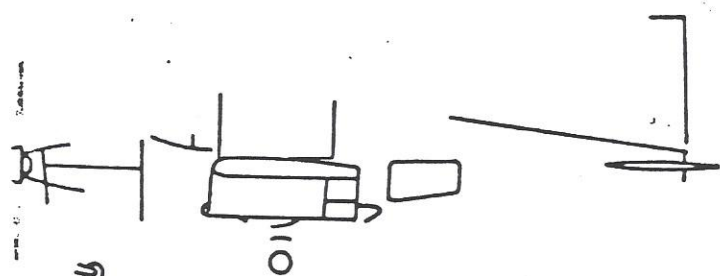
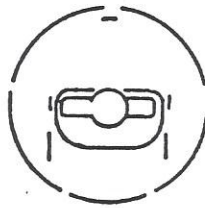


SINGLE ENGINE AIRCRAFT ACCESSORY KIT NO. 130

SUBJECT: LANDING GEAR (ATA 32) NOSE LANDING GEAR -
SHOCK ABSORBERS - ADDITION OF



NOTED BY	
NAME	DATE
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____

17 JULY 1978

UNITED STATES AIR FORCE
NATION
WILMINGTON, GEORGIA 31401

SUBJECT: Landing Gear (ATA No. 32) Nose Landing Gear - Shock Absorbers - Addition of

PURPOSE/DISCUSSION: The purpose of this kit is to install Shock Absorbers on the Nose Landing Gear. The Shock Absorbers act to reduce vertical oscillation during taxiing.

DESCRIPTION: This Accessory Kit modifies existing Nose Landing Gear mounting, installs Shock Absorbers, bracket assemblies and miscellaneous hardware.
 Accessory Kit 130-1 is for installation on all AA1, 1A and 1B aircraft.
 Accessory Kit 130-2 is for installation on AA5 0001 through 0640.
 Accessory Kit 130-3 is for installation on AA5 0641 and subsequent, AA5A 0001 through 0282 and AA5B 0001 through 0399 aircraft.

**SPECIAL TOOLS/
EQUIPMENT REQUIRED:** Standard Aircraft Mechanics Tools

EFFECTIVITY:	<u>MODEL</u>	<u>SERIAL NUMBER</u>
	AA1	0001 and Sub.
	AA1A	0001 and Sub.
	AA1B	0001 and Sub.
	AA5	0001 and Sub.
	AA5A	0001 through 0282
	AA5B*	0001 through 0399

PREREQUISITE: *AA5B aircraft serial numbers 0001 through 0399 must update the original 5503005-501 Carburetor Air Induction Box Assembly to the 5503005-519 Carburetor Air Induction Box Assembly configuration or equivalent prior to or in conjunction with the installation of this Accessory Kit. This prerequisite is necessary to provide required clearance for the installation of a Nose Landing Gear Shock Absorber Bracket on the firewall of the aircraft.

WEIGHT AND BALANCE:	<u>WEIGHT</u>	<u>ARM</u>	<u>MOMENT</u>
	+4.31	46.552	+200.64

THIS IS A DESIGN IMPROVEMENT. NO PARTS OR LABOR CREDIT WILL BE GIVEN.

The following instructions, in step by step form, are written as a guide to perform this installation or modification. Compliance with safe maintenance practice as recommended in the maintenance manual and FAA Regulations is Mandatory.

GRUMMAN AMERICAN SINGLE ENGINE AIRCRAFT ACCESSORY KIT NO. 130

PRICE:

Prices are subject to change without notice:

	<u>List Price (E)</u>
AK 130-1	261.15
AK 130-2	277.92
AK 130-3	336.16

MODIFICATION INSTRUCTIONS:

A. Prepare the aircraft for safe maintenance as follows:

A-1 Insure Master Switch OFF.

A-2 Aircraft grounded.

A-3 Apply Parking Brakes or chock Main Landing Gear.

NOTE

THE AIRCRAFT WEIGHT MUST BE REMOVED FROM THE NOSE LANDING GEAR AND THE GEAR RAISED APPROXIMATELY 6 INCHES ABOVE THE GROUND FOR THIS INSTALLATION.

B. Raise the Nose Landing Gear as follows:

B-1 Apply downward pressure on the horizontal stabilizer root until the aft of the aircraft rests on the ground.

B-2 While holding the tail down slide a 30" stand with a padded top beneath the forward fuselage immediately behind the torque tube center bearing bolts.

B-3 Slowly remove downward pressure from the horizontal stabilizer until aircraft rests on the stand.

C. Remove the lower cowl in accordance with instructions provided in the Maintenance Manual. Retain hardware.

D. Remove Nose Gear as follows:

D-1 Remove 12 screws securing firewall seal boot to firewall.

D-2 Slide firewall seal boot down landing gear to expose nose gear and retainer bolts in torque tube.

D-3 Remove and discard Nose Gear Strut retainer bolts.

- D-4 Remove Nose Gear Strut from torque tube.
 - D-5 Remove and discard 702064-501 firewall boot assembly, AN737TW66 clamp, 702060-1 plate and mounting hardware. Remove and discard nose strut fairing boot and retain retainer.
- E. Rework Nose Gear Torque Tube.
- E-1 Gain access to torque tube center bearing mounting bolts by removing console side panels.
 - E-2 For AA-1B Aircraft only: Using a stop drill remove the Rivets (4) of the Instrument Panel Support Brackets (2). (See Figure 2).

CAUTION

WHEN REMOVING THE RIVETS OF THE INSTRUMENT PANEL SUPPORT BRACKETS DRILL INTO THE HONEYCOMB ONLY. DO NOT PENETRATE THE FIREWALL.

The instrument panel support brackets will be relocated in Step E-10 following the installation of the 5702003-502 Bracket Assembly. Fill the existing holes (4) in the Honeycomb with Proseal 700 Firewall Sealant.

- E-3 Remove torque tube center bearing mounting bolts (4) on firewall and discard. If spacers are loose, remove and retain.
- E-4 Install AN6-13A bolts and AN960-616L Washers in outboard holes (2). Install AN6-14A bolts and AN960-616L Washers in inboard holes (2). See Figure 1.
- E-5 Drill Rivets (2) from mixture control cable retaining clip on firewall. Relocate clip 180° (See Figure 2) drill .125-.128 Dia. 2 holes and rivet clip in place using 1601-0410 Rivets (2). Fill old holes with Pro-Seal 700 Firewall Sealant.
- E-6 Locate 5702003-502 Bracket Assy. in place on firewall. See Figure 2. Using the 2 top mounting holes in the 5702003-502 bracket assembly, drill 1/8" dia. holes (.125-.128) (2) through firewall. Use care when drilling through firewall.

NOTE

IT IS RECOMMENDED THAT HOLES BE ENLARGED FROM INSIDE OF AIRCRAFT, UNLESS ENGINE HAS BEEN REMOVED, ALLOWING ACCESSABILITY TO WORK FROM FIREWALL SIDE.

- E-7 Remove bracket assembly and enlarge 1/8" holes to .500 dia. ($\frac{1}{2}$ "). See Figure 1.
- E-8 Install 5702003-11 Spacers in enlarged holes using Pro-Seal 700 Firewall Sealant. See Figure 1.

- E-9 Install 5702003-502 Bracket Assembly as shown in Figure 1. Torque upper mounting bolts to 120 ± 2 inch pounds. Torque lower mounting bolts (4) to 175 ± 15 inch pounds.
- E-10 For AA-1B Aircraft only: Relocate the Instrument Panel Support Brackets outboard of the upper mounting bolts of the 5702003-502 Bracket Assembly .050. Drill .124-.128 Dia holes (4) into honeycomb but not through the firewall, rivet the support brackets in place using 1601-0410 Rivets (4).
- F. Installation of Firewall Seal Box Assembly.
- F-1 Remove any excess firewall asbestos material from opening in firewall.
- F-2 Locate 5702005-502 box assembly in position as shown in Figure 4. Using a #40 drill, with a drill stop set for $\frac{1}{4}$ " penetration, drill 6 holes through the firewall. Remove box assembly.
- F-3 Seal exposed Honeycomb opening in firewall with Pro-Seal 700 Firewall Sealant.

WARNING

USE CONTACT CEMENT IN WELL VENTILATED AREA. AVOID BREATHING FUMES, KEEP AWAY FROM FLAMES.

- F-4 Using contact cement, glue 5702005-4 Seals (.070 thickness) to each of the 5702005-5 Seals (.040 thickness) as shown in Figure 5.
- F-5 When cement has dried, coat all surfaces of seal with petroleum or grease and install seals on torque tube. See Figure 4.
- F-6 Coat mounting flanges of 5702005-502 Box Assembly with Pro-Seal 700 Firewall Sealant. Install Box Assembly on Firewall and insure that the 5702005-4 and 5702005-5 Seals are located inside Box Assembly as shown in Figure 4. Attach Box Assembly to Firewall using GAES1021A-6-4 Screws (6).
- F-7 Install 5702005-3 Box Cover on aft end of the Box Assembly and attach using GAES1021A-6-4 Screws (4). See Figure 4.
- F-8 Seal any opening between Box and Box Cover using Pro-Seal 700 Firewall Sealant. Box should form an air tight seal around the torque tube.

NOTE

INSPECT AREA BENEATH CENTER CONSOLE FOR FOREIGN OBJECTS, DIRT, AND DEBRIS. CLEAN AS REQUIRED AND CHECK CONTROLS FOR FREEDOM OF MOVEMENT.

- F-9 Reinstall console side panels removed in Step E-1.

G. Installation of Shock Absorber Assemblies:

G-1 Lubricate the bearing surface of the hole in the lower end of 5702006-1 Shock Absorber with MIL-G-7711 grease. As shown in Figure 3 attach 5702006-1 Shock Absorber (2) to 5702003-503 Bracket Assembly using NAS1304-15 Bolt (2) and MS20365-428 Nut (2) with an AN960-416 Washer (2) under each Nut. Using AN960-416 and AN960-416L Washers, shim as required between the 5702003-503 Bracket Assembly and both sides of the Shock Tab. Tighten the Nut to obtain a gap of .005-.032 between Shock Tab and Washer. CAUTION: Do not over torque as this would restrict the necessary pivot action of the Shock Absorber.

G-2 Slide 5702003-503 Bracket Assembly into position on torque tube.

NOTE

AA-1, AA-1A, AA-1B and AA5 0001-0640 omit Step G-3 and proceed to Step G-4.

G-3 Slide 5702002-3 Boot and retainer (retained in Step D-5) into position in the Nose Landing Gear Strut.

G-4 Apply wet Zinc Chromate Primer to upper end of Nose Gear Strut and install Strut, wet, into torque tube. Install NAS464P6A31 Bolts (2), AN960-616L Washers (2) and MS20364-624 Nuts (2). Torque Bolts to 175 ± 15 inch pounds. See Figure 1. Use RTV Silicone or equivalent sealant to seal space between end of torque tube and Nose Gear Strut. Also seal around bolt heads and nuts of Bracket Assembly.

G-5 Coat 5702003-10 Bushings (2) with MIL-G-7711 grease and install into top of Shock Absorber ends. See Figure 2.

G-6 Coat AN6-15A Bolts (2) with MIL-G-7711 grease. Compress Shock Absorbers and install into 5702003-502 Bracket Assembly using AN6-15A Bolts (2), AN960-616L Washers (2) and MS20364-624 Nuts (2). Torque Bolts to 175 ± 15 inch pounds. See Figure 2.

H. Rework Cowling Instructions AA-1, AA-1A and AA-1B.

H-1 Cut lower cowling as shown in Figure 6.

H-2 Install 5702003-3 Doubler (2) using MS20426AD4-4 Rivets (22). See Figure 6.

I. Rework Cowling Instructions AA5 0001-0640.

I-1 Mark the increased cut out on the lower cowl assembly trailing edge lip and 5101021-11 Doubler as shown in Figure 7.

I-2 Beginning at the aft edge of the trailing edge lip cut the lower cowl assembly as shown. See Figure 7.

I-3 Remove the Outboard Flange of the 5101021-11 Doubler. See Figure 7.

GRUMMAN AMERICAN SINGLE ENGINE AIRCRAFT ACCESSORY KIT NO. 130

- I-4 Remove that section of the 5101021-11 Doubler that joggles over the cowl trailing edge lip. Do not cut the cowl skin. Allow a gap of approximately .10 between the Doubler and trailing edge lip. See Figure 7.
- I-5 Remove the existing Inboard Rivets (1/side) that secure the trailing edge lip to the lower cowl skin. See Figure 7.
- I-6 Locate 5702007-1, 5702007-2 Stiffeners and 5702007-3 Doublers (2). Using pilot holes provided drill thru lower cowl assembly .127-.133 Dia. 12 places each side and temporarily secure. Back drill the 5702007-1 and -2 Stiffener .127-.133 Dia. thru the existing rivet hole (Ref. Step I-5). See Figure 7.
- I-7 Countersink lower side all holes (13/side) 100° x .225 Dia and install MS20426AD4-5 Rivets (26) flush lower side.
- J. Rework Cowling Instructions AA5 0641 and Sub., AA5A 0001 and Sub. and AA5B 0001 and Sub.
 - J-1 Cut out lower cowling as shown in Figure 8.
- K. Reinstall Cowling as follows:
 - K-1 Reinstall Cowling using hardware retained in Section C.
 - K-2 On AA-5's (with Boot installed) install 5702003-12 Chafe Strip inside 5702002-3 Boot. Clean contact area with Isopropyl Alcohol before installing Chafe Strip. Position Chafe Strip so that Boot will not wear on Bracket Assembly. Secure Boot using Retainer and hardware previously retained.
 - K-3 Paint 5702002-3 boot (if installed) and reworked area of cowl.
- L. Return aircraft to flight status.
- M. Record compliance in the log book.

GRUMMAN AMERICAN SINGLE ENGINE AIRCRAFT ACCESSORY KIT NO. 130

PARTS REQUIRED PER AIRCRAFT:

<u>PART NUMBER</u>	<u>NOMENCLATURE</u>	<u>QUANTITY</u>		
		<u>Kit 1</u>	<u>Kit 2</u>	<u>Kit 3</u>
5702006-1	Shock Absorber	2	2	2
5702003-502	Bracket Assembly	1	1	1
5702003-503	Bracket Assembly	1	1	1
5702003-10	Bushing	2	2	2
5702003-11	Spacer	2	2	2
5702005-502	Box Assembly	1	1	1
5702005-3	Aft Box Cover	1	1	1
5702005-4	Seal	2	2	2
5702005-5	Seal	2	2	2
AN5-12A	Bolt	2	2	2
AN6-13A	Bolt	2	2	2
AN6-14A	Bolt	2	2	2
AN6-15A	Bolt	2	2	2
AN960-416	Bolt	2	2	2
AN960-416L	Washer	6	6	6
AN960-516L	Washer	10	10	10
AN960-616L	Washer	4	4	4
AN970-5	Washer	18	18	18
GAES1021A-6-4	Washer	4	4	4
MS20364-624	Screw	10	10	10
MS20365-428	Nut	4	4	4
MS20365-524	Nut	2	2	2
MS20365-624	Nut	2	2	2
NAS464P6A31	Nut	4	4	4
1601-0410	Bolt	2	2	2
5702003-3	Rivet	8	8	8
MS20426AD4-4	Doubler	2	-	-
5702007-1	Rivet	24	-	-
5702007-2	Stiffener	-	1	-
5702007-3	Stiffener	-	1	-
MS20426AD4-5	Doubler	-	2	-
5702002-3	Rivet	-	28	-
5702003-12	Boot	-	-	-
NAS1304-15	Chafe Strip	-	-	1
	Bolt	2	2	2

Accessory Kit prepared by Grumman American Aviation Corporation,
P.O. Box 2206, Travis Field, Savannah, Georgia 31402.

FAA (DER) Approval of this Accessory Kit has been granted.

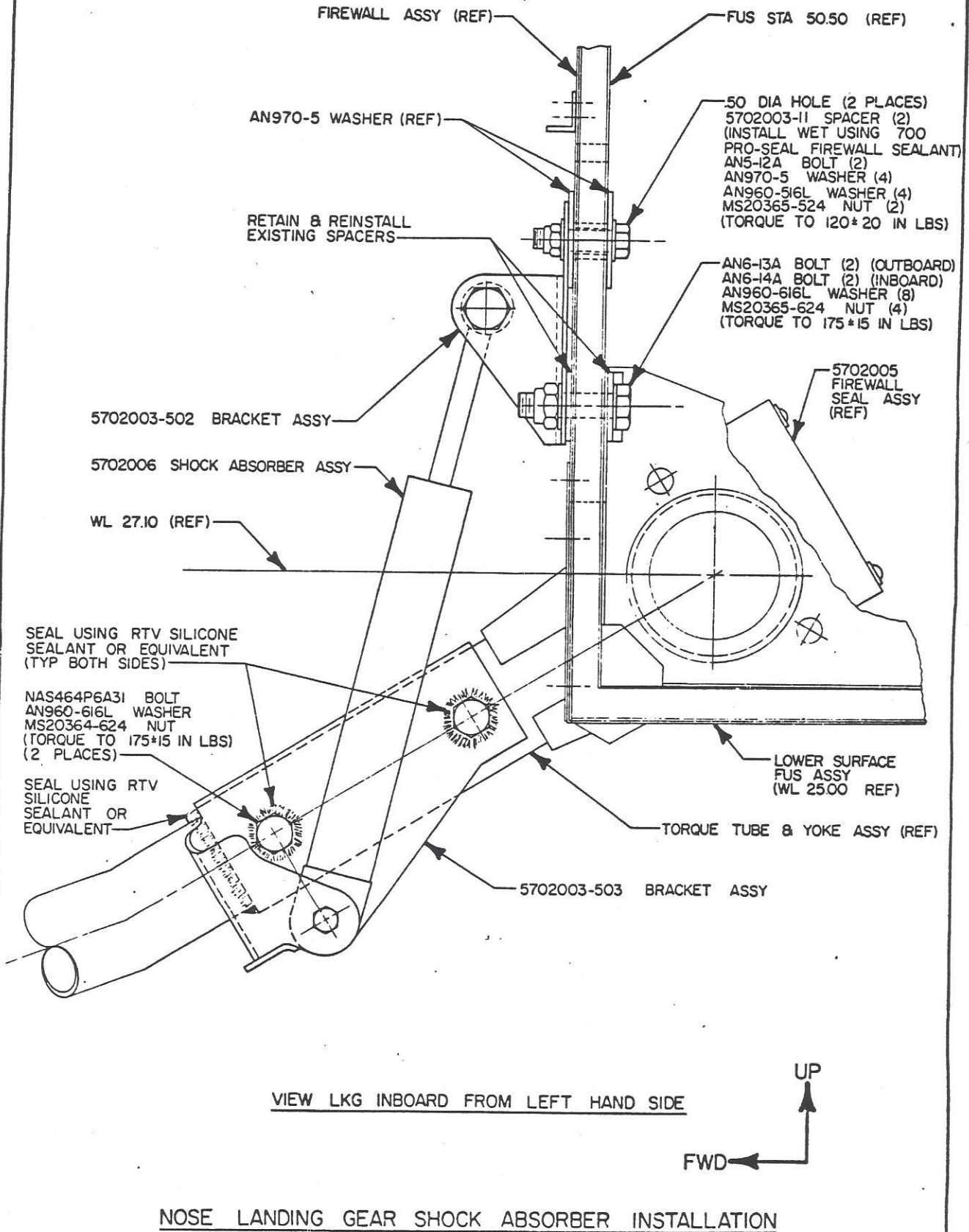


FIGURE 1

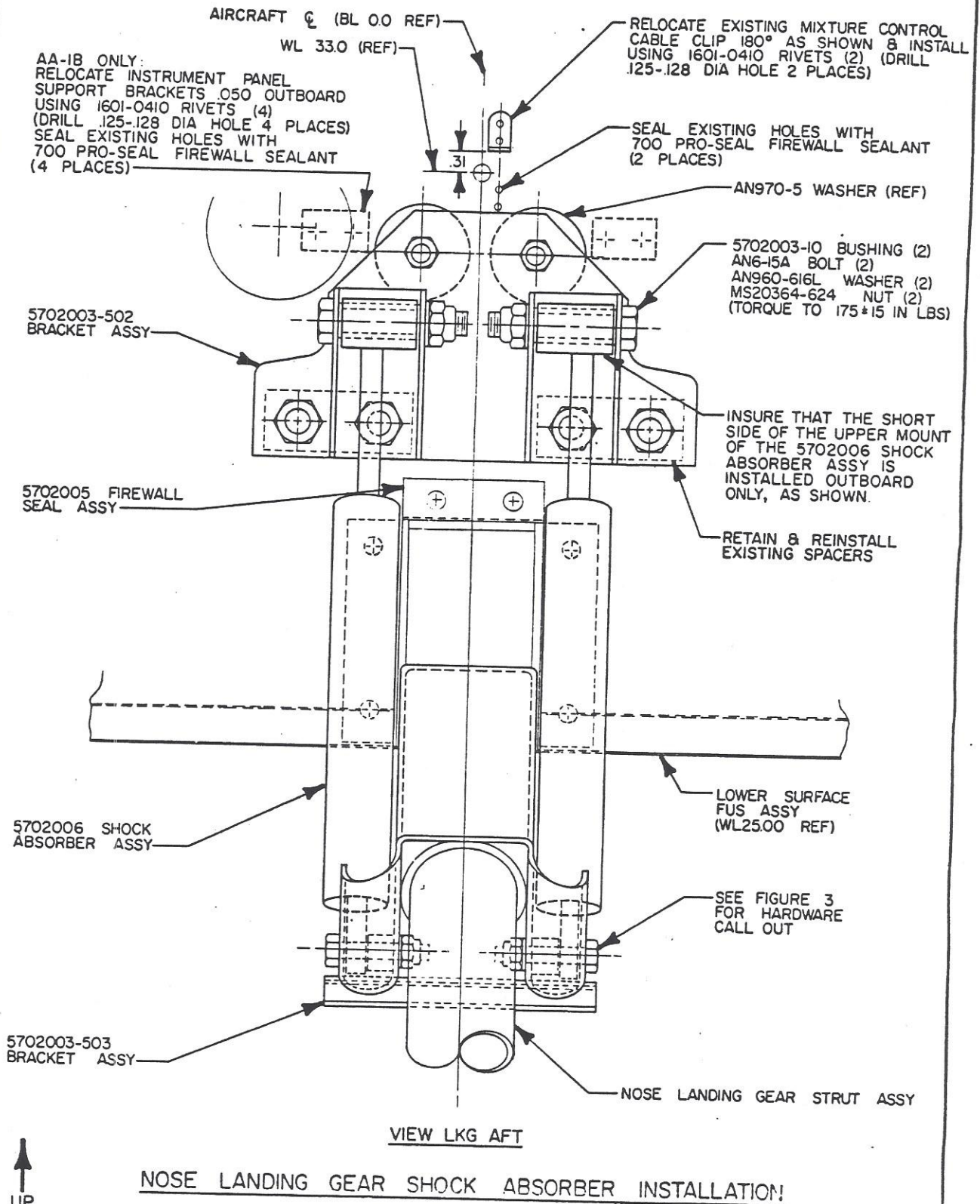
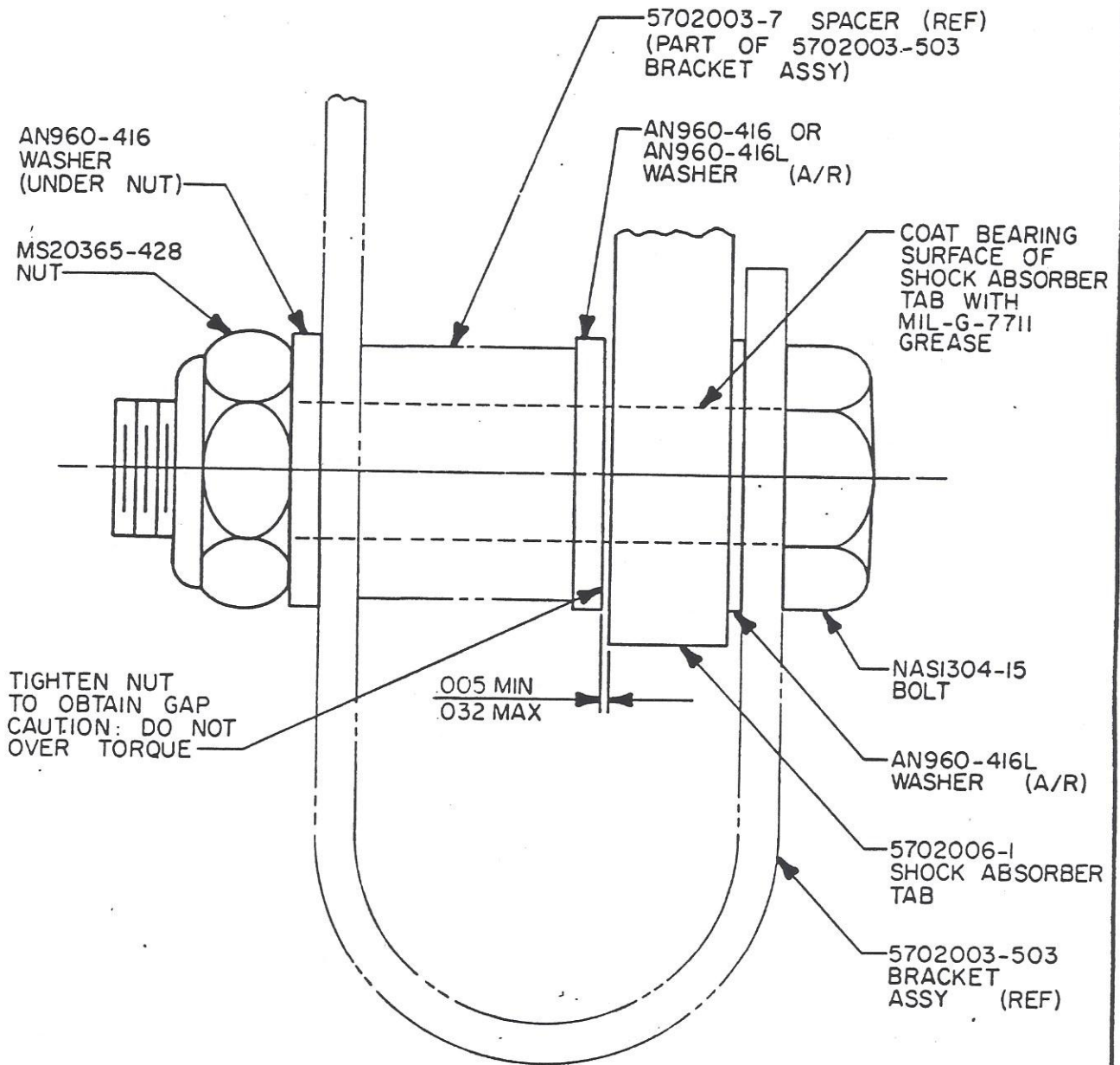


FIGURE 2



5702006-1 SHOCK ABSORBER
TYPICAL LOWER END INSTALLATION

FIGURE 3

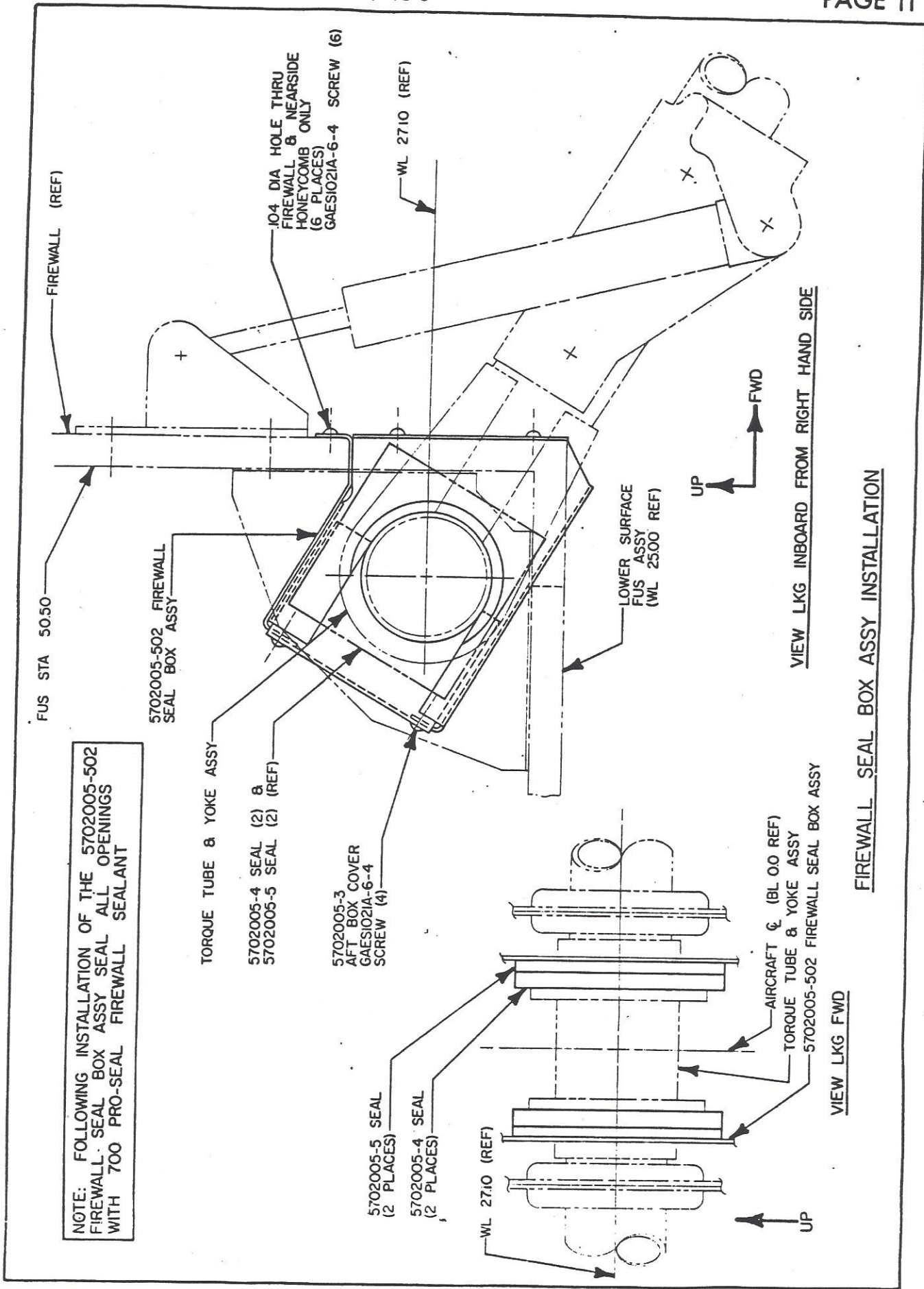
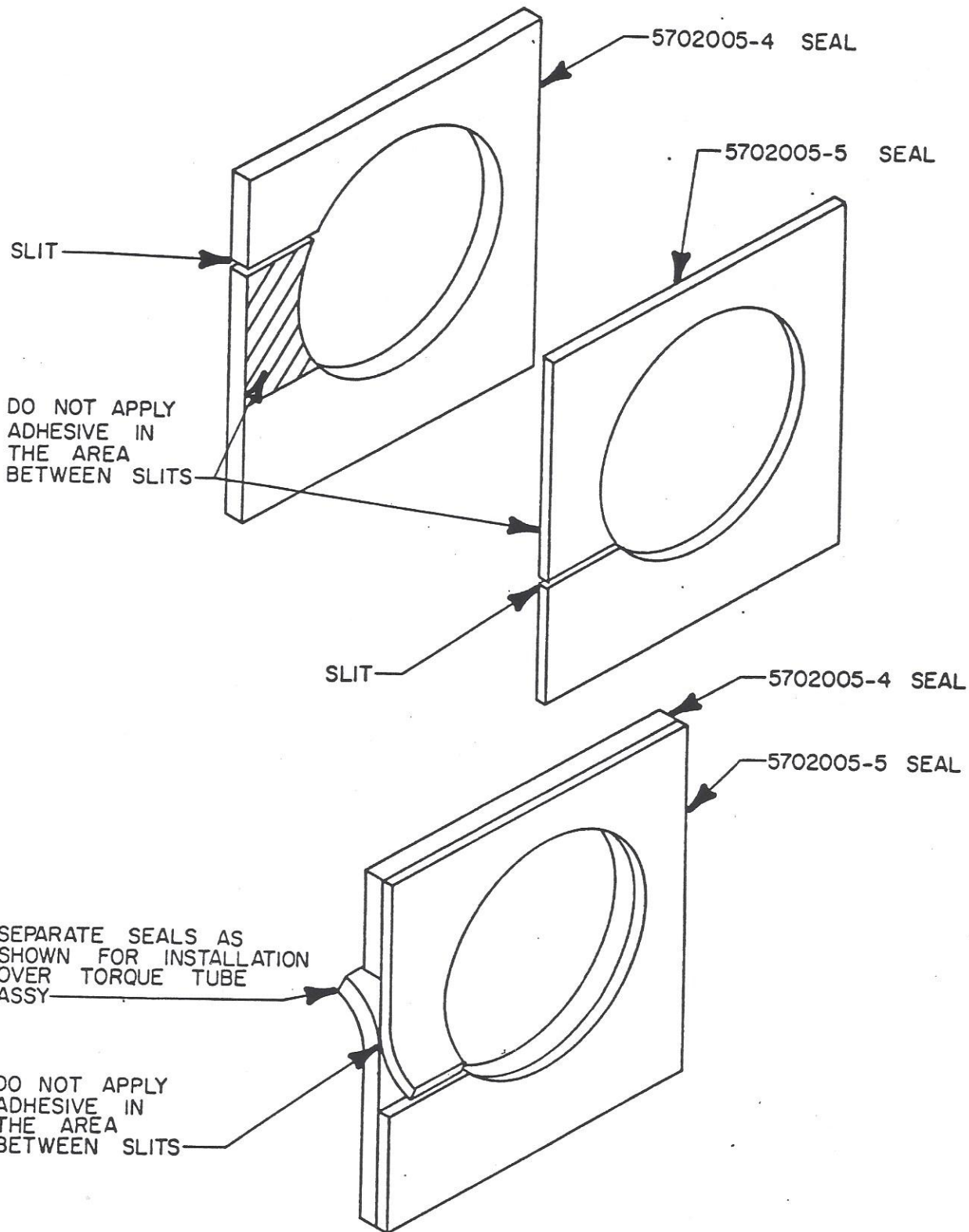
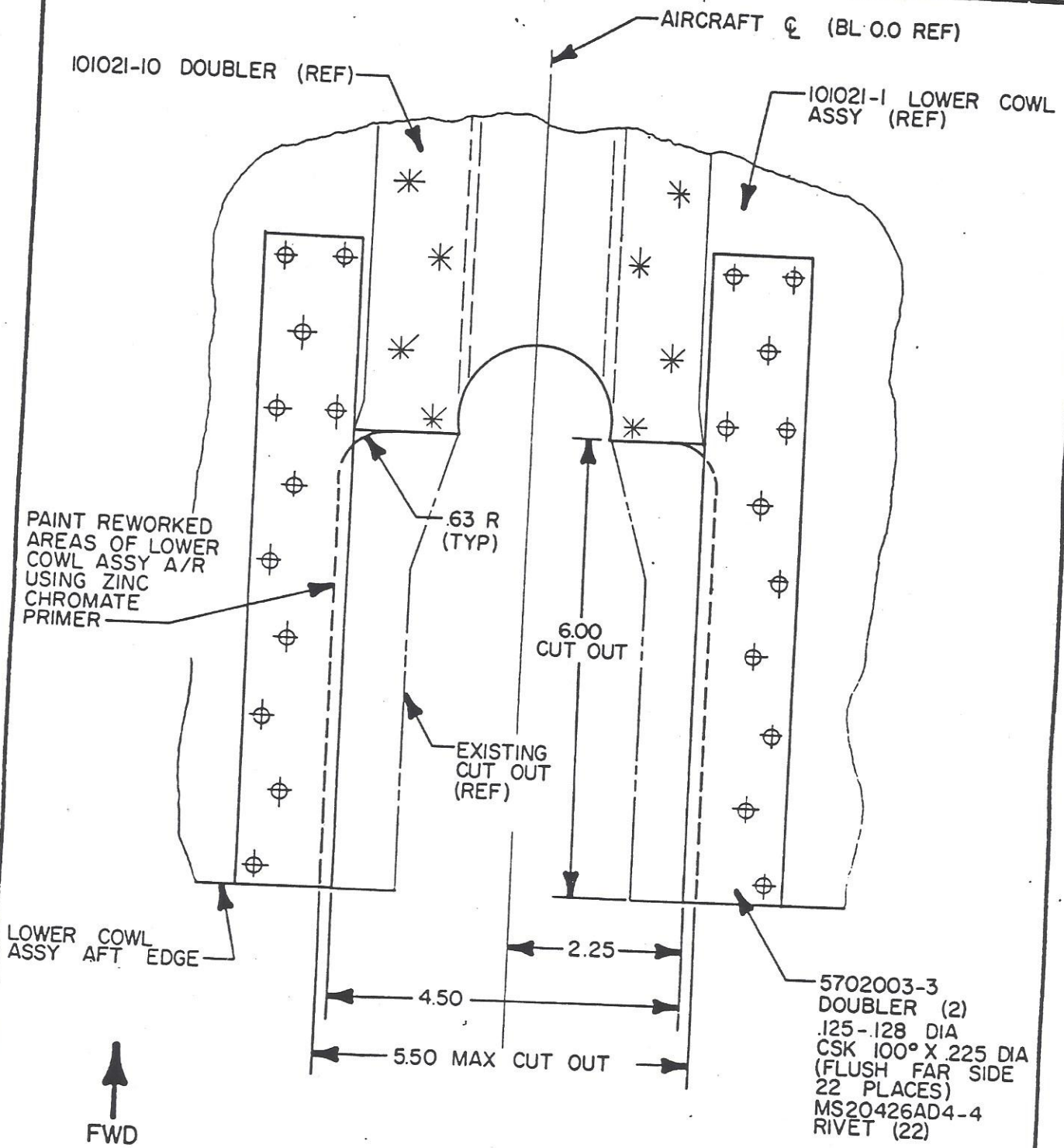


FIGURE 4



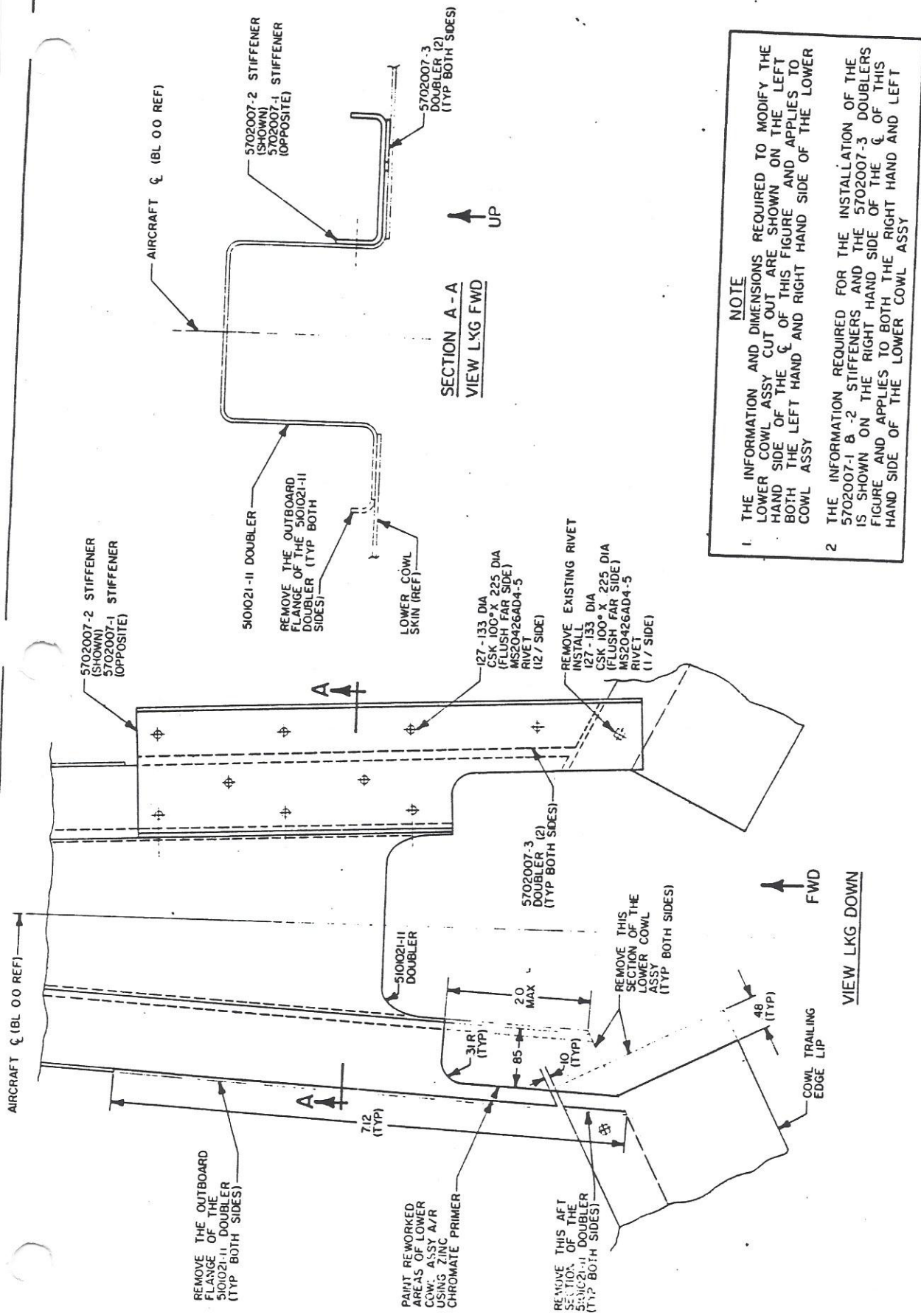
NOTE
 AFTER CONTACT CEMENT HAS CURED COAT ALL SURFACES OF SEALS WITH MIL-G-7711 GREASE PRIOR TO INSTALLATION.

FIGURE 5



VIEW LKG DOWN

LOWER COWL ASSY REWORK - AA-1 SERIES

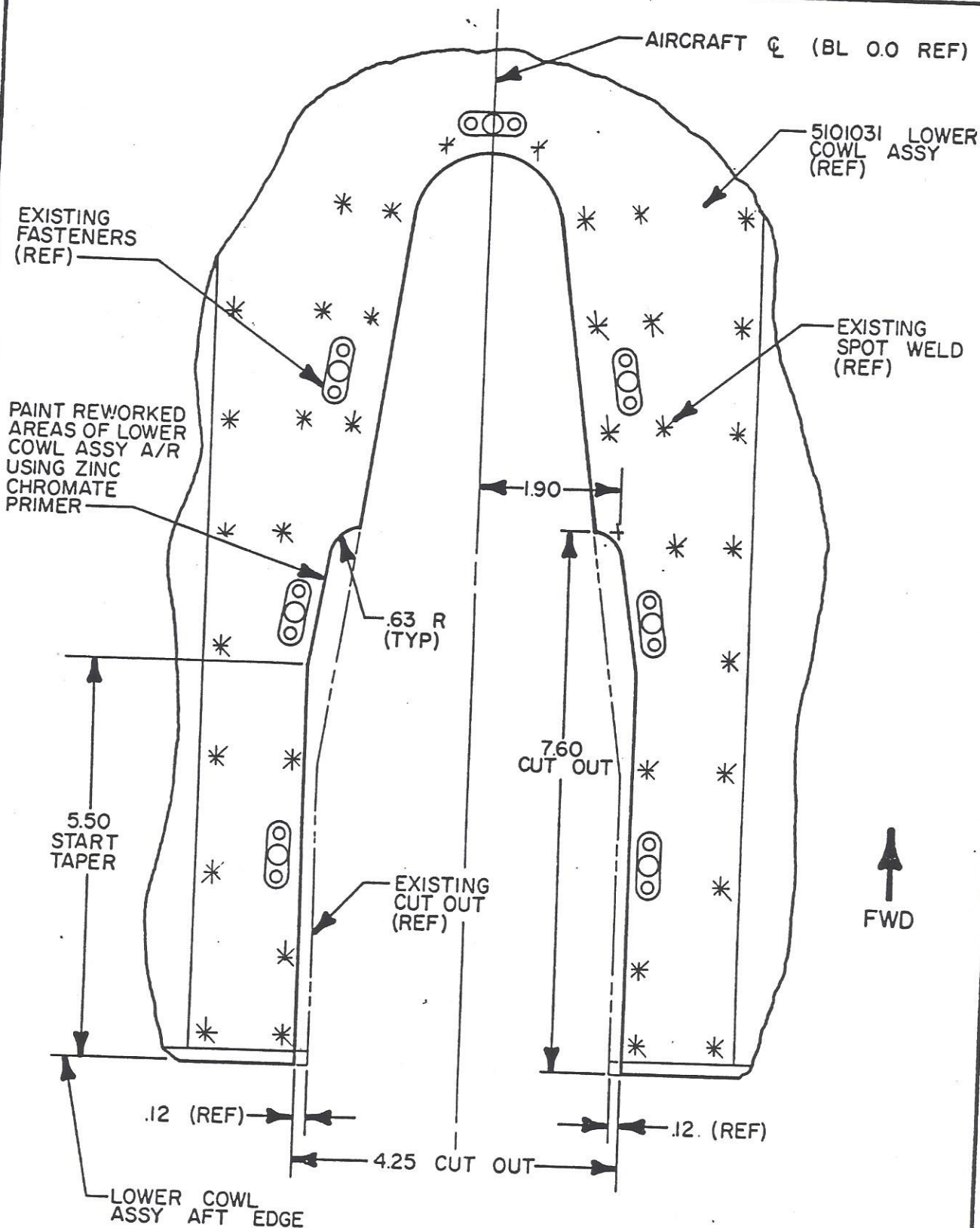


NOTE

1. THE INFORMATION AND DIMENSIONS REQUIRED TO MODIFY THE LOWER COWL ASSY CUT OUT ARE SHOWN ON THE LEFT HAND SIDE OF THE ζ OF THIS FIGURE AND APPLIES TO BOTH THE LEFT HAND AND RIGHT HAND SIDE OF THE LOWER COWL ASSY
2. THE INFORMATION REQUIRED FOR THE INSTALLATION OF THE 5702007-1 & -2 STIFFENERS AND THE 5702007-3 DOUBLERS IS SHOWN ON THE RIGHT HAND SIDE OF THE ζ OF THIS FIGURE AND APPLIES TO BOTH THE RIGHT HAND AND LEFT HAND SIDE OF THE LOWER COWL ASSY

LOWER COWL ASSY REWORK AA-5 SERIES (0001-0640)

FIGURE 7



VIEW LKG DOWN

LOWER COWL ASSY REWORK

AA-5 (0641 & SUB), AA-5A (0001-0282), AA-5B (0001-0399)

FIGURE 8