

 **BOEING**
COMPONENT
MAINTENANCE MANUAL

TO: ALL HOLDERS OF RUDDER ACTUATOR INPUT CRANK ASSEMBLY
COMPONENT MAINTENANCE MANUAL 27-21-48

REVISION NO. 4 DATED JUL 01/03

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

301

Updated per latest engineering.

701

1004,1008-1009,1011

REPAIR 4-1

Edited without technical change.

601

703

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HIGHLIGHTS

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RUDDER ACTUATOR INPUT CRANK ASSEMBLY

PART NUMBER 252T3114-1,-2,-7 THRU -10

COMPONENT MAINTENANCE MANUAL
WITH
ILLUSTRATED PARTS LIST

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TITLE PAGE

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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

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REVISION RECORD

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TEMPORARY REVISION AND SERVICE BULLETIN RECORD

BOEING SERVICE BULLETIN	BOEING TEMPORARY REVISION	OTHER DIRECTIVE	DATE OF INCORPORATION INTO MANUAL
		PRR B10435	JUL 10/85

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TR & SB RECORD

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 COMPONENT
 MAINTENANCE MANUAL

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			602	BLANK	
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2	BLANK		602	MAR 01/00	01.1
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2	BLANK		602	BLANK	
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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 | 4. List of Effective Pages |
| 2. Record of Revisions | 5. Table of Contents |
| 3. Temporary Revision &
Service Bulletin Record | 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:

Assembly:

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INTRODUCTION

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RUDDER ACTUATOR INPUT CRANK ASSEMBLY

DESCRIPTION AND OPERATION

1. The rudder actuator input crank assembly consists of a matched set of override assembly and torque tube assembly. The override assembly consists of two cams mounted on a hub assembly and two spring-loaded crank arm assemblies. The hub assembly and crank arm assemblies pivot around the output crank.
2. The crank assembly transfers rudder input from the yaw damper summing lever to the upper and lower rudder PCAs. The override assembly allows rudder control in case of jam in the actuator or linkage.
3. Leading Particulars (Approximate)

Length -- 7 inches

Width -- 7 inches

Height -- 7 inches

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DESCRIPTION & OPERATION

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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. Parts Replacement (IPL Fig. 1)

NOTE: The following parts are recommended for replacement. Unless otherwise noted, actual replacement of parts may be based on in-service experience.

A. Nuts (30A, 45A, 95A)

B. Bolts (70A, 75A, 140B, 150A) and collars (80A, 145A, 155A)

2. Disassembly (IPL Fig. 1)

CAUTION: OVERRIDE ASSEMBLY (5) AND TORQUE TUBE ASSEMBLY (205B) CONSTITUTE A MATCHED SET. DO NOT REPLACE INDIVIDUAL ASSEMBLY OR PERFORMANCE WILL BE ADVERSELY AFFECTED.

A. Remove bolt (10A), screws (15A) washers (20A, 25A), nut (30A) and separate override assembly (5) from torque tube assembly (205B). Tag override assembly and torque tube assembly indicating matched parts.

B. Disassemble override assembly (5).

CAUTION: CAMS (105, 110), HUB ASSEMBLY (115A), CAM FOLLOWER ARM ASSEMBLIES (175, 180) AND OUTPUT CRANK (200) CONSTITUTE A MATCHED AFTER ASSEMBLY. DO NOT REPLACE INDIVIDUAL PART OR PERFORMANCE WILL BE ADVERSELY AFFECTED.

(1) Bend tab of washer (40) back and slowly back off nut (45A) to release springs (55, 60, 65) force.

(2) Remove nut (45A), washer (40), bolt (35), guides (50) and springs (55,60,65).

(3) Remove bolt (85A), washer (90A), nut (95A), bushing (100) and separate hub assembly (115A) from output crank (200).

(4) Remove bolts (150A), collars (155A), bushings (160) and separate follower arm assemblies (175,180) from output crank (200).

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- (5) Remove bolts (140A), collars (145A), bearings (160) and bushings (170) from follower arm assemblies (175, 180).

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DISASSEMBLY

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CHECK

1. Check all parts for obvious defects in accordance with standard industry practices.
2. Magnetic particle check the following parts (Ref IPL Fig. 1) per 20-20-01.
 - A. Guide (50)
 - B. Springs (55,60,65)
 - C. Cams (105,110)
 - D. Arms (190,195)
3. Penetrant check the following parts (Ref IPL Fig. 1) per 20-20-02.
 - | A. Spring (55A, 55B, 60A, 60B, 65A)
 - | B. Hub (130B)
 - | C. Crank (200)
 - | D. Sleeve (220, 245)
 - | E. Lever (255)
 - | F. Tube (260)
4. Check springs (Fig. 501).

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02.1 Page 501
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ITEM NUMBER (IPL FIG. 1)	TEST LENGTH (INCHES)	ALLOWABLE LOAD LIMIT (POUND)
55,55A	1.702-1.722	103-125
	1.428-1.448	145-177
55B	1.702-1.722	130-158
	1.428-1.448	183-223
60,60A	1.702-1.722	51.14-63.14
	1.428-1.448	72.65-88.65
60B	1.702-1.722	50.00-62.00
	1.428-1.448	71.00-87.00
65	1.702-1.722	25.77-31.37
	1.428-1.448	36.33-44.33

Spring Check
 Figure 501

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REPAIR – GENERAL1. Content

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

<u>P/N</u>	<u>NAME</u>	<u>REPAIR</u>
252T3114	TUBE, TORQUE	1-1
252T3164	HUB, SUPPORT	2-1
252T3166	ARM, FOLLOWER	3-1
—	MISC PARTS REFINISH	4-1

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
 20-43-01 Chromic Acid Anodizing
 20-50-03 Bearing Installation and Retention

3. Materials

NOTE: Equivalent substitutes may be used.

- A. Primer -- BMS 10-11, Type 1 (Ref 20-60-02)
 B. Sealant -- BMS 5-95 (Ref 20-60-04)

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4. Dimensioning Symbols

A. Standard True Position Dimensioning Symbols used in applicable repair procedures are shown in Fig. 601.

—	STRAIGHTNESS	\oplus	THEORETICAL EXACT POSITION OF A FEATURE (TRUE POSITION)
\square	FLATNESS	\varnothing	DIAMETER
\perp	PERPENDICULARITY (OR SQUARENESS)	S \varnothing	SPHERICAL DIAMETER
//	PARALLELISM	R	RADIUS
\bigcirc	ROUNDNESS	SR	SPHERICAL RADIUS
\bigcirc	CYLINDRICITY	()	REFERENCE
\frown	PROFILE OF A LINE	BASIC (BSC) OR	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.
\triangle	PROFILE OF A SURFACE	DIM	
\odot	CONCENTRICITY	-A-	DATUM
\equiv	SYMMETRY	\textcircled{M}	MAXIMUM MATERIAL CONDITION (MMC)
\sphericalangle	ANGULARITY	\textcircled{L}	LEAST MATERIAL CONDITION (LMC)
\nearrow	RUNOUT	\textcircled{S}	REGARDLESS OF FEATURE SIZE (RFS)
\nearrow	TOTAL RUNOUT	\textcircled{P}	PROJECTED TOLERANCE ZONE
\sqsubset	COUNTERBORE OR SPOTFACE	FIM	FULL INDICATOR MOVEMENT
\sphericalangle	COUNTERSINK		

EXAMPLES

$\text{—} \quad 0.002$	STRAIGHT WITHIN 0.002	$\textcircled{\perp} \text{ C } \varnothing \quad 0.0005$	CONCENTRIC TO C WITHIN 0.0005 DIAMETER
$\perp \text{ B } \quad 0.002$	PERPENDICULAR TO B WITHIN 0.002	$\equiv \text{ A } \quad 0.010$	SYMMETRICAL WITH A WITHIN 0.010
$// \text{ A } \quad 0.002$	PARALLEL TO A WITHIN 0.002	$\sphericalangle \text{ A } \quad 0.005$	ANGULAR TOLERANCE 0.005 WITH A
$\bigcirc \quad 0.002$	ROUND WITHIN 0.002	$\oplus \text{ B } \varnothing \quad 0.002 \text{ (S)}$	LOCATED AT TRUE POSITION WITHIN 0.002 DIA RELATIVE TO DATUM B, REGARDLESS OF FEATURE SIZE
$\bigcirc \quad 0.010$	CYLINDRICAL SURFACE MUST LIE BETWEEN TWO CONCENTRIC CYLINDERS, ONE OF WHICH HAS A RADIUS 0.010 INCH GREATER THAN THE OTHER	$\perp \text{ A } \varnothing \quad 0.010 \text{ (M)}$ 0.510 (P)	AXIS IS TOTALLY WITHIN A CYLINDER OF 0.010-INCH DIAMETER, PERPENDICULAR TO, AND EXTENDING 0.510-INCH ABOVE, DATUM A, MAXIMUM MATERIAL CONDITION
$\frown \text{ A } \quad 0.006$	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	2.000	EXACT DIMENSION IS 2.000
$\triangle \text{ A } \quad 0.020$	SURFACES MUST LIE WITHIN PARALLEL BOUNDARIES 0.02 INCH APART AND EQUALLY DISPOSED ABOUT TRUE PROFILE	OR 2.000 BSC	
(NOTE THAT $\triangle \text{ A } \quad 0.020$ MAY ALSO APPEAR AS $\triangle \quad 0.020 \text{ A}$)			

True Position Dimensioning Symbols
Figure 601

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TORQUE TUBE ASSEMBLY – REPAIR 1-1

252T3114-5, -6

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

1. Bearing Replacement

- A. Remove bearings (225,250) and sleeves (220,245) as applicable.
- B. Install replacement bearing and sleeve with BMS 5-95 wet sealant and line stake per 20-50-03. Stake sleeve 0.018-0.022 in. deep and 0.187-0.218 in. wide at 6 places equally spaced on both sides. Maximum gap in sleeve shall be 0.062 in.

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SUPPORT HUB ASSEMBLY – REPAIR 2-1

252T3164-5

NOTE: Refer to REPAIR-GEN for list of applicable standard practices. For repair of surfaces which may only require stripping and restoration of original finish, refer to REFINISH instruction, Fig. 601.

1. Bushing Replacement (Fig. 601)

A. Remove bushing.

B. Install the replacement bushing per SOPM 20-50-03 with BMS 5-95 wet sealant.

C. Machine bushing I.D. to dimension and finish shown.

D. Fillet seal bushing flange with BMS 5-95 wet sealant per SOPM 20-50-19.

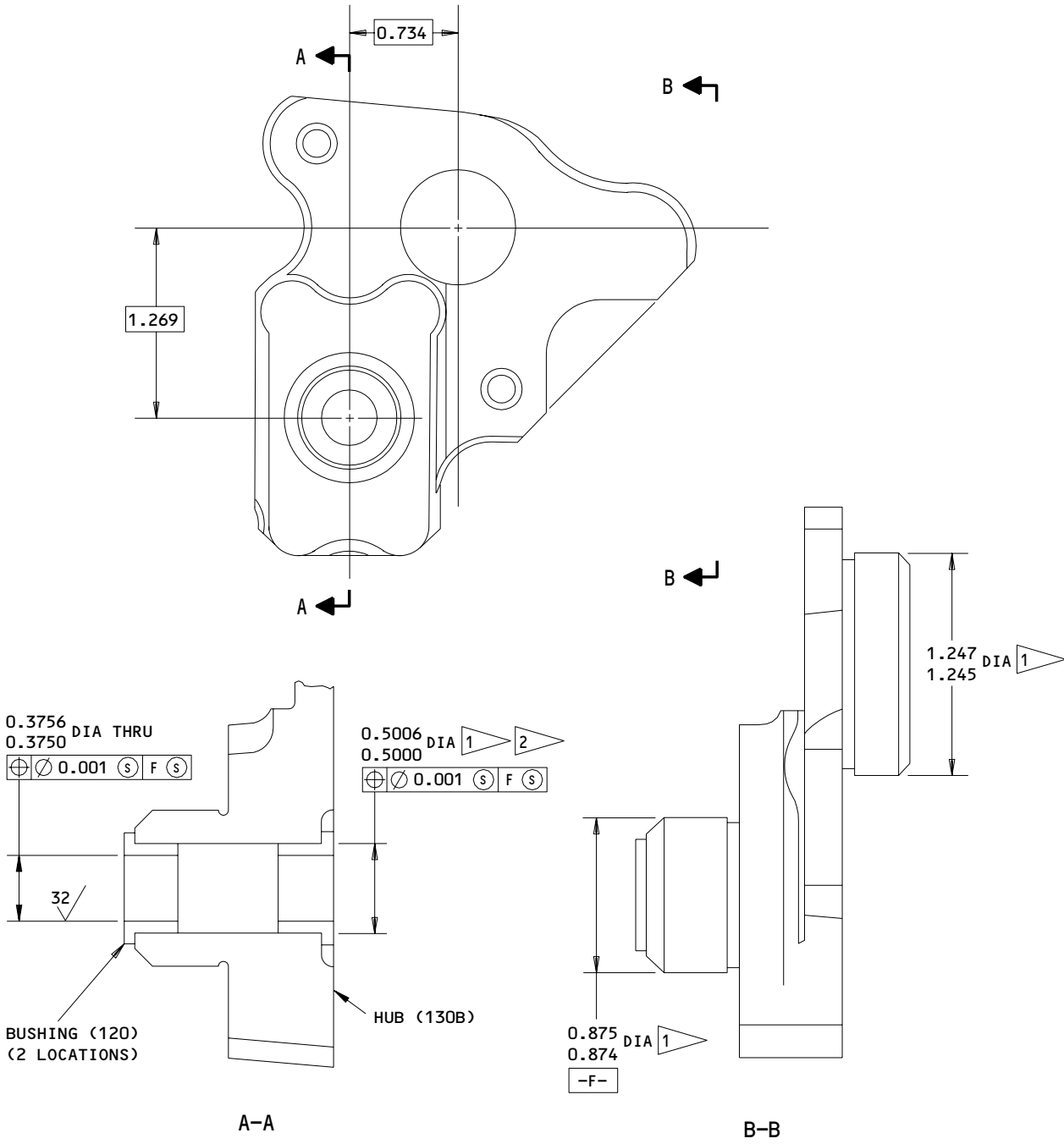
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REFINISH

HUB (130B)—CHROMIC ACID ANODIZE (F-17.04) AND APPLY 2 COATS OF PRIMER (F-20.03) ALL OVER EXCEPT AS NOTED

- 1 OMIT PRIMER THIS SURFACE
- 2 INSIDE DIAMETER OF HUB (130B)

125 ALL MACHINED SURFACES UNLESS SHOWN DIFFERENTLY

MATERIAL: AL ALLOY
 ALL DIMENSIONS ARE IN INCHES

252T3164-5
 Bushing Replacement and Hub Refinish
 Figure 601

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FOLLOWER ARM ASSEMBLY – REPAIR 3-1

252T3166-1, -2

NOTE: Refer to REPAIR-GEN for list of applicable standard practices. For repair of surfaces which may only require stripping and restoration of original finish, refer to REFINISH instruction.

1. Bushing Replacement

A. Remove bushing.

B. Install replacement bushing per SOPM 20-50-03 with BMS 5-95 wet sealant.

C. Fillet seal bushing flange with BMS 5-95 sealant.

2. Refinish

A. Arm (190,195) -- Cadmium plate and apply 1 coat of primer (F-16.01) all over except no plating or primer in 0.1900-0.1905, 0.3138-0.3143 and 0.5000-0.5006 diameter holes. Plating throw-in allowed in holes.
Material: Al alloy.

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REPAIR 3-1

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MISCELLANEOUS PARTS REFINISH – REPAIR 4-1

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

IPL FIG. & ITEM	MATERIAL	FINISH
<u>Fig. 1</u>		
Guide (50)	15-5PH CRES, 150-170 ksi	Cadmium plate and apply 1 coat of primer (F-16.01) all over except omit primer in 0.2500-0.2505 diameter hole.
Springs (55,60,65)	17-7PH CRES wire	Passivate (F-17.09) all over
Springs (55A,55B,60A,60B,65A)	Titanium alloy wire	Apply Duralon primer and enamel (F-21.14) to the outside diameter of all coils and to each ground end surface. Top coat thickness 0.004-0.008 inch, black color.
Cams (105,110)	15-5PH CRES, 180-200 ksi	Cadmium plate and apply 1 coat of primer (F-16.01) except no plating or primer on cam profile and no primer in 0.876-0.877 diameter hole.
Output crank (200)	Al alloy	Chromic acid anodize (F-17.04) all over and apply 2 coats of primer (F-20.03) except omit primer in 0.2500-0.2505 and 0.3750-0.3756 diameter holes.

Refinish Details
 Figure 601

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REPAIR 4-1

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ASSEMBLY1. Materials

NOTE: Equivalent substitutes may be used.

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

B. Grease -- BMS 3-24 (Ref 20-60-02)

2. Assembly (IPL Fig. 1)

A. Assemble override assembly (30A).

CAUTION: CAMS (105, 110), ARM ASSEMBLIES (175, 180), HUB ASSEMBLY (115A) AND OUTPUT CRANK (200) CONSTITUTE A MATCHED SET. DO NOT REPLACE INDIVIDUAL PART.

- (1) Check that cams (105, 110), hub assembly (115A), arm assemblies (175, 180) and output crank (200) are parts of a matched set.
- (2) Install bolts (140A), bearings (160), bushings (170) and collars (145B) on arm assemblies (175,180). Install bushings (170) with grease.
- (3) Position arm assemblies (175,180) on output crank (200) and secure with bolts (150A), bushings (165) and collars (155A).
- (4) Assemble cams (105, 110) and hub assembly (115A) with wet sealant on faying surfaces. Secure cams with bolts (70A, 75A) and collars (80A). Install fasteners with wet sealant.
- (5) Position hub assembly (115A) with attached cam (105, 110) on output crank (200) and secure with bolt (85A), washer (90A), nut (95A) and bushing (100). Install bushing with grease.
- (6) Install springs (55,60,65), guides (50) and secure with bolt (35), washer (40), nut (45A). Tighten nut (45A) to obtain 3.90-4.50 inches dim between guides.

CAUTION: TORQUE TUBE ASSEMBLY (205B) AND OVERRIDE ASSEMBLY (5) CONSTITUTE A MATCHED SET AFTER ASSEMBLY. DO NOT REPLACE INDIVIDUAL PART.

B. Secure override assembly (5) to torque tube assembly (205B) with bolt (10A), screws (15A), washers (20A, 25A) and nut (30A). Install bolt (10A) with wet sealant.

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C. Assembly adjustment (Fig. 701)

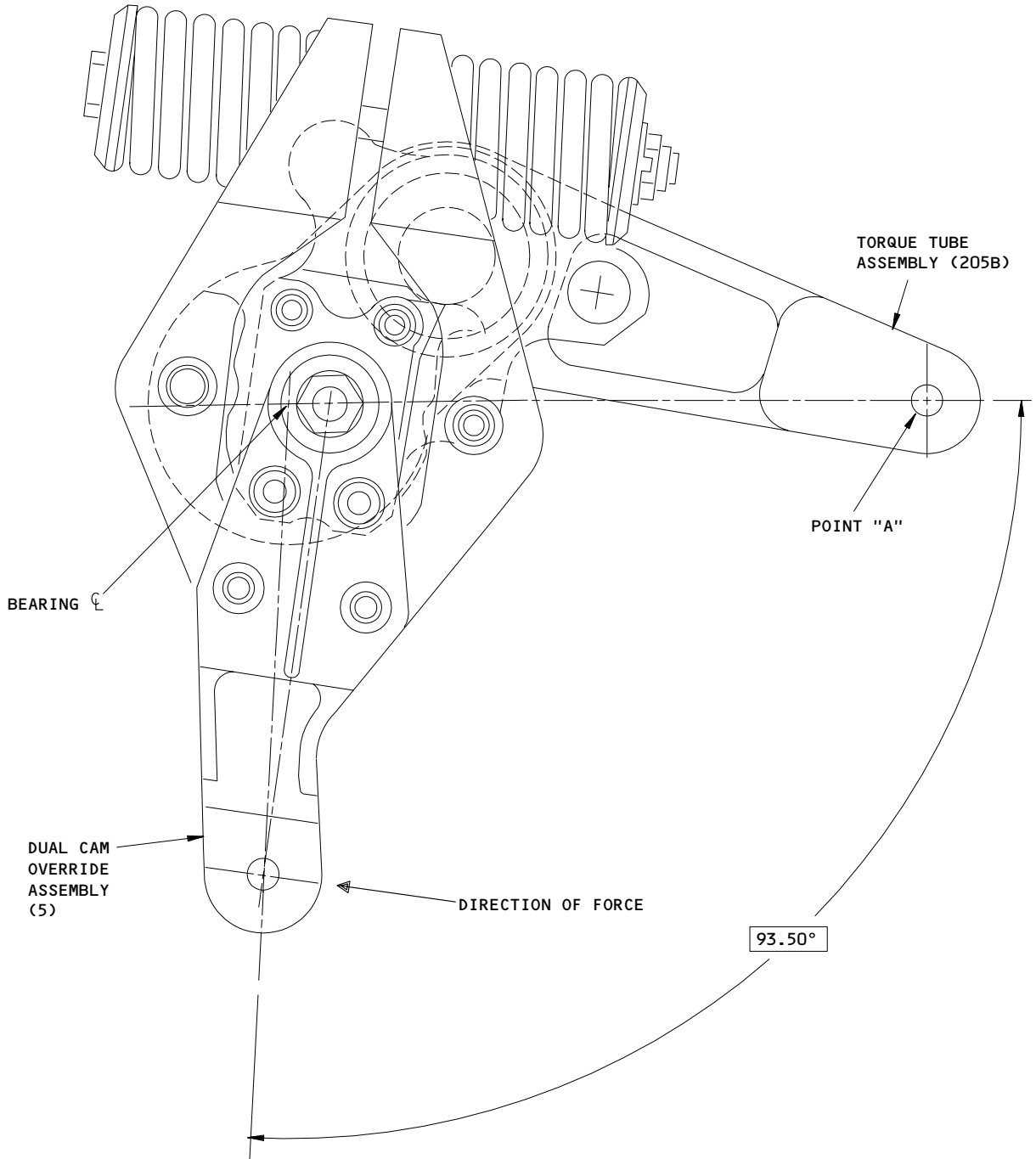
- (1) Support assembly at bearings (225,250) centerline and at point A indicated.
- (2) Adjust spring length to obtain a break out force of 129.5–139.5 pounds applied to output crank (200) in the direction indicated.
- (3) After the adjustment is completed, bend up tab of washer (40) to the nearest flat of nut (45A).

3. Store this component using standard industry practices.

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Assembly Check Diagram
Figure 701

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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.

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ILLUSTRATED PARTS LIST

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VENDORS

15653 KAYNAR TECHNOLOGY KAYNAR DIV
800 SOUTH STATE COLLEGE BLVD PO BOX 3001
FULLERTON, CALIFORNIA 92634-3001
FORMERLY MICRODOT AEROSP LTD VK6405

17446 HUCK MFG CO GOV CONTRACTS LOS ANGELES DIV SUB OF FED-MOGUL
900 WATSON CENTER ROAD
CARSON, CALIFORNIA 90745

21335 TORRINGTON CO FAFNIR BEARING DIV
59 FIELD STREET
TORRINGTON, CONNECTICUT 06790-4942
FORMERLY FAFNIR BRG AND TEXTRON INC FAFNIR DIV IN
NEW BRITAIN, CONNECTICUT

38443 MRC BEARINGS
402 CHANDLER STREET
JAMESTOWN, NEW YORK 14701-3802
FORMERLY MARLIN-ROCKWELL CORP DIV TRW AND TRW INC

5M902 FAIRCHILD IND INC FAIRCHILD AEROSPACE FASTENER DIV
3016 W LOMITA BLVD
TORRANCE, CALIFORNIA 90505-5103
FMLY IN REDONDO BEACH, CALIF

56878 SPS TECHNOLOGIES INC AEROSPACE AND INDUSTRIAL PRODUCTS DIV
HIGHLAND AVENUE
JENKINTOWN, PENNSYLVANIA 19046
FORMERLY STANDARD PRESSED STEEL

60380 TORRINGTON CO BEARINGS DIV SUBSIDIARY OF INGERSOLL-RAND CORP
59 FIELD STREET PO BOX 1008
TORRINGTON, CONNECTICUT 06790-4942
FORMERLY TORRINGTON BEARING COMPANY

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VENDORS

62554 SIMMONDS MECAERO FASTENERS INC
1734 SEQUOIA AVENUE
ORANGE, CALIFORNIA 92668

73197 HI-SHEAR TECHNOLOGY CORP
2600 SKYPARK DRIVE
TORRANCE, CALIFORNIA 90509

83086 NEW HAMPSHIRE BALL BEARINGS, INCORPORATED
ROUTE 202
PETERBOROUGH, NEW HAMPSHIRE 03458

92215 FAIRCHILD IND INC FAIRCHILD AEROSPACE FASTENER DIV
3010 W LOMITA BLVD
TORRANCE, CALIFORNIA 90505-5102
FORMERLY VOI-SHAN IN CULVER CITY, CALIF

92563 MCGILL MFG CO INC BEARINGS DIV
909 LAFAYETTE STREET
VALPARAISO, INDIANA 46383-4210

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PART NUMBER	AIRLINE PART NO.	FIG.	ITEM	TTL REQ
ATF3		1	160	2
BACB10CA4		1	225	1
		1	250	1
BACB10ET03		1	160	2
BACB28AK04-144		1	100	1
		1	165	2
BACB28W6B025		1	120	2
		1	185A	2
BACB30NN4K25		1	85A	1
BACB30NN4K7		1	10A	1
BACB30NTK3		1	15A	2
BACB30VM6K14		1	70A	1
BACB30VM6K15		1	75A	3
BACB30VN6K14		1	140A	2
BACB30VN8K26		1	150A	2
BACB30VU6K14		1	140B	2
BACC30BK6		1	80A	4
BACC30BK8		1	155A	2
BACC30BL6		1	145A	2
BACN10JC4CM		1	45A	1
BACN10YR4CD		1	30A	1
		1	95A	1
DSP4		1	225	1
		1	250	1
DSP4FS428		1	225	1
		1	250	1
DSP45D610		1	225	1
		1	250	1
HHDSP4		1	225	1
		1	250	1
HST11AG6-14		1	140B	2
HST79-6		1	145A	2
H52732-4CD		1	30A	1
		1	95A	1
LGPL2SCV6-15AC		1	75A	3
LGPL2SPV6-14AC		1	140A	2
LGP2SPV6-14AC		1	140A	2
MS21141-0604P		1	215B	7
		1	240B	5
MS21209F1-10P		1	125	2
MS27111-1		1	40	1
NAS1149D0363J		1	25A	2
NAS1149D0463J		1	20A	1
NAS1149F0432P		1	90A	1

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PART NUMBER	AIRLINE PART NO.	FIG.	ITEM	TTL REQ
NAS77-3-28		1	170	2
PLH54CD		1	30A	1
		1	95A	1
252T3114-1		1	1	RF
252T3114-5		1	205B	1
252T3114-6		1	205C	1
252T3114-7		1	1B	RF
252T3114-8		1	1C	RF
252T3114-9		1	1D	RF
252T3118-1		1	5	1
252T3118-2		1	135	1
252T3118-3		1	5A	1
252T3118-4		1	5B	1
252T3140-1		1	105	1
252T3140-2		1	110	1
252T3141-1		1	55	2
252T3141-2		1	55A	2
252T3141-3		1	55B	2
252T3142-1		1	60	2
252T3142-2		1	60A	2
252T3142-3		1	60B	2
252T3143-1		1	65	2
252T3143-2		1	65A	2
252T3144-1		1	50	2
252T3144-2		1	50A	2
252T3145-1		1	35	1
252T3152-10		1	260	1
252T3161-1		1	220	1
		1	245	1
252T3163-1		1	210	1
252T3163-2		1	230	1
252T3164-5		1	115A	1
252T3164-6		1	130B	1
252T3164-7		1	130C	1
252T3165-1		1	200	1
252T3165-3		1	200A	1
252T3166-1		1	175	1
252T3166-2		1	180	1
252T3166-3		1	190	1
252T3166-4		1	195	1
252T3166-7		1	190A	1
252T3166-8		1	195A	1
252T3175-6		1	235	1
252T3175-7		1	235A	1
252T3175-8		1	255	1

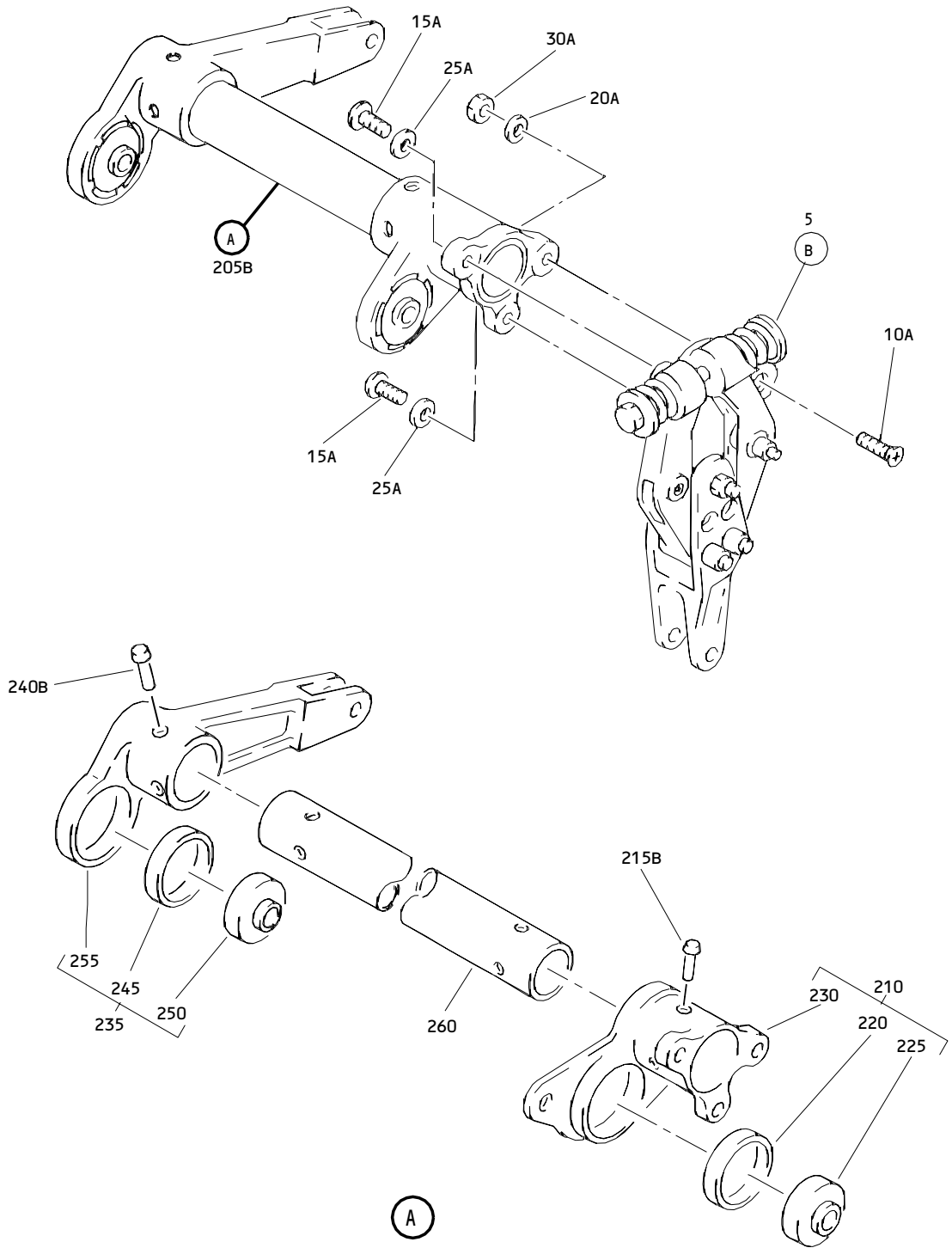
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PART NUMBER	AIRLINE PART NO.	FIG.	ITEM	TTL REQ
252T3175-9		1	255A	1
3AFC512		1	160	2
3SLCC6		1	80A	4
3SLCC8		1	155A	2
81668V6K15		1	75A	3
81669V6K14		1	140A	2

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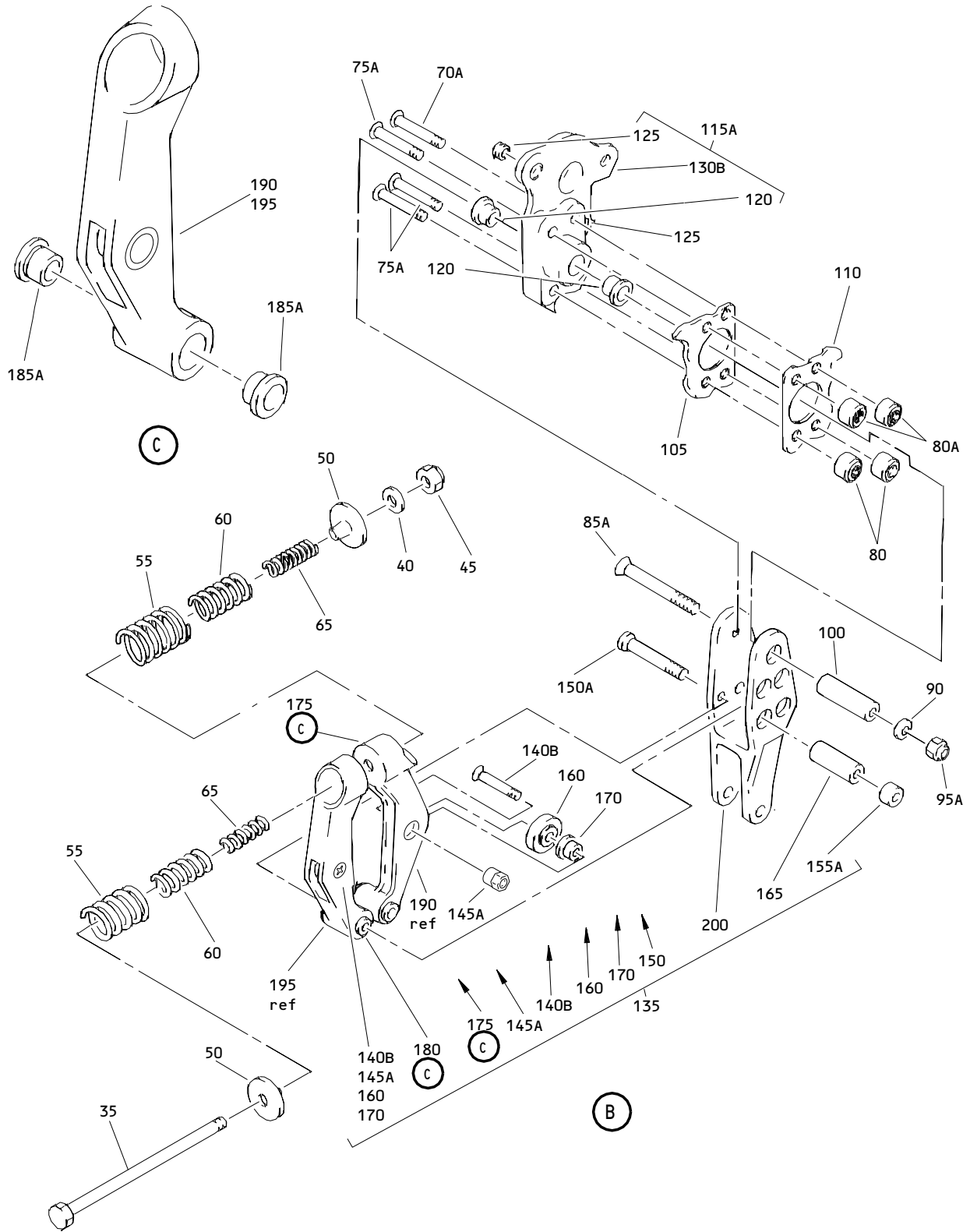
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Rudder Actuator Input Crank Assembly
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Rudder Actuator Input Crank Assembly
 Figure 1 (Sheet 2)

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FIG. & ITEM	PART NO.	AIRLINE PART NUMBER	NOMENCLATURE 1234567	EFF CODE	QTY PER ASSY
01- -1	252T3114-1		CRANK ASSY-RUD ACTUATOR INPUT (MATCHED SET)	A	RF
-1A	252T3114-2		CRANK ASSY-RUD ACTUATOR INPUT (MATCHED SET)	B	RF
-1B	252T3114-7		CRANK ASSY-RUD ACTUATOR INPUT (MATCHED SET)	C	RF
-1C	252T3114-8		CRANK ASSY-RUD ACTUATOR INPUT (MATCHED SET)	D	RF
-1D	252T3114-9		CRANK ASSY-RUD ACTUATOR INPUT (MATCHED SET)	E	RF
-1E	252T3114-10		CRANK ASSY-RUD ACTUATOR INPUT (MATCHED SET)	F	RF
5	252T3118-1		.OVERRIDE ASSY-DUAL CAM (MATCHED SET)	A,B	1
-5A	252T3118-3		.OVERRIDE ASSY-DUAL CAM (MATCHED SET)	C,D	1
-5B	252T3118-4		.OVERRIDE ASSY-DUAL CAM (MATCHED SET)	E,F	1
			ATTACHING PARTS		
10	BACB30LU4-7		DELETED		
10A	BACB30NN4K7		.BOLT		1
15	NAS623-3-3		DELETED		
15A	BACB30NTK3		.SCREW		2
20	AN960PD416		DELETED		
20A	NAS1149D0463J		.WASHER		1
25	AN960PD10		DELETED		
25A	NAS1149D0363J		.WASHER		2
30	H10-4BAC		DELETED		
30A	H52732-4CD		.NUT- (V15653) (SPEC BACN10YR4CD) (OPT PLH54CD (V62554)) -----*		1
35	252T3145-1		..BOLT		1
40	MS27111-1		..WASHER		1
45	H10-4BAC		DELETED		
45A	BACN10JC4CM		..NUT	A-F	1
50	252T3144-1		..GUIDE	A-D	2
-50A	252T3144-2		..GUIDE	E,F	2
55	252T3141-1		..SPRING-OUTER	A,B	2

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FIG. & ITEM	PART NO.	AIRLINE PART NUMBER	NOMENCLATURE 1234567	EFF CODE	QTY PER ASSY
01- -55A	252T3141-2		..SPRING-OUTER (252T3141-3 T/W 252T3142-3 T/W 252T3144-2 ARE I/W 252T3414-2 T/W 252T3142-2 T/W 252T3143-2 T/W 252T3144-1)	C,D	2
-55B	252T3141-3		..SPRING-OUTER (252T3141-3 T/W 252T3142-3 T/W 252T3144-2 ARE I/W 252T3414-2 T/W 252T3142-2 T/W 252T3143-2 T/W 252T3144-1)	E,F	2
60 -60A	252T3142-1 252T3142-2		..SPRING-MIDDLE ..SPRING-MIDDLE (252T3141-3 T/W 252T3142-3 T/W 252T3144-2 ARE I/W 252T3414-2 T/W 252T3142-2 T/W 252T3143-2 T/W 252T3144-1)	A,B C,D	2 2
-60B	252T3142-3		..SPRING-MIDDLE (252T3141-3 T/W 252T3142-3 T/W 252T3144-2 ARE I/W 252T3414-2 T/W 252T3142-2 T/W 252T3143-2 T/W 252T3144-1)	E,F	2
65 -65A	252T3143-1 252T3143-2		..SPRING-INNER ..SPRING-INNER	A,B C,D	2 2
70	SAL100YT6-14		DELETED		
70A	BACB30VM6K14		..BOLT		1
75	SAL100YT6-15		DELETED		
75A	81668V6K15		..BOLT- (V56878) (SPEC BACB30VM6K15) (OPT LGPL2SCV6-15AC (V92215)) (OPT LGPL2SCV6-15AC (V17446))		3

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FIG. & ITEM	PART NO.	AIRLINE PART NUMBER	NOMENCLATURE 1234567	EFF CODE	QTY PER ASSY
01-80	2DCC6		DELETED		
80A	3SLCC6		..COLLAR (V17446) (SPEC BACC30BK6)	A-F	4
85	BACB30LU4-25		DELETED		
85A	BACB30NN4K25		..BOLT	A-F	1
90	AN960-416L		DELETED		
90A	NAS1149F0432P		..WASHER		1
95	BACN10JC4		DELETED		
95A	H52732-4CD		..NUT- (V15653) (SPEC BACN10YR4CD) (OPT PLH54CD (V62554))		1
100	BACB28AK04-144		..BUSHING		1
105	252T3140-1		..CAM-(MATCHED SET)		1
110	252T3140-2		..CAM-(MATCHED SET)		1
115	252T3164-1		DELETED		
115A	252T3164-5		..HUB ASSY-SPRT		1
120	BACB28W6B025		...BUSHING		2
125	MS21209F1-10P		...INSERT		2
130	252T3164-2		DELETED		
-130A	252T3164-4		DELETED		
130B	252T3164-6		...HUB- (OPT ITEM 130C)		1
-130C	252T3164-7		...HUB- (OPT ITEM 130B)		1
135	252T3118-2		..ARM ASSY-CRANK		1
140	BACB30FN6-14		DELETED		
140A	BACB30VN6K14		DELETED		
140B	HST11AG6-14		.BOLT (V06725) (SPEC BACB30VU6K14) (OPT HST11AG6-14 (V73197)) (OPT HST11AG6-14 (V56878)) (OPT HST11AG6-14 (VOPTK6))		2

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FIG. & ITEM	PART NO.	AIRLINE PART NUMBER	NOMENCLATURE 1234567	EFF CODE	QTY PER ASSY
R	01-145	HL79-6	DELETED		
	145A	HST79CY6	...COLLAR- (V73197) (SPEC BACC30BL6) (OPT HST79-6 (V92215)) (OPT HST79CY6 (V56878)) (OPT HST79CY6 (V5M902))		2
	150	BACB30TZ8K26	DELETED		
	150A	BACB30VN8K26	...BOLT		2
	155	2SC3C08	DELETED		
	155A	3SLCC8	...COLLAR- (V17446) (SPEC BACC30BK8) (OPT 3SLCC8 (V92215))		2
	160	ATF3	...BEARING- (V60380) (SPEC BACB10ET03) (OPT 3AFC512 (V92563))		2
	165	BACB28AK04-144	...BUSHING		2
	170	NAS77-3-28	...BUSHING		2
	175	252T3166-1	...ARM ASSY-FOLLOWER (MATCHED SET)		1
180	252T3166-2	...ARM ASSY-FOLLOWER (MATCHED SET)		1	

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FIG. & ITEM	PART NO.	AIRLINE PART NUMBER	NOMENCLATURE 1234567	EFF CODE	QTY PER ASSY
01-					
185	BACB28X6M025		DELETED		
185A	BACB28W6B025		....BUSHING		2
190	252T3166-3		....ARM-		1
			(OPT ITEM 190A)		
			(USED ON ITEM 175)		
-190A	252T3166-7		....ARM-		1
			(OPT ITEM 190)		
			(USED ON ITEM 175)		
195	252T3166-4		....ARM-		1
			(OPT ITEM 195A)		
			(USED ON ITEM 180)		
-195A	252T3166-8		....ARM-		1
			(OPT ITEM 195)		
			(USED ON ITEM 180)		
200	252T3165-1		...CRANK-OUTPUT		1
			(MATCHED SET)		
			(OPT ITEM 200A)		
-200A	252T3165-3		...CRANK-OUTPUT		1
			(MATCHED SET)		
			(OPT ITEM 200)		
205	252T3114-3		DELETED		
-205A	252T3114-4		DELETED		
205B	252T3114-5		.TUBE ASSY-TORQUE	A,C,E	1
			(MATCHED SET)		
-205C	252T3114-6		.TUBE ASSY-TORQUE	B,D	1
			(MATCHED SET)		
210	252T3163-1		..BOSS ASSY		1
			ATTACHING PARTS		
215	MS90354-0603		DELETED		
-215A	MS90354S0603		DELETED		
215B	MS21141-0604P		..FASTENER		7
			-----*		
220	252T3161-1		...SLEEVE		1

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FIG. & ITEM	PART NO.	AIRLINE PART NUMBER	NOMENCLATURE 1234567	EFF CODE	QTY PER ASSY
01- 225	DSP4		...BEARING- (V38443) (SPEC BACB10CA4) (OPT DSP4FS428 (V21335)) (OPT HHDSP4 (V38443)) (OPT DSP45D610 (V83086))		1
230	252T3163-2		...BOSS ASSY		1
235	252T3175-6		..LEVER ASSY	A,C,E	1
-235A	252T3175-7		..LEVER ASSY	B,D	1
240	MS90354-0603		ATTACHING PARTS DELETED		
-240A	MS90354S0603		DELETED		
240B	MS21141-0604P		..FASTENER -----*		5
245	252T3161-1		...SLEEVE		1
250	DSP4		...BEARING- (V38443) (SPEC BACB10CA4) (OPT DSP4FS428 (V21335)) (OPT HHDSP4 (V38443)) (OPT DSP45D610 (V83086))		1
255	252T3175-8		...LEVER	A,C	1
-255A	252T3175-9		...LEVER	B,D	1
260	252T3152-10		..TUBE		1

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