COMPONENT MAINTENANCE MANUAL WITH ILLUSTRATED PARTS LIST

OVERWING EXIT COUNTERBALANCE MECHANISM ASSEMBLY

PART NUMBER 144A6631–3

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COMPONENT MAINTENANCE MANUAL

Revision No. 11
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To: All holders of OVERWING EXIT COUNTERBALANCE MECHANISM ASSEMBLY 52-26-09.

Attached is the current revision to this COMPONENT MAINTENANCE MANUAL

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

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Location of Change	Description of Change
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COMPONENT MAINTENANCE MANUAL

A = Added, R = Revised, D = Deleted, O = Overflow

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COMPONENT MAINTENANCE MANUAL

TEMPORARY REVISION AND SERVICE BULLETIN RECORD

BOEING SERVICE BULLETIN	BOEING TEMPORARY REVISION	OTHER DIRECTIVE	DATE OF INCORPORATION INTO MANUAL
		PRR 38130	MAR 01/98

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

Revision		Filed		Revision		Filed	
Number	Date	Date	Initials	Number	Date	Date	Initials

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Temporary Revision		Inserted		Removed	
Number	Date	Date	Initials	Date	Initials

Temporary Revision		Inserted		Removed	
Date	Initials	Number	Date	Date	Initials

Temporary Revision		Inserted		Removed	
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Temporary Revision		Inserted		Removed	
Date	Initials	Number	Date	Date	Initials

INTRODUCTION

1. General

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

B. This manual is divided into different parts:

(1) Title Page

(2) Transmittal Letter

(3) Highlights

(4) List of Effective Pages

(5) Table of Contents

(6) Temporary Revision & Service Bulletin Record

(7) Record of Revisions

(8) Record of Temporary Revisions

(9) Introduction

(10) Procedures & IPL Sections

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

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

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

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

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

AUTOMATIC OVERWING EXIT COUNTERBALANCE MECHANISM ASSEMBLY - DESCRIPTION AND OPERATION

1. Description

A. The automatic-overwing-exit counterbalance mechanism assembly is made of an actuation spring and a plunger assembly contained in a canister and a guide fitting assembly. A rod end bearing assembly is attached to the plunger assembly to permit installation of the unit on the airplane.

2. Operation

A. The counterbalance mechanism assembly attaches to airplane structure through the bearing on the guide fitting cap. The assembly attaches to the overwing exit door through the rod end bearing.

B. Two counterbalance mechanism assemblies and a snubber assembly are installed at each overwing exit door.

NOTE: Refer to CMM 52-26-10 for data on the snubber assembly.

C. The counterbalance mechanism assemblies give the force necessary to lift the overwing exit door to the open position.

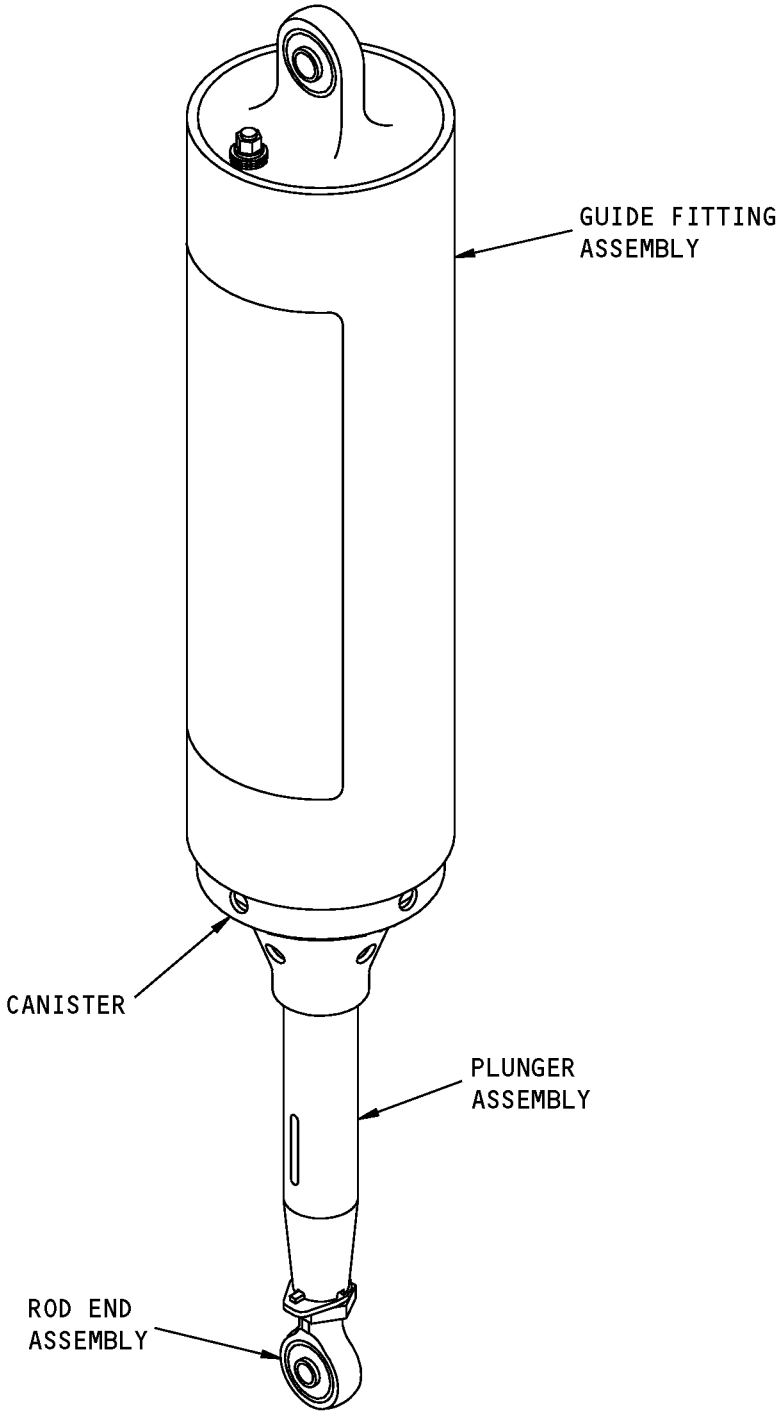
3. Leading Particulars (Approximate)

A. Length – 19.7 inches between bearing centers (extended position) 16.0 inches between bearing centers (compressed position)

B. Diameter – 2.60 inches (maximum)

C. Stroke – 3.65 inches

D. Weight – 7 pounds



Automatic Overwing Exit Counterbalance Mechanism Assembly
Figure 1

(NOT APPLICABLE)

DISASSEMBLY

1. General

A. This procedure has the data necessary to disassemble the counterbalance mechanism assembly (1A).

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 the SOPM subjects identified in this procedure.

D. Refer to IPL Figure 1 for item numbers.

2. Disassembly

A. Tools/Equipment

NOTE: Equivalent substitutes may be used.

Reference	Description
SPL-5406	Automatic Overwing Exit Door Spring Fixture Equipment (Part #: C52005-1, Supplier: 81205)

B. Procedure

(1) Loosen the nut (5) and washer (10) on the rod end assembly (15), then remove the parts from the plunger assembly (75).

NOTE: Do not remove the bearing (20) from the rod end assembly unless necessary for repair or replacement.

WARNING: THE SPRING (45) HAS A LOAD OF MORE THAN 440 POUNDS ON IT WHEN THE COUNTERBALANCE MECHANISM ASSEMBLY IS ASSEMBLED. MAKE SURE THAT THE PARTS ARE SAFELY ATTACHED TO THE ASSEMBLY TOOL BEFORE THE SPLIT RINGS (30) ARE REMOVED, OR INJURY TO PERSONNEL OR DAMAGE TO EQUIPMENT CAN OCCUR.

(2) Install the remaining parts of the counterbalance mechanism assembly (1A) in the Fixture Equipment, SPL-5406.

(3) Apply a load on the canister (35) to compress the spring (45) until the split rings (30) can be seen. Remove the split rings (30) from the groove in the plunger (85).

(4) Slowly decrease the load on the counterbalance mechanism assembly (1A) until the load is completely removed from the spring (45).

(5) Remove the counterbalance mechanism assembly (1A) from the TBD assembly tool.

(6) Remove the canister (35) and the spring (45) from the guide fitting assembly (90).

CAUTION: THE CAP ASSEMBLY (95), GUIDE FITTING (115), AND SHROUD (120) ARE A MATCHED SET. KEEP THE THREE PARTS TOGETHER. IF REPLACEMENT IS NECESSARY, REPLACE THE THREE PARTS AT THE SAME TIME WITH A NEW MATCHED SET, OR THE ASSEMBLY CAN OPERATE INCORRECTLY.

(7) Remove the thrust washers (40, 50) from the canister (35) and the guide fitting assembly (90).

CAUTION: THE PLUNGER (85) AND THE STOP BOLT (80) ARE A MATCHED SET. KEEP THE TWO PARTS TOGETHER. IF REPLACEMENT IS NECESSARY, REPLACE THE TWO PARTS AT THE SAME TIME WITH A NEW MATCHED SET, OR THE ASSEMBLY CAN OPERATE INCORRECTLY.

(8) Remove the nut (70), washers (65), and bolt (60) from the guide fitting assembly (90), then remove the cap assembly (95) and the shroud (120) from the guide fitting (115).

NOTE: Do not remove the aluminum foil marker (125) from the shroud unless necessary for repair or replacement.

Do not remove the bearing (100) from the cap assembly (95) unless necessary for repair or replacement.

(9) Remove the spring pin (55) from the plunger assembly (75), then remove the stop bolt (80) from the plunger (85).

(10) Remove the plunger (85) from the guide fitting (115).

NOTE: Do not remove the bonded stop pad (110) from the guide fitting unless necessary for repair or replacement.

(11) Install the stop bolt (80) in the plunger (85) and tighten the stop bolt with your fingers.

CAUTION: THE CAP ASSEMBLY (95) AND THE GUIDE FITTING (115) HAVE EXTRA FINE THREADS. BE CAREFUL THAT YOU DO NOT CROSS-THREAD THE PARTS OR CAUSE OTHER DAMAGE WHEN YOU ASSEMBLE THE GUIDE FITTING ASSEMBLY.

(12) Put a tag on the plunger assembly (75), or put the assembly in a bag and put a tag on the bag. Use a rubber stamp on the tag to identify the assembly as follows: "ASSEMBLY 144A6658, MATCHED SET. KEEP THE PARTS TOGETHER AND INSTALL AS A UNIT."

(13) Assemble the guide fitting assembly (90). Keep the parts together with a nylon tie strap installed through the bolt (60) hole.

(14) Put a tag on the guide fitting assembly (90), or put the assembly in a bag and put a tag on the bag. Use a rubber stamp on the tag to identify the assembly as follows: "ASSEMBLY 144A6659, MATCHED SET. KEEP THE PARTS TOGETHER AND INSTALL AS A UNIT."

CLEANING

1. General

A. This procedure has the data necessary to clean the counterbalance mechanism assembly (1A).

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

C. Refer to IPL Figure 1 for item numbers.

2. Cleaning

A. References

Reference	Title
SOPM 20-30-01	CLEANING AND RELUBRICATING BEARINGS
SOPM 20-30-03	GENERAL CLEANING PROCEDURES

B. Procedure

(1) Clean the bearings (20, 100) as specified in SOPM 20-30-01.

(2) Use standard industry procedures and refer to SOPM 20-30-03 to clean other parts.

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 the SOPM subjects identified in this procedure.

D. Refer to IPL Figure 1 for item numbers.

2. Check

A. References

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

B. Procedure

(1) Use standard industry 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) Rod end (25)

(b) Split ring (30)

(c) Canister (35)

(d) Stop bolt (80)

(e) Plunger (85)

(f) Fitting (115)

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

(a) Spring (45)

(b) Cap (105)

(4) Do a load check of the spring (45).

(a) Free length – 17.41 inches (for reference only)

(b) Load at compressed position (8.84 inches) – 768-938 pounds

(c) Load at extended position (12.49 inches) – 441-539 pounds

REPAIR

1. General

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

Table 601:

PART NUMBER	NAME	REPAIR
—	REFINISH OF OTHER PARTS	1-1
144A6633	GUIDE FITTING	2-1
144A6634	CAP ASSEMBLY	3-1
144A6652	ROD END ASSEMBLY	4-1
144A6659	GUIDE FITTING	5-1
BAC27DBY192	MARKER	6-1

2. Dimensioning Symbols

A. Standard True Position Dimensioning Symbols used in the applicable repair procedures are shown in REPAIR-GENERAL, Figure 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

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 the SOPM subjects identified in this procedure.

C. Refer to IPL Figure 1 for item numbers.

2. Refinish of Other Parts

A. Consumable Materials

NOTE: Equivalent substitutes may be used.

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

B. References

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

C. General

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

D. Procedure

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

(1) Refer to REPAIR 1-1, Table 601 for refinish details.

Table 601: Refinish Details

IPL FIG. & ITEM	MATERIAL	FINISH
IPL Fig. 1		
Split ring (30)	CRES, CH900 condition	Passivate (F-17.25).
Canister (35)	CRES, 180-200 ksi	Passivate (F-17.25). Apply lubricant, D00113 (F-19.10) to the 2.36 inch and 0.76 inch ID surfaces. Overspray onto adjacent surfaces is permitted.
Stop bolt (80), plunger (85)	CRES, 180-200 ksi	Passivate (F-17.25).

GUIDE FITTING - REPAIR 2-1

144A6633–1

1. General

A. This procedure has the data necessary to repair and refinish the guide fitting (115).

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

C. Refer to IPL Figure 1 for item numbers.

D. General repair details:

(1) Material: CRES, 180-200 ksi

2. Karon V Coating Repair

A. Procedure

(1) Prepare surfaces and apply Karon V coating as shown in REPAIR 2-1, Figure 601.

NOTE: Application of Karon V is a proprietary procedure. If repair of the Karon V coating is necessary, contact the vendor, Kamatics Corporation, at this address:

Kamatics Corporation 1330 Blue Hills Avenue Bloomfield, CT 06002

Phone: (860) 242-4461

3. Guide Fitting (115) Refinish

A. Consumable Materials

NOTE: Equivalent substitutes may be used.

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

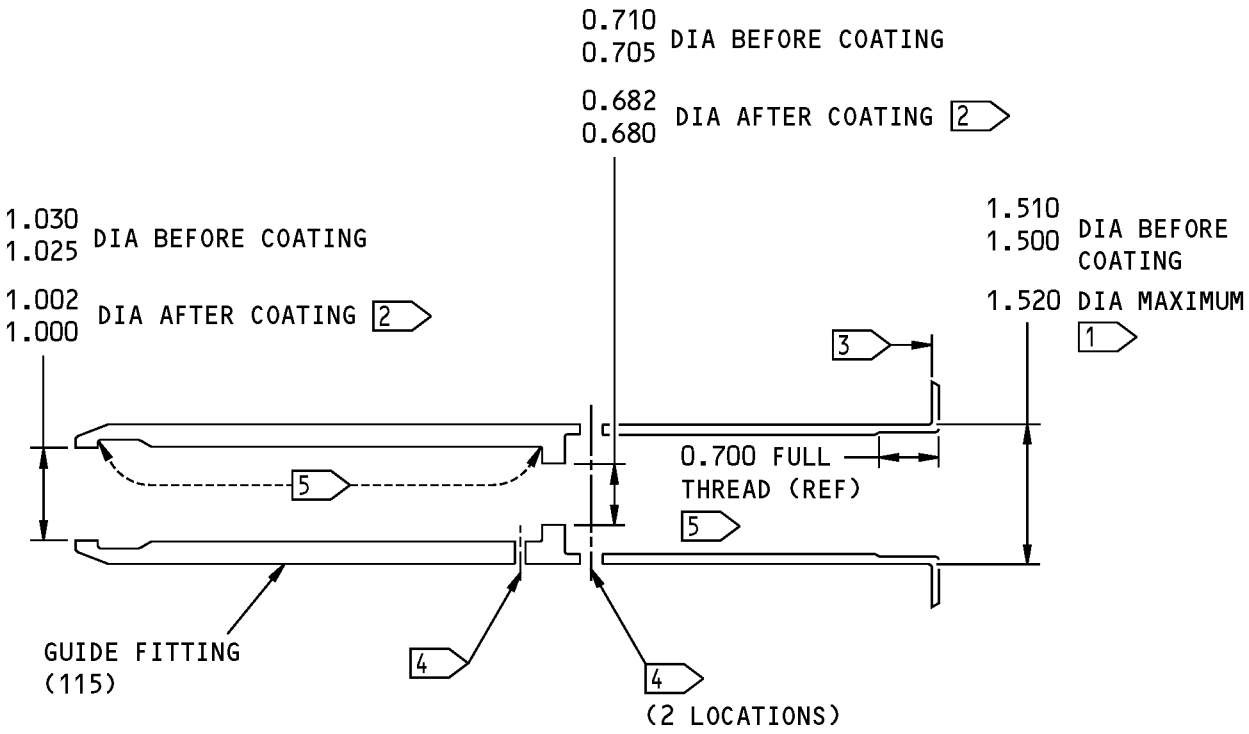
B. References

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

C. Refinish Procedure

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

(1) Passivate (F-17.25). Apply lubricant, D00113 (F-19.10) to the surfaces shown in REPAIR 2-1, Figure 601.



1. APPLY KARON V COATING TO 0.005 MINIMUM THICKNESS
2. APPLY KARON V COATING AS NECESSARY TO GET THIS DIMENSION
3. APPLY KARON V COATING TO 0.010 MAXIMUM THICKNESS
4. MAKE SURE HOLE IS OPEN AFTER KARON V COATING IS APPLIED
5. APPLY BMS 3-8 SOLID FILM LUBRICANT (SOPM 20-50-08)

ITEM NUMBERS REFER TO IPL FIG. 1

ALL DIMENSIONS ARE IN INCHES

144A6633-1 Guide Fitting Repair
Figure 601

CAP ASSEMBLY - REPAIR 3-1

144A6634–1

1. General

A. This procedure has the data necessary to repair and refinish the cap assembly (95).

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

C. Refer to IPL Figure 1 for item numbers.

D. General repair details:

(1) Material : Titanium alloy

2. Bearing (100) Replacement

A. Consumable Materials

NOTE: Equivalent substitutes may be used.

Reference	Description	Specification
D00633	Grease - Aircraft General Purpose	BMS3-33

B. References

Reference	Title
SOPM 20-50-03	BEARING AND BUSHING REPLACEMENT
SOPM 20-60-03	LUBRICANTS

C. Replacement Procedure

NOTE: For lubricants, refer to SOPM 20-60-03.

(1) Remove the bearing (100) from the cap assembly (95).

(2) Install the new bearing (100) (SOPM 20-50-03) with grease, D00633.

(3) Roller swage the bearing (100) outer race over the cap (105) .

3. Cap (105) Refinish

A. Consumable Materials

NOTE: Equivalent substitutes may be used.

Reference	Description	Specification
C50030	Coating - Phosphate-Fluoride, Manual Application	BAC5861, Method III

B. References

Reference	Title
BAC 5861	Boeing Aircraft Company Process Specification
SOPM 20-30-02	STRIPPING OF PROTECTIVE FINISHES
SOPM 20-41-01	DECODING TABLE FOR BOEING FINISH CODES
SOPM 20-60-02	FINISHING MATERIALS

C. Refinish Procedure

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

(1) Apply phosphate-fluoride coating, C50030 (F-14.881) (BAC 5861) on the cap (105).

ROD END ASSEMBLY - REPAIR 4-1

144A6652–1

1. General

A. This procedure has the data necessary to repair and refinish the rod end assembly (15).

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

C. Refer to IPL Figure 1 for item numbers.

D. General repair details:

(1) Material: CRES, 180-200 ksi

2. Bearing (20) Replacement

A. Consumable Materials

NOTE: Equivalent substitutes may be used.

Reference	Description	Specification
D00633	Grease - Aircraft General Purpose	BMS3-33

B. References

Reference	Title
SOPM 20-50-03	BEARING AND BUSHING REPLACEMENT
SOPM 20-60-03	LUBRICANTS

C. Replacement Procedure

NOTE: For lubricants, refer to SOPM 20-60-03.

(1) Remove the bearing (20) from the rod end assembly (15).

(2) Install the new bearing (20) with grease, D00633.

(3) Roller swage the bearing (20) outer race over the rod end (25) (SOPM 20-50-03) .

3. Rod End (25) Refinish

A. Consumable Materials

NOTE: Equivalent substitutes may be used.

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

B. References

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

C. Refinish Procedure

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

(1) Passivate (F-17.25). Apply lubricant, D00113 (F-19.10) to the threads.

GUIDE FITTING ASSEMBLY - REPAIR 5-1

144A6659–1

1. General

A. This procedure has the data necessary to repair the guide fitting assembly (90).

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

C. Refer to IPL Figure 1 for item numbers.

2. Stop Pad (110) Replacement

A. Consumable Materials

NOTE: Equivalent substitutes may be used.

Reference	Description	Specification
A00165	Adhesive - Neoprene	BMS5-7 Type I

B. References

Reference	Title
SOPM 20-30-03	GENERAL CLEANING PROCEDURES
SOPM 20-50-12	APPLICATION OF ADHESIVES

C. Procedure

(1) Disassemble the guide fitting assembly (90). Refer to DISASSEMBLY.

(2) Remove the stop pad (110) from the base of the counterbore in the guide fitting (115).

CAUTION: DO NOT USE TOO MUCH ADHESIVE. MAKE SURE THAT THE ADHESIVE DOES NOT FLOW ON THE ADJACENT INSIDE DIAMETER SURFACE OF THE GUIDE FITTING.

(3) Clean the bonding surface in the guide fitting (115) (SOPM 20-30-03).

(4) Bond the new stop pad (110) with adhesive, A00165 (SOPM 20-50-12) to the base of the counterbore in the guide fitting (115). Make sure that the stop pad is concentric to the ID of the guide fitting within 0.020 inch.

(5) Assemble the guide fitting assembly (90). Refer to ASSEMBLY.

MARKER - REPAIR 6-1

BAC27DBY19

1. General

A. This procedure has the data necessary to replace the marker (125).

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

C. Refer to IPL Figure 1 for item numbers.

2. Marker Replacement

A. References

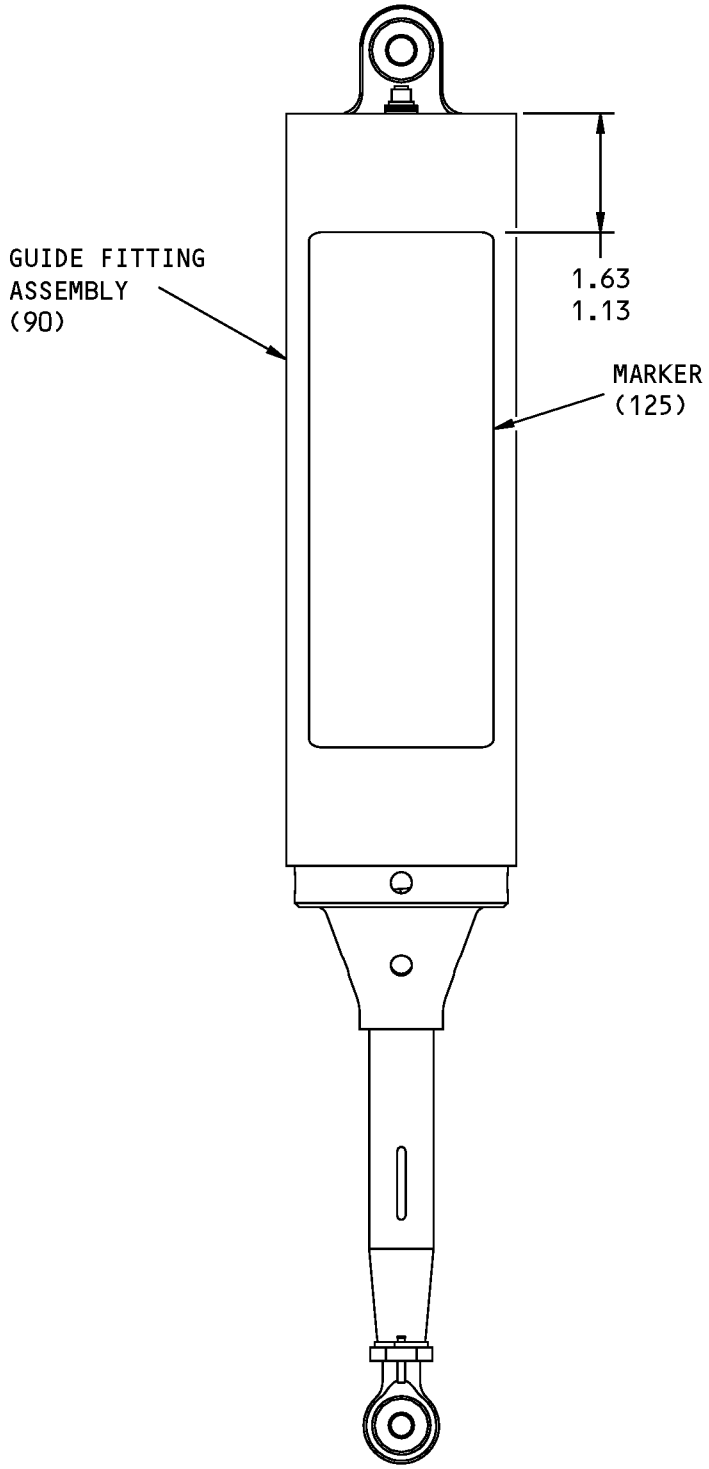
Reference	Title
SOPM 20-30-03	GENERAL CLEANING PROCEDURES
SOPM 20-50-05	APPLICATION OF ALUMINUM FOIL AND OTHER MARKERS

B. Procedure

(1) Remove the damaged or defective marker (125).

(2) Clean the surface of the shroud (120) (SOPM 20-30-03).

(3) Install the decal approximately in the location shown in REPAIR 6-1, Figure 601 (SOPM 20-50-05).



BAC27DBY192 Marker Replacement
Figure 601

ASSEMBLY

1. General

A. This procedure has the data necessary to assemble the counterbalance mechanism assembly (1A).

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

C. Refer to IPL Figure 1 for item numbers.

2. Assembly

A. Tools/Equipment

NOTE: Equivalent substitutes may be used.

Reference	Description
SPL-5406	Automatic Overwing Exit Door Spring Fixture Equipment (Part #: C52005-1, Supplier: 81205)

B. Consumable Materials

NOTE: Equivalent substitutes may be used.

Reference	Description	Specification
D00633	Grease - Aircraft General Purpose	BMS3-33

C. References

Reference	Title
SOPM 20-50-01	BOLT AND NUT INSTALLATION
SOPM 20-50-07	LUBRICATION
SOPM 20-60-03	LUBRICANTS
SOPM 20-60-04	MISCELLANEOUS MATERIALS

D. Procedure

NOTE: For bolt and nut installation, refer to SOPM 20-50-01. For lubricants, refer to SOPM 20-60-03. For miscellaneous materials, refer to SOPM 20-60-04.

(1) Remove the stop bolt (80) from the plunger assembly (75) if it is installed. Refer to DISASSEMBLY.

(2) Disassemble the guide fitting assembly (90) (DISASSEMBLY). Make sure that the stop pad (110) is bonded in the guide fitting (115).

(3) Apply a thick layer of grease, D00633 to the 0.679 inch OD of the plunger (85) (SOPM 20-50-07), as shown in ASSEMBLY, Figure 701.

(4) Use a light force to install the plunger (85) as far as possible into the guide fitting (115). Install the plunger with the lubricated end first.

(5) Remove the grease, D00633 that comes out of the escape hole in the wall of the guide fitting (115).

CAUTION: THE PLUNGER (85) AND THE STOP BOLT (80) ARE A MATCHED SET. USE THE TWO PARTS REMOVED DURING DISASSEMBLY, OR A NEW MATCHED SET, OR THE ASSEMBLY CAN OPERATE INCORRECTLY.

(6) Move the plunger (85) up and down in the guide fitting until no grease, D00633 comes out of the escape hole.

CAUTION: THE CAP ASSEMBLY (95), GUIDE FITTING (115), AND SHROUD (120) ARE A MATCHED SET. KEEP THE THREE PARTS TOGETHER. IF REPLACEMENT IS NECESSARY, REPLACE THE THREE PARTS AT THE SAME TIME WITH A NEW MATCHED SET, OR THE ASSEMBLY CAN OPERATE INCORRECTLY.

CAUTION: THE CAP ASSEMBLY (95) AND THE GUIDE FITTING (115) HAVE EXTRA FINE THREADS. BE CAREFUL THAT YOU DO NOT CROSS-THREAD THE PARTS OR CAUSE OTHER DAMAGE WHEN YOU ASSEMBLE THE GUIDE FITTING ASSEMBLY.

(7) Install the stop bolt (80) in the plunger (85). Turn the stop bolt until the head touches the plunger. Apply more torque until the 0.062-inch diameter holes in the stop bolt and plunger are aligned. Install the spring pin (55) in the holes with the pin 0.00-0.03 inch below the surface of the stop bolt.

(8) Assemble the guide fitting assembly (90). Tighten the parts until the 0.166-inch diameter holes are aligned in all three parts of the assembly.

(9) Install the bolt (60), washers (65), and nut (70).

(10) Apply a layer of grease, D00633 to the thrust washer (50), then install the thrust washer in the guide fitting assembly (90). Make sure that the chamfered edge of the washer is toward the closed end of the guide fitting assembly.

(11) Apply a layer of grease, D00633 to the thrust washer (40), then install the thrust washer in the canister (35). Make sure that the chamfered edge of the washer is toward the closed end of the canister.

(12) Assemble the spring (45) and canister (35) loosely in the guide fitting assembly (90). Turn the plunger to align one of the slots at the tip with the centerline of the bearing (100), within 5 degrees.

WARNING: THE SPRING (45) WILL HAVE A COMPRESSION LOAD OF MORE THAN 440 POUNDS ON IT WHEN THE COUNTERBALANCE MECHANISM ASSEMBLY IS ASSEMBLED. MAKE SURE THAT THE PARTS ARE SAFELY ATTACHED TO THE ASSEMBLY TOOL, OR INJURY TO PERSONNEL OR DAMAGE TO EQUIPMENT CAN OCCUR.

(13) Put the loose assembly in the Fixture Equipment, SPL-5406.

(14) Compress the assembly until you can see the groove for the split rings in the plunger (85). Refer to ASSEMBLY, Figure 701.

(15) Install the split rings (30) in the groove in the plunger (85). Use grease, D00633 to hold the split rings temporarily in the groove.

(16) Slowly release the force on the assembly until the end of the canister (35) is over the split rings (30) to hold them in position.

(17) Remove the assembled parts from the Fixture Equipment, SPL-5406.

(18) Put the nut (5) and washer (10) on the shaft of the rod end assembly (15).

(19) Install the rod end assembly (15) in the threaded end of the plunger assembly (75). Adjust the rod end assembly to get the 19.666 inch distance between bearing (20, 100) centers, as shown in ASSEMBLY, Figure 701. Then turn the rod end as required (+/- 1/2 turn) to align the bearing (20) with the bearing (100).

(20) Move the washer (10) down the shank of the rod end assembly (15) until the tab engages a slot in the end of the plunger (85). Tighten the nut (5) to lock the rod end assembly at the correct position.

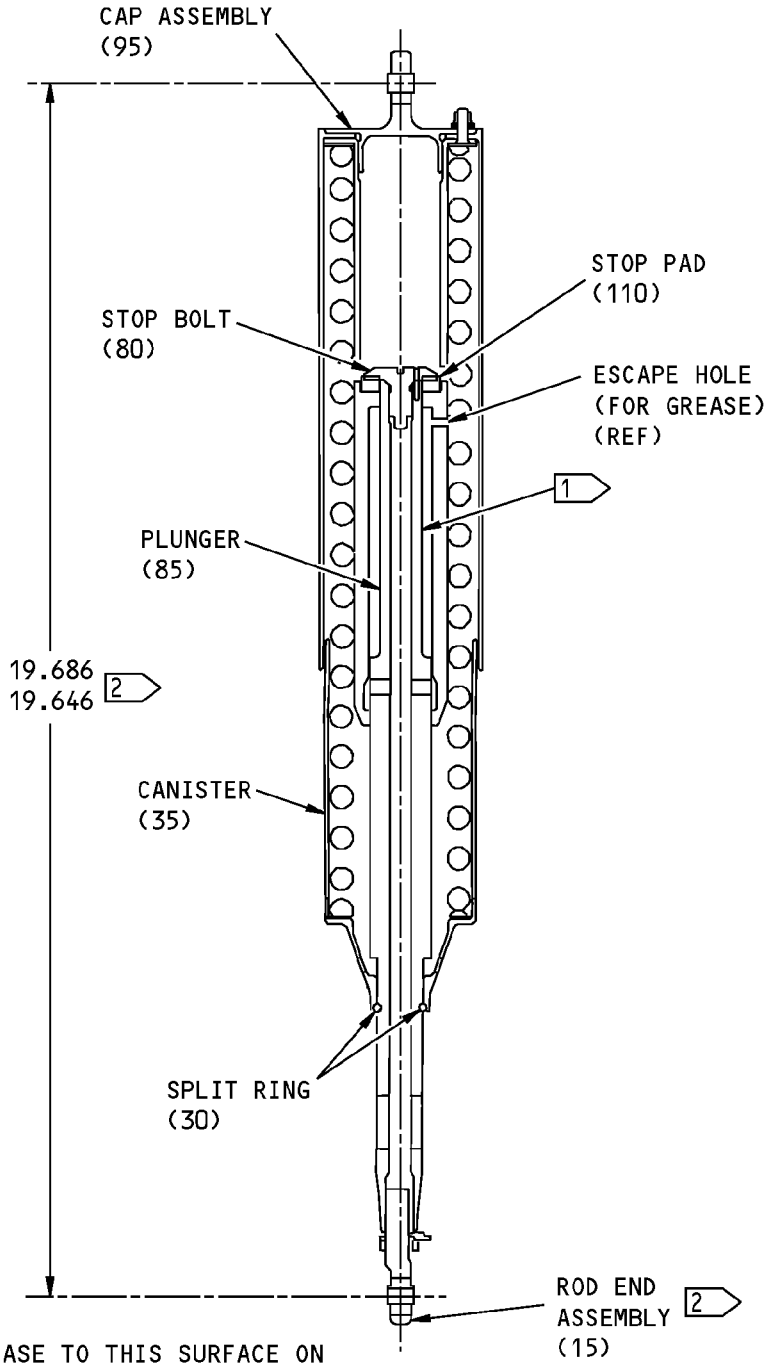
3. Storage

A. References

Reference	Title
SOPM 20-44-02	TEMPORARY PROTECTIVE COATINGS

B. Procedure

(1) Use standard industry procedures to store this component. Refer to SOPM 20-44-02 for more data.



1 APPLY GREASE TO THIS SURFACE ON THE PLUNGER

2 TURN ROD END TO GET DIMENSION SHOWN, THEN ADJUST AS NECESSARY TO ALIGN BEARING CENTERLINES

ITEM NUMBERS REFER TO IPL FIG. 1

ALL DIMENSIONS ARE IN INCHES

Assembly Details
Figure 701

BOEING®

COMPONENT MAINTENANCE MANUAL

FITS AND CLEARANCES

(NOT APPLICABLE)

SPECIAL TOOLS, FIXTURES, AND EQUIPMENT

1. General

A. This section lists the special tools, fixtures, and equipment necessary for maintenance.

NOTE: Equivalent substitutes may be used.

Special Tools

Reference	Description	Part Number	Supplier
SPL-5406	Automatic Overwing Exit Door Spring Fixture Equipment	C52005-1	81205

Tool Supplier Information

CAGE Code	Supplier Name	Supplier Address
81205	THE BOEING COMPANY	17930 INTERNATIONAL BLVD. SOUTH SEATAC, WA 98188-4321 Telephone: 206-662-6650 Facsimile: 206-662-7145

ILLUSTRATED PARTS LIST

1. Introduction

A. The Illustrated Parts List (IPL) contains an illustration and a list of component parts you can repair or replace. The Illustrated Parts Catalog (IPC) shows how to use the Boeing part number system.

B. This shows how parts are related: The relation of each item to its next higher assembly (NHA) is shown in the NOMENCLATURE column. Use the indenture system that follows:

1 2 3 4 5 6 7

. Assembly

. Attaching parts for assembly

. . Detail parts for assembly

. . Subassembly

. . Attaching parts for subassembly

. . . Detail parts for subassembly

. . . Sub-subassembly

. . . Attaching parts for subassembly

. . . . . Details parts for sub-subassembly

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

C. Each top assembly is given one use code letter (A, B, C, etc.) in the USAGE CODE column. All subsequent component parts in the list can have one or more of the use code letters to show effectivity to top assemblies. A component part without a use code applies to all top assemblies.

D. An alphabetical letter is added after the item number for optional parts, parts changed by a Service Bulletin, configuration differences (except left-handed and right-handed parts), last engineering releases, and parts added between item numbers in a sequence. The alphabetical letter will not be shown on the illustration for equivalent parts of the same part number.

E. Color-coded parts are identified with a single digit alpha following the dash number or with ''SP'' suffix. If the ''SP'' suffix is used, it represents consolidation of all color codes applicable for a given usage which are not separately listed. Orders for color-coded parts should include the registry number of the airplane for which the parts are ordered.

F. If a part number is 15 characters long but will not fit in the part number column, the part number will be displayed with a ''~'' at the end of the line and will be continued on the next line. The ''~'' denotes that the part number continues on the next line.

G. Parts changed by a Service Bulletin are shown by PRE SB XXXX and POST SB XXXX added to the NOMENCLATURE column.

(1) When a new top assembly is added by a Service Bulletin, PRE SB XXXX and POST SB XXXX will be added at the top assembly level only. The configuration differences at the detail part level are shown by use code letters.

(2) When the top assembly part number is not changed by the Service Bulletin, PRE SB XXXX and POST SB XXXX will be added at the detail level.

H. Interchangeable Parts

Optional (OPT)	The part is optional to and interchangeable with other parts that have the same item number.
Replaces, Replaced by and not interchangeable with (REPLACES, REPLACED BY AND NOT INTCHG/W)	The part replaces and is not interchangeable with the initial part.
Replaces, Replaced by (REPLACES, REPLACED BY)	The part replaces and is interchangeable with, or is an alternative to, the initial part.

VENDOR CODES

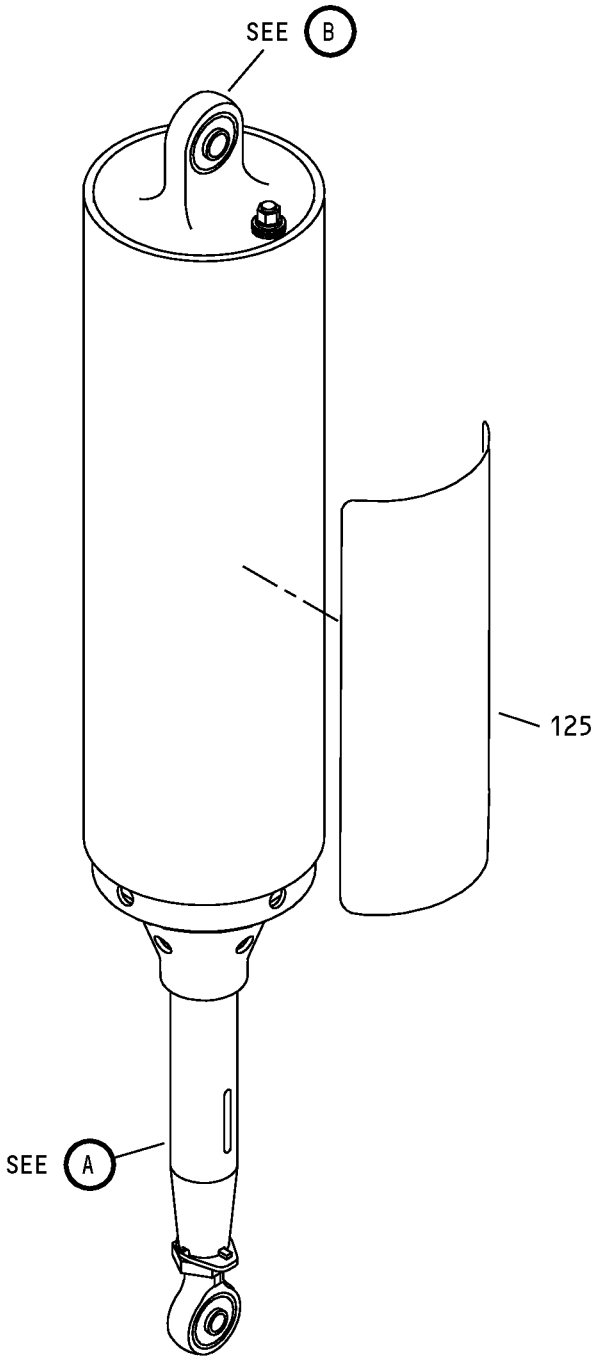
Code	Name
08524	Replaced: [V08524] DEUTSCH FASTENER CORP SEE CODE V97928 Replaced: [V97928] SEE V17446 HUCK INTL by Code: Name and Address below 17446: HUCK INTL INC AEROSPACE FASTENER DIV 900 WATSON CENTER ROAD CARSON, CALIFORNIA 90745-4201 FORMERLY V32134 REXNORD INC; FORMERLY V97928 HUCK INTL Referenced in FORMERLY line below [17419] DEUTSCH COMPANY THE WELLS FARGO BANK BLDG 2444 WILSHIRE BLVD #600 SANTA MONICA, CALIFORNIA 90403 FORMERLY DEUTSCH FASTENER CORP V08524 FORMERLY IN LOS ANGELES
15653	ALCOA GLOBAL FASTENERS INC DIV KAYNAR PRODUCTS 800 S STATE COLLEGE BLVD FULLERTON, CALIFORNIA 92831-3001 FORMERLY VK6405 MICRODOT AEROSP LTD; FORMERLY KAYNAR TECH FORMERLY FAIRCHILD FASTENERS KAYNAR DIV
56878	SPS TECHNOLOGIES INC AEROSPACE AND INDUSTRIAL PRODUCTS DIV 301 HIGHLAND AVE JENKINTOWN, PENNSYLVANIA 19046 FORMERLY STANDARD PRESSED STEEL FORMERLY IN SALT LAKE, UTAH
62554	SIMMONDS MECAERO FASTENERS INC 1734 SEQUOIA AVENUE ORANGE, CALIFORNIA 92668

Code	Name
73197	HI-SHEAR TECHNOLOGY CORP 2600 SKYPARK DRIVE TORRANCE, CALIFORNIA 90509
80539	SPS TECHNOLOGIES INC DIV AERPSOACE - SANTA ANA 2701 SOUTH HARBOR BOULEVARD SANTA ANA, CALIFORNIA 92704-5803 FORMERLY NUTT-SHEL DIV OF SPC WESTERN CO V80539 AND STANDARD PRESSED STEEL WESTERN DIV V17279
92215	FAIRCHILD IND INC FAIRCHILD AEROSPACE FASTENER DIV 3010 W LOMITA BLVD TORRANCE, CALIFORNIA 90505-5102 FORMERLY VOI-SHAN IN CULVER CITY, CALIF
97928	Replaced: [V97928] SEE V17446 HUCK INTL by Code: Name and Address below 17446: HUCK INTL INC AEROSPACE FASTENER DIV 900 WATSON CENTER ROAD CARSON, CALIFORNIA 90745-4201 FORMERLY V32134 REXNORD INC; FORMERLY V97928 HUCK INTL

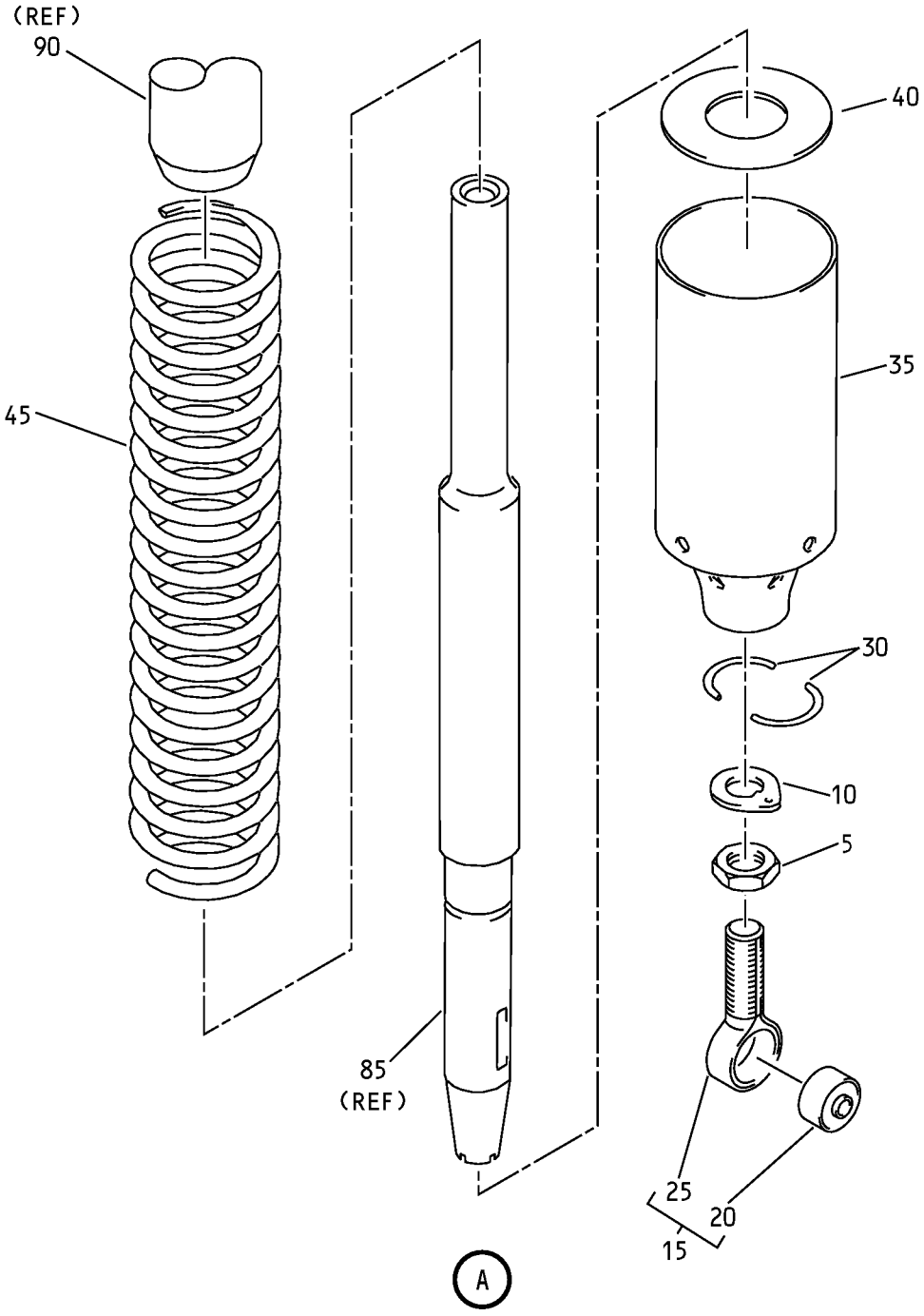
NUMERICAL INDEX

PART NUMBER	AIRLINE PART NUMBER	FIGURE	ITEM	UNITS PER ASSEMBLY
144A6631-3		1	1A	RF
144A6632-1		1	45	1
144A6633-1		1	115	1
144A6634-1		1	95	1
144A6634-2		1	105	1
144A6635-1		1	110	1
144A6636-1		1	85	1
144A6637-1		1	120	1
144A6638-1		1	80	1
144A6639-1		1	35	1
144A6652-1		1	15	1
144A6652-2		1	25	1
144A6656-1		1	40	1
144A6656-2		1	50	1
144A6657-1		1	30	2
144A6658-1		1	75	1
144A6659-1		1	90	1
67068-5A4U		1	60	1
BAC27DBY192		1	125	1
BACB30FN5A4U		1	60	1
BACN10YR08CM		1	70	1
H52732-08CM		1	70	1
HL41-5-4		1	60	1
		1	60	1
		1	60	1
		1	60	1
		1	60	1
		1	60	1
MS14103-4		1	20	1
MS14103-5		1	100	1
MS16562-192		1	55	1
NAS1149CN832R		1	65	3
NAS1423C7		1	5	1
NAS513-7		1	10	1

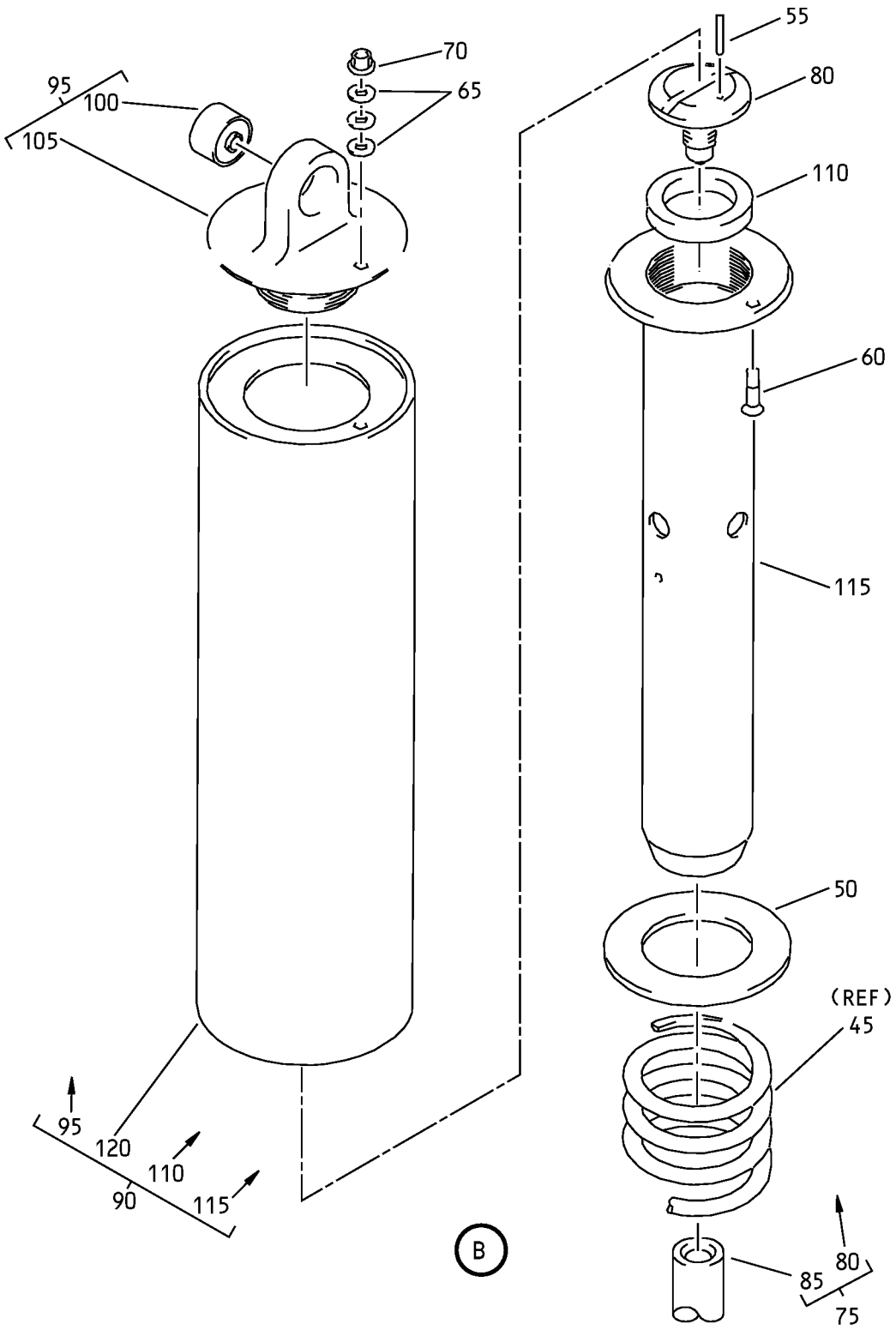
PART NUMBER	AIRLINE PART NUMBER	FIGURE	ITEM	UNITS PER ASSEMBLY
PLH508CM		1	70	1



Automatic Overwing Exit Counterbalance Mechanism Assembly
IPL Figure 1 (Sheet 1 of 3)



Automatic Overwing Exit Counterbalance Mechanism Assembly
IPL Figure 1 (Sheet 2 of 3)



Automatic Overwing Exit Counterbalance Mechanism Assembly
IPL Figure 1 (Sheet 3 of 3)

FIG/ ITEM	PART NUMBER	AIRLINE PART NUMBER	NOMENCLATURE 1 2 3 4 5 6 7	USAGE CODE	UNITS PER ASSY
1–					
–1A	144A6631-3		MECHANISM ASSY-COUNTERBALANCE MECH, AUTO OVERWING EXIT		RF
5	NAS1423C7		. NUT		1
10	NAS513-7		. WASHER		1
15	144A6652-1		. END ASSY-ROD		1
20	MS14103-4		. . BEARING		1
25	144A6652-2		. . END		1
30	144A6657-1		. RING-SPLIT		2
35	144A6639-1		. CANISTER		1
40	144A6656-1		. WASHER-THRUST		1
45	144A6632-1		. SPRING-ACTUATION		1
50	144A6656-2		. WASHER-THRUST		1
55	MS16562-192		. PIN-SPR		1
60	HL41-5-4		. BOLT (V56878) (SPEC BACB30FN5A4U) (OPT HL41-5-4 (V73197)) (OPT HL41-5-4 (V92215)) (OPT HL41-5-4 (V97928)) (OPT 67068-5A4U (V56878)) (OPT HL41-5-4 (V80539)) (OPT HL41-5-4 (V08524))		1
65	NAS1149CN832R		. WASHER		3
70	H52732-08CM		. NUT (V15653) (SPEC BACN10YR08CM) (OPT PLH508CM (V62554))		1
75	144A6658-1		. PLUNGER ASSY		1
80	144A6638-1		. . BOLT-STOP (MATCHED SET)		1
85	144A6636-1		. . PLUNGER (MATCHED SET)		1
90	144A6659-1		. FITTING ASSY-GUIDE		1
95	144A6634-1		. . CAP ASSY (MATCHED SET)		1
100	MS14103-5		. . . BEARING		1

–Item not Illustrated

FIG/ ITEM	PART NUMBER	AIRLINE PART NUMBER	NOMENCLATURE 1 2 3 4 5 6 7	USAGE CODE	UNITS PER ASSY
1–					
105	144A6634-2		. . . CAP		1
110	144A6635-1		. . PAD-STOP		1
115	144A6633-1		. . FITTING (MATCHED SET)		1
120	144A6637-1		. . SHROUD (MATCHED SET)		1
125	BAC27DBY192		. MARKER-ALUMINUM FOIL		1

–Item not Illustrated