TO: ALL HOLDERS OF MAIN LANDING GEAR ALTERNATE EXTEND UPLOCK RELEASE DOOR SAFETY VALVE ASSEMBLY COMPONENT MAINTENANCE MANUAL 32-35-82

REVISION NO. 1 DATED JUL 01/93

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 1	Identified cleaning as a topic that can be done by standard industry practices. Identified Disassembly as a topic that does have special instructions.
INTRODUCTION 1	Added verification dates.

BOEING

COMPONENT
MAINTENANCE MANUAL

MAIN LANDING GEAR ALTERNATE EXTEND UPLOCK RELEASE DOOR SAFETY VALVE ASSEMBLY

PART NUMBER 257T3407-1,-2

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

PAGE	DATE	CODE
32-35-82		
TITLE PAGE		
1	APR 10/85	01
2	BLANK	
REVISION RECORD		
1	APR 10/85	01
2	BLANK	
TR & SB RECORD		
1	APR 10/85	01
2	BLANK	
LIST OF EFFECTIVE PAGES		
*1	JUL 01/93	01
THRU LAST PAGE		
CONTENTS		
*1	JUL 01/93	01.1
2	BLANK	
INTRODUCTION		
*1	JUL 01/93	01.1
2	BLANK	
DESCRIPTION & OPERATION		
1	APR 10/85	01
2	BLANK	
DISASSEMBLY		
301	APR 10/85	01
302	BLANK	
CHECK		
501	APR 10/85	01
502	BLANK	
REPAIR-GENERAL		
601	APR 10/85	01
602	APR 10/85	01
REPAIR 1-1		
601	APR 10/85	01
602	APR 10/85	01
REPAIR 2-1		
601	APR 10/85	01
602	BLANK	
REPAIR 3-1		
601	APR 10/85	01
602	BLANK	
ASSEMBLY		
701	APR 10/85	01
702	BLANK	
FITS AND CLEARANCES		
801	APR 10/85	01
802	BLANK	
ILLUSTRATED PARTS LIST		
1001	APR 10/85	01
1002	APR 10/85	01
1003	BLANK	
1004	APR 10/85	01
1005	APR 10/85	01
1006	BLANK	

* = REVISED, ADDED OR DELETED

TABLE OF CONTENTS

*[1] Special instructions not required. Use standard industry practices.

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 -- May 6/85
Assembly -- May 6/85

MAIN LANDING GEAR ALTERNATE EXTEND UPLOCK RELEASE DOOR SAFETY VALVE ASSEMBLY

DESCRIPTION AND OPERATION

1. The main landing gear alternate extend uplock release door safety valve assembly consists of a rotary input shear seal valve module, with attached crank. The joint is pinned by a shear rivet and additionally secured by a retention cap pinned to the end of the crank hub.

2. Leading Particulars (Approximate)

   Length -- 8 inches
   Height -- 6 inches
   Depth -- 6 inches
   Weight -- 4 pounds

DISASSEMBLY

NOTE: Disassemble this component only as necessary to complete fault isolation, determine the serviceability of parts, perform required repairs and restore the unit to serviceable condition.

1. Remove cotter pin (20), pin (15) from cap (25). Remove cap from crank (30 or 35).

2. Remove shear rivet (10) from crank (30 or 35) then slide crank off valve (115). Do not disassemble crank (30 or 35) unless necessary for repair or replacement.

3. Remove reducers (95, 105) and packings (100, 110) from valve (115). Refer to appropriate vendor instructions for overhaul of valve (115).

CHECK

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

2. Magnetic particle check retention cap (25) and spacers (45,50) per 20-20-01.

REPAIR - GENERAL

1. Content

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

P/N	NAME	REPAIR
257T3405	CRANK	1-1
257T3437	SPACER	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
   20-30-03 General Cleaning Procedures
   20-41-01 Decoding Table for Boeing Finish Codes
   20-41-02 Application of Chemical and Solvent Resistant Finishes

3. Materials

   NOTE: Equivalent substitutes may be used.

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

   B. Enamel -- BMS 10-60 gloss white color 702 (Ref 20-60-02)

4. Dimensioning Symbols

A. Standard True Position Dimensioning Symbols used in 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
⌖	THEORETICAL EXACT POSITION OF A FEATURE (TRUE POSITION)
∅	DIAMETER
BASIC (BSC) OR [DIM]	A THEORETICALLY EXACT DIMENSION USED TO DESCRIBE SIZE, SHAPE OR LOCATION OF A FEATURE FROM WHICH PERMISSIBLE VARIATIONS ARE ESTABLISHED BY TOLERANCES ON OTHER DIMENSIONS OR NOTES.
[-A-]	DATUM
Ⓜ	MAXIMUM MATERIAL CONDITION (MMC)
Ⓢ	REGARDLESS OF FEATURE SIZE (RFS)
Ⓟ	PROJECTED TOLERANCE ZONE

EXAMPLES

— | 0.002	STRAIGHT WITHIN 0.002
⊥ | B | 0.002	PERPENDICULAR TO B WITHIN 0.002
// | A | 0.002	PARALLEL TO 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
⌒ | A | 0.006	EACH LINE ELEMENT OF THE SURFACE AT ANY CROSS SECTION MUST LIE BETWEEN TWO PROFILE BOUNDARIES 0.006 INCH APART IN RELATION TO DATUM PLANE A
⌓ | A | 0.020	SURFACES MUST LIE WITHIN PARALLEL BOUNDARIES 0.02 INCH APART AND EQUALLY DISPOSED ABOUT TRUE PROFILE
◎ | C | ∅ 0.0005	CONCENTRIC TO C WITHIN 0.0005 DIAMETER (FULL INDICATOR MOVEMENT)
⌯ | A | 0.010	SYMMETRICAL WITH A WITHIN 0.010
∠ | A | 0.005	ANGULAR TOLERANCE 0.005 WITH A
⌖ | B | ∅ 0.002 Ⓢ	LOCATED AT TRUE POSITION WITHIN 0.002 DIA IN RELATION TO DATUM B, REGARDLESS OF FEATURE SIZE
⊥ | A | ∅ 0.010 Ⓜ 0.510 Ⓟ	AXIS IS TOTALLY WITHIN A CYLINDER OF 0.010-INCH DIAMETER, PERPENDICULAR TO, AND EXTENDING 0.510-INCH ABOVE, DATUM A, MAXIMUM MATERIAL CONDITION
[2.000] OR 2.000 BSC	EXACT DIMENSION IS 2.000

True Position Dimensioning Symbols
Figure 601

172530

CRANK ASSEMBLY - REPAIR 1-1

257T3405-3, -4

NOTE: Refer to REPAIR-GEN for list of applicable standard practices and to IPL Fig. 1 for item numbers. For repair of surfaces which may require only restoration of original finish, refer to Refinish instructions, Fig. 601.

1. Parts Replacement (Fig. 601)

   A. Remove nut (80), bolt (55), washers (60), spacers (65, 70, 75).

   B. Drill out rivets (40) to separate crank halves and spacer.

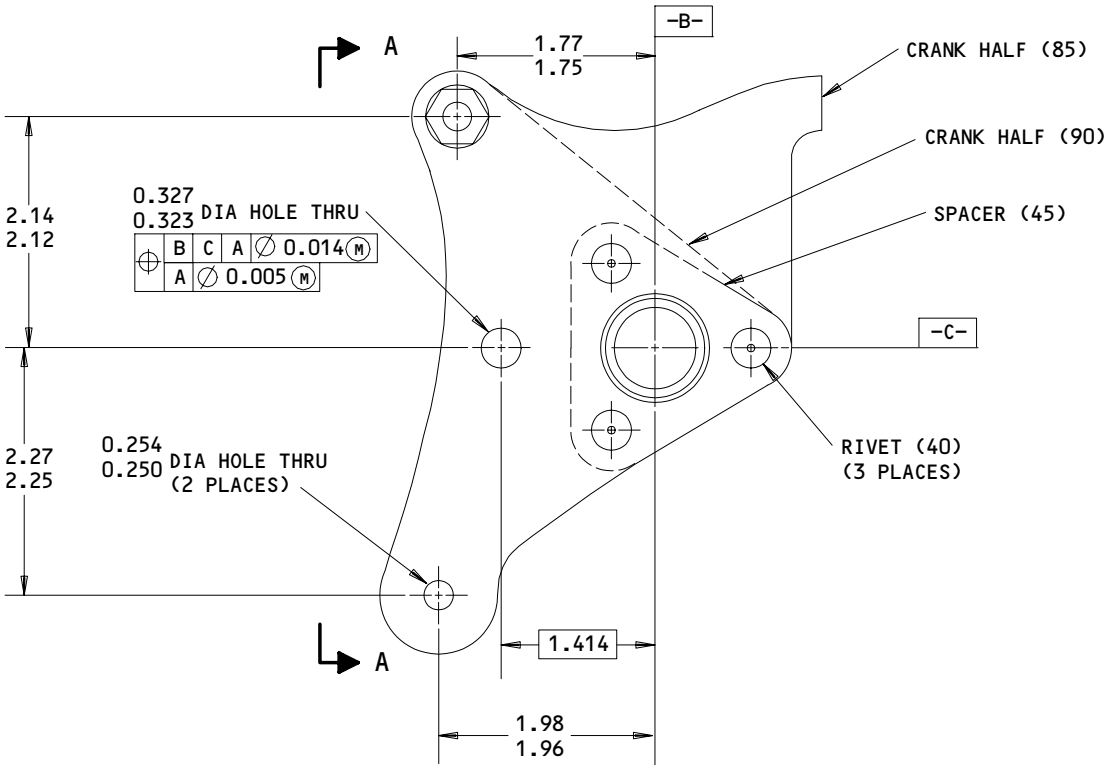
   C. Replace defective parts.

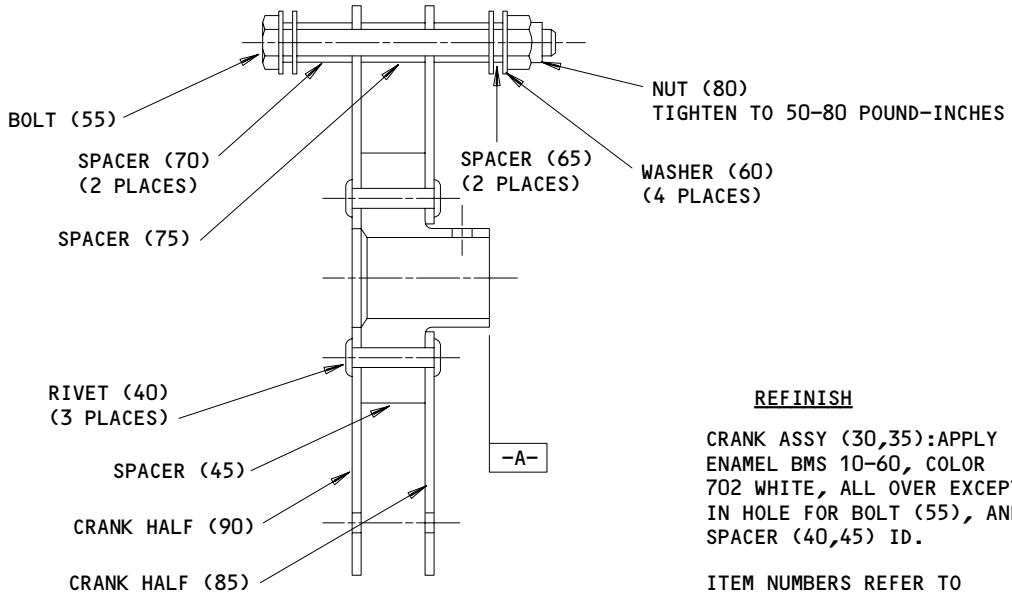
   D. If spacer is replaced, drill holes for rivets in new spacer using holes in crank halves for location. Sandwich spacer between crank halves and fasten with rivets (40).

   E. If crank halves are replaced, drill holes as indicated in new halves.

   F. Apply topcoat as shown.

   G. Install bolt, spacers, washers, nut as shown. Tighten nut to 50-80 lb-in.





A-A

REFINISH

CRANK ASSY (30,35):APPLY ENAMEL BMS 10-60, COLOR 702 WHITE, ALL OVER EXCEPT IN HOLE FOR BOLT (55), AND SPACER (40,45) ID.

ITEM NUMBERS REFER TO IPL FIG 1.

257T3405-3,-4

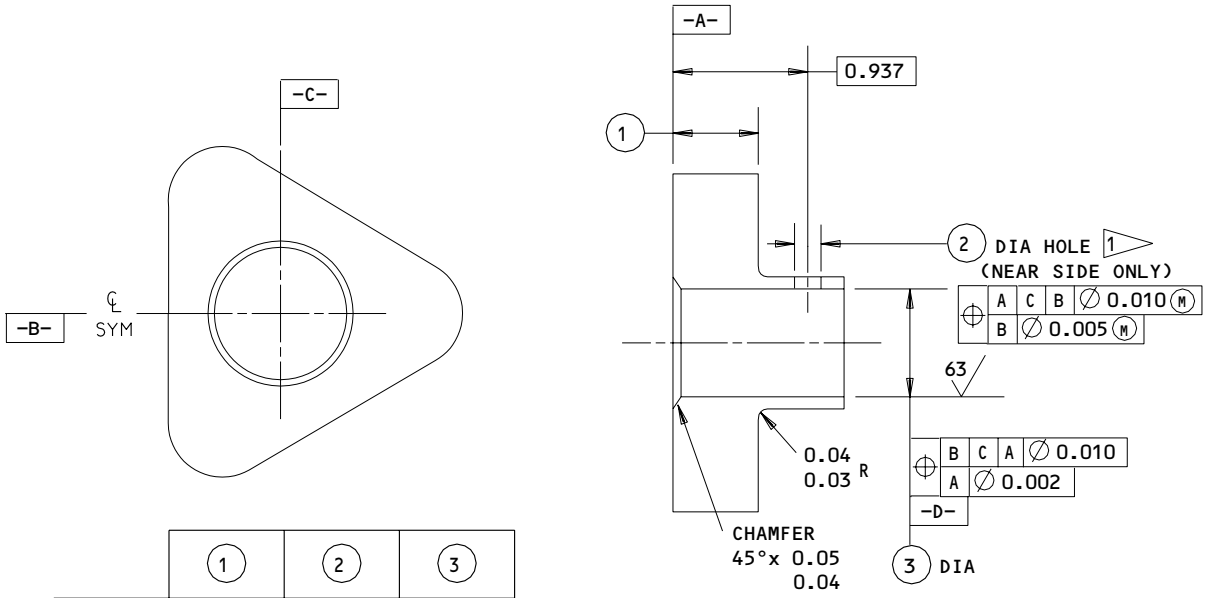
Crank Assembly - Parts Replacement
Figure 601

SPACER - REPAIR 2-1

257T3437-3, -4

1. Coating Repair

NOTE: Repair consists of restoration of original finish. Refer to Refinish instructions, Fig. 601 and to REPAIR-GEN for list of applicable standard practices.



	1	2	3
DESIGN DIM	0.605 0.595	0.162 0.159	0.756 0.753
REPAIR LIMIT	-	-	-

REFINISH

CADMIUM PLATE AND APPLY PRIMER, BMS 10-11, TYPE 1 (F-16.01) ALL OVER, EXCEPT OMIT PRIMER IN DIA -D-

1 DO NOT BREAK SHARP EDGES OF THIS HOLE

REPAIR

(SAME AS REFINISH)

125 MACHINE FINISH EXCEPT AS NOTED

MATERIAL: 15-5PH CRES, 150-170 KSI

ALL DIMENSIONS ARE IN INCHES

257T3437-3,-4

Spacier Repair and Refinish
Figure 601

172732

MISCELLANEOUS PARTS REFINISH - REPAIR 3-1

1. Repair of parts listed in Fig. 601 consists of restoration of the original finish.

IPL FIG. & ITEM	MATERIAL	FINISH
Fig. 1		
Retention Cap (25)	15-5PH CRES, 150-170 ksi	Cadmium plate and apply primer, BMS 10-11, type 1 (F-16.01), all over.
Crank Halves (85, 90)	Al alloy	Chemical treat and apply primer, BMS 10-11, type 1 (F-18.06), all over.

Refinish Details
Figure 601

ASSEMBLY

1. Materials

NOTE: Equivalent substitutes may be used.

A. Lubricant -- Hydraulic fluid, BMS 3-11 (Assembly Lube MCS 352 optional) (Ref 20-60-03)

2. Assembly (IPL Fig. 1)

A. Lubricate reducers (95,105) and packings (100,110) with hydraulic fluid or assembly lube, then install in valve (115).

CAUTION: RIVET (10) IS SPECIAL SHEAR RIVET. SUBSTITUTION WILL ALTER MECHANISM OVERLOAD SAFETY CHARACTERISTICS.

B. Position crank (30 or 35) on valve (115) shaft. Line up holes on valve shaft and crank hub, then install shear rivet (10). (Do not drive rivet.)

C. Install retention cap (25), pin (15), and cotter pin (20).

FOR TORQUE VALUES OF STANDARD FASTENERS, REFER TO 20-50-01			
ITEM NO. IPL FIG. 1	NAME	TORQUE	
		POUND-INCHES	POUND-FEET
65	NUT	50-80	

Torque Table
Figure 801

172531

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.

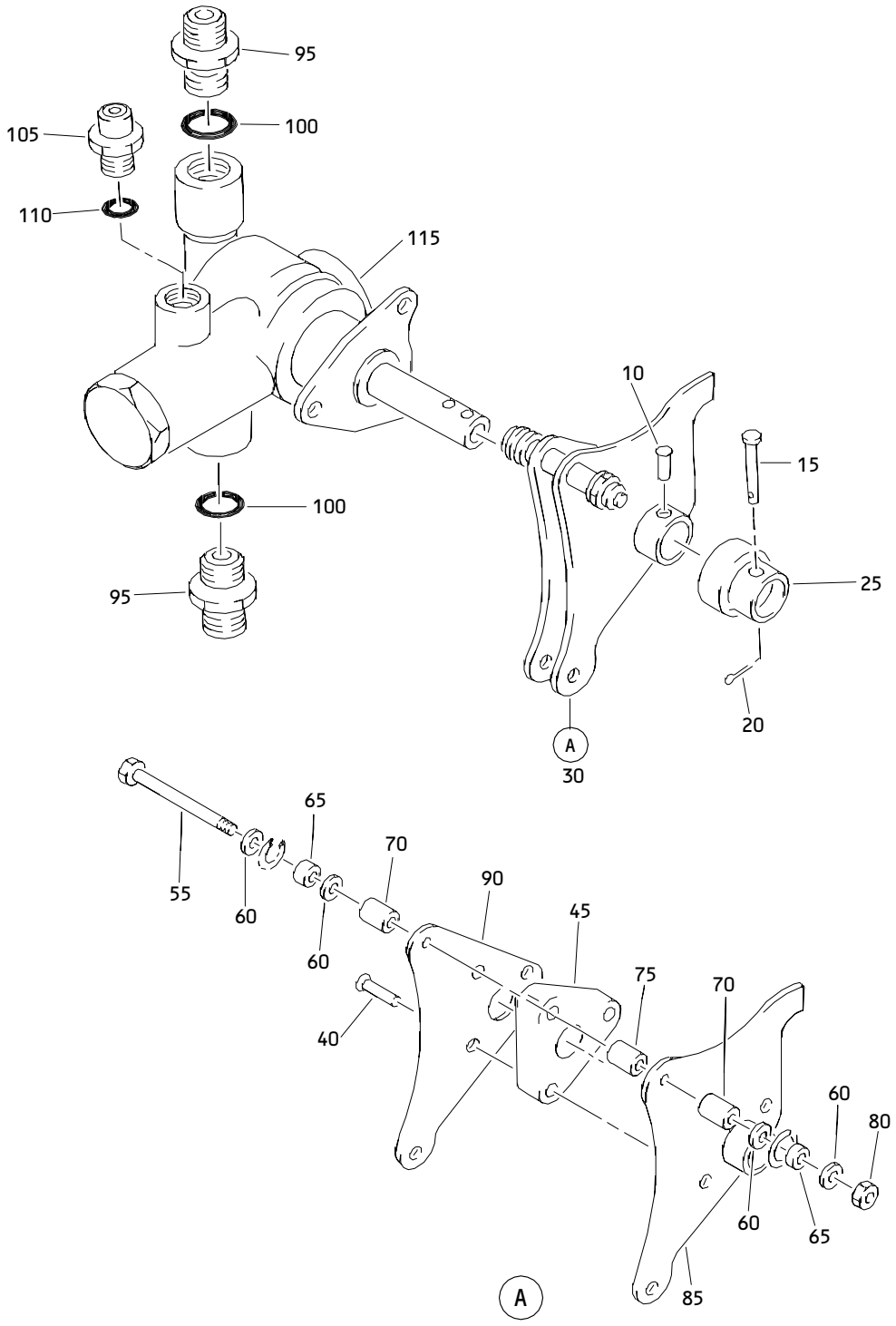
    B. When the top assembly part number is not changed by the Service Bulletin, the notations appear at the detail part level.

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

92003 PARKER-HANNIFIN CORPORATION
18321 JAMBOREE BOULEVARD
IRVINE, CAIFORNIA 92713



Main Landing Gear Alternate Extend Uplock
Release Door Safety Valve Assembly
Figure 1

FIG. & ITEM	PART NO.	AIRLINE PART NUMBER	NOMENCLATURE 1234567	EFF CODE	QTY PER ASSY
01-					
-1	257T3407-1		VALVE ASSY-MAIN GEAR ALTERNATE EXTEND UPLOCK RELEASE DOOR SAFETY	A	RF
-5	257T3407-2		VALVE ASSY-MAIN GEAR ALTERNATE EXTEND UPLOCK RELEASE DOOR SAFETY	B	RF
10	MS20615-5MP4		.RIVET		1
15	MS20392-2C29		.PIN		1
20	MS24665-151		.PIN-COTTER		1
25	257T3433-2		.CAP-RETENTION		1
30	257T3405-3		.CRANK ASSY	A	1
-35	257T3405-4		.CRANK ASSY	B	1
40	BACR15BB6AD		..RIVET		3
45	257T3437-3		..SPACER	A	1
-50	257T3437-4		..SPACER	B	1
55	NAS6604-33		..BOLT		1
60	BACW10P93A		..WASHER		4
65	NAS43HT4-6		..SPACER		2
70	NAS43HT4-33		..SPACER		2
75	NAS43HT4-38		..SPACER		1
80	BACN10JC4		..NUT		1
85	257T3439-4		..CRANK HALF		1
90	257T3439-3		..CRANK HALF		1
95	BACR17E10-4		.REDUCER		2
100	NAS1612-10		.PACKING		2
105	BACR17E8-6		.REDUCER		1
110	NAS1612-8		.PACKING		1
115	3790033-104		.VALVE (V92003) (SPEC S273T402-4)		1