COMPONENT MAINTENANCE MANUAL WITH ILLUSTRATED PARTS LIST

NOSE LANDING GEAR COMPONENT ASSEMBLY

PART NUMBER 162A1100–10, –12, –4, –5, –6, –7, –8, –9

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COMPONENT MAINTENANCE MANUAL

Revision No. 28
Jul 01/2009

To: All holders of NOSE LANDING GEAR COMPONENT ASSEMBLY 32-21-12.

Attached is the current revision to this COMPONENT MAINTENANCE MANUAL

The COMPONENT MAINTENANCE MANUAL is furnished either as a printed manual, on microfilm, or digital products, or any combination of the three. This revision replaces all previous microfilm cartridges or digital products. All microfilm and digital products are reissued with all obsolete data deleted and all updated pages added.

For printed manuals, changes are indicated on the List of Effective Pages (LEP). The pages which are revised will be identified on the LEP by an R (Revised), A (Added), O (Overflow, i.e. changes to the document structure and/or page layout), or D (Deleted). Each page in the LEP is identified by Chapter-Section-Subject number, page number and page date.

Pages replaced or made obsolete by this revision should be removed and destroyed.

ATTENTION

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Location of Change	Description of Change
32-21-12 REPAIR 1-1	Changed the data in the Consumable Materials list. Changed consumable from ‘‘lubricant, D50081’’ to ‘‘solid film lubricant, D50081’’

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TEMPORARY REVISION AND SERVICE BULLETIN RECORD

BOEING SERVICE BULLETIN	BOEING TEMPORARY REVISION	OTHER DIRECTIVE	DATE OF INCORPORATION INTO MANUAL
		PRR 38105	MAR 01/98
		PRR 38117	MAR 01/98
		PRR 38140	MAR 01/98
	32-25		NOV 01/03
737-32-1342		PRR 38629-R	JUL 01/07
737-32-1362		MRR 3322-1539	JUL 01/08
	32-29		JUL 01/08
		PRR 3800A-3	JUL 01/08
737-32-1342R1		PRR 38629-R	JUL 01/08

All revisions to this manual will be accompanied by transmittal sheet bearing the revision number. Enter the revision number in numerical order, together with the revision date, the date filed and the initials of the person filing.

Revision		Filed	
Number	Date	Date	Initials

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Number	Date	Date	Initials

Revision		Filed		Revision		Filed	
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All temporary revisions to this manual will be accompanied by a cover sheet bearing the temporary revision number. Enter the temporary revision number in numerical order, together with the temporary revision date, the date the temporary revision is inserted and the initials of the person filing.
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Temporary Revision		Inserted		Removed	
Number	Date	Date	Initials	Date	Initials

Temporary Revision		Inserted		Removed	
Date	Initials	Number	Date	Date	Initials

Temporary Revision		Inserted		Removed	
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INTRODUCTION

1. General

A. The instructions in this manual supply the data necessary to do the maintenance functions together with the test, fault isolation, repair, and replacement of the defective parts.

B. This manual is divided into different parts:

(1) Title Page

(2) Transmittal Letter

(3) Highlights

(4) List of Effective Pages

(5) Table of Contents

(6) Temporary Revision & Service Bulletin Record

(7) Record of Revisions

(8) Record of Temporary Revisions

(9) Introduction

(10) Procedures & IPL Sections

C. Components that can be repaired have a different repair number for each specified repair. To find the repair number location of a component, look in the Repair-General procedure at the beginning of the REPAIR section. The Repair-General procedure also has an explanation of the True Position Dimension symbols used.

D. All dimensions, measures, quantities and weights included are in English units. When metric equivalents are given they will be in the parentheses that follow the English units.

E. The introduction to the Illustrated Parts List (IPL) shows how the IPL data is used.

F. Design changes, optional parts, configuration differences and Service Bulletin modifications may cause different part numbers. These part numbers are identified in the IPL with an alphabetical letter which is added to the end of the basic item number. This new item number is referred to as an alpha-variant. Throughout the manual, IPL basic item number references also apply to alpha-variants unless shown differently.

G. The tool reference numbers found in the individual procedures and in the Special Tools, Fixtures, and Equipment section are used to identify if a tool is a standard tool (STD-XXXX), a commercial tool (COM-XXXX), or a Special Tool (SPL-XXXX). This reference number is also used to distinguish between tools with similar names in the same procedure. These reference numbers are for use in the documentation only. They are not to be used for ordering tools.

NOSE LANDING GEAR COMPONENT INSTALLATION - DESCRIPTION AND OPERATION

1. Description

A. The nose gear component installation includes the shock strut, torsion links, the steering actuator fittings and the trunnion mounting components. The component assembly holds up the nose of the airplane while on the ground.

2. Operation

A. The torsion links keep the radial alignment of the inner cylinder of the shock strut and the steering collar.

B. The steering actuator fittings attach the rod end of the steering actuators to the steering collar.

C. The trunnion mounting components attach the shock strut to the airplane through the trunnions.

D. The main part of the nose gear is the shock strut. The shock strut has an inner cylinder, the axles and the outer cylinder. The outer cylinder attaches to the airplane structure. The internal components of the shock strut have a metering pin, an orifice with a support tube and the upper and lower centering cams.

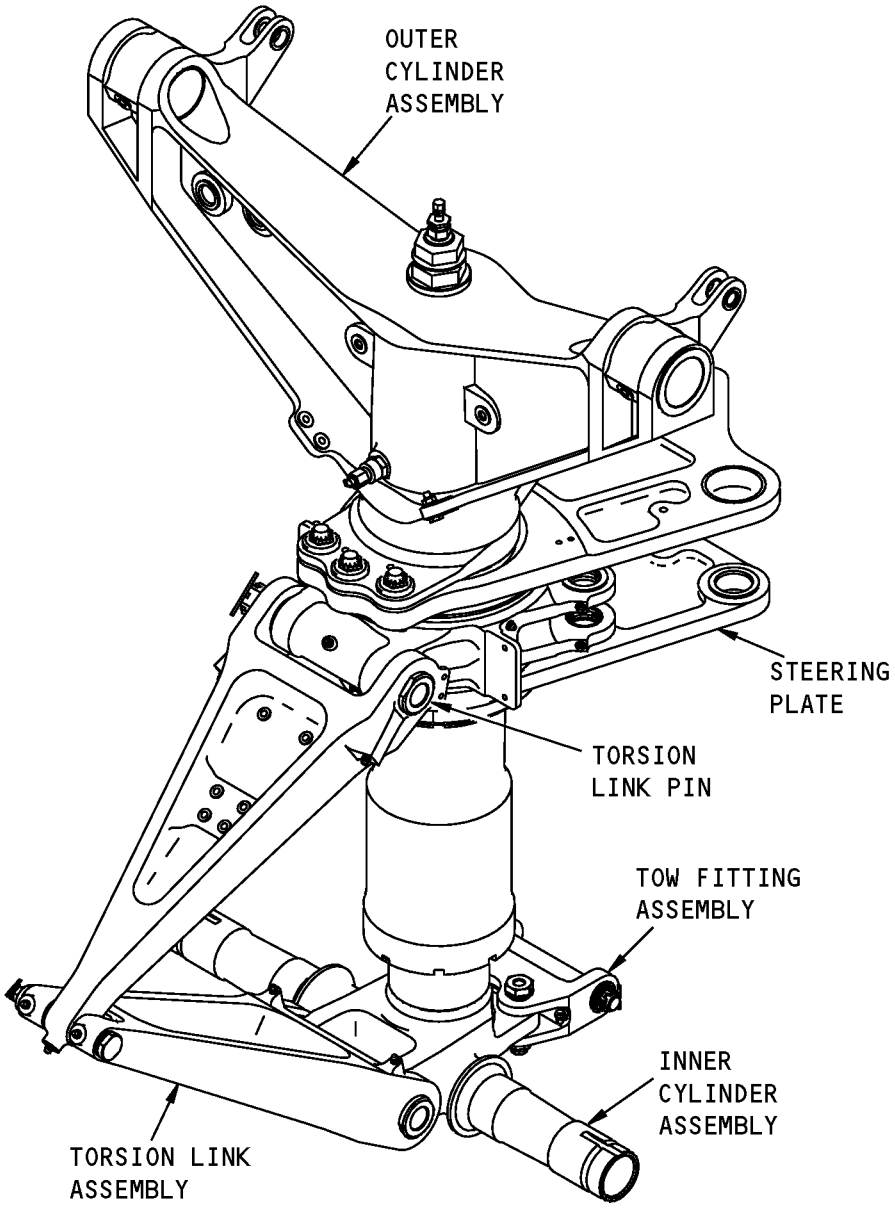
3. Leading Particulars (Approximate)

A. Length – 35 inches

B. Width – 30 inches

C. Height – 44 inches

D. Weight – 277 pounds



Nose Landing Gear Component Assembly
Figure 1

TESTING AND FAULT ISOLATION

1. General

A. This procedure does a test of the unit after an overhaul or for fault isolation.

B. Refer to the Standard Overhaul Practices Manual (SOPM) for the SOPM subjects identified in this procedure.

C. Refer to IPL Figure 1 for item numbers.

2. Testing and Fault Isolation

A. Consumable Materials

NOTE: Equivalent substitutes may be used.

Reference	Description	Specification
D50022	Fluid - Landing Gear Shock Strut (Specifically For Preservation)	BMS3-32, Type I
G00018	Nitrogen - Gaseous, Pressurizing, 99.5 Percent Pure	A-A-59503, Type I, Grade B
G02314	Air - Compressed, Breathing	BB-A-1034

B. References

Reference	Title
SOPM 20-60-03	LUBRICANTS

C. Procedure

NOTE: The position of the nose landing gear component assembly is vertical for this test.

(1) Assemble the nose gear component.

(2) Fill the shock strut with hydraulic fluid.

(a) Put the shock strut in a vertical and fully compressed position.

(b) Fill the shock strut with fluid, D50022 (SOPM 20-60-03) until the fluid overflows. Use a minimum of 202.8 cubic inches (7 pints or 3.32 liters).

(3) Operate the shock strut a minimum of ten cycles to bleed the air out. Make sure the shock strut operates smoothly and does not catch. Make sure nothing rubs the inner cylinder chrome plate. Local polished areas are acceptable if they do not have depth.

(4) Measure and record Dimension X, between the lower surface of the steering plate and the upper surfaces of the tow fitting (TESTING AND FAULT ISOLATION, Figure 101). Make sure Dimension X is within these limits.

- Fully compressed: 13.81-14.21 inches
- Fully extended: 29.31-29.71 inches

(5) Fully compress the shock strut. Disconnect the hydraulic return line. Install valve (275). Connect a source of nitrogen, G00018 or dry compressed air, G02314 to the valve. Then, with minimum nitrogen or air pressure, fully extend the shock strut.

WARNING: DO NOT PRESSURIZE THE SHOCK STRUT FOR THE TEST UNLESS THE INNER CYLINDER IS FULLY EXTENDED. DAMAGE TO THE UNIT OR PERSONAL INJURY CAN OCCUR.

(6) Pressurize the shock strut with nitrogen, G00018 or dry compressed air, G02314 to 230-240 psig (275-285 psig for 162A1100-12).

(7) Let the shock strut become stable for a minimum of 30 minutes. Then record the pressure (P1).

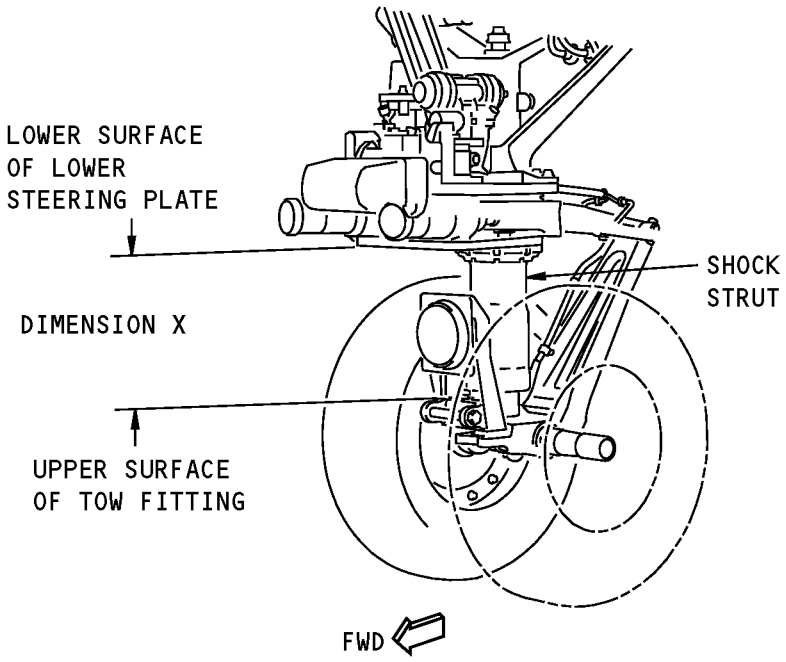
(8) Close valve (275). Let the shock strut hold pressure for a minimum of 60 minutes. Do not remove or loosen the pressure gage.

(9) Open valve (275). Record the pressure (P2). There must be no sign of change between P1 and P2. Pressure changes because of ambient temperature changes must be within plus or minus 10 psi.

(10) Visually examine the area around valve (275) and gland nut (605). There must be no signs of leakage. Signs of hydraulic fluid which do not make a full drop are acceptable.

(11) There must be no sign of bubbles around valve (275).

(12) Gradually loosen the swivel nut on valve (275) one or two turns counterclockwise, to slowly release the pressure. Then tighten the swivel nut of valve (275) to 5-7 pound-feet.



Nose Landing Gear Shock Strut Dimension X
Figure 101

DISASSEMBLY

1. General

A. This procedure tells how to disassemble the nose gear component installation.

B. Disassemble this unit only sufficiently to isolate the defects, do the necessary repairs, and put the component back in a serviceable condition.

C. Refer to IPL Figure 1 for the item numbers.

2. Disassembly

A. Tools/Equipment

NOTE: Equivalent substitutes may be used.

Reference	Description
SPL-1895	Equipment - Removal/Installation, Metering Pin and Retainer Ring, NLG (Part #: C32035-1, Supplier: 81205)
SPL-9660	Removal/Installation Equipment - NLG Lower Seals (Opt Part #: C32016-33, Supplier: 81205)
SPL-9661	Extension - Orifice Tube, Nose Gear Shock Strut (C32019-2 is included in C32019-1) (Part #: C32019-2, Supplier: 81205)
SPL-9663	Assembly - Spanner Wrench, Gland Nut (C32025-8 is included in C32025-7) (Part #: C32025-8, Supplier: 81205)
SPL-9677	Wrench - Spanner, Retainer, Steering Collar (C32040-4 is included in C32040-1) (Part #: C32040-4, Supplier: 81205)

B. Special Tools

(1) lower seal removal/installation equipment, SPL-9660

(2) orifice tube extension, SPL-9661

(3) gland nut spanner wrench, SPL-9663

(4) metering pin and retainer ring equipment, SPL-1895

(5) spanner wrench, SPL-9677

C. Procedure

(1) Use standard industry procedures to disassemble this unit.

(2) Replace these parts at each overhaul:

(a) O-rings (310, 525, 565, 590)

(b) Packing (405)

(c) Seals (560, 585, 595)

(d) Insert (580)

CLEANING

1. General

A. This procedure tells how to clean the parts of the nose gear component installation.

B. Refer to the Standard Overhaul Practices Manual (SOPM) for the SOPM subjects identified in this procedure.

C. Refer to IPL Figure 1 for the item numbers.

2. Cleaning

A. References

Reference	Title
SOPM 20-30-03	GENERAL CLEANING PROCEDURES

B. Procedure

(1) Clean all parts using standard industry procedures and the instructions in SOPM 20-30-03.

CHECK

1. General

A. This procedure tells how to find defects in the specified parts.

B. Refer to FITS AND CLEARANCES for design dimensions and wear limits.

C. Refer to the Standard Overhaul Practices Manual (SOPM) for the SOPM subjects identified in this procedure.

D. Refer to IPL Figure 1 for the item numbers.

2. Check

A. References

Reference	Title
SOPM 20-20-01	MAGNETIC PARTICLE INSPECTION
SOPM 20-20-02	PENETRANT METHODS OF INSPECTION

B. Procedure

(1) Use standard industry practices to do a visual check of all the parts for defects.

(2) Do a magnetic particle inspection (SOPM 20-20-01) of these parts:

(a) Bolt (15)

(b) Pin (70, 75, 135)

(c) Washer (80, 85, 140, 300)

(d) Collar (250)

(e) Spacer (285)

(f) Nut (295)

(g) Cylinder (395, 435)

(h) Circlip (480)

(i) Holder (490)

(j) Retainer (500)

(k) Nut (515)

(l) Retainer Ring (520)

(m) Metering Pin (530)

(n) Dowel (550)

(o) Centering Cam (555)

(p) Gland Nut (605)

(q) Lockplate (620)

(3) Do a penetrant inspection (SOPM 20-20-02) of these parts:

(a) Tow Fitting (55)

(b) Torsion Links (125, 175)

(c) Steering Plate (203)

(d) Steering sleeve (270)

(e) Orifice Support Tube (290)

(f) Seal Retainer (305, 570)

(g) Carrier Half (445, 450)

(h) Orifice Plate (495)

(i) Pin (535)

(j) Lower Bearing Carrier (575)

REPAIR

1. General

A. Instructions for repair, refinish, and replacement of the specified subassembly parts are included in each REPAIR when applicable:

Table 601:

PART NUMBER	NAME	REPAIR
—	REFINISH OF OTHER PARTS	1-1
162A1110	OUTER CYLINDER ASSEMBLY	2-1, 2-2
162A1120	INNER CYLINDER ASSEMBLY	3-1, 3-2, 3-3
162A1160	TOW FITTING ASSEMBLY	4-1, 4-2
162A1311, 162A1315	UPPER TORSION LINK ASSEMBLY	5-1, 5-2
162A1312, 162A1313	LOWER TORSION LINK ASSEMBLY	6-1, 6-2
162A1306, 162A1310	PIN	7-1
162A1417	STEERING PLATE ASSEMBLY	8-1, 8-2
162A1501	CENTERING CAM ASSEMBLY	9-1
162A1503	METERING PIN	10-1
162A1505	NUT ASSEMBLY	11-1
162A1507	ORIFICE SUPPORT TUBE	12-1
162A1404, 162A1420	STEERING COLLAR ASSEMBLY	13-1, 13-2
162A1405, 162A1421	SLEEVE ASSEMBLY	14-1, 14-2
162A1510	LOWER BEARING CARRIER	15-1
162A1511	UPPER BEARING CARRIER ASSEMBLY	16-1
162A1513	GLAND NUT	2-2

2. Dimensioning Symbols

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

REFINISH OF OTHER PARTS - REPAIR 1-1

1. General

A. This procedure tells how to refinish the parts which are not in the other repair procedures.

B. Refer to the Standard Overhaul Practices Manual (SOPM) for the SOPM subjects identified in this procedure.

C. Refer to IPL Figure 1 for the item numbers.

2. Refinish of Other Parts

A. Consumable Materials

NOTE: Equivalent substitutes may be used.

Reference	Description	Specification
C00259	Primer - Chemical And Solvent Resistant Finish, Epoxy Resin	BMS10-11, Type I
D50081	Lubricant - Solid Film Lubricant, Liquid Dispersed	BMS 3-8

B. References

Reference	Title
SOPM 20-30-02	STRIPPING OF PROTECTIVE FINISHES
SOPM 20-41-01	DECODING TABLE FOR BOEING FINISH CODES
SOPM 20-60-02	FINISHING MATERIALS
SOPM 20-60-03	LUBRICANTS

C. Procedure

NOTE: For stripping of protective finishes, refer to SOPM 20-30-02. For the decoding table for Boeing finish codes, refer to SOPM 20-41-01. For finishing materials, refer to SOPM 20-60-02. For lubricants, refer to SOPM 20-60-03.

(1) Instructions for the repair of the parts in REPAIR 1-1, Table 601 are for replacement of the original finish.

Table 601: Refinish Details

IPL FIG. AND ITEM NUMBER	MATERIAL	FINISH
IPL Fig. 1		
Bolt (15)	15-5PH CRES, 180-200 ksi	Passivate (F-17.25).
Washers (80, 85, 140, 300)	15-5PH CRES, 180-200 ksi	Passivate (F-17.25).
Locktab (190)	15-5PH CRES, 180-200 ksi	Passivate (F-17.25).
Nut (195)	Ti alloy	Apply solid film lubricant, D50081 (F-19.10) on the threads. No finish on the other surfaces.
Bolt (210)	Ti alloy	Tiodize process II as specified in AMS2488 (to be done by Tiodize Co., Inc., V34568).

Table 601: Refinish Details (Continued)

IPL FIG. AND ITEM NUMBER	MATERIAL	FINISH
Spacer (285)	15-5PH CRES, 180-200 ksi	Passivate (F-17.25).
Nut (295)	15-5PH CRES, 180-200 ksi	Passivate (F-17.25). Apply solid film lubricant, D50081 (F-19.10) to the threads.
Seal retainer (305)	Al alloy	Boric acid-sulfuric acid anodize or chromic acid anodize (F-17.31). Apply primer, C00259 (F-20.02).
Carrier halves (445, 450)	Ti alloy	Tiodize process II as specified in AMS2488 (to be done by Tiodize Co., Inc., V34568).
Inserts (455, 580)	DU, bronze backed	No finish (F-25.01).
Ring (460)	Al-Ni-Bronze	No finish (F-25.01).
Cam (465)	Al-Ni-Bronze	No finish (F-25.01).
Valve (470)	Al-Ni-Bronze	No finish (F-25.01).
Dowels (475, 550)	15-5PH CRES, 180-200 ksi	Passivate (F-17.25).
Circlip (480)	17-7PH CRES, CH900	Passivate (F-17.25).
Holder (490)	4340 Steel, 150-170 ksi	No finish (F-25.01).
Plate (495)	Al-Ni-Bronze	No finish (F-25.01).
Retainer (500)	15-5PH CRES, 180-200 ksi	Passivate (F-17.25).
Nut (515)	4330M Steel, 180-200 ksi	No finish (F-25.01).
Ring (520)	4330M Steel, 180-200 ksi	No finish (F-25.01).
Pin (535)	15-5PH CRES, 180-200 ksi	Passivate (F-17.25).
Centering cam (555)	15-5PH CRES, 150-170 ksi	Passivate (F-17.25).
Seal retainer (570)	Al alloy	No finish (F-25.01).
Gland nut (605)	4330M Steel, 180-200 ksi	See REPAIR 2-2, Figure 608.
Lockplate (620)	15-5PH CRES, 180-200 ksi	Passivate (F-17.25).

FIGURE 601 DELETED
(SEE REPAIR 2-2 FIGURE 608 FOR
GLAND NUT REFINISH AND OTHER DETAILS)

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162A1513-1 Gland Nut Refinish
Figure 601

OUTER CYLINDER ASSEMBLY - REPAIR 2-1

162A1110–1, –3, –5, –7

1. General

A. Use this procedure to replace bushings and lube fittings, and refinish the outer cylinder assembly (315).

B. Refer to the Standard Overhaul Practices Manual (SOPM) for the SOPM subjects identified in this procedure.

C. Refer to IPL Figure 1 for item numbers.

2. Bushing Replacement

A. Consumable Materials

NOTE: Equivalent substitutes may be used.

Reference	Description	Specification
A00247	Sealant - Pressure And Environmental - Chromate Type	BMS 5-95

B. References

Reference	Title
SOPM 20-41-01	DECODING TABLE FOR BOEING FINISH CODES
SOPM 20-50-03	BEARING AND BUSHING REPLACEMENT
SOPM 20-60-04	MISCELLANEOUS MATERIALS

C. Procedure (REPAIR 2-1, Figure 601)

NOTE: For the decoding table for Boeing finish codes, refer to SOPM 20-41-01. For miscellaneous materials, refer to SOPM 20-60-04.

(1) Remove the old bushings (325, 330, 335, 340, 345, 350, 355, 360, 365, 370, 375, 380, 385, 390) from the outer cylinder assembly (315).

(2) If you find defects on the outer cylinder surfaces, refer to REPAIR 2-2 for repair instructions.

(3) Install replacement bushings by the shrink-fit procedure (SOPM 20-50-03) with sealant, A00247.

(4) Machine the bushings to design dimensions and finish.

3. Lube Fitting Replacement

A. Consumable Materials

NOTE: Equivalent substitutes may be used.

Reference	Description	Specification
D00013	Grease - Aircraft And Instrument Grease	MIL-PRF-23827 (NATO G-354) (Supersedes MIL-G-23827)
D00633	Grease - Aircraft General Purpose	BMS3-33

B. References

Reference	Title
CMM 32-00-03	LANDING GEAR PARTS LUBRICATION FITTING REPLACEMENT
SOPM 20-41-01	DECODING TABLE FOR BOEING FINISH CODES
SOPM 20-60-03	LUBRICANTS
SOPM 20-60-04	MISCELLANEOUS MATERIALS

C. Procedure (REPAIR 2-1, Figure 601)

NOTE: For the decoding table for Boeing finish codes, refer to SOPM 20-41-01. For miscellaneous materials, refer to SOPM 20-60-04. For landing gear parts lubrication fitting replacement, refer to CMM 32-00-03.

(1) Remove the old lube fittings (320) from the outer cylinder assembly (315).

(2) Install replacement lube fittings (CMM 32-00-03).

(3) After bushing and lube fitting installation, apply grease, D00633 (grease, D00013 optional for 162A1110-1) (SOPM 20-60-03) at the lube fitting until the grease comes out at the bushing inner diameter.

4. Refinish

A. Consumable Materials

NOTE: Equivalent substitutes may be used.

Reference	Description	Specification
C00033	Coating - Exterior Protective Enamel, Flexibility Use	BMS10-60, Type II

B. References

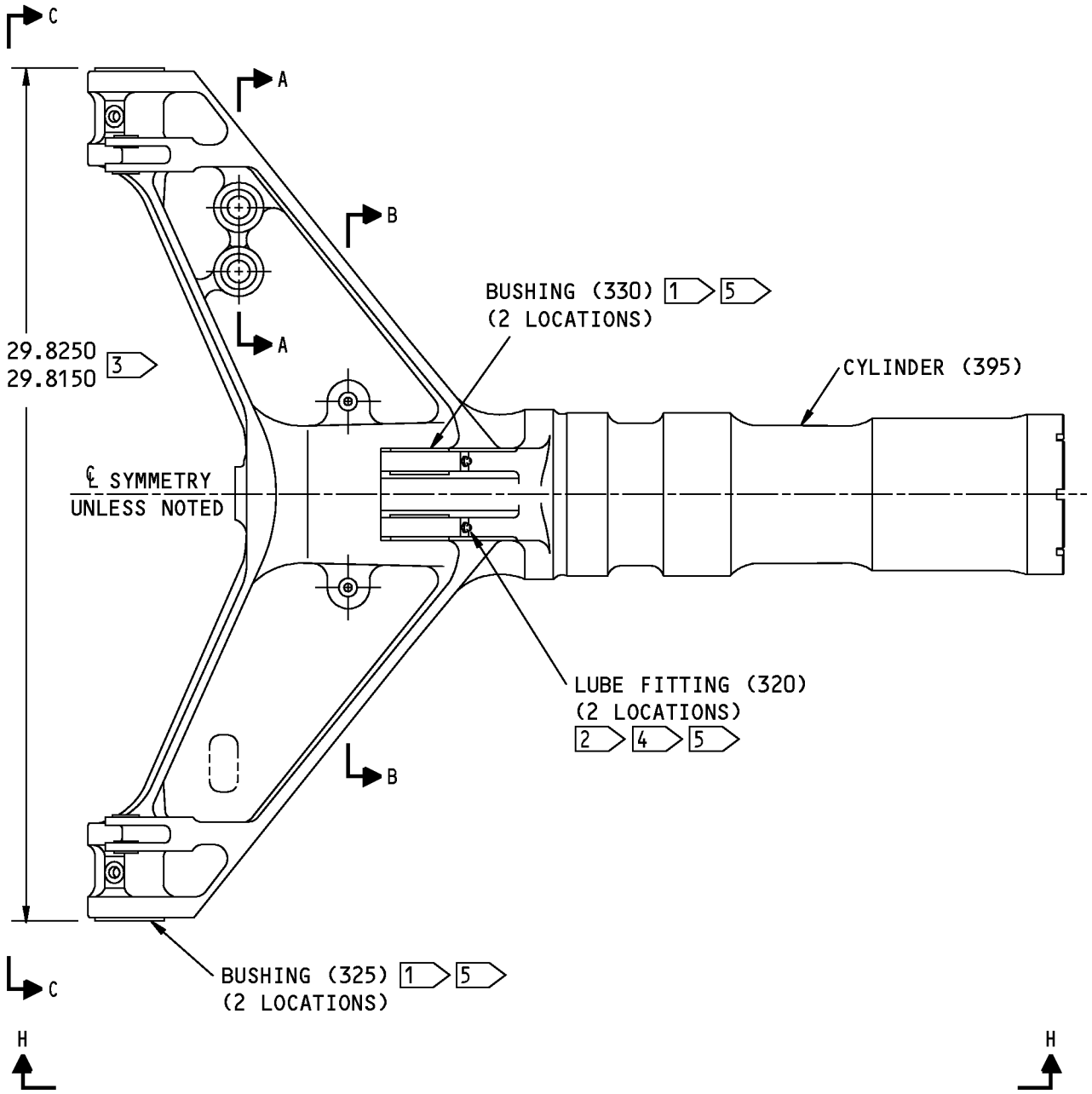
Reference	Title
SOPM 20-41-01	DECODING TABLE FOR BOEING FINISH CODES
SOPM 20-60-02	FINISHING MATERIALS

C. Procedure

NOTE: For the decoding table for Boeing finish codes, refer to SOPM 20-41-01. For finishing materials, refer to SOPM 20-60-02.

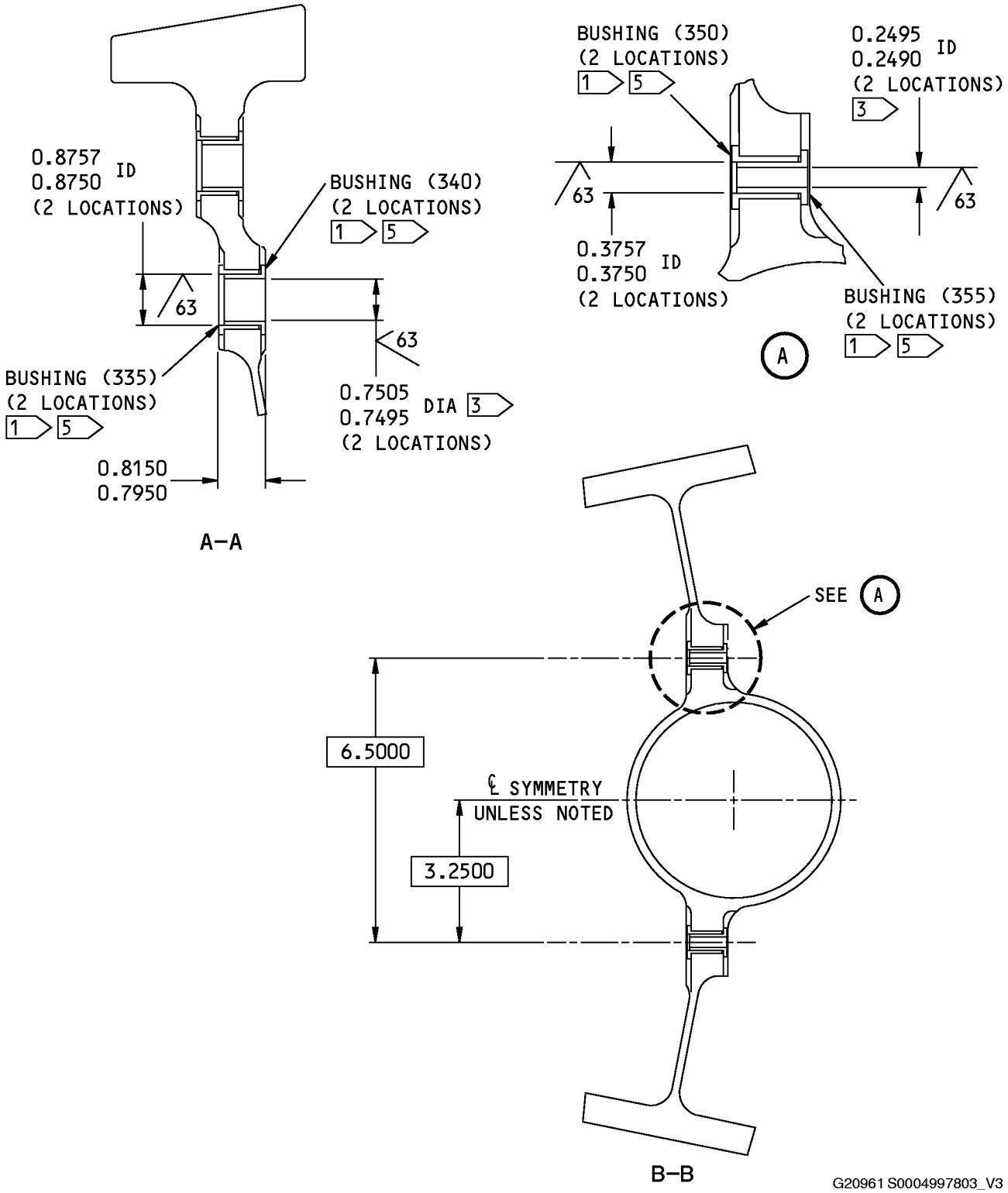
(1) Apply enamel coating, C00033 (F-20.56-707) to the external surfaces of the outer cylinder assembly, but not in the area specified by flagnote 7.

(2) Do not apply enamel to the bushing bores or faces.

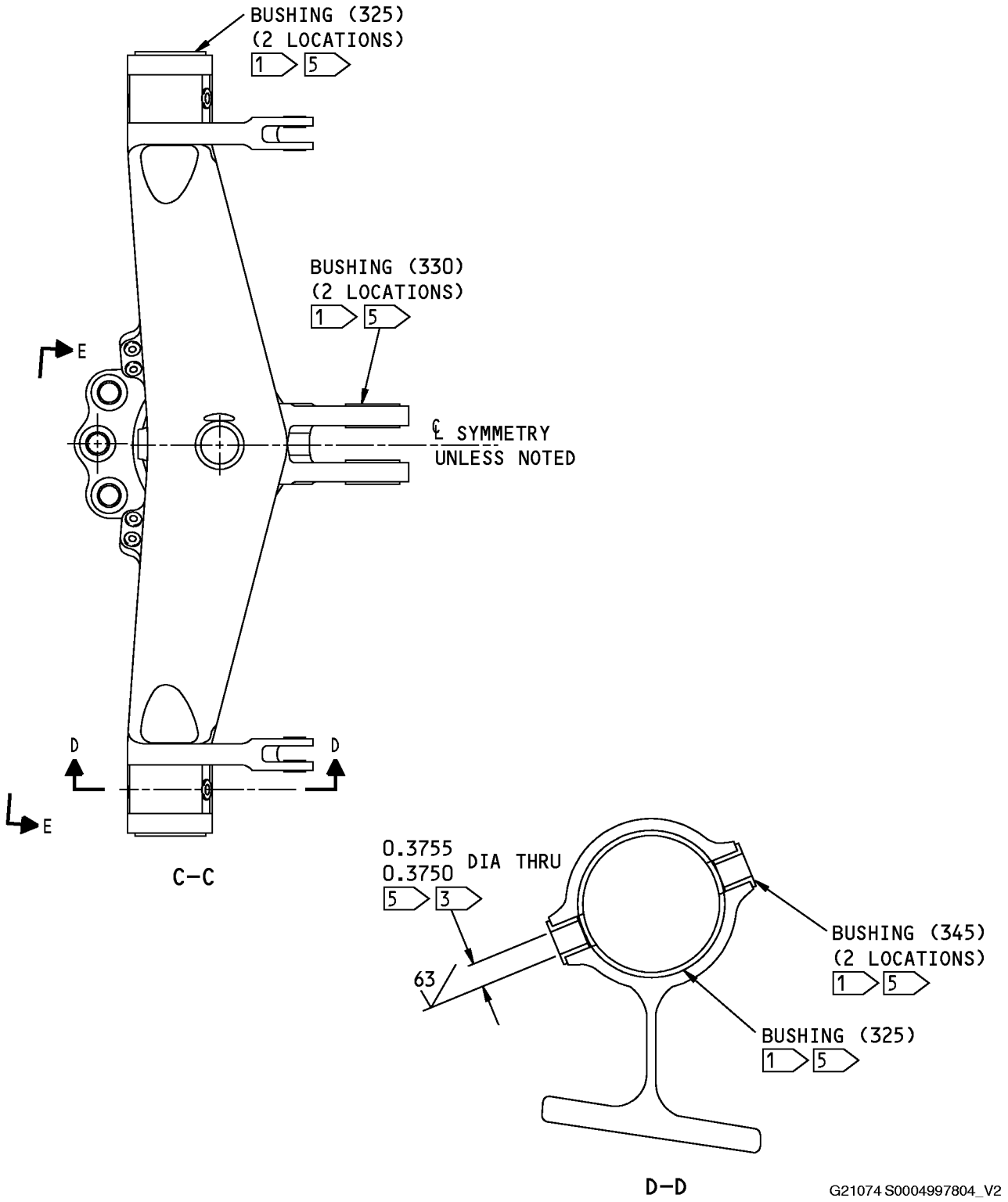


G20875 S0004997802_V3

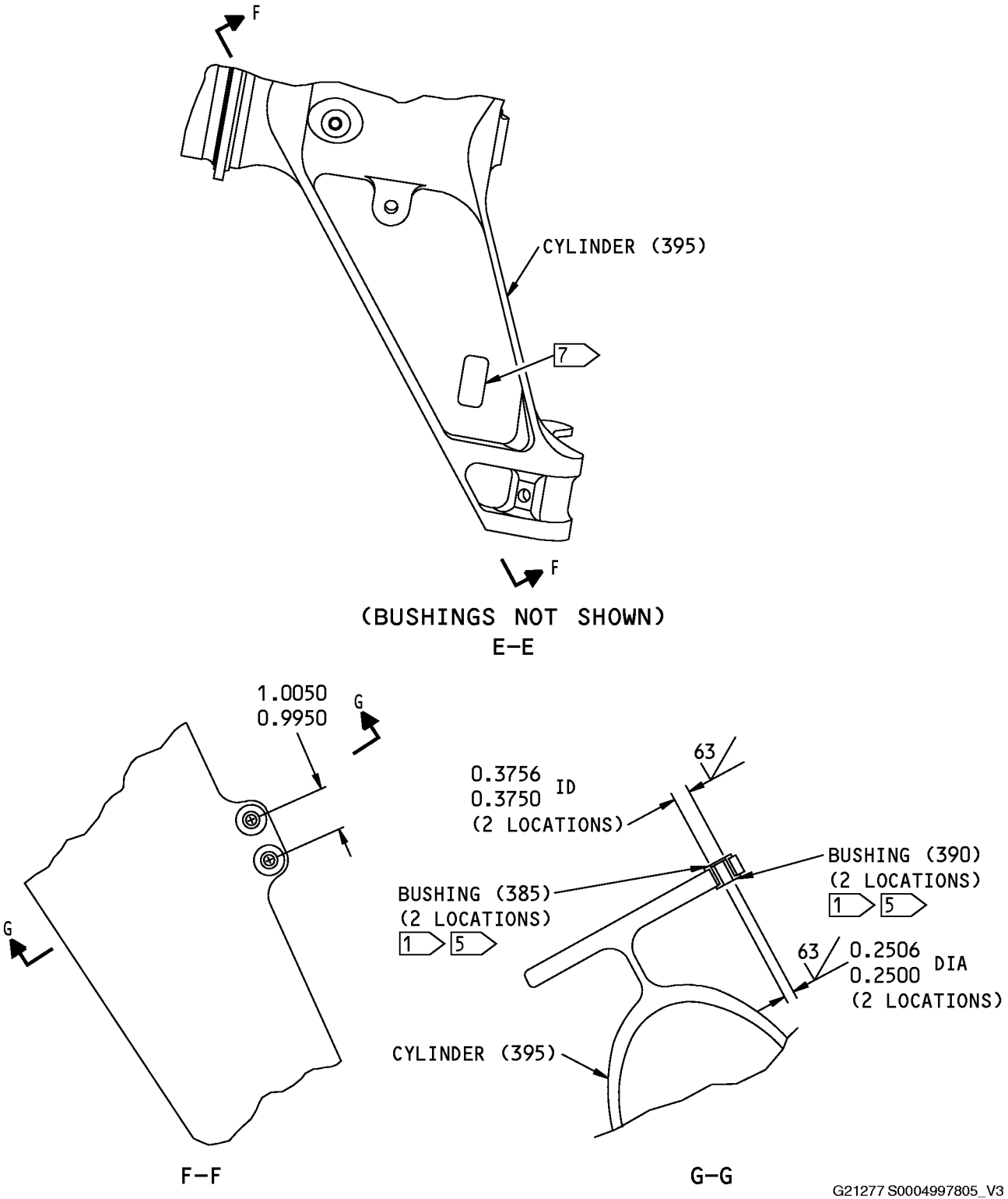
162A1110-1, -3, -5, -7 Outer Cylinder Assembly Repair
Figure 601 (Sheet 1 of 8)



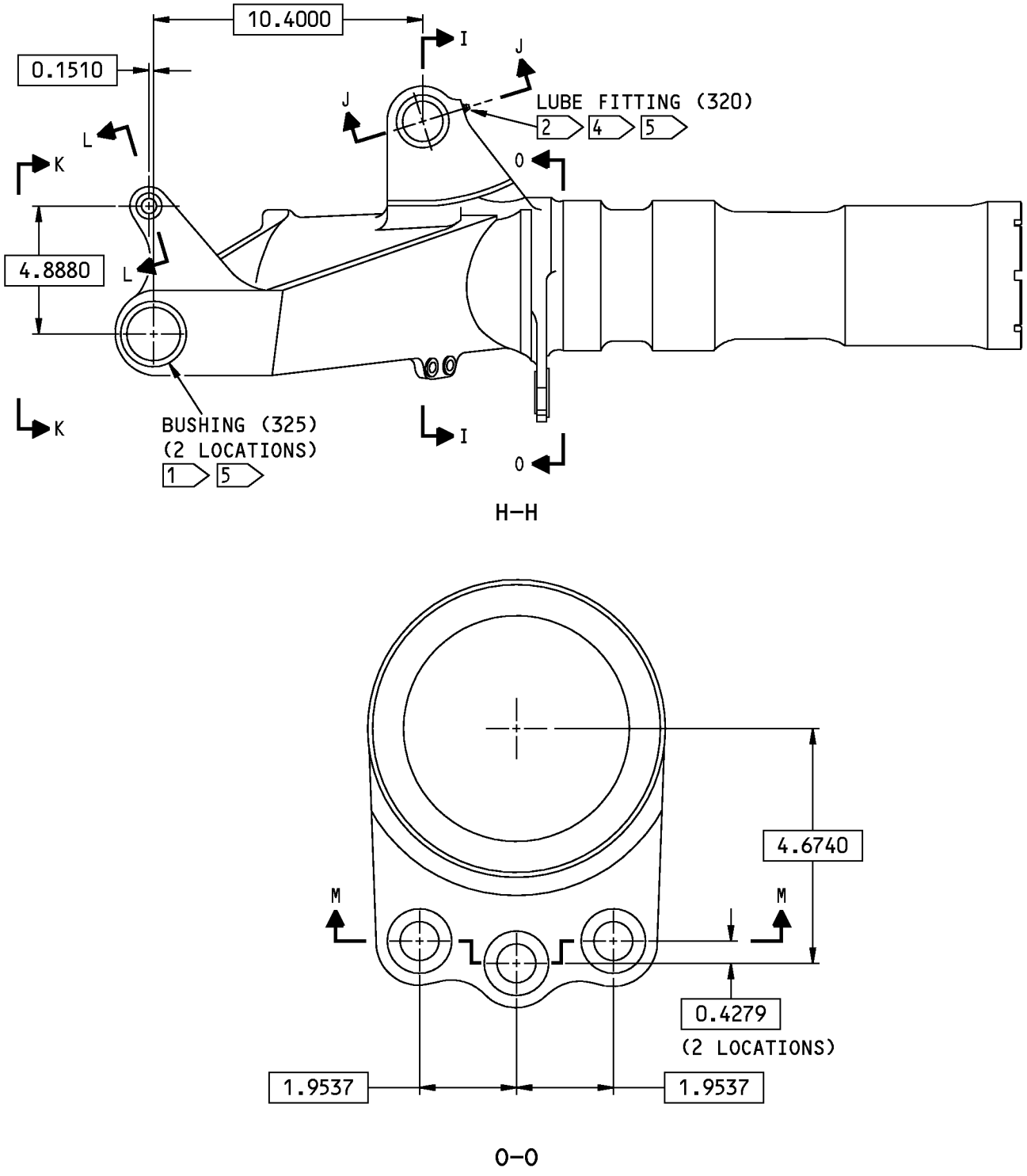
162A1110-1, -3, -5, -7 Outer Cylinder Assembly Repair
Figure 601 (Sheet 2 of 8)



162A1110-1, -3, -5, -7 Outer Cylinder Assembly Repair
Figure 601 (Sheet 3 of 8)

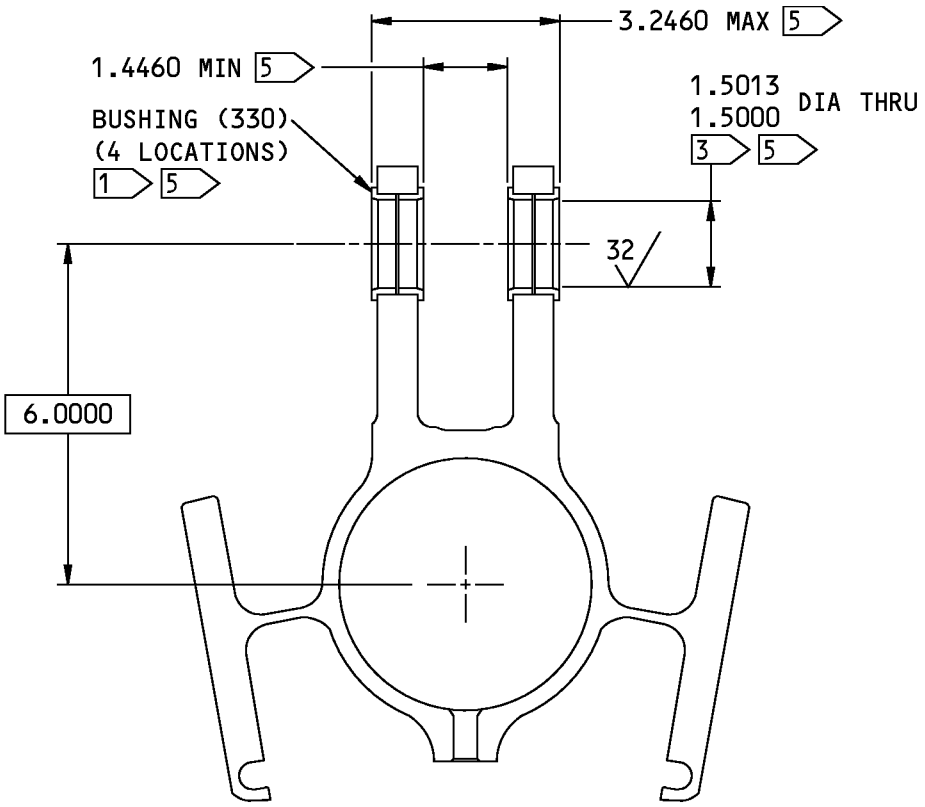


162A1110-1, -3, -5, -7 Outer Cylinder Assembly Repair
Figure 601 (Sheet 4 of 8)



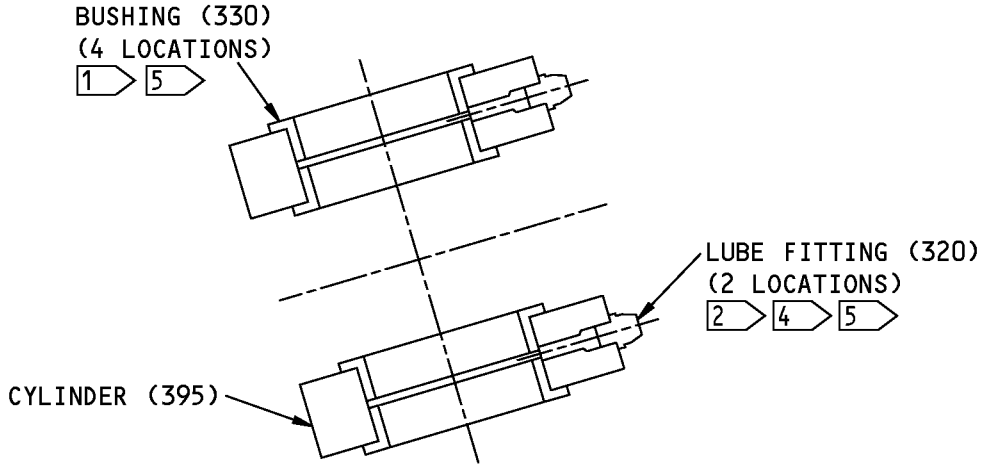
G21375 S0004997806_V2

162A1110-1, -3, -5, -7 Outer Cylinder Assembly Repair
Figure 601 (Sheet 5 of 8)



(BUSHINGS 385 AND 390 NOT SHOWN)

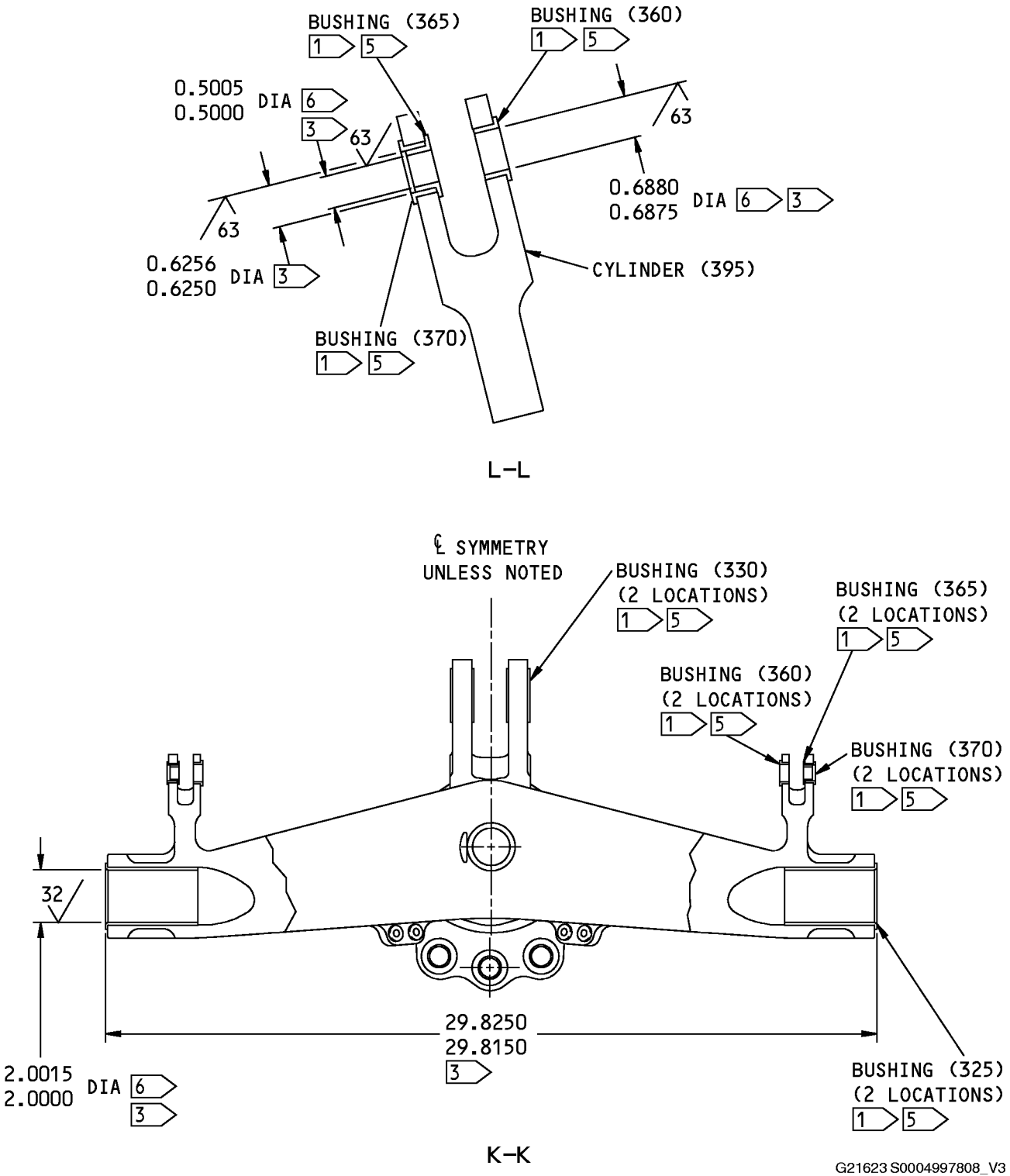
I–I



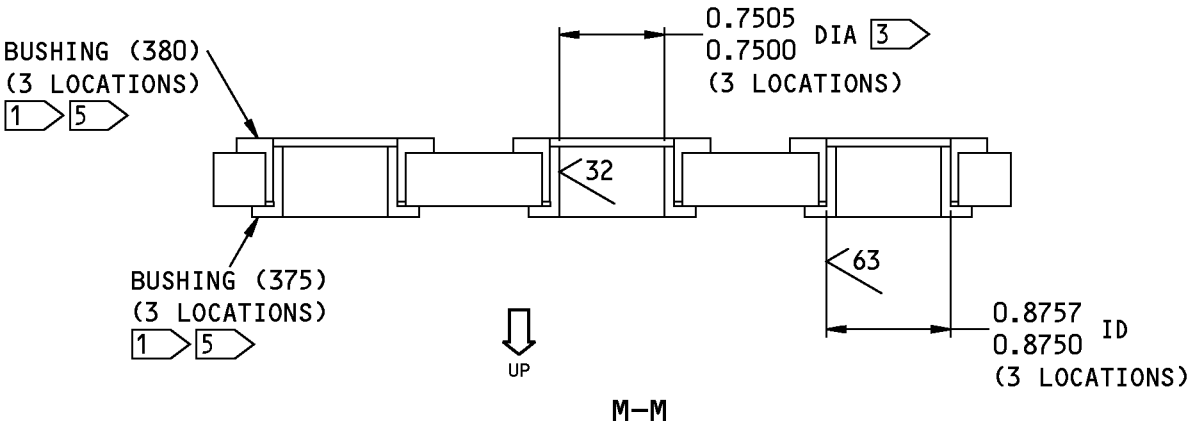
J–J

G21464 S0004997807_V3

162A1110-1, -3, -5, -7 Outer Cylinder Assembly Repair
Figure 601 (Sheet 6 of 8)



162A1110-1, -3, -5, -7 Outer Cylinder Assembly Repair
Figure 601 (Sheet 7 of 8)



M–M

1 USE THE SHRINK-FIT PROCEDURE IN SOPM 20-50-03 TO INSTALL THE BUSHING WITH BMS 5-95 SEALANT. AFTER BUSHING INSTALLATION, APPLY FILLET SEAL WITH BMS 5-95 SEALANT

2 USE THE SHRINK-FIT PROCEDURE IN SOPM 20-50-03 TO INSTALL THE LUBE FITTING WITH BMS 5-95 SEALANT

3 INSTALLED DIMENSION. ADJUST TO THIS SIZE IF NECESSARY

4 AFTER BUSHING INSTALLATION AND BEFORE THE SEALANT DRIES, APPLY BMS 3-33 GREASE TO THE LUBE FITTING UNTIL THE GREASE COMES THROUGH AT THE INNER DIAMETER OF THE HOLE

5 DO NOT APPLY ENAMEL HERE

6 DO NOT APPLY PRIMER OR ENAMEL ON THIS SURFACE

7 DO NOT APPLY ENAMEL (F-20.56-707) HERE. MASK THIS AREA AS NECESSARY. APPLY BMS 10-60, TYPE 2 GLOSS ENAMEL (F-19.39-707). WHEN DRY, APPLY BLACK ENAMEL (F-19.39-701) TO THE CHARACTERS ONLY. WHEN DRY, APPLY TYPE 41 COATING (F-21.34) TO A THICKNESS OF THE SURROUNDING ENAMEL

ITEM NUMBERS REFER TO IPL FIG. 1

ALL DIMENSIONS ARE IN INCHES

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162A1110-1, -3, -5, -7 Outer Cylinder Assembly Repair
Figure 601 (Sheet 8 of 8)

OUTER CYLINDER - REPAIR 2-2

162A1110–2, –4, –6, –8

1. General

A. This procedure tells how to repair and refinish the outer cylinder (395).

B. Refer to the Standard Overhaul Practices Manual (SOPM) for the SOPM subjects identified in this procedure.

C. Refer to IPL Figure 1 for the item numbers.

D. General repair details:

(1) Material: 4340M steel, 275-300 ksi

(2) Shot peen:

(a) Hard Shot Rc 55-65

(b) Shot Size 0.016-0.033

(c) Intensity 0.014-0.018A2

(d) Coverage 2.0

2. Refinish

A. Consumable Materials

NOTE: Equivalent substitutes may be used.

Reference	Description	Specification
C00175	Primer - Urethane Compatible, Corrosion Resistant (Less Than 1% Aromatic Amines)	BMS10-79, Type III

B. References

Reference	Title
CMM 32-00-05	REPAIR OF HIGH-STRENGTH STEEL LANDING GEAR PARTS
SOPM 20-10-03	SHOT PEENING
SOPM 20-30-02	STRIPPING OF PROTECTIVE FINISHES
SOPM 20-41-01	DECODING TABLE FOR BOEING FINISH CODES
SOPM 20-60-02	FINISHING MATERIALS

C. Procedure (REPAIR 2-2, Figure 601)

NOTE: For shot peening, refer to SOPM 20-10-03. For stripping of protective finishes, refer to SOPM 20-30-02. For the decoding table for Boeing finish codes, refer to SOPM 20-41-01. For finishing materials, refer to SOPM 20-60-02. For the repair of high-strength steel landing gear parts, refer to CMM 32-00-05.

(1) Cadmium-titanium plate (F-15.01) 0.0005-0.0019 inch thick, unless shown differently.

(2) Apply primer, C00175 (F-19.47) unless shown differently.

3. Lug Faces and Holes

A. References

Reference	Title
CMM 32-00-05	REPAIR OF HIGH-STRENGTH STEEL LANDING GEAR PARTS
SOPM 20-10-03	SHOT PEENING

B. Procedure (REPAIR 2-2, Figure 601)

NOTE: For shot peening, refer to SOPM 20-10-03. For the repair of high-strength steel landing gear parts, refer to CMM 32-00-05.

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

(2) Refinish as indicated (REPAIR 2-2, Paragraph 2.).

(3) Make oversize bushings (REPAIR 2-2, Figure 602 thru REPAIR 2-2, Figure 607), as necessary to adjust for the material removed.

(4) Install the bushings as shown in REPAIR 2-1.

4. Barrel Surfaces

A. References

Reference	Title
SOPM 20-10-03	SHOT PEENING
SOPM 20-10-04	GRINDING OF CHROME PLATED PARTS
SOPM 20-42-03	HARD CHROME PLATING

B. Procedure (REPAIR 2-2, Figure 601)

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

(2) Shot peen (SOPM 20-10-03) all surfaces, but not where shown by flagnote 3.

(3) Build up the surfaces with chrome plate (SOPM 20-42-03).

(4) Grind the chrome plate to design dimensions and finish (SOPM 20-10-04).

5. Threads for Gland Nut (REPAIR 2-2, Figure 601)

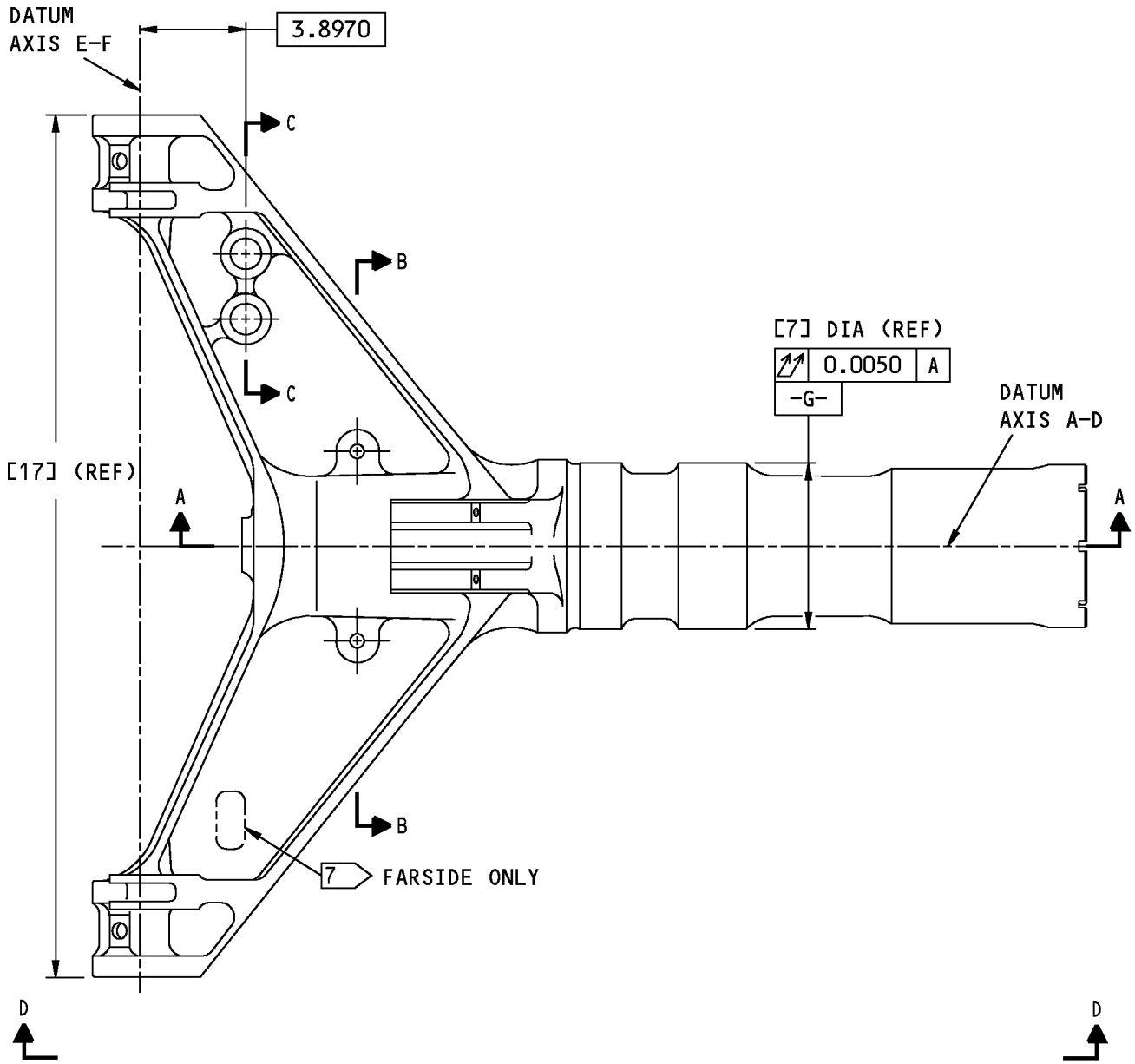
A. Procedure

(1) Blend out defects in the threads if the damage is not more than 50% of the thread bearing surface and if the blends will be on not more than 50% of the threads in any 3-inch segment circumferentially. You can do this blend repair on original or undersize threads.

CAUTION: IF YOU CUT THESE THREADS UNDERSIZE, MAKE SURE TO IDENTIFY THIS ON THE CYLINDER. MAKE SURE YOU USE THE CORRECT GLAND NUT.

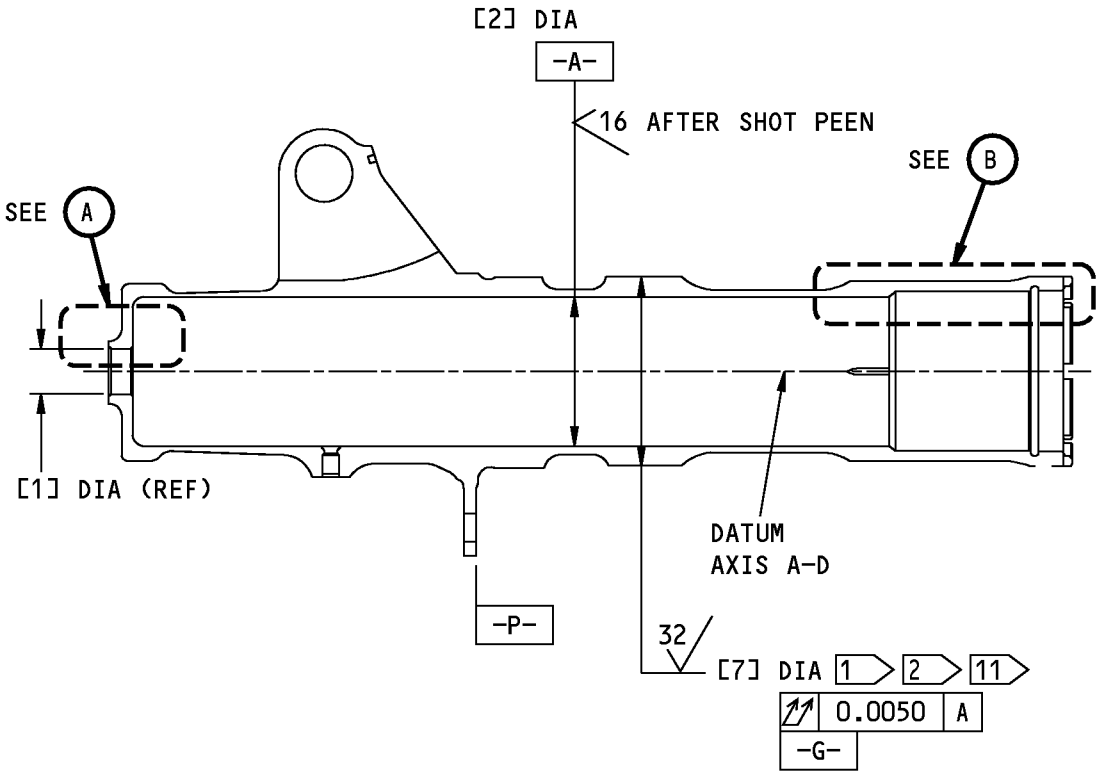
(2) For repair of damage more than these limits, cut the threads to an oversize as shown. Make a special gland nut with threads that match (REPAIR 2-2, Figure 608). Make sure to identify the outer cylinder and the gland nut as matched parts.

(3) If the threads are already at the largest oversize and defects or necessary repairs are more than the limits of REPAIR 2-2, Paragraph 5.A.(1), get instructions from Boeing.



G22550 S0004997812_V2

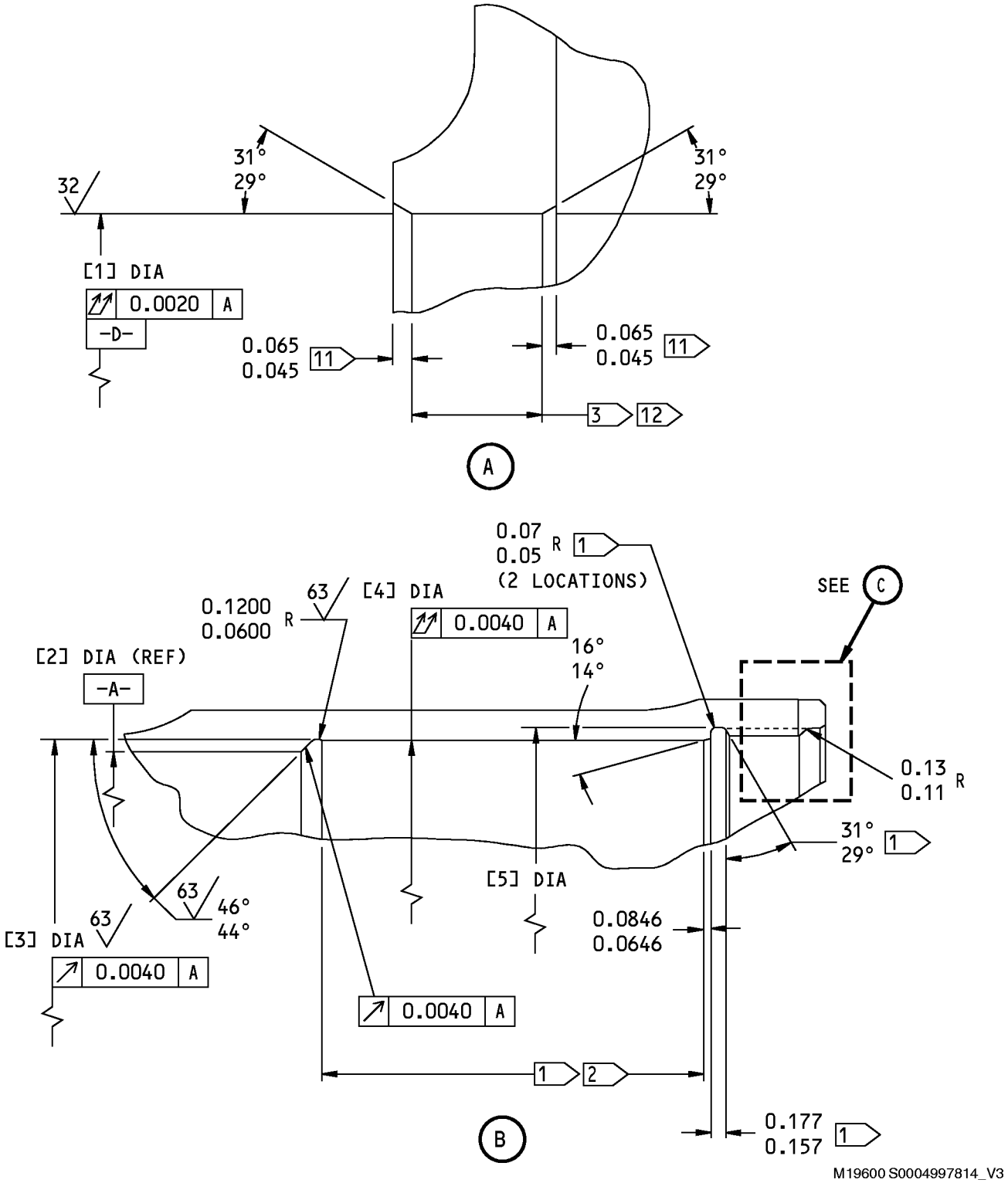
162A1110-2, -4, -6, -8 Outer Cylinder Repair
Figure 601 (Sheet 1 of 12)



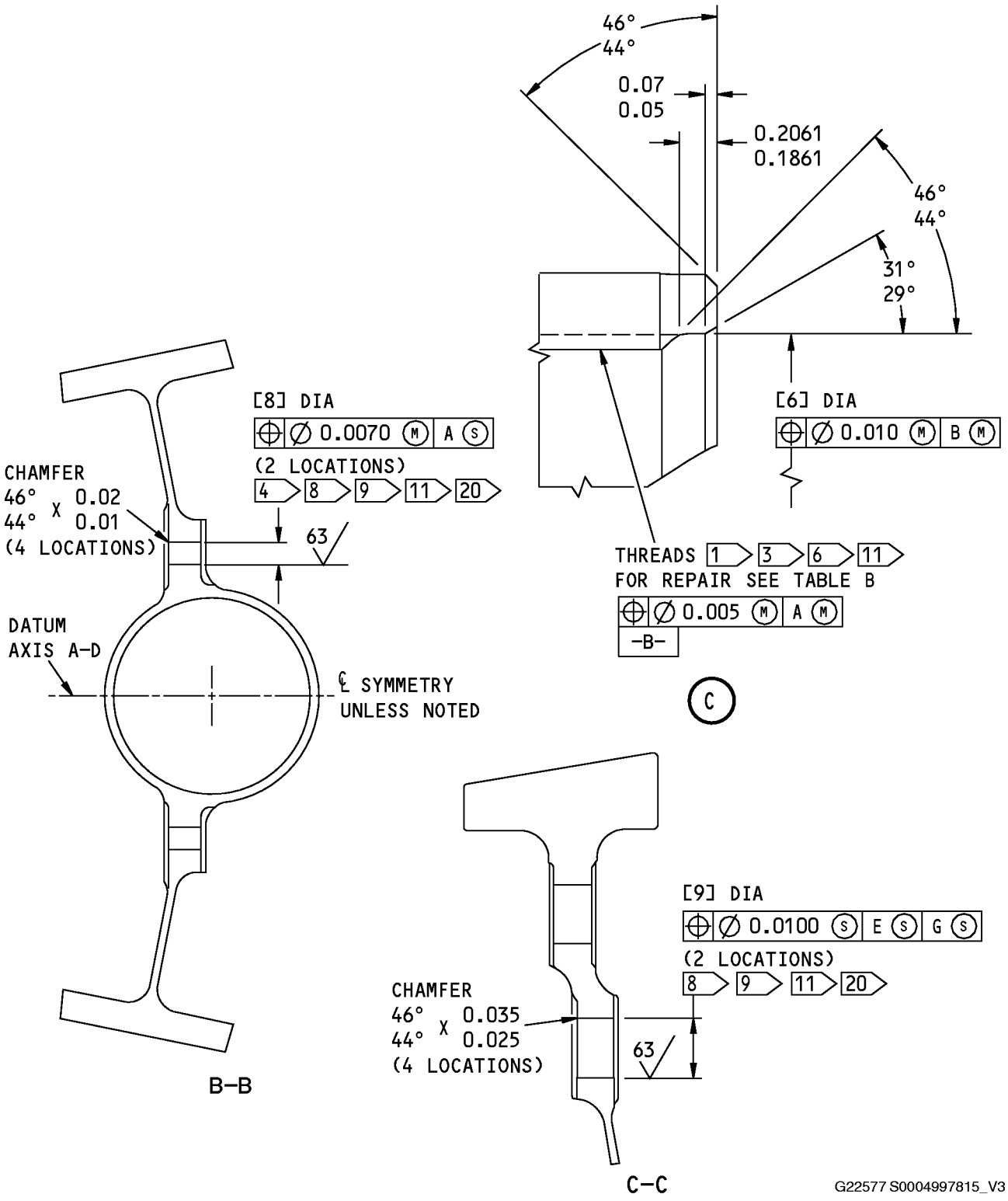
A–A

G23130 S0004997813_V4

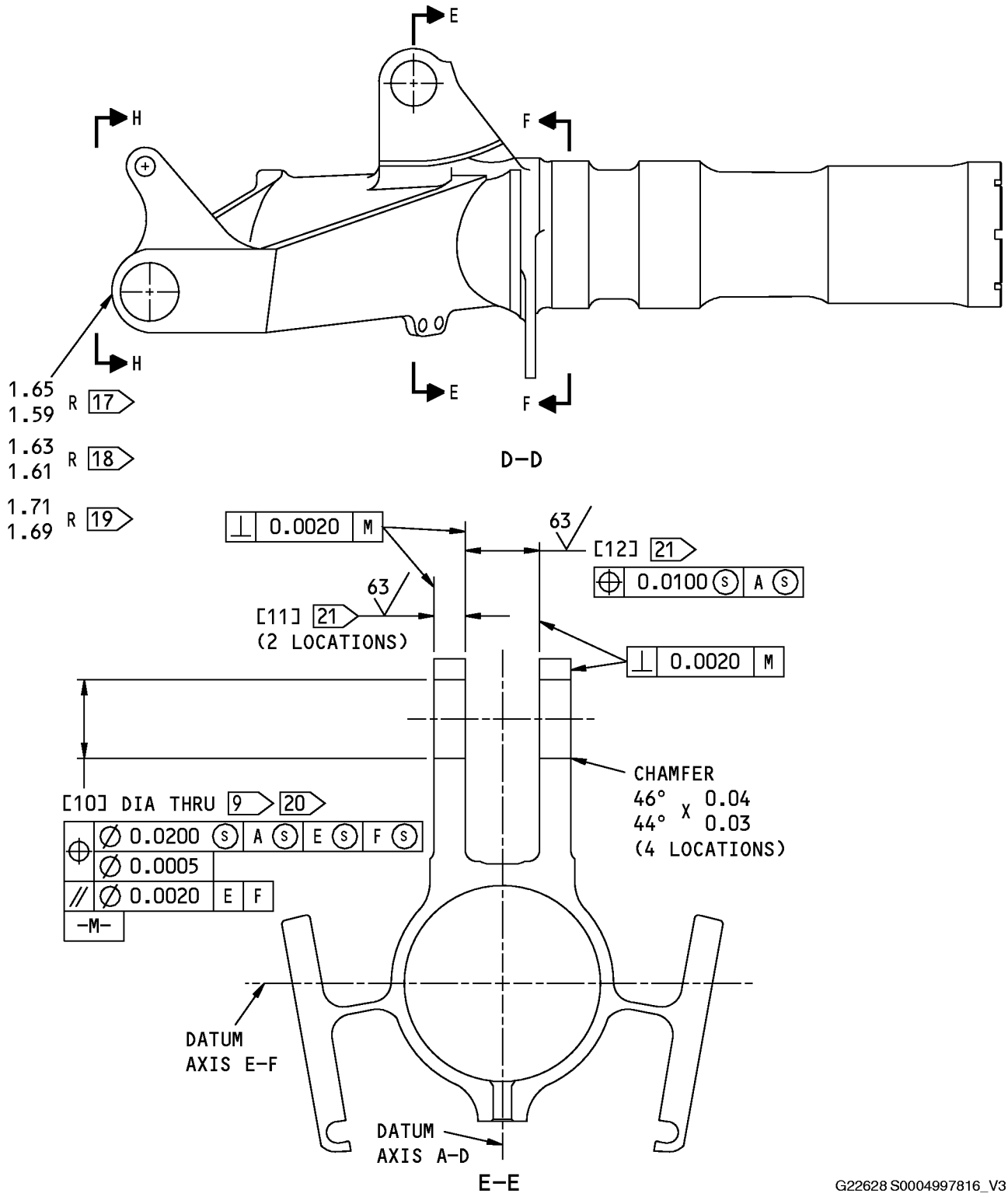
162A1110-2, -4, -6, -8 Outer Cylinder Repair
Figure 601 (Sheet 2 of 12)



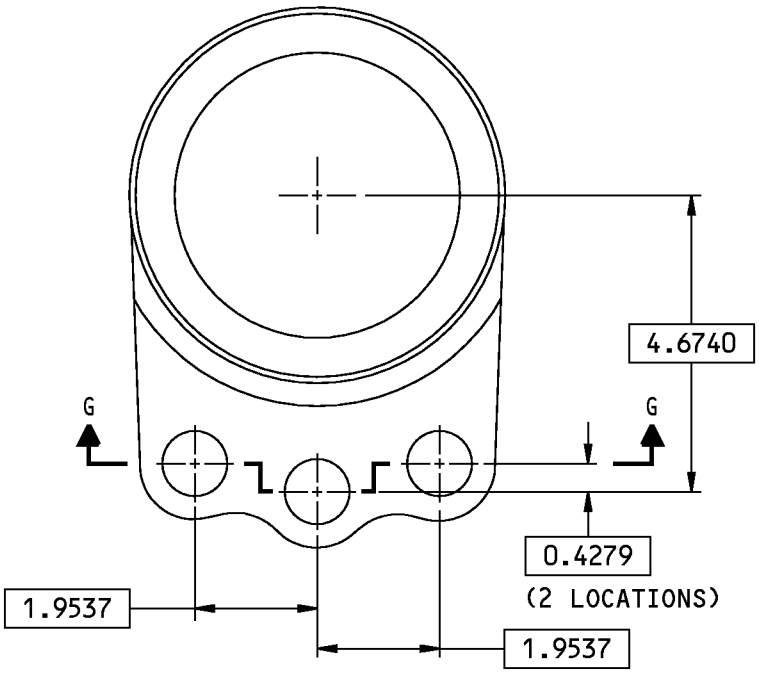
162A1110-2, -4, -6, -8 Outer Cylinder Repair
Figure 601 (Sheet 3 of 12)



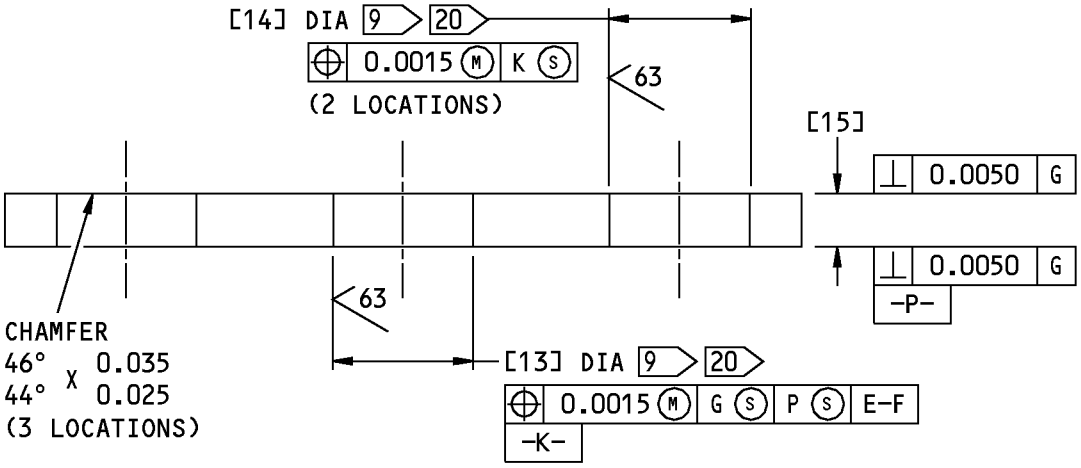
162A1110-2, -4, -6, -8 Outer Cylinder Repair
Figure 601 (Sheet 4 of 12)



162A1110-2, -4, -6, -8 Outer Cylinder Repair
Figure 601 (Sheet 5 of 12)



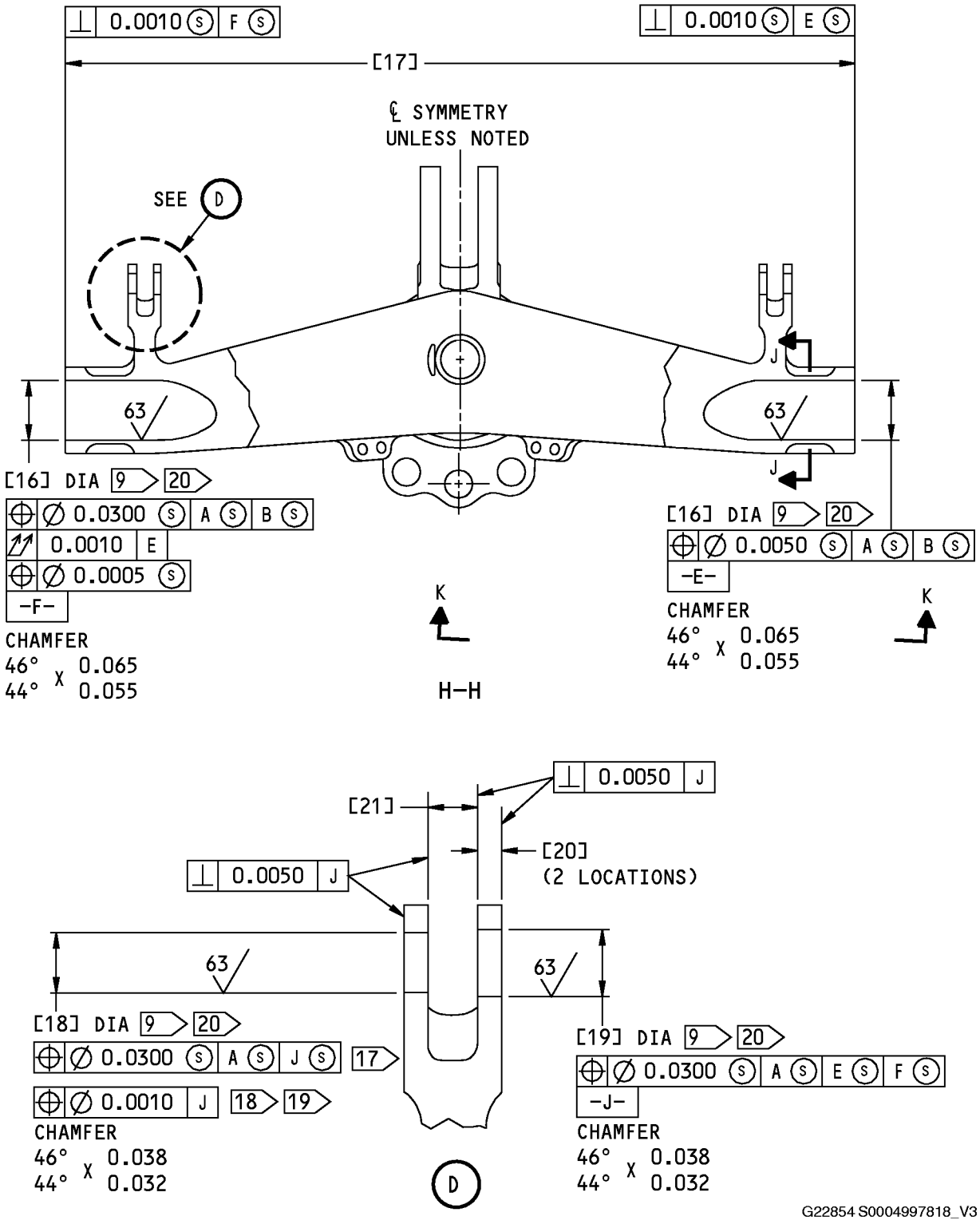
F–F



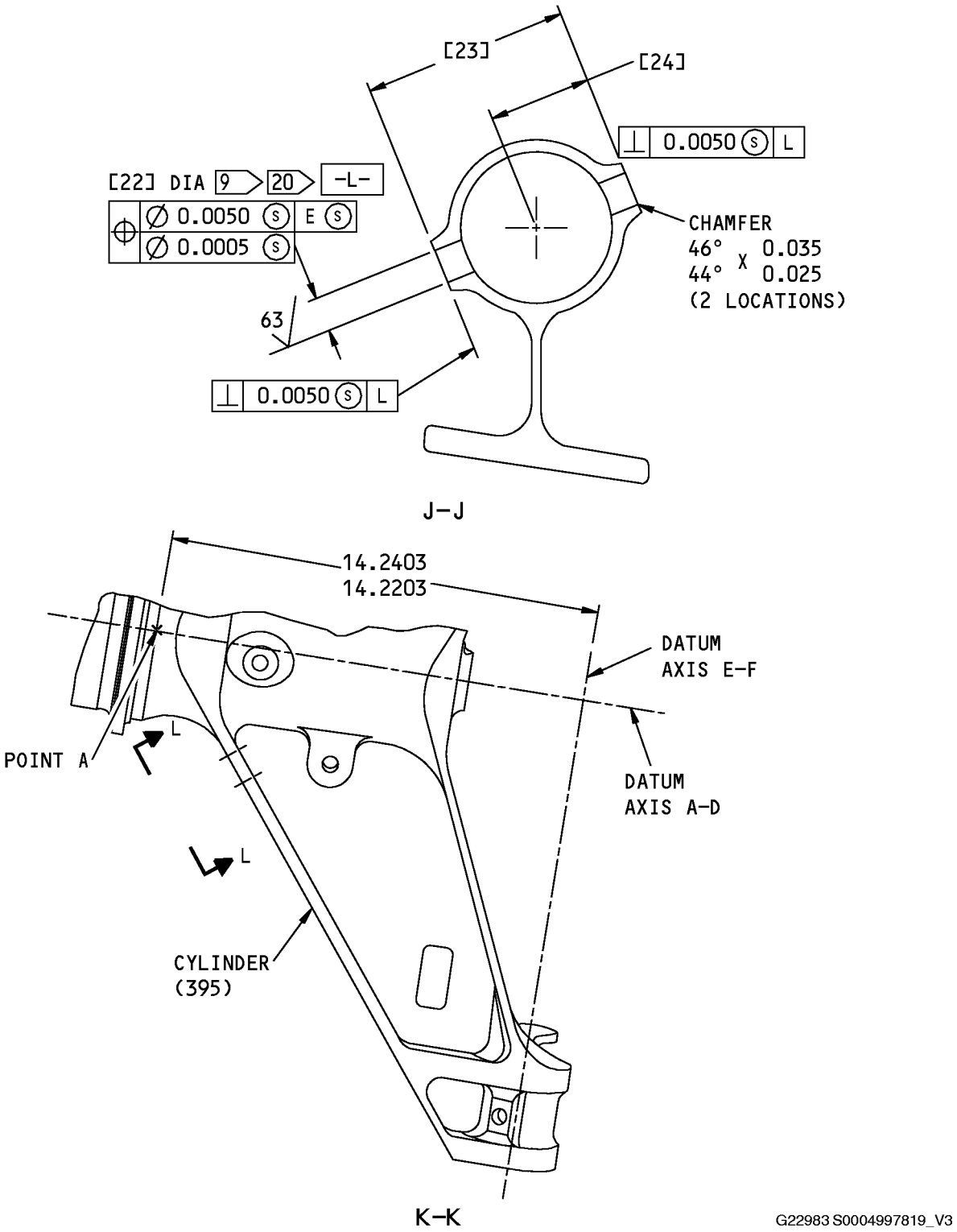
G–G

G22677 S0004997817_V3

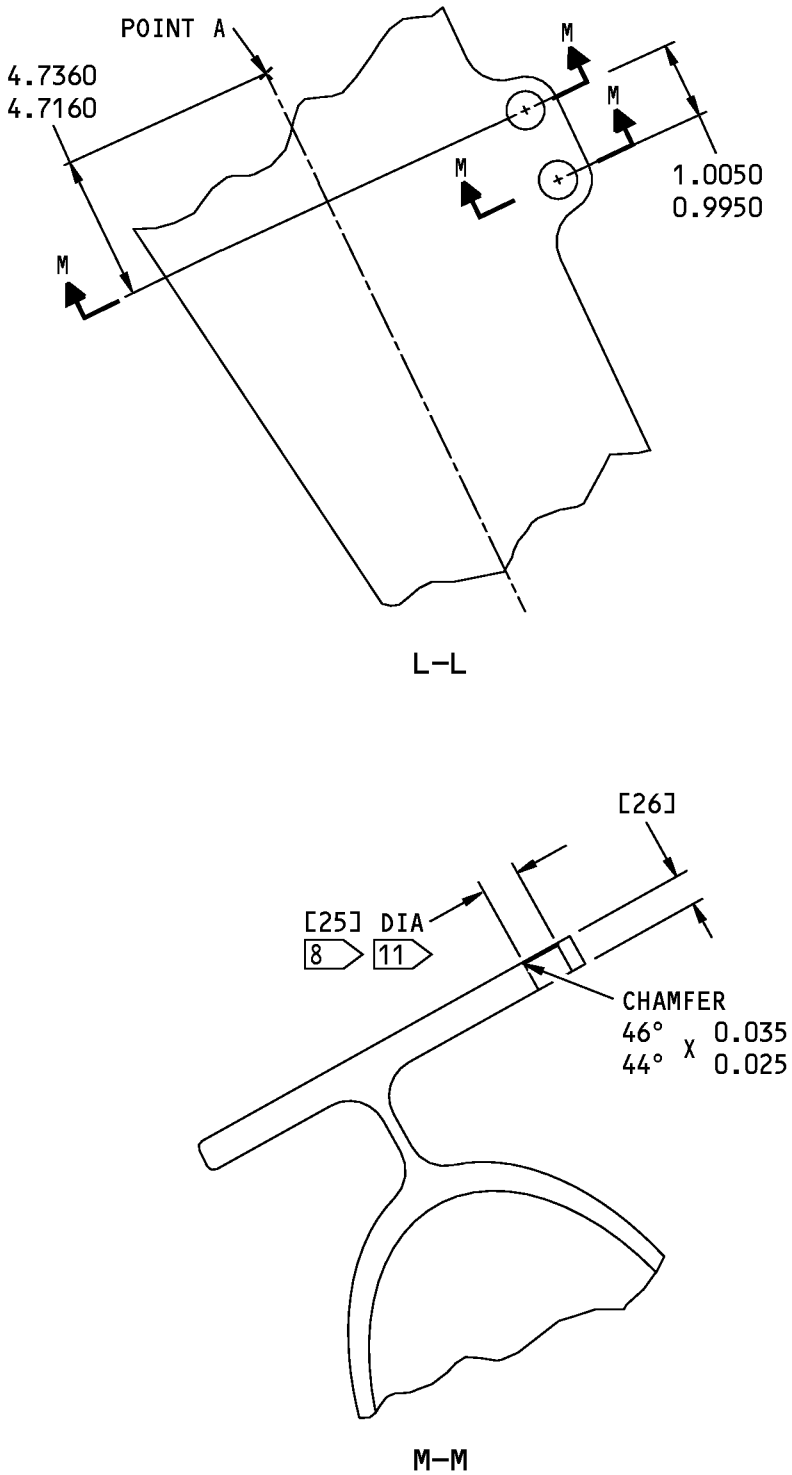
162A1110-2, -4, -6, -8 Outer Cylinder Repair
Figure 601 (Sheet 6 of 12)



162A1110-2, -4, -6, -8 Outer Cylinder Repair
Figure 601 (Sheet 7 of 12)



162A1110-2, -4, -6, -8 Outer Cylinder Repair
Figure 601 (Sheet 8 of 12)



G23018 S0004997820_V3

162A1110-2, -4, -6, -8 Outer Cylinder Repair
Figure 601 (Sheet 9 of 12)

REFERENCE NUMBER	[1]	[2]	[3]	[4]	[5]	[6]	[7]
DESIGN DIMENSION	1.4300 1.4280 15	4.5030 4.5000	4.7680 4.7630	4.7450 4.7430 15	5.0330 5.0230	5.0300 5.0100	5.7490 5.7475 15
REPAIR LIMIT	1.4610 16	---	---	4.7730 5	SEE TABLE B	---	5.7190 5

REFERENCE NUMBER	[8]	[9]	[10]	[11]	[12]	[13]	[14]	[15]
DESIGN DIMENSION	0.5006 0.5000	1.0007 1.0000	1.6893 1.6880	0.7250 0.7150	1.6285 1.6235	1.0007 1.0000	1.0007 1.0000	0.3850 0.3750
REPAIR LIMIT	0.5606 13	1.0607 13	1.7493 13	0.6550 11	1.6885 13	1.0607 13	1.0607 13	0.3150 13

REFERENCE NUMBER	[16]	[17]	[18]	[19]	[20]	[21]	[22]	[23]
DESIGN DIMENSION	2.1895 2.1880	29.6370 29.6250	0.7507 0.7500	0.8132 0.8125	0.2855 0.2755	0.6290 0.6190	0.5006 0.5000	3.0300 2.9700
REPAIR LIMIT	2.2495 13	29.5650 13	0.8107 13	0.8732 13	0.2455 13	0.6590 13	0.5606 13	2.3700 13

REFERENCE NUMBER	[24]	[25]	[26]
DESIGN DIMENSION	1.5150 1.4850	0.5006 0.5000	0.4300 0.4000
REPAIR LIMIT	1.4550 13	0.5606 13	0.3400 13

TABLE A

G23203 S0004997821_V3

162A1110-2, -4, -6, -8 Outer Cylinder Repair
Figure 601 (Sheet 10 of 12)

UNJ-3B THREAD SIZE	5.0000-12 (DESIGN) (REF)	5.0625-12 (1/16 OVERSIZE)	5.1250-12 (1/8 OVERSIZE)
MAJOR DIA	5.0014 MIN 14	5.0639 MIN 14	5.1264 MIN 14
	5.0000 MIN 15	5.0625 MIN 15	5.1250 MIN 15
PITCH DIA	4.9545 4.9487 14	5.0170 5.0112 14	5.0795 5.0737 14
	4.9525 4.9459 15	5.0150 5.0084 15	5.0775 5.0709 15
MINOR DIA	4.9299 4.9203 14	4.9924 4.9828 14	5.0549 5.0453 14
	4.9289 4.9189 15	4.9914 4.9814 15	5.0539 5.0439 15
RELIEF DIA	5.0330 5.0230 14	5.0955 5.0855 14	5.1580 5.1480 14
RELIEF REPAIR DIA	----	----	----

TABLE B

M19754 S0004997822_V2

162A1110-2, -4, -6, -8 Outer Cylinder Repair
Figure 601 (Sheet 11 of 12)

1 > WIPE WITH BMS 10-79, TYPE 3 PRIMER (F-19.451)

2 > CHROME PLATE (F-15.34), 0.003 INCH MINIMUM THICK AFTER FINISH OPERATIONS

3 > DO NOT SHOT PEEN THIS SURFACE

4 > SHOT PEEN IS OPTIONAL

5 > LIMIT FOR CHROME PLATE BUILDUP (SOPM 20-42-03) AND GRIND TO DESIGN DIMENSIONS AND FINISH (SOPM 20-10-04)

6 > FOR 162A1110-2,-4,-6: CADMIUM-TITANIUM PLATE (F-15.32). DO NOT APPLY BMS 10-79, TYPE 3 (F-19.47) PRIMER OR ENAMEL

7 > PART NUMBER AND SERIAL NUMBER LOCATION

8 > CAD-PLATE THROW-IN IS REQUIRED

9 > FOR 162A1110-2: CADMIUM-TITANIUM PLATE (F-15.32) AND APPLY BMS 10-79, TYPE 3 PRIMER (F-19.47) ON THIS SURFACE ONLY

10 > DO NOT APPLY ENAMEL OR PRIMER ON THIS SURFACE

11 > DO NOT APPLY ENAMEL HERE

12 > NICKEL PLATE (F-15.33), 0.0015 INCH MINIMUM THICK

13 > LIMIT FOR OVERSIZE BUSHING INSTALLATION

14 > BEFORE PLATING

15 > AFTER PLATING

16 > LIMIT FOR NICKEL PLATE BUILDUP (SOPM 20-42-09) AND MACHINE TO DESIGN DIMENSIONS AND FINISH

17 > 162A1110-2

18 > 162A1110-4

19 > 162A1110-6,-8

20 > FOR 162A1110-4,-6,-8: CADMIUM-TITANIUM (F-15.01), 0.0005-0.0020 INCH THICK. AREAS CAN BE BROUGHT BELOW 0.0020 INCH MAXIMUM THICKNESS BY HAND WITH FINE ABRASIVES SUCH AS SCOTCH BRITE OR NON-METALLIC BRUSHES. APPLY BMS 10-79, TYPE 3 PRIMER (F-19.47)

21 > CADMIUM-TITANIUM PLATE (F-15.32) AND APPLY BMS 10-79, TYPE 3 PRIMER (F-19.47) ON THIS SURFACE ONLY

125 ALL MACHINED SURFACES UNLESS SHOWN DIFFERENTLY

BREAK ALL SHARP EDGES

DIMENSIONS AND SURFACE FINISHES APPLY BEFORE SHOT PEENING, UNLESS NOTED

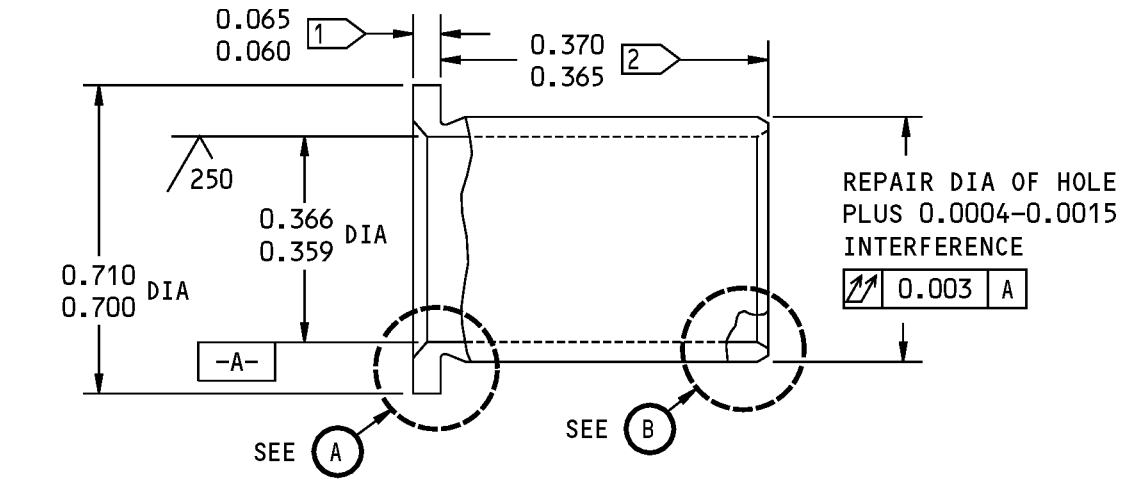
ALL DIMENSIONS APPLY BEFORE PLATING UNLESS NOTED

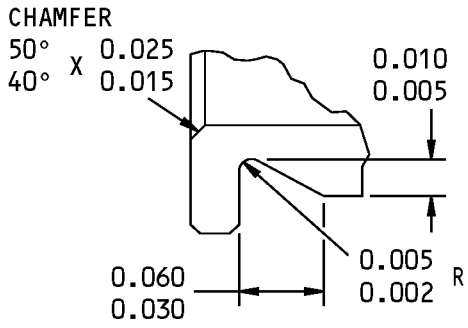
ITEM NUMBERS REFER TO IPL FIG. 1

ALL DIMENSIONS ARE IN INCHES

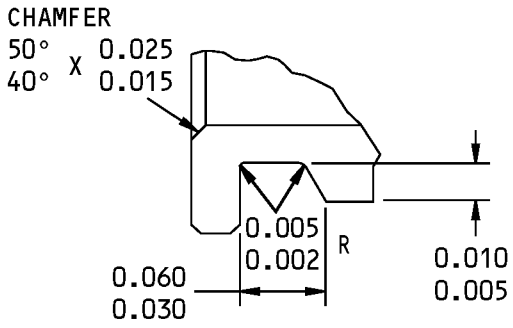
G24728 S0004997823_V4

162A1110-2, -4, -6, -8 Outer Cylinder Repair
Figure 601 (Sheet 12 of 12)

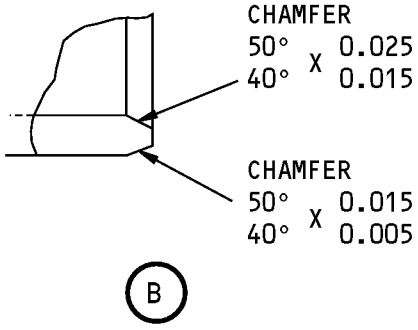




OR



A



B

63 ALL MACHINED SURFACES

BREAK ALL SHARP EDGES 0.01-0.02 R

MATERIAL: 15-5PH CRES (AMS 5659) OR 17-4PH CRES (AMS 5643), 180-200 KSI

FINISH: CADMIUM PLATE (F-15.06) OR ZINC-NICKEL PLATE (F-15.40) (OPT IN ID). PLATING CAN RUN OUT IN THE BORE

ITEM NUMBERS REFER TO IPL FIG. 1

ALL DIMENSIONS APPLY AFTER PLATING, BUT THE BORE IS NOT PLATED

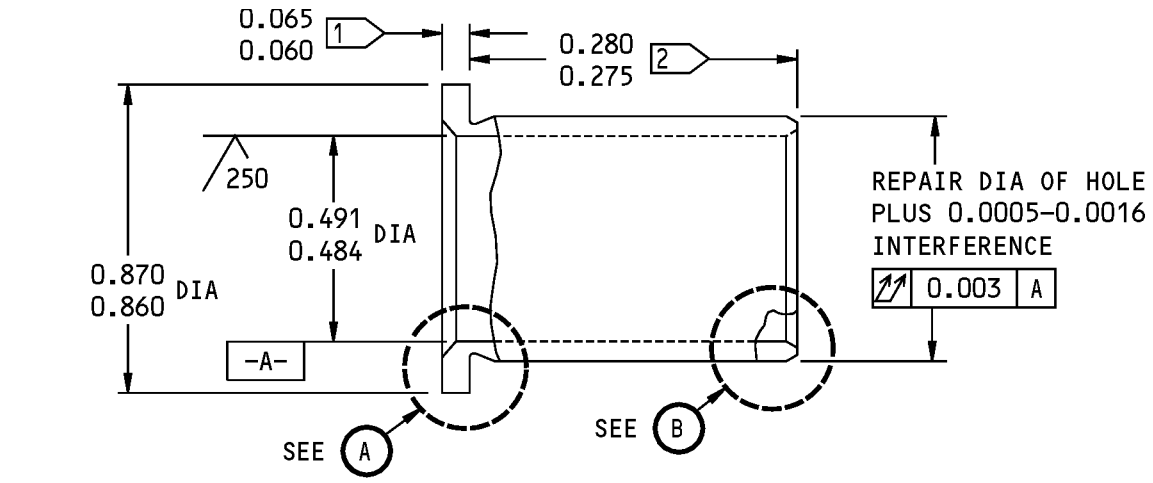
ALL DIMENSIONS ARE IN INCHES

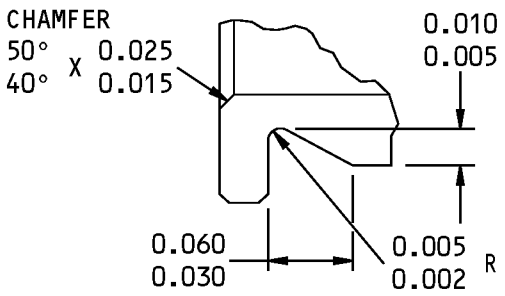
1 PLUS AMOUNT REMOVED FROM LUG FACE

2 MINUS AMOUNT REMOVED FROM LUG FACE

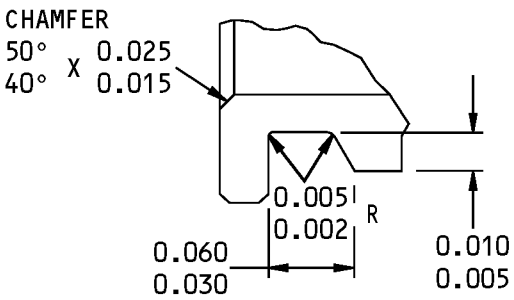
HOLE LOCATION [25] FIG. 601 -- REPLACES BUSHING (385)
BACB28AP06P037

Oversize Bushing Details
Figure 602

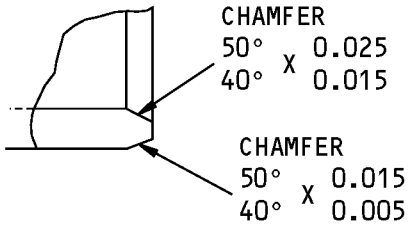




OR



A



B

1 PLUS AMOUNT REMOVED FROM LUG FACE

2 MINUS AMOUNT REMOVED FROM LUG FACE

63 ALL MACHINED SURFACES UNLESS SHOWN DIFFERENTLY

BREAK ALL SHARP EDGES 0.01-0.02 R

MATERIAL: 15-5PH CRES (AMS 5659) OR 17-4PH CRES (AMS 5643), 180-200 KSI

FINISH: CADMIUM PLATE (F-15.06) OR ZINC-NICKEL PLATE (F-15.40) (OPT IN ID). PLATING CAN RUN OUT IN THE BORE

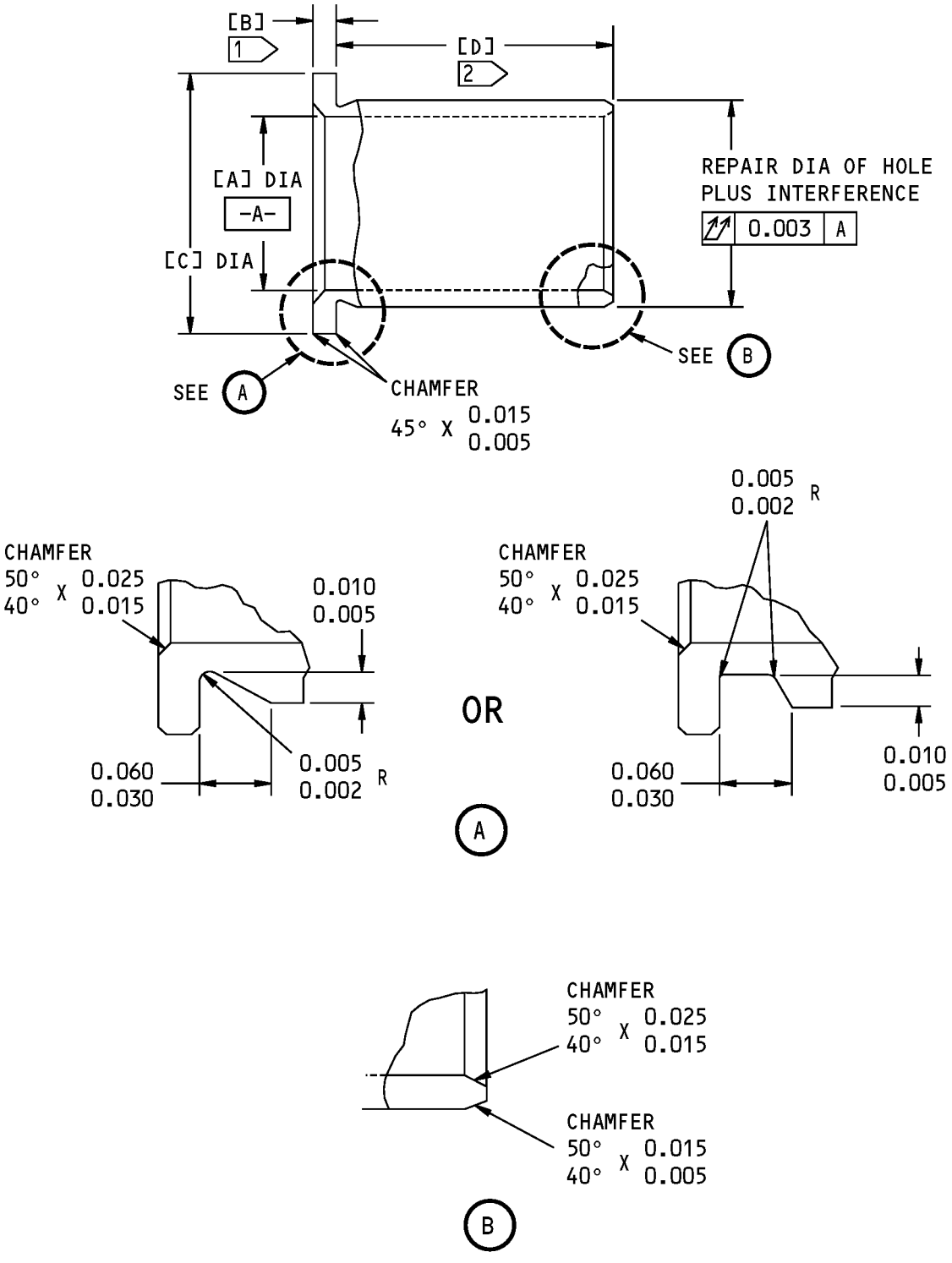
ITEM NUMBERS REFER TO IPL FIG. 1

ALL DIMENSIONS APPLY AFTER PLATING, BUT THE BORE IS NOT PLATED

ALL DIMENSIONS ARE IN INCHES

HOLE LOCATION [18] FIG. 601 -- REPLACES BUSHING (365)
BACB28AP08P028

Oversize Bushing Details
Figure 603



Oversize Bushing Details
Figure 604 (Sheet 1 of 2)

HOLE LOCATION (FIG. 601)	REPLACES BUSHING (IPL FIG. 1)	[A]	[B]	[C]	[D]	INTER-FERENCE	MATERIAL
[9]	(335) BACB28AT14B062C	0.864 0.844	0.093 0.088	1.190 1.180	0.620 0.615	0.0022 0.0010	4
[18]	(370) BACB28AT10D027C	0.615 0.609	0.068 0.063	0.890 0.880	0.270 0.265	0.0019 0.0007	3
[19]	(360) BACB28AT11B028C	0.678 0.672	0.074 0.069	0.960 0.950	0.280 0.275	0.0019 0.0007	4

1 PLUS AMOUNT REMOVED FROM LUG FACE

2 MINUS AMOUNT REMOVED FROM LUG FACE

3 15-5PH CRES (AMS 5659), OR 17-4PH CRES (AMS 5643), Rc 32-37

4 ALUMINUM-BRONZE (AMS 4640)

63 ALL MACHINED SURFACES

BREAK ALL SHARP EDGES

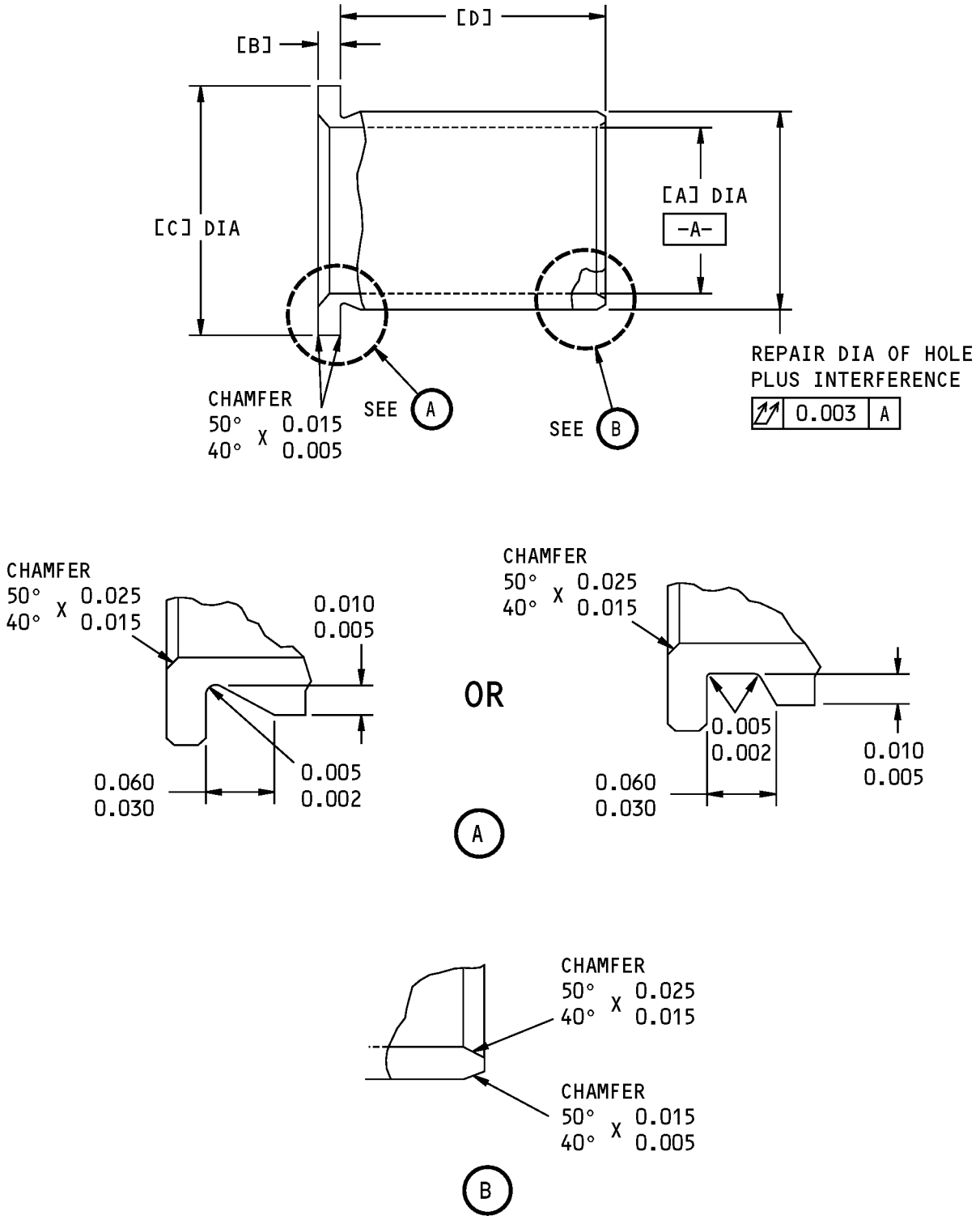
FINISH: CADMIUM PLATE (F-15.06) OR ZINC-NICKEL PLATE (F-15.40) (OPT IN ID) PLATING CAN RUN OUT IN THE BORE

ALL DIMENSIONS APPLY AFTER PLATING, BUT THE BORE IS NOT PLATED

ITEM NUMBERS REFER TO IPL FIG. 1

ALL DIMENSIONS ARE IN INCHES

Oversize Bushing Details
Figure 604 (Sheet 2 of 2)



Oversize Bushing Details
Figure 605 (Sheet 1 of 2)

HOLE LOCATION (FIG. 601)	REPLACES BUSHING (IPL FIG. 1)	[A]	[B] 1	[C]	[D] 2	INTER-FERENCE	MATERIAL
[9]	(340) BACB28AU12B062C	0.739 0.734	0.080 0.075	1.190 1.180	0.620 0.615	0.0020 0.0008	3
[22]	(345) BACB28AU06B037C	0.366 0.359	0.065 0.060	0.750 0.740	0.370 0.365	0.0015 0.0004	3
[8]	(350) BACB28AU06B075C	0.366 0.359	0.065 0.060	0.750 0.740	0.750 0.745	0.0015 0.0004	3
[8]	(355) BACB28AU04C075C	0.241 0.234	0.065 0.060	0.630 0.620	0.750 0.745	0.0014 0.0002	4
[13] [14]	(375) BACB28AU12B042C	0.739 0.734	0.080 0.075	1.190 1.180	0.420 0.415	0.0020 0.0008	3
[13] [14]	(380) BACB28AU14B037C	0.864 0.844	0.093 0.088	1.400 1.390	0.370 0.365	0.0022 0.0010	3
[25]	(390) BACB28AU04B043C	0.241 0.234	0.065 0.060	0.630 0.620	0.430 0.425	0.0014 0.0002	3

1 PLUS AMOUNT REMOVED FROM LUG FACE

2 MINUS AMOUNT REMOVED FROM LUG FACE

3 ALUMINUM-NICKEL-BRONZE HR50 OR TQ50 (AMS 4640)

4 CU-BE (AMS 4533 OR 4535)

63 ALL MACHINED SURFACES UNLESS SHOWN DIFFERENTLY

BREAK ALL SHARP EDGES

FINISH: CADMIUM PLATE (F-15.06) OR ZINC-NICKEL PLATE (F-15.40), (OPT IN ID)

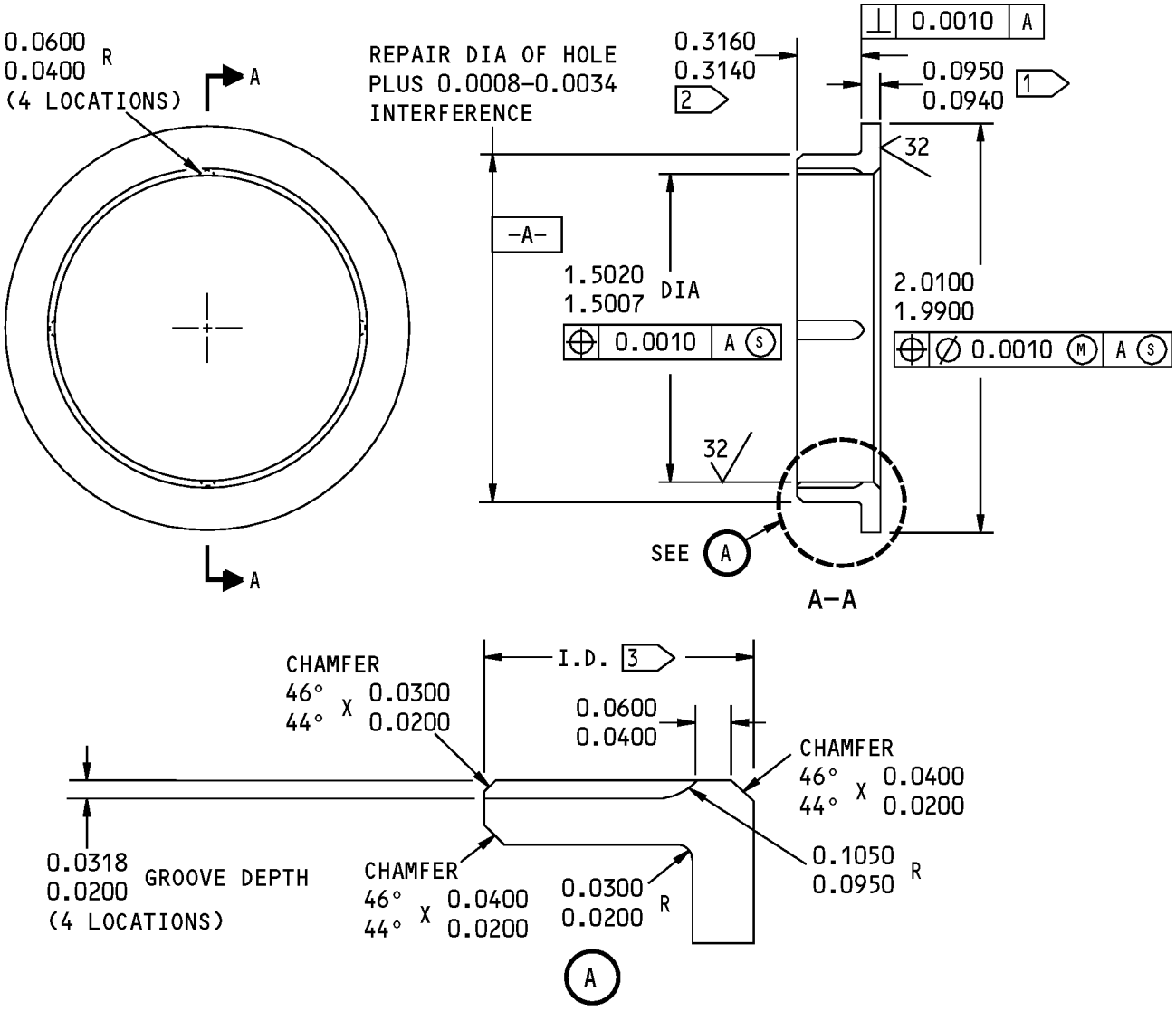
MATERIAL: AS SHOWN BY 3 OR 4

DIMENSIONS AFTER PLATING, BUT THE BORE IS NOT PLATED

ITEM NUMBERS REFER TO IPL FIG. 1

ALL DIMENSIONS ARE IN INCHES

Oversize Bushing Details
Figure 605 (Sheet 2 of 2)



1 PLUS AMOUNT REMOVED FROM LUG FACE

2 MINUS AMOUNT REMOVED FROM LUG FACE

3 DO NOT PLATE

125 ALL MACHINED SURFACES UNLESS SHOWN DIFFERENTLY

BREAK ALL SHARP EDGES 0.01-0.02 R

MATERIAL: AL-NI-BRONZE (AMS 4640)

FINISH: CADMIUM PLATE (F-15.36)

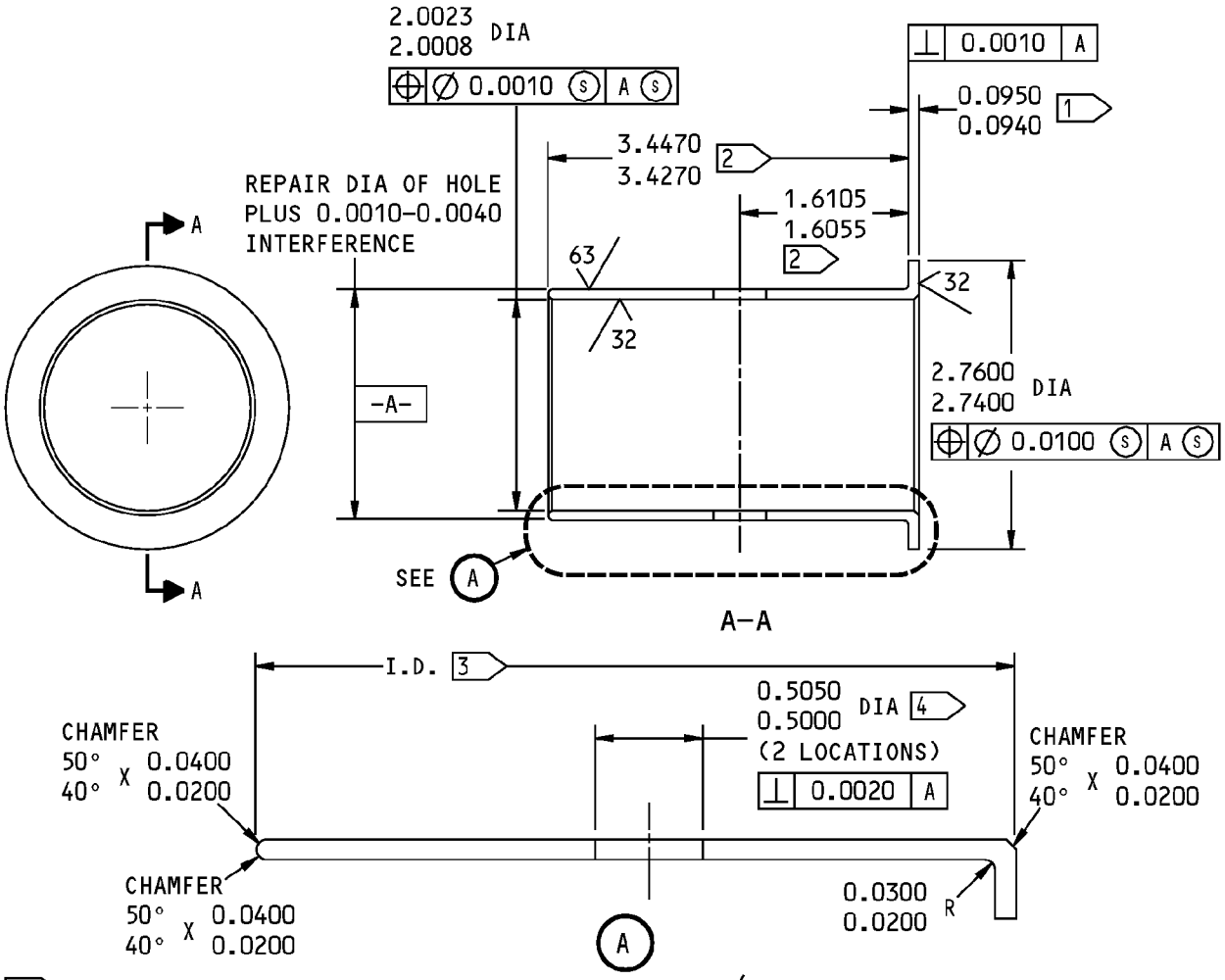
ITEM NUMBERS REFER TO IPL FIG. 1

ALL DIMENSIONS APPLY BEFORE PLATING

ALL DIMENSIONS ARE IN INCHES

HOLE LOCATION [10] FIG. 601 -- REPLACES BUSHING (330) 162A1113-2

Oversize Bushing Details
Figure 606



1 PLUS AMOUNT REMOVED FROM LUG FACE

2 MINUS AMOUNT REMOVED FROM LUG FACE

3 DO NOT PLATE

4 CADMIUM PLATE CAN BE ON THIS HOLE

125 ALL MACHINED SURFACES UNLESS SHOWN DIFFERENTLY

MATERIAL: AL–NI–BRONZE AS SHOWN IN AMS 4640

FINISH: CADMIUM PLATE (F–15.36) UNLESS SHOWN BY 3 4

BREAK ALL SHARP EDGES 0.01–0.02 R

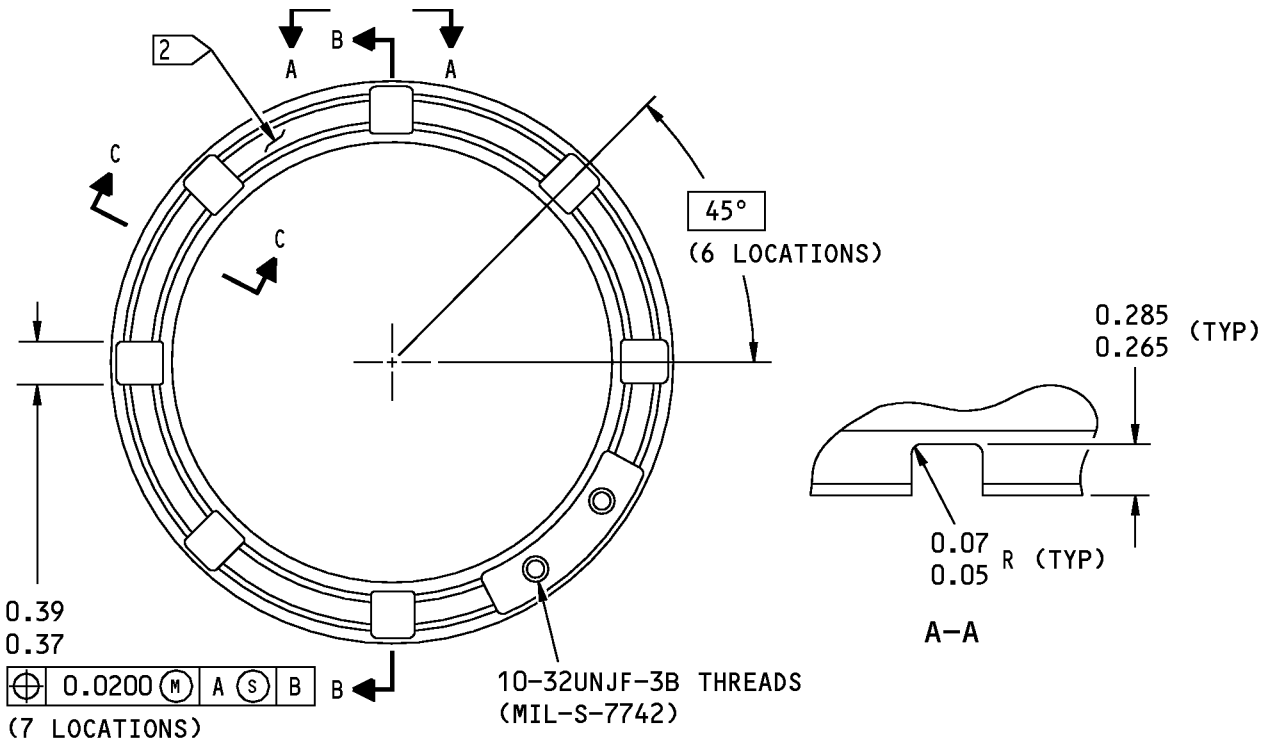
ITEM NUMBERS REFER TO IPL FIG. 1

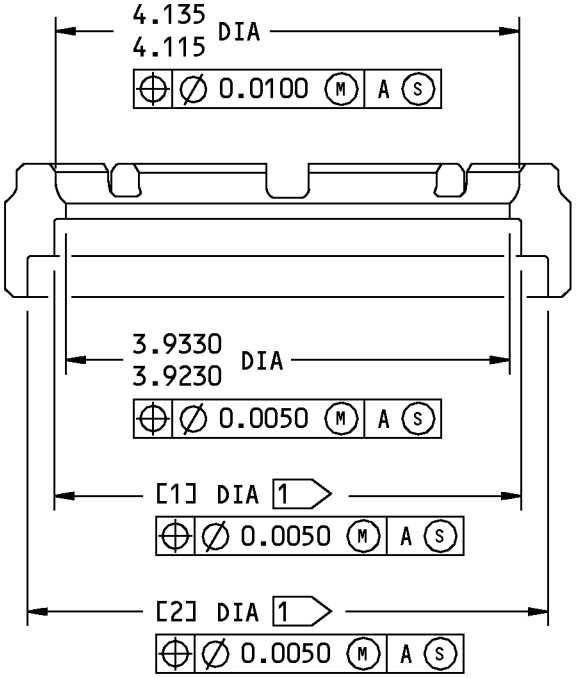
ALL DIMENSIONS APPLY BEFORE PLATING

ALL DIMENSIONS ARE IN INCHES

HOLE LOCATION [16] FIG. 601 -- REPLACES BUSHING (325)
162A1113–3

Oversize Bushing Details
Figure 607





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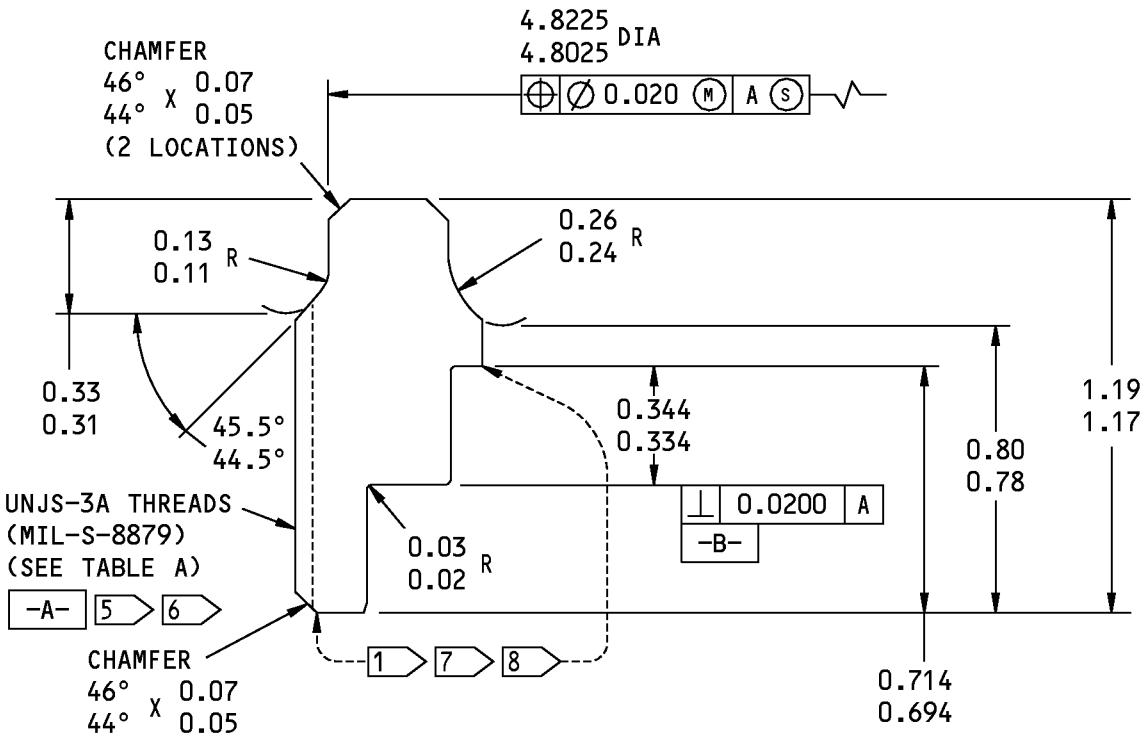
162A1513-1 Gland Nut Details
Figure 608 (Sheet 1 of 3)



C–C

UNJS-3A-MOD THREAD SIZE	5.0000-12 (DESIGN) (REF)	5.0625-12 (1/16 OVERSIZE)	5.1250-12 (1/8 OVERSIZE)
MAJOR DIA	4.9986 3 / 4.9876 3	5.0611 3 / 5.0501 3	5.1236 3 / 5.1126 3
	5.0000 4 / 4.9886 4	5.0625 4 / 5.0511 4	5.1250 4 / 5.1136 4
PITCH DIA -A-	4.9431 3 / 4.9389 3	5.0056 3 / 5.0014 3	5.0681 3 / 5.0639 3
	4.9459 4 / 4.9409 4	5.0084 4 / 5.0034 4	5.0709 4 / 5.0659 4
MINOR DIA	4.9024 3 / 4.8928 3	4.9649 3 / 4.9553 3	5.0274 3 / 5.0178 3
	4.9038 4 / 4.8938 4	4.9663 4 / 4.9563 4	5.0288 4 / 5.0188 4
ROOT RADIUS	0.0150 / 0.0125	0.0150 / 0.0125	0.0150 / 0.0125

TABLE A

M19899 S0004997833_V3

162A1513-1 Gland Nut Details
Figure 608 (Sheet 2 of 3)

REFINISH

CHROME PLATE (F-15.43) AREA SHOWN. ON OTHER SURFACES, CADMIUM-TITANIUM PLATE (F-15.32). APPLY BMS 10-79, TYPE 3 PRIMER (F-19.47) AND BMS 10-60 ENAMEL (F-19.39-707) UNLESS SHOWN DIFFERENTLY. USE YELLOW ENAMEL ON NUTS WITH OVERSIZE THREADS. WIPE THREADS WITH PRIMER (F-19.451)

1> THIN DENSE CHROME PLATE (F-15.43, WHICH REPLACES F-14.892) WITH RUNOUT 0.00-0.06 FROM TANGENT OF RADIUS. WIPE THE CHROME PLATE WITH PRIMER (F-19.451)

2> ELECTRO-CHEMICAL ETCH (0.006-0.009 DEEP) OR VIBRO ENGRAVE HERE (SOPM 20-50-10) THE PART NUMBER, SERIAL NUMBER AND OTHER DATA, SUCH AS MANUFACTURERS IDENTIFICATION OR IF THIS NUT HAS OVERSIZE THREADS

3> BEFORE PLATING

4> AFTER PLATING

5> MASK THREADS BEFORE SHOT PEENING

6> CADMIUM-TITANIUM PLATE (F-15.32). DO NOT APPLY PRIMER OR ENAMEL

7> LIMIT FOR CHROME PLATE BUILDUP (SOPM 20-42-03) AND GRIND TO DESIGN DIMENSIONS AND FINISH (SOPM 20-10-04). MAXIMUM CHROME PLATE THICKNESS 0.015 AFTER GRINDING. RUNOUT 0.00-0.06 FROM TANGENT OF RADIUS

8> LIMIT FOR SULFAMATE NICKEL PLATE BUILDUP (SOPM 20-42-09) AND MACHINE TO DESIGN DIMENSIONS AND FINISH. RUNOUT 0.00-0.06 FROM TANGENT OF RADIUS

9> YOU CAN USE CHROME PLATE BUILDUP PER 7> OR NICKEL PLATE BUILDUP PER 8> BUT NOT BOTH

REPAIR

125 ALL MACHINED SURFACES UNLESS SHOWN DIFFERENTLY

MAGNETIC PARTICLE EXAMINE (SOPM 20-20-01)

SHOT PEEN (SOPM 20-10-03)
RC 55-65 HARD SHOT
0.016-0.033 SHOT SIZE
0.014-0.018A2 INTENSITY
DO NOT SHOT PEEN THREADS 5>

MATERIAL: 4330M STEEL, 180-200 KSI

DIMENSIONS ARE BEFORE PLATING UNLESS SHOWN DIFFERENTLY

ALL DIMENSIONS ARE IN INCHES

REFERENCE NUMBER	[1]	[2]
DESIGN DIMENSION	4.1210 4.1190	4.5935 4.5915
REPAIR LIMIT 9>	4.1500 7> 8>	4.6220 7> 8>

TABLE B

U70970 S0000213301_V3

162A1513-1 Gland Nut Details
Figure 608 (Sheet 3 of 3)

INNER CYLINDER ASSEMBLY - REPAIR 3-1

162A1120–1, –3, –5

1. General

A. This procedure tells how to replace the bushings (425, 430) and lube fitting (420) in the inner cylinder assembly (415).

B. Refer to the Standard Overhaul Practices Manual (SOPM) for the SOPM subjects identified in this procedure.

C. Refer to IPL Figure 1 for the item numbers.

2. Bushing Replacement

A. Consumable Materials

NOTE: Equivalent substitutes may be used.

Reference	Description	Specification
A00247	Sealant - Pressure And Environmental - Chromate Type	BMS 5-95
D00015	Grease - Aircraft Bearing (Use BMS 3-24 until existing stocks are depleted, BMS 3-33 supersedes BMS 3-24)	BMS3-24 (Superseded by BMS 3-33)

B. References

Reference	Title
SOPM 20-41-01	DECODING TABLE FOR BOEING FINISH CODES
SOPM 20-50-03	BEARING AND BUSHING REPLACEMENT
SOPM 20-50-19	GENERAL SEALING
SOPM 20-60-03	LUBRICANTS
SOPM 20-60-04	MISCELLANEOUS MATERIALS

C. Procedure (REPAIR 3-1, Figure 601)

NOTE: For the decoding table for Boeing finish codes, refer to SOPM 20-41-01. For general sealing, refer to SOPM 20-50-19. For miscellaneous materials, refer to SOPM 20-60-04.

(1) Remove the old bushings (425, 430) from the inner cylinder assembly (415).

(2) If you find defects on lug holes or lug faces, refer to REPAIR 3-2 for repair instructions. If you find defects on other inner cylinder surfaces, refer to REPAIR 3-3 for repair instructions.

(3) Use the shrink-fit procedure (SOPM 20-50-03) to install:

(a) Bushing (430) with sealant, A00247.

(b) Bushing (425) with grease, D00015 (SOPM 20-60-03).

(4) Machine the bushings to design dimensions and finish as shown.

(5) Fillet seal the bushings with sealant, A00247.

3. Lube Fitting Replacement

A. Consumable Materials

NOTE: Equivalent substitutes may be used.

Reference	Description	Specification
D00013	Grease - Aircraft And Instrument Grease	MIL-PRF-23827 (NATO G-354) (Supersedes MIL-G-23827)
D00633	Grease - Aircraft General Purpose	BMS3-33

B. References

Reference	Title
CMM 32-00-03	LANDING GEAR PARTS LUBRICATION FITTING REPLACEMENT
SOPM 20-30-90	SOLVENTS FOR FINAL CLEANING OF SOLVENT RESISTANT ORGANIC COATINGS BEFORE NON-STRUCTURAL BONDING (SERIES 90)
SOPM 20-41-01	DECODING TABLE FOR BOEING FINISH CODES
SOPM 20-60-03	LUBRICANTS

C. Procedure

NOTE: For solvents for cleaning solvent resistant organic coatings, refer to SOPM 20-30-90. For the decoding table for Boeing finish codes, refer to SOPM 20-41-01. For lubricants, refer to SOPM 20-60-03.

(1) Replace the lube fitting (420) by the shrink-fit procedure (CMM 32-00-03).

(2) Make sure that the lubrication passage is clear:

(a) For outer cylinder assemblies 162A1120-1 and -3, apply grease, D00013 or grease, D00633 to the lube fitting until grease appears at the inside diameter of the hole.

(b) For outer cylinder assembly 162A1120-5, apply grease, D00633 to the lube fitting until grease appears at the inside diameter of the hole.

4. Inner Cylinder Assembly Refinish

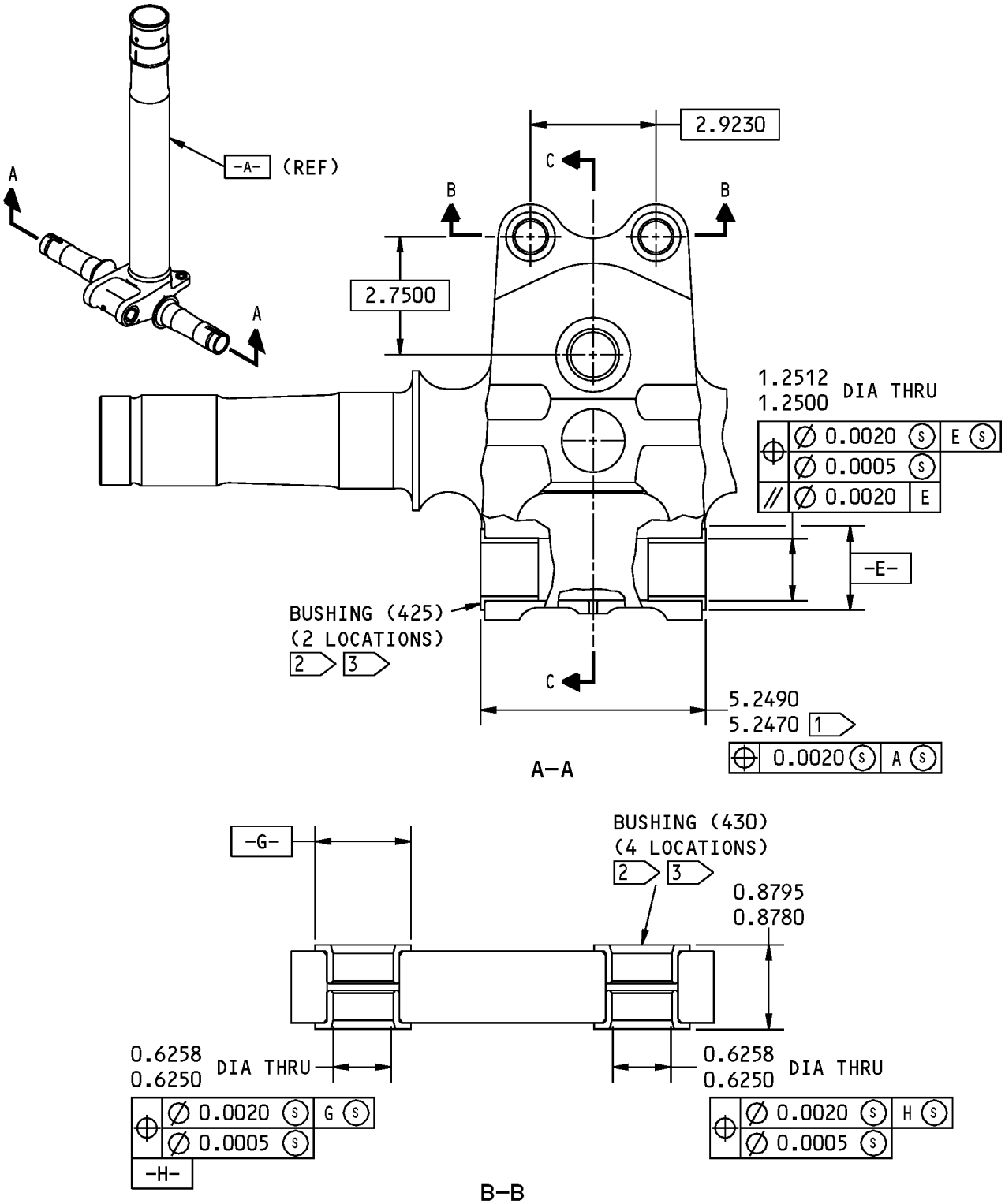
A. Consumable Materials

NOTE: Equivalent substitutes may be used.

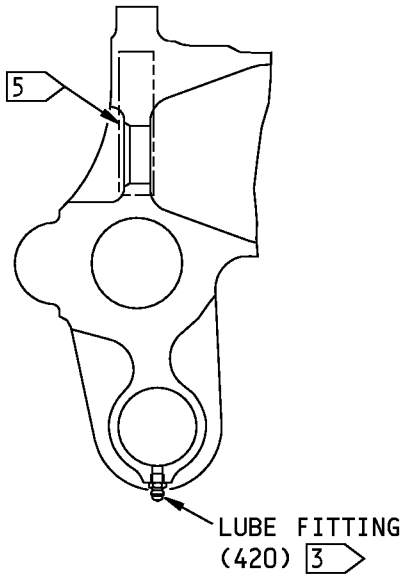
Reference	Description	Specification
C00033	Coating - Exterior Protective Enamel, Flexibility Use	BMS10-60, Type II

B. Procedure (REPAIR 3-1, Figure 601)

(1) Apply coating, C00033 (F-20.56-707) to external surfaces of the inner cylinder assembly. Do not apply enamel to the lube fittings, bushings, or the area specified by flagnote 5.



162A1120-1, -3, -5 Inner Cylinder Assembly Repair
Figure 601 (Sheet 1 of 2)



C-C

1 MACHINE THE INSIDE FLANGE FACE OF BOTH BUSHINGS AS NECESSARY TO GET THIS DIMENSION WHEN INSTALLED. SURFACE FINISH 63 MICROINCHES. THE MINIMUM FLANGE THICKNESS 0.0900 INCH. AFTER YOU MACHINE THE INSIDE FACE, STYLUS CADMIUM PLATE IT (SOPM 20-42-10)

2 FILLET SEAL WITH BMS 5-95 SEALANT, 65-89033 METHOD 1 (SOPM 20-50-19)

3 DO NOT APPLY ENAMEL HERE

4 AFTER BUSHING INSTALLATION, APPLY GREASE TO THE LUBE FITTING UNTIL THE GREASE COMES OUT AT THE BUSHING INNER DIAMETER

5 DO NOT APPLY ENAMEL (F-20.56-707) HERE. MASK THIS AREA AS NECESSARY. APPLY BMS 10-60, TYPE 2 GLOSS ENAMEL (F-19.39-707). WHEN DRY, APPLY BLACK ENAMEL (F-19.39-701) TO THE CHARACTERS ONLY. WHEN DRY, APPLY TYPE 41 COATING (F-21.34) TO A THICKNESS OF THE SURROUNDING ENAMEL

ITEM NUMBERS REFER TO IPL FIG. 1

ALL DIMENSIONS ARE IN INCHES

G22236 S0004997836_V2

162A1120-1, -3, -5 Inner Cylinder Assembly Repair
Figure 601 (Sheet 2 of 2)

INNER CYLINDER - REPAIR 3-2

162A1120–2, –4, –6

1. General

A. This procedure tells how to repair the lug faces and holes of the inner cylinder (435).

B. Refer to the Standard Overhaul Practices Manual (SOPM) for details of the SOPM subjects identified in this procedure.

C. Refer to IPL Figure 1 for the item numbers.

D. General repair details:

(1) Material: 4340M Steel, 275-300 ksi

(2) Shot peen: All surfaces, but not the lubrication hole

(a) Shot Size 0.016-0.033
Hard Shot RC55-65
Intensity 0.014-0.018A2
Coverage 2.0

2. Inner Cylinder Refinish

A. Consumable Materials

NOTE: Equivalent substitutes may be used.

Reference	Description	Specification
C00175	Primer - Urethane Compatible, Corrosion Resistant (Less Than 1% Aromatic Amines)	BMS10-79, Type III

B. References

Reference	Title
CMM 32-00-05	REPAIR OF HIGH-STRENGTH STEEL LANDING GEAR PARTS
SOPM 20-10-03	SHOT PEENING
SOPM 20-30-02	STRIPPING OF PROTECTIVE FINISHES
SOPM 20-41-01	DECODING TABLE FOR BOEING FINISH CODES
SOPM 20-60-02	FINISHING MATERIALS

C. Procedure (REPAIR 3-2, Figure 601)

NOTE: For shot peening, refer to SOPM 20-10-03. For stripping of protective finishes, refer to SOPM 20-30-02. For the decoding table for Boeing finish codes, refer to SOPM 20-41-01. For finishing materials, refer to SOPM 20-60-02. For the repair of high-strength steel landing gear parts, refer to CMM 32-00-05.

(1) Cadmium-titanium plate (F-15.01), 0.0005-0.0019 thick and apply primer, C00175 (F-19.47), unless shown differently.

3. Lug Faces and Holes

A. References

Reference	Title
SOPM 20-42-02	LOW HYDROGEN EMBRITTLEMENT CADMIUM - TITANIUM ALLOY PLATING
SOPM 20-44-04	APPLICATION OF URETHANE COMPATIBLE PRIMER

B. Procedure (REPAIR 3-2, Figure 601)

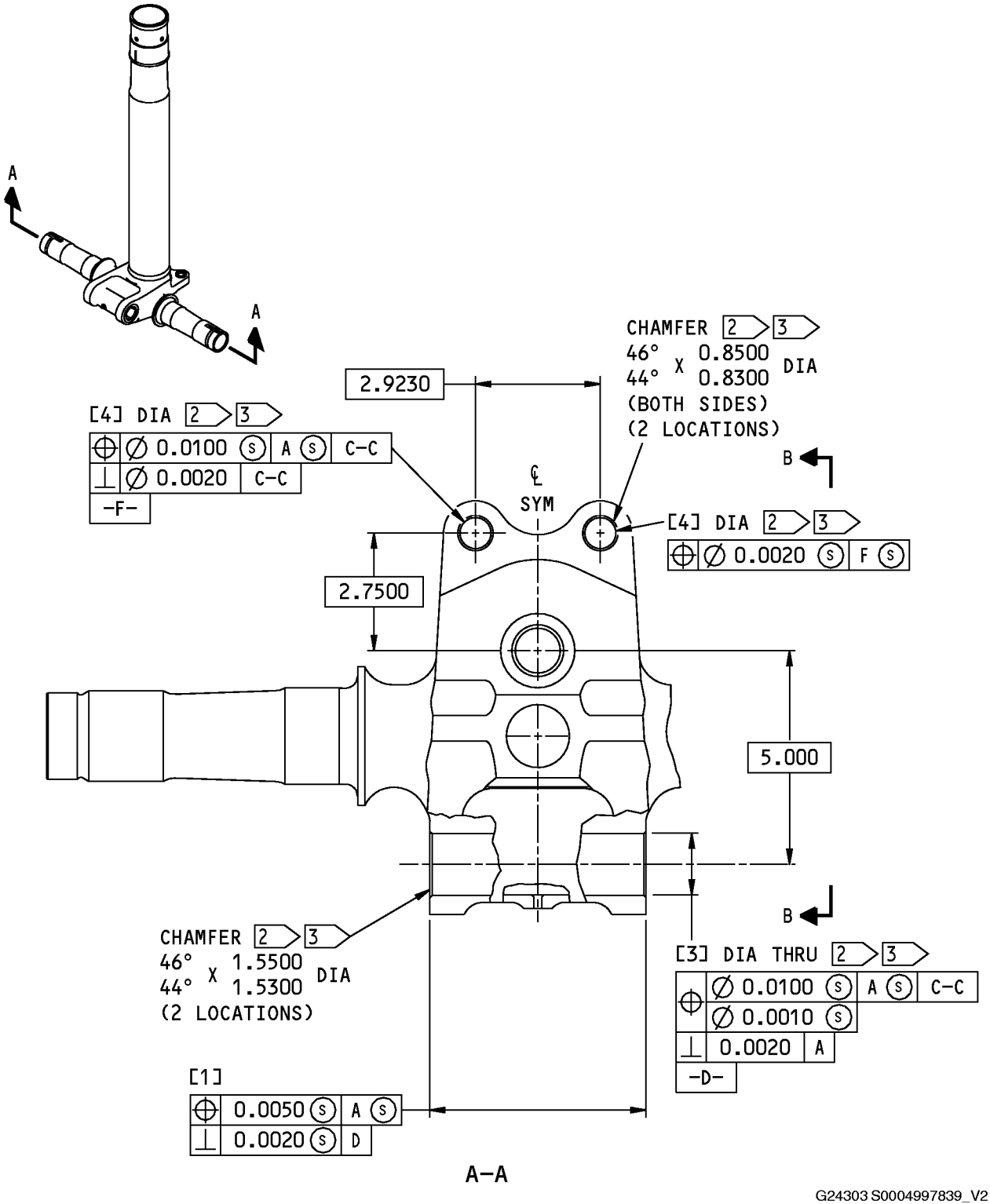
NOTE: For low hydrogen embrittlement cadmium-titanium plating, refer SOPM 20-42-02. For application of urethane compatible primer, refer to SOPM 20-44-04.

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

(2) Cadmium-titanium plate and apply primer to the lug holes and faces as indicated.

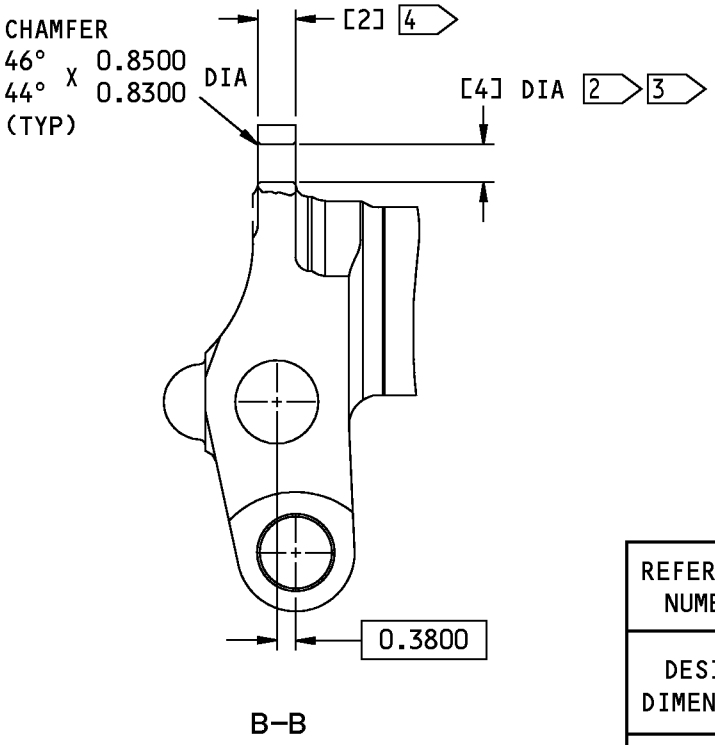
(3) Make oversize bushings (REPAIR 3-2, Figure 602 and REPAIR 3-2, Figure 603), as necessary to adjust for the material removed.

(4) Install the bushings as shown in REPAIR 3-1.



G24303 S0004997839_V2

162A1120-2, -4 Inner Cylinder Lug Face and Hole Repair
Figure 601 (Sheet 1 of 2)



REFERENCE NUMBER	[1]	[2]	[3]	[4]
DESIGN DIMENSION	5.0600 5.0550	0.7500 0.7450	1.4392 1.4380	0.7518 0.7510
REPAIR LIMIT 1	4.9950	0.7150	1.4992	0.8118

1 LIMIT FOR INSTALLATION OF OVERSIZE BUSHINGS

2 FOR 162A1120-2: CADMIUM-TITANIUM PLATE (F-15.32). APPLY BMS 10-79, TYPE 3 PRIMER (F-19.47)

3 FOR 162A1120-4,-6: CADMIUM-TITANIUM PLATE (F-15.01), 0.0005-0.0020 INCH THICK. AREAS ABOVE 0.0020 INCH CAN BE BROUGHT BELOW THE MAXIMUM THICKNESS BY HAND WITH FINE ABRASIVES SUCH AS SCOTCH BRITE OR NON-METALLIC BRUSHES. APPLY BMS 10-79, TYPE 3 PRIMER (F-19.47)

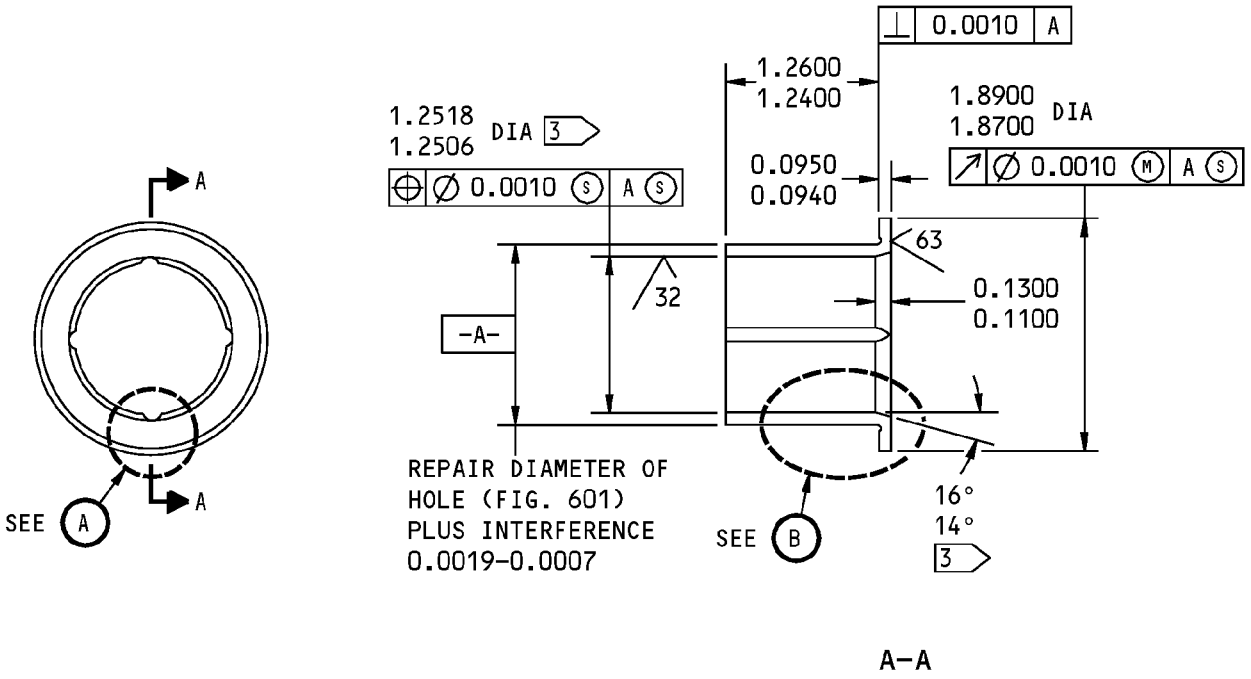
4 CADMIUM-TITANIUM PLATE (F-15.32). APPLY BMS 10-79, TYPE 3 PRIMER (F-19.47)

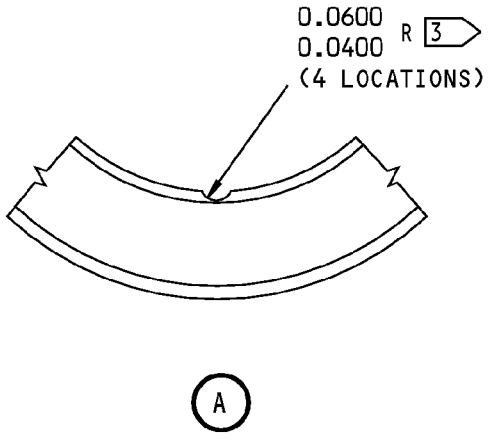
125 ALL MACHINED SURFACES UNLESS SHOWN DIFFERENTLY

ALL DIMENSIONS ARE IN INCHES

G24535 S0004997840_V2

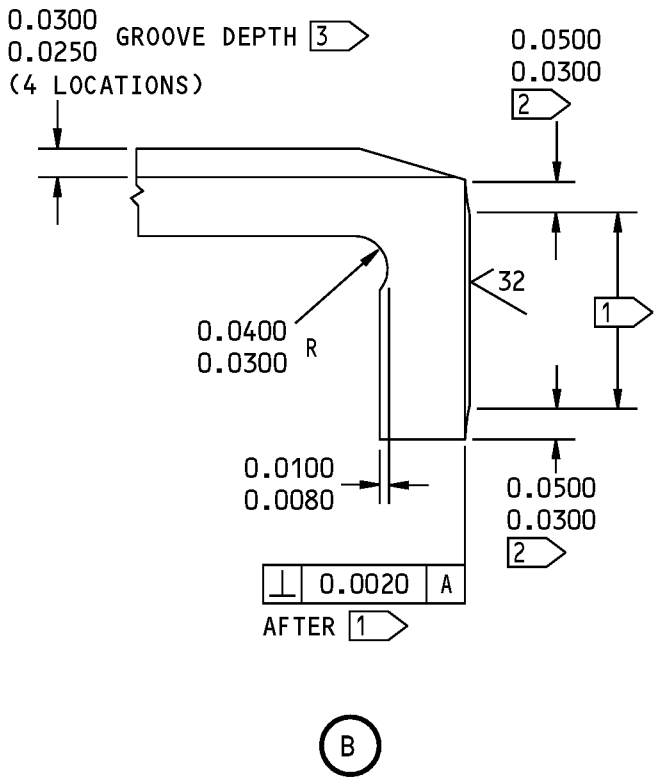
162A1120-2, -4 Inner Cylinder Lug Face and Hole Repair
Figure 601 (Sheet 2 of 2)





HOLE LOCATION [3] FIG. 601 - REPLACES BUSHING (425) 162A1122-1

Oversize Bushing Details
Figure 602 (Sheet 1 of 2)



1 APPLY CHROME PLATE (F-15.34), 0.003-0.005 THICK. GRIND CHROME PLATE (SOPM 20-10-04)

2 CHROME PLATE RUNOUT AREA

3 DO NOT APPLY CADMIUM PLATE (F-15.06) HERE

125 ALL MACHINED SURFACES UNLESS SHOWN DIFFERENTLY

MATERIAL: AL-NI-BRZ (AMS 4640)

BREAK ALL SHARP EDGES TO R 0.01-0.02

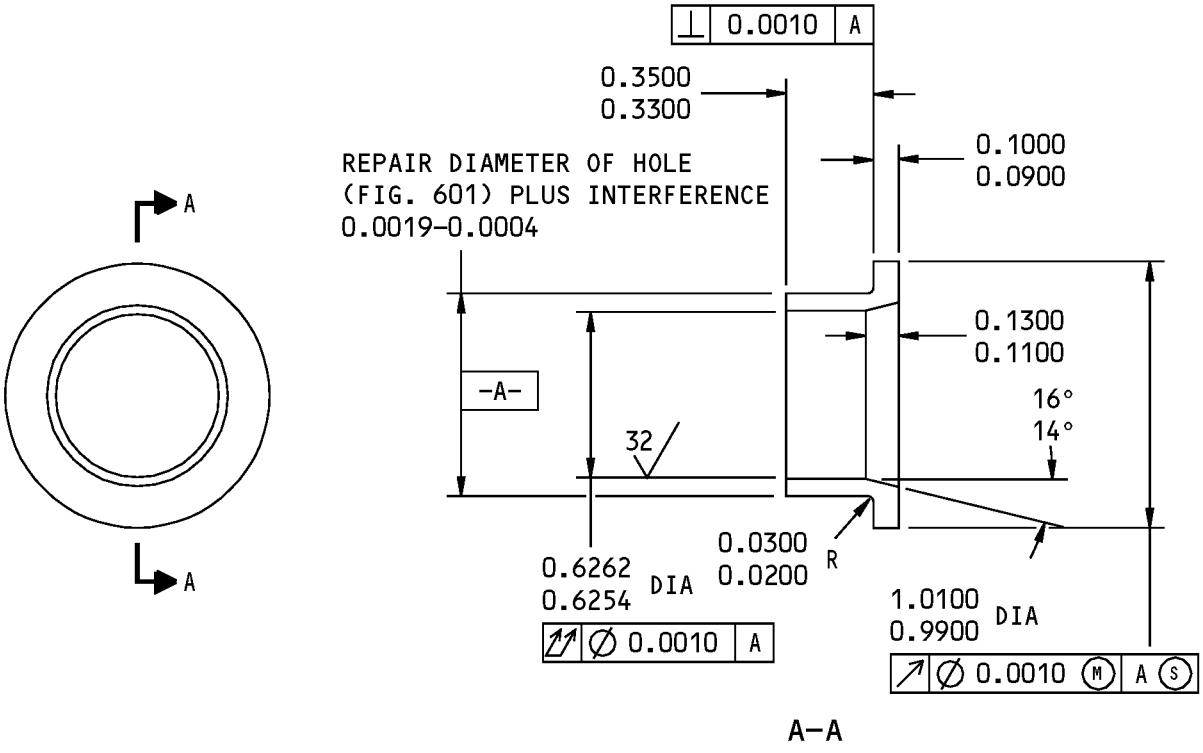
FINISH: CADMIUM PLATE (F-15.06) 0.0003-0.0005 THICK UNLESS NOTED

ITEM NUMBERS REFER TO IPL FIG. 1

ALL DIMENSIONS ARE IN INCHES

ALL DIMENSIONS APPLY BEFORE PLATING

Oversize Bushing Details
Figure 602 (Sheet 2 of 2)



125 ALL MACHINED SURFACES UNLESS SHOWN DIFFERENTLY

MATERIAL: AL-NI-BRZ (AMS 4640)

BREAK ALL SHARP EDGES 0.01–0.02 R

FINISH: CADMIUM PLATE (F-15.06)
0.0003–0.0005 THICK

ITEM NUMBERS REFER TO IPL FIG. 1

ALL DIMENSIONS APPLY BEFORE PLATING

ALL DIMENSIONS ARE IN INCHES

HOLE LOCATION [4] FIG. 601 – REPLACES BUSHING (430) 162A1122-2

Oversize Bushing Details
Figure 603

INNER CYLINDER - REPAIR 3-3

162A1120–2, –4, –6

1. General

A. This procedure tells how to repair the barrel and axle surfaces of the inner cylinder (435).

B. Refer to the Standard Overhaul Practices Manual (SOPM) for details of the SOPM subjects identified in the procedure.

C. Refer to IPL Figure 1 for the item numbers.

D. General repair details:

(1) Material: 4340M Steel, 275 - 300 ksi

(2) Shot Peen:

(a) Shot Size 0.016 - 0.033

(b) Hard Shot (RC 55-65)

(c) Intensity 0.014 - 0.018A2

(d) Coverage 2.0

2. Inner Cylinder Barrel and Axle Repair

A. References

Reference	Title
SOPM 20-20-01	MAGNETIC PARTICLE INSPECTION

B. Procedure (REPAIR 3-3, Figure 601)

(1) Inside and Outside Diameters

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

(b) Do a magnetic particle inspection (SOPM 20-20-01).

(c) If applicable, shot peen, chrome plate and grind to design dimensions and finish.

(2) Reliefs

(a) Machine as necessary, within repair limits, to remove defects. Blend smoothly into the tangent points.

(b) Do a magnetic particle inspection (SOPM 20-20-01).

(c) Refinish as indicated.

3. Refinish

A. Consumable Materials

NOTE: Equivalent substitutes may be used.

Reference	Description	Specification
C00175	Primer - Urethane Compatible, Corrosion Resistant (Less Than 1% Aromatic Amines)	BMS10-79, Type III

B. References

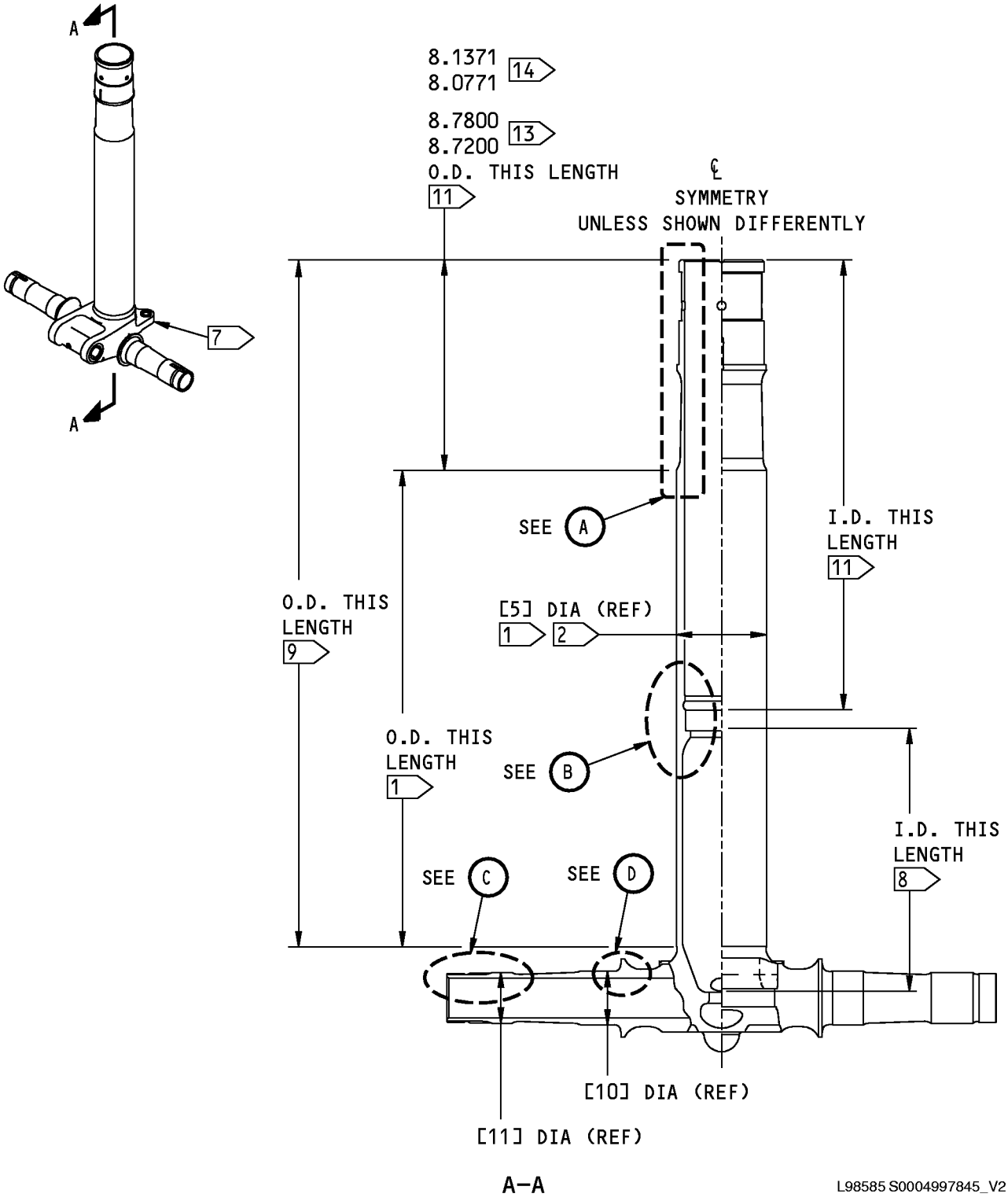
Reference	Title
SOPM 20-30-02	STRIPPING OF PROTECTIVE FINISHES
SOPM 20-41-01	DECODING TABLE FOR BOEING FINISH CODES
SOPM 20-60-02	FINISHING MATERIALS

C. Procedure (REPAIR 3-3, Figure 601)

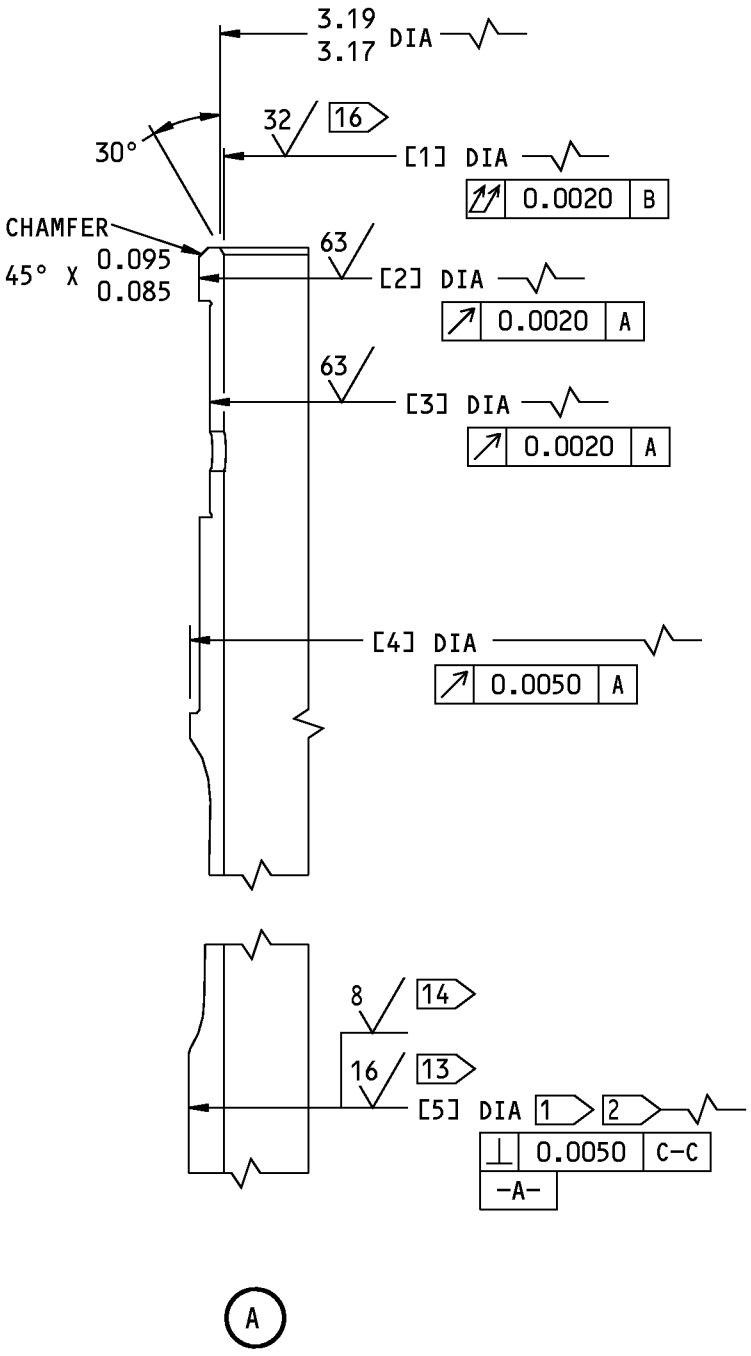
NOTE: For stripping of protective finishes, refer to SOPM 20-30-02. For the decoding table for Boeing finish codes, refer to SOPM 20-41-01. For finishing materials, refer to SOPM 20-60-02.

(1) Chrome plate surfaces as indicated.

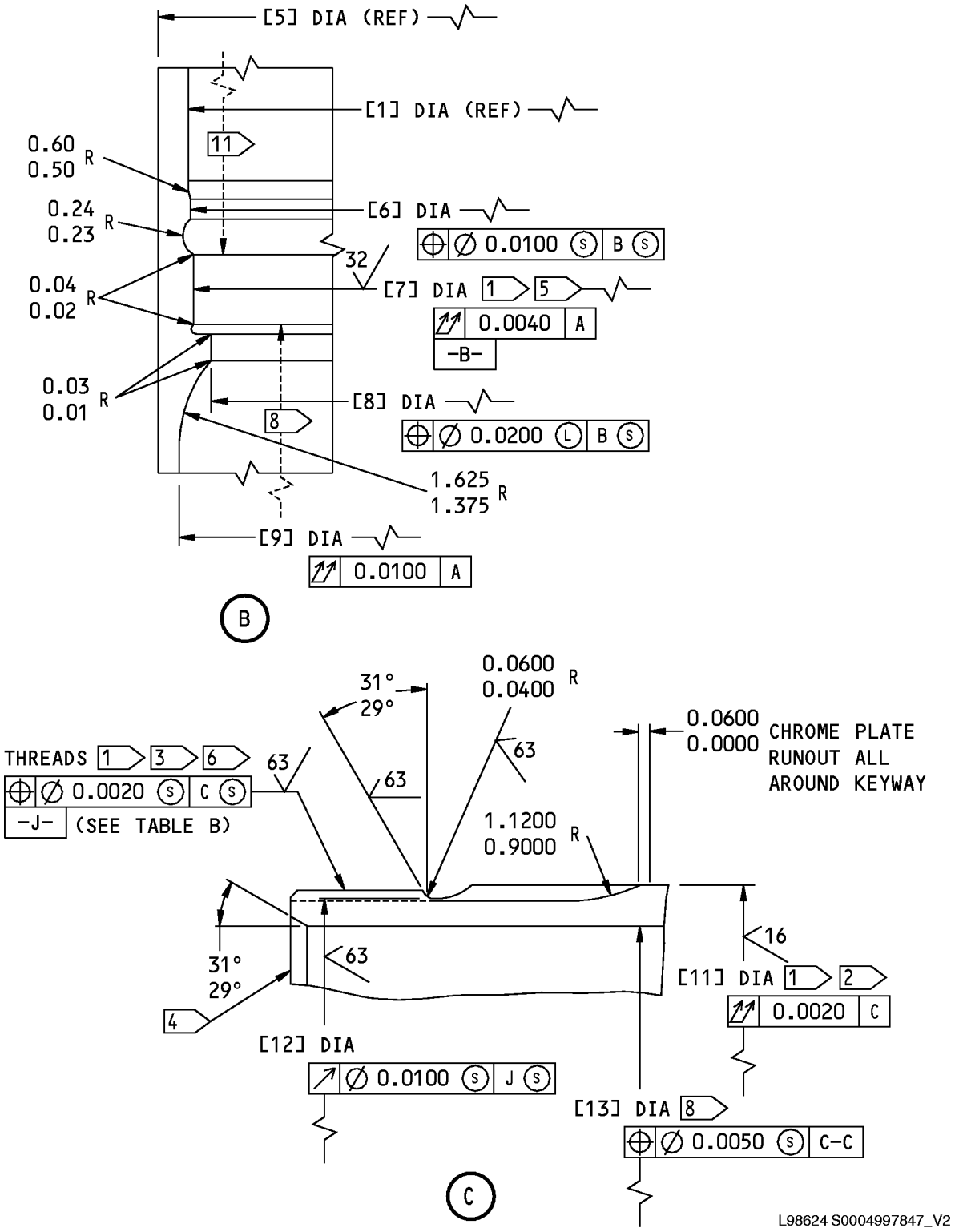
(2) Cadmium-titanium plate and apply primer, C00175 (F-19.47), except as indicated by flagnotes.



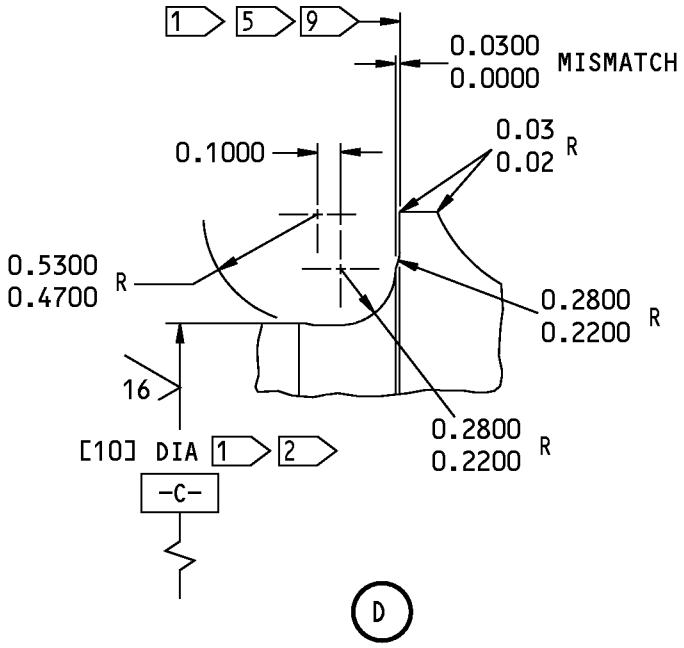
162A1120-2, -4, -6 Inner Cylinder Barrel and Axle Repair
Figure 601 (Sheet 1 of 6)



162A1120-2, -4, -6 Inner Cylinder Barrel and Axle Repair
Figure 601 (Sheet 2 of 6)



162A1120-2, -4, -6 Inner Cylinder Barrel and Axle Repair
Figure 601 (Sheet 3 of 6)



REFERENCE NUMBER	[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]
DESIGN DIMENSION	3.1060 3.1040	3.5700 3.5680	3.3760 3.3740	3.7350 3.7300	3.7470 3.7450 12	3.0650 3.0550	2.9950 2.9930 12	2.6350 2.6150
REPAIR LIMIT	---	---	---	---	3.7260 10	3.0853 15	---	---

REFERENCE NUMBER	[9]	[10]	[11]	[12]	[13]
DESIGN DIMENSION	3.3000 3.2600	2.2495 2.2485 12	2.1245 2.1235 12	1.9700 1.9600	1.6800 1.6600
REPAIR LIMIT	---	2.2195 10	2.0945 10	SEE TABLE B	---

TABLE A

L98631 S0004997848_V2

162A1120-2, -4, -6 Inner Cylinder Barrel and Axle Repair
Figure 601 (Sheet 4 of 6)

UNJS-3A THREAD SIZE	2.0625-16 (DESIGN)
MAJOR DIA	2.0625 2.0531
PITCH DIA	2.0219 2.0179
ROOT RADIUS	0.0113 0.0094
MINOR DIA	1.9903 1.9825
RELIEF DIA	1.9700 1.9600
RELIEF REPAIR DIA	----

TABLE B

G24640 S0004997849_V3

162A1120-2, -4, -6 Inner Cylinder Barrel and Axle Repair
Figure 601 (Sheet 5 of 6)

1 > WIPE WITH PRIMER (F-19.451)

2 > CHROME PLATE (F-15.34), 0.003 MINIMUM THICKNESS AFTER FINISH OPERATIONS

3 > DO NOT SHOT PEEN THIS SURFACE

4 > SHOT PEEN IS OPTIONAL ON THE END OF THE AXLE

5 > APPLY THIN DENSE CHROME PLATE (F-15.43, WHICH REPLACES F-14.892)

6 > CADMIUM-TITANIUM PLATE (F-15.32). DO NOT APPLY PRIMER (F-19.47) OR ENAMEL

7 > PART NUMBER AND SERIAL NUMBER LOCATION

8 > CADMIUM-TITANIUM PLATE (F-15.01), 0.0005-0.0019 THICK. PLATING THROW-IN IS NECESSARY IN HOLE FOR LUBE FITTING. APPLY BMS 10-79, TYPE 3 PRIMER (F-19.66) AND MIL-C-11796, CLASS 1 CORROSION PREVENTIVE COMPOUND (F-19.03)

9 > DO NOT APPLY PRIMER OR ENAMEL ON THIS AREA UNLESS SHOWN BY 1 >

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

11 > NO FINISH (F-25.01)

12 > DIMENSIONS AFTER PLATING

13 > 162A1120-2

14 > 162A1120-4,-6

15 > RESTORATION TO DESIGN DIMENSIONS NOT REQUIRED

16 > 125 √ IS DESIGN VALUE ON 162A1120-2,-4.

32 √ IS RECOMMENDED REPAIR VALUE

ITEM NUMBERS REFER TO IPL FIG. 1

ALL DIMENSIONS APPLY BEFORE PLATING UNLESS SHOWN DIFFERENTLY

DIMENSIONS AND SURFACE FINISHES APPLY BEFORE SHOT PEENING UNLESS SHOWN DIFFERENTLY

ALL DIMENSIONS ARE IN INCHES

1529108 S0000279282_V1

162A1120-2, -4, -6 Inner Cylinder Barrel and Axle Repair
Figure 601 (Sheet 6 of 6)

TOW FITTING ASSEMBLY - REPAIR 4-1

162A1160–1, –5

1. General

A. This procedure tells how to replace the bushings (45B, 50) and lube fittings (40) in the tow fitting assembly (35B).

B. Refer to the Standard Overhaul Practices Manual (SOPM) for the SOPM subjects identified in this procedure.

C. Refer to IPL Figure 1 for the item numbers.

2. Bushing Replacement

A. Consumable Materials

NOTE: Equivalent substitutes may be used.

Reference	Description	Specification
A00247	Sealant - Pressure And Environmental - Chromate Type	BMS 5-95

B. References

Reference	Title
SOPM 20-41-01	DECODING TABLE FOR BOEING FINISH CODES
SOPM 20-50-03	BEARING AND BUSHING REPLACEMENT
SOPM 20-60-04	MISCELLANEOUS MATERIALS

C. Procedure

NOTE: For the decoding table for Boeing finish codes, refer to SOPM 20-41-01. For miscellaneous materials, refer to SOPM 20-60-04.

(1) Remove the bushings (45B, 50) from the tow fitting (55A) (SOPM 20-50-03).

(2) Use the shrink-fit procedure to install the bushings with wet sealant, A00247.

(3) Ream the bushings to the final dimensions shown in REPAIR 4-1, Figure 601.

3. Lube Fitting Replacement

A. Consumable Materials

NOTE: Equivalent substitutes may be used.

Reference	Description	Specification
A00247	Sealant - Pressure And Environmental - Chromate Type	BMS 5-95
D00633	Grease - Aircraft General Purpose	BMS3-33

B. References

Reference	Title
CMM 32-00-03	LANDING GEAR PARTS LUBRICATION FITTING REPLACEMENT
SOPM 20-60-03	LUBRICANTS

Reference	Title
SOPM 20-60-04	MISCELLANEOUS MATERIALS

C. Procedure

NOTE: For landing gear parts lubrication fitting replacement, refer to CMM 32-00-03.

(1) Install the lube fitting within ± 5 degrees of the location shown in REPAIR 4-1, Figure 601, with wet sealant, A00247 (SOPM 20-60-04).

(2) After bushing installation, and before the sealant dries, apply grease, D00633 (SOPM 20-60-03) to the lube fitting until the grease appears at the bushing inner diameter.

4. Tow Fitting Assembly Refinish

A. Consumable Materials

NOTE: Equivalent substitutes may be used.

Reference	Description	Specification
C00033	Coating - Exterior Protective Enamel, Flexibility Use	BMS10-60, Type II

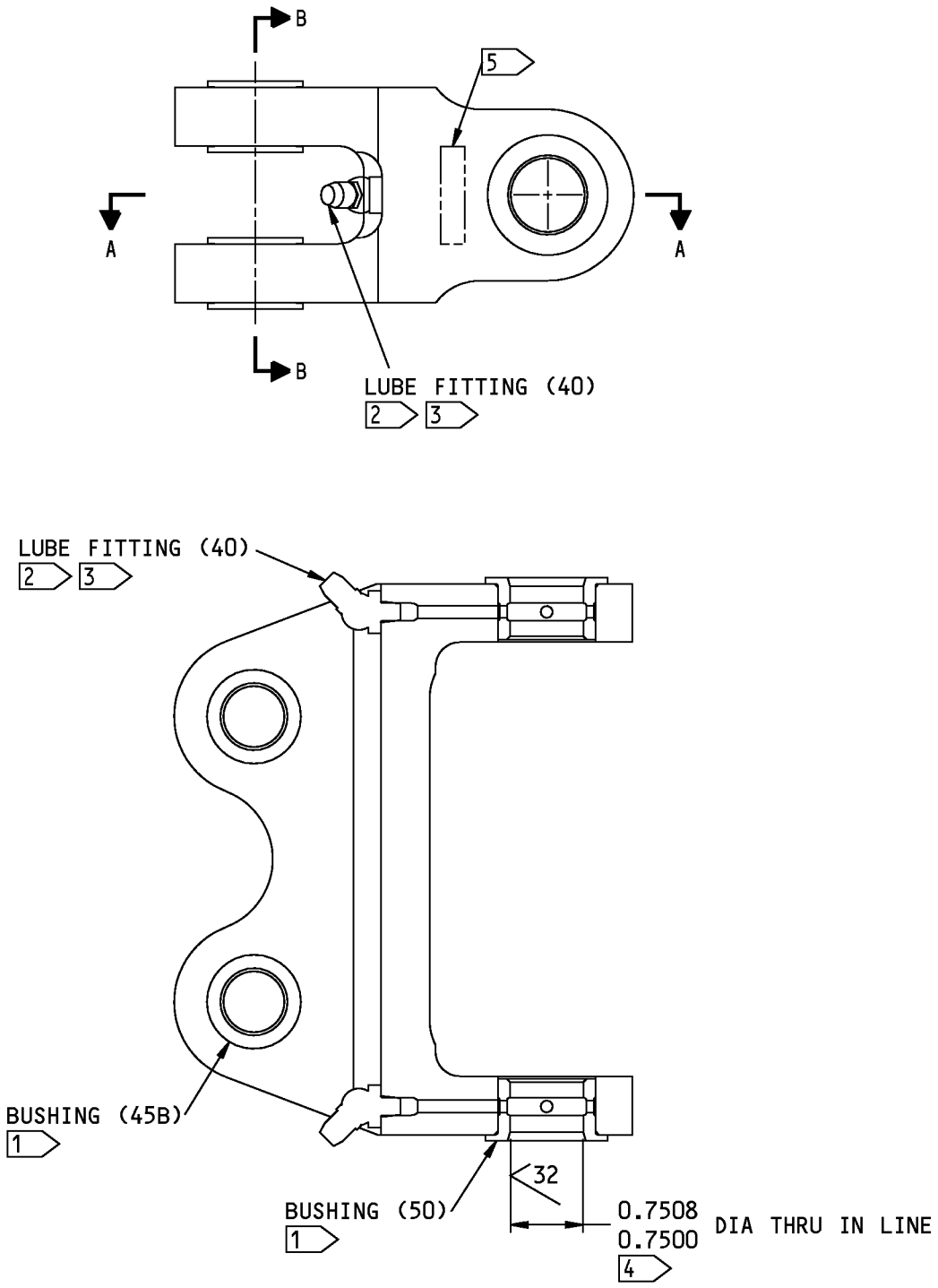
B. References

Reference	Title
SOPM 20-41-01	DECODING TABLE FOR BOEING FINISH CODES
SOPM 20-60-02	FINISHING MATERIALS

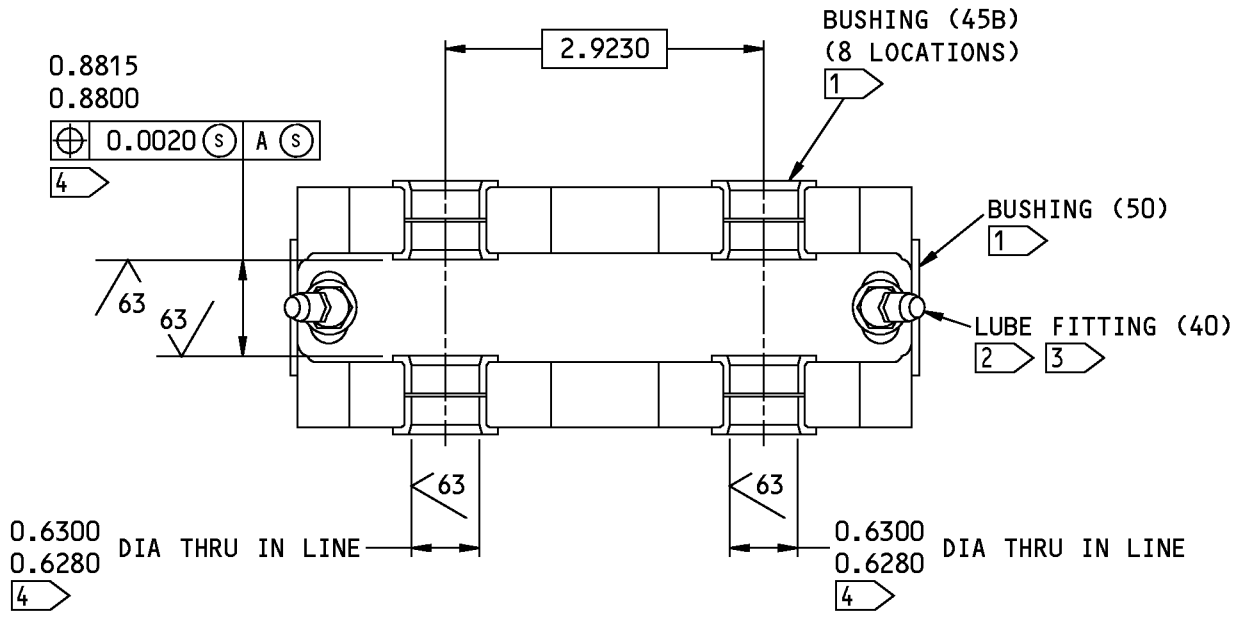
C. Procedure

NOTE: For the decoding table for Boeing finish codes, refer to SOPM 20-41-01. For finishing materials, refer to SOPM 20-60-02.

(1) Apply enamel coating, C00033 (F-20.56-707) to all external faces, except bushing flange faces, holes, lube fittings or the part mark area specified by flagnote 5.



162A1160-1,-5 Tow Fitting Assembly Repair
Figure 601 (Sheet 1 of 2)



B–B

1 INSTALL THE BUSHINGS BY THE SHRINK-FIT METHOD WITH BMS 5-95 SEALANT. FOR BUSHING (50), REMOVE UNWANTED SEALALNT FROM THE GROOVE TO MAKE SURE THE LUBE PATH IS CLEAR

2 INSTALL THE LUBE FITTING WITH BMS 5-95 SEALANT. TURN THE LUBE FITTING WITHIN ± 5° OF THE LOCATION SHOWN

3 AFTER BUSHING INSTALLATION AND BEFORE THE SEALANT DRIES, APPLY BMS 3-33 GREASE AT THE LUBE FITTING UNTIL THE GREASE COMES OUT AT THE BUSHING INNER DIAMETER

4 INSTALLED DIMENSION. ADJUST TO THIS SIZE AS NECESSARY

5 DO NOT APPLY ENAMEL (F-20.56-707) HERE. MASK THIS AREA AS NECESSARY. APPLY BMS 10-60, TYPE 2 GLOSS ENAMEL (F-19.39-707). WHEN DRY, APPLY BLACK ENAMEL (F-19.39-701) TO THE CHARACTERS ONLY. WHEN DRY, APPLY TYPE 41 COATING (F-21.34) TO A THICKNESS OF THE SURROUNDING ENAMEL

ITEM NUMBERS REFER TO IPL FIG. 1

ALL DIMENSIONS ARE IN INCHES

G23966 S0004997852_V3

162A1160-1,-5 Tow Fitting Assembly Repair
Figure 601 (Sheet 2 of 2)

TOW FITTING - REPAIR 4-2

162A1160–2, –6

1. General

A. This procedure tells how to repair and refinish the tow fitting (55A).

B. Refer to the Standard Overhaul Practices Manual (SOPM) for the SOPM subjects identified in this procedure.

C. Refer to IPL Figure 1 for the item numbers.

D. General repair details:

(1) Material: Al alloy

(2) Shot peen: All surfaces (but not in the part mark location)

Intensity 0.012-0.017A2

Coverage 2.0

2. Tow Fitting Refinish

A. Consumable Materials

NOTE: Equivalent substitutes may be used.

Reference	Description	Specification
C00175	Primer - Urethane Compatible, Corrosion Resistant (Less Than 1% Aromatic Amines)	BMS10-79, Type III

B. References

Reference	Title
SOPM 20-10-03	SHOT PEENING
SOPM 20-30-02	STRIPPING OF PROTECTIVE FINISHES
SOPM 20-41-01	DECODING TABLE FOR BOEING FINISH CODES

C. Procedure (REPAIR 4-2, Figure 601)

NOTE: For shot peening, refer to SOPM 20-10-03. For stripping of protective finishes, refer to SOPM 20-30-02. For the decoding table for Boeing finish codes, refer to SOPM 20-41-01.

(1) Boric acid-sulfuric acid anodize (F-17.31) and apply primer, C00175 (F-19.47) all over, unless noted in REPAIR 4-2, Figure 601.

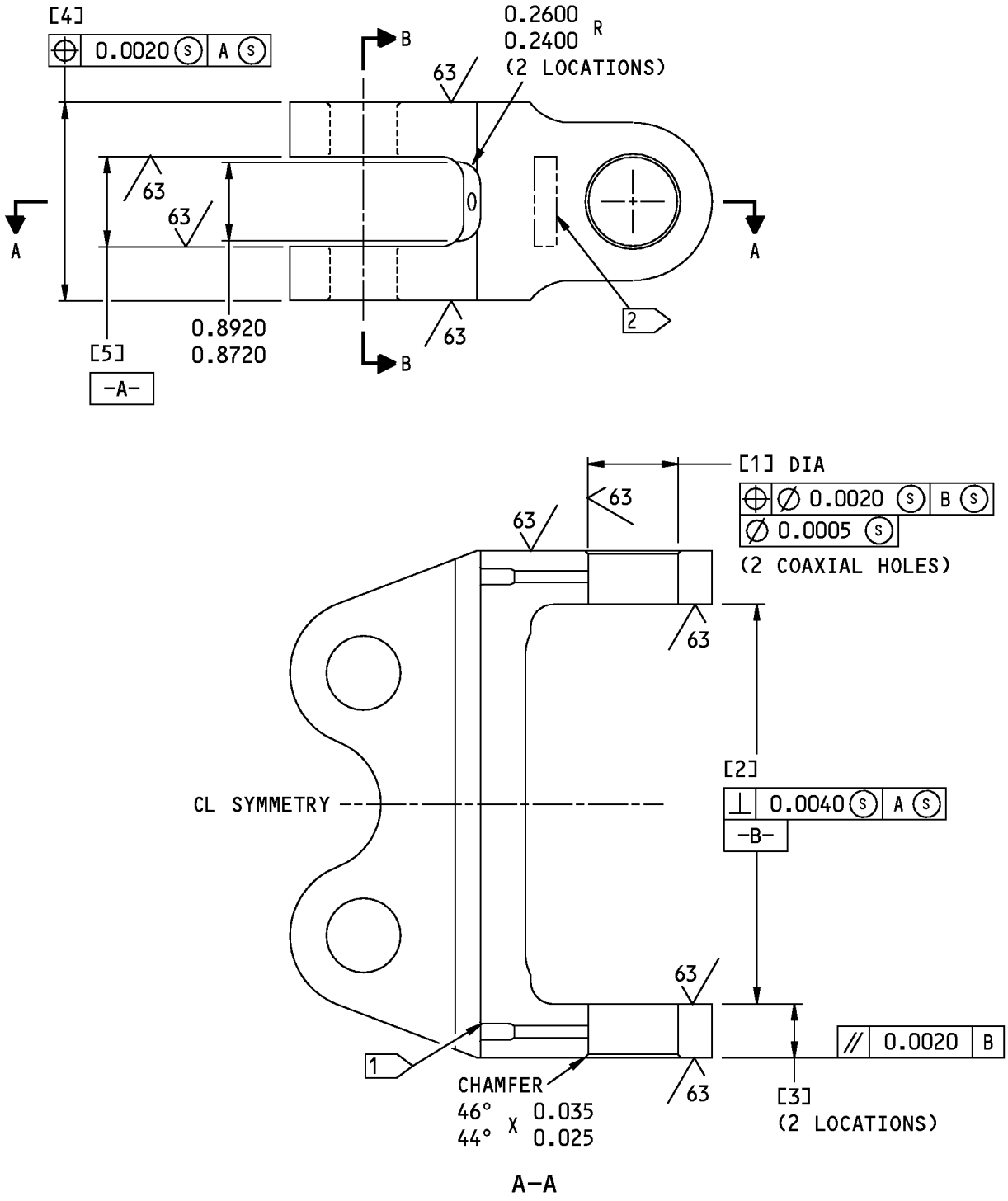
3. Tow Fitting Repair

A. Procedure (REPAIR 4-2, Figure 601)

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

(2) Make oversize bushings (REPAIR 4-2, Figure 602), as necessary, to adjust for the material removed.

(3) Install the bushings as shown in REPAIR 4-1.



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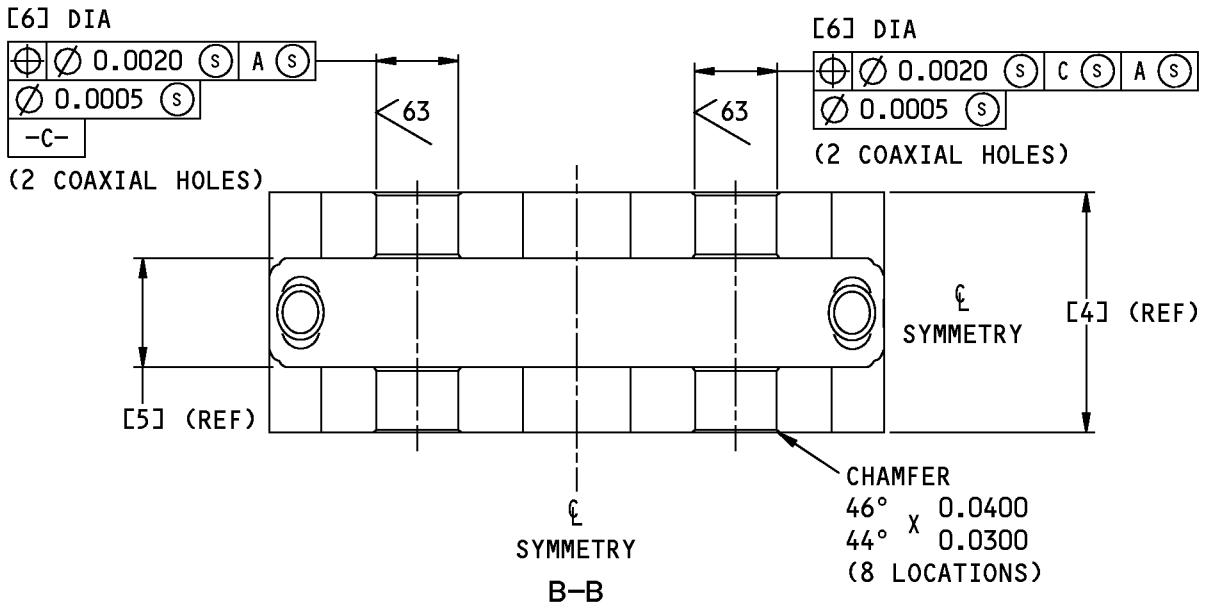
162A1160-2, -6 Tow Fitting Repair
Figure 601 (Sheet 1 of 2)



REFERENCE NUMBER	[1]	[2]	[3]	[4]	[5]	[6]
DESIGN DIMENSION	1.0004 0.9996	4.4520 4.4480	0.6000 0.5980	2.2160 2.1960	1.0040 1.0000	0.7518 0.7510
REPAIR LIMIT	1.0604 <3>	4.5370 <4>	0.5575 <3>	2.1620 <3>	---	0.8470 <3>

<1> BORIC ACID–SULFURIC ACID ANODIZE IS OPTIONAL IN THE HOLE. DO NOT APPLY PRIMER

<2> PART NUMBER. DO NOT SHOT PEEN THIS AREA

<3> LIMIT FOR OVERSIZE BUSHING INSTALLATION

<4> RESTORATION TO DESIGN DIMENSIONS NOT NECESSARY

125 ALL MACHINED SURFACES UNLESS SHOWN DIFFERENTLY

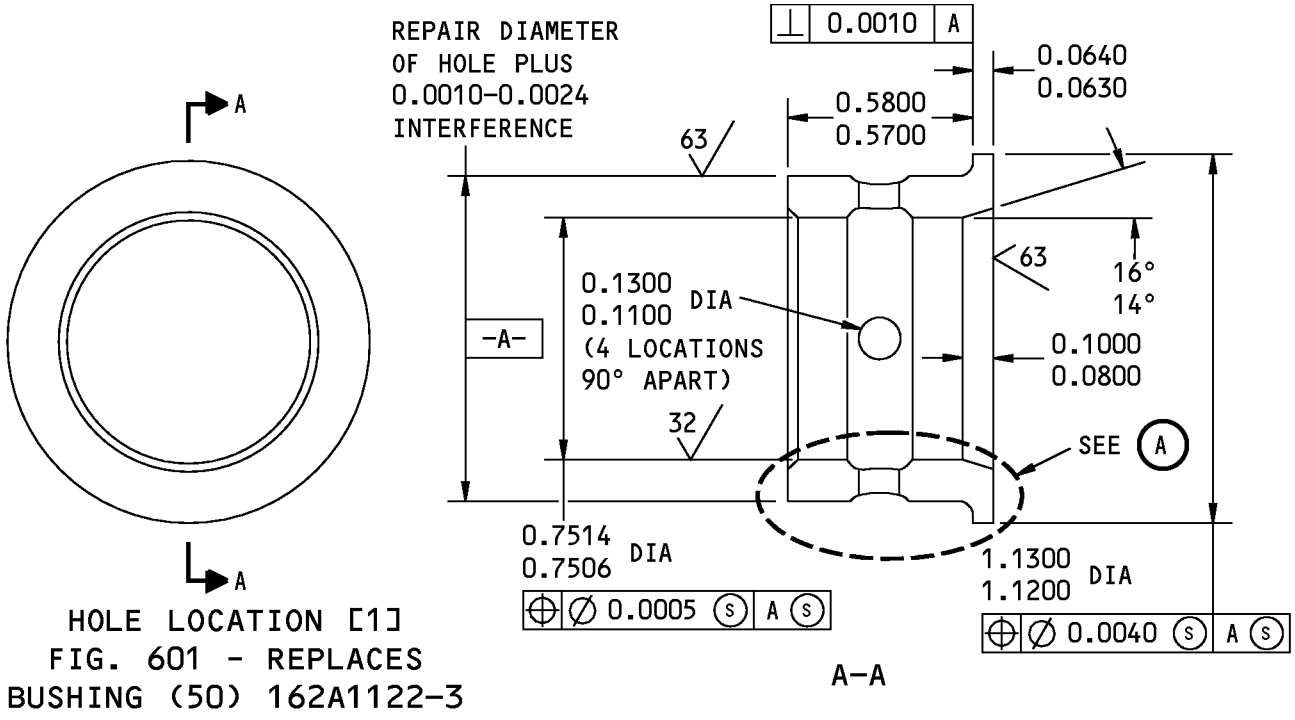
DIMENSIONS & SURFACE FINISHES APPLY BEFORE SHOT PEENING

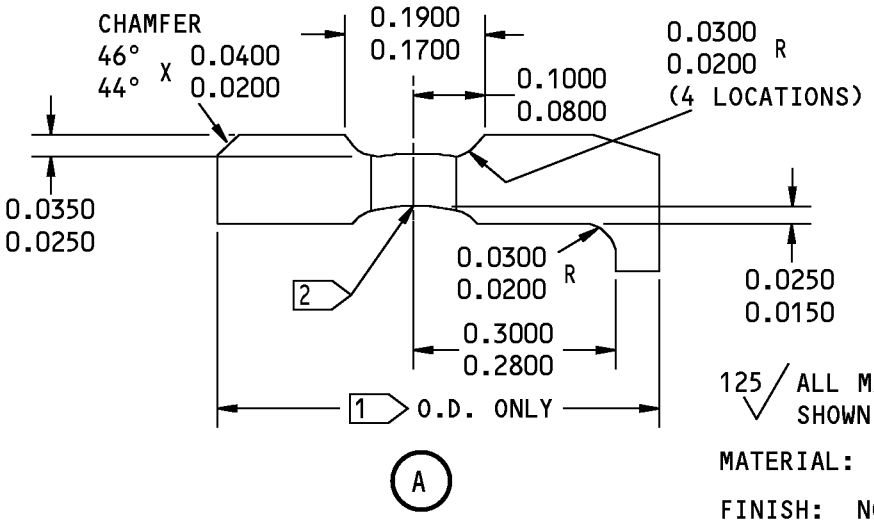
ITEM NUMBERS REFER TO IPL FIG. 1

ALL DIMENSIONS ARE IN INCHES

G24061 S0004997856_V3

162A1160-2, -6 Tow Fitting Repair
Figure 601 (Sheet 2 of 2)





125 ALL MACHINED SURFACES UNLESS SHOWN DIFFERENTLY

MATERIAL: AL-NI-BRZ (AMS 4640)

FINISH: NO FINISH UNLESS SHOWN BY 1 2

BREAK ALL SHARP EDGES TO R 0.01-0.02

ITEM NUMBERS REFER TO IPL FIG. 1

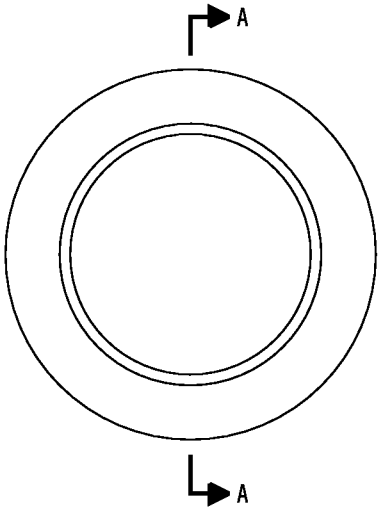
ALL DIMENSIONS ARE IN INCHES

ALL DIMENSIONS APPLY BEFORE PLATING

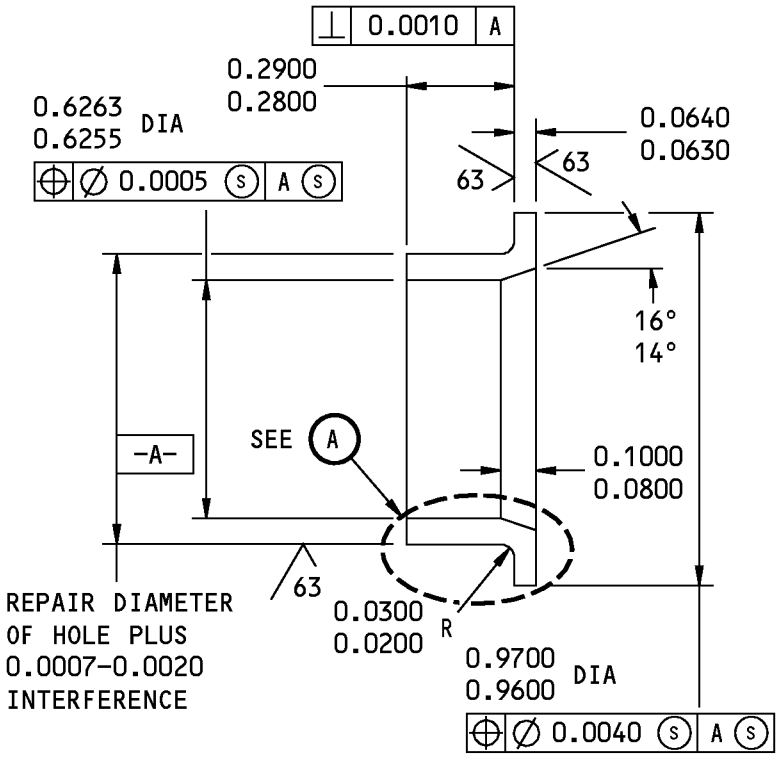
1 CADMIUM PLATE (F-15.36) HERE

2 CADMIUM THROW-IN PERMITTED HERE

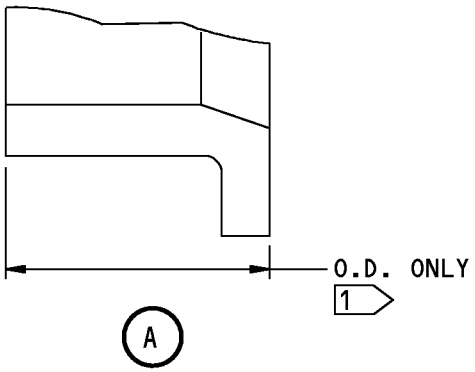
Oversize Bushing Details
Figure 602



HOLE LOCATION [6]
FIG. 601 - REPLACES
BUSHING (45B) 162A1122-4



A-A



1 CADMIUM PLATE (F-15.36) HERE

125 ALL MACHINED SURFACES UNLESS SHOWN DIFFERENTLY

MATERIAL: AL-NI-BRZ (AMS 4640)

FINISH: NO FINISH UNLESS SHOWN BY 1

BREAK ALL SHARP EDGES TO R 0.01-0.02

ITEM NUMBERS REFER TO IPL FIG. 1

ALL DIMENSIONS ARE IN INCHES

ALL DIMENSIONS APPLY BEFORE PLATING

G27397 S0004997858_V3

Oversize Bushing Details
Figure 603

UPPER TORSION LINK ASSEMBLY - REPAIR 5-1

162A1311–1, –3, 162A1315–1, –3

1. General

A. This procedure tells how to replace the bushings (160, 165, 170) and lube fittings (155) in the torsion link assembly (150).

B. Refer to the Standard Overhaul Practices Manual (SOPM) for the SOPM subjects identified in this procedure.

C. Refer to IPL Figure 1 for the item numbers.

2. Bushing Replacement

A. Consumable Materials

NOTE: Equivalent substitutes may be used.

Reference	Description	Specification
A00247	Sealant - Pressure And Environmental - Chromate Type	BMS 5-95

B. References

Reference	Title
SOPM 20-41-01	DECODING TABLE FOR BOEING FINISH CODES
SOPM 20-50-03	BEARING AND BUSHING REPLACEMENT
SOPM 20-60-04	MISCELLANEOUS MATERIALS

C. Procedure

NOTE: For the decoding table for Boeing finish codes, refer to SOPM 20-41-01. For miscellaneous materials, refer to SOPM 20-60-04.

(1) Remove the old bushings (160, 165, 170) from the torsion link (175) (SOPM 20-50-03).

(2) If there are defects on the link surfaces, refer to REPAIR 5-2 for repair instructions.

(3) Use the shrink-fit procedure (SOPM 20-50-03) to install replacement bushings with sealant, A00247.

(4) Machine the bushings to design dimensions and finish shown in REPAIR 5-1, Figure 601 or REPAIR 5-1, Figure 602.

(5) Obey the flagnotes in REPAIR 5-1, Figure 601 or REPAIR 5-1, Figure 602.

3. Lube Fitting Replacement

A. Consumable Materials

NOTE: Equivalent substitutes may be used.

Reference	Description	Specification
A00247	Sealant - Pressure And Environmental - Chromate Type	BMS 5-95
D00013	Grease - Aircraft And Instrument Grease	MIL-PRF-23827 (NATO G-354) (Supersedes MIL-G-23827)
D00633	Grease - Aircraft General Purpose	BMS3-33

B. References

Reference	Title
CMM 32-00-03	LANDING GEAR PARTS LUBRICATION FITTING REPLACEMENT
SOPM 20-50-03	BEARING AND BUSHING REPLACEMENT
SOPM 20-60-03	LUBRICANTS
SOPM 20-60-04	MISCELLANEOUS MATERIALS

C. Procedure

NOTE: For lubricants, refer to SOPM 20-60-03. For landing gear parts lubrication fitting replacement, refer to CMM 32-00-03.

(1) Remove the lube fitting (155) from the torsion link (175).

(2) Install the replacement lube fittings with sealant, A00247 (SOPM 20-60-04).

(3) For the 162A1311-1, 162A1315-1 link assemblies: After bushing and lube fitting installation (SOPM 20-50-03), apply grease, D00013 or grease, D00633 to the lube fitting until the grease appears at the bushing inner diameter.

(4) For the 162A1311-3, 162A1315-3 link assemblies: After bushing and lube fitting installation (SOPM 20-50-03), apply grease, D00633 to the lube fitting until the grease appears at the bushing inner diameter.

4. Torsion Link Assembly Refinish

A. Consumable Materials

NOTE: Equivalent substitutes may be used.

Reference	Description	Specification
C00033	Coating - Exterior Protective Enamel, Flexibility Use	BMS10-60, Type II

B. References

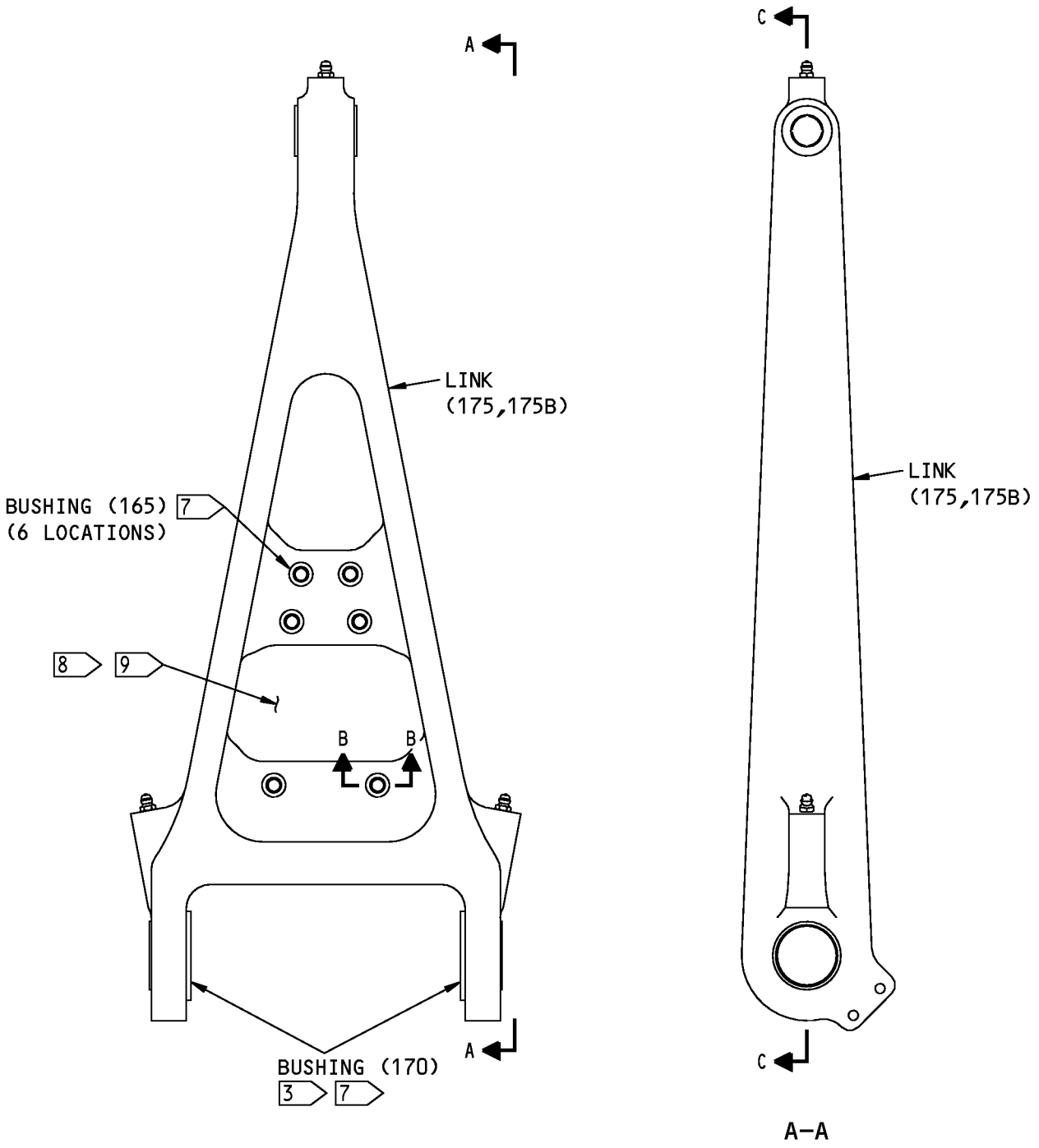
Reference	Title
SOPM 20-41-01	DECODING TABLE FOR BOEING FINISH CODES
SOPM 20-60-02	FINISHING MATERIALS

C. Procedure (REPAIR 5-1, Figure 601)

NOTE: For the decoding table for Boeing finish codes, refer to SOPM 20-41-01. For finishing materials, refer to SOPM 20-60-02.

(1) Apply enamel coating, C00033 (F-20.56-707) to external surfaces, except the holes, bushing flanges, lube fittings and surface noted by flagnote 10.

(2) Obey flagnote 10.



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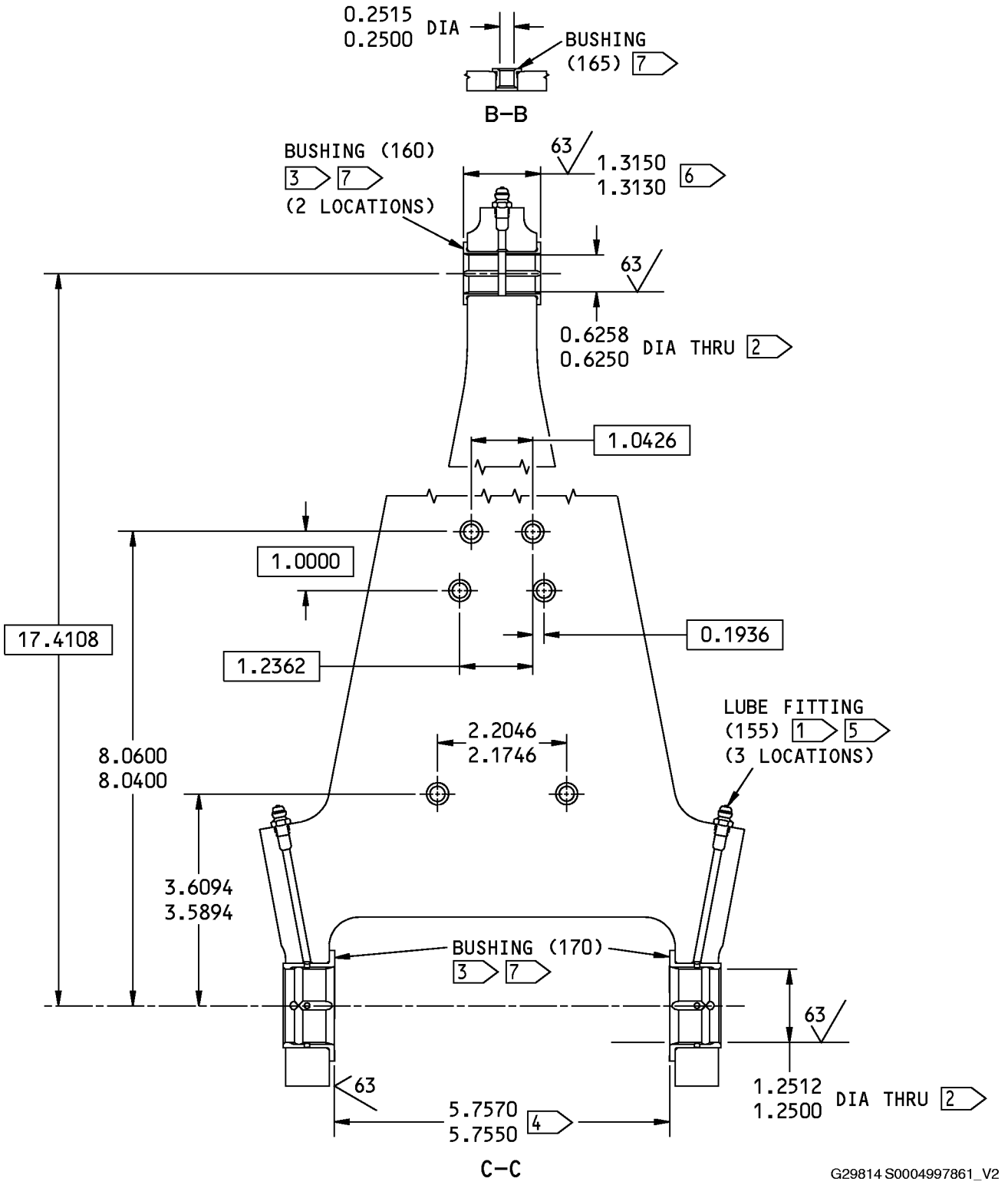
162A1311-1, -3 Upper Torsion Link Assembly Repair
Figure 601 (Sheet 1 of 3)



162A1311-1, -3 Upper Torsion Link Assembly Repair
Figure 601 (Sheet 2 of 3)

1 AFTER LUBE FITTING INSTALLATION, AND BEFORE THE SEALANT DRIES, APPLY GREASE AT THE LUBE FITTING UNTIL THE GREASE COMES OUT AT THE INNER DIAMETER OF THE BUSHING

2 INSTALLED DIMENSION. ADJUST TO THIS SIZE IF NECESSARY

3 THE MAXIMUM DISTANCE BETWEEN THE LUG FACE AND THE INSIDE FACE OF THE BUSHING FLANGE IS 0.0010 INCH

4 MACHINE THE FLANGE FACES OF THE INSTALLED BUSHINGS TO GET THIS DIMENSION. MINIMUM FLANGE THICKNESS, 0.0600 INCH

5 INSTALL THE LUBE FITTING WITH BMS 5-95 SEALANT

6 MACHINE THE UNDERSIDE FLANGE FACES OF BOTH BUSHINGS TO GET THIS DIMENSION WHEN INSTALLED. MINIMUM FLANGE THICKNESS, 0.0060 INCH. AFTER YOU MACHINE THE UNDERSIDE FLANGE FACE, TOUCH UP THE MACHINED AREA WITH BMS 10-79 TYPE 3 PRIMER (F-19.66)

7 USE THE SHRINK-FIT PROCEDURE TO INSTALL THE BUSHING WITH BMS 5-95 SEALANT

8 PART NUMBER AND SERIAL NUMBER

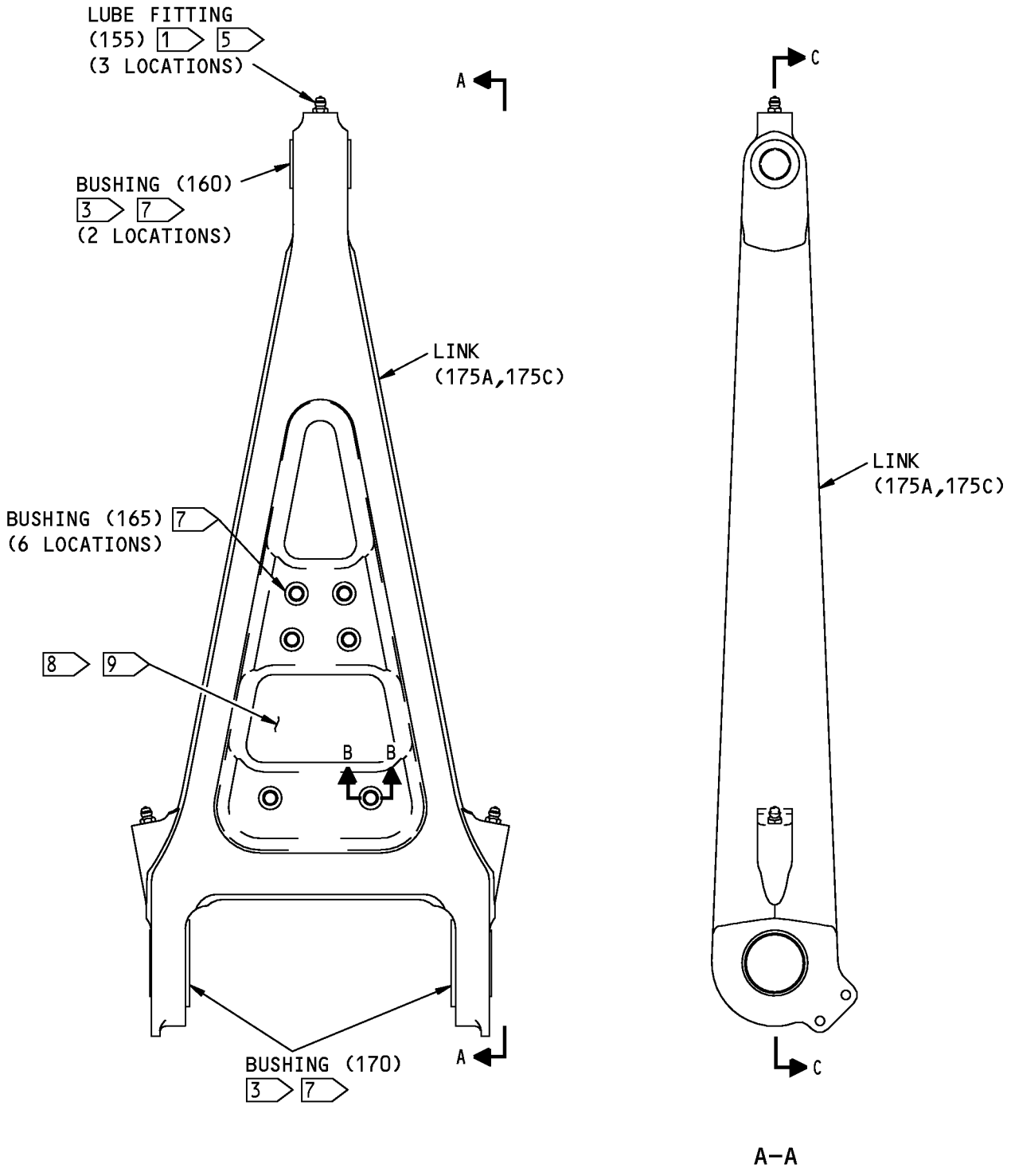
9 DO NOT APPLY ENAMEL (F-20.56-707) HERE. MASK THIS AREA AS NECESSARY. APPLY BMS 10-60, TYPE 2 GLOSS ENAMEL (F-19.39-707). WHEN DRY, APPLY BLACK ENAMEL (F-19.39-701) TO THE CHARACTERS ONLY. WHEN DRY, APPLY TYPE 41 CLEAR COATING (F-21.34) TO THIS AREA

ITEM NUMBERS REFER TO IPL FIG. 1

ALL DIMENSIONS ARE IN INCHES

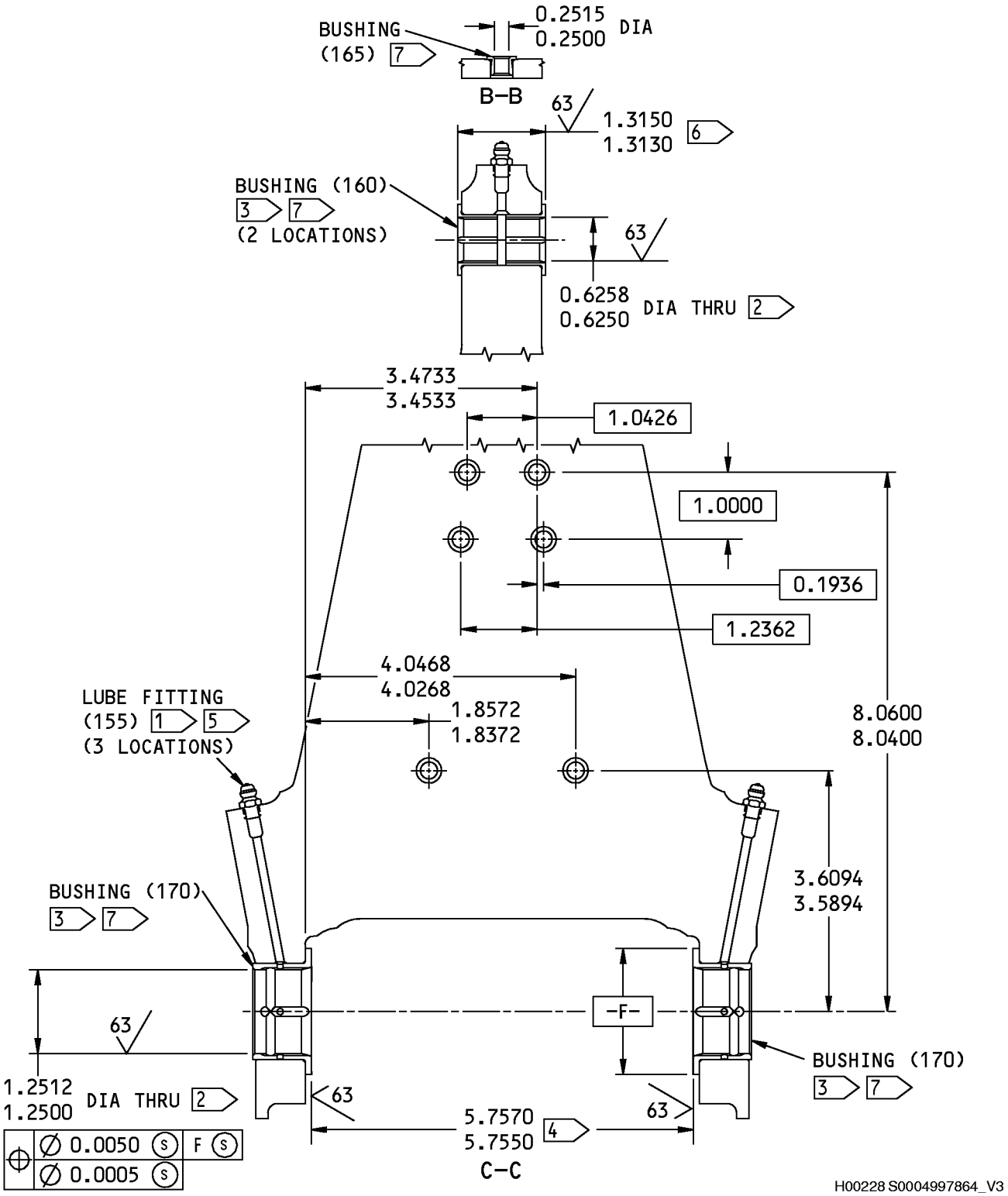
G29838 S0004997862_V3

162A1311-1, -3 Upper Torsion Link Assembly Repair
Figure 601 (Sheet 3 of 3)



H00195 S0004997863_V2

162A1315-1,-3 Upper Torsion Link Assembly Repair
Figure 602 (Sheet 1 of 3)



162A1315-1,-3 Upper Torsion Link Assembly Repair
Figure 602 (Sheet 2 of 3)

1 > AFTER LUBE FITTING INSTALLATION, AND BEFORE THE SEALANT DRIES, APPLY GREASE AT THE LUBE FITTING UNTIL THE GREASE COMES OUT AT THE INNER DIAMETER OF THE BUSHING

2 > INSTALLED DIMENSION. ADJUST TO THIS SIZE IF NECESSARY

3 > THE MAXIMUM DISTANCE BETWEEN THE LUG FACE AND THE INSIDE FACE OF THE BUSHING FLANGE IS 0.0010 INCH

4 > MACHINE THE FLANGE FACES OF THE INSTALLED BUSHINGS TO GET THIS DIMENSION. MINIMUM FLANGE THICKNESS, 0.0600 INCH

5 > INSTALL THE LUBE FITTING WITH BMS 5-95 SEALANT

6 > MACHINE THE UNDERSIDE FLANGE FACES OF BOTH BUSHINGS TO GET THIS DIMENSION WHEN INSTALLED. MINIMUM FLANGE THICKNESS, 0.0060 INCH. AFTER YOU MACHINE THE UNDERSIDE FLANGE FACE, TOUCH UP THE MACHINED AREA WITH BMS 10-79 TYPE 3 PRIMER (F-19.66)

7 > USE THE SHRINK-FIT PROCEDURE TO INSTALL THE BUSHING WITH BMS 5-95 SEALANT

8 > PART NUMBER AND SERIAL NUMBER

9 > DO NOT APPLY ENAMEL (F-20.56-707) HERE. MASK THIS AREA AS NECESSARY. APPLY BMS 10-60, TYPE 2 GLOSS ENAMEL (F-19.39-707). WHEN DRY, APPLY BLACK ENAMEL (F-19.39-701) TO THE CHARACTERS ONLY. WHEN DRY, APPLY TYPE 41 CLEAR COATING (F-21.34) TO THIS AREA

ITEM NUMBERS REFER TO IPL FIG. 1

ALL DIMENSIONS ARE IN INCHES

H00432 S0004997865_V3

162A1315-1,-3 Upper Torsion Link Assembly Repair
Figure 602 (Sheet 3 of 3)

BOEING®

COMPONENT MAINTENANCE MANUAL

UPPER TORSION LINK - REPAIR 5-2

162A1311–2, –4, 162A1315–2, –4

1. General

A. This procedure tells how to repair and refinish the upper torsion link (175).

B. Refer to the Standard Overhaul Practices Manual (SOPM) for details of the SOPM subjects identified in this procedure.

C. Refer to IPL Figure 1 for the item numbers.

D. General repair details:

(1) Material: Al alloy

(2) Shot peen: All surfaces, but not in lubrication holes or where indicated in REPAIR 5-2, Figure 601 and REPAIR 5-2, Figure 602. Overspray is permitted

Intensity 0.008-0.013A2

Coverage 1.0 manual, 2.0 automatic

2. Upper Torsion Link Refinish

A. Consumable Materials

NOTE: Equivalent substitutes may be used.

Reference	Description	Specification
C00175	Primer - Urethane Compatible, Corrosion Resistant (Less Than 1% Aromatic Amines)	BMS10-79, Type III

B. References

Reference	Title
SOPM 20-10-03	SHOT PEENING
SOPM 20-30-02	STRIPPING OF PROTECTIVE FINISHES
SOPM 20-41-01	DECODING TABLE FOR BOEING FINISH CODES
SOPM 20-60-02	FINISHING MATERIALS

C. Procedure (REPAIR 5-2, Figure 601)

NOTE: For shot peening, refer to SOPM 20-10-03. For stripping of protective finishes, refer to SOPM 20-30-02. For the decoding table for Boeing finish codes, refer to SOPM 20-41-01.

(1) Boric acid-sulfuric acid anodize or chromic acid anodize (F-17.31). Anodization is not necessary in the lubrication holes. Apply primer, C00175 (F-19.47) to all surfaces, but not in the lubrication holes (SOPM 20-60-02).

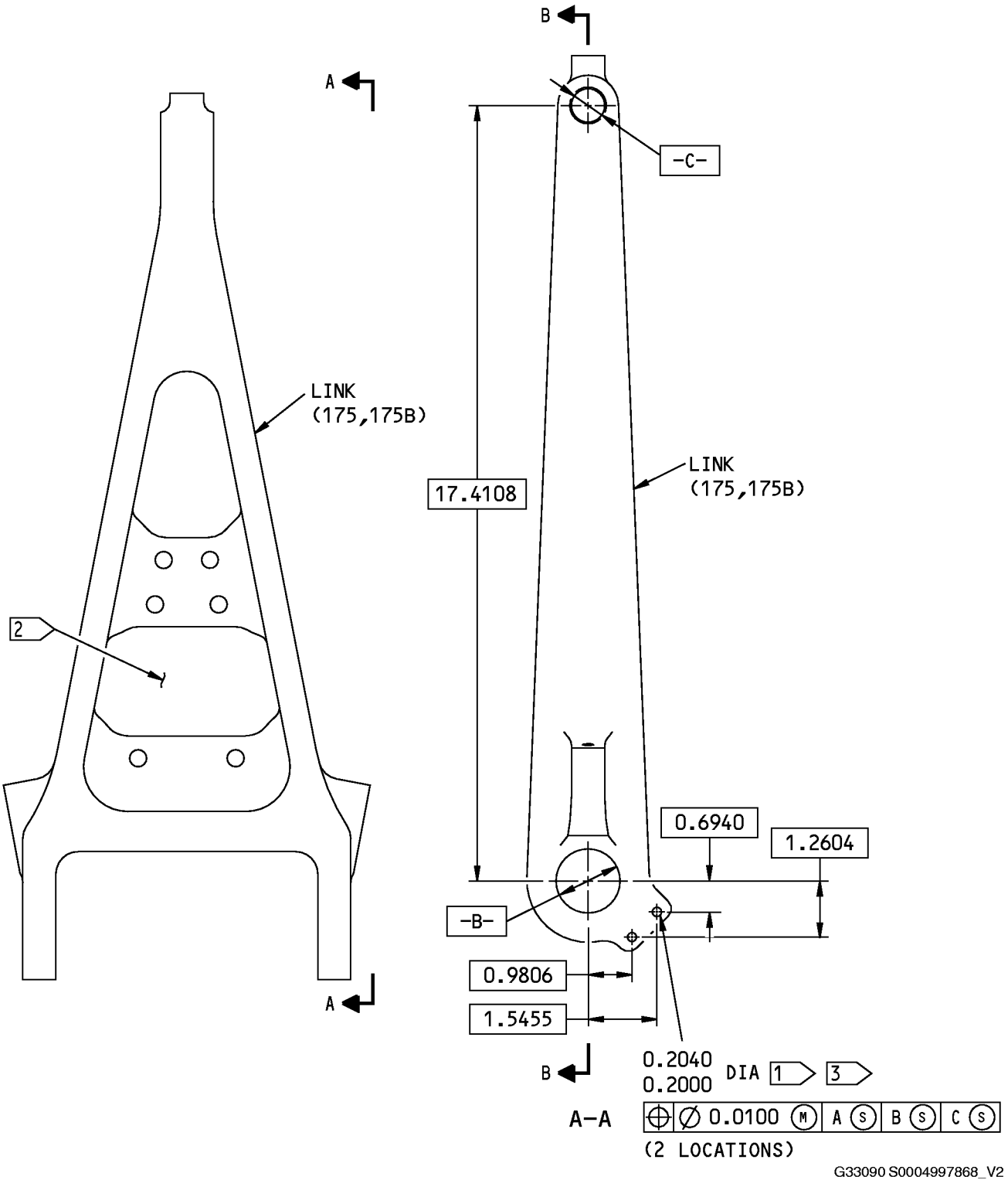
3. Upper Torsion Link Repair (REPAIR 5-2, Figure 601 or REPAIR 5-2, Figure 602)

A. Procedure

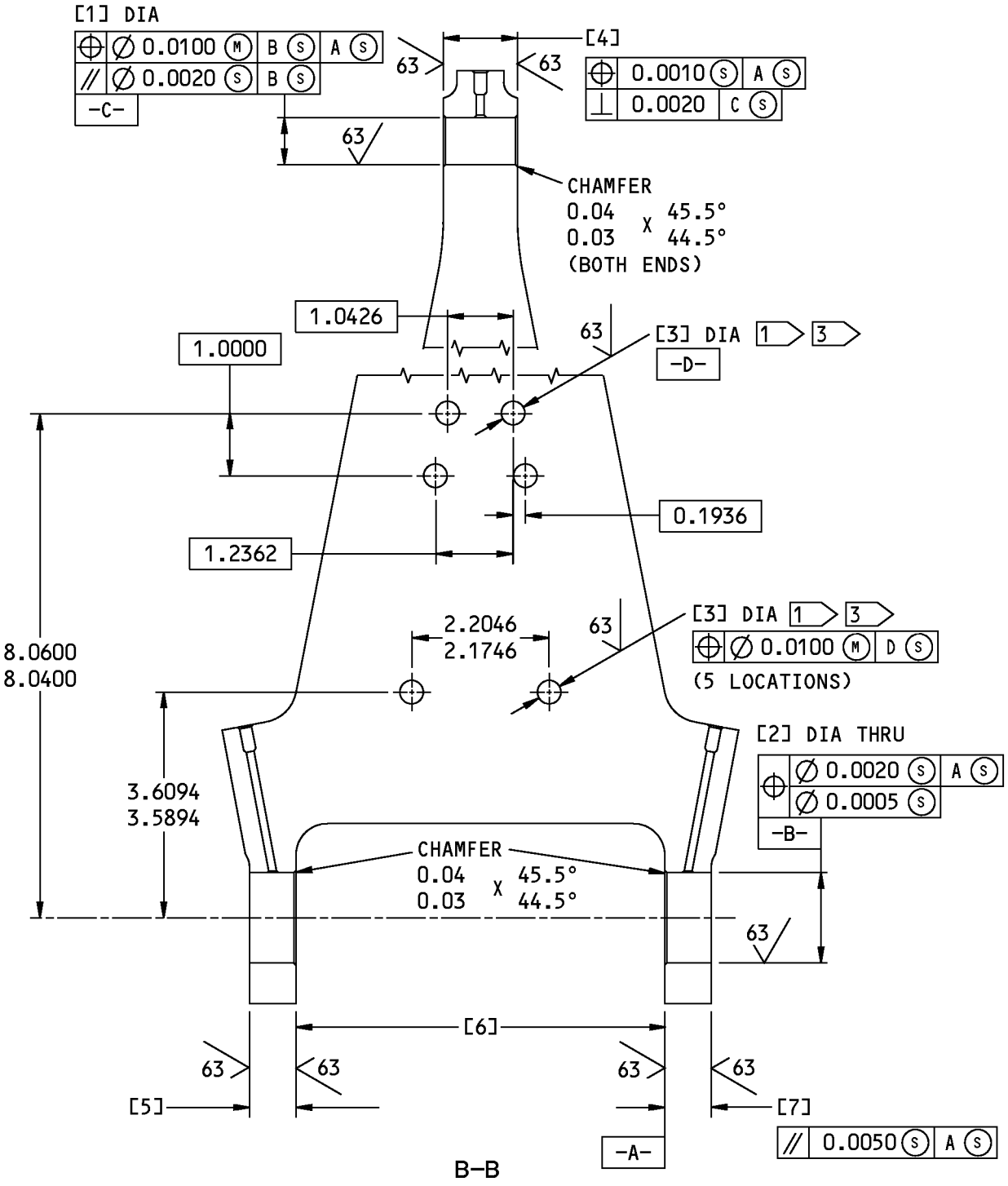
(1) Machine as necessary, within repair limits, to remove defects.

(2) Make oversize bushings (REPAIR 5-2, Figure 603 or REPAIR 5-2, Figure 604), as required, to adjust for the material removed.

(3) Install the bushings as shown in REPAIR 5-1.



162A1311-2,-4 Upper Torsion Link Repair
Figure 601 (Sheet 1 of 3)



G33282 S0004997869_V3

162A1311-2,-4 Upper Torsion Link Repair
Figure 601 (Sheet 2 of 3)

REFERENCE NUMBER	[1]	[2]	[3]	[4]	[5]	[6]	[7]
DESIGN DIMENSION	0.7518 0.7510	1.4392 1.4380	0.3754 0.3748	1.1900 1.1850	0.7450 0.7350	5.8865 5.8815	0.7450 0.7350
REPAIR LIMIT 5	0.9170	1.4992	0.4354	1.1050	0.7050	5.9465	0.7050

1 SHOT PEEN IS NOT NECESSARY. OVERSPRAY IS PERMITTED

2 PART NUMBER AND SERIAL NUMBER. DO NOT SHOT PEEN HERE

3 BREAK SHARP EDGE OF THE HOLE 0.0100-0.0300 R AND 63 MICROINCH FINISH

4 ANODIZATION IS NOT NECESSARY IN THE LUBE PASSAGE. DO NOT APPLY PRIMER

5 LIMIT FOR OVERSIZE BUSHING INSTALLATION

125 ALL MACHINED SURFACES UNLESS SHOWN DIFFERENTLY

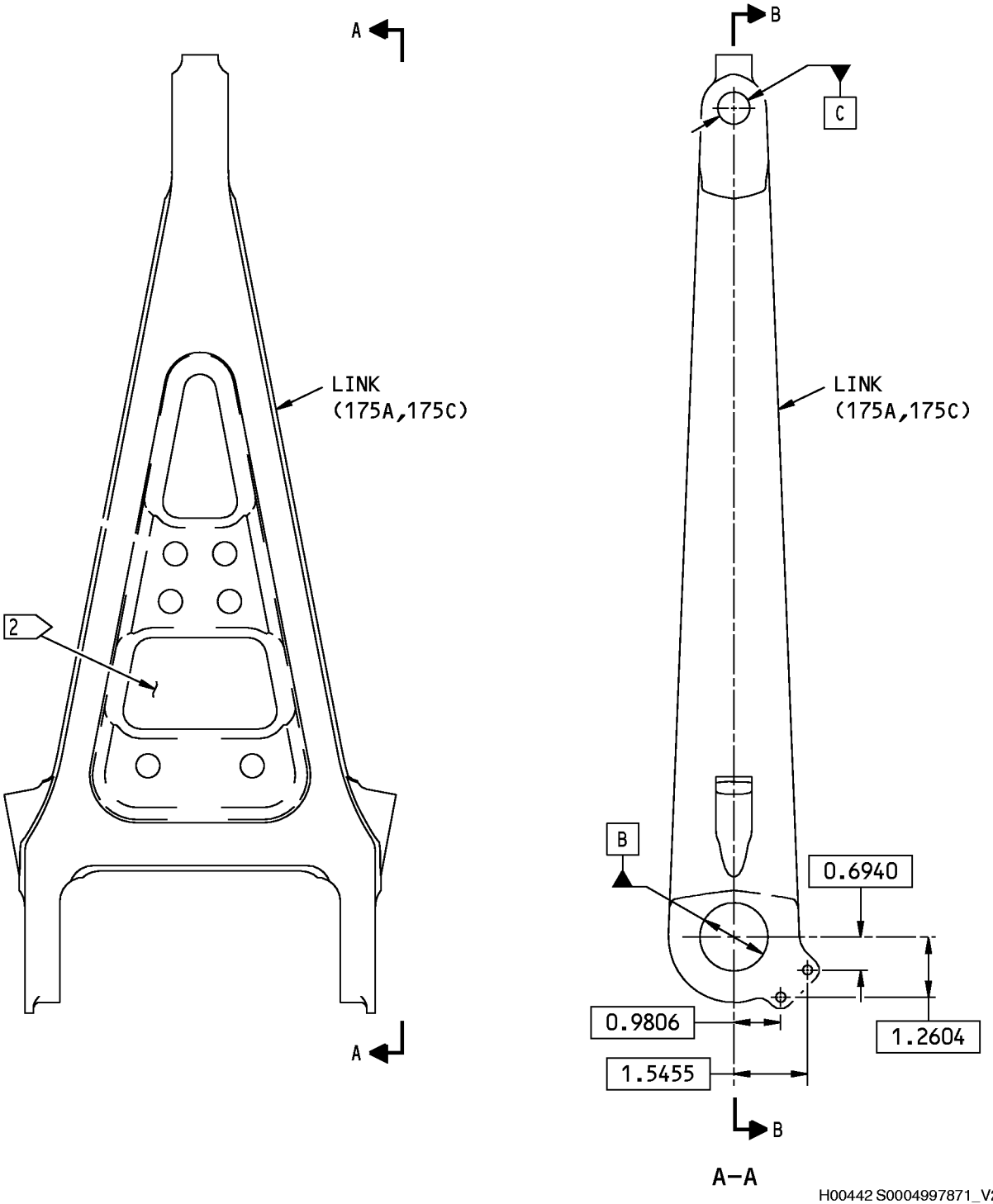
BREAK ALL SHARP EDGES

ITEM NUMBERS REFER TO IPL FIG. 1

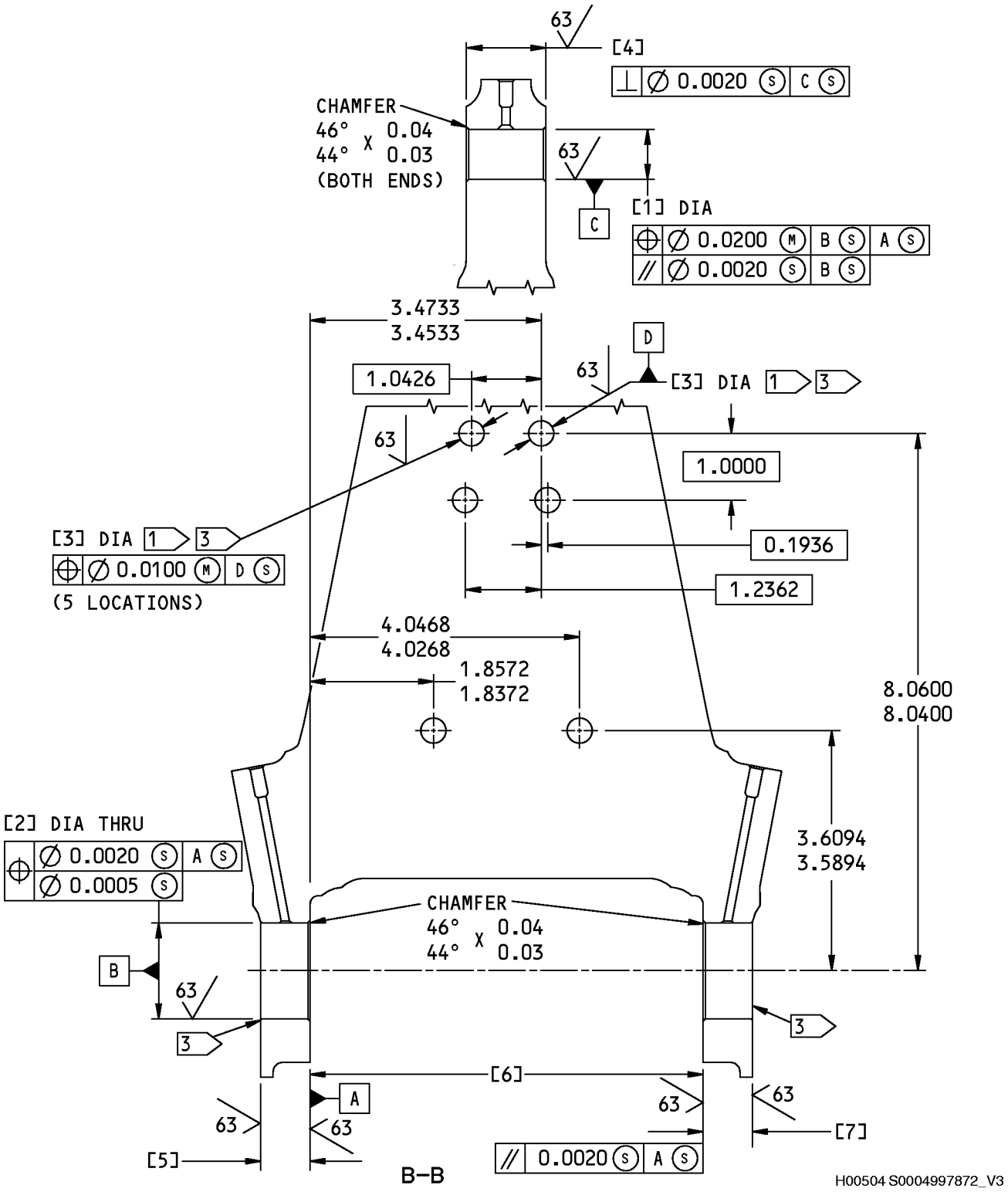
ALL DIMENSIONS ARE IN INCHES

G33322 S0004997870_V4

162A1311-2,-4 Upper Torsion Link Repair
Figure 601 (Sheet 3 of 3)



162A1315-2,-4 Upper Torsion Link Repair
Figure 602 (Sheet 1 of 3)



162A1315-2,-4 Upper Torsion Link Repair
Figure 602 (Sheet 2 of 3)

REFERENCE NUMBER	[1]	[2]	[3]	[4]	[5]	[6]	[7]
DESIGN DIMENSION	0.7518 0.7510	1.4392 1.4380	0.3754 0.3748	1.1900 1.1850	0.7450 0.7350	5.8865 5.8815	0.7450 0.7350
REPAIR LIMIT 5	0.9170	1.4992	0.4354	1.1050	0.7050	5.9465	0.7050

1 SHOT PEEN IS NOT NECESSARY. OVERSPRAY IS PERMITTED

2 PART NUMBER AND SERIAL NUMBER. DO NOT SHOT PEEN HERE

3 BREAK SHARP EDGE OF THE HOLE 0.0100-0.0300 R AND 63 MICROINCH FINISH

4 ANODIZATION IS NOT NECESSARY IN THE LUBE PASSAGE. DO NOT APPLY PRIMER

5 LIMIT FOR OVERSIZE BUSHING INSTALLATION

125 ALL MACHINED SURFACES UNLESS SHOWN DIFFERENTLY

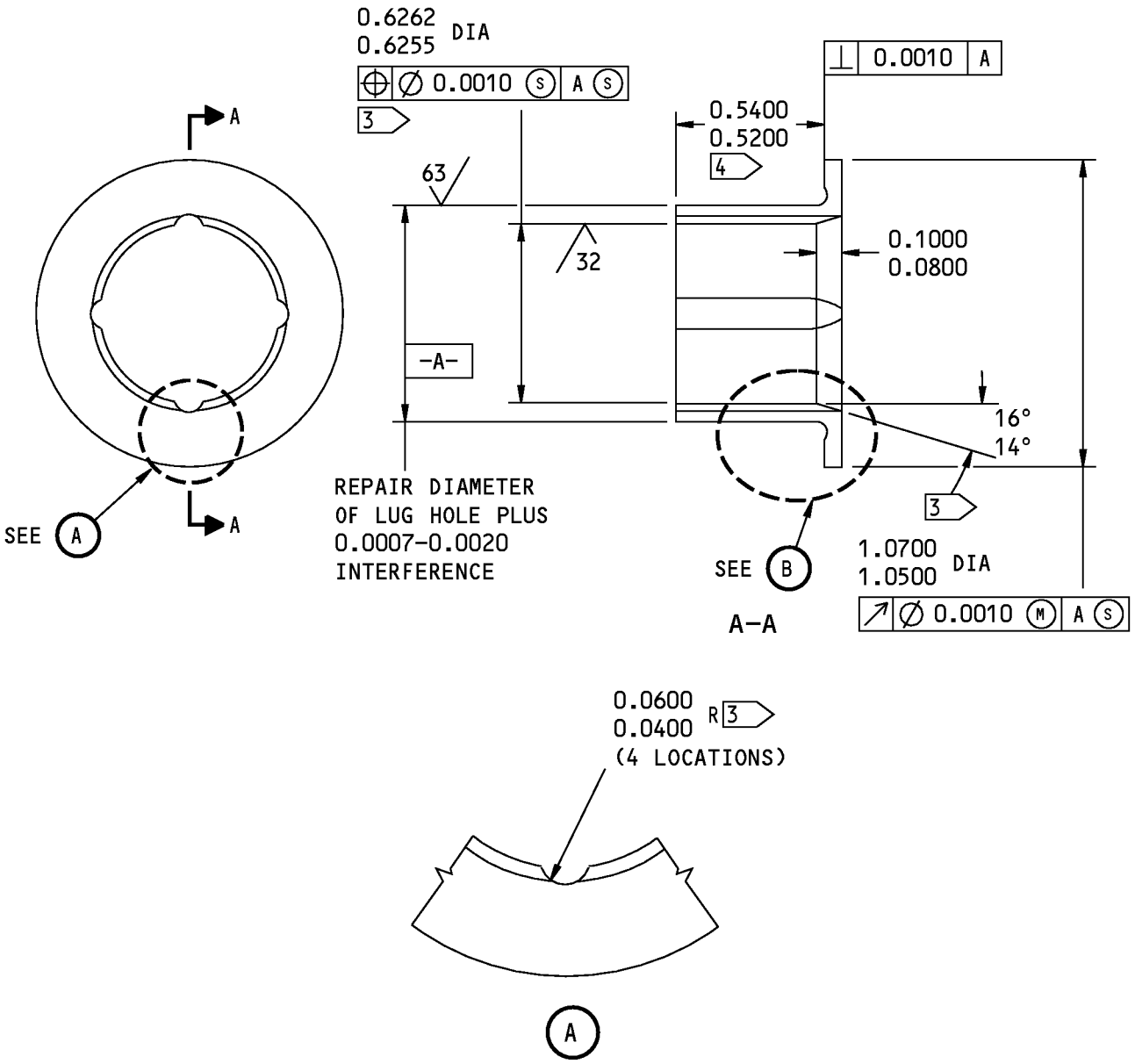
BREAK ALL SHARP EDGES

ITEM NUMBERS REFER TO IPL FIG. 1

ALL DIMENSIONS ARE IN INCHES

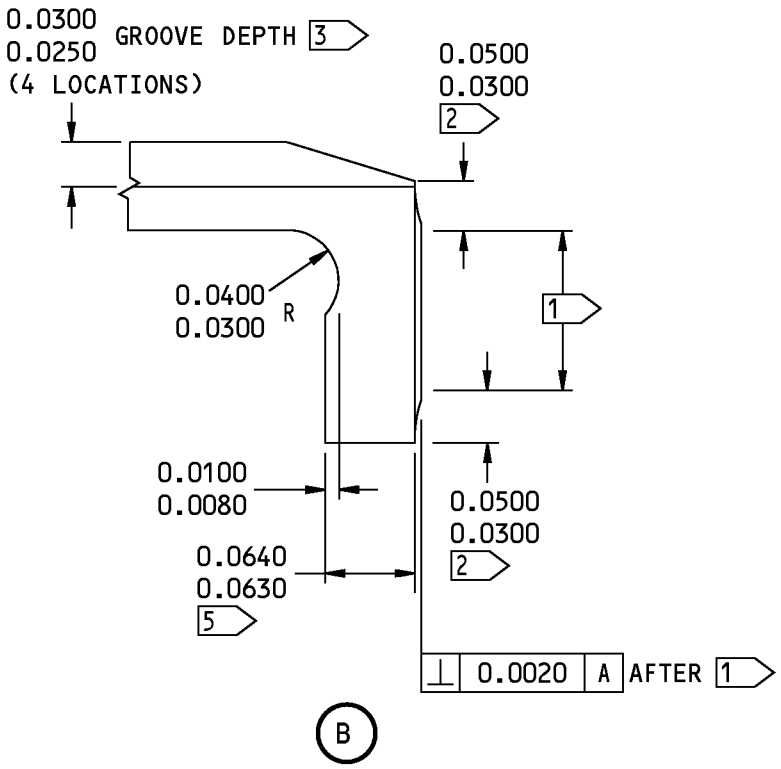
H00435 S0004997873_V4

162A1315-2,-4 Upper Torsion Link Repair
Figure 602 (Sheet 3 of 3)



HOLE LOCATION [1] FIG. 601 OR 602 - REPLACES BUSHING (160)

Oversize Bushing Details
Figure 603 (Sheet 1 of 2)



1 CHROME PLATE (F-15.34), 0.003-0.005 INCH THICK, 32 MICRO-INCH FINISH AFTER GRINDING (SOPM 20-10-04).

2 CHROME PLATE RUNOUT

3 NO CADMIUM PLATE

4 MINUS AMOUNT REMOVED FROM LUG FACE

5 PLUS AMOUNT REMOVED FROM LUG FACE

125 ALL MACHINED SURFACES UNLESS SHOWN DIFFERENTLY

MATERIAL: AL-NI-BRZ (AMS 4640)

BREAK ALL SHARP EDGES TO 0.01-0.02 R

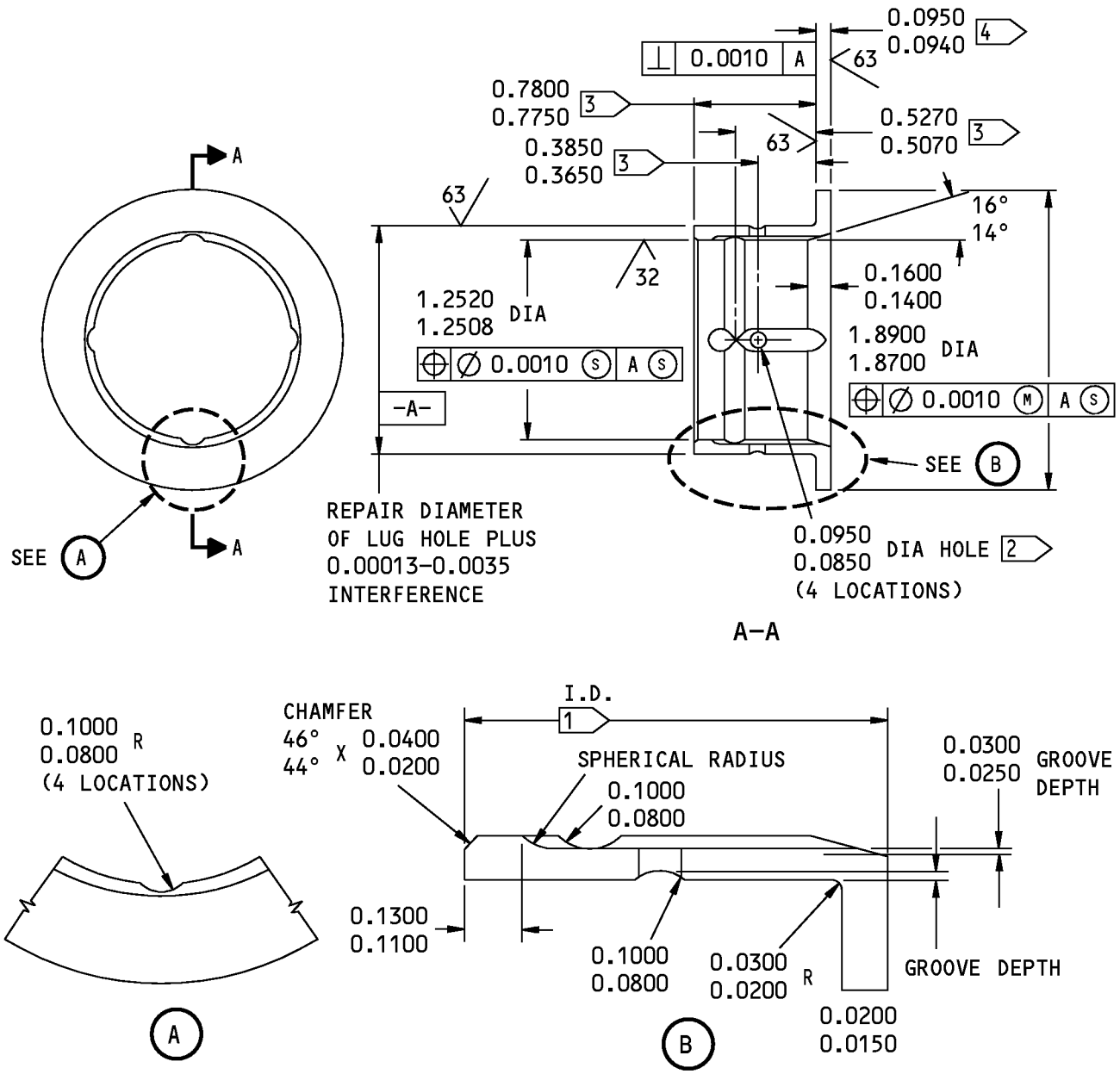
FINISH: CADMIUM PLATE (F-15.36) UNLESS SHOWN BY 1 2 3

ITEM NUMBERS REFER TO IPL FIG. 1

ALL DIMENSIONS ARE IN INCHES

ALL DIMENSIONS APPLY BEFORE PLATING

Oversize Bushing Details
Figure 603 (Sheet 2 of 2)



HOLE LOCATION [2] FIG. 601 OR 602 - REPLACES BUSHING (170)

G27748 S0004997876_V3

Oversize Bushing Details
Figure 604 (Sheet 1 of 2)

1 > NO CADMIUM PLATE

2 > CADMIUM THROW-IN PERMITTED

3 > MINUS AMOUNT REMOVED FROM LUG FACE

4 > PLUS AMOUNT REMOVED FROM LUG FACE

125 √ ALL MACHINED SURFACES UNLESS SHOWN DIFFERENTLY

MATERIAL: AL-NI-BRZ (AMS 4640)

BREAK ALL SHARP EDGES TO 0.01-0.02 R

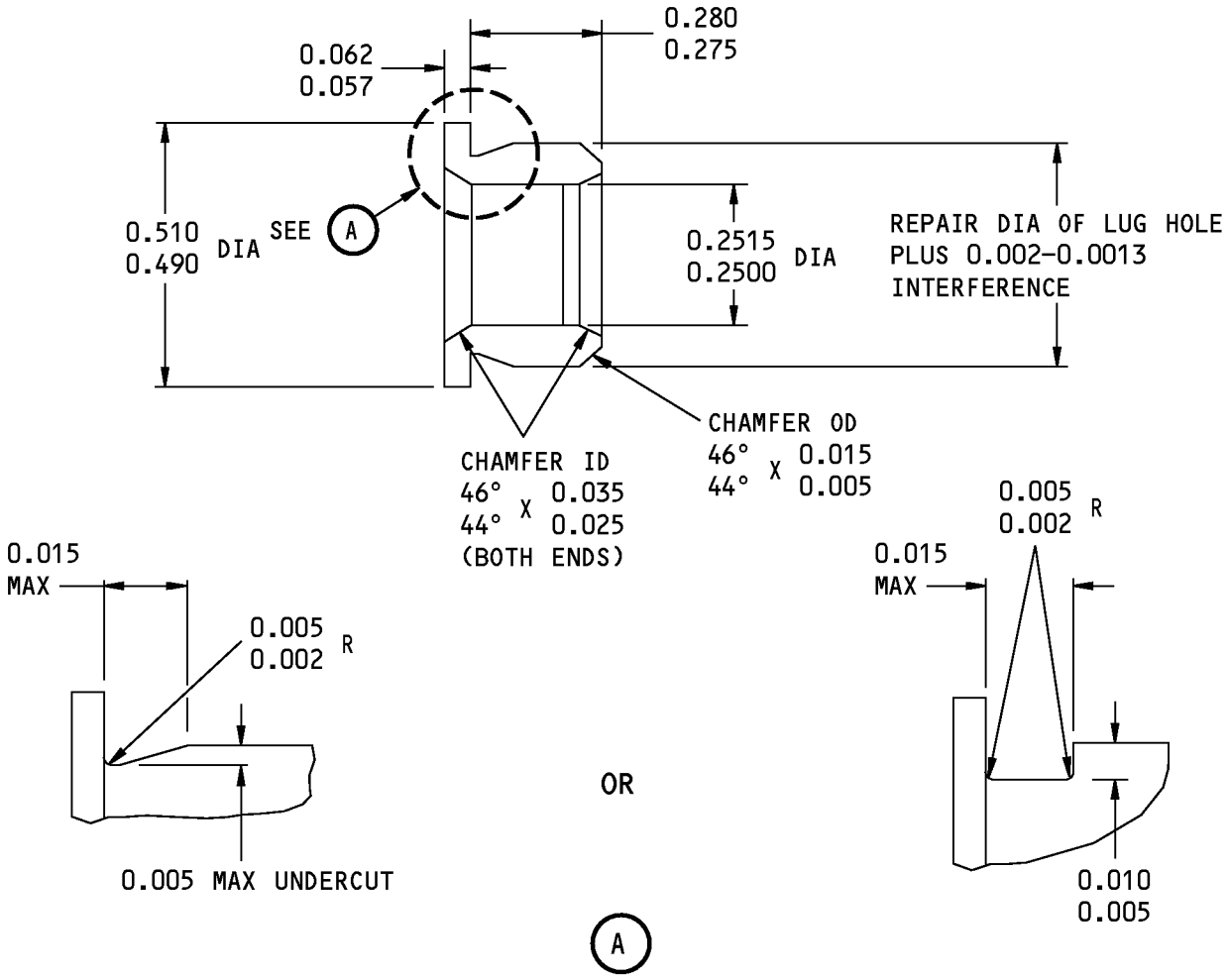
FINISH: CADMIUM PLATE (F-15.36) UNLESS SHOWN BY 1 >

ITEM NUMBERS REFER TO IPL FIG. 1

ALL DIMENSIONS ARE BEFORE PLATING

ALL DIMENSIONS ARE IN INCHES

Oversize Bushing Details
Figure 604 (Sheet 2 of 2)



100 ALL MACHINED SURFACES UNLESS SHOWN DIFFERENTLY

BREAK ALL SHARP EDGES 0.005-0.025

MATERIAL: BERYLLIUM COPPER (QQ-C-530), CONDITION H.T.

FINISH: CADMIUM PLATE (F-15.41)

ITEM NUMBERS REFER TO IPL FIG. 1

ALL DIMENSIONS APPLY AFTER PLATING

ALL DIMENSIONS ARE IN INCHES

HOLE LOCATION [3] FIG. 601 OR 602 - REPLACES BUSHING (165)

Oversize Bushing Details
Figure 605

LOWER LINK TORSION ASSEMBLY - REPAIR 6-1

162A1312–1, –3, 162A1313–1, –3

1. General

A. This procedure tells how to replace the bushings (110, 115, 120) and lube fittings (105) in the lower torsion link assembly (100).

B. Refer to the Standard Overhaul Practices Manual (SOPM) for the SOPM subjects identified in this procedure.

C. Refer to IPL Figure 1 for the item numbers.

2. Bushing Replacement

A. Consumable Materials

NOTE: Equivalent substitutes may be used.

Reference	Description	Specification
A00247	Sealant - Pressure And Environmental - Chromate Type	BMS 5-95

B. References

Reference	Title
SOPM 20-41-01	DECODING TABLE FOR BOEING FINISH CODES
SOPM 20-50-03	BEARING AND BUSHING REPLACEMENT
SOPM 20-60-04	MISCELLANEOUS MATERIALS

C. Procedure

NOTE: For the decoding table for Boeing finish codes, refer to SOPM 20-41-01. For miscellaneous materials, refer to SOPM 20-60-04.

(1) Remove the bushings (110, 115, 120) from the lower torsion link (125).

(2) If you find defects on the link surfaces, refer to REPAIR 6-2 for repair instructions.

(3) Use the shrink-fit procedure (SOPM 20-50-03) to install replacement bushings with sealant, A00247.

(4) Machine the bushings to the design dimensions and finish shown in REPAIR 6-1, Figure 601 or REPAIR 6-1, Figure 602.

3. Lube Fitting Replacement

A. Consumable Materials

NOTE: Equivalent substitutes may be used.

Reference	Description	Specification
A00247	Sealant - Pressure And Environmental - Chromate Type	BMS 5-95
D00633	Grease - Aircraft General Purpose	BMS3-33

B. References

Reference	Title
CMM 32-00-03	LANDING GEAR PARTS LUBRICATION FITTING REPLACEMENT
SOPM 20-60-03	LUBRICANTS
SOPM 20-60-04	MISCELLANEOUS MATERIALS

C. Procedure

NOTE: For landing gear parts lubrication fitting replacement, refer to CMM 32-00-03.

(1) Remove the old lube fittings (105) from the torsion link (125).

(2) Install replacement lube fittings with sealant, A00247 (SOPM 20-60-04).

(3) After bushing and lube fitting installation, apply grease, D00633 (SOPM 20-60-03) at the lube fitting until the grease comes out at the bushing inner diameter.

4. Link Torsion Assembly Refinish

A. Consumable Materials

NOTE: Equivalent substitutes may be used.

Reference	Description	Specification
C00033	Coating - Exterior Protective Enamel, Flexibility Use	BMS10-60, Type II

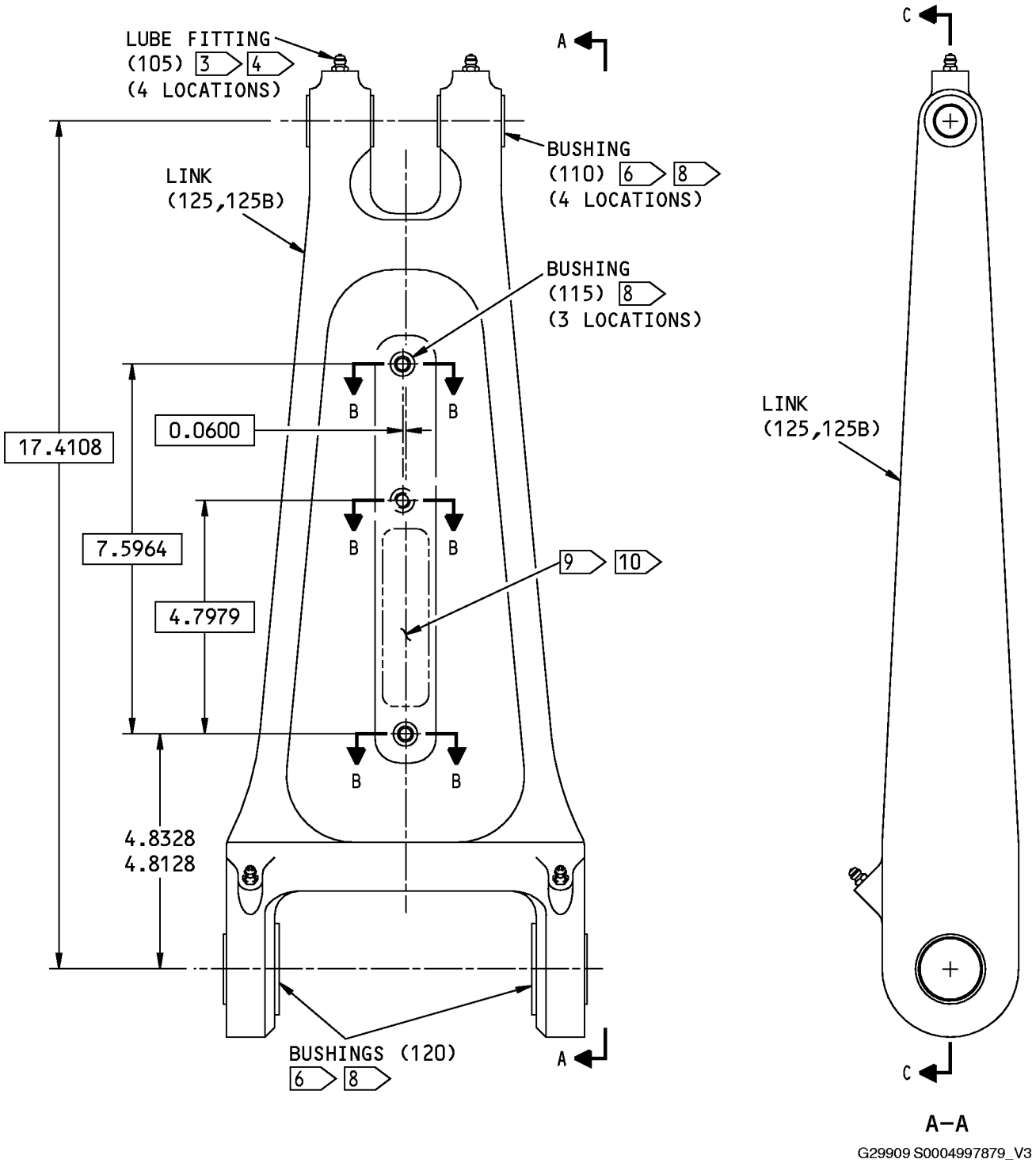
B. References

Reference	Title
SOPM 20-41-01	DECODING TABLE FOR BOEING FINISH CODES
SOPM 20-60-02	FINISHING MATERIALS

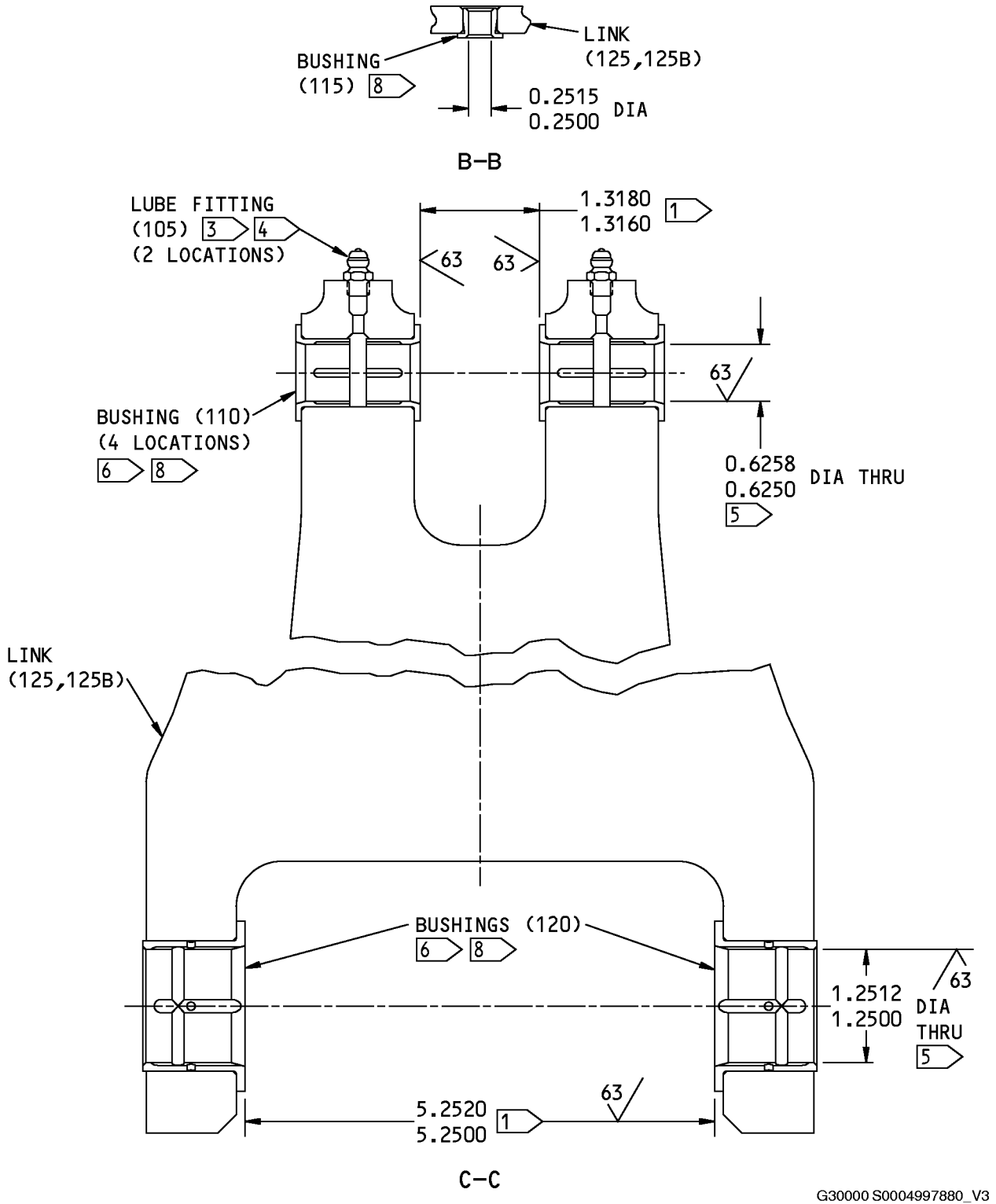
C. Procedure (REPAIR 6-1, Figure 601 or REPAIR 6-1, Figure 602)

NOTE: For the decoding table for Boeing finish codes, refer to SOPM 20-41-01. For finishing materials, refer to SOPM 20-60-02.

(1) Apply enamel coating, C00033 (F-20.56-707) to external surfaces, but not the holes, bushing flanges, lube fitting, and surface shown by flagnote 10.



162A1312-1, -3 Lower Torsion Link Assembly Repair
Figure 601 (Sheet 1 of 3)



162A1312-1, -3 Lower Torsion Link Assembly Repair
Figure 601 (Sheet 2 of 3)

1> MACHINE THE FLANGE FACES OF THE BUSHINGS TO GET THIS DIMENSION WHEN INSTALLED. MINIMUM FLANGE THICKNESS, 0.060 INCH

2> DELETED

3> AFTER BUSHING AND LUBE FITTING INSTALLATION AND BEFORE THE SEALANT DRIES, APPLY GREASE TO THE LUBE FITTING UNTIL THE GREASE COMES OUT AT THE INNER DIAMETER OF THE BUSHING

4> INSTALL THE LUBE FITTING WITH BMS 5-95 SEALANT

5> INSTALLED DIMENSION. ADJUST TO THIS SIZE IF NECESSARY

6> THE MAXIMUM DISTANCE BETWEEN THE FACE OF THE LUG AND THE INSIDE OF THE BUSHING FLANGE IS 0.0010 INCH

7> RESERVED

8> USE THE SHRINK-FIT PROCEDURE TO INSTALL THE BUSHING WITH BMS 5-95 SEALANT

9> PART NUMBER AND SERIAL NUMBER

10> DO NOT APPLY ENAMEL (F-20.56-707) HERE. MASK THIS AREA AS NECESSARY. APPLY BMS 10-60, TYPE 2 GLOSS ENAMEL (F-19.39-707). WHEN DRY, APPLY BLACK ENAMEL (F-19.39-701) TO THE CHARACTERS ONLY. WHEN DRY, APPLY A LAYER OF TYPE 41 CLEAR COATING (F-21.34) TO THIS AREA.

ITEM NUMBERS REFER TO IPL FIG. 1

ALL DIMENSIONS ARE IN INCHES

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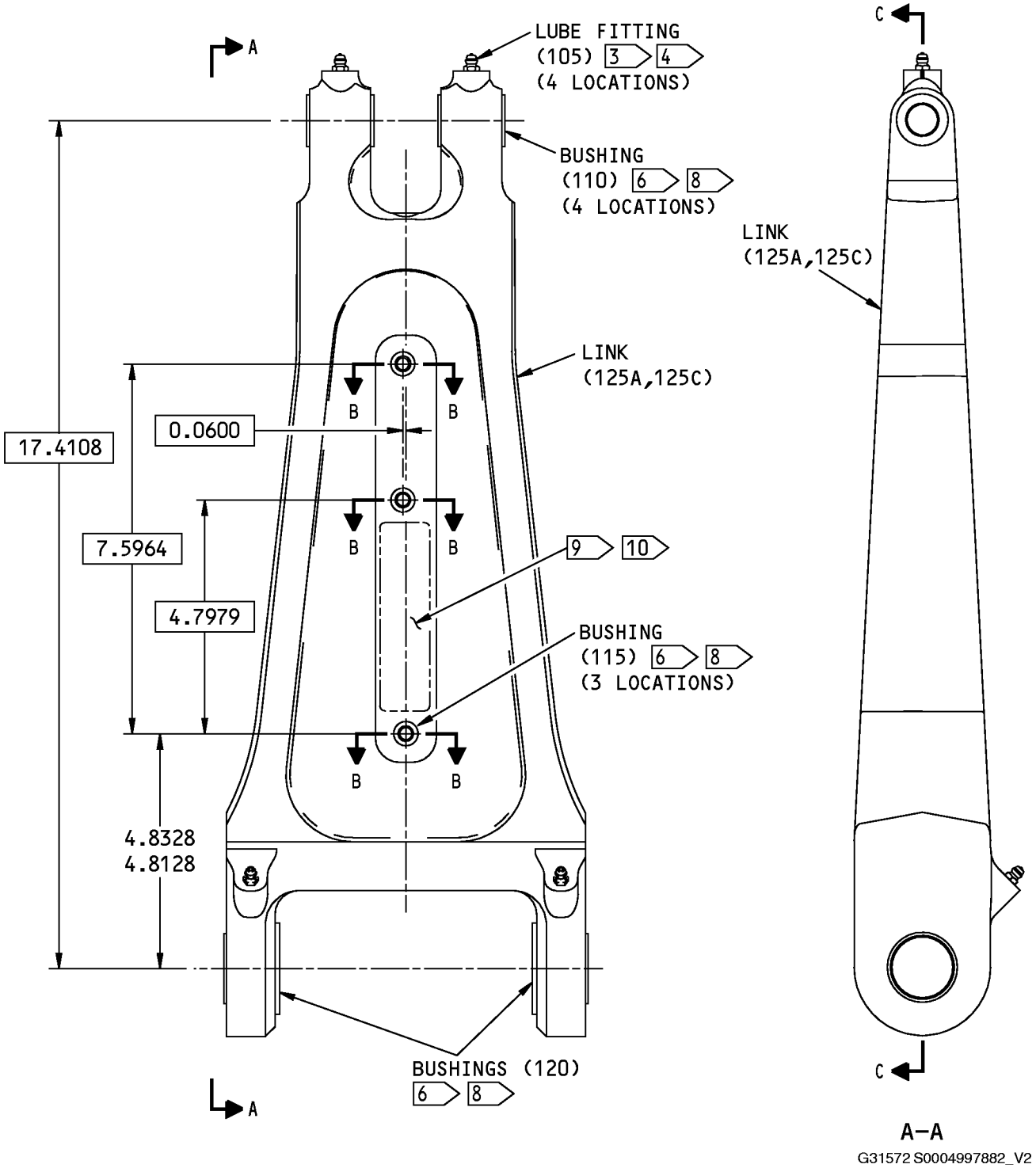
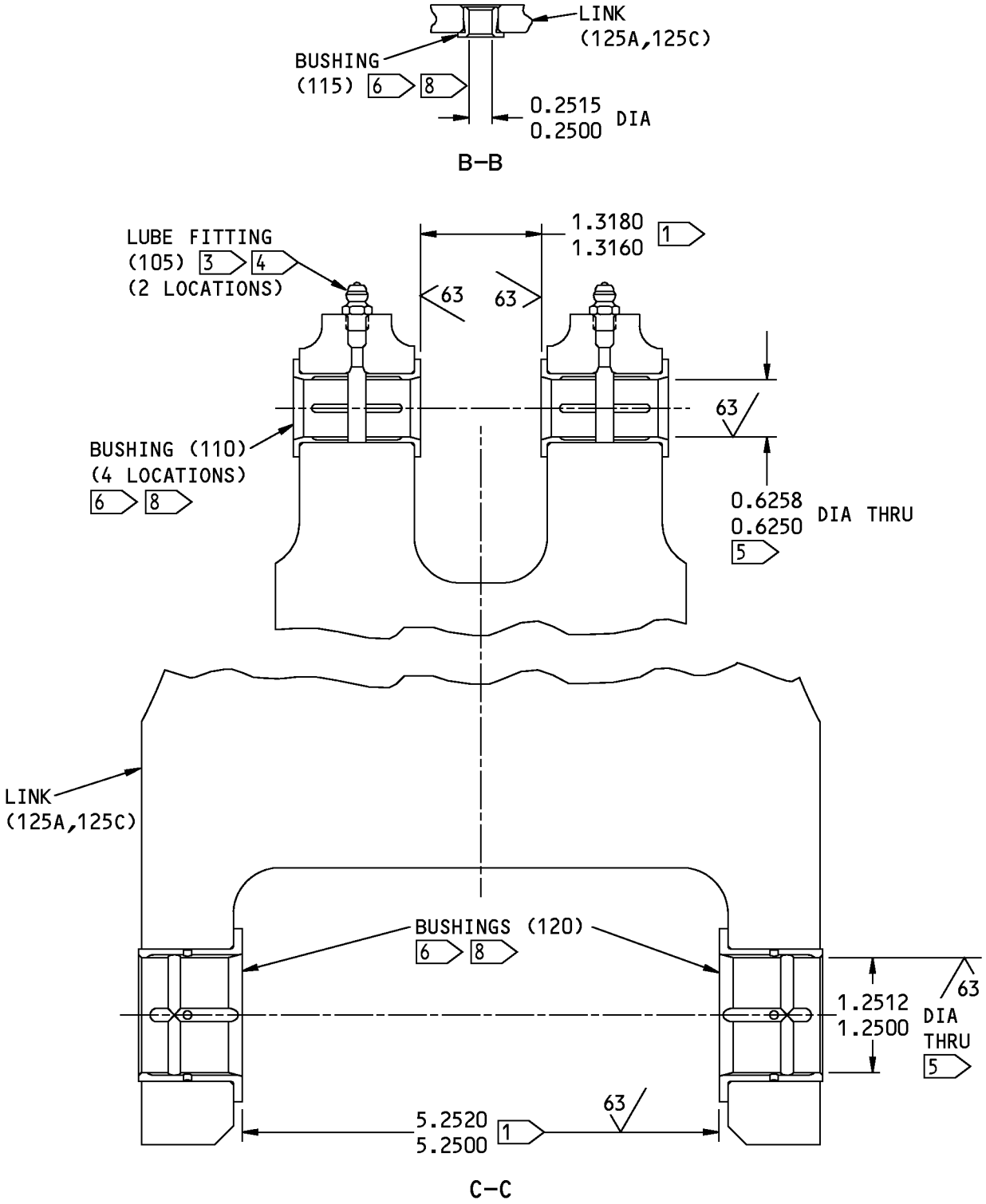
162A1312-1, -3 Lower Torsion Link Assembly Repair
Figure 601 (Sheet 3 of 3)



162A1313-1, -3 Lower Torsion Link Assembly Repair
Figure 602 (Sheet 1 of 3)



H01011 S0004997883_V3

162A1313-1, -3 Lower Torsion Link Assembly Repair
Figure 602 (Sheet 2 of 3)

1> MACHINE THE FLANGE FACES OF THE BUSHINGS TO GET THIS DIMENSION WHEN INSTALLED. MINIMUM FLANGE THICKNESS, 0.060 INCH

2> DELETED

3> AFTER BUSHING AND LUBE FITTING INSTALLATION AND BEFORE THE SEALANT DRIES, APPLY GREASE TO THE LUBE FITTING UNTIL THE GREASE COMES OUT AT THE INNER DIAMETER OF THE BUSHING

4> INSTALL THE LUBE FITTING WITH BMS 5-95 SEALANT

5> INSTALLED DIMENSION. ADJUST TO THIS SIZE IF NECESSARY

6> THE MAXIMUM DISTANCE BETWEEN THE FACE OF THE LUG AND THE INSIDE OF THE BUSHING FLANGE IS 0.0010 INCH

7> RESERVED

8> USE THE SHRINK-FIT PROCEDURE TO INSTALL THE BUSHING WITH BMS 5-95 SEALANT

9> PART NUMBER AND SERIAL NUMBER

10> DO NOT APPLY ENAMEL (F-20.56-707) HERE. MASK THIS AREA AS NECESSARY. APPLY BMS 10-60, TYPE 2 GLOSS ENAMEL (F-19.39-707). WHEN DRY, APPLY BLACK ENAMEL (F-19.39-701) TO THE CHARACTERS ONLY. WHEN DRY, APPLY A LAYER OF TYPE 41 CLEAR COATING (F-21.34) TO THIS AREA

ITEM NUMBERS REFER TO IPL FIG. 1

ALL DIMENSIONS ARE IN INCHES

H01012 S0004997884_V3

162A1313-1, -3 Lower Torsion Link Assembly Repair
Figure 602 (Sheet 3 of 3)

LOWER TORSION LINK - REPAIR 6-2

162A1312–2, –4, 162A1313–2, –4

1. General

A. This procedure tells how to repair and refinish the lower torsion link (125).

B. Refer to the Standard Overhaul Practices Manual (SOPM) for details of the SOPM subjects identified in this procedure.

C. Refer to IPL Figure 1 for the item numbers.

D. General repair details:

(1) Material: Al alloy

(2) Shot peen: All surfaces, but not in the lubrication holes or the part mark area.

Intensity 0.008-0.013A2

Coverage 1.0 Automatic, 2.0 Manual

2. Lower Torsion Link Refinish

A. Consumable Materials

NOTE: Equivalent substitutes may be used.

Reference	Description	Specification
C00175	Primer - Urethane Compatible, Corrosion Resistant (Less Than 1% Aromatic Amines)	BMS10-79, Type III

B. References

Reference	Title
SOPM 20-10-03	SHOT PEENING
SOPM 20-30-02	STRIPPING OF PROTECTIVE FINISHES
SOPM 20-41-01	DECODING TABLE FOR BOEING FINISH CODES
SOPM 20-60-02	FINISHING MATERIALS

C. Procedure (REPAIR 6-2, Figure 601 or REPAIR 6-2, Figure 602)

NOTE: For shot peening, refer to SOPM 20-10-03. For stripping of protective finishes, refer to SOPM 20-30-02. For the decoding table for Boeing finish codes, refer to SOPM 20-41-01.

(1) Boric acid-sulfuric acid anodize or chromic acid anodize (F-17.31). Anodization is optional in the lubrication holes. Apply primer, C00175 (F-19.47), but not in the lubrication holes (SOPM 20-60-02).

3. Lower Torsion Link Repair (REPAIR 6-2, Figure 601 or REPAIR 6-2, Figure 602)

A. Lug Faces and Holes

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

(2) Make oversize bushings (REPAIR 6-2, Figure 604 and REPAIR 6-2, Figure 606), as necessary, to adjust for the material removed.

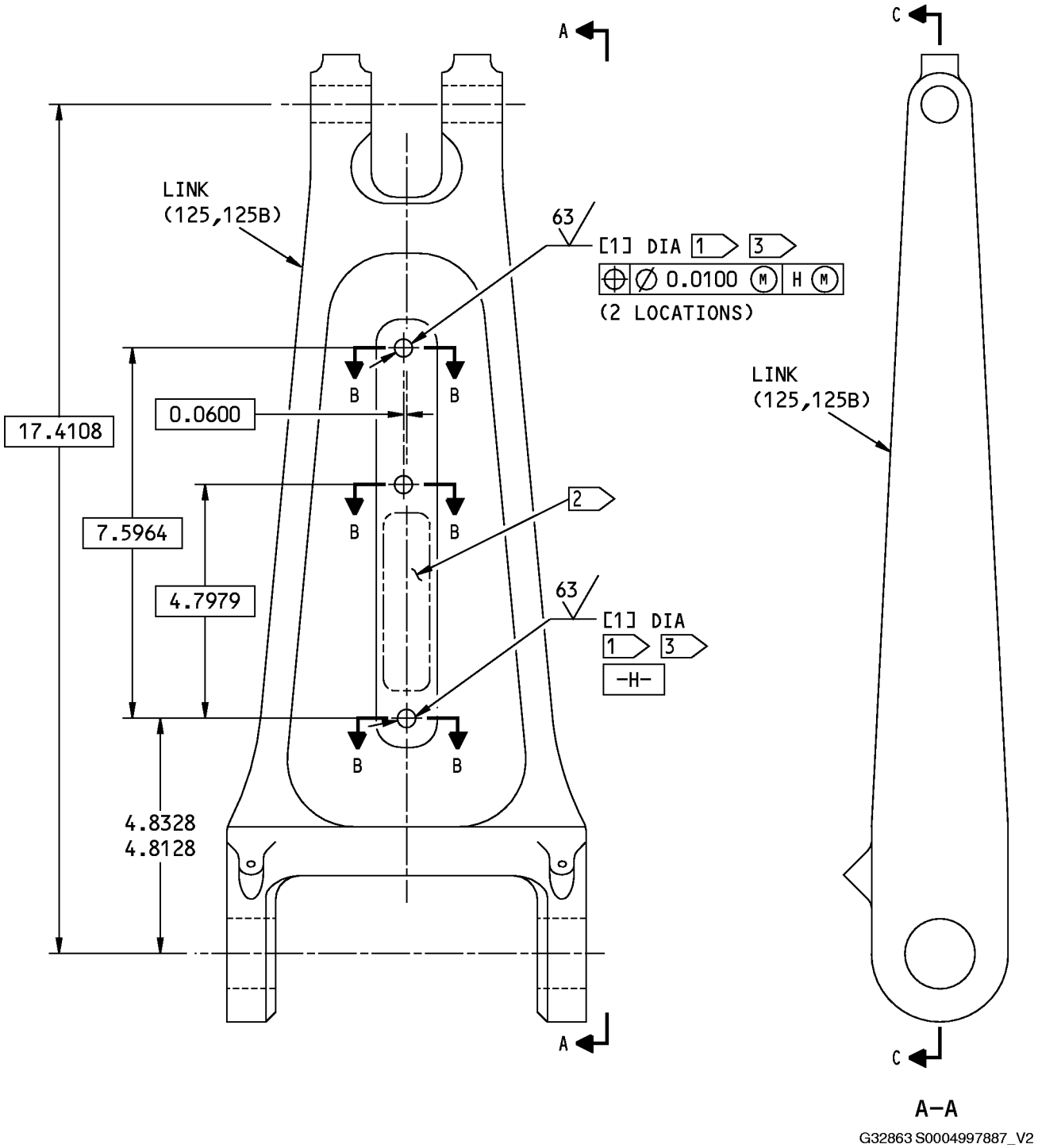
(3) Install the bushings as shown in REPAIR 6-1.

B. Nicks and Gouges (REPAIR 6-2, Figure 603)

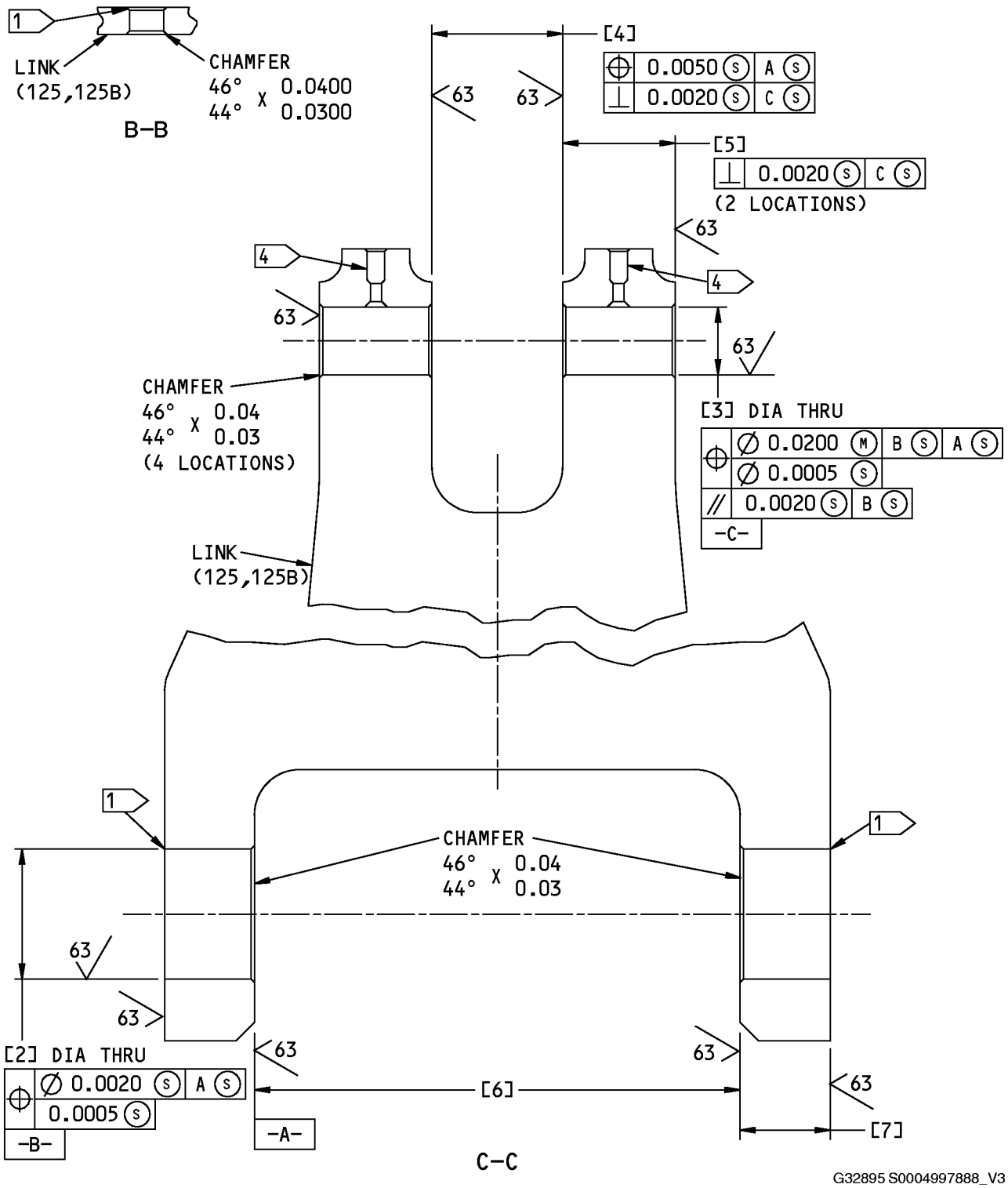
(1) Blend out the defects within the limits and areas shown. Blends can be on the left flange or the right flange, or both, but only one blend is permitted on each flange. Blend out the defects 20:1 with the adjacent surfaces. If blends are necessary outside the limits or areas shown, ask Boeing for advice.

(2) Shot peen as indicated.

(3) Refinish as specified in REPAIR 6-2, Paragraph 2.



162A1312-2, -4 Lower Torsion Link Repair
Figure 601 (Sheet 1 of 3)



162A1312-2, -4 Lower Torsion Link Repair
Figure 601 (Sheet 2 of 3)

REFERENCE NUMBER	[1]	[2]	[3]	[4]	[5]	[6]	[7]
DESIGN DIMENSION	0.3754 0.3748	1.4392 1.4380	0.7518 0.7510	1.4470 1.4420	1.2500 1.2400	5.3775 5.3725	1.0000 0.9900
REPAIR LIMIT 5	0.4354	1.4992	0.8118	1.5250	1.1870	5.4375	0.9600

1 BREAK SHARP EDGES OF THE HOLE 0.01-0.03 R AND 63 MICROINCH FINISH

2 PART NUMBER AND SERIAL NUMBER. DO NOT SHOT PEEN HERE

3 SHOT PEEN IS NOT NECESSARY. OVERSPRAY IS PERMITTED

4 ANODIZATION IS NOT NECESSARY IN THE LUBE PASSAGE. DO NOT APPLY PRIMER

5 LIMIT FOR OVERSIZE BUSHING INSTALLATION

125 ALL MACHINED SURFACES UNLESS SHOWN DIFFERENTLY

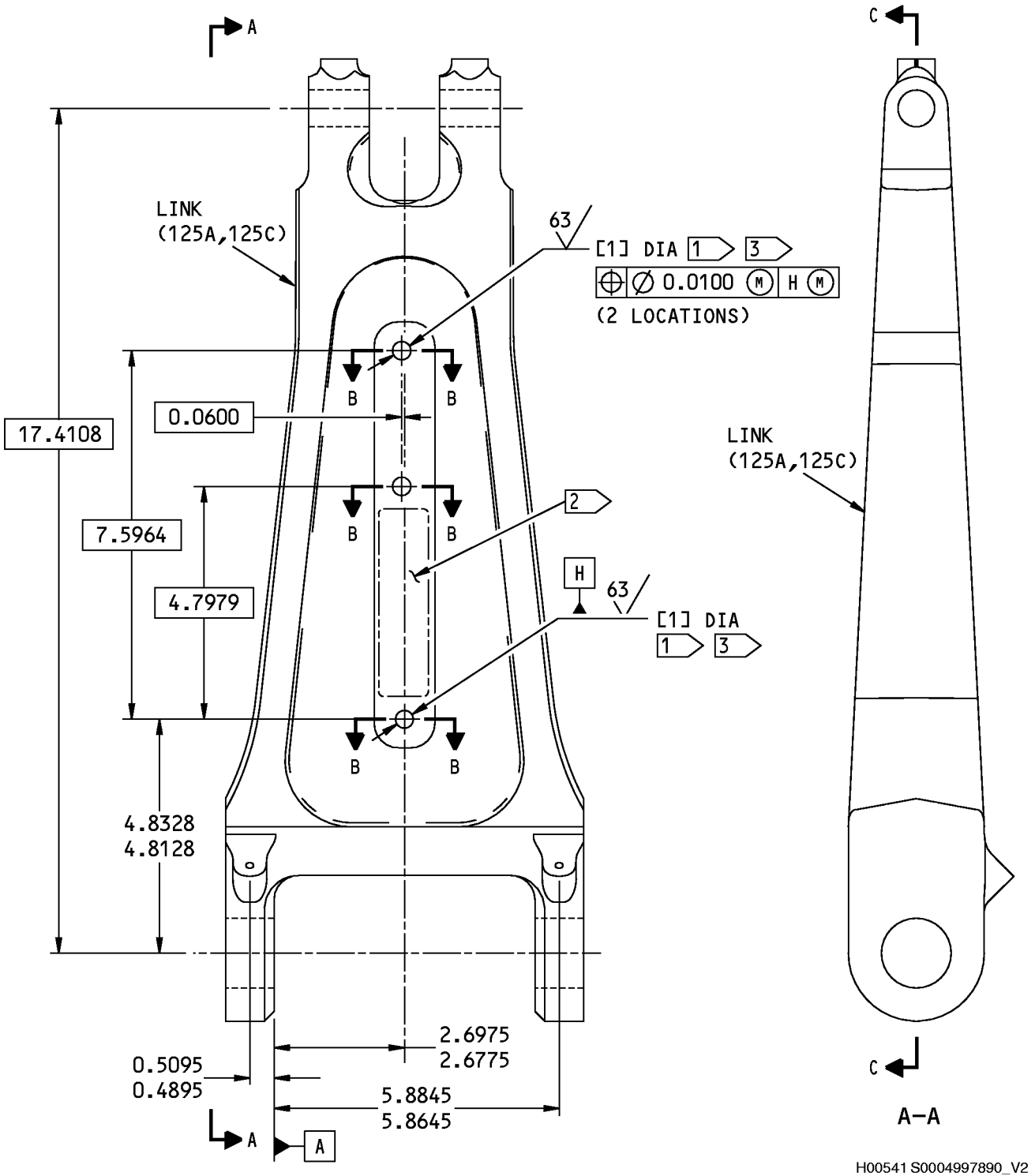
BREAK ALL SHARP EDGES TO 0.06-0.09 R UNLESS SHOWN DIFFERENTLY

ITEM NUMBERS REFER TO IPL FIG. 1

ALL DIMENSIONS ARE IN INCHES

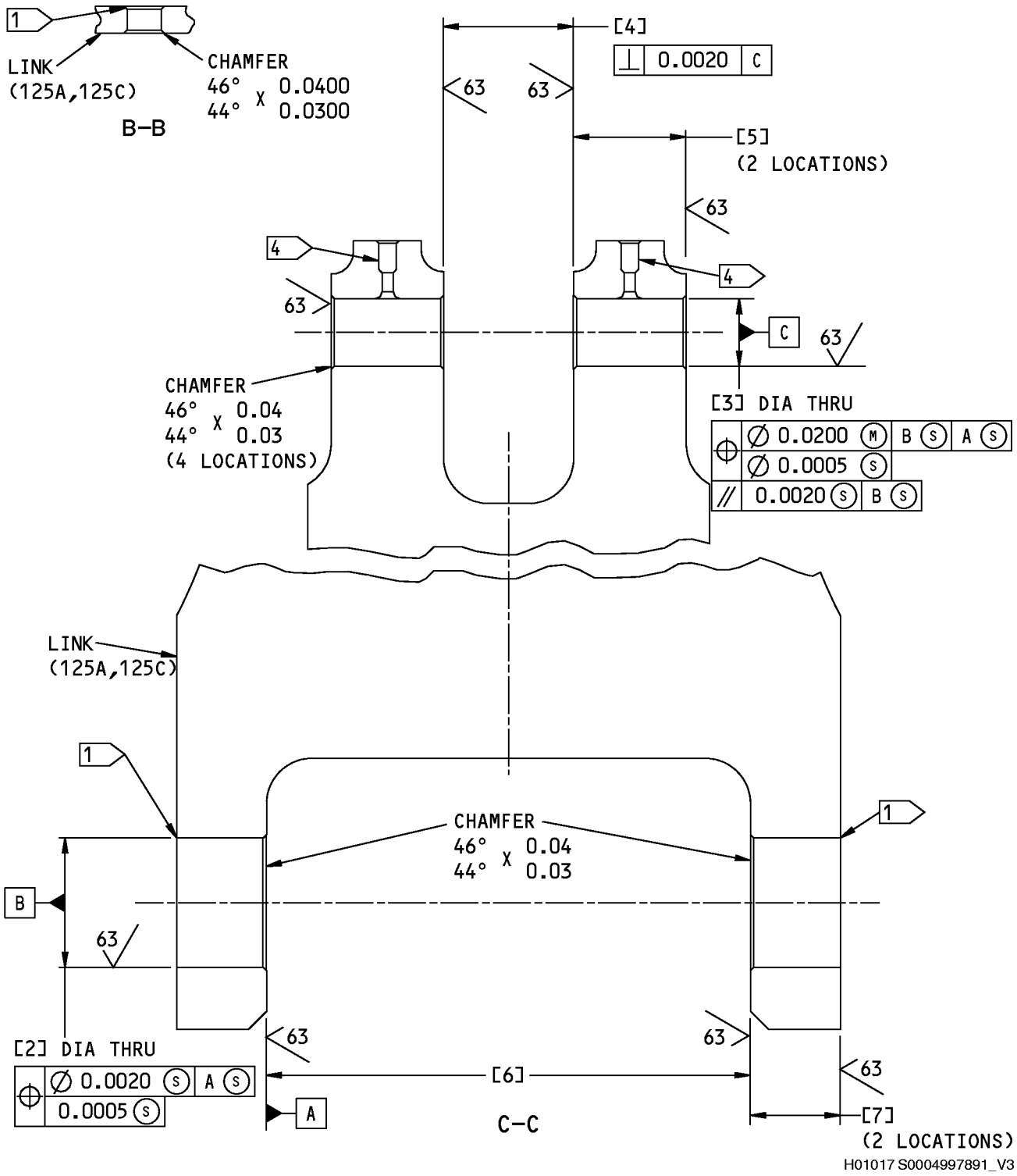
G32932 S0004997889_V4

162A1312-2, -4 Lower Torsion Link Repair
Figure 601 (Sheet 3 of 3)



H00541 S0004997890_V2

162A1313-2, -4 Lower Torsion Link Repair
Figure 602 (Sheet 1 of 3)



162A1313-2, -4 Lower Torsion Link Repair
Figure 602 (Sheet 2 of 3)

REFERENCE NUMBER	[1]	[2]	[3]	[4]	[5]	[6]	[7]
DESIGN DIMENSION	0.3754 0.3748	1.4392 1.4380	0.7518 0.7510	1.4470 1.4420	1.2500 1.2400	5.3775 5.3725	1.0000 0.9900
REPAIR LIMIT 5	0.4354	1.4992	0.8118	1.5250	1.1870	5.4375	0.9600

1 BREAK SHARP EDGES OF THE HOLE 0.01-0.03 R AND 63 MICROINCH FINISH

2 PART NUMBER AND SERIAL NUMBER. DO NOT SHOT PEEN HERE

3 SHOT PEEN IS NOT NECESSARY. OVERSPRAY IS PERMITTED

4 ANODIZATION IS NOT NECESSARY IN THE LUBE PASSAGE. DO NOT APPLY PRIMER

5 LIMIT FOR OVERSIZE BUSHING INSTALLATION

125 ALL MACHINED SURFACES UNLESS SHOWN DIFFERENTLY

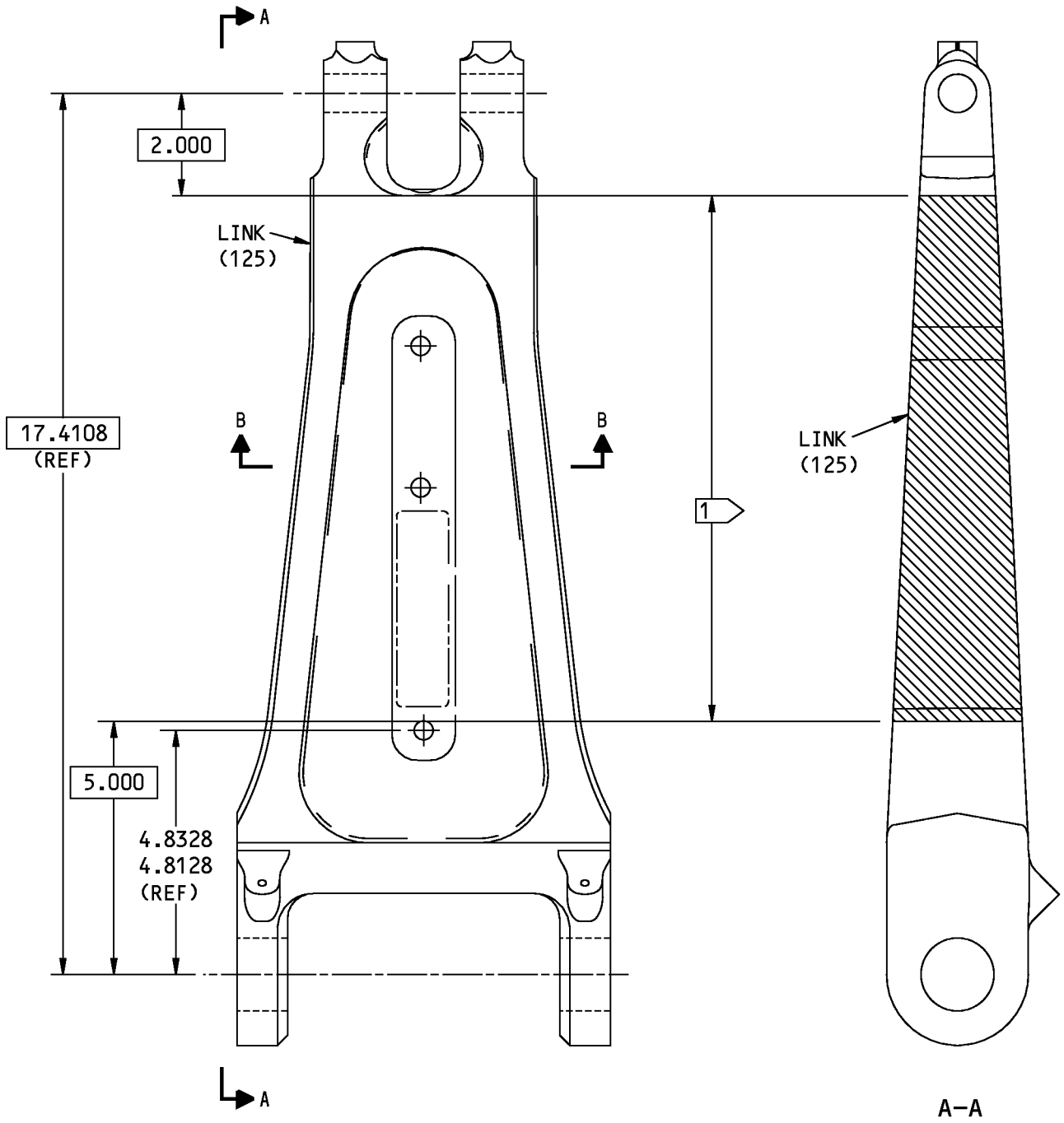
BREAK ALL SHARP EDGES TO 0.06-0.09 R UNLESS SHOWN DIFFERENTLY

ITEM NUMBERS REFER TO IPL FIG. 1

ALL DIMENSIONS ARE IN INCHES

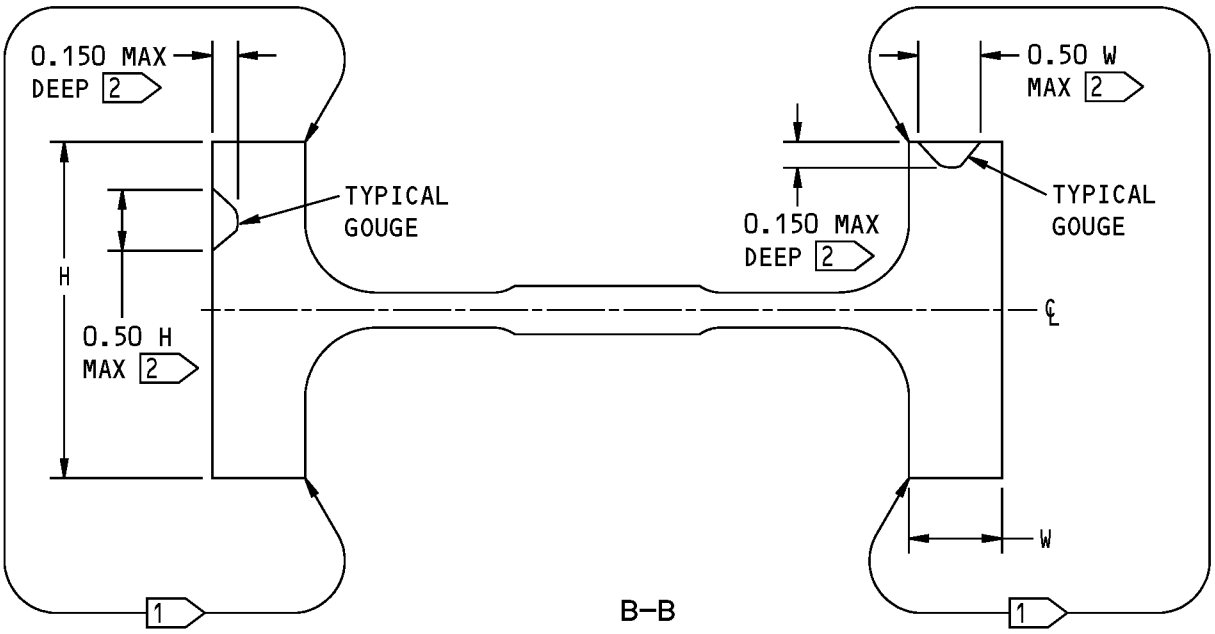
H01019 S0004997892_V4

162A1313-2, -4 Lower Torsion Link Repair
Figure 602 (Sheet 3 of 3)



W42546 S0004997893_V2

162A1312-2,-4; 162A1313-2,-4 Lower Torsion Link Nick and Gouge Repair
Figure 603 (Sheet 1 of 2)



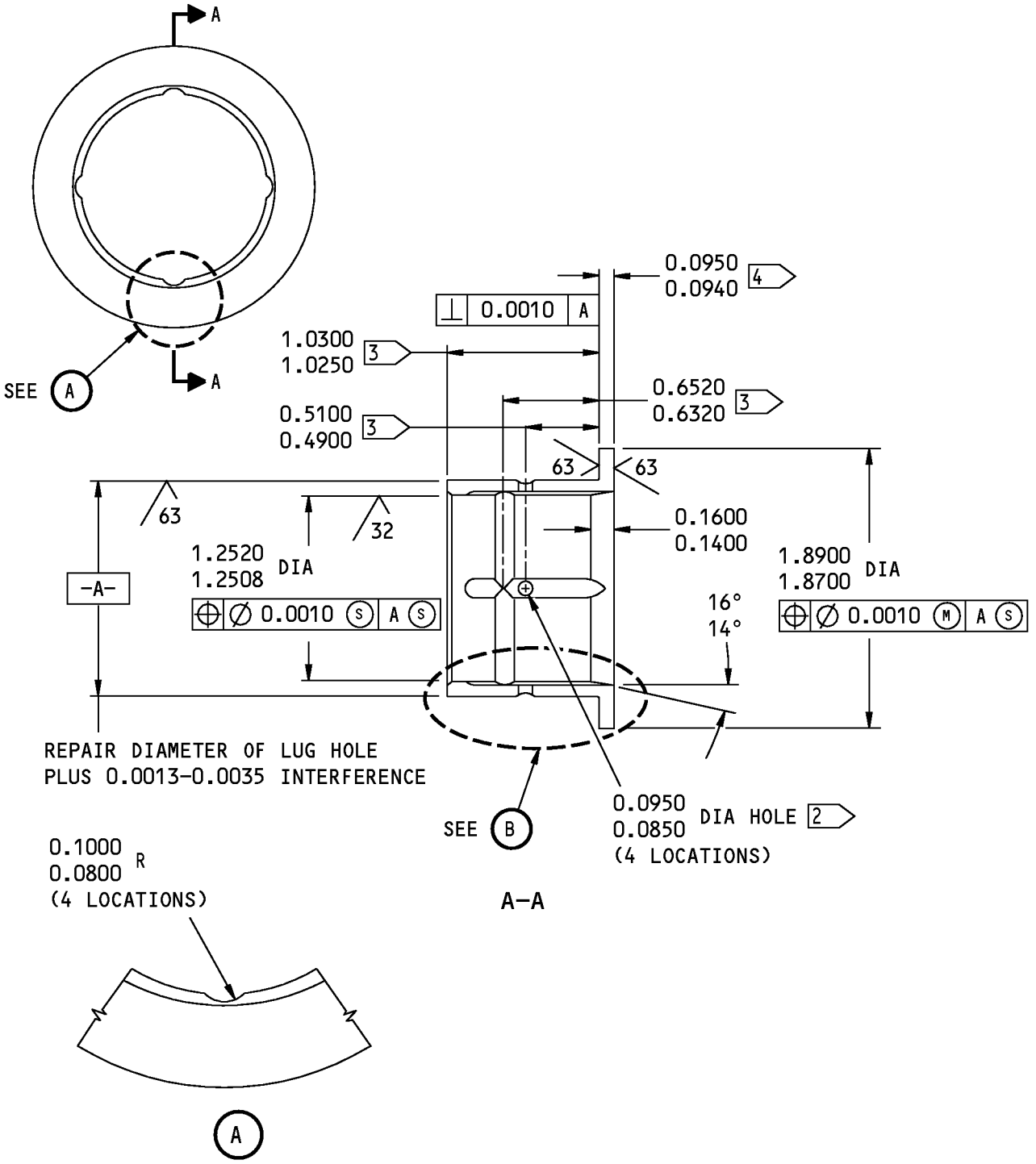
1 BLENDS PERMITTED ONLY ON THESE OUTER SURFACES. ONLY ONE BLEND PERMITTED ON EACH FLANGE, ON ONLY ONE OF THE TOP, SIDE, OR BOTTOM SURFACES

2 LIMIT FOR DEFECT REMOVAL

ITEM NUMBERS REFER TO IPL FIG. 1

ALL DIMENSIONS ARE IN INCHES

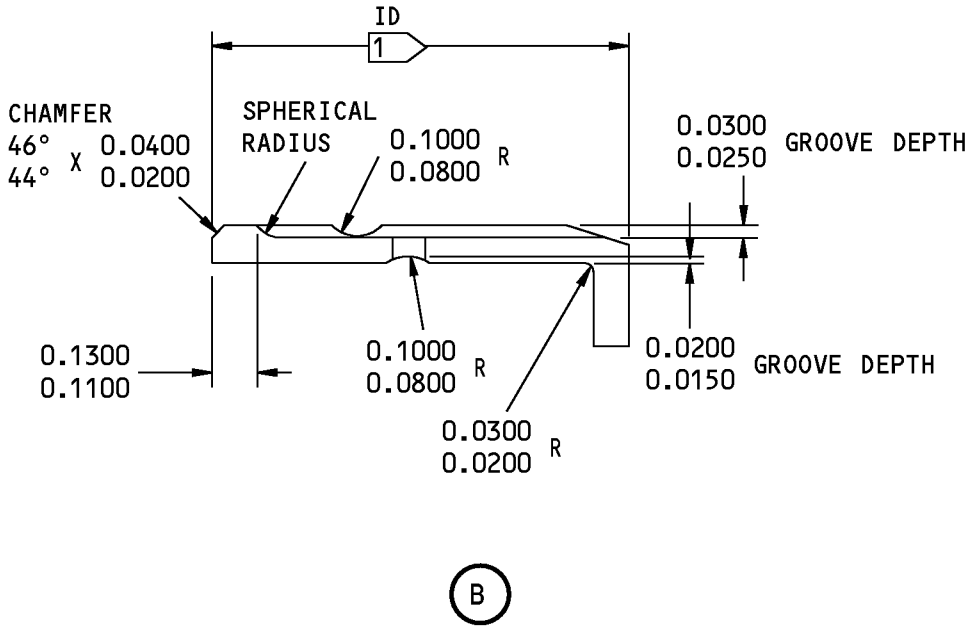
162A1312-2,-4; 162A1313-2,-4 Lower Torsion Link Nick and Gouge Repair
Figure 603 (Sheet 2 of 2)



HOLE LOCATION [2] FIG. 601 OR 602 - REPLACES BUSHING (120)

G27006 S0004997895_V3

Oversize Bushing Details
Figure 604 (Sheet 1 of 2)



1 NO CADMIUM PLATE

2 CADMIUM THROW-IN PERMITTED

3 MINUS AMOUNT REMOVED FROM LUG FACE

4 PLUS AMOUNT REMOVED FROM LUG FACE

125 ALL MACHINED SURFACES UNLESS SHOWN DIFFERENTLY

BREAK ALL SHARP EDGES TO 0.01-0.02 R

MATERIAL: AL-NI-BRZ (AMS 4640)

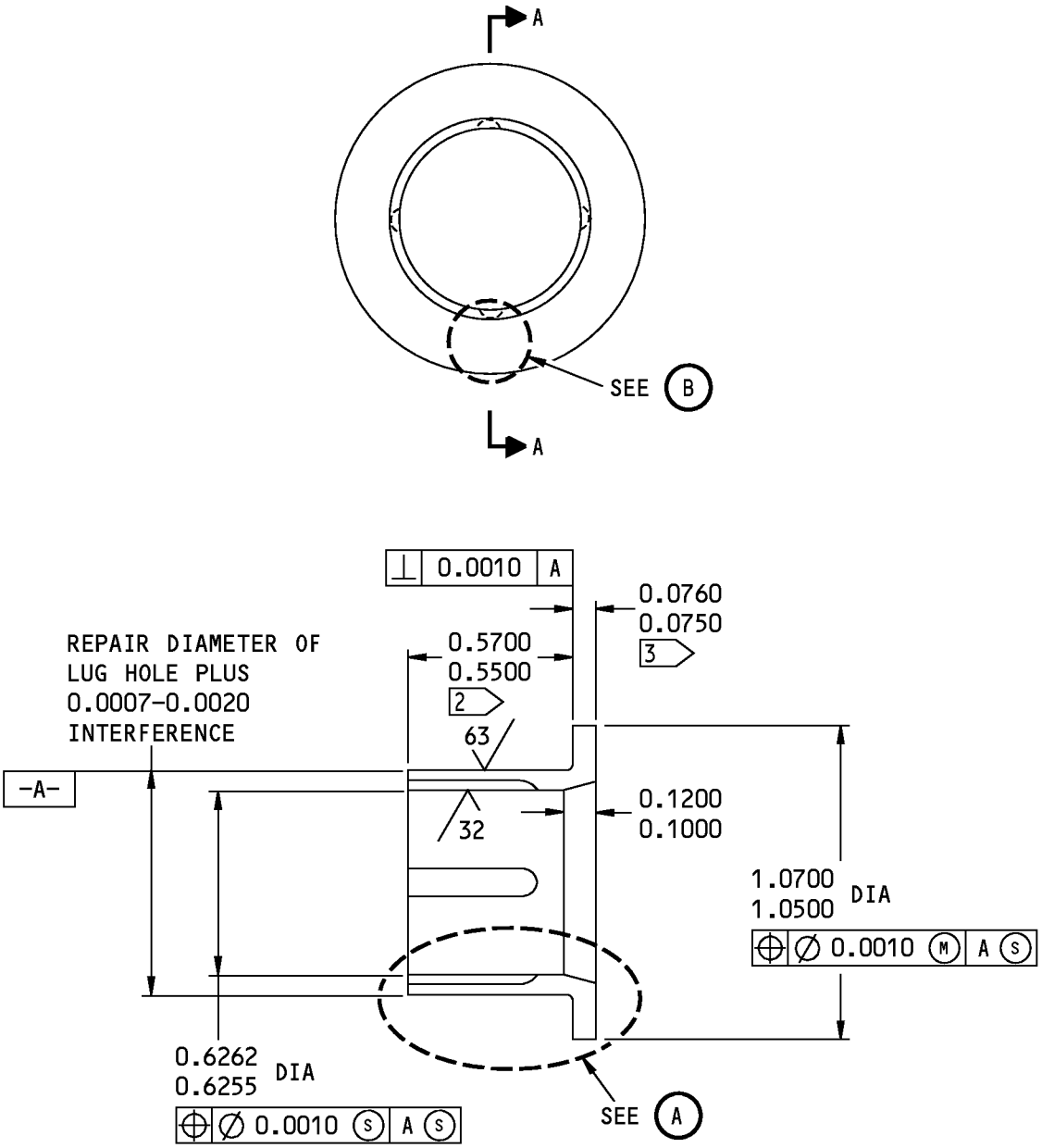
FINISH: CADMIUM PLATE (F-15.36) UNLESS SHOWN BY 1 2

ITEM NUMBERS REFER TO IPL FIG. 1

ALL DIMENSIONS ARE IN INCHES

ALL DIMENSIONS APPLY BEFORE PLATING

Oversize Bushing Details
Figure 604 (Sheet 2 of 2)

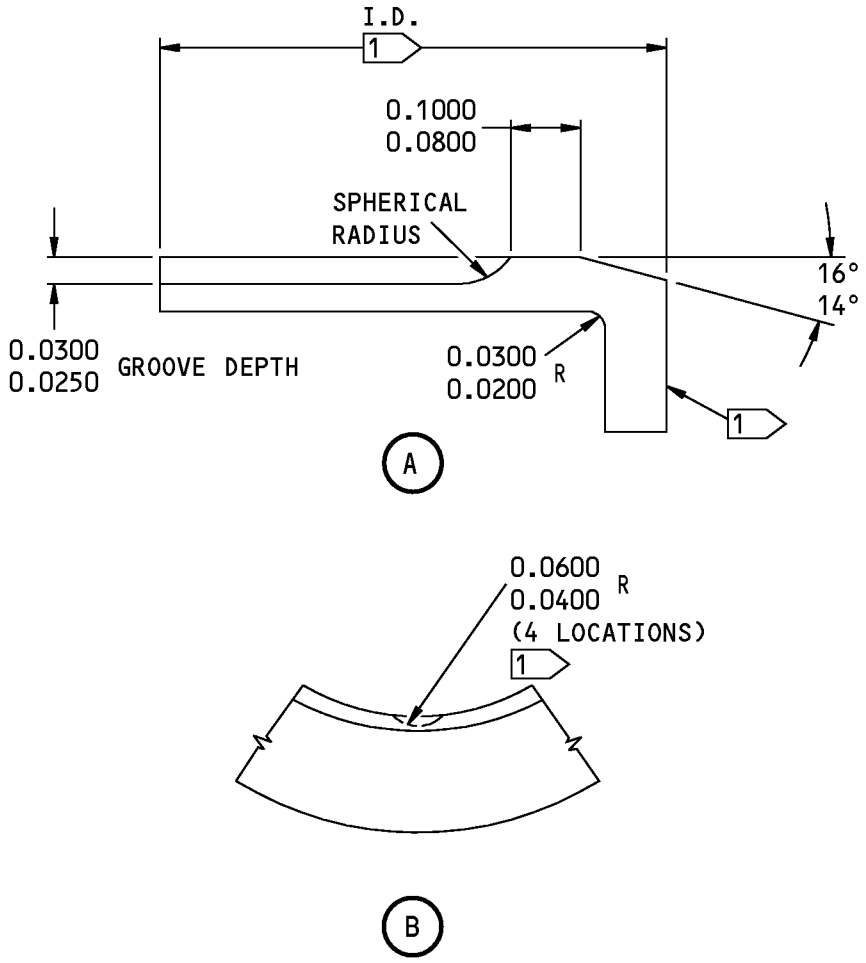


A-A

HOLE LOCATION [3] FIG. 601 OR 602 - REPLACES BUSHING (110)

G27163 S0004997897_V3

Oversize Bushing Details
Figure 605 (Sheet 1 of 2)



1 NO CADMIUM PLATE

2 MINUS AMOUNT REMOVED FROM LUG FACE

3 PLUS AMOUNT REMOVED FROM LUG FACE

125 ALL MACHINED SURFACES UNLESS SHOWN DIFFERENTLY

BREAK ALL SHARP EDGES TO 0.01-0.02 R

MATERIAL: AL-NI-BRZ (AMS 4640)

FINISH: CADMIUM PLATE (F-15.36) UNLESS SHOWN BY 1

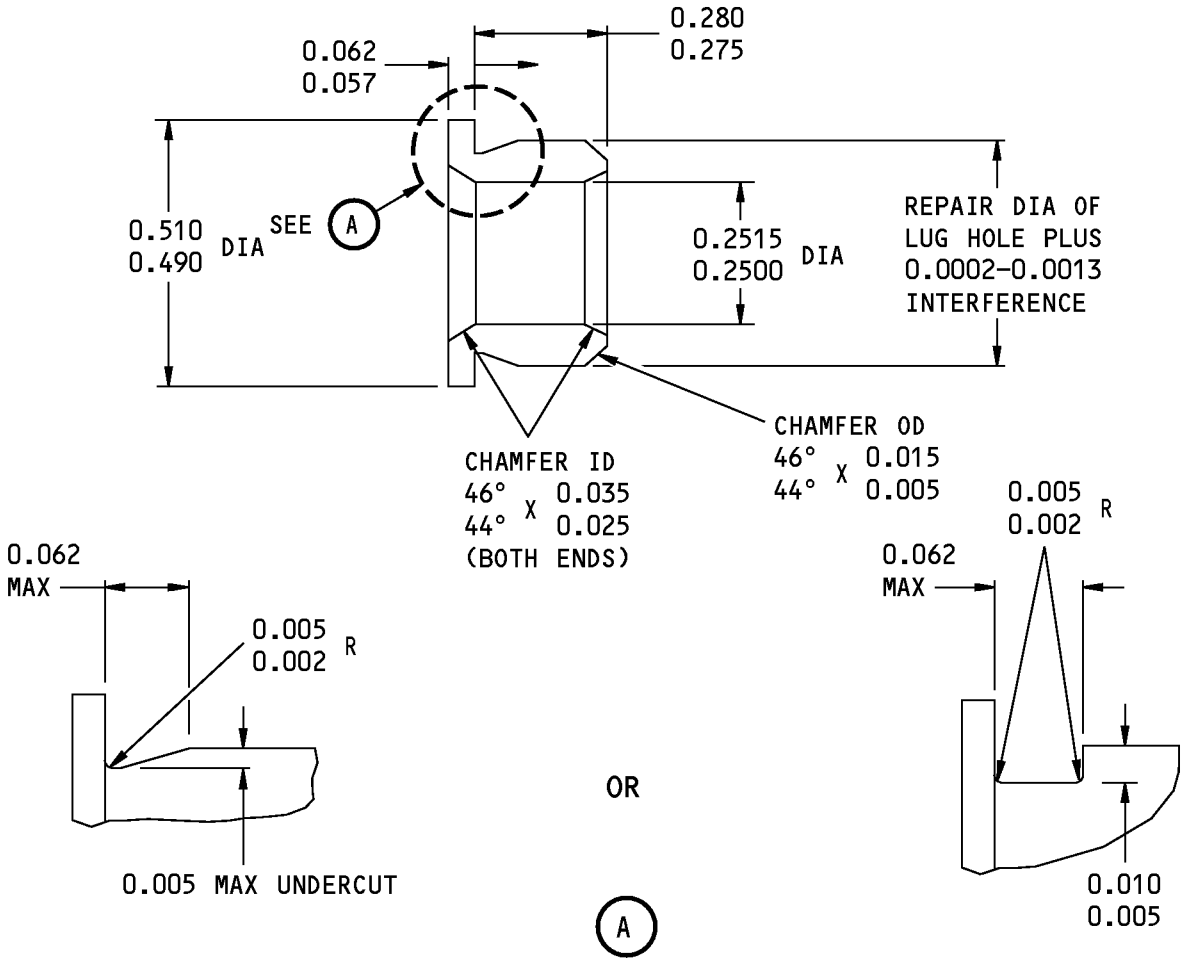
ITEM NUMBERS REFER TO IPL FIG. 1

ALL DIMENSIONS ARE IN INCHES

HOLE LOCATION [3] FIG. 601 OR 602 - REPLACES BUSHING (110)

1538637 S0000280237_V1

Oversize Bushing Details
Figure 605 (Sheet 2 of 2)



100 ALL MACHINED SURFACES UNLESS SHOWN DIFFERENTLY

BREAK ALL SHARP EDGES 0.005-0.025

MATERIAL: BERYLLIUM COPPER (QQ-C-530), CONDITION H.T.
OPT: AL-NI-BRONZE (AMS 4640 OR AMS 4880)

FINISH: CADMIUM PLATE (F-15.06)

ITEM NUMBERS REFER TO IPL FIG. 1

ALL DIMENSIONS APPLY AFTER PLATING

ALL DIMENSIONS ARE IN INCHES

HOLE LOCATION [1] FIG. 601 OR 602 - REPLACES BUSHING (115) NAS77B4-028P

G26849 S0004997898_V3

Oversize Bushing Details
Figure 606

PIN - REPAIR 7-1

162A1306–1, –2, 162A1310–1, –2

1. General

A. This procedure tells how to repair and refinish pins (70, 75, 135).

B. Refer to the Standard Overhaul Practices Manual (SOPM) for the SOPM subjects identified in this procedure.

C. Refer to IPL Figure 1 for the item numbers.

D. General repair details:

(1) Material: 4340M Steel, 275-300 ksi

(2) Shot peen: All surfaces, but not in holes. Overspray is permitted

Hard Shot RC 55-65

Shot Size 0.016-0.033

Intensity 0.014-0.018A2

Coverage 2.0

2. Pin Repair

A. Consumable Materials

NOTE: Equivalent substitutes may be used.

Reference	Description	Specification
C00033	Coating - Exterior Protective Enamel, Flexibility Use	BMS10-60, Type II
C00175	Primer - Urethane Compatible, Corrosion Resistant (Less Than 1% Aromatic Amines)	BMS10-79, Type III
C50001	Compound - Corrosion Preventive, Petroleum Hot Application (Hard Film)	MIL-C-11796, Class I

B. References

Reference	Title
CMM 32-00-05	REPAIR OF HIGH-STRENGTH STEEL LANDING GEAR PARTS
SOPM 20-10-03	SHOT PEENING
SOPM 20-30-02	STRIPPING OF PROTECTIVE FINISHES
SOPM 20-41-01	DECODING TABLE FOR BOEING FINISH CODES
SOPM 20-42-03	HARD CHROME PLATING

C. Procedure (REPAIR 7-1, Figure 601, REPAIR 7-1, Figure 602)

NOTE: For shot peening, refer to SOPM 20-10-03. For stripping of protective finishes, refer to SOPM 20-30-02. For repair of high-strength steel landing gear parts, refer to CMM 32-00-05.

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

(2) Unless shown differently, build up with chrome plate (SOPM 20-42-03) to the after-plating dimensions shown.

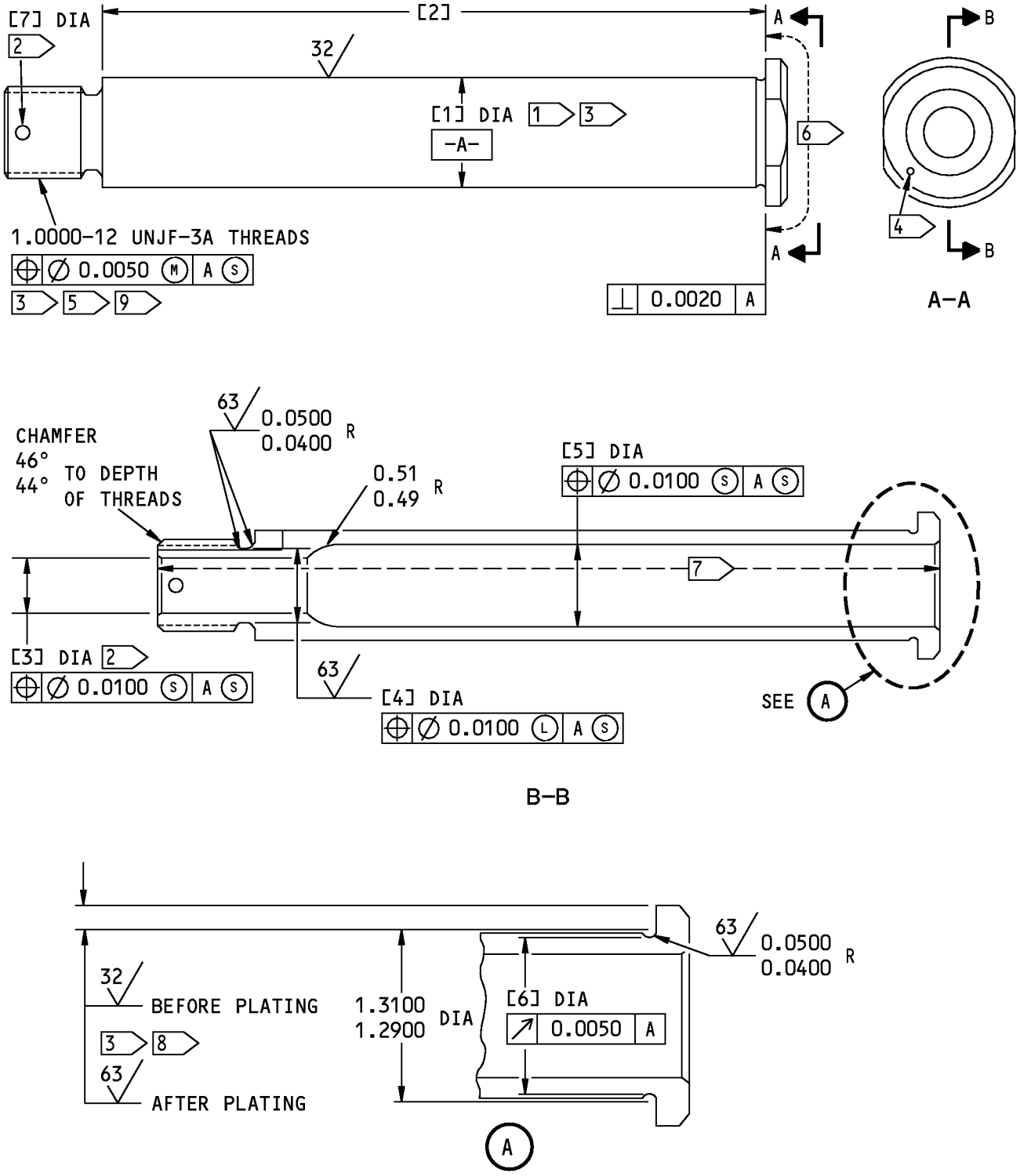
(3) Refinish other surfaces as indicated (REPAIR 7-1, Paragraph 2.D.).

D. Refinish (REPAIR 7-1, Figure 601, REPAIR 7-1, Figure 602)

NOTE: For stripping of protective finishes, refer to SOPM 20-30-02. For the decoding table for Boeing finish codes, refer to SOPM 20-41-01.

(1) Chrome plate, cadmium-titanium plate and apply primer, C00175 and enamel coating, C00033 as shown.

(2) Apply compound, C50001 as shown.



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162A1306-1, -2 Pin Repair and Refinish
Figure 601 (Sheet 1 of 2)

REFERENCE NUMBER	[1]	[2]	[3]	[4]	[5]	[6]	[7]
DESIGN DIMENSION	1.2495 1.2485 10	7.6000 7.5950	0.5700 0.5500	0.8800 0.8700	0.9300 0.9100	1.1900 1.1800	0.1510 0.1410
REPAIR LIMIT	1.2185 11	---	---	---	---	---	---

1 CHROME PLATE (F-15.34), 0.003 MINIMUM THICK AFTER GRINDING

2 SHOT PEEN IS NOT NECESSARY. OVERSPRAY IS PERMITTED

3 WIPE THE PLATING WITH BMS 10-79 TYPE 3 PRIMER (F-19.451)

4 PART NUMBER AND SERIAL NUMBER LOCATION

5 DO NOT SHOT PEEN THE THREADS

6 CADMIUM-TITANIUM PLATE (F-15.01). APPLY BMS 10-79 TYPE 3 PRIMER (F-19.47) AND BMS 10-60 TYPE 2 ENAMEL (F-19.39-707)

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

8 CHROME PLATE (F-15.34), 0.001-0.002 MINIMUM THICK, WITH 0.030 RUNOUT AT EDGES. DO NOT GRIND

9 CADMIMUM-TITANIUM PLATE (F-15.32)

10 AFTER PLATING

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

125 ALL MACHINED SURFACES UNLESS SHOWN DIFFERENTLY

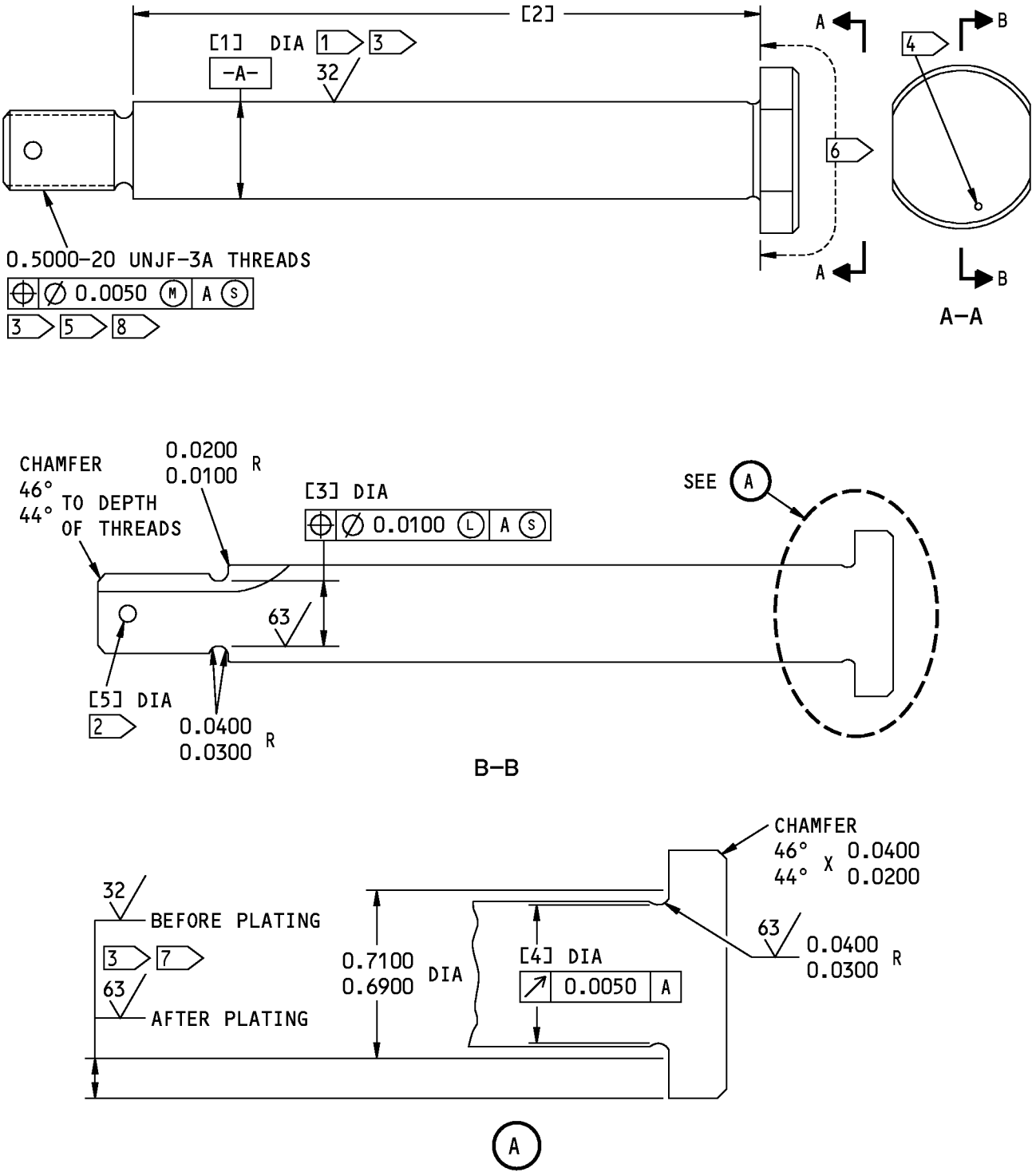
BREAK ALL SHARP EDGES 0.01-0.02 UNLESS SHOWN DIFFERENTLY

DIMENSIONS ARE BEFORE PLATING UNLESS SHOWN DIFFERENTLY

ITEM NUMBERS REFER TO IPL FIG. 1

ALL DIMENSIONS ARE IN INCHES

162A1306-1, -2 Pin Repair and Refinish
Figure 601 (Sheet 2 of 2)



G29437 S0004997903_V2

162A1310-1,-2 Pin Repair and Finish
Figure 602 (Sheet 1 of 2)

REFERENCE NUMBER	[1]	[2]	[3]	[4]	[5]
DESIGN DIMENSION	0.6245 0.6235 9	4.1200 4.1150	0.4280 0.4210	0.6100 0.6000	0.1160 0.1060
REPAIR LIMIT	0.5935 10	---	---	0.5700 11	---

1 CHROME PLATE (F-15.34), 0.003 MINIMUM THICK AFTER GRINDING.

2 SHOT PEEN IS NOT NECESSARY. OVERSPRAY IS PERMITTED

3 WIPE THE PLATING WITH BMS 10-79 TYPE 3 PRIMER (F-19.451)

4 PART NUMBER AND SERIAL NUMBER LOCATION

5 DO NOT SHOT PEEN THE THREADS

6 CADMIUM-TITANIUM PLATE (F-15.01). APPLY BMS 10-79 TYPE 3 PRIMER (F-19.47) AND BMS 10-60 TYPE 2 ENAMEL (F-19.39-707)

7 CHROME PLATE (F-15.34), 0.001-0.002 MINIMUM THICK, WITH 0.030 RUNOUT AT EDGES. DO NOT GRIND

8 CADMIMUM-TITANIUM PLATE (F-15.32)

9 AFTER PLATING

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

11 RESTORATION TO DESIGN DIMENSION NOT NECESSARY

125 ALL MACHINED SURFACES UNLESS SHOWN DIFFERENTLY

BREAK ALL SHARP EDGES 0.01-0.02 UNLESS SHOWN DIFFERENTLY

DIMENSIONS ARE BEFORE PLATING UNLESS SHOWN DIFFERENTLY

ITEM NUMBERS REFER TO IPL FIG. 1

ALL DIMENSIONS ARE IN INCHES

G37656 S0004997904_V2

162A1310-1,-2 Pin Repair and Finish
Figure 602 (Sheet 2 of 2)

STEERING PLATE ASSEMBLY - REPAIR 8-1

162A1417–3, –5, –7, –9

1. General

A. This procedure tells how to replace the bushings (201) in the steering plate assembly (200).

B. Refer to the Standard Overhaul Practices Manual (SOPM) for the SOPM subjects identified in this procedure.

C. Refer to IPL Figure 1 for the item numbers.

2. Bushing Replacement

A. References

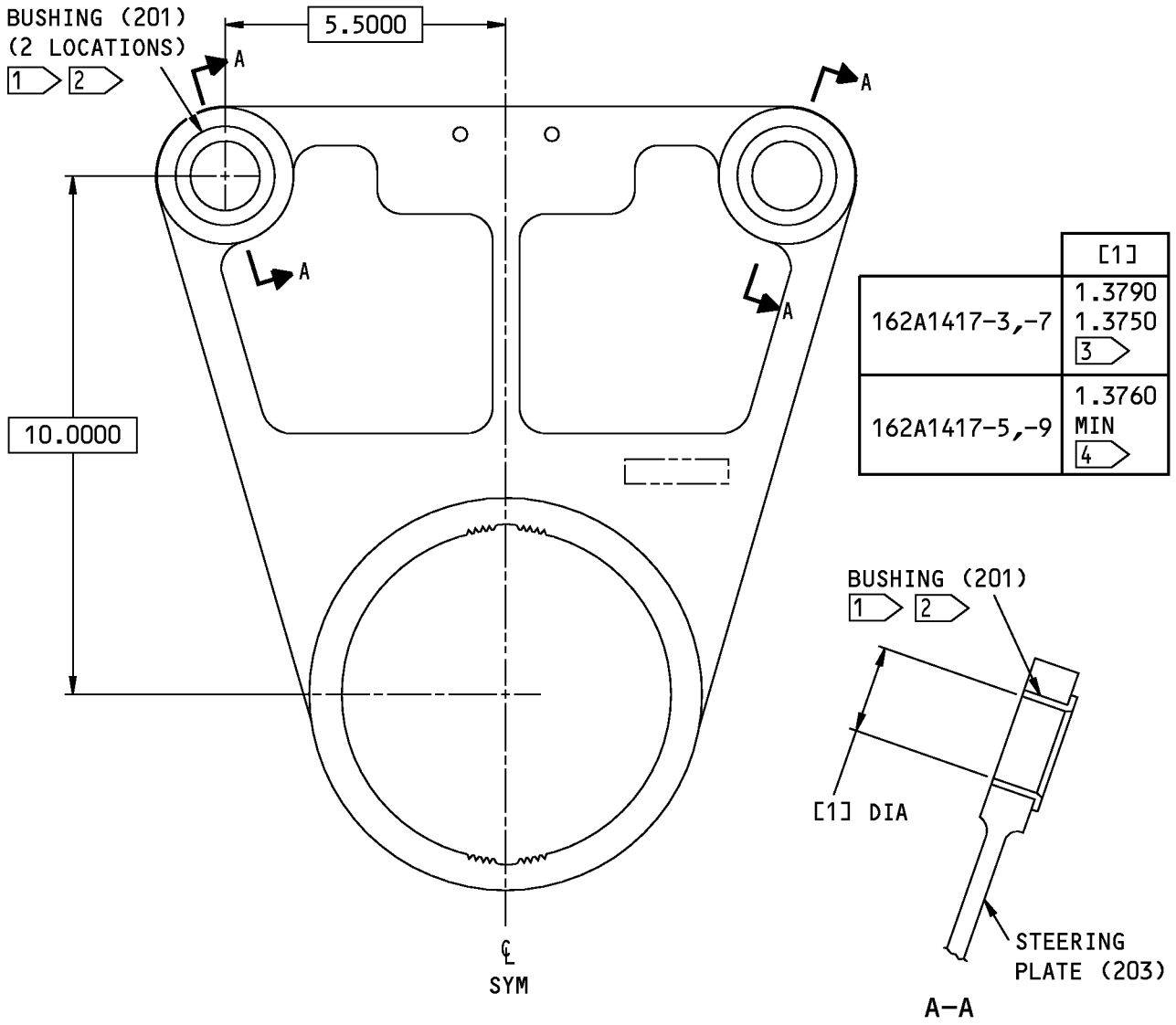
Reference	Title
SOPM 20-50-03	BEARING AND BUSHING REPLACEMENT

B. Procedure (REPAIR 8-1, Figure 601)

(1) Remove the old bushings (201) from the steering plate assembly (200).

(2) If you find defects on the steering plate (203), refer to REPAIR 8-2 for repair instructions.

(3) Install replacement bushings (201) by the shrink-fit procedure (SOPM 20-50-03).



1 USE THE SHRINK FIT METHOD TO INSTALL THE BUSHINGS

2 0.0010 MAXIMUM GAP BETWEEN THE LUG FACE AND THE INSIDE FACE OF THE BUSHING FLANGE

3 INSTALLED DIMENSION. ADJUST TO THIS RANGE IF NECESSARY

4 INSTALLED DIMENSION. DO NOT ADJUST

ITEM NUMBERS REFER TO IPL FIG. 1

ALL DIMENSIONS ARE IN INCHES

G25155 S0004997906_V2

162A1417-3,-5,-7,-9 Steering Plate Assembly Bushing Replacement
Figure 601

STEERING PLATE - REPAIR 8-2

162A1417–4, –6, –8, –10

1. General

A. This procedure tells how to repair and refinish the steering plate (203).

B. Refer to the Standard Overhaul Practices Manual (SOPM) for details of the SOPM subjects identified in this procedure.

C. Refer to IPL Figure 1 for the item numbers.

D. General repair details:

(1) Material: Titanium alloy

(2) Shot peen: All surfaces, overspray is permitted

Hard Shot RC 55-65

Intensity 0.014-0.018A2

Coverage 2.0

2. Steering Plate Repair

A. Consumable Materials

NOTE: Equivalent substitutes may be used.

Reference	Description	Specification
D00113	Lubricant - Liquid Dispersed Solid Film Lubricant	BMS3-8, BAC 5811, TYPE VIII

B. References

Reference	Title
SOPM 20-10-03	SHOT PEENING
SOPM 20-10-07	MACHINING OF TITANIUM
SOPM 20-20-02	PENETRANT METHODS OF INSPECTION
SOPM 20-50-08	APPLICATION OF BONDED SOLID FILM LUBRICANTS

C. Procedure (REPAIR 8-2, Figure 601)

NOTE: For shot peening, refer to SOPM 20-10-03. For machining of titanium, refer to SOPM 20-10-07.

(1) Bore for Bushing

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

(b) Get an oversize equivalent of the bushing to agree with the repair diameter (Table A).

(c) If necessary, machine the bushing OD to get a 0.0014-0.0038 inch interference fit with the oversize hole in the steering plate (203).

(2) Spline Teeth Faces

(a) Use this procedure if you find wear on the spline teeth faces (0.005 inch maximum permitted per face).

(b) Visually examine all worn areas for stress risers, with a minimum of 10X magnification.

(c) Blend out all stress risers. Keep a 40 microinch or smoother surface finish. Blend with a 10:1 minimum ratio. Do not increase the depth of the worn surface.

(d) Penetrant examine (SOPM 20-20-02) to make sure that all of the defects have been removed.

(e) Apply lubricant, D00113 (F-19.10) (SOPM 20-50-08) as specified by flagnote 6.

3. Steering Plate Refinish

A. Consumable Materials

NOTE: Equivalent substitutes may be used.

Reference	Description	Specification
D00113	Lubricant - Liquid Dispersed Solid Film Lubricant	BMS3-8, BAC 5811, TYPE VIII

B. References

Reference	Title
SOPM 20-10-05	APPLICATION AND FINISHING OF THERMAL SPRAY COATINGS
SOPM 20-30-02	STRIPPING OF PROTECTIVE FINISHES
SOPM 20-41-01	DECODING TABLE FOR BOEING FINISH CODES
SOPM 20-50-08	APPLICATION OF BONDED SOLID FILM LUBRICANTS
SOPM 20-60-02	FINISHING MATERIALS
SOPM 20-60-03	LUBRICANTS

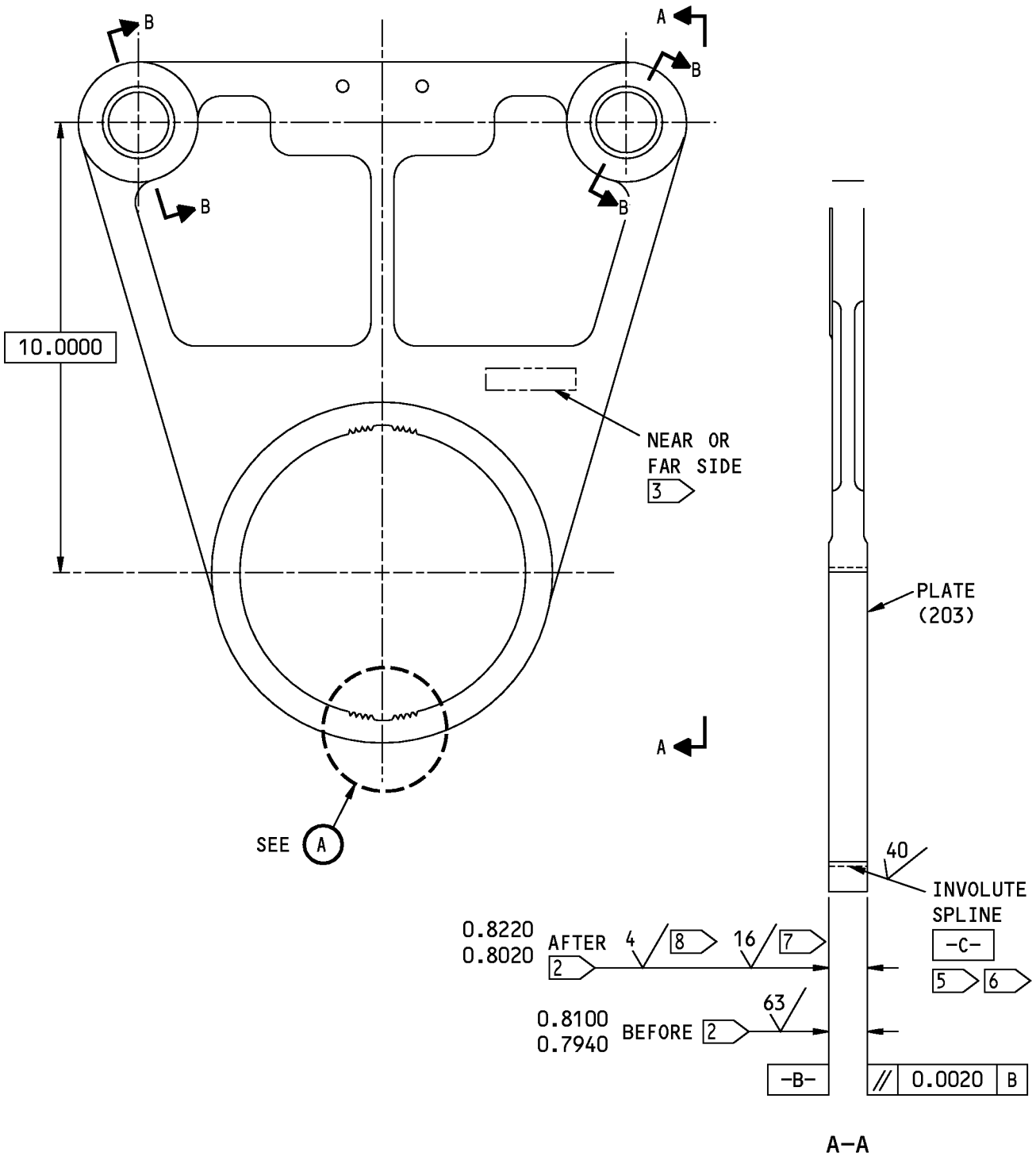
C. Procedure (REPAIR 8-2, Figure 601)

NOTE: For stripping of protective finishes, refer to SOPM 20-30-02. For the decoding table for Boeing finish codes, refer to SOPM 20-41-01. For finishing materials, refer to SOPM 20-60-02. For lubricants, refer to SOPM 20-60-03.

(1) Apply thermal spray coating (SOPM 20-10-05) as specified by flagnote 2. Obey the run-out areas shown by flagnote 1 and do not apply the thermal spray coating as shown by flagnote 4.

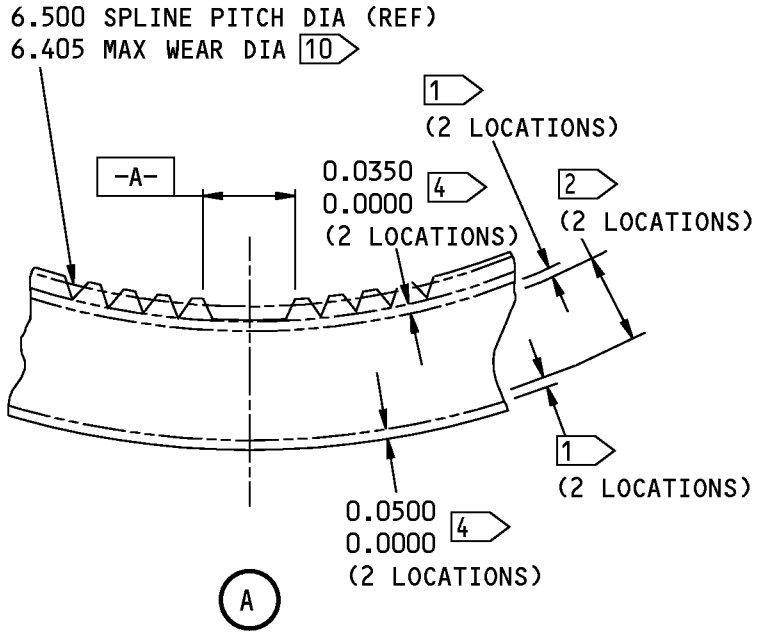
(2) Apply lubricant, D00113 (F-19.10) (SOPM 20-50-08) as specified by flagnote 6.

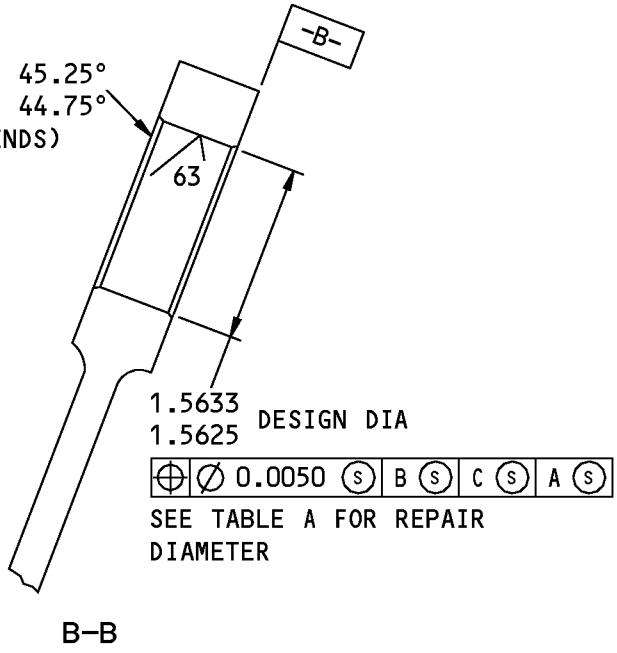
(3) To incorporate SB 32-1342, use the 162A1417-6 refinish details. Or send the part to Boeing for exchange with a Post SB 32-1342 part. See SB 32-1342 for details.



G24971 S0004997909_V2

162A1417-4,-6,-8,-10 Steering Plate Repair
Figure 601 (Sheet 1 of 3)





REPAIR RANGE 9	OVERSIZE BUSHING
1.5733 1.5725	KJB647100B1T
1.5833 1.5825	KJB647100B1U
1.5933 1.5925	KJB647100B1V
1.6033 1.6025	KJB647100B1W
1.6133 1.6125	KJB647100B1X
1.6230 1.6225	KJB647100B1Y

TABLE A

G25014 S0004997910_V4

162A1417-4,-6,-8,-10 Steering Plate Repair
Figure 601 (Sheet 2 of 3)

1 THERMAL SPRAY RUNOUT AREA

2 ON 162A1417-4,-8 PLATES, APPLY BMS 10-67, TYPE 1 THERMAL SPRAY COATING (F-15.390).
ON 162A1417-6,-10 PLATES, APPLY BMS 10-67, TYPE 17 THERMAL SPRAY COATING (F-15.386). GRIND THESE COATINGS TO DESIGN DIMENSIONS AND THE INDICATED FINISH. COATING THICKNESS MUST BE 0.004-0.006 AFTER GRINDING

3 PART NUMBER AND SERIAL NUMBER LOCATION

4 DO NOT APPLY THERMAL SPRAY COATING HERE

5 DO NOT SHOT PEEN HERE

6 APPLY BMS 3-8 LUBRICANT (F-19.10) HERE

7 162A1417-4

8 162A1417-6,-8,-10

9 RANGE FOR INSTALLATION OF OVERSIZE BUSHING

10 AS MEASURED BETWEEN TWO 0.0864 DIA PINS (ANSI B92.1)

125 ALL MACHINED SURFACES UNLESS SHOWN DIFFERENTLY

BREAK ALL SHARP EDGES 0.06-0.09 UNLESS SHOWN DIFFERENTLY

ITEM NUMBERS REFER TO IPL FIG. 1

ALL DIMENSIONS ARE IN INCHES

DIMENSIONS & SURFACE FINISHES APPLY BEFORE SHOT PEENING UNLESS SHOWN DIFFERENTLY

N86359 S0004997911_V4

162A1417-4,-6,-8,-10 Steering Plate Repair
Figure 601 (Sheet 3 of 3)

LOWER CENTERING CAM ASSEMBLY - REPAIR 9-1

162A1501–1

1. General

A. This procedure tells how to replace the parts of the lower centering cam assembly (540).

B. Refer to the Standard Overhaul Practices Manual (SOPM) for the SOPM subjects identified in this procedure.

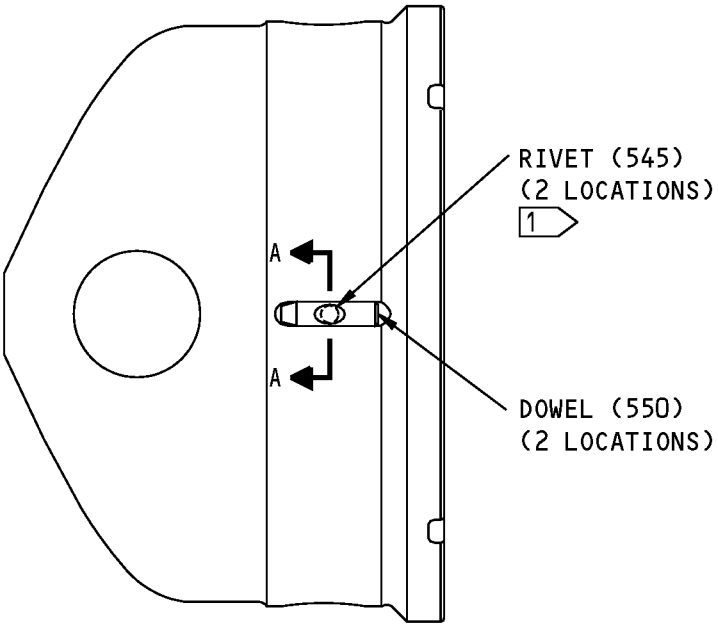
C. Refer to IPL Figure 1 for the item numbers.

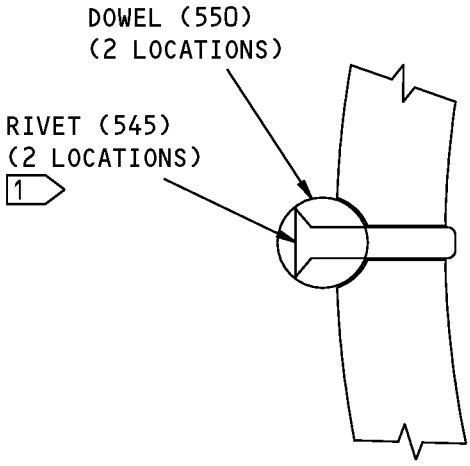
2. Dowel Replacement (REPAIR 9-1, Figure 601)

A. Remove the rivet (545) and the dowel (550) from the lower centering cam assembly.

B. Install a replacement dowel (550) and a new rivet (545) by hand. Make sure the dowel can move 0.0050-0.0150 inch in any direction after installation.

C. Make sure the rivet head is within the contour of the dowel. You can remove material from the rivet head if necessary.





A–A

1 BUCK THE RIVET TO HOLD THE DOWEL IN PLACE, ALLOW THE DOWEL TO MOVE 0.0050–0.0150 INCH IN ANY DIRECTION. RIVET BUCKING MAY BE DONE BY HAND OPERATION. THE RIVET HEAD MUST BE WITHIN THE DOWEL CONTOUR AFTER INSTALLATION. SHAVING THE RIVET HEAD IS ALLOWED.

ITEM NUMBERS REFER TO IPL FIG. 1

ALL DIMENSIONS ARE IN INCHES

162A1501-1 Centering Cam Assembly Repair
Figure 601

METERING PIN - REPAIR 10-1

162A1503–2

1. General

A. This procedure tells how to repair and refinish the metering pin (530).

B. Refer to the Standard Overhaul Practices Manual (SOPM) for the SOPM subjects identified in this procedure.

C. Refer to IPL Figure 1 for the item numbers.

D. General repair details:

(1) Material: 4330M Steel, 220-240 ksi

(2) Shot peen: As shown in flagnotes 1, 3, and 4

2. Metering Pin Refinish

A. Consumable Materials

NOTE: Equivalent substitutes may be used.

Reference	Description	Specification
C00259	Primer - Chemical And Solvent Resistant Finish, Epoxy Resin	BMS10-11, Type I

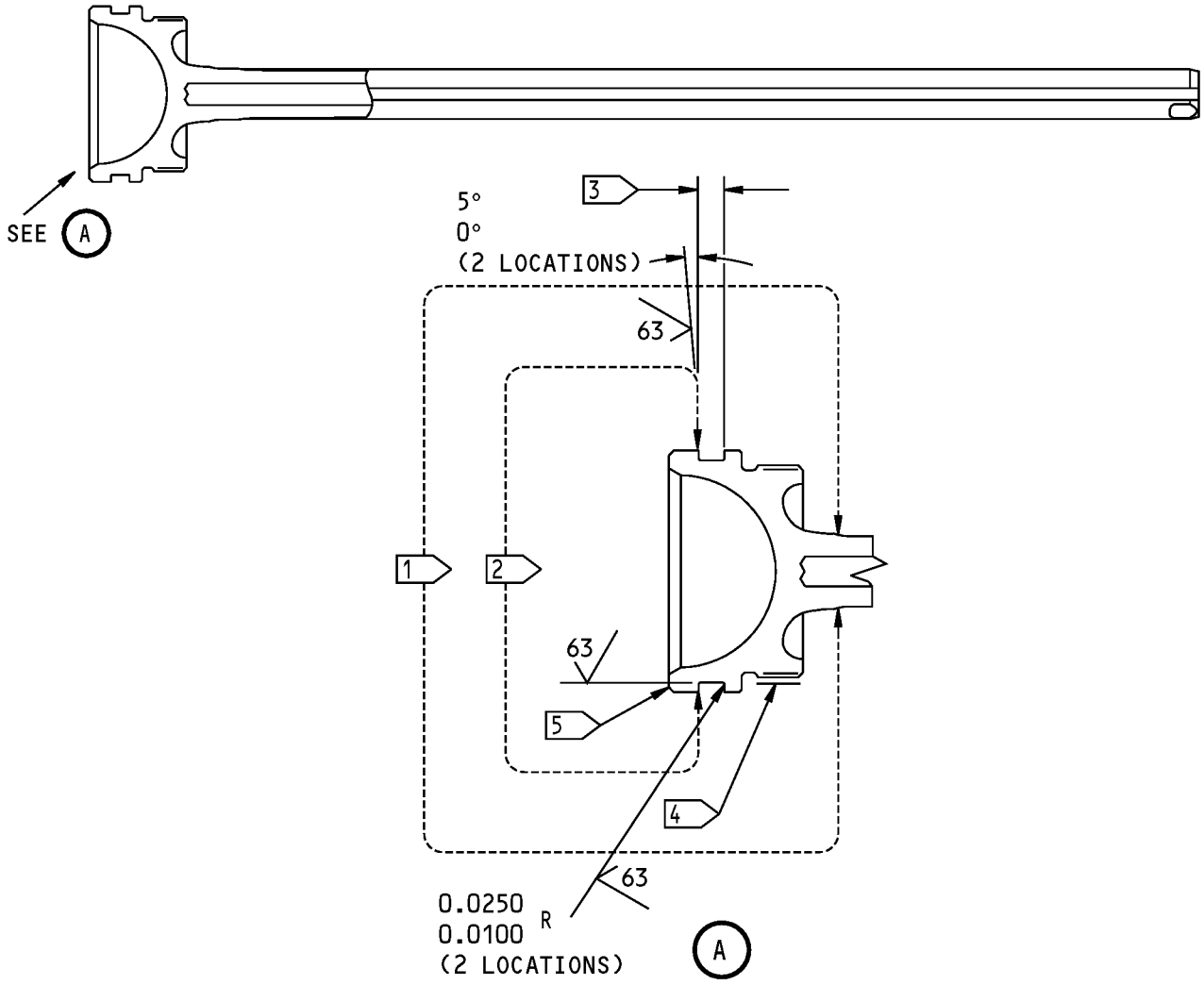
B. References

Reference	Title
CMM 32-00-05	REPAIR OF HIGH-STRENGTH STEEL LANDING GEAR PARTS
SOPM 20-10-03	SHOT PEENING
SOPM 20-30-02	STRIPPING OF PROTECTIVE FINISHES
SOPM 20-41-01	DECODING TABLE FOR BOEING FINISH CODES
SOPM 20-60-02	FINISHING MATERIALS

C. Procedure (REPAIR 10-1, Figure 601)

NOTE: For shot peening, refer to SOPM 20-10-03. For stripping of protective finishes, refer to SOPM 20-30-02. For the decoding table for Boeing finish codes, refer to SOPM 20-41-01. For finishing materials refer to SOPM 20-60-02. For repair of high-strength steel landing parts, refer to CMM 32-00-05.

(1) Cadmium-titanium plate (F-15.01) and apply primer, C00259 (F-20.02) to the surfaces noted in flagnote 2.



1 SHOT PEEN THESE SURFACES (UNLESS SHOWN OTHERWISE) AS SHOWN IN SOPM 20-10-03. USE HARDSHOT (RC55-65), INTENSITY 0.010A-0.015A, COVERAGE 2.0.

2 APPLY CADMIUM-TITANIUM PLATE (F-15.01) AND BMS 10-11, TYPE 1 PRIMER (F-20.02).

3 DO NOT SHOT PEEN OR GLASS PEEN THIS AREA.

4 GLASS BEAD PEEN THIS SURFACE AFTER HEAT TREAT PER SOPM 20-10-03. INTENSITY 0.006A, COVERAGE 2.0.

5 THE PART NUMBER AND SERIAL NUMBER ARE FOUND HERE.

125 ALL MACHINED SURFACES UNLESS SHOWN DIFFERENTLY

BREAK ALL SHARP EDGES TO R 0.02-0.03

ITEM NUMBERS REFER TO IPL FIG. 1

ALL DIMENSIONS ARE IN INCHES

DIMENSIONS & SURFACE FINISHES APPLY BEFORE SHOT PEENING

162A1503-2 Metering Pin Refinish
Figure 601

NUT ASSEMBLY - REPAIR 11-1

162A1505–1

1. General

A. This procedure tells how to replace the plug in the nut assembly (505).

B. Refer to the Standard Overhaul Practices Manual (SOPM) for the SOPM subjects identified in this procedure.

C. Refer to IPL Figure 1 for item numbers.

2. Plug Replacement

A. Consumable Materials

NOTE: Equivalent substitutes may be used.

Reference	Description	Specification
A00551	Sealant - Fuel Tank	BAC5010, Type 44 (BMS5-44, BMS5-45)

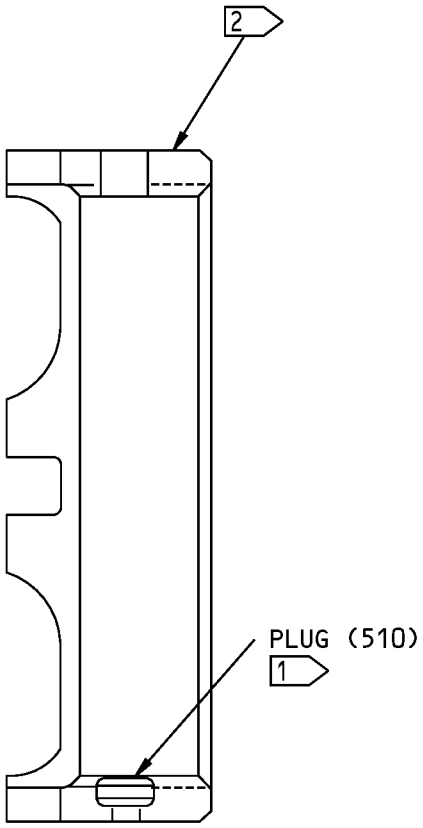
B. References

Reference	Title
SOPM 20-50-12	APPLICATION OF ADHESIVES

C. Procedure

(1) Remove the old plug (510) from the nut assembly (505).

(2) Bond a replacement plug (510) into the nut with sealant, A00551 as shown in SOPM 20-50-12.



1 BOND THE PLUG INTO THE NUT WITH TYPE 44 ADHESIVE AS SHOWN IN SOPM 20-52-12.

2 THE PART NUMBER IS FOUND HERE.

ITEM NUMBERS REFER TO IPL FIG. 1

ALL DIMENSIONS ARE IN INCHES

162A1505-1 Nut Assembly Repair
Figure 601

BOEING®

COMPONENT MAINTENANCE MANUAL

ORIFICE SUPPORT TUBE - REPAIR 12-1

162A1507–1

1. General

A. This procedure tells how to refinish the orifice support tube (290).

B. Refer to the Standard Overhaul Practices Manual (SOPM) for the SOPM subjects identified in this procedure.

C. Refer to IPL Figure 1 for the item numbers.

D. General repair details:

(1) Material: Titanium alloy

(2) Shot peen: All surfaces, unless noted

Hard Shot Rc 55-65.

Intensity 0.010-0.015A2

Coverage 2.0

2. Orifice Support Tube Refinish

A. Consumable Materials

NOTE: Equivalent substitutes may be used.

Reference	Description	Specification
D00113	Lubricant - Liquid Dispersed Solid Film Lubricant	BMS3-8, BAC 5811, TYPE VIII

B. References

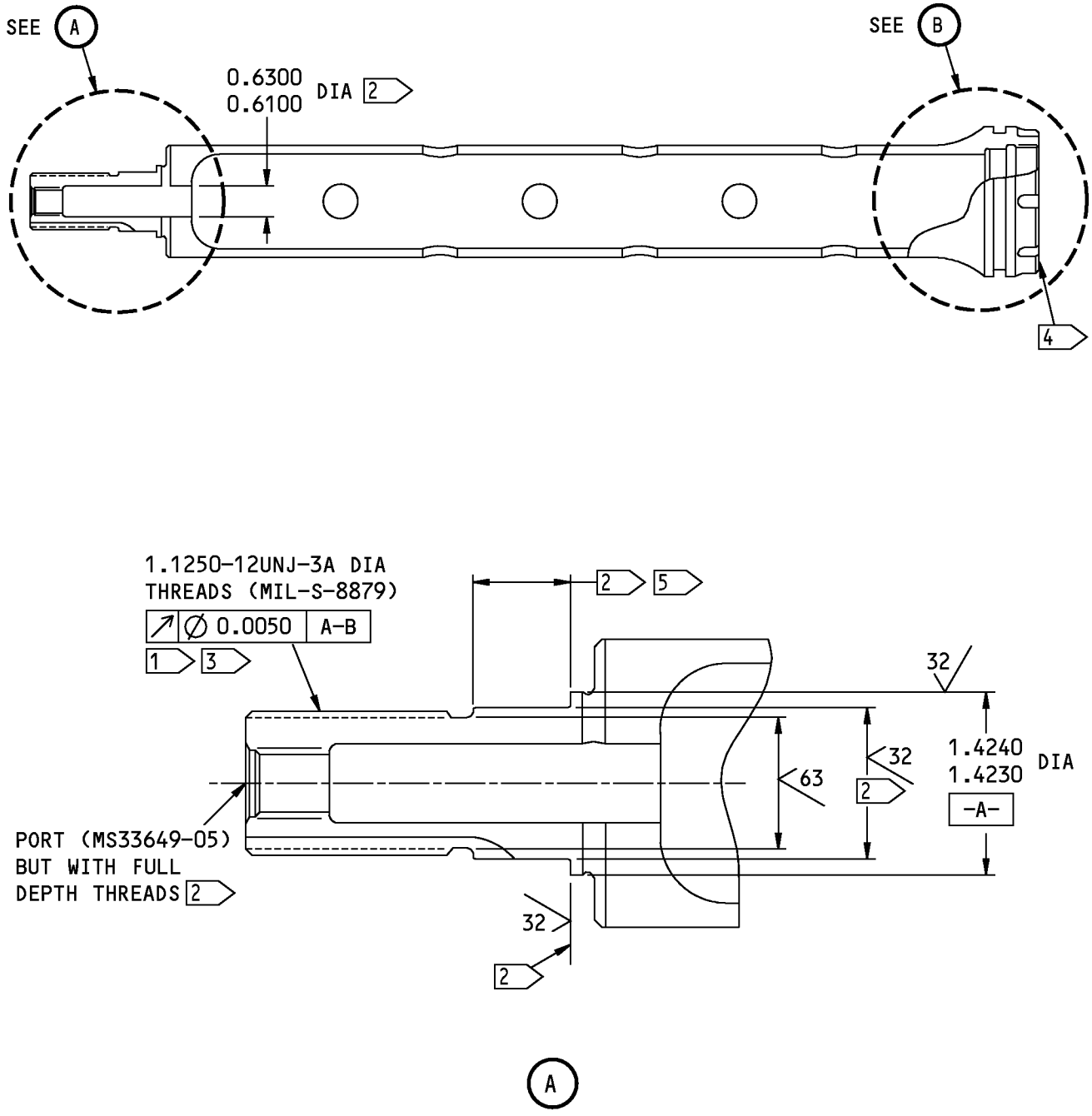
Reference	Title
CMM 32-00-05	REPAIR OF HIGH-STRENGTH STEEL LANDING GEAR PARTS
SOPM 20-10-03	SHOT PEENING
SOPM 20-30-02	STRIPPING OF PROTECTIVE FINISHES
SOPM 20-41-01	DECODING TABLE FOR BOEING FINISH CODES
SOPM 20-50-08	APPLICATION OF BONDED SOLID FILM LUBRICANTS
SOPM 20-60-02	FINISHING MATERIALS

C. Procedure (REPAIR 12-1, Figure 601)

NOTE: For shot peening, refer to SOPM 20-10-03. For stripping of protective finishes, refer to SOPM 20-30-02. For the decoding table for Boeing finish codes, refer to SOPM 20-41-01. For finishing materials, refer to SOPM 20-60-02. For repair of high-strength steel landing parts, refer to CMM 32-00-05.

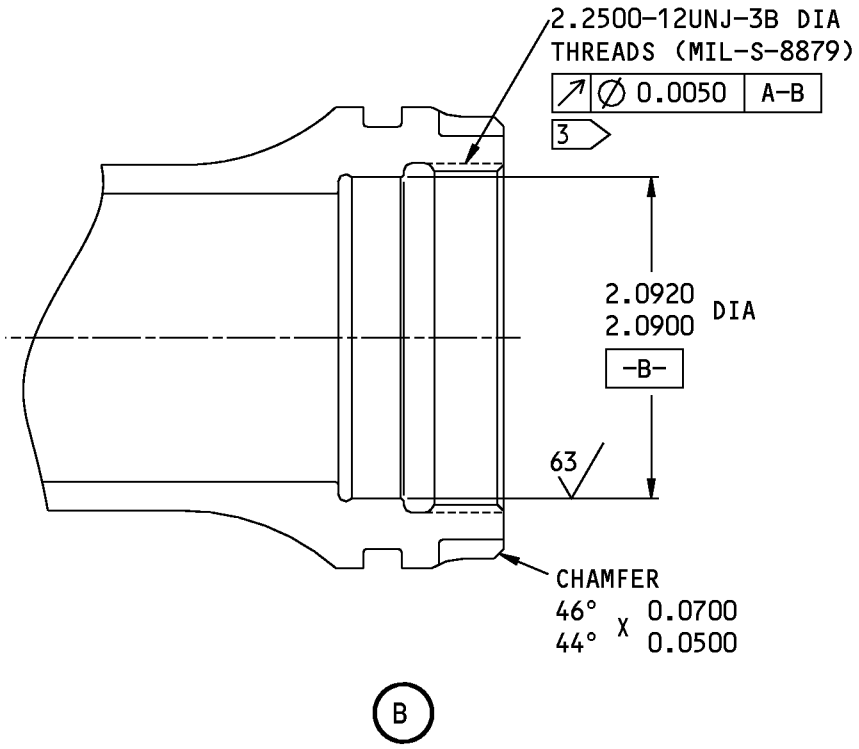
(1) Send the tube to Tiodize Co., Inc (V34568) to anodize (F-30.015) the surfaces noted by flagnote 5.

(2) Apply lubricant, D00113 (F-19.10) (SOPM 20-50-08) to the surfaces noted by flagnote 1.



G25622 S0004997921_V3

162A1507-1 Orifice Support Tube Refinish
Figure 601 (Sheet 1 of 2)



1 APPLY BMS 3-8 LUBRICANT (F-19.10)

2 DO NOT SHOT PEEN OR GLASS PEEN HERE

3 GLASS BEAD PEEN THIS SURFACE (SOPM 20-10-03). INTENSITY 0.006A2, COVERAGE 2.0

4 THE PART NUMBER AND SERIAL NUMBER

5 ANODIZE (F-30.015)

ITEM NUMBERS REFER TO IPL FIG. 1

ALL DIMENSIONS ARE IN INCHES

H12169 S0004997922_V3

162A1507-1 Orifice Support Tube Refinish
Figure 601 (Sheet 2 of 2)

STEERING COLLAR ASSEMBLY - REPAIR 13-1

162A1404–3, –5, 162A1420–1

1. General

A. This procedure tells how to replace the parts of the steering collar assembly (222).

B. Refer to the Standard Overhaul Practice Manual (SOPM) for the SOPM subjects identified in this procedure.

C. Refer to IPL Figure 1 for the item numbers.

2. Bushing and Bearing Replacement

A. Consumable Materials

NOTE: Equivalent substitutes may be used.

Reference	Description	Specification
A00247	Sealant - Pressure And Environmental - Chromate Type	BMS 5-95

B. References

Reference	Title
SOPM 20-41-01	DECODING TABLE FOR BOEING FINISH CODES
SOPM 20-42-10	LOW HYDROGEN EMBRITTLEMENT STYLUS CADMIUM PLATING
SOPM 20-50-03	BEARING AND BUSHING REPLACEMENT
SOPM 20-60-04	MISCELLANEOUS MATERIALS

C. Procedure (REPAIR 13-1, Figure 601)

NOTE: For the decoding table for Boeing finish codes, refer to SOPM 20-41-01.

(1) Remove the bushings (235, 240) and bearings (245, 247) from the steering collar (250) (SOPM 20-50-03).

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

(3) Because bushing (240) has a chrome plated outer flange face, remove material from the inside flange face of these bushings to get the dimensions shown when the bushings are installed. The minimum flange thickness is 0.0900 inch and the surface roughness is 63 RA. Stylus cadmium plate (SOPM 20-42-10) the machined faces.

(4) Use the shrink-fit procedure to install the replacement bushings (235, 240) and bearings (245, 247) with sealant, A00247 (SOPM 20-60-04) under the flanges only.

(5) Machine the other bushing surfaces to design dimensions and finish.

3. Lube Fitting Replacement

A. Consumable Materials

NOTE: Equivalent substitutes may be used.

Reference	Description	Specification
A00247	Sealant - Pressure And Environmental - Chromate Type	BMS 5-95
D00013	Grease - Aircraft And Instrument Grease	MIL-PRF-23827 (NATO G-354) (Supersedes MIL-G-23827)
D00633	Grease - Aircraft General Purpose	BMS3-33

B. References

Reference	Title
CMM 32-00-03	LANDING GEAR PARTS LUBRICATION FITTING REPLACEMENT
SOPM 20-41-01	DECODING TABLE FOR BOEING FINISH CODES
SOPM 20-60-03	LUBRICANTS
SOPM 20-60-04	MISCELLANEOUS MATERIALS

C. Procedure (REPAIR 13-1, Figure 601)

NOTE: For the decoding table for Boeing finish codes, refer to SOPM 20-41-01. For lubricants, refer to SOPM 20-60-03. For miscellaneous materials, refer to SOPM 20-60-04. For landing gear parts lubrication fitting replacement, refer to CMM 32-00-03.

(1) Remove the old lube fittings (230) from the steering collar (250).

(2) Use the shrink-fit procedure to install the replacement lube fittings (230) with sealant, A00247.

(3) Make sure that the lubrication passage is clear:

(a) Apply grease, D00633 or grease, D00013 (optional for 162A1404-3, 162A1420-1) at the lube fittings (230) until you see grease at the inside diameter of the bushings (235, 240).

4. Steering Collar Assembly Refinish

A. Consumable Materials

NOTE: Equivalent substitutes may be used.

Reference	Description	Specification
B00571	Coating - Clear Hydraulic Fluid Resistant Topcoat	BAC5710, Type 41
C00033	Coating - Exterior Protective Enamel, Flexibility Use	BMS10-60, Type II
C50075	Coating - Exterior Protective Enamel, Gray	BMS10-60, Type II, BAC707 Gray

B. References

Reference	Title
SOPM 20-30-02	STRIPPING OF PROTECTIVE FINISHES
SOPM 20-41-01	DECODING TABLE FOR BOEING FINISH CODES

Reference	Title
SOPM 20-44-01	APPLICATION OF SPECIAL PURPOSE COATINGS AND FINISHES
SOPM 20-60-02	FINISHING MATERIALS

C. Procedure

NOTE: For stripping of protective finishes, refer to SOPM 20-30-02. For the decoding table for Boeing finish codes, refer to SOPM 20-41-01. For finishing materials, refer to SOPM 20-60-02.

(1) Apply enamel coating, C50075 (F-20.56-707) to exterior surfaces only, but not in holes, bushing faces, lube fittings and pad-up area of indicator mark.

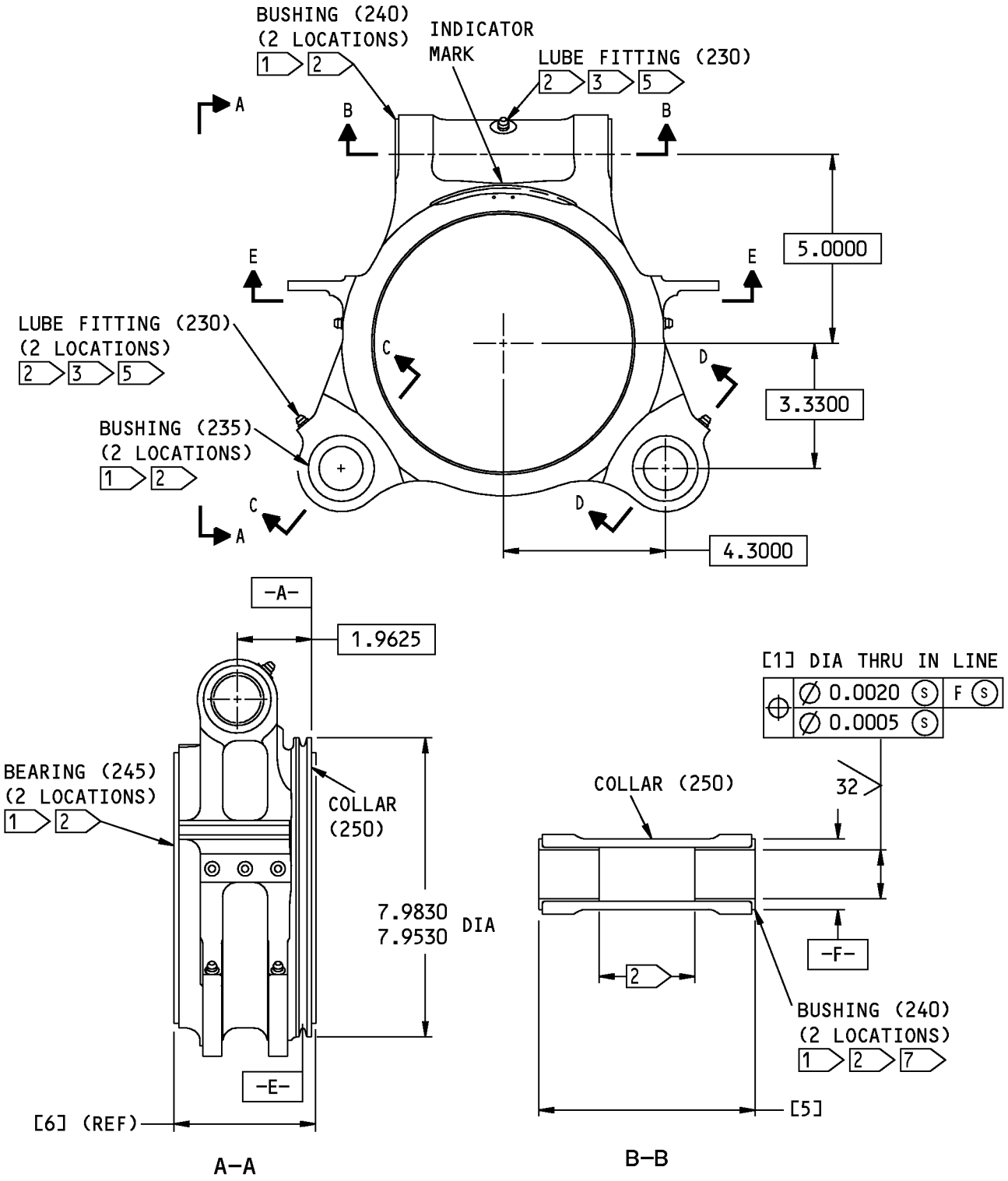
(2) Indicator Mark

(a) Mask surfaces as necessary.

(b) Apply enamel coating, C50075 (F-19.39-707).

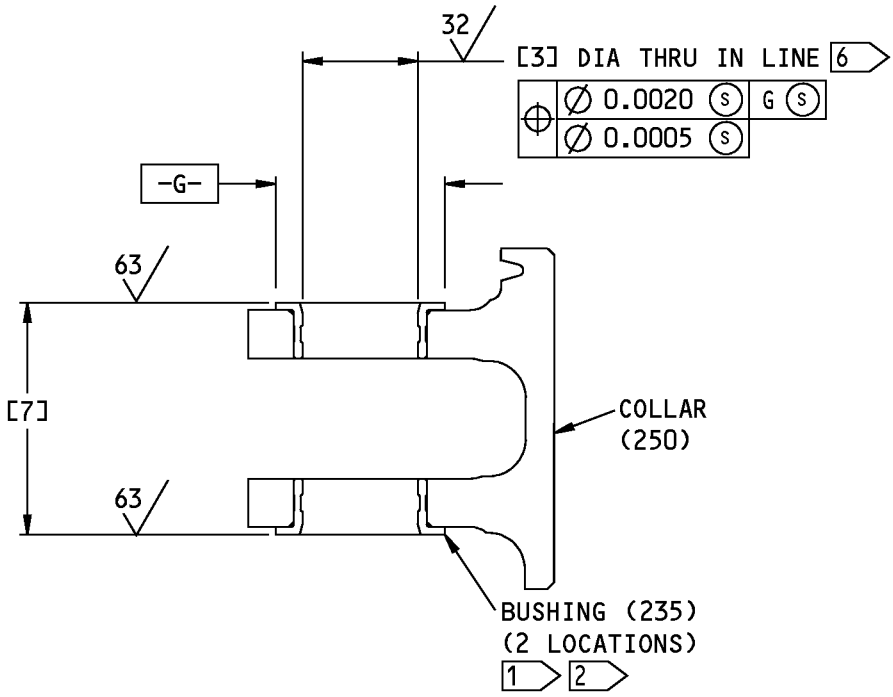
(c) When dry, apply enamel coating, C00033, color 701 black gloss (F-19.39-701) to the indicator mark and identification characters only.

(d) When dry, apply Type 41 clear coating, B00571 (F-21.34) (SOPM 20-44-01).

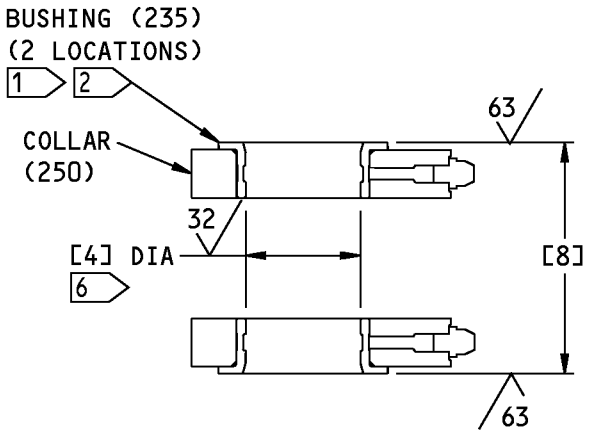


G37461 S0004997924_V2

162A1404-3,-5 Steering Collar Assembly Repair
Figure 601 (Sheet 1 of 4)



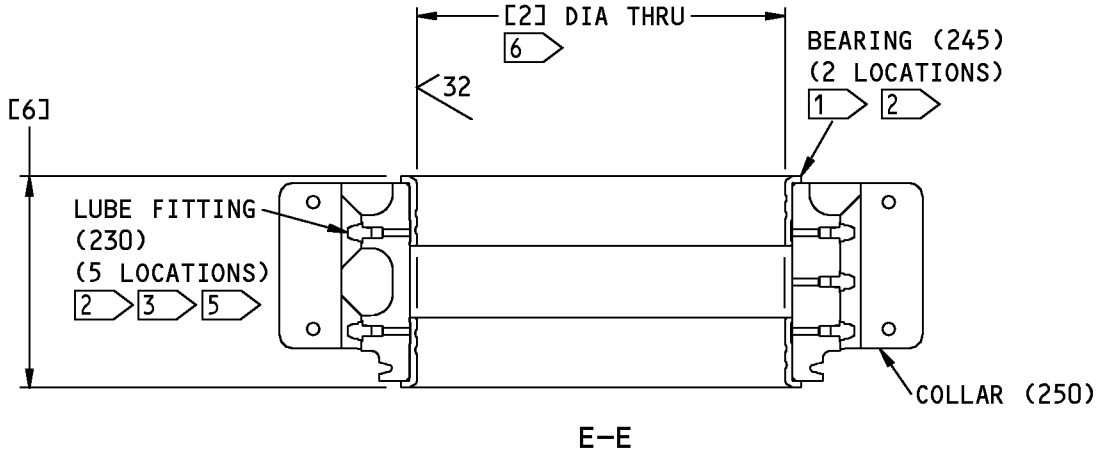
C–C



D–D

L28578 S0004997925_V2

162A1404-3,-5 Steering Collar Assembly Repair
Figure 601 (Sheet 2 of 4)



G98684 S0004997926_V2

162A1404-3,-5 Steering Collar Assembly Repair
Figure 601 (Sheet 3 of 4)

REFERENCE NUMBER	[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]
DESIGN DIMENSION	1.2512 1.2500	6.6190 6.6175	1.1886 1.1875	1.1886 1.1875	5.7540 5.7520	3.7655 MAX	2.4050 MAX	2.4050 MAX

1> USE THE SHRINK FIT PROCEDURE (SOPM 20-50-03) TO INSTALL THIS BUSHING OR BEARING WITH BMS 5-95 SEALANT UNDER THE FLANGE ONLY. THE GAP BETWEEN THE INSIDE FACE OF THE BUSHING FLANGE AND THE FACE OF THE LUG IS 0.001 MAXIMUM. FILLET SEAL WITH BMS 5-95 SEALANT

2> NO PRIMER OR ENAMEL

3> USE THE SHRINK-FIT PROCEDURE TO INSTALL THIS LUBE FITTING WITH BMS 5-95 SEALANT

4> PART NUMBER AND SERIAL NUMBER

5> APPLY GREASE AT THE LUBE FITTING UNTIL THE GREASE COMES OUT ON THE INSIDE DIAMETER OF THE BUSHING OR BEARING

6> INSTALLED DIMENSION, SIZE IF NECESSARY

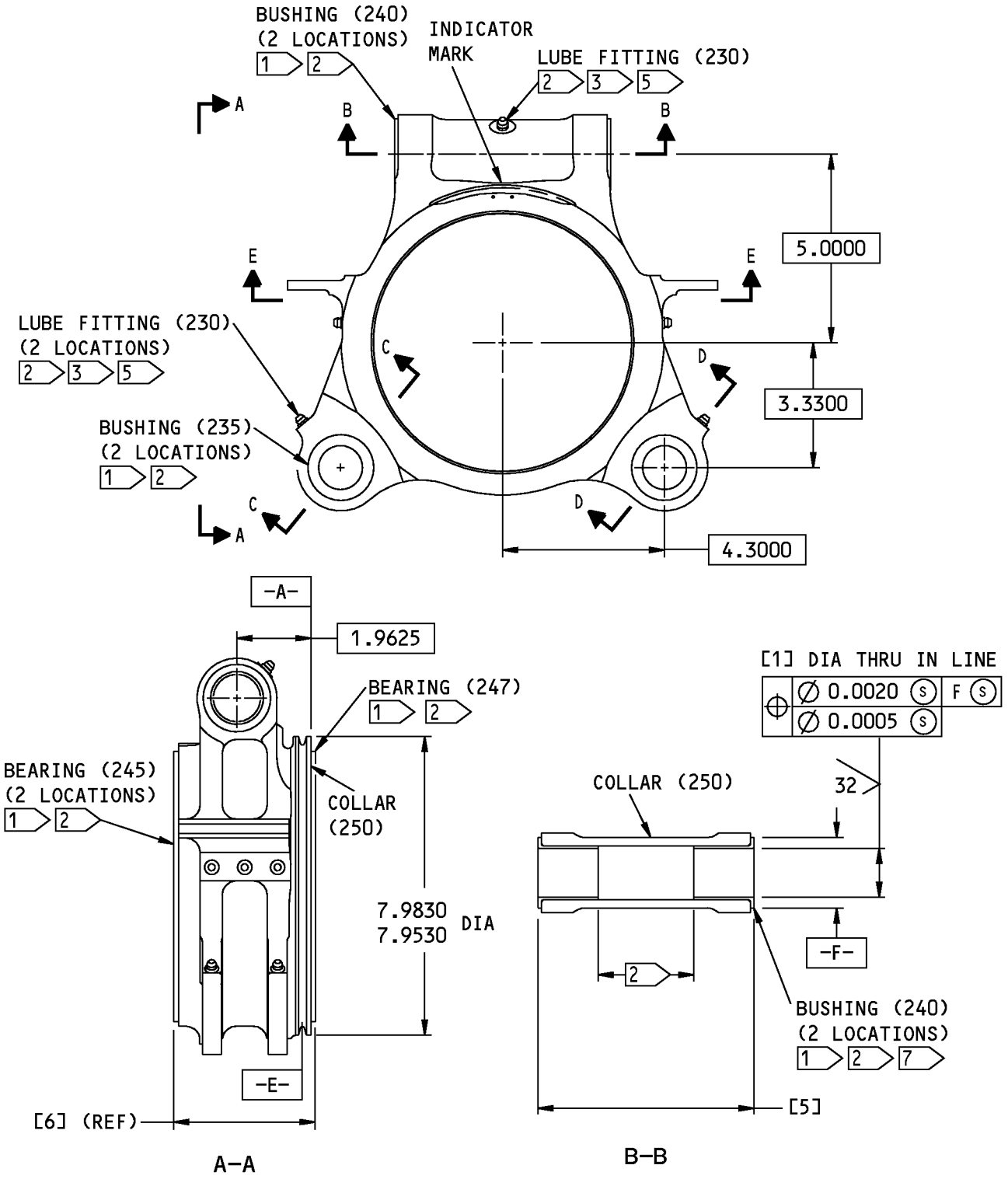
7> MACHINE THE INSIDE FLANGE FACE OF THE BUSHING (240) TO GET THE [5] DIMENSION. THE SURFACE ROUGHNESS IS 63 RA. MINIMUM FLANGE THICKNESS IS 0.0900. STYLUS CADMIUM PLATE THE INSIDE OF THE FLANGE FACE AFTER MACHINING

ITEM NUMBERS REFER TO IPL FIG. 1

ALL DIMENSIONS ARE IN INCHES

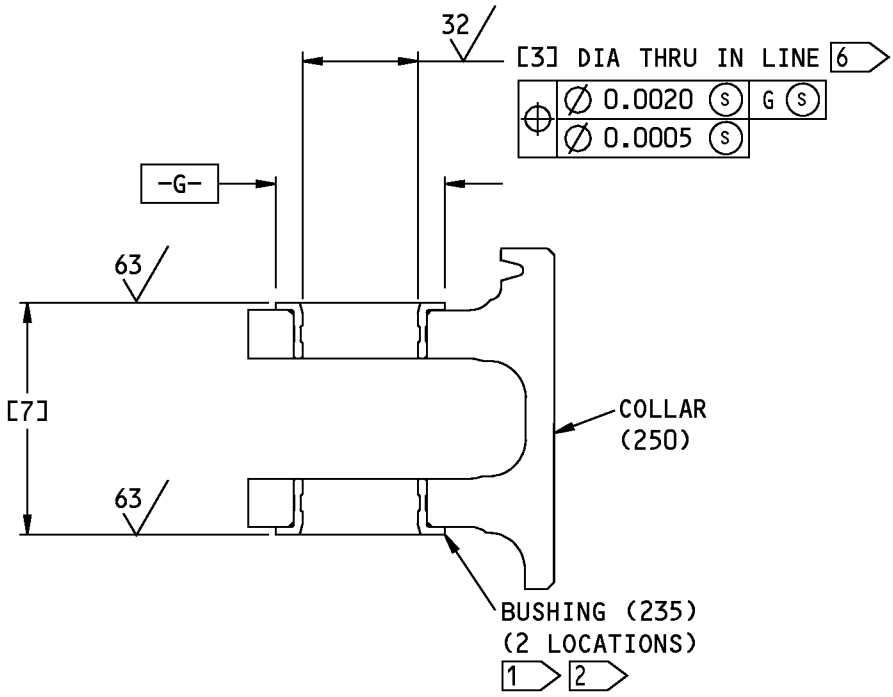
L28585 S0004997927_V3

162A1404-3,-5 Steering Collar Assembly Repair
Figure 601 (Sheet 4 of 4)

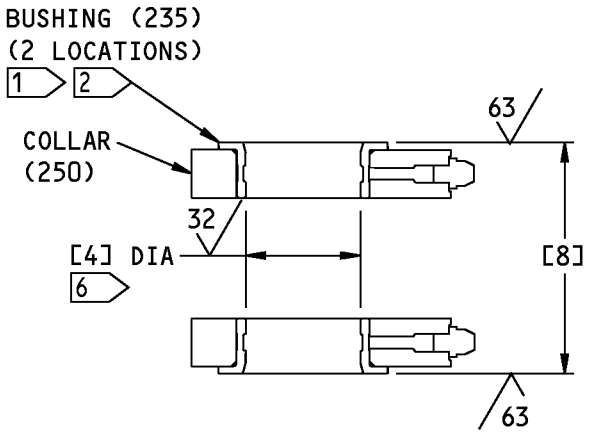


1381826 S0000251300_V2

162A1420-1 Steering Collar Assembly Repair
Figure 602 (Sheet 1 of 4)



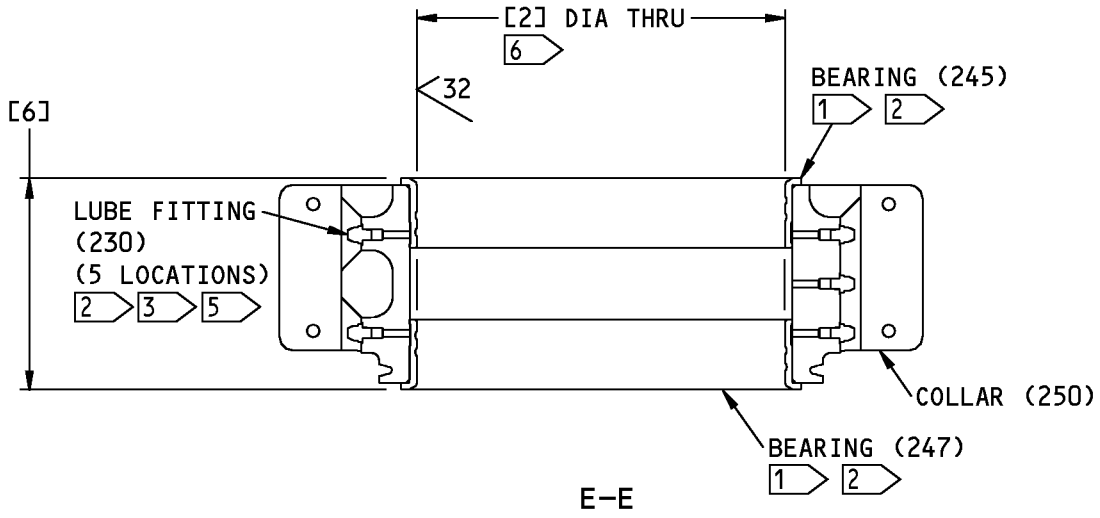
C–C



D–D

1381836 S0000251302_V2

162A1420-1 Steering Collar Assembly Repair
Figure 602 (Sheet 2 of 4)



1381841 S0000251303_V2

162A1420-1 Steering Collar Assembly Repair
Figure 602 (Sheet 3 of 4)

REFERENCE NUMBER	[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]
DESIGN DIMENSION	1.2512 1.2500	6.6190 6.6175	1.1886 1.1875	1.1886 1.1875	5.7540 5.7520	3.8235 MAX	2.4050 MAX	2.4050 MAX

1 > USE THE SHRINK FIT PROCEDURE (SOPM 20-50-03) TO INSTALL THIS BUSHING OR BEARING WITH BMS 5-95 SEALANT UNDER THE FLANGE ONLY. THE GAP BETWEEN THE INSIDE FACE OF THE BUSHING FLANGE AND THE FACE OF THE LUG IS 0.001 MAXIMUM. FILLET SEAL WITH BMS 5-95 SEALANT

2 > NO PRIMER OR ENAMEL

3 > USE THE SHRINK-FIT PROCEDURE TO INSTALL THIS LUBE FITTING WITH BMS 5-95 SEALANT

4 > PART NUMBER AND SERIAL NUMBER

5 > APPLY GREASE AT THE LUBE FITTING UNTIL THE GREASE COMES OUT ON THE INSIDE DIAMETER OF THE BUSHING OR BEARING

6 > INSTALLED DIMENSION, SIZE IF NECESSARY

7 > MACHINE THE INSIDE FLANGE FACE OF THE BUSHING (240) TO GET THE [5] DIMENSION. THE SURFACE ROUGHNESS IS 63 RA. MINIMUM FLANGE THICKNESS IS 0.0900. STYLUS CADMIUM PLATE THE INSIDE OF THE FLANGE FACE AFTER MACHINING

ITEM NUMBERS REFER TO IPL FIG. 1

ALL DIMENSIONS ARE IN INCHES

1381848 S0000251304_V2

162A1420-1 Steering Collar Assembly Repair
Figure 602 (Sheet 4 of 4)

STEERING COLLAR - REPAIR 13-2

162A1404–4, –6

1. General

A. This procedure tells how to repair and refinish the steering collar (250).

B. Refer to the Standard Overhaul Practices Manual (SOPM) for the SOPM subjects identified in this procedure.

C. Refer to IPL Figure 1 for the item numbers.

D. General repair details:

(1) Material: 4340M Steel, 275-300 ksi

(2) Shot peen: All surfaces, but not in the lubrication holes

Shot Size 0.016-0.033

Hard Shot Rc 55-65

Intensity 0.014-0.018A2

Coverage 2.0

2. Steering Collar Refinish

A. Consumable Materials

NOTE: Equivalent substitutes may be used.

Reference	Description	Specification
C00175	Primer - Urethane Compatible, Corrosion Resistant (Less Than 1% Aromatic Amines)	BMS10-79, Type III

B. References

Reference	Title
CMM 32-00-05	REPAIR OF HIGH-STRENGTH STEEL LANDING GEAR PARTS
SOPM 20-10-03	SHOT PEENING
SOPM 20-30-02	STRIPPING OF PROTECTIVE FINISHES
SOPM 20-41-01	DECODING TABLE FOR BOEING FINISH CODES
SOPM 20-60-02	FINISHING MATERIALS

C. Procedure (REPAIR 13-2, Figure 601)

NOTE: For shot peening, refer to SOPM 20-10-03. For stripping of protective finishes, refer to SOPM 20-30-02. For the decoding table for Boeing finish codes, refer to SOPM 20-41-01. For finishing materials, refer to SOPM 20-60-02. For repair of high-strength steel landing parts, refer to CMM 32-00-05.

(1) Chrome plate and cadmium-titanium plate as indicated by flagnotes 1 and 4. Cadmium-titanium plate (F-15.01) all other surfaces.

(2) Apply primer, C00175 (F-19.47) as indicated.

3. Lug Faces and Holes

A. Procedure (REPAIR 13-2, Figure 601)

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

(2) Make oversize bushings (REPAIR 13-2, Figure 602 thru REPAIR 13-2, Figure 605), to adjust for the material removed.

(3) Install the bushings as shown in REPAIR 13-1.

4. Cable Groove

A. References

Reference	Title
SOPM 20-20-01	MAGNETIC PARTICLE INSPECTION

B. Procedure (REPAIR 13-2, Figure 601)

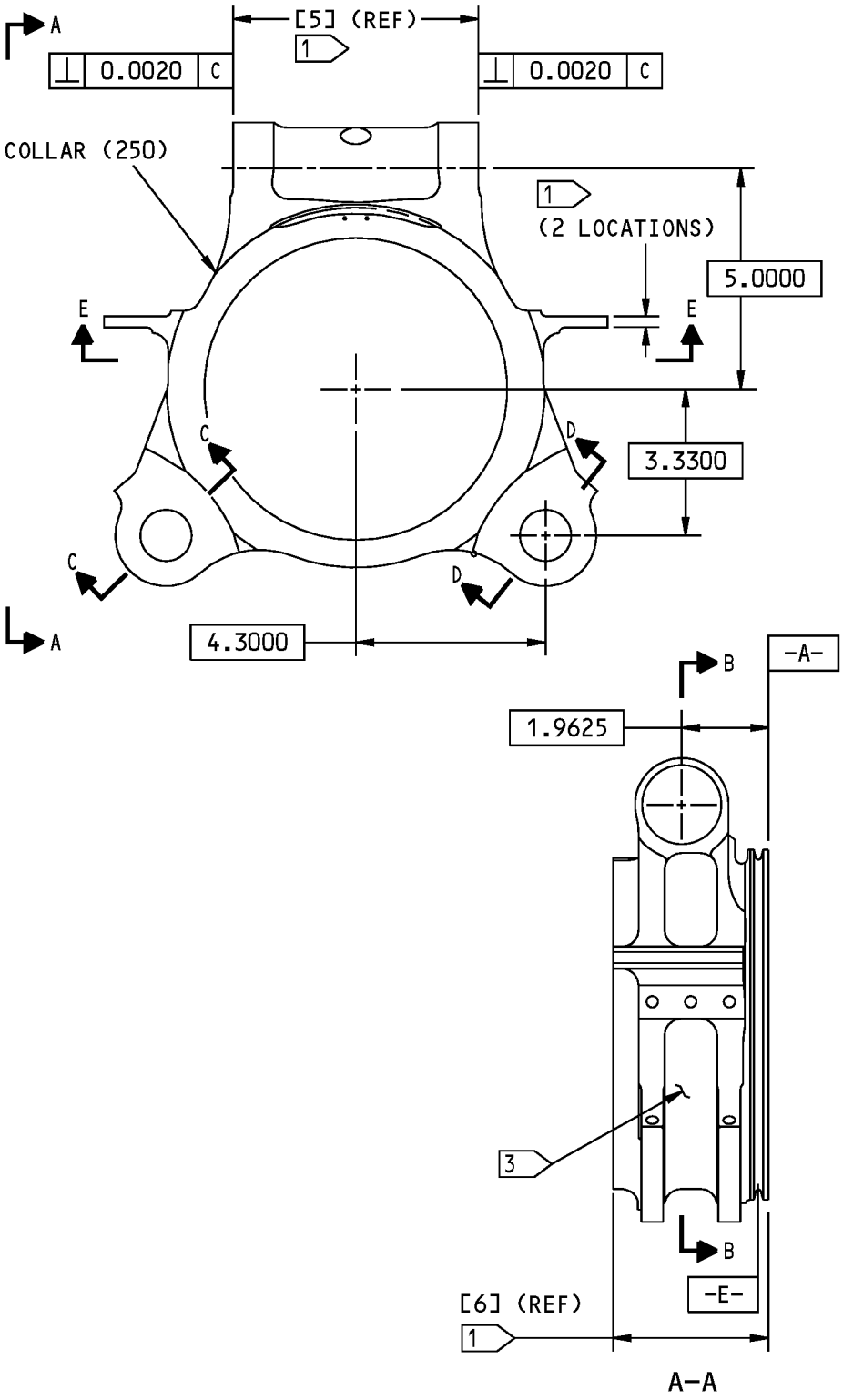
(1) Remove the chrome plate from the groove.

(2) Blend or machine out defects, within repair limits. Keep a minimum 10:1 ratio along the groove, circumferentially.

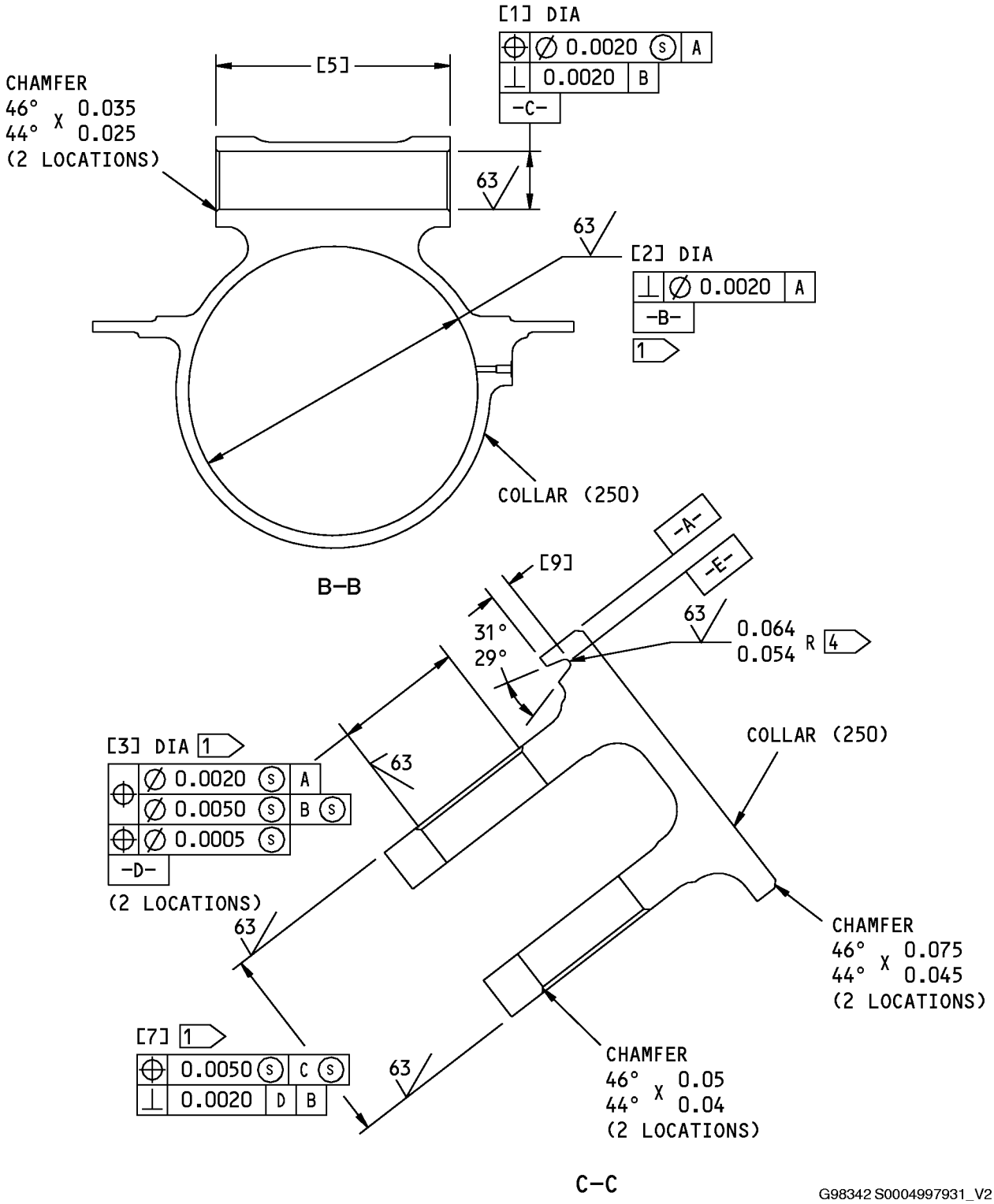
(3) Magnetic particle examine (SOPM 20-20-01).

(4) Shot peen as indicated.

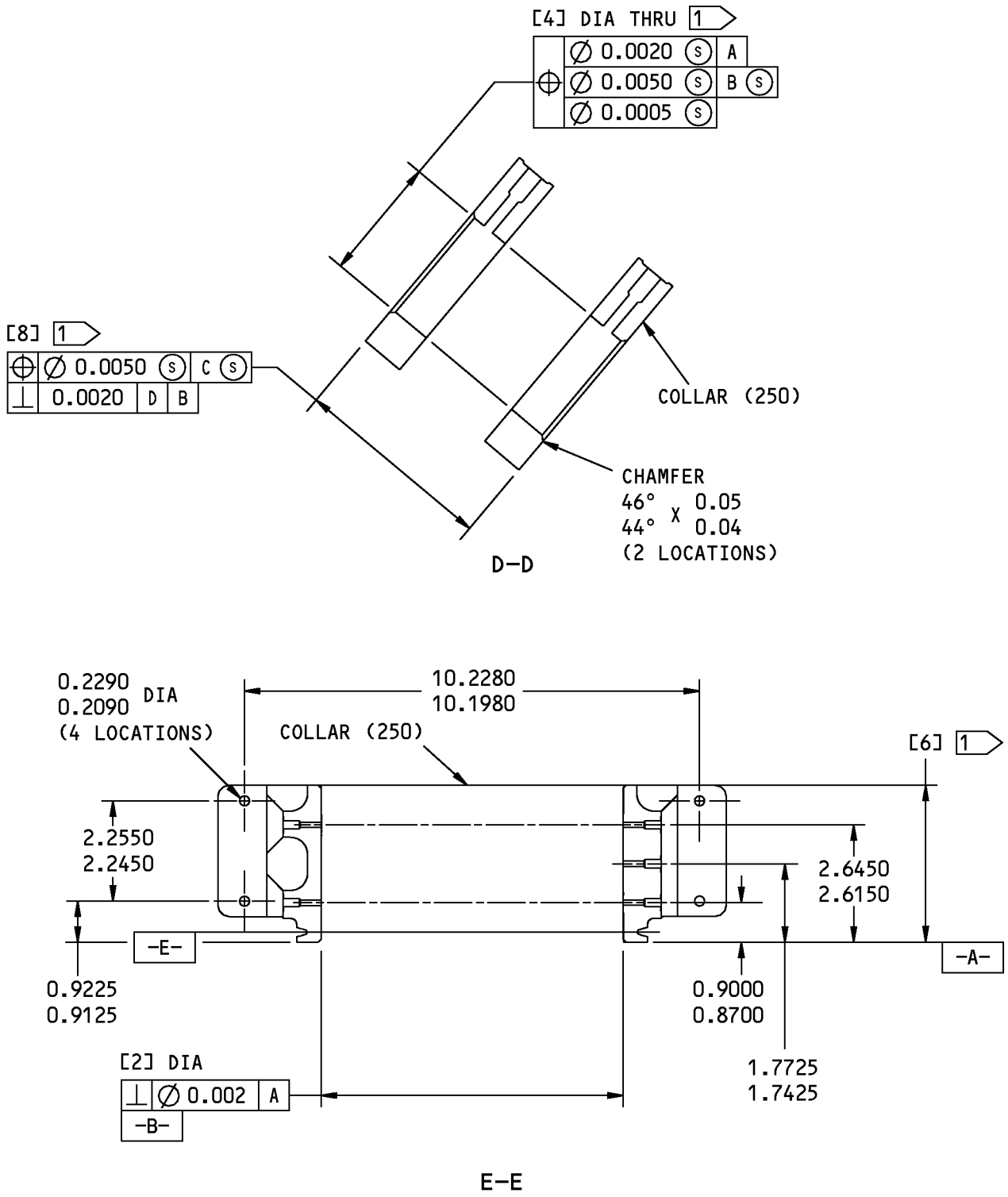
(5) Refinish as specified in REPAIR 13-2, Paragraph 2.



162A1404-4,-6 Steering Collar Repair
Figure 601 (Sheet 1 of 4)



162A1404-4,-6 Steering Collar Repair
Figure 601 (Sheet 2 of 4)



G98493 S0004997932_V2

162A1404-4,-6 Steering Collar Repair
Figure 601 (Sheet 3 of 4)

REFERENCE NUMBER	[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]	[9]
DESIGN DIMENSION	1.4392 1.4380	6.8670 6.8655	1.4166 1.4155	1.4166 1.4155	5.5650 5.5600	3.5200 3.5150	2.2500 2.2400	2.2500 2.2400	0.2340 0.2240
REPAIR LIMIT	1.4992 <2>	6.9270 <2>	1.4766 <2>	1.4766 <2>	5.5000 <2>	3.4550 <2>	2.1800 <2>	2.1800 <2>	0.2490 <5>

<1> CADMIUM-TITANIUM PLATE (F-15.32) AND APPLY BMS 10-79 TYPE 3 PRIMER (F-19.47) ON THESE FACES

<2> LIMIT FOR INSTALLATION OF OVERSIZE BUSHINGS

<3> PART NUMBER AND SERIAL NUMBER

<4> CHROME PLATE (F-15.43, WHICH REPLACES F-14.892). DO NOT CADMIUM-TITANIUM PLATE OR APPLY PRIMER OR ENAMEL

<5> RESTORATION TO DESIGN DIMENSIONS NOT REQUIRED

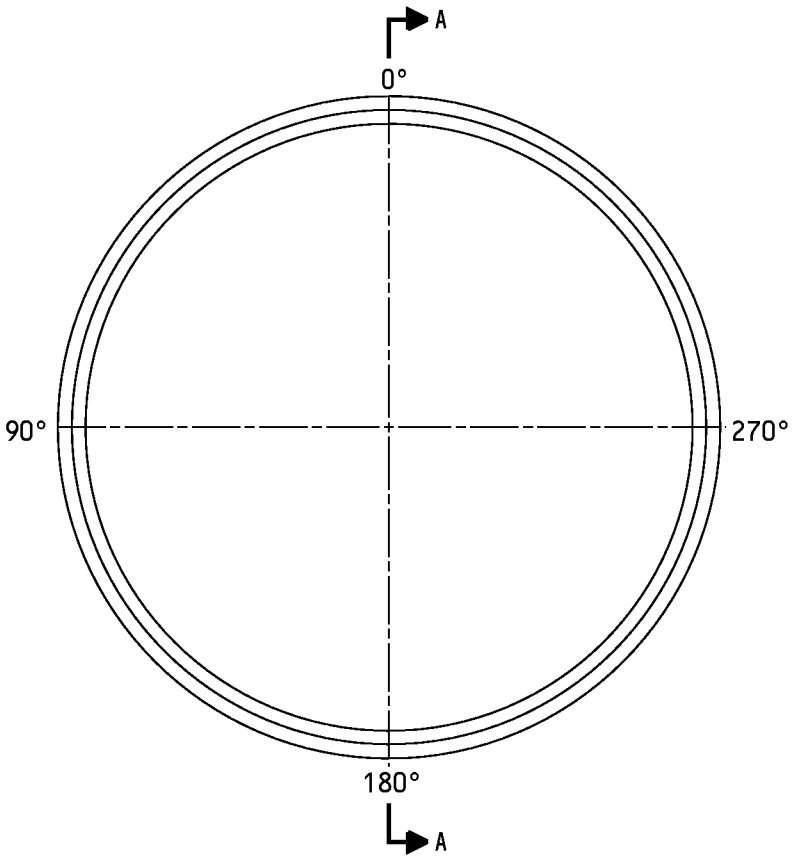
63 ALL MACHINED SURFACES UNLESS SHOWN DIFFERENTLY

BREAK SHARP EDGES 0.02-0.03 R UNLESS SHOWN DIFFERENTLY

ITEM NUMBERS REFER TO IPL FIG. 1

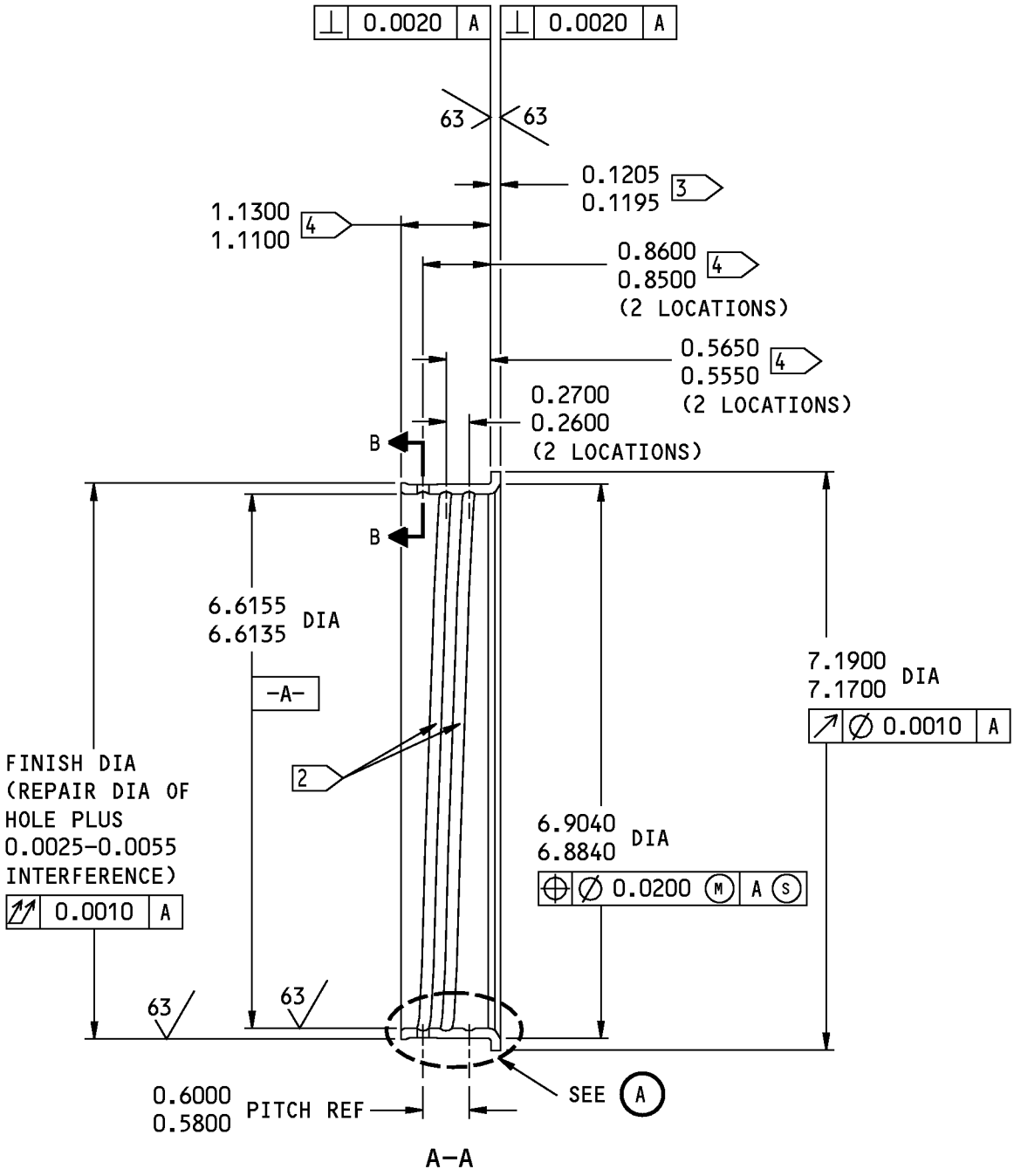
ALL DIMENSIONS ARE IN INCHES

162A1404-4,-6 Steering Collar Repair
Figure 601 (Sheet 4 of 4)



HOLE LOCATION [2] FIG. 601 OR 602 -
REPLACES BEARING (245) 162A1403-1

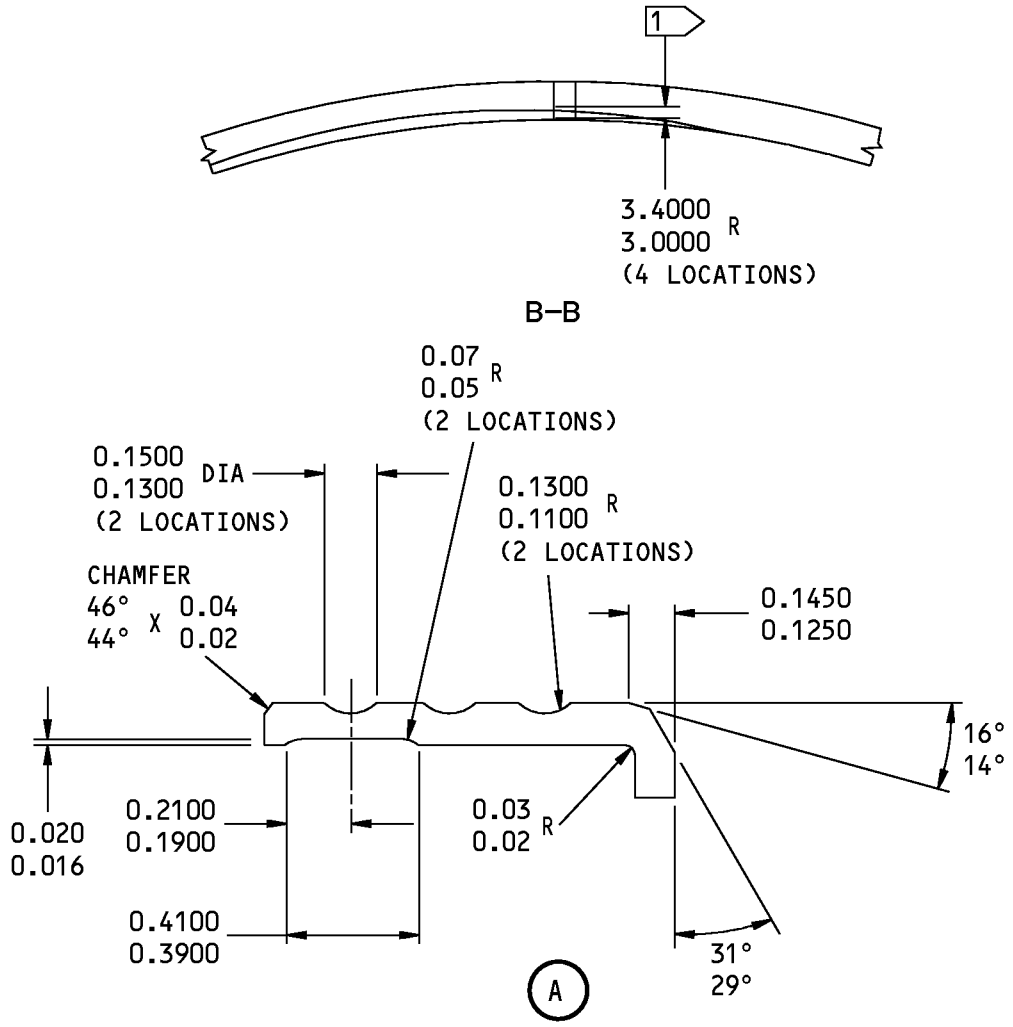
Oversized Bearing Details
Figure 602 (Sheet 1 of 3)



HOLE LOCATION [2] FIG. 601 OR 602 -
REPLACES BEARING (245) 162A1403-1

G39307 S0004997935_V3

Oversized Bearing Details
Figure 602 (Sheet 2 of 3)



HOLE LOCATION [2] FIG. 601 OR 602 -
REPLACES BEARING (245) 162A1403-1

1 THE FULL DEPTH OF THE START AND END POINT OF 0.59 INCH PITCH LUBE GROOVE IS AT 0 AND 180 DEGREES

2 ONE CYCLE PITCH OF THE INNER LUBE GROOVES IS 175-185 DEGREES APART LEAD DIRECTION OPTIONAL

3 PLUS AMOUNT REMOVED FROM LUG FACE

4 MINUS AMOUNT REMOVED FROM LUG FACE

125 ALL MACHINED SURFACES UNLESS SHOWN DIFFERENTLY

BREAK SHARP EDGES 0.01-0.02 R

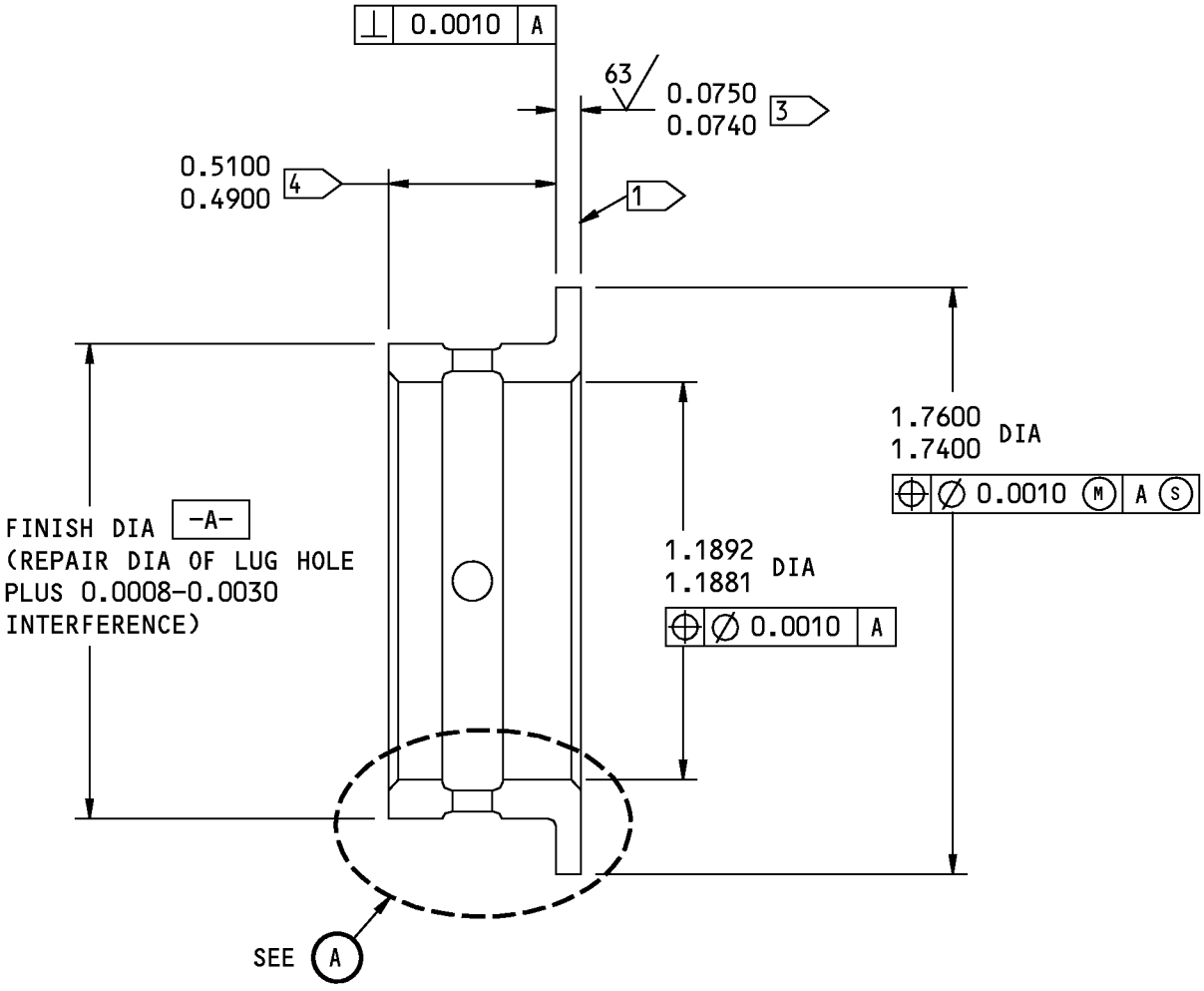
MATERIAL: AL-NI-BRZ (AMS4880)

FINISH: CADMIUM PLATE (F-15.36)

ITEM NUMBERS REFER TO IPL FIG. 1

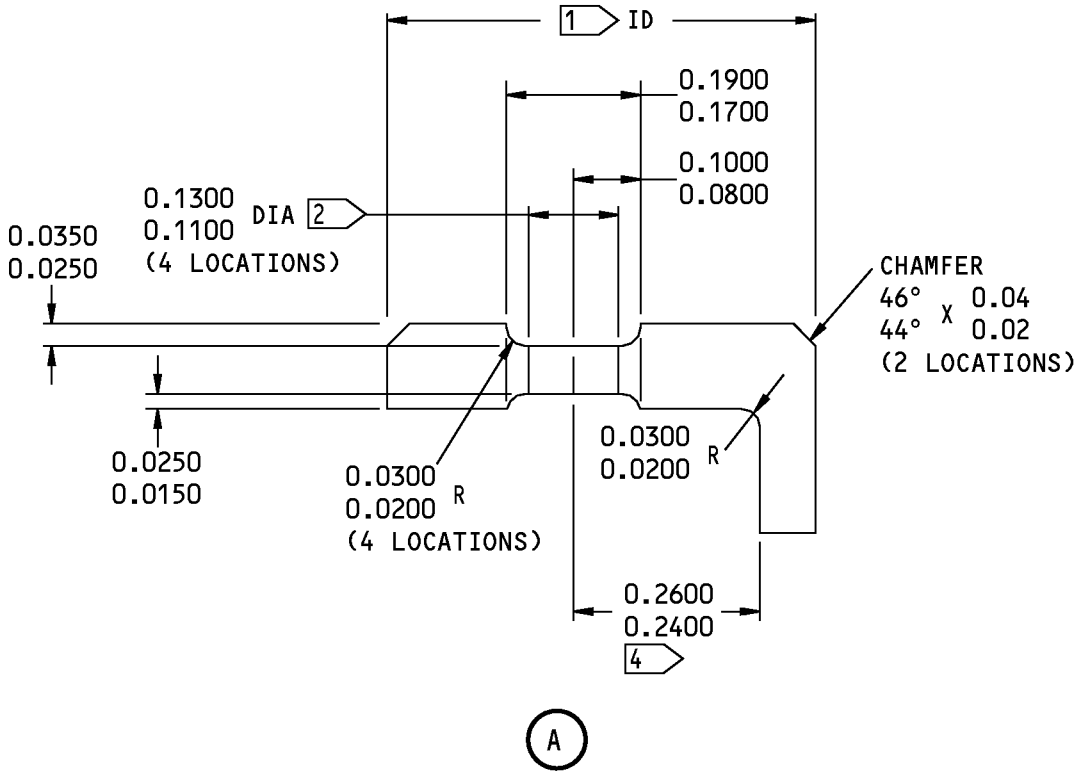
ALL DIMENSIONS ARE IN INCHES

Oversized Bearing Details
Figure 602 (Sheet 3 of 3)



HOLE LOCATIONS [3] [4] FIG. 601 OR 602
REPLACES BUSHING (235) 162A1402-1

Oversize Bushing Details
Figure 603 (Sheet 1 of 2)



HOLE LOCATIONS [3], [4] FIG. 601 OR 602
REPLACES BUSHING (235) 162A1402-1

1 > DO NOT CADMIUM PLATE (F-15.36)

2 > CADMIUM PLATE THROW-IN CAN BE IN THESE HOLES

3 > PLUS AMOUNT REMOVED FROM LUG FACE

4 > MINUS AMOUNT REMOVED FROM LUG FACE

125 ALL MACHINED SURFACES UNLESS SHOWN DIFFERENTLY

MATERIAL: AL-NI-BRZ (AMS 4640)

BREAK SHARP EDGES 0.01-0.02 R

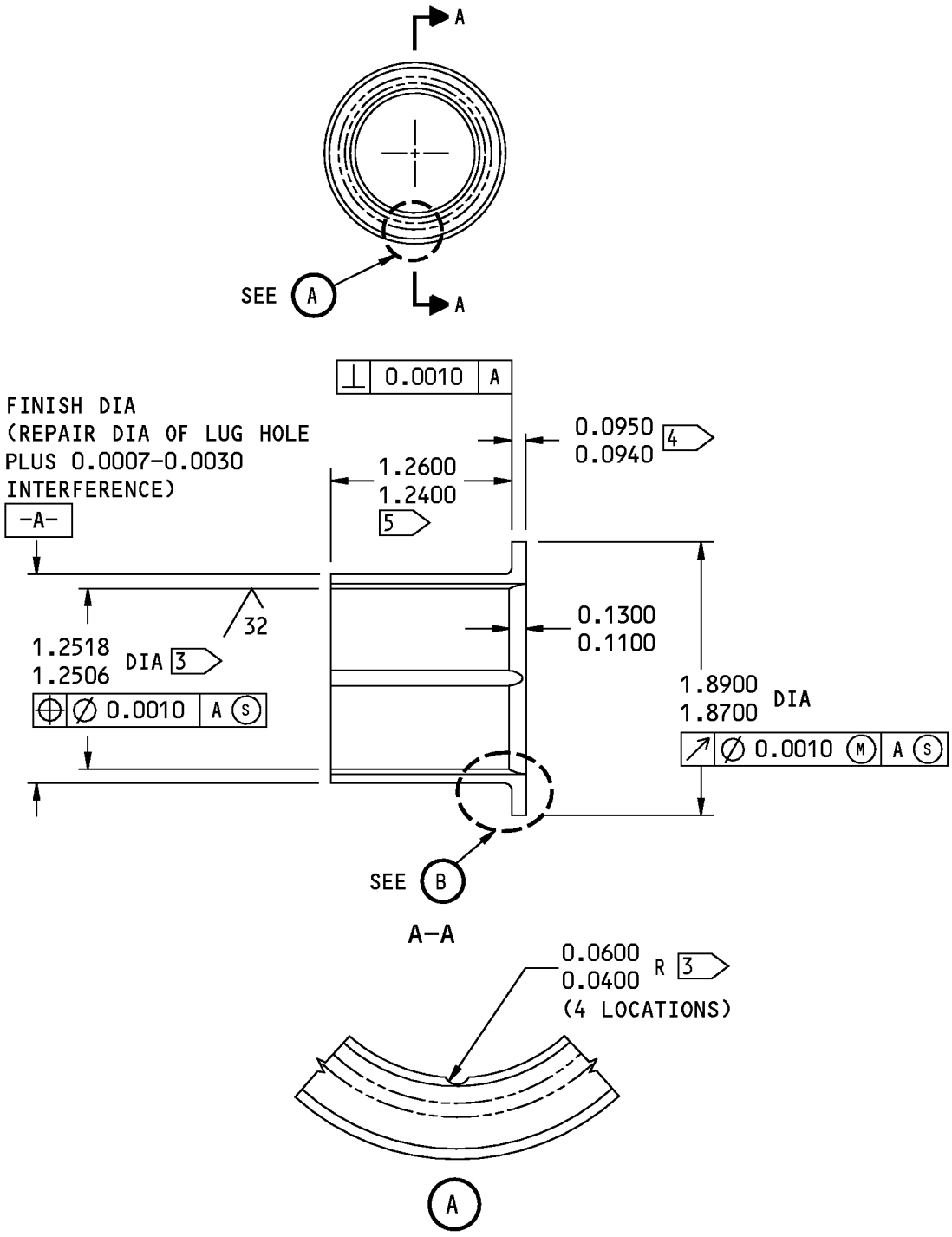
FINISH: CADMIUM PLATE (F-15.36) UNLESS SHOWN BY 1 >

ITEM NUMBERS REFER TO IPL FIG. 1

DIMENSIONS ARE BEFORE PLATING

ALL DIMENSIONS ARE IN INCHES

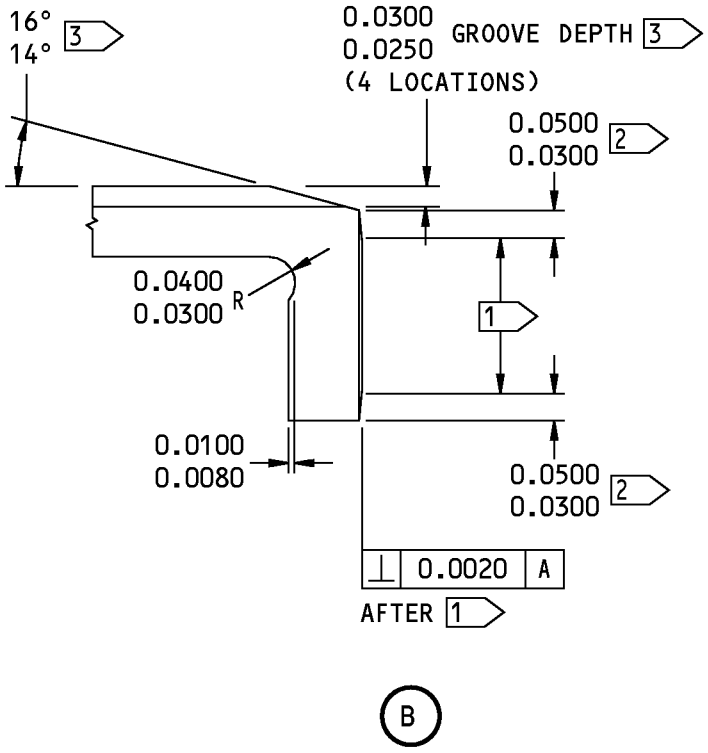
Oversize Bushing Details
Figure 603 (Sheet 2 of 2)



HOLE LOCATION [1] FIG. 601 OR 602 -
REPLACES BUSHING (240) 162A1122-1

G98720 S0004997939_V3

Oversize Bushing Details
Figure 604 (Sheet 1 of 2)



HOLE LOCATION [1] FIG. 601 OR 602 -
REPLACES BUSHING (240) 162A1122-1

1 CHROME PLATE (F-15.34), 0.003-0.005 THICK, 32 MICROINCH AFTER GRINDING

2 CHROME PLATE RUNOUT AREA

3 DO NOT APPLY CADMIUM PLATE (F-15.06) HERE

4 PLUS AMOUNT REMOVED FROM LUG FACE

5 MINUS AMOUNT REMOVED FROM LUG FACE

125 ALL MACHINED SURFACES UNLESS SHOWN DIFFERENTLY

MATERIAL: AL-NI-BRZ (AMS 4640)

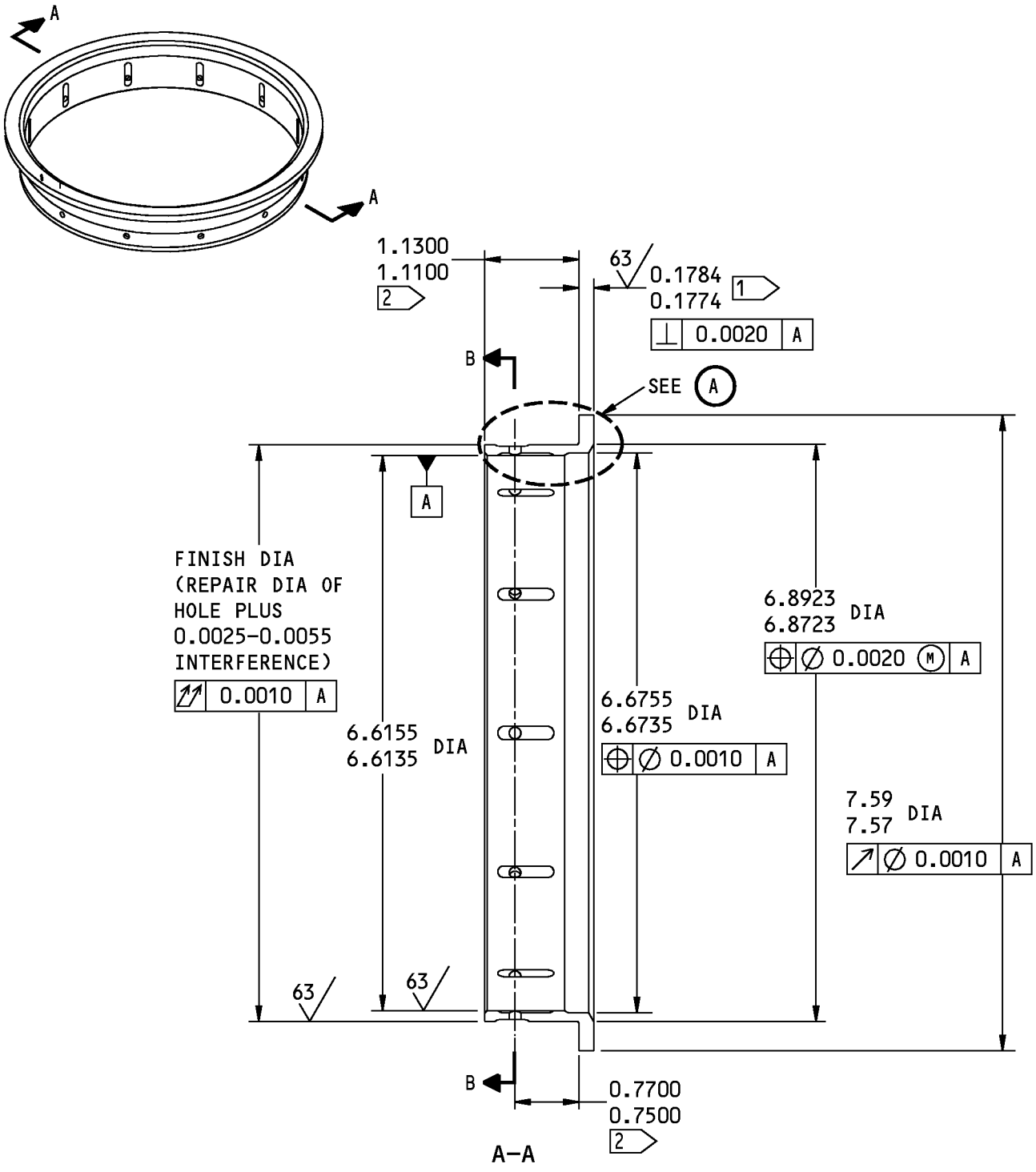
BREAK SHARP EDGES 0.01-0.02 R

FINISH: CADMIUM PLATE (F-15.06), 0.0003-0.0005 THICK, UNLESS SHOWN BY 1 2 3

ITEM NUMBERS REFER TO IPL FIG. 1

ALL DIMENSIONS ARE IN INCHES

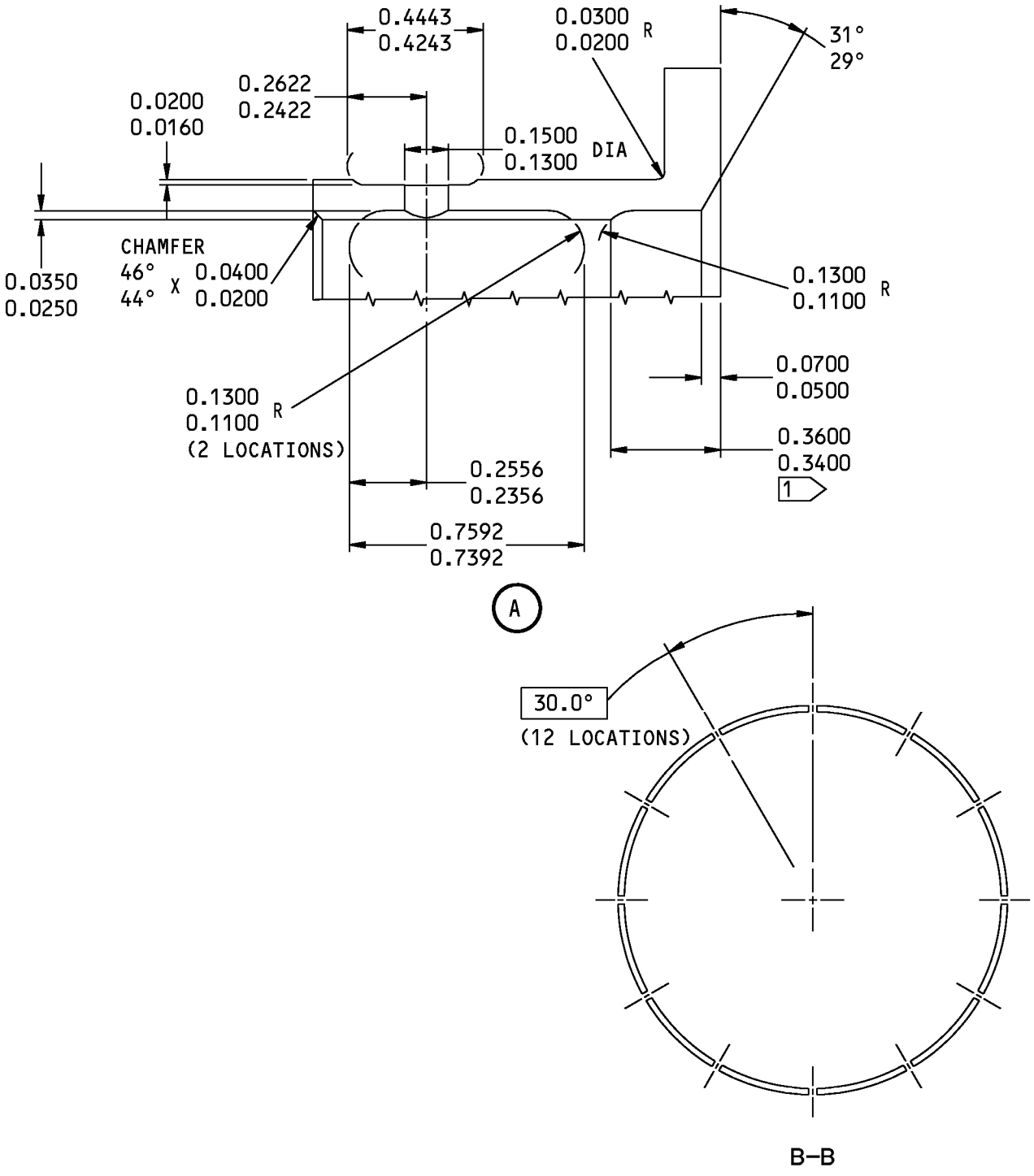
Oversize Bushing Details
Figure 604 (Sheet 2 of 2)



HOLE LOCATION [2] FIG. 602 - REPLACES BEARING (247) 162A1422-1

1383342 S0000251305_V2

Oversize Bearing Details
Figure 605 (Sheet 1 of 3)



HOLE LOCATION [2] FIG. 602 - REPLACES BEARING (247) 162A1422-1

1383718 S0000251306_V2

Oversize Bearing Details
Figure 605 (Sheet 2 of 3)

1 PLUS AMOUNT REMOVED FROM LUG FACE

2 MINUS AMOUNT REMOVED FROM LUG FACE

125 ALL MACHINED SURFACES UNLESS SHOWN DIFFERENTLY

BREAK SHARP EDGES 0.01-0.02 R

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

FINISH: CADMIUM PLATE (F-15.36)

ITEM NUMBERS REFER TO IPL FIG. 1

ALL DIMENSIONS ARE IN INCHES

HOLE LOCATION [2] FIG. 602 - REPLACES BEARING (247) 162A1422-1

Oversize Bearing Details
Figure 605 (Sheet 3 of 3)

STEERING SLEEVE ASSEMBLY - REPAIR 14-1

162A1405–3, –5, –7, –9, 162A1421–1

1. General

A. This procedure tells how to replace the bushings (260, 265) in the steering sleeve assembly (255).

B. Refer to the Standard Overhaul Practices Manual (SOPM) for the SOPM subjects identified in this procedure.

C. Refer to IPL Figure 1 for the item numbers.

2. Bushing Replacement

A. Consumable Materials

NOTE: Equivalent substitutes may be used.

Reference	Description	Specification
A00247	Sealant - Pressure And Environmental - Chromate Type	BMS 5-95

B. References

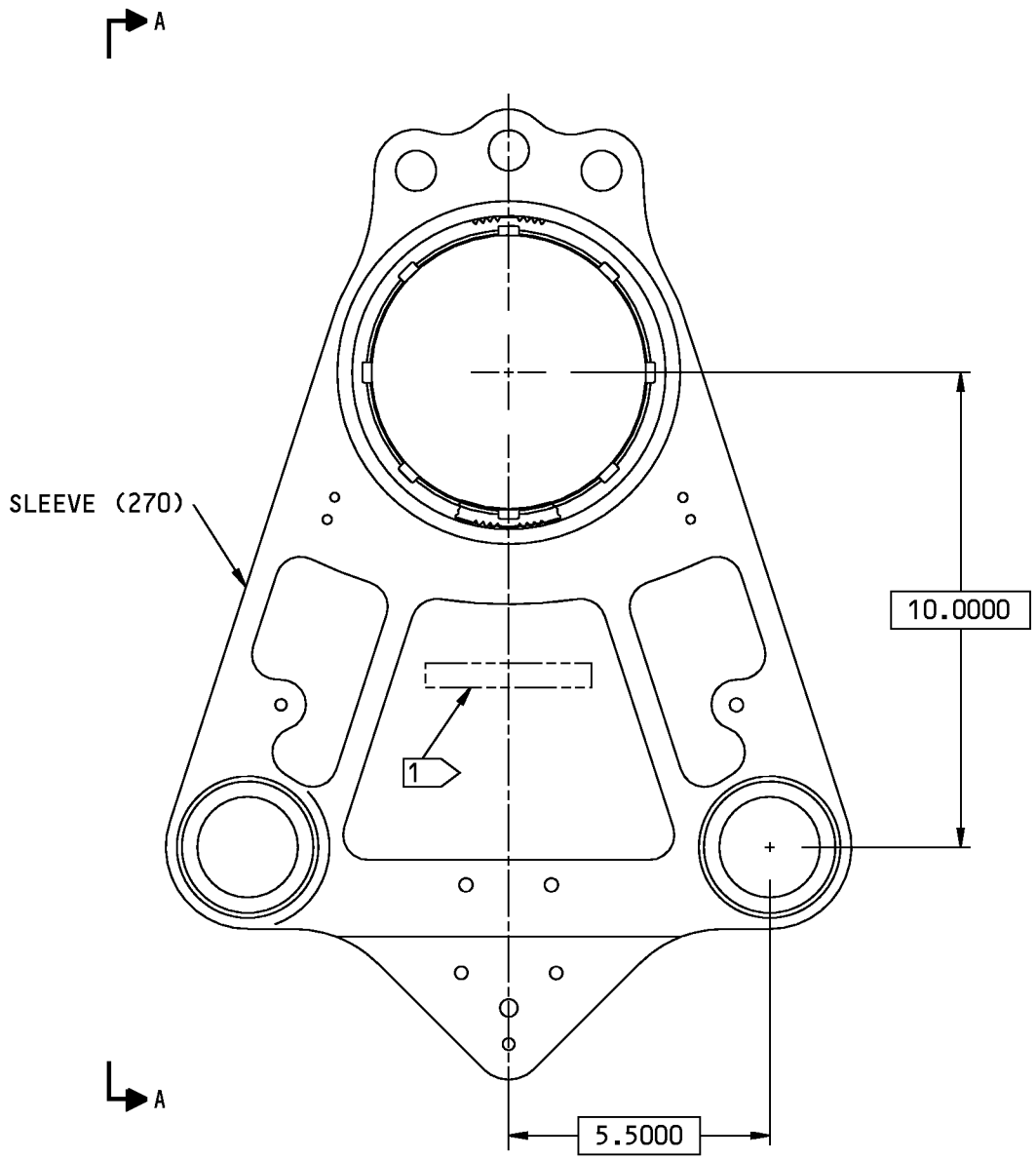
Reference	Title
SOPM 20-50-03	BEARING AND BUSHING REPLACEMENT
SOPM 20-60-04	MISCELLANEOUS MATERIALS

C. Procedure (REPAIR 14-1, Figure 601)

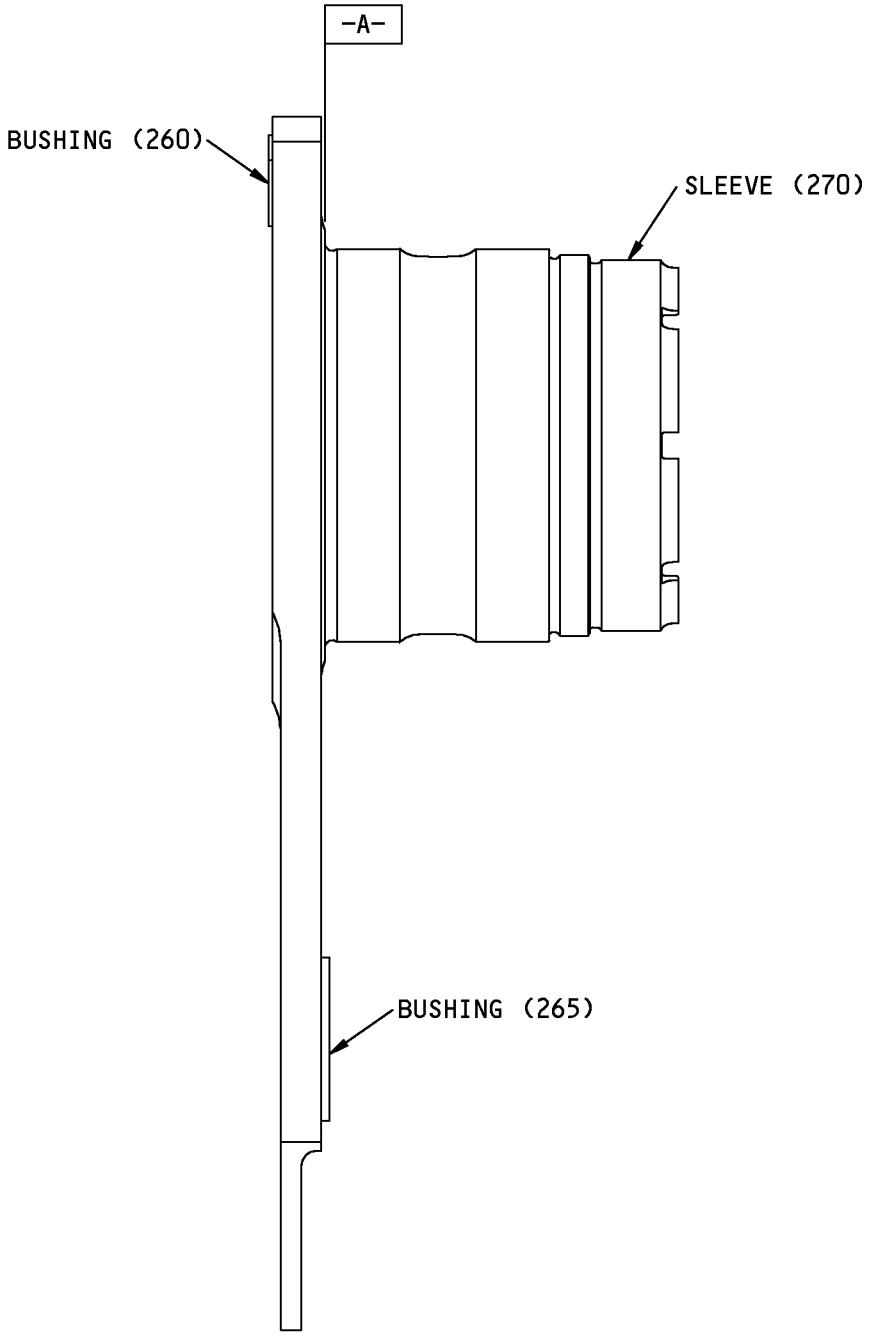
(1) Remove the old bushings from the steering sleeve (270).

(2) If you find defects on the steering sleeve (270), refer to REPAIR 14-2 for repair instructions.

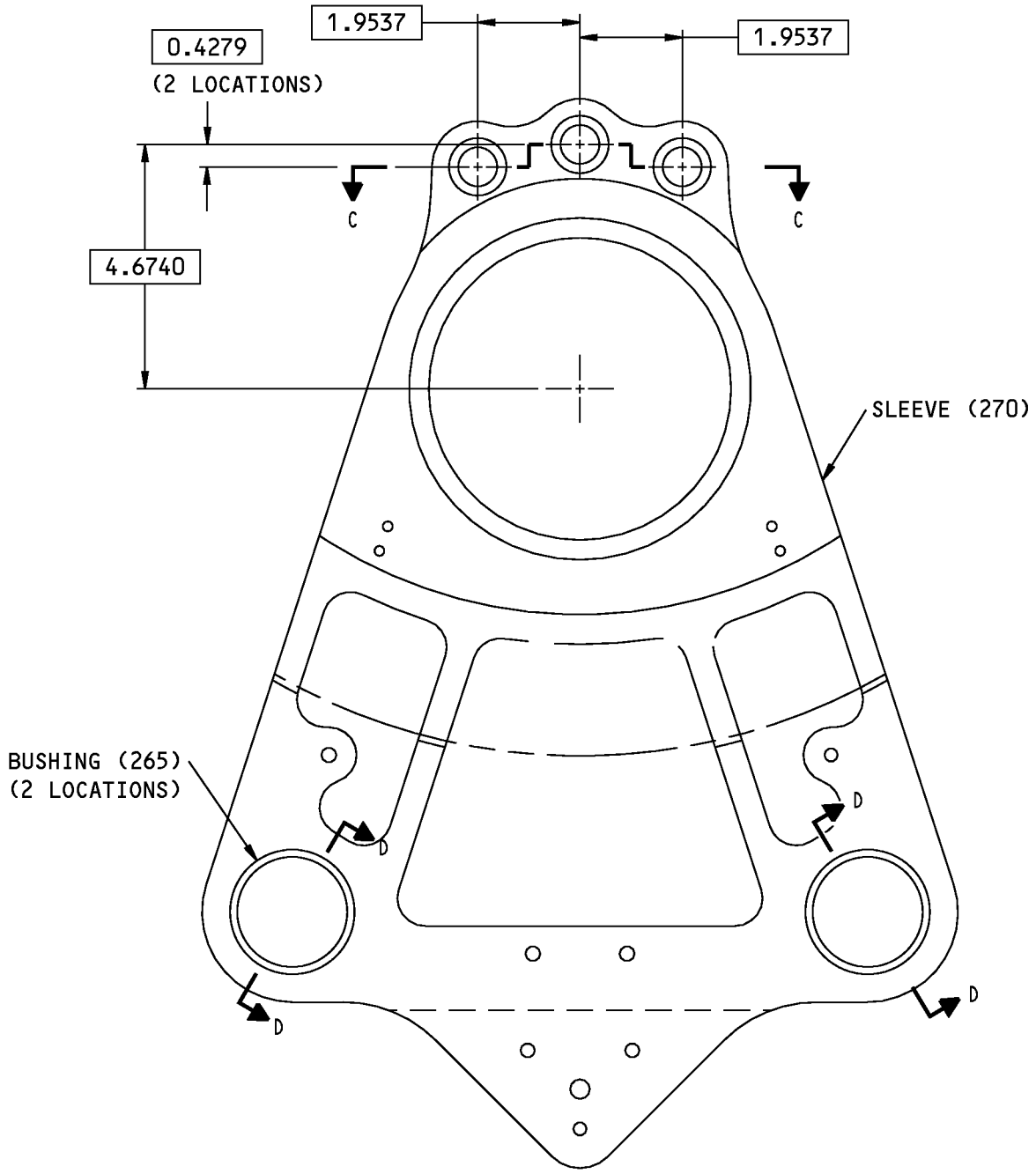
(3) Install replacement bushings by the shrink-fit procedure (SOPM 20-50-03) with sealant, A00247 (SOPM 20-60-04).



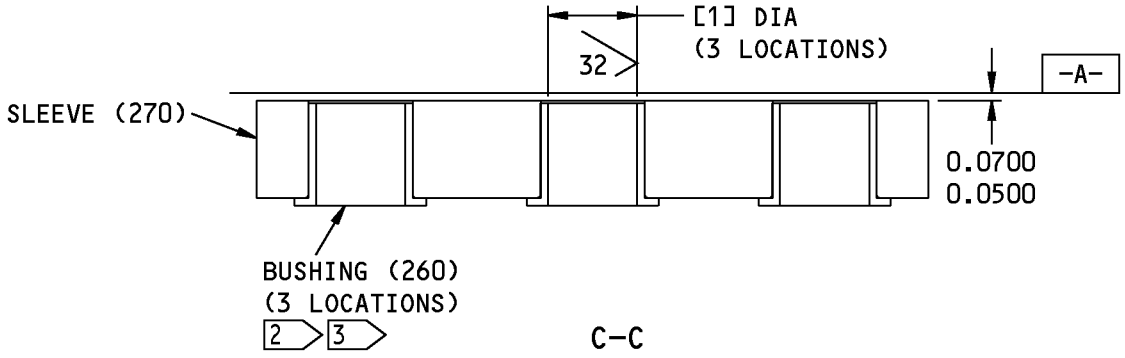
162A1405-3,-5,-7,-9; 162A1421-1 Steering Sleeve Assembly Bushing Replacement
Figure 601 (Sheet 1 of 4)



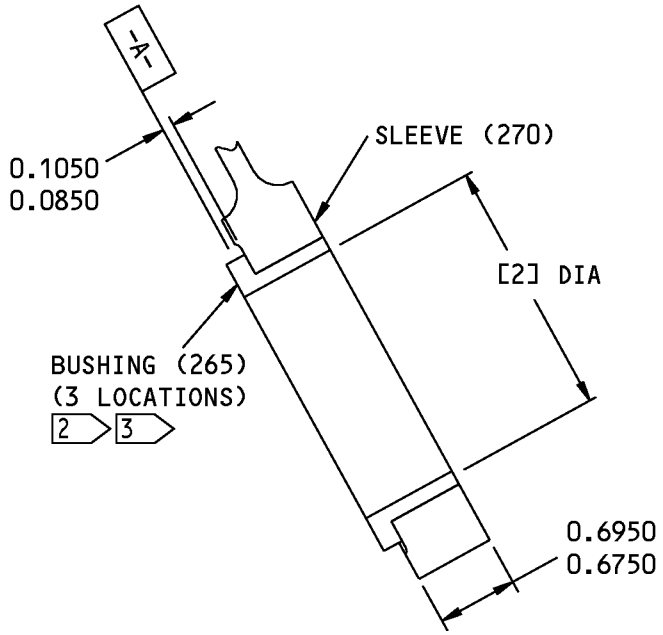
162A1405-3,-5,-7,-9; 162A1421-1 Steering Sleeve Assembly Bushing Replacement
Figure 601 (Sheet 2 of 4)



162A1405-3,-5,-7,-9; 162A1421-1 Steering Sleeve Assembly Bushing Replacement
Figure 601 (Sheet 3 of 4)



C-C



D-D

1 PART NUMBER AND SERIAL NUMBER

2 INSTALL THIS BUSHING BY THE SHRINK-FIT PROCEDURE

3 0.0010 MAXIMUM GAP BETWEEN THE PLATE AND INSIDE FACE OF THE BUSHING FLANGE

4 INSTALLED DIMENSION. ADJUST TO THIS RANGE IF NECESSARY

5 INSTALLED DIMENSION. DO NOT ADJUST

	[1]	[2]
162A1405-3,-7	0.7505 0.7500 4	2.1294 2.1250 4
162A1405-5,-9 162A1421-1	0.7505 0.7500 4	2.1260 MIN 5

ITEM NUMBERS REFER TO IPL FIG. 1

ALL DIMENSIONS ARE IN INCHES

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162A1405-3,-5,-7,-9; 162A1421-1 Steering Sleeve Assembly Bushing Replacement
Figure 601 (Sheet 4 of 4)

STEERING SLEEVE - REPAIR 14-2

162A1405–4, –6, –8, –10, 162A1421–2

1. General

A. Use this procedure to repair and refinish the steering sleeve (270).

B. Refer to the Standard Overhaul Practices Manual (SOPM) for details of the SOPM subjects identified in this procedure.

C. Refer to IPL Figure 1 for item numbers.

D. General repair details:

(1) Material: Titanium alloy

(2) Shot peen: All surfaces, but not on threads or splines. Overspray is permitted, but not on the surfaces specified by flagnote 6.

Intensity 0.014A2

Coverage 2.0

2. Repair

A. Consumable Materials

NOTE: Equivalent substitutes may be used.

Reference	Description	Specification
D00113	Lubricant - Liquid Dispersed Solid Film Lubricant	BMS3-8, BAC 5811, TYPE VIII

B. References

Reference	Title
SOPM 20-10-03	SHOT PEENING
SOPM 20-10-07	MACHINING OF TITANIUM
SOPM 20-20-02	PENETRANT METHODS OF INSPECTION

C. Procedure (REPAIR 14-2, Figure 601 and REPAIR 14-2, Figure 602)

NOTE: For shot peening, refer to SOPM 20-10-03. For machining of titanium, refer to SOPM 20-10-07.

(1) Holes for bushings

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

(b) For bushing (260), make oversize bushings (REPAIR 14-2, Figure 603), as necessary, to adjust for the material removed. For bushing (265), get an equivalent oversize bushing that fits the repair diameter (Table B). If necessary, machine the bushing OD to get a 0.0020-0.0050 inch interference fit with the oversize hole in the steering sleeve.

(c) Install the bushings as shown in REPAIR 14-1.

(2) Spline Teeth Faces

(a) Use this procedure if you find wear on the spline teeth faces (0.005 inch maximum permitted per face).

(b) Visually examine all worn areas for stress risers, with a minimum of 10X magnification.

(c) Blend out all stress risers. Keep a 40 microinch or smoother surface finish. Blend with a 10:1 minimum ratio. Do not increase the depth of the worn surface.

(d) Penetrant examine (SOPM 20-20-02) to make sure all of the defects are removed.

(e) Apply solid film lubricant, D00113 (F-19.10) as specified by flagnote 8.

3. Refinish

A. Consumable Materials

NOTE: Equivalent substitutes may be used.

Reference	Description	Specification
D00113	Lubricant - Liquid Dispersed Solid Film Lubricant	BMS3-8, BAC 5811, TYPE VIII
G00167	Coating - Flame Spray Tungsten Carbide Powder	BMS10-67, Type I
G50026	Coating - Thermal Spray Powder (Tungsten Carbide Cobalt Chrome)	BMS10-67, Type XVII

B. References

Reference	Title
SOPM 20-10-05	APPLICATION AND FINISHING OF THERMAL SPRAY COATINGS
SOPM 20-30-02	STRIPPING OF PROTECTIVE FINISHES
SOPM 20-41-01	DECODING TABLE FOR BOEING FINISH CODES
SOPM 20-60-03	LUBRICANTS

C. Procedure (REPAIR 14-2, Figure 601 and REPAIR 14-2, Figure 602)

NOTE: For stripping of protective finishes, refer to SOPM 20-30-02. For the decoding table for Boeing finish codes, refer to SOPM 20-41-01.

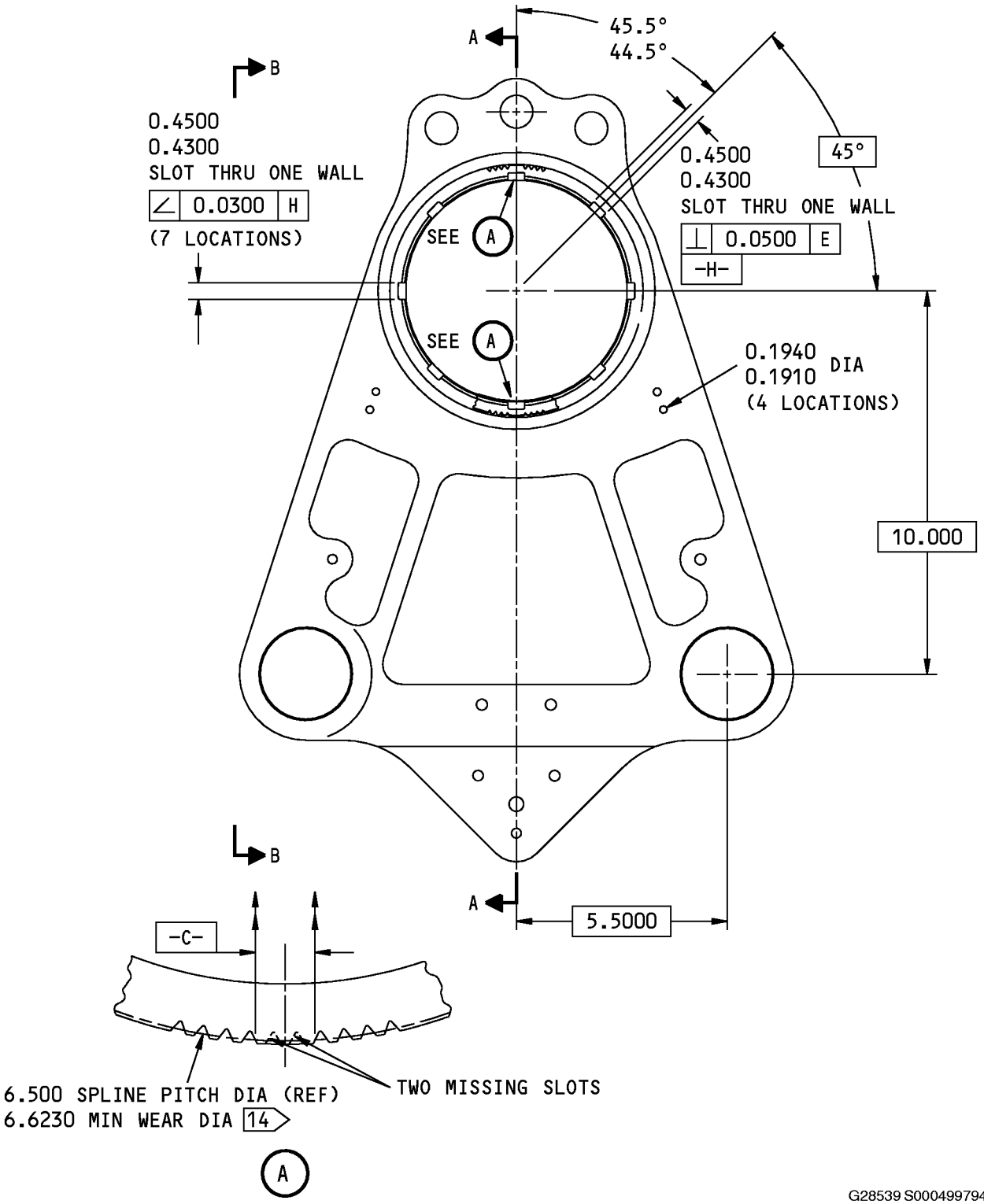
(1) For 1462A1405-4, -8: Apply flame spray coating, G00167 (F-15.390), thermal spray coating, G50026 (F-15.384), or flame spray coating, G00167 (F-15.380) (SOPM 20-10-05) on the surfaces shown by flagnote 1.

(2) For 162A1405-6, -10 and 162A1421-2: Apply thermal spray coating, G50026 (F-15.386) on the surfaces shown by flagnote 1.

(3) Send the part to Kamatics (V50632) or Kahr Bearing (V97613) for application of the coating shown by flagnote 3.

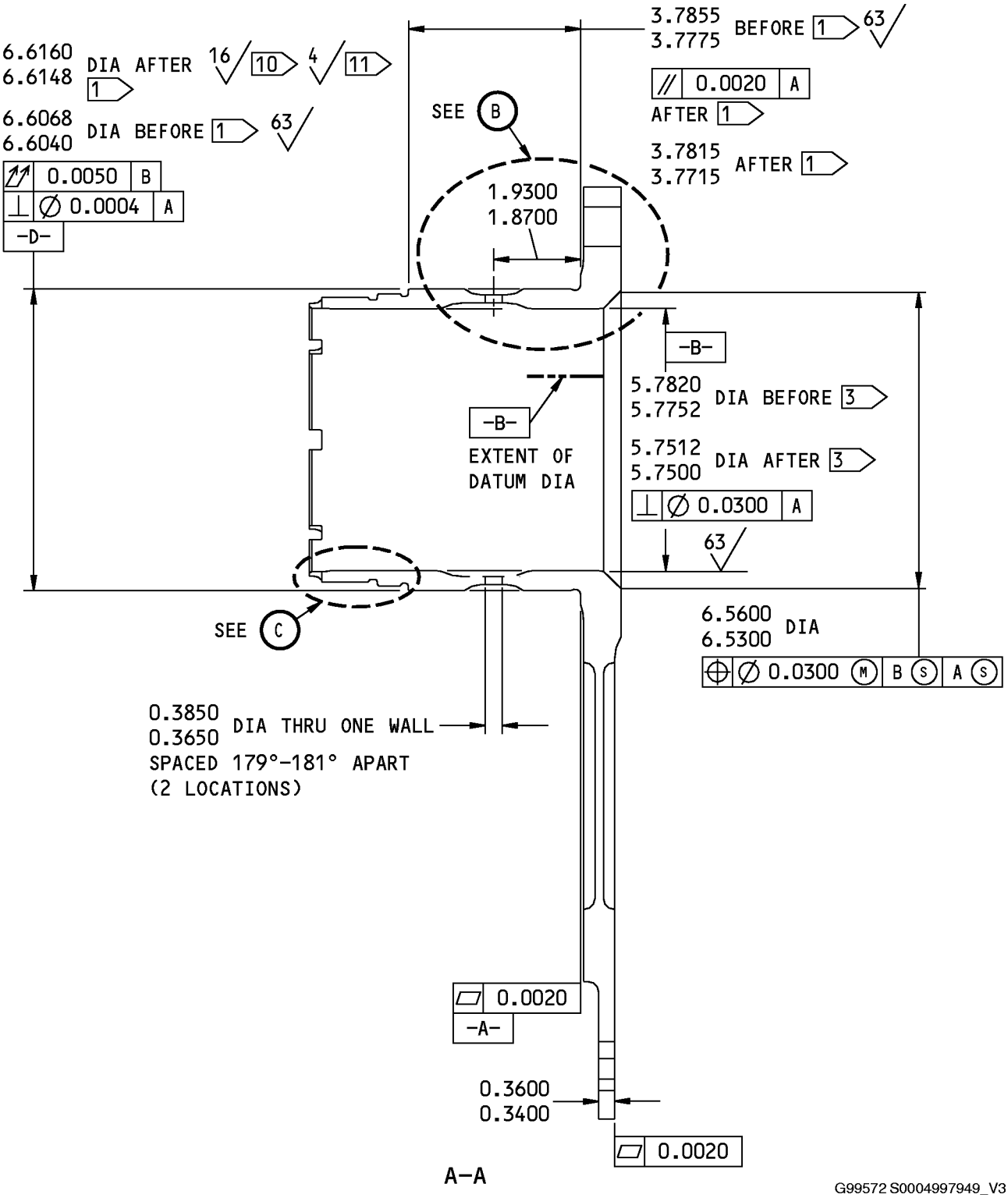
(4) Apply lubricant, D00113 (F-19.10) (SOPM 20-60-03) on the spline teeth as specified by flagnote 8.

(5) For steering sleeves 162A1405-4 and 162A1405-8 with surface wear damage, use the 162A1405-6 refinish details. For steering sleeves 162A1405-4 and 162A1405-8 with damage (grooves) in the 0.125 inch fillet radius area , rework as 162A1421-2 (SB 32-1342). Or send the part to Boeing for exchange with a Post SB 32-1342 part. See SB 32-1342 for details.

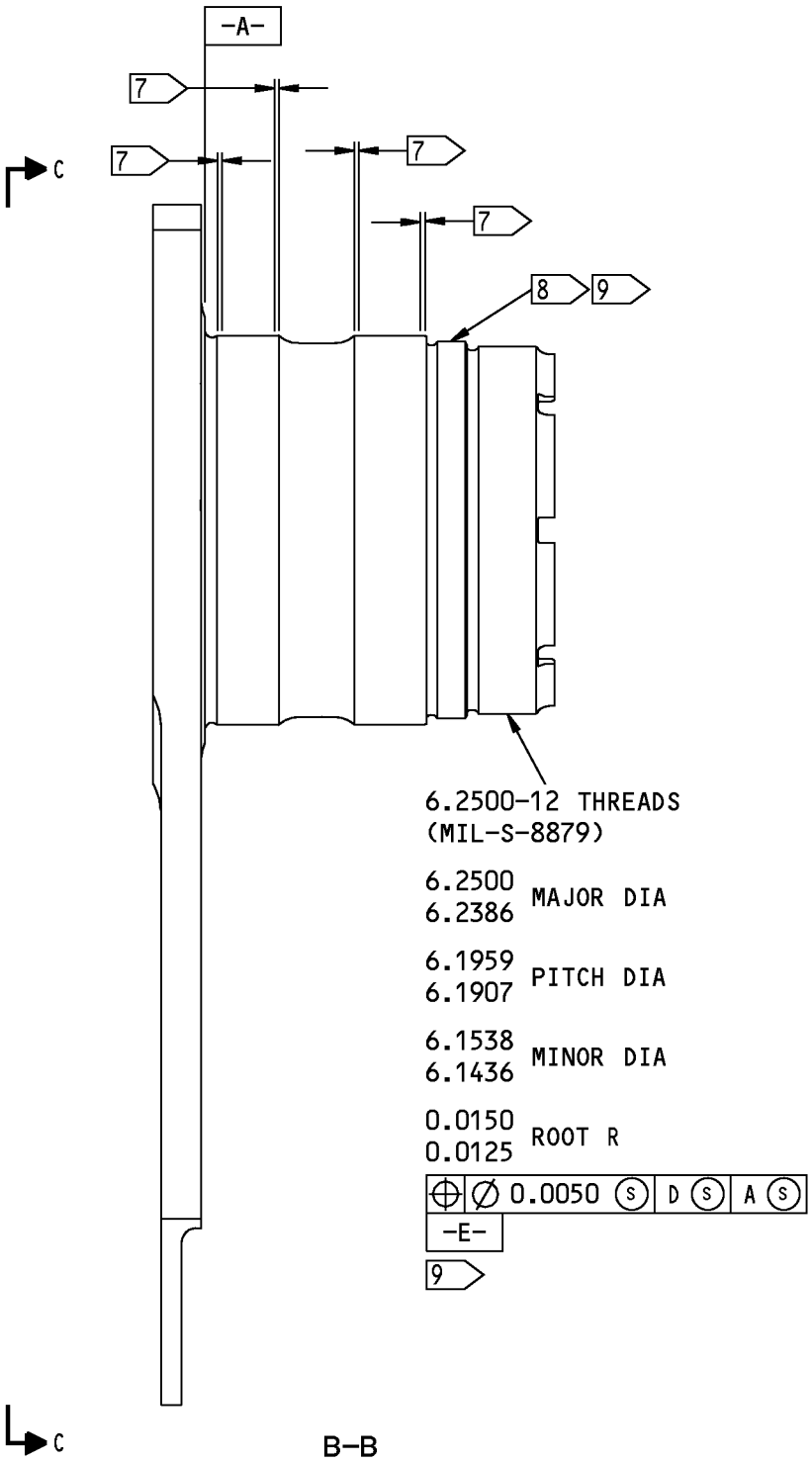


G28539 S0004997948_V4

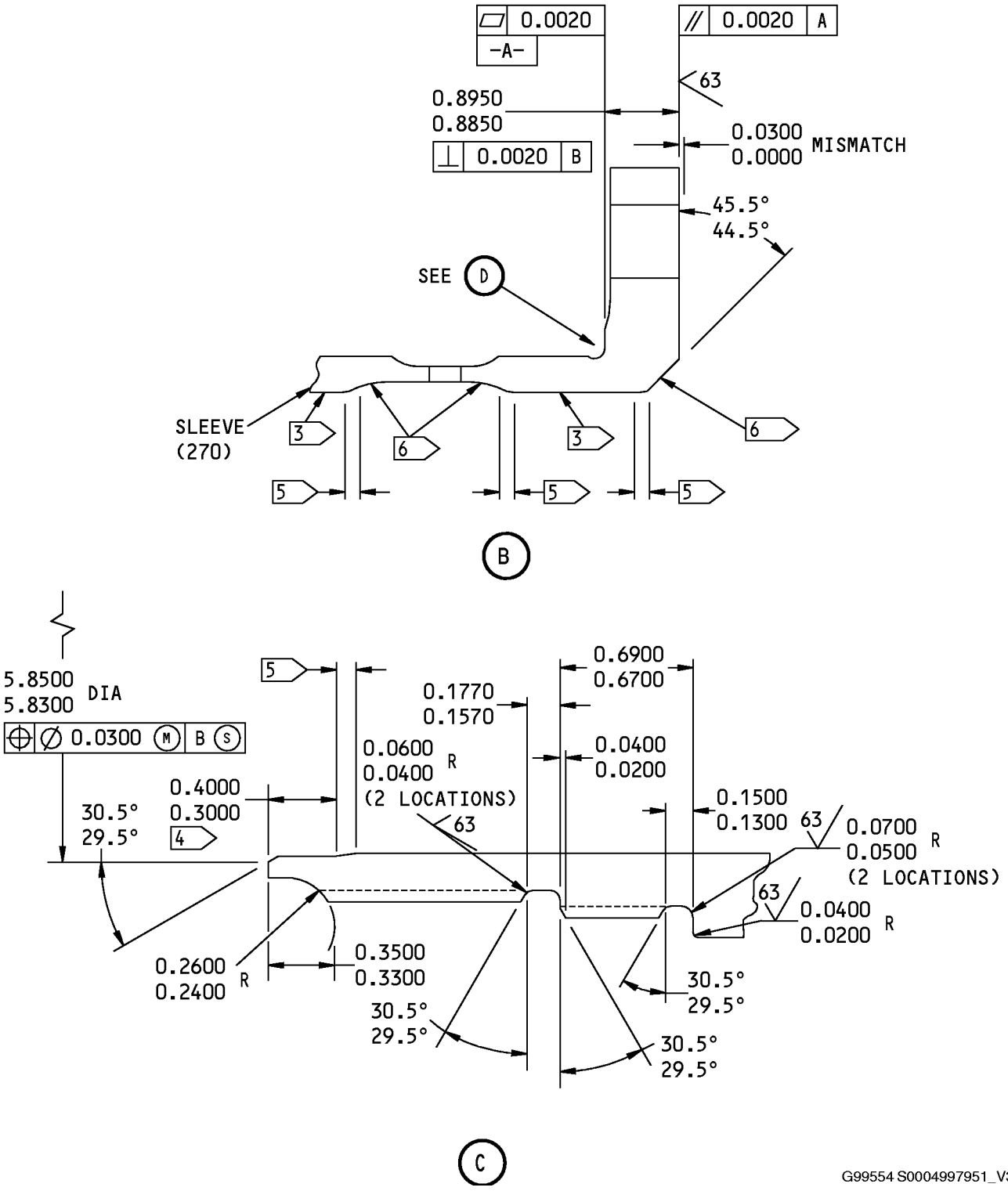
162A1405-4,-6,-8,-10 Steering Sleeve Repair
Figure 601 (Sheet 1 of 9)



162A1405-4,-6,-8,-10 Steering Sleeve Repair
Figure 601 (Sheet 2 of 9)

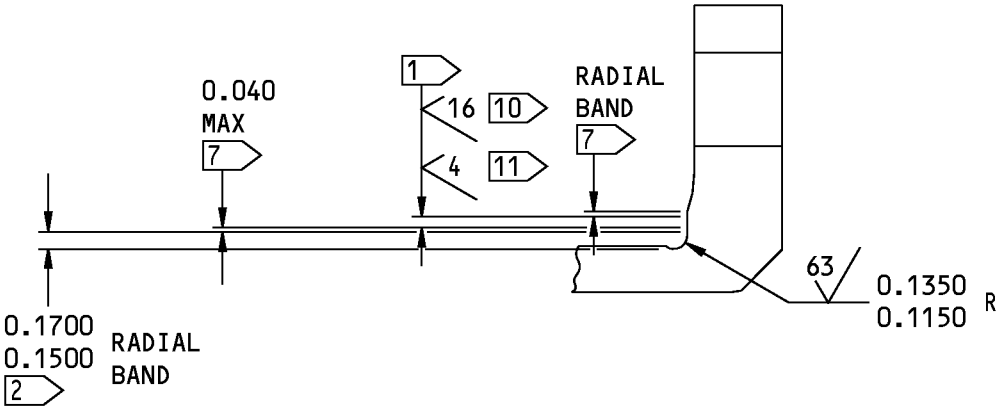


162A1405-4,-6,-8,-10 Steering Sleeve Repair
Figure 601 (Sheet 3 of 9)



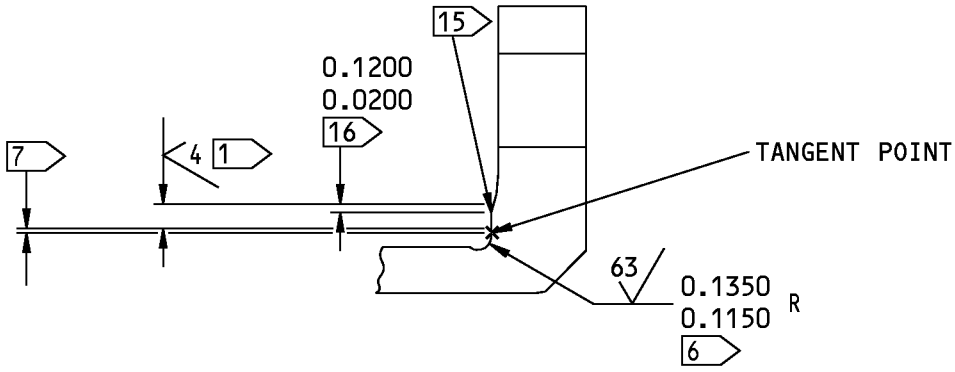
G99554 S0004997951_V3

162A1405-4,-6,-8,-10 Steering Sleeve Repair
Figure 601 (Sheet 4 of 9)



162A1405-4,-8

D

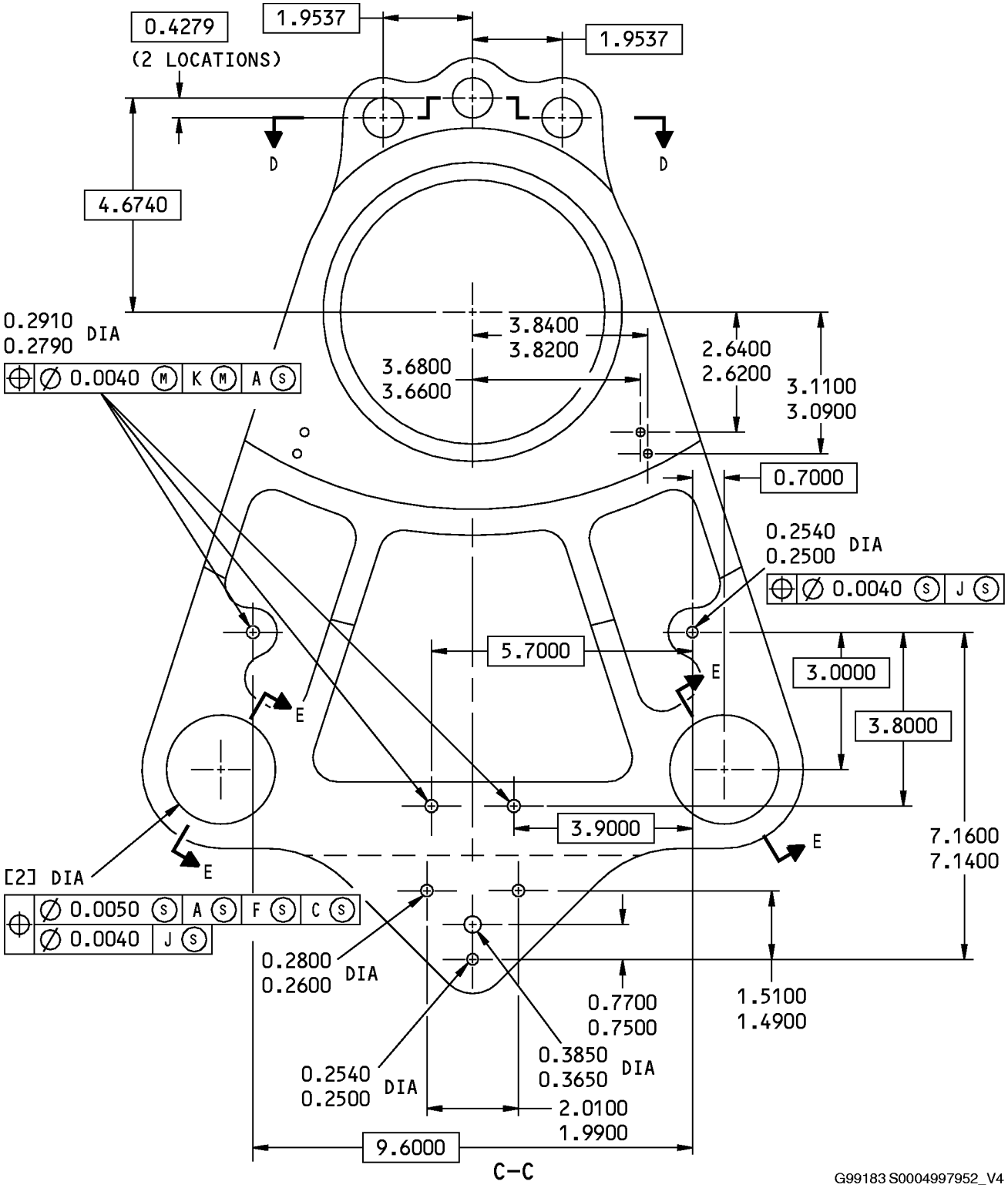


162A1405-6,-10

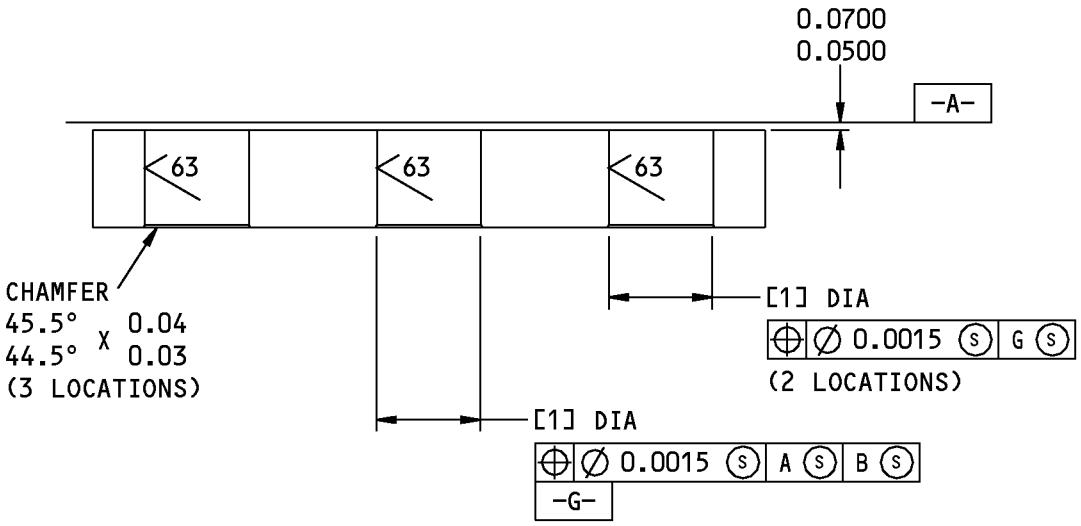
D

1532250 S0000279930_V1

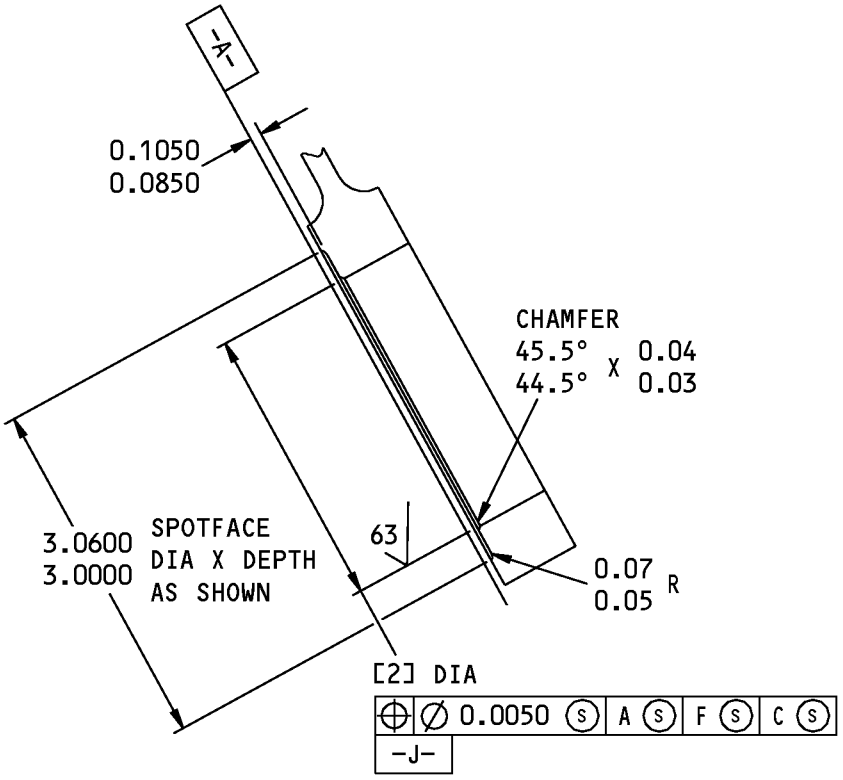
162A1405-4,-6,-8,-10 Steering Sleeve Repair
Figure 601 (Sheet 5 of 9)



162A1405-4,-6,-8,-10 Steering Sleeve Repair
Figure 601 (Sheet 6 of 9)



D-D



E-E

G99282 S0004997953_V3

162A1405-4,-6,-8,-10 Steering Sleeve Repair
Figure 601 (Sheet 7 of 9)

REFERENCE NUMBER	[1]	[2]
DESIGN DIMENSION	0.8768 0.8760	2.3762 2.3750
REPAIR LIMIT	0.9368 12	SEE TABLE B

TABLE A

REPAIR RANGE 13	OVERSIZE BUSHING
2.3862 2.3850	KJB647100B2T
2.3962 2.3950	KJB647100B2U
2.4062 2.4050	KJB647100B2V
2.4162 2.4150	KJB647100B2W
2.4262 2.4250	KJB647100B2X
2.4360 2.4350	KJB647100B2Y

TABLE B

G99605 S0004997954_V2

162A1405-4,-6,-8,-10 Steering Sleeve Repair
Figure 601 (Sheet 8 of 9)

1> ON 162A1405-4,-8 SLEEVES, APPLY BMS 10-67, TYPE 1 THERMAL SPRAY COATING (F-15.380 OR F-15.390). OR BMS 10-67 TYPE 17 COATING (F-15.384).
ON 162A1405-6,-10 SLEEVES, APPLY BMS 10-67 TYPE 17 THERMAL SPRAY COATING (F-15.386). GRIND THESE COATINGS TO DESIGN DIMENSIONS AND THE INDICATED FINISH. COATING THICKNESS MUST BE 0.004-0.006 AFTER GRINDING

2> DO NOT APPLY THERMAL SPRAY COATING HERE

3> SAE AS81934 (REPLACES MIL-B-81934) COATING, 0.012-0.016 THICK: KARON B COATING APPLIED BY KAMATICS (V50632), OR KAHRLON X1200S LINER BONDED TO SURFACE WITH DACRON ADHESIVE BACKING APPLIED BY KAHR BEARING (V97613)

4> DO NOT APPLY SAE AS81934 (REPLACES MIL-B-81934) COATING HERE

5> SAE AS81934 (REPLACES MIL-B-81934) COATING RUNOUT AREA 0.100 WIDE

6> NO OVERSPRAY

7> THERMAL SPRAY RUNOUT AREA. 0.006-0.030 WIDE FOR 162A1405-4,-8. 0.040 MAXIMUM WIDTH FOR 162A1405-6,-10

8> APPLY BMS 3-8 SOLID FILM LUBRICANT (F-19.10)

9> DO NOT SHOT PEEN

10> 162A1405-4

11> 162A1405-8

12> LIMIT FOR INSTALLATION OF OVERSIZE BUSHING

13> RANGE FOR INSTALLATION OF OVERSIZE BUSHING

14> AS MEASURED OVER TWO 0.0960 DIA PINS (ANSI B92.1)

15> BREAK THE GROUND EDGE OF THE THERMAL SPRAY COATING EQUIVALENT TO 0.01-0.02 R

16> THERMAL SPRAY COATING TO RUNOUT AND TRANSITION TO BASE MATERIAL

125 ALL MACHINED SURFACES UNLESS SHOWN DIFFERENTLY

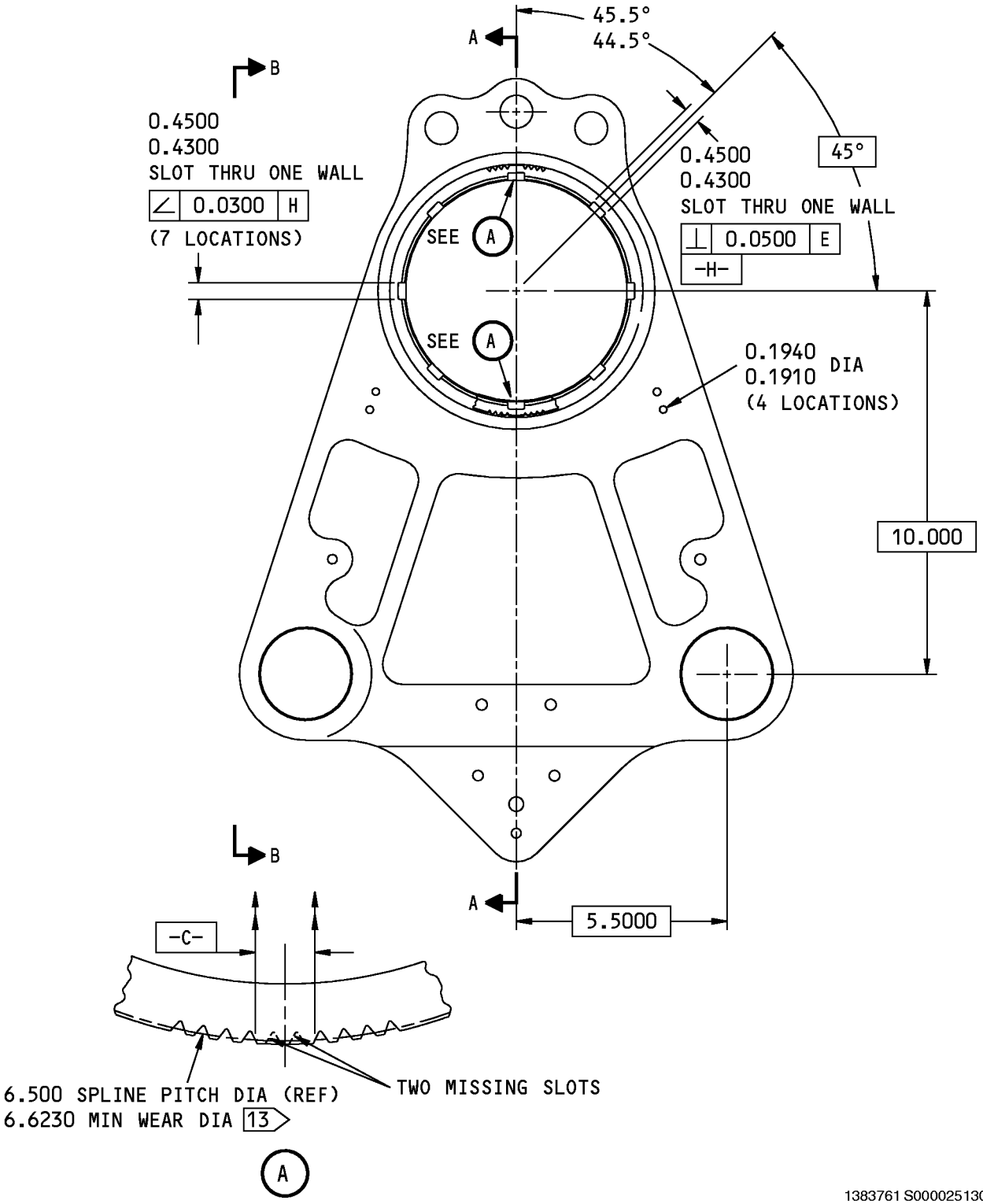
BREAK ALL SHARP EDGES

ITEM NUMBERS REFER TO IPL FIG. 1

ALL DIMENSIONS ARE IN INCHES

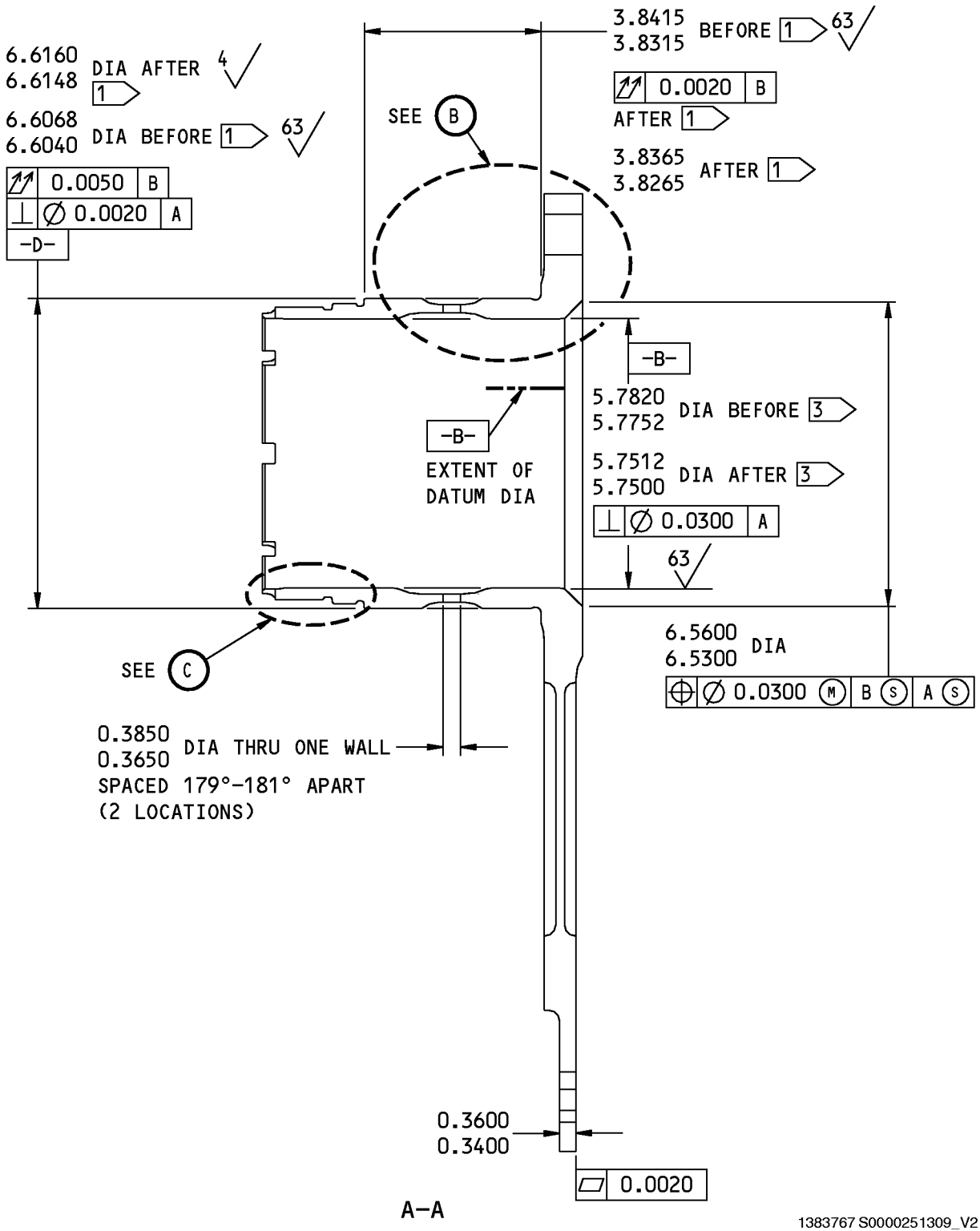
N86468 S0004997955_V4

162A1405-4,-6,-8,-10 Steering Sleeve Repair
Figure 601 (Sheet 9 of 9)

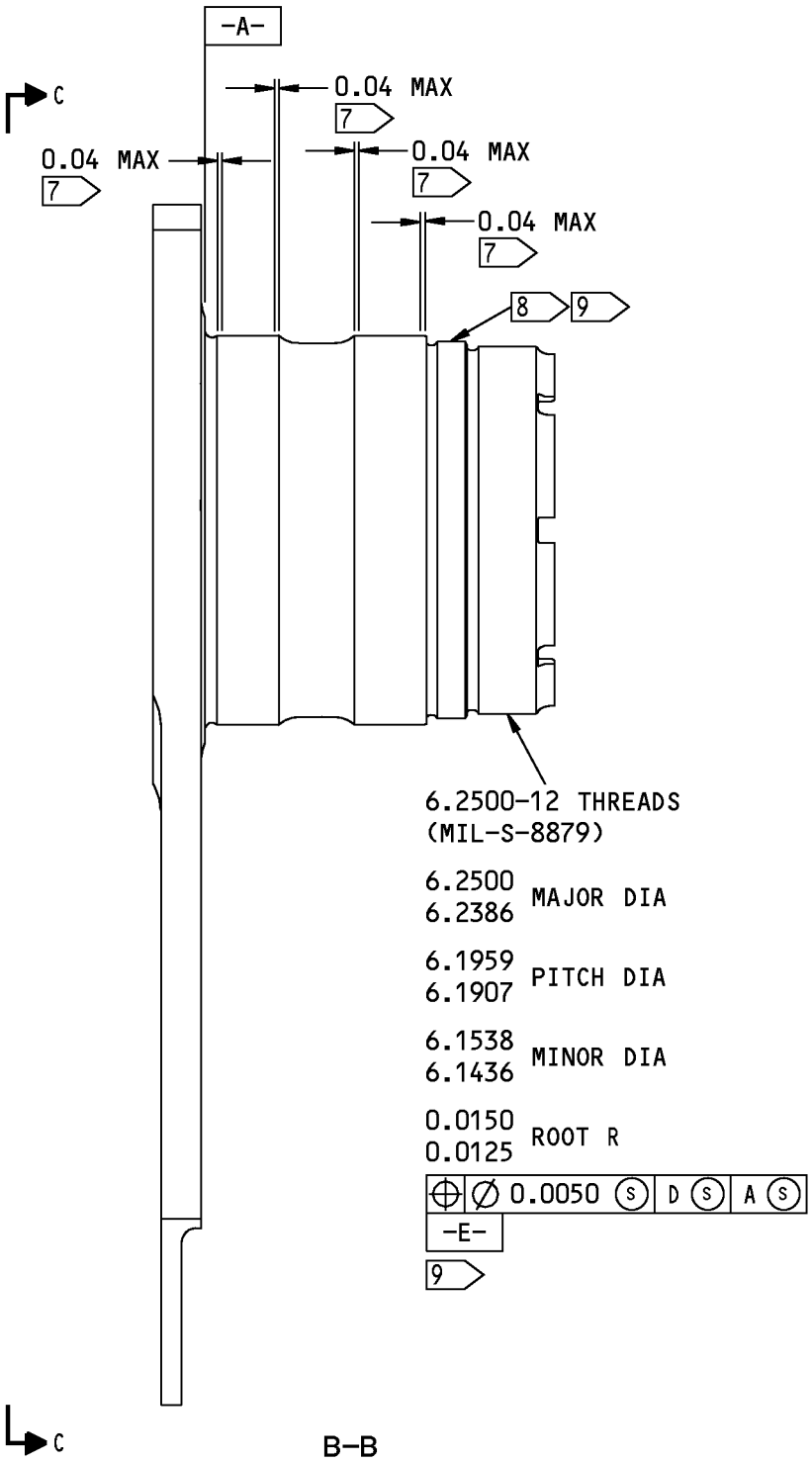


1383761 S0000251308_V2

162A1421-2 Steering Sleeve Repair
Figure 602 (Sheet 1 of 9)

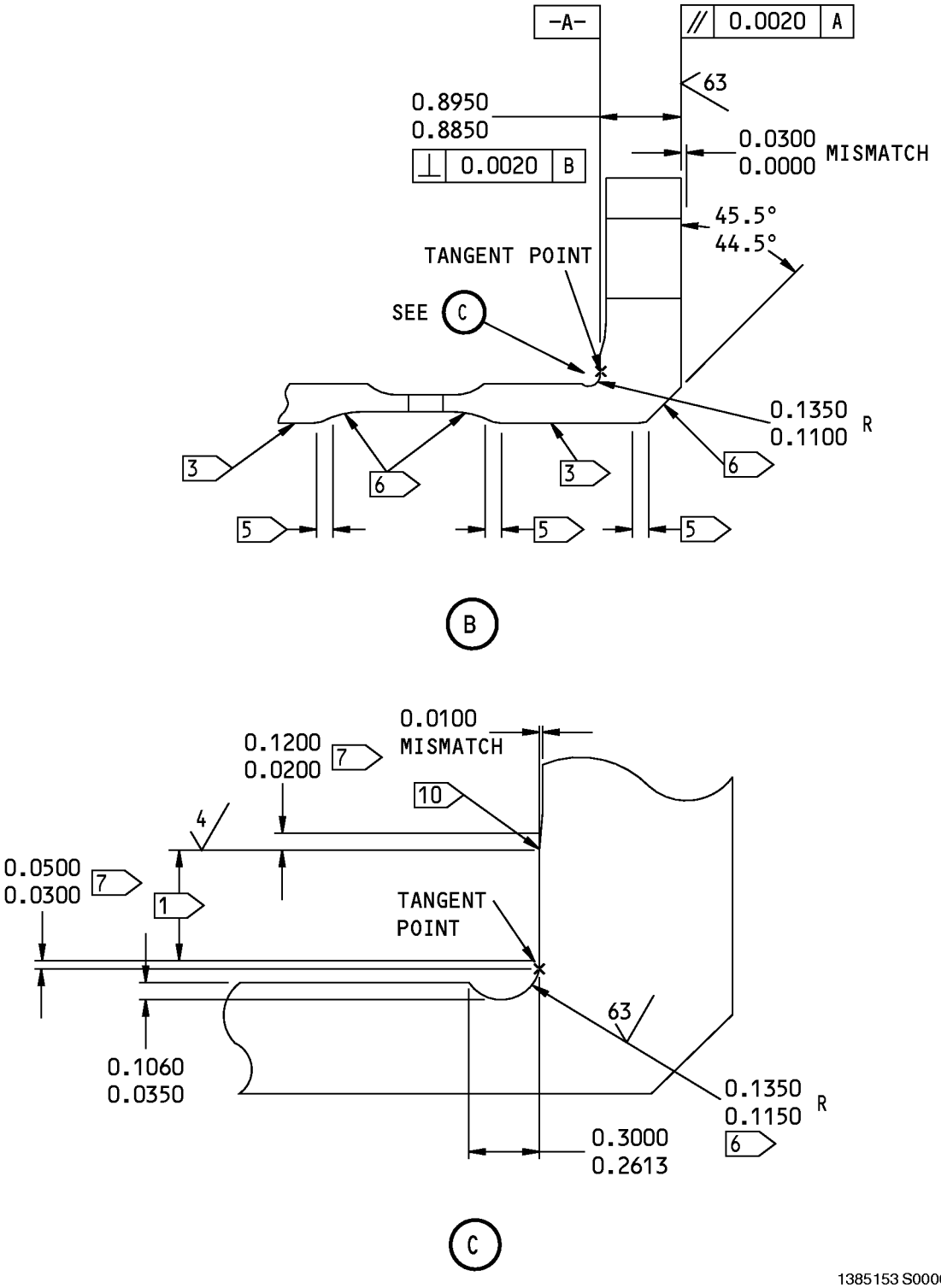


162A1421-2 Steering Sleeve Repair
Figure 602 (Sheet 2 of 9)



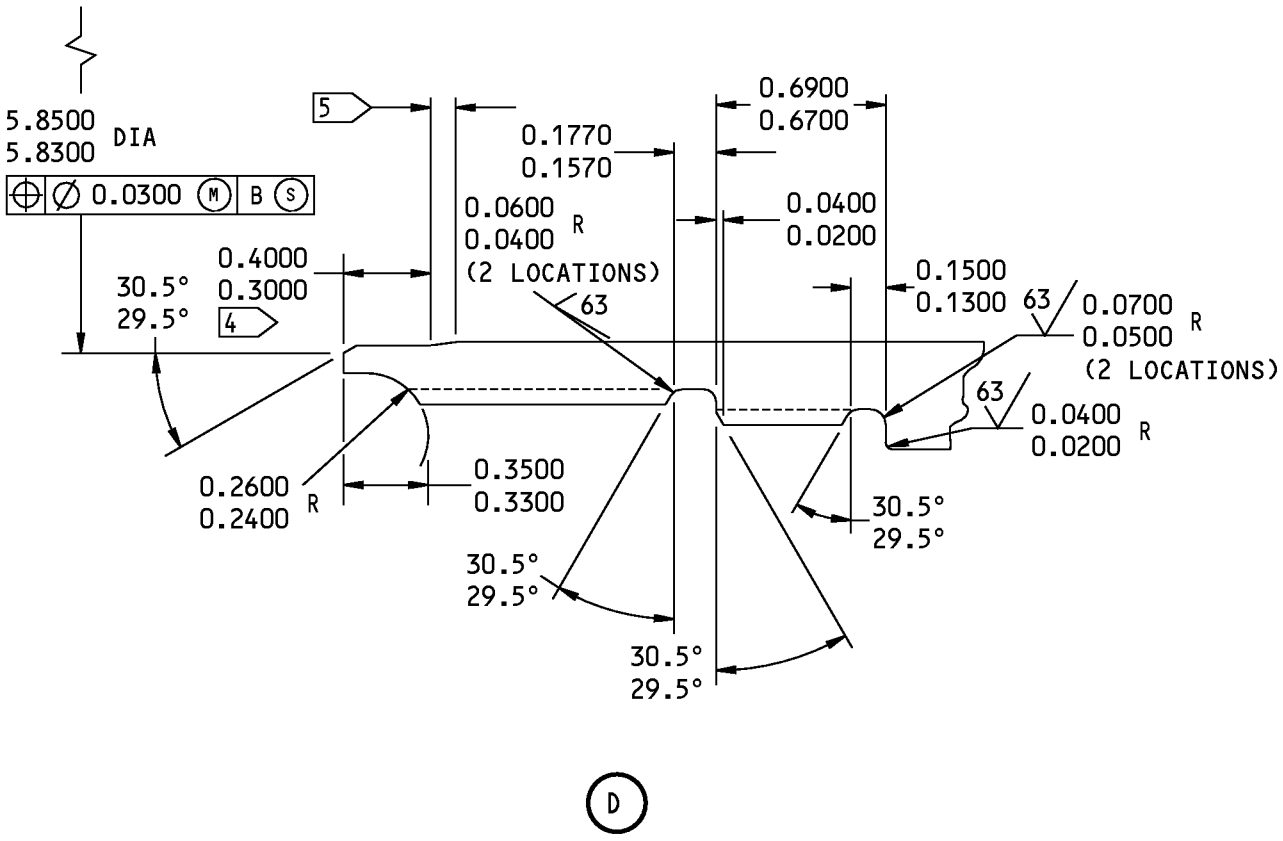
1383769 S0000251310_V2

162A1421-2 Steering Sleeve Repair
Figure 602 (Sheet 3 of 9)



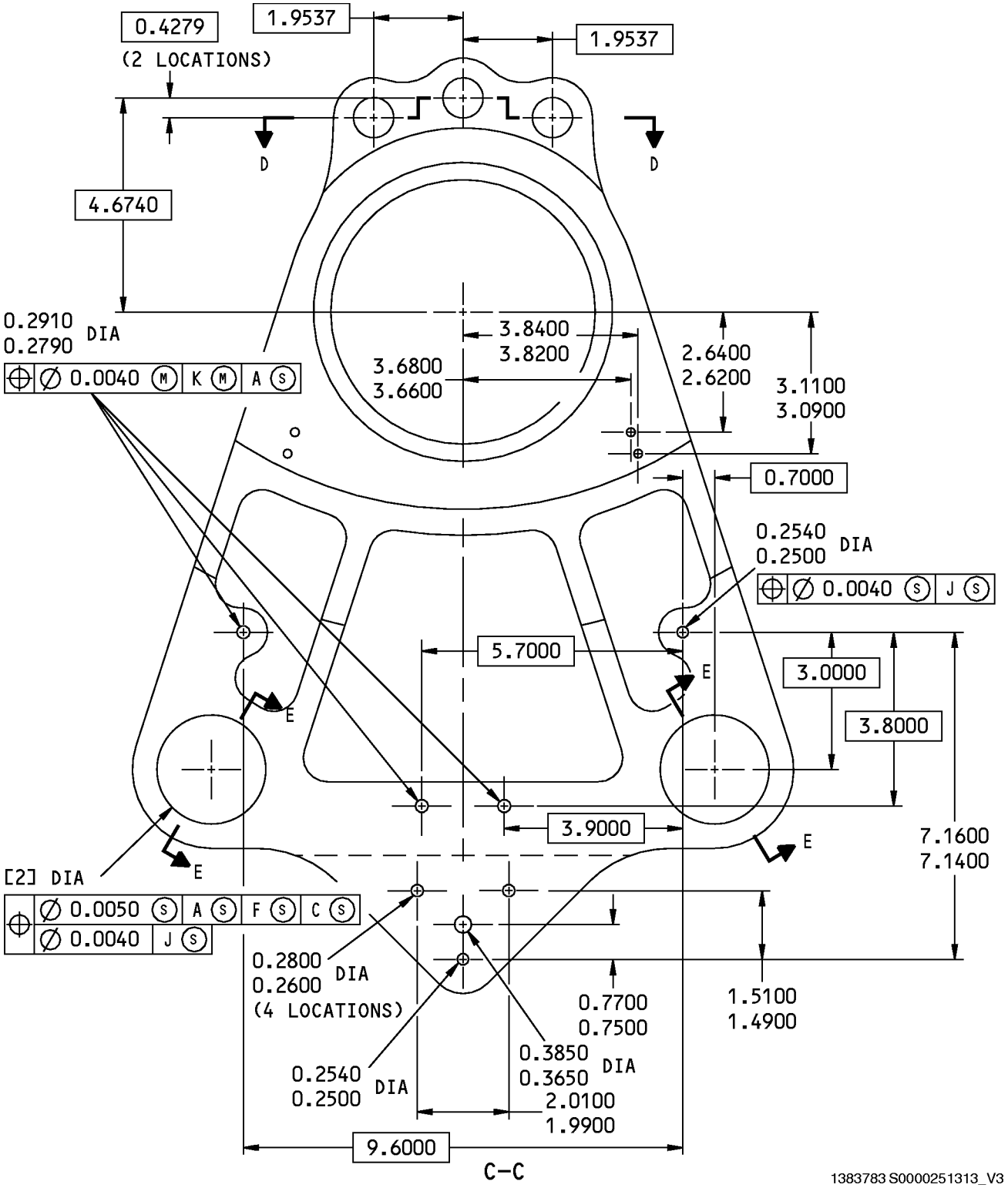
1385153 S0000251311_V2

162A1421-2 Steering Sleeve Repair
Figure 602 (Sheet 4 of 9)

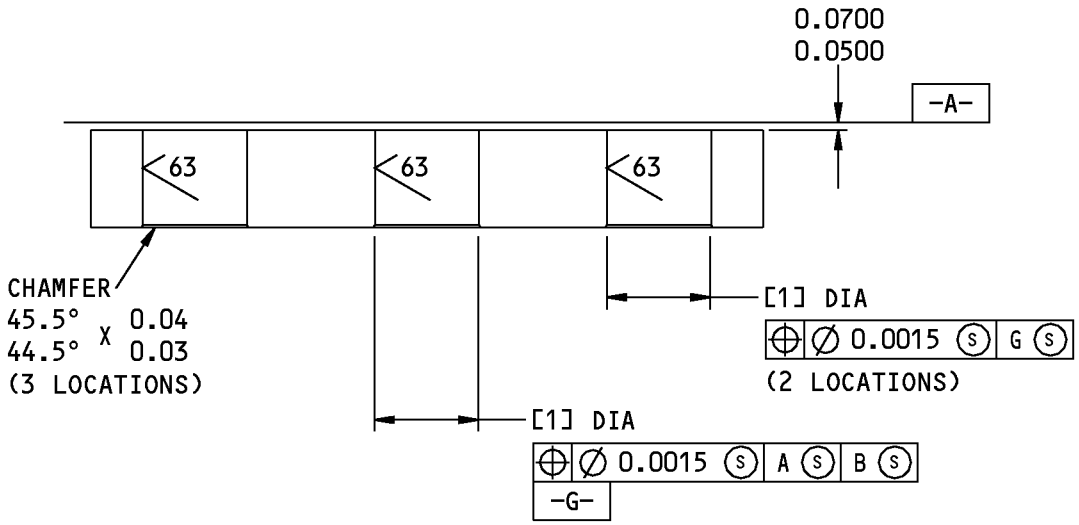


1383779 S0000251312_V2

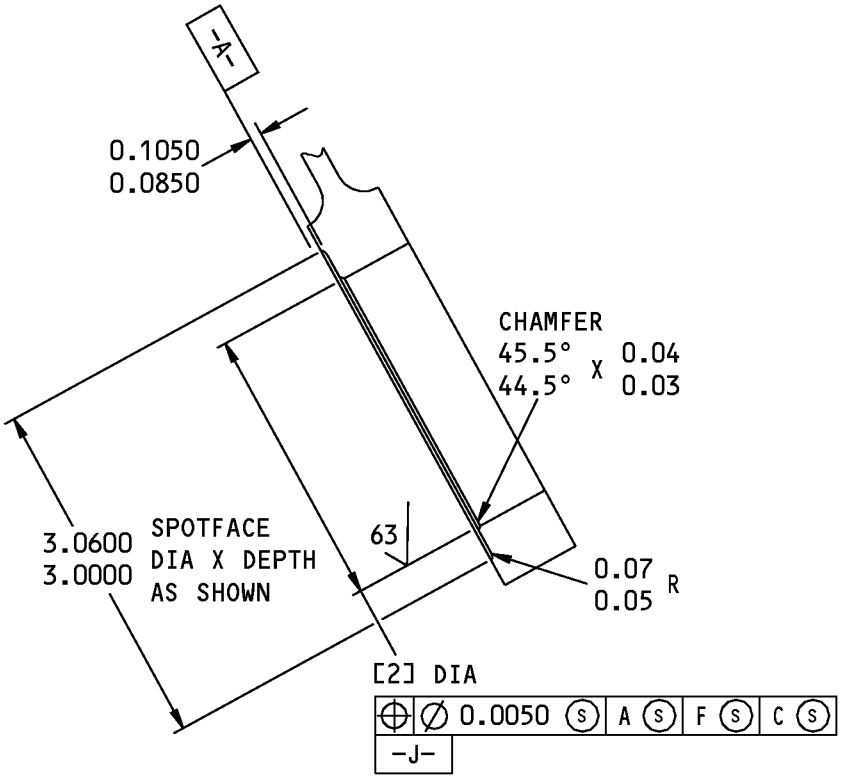
162A1421-2 Steering Sleeve Repair
Figure 602 (Sheet 5 of 9)



162A1421-2 Steering Sleeve Repair
Figure 602 (Sheet 6 of 9)



D-D



E-E

1383786 S0000251314_V2

162A1421-2 Steering Sleeve Repair
Figure 602 (Sheet 7 of 9)

REFERENCE NUMBER	[1]	[2]
DESIGN DIMENSION	0.8768 0.8760	2.3762 2.3750
REPAIR LIMIT	0.9368 11	SEE TABLE B

TABLE A

REPAIR RANGE 12	OVERSIZE BUSHING
2.3862 2.3850	KJB647100B2T
2.3962 2.3950	KJB647100B2U
2.4062 2.4050	KJB647100B2V
2.4162 2.4150	KJB647100B2W
2.4262 2.4250	KJB647100B2X
2.4360 2.4350	KJB647100B2Y

TABLE B

1383794 S0000251315_V2

162A1421-2 Steering Sleeve Repair
Figure 602 (Sheet 8 of 9)

1> APPLY BMS 10-67 TYPE 17 THERMAL SPRAY COATING (F-15.386). GRIND THESE COATINGS TO DESIGN DIMENSIONS AND THE INDICATED FINISH. COATING THICKNESS MUST BE 0.004-0.006 AFTER GRINDING

2> DO NOT APPLY THERMAL SPRAY COATING HERE

3> SAE AS81934 (REPLACES MIL-B81934) COATING, 0.012-0.016 THICK: KARON B COATING APPLIED BY KAMATICS (V50632), OR KAHRLON X1200S LINER BONDED TO SURFACE WITH DACRON ADHESIVE BACKING APPLIED BY KAHR BEARING (V97613)

4> DO NOT APPLY SAE AS81934 (REPLACES MIL-B-81934) COATING HERE

5> SAE AS81934 COATING RUNOUT AREA 0.100 WIDE

6> NO OVERSPRAY

7> THERMAL SPRAY RUNOUT AREA

8> APPLY BMS 3-8 SOLID FILM LUBRICANT (F-19.10)

9> DO NOT SHOT PEEN

10> BREAK THE GROUND EDGE OF THE THERMAL SPRAY COATING EQUIVALENT TO 0.01-0.02 R

11> LIMIT FOR INSTALLATION OF OVERSIZE BUSHING

12> RANGE FOR INSTALLATION OF OVERSIZE BUSHING

13> AS MEASURED OVER TWO 0.0960 DIA PINS (ANSI B92.1)

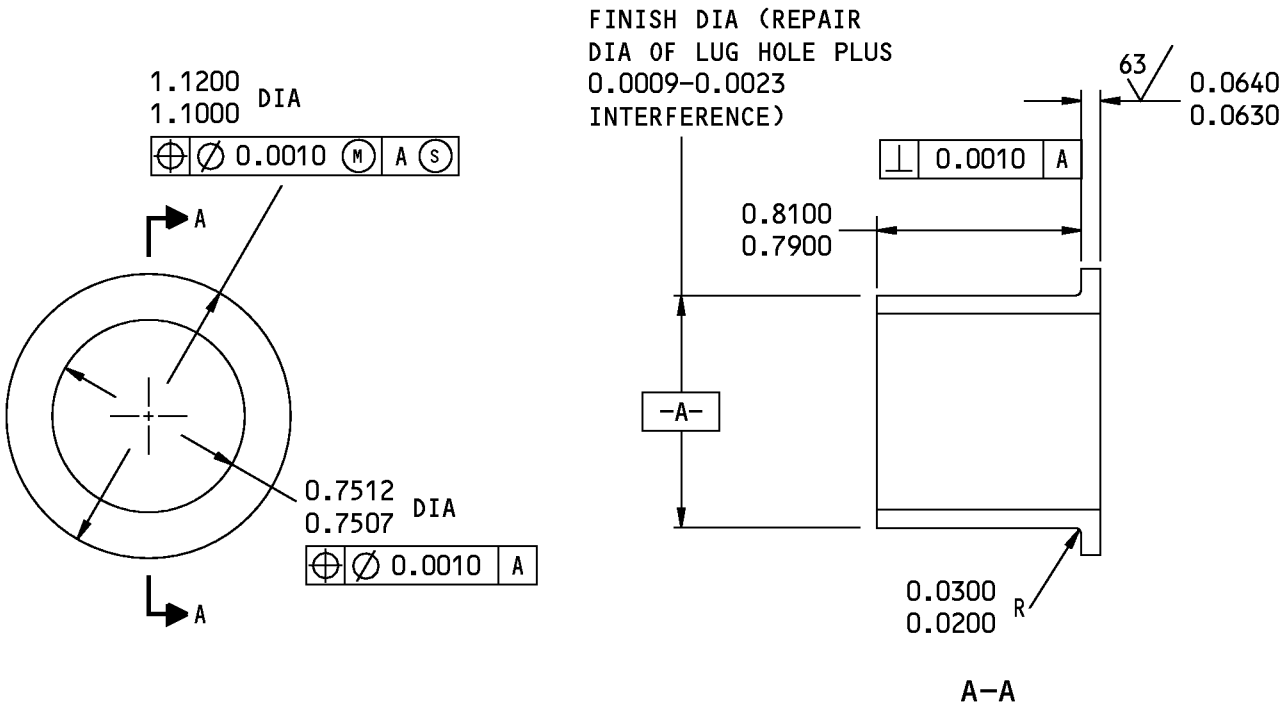
125 ALL MACHINED SURFACES UNLESS SHOWN DIFFERENTLY

BREAK ALL SHARP EDGES

ITEM NUMBERS REFER TO IPL FIG. 1

ALL DIMENSIONS ARE IN INCHES

162A1421-2 Steering Sleeve Repair
Figure 602 (Sheet 9 of 9)



125 ALL MACHINED SURFACES UNLESS SHOWN DIFFERENTLY

BREAK ALL SHARP EDGES

FINISH: APPLY NO FINISH (F-25.01)

MATERIAL: AL-NI-BRZ (AMS 4640)

ITEM NUMBERS REFER TO IPL FIG. 1

ALL DIMENSIONS ARE IN INCHES

HOLE LOCATION [1] FIG. 601 OR 602 -
REPLACES BUSHING (260)

G99987 S0004997956_V3

Oversize Bushing Details
Figure 603

LOWER BEARING CARRIER - REPAIR 15-1

162A1510–1

1. General

A. This procedure tells how to repair and refinish the lower bearing carrier (575).

B. Refer to the Standard Overhaul Practices Manual (SOPM) for the SOPM subjects identified in this procedure.

C. Refer to IPL Figure 1 for the item numbers.

D. General repair details:

(1) Material: Titanium alloy

2. Bearing Carrier Repair

A. References

Reference	Title
SOPM 20-20-02	PENETRANT METHODS OF INSPECTION
SOPM 20-30-03	GENERAL CLEANING PROCEDURES

B. Procedure

NOTE: For general cleaning procedures, refer to SOPM 20-30-03.

(1) Seal land surface (REPAIR 15-1, Figure 601)

(a) Machine the seal land as necessary to remove defects.

(b) Machine the upper face of the carrier (at the same end as the seal land) to get the 0.8714-0.8864 inch dimension from the seal land.

(c) Restore the chamfer and break the edge as shown.

(d) Machine two new flat areas into the OD for the retainer pins, 30 degrees from the old locations.

(e) Drill two new holes for the retainer pins on the new flat surfaces. Use the same dimensions as the old holes, and the same distance from the new edge as the old holes were from the old edge before it was machined.

(f) Countersink the old holes as shown, at the inner diameter surface.

(g) Penetrant examine all machined surfaces (SOPM 20-20-02).

(h) Send the carrier to Tiodize Co., Inc. (V34568) for refinish (REPAIR 15-1, Paragraph 3.).

(i) Install Monel rivets in the old holes, from the inside of the carrier. You can use MS20427M5-7, BACR15CE7M7, or NAS1200M5-7 rivets. Peen the tail ends of these rivets against the OD. Machine the rivet heads flush with the carrier ID surface.

3. Bearing Carrier Refinish

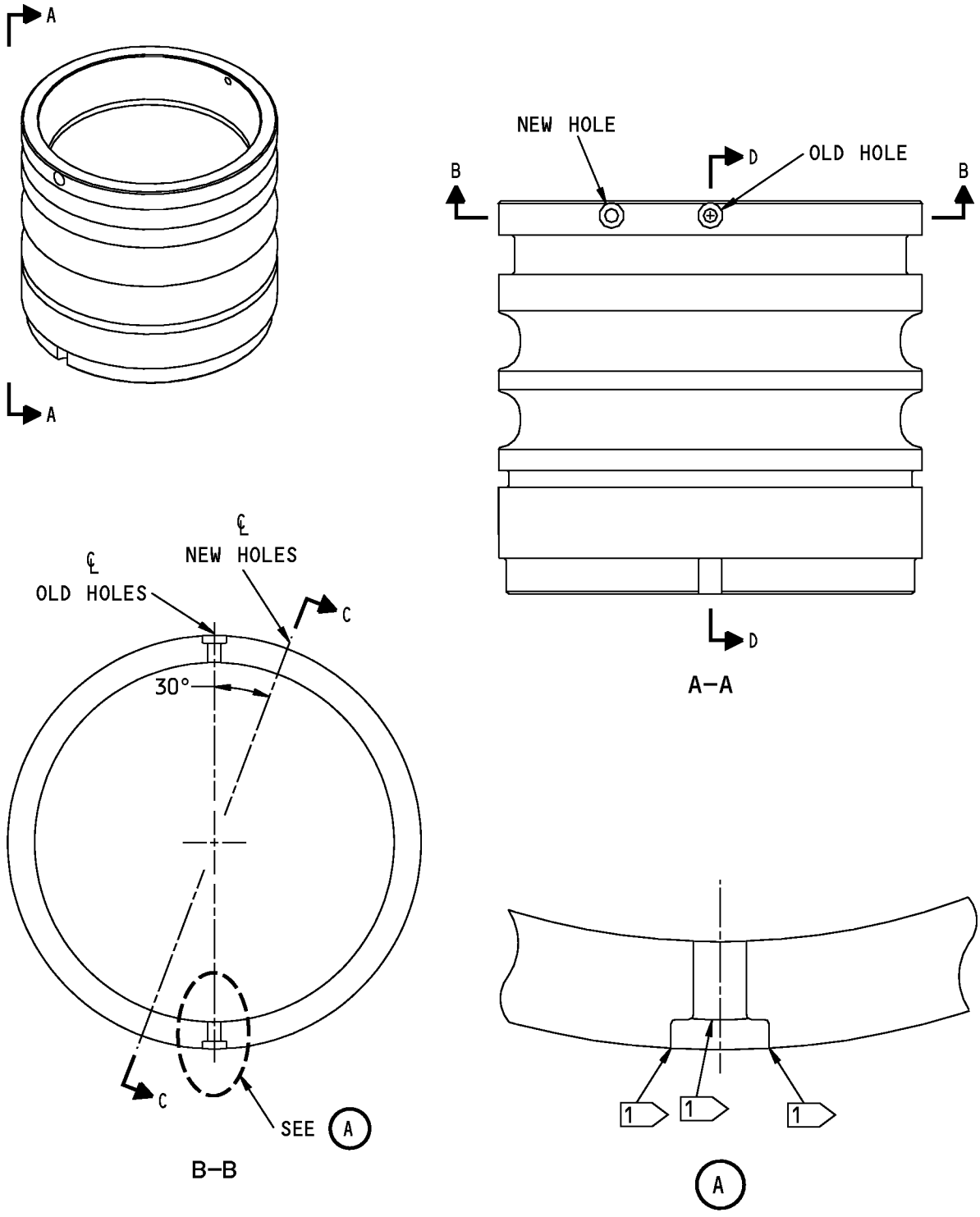
A. References

Reference	Title
SOPM 20-41-01	DECODING TABLE FOR BOEING FINISH CODES

B. Procedure

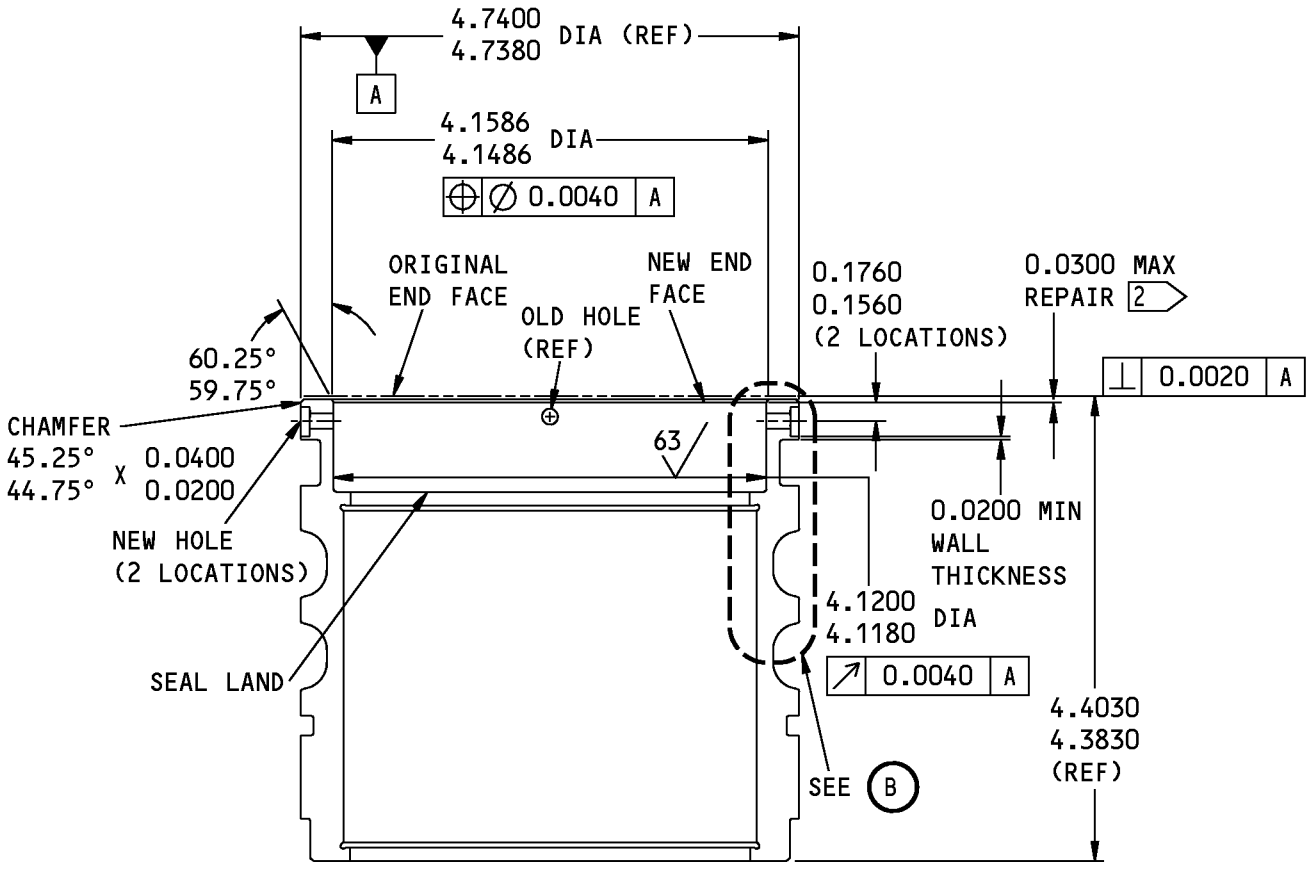
NOTE: For the decoding table for Boeing finish codes, refer to SOPM 20-41-01.

(1) Send the parts to Tiodize Co., Inc. (V34568) to apply Tiodize coating (F-30.015).



1384339 S0000251324_V2

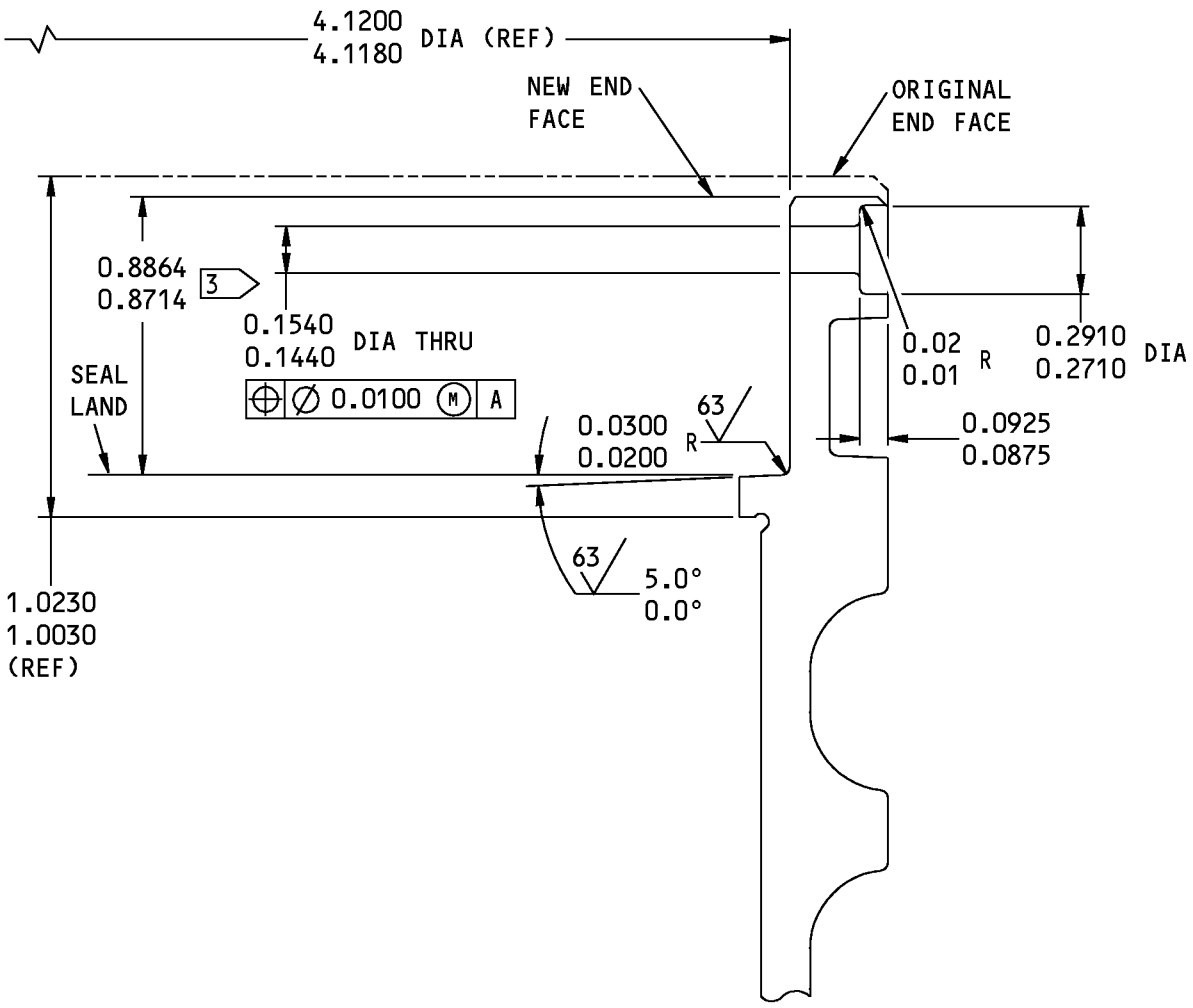
162A1510-1 Lower Bearing Carrier Repair
Figure 601 (Sheet 1 of 4)



C–C
(TURNED CCW 120°)

1384489 S0000251325_V2

162A1510-1 Lower Bearing Carrier Repair
Figure 601 (Sheet 2 of 4)

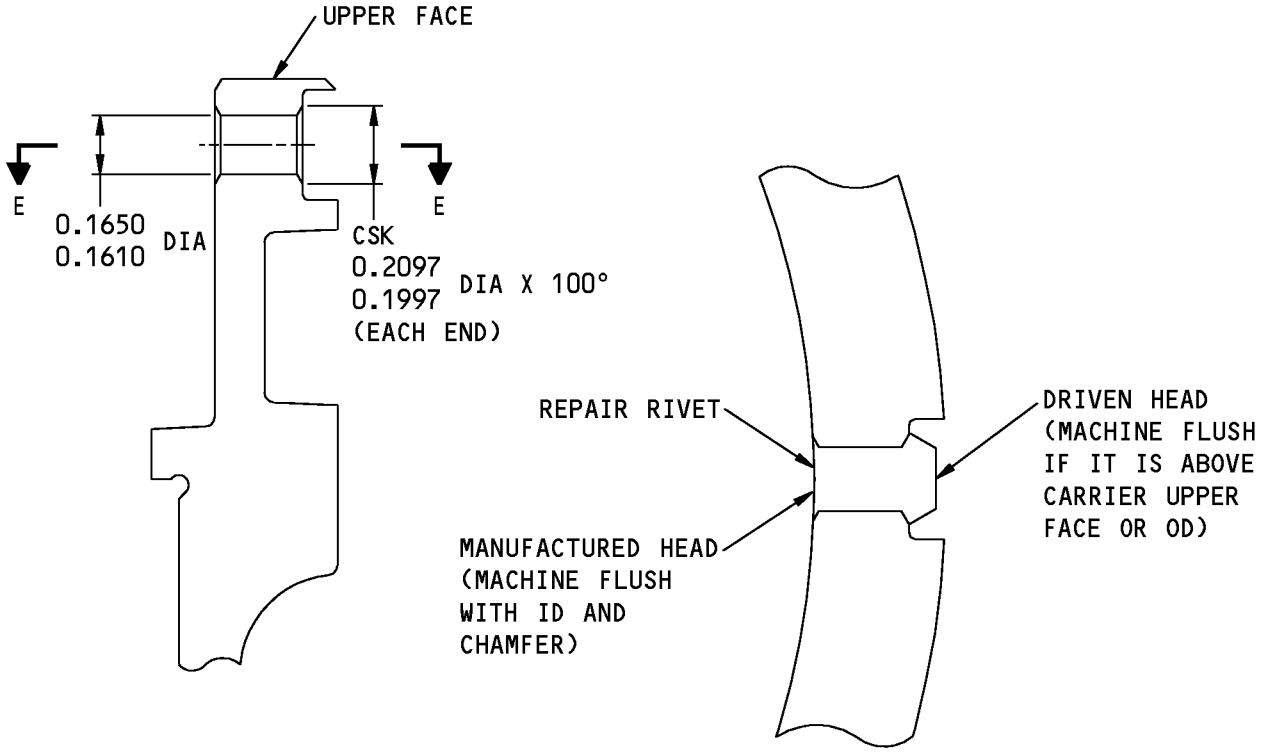


GLAND REPAIR AND NEW HOLE DETAILS

B

1384627 S0000251326_V2

162A1510-1 Lower Bearing Carrier Repair
Figure 601 (Sheet 3 of 4)



1 BREAK SHARP EDGES 0.01–0.02 R

2 LIMIT FOR MATERIAL REMOVAL

3 REMOVE THE SAME AMOUNT FROM THE UPPER FACE AS YOU REMOVED FROM THE SEAL LAND, TO KEEP THE LENGTH DIMENSION WITHIN LIMITS SHOWN

125 ALL MACHINED SURFACES UNLESS SHOWN DIFFERENTLY

BREAK SHARP EDGES 0.005–0.010 UNLESS SHOWN DIFFERENTLY

DIMENSIONS AND SURFACE FINISH ARE BEFORE COATING

ALL DIMENSIONS ARE IN INCHES

162A1510-1 Lower Bearing Carrier Repair
Figure 601 (Sheet 4 of 4)

BOEING®

COMPONENT MAINTENANCE MANUAL

UPPER BEARING CARRIER ASSEMBLY - REPAIR 16-1

162A1511–4

1. General

A. This procedure tells how to repair and refinish upper bearing carrier assembly (440).

B. Refer to the Standard Overhaul Practices Manual (SOPM) for the SOPM subjects identified in this procedure.

C. Refer to IPL Figure 1 for item numbers.

D. General repair details:

(1) Material: Titanium alloy

(2) Do not shot peen.

(3) Each 162A1511-series carrier assembly is a set of matched halves. Keep the halves of a set together. Do not mix halves from different sets.

2. Carrier Assembly Repair

A. References

Reference	Title
SOPM 20-10-07	MACHINING OF TITANIUM
SOPM 20-20-02	PENETRANT METHODS OF INSPECTION
SOPM 20-30-03	GENERAL CLEANING PROCEDURES

B. Procedure (REPAIR 16-1, Figure 601)

NOTE: For general cleaning procedures, refer to SOPM 20-30-03.

(1) Make spotfaces or machine the bore as necessary, within repair limits, to remove defects (SOPM 20-10-07).

(2) Blend machined surfaces to a radius of 0.005-0.015 inches.

(3) Break sharp edges to a radius of 0.005-0.010 inches, unless shown differently.

(4) Penetrant examine the machined surfaces (SOPM 20-20-02).

(5) Refinish the machined surfaces as specified in REPAIR 16-1, Paragraph 3.

3. Carrier Assembly Refinish

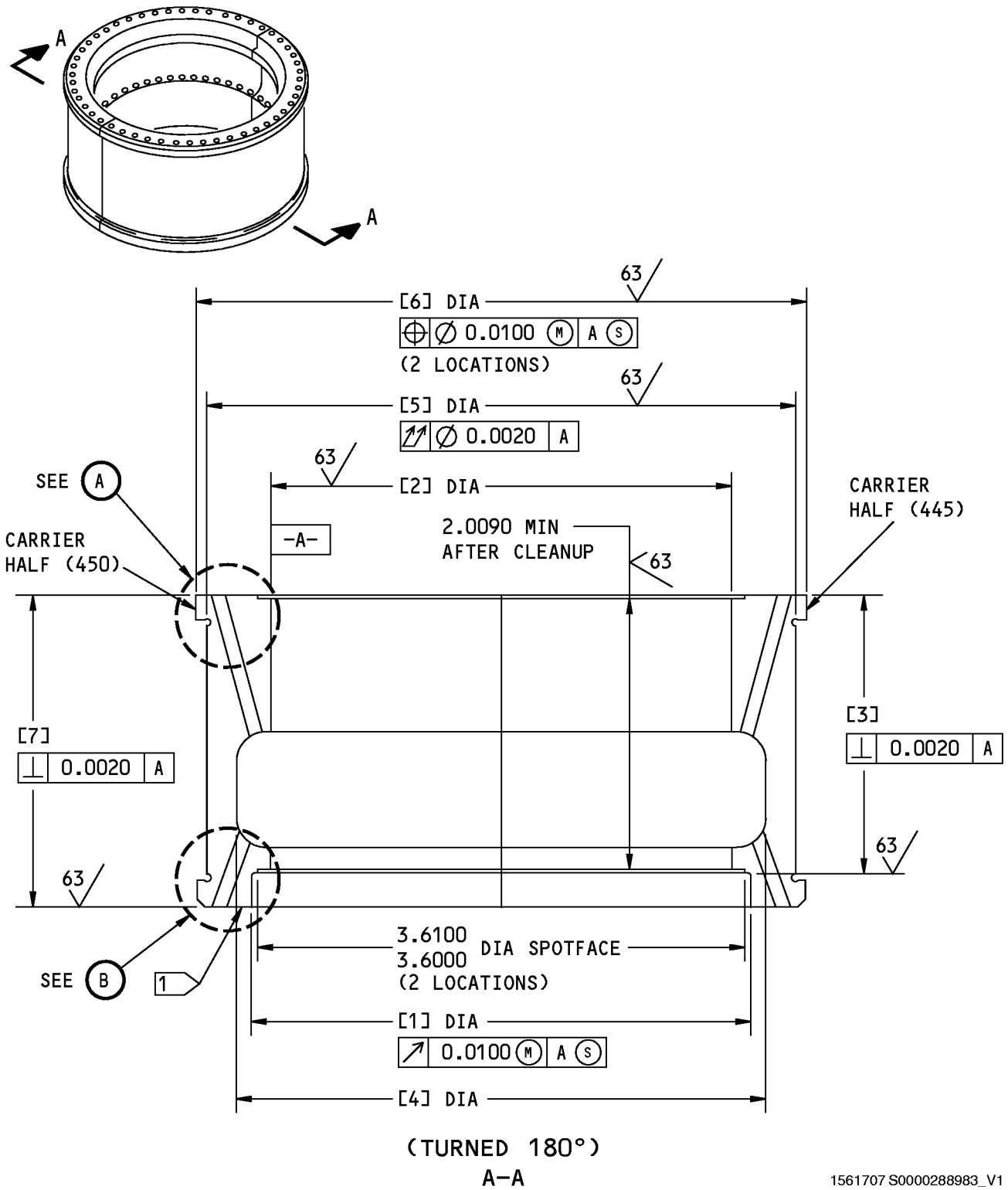
A. References

Reference	Title
SOPM 20-41-01	DECODING TABLE FOR BOEING FINISH CODES

B. Procedure

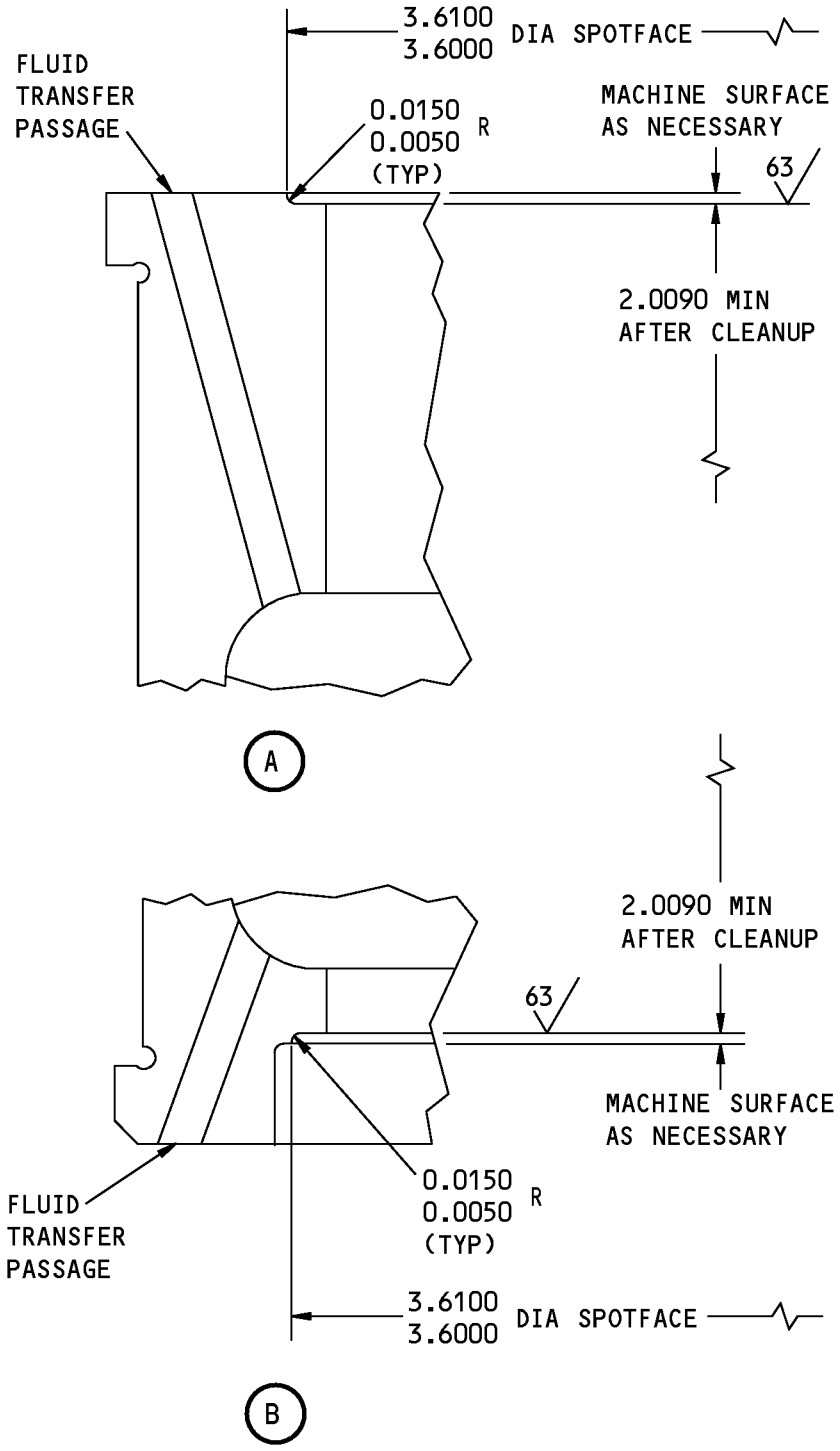
NOTE: For the decoding table for Boeing finish codes, refer to SOPM 20-41-01.

(1) Send the parts to Tiodize Co., Inc. (V34568) to apply Tiodize coating (F-30.015).



1561707 S0000288983_V1

162A1511-4 Upper Bearing Carrier Assembly Repair
Figure 601 (Sheet 1 of 3)



1561745 S0000288999_V1

162A1511-4 Upper Bearing Carrier Assembly Repair
Figure 601 (Sheet 2 of 3)

REFERENCE NUMBER	[1]	[2]	[3]	[4]	[5]	[6]	[7]
DESIGN DIMENSION	3.6700 3.6500	3.3790 3.3770	2.0310 2.0290	3.8820 3.8620	4.3120 4.3100	4.4650 4.4600	2.2900 2.2700
REPAIR LIMIT	---	3.3815 2	2.0090 2	---	---	---	---

CAUTION:
EACH ASSEMBLY IS A MATCHED SET OF CARRIER HALVES. DO NOT MIX THE HALVES WITH HALVES FROM OTHER SETS.

1 PART NUMBER AND SERIAL NUMBER

2 LIMIT FOR MATERIAL REMOVAL FROM THE BORE OR FOR SPOTFACES AS SHOWN. IF MATERIAL REMOVAL IS MORE THAN THE REPAIR LIMIT, REMOVE THE PART FROM SERVICE.

125 ALL MACHINED SURFACES UNLESS SHOWN DIFFERENTLY

BREAK SHARP EDGES TO A RADIUS OF 0.005-0.010 INCH UNLESS SHOWN DIFFERENTLY

DIMENSIONS AND SURFACE TEXTURES ARE BEFORE ALL FINISHES

ITEM NUMBERS REFER TO IPL FIG. 1

ALL DIMENSIONS ARE IN INCHES

1561774 S0000289015_V1

162A1511-4 Upper Bearing Carrier Assembly Repair
Figure 601 (Sheet 3 of 3)

ASSEMBLY

1. General

A. Use this procedure to assemble the nose landing gear component unit.

B. Refer to the Standard Overhaul Practices Manual (SOPM) for the SOPM subjects identified in this procedure.

C. Refer to IPL Figure 1 for the item numbers.

2. Assembly

A. Tools/Equipment

NOTE: Equivalent substitutes may be used.

Reference	Description
SPL-1895	Equipment - Removal/Installation, Metering Pin and Retainer Ring, NLG (Part #: C32035-1, Supplier: 81205)
SPL-9660	Removal/Installation Equipment - NLG Lower Seals (Opt Part #: C32016-33, Supplier: 81205)
SPL-9661	Extension - Orifice Tube, Nose Gear Shock Strut (C32019-2 is included in C32019-1) (Part #: C32019-2, Supplier: 81205)
SPL-9663	Assembly - Spanner Wrench, Gland Nut (C32025-8 is included in C32025-7) (Part #: C32025-8, Supplier: 81205)
SPL-9667	Plunger - Scraper (C32016-2 is included in C32016-33) (Part #: C32016-2, Supplier: 81205)
SPL-9669	Reducer - Scraper (C32016-3 is included in C32016-33) (Part #: C32016-3, Supplier: 81205)
SPL-9670	Retainer - Scraper (C32016-4 is included in C32016-33) (Part #: C32016-4, Supplier: 81205)
SPL-9671	Lock Assembly - Scraper (C32016-5 is included in C32016-33) (Part #: C32016-5, Supplier: 81205)
SPL-9672	Guide - Dynamic Seal (C32016-45 is included in C32016-33) (Part #: C32016-45, Supplier: 81205)
SPL-9677	Wrench - Spanner, Retainer, Steering Collar (C32040-4 is included in C32040-1) (Part #: C32040-4, Supplier: 81205)
SPL-9679	Assembly - Wrench (C32035-6 is included in C32035-1) (Part #: C32035-6, Supplier: 81205)
SPL-9680	Assembly - Socket (C32035-3 is included in C32035-1) (Part #: C32035-3, Supplier: 81205)

B. Consumable Materials

NOTE: Equivalent substitutes may be used.

Reference	Description	Specification
A00226	Compound - Tamper-Proof Putty	BMS8-45
A00247	Sealant - Pressure And Environmental - Chromate Type	BMS 5-95
B00184	Solvent - Presealing, Cleaning Solvent	BMS11-7
B00571	Coating - Clear Hydraulic Fluid Resistant Topcoat	BAC5710, Type 41
C00913	Compound - Corrosion Inhibiting Material, Nondrying Resin Mix	BMS 3-27
C50075	Coating - Exterior Protective Enamel, Gray	BMS10-60, Type II, BAC707 Gray
D00013	Grease - Aircraft And Instrument Grease	MIL-PRF-23827 (NATO G-354) (Supersedes MIL-G-23827)
D00467	Fluid - Landing Gear Shock Strut	BMS3-32, Type II
D00633	Grease - Aircraft General Purpose	BMS3-33
G01048	Lockwire - Corrosion Resistant Steel (0.032 In. Dia.)	NASM20995˜ C32
G01314	Tape - Polyethylene - 3M No. 8412	
G50136	Paste - Corrosion Inhibiting, Non-drying	BMS 3-38
G50381	Abrasive - Aluminum Oxide Paper, 180 Grit	

C. References

Reference	Title
SOPM 20-30-03	GENERAL CLEANING PROCEDURES
SOPM 20-41-05	APPLICATION OF CORROSION INHIBITING COMPOUNDS
SOPM 20-50-01	BOLT AND NUT INSTALLATION
SOPM 20-50-02	INSTALLATION OF SAFETYING DEVICES
SOPM 20-50-05	APPLICATION OF ALUMINUM FOIL AND OTHER MARKERS
SOPM 20-50-08	APPLICATION OF BONDED SOLID FILM LUBRICANTS
SOPM 20-50-19	GENERAL SEALING
SOPM 20-50-21	HOW TO INSTALL NAMEPLATE STRAPS AND SEALS
SOPM 20-60-02	FINISHING MATERIALS
SOPM 20-60-03	LUBRICANTS
SOPM 20-60-04	MISCELLANEOUS MATERIALS

D. Procedure (ASSEMBLY, Figure 701)

NOTE: For the application of corrosion inhibiting compound, refer to SOPM 20-41-05. For bolt and nut installation, refer to SOPM 20-50-01. For the application of aluminum foil and other markers, refer to SOPM 20-50-05. For the application of bonded solid film lubricants, refer to SOPM 20-50-08. For general sealing, refer to SOPM 20-50-19. For finishing materials, refer to SOPM 20-60-02. For lubricants, refer to SOPM 20-60-03. For miscellaneous materials, refer to SOPM 20-60-04.

(1) Use standard industry practices and these steps.

(2) Install the AGT ring assembly (525) on the metering pin (530) as shown.

(3) Install the retaining ring (520) and the nut assembly (505) onto the metering pin (530).

(a) Apply a layer of hydraulic fluid, D00467 to the threads of nut assembly (505).

(b) With lower seal removal/installation equipment, SPL-9660, compress the retaining ring (520) on the metering pin (530). Install the nut assembly (505) to hold the retaining ring (520) compressed between the metering pin (530) and the nut assembly (505).

(4) Install the metering pin (530) and the related parts into the inner cylinder assembly (415).

(a) Put the metering pin (530) and the related parts into the inner cylinder assembly (415).

(b) From inside the inner cylinder assembly (415), use wrench assembly, SPL-9679 and socket assembly, SPL-9680 to back off the nut assembly (505). This will let the retainer ring (520) expand into the inner cylinder assembly (415) groove.

(c) With metering pin and retainer ring equipment, SPL-1895, tighten nut assembly (505) to 75-100 lb-ft.

(5) Before assembly, wipe all surfaces of the seals (560, 585), the AGT ring assembly (565), the T-ring assembly (590), the seal assembly (595), and the scraper (600B) with hydraulic fluid, D00467.

CAUTION: DO NOT SLIDE THE GLAND NUT (605) MORE THAN 10 INCHES ONTO THE INNER CYLINDER ASSEMBLY (415), OR DAMAGE COULD OCCUR.

(6) With scraper plunger, SPL-9667 and scraper reducer, SPL-9669, install the scraper (600B) into the gland nut (605) with the rubber spring toward the castellation of the gland nut (605). Use scraper retainer, SPL-9670 and scraper lock assembly, SPL-9671 to keep the scraper in the gland nut.

(7) Apply hydraulic fluid, D00467 to the chrome plated outside diameter of the inner cylinder assembly (415).

(8) Compress the insert (580) by hand and install it into the carrier (575).

(9) Install the seal assembly (595) onto the carrier (575) with the rubber spring (O-ring) toward the gland nut (605).

(10) Install the T-ring assembly (590) onto the carrier (575) with one white and one brown backup ring on each side of the T-ring assembly (590).

(11) Install the seal (585) and the AGT ring assembly (565) on the carrier (575) with a backup ring on each side of the AGT ring assembly (565).

(12) Install a backup ring into the seal (560) with the bevel side against the seal (560). Slide the seal (560) and the backup ring into the carrier (575).

(13) Install the seal retainer (570) onto the carrier (575). Hold the seal retainer (570) in position with two pins (535).

(14) Install dynamic seal guide, SPL-9672 over the open end of the inner cylinder assembly (415). Apply hydraulic fluid onto the outer diameter of the guide.

(15) Carefully slide the carrier (575) and related parts over the guide and onto the inner cylinder assembly (415).

(16) Install the cam assembly (540) onto the inner cylinder assembly (415).

(17) Install the circlip (480) onto the inner cylinder assembly (415), as shown in ASSEMBLY, Figure 701, View A.

(18) Install the dowel (475) onto the inner cylinder assembly (415). Carefully slide the upper centering cam (465) onto the inner cylinder assembly (415).

(19) Install the valve (470) onto the upper centering cam (465). Install the ring (460) onto the valve (470).

(20) Install the upper carrier assembly (440), the inner cylinder assembly (415), behind the upper centering cam (465). Hold the upper carrier assembly (440) in place with the insert (455).

NOTE: If the inner cylinder assembly (415) and related parts will not be immediately installed into the outer cylinder assembly (315), wrap them in plastic as assembled to keep them clean.

(21) Put the holder (490) and the orifice plate (495) into the open end of the support tube (290), as shown in ASSEMBLY, Figure 701, View B.

(22) Apply hydraulic fluid, D00467 to the threads of the retainer nut (500). Install the retainer nut (500) into the support tube (290). Tighten the retainer nut (500) to 30-50 lb-in. with metering pin and retainer ring equipment, SPL-1895.

(23) Lockwire the retainer nut (500) to the support tube (290) by the double-twist method with lockwire, G01048 (SOPM 20-50-02).

(24) Install the ring (485) onto the support tube (290), as shown in ASSEMBLY, Figure 701, View B.

NOTE: If the support tube (290) and the related parts will not be immediately installed into the outer cylinder assembly (315), wrap them in plastic as assembled to keep them clean.

(25) Apply hydraulic fluid, D00467 to all surfaces of the AGT ring assembly (310). Install the AGT ring assembly (310) onto the support tube (290). Make sure that the scarf cut gaps on the back-up rings are 180° apart, as shown in ASSEMBLY, Figure 701, View A.

(26) Install orifice tube extension, SPL-9661 onto the support tube (290). Apply shock strut fluid to the outer diameter of the guide.

(27) Use the extension as a guide to install the support tube (290) into the outer cylinder (315) until fully seated, as shown in ASSEMBLY, Figure 701.

(28) Remove the extension from the support tube (290). Install the seal retainer (305), the washer (300) over the end of the support tube (290), as shown in ASSEMBLY, Figure 701, View A.

(29) Install the nut (295) onto the support tube (290). Tighten the nut (295) to 50-58 lb-in.

(30) Install the spacer (285) and the nut (280) onto the support tube (290). Tighten the nut (280) by hand, as indicated by flagnote 21.

(31) Apply grease, D00633 (preferred) or grease, D00013 (optional for 162A1100-4 thru -9) to the chrome journals of the outer cylinder assembly (315), as shown in ASSEMBLY, Figure 701, View G, and flagnote 10.

(32) Carefully slide the sleeve assembly (255) onto the outer cylinder assembly (315), as shown in ASSEMBLY, Figure 701, View B.

WARNING: BMS 3-27 CORROSION INHIBITING COMPOUND CONTAINS SOLVENTS, CHROMATES, AND A SMALL AMOUNT OF BOUND ASBESTOS. CONSULT THE APPLICABLE SAFETY STANDARDS FOR APPROVED HANDLING PROCEDURES.

CAUTION: BMS 3-27 COMPOUND IS ONLY USED IN STATIC JOINTS WHERE GREASE CANNOT BE APPLIED. BMS 3-27 COMPOUND IN DYNAMIC JOINTS WILL NOT LET THEM MOVE FREELY.

(33) Apply a thin layer of corrosion inhibiting non-drying paste, G50136 or compound, C00913 (162A1100-4 thru -9 only) to the belt shanks, thread reliefs, threads, and washer faces of the bolts (210) and the washers (215).

(34) Install the sleeve assembly (255) onto the outer cylinder assembly (315) with the bolts (210), the washers (215), and the nut (220).

(35) Tighten the nuts (220) to 160-190 pound-inches above the run-on torque. Back off each nut to align to the nearest castellation.

(36) Install cotter pins (205) (SOPM 20-50-02).

(37) Fill the cavity with grease, D00633 (preferred) or grease, D00013 (optional for 162A1100-5 thru -9), as specified by flagnote 28. This step does not apply to 162A1100-4.

(38) Fill the space between the outer cylinder assembly (315) and the sleeve assembly (255) with sealant, A00247. Fillet seal around the outer cylinder assembly (315) and sleeve assembly (255). Apply enamel coating, C50075 (F-20.56-707) to the sealant and the area around the sealant.

(39) Apply grease, D00633 (preferred) or grease, D00013 (optional for 162A1100-4 thru -9) to the inside diameter of the steering collar assembly (222).

(40) Carefully slide the steering collar assembly (222) onto the steering sleeve assembly (255).

(41) Install the steering plate assembly (200) onto the steering sleeve assembly (255) with the bushing face toward the top of the landing gear.

(42) Install nut (195) onto steering sleeve assembly (255). With spanner wrench, SPL-9677, tighten nut (195) to 50-75 pound-feet. If necessary, back off the nut the minimum amount necessary to let you install lock tab (190).

WARNING: BMS 3-27 CORROSION INHIBITING COMPOUND CONTAINS SOLVENTS, CHROMATES, AND A SMALL AMOUNT OF BOUND ASBESTOS. CONSULT THE APPLICABLE SAFETY STANDARDS FOR APPROVED HANDLING PROCEDURES.

CAUTION: BMS 3-27 COMPOUND IS ONLY USED IN STATIC JOINTS WHERE GREASE CANNOT BE APPLIED. BMS 3-27 COMPOUND IN DYNAMIC JOINTS WILL NOT LET THEM MOVE FREELY.

(43) Apply a thin layer of corrosion inhibiting non-drying paste, G50136 or compound, C00913 (162A1100-4 thru -9 only) to the threads, thread reliefs, and washer faces of screws (180) and washers (185).

(44) Install lock tab (190) on nut (195) with washers (185) and screws (180). Tighten screws (180) to 50-70 lb-in.

(45) Lockwire screws (180) with lockwire, G01048 (SOPM 20-50-02)

(46) Put the dunking sleeves into the open end of the outer cylinder assembly (315). Carefully slide inner cylinder assembly (415) and related parts approximately halfway into outer cylinder assembly (315).

NOTE: Make sure that all subassembled parts and tools are clean. Clean both sets of dunking sleeves and wipe all mating surfaces with hydraulic fluid, D00467.

(47) Remove the dunking sleeves from the open end of the outer cylinder assembly (315). Replace them with another set of dunking sleeves.

(48) Continue to slide the inner cylinder assembly (415) and related parts into the outer cylinder assembly (315) until the lower carrier (575) and seals are fully down against the mating surfaces of outer cylinder assembly (315).

WARNING: BMS 3-27 CORROSION INHIBITING COMPOUND CONTAINS SOLVENTS, CHROMATES, AND A SMALL AMOUNT OF BOUND ASBESTOS. CONSULT THE APPLICABLE SAFETY STANDARDS FOR APPROVED HANDLING PROCEDURES.

CAUTION: BMS 3-27 COMPOUND IS ONLY USED IN STATIC JOINTS WHERE GREASE CANNOT BE APPLIED. BMS 3-27 COMPOUND IN DYNAMIC JOINTS WILL NOT LET THEM MOVE FREELY.

(49) Remove scraper retainer, SPL-9670 and scraper lock assembly, SPL-9671 from the gland nut. Apply a thin layer of corrosion inhibiting non-drying paste, G50136 or compound, C00913 (162A1100-4 thru -9 only) to the gland nut (605) threads and thread relief of the outer cylinder assembly (315).

(50) Thread the gland nut (605) into the outer cylinder assembly (315) with gland nut spanner wrench, SPL-9663. Tighten the gland nut (605) to 100-125 lb-ft. If necessary, back off the gland nut (605) the minimum distance to let you install lockplate (620), as shown in ASSEMBLY, Figure 701, View C-C.

(51) Clean check valve (410) with solvent, B00184 as indicated by flagnote 8 in ASSEMBLY, Figure 701, View D.

(52) Apply hydraulic fluid to the packing (405) and the threads of the check valve (410).

(53) Install the packing (405) onto the check valve (410). Install the check valve (410) onto the outer cylinder assembly (315) and tighten the valve to 22-25 lb-ft.

(54) Install the cap assembly (400) onto the check valve (410). Tighten the cap assembly (400) as indicated by flagnote 16 in ASSEMBLY, Figure 701, View D.

WARNING: BMS 3-27 CORROSION INHIBITING COMPOUND CONTAINS SOLVENTS, CHROMATES, AND A SMALL AMOUNT OF BOUND ASBESTOS. CONSULT THE APPLICABLE SAFETY STANDARDS FOR APPROVED HANDLING PROCEDURES.

CAUTION: BMS 3-27 COMPOUND IS ONLY USED IN STATIC JOINTS WHERE GREASE CANNOT BE APPLIED. BMS 3-27 COMPOUND IN DYNAMIC JOINTS WILL NOT LET THEM MOVE FREELY.

(55) Apply a thin layer of corrosion inhibiting non-drying paste, G50136 or compound, C00913 (162A1100-4 thru -9 only) to the threads and shank of the bolts (411) and the faces of the washers (412).

(56) Install the bolt (411), the washers (412), and the nut (413) onto the outer cylinder assembly (315). Lockwire the check valve (410) to the bolt (411) by the double-twist method with lockwire, G01048 (SOPM 20-50-02).

(57) Clean the valve (275) with solvent, B00184. Apply hydraulic fluid, D00467 to the O-ring and threads of the valve (275).

(58) Install the valve (275) onto the support tube (290), as shown in ASSEMBLY, Figure 701, View A. Tighten the body to 11-13 lb-ft and tighten the swivel nut to 5-7 lb-ft. Lockwire the valve (275) to the nut (280) by the double-twist method with lockwire, G01048 (SOPM 20-50-02).

WARNING: BMS 3-27 CORROSION INHIBITING COMPOUND CONTAINS SOLVENTS, CHROMATES, AND A SMALL AMOUNT OF BOUND ASBESTOS. CONSULT THE APPLICABLE SAFETY STANDARDS FOR APPROVED HANDLING PROCEDURES.

CAUTION: BMS 3-27 COMPOUND IS ONLY USED IN STATIC JOINTS WHERE GREASE CANNOT BE APPLIED. BMS 3-27 COMPOUND IN DYNAMIC JOINTS WILL NOT LET THEM MOVE FREELY.

(59) Apply a thin layer of corrosion inhibiting non-drying paste, G50136 or corrosion inhibiting compound, C00913 (162A1100-4 thru -9 only) to the threads and shanks of the bolts (10A, 15) and the faces of the washers (20, 22, 25, 27), as shown in ASSEMBLY, Figure 701, View C.

(60) Install tow fitting assembly (35B) onto inner cylinder assembly (415) with bolts (10A), washers (22, 27), and nuts (32).

(61) Tighten nuts (32) to 250-300 lb-in above run-on torque.

(62) Install cotter pins (6) on bolts (10A) (SOPM 20-50-02).

(63) Install bolt (15), washers (20, 25), and nut (30) onto the tow fitting assembly (35B). Tighten nut (30) to 160-190 lb-in above run-on torque. If necessary, back off the nut (30) to align to the nearest castellation.

(64) Install cotter pin (5) (SOPM 20-50-02).

(65) Operate the assembled unit from fully extended to fully compressed position, as shown in ASSEMBLY, Figure 702. Make a check of the dimensions in the fully compressed and fully compressed positions as indicated.

(66) Do the production pressure test procedures as shown in TESTING AND FAULT ISOLATION, Paragraph 2.C.(3).

(67) Install a replacement nameplate (640) onto the outer cylinder assembly (315), as shown in ASSEMBLY, Figure 701, View C.

(a) Steel stamp the manufacturer, the serial number, and part number with 0.12-inch characters in the spaces provided on the replacement nameplate (315). Use the old nameplate as a guide.

(b) Clean the nameplate (640) installation surface with solvent, B00184 (SOPM 20-30-03).

(c) Bend the nameplate (640) to the outer diameter of the outer cylinder assembly (315). Mark the locations of the mounting straps or bands onto the outer cylinder assembly (315) with a pencil.

(d) Cut two pieces of 3M No. 8412 tape, G01314, each approximately 17 inches long. Wrap each piece of tape around the outer cylinder assembly (315) to the locations marked. Overlap the ends of the tape approximately 1 inch at each location.

(e) Cut two pieces of straps (625) to approximately 20 inches in length. Install the straps (625) from under the nameplate (640), over the top, and back through the underside of the nameplate. Use sealant, A00247 to seal the nameplate (640) onto the outer cylinder assembly (315). Make sure that the straps (625) are over the tape.

(f) Install the seals (630) onto the straps (625) with a crimping tool (SOPM 20-50-21). Cut off unwanted strap ends as necessary. Seal the edges of the nameplate (640) with sealant, A00247.

(g) Apply coating, B00571 (F-21.34) all over the nameplate (640) and the straps (625).

(68) Install the marker (635A) onto the plate assembly (200), as shown in ASSEMBLY, Figure 701, View B.

(a) Clean the plate assembly (200) surface with solvent, B00184 (SOPM 20-30-03).

(b) Remove the foil backing from the marker (635A). Do not touch the adhesive backing.

(c) Install the marker (635A) onto the plate assembly (200) surface. Make sure that no air pockets are in the marker (635A).

(d) Apply coating, B00571 (F-21.34) on all of the marker (635A), and out from the edges of the marker.

(69) Apply warning stencils at valves (275) and (410) as shown by flagnote 27 in ASSEMBLY, Figure 701.

(a) Clean the surface indicated by flagnote 27 with solvent, B00184.

(b) Lightly sand the surface with 180 grit abrasive paper, G50381 or finer abrasive paper. Then wipe with solvent, B00184.

(c) Apply the stencil as indicated.

(d) Apply coating, B00571 (F-21.34) to all stamped and stenciled surfaces.

(70) Install the upper and lower torsion links (100, 150) onto the outer and inner cylinder assemblies (315, 415) as shown in ASSEMBLY, Figure 701.

(a) Apply a thin layer of grease, D00633 (preferred) or grease, D00013 (optional for 162A1100-4 thru -9) to all chrome surfaces of the torsion link and apex pins (70, 75, 135) as indicated by flagnote 6.

(b) Apply a thin layer of corrosion inhibiting non-drying paste, G50136 or corrosion inhibiting compound, C00913 (162A1100-4 thru -9 only) to the shank of unplated pins (70, 75, 135), the threads, thread reliefs, washer (80, 85, 140) faces, the cotter pins (60, 65, 130) as indicated by flagnote 22.

(c) Install the torsion link assembly (150) onto the outer cylinder assembly (315) with the pin (70), the washers (80), and the nut (90) as shown in ASSEMBLY, Figure 701, sheet 5.

(d) Tighten the nut (90) to 21-25 lb-ft. above the run-on torque. Back off the nut (90) to the nearest castellation. Install the cotter pin (60) onto the pin (70).

(e) Install the torsion link assembly (100) onto the inner cylinder assembly (415) with the pin (135), the washer (140) and the nut (145), as shown in View D-D.

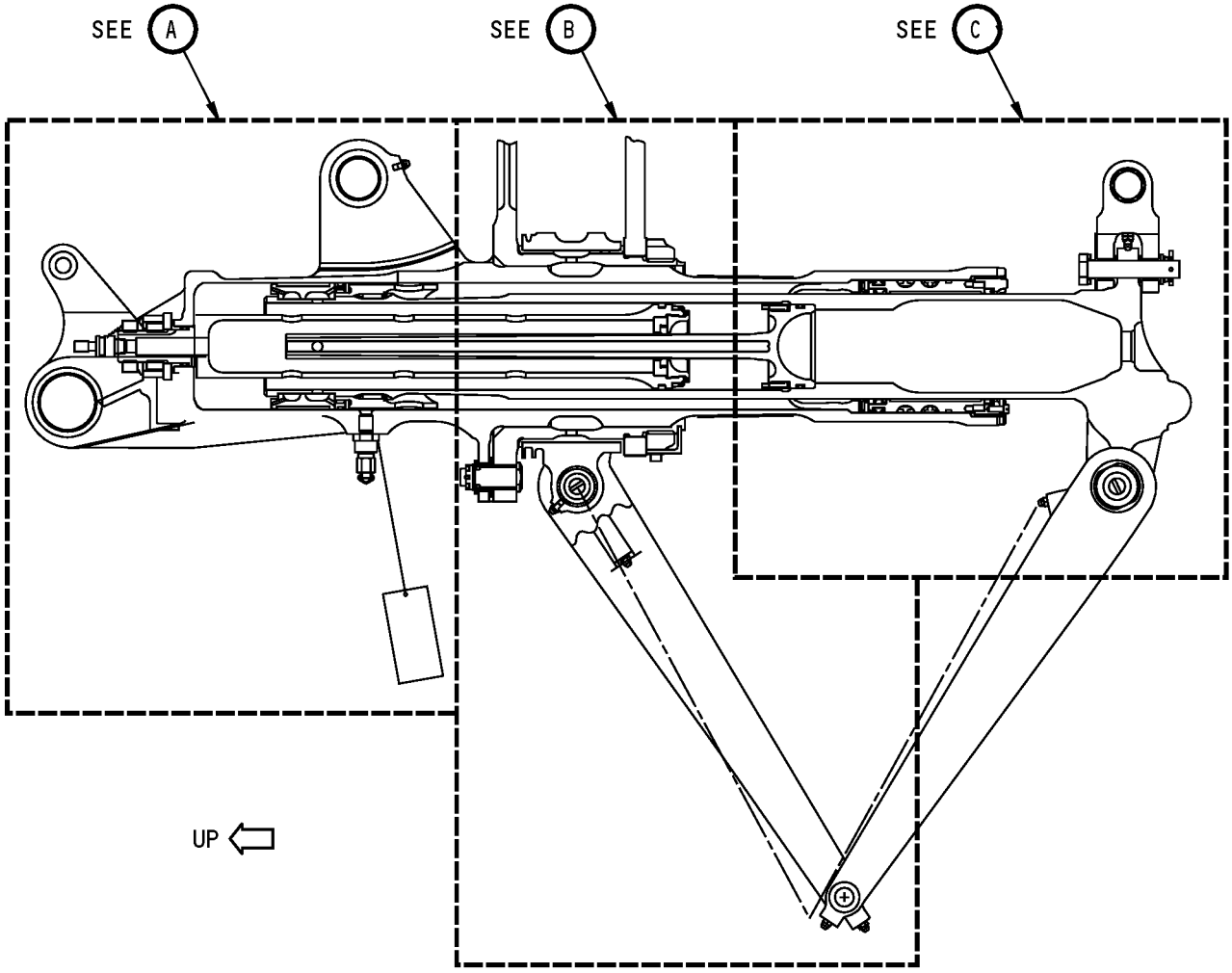
(f) Tighten the nut (145) to 21-25 lb-ft. above the run-on torque. Back off the nut (145) to the nearest castellation. Install the cotter pin (130) onto the pin (135).

(g) Install the apex pin (75) through the torsion link assemblies (100, 150) with the washer (85) and the nut (95).

(h) Tighten the nut (95) to 160-190 lb-in. above the run-on torque. Back off to the nearest castellation. Install the cotter pin (65) onto the pin (75).

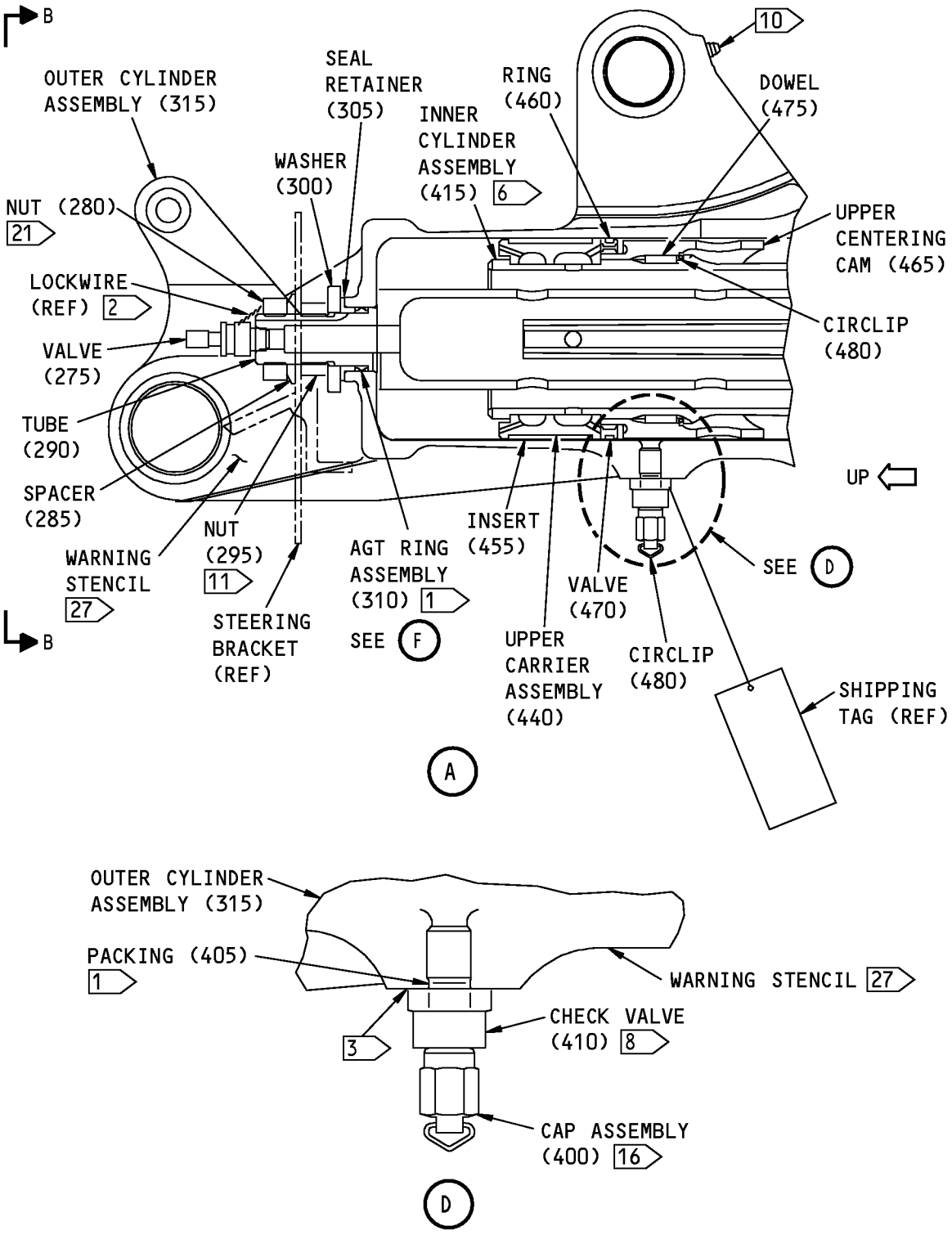
(71) Clean surfaces indicated by flagnote 3 with solvent, B00184. Apply compound, A00226 tamper proof putty to a minimum thickness of 0.002 inches to the surfaces indicated by flagnote 3.

(72) Apply grease, D00633 (preferred) or grease, D00013 (optional for 162A1100-4 thru -9) at all lube fittings indicated by flagnote 10.



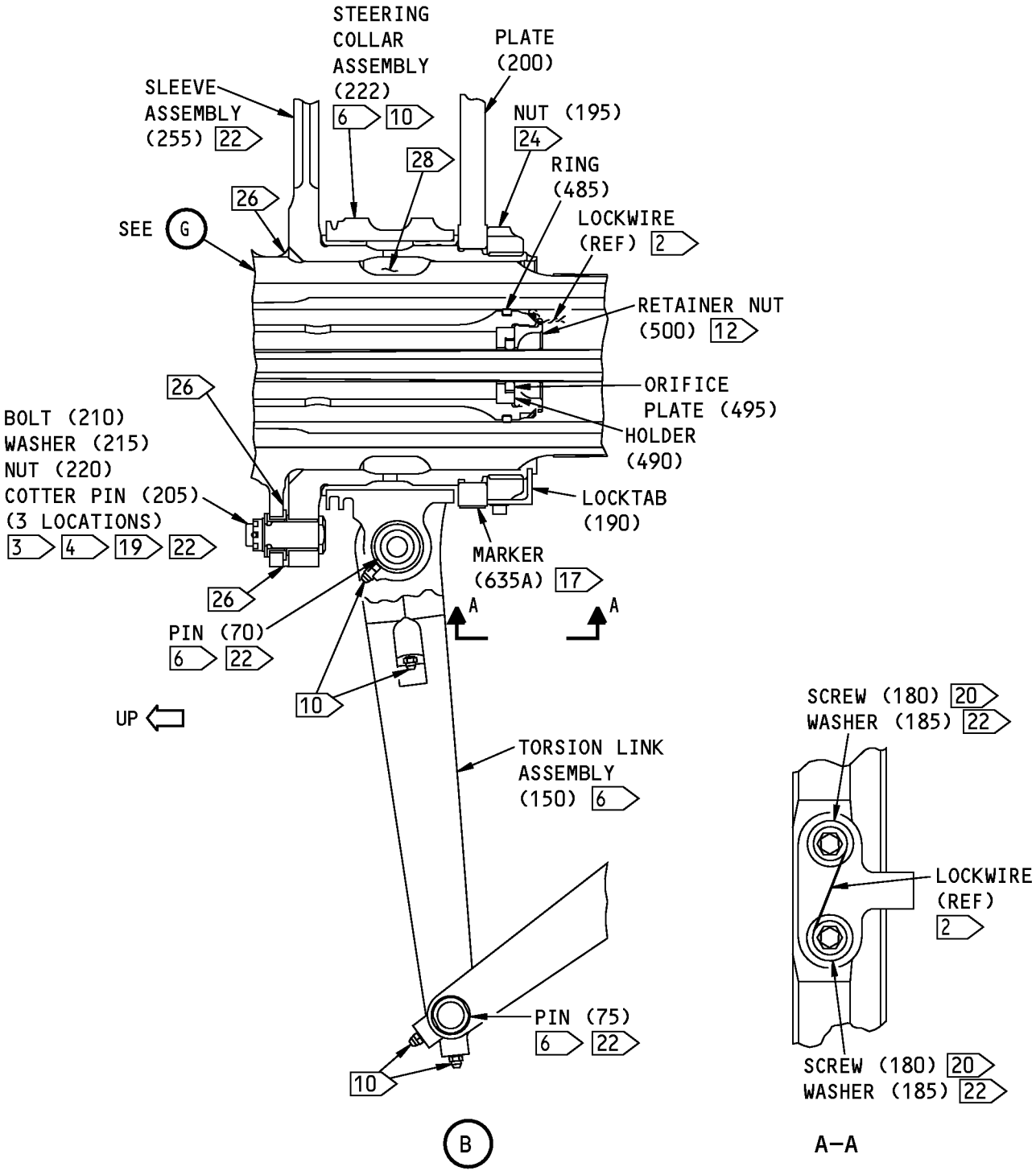
RIGHT SIDE VIEW

Nose Landing Gear Component Installation
Figure 701 (Sheet 1 of 8)



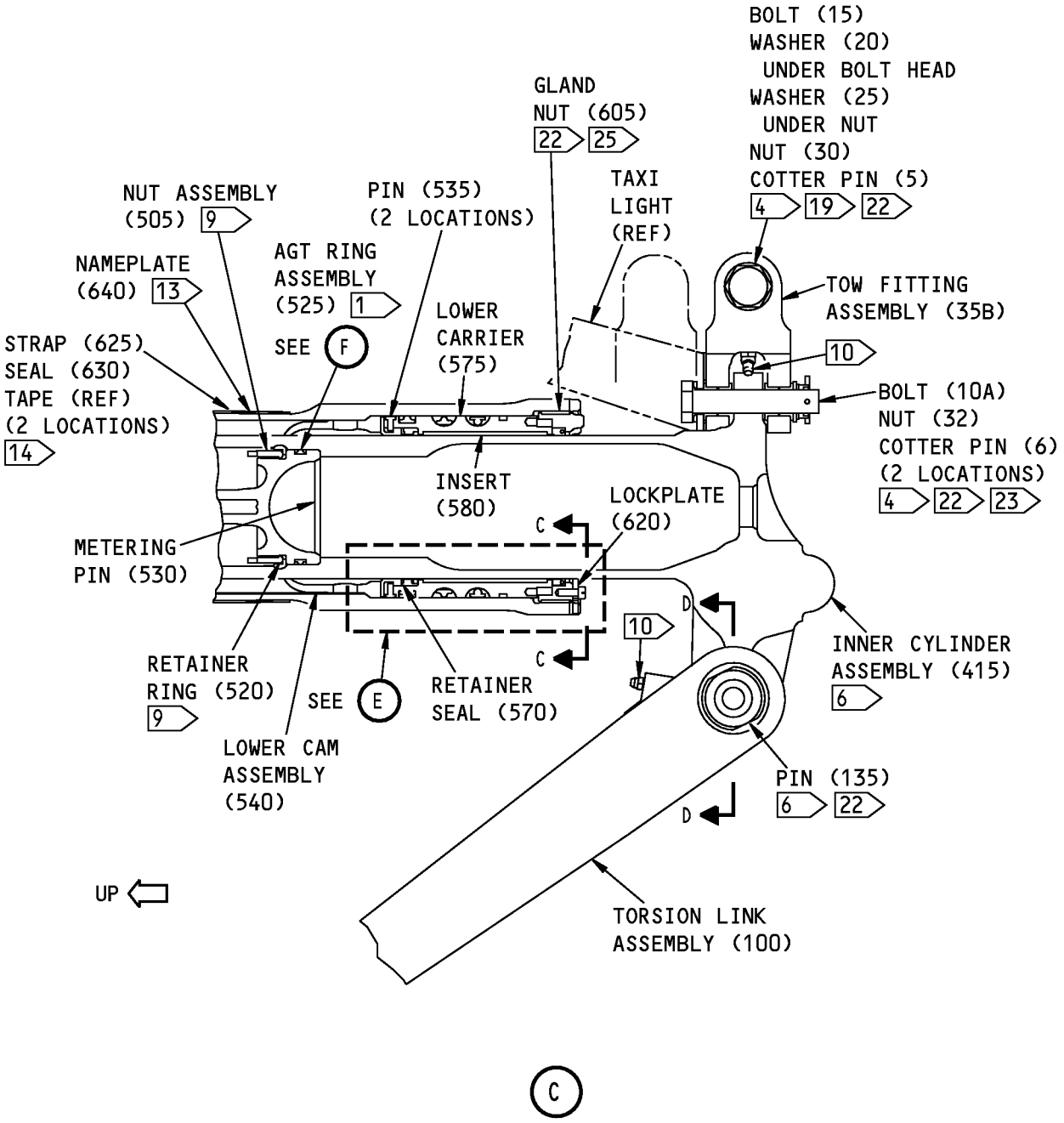
G20151 S0004997959_V4

Nose Landing Gear Component Installation
Figure 701 (Sheet 2 of 8)

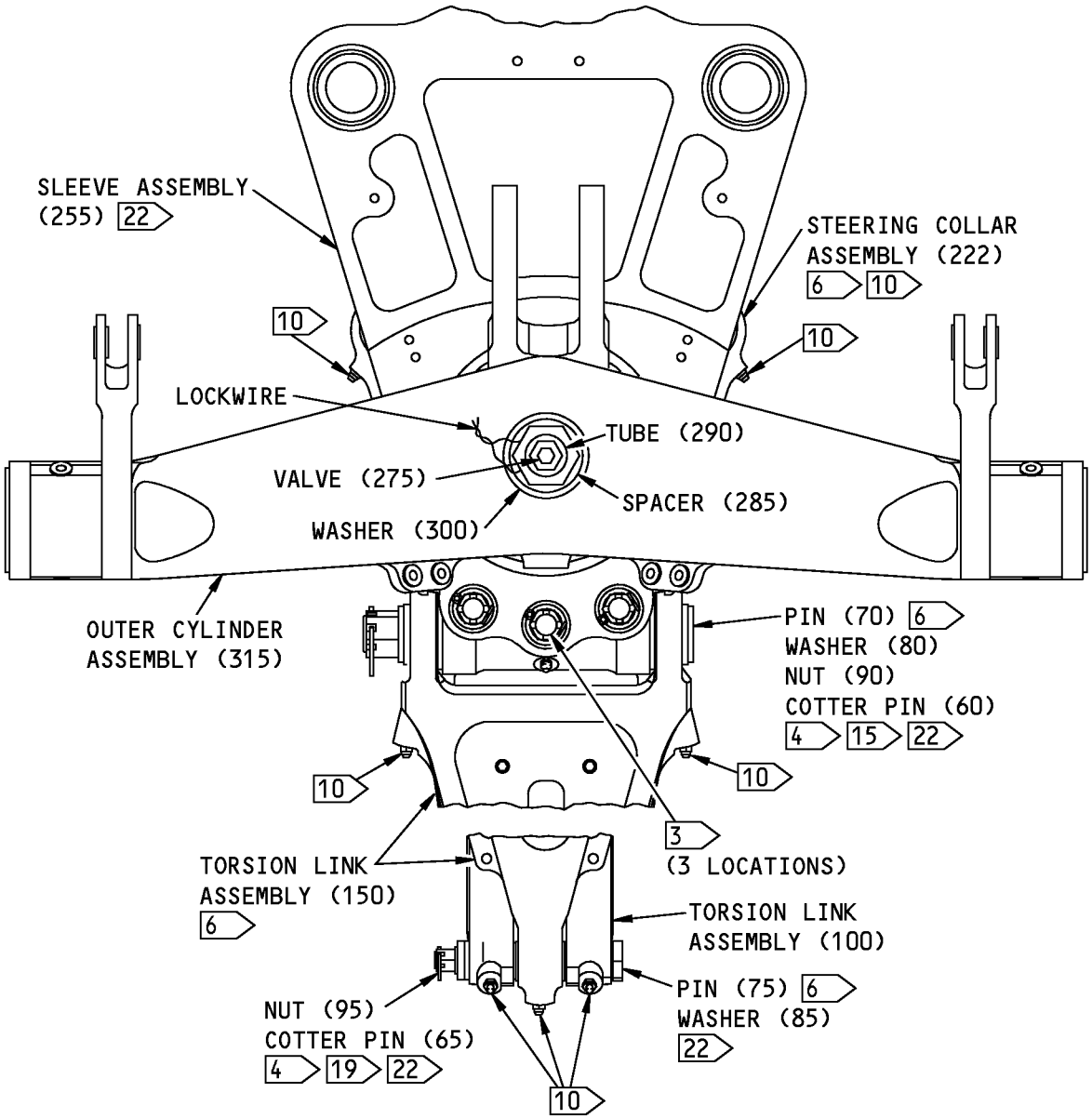


G20248 S0004997960_V3

Nose Landing Gear Component Installation
Figure 701 (Sheet 3 of 8)



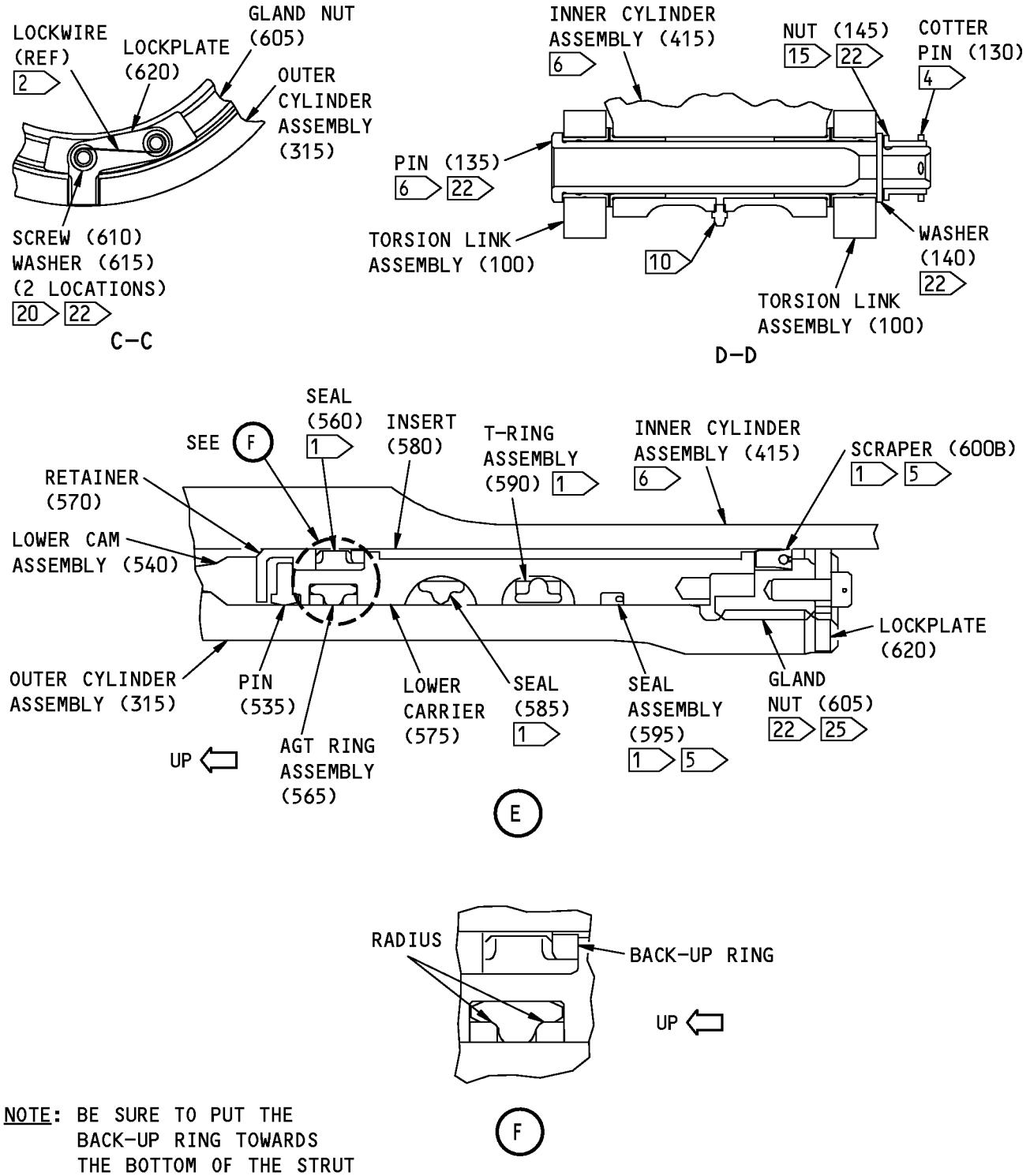
Nose Landing Gear Component Installation
Figure 701 (Sheet 4 of 8)



B–B

G20540 S0004997962_V3

Nose Landing Gear Component Installation
Figure 701 (Sheet 5 of 8)



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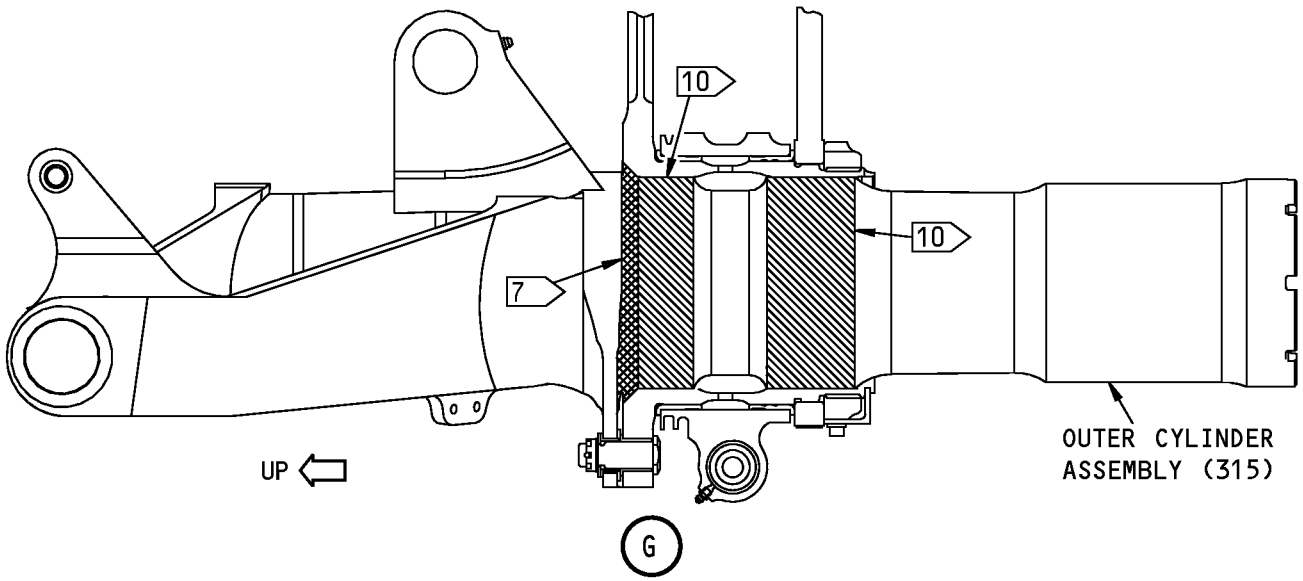
Nose Landing Gear Component Installation
Figure 701 (Sheet 6 of 8)



1. PUT THE AGT RING ASSEMBLY AND T-RING IN HYDRAULIC FLUID. ALSO, WIPE THE MATING SURFACES WITH HYDRAULIC FLUID
2. INSTALL LOCKWIRE BY THE DOUBLE TWIST METHOD (SOPM 20-50-02).
3. APPLY BMS 8-45 TAMPER PROOF PUTTY HERE AFTER ASSEMBLY, SO EXTERNAL ADJUSTMENT WILL BREAK THE SEAL
4. INSTALL COTTER PINS (SOPM 20-50-02)
5. INSTALL THE SCRAPER WITH THE RUBBER SPRING (O-RING) AWAY FROM THE LOWER BEARING
6. APPLY A THIN LAYER OF BMS 3-33 GREASE (PREFERRED) OR MIL-PRF-23827 GREASE (OPTIONAL FOR 162A1100-4 THRU -9) TO THE CHROME PLATED SURFACES OF THE PINS, BUSHING FACES, AND GROOVES BEFORE INSTALLATION. WIPE OFF UNWANTED GREASE
7. APPLY BMS 5-95 SEALANT
8. CLEAN THE VALVE WITH SOLVENT (SOPM 20-30-03). REMOVE ALL SIGNS OF THE SOLVENT BEFORE INSTALLATION. APPLY HYDRAULIC FLUID TO THE THREADS. INSTALL THE VALVE AND TIGHTEN IT TO 22-25 POUND-FEET
9. APPLY HYDRAULIC FLUID TO THE NUT THREADS. COMPRESS THE RETAINER RING AND TIGHTEN THE NUT RETAINER TO KEEP THE RING COMPRESSED BETWEEN THE NUT AND THE METERING PIN. AFTER INSTALLATION, BACK OFF THE NUT TO LET THE RETAINING RING EXPAND IN THE GROOVE. THEN TIGHTEN THE NUT TO 75-100 POUND-FEET TORQUE TO HOLD THE RETAINING RING IN THE GROOVE
10. APPLY BMS 3-33 (PREFERRED) OR MIL-PRF-23827 GREASE (OPTIONAL FOR 162A1100-4 THRU -9) AT LUBE FITTINGS
11. TIGHTEN THE NUT TO 50-58 POUND-INCHES
12. LUBRICATE THREADS WITH HYDRAULIC FLUID. TIGHTEN THE NUT TO 30-50 POUND-INCHES

G20633 S0004997964_V2

Nose Landing Gear Component Installation
Figure 701 (Sheet 7 of 8)

13> INSTALL THE NAMEPLATE WITH TYPE 93 ADHESIVE (SOPM 20-50-12). APPLY BMS 5-95 SEALANT AROUND THE EDGES OF THE NAMEPLATE (SOPM 20-50-19) AFTER THE BANDS ARE INSTALLED. APPLY TYPE 41 CLEAR COATING (F-21.34) TO ALL OF THE NAMEPLATE, THE SEALANT AREA AND THE BANDS

14> CLEAN THE PAINTED SURFACES (SOPM 20-30-03). INSTALL ONE WRAP OF 3M 8412 TAPE UNDER EACH STRAP. MAKE THE ENDS OF THE TAPE OVERLAP APPROXIMATELY 1 INCH

15> TIGHTEN THE NUT TO 21-25 POUND-FEET. ABOVE RUN-ON TORQUE. BACK OFF THE NUT TO ALIGN THE NEAREST CASTELLATION.

16> TIGHTEN TO 50-70 POUND-INCHES

17> INSTALL THE MARKER CENTERED OVER THE ENAMEL STRIPE ± 1 DEGREE (SOPM 20-50-05). APPLY TYPE 41 CLEAR COATING (F-21.34) TO ALL OF THE MARKER, AND OUT FROM IT A MINIMUM OF 0.1 INCH

19> TIGHTEN THE NUT TO 160-190 POUND-INCHES ABOVE RUN-ON TORQUE. LOOSEN TO ALIGN WITH THE NEAREST CASTELLATION

20> TIGHTEN TO STANDARD TORQUE (SOPM 20-50-01)

21> TIGHTEN HAND-TIGHT. THIS NUT WILL BE TIGHTENED TO FINAL TORQUE WHEN BRACKET (CMM 32-21-16, IPL FIG. 1; 446) IS INSTALLED

22> APPLY A THIN LAYER OF BMS 3-38 OR BMS 3-27 (162A1100-4 THRU -9 ONLY) CORROSION PREVENTIVE COMPOUND TO THE SHANK OF THE UNPLATED PINS, THREADS, THREAD RELIEFS AND WASHER FACES, BEFORE INSTALLATION. WIPE OFF UNWANTED COMPOUND

23> TIGHTEN THE NUT TO 250-300 POUND-FEET ABOVE RUN-ON TORQUE

24> TIGHTEN THE NUT TO 50-75 POUND-FEET. BACK OFF THE NUT AS NECESSARY TO INSTALL THE LOCKTAB

25> TIGHTEN THE NUT TO 100-125 POUND-FEET. BACK OFF THE NUT AS NECESSARY TO INSTALL THE LOCKPLATE

26> FILL THE GAP BETWEEN THE OUTER CYLINDER AND SLEEVE ASSEMBLIES WITH BMS 5-95 SEALANT. MAKE A FILLET SEAL. APPLY BMS 10-60, TYPE 2 ENAMEL, COLOR 707 (F-20.56-707) TO THE SEALANT AND THE AREA AROUND THE SEALANT

27> APPLY WARNING STENCIL HERE, IN 0.25-HIGH LETTERS, WITH RED BMS 10-60 ENAMEL (F-14.9815-101, WHICH REPLACES SRF-14.9815-101): -WARNING- RELEASE PRESSURE IN STRUT BEFORE REMOVING VALVE

28> FILL CAVITY WITH BMS 3-33 GREASE (PREFERRED) OR MIL-PRF-23827 GREASE (OPTIONAL FOR 162A1100-5 THRU -9). THIS FLAGNOTE DOES NOT APPLY TO 162A1100-4

ITEM NUMBERS REFER TO IPL FIG. 1

ALL DIMENSIONS ARE IN INCHES

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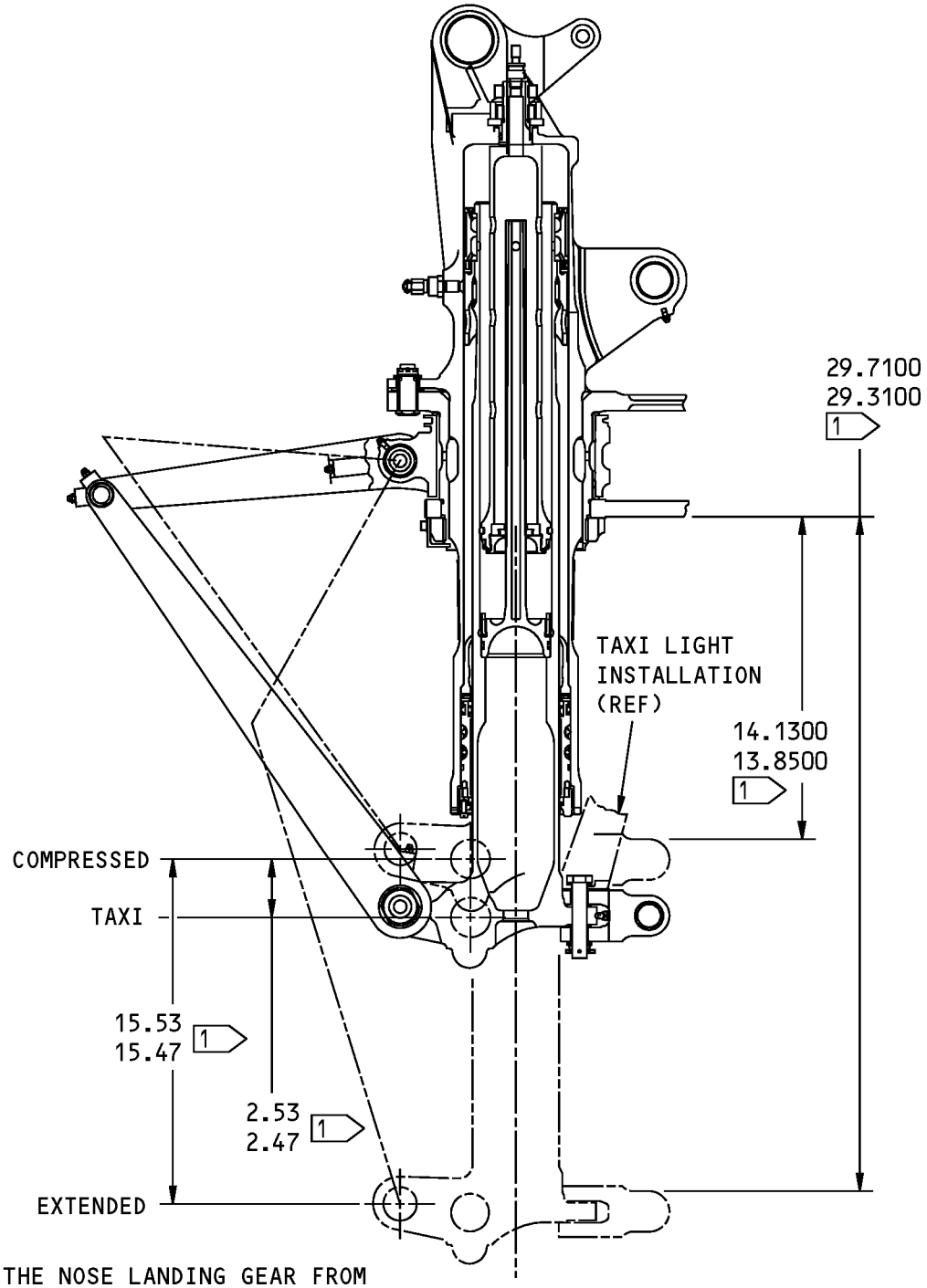
Nose Landing Gear Component Installation
Figure 701 (Sheet 8 of 8)

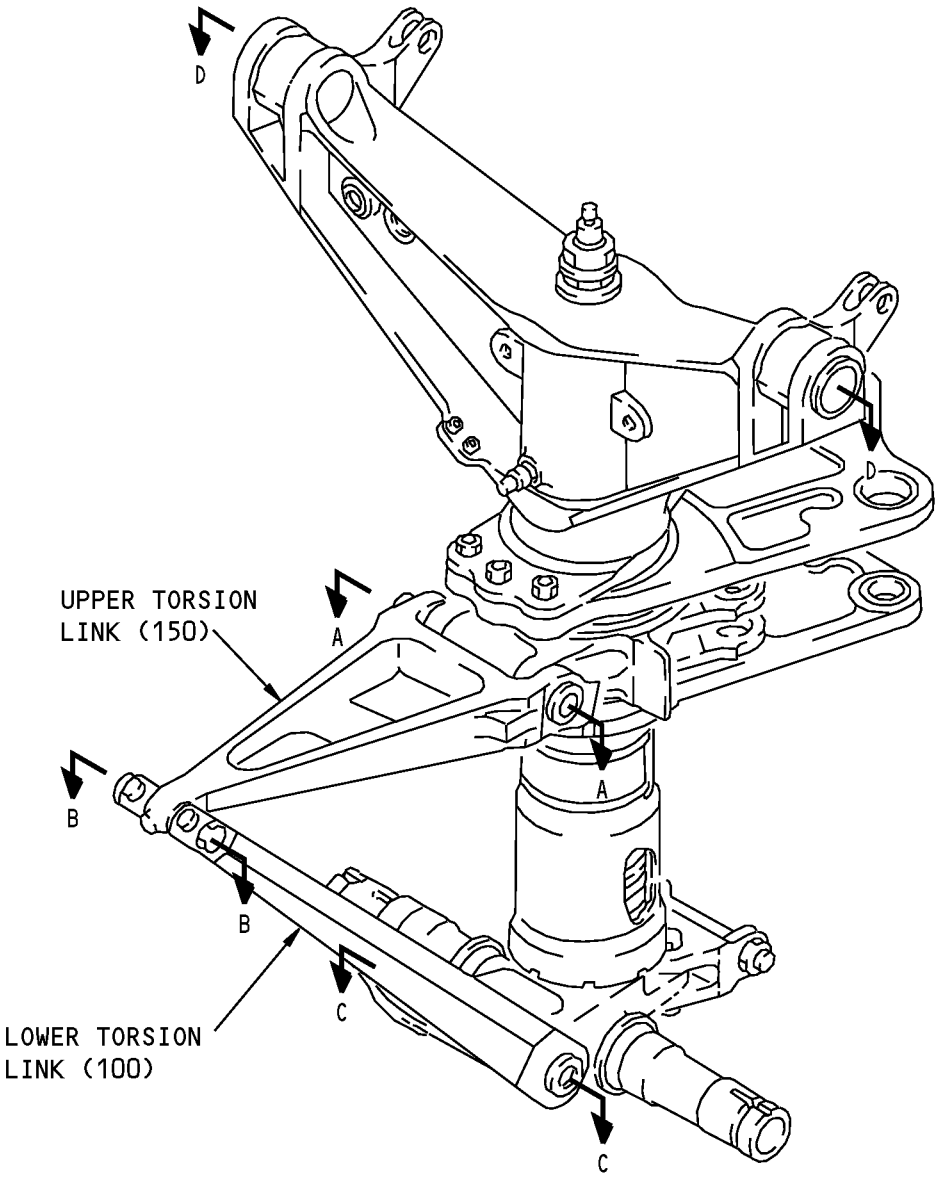


1 OPERATE THE NOSE LANDING GEAR FROM ITS FULLY EXTENDED POSITION TO FULLY COMPRESSED POSITION. MAKE A CHECK OF THE DIMENSIONS AT EACH POSITION

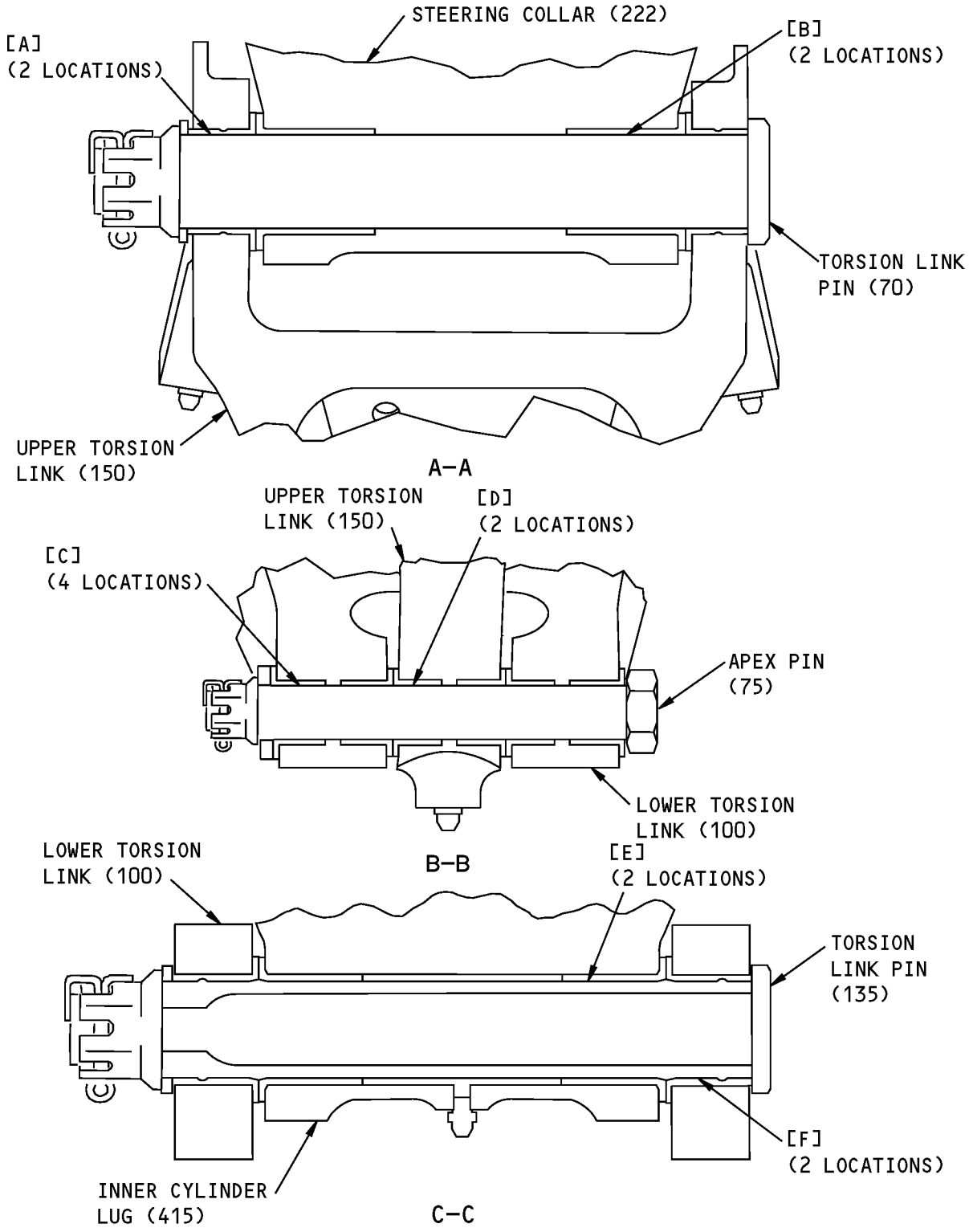
ITEM NUMBERS REFER TO IPL FIG. 1

ALL DIMENSIONS ARE IN INCHES

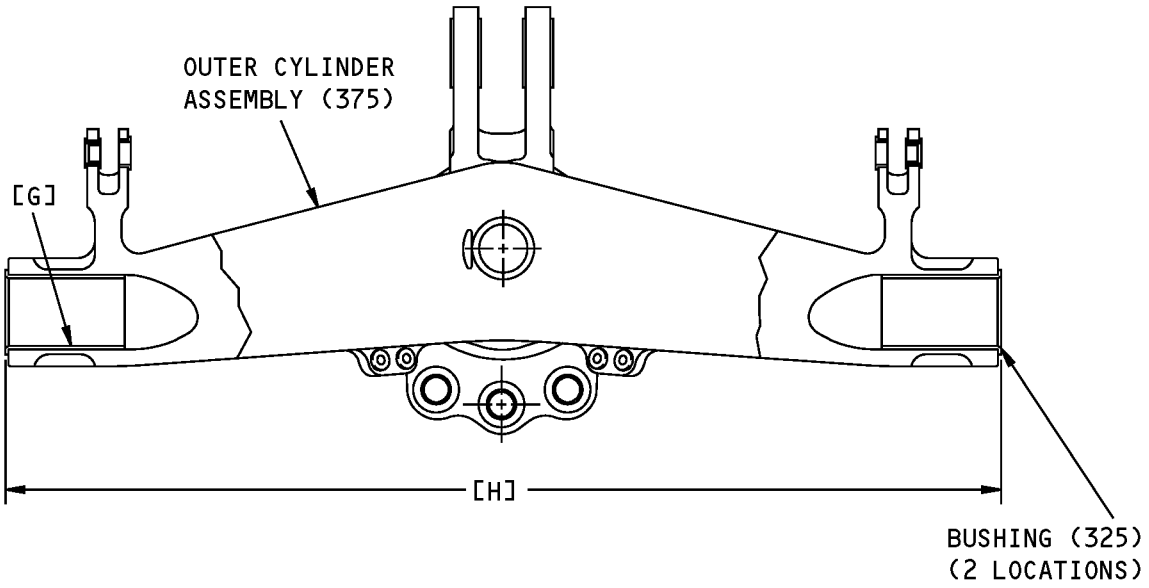
Nose Landing Gear Component Installation Check
Figure 702



Fits and Clearances
Figure 801 (Sheet 1 of 4)



Fits and Clearances
Figure 801 (Sheet 2 of 4)



D–D

Fits and Clearances
Figure 801 (Sheet 3 of 4)

REF LETTER	REF IPL FIG. 1, MATING ITEM NO.	DESIGN DIMENSION*				SERVICE WEAR LIMIT*		
		DIMENSION		ASSEMBLY CLEARANCE 3		DIMENSION		MAXIMUM CLEARANCE
		MIN	MAX	MIN	MAX	MIN	MAX	
[A]	ID 170 OD 70	1.2500 1.2485	1.2512 1.2495	0.0005	0.0027	1.2463	1.2544	0.0049
[B]	ID 240 OD 70	1.2500 1.2485	1.2512 1.2495	0.0005	0.0027	1.2463	1.2544	0.0049
[C]	ID 110 OD 75	0.6250 0.6235	0.6258 0.6245	0.0005	0.0023	0.6219	0.6284	0.0039
[D]	ID 160 OD 75	0.6250 0.6235	0.6258 0.6245	0.0005	0.0023	0.6219	0.6284	0.0039
[E]	ID 425 OD 135	1.2500 1.2485	1.2512 1.2495	0.0005	0.0027	1.2463	1.2544	0.0049
[F]	ID 120 OD 135	1.2500 1.2485	1.2512 1.2495	0.0005	0.0027	1.2463	1.2544	0.0049
[G]	ID 325 OD 1	2.0000 1.9975	2.0015 1.9990	0.0010	0.0040	1.9947	2.0058	0.0068
[H]	2 325	29.815	29.825			29.800		

* ALL DIMENSIONS ARE IN INCHES

1 TRUNNION PINS 162A0301,162A0302

2 OUTSIDE DIMENSION ACROSS BUSHING FLANGES

Fits and Clearances
Figure 801 (Sheet 4 of 4)

REF IPL		NAME	TORQUE*	
FIG. NO.	ITEM NO.		POUND-INCHES	POUND-FEET
1	30	Nut	160-190 [1]	
1	32	Nut	250-300 [1]	
1	90	Nut		21-25 [1]
1	95	Nut	160-190 [1]	
1	145	Nut		21-25 [1]
1	195	Nut		50-75
1	220	Nut	160-190 [1]	
1	275	Valve (Body)		11-13
1	275	Valve (Swivel Nut)		5-7
1	295	Nut	50-58	
1	400	Cap Assembly	50-70	
1	410	Check Valve		22-25
1	413	Nut	50-80	
1	500	Retainer Nut	30-50	
1	515	Nut		75-100
1	605	Nut		100-125

* REFER TO SOPM 20-50-01 FOR TORQUE VALUES OF STANDARD FASTENERS.

[1] ABOVE RUN-ON TORQUE

G21670 S0004997972_V2

Torque Table
Figure 802

SPECIAL TOOLS, FIXTURES, AND EQUIPMENT

1. General

A. This section lists the special tools, fixtures, and equipment necessary for maintenance.

NOTE: Equivalent substitutes may be used.

Special Tools

Reference	Description	Part Number	Supplier
SPL-1895	Equipment - Removal/Installation, Metering Pin and Retainer Ring, NLG	C32035-1	81205
SPL-9660	Removal/Installation Equipment - NLG Lower Seals	Opt: C32016-33	81205
SPL-9661	Extension - Orifice Tube, Nose Gear Shock Strut (C32019-2 is included in C32019-1)	C32019-2	81205
SPL-9663	Assembly - Spanner Wrench, Gland Nut (C32025-8 is included in C32025-7)	C32025-8	81205
SPL-9667	Plunger - Scraper (C32016-2 is included in C32016-33)	C32016-2	81205
SPL-9669	Reducer - Scraper (C32016-3 is included in C32016-33)	C32016-3	81205
SPL-9670	Retainer - Scraper (C32016-4 is included in C32016-33)	C32016-4	81205
SPL-9671	Lock Assembly - Scraper (C32016-5 is included in C32016-33)	C32016-5	81205
SPL-9672	Guide - Dynamic Seal (C32016-45 is included in C32016-33)	C32016-45	81205
SPL-9677	Wrench - Spanner, Retainer, Steering Collar (C32040-4 is included in C32040-1)	C32040-4	81205
SPL-9679	Assembly - Wrench (C32035-6 is included in C32035-1)	C32035-6	81205
SPL-9680	Assembly - Socket (C32035-3 is included in C32035-1)	C32035-3	81205

Tool Supplier Information

CAGE Code	Supplier Name	Supplier Address
81205	THE BOEING COMPANY	17930 INTERNATIONAL BLVD. SOUTH SEATAC, WA 98188-4321 Telephone: 206-662-6650 Facsimile: 206-662-7145

ILLUSTRATED PARTS LIST

1. Introduction

A. The Illustrated Parts List (IPL) contains an illustration and a list of component parts you can repair or replace. The Illustrated Parts Catalog (IPC) shows how to use the Boeing part number system.

B. This shows how parts are related: The relation of each item to its next higher assembly (NHA) is shown in the NOMENCLATURE column. Use the indenture system that follows:

1 2 3 4 5 6 7

. Assembly

. Attaching parts for assembly

. . Detail parts for assembly

. . Subassembly

. . Attaching parts for subassembly

. . . Detail parts for subassembly

. . . Sub-subassembly

. . . Attaching parts for subassembly

. . . . . Details parts for sub-subassembly

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

C. Each top assembly is given one use code letter (A, B, C, etc.) in the USAGE CODE column. All subsequent component parts in the list can have one or more of the use code letters to show effectivity to top assemblies. A component part without a use code applies to all top assemblies.

D. An alphabetical letter is added after the item number for optional parts, parts changed by a Service Bulletin, configuration differences (except left-handed and right-handed parts), last engineering releases, and parts added between item numbers in a sequence. The alphabetical letter will not be shown on the illustration for equivalent parts of the same part number.

E. Color-coded parts are identified with a single digit alpha following the dash number or with ''SP'' suffix. If the ''SP'' suffix is used, it represents consolidation of all color codes applicable for a given usage which are not separately listed. Orders for color-coded parts should include the registry number of the airplane for which the parts are ordered.

F. If a part number is 15 characters long but will not fit in the part number column, the part number will be displayed with a ''~'' at the end of the line and will be continued on the next line. The ''~'' denotes that the part number continues on the next line.

G. Parts changed by a Service Bulletin are shown by PRE SB XXXX and POST SB XXXX added to the NOMENCLATURE column.

(1) When a new top assembly is added by a Service Bulletin, PRE SB XXXX and POST SB XXXX will be added at the top assembly level only. The configuration differences at the detail part level are shown by use code letters.

(2) When the top assembly part number is not changed by the Service Bulletin, PRE SB XXXX and POST SB XXXX will be added at the detail level.

H. Interchangeable Parts

Optional (OPT)	The part is optional to and interchangeable with other parts that have the same item number.
Replaces, Replaced by and not interchangeable with (REPLACES, REPLACED BY AND NOT INTCHG/W)	The part replaces and is not interchangeable with the initial part.
Replaces, Replaced by (REPLACES, REPLACED BY)	The part replaces and is interchangeable with, or is an alternative to, the initial part.

VENDOR CODES

Code	Name
00266	ACME STEEL COMPANY 13500 SOUTH PERRY AVENUE RIVERDALE, ILLINOIS 60627-1182 FORMERLY INTERLAKE INC
01673	AIRDROME PRECISION COMPONENTS 3251 E AIRPORT WAY LONG BEACH, CALIFORNIA 90806-2407 FORMERLY AIRDROME PARTS CO
09257	BUSAK AND SHAMBAN INC SEALS DIV 2531 BREMER DR PO BOX 176 FORT WAYNE, INDIANA 46801 FORMERLY SHAMBAN, W S AND CO
0FKM1	ALEMITE CORP 167 ROWLAND DR JOHNSON CITY, TENNESSEE 37601
11815	CHERRY AEROSPACE FASTENERS DIV OF TEXTRON 1224 EAST WARNER AVENUE PO BOX 2157 SANTA ANA, CALIFORNIA 92707-0157 FORMERLY IN LOS ANGELES, CALIF , FORMERLY CHERRY FASTENERS TOWNSEND DIV OF TEXTRON INC V71087
15653	ALCOA GLOBAL FASTENERS INC DIV KAYNAR PRODUCTS 800 S STATE COLLEGE BLVD FULLERTON, CALIFORNIA 92831-3001 FORMERLY VK6405 MICRODOT AEROSP LTD; FORMERLY KAYNAR TECH FORMERLY FAIRCHILD FASTENERS KAYNAR DIV

Code	Name
50632	KAMATICS CORP SUB OF KAMAN CORP 1335 BLUE HILLS ROAD BLOOMFIELD, CONNECTICUT 06002-1304
50808	UNITED SUPPLY CO INC 3676 S BROADWAY PLACE LOS ANGELES, CALIFORNIA 90007-4432
52828	REPUBLIC FASTENER MFG CORP 1300 RANCHO CONEJO BLVD NEWBURY PARK, CALIFORNIA 91320-1405 FORMERLY IN SYLMAR, CALIFORNIA
5F573	GREENE TWEED AND CO ILP DBA GREENE TWEED AND CO 2075 DETWILER RD KULPSVILLE, PENNSYLVANIA 19443-0305
72962	HARVARD INDUSTRIES INC 3 WERNER WAY SUITE 210 LEBANON, NEW JERSEY 08833 FORMERLY ESNA V7A079 FORMERLY ELASTIC STOP NUT IN UNION, NJ
80539	SPS TECHNOLOGIES INC DIV AERPSOACE - SANTA ANA 2701 SOUTH HARBOR BOULEVARD SANTA ANA, CALIFORNIA 92704-5803 FORMERLY NUTT-SHEL DIV OF SPC WESTERN CO V80539 AND STANDARD PRESSED STEEL WESTERN DIV V17279
92215	FAIRCHILD IND INC FAIRCHILD AEROSPACE FASTENER DIV 3010 W LOMITA BLVD TORRANCE, CALIFORNIA 90505-5102 FORMERLY VOI-SHAN IN CULVER CITY, CALIF
97928	Replaced: [V97928] SEE V17446 HUCK INTL by Code: Name and Address below 17446: HUCK INTL INC AEROSPACE FASTENER DIV 900 WATSON CENTER ROAD CARSON, CALIFORNIA 90745-4201 FORMERLY V32134 REXNORD INC; FORMERLY V97928 HUCK INTL

Code	Name
99240	CRISSAIR, INCORPORATED 38905 10TH STREET EAST PALMDALE, CALIFORNIA 93550-4000 FORMERLY IN EL SEGUNDO, CALIFORNIA

NUMERICAL INDEX

PART NUMBER	AIRLINE PART NUMBER	FIGURE	ITEM	UNITS PER ASSEMBLY
102LH9074-10		1	32	2
		1	32B	2
102LH9075-4W		1	413	1
162A1100-10REVA		1	1H	RF
162A1100-10REVB		1	1J	RF
162A1100-10REVC		1	1K	RF
162A1100-12REVA		1	1L	RF
162A1100-4		1	1B	RF
162A1100-5		1	1C	RF
162A1100-6		1	1D	RF
162A1100-7		1	1E	RF
162A1100-8		1	1F	RF
162A1100-9		1	1G	RF
162A1110-1		1	315	1
162A1110-2		1	395	1
162A1110-3		1	315A	1
162A1110-4		1	395A	1
162A1110-5		1	315B	1
162A1110-6		1	395B	1
162A1110-7		1	315C	1
162A1110-8		1	395C	1
162A1113-2		1	330	4
162A1113-3		1	325	2
162A1120-1		1	415	1
162A1120-2		1	435	1
162A1120-3		1	415A	1
162A1120-4		1	435A	1
162A1120-5		1	415B	1
162A1120-6		1	435B	1
162A1122-1		1	240	2
		1	425	2
162A1122-2		1	430	4
162A1122-3		1	50	2
162A1122-4		1	45B	8

PART NUMBER	AIRLINE PART NUMBER	FIGURE	ITEM	UNITS PER ASSEMBLY
162A1160-1		1	35B	1
		1	35C	1
162A1160-2		1	55A	1
162A1160-5		1	35D	1
162A1160-6		1	55B	1
162A1164-1		1	15	1
162A1304-1		1	120	2
162A1304-2		1	110	4
162A1304-3		1	160	2
162A1304-4		1	170	2
162A1306-1		1	70	1
		1	135	1
162A1306-2		1	70A	1
		1	135A	1
162A1309-1		1	85	1
162A1309-2		1	80	1
		1	140	1
162A1310-1		1	75	1
162A1310-2		1	75A	1
162A1311-1		1	150	1
162A1311-2		1	175	1
162A1311-3		1	150B	1
162A1311-4		1	175B	1
162A1312-1		1	100	1
162A1312-2		1	125	1
162A1312-3		1	100B	1
162A1312-4		1	125B	1
162A1313-1		1	100A	1
162A1313-2		1	125A	1
162A1313-3		1	100C	1
162A1313-4		1	125C	1
162A1315-1		1	150A	1
162A1315-2		1	175A	1
162A1315-3		1	150C	1
162A1315-4		1	175C	1

PART NUMBER	AIRLINE PART NUMBER	FIGURE	ITEM	UNITS PER ASSEMBLY
162A1402-1		1	235	4
162A1402-2		1	260	3
162A1403-1		1	245	2
		1	245A	1
162A1404-3		1	222	1
162A1404-4		1	250	1
162A1404-5		1	222A	1
162A1404-6		1	250A	1
162A1405-10		1	270C	1
162A1405-3		1	255	1
162A1405-4		1	270	1
162A1405-5		1	255B	1
162A1405-6		1	270B	1
162A1405-7		1	255A	1
		1	255C	1
162A1405-8		1	270A	1
162A1405-9		1	255E	1
162A1406-1		1	195	1
162A1410-1		1	190	1
162A1415-1		1	210	3
162A1416-2		1	635A	1
		1	635C	1
162A1416-3		1	635B	1
		1	635D	1
162A1417-10		1	203C	1
162A1417-3		1	200	1
162A1417-4		1	203	1
162A1417-5		1	200B	1
162A1417-6		1	203B	1
162A1417-7		1	200A	1
		1	200C	1
162A1417-8		1	203A	1
162A1417-9		1	200E	1
162A1420-1		1	222B	1
162A1421-1		1	255F	1

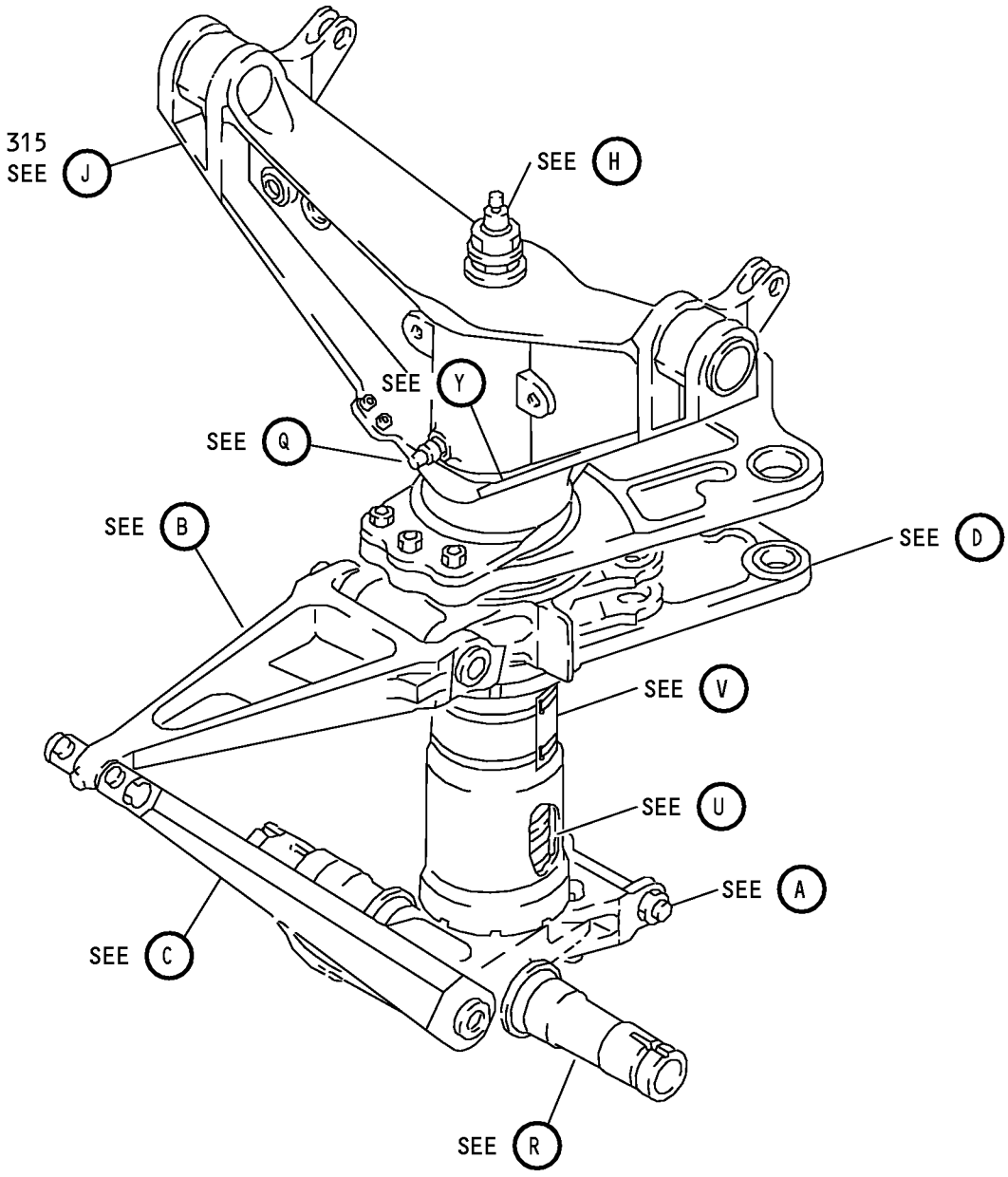
PART NUMBER	AIRLINE PART NUMBER	FIGURE	ITEM	UNITS PER ASSEMBLY
162A1421-2		1	270D	1
162A1422-1		1	247	1
162A1501-1		1	540	1
162A1501-2		1	555	1
162A1502-1		1	550	2
162A1502-2		1	475	2
162A1503-2		1	530	1
162A1505-1		1	505	1
162A1505-2		1	515	1
162A1506-1		1	510	1
162A1507-1		1	290	1
162A1508-1		1	495	1
162A1509-1		1	465	1
162A1510-1		1	575	1
162A1511-4		1	440	1
162A1511-5		1	445	1
162A1511-6		1	450	1
162A1512-1		1	470	1
162A1513-1		1	605	1
162A1514-1		1	520	1
162A1514-2		1	520A	1
162A1514-3		1	520B	1
162A1515-1		1	295	1
162A1516-1		1	300	1
162A1518-1		1	640	1
		1	640A	1
		1	640D	1
162A1518-2		1	640B	1
		1	640C	1
		1	640E	1
162A1519-1		1	620	1
162A1520-1		1	485	1
162A1521-1		1	480	1
162A1522-1		1	285	1
162A1523-1		1	305	1

PART NUMBER	AIRLINE PART NUMBER	FIGURE	ITEM	UNITS PER ASSEMBLY
162A1524-1		1	500	1
162A1525-1		1	535	2
162A1526-1		1	580	1
162A1527-1		1	455	1
162A1528-1		1	460	1
162A1529-1		1	570	1
162A1529-2		1	570A	1
		1	570B	1
162A1530-1		1	490	1
1728B		1	105	4
		1	155	3
		1	230	10
		1	320	2
		1	420	1
1992B1		1	40	2
265-34300-160-6050		1	560	1
265-34301-161-6050		1	560A	1
295-34300-965-5010		1	590	1
2C9342		1	410	1
352-24601-330G		1	595E	1
353-34300-312G		1	600B	1
353-34300-330G		1	600B	1
44PB134-4441		1	630	2
69235-1018CD		1	32	2
		1	32B	2
7217MTE160P8		1	310	1
7232MT160P8		1	525	1
7348MT160		1	585	1
		1	585B	1
7348MT160P8		1	565	1
AP1008-04N		1	400	1
AS1660-0271		1	595A	1
		1	595C	1
BACB28AP06P037		1	385	4
BACB28AP08P028		1	365	2

PART NUMBER	AIRLINE PART NUMBER	FIGURE	ITEM	UNITS PER ASSEMBLY
BACB28AT10D027C		1	370	2
BACB28AT11B028C		1	360	2
BACB28AT14B062C		1	335	2
BACB28AU04B043C		1	390	4
BACB28AU04C075C		1	355	2
BACB28AU06B037C		1	345	4
BACB28AU06B075C		1	350	2
BACB28AU12B042C		1	375	3
BACB28AU12B062C		1	340	2
BACB28AU14B037C		1	380	3
BACB28AZ22A072B		1	201	2
BACB28AZ34A063B		1	265	2
BACB30LM10-38		1	10E	2
BACB30LM10D38		1	10F	2
BACB30LM10D42		1	10H	2
BACB30LM4D9		1	411A	1
BACB30NM10K38		1	10D	2
		1	10G	2
BACB30NR10DR42		1	10C	2
		1	10J	2
BACC14AD04N		1	400	1
BACN10JC10CD		1	32	2
		1	32B	2
BACN10JC4CD		1	413	1
BACN11N110CS		1	30	1
		1	220	3
BACN11N16CD		1	90	1
		1	145	1
BACN11N8CS		1	95	1
BACN11U18CD1		1	280A	1
BACP18BC03A08P		1	65	1
BACP18BC04A08P		1	205	3
BACP18BC04A10P		1	5	1
BACP18BC04C16P		1	60	1
		1	130	1

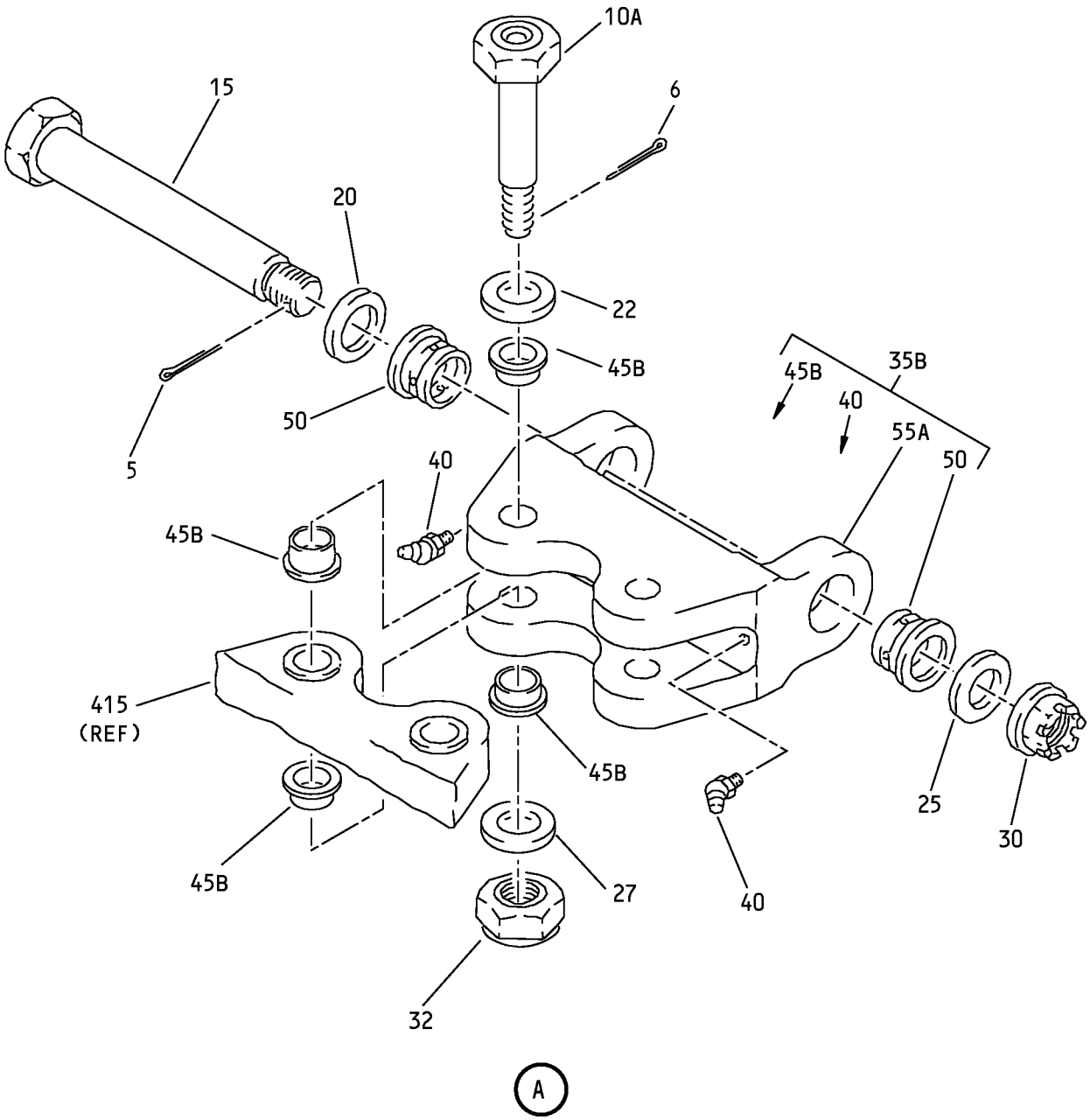
PART NUMBER	AIRLINE PART NUMBER	FIGURE	ITEM	UNITS PER ASSEMBLY
BACS11AK2		1	630	2
BACS12HL3AHU8		1	610A	2
BACS12HL4AHU8		1	180A	2
BACS38E8-13		1	625	2
BACW10BP10APU		1	25	1
BACW10BP10CD		1	22	2
BACW10BP10DP		1	27	2
BACW10BP12ACU		1	20	1
BCREF12622		1	560	1
BCREF12623		1	590	1
BCREF50824		1	560A	1
BMN4122CPD8-10		1	32	2
		1	32B	2
BRH10C4D		1	413	1
H51650-10BAC		1	32	2
		1	32B	2
H51650-4BAC		1	413	1
KJB647100B1		1	201A	2
		1	201C	2
KJB647100B2		1	265A	2
		1	265C	2
MODREF285414		1	1H	RF
MODREF294431		1	1J	RF
MODREF325158		1	1K	RF
MODREF359458		1	1L	RF
MS14144L10		1	32A	2
MS20427M2-6		1	545	2
MS24665-374		1	6	2
MS28778-5		1	405	1
MS28889-2		1	275	1
NAS1149C0332R		1	615	2
NAS1149C0432R		1	185	2
NAS1149C1063R		1	215	3
NAS1149E0416P		1	412	2
NAS1351N3H8		1	610	2

PART NUMBER	AIRLINE PART NUMBER	FIGURE	ITEM	UNITS PER ASSEMBLY
NAS1351N4H8		1	180	2
NAS509-18		1	280	1
NAS6610D38		1	10A	2
NAS6610D42		1	10B	2
NAS6704D9		1	411	1
NAS77B4-028P		1	115	3
		1	165	6
NS202486-048		1	413	1
P3001-246P096		1	595	1
		1	595D	1
S34702-217BAK29		1	310A	1
S34702-232BAK29		1	525A	1
S34702-348BAK		1	585A	1
S34702-348BAK29		1	565B	1
S34706-348BAK		1	585C	1
S37967-343G99		1	600B	1
T6C428JCD		1	413	1
US2103-04N		1	400	1



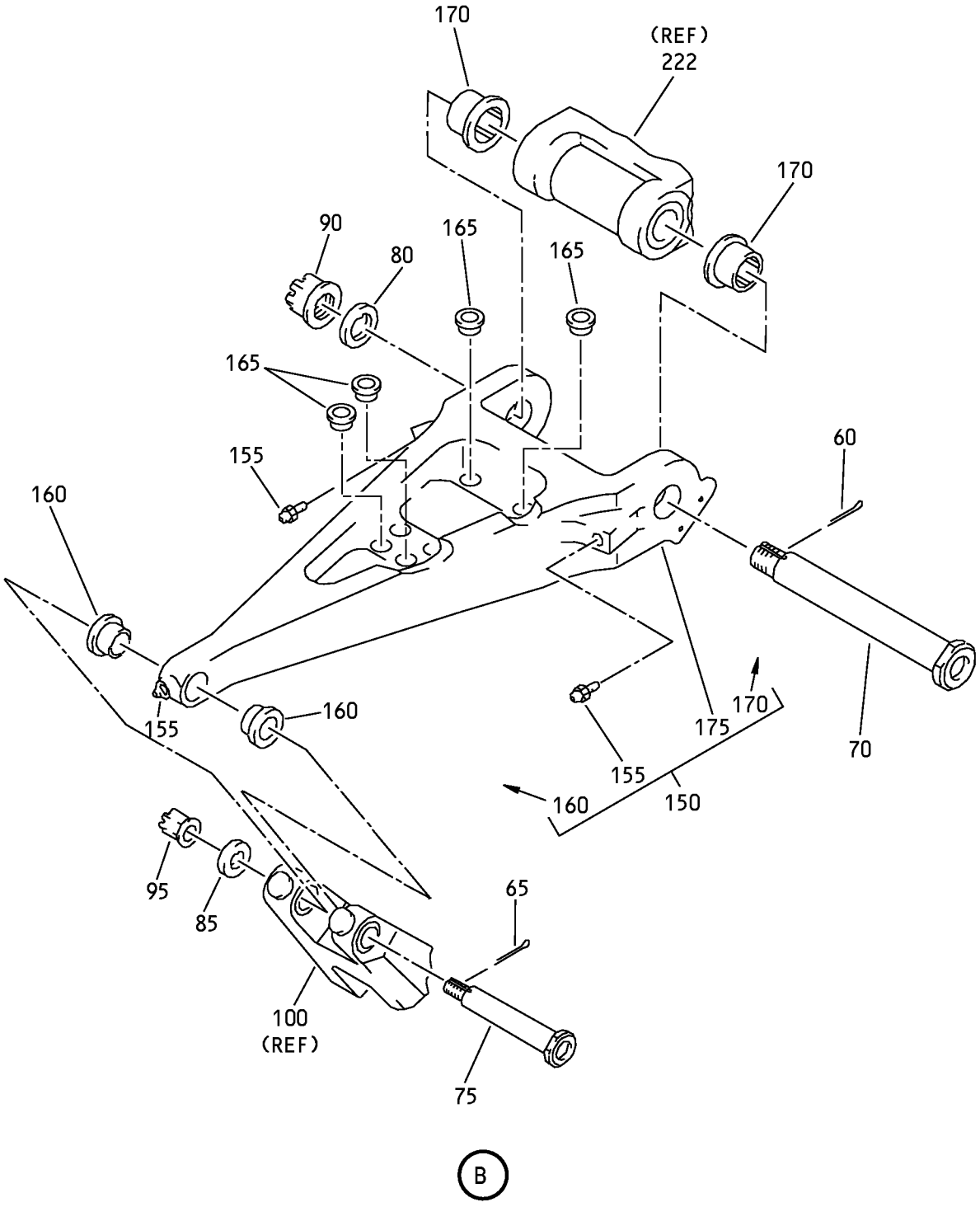
G20452 S0004997976_V2

Nose Landing Gear Component Installation
IPL Figure 1 (Sheet 1 of 15)



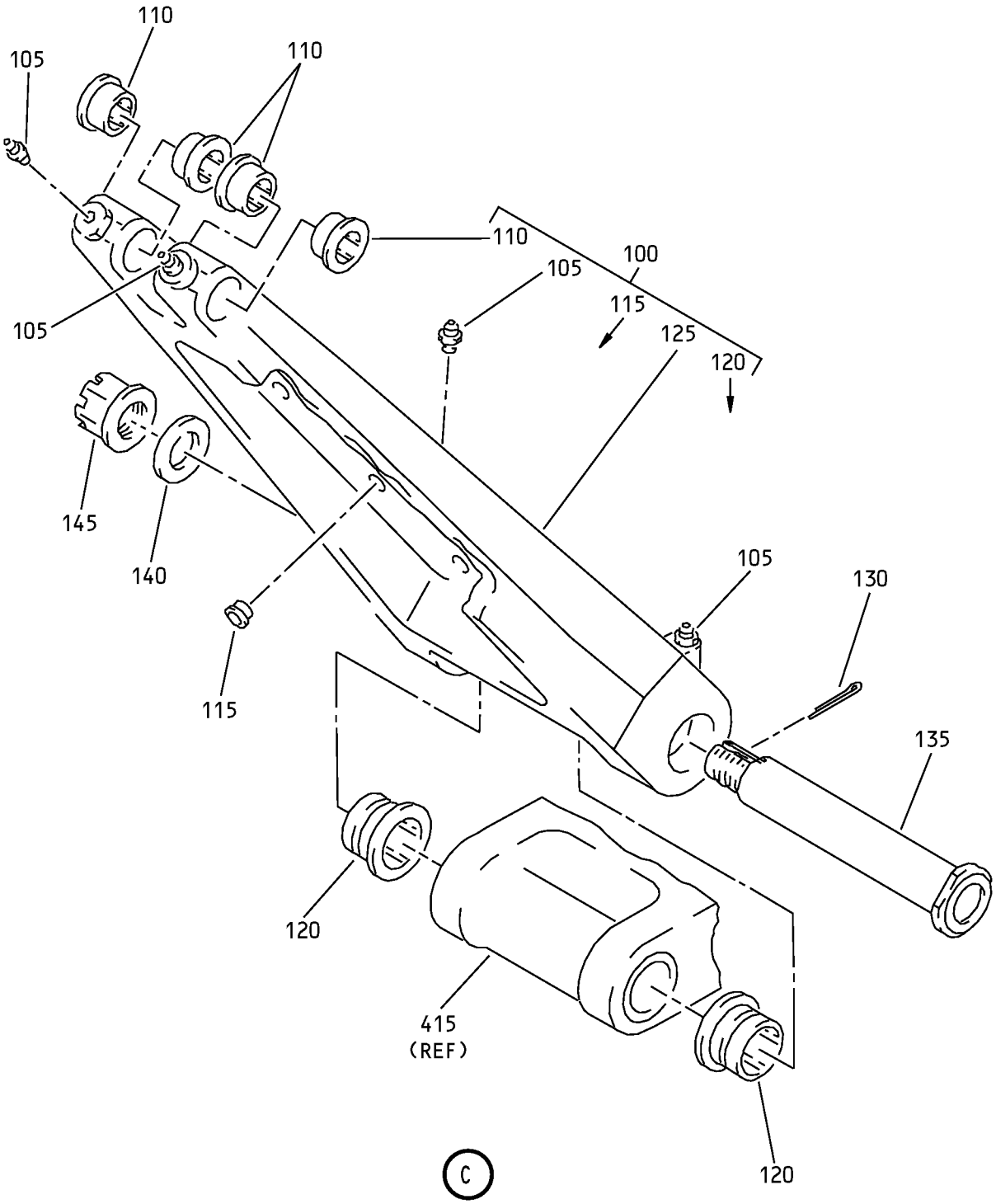
G20488 S0004997977_V2

Nose Landing Gear Component Installation
IPL Figure 1 (Sheet 2 of 15)

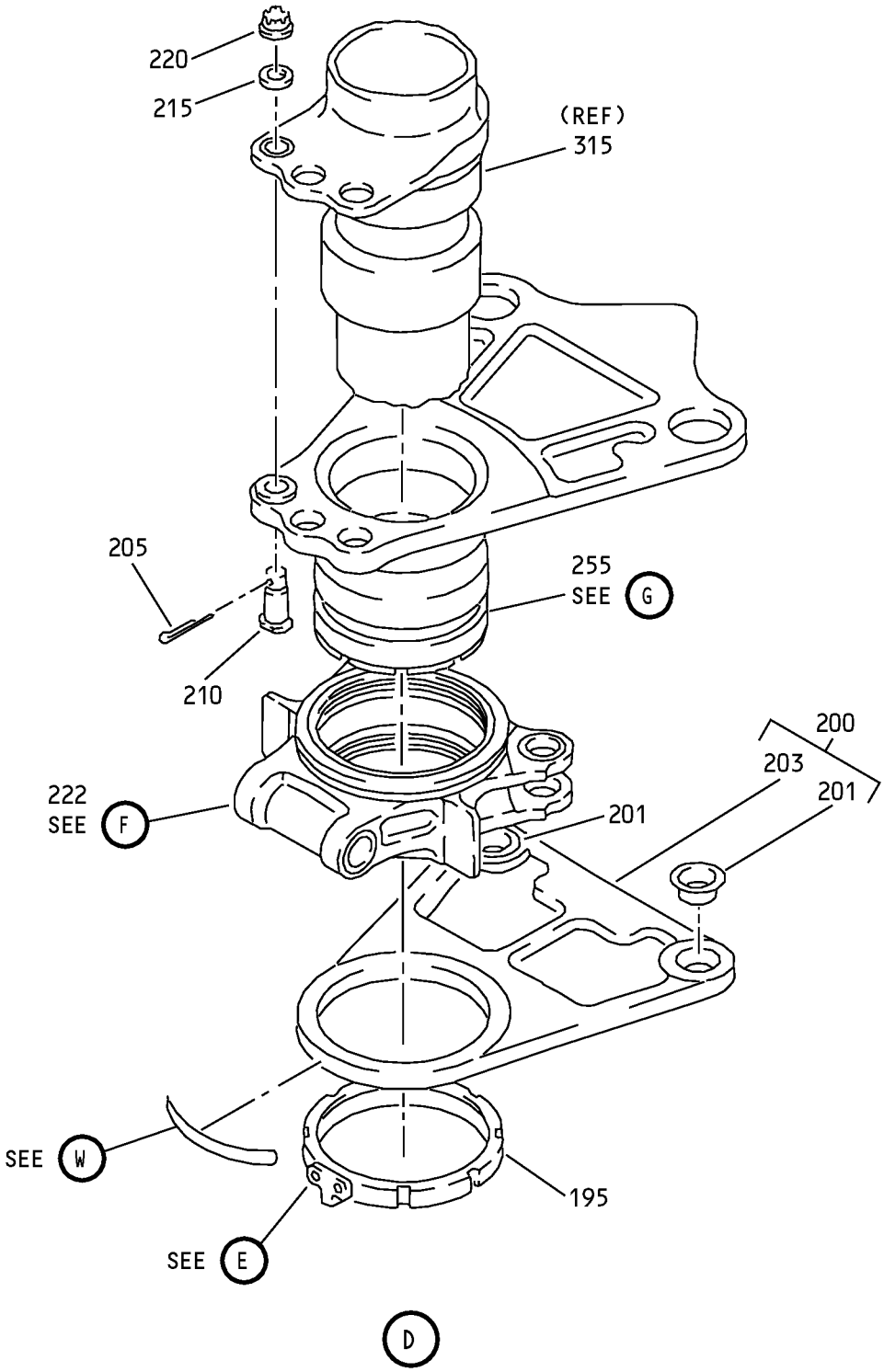


G20491 S0004997978_V2

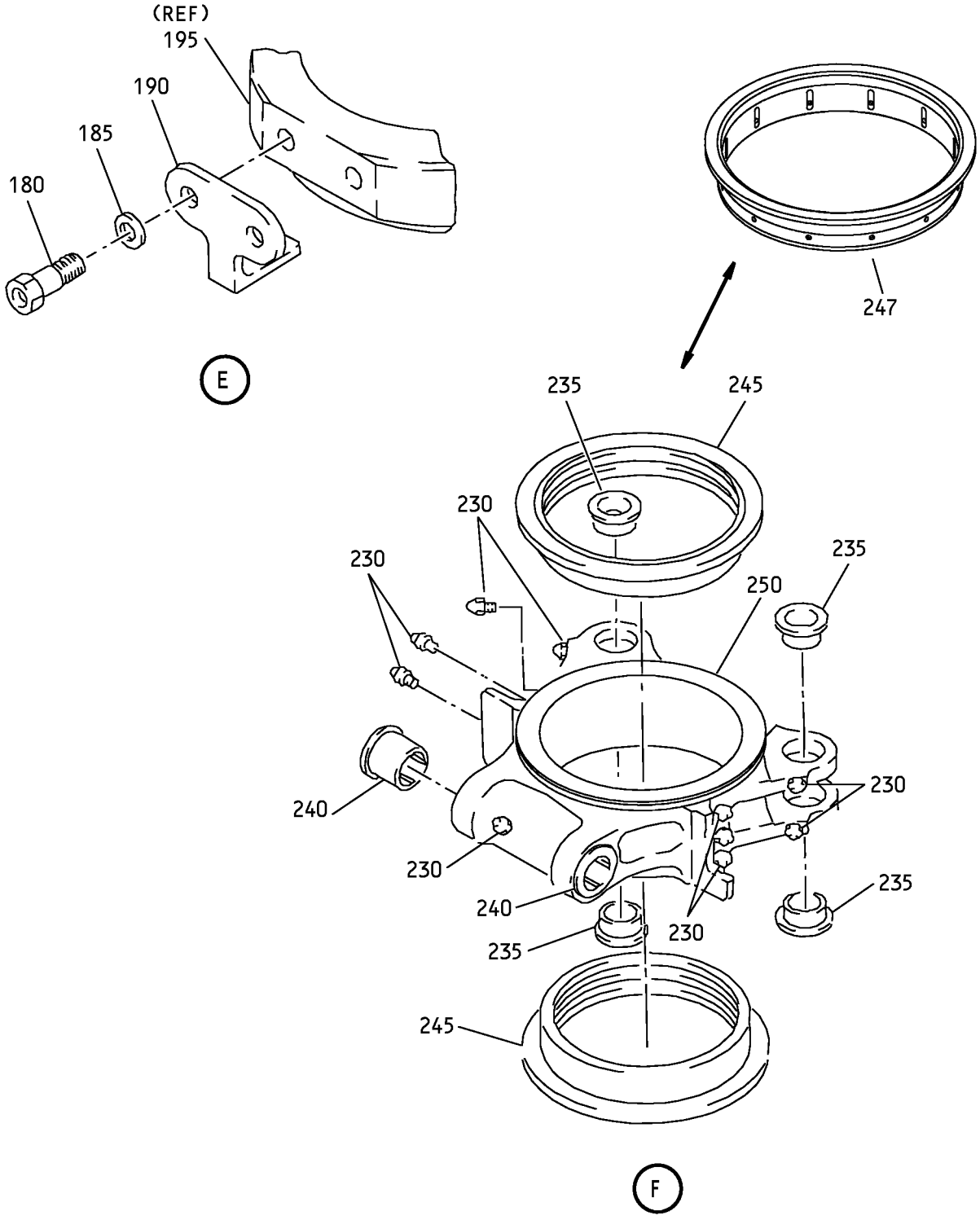
Nose Landing Gear Component Installation
IPL Figure 1 (Sheet 3 of 15)



Nose Landing Gear Component Installation
IPL Figure 1 (Sheet 4 of 15)

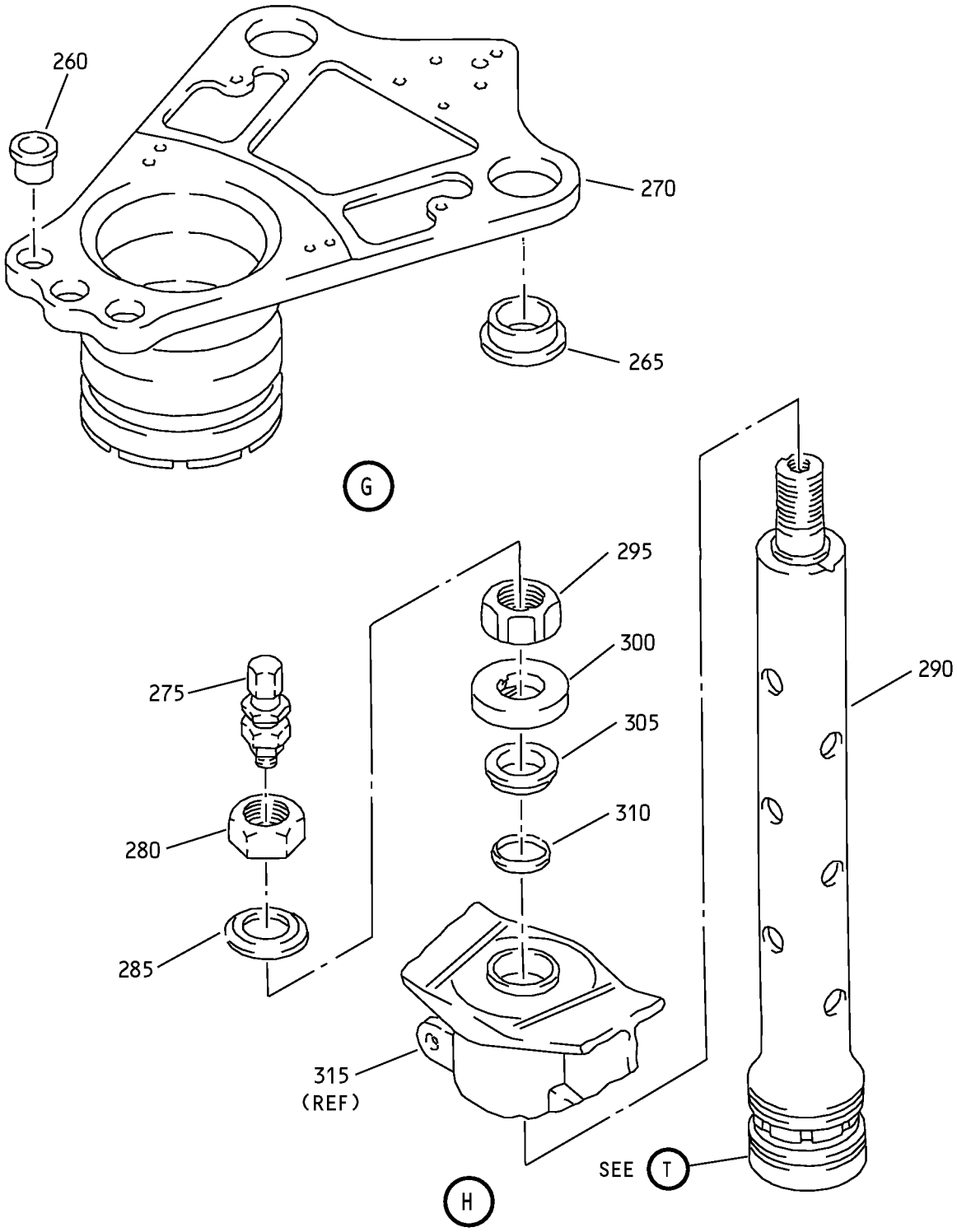


Nose Landing Gear Component Installation
IPL Figure 1 (Sheet 5 of 15)

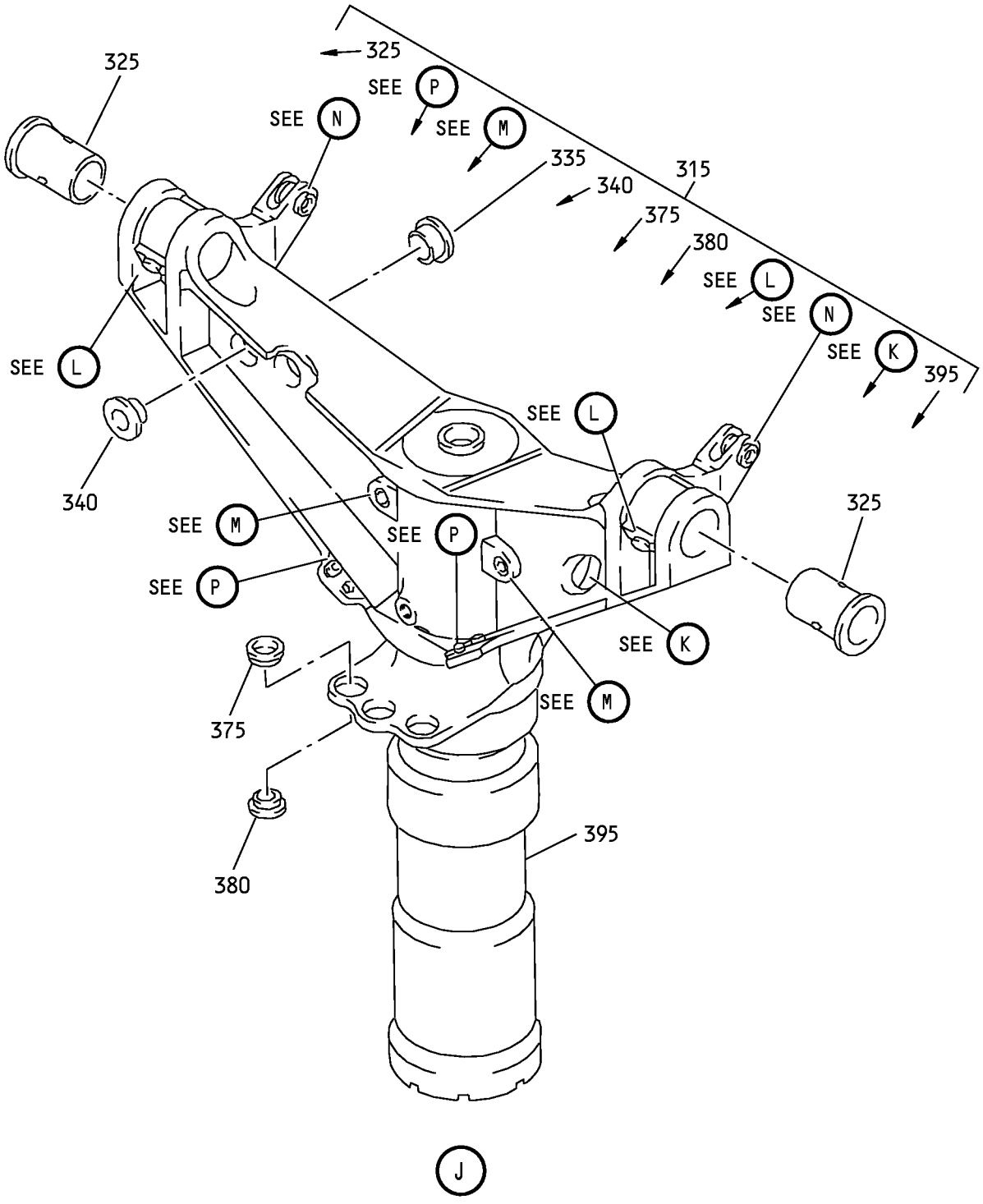


G20526 S0004997981_V3

Nose Landing Gear Component Installation
IPL Figure 1 (Sheet 6 of 15)

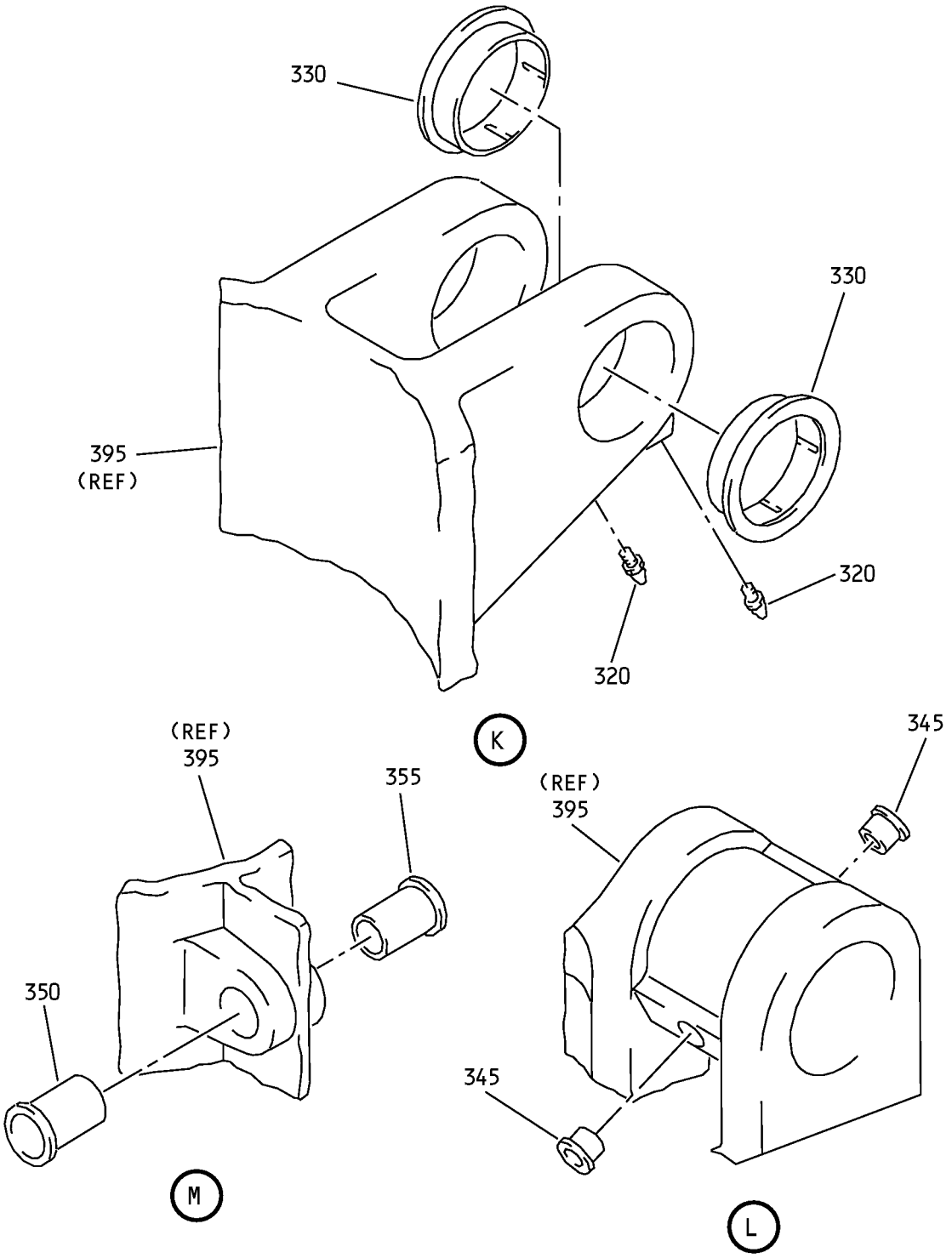


Nose Landing Gear Component Installation
IPL Figure 1 (Sheet 7 of 15)

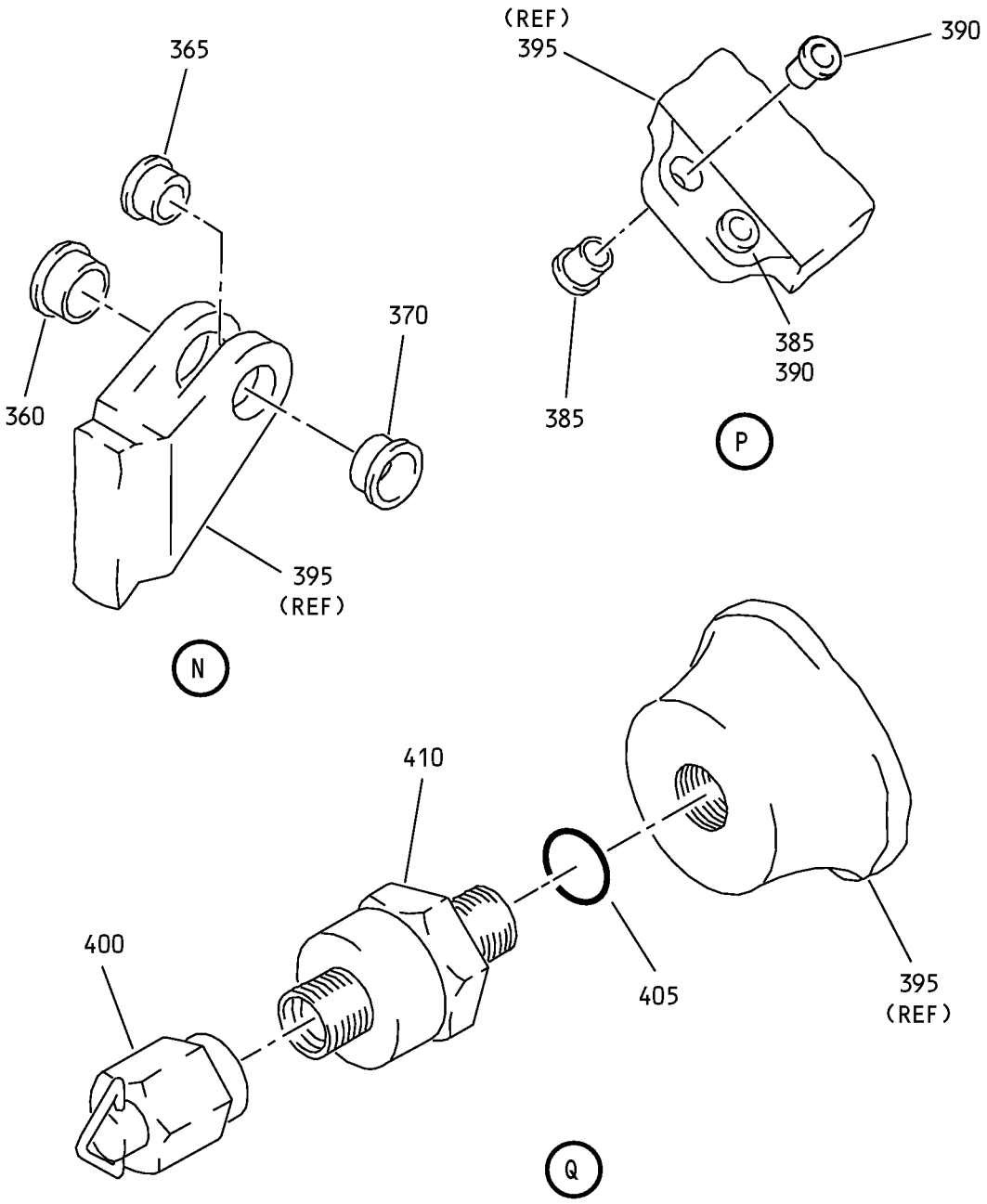


G20555 S0004997983_V3

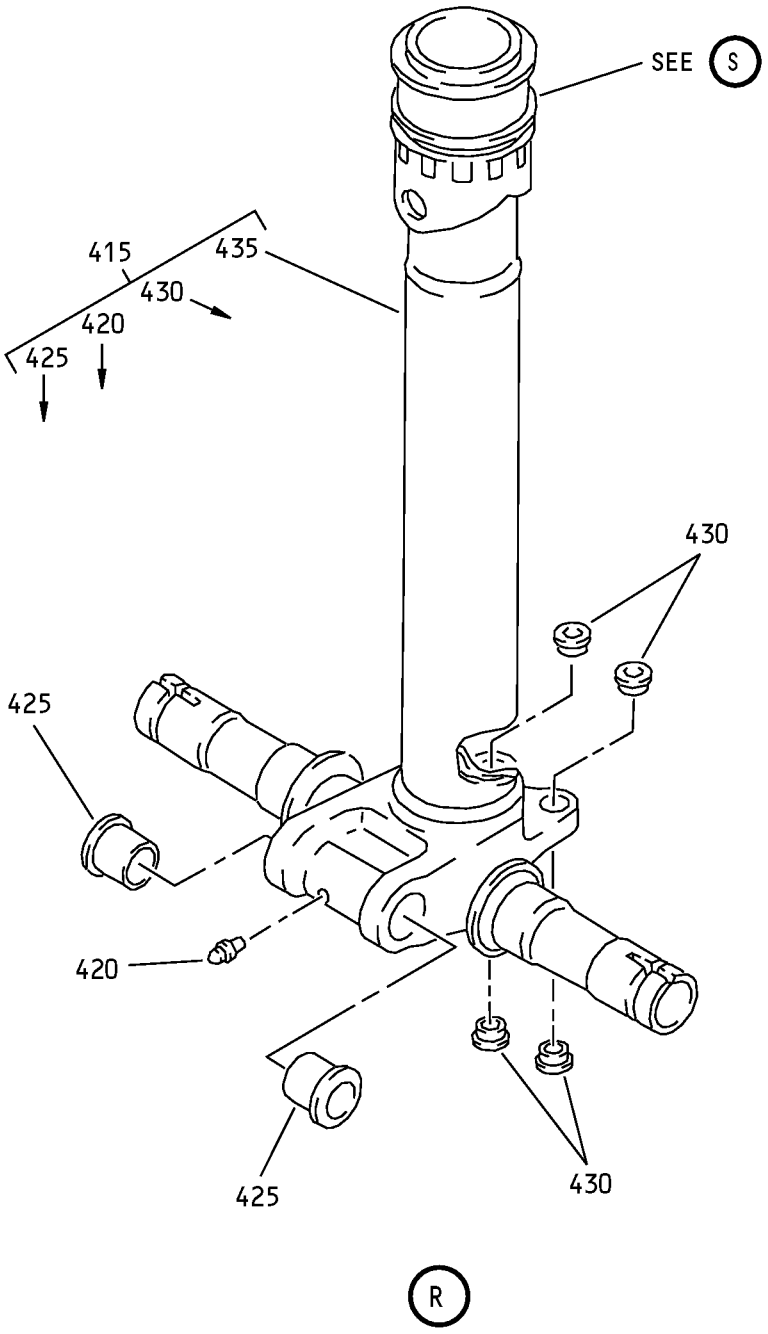
Nose Landing Gear Component Installation
IPL Figure 1 (Sheet 8 of 15)



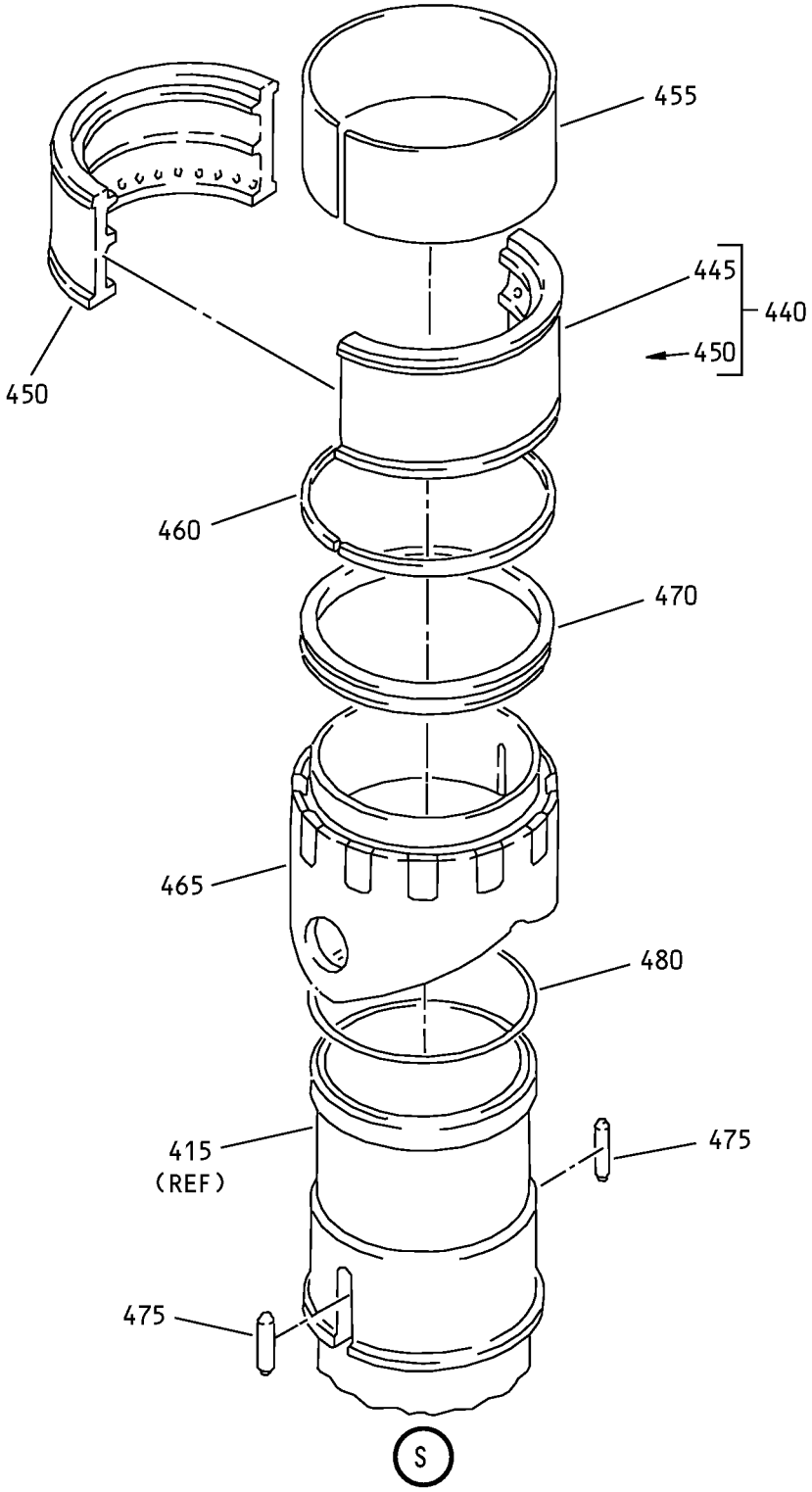
Nose Landing Gear Component Installation
IPL Figure 1 (Sheet 9 of 15)



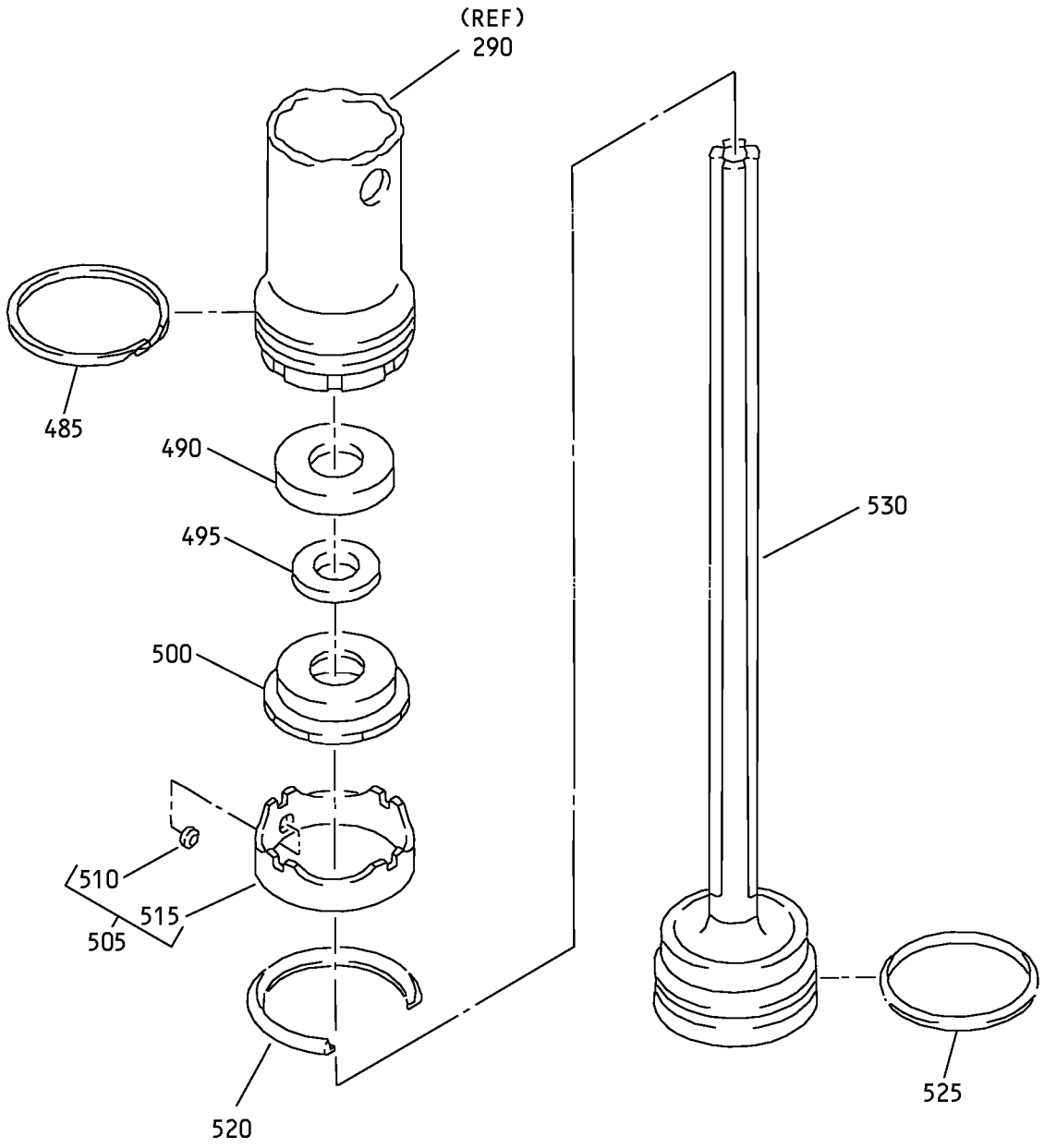
Nose Landing Gear Component Installation
IPL Figure 1 (Sheet 10 of 15)



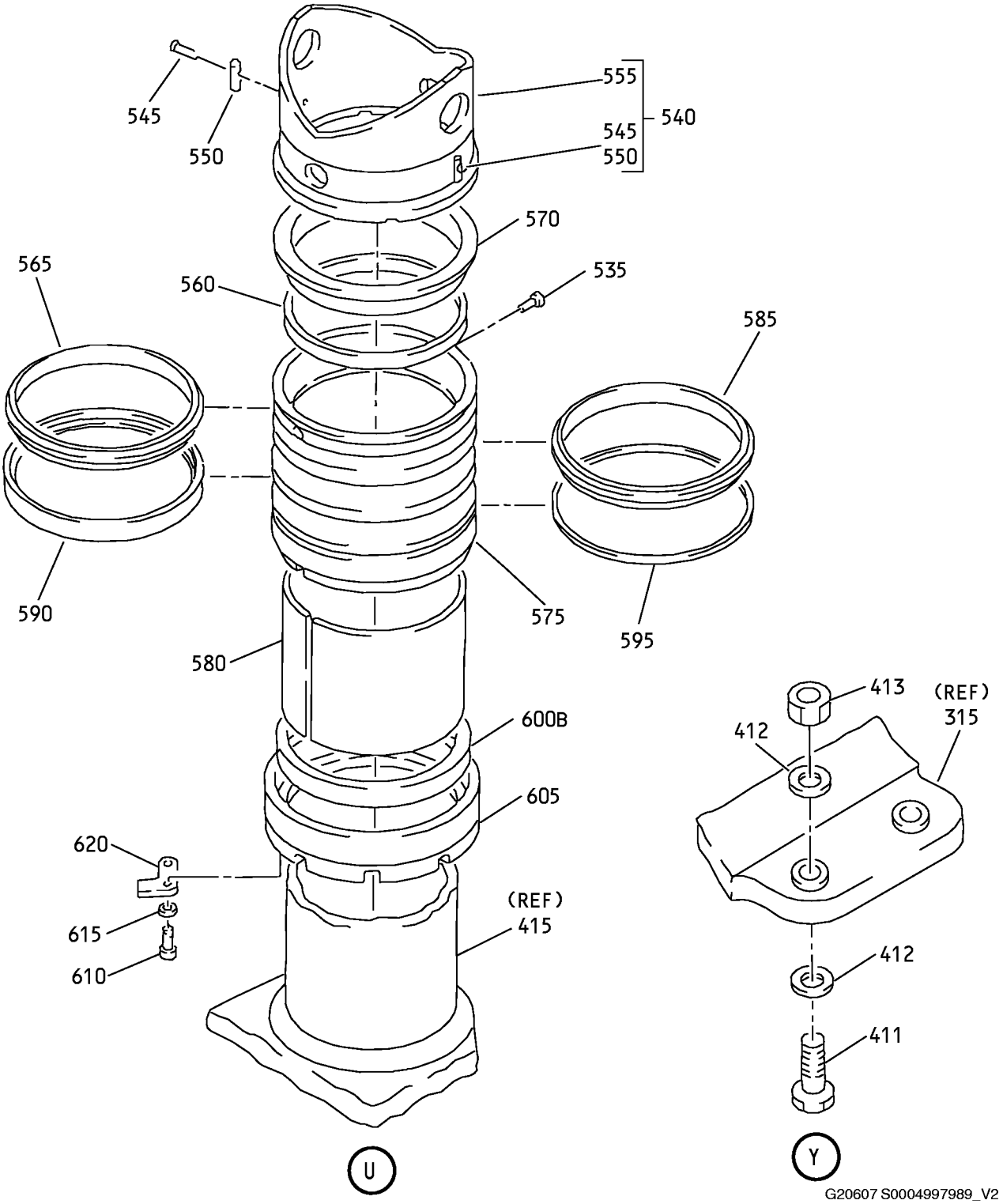
Nose Landing Gear Component Installation
IPL Figure 1 (Sheet 11 of 15)



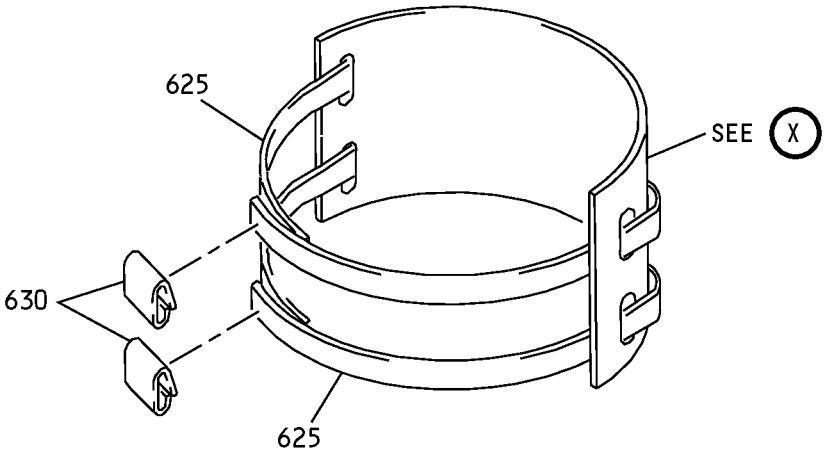
Nose Landing Gear Component Installation
IPL Figure 1 (Sheet 12 of 15)



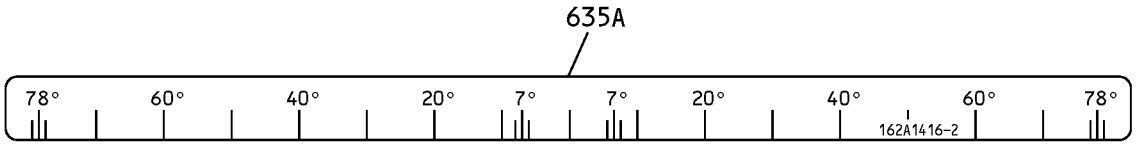
Nose Landing Gear Component Installation
IPL Figure 1 (Sheet 13 of 15)



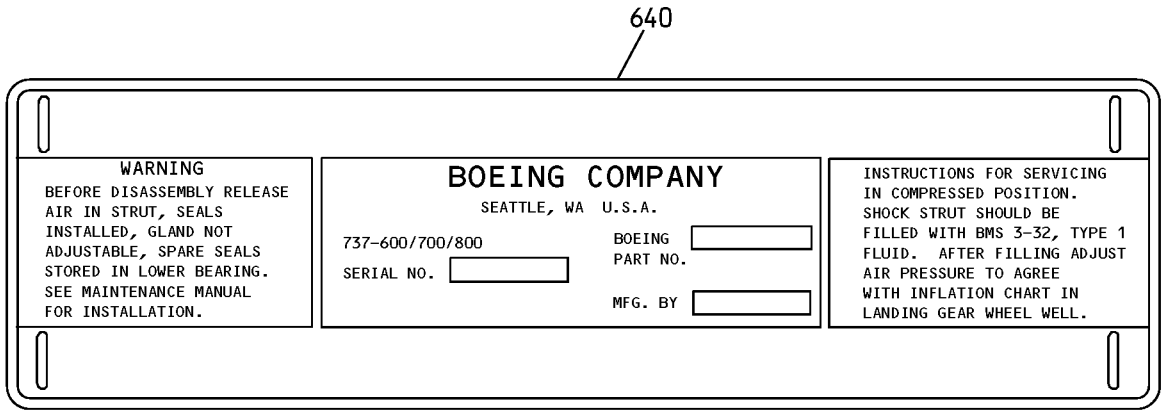
Nose Landing Gear Component Installation
IPL Figure 1 (Sheet 14 of 15)



V



W



X

Nose Landing Gear Component Installation
IPL Figure 1 (Sheet 15 of 15)

FIG/ ITEM	PART NUMBER	AIRLINE PART NUMBER	NOMENCLATURE 1 2 3 4 5 6 7	USAGE CODE	UNITS PER ASSY
1–					
–1A	162A1100-3		DELETED		
–1B	162A1100-4		COMPONENT INSTL-NLG (PRE SB 737-32-1342, R1)	A	RF
–1C	162A1100-5		COMPONENT INSTL-NLG (POST SB 737-32-1342, R1)	B	RF
–1D	162A1100-6		COMPONENT INSTL-NLG (PRE SB 737-32-1342, R1)	C	RF
–1E	162A1100-7		COMPONENT INSTL-NLG (PRE SB 737-32-1362)	D	RF
–1F	162A1100-8		COMPONENT INSTL-NLG (POST SB 737-32-1362)	E	RF
–1G	162A1100-9		COMPONENT INSTL-NLG	F	RF
–1H	MODREF285414		COMPONENT INSTL-NLG (162A1100-10REVA)	G	RF
–1J	MODREF294431		COMPONENT INSTL-NLG (162A1100-10REVB)	H	RF
–1K	MODREF325158		COMPONENT INSTL-NLG (162A1100-10REVC)	J	RF
–1L	MODREF359458		COMPONENT INSTL-NLG (162A1100-12REVA)	K	RF
5	BACP18BC04A10P		. PIN-COTTER		1
6	MS24665-374		. PIN-COTTER (USED WITH ITEM 32A)	A-E	2
–10	162A1162-1		DELETED		
10A	NAS6610D38		. BOLT (OPT ITEM 10B, 10C, 10D)	A-E	2
–10B	NAS6610D42		. BOLT (OPT ITEM 10A, 10C, 10D)	A-E	2
–10C	BACB30NR10DR42		. BOLT (OPT ITEM 10A, 10B, 10D)	A-E	2
–10D	BACB30NM10K38		. BOLT (OPT ITEM 10A, 10B, 10C)	A-E	2
–10E	BACB30LM10-38		. BOLT (OPT ITEM 10F, 10G, 10H, 10J)	F-K	2
–10F	BACB30LM10D38		. BOLT (OPT ITEM 10E, 10G, 10H, 10J)	F-K	2

–Item not Illustrated

FIG/ ITEM	PART NUMBER	AIRLINE PART NUMBER	NOMENCLATURE 1 2 3 4 5 6 7	USAGE CODE	UNITS PER ASSY
1–					
–10G	BACB30NM10K38		. BOLT (OPT ITEM 10E, 10F, 10H, 10J)	F-K	2
–10H	BACB30LM10D42		. BOLT (OPT ITEM 10E, 10F, 10G, 10J)	F-K	2
–10J	BACB30NR10DR42		. BOLT (OPT ITEM 10E, 10F, 10G, 10H)	F-K	2
15	162A1164-1		. BOLT		1
20	BACW10BP12ACU		. WASHER		1
22	BACW10BP10CD		. WASHER		2
25	BACW10BP10APU		. WASHER		1
27	BACW10BP10DP		. WASHER		2
30	BACN11N110CS		. NUT		1
32	102LH9074-10		. NUT (V72962) (SPEC BACN10JC10CD) (OPT H51650-10BAC (V15653)) (OPT 69235-1018CD (V92215)) (OPT BMN4122CPD8-10 (V97928)) (OPT ITEM 32A)	A-E	2
–32A	MS14144L10		. NUT (OPT ITEM 32) (USED WITH ITEMS 10B, 10C)	A-E	2
–32B	102LH9074-10		. NUT (V72962) (SPEC BACN10JC10CD) (OPT H51650-10BAC (V15653)) (OPT 69235-1018CD (V92215)) (OPT BMN4122CPD8-10 (V97928))	F-K	2
–35	162A1160-3		DELETED		
–35A	162A1160-3		DELETED		
35B	162A1160-1		. FITTING ASSY-TOW	A-J	1
–35C	162A1160-1		. FITTING ASSY-TOW (OPT ITEM 35D)	K	1
–35D	162A1160-5		. FITTING ASSY-TOW (OPT ITEM 35C)	K	1
40	1992B1		. . FITTING (V0FKM1)		2
–45	162A1122-5		DELETED		

–Item not Illustrated

FIG/ ITEM	PART NUMBER	AIRLINE PART NUMBER	NOMENCLATURE 1 2 3 4 5 6 7	USAGE CODE	UNITS PER ASSY
1–					
–45A	162A1122-3		DELETED		
45B	162A1122-4		. . BUSHING		8
–47	162A1122-6		DELETED		
50	162A1122-3		. . BUSHING		2
–55	162A1160-4		DELETED		
55A	162A1160-2		. . FITTING (USED ON ITEMS 35B, 35C)		1
–55B	162A1160-6		. . FITTING (USED ON ITEM 35D)		1
60	BACP18BC04C16P		. PIN-COTTER		1
65	BACP18BC03A08P		. PIN-COTTER		1
70	162A1306-1		. PIN (LIFE LIMITED PART)	A-J	1
–70A	162A1306-2		. PIN (LIFE LIMITED PART)	K	1
75	162A1310-1		. PIN (LIFE LIMITED PART)	A-J	1
–75A	162A1310-2		. PIN (LIFE LIMITED PART)	K	1
80	162A1309-2		. WASHER		1
85	162A1309-1		. WASHER		1
90	BACN11N16CD		. NUT		1
95	BACN11N8CS		. NUT		1
100	162A1312-1		. LINK ASSY-TORSION (OPT ITEM 100A)	A-J	1
–100A	162A1313-1		. LINK ASSY-TORSION (OPT ITEM 100)	A-J	1
–100B	162A1312-3		. LINK ASSY-TORSION (OPT ITEM 100C)	K	1
–100C	162A1313-3		. LINK ASSY-TORSION (OPT ITEM 100B)	K	1
105	1728B		. . FITTING-LUBE (V0FKM1)		4
110	162A1304-2		. . BUSHING		4
115	NAS77B4-028P		. . BUSHING		3

–Item not Illustrated

FIG/ ITEM	PART NUMBER	AIRLINE PART NUMBER	NOMENCLATURE 1 2 3 4 5 6 7	USAGE CODE	UNITS PER ASSY
1–					
120	162A1304-1		. . BUSHING		2
125	162A1312-2		. . LINK (LIFE LIMITED PART) (USED ON ITEM 100)		1
–125A	162A1313-2		. . LINK (LIFE LIMITED PART) (USED ON ITEM 100A)		1
–125B	162A1312-4		. . LINK (LIFE LIMITED PART) (USED ON ITEM 100B)		1
–125C	162A1313-4		. . LINK (LIFE LIMITED PART) (USED ON ITEM 100C)		1
130	BACP18BC04C16P		. PIN-COTTER		1
135	162A1306-1		. PIN (LIFE LIMITED PART)	A-J	1
–135A	162A1306-2		. PIN (LIFE LIMITED PART)	K	1
140	162A1309-2		. WASHER		1
145	BACN11N16CD		. NUT		1
150	162A1311-1		. LINK ASSY-TORSION (OPT ITEM 150A)	A-J	1
–150A	162A1315-1		. LINK ASSY-TORSION (OPT ITEM 150)	A-J	1
–150B	162A1311-3		. LINK ASSY-TORSION (OPT ITEM 150C)	K	1
–150C	162A1315-3		. LINK ASSY-TORSION (OPT ITEM 150B)	K	1
155	1728B		. . FITTING-LUBE (V0FKM1)		3
160	162A1304-3		. . BUSHING		2
165	NAS77B4-028P		. . BUSHING		6
170	162A1304-4		. . BUSHING		2
175	162A1311-2		. . LINK (LIFE LIMITED PART) (USED ON ITEM 150)		1

–Item not Illustrated

FIG/ ITEM	PART NUMBER	AIRLINE PART NUMBER	NOMENCLATURE 1 2 3 4 5 6 7	USAGE CODE	UNITS PER ASSY
1–					
–175A	162A1315-2		. . LINK (LIFE LIMITED PART) (USED ON ITEM 150A)		1
175B	162A1311-4		. . LINK (LIFE LIMITED PART) (USED ON ITEM 150B)		1
–175C	162A1315-4		. . LINK (LIFE LIMITED PART) (USED ON ITEM 150C)		1
180	NAS1351N4H8		. SCREW	A-F	2
–180A	BACS12HL4AHU8		. SCREW	G-K	2
185	NAS1149C0432R		. WASHER		2
190	162A1410-1		. LOCKTAB		1
195	162A1406-1		. NUT		1
200	162A1417-3		. PLATE ASSY (OPT ITEM 200A)	A	1
–200A	162A1417-7		. PLATE ASSY (OPT ITEM 200)	A	1
–200B	162A1417-5		. PLATE ASSY	B, D-J	1
–200C	162A1417-7		. PLATE ASSY	C	1
–200D	162A1417-5		DELETED		
–200E	162A1417-9		. PLATE ASSY	K	1
201	BACB28AZ22A072B		. . BUSHING (OPT ITEM 201A) (USED ON ITEMS 200, 200A, 200C)		2
–201A	KJB647100B1		. . BUSHING (V50632) (OPT ITEM 201) (USED ON ITEMS 200, 200A, 200C)		2
–201B	BACB28AZ22A072B		DELETED		
–201C	KJB647100B1		. . BUSHING (V50632) (USED ON ITEMS 200B, 200D, 200E)		2
–202	BACB28AZ22A072B		DELETED		
203	162A1417-4		. . PLATE (USED ON ITEM 200) (LIFE LIMITED PART)		1

FIG/ ITEM	PART NUMBER	AIRLINE PART NUMBER	NOMENCLATURE 1 2 3 4 5 6 7	USAGE CODE	UNITS PER ASSY
1–					
–203A	162A1417-8		. . PLATE (USED ON ITEMS 200A, 200C) (LIFE LIMITED PART)		1
–203B	162A1417-6		. . PLATE (USED ON ITEMS 200B, 200D) (LIFE LIMITED PART)		1
–203C	162A1417-10		. . PLATE (LIFE LIMITED PART)	K	1
205	BACP18BC04A08P		. PIN-COTTER		3
210	162A1415-1		. BOLT		3
215	NAS1149C1063R		. WASHER		3
220	BACN11N110CS		. NUT		3
222	162A1404-3		. COLLAR ASSY-STEERING (PRE SB 737-32-1342R1)	A-J	1
–222A	162A1404-5		. COLLAR ASSY-STEERING	K	1
–222B	162A1420-1		. COLLAR ASSY-STEERING (USED WITH ITEM 255F) (POST SB 737-32-1342R1)	A-C	1
–225	162A1404-1		DELETED		
230	1728B		. . FITTING-LUBE (V0FKM1)		10
235	162A1402-1		. . BUSHING		4
240	162A1122-1		. . BUSHING		2
245	162A1403-1		. . BEARING (USED ON ITEMS 222, 222A)		2
–245A	162A1403-1		. . BEARING (USED ON ITEM 222B)		1
247	162A1422-1		. . BEARING (USED ON ITEM 222B)		1
250	162A1404-4		. . COLLAR	A-J	1
–250A	162A1404-6		. . COLLAR	K	1
255	162A1405-3		. SLEEVE ASSY (OPT ITEM 255A) (PRE SB 737-32-1342R1)	A	1
–255A	162A1405-7		. SLEEVE ASSY (OPT ITEM 255) (PRE SB 737-32-1342R1)	A	1

–Item not Illustrated

FIG/ ITEM	PART NUMBER	AIRLINE PART NUMBER	NOMENCLATURE 1 2 3 4 5 6 7	USAGE CODE	UNITS PER ASSY
1–					
–255B	162A1405-5		. SLEEVE ASSY	B, D-J	1
–255C	162A1405-7		. SLEEVE ASSY (PRE SB 737-32-1342R1)	C	1
–255D	162A1405-5		DELETED		
–255E	162A1405-9		. SLEEVE ASSY	K	1
–255F	162A1421-1		. SLEEVE ASSY (USED WITH ITEM 222B) (POST SB 737-32-1342R1)	A, C	1
260	162A1402-2		. . BUSHING		3
265	BACB28AZ34A063B		. . BUSHING (OPT ITEM 265A) (USED ON ITEMS 255, 255A, 255C)		2
–265A	KJB647100B2		. . BUSHING (V50632) (OPT ITEM 265) (USED ON ITEMS 255, 255A, 255C)		2
–265B	BACB28AZ34A063B		DELETED		
–265C	KJB647100B2		. . BUSHING (V50632) (USED ON ITEMS 255B, 255D, 255E, 255F)		2
270	162A1405-4		. . SLEEVE (LIFE LIMITED PART) (USED ON ITEM 255)	A	1
–270A	162A1405-8		. . SLEEVE (LIFE LIMITED PART) (USED ON ITEMS 255A, 255C)	A, C	1
–270B	162A1405-6		. . SLEEVE (LIFE LIMITED PART) (USED ON ITEMS 255B, 255D)		1
–270C	162A1405-10		. . SLEEVE (LIFE LIMITED PART) (USED ON ITEM 255E)	K	1
–270D	162A1421-2		. . SLEEVE (LIFE LIMITED PART) (USED ON ITEM 255F)	A, C	1
275	MS28889-2		. VALVE		1
280	NAS509-18		. NUT	A-F	1
–280A	BACN11U18CD1		. NUT	G-K	1

–Item not Illustrated

FIG/ ITEM	PART NUMBER	AIRLINE PART NUMBER	NOMENCLATURE 1 2 3 4 5 6 7	USAGE CODE	UNITS PER ASSY
1–					
285	162A1522-1		. SPACER		1
290	162A1507-1		. TUBE-SUPT		1
295	162A1515-1		. NUT		1
300	162A1516-1		. WASHER		1
305	162A1523-1		. RETAINER-SEAL		1
310	7217MTE160P8		. RING ASSY-AGT (V5F573) (OPT ITEM 310A)		1
–310A	S34702-217BAK29		. SEAL (OPT ITEM 310)		1
315	162A1110-1		. CYLINDER ASSY-OUTER	A-C	1
–315A	162A1110-3		. CYLINDER ASSY-OUTER	D-F	1
–315B	162A1110-5		. CYLINDER ASSY-OUTER	G-J	1
–315C	162A1110-7		. CYLINDER ASSY-OUTER	K	1
320	1728B		. . FITTING-LUBE (V0FKM1)		2
325	162A1113-3		. . BUSHING		2
330	162A1113-2		. . BUSHING		4
335	BACB28AT14B062C		. . BUSHING		2
340	BACB28AU12B062C		. . BUSHING		2
345	BACB28AU06B037C		. . BUSHING		4
350	BACB28AU06B075C		. . BUSHING		2
355	BACB28AU04C075C		. . BUSHING		2
360	BACB28AT11B028C		. . BUSHING		2
365	BACB28AP08P028		. . BUSHING		2
370	BACB28AT10D027C		. . BUSHING		2
375	BACB28AU12B042C		. . BUSHING		3
380	BACB28AU14B037C		. . BUSHING		3
385	BACB28AP06P037		. . BUSHING		4
390	BACB28AU04B043C		. . BUSHING		4
395	162A1110-2		. . CYLINDER (LIFE LIMITED PART)	A-C	1

–Item not Illustrated

FIG/ ITEM	PART NUMBER	AIRLINE PART NUMBER	NOMENCLATURE 1 2 3 4 5 6 7	USAGE CODE	UNITS PER ASSY
1–					
–395A	162A1110-4		. . CYLINDER-OUTER (LIFE LIMITED PART)	D-F	1
–395B	162A1110-6		. . CYLINDER-OUTER (LIFE LIMITED PART)	G-J	1
–395C	162A1110-8		. . CYLINDER-OUTER (LIFE LIMITED PART)	K	1
400	US2103-04N		. CAP ASSY (V50808) (SPEC BACC14AD04N) (OPT AP1008-04N (V01673))		1
405	MS28778-5		. PACKING		1
410	2C9342		. VALVE-CHECK (V99240)		1
411	NAS6704D9		. BOLT	A-E	1
–411A	BACB30LM4D9		. BOLT	F-K	1
412	NAS1149E0416P		. WASHER		2
413	BRH10C4D		. NUT (V52828) (SPEC BACN10JC4CD) (OPT T6C428JCD (V11815)) (OPT NS202486-048 (V80539)) (OPT 102LH9075-4W (V72962)) (OPT H51650-4BAC (V15653))		1
415	162A1120-1		. CYLINDER ASSY-INNER	A-E	1
–415A	162A1120-3		. CYLINDER ASSY-INNER	F-J	1
–415B	162A1120-5		. CYLINDER ASSY-INNER	K	1
420	1728B		. . FITTING-LUBE (V0FKM1)		1
425	162A1122-1		. . BUSHING		2
430	162A1122-2		. . BUSHING		4
435	162A1120-2		. . CYLINDER (LIFE LIMITED PART)	A-E	1
–435A	162A1120-4		. . CYLINDER (LIFE LIMITED PART)	F-J	1
–435B	162A1120-6		. . CYLINDER (LIFE LIMITED PART)	K	1
440	162A1511-4		. CARRIER ASSY-UPPER BRG (MATCHED SET)		1

–Item not Illustrated

FIG/ ITEM	PART NUMBER	AIRLINE PART NUMBER	NOMENCLATURE 1 2 3 4 5 6 7	USAGE CODE	UNITS PER ASSY
1–					
445	162A1511-5		. . HALF (MATCHED SET)		1
450	162A1511-6		. . HALF (MATCHED SET)		1
455	162A1527-1		. INSERT		1
460	162A1528-1		. RING		1
465	162A1509-1		. CAM-CENTERING UPR		1
470	162A1512-1		. VALVE		1
475	162A1502-2		. DOWEL		2
480	162A1521-1		. CIRCLIP		1
485	162A1520-1		. RING		1
490	162A1530-1		. HOLDER		1
495	162A1508-1		. PLATE-ORIFICE		1
500	162A1524-1		. NUT-RETAINER		1
505	162A1505-1		. NUT ASSY		1
510	162A1506-1		. . PLUG		1
515	162A1505-2		. . NUT		1
520	162A1514-1		. RING-RETAINER (OPT ITEM 520A, 520B)		1
–520A	162A1514-2		. RING-RETAINER (OPT ITEM 520, 520B)		1
–520B	162A1514-3		. RING-RETAINER (OPT ITEM 520, 520A)		1
525	7232MT160P8		. RING ASSY-AGT (V09257) (OPT ITEM 525A)		1
–525A	S34702-232BAK29		. SEAL (V09257) (OPT ITEM 525)		1
530	162A1503-2		. PIN-METERING		1
535	162A1525-1		. PIN		2
540	162A1501-1		. CAM ASSY-LWR		1
545	MS20427M2-6		. . RIVET		2
550	162A1502-1		. . DOWEL		2

–Item not Illustrated

FIG/ ITEM	PART NUMBER	AIRLINE PART NUMBER	NOMENCLATURE 1 2 3 4 5 6 7	USAGE CODE	UNITS PER ASSY
1–					
555	162A1501-2		. . CAM		1
–560	BCREF12622		. SEAL-RING (V5F573) (265-34300-160-6050)	A-G	1
–560A	BCREF50824		. SEAL-RING (V5F573) (265-34301-161-6050)	H, J, K	1
565	7348MT160P8		. RING ASSY-AGT (V5F573) (OPT ITEM 565B)		1
–565A	S34702-348BAL29		DELETED		
–565B	S34702-348BAK29		. SEAL (V09257) (OPT ITEM 565)		1
570	162A1529-1		. RETAINER-SEAL (PRE SB 737-32-1362)	A-D	1
–570A	162A1529-2		. RETAINER-SEAL	E-K	1
–570B	162A1529-2		. RETAINER-SEAL (POST SB 737-32-1362)	A-C	1
575	162A1510-1		. CARRIER-LWR BRG		1
580	162A1526-1		. INSERT		1
585	7348MT160		. SEAL-ELASTOMERIC (V5F573) (OPT ITEM 585A)	A-H	1
–585A	S34702-348BAK		. SEAL (V09257) (OPT ITEM 585)	A-H	1
–585B	7348MT160		. SEAL-ELASTOMERIC (V5F573) (OPT ITEM 585C)	J, K	1
–585C	S34706-348BAK		. SEAL (V09257) (OPT ITEM 585B)	J, K	1
590	BCREF12623		. RING ASSY-T (V5F573) (295-34300-965-5010)		1
595	P3001-246P096		. SEAL ASSY (V5F573) (OPT ITEM 595A)	A-H	1

–Item not Illustrated

FIG/ ITEM	PART NUMBER	AIRLINE PART NUMBER	NOMENCLATURE 1 2 3 4 5 6 7	USAGE CODE	UNITS PER ASSY
1–					
–595A	AS1660-0271		. SEAL (V5F573) (OPT ITEM 595)	A-H	1
–595C	AS1660-0271		. SEAL (V5F573) (OPT ITEM 595D, 595E)	J, K	1
–595D	P3001-246P096		. SEAL ASSY (V5F573) (OPT ITEM 595C, 595E)	J, K	1
–595E	352-24601-330G		. SEAL ASSY-RSA PISTON TYPE (V5F573) (OPT ITEM 595C, 595D)	J, K	1
–600	353-34300-312G		DELETED		
–600A	S37967-343G99		DELETED		
600B	353-34300-330G		. SCRAPER (V5F573) (SPEC S37967-343G99) (OPT 353-34300-312G (V5F573))		1
605	162A1513-1		. NUT-GLAND		1
610	NAS1351N3H8		. SCREW	A-F	2
–610A	BACS12HL3AHU8		. SCREW	G-K	2
615	NAS1149C0332R		. WASHER		2
620	162A1519-1		. PLATE-LOCK		1
625	BACS38E8-13		. STRAP		2
630	44PB134-4441		. SEAL-STRAP (V00266) (SPEC BACS11AK2)		2
–635	162A1416-1		DELETED		
635A	162A1416-2		. MARKER	A, C	1
–635B	162A1416-3		. MARKER	D-K	1
–635C	162A1416-2		. MARKER (OPT ITEM 635D)	B	1
–635D	162A1416-3		. MARKER (OPT ITEM 635C)	B	1
640	162A1518-1		. NAMEPLATE (PRE SB 737-32-1362)	A, C	1

–Item not Illustrated

FIG/ ITEM	PART NUMBER	AIRLINE PART NUMBER	NOMENCLATURE 1 2 3 4 5 6 7	USAGE CODE	UNITS PER ASSY
1–					
–640A	162A1518-1		. NAMEPLATE (OPT ITEM 640B) (PRE SB 737-32-1362)	B	1
–640B	162A1518-2		. NAMEPLATE (OPT ITEM 640A)	B	1
–640C	162A1518-2		. NAMEPLATE	D-K	1
–640D	162A1518-1		. NAMEPLATE (POST SB 737-32-1362) (OPT ITEM 640E)	A, C	1
–640E	162A1518-2		. NAMEPLATE (POST SB 737-32-1362) (OPT ITEM 640D)	A, C	1

–Item not Illustrated