TO: ALL HOLDERS OF MAIN LANDING GEAR INSTALLATION COMPONENTS, COMPONENT MAINTENANCE MANUAL 32-11-81

REVISION NO. 32 DATED JUL 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
REPAIR 6-1 602	Identified differences of the 161T2031-series lock assemblies.
REPAIR 10-1 601	Added clarifications and updated callouts.
REPAIR 15-2 607	Changed the flange diameter of the oversize equivalent of bushing 161T2874-12.

MAIN LANDING GEAR INSTALLATION COMPONENTS

PART NUMBERS

112T1709-1	161T1300-1
161T1039-693	161T1309-1,-3
161T1039-1	161T2031-3,-5
161T1190-1	161T2045-1
161T1191-1,-2	161T2106-1,-3
161T1192-1	161T2114-1,-3
161T1193-1	161T2129-1
161T1194-1,-3	161T2130-1
161T1195-1	161T2133-1
161T1196-1	161T2136-2
161T1197-1	161T5000-2
161T1198-1	161T6010-1,-2

COMPONENT MAINTENANCE MANUAL
WITH
ILLUSTRATED PARTS LIST

MAIN LANDING GEAR INSTALLATION COMPONENTS

PART NUMBERS 161T6021-1
(CONTINUED) 161T6022-3,-4
161T6031-1,-3,-5
161T6033-1
161T6046-2,-3
161T6047-3,-5,-7,-9
161T6116-1

COMPONENT MAINTENANCE MANUAL
WITH
ILLUSTRATED PARTS LIST

M45388

REVISION RECORD

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

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

TEMPORARY REVISION AND SERVICE BULLETIN RECORD

BOEING SERVICE BULLETIN	BOEING TEMPORARY REVISION	OTHER DIRECTIVE	DATE OF INCORPORATION INTO MANUAL
51-7		PRR B10100 MC B1031-025K PRR C12338 PRR C12377 PRR B13390	JUL 10/84 APR 10/85 JAN 01/90 DEC 01/95 MAR 01/02

PAGE	DATE	CODE
32-11-81		
TITLE PAGE		
1	MAR 01/02	01.1
2	MAR 01/02	01.1
REVISION RECORD		
1	JUL 10/84	01
2	BLANK	
TR & SB RECORD		
1	MAR 01/02	01.1
2	BLANK	
LIST OF EFFECTIVE PAGES		
*1	JUL 01/05	01
THRU LAST PAGE		
CONTENTS		
1	DEC 01/95	01.1
2	MAR 01/02	01.1
INTRODUCTION		
1	JUL 10/84	01
2	BLANK	
REPAIR-GENERAL		
601	MAR 01/02	01.1
602	MAR 01/02	01.1
REPAIR 1-1		
601	JUL 10/85	01.1
602	JUL 10/84	01
REPAIR 2-1		
601	APR 10/85	01.1
602	OCT 01/88	01.1
REPAIR 3-1		
601	JUL 01/00	01.1
602	JAN 10/85	01.1
603	APR 10/85	01.1

PAGE	DATE	CODE
REPAIR 3-1		CONT.
604	BLANK	
REPAIR 4-1		
601	JUL 01/00	01.1
602	MAR 01/95	01.1
603	JUL 10/84	01
604	BLANK	
REPAIR 5-1		
601	JUL 10/85	01.1
602	JUL 10/85	01.101
603	APR 10/85	01.101
604	APR 10/85	01.101
REPAIR 6-1		
601	MAR 01/98	01.1
*602	JUL 01/05	01.1
603	MAR 01/98	01.1
604	BLANK	
REPAIR 7-1		
601	JUL 10/85	01.1
602	JUL 10/85	01.101
603	APR 10/85	01.101
604	APR 10/85	01.101
REPAIR 8-1		
601	JUL 01/99	01.1
602	JUL 01/99	01.1
603	JUL 01/03	01.1
604	JUL 01/99	01.1
REPAIR 9-1		
601	APR 10/85	01.1
602	APR 10/85	01.1
603	APR 10/85	01.101
604	APR 10/85	01.101
REPAIR 10-1		
*601	JUL 01/05	01.1
602	SEP 01/95	01.1
603	NOV 01/02	01.1

* = REVISED, ADDED OR DELETED

PAGE	DATE	CODE
REPAIR 10-1		CONT.
604	NOV 01/02	01.1
605	SEP 01/95	01.101
606	BLANK	
REPAIR 11-1		
601	JUL 01/00	01.1
602	JUL 01/00	01.1
603	JAN 01/90	01.1
604	NOV 01/03	01.1
REPAIR 12-1		
601	MAR 01/02	01.1
602	MAR 01/02	01.1
REPAIR 13-1		
601	MAR 01/02	01.1
602	BLANK	
REPAIR 13-2		
601	JUL 01/03	01.1
602	JUL 01/03	01.1
603	NOV 01/03	01.1
604	BLANK	
REPAIR 14-1		
601	JUL 01/00	01.1
602	DEC 01/95	01.1
REPAIR 14-2		
601	JUL 01/02	01.1
602	BLANK	
REPAIR 15-1		
601	JUL 01/03	01.1
602	MAR 01/02	01.1
603	MAR 01/02	01.1
604	MAR 01/02	01.1
REPAIR 15-2		
601	JUL 01/03	01.1
602	MAR 01/02	01.1
603	MAR 01/02	01.1

PAGE	DATE	CODE
REPAIR 15-2		CONT.
604	MAR 01/02	01.1
605	MAR 01/02	01.1
606	MAR 01/02	01.1
*607	JUL 01/05	01.1
608	BLANK	
REPAIR 15-3		
601	MAR 01/02	01.1
602	MAR 01/02	01.1
603	MAR 01/02	01.1
604	MAR 01/02	01.1
605	MAR 01/02	01.1
606	BLANK	
REPAIR 16-1		
601	MAR 01/02	01.1
602	BLANK	
REPAIR 16-2		
601	MAR 01/02	01.1
602	MAR 01/02	01.1
603	MAR 01/02	01.1
604	MAR 01/02	01.1
605	MAR 01/02	01.1
606	MAR 01/02	01.1
REPAIR 17-1		
601	MAR 01/02	01.1
602	MAR 01/02	01.1
603	MAR 01/02	01.1
604	MAR 01/02	01.1
REPAIR 18-1		
601	MAR 01/02	01.1
602	MAR 01/02	01.1
REPAIR 19-1		
601	JUL 01/02	01.1
602	NOV 01/04	01.1
603	NOV 01/04	01.1
604	NOV 01/04	01.1

* = REVISED, ADDED OR DELETED

PAGE	DATE	CODE
REPAIR 20-1		
601	JUL 01/00	01.1
602	BLANK	
REPAIR 21-1		
601	MAR 01/02	01.1
602	JUL 01/00	01.1
REPAIR 22-1		
601	MAR 01/02	01.1
602	MAR 01/02	01.1
603	MAR 01/02	01.1
604	BLANK	
REPAIR 23-1		
601	MAR 01/02	01.1
602	MAR 01/02	01.1
REPAIR 24-1		
601	MAR 01/02	01.1
602	MAR 01/02	01.1
FITS AND CLEARANCES		
801	MAR 01/02	01.1
802	DEC 01/95	01.1
803	DEC 01/95	01.1
804	DEC 01/95	01.1
805	DEC 01/95	01.1
806	DEC 01/95	01.1
807	MAR 01/02	01.1
808	MAR 01/02	01.1
809	MAR 01/02	01.1
810	MAR 01/02	01.1
ILLUSTRATED PARTS LIST		
1001	JUL 10/84	01
1002	JUL 10/84	01
1003	NOV 01/02	01.1
1004	MAR 01/05	01.1
1005	MAR 01/05	01.1
1006	BLANK	
1007	NOV 01/02	01.101
1008	NOV 01/04	01.1

PAGE	DATE	CODE
ILLUSTRATED PARTS LIST		CONT.
1009	NOV 01/04	01.1
1010	NOV 01/02	01.101
1011	NOV 01/02	01.101
1012	NOV 01/02	01.101
1013	MAR 01/05	01.1
1014	NOV 01/04	01.1
1015	NOV 01/04	01.1
1016	NOV 01/02	01.101
1017	NOV 01/02	01.101
1018	NOV 01/02	01.101
1019	NOV 01/02	01.101
1020	NOV 01/02	01.101
1021	NOV 01/02	01.101
1022	NOV 01/02	01.101
1023	NOV 01/02	01.101
1024	NOV 01/02	01.101
1025	NOV 01/02	01.101
1026	NOV 01/02	01.101
1027	MAR 01/05	01.1
1028	NOV 01/02	01.101
1029	NOV 01/02	01.101
1030	NOV 01/02	01.101
1031	NOV 01/02	01.101
1032	NOV 01/02	01.101
1033	MAR 01/05	01.1
1034	NOV 01/02	01.101
1035	NOV 01/02	01.101
1036	NOV 01/02	01.101
1037	NOV 01/02	01.101
1038	NOV 01/02	01.101
1039	NOV 01/02	01.101
1040	NOV 01/02	01.101
1041	NOV 01/02	01.101
1042	BLANK	

* = REVISED, ADDED OR DELETED

TABLE OF CONTENTS

NOTE: This manual contains overhaul data for some of the components of the main landing gear installation. Overhaul functions which cannot be done by standard industry practices are included in the repair instructions for each component.

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.

REPAIR - GENERAL

1. Content

   A. Each separate repair, as applicable, includes check, repair, and refinish instructions.

2. Standard Practices

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

20-00-00	Introduction
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
20-20-01	Magnetic Particle Inspection
20-20-02	Penetrant Methods of Inspection
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
20-42-03	Hard Chrome Plating
20-50-03	Bearing and Bushing Replacement
20-50-08	Application of Bonded Solid Film Lubricants
20-50-19	General Sealing
20-60-02	Finishing Materials
20-60-03	Lubricants
20-60-04	Miscellaneous Materials
32-00-02	Landing Gear Attachment Parts Top Coat Application
32-00-03	Landing Gear Parts Lubrication Fitting Replacement
32-00-05	Repair of High Strength Steel Landing Gear Parts

3. Materials

   NOTE: Equivalent substitutes can be used.

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

   B. Enamel -- BMS 10-60, color 707 gray gloss (SOPM 20-60-02)

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

D. Grease -- BMS 3-33 (SOPM 20-60-03)

4. Dimensioning Symbols

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

RACE ASSEMBLY, AFT TRUNNION OUTER - REPAIR 1-1

161T1190-1

NOTE: Refer to REPAIR/GEN for list of applicable standard practices. Refer to IPL Fig. 2 for item numbers.

1. Check

   A. Magnetic particle check race halves (5, 10).

2. Repair

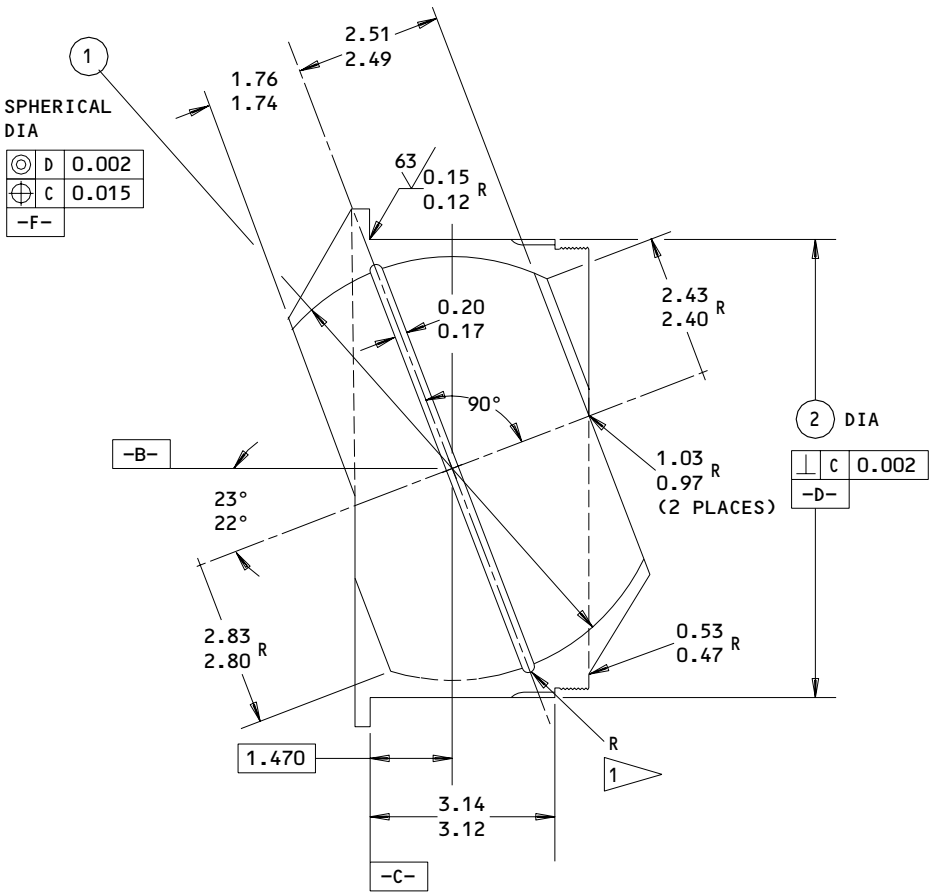
   A. Lube Fitting Replacement

      (1) Replace lube fitting (15) per 32-00-03.

   B. For repair of surfaces which may require only restoration of original finish, refer to Refinish instructions, Fig. 601.

3. Fits and Clearances

   A. Refer to Fig. 801.



	1	2
DESIGN DIM	7.2530 7.2515	7.749 7.748
REPAIR LIMIT	---	---

REFINISH

PASSIVATE (F-17.09) CHROME PLATE (F-15.03)
DIA -F-, 0.0005-0.0007 THICK

REPAIR

125 MACHINE FINISH EXCEPT AS NOTED

MATERIAL: 15-5PH CRES, 180-200 KSI

1 PLATING OPTIONAL

161T1190-2,-3
Race Repair and Refinish
Figure 601

132045

RACE, AFT TRUNNION INNER - REPAIR 2-1

161T1193-1

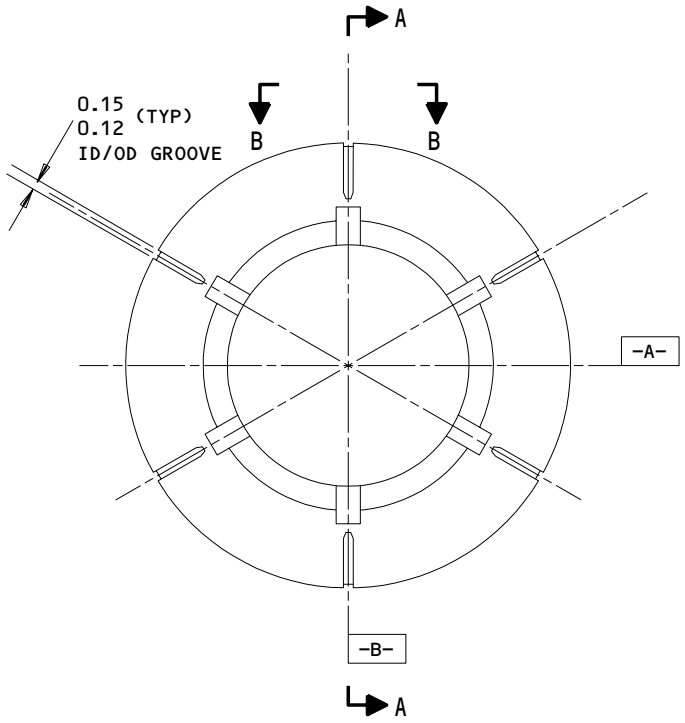
NOTE: Refer to REPAIR-GEN for list of applicable standard practices.

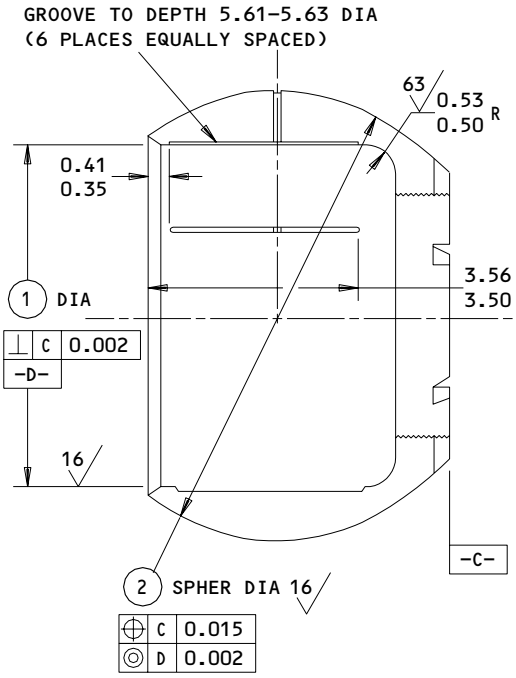
1. Repair

   NOTE: Repair consists of replacement of worn or defective race.

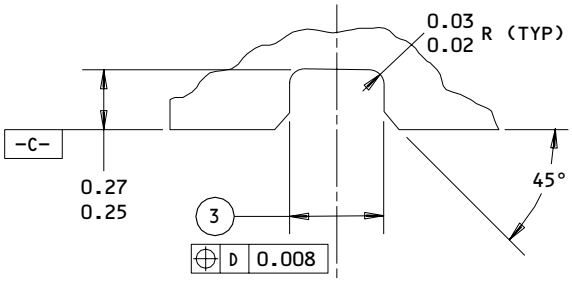
2. Fits and Clearances

   A. Refer to Fig. 801.





A-A



B-B

	1	2	3
DESIGN DIM	5.5015 5.5000	7.2500 7.2485	0.534 0.527
REPAIR LIMIT	---	---	---

REFINISH

NO FINISH

REPAIR

MATERIAL: AL-NI-BRZ PER AMS 4640

ALL DIMENSIONS ARE IN INCHES

161T1193-1
Race Repair
Figure 601

132048

COLLAR ASSEMBLY, AFT TRUNNION BEARING ADJUSTING - REPAIR 3-1

161T1194-1, -3

NOTE: Refer to REPAIR - GENERAL for a list of applicable standard practices.
Refer to IPL Fig. 3 for item numbers.

1. Check

   A. Magnetic particle examine collar (5).

2. Repair

   A. Bushing Replacement (Fig. 601)

      (1) Remove the old bushings.

      (2) If you find defects on the collar, refer to par. B for repair instructions.

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

      (4) Make a check of the dimensions and machine them as necessary to design dimensions and finish.

   B. Installation of Oversize Bushing (Fig. 601)

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

      (2) Passivate.

      (3) Make an oversize bushing (Fig. 602) as required to adjust for the material removed in step (1).

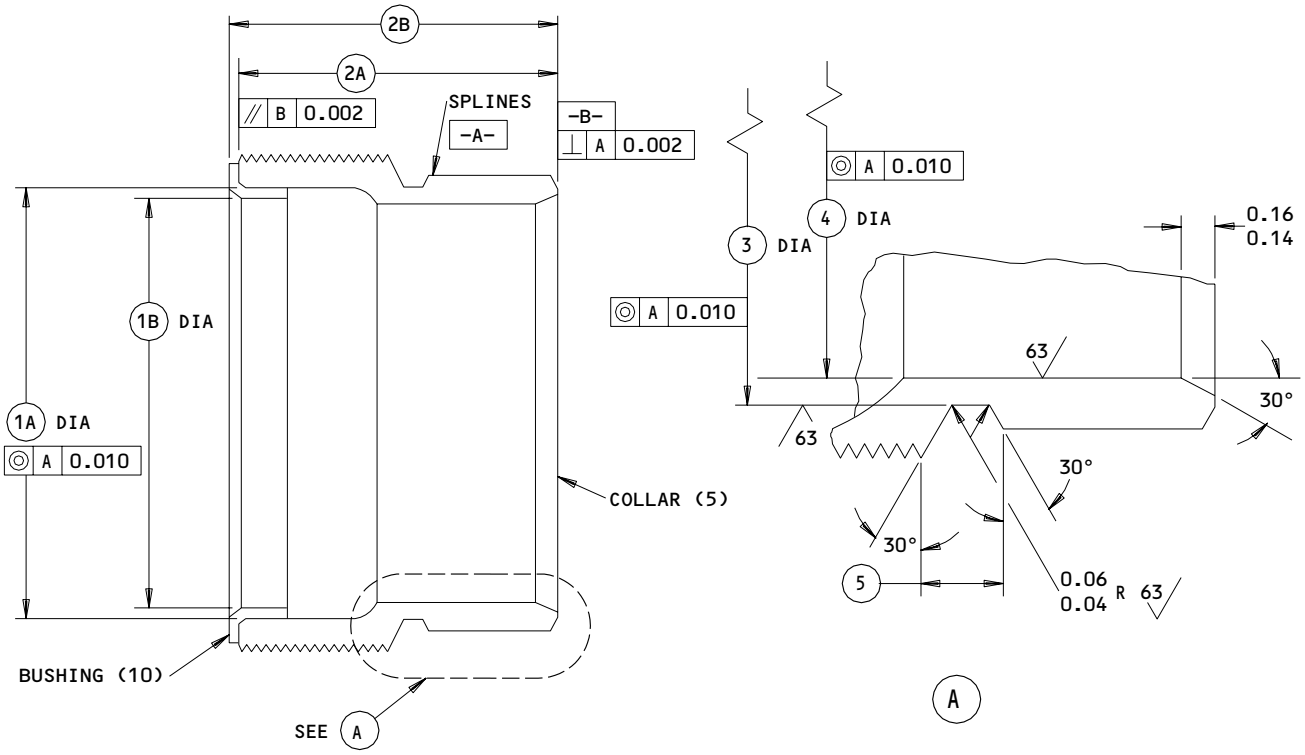
      (4) Install the bushing per par. A.

   C. Refinish

      (1) For repair of surfaces which is only replacement of the original finish, refer to Refinish instructions, Fig. 601.

3. Fits and Clearances

   A. Refer to Fig. 801.



	1A	1B	2A	2B	3	4	5
DESIGN DIM	3.4515 3.4500	3.2777 3.2444	2.66 2.64	2.741 2.720	3.510 3.490	3.27 3.25	0.39 0.37
REPAIR LIMIT	3.4715 <1>	---	---	---	---	---	---

REFINISH

PASSIVATE (F-17.09) ALL OVER. ON 161T1194-2 COLLAR, APPLY DRY FILM LUBRICANT TO SPLINES PER MIL-L-8937,TYPE VI, CLASS I.

<1> LIMIT FOR INSTL OF OVERSIZE BUSHING

REPAIR

REF <1>

125 MACHINE FINISH EXCEPT AS NOTED

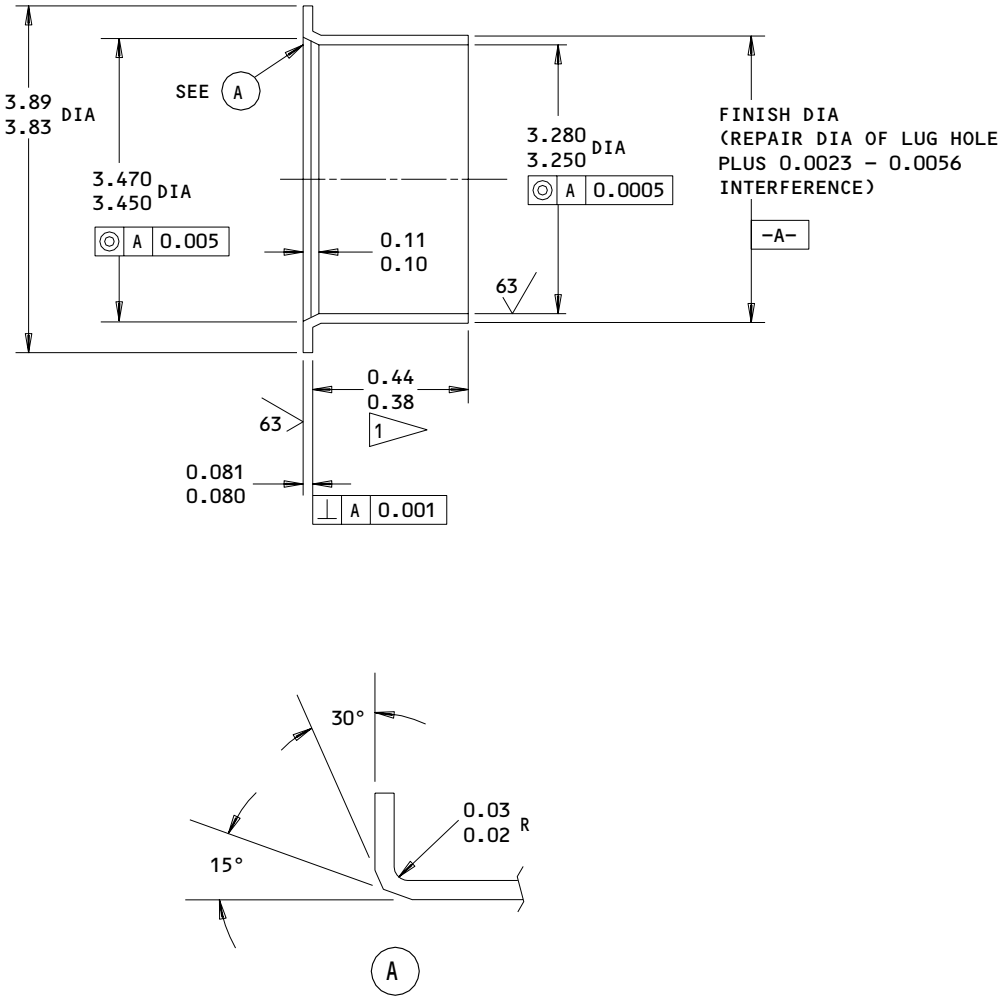
SHOT PEEN: 0.017-0.046 SHOT SIZE
0.016A2 INTENSITY

MATERIAL: 15-5PH CRES, 180-200 KSI

ALL DIMENSIONS ARE IN INCHES

ITEM NUMBERS REFER TO IPL FIG. 3

161T1194-1,-3
Collar Repair and Refinish
Figure 601



HOLE LOCATION (1A) FIG. 601 - REPLACES BUSHING (10, IPL FIG. 3) 161T1210-33

125 ALL MACHINED SURFACES EXCEPT AS NOTED

BREAK SHARP EDGES 0.01 - 0.02R

CADMIUM PLATE (0.0003-0.0005 THICK, F-15.06) ALL OVER (OPT IN ID)

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

ALL DIMENSIONS APPLY BEFORE PLATING

ALL DIMENSIONS ARE IN INCHES

1 MINUS AMOUNT REMOVED FROM LUG FACE

Oversize Bushing Details
Figure 602

WASHER ASSEMBLY, AFT TRUNNION BEARING SPLINED - REPAIR 4-1

161T1197-1

NOTE: Refer to REPAIR-GEN for a list of applicable standard practices. Refer to IPL Fig. 5 for item numbers.

1. Check

   A. Magnetic particle examine washer (5).

2. Repair

   A. Bushing (10) Replacement

      (1) Remove the old bushing.

      (2) Install a replacement bushing by the shrink-fit method (SOPM 20-50-03).

   B. Installation of Oversize Bushing

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

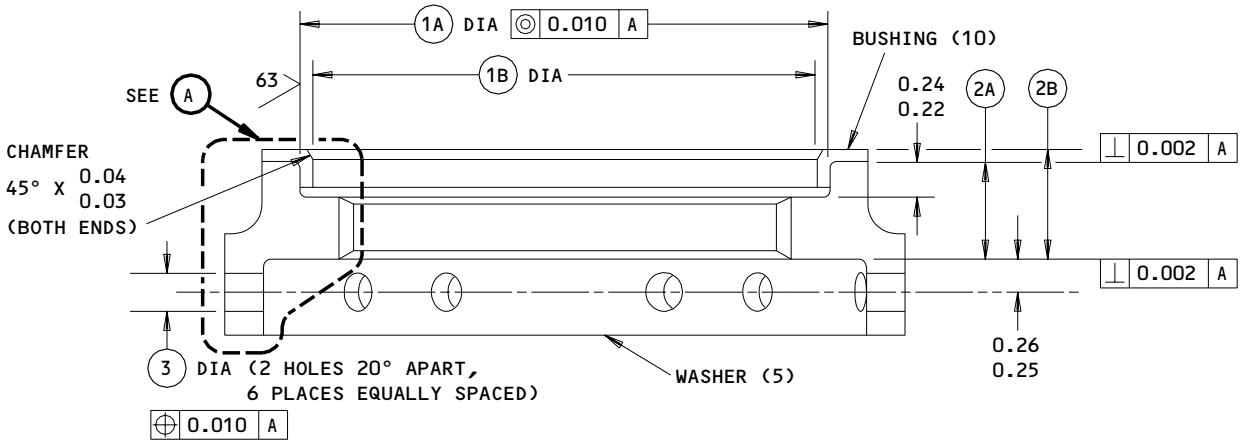
      (2) Shot peen and passivate.

      (3) Make an oversize bushing per Fig. 602 to adjust for the material removed in step (1).

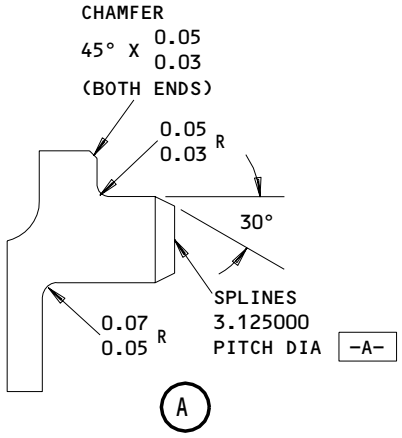
      (4) Install the bushing per par. A.

   C. Refinish

      (1) For repair of surfaces which is only replacement of the original finish, refer to Refinish instructions, Fig. 601.



REFERENCE NUMBER	1A	1B	2A	2B	3
DESIGN DIMENSION	3.8265 3.8250	3.628 3.614	0.66 0.65	0.741 0.730	0.354 0.342
REPAIR LIMIT	3.8465 1	--	--	--	--
WEAR LIMIT	--	--	--	0.720	--



REFINISH

PASSIVATE (F-17.09) ALL OVER. APPLY DRY-FILM LUBRICANT MIL-L-8937, TYPE VI, CLASS 1 TO SPLINES

1 LIMIT FOR INSTL OF OVERSIZE BUSHING

REPAIR

125 ALL MACHINED SURFACES UNLESS SHOWN DIFFERENTLY

SHOT PEEN: (EXCEPT SPLINES)
0.017-0.023 SHOT SIZE
0.016A2 INTENSITY

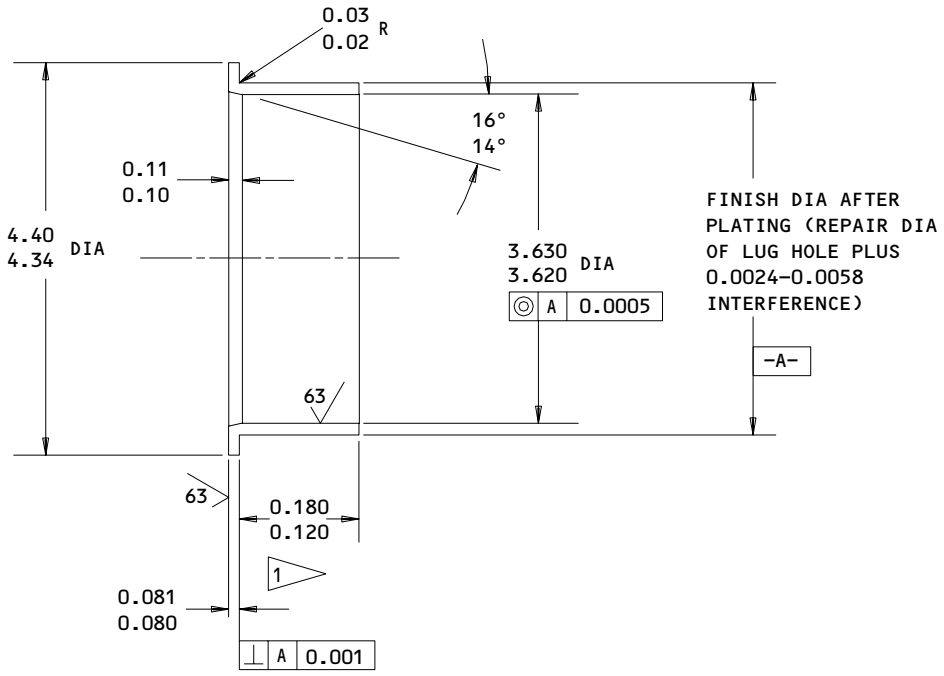
MATERIAL: 15-5PH CRES, 180-200 KSI

ITEM NUMBERS REFER TO IPL FIG. 5

ALL DIMENSIONS ARE IN INCHES

161T1197-1
Washer Repair and Refinish
Figure 601

132192



HOLE LOCATION (1A) FIG. 601 - REPLACES BUSHING (10, IPL FIG. 5) 161T1210-32

125 ALL MACHINED SURFACES EXCEPT AS NOTED

BREAK SHARP EDGES 0.01-0.02R

CADMIUM PLATE (0.0003-0.0005 THICK, F-15.06) ALL OVER (OPT IN ID)

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

ALL DIMENSIONS APPLY BEFORE PLATING

ALL DIMENSIONS ARE IN INCHES

1 MINUS AMOUNT REMOVED FROM LUG FACE

Oversize Bushing Details
Figure 602

131972

BOLT ASSEMBLY, LOCK ACTUATOR - REPAIR 5-1

161T1309-1, -3

NOTE: Refer to REPAIR-GEN for list of applicable standard practices. Refer to IPL Fig. 6 for item numbers.

1. Check

   A. Magnetic particle check bolts (15, 20).

2. Repair

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

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

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

   B. Head Face Repair

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

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

         NOTE: As an option, chrome plate buildup may be omitted and shoulder face at thread end machined accordingly to restore grip length.

   C. Relief Grooves

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

      (2) Shot peen and apply cadmium-titanium plate followed by primer.

   D. Pin Retention Hole

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

      (2) Cadmium-titanium plate. Apply primer.

   E. Lube Fitting Replacement

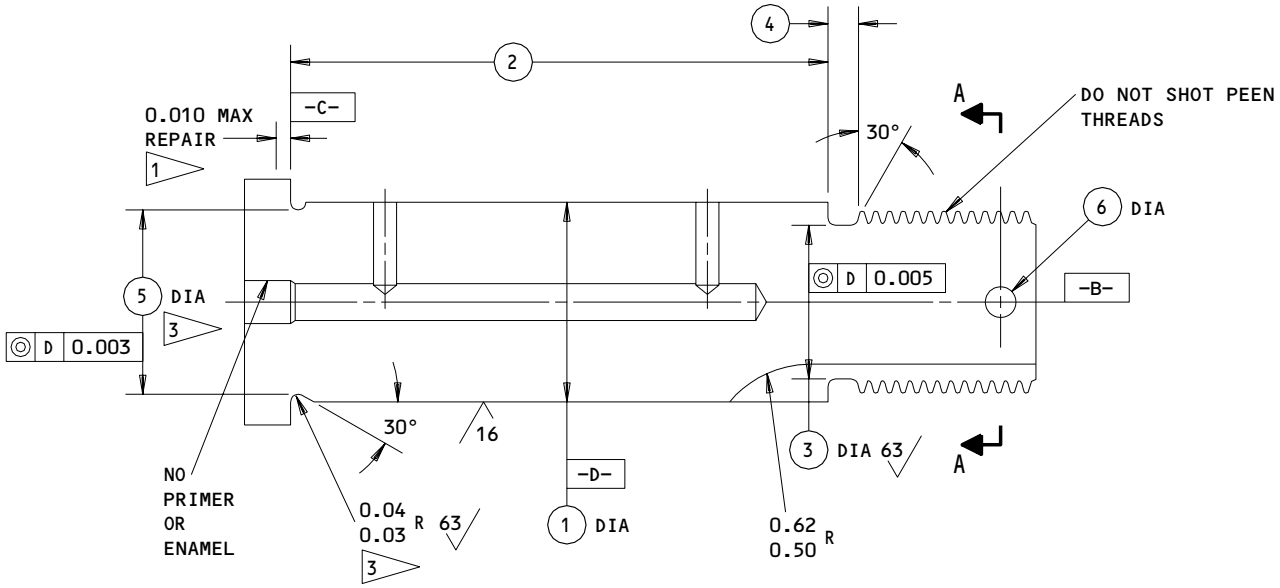
      (1) Replace lube fitting (10) per 32-00-03.

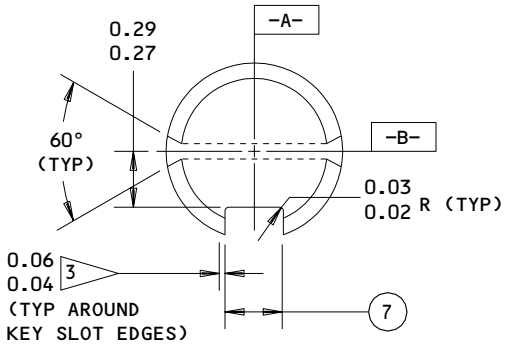
F. Refinish

(1) For repair of surfaces which may require only restoration of original finish, refer to Refinish instructions, Fig. 601.

3. Fits and Clearances

A. Refer to Fig. 801.





A-A

161T1309-1,-3
Bolt Repair and Refinish
Figure 601 (Sheet 1)

	(1)	(2) ▷4	(2) ▷5	(3)	(4)	(5)	(6)	(7)
DESIGN DIM	0.874 0.873	2.280 2.275	4.775 4.770	0.66 0.65	0.135 0.115	0.860 0.855	0.151 0.141	0.166 0.156
REPAIR LIMIT	0.853 ▷1	---	---	0.63 ▷2	0.155 ▷6	0.835 ▷2	0.171 ▷2	0.186 ▷2

REFINISH

CHROME PLATE (F-15.34) DIA -D-, 0.003 MIN THICK. OBSERVE 0.08 MAX CHROME PLATE RUNOUT

CADMIUM PLATE (F-15.02) OTHER AREAS AND APPLY PRIMER & ENAMEL PER 32-00-02, EXCEPT AS NOTED

REPAIR

REF ▷1 ▷6

125 MACHINE FINISH EXCEPT AS NOTED

SHOT PEEN:
0.016-0.033 SHOT SIZE
0.009-0.015 A2 INTENSITY

MATERIAL: 4330M STEEL, 180-200 KSI

ALL DIMENSIONS ARE IN INCHES

▷1 LIMIT FOR CHROME PLATE BUILDUP & GRINDING TO DESIGN DIM & FINISH. OBSERVE PLATING RUNOUT AS NOTED

▷2 RESTORATION TO DESIGN DIM NOT REQUIRED

▷3 NO CHROME PLATE

▷4 161T1309-1

▷5 161T1309-3

▷6 LIMIT FOR RESTORING GRIP LENGTH WHEN HEAD FACE IS MACHINED BUT NOT RESTORED TO DESIGN DIM BY CHROME PLATE BUILDUP. (RESTORATION OF GROOVE WIDTH TO DESIGN DIM IS NOT REQUIRED).

161T1309-1,-3
Bolt Repair and Refinish
Figure 601 (Sheet 2)

LOCK ASSEMBLY, ECCENTRIC - REPAIR 6-1

161T2031-3, -5

NOTE: Refer to REPAIR-GEN for a list of applicable standard practices. Refer to IPL Fig. 7 for item numbers. For repair of surfaces which is only replacement of the original finish, refer to Refinish instructions, Fig. 601.

1. Check

   A. Magnetic particle examine lock (10).

2. Repair (Fig. 601)

   A. Bushing Replacement

      (1) Remove the old bushings.

      (2) If you find defects on lock surfaces, refer to par. B. for repair instructions.

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

      (4) Make a check of the dimensions and machine them as necessary to design dimensions and finish.

      (5) Seal the bushings as shown.

   B. Lock Faces and Bores

      (1) Installation of Oversize Bushings

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

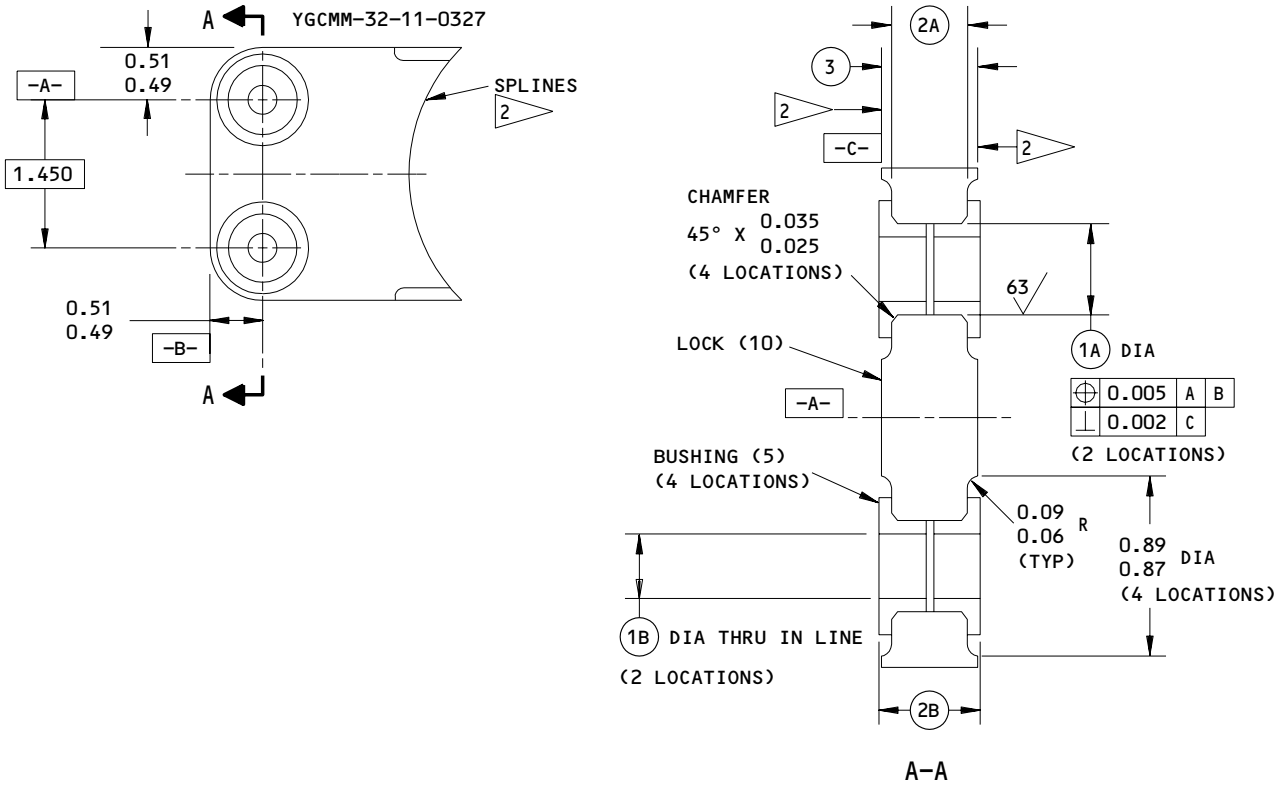
         (b) Shot peen. Passivate.

         (c) Make oversize bushings (Fig. 602 and on), as required, to adjust for the amount of material removed in step (a).

         (d) Install the bushings per par. A.

3. Fits and Clearances

   A. Refer to Fig. 801.



A-A

	1A	1B	2A	2B 3	2B 4	3
DESIGN DIM	0.4465 0.4450	0.3240 0.3225	0.3734 0.3684	0.482 0.478	0.500 0.478	0.46 0.45
REPAIR LIMIT	0.4665 1	---	---	---	---	---

REFINISH

PASSIVATE (F-17.25, WHICH REPLACES F-17.09) ALL OVER. AFTER BUSHING INSTALLATION, APPLY PRIMER BMS 10-11, TYPE 1 (F-20.02) AND ENAMEL, BMS 10-60 (F-14.9813, WHICH REPLACES SRF-14.9813) EXCEPT ON HOLES, BUSHINGS, SPLINES, AND SHOWN BY AS NOTED 2

1 LIMIT FOR INSTL OF OVERSIZE BUSHING

2 NO PRIMER OR ENAMEL

3 161T2031-3

4 161T2031-5

REPAIR

REF 1

125 ALL MACHINED SURFACES UNLESS SHOWN DIFFERENTLY

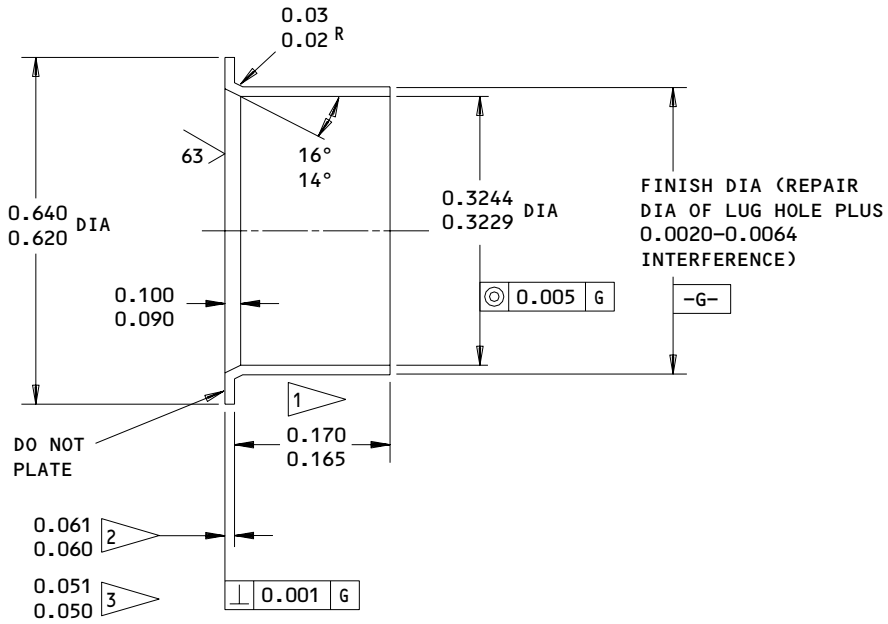
SHOT PEEN: 0.017-0.023 A2 SHOT SIZE
0.016 A2 INTENSITY

MATERIAL: 15-5PH CRES, 180-200 KSI

ITEM NUMBERS REFER TO IPL FIG. 7

ALL DIMENSIONS ARE IN INCHES

161T2031-3,-5
Lock Repair and Refinish
Figure 601



HOLE LOCATION (1A) FIG. 601 – REPLACES BUSHING (5, IPL FIG. 7) 161T6040–20,–21

1 MINUS AMOUNT REMOVED FROM LUG FACE
2 161T6040–20
3 161T6040–21

125 ALL MACHINED SURFACES UNLESS SHOWN DIFFERENTLY

BREAK SHARP EDGES 0.01–0.02R

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

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

ALL DIMENSIONS APPLY BEFORE PLATING

ALL DIMENSIONS ARE IN INCHES

Oversize Bushing Details
Figure 602

PIN ASSEMBLY, DOWNLOCK ACTUATOR/SIDE STRUT - REPAIR 7-1

161T2045-1

NOTE: Refer to REPAIR-GEN for list of applicable standard practices. Refer to IPL Fig. 8 for item numbers.

1. Check

   A. Magnetic particle check pin (10).

2. Repair

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

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

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

   B. Head Face Repair

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

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

         NOTE: As an option, chrome plate buildup may be omitted and shoulder face at thread end machined accordingly to restore grip length.

   C. Relief Grooves

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

      (2) Shot peen and apply cadmium plate followed by primer.

   D. Pin Retention Hole

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

      (2) Cadmium plate. Apply primer.

   E. Lube Fitting Replacement

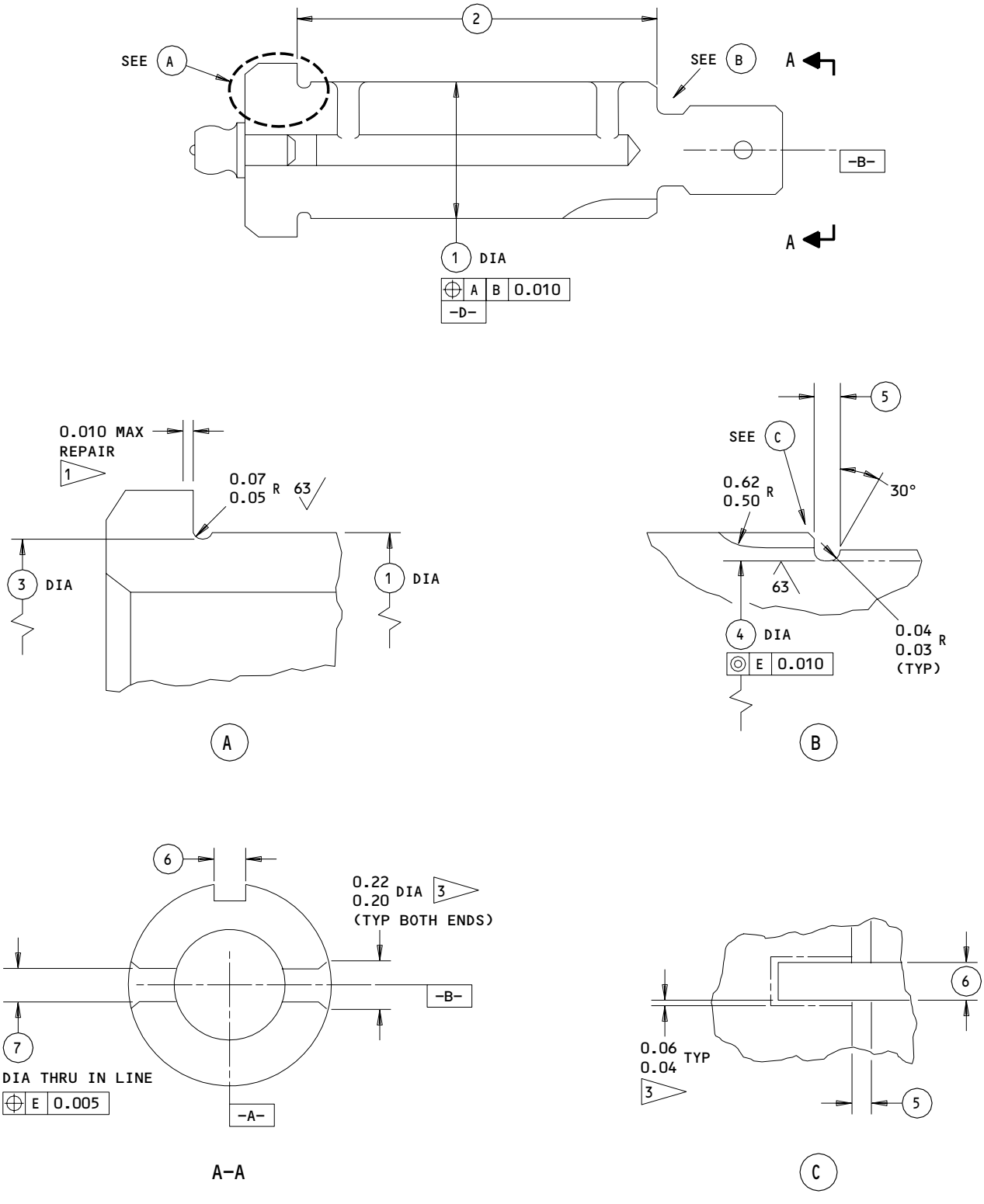
      (1) Replace lube fitting (5) per 32-00-03.

F. Refinish

(1) For repair of surfaces which may require only restoration of original finish, refer to Refinish instructions, Fig. 601.

3. Fits and Clearances

A. Refer to Fig. 801.



161T2045-1
Pin Repair and Refinish
Figure 601 (Sheet 1)

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
DESIGN DIM	0.7495 0.7475	2.225 2.215	0.69 0.68	0.428 0.421	0.16 0.14	0.13 0.11	0.119 0.099
REPAIR LIMIT	0.7275 ▷1	---	0.66 ▷2	0.401 ▷2	0.17 ▷4	0.15 ▷2	0.139 ▷2

REFINISH

CHROME PLATE (F-15.34) DIA -A-, 0.003 MIN THICK. OBSERVE 0.08 MAX PLATING RUNOUT

CADMIUM PLATE (F-15.02) ALL OTHER SURFACES, 0.0005 MIN THICK. APPLY PRIMER & ENAMEL PER 32-00-02

REPAIR

REF ▷1 ▷2 ▷4

125 MACHINE FINISH EXCEPT AS NOTED

SHOT PEEN: 0.016-0.033 SHOT SIZE
0.014-0.018A2 INTENSITY

MATERIAL: 4330M STEEL, 180-200 KSI

ALL DIMENSIONS ARE IN INCHES

▷1 LIMIT FOR CHROME PLATE BUILDUP & GRINDING TO DESIGN DIM & FINISH. OBSERVE 0.08 MAX PLATING RUNOUT

▷2 RESTORATION TO DESIGN DIM NOT REQUIRED

▷3 NO CHROME PLATE

▷4 LIMIT FOR RESTORING GRIP LENGTH WHEN HEAD FACE IS MACHINED BUT NOT RESTORED TO DESIGN DIM BY CHROME PLATE BUILDUP. (RESTORATION OF GROOVE WIDTH TO DESIGN DIM IS NOT REQUIRED)

161T2045-1
Pin Repair and Refinish
Figure 601 (Sheet 2)

BOLT, RETRACT ACTUATOR - REPAIR 8-1

161T5000-2

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

1. Check

   A. Magnetic particle examine bolt (400).

2. Repair

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

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

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

   B. Inside Diameter Repair (Fig. 601)

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

      (2) Nickel plate and cadmium plate as indicated.

   C. Head Face Repair

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

      (2) Shot peen, chrome plate, and grind to restore grip length. Do not chrome plate the relief groove. As an alternative to chrome plate buildup, machine the shoulder face at the thread end to restore grip length.

   D. Relief Grooves

      (1) Machine as required, within repair limits, to remove defects. To adjust the grip length, machine the shoulder at the thread relief.

      (2) Shot peen and apply cadmium-titanium plate followed by primer.

   E. Pin Retention Holes

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

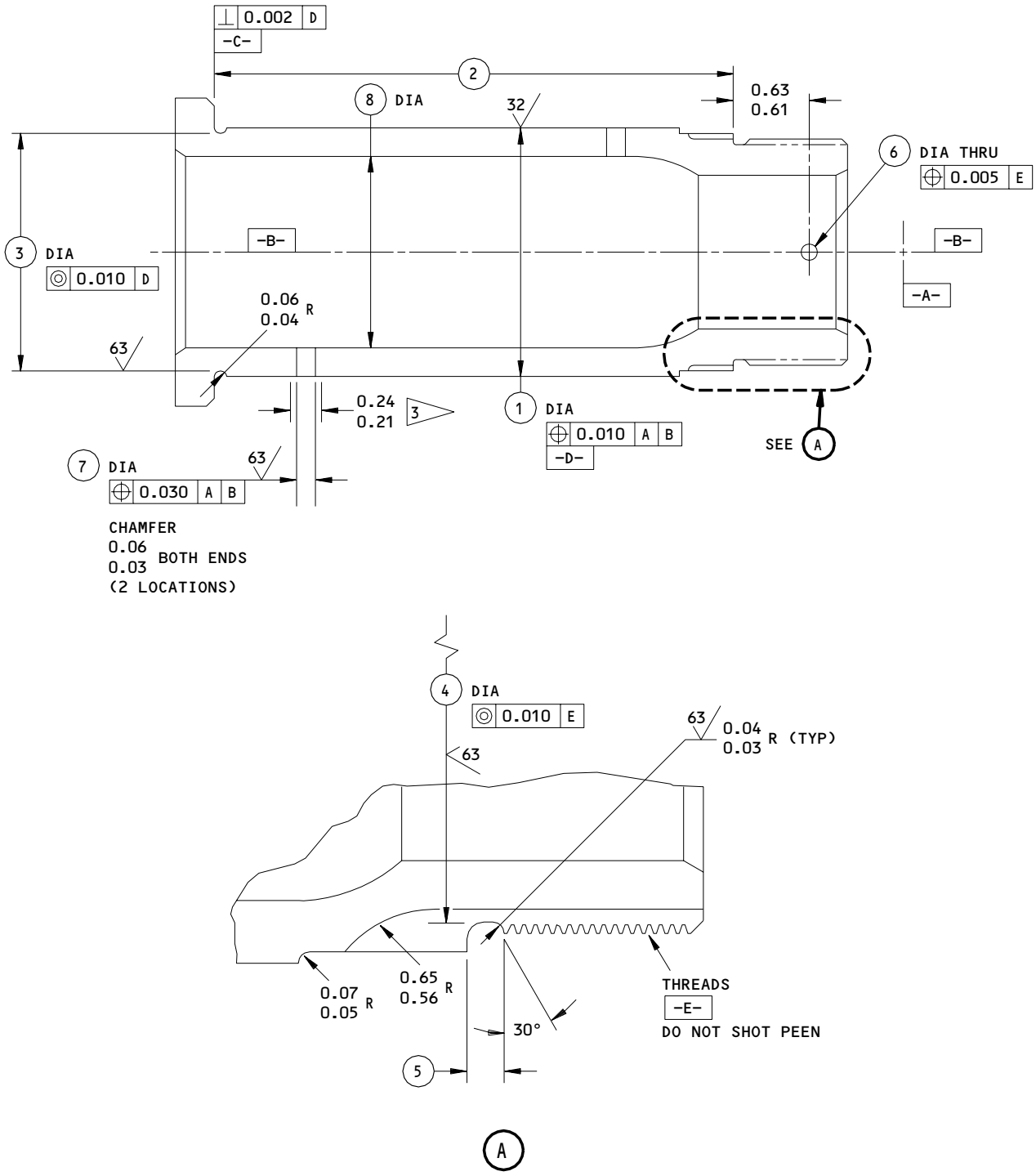
(2) Cadmium plate. Apply primer.

F. Refinish

(1) For repair of surfaces which is only replacement of the original finish, refer to Refinish instructions, Fig. 601.

3. Fits and Clearances

A. Refer to Fig. 801.



161T5000-2
Bolt Repair and Refinish
Figure 601 (Sheet 1)

132213

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
DESIGN DIM	2.124 2.122	5.891 5.886	2.09 2.08	1.660 1.653	0.14 0.12	0.270 0.264	0.13 0.11	1.560 1.558
REPAIR LIMIT	2.102 ▷1	---	2.06 ▷2	1.633 ▷2	0.15 ▷4	0.290 ▷2	---	1.590 ▷5

REFINISH

CHROME PLATE (F-15.34) DIAMETER -A-, 0.003 MINIMUM THICK, WITH 0.08 MAXIMUM PLATING RUNOUT

CADMIUM-TITANIUM PLATE (F-15.01) ALL OTHER SURFACES, 0.0005 MINIMUM THICK. APPLY PRIMER AND ENAMEL PER CMM 32-00-02.

REPAIR

REF ▷1 ▷2 ▷4 ▷5

125 ALL MACHINED SURFACES UNLESS SHOWN DIFFERENTLY

SHOT PEEN:
0.016-0.033 SHOT SIZE
0.014-0.018A2 INTENSITY

MATERIAL: 4340M STEEL, 275-300 KSI

ALL DIMENSIONS ARE IN INCHES

▷1 LIMIT FOR CHROME PLATE BUILDUP AND GRINDING TO DESIGN DIMENSION AND FINISH, WITH 0.08 MAXIMUM PLATING RUNOUT

▷2 RESTORATION TO DESIGN DIMENSION NOT REQUIRED

▷3 NO CHROME PLATE

▷4 LIMIT FOR RESTORING GRIP LENGTH WHEN HEAD FACE IS MACHINED BUT NOT RESTORED TO DESIGN DIMENSION BY CHROME PLATE BUILDUP. (RESTORATION OF GROOVE WIDTH TO DESIGN DIMENSION IS NOT REQUIRED.)

▷5 LIMIT FOR NICKEL PLATE BUILDUP AND MACHINING TO 1.560-1.561 DIAMETER. THEN CADMIUM PLATE PER SOPM 20-42-01 TO DESIGN DIMENSION

161T5000-2
Bolt Repair and Refinish
Figure 601 (Sheet 2)

132223

PIN, LOWER DRAG STRUT TO SPINDLE - REPAIR 9-1

161T6010-1, -2

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

1. Check

   A. Magnetic particle check pin (300).

2. Repair

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

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

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

   B. Head Face Repair

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

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

         NOTE: As an option, chrome plate buildup may be omitted and shoulder face at thread end machined accordingly to restore grip length.

   C. Relief Grooves

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

      (2) Shot peen and apply cadmium-titanium plate followed by primer.

   D. Pin Retention Hole

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

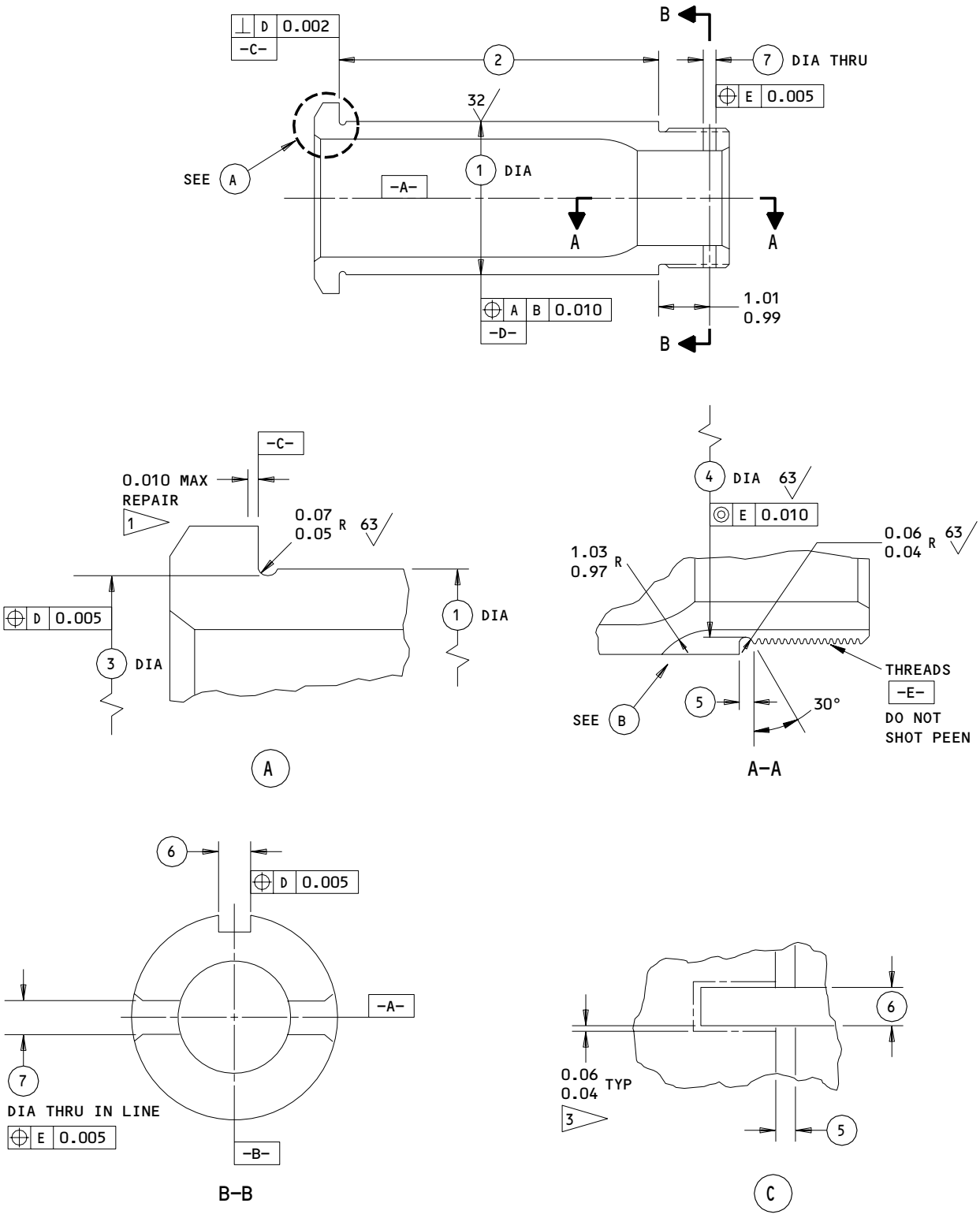
      (2) Cadmium-titanium plate. Apply primer.

   E. Refinish

      (1) For repair of surfaces which may require only restoration of original finish, refer to Refinish instructions, Fig. 601.

3. Fits and Clearances

A. Refer to Fig. 801.



161T6010-1,-2
Pin Repair and Refinish
Figure 601 (Sheet 1)

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
DESIGN DIM	2.999 2.997	6.505 6.500	2.945 2.940	2.63 2.62	0.20 0.18	0.380 0.375	0.270 0.264
REPAIR LIMIT	2.977 ▷1	---	2.920 ▷2	2.60 ▷2	0.21 ▷4	0.400 ▷2	0.290 ▷2

REFINISH

CHROME PLATE (F-15.34) DIA -A-, 0.003 MIN THICK. OBSERVE 0.08 MAX PLATING RUNOUT

CADMIUM-TITANIUM PLATE (F-15.01) ALL OTHER SURFACES, 0.0005 MIN THICK. APPLY PRIMER & ENAMEL PER 32-00-02. APPLY CORROSION PREVENTIVE COMPOUND MIL-C-11796 CLASS 1 (F-19.03) TO INTERIOR

REPAIR

REF ▷1 ▷2 ▷4

125√ MACHINE FINISH EXCEPT AS NOTED

SHOT PEEN: 0.016-0.033 SHOT SIZE
0.014-0.018A2 INTENSITY

MATERIAL: 4340M STEEL, 275-300 KSI

ALL DIMENSIONS ARE IN INCHES

▷1 LIMIT FOR CHROME PLATE BUILDUP & GRINDING TO DESIGN DIM & FINISH. OBSERVE 0.08 MAX PLATING RUNOUT

▷2 RESTORATION TO DESIGN DIM NOT REQUIRED

▷3 NO CHROME PLATE

▷4 LIMIT FOR RESTORING GRIP LENGTH WHEN HEAD FACE IS MACHINED BUT NOT RESTORED TO DESIGN DIM BY CHROME PLATE BUILDUP. (RESTORATION OF GROOVE WIDTH TO DESIGN DIM IS NOT REQUIRED)

161T6010-1,-2
Pin Repair and Refinish
Figure 601 (Sheet 2)

131998

WASHER ASSEMBLY, UPPER DRAG STRUT SPINDLE - REPAIR 10-1

161T6022-3, -4

NOTE: Refer to REPAIR-GEN for a list of applicable standard practices. Refer to IPL Fig. 9 for item numbers.

1. Check

   A. Magnetic particle examine washers (20, 25).

2. Repair

   A. Bushing Replacement (Fig. 601)

      (1) Remove the old bushings.

      (2) If you find defects on washer surfaces, refer to par. B. for repair instructions.

      (3) Install replacement bushings by the shrink-fit method.

      (4) Make a check of the dimensions and machine them as necessary to design dimensions and finish.

      (5) Seal the bushings per REPAIR 20-1.

   B. Lug Faces and Holes (Fig. 601)

      (1) Installation of Oversize Bushings

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

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

         (c) Make oversize bushings (Fig. 602) as required, to adjust for the material removed.

         (d) Install the bushings per par. A.

(2) Dimension 4

(a) Machine as required, within design dimensions, to remove defects.

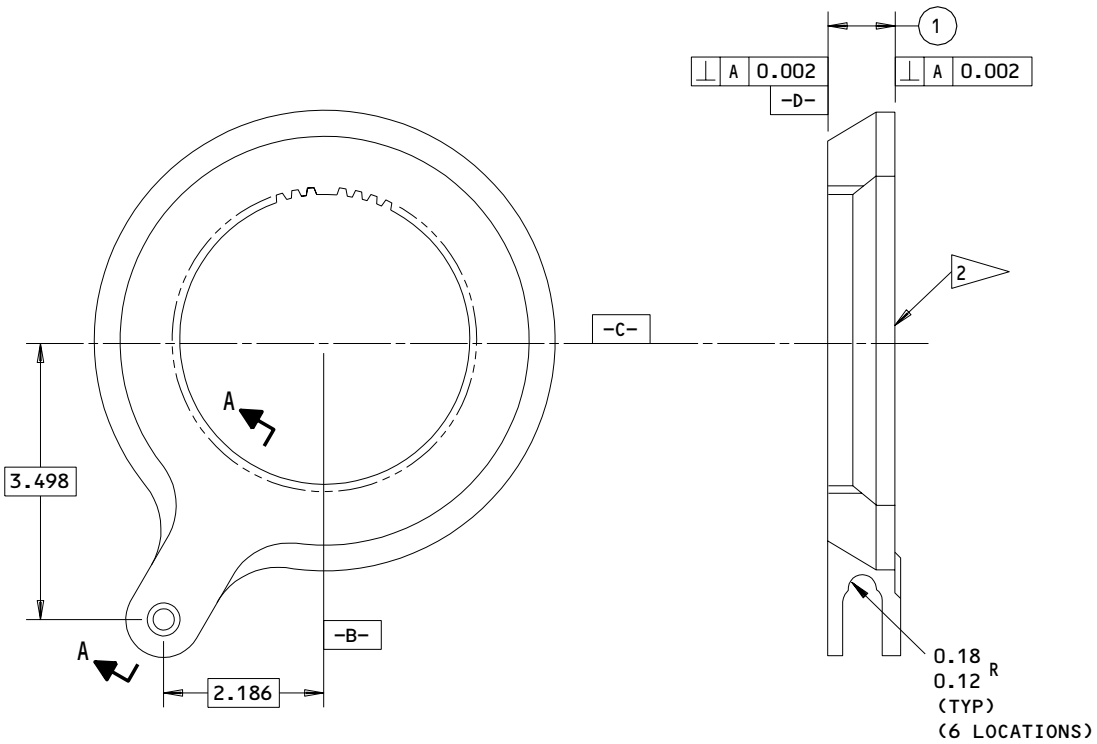
(b) Refinish as indicated.

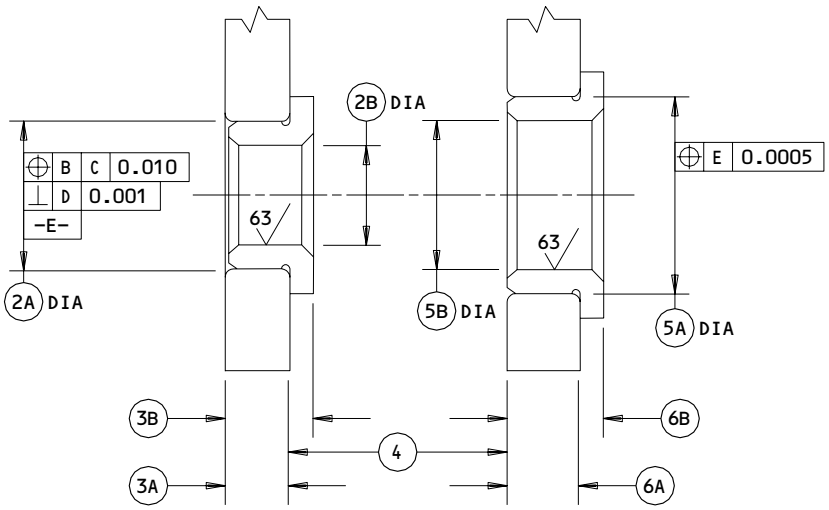
C. Refinish

(1) For repair of surfaces which is only replacement of the original finish, refer to Refinish instructions, Fig. 601.

3. Fits and Clearances

A. Refer to Fig. 801.





(ROTATED 32° COUNTERCLOCKWISE)
A-A

161T6022-3 (SHOWN), OPPOSITE -4
Washer Repair and Refinish
Figure 601 (Sheet 1)

132281

	(1)	(2A)	(2B)	(3A)	(3B)	(4)	(5A)	(5B)	(6A)	(6B)
DESIGN DIM	0.880 0.875	0.3752 0.3737	0.2515 0.2500	0.165 0.160	0.227 0.217	0.5650 0.5600	0.5000 0.4998	0.3765 0.3750	0.185 0.170	0.247 0.227
REPAIR LIMIT	---	0.4052 ▷1	---	0.130 ▷1	---	0.5665 ▷4	0.5300 ▷1	---	0.140 ▷1	---

REFINISH

CHROME PLATE AREA NOTED ▷2. CADMIUM-TITANIUM PLATE (F-15.01) ALL OTHER SURFACES AND APPLY PRIMER & ENAMEL PER 32-00-02

▷1 LIMIT FOR INSTL OF OVERSIZE BUSHING

▷2 CHROME PLATE (F-15.34), 0.0015-0.0020 THICK. DO NOT GRIND.

▷3 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

▷4 RESTORATION TO DESIGN DIMENSIONS NOT REQUIRED.

REPAIR

REF ▷1 ▷3 ▷4

125 MACHINE FINISH EXCEPT AS NOTED

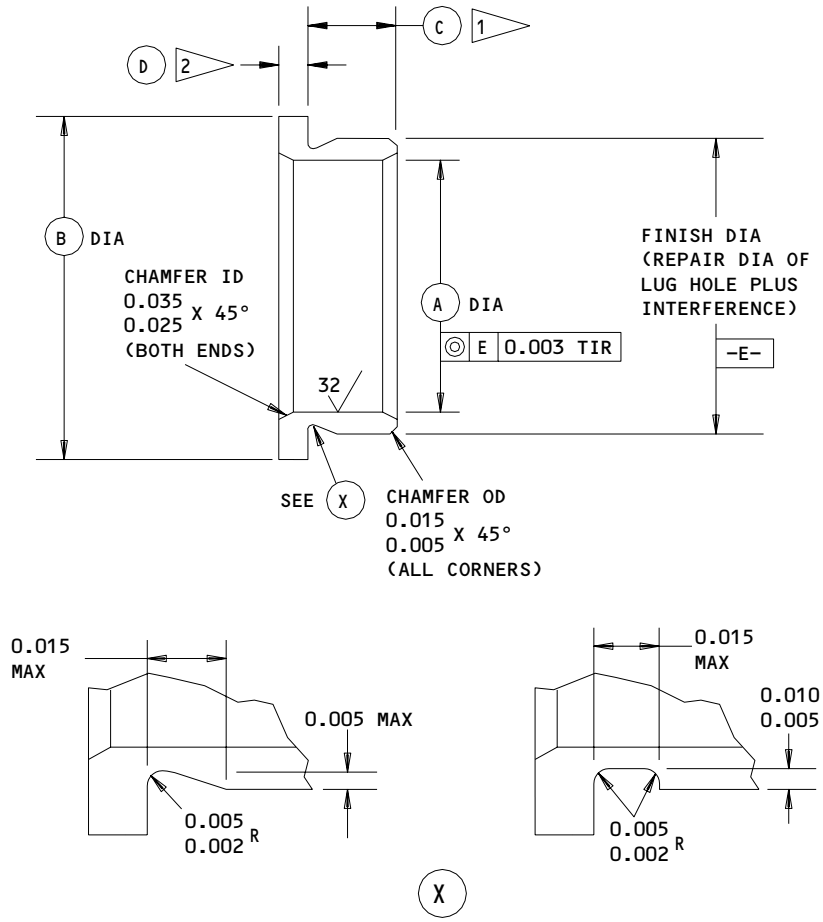
SHOT PEEN: 0.016-0.033 SHOT SIZE
0.009-0.015A2 INTENSITY

MATERIAL: 4340M STEEL, 180-200 KSI

ALL DIMENSIONS APPLY BEFORE PLATING

ALL DIMENSIONS ARE IN INCHES

161T6022-3 (SHOWN), OPPOSITE -4
Washer Repair and Refinish
Figure 601 (Sheet 2)



LOCATION (FIG. 601)	REPLACES BUSHING	A	B	C 1	D 2	INTERFERENCE
2A	(15, IPL FIG. 9) NAS77A4-015P	0.2515 0.2500	0.510 0.490	0.155 0.145	0.062 0.057	0.0024 0.0004
5A	(10, IPL FIG. 9) NAS77A6-018P	0.3765 0.3750	0.635 0.615	0.185 0.175	0.062 0.057	0.0033 0.0006

63 MACHINED SURFACES EXCEPT AS NOTED

BREAK SHARP EDGES 0.010-0.020R

CADMIUM PLATE (F-15.06) EXCEPT IN BORE

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

ALL DIMENSIONS APPLY AFTER PLATING

ALL DIMENSIONS ARE IN INCHES

1 MINUS AMOUNT REMOVED FROM LUG FACE

2 PLUS AMOUNT REMOVED FROM LUG FACE

Oversize Bushing Details
Figure 602

SPRING ASSEMBLY, JURY STRUT - REPAIR 11-1

161T6031-1, -3, -5

NOTE: Refer to REPAIR - GENERAL for a list of applicable standard practices. Refer to Fig. 10 for item numbers.

1. Check

A. Penetrant examine spring assembly (1). Be sure to extend the spring during the check to look for defects between the coils.

B. Do a load test of the spring assemblies (1) as follows:

APPROXIMATE FREE LENGTH (INCHES) *[1]	TEST LENGTH (INCHES) *[1]	ALLOWABLE LOAD LIMITS (POUNDS)
17.75	22.86 31.68	226-264 450-550

*[1] MEASURED BETWEEN TERMINAL BUSHING CENTERS

C. On 161T6031-5 spring assembly (1B), extend the spring to 21.86-23.86 inches, and make sure at least 1.5 wraps of the spring are against the tapered surface of the terminal.

2. Repair

A. Bushing Replacement (Fig. 601)

(1) Remove the old bushings.

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

(3) Make a check of the dimensions and machine them as necessary to design dimensions and finish shown.

B. Lug Holes (Fig. 601)

(1) Installation of Oversize Bushings

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

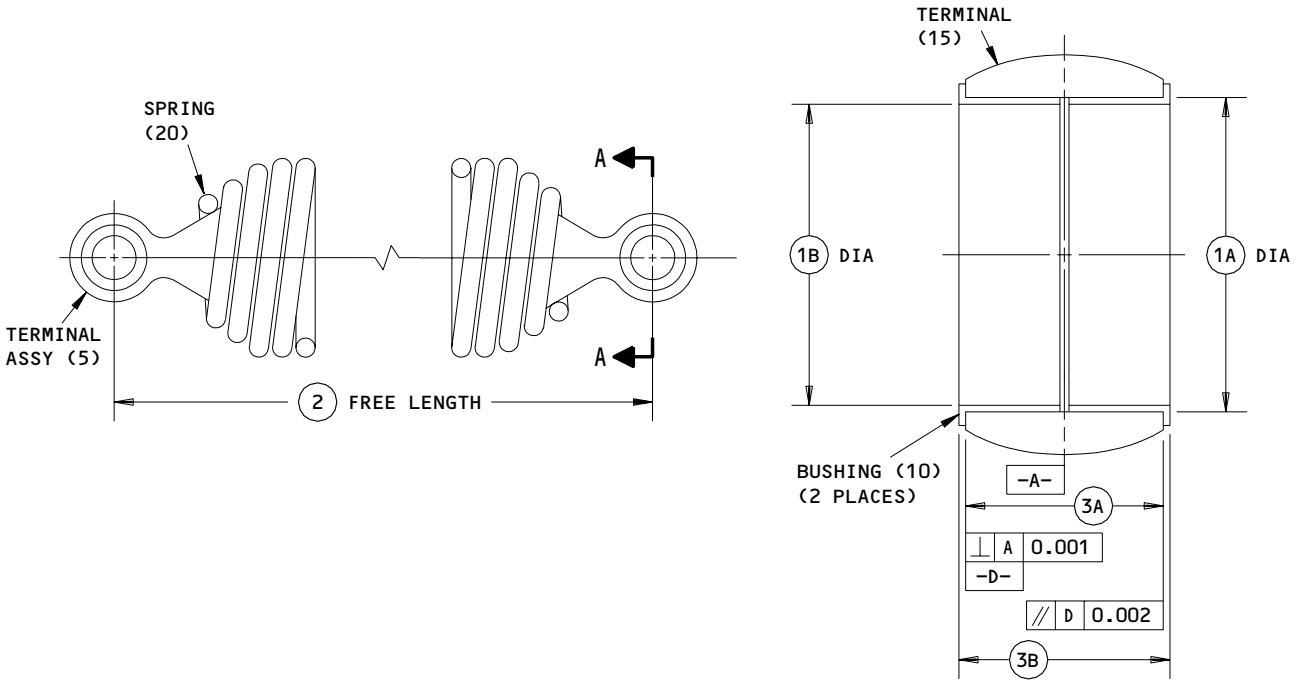
(b) Passivate.

(c) Make oversize bushings (Fig. 602), as required, to adjust for the material removed in step (a).

(d) Install the bushings per par. A.

3. Fits and Clearances

A. Refer to Fig. 801.



A-A

	1A	1B	2	3A ▷2	3A ▷3	3B ▷2	3B ▷3
DESIGN DIM	0.8765 0.8750	0.7515 0.7500	17.75 (APPROX)	0.730 0.720	0.755 0.745	0.878 0.866	0.903 0.891
REPAIR LIMIT ▷1	0.9065	---	---	0.690	0.715	---	---

REFINISH

(NONE)

REPAIR

REF ▷1

63 MACHINE FINISH

MATERIAL: SPRING (20): 17-7PH CRES
TERMINAL ▷2: 17-4PH CRES
TERMINAL ▷3: 304 CRES

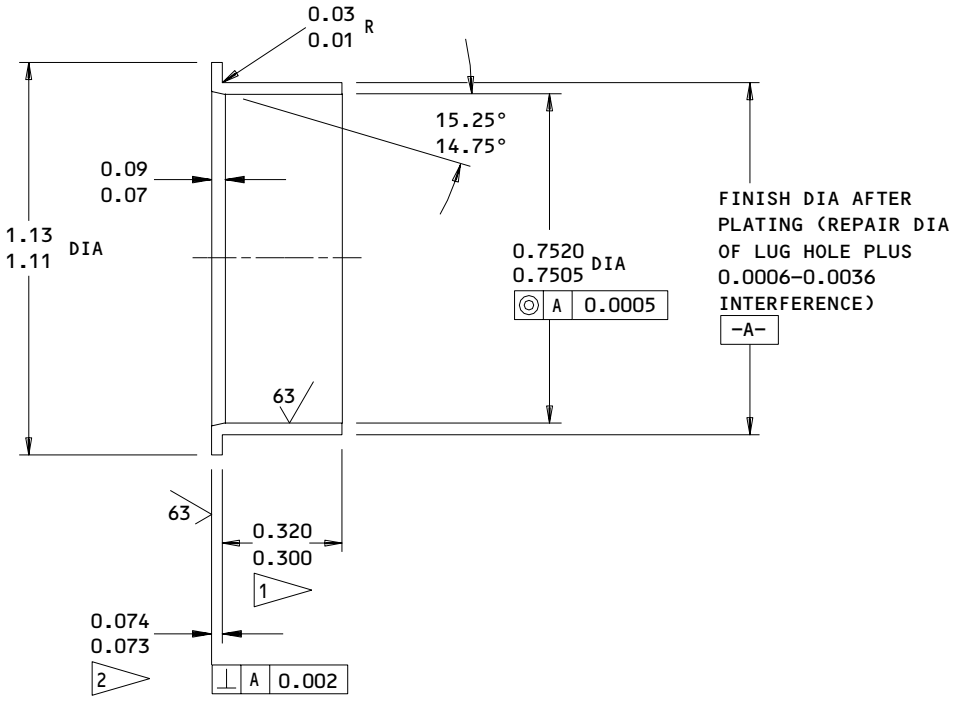
ITEM NUMBERS REFER TO IPL FIG. 10

ALL DIMENSIONS ARE IN INCHES

▷1 LIMIT FOR INSTL OF OVERSIZE BUSHINGS
▷2 TERMINAL 161T6032-2,-4
▷3 TERMINAL 161T6045-1

161T6031-1,-3,-5
Spring Repair
Figure 601

132287



HOLE LOCATION (1) FIG. 601 - REPLACES BUSHING (5, IPL FIG. 10) 161T6038-2

1 MINUS AMOUNT REMOVED FROM LUG FACE
2 PLUS AMOUNT REMOVED FROM LUG FACE

150 ALL MACHINED SURFACES EXCEPT AS NOTED

BREAK SHARP EDGES 0.01-0.02R

FINISH: NO FINISH

MATERIAL: OILITE SINTERED BRONZE, MIL-B-5687
TYPE 1 COMP A OR B

ALL DIMENSIONS ARE IN INCHES

Oversize Bushing Details
Figure 602

SHAFT, JURY STRUT SPRING - REPAIR 12-1

161T6033-1

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

1. Check

   A. Magnetic particle examine shaft (310).

2. Repair

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

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

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

   B. Relief Grooves

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

      (2) Shot peen and passivate.

   C. Pin Retention Holes

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

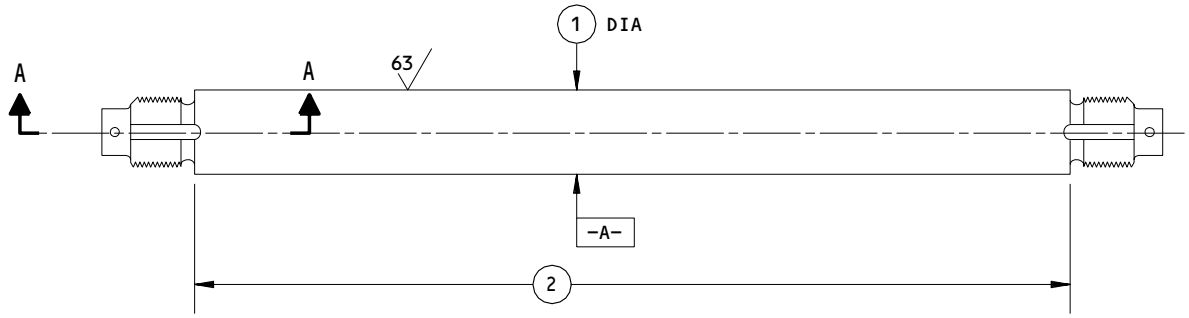
      (2) Passivate.

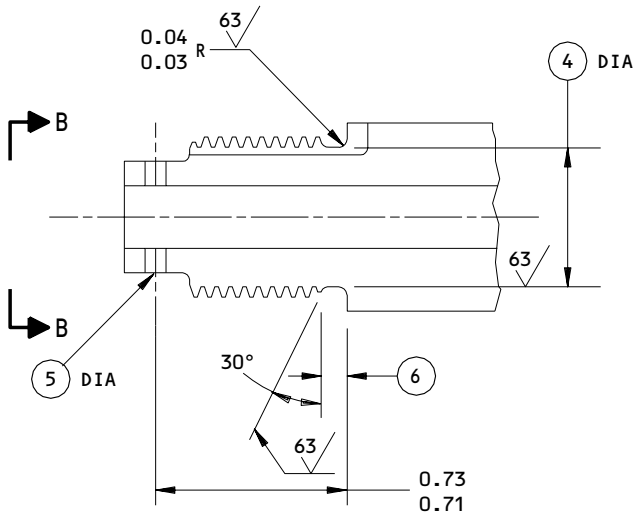
   D. Refinish

      (1) For repair of surfaces which is only replacement of the original finish, refer to Refinish instructions, Fig. 601.

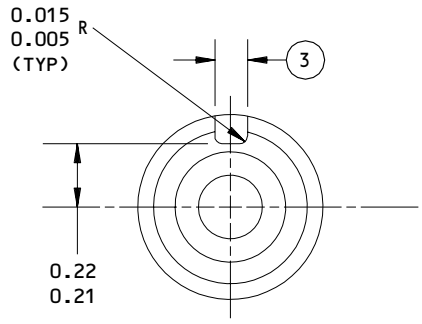
3. Fits and Clearances

   A. See Fig. 801.





A–A



B–B

	1	2	3	4	5	6
DESIGN DIM	0.749 0.748	8.40 8.39	0.135 0.130	0.544 0.537	0.09 0.08	0.12 0.10
REPAIR LIMIT	0.728 1	---	0.155 2	0.517 2	0.11 2	---

REFINISH

CHROME PLATE (F-15.03) DIAMETER -A-,
0.0003-0.0005 THICK.
PASSIVATE (F-17.25, WHICH REPLACES F-17.09)
ALL OTHER SURFACES

1 LIMIT FOR CHROME PLATE BUILDUP (SOPM 20-42-03) AND GRIND TO DESIGN DIMENSIONS AND FINISH (SOPM 20-10-04). PUT A 0.08 MAXIMUM CHROME PLATE RUNOUT AT EDGES AND RELIEFS

2 RESTORATION TO DESIGN DIMENSIONS NOT REQUIRED

REPAIR

REF 1 2

125 ALL MACHINED SURFACES UNLESS SHOWN DIFFERENTLY

SHOT PEEN: 0.017-0.023 SHOT SIZE
0.016A2 INTENSITY

MATERIAL: 15-5PH CRES, 180-200 KSI

ALL DIMENSIONS ARE IN INCHES

161T6033-1
Shaft Repair and Refinish
Figure 601

132289

SPOOL ASSEMBLY, JURY STRUT SPRING - REPAIR 13-1

161T6047-3, -5, -9

NOTE: Refer to REPAIR - GENERAL for a list of applicable standard practices. IPL Fig. 11 for item numbers.

1. Check

   A. Magnetic particle examine spool (5).

2. Repair

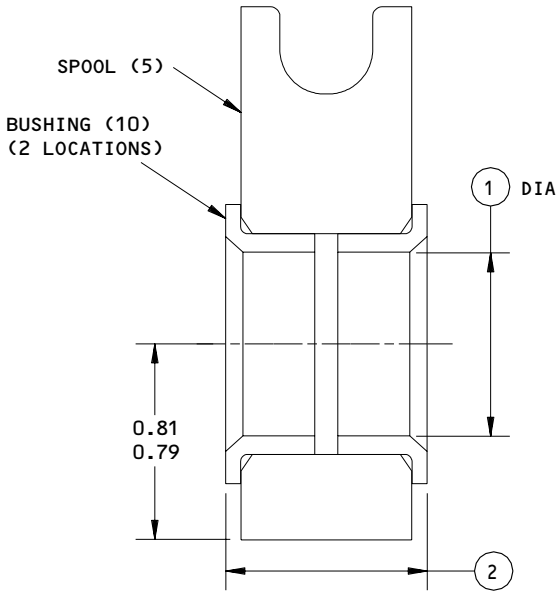
   A. Bushing Replacement

      (1) Remove the old bushings (10).

      (2) If you find defects on the spool, refer to REPAIR 13-2 for repair instructions.

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

      (4) Make a check of the dimensions and machine them as necessary to design dimensions and finish.



REFERENCE NUMBER	(1)	(2)
161T6047-3,-9	0.7520 0.7505	0.878 0.866
161T6047-5	0.5640 0.5630	0.865 0.840

125 ALL MACHINED SURFACES UNLESS SHOWN DIFFERENTLY

ITEM NUMBERS REFER TO IPL FIG. 1

ALL DIMENSIONS ARE IN INCHES

161T6047-3,-5,-9
Spool Assembly Bushing Replacement
Figure 601

SPOOL - REPAIR 13-2

161T6047-4, -6, -8

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. Repair (Fig. 601)

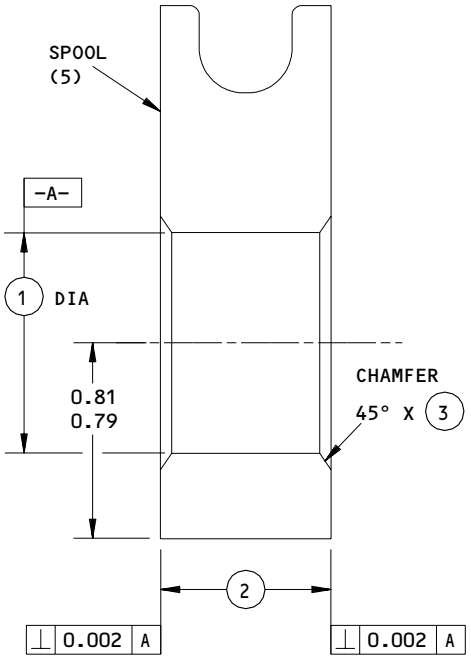
A. Installation of Oversize Bushings

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

(2) Passivate.

(3) Make oversize bushings (Fig. 602), as required, to adjust for the material removed.

(4) Install the bushings per REPAIR 13-1.



REFERENCE NUMBER		1	2	3
161T6047-4	DESIGN DIM	0.8765 0.8750	0.73 0.72	0.06 0.04
	REPAIR LIMIT	0.9365 1	---	---
161T6047-6	DESIGN DIM	0.6882 0.6875	0.73 0.72	0.04 0.02
	REPAIR LIMIT	---	---	---
161T6047-8	DESIGN DIM	0.8765 0.8758	0.73 0.72	0.04 0.02
	REPAIR LIMIT	0.9365 1	---	---

REFINISH

PASSIVATE (F-17.25, WHICH REPLACES F-17.09) ALL OVER

1 LIMIT FOR INSTALLATION OF OVERSIZE BUSHINGS

REPAIR

REF 1

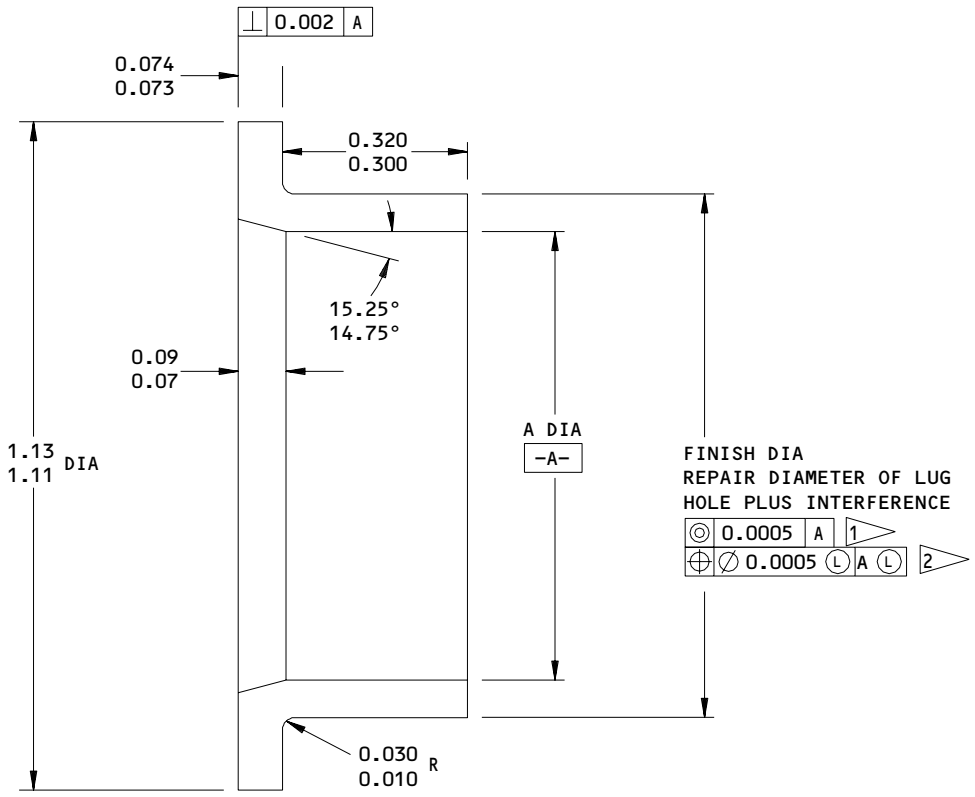
125 ALL MACHINED SURFACES UNLESS SHOWN DIFFERENTLY

MATERIAL: 15-5PH CRES, 180-200 KSI

ALL DIMENSIONS ARE IN INCHES

161T6047-4,-6,-8
Spool Repair and Refinish
Figure 601

F39177



REPLACES ITEM NO. (IPL FIG. 11)	A	INTERFERENCE
161T6038-2 (10)	0.7520 0.7505	0.0036 0.0006
161T6038-3 (10B)	0.7532 0.7522	0.0023 0.0006

1 161T6038-2
2 161T6038-3

150 ALL MACHINED SURFACES UNLESS SHOWN DIFFERENTLY

BREAK SHARP EDGES 0.01-0.02R

MATERIAL: OILITE SINTERED BRONZE (MIL-B-5687 TYPE 1 COMPOSITION A OR B)

FINISH: NO FINISH

ALL DIMENSIONS ARE IN INCHES

Oversize Bushing Details
Figure 602

W22915

LINK ASSEMBLY, SIDE STRUT SPRING - REPAIR 14-1

161T1039-1

NOTE: Refer to REPAIR - GENERAL for a list of applicable standard practices.
Refer to IPL Fig. 12 for item numbers.

1. Check

A. Penetrant examine link.

B. Bushing Replacement (Fig. 601)

(1) Remove the old bushings.

(2) If you find defects on the link, refer to REPAIR 14-2 for repair instructions.

(3) Install replacement bushings by the shrink-fit method (SOPM 20-50-03) with BMS 3-24 grease.

C. Bearing Replacement (Fig. 601)

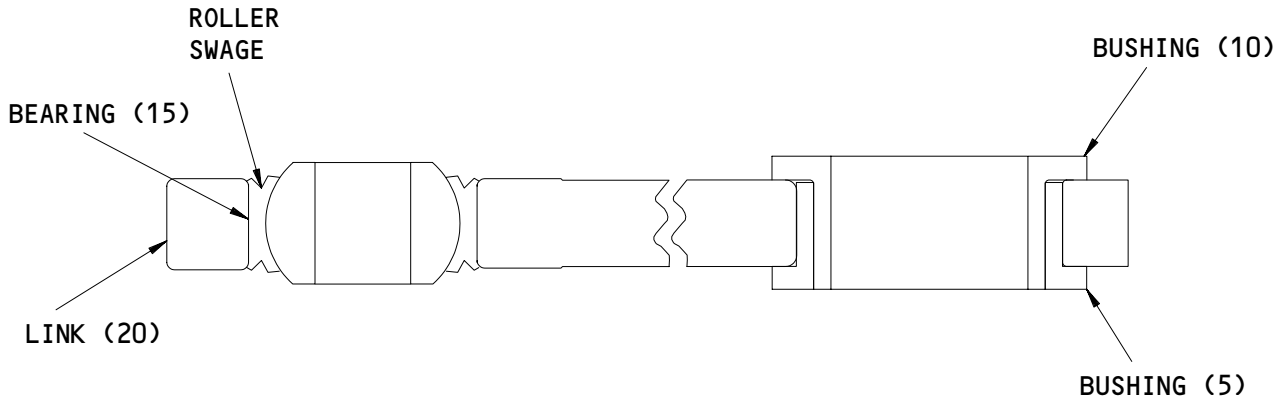
(1) Remove the bearing.

(2) If you find defects on the link, refer to REPAIR 14-2 for repair instructions.

(3) Install a replacement bearing (a slip fit in the link) with BMS 3-24 grease. Roller swage it per SOPM 20-50-03.

(4) Give the swaged bearing an axial push out load test of a minimum of 1750 pounds. The bearing must not come loose.

(5) Make sure the ball can turn freely when given a maximum breakaway torque of 50 pound-inches.



ITEM NUMBERS REFER TO IPL FIG. 12

161T1039-1
Link Assembly Parts Replacement
Figure 601

F39269

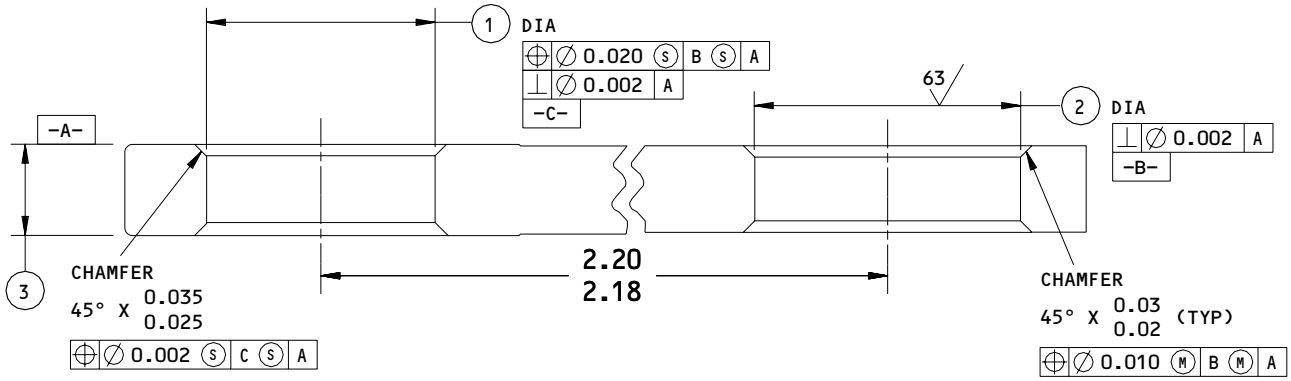
LINK - REPAIR 14-2

161T1039-2

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

1. Repair (Fig. 601)

   A. Repair is only replacement of a worn or defective race.



REFERENCE NUMBER	1	2	3
DESIGN DIMENSION	0.876 0.875	1.0007 1.0000	0.349 0.339
REPAIR LIMIT	----	----	----

REFINISH

NO FINISH

REPAIR

(SAME AS REFINISH)

125 ALL MACHINED SURFACES UNLESS SHOWN DIFFERENTLY

MATERIAL: TITANIUM ALLOY

ALL DIMENSIONS ARE IN INCHES

161T1039-1
Link Repair and Refinish
Figure 601

F39645

SPINDLE ASSEMBLY, UPPER - REPAIR 15-1

161T2106-1, -3

NOTE: Refer to REPAIR - GENERAL for a list of applicable standard practices. Refer to IPL Fig. 13 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 15-2 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 provide dimensions shown.

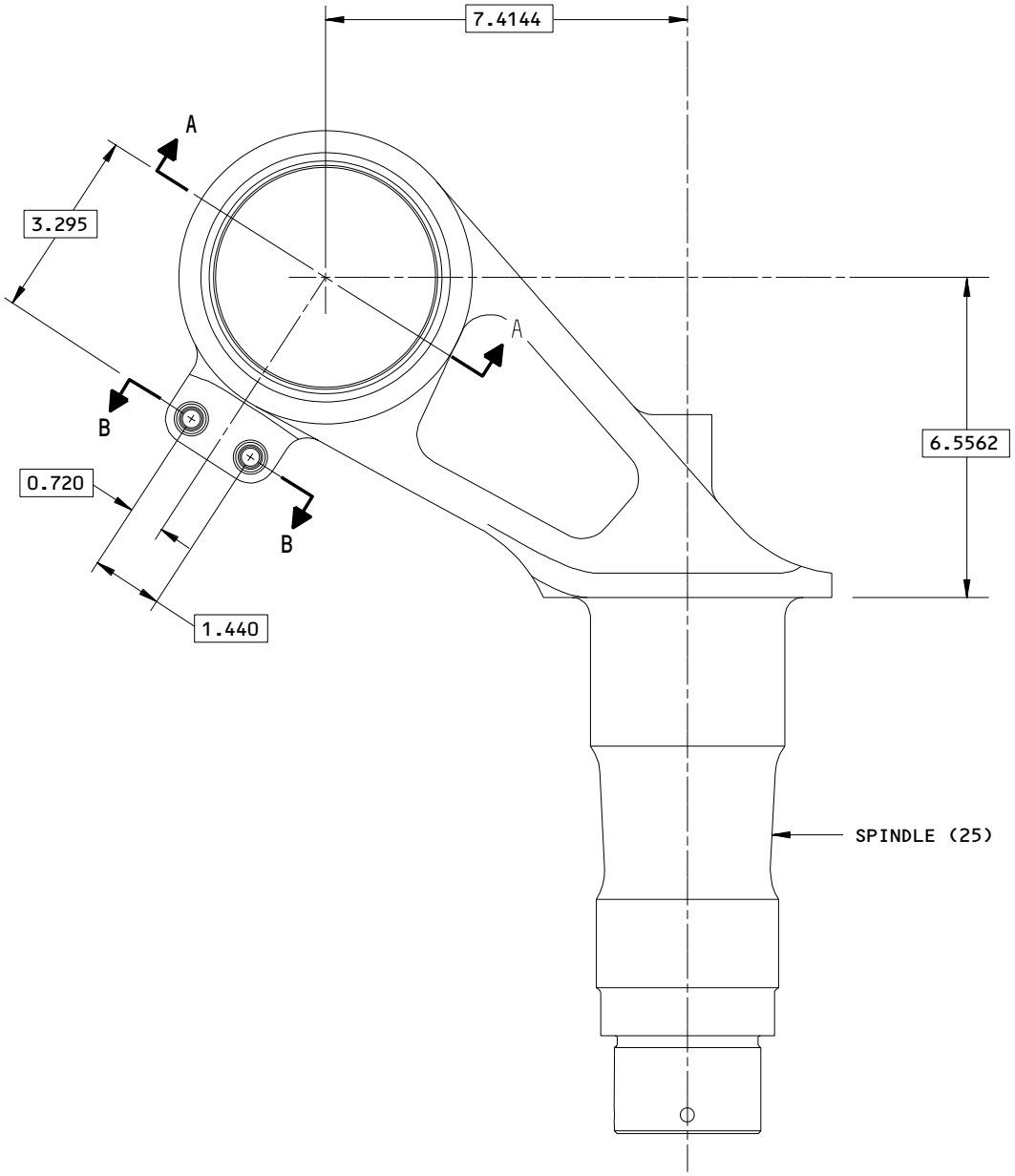
   E. Seal the bushings per SOPM 20-50-19.

2. Lube Fitting Replacement

   A. Replace lube fittings (20) per CMM 32-00-03.

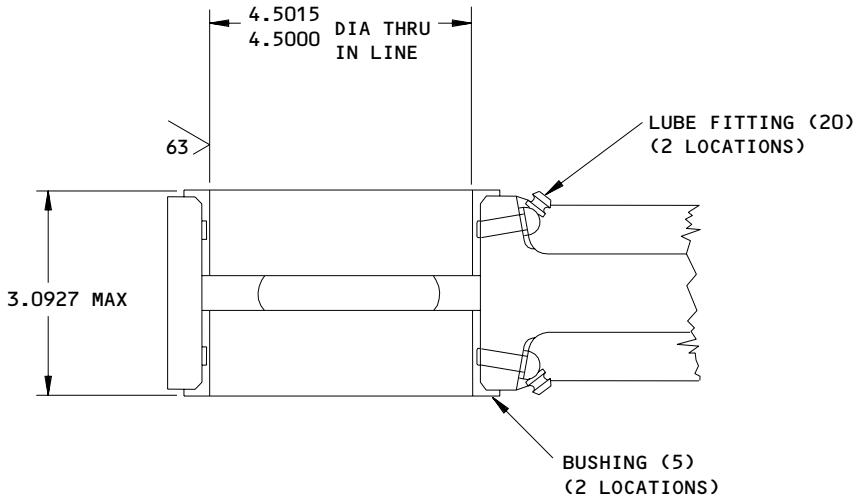
3. Alignment Zone Markings (161T2106-3 only) (Fig. 602)

   A. After you apply the final enamel topcoat (REPAIR 15-2), paint the alignment zones and indicator dots on the flange faces as shown.

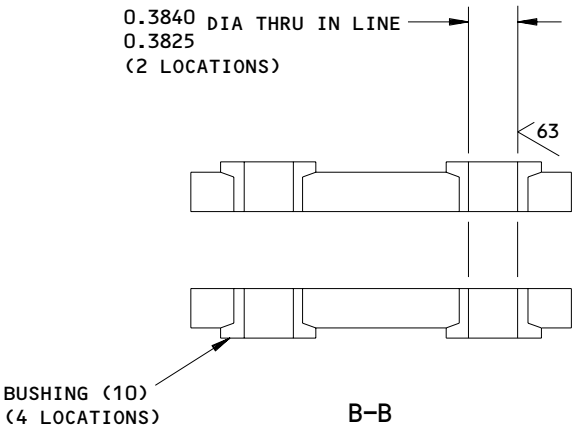


161T2106-1,-3
Bushing Replacement
Figure 601 (Sheet 1)

M45668



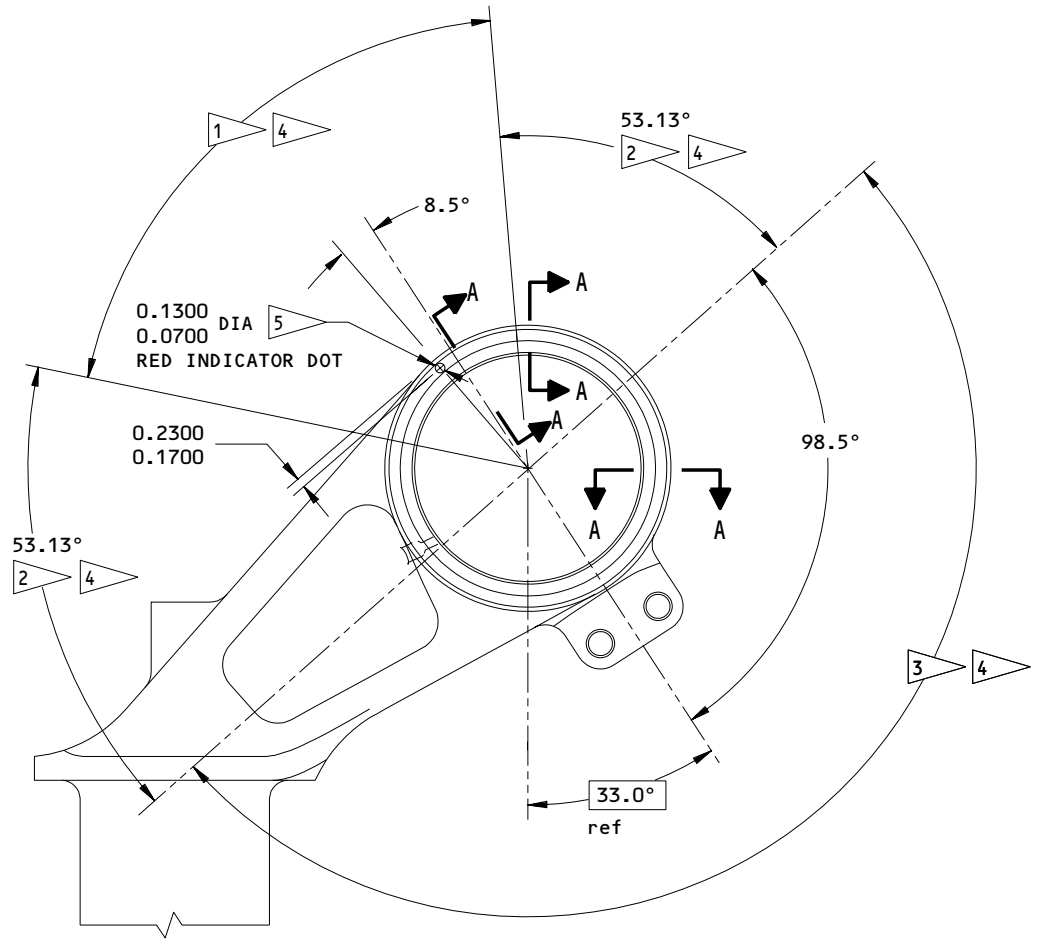
A-A

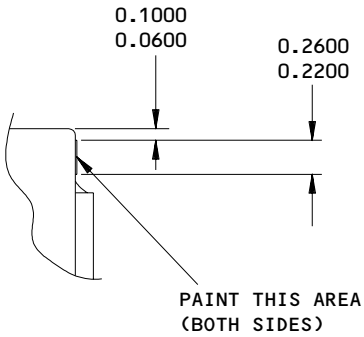


B-B

ITEM NUMBERS REFER TO IPL FIG. 13

161T2106-1,-3
Bushing Replacement
Figure 601 (Sheet 2)





A-A
(TYP)

1 APPLY GREEN BMS 10-60 ENAMEL
(F-14.9815-4665)

2 APPLY YELLOW BMS 10-60 ENAMEL
(F-14.9815-3540)

3 APPLY RED BMS 10-60 ENAMEL
(F-14.9815-1076)

4 APPLY CLEAR PROTECTIVE COATING
(F-21.34)

5 APPLY RED BMS 10-60 ENAMEL
(F-14.9815-101)

161T2106-3
Painted Alignment Zone Details
Figure 602

M45795

SPINDLE, UPPER - REPAIR 15-2

161T2106-2

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 Defects in Center of Lug ID

      NOTE: This procedure lets you remove defects without machining the bore oversize, if the defects are only in the center area between two bushings.

      (1) Calculate the repair diameter and width of groove required to remove defects (Fig. 602).

      (2) Machine the center area as required.

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

      (4) Install replacement bushings per REPAIR 3-1.

      (5) Completely fill the cavity under and between bushings with grease.

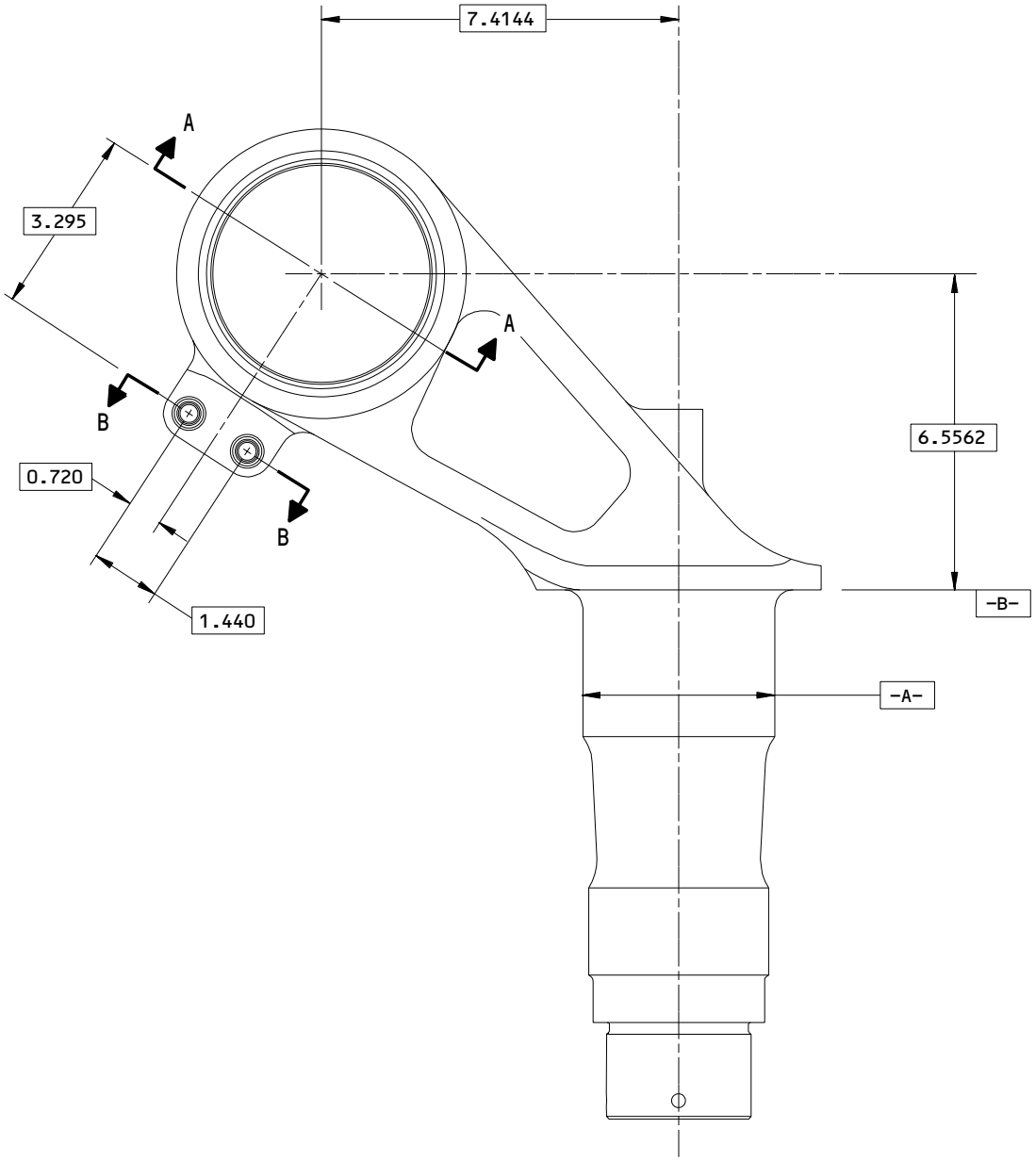
   B. Method 2 -- Installation of Oversize Bushings

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

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

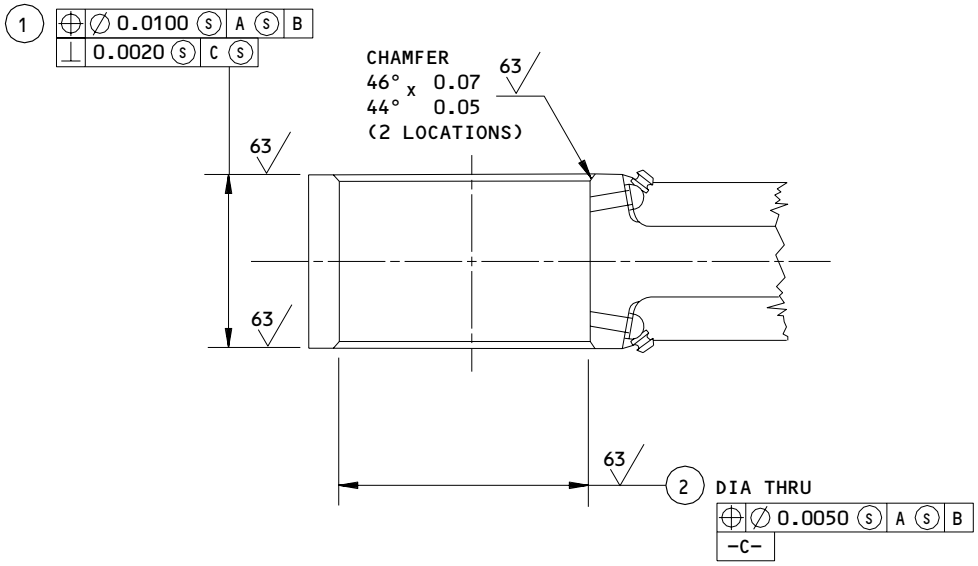
      (3) Make oversize bushings (Fig. 603 and on), as required, to adjust for the material removed.

      (4) Install the bushings per REPAIR 15-1.

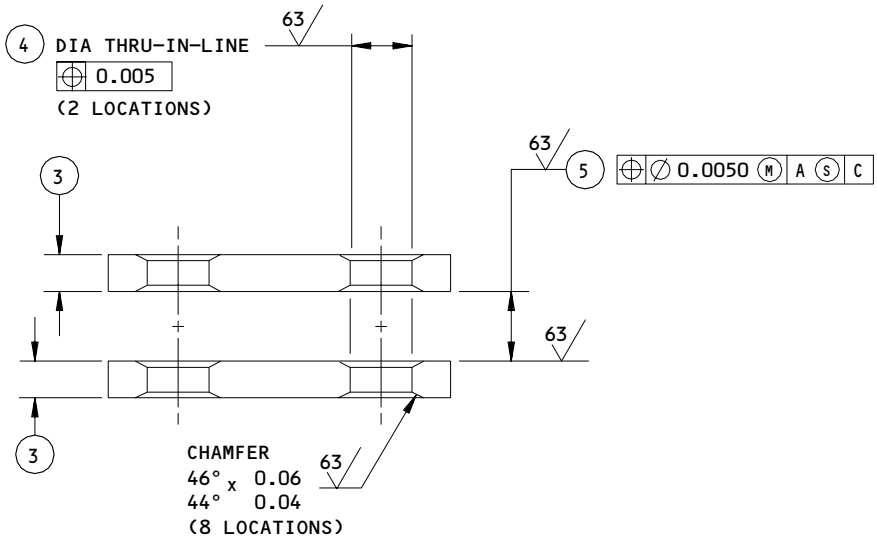


161T2106-2
Lug Face and Hole Repair
Figure 601 (Sheet 1)

M45806



A-A



B-B

161T2106-2
Lug Face and Hole Repair
Figure 601 (Sheet 2)

M45828

	(1)	(2)	(3)	(4)	(5)
DESIGN DIM	2.8311 2.8261	4.7515 4.7500	0.26 0.24	0.5016 0.5010	0.4550 0.4500
REPAIR LIMIT 1	2.7961 2	4.8115	0.21 3	0.5706	---

REFINISH

REFER TO REPAIR 3-3 FOR REFINISH INSTRUCTIONS

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 0.03-0.07 R.

3 LUGS WITH ONLY ONE BUSHING INSTALLED CAN USE ALL OF THIS REPAIR ON EITHER LUG FACE

REPAIR

REF 1 2 3

125 ALL MACHINED SURFACES UNLESS SHOWN DIFFERENTLY

BREAK SHARP EDGES 0.03-0.06 R

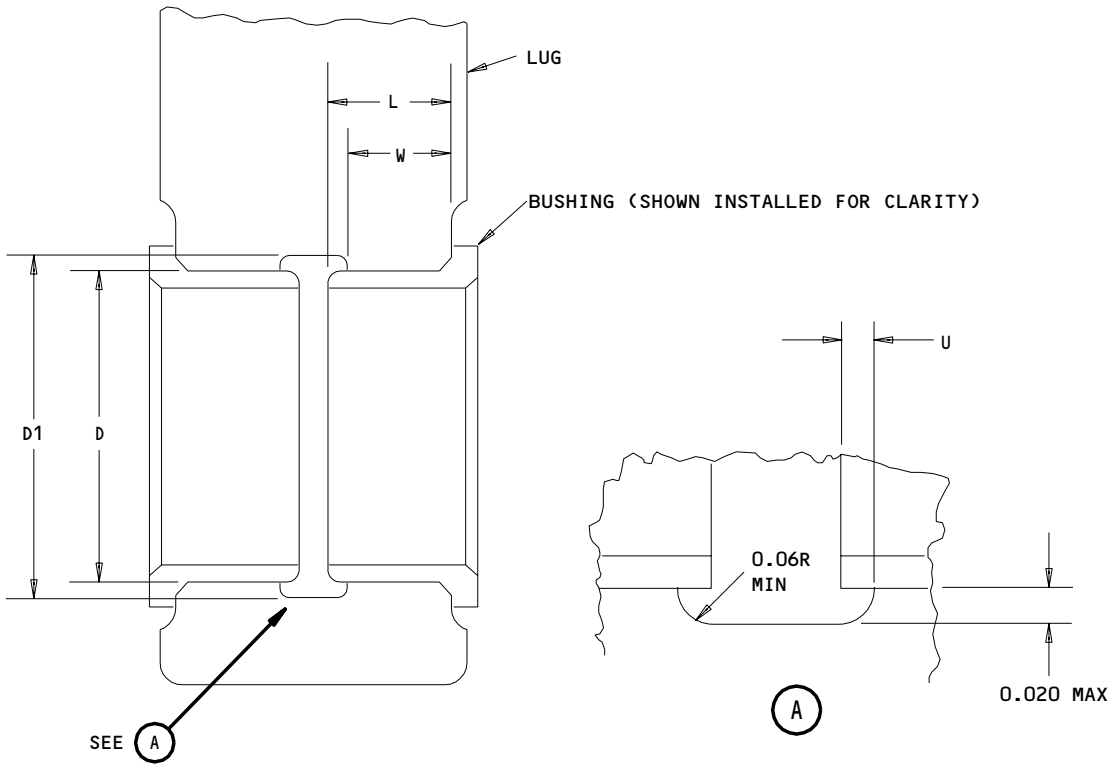
SHOT PEEN: (SOPM 20-10-03)
0.016-0.033 SHOT SIZE
0.014-0.016 A2 INTENSITY

MATERIAL: 4340M STEEL, 275-300 KSI

ALL DIMENSIONS ARE IN INCHES

161T2106-2
Lug Face and Hole Repair
Figure 601 (Sheet 3)

M45852



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)

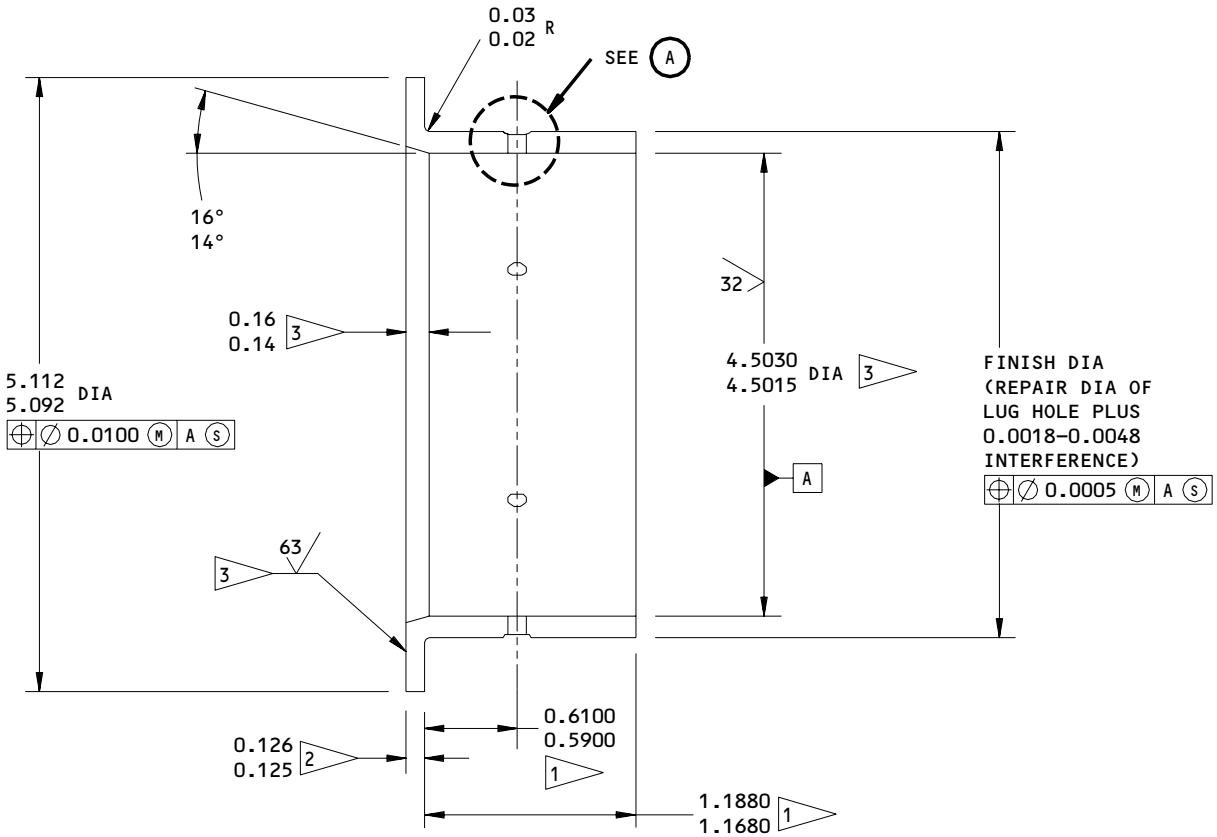
U = UNDERCUT = (L X 0.1) (0.06 MAX)

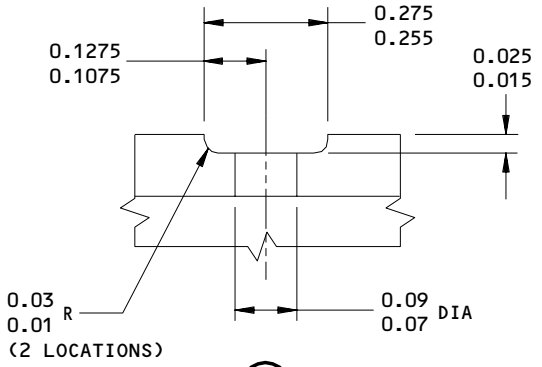
W = LUG DIM TO EDGE OF GROOVE = (L–U)

ALL DIMENSIONS ARE IN INCHES

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

M45854





A

(6 LOCATIONS EQUALLY SPACED)

1 MINUS AMOUNT REMOVED FROM LUG FACE

2 PLUS AMOUNT REMOVED FROM LUG FACE

3 DO NOT PLATE

125 ALL MACHINED SURFACES UNLESS SHOWN DIFFERENTLY

BREAK SHARP EDGES 0.015–0.025 R UNLESS SHOWN DIFFERENTLY

PENETRANT EXAMINE (SOPM 20-20-02)

FINISH: CADMIUM PLATE (F-15.36) UNLESS SHOWN DIFFERENTLY

MATERIAL: AL-NI-BRONZE (AMS 4640 OR AMS 4880)

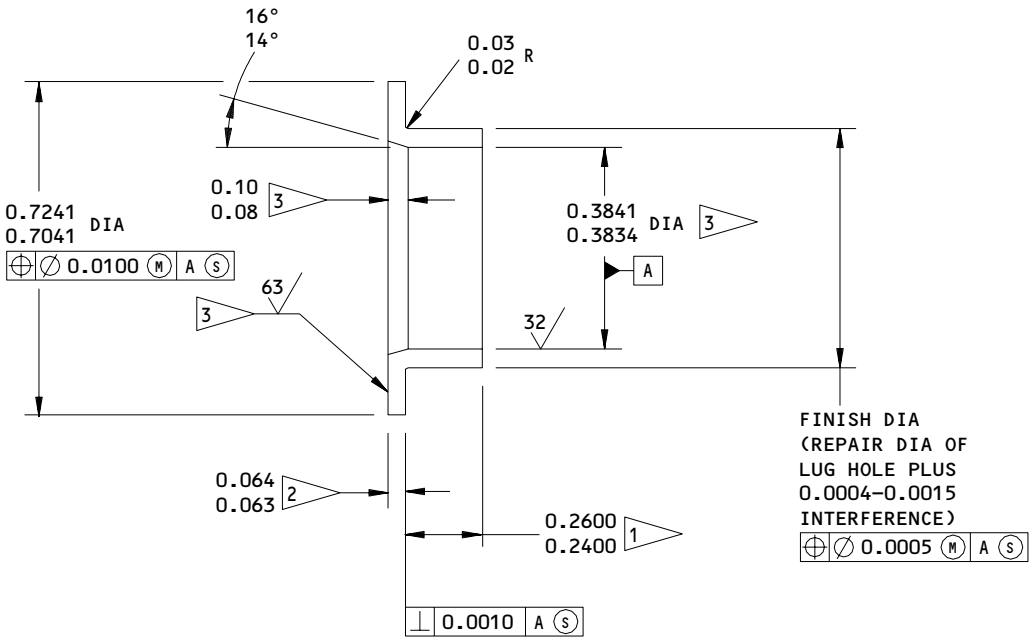
DIMENSIONS ARE BEFORE PLATING

ALL DIMENSIONS ARE IN INCHES

HOLE LOCATION (2) FIG. 601 - REPLACES BUSHING (IPL FIG. 13; 5) 161T2874-11

Oversize Bushing Details
Figure 603

M45958



125 ALL MACHINED SURFACES UNLESS SHOWN DIFFERENTLY

BREAK SHARP EDGES 0.015–0.025 R UNLESS SHOWN DIFFERENTLY

PENETRANT EXAMINE (SOPM 20–20–02)

FINISH: CADMIUM PLATE (F–15.36) UNLESS SHOWN DIFFERENTLY

MATERIAL: AL–NI–BRONZE (AMS 4640 OR AMS 4880)

DIMENSIONS ARE BEFORE PLATING

ALL DIMENSIONS ARE IN INCHES

1 MINUS AMOUNT REMOVED FROM LUG FACE

2 PLUS AMOUNT REMOVED FROM LUG FACE

3 DO NOT PLATE

HOLE LOCATION (4) FIG. 601 – REPLACES BUSHING (IPL FIG. 13; 10) 161T2874–12

Oversize Bushing Details
Figure 604

M45967

SPINDLE, UPPER - REPAIR 15-3

161T2106-3

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 - Diameter E and G (Fig. 601)

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

   B. Build up with thermal spray coating and grind to design dimensions and finish.

2. Shoulder Repair (Fig. 601)

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

   B. Shot peen. Build up with thermal spray coating and grind to restore grip length. Do not apply coating to the relief groove.

      NOTE: As an alternative to this thermal spray coating buildup, machine the shoulder face at the thread end to restore grip length.

3. Relief Groove (Fig. 601)

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

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

4. Pin Retention Holes; Small Bore (Fig. 601)

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

   B. Cadmium-titanium plate. Apply primer.

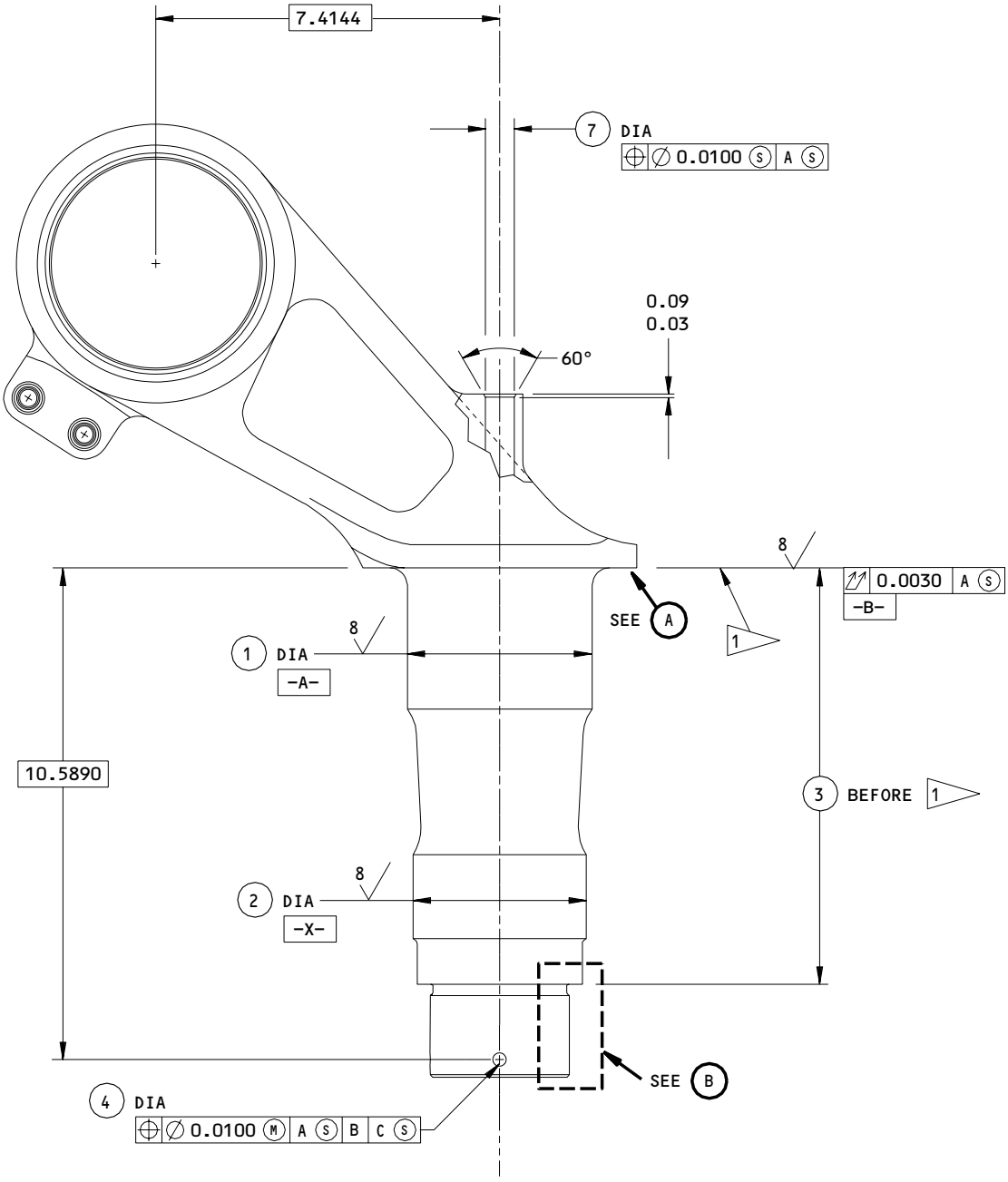
5. Threads (Fig. 601)

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

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

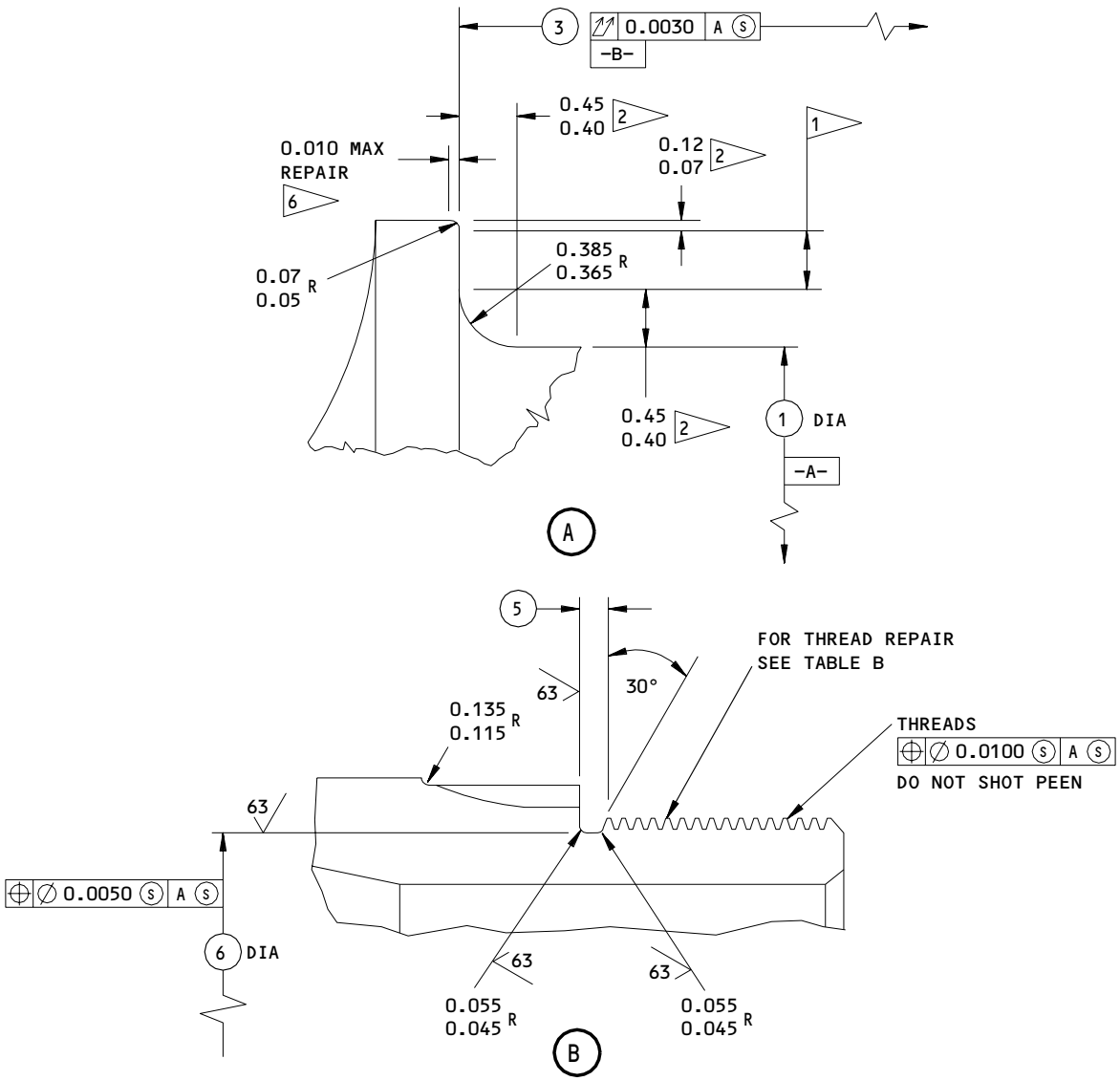
   C. Make an undersize nut (Fig. 602).

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



161T2106-2
Spindle Repair and Refinish
Figure 601 (Sheet 1)

M46016



(ROTATED 90° CCW)

REFERENCE NUMBER	1	2	3	4	5	6	7
DESIGN DIMENSION	4.0000 3.9985 ▷2	3.7500 3.7484 ▷2	8.984 8.964	0.291 0.279	0.2085 0.2065	2.885 2.875	0.635 0.615
REPAIR LIMIT	3.9685 ▷6	3.7184 ▷6	--	0.300 ▷4	0.300 ▷3	SEE TABLE B	0.650 ▷4

TABLE A

161T2106-2
Spindle Repair and Refinish
Figure 601 (Sheet 2)

UNJF-3A THREAD SIZE	3.000-12 (DESIGN)	2.875-12 (1/8 UNDERSIZE)
MAJOR DIA	3.0000 2.9886	2.8750 2.8636
PITCH DIA	2.9459 2.9412	2.8209 2.8162
MINOR DIA	2.9038 2.8940	2.7788 2.7690
ROOT RADIUS	0.0150 0.0125	0.0150 0.0125
THREAD RELIEF DESIGN DIA	2.885 2.875	2.760 2.750
THREAD RELIEF REPAIR LIMIT	2.855 4	---

TABLE B

REFINISH

APPLY BMS 10-67 TYPE 17 THERMAL SPRAY (F-15.384) TO DIAMETERS -A-, -X-. ON SHOULDER SURFACE B, APPLY THERMAL SPRAY PER 1

ON ALL OTHER SURFACES CADMIUM-TITANIUM PLATE (F-15.32). WIPE THREADS, SPLINES RELIEFS WITH PRIMER (F-19.451). APPLY BMS 10-79 TYPE 3 PRIMER (F-19.47) TO OTHER CADMIUM-TITANIUM PLATED SURFACES, BUT FINISH INTERIOR PER 5

AFTER BUSHING AND LUBE FITTING INSTALLATION, APPLY BMS 10-60 GRAY GLOSS ENAMEL (F-19.39-707) BUT NOT ON BUSHINGS, LUBE FITTINGS, CHROME PLATED AREAS, THREADS, SPLINES, RELIEFS AND INTERIOR BORE

1 APPLY BMS 10-67 TYPE 17 THERMAL SPRAY 0.003-0.005 THICK

2 AFTER COATING

3 LIMIT FOR RESTORING GRIP LENGTH WHEN HEAD FACE IS MACHINED BUT NOT RESTORED TO DESIGN DIMENSION BY THERMAL SPRAY BUILDUP. (RESTORATION OF GROOVE WIDTH TO DESIGN DIMENSION IS NOT REQUIRED.)

4 RESTORATION TO DESIGN DIMENSION NOT REQUIRED

REPAIR

REF 3 4 6

125 ALL MACHINED SURFACES UNLESS SHOWN DIFFERENTLY

BREAK SHARP EDGES 0.03-0.06 UNLESS SHOWN DIFFERENTLY

SHOT PEEN: 0.016-0.033 SHOT SIZE
0.009-0.015 A2 INTENSITY
DO NOT SHOT PEEN THREADS

MATERIAL: 4340M STEEL, 275-300 KSI

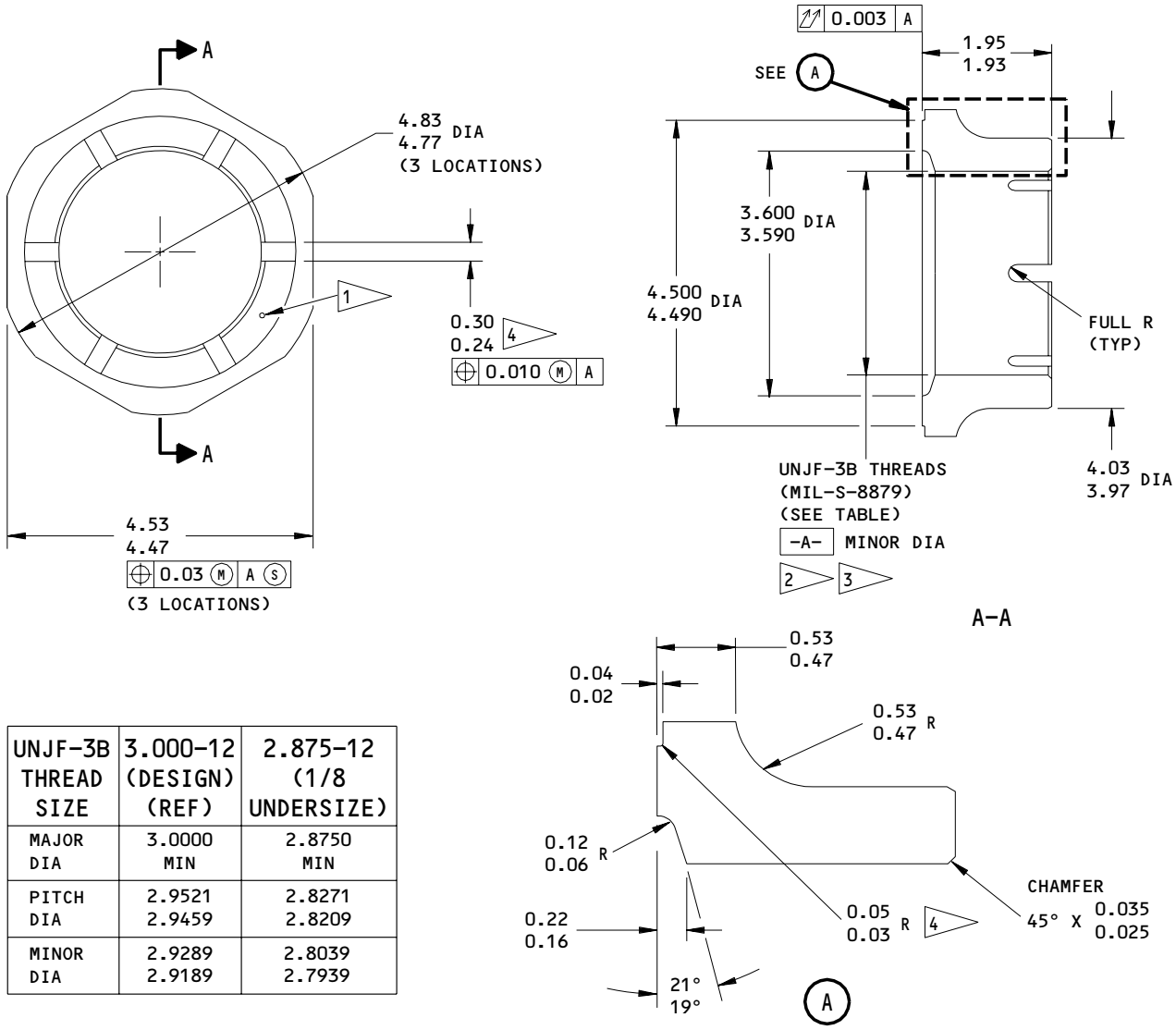
ALL DIMENSIONS ARE IN INCHES

5 AFTER CADMIUM-TITANIUM PLATING THE INTERIOR, APPLY BMS 10-79 TYPE 3 PRIMER (F-19.66) AND MIL-C-11796, CLASS 1 CORROSION PREVENTIVE COMPOUND (F-19.03)

6 LIMIT FOR BMS 10-67 TYPE 17 THERMAL SPRAY COATING BUILDUP (SOPM 20-10-05) AND GRIND TO DESIGN DIMENSION AND FINISH. PUT A 0.06 PLATING RUNOUT AT EDGES AND RELIEFS

161T2106-2
Spindle Repair and Refinish
Figure 601 (Sheet 3)

M46066



UNJF-3B THREAD SIZE	3.000-12 (DESIGN) (REF)	2.875-12 (1/8 UNDERSIZE)
MAJOR DIA	3.0000 MIN	2.8750 MIN
PITCH DIA	2.9521 2.9459	2.8271 2.8209
MINOR DIA	2.9289 2.9189	2.8039 2.7939

REFINISH

CADMIUM-TITANIUM PLATE (F-15.01). APPLY BMS 10-79, TYPE 3 PRIMER (F-19.47) AND BMS 10-60 ENAMEL (F-14.9813 WHICH REPLACES SRF-14.9813), BUT USE YELLOW ENAMEL ON NUTS WITH UNDERSIZE THREADS. WIPE THREADS AND THREAD RELIEF WITH PRIMER (F-19.451)

1. ON NUTS WITH UNDERSIZE THREADS, VIBRO-ENGRAVE "MATCHED SET - DO NOT SEPARATE" IN THIS LOCATION
2. CADMIUM PLATE (F-15.32) THIS SURFACE
3. DO NOT SHOT PEEN
4. SHOT PEEN OPTIONAL

REPAIR

125 ALL MACHINED SURFACES UNLESS SHOWN DIFFERENTLY

BREAK SHARP EDGES 0.02-0.03 R UNLESS SHOWN DIFFERENTLY

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

SHOT PEEN (SOPM 20-10-03):
Rc 55-65 SHOT HEAT TREAT
0.016-0.033 SHOT SIZE
0.014-0.018 A2 INTENSITY

MATERIAL: 4340M STEEL, 275-300 KSI

ALL DIMENSIONS ARE IN INCHES

REPLACES 161W0103-1
Undersize Nut Details
Figure 602

M46271

ECCENTRIC ASSEMBLY - REPAIR 16-1

161T2114-1, -3

1. Bushing Replacement (Fig. 601)

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

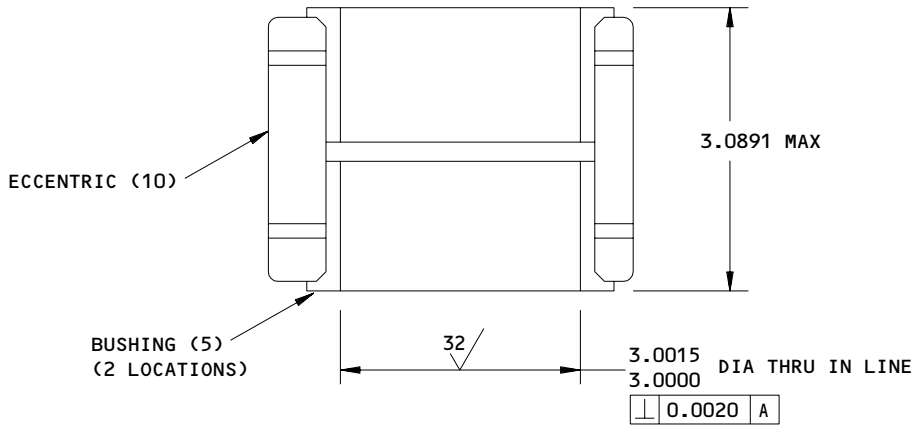
A. Remove the old bushings.

B. If you find defects on the eccentric, refer to REPAIR 16-2 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 machined to give the installed dimensions.



161T2114-1
Bushing Replacement
Figure 601

M46274

ECCENTRIC - REPAIR 16-2

161T2114-2, -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, to Refinish instructions, Fig. 601.

1. Lug Faces and Holes (Fig. 601)

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

      NOTE: This procedure lets you remove defects without machining the entire bore oversize, if the defects are on in the center area between two bushings.

      (1) Calculate the repair diameter and width of groove required to remove defects (Fig. 602).

      (2) Machine the center area as required.

      (3) Refinish as indicated.

      (4) Install replacement bushings per REPAIR 9-1.

      (5) Completely fill cavity under and between the bushings with grease.

   B. Method 2 -- Installation of Oversize Bushings

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

      (2) Refinish as indicated.

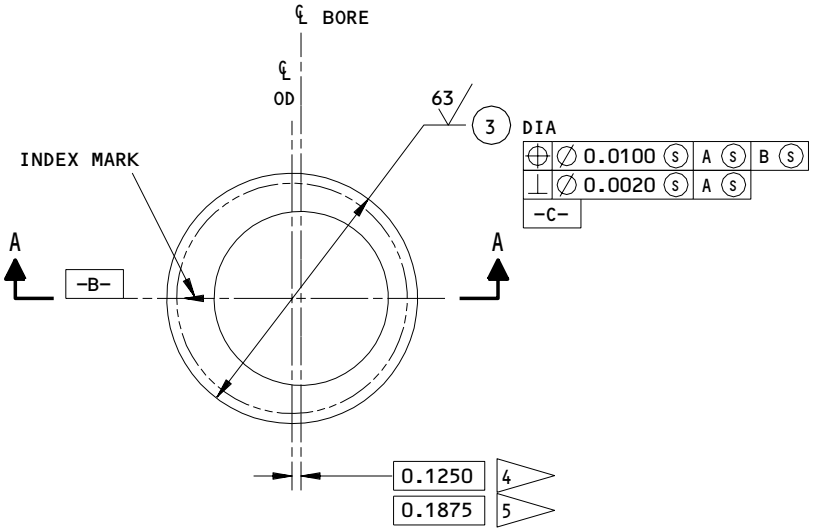
      (3) Make bushings (Fig. 603), as necessary, to adjust for the material removed.

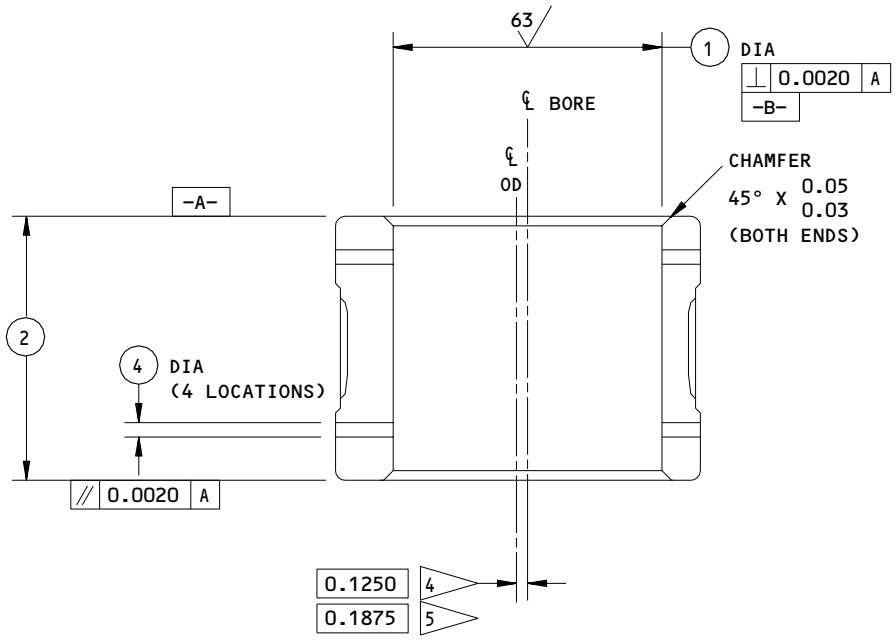
      (4) Install the bushings per REPAIR 9-1.

2. OD - Diameter C (Fig. 601)

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

   B. Build up the machined surfaces with chrome plate. Grind to design dimensions and finish.





A-A

161T2114-2,-4
Eccentric Repair and Refinish
Figure 601 (Sheet 1)

M46277

	(1)	(2)	(3)	(4)
DESIGN DIM	3.2915 3.2900	2.8311 2.8261	4.4990 4.4980	0.13 0.11
REPAIR LIMIT	----	----	----	—

REFINISH

PASSIVATE (F-17.25) ALL OVER

1 > LIMIT FOR INSTALLATION OF OVERSIZE BUSHINGS

2 > LIMIT FOR CHROME PLATE BUILDUP AND GRIND TO DESIGN DIMENSIONS AND FINISH

3 > 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 0.03-0.07 R

4 > 161T2114-2

5 > 161T2114-4

REPAIR

(SAME AS REFINISH)

125 ALL MACHINED SURFACES UNLESS SHOWN DIFFERENTLY

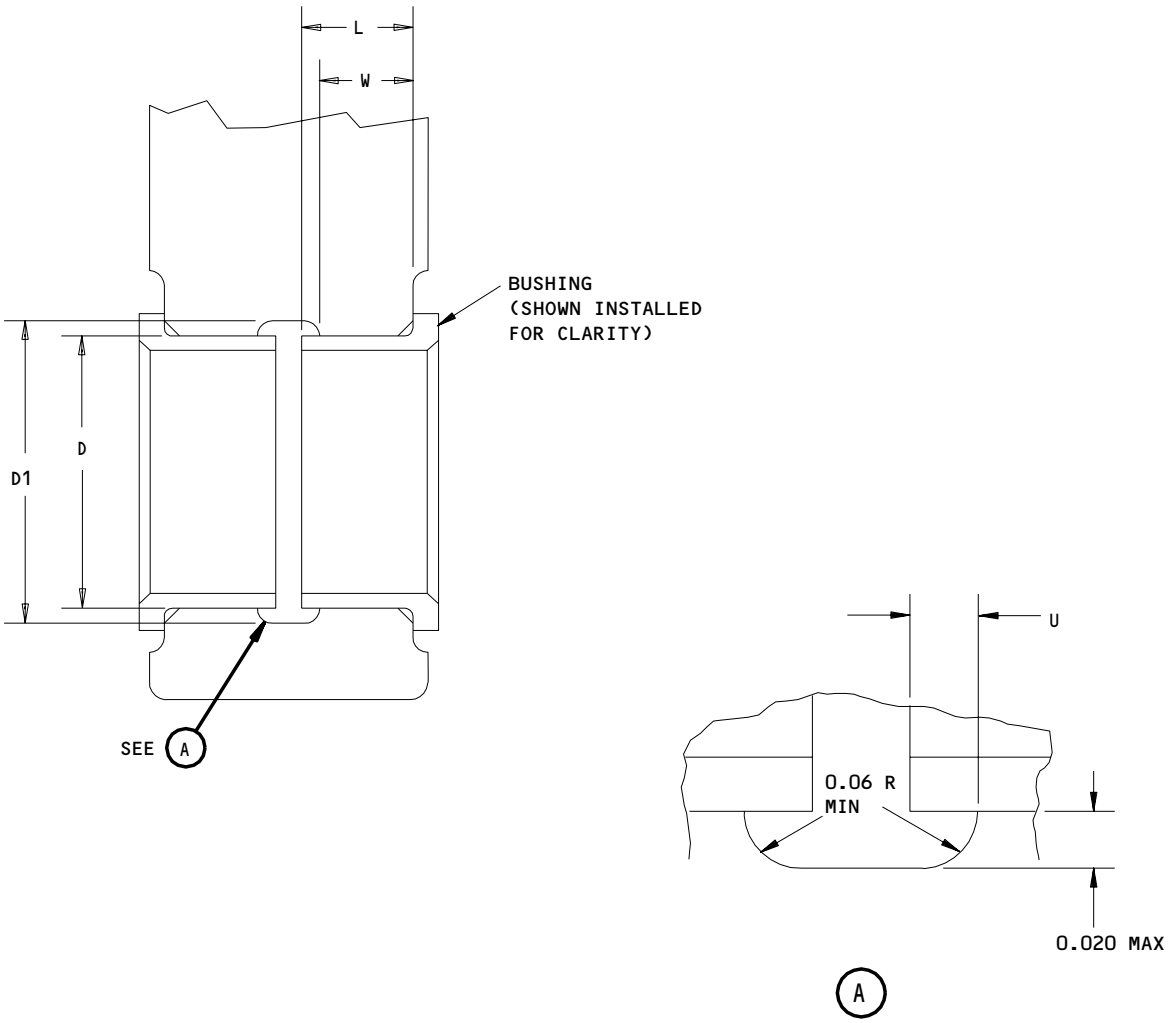
BREAK SHARP EDGES 0.02-0.03 R

MATERIAL: 15-5PH CRES, 180-200 KSI

ALL DIMENSIONS ARE IN INCHES

161T2114-2,-4
Eccentric Repair and Refinish
Figure 601 (Sheet 2)

M46278



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)

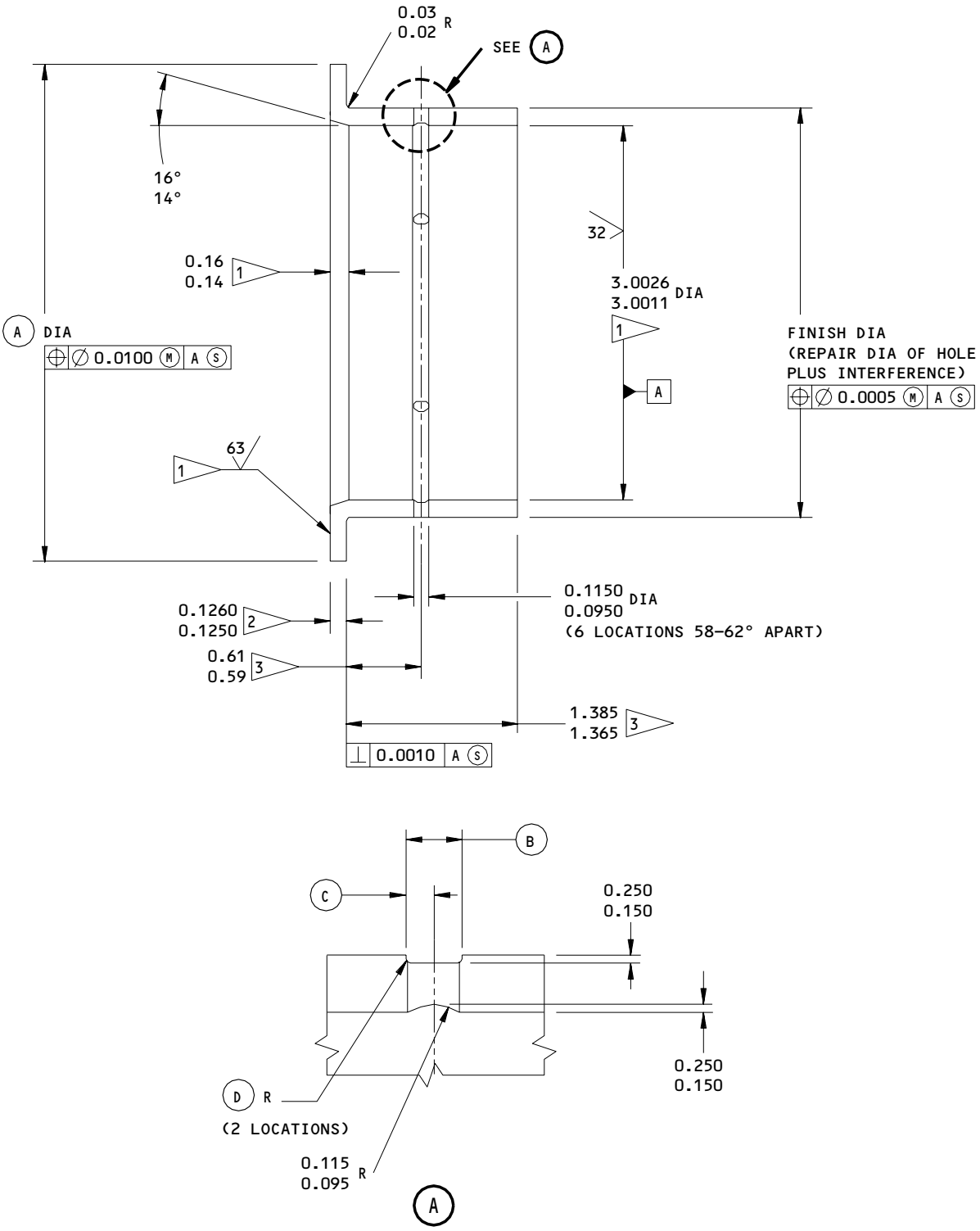
U = UNDERCUT = (L X 0.1) (0.06 MAX)

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

M46281



Oversize Bushing Details
Figure 603 (Sheet 1)

HOLE LOCATION (FIG. 601)	REPLACES BUSHING (IPL FIG. 13)	(A)	(B)	(C)	(D)	INTERFERENCE
(1)	(5) 161T2874-10	4.010 3.990	----	----	----	0.0028 0.0013
(1)	(5A) 161T2874-88	3.948 3.928	0.16 0.14	0.085 0.065	0.03 0.01	0.0028 0.0013

FINISH

CADMIUM PLATE (F-15.36) UNLESS SHOWN BY 1

1 NO FINISH

2 PLUS AMOUNT REMOVED FROM END FACE

3 MINUS AMOUNT REMOVED FROM END FACE

125 ALL MACHINED SURFACES UNLESS SHOWN DIFFERENTLY

BREAK SHARP EDGES 0.015-0.025 R UNLESS SHOWN DIFFERENTLY

MATERIAL: AL-NI-BRONZE (AMS 4640 OR AMS 4880)

DIMENSIONS ARE BEFORE PLATING

ALL DIMENSIONS ARE IN INCHES

Oversize Bushing Details
Figure 603 (Sheet 2)

M46319

PIN - REPAIR 17-1

161T2129-1

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

1. Check

A. Magnetic particle examine pin (505).

2. Repair

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

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

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

B. Relief Grooves

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

(2) Shot peen.

C. Pin Retention Holes

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

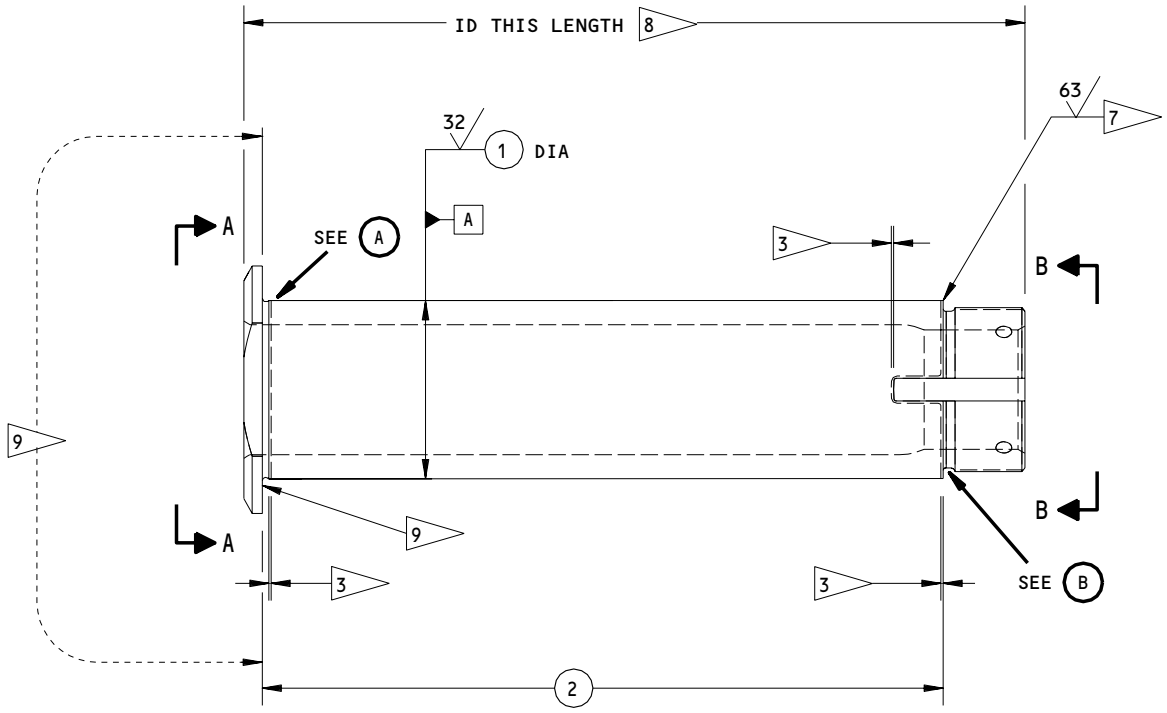
(2) Passivate.

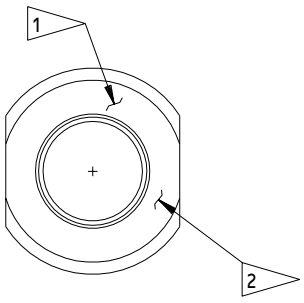
D. Refinish

(1) For repair of surfaces which is only replacement of the original finish, refer to Refinish instructions, Fig. 601.

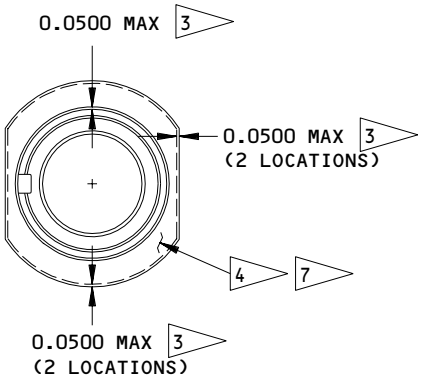
3. Fits and Clearances

A. See Fig. 801.





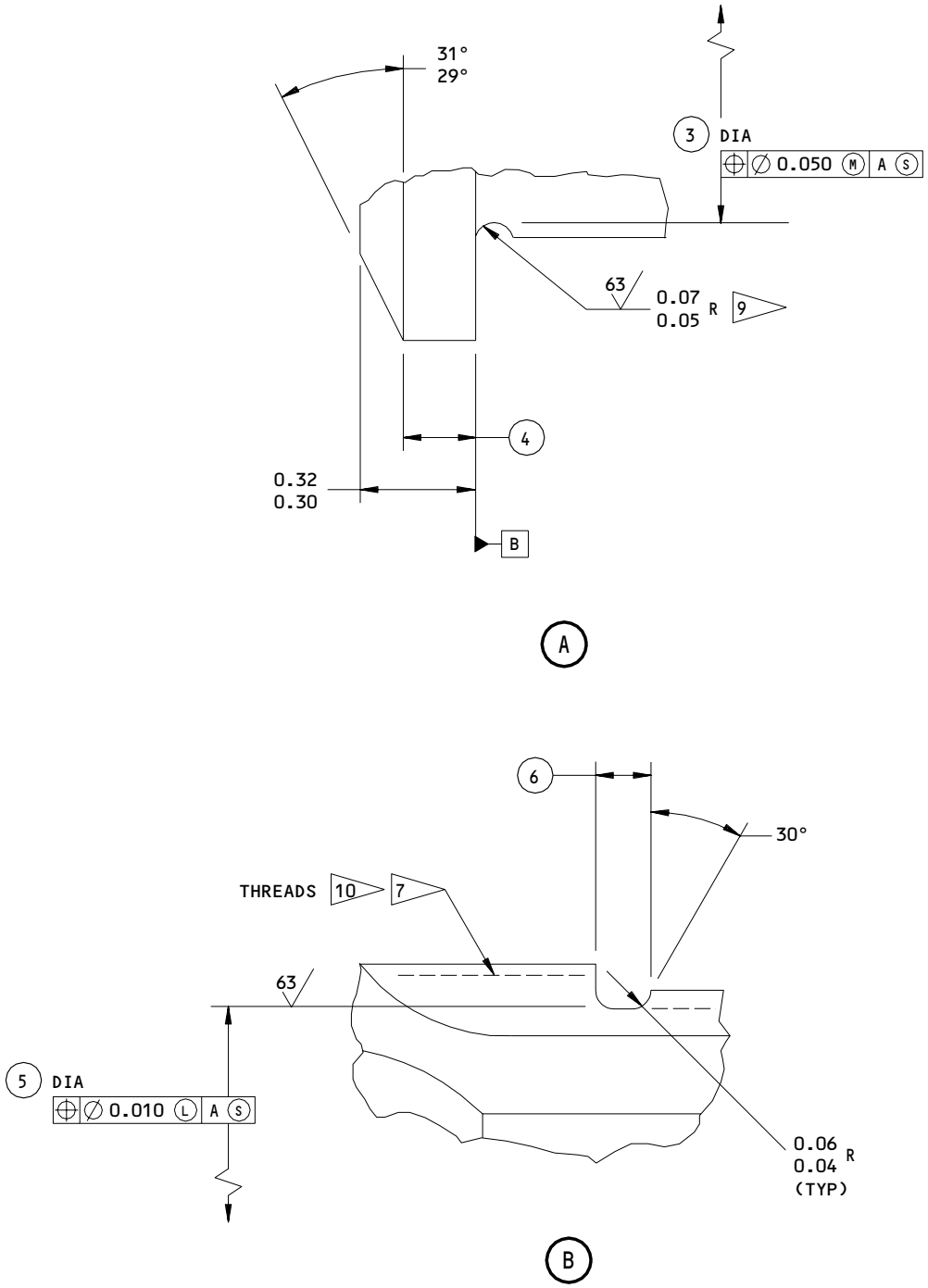
A–A



B–B

161T2129-1
Pin Repair and Refinish
Figure 601 (Sheet 1)

M46324



161T2129-1
Pin Repair and Refinish
Figure 601 (Sheet 2)

REFERENCE NUMBER	(1)	(2)	(3)	(4)	(5)	(6)
DESIGN DIMENSION	2.9990 2.9970	6.5980 6.5930	2.9450 2.9400	0.1800 0.1600	2.6300 2.6200	0.1770 0.1570
REPAIR LIMIT	2.9690 ▷5	----	----	----	----	----

REFINISH

AS NOTED

▷1 PART NUMBER AND SERIAL NUMBER LOCATION

▷2 RUBBER STAMP THE WORDS "THIS END AFT" AT THIS SURFACE WITH BLACK ENAMEL, OR STENCIL WITH BMS 10-60 ENAMEL (F-14.9815-701, WHICH REPLACES SRF-14.9815-701)

▷3 CHROME PLATE RUNOUT

▷4 CHROME PLATE (F-15.34) 0.0025-0.0035 INCH THICK. DO NOT GRIND

▷5 LIMIT FOR CHROME PLATE BUILDUP (SOPM 20-42-03) AND GRIND TO DESIGN DIMENSIONS AND FINISH

▷6 CHROME PLATE (F-15.34), 0.003 MINIMUM THICKNESS

▷7 WIPE THE CHROME PLATE WITH PRIMER (F-19.451)

▷8 CADMIUM-TITANIUM PLATE (F-15.01). APPLY BMS 10-79, TYPE 3 PRIMER (F-19.66) AND MIL-C-11796, CLASS 1 CORROSION PREVENTIVE COMPOUND (F-19.03)

REPAIR

REF ▷5

125 ALL MACHINED SURFACES UNLESS SHOWN DIFFERENTLY

BREAK ALL SHARP EDGES

SHOT PEEN (SOPM 20-10-03)
0.016-0.033 SHOT SIZE
0.014-0.016 A2 INTENSITY

MATERIAL: 4340M STEEL, 275-300 KSI

ALL DIMENSIONS ARE IN INCHES

▷9 CADMIUM-TITANIUM PLATE (F-15.01). APPLY BMS 10-79, TYPE 3 PRIMER (F-19.66) AND BMS 10-60 ENAMEL (F-19.39-707)

▷10 CADMIUM-TITANIUM PLATE (F-15.32)

161T2129-1
Pin Repair and Refinish
Figure 601 (Sheet 3)

M46346

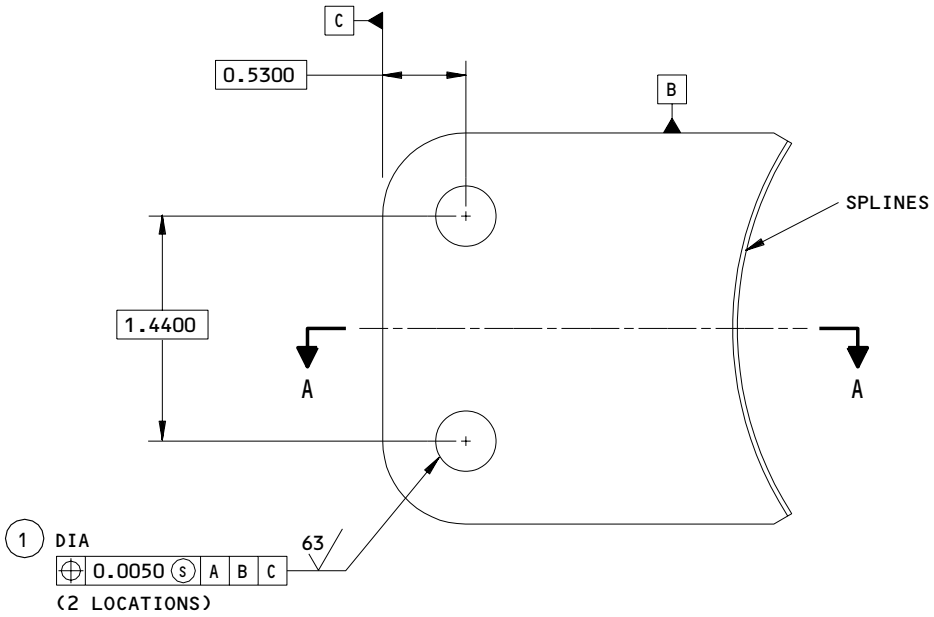
LOCK - REPAIR 18-1

161T2133-1

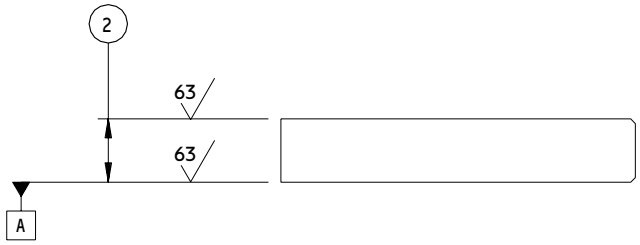
NOTE: Refer to REPAIR - GENERAL for a list of applicable standard practices.

1. Repair (Fig. 601)

   NOTE: Repair is only replacement of the original finish. Refer to Refinish instructions for details.



REFERENCE NUMBER	1	2
DESIGN DIMENSION	0.3875 0.3825	0.4100 0.4000
REPAIR LIMIT	----	----



A-A

REFINISH

PASSIVATE (F-17.25) THE SPLINES. ON OTHER SURFACES, CADMIUM PLATE (F-16.06) AND APPLY BMS 10-79, TYPE 3 PRIMER (F-19.47). APPLY BMS 10-60 TYPE 2 ENAMEL (F-19.39-707) BUT NOT IN HOLES OR ON SPLINES

REPAIR

(SAME AS REFINISH)

125 ALL MACHINED SURFACES UNLESS SHOWN DIFFERENTLY

MATERIAL: 15-5PH CRES, 180-200 KSI

DIMENSIONS ARE BEFORE FINISH

ALL DIMENSIONS ARE IN INCHES

161T2133-1
Lock Repair and Refinish
Figure 601

M46358

MISCELLANEOUS PARTS REFINISH - REPAIR 19-1

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

1. Check (IPL Fig. 1)

   A. Magnetic particle examine plates (200), nuts (205, 215, 305, 520, 545), lock tab (220).

   B. Penetrant examine springs (320). Be sure to extend the spring during the check to look for defects between the coils.

   C. Do a strength check of springs (320) as follows:

SPRING ITEM NO.	APPROXIMATE FREE LENGTH (INCHES)(REF)*[1]	TEST LENGTH (INCHES)	ALLOWABLE LOAD LIMITS (POUNDS)
320, 320A	12.30	22.86 31.68	220.5-269.5 400.0-500.0
320B	18.648	28.19 35.10	261.0-319.0 450.0-550.0

*[1] Measured between hook centers, not hook inside faces.

2. Repair of parts listed in Fig. 601 is only replacement of the original finish.

IPL FIG. & ITEM	MATERIAL	FINISH
Fig. 1		
Spool (45B)	Plastic	No finish.
Plates (200), Lock Tab (220)	15-5PH CRES, 180-200 ksi	Passivate (F-17.25, which replaces F-17.09).
Nuts (205,215)	15-5PH CRES, 180-200 ksi	Passivate (F-17.25, which replaces F-17.09). Apply Type 6, Class 1 solid film lubricant (F-19.81) on threads.
Washer (302)	4340 steel, 180-200 ksi	Cadmium plate and apply BMS 10-11 Type 1 primer (F-16.01). Apply one more layer of BMS 10-11, Type 1 primer (F-20.02) on faces and ID. Apply BMS 10-60 enamel (F-14.9813, which replaces SRF-14.9813) on OD.
Nut (303)	4340 steel, 180-200 ksi	Cadmium plate and apply BMS 10-11 Type 1 primer (F-16.01). Apply one more layer of BMS 10-11, Type 1 primer (F-20.02) on base face. Wipe threads with primer (F-19.45). Apply BMS 10-60 enamel (F-14.9813, which replaces SRF-14.9813) to other surfaces.
Springs (320)	Titanium alloy	No finish.
Sleeve (325)	17-4PH CRES, 180-200 ksi	Passivate (F-17.25, which replaces F-17.09).
Washers (330,335)	301 CRES, 1/4 hard	Passivate (F-17.25, which replaces F-17.09).

Refinish Details
Figure 601 (Sheet 1)

IPL FIG. & ITEM	MATERIAL	FINISH
Ring (405)	15-5PH CRES, 180-200 ksi	Passivate (F-17.25, which replaces F-17.09)
Ring (405A)	Al-Ni-Bronze AMS 4640	Cadmium plate (F-15.06)
Washer (410)	Nylon	No finish.
Washer (415)	17-7PH CRES, 180-200 ksi	Cadmium plate (F-15.02)
Washer (420)	4340 steel, 180-200 ksi	Cadmium plate (F-15.02). Apply primer and enamel per CMM 32-00-02.
Nut (425)	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 threads with primer (F-19.45). Apply BMS 10-60 gray gloss enamel (F-14.9813, which replaces SRF-14.9813) or BMS 10-11, Type 2 enamel (F-21.02) all over but not on faying surface or threads.
Nut (470)	15-5PH CRES, 125-145 ksi	Passivate (F-17.13). Apply BMS 10-11, type 1 primer (F-20.02) and BMS 10-60 enamel (F-14.9813, which replaces SRF-14.9813) on all surfaces but not threads. Apply BMS 3-8 lubricant (F-19.10) on threads.
Washer (500)	15-5PH CRES	Passivate (F-17.25)
Nut (520)	4340 Steel, 180-200 ksi	Cadmium-titanium plate (F-15.01). Apply primer and enamel per CMM 32-00-02.

Refinish Details
Figure 601 (Sheet 2)

IPL FIG. & ITEM	MATERIAL	FINISH
Washer (525)	15-5PH CRES, 150-170 ksi	Passivate (F-17.25, which replaces F-17.09).
Washer (535)	4330M Steel, 180-200 ksi	Cadmium plate (F-15.06). Apply primer and enamel per CMM 32-00-02, but use BMS 10-79, type 3 primer, not BMS 10-11, type 1 primer.
Washer (540)	4340M Steel, 180-200 ksi	Chrome plate (F-15.34) the larger face, 0.0015-0.0020 inch thick. On other surfaces, cadmium plate (F-15.06). Apply primer and enamel per CMM 32-00-02, but use BMS 10-79, type 3 primer, not BMS 10-11, type 1 primer.
Nut (545)	4340M Steel, 275-300 ksi	Cadmium-titanium plate (F-15.01). Apply primer and enamel per CMM 32-00-02, but use BMS 10-79, type 3 primer, not BMS 10-11, type 1 primer.
End Cap (550)	15-5PH CRES, 180-200 ksi	Cadmium plate (F-16.13 or F-16.06). Apply BMS 3-8 lubricant (F-19.10) to the 0.90 and 1.25-inch diameters and the transition radium between these diameters.
Fig. 4		
Ring (5)	15-5PH CRES, 180-200 ksi	Passivate (F-17.25, which replaces F-17.09). Apply Type 6, Class 1 solid film lubricant (F-19.81) on splines. Replace lube fitting (10) per CMM 32-00-03.

Refinish Details
Figure 601 (Sheet 3)

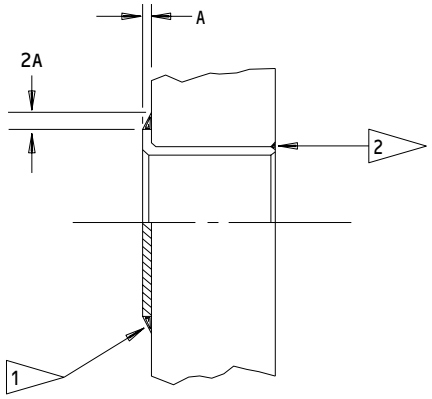
BUSHING SEALING - REPAIR 20-1

1. Before you apply sealant, make sure all other primer and enamel is applied to the part.

2. Solvent clean the area to be sealed and the adjacent area per SOPM 20-30-03.

3. Apply a fillet of BMS 5-95 sealant as shown or per SOPM 20-50-19.

4. Apply BMS 10-60 gray gloss enamel (F-14.9813, which replaces SRF-14.9813) over the sealant and areas around the sealant. Do not apply overcoat to bushing flange faces.



1 A CONTINUOUS FILLET SEAL MUST EXTEND TO TOP OF BUSHING FLANGE EDGE AND BE PROPORTIONED AS SHOWN. OPTIONAL: SEAL PER SOPM 20-50-19. DO NOT APPLY SEALANT TO BUSHING FACE.

2 FILL THIS CAVITY ALL AROUND THE BUSHING. MAKE SURE THE SEALANT IS FLUSH WITH THE SURFACE.

Bushing Sealing Details
Figure 601

131940

NUT, UPPER DRAG STRUT SPINDLE - REPAIR 21-1

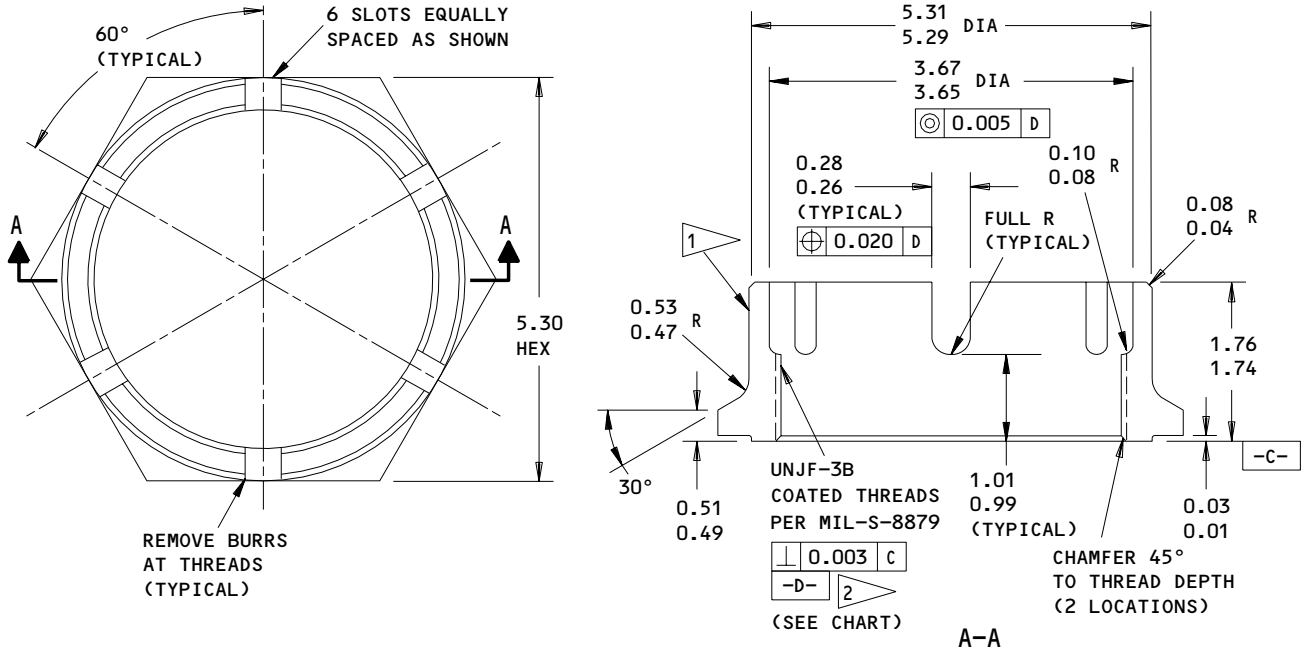
161T6021-1

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

1. Undersize Threads (Fig. 601)

   A. If you cut the threads undersize on the upper drag strut spindle 161T6007-series (Ref CMM 32-11-60, REPAIR 3-3), make a nut with undersize threads as shown.

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



UNJF-3B THREAD SIZE	3.625-12 (DESIGN) (REF)	3.500-12 (1/8 UNDERSIZE)
MAJOR DIA	3.6258 3.6130	3.5008 3.4880
PITCH DIA	3.5787 3.5709	3.4537 3.4459
MINOR DIA	3.5538 3.5438	3.4288 3.4188

REFINISH

CADMIUM-TITANIUM PLATE (F-15.01). APPLY PRIMER AND ENAMEL AS SHOWN IN CMM 32-00-02. 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 DO NOT SHOT PEEN THREADS

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)

SHOT PEEN (SOPM 20-10-03):
Rc 55-65 SHOT HEAT TREAT
0.016-0.033 SHOT SIZE
0.014-0.018 A2 INTENSITY

MATERIAL: 4340M STEEL, 275-300 KSI

ALL DIMENSIONS ARE IN INCHES

REPLACES 161T6021-1
Undersize Nut Details
Figure 601

E54664

PIN - REPAIR 22-1

161T2136-2

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

1. Check

A. Magnetic particle examine pin (515).

2. Repair

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

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

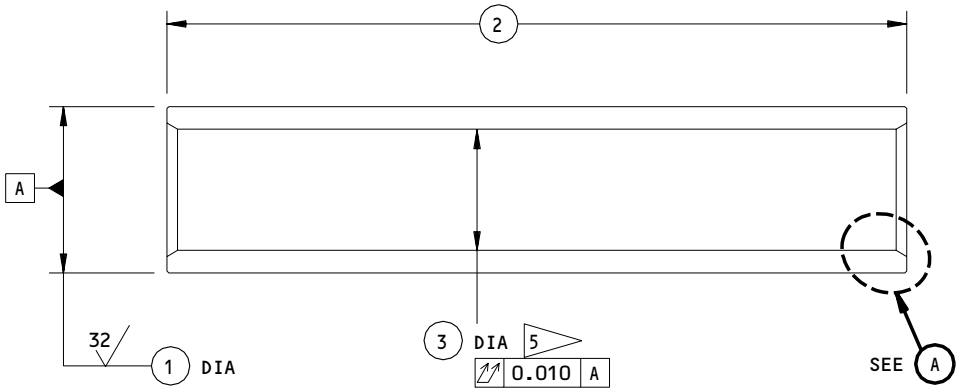
(2) Shot peen, chrome plate, and grind to design dimensions and finish. Chrome plate thickness must not be more than 0.010 inch after grinding.

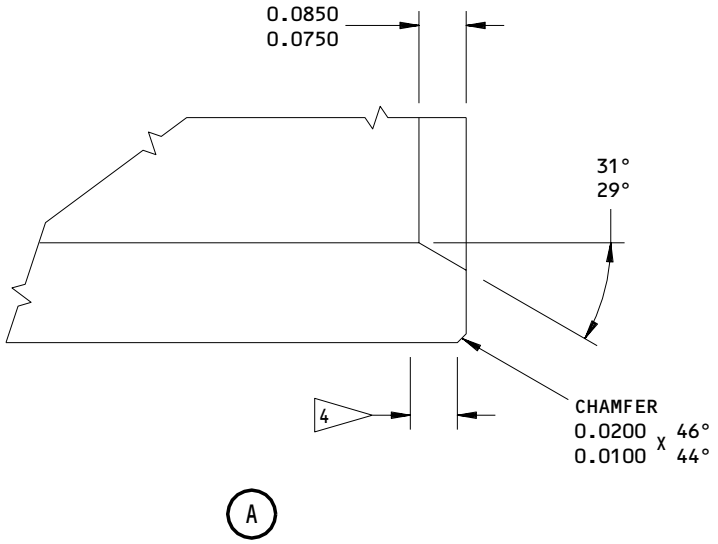
B. Refinish

(1) For repair of surfaces which is only replacement of the orignal finish, refer to Refinish instructions, Fig. 601.

3. Fits and Clearances

A. See Fig. 801.





161T2136-2
Pin Repair and Refinish
Figure 601 (Sheet 1)

M46362

REFERENCE NUMBER	(1)	(2)	(3)
DESIGN DIMENSION	1.2490 1.2390	4.2600 4.2500	0.905 0.900
REPAIR LIMIT	1.2190 ▷2	----	----

REFINISH

AS NOTED

▷1 PART NUMBER AND SERIAL NUMBER LOCATION

▷2 LIMIT FOR CHROME PLATE BUILDUP (SOPM 20-42-03) AND GRIND TO DESIGN DIMENSIONS AND FINISH

▷3 CHROME PLATE (F-15.34) 0.003 INCH THICK MAXIMUM AND WIPE WITH PRIMER (F-19.451)

▷4 CHROME PLATE RUNOUT

▷5 CADMIUM-TITANIUM PLATE (F-15.01) AND APPLY BMS 10-79, TYPE 3 PRIMER (F-19.66) AND MIL-C-11796, CLASS 1 CORROSION PREVENTIVE COMPOUND (F-19.03) IN THE INSIDE SURFACE OF THIS LENGTH

REPAIR

REF ▷2

125 ALL MACHINED SURFACES UNLESS SHOWN DIFFERENTLY

BREAK ALL SHARP EDGES

MATERIAL: 4340M STEEL, 275-300 KSI

SHOT PEEN (SOPM 20-10-03)
0.016-0.033 SHOT SIZE
0.014-0.016 A2 INTENSITY

ITEM NUMBERS REFER TO IPL FIG. 1

ALL DIMENSIONS ARE IN INCHES

161T2136-2
Pin Repair and Refinish
Figure 601 (Sheet 2)

M46373

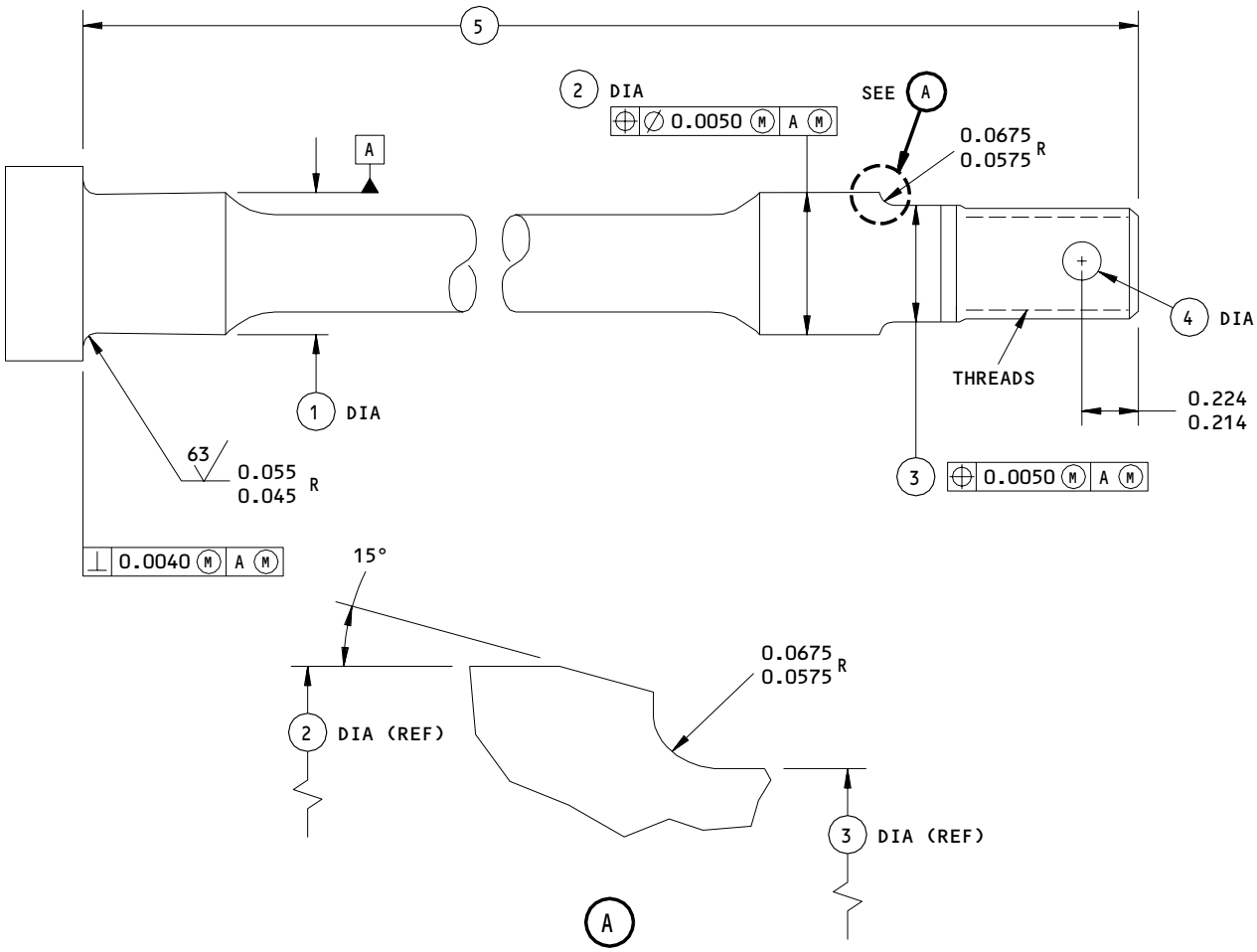
BOLT - REPAIR 23-1

161T6116-1

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

1. Repair (Fig. 601)

   NOTE: Repair is only replacement of the original finish. Refer to Refinish instructions for details.



REFERENCE NUMBER	1	2	3	4	5
DESIGN DIMENSION	0.5550 0.5450	0.5550 0.5450	0.4550 0.4450	0.151 0.141	5.4668 5.4558
REPAIR LIMIT	----	----	----	----	----

REFINISH

PASSIVATE (F-17.25)

REPAIR

(SAME AS REFINISH)

125 ALL MACHINED SURFACES UNLESS SHOWN DIFFERENTLY

MATERIAL: 15-5PH CRES, 180-200 KSI

ALL DIMENSIONS ARE IN INCHES

161T6116-1
Bolt Repair and Refinish
Figure 601

M46444

RACE, FORWARD TRUNNION BEARING OUTER - REPAIR 24-1

161T1300-1

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

1. Check

A. Penetrant check the race halves.

2. Repair (Fig. 601)

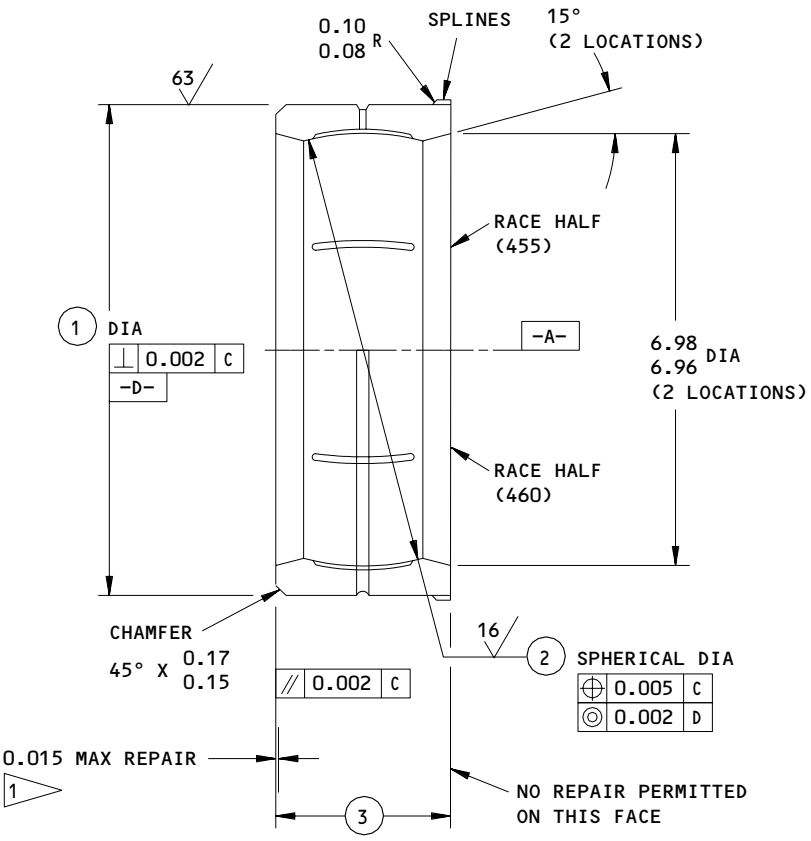
A. End Face Repair

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

(2) Chrome plate and grind to design dimensions and finish.

3. Fits and Clearances

A. See Fig. 801.



CAUTION: THIS ASSEMBLY IS A MATCHED SET OF RACE HALVES

REFERENCE NUMBER	1	2	3
DESIGN DIMENSION	7.897 7.894	7.001 7.000	2.805 2.800
REPAIR LIMIT	----	----	2.785 1

REFINISH

NO FINISH

1 LIMIT FOR CHROME PLATE BUILDUP AND GRIND TO DESIGN DIMENSIONS AND FINISH

REPAIR

REF 1

125 ALL MACHINED SURFACES UNLESS SHOWN DIFFERENTLY

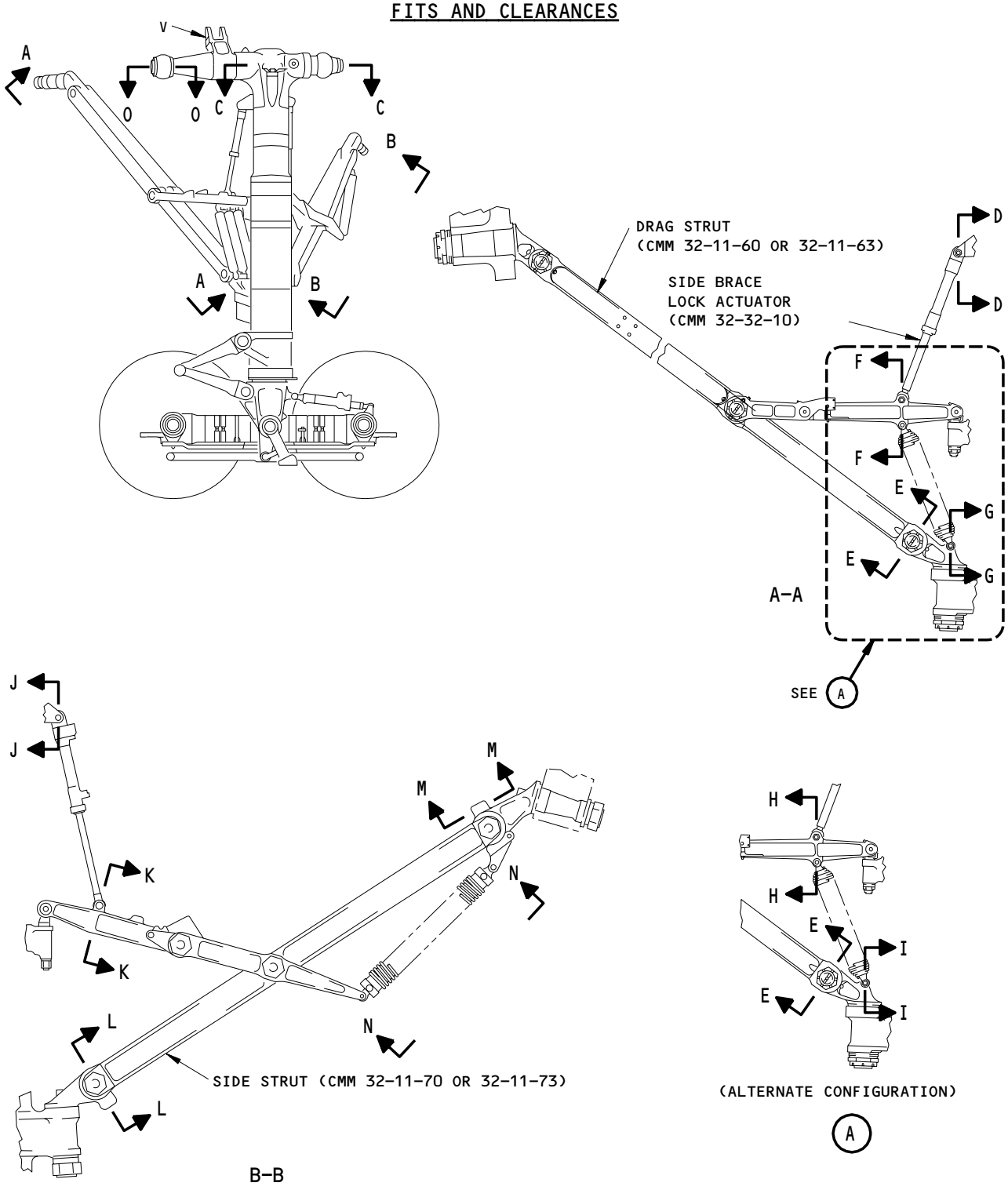
BREAK ALL SHARP EDGES 0.01-0.02 R

MATERIAL: AL-NI-BRONZE (AMS 4640 OR AMS 4880)

ALL DIMENSIONS ARE IN INCHES

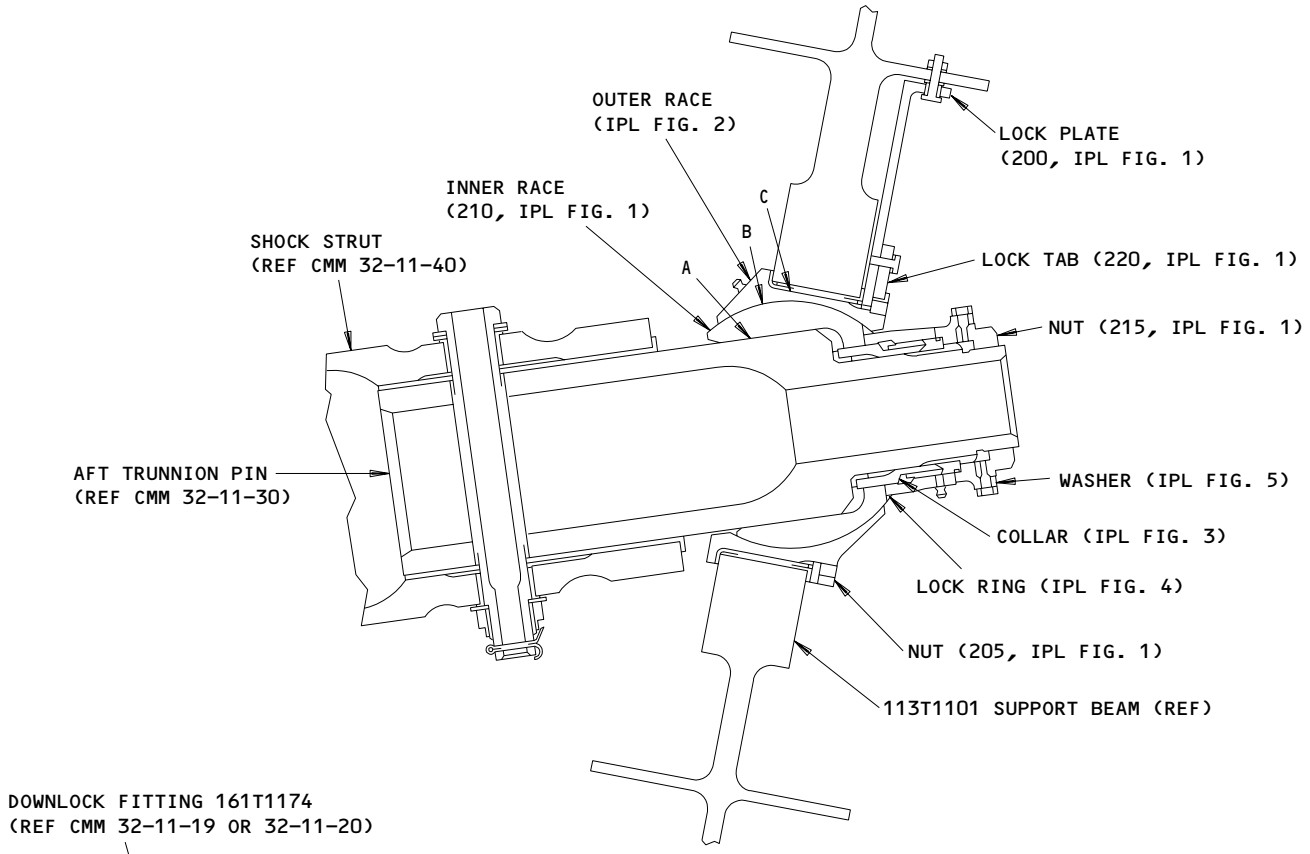
161T1300-1
Forward Trunnion Bearing Outer Race Assembly Repair and Refinish
Figure 601

M46482

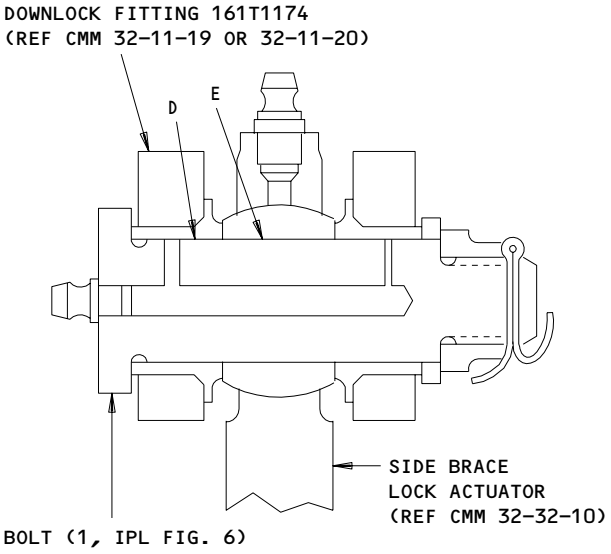


Fits and Clearances
Figure 801 (Sheet 1)

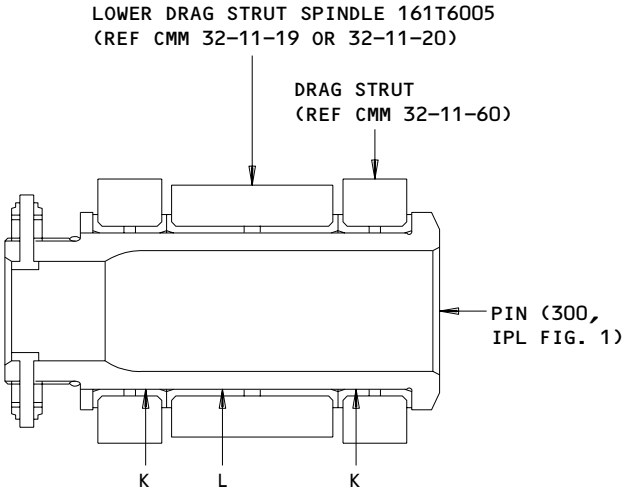
132292



C-C



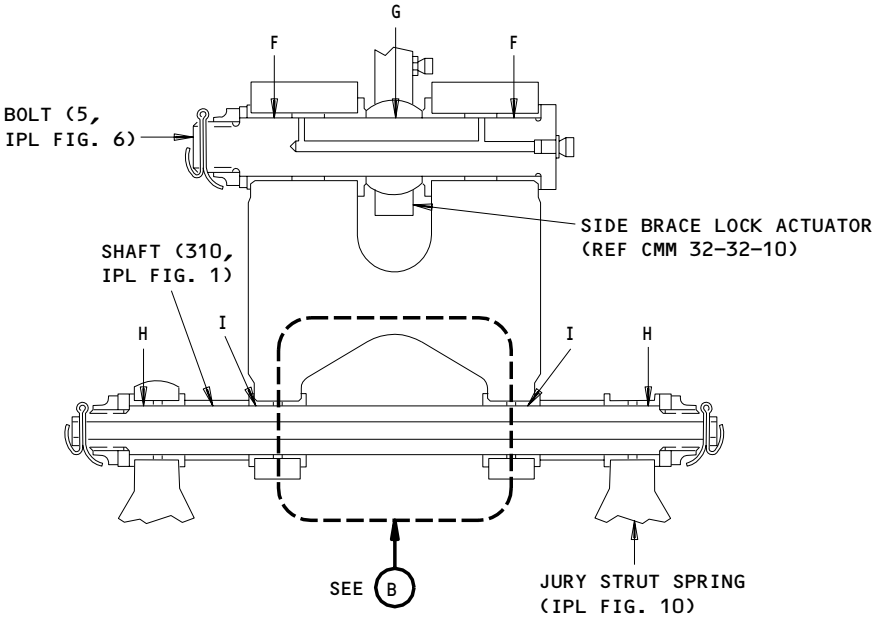
D-D



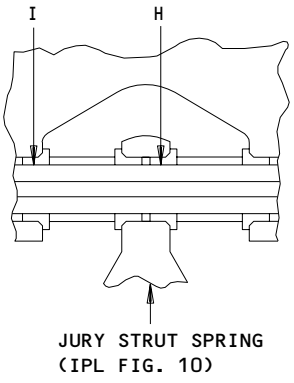
E-E

Fits and Clearances
Figure 801 (Sheet 2)

132294

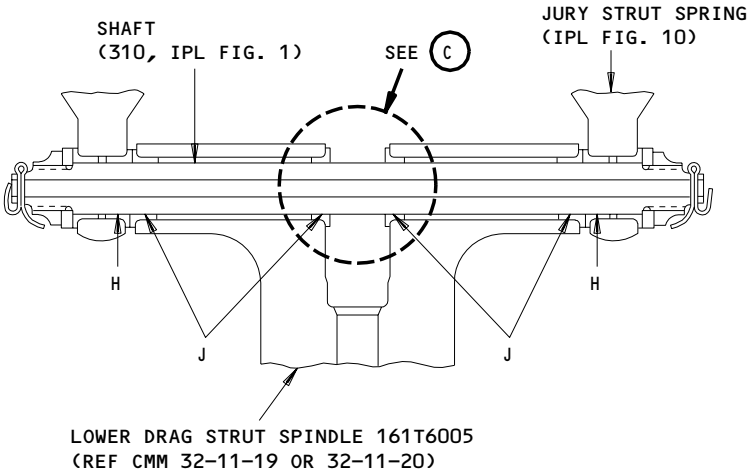


F-F

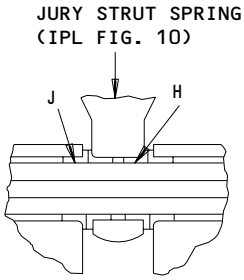


(ALTERNATE CONFIGURATION)

B



G-G

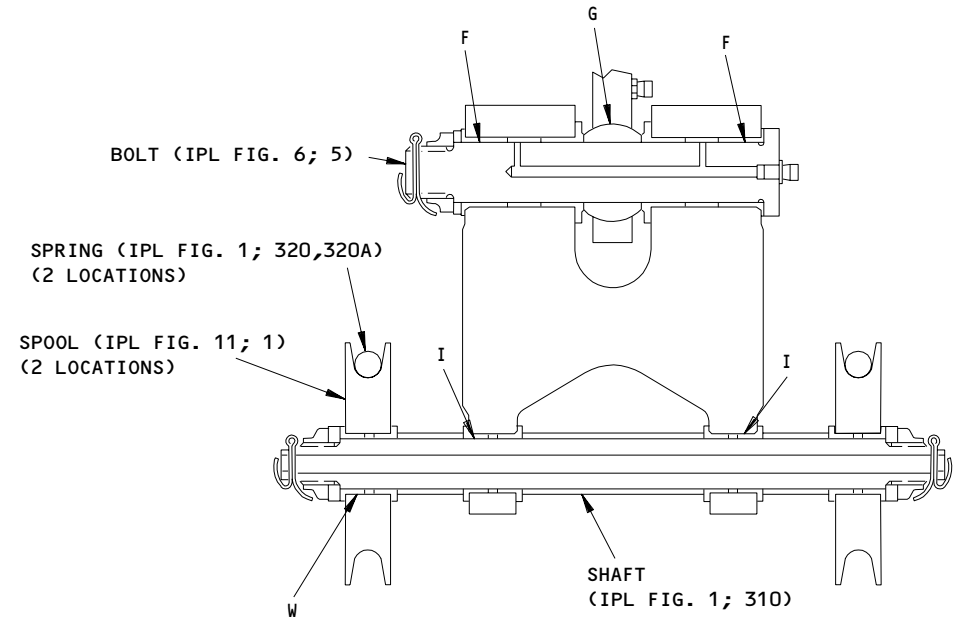


(ALTERNATE CONFIGURATION)

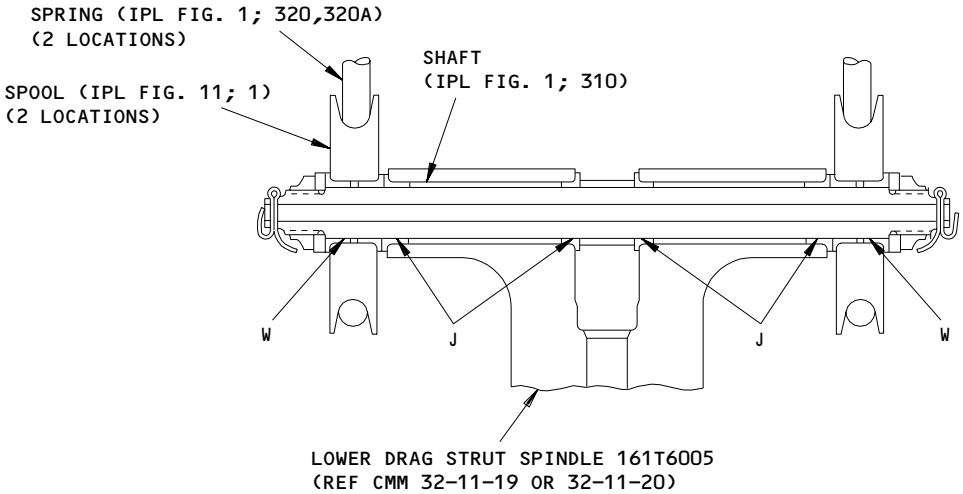
C

Fits and Clearances
Figure 801 (Sheet 3)

132298



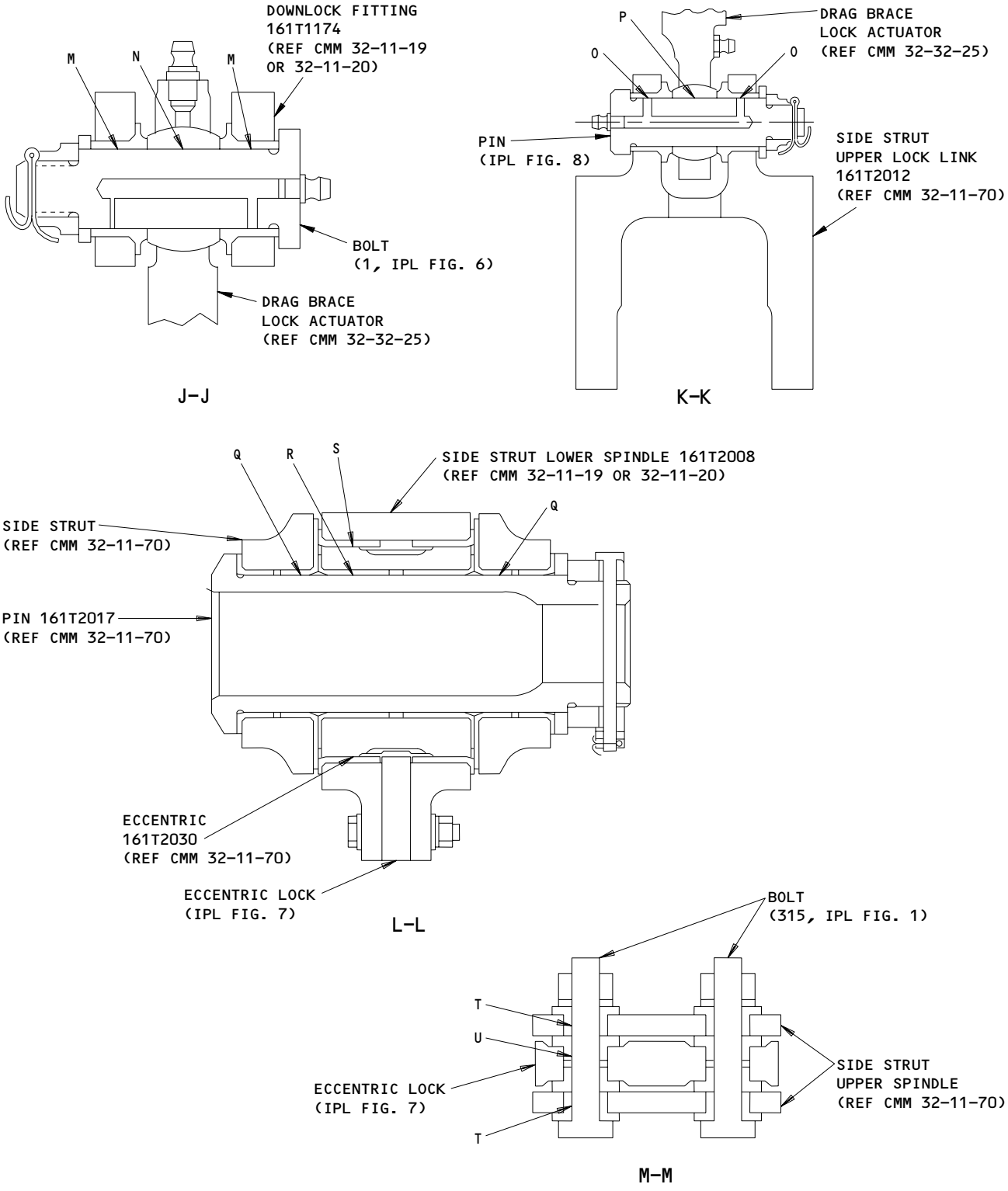
H-H



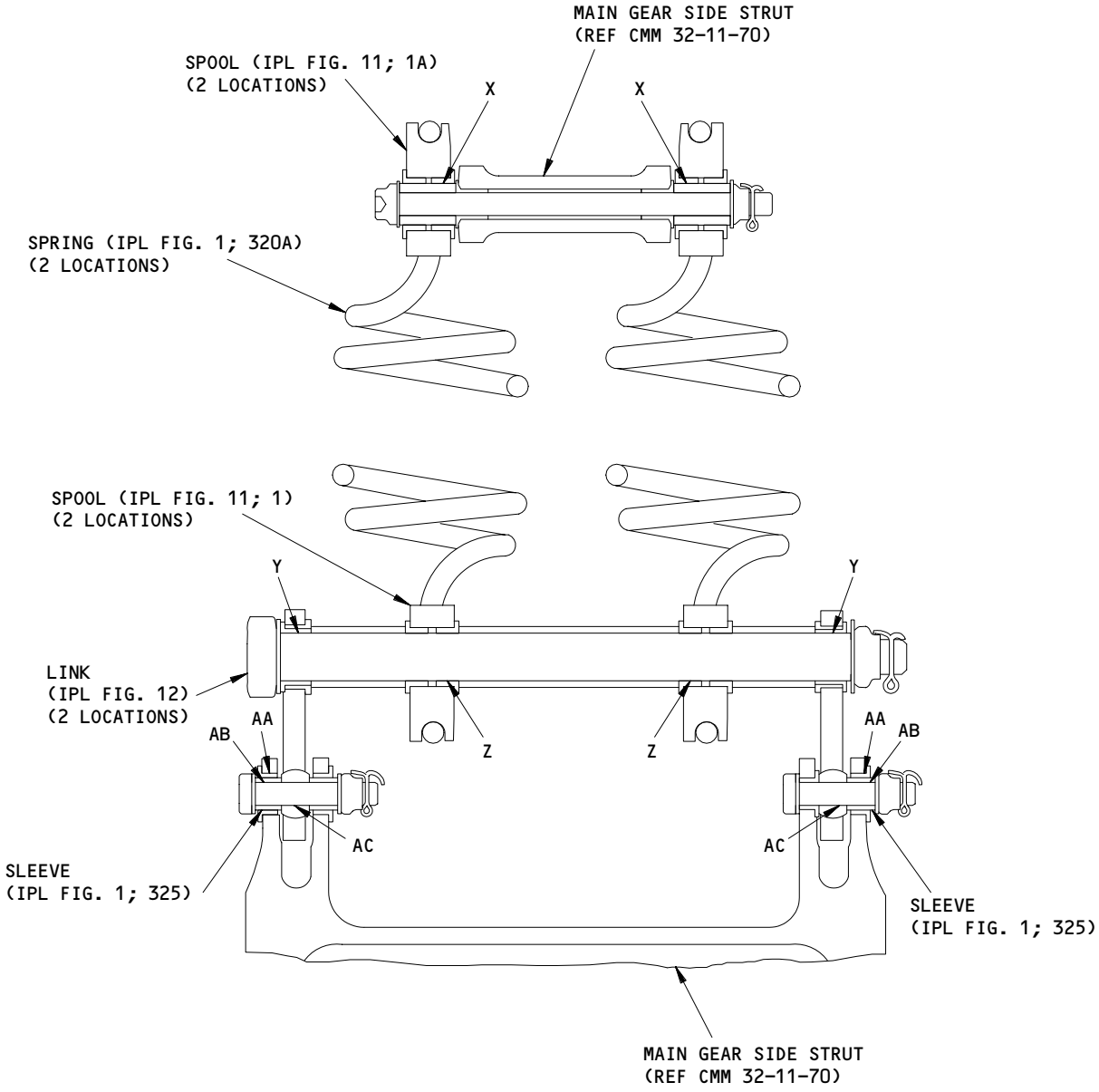
I-I

Fits and Clearances
Figure 801 (Sheet 4)

F39934

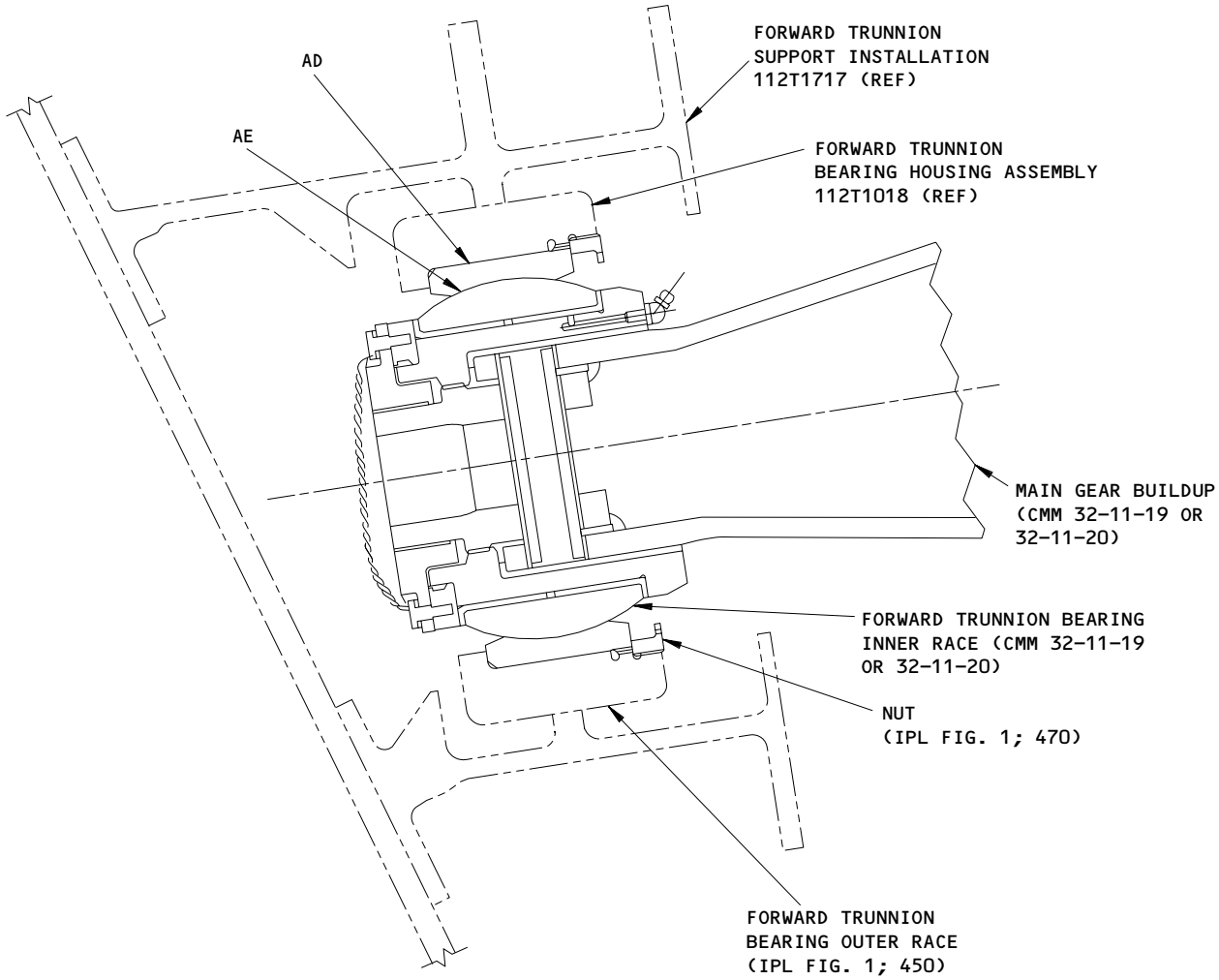


Fits and Clearances
Figure 801 (Sheet 5)



N-N

Fits and Clearances
Figure 801 (Sheet 6)



0-0

Fits and Clearances
Figure 801 (Sheet 7)

M46512

REF LETTER	REF IPL		DESIGN DIMENSION*				SERVICE WEAR LIMIT*		
	FIG. NO.	MATING ITEM NO.	DIMENSION		ASSEMBLY CLEARANCE		DIMENSION		MAXIMUM CLEARANCE
			MIN	MAX	MIN	MAX	MIN	MAX	
A	1	ID 210	5.5000	5.5015	0.0010	0.0035		5.5072	0.0082
	--	OD 1	5.4980	5.4990			5.4933		
B	2	ID 2 5,10	7.2515	7.2530	0.0015	0.0045		7.2599	0.0099
	1	OD 2 210	7.2485	7.2500			7.2431		
C	--	ID 3	7.7500	7.7515	0.0010	0.0035		7.7581	0.0091
	2	OD 5,10	7.7480	7.7490			7.7424		
D	--	ID 4	0.8750	0.8765	0.0010	0.0035		0.8814	0.0054
	6	OD 1	0.8730	0.8740			0.8711		
E	--	ID 5	0.8745	0.8750	0.0005	0.0020		0.8779	0.0039
	6	OD 1	0.8730	0.8740			0.8711		
F	--	ID 6	0.8750	0.8790	0.0010	0.0060		0.8819	0.0079
	6	OD 5	0.8730	0.8740			0.8711		
G	--	ID 5	0.8745	0.8750	0.0005	0.0020		0.8779	0.0039
	6	OD 5	0.8730	0.8740			0.8711		
H	10	ID 10	0.7500	0.7515	0.0010	0.0035		0.7532	0.0042
	1	OD 310	0.7480	0.7490			0.7473		
I	--	ID 6	0.7500	0.7540	0.0010	0.0060		0.7567	0.0077
	1	OD 310	0.7480	0.7490			0.7463		
J	--	ID 7	0.7500	0.7515	0.0010	0.0035		0.7532	0.0042
	1	OD 310	0.7480	0.7490			0.7473		
K	--	ID 6	3.0000	3.0015	0.0010	0.0045		3.0070	0.0080
	1	OD 300	2.9970	2.9990			2.9935		
L	--	ID 7	3.0000	3.0015	0.0010	0.0045		3.0070	0.0080
	1	OD 300	2.9970	2.9990			2.9935		
M	--	ID 8	0.8750	0.8765	0.0010	0.0035		0.8814	0.0054
	6	OD 1	0.8730	0.8740			0.8711		
N	--	ID 9	0.8745	0.8750	0.0005	0.0020		0.8779	0.0039
	6	OD 1	0.8730	0.8740			0.8711		
O	--	ID 10	0.7500	0.7515	0.0005	0.0040		0.7532	0.0042
	8	OD 1	0.7475	0.7495			0.7473		

Fits and Clearances
Figure 801 (Sheet 8)

REF LETTER	REF IPL		DESIGN DIMENSION*				SERVICE WEAR LIMIT*		
	FIG. NO.	MATING ITEM NO.	DIMENSION		ASSEMBLY CLEARANCE		DIMENSION		MAXIMUM CLEARANCE
			MIN	MAX	MIN	MAX	MIN	MAX	
Q	--	ID 10	2.5000	2.5015	0.0010	0.0045		2.5067	0.0077
	--	OD 11	2.4970	2.4990			2.4938		
R	--	ID 12	2.500	2.5015	0.0010	0.0045		2.5067	0.0077
	--	OD 11	2.4970	2.4990			2.4938		
S	--	ID 13	3.7500	3.7515	0.0010	0.0045		3.7574	0.0084
	--	OD 14	3.7470	3.7490			3.7431		
T	--	ID 15	0.3200	0.3215	0.0080	0.0105		0.3236	0.0116
	1	OD 315	0.3110	0.3120			0.3099		
U	7	ID 5	0.3225	0.3240	0.0105	0.0130			
	1	OD 315	0.3110	0.3120					
V	1	ID 16	2.1250	2.1265	0.0010	0.0045		2.1314	0.0074
		OD 400	2.1220	2.1240			2.1191		
W	11	ID 10	0.7505	0.7520	0.0015	0.0040		0.7547	0.0057
	1	OD 310	0.7480	0.7490			0.7463		
X	11	ID 10A	0.5630	0.5640	0.0025	0.0055		0.5675	0.0070
	--	OD 17	0.5585	0.5605			0.5570		
Y	12	ID 10	0.7505	0.7515	0.0015	0.0035		0.7542	0.0052
	--	OD 18	0.7480	0.7490			0.7463		
Z	11	ID 10	0.7505	0.7520	0.0015	0.0040		0.7547	0.0057
	--	OD 18	0.7480	0.7490			0.7463		

Fits and Clearances
Figure 801 (Sheet 9)

REF LETTER	REF IPL		DESIGN DIMENSION*				SERVICE WEAR LIMIT*		
	FIG. NO.	MATING ITEM NO.	DIMENSION		ASSEMBLY CLEARANCE		DIMENSION		MAXIMUM CLEARANCE
			MIN	MAX	MIN	MAX	MIN	MAX	
AA	--	ID 19	0.5000	0.5015	0.0005	0.0040		0.5049	0.0054
	1	OD 325	0.4975	0.4995			0.4961		
AB	1	ID 325	0.3750	0.3765	0.0005	0.0030		0.3787	0.0042
	--	OD 20	0.3735	0.3745			0.3723		
AC	12	ID 15	0.3750	0.3755	0.0005	0.0015		0.3772	0.0027
	--	OD 20	0.3735	0.3745			0.3728		
AD	--	ID 21	7.8982	7.9000	0.0012	0.0060		7.9086	0.0116
	1	OD 450	7.8940	7.8970			7.8884		
AE	1	ID 450	7.0000	7.0010	0.0020	0.0040		7.0073	0.0093
	--	OD 22	6.9970	6.9980			6.9917		

* ALL DIMENSIONS ARE IN INCHES

1. AFT TRUNNION PIN 161T1187-1 (CMM 32-11-30)
2. SPHERICAL DIAMETER
3. MATING BUSHINGS IN SUPPORT BEAM 113T1101 (REF)
4. MATING BUSHINGS IN FITTING 161T1174 (CMM 32-11-19 OR 32-11-20)
5. MATING BEARING IN SIDE BRACE LOCK ACTUATOR (CMM 32-32-10)
6. MATING BUSHINGS IN DRAG STRUT (CMM 32-11-60)
7. MATING BUSHINGS IN LOWER DRAG STRUT SPINDLE (CMM 32-11-19 OR 32-11-20)
8. MATING BUSHINGS IN FITTING 161T1174 (CMM 32-11-19 OR 32-11-20)
9. MATING BEARING IN DRAG BRACE LOCK ACTUATOR (CMM 32-32-25)
10. MATING BUSHINGS IN SIDE STRUT (CMM 32-11-70)
11. PIN 161T2017 (CMM 32-11-70)
12. MATING BUSHINGS IN ECCENTRIC 161T2030 (CMM 32-11-70)
13. MATING BUSHINGS IN SIDE STRUT LOWER SPINDLE 161T2008 (CMM 32-11-19 OR 32-11-20)
14. ECCENTRIC 161T2030 (CMM 32-11-70)
15. MATING BUSHINGS IN SIDE STRUT UPPER SPINDLE 161T2006 (CMM 32-11-70)
16. MATING BUSHINGS IN SHOCK STRUT OUTER CYLINDER 161T1110 (CMM 32-11-70)
17. INSTALLATION SPACER NAS74A6E014 (REF)
18. INSTALLATION BOLT BACB30PW12CD149 (REF)
19. MATING BUSHING IN SIDE STRUT LOWER LOCK LINK 161T2010 (CMM 32-11-70)
20. INSTALLATION BOLT NAS6706D21 (REF)
21. FORWARD TRUNNION BEARING HOUSING 112T1017 (REF)
22. FORWARD TRUNNION BEARING INNER RACE 161T1301 (CMM 32-11-19 OR 32-11-20)

Fits and Clearances
Figure 801 (Sheet 10)

F39482

ILLUSTRATED PARTS LIST

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

2. Indentures show parts relationships as follows:

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

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

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

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

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

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

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

6. Parts Interchangeability

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

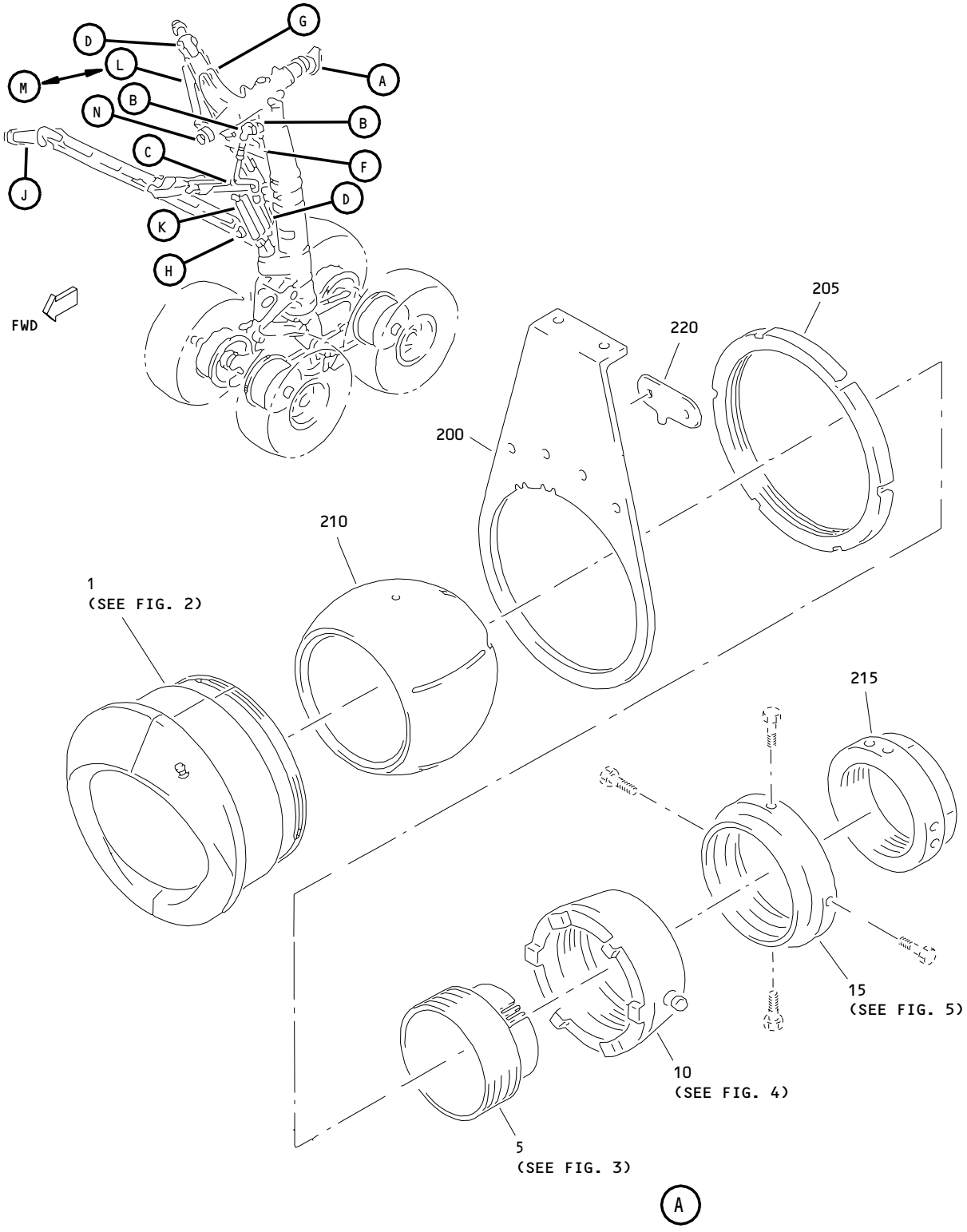
VENDORS

95879 ALEMITE DIV. OF STEWART-WARNER CORP.
1826 DIVERSEY PARKWAY
CHICAGO, ILLINOIS 60614

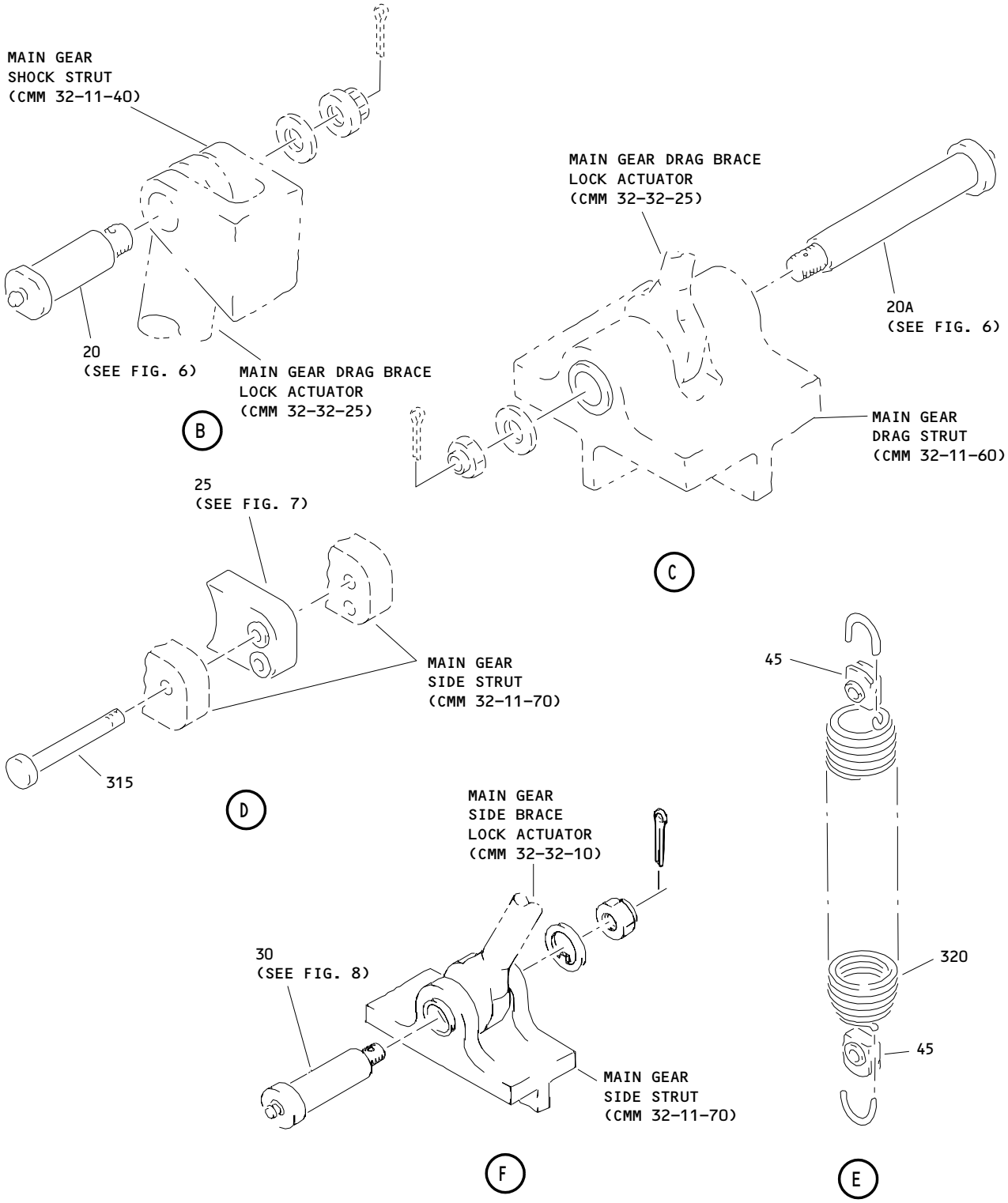
PART NUMBER	AIRLINE PART NO.	FIG.	ITEM	TTL REQ
BACB10ES06G		12	15	1
BACB28AT14B033A		12	5	1
BACB28AV09A035B		11	10A	2
BACB28AV12A042B		12	10	1
MS15004-2		13	20	2
NAS6605-18		1	315	RF
NAS77A4-015P		9	15	1
NAS77A6-018P		9	10	1
112T1709-1		1	470	RF
161T0000-693		1	325	RF
161T1039-1		1	50	RF
		12	1	RF
161T1039-2		12	20	1
161T1190-1		1	1	RF
		2	1	RF
161T1190-2		2	5	1
161T1190-3		2	10	1
161T1191-1		1	200	RF
161T1191-2		1	200A	RF
161T1192-1		1	205	RF
161T1193-1		1	210	RF
161T1194-1		1	5	RF
		3	1	RF
161T1194-2		3	5	1
161T1194-3		1	5A	RF
		3	1A	RF
161T1194-4		3	5A	1
161T1195-1		1	10	RF
		4	1	RF
161T1195-2		4	5	1
161T1196-1		1	215	RF
161T1197-1		1	15	RF
		5	1	RF
161T1197-2		5	5	1
161T1198-1		1	220	RF
161T1210-32		5	10	1
161T1210-33		3	10	1
161T1300-1		1	450	RF
161T1300-2		1	455	1
161T1300-3		1	460	1
161T1309-1		1	20	RF
		6	1	RF
161T1309-2		6	15	1
161T1309-3		1	20A	RF
		6	5	RF
161T1309-4		6	20	1

PART NUMBER	AIRLINE PART NO.	FIG.	ITEM	TTL REQ
161T2031-3		1	25	RF
		7	1	RF
161T2031-4		7	10	1
161T2031-5		1	25	RF
		7	1A	RF
161T2045-1		1	30	RF
		8	1	RF
161T2045-2		8	10	1
161T2106-1		1	55	RF
		13	1	RF
161T2106-2		13	25	
161T2106-3		1	55A	RF
		13	1A	RF
161T2114-1		1	60	RF
		14	1	RF
161T2114-2		14	10	1
161T2114-3		1	60A	RF
		14	1A	2
161T2114-4		14	10A	1
161T2130-1		1	320B	RF
161T2874-10		14	5	2
161T2874-11		13	5	2
161T2874-12		13	10	4
161T2874-88		14	5A	2
161T5000-2		1	400	RF
161T6010-1		1	300	RF
161T6010-2		1	300A	RF
161T6021-1		1	305	RF
161T6022-3		1	35	RF
		9	1	RF
161T6022-4		1	35A	RF
		9	5	RF
161T6022-5		9	20	1
161T6022-6		9	25	1
161T6031-1		1	40	RF
		10	1	RF
161T6031-2		10	20	1
161T6031-3		1	40A	RF
		10	1A	RF
161T6031-4		10	20	1
161T6031-5		1	40B	RF
		10	1B	RF
161T6032-1		10	5	2
161T6032-2		10	15	1
161T6032-3		10	5A	2
161T6032-4		10	15B	1
161T6033-1		1	310	RF

PART NUMBER	AIRLINE PART NO.	FIG.	ITEM	TTL REQ
161T6038-2		10	10	2
		11	10	2
161T6038-3		11	10B	2
161T6040-20		7	5	4
161T6040-21		7	5A	4
161T6045-1		10	15A	1
161T6046-2		1	320	RF
161T6046-3		1	320A	RF
161T6047-3		1	45	RF
		11	1	RF
161T6047-4		11	5	1
161T6047-5		1	45A	RF
		11	1A	RF
161T6047-6		11	5A	1
161T6047-7		1	45B	RF
		11	1B	RF
161T6047-8		11	5B	1
161T6047-9		1	45C	RF
		11	1C	RF
161W7010-1		13	15	2
162T2017-3		1	330	RF
162T2017-4		1	335	RF
1728B		2	15	1
		4	10	1
		6	10	1
		8	5	1

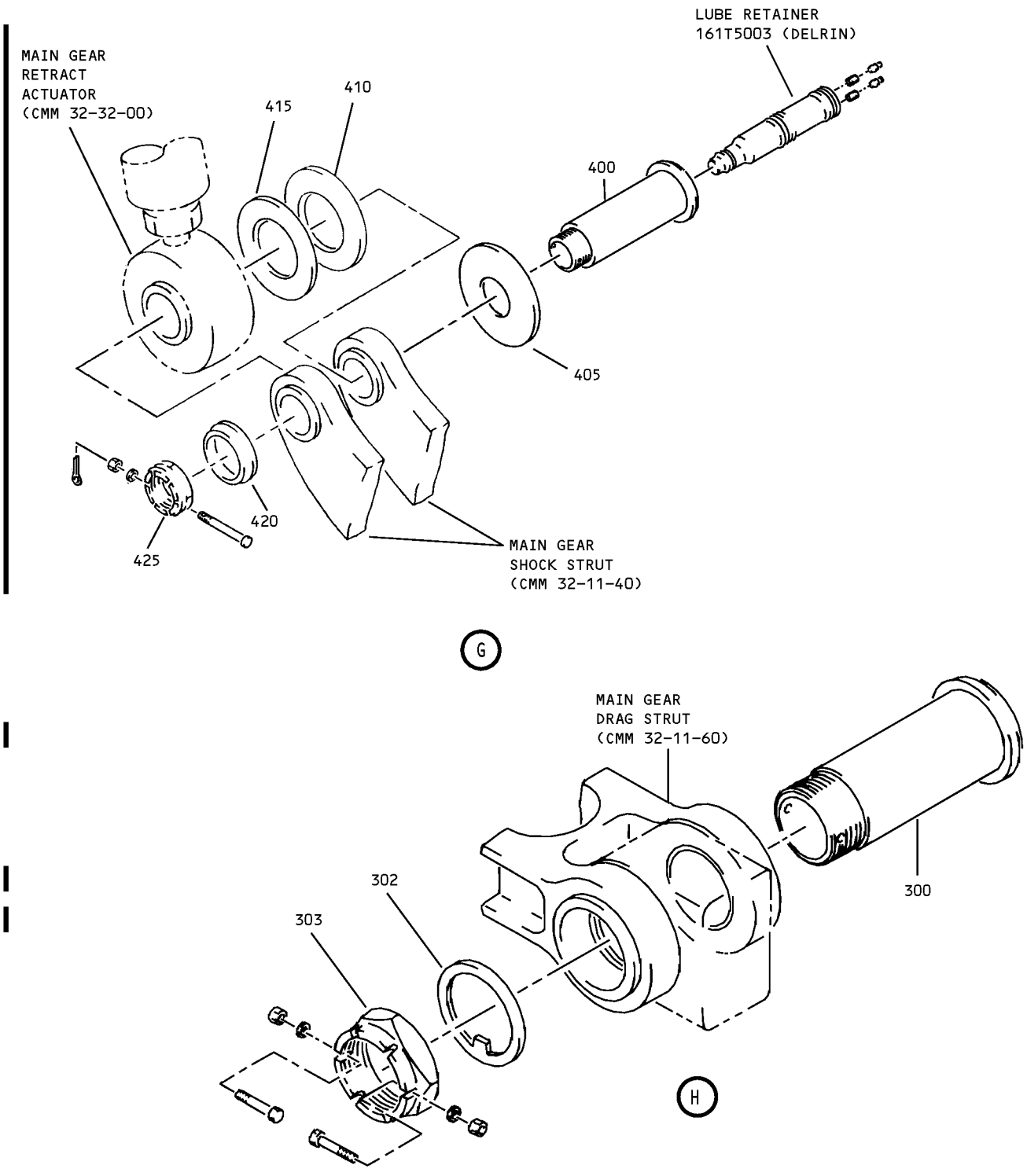


Main Landing Gear Installation Components
Figure 1 (Sheet 1)



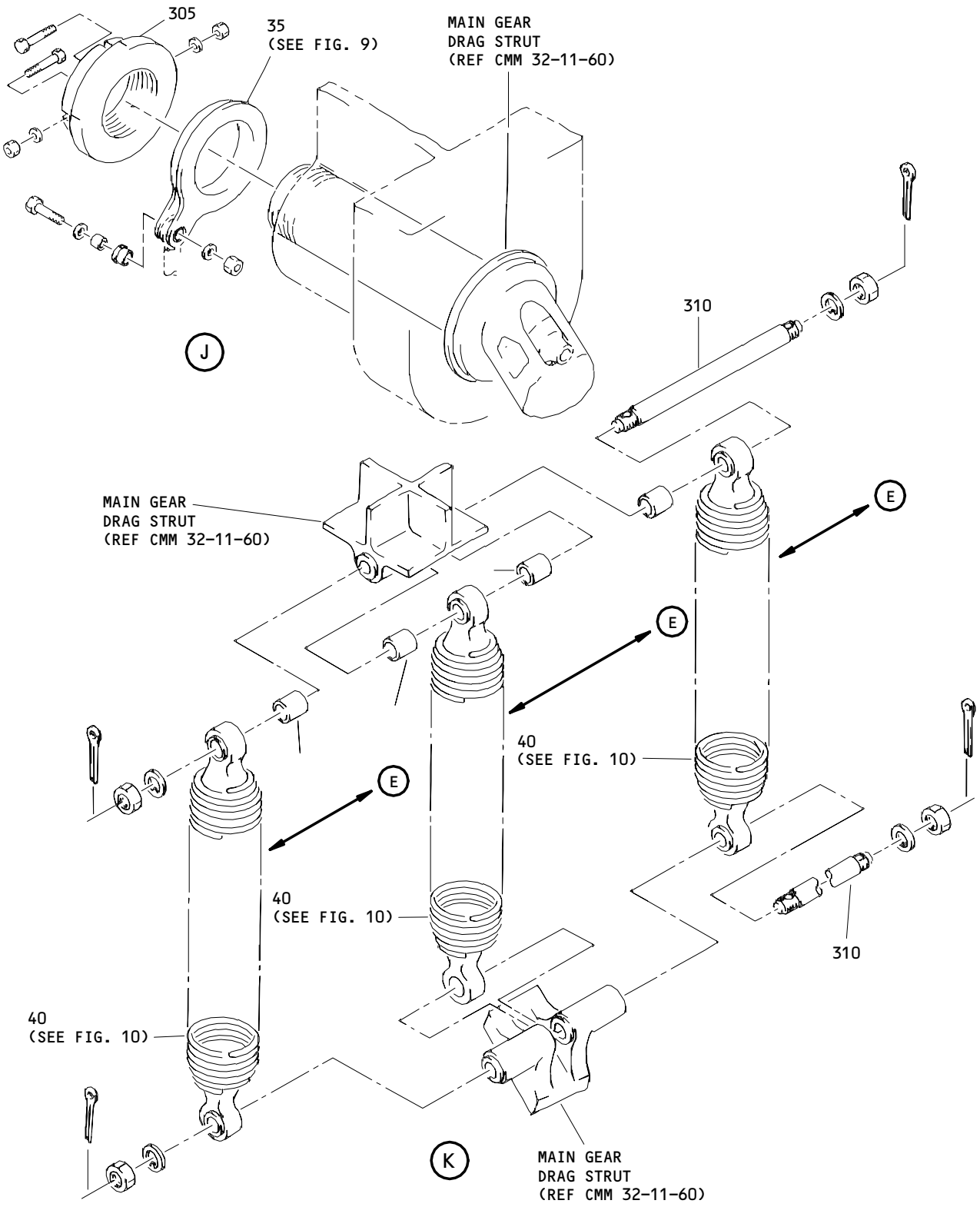
Main Landing Gear Installation Components
Figure 1 (Sheet 2)

742252

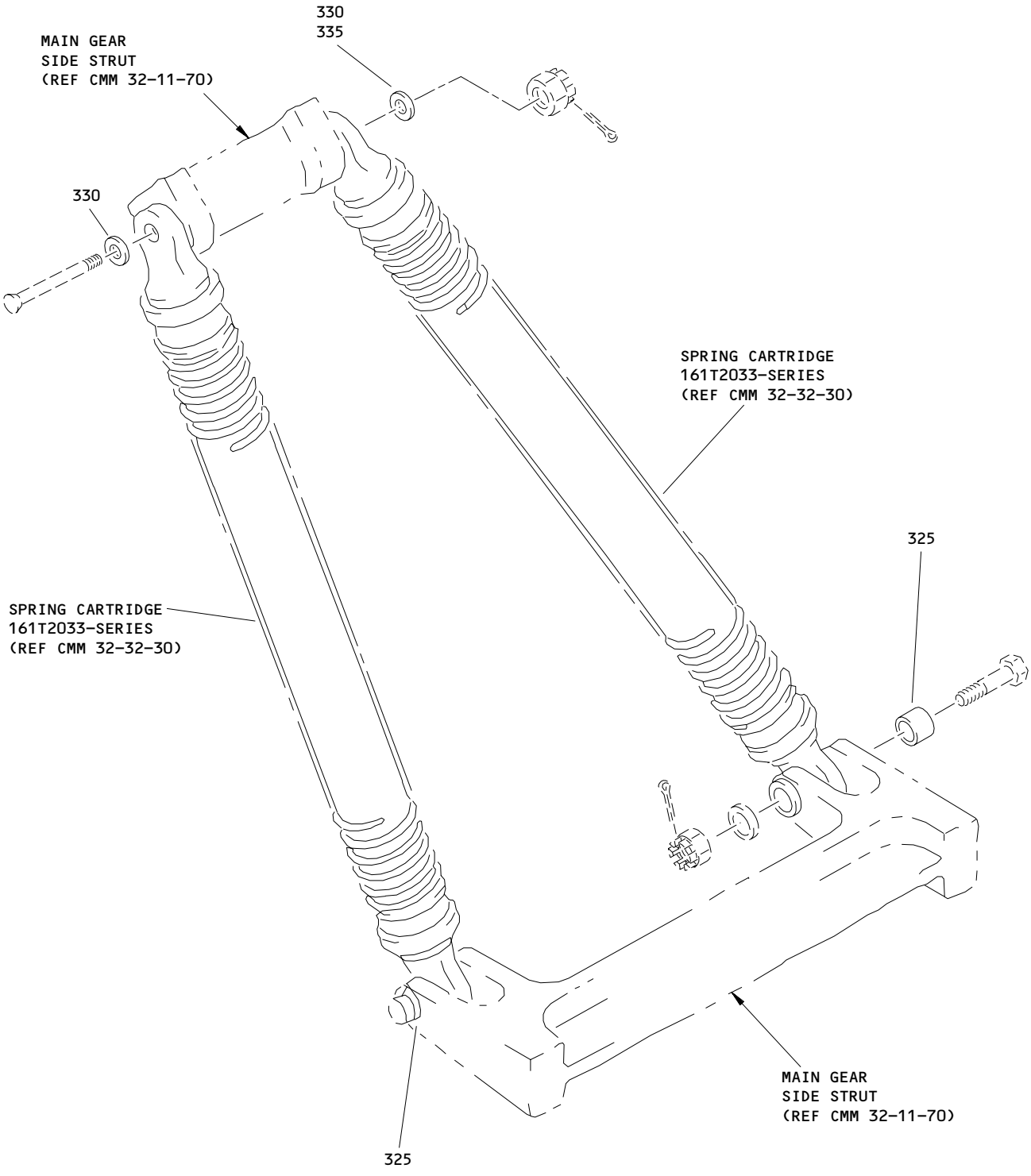


Main Landing Gear Installation Components
Figure 1 (Sheet 3)

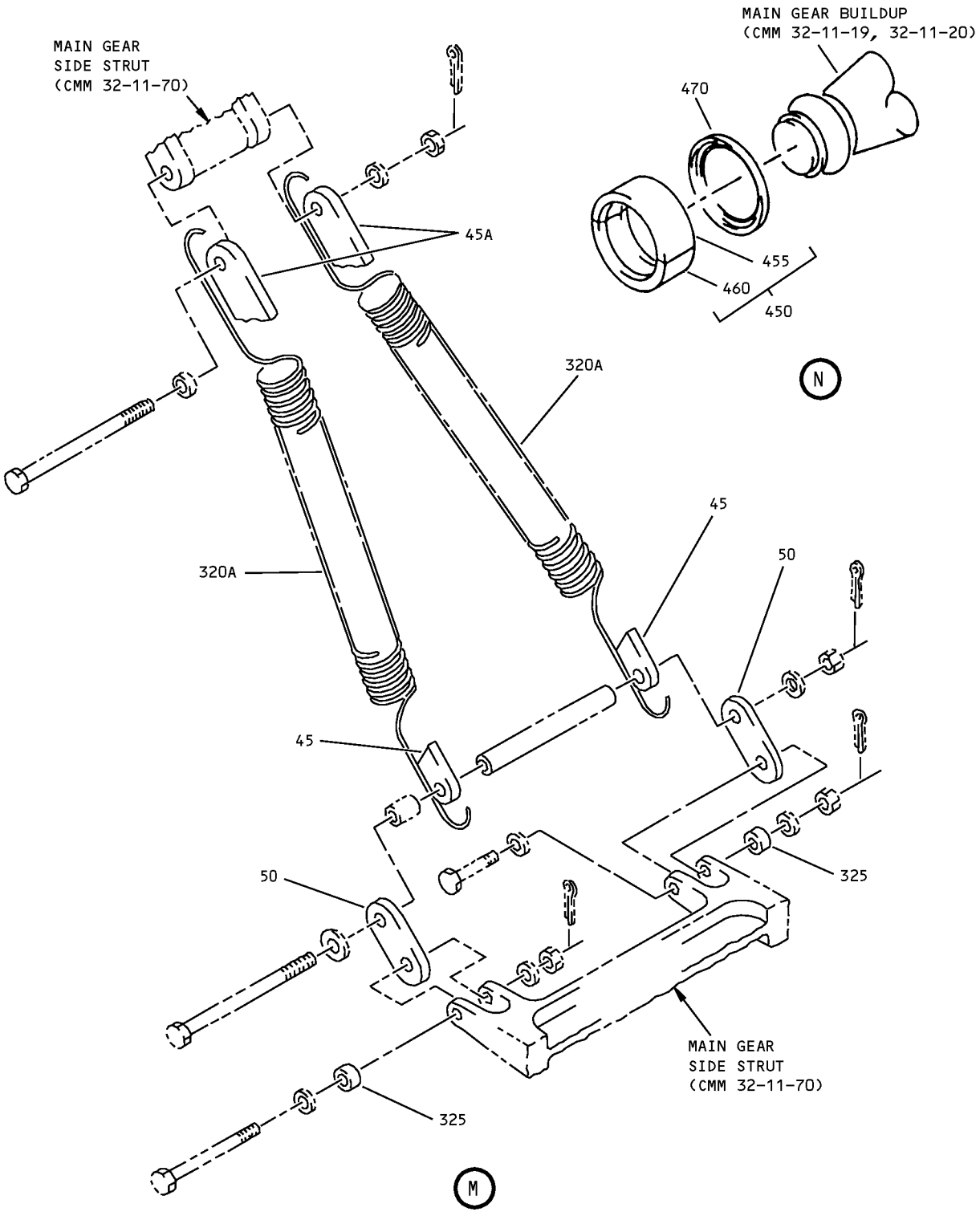
132739



Main Landing Gear Installation Components
Figure 1 (Sheet 4)



Main Landing Gear Installation Components
Figure 1 (Sheet 5)



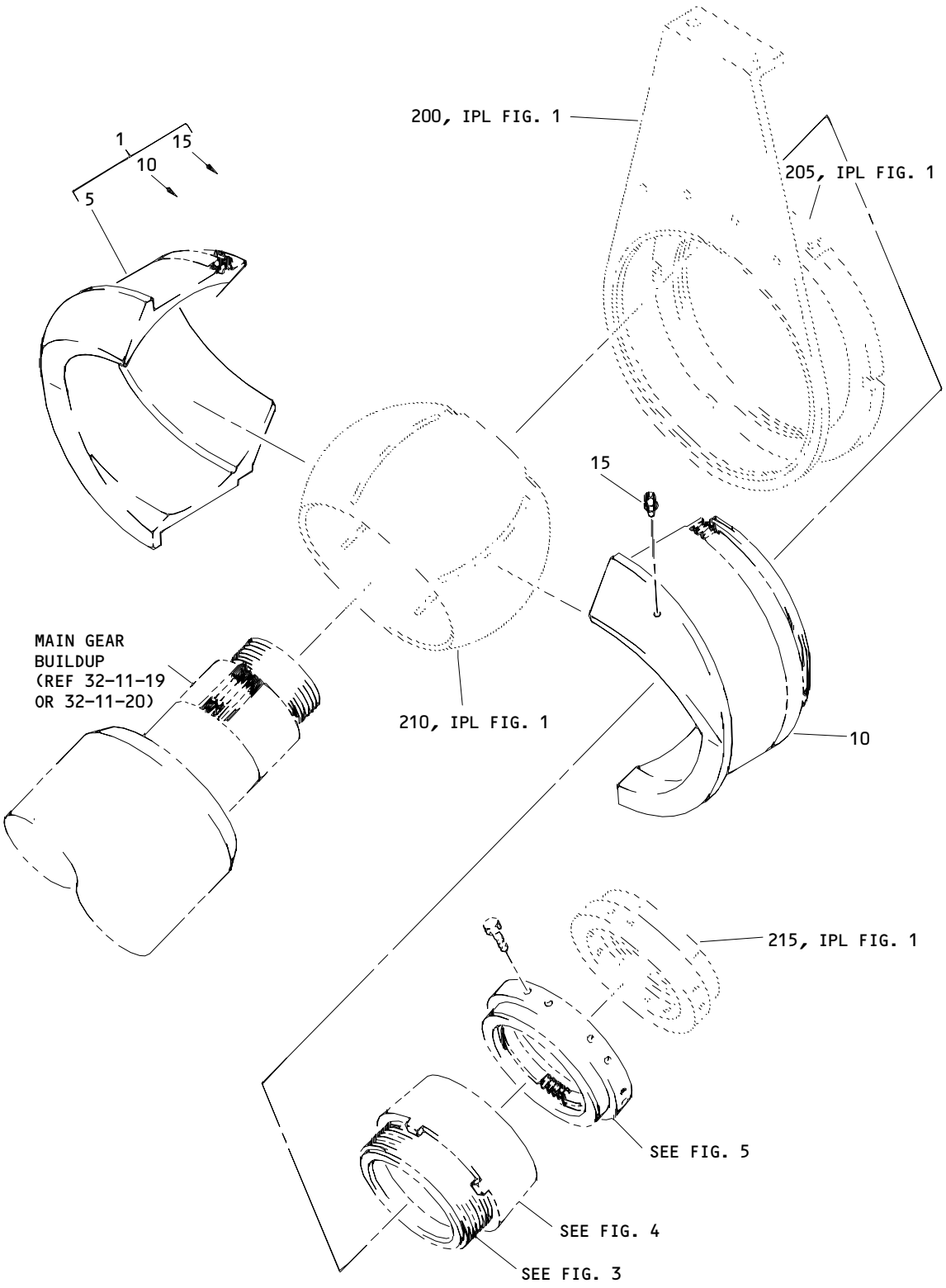
Main Landing Gear Installation Components
Figure 1 (Sheet 6)

F40255

FIG. & ITEM	PART NO.	AIRLINE PART NUMBER	NOMENCLATURE 1234567	EFF CODE	QTY PER ASSY
01-					
1	161T1190-1		RACE ASSY, AFT TRUNNION OUTER (FOR DETAILS SEE FIG. 2)		RF
5	161T1194-1		COLLAR ASSY, AFT TRUNNION BEARING ADJUSTING (FOR DETAILS SEE FIG. 3)		RF
5A	161T1194-3		COLLAR ASSY, AFT TRUNNION BEARING ADJUSTING (FOR DETAILS SEE FIG. 3)		RF
10	161T1195-1		RING ASSY-AFT TRUNNION BEARING SPLINED (FOR DETAILS SEE FIG. 4)		RF
15	161T1197-1		WASHER ASSY, AFT TRUNNION BEARING SPLINED (FOR DETAILS SEE FIG. 5)		RF
20	161T1309-1		BOLT ASSY, LOCK ACTUATOR (FOR DETAILS SEE FIG. 6)		RF
20A	161T1309-3		BOLT ASSY, LOCK ACTUATOR (FOR DETAILS SEE FIG. 6)		RF
25	161T2031-3		LOCK ASSY, SIDE STRUT TO SPINDLE ECCENTRIC (FOR DETAILS SEE FIG. 7)		RF
-25A	161T2031-5		LOCK ASSY, SIDE STRUT TO SPINDLE ECCENTRIC (FOR DETAILS SEE FIG. 7)		RF
30	161T2045-1		PIN ASSY, SIDE STRUT/ DOWNLOCK ACTUATOR (FOR DETAILS SEE FIG. 8)		RF
35	161T6022-3		WASHER ASSY, UPPER DRAG STRUT SPINDLE (FOR DETAILS SEE FIG. 9)		RF
35A	161T6022-4		WASHER ASSY, UPPER DRAG STRUT SPINDLE (FOR DETAILS SEE FIG. 9)		RF
40	161T6031-1		SPRING ASSY, JURY STRUT (FOR DETAILS SEE FIG. 10)		RF
-40A	161T6031-3		SPRING ASSY-JURY STRUT (FOR DETAILS SEE FIG. 10)		RF
-40B	161T6031-5		SPRING ASSY-JURY STRUT (FOR DETAILS SEE FIG. 10)		RF
-45	161T6047-3		SPOOL ASSY-JURY STRUT SPRING (FOR DETAILS SEE FIG. 11)		RF

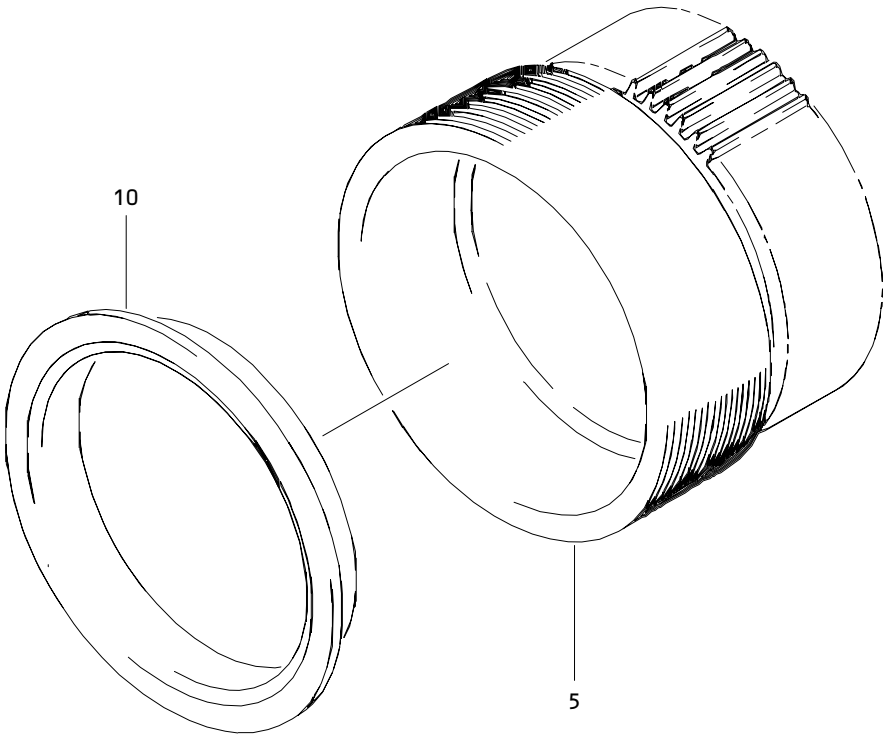
FIG. & ITEM	PART NO.	AIRLINE PART NUMBER	NOMENCLATURE 1234567	EFF CODE	QTY PER ASSY
01-					
-45A	161T6047-5		SPOOL ASSY-JURY STRUT SPRING (FOR DETAILS SEE FIG. 11)		RF
-45B	161T6047-7		SPOOL-JURY STRUT SPRING (PLASTIC) (FOR DETAILS SEE FIG. 11)		RF
-45C	161T6047-9		SPOOL ASST-JURY STRUT SPRING (FOR DETAILS SEE FIG. 11)		RF
-50	161T1039-1		LINK ASSY-SIDE STRUT SPRING (FOR DETAILS SEE FIG. 12)		RF
-55	161T2106-1		SPINDLE ASSY- (FOR DETAILS SEE FIG. 13)		RF
-55A	161T2106-3		SPINDLE ASSY- (FOR DETAILS SEE FIG. 13)		RF
-60	161T2114-1		ECCENTRIC ASSY- (FOR DETAILS SEE FIG. 14)		RF
-60A	161T2114-3		ECCENTRIC ASSY- (FOR DETAILS SEE FIG. 14)		RF
			INSTALLATION PARTS		
200	161T1191-1		PLATE, AFT TRUNNION BEARING LOCK		RF
200A	161T1191-2		PLATE, AFT TRUNNION BEARING LOCK		RF
205	161T1192-1		NUT, AFT TRUNNION BEARING RETAINER		RF
210	161T1193-1		RACE, AFT TRUNNION INNER		RF
215	161T1196-1		NUT, AFT TRUNNION BEARING CLAMP		RF
220	161T1198-1		TAB, AFT TRUNNION BEARING LOCK		RF
300	161T6010-1		PIN, DRAG STRUT TO SPINDLE (PRE SB 51-7)		RF
300A	161T6010-2		PIN, DRAG STRUT TO SPINDLE (POST SB 51-7)		RF
302	161T2019-1		WASHER		RF
303	161T2018-1		NUT		RF
305	161T6021-1		NUT, UPPER DRAG STRUT SPINDLE		RF
310	161T6033-1		SHAFT, JURY STRUT SPRING		RF
315	NAS6605-18		BOLT		RF
-320	161T6046-2		SPRING-LOCK, JURY STRUT MLG		RF

FIG. & ITEM	PART NO.	AIRLINE PART NUMBER	NOMENCLATURE 1234567	EFF CODE	QTY PER ASSY
01-					
-320A	161T6046-3		SPRING-LOCK, JURY STRUT MLG		RF
-320B	161T2130-1		SPRING-DOWNLOCK, SIDE BRACE		RF
325	161T0000-693		SLEEVE-CLAMPUP		RF
330	162T2017-3		WASHER		RF
335	162T2017-4		WASHER		RF
400	161T5000-2		BOLT, RETRACT ACTUATOR		RF
405	113T1001-2		RING		RF
-405A	113T1001-3		RING		RF
410	273T1146-1		WASHER		RF
415	273T1147-1		WASHER		RF
420	161T5002-2		WASHER		RF
425	161T5001-1		NUT		RF
450	161T1300-1		BRACE ASSY-FORWARD TUNNION BEARING OUTER		RF
455	161T1300-2		.HALF-RACE		1
460	161T1300-3		.HALF-RACE		1
470	112T1709-1		NUT		RF
500	161A2128-2		WASHER		RF
505	161T2129-1		PIN, SIDE STRUT		RF
510	161T2133-1		LOCK		RF
515	161T2136-2		PIN		RF
520	161T6026-1		NUT		RF
525	161T6039-1		WASHER		RF
530	161T6116-1		BOLT		RF
535	161W0061-2		WASHER		RF
540	161W0102-1		WASHER		RF
545	161W0103-1		NUT		RF
550	161W3130-1		CAP-END		RF



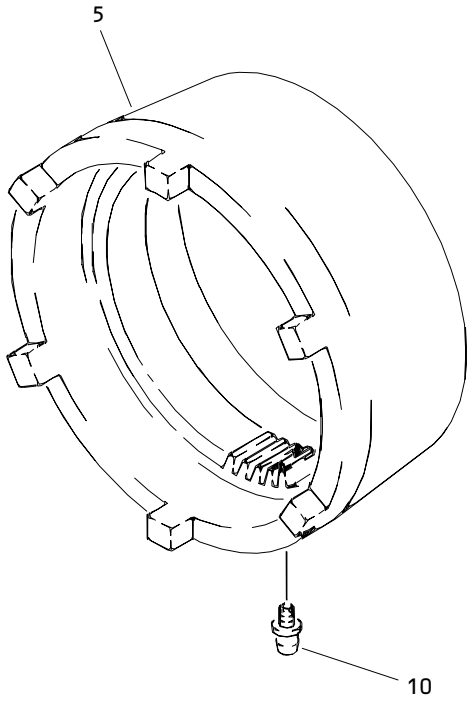
Aft Trunnion Outer Race Assembly
Figure 2

FIG. & ITEM	PART NO.	AIRLINE PART NUMBER	NOMENCLATURE 1234567	EFF CODE	QTY PER ASSY
02-					
-1	161T1190-1		RACE ASSY, AFT TRUNNION OUTER		RF
5	161T1190-2		.RACE HALF		1
10	161T1190-3		.RACE HALF		1
15	1728B		.FITTING-LUBE (V95879)		1



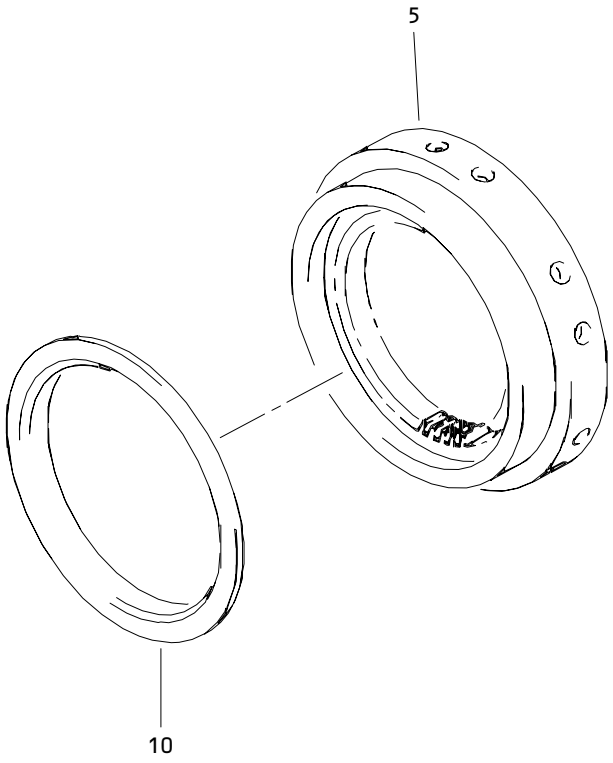
Aft Trunnion Bearing Adjusting Collar Assembly
Figure 3

FIG. & ITEM	PART NO.	AIRLINE PART NUMBER	NOMENCLATURE 1234567	EFF CODE	QTY PER ASSY
03-					
-1	161T1194-1		COLLAR ASSY, AFT TRUNNION BEARING ADJUSTING	A	RF
-1A	161T1194-3		COLLAR ASSY, AFT TRUNNION BEARING ADJUSTING	B	RF
5	161T1194-2		.COLLAR	A	1
5A	161T1194-4		.COLLAR	B	1
10	161T1210-33		.BUSHING		1



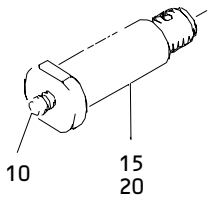
Aft Trunnion Bearing Lockring Assembly
Figure 4

FIG. & ITEM	PART NO.	AIRLINE PART NUMBER	NOMENCLATURE 1234567	EFF CODE	QTY PER ASSY
04-					
-1	161T1195-1		RING ASSY, AFT TRUNNION BEARING LOCK		RF
5	161T1195-2		.RING		1
10	1728B		.FITTING, LUBE (V95879)		1



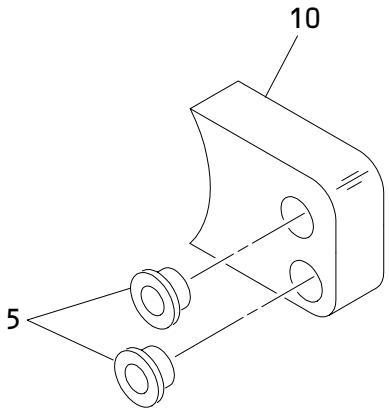
Main Landing Gear Aft Trunnion Bearing Splined Washer Assembly
Figure 5

FIG. & ITEM	PART NO.	AIRLINE PART NUMBER	NOMENCLATURE 1234567	EFF CODE	QTY PER ASSY
05-					
-1	161T1197-1		WASHER ASSY, AFT TRUNNION BEARING SPLINED		RF
5	161T1197-2		.WASHER		1
10	161T1210-32		.BUSHING		1



Lock Actuator Bolt Assembly
Figure 6

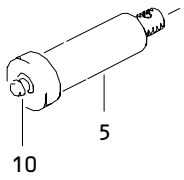
FIG. & ITEM	PART NO.	AIRLINE PART NUMBER	NOMENCLATURE 1234567	EFF CODE	QTY PER ASSY
06-					
-1	161T1309-1		BOLT ASSY, LOCK ACTUATOR	A	RF
-5	161T1309-3		BOLT ASSY, LOCK ACTUATOR	B	RF
10	1728B		.FITTING, LUBE (V95879)		1
15	161T1309-2		.BOLT	A	1
20	161T1309-4		.BOLT	B	1



Side Strut to Spindle Eccentric Lock Assembly
Figure 7

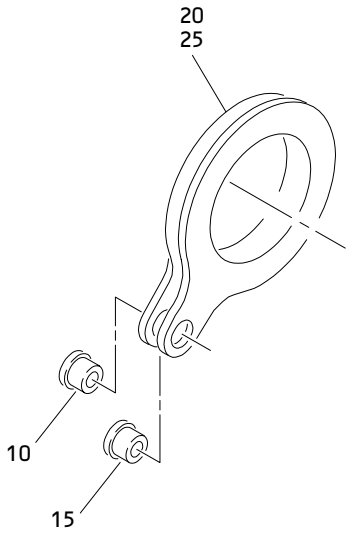
133443

FIG. & ITEM	PART NO.	AIRLINE PART NUMBER	NOMENCLATURE 1234567	EFF CODE	QTY PER ASSY
07-					
-1	161T2031-3		LOCK ASSY, SIDE STRUT TO SPINDLE ECCENTRIC	A	RF
-1A	161T2031-5		LOCK ASSY, SIDE STRUT TO SPINDLE ECCENTRIC	B	RF
5	161T6040-20		.BUSHING	A	4
-5A	161T6040-21		.BUSHING	B	4
10	161T2031-4		.LOCK		1



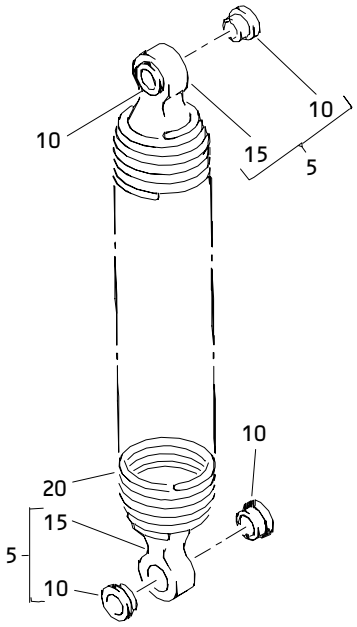
Downlock Actuator/Side Strut Pin Assembly
Figure 8

FIG. & ITEM	PART NO.	AIRLINE PART NUMBER	NOMENCLATURE 1234567	EFF CODE	QTY PER ASSY
08- -1	161T2045-1		PIN ASSY, SIDE STRUT/ DOWNLOCK ACTUATOR		RF
5	1728B		.FITTING,LUBE (V95879)		1
10	161T2045-2		.PIN		1



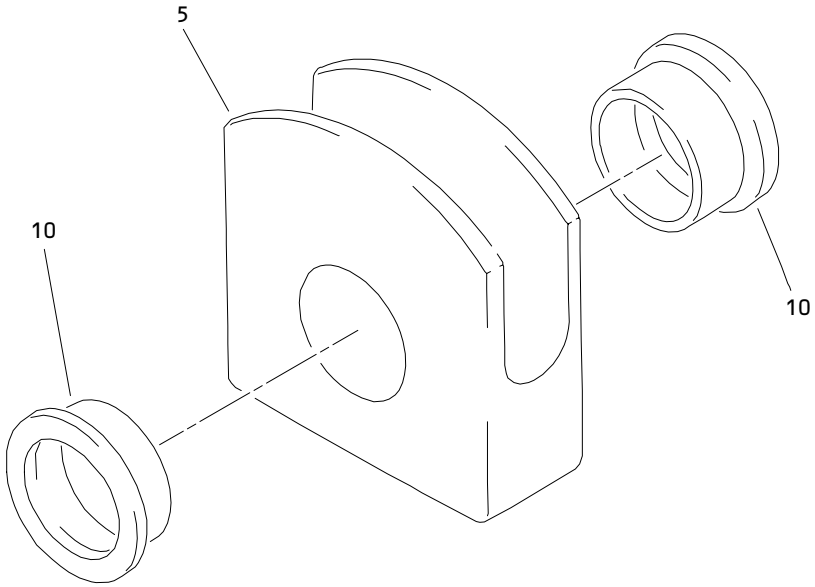
Upper Drag Strut Spindle Washer Assembly
Figure 9

FIG. & ITEM	PART NO.	AIRLINE PART NUMBER	NOMENCLATURE 1234567	EFF CODE	QTY PER ASSY
09-					
-1	161T6022-3		WASHER ASSY, UPPER DRAG STRUT SPINDLE	A	RF
-5	161T6022-4		WASHER ASSY, UPPER DRAG STRUT SPINDLE	B	RF
10	NAS77A6-018P		.BUSHING		1
15	NAS77A4-015P		.BUSHING		1
20	161T6022-5		.WASHER	A	1
25	161T6022-6		.WASHER	B	1



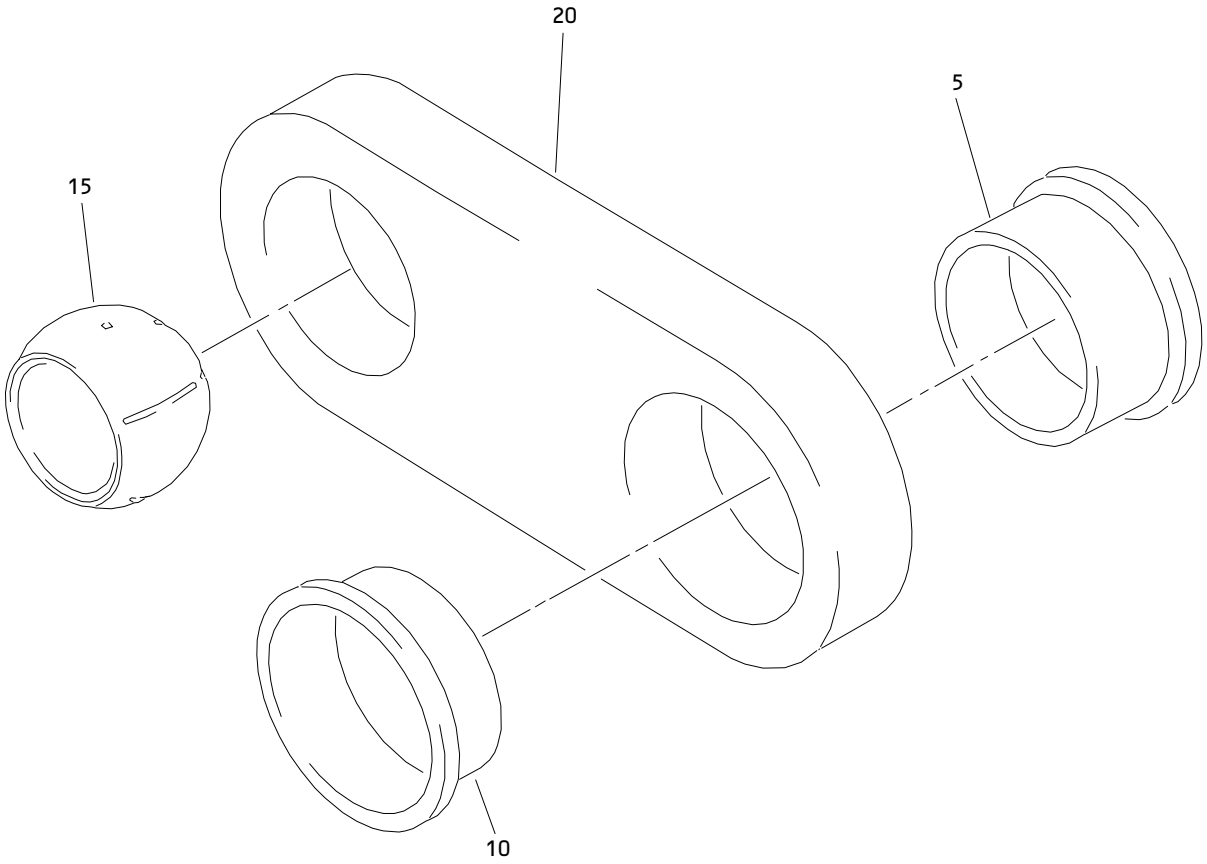
Jury Strut Spring Assembly
Figure 10

FIG. & ITEM	PART NO.	AIRLINE PART NUMBER	NOMENCLATURE 1234567	EFF CODE	QTY PER ASSY
10-					
-1	161T6031-1		SPRING ASSY, JURY STRUT	A	RF
-1A	161T6031-3		SPRING ASSY, JURY STRUT	B	RF
-1B	161T6031-5		SPRING ASSY, JURY STRUT	C	RF
5	161T6032-1		.TERMINAL ASSY		2
-5A	161T6032-3		.TERMINAL ASSY	BC	2
10	161T6038-2		..BUSHING		2
15	161T6032-2		..TERMINAL (USED ON ITEM 5)		1
15A	161T6045-1		..TERMINAL (OPT) (USED ON ITEM 5)		1
15B	161T6032-4		..TERMINAL (USED ON ITEM 5A)		1
20	161T6031-2		.SPRING	AB	1
20	161T6031-4		.SPRING	C	1



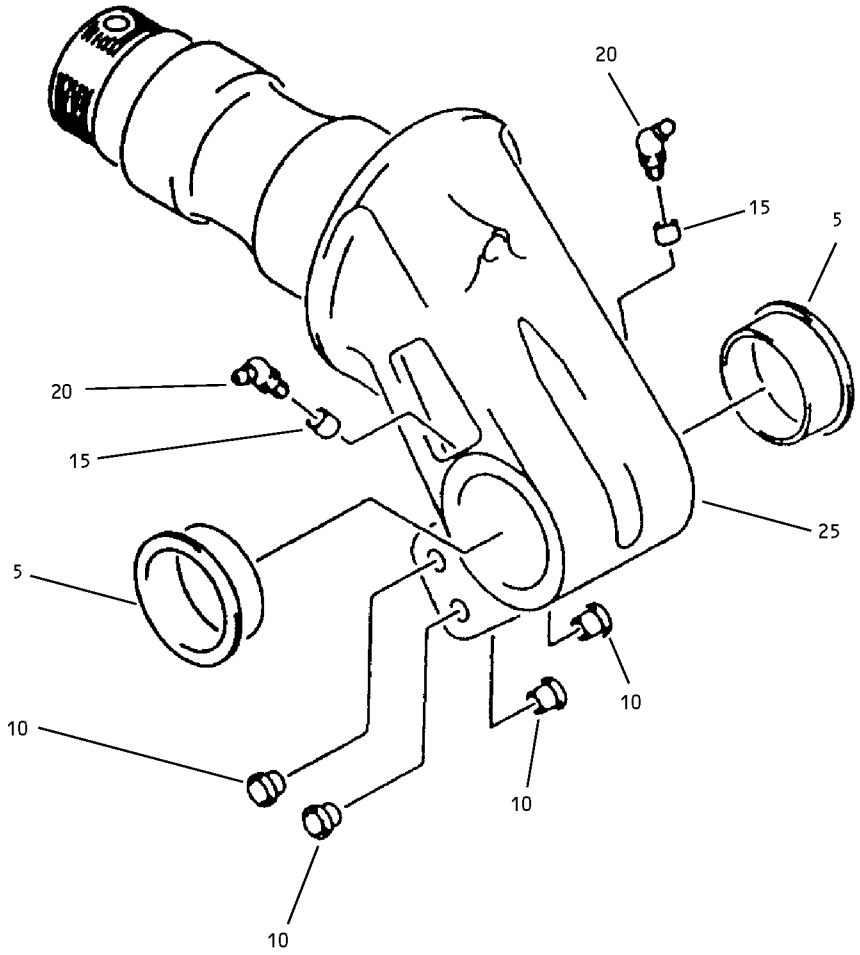
Jury Strut Spool Assembly
Figure 11

FIG. & ITEM	PART NO.	AIRLINE PART NUMBER	NOMENCLATURE 1234567	EFF CODE	QTY PER ASSY
11-					
1	161T6047-3		SPOOL ASSY-JURY STRUT SPRING	A	RF
-1A	161T6047-5		SPOOL ASSY-JURY STRUT SPRING	B	RF
-1B	161T6047-7		SPOOL-JURY STRUT SPRING (PLASTIC)	C	RF
-1C	161T6047-9		SPOOL ASSY-JURY STRUT SPRING	D	RF
5	161T6047-4		.SPOOL	A	1
-5A	161T6047-6		.SPOOL	B	1
-5B	161T6047-8		.SPOOL	D	1
10	161T6038-2		.BUSHING	A	2
-10A	BACB28AV09A035B		.BUSHING	B	2
-10B	161T6038-3		.BUSHING	D	2



Side Strut Spring Link Assembly
Figure 12

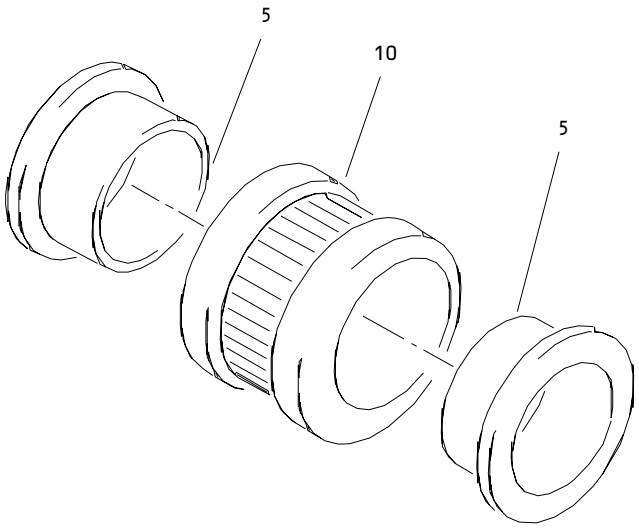
FIG. & ITEM	PART NO.	AIRLINE PART NUMBER	NOMENCLATURE 1234567	EFF CODE	QTY PER ASSY
12-					
-1	161T1039-1		LINK ASSY-SIDE STRUT SPRING		RF
5	BACB28AT14B033A		.BUSHING		1
10	BACB28AV12A042B		.BUSHING		1
15	BACB10ES06G		.BEARING		1
20	161T1039-2		.LINK		1



Spindle Assembly
Figure 13

M46576

FIG. & ITEM	PART NO.	AIRLINE PART NUMBER	NOMENCLATURE 1234567	EFF CODE	QTY PER ASSY
13-					
-1	161T2106-1		SPINDLE ASSY	A	RF
-1A	161T2106-3		SPINDLE ASSY-PAINTED ALIGNMENT ZONES	B	RF
5	161T2874-11		.BUSHING		2
10	161T2874-12		.BUSHING		4
15	161W7010-1		.INSERT		2
20	MS15004-2		.FITTING-LUBE		2
25	161T2106-2		.SPINDLE		



Eccentric Assembly
Figure 14

M46577

FIG. & ITEM	PART NO.	AIRLINE PART NUMBER	NOMENCLATURE 1234567	EFF CODE	QTY PER ASSY
14-					
-1	161T2114-1		ECCENTRIC ASSY	A	RF
-1A	161T2114-3		ECCENTRIC ASSY	B	2
5	161T2874-10		.BUSHING	A	2
5A	161T2874-88		.BUSHING	B	2
10	161T2114-2		.ECCENTRIC	A	1
10A	161T2114-4		.ECCENTRIC	B	1