TO: ALL HOLDERS OF MAIN LANDING GEAR DOOR ACTUATOR ASSEMBLY COMPONENT MAINTENANCE MANUAL 32-32-19

REVISION NO. 3 DATED MAR 01/02

HIGHLIGHTS

All data formerly in 767 CMM 32-32-12 is now included in this CMM 32-32-19. 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
101 301-302 701-702 901	Identified F72959 wrench set as a replacement for AN8515 wrenches.
101-102 301-302 501 REPAIR-GEN 601-602 REPAIR 1-1 601 REPAIR 2-1 601 REPAIR 3-1 601 REPAIR 4-1 601-602 REPAIR 5-1 601 REPAIR 6-1 601 701-704 802	Added clarifications and updated callouts. Deleted procedures which can be done by standard industry practices and the instructions in the SOPM.

MAIN LANDING GEAR DOOR ACTUATOR ASSEMBLY

PART NUMBER 273T4520-3,-4
273T4521-2,-3

COMPONENT MAINTENANCE MANUAL
WITH
ILLUSTRATED PARTS LIST

REVISION RECORD

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

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

TEMPORARY REVISION AND SERVICE BULLETIN RECORD

BOEING SERVICE BULLETIN	BOEING TEMPORARY REVISION	OTHER DIRECTIVE	DATE OF INCORPORATION INTO MANUAL
32-7		PRR B10036 MC B1290-001 MC B1323-001K	DEC 10/81 JAN 10/83 APR 10/85

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*901	MAR 01/02	01.1
902	BLANK	
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1001	JUL 01/88	01.1
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1003	JUL 01/88	01.1
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TABLE OF CONTENTS

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

INTRODUCTION

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

This manual is divided into separate sections:

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

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

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

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

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

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

Verification:

Testing/TS	Jun 11/82
Disassembly	Jun 11/82
Assembly	Jun 11/82

MAIN LANDING GEAR DOOR ACTUATOR ASSEMBLY

DESCRIPTION AND OPERATION

1. The main landing gear door actuator assembly consists of head end, end cap, rod end, and barrel, all made from corrosion resistant steel.

2. Hydraulic pressure is applied to the OPEN or CLOSED port of the actuator to facilitate main landing gear door opening and closing during gear extension and retraction. The actuator also provides snubbing effect in both directions of travel.

3. Leading Particulars (Approximate)

   A. Length -- Extended 32.6 inches (between center of bearings)
      -- Retracted 21.3 inches (between center of bearings)

   B. Diameter -- 4 inches

   C. Weight -- 32 pounds

   D. Operating Medium -- Hydraulic Fluid, BMS 3-11

   E. Maximum Operating Pressure -- 5400 psi

   F. Proof Pressure -- 5300-5500 psi

   G. Return Pressure -- 550-650 psi

TESTING/TROUBLE SHOOTING

1. Equipment

NOTE: Equivalent substitutes can be used.

A. Fixture -- A32059-1

B. Wrench set -- F72959 (Replaces AN8515-1)

C. Hydraulic stand -- to supply BMS 3-11 hydraulic fluid at variable pressure of 0-5500 psi. Hydraulic fluid must be filtered to 15 micron absolute and be 80-120°F.

2. Preparation for Test

A. Install valves (10, 20, IPL Fig. 1) and packings (5, 15) to OPEN and CLOSE ports of actuator assembly (25).

B. Install unit in test fixture A32059-1 and connect all hydraulic lines.

C. Fill unit with hydraulic fluid and bleed all air from unit.

D. Apply 5400-5600 psi hydraulic pressure to the CLOSED port and tighten nuts (35, 75) to 500-800 lb-in with the wrench.

3. Test

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

CAUTION: DO NOT CYCLE UNIT AT PROOF PRESSURE.

A. External Leakage Test

(1) Cycle unit for 25 complete stroke cycles with test stand set at 2900-3100 psi inlet pressure and 550-650 psi return pressure at a rate of approximately 4 gpm. Make sure the leakage at the rod seal is not more than 1 drop and there is no other external leakage.

B. Internal Leakage Test

(1) With piston rod extended, apply 3000 psi to CLOSE port. Leakage at OPEN port must not be more than 2 cc/minute. Do the test with 50 psi pressure at CLOSE port. Leakage from OPEN port must not be more than 2 cc/minute.

(2) With the piston rod fully retracted, apply 3000 psi to OPEN port. Leakage at CLOSE port must not be more than 2 cc/minute. Do the test with 50 psi at OPEN port. Leakage from CLOSE port must not be more than 2 cc/minute.

C. Proof Pressure Test

CAUTION: DO NOT EXTEND OR RETRACT UNIT AT PROOF PRESSURE (8000-8200 PSI).

(1) Slowly apply 5300-5500 psi to CLOSE port with no pressure at OPEN port and hold pressure for 3 minutes. Make sure there is no sign of external leakage or permanent set.

(2) Do step (1) at OPEN port. Make sure there is no sign of external leakage or permanent set.

D. Snubbing Test

(1) With the unit fully retracted, apply hydraulic fluid at a maximum pressure of 3000 psi to the CLOSE port. Make sure the piston moves at a uniform rate from 1.5 inches from retracted position to 1.0 inch from the extended position. Deceleration must start at 1.0 inch from the extended position.

(2) With the unit fully extended, supply hydraulic fluid at a maximum pressure of 3000 psi to the OPEN port. Make sure the piston moves at a uniform rate in the range specified in step (1). Deceleration must start at 1.5 inch from the retracted position.

TROUBLE	PROBABLE CAUSE	CORRECTION
Excessive leakage at rod end (80)	Defective packings (160), backup rings (155) or foot seal (175)	Disassemble and replace parts per par. 4.A., 4.B.
Excessive leakage at OPEN or CLOSED ports	Defective piston seal (195)	Disassemble and replace part per par. 4.A., 4.C.
Piston does not decelerate at either end of the stroke	Worn piston rod (200)	Disassemble and replace part per par. 4.A., 4.D.
Binding or irregular movement of piston rod (200)	Worn piston rod (200) or barrel (190)	Disassemble and replace parts per par. 4.A., 4.D.
	Contaminated parts	Completely disassemble unit per DISASSEMBLY and clean all parts

Trouble Shooting Chart
Figure 101

4. Corrective Procedures

A. Disconnect hydraulic lines and drain all hydraulic fluid from unit.

B. Replacement of packings (160), backup rings (155) and hat seal (175).

(1) Disassemble unit per DISASSEMBLY par. 3.A. thru 3.E. and 3.G.

(2) Replace defective parts.

(3) Assemble parts per ASSEMBLY par. 4.F. thru 4.K., 4.M. thru 4.O.

(4) Retest unit per par. 2 and 3.

C. Replacement of piston seal (195).

(1) Disassemble unit per DISASSEMBLY par. 3.A. thru 3.D.

(2) Replace defective seals (Ref Fig. 701).

(3) Assemble parts per ASSEMBLY par. 4.M. thru 4.O.

(4) Retest unit per par. 2 and 3.

D. Replacement of piston rod (200).

(1) Disassemble unit per DISASSEMBLY par. 3.A. thru 3.E.

(2) Replace piston rod.

(3) Install piston seal (195) on piston rod per Fig. 701.

(4) Assemble parts per ASSEMBLY par. 4.M. thru 4.O.

(5) Retest unit per par. 2 and 3.

DISASSEMBLY

NOTE: Refer to TESTING/TROUBLE SHOOTING to establish condition or probable cause of any malfunction and to determine extent of disassembly or repair.

1. Equipment

   NOTE: Equivalent substitutes can be used.

   A. A32040-15 -- Rod End Wrench

   B. A32059-1 or -16 -- Holding Fixture

   C. F72959 -- Wrench Set (replaces AN8515-1)

   D. A32059-18 -- Barrel Wrench

   E. A32059-11 -- Piston Rod Wrench

2. Parts Replacement

   NOTE: The following parts are recommended for replacement. Unless shown differently, replacement of other parts can be by in-service experience.

   A. Lockwire

   B. Packings (5, 15, 135, 160)

   C. Rings (130, 140, 155)

   D. Cup lockwashers (30, 70)

   E. Piston ring set (195)

   F. Nameplate, strap and markers

3. Disassembly (IPL Fig. 1)

   A. Remove lockwire and sealant.

   B. Remove valves (10, 20) and packings (5, 15) from actuator (25).

CAUTION: BEARINGS (65, 95) HALVES MAKE A MATCHED SET AND MUST BE KEPT TOGETHER TO BE SURE THE UNIT WILL OPERATE CORRECTLY AFTER ASSEMBLY. DO NOT MIX BEARING SETS.

C. Remove bearings (65, 95) from head end (40) and rod end (80).

D. Straighten flange of cup lockwasher (100) on rod end (80).

E. Hold actuator in holding fixture A32059-1 or -16.

F. With rod end wrench A32040-15, hold rod end (80). With wrench A32059-11, unscrew piston rod (200) from rod end (80).

G. Remove rod end (80) and cup lockwasher (100) from piston rod (200).

H. Unscrew and remove retainer nut (105) from cap (110) with spanner wrench F72959.

I. Straighten flanges of cup lockwashers (70) on cap (110) and barrel (190). With spanner wrench F72959, unscrew locknut (75). Unscrew and remove cap (110) with attached parts (130, 135, 185, 155, 160, 165, 175, 170 and 150) from barrel (190).

J. Remove parts (130, 135, 155, 160, 165, 175, 170 and 150) from cap assembly (110).

NOTE: Do not remove ring (185) unless necessary for repair or replacement.

CAUTION: BE VERY CAREFUL WHEN YOU REMOVE PISTON ROD (200) FROM BARREL (190) NOT TO DAMAGE THE ROD OR BARREL.

K. Install rod end (80) temporarily on piston rod (200), and pull piston rod (200) out of barrel (190). Remove rod end (80) from piston rod (200). Remove piston seal (195) from piston rod (200). Remove cup lockwashers (70) and locknut (75) from barrel (190).

L. Straighten the flanges of cup lockwashers (30) on head end (40) and barrel (190). With spanner wrench F72959, unscrew locknut (35).

M. With wrench A32059-18, unscrew barrel (190) and remove from head end (40). Remove cup lockwashers (30) and locknut (35) from barrel (190).

N. Remove backup rings (130), packing (135), ring retainer (145) and ring (140) from head end (40).

CHECK

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

2. Magnetic particle check (SOPM 20-20-01) the following parts:

   A. Retainer ring (145)

   B. Locknuts (35, 75)

   C. Seal retainer nut (105)

   D. Barrel (190)

   E. Rod end (90)

   F. Piston rod (200)

   G. Head end (60)

   H. Cap (125)

3. Penetrant check (SOPM 20-20-02) the following parts:

   A. Seal retainer (170)

   B. Bushing (165)

REPAIR - GENERAL

1. Content

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

P/N	NAME	REPAIR
273T0035	CAP, ROD END	1-1
273T0036	HEAD END	2-1
273T0037	ROD END	3-1
273T0038	PISTON ROD	4-1
273T0047	ROD END	3-1
273T0048	CAP, ROD END	1-1
273T0049	HEAD END	2-1
- - -	MISCELLANEOUS PARTS REFINISH	5-1
- - -	EXTERNAL PARTS REPLACEMENT	6-1

2. Standard Practices

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

20-30-02 Stripping of Protective Finishes
20-41-01 Decoding Table for Boeing Finish Codes
20-42-03 Hard Chrome Plating
20-44-02 Temporary Protective Coatings
20-50-04 Installation of Permanent Drill Passage Pin and Plug
20-50-05 Application of Aluminum Foil and Other Markers
20-50-08 Application of Solid Film Lubricant
20-60-02 Finishing Materials

3. Materials

NOTE: Equivalent substitutes can be used.

A. Solid film lubricant -- Type 6, Class 3 (SOPM 20-50-08)

B. Clear protective coating -- Type 41 (SOPM 20-60-02)

4. Dimensioning Symbols

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

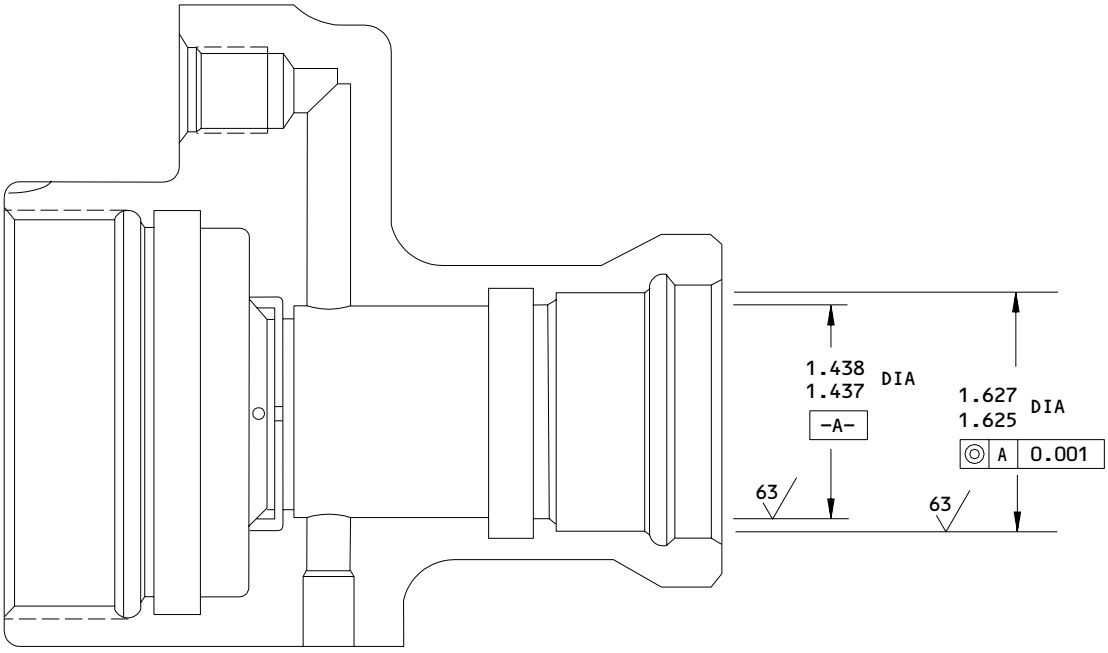
CAP, ROD END - REPAIR 1-1

273T0035
273T0048

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

1. Pin and Plug Replacement

A. Replace pin (120) and plug (115) in cap (110) (SOPM 20-50-04).



REFINISH

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

REPAIR

(SAME AS REFINISH)

125 ALL MACHINED SURFACES UNLESS SHOWN DIFFERENTLY

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

ALL DIMENSIONS ARE IN INCHES

273T0035-2
273T0048-2
Rod End Cap Repair
Figure 601

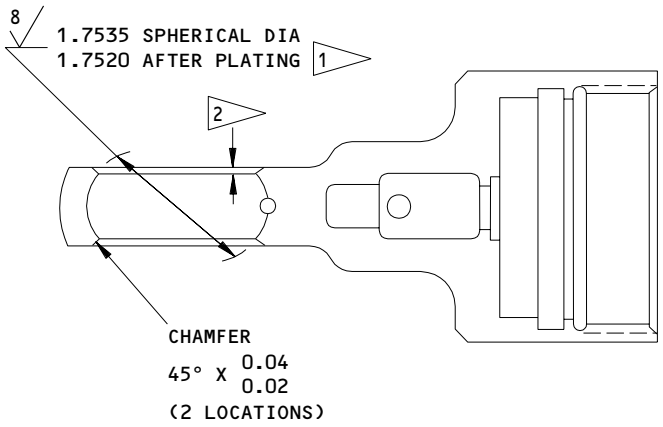
HEAD END - REPAIR 2-1

273T0036 273T0049

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

1. Pin and Plug Replacement

   A. Replace pin (55) and plug (50) in head end (40) (SOPM 20-50-04).



REFINISH

CHROME PLATE SPHERICAL DIAMETER AS SHOWN BY 1. PASSIVATE (F-17.25, WHICH REPLACES (F-17.09) OTHER SURFACES.

1 CHROME PLATE (F-15.34) 0.0007-0.0010 THICK. DO NOT GRIND

2 CHROME PLATE RUNOUT

REPAIR

(SAME AS REFINISH)

125 ALL MACHINED SURFACES UNLESS SHOWN DIFFERENTLY

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

ALL DIMENSIONS ARE IN INCHES

273T0036-2
273T0049-2
Head End Repair and Refinish
Figure 601

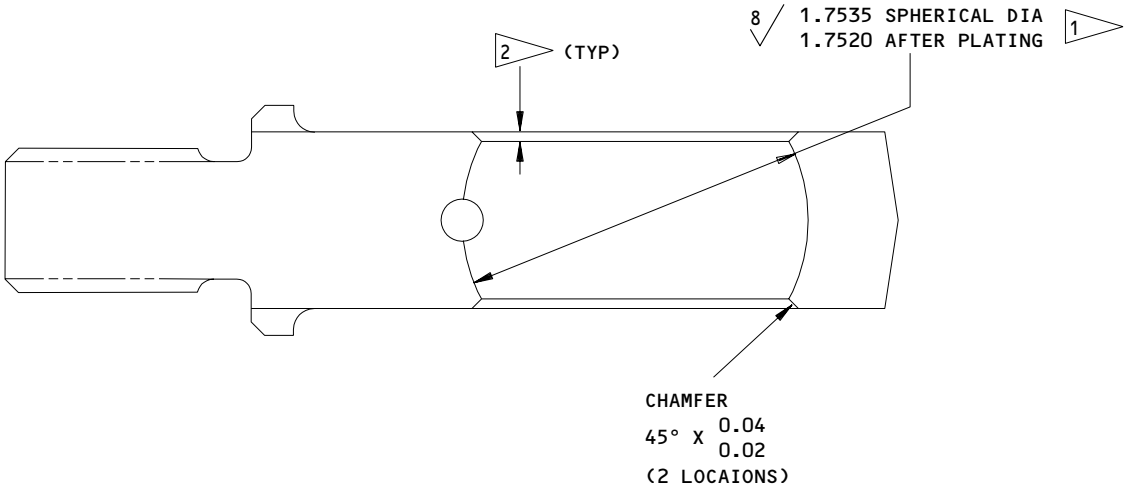
2533

ROD END - REPAIR 3-1

273T0037
273T0047

1. Plating Repair

A. Repair is only replacement of the original finish. Refer to Refinish instructions, Fig. 601. Refer to REPAIR - GENERAL for a list of applicable standard practices.



REFINISH

CHROME PLATE SPHERICAL DIAMETER AS SHOWN BY 1. PASSIVATE (F-17.25, WHICH REPLACES (F-17.09) OTHER SURFACES.

1. CHROME PLATE (F-15.34), 0.007-0.0010 THICK. DO NOT GRIND

2. CHROME PLATE RUNOUT

REPAIR

(SAME AS REFINISH)

125 ALL MACHINED SURFACES UNLESS SHOWN DIFFERENTLY

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

ALL DIMENSIONS ARE IN INCHES

273T0037-2
273T0047-2
Rod End Repair and Refinish
Figure 601

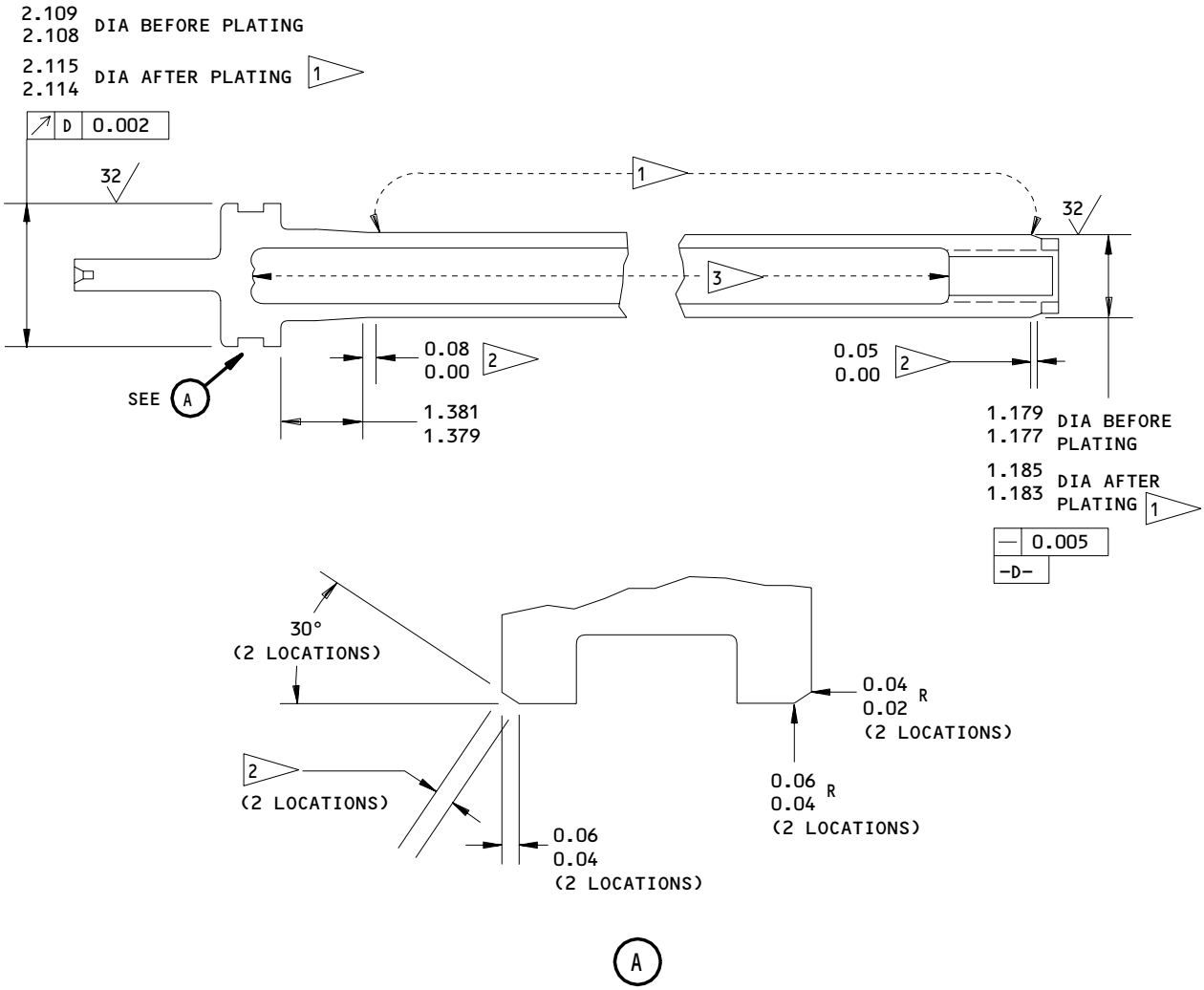
2536

ROD, PISTON - REPAIR 4-1

273T0038-1, -5

1. Plating Repair

A. Repair is only replacement of the original finish. Refer to Refinish instructions, Fig. 601. Refer to REPAIR - GENERAL for a list of applicable standard practices.



REFINISH

CHROME PLATE AREAS SHOWN BY 1. PASSIVATE (F-17.25, WHICH REPLACES F-17.09) OTHER SURFACES.

1 CHROME PLATE (F-15.34), 0.003-0.005 THICK

2 CHROME PLATE RUNOUT

3 THE ORIGINAL CONFIGURATION 273T0038-1 IS FILLED WITH FOAM. FOR INCREASED CORROSION PROTECTION, REMOVE THE FOAM. (ROD IS PACKED WITH GREASE AT ASSEMBLY AND IS THEN EQUIVALENT TO 273T0038-5)

REPAIR

(SAME AS REFINISH)

125 ALL MACHINED SURFACES UNLESS SHOWN DIFFERENTLY

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

ALL DIMENSIONS ARE IN INCHES

273T0038-1,-5

Piston Rod Repair and Refinish
Figure 601

2561

MISCELLANEOUS PARTS REFINISH- REPAIR 5-1

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

IPL FIG. & ITEM	MATERIAL	FINISH
Fig. 2		
Barrel (190), Nuts (35,75)	15-5PH CRES, 180-200 ksi	Passivate (F-17.25, which replaces F-17.09) all over. Apply solid film lubricant (SOPM 20-50-08) on barrel threads only.
Ring retainer (145)	15-5PH CRES, 180-200 ksi	Passivate (F-17.25, which replaces F-17.09) all over.

Refinish Details
Figure 601

EXTERNAL PARTS REPLACEMENT - REPAIR 6-1

BAC27THY0039
BAC27THY0040
BAC27THY0041

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

1. Nameplate Replacement

   A. Steel stamp the serial number and dash number on the replacement nameplate (210).

   B. Bend the nameplate (210) to match the curve of barrel (190).

   C. Install the nameplate with a new strap (205) on barrel (190).

2. Marker Replacement

   A. Replace markers (215, 220) per SOPM 20-50-05.

   B. Apply Type 41 clear BMS 3-11 resistant coating (F-21.34). Apply the coating to the marker and a minimum of 0.38 inch out from the edge of the marker.

ASSEMBLY

1. Materials

NOTE: Equivalent substitutes can be used.

A. Sealant -- BMS 5-26 or MIL-S-8802 (SOPM 20-60-04)

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

C. Hydraulic Fluid -- BMS 3-11 (SOPM 20-60-03)

D. Assembly Lube - MCS 352 (SOPM 20-60-03)

2. Equipment

NOTE: Equivalent substitutes can be used.

A. A32040-15 -- Rod End Wrench

B. A32059-1 -- Holding Fixture

C. F72959 -- Wrench Set (Replaces AN8515)

D. A32059-18 -- Barrel Spanner Wrench

E. A32059-11 -- Piston Rod Wrench

3. Lubrication

A. Lightly lubricate packings at assembly with hydraulic fluid or assembly lube.

4. Assembly (IPL Fig. 1)

NOTE: Install packings and seals per SOPM 20-50-06.

A. Install ring (140), ring retainer (145), packing (135) and backup rings (130) on head end assembly (40).

B. Install packing (135) backup rings (130), packing (160) and backup rings (155) on cap (110).

C. Install piston seal (195) on piston (200).

D. Screw locknut (35) on barrel (190) finger-tight to end of thread, and insert 2 cup lockwashers (30) with flange facing away from each other on barrel (190).

E. Hold head end (40) in holding fixture A32059-1 or -16. Apply sealant to thread of barrel (190). Screw barrel (190) on head end assembly (40), and with wrench A32059-18, tighten barrel (190) to 500-800 lb-in.

F. With spanner wrench F72959, tighten locknut (35) to 500-800 lb-in.

G. Screw locknut (75) on barrel (190) finger-tight to end of thread, and insert two cup lockwashers (70) with flange facing away from each other on barrel (190).

CAUTION: BE VERY CAREFUL NOT TO DAMAGE THE ROD OR BARREL WHEN YOU INSTALL PISTON ROD (200) IN BARREL (190).

H. Put piston rod (200) into barrel (190).

I. Install bushing (165) on cap (110). Apply sealant to the threads of barrel (190). Screw cap (110) on barrel (190) until it bottoms. Unscrew cap (110) one turn or less, as required, until port on cap (110) lines up with port on head end (40) within ±5°.

J. With spanner wrench F72959, tighten locknut (75) to 500-800 lb-in.

K. Install packing (166), foot seal (175), retainer (170) and scraper (150) in cap (110). Apply sealant to the threads of retainer nut (105). Screw retainer nut (105) on cap (110) and tighten to 200-300 lb-in with spanner wrench F72959.

L. Before you assemble piston rod (200) and rod end (80), fill the piston rod cavity with grease. Do not fill it with foam.

M. Put cup lockwasher (100) on rod end (80). Apply sealant to the threads of rod end (80). Screw rod end (80) on piston rod (200) finger-tight.

N. With rod end wrench A32040-15, hold rod end (80), and with wrench A32059-11, tighten piston rod (200) to 2200-2500 lb-in.

CAUTION: BEARINGS (65, 95) ARE A SET OF MATCHED HALVES. DO NOT MIX WITH BEARING HALVES FROM OTHER SETS. BEARING HALVES MUST BE INSTALLED WITH INDEX MARKS ALIGNED.

O. Apply grease to bearing bores in head end (40) and rod end (80) and install bearings (65, 95) respectively with the index marks on the bearing halves aligned.

P. Install packings (5, 15) and valves (10, 20) on head end (40) and cap (110) respectively.

Q. Do the test (Ref TESTING/TROUBLE SHOOTING).

R. After the test, use a square punch to break the flange of the cup lockwashers (100, 30, 70) into the mating slots. Lockwire retainer nut (105) to cap (110) by the double twist method.

S. Apply sealant to contact areas of:

(1) Head end (40), cup lockwashers (30), locknut (35), and barrel (190).

(2) Cap (110), cup lockwashers (70), locknut (75) and barrel (190).

(3) Retainer nut (105) and cap (110).

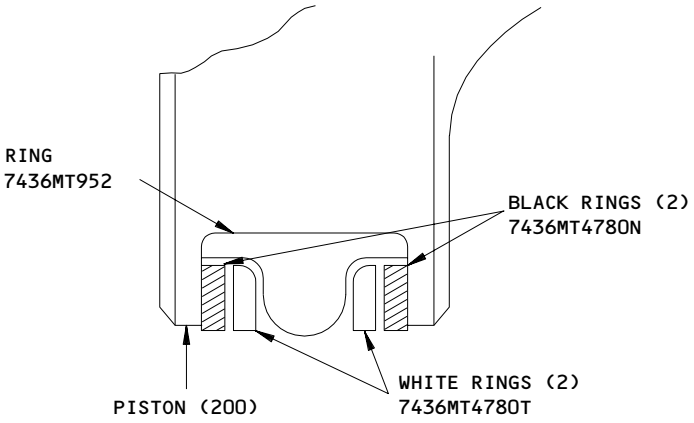
(4) Rod end (80), cup lockwasher (100) and piston rod (200).

5. Storage

A. Fill the unit with hydraulic fluid.

B. Cap or plug ports with hydraulic fluid resistant caps or plugs.

C. Give protection to the unit and put it away by standard industry practices and the instuctions in SOPM 20-44-02 and 20-70-01.

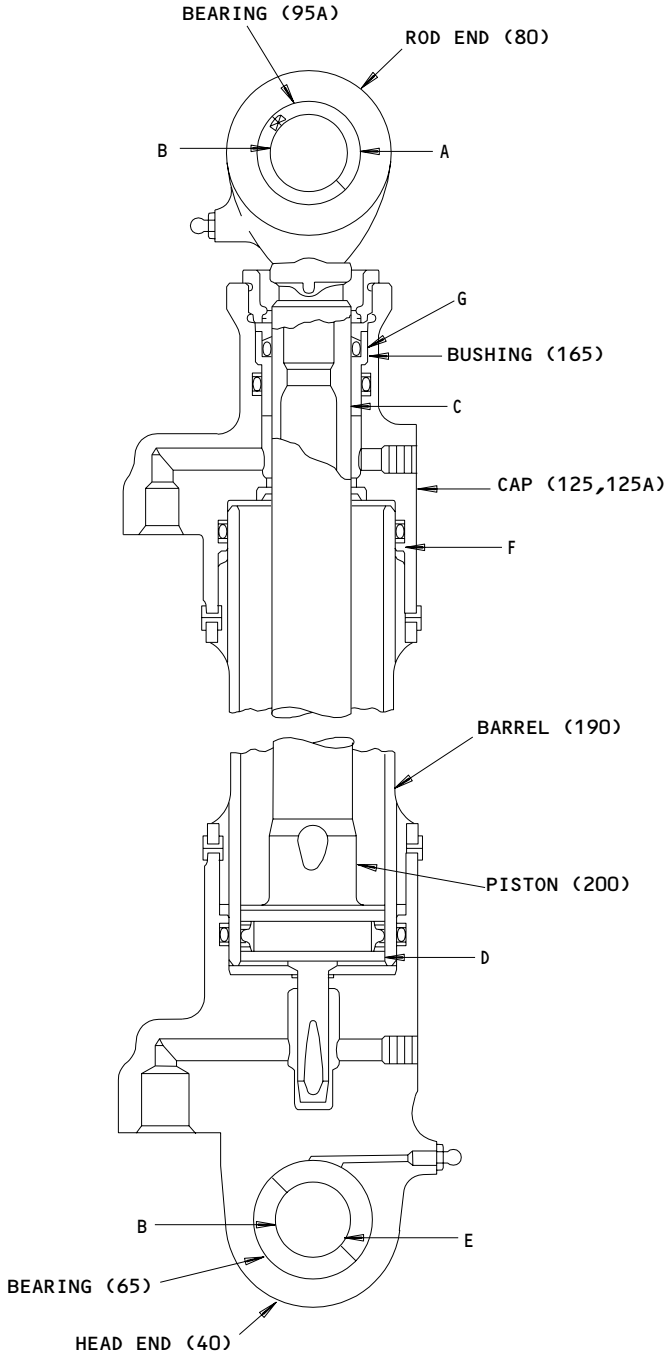


NOTE: PISTON SEAL RING (195) HAS ONE 7436MT952 SEAL, TWO 7436MT478OT RINGS, AND TWO 7436MT478ON RINGS.

Piston Seal Installation
Figure 701

2562

FITS AND CLEARANCES



Fits and Clearances
Figure 801 (Sheet 1)

2564

Ref Letter Fig.801	Mating Item No. IPL Fig.1	Design Dimension				Service Wear Limit		
		Dimension		Assembly Clearance		Dimension		Maximum Clearance
		Min	Max	Min	Max	Min	Max	
A	ID 80 (1) OD 95A (1)	1.7520 1.7495	1.7535 1.7500	0.0020	0.0040	1.7490	1.7540	0.0050
B	ID 65,95A OD (2)	1.1245 1.1225	1.1250 1.1240	0.0005	0.0025	1.1220	1.1255	0.0045
C	ID 165 OD 200	1.187 1.183	1.188 1.185	0.002	0.005	1.182	1.189	0.007
D	ID 190 OD 200	2.118 2.114	2.120 2.115	0.003	0.006	2.113	2.121	0.008
E	ID 40 (1) OD 65 (1)	1.7520 1.7495	1.7535 1.7500	0.0020	0.0040	1.7490	1.7540	0.0050
F	ID 125 OD 190	2.501 2.496	2.503 2.498	0.0030	0.0070	2.4955	2.5035	0.0080
G	ID 125 OD 165	1.437 1.433	1.438 1.435	0.002	0.005	1.432	1.439	0.007

ALL DIMENSIONS ARE IN INCHES

(1) SPHERICAL DIAMETER

(2) SHOULDER BOLT 149T6985-4,-8 (REF)

Fits and Clearances
Figure 801 (Sheet 2)

2526

FOR TORQUE VALUE OF STANDARD FASTENERS, REFER TO 20-50-01			
ITEM NO. IPL FIG. 1	NAME	TORQUE	
		POUND-INCHES	POUND-FEET
80	Rod End	2200-2500	
190	Barrel	500-800	
35,75	Nuts, Lock	500-800*[1]	
40	Head End	500-800	
105	Nut, Retainer	200-300	
*[1] Tighten with 5400-5600 psi hydraulic pressure applied to the CLOSED port.			

Torque Table
Figure 802

SPECIAL TOOLS, FIXTURES AND EQUIPMENT

NOTE: Equivalent substitutes can be used.

1. A32040-15 -- Rod End Wrench
2. A32059-1 or -16 -- Holding Fixture
3. A32059-11 -- Piston Rod Wrench
4. A32059-18 -- Barrel Wrench
5. F72959 -- Wrench Set (Replaces AN8515)

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

02886 DODGE-WASMUND MFG CO INC
9603 BEVERLY ROAD
PICO RIVERA, CALIFORNIA 90660

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

26303 OHIO AIRCRAFT SUPPLIES INC
717 HINDRY AVE
INGLEWOOD, CALIFORNIA 90301

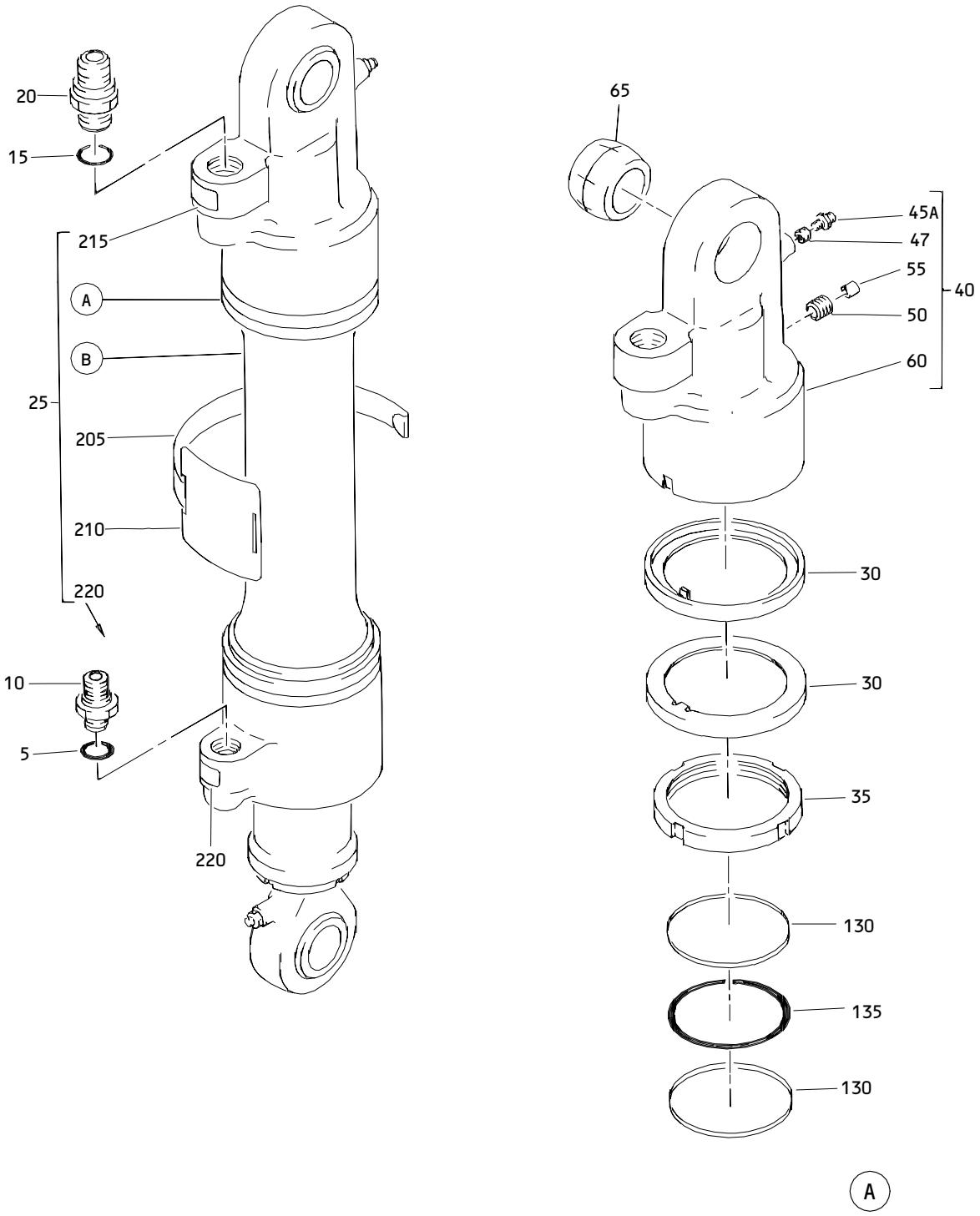
26879 CORONADO MFG INC
11069 PENROSE AVENUE
SUN VALLEY, CALIFORNIA 91352

72902 GREENE TWEED AND CO INC
320 ELM AVENUE
NORTH WALES, PENNSYLVANIA 19454

92555 LEE COMPANY
2 PETTIPAUG ROAD
WESTBROOK, CONNECTICUT 06498

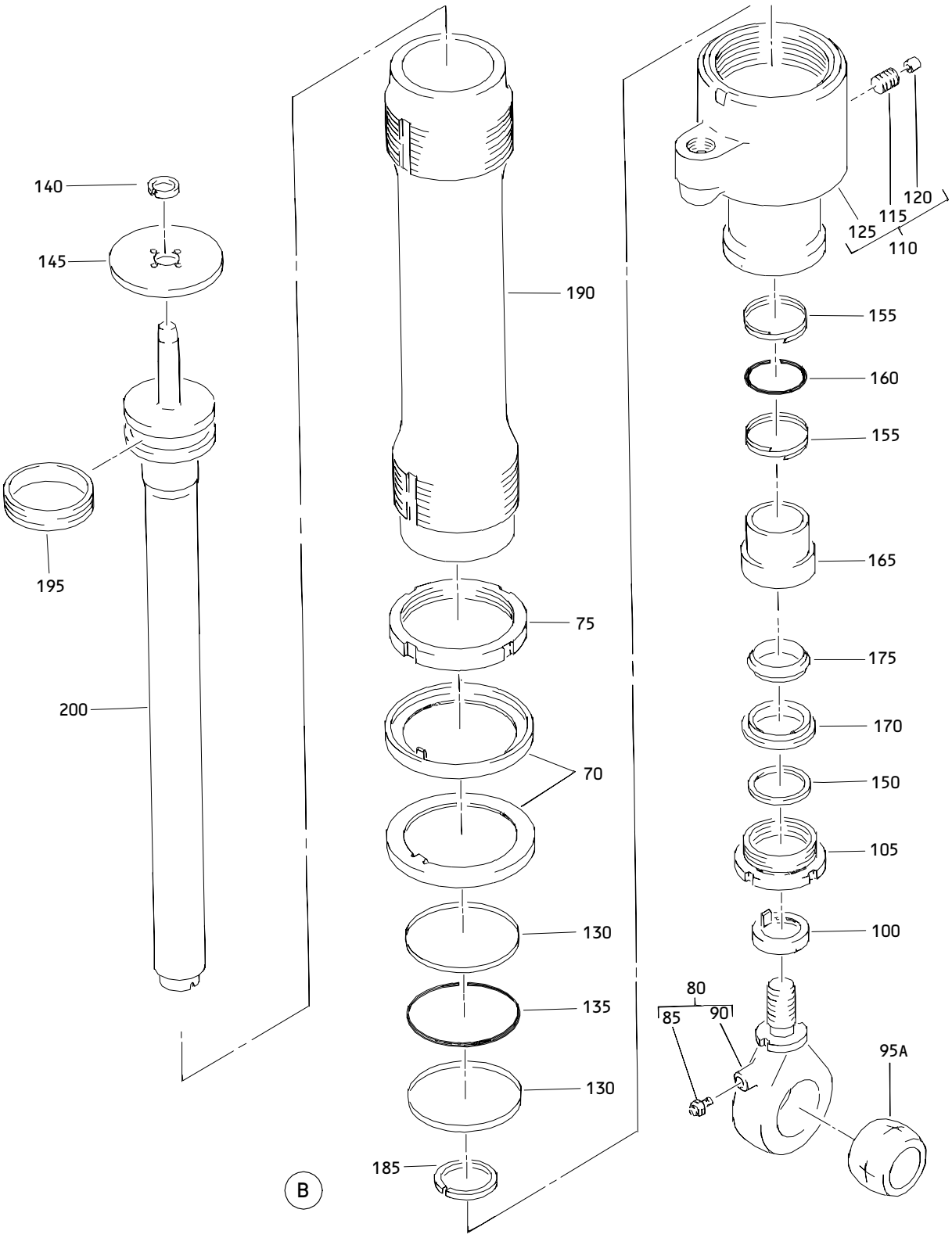
97820 SHAMBAN W S AND CO
711 MITCHELL ROAD
NEWBURY PARK, CALIFORNIA 91320

99240 CRISSAIR, INCORPORATED
122 ARENA STREET
EL SEGUNDO, CALIFORNIA 90246



Main Landing Gear Door Actuator Assembly
Figure 1 (Sheet 1)

T55254



Main Landing Gear Door Actuator Assembly
Figure 1 (Sheet 2)

T55255

FIG. & ITEM	PART NO.	AIRLINE PART NUMBER	NOMENCLATURE 1234567	EFF CODE	QTY PER ASSY
01-					
-1	273T4520-3		ACTUATOR ASSY-MLG DOOR *[1]	A	RF
-1A	273T4520-4		ACTUATOR ASSY-MLG DOOR *[1]	B	RF
5	NAS1612-6		.PACKING		1
10	9R3204		.VALVE-CHECK RESTRICT (V99240)		1
15	NAS1612-8		.PACKING		1
20	9R3206		.VALVE-CHECK RESTRICT (V99240)		1
25	273T4521-2		.ACTUATOR ASSY	A	1
-25A	273T4521-3		.ACTUATOR ASSY	B	1
30	273T0045-1		..WASHER-CUP LOCKING		2
35	273T0043-1		..NUT-LOCK		1
40	273T0036-1		..END ASSY-HEAD (OPT ITEM 40A)		1
-40A	273T0049-1		..END ASSY-HEAD (OPT ITEM 40)		1
45	MS15004-3		DELETED		
45A	MS15004-2		...FITTING-LUBE		1
47	MS12209F1-10		DELETED		
47A	MS21209F1-10		...INSERT		1
50	PLGA3437020		...PLUG- (V92555) (SPEC BACP20AX31)		1
55	PLGA3436020		...PIN- (V92555) (SPEC BACP20AX31P)		1
60	273T0036-2		...END- (USED ON ITEM 040)		1
-60A	273T0049-2		...END- (USED ON ITEM 040A)		1
65	270T0002-18		..BALL-SPLIT		1
70	273T0045-1		..WASHER-CUP LOCK		2
75	273T0043-1		..NUT-LOCK		1
80	273T0037-1		..END ASSY-ROD (OPT ITEM 80A)		1
-80A	273T0047-1		..END ASSY-ROD (OPT ITEM 80)		1
85	MS15004-1		...FITTING-LUBE		1

FIG. & ITEM	PART NO.	AIRLINE PART NUMBER	NOMENCLATURE 1234567	EFF CODE	QTY PER ASSY
01-					
90	273T0037-2		...END-		1
			(USED ON ITEM 080)		
-90A	273T0047-2		...END-		1
			(USED ON ITEM 080A)		
95	273T0002-18		DELETED		
95A	270T0002-18		..BALL-SPLIT		1
100	66-12156-3		..WASHER-CUP LOCK		1
105	273T0042-1		..NUT-SEAL RETAINER		1
110	273T0035-1		...CAP ASSY-ROD END		1
			(OPT ITEM 110A)		
-110A	273T0048-1		...CAP ASSY-ROD END		1
			(OPT ITEM 110)		
115	PLGA3437020		...PLUG-		1
			(V92555)		
			(SPEC BACP20AX31)		
120	PLGA3436020		...PIN-		1
			(V92555)		
			(SPEC BACP20AX31P)		
125	273T0035-2		...CAP-		1
			(USED ON ITEM 110)		
-125A	273T0048-2		...CAP-		1
			(USED ON ITEM 110A)		
130	MS27595-230		..RING-BACKUP		4
135	NAS1611-230		..PACKING		2
140	273T0044-1		..RING		1
145	273T0046-1		..RETAINER-RING		1
150	CWR76-12A		..SCRAPER-		1
			(V26879)		
			(SPEC BACS34A12)		
			(OPT DW96801-12		
			(V02886))		
			(OPT S30388-12		
			(V97820))		
			(OPT TF005-12C		
			(V07128))		
			(OPT 2140-12		
			(V26303))		
155	MS28782-26		..RING-BACKUP		2
160	NAS1611-221		..PACKING		1
165	273T0040-1		..BUSHING		1

FIG. & ITEM	PART NO.	AIRLINE PART NUMBER	NOMENCLATURE 1234567	EFF CODE	QTY PER ASSY
01-					
170	273T0041-1		..RETAINER-RING		1
175	S33555-212H99		DELETED		
175	NAS1611-217		..PACKING (OPT TO ITEM 175B)		1
175A	BACS11AA217		..SEAL (OPT TO ITEM 175B)		1
175B	S33555-217H99		..SEAL-HAT (OPT ITEMS 175, 175A) (V97820)		1
185	273T0044-2		..RING		1
190	273T0039-1		..BARREL		1
195	7327MT952-4780		..SEAL-PISTON (CONSISTS OF 2 EACH 7327MT4780N AND 7327MT4780T RINGS AND 1 7327MT952 SEAL) (V72902)		1
200	273T0038-1		..ROD-PISTON	A	1
-200A	273T0038-5		..ROD-PISTON	B	1
205	273T0050-1		..STRAP-NAMEPLATE		1
210	BAC27THY0039		..NAMEPLATE		1
215	BAC27THY0041		..MARKER-CLOSE		1
220	BAC27THY0040		..MARKER-OPEN		1

*[1] PRE SB 32-7. REFER TO 32-32-20 FOR POST SB 32-7 CONFIG.