TO: ALL HOLDERS OF CF6-80A AFT ENGINE MOUNT ASSEMBLY COMPONENT MAINTENANCE MANUAL 71-21-11

REVISION NO. 16 DATED NOV 01/03

HIGHLIGHTS

Pages which have been added or revised are outlined below together with the highlights of the revision. Remove and insert the affected pages as listed and enter Revision No. and date on the Record of Revision Sheet.

CHAPTER/SECTION AND PAGE NO.	DESCRIPTION OF CHANGE
1003,1007,1009	Added bearing assembly part number S302T001-819 to reflect the engineering drawing.

BOEING

COMPONENT
MAINTENANCE MANUAL

CF6-80A AFT ENGINE MOUNT ASSEMBLY

PART NUMBER 310T1020-3

COMPONENT MAINTENANCE MANUAL
WITH
ILLUSTRATED PARTS LIST

13103

BOEING
COMPONENT
MAINTENANCE MANUAL

REVISION RECORD

- Retain this record in front of manual. On receipt of revision, insert revised pages in the manual, and enter revision number, date inserted and initial.

REVISION NUMBER	REVISION DATE	DATE FILED	BY	REVISION NUMBER	REVISION DATE	DATE FILED	BY

TEMPORARY REVISION AND SERVICE BULLETIN RECORD

BOEING SERVICE BULLETIN	BOEING TEMPORARY REVISION	OTHER DIRECTIVE	DATE OF INCORPORATION INTO MANUAL
	71-13		APR 01/92

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TITLE PAGE		
1	JUL 10/83	01
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REVISION RECORD		
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TR & SB RECORD		
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1	JAN 10/85	01.1
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601	OCT 01/91	01.1
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601	DEC 01/96	01.1
602	DEC 01/96	01.1
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604	DEC 01/96	01.1
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803	JAN 01/94	01.1
804	JUL 10/83	01
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1001	JUL 10/83	01
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*1007	NOV 01/03	01.1
*1008	NOV 01/03	01.101
*1009	NOV 01/03	01.1
1010	DEC 01/96	01.101
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* = REVISED, ADDED OR DELETED

TABLE OF CONTENTS

*[1] Special instructions not required. Use standard industry practices and information contained in 20-30-01 and 20-30-03.

INTRODUCTION

The instructions in this manual provide the information necessary to perform maintenance functions ranging from simple checks and replacement to complete shop-type repair.

This manual is divided into separate sections:

1. Title Page
2. Record of Revisions
3. Temporary Revision & Service Bulletin Record
4. List of Effective Pages
5. Table of Contents
6. Introduction
7. Procedures & IPL Sections

Refer to the Table of Contents for the page location of applicable sections. An asterisked flagnote *[ ] in place of the page number indicates that no special instructions are provided since the function can be performed using standard industry practices.

The beginning of the REPAIR section includes a list of the separate repairs, a list of applicable standard Boeing practices, and an explanation of the True Position Dimensioning symbols used.

An explanation of the use of the Illustrated Parts List is provided in the Introduction to that section.

All weights and measurements used in the manual are in English units, unless otherwise stated. When metric equivalents are given they will be in parentheses following the English units.

Design changes, optional parts, configuration differences and Service Bulletin modifications create alternate part numbers. These are identified in the Illustrated Parts List (IPL) by adding an alphabetical character to the basic item number. The resulting item number is called an alpha-variant. Throughout the manual, IPL basic item number references also apply to alpha-variants unless otherwise indicated.

Verification:

Disassembly	Dec 3/81
Assembly	Dec 3/81

CF6-80A AFT ENGINE MOUNT ASSEMBLY

DESCRIPTION AND OPERATION

1. The aft engine mount assembly consists of fitting assemblies, links and parts required to attach CF6-80A engine to the strut.

DISASSEMBLY

1. Disassemble this component using standard industry practices and the following procedures.

2. Do not remove spherical bearing outer races; bearing balls may be replaced, if necessary.

3. Do not remove flanged bushings and nutplate unless necessary for repair or replacement.

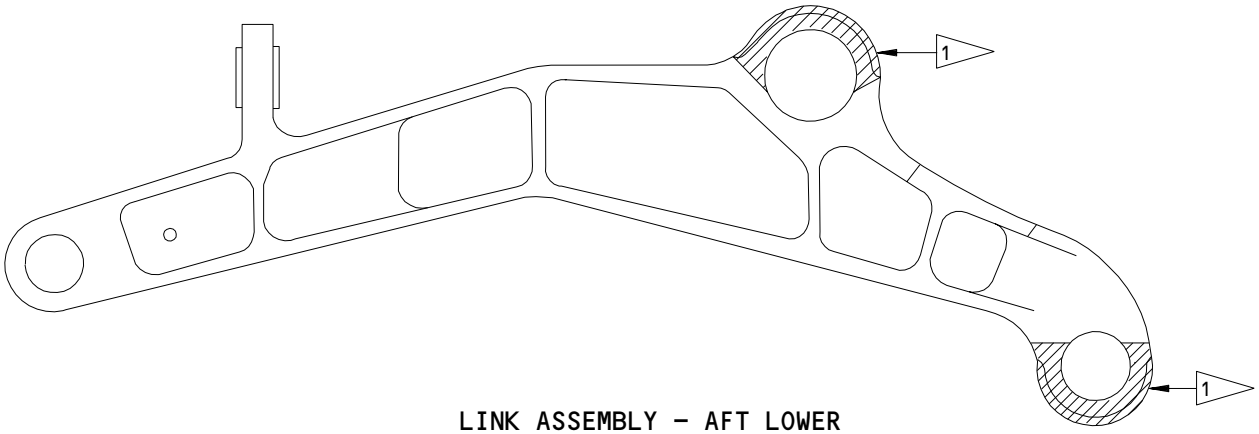
CHECK

1. Check all parts for obvious defects in accordance with standard industry practices. Refer to FITS AND CLEARANCES for design dimensions and wear limits.

2. Magnetic particle check per 20-20-01 -- Link (25), fittings (95, 135), pin (110).

3. Penetrant check per 20-20-02 -- Bolts (5, 75), washers (10, 15, 80, 85), retainers (68, 70, 130).

4. Do a check for scratches and gouges on the engine mount components as shown in Fig. 501. Repair the damage to within the maximum allowable depths as shown in the applicable Repair section.



LINK ASSEMBLY – AFT LOWER
310T1033

NOMENCLATURE	PART NUMBER	MAXIMUM REPAIRABLE GOUGE DEPTH (INCHES)	
		GENERAL 2	RESTRICTED 3
FITTING ASSEMBLY – AFT UPPER	310T1031	0.03	--
LINK ASSEMBLY – AFT TANGENT	310T1032	0.03	--
FITTING ASSEMBLY – AFT LOWER	310T1033	0.03	0.005

NOTE: SEE APPLICABLE REPAIR SECTION FOR REPAIR PROCEDURE.

1 RESTRICTED AREA. SEE CHART FOR MAXIMUM REPAIRABLE GOUGE DEPTH

2 MAXIMUM REPAIRABLE GOUGE DEPTH ALL OVER EXCEPT IN RESTRICTED AREAS SHOWN

3 MAXIMUM REPAIRABLE GOUGE DEPTH IN RESTRICTED AREAS SHOWN

Scratch and Gouge Check
Figure 501

REPAIR - GENERAL

1. Content

   A. Repair, refinish and replacement procedures are included in separate repair sections as follows:

P/N	NAME	REPAIR
310T1031	FITTING UPPER	1-1, 1-2
310T1032	LINK	2-1, 2-2
310T1033	FITTING, LOWER	3-1, 3-2
310T1036	BOLT	4-1
- - -	MISC PARTS REFINISH	5-1

2. Standard Practices

   A. Refer to the following standard practices as applicable, for details of procedures in each individual repair.

20-10-01	Repair and Refinish of High Strength Steel Parts
20-10-02	Machining of Alloy Steel
20-30-02	Stripping of Protective Finishes
20-41-01	Decoding Table For Boeing Finish Codes
20-42-09	Electrodeposit Nickel Plating
20-50-03	Bearing Installation and Retention
20-50-13	Application of Weather, Fuel, Oil, Solvent and Heat Resistant Protective Coatings

3. Materials

   NOTE: Equivalent substitutes may be used.

   A. Protective Coating -- BMS 14-4, Type 1 (Ref 20-60-02)

   B. Protective Coating -- BMS 14-4, Type 2 (Ref 20-60-02)

   C. Methyl Ethyl Ketone (Ref 20-60-01)

4. Dimensioning Symbols

A. Standard True Position Dimensioning Symbols used in applicable repair procedures are shown in Fig. 601.

—	STRAIGHTNESS
▱	FLATNESS
⊥	PERPENDICULARITY (OR SQUARENESS)
//	PARALLELISM
○	ROUNDNESS
⌭	CYLINDRICITY
⌒	PROFILE OF A LINE
⌓	PROFILE OF A SURFACE
◎	CONCENTRICITY
⌯	SYMMETRY
∠	ANGULARITY
↗	RUNOUT
⌖	THEORETICAL EXACT POSITION OF A FEATURE (TRUE POSITION)
∅	DIAMETER
BASIC (BSC) OR [DIM]	A THEORETICALLY EXACT DIMENSION USED TO DESCRIBE SIZE, SHAPE OR LOCATION OF A FEATURE FROM WHICH PERMISSIBLE VARIATIONS ARE ESTABLISHED BY TOLERANCES ON OTHER DIMENSIONS OR NOTES.
[-A-]	DATUM
Ⓜ	MAXIMUM MATERIAL CONDITION (MMC)
Ⓢ	REGARDLESS OF FEATURE SIZE (RFS)
Ⓟ	PROJECTED TOLERANCE ZONE

EXAMPLES

— 0.002	STRAIGHT WITHIN 0.002
⊥ B 0.002	PERPENDICULAR TO B WITHIN 0.002
// A 0.002	PARALLEL TO A WITHIN 0.002
○ 0.002	ROUND WITHIN 0.002
⌭ 0.010	CYLINDRICAL SURFACE MUST LIE BETWEEN TWO CONCENTRIC CYLINDERS, ONE OF WHICH HAS A RADIUS 0.010 INCH GREATER THAN THE OTHER
⌒ A 0.006	EACH LINE ELEMENT OF THE SURFACE AT ANY CROSS SECTION MUST LIE BETWEEN TWO PROFILE BOUNDARIES 0.006 INCH APART IN RELATION TO DATUM PLANE A
⌓ A 0.020	SURFACES MUST LIE WITHIN PARALLEL BOUNDARIES 0.02 INCH APART AND EQUALLY DISPOSED ABOUT TRUE PROFILE
◎ C ∅ 0.0005	CONCENTRIC TO C WITHIN 0.0005 DIAMETER (FULL INDICATOR MOVEMENT)
⌯ A 0.010	SYMMETRICAL WITH A WITHIN 0.010
∠ A 0.005	ANGULAR TOLERANCE 0.005 WITH A
⌖ B ∅ 0.002 Ⓢ	LOCATED AT TRUE POSITION WITHIN 0.002 DIA IN RELATION TO DATUM B, REGARDLESS OF FEATURE SIZE
⊥ A ∅ 0.010 Ⓜ 0.510 Ⓟ	AXIS IS TOTALLY WITHIN A CYLINDER OF 0.010-INCH DIAMETER, PERPENDICULAR TO, AND EXTENDING 0.510-INCH ABOVE, DATUM A, MAXIMUM MATERIAL CONDITION
[2.000] OR 2.000 BSC	EXACT DIMENSION IS 2.000

True Position Dimensioning Symbols
Figure 601

FITTING ASSEMBLY, UPPER - REPAIR 1-1

310T1031-3, -5

CAUTION: BE CAREFUL WITH ION-VAPOR-DEPOSITED-ALUMINUM COATED PARTS. YOU CAN EASILY DAMAGE THIS COATING.

NOTE: Refer to REPAIR-GENERAL for a list of applicable standard practices. For the repair of surfaces which require restoration of the original finish, refer to the Refinish instructions, Repair 1-2.

1. Bushing Replacement (Fig. 601)

   A. Remove bushings (100, 105).

   B. Measure the holes for bushings (100, 105). If the diameter is larger than the design diameter as shown in Fig. 601 for Repair Procedure 1-2, install an oversize bushing. Refer to Repair Procedure 1-2 for the bushing installation.

   C. If the bushing hole diameter is within the design diameter limits, install the bushing by first cleaning the hole with a double application of methyl ethyl ketone. Apply wet BMS 14-4, type 1 or 2, protective coating to the hole and immediately install the bushing. Use the shrink fit method per 20-50-03. Wipe off any excess protective coating immediately after installation.

      NOTE: Do not apply catalyst. Do not bake after installation.

   D. Machine bushings to the dimensions shown in Fig. 601.

2. Scratch and Gouge Repair

   NOTE: Repair the damage to within the maximum allowable depth of 0.003 inches.

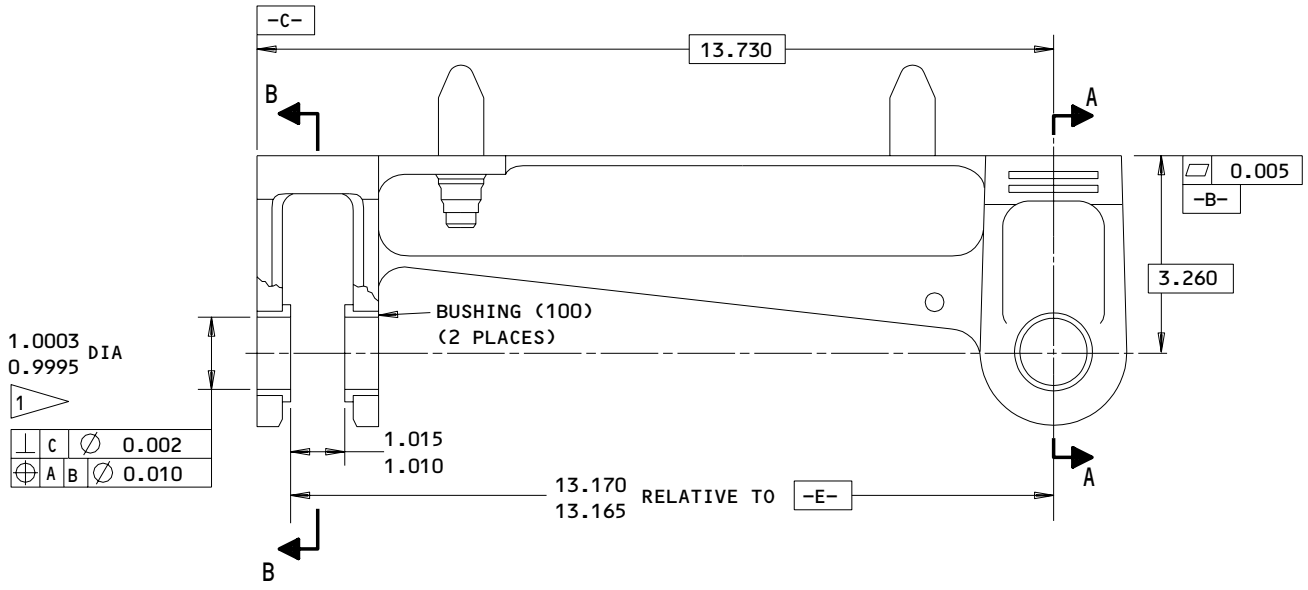
   A. Blend out scratches and gouges to a 1.00-inch minimum blend radius.

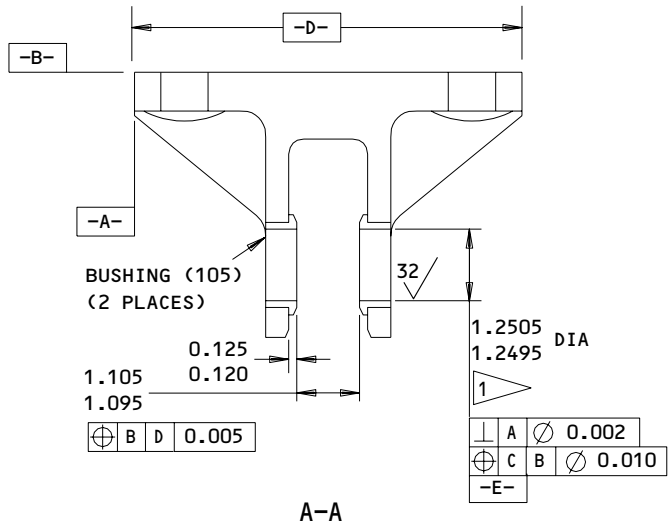
3. Refinish

A. Mask the inner diameters, the faces and the faying surfaces of the bushing. Locally strip the IVD coating in agreement with 20-30-02. Use 2 percent (by weight) sodium hydroxide with balance of water.

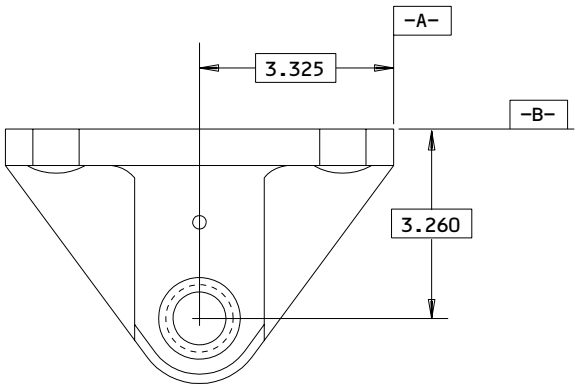
NOTE: You do not have to bake the fitting before you strip it.

B. Apply BMS 14-4 Type I. Bake the fitting to 325° ±25° for 4 hours.





A–A



B–B

1 TWO HOLES CONCENTRIC TO COMMON AXIS WITHIN 0.001 FIM

ALL DIMENSIONS ARE IN INCHES

ITEM NUMBERS REFER TO IPL FIG. 1

310T1031-3,-5
Bushing Replacement
Figure 601

FITTING, UPPER - REPAIR 1-2

310T1031-4, -6

NOTE: Refer to REPAIR-GEN for list of applicable standard practices. For repair of surfaces which may only require restoration of original finish, refer to Refinish instructions, Fig. 601.

1. Installation of Oversize Bushing (Fig. 601)

   A. Machine as required within repair limits to remove defects.

   B. Manufacture bushings (100, 105) per Fig. 602.

   C. Install bushing per Repair 1-1.

2. Pylon Attach Hole Damage Removal (Fig. 601)

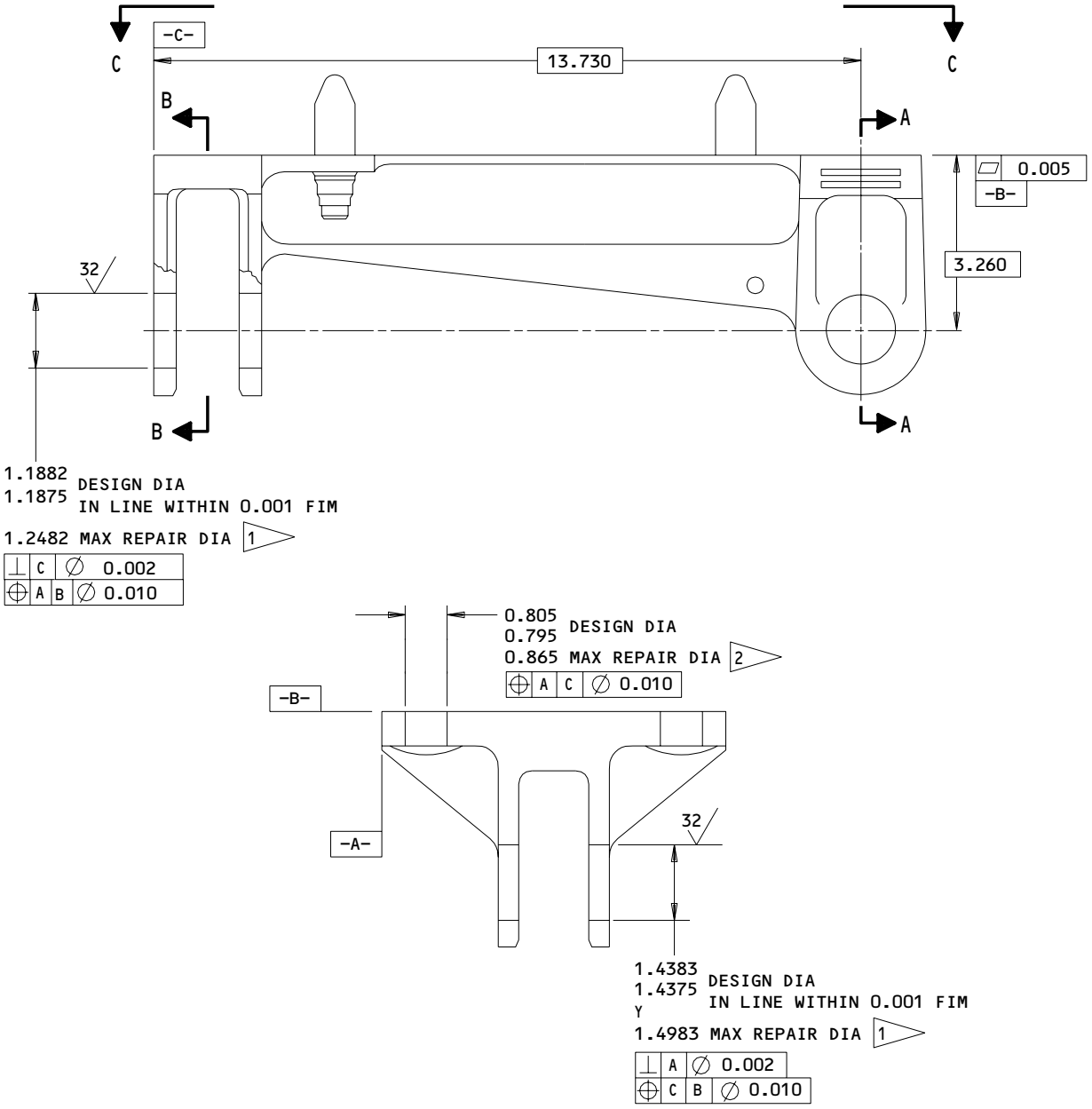
   A. Machine hole as required within repair limits to remove defects.

   B. Nital etch the reworked areas per 20-10-02.

   C. Bake at 315 ±15°F for 4 hours per 20-10-02.

   D. Magnetic particle check per 20-20-01.

   E. Apply BMS 14.4, type 1 protective coating per 20-50-13 to affected areas.

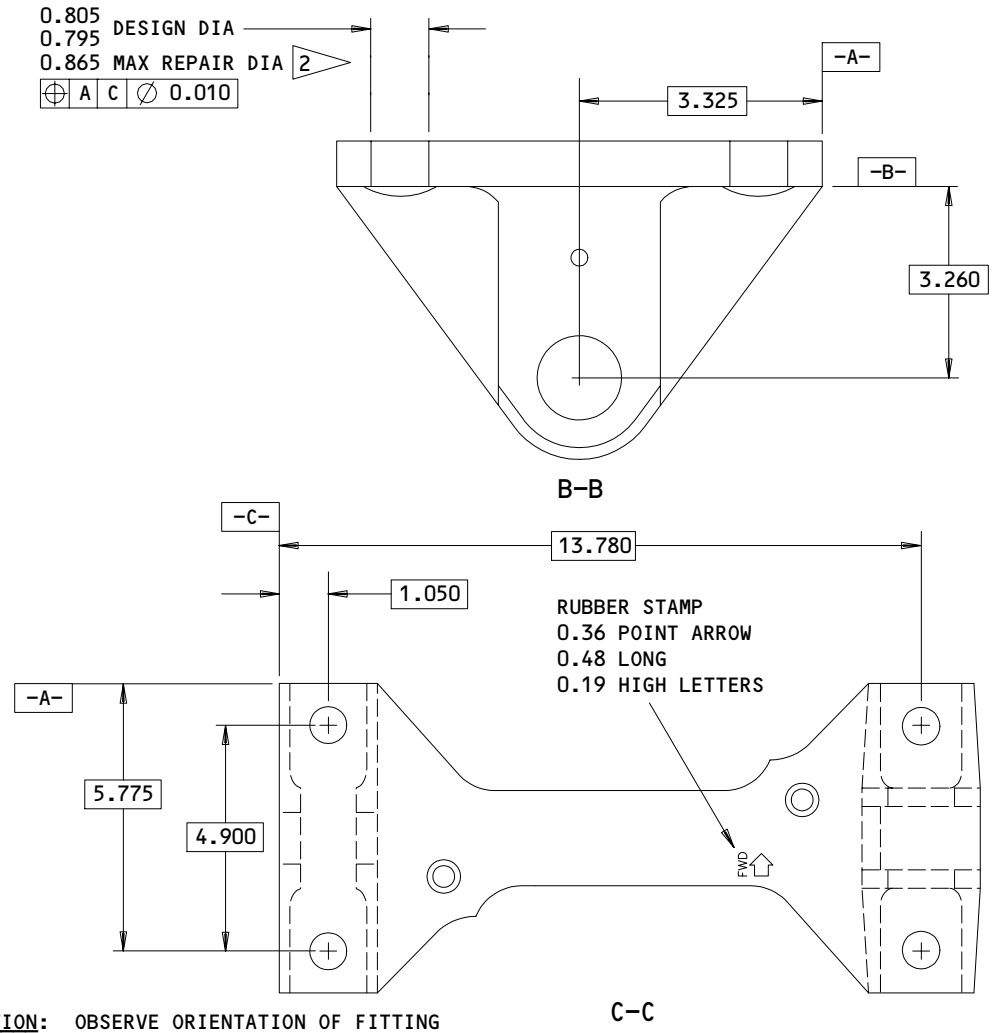


A-A

310T1031-4,-6

ALL DIMENSIONS ARE IN INCHES

Fitting Refinish
Figure 601 (Sheet 1)



CAUTION: OBSERVE ORIENTATION OF FITTING BEFORE RUBBER STAMPING.

REFINISH

FOR FITTING 310T1031-4 ONLY:
APPLY BMS 14-4, TYPE 1 PROTECTIVE COATING PER 20-50-13, CLASS 1 ALL OVER
FOR FITTING 310T1031-6 ONLY:
DRY ABRASIVE BLAST CLEAN AND

APPLY ION VAPOR DEPOSITED ALUMINUM COATING WITH COLORED CHEMICAL SURFACE TREATMENT PER MIL-C-83488, TYPE 2, CLASS 1. OMIT FROM BUSHING HOLES.

APPLY BMS 14-4, TYPE 1 PROTECTIVE COATING PER 20-50-13, CLASS 1 ALL OVER EXCEPT ON BEARING, BUSHINGS AND HOLES.

1 REPAIR LIMIT FOR INSTALLATION OF OVERSIZE BUSHING

2 REPAIR LIMIT FOR REMOVAL OF DAMAGE FROM LUG HOLE

REPAIR

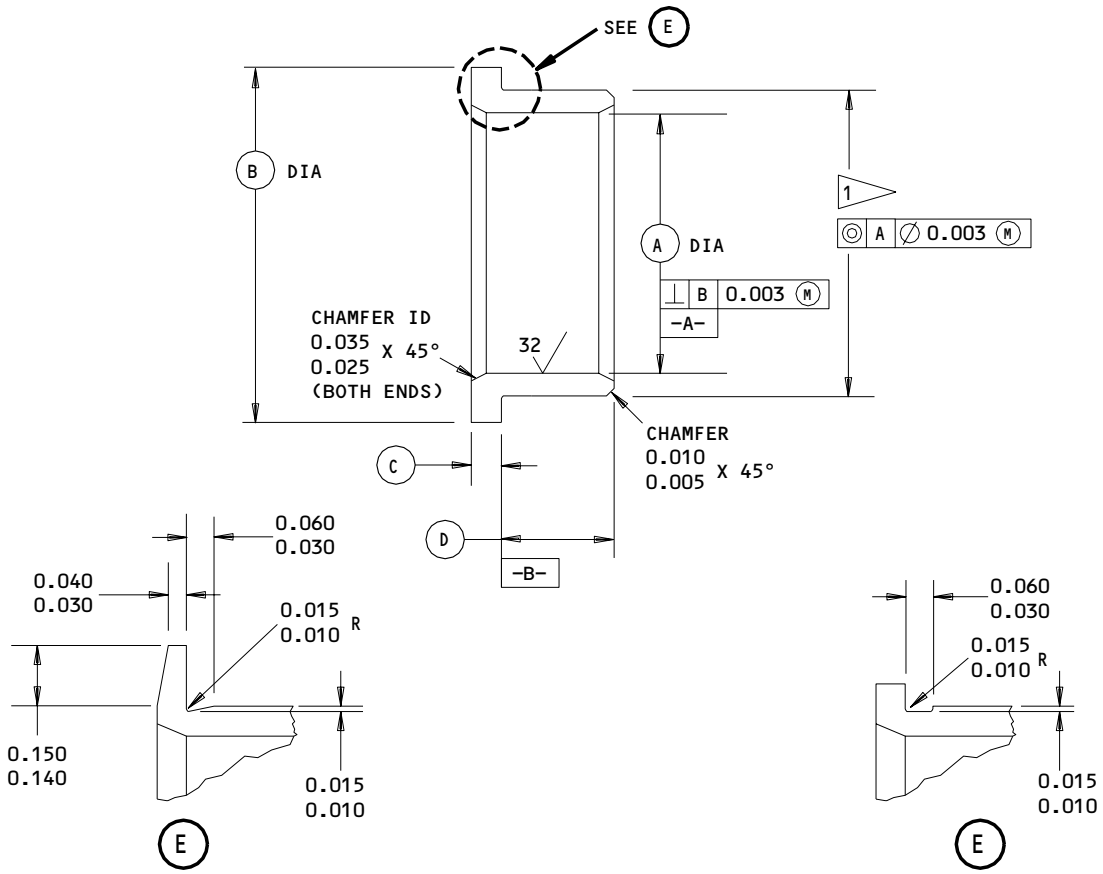
REF 1

MATERIAL: 9NI-400-.3C STEEL, 220 KSI MIN

ALL DIMENSIONS ARE IN INCHES

310T1031-4,-6

Fitting Refinish
Figure 601 (Sheet 2)



ORIGINAL BUSHING NO. (REF)	A	B	C	D	INTERFERENCE
100, FIG. 1	1.0003 0.9995	1.410 1.390	0.115 0.110	0.365 0.360	0.0023 0.0008
105, FIG. 1	1.2505 1.2495	1.697 1.677	0.130 0.125	0.375 0.370	0.0026 0.0009

1 FINAL BUSHING OUTSIDE DIAMETER EQUALS REPAIR DIAMETER OF FITTING PLUS INTERFERENCE

63 MACHINED SURFACES EXCEPT AS NOTED

BREAK SHARP EDGES

APPLY NO FINISH

MATERIAL: INCONEL 718 PER AMS 5662

PENETRANT CHECK PER 20-20-02

ALL DIMENSIONS ARE IN INCHES

Oversize Bushing Detail
Figure 602

288919

LINK ASSEMBLY - REPAIR 2-1

310T1032-3

NOTE: Refer to REPAIR-GEN for list of applicable standard practices. For repair of surfaces which may only require restoration of original finish, refer to Refinish instructions, Repair 2-2.

1. Bearing Replacement (Fig. 601)

   A. Remove bearing (30).

   B. Check hole diameter and repair as required per Repair 2-2.

   C. Clean hole with double application of methyl ethyl ketone. Apply wet BMS 14-4, type 2, protective coating to hole and immediately install bearing race. Roller swage per 20-50-03. Wipe off excess protective coating immediately after swaging. Race must be axially centered in hole within 0.005 inch with slot in race positioned as shown.

      NOTE: Do not apply catalyst. Do not bake after installation.

   D. Install ball and hold in place with aluminum wire until unit is installed.

2. Bushing Replacement (Fig. 601)

   A. Press out old bushings (35).

   B. Measure the hole for bushings (35). If the diameter is larger than the design diameter as shown in Fig. 601 for Repair Procedure 2-2, install an oversize bushing . Refer to Repair Procedure 2-2 for the bushing installation.

   C. If the bushing hole diameter is within the design diameter limits, install the bushing by first cleaning the hole with a double application of methyl ethyl ketone. Apply wet BMS 14-4, type 1 or 2, protective coating to the hole and immediately install the bushing. Use the shrink-fit method per 20-50-03. Wipe off any excess protective coating immediately after installation.

   D. Machine bushings to dimension shown in Fig. 601.

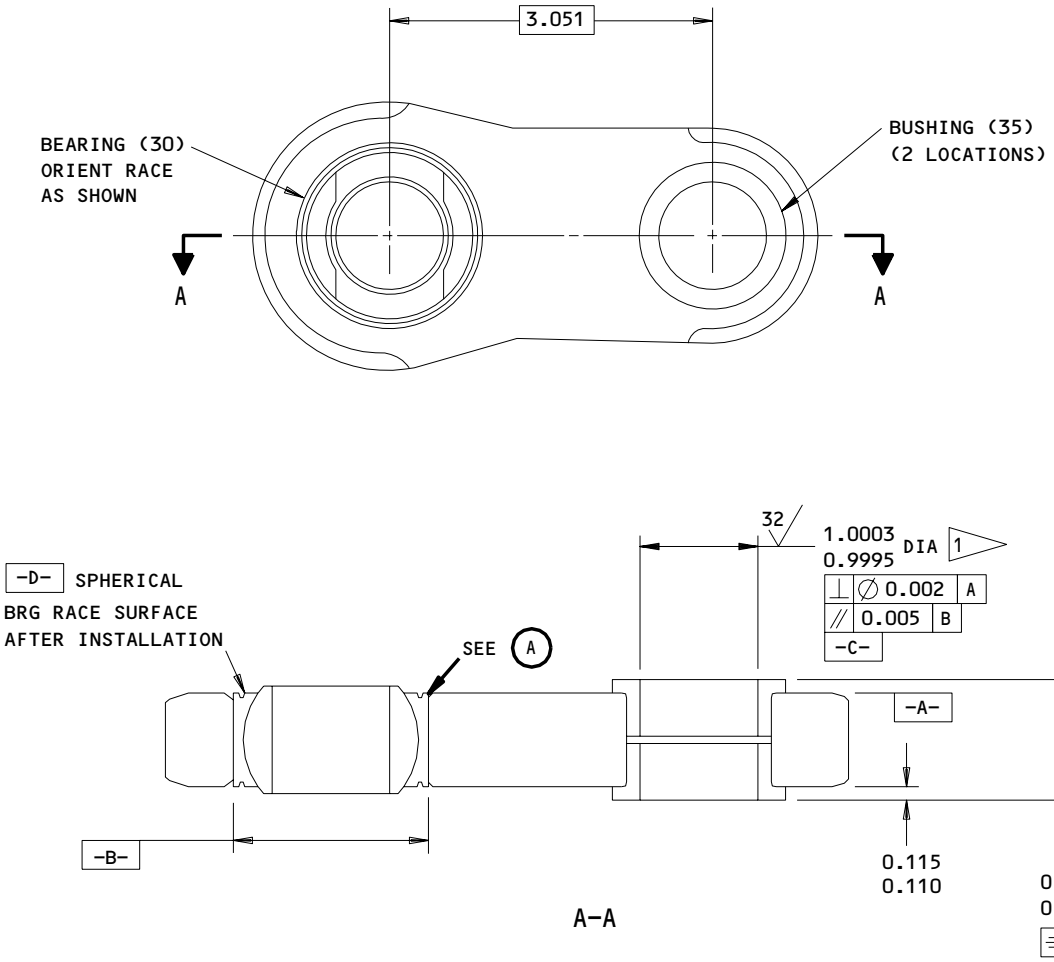
3. Scratch and Gouge Repair

   NOTE: Repair for damage within maximum allowable depth of 0.003.

   A. Blend out scratches and gouges to 1.00-inch thick minimum radius.

B. Mask bushing inner diameters, faces and faying surfaces prior to stripping. Locally strip the IVD coating per 20-30-02. Use 2 percent (by weight) sodium hydroxide with balance of water. Bake prior to strip not required.

C. Apply BMS 14-4 Type I, then bake to 325° ±25° for 4 hours.



1 TWO HOLES CONCENTRIC TO COMMON AXIS WITHIN 0.001 FIM

ITEM NUMBERS REFER TO IPL FIG. 1

ALL DIMENSIONS ARE IN INCHES

310T1032-3
Bushing and Bearing Replacement
Figure 601

LINK - REPAIR 2-2

310T1032-4

NOTE: Refer to REPAIR-GEN for list of applicable standard practices. For repair of surfaces which may only require restoration of original finish, refer to Refinish instructions, Fig. 601.

1. Bearing Hole Repair (Fig. 601, 602)

   A. Method 1 -- Nickel Plate Buildup

      (1) Hone, as required, to remove defects within specified repair limits in Fig. 602.

      (2) Nickel plate hole in link up to 0.0005-inch thickness and hone to specified dimension in Fig. 602.

      (3) Install bearing (30) per Repair 2-1.

   B. Method 2 -- Installation of Oversize Bearings

      (1) Remove defects by machining to repair limits as shown in Fig. 602.

      (2) Select appropriate oversize bearing from Fig. 602.

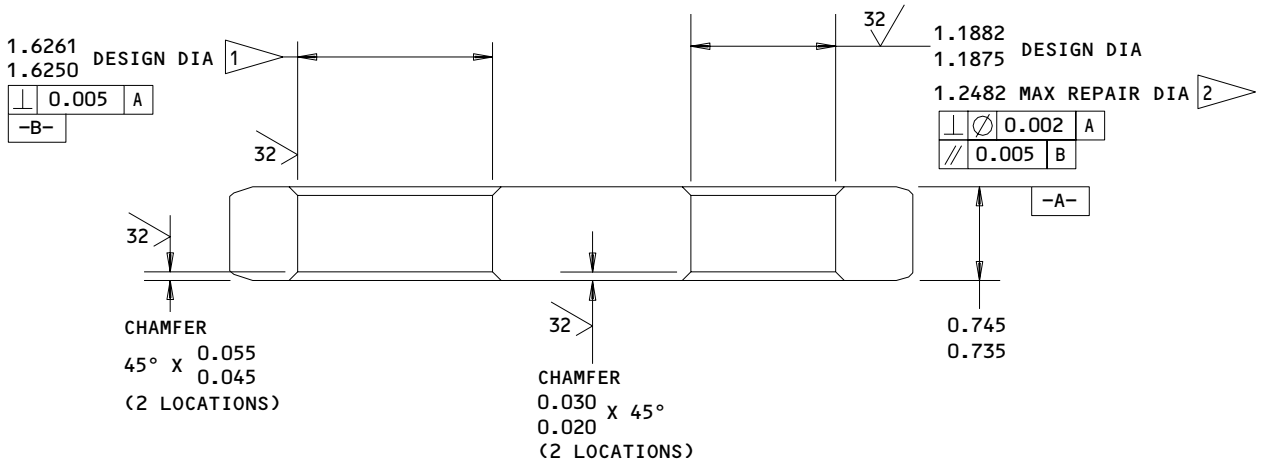
      (3) Install bearing per Repair 2-1.

2. Installation of Oversize Bushing (Fig. 601)

   A. Machine as required within repair limits to remove defects.

   B. Manufacture oversize bushings per Fig. 602.

   C. Install bushings per Repair 2-1.



REFINISH

APPLY BMS 14-4, TYPE 1 PROTECTIVE COATING
AS SHOWN IN SOPM 20-50-13, CLASS 1 ALL OVER

1 SEE FIG. 602 FOR OVERSIZE BEARING REPAIR LIMITS

2 REPAIR LIMIT FOR INSTALLATION OF OVERSIZE BUSHING

REPAIR

REF 1 2

MATERIAL: 9NI-4CO-.3C STEEL, 220 KSI MIN

ALL DIMENSIONS ARE IN INCHES

310T1032-4
Link Repair
Figure 601

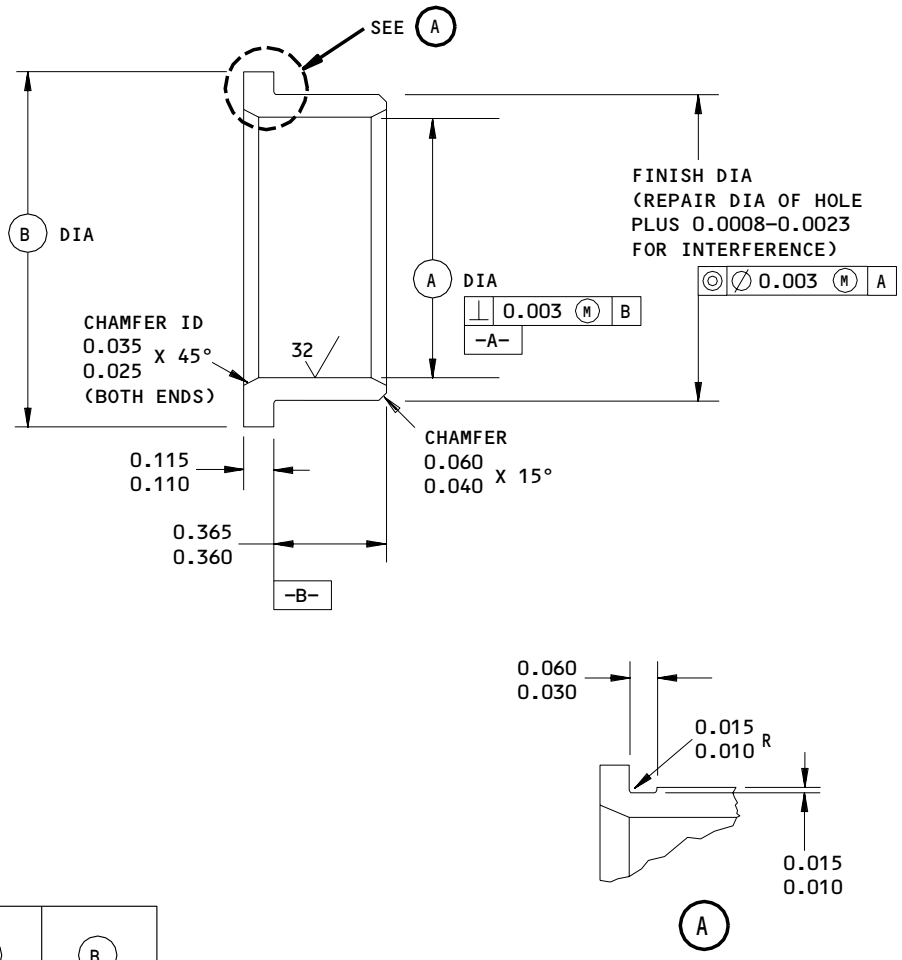
REPAIR LIMIT	OVERSIZE BEARING OD	VALLEY TODECO P/N	PSI P/N
1.6265 1 / 1.6256	1.6250 1 / 1.6245	VTB1310	P22950
1.6275 / 1.6266	1.6260 / 1.6255	VTB01310-P01	P22950-P1
1.6285 / 1.6276	1.6270 / 1.6265	VTB01310-P02	P22950-P2
1.6315 / 1.6306	1.6300 / 1.6295	VTB01310-P05	P22950-P5
1.6365 / 1.6356	1.6350 / 1.6345	VTB01310-P10	P22950-P10
1.6415 / 1.6406	1.6400 / 1.6395	VTB01310-P15	P22950-P15
1.6465 / 1.6456	1.6450 / 1.6445	VTB01310-P20	P22950-P20
1.6565 / 1.6556	1.6550 / 1.6545	VTB01310-P30	P22950-P30

OVERSIZE BEARING DETAILS FOR BEARING (30)

Oversize Bearing and Bushing Details
Figure 602 (Sheet 1)

13111

190507



ORIGINAL BUSHING NO. (REF)	(A)	(B)
FIG. 1, 35	1.0003 0.9995	1.410 1.390

63 ALL MACHINED SURFACES UNLESS SHOWN DIFFERENTLY

BREAK SHARP EDGES

APPLY NO FINISH

MATERIAL: INCONEL 718, AMS 5662

PENETRANT CHECK AS SHOWN IN SOPM 20-20-02

ALL DIMENSIONS ARE IN INCHES

1 FOR NICKEL PLATE BUILDUP REPAIR ONLY WITH BEARING (30) REPLACEMENT

Oversize Bearing and Bushing Details
Figure 602 (Sheet 2)

288917

FITTING ASSEMBLY, LOWER - REPAIR 3-1

310T1033-3, -5

NOTE: Refer to REPAIR-GEN for list of applicable standard practices. For repair of surfaces which may only require restoration of original finish, refer to Refinish instructions, Repair 3-2.

1. Bearing Replacement (Fig. 601)

   A. Remove bearings (145, 150A).

   B. Check hole diameter and repair as required per Repair 3-2.

   C. Clean hole with double application of methyl ethyl ketone. Apply wet BMS 14-4, type 2, protective coating to hole and immediately install bearing race. Roller or anvil swage per 20-50-03. Wipe off excess protective coating immediately after swaging. Race must be axially centered in holes within 0.005 inch with slot in race positioned as shown.

      NOTE: Do not apply catalyst. Do not bake after installation.

   D. Install balls and hold in place with aluminum wire until unit is installed.

2. Bushing Replacement (Fig. 601)

   A. Press out old bushings (140).

   B. Measure the hole for bushing (140). If the diameter is larger than the design diameter as shown in Fig. 601 for Repair Procedure 3-2, install an oversize bushing. Refer to Repair Procedure 3-2 for bushing installation.

   C. If the bushing hole diameter is within the design diameter limits, install the bushing by first cleaning the hole with a double application of methyl ethyl ketone. Apply wet BMS 14-4, type 1 or 2, protective coating to the hole and immediately install the bushing. Use the shrink-fit method per 20-50-03. Wipe off any excess protective coating immediately after installation.

   D. Machine bushings to dimension shown in Fig. 601.

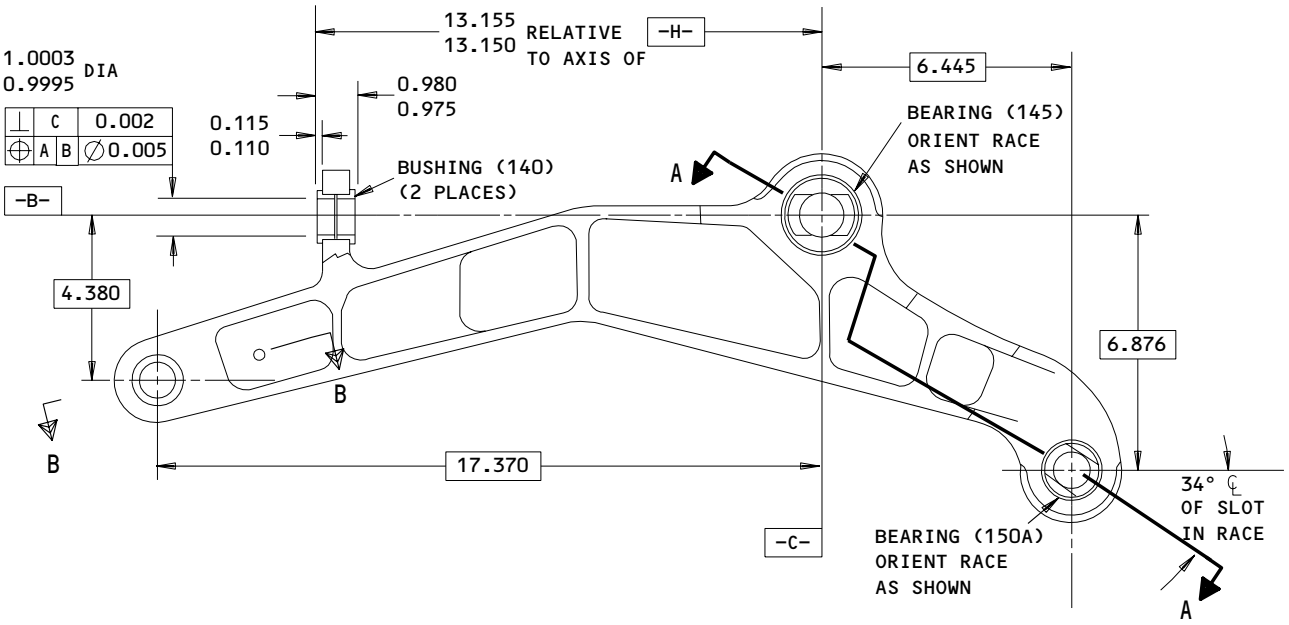
3. Scratch and Gouge Repair

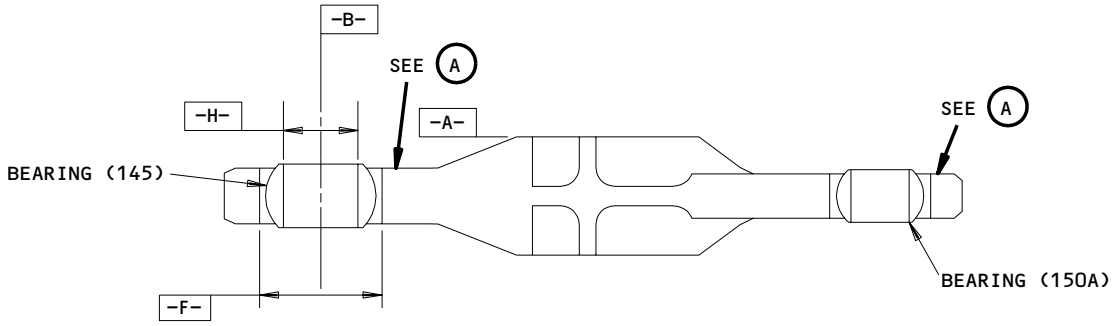
NOTE: The Repair is for damage within maximum allowable depth of 0.003.

   A. Blend out scratches and gouges to 1.00-inch thick minimum radius.

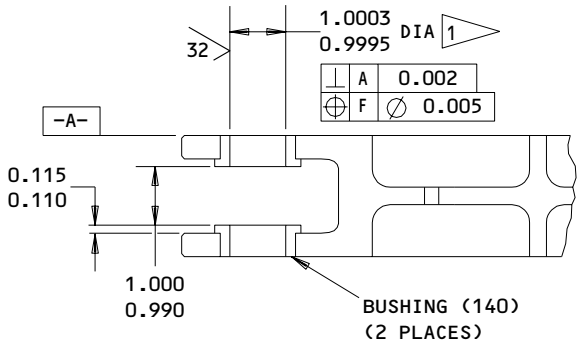
B. Mask bushing inner diameters, faces and faying surfaces prior to stripping. Locally strip the IVD coating per 20-30-02. Use 2 percent (by weight) sodium hydroxide with balance of water. Bake prior to strip not required.

C. Apply BMS 14-4 Type I, then bake to 325° ±25° for 4 hours.

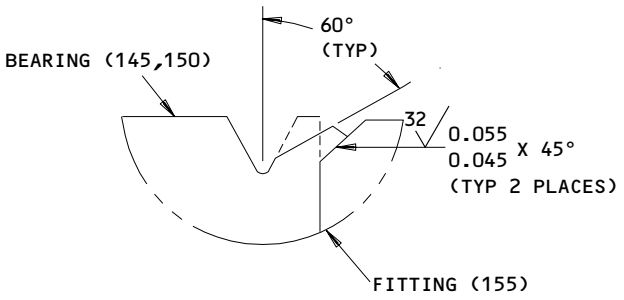




A-A



B-B



SWAGING DETAIL

A

1 TWO HOLES CONCENTRIC TO COMMON AXIS WITHIN 0.001 FIM

ALL DIMENSIONS ARE IN INCHES

310T1033-3,-5
Bushing and Bearing Replacement
Figure 601

13141

FITTING, LOWER - REPAIR 3-2

310T1033-4, -6

CAUTION: BE CAREFUL WITH ION-VAPOR-DEPOSITED-ALUMINUM COATED PARTS. THIS COATING CAN BE DAMAGED EASILY.

NOTE: Refer to REPAIR-GENERAL for a list of applicable standard practices. For repair of surfaces which only require restoration of original finish, refer to Refinish instructions, Fig. 601.

1. Bearing Hole Repair (Fig. 601, 602, 603)

   A. Method 1 -- Nickel Plate Buildup

      (1) Hone, as required, to remove defects within repair limits.

      (2) Nickel plate bearing bore and hone to dimension indicated.

      (3) Install bearings (145, 150A) per Repair 3-1.

   B. Method 2 -- Installation of Oversize Bearings

      (1) Remove defects by machining to repair limits as shown in Fig. 602.

      (2) Select the applicable oversize bearing(s) from the table in Fig. 603.

      (3) Install bearing(s) per Repair 3-1.

2. Installation of Oversize Bushing (Fig. 601, 602)

   A. To remove defects, machine as required within repair limits as shown in Fig. 601.

   B. Manufacture bushings (140) per Fig. 602.

   C. Install bushing per Repair 3-1.

3. Scratch and Gouge Repair

NOTE: For the maximum repairable gouge depth, all over the component and in restricted areas, refer to Fig. 501.

A. Blend out scratches and gouges to a 1.00-inch minimum blend radius.

4. Corrosion Repair

A. The maximum corrosion clean-up depth in the restricted area is 0.005 inch. Refer to Fig. 601.

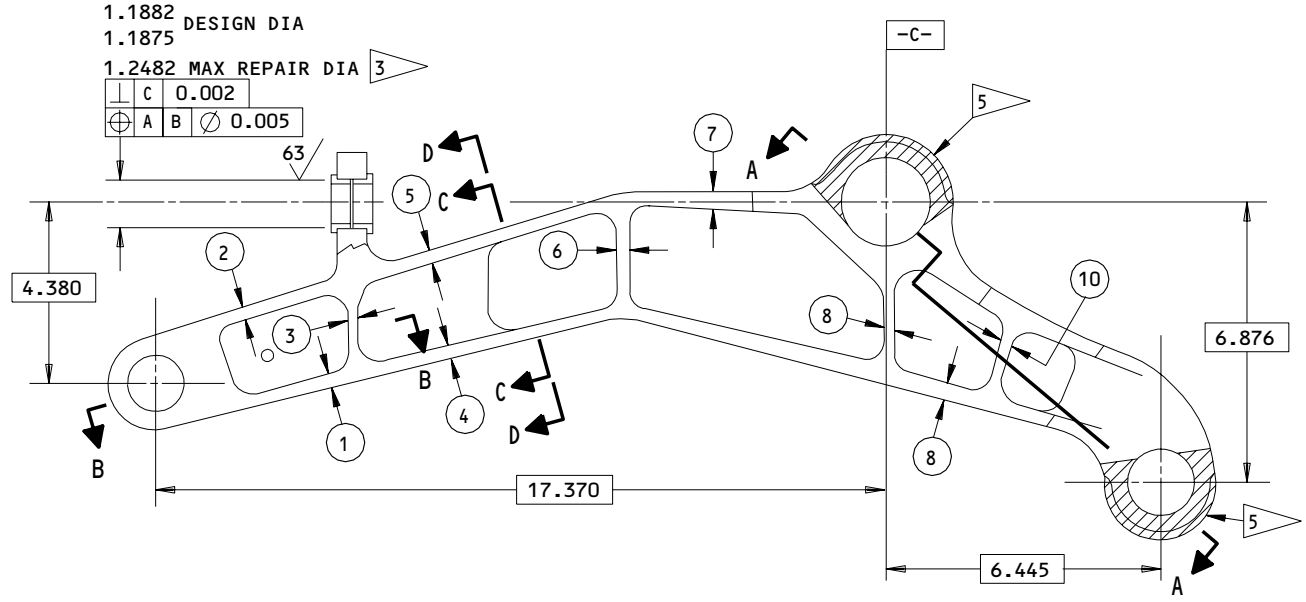
B. Blend out corrosion as shown in Fig. 601. For the typical maximum clean-up depth on the faces, on the edges, and on the webs of the fitting, refer to Fig. 601.

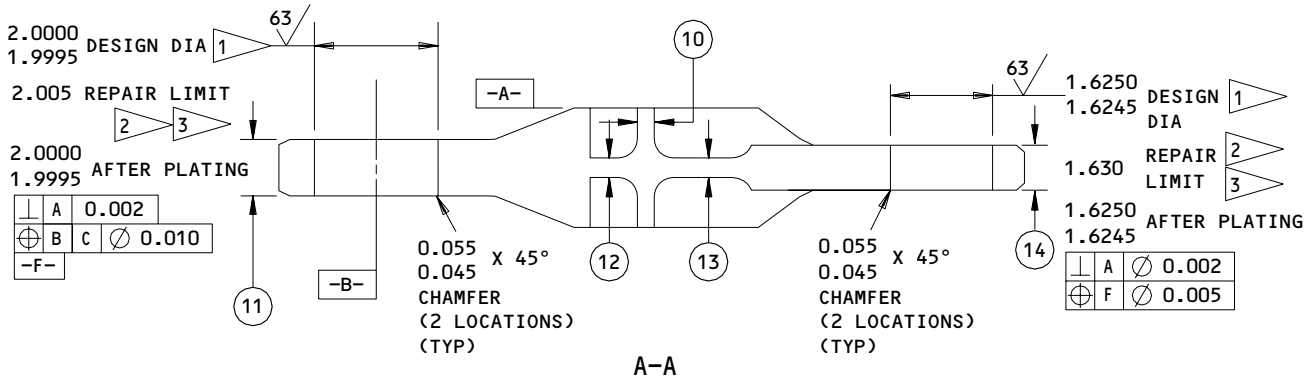
5. Refinish

A. Mask the inner diameters, the faces and the faying surfaces of the bushing. Locally strip the IVD coating in agreement with 20-30-02. Use 2 percent (by weight) sodium hydroxide with balance of water.

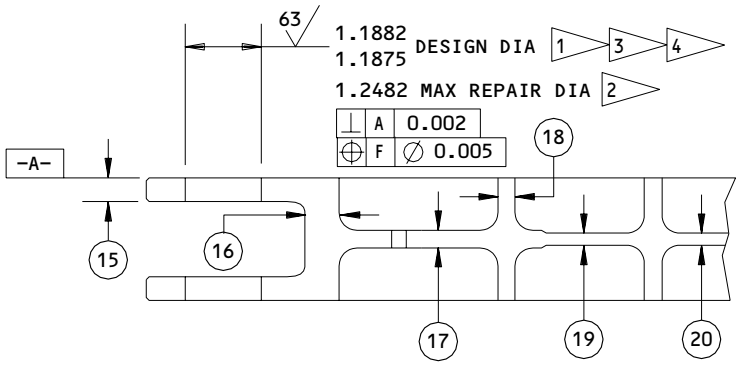
NOTE: You do not have to bake the fitting before you strip it.

B. Apply BMS 14-4 Type 1. Bake the fitting to 325°F ±25°F for 4 hours.





A-A



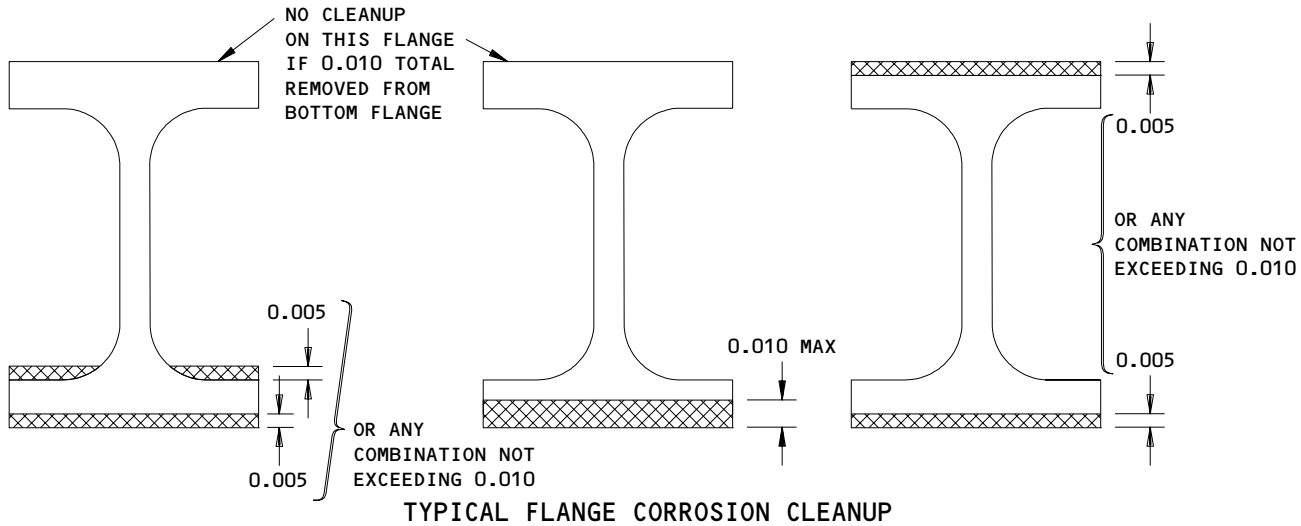
B-B

310T1033-4,-6
Fitting Repair
Figure 601 (Sheet 1)

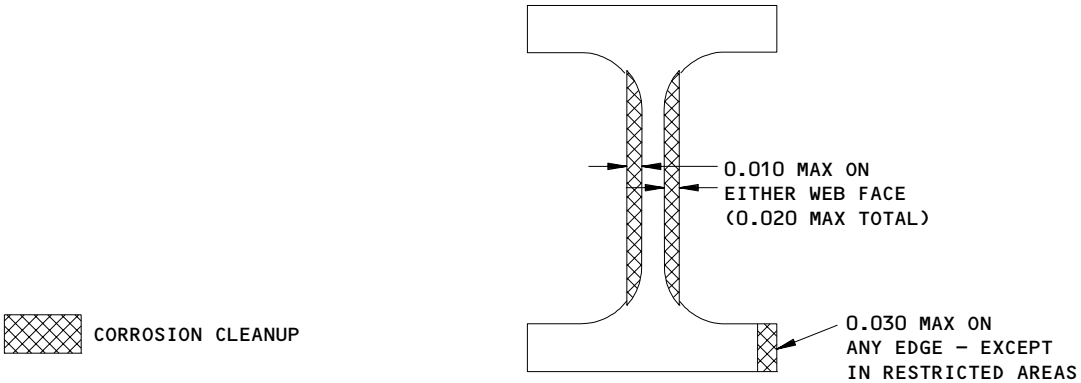
13160

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
DESIGN DIM	SEE FLANGE CLEANUP	SEE FLANGE CLEANUP	0.260 0.240	SEE FLANGE CLEANUP	SEE FLANGE CLEANUP	0.510 0.490	SEE FLANGE CLEANUP	0.260 0.240	SEE FLANGE CLEANUP	0.280 0.260

	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)	(19)	(20)
DESIGN DIM	0.937 0.927	0.370 0.350	0.370 0.350	0.745 0.735	0.390 0.380	SEE WEB CLEANUP	0.310 0.290	0.260 0.240	0.260 0.240	0.260 0.240



TYPICAL FLANGE CORROSION CLEANUP
(OUTSIDE RESTRICTED AREAS)
C-C



TYPICAL WEB CORROSION CLEANUP
D-D

310T1033-4,-6
Fitting Repair
Figure 601 (Sheet 2)

H78482

REFINISH

310T1033-4,-6:
DRY ABRASIVE BLAST AS SHOWN IN SOPM 20-30-03 AND APPLY ION VAPOR DEPOSITED ALUMINUM COATING (F-24.06) ALL OVER EXCEPT IN BUSHING/BEARING HOLES.

OPTIONAL FINISH:
COAT ONLY THE SURFACES OF THE FITTING WHICH WILL BE IN CONTACT WITH BUSHING FLANGES WITH BMS 14-4, TYPE 1 PROTECTIVE COATING. BAKE THE PART AND BURNISH AS REQUIRED. INSTALL INNER AND OUTER BUSHINGS (NESTED SET) AS SHOWN IN REPAIR 3-1. REMOVE EXCESS BMS 14-4, TYPE 1 PROTECTIVE COATING FROM EDGE OF BUSHING FLANGE AND SURROUNDING AREA TO ENSURE (F-24.06) FILLET SEAL WITH BUSHING FLANGE. BAKE AS REQUIRED. MACHINE BUSHING INSIDE DIAMETERS AS NECESSARY. MASK ALL BUSHING FLANGE FACES, INSIDE DIAMETERS, AND EXPOSED BEARING SURFACES. DRY ABRASIVE BLAST AS SHOWN IN SOPM 20-30-03 AND APPLY ION VAPOR DEPOSITED ALUMINUM COATING (F-24.06) ALL OVER.

1 NICKEL PLATE THIS SURFACE AND HONE TO DESIGN DIAMETER

2 REPAIR LIMIT FOR NICKEL PLATE BUILDUP

3 SEE FIG. 602 FOR OVERSIZE BUSHING REPAIR LIMITS

4 TWO HOLES CONCENTRIC TO COMMON AXIS WITHIN 0.001 FIM

5 RESTRICTED AREA FOR SCRATCH, GOUGE, AND CORROSION. MAXIMIUM BLEND DEPTH 0.005.

6 SEE FIG. 603 FOR OVERSIZE BEARING REPAIR LIMITS.

REPAIR

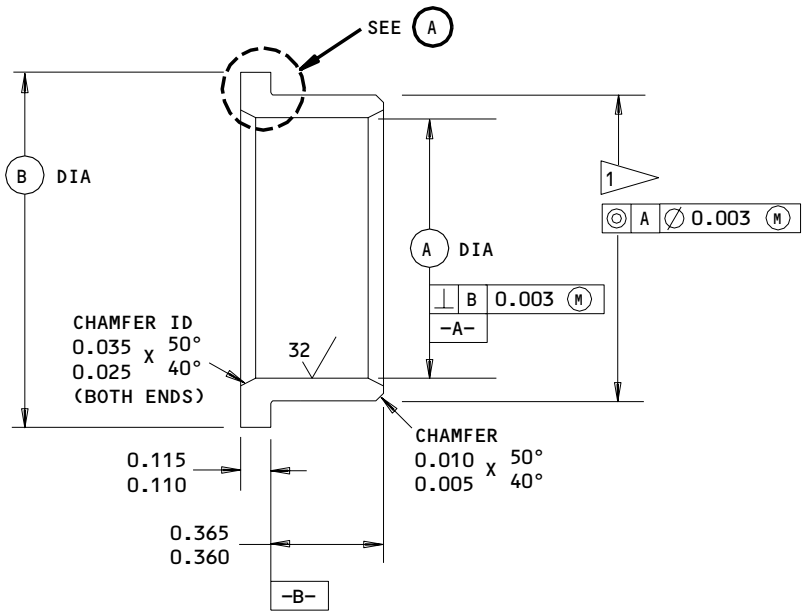
REF 1 2 3 4 5

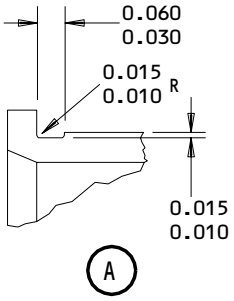
MATERIAL: 9NI-4CO-.3C STEEL, 220 KSI MIN

ALL DIMENSIONS ARE IN INCHES

310T1033-4,-6
Fitting Repair
Figure 601 (Sheet 3)

H78484





ORIGINAL BUSHING NO. (REF)	A	B
140, FIG. 1	1.0003 0.9995	1.410 1.390

1 FINISH DIAMETER (REPAIR DIAMETER OF HOLE PLUS 0.0008–0.0023 FOR INTERFERENCE)

63 ALL MACHINED SURFACES UNLESS SHOWN DIFFERENTLY

BREAK SHARP EDGES

APPLY NO FINISH

MATERIAL: INCONEL 718 PER AMS 5662

PENETRANT CHECK PER SOPM 20-20-02

ALL DIMENSIONS ARE IN INCHES

Oversize Bushing Details
Figure 602

288918

REPAIR LIMIT	OVERSIZE BEARING OD	VALLEY TODECO P/N	PSI P/N
2.0014 2.0004	2.0000 1.9995	VTB01130	P22960
2.0024 2.0014	2.0010 2.0005	VTB01130-P01	P22960-P1
2.0034 2.0024	2.0020 2.0015	VTB01130-P02	P22960-P2
2.0064 2.0054	2.0050 2.0045	VTB01130-P05	P22960-P5
2.0114 2.0104	2.0100 2.0095	VTB01130-P10	P22960-P10
2.0164 2.0154	2.0150 2.0145	VTB01130-P15	P22960-P15
2.0214 2.0204	2.0200 2.0195	VTB01130-P20	P22960-P20
2.0314 2.0304	2.0300 2.0295	VTB01130-P30	P22960-P30

OVERSIZE BEARING DETAILS FOR BEARING (145)

REPAIR LIMIT	OVERSIZE BEARING OD	VALLEY TODECO P/N	PSI P/N
1.6265 1.6256	1.6250 1.6245	VTB1310	P22950
1.6275 1.6266	1.6260 1.6255	VTB01310-P01	P22950-P1
1.6285 1.6276	1.6270 1.6265	VTB01310-P02	P22950-P2
1.6315 1.6306	1.6300 1.6295	VTB01310-P05	P22950-P5
1.6365 1.6356	1.6350 1.6345	VTB01310-P10	P22950-P10
1.6415 1.6406	1.6400 1.6395	VTB01310-P15	P22950-P15
1.6465 1.6456	1.6450 1.6445	VTB01310-P20	P22950-P20
1.6565 1.6556	1.6550 1.6545	VTB01310-P30	P22950-P30

OVERSIZE BEARING DETAILS FOR BEARING (150A)

Oversize Bearing Details
Figure 603

BOLT - REPAIR 4-1

310T1036-1, -2, -3

1. Repair

A. Unless otherwise specified in these Repair Instructions, remove minor pits, nicks and scratches with a fine stone. Blend repairs smoothly into parent material.

B. Bolt Repair

NOTE: When repair by machining is necessary, tool centers 0.250 inch deep may be used in the head and shank end of bolts.

(1) Repair rolled threads of bolts as follows:

CAUTION: NO REPAIR PERMITTED BELOW MINIMUM PITCH DIAMETER OF THREADS. NO REPAIR PERMITTED IN THREAD RELIEF OR RUNNOUT AREA.

(a) Repair damage in the region between minimum pitch diameter and major diameter by using thread chasers conforming to the following:

1) Capable of cutting UNJF-3A threads.

2) Modified to preclude cutting threads below the following minimum pitch diameters:

Thread Size	Minimum Pitch Diameter (inches)
0.500-20 UNJF-3A	0.4643

a) Nickel strike anodically for 15 to 45 seconds at 30 ASF. Instantly follow with cathodic current for 4 minutes at 30 to 60 ASF. Strike bath is 32 Oz/gal. NiC12, 16 oz/gal HC1 at room temperature.

(b) Rework of threads shall be uniform along entire thread length except for runout. After rework, major diameters of threads shall not be less than the following:

Thread Size	Major Diameter (inches)
0.500-20 UNJF-3A	0.4919

(c) Maintain surface finish of 63 microinches on flats of major diameter and on thread flanks.

(2) Minor repair of bolt shanks.

(a) Minor repair is defined as the blending out of damage or wear by grinding, honing or machining within specified limits. Buildup to original design dimensions is not required. Stripping, repairing, or replating of chrome or silver plating is not required.

(b) Limits for minor repair.

1) Wear or damage not exceeding a depth of 0.004 inch. The sum of all reworked area lengths, measured axially along length of bolt, shall not exceed 10% of bolt grip length.

2) No rework in head-to-shank relief area. See Fig. 601.

3) Repaired areas shall have a surface roughness of 16 microinches maximum.

(c) After repair, visual check repaired area for cracks, nicks or damage.

(3) Major repair of bolt (Fig. 601).

(a) Strip plating per 20-30-02.

CAUTION: NO REPAIR OF THE SHOULDER FILLET OR SHOULDER BEARING SURFACE. IS PERMITTED. MINOR FRETTING MAY BE POLISHED OUT TO A DEPTH 0.002 INCH ON BOLTHEAD BEARING SURFACE.

(b) Machine per 20-10-02 as required to eliminate defects, but do not exceed dimensions shown in Fig. 601.

(c) Perform penetrant check per 20-20-02.

(d) All bolts.

1) Mask threads and shot peen machined area, including thread runout, per 20-10-03, using 0.0165-0.0331 shot and 0.012A2 intensity.

2) Build up shank with hard chrome plate as follows.

CAUTION: NO CHROME PLATE PERMITTED ON THREADS OR IN THREAD ROUNOUT. AFTER FINISH GRINDING, PLATING THICKNESS MUST NOT EXCEED 0.010 INCH.

a) Vapor degrease or solvent clean.

b) Mask threads, thread runout, fillets and relief, as required.

c) Vacu-blast abrasive clean.

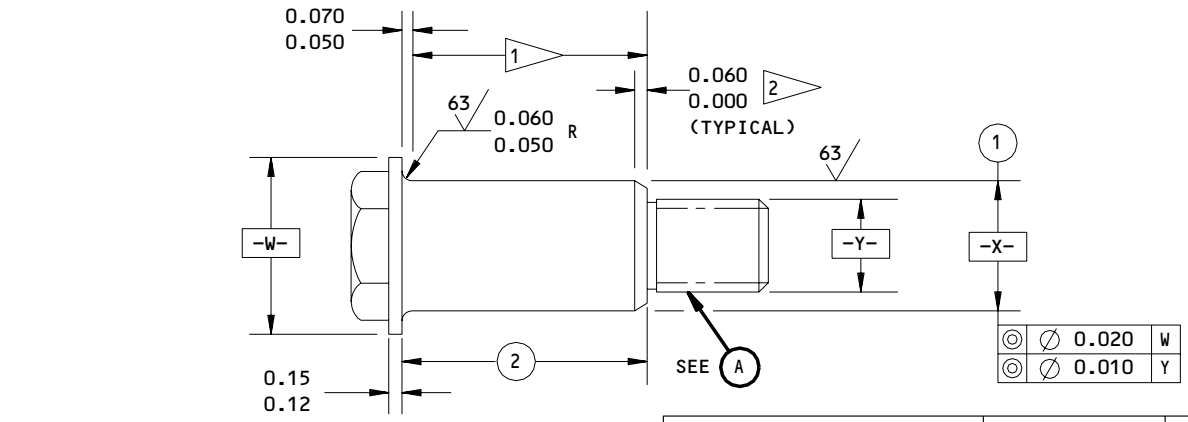
d) Alkaline clean and rinse to remove abrasive residue.

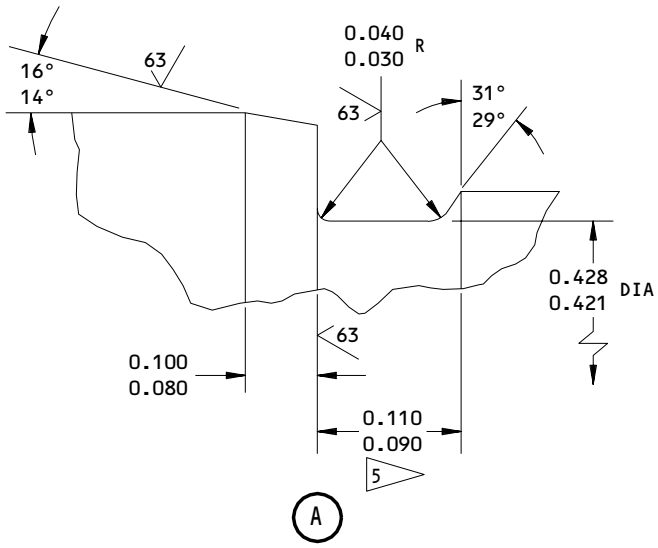
e) Rinse and immediately proceed to the chromium plating bath.

f) Chromium plate at 1-1/2 to 2 ASI to deposit required plate thickness.

g) Rinse and dry.

(e) Grind chrome plate per 20-10-04 to finish dimensions. Maintain surface finish of 63 microinches.





REFERENCE NUMBER		1	2
BOLT	DESIGN DIMENSION	1.2490 1.2475 3	2.278 2.258
310T1036-1	REPAIR LIMIT	1.2275 4	
BOLT	DESIGN DIMENSION	0.9990 0.9980 3	2.270 2.250
310T1036-2	REPAIR LIMIT	0.9780 4	
BOLT	DESIGN DIMENSION	0.9990 0.9980 3	3.250 3.230
310T1036-3	REPAIR LIMIT	0.9780 4	

REFINISH

CHROME PLATE AREA NOTED BY 1. NO CHROME PLATE PERMITTED ON THREAD RELIEF AREA. NO FINISH ALL OTHER SURFACES.

1. CHROME PLATE (F-15.03) 0.0004-0.0007 THICK
2. CHROME PLATE RUNOUT
3. DIMENSION AFTER PLATING
4. MACHINE TO REMOVE DEFECTS. CHROME PLATE (F-15.03) AND GRIND TO DESIGN DIMENSIONS. SINGLE PLATE THICKNESS 0.003 MINIMUM AFTER GRINDING.
5. NO CHROME PLATE ALLOWED ON THREAD RELIEF AREA.

REPAIR

REF 1 2 3 4 5

MATERIAL: INCONEL 718

ALL DIMENSIONS ARE IN INCHES

B310T1036-1 THRU -3
Bolt Repair
Figure 601

13144

MISCELLANEOUS PARTS REFINISH - REPAIR 5-1

1. Repair of parts listed in Fig. 601 consists of restoration of original finish.

IPL FIG. & ITEM	MATERIAL	FINISH
Fig. 1		
Retainers (68, 70, 130)	INCONEL 625	Passivate (F-17.09).
Washers (10, 15, 80, 85)	A286 CRES	Passivate (F-17.09).
Pin (110)	15-5PH CRES, 180-200 ksi	Passivate (F-17.09).

Refinish Details
Figure 601

ASSEMBLY

1. Materials

   A. Anti-seize compound Never-Seez pure Nickel special grade.

2. Assemble Aft Engine Mount (IPL Fig. 1)

   A. Install shear pins (110, IPL Fig. 1) on upper fitting (125) and secure with washers (115), nuts (120). Tighten nut to 440-650 lb-in.

   B. Apply antiseize compound to threads and shank of bolt (5). Position lower fitting (135) on upper fitting (95) and install bolt (5) (bolt head facing outboard as shown on IPL), washer (10) under bolt head, washer (15) under nut, and nut (20). Tighten nut to 630-1070 lb-in (52.5-89.1 lb-ft). Do not turn bolt to tighten nut.

   C. Apply antiseize compound to threads and shank of bolt (75). Insert bolt (75), washer (80) thru holes in upper and lower fitting (95, 135) with bolt head facing as shown in IPL, install washer (85) and nut (90). Tighten nut to 630-1070 lb-in (52.5-89.1 lb-ft). Do not turn bolt to tighten nut.

   D. Install retainer (68) on bolt (5) head and secure retainer to upper fitting (95) with bolt (45), washer (55) (under bolt head), washer (60) (under nut) and nut (65).

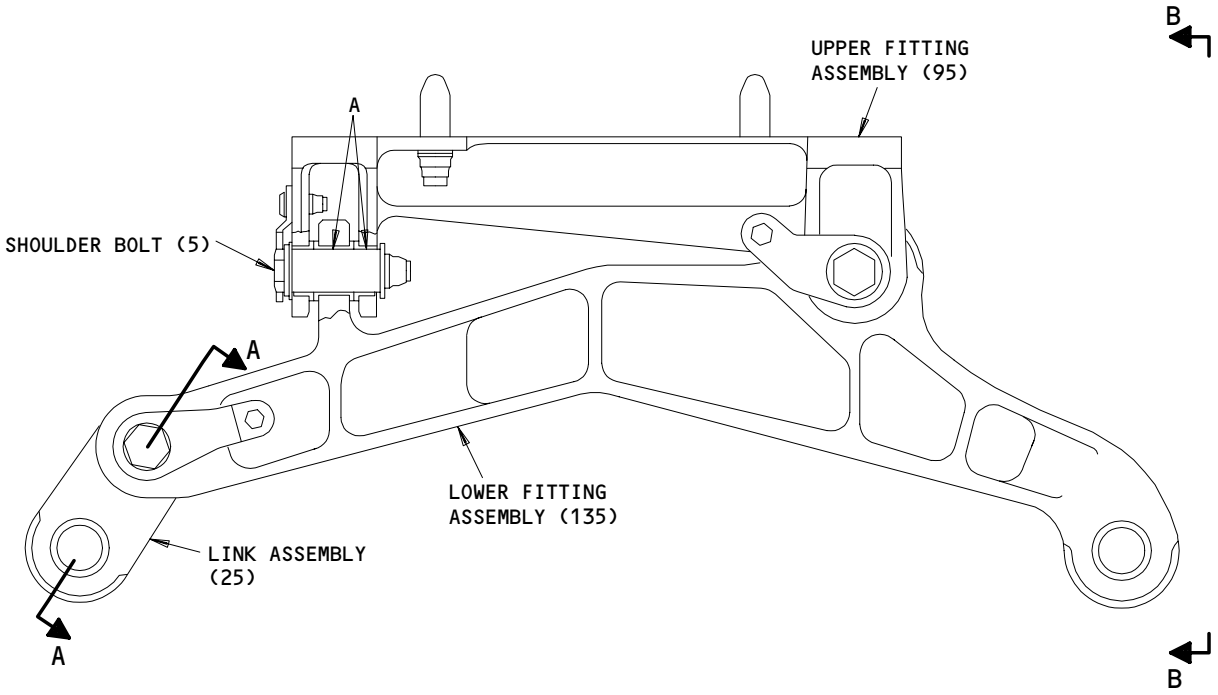
   E. Apply antiseize compound to threads and shank of bolt (127). Install retainer (130) on bolt (75) head and secure retainer to nutplate (107) on upper fitting (95) with bolt (127) and washer (129).

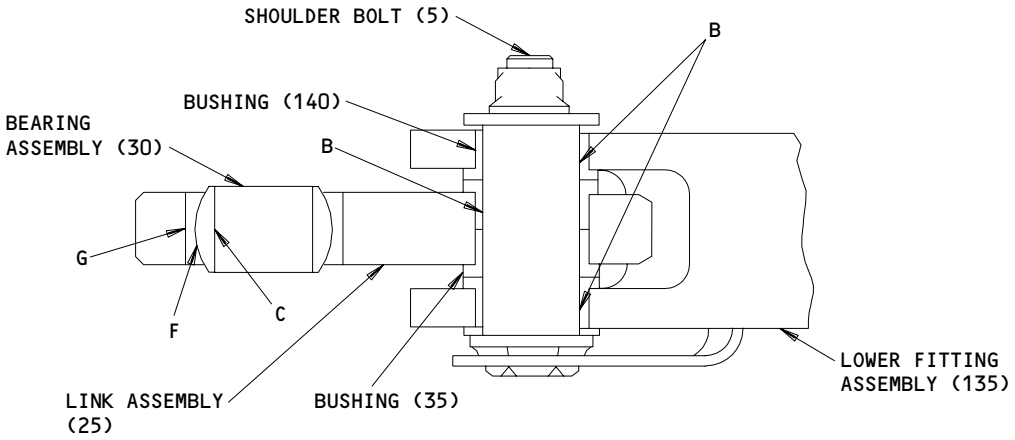
   F. Apply antiseize compound to threads and shank of bolt (5). Position link (25) on lower fitting (135) and install bolt (5) and washer (10) thru bushing holes in link and lower fitting. Install washer (15) and nut (20). Tighten nut to 630-1070 lb-in (52.5-89.1 lb-ft). Do not turn bolt to tighten nut.

   G. Apply antiseize compound to threads and shank of bolt (50). Install retainer (70) on bolt (5) head and secure retainer to lower fitting with bolt (50), washer (55) (under bolt head), washer (60) (under nut) and nut (65).

   H. Store this component using standard industry practices.

FITS AND CLEARANCES

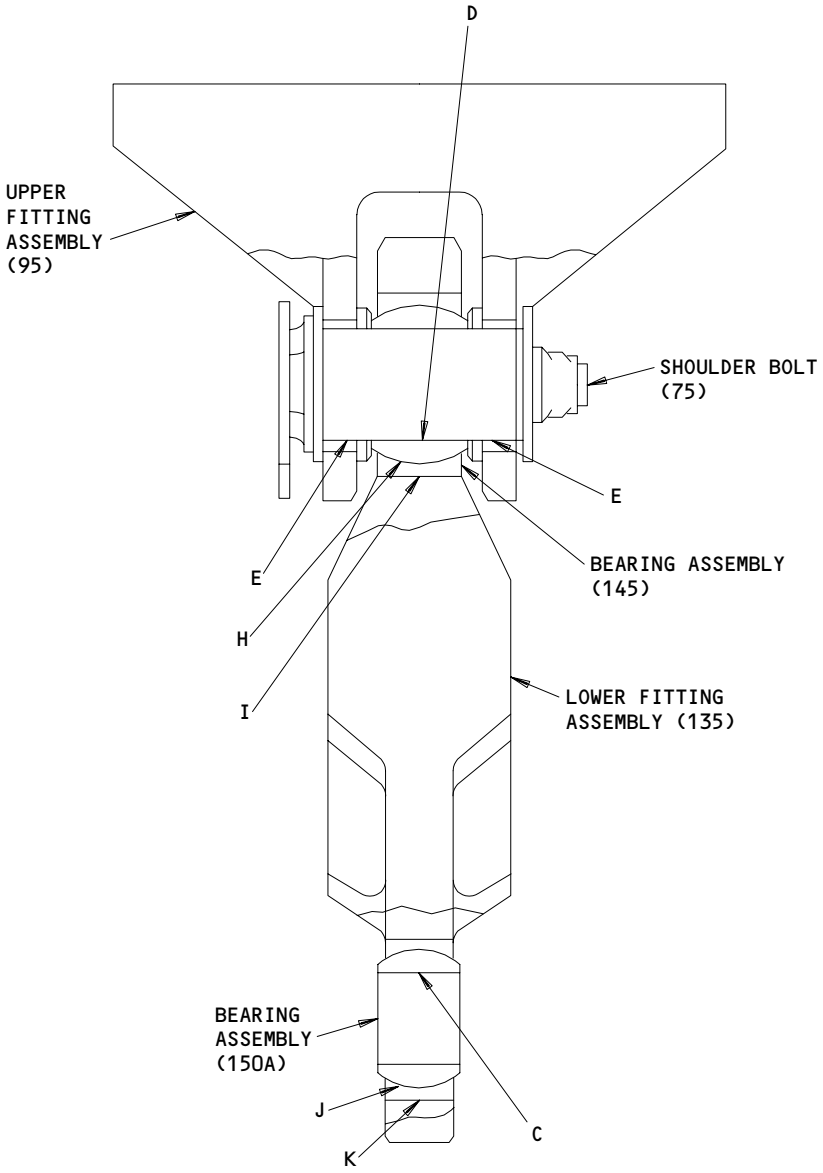




A–A

ITEM NUMBERS REFER TO IPL FIG. 1

Fits and Clearance
Figure 801 (Sheet 1)



B–B

ITEM NUMBERS REFER TO IPL FIG. 1

Fits and Clearances
Figure 801 (Sheet 2)

REF LETTER	REF IPL FIG. 1, MATING ITEM NO.	DESIGN DIMENSION*				SERVICE WEAR LIMIT*		
		DIMENSION		ASSEMBLY CLEARANCE		DIMENSION		MAXIMUM CLEARANCE
		MIN	MAX	MIN	MAX	MIN	MAX	
A	ID 100,140 OD 5	0.9995 0.9980	1.0003 0.9990	0.0005	0.0023	0.9943	1.0040	0.0060
B	ID 35,140 OD 5	0.9995 0.9980	1.0003 0.9990	0.0005	0.0023	0.9960	1.0020	0.0049
C	ID 30,150 OD 8	0.9995 0.9980	1.0000 0.9990	0.0005	0.0020	0.9960	1.0020	7
D	ID 145 OD 75	1.2495 1.2475	1.2500 1.2490	0.0005	0.0025	1.2453	1.2522	7
E	ID 105 OD 75	1.2495 1.2475	1.2505 1.2490	0.0005	0.0030	1.2445	1.2535	0.06
F	ID 1 OD 2	1.4375 1.4365	1.4380 1.4370	0.0005	0.0015		1.4410	7
G	ID 40 OD 30	1.6250 1.6245	1.6261 1.6250	0.0000	0.0016			0.0020
H	ID 3 OD 4	1.7820 1.7805	1.7825 1.7810	0.0010	0.0020		1.7855	7
I	ID 135 OD 145	2.0000 1.9995	2.0012 2.0000	0.0000	0.0017			0.0025
J	ID 5 OD 6	1.4375 1.4365	1.4380 1.4370	0.0005	0.0015		1.4410	7
K	ID 135 OD 150A	1.6250 1.6245	1.6261 1.6250	0.0000	0.0016			0.0025

* ALL DIMENSION ARE IN INCHES

1 30 BEARING RACE
2 30 BEARING BALL
3 145 BEARING RACE
4 145 BEARING BALL
5 150A BEARING RACE
6 150A BEARING BALL
7 BALL TO BOLT AND BALL TO RACE COMBINED MAXIMUM CLEARANCE = 0.0060 RADIAL PLUS 0.0080 AXIAL
8 INSTALLATION BOLT 310T1036-3

Fits and Clearances
Figure 801 (Sheet 3)

FOR TORQUE VALUE OF STANDARD FASTENERS, REFER TO 20-50-01			
ITEM NO. IPL FIG. 1	NAME	TORQUE	
		POUND-INCHES	POUND-FEET
20.90	Nut	630-1070	52.5-89.1
120	Nut	440-650	

Torque Table
Figure 802

ILLUSTRATED PARTS LIST

1. This section lists and illustrates replaceable or repairable component parts. The Illustrated Parts Catalog contains a complete explanation of the Boeing part numbering system.

2. Indentures show parts relationships as follows:

    Assembly
      Detail Parts for Assembly
      Subassembly
      Attaching Parts for Subassembly
        Detail Parts for Subassembly

    Detail Installation Parts (Included only if installation parts may be returned to shop as part of assembly)

3. One use code letter (A, B, C, etc.) is assigned in the EFF CODE column for each variation of top assembly. All listed parts are used on all top assemblies except when limitations are shown by use code letter opposite individual part entries.

4. Letter suffixes (alpha-variants) are added to item numbers for optional parts, Service Bulletin modification parts, configuration differences (except left- and right-hand parts), product improvement parts, and parts added between two sequential item numbers. The alpha-variant is not shown on illustrations when appearance and location of all variants of the part is the same.

5. Service Bulletin modifications are shown by the notations PRE SB XXXX and POST SB XXXX.

    A. When a new top assembly part number is assigned by Service Bulletin, the notations appear at the top assembly level only. The configuration differences at detail part level are then shown by use code letter.

    B. When the top assembly part number is not changed by the Service Bulletin, the notations appear at the detail part level.

6. Parts Interchangeability

Optional (OPT)	The parts are optional to and interchangeable with other parts having the same item number.
Supersedes, Superseded By (SUPSDS, SUPSD BY)	The part supersedes and is not interchangeable with the original part.
Replaces, Replaced By (REPLS, REPLD BY)	The part replaces and is interchangeable with, or is an alternate to, the original part.

VENDORS

06710 VALLEY-TODECO INCORPORATED
12975 BRADLEY AVENUE
SYLMAR,CALIFORNIA 91342

15653 KAYNAR MFG COMPANY INC KAYLOCK DIV
PO BOX 3001 800 SOUTH STATE COLLEGE BLVD
FULLERTON, CALIFORNIA 92634

22599 ESNA DIV OF AMERACE CORPORATION
16150 STAGG STREET
VAN NUYS, CALIFORNIA 91407

52828 REPUBLIC FASTENER MFG CORP
1300 RANCHO CONEJO BLVD
NEWBURY PARK, CALIFORNIA 91320

57606 PSI BEARINGS INC
15424 CABRITO RD
VAN NUYS, CALIFORNIA 91406

71087 BOOTS ACFT NUT DIV TOWNSEND CO SEE TEXTRON INC CHERRY
FASTENER TOWNSEND DIV V11815

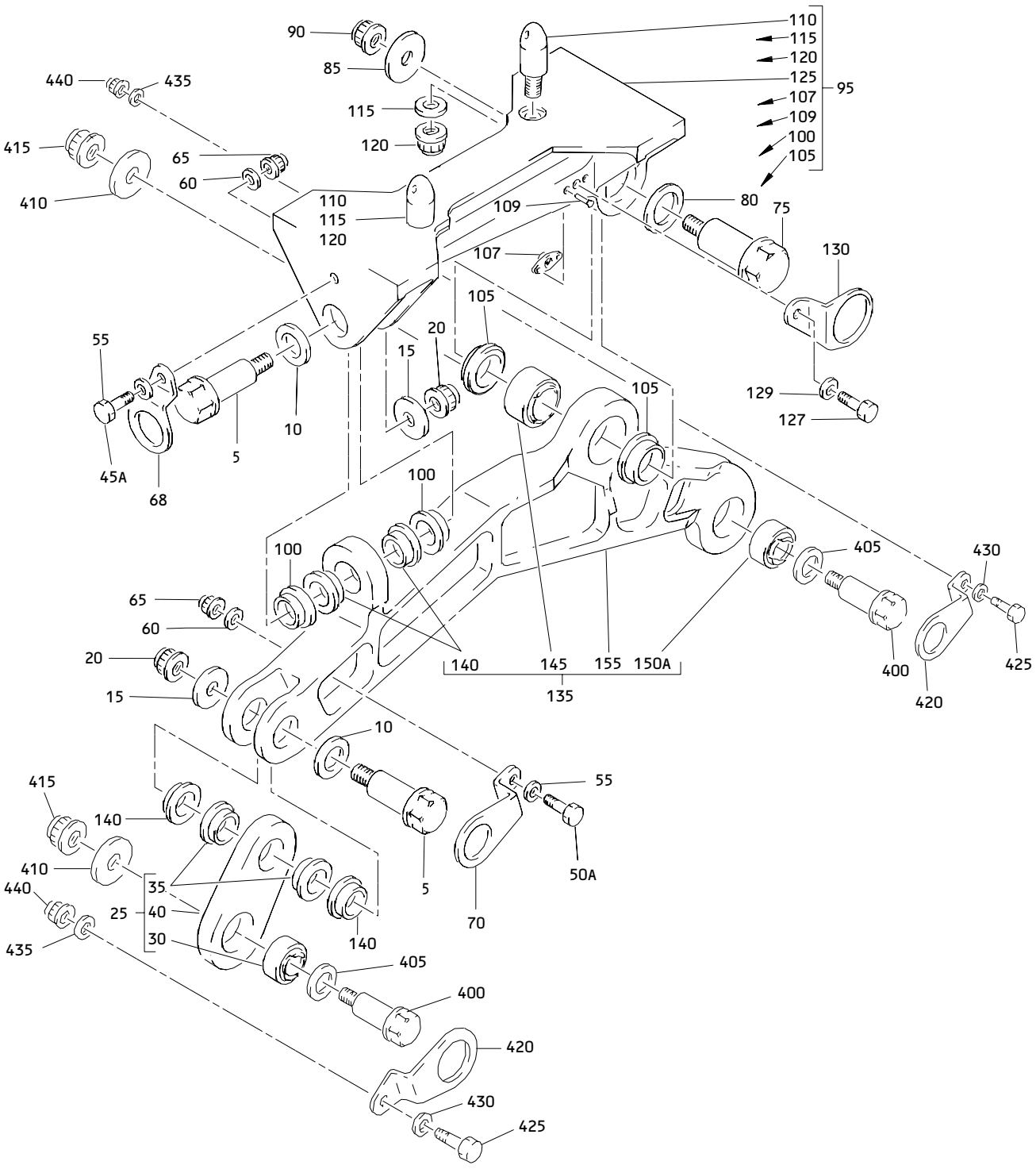
72962 ESNA DIV OF AMERACE CORP
2330 VAUXHALL ROAD
UNION, NEW JERSEY 07083

80539 SPS TECHNOLOGIES INC AEROSPACE PRODUCTS DIV
2701 SOUTH HARBOR BOULEVARD
SANTA ANA, CALIFORNIA 92702

92215 VOI-SHAN DIV OF VSI CORP
8463 HIGUERA STREET
CULVER CITY, CALIFORNIA 90230

PART NUMBER	AIRLINE PART NO.	FIG.	ITEM	TTL REQ
A039432		81	5	1
A542039		81	10	1
BACB30LJ4U10		1	50	
		1	425	2
		1	45A	1
BACB30LJ4U12		1	45	
BACB30LJ4U6		1	127	1
BACB30LJ4U8		1	50A	1
BACN10JN4C		1	107	1
BACW10BP4ACU		1	55	2
		1	129	1
		1	430	2
BACW10BP4APU		1	60	2
		1	435	2
BACW10BP8APU		1	115	2
BRFM20C4		1	107	1
MF1031-4BAC		1	107	1
MS20427M3		1	109	2
NAS1805-4P		1	65	2
		1	440	2
NAS1805-8P		1	20	2
		1	90	1
		1	120	2
		1	415	2
NS103218S048		1	107	1
P20360		1	145B	1
P22950		1	30A	1
		1	150B	1
P22960		1	145A	1
T8126C4C		1	107	1
S302T001-819		1	150C	1
VN252B048		1	107	1
VTB01130REVD		1	145	1
		80	1	RF
VTB01130REVG		1	150	
VTB01131		80	5	1
VTB01132		80	10	1
VTB01310REVG		1	30	1
		1	150A	1
		81	1	RF
101F9201M4		1	107	1
		1	107	1
302T0200-27		1	35	2
		1	100	2
		1	140	4
302T0200-28		1	105	2
310T1020-3		1	1	RF

PART NUMBER	AIRLINE PART NO.	FIG.	ITEM	TTL REQ
310T1031-3		1	95	1
310T1031-4		1	125	1
310T1031-5		1	95A	1
310T1031-6		1	125A	1
310T1032-3		1	25	1
310T1032-4		1	40	1
310T1033-3		1	135	1
310T1033-4		1	155	1
310T1033-5		1	135A	1
310T1033-6		1	155A	1
310T1036-1		1	75	1
310T1036-2		1	5	2
310T1036-3		1	400	2
310T3037-2		1	110	2
310T3039-5		1	68	1
310T3039-6		1	130	1
310T3039-7		1	70	1
310T3039-8		1	420	2
310T3151-5		1	15	2
		1	410	2
310T3151-6		1	85	1
310T3151-8		1	10	2
		1	405	2
310T3151-9		1	80	1



CF6-80A Aft Engine Mount Assembly
Figure 1

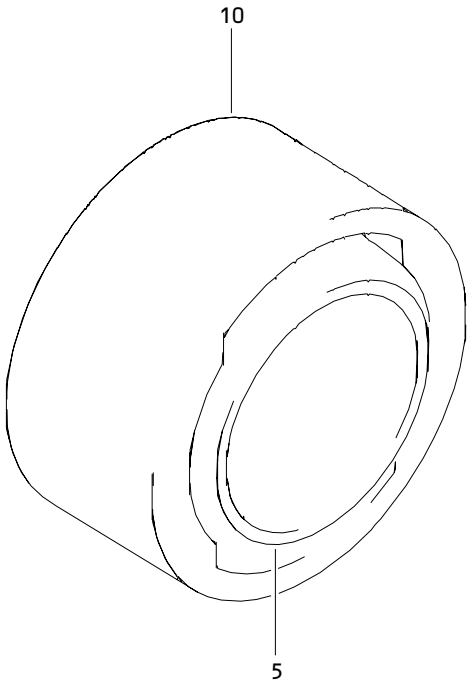
13155

FIG. & ITEM	PART NO.	AIRLINE PART NUMBER	NOMENCLATURE 1234567	EFF CODE	QTY PER ASSY
01-					
-1	310T1020-3		MOUNT ASSY-CF6-80A AFT ENG		RF
5	310T1036-2		.BOLT-SHOULDER		2
10	310T3151-8		.WASHER		2
15	310T3151-5		.WASHER		2
20	NAS1805-8P		.NUT		2
25	310T1032-3		.LINK ASSY		1
30	VTB01310REVG		..BEARING ASSY- (V06710) (FOR DETAIL SEE FIG. 81) *[1]		1
30A	P22950		..BEARING ASSY- (V57606) *[1]		1
30B	S302T001-819		..BEARING ASSY *[1]		1
35	302T0200-27		..BEARING		2
40	310T1032-4		..LINK		1
45	BACB30LJ4U12		DELETED		
45A	BACB30LJ4U10		.BOLT		1
50	BACB30LJ4U10		DELETED		
50A	BACB30LJ4U8		.BOLT		1
55	BACW10BP4ACU		.WASHER		2
60	BACW10BP4APU		.WASHER		2
65	NAS1805-4P		.NUT		2
68	310T3039-5		.RETAINER-BOLT		1
70	310T3039-7		.RETAINER-BOLT		1
75	310T1036-1		.BOLT-SHOULDER		1
80	310T3151-9		.WASHER		1
85	310T3151-6		.WASHER		1
90	NAS1805-8P		.NUT		1
95	310T1031-3		.FITTING ASSY-UPR (OPT ITEM 95A)		1

FIG. & ITEM	PART NO.	AIRLINE PART NUMBER	NOMENCLATURE 1234567	EFF CODE	QTY PER ASSY
01-					
95A	310T1031-5		.FITTING ASSY-UPR (OPT ITEM 95)		1
100	302T0200-27		..BUSHING		2
105	302T0200-28		..BUSHING		2
107	T8126C4C		..NUTPLATE- (V71087) (SPEC BACN10JN4C) (OPT BRFM20C4 (V52828)) (OPT MF1031-4BAC (V15653)) (OPT NS103218S048 (V80539)) (OPT VN252B048 (V92215)) (OPT 101F9201M4 (V22599)) (OPT 101F9201M4 (V72962)) ATTACHING PARTS		1
109	MS20427M3		..RIVET -------*-------		2
110	310T3037-2		..PIN-SHEAR		2
115	BACW10BP8APU		..WASHER		2
120	NAS1805-8P		..NUT		2
125	310T1031-4		..FITTING (USED ON ITEM 95)		1
125A	310T1031-6		..FITTING (USED ON ITEM 95A)		1
127	BACB30LJ4U6		.BOLT		1
129	BACW10BP4ACU		.WASHER		1
130	310T3039-6		.RETAINER-BOLT		1
135	310T1033-3		.FITTING ASSY-LWR (OPT ITEM 135A)		1
135A	310T1033-5		.FITTING ASSY-LWR (OPT ITEM 135)		1

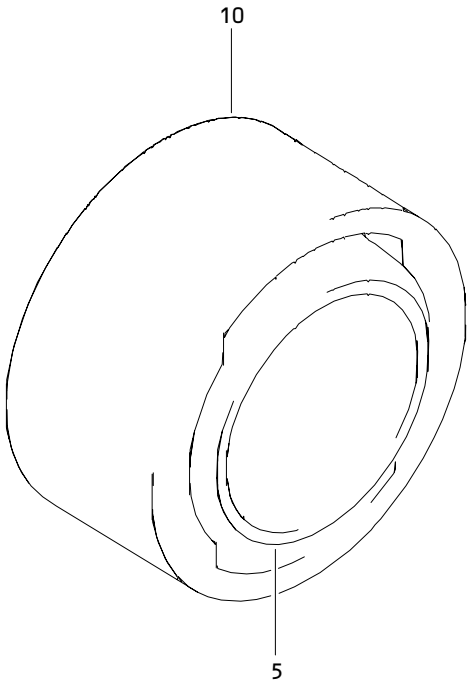
FIG. & ITEM	PART NO.	AIRLINE PART NUMBER	NOMENCLATURE 1234567	EFF CODE	QTY PER ASSY
01-					
140	302T0200-27		..BUSHING		4
145	VTB01130REVD		..BEARING ASSY (V06710) (OPT ITEMS 145A,145B) (FOR DETAILS SEE FIG. 80)		1
145A	P22960		..BEARING ASSY (V57606) (OPT ITEMS 145,145B)		1
145B	P20360		..BEARING ASSY (V57606) (OPT ITEMS 145,145A)		1
150	VTB01130REVG		DELETED		
150A	VTB01310REVG		..BEARING ASSY- (V06710) (FOR DETAILS SEE FIG. 81) *[1]		1
150B	P22950		..BEARING ASSY- (V57606) *[1]		1
150C	S302T001-819		..BEARING ASSY- *[1]		1
155	310T1033-4		..FITTING (USED ON ITEM 135)		1
155A	310T1033-6		..FITTING (USED ON ITEM 135A)		1
			INSTALLATION PARTS		
400	310T1036-3		BOLT		2
405	310T3151-8		WASHER		2
410	310T3151-5		WASHER		2
415	NAS1805-8P		NUT		2
420	310T3039-8		RETAINER		2
425	BACB30LJ4U10		BOLT		2
430	BACW10BP4ACU		WASHER		2
435	BACW10BP4APU		WASHER		2
440	NAS1805-4P		NUT		2

*[1] BEARING ASSEMBLY P/N S302T001-819 CAN REPLACE BUT NOT BE REPLACED BY BEARING ASSEMBLIES, P/N P22950 or P/N VTB01310.



Bearing Assembly
Figure 80

FIG. & ITEM	PART NO.	AIRLINE PART NUMBER	NOMENCLATURE 1234567	EFF CODE	QTY PER ASSY
80- -1	VTB01130REVD		BEARING ASSY (V06710)		RF
5	VTB01131		.BALL (V06710)		1
10	VTB01132		.RACE (V06710)		1



Bearing Assembly
Figure 81

FIG. & ITEM	PART NO.	AIRLINE PART NUMBER	NOMENCLATURE 1234567	EFF CODE	QTY PER ASSY
81- -1	VTB01310REVG		BEARING ASSY (V06710)		RF
5	A039432		.BALL (V06710)		1
10	A542039		.RACE (V06710)		1