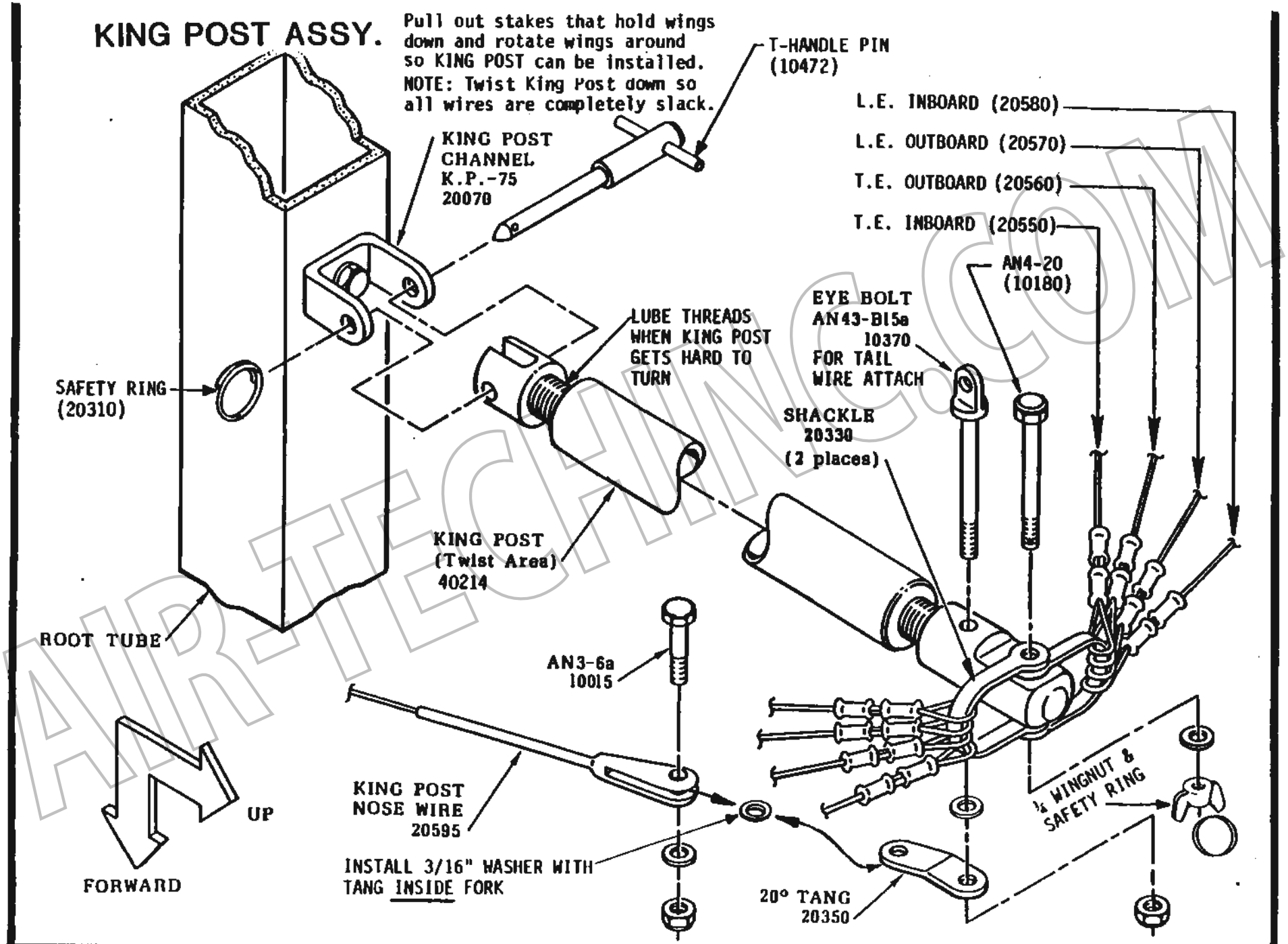






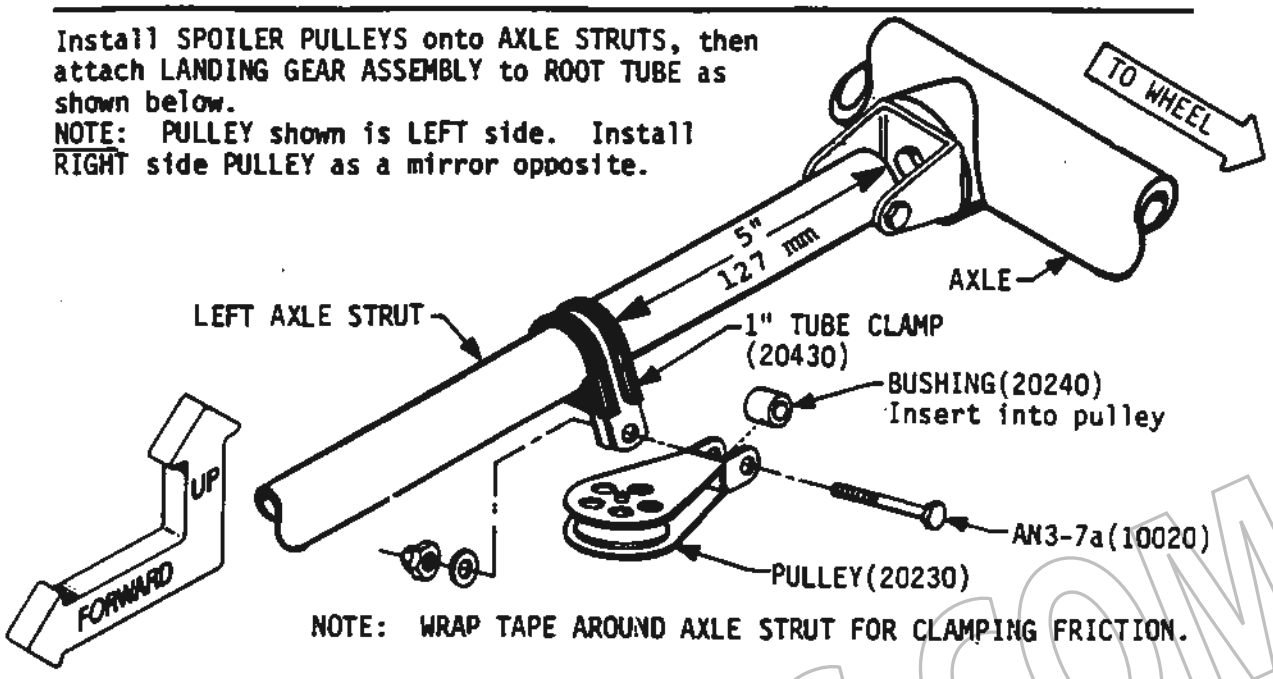
1. ATTACH TRI-BAR TO ROOT TUBE AS SHOWN IN (B).
2. ATTACH NOSE WIRE TO ROOT TUBE AS SHOWN IN (A). (ADD AND TIGHTEN DOWN HARDWARE.)
3. ATTACH LOWER WING WIRES TO TRI-BAR USING AN4-17's, WINGNUTS, AND SAFETY RINGS AS SHOWN EARLIER IN TRI-BAR ASSEMBLY.
4. TIP WING ASSEMBLY ONTO L.E. AND ADD KING POST AS SHOWN ON NEXT PAGE.

KING POST ASSY.

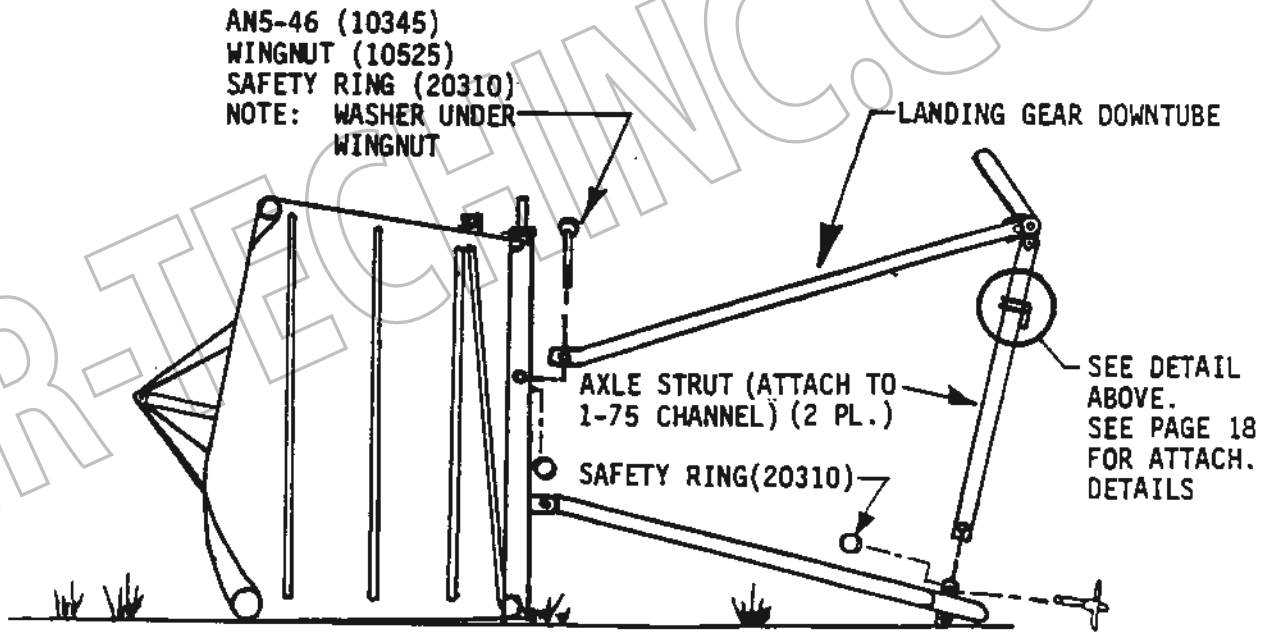


LANDING GEAR ATTACHMENT

Install SPOILER PULLEYS onto AXLE STRUTS, then attach LANDING GEAR ASSEMBLY to ROOT TUBE as shown below.
NOTE: PULLEY shown is LEFT side. Install RIGHT side PULLEY as a mirror opposite.



NOTE: WRAP TAPE AROUND AXLE STRUT FOR CLAMPING FRICTION.

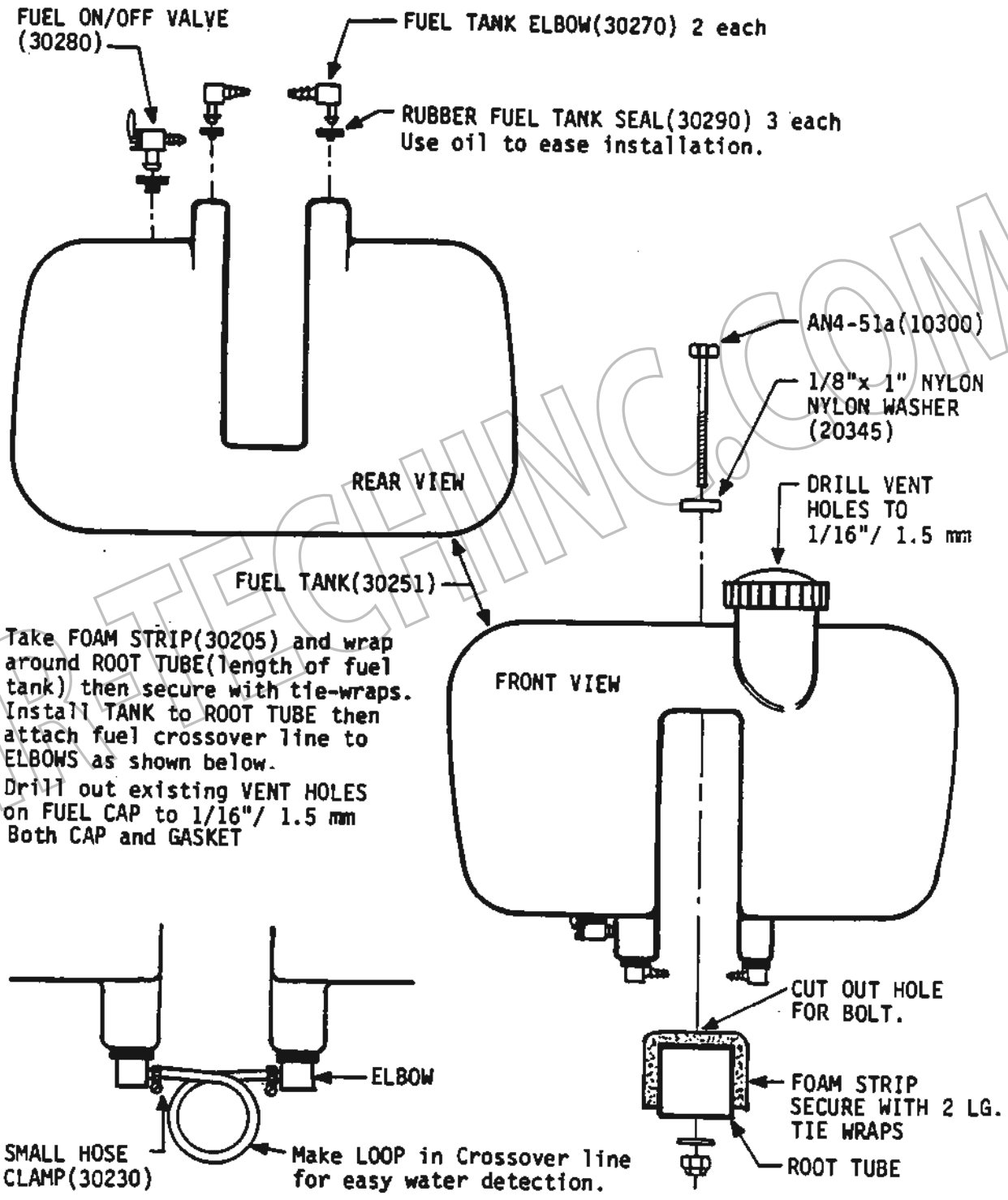


ENGINE RE-INSTALLATION

RE-INSTALL ENGINE TO ROOT TUBE WITH THE TWO AN5-30a BOLTS.

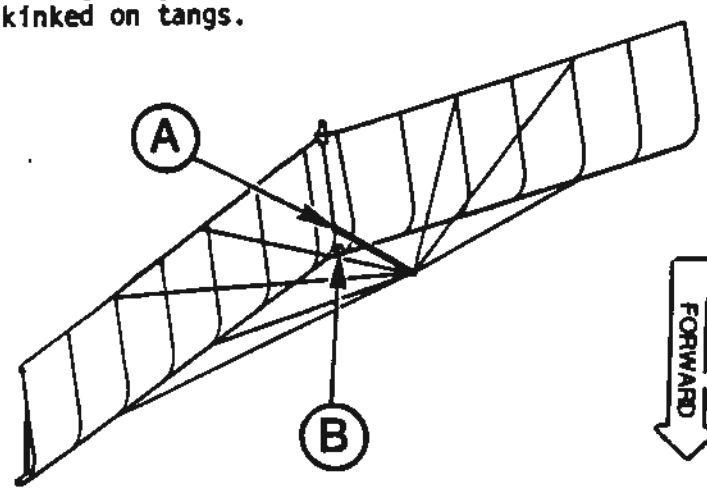
FUEL TANK ASSEMBLY

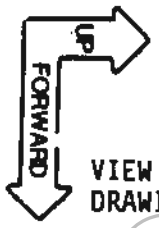
Install fuel fittings as shown below.



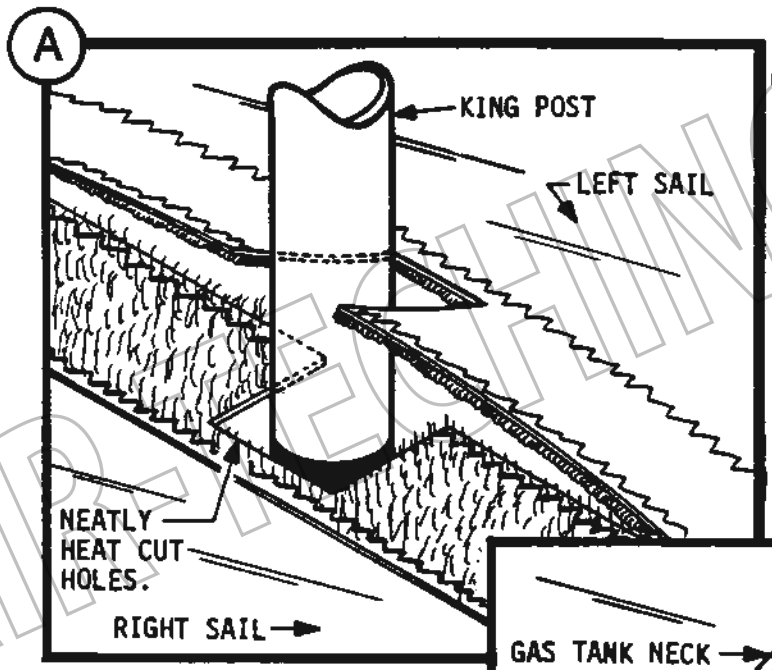
HEAT CUTTING VELCRO DOOR

Before heat cutting, tighten king post and make sure no wires are kinked on tangs.

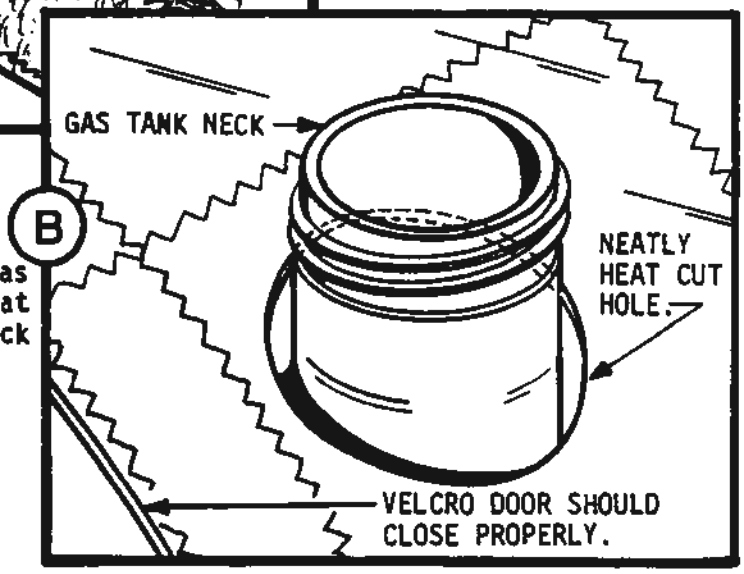




VIEW FOR BOTH DRAWINGS BELOW

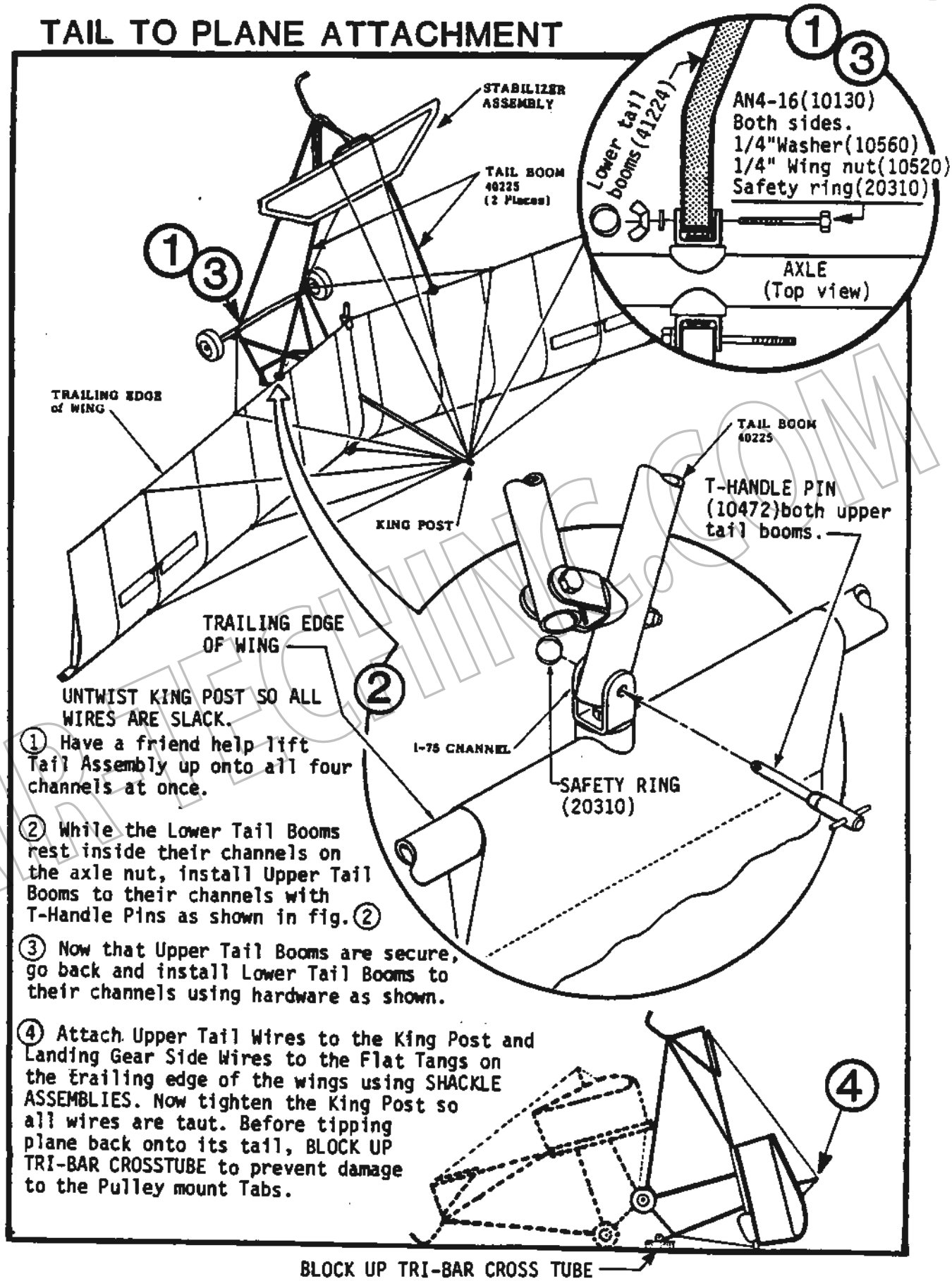


(A) Neatly heat cut hole on each sail as shown so velcro door closes snugly around king post.



(B) Take filler cap off of gas tank and again neatly heat cut hole for gas tank neck so velcro door may close properly.

TAIL TO PLANE ATTACHMENT



UNTWIST KING POST SO ALL WIRES ARE SLACK.

① Have a friend help lift Tail Assembly up onto all four channels at once.

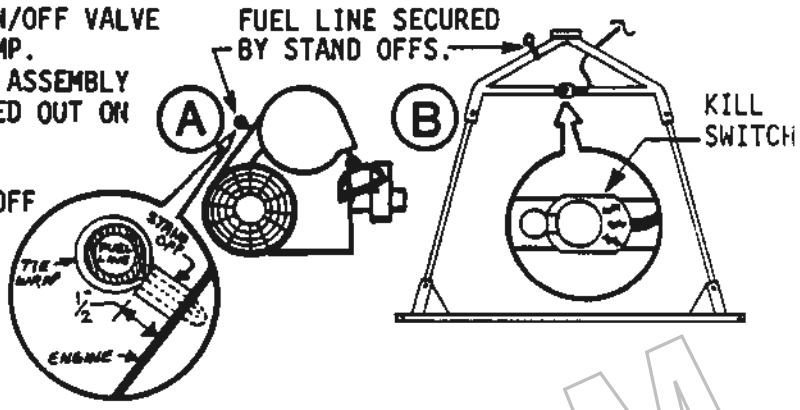
② While the Lower Tail Booms rest inside their channels on the axle nut, install Upper Tail Booms to their channels with T-Handle Pins as shown in fig. ②

③ Now that Upper Tail Booms are secure, go back and install Lower Tail Booms to their channels using hardware as shown.

④ Attach Upper Tail Wires to the King Post and Landing Gear Side Wires to the Flat Tangs on the trailing edge of the wings using SHACKLE ASSEMBLIES. Now tighten the King Post so all wires are taut. Before tipping plane back onto its tail, BLOCK UP TRI-BAR CROSSTUBE to prevent damage to the Pulley mount Tabs.

IGNITION WIRING/FUEL SYSTEM

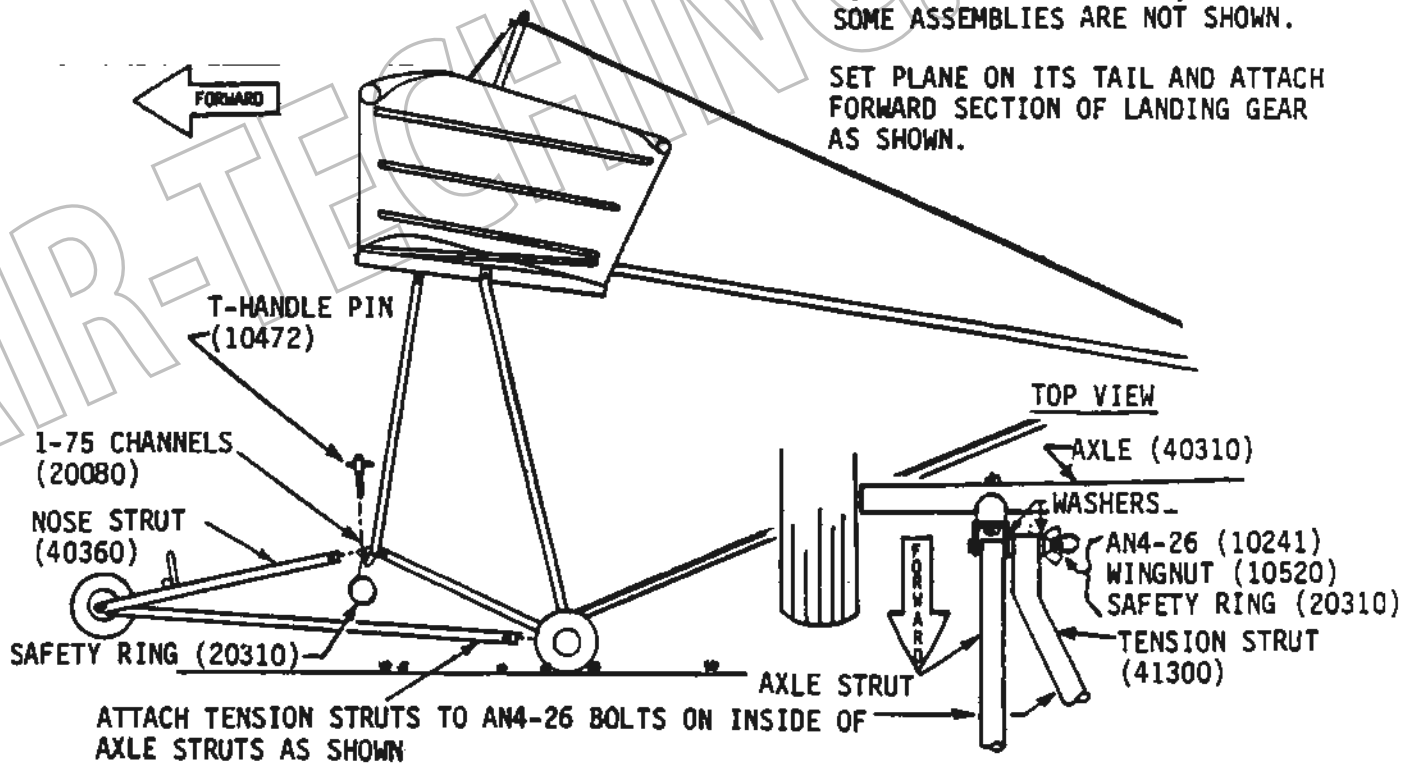
INSTALL AND SECURE FUEL LINE TO ON/OFF VALVE ON FUEL TANK USING SMALL HOSE CLAMP. SECURE FUEL LINE TO UPPER TRI-BAR ASSEMBLY AND HOLE ON ENGINE THAT WAS DRILLED OUT ON "EXHAUST HEADER ASSEMBLY" PAGE BY USING MEDIUM TIE WRAP AND SMALL PIECE OF FUEL LINE FOR THE STAND OFF AS SHOWN IN DRAWINGS (A) AND (B). INSTALL KILL SWITCH TO UPPER TRI-BAR AS SHOWN IN DRAWING (B).



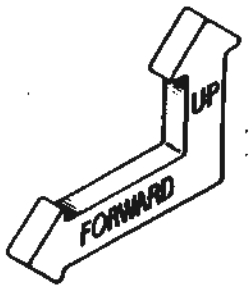
NOSE GEAR ATTACHMENT

FOR PURPOSE OF CLARITY, SOME ASSEMBLIES ARE NOT SHOWN.

SET PLANE ON ITS TAIL AND ATTACH FORWARD SECTION OF LANDING GEAR AS SHOWN.

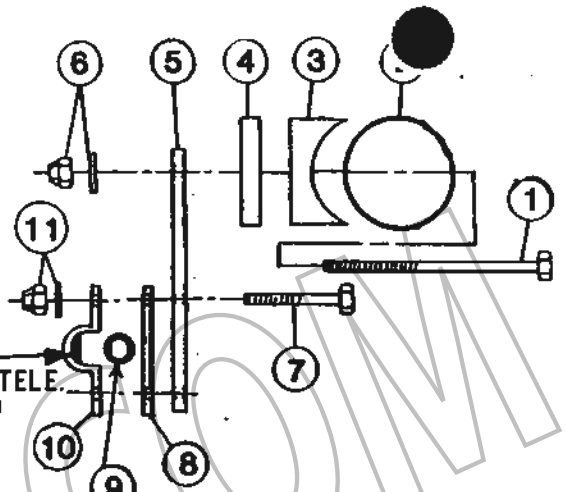


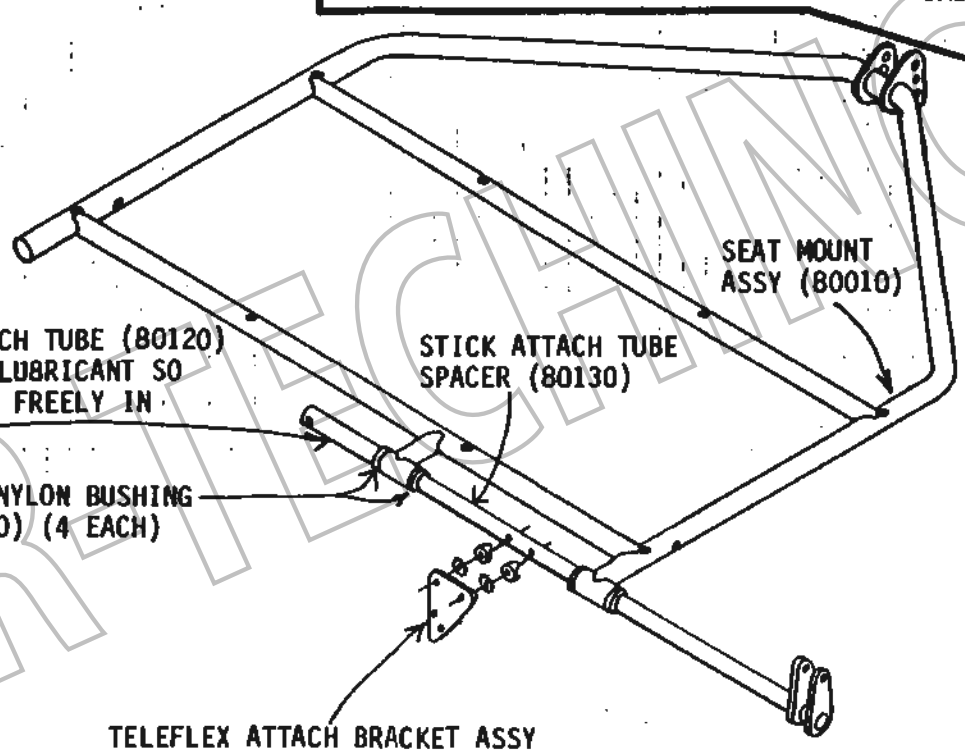
TELEFLEX TUBE AND BRACKET ASSY.

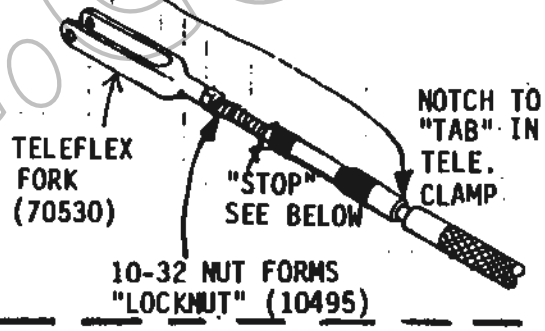


DETAIL "A"

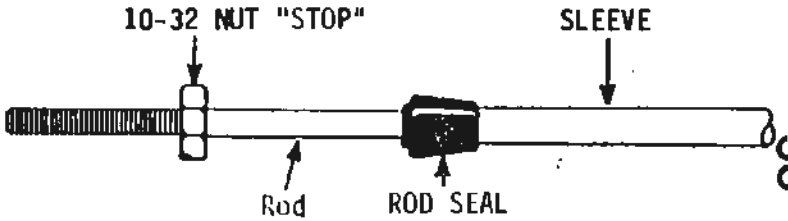
1) AN3-17a(10050) 2 reqd.
2) STICK ATTACH TUBE/SPACER ASSY.
3) 1 x 1/4" SADDLE(20280) 2 reqd.
4) 1 x 1/8" NYLON WASHER (20345) 2 reqd.
5) TELEFLEX ATTACH BRACKET(70600)
6) 3/16" WASHER(10550) 3/16" LOCKNUT(10500)
7) AN3-5a(10010) 2 reqd.
8) TELEFLEX CLAMP(70510)
9) TELEFLEX CABLE(70470)
10) TELEFLEX CLAMP(70510)
11) 3/16" WASHER(10550) 3/16" LOCKNUT (10500)

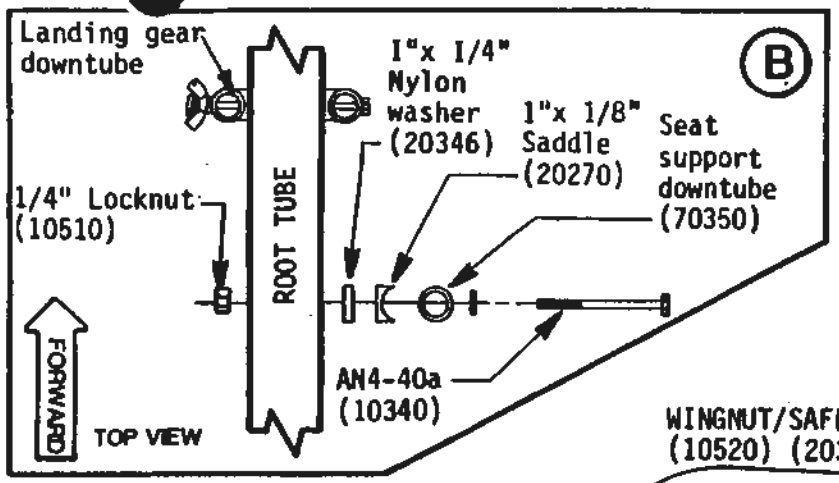






TELEFLEX NOTE:
THREAD THE 10-32 NUT ALL THE WAY TO THE END OF THE THREADED PORTION OF BOTH ROD ENDS AND LOCK TIGHTLY. THIS WILL PREVENT EITHER END OF THE ROD FROM GOING BEYOND THE MAXIMUM TRAVEL ALLOWED.





IMPORTANT! SLIDE "LOOP END" OF PUSH/PULL CABLE (20627) OVER PUSH/PULL TUBE PRIOR TO INSTALLATION. ATTACH OPPOSITE END TO ROOT TUBE WIRE SHACKLE ON MAIN GEAR.

(A) DRILL THIS HOLE IN STICK, SADDLES AND NYLON WASHERS AS CALLED FOR TO 5/16" DIA.

Seat support downtube(70350) STRAIGHT END HERE

OPPOSITE END ATTACHED TO ROOT TUBE AS SHOWN IN DETAIL B

AN4-15 (10121)

WINGNUT/SAFETY RING (10520) (20310)

Wingnut and safety ring 10520 20310

Control Stick Grip(70580) Put on with hot water and soap.

THROTTLE cable housing See detail on "THROTTLE CABLE ATTACH" page.

ELEVATOR CONTROL ARM

7/8" SADOLE (2) (20265) WHITE

AN5-30(10332)

FRONT VIEW

COTTER KEY

BOLT

ELEVATOR PUSH/PULL TUBE (B0080)

1"x1/8" SADOLE (20270)

AN4-14 (10110)

COTTER KEY (10635)install as shown.

1"x1/8" NYLON WASHER (20345)

AN3-13a (10030)

1"x1/8" SADDLE (20270)

AN4-14 (10110)

ELEVATOR ADJUST TUBE (80110)

ATTACH HERE WHEN FLYING DOUBLE

5/8"x1/16" NYLON WASHER (2) (20340)

WINGNUT (10520) safety ring 20310

5/16" WASHER

5/16" THIN LOCKNUT (10541)

ATTACH HERE WHEN FLYING SOLO

AN4-15 (10121)

Two 1/4" Washers

3/16"x3/8" CLEVIS PIN (10440) SAFETY RING (20310)

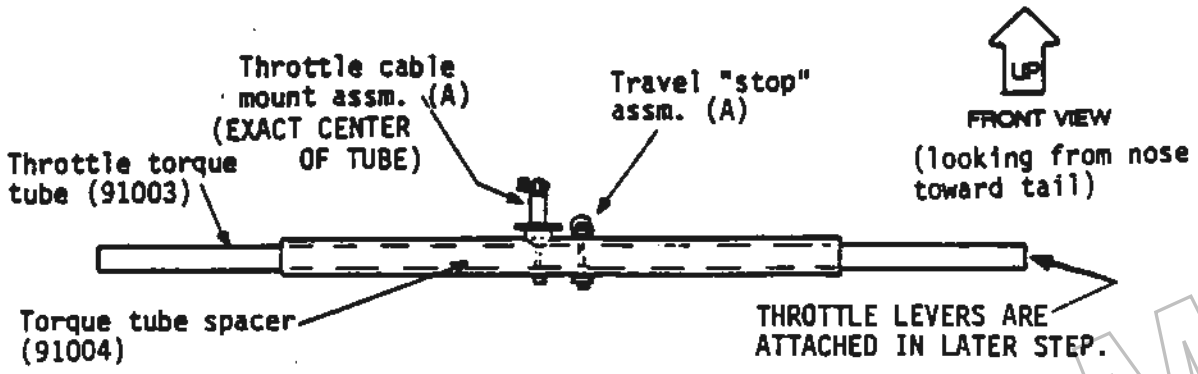
T-HANDLE PIN(10472) SAFETY RING(20310) 2 PLACES.

CASTLE NUT (10521) SAFETY RING (20310)

AN43B-14a EYEBOLT (10350)

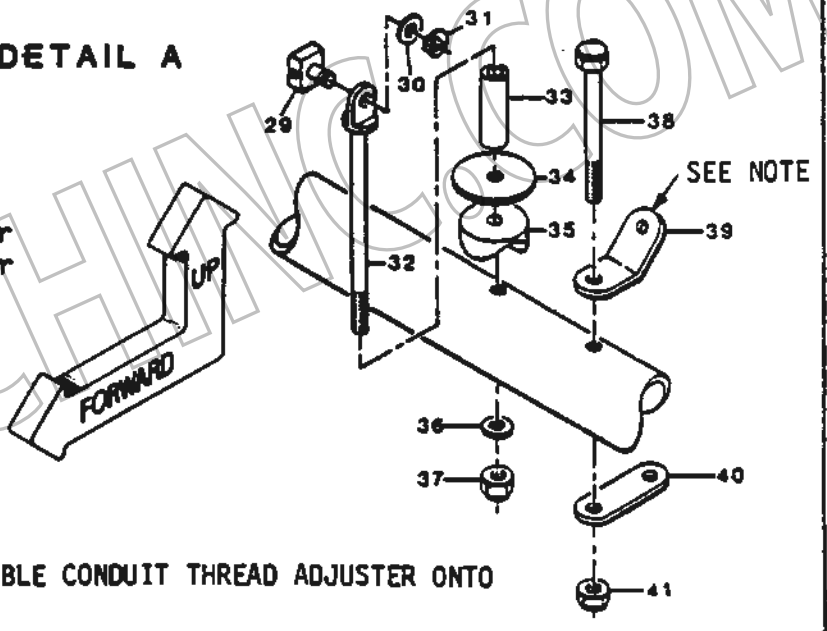
TORQUE TUBE ASSY.

1. Slide the TORQUE TUBE SPACER (91004) over the THROTTLE TORQUE TUBE (91003) and attach the throttle cable mounting hardware and "travel stop" hardware as shown in DETAIL A.



DETAIL A

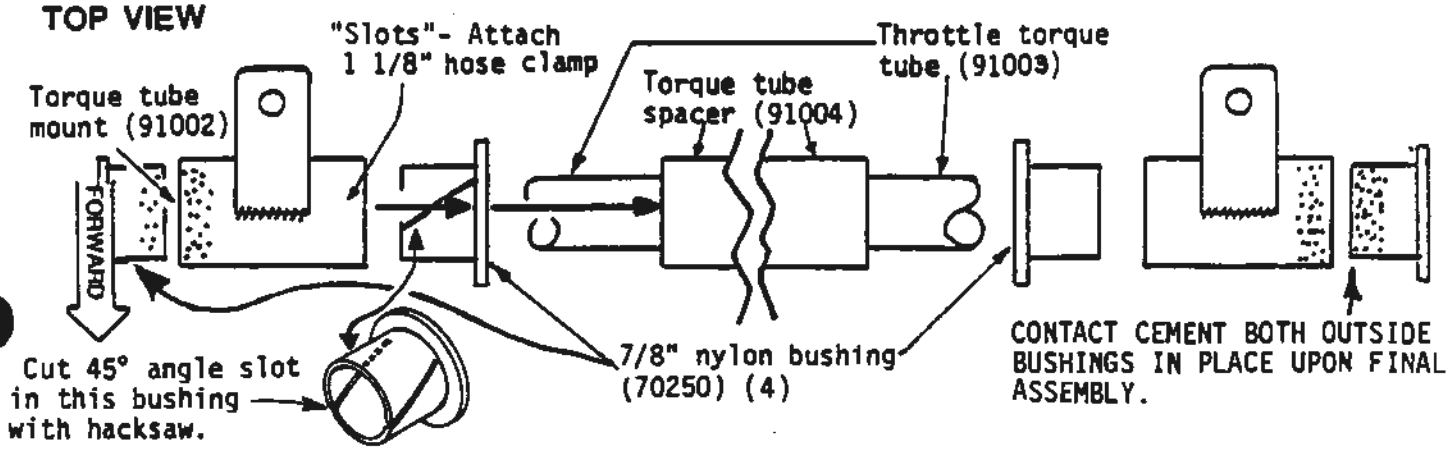
INDEX		
29	90250	Cable swivel
30	10550	3/16" washer
31	90260	E-Clip
32	10375	An438-23a
33	91006	3/4" Alumn. spacer
34	10565	1/4" Fender washer
35	20270	1/8" Thick saddle
36	10560	1/4" Washer
37	10510	1/4" Locknut
38	10100	AN4-14a
39	20355	75 deg. tang
40	20360	Flat tang
41	10510	1/4" Locknut



NOTE: SEE PAGE 58 AND SUB-ASSEMBLE CONDUIT THREAD ADJUSTER ONTO TANG AS SHOWN.

2. Slide the 7/8" NYLON BUSHINGS (70250) into the TORQUE TUBE MOUNTS (91002) as shown (pay attention to proper "direction"). Slide each "sub assm." over the the THROTTLE TORQUE TUBE until it "butts" against the TORQUE TUBE SPACER as shown.

TOP VIEW

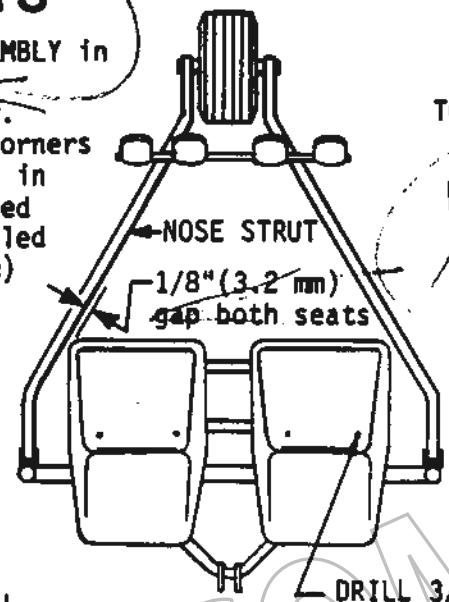


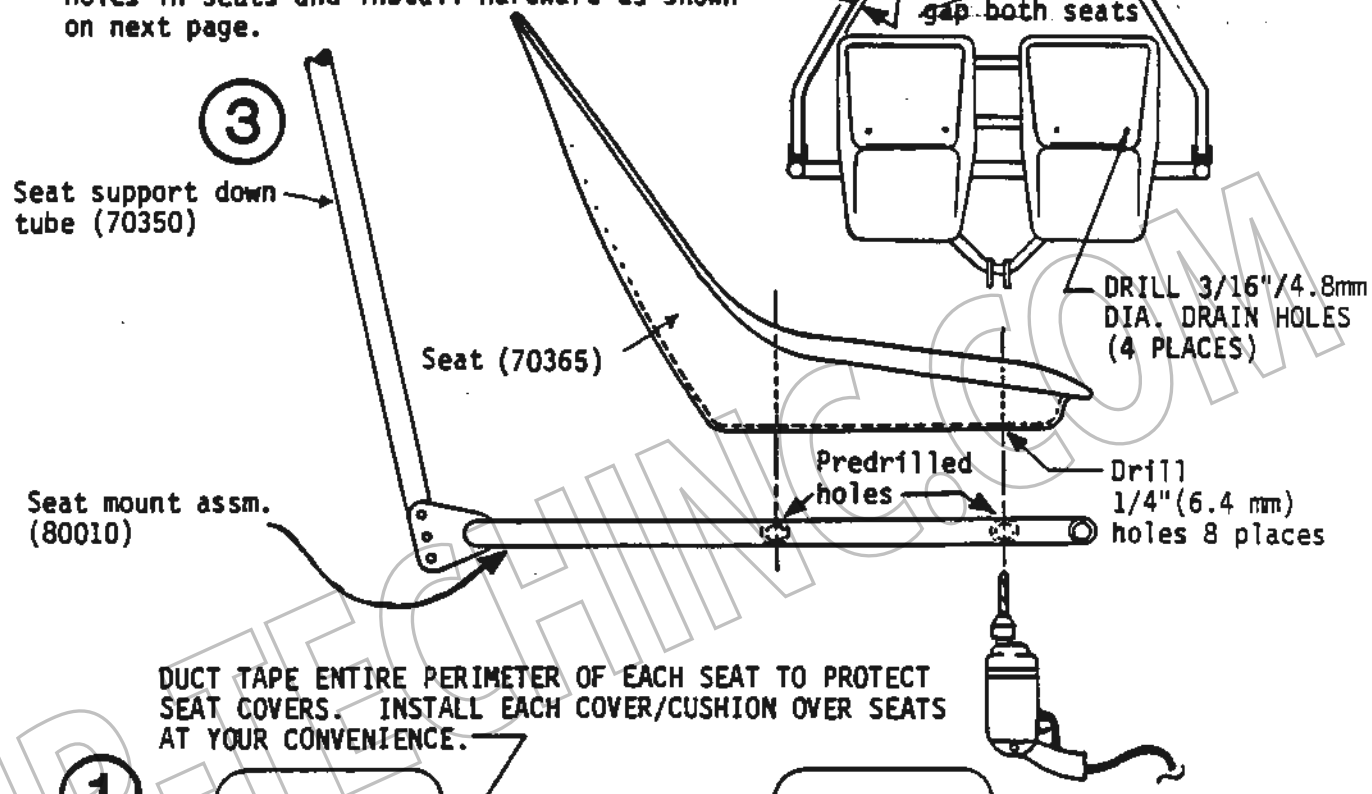
MOUNTING SEATS

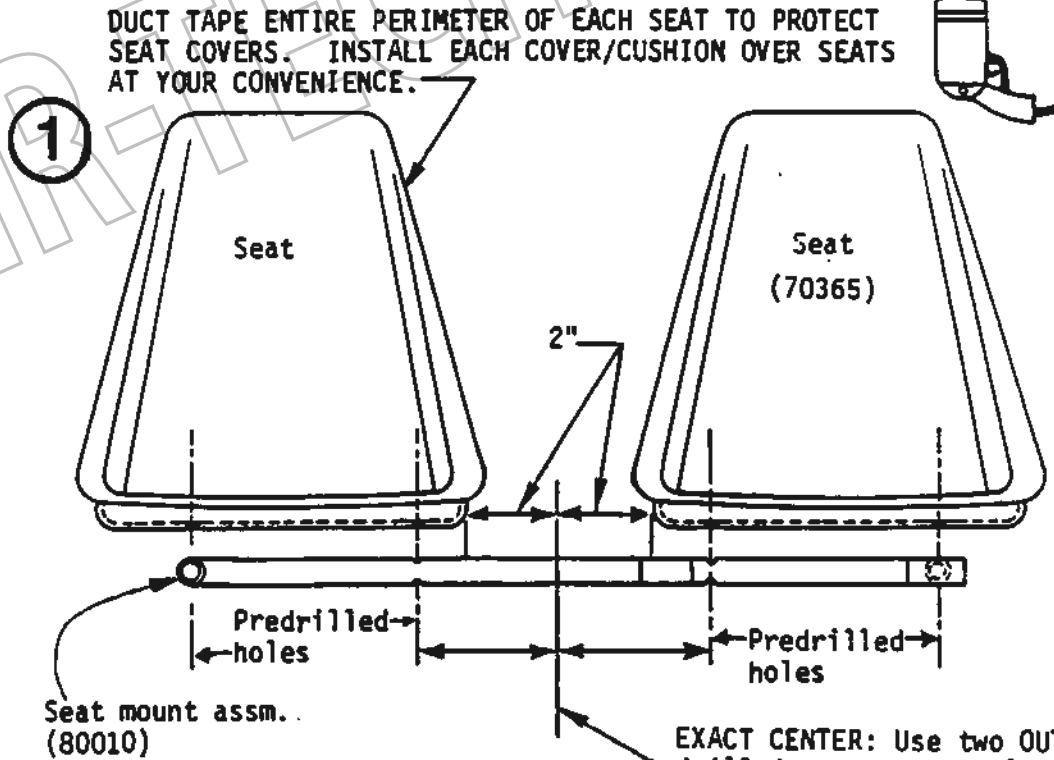
IMPORTANT! Before starting, place SEAT MOUNT ASSEMBLY in its forward position on the TRI-BAR CROSSTUBE.

① Align seats laterally as shown in fig. 1 below.

② Slide both seats forward until their outside corners are 1/8"(3.2 mm) from the NOSE STRUTS as shown in fig. 2 at right. BE SURE seats are still aligned laterally. ③ With seats aligned, use predrilled holes in seat mount to drill eight 1/4"(6.4 mm) holes in seats and install hardware as shown on next page.





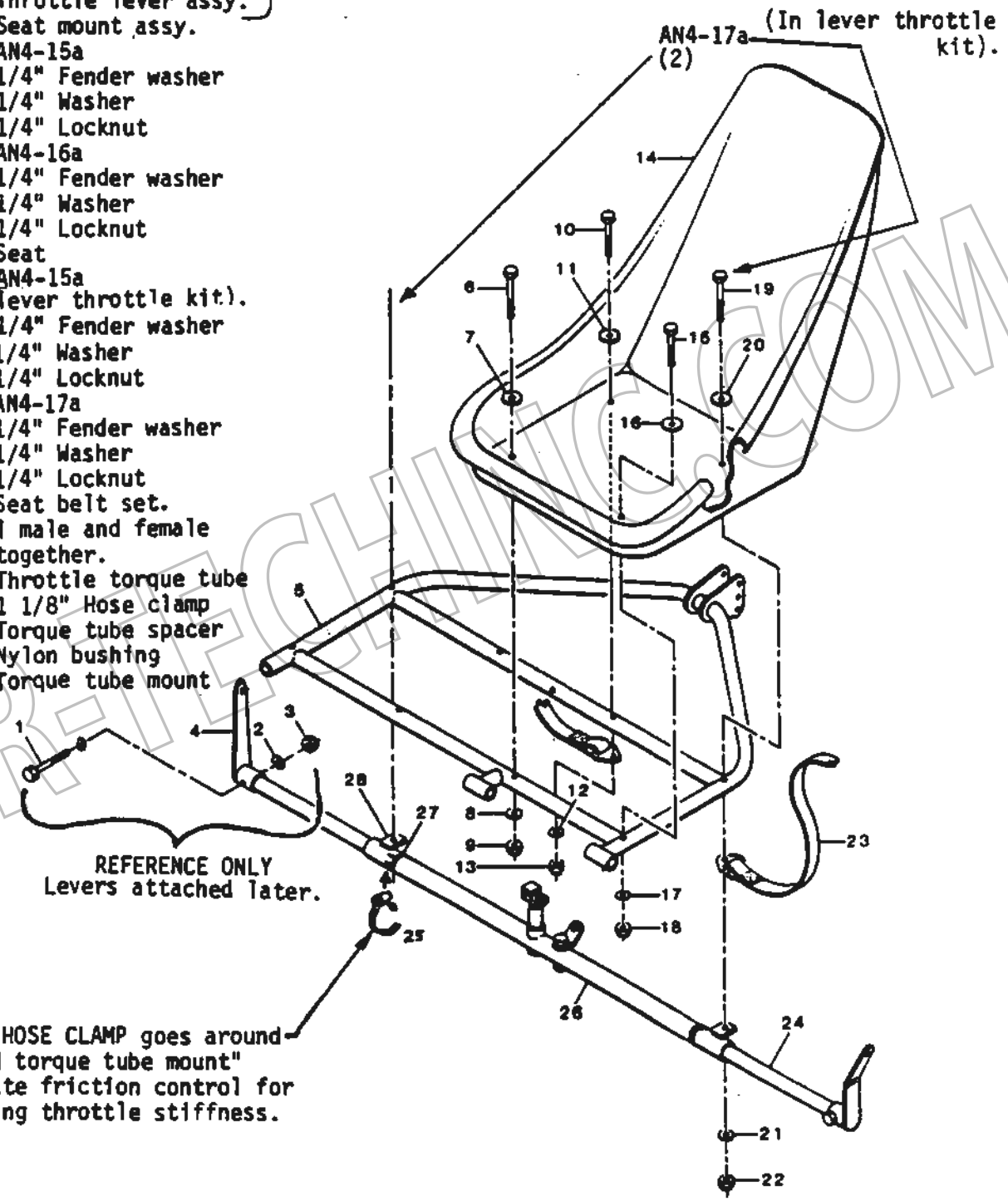


MOUNTING SEATS CONT.

Install hardware as shown in sequence. NOTE: Steps 1-4 are for reference only and will be installed later.
The same hardware is used to install both seats.

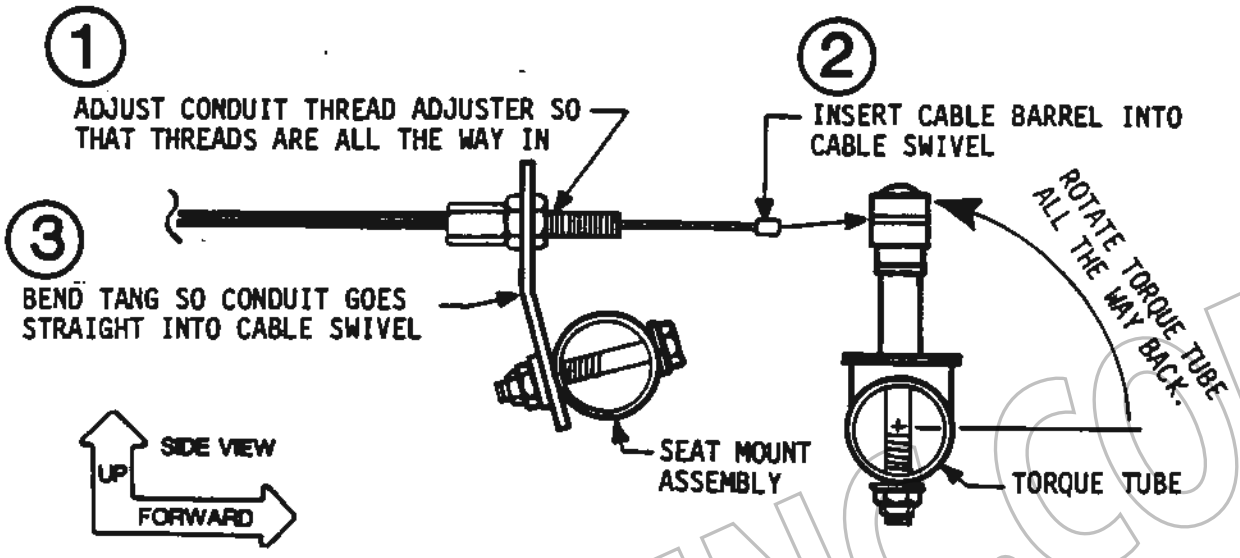
1 10030 AN3-13a 2 reqd.
2 10550 3/16" washer
3 10500 3/16" locknut
4 91001 Throttle lever assy.
} REFERENCE ONLY. SEE LEVER THROTTLE ATTACH PAGE.

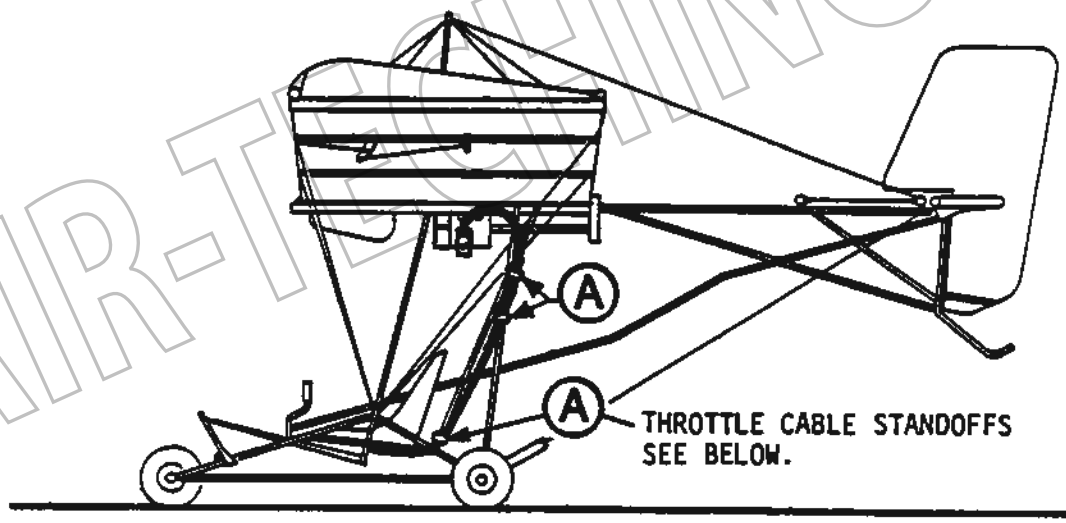
5 80010 Seat mount assy.
6 10120 AN4-15a
7 10565 1/4" Fender washer
8 10560 1/4" Washer
9 10510 1/4" Locknut
10 10140 AN4-16a
11 10565 1/4" Fender washer
12 10560 1/4" Washer
13 10510 1/4" Locknut
14 70365 Seat
15 10120 AN4-15a
(1 in lever throttle kit).
16 10565 1/4" Fender washer
17 10560 1/4" Washer
18 10510 1/4" Locknut
19 10150 AN4-17a
20 10565 1/4" Fender washer
21 10560 1/4" Washer
22 10510 1/4" Locknut
23 70330 Seat belt set.
Install male and female belts together.
24 91003 Throttle torque tube
25 30470 1 1/8" Hose clamp
26 91004 Torque tube spacer
27 70250 Nylon bushing
28 91002 Torque tube mount

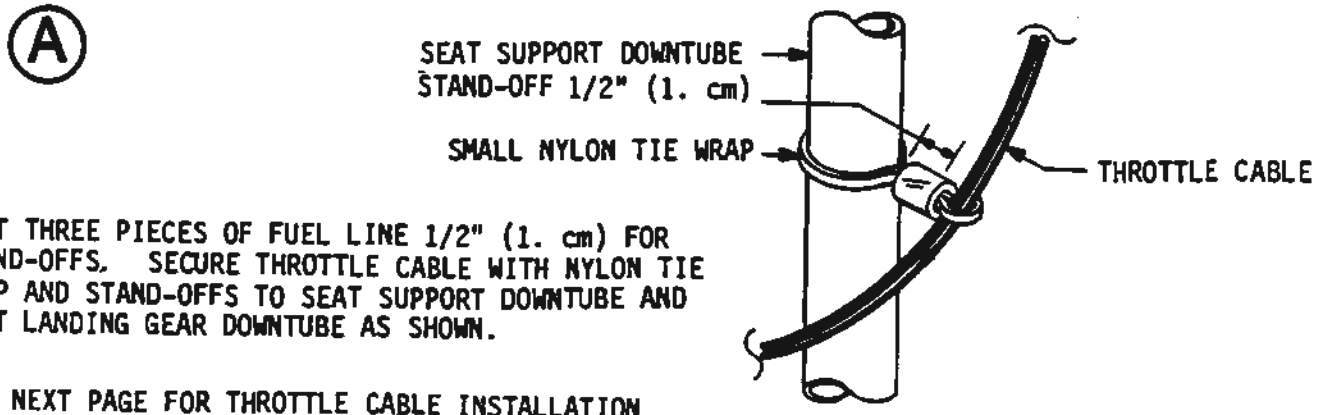


THROTTLE CABLE ASSY.

INSTALL THROTTLE CABLE AS SHOWN BELOW.





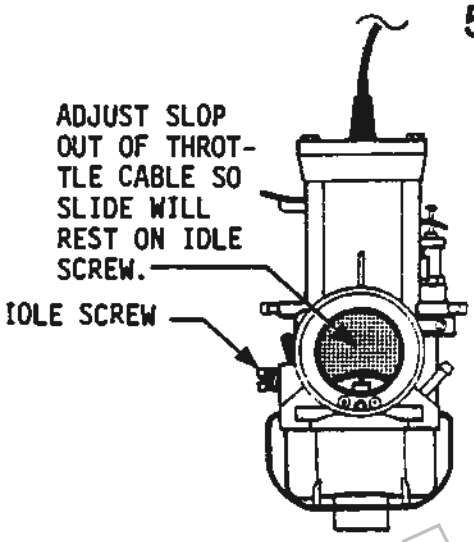


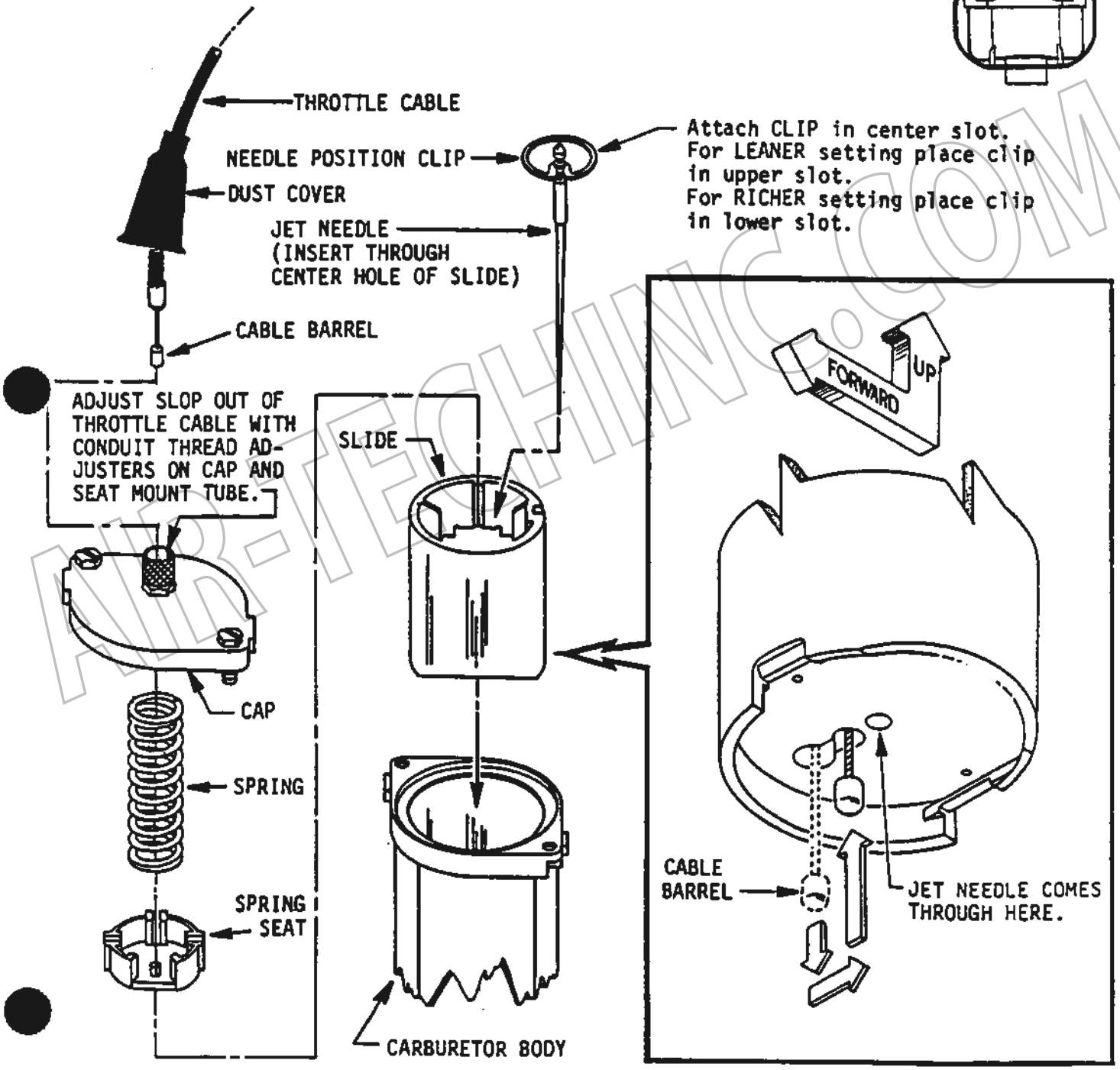
*CUT THREE PIECES OF FUEL LINE 1/2" (1. cm) FOR STAND-OFFS. SECURE THROTTLE CABLE WITH NYLON TIE WRAP AND STAND-OFFS TO SEAT SUPPORT DOWNTUBE AND LEFT LANDING GEAR DOWNTUBE AS SHOWN.

SEE NEXT PAGE FOR THROTTLE CABLE INSTALLATION TO CARBURETOR.

THROTTLE CABLE ASSY. CONT.

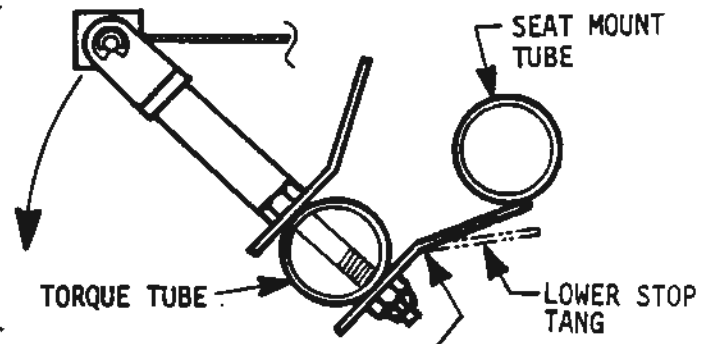
Take off CAP of CARBURETOR. (Be careful of SPRING popping out). Insert JET NEEDLE down through center hole of SLIDE, then take CABLE BARREL and insert it through hardware as shown. Secure CABLE BARREL in SLIDE as shown in detail at right. Take completed assembly and set into CARBURETOR BODY and secure CAP with SCREWS. Now adjust slop out of THROTTLE CABLE with conduit thread adjusters on CARBURETOR CAP and SEAT MOUNT TUBE so the CARBURETOR SLIDE rests on top of IDLE SCREW as shown in diagram at right.



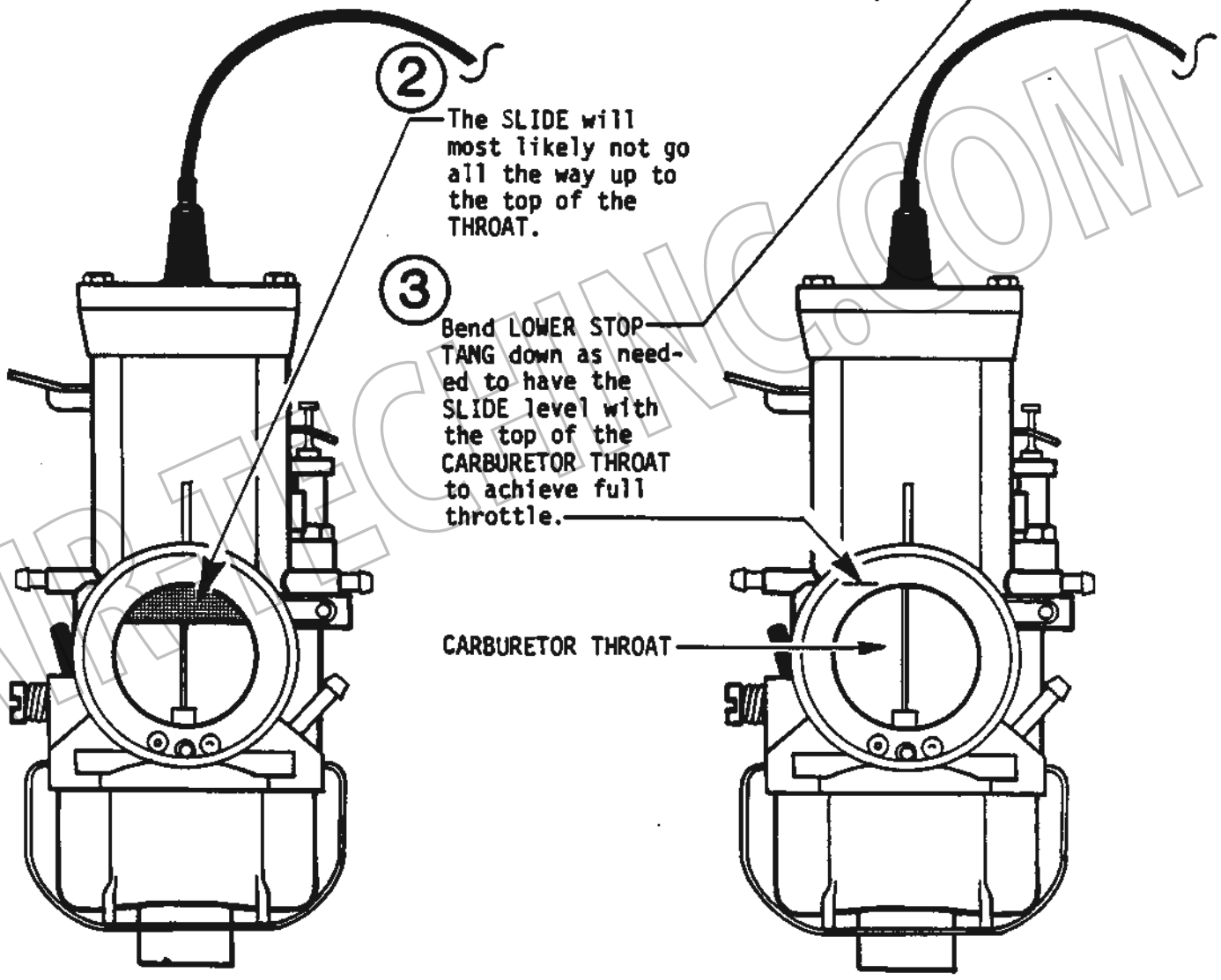


THROTTLE CABLE ASSY. CONT.

Before starting on this page, check again that procedures on the preceeding page have been done correctly.



1. Rotate TORQUE TUBE completely forward.



2. The SLIDE will most likely not go all the way up to the top of the THROAT.

3. Bend LOWER STOP TANG down as needed to have the SLIDE level with the top of the CARBURETOR THROAT to achieve full throttle.

CARBURETOR THROAT

* The AIR FILTER should be installed after the above procedure is completed. Refer back to the "CARBURETOR ASSEMBLY" page for hardware.

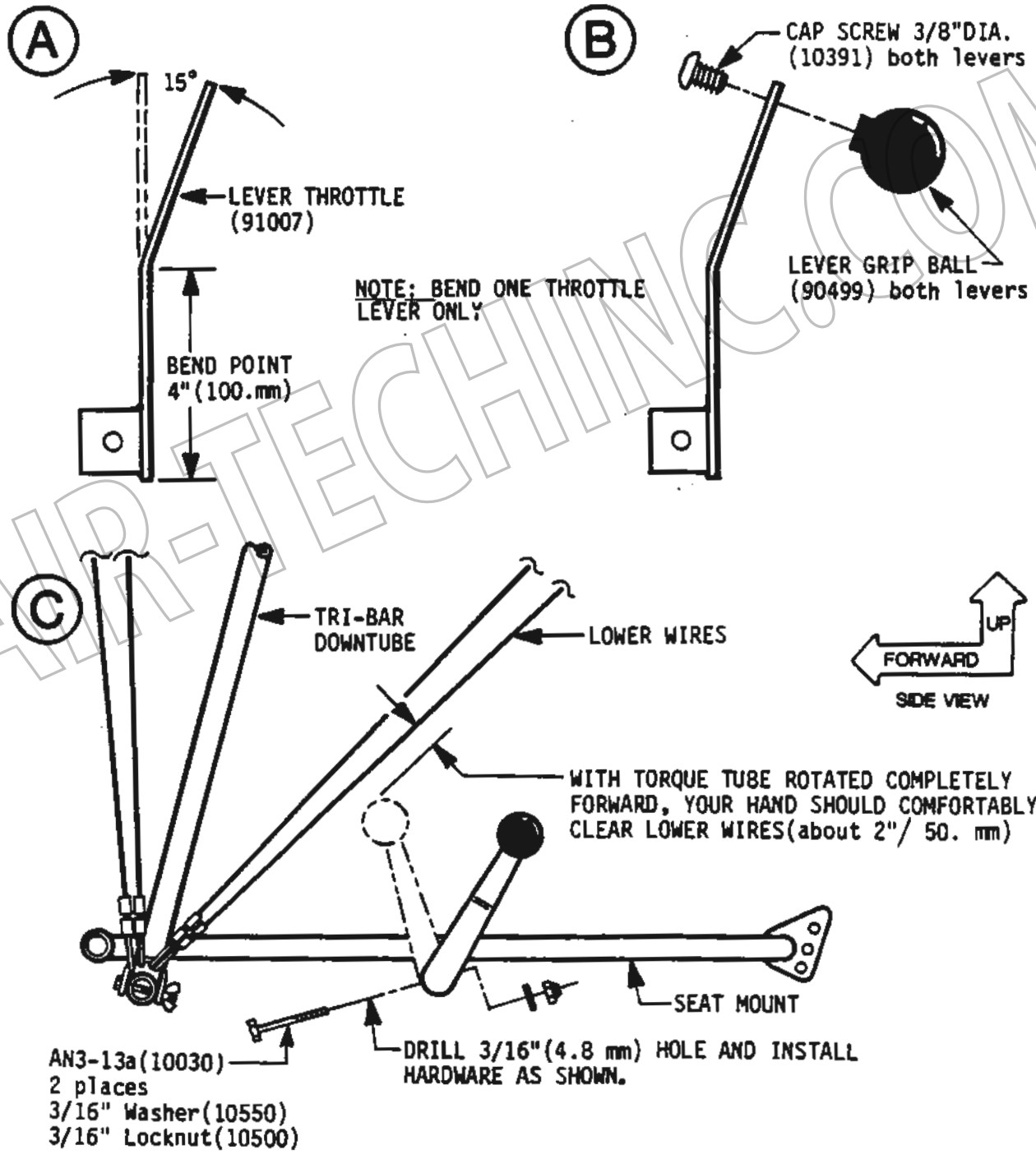
THROTTLE CABLE ASSY. CONT.

Assemble hardware in sequence shown.

Ⓐ Take only ONE of two lever throttles and bend in vice between two pieces of wood to the specifications shown in detail "A".

Ⓑ Install Lever grip balls on both lever throttles as shown in detail "B".

Ⓒ Rotate Torque tube completely forward(when lower tang bottoms out on seat mount assembly). Then place Bent lever throttle on the left side of torque. tube. Sit in left seat and adjust lever throttle so your hand comfortably clears the lower wing wires at full throttle as shown. With lever throttle in place, mark and drill 3/16"(4.8 mm) hole in torque tube using holes in lever throttle as guides. Install hardware as shown.
Repeat mounting procedure for right hand throttle.



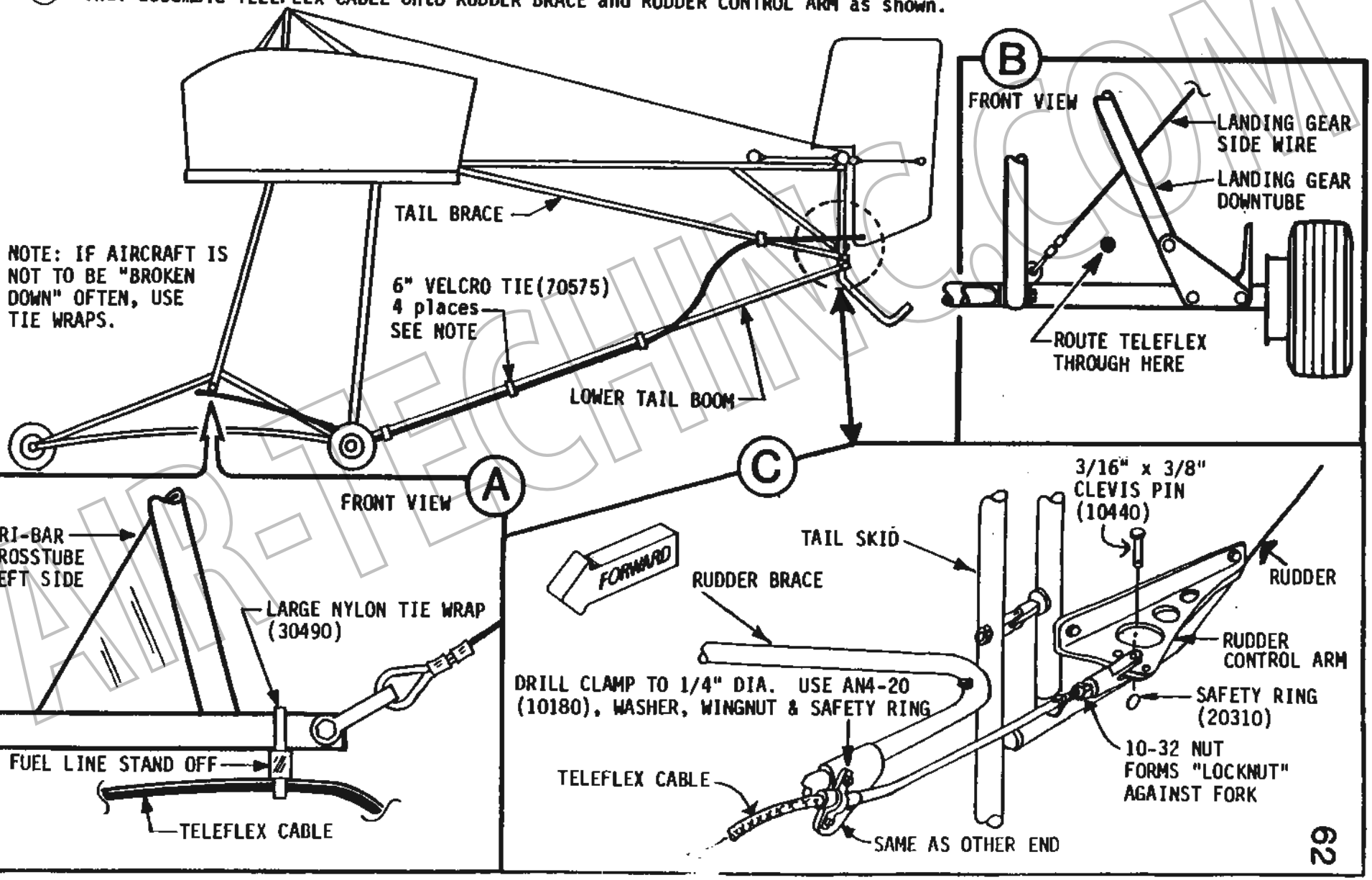
TELEFLEX CABLE ROUTING

INSTALL TELEFLEX CABLE BY DRAWING SEQUENCE.

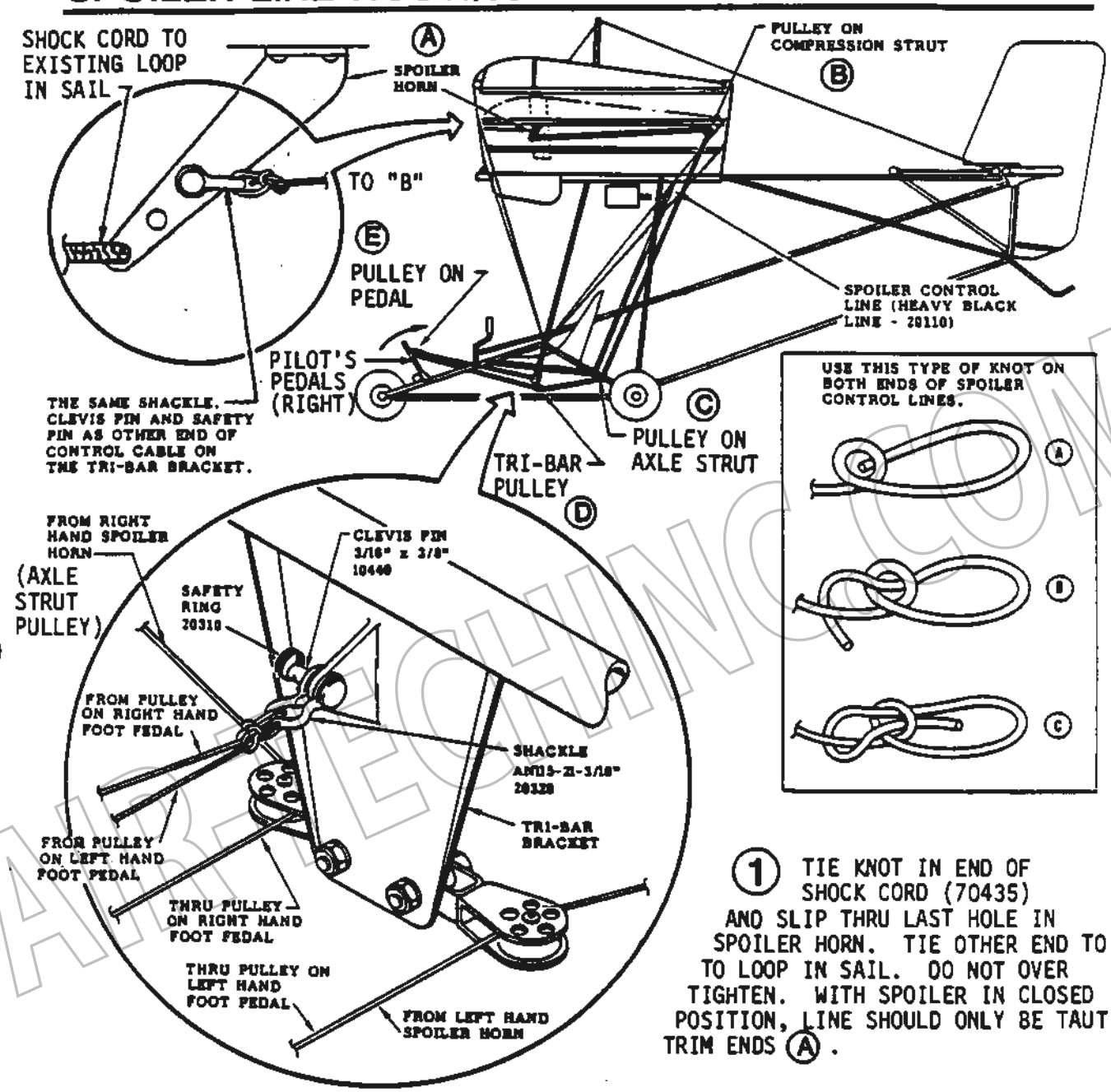
(A) Attach TELEFLEX CABLE to TRI-BAR CROSSTUBE with small piece of FUEL LINE for stand off and secure with LARGE NYLON TIE WRAP.

(B) Route TELEFLEX CABLE as shown in drawing B then secure CABLE along LOWER TAIL BOOM with three 6" VELCRO TIES. Secure CABLE again on TAIL BRACE with 6" VELCRO TIES.

(C) Final assemble TELEFLEX CABLE onto RUDDER BRACE and RUDDER CONTROL ARM as shown.



SPOILER LINE ROUTING



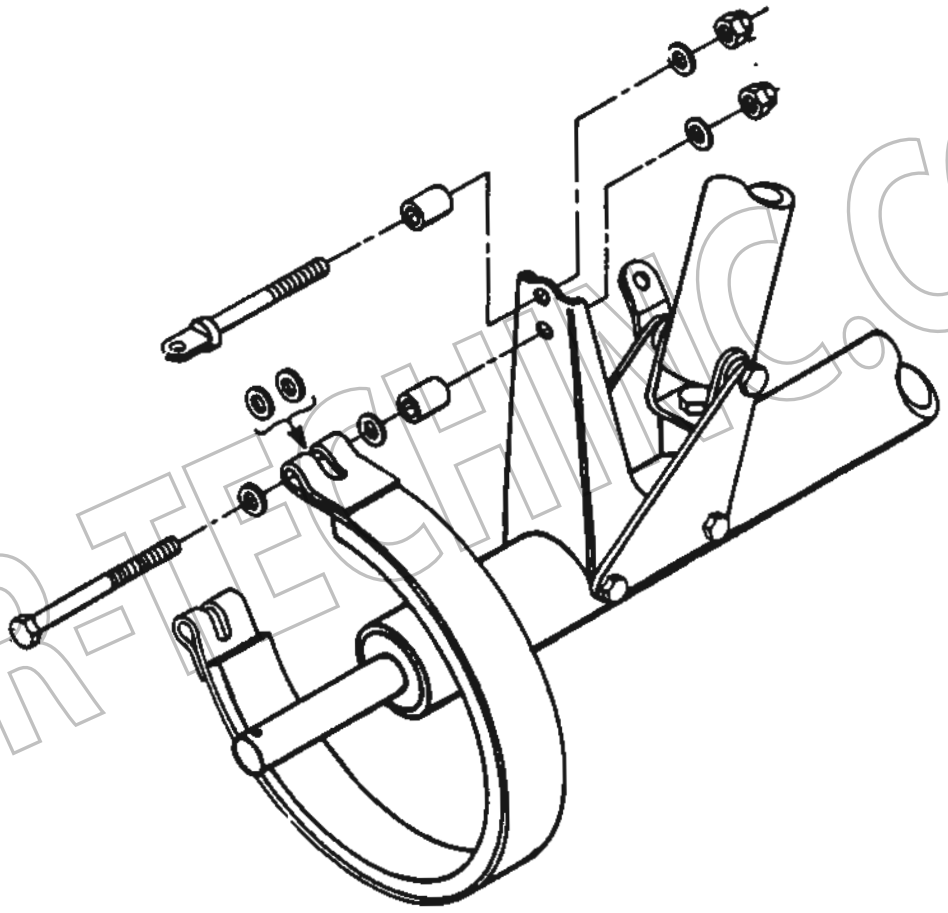
(1) TIE KNOT IN END OF SHOCK CORD (70435) AND SLIP THRU LAST HOLE IN SPOILER HORN. TIE OTHER END TO TO LOOP IN SAIL. DO NOT OVER TIGHTEN. WITH SPOILER IN CLOSED POSITION, LINE SHOULD ONLY BE TAUT. TRIM ENDS (A).

(2) ATTACH SHACKLE ASSY. TO UPPERMOST HOLE IN SPOILER HORN. TIE ONE END OF CONTROL LINE TO SHACKLE.

(3) ROUTE LINE FROM HORN THRU PULLEY ON COMPRESSION STRUT (B), THRU PULLEY ON AXLE STRUT (C), THRU PULLEY ON TRI-BAR (SAME SIDE AS HORN) (D), THRU PULLEY ON SAME SIDE PEDAL (E), AND FINALLY TO SHACKLE ASSY. ON PILOT'S SIDE TRI-BAR "TAB" AS SHOWN ABOVE. ONLY USE BOWLINE KNOTS AS SHOWN. WITH PEDAL IN UNPRESSED STATE, PULL LINE UNTIL SPOILER "OPENS" 1/16" (1.6 mm) FROM UPPER WING SURFACE AND TIE. REPEAT ON OTHER SIDE.

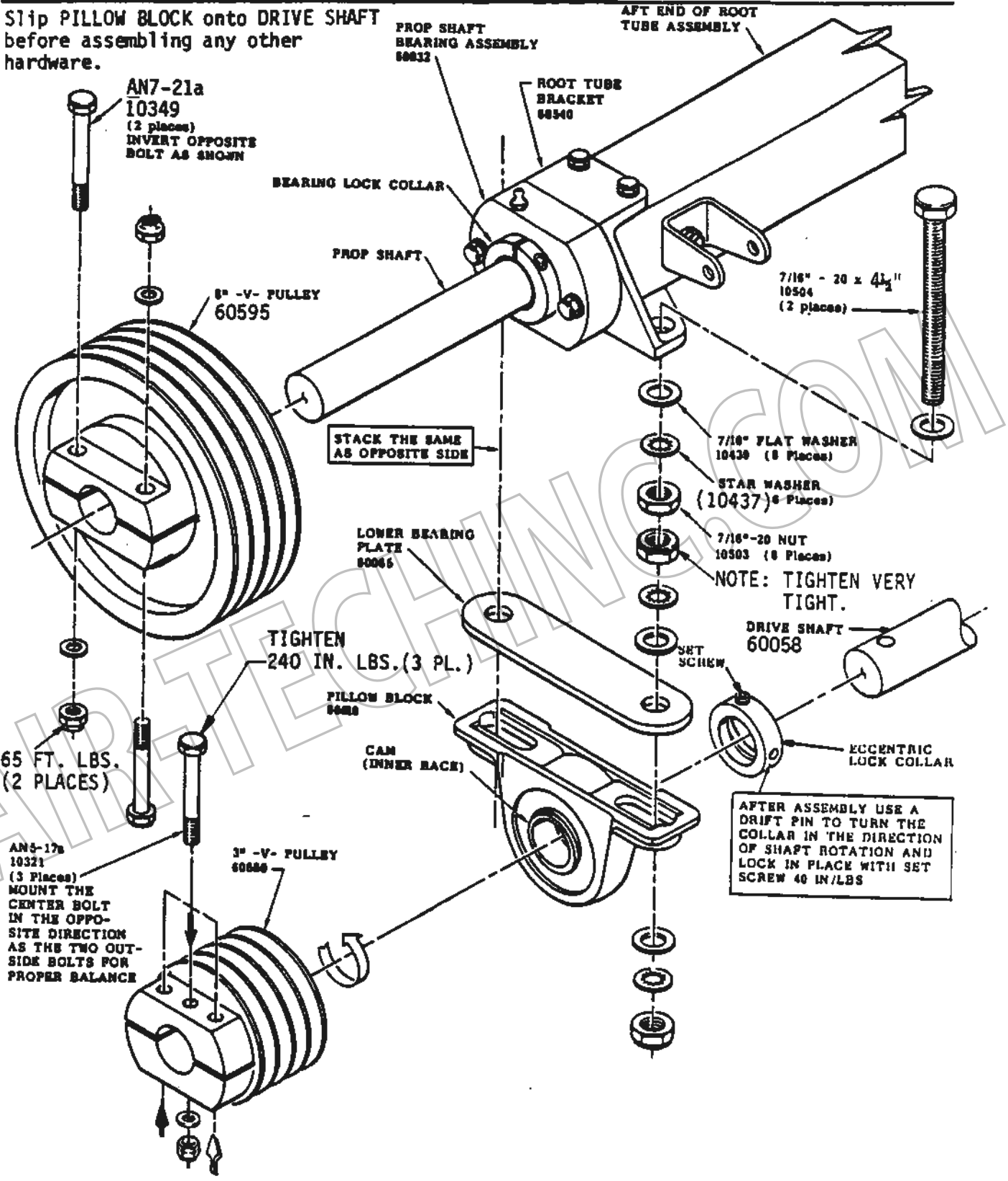
BRAKE SYSTEM COMPLETION

AT THIS TIME COMPLETE THE INSTALLATION OF THE BRAKE SYSTEM. DO SO BY CONSULTING ASSEMBLY INSTRUCTIONS INCLUDED IN THE MXII BRAKE KIT #91222 (SEPARATE INSTRUCTIONS). YOU HAVE ALREADY COMPLETED CERTAIN SUB-ASSEMBLIES, SO READ THE INSTRUCTIONS COMPLETELY TO OETERMINE WHAT STEPS ARE APPLICABLE.



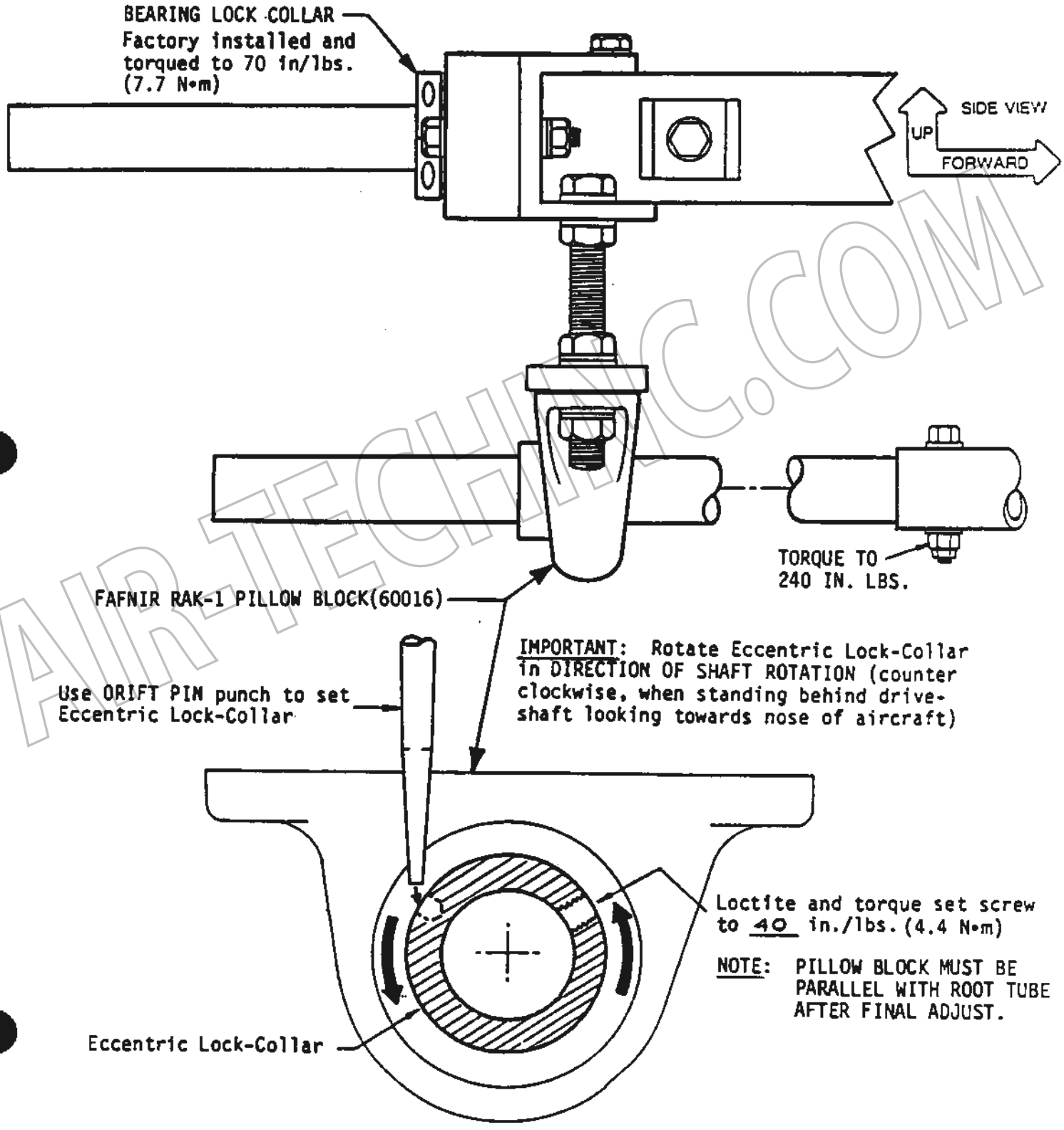
REDUCTION ASSEMBLY — REFER TO THE TWO FOLLOWING PAGES PRIOR TO ASSY

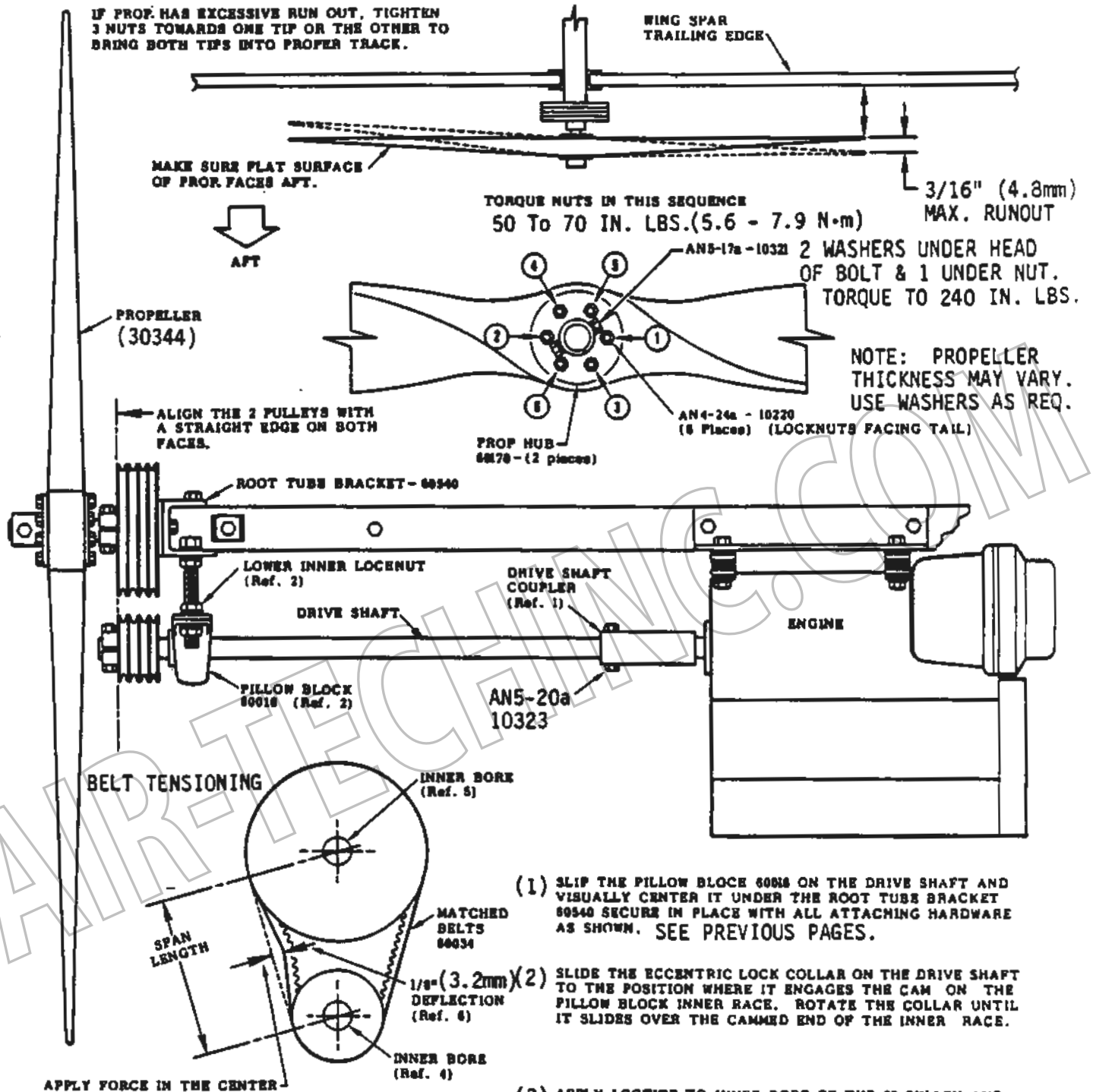
Slip PILLOW BLOCK onto DRIVE SHAFT before assembling any other hardware.



DRIVESHAFT/BEARING ASSM.

INSTALL ECCENTRIC LOCK COLLAR AS SHOWN BELOW. UPPER DRAWING FOR REFERENCE ONLY.





NOTE: MARK THE BELTS IN SEQUENCE (1-2-3-4) AND ALWAYS RE-INSTALL IN THE SAME ORDER.

RECOMMENDED BELT TENSION:
DAYCO--3VX250 "V" BELTS
8 LBS. INITIAL 30 MIN. BREAK-IN
5-6 LBS AFTER BREAK-IN

GATES--3VX250 "V" BELTS.
7 LBS. INITIAL 30 MIN. BREAK-IN
4-1/2 to 5-1/2 LBS. AFTER BREAK-IN

NOTE: THE BELTS COME IN MATCHED SETS. IF DAMAGED REPLACE ALL FOUR BELTS

(1) SLIP THE PILLOW BLOCK 60018 ON THE DRIVE SHAFT AND VISUALLY CENTER IT UNDER THE ROOT TUBE BRACKET 60540 SECURE IN PLACE WITH ALL ATTACHING HARDWARE AS SHOWN. SEE PREVIOUS PAGES.

(2) SLIDE THE ECCENTRIC LOCK COLLAR ON THE DRIVE SHAFT TO THE POSITION WHERE IT ENGAGES THE CAM ON THE PILLOW BLOCK INNER RACE. ROTATE THE COLLAR UNTIL IT SLIDES OVER THE CAMMED END OF THE INNER RACE.

(3) APPLY LOCTITE TO INNER BORE OF THE 3" PULLEY AND SLIDE IT ON THE DRIVE SHAFT. SECURE WITH 3 BOLTS: MOUNT THE CENTER BOLT IN THE OPPOSITE DIRECTION AS THE OUTSIDE BOLTS FOR PROPER BALANCE. TORQUE TO 240 IN.LBS.

(4) APPLY LOCTITE TO THE INNER BORE OF THE 6" PULLEY AND SLIDE IT ONTO THE PROP. SHAFT. MOUNT BELTS AND ALIGN THE 2 PULLEYS WITH A STRAIGHT EDGE AS SHOWN. ATTACH PULLEY WITH 2 BOLTS MOUNTED IN OPPOSITE DIRECTIONS (FOR BALANCE) 65 FT. LBS.

(5) ADJUST BELT TENSION AND LOCK PILLOW BLOCK IN PLACE.

(6) ATTACH PROP AS SHOWN AND TORQUE NUTS TO 70 IN. LBS.

BEARING LUBRICATION

Note: Too much grease is as bad as not enough.

BOTH the drive shaft and prop shaft bearing MUST BE PERIODICALLY RELUBRICATED to assure long life. The bearings should be lubricated EVERY 50 HRS. OF OPERATION and 30 hrs. if operated in extreme dirt/dust environment.

REMOVE the propeller and use EXTREME CAUTION as the bearings ideally should be lubricated while in operation (run engine at idle and DO NOT overspeed).

Feed the specified lubricant into the bearing SLOWLY until a slight "bead" (of lubricant) forms around the seal.

PROPER LUBRICATION OF BEARINGS PREVENTS EXCESSIVE WEAR OF PARTS, PROTECTS BALL RACES, BALLS, ETC. FROM CORROSION AND HELPS IN DISSIPATING INTERNAL HEAT.

SPECIFIED LUBRICANT ONLY!

USE ONLY A LUBRICANT CONFORMING TO A NLGI GRADE TWO CONSISTENCY.
IDEALLY A LITHIUM BASED LUBRICANT.

TUBE CAPS

Tube Caps: Be sure to install the tube caps and it's recommended that the caps with a loose fitting be pop riveted on with small 1/8" rivets.
The following tubes receive caps:

7/8" TUBE CAPS, ONE IN EACH END OF THE:

1. TAIL BRACE TUBES.
2. RUDDER BRACE TUBE.
3. STABILIZER T.E.
4. ELEVATOR L.E.
5. TAIL SKID
6. L.E. OF THE RUDDER

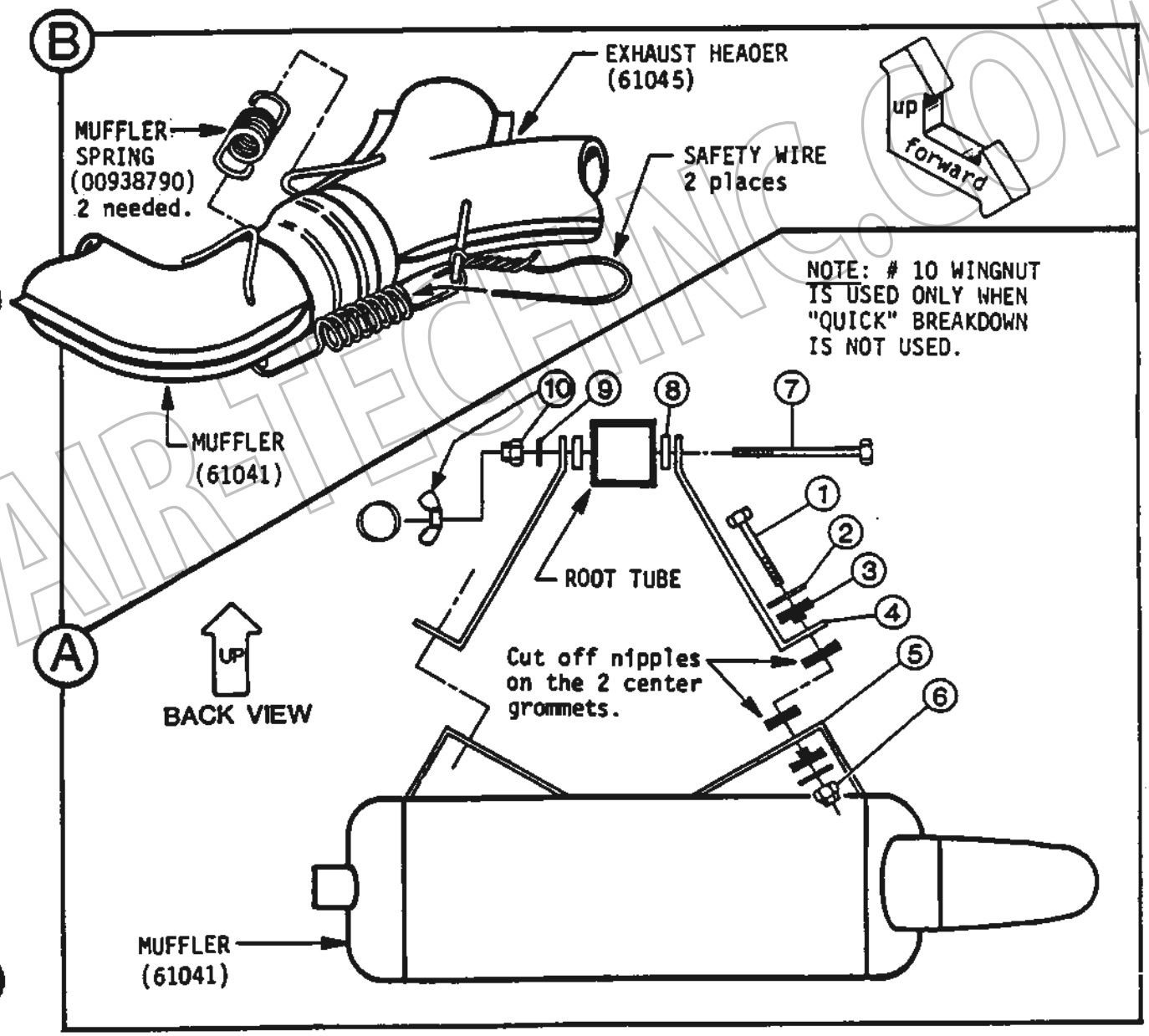
1" TUBE CAP
BOTH ENDS LOWER TAIL BOOMS
ADD APPROPRIATE SIZE PROVIDED TUBE CAPS IN L.E. & T.E. WING SPARS

MUFFLER ASSY.

FIG. A Assemble hardware below by sequence and notes.

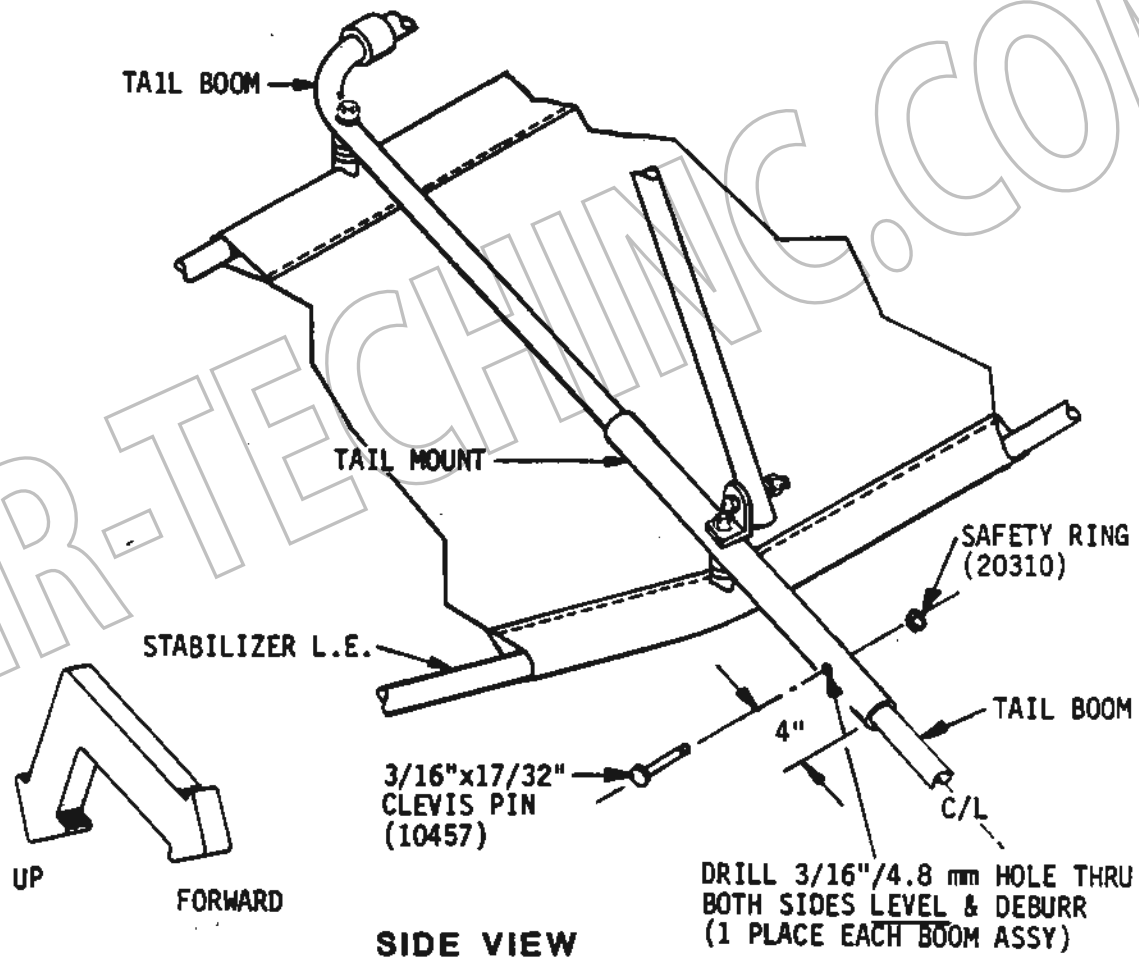
1) AN5-21a (10331)
2) Fender washer(10600) 2 needed.
3) Rubber grommet(30380) 4 needed. Note direction of first and last nipples. Cut off center nipples.
4) Muffler attach strap(61042)
5) Muffler bracket.
6) 5/16" Locknut (10540) Repeat steps 1-6 for other side.
7) AN4-27 (10260). Use FIRST HOLE AFT of seat support down tube hole. Assemble hardware as shown.
8) 1"x 1/8" Nylon washer(20345) 2 reqd.
9) 1/4" Washer(10560)
10) 1/4" Locknut(10510)or Wingnut (10520)

FIG. B Take MUFFLER and join together to EXHAUST HEADER, attach SPRINGS to tabs then SAFETY WIRE to tabs and route wire down thru center of SPRINGS and fasten to tabs at other end.



TAIL BOOM "PINNING"

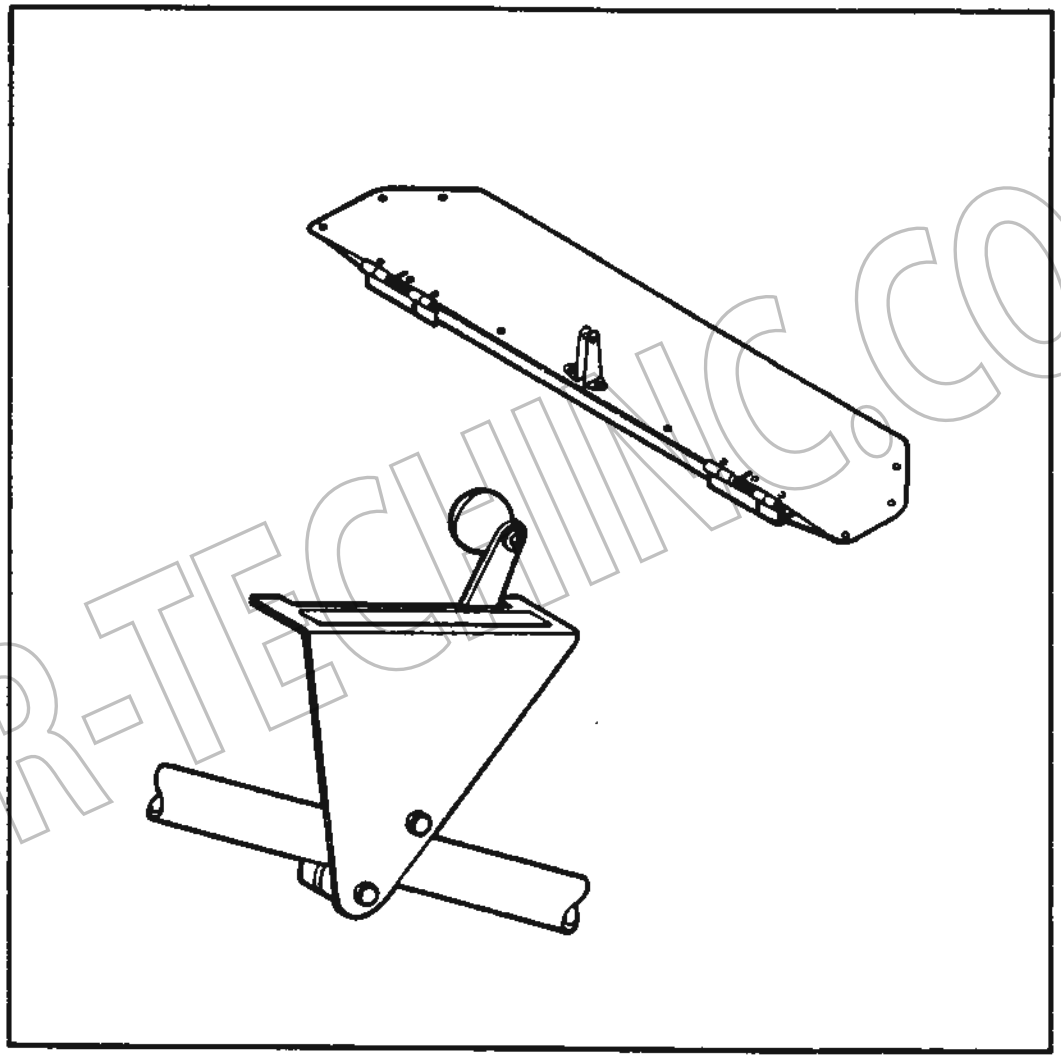
THIS STEP MUST TAKE PLACE WITH THE AIRCRAFT IN A COMPLETED FORM (LESS TRIM TAB, ENGINE RUN) AND KING POST TIGHT AS DESCRIBED IN THE MXII OWNER'S MANUAL. CAREFULLY LOCATE, CENTER PUNCH AND DRILL AS SHOWN BELOW EACH TAIL BOOM/TAIL MOUNT AND PIN WITH 3/16" x 1-7/32" CLEVIS PIN (10457) AND SAFETY RING (20310).



SIDE VIEW

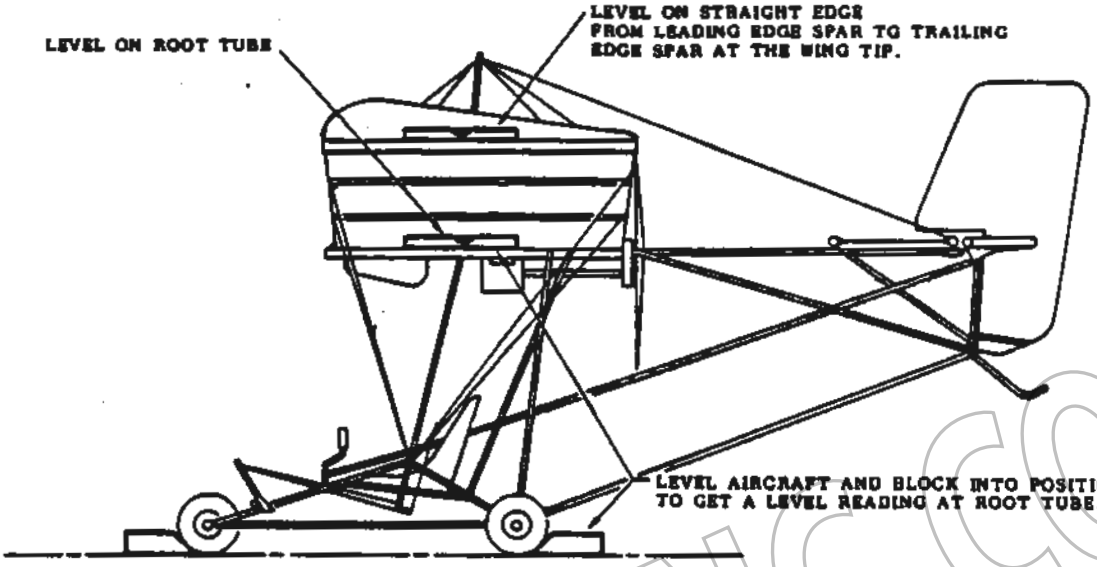
TRIM TAB KIT ADDITION

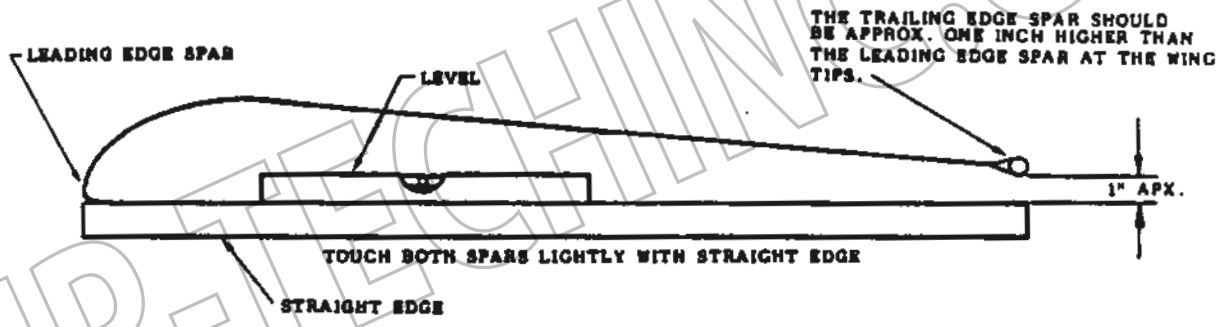
AT THIS POINT, CONSTRUCT AND ADD THE TRIM TAB (CONTROLLABLE) TO YOUR MXII. FOLLOW THE SEPARATE ASSEMBLY INSTRUCTIONS PROVIDED WITHIN THE TRIM TAB KIT.



TRIM TAB NOTE: THIS TAB IS ONLY INTENDED TO AID THE PILOT IN COMPENSATING FOR VARYING C.G.'S AS A RESULT OF FUEL BURN-OFF AND DIFFERENT PASSENGER WEIGHTS. YOU MUST STILL MOVE THE SEATS FORE AND AFT, DEPENDING UPON THE LOAD CONDITIONS.

WING WASHOUT





(1) LEVEL AND BLOCK THE AIRCRAFT AS SHOWN ABOVE TO GET A LEVEL READING ACROSS THE ROOT TUBE FORWARD AND APT.

(2) USE SAME LEVEL ON A STRAIGHT EDGE TO GET READING AT WING TIPS FORWARD AND APT. AS SHOWN ABOVE.

CORRECT WING WASHOUT IS AN IMPORTANT FACTOR IN THE STALLING CHARACTERISTICS AND LOW SPEED HANDLING OF YOUR AIRCRAFT. WASHOUT IS SET AT THE FACTORY THROUGH PRECISE WIRE LENGTHS: HOWEVER, IT SHOULD BE CHECKED BEFORE FLIGHT TO BE CERTAIN THAT THE ANGLES ARE WITHIN FACTORT SPECIFICATIONS.

(3) MAKE SURE THE KING POST IS ADJUSTED AND ALL THE SLACK IS OUT OF THE WIRES.

(4) CHECK ALL WIRES FOR IMPROPER LOCATION, TWIST ETC.

WASHOUT AT THE TRAILING EDGE APX. 1"

IF PROBLEMS OCCUR FEEL FREE TO CONTACT YOUR DEALER.

ROTAX 377 & 503 ENGINE BREAK-IN PROCEDURE.

The break-in period must be done with the engine on the aircraft and loaded with the prop.
Tie off AXLE(NOT TAIL) to secure aircraft from rolling forward or place aircraft up against bldg.
Be CAUTIOUS of persons and objects in the PROP BLAST AREA.

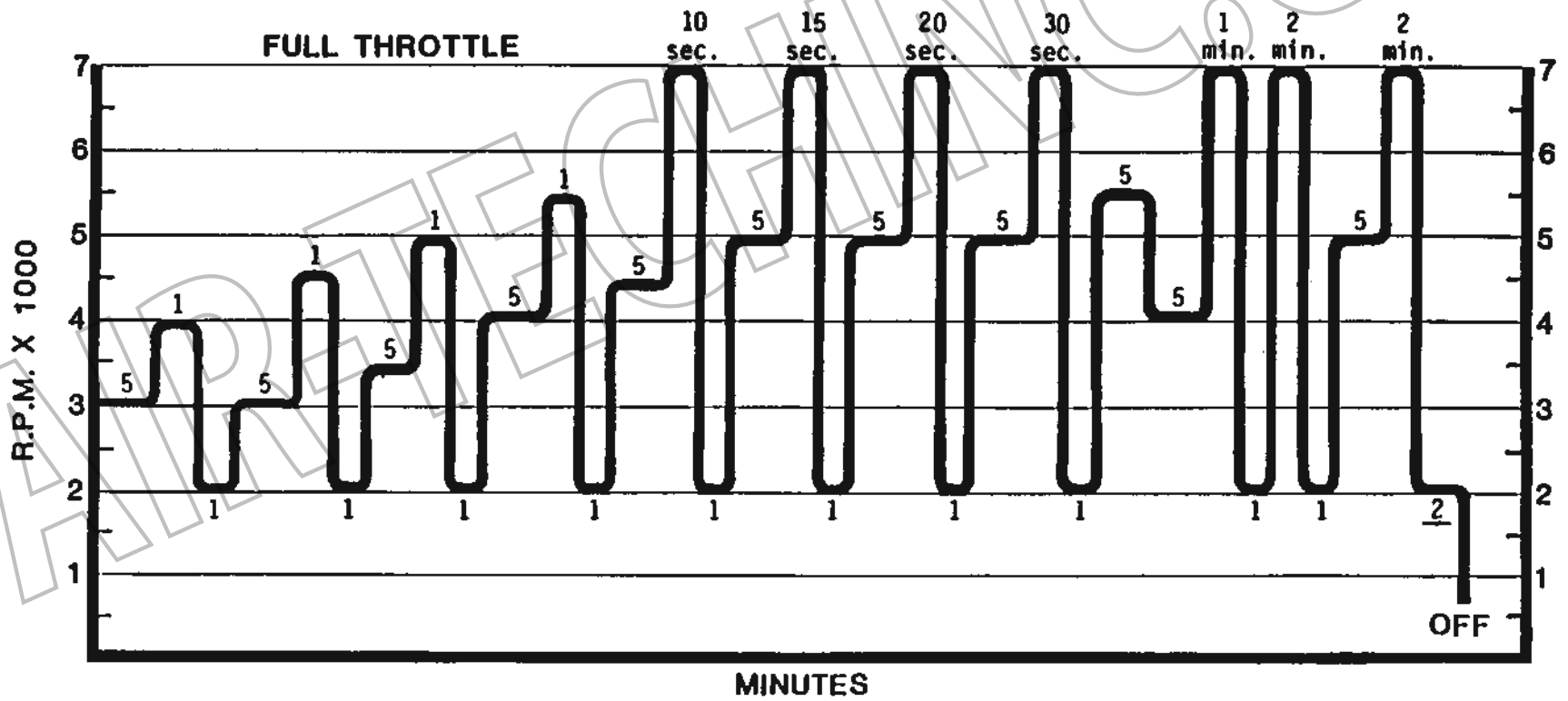
Use the graph below for break-in time / R.P.M.
Use a BIA TCW rated oil with the fuel ONLY!.
The FUEL to OIL mixture ratio should be 50-1.
(ENGLISH) 5 gal.FUEL to 13.8 oz. OIL.
(METRIC) 20 l. FUEL to 400 ml. OIL.

CAUTION! During break-in when the engine heats up it will want to accelerate from about 5000 R.P.M. to 6000 R.P.M. The engine will be running DANGEROUSLY LEAN and may burn up. The throttle must be reduced back to 5000 R.P.M. every time the engine wants to speed up.

IMPORTANT.

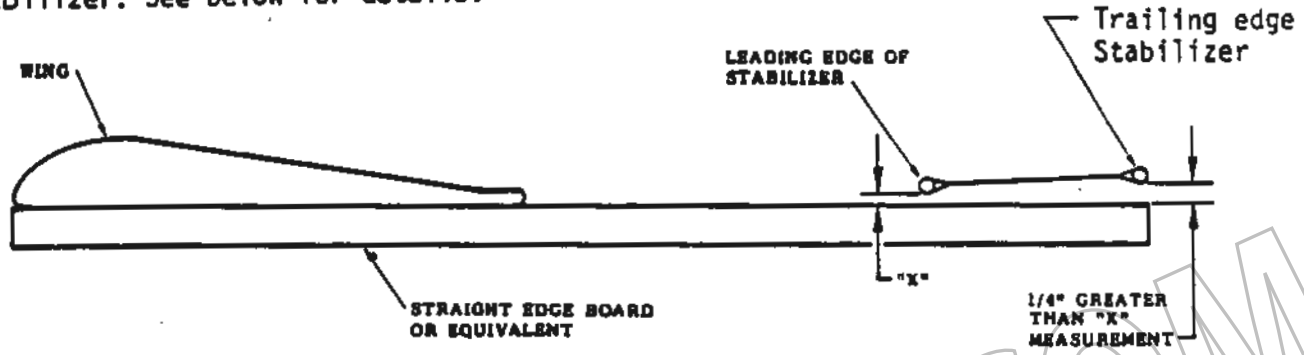
After engine cools, re-torque cylinder heads to 220 in. lbs.(24.5 N·m) also re-tighten exhaust header bolts.

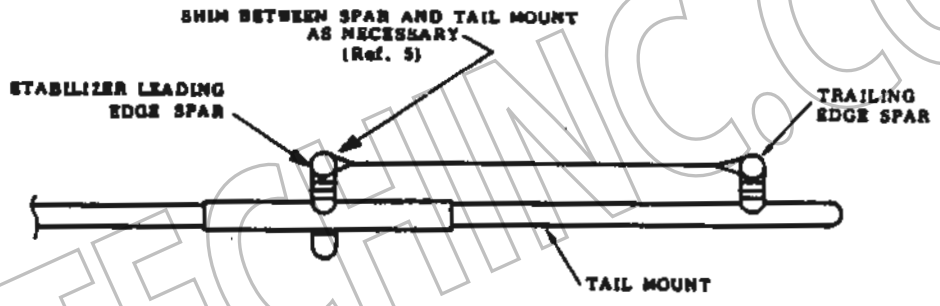
A final note is to adjust the idle after break-in. Adjust SMALL SCREW for smooth idle and adjust the LARGE SCREW for idle speed.



WING/STABILIZER INCIDENCE

This procedure may not be necessary. The aircraft must first be flown at normal cruise speed to see if it wants to pitch up or down with hands off the stick. If this is the case then SHIM STABILIZER accordingly. If aircraft wants to pitch up, ADD washers to leading edge stabilizer. If aircraft wants to pitch down, ELIMINATE washers from leading edge stabilizer. See below for details.





1. TO MEASURE THE INCIDENCE, WEIGHT THE NOSE WHEEL TO THE GROUND SO THAT THE UPPER TAIL WIRES ARE TAUT.
2. MAKE SURE THE KING POST IS ADJUSTED TO REMOVE ALL SLACK FROM WIRES.
3. PLACE A STRAIGHT EDGE ACROSS THE BOTTOM OF THE WING SPARS NEAR THE ROOT OF THE WING. THE STRAIGHT EDGE SHOULD LIGHTLY TOUCH BOTH SPARS AND CONTINUE BACK UNDER BOTH STABILIZER SPARS. (2 PEOPLE ON THIS OPERATION.)
4. STABILIZER TRAILING EDGE SHOULD BE 1/4" HIGHER THAN THE STABILIZER LEADING EDGE.
5. IF YOU DO NOT GET THE PROPER DIFFERENCE, IT WILL BE NECESSARY TO SHIM THE STABILIZER SPARS WITH WASHERS TO ACHIEVE THE PROPER ANGLE.
6. LONGER BOLTS (AN4-36A) AND EXTRA 1/4" NYLON WASHERS ARE PROVIDED IN KIT FOR THIS.

NOTE:

DO NOT NEGLECT THIS PROCEDURE. IT HAS AN EFFECT ON FLIGHT PERFORMANCE.