TO: ALL HOLDERS OF MAIN LANDING GEAR TRUCK POSITIONER ACTUATOR ASSEMBLY
COMPONENT MAINTENANCE MANUAL 32-32-66

REVISION NO. 2 DATED JUL 01/03

HIGHLIGHTS

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

CHAPTER/SECTION AND PAGE NO.	DESCRIPTION OF CHANGE
CONTENTS	Added clarifications and updated callouts.
1	
101-102	
303	
401	
101,104	Added test fixture callouts.
901	

BOEING

COMPONENT
MAINTENANCE MANUAL

TRUCK POSITIONER ACTUATOR ASSEMBLY

PART NUMBER 273T6151-1

COMPONENT MAINTENANCE MANUAL
WITH
ILLUSTRATED PARTS LIST

K10335

REVISION RECORD

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

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

K10336

TEMPORARY REVISION AND SERVICE BULLETIN RECORD

BOEING SERVICE BULLETIN	BOEING TEMPORARY REVISION	OTHER DIRECTIVE	DATE OF INCORPORATION INTO MANUAL

PAGE	DATE	CODE
32-32-66		
TITLE PAGE		
1	JUL 01/99	01
2	BLANK	
REVISION RECORD		
1	JUL 01/99	01
2	BLANK	
TR & SB RECORD		
1	JUL 01/99	01
2	BLANK	
LIST OF EFFECTIVE PAGES		
*1	JUL 01/03	01
THRU LAST PAGE		
CONTENTS		
*1	JUL 01/03	01.1
2	BLANK	
INTRODUCTION		
1	JUL 01/99	01
2	BLANK	
DESCRIPTION & OPERATION		
1	NOV 01/99	01.1
2	BLANK	
TESTING & FAULT ISOLATION		
*101	JUL 01/03	01.1
*102	JUL 01/03	01.1
*103	JUL 01/03	01.101
*104	JUL 01/03	01.1
105	NOV 01/99	01.1
106	BLANK	
DISASSEMBLY		
301	NOV 01/99	01.1
302	NOV 01/99	01.1
*303	JUL 01/03	01.1
DISASSEMBLY		CONT.
304	BLANK	
CLEANING		
*401	JUL 01/03	01.1
402	BLANK	
CHECK		
501	NOV 01/99	01.1
502	NOV 01/99	01.1
REPAIR-GENERAL		
601	JUL 01/99	01
602	JUL 01/99	01
REPAIR 1-1		
601	JUL 01/99	01
602	NOV 01/99	01.1
REPAIR 2-1		
601	JUL 01/99	01
602	NOV 01/99	01.1
603	JUL 01/99	01
604	JUL 01/99	01
REPAIR 2-2		
601	JUL 01/99	01
602	JUL 01/99	01
603	JUL 01/99	01
604	JUL 01/99	01
605	NOV 01/99	01.1
606	NOV 01/99	01.1
REPAIR 3-1		
601	JUL 01/99	01
602	JUL 01/99	01
REPAIR 4-1		
601	JUL 01/99	01
602	NOV 01/99	01.1
603	NOV 01/99	01.1
604	NOV 01/99	01.1
605	NOV 01/99	01.1

* = REVISED, ADDED OR DELETED

* = REVISED, ADDED OR DELETED

TABLE OF CONTENTS

INTRODUCTION

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

This manual is divided into separate sections:

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

Refer to the Table of Contents for the page location of applicable sections.

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

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

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

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

Verification:

MAIN LANDING GEAR TRUCK POSITIONER ACTUATOR ASSEMBLY

DESCRIPTION AND OPERATION

1. Description

   A. The main landing gear truck positioner actuator assembly consists of a manifold assembly, barrel assembly, rod end, split ball bearing, external and internal piston rods. Hydraulic pressure applied to the pressure port moves the actuator to the stowed position and tilting the truck for gear retraction.

2. Operation

   A. The main landing gear truck positioner actuator assembly has an 'UP' and a 'DOWN' hydraulic pressure port. When either port is pressurized, the actuator moves to the stow position (Forward tires down about 16°) unless there is an external resisting force such as airplane on the ground. The actuator assembly has an internal relief valve that dumps hydraulic fluid to the return system allowing the actuator to extend and retract.

3. Leading Particulars (Approximate)

   A. Length -- 29.0 inches (Extended)
   21.0 inches (Retracted)
   26.7 inches (Stowed)

   B. Width -- 4.5 inches

   C. Height -- 6.25 inches

   D. Weight -- 27.8 pounds (Dry)

   E. Proof Pressure -- 4500 psi

TESTING AND FAULT ISOLATION

1. General

   A. This procedure has the data necessary to do a test of the mechanism after an overhaul or for fault isolation.

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

   C. Refer to IPL Fig. 1 for item numbers.

2. Test Conditions

   NOTE: Equivalent substitutes may be used.

   A. Ambient Conditions During Test

      (1) Temperature -- 60 - 100°F

      (2) Pressure -- 13 – 17 psia

      (3) Relative Humidity -- 10 - 90 percent

   B. Measurement Tolerance

      (1) Temperature -- ±4°F

      (2) Pressure -- ±2 percent

      (3) Hydraulic Flow -- ±2 percent

3. Equipment and Materials

   A. Hydraulic test stand to supply BMS 3-11, type 4 hydraulic fluid at a variable pressure of 0 to 4500 psi, and fluid filtered continuously by a filter not larger than to 15 microns absolute. The temperature of the hydraulic fluid must be 60-120°F.

   B. Test Fixture -- A32121-1 equipment

   C. Fittings -- To fit the up, down and return ports

   D. Lockwire -- MS20995C32 (SOPM 20-60-04)

   E. Hydraulic Fluid -- BMS 3-11, type 4 (SOPM 20-60-03)

4. General Procedure

A. Before the test, bleed all air from the actuator.

5. Test

WARNING: DO NOT APPLY COMPRESSED AIR TO THE PORTS AT ANY TIME.

CAUTION: DO NOT CYCLE THE UNIT AT PROOF PRESSURE.

A. Install the actuator in the test fixture.

B. Low Pressure Leakage Test

(1) Before doing this test, clean around the excluder (200) in order to detect any leakage that may occur. With the up port open (see Fig. 101), pressurize the down port to 3 to 7 psi and hold for three minutes. There must be no external leakage, except up to 0.5 milliliters is allowed from the up port. Record the measured value.

C. External Leakage Test

(1) With the up port connected to the return port, pressurize the down port (see Fig. 101) to 3000 psi. Use an external loading device to cycle the unit from the stowed position to within 0.50 inch from the fully retracted position and then to within 0.50 inch from the fully extended position, then back to the stowed position. The average linear rate must be 2 inches per second ±0.50 inch per second. Repeat this procedure for a minimum of 25 cycles. Leakage from the piston rod seal (205) must not exceed one drop during the last 25 cycles. Record the measured value.

D. Actuator Length Verification Test

(1) Verify the actuator lengths for the extended, stowed and the retracted positions as defined in Fig. 101 along with the following instructions. With the actuator depressurized, extend the actuator to the maximum length. Slowly increase the pressure to the down port until smooth, sustained motion is achieved. The piston rod (260) shall retract to the stowed position with no tendency to stick or bind at a maximum pressure of 150 psi. There must be no external leakage. Repeat the test with the actuator in the retracted position. The piston rod must extend to the stowed position. There must be no external leakage.

E. Post Assembly Relief Valve Test

(1) Connect a pressure line to the bleed port (see Fig. 101) of the actuator manifold. The down and the up port fittings must be uncapped. Apply 50 psi through the bleed port and measure the leakage at the down port and the up port. The leakage must not be greater than 2 drops per minute at either port. Slowly increase the pressure until the flow at the up port is 30 milliliters per minute. The pressure at which this occurs must not be greater than 3650 psi. The leakage at the down port must not be greater than 2 drops per minute. Continue increasing the pressure until the flow is greater than 10 gallons per minute, then decrease the pressure until the flow is less than 15 milliliters per minute. The pressure at which this occurs must not be less than 3200 psi. Record the measured value.

F. Rate Control Test

(1) With the actuator in the fully retracted position, apply 750 psi to the up port with the down port uncapped. The actuator must extend to the stowed position in 2.5 seconds ±0.5 seconds.

G. Proof Pressure Test

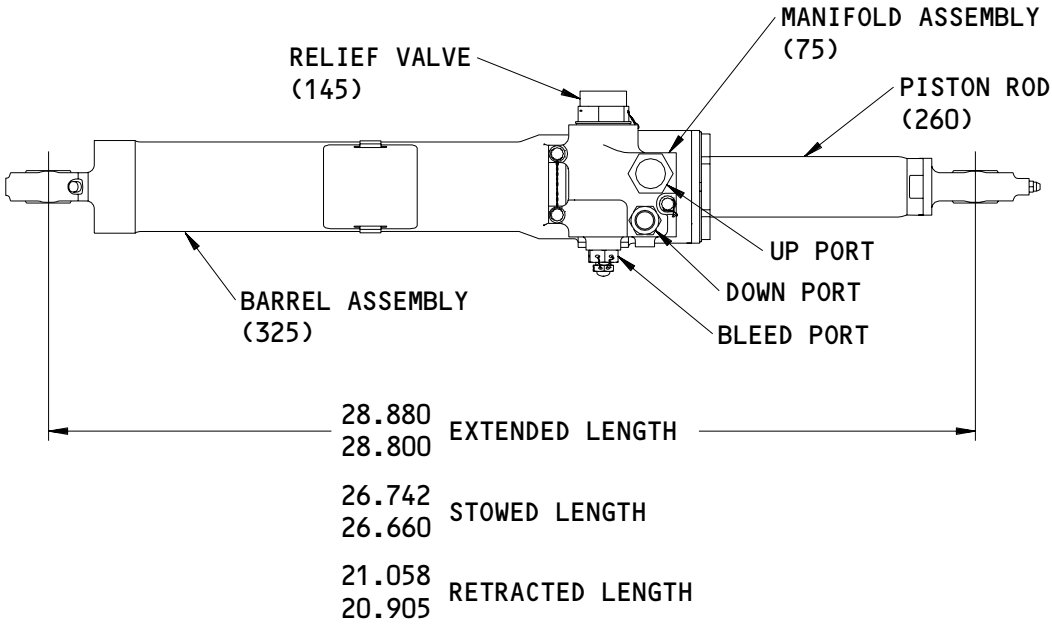
(1) With the actuator in the stowed position and the down port capped, apply 4500 psi to the up port at a maximum pressure rise rate of 3500 psi per second. Hold the pressure for two minutes minimum. There must be no external leakage, signs of permanent deformation or damage to the unit.

H. Leakage Check for Head End Seals and Inner Piston Seals

(1) With the actuator unpressurized, put the actuator in the vertical position with the rod end (180) up. Remove the screw (315) from the head end of the actuator barrel and check for any leakage. There must be no leakage after three minutes minimum.

I. Remove the actuator from the test fixture.

TROUBLE	PROBABLE CAUSE	CORRECTION
Internal binding, sticking or erratic piston rod (260) and connecting rod piston (285) movement, see paragraph D and F.	Defective: Check Valve (50, 100) Restrictor (115) Excluder Scrapper (200) Seal (205, 240, 270) Bearing Ring (225) Glyd-Ring Scraper (230, 275) Piston Rod (260) Connecting Rod (285) Retainer Ring (300) Piston (305) Barrel (325)	Disassemble and replace defective parts. Bleed all air from system.
External leakage exceeds limit, see paragraph B, C, D, G and H.	Defective: Packing (35, 45, 60, 65, 125, 215, 290) Seal (205, 240, 270)	Disassemble and replace defective parts. Bleed all air from system.
Internal leakage exceeds limit, see paragraph E.	Defective: Packing (135) Check valve (50, 100) Relief valve (145) External leakage	Disassemble and replace defective parts. Bleed all air from system.



Testing and Fault Isolation
Figure 101

K11005

DISASSEMBLY

1. General

A. This procedure has the data necessary to disassemble the truck actuator assembly.

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

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

D. Refer to IPL Fig. 1 for item numbers.

E. Refer to TESTING AND FAULT ISOLATION to establish condition or probable cause of any malfunction and to determine the extent of disassembly and repair.

2. Disassembly

A. References

B. Procedure

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

(2) Use standard industry procedures and the steps shown below to disassemble this component.

(3) Parts Replacement (IPL Fig. 1)

NOTE: The following parts are recommended for replacement. Unless otherwise specified, actual replacement of parts may be based on in-service experience.

NOTE: Do not remove the nameplate (350), the check valve (100), the restrictor (115), the plugs (80, 90, 105), the pins (85, 95, 110), lub fittings (160, 320) unless otherwise necessary for repair or replacement.

(a) Packings (25, 35, 45, 60, 65, 125, 135, 215, 235, 280, 290)

(b) Backup Rings (70, 130, 140, 210, 220, 295)

(c) Seals (205, 240, 270)

(d) Excluder (200)

(e) Glydring scraper (230, 275)

(f) Cuplock washer (150, 170, 190, 250)

(g) Connecting rod nut (310)

(h) Piston ring (245, 265)

(i) Retaining ring (300)

(4) Remove all lockwire.

(5) Remove the bleeder valve assembly (15) from the manifold assembly (75). Drain the hydraulic fluid from the actuator, by tipping the actuator so the fluid drains out the bleed port.

(a) Remove the valve (30) and the bolt (20) from the adapter (40).

(b) Remove the packings (25, 35, 45) from the bolt (20), the valve (30) and the adapter (40).

(6) Remove the check valve (50) and the union (55) from the manifold assembly (75).

(a) Remove the packings (45, 60) from the valve and the union.

(7) Remove the relief valve assembly (145) from the manifold assembly (75).

(a) Remove the packings (125, 135) and the backup rings (130, 140) from the relief valve.

(8) Remove the bolts (5) and the washers (10).

(9) Remove the manifold assembly (75) from the barrel assembly (325). The packing (65) and the backup rings (70) will disassemble from the barrel assembly along with the manifold assembly.

(10) Rod end (180) removal and disassembly:

(a) Pry up the staked (deformed) part of the cuplock washer (150) from the two slots in the piston rod (260).

(b) Remove the rod end (180), and the cuplock washer (150).

(c) Remove the vent retainer (165), the cuplock washer (170) and the vent valve (175).

(d) Remove the split ball bearing (185).

(11) Pry up the staked (deformed) part of the cuplock washer (190) from the slots in the end gland (195). Loosen the end gland and remove it and the cuplock washer over and off of the piston rod (260).

(12) Remove the seal (205), the packing (215), the backup rings (210, 220) and the excluder (200) from the end gland (195).

CAUTION: WHEN PULLING THE CONNECTING ROD (285) AND THE PISTON ROD (260) OUT OF THE BARREL ASSEMBLY (325), THE BEARING RING (225) WILL BE FREE TO FALL OFF OF THE PISTON ROD. THEREFORE, BE PREPARED TO CATCH THE BEARING RING SO THEY ARE NOT DAMAGED.

(13) Remove the screw (315) and pull the piston rod (260) and the connecting rod out of the barrel assembly (325). The bearing ring (225) will fall out while this is done.

(14) Pry up the staked (deformed) part of the cuplock washer (250) from the slots in the piston nut (255). Remove the floating piston nut and the cuplock washer from the piston rod (260). At this time in the disassembly, the connecting rod (285) and the piston rod (260) will come apart.

(15) Remove the glydring scraper (230), the packing (235), the seal (240) and piston ring (245).

(16) Remove the connecting rod nut (310) and throw it away.

(17) Push the connecting rod up through the floating piston (305) to expose the retaining rings (300). Remove the retaining rings. Remove the floating piston off of the connecting rod.

(18) Remove the backup ring (295), the packing (280, 290), the seal (270), the glydring scraper (275) and the piston ring (265).

(19) Remove the split ball bearing (185).

CLEANING

1. General

   A. This procedure has the data necessary to clean the truck actuator assembly.

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

   C. Refer to IPL Fig. 1 for item numbers.

2. Cleaning

   A. References

      (1) SOPM 20-30-01, Cleaning and Relubricating Bearings

      (2) SOPM 20-30-03, General Cleaning Procedures

   B. Procedure

      (1) Clean the bearings (185) by the instructions in SOPM 20-30-01.

      (2) Clean other parts by standard industry procedures and the instructions in SOPM 20-30-03.

CHECK

1. General

   A. This procedure has the data necessary to find defects in the material of the specified parts.

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

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

   D. Refer to IPL Fig. 1 for item numbers.

2. Check

   A. References

      (1) SOPM 20-20-01, Magnetic Particle Inspection

      (2) SOPM 20-20-02, Penetrant Methods of Inspection

   B. Procedure

      (1) Use standard industry procedures to do a visual check of all the parts for defects. Do the penetrant or magnetic particle check if the visual check shows possible damage or if you suspect possible damage on the parts listed below:

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

         (a) Manifold (120)

         (b) Vent retainer (165)

         (c) Rod end (180)

         (d) Piston nut (255)

         (e) Piston rod (260)

         (f) Connecting rod (285)

         (g) Floating piston (305)

         (h) Barrel assembly (325)

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

(a) Gland end (195)

(b) Bearing rings (225)

REPAIR - GENERAL

1. General

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

PART NUMBER	NAME	REPAIR
---	REFINISH OF OTHER PARTS	1-1
273T6152	BARREL ASSEMBLY	2-1, 2-2
273T6153	MANIFOLD	3-1
273T6154	PISTON ROD	4-1
273T6158	FLOATING PISTON	5-1
273T6159	CONNECTING ROD	6-1
273T6163	ROD END ASSEMBLY	7-1, 7-2

2. Dimensioning Symbols

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

—	STRAIGHTNESS
▱	FLATNESS
⊥	PERPENDICULARITY (OR SQUARENESS)
//	PARALLELISM
○	ROUNDNESS
⌭	CYLINDRICITY
⌒	PROFILE OF A LINE
⌓	PROFILE OF A SURFACE
◎	CONCENTRICITY
⌯	SYMMETRY
∠	ANGULARITY
↗	RUNOUT
↗↗	TOTAL RUNOUT
⌴	COUNTERBORE OR SPOTFACE
⌵	COUNTERSINK
⌖	THEORETICAL EXACT POSITION OF A FEATURE (TRUE POSITION)
∅	DIAMETER
S ∅	SPHERICAL DIAMETER
R	RADIUS
SR	SPHERICAL RADIUS
()	REFERENCE
BASIC (BSC) OR [DIM]	A THEORETICALLY EXACT DIMENSION USED TO DESCRIBE SIZE, SHAPE OR LOCATION OF A FEATURE. FROM THIS FEATURE PERMISSIBLE VARIATIONS ARE ESTABLISHED BY TOLERANCES ON OTHER DIMENSIONS OR NOTES.
[-A-]	DATUM
Ⓜ	MAXIMUM MATERIAL CONDITION (MMC)
Ⓛ	LEAST MATERIAL CONDITION (LMC)
Ⓢ	REGARDLESS OF FEATURE SIZE (RFS)
Ⓟ	PROJECTED TOLERANCE ZONE
FIM	FULL INDICATOR MOVEMENT

EXAMPLES

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

True Position Dimensioning Symbols
Figure 601

K10337

REFINISH OF OTHER PARTS - REPAIR 1-1

1. General

   A. This procedure has the data necessary to refinish the parts which are not given in the specified repairs.

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

   C. Refer to IPL Fig. 1 for item numbers.

2. Refinish of Other Parts

   A. General

      (1) Instructions for the repair of the parts listed in Table 601 are for repair of the initial finish.

   B. References

      (1) SOPM 20-20-01, Magnetic Particle Inspection

      (2) SOPM 20-30-02, Stripping of Protective Finishes

      (3) SOPM 20-30-03, General Cleaning Procedures

      (4) SOPM 20-41-01, Decoding Table for Boeing Finish Codes

      (5) SOPM 20-41-02, Application of Chemical and Solvent Resistant Finishes

      (6) SOPM 20-60-02, Finishing Materials

   C. Procedure

IPL FIG. & ITEM	MATERIAL	FINISH
IPL Fig. 1		
Vent retainer (165)	CRES 15-5 PH 140-160 ksi	Passivate (F-17.25).
Piston nut (255)	CRES 15-5 PH 180-200 ksi	Passivate (F-17.25).

Refinish Details
Table 601

BARREL ASSEMBLY - REPAIR 2-1

273T6152-1

1. General

A. This procedure has the data necessary to replace the bearing (185) in the barrel assembly (325).

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

C. Refer to the REPAIR - GENERAL (32-32-66/601, REPAIR - GENERAL) for the Standard True Position Dimensioning Symbols shown in the repair.

D. Refer to IPL Fig. 1 for item numbers.

2. Bearing Replacement

A. Consumable Materials

NOTE: Equivalent material can be used.

(1) D00633 Grease -- BMS 3-33 (SOPM 20-60-03)

B. References

(1) SOPM 20-60-03, Lubricants

C. Procedure

(1) Remove the bearing (185) from the barrel assembly (325).

(2) Check the inner diameter of the barrel assembly (325) where it touches the outer diameter of the bearing (185) for corrosion and service wear.

(a) If there is corrosion, then refer to REPAIR 2-2 for repair.

(b) If the actual measured service wear is not within the acceptable range shown in the Fits and Clearances section, then refer to REPAIR 2-2 for repair.

(3) Apply a light coat of BMS 3-33 grease to the bearing (185) inner and outer diameter before installing it into the barrel (340).

(4) Install the bearing (185) into the barrel (340).

3. Lube Fitting Replacement

A. Procedure

(1) Remove the lube fitting (320).

(2) Install the lube fitting (320). Torque the lube fitting 20-30 pound-inches.

4. Nameplate and Strap Replacement

CAUTION: THE NAMEPLATE STRAP (345) MAY BE USED ONLY ONE TIME. DO NOT REUSE THE EXISTING STRAP WHEN INSTALLING A NEW NAMEPLATE (350) OR WHEN REINSTALLING THE EXISTING NAMEPLATE. THE STRAP AND THE NAMEPLATE MUST BE TIGHT ON THE MOUNTING SURFACE.

A. Replaceable Items

(1) Nameplate strap (345)

B. Consumable Materials

NOTE: Equivalent material can be used.

(1) A00436 Sealant -- BMS 3-26 (SOPM 20-60-02)

C. References

(1) SOPM 20-60-02, Finishing Materials

D. Procedure

(1) Before installing the nameplate strap (345), steel stamp the strap with: the assembly dash number, the serial number, the manufacture company, the manufacture data and cage number.

(2) Bend the nameplate (350) to a radius slightly smaller than the barrel (340) radius.

(3) Bend the corners of the nameplate slightly toward the mounting surface.

(4) Bend one end of the nameplate strap (345) and insert the strap through one of the holes on the nameplate (350) (see Fig. 601).

(5) Apply BMS 3-27 sealant under the entire surface area of the nameplate (350) and the nameplate strap (345).

(6) Assemble the nameplate (350) and the attached nameplate strap (345) around the barrel (340).

(7) Hold the nameplate (350) on the barrel (340) and push the loose end of the nameplate strap (345) through the remaining hole on the nameplate.

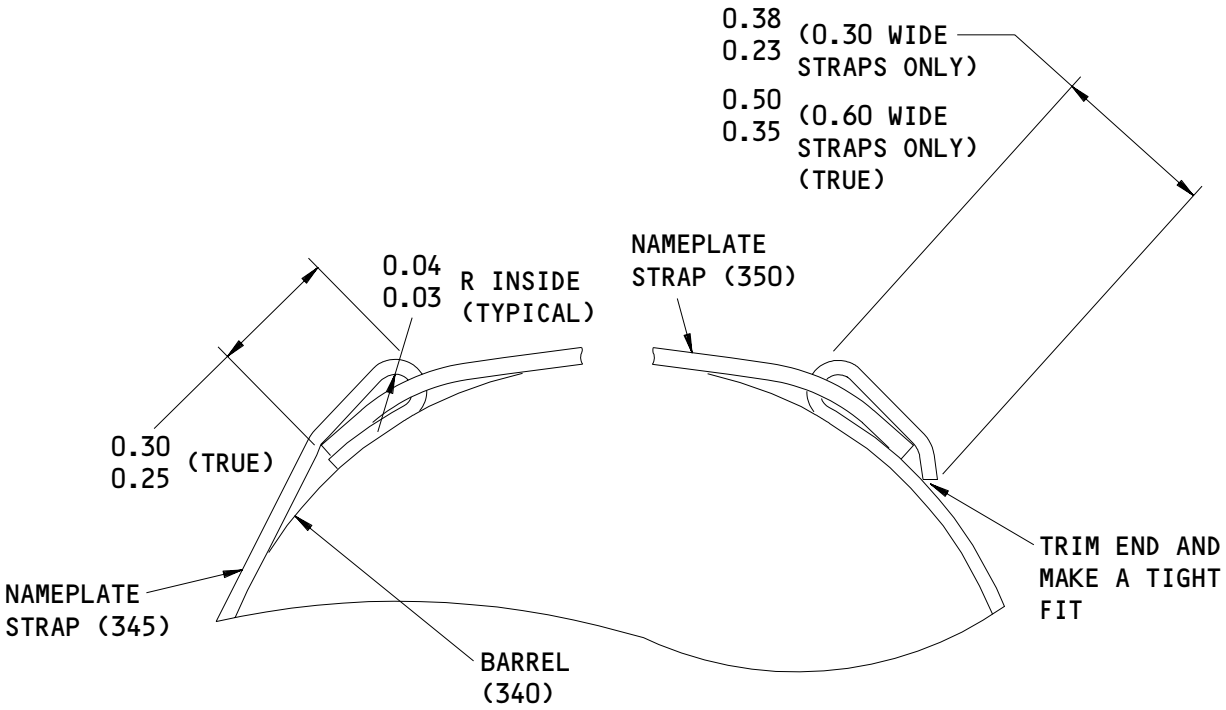
(8) Slightly bend the nameplate strap (345) while pulling on the nameplate strap to obtain pretension of the strap and nameplate assembly.

WARNING: BE CAREFUL TO NOT TEAR THE NAMEPLATE (350) BY APPLYING TOO MUCH PRETENTION TO THE STRAP.

(9) While maintaining the pretension, use a suitable tool to make the final bend and to apply more pretention to the nameplate and strap assembly.

(10) Cut the nameplate strap (345) to the dimensions shown in Fig. 601.

(11) Bend the nameplate strap (345) end down over the edge of the nameplate (350). Use a suitable softnose hammer to obtain a strap installation that closely conforms to Fig. 601.



Nameplate and Strap Replacement
Figure 601

K11029

BARREL ASSEMBLY - REPAIR 2-2

273T6152-2

1. General

A. This procedure has the data necessary to repair and refinish the barrel (340).

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

C. Refer to the REPAIR - GENERAL (32-32-66/601, REPAIR - GENERAL) for the Standard True Position Dimensioning Symbols shown in the repair.

D. Refer to IPL Fig. 1 for item numbers.

E. General repair details:

(1)	Material:	CRES 15-5 PH 180-200 ksi
(2)	Shot peen:	Intensity -- 0.005A-0.010A Shot number -- 170-460 Coverage -- 2.0

2. Bearing Hole Repair

A. References

(1) SOPM 20-10-02, Machining of Alloy Steels

(2) SOPM 20-10-03, Shot Peening

(3) SOPM 20-10-04, Grinding of Chrome Plated Parts

(4) SOPM 20-20-01, Magnetic Particle Inspection

(5) SOPM 20-30-02, Stripping of Protective Finishes

(6) SOPM 20-30-03, General Cleaning Procedures

(7) SOPM 20-41-01, Decoding Table For Boeing Finish Codes

(8) SOPM 20-42-03, Hard Chrome Plating

(9) SOPM 20-42-09, Electrodeposited Nickel Plating

B. Procedure

(1) Machine the inner diameter of the bearing hole (SOPM 20-10-02) as required, within repair limits to remove defects (see Fig. 601).

(2) Break all sharp edges.

(3) Magnetic particle inspect (SOPM 20-20-01), Class A critical, the machined area.

(4) Shot peen (SOPM 20-10-03) the machined area using 170-460 shot number, 0.005A to 0.010A intensity and 2.0 coverage.

(5) The machined bearing hole diameter has to be built back up to design dimensions. This is accomplished by chrome plating (SOPM 20-42-03) and, if required, nickel plating (SOPM 20-42-09). The maximum chrome plate thickness after final machining is 0.010 inch. Nickel plating is used only if build up plating thickness must be greater than 0.010 inch. If nickel is required, the nickel plate (F-15.33) will be applied first, then apply chrome plate (F-15.34).

(6) Machine the plated inner diameter (SOPM 20-10-04) to design dimensions, and finish shown in Fig. 601.

3. Barrel Inner Diameter Repair

A. References

(1) SOPM 20-10-02, Machining of Alloy Steels

(2) SOPM 20-10-03, Shot Peening

(3) SOPM 20-10-04, Grinding of Chrome Plated Parts

(4) SOPM 20-20-01, Magnetic Particle Inspection

(5) SOPM 20-30-02, Stripping of Protective Finishes

(6) SOPM 20-30-03, General Cleaning Procedures

(7) SOPM 20-41-01, Decoding Table For Boeing Finish Codes

(8) SOPM 20-42-03, Hard Chrome Plating

(9) SOPM 20-42-09, Electrodeposited Nickel Plating

B. Procedure

(1) Machine the inner diameter of the barrel (340) (SOPM 20-10-02) as required, within repair limits to remove defects (see Fig. 601).

(2) Break all sharp edges.

(3) Magnetic particle inspect (SOPM 20-20-01), Class A critical, the machined area.

(4) Shot peen (SOPM 20-10-03) the machined area using 170-460 shot number, 0.005A to 0.010A intensity and 2.0 coverage.

(5) The inner diameter of the barrel has to be built back up to design dimensions. This is accomplished by chrome plating (SOPM 20-42-03) and, if required, nickel plating (SOPM 20-42-09). The maximum chrome plate thickness after final machining is 0.010 inch. Nickel plating is used only if build up plating thickness must be greater than 0.010 inch. If nickel is required, the nickel plate (F-15.33) will be applied first, then apply chrome plate (F-15.34).

(6) Machine the plated inner diameter (SOPM 20-10-04) to design dimensions, and finish as shown in Fig. 601.

4. Barrel Refinish

A. General

(1) This procedure has the data necessary to restore the barrel (340) back to the original finish.

(2) This procedure is for refinish only, not repair.

(3) Refer to IPL Fig. 1 for item numbers.

B. Refinish

(1) References

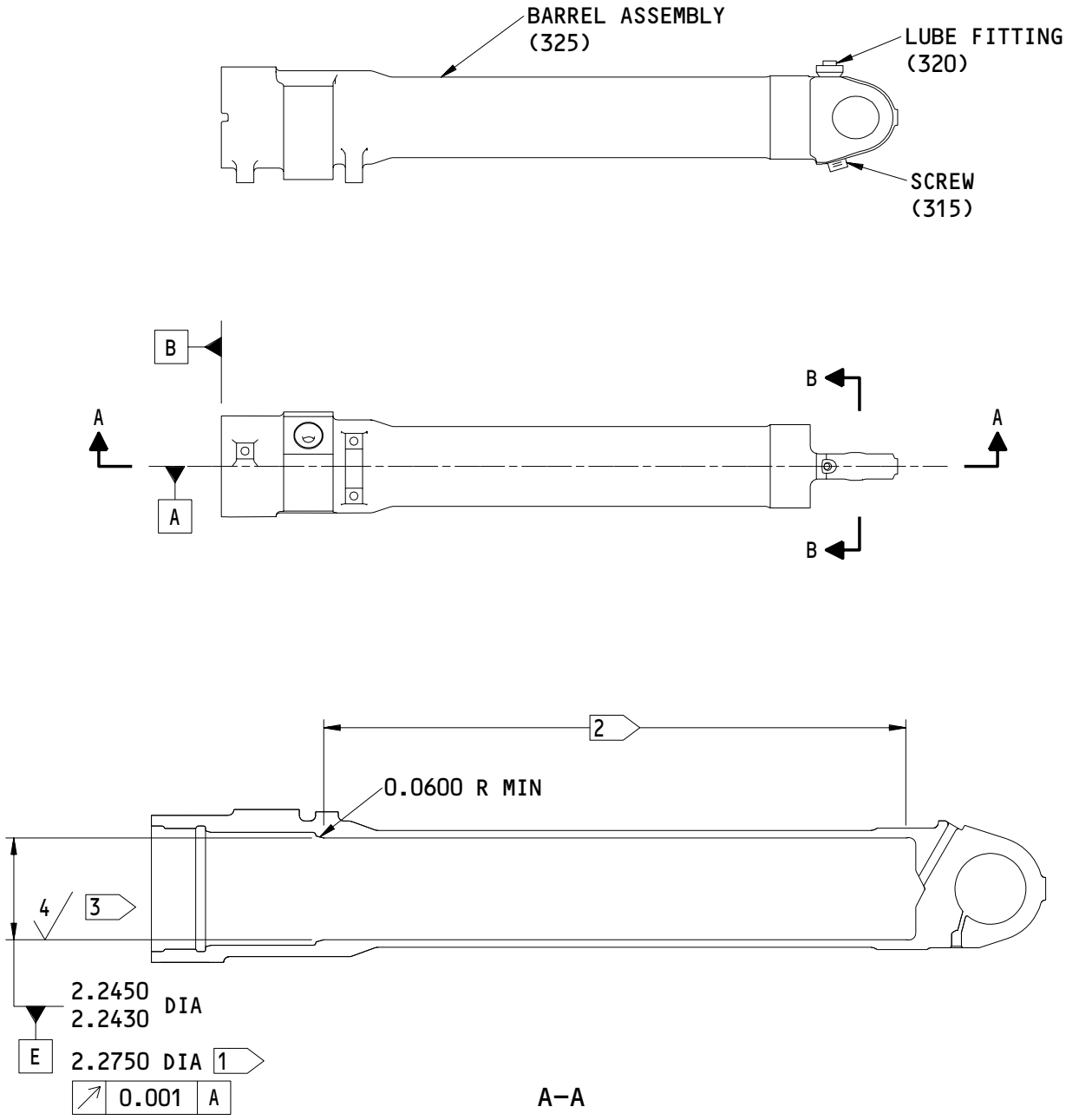
(a) SOPM 20-30-02, Striping of Protective Finishes

(b) SOPM 20-30-03, General Cleaning Procedures

(c) SOPM 20-41-01, Decoding of Boeing Finish Codes

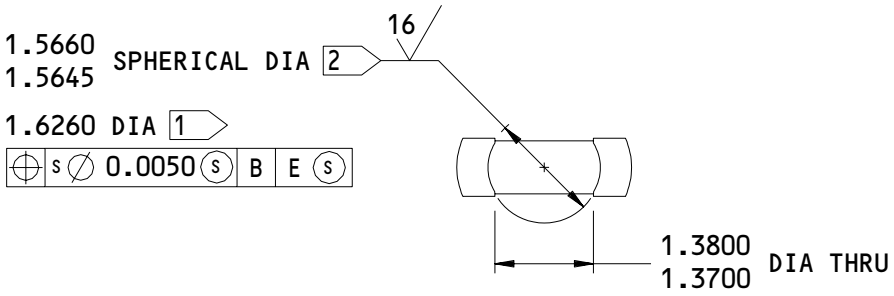
(2) Procedure

(a) Passivate (F-17.25) all over.



273T6152-2
Barrel Repair
Figure 601 (Sheet 1)

K11054



B–B

1 REPAIR LIMIT

2 PLATING REPAIR AREA ON INNER DIAMETER

3 SURFACE FINISH CAN BE 4 TO 8 MICROINCHES

125 ALL MACHINED SURFACES UNLESS SHOWN DIFFERENTLY

BREAK ALL SHARP EDGES

ITEM NUMBERS REFER TO IPL FIG. 1

ALL DIMENSIONS ARE IN INCHES

273T6152-2
Barrel Repair
Figure 601 (Sheet 2)

K11064

MANIFOLD ASSEMBLY - REPAIR 3-1

273T6153-1

1. General

A. This procedure has the data necessary to repair and refinish the manifold assembly (75).

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

C. Refer to the REPAIR - GENERAL (32-32-66/601, REPAIR - GENERAL) for the Standard True Position Dimensioning Symbols shown in the repair.

D. Refer to IPL Fig. 1 for item numbers.

2. Internal Manifold Repair

A. Reference

(1) SOPM 20-50-04, Installation of Permanent Pins and Plugs in Drill Passages

B. Replace the check valve (100), the restrictor (115), the plugs (80, 90, 105) and the pins (85, 95, 110).

WARNING: DO NOT PRE-ASSEMBLE THE PLUGS BY INSERTING THE PINS INTO THE PLUGS BEFORE PUTTING THE PLUGS INTO THE HOLES.

WARNING: DO NOT APPLY ADDITIONAL LUBRICATION OF THE PINS.

WARNING: DO NOT ALLOW THE PINS TO COME IN CONTACT WITH WATER.

(1) Procedure

(a) Remove the pins and the plugs as shown in SOPM 20-50-04.

(b) Remove the check valve and the restricter.

(c) Install the new check valves and new restricter.

(d) Install the pins and the plugs as shown in SOPM 20-50-04.

3. Manifold Refinish

A. References

(1) SOPM 20-30-02, Stripping of Protective Finishes

(2) SOPM 20-30-03, General Cleaning Procedures

(3) SOPM 20-41-01, Decoding Table for Boeing Finish Codes

B. Procedure

(1) Passivate (F-17.25) all over.

PISTON ROD - REPAIR 4-1

273T6154-1

1. General

A. This procedure has the data necessary to repair and refinish the piston rod (260).

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

C. Refer to the REPAIR - GENERAL (32-32-66/601, REPAIR - GENERAL) for the Standard True Position Dimensioning Symbols shown in the repair.

D. Refer to IPL Fig. 1 for item numbers.

E. General repair details:

(1)	Material:	CRES 15-5 PH 180-200 ksi
(2)	Shot peen:	Intensity -- 0.005A-0.010A Shot number -- 170-460 Coverage -- 2.0

2. Piston Rod Repair

A. References

(1) SOPM 20-10-02, Machining of Alloy Steels

(2) SOPM 20-10-03, Shot Peening

(3) SOPM 20-10-04, Grinding of Chrome Plated Parts

(4) SOPM 20-20-01, Magnetic Particle Inspection

(5) SOPM 20-30-02, Stripping of Protective Finishes

(6) SOPM 20-30-03, General Cleaning Procedures

(7) SOPM 20-41-01, Decoding Table For Boeing Finish Codes

(8) SOPM 20-42-03, Hard Chrome Plating

(9) SOPM 20-42-09, Electrodeposited Nickel Plating

B. Procedure

CAUTION: REWORK ON THE PISTON ROD INNER DIAMETER IS NOT ALLOWED. IF SERVICE WEAR IS BEYOND WHAT IS ALLOWED IN THE FITS AND CLEARANCE THEN REPLACE THE PISTON ROD.

(1) Machine the piston rod (260) (SOPM 20-10-02) as required, within repair limits to remove defects as shown in Fig. 601.

(2) Break all sharp edges.

(3) Magnetic particle inspect (SOPM 20-20-01), Class A critical, the machined area.

(4) Shot peen (SOPM 20-10-03) the machined area using 170-460 shot number, 0.005A to 0.010A intensity and 2.0 coverage.

(5) The machined surfaces have to be built back up to design dimensions. This is accomplished by chrome plating (SOPM 20-42-03) and, if required, nickel plating (SOPM 20-42-09). The maximum chrome plate thickness after final machining is 0.010 inch. Nickel plating is used only if build up plating thickness must be greater than 0.010 inch. If nickel is required, the nickel plate (F-15.33) will be applied first, then apply chrome plate (F-15.34).

(6) Machine the plated areas (SOPM 20-10-04) to design dimensions, and finish shown in Fig. 601.

3. Piston Rod Refinish

A. General

(1) This procedure has the data necessary to restore the piston rod (260) back to the original finish.

(2) This procedure is for refinish only, not repair.

(3) Refer to IPL Fig. 1 for item numbers.

(4) General repair details:

(a) Material: CRES 15-5 PH
180-200 ksi

(b) Shot peen: Intensity -- 0.005A-0.010A
Coverage -- 2.0
Shot Number -- 170-460

B. References

(1) SOPM 20-10-02, Machining of Alloy Steels

(2) SOPM 20-30-02, Striping of Protective Finishes

(3) SOPM 20-30-03, General Cleaning Procedures

(4) SOPM 20-41-01, Decoding of Boeing Finish Codes

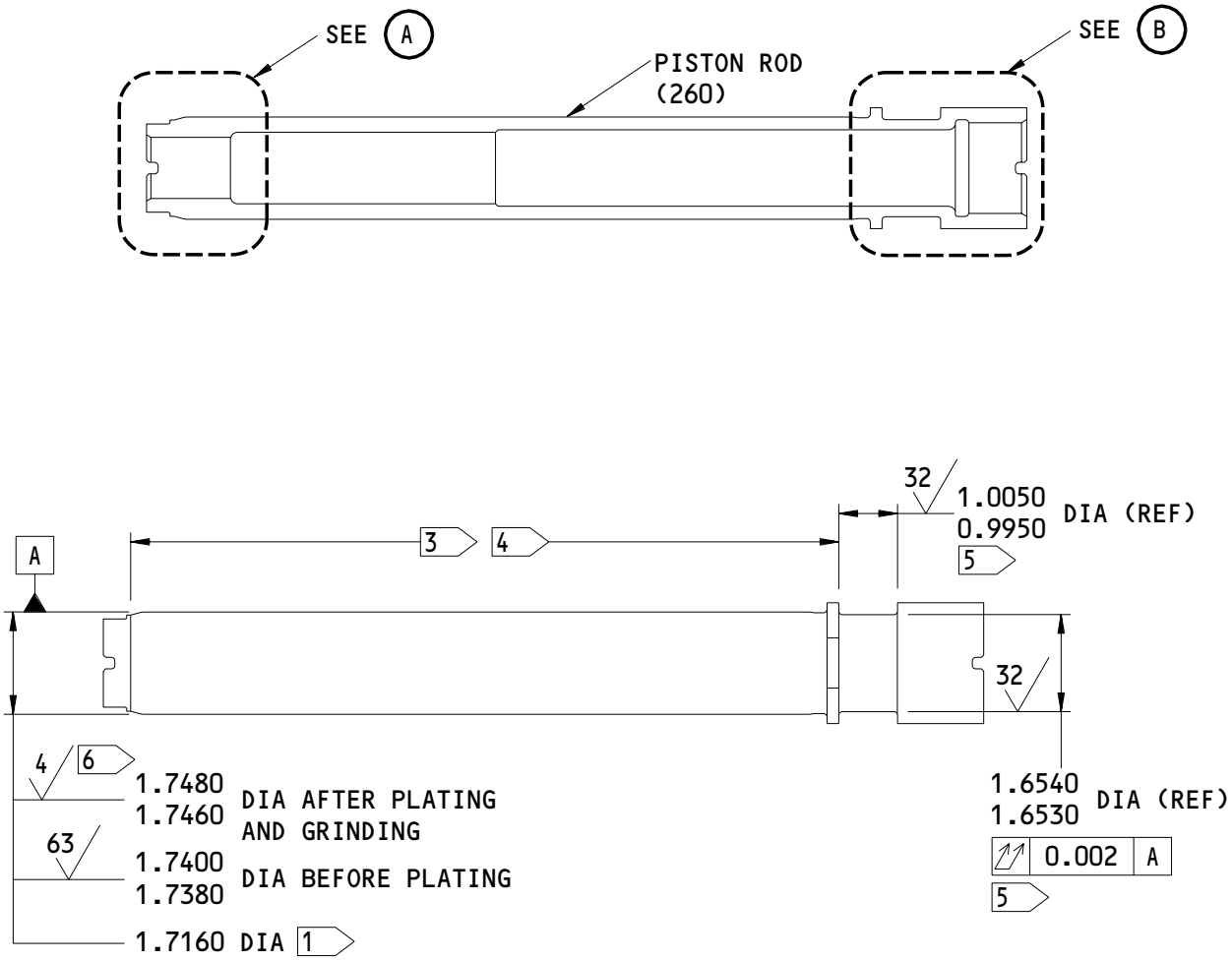
(5) SOPM 20-42-03, Hard Chrome Plating

C. Procedure

(1) Chrome plate (F-15.34), 0.003 inch minimum thickness, as shown in Fig. 601.

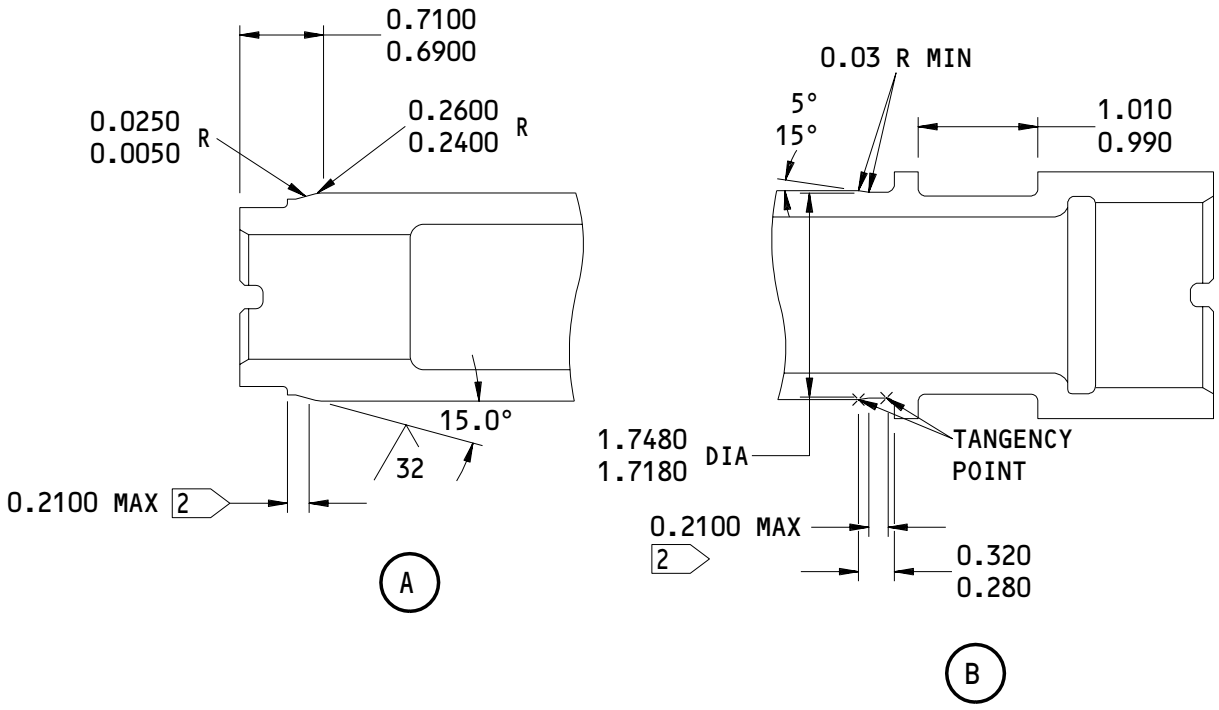
(2) Passivate (F-17.25), except as shown in Fig. 601.

(3) Machine (SOPM 20-10-02) to dimensions and finish as shown in Fig. 601.



273T6154-1
Piston Rod Repair
Figure 601 (Sheet 1)

K11114



1 REPAIR LIMIT

2 PLATING RUNOUT

3 PLATING REPAIR AREA (F-15.33, F-15.34)

4 SHOT PEEN

5 REPAIR NOT ALLOWED

6 SURFACE FINISH CAN BE 4 TO 8 MICROINCHES

125 ALL MACHINED SURFACES UNLESS SHOWN DIFFERENTLY

BREAK ALL SHARP EDGES

ITEM NUMBERS REFER TO IPL FIG. 1

ALL DIMENSIONS ARE IN INCHES

273T6154-1
Piston Rod Repair
Figure 601 (Sheet 2)

FLOATING PISTON - REPAIR 5-1

273T6158-1

1. General

A. This procedure has the data necessary to repair and refinish the floating piston (305).

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

C. Refer to the REPAIR - GENERAL (32-32-66/601, REPAIR - GENERAL) for the Standard True Position Dimensioning Symbols shown in the repair.

D. Refer to IPL Fig. 1 for item numbers.

E. General repair details:

(1)	Material:	CRES 15-5 PH 180-200 ksi
(2)	Shot peen:	Intensity -- 0.005A-0.010A Shot number -- 170-460 Coverage -- 2.0

2. Piston Repair

A. References

(1) SOPM 20-10-02, Machining of Alloy Steels

(2) SOPM 20-10-03, Shot Peening

(3) SOPM 20-10-04, Grinding of Chrome Plated Parts

(4) SOPM 20-20-01, Magnetic Particle Inspection

(5) SOPM 20-30-02, Stripping of Protective Finishes

(6) SOPM 20-30-03, General Cleaning Procedures

(7) SOPM 20-41-01, Decoding Table For Boeing Finish Codes

(8) SOPM 20-42-03, Hard Chrome Plating

(9) SOPM 20-42-09, Electrodeposited Nickel Plating

B. Procedure

(1) Machine the piston (305) (SOPM 20-10-02) as required, within repair limits to remove defects as shown in Fig. 601.

(2) Break all sharp edges.

(3) Magnetic particle inspect (SOPM 20-20-01), Class A critical, the machined area.

(4) Shot peen (SOPM 20-10-03) the machined area using 170-460 shot number, 0.005A to 0.010A intensity and 2.0 coverage.

(5) The machined surfaces have to be built back up to design dimensions. This is accomplished by chrome plating (SOPM 20-42-03) and, if required, nickel plating (SOPM 20-42-09). The maximum chrome plate thickness after final machining is 0.010 inch. Nickel plating is used only if build up plating thickness must be greater than 0.010 inch. If nickel is required, the nickel plate (F-15.33) will be applied first, then apply chrome plate (F-15.34).

(6) Machine the plated areas (SOPM 20-10-04) to design dimensions, and finish shown in Fig. 601.

3. Piston Refinish

A. General

(1) This procedure has the data necessary to restore the piston (305) back to the original finish.

(2) This procedure is for refinish only, not repair.

(3) Refer to IPL Fig. 1 for item numbers.

(4) General repair details:

(a) Material: CRES 15-5 PH
180-200 ksi

(b) Shot peen: Intensity -- 0.005A-0.010A
Coverage -- 2.0
Shot Number -- 170-460

B. References

(1) SOPM 20-10-02, Machining of Alloy Steels

(2) SOPM 20-30-02, Striping of Protective Finishes

(3) SOPM 20-30-03, General Cleaning Procedures

(4) SOPM 20-41-01, Decoding of Boeing Finish Codes

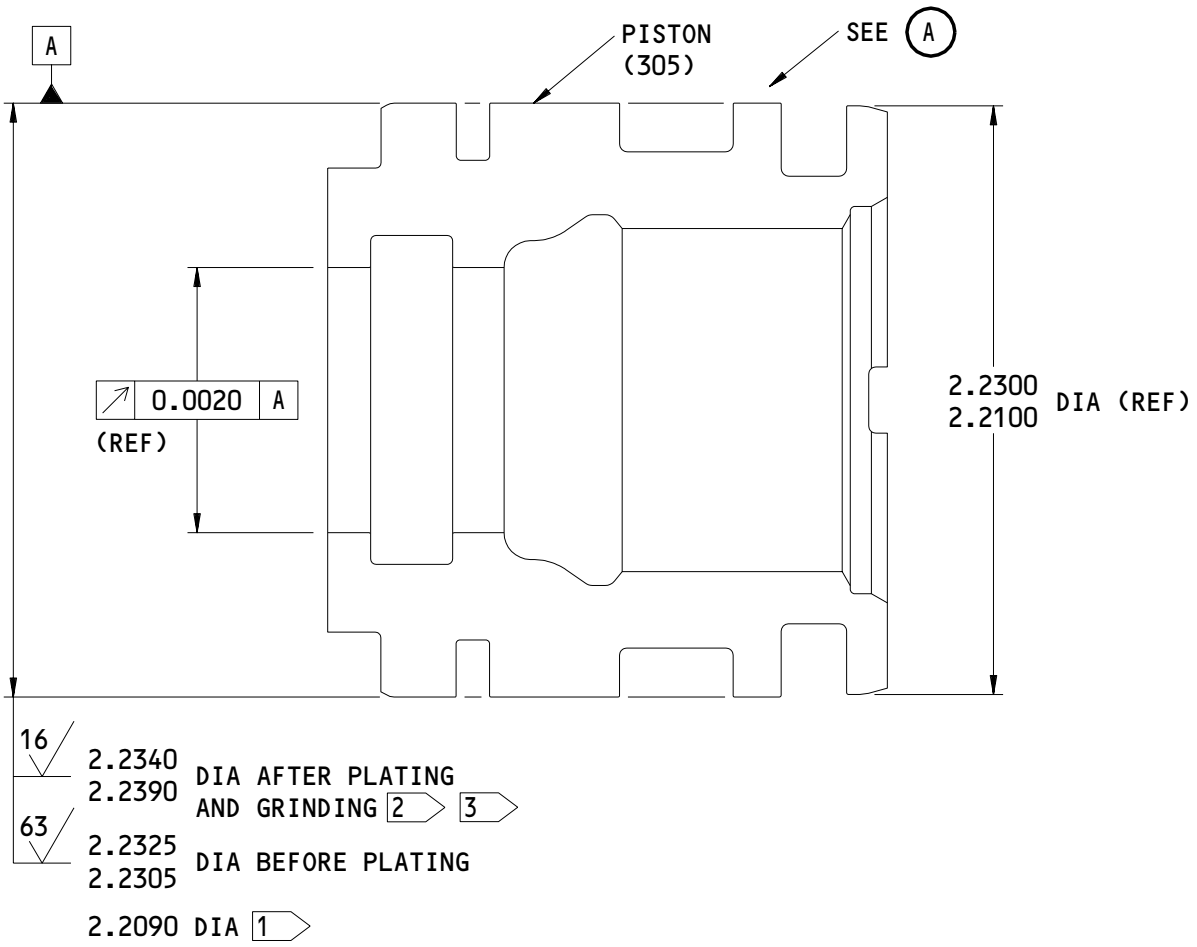
(5) SOPM 20-42-03, Hard Chrome Plating

C. Procedure

(1) Chrome plate (F-15.34), 0.003 inch minimum thickness, as shown in Fig. 602.

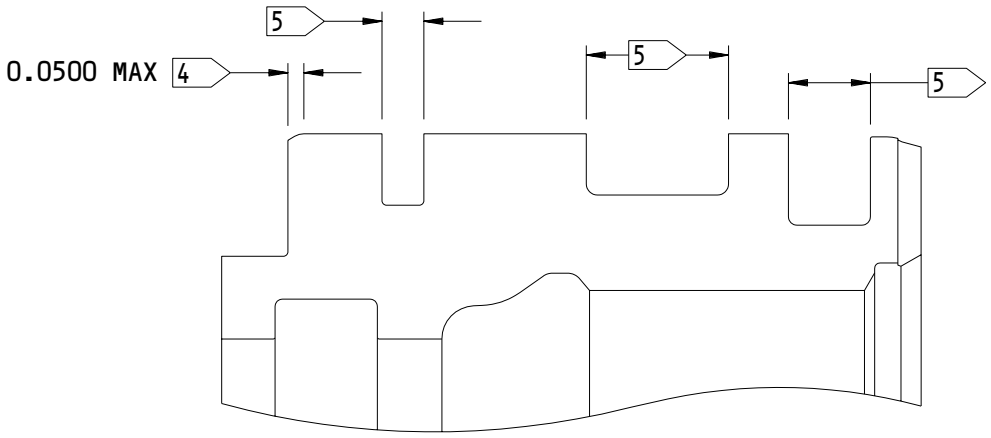
(2) Passivate (F-17.25), except as shown in Fig. 602.

(3) Machine (SOPM 20-10-02) to dimensions and finish as shown in Fig. 602.



273T6158-1
Piston Repair
Figure 601 (Sheet 1)

K11230



1 > REPAIR LIMIT

2 > PLATING REPAIR AREA (F-15.33, F-15.34)

3 > SHOT PEEN

4 > PLATING RUNOUT AREA

5 > DO NOT SHOT PEEN

125 ALL MACHINED SURFACES UNLESS SHOWN DIFFERENTLY

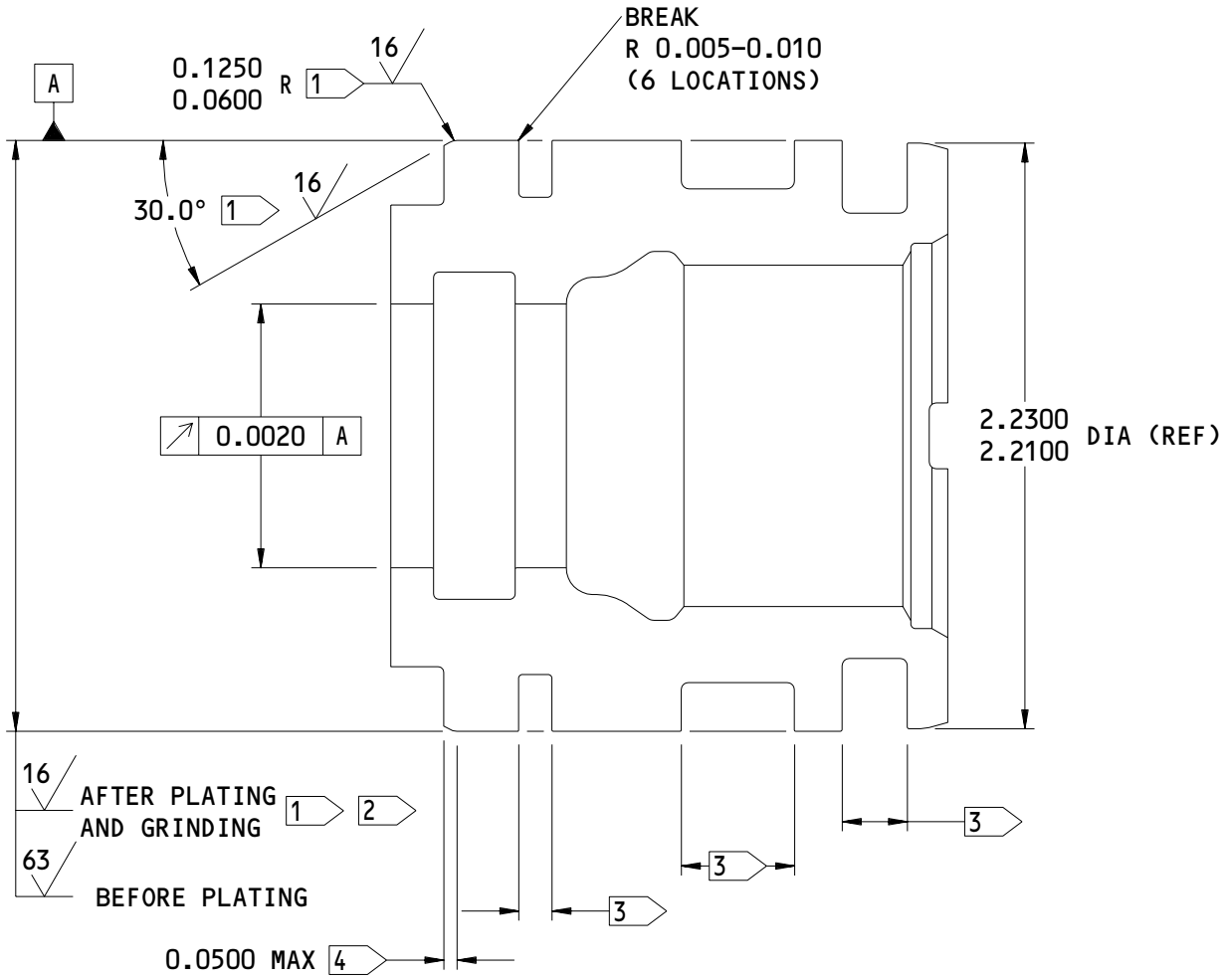
BREAK ALL SHARP EDGES

ITEM NUMBERS REFER TO IPL FIG. 1

ALL DIMENSIONS ARE IN INCHES

273T6158-1
Piston Repair
Figure 601 (Sheet 2)

K11234



1 CHROME PLATE (F-15.34), T = 0.003 MIN

2 SHOT PEEN

3 DO NOT SHOT PEEN

4 CHROME PLATE RUNOUT AREA

125 ALL MACHINED SURFACES UNLESS SHOWN DIFFERENTLY

BREAK ALL SHARP EDGES

ITEM NUMBERS REFER TO IPL FIG. 1

ALL DIMENSIONS ARE IN INCHES

273T6158-1
Piston Refinish
Figure 602

K11229

CONNECTING ROD - REPAIR 6-1

273T6159-1

1. General

A. This procedure has the data necessary to repair and refinish the connecting rod (285).

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

C. Refer to the REPAIR - GENERAL (32-32-66/601, REPAIR - GENERAL) for the Standard True Position Dimensioning Symbols shown in the repair.

D. Refer to IPL Fig. 1 for item numbers.

E. General repair details:

(1)	Material:	CRES 15-5 PH 180-200 ksi
(2)	Shot peen:	Intensity -- 0.005A-0.010A Shot number -- 170-460 Coverage -- 2.0

2. Connecting Rod Repair

A. References

(1) SOPM 20-10-02, Machining of Alloy Steels

(2) SOPM 20-10-03, Shot Peening

(3) SOPM 20-10-04, Grinding of Chrome Plated Parts

(4) SOPM 20-20-01, Magnetic Particle Inspection

(5) SOPM 20-30-02, Stripping of Protective Finishes

(6) SOPM 20-30-03, General Cleaning Procedures

(7) SOPM 20-41-01, Decoding Table For Boeing Finish Codes

(8) SOPM 20-42-03, Hard Chrome Plating

(9) SOPM 20-42-09, Electrodeposited Nickel Plating

B. Procedure

(1) Machine the connecting rod (285) (SOPM 20-10-02) as required, within repair limits to remove defects as shown in Fig. 601.

(2) Break all sharp edges.

(3) Magnetic particle inspect (SOPM 20-20-01), Class A critical, the machined area.

(4) Shot peen (SOPM 20-10-03) the machined area using 170-460 shot number, 0.005A to 0.010A intensity and 2.0 coverage.

(5) The machined surfaces have to be built back up to design dimensions. This is accomplished by chrome plating (SOPM 20-42-03) and, if required, nickel plating (SOPM 20-42-09). The maximum chrome plate thickness after final machining is 0.010 inch. Nickel plating is used only if build up plating thickness must be greater than 0.010 inch. If nickel is required, the nickel plate (F-15.33) will be applied first, then apply chrome plate (F-15.34).

(6) Machine the plated areas (SOPM 20-10-04) to design dimensions, and finish shown in Fig. 601.

3. Connecting Rod Refinish

A. General

(1) This procedure has the data necessary to restore the connecting rod (285) back to the original finish.

(2) This procedure is for refinish only, not repair.

(3) Refer to IPL Fig. 1 for item numbers.

(4) General repair details:

(a) Material: CRES 15-5 PH
180-200 ksi

(b) Shot peen: Intensity -- 0.005A-0.010A
Coverage -- 2.0
Shot Number -- 170-460

B. References

(1) SOPM 20-10-02, Machining of Alloy Steels

(2) SOPM 20-30-02, Striping of Protective Finishes

(3) SOPM 20-30-03, General Cleaning Procedures

(4) SOPM 20-41-01, Decoding of Boeing Finish Codes

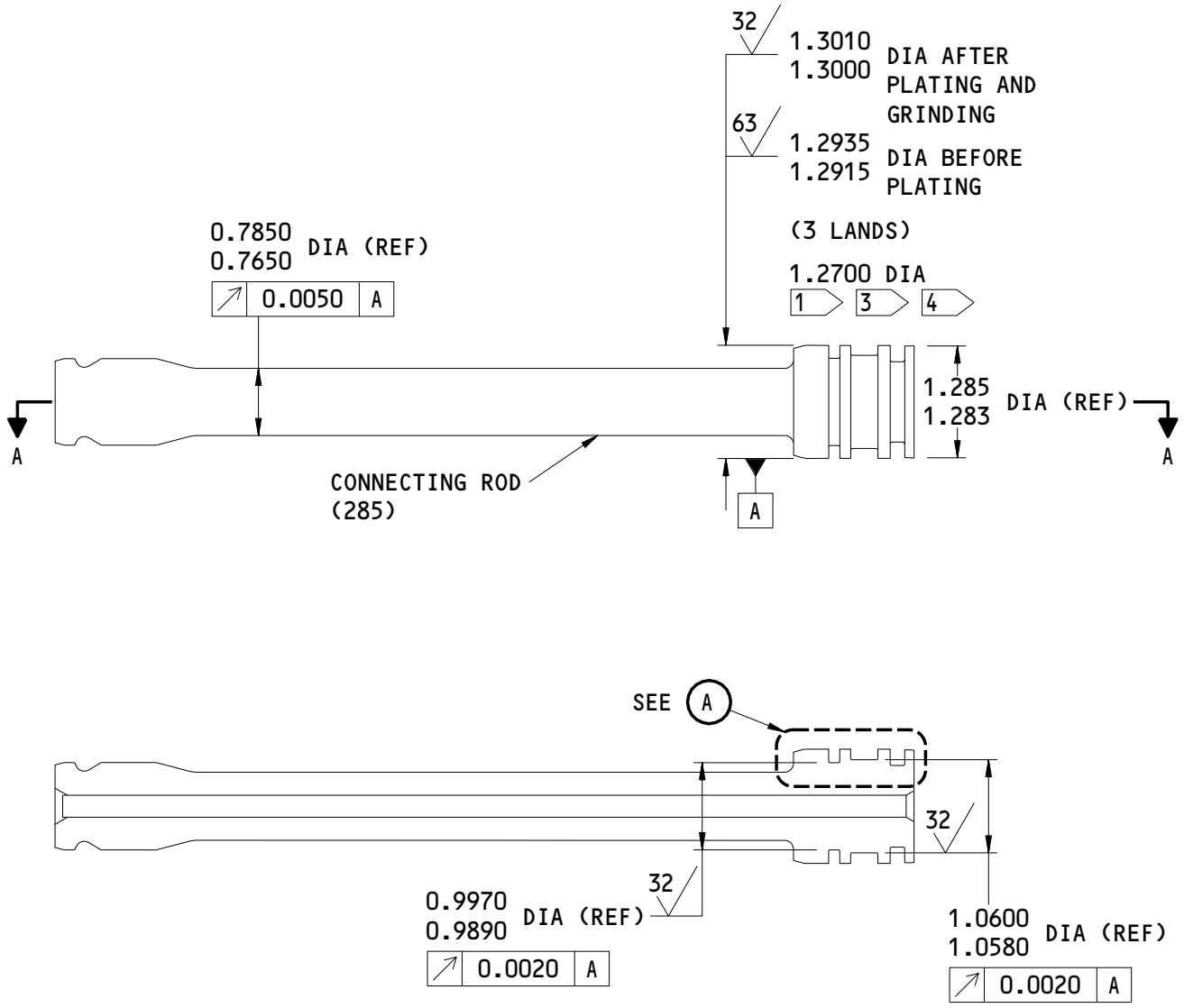
(5) SOPM 20-42-03, Hard Chrome Plating

C. Procedure

(1) Chrome plate (F-15.34), 0.003 inch minimum thickness, as shown in Fig. 601.

(2) Passivate (F-17.25), except as shown in Fig. 601.

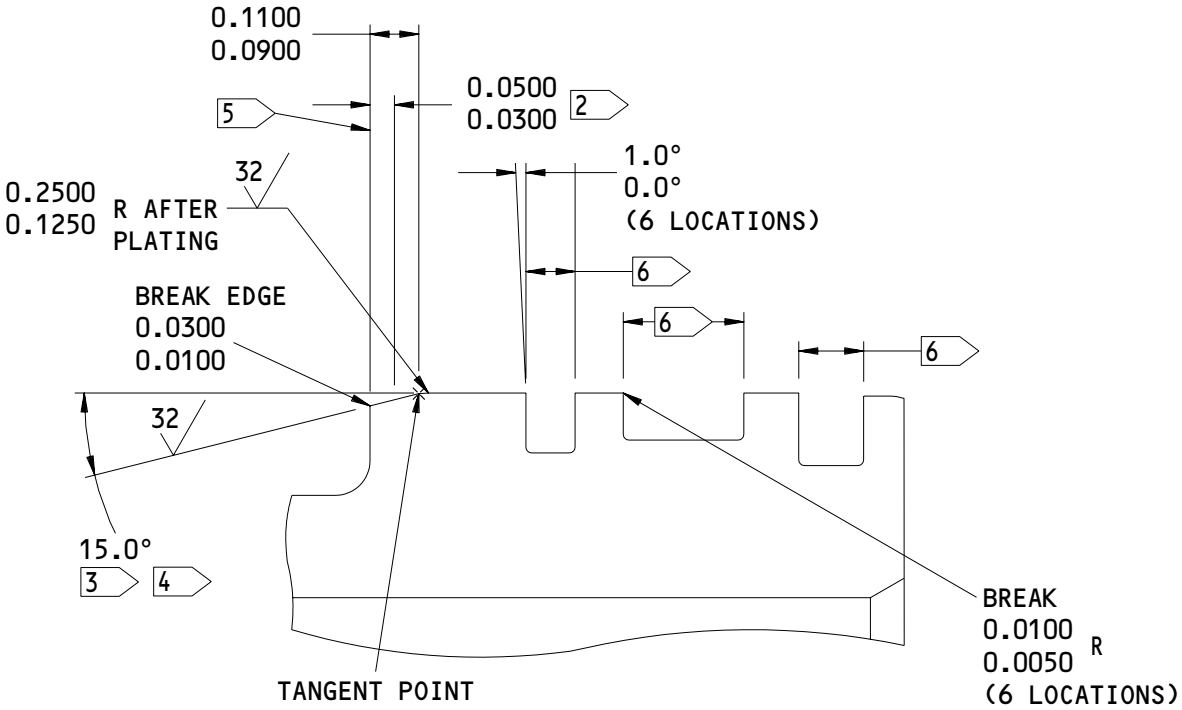
(3) Machine (SOPM 20-10-02) to dimensions and finish as shown in Fig. 601.



A–A

273T6159-1
Connecting Rod Repair
Figure 601 (Sheet 1)

K11281



1 > REPAIR LIMIT

2 > PLATING RUNOUT

3 > PLATING REPAIR AREA

4 > SHOT PEEN

5 > NO PLATING ON THIS SURFACE

6 > DO NOT SHOT PEEN

125 ALL MACHINED SURFACES UNLESS SHOWN DIFFERENTLY

BREAK ALL SHARP EDGES

ITEM NUMBERS REFER TO IPL FIG. 1

ALL DIMENSIONS ARE IN INCHES

273T6159-1
Connecting Rod Repair
Figure 601 (Sheet 2)

ROD END ASSEMBLY - REPAIR 7-1

273T6163-1

1. General

A. This procedure has the data necessary to replace the bearing (185) and the vent valve (175) in the rod end assembly (155).

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

C. Refer to the REPAIR - GENERAL (32-32-66/601, REPAIR - GENERAL) for the Standard True Position Dimensioning Symbols shown in the repair.

D. Refer to IPL Fig. 1 for item numbers.

2. Bearing Replacement

A. Consumable Materials

NOTE: Equivalent material can be used.

(1) D00633 Grease -- BMS 3-33 (SOPM 20-60-03)

B. References

(1) SOPM 20-60-03, Lubricants

C. Procedure

(1) Remove the bearing (185) from the rod end (180).

(2) Check the inner diameter of the rod end (180) where it touches the outer diameter of the bearing (185) for corrosion and service wear.

(a) If there is corrosion, then refer to REPAIR 7-2 for repair.

(b) If the actual measured service wear is not within the acceptable range shown in the Fits and Clearances section, then refer to REPAIR 7-2 for repair.

(3) Apply a light coat of BMS 3-33 grease to the bearing (185) inner and outer diameter before installing it into the rod end (180).

(4) Install the bearing (185) into the rod end (180).

3. Vent Valve Replacement

A. Procedure

(1) Bend out the deformed part of the cup lockwasher (170) away from the flats on the vent retainer (165).

(2) Remove the vent retainer (165).

(3) Remove the cuplock washer (170) and throw it away.

(4) Remove the vent valve (175) and throw it away.

(5) Install the new vent valve (175).

(6) Install the new cuplock washer (170) onto the vent retainer (165).

(7) Install the vent retainer (165) into the rod end (180). Make sure that the tang of the cuplock washer (170) engages the rod end (180) (see Fig. 601).

(8) Torque the vent retainer (165) 150 to 200 pound-inches.

(9) Deform the cuplock washer (170) over the vent retainer flats (165). Deform the cuplock washer over two opposing flats of the vent retainer. The deformed portion of the cuplock washer must make maximum possible contact with the flats of the vent retainer.

4. Lube Fitting Replacement

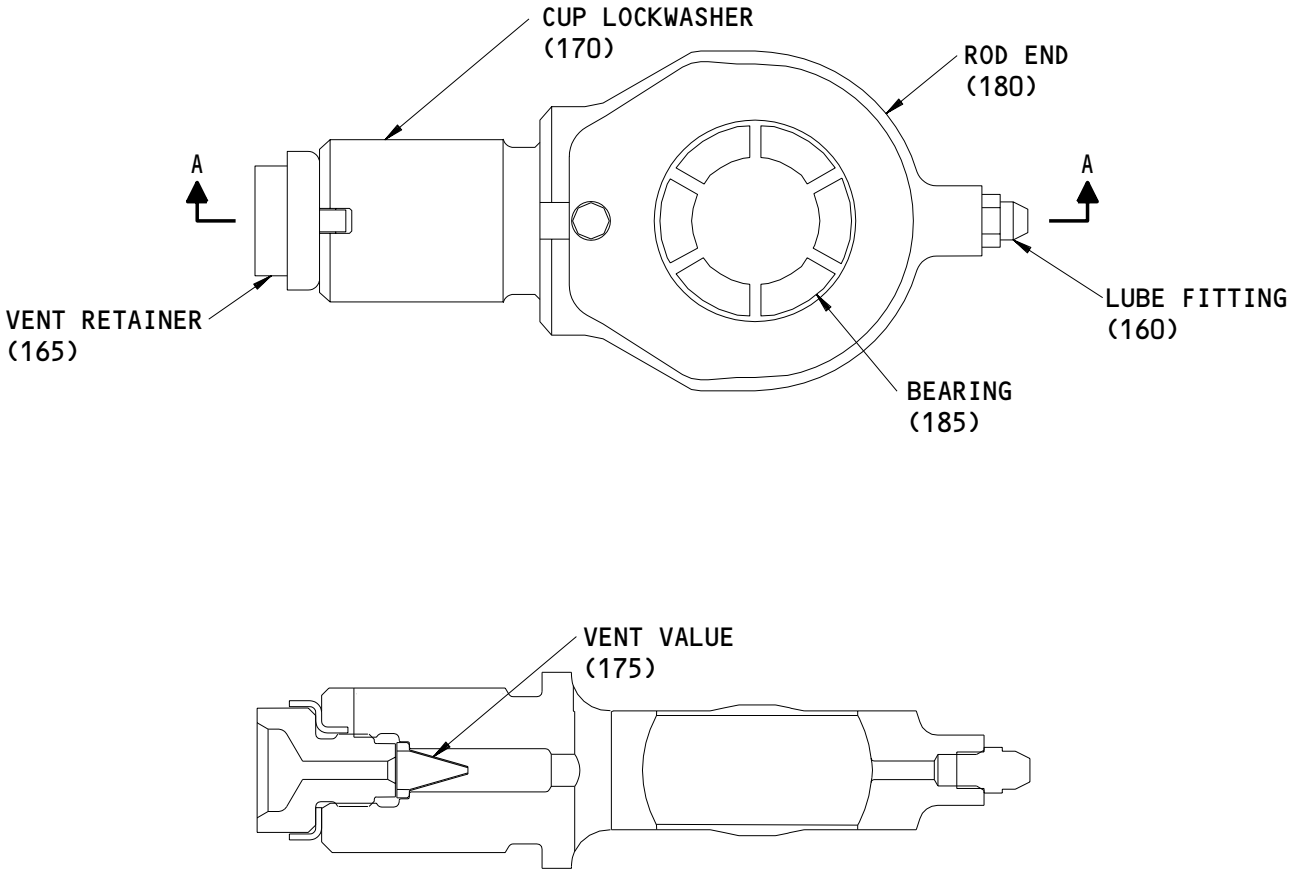
A. References

(1) CMM 32-00-03, Lubrication Fitting Replacement

B. Procedure

(1) Remove the lube fitting (160).

(2) Install the lube fitting (160), see CMM 32-00-03, and torque 20 to 30 pound-inches.



A–A

125 ALL MACHINED SURFACES UNLESS SHOWN DIFFERENTLY

BREAK ALL SHARP EDGES

ITEM NUMBERS REFER TO IPL FIG. 1

ALL DIMENSIONS ARE IN INCHES

273T6163-1
Rod End Assembly Repair
Figure 601

ROD END - REPAIR 7-2

273T6163-2

1. General

A. This procedure has the data necessary to repair and refinish the rod end (180).

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

C. Refer to the REPAIR - GENERAL (32-32-66/601, REPAIR - GENERAL) for the Standard True Position Dimensioning Symbols shown in the repair.

D. Refer to IPL Fig. 1 for item numbers.

E. General repair details:

(1)	Material:	CRES 15-5 PH 180-200 ksi
(2)	Shot peen:	Intensity -- 0.005A-0.010A Shot number -- 170-460 Coverage -- 2.0

2. Rod End Repair

A. References

(1) SOPM 20-10-02, Machining of Alloy Steels

(2) SOPM 20-10-03, Shot Peening

(3) SOPM 20-10-04, Grinding of Chrome Plated Parts

(4) SOPM 20-20-01, Magnetic Particle Inspection

(5) SOPM 20-30-02, Stripping of Protective Finishes

(6) SOPM 20-30-03, General Cleaning Procedures

(7) SOPM 20-41-01, Decoding Table For Boeing Finish Codes

(8) SOPM 20-42-03, Hard Chrome Plating

(9) SOPM 20-42-09, Electrodeposited Nickel Plating

B. Procedure

(1) Machine the inner diameter of the bearing hole (SOPM 20-10-02) as required, within repair limits to remove defects as shown in Fig. 601.

(2) Break all sharp edges.

(3) Magnetic particle inspect (SOPM 20-20-01), Class A critical, the machined area.

(4) Shot peen (SOPM 20-10-03) the machined area using 170-460 shot number, 0.005A to 0.010A intensity and 2.0 coverage.

(5) The machined bearing hole diameter has to be built back up to design dimensions. This is accomplished by chrome plating (SOPM 20-42-03) and, if required, nickel plating (SOPM 20-42-09). The maximum chrome plate thickness after final machining is 0.010 inch. Nickel plating is used only if build up plating thickness must be greater than 0.010 inch. If nickel is required, the Nickel plate (F-15.33) will be applied first, then apply chrome plate (F-15.34).

(6) Machine the plated inner diameter (SOPM 20-10-04) to design dimensions and finish shown in Fig. 601.

3. Rod End Refinish

A. General

(1) This procedure has the data necessary to restore the rod end (180) back to the original finish.

(2) This procedure is for refinish only, not repair.

(3) Refer to IPL Fig. 1 for item numbers.

B. Refinish

(1) Consumable Materials

NOTE: Equivalent material can be used.

(a) D00113, Solid Film Lubricant -- BMS 3-8 (SOPM 20-50-08)

(2) References

(3) SOPM 20-30-02, Striping of Protective Finishes

(4) SOPM 20-30-03, General Cleaning Procedures

(5) SOPM 20-41-01, Decoding of Boeing Finish Codes

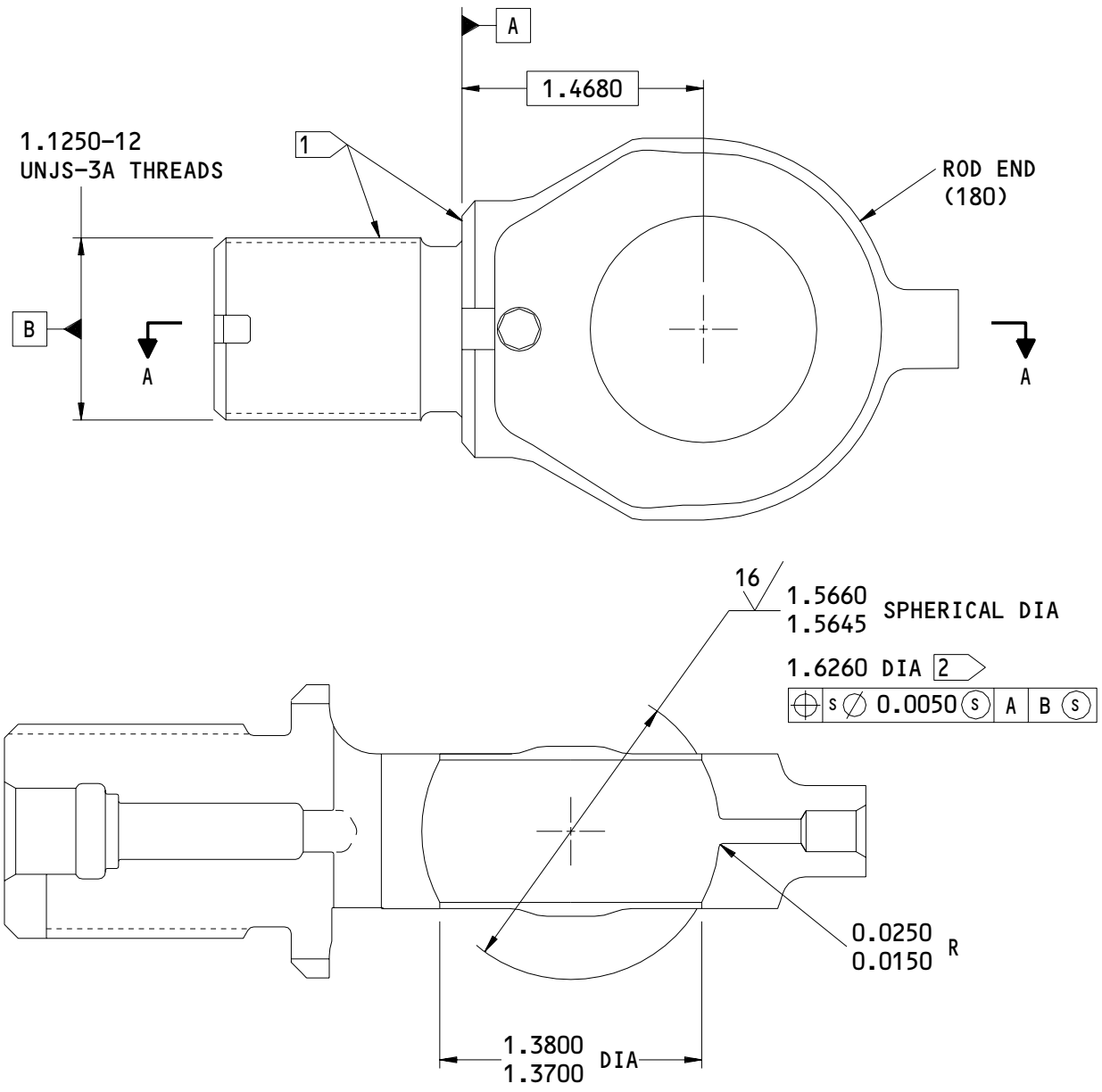
(6) SOPM 20-50-03, Bearing Removal, Installation and Retention

(7) SOPM 20-50-08, Application of Bonded Solid Film Lubricants

C. Procedure

(1) Passivate (F-17.25) only to unplated areas.

(2) Apply solid film lubricant (F-19.10) as shown in Fig. 601.



A-A

1 SOLID FILM LUBRICANT (F-19.10)

2 REPAIR LIMIT

125 ALL MACHINED SURFACES UNLESS SHOWN DIFFERENTLY

BREAK ALL SHARP EDGES

ITEM NUMBERS REFER TO IPL FIG. 1

ALL DIMENSIONS ARE IN INCHES

273T6163-2
Rod End Repair
Figure 601

K11396

ASSEMBLY

1. General

A. This procedure has the data necessary to assemble the actuator assembly.

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

C. Refer to IPL Fig. 1 and Figs. 701 and 702 for item numbers.

2. Assembly

A. Consumable Materials

NOTE: Equivalent material can be used.

(1) A00226 Tamper-Proof Putty -- BMS 8-45 (SOPM 20-60-04)

(2) A00436 Sealant -- BMS 5-26 (SOPM 20-60-04)

(3) C00913 Compound -- BMS 3-27 (SOPM 20-60-02)

(4) D00292 Lubricant -- MCS352 (Monsanto Chemical Co.)

(5) G01505 Lockwire -- MS20995 (SOPM 20-60-04)

(6) D00153 Fluid -- BMS 3-11 (SOPM 20-60-02)

B. References

(1) SOPM 20-50-00, Fluid System Fitting Torque Values

(2) SOPM 20-50-01, Bolt and Nut Installation

(3) SOPM 20-50-02, Installation of Safety Devices

(4) SOPM 20-60-02, Finishing Materials

(5) SOPM 20-60-04, Miscellaneous Materials

C. Procedure

(1) Use standard industry procedures and the steps shown below to assemble this component.

(2) Be sure to lubricate all seals, packings and backup rings with BMS 3-11 hydraulic fluid before installing them.

(3) Prepare the floating piston (305) and the connecting rod (285) for installation into the barrel (340).

(a) Install the packing (280), the glydring scraper (275), the seal (270), and the piston ring (265) onto the floating piston (305).

(b) Install the packing (290) and backup rings (295) onto the floating piston (305).

(c) Install the piston nut (255) and cuplock washer (250) over the shaft of the connecting rod (285) (see Fig. 701).

(d) Install the connecting rod (285) through the center of the floating piston (305) so that the retaining rings (300) can be installed. Pull the connecting rod up tight against the retaining rings and the floating piston so that the retaining rings are held in place.

(e) Install the nut (310) into the threads of the floating piston (305). Make sure that the nut is tight enough to hold the retainer rings (300) in place before torquing.

(f) Use the wrenching flats on the floating piston (305) to secure the floating piston, then torque the nut (310) 1650 to 1750 pound-inches.

(g) Make sure that the distance between the bottom of the flange on the nut (310) and the top surface of the floating piston (305) is 0.007 to 0.042 inch (see Fig. 701).

(h) Peen the flange of the nut (310) into the two slots in the top of the floating piston (305). This will keep the connecting rod nut from moving.

(i) Install the piston ring (245), the seal (240), the packing (235), and the glydring scraper (230) onto the connecting rod (285).

(4) Prepare the piston rod (260) and end gland (195) for installation into the barrel (340).

(a) Install the excluder (200) onto the end gland (195).

(b) Install the seal (205) and the backup rings (210) onto the end gland (195).

(c) Install the packing (215) and the backup rings (220) onto the end gland (195).

(d) Install the end gland (195) and the cup lockwasher (190) onto the piston rod (260).

(e) Install the cuplock washer (150) onto the rod end assembly (155).

(f) Install the rod end assembly (155) onto the piston rod (260).

(g) Secure the piston rod (260) by the wrenching flats and torque the rod end assembly (155) 800 to 850 pound-inches.

(h) Peen the cuplock washer (150) into the two slots on the rod end assembly (155). The deformed part of the cuplock washer must contact both corners of each slot (see Fig. 701).

(5) Install the piston rod (260) onto the connecting rod (285).

(a) Install the connecting rod (285) into the piston rod (260).

(b) Lightly lubricate, with MCS352 lubricant, the cuplock washer (250)/piston rod (260) interface and the threads of the piston nut (255).

(c) Install the piston nut (255) and the cuplock washer (250) onto the piston rod (260) and torque the nut 1500 to 1600 pound-inches.

(d) Peen the cuplock washer (250) into the two slots on the piston nut (255). The deformed part of the cuplock washer must contact both corners of each slot (see Fig. 701).

(6) Install the connecting rod/piston rod assembly into the barrel (340).

(a) Lightly lubricate the seals with BMS 3-11 hydraulic fluid before installing the connecting rod/piston rod assembly into the barrel (340).

(b) Install the floating piston (305) end of the connecting rod/piston rod assembly into the barrel (340). Push this assembly into the barrel until the bearing rings (225) can be put onto the piston rod (260).

(c) Install the bearing rings (225) onto the piston rod (260) with a small amount of MCS352 lubricant applied to the inner and outer diameter of the bearing rings.

(d) Push the connecting rod/piston rod assembly further into the barrel (340). Make sure that the bearing rings remain in position on the piston rod (260).

(e) Continue pushing the connecting rod/piston rod assembly into the barrel (340) until the bearing rings (225) fully engage the barrel inner diameter.

(f) Install the end gland (195) and the cuplock washer (190) into the barrel and torque the end gland 1500 to 1600 pound-inches.

(g) Peen the cuplock washer (190) into the two slots on the end gland (195). The deformed part of the cuplock washer must contact both corners of each slot (see Fig. 701).

(7) Prepare the manifold assembly (75) for installation onto the barrel (340).

NOTE: For the installation of the plugs (80, 90, 105), the check valve (100), the restrictor (115), and the pins (85, 95, 110) see REPAIR 3-1.

(a) Install the adapter (40) and the packing (45) into the manifold (120). Torque the adapter 140 to 160 pound-inches.

(b) Install the valve (30) and the packing (35) into the adapter (40). Torque the valve 50 to 70 pound-inches.

(c) Install the bolt (20) and the packing (25) into the valve (30). Torque the bolt 20 to 25 pound-inches.

(d) Attach lockwire (SOPM 20-50-02) from the adapter (40) and the valve (30) using the double-twist method and tamper-proof putty (see Fig. 702).

(e) Install the packings (125, 135) and the backup rings (130, 140) onto the relief valve (145). Then install the relief valve into the manifold (120). Torque the relief valve 1000 to 1100 pound-inches.

(f) Attach lockwire (SOPM 20-50-02) from the relief valve (145) and the manifold assembly (75) using the double-twist method and tamper-proof putty (see Fig. 702).

(g) Install the check valve (50) and the packing (45) into the manifold (120). Torque (SOPM 20-50-00) the check valve 256 to 283 pound-inches.

(h) Install the union (55) and the packing (60) into the manifold (120). Torque (SOPM 20-50-00) the union 665 to 735 pound-inches.

(8) Install the manifold assembly (75) onto the barrel (340).

(a) Install the packing (65) and the rings (70) onto the manifold (120).

(b) Install the manifold assembly (75) onto the barrel (340) with the bolts (5) and the washers (10) using BMS 3-27 grease. Torque the bolts 60 to 70 pound-inches.

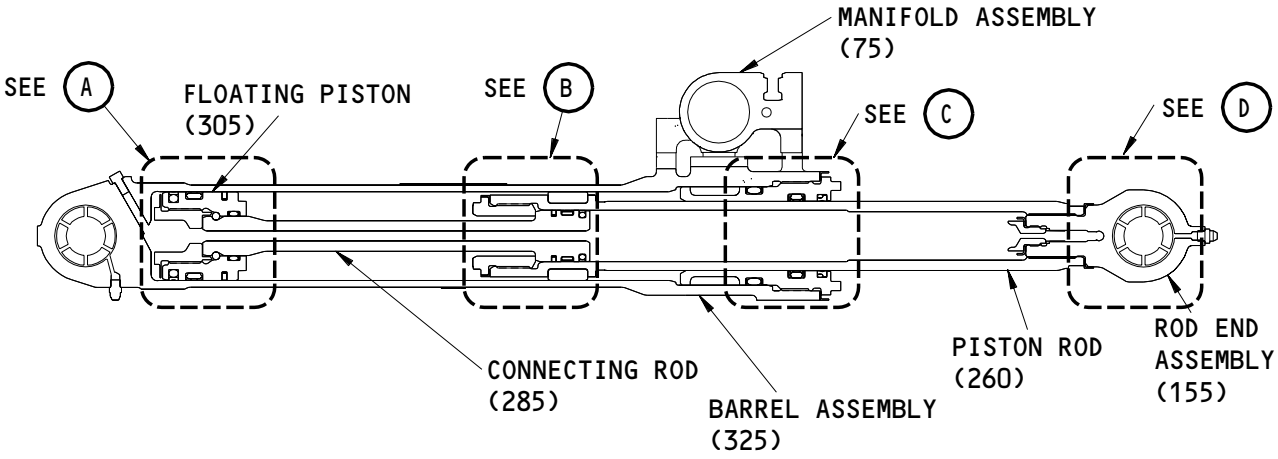
(c) Attach lockwire (SOPM 20-50-02) from the bolts (5) and the manifold assembly (75) using the double-twist method and tamper-proof putty.

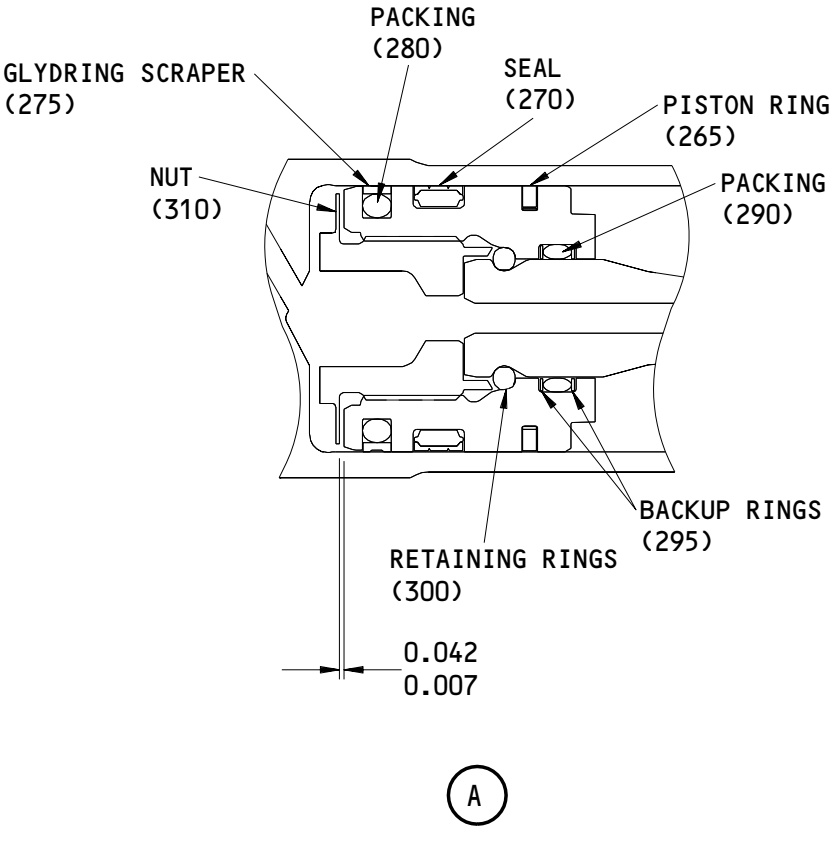
(9) Install the plug (315) into the barrel (340). Torque the plug 20 to 25 pound-inches.

(10) Solvent clean and fillet seal seal, with BMS 5-26 sealant, around the screw (315) head, see Fig. 603.

(11) Solvent clean and fillet seal, with BMS 5-26 sealant, completely around the manifold assembly (75) to barrel assembly (325) connection, see Fig. 603.

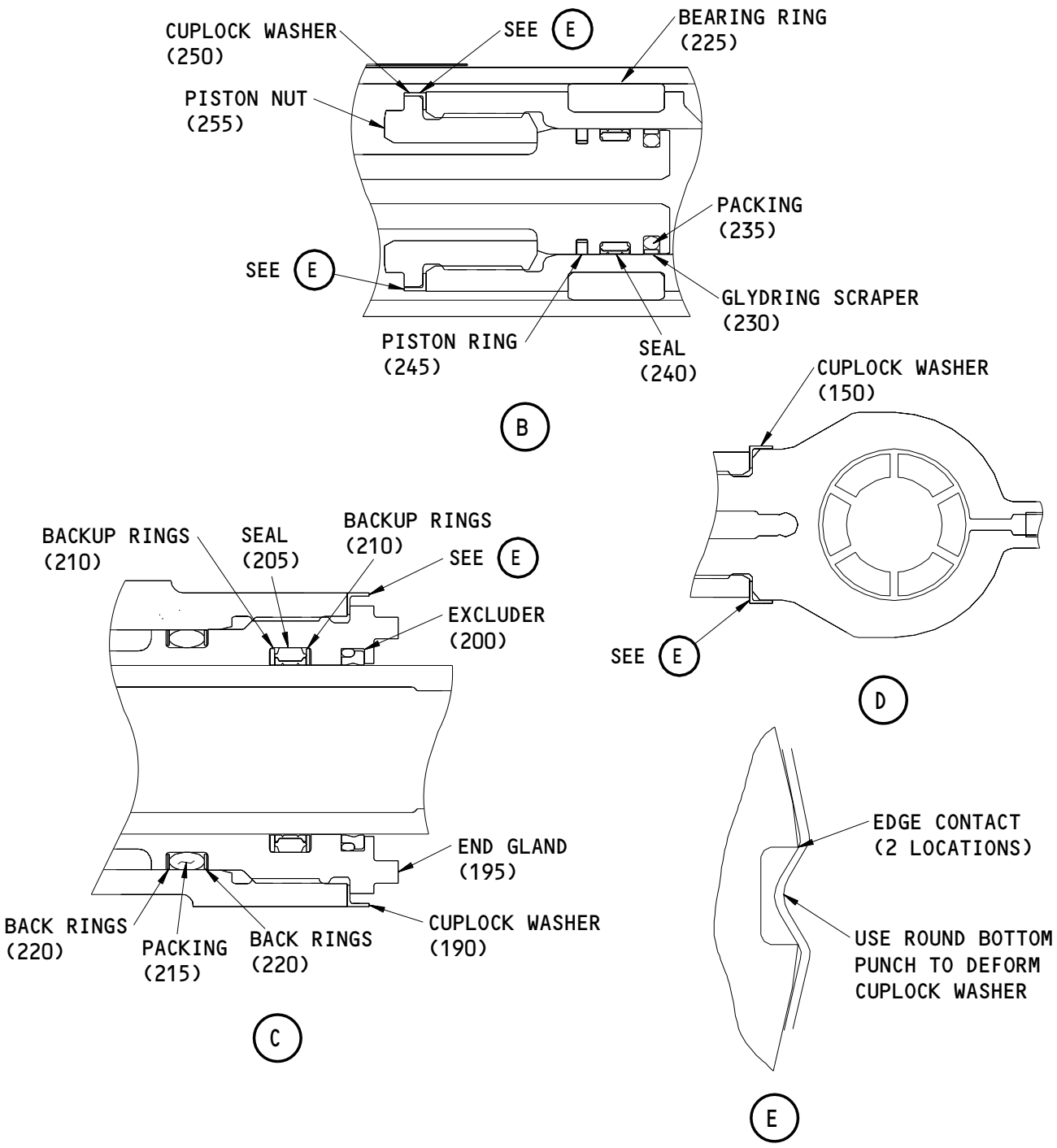
(12) Solvent clean and fillet seal, with BMS 5-26, into and over the slots between the cuplock washer and the actuator, see Fig. 603.





Actuator Assembly
Figure 701 (Sheet 1)

K11750

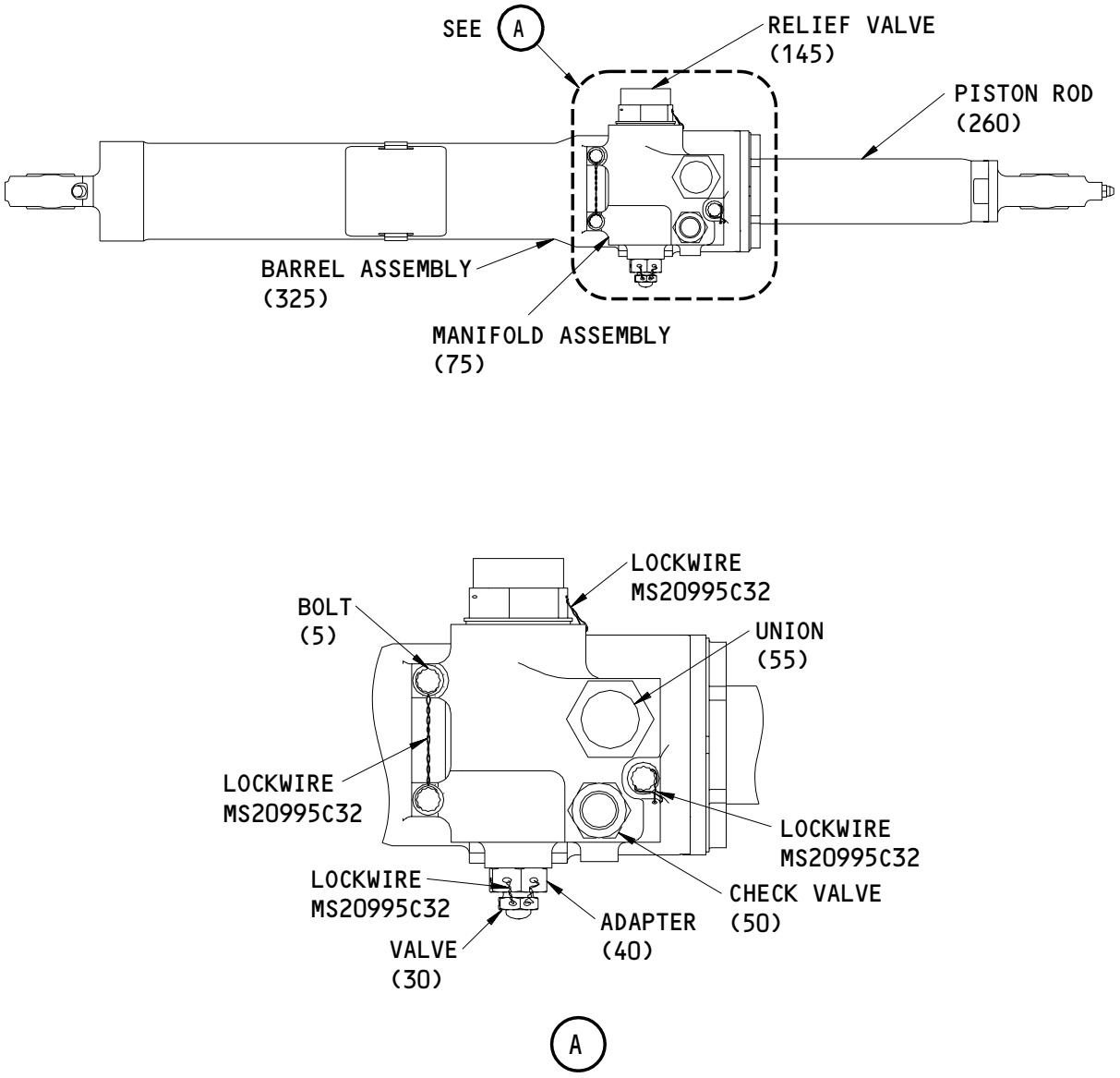


ITEM NUMBERS REFER TO IPL FIG. 1

ALL DIMENSIONS ARE IN INCHES

Actuator Assembly
Figure 701 (Sheet 2)

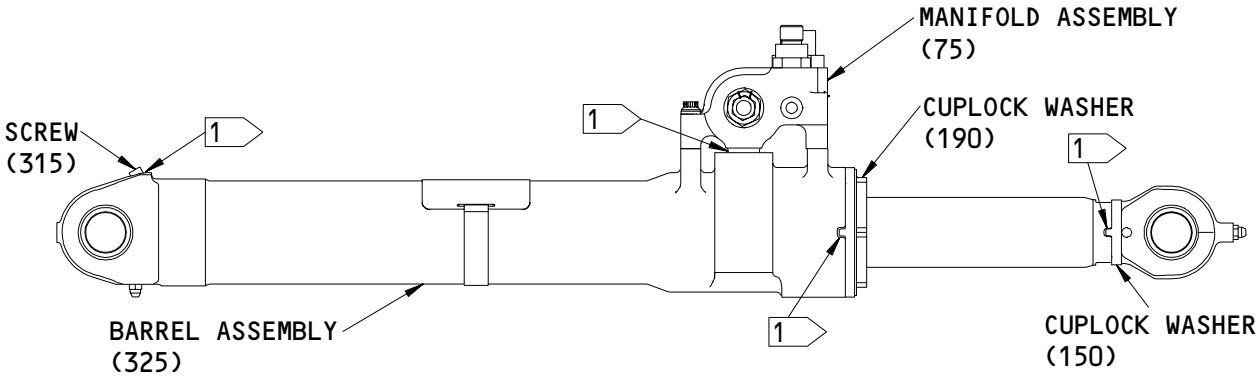
K11759



ITEM NUMBERS REFER TO IPL FIG. 1

Actuator Assembly
Figure 702

K11784



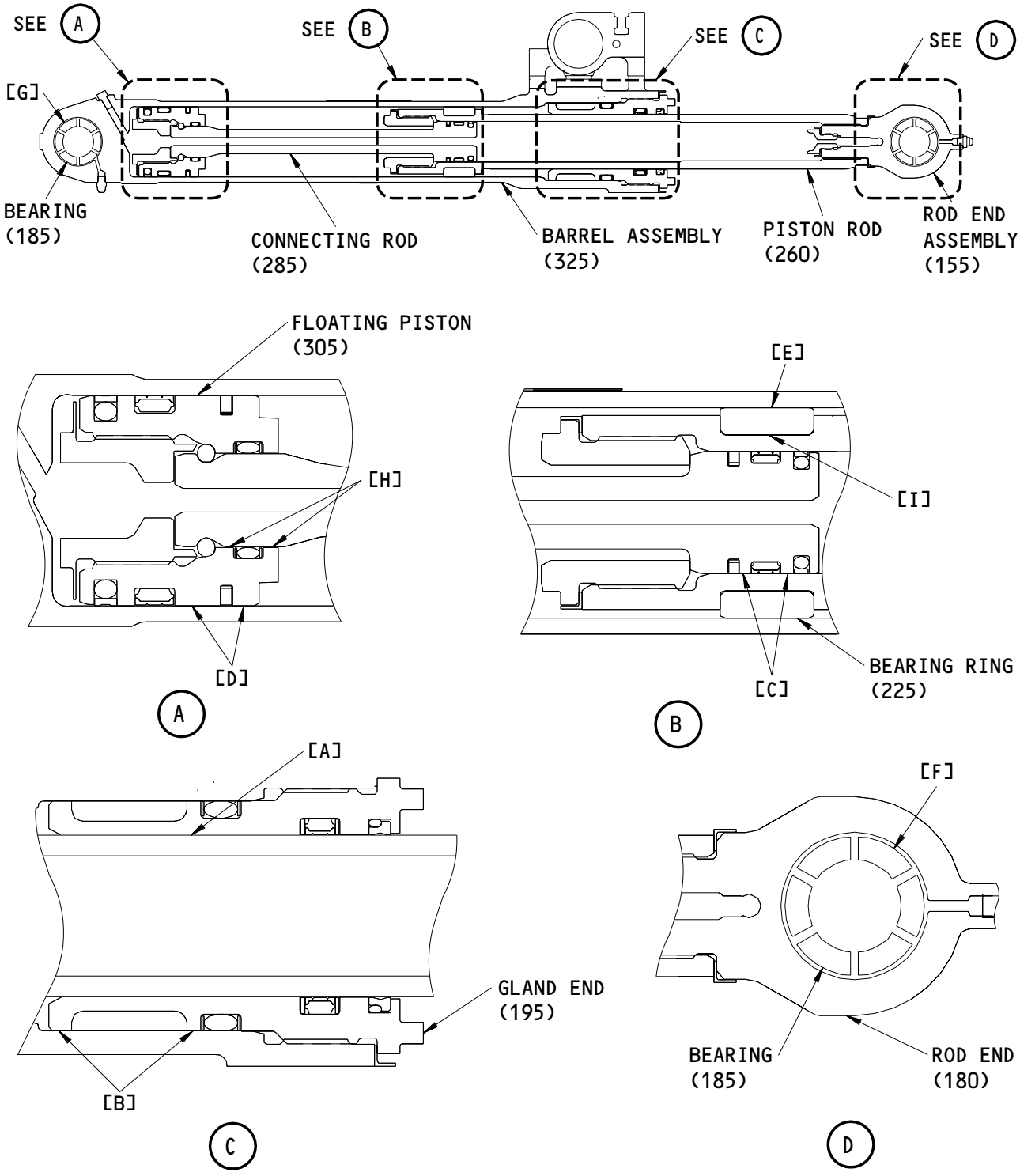
1 SOLVENT CLEAN AND FILLET SEAL WITH BMS 5-26

ITEM NUMBERS REFER TO IPL FIG. 1

Actuator Assembly
Figure 703

K53611

FITS AND CLEARANCES



Fits and Clearances
Figure 801 (Sheet 1)

K12097

REF LETTER	REF IPL FIG. 1, MATING ITEM NO.	DESIGN DIMENSION*				SERVICE WEAR LIMIT*		
		DIMENSION		ASSEMBLY CLEARANCE		DIMENSION		MAXIMUM CLEARANCE
		MIN	MAX	MIN	MAX	MIN	MAX	
[A]	ID 195	1.7500	1.7520	0.0020	0.0060		1.7535	0.0090
	OD 260	1.7460	1.7480			1.7445		
[B]	ID 325	2.4930	2.4950	0.0030	0.0070		2.4970	0.0110
	OD 195	2.4880	2.4900			2.4860		
[C]	ID 260	1.3030	1.3050	0.0020	0.0050		1.3060	0.0070
	OD 285	1.3000	1.3010			1.2990		
[D]	ID 325	2.2430	2.2450	0.0030	0.0060		2.2470	0.0100
	OD 305	2.2390	2.2400			2.2370		
[E]	ID 325	2.2430	2.2450	0.0005	0.0075		2.2470	0.0110
	OD 225	2.2375	2.2425			2.2360		
[F]	ID 180	1.5645	1.5600	0.0020	0.0040		1.5680	0.0080
	OD 185	1.5620	1.5625			1.5600		
[G]	ID 325	1.5645	1.5660	0.0020	0.0040		1.5680	0.0080
	OD 185	1.5620	1.5625			1.5600		
[H]	ID 305	1.0000	1.0010		0.0050			
	OD 285	0.9960	0.9980	0.0020		1	1	1
[I]	2 225	0.290	0.2910		0.0155	0.289		0.0185
	OD 260	1.6530	1.6540	0.0015		1.652		

* ALL DIMENSIONS ARE IN INCHES

1 NONE ALLOWED

2 BEARING THICKNESS

Fits and Clearances
Figure 801 (Sheet 2)

K12720

REF IPL		NAME	TORQUE*	
FIG. NO.	ITEM NO.		POUND-INCHES	POUND-FEET
1	5	Bolt	60-70	
1	20	Bolt	20-25	
1	30	Valve	50-70	
1	40	Adapter	140-160	
1	50	Check Valve	256-283	
1	55	Union	665-735	
1	145	Relief Valve	1000-1100	
1	155	Roc End	800-850	
1	160	Lube Fitting	20-30	
1	195	End Gland	1500-1600	
1	255	Piston Nut	1500-1600	
1	310	Nut	1650-1750	
1	320	Lube Fitting	20-30	

* REFER TO SOPM 20-50-01 FOR TORQUE VALUES OF STANDARD FASTENERS

Torque Table
Figure 802

K16192

SPECIAL TOOLS, FIXTURES, AND EQUIPMENT

1. General

A. This is a list of the special tools, fixtures, and equipment used in this manual.

B. Equivalent alternatives can be used.

(1) A32121-1 -- Holding Fixture Equipment

ILLUSTRATED PARTS LIST

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

2. Indentures show parts relationships as follows:

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

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

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

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

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

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

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

6. Parts Interchangeability

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

VENDORS

02107 FLOUROCARBON CO OHIO DIV
DOVER, OHIO 44622
CANCELLED NO REPLACEMENT

02697 PARKER-HANNIFIN CORP SEAL GROUP O-RING DIV
2360 PALUMBO DRIVE PO BOX 11751
LEXINGTON, KENTUCKY 40509

07128 TETRAFLUOR INC
2051 EAST MAPLE AVENUE
EL SEGUNDO, CALIFORNIA 90245-5009

26303 GREENE TWEED IND INC ADVANTEC DIV
7101 PATTERSON DRIVE PO BOX 5037
GARDEN GROVE, CALIFORNIA 92645-5037

26879 CORONADO MFG INC
11069 PENROSE AVENUE
SUN VALLEY, CALIFORNIA 90352-2722

92555 LEE COMPANY
2 PETTIPAUG ROAD PO BOX 424
WESTBROOK, CONNECTICUT 06498-1543

94878 RAYBESTOS-MANHATTAN INC PACIFIC COAST DIV
FULLERTON, CALIFORNIA 92631
BUSINESS DISCONTINUED

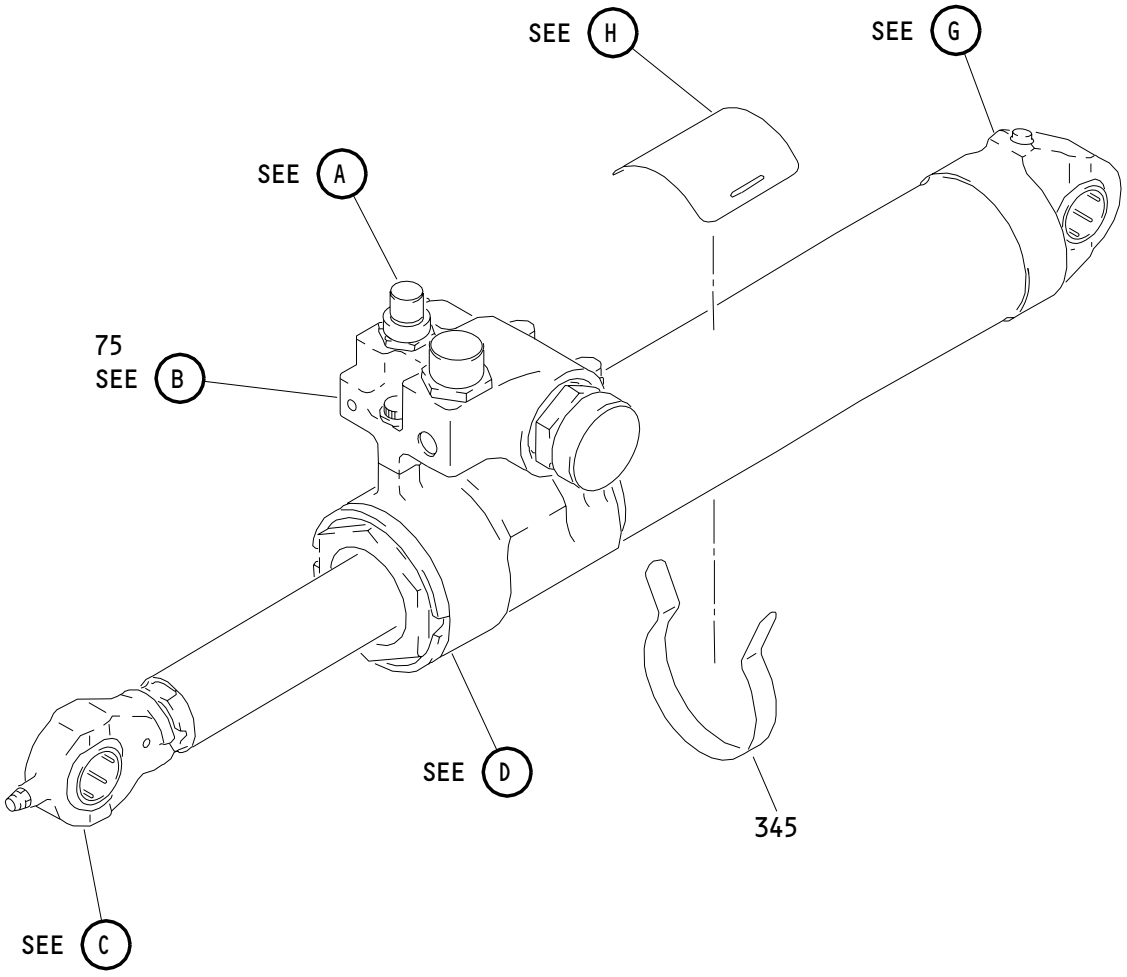
97820 BUSAK AND SHAMBAN INC BEARING DIV
711 MITCHELL ROAD PO BOX 665
NEWBURY PARK, CALIFORNIA 91320-2214

99240 CRISSAIR, INCORPORATED
38905 10TH STREET EAST
PALMDALE, CALIFORNIA 93550-3415

PART NUMBER	AIRLINE PART NO.	FIG.	ITEM	TTL REQ
BACB30LE4HU14		1	5	3
BACB30LK3U1		1	20	1
BACB30NT3R1		1	20A	1
BACB30NT3S1		1	20B	1
BACP20AX18		1	90	1
BACP20AX18P		1	95	1
BACP20AX25		1	105	1
BACP20AX25P		1	110	1
BACP20AX37		1	80	1
BACP20AX37P		1	85	1
BACR12BM114		1	70	2
BACR12BM214		1	140	4
		1	295	4
BACR12BM219		1	130	2
BACR12BM330		1	220	2
BACW10BP4CTU		1	10	3
BAC27TLG16		1	350	1
CKRA2505005A		1	100	1
C11236-114B		1	70	2
C11236-214B		1	140	2
		1	295	2
C11236-219B		1	130	2
C11236-330B		1	220	2
JETA1872800L		1	115	1
MS15004-1		1	160	1
		1	320	1
MS16998-26		1	315A	1
MS21209F1-15L		1	335	1
MS21209F4-15L		1	330	3
MS21902J10		1	55	1
NAS1351N3-6P		1	315	1
NAS1611-011A		1	35A	1
NAS1611-114A		1	65A	1
NAS1611-213A		1	235A	2
NAS1611-214A		1	135A	1
		1	290A	1
NAS1611-219A		1	125A	1
NAS1611-326A		1	280A	1
NAS1611-330A		1	215A	1
NAS1612-10A		1	60A	1
NAS1612-6A		1	45A	2

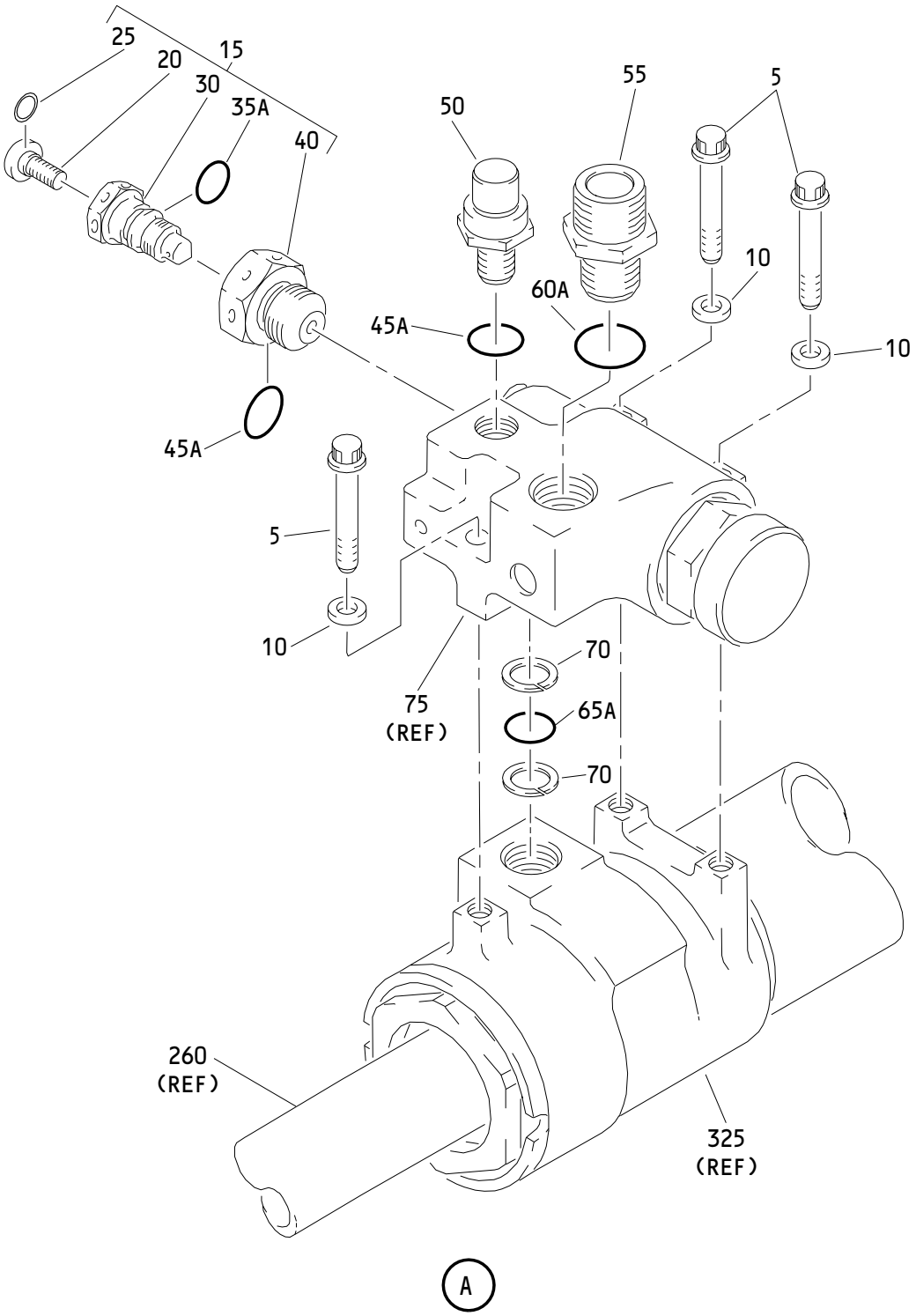
PART NUMBER	AIRLINE PART NO.	FIG.	ITEM	TTL REQ
PLGA2186020		1	95	1
PLGA2187020		1	90	1
PLGA2816020		1	110	1
PLGA2817020		1	105	1
PLGA4066020		1	85	1
PLGA4067020		1	80	1
RMR12BM114		1	70	2
RMR12BM214		1	140	2
		1	295	2
RMR12BM219		1	130	2
RMR12BM330		1	220	2
STF800-114		1	70	2
STF800-214		1	140	2
		1	295	2
STF800-219		1	130	2
STF800-330		1	220	2
S30294-114-1		1	70	2
S30294-214-1		1	140	2
		1	295	2
S30294-219-1		1	130	2
S30294-330-1		1	220	2
S30855-327H99N		1	205	1
S32925-719H99		1	200	1
S32934-215-29		1	230	1
S32934-328-29		1	275	1
S33157-327-29		1	210	2
S34722-215H99N		1	240	1
S34722-328H99N		1	270	1
S38003-215-29		1	245	1
S38003-328-29		1	265	1
TF450-114A		1	70	2
TF450-214A		1	140	2
		1	295	2
TF450-219A		1	130	2
TF450-330A		1	220	2
1C4078		1	50	1
2100-114		1	70	2
2100-214		1	140	2
		1	295	2
2100-219		1	130	2

PART NUMBER	AIRLINE PART NO.	FIG.	ITEM	TTL REQ
2100-330		1	220	2
270T0002-16		1	185	2
273T0050-1		1	345	1
273T6151-1		1	1A	RF
273T6152-1		1	325	1
273T6152-2		1	340	1
273T6153-1		1	75	1
273T6153-2		1	120	1
273T6154-1		1	260	1
273T6155-1		1	150	1
273T6155-2		1	190	1
273T6155-3		1	250	1
273T6156-1		1	225	2
273T6157-1		1	195	1
273T6158-1		1	305	1
273T6159-1		1	285	1
273T6160-1		1	300	2
273T6161-1		1	310	1
273T6163-1		1	155	1
273T6163-2		1	180	1
273T6164-1		1	255	1
273T6167-1		1	165	1
293W6132-2		1	15	1
293W6133-1		1	30	1
293W6134-2		1	40	1
5-125E515-80		1	25	1
60B00269-5		1	145	1
66-12156-1		1	170	1
69B80006-1		1	175	1



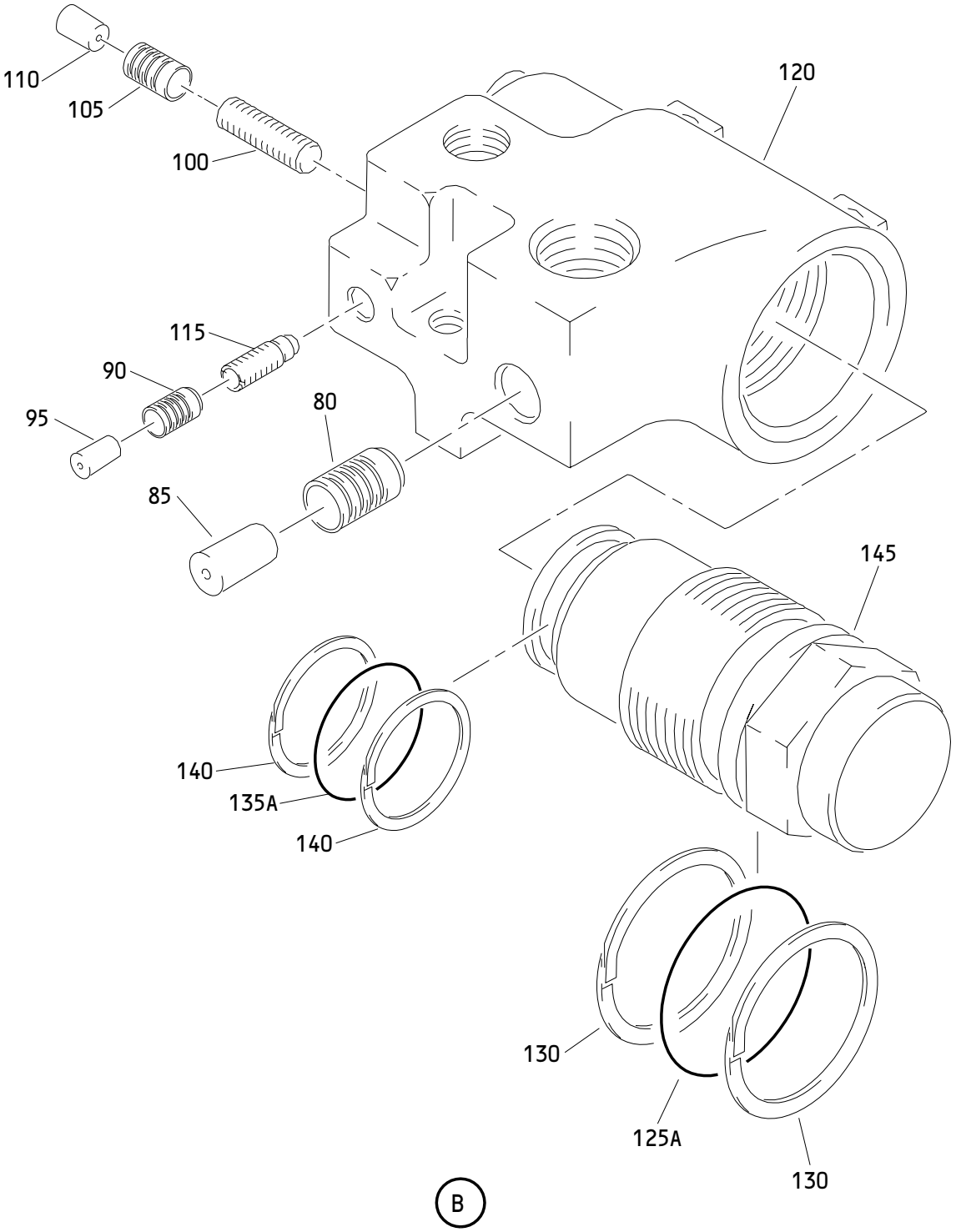
Main Landing Gear Truck Positioner Actuator Assembly
Figure 1 (Sheet 1)

K12190



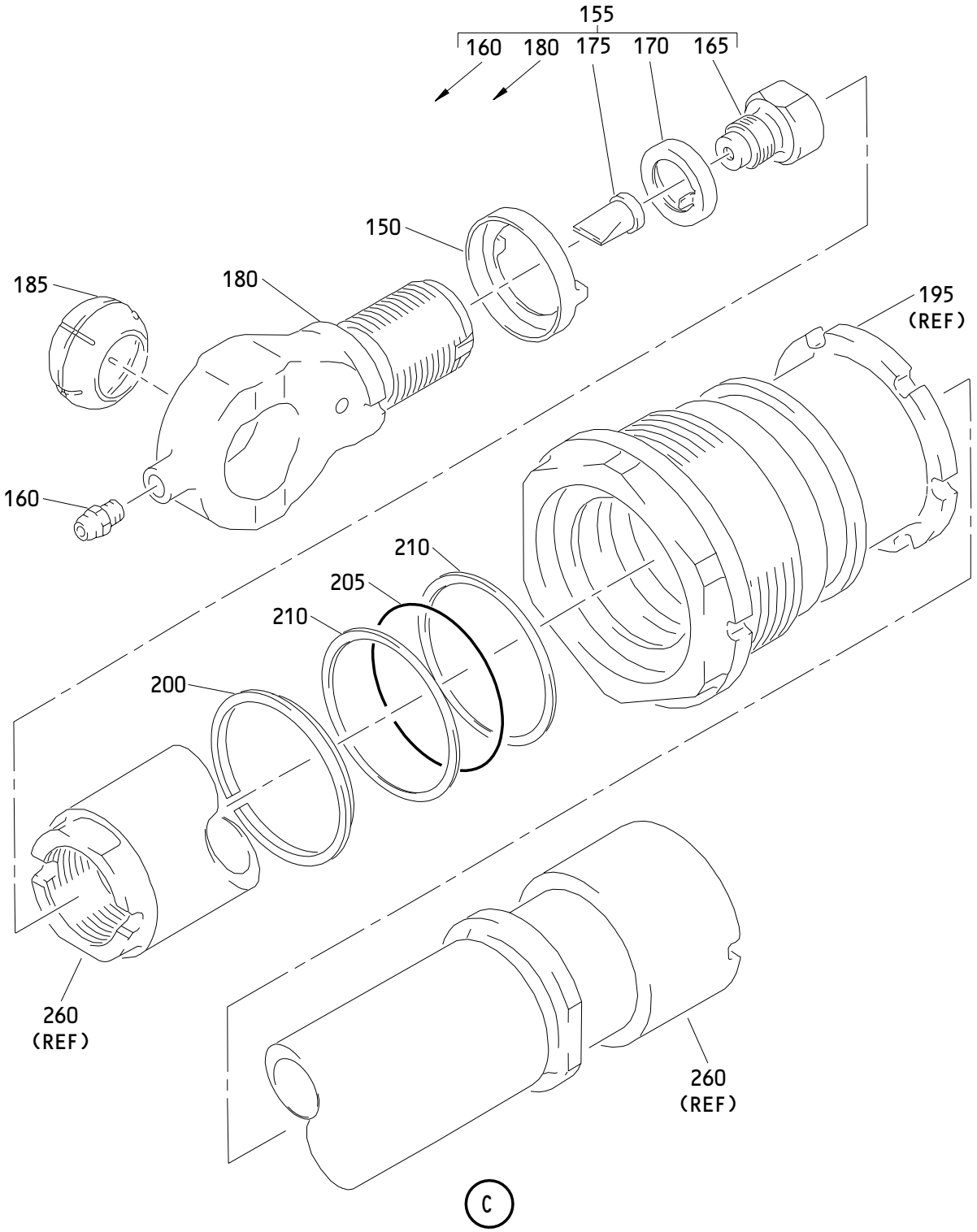
Main Landing Gear Truck Positioner Actuator Assembly
Figure 1 (Sheet 2)

K12337



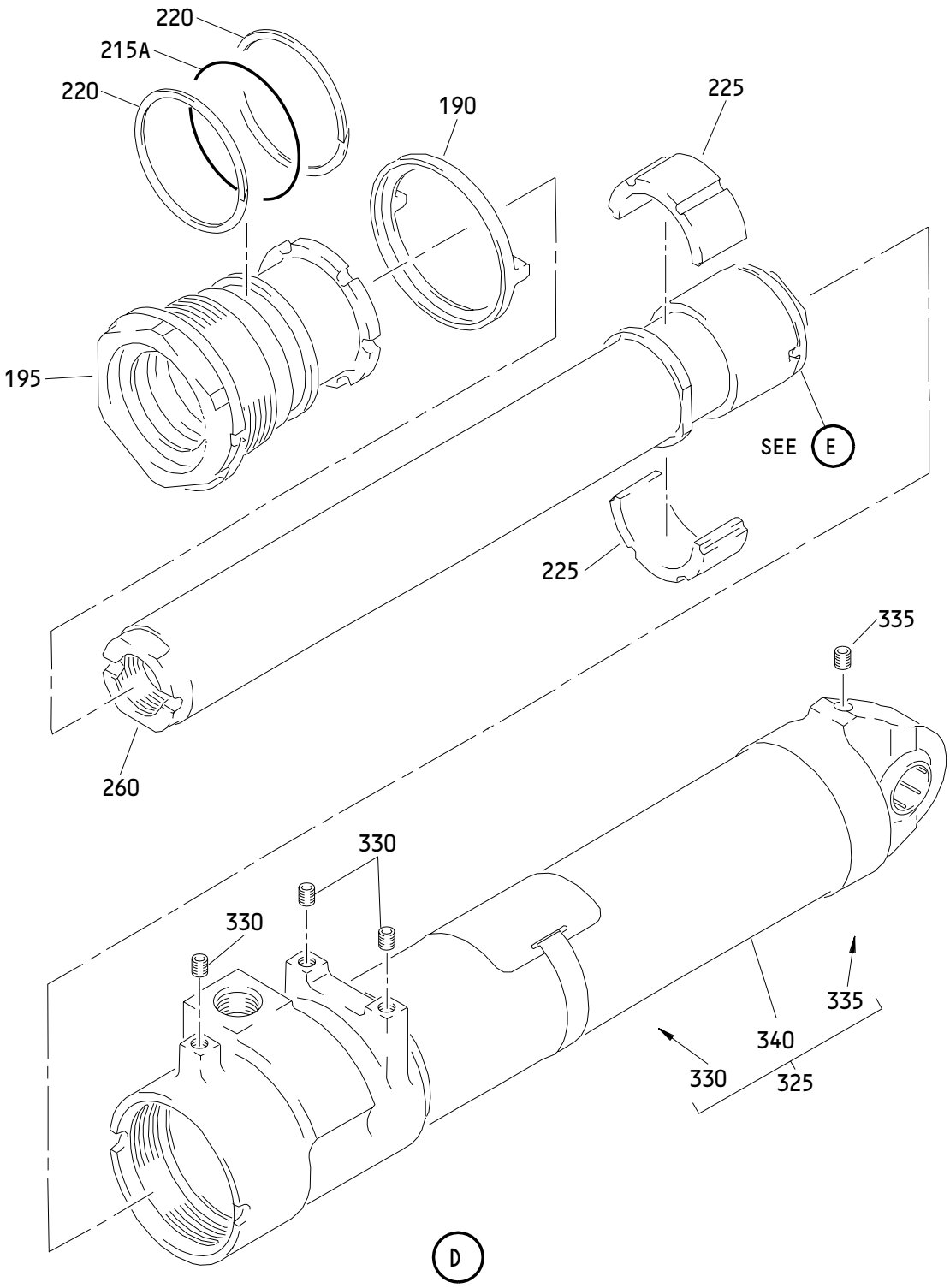
Main Landing Gear Truck Positioner Actuator Assembly
Figure 1 (Sheet 3)

K12373



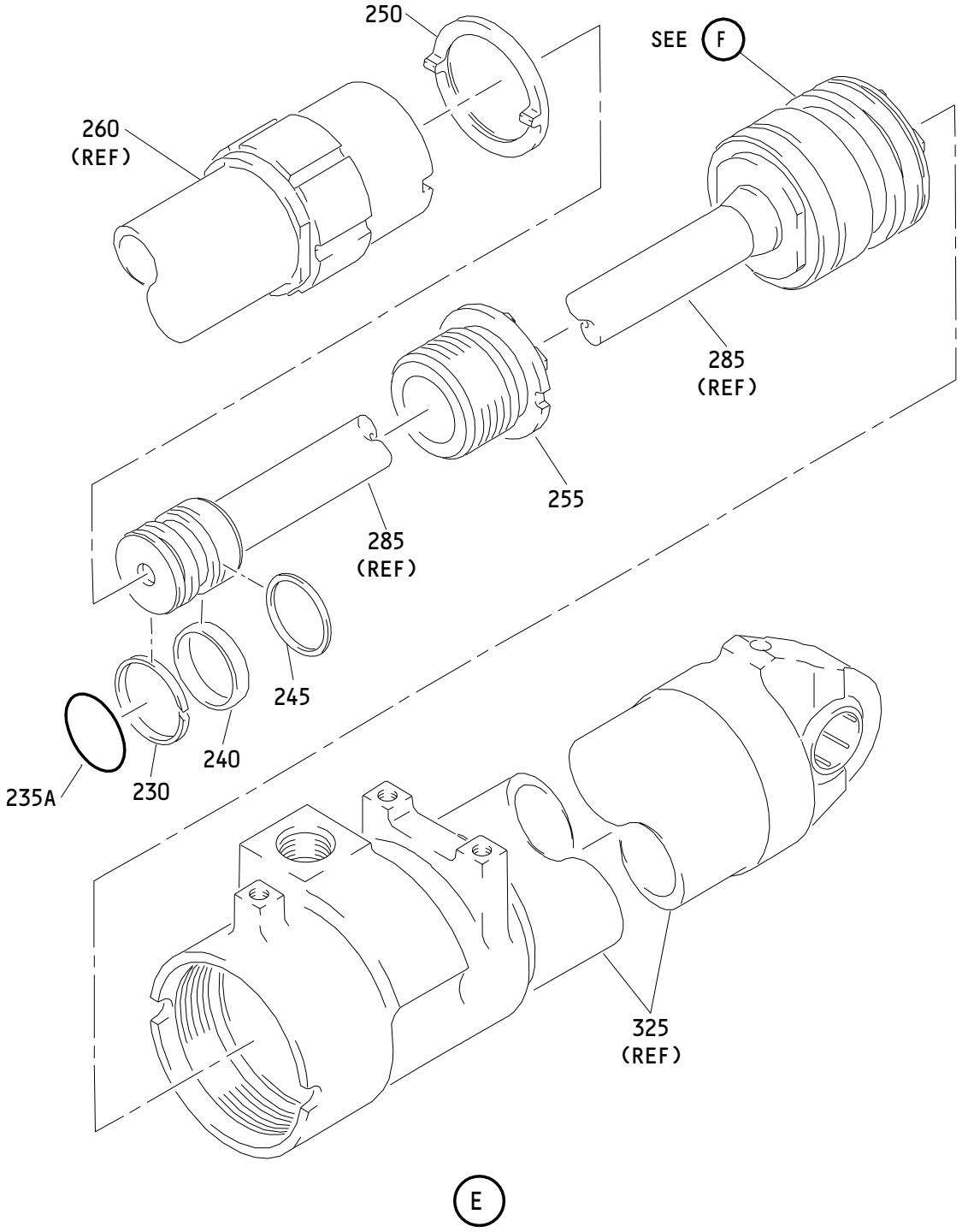
Main Landing Gear Truck Positioner Actuator Assembly
Figure 1 (Sheet 4)

K12682



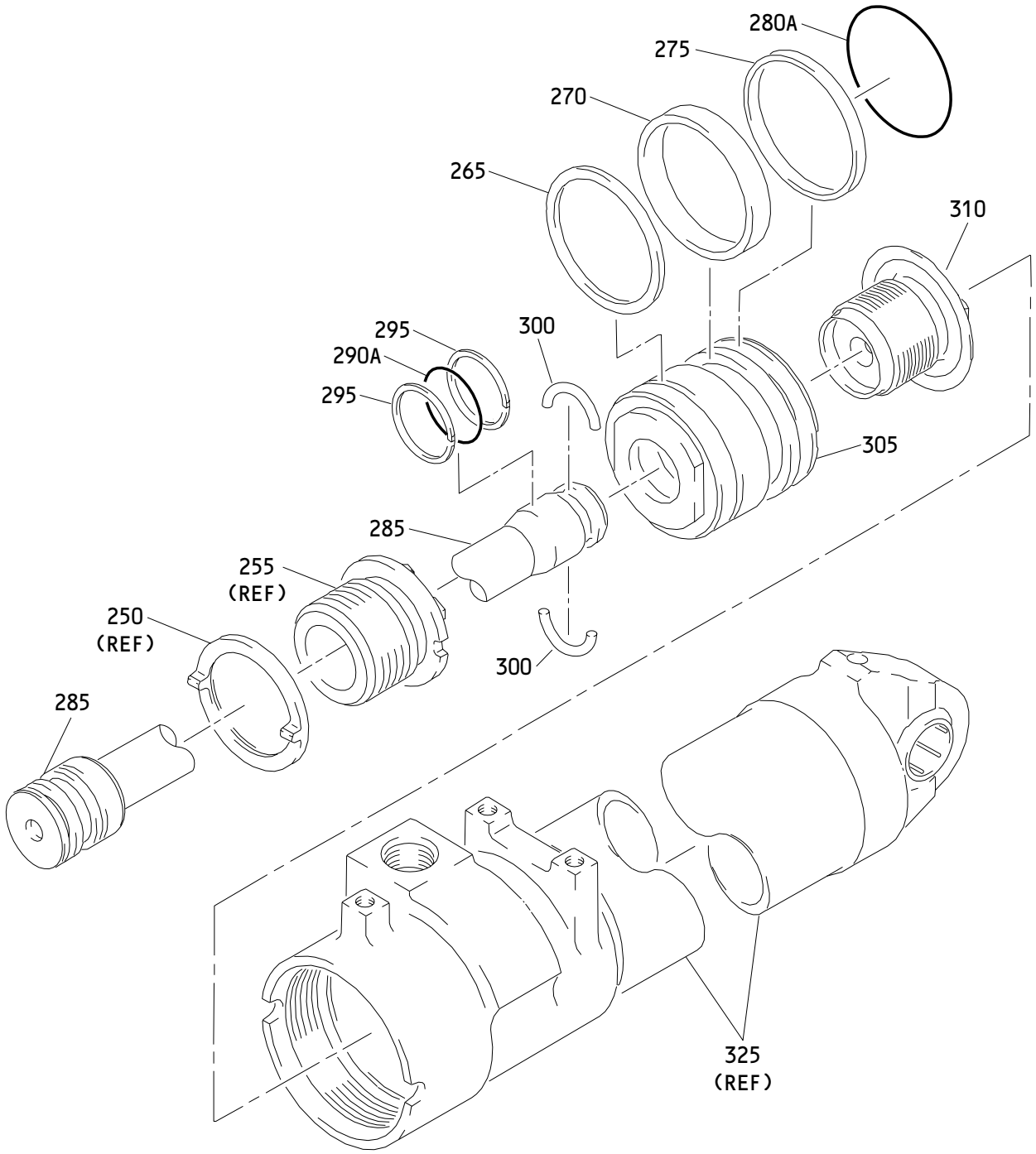
Main Landing Gear Truck Positioner Actuator Assembly
Figure 1 (Sheet 5)

K12424

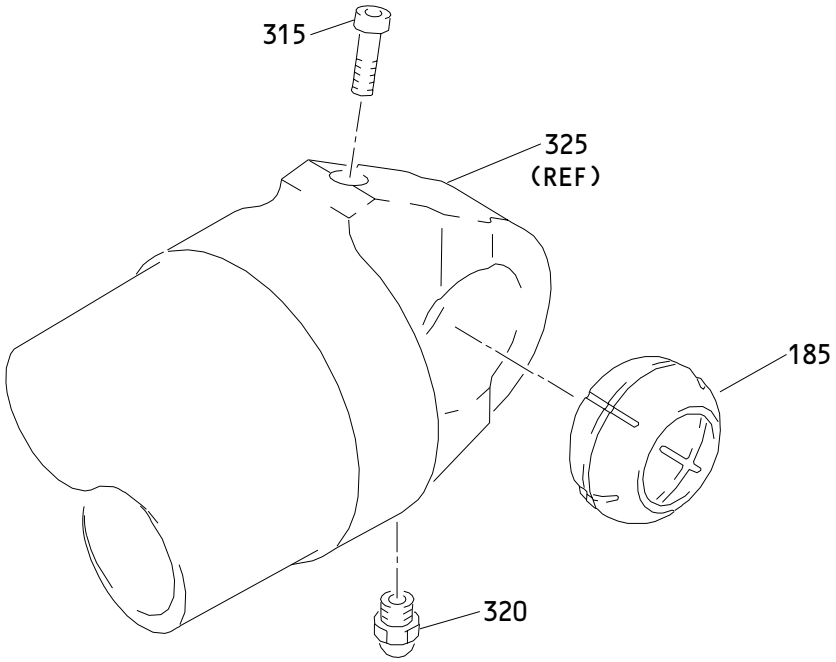


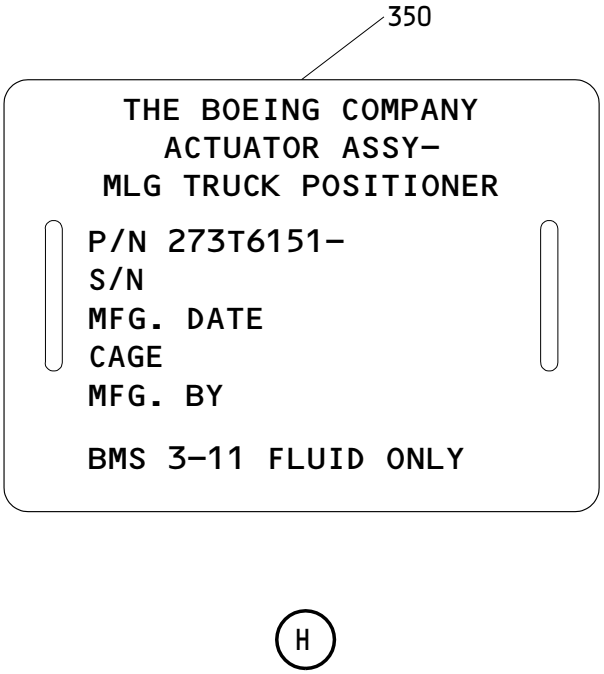
Main Landing Gear Truck Positioner Actuator Assembly
Figure 1 (Sheet 6)

K12623



Main Landing Gear Truck Positioner Actuator Assembly
Figure 1 (Sheet 7)





Main Landing Gear Truck Positioner Actuator Assembly
Figure 1 (Sheet 8)

K12705

FIG. & ITEM	PART NO.	AIRLINE PART NUMBER	NOMENCLATURE 1234567	EFF CODE	QTY PER ASSY
01-					
-1A	273T6151-1		ACTUATOR ASSY-TRUCK POSITIONER MLG		RF
5	BACB30LE4HU14		.BOLT		3
10	BACW10BP4CTU		.WASHER		3
15	293W6132-2		.VALVE ASSY-BLEEDER		1
20	BACB30LK3U1		..BOLT- (OPT ITEMS 20A, 20B)		1
-20A	BACB30NT3R1		..BOLT- (OPT ITEMS 20, 20B)		1
-20B	BACB30NT3S1		..BOLT- (OPT ITEMS 20, 20A)		1
25	5-125E515-80		..PACKING- (V02697)		1
30	293W6133-1		..VALVE		1
35	NAS1611-011		DELETED		
35A	NAS1611-011A		..PACKING		1
40	293W6134-2		..ADAPTER		1
45	NAS1612-6		DELETED		
45A	NAS1612-6A		.PACKING		2
50	1C4078		.VALVE-CHECK (V99240)		1
55	MS21902J10		.UNION		1
60	NAS1612-10		DELETED		
60A	NAS1612-10A		.PACKING		1
65	NAS1611-114		DELETED		
65A	NAS1611-114A		.PACKING		1
70	C11236-114B		.RING-BACKUP (V26879) (SPEC BACR12BM114) (OPT RMR12BM114 (V94878)) (OPT STF800-114 (V02107)) (OPT S30294-114-1 (V97820)) (OPT TF450-114A (V07128)) (OPT 2100-114 (V26303))		2

FIG. & ITEM	PART NO.	AIRLINE PART NUMBER	NOMENCLATURE 1234567	EFF CODE	QTY PER ASSY
01-					
75	273T6153-1		.MANIFOLD ASSY-		1
80	PLGA4067020		..PLUG-		1
			(V92555)		
			(SPEC BACP20AX37)		
85	PLGA4066020		..PIN-		1
			(V92555)		
			(SPEC BACP20AX37P)		
90	PLGA2187020		..PLUG-		1
			(V92555)		
			(SPEC BACP20AX18)		
95	PLGA2186020		..PIN-		1
			(V92555)		
			(SPEC BACP20AX18P)		
100	CKRA2505005A		..VALVE-LEE CHECK		1
105	PLGA2817020		..PLUG-		1
			(V92555)		
			(SPEC BACP20AX25)		
110	PLGA2816020		..PIN-		1
			(V92555)		
			(SPEC BACP20AX25P)		
115	JETA1872800L		..RESTRICTOR-LEE		1
			(V92555)		
120	273T6153-2		..MANIFOLD		1
125	NAS1611-219		DELETED		
125A	NAS1611-219A		.PACKING		1
130	C11236-219B		.RING-BACKUP		2
			(V26879)		
			(SPEC BACR12BM219)		
			(OPT RMR12BM219		
			(V94878))		
			(OPT STF800-219		
			(V02107))		
			(OPT S30294-219-1		
			(V97820))		
			(OPT TF450-219A		
			(V07128))		
			(OPT 2100-219		
			(V26303))		
135	NAS1611-214		DELETED		
135A	NAS1611-214A		.PACKING		1

FIG. & ITEM	PART NO.	AIRLINE PART NUMBER	NOMENCLATURE 1234567	EFF CODE	QTY PER ASSY
01-					
140	C11236-214B		.RING-BACKUP (V26879) (SPEC BACR12BM214) (OPT RMR12BM214 (V94878)) (OPT STF800-214 (V02107)) (OPT S30294-214-1 (V97820)) (OPT TF450-214A (V07128)) (OPT 2100-214 (V26303))		2
145	60B00269-5		.VALVE ASSY-RELIEF		1
150	273T6155-1		.WASHER-CUPLOCK		1
155	273T6163-1		.END ASSY-ROD		1
160	MS15004-1		..FITTING-LUBE		1
165	273T6167-1		..RETAINER-VENT		1
170	66-12156-1		..LOCKWASHER-CUP		1
175	69B80006-1		..VALVE-VENT		1
180	273T6163-2		..ROD END		1
185	270T0002-16		.BEARING-SPLIT BALL		2
190	273T6155-2		.WASHER-CUPLOCK		1
195	273T6157-1		.END GLAND		1
200	S32925-719H99		.EXCLUDER-DC (V97820)		1
205	S30855-327H99N		.SEAL-PLUS II (V97820)		1
210	S33157-327-29		.RING-BACKUP (V97820)		2
215	NAS1611-330		DELETED		
215A	NAS1611-330A		.PACKING		1
220	C11236-330B		.RING-BACKUP (V26879) (SPEC BACR12BM330) (OPT RMR12BM330 (V94878)) (OPT STF800-330 (V02107)) (OPT S30294-330-1 (V97820)) (OPT TF450-330A (V07128)) (OPT 2100-330 (V26303))		2

FIG. & ITEM	PART NO.	AIRLINE PART NUMBER	NOMENCLATURE 1234567	EFF CODE	QTY PER ASSY
01-					
225	273T6156-1		.RING-BRG		2
230	S32934-215-29		.SCRAPER-DC GLYDRING (V97820)		1
235	NAS1611-213		DELETED		
235A	NAS1611-213A		.PACKING		1
240	S34722-215H99N		.SEAL-PLUS II (V97820)		1
245	S38003-215-29		.RING-PISTON (V97820)		1
250	273T6155-3		.WASHER-CUPLOCK		1
255	273T6164-1		.NUT-PISTON		1
260	273T6154-1		.ROD-PISTON		1
265	S38003-328-29		.RING-PISTON (V97820)		1
270	S34722-328H99N		.SEAL-PLUS II (V97820)		1
275	S32934-328-29		.SCRAPER-DC GLYDRING (V97820)		1
280	NAS1611-326		DELETED		
280A	NAS1611-326A		.PACKING		1
285	273T6159-1		.PISTON-ROD CONN FLOATING		1
290	NAS1611-214		DELETED		
290A	NAS1611-214A		.PACKING		1
295	C11236-214B		.RING-BACKUP (V26879) (SPEC BACR12BM214) (OPT RMR12BM214 (V94878)) (OPT STF800-214 (V02107)) (OPT S30294-214-1 (V97820)) (OPT TF450-214A (V07128)) (OPT 2100-214 (V26303))		2

FIG. & ITEM	PART NO.	AIRLINE PART NUMBER	NOMENCLATURE 1234567	EFF CODE	QTY PER ASSY
01-					
300	273T6160-1		.RING-RETAINING		2
305	273T6158-1		.PISTON-FLOATING		1
310	273T6161-1		.NUT		1
315	NAS1351N3-6P		.SCREW- (OPT ITEM 315A)		1
-315A	MS16998-26		.SCREW- (OPT ITEM 315)		1
320	MS15004-1		.FITTING-LUBE		1
325	273T6152-1		.BARREL ASSY		1
330	MS21209F4-15L		..INSERT		3
335	MS21209F1-15L		..INSERT		1
340	273T6152-2		..BARREL		1
345	273T0050-1		.STRAP-NAMEPLATE		1
350	BAC27TLG16		.MARKER		1

- Item Not Illustrated