TO: ALL HOLDERS OF NOSE LANDING GEAR DRAG STRUT ASSEMBLY COMPONENT MAINTENANCE MANUAL 32-21-54.

REVISION NO. 35 DATED NOV 01/05

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
701	Added clarifications and updated callouts.
702	Changed item number of the sensor targets.

NOSE LANDING GEAR DRAG STRUT ASSEMBLY

PART NUMBERS 162T2000-5,-10,-11,-13 THRU -16

COMPONENT MAINTENANCE MANUAL
WITH
ILLUSTRATED PARTS LIST

T21856

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

T21793

TEMPORARY REVISION AND SERVICE BULLETIN RECORD

BOEING SERVICE BULLETIN	BOEING TEMPORARY REVISION	OTHER DIRECTIVE	DATE OF INCORPORATION INTO MANUAL
		PRR B10247	OCT 10/83
		PRR B10429	OCT 10/83
		PRR B10472	OCT 10/83
		PRR B10681	OCT 10/83
32-0010		PRR B10873	OCT 10/83
		PRR C12338	JAN 01/90
		PRR C12377	SEP 01/95
32A0185	32-60		NOV 01/99

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TR & SB RECORD		
1	MAR 01/05	01.1
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601	JUL 10/85	01.1
602	JUL 01/88	01.101
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601	MAR 01/97	01.1
602	JUL 01/88	01.1
603	OCT 10/83	01
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1004	SEP 01/94	01.1
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Cleaning . . . . . .*[1]	
Check.	501
Repair	601
Assembly	701
Fits and Clearances.	801
Special Tools.	901
Illustrated Parts List	1001

*[1] Special instructions are not necessary. Use standard industry practices and the instructions in SOPM 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	NOV 29/82
Assembly	NOV 29/82

NOSE LANDING GEAR DRAG STRUT ASSEMBLY

DESCRIPTION AND OPERATION

1. The nose landing gear drag strut assembly consists of aluminum fore and aft lock links, upper drag strut, and lower drag strut. The lower drag strut and universal are steel, with the lower drag strut bearing being beryllium-copper. The lock links have springs installed, with a ground lockpin for shipping and safety.

2. The drag strut braces the shock strut. The lock links stiffen the drag strut, and lock the nose landing gear in the retracted or extended position.

3. The downlock sequence starts with the lock actuator pushing the lock links undercenter. The gear then extends, pulling the lock links back to, and over, the centered position. The required force is provided by gravity, with assist from the lock springs which also hold the lock links overcenter.

4. Retraction is also initiated by the lock actuator, which pulls the lock links undercenter. The retract actuator then pushes the nose landing gear up into the wheel well, where the lock links are again pulled overcenter, locking the entire assembly in the retracted position.

5. Leading Particulars (approximate)

   Length -- 89 inches
   Width -- 49 inches
   Height -- 45 inches
   Weight -- 325 lbs.

DISASSEMBLY

NOTE: Disassemble this component only as necessary to complete fault isolation, determine the serviceability of parts, perform required repairs, and restore the unit to serviceable condition.

1. Equipment

   NOTE: Equivalent substitutes can be used.

   A. Spring Extender Tool -- A32018-1 or A32099-1 or A32099-25 or A32099-38

2. Parts Replacement

   NOTE: The following listed parts are recommended for replacement. Actual replacement may be based on in-service experience.

   A. Cotter pins

3. Disassembly

   WARNING: BE VERY CAREFUL WHEN YOU REMOVE SPRINGS. THEY ARE STRONG AND COULD EJECT WITH SUFFICIENT FORCE TO CAUSE INJURY TO PERSONS OR DAMAGE TO PARTS.

   A. Remove springs with the spring extender tool.

   B. Disassemble the drag strut assembly by standard industry practices. Measure the thickness of shim (365) and make a note of the dimension to help during assembly.

CHECK

1. Examine all parts for defects by standard industry practices. Refer to FITS AND CLEARANCES for design dimensions and wear limits.

2. Examine all pin and spindle shanks for wear. Carefully examine the area around lubrication holes for hairline cracks.

3. Magnetic particle check (SOPM 20-20-01):

   A. Lower drag strut (240)

   B. Universal (135)

   C. Pins (10, 45, 70, 105, 155, 415)

   D. Tang washers (5, 75, 110, 160, 425)

   E. Springs (335)

   F. Spacers (295, 615)

   G. Spindle (300)

   H. Target (475)

   I. Spools (290, 560)

   J. Stop plate (360)

   K. Pad, manual release (530)

   L. Nuts (80, 115, 165)

   M. Shaft (610)

4. Penetrant check (SOPM 20-20-02):

   A. Upper drag strut (215)

   B. Forward lock link (665)

   C. Aft lock link (470)

   D. Steering arm (330)

E. Springs (335B)

F. Spacer (625)

G. Brackets (395, 400, 505, 510)

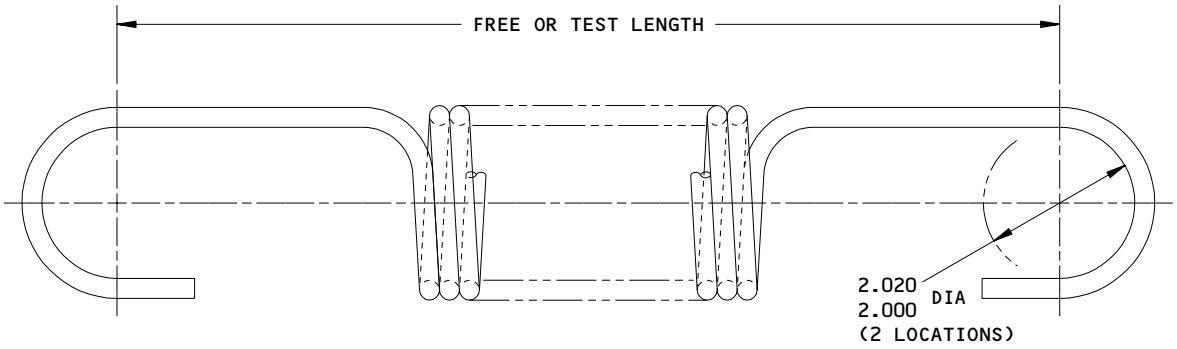
5. Springs (335, 335B, 335C)

A. Penetrant examine the spring. Be sure to extend the spring during the check to look for defects between the coils.

B. Do a load test of the spring as follows:

PART NUMBER	APPROXIMATE FREE LENGTH (INCHES) *[1]	TEST LENGTH (INCHES) *[1]	ALLOWABLE LOAD LIMITS (POUNDS)
162T3007-2	12.14	18.00 20.17	124.96 - 152.96 159.79 - 196.79
162T3033-2,-3	10.23	18.00 20.17	124.96 - 152.96 159.79 - 196.79

*[1] MEASURED BETWEEN HOOK CENTERS



162T3033-2,-3 SHOWN

Spring Check Data
Figure 501

L76534

REPAIR - GENERAL

1. Content

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

P/N	NAME	REPAIR
162T2001 162T2104	STRUT, UPPER DRAG	1-1, 1-2
162T2003	STRUT, LOWER DRAG	2-1, 2-2
162T3001	LINK, FORWARD LOCK	3-1, 3-2
162T3003	LINK, AFT LOCK	4-1, 4-2
162T3027 162T3005	ARM, STEERING	5-1, 5-2
162T2005	UNIVERSAL	6-1, 6-2
162T2007	PIN, UPPER DRAG STRUT	7-1
162T2008	PIN APEX	8-1
162T2009-1,-3	PIN, LOWER DRAG STRUT	9-1
162T2009-2,-4	PIN, UNIVERSAL	9-1
162T3012	SPOOL	10-1, 10-2
162T3028	SHAFT, FORWARD LOCK	11-1
162T3011	SPINDLE, AFT	12-1
162T3006	PIN, LOCK	13-1
162T3029	CRANK, LOCK	14-1, 14-2
- -	MISCELLANEOUS PARTS REFINISH	15-1
- -	BUSHING SEALING	16-1

2. Standard Practices

A. Refer to these standard practices, as applicable, for details of procedures in individual repairs.

20-10-01 Repair and Refinish of High Strength Steel Parts
20-10-02 Machining of Alloy Steel
20-10-03 Shot Peening
20-10-04 Grinding of Chrome Plated Parts
20-30-02 Stripping of Protective Finishes
20-30-03 General Cleaning Procedures
20-41-01 Decoding Table for Boeing Finish Codes
20-42-02 Low Hydrogen Embrittlement Cadmium-Titanium Alloy Plating

NOTE: Low Hydrogen Embrittlement Cadmium Plating (SOPM 20-42-01) can be used as an alternative for the preferred Low Hydrogen Embrittlement Cadmium-Titanium Alloy Plating (SOPM 20-42-02).

20-42-03 Hard Chrome Plating
20-42-05 Bright Cadmium Plating
20-42-09 Electrodeposited Nickel Plating
20-43-01 Chromic Acid Anodizing
20-50-03 Bearing and Bushing Replacement
20-60-01 Cleaning Materials
20-60-02 Finishing Materials
20-60-03 Lubricants
20-60-04 Miscellaneous Materials
32-00-02 Landing Gear Attachment Parts - Topcoat Application
32-00-03 Landing Gear Parts - Lubrication Fitting Replacement
32-00-05 Repair and Refinish of High Strength Steel Landing Gear Parts

3. Materials

NOTE: Equivalent substitutes can be used.

A. Cheesecloth -- BMS 15-5, Class A (SOPM 20-60-04)

B. Corrosion Preventive Compound -- MIL-C-11796, Class 1 (SOPM 20-60-02)

C. Enamel -- BMS 10-11, Type 2, Gloss, Color Yellow (301) (SOPM 20-60-02)

D. Enamel -- BMS 10-60, Gloss, Color Gray (707) (SOPM 20-60-02)

E. Grease -- BMS 3-33 or MIL-G-23827 (SOPM 20-60-03)

F. Primer -- BMS 10-11, Type 1 (SOPM 20-60-02)

G. Sealant -- BMS 5-95 (SOPM 20-60-04)

H. Solvent -- Aliphatic Naphtha (SOPM 20-60-01)

4. Dimensioning Symbols

A. Standard True Position Dimensioning Symbols used in applicable repair procedures are shown in SOPM 20-00-00.

DRAG STRUT ASSEMBLY, UPPER - REPAIR 1-1

162T2001-5, -7
162T2104-1

NOTE: Refer to REPAIR-GEN for list of applicable standard practices. Refer to IPL Fig. 1 for item numbers.

1. Bushing Replacement (Fig. 601)

   A. Remove bushings.

   B. If corrosion or damage exists on lug faces or hole surfaces refer to REPAIR 1-2 for repair instructions.

   C. Install new bushings using shrink-fit method per 20-50-03.

   D. Check dimensions and machine as necessary.

      NOTE: Machining of bushings after installation is not normally required, since bushings and lug faces are premachined to provide dimensions shown.

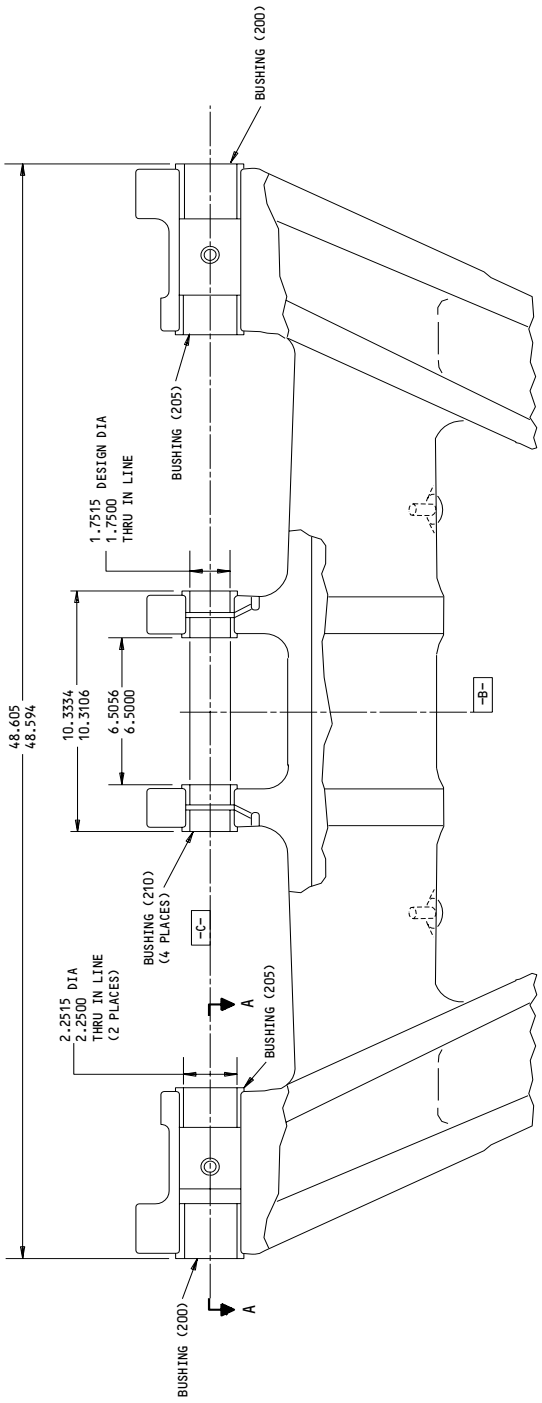
   E. Seal bushings per REPAIR 16-1 except as noted.

   F. Apply grease to lube fittings until grease appears at ID of bushings.

2. Lube Fitting Replacement

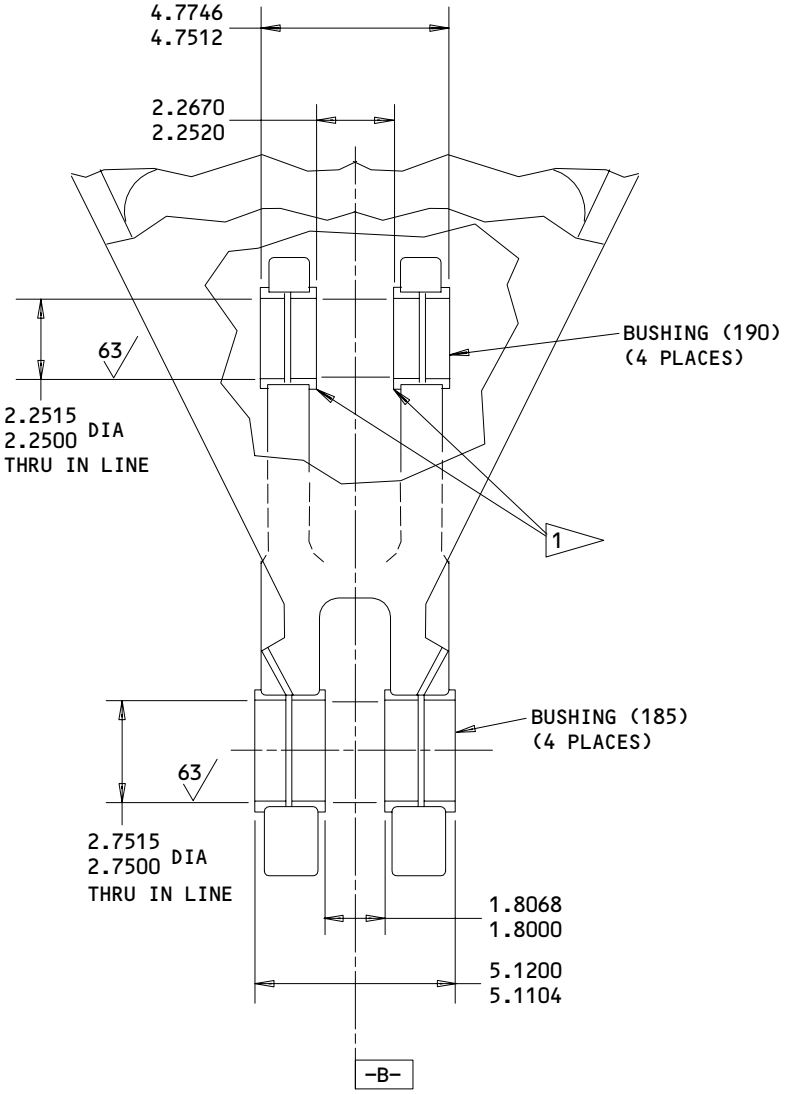
   A. Replace lube fittings (175, 180) per 32-00-03.

   B. If you find corrosion or defects on the lube holes, refer to REPAIR 1-2 for repair instructions.



162T2001-5,-7
162T2104-1
Bushing Replacement
Figure 601 (Sheet 1)

t21794



REFINISH

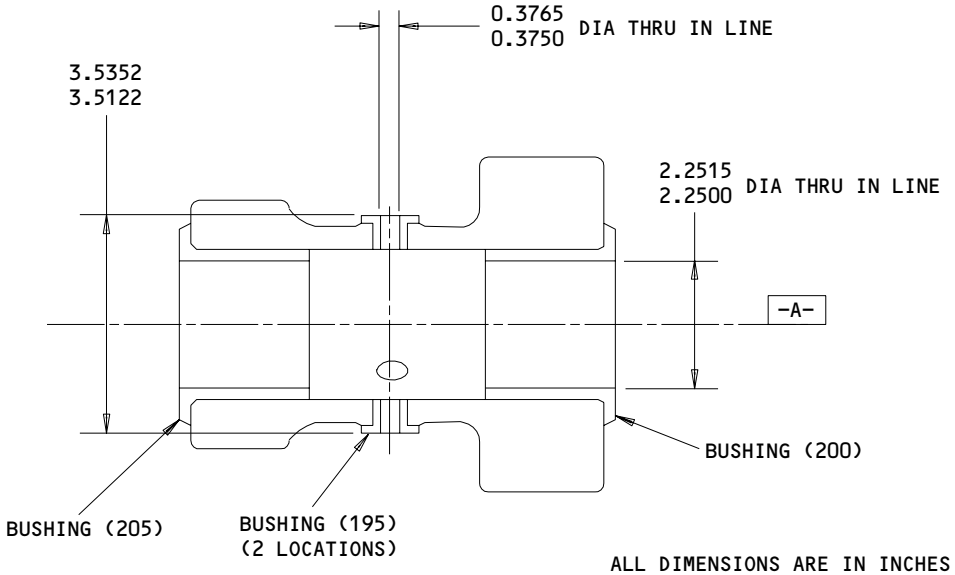
FOR REFINISH INSTRUCTIONS
REF REPAIR 1-2

ALL DIMENSIONS ARE INCHES

1 DO NOT FILLET SEAL

162T2001-5,-7
162T2104-1
Bushing Replacement
Figure 601 (Sheet 2)

T21795



A-A (TYP)

162T2001-5,-7
162T2104-1
Bushing Replacement
Figure 601 (Sheet 3)

99444

DRAG STRUT, UPPER - REPAIR 1-2

162T2001-6, -8
162T2104-2

NOTE: Refer to REPAIR-GEN for a list of applicable standard practices. For repa repair of surfaces which is only replacement of the original finish, refer to Refinish instructions, Fig. 601.

1. Lug Faces and Holes (Fig. 601)

A. Method 1 -- Removal of Corrosion in Center of Lug ID

NOTE: This procedure lets you remove corrosion without machining the entire bore oversize, if corrosion is confined to the center area which is exposed between two bushings.

(1) Determine repair diameter and width of groove required to remove corrosion (Fig. 602).

(2) Machine center area as required.

(3) Chemical treat and apply primer, BMS 10-11, type 1.

(4) Install bushings per REPAIR 1-1.

B. Method 2 -- Installation of Oversize Bushings

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

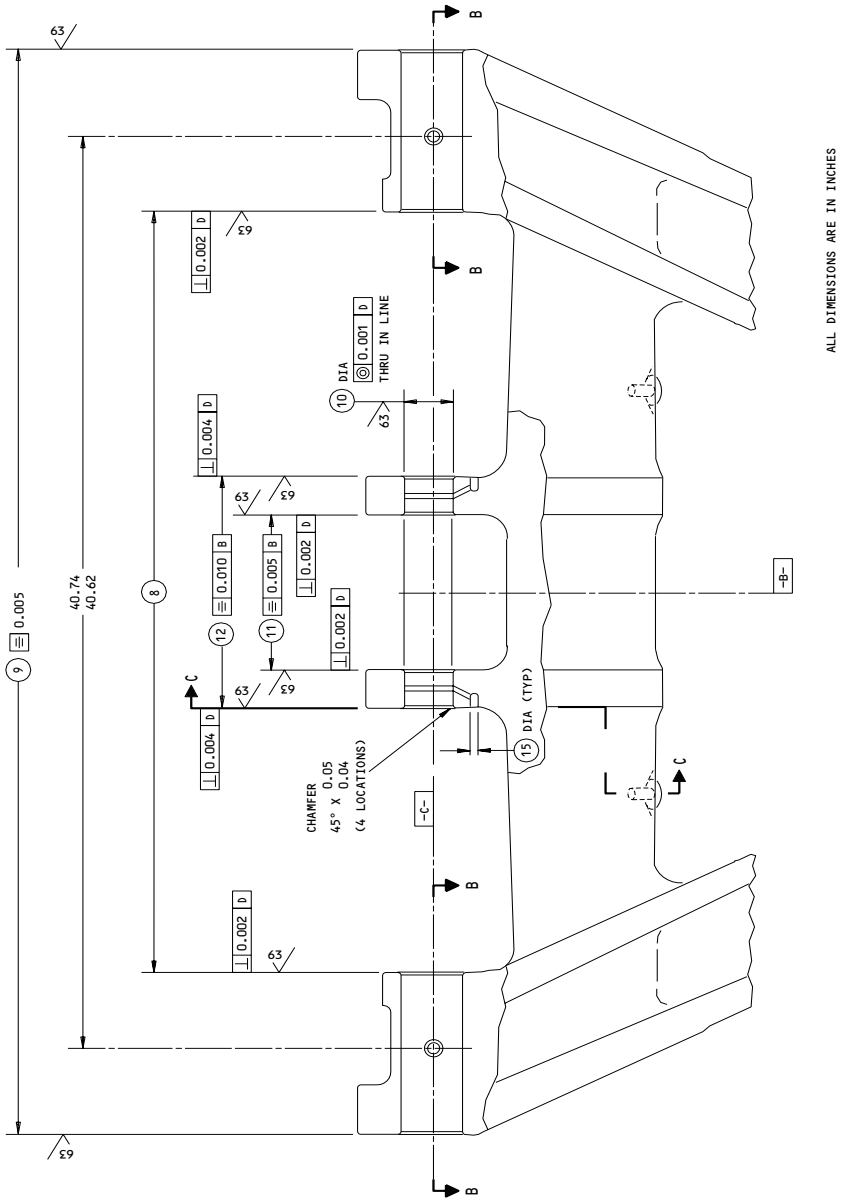
(2) Shot peen, chemical treat and apply primer, BMS 10-11, type 1.

(3) Make bushings (Fig. 603 and on), as required, to make allowance for amount of material removed in step (1).

(4) Install bushings per REPAIR 1-1.

2. Lube Holes (Fig. 601)

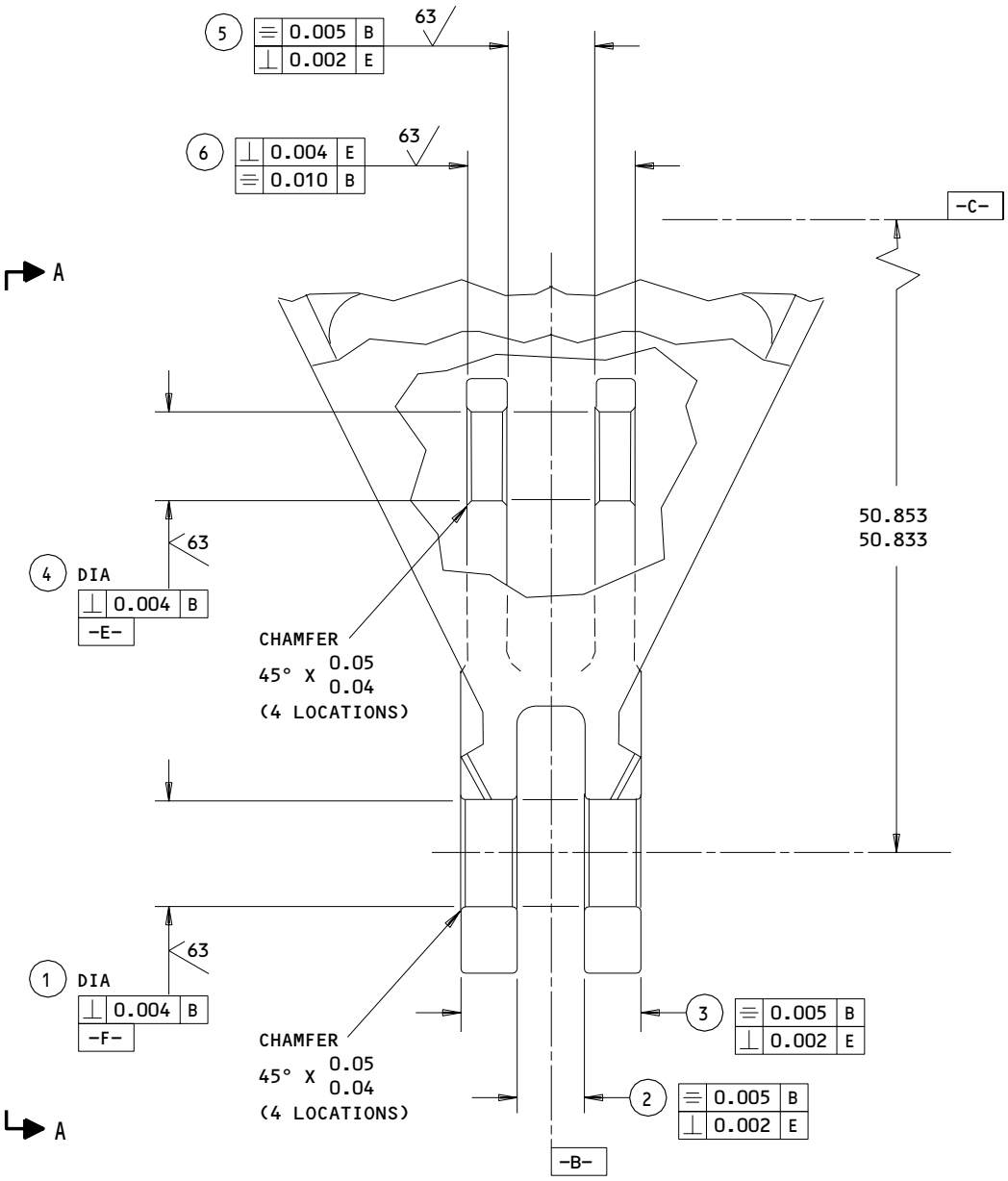
A. Repair the lube holes as shown.



ALL DIMENSIONS ARE IN INCHES

162T2001-6,-8
162T2104-2
Upper Drag Strut Repair and Refinish
Figure 601 (Sheet 1)

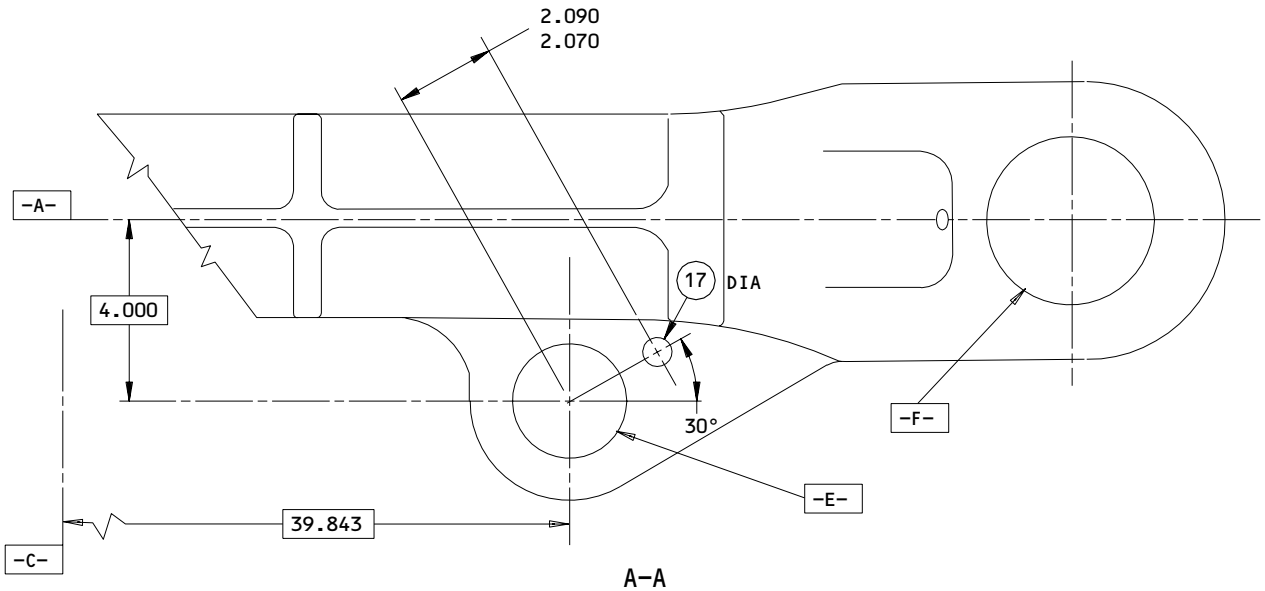
99445



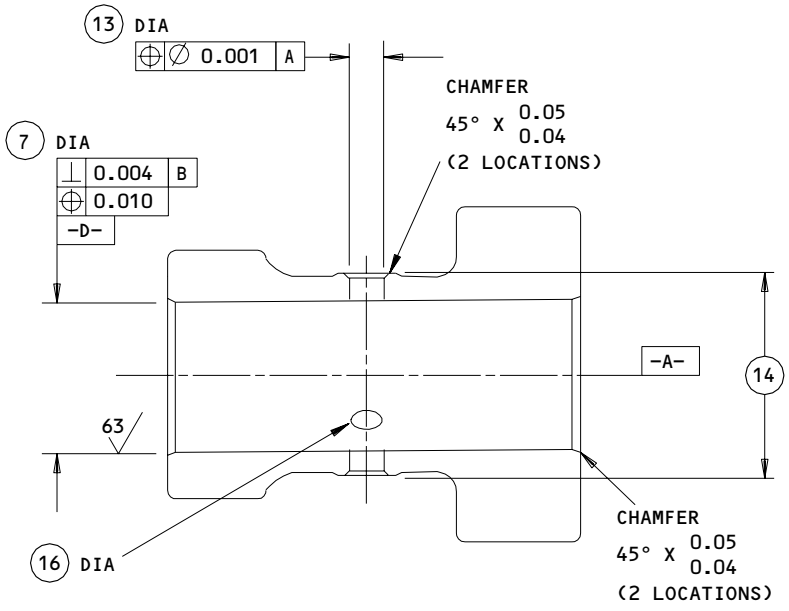
ALL DIMENSIONS ARE IN INCHES

162T2001-6,-8
162T2104-2

Upper Drag Strut Repair and Refinish
Figure 601 (Sheet 2)



A-A

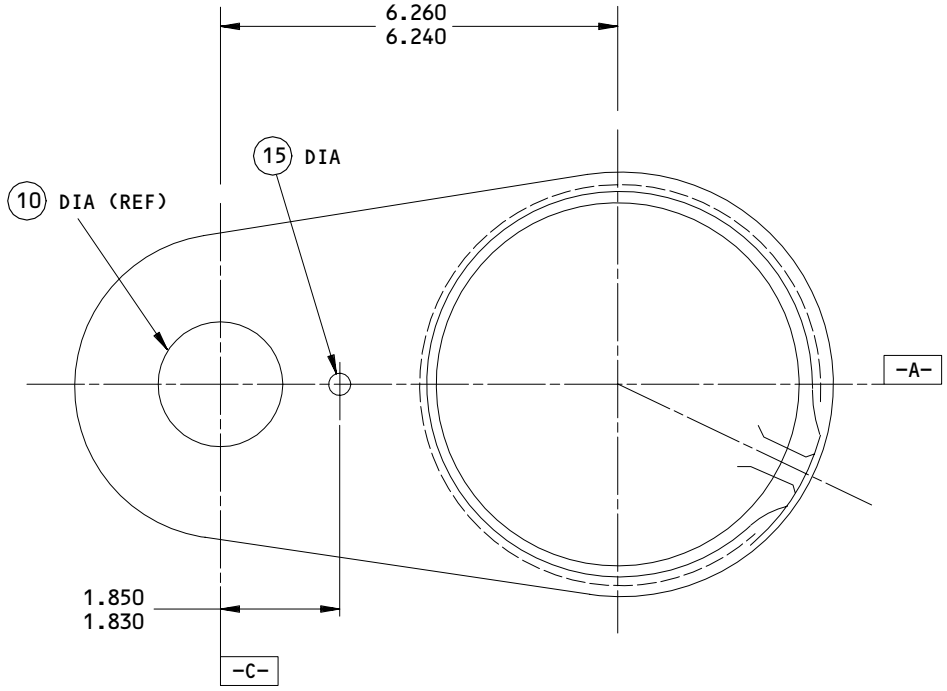


B-B

ALL DIMENSIONS ARE IN INCHES

162T2001-6,-8
162T2104-2

Upper Drag Strut Repair and Refinish
Figure 601 (Sheet 3)



C-C

ALL DIMENSIONS ARE IN INCHES

162T2001-6,-8
162T2104-2

Upper Drag Strut Repair and Refinish
Figure 601 (Sheet 4)

69469

REFERENCE NUMBER	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
DESIGN DIMENSION	2.9515 2.9500	1.9702 1.9652	4.9548 4.9498	2.4115 2.4100	2.3822 2.3772	4.650 4.630	2.4115 2.4100	33.820 33.780	48.4798 48.4748
REPAIR LIMIT ▷1	3.1300	2.0650 ▷2	4.9050 ▷2	2.5000	2.5000 ▷2	4.500 ▷2	2.4715	33.850 ▷2	48.4448 ▷2

REFERENCE NUMBER	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)
DESIGN DIMENSION	1.9115 1.9100	6.6302 6.6252	10.210 10.190	0.5015 0.5000	3.410 3.390	0.249 0.248	0.189 0.183	0.249 0.248
REPAIR LIMIT	1.9715 ▷1	6.6800 ▷1 ▷2	10.160 ▷1 ▷2	0.5615 ▷1	3.360 ▷1	0.317 ▷3	0.317 ▷3	0.317 ▷3

REFINISH

CHROMIC ACID ANODIZE (F-17.04). APPLY BMS 10-11, TYPE 1 PRIMER (F-20.02), BUT NOT IN HOLES FOR BUSHINGS AND LUBE FITTINGS. AFTER BUSHING AND LUBE FITTINGS INSTALLATION, APPLY BMS 10-60 GRAY GLOSS ENAMEL (SRF-14.9813) ALL OVER, BUT NOT ON BUSHINGS, LUBE FITTINGS, OR ID.

REPAIR

REF ▷1 ▷2 ▷3

125 ALL MACHINED SURFACES UNLESS SHOWN DIFFERENTLY

BREAK ALL SHARP EDGES 0.06-0.09 R UNLESS SHOWN DIFFERENTLY

SHOT PEEN: 0.023-0.055 SHOT SIZE
0.010 A2 INTENSITY

MATERIAL: AL ALLOY

ALL DIMENSIONS ARE IN INCHES

▷1 LIMIT FOR INSTALLATION OF OVERSIZE BUSHINGS

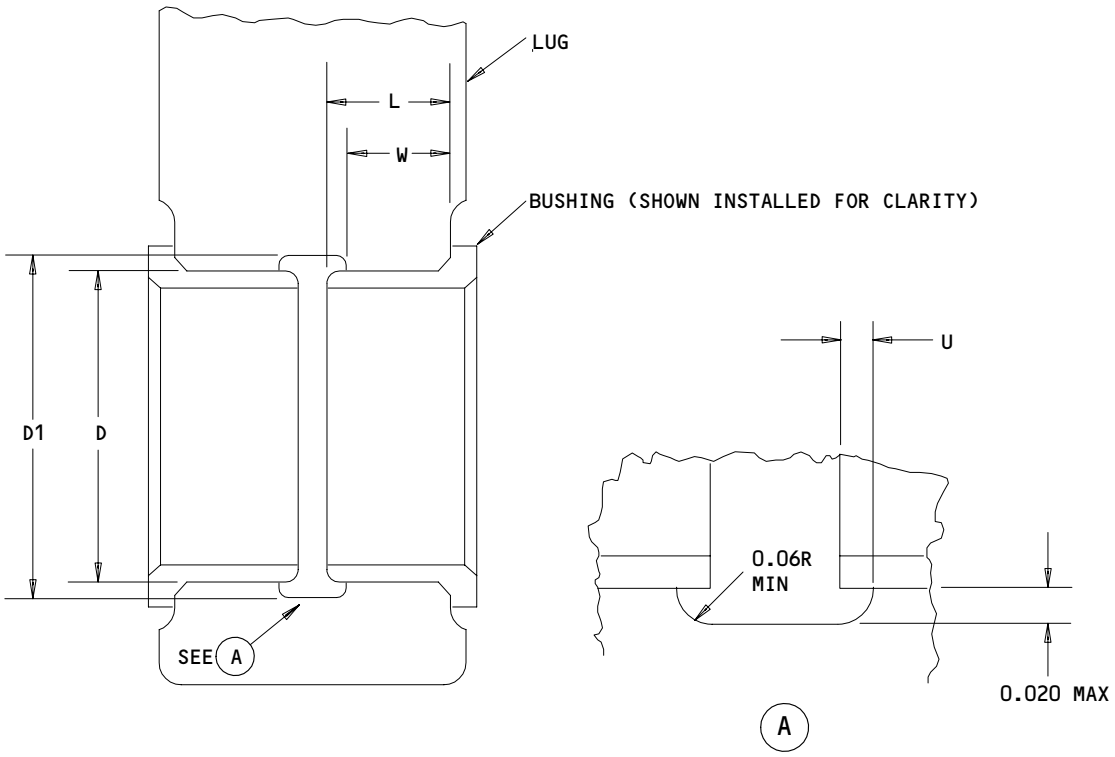
▷2 LUG FACE MACHINING REQUIREMENTS:

1. MATERIAL REMOVED FROM ANY FACE MUST NOT EXCEED HALF THE DIFFERENCE BETWEEN THE DESIGN DIM AND REPAIR LIMIT
2. FLAT SURFACE MUST BE MINIMUM OF 0.02 LARGER THAN FLANGE DIA OF BUSHING TO BE INSTALLED
3. BLEND MISMATCH STEPS TO 0.18-0.26 RADIUS, OR IF WITHIN 0.10 OF LUG FILLET RADIUS USE SAME RADIUS AS LUG FILLET. BREAK SHARP EDGES 0.03-0.07 R.

▷3 LIMIT FOR INSTL OF REPAIR BUSHING AS SHOWN IN CMM 32-00-03.

162T2001-6,-8
162T2104-2

Upper Drag Strut Repair and Refinish
Figure 601 (Sheet 5)



D = MAX REPAIR DIA OF HOLE (SEE FIG. 601)

D1 = MAX REPAIR DIA OF GROOVE = (D +0.040)

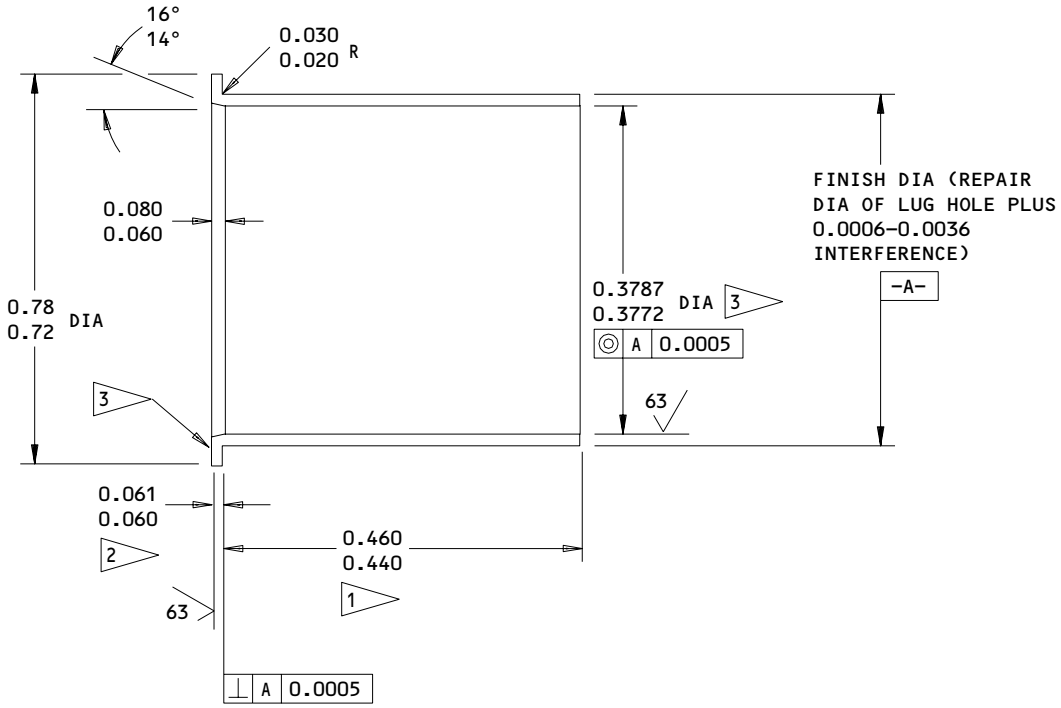
L = LENGTH OF BUSHING (SEE FIG. 603)

U = UNDERCUT = (L X 0.1) (0.06 MAX)

W = LUG DIM TO EDGE OF GROOVE = (L–U)

ALL DIMENSIONS ARE IN INCHES

Lug Hole Diameter – Corrosion Removal From Area Between Bushings
Figure 602



1 MINUS AMOUNT REMOVED FROM LUG FACE

2 PLUS AMOUNT REMOVED FROM LUG FACE

3 NO PLATING ON ID AND BUSHING FACE

125 ALL MACHINED SURFACES UNLESS SHOWN DIFFERENTLY

BREAK SHARP EDGES 0.01–0.02 R

CADMIUM PLATE 0.0003–0.0005 THICK, EXCEPT AS NOTED

MATERIAL: AL–NI–BRZ PER AMS 4640 OR AMS 4880

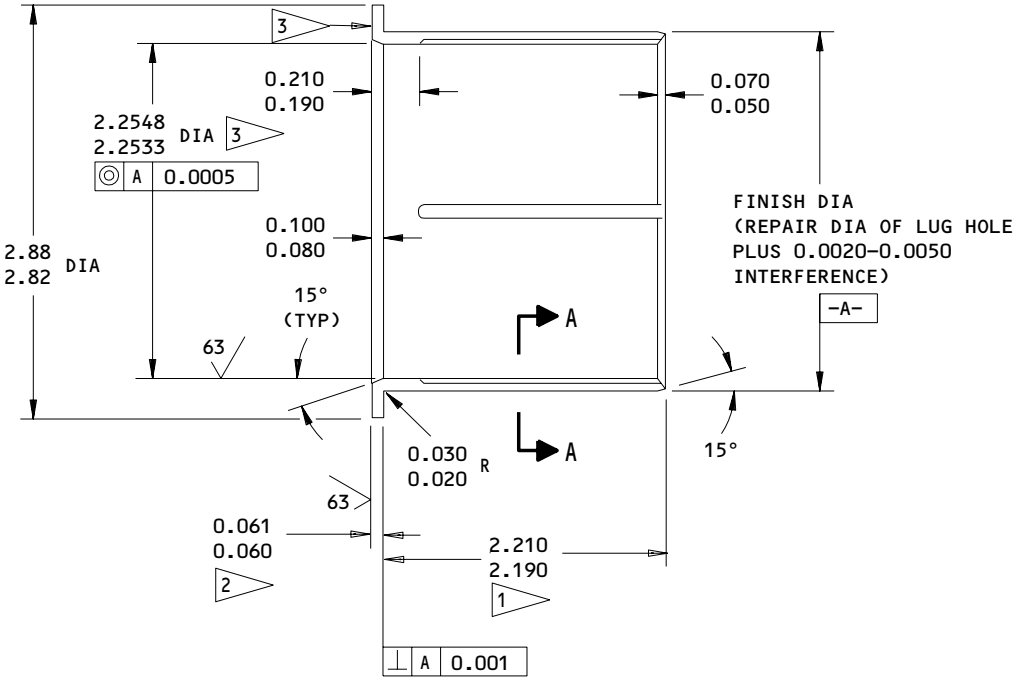
ALL DIMENSIONS ARE IN INCHES

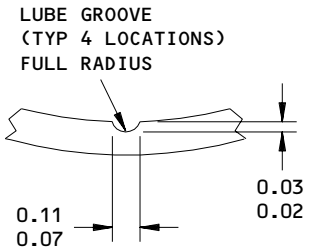
ALL DIMENSIONS APPLY BEFORE PLATING

HOLE LOCATION (13) FIG. 601 REPLACES BUSHING (195) 161T1210–8

Oversize Bushing Details
Figure 603

99451





(TYP)
A–A

1 MINUS AMOUNT REMOVED FROM LUG FACE
2 PLUS AMOUNT REMOVED FROM LUG FACE
3 NO PLATING ON ID AND BUSHING FACE

125 ALL MACHINED SURFACES UNLESS SHOWN DIFFERENTLY

BREAK SHARP EDGES 0.01–0.02 R

CADMIUM PLATE 0.0003–0.0005 THICK EXCEPT AS NOTED

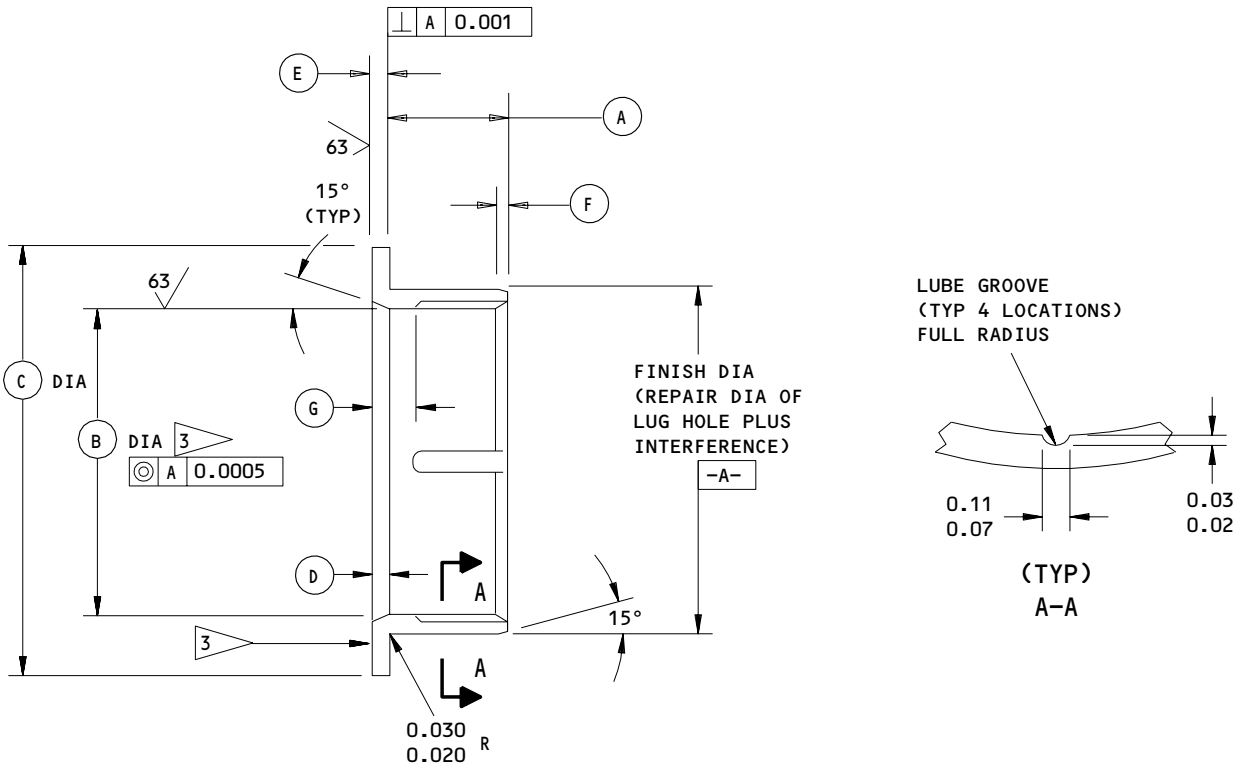
MATERIAL: AL–NI–BRZ PER AMS 4640 OR AMS 4880

ALL DIMENSIONS ARE IN INCHES

ALL DIMENSIONS BEFORE PLATING

HOLE LOCATION (7) (OUTSIDE) FIG. 601 – REPLACES BUSHING (200) 162T2101–1

Oversize Bushing Details
Figure 604



HOLE LOCATION (FIG. 601)	REPLACES BUSHING (IPL FIG. 1)	A 1	B	C	D	E 2	F	G	INTERFERENCE
10	(210) 162T2100-1	0.840 0.820	1.7545 1.7530	2.33 2.27	0.090 0.070	0.061 0.060	0.07 0.05	0.190 0.170	0.0046 0.0016
7 (INSIDE)	(205) 162T2101-2	1.710 1.690	2.2548 2.2533	2.88 2.82	0.100 0.080	0.061 0.060	0.070 0.050	0.210 0.190	0.0050 0.0020

1 MINUS AMOUNT REMOVED FROM LUG FACE

2 PLUS AMOUNT REMOVED FROM LUG FACE

3 NO PLATING ON ID AND BUSHING FACE

125 ALL MACHINED SURFACES UNLESS SHOWN DIFFERENTLY

BREAK SHARP EDGES 0.01-0.02 R

CADMIUM PLATE 0.0003-0.0005 THICK EXCEPT AS NOTED

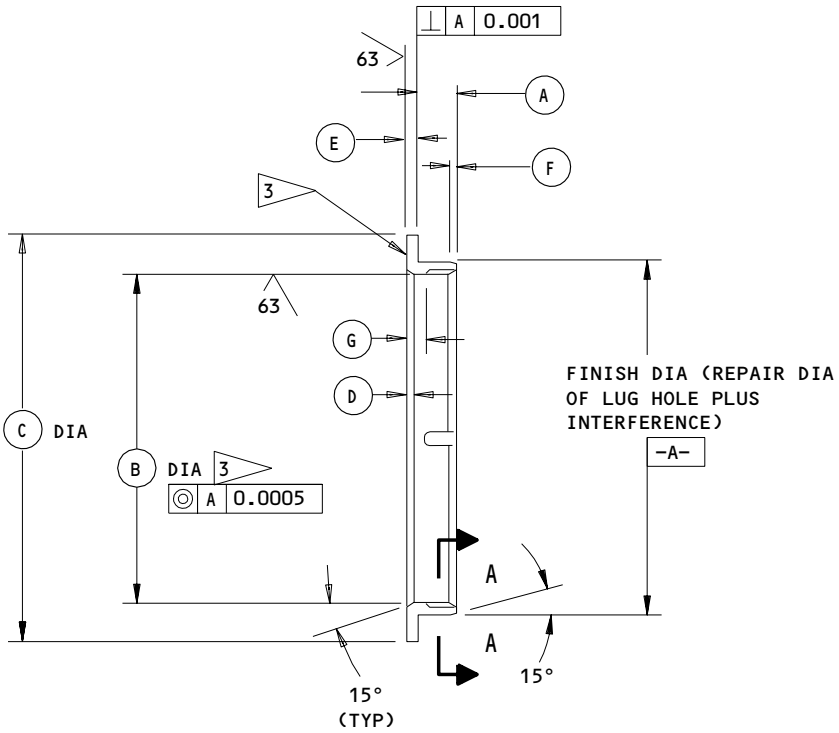
MATERIAL: AL-NI-BRZ PER AMS 4640 OR AMS 4880

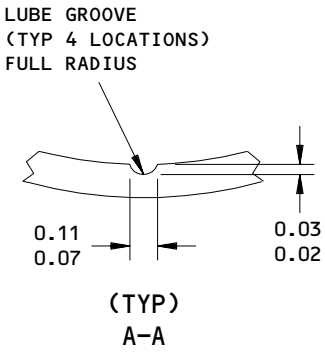
ALL DIMENSIONS ARE IN INCHES

ALL DIMENSIONS APPLY BEFORE PLATING

Oversize Bushing Details
Figure 605

99453





HOLE LOCATION (FIG. 601)	REPLACES BUSHING (IPL FIG. 1)	A 1	B	C	D	E 2	F	G	INTERFERENCE
4	(190) 162T2101-3	0.510 0.490	2.2548 2.2533	2.88 2.82	0.100 0.080	0.061 0.060	0.070 0.050	0.210 0.190	0.0050 0.0020
1	(185) 162T2103-1	0.710 0.690	2.7552 2.7537	3.38 3.32	0.130 0.110	0.081 0.080	0.070 0.050	0.260 0.240	0.0054 0.0019

1 MINUS AMOUNT REMOVED FROM LUG FACE

2 PLUS AMOUNT REMOVED FROM LUG FACE

3 NO PLATING ON ID AND BUSHING FACE

125 ALL MACHINED SURFACES UNLESS SHOWN DIFFERENTLY

BREAK SHARP EDGES 0.01-0.02 R

CADMIUM PLATE 0.0003-0.0005 THICK EXCEPT AS NOTED

MATERIAL: AL-NI-BRZ PER AMS 4640 OR AMS 4880

ALL DIMENSIONS ARE IN INCHES

ALL DIMENSIONS APPLY BEFORE PLATING

Oversize Bushing Details
Figure 606

99454

DRAG STRUT ASSEMBLY, LOWER - REPAIR 2-1

162T2003-3, -5

NOTE: Refer to REPAIR-GEN for a list of applicable standard practices. Refer to IPL Fig. 1 for item numbers.

1. Bushing and Bearing Replacement (Fig 601)

   A. Remove the old bushings and bearing.

   B. If you find defects on lug faces or hole surfaces, refer to REPAIR 2-2 for repair instructions.

   C. Install replacement bushings by the shrink-fit method (SOPM 20-50-03).

   D. Make a check of the dimensions and machine them as necessary.

      NOTE: Machining of bushings after installation is not usually necessary because bushings and lug faces are premachined to give the dimensions shown.

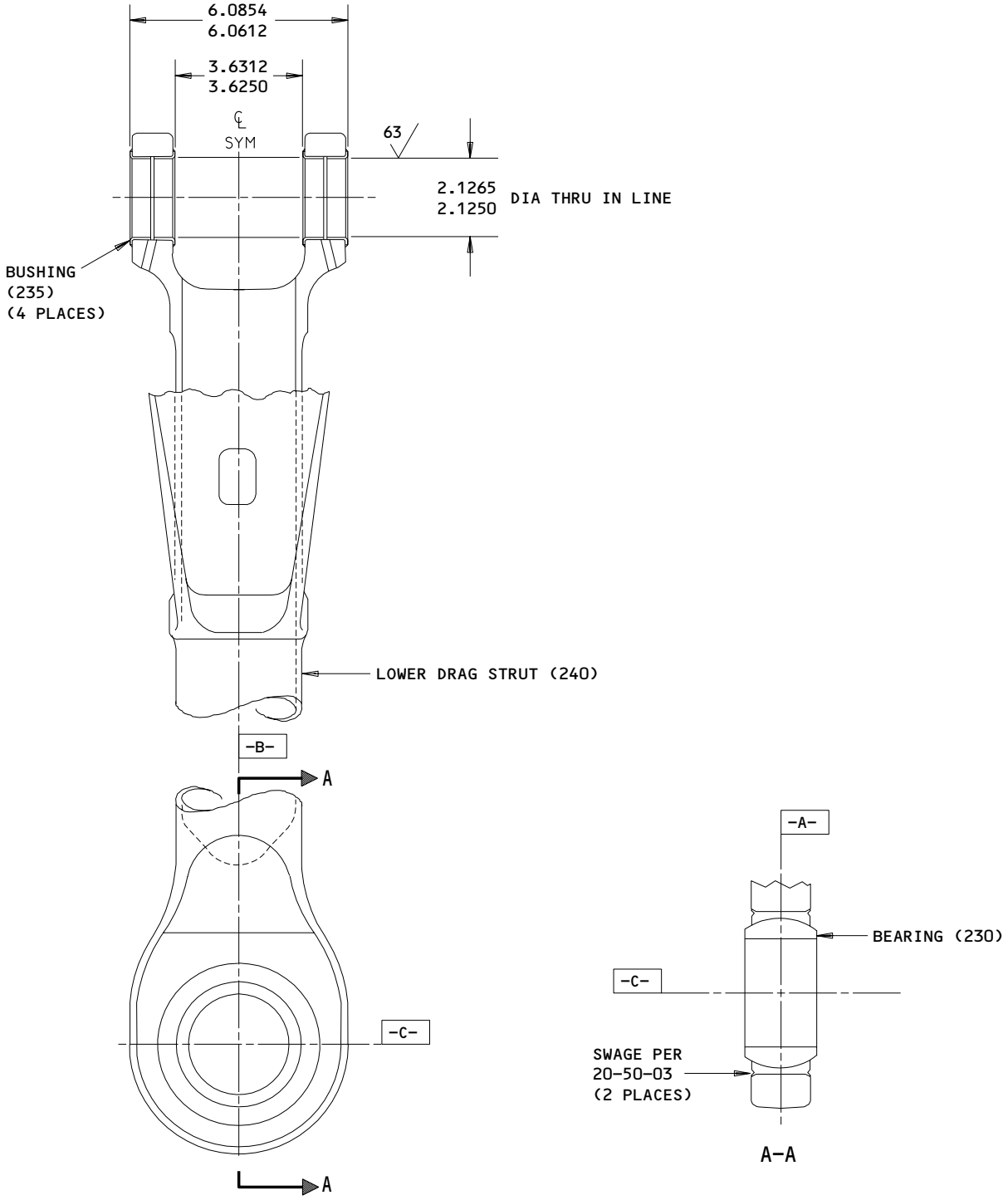
   E. Install a replacement bearing and roller swage it (SOPM 20-50-03).

   F. Seal bushings per REPAIR 16-1.

   G. Apply grease to lube fittings until grease appears at ID of bearing.

2. Lube Fitting Replacement

   A. Replace lube fitting (225) per CMM 32-00-03.



REFINISH

REF REPAIR 2-2 FOR REFINISH INSTRUCTIONS

ALL DIMENSIONS ARE IN INCHES

162T2003-3,-5
Bushing and Bearing Replacement
Figure 601

99455

DRAG STRUT, LOWER - REPAIR 2-2

162T2003-4, -6

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

1. Lug Faces and Holes (Fig. 601)

A. Method 1 -- Removal of Corrosion in Center of Lug ID

NOTE: This procedure enables corrosion to be removed without machining the entire bore oversize, if corrosion is localized at the center area which is exposed between two bushings.

(1) Determine repair diameter and width of groove required to remove corrosion (Fig. 602).

(2) Machine center area as required.

(3) Cadmium-titanium plate and apply primer, BMS 10-11, type 1.

(4) Install bushings per REPAIR 2-1.

B. Method 2 -- Installation of Oversize Bushings

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

(2) Shot peen, cadmium-titanium plate and apply primer, BMS 10-11, type 1.

(3) Make bushings (Fig. 603), as required, to adjust for the material removed in step (1).

(4) Install bushings per REPAIR 2-1.

C. Method 3 -- Installation of oversize bearing

(1) Machine as required, to one of the repair limit ranges given in Table A for an applicable oversize bearing.

(2) Shot peen, cadmium-titanium plate and apply primer, BMS 10-11, type 1.

(3) Install and swage the applicable oversized bearing per 20-50-03.

(4) Fillet seal both sides of bearing with BMS 5-95 sealant.

2. Bore - Diameter 6 (Fig. 601)

A. Remove all finishes from the strut per SOPM 20-30-03. This includes the bore.

B. Visually examine the bore surfaces for these conditions:

(1) Surfaces rougher than 125 microinches

(2) Local machining grooves, tool chatter marks, gouges

(3) Corrosion

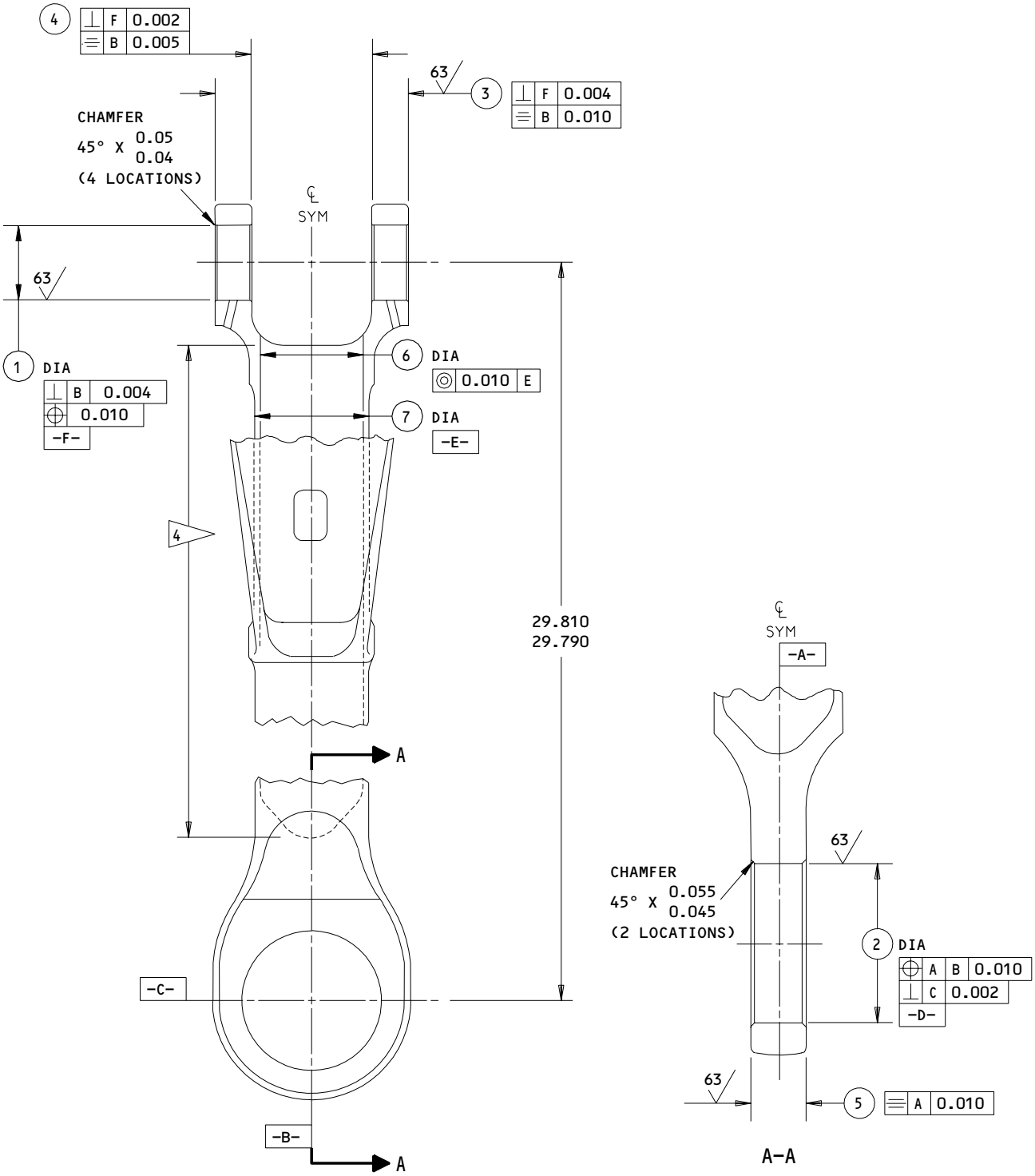
C. Machine as required, within repair limits, to remove defects. If there are no defects, go to step G.

D. Surface temper etch per SOPM 20-10-02.

E. Stress relieve per SOPM 20-10-02. Material is 4340M steel, 275-300 ksi.

F. Magnetic particle examine the bore surfaces by the residual magnetic inspection method of SOPM 20-20-01. Examine to the limits of visual acuity with such aids as borescopes, mirrors, light guides, and ultraviolet pencil lights.

G. Refinish as indicated.



ALL DIMENSIONS ARE IN INCHES

162T2003-4,-6
Lug Face and Hole Repair
Figure 601 (Sheet 1)

T21810

REFERENCE NUMBER	(1)	(2)	(3)	(4)	(5)	(6)	(7) ▷5	(7) ▷6
DESIGN DIMENSION	2.2865 2.2850	4.1265 4.1255	5.960 5.940	3.7566 3.7516	1.510 1.500	3.160 3.140	3.510 3.490	3.610 3.590
REPAIR LIMIT	2.3465 ▷1	SEE TABLE A	5.910 ▷1 ▷2	3.7866 ▷1 ▷2	1.470 ▷2 ▷3	3.190 ▷3 ▷5 3.230 ▷3 ▷6	—	—

OVERSIZE BEARING P/N	(2) REPAIR LIMIT
60B00180-48	4.1455-4.1465
60B00180-49	4.1655-4.1665
60B00180-50	4.1855-4.1865

TABLE A

REFINISH

CADMIUM-TITANIUM PLATE (0.0005-0.0007 THICK, F-15.32) BEARING HOLE, BUSHING HOLE, LUG FACES, AND LUBE HOLE IDs. CADMIUM-TITANIUM PLATE (0.0005 MIN THICK, F-15.01) ALL OTHER SURFACES. APPLY BMS 10-11, TYPE 1, PRIMER (F-20.02) ALL OVER EXCEPT IN LUBE HOLES AND ID. AFTER BUSHING, BEARING, AND LUBE FITTING INSTALLATION, APPLY BMS 10-60 GRAY GLOSS ENAMEL (SRF-14.9813) ALL OVER, EXCEPT ON BUSHINGS, BEARING, LUBE FITTINGS, AND ID. IN ID, APPLY PRIMER AND CORROSION PREVENTIVE COMPOUND PER ▷4.

REPAIR

REF ▷1 ▷2 ▷3

125 ALL MACHINED SURFACES UNLESS SHOWN DIFFERENTLY

BREAK SHARP EDGES EQUIVALENT TO 0.06 R EXCEPT AS NOTED

SHOT PEEN: 0.016-0.033 SHOT SIZE
0.014-0.016 A2 INTENSITY

MATERIAL: 4340M STEEL, 275-300 KSI

ALL DIMENSIONS ARE IN INCHES

▷1 REPAIR LIMIT FOR INSTALLATION OF OVERSIZE BUSHINGS

▷2 LUG FACE MACHINING REQUIREMENTS:

1. MATERIAL REMOVED FROM ANY FACE MUST NOT EXCEED HALF THE DIFFERENCE BETWEEN THE DESIGN DIM AND REPAIR LIMIT
2. FLAT SURFACE MUST BE MINIMUM OF 0.02 LARGER THAN FLANGE DIA OF BUSHING TO BE INSTALLED
3. BLEND MISMATCH STEPS TO 0.18-0.26 RADIUS, OR IF WITHIN 0.10 OF LUG FILLET RADIUS USE SAME RADIUS AS LUG FILLET. BREAK SHARP EDGES 0.03-0.07 R.

▷3 RESTORATION TO DESIGN DIMENSION NOT REQUIRED

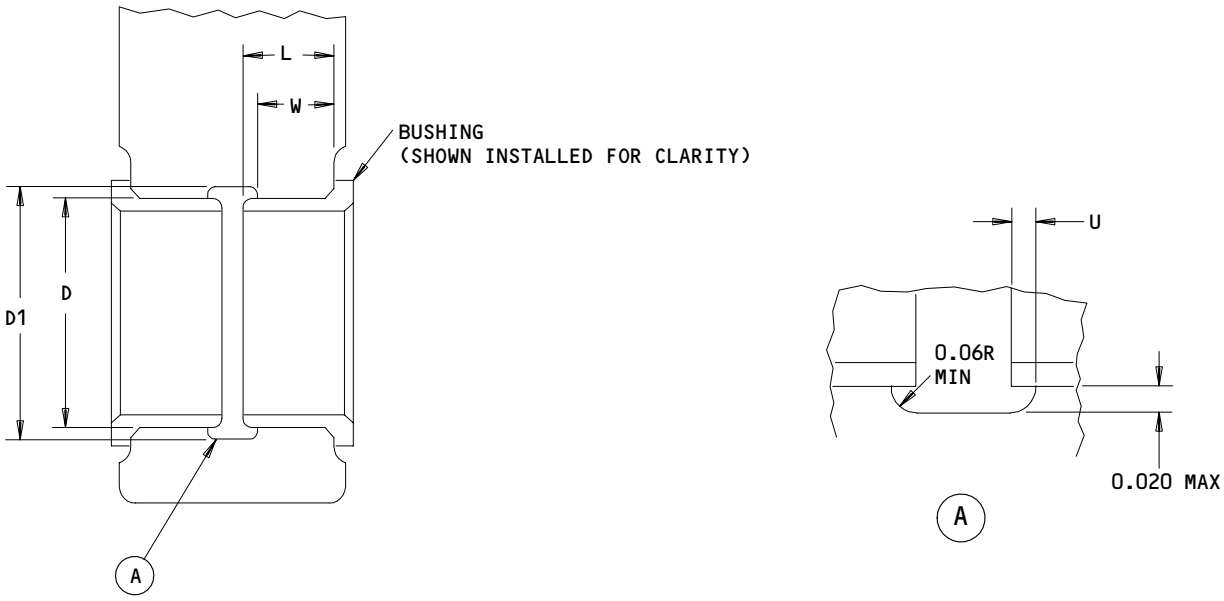
▷4 APPLY BMS 10-11, TYPE 1, PRIMER (F-20.03) AND MIL-C-11796 CORROSION PREVENTIVE COMPOUND (F-19.03) TO ID.

▷5 162T2003-4

▷6 162T2003-6

162T2003-4,-6
Lug Face and Hole Repair
Figure 601 (Sheet 2)

T21811



D = MAX REPAIR DIA OF HOLE (SEE FIG. 601)

D1 = MAX REPAIR DIA OF GROOVE = (D +0.040)

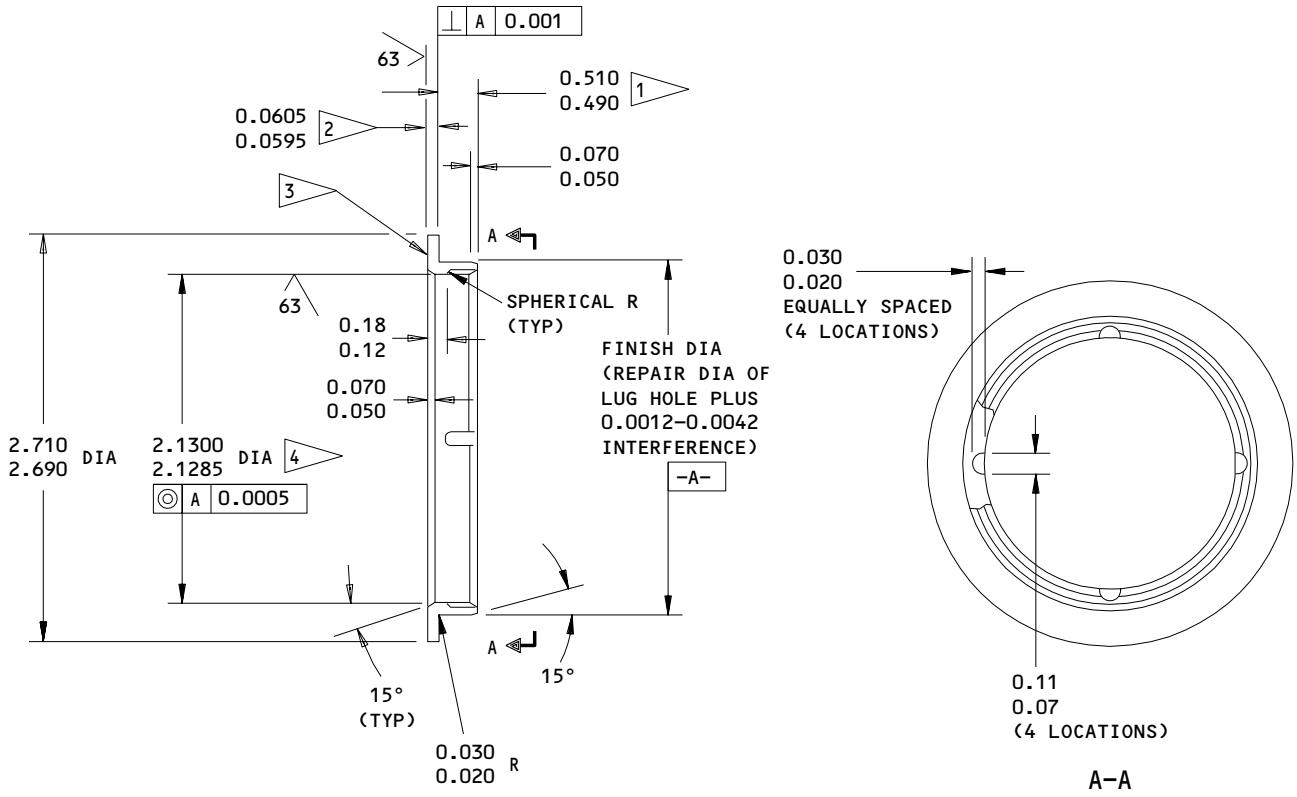
L = LENGTH OF BUSHING (SEE FIG. 603)

U = UNDERCUT = (L X 0.1) (0.06 MAX)

W = LUG DIM TO EDGE OF GROOVE = (L–U)

ALL DIMENSIONS ARE IN INCHES

Lug Hole Diameter – Corrosion Removal from Area Between Bushings
Figure 602



1 MINUS AMOUNT REMOVED FROM LUG FACE

2 PLUS AMOUNT REMOVED FROM LUG FACE

3 FLASH CHROME 0.0003–0.0005 THICK PER 20–42–03 ON BUSHING FACE. OPTION – THIN DENSE CHROME PER BMS 10–70.

4 NO PLATING ON BUSHING ID

125 ALL MACHINED SURFACES UNLESS SHOWN DIFFERENTLY

BREAK SHARP EDGES 0.01–0.02 R

CADMIUM PLATE 0.0003–0.0005 THICK (F–15.06) EXCEPT AS NOTED

MATERIAL: AL–NI–BRZ PER AMS 4640 OR AMS 4880

ALL DIMENSIONS ARE IN INCHES

HOLE LOCATION (1) FIG. 601 – REPLACES BUSHING (235) 162T1122–1

Oversize Bushing Details
Figure 603

T21813

LOCK LINK ASSEMBLY, FORWARD - REPAIR 3-1

162T3001-1

NOTE: Refer to REPAIR-GEN for a list of applicable standard practices. Refer to IPL Fig. 1 for item numbers.

1. Bushing Replacement (Fig. 601)

   A. Remove the old bushings.

   B. If you find defects on lug faces or hole surfaces, refer to REPAIR 3-2 for repair instructions.

   C. Install replacement bushings by the shrink-fit method (SOPM 20-50-03).

   D. Swage bushings (640) as shown.

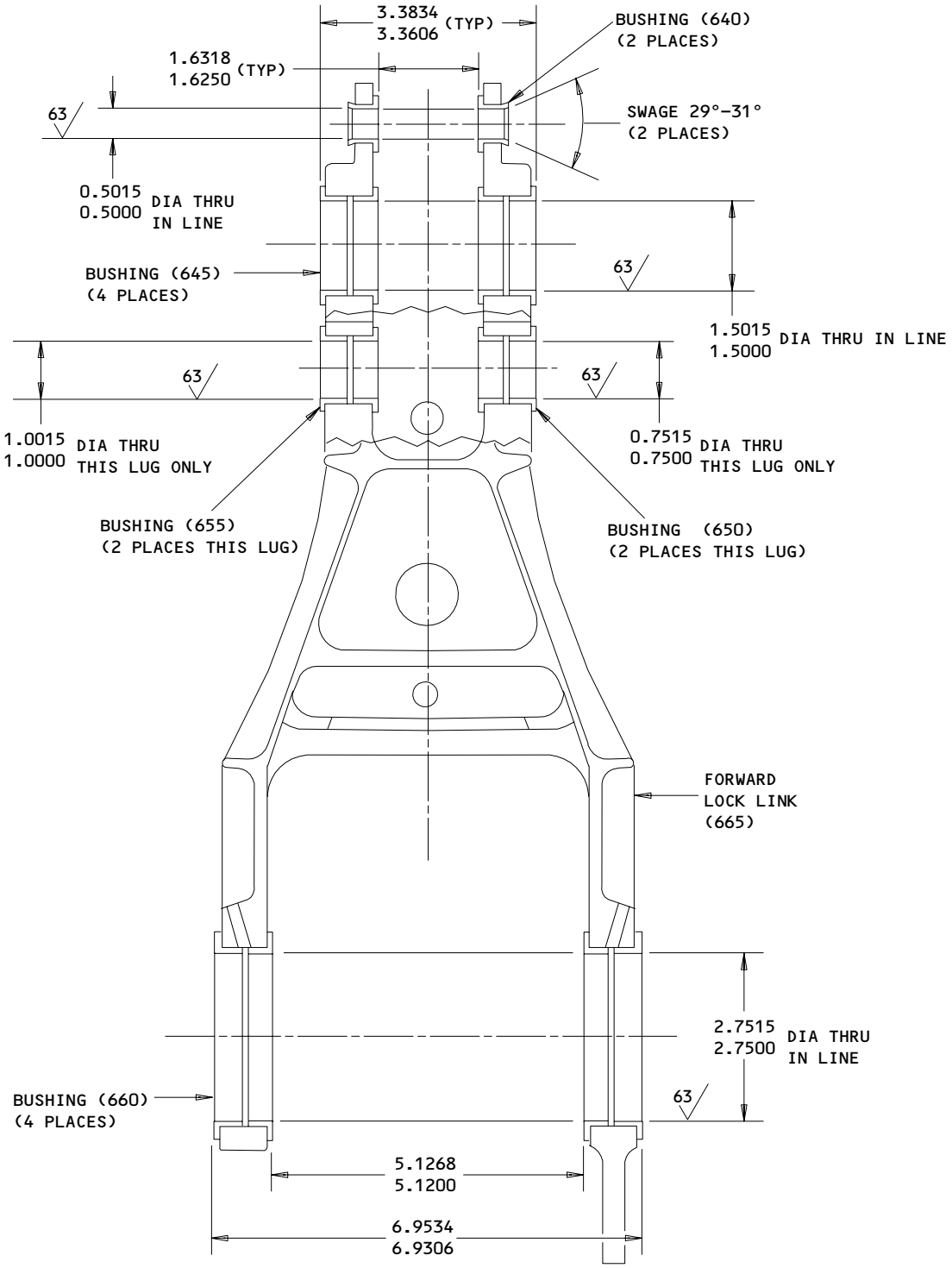
   E. Make a check of the dimensions and machine them as necessary.

      NOTE: Machining of bushings after installation is not usually necessary because bushings and lug faces are premachined to give dimensions shown.

   F. Seal the bushings per REPAIR 16-1.

2. Lube Fitting Replacement

   A. Replace lube fittings (635) per CMM 32-00-03.



REFINISH

REF REPAIR 3-2
FOR REFINISH INSTRUCTIONS

ALL DIMENSIONS ARE IN INCHES

162T3001-1
Bushing Replacement
Figure 601

T21815

LOCK LINK, FORWARD - REPAIR 3-2

162T3001-2

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

1. Lug Faces and Holes (Fig. 601)

   A. Method 1 -- Removal of Corrosion in Center of Lug ID

      NOTE: This procedure enables corrosion to be removed without machining the entire bore oversize, if corrosion is localized at the center area which is exposed between two bushings.

      (1) Determine repair diameter and width of groove required to remove corrosion (Fig. 602).

      (2) Machine center area as required.

      (3) Chemical treat and apply primer, BMS 10-11, type 1.

      (4) Install bushings per REPAIR 3-1.

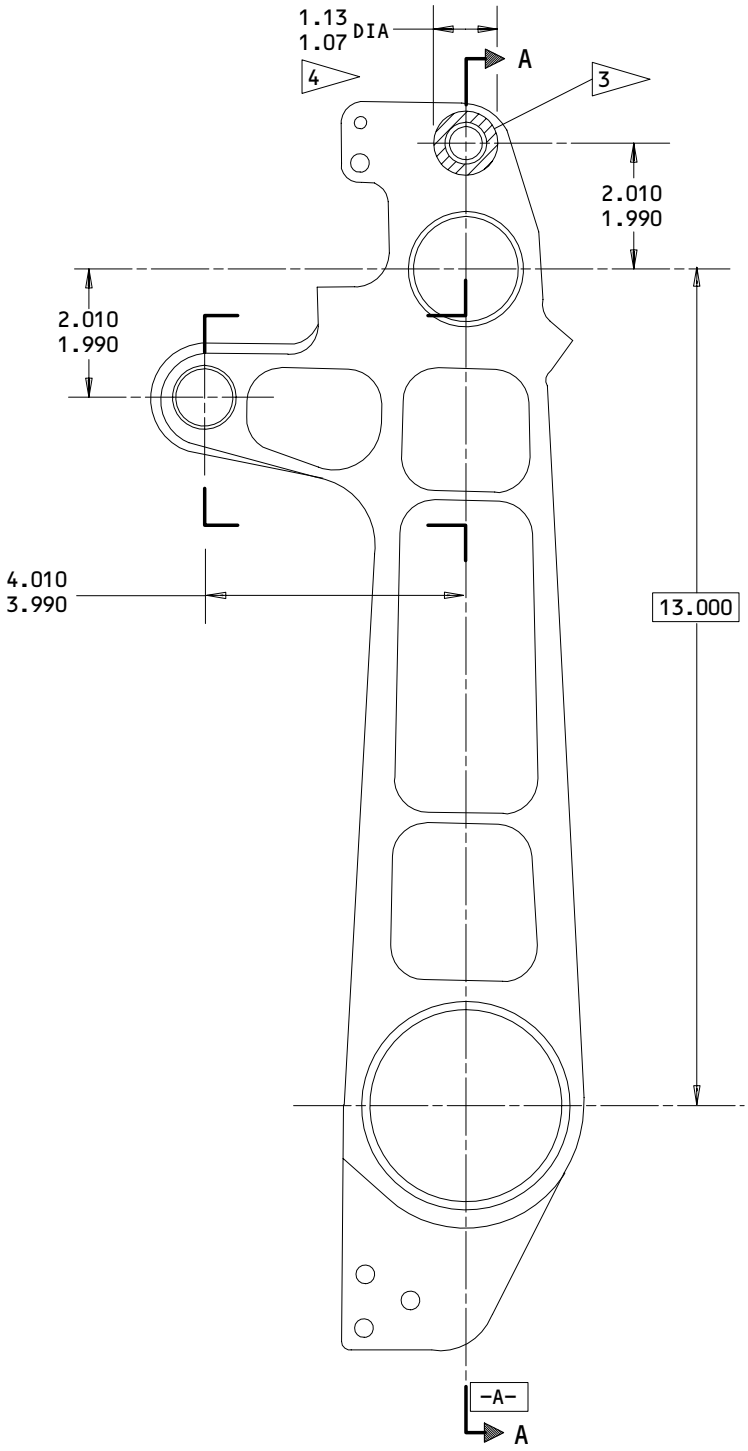
   B. Method 2 -- Installation of Oversize Bushings

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

      (2) Shot-peen, chemical treat and apply primer, BMS 10-11, type 1.

      (3) Make bushings (Fig. 603 and on), as required, to adjust for amount of material removed in step (1).

      (4) Install bushings per REPAIR 3-1.

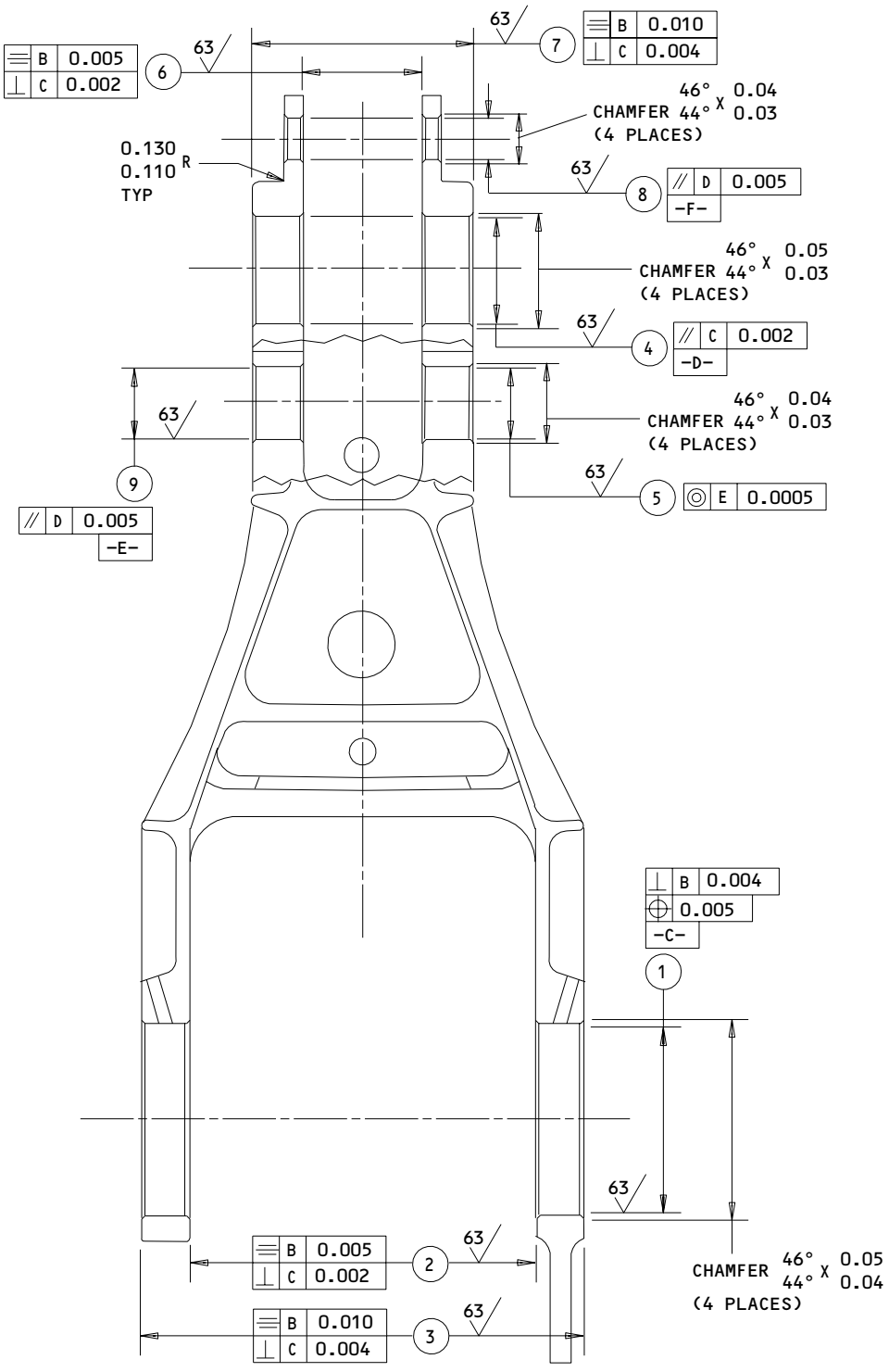


ALL DIMENSIONS ARE IN INCHES

162T3001-2

Lug Face and Hole Repair
Figure 601 (Sheet 1)

T21816



A-A
162T3001-2

ALL DIMENSIONS ARE IN INCHES

Lug Face and Hole Repair
Figure 601 (Sheet 2)

T21817

	LOCATION								
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
DESIGN DIM	2.9515 2.9500	5.2902 5.2852	6.790 6.770	1.6615 1.6600	0.8765 0.8750	1.7552 1.7502	3.260 3.240	0.6265 0.6250	1.1265 1.1250
REPAIR LIMIT ▷1	3.0115 MAX	5.3202 MAX ▷2	6.740 MIN ▷2	1.7215 MAX	0.9365 MAX	1.7852 MAX ▷2	3.205 MIN ▷2	0.6865 MAX	1.1865 MAX

REFINISH:

CHROMIC ACID ANODIZE (F-17.04) AND APPLY ONE COAT BMS 10-11 TYPE 1 PRIMER (F-20.02) ALL OVER. AFTER BUSHING AND LUBE FITTING INSTALLATION, APPLY BMS 10-60 GRAY GLOSS ENAMEL (SRF-14.9813) ALL OVER, EXCEPT ON BUSHINGS AND LUBE FITTINGS. APPLY BMS 10-11, TYPE 2, YELLOW GLOSS ENAMEL (SRF-14.905-301) PER ▷3.

REPAIR:

REF ▷1 ▷2

125 ALL MACHINED SURFACES EXCEPT AS NOTED

BREAK SHARP EDGES EQUIVALENT TO 0.03-0.06 R EXCEPT AS NOTED

SHOT PEEN: 0.023-0.055 SHOT SIZE
0.006 A2 INTENSITY

MATERIAL: 7075-T73 AL ALLOY

ALL DIMENSIONS ARE IN INCHES

▷1 REPAIR LIMIT FOR OVERSIZE BUSHING INSTALLATION

▷2 LUG FACE MACHINING REQUIREMENTS:

1. MATERIAL REMOVED FROM ANY FACE MUST NOT EXCEED HALF THE DIFFERENCE BETWEEN THE DESIGN DIM AND REPAIR LIMIT.
2. FLAT SURFACE MUST BE MINIMUM OF 0.02 LARGER THAN FLANGE DIA OF BUSHING TO BE INSTALLED.
3. BLEND MISMATCH STEPS TO 0.18-0.26 RADIUS, OR IF WITHIN 0.10 OF LUG FILLET RADIUS USE SAME RADIUS AS LUG FILLET. BREAK SHARP EDGES 0.03-0.07 R.

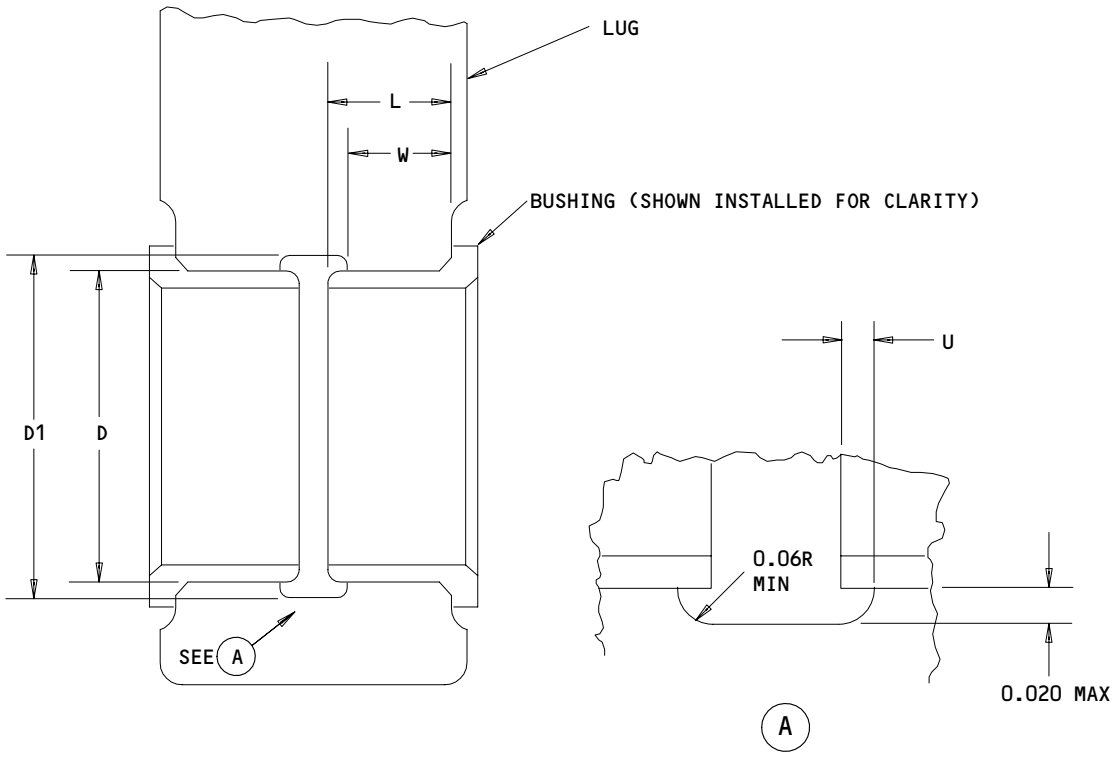
▷3 PAINT CIRCLE AS SHOWN PER SRF-14.905-301.

▷4 BOTH LUGS OUTSIDE FACES ONLY.

162T3001-2

Lug Face and Hole Repair
Figure 601 (Sheet 3)

T21818



D = MAX REPAIR DIA OF HOLE (SEE FIG. 601)

D1 = MAX REPAIR DIA OF GROOVE = (D +0.040)

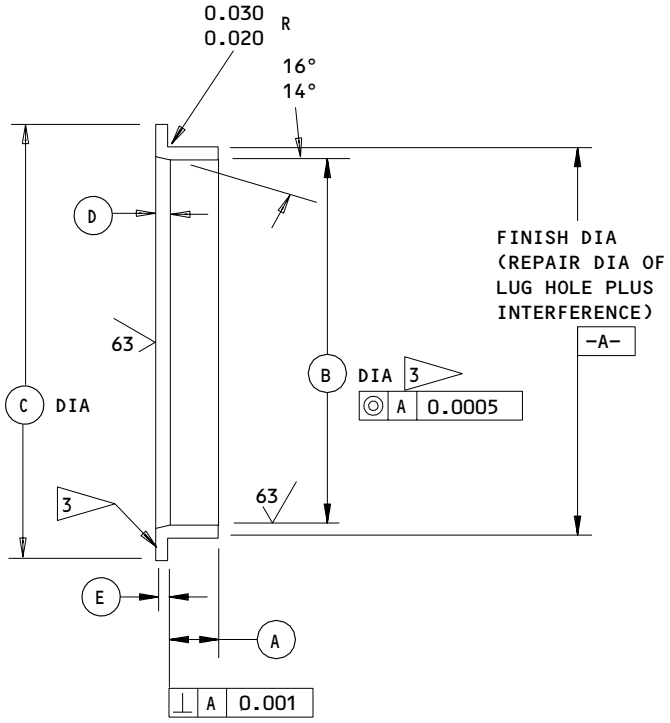
L = LENGTH OF BUSHING (SEE FIG. 603)

U = UNDERCUT = (L X 0.1) (0.06 MAX)

W = LUG DIM TO EDGE OF GROOVE = (L–U)

ALL DIMENSIONS ARE IN INCHES

Lug Hole Diameter – Corrosion Removal from Area Between Bushings
Figure 602



HOLE LOCATION (FIG. 601)	REPLACES BUSHING (IPL FIG. 1)	A 1	B	C	D	E 2	INTERFERENCE
4	(645) 161T1210-38	0.360 0.340	1.5044 1.5029	2.03 1.97	0.080 0.060	0.061 0.060	0.0044 0.0014
9	(655) 161T1210-12	0.360 0.340	1.0041 1.0026	1.48 1.42	0.080 0.060	0.061 0.060	0.0040 0.0010

1 MINUS AMOUNT REMOVED BY LUG FACE

2 PLUS AMOUNT REMOVED BY LUG FACE

3 NO PLATING ON ID AND BUSHING FACE

125 ALL MACHINED SURFACES UNLESS SHOWN DIFFERENTLY

BREAK SHARP EDGES 0.01-0.02R

CADMIUM PLATE 0.0003-0.0005 THICK, EXCEPT AS NOTED

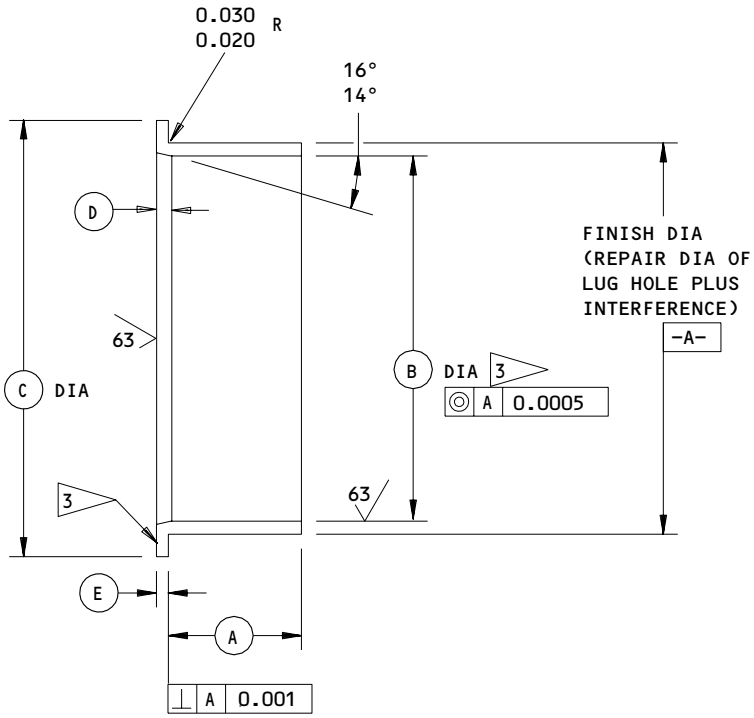
MATERIAL: AL-NI-BRZ PER AMS 4640 OR AMS 4880

ALL DIMENSIONS ARE IN INCHES

ALL DIMENSIONS APPLY BEFORE PLATING

Oversize Bushing Details
Figure 603

T21820



HOLE LOCATION (FIG. 601)	REPLACES BUSHING (IPL FIG. 1)	A 1	B	C	D	E 2	INTERFERENCE
8	(640) 161T1210-20	0.330 0.310	0.5038 0.5023	0.93 0.87	0.080 0.060	0.061 0.060	0.0037 0.0007
5	(650) 161T1210-37	0.360 0.340	0.7539 0.7524	1.23 1.17	0.080 0.060	0.061 0.060	0.0048 0.0008

125 ALL MACHINED SURFACES UNLESS SHOWN DIFFERENTLY

BREAK SHARP EDGES 0.01-0.02 R

CADMIUM PLATE 0.0003-0.0005 THICK, EXCEPT AS NOTED

MATERIAL: AL-NI-BRZ PER AMS 4640 OR AMS 4880

ALL DIMENSIONS ARE IN INCHES

ALL DIMENSIONS APPLY BEFORE PLATING

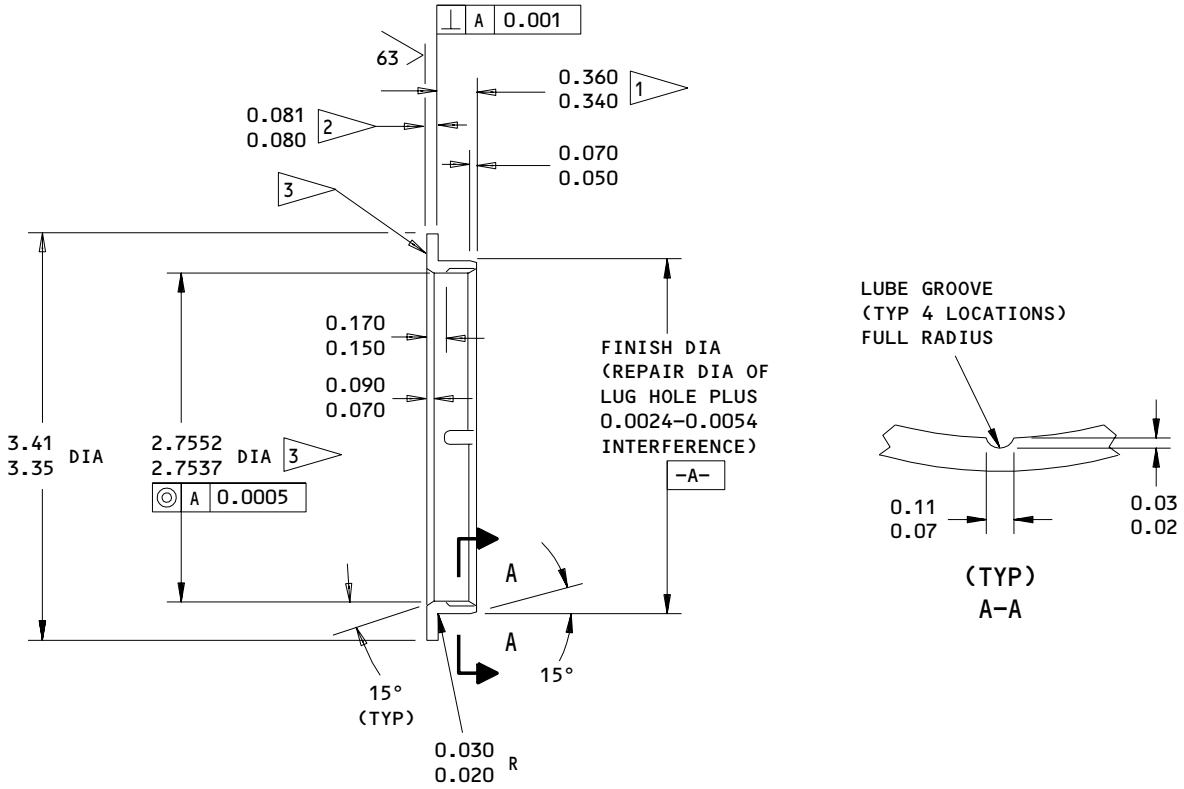
1 MINUS AMOUNT REMOVED BY LUG FACE

2 PLUS AMOUNT REMOVED BY LUG FACE

3 NO PLATING ON ID AND BUSHING FACE

Oversize Bushing Details
Figure 604

T21821



125 ALL MACHINED SURFACES UNLESS SHOWN DIFFERENTLY

BREAK SHARP EDGES 0.01–0.02 R

CADMIUM PLATE 0.0003–0.0005 THICK, EXCEPT AS NOTED

MATERIAL: AL–NI–BRZ PER AMS 4640 OR AMS 4880

ALL DIMENSIONS ARE IN INCHES

ALL DIMENSIONS APPLY BEFORE PLATING

1 MINUS AMOUNT REMOVED FROM LUG FACE

2 PLUS AMOUNT REMOVED FROM LUG FACE

3 NO PLATING ON ID AND BUSHING FACE

HOLE LOCATION (1) FIG. 601 – REPLACES BUSHING (660) 162T3020–1

Oversize Bushing Details
Figure 605

T21822

LOCK LINK ASSEMBLY, AFT - REPAIR 4-1

162T3003-1, -3

NOTE: Refer to REPAIR-GEN for a list of applicable standard practices. Refer to IPL Fig. 1 for item numbers.

1. Bushing Replacement (Fig. 601)

   A. Remove the old bushings.

   B. If you find defects on lug faces or hole surfaces, refer to REPAIR 4-2 for repair instructions.

   C. Install replacement bushings by the shrink-fit method (SOPM 20-50-03).

   D. If applicable, swage ends of bushing (465) (SOPM 20-50-03). After the swage, the ends of the bushing must not be above the lug face more than 0.03 inch.

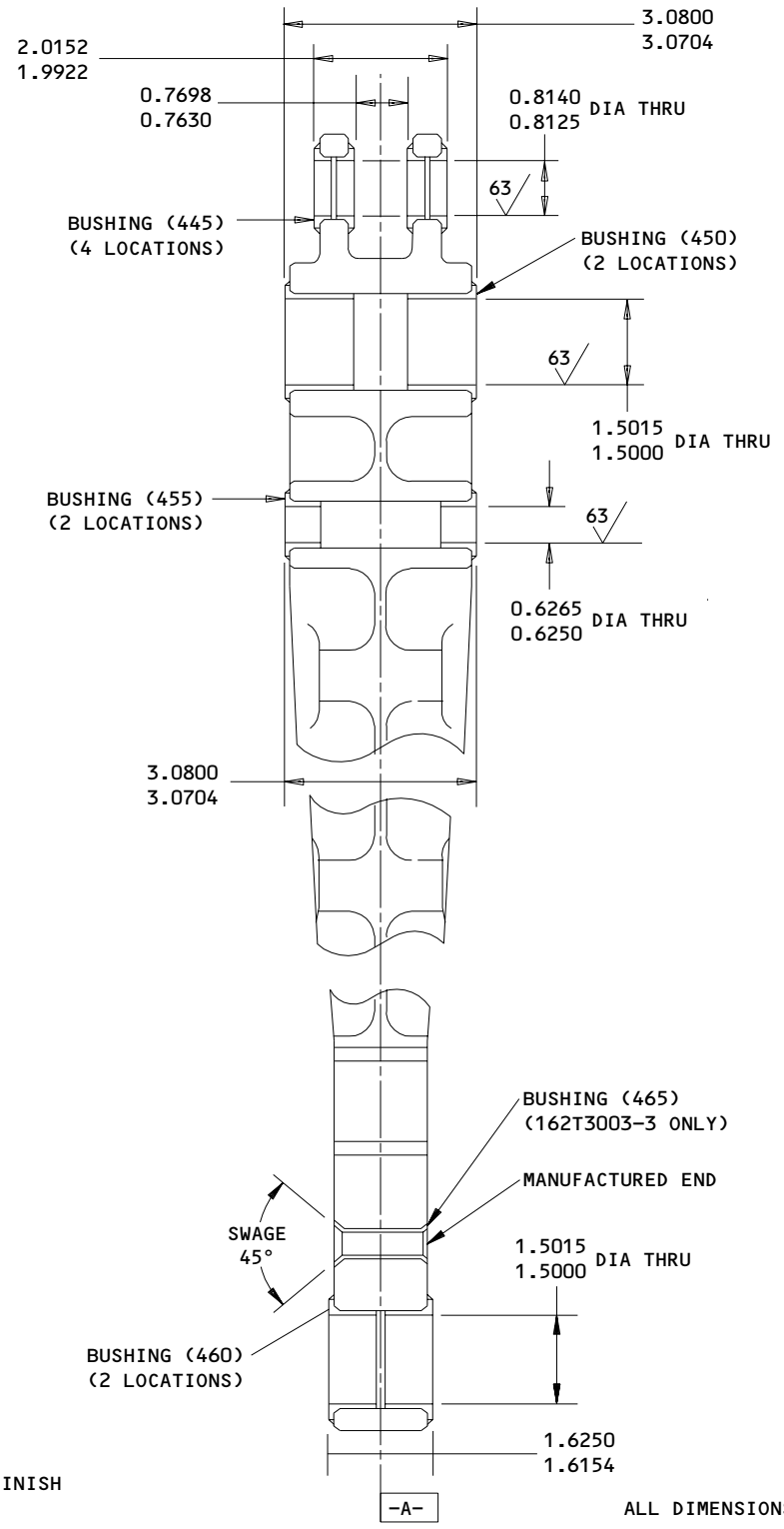
   E. Make a check of the dimensions and machine them as necessary.

      NOTE: Machining of bushings after installation is not usually necessary because bushings and lug faces are premachined to give dimensions shown.

   F. Seal bushings (445, 450, 455, 460) per REPAIR 16-1.

2. Lube Fitting Replacement

   A. Replace lube fittings (440) per CMM 32-00-03.



REFINISH

REF REPAIR 4-2 FOR REFINISH INSTRUCTIONS

ALL DIMENSIONS ARE IN INCHES

162T3003-1,-3
Bushing Replacement
Figure 601

T21824

LOCK LINK, AFT - REPAIR 4-2

162T3003-2, -4

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

1. Lug Faces and Holes (Fig. 601)

A. Method 1 -- Removal of Corrosion in Center of Lug ID

NOTE: This procedure enables corrosion to be removed without machining the entire bore oversize, if corrosion is localized at the center area which is exposed between two bushings.

(1) Determine repair diameter and width of groove required to remove corrosion (Fig. 602).

(2) Machine center area as required.

(3) Chemical treat and apply primer, BMS 10-11, type 1.

(4) Install bushings per REPAIR 4-1.

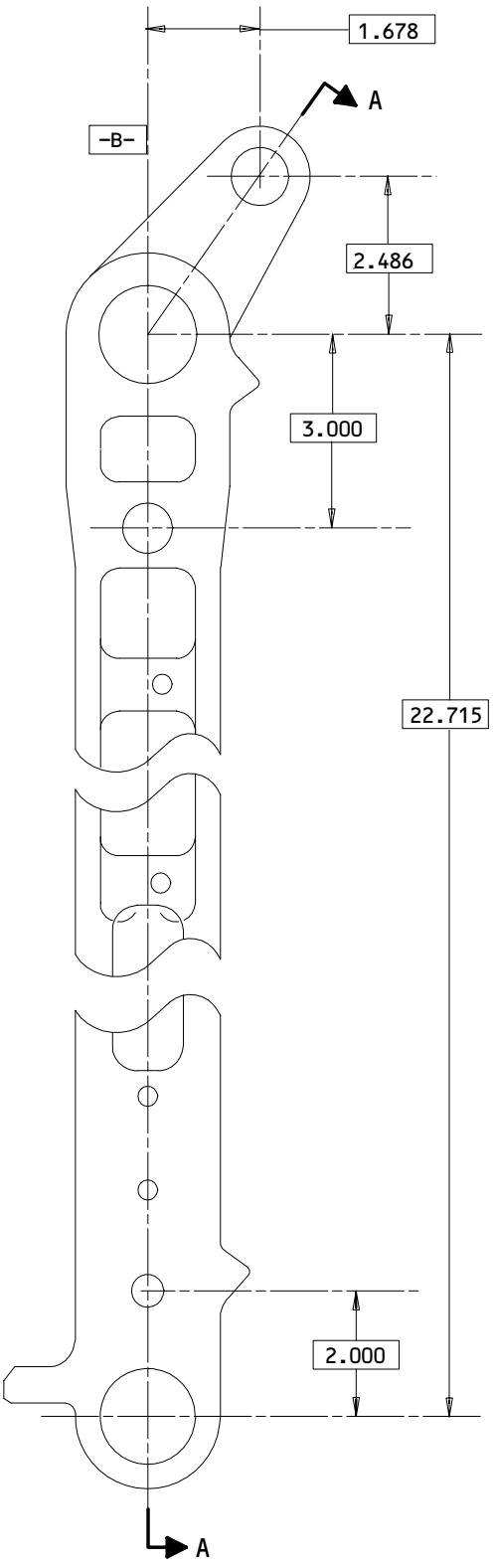
B. Method 2 -- Installation of Oversize Bushings

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

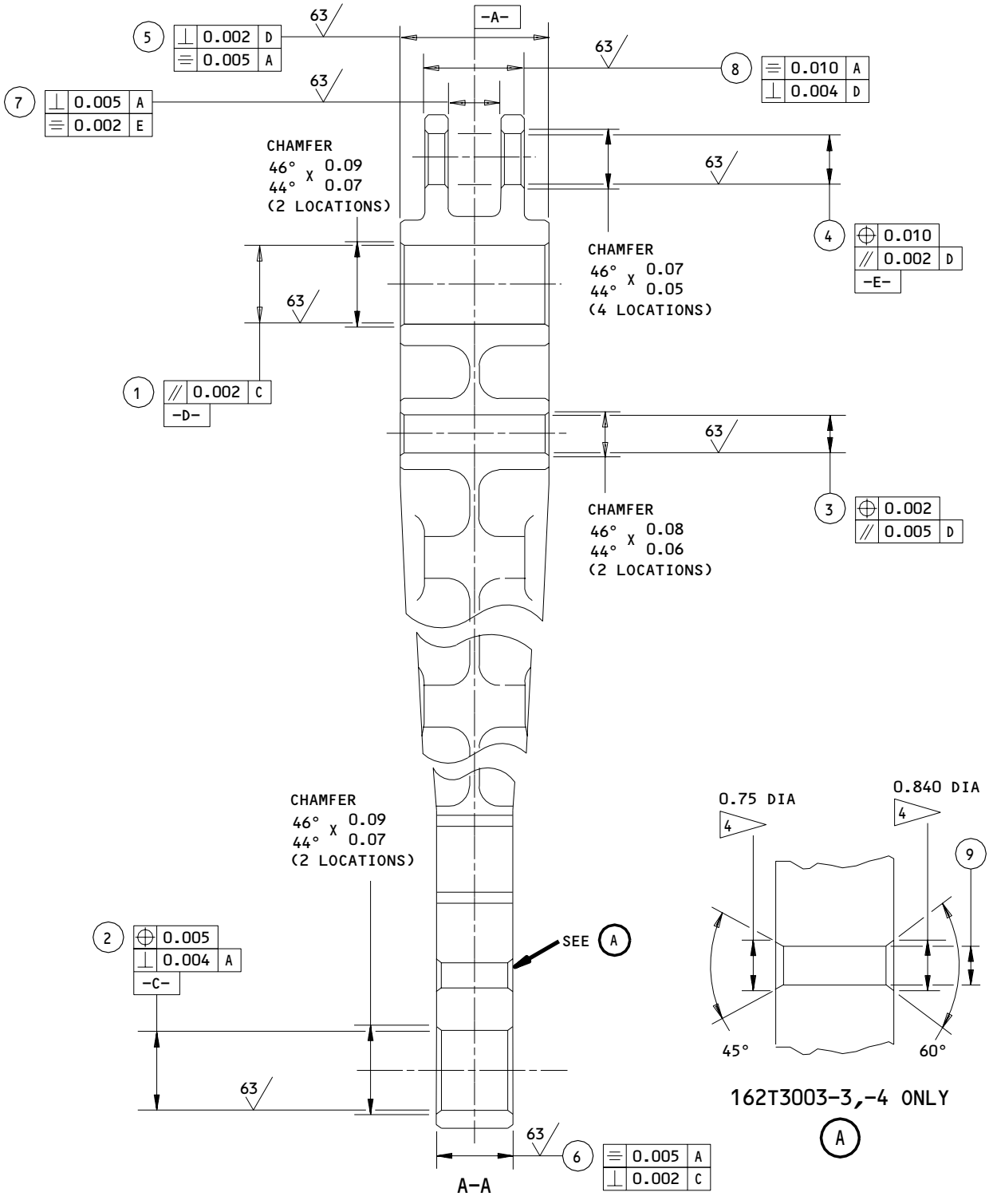
(2) Shot-peen, chemical treat and apply primer, BMS 10-11, type 1.

(3) Make bushings (Fig. 603 and on), as required, to adjust for amount of material removed in step (1).

(4) Install bushings per REPAIR 4-1.



162T3003-2,-4
Lug Face and Hole Repair
Figure 601 (Sheet 1)



162T3003-2,-4
Lug Face and Hole Repair
Figure 601 (Sheet 2)

T21826

REFERENCE NUMBER	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
DESIGN DIMENSION	1.6615 1.6600	1.6615 1.6600	0.7515 0.7500	0.9390 0.9375	2.9548 2.9498	1.4998 1.4948	0.8932 0.8882	1.890 1.870	0.6615 0.6600
REPAIR LIMIT ▷1	1.7215	1.7215	0.8115	0.9990	2.9198 ▷2	1.1900 ▷2	0.9232 ▷2	1.840 ▷2	0.7700 ▷2 ▷3

REFINISH

CHROMIC ACID ANODIZE (F-17.04) AND APPLY BMS 10-11 TYPE 1 PRIMER (F-20.02) ALL OVER

AFTER BUSHING AND LUBE FITTING INSTALLATION, APPLY BMS 10-60 GRAY GLOSS ENAMEL (F-14.9813, WHICH REPLACES SRF-14.9813) ALL OVER BUT NOT ON BUSHINGS AND LUBE FITTINGS

▷1 LIMIT FOR INSTALLATION OF OVERSIZE BUSHINGS

▷2 LUG FACE MACHINING REQUIREMENTS:

1. MATERIAL REMOVED FROM ANY FACE MUST NOT BE MORE THAN HALF THE DIFFERENCE BETWEEN THE DESIGN DIMENSION AND REPAIR LIMIT
2. **FLAT SURFACE MUST BE MINIMUM OF** 0.02 LARGER THAN FLANGE DIAMETER OF BUSHING TO BE INSTALLED
3. BLEND MISMATCH STEPS TO 0.18-0.26 RADIUS,OR IF WITHIN 0.10 OF LUG FILLET RADIUS USE SAME RADIUS AS LUG FILLET. BREAK SHARP EDGES 0.03-0.07R.

▷3 RESTORE CHAMFERS TO ORIGINAL DEPTH

▷4 REVERSED LOCATION OF CHAMFERS IS OPTIONAL

REPAIR

REF ▷1 ▷2 ▷3 ▷4

125 ALL MACHINED SURFACES UNLESS SHOWN DIFFERENTLY

BREAK SHARP EDGES EQUIVALENT TO 0.03-0.06R UNLESS SHOWN DIFFERENTLY

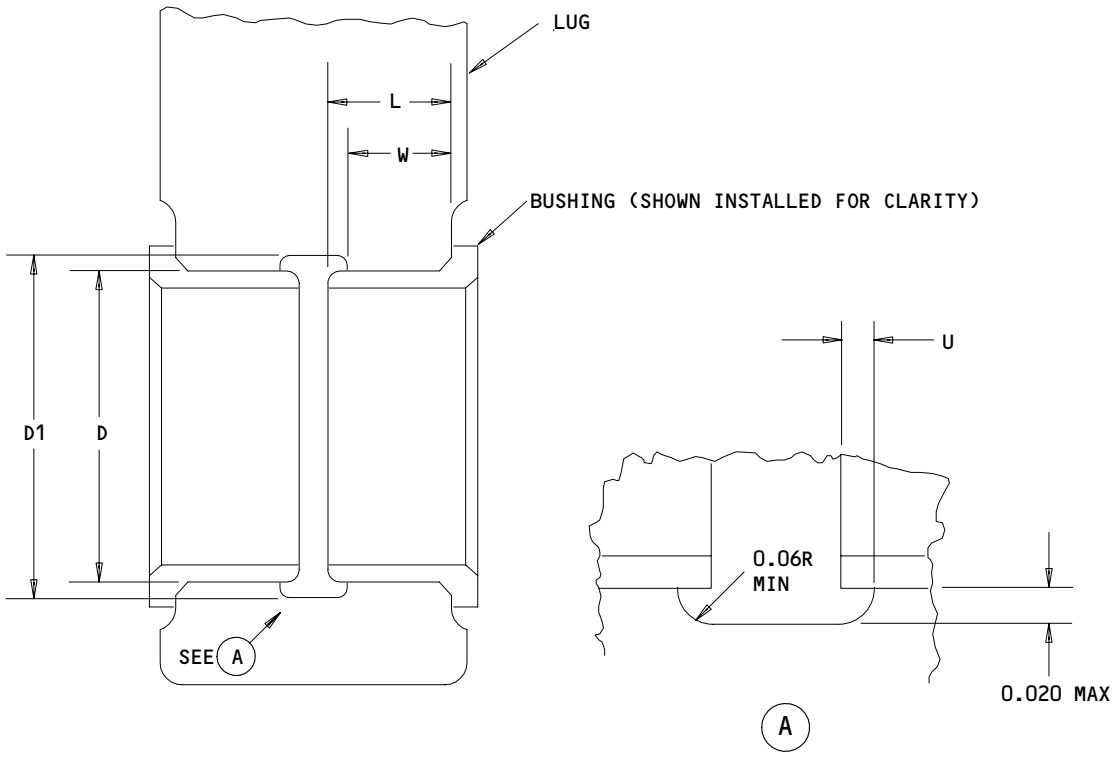
SHOT PEEN: 0.023-0.055 SHOT SIZE
0.012 A2 INTENSITY

MATERIAL: AL ALLOY

ALL DIMENSIONS ARE IN INCHES

162T3003-2,-4
Lug Face and Hole Repair
Figure 601 (Sheet 3)

T21827



D = MAX REPAIR DIA OF HOLE (SEE FIG. 601)

D1 = MAX REPAIR DIA OF GROOVE = (D +0.040)

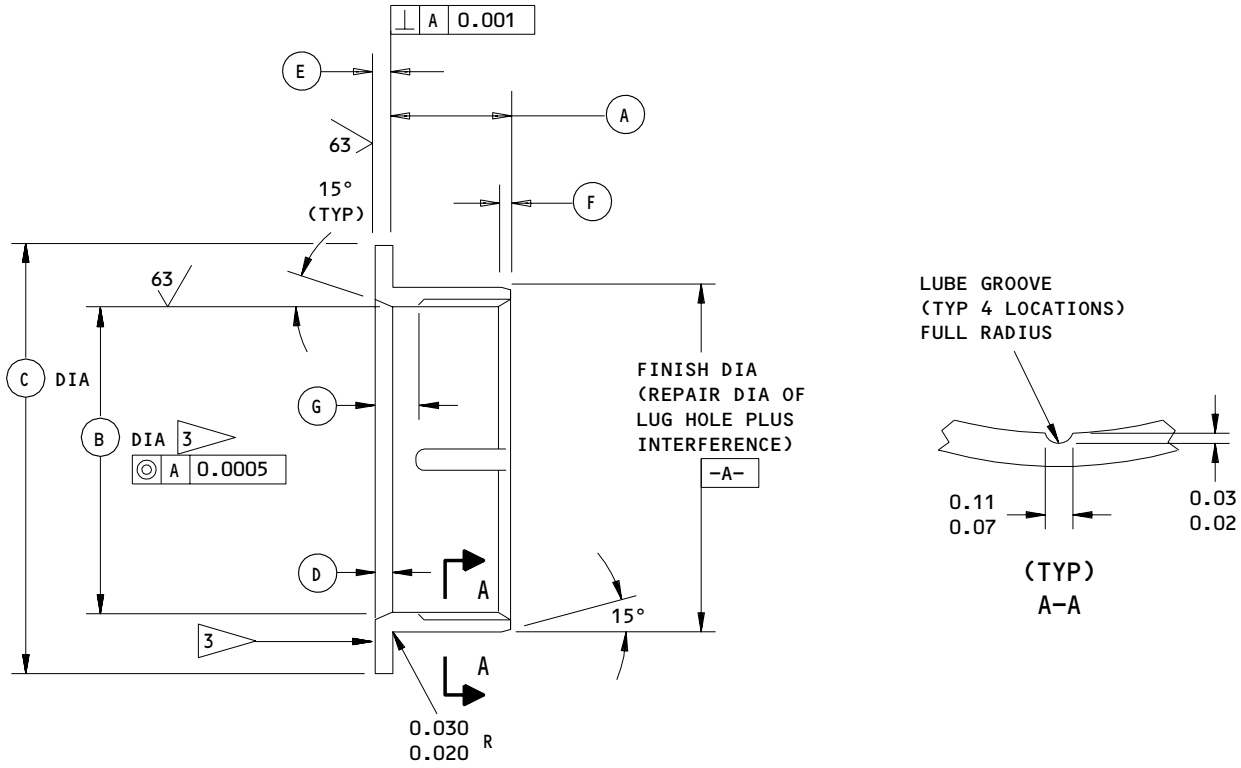
L = LENGTH OF BUSHING (SEE FIG. 603)

U = UNDERCUT = (L X 0.1) (0.06 MAX)

W = LUG DIM TO EDGE OF GROOVE = (L–U)

ALL DIMENSIONS ARE IN INCHES

Lug Hole Diameter – Corrosion Removal From Area Between Bushings
Figure 602



HOLE LOCATION (FIG. 601)	REPLACES BUSHING (IPL FIG. 1)	A 1	B	C	D	E 2	F	G	INTERFERENCE
1	(450) 162T3021-2	1.010 0.990	1.5044 1.5029	2.01 1.99	0.09 0.07	0.061 0.060	0.07 0.05	0.190 0.170	0.0044 0.0014
2	(460) 162T3021-1	0.710 0.690	1.5044 1.5029	2.01 1.99	0.09 0.07	0.061 0.060	0.07 0.05	0.190 0.170	0.0044 0.0014

1 MINUS AMOUNT REMOVED FROM LUG FACE

2 PLUS AMOUNT REMOVED FROM LUG FACE

3 NO PLATING ON ID AND BUSHING FACE

125 ALL MACHINED SURFACES UNLESS SHOWN DIFFERENTLY

BREAK SHARP EDGES 0.01-0.02 R

CADMIUM PLATE 0.0003-0.0005 THICK EXCEPT AS NOTED

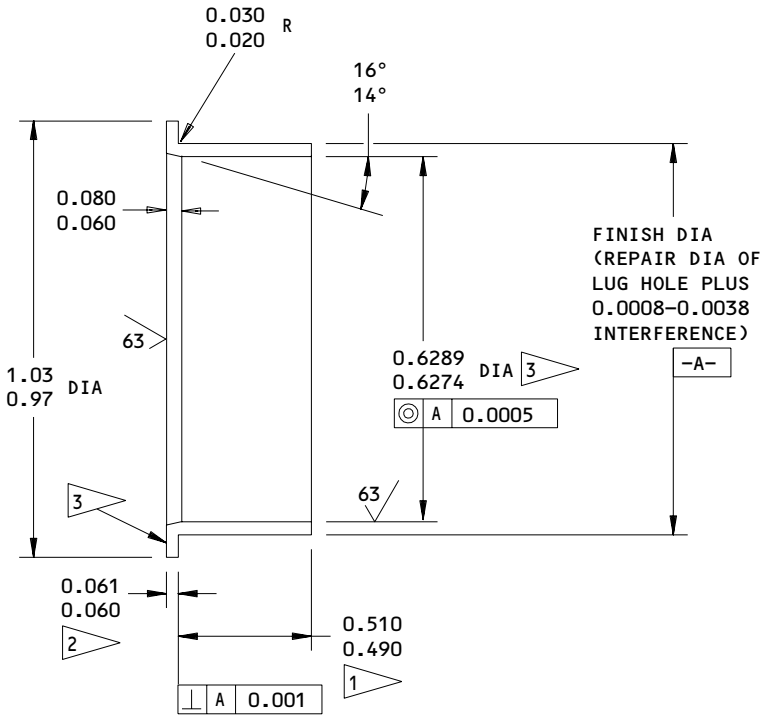
MATERIAL: AL-NI-BRZ PER AMS 4640 OR AMS 4880

ALL DIMENSIONS ARE IN INCHES

ALL DIMENSIONS APPLY BEFORE PLATING

Oversize Bushing Details
Figure 603

T21829



125 ALL MACHINED SURFACES UNLESS SHOWN DIFFERENTLY

BREAK SHARP EDGES 0.01–0.02 R

CADMIUM PLATE 0.0003–0.0005 THICK, EXCEPT AS NOTED

MATERIAL: AL–NI–BRZ PER AMS 4640 OR AMS 4880

ALL DIMENSIONS ARE IN INCHES

ALL DIMENSIONS APPLY BEFORE PLATING

1 MINUS AMOUNT REMOVED BY LUG FACE

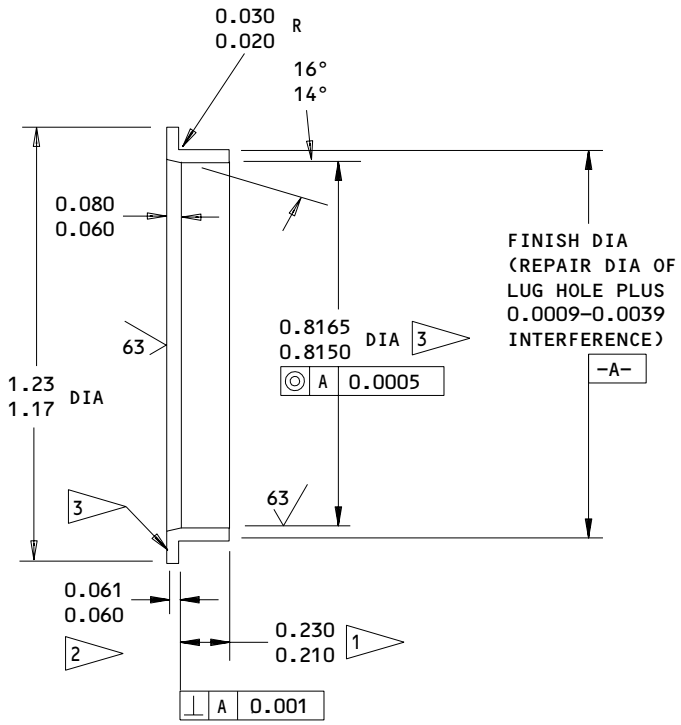
2 PLUS AMOUNT REMOVED BY LUG FACE

3 NO PLATING ON ID AND BUSHING FACE

HOLE LOCATION (3) FIG. 601 – REPLACES BUSHING (455) 161T1210–40

Oversize Bushing Details
Figure 604

T21830



1 MINUS AMOUNT REMOVED FROM LUG FACE

2 PLUS AMOUNT REMOVED FROM LUG FACE

3 NO PLATING ON ID AND BUSHING FACE

125 ALL MACHINED SURFACES UNLESS SHOWN DIFFERENTLY

BREAK SHARP EDGES 0.01–0.02 R

CADMIUM PLATE 0.0003–0.0005 THICK EXCEPT AS NOTED

MATERIAL: AL–NI–BRZ PER AMS 4640 OR AMS 4880

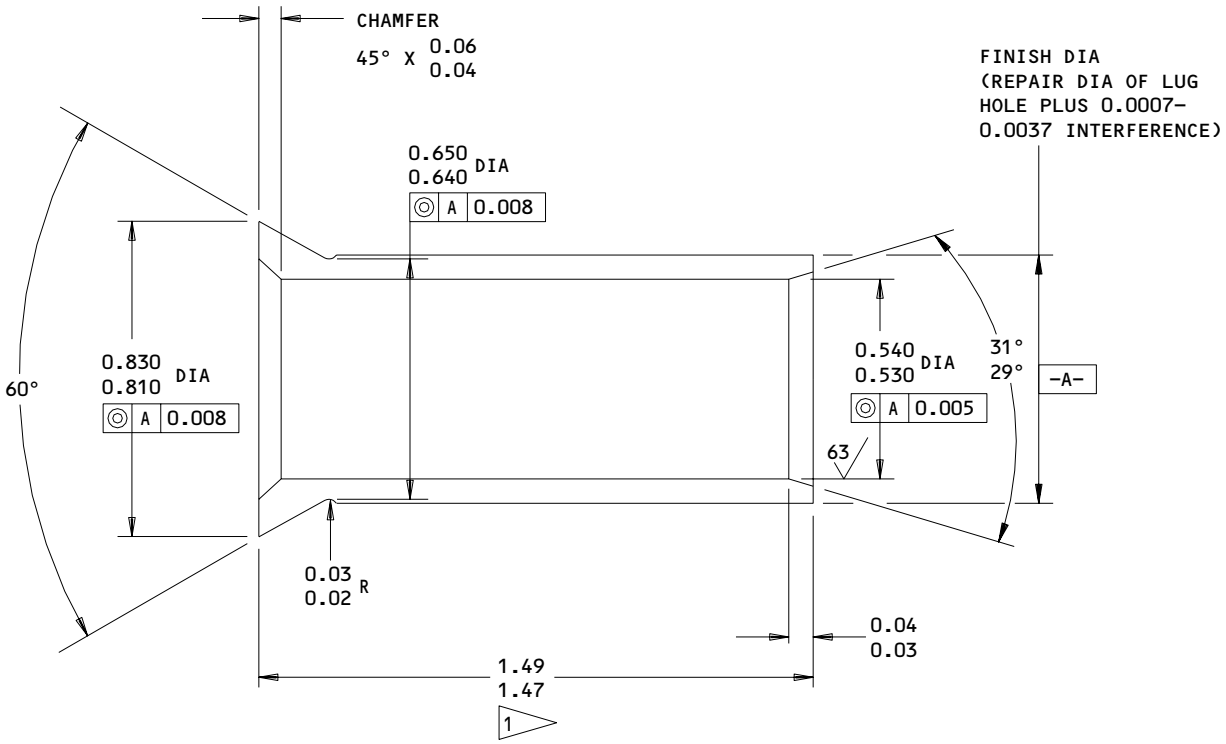
ALL DIMENSIONS APPLY BEFORE PLATING

ALL DIMENSIONS ARE IN INCHES

HOLE LOCATION (4) FIG. 601 – REPLACES BUSHING (445) 161T1210–39

Oversize Bushing Details
Figure 605

T21831



125 ALL MACHINED SURFACES UNLESS SHOWN DIFFERENTLY

BREAK SHARP EDGES 0.01–0.02 R

CADMIUM PLATE (F-15.06) 0.0003–0.0005 THICK

MATERIAL: AL-NI-BRZ, AMS 4640

ALL DIMENSIONS ARE IN INCHES

ALL DIMENSIONS APPLY BEFORE PLATING

1 MINUS AMOUNT REMOVED FROM LUG FACE

HOLE LOCATION (9) FIG. 601 - REPLACES BUSHING (465) 162T3032-1

Oversize Bushing Details
Figure 606

794243

ARM ASSEMBLY, STEERING MECHANISM - REPAIR 5-1

162T3027-1/162T3005-1

NOTE: Refer to REPAIR-GENERAL for a list of applicable standard practices. Refer to IPL Fig. 1 for item numbers.

1. Bushing Replacement (Fig. 601, 602)

   A. Remove the bushings.

   B. If you find corrosion or damage on lug faces or hole surfaces, refer to REPAIR 5-2 for repair instructions.

   C. Install the replacement bushings by the shrink-fit method per SOPM 20-50-03.

   D. Swage the bushings as shown.

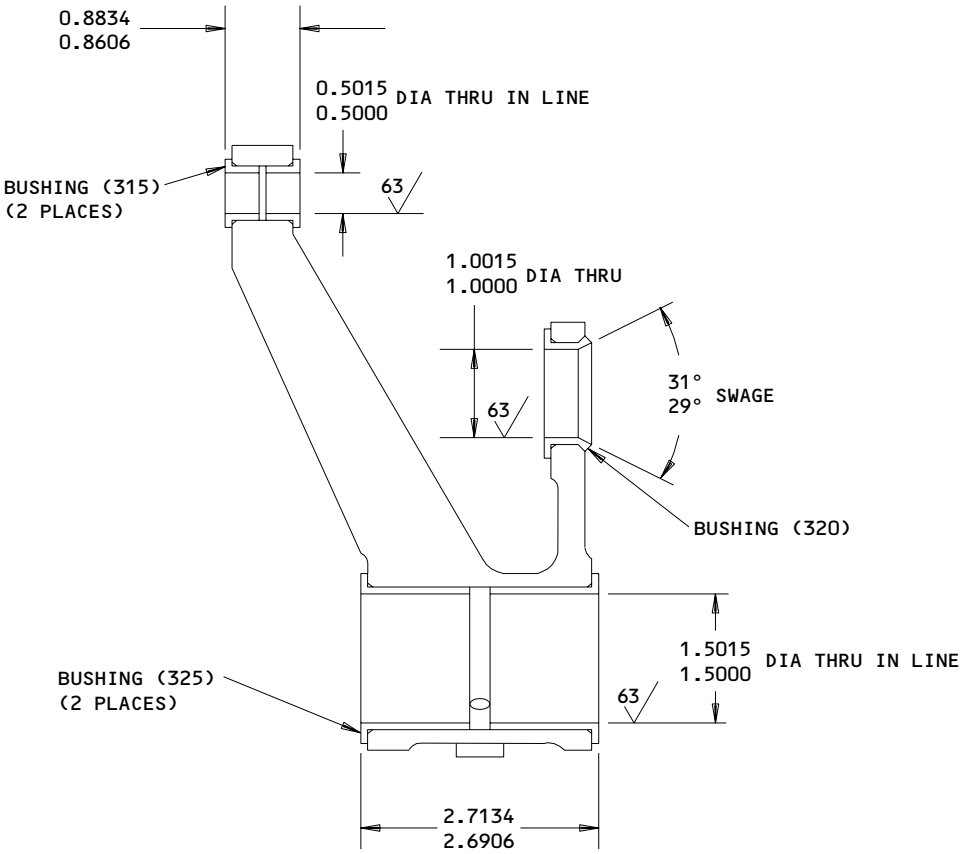
   E. Make a check of the dimensions and machine them as necessary.

      NOTE: Machining of the bushings after installation is not usually necessary, because bushings and lug faces are premachined to give the dimensions shown.

   F. Seal bushings per REPAIR 16-1.

2. Lube Fitting Replacement

   A. Replace lube fitting (310) per CMM 32-00-03.



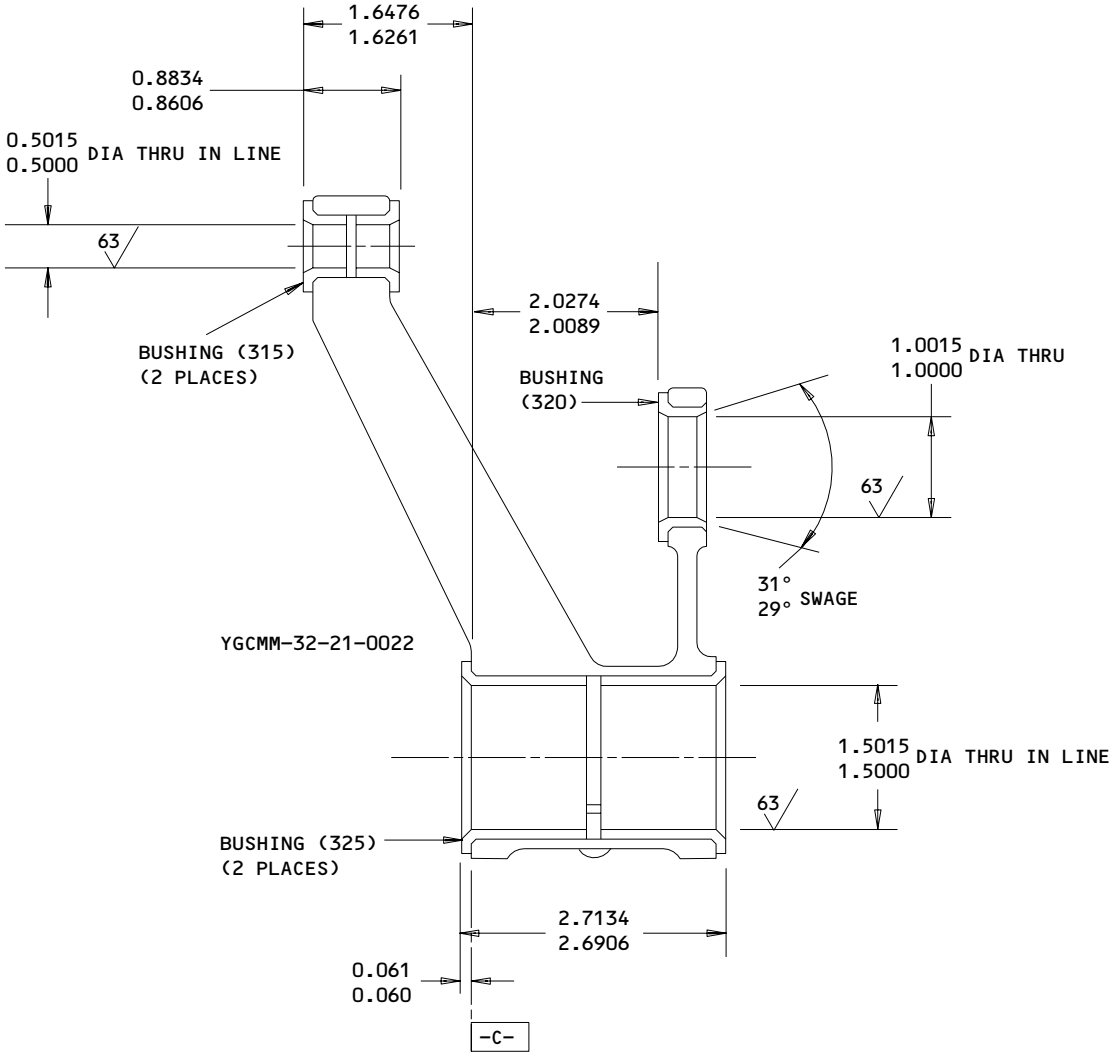
REFINISH

REF REPAIR 5-2
FOR REFINISH INSTRUCTIONS

ALL DIMENSIONS ARE IN INCHES

162T3027-1
Bushing Replacement
Figure 601

14466



REFINISH

REF REPAIR 5-2 FOR REFINISH INSTRUCTIONS

ALL DIMENSIONS ARE IN INCHES

162T3005-1
Bushing Replacement
Figure 602

T21832

ARM, STEERING MECHANISM - REPAIR 5-2

162T3027-2
162T3005-2

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

1. Lug Faces and Holes (Fig. 601, 602)

A. Method 1 -- Removal of Corrosion in Center of Lug ID

NOTE: This procedure enables corrosion to be removed without machining the entire bore oversize, if corrosion is localized at the center area which is exposed between two bushings.

(1) Determine repair diameter and width of groove required to remove corrosion (Fig. 602).

(2) Machine center area as required.

(3) Chemical treat and apply primer, BMS 10-11, type 1.

(4) Install bushings per REPAIR 5-1.

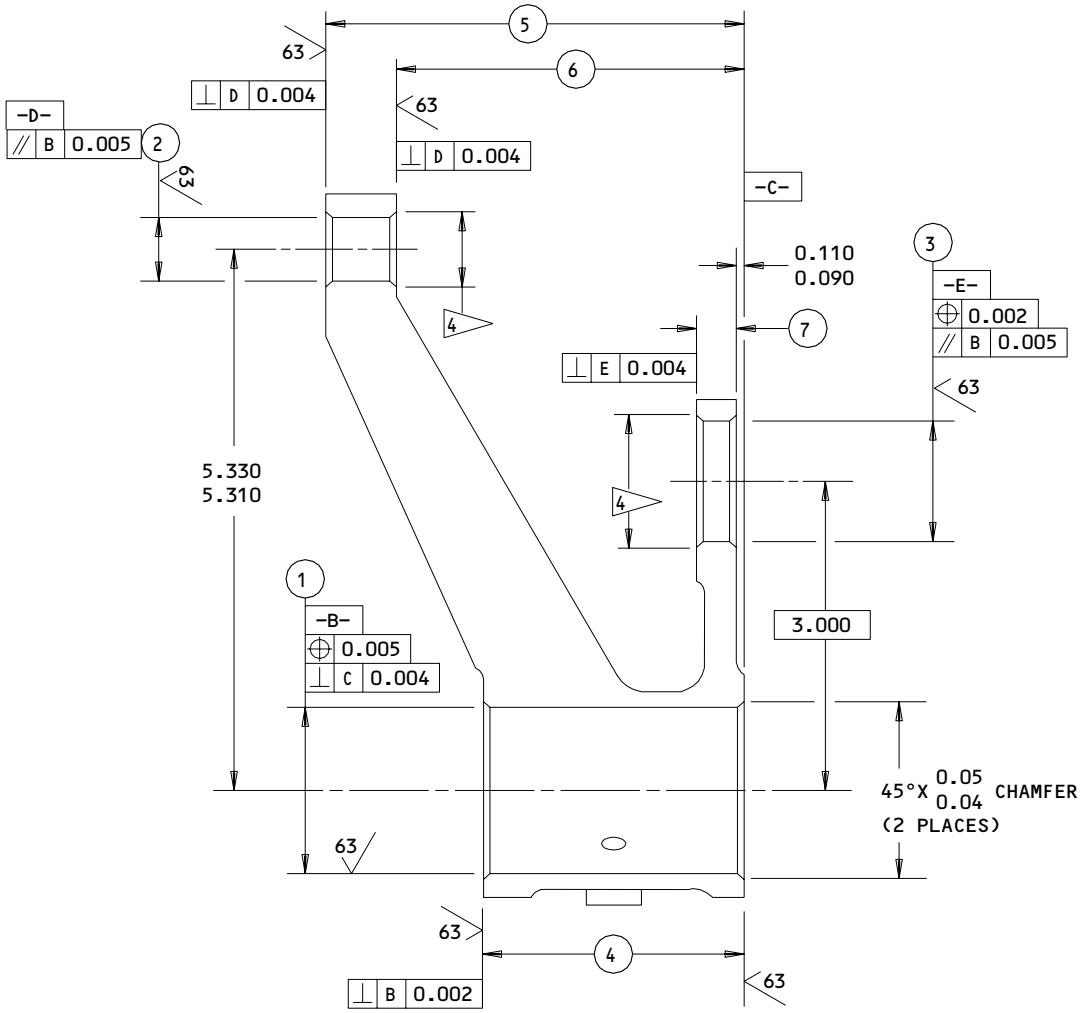
B. Method 2 -- Installation of Oversize Bushings

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

(2) Shot-peen, chemical treat and apply primer, BMS 10-11, type 1.

(3) Make bushings (Fig. 603 and on), as required, to adjust for the amount of material removed in step (1).

(4) Install bushings per REPAIR 5-1.



	LOCATION						
	1	2	3	4 ▷2	5 ▷2	6 ▷2	7 ▷2
DESIGN DIM	1.6615 1.6600	0.6265 0.6250	1.1265 1.1250	2.590 2.570	4.165 4.145	3.415 3.395	0.410 0.390
REPAIR LIMIT ▷1	1.7215	0.6865	1.1865	2.540	4.119	3.445	0.375 ▷3

ALL DIMENSIONS ARE IN INCHES

162T3027-2

Lug Face and Hole Repair
Figure 601 (Sheet 1)

14476

REFINISH

CHROMIC ACID ANODIZE(F-17.04) AND APPLY ONE COAT BMS 10-11, TYPE 1, PRIMER (F-20.02) ALL OVER. AFTER BUSHING AND LUBE FITTING INSTALLATION, APPLY BMS 10-60 GRAY GLOSS ENAMEL (SRF-14.9813) ALL OVER, EXCEPT ON BUSHINGS AND LUBE FITTING.

REPAIR

REF 1

125 ALL MACHINED SURFACES EXCEPT AS NOTED.

BREAK SHARP EDGES 0.03-0.06R EXCEPT AS NOTED

SHOT PEEN: 0.023-0.055 SHOTSIZE
0.006A2 INTENSITY

MATERIAL: AL ALLOY

ALL DIMENSIONS ARE IN INCHES

1 REPAIR LIMIT FOR INSTALLATION OF OVERSIZE BUSHINGS

2 LUG FACE MACHINING REQUIREMENTS:

1. MATERIAL REMOVED FROM ANY FACE MUST NOT EXCEED HALF THE DIFFERENCE BETWEEN THE DESIGN DIM AND REPAIR LIMIT.

2. FLAT SURFACE MUST BE MINIMUM OF 0.02 LARGER THAN FLANGE DIA OF BUSHING TO BE INSTALLED.

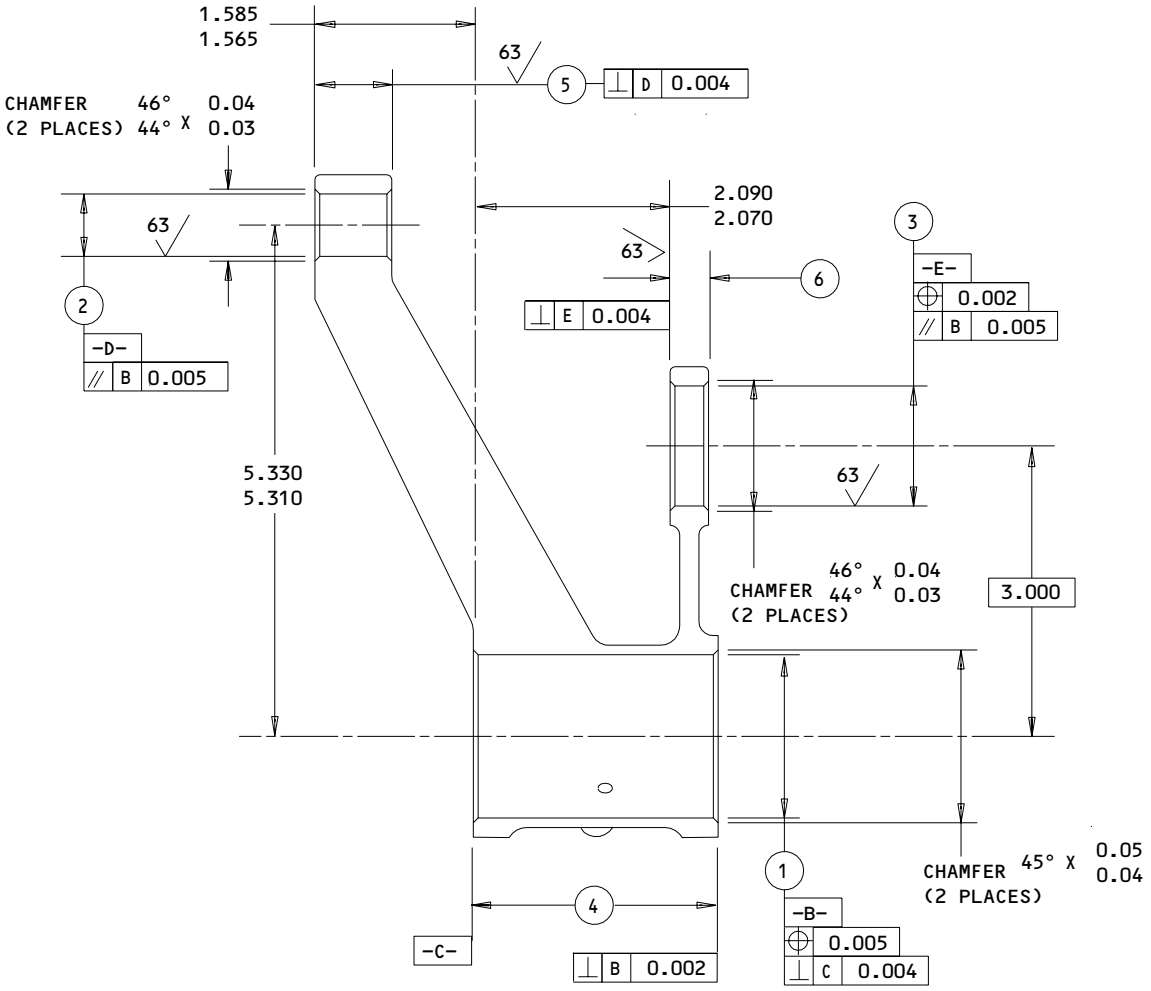
3. BLEND MISMATCH STEPS TO 0.18-0.26R, OR IF WITHIN 0.10 OF LUG FILLET RADIUS, USE SAME RADIUS AS LUG FILLET. BREAK SHARP EDGES 0.03-0.06R.

3 LUGS WITH ONLY ONE BUSHING MAY UTILIZE ENTIRE REPAIR ON EITHER FACE.

4 CHAMFER $\begin{matrix}46°\\44°\end{matrix}$ X $\begin{matrix}0.04\\0.03\end{matrix}$

162T3027-2

Lug Face and Hole Repair
Figure 601 (Sheet 2)



	LOCATION					
	1	2	3	4 (1)	5 (1)	6 (1)
DESIGN DIM	1.6615 1.6600	0.6265 0.6250	1.1265 1.1250	2.590 2.570	0.760 0.740	0.410 0.390
REPAIR LIMIT (2)	1.7215 MAX	0.6865 MAX	1.1865 MAX	2.540 MIN	0.710 MIN	0.360 MIN (3)

162T3005-2
Lug Face and Hole Repair
Figure 602 (Sheet 1)

T21833

REFINISH

CHROMIC-ACID ANODIZE (F-17.04) AND APPLY ONE COAT BMS 10-11, TYPE 1 PRIMER (F-20.02) ALL OVER. AFTERBUSHING AND LUBE FITTING INSTALLATION, APPLY BMS 10-60 GRAY GLOSS ENAMEL (SRF-14.9813) ALL OVER, EXCEPT ON BUSHINGS AND LUBE FITTING.

REPAIR

REF 1

125 ALL MACHINED SURFACES, EXCEPT AS NOTED.

BREAK SHARP EDGES EQUIV. TO 0.03-0.06R EXCEPT AS NOTED.

SHOT PEEN: 0.023-0.055 SHOT SIZE
0.006A2 INTENSITY

MATERIAL: AL ALLOY

ALL DIMENSIONS ARE IN INCHES

1 LUG FACE MACHINING REQUIREMENTS:

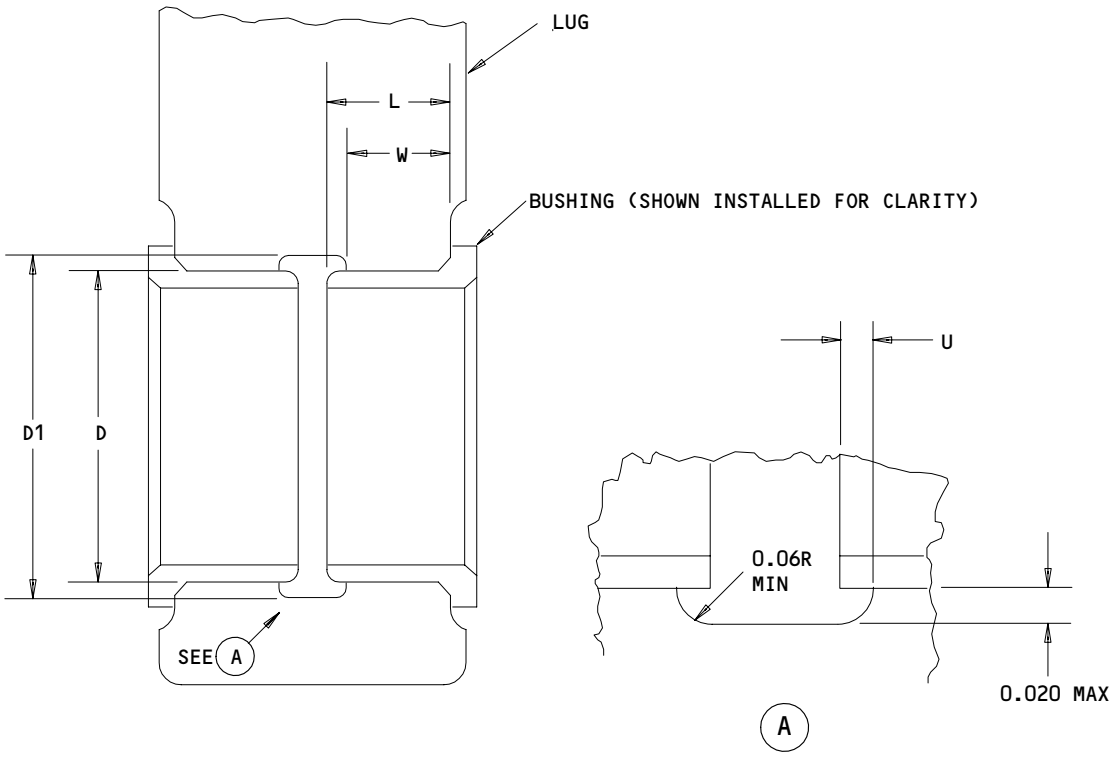
1. MATERIAL REMOVED FROM ANY FACE MUST NOT EXCEED HALF THE DIFFERENCE BETWEEN THE DESIGN DIM AND REPAIR LIMIT.
2. FLAT SURFACE MUST BE MINIMUM OF 0.02 LARGER THAN FLANGE DIA OF BUSHING TO BE INSTALLED
3. BLEND MISMATCH STEPS TO 0.18-0.26R, OR IF WITHIN 0.10 OF LUG FILLET RADIUS, USE SAME RADIUS AS LUG FILLET. BREAK SHARP EDGES 0.03-0.06R

2 REPAIR LIMIT FOR INSTALLATION OF OVERSIZE BUSHINGS

3 LUGS WITH ONLY ONE BUSHING MAY UTILIZE ENTIRE REPAIR ON EITHER FACE.

162T3005-2
Lug Face and Hole Repair
Figure 602 (Sheet 2)

T21834



D = MAX REPAIR DIA OF HOLE (SEE FIG. 601)

D1 = MAX REPAIR DIA OF GROOVE = (D +0.040)

L = LENGTH OF BUSHING (SEE FIG. 604)

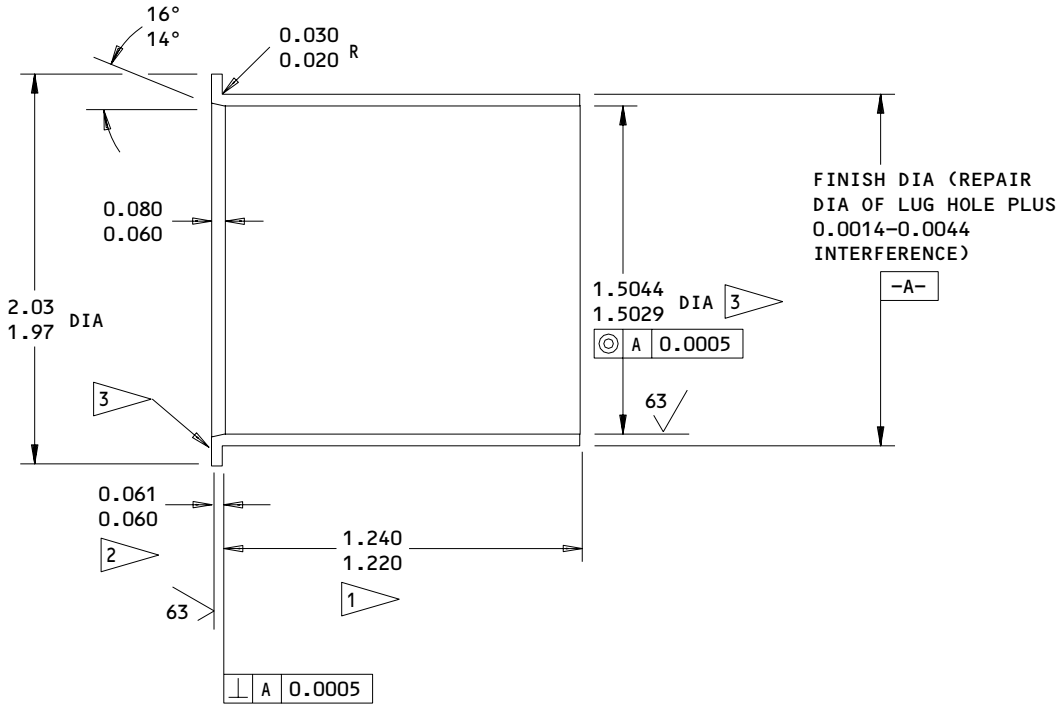
U = UNDERCUT = (L X 0.1) (0.06 MAX)

W = LUG DIM TO EDGE OF GROOVE = (L–U)

ALL DIMENSIONS ARE IN INCHES

Lug Hole Diameter – Corrosion Removal From Area Between Bushings
Figure 603

T21835



125 ALL MACHINED SURFACES UNLESS SHOWN DIFFERENTLY

BREAK SHARP EDGES 0.01–0.02 R

CADMIUM PLATE 0.0003–0.0005 THICK, EXCEPT AS NOTED

MATERIAL: AL–NI–BRZ PER AMS 4640 OR AMS 4880

ALL DIMENSIONS ARE IN INCHES

ALL DIMENSIONS APPLY BEFORE PLATING

1 MINUS AMOUNT REMOVED FROM LUG FACE

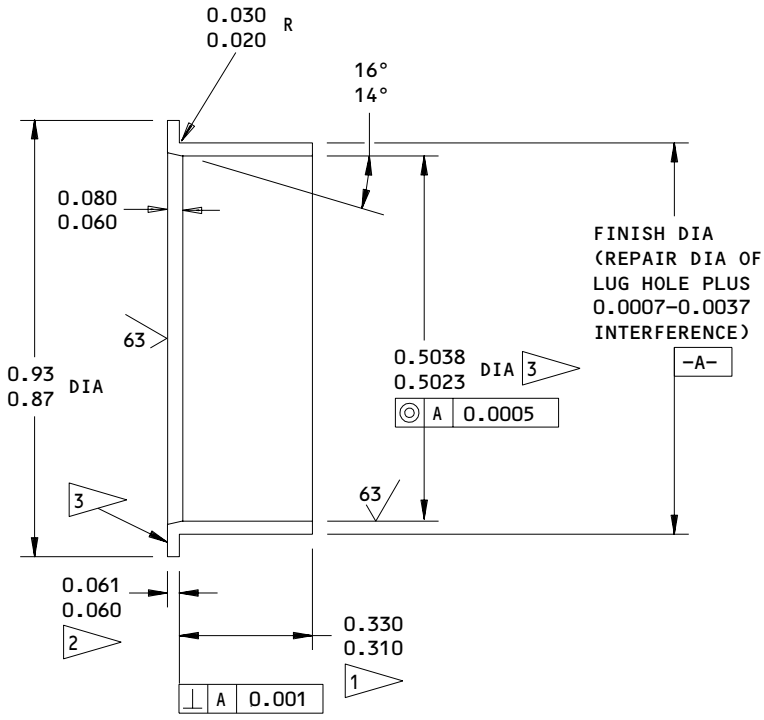
2 PLUS AMOUNT REMOVED FROM LUG FACE

3 NO PLATING ON ID AND BUSHING FACE

HOLE LOCATION (1) FIG. 601 REPLACES BUSHING (325) 161T1210–41

Oversize Bushing Details
Figure 604

T21836



125 ALL MACHINED SURFACES UNLESS SHOWN DIFFERENTLY

BREAK SHARP EDGES 0.01-0.02 R

CADMIUM PLATE 0.0003-0.0005 THICK, EXCEPT AS NOTED

MATERIAL: AL-NI-BRZ PER AMS 4640 OR AMS 4880

ALL DIMENSIONS ARE IN INCHES

ALL DIMENSIONS APPLY BEFORE PLATING

1 MINUS AMOUNT REMOVED BY LUG FACE

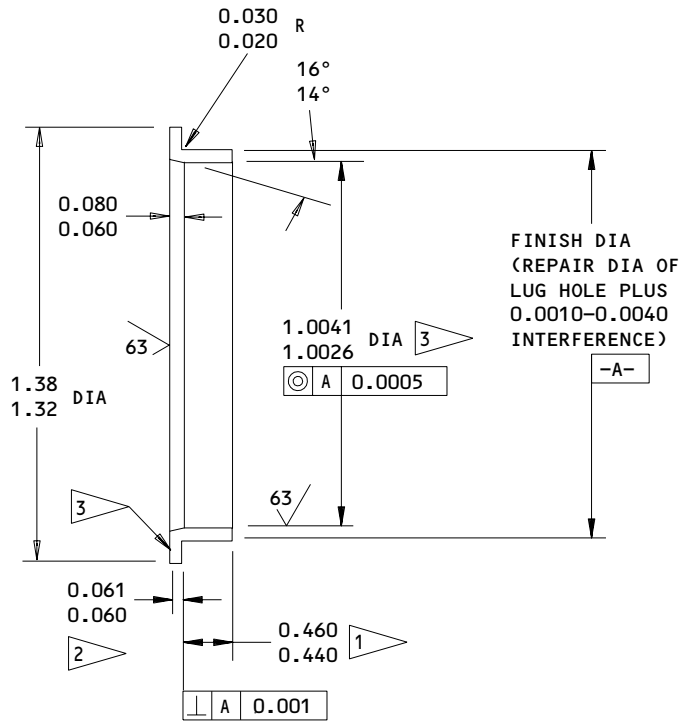
2 PLUS AMOUNT REMOVED BY LUG FACE

3 NO PLATING ON ID AND BUSHING FACE

HOLE LOCATION (2) FIG. 601 - REPLACES BUSHING (315) 161T1210-20

Oversize Bushing Details
Figure 605

T21837



125 ALL MACHINED SURFACES UNLESS SHOWN DIFFERENTLY

BREAK SHARP EDGES 0.01–0.02 R

CADMIUM PLATE 0.0003–0.0005 THICK EXCEPT AS NOTED

MATERIAL: AL–NI–BRZ PER AMS 4640 OR AMS 4880

ALL DIMENSIONS APPLY BEFORE PLATING

ALL DIMENSIONS ARE IN INCHES

1 MINUS AMOUNT REMOVED FROM LUG FACE

2 PLUS AMOUNT REMOVED FROM LUG FACE

3 NO PLATING ON ID AND BUSHING FACE

HOLE LOCATION (3) FIG. 601 – REPLACES BUSHING (320) 161T1210–19

Oversize Bushing Details
Figure 606

T21838

UNIVERSAL ASSEMBLY, DRAG STRUT - REPAIR 6-1

162T2005-1

NOTE: Refer to REPAIR-GENERAL for a list of applicable standard practices.
Refer to IPL Fig. 1 for item numbers.

1. Bushing Replacement (Fig. 601)

A. Remove the bushings.

B. If you find corrosion or damage on lug faces or hole surfaces, refer to REPAIR 6-2 for repair instructions.

C. Install the replacement bushings by the shrink-fit method per SOPM 20-50-03.

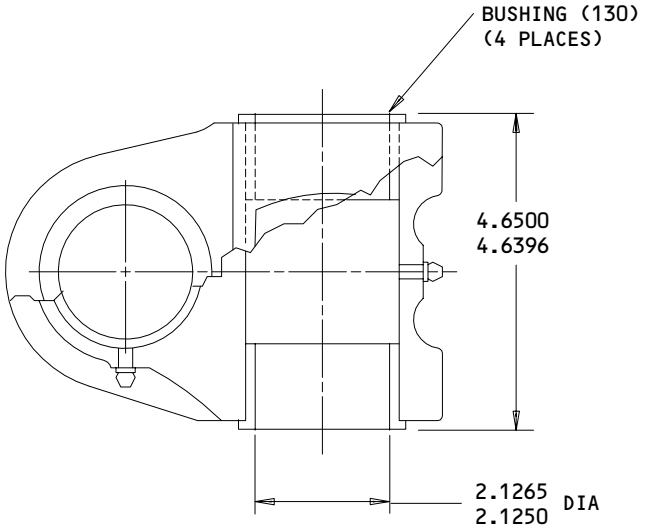
D. Make a check of the dimensions and machine them as necessary.

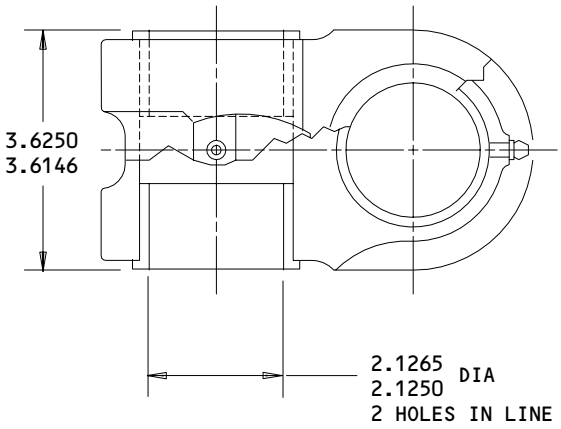
NOTE: Machining of bushings after installation is not usually necessary, because bushings and lug faces are premachined to give the dimensions shown.

E. Seal bushings per REPAIR 16-1.

2. Lube Fitting Replacement

A. Replace lube fittings (125) per CMM 32-00-03.





REFINISH

REF. REPAIR 6-2 FOR
REFINISH INSTRUCTIONS

ALL DIMENSIONS ARE IN INCHES

DIMENSIONS APPLY AFTER PLATING

162T2005-1

Bushing Replacement
Figure 601

T21839

ASSY - UNIVERSAL, DRAG STRUT - REPAIR 6-2

162T2005-2

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. Lug Faces and Holes (Fig. 601)

A. Method 1 -- Removal of Corrosion in Center of Lug ID

NOTE: This procedure enables corrosion to be removed without machining the entire bore oversize, if corrosion is localized at the center area which is exposed between two bushings.

(1) Determine repair diameter and width of groove required to remove corrosion (Fig. 602).

(2) Machine center area as required.

(3) Cadmium-titanium plate and apply primer, BMS 10-11, type 1.

(4) Install bushings per REPAIR 6-1.

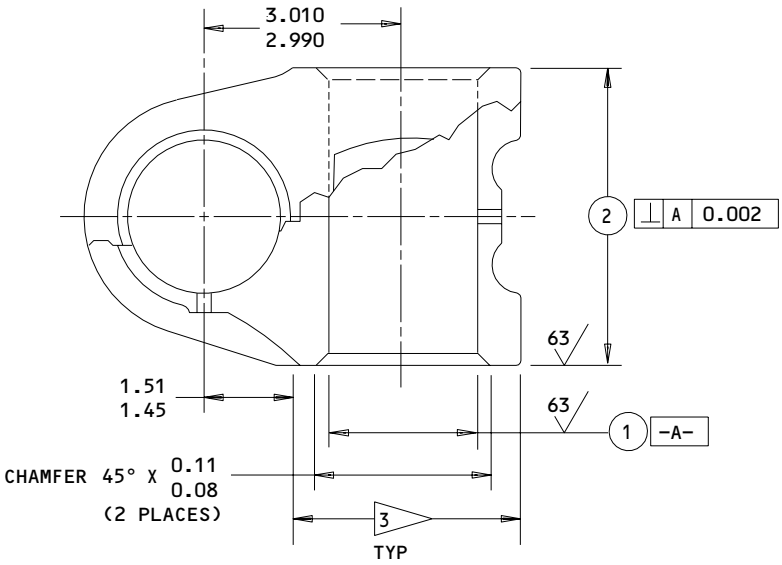
B. Method 2 -- Installation of Oversize Bushings

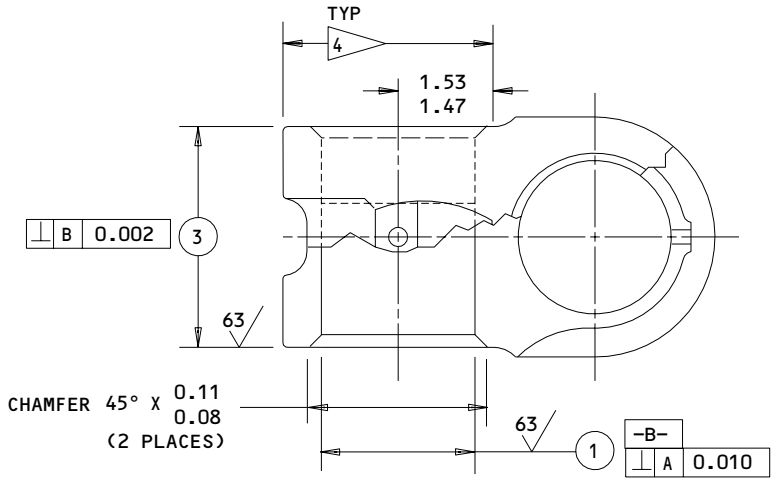
(1) Machine as required, within repair limits shown, to remove defects.

(2) Shot-peen, cadmium-titanium plate and apply primer, BMS 10-11, type 1.

(3) Manufacture bushings (Fig. 603), as required, to compensate for amount of material removed in step (1).

(4) Install bushings per REPAIR 6-1.





	1	2 ▽2	3 ▽2
DESIGN DIM	2.2865 2.2850	4.5234 4.5184	3.4984 3.4934
REPAIR LIMIT ▽1	2.3465 MAX	4.4184 MIN	3.4634 MIN

ALL DIMENSIONS ARE IN INCHES

162T2005-2

Lug Face and Hole Repair
Figure 601 (Sheet 1)

REFINISH

CADMIUM-TITANIUM PLATE (0.0005-0.007 THICK, F-15.32) BUSHING HOLE ID's AND LUG FACES. CADMIUM-TITANIUM PLATE (0.0005 MIN THICK, F-15.01) ALL OTHER SURFACES. APPLY ONE COAT BMS 10-11, TYPE 1, PRIMER (F-20.02) ALL OVER EXCEPT IN LUBE HOLES. AFTER BUSHING AND LUBE FITTING INSTALLATION, APPLY BMS 10-60 GRAY GLOSS ENAMEL (SRF-14.9813) ALL OVER EXCEPT ON BUSHINGS AND LUBE FITTINGS.

REPAIR

REF 1 2

125 ALL MACHINED SURFACES EXCEPT AS NOTED

BREAK SHARP EDGES EQUIVALENT TO 0.06 R EXCEPT AS NOTED

SHOT PEEN: 0.016-0.033 SHOT SIZE
0.014-0.016 A2 INTENSITY

MATERIAL: 4340M STEEL
(275-300 KSI)

ALL DIMENSIONS ARE IN INCHES

1 REPAIR LIMIT FOR INSTALLATION OF OVER-SIZE BUSHINGS

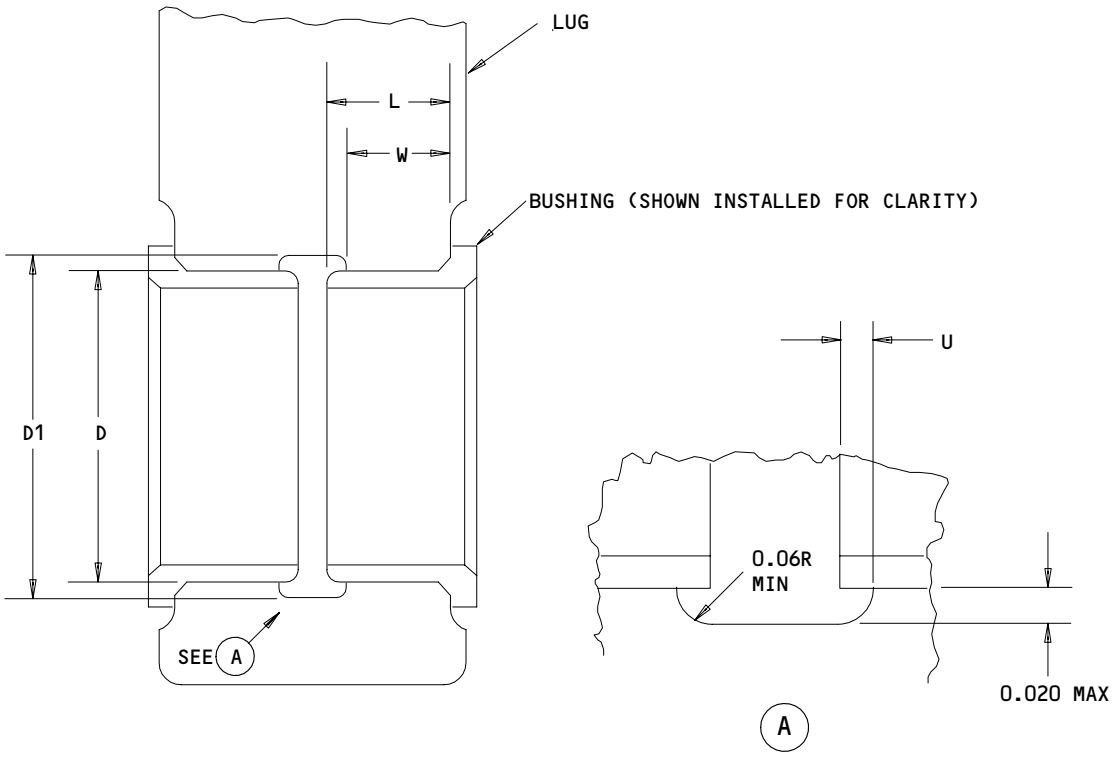
2 LUG FACE MACHINING REQUIREMENTS:

1. MATERIAL REMOVED FROM ANY FACE MUST NOT EXCEED HALF THE DIFFERENCE BETWEEN THE DESIGN DIM AND REPAIR LIMIT.
2. FLAT SURFACE MUST BE MINIMUM OF 0.02 LARGER THAN FLANGE DIA OF BUSHING TO BE INSTALLED.
3. BLEND MISMATCH STEPS TO 0.18-0.26 R, OR IF WITHIN 0.10 OF LUG FILLET RADIUS USE SAME RADIUS AS LUG FILLET. BREAK SHARP EDGES 0.03-0.07 R.

162T2005-2

Lug Face and Hole Repair
Figure 601 (Sheet 2)

T21841



D = MAX REPAIR DIA OF HOLE (SEE FIG. 601)

D1 = MAX REPAIR DIA OF GROOVE = (D +0.040)

L = LENGTH OF BUSHING (SEE FIG. 603)

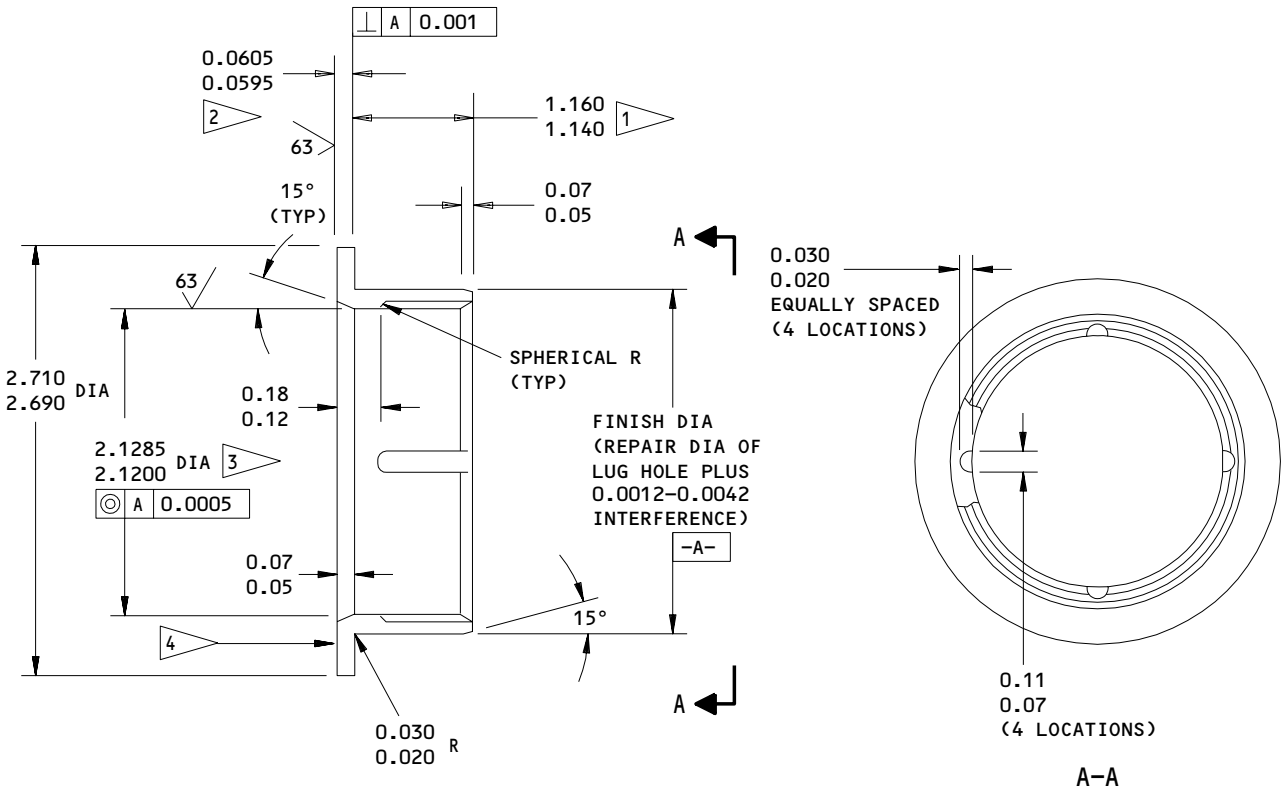
U = UNDERCUT = (L X 0.1) (0.06 MAX)

W = LUG DIM TO EDGE OF GROOVE = (L–U)

ALL DIMENSIONS ARE IN INCHES

Lug Hole Diameter – Corrosion Removal From Area Between Bushings
Figure 602

T21842



1 MINUS AMOUNT REMOVED FROM LUG FACE

2 PLUS AMOUNT REMOVED FROM LUG FACE

3 NO PLATING ON ID

4 FLASH CHROME 0.0003–0.0005 THICK ON BUSHING FACE. OR THIN DENSE CHROME PLATE, CLASS 4, AS SHOWN IN SOPM 20–42–03, WHICH REPLACES BMS 10–70.

125 ALL MACHINED SURFACES UNLESS SHOWN DIFFERENTLY

BREAK SHARP EDGES 0.01–0.02 R

CADMIUM PLATE (F–15.06) 0.0003–0.0005 THICK, BUT NOT AREAS SHOWN BY 3 4

MATERIAL: AL–NI–BRZ, AMS 4640 OR AMS 4880

ALL DIMENSIONS ARE IN INCHES

HOLE LOCATION (1) FIG. 601 – REPLACES BUSHING (130) 162T1122–2

Oversize Bushing Details
Figure 603

T21843

PIN, UPPER DRAG STRUT - REPAIR 7-1

162T2007-1, -2

NOTE: Refer to REPAIR-GEN for a list of applicable standard practices. For repair of surfaces which is only replacement of the original finish, refer to Refinish instructions, Fig. 601.

1. Shank Repair - Diameter A (Fig. 601)

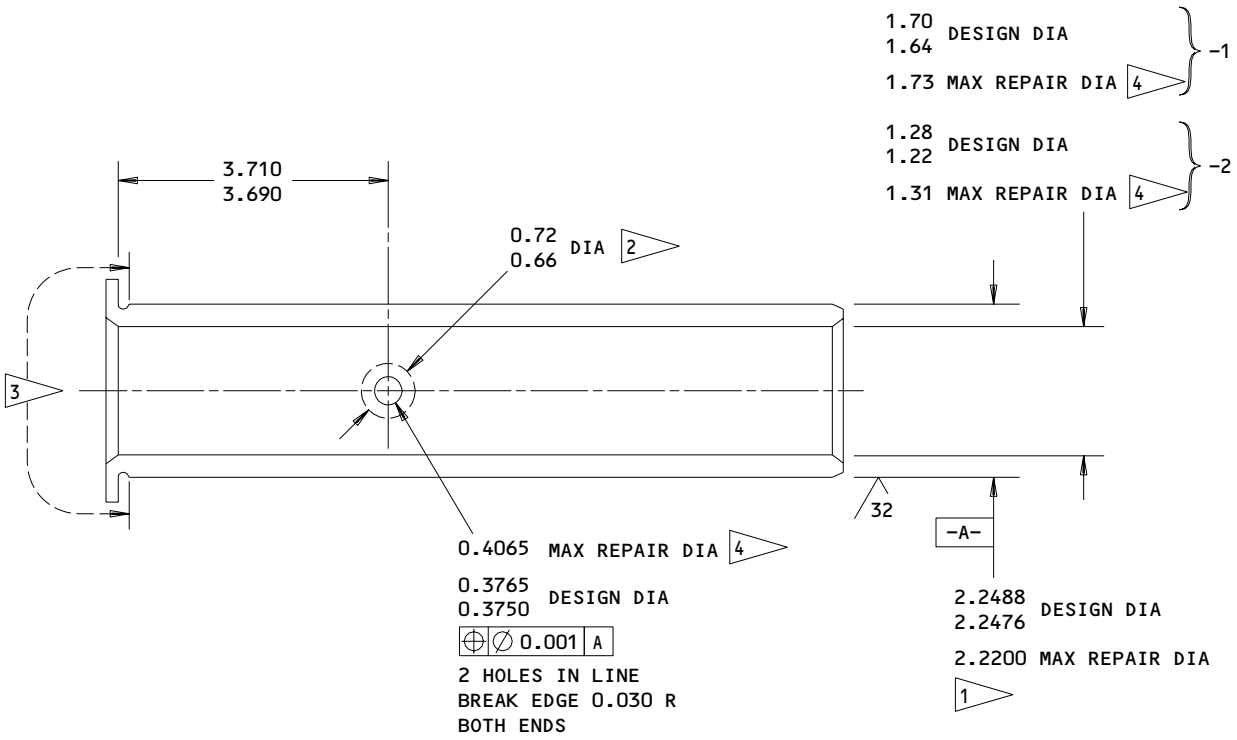
   A. Machine as required, within repair limits, to remove defects.

   B. Shot peen, chrome plate and grind to design dimensions and finish.

2. Pin Retention Holes (Fig. 601)

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

   B. Cadmium-titanium plate. Apply primer.



REFINISH

CHROME PLATE (F-15.34, 0.003 MIN THICKNESS) OD EXCEPT AS NOTED AND APPLY WIPE-ON PRIMER (F-19.45). CADMIUM-TITANIUM PLATE AND APPLY CHROMATE POST PLATE TREATMENT (F-15.01) ALL OTHER SURFACES. APPLY PRIMER AND ENAMEL TO AREA NOTED BY 3. APPLY BMS 10-11, TYPE 1, PRIMER (F-20.03) AND MIL-C-11796 CLASS 1 CORROSION PREVENTIVE COMPOUND (F-19.03) TO ID.

1 LIMIT FOR CHROME PLATE BUILDUP AND GRIND TO DIMENSIONS SHOWN. OBSERVE 0.08 PLATING RUNOUT AT EDGES, HOLES, AND RELIEF. DO NOT PLATE RELIEF RADII

2 NO CHROME PLATE THIS AREA

3 APPLY BMS 10-11, TYPE 1, PRIMER (F-20.02) AND BMS 10-60 COLOR 707 GRAY GLOSS ENAMEL (SRF-14.9813)

4 RESTORATION TO DESIGN DIMENSIONS NOT REQUIRED

REPAIR

REF 1 4

125 ALL MACHINED SURFACES UNLESS SHOWN DIFFERENTLY

BREAK SHARP EDGES 0.02-0.04 R

SHOT PEEN: 0.016-0.033 SHOT SIZE
0.014-0.016 A2 INTENSITY

MATERIAL: 4340M STEEL (275-300 KSI)

ALL DIMENSIONS ARE IN INCHES

162T2007-1,-2
Pin Repair and Refinish
Figure 601

T21844

PIN, APEX - REPAIR 8-1

162T2008-1

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

1. Shank Repair - OD, ID (Fig. 601)

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

   B. Shot-peen, chrome plate and grind to design dimensions and finish. Chrome plate thickness must not be more than 0.010-inch after grinding.

2. Head Face Repair (Fig. 601)

   A. Machine as required, within repair limits, to remove defects. Blend into relief groove if necessary.

   B. Shot-peen, chrome plate, and grind to restore grip length. Do not chrome plate relief groove.

      NOTE: If head face is not plated to original dimension, grip length may be adjusted by machining shoulder at thread end per par. 3.

3. Relief Grooves (Fig. 601)

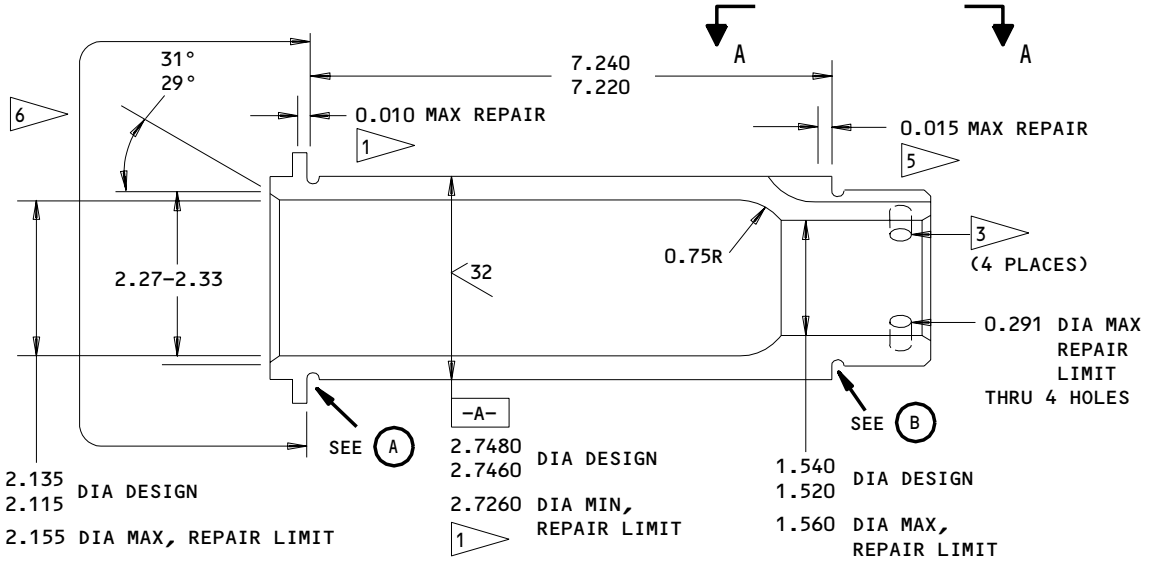
   A. Machine as required, within repair limits, to remove defects. If necessary to adjust grip length, machine shoulder at thread relief.

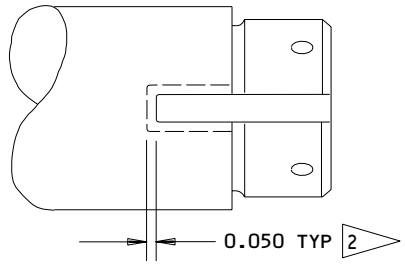
   B. Shot-peen and apply cadmium-titanium plate followed by primer.

4. Pin Retention Holes (Fig. 601)

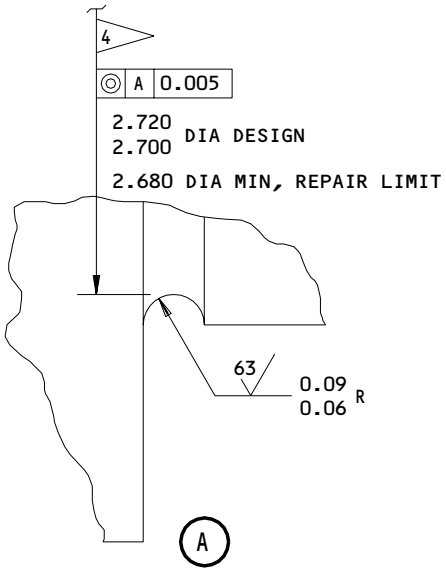
   A. Machine as required, within repair limits, to remove defects.

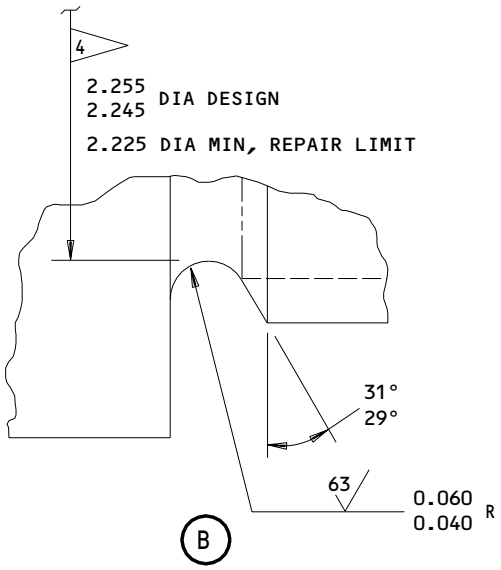
   B. Cadmium-titanium plate.





A-A





ALL DIMENSIONS ARE IN INCHES

162T2008-1
Pin Repair
Figure 601 (Sheet 1)

666231

REFINISH

CHROME PLATE (F-15.34, 0.003 MIN THICKNESS) ON OD ONLY. CADMIUM-TITANIUM PLATE, AND APPLY CHROMATE POST-PLATE TREATMENT (F-15.32) ALL OTHER SURFACES. APPLY PRIMER AND ENAMEL PER 32-00-02.

REFINISH

REF 1 3 5

125 ALL MACHINED SURFACES EXCEPT AS NOTED

BREAK SHARP EDGES 0.03-0.06R

SHOT PEEN: 0.016-0.033 SHOT SIZE
0.014-0.016A2 INTENSITY

MATERIAL: 4340M STEEL (275-300 KSI)

ALL DIMENSIONS ARE IN INCHES

1. BUILDUP WITH CHROME PLATE AND GRIND TO DIMENSIONS SHOWN.OBSERVE 0.08 PLATING RUNOUT AT EDGES, HOLES, AND RELIEFS UNLESS OTHERWISE NOTED. DO NOT PLATE RELIEF RADII
2. NO CHROME PLATE IN THIS AREA
3. BREAK ALL SHARP EDGES 0.01-0.02R AT ENDS OF HOLES
4. RESTORATION TO DESIGN DIM NOT REQUIRED
5. DO NOT SHOT PEEN THREADS
6. F-20.02 PLUS SRF-14.9813 ON AREA NOTED

162T2008-1
Pin Repair
Figure 601 (Sheet 2)

T21846

PIN, LOWER DRAG STRUT AND UNIVERSAL - REPAIR 9-1

162T2009-1, -2, -3, -4

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

1. Shank Repair - OD (Fig. 601)

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

   B. Shot-peen, chrome plate and grind to design dimensions and finish. Chrome plate thickness must not be more than 0.010 inch after grinding.

2. Head Face Repair (Fig. 601)

   A. Machine as required, within repair limits, to remove defects. Blend into relief groove if necessary.

   B. Shot-peen, chrome plate, and grind to restore grip length. Do not chrome plate relief groove.

      NOTE: If head face is not plated to original dimension, grip length may be adjusted by machining shoulder at thread end per par. 3.

3. Relief Grooves (Fig. 601)

   A. Machine as required, within repair limits, to remove defects. If necessary to adjust grip length, machine shoulder at thread relief.

   B. Shot-peen and apply cadmium-titanium plate followed by primer.

4. Pin Retention Holes (Fig. 601)

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

   B. Cadmium-titanium plate. Apply primer.

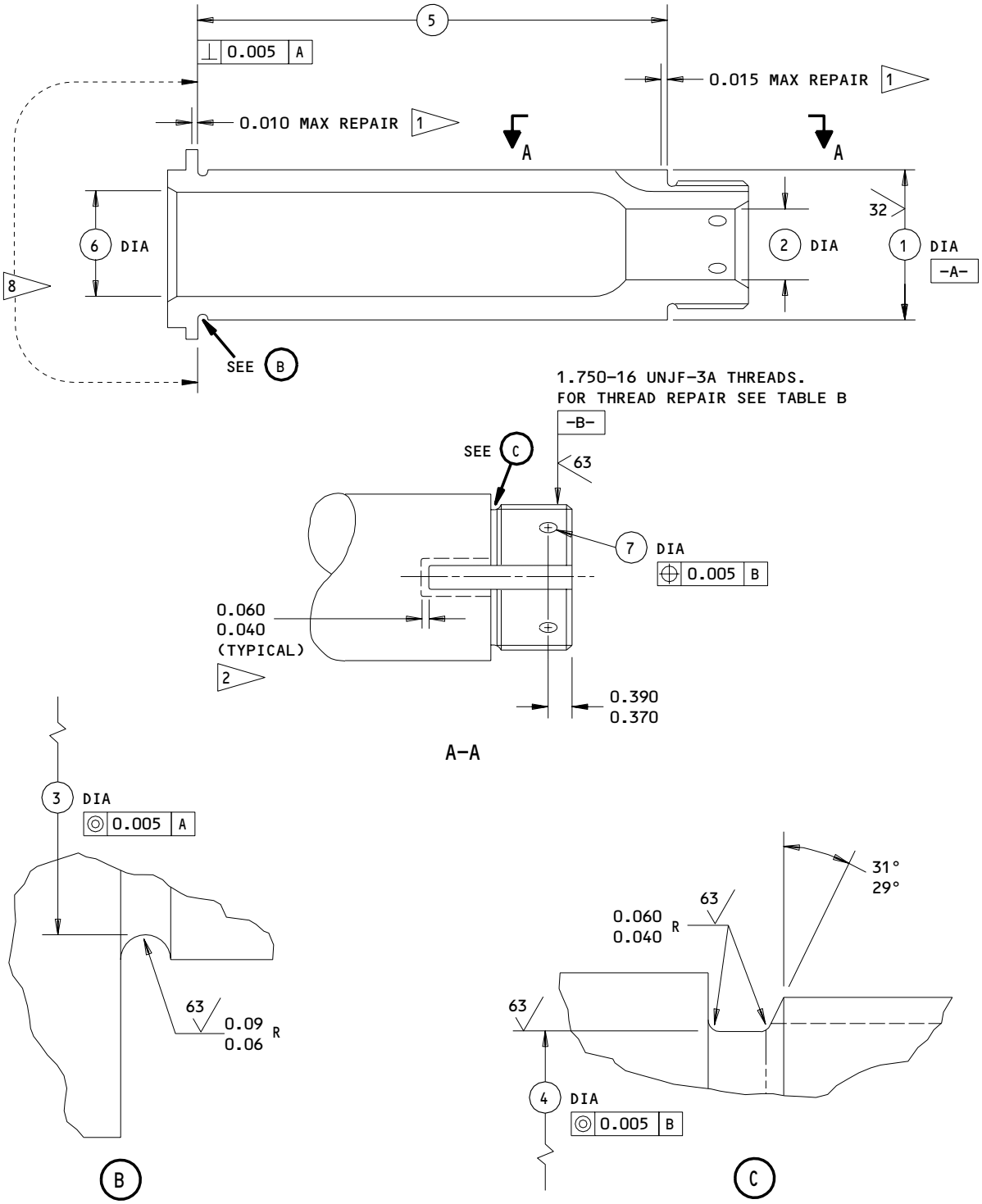
5. Threads (Fig. 601)

A. Cut the threads to a smaller size, as shown.

B. Cadmium-titanium plate the threads. Apply primer per CMM 32-00-02.

C. Make an undersize nut (Fig. 602).

D. Be sure to identify the pin and the nut as matched parts. We recommend that you vibro-engrave MATCHED SET - DO NOT SEPARATE on the pin and the nut, and paint these parts with yellow BMS 10-60 enamel.



162T2009-1,-2,-3,-4
Pin Repair and Refinish
Figure 601 (Sheet 1)

T21847

REFERENCE NUMBER	(1)	(2)	(3)	(4)	(5) ▷4	(5) ▷5	(5) ▷6	(5) ▷7	(6) ▷4
DESIGN DIMENSION	2.124 2.123	0.960 0.940	2.070 2.050	1.630 1.620	6.370 6.350	7.420 7.400	6.382 6.362	7.480 7.460	1.610 1.590
REPAIR LIMIT	2.103 ▷1	0.980 ▷3	2.030 ▷3	1.600 ▷3	--	--	--	--	1.630 ▷3

REFERENCE NUMBER	(6) ▷5	(6) ▷6	(6) ▷7	(7)
DESIGN DIMENSION	1.540 1.520	1.360 1.340	1.360 1.340	0.261 0.250
REPAIR LIMIT	1.560 ▷3	1.380 ▷3	1.380 ▷3	0.293 ▷3

TABLE A

UNJ-3A THREAD SIZE	1.7500-16 (DESIGN)	1.6250-16 (1/8 UNDERSIZE)
MAJOR DIA	1.7500 1.7406	1.6250 1.6156
PITCH DIA	1.7094 1.7054	1.5844 1.5805
MINOR DIA	1.6778 1.6700	1.5528 1.5451
ROOT RADIUS	0.0113 0.0094	0.0113 0.0094
THREAD RELIEF DESIGN DIA	1.630 1.620	1.505 1.495
THREAD RELIEF REPAIR LIMIT	1.600 ▷3	—

TABLE B

REFINISH

CHROME PLATE (F-15.34, THICKNESS 0.003 MINIMUM) DIAMETER -A- AND WIPE IT WITH PRIMER (F-19.45). CADMIUM-TITANIUM PLATE (F-15.32) ALL OTHER SURFACES. APPLY PRIMER AND ENAMEL ON AREA SHOWN BY ▷8. APPLY BMS 10-11, TYPE 1 PRIMER (F-20.03) TO RELIEFS AND INSIDE DIAMETER. APPLY CORROSION PREVENTIVE COMPOUND (F-19.03) ON INSIDE DIAMETER. WIPE THREADS WITH PRIMER (F-19.45)

▷1 LIMIT FOR BUILDUP WITH CHROME PLATE (SOPM 20-42-03) AND GRIND TO DESIGN DIMENSIONS AND FINISH, WITH RUNOUT AT EDGES, HOLES AND RELIEFS. DO NOT PLATE RELIEF RADII

▷2 NO CHROME PLATE IN THIS AREA

▷3 RESTORATION TO DESIGN DIMENSION NOT REQUIRED

▷4 162T2009-1

▷5 162T2009-2

REPAIR

REF ▷1 ▷2 ▷3

125 ALL MACHINED SURFACES UNLESS SHOWN DIFFERENTLY

BREAK SHARP EDGES 0.03-0.06 R

SHOT PEEN: 0.016-0.033 SHOT SIZE
0.014-0.016 A2 INTENSITY

MATERIAL: 4340M STEEL (275-300 KSI)

ALL DIMENSIONS ARE IN INCHES

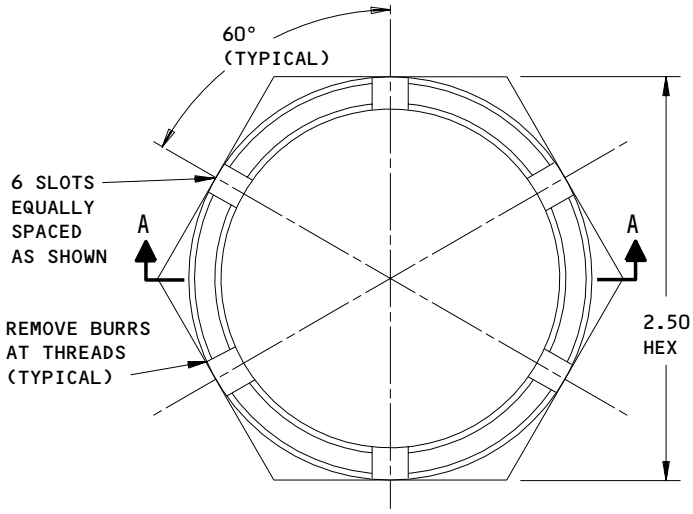
▷6 162T2009-3

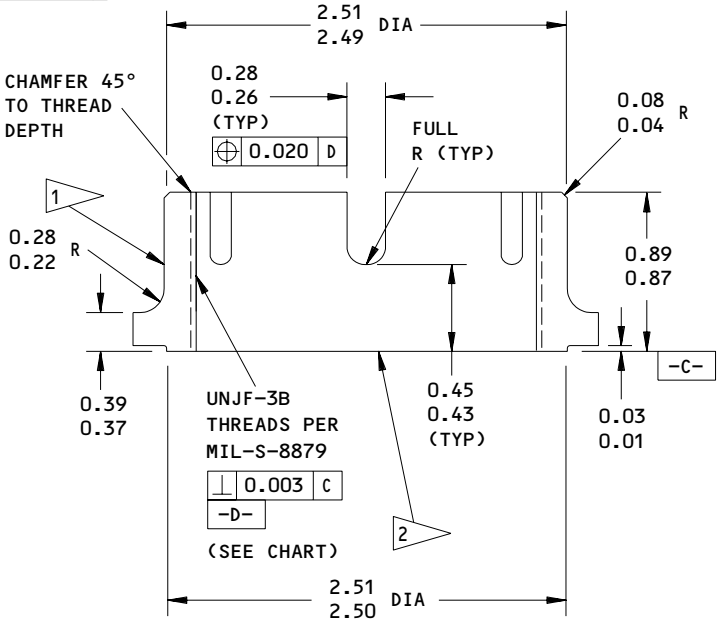
▷7 162T2009-4

▷8 APPLY BMS 10-11, TYPE 1 PRIMER (F-20.02) AND BMS 10-60 GRAY GLOSS ENAMEL (F-14.9813, WHICH REPLACES SRF-14.9813)

162T2009-1,-2,-3,-4
Pin Repair and Refinish
Figure 601 (Sheet 2)

T21848





UNJ-3B THREAD SIZE	1.7500-16 (DESIGN) (REF)	1.6250-16 (1/8 UNDERSIZE)
MAJOR DIA (MIN)	1.7500	1.6250
PITCH DIA	1.7146 1.7094	1.5895 1.5844
MINOR DIA	1.6977 1.6892	1.5727 1.5642
ROOT RADIUS	0.0113 0.0094	0.0113 0.0094

A-A

REFINISH

CADMIUM PLATE AND APPLY BMS 10-11, TYPE 1 PRIMER (F-16.01), BUT NOT PRIMER ON THREADS. WIPE THREADS WITH PRIMER (F-19.45) APPLY BMS 10-60 ENAMEL (F-14.9813, WHICH REPLACES SRF-14.9813) OR BMS 10-11, TYPE 2 ENAMEL (F-21.02), BUT USE YELLOW ENAMEL ON NUTS WITH UNDERSIZE THREADS

1 ON NUTS WITH UNDERSIZE THREADS, VIBRO-ENGRAVE "MATCHED SET - DO NOT SEPARATE" IN THIS LOCATION

2 NO ENAMEL ON THIS SURFACE

REPAIR

125 ALL MACHINED SURFACES UNLESS SHOWN DIFFERENTLY

BREAK SHARP EDGES 0.02-0.03 R EXCEPT AS NOTED

MAGNETIC PARTICLE EXAMINE, CLASS B (SOPM 20-20-01)

MATERIAL: 4340 STEEL OR 15-5PH CRES, 180-200 KSI

ALL DIMENSIONS ARE IN INCHES

REPLACES 161T5001-1
Undersize Nut Details
Figure 602

M03380

SPOOL ASSY, SPRING - REPAIR 10-1

162T3012-2

1. Bearing Replacement (Fig. 601)

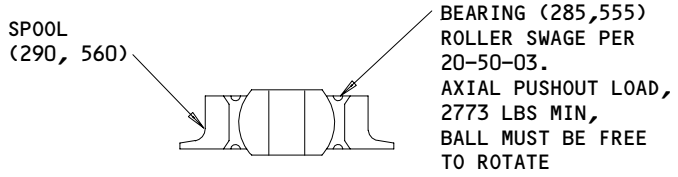
NOTE: Refer to REPAIR-GEN for list of applicable standard practices.

A. Remove bearing.

B. If corrosion or damage exists on lug faces or hole surfaces, refer to REPAIR 10-2 for repair instructions.

C. Install new bearing.

D. Roller swage outer race.



REFINISH

SEE REPAIR 10-2 FOR
REFINISH INSTRUCTIONS

ALL DIMENSIONS ARE IN INCHES

162T3012-2

Bearing Replacement
Figure 601

T21849

SPOOL, SPRING - REPAIR 10-2

162T3012-4

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. Holes (fig. 601)

A. Method 1 -- Chrome Plate Buildup (optional)

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

(2) Shot-peen, chrome plate and grind to design dimensions and finish. Chrome plate not to exceed 0.010 after grinding.

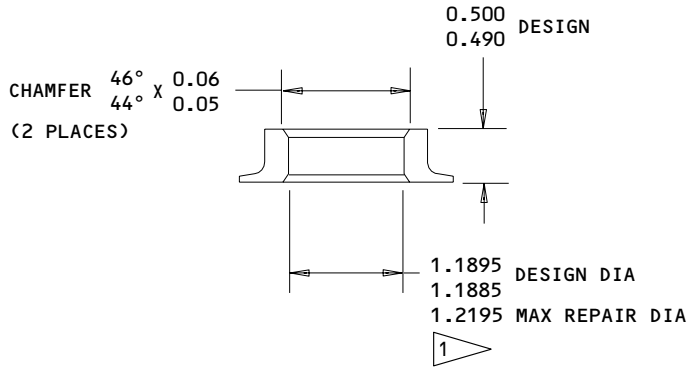
(3) Install bearings (see IPL) per REPAIR 10-1.

B. Method 2 -- Nickel Plate Buildup (optional)

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

(2) Shot-peen, nickel plate, and machine (do not grind) to design dimensions and finish. Nickel plate not to exceed 0.010 after machining.

(3) Install bearings (see IPL) per REPAIR 10-1.



REFINISH

PASSIVATE (F-17.09) ALL OVER

REPAIR

REF 1

125 MACHINED SURFACES EXCEPT AS NOTED

BREAK SHARP EDGES 0.02-0.03R

SHOT PEEN: 0.017-0.046 SHOT SIZE
0.016A2 INTENSITY

MATERIAL: 15-5PH CRES (180-200 KSI)

ALL DIMENSIONS ARE IN INCHES

1 REPAIR LIMIT FOR CHROME OR NICKEL PLATE BUILD-UP AND INSTALLATION OF BEARINGS LISTED IN PARTS LIST

162T3012-4
Hole Repair
Figure 601

T21850

SHAFT, FWD LOCK - REPAIR 11-1

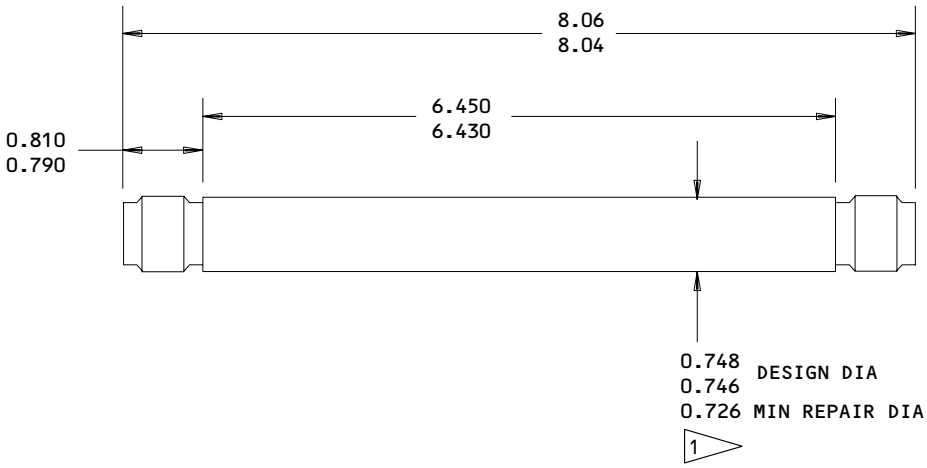
162T3028-1

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

1. Shank Repair (Fig. 601)

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

   B. Shot-peen, chrome plate and grind to design dimensions and finish. Chrome plate not to exceed 0.010 after grinding.



REFINISH

PASSIVATE (F-17.09) ALL OVER

REPAIR

REF 1

125 MACHINED SURFACES EXCEPT AS NOTED

BREAK SHARP EDGES 0.01-0.02R

SHOT PEEN: 0.0170-0.0460 SHOT SIZE
0.010A2 INTENSITY

MATERIAL: 15-5PH CRES (180-200 KSI)

ALL DIMENSIONS ARE IN INCHES

1 BUILDUP WITH CHROME PLATE AND GRIND TO DIMENSIONS SHOWN. OBSERVE 0.08 PLATING RUNOUT AT EDGES, HOLES AND RELIEFS UNLESS OTHERWISE NOTED. DO NOT PLATE RELIEF RADII

162T3028-1
Lock Shaft Repair
Figure 601

T21851

SPINDLE, AFT, LOCK - REPAIR 12-1

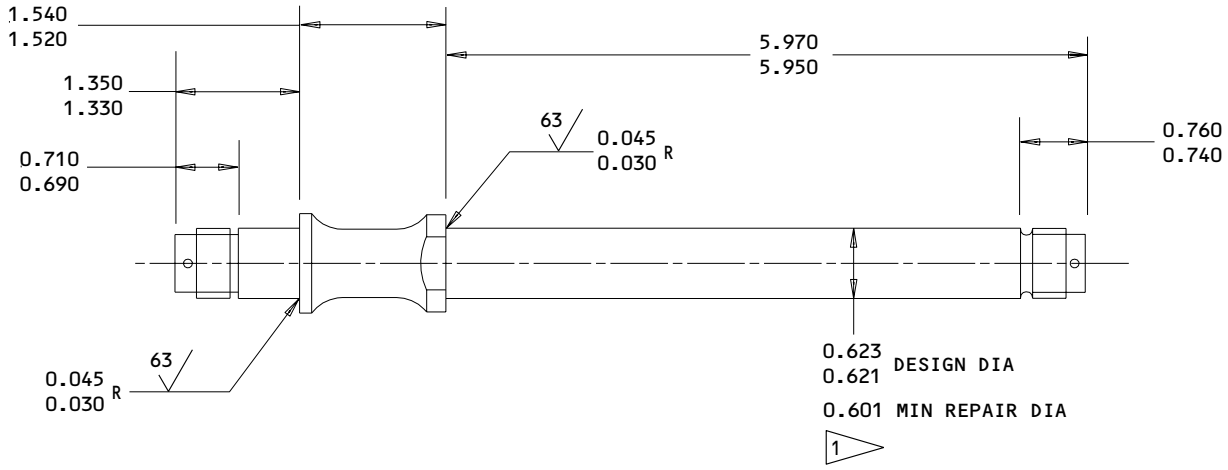
162T3011-1

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

1. Shank Repair - OD (Fig. 601)

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

   B. Shot-peen, chrome plate and grind to design dimensions and finish. Chrome plate not to exceed 0.010 after grinding.



REFINISH

PASSIVATE (F-17.09) ALL OVER

REPAIR

REF 1

125 MACHINED SURFACES EXCEPT AS NOTED

BREAK SHARP EDGES 0.02-0.03R

SHOT PEEN: 0.017-0.046 SHOT SIZE
0.016 A2 INTENSITY

MATERIAL: 15-5PH CRES (180-200 KSI)

ALL DIMENSIONS ARE IN INCHES

1 BUILDUP WITH CHROME PLATE AND GRIND TO DIMENSIONS SHOWN. OBSERVE 0.08 PLATING RUNOUT AT EDGES, HOLES AND RELIEFS UNLESS OTHERWISE NOTED. DO NOT PLATE RELIEF RADII

162T3011-1
Pin Repair
Figure 601

T21852

PIN, LOCK - REPAIR 13-1

162T3006-1, -2

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

1. Shank Repair - OD (Fig. 601)

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

   B. Shot peen, chrome plate and grind to design dimensions and finish. Chrome plate thickness must not be more than 0.010 inch after grinding.

2. Head Face Repair (Fig. 601)

   A. Machine as required, within repair limits, to remove defects. Blend into relief groove if necessary.

   B. Shot peen, chrome plate, and grind to restore grip length. Do not chrome plate relief groove.

      NOTE: If head face is not plated to original dimension, grip length may be adjusted by machining shoulder at thread end per par. 3.

3. Relief Grooves (Fig. 601)

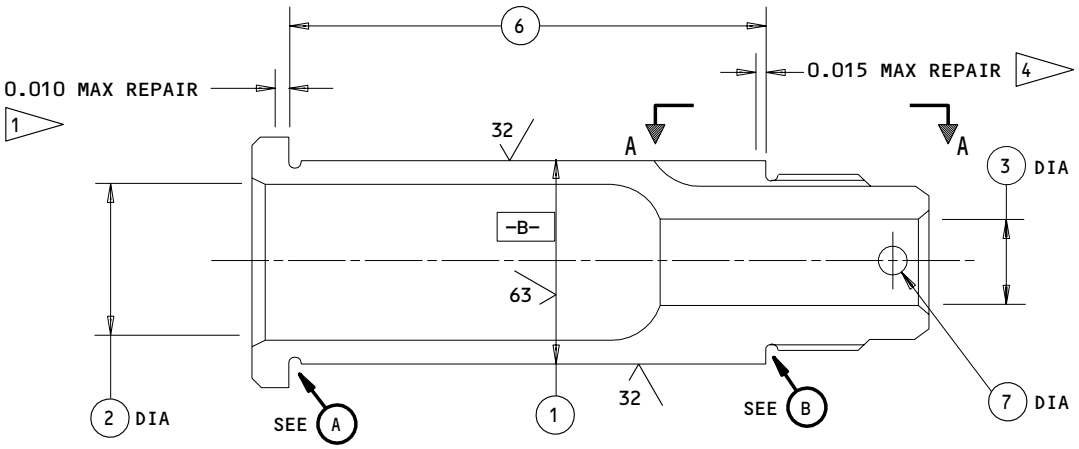
   A. Machine as required, within repair limits, to remove defects. If necessary to adjust grip length, machine shoulder at thread relief.

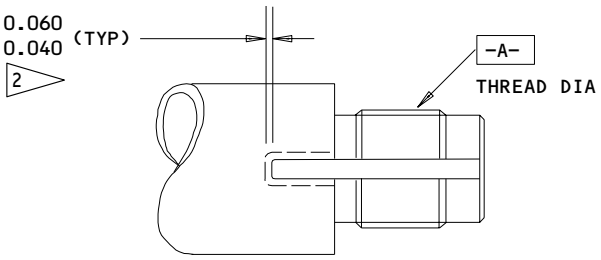
   B. Shot peen. Cadmium plate. Apply primer.

4. Pin Retention Holes (Fig. 601)

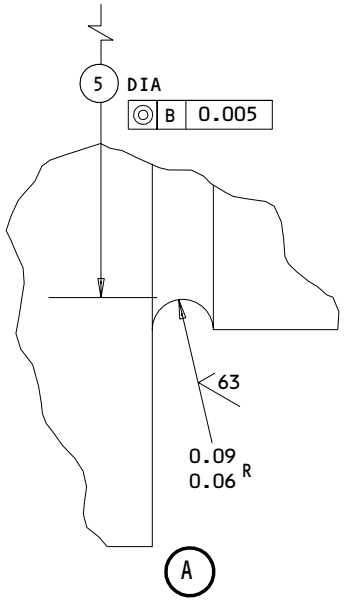
   A. Machine as required, within repair limits, to remove defects.

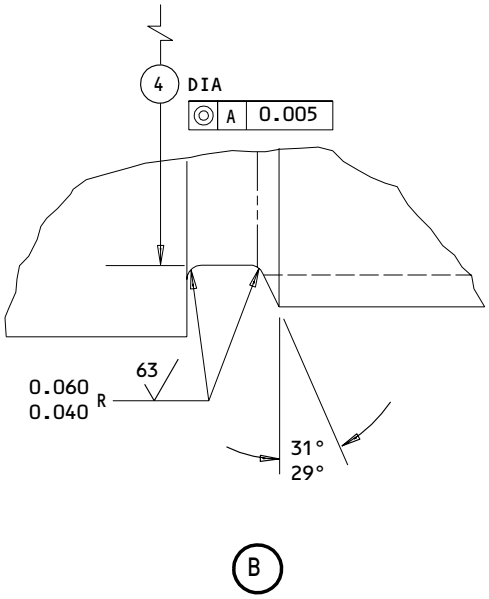
   B. Cadmium plate. Apply primer.





A-A





ALL DIMENSIONS ARE IN INCHES

162T3006-1, -2

Pin Repair and Refinish
Figure 601 (Sheet 1)

T21853

	(1)	(2)	(3)	(4)	(5)	(6) 3	(6) 5	(7)
DESIGN DIM	1.499 1.498	1.160 1.140	0.710 0.690	1.005 0.995	1.460 1.440	3.675 3.655	7.845 7.825	0.116 0.106
REPAIR LIMIT	1.478 1	1.180 4	0.730 4	0.965 4	1.410 4	---	---	0.136 4

REFINISH

CHROME PLATE (F-15.34) O.D.. CADMIUM PLATE (F-15.02) ALL OTHER SURFACES. APPLY PRIMER AND ENAMEL PER 32-00-02 EXCEPT, ON INSIDE DIAMETER SURFACES, APPLY BMS 10-11, TYPE 1 PRIMER (F-20.03) AND MIL-C-11796, CLASS 1 CORROSION PREVENTIVE COMPOUND (F-19.03).

REPAIR

REF 1 2 4

125 MACHINE FINISH EXCEPT AS NOTED

BREAK SHARP EDGES 0.02-0.03R

SHOT PEEN: 0.017-0.046 SHOT SIZE
0.012 A2 INTENSITY

MATERIAL: 4330M STEEL (180-200 KSI)

ALL DIMENSIONS ARE IN INCHES

1 LIMIT FOR CHROME PLATE BUILDUP AND GRIND TO DESIGN DIMENSIONS AND FINISH. OBSERVE 0.08 PLATING RUNOUT AT EDGES, HOLES AND RELIEFS UNLESS OTHERWISE NOTED. DO NOT PLATE RELIEF RADII.

2 OBSERVE 0.08 CHROME PLATE RUNOUT

3 PART NO. 162T3006-1

4 RESTORATION TO DESIGN DIM NOT REQUIRED

5 PART NO. 162T3006-2

162T3006-1,-2

Pin Repair and Refinish
Figure 601 (Sheet 2)

T21854

CRANK ASSEMBLY, LOCK - REPAIR 14-1

162T3029-1

NOTE: Refer to REPAIR-GEN for list of applicable standard practices. Refer to IPL Fig. 1 for item numbers.

1. Bushing Replacement (Fig. 601)

   A. Remove existing bushings.

   B. If corrosion or damage exists on lug faces or hole surfaces, refer to REPAIR 14-2 for repair instructions.

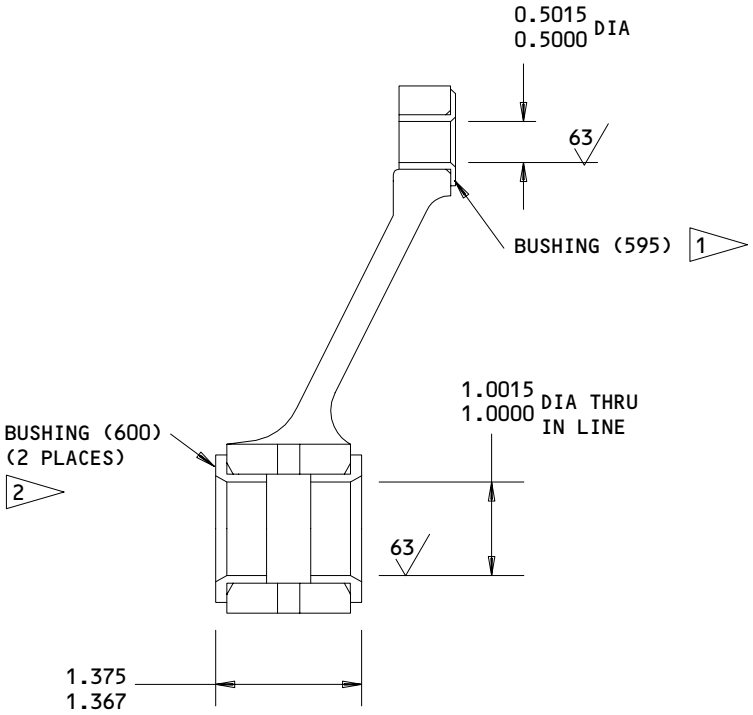
   C. Install replacement bushings per 20-50-03 except as noted.

   D. Check dimensions and machine as necessary.

      NOTE: Machining of bushings after installation is not normally required, since bushings and lug faces are premachined to provide dimensions shown.

2. Lube Fitting Replacement

   A. Replace lube fitting (590) per 32-00-03.



REFINISH

ALL DIMENSIONS ARE IN INCHES

REF REPAIR 14-2 FOR
REFINISH INSTRUCTIONS

1 INSTALL PER 20-50-03 EXCEPT USE BMS 5-95 SEALANT (BMS 5-79 OPTIONAL) IN PLACE OF WET PRIMER.

2 INSTALL PER 20-50-03 EXCEPT USE BMS 3-24 GREASE IN PLACE OF WET PRIMER.

162T3029-1

Bushing Replacement
Figure 601

CRANK, LOCK - REPAIR 14-2

162T3029-2

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

1. Lug Faces and Holes (Fig. 601)

A. Method 1 -- Removal Corrosion in Center of Lug ID

NOTE: This procedure enables corrosion to be removed without machining the entire bore oversize, if corrosion is localized at the center area which is exposed between two bushings.

(1) Determine repair diameter and width of groove required to remove corrosion (Fig. 602).

(2) Machine center area as required.

(3) Chemical treat and apply BMS 10-11, Type 1 primer.

(4) Install bushings per REPAIR 14-1.

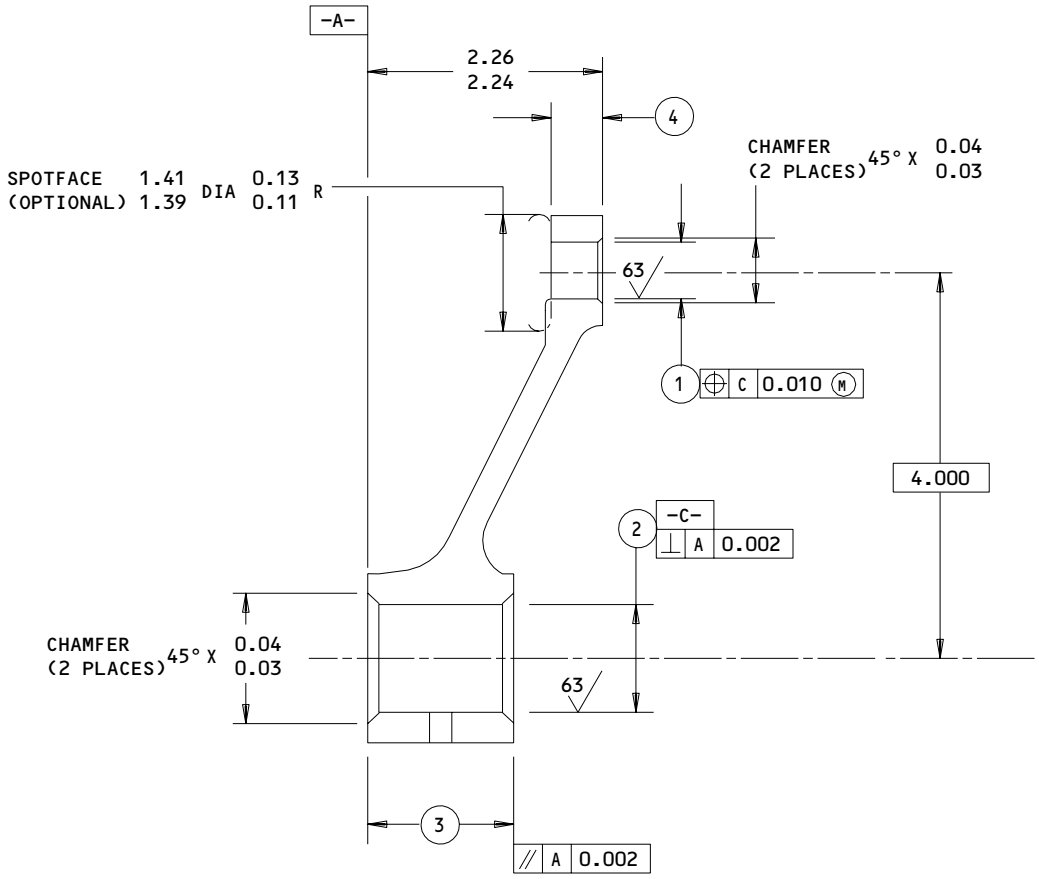
B. Method 2 -- Installation of Oversized Bushings

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

(2) Shot peen, chemical treat, and apply BMS 10-11, type 1 primer.

(3) Make bushings (Fig. 603 and on) as required, to adjust for amount of material removed in step (1).

(4) Install bushings per REPAIR 14-1.



	LOCATION			
	1	2	2 3	2 4
DESIGN DIM	0.6265 0.6250	1.1265 1.1250	1.2498 1.2448	0.51 0.49
REPAIR LIMIT 1	0.6865 MAX	1.1865 MAX	1.2148 MIN	0.48 MIN

162T3029-2

Lug Face and Hole Repair
Figure 601 (Sheet 1)

24661

REFINISH

CHROMIC ACID ANODIZE AND APPLY ONE COAT BMS 10-11, TYPE 1 PRIMER (F-18.13) ALL OVER. AFTER BUSHING AND LUG FITTING INSTALLATION, APPLY BMS 10-60 GRAY GLOSS ENAMEL (SRF-14.9813) ALL OVER, EXCEPT ON BUSHING AND LUBE FITTING.

REPAIR

REF 1 2

125 ALL MACHINED SURFACES EXCEPT AS NOTED

BREAK ALL SHARP EDGES 0.02-0.04R

SHOT PEEN: 0.023-0.055 SHOT SIZE
0.010A2 INTENSITY

MATERIAL: AL ALLOY

ALL DIMENSIONS ARE IN INCHES

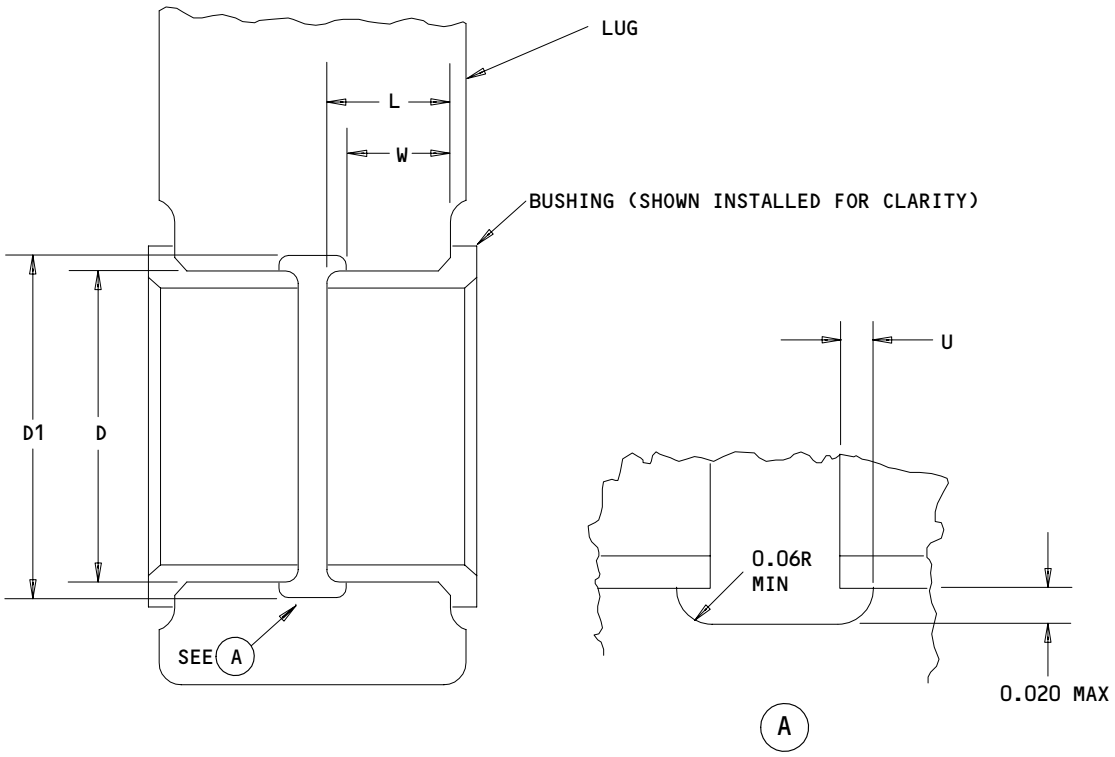
1 REPAIR LIMIT FOR INSTALLATION OF OVERSIZE BUSHINGS

2 LUG FACE MACHINING REQUIREMENTS:

1. MATERIAL REMOVED FROM ANY FACE MUST NOT EXCEED HALF THE DIFFERENCE BETWEEN THE DESIGN DIM AND REPAIR LIMIT
2. FLAT SURFACE MUST BE MINIMUM OF 0.02 LARGER THAN FLANGE DIA OF BUSHING TO BE INSTALLED
3. BLEND MISMATCH STEPS TO 0.18-0.26 RADIUS, OR IF WITHIN 0.10 OF LUG FILLET RADIUS, USE SAME RADIUS AS LUG FILLET. BREAK SHARP EDGES 0.03-0.07R.

162T3029-2

Lug Face and Hole Repair
Figure 601 (Sheet 2)



D = MAX REPAIR DIA OF HOLE (SEE FIG. 601)

D1 = MAX REPAIR DIA OF GROOVE = (D +0.040)

L = LENGTH OF BUSHING (SEE FIG. 603)

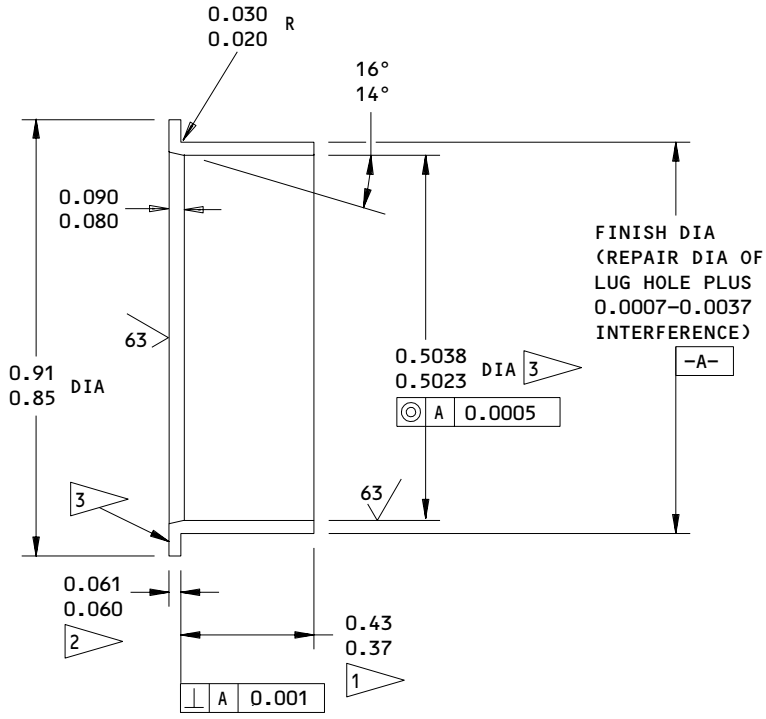
U = UNDERCUT = (L X 0.1) (0.06 MAX)

W = LUG DIM TO EDGE OF GROOVE = (L–U)

ALL DIMENSIONS ARE IN INCHES

Lug Hole Diameter – Corrosion Removal from Area Between Bushings
Figure 602

T21812



125 ALL MACHINED SURFACES UNLESS SHOWN DIFFERENTLY

BREAK SHARP EDGES 0.01–0.02 R

CADMIUM PLATE (0.0003–0.0005 THICK, F-15.06) EXCEPT AS NOTED

MATERIAL: AL-NI-BRZ PER AMS 4640 OR AMS 4880

ALL DIMENSIONS ARE IN INCHES

ALL DIMENSIONS APPLY BEFORE PLATING

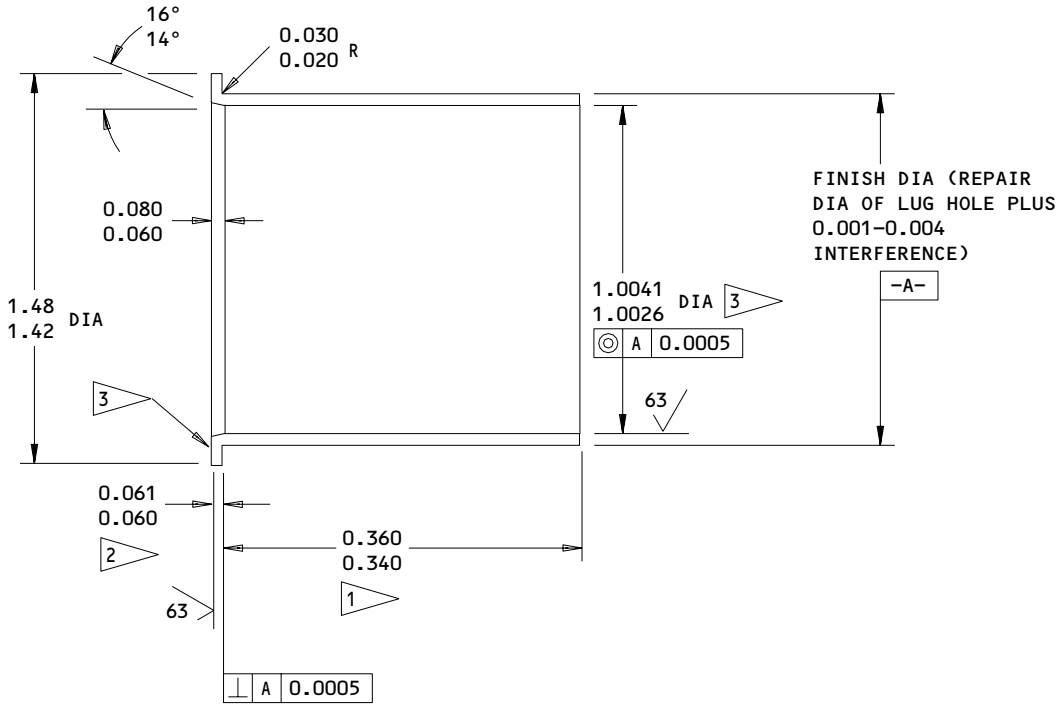
1 MINUS AMOUNT REMOVED BY LUG FACE

2 PLUS AMOUNT REMOVED BY LUG FACE

3 DO NOT PLATE ID OR BUSHING FACE

HOLE LOCATION (1) FIG. 601 - REPLACES BUSHING (595) 161T1210-55

Oversize Bushing Details
Figure 603



125 ALL MACHINED SURFACES UNLESS SHOWN DIFFERENTLY

BREAK SHARP EDGES 0.01–0.02 R

CADMIUM PLATE (0.0003–0.0005 THICK, EXCEPT AS NOTED

MATERIAL: AL–NI–BRZ PER AMS 4640 OR AMS 4880

ALL DIMENSIONS ARE IN INCHES

ALL DIMENSIONS APPLY BEFORE PLATING

1 MINUS AMOUNT REMOVED BY LUG FACE

2 PLUS AMOUNT REMOVED BY LUG FACE

3 DO NOT PLATE ID OR BUSHING FACE

HOLE LOCATION (2) FIG. 601 – REPLACES BUSHING (600) 161T1210–12

Oversize Bushing Details
Figure 604

24681

MISCELLANEOUS PARTS REFINISH - REPAIR 15-1

1. Repair of these parts is only replacement of the original finish. Refer to REPAIR-GENERAL for a list of applicable standard practices.

IPL FIG. & ITEM	MATERIAL	FINISH
Fig. 1		
Spacer (295), Stop plate (360), Target (475), Pad (530)	15-5PH CRES, 180-200 ksi	Passivate (F-17.25, which replaces F-17.09).
Tang washer (5,75, 110,160)	4340 steel, 180-200 ksi	Cadmium plate and apply BMS 10-11, type 1, primer (F-16.01) all over. Apply BMS 10-60 gray gloss enamel (F-14.9813, which replaces SRF-14.9813) to OD.
Springs (335)	17-1PH CRES, CH900	Passivate (F-17.25, which replaces F-17.09).
Springs (335B,335C)	Titanium alloy	No finish.
Target bracket (505,510), Sensor bracket (395,400), Spacer (405)	Al alloy	Chromic acid anodize and apply BMS 10-11, type 1 primer (F-18.13), primer (F-18.13), and BMS 10-60 gray gloss enamel (F-14.9813, which replaces SRF-14.9813) all over.
Nut (80,115)	4340 steel, 180-200 ksi	Cadmium plate and apply BMS 10-11, type 1 primer (F-16.01) all over, but not on threads, followed by BMS 10-11, type 1 primer F-20.02)on faying surface and wipe primer (F-19.45) on threads. Apply BMS 10-60 gray gloss enamel (F-14.9813, which replaces SRF-14.9813) all over but not on faying surface and threads.
Spacer (625)	Al alloy	Chromic acid anodize and apply BMS 10-11, type 1 primer (F-18.13) all over. Apply BMS 10-60 gray gloss enamel (F-14.9813, which replaces SRF-14.9813) all over, but not on ID.

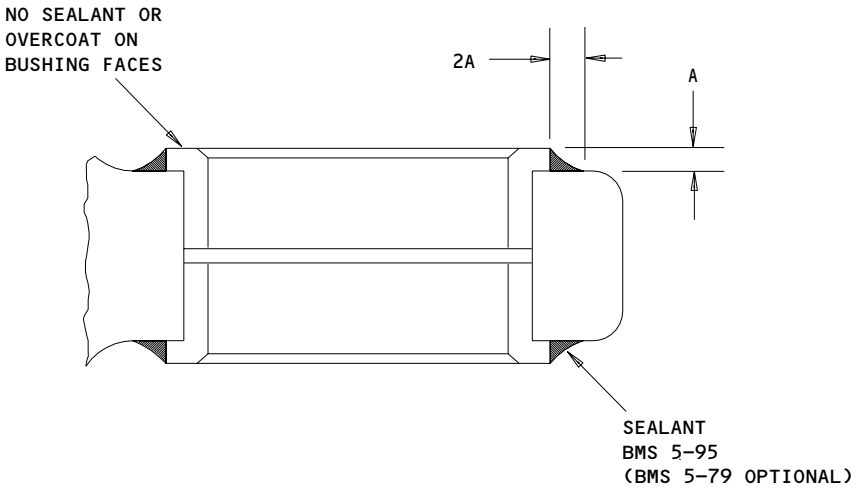
Refinish Details
Figure 601 (Sheet 1)

IPL FIG. & ITEM	MATERIAL	FINISH
Fig. 1		
Nut (165)	4340 steel, 180-200 ksi	Cadmium plate (F-15.02) all over. Apply BMS 10-11, type 1 primer (F-20.03) on faying surface. Apply BMS 10-11, type 1 primer (F-20.02) and BMS 10-60 gray gloss enamel (F-14.9813, which replaces SRF-14.9813) all over but not on faying surface and threads. Apply wipe primer (F-19.45) to threads.

Refinish Details
Figure 601 (Sheet 2)

BUSHING SEALING - REPAIR 16-1

1. Seal flanged bushings of the component per Fig. 601.



1. CLEAN AREAS OF SEALANT APPLICATION WITH SOLVENT.
2. APPLY FILLET OF SEALANT TO EDGES OF BUSHINGS AS SHOWN.
3. APPLY COATING OF GRAY GLOSS ENAMEL, BMS 10-60 OVER SEALANT AND AREAS AROUND SEALANT.

Bushing Sealing
Figure 601

T21855

ASSEMBLY

1. Materials

NOTE: Equivalent substitutes can be used.

A. Grease -- BMS 3-33 or MIL-G-23827 (SOPM 20-60-03)

B. Primer -- BMS 10-11, type 1 (SOPM 20-60-02)

C. Enamel -- BMS 10-11, type 2, yellow gloss (SOPM 20-60-02)

D. Blocking Material -- Semi-rigid, non-abrasive material, such as wood blocks, or rigid foam

2. Equipment

NOTE: Equivalent substitutes can be used.

A. Spring extender tool -- A32018-1 or A32099-1 or A32099-25 or A32099-38

3. Assembly

A. Lubricate upper pins (45) and bolts (30) shanks, threads, and washer (35) surfaces with grease. Install pins in upper drag strut assembly (170) and secure with washers (35) and nuts (40). Tighten nuts only as required for installation of cotter pins (25). Put in the cotter pins and bend them only to hold them temporarily in position.

NOTE: Parts will be disassembled when the component is installed in the airplane.

B. Lubricate universal pin (70) and bolt (55) shanks, threads, and washers (60, 62, 75) surfaces with grease. Install pin with blocking material, tang washer (75) and nut (80). Tighten nut only as required for installation of cross bolt. Install bolt (55), with washers (60, 62) and nut (65). Tighten the nut only as required for installation of cotter pin and bend the cotter pin only to hold it temporarily (Fig. 701), because these parts are disassembled when the component is installed in the airplane.

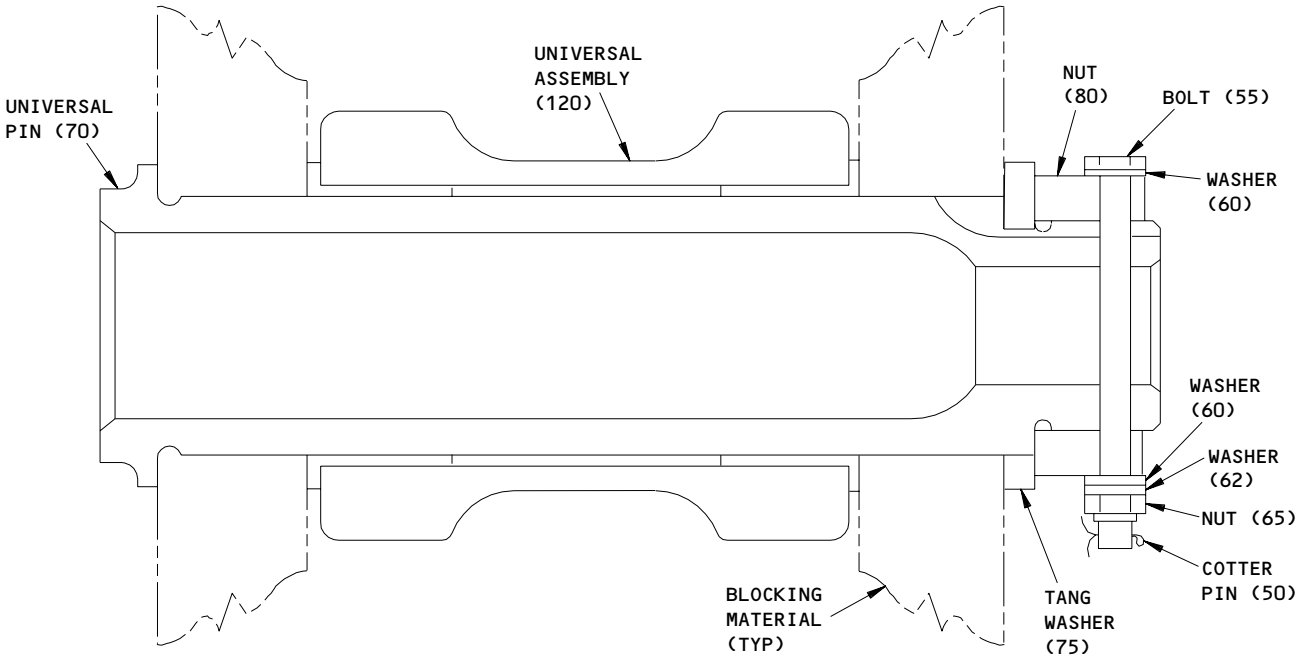
CAUTION: BE SURE TO INSTALL LOWER DRAG STRUT (220) AS SHOWN IN FIG. 703 AND IPL FIG. 1) TO MAKE SURE YOU WILL HAVE ACCESS TO THE LUBE FITTINGS AFTER THIS UNIT IS INSTALLED ON THE AIRPLANES. BE SURE TO INSTALL PIN (105) IN THE DIRECTION SHOWN (FIG. 703 AND IPL FIG. 1) OR DAMAGE TO THE SHOCK STRUT OUTER CYLINDER CAN OCCUR.

C. Lubricate lower pin (105) and bolt (90) shanks, threads, and washers (95, 97, 110) surfaces with grease. Install the universal on lower drag strut assembly (220) with pin (105), tang washer (110) and nut (115). Tighten the nut to 100 lb-ft maximum torque. Back off the nut if necessary to align the nearest slot or castellation with the lockbolt hole. Install bolt (90), washers (95, 97), and nut (100). Tighten the nut and install the cotter pin (85).

D. Put manual-release pad (530) on forward lock link assembly (630) with the flat side of the pad against the lock link. Install bolts (515), washers (520), and nuts (525) with wet primer. Tighten the nuts.

E. Install lock link sensor target brackets (505, 510) on the outside lug faces of the forward lock link, with rivets (495, 500) and wet primer. Install sensor targets (475) with target shims (485), washers (480), and nuts (490). Hand-tighten the nuts, because the sensor targets will be adjusted when the component is installed on the airplane.

F. Lubricate apex pin (155) and bolts (140) shanks, threads, and washer (145, 160) surfaces with grease. Install the pin with tang washer (160) and nut (165). Tighten the nut to 100 lb-ft maximum torque and back off if necessary to align the nearest slot or castellation with the lockbolt hole. Install bolts (140), washers (145), and nuts (150). Tighten the nuts.



Blocking Material Installation - Universal Pin
Figure 701

T56180

G. Attach aft lock link sensor brackets (395, 400) with bolts (370, 375, 380), washers (385), spacers (405), nuts (390), and wet primer to aft lock link assembly (435). Tighten nuts.

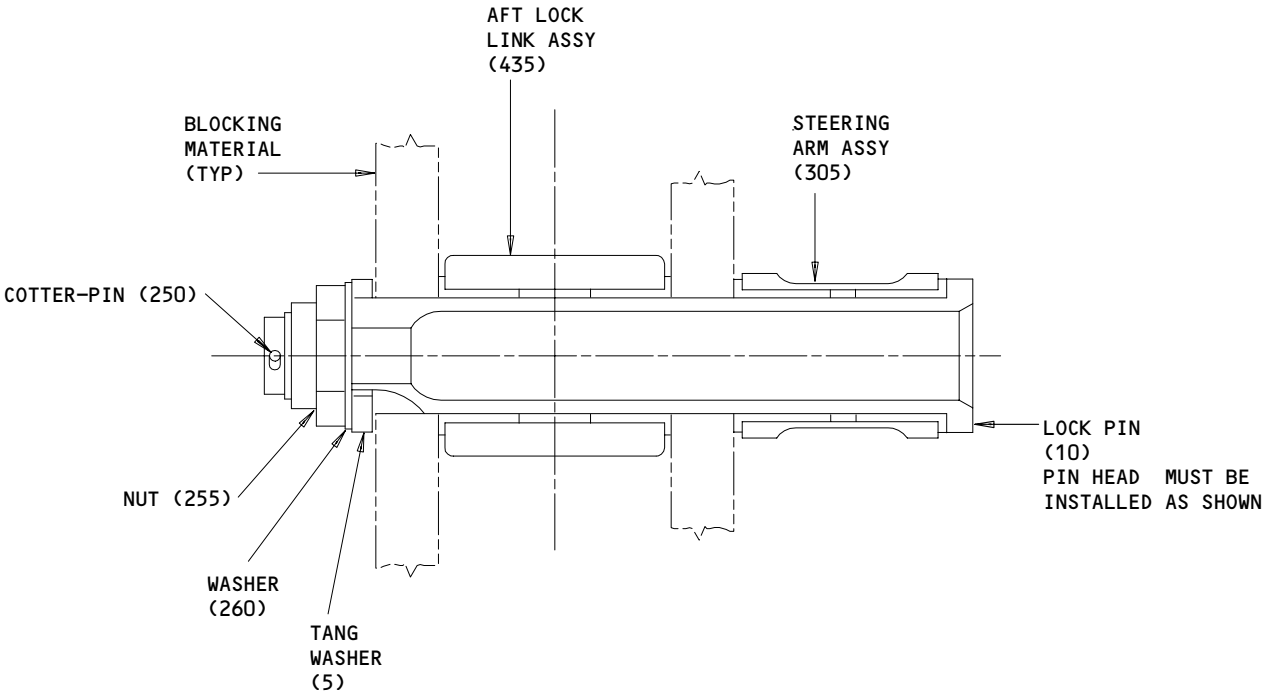
H. Lubricate lockpin (10) shank, threads, and washer (5, 260) surfaces with grease. Install pin with blocking material, tang washer (5), washer (260), and nut (255). Tighten nut only as required for installation of cotter pin (250). Insert cotter pin (250) and spread to retain temporarily (Fig. 702).

NOTE: Parts are disassembled when component is installed in the airplane.

I. Attach stop plates (360) to forward and aft lock links using bolts (345), shims (365), washers (350), nuts (355), and wet primer. Hand-tighten nuts.

NOTE: Use shims (365) with same thickness as noted in disassembly to facilitate readjustment. Nuts (355) are tightened and cotter pins (340) inserted at a later step to facilitate readjustment.

J. Lubricate lockpin (415) shank, threads, and washer (420, 425) surfaces with grease. Attach aft lock link to forward lock link with lockpin (415), tang washer (425), washer (420), and nut (430). Tighten nut and install cotter pin (410).



Blocking Material Installation - Lockpin
Figure 702

T21864

K. Perform clearance check per Fig. 704. No interference or binding of any parts is allowed.

WARNING: BOLT (15) AND NUT (20) MUST BE IN PLACE BEFORE STARTING SPRING INSTALLATION, OR INJURY TO PERSONNEL AND DAMAGE TO PARTS COULD RESULT.

L. Install bolt (15) and nut (20) (ground lockpin and nut).

NOTE: Bolt and nut are used only for shipping and safety during transit.

M. Install aft spindle (300) and spacer (295). Install lockshaft (610), spacers (625, 620, 615) and crank (605).

NOTE: These assemblies will remain loose until spring installation is completed in following procedures.

WARNING: USE EXTREME CARE WHEN INSTALLING SPRINGS OR INJURY TO PERSONNEL AND DAMAGE TO PARTS COULD RESULT.

N. Install spool assemblies (550) using bushings (565, 595), bolts (535), washers (540) and nuts (545).

O. Install spool assemblies (280) using washers (275) and nuts (270).

P. Install washers (580) and nuts (575).

Q. Install springs (335) with the spring extender tool.

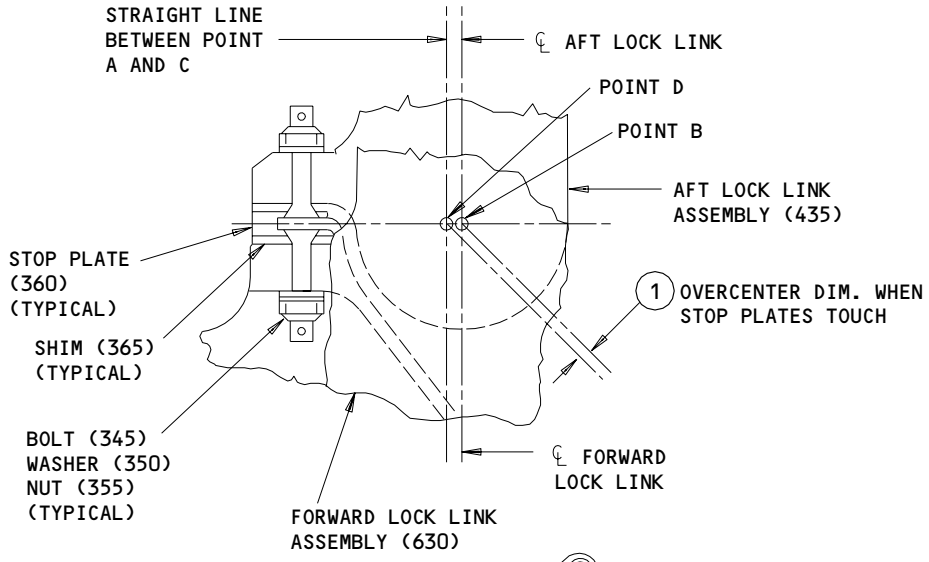
R. Tighten nuts (270, 575) and install cotter pins (265, 570).

S. Check overcenter dimension per Fig. 703, Sheet 1 or Fig. 703, Sheet 2. Remove or add 0.003 shims as necessary to obtain overcenter dimension and allow entry of ground lockpin. After adjustment, tighten nuts (355) and install cotter pins (340) (Fig. 703, Sheet 1).

T. Lubricate all grease fittings with grease.

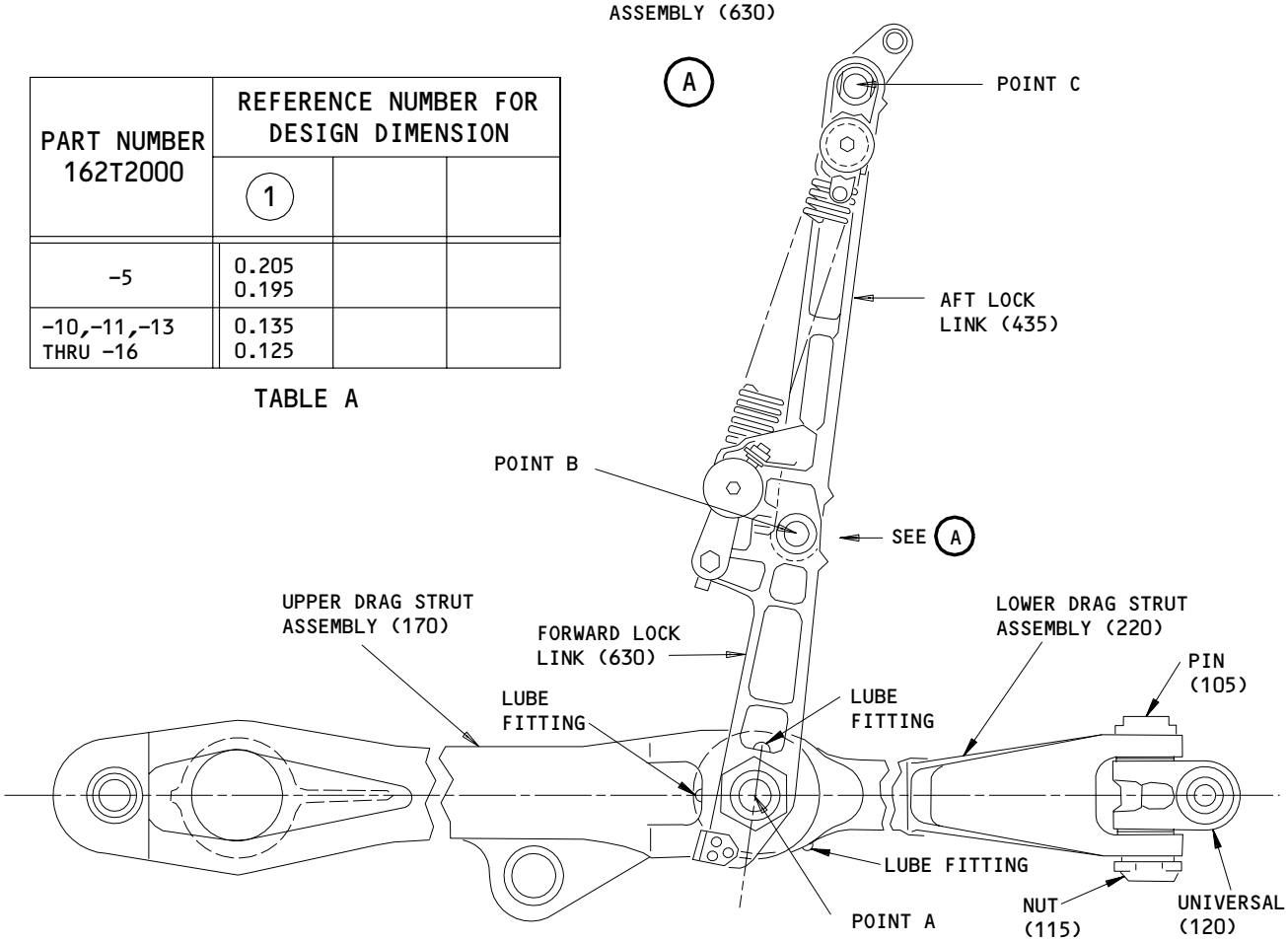
U. Do the clearance check (Fig. 706). Make sure the forward lock link moves freely.

V. Give protection to the unit and put it away by standard industry practices.



PART NUMBER 162T2000	REFERENCE NUMBER FOR DESIGN DIMENSION		
	1		
-5	0.205 0.195		
-10,-11,-13 THRU -16	0.135 0.125		

TABLE A

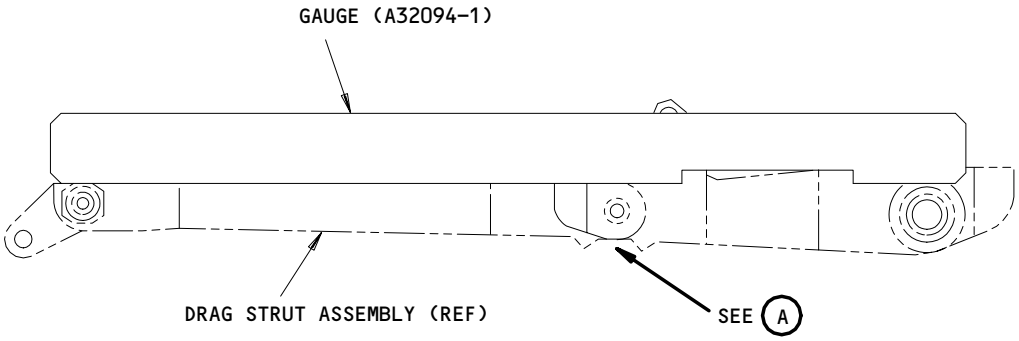


ITEM NUMBERS REFER TO IPL FIG. 1

ALL DIMENSIONS ARE IN INCHES

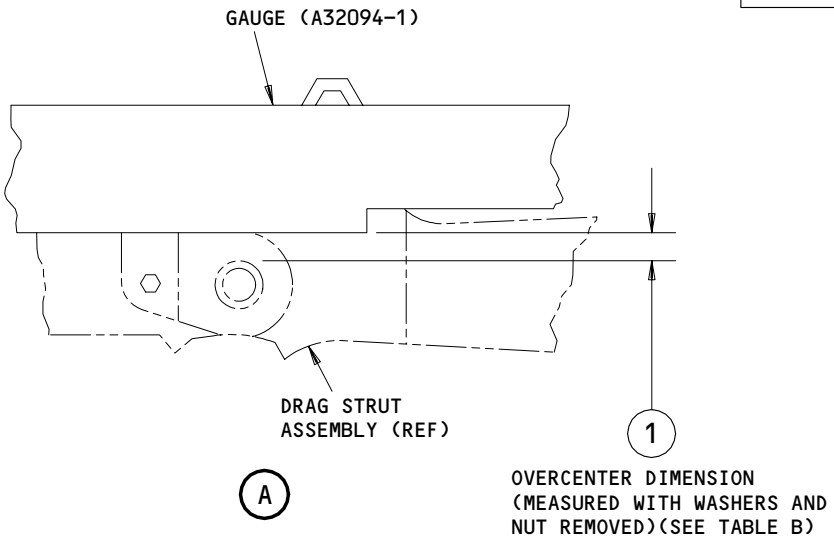
Overcenter Dimension Adjustment
Figure 703 (Sheet 1)

T21866



PART NUMBER 162T2000	REFERENCE NUMBER FOR DESIGN DIMENSION		
	1		
-5	0.601 0.593		
-10,-11,-13 THRU -16	0.531 0.523		

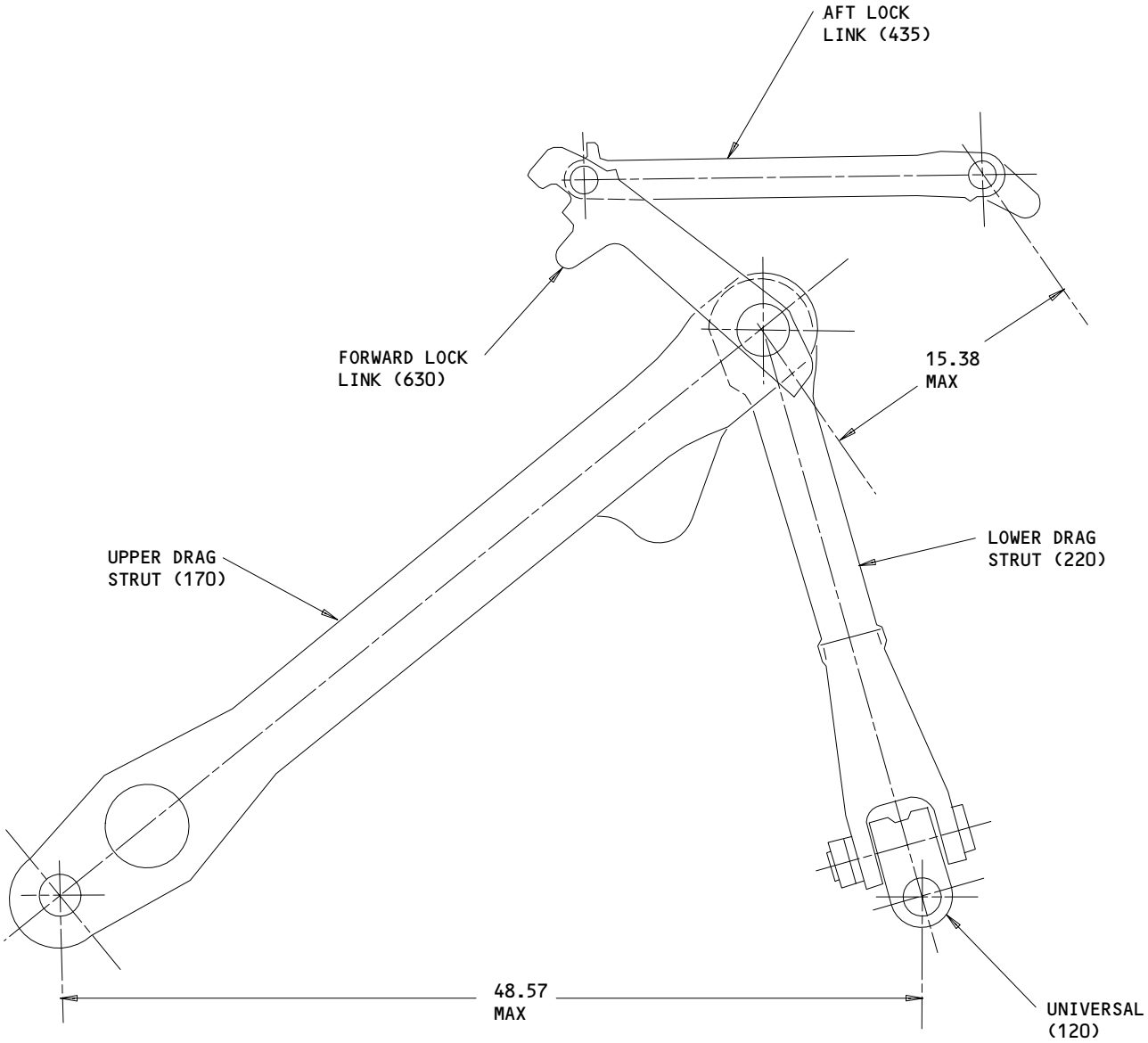
TABLE B



ITEM NUMBERS REFER TO IPL FIG. 1

ALL DIMENSIONS ARE IN INCHES

Overcenter Dimension Adjustment
Figure 703 (Sheet 2)



FOLD ASSY TO
DIMENSIONS SHOWN.
NO INTERFERENCE OR
BINDING IS ALLOWED.

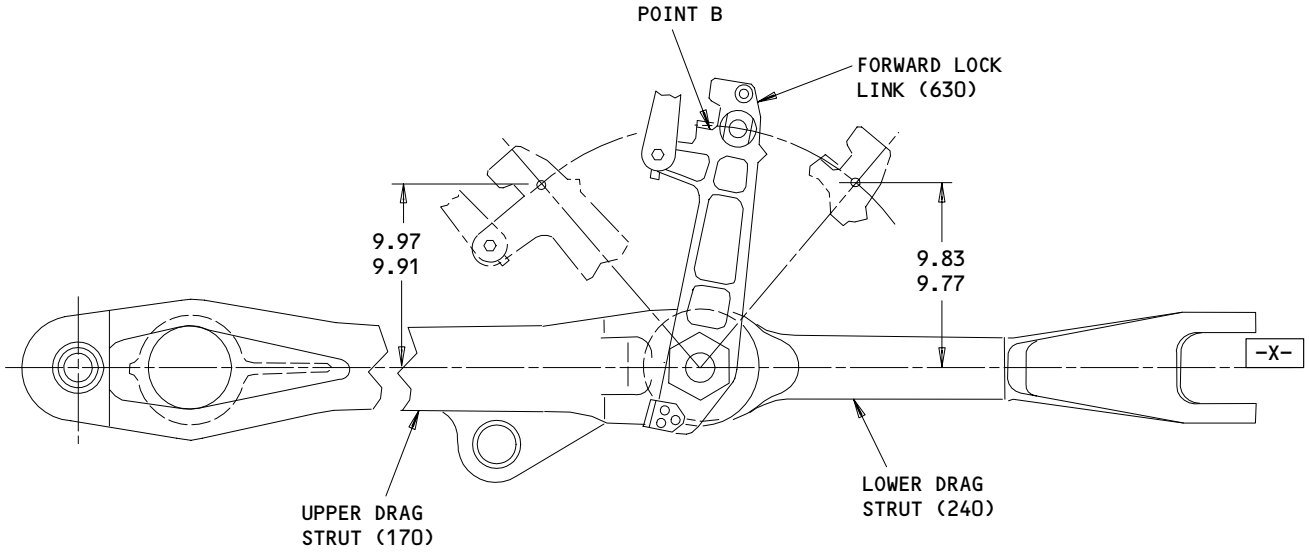
ALL DIMENSIONS ARE IN INCHES

Clearance Check
Figure 704

T21867

DELETED

Arrow Marking – Lock Links
Figure 705



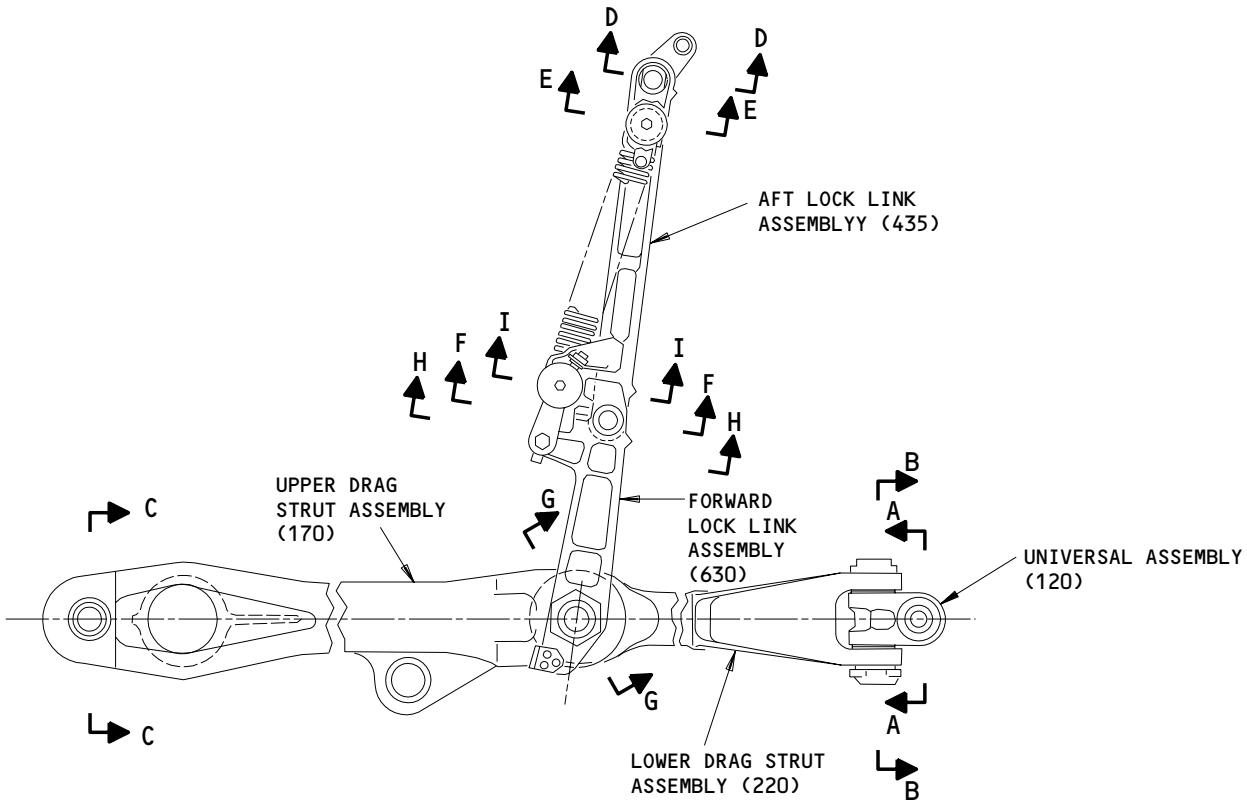
ROTATE LOCK LINKS TO DIMENSION SHOWN.
GROUND LOCK PIN (220) MUST BE IN PLACE.
DIMENSIONS SHOWN ARE TAKEN BETWEEN DATUM X AND POINT B.

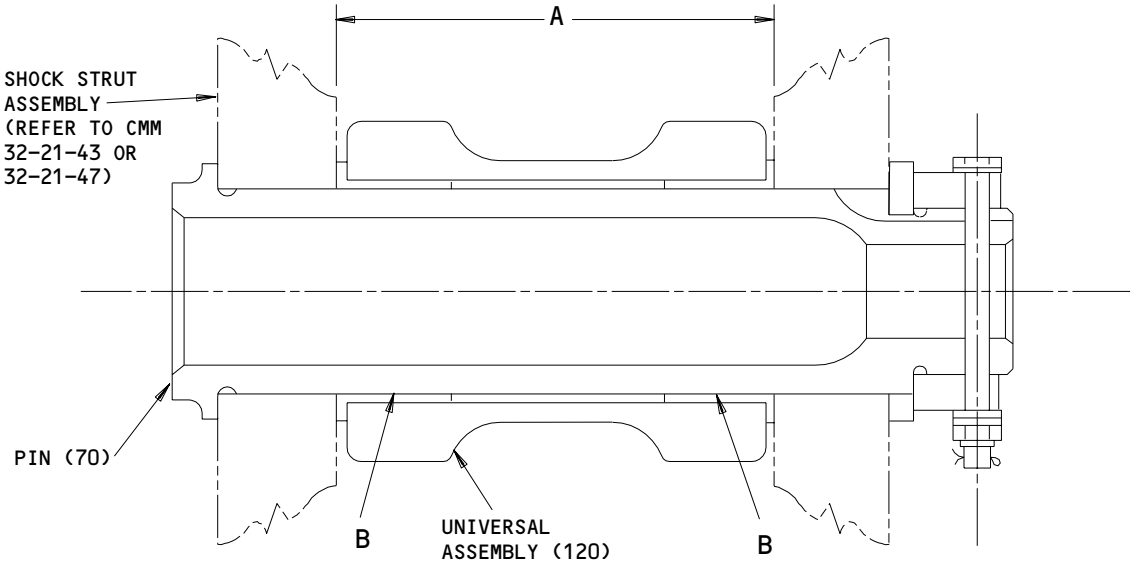
ALL DIMENSIONS ARE IN INCHES

Lock Link Clearance Check
Figure 706

T21869

FITS AND CLEARANCES

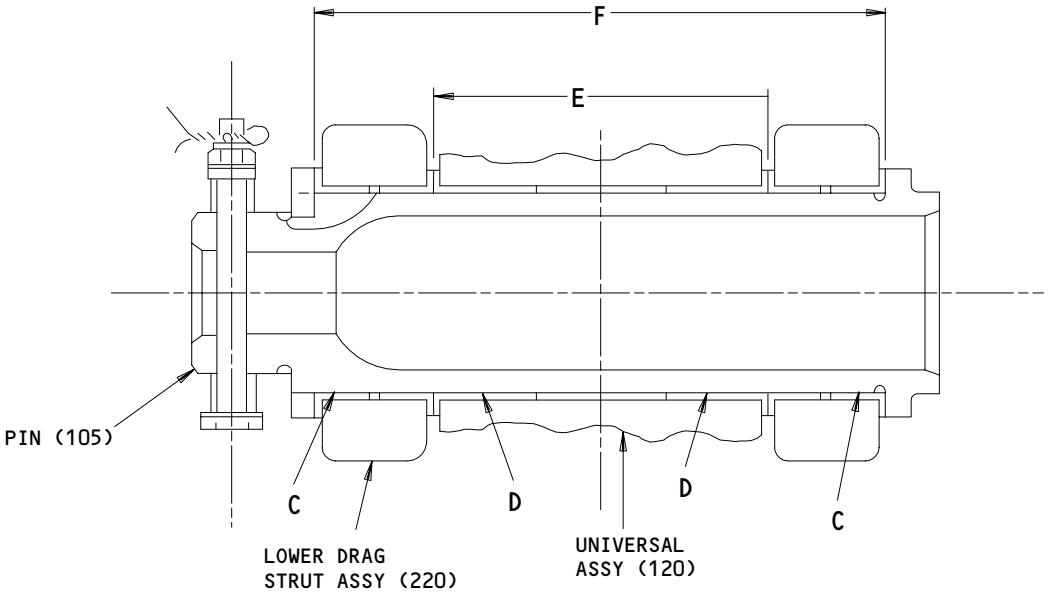




A-A

Fit and Clearances
Figure 801 (Sheet 1)

19816



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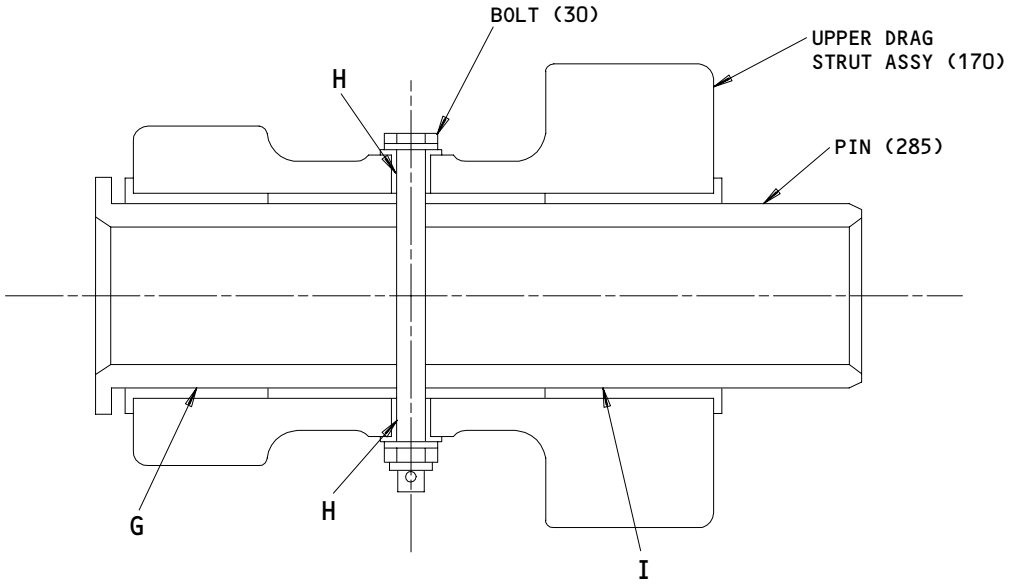
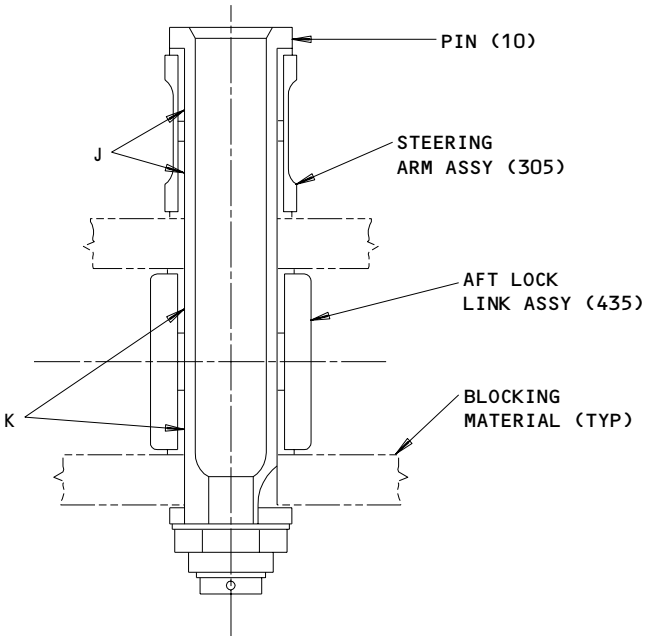
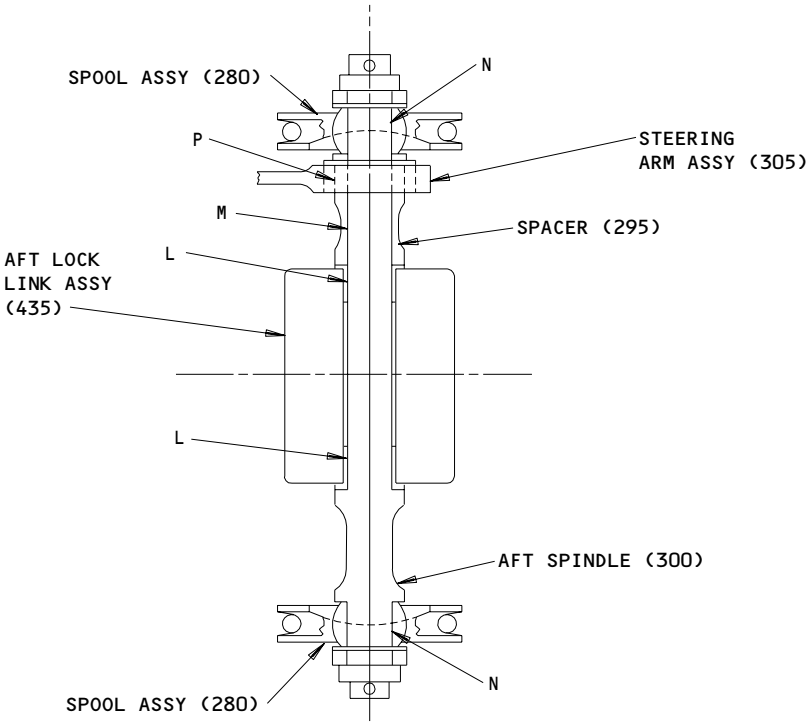


C-C

Fits and Clearances
Figure 801 (Sheet 2)

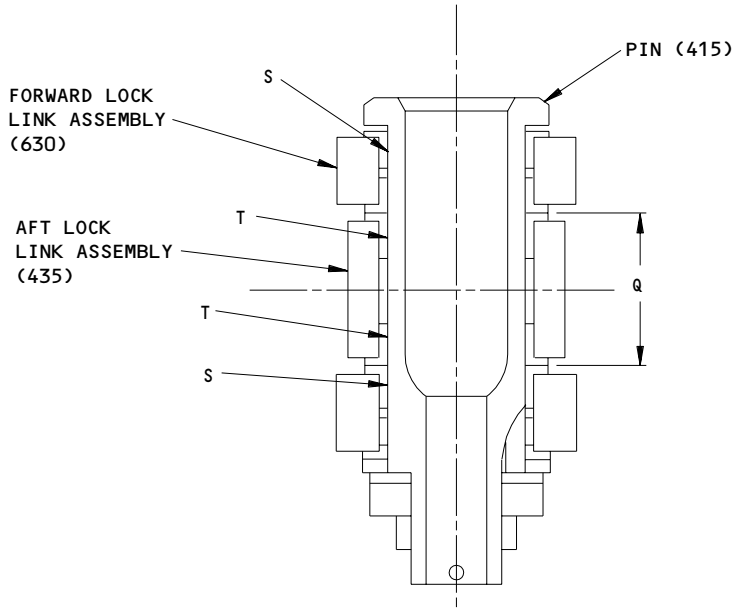


D–D

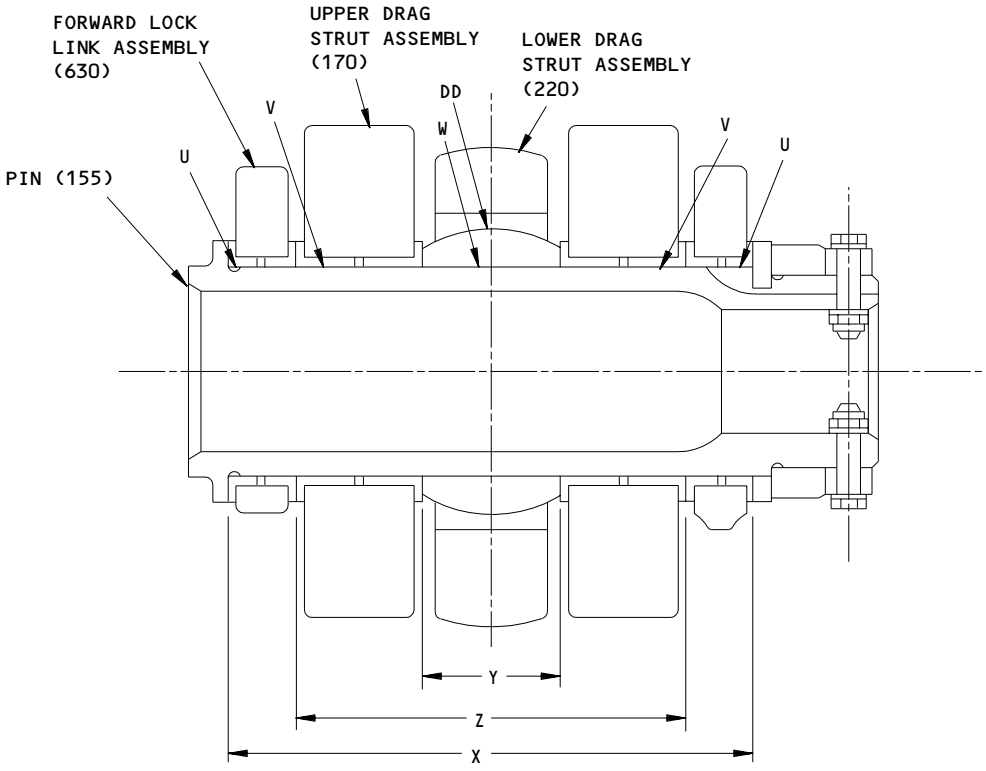


E–E

Fits and Clearances
Figure 801 (Sheet 3)



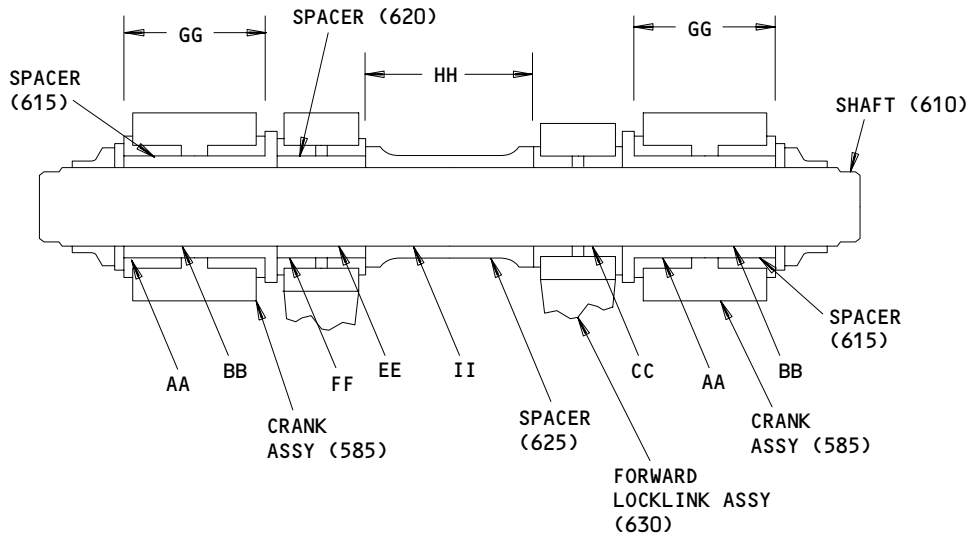
F-F



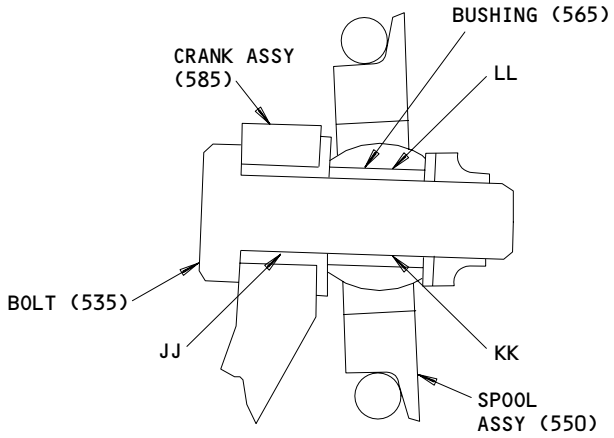
G-G

Fits and Clearances
Figure 801 (Sheet 4)

19921



H-H



I-I

Fits and Clearances
Figure 801 (Sheet 5)

Ref Letter Fig.801	Mating Item No. IPL Fig. 1	Design Dimension				Service Wear Limit		
		Dimension		Assembly Clearance		Dimension		Maximum Clearance
		Min	Max	Min	Max	Min	Max	
A	2 > 7 1 > 120	4.6500 4.6396	4.6594 4.6500	0.0000	0.0198	4.6353	4.6741	0.0241
B	ID 120 OD 70	2.1250 2.1230	2.1265 2.1240	0.0010	0.0035	2.1200	2.1300	0.0064
C	ID 220 OD 105	2.1250 2.1230	2.1265 2.1240	0.0010	0.0035	2.1200	2.1300	0.0064
D	ID 120 OD 105	2.1250 2.1230	2.1265 2.1240	0.0010	0.0035	2.1200	2.1300	0.0064
E	2 > 220 1 > 120	3.6250 3.6146	3.6312 3.6250	0.0000	0.0166	3.5980	3.6478	0.0204
F 9	2 > 105 1 > 220	6.3500 6.0612	6.3700 6.0854	0.2646	0.3088			
F 10	2 > 105A 1 > 220	6.3620 6.0612	6.3820 6.0854	0.2766	0.3208			
G	ID 170 OD 45	2.2500 2.2476	2.2515 2.2488	0.0012	0.0039	2.2446	2.2557	0.0069
H	ID 170 OD 30	0.3750 0.3735	0.3765 0.3745	0.0005	0.003	0.3722	0.3787	0.0042
I	ID 170 OD 45	2.2500 2.2476	2.2515 2.2488	0.0012	0.0039	2.2446	2.2557	0.0069
J	ID 305 OD 10	1.5000 1.4980	1.5015 1.4990	0.0010	0.0035	1.4950	1.5049	0.0059
K	ID 435 OD 10	1.5000 1.4980	1.5015 1.4990	0.0010	0.0035	1.4950	1.5049	0.0059

ALL DIMENSIONS ARE IN INCHES

Fits and Clearances
Figure 801 (Sheet 6)

Ref Letter Fig.801	Mating Item No. IPL Fig. 1	Design Dimension				Service Wear Limit		
		Dimension		Assembly Clearance		Dimension		Maximum Clearance
		Min	Max	Min	Max	Min	Max	
L	ID 435 OD 300	0.6250 0.6210	0.6265 0.6230	0.0020	0.0055	0.6194	0.6300	0.0071
M	ID 295 OD 300	0.630 0.621	0.635 0.623	0.007	0.014	0.6194	0.6385	0.0156
N	ID 280 OD 300	0.6245 0.6210	0.6250 0.6230	0.0015	0.0040	0.6194	0.6285	0.0056
P	ID 305 OD 295	1.0000 0.995	1.0015 0.997	0.0030	0.0065	0.9895	1.0070	0.0085
Q	2 630 1 435	1.6250 1.6154	1.6318 1.6250	0.0000	0.0164	1.5990	1.6578	0.0328
S	ID 630 OD 415	1.5000 1.4980	1.5015 1.4990	0.0010	0.0035	1.4950	1.5049	0.0059
T	ID 435 OD 415	1.5000 1.4980	1.5015 1.4990	0.0010	0.0035	1.4950	1.5049	0.0059
U	ID 630 OD 155	2.7500 2.7460	2.7515 2.7480	0.0020	0.0055	2.7426	2.7568	0.0088
V	ID 170 OD 155	2.7500 2.7460	2.7515 2.7480	0.0020	0.0055	2.7420	2.7568	0.0088
W	ID 220 5 OD 155	2.7500 2.7460	2.7505 2.7480	0.0020	0.0045	2.7426	2.7558	0.0078
X	8 155 2 630	7.220 6.9306	7.240 6.9534	0.2666	0.3094			
Y	2 170 1 220	1.8000 1.7950	1.8068 1.8000	0.0000	0.0118	1.7832	1.8186	0.0145

ALL DIMENSIONS ARE IN INCHES

Fits and Clearances
Figure 801 (Sheet 7)

Ref Letter Fig.801	Mating Item No. IPL Fig. 1	Design Dimension				Service Wear Limit		
		Dimension		Assembly Clearance		Dimension		Maximum Clearance
		Min	Max	Min	Max	Min	Max	
Z	2 630 1 170	5.1200 5.1104	5.1268 5.1200	0.0000	0.0164	5.0940	5.1432	0.0209
AA	ID 585 OD 615	1.0000 0.9970	1.0015 0.9980	0.0020	0.0045	0.9950	1.0045	0.0065
BB	ID 615 OD 610	0.750 0.746	0.751 0.748	0.002	0.005	0.744	0.755	0.007
CC	ID 630 OD 610	0.7500 0.7460	0.7515 0.7480	0.0020	0.0055	0.7442	0.7552	0.0072
DD	6 230			0.002	0.004			0.0078
EE	ID 620 OD 610	0.7495 0.7460	0.7510 0.7480	0.0015	0.0050	0.7442	0.7547	0.0067
FF	ID 630 OD 620	1.0000 0.9976	1.0015 0.9990	0.0010	0.0039	0.9956	1.0049	0.0059
GG	3 615 1 585	1.3800 1.3670	1.3850 1.3750	0.0050	0.0180	1.3490	1.4030	0.0203
HH	2 630 3 625	1.625 1.600	1.6318 1.620	0.005	0.0318	1.5682	1.6636	0.0343
II	ID 625 OD 610	0.760 0.746	0.770 0.748	0.012	0.024	0.744	0.774	0.026

Fits and Clearances
Figure 801 (Sheet 8)

Ref Letter Fig.801	Mating Item No. IPL Fig. 1	Design Dimension 4				Service Wear Limit		
		Dimension		Assembly Clearance		Dimension		Maximum Clearance
		Min	Max	Min	Max	Min	Max	
JJ	ID 585 OD 535	0.5000 0.4985	0.5015 0.4995	0.0005	0.003	0.4970	0.5039	0.0044
KK	ID 565 OD 535	0.5000 0.4985	0.5015 0.4995	0.0005	0.003	0.4970	0.5039	0.0044
LL	ID 550 OD 565	0.6245 0.6257	0.6250 0.6265	−0.0007	−0.0020	0.6241	0.6274	0.0009

1> DIMENSIONS ACROSS OUTER FLANGES OF BUSHINGS

2> DIMENSIONS BETWEEN INNER FLANGES OF BUSHINGS

3> VALUES REFER TO LENGTH OF SPACER

4> NEGATIVE VALUES ARE AN INTERFERENCE FIT

5> DIAMETRICAL CLEARANCE PIN TO BALL ONLY

6> DIAMETRICAL CLEARANCE BALL TO RACE

7> DIMENSIONS ACROSS OUTER FLANGES OF BUSHING IN SHOCK STRUT UNIVERSAL LUG MOUNT (REF CMM 32-21-43 OR 32-21-47)

8> LENGTH OF PIN

9> 162T2009-1

10> 162T2009-3

ALL DIMENSIONS ARE IN INCHES

Fits and Clearances
Figure 801 (Sheet 9)

FOR TORQUE VALUES OF STANDARD FASTENERS, REFER TO 20-50-01			
ITEM NO. IPL FIG. 1	NAME	TORQUE	
		POUND-INCHES	POUND-FEET
115	NUT		100 MAX
165	NUT		100 MAX

Torque Table
Figure 802

SPECIAL TOOLS

NOTE: Equivalent substitutes can be used.

1. A32018-1 -- NLG Lock Link Spring Extender.

2. A32094-1 -- NLG Down Lock Link Adjustment Gauge.

3. A32099-38 -- Spring Extender Tool (Replaces A32018-1, A32099-1, -25) (Limited)

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 an alternate to the original part.

VENDORS

S0352 NIPPON MINIATURE BEARING CO LTD
TOKYO, JAPAN

06710 LAMSON AND SESSIONS CO THE VALLEY-TODECO
12975 BRADLEY AVENUE
SYLMAR, CALIFORNIA 91342-3830

06725 AIR INDUSTRIES CORPORATION
12570 KNOTT STREET
GARDEN GROVE, CALIFORNIA 92641-3932

06950 SCREWCORP VSI AEROSPACE PRODUCTS DIV FAIRCHILD IND DIV
13001 EAST TEMPLE AVENUE PO BOX 730
CITY OF INDUSTRY, CALIFORNIA 91746-1417

08073 MAMCO MANUFACTURING CO INC
1411 NORTHWEST 50TH
SEATTLE, WASHINGTON 98107-5123

08524 DEUTSCH FASTENER CORP SEE CODE V97928

09192 ALUMINUM COMPANY OF AMERICA VERNON WORKS
5151 ALCOA AVENUE
VERNON, CALIFORNIA 90058-3715

10630 ANILLO INDUSTRIES, INCORPORATED
2090 NORTH GLASSELL
ORANGE, CALIFORNIA 92667

15653 MICRODOT INC AEROSPACE FASTENING SYS KAYNAR MFG DIV
800 SOUTH STATE COLLEGE BLVD PO BOX 3001
FULLERTON, CALIFORNIA 92634-3001

15860 NEW HAMPSHIRE BALL BEARINGS, INCORPORATED ASTRO DIVISION
155 LEXINGTON AVENUE
LACONIA, NEW HAMPSHIRE 03246-2937

17943 FEDERAL MANUFACTURING CORPORATION
9825 DESOTO AVENUE
CHATSWORTH, CALIFORNIA 91311

27624 PB FASTENERS DIV OF BRILES PAUL R
1700 WEST 132ND STREET
GARDENA, CALIFORNIA 90249

42838 NATIONAL RIVET AND MANUFACTURING COMPANY
1-21 EAST JEFFERSON STREET
WAUPUN, WISCONSIN 53963-2028

VENDORS

50294 NEW HAMPSHIRE BALL BEARINGS INC
9730 INDEPENDENCE AVENUE PO BOX 2515
CHATSWORTH, CALIFORNIA 91311-4323

52828 REPUBLIC FASTENER MFG CORP
1300 RANCHO CONEJO BLVD
NEWBURY PARK, CALIFORNIA 91320-1405

53551 ALLFAST FASTENING SYSTEMS INC
15200 EAST DON JULIAN ROAD PO BOX 3166
CITY OF INDUSTRY, CALIFORNIA 91745-1001

55580 BRILES RIVET CORP
2640 VISTA PACIFIC DRIVE
OCEANSIDE, CALIFORNIA 92056-3514

56878 SPS TECHNOLOGIES INC AEROSPACE AND INDUSTRIAL PRODUCTS DIV
HIGHLAND AVENUE
JENKINTOWN, PENNSYLVANIA 19046

58009 MOELLER MFG AND SUPPLY INC
1140 N KRAEMER BLVD UNIT K
ANAHEIM, CALIFORNIA 92806-1919

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

72962 ELASTIC STOP NUT A DIV OF HARTFORD INDUSTRIES INC
2330 VAUXHALL ROAD
UNION, NEW JERSEY 07083-5038

73134 IMO INDUSTRIES INC HEIM BEARINGS DIV
60 ROUND HILL ROAD PO BOX 430
FAIRFIELD, CONNECTICUT 06430

80539 SPS TECHNOLOGIES INC AEROSPACE PRODUCTS DIV
2701 SOUTH HARBOR BOULEVARD PO BOX 1259
SANTA ANA, CALIFORNIA 92702-1259

85495 BRILES MFG CO SEE OMARK INDUSTRIES
PRECISION FASTENING SUB OF OMARK IND INC SEE DEUTSCH
FASTENER CORP V08524

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

VENDORS

95879 ALEMITE DIVISION OF STEWART WARNER CORP
1826 DIVERSEY PARKWAY
CHICAGO, ILLINOIS 60614-1540

97613 SARGENT TECHNOLOGIES
1851 SOUTH PANTANO ROAD
TUCSON, ARIZONA 85710

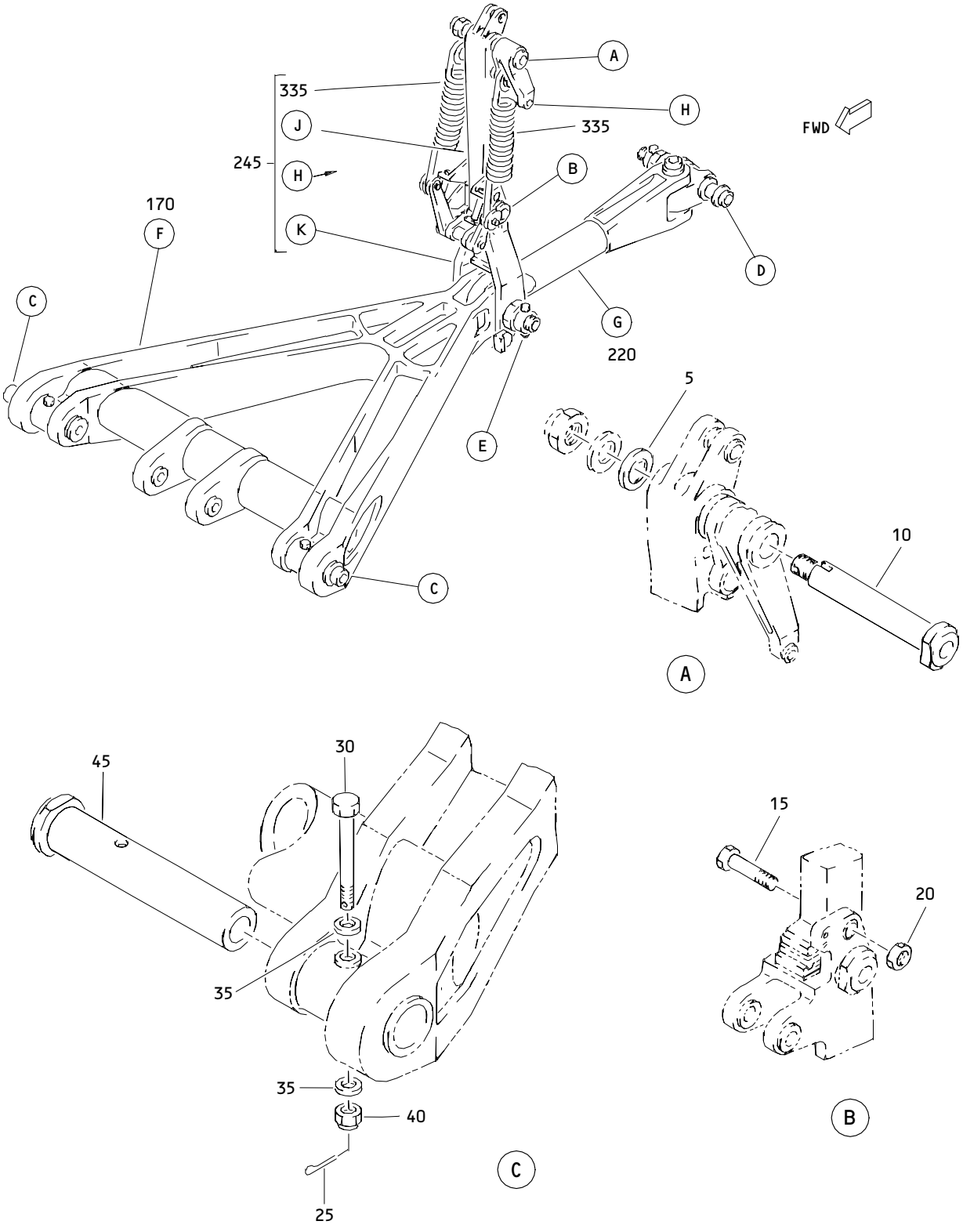
97928 DEUTSCH FASTENER CORP
3969 PARAMONT BOULEVARD
LAKEWOOD, CALIFORNIA 90712-4193

PART NUMBER	AIRLINE PART NO.	FIG.	ITEM	TTL REQ
AN960-416		1	520	3
AN960PD416		1	385	4
BACB10FC10C		1	285	1
		1	555	1
BACB28Y8C058		1	565	2
BACB30LH3DU13		1	345	4
BACB30LU4-9		1	375	2
BACB30NF8-19		1	535	2
BACB30NJ4-11		1	515	3
BACN10JC10		1	270	2
BACN10JC12		1	575	2
BACN10JC18		1	255	1
		1	430	1
BACN10JC3		1	355	4
		1	490	2
BACN10JC4		1	150	2
		1	390	4
		1	525	3
BACN10JC8		1	20	1
		1	545	2
BACN11N4CD		1	65B	1
		1	100B	1
BACP18BC02A06P		1	50A	1
		1	85A	1
BACR15BB4B10		1	495	2
BACR15BB8B10		1	500	2
BACW10BP12APU		1	580	2
BACW10BP18APU		1	260	1
		1	420	1
BACW10BP3APU		1	350	6
		1	480	2
BACW10BP4APU		1	60	2
		1	62	1
		1	95	2
		1	97	1
		1	145	4
BACW10BP6APU		1	35	4
KSSB44-19		1	230	1
LCN12-428		1	65	1
		1	100	1
LCN12-624		1	40	2
MS24665-151		1	340	4
MS24665-153		1	50	1
		1	85	1
MS24665-300		1	25	2
MS24665-304		1	265	2
		1	570	2

PART NUMBER	AIRLINE PART NO.	FIG.	ITEM	TTL REQ
MS24665-306		1	250	1
		1	410	1
NAS6604-13		1	140	2
NAS6604-38		1	370	1
NAS6604-42		1	380	1
NAS6604D42		1	55A	1
		1	90A	1
NAS6604D44		1	55	1
		1	90	1
NAS6606D58		1	30	2
NAS6608-42		1	15	1
NAS73-12E014		1	620	1
161T1210-12		1	600	2
		1	655	2
161T1210-19		1	320	1
161T1210-20		1	315	2
		1	640	2
161T1210-37		1	650	2
161T1210-38		1	645	4
161T1210-39		1	445	4
161T1210-40		1	455	2
161T1210-41		1	325	2
161T1210-55		1	595	1
161T1210-8		1	195	4
161T5001-1		1	80	1
		1	115	1
162T1122-1		1	235	4
162T1122-2		1	130	4
162T2000-10		1	1B	RF
162T2000-11		1	1C	RF
162T2000-12		1	245C	1
162T2000-13		1	1D	RF
162T2000-14		1	1E	RF
162T2000-15		1	1F	RF
162T2000-16		1	1G	RF
162T2000-17		1	245D	1
162T2000-5		1	1	RF
162T2000-6		1	1A	
162T2000-7		1	245	1
162T2000-8		1	245A	
162T2000-9		1	245B	1
162T2001-5		1	170	1
162T2001-6		1	215	1
162T2001-7		1	170A	1
162T2001-8		1	215A	1
162T2003-3		1	220	1
162T2003-4		1	240	1

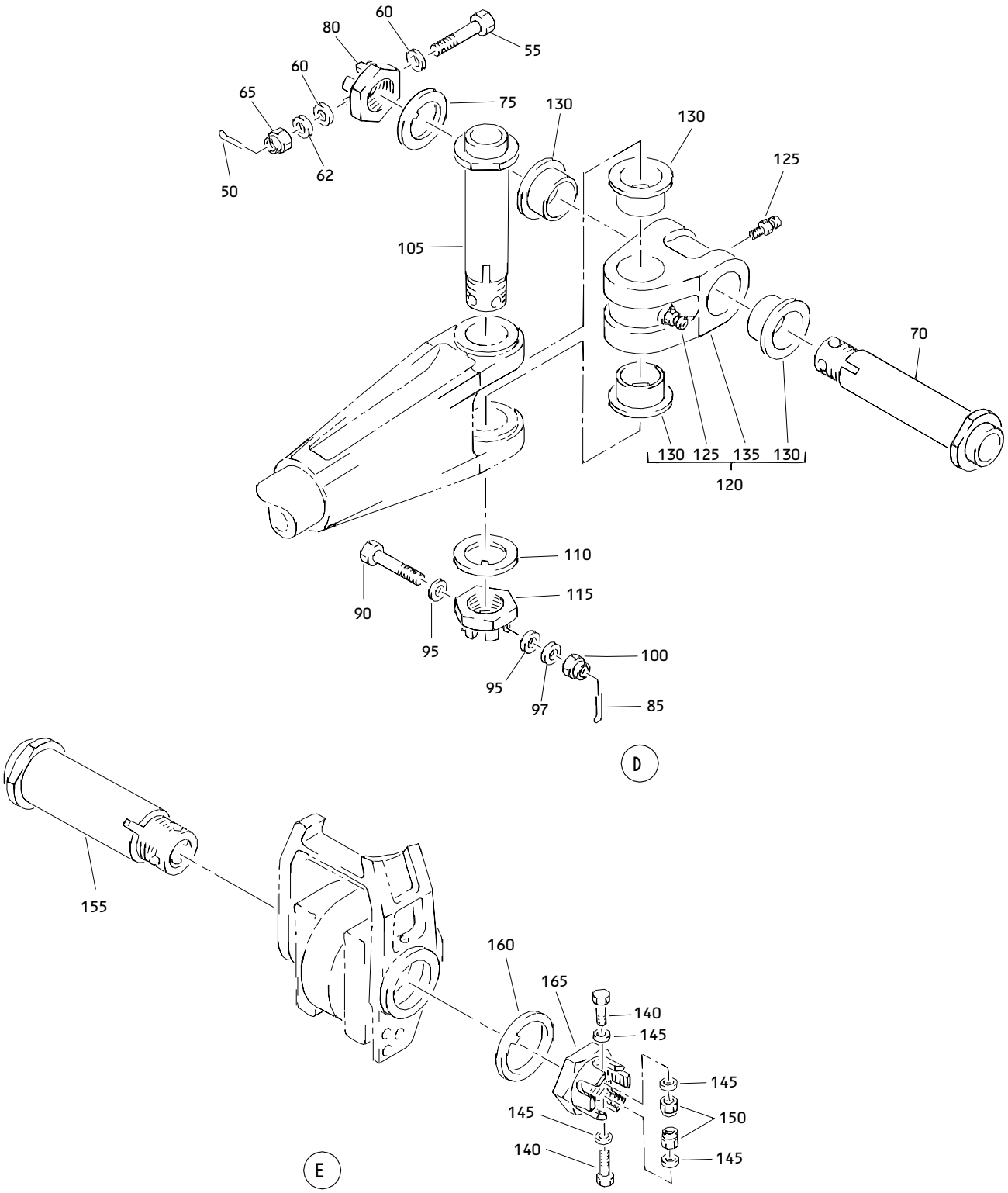
PART NUMBER	AIRLINE PART NO.	FIG.	ITEM	TTL REQ
162T2003-5		1	220A	1
162T2003-6		1	240A	1
162T2005-1		1	120	1
162T2005-2		1	135	1
162T2007-1		1	45	2
162T2007-2		1	45A	2
162T2008-1		1	155	1
162T2009-1		1	105	1
162T2009-2		1	70	1
162T2009-3		1	105A	1
162T2009-4		1	70A	1
162T2011-1		1	165	1
162T2015-1		1	75	1
		1	110	1
162T2015-14		1	5	1
162T2015-4		1	425	1
162T2015-6		1	160	1
162T2017-1		1	275	2
162T2017-2		1	540	2
162T2100-1		1	210	4
162T2101-1		1	200	2
162T2101-2		1	205	2
162T2101-3		1	190	4
162T2103-1		1	185	4
162T2104-1		1	170J	1
162T2104-2		1	215J	1
162T3001-1		1	630	1
162T3001-2		1	665	1
162T3003-1		1	435	1
162T3003-2		1	470	1
162T3003-3		1	435A	1
162T3003-4		1	470A	1
162T3005-1		1	305A	1
162T3005-2		1	330A	1
162T3006-1		1	415	1
162T3006-2		1	10	1
162T3007-2		1	335	2
162T3008-2		1	295	1
162T3008-3		1	625	1
162T3010-1		1	475	2
162T3011-1		1	300	1
162T3012-2		1	280	2
		1	550	2
162T3012-4		1	290	1
		1	560	1
162T3014-1		1	360	2
162T3015-1		1	365	2

PART NUMBER	AIRLINE PART NO.	FIG.	ITEM	TTL REQ
162T3016-3		1	510	1
162T3016-4		1	505	1
162T3017-4		1	405	2
162T3017-5		1	395	1
162T3017-6		1	400	1
162T3020-1		1	660	4
162T3021-1		1	460	2
162T3021-2		1	450	2
162T3027-1		1	305	1
162T3027-2		1	330	1
162T3028-1		1	610	1
162T3029-1		1	585	2
162T3029-2		1	605	1
162T3030-1		1	615	2
162T3031-1		1	530	1
162T3032-1		1	465	1
162T3033-1		1	335A	
162T3033-2		1	335B	2
162T3033-3		1	335C	2
1728B		1	125	2
		1	175	4
		1	225	3
		1	310	1
		1	440	2
		1	635	4
1743B		1	180	4
3036		1	590	1
58703-428-7		1	65A	1
		1	100A	1
58703-624-15		1	40A	2
60B00180-43		1	230	1
60B00180-48		1	230A	1
60B00180-49		1	230B	1
60B00180-50		1	230C	1
69B96332-1		1	485	2



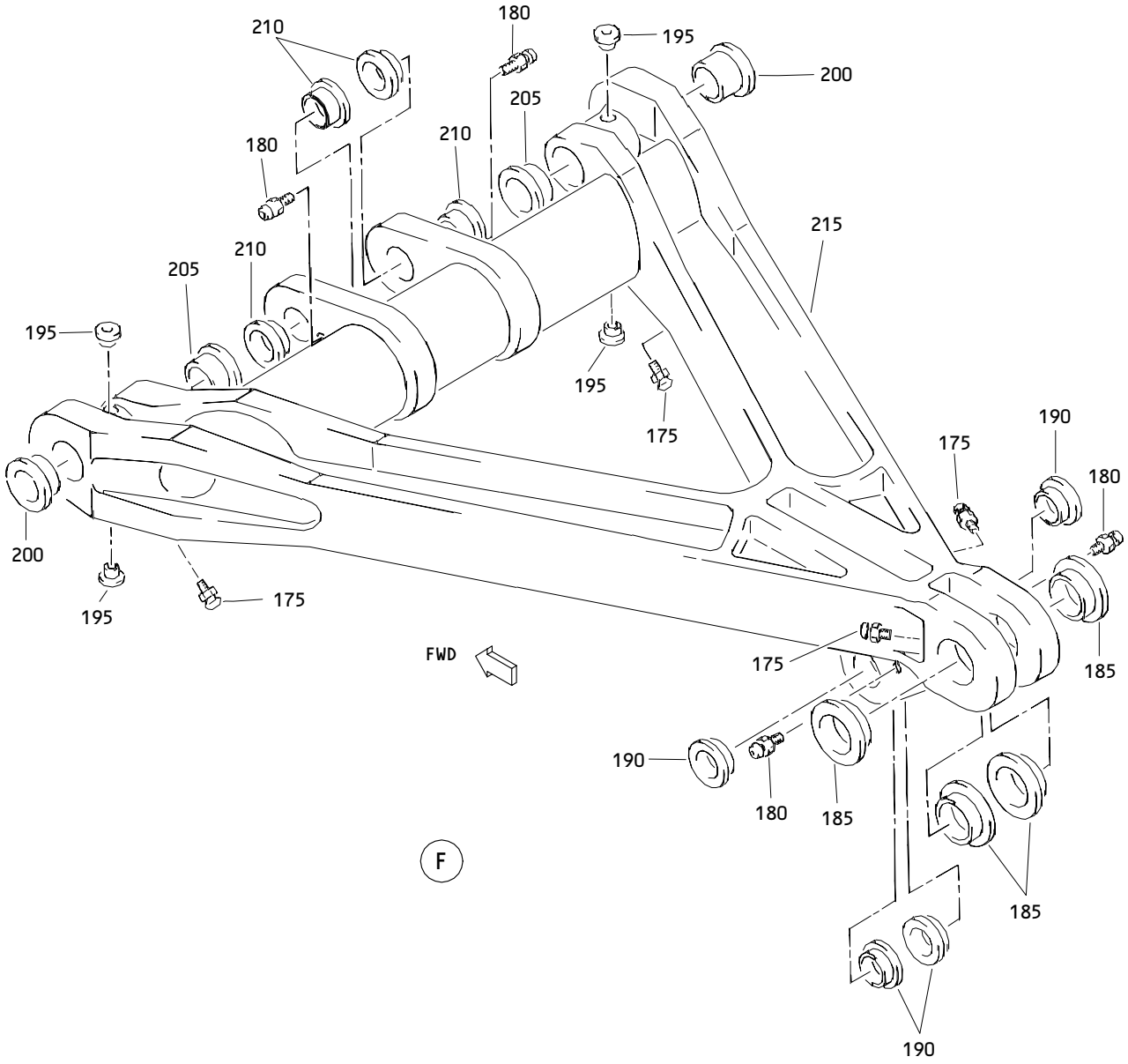
Nose Landing Gear Drag Strut Assembly
Figure 1 (Sheet 1)

T81142



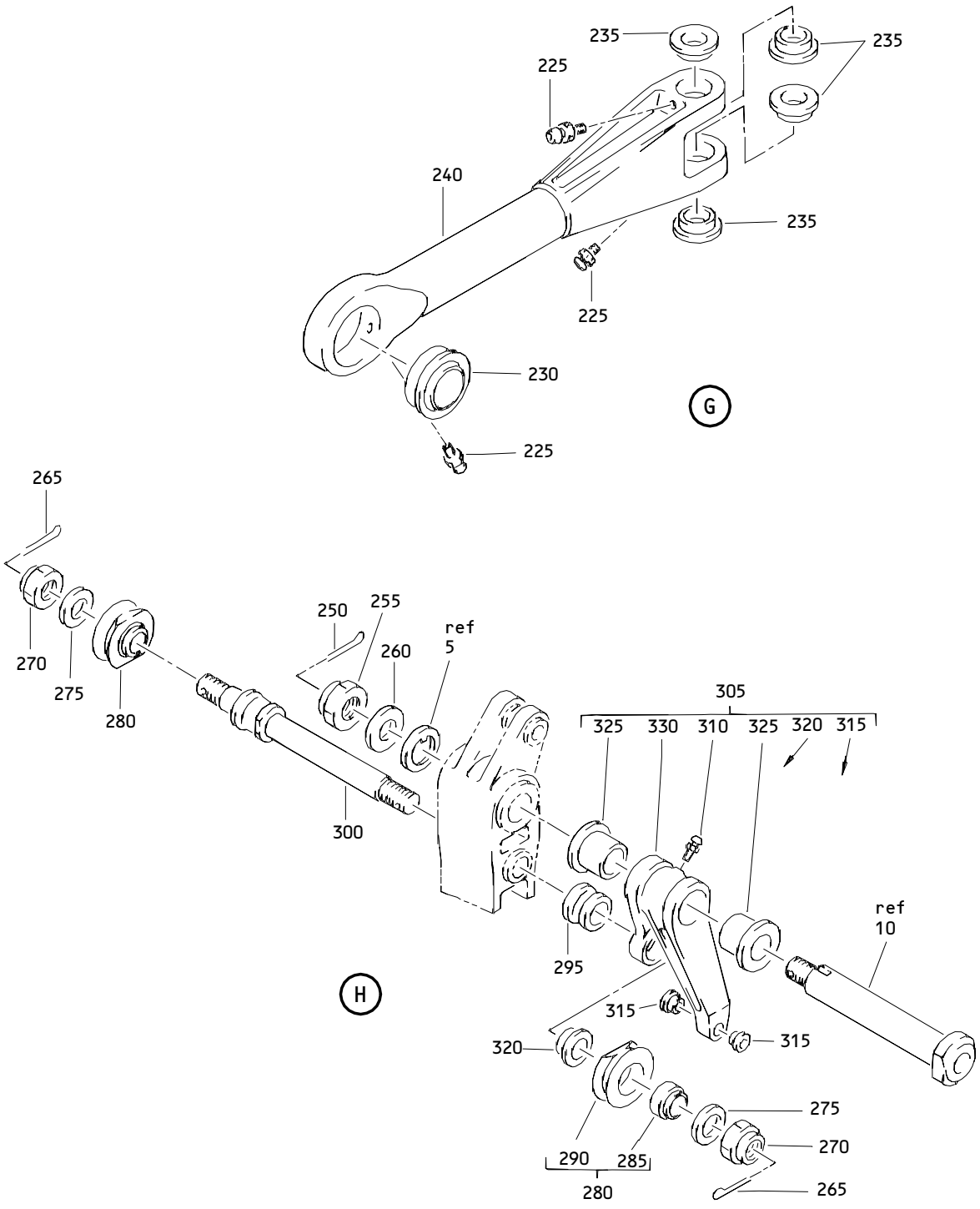
Nose Landing Gear Drag Strut Assembly
Figure 1 (Sheet 2)

T81143

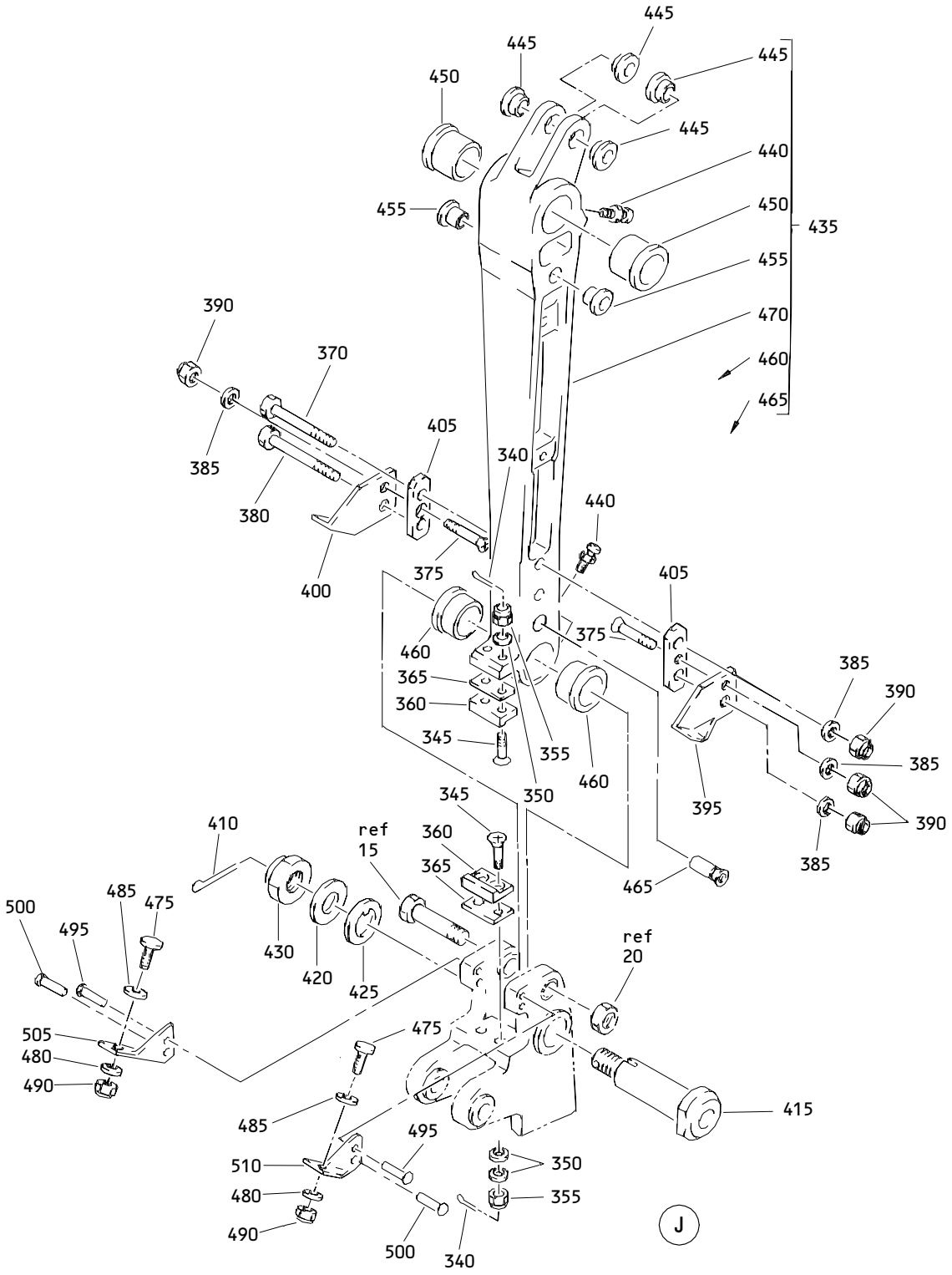


Nose Landing Gear Drag Strut Assembly
Figure 1 (Sheet 3)

T81144

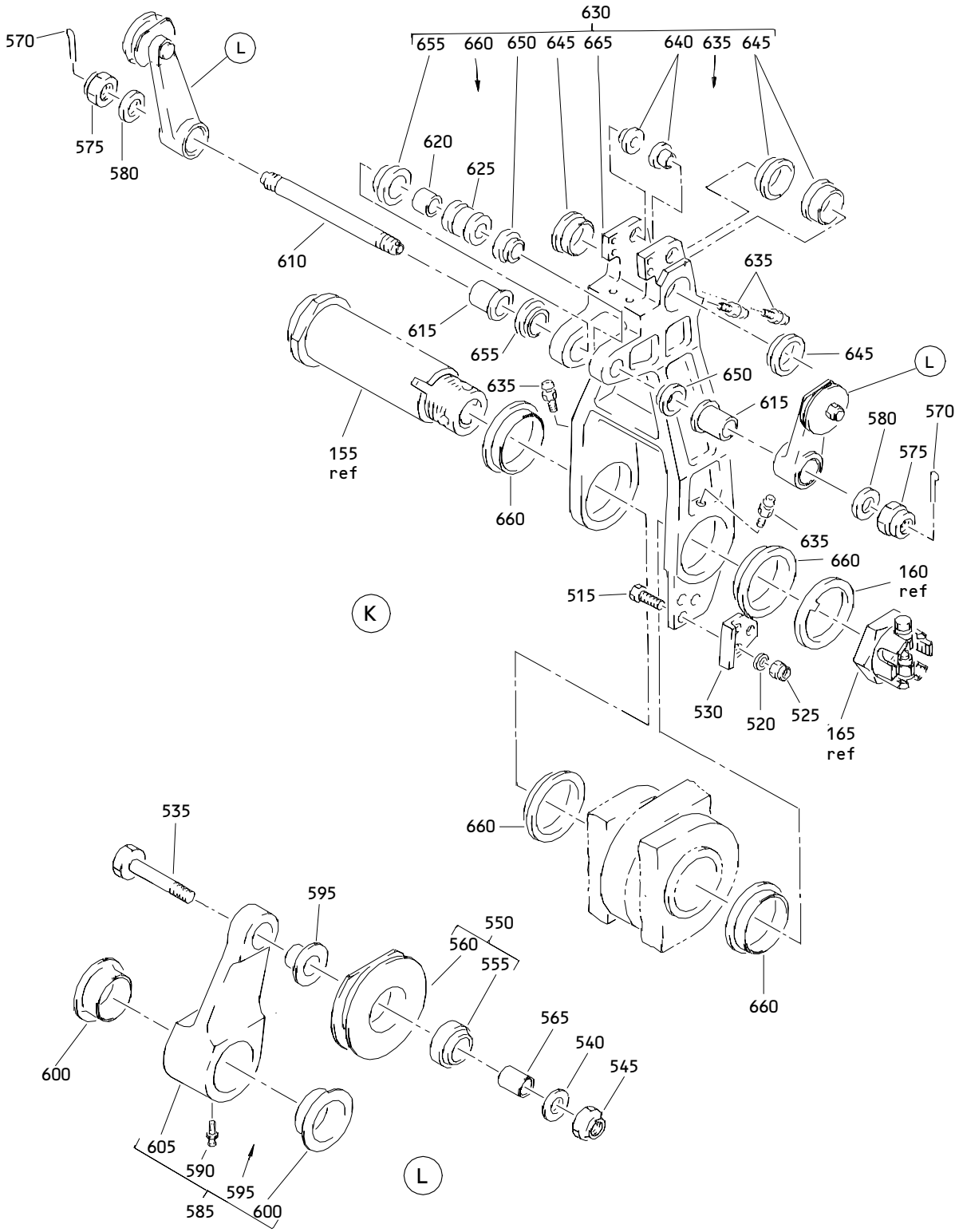


Nose Landing Gear Drag Strut Assembly
Figure 1 (Sheet 4)



Nose Landing Gear Drag Strut Assembly
Figure 1 (Sheet 5)

T81146



Nose Landing Gear Drag Strut Assembly
Figure 1 (Sheet 6)

FIG. & ITEM	PART NO.	AIRLINE PART NUMBER	NOMENCLATURE 1234567	EFF CODE	QTY PER ASSY
01-					
-1	162T2000-5		STRUT ASSY-NLG DRAG	A	RF
-1A	162T2000-6		DELETED		
-1B	162T2000-10		STRUT ASSY-NLG DRAG	B	RF
-1C	162T2000-11		STRUT ASSY-NLG DRAG	C	RF
-1D	162T2000-13		STRUT ASSY-NLG DRAG	D	RF
-1E	162T2000-14		STRUT ASSY-NLG DRAG	E	RF
-1F	162T2000-15		STRUT ASSY-NLG DRAG	F	RF
-1G	162T2000-16		STRUT ASSY-NLG DRAG	G	RF
5	162T2015-14		.WASHER-TANG		1
10	162T3006-2		.PIN-LOCK		1
15	NAS6608-42		.BOLT-*(1)		1
20	BACN10JC8		.NUT-*(1)		1
25	MS24665-300		.PIN-COTTER		2
30	NAS6606D58		.BOLT		2
35	BACW10BP6APU		.WASHER- (V10630) (SPEC BACW10BP6APU)		4
40	LCN12-624		.NUT- (V56878) (OPT ITEM 40A)		2
-40A	58703-624-15		.NUT- (V56878) (OPT ITEM 40)		2
45	162T2007-1		.PIN-UPR	ABDF	2
-45A	162T2007-2		.PIN-UPR	CEG	2
50	MS24665-153		.PIN-COTTER	A-F	1
-50A	BACP18BC02A06P		.PIN-COTTER	G	1
55	NAS6604D44		.BOLT	A-F	1
-55A	NAS6604D42		.BOLT	G	1
60	BACW10BP4APU		.WASHER		2
62	BACW10BP4APU		.WASHER	A-F	1
65	LCN12-428		.NUT-SELF LOCKING (V56878) (OPT ITEM 65A)	A-F	1

FIG. & ITEM	PART NO.	AIRLINE PART NUMBER	NOMENCLATURE 1234567	EFF CODE	QTY PER ASSY
01-					
-65A	58703-428-7		.NUT- (V56878) (OPT ITEM 65)	A-F	1
-65B	BACN11N4CD		.NUT	G	1
70	162T2009-2		.PIN-UNIV	ABDF	1
-70A	162T2009-4		.PIN-UNIV	CEG	1
75	162T2015-1		.WASHER-TANG		1
80	161T5001-1		.NUT		1
85	MS24665-153		.PIN-COTTER	A-F	1
-85A	BACP18BC02A06P		.PIN-COTTER	G	1
90	NAS6604D44		.BOLT	A-F	1
-90A	NAS6604D42		.BOLT	G	1
95	BACW10BP4APU		.WASHER		2
97	BACW10BP4APU		.WASHER	A-F	1
100	LCN12-428		.NUT-SELF LOCKING (V56878) (OPT ITEM 100A)	A-F	1
-100A	58703-428-7		.NUT- (V56878) (OPT ITEM 100)	A-F	1
-100B	BACN11N4CD		.NUT	G	1
105	162T2009-1		.PIN-LWR	ABDF	1
-105A	162T2009-3		.PIN-LWR	CEG	1
110	162T2015-1		.WASHER-TANG		1
115	161T5001-1		.NUT		1
120	162T2005-1		.UNIVERSAL ASSY		1
125	1728B		..FITTING-LUBE (V95879)		2
130	162T1122-2		..BUSHING		4
135	162T2005-2		..UNIVERSAL		1
140	NAS6604-13		.BOLT		2
145	BACW10BP4APU		.WASHER-		4

FIG. & ITEM	PART NO.	AIRLINE PART NUMBER	NOMENCLATURE 1234567	EFF CODE	QTY PER ASSY
01-					
150	BACN10JC4		.NUT		2
155	162T2008-1		.PIN-APEX		1
160	162T2015-6		.WASHER-TANG		1
165	162T2011-1		.NUT-APEX		1
170	162T2001-5		.STRUT ASSY-UPR DRAG (OPT ITEM 170A)	ABDF	1
-170A	162T2001-7		.STRUT ASSY-UPR DRAG (OPT ITEM 170)	ABDF	1
-170J	162T2104-1		.STRUT ASSY-UPR DRAG	CEG	1
175	1728B		..FITTING-LUBE (V95879)		4
180	1743B		..FITTING-LUBE (V95879)		4
185	162T2103-1		..BUSHING		4
190	162T2101-3		..BUSHING		4
195	161T1210-8		..BUSHING		4
200	162T2101-1		..BUSHING		2
205	162T2101-2		..BUSHING		2
210	162T2100-1		..BUSHING		4
215	162T2001-6		..STRUT-DRAG (USED ON ITEM 170)		1
-215A	162T2001-8		..STRUT-DRAG (USED ON ITEM 170A)		1
-215J	162T2104-2		..STRUT (USED ON ITEM 170J)		1
220	162T2003-3		.STRUT ASSY-LWR	ABDF	1
-220A	162T2003-5		.STRUT ASSY-LWR	CEG	1
225	1728B		..FITTING-LUBE (V95879)		3

FIG. & ITEM	PART NO.	AIRLINE PART NUMBER	NOMENCLATURE 1234567	EFF CODE	QTY PER ASSY
01-					
230	KSSB44-19		..BEARING- (V97613) (SPEC 60B00180-43) (SELECT FROM)		1
-230A	60B00180-48		..BEARING-(REPAIR PART) (0.02 OVERSIZED) (SELECT FROM)		1
-230B	60B00180-49		..BEARING-(REPAIR PART) (0.04 OVERSIZED) (SELECT FROM)		1
-230C	60B00180-50		..BEARING-(REPAIR PART) (0.06 OVERSIZED) (SELECT FROM)		1
235	162T1122-1		..BUSHING		4
240	162T2003-4		..STRUT (USED ON ITEM 220)		1
-240A	162T2003-6		..STRUT (USED ON ITEM 220A)		1
245	162T2000-7		.LINK ASSY-LOCK	A	1
-245A	162T2000-8		DELETED		
-245B	162T2000-9		.LINK ASSY-LOCK	BC	1
-245C	162T2000-12		.LINK ASSY-LOCK	DE	1
-245D	162T2000-17		.LINK ASSY-LOCK	FG	1
250	MS24665-306		..PIN-COTTER		1
255	BACN10JC18		..NUT		1
260	BACW10BP18APU		..WASHER		1
265	MS24665-304		..PIN-COTTER		2
270	BACN10JC10		..NUT		2
275	162T2017-1		..WASHER		2
280	162T3012-2		..SPOOL ASSY-SPR		2
285	BACB10FC10C		...BEARING		1

FIG. & ITEM	PART NO.	AIRLINE PART NUMBER	NOMENCLATURE 1234567	EFF CODE	QTY PER ASSY
01-					
290	162T3012-4		...SPOOL		1
295	162T3008-2		..SPACER-LOCK		1
300	162T3011-1		..SPINDLE-AFT		1
305	162T3027-1		..ARM ASSY-STEERING MECH (OPT ITEM 305A)		1
-305A	162T3005-1		..ARM ASSY-STEERING MECH (OPT ITEM 305)		1
310	1728B		...FITTING- (V95879)		1
315	161T1210-20		...BUSHING		2
320	161T1210-19		...BUSHING		1
325	161T1210-41		...BUSHING		2
330	162T3027-2		...ARM- (USED ON ITEM 305)		1
-330A	162T3005-2		...ARM- (USED ON ITEM 305A)		1
335	162T3007-2		..SPRING-LOCK (OPT ITEM 335B) (USED ON ITEMS 245, 245B, 245C)		2
-335A	162T3033-1		DELETED		
-335B	162T3033-2		..SPRING-LOCK (OPT ITEM 335) (USED ON ITEMS 245, 245B, 245C)		2
-335C	162T3033-3		..SPRING-LOCK (USED ON ITEM 245D)		2
340	MS24665-151		..PIN-COTTER		4
345	BACB30LH3DU13		..BOLT		4
350	BACW10BP3APU		..WASHER- (V10630) (SPEC BACW10BP3APU)		6

FIG. & ITEM	PART NO.	AIRLINE PART NUMBER	NOMENCLATURE 1234567	EFF CODE	QTY PER ASSY
01-					
355	BACN10JC3		..NUT		4
360	162T3014-1		..PLATE-STOP		2
365	162T3015-1		..SHIM- (MFD FROM CRES BAC15374-33C F25-01 .033 IN 1.50 IN .85 IN)		2
370	NAS6604-38		..BOLT		1
375	BACB30LU4-9		..BOLT		2
380	NAS6604-42		..BOLT		1
385	AN960PD416		..WASHER		4
390	BACN10JC4		..NUT		4
395	162T3017-5		..BRACKET-AFT LOCK LINK SENSOR		1
400	162T3017-6		..BRACKET-AFT LOCK LINK SENSOR		1
405	162T3017-4		..SPACER		2
410	MS24665-306		..PIN-COTTER		1
415	162T3006-1		..PIN-LOCK		1
420	BACW10BP18APU		..WASHER		1
425	162T2015-4		..WASHER-TANG		1
430	BACN10JC18		..NUT		1
435	162T3003-1		..LINK ASSY-AFT LOCK (USED ON ITEM 245)		1
-435A	162T3003-3		..LINK ASSY-AFT LOCK (USED ON ITEMS 245B, 245C, 245D)		1
440	1728B		...FITTING-LUBE (V95879)		2
445	161T1210-39		...BUSHING		4

FIG. & ITEM	PART NO.	AIRLINE PART NUMBER	NOMENCLATURE 1234567	EFF CODE	QTY PER ASSY
01-					
450	162T3021-2		...BUSHING		2
455	161T1210-40		...BUSHING		2
460	162T3021-1		...BUSHING		2
465	162T3032-1		...BUSHING (USED ON ITEM 435A)		1
470	162T3003-2		...LINK (USED ON ITEM 435)		1
-470A	162T3003-4		...LINK (USED ON ITEM 435A)		1
475	162T3010-1		..TARGET-SENSOR		2
480	BACW10BP3APU		..WASHER-		2
485	69B96332-1		..SHIM-TARGET		2
490	BACN10JC3		..NUT		2
495	BACR15BB4B10		..RIVET		2
500	BACR15BB8B10		..RIVET		2
505	162T3016-4		..BRACKET-LOCK LINK SENSOR TARGET		1
510	162T3016-3		..BRACKET-LOCK LINK SENSOR TARGET		1
515	BACB30NJ4-11		..BOLT (USED ON ITEMS 245B, 245C, 245D)		3
520	AN960-416		..WASHER (USED ON ITEMS 245B, 245C, 245D)		3
525	BACN10JC4		..NUT		3
530	162T3031-1		..PAD-MANUAL RELEASE (USED ON ITEMS 245B, 245C, 245D)		1
535	BACB30NF8-19		..BOLT		2
540	162T2017-2		..WASHER		2
545	BACN10JC8		..NUT		2

FIG. & ITEM	PART NO.	AIRLINE PART NUMBER	NOMENCLATURE 1234567	EFF CODE	QTY PER ASSY
01-					
550	162T3012-2		..SPOOL ASSY-SPR		2
555	BACB10FC10C		...BEARING		1
560	162T3012-4		...SPOOL		1
565	BACB28Y8C058		..BUSHING		2
570	MS24665-304		..PIN-COTTER		2
575	BACN10JC12		..NUT		2
580	BACW10BP12APU		..WASHER (V10630) (SPEC BACW10BP12APU)		2
585	162T3029-1		..CRANK ASSY-LOCK		2
590	3036		...FITTING-LUBE (V95879)		1
595	161T1210-55		...BUSHING		1
600	161T1210-12		...BUSHING		2
605	162T3029-2		...CRANK		1
610	162T3028-1		..SHAFT-LOCK		1
615	162T3030-1		..SPACER-LOCK		2
620	NAS73-12E014		..SPACER		1
625	162T3008-3		..SPACER-LOCK		1
630	162T3001-1		..LINK ASSY-FWD LOCK		1
635	1728B		...FITTING-LUBE (V95879)		4
640	161T1210-20		...BUSHING		2
645	161T1210-38		...BUSHING		4
650	161T1210-37		...BUSHING		2
655	161T1210-12		...BUSHING		2
660	162T3020-1		...BUSHING		4
665	162T3001-2		...LINK		1

*(1) THIS BOLT AND NUT IS USED ONLY FOR PROTECTION DURING SHIPPING AND IS REMOVED WHEN THE DRAG STRUT IS INSTALLED.