TO: ALL HOLDERS OF AILERON HINGE BEARING BLOCK ASSEMBLY COMPONENT MAINTENANCE MANUAL 57-51-02

REVISION NO. 2 DATED JUN 01/97

HIGHLIGHTS

All data formerly in manual 57-51-01 is included in this manual 57-51-02.

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	Added clarification to details. Deleted procedures which can be done by standard industry practices.
DESCRIPTION & OPERATION 1 401 501	
REPAIR-GEN 601	
REPAIR 1-1 601	
REPAIR 2-1 601	
REPAIR 3-1 601	
REPAIR 4-1 601-602	
REPAIR-GEN 602-603	Changed the standard location of the datum letters.

COMPONENT
MAINTENANCE MANUAL

AILERON HINGE BEARING BLOCK ASSEMBLY

PART NUMBER 113T1505-1,-2,-9,-10
113T1517-1,-2
113T1519-1

COMPONENT MAINTENANCE MANUAL
WITH
ILLUSTRATED PARTS LIST

131389

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

COMPONENT
MAINTENANCE MANUAL

TEMPORARY REVISION AND SERVICE BULLETIN RECORD

BOEING SERVICE BULLETIN	BOEING TEMPORARY REVISION	OTHER DIRECTIVE	DATE OF INCORPORATION INTO MANUAL
		PRR B10016	JUL 10/84

PAGE	DATE	CODE
57-51-02		
TITLE PAGE		
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REVISION RECORD		
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TR & SB RECORD		
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1005	JUL 01/92	01.1
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* = REVISED, ADDED OR DELETED

TABLE OF CONTENTS

INTRODUCTION

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

This manual is divided into separate sections:

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

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

AILERON HINGE BEARING BLOCK ASSEMBLIES

DESCRIPTION AND OPERATION

1. Description and Operation

A. The aileron hinge bearing block assemblies are machined aluminum blocks with bearings and bushings. They attach the ailerons to the airplane.

2. Leading Particulars (approximate)

Length -- 7.5 inches
Width -- 6.0 inches
Thickness -- 3.0 inches
Weight -- 4.5 pounds

CLEANING

1. Clean all parts but the teflon bearings (20, 25, 45, 50, IPL Fig. 1; 15, 20, 45, 50 IPL Fig. 2; 15, IPL Fig. 3) standard industry practices and the instructions in SOPM 20-30-03.

2. Clean teflon bearing (20, 25, 45, 50, IPL Fig. 1; 15, 20, 45, 50, IPL Fig. 2; 15, IPL Fig. 3) per 20-30 01.

CHECK

1. Examine all parts for obvious defects by standard industry practices.

2. Penetrant check per 20-20-02 -- Blocks (35, 60, IPL Fig. 1; 30, 30A, 60, 60A, IPL Fig. 2; 25, IPL Fig. 3).

3. Refer to 767 Structural Repair Manual, 57-51-02, for repair limits and data.

REPAIR - GENERAL

1. Content

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

P/N	NAME	REPAIR
113T1505-1, -2	BLOCK ASSEMBLY	1-1
113T1505-9, -10	BLOCK ASSEMBLY	2-1
113T1517	BLOCK ASSEMBLY	3-1
113T1519	BLOCK ASSEMBLY	4-1

2. Standard Practices

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

   B. 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
      20-43-01 Chromic Acid Anodizing
      20-50-03 Bearing Removal, Installation and Retention
      20-60-02 Finishing Materials
      20-60-03 Lubricants
      20-60-04 Miscellaneous Materials

3. Materials

   NOTE: Equivalent substitutes can be used.

   A. Grease -- BMS 3-24, (Ref 20-60-03)

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

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

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
⌰	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 WHICH 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 B WITHIN 0.002
[// | 0.002 | A]	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
[⌒ | 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 PLANE A
[⌓ | 0.020 | A]	SURFACES MUST LIE WITHIN PARALLEL BOUNDARIES 0.02 INCH APART AND EQUALLY DISPOSED ABOUT TRUE PROFILE

[◎ | ∅ 0.0005 | C]	CONCENTRIC TO C WITHIN 0.0005 DIAMETER
[⌯ | 0.010 | A]	SYMMETRICAL WITH A WITHIN 0.010
[∠ | 0.005 | A]	ANGULAR TOLERANCE 0.005 WITH 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, AND EXTENDING 0.510-INCH ABOVE, DATUM A, MAXIMUM MATERIAL CONDITION
[2.000] OR 2.000 BSC	THEORETICALLY EXACT DIMENSION IS 2.000

NOTE: DATUM MAY APPEAR AT EITHER SIDE OF TOLERANCE FRAME [0.020 | A] [A | 0.020]

True Position Dimensioning Symbols
Figure 601

131391

BLOCK ASSEMBLY - REPAIR 1-1

113T1505-1, -2

NOTE: Refer to REPAIR-GENERAL for a list of applicable standard practices. Refer to IPL Fig. 1 for item numbers.

1. Bearing (25, 50) Replacement

   A. Remove the old bearing and retaining ring (30 or 55).

   B. Install a replacement bearing and retaining ring (30 or 55) with BMS 3-24 grease.

   C. Roller swage the retaining ring per SOPM 20-50-03 until it is flush within -0.005 inch/+0.015 inch.

2. Bearing (20, 45) Replacement

   A. Remove the old bearing.

   B. Install a replacement bearing with BMS 3-24 grease.

   C. Roller swage the bearing per SOPM 20-50-03.

3. Refinish

   A. Block (35, 60) -- Chromic acid anodize and apply BMS 10-11, type 1 primer (F-18.13), but apply no primer in the holes. Material: Al alloy

BLOCK ASSEMBLY - REPAIR 2-1

113T1505-9, -10

NOTE: Refer to REPAIR-GENERAL for a list of applicable standard practices. Refer to IPL Fig. 2 for item numbers.

1. Bearing (15) Replacement

   A. Remove the old bearing and retaining ring (25).

   B. Install a replacement bearing and retaining ring (25) with BMS 3-24 grease.

   C. Roller swage the retaining ring (25) per SOPM 20-50-03 unti it is flush within -0.005 inch/+0.015 inch.

2. Bushing (10) Replacement

   A. Remove the old bushings.

   B. Install replacement bushings by the shrink-fit or press-fit method of SOPM 20-50-03.

   C. Machine the bushing bores to 0.312 - 0.313 inch diameter.

3. Bearing (20) Replacement

   A. Remove the old bearing.

   B. Install a replacement bearing with BMS 3-24 and roller swage it per SOPM 20-50-03.

4. Refinish

   A. Block (30, 30A) -- Chromic acid anodize and apply BMS 10-11, type 1 primer (F-18.13), but apply no primer in the holes. Material: Al alloy

BLOCK ASSEMBLY - REPAIR 3-1

113T1517-1, -2

NOTE: Refer to REPAIR-GENERAL for a list of applicable standard practices. Refer to IPL Fig. 2 for item numbers.

1. Bearing (45) Replacement

   A. Remove the old bearing and retaining ring (55).

   B. Install a replacement bearing and retaining ring (55) with BMS 3-24 grease.

   C. Roller swage the retaining ring (55) per SOPM 20-50-03 unti it is flush within -0.005 inch/+0.015 inch.

2. Bushing (40) Replacement

   A. Remove the old bushings.

   B. Install replacement bushings by the shrink-fit or press-fit method of SOPM 20-50-03.

   C. Machine the bushing boress to 0.4995 - 0.5005 inch diameter.

3. Bearing (50) Replacement

   A. Remove the old bearing.

   B. Install a replacement bearing with BMS 3-24 grease and swage it per SOPM 20-50-03.

4. Refinish

   A. Block (60, 60A) -- Chromic acid anodize and apply BMS 10-11, type 1 primer (F-18.13), but apply no primer in the holes. Material: Al alloy

BEARING BLOCK ASSEMBLY - REPAIR 4-1

113T1519-1

NOTE: Refer to REPAIR-GENERAL for a list of applicable standard practices. Refer to IPL Fig. 3 for item numbers.

1. Bearing (15) Replacement

   A. Remove the old bearing and retaining ring (20).

   B. Install a replacement bearing and retaining ring (20) with BMS 3-24 grease.

   C. Roller swage the retaining ring per SOPM 20-50-03.

2. Bushing (10) Replacement (Fig. 601)

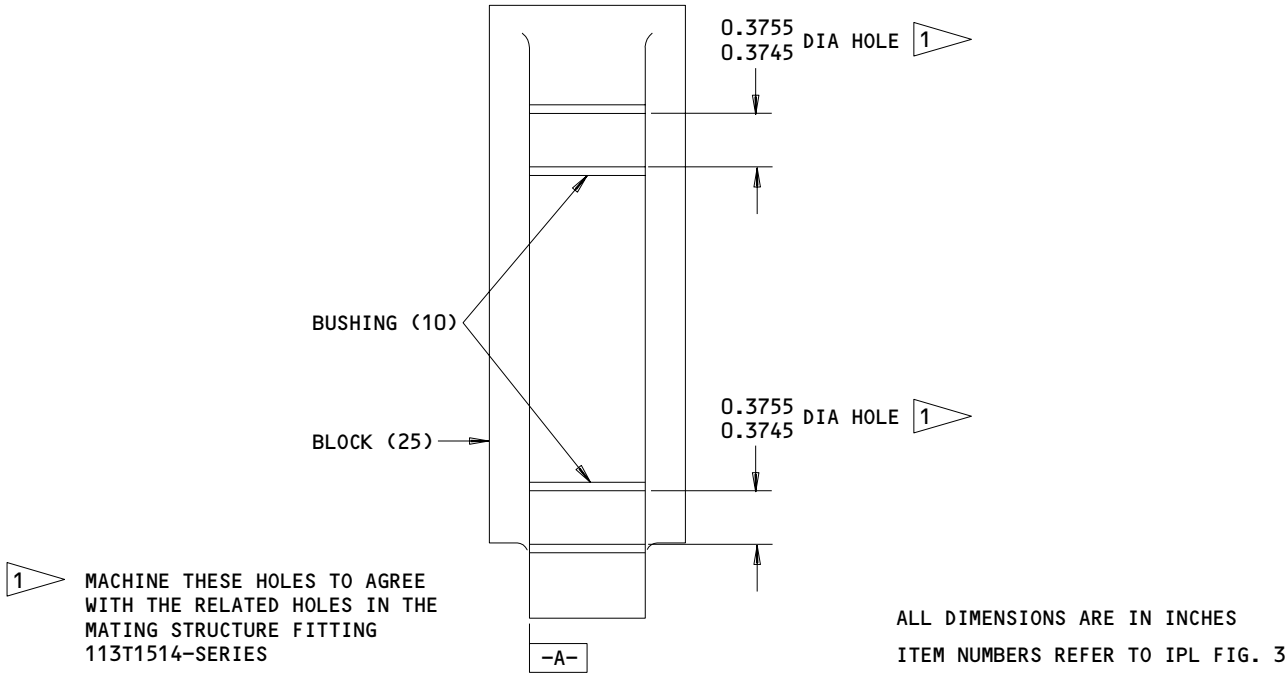
   A. Remove the old bushings.

   B. Install replacement bushings by the shrink-fit or press-fit method of SOPM 20-50-03.

   C. Machine the bores of the bushings as shown.

3. Refinish

   A. Block (25) -- Chromic acid anodize and apply BMS 10-11, type 1 primer (F-18.13), but apply no primer in the holes. Material: Al alloy



Bushing Replacement
Figure 601

131392

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

15860 NEW HAMPSHIRE BALL BEARINGS, INCORPORATED ASTRO DIVISION
155 LEXINGTON AVENUE
LACONIA, NEW HAMPSHIRE 03246

23294 AVALON MACHINE PRODUCTS INC
15337 ALLEN STREET
PARAMOUNT, CALIFORNIA 90723

50294 NMB INC
9730 INDEPENDENCE AVENUE
CHATSWORTH, CALIFORNIA 91311

50632 KAMATICS CORP SUB OF KAMAN CORP
1335 BLUE HILLS ROAD
BLOOMFIELD, CONNECTICUT 06002

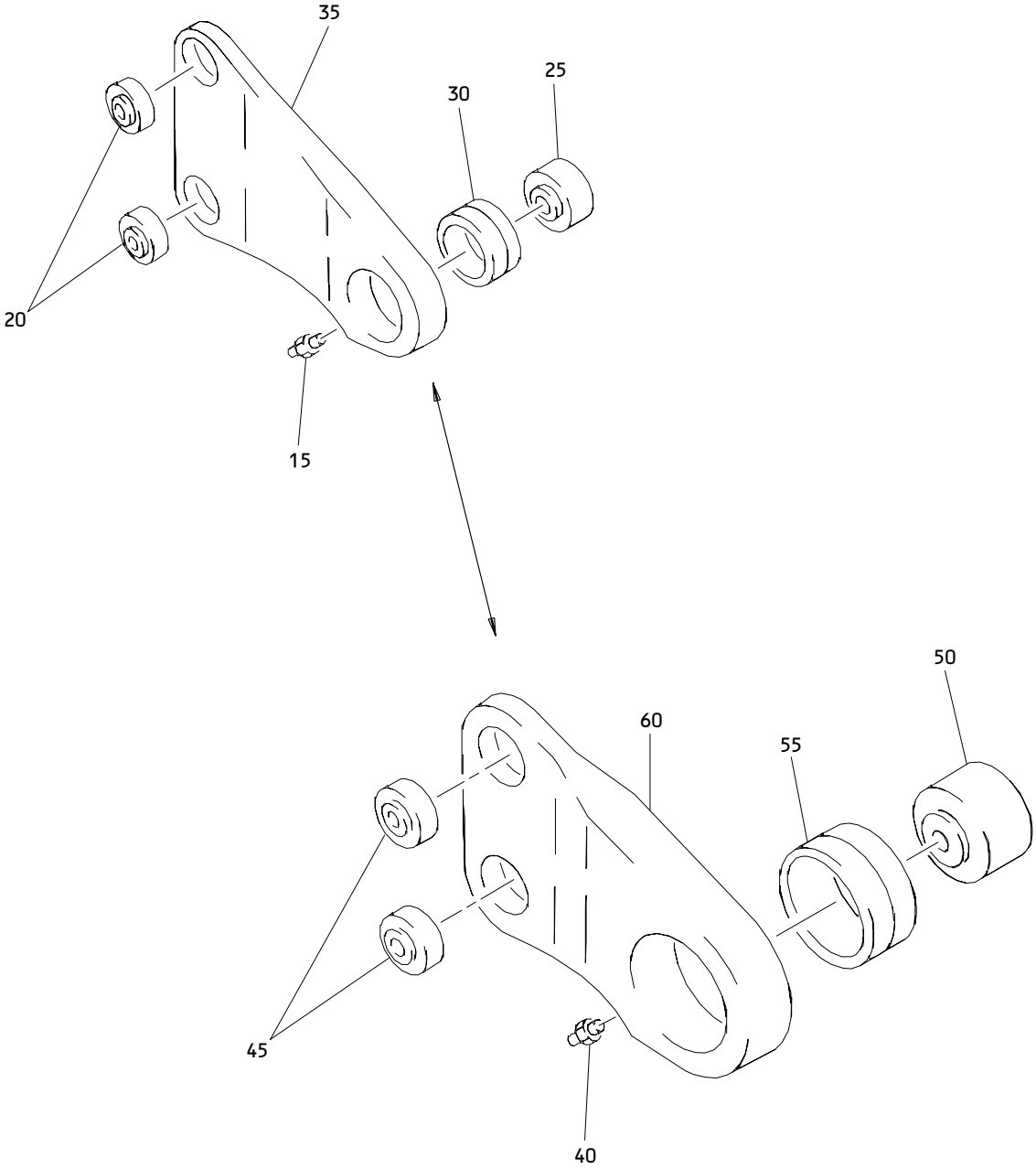
70265 ALL POWER MANUFACTURING COMPANY
13141 MOLETTE STREET
SANTE FE SPRINGS, CALIFORNIA 90670

73134 HEIM DIV INCOM INTERNATIONAL INC
60 ROUND HILL ROAD
FAIRFIELD, CONNECTICUT 06430

77896 REXNORD INC. BEARING DIVISION
2400 CURTIS STREET
DOWNERS GROVE, ILLINOIS 60515

94892 MASTER MACHINE PRODUCTS CORPORATION
2069 RANDOLPH STREET
HUNTINGTON PARK, CALIFORNIA 90255

97613 SARGENT INDUSTRIES KAHR BEARING DIVISION
3010 NORTH SAN FERNANDO ROAD
BURBANK, CALIFORNIA 91503

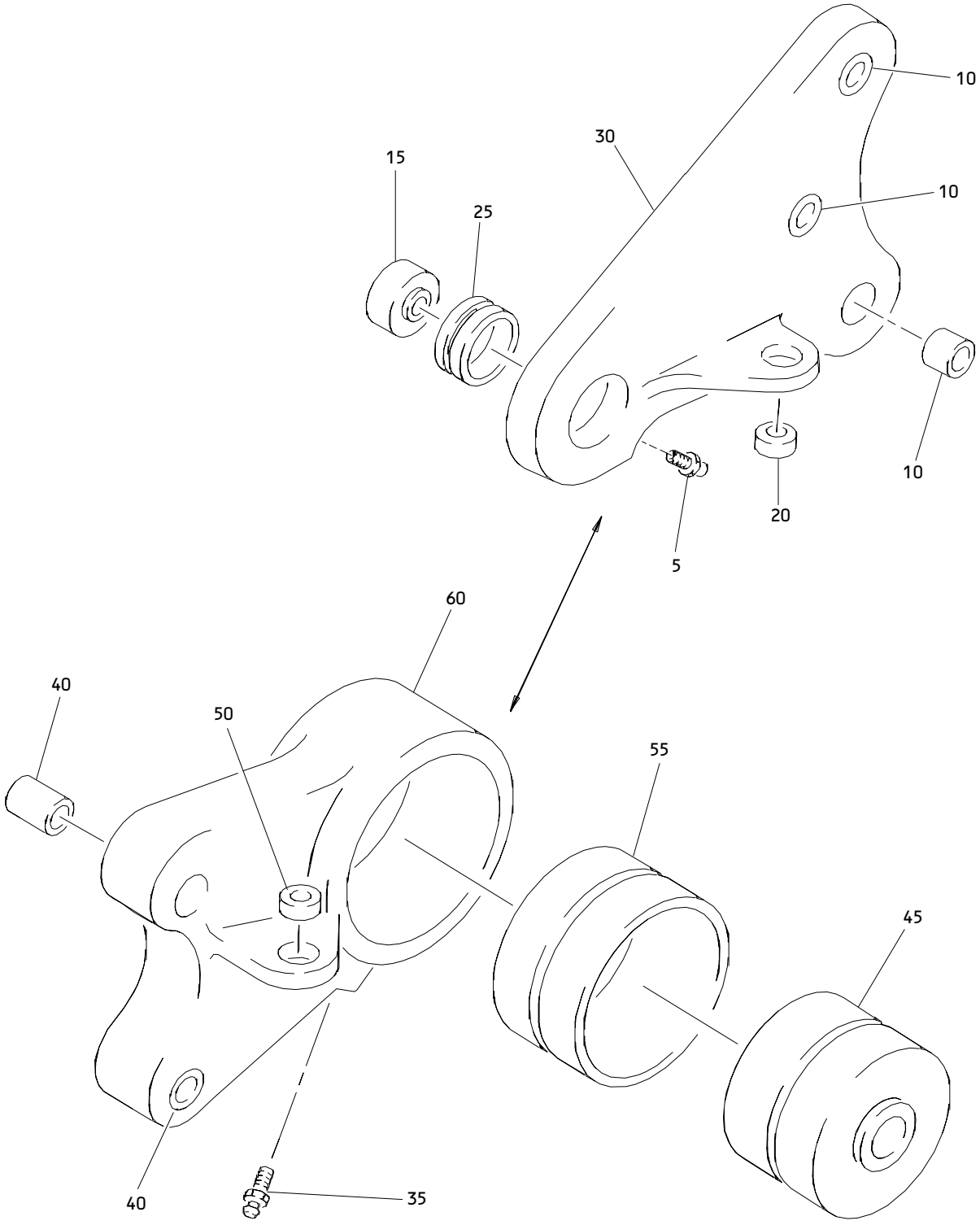


Outboard Aileron Hinge Bearing Block Assembly
Inboard Aileron (Outboard Hinge) Bearing Block Assembly
Figure 1

132803

FIG. & ITEM	PART NO.	AIRLINE PART NUMBER	NOMENCLATURE 1234567	EFF CODE	QTY PER ASSY
01-					
-1	113T1505-1		BLOCK ASSY-OUTBD AIL. HINGE BRG	A	RF
-1A	113T1505-2		BLOCK ASSY-OUTBD AIL. HINGE BRG	B	RF
-1B	113T1505-9		BLOCK ASSY-OUTBD AIL. HINGE BRG (FOR DETAILS SEE FIG. 2)	C	RF
-1C	113T1505-10		BLOCK ASSY-OUTBD AIL. HINGE BRG (FOR DETAILS SEE FIG. 2)	D	RF
-5	113T1517-1		BLOCK ASSY-INBD AIL. (OUTBD HINGE) BRG (FOR DETAILS SEE FIG. 2)	E	RF
-5A	113T1517-2		BLOCK ASSY-INBD AIL. (OUTBD HINGE) BRG (FOR DETAILS SEE FIG. 2)	F	RF
-10	113T1519-1		BLOCK ASSY-INBD AIL. BRG (FOR DETAILS SEE FIG. 3)	G	RF
15	MS15001-1		.FITTING	A	1
20	ADW4V301NC		.BEARING- (V15860) (SPEC BACB10FA04GC) (OPT KSC152200BZ4GC (V50632)) (OPT KWDB4-35 (V97613)) (OPT WHTFA04VC (V50294)) (OPT WRRS04FAGC (V73134))	A	2
25	DAS4-14A48		.BEARING- (V77896) (SPEC BACB10CH40C)	A	1
30	113T1518-1		.RING-RTNR (REPLD BY ITEM 30A)	A	1
-30A	113T1518-5		.RING-RTNR (REPLS ITEM 30)	A	1
35	113T1505-5		.BLOCK	A	1
40	MS15001-1		.FITTING	B	1

FIG. & ITEM	PART NO.	AIRLINE PART NUMBER	NOMENCLATURE 1234567	EFF CODE	QTY PER ASSY
01-45	ADW5V301NC		.BEARING- (V15860) (SPEC BACB10FA05GC) (OPT KSC152200BZ5CC (V50632)) (OPT KWDB5-35 (V97613)) (OPT WHTFA05VC (V50294)) (OPT WRRS05FAGC (V73134))	B	2
50	DAS5-25A48		.BEARING- (V77896) (SPEC BACB10CH53C)	B	1
55	113T1518-2		.RING-RTNR	B	1
60	113T1505-6		.BLOCK	B	1

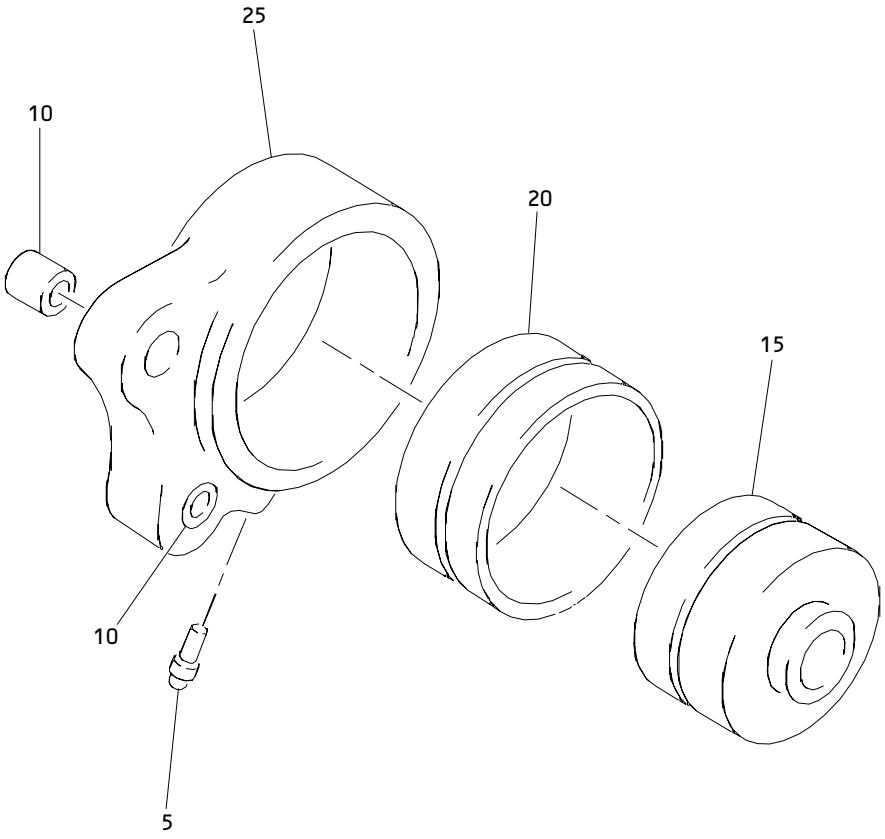


Outboard Aileron Hinge Bearing Block Assembly
Inboard Aileron (Outboard Hinge) Bearing Block Assembly
Figure 2

132804

FIG. & ITEM	PART NO.	AIRLINE PART NUMBER	NOMENCLATURE 1234567	EFF CODE	QTY PER ASSY
02-					
-1	113T1505-9		BLOCK ASSY-OUTBD AIL. HINGE BRG	C	RF
-1A	113T1505-10		BLOCK ASSY-OUTBD AIL. HINGE BRG	D	RF
-1B	113T1517-1		BLOCK ASSY-INBD AIL. (OUTBD HINGE) BRG	E	RF
-1C	113T1517-2		BLOCK ASSY-INBD AIL. (OUTBD HINGE) BRG	F	RF
5	MS15001-1		.FITTING	CD	1
10	BACB28U5B046		.BUSHING- (V23294) (SPEC BACB28U5B046) (OPT BACB28U5B046 (V70265)) (OPT BACB28U5B046 (V94892))	CD	3
15	DAS5-25A48		.BEARING- (V77896) (SPEC BACB10CH53C)	CD	1
20	ADW4V301NC		.BEARING- (V15860) (SPEC BACB10FA04GC) (OPT KSC15220OBZ4GC (V50632)) (OPT KWDB4-35 (V97613)) (OPT WHTFA04VC (V50294)) (OPT WRRS04FAGC (V73134))	CD	1

FIG. & ITEM	PART NO.	AIRLINE PART NUMBER	NOMENCLATURE 1234567	EFF CODE	QTY PER ASSY
02-					
25	113T1518-2		.RING-RTNR	CD	1
30	113T1505-11		.BLOCK	C	1
-30A	113T1505-12		.BLOCK	D	1
35	MS15001-1		.FITTING	EF	1
40	BACB28U8B088		.BUSHING- (V23294) (SPEC BACB28U8B088) (OPT BACB28U8B088 (V70265)) (OPT BACB28U8B088 (V94892))	EF	2
45	DAS14-48A48		.BEARING- (V77896) (SPEC BACB10CH14C)	EF	1
50	ADW4V301NC		.BEARING- (V15860) (SPEC BACB10FA04GC) (OPT KSC152200BZ4GC (V50632)) (OPT KWDB4-35 (V97613)) (OPT WHTFA04VC (V50294)) (OPT WRRS04FAGC (V73134))	EF	1
55	113T1518-3		.RING-RTNR	EF	1
60	113T1517-3		.BLOCK	E	1
-60A	113T1517-4		.BLOCK	F	1



Inboard Aileron Bearing Block Assembly
Figure 3

FIG. & ITEM	PART NO.	AIRLINE PART NUMBER	NOMENCLATURE 1234567	EFF CODE	QTY PER ASSY
03-					
-1	113T1519-1		BLOCK ASSY-INBD AIL. BRG	G	RF
5	MS15001-1		.FITTING	G	1
10	BACB28U6B088		.BUSHING- (V23294) (SPEC BACB28U6B088) (OPT BACB28U6B088 (V70265)) (OPT BACB28U6B088 (V94892))	G	2
15	DAS14-48A48		.BEARING- (V77896) (SPEC BACB10CH14C)	G	1
20	113T1518-3		.RING-RTNR	G	1
25	113T1519-2		.BLOCK	G	1