MAIN GEAR DOOR OPERATED SEQUENCE VALVE BUNGEE ASSEMBLY

PART NUMBER 273T4531-1

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
		PRR B10031	APR 10/83

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INTRODUCTION

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

This manual is divided into separate sections:

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

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

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

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

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

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

Verification:

Disassembly -- OCT 21/86
Assembly -- OCT 21/86

MAIN GEAR DOOR OPERATED SEQUENCE VALVE BUNGEE ASSEMBLY

DESCRIPTION AND OPERATION

1. The main gear door operated sequence valve bungee assembly consists of cylinder, rod, piston, spring, collar, bushing, and rod ends.

2. The bungee assembly is a backup system to the lever connecting the main landing gear door to the sequencing valve. If the lever fails, the bungee pulls the valve into the gear down position so that the gear can still be extended.

3. Leading Particulars (Approximate)

   Length (compressed) -- 11 inches
   Length (extended) -- 16 inches
   Diameter (largest) -- 1 inch
   Weight -- 1 pound

DISASSEMBLY

1. Remove rivets (5, 8), rod end bearings (10, 15) and collar (20) from cylinder.

2. Slide out (50,) with piston (30) attached, washers (35) and spring (45).

3. Do not remove piston (30) from rod (50), or bushing (40) from cylinder (25), unless necessary for repair or replacement.

CLEANING

1. Clean all parts except bearings (10, 15, IPL Fig. 1) using standard industry practices and the information contained in 20-30-03.

CAUTION: BEARINGS (10, 15) ARE TEFLON LINED. CLEAN ONLY BY SPECIAL METHOD GIVEN IN 20-30-01.

2. Clean rod end bearings (10, 15) only by special method for teflon lined bearings in 20-30-01.

CHECK

1. Check all parts for obvious defects in accordance with standard industry practices.

2. Magnetic particle check cylinder (25), spring (45) and rod (50) per 20-20-01.

3. Spring Check

   A. Compress spring (45) to 3.0 inches and check that load is 26-30 lbs.

REPAIR - GENERAL

1. Content

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

P/N	NAME	REPAIR
273T4536	ROD	1-1
273T4534	CYLINDER	2-1
- -	MISCELLANEOUS PARTS REFINISH	3-1

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

3. Materials

   NOTE: Equivalent substitutes may be used.

   A. Sealant -- BMS 5-95 (Ref 20-60-04)

   B. Primer -- BMS 10-11, Type 1 (Ref 20-60-02)

   C. Enamel -- BMS 10-60, Color 707 Gray Gloss Enamel (Ref 20-60-02)

ROD - REPAIR 1-1

273T4536-1

1. Piston Replacement (Fig. 601)

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

A. Machine OD of piston (30) until sufficient amount of wire (33) is exposed tp enable gripping with pliers. Pull wire out and remove remaining portion of piston from rod (50). If wire cannot be pulled out or breaks, carefully cut piston to split it into pieces to free it from rod.

B. Cut a piece of wire (33) approximately 1.60 inches long. Smooth and round one end to remove burrs and sharp edges.

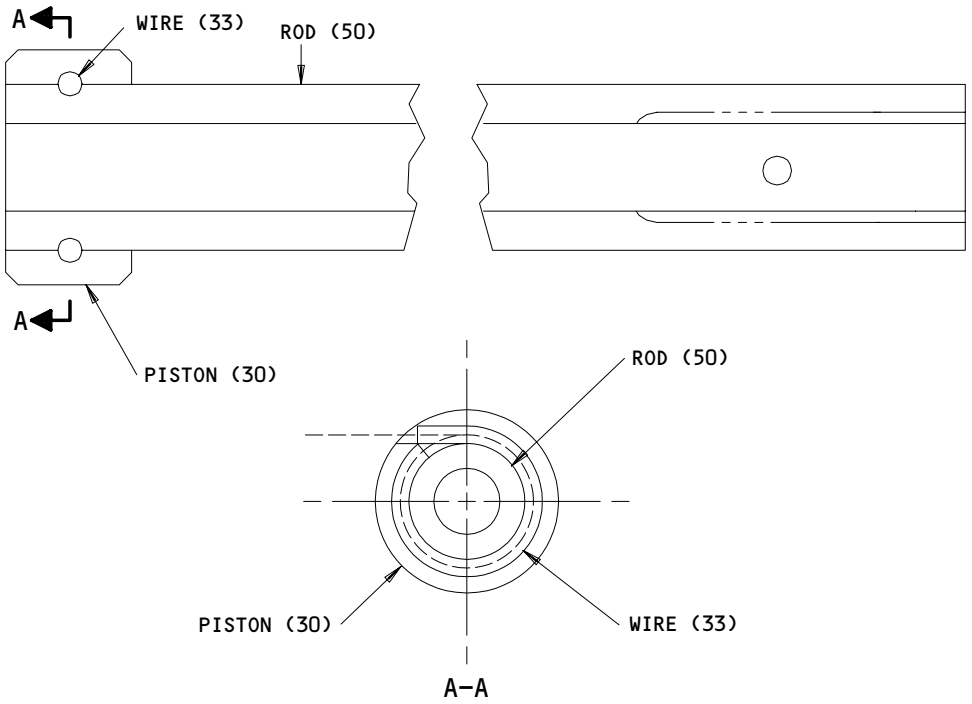
C. Insert replacement piston (30) on rod at grooved end and position with outer face flush with end of rod.

D. Clamp piston (30) in vise so hole in OD is accessible.

E. Insert prepared end of wire (33) in hole in piston OD. With a small hammer, tap exposed end of wire to drive it into piston (3). Wire will curl around inside circumferential groove between piston and rod, locking the two together.

F. Continue driving wire into piston until entire length is installed. Use a pin punch to drive outer end of wire flush with piston OD.

G. Stake around hole to retain wire in piston. Remove upset material projecting from piston OD and smooth surface to 16 microinch surface.



Piston Replacement on Rod
Figure 601

4107

CYLINDER - REPAIR 2-1

273T4534-1

1. Bushing Replacement (Fig. 601)

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

A. Machine out ID of bushing (40) until wire (43) is exposed. Pry loose wire (43) and remaining portion of bushing from cylinder (25).

B. Cut a piece of wire (43), approximately 2.15 inches long. Smooth and round one end to remove burrs and sharp edges.

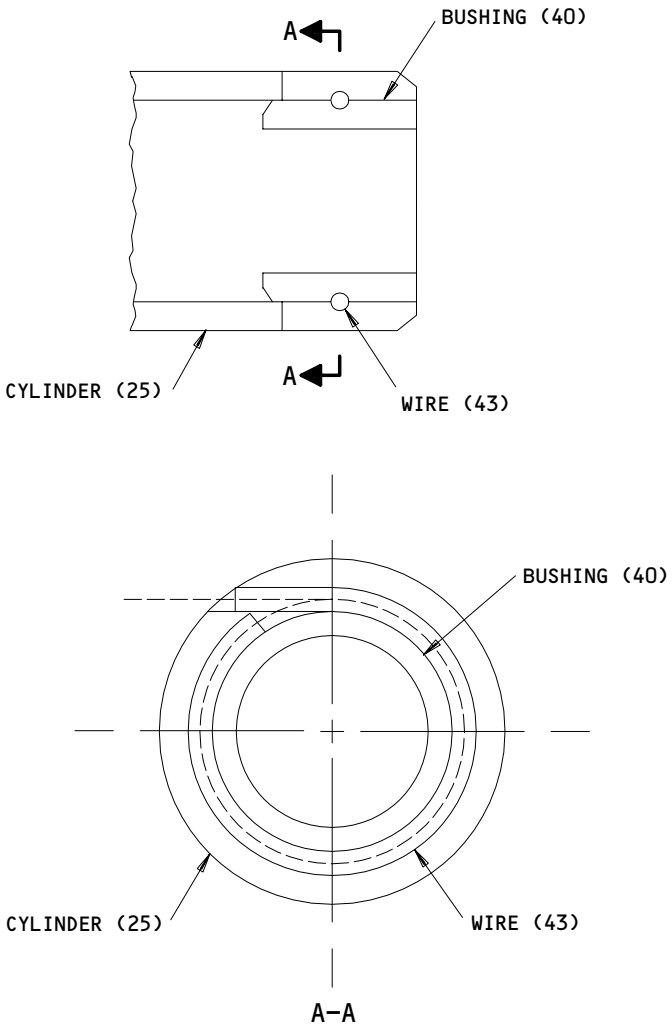
C. Insert replacement bushing (40) in cylinder bore at ground end and position with outer face flush with end face of cylinder.

D. Clamp cylinder in vise so hole in OD is accessible.

E. Insert prepared end of wire (43) in hole in cylinder OD. With a small hammer, tap exposed end of wire to drive it into cylinder (25). Wire will curl around inside circumferential groove between bushing and cylinder, locking the two together.

F. Continue driving wire into cylinder until entire length is installed. Use a pin punch to drive outer end of wire flush with cylinder OD.

G. Dimple around hole to retain wire in cylinder.



Bushing Replacement in Cylinder
Figure 601

4108

MISCELLANEOUS PARTS REFINISH - REPAIR 3-1

1. Repair of the parts listed in Fig. 601 consists of restoration of the original finish. Refer to REPAIR-GEN for list of applicable standard practices.

IPL FIG. & ITEM	MATERIAL	FINISH
Fig. 1		
Rod (50), Collar (20), Cylinder (25)	17-4PH CRES, 180-200 ksi	Passivate (F-17.09) all over.
Spring (45)	17-7PH CRES per AMS5673 Optional - AMS5678 HT TR to CH900	Passivate (F-17.09) all over.
Bungee assy (1)		Apply one coat BMS 10-11, type 1 primer (F-20.02) and BMS 10-60 gray gloss enamel (SRF-14.9813) all over except on bearings, in longitudinal slots in cylinder wall and inside cylinder.
Washer (35)	AISI 301 CRES	Passivate (F-17.09) all over.

Refinish Details
Figure 601

ASSEMBLY

1. Materials

NOTE: Equivalent substitutes may be used.

A. Sealant -- BMS 5-95 (BMS 5-79 Optional) (Ref 20-60-04)

2. Assembly (IPL Fig. 1) (Fig. 701)

CAUTION: KEYWAY OF ROD END BEARING (10) IS TO SERVE AS DRAINAGE CHANNEL AND SHALL NOT BE OBSTRUCTED BY RIVET OR SEALANT.

A. If rod end bearing (10, 15), collar (20) or cylinder (25) are replaced, drill new holes for rivets (5, 8) as necessary. Maintain center-to-center distance shown. Locate holes in rod end bearing (10) at 90-degree spacing, not to pass thru keyway.

B. Slide one washer (35), spring (45) and remaining washer (35) over rod (50). Insert rod, threaded bore end first, thru cylinder (25) from end without bushing (40).

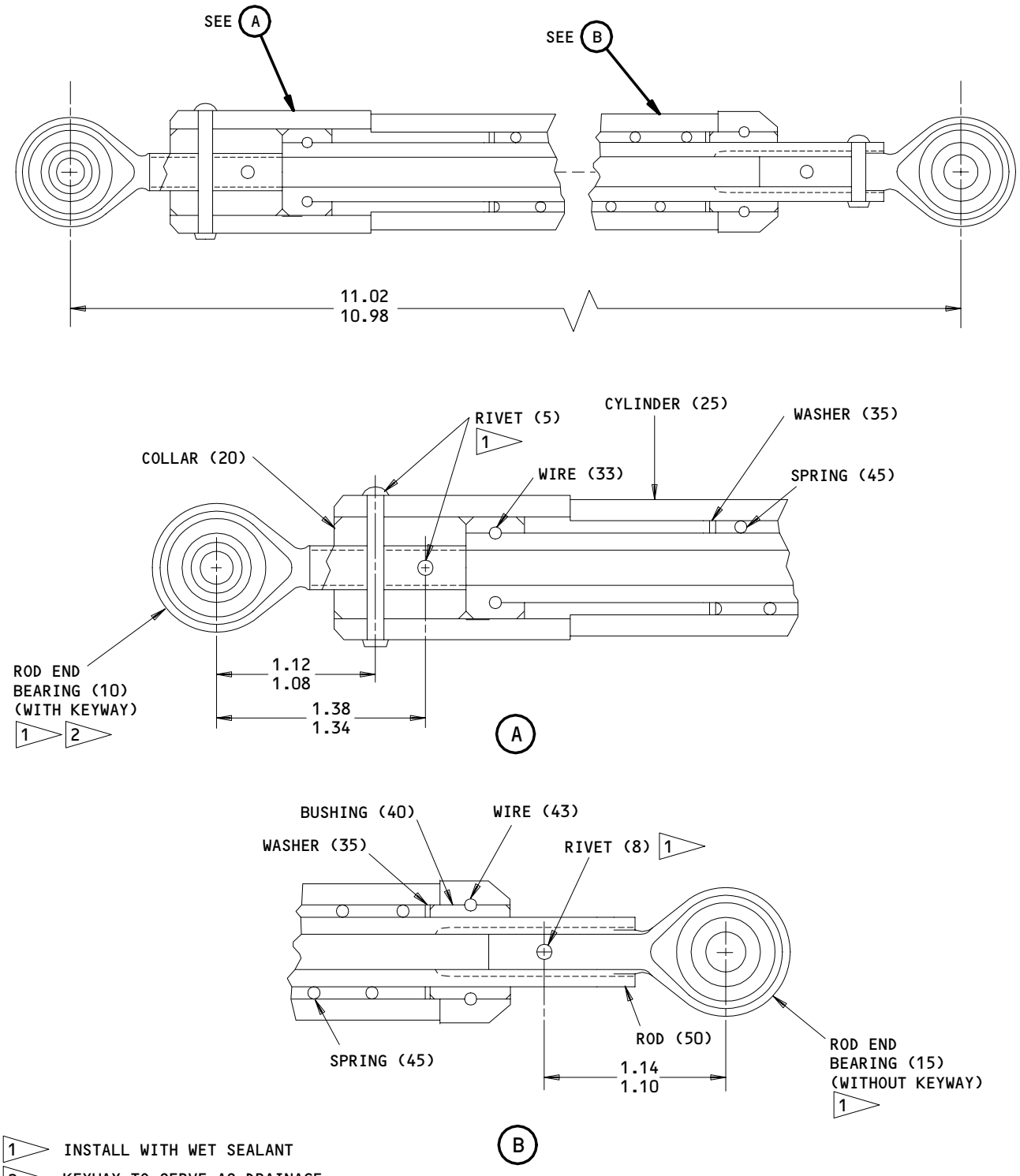
CAUTION: KEYWAY OF ROD END BEARING (10) IS TO SERVE AS DRAINAGE CHANNEL AND SHALL NOT BE OBSTRUCTED BY RIVET OR SEALANT.

C. To keep sealant from blocking keyway, temporarily position a length of wire, such as lockwire, in keyway of rod end bearing (10). Then install rod end bearing in collor (20) with wet sealant, threading parts together until holes for rivets (5) align.

D. Insert collar (20) into cylinder (25). Install rivets (5) with wet sealant.

E. Install rod end bearing (15) in rod, with wet sealant. Install rivet (8) with wet sealant.

F. Remove wire, temporarily installed in step C. above, after sealant is cured sufficiently to allow keyway to remain open as drainage channel.



1 INSTALL WITH WET SEALANT

2 KEYWAY TO SERVE AS DRAINAGE CHANNEL. DO NOT OBSTRUCT WITH RIVET OR SEALANT

ALL DIMENSIONS ARE IN INCHES

Assembly Details
Figure 701

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.

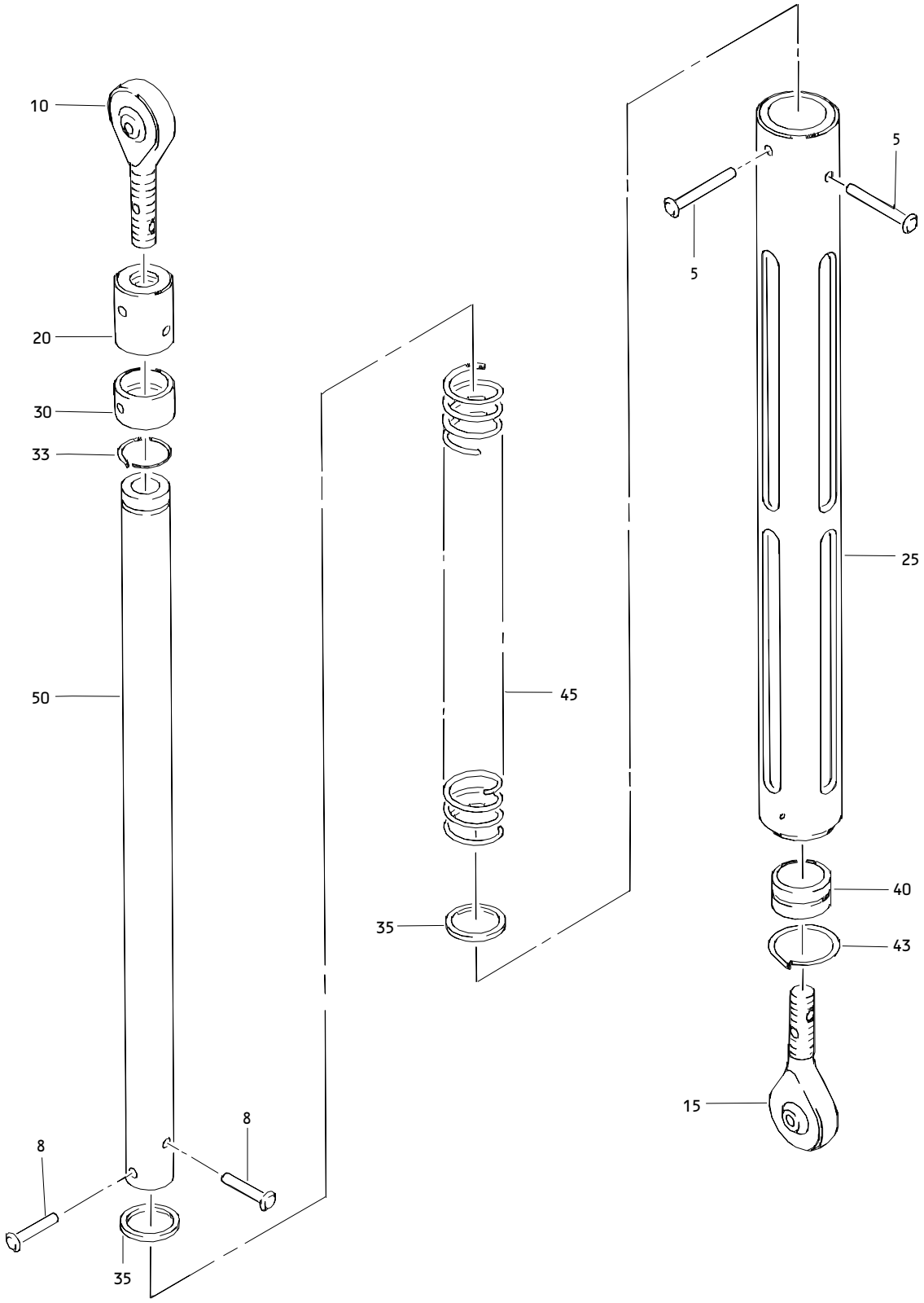
5. Service Bulletin modifications are shown by the notations PRE SB XXXX and POST SB XXXX.

    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.



Main Gear Door Operated Sequence Valve Bungee Assembly
Figure 1

T55257

FIG. & ITEM	PART NO.	AIRLINE PART NUMBER	NOMENCLATURE 1234567	EFF CODE	QTY PER ASSY
01-					
-1	273T4531-1		BUNGEE ASSY-MG DOOR OPERATED SEQ VALVE		RF
5	MS20615-4M18		.RIVET		2
8	MS20615-4M11		.RIVET		2
10	M81935-1-3		.BEARING, ROD END		1
15	M81935-1-4K		.BEARING, ROD END		1
20	273T4532-1		.COLLAR		1
25	273T4534-1		.CYLINDER		1
30	273T4533-1		.PISTON		1
33	273T4531-2		.WIRE		1
35	273T4547-1		.WASHER		2
40	273T4535-1		.BUSHING		1
43	273T4531-3		.WIRE		1
45	273T4537-1		.SPRING		1
50	273T4536-1		.ROD		1