COMPONENT MAINTENANCE MANUAL WITH ILLUSTRATED PARTS LIST

ELEVATOR CONTROL QUADRANT ASSEMBLY

PART NUMBER 251A2196–1, –2

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COMPONENT MAINTENANCE MANUAL

Revision No. 10
Jul 01/2009

To: All holders of ELEVATOR CONTROL QUADRANT ASSEMBLY 27-37-17.

Attached is the current revision to this COMPONENT MAINTENANCE MANUAL

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TEMPORARY REVISION AND SERVICE BULLETIN RECORD

BOEING SERVICE BULLETIN	BOEING TEMPORARY REVISION	OTHER DIRECTIVE	DATE OF INCORPORATION INTO MANUAL
		PRR 38050	DEC 01/97
		PRR 38400	NOV 01/03

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	
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Temporary Revision		Inserted		Removed	
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Number	Date	Date	Initials	Date	Initials

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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.

ELEVATOR CONTROLS QUADRANT ASSEMBLY - DESCRIPTION AND OPERATION

1. Description

A. The elevator controls quadrant assembly includes the column override assembly and left and right support assemblies. The column override assembly has two tube assemblies connected by a spring loaded follower assembly. The column override assembly connects the pilot's and the first officer's control column together. It has cranks that connect to the feel and centering units of the airplane.

2. Operation

A. The elevator controls quadrant assembly transmits control input from the control columns to the feel and centering units of the airplane. The column override assembly lets each control column operate independently.

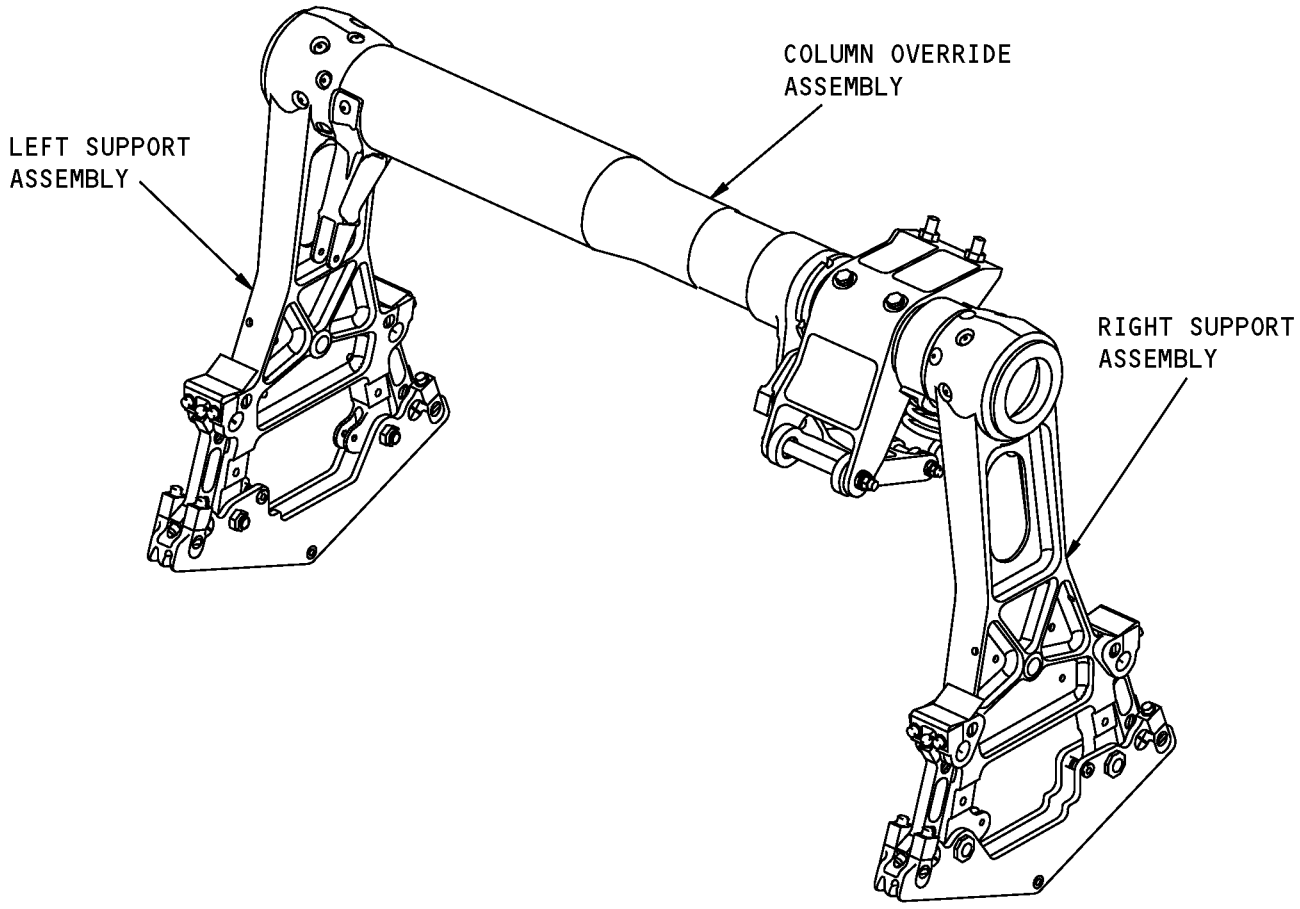
3. Leading Particulars (Approximate)

A. Length – 29 inches

B. Width – 12 inches

C. Height – 20 inches

D. Weight – 16 pounds



Elevator Controls Quadrant Assembly
Figure 1

TESTING AND FAULT ISOLATION

1. General

A. This procedure has the data necessary to do a test of the elevator controls quadrant assembly after an overhaul or for fault isolation.

B. There are three parts to the procedure:

(1) Quadrant Assembly Test

(2) Fault Isolation

(3) Fault Correction

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. Testing and Fault Isolation

A. Tools/Equipment

NOTE: Equivalent substitutes may be used.

Reference	Description
SPL-5392	Elevator Controls Quadrant Assembly Test Equipment (Part #: C27073-1, Supplier: 81205)

B. Procedure

(1) Install the quadrant assembly in the Elevator Controls Quadrant Assembly Test Equipment, SPL-5392.

(2) Do a quadrant assembly breakout test:

(a) Measure the breakout torque for the input crank (350).

1) Hold the input crank (420).

2) Turn the input crank (350).

3) Measure the breakout torque for the crank (350).

a) Make sure the breakout torque is between 975 and 1025 pound-inches.

(b) Measure the breakout torque for the crank (420).

1) Hold the crank (350).

2) Turn the crank (420).

3) Measure the breakout torque for the crank (420).

a) Make sure the breakout torque is between 975 and 1025 pound-inches.

(3) Do a freeplay test:

(a) Measure the freeplay of the quadrant assembly.

1) Hold the input crank (420) of the tube assembly (360).

2) Apply a clockwise load of 180-220 pound-inches to the input crank (350) of the tube assembly (170).

3) Zero a dial indicator at the edge of the input crank (350) on the tube assembly (170) 5.8 inches from the center of the tube.

4) Remove the load of 180-220 pound-inches from the input crank (350) of the tube assembly (170).

5) Read the dial indicator for this position.

6) Apply a counterclockwise load of 180-220 pound-inches to the input crank (350) of the tube assembly (170).

7) Remove the load of 180-220 pound-inches from the input crank (350) of the tube assembly (170).

8) Read the dial indicator for this position. The difference between the two dial indicator measurements must not be more than 0.042 inch.

(4) Do a friction test for bearings (130, 140):

(a) Measure the friction torque of the quadrant assembly (1A).

1) Turn the tube assembly (1A) 30 degrees clockwise and then 30 degrees counterclockwise.

2) Measure the torque necessary to turn the quadrant assembly.

a) Make sure the torque necessary to turn the quadrant assembly (1A) is not more than 4.5 pound-inches.

b) Make sure the quadrant assembly turns freely and smoothly.

3. Fault Isolation

A. General

(1) Refer to TESTING AND FAULT ISOLATION, Table 101 to do fault isolation with the test results.

Table 101: Fault Isolation Chart

TROUBLE	PROBABLE CAUSE	CORRECTIONS
Breakout torque is not 975 to 1025 pound-inches	Springs (165)	Adjust spring (165) tension, or replace defective springs (165).
Freeplay is more than 0.042 inch	Worn bushings (195,200,265,275) or defective crank (350,420), barrel (355,425), or cam arm (375)	Disassemble and replace worn bushing(s) (195,200,265,275) or replace defective crank (350,420), tube (355,425) or cam (375) arm.
Friction torque is more than 4.5 pound-inches	Defective bearings (130,140)	Replace defective bearing(s) (130,140).

4. Fault Correction

A. Procedure

(1) Override Breakout test fault correction

(a) If the breakout torque is not 975 to 1025 pound-inches, adjust the spring tension (ASSEMBLY).

1) Do a breakout test on the quadrant assembly.

(b) If the breakout torque is not 975 to 1025 pound-inches after the spring (165) tension adjustment, replace the springs (165) as follows:

1) Remove the springs (165) from the quadrant assembly (1A) (DISASSEMBLY).

2) Replace the defective springs (165) if it is necessary (ASSEMBLY).

3) Do a breakout test on the quadrant assembly (1A).

(2) Freeplay test fault correction

(a) If the quadrant assembly freeplay is more than 0.042 inch, replace the bushing(s) (195, 200, 265, 275) as follows:

1) Remove the follower assembly (305) from the tube assembly (170) (DISASSEMBLY).

2) Replace the defective bushing(s) (195, 200, 265, 275) if it is necessary (REPAIR).

3) Install the follower assembly (305) on the support assembly (190) (ASSEMBLY).

4) Do a freeplay test on the quadrant assembly.

(b) If the quadrant assembly freeplay is more than 0.042 inch, replace the input crank (350, 420), barrel (355, 425), or cam arm (375) as follows:

1) Disassemble the quadrant assembly (DISASSEMBLY).

2) Replace the defective input cranks (350, 420), barrel (355, 425), or cam arm (375), if it is necessary.

3) Assemble the quadrant assembly (ASSEMBLY).

4) Do a freeplay test on the quadrant assembly.

(3) Friction test fault correction

(a) If the friction torque is more than 4.5 pound-inches, replace the bearing(s) (130, 140) as follows:

(b) Disassemble the quadrant assembly (DISASSEMBLY).

(c) Replace the defective bearings (130, 140) if it is necessary (REPAIR).

(d) Assemble the quadrant assembly (ASSEMBLY).

(e) Do a friction test on the quadrant assembly.

DISASSEMBLY

1. General

A. This procedure has the data necessary to disassemble the elevator controls quadrant assembly.

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 IPL Figure 1 for item numbers.

2. Elevator Controls Quadrant Assembly

A. Procedure

(1) Use standard industry procedures and these steps.

(2) Remove rivets (5), bolts (10), collars (15), and assemblies (20, 25) from column override assembly (120).

(3) Disassemble support assemblies (20, 25).

(a) Remove screws (30), washers (35), nuts (40), and retainers (45) from supports (80).

(b) Remove pivots (50), shoulder bolts (55), washer (60), and nuts (65) from supports (80).

(c) Remove guards (70), links (75), and quadrant assemblies (85, 90) from supports (80).

NOTE: Do not disassemble quadrant assembly (85, 90) unless repair or part replacement is necessary.

(4) Disassemble column override assembly (120).

(a) Remove springs (165) as follows:

1) Loosen nut (240) and release the load off springs (165).

2) Remove springs (165).

(b) Remove bolt (150), filler (155), and nut (160).

(c) Remove jamnut (125) and bearing (130) from left tube assembly (170).

(d) Pull left tube assembly (170) out of right tube assembly (360).

(e) Remove spacer (135), bearing (140), and jam nut (145) from left tube assembly (170).

(f) Disassemble right tube assembly (170).

1) Remove bolts (175), washers (180), nuts (185), and support assembly (190) from right barrel (355).

2) Remove bolts (210), washers (215, 220), nuts (225), bushings (230), and pulleys (235) from clevis bolts (245).

3) Remove nuts (240), and washers (237), clevis bolts (245) from support (205).

4) Remove bolt (250), washers (255), bushings (265, 275), bearing (270), nut (260), and follower assembly (305).

5) Remove bolt (280), washers (285), and nut (290) from follower assembly (305).

6) Remove pulleys (295), bushing (300), and follower assembly (305).

7) Remove bolt (335), collar (340), rivets (345), and input crank (350) from the barrel (355).

(g) Disassemble left tube assembly (360).

1) Remove bolts (365), collar (370), and cam arm (375).

2) Remove bolts (380, 385), washer (390), collar (395), and cam (400).

3) Remove rivets (405), bolt (410), collar (415), and input crank (420) from barrel (425).

CLEANING

1. General

A. This procedure has the data necessary to clean the parts of the elevator controls quadrant assembly.

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 (130, 140, 270, 325) as specified in SOPM 20-30-01.

(2) Clean all other parts by standard industry procedures and the instructions in SOPM 20-30-03.

CHECK

1. General

A. This procedure has the data necessary to find defects in the specified parts.

B. Refer to FITS AND CLEARANCES for 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 think there are defects on the parts listed below:

(2) Do a magnetic particle check (SOPM 20-20-01) of these parts:

(a) Shoulder Bolt (55)

(b) Clevis bolt (245)

(c) Cam (400)

(d) Pin (55)

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

(a) Link (75)

(b) Support (80)

(c) Quadrant (110, 115)

(d) Spacer (135)

(e) Input crank (350, 420)

(f) Barrel (355, 425)

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
251A2188	LEFT SIDE BARREL	2-1
251A2189	RIGHT SIDE BARREL	3-1
251A2193	SUPPORT ASSEMBLY	4-1, 4-2
251A2194	CAM FOLLOWER ASSEMBLY	5-1, 5-2
253W2314	CLEVIS BOLT	6-1
65-52995	SUPPORT	7-1
65-53592	QUADRANT ASSEMBLY	8-1, 8-2
69-40236	SHOULDER BOLT	9-1
65C25546	INPUT CRANK	10-1

2. Dimensioning Symbols

A. Standard True Position Dimensioning Symbols used in the applicable repair procedures are shown in SOPM 20-00-00.

REFINISH OF OTHER PARTS - REPAIR 1-1

1. General

A. This procedure has the data necessary to repair and refinish the cam follower assembly (305).

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
C00259	Primer - Chemical And Solvent Resistant Finish, Epoxy Resin	BMS10-11, Type I

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

C. Procedure

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

(1) Instructions for the repair of the parts in REPAIR 1-1, Table 601 is for replacement of the original finish.

Table 601: Refinish Details

IPL FIG. & ITEM	MATERIAL	FINISH
IPL Fig. 1		
Guard (70)	304 CRES 1/4 hard	Passivate (F-17.25, which replaces F-17.09).
Link (75)	Aluminum alloy	Anodize and apply primer, C00259 (F-18.04), but no primer in holes.
Spacer (135)	Aluminum alloy	Chromic anodize and apply primer, C00259 (F-18.13).
Pulleys (235, 295)	AL-NI bronze	Apply no finish (F-25.01).

LEFT SIDE BARREL - REPAIR 2-1

251A2188–1

1. General

A. This procedure has the data necessary to repair and refinish the left side barrel (425).

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

C. Refer to REPAIR-GENERAL, Paragraph 2. for the Standard True Position Dimensioning Symbols shown in this repair.

D. Refer to IPL Figure 1 for item numbers.

E. General repair details:

(1) Material: Aluminum alloy

2. Left Side Barrel

A. Consumable Materials

NOTE: Equivalent substitutes may be used.

Reference	Description	Specification
C00259	Primer - Chemical And Solvent Resistant Finish, Epoxy Resin	BMS10-11, Type I

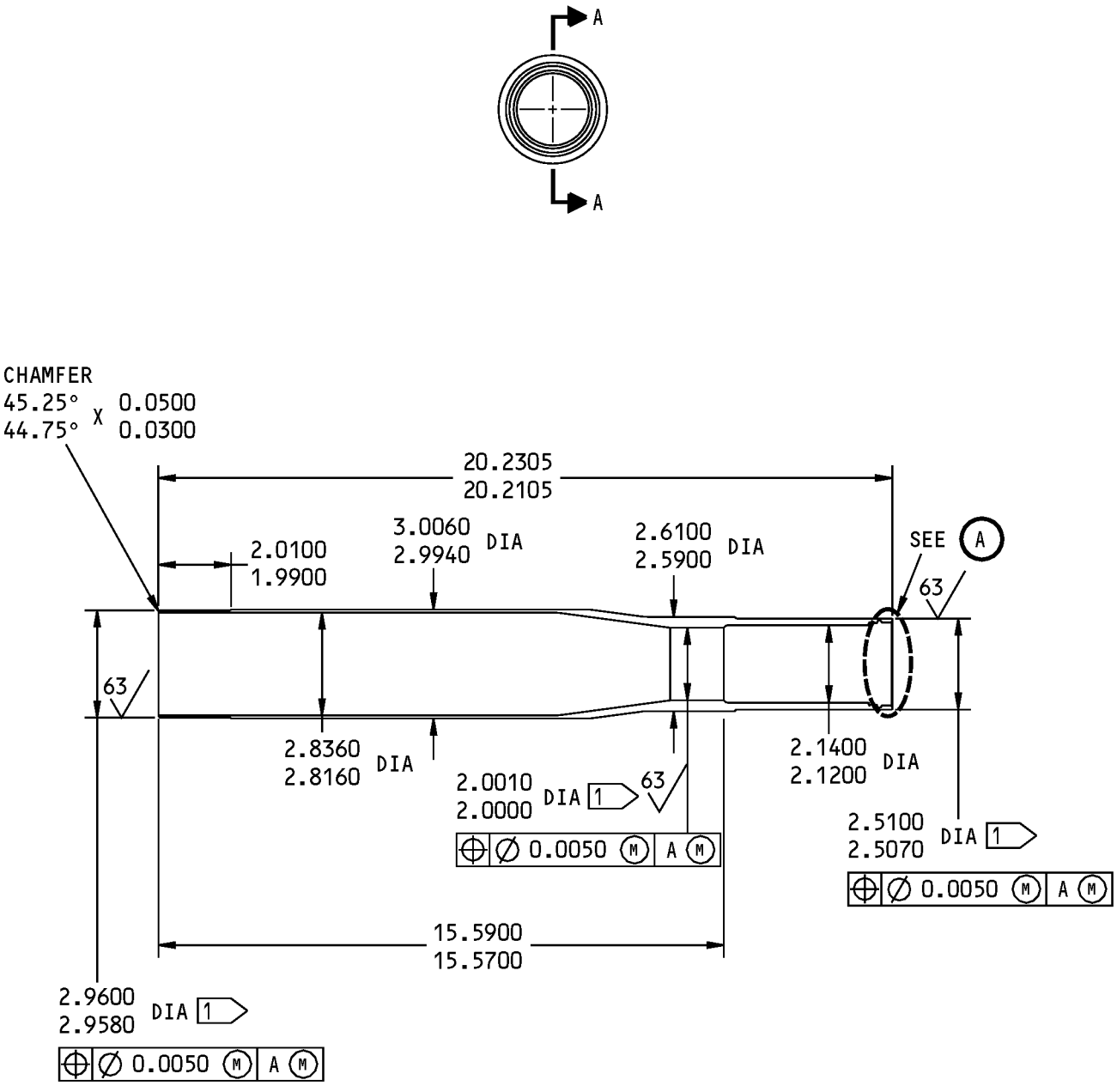
B. References

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

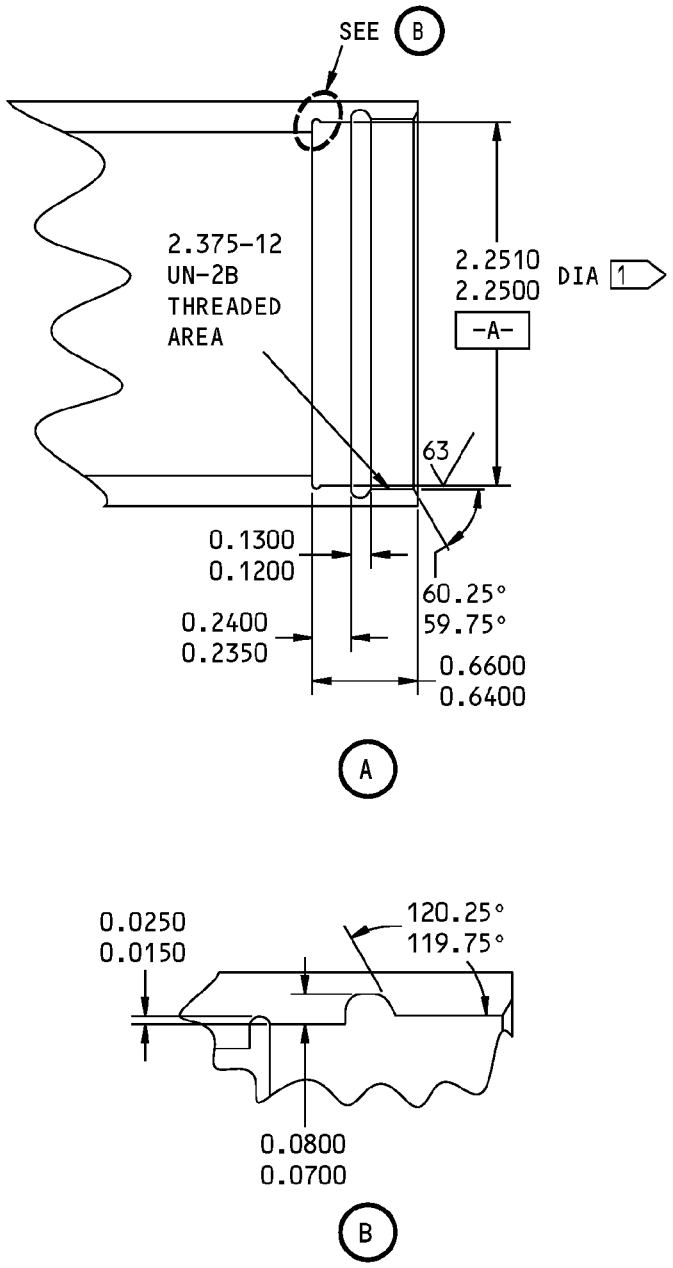
C. Procedure (REPAIR 2-1, Figure 601)

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

(1) Boric acid-sulfuric acid anodize or chromic acid anodize (F-17.31). Apply primer, C00259 (F-20.03).



251A2188-1 Left Side Barrel Repair
Figure 601 (Sheet 1 of 2)



1 DO NOT APPLY PRIMER ON THIS SURFACE.

63 ALL MACHINED SURFACES UNLESS SHOWN DIFFERENTLY

BREAK ALL SHARP EDGES

ITEM NUMBERS REFER TO IPL FIG. 1

ALL DIMENSIONS ARE IN INCHES

251A2188-1 Left Side Barrel Repair
Figure 601 (Sheet 2 of 2)

RIGHT SIDE BARREL - REPAIR 3-1

251A2189–1

1. General

A. This procedure has the data necessary to repair and refinish the right side barrel (355).

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

C. Refer to REPAIR-GENERAL, Paragraph 2. for the Standard True Position Dimensioning Symbols shown in this repair.

D. Refer to IPL Figure 1 for item numbers.

E. General repair details:

(1) Material: Aluminum alloy

2. Right Side Barrel Refinish

A. Consumable Materials

NOTE: Equivalent substitutes may be used.

Reference	Description	Specification
C00259	Primer - Chemical And Solvent Resistant Finish, Epoxy Resin	BMS10-11, Type I

B. References

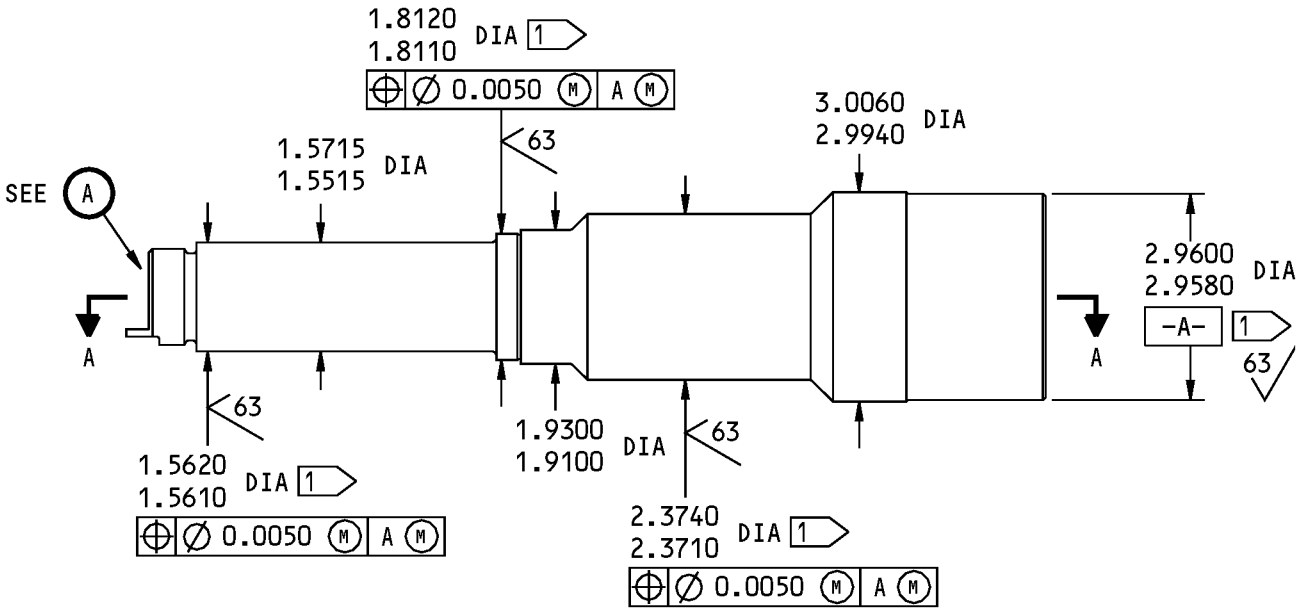
Reference	Title
SOPM 20-30-02	STRIPPING OF PROTECTIVE FINISHES
SOPM 20-41-01	DECODING TABLE FOR BOEING FINISH CODES
SOPM 20-60-02	FINISHING MATERIALS

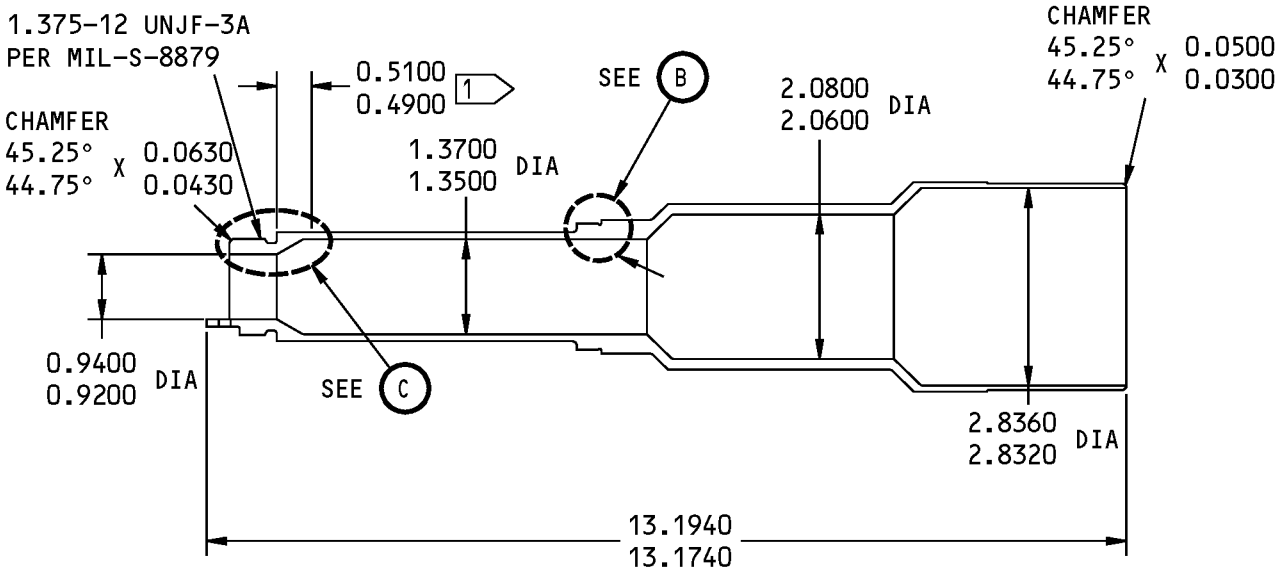
C. Procedure (REPAIR 3-1, Figure 601)

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

(1) Boric acid-sulfuric acid anodize or chromic acid anodize (F-17.31).

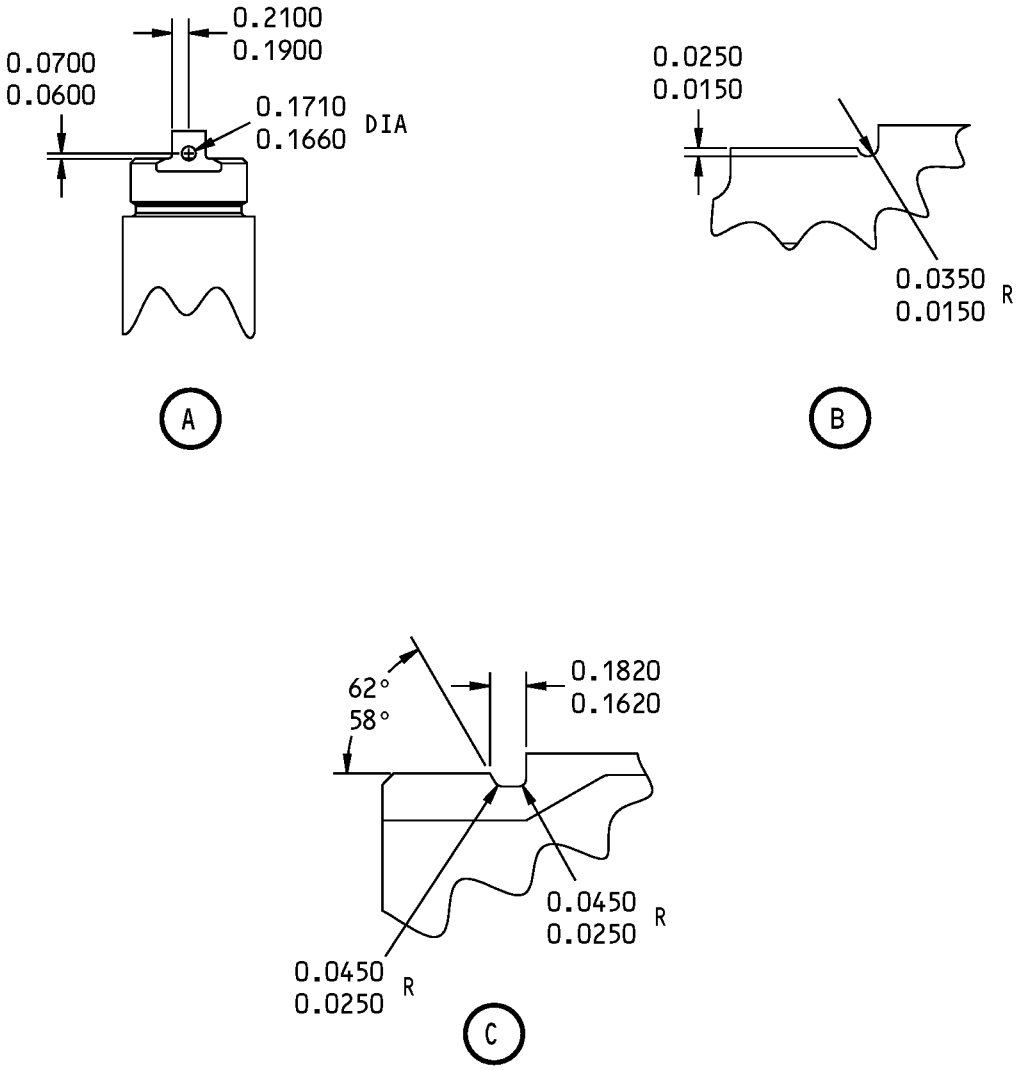
(2) Apply primer, C00259 (F-20.02).





A-A

251A2189-1 Right Side Barrel Repair
Figure 601 (Sheet 1 of 2)



1 DO NOT APPLY PRIMER IN THIS SURFACE.

125 ALL MACHINED SURFACES UNLESS SHOWN DIFFERENTLY

BREAK ALL SHARP EDGES

ITEM NUMBERS REFER TO IPL FIG. 1

ALL DIMENSIONS ARE IN INCHES

251A2189-1 Right Side Barrel Repair
Figure 601 (Sheet 2 of 2)

SUPPORT ASSEMBLY - REPAIR 4-1

251A2193–1

1. General

A. This procedure has the data necessary to repair the support assembly (190).

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. Bushing Replacement

A. Consumable Materials

NOTE: Equivalent substitutes may be used.

Reference	Description	Specification
A00247	Sealant - Pressure And Environmental - Chromate Type	BMS 5-95

B. References

Reference	Title
SOPM 20-50-03	BEARING AND BUSHING REPLACEMENT
SOPM 20-60-04	MISCELLANEOUS MATERIALS

C. Procedure

NOTE: for miscellaneous materials, refer to SOPM 20-60-04.

(1) Remove the bushings (195, 200) from the support (205).

(2) Install replacement bushings (195, 200) in the support (205) by the shrink-fit method (SOPM 20-50-03) with wet sealant, A00247.

(3) Machine bushing (195) to 0.3125-0.3130 inch diameter. Machine bushing (200) to 0.4375-0.4381 inch diameter.

SUPPORT - REPAIR 4-2

251A2193–2

1. General

A. This procedure has the data necessary to repair and refinish the support (205).

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

C. Refer to REPAIR-GENERAL, Paragraph 2. for the Standard True Position Dimensioning Symbols shown in this repair.

D. Refer to IPL Figure 1 for item numbers.

E. General repair details:

(1) Material: Aluminum alloy

2. Support Refinish

A. Consumable Materials

NOTE: Equivalent substitutes may be used.

Reference	Description	Specification
C00259	Primer - Chemical And Solvent Resistant Finish, Epoxy Resin	BMS10-11, Type I

B. References

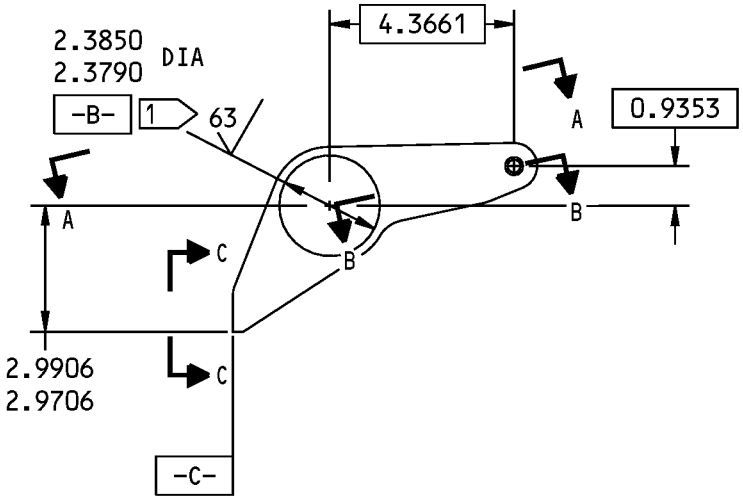
Reference	Title
SOPM 20-30-02	STRIPPING OF PROTECTIVE FINISHES
SOPM 20-41-01	DECODING TABLE FOR BOEING FINISH CODES
SOPM 20-60-02	FINISHING MATERIALS

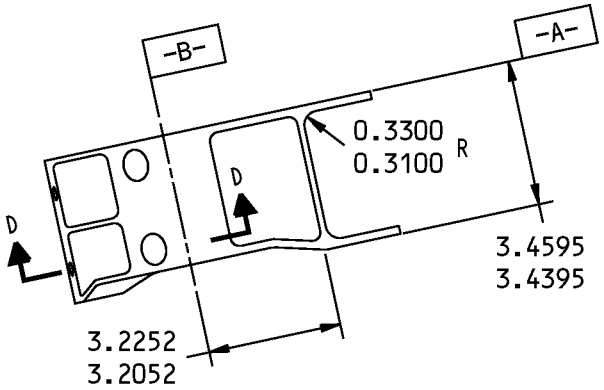
C. Procedure (REPAIR 4-2, Figure 601)

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

(1) Boric acid-sulfuric acid anodize or chromic acid anodize (F-17.31).

(2) Apply primer, C00259 (F-20.03) unless shown by flagnote 1.





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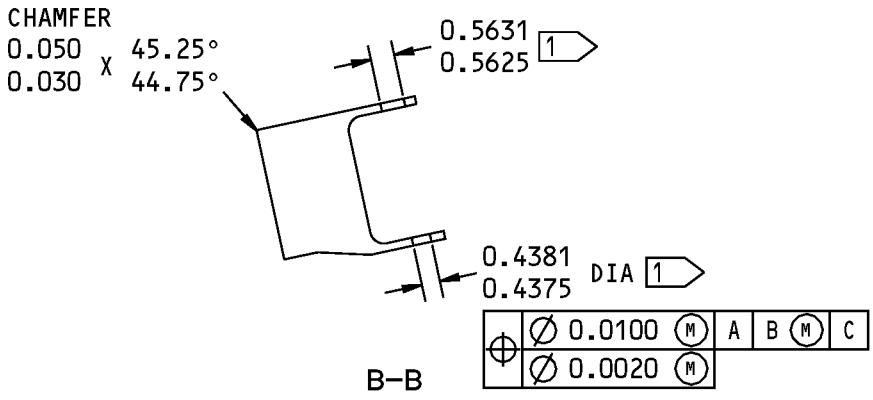
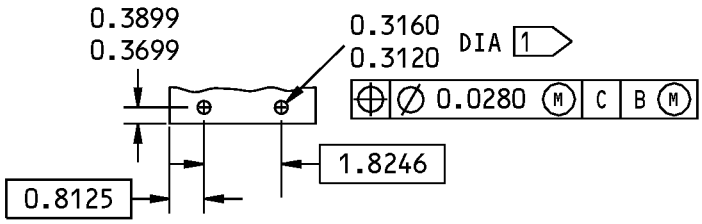
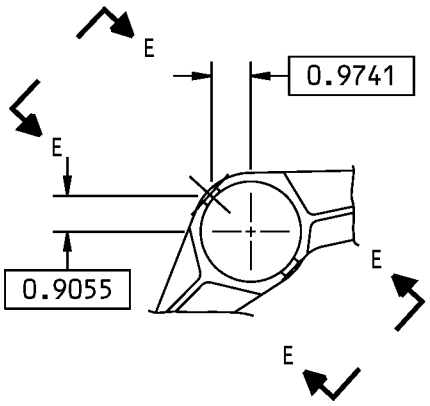


B–B

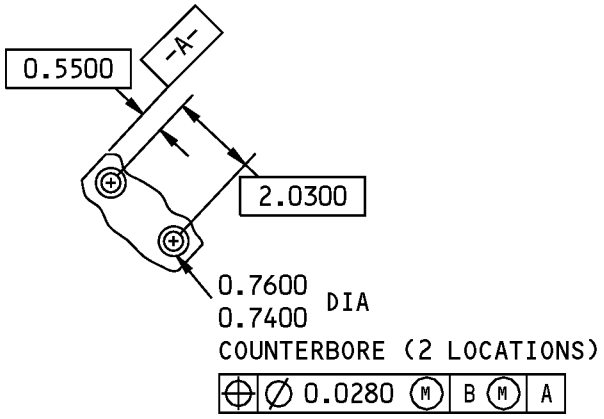
251A2193-2 Support Repair
Figure 601 (Sheet 1 of 2)



C–C



D–D



E–E

1 NO PRIMER ON THIS SURFACE.

125 ALL MACHINED SURFACES UNLESS SHOWN DIFFERENTLY

BREAK ALL SHARP EDGES

ITEM NUMBERS REFER TO IPL FIG. 1

ALL DIMENSIONS ARE IN INCHES

251A2193-2 Support Repair
Figure 601 (Sheet 2 of 2)

CAM FOLLOWER ASSEMBLY - REPAIR 5-1

251A2194–1

1. General

A. This procedure has the data necessary to repair and refinish the cam follower assembly (305).

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. Cam Replacement

A. Procedure (REPAIR 5-1, Figure 601)

(1) Remove the nut (320), washer (315), and the cam (310) from the follower (330).

(2) Install the new cam (310) into the follower (330) with the washer (315) and nut (320).

3. Bearing Replacement

A. Consumable Materials

NOTE: Equivalent substitutes may be used.

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

B. References

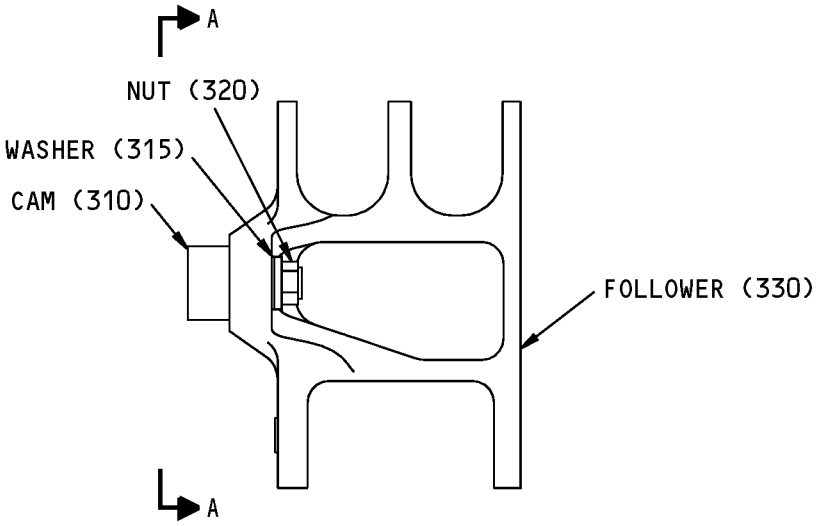
Reference	Title
SOPM 20-50-03	BEARING AND BUSHING REPLACEMENT
SOPM 20-60-03	LUBRICANTS

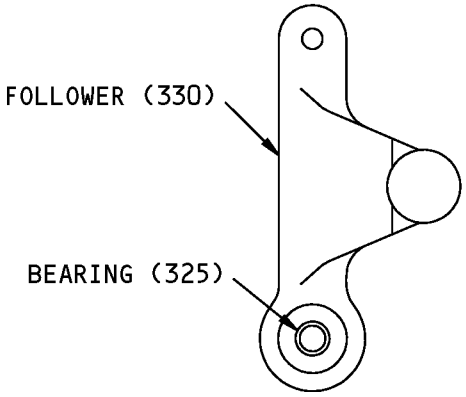
C. Procedure (REPAIR 5-1, Figure 601)

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

(1) Remove the old bearing (325) from the follower (330).

(2) Install a replacement bearing (325) into the follower (330) with grease, D00633 and roller swage to a depth of 0.005-0.009 inch (SOPM 20-50-03).





A-A

ITEM NUMBERS REFER TO IPL FIG. 1

251A2194-1 Cam Follower Assembly Repair
Figure 601

FOLLOWER - REPAIR 5-2

251A2194–2

1. General

A. This procedure has the data necessary to repair and refinish the follower (330).

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

C. Refer to REPAIR-GENERAL, Paragraph 2. for the Standard True Position Dimensioning Symbols shown in this repair.

D. Refer to IPL Figure 1 for item numbers.

E. General repair details:

(1) Material: Aluminum alloy

2. Follower Refinish

A. Consumable Materials

NOTE: Equivalent substitutes may be used.

Reference	Description	Specification
C00259	Primer - Chemical And Solvent Resistant Finish, Epoxy Resin	BMS10-11, Type I

B. References

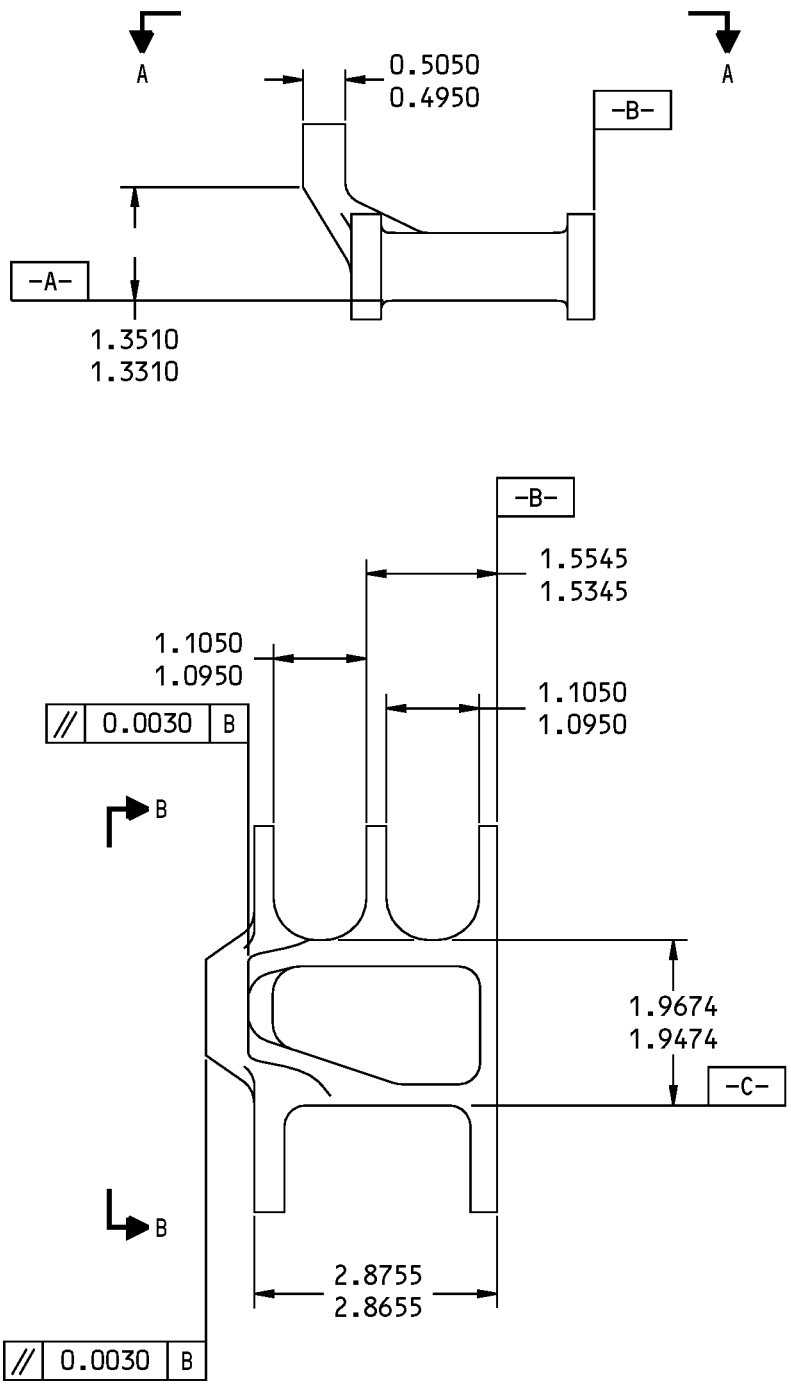
Reference	Title
SOPM 20-30-02	STRIPPING OF PROTECTIVE FINISHES
SOPM 20-41-01	DECODING TABLE FOR BOEING FINISH CODES
SOPM 20-60-02	FINISHING MATERIALS

C. Procedure (REPAIR 5-2, Figure 601)

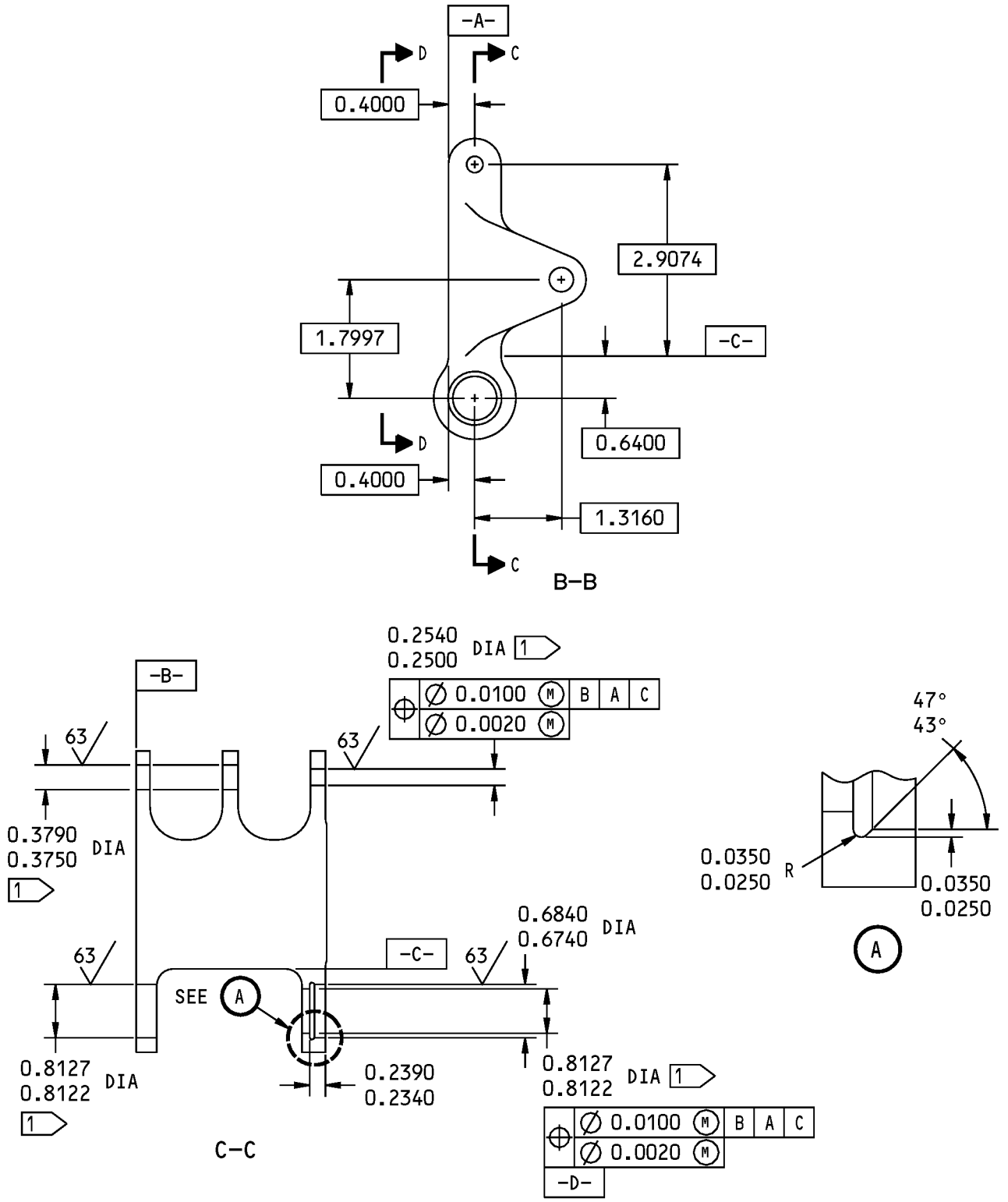
NOTE: For stripping of protective finishes, refer to SOPM 20-30-02. For the decoding table for Boeing finish codes, refer to SOPM 20-41-01. For finishing materials, refer to SOPM 20-60-02.

(1) Boric acid-sulfuric acid anodize or chromic acid anodize (F-17.31).

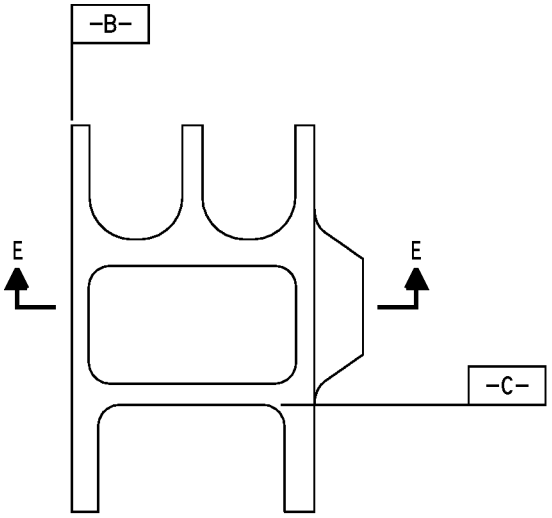
(2) Apply primer, C00259 (F-20.03) unless shown by flagnote 1.



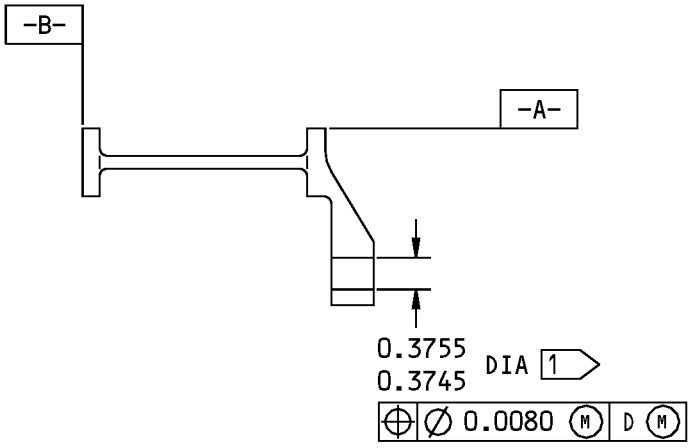
251A2194-2 Follower Repair
Figure 601 (Sheet 1 of 3)



251A2194-2 Follower Repair
Figure 601 (Sheet 2 of 3)



D–D



E–E

1 DO NOT APPLY PRIMER ON THIS SURFACE.

125 ALL MACHINED SURFACES UNLESS SHOWN DIFFERENTLY

BREAK ALL SHARP EDGES

ITEM NUMBERS REFER TO IPL FIG. 1

ALL DIMENSIONS ARE IN INCHES

251A2194-2 Follower Repair
Figure 601 (Sheet 3 of 3)

CLEVIS BOLT - REPAIR 6-1

253W2314–1

1. General

A. This procedure has the data necessary to repair and refinish the clevis bolt (245).

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

C. Refer to REPAIR-GENERAL, Paragraph 2. for the Standard True Position Dimensioning Symbols shown in this repair.

D. Refer to IPL Figure 1 for item numbers.

E. General repair details:

(1) Material: 15-5PH CRES

(2) Heat treat: 180-200 ksi

2. Clevis Bolt Refinish

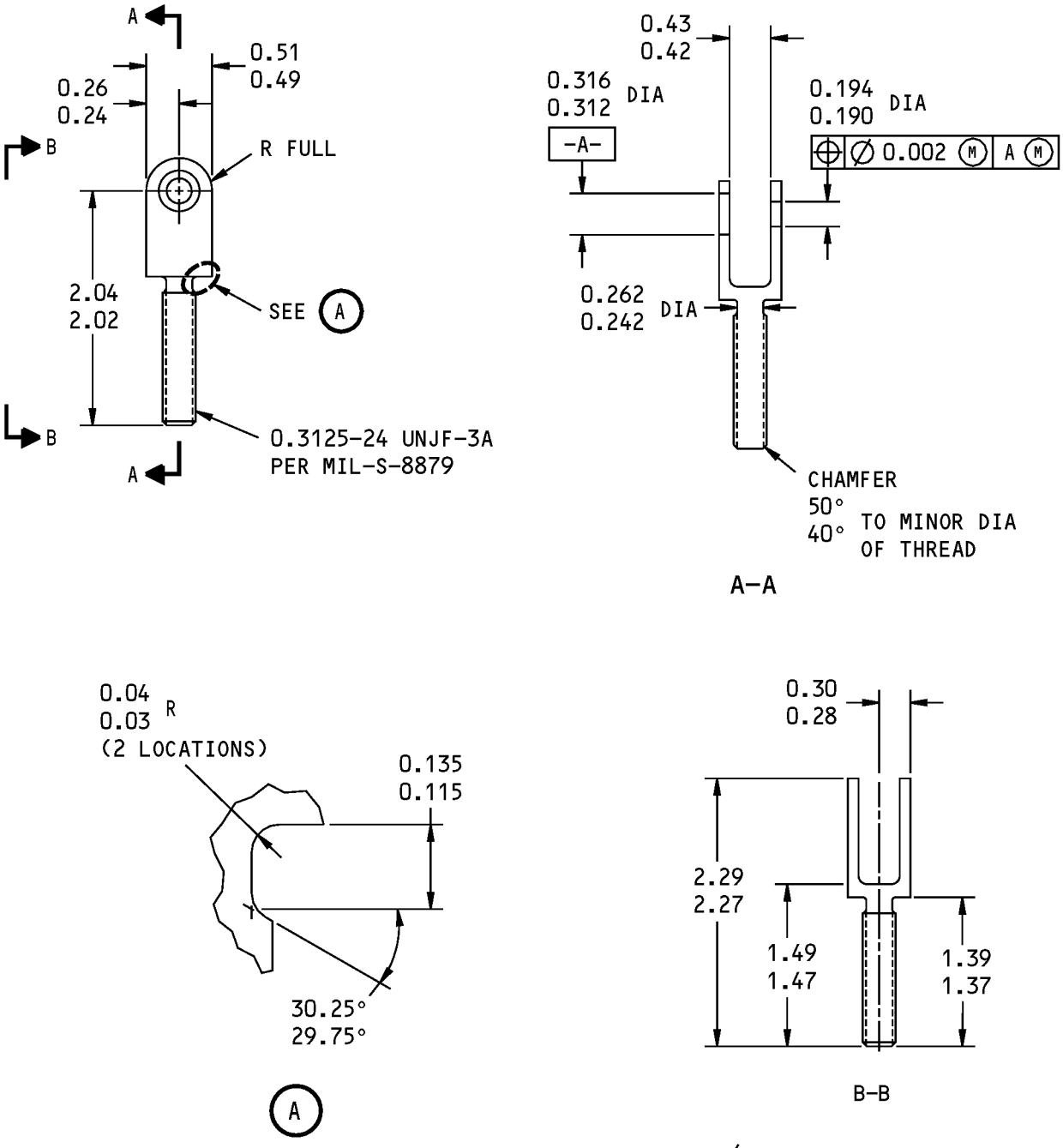
A. References

Reference	Title
SOPM 20-30-02	STRIPPING OF PROTECTIVE FINISHES
SOPM 20-41-01	DECODING TABLE FOR BOEING FINISH CODES

B. Procedure (REPAIR 6-1, Figure 601)

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.

(1) Cadmium plate (F-16.06).



253W2314-1 Clevis Bolt Repair
Figure 601

SUPPORT - REPAIR 7-1

65-52995–13

1. General

A. This procedure has the data necessary to repair and refinish the support (80).

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

C. Refer to REPAIR-GENERAL, Paragraph 2. for the Standard True Position Dimensioning Symbols shown in this repair.

D. Refer to IPL Figure 1 for item numbers.

E. General repair details:

(1) Material: Aluminum alloy

2. Support Refinish

A. Consumable Materials

NOTE: Equivalent substitutes may be used.

Reference	Description	Specification
C00259	Primer - Chemical And Solvent Resistant Finish, Epoxy Resin	BMS10-11, Type I

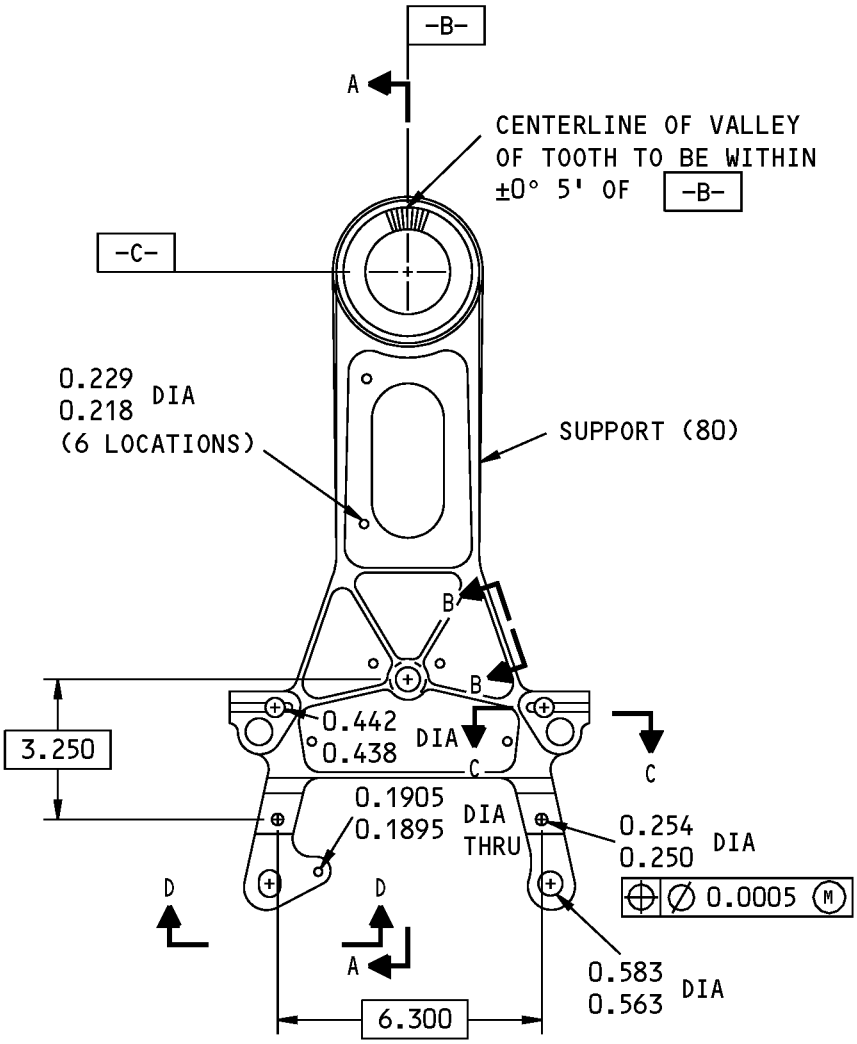
B. References

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

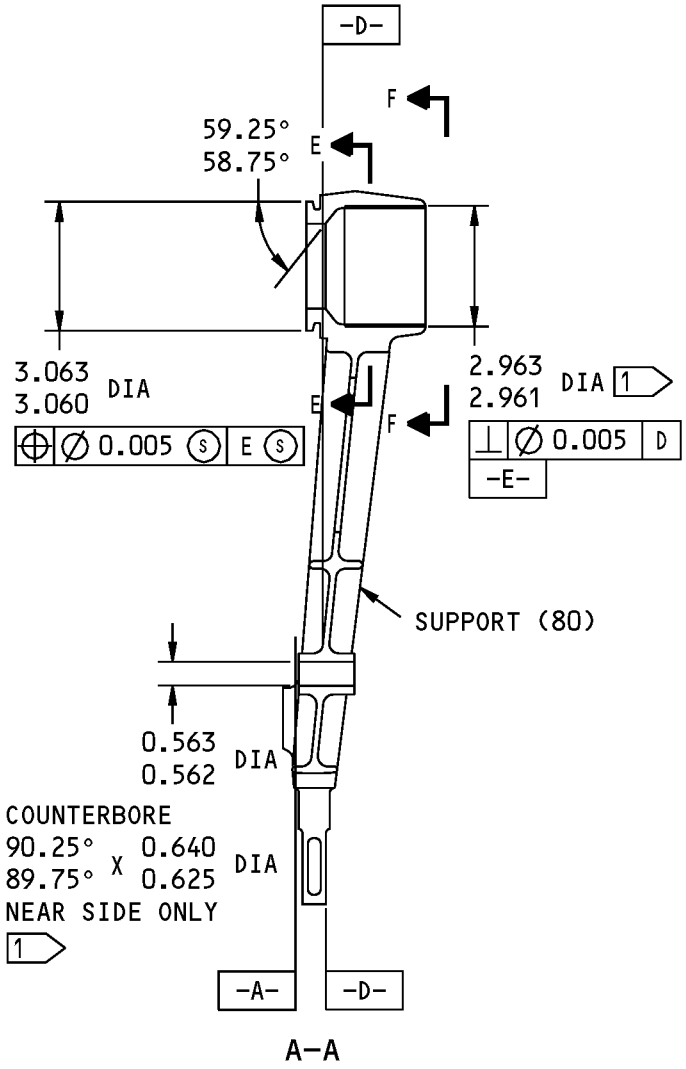
C. Procedure (REPAIR 7-1, Figure 601)

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

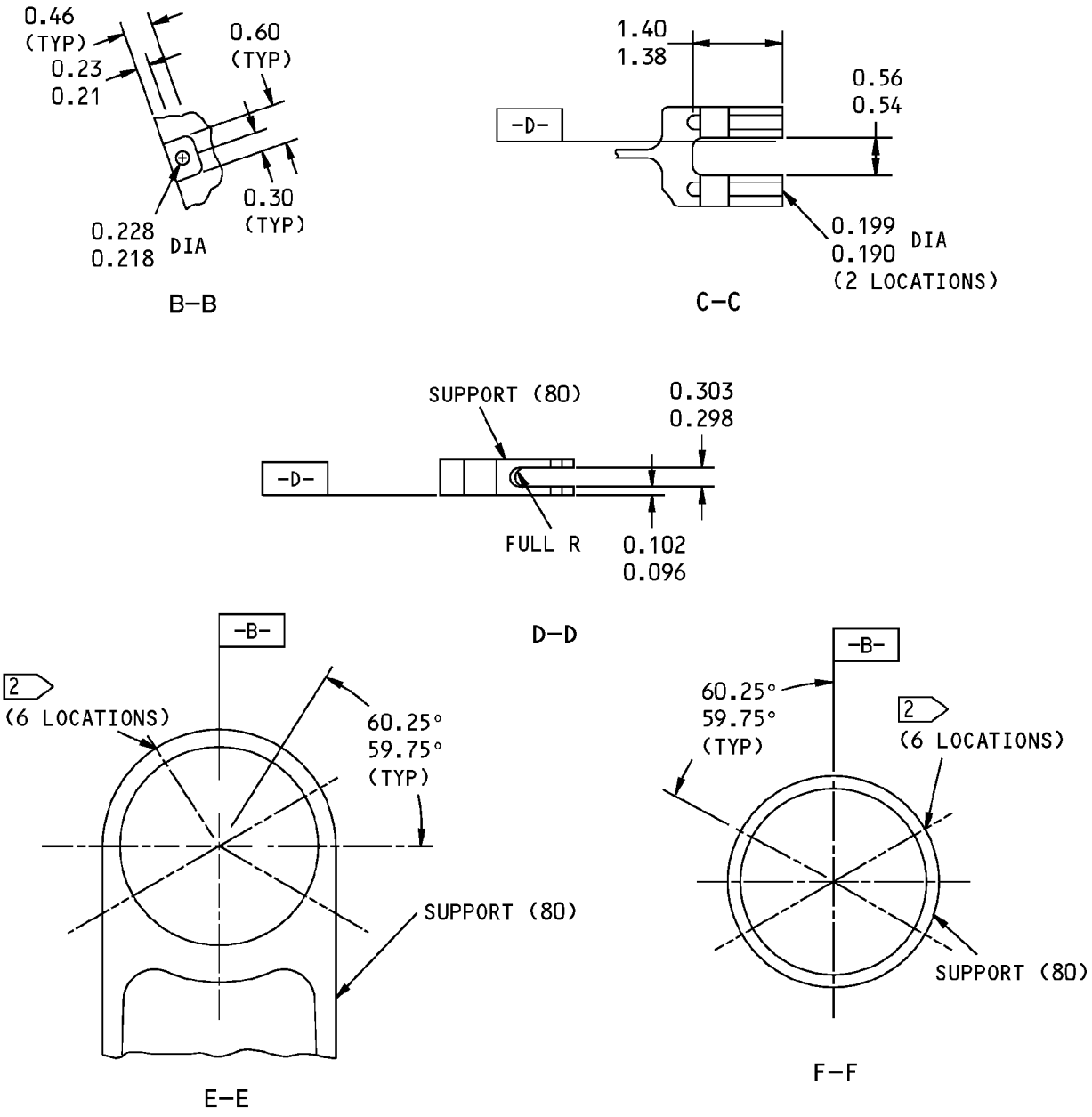
(1) Anodize and apply primer, C00259 (F-18.04) unless shown by flagnote 1.



65-52995-13 Support Repair
Figure 601 (Sheet 1 of 3)



65-52995-13 Support Repair
Figure 601 (Sheet 2 of 3)



1. DO NOT APPLY PRIMER ON THIS SURFACE.
2. DRILL 0.1870–0.1895 INCH DIAMETER FASTENER HOLE AT THIS LOCATION.

ITEM NUMBERS REFER TO IPL FIG. 1

ALL DIMENSIONS ARE IN INCHES

65-52995-13 Support Repair
Figure 601 (Sheet 3 of 3)

QUADRANT ASSEMBLY - REPAIR 8-1

65-53592–1, –2

1. General

A. This procedure has the data necessary to repair and refinish the quadrant assembly (85, 90).

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

C. Refer to REPAIR-GENERAL, Paragraph 2. for the Standard True Position Dimensioning Symbols shown in this repair.

D. Refer to IPL Figure 1 for item numbers.

2. Bushing Replacement

A. Consumable Materials

NOTE: Equivalent substitutes may be used.

Reference	Description	Specification
A00247	Sealant - Pressure And Environmental - Chromate Type	BMS 5-95

B. References

Reference	Title
SOPM 20-60-04	MISCELLANEOUS MATERIALS

C. Procedure (REPAIR 8-1, Figure 601)

NOTE: For miscellaneous materials, refer to SOPM 20-60-04.

(1) Remove the bushings (105) from the quadrant (110 or 115).

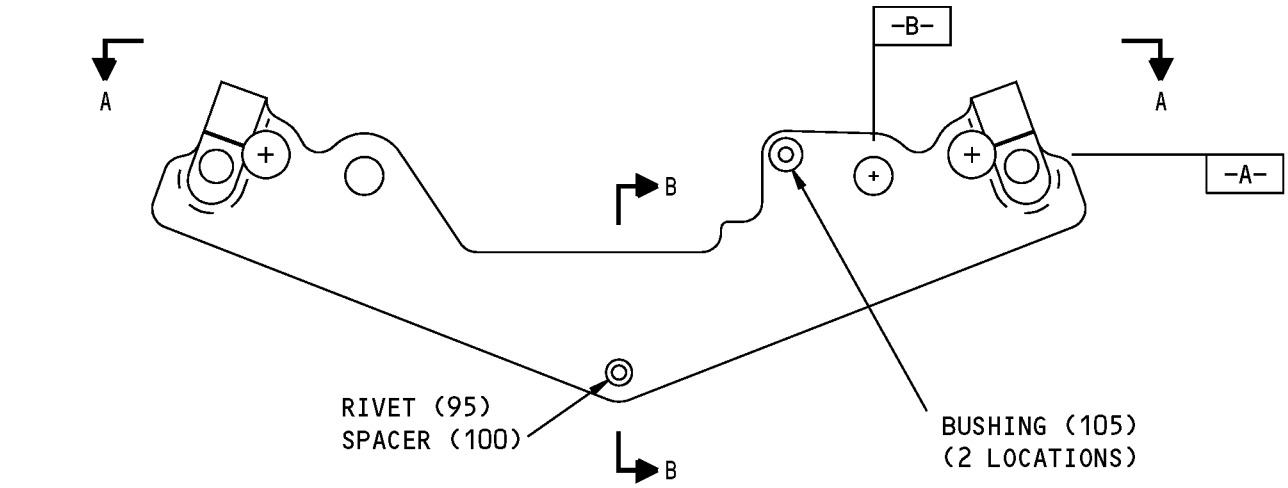
(2) Install replacement bushings (105) by the shrink-fit method with wet sealant, A00247.

3. Rivet Replacement

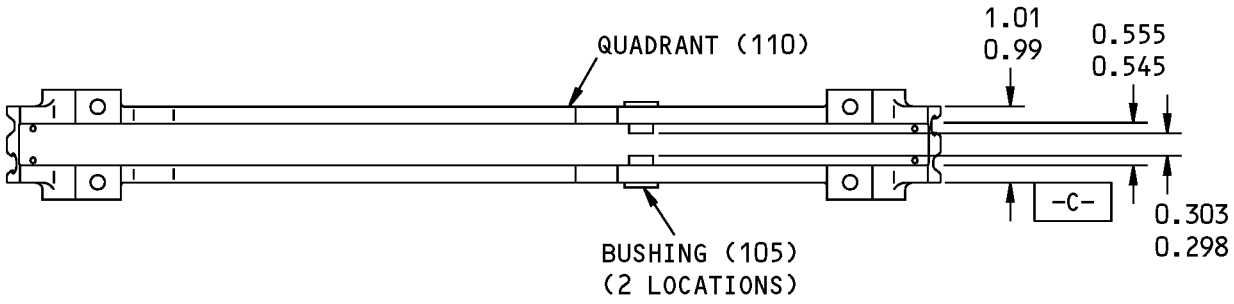
A. Procedure

(1) Remove the rivet (95) and the spacer (100) from the quadrant (110 or 115).

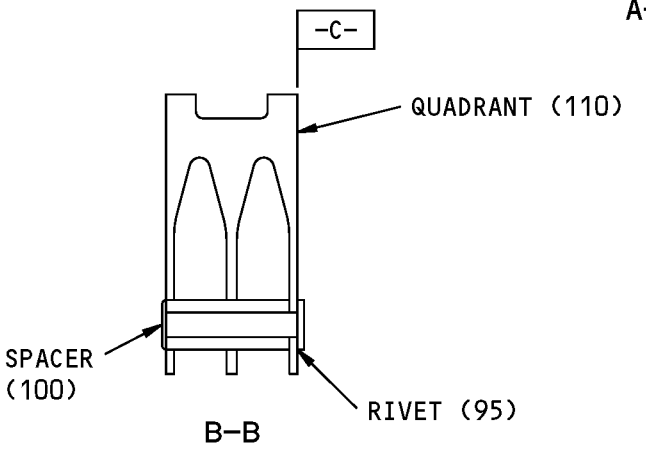
(2) Install the new rivet (95) and the spacer (100) into the quadrant (110 or 115).



65-53592-1 SHOWN
65-53592-2 OPPOSITE



A-A



B-B

BREAK ALL SHARP EDGES

ITEM NUMBERS REFER TO IPL FIG. 1

ALL DIMENSIONS ARE IN INCHES

65-53592-1,-2 Quadrant Assembly Repair
Figure 601

QUADRANT - REPAIR 8-2

65-53592–3, –4

1. General

A. This procedure has the data necessary to repair and refinish the quadrant (110, 115).

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

C. Refer to REPAIR-GENERAL, Paragraph 2. for the Standard True Position Dimensioning Symbols shown in this repair.

D. Refer to IPL Figure 1 for item numbers.

E. General repair details:

(1) Material: Aluminum alloy

2. Quadrant Refinish

A. Consumable Materials

NOTE: Equivalent substitutes may be used.

Reference	Description	Specification
C00259	Primer - Chemical And Solvent Resistant Finish, Epoxy Resin	BMS10-11, Type I

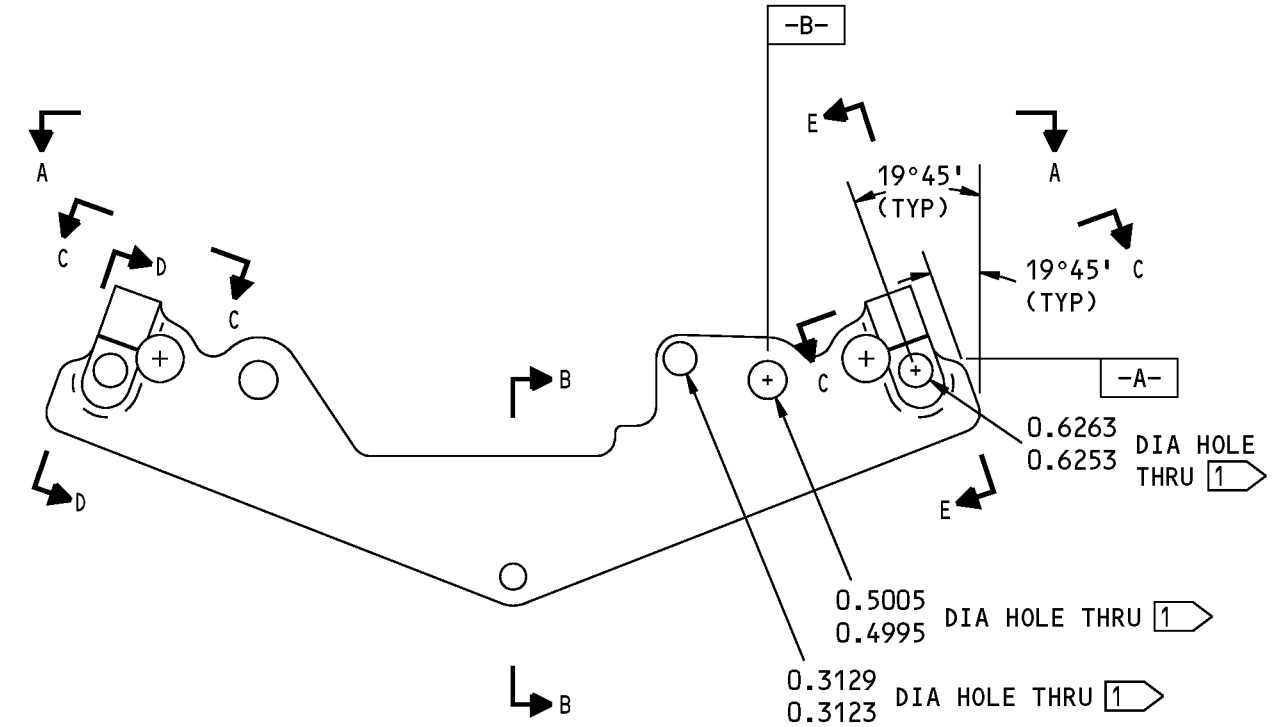
B. References

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

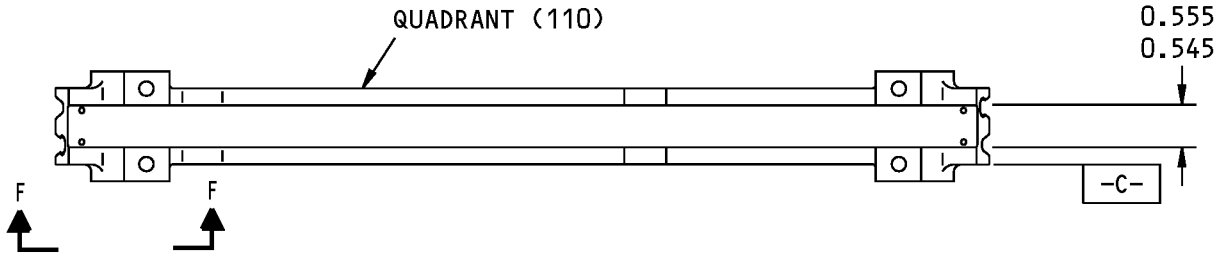
C. Procedure (REPAIR 8-2, Figure 601)

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

(1) Anodize and apply primer, C00259 (SRF-2.19).

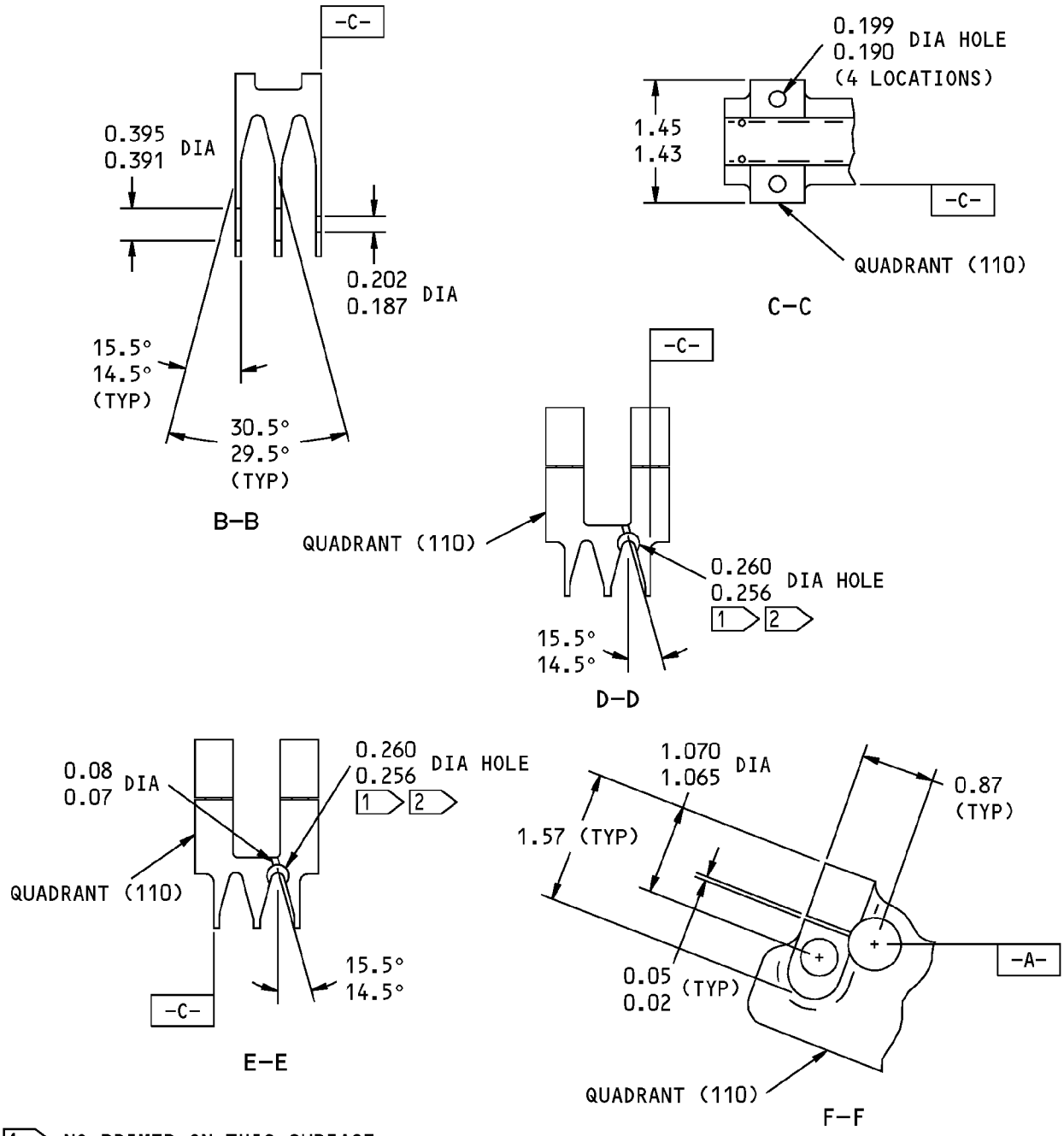


65-53592-3 SHOWN
65-53592-4 OPPOSITE



A-A

65-53592-3,-4 Quadrant Repair
Figure 601 (Sheet 1 of 2)



1 NO PRIMER ON THIS SURFACE

2 CENTER LINE OF CABLE TERMINAL SOCKET (0.256-0.250 DIA HOLE) TO BE WITHIN 0.005 OF GROOVE CL AT BOTTOM OF SOCKET

BREAK ALL SHARP EDGES

ITEM NUMBERS REFER TO IPL FIG. 1

ALL DIMENSIONS ARE IN INCHES

65-53592-3,-4 Quadrant Repair
Figure 601 (Sheet 2 of 2)

SHOULDER BOLT - REPAIR 9-1

69-40263–1, –2

1. General

A. This procedure has the data necessary to repair and refinish the shoulder bolt (55).

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

C. Refer to REPAIR-GENERAL, Paragraph 2. for the Standard True Position Dimensioning Symbols shown in this repair.

D. Refer to IPL Figure 1 for item numbers.

E. General repair details:

(1) Material: 4340 Steel

(2) Heat Treat: 160-180 ksi

2. Shoulder Bolt Refinish

A. References

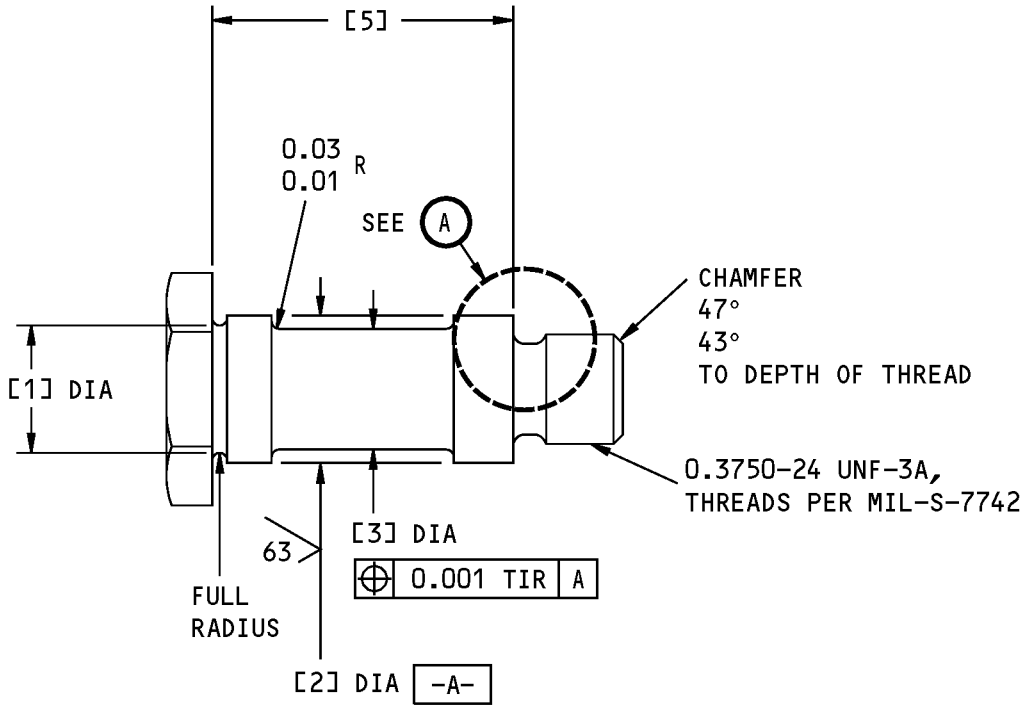
Reference	Title
SOPM 20-30-02	STRIPPING OF PROTECTIVE FINISHES
SOPM 20-41-01	DECODING TABLE FOR BOEING FINISH CODES

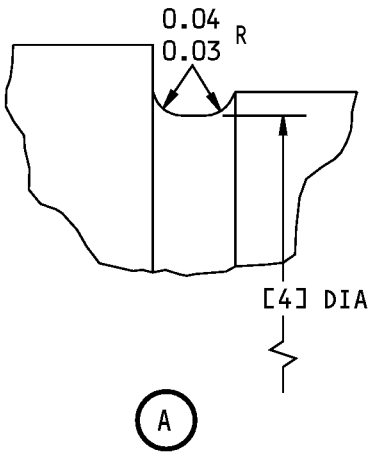
B. Procedure (REPAIR 9-1, Figure 601)

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.

(1) Bolt 69-40263-1: Cadmium plate (F-15.25).

(2) Bolt 69-40263-2: Cadmium plate (F-15.02).





REFERENCE NUMBER	[1]	[2]	[3] 1	[3] 2	[4]	[5]
DESIGN DIMENSION	0.440 0.420	0.4993 0.4983 3	0.4110 0.4090 3	0.3120 0.3110 3	0.314 0.309	1.020 1.010
REPAIR LIMIT	----	----	----	----	----	----

125 ALL MACHINED SURFACES UNLESS SHOWN DIFFERENTLY

BREAK ALL SHARP EDGES

DIMENSIONS ARE BEFORE PLATING UNLESS SHOWN BY 3

ALL DIMENSIONS ARE IN INCHES

1 69-40263-1

2 69-40263-2

3 AFTER PLATING

69-40263-1 Shoulder Bolt Repair
Figure 601

INPUT CRANK - REPAIR 10-1

65C25546–1

1. General

A. This procedure has the data necessary to repair and refinish the input crank (350, 420).

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

C. Refer to REPAIR-GENERAL, Paragraph 2. for the Standard True Position Dimensioning Symbols shown in this repair.

D. Refer to IPL Figure 1 for item numbers.

E. General repair details:

(1) Material: Aluminum alloy

2. Input Crank

A. Consumable Materials

NOTE: Equivalent substitutes may be used.

Reference	Description	Specification
C00259	Primer - Chemical And Solvent Resistant Finish, Epoxy Resin	BMS10-11, Type I

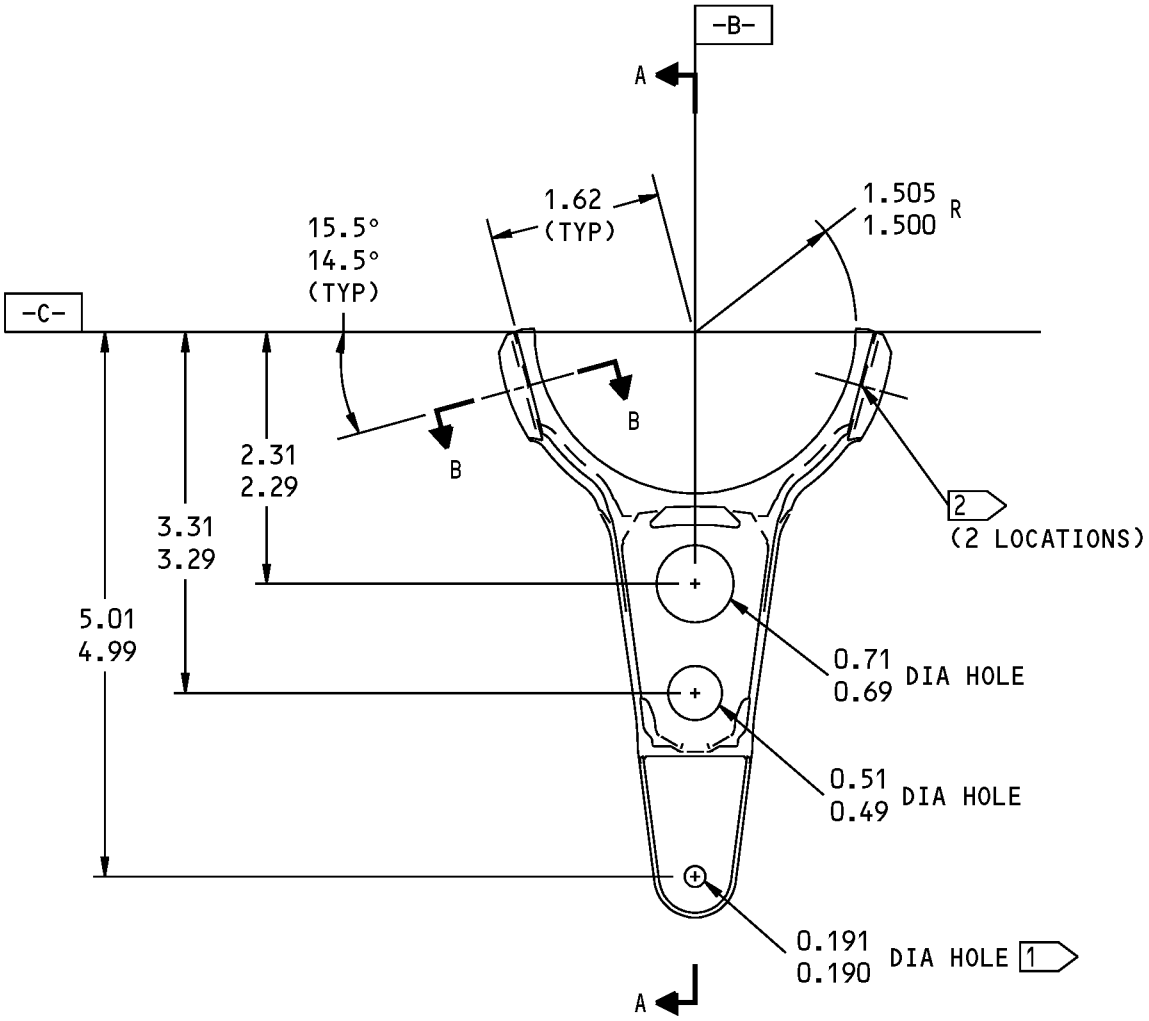
B. References

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

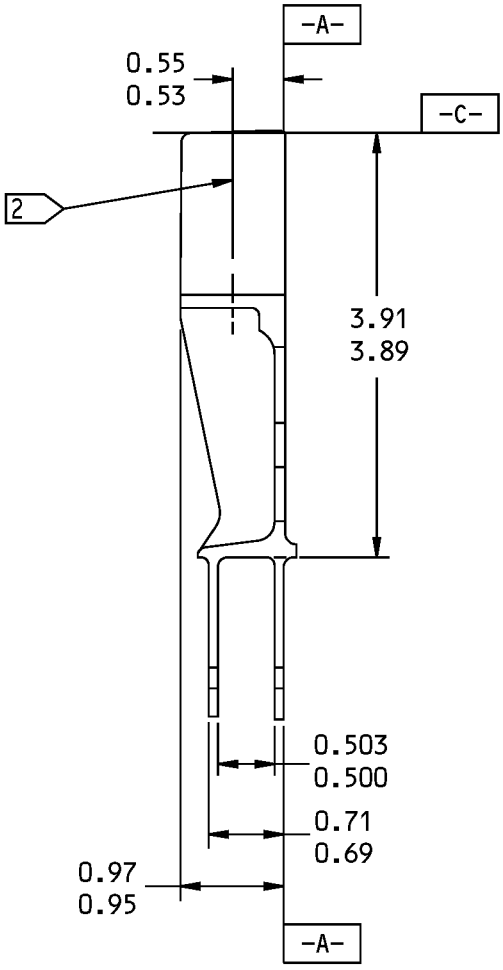
C. Procedure (REPAIR 10-1, Figure 601)

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

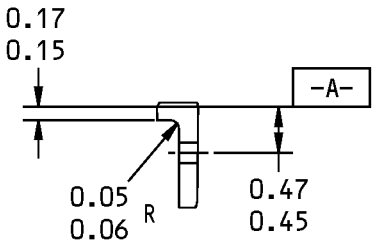
(1) Chromic acid anodize and apply primer, C00259 (F-18.13) unless shown by flagnote 1.



65C25546-1 Input Crank Repair
Figure 601 (Sheet 1 of 2)



A–A



B–B

1 DO NOT APPLY PRIMER IN THIS SURFACE.

2 DRILL FASTENER HOLE AT THIS LOCATION.

125 ALL MACHINED SURFACES UNLESS SHOWN DIFFERENTLY

BREAK ALL SHARP EDGES

ITEM NUMBERS REFER TO IPL FIG. 1

ALL DIMENSIONS ARE IN INCHES

65C25546-1 Input Crank Repair
Figure 601 (Sheet 2 of 2)

ASSEMBLY

1. General

A. This procedure has the data necessary to assemble the elevator controls quadrant assembly.

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. Consumable Materials

NOTE: Equivalent substitutes may be used.

Reference	Description	Specification
G50347	Lockwire - Nickel-copper, 0.032 inch diameter	NASM20995N˜ C32

B. References

Reference	Title
SOPM 20-30-02	STRIPPING OF PROTECTIVE FINISHES
SOPM 20-41-01	DECODING TABLE FOR BOEING FINISH CODES
SOPM 20-50-01	BOLT AND NUT INSTALLATION
SOPM 20-50-02	INSTALLATION OF SAFETYING DEVICES
SOPM 20-60-02	FINISHING MATERIALS
SOPM 20-60-03	LUBRICANTS
SOPM 20-60-04	MISCELLANEOUS MATERIALS

C. Procedure

NOTE: For stripping for protective finishes, refer to SOPM 20-30-02. For decoding table for Boeing finishes, refer to SOPM 20-41-01. For bolt and nut installation, refer to SOPM 20-50-01. For finishing materials, refer to SOPM 20-60-02. For lubricants, refer to SOPM 20-60-03. For miscellaneous materials, refer to SOPM 20-60-04.

(1) Use standard industry procedures and these steps.

(2) Assemble the left tube assembly (360) (ASSEMBLY, Figure 701).

(a) Install cam arm (375) at 0.3400-0.3600 inch distance from one end of left barrel (425) with bolts (365) and collars (370).

(b) Install cam (400) on cam arm (375) with bolts (380, 385) washer (390) and collars (395).

(c) Install input crank (420) on left barrel (425) with bolt (410), collar (415) and rivets (405).

(3) Assemble the right tube assembly (170) (ASSEMBLY, Figure 702).

(a) Install input crank (350) on right barrel (355) with bolt (335), collar (340), and rivets (345).

(b) Install pulleys (295) on follower assembly (305) with bushing (300), bolt (280), washer (285) and nut (290).

(c) Install follower assembly (305) on support assembly (190) with bolt (250), washer (255), bushings (265, 275), bearing (270) and nut (260).

(d) Install clevis bolts (245) on support assembly (190) with washers (237) and nuts (240).

(e) Install pulleys (235) to clevis bolts (245) with bushings (230), bolts (210), washers (215, 220), and nuts (225).

(f) Install support assembly (190) on right barrel (355) with bolts (175), washers (180) and nuts (185).

(4) Assemble the column override assembly (120) (ASSEMBLY, Figure 703).

(a) Slide the jamnut (125) onto the right tube assembly (170).

(b) Install bearings (130, 140) and torque tube spacer (135) on right tube assembly (170) (flagnote 2).

(c) Install jamnut (145) on right tube assembly (170). Tighten jamnut (145) to 50-230 pound-inches over the run-on torque (flagnote 1).

(d) Install filler (155) on right tube assembly (170) with cap bolt (150) and nut (160).

(e) Slide right tube assembly (170) into left tube assembly (360). Tighten jamnut (125) to 50-230 pound-inches over the run-on torque (flagnote 1).

(f) Install lockwire, G50347 on jamnut (125) and the bolt (380) the double-twist method (SOPM 20-50-02).

(g) Install springs (165) on the pulleys (235, 295) with installed length of 5.50 inches. Adjust the locknuts on the spring hooks if necessary.

(5) Assemble the support assemblies (20, 25) (ASSEMBLY, Figure 704).

(a) Install quadrant assemblies (85, 90) on supports (80) with shoulder bolts (55), washers (60) and nuts (65).

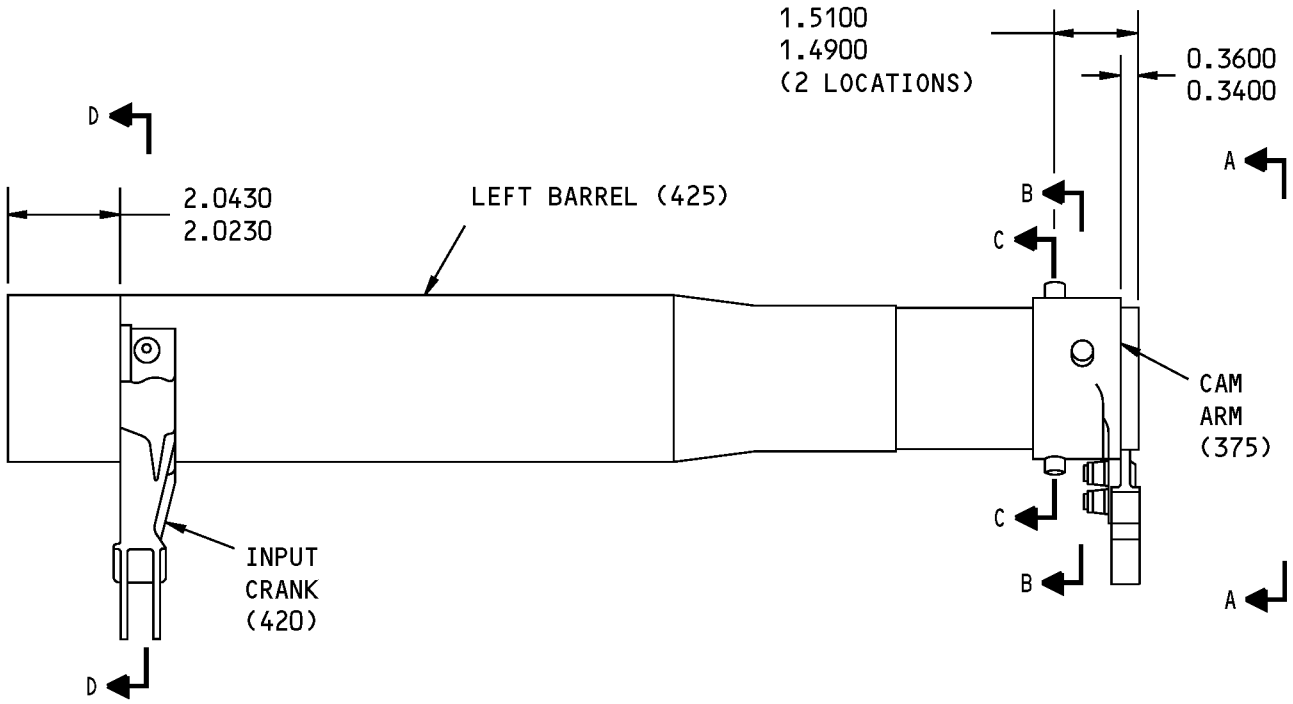
(b) Install links (75) into supports (80) and quadrant assemblies (85, 90) with pivots (50).

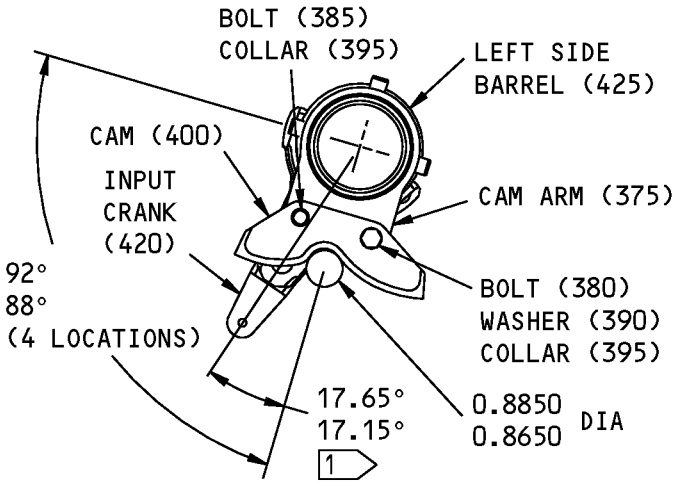
(c) Install link guards (70) on supports (80) and links (75) with screws (30), washers (35), nuts (40) and retainers (45).

(d) Install other screws (30), washers (35), nuts (40) and retainers (45) on quadrant assemblies (85, 90) and links (75). Tighten screws (30) to 40-47 pound-inches.

(e) Install support assemblies (20, 25) on column override assembly (120) with bolts (10), collars (15) and rivets (5).

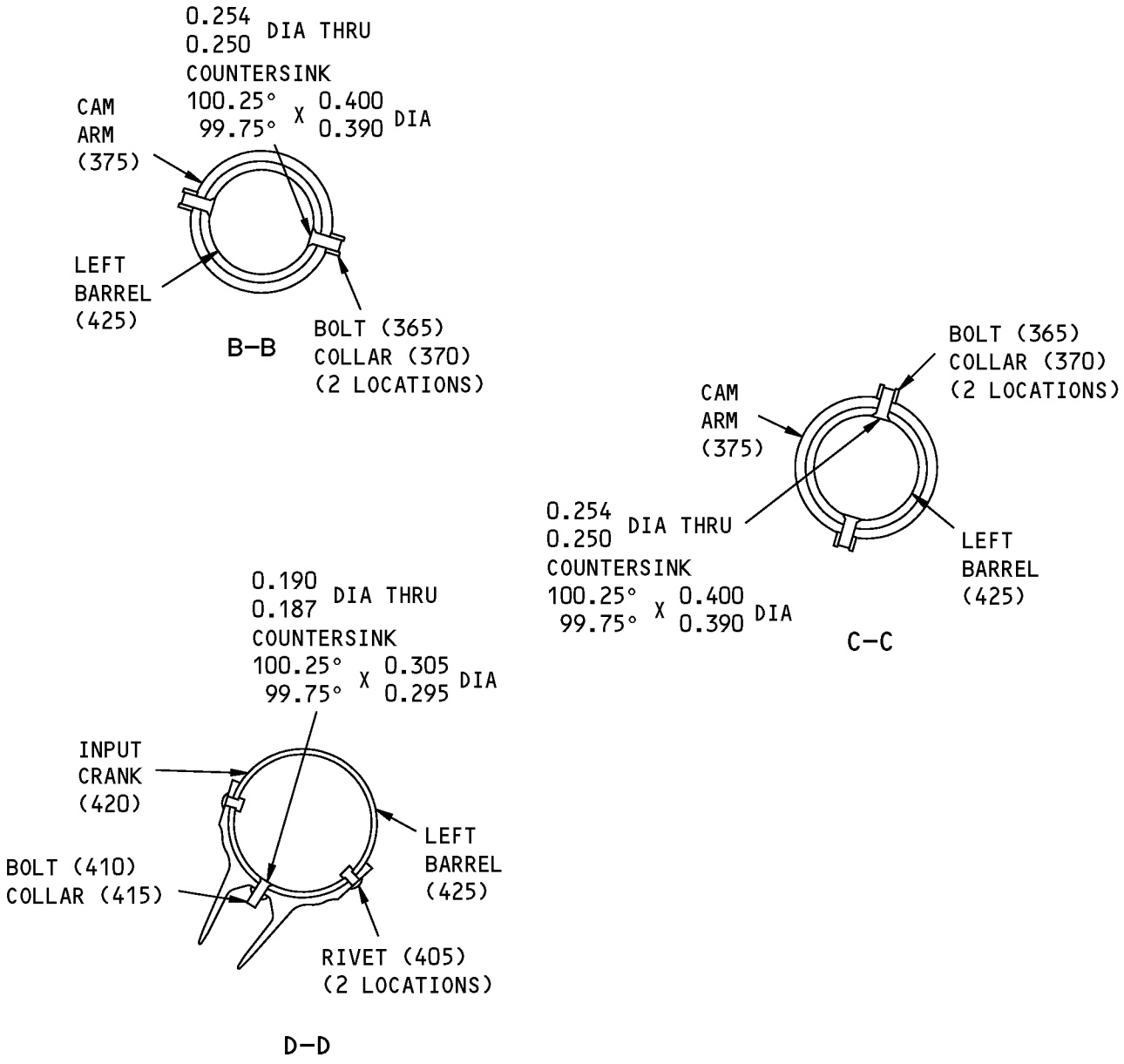
(6) Do a test of the quadrant assembly as specified in the TESTING AND FAULT ISOLATION.





A–A

Left Tube Assembly
Figure 701 (Sheet 1 of 2)

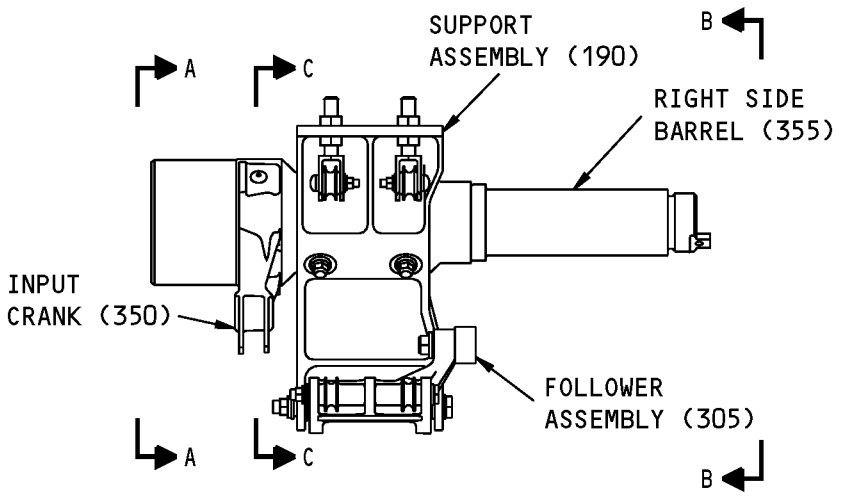


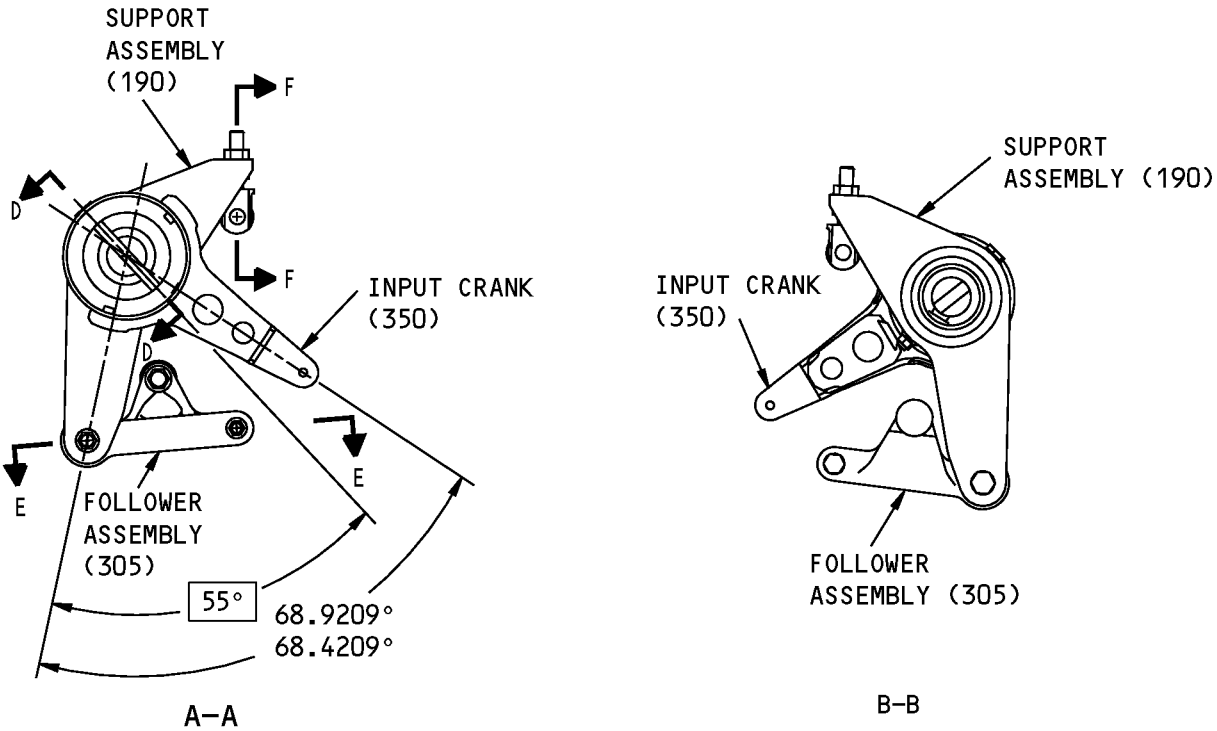
1 USE A 0.875 INCH DIAMETER BOSS TO LOCATE THE CAM RELATIVE TO THE CRANK AS SHOWN.

ITEM NUMBERS REFER TO IPL FIG. 1

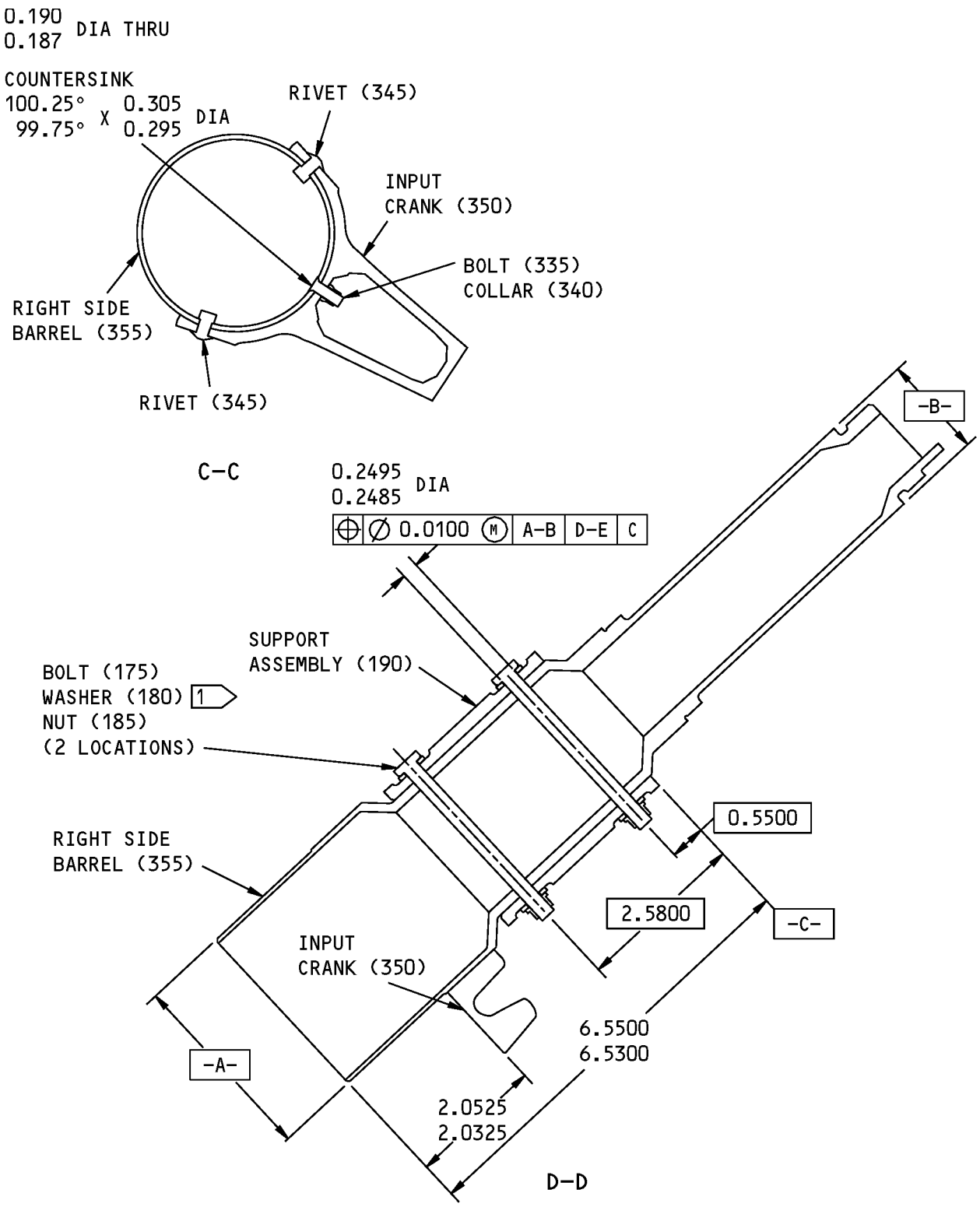
ALL DIMENSIONS ARE IN INCHES

Left Tube Assembly
Figure 701 (Sheet 2 of 2)

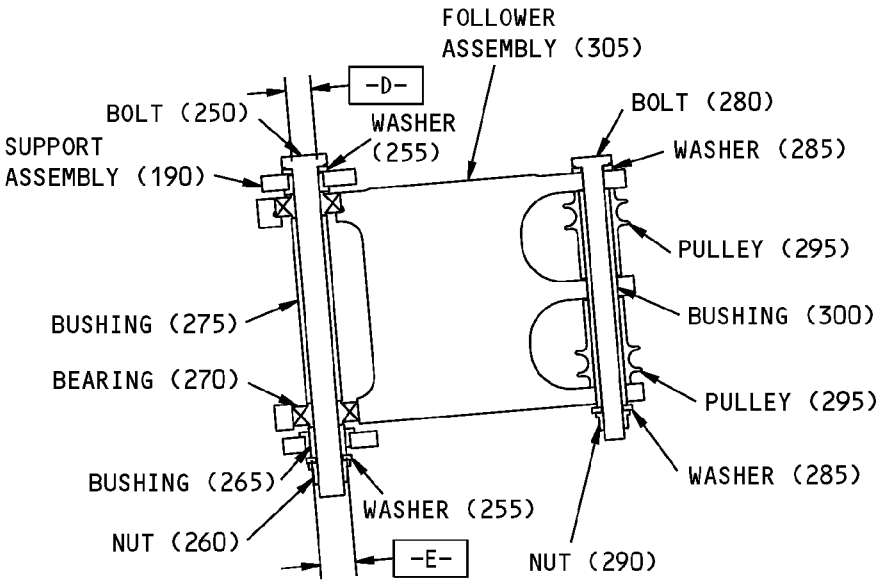




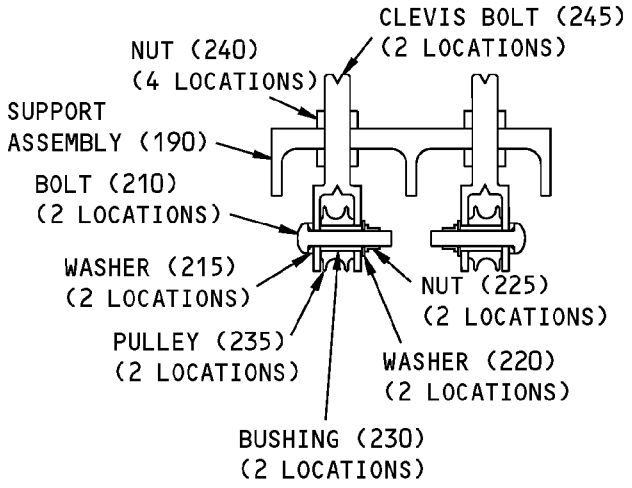
Right Tube Assembly
Figure 702 (Sheet 1 of 3)



Right Tube Assembly
Figure 702 (Sheet 2 of 3)



E-E



F-F

1 WASHER UNDER BOLTHEAD AND UNDER THE NUT

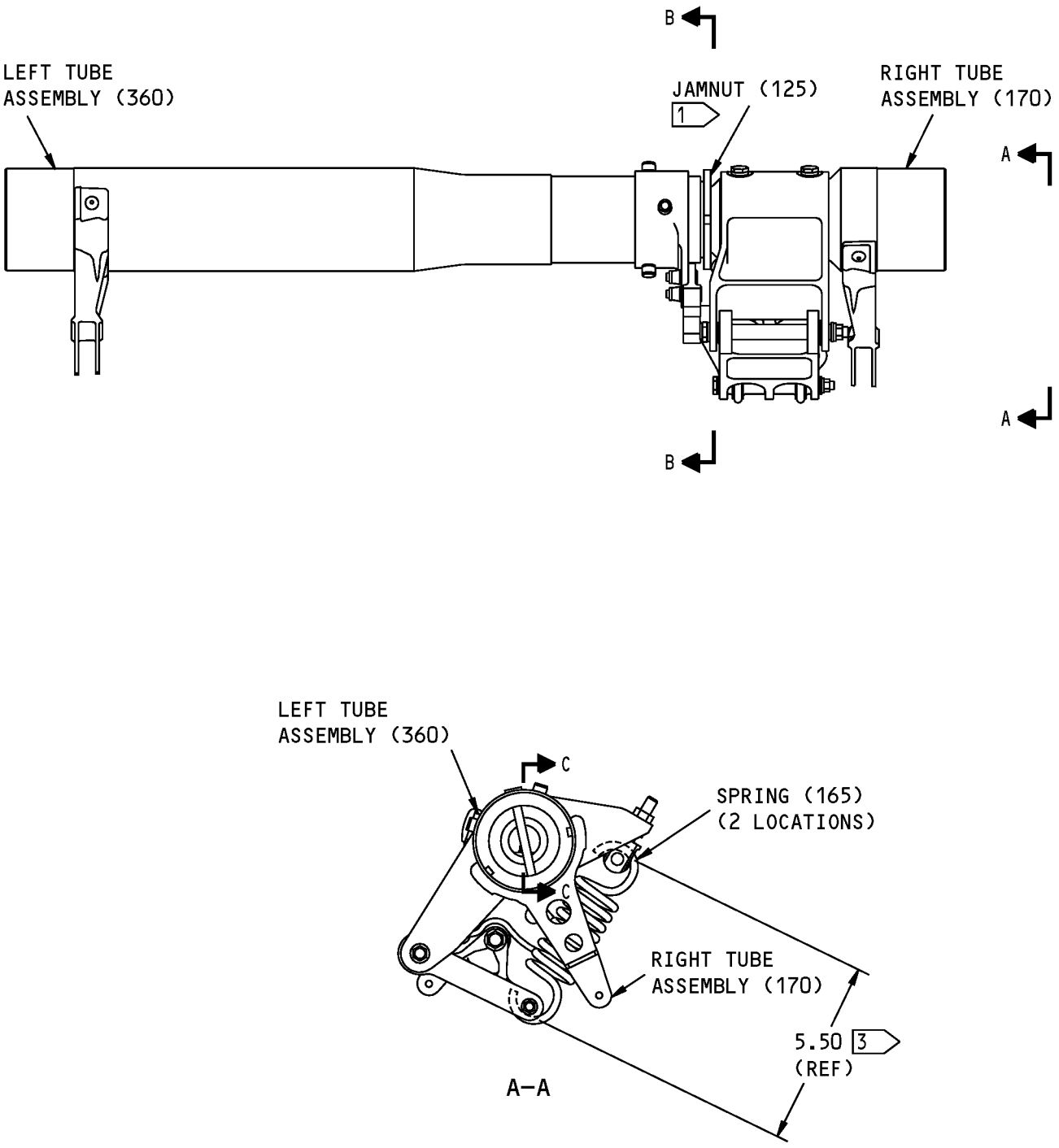
125 ALL MACHINED SURFACES UNLESS SHOWN DIFFERENTLY

BREAK ALL SHARP EDGES

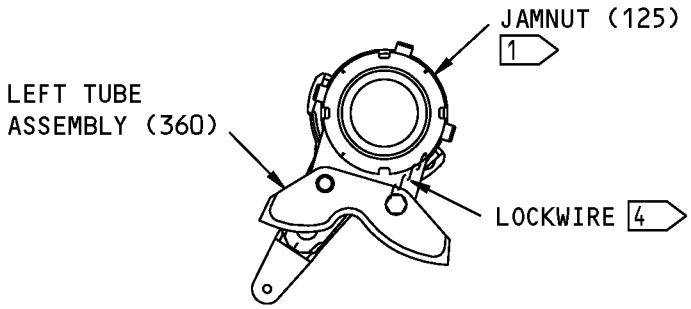
ITEM NUMBERS REFER TO IPL FIG. 1

ALL DIMENSIONS ARE IN INCHES

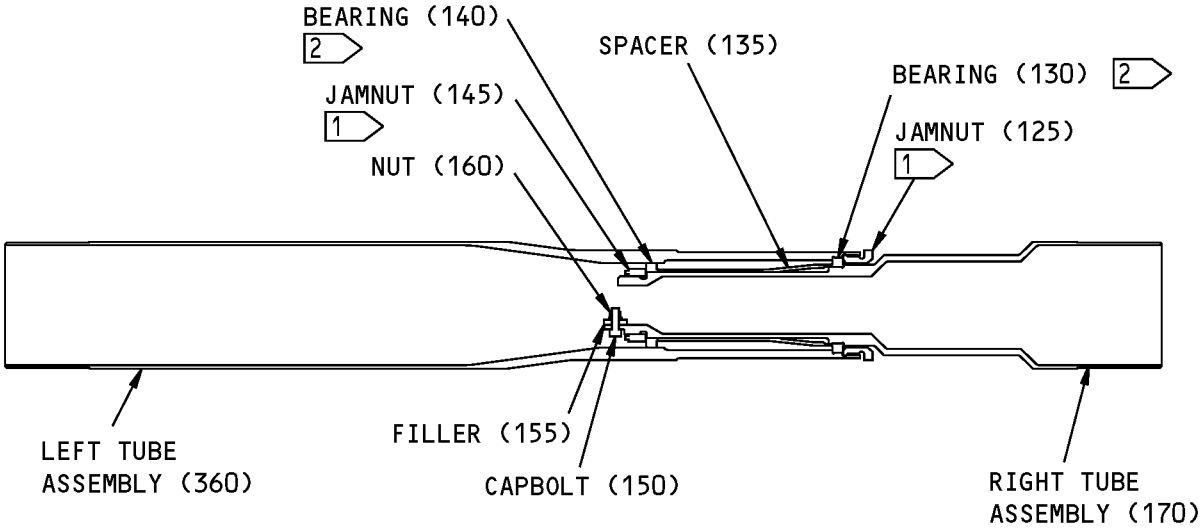
Right Tube Assembly
Figure 702 (Sheet 3 of 3)



Column Override Assembly
Figure 703 (Sheet 1 of 2)



B–B



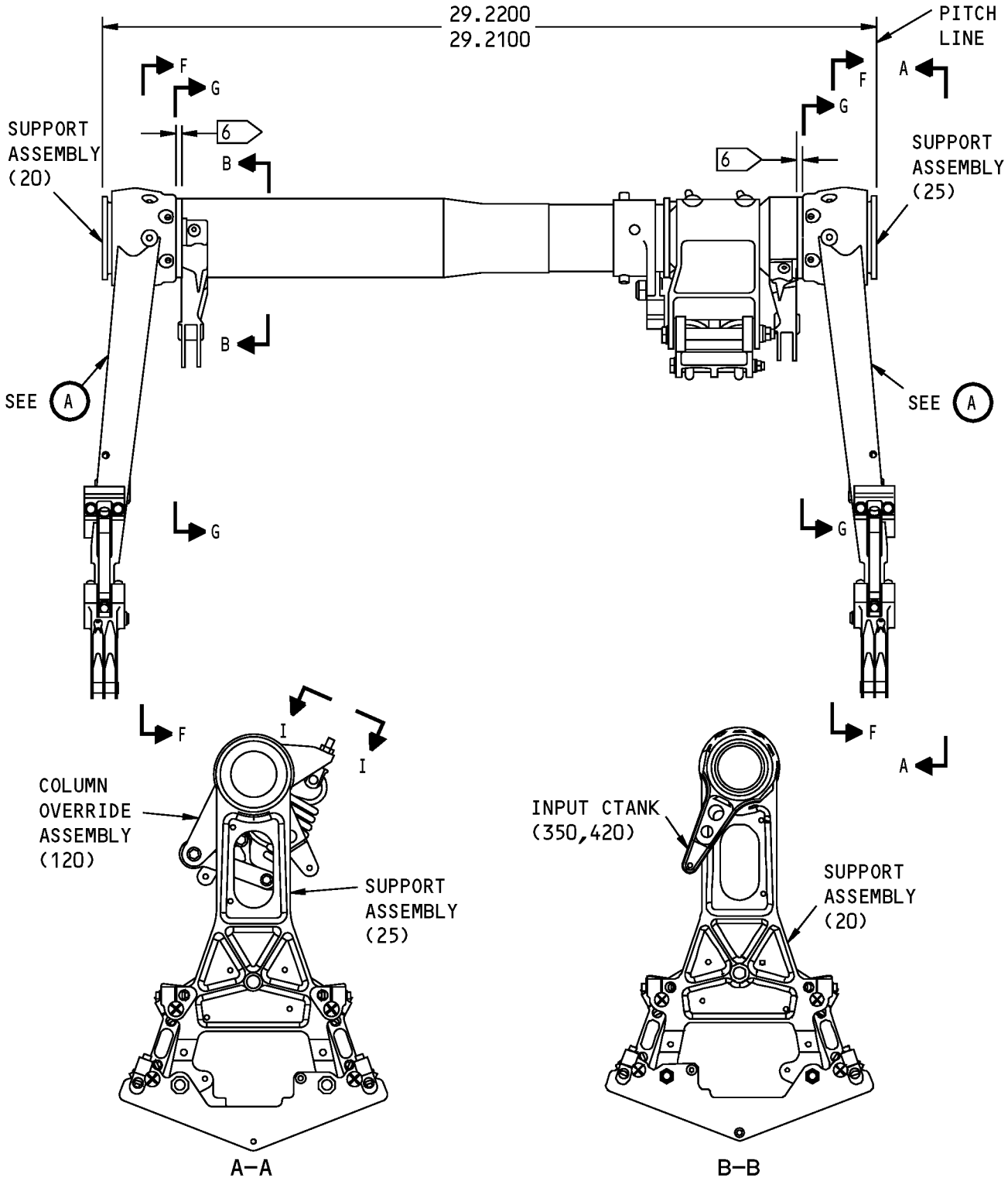
C–C 5

1. TIGHTEN THE JAMNUT TO WITHIN 50–230 IN-LBS OVER THE RUN-ON TORQUE.
2. INSTALL BEARING WITH BMS 3-33 GREASE AS SHOWN IN SOPM 20-50-03.
3. INSTALLED SPRING LENGTH IS 5.50 INCHES. ADJUST LOCKNUTS ON SPRINGHOOKS IF NECESSARY TO MEET THE INSTALLED LENGTH.
4. USE THE DOUBLE TWIST METHOD TO INSTALL THE LOCKWIRE AS SHOWN IN SOPM 20-50-02.
5. SUPPORT, CAM, AND CRANKS ARE NOT SHOWN FOR CLARITY.

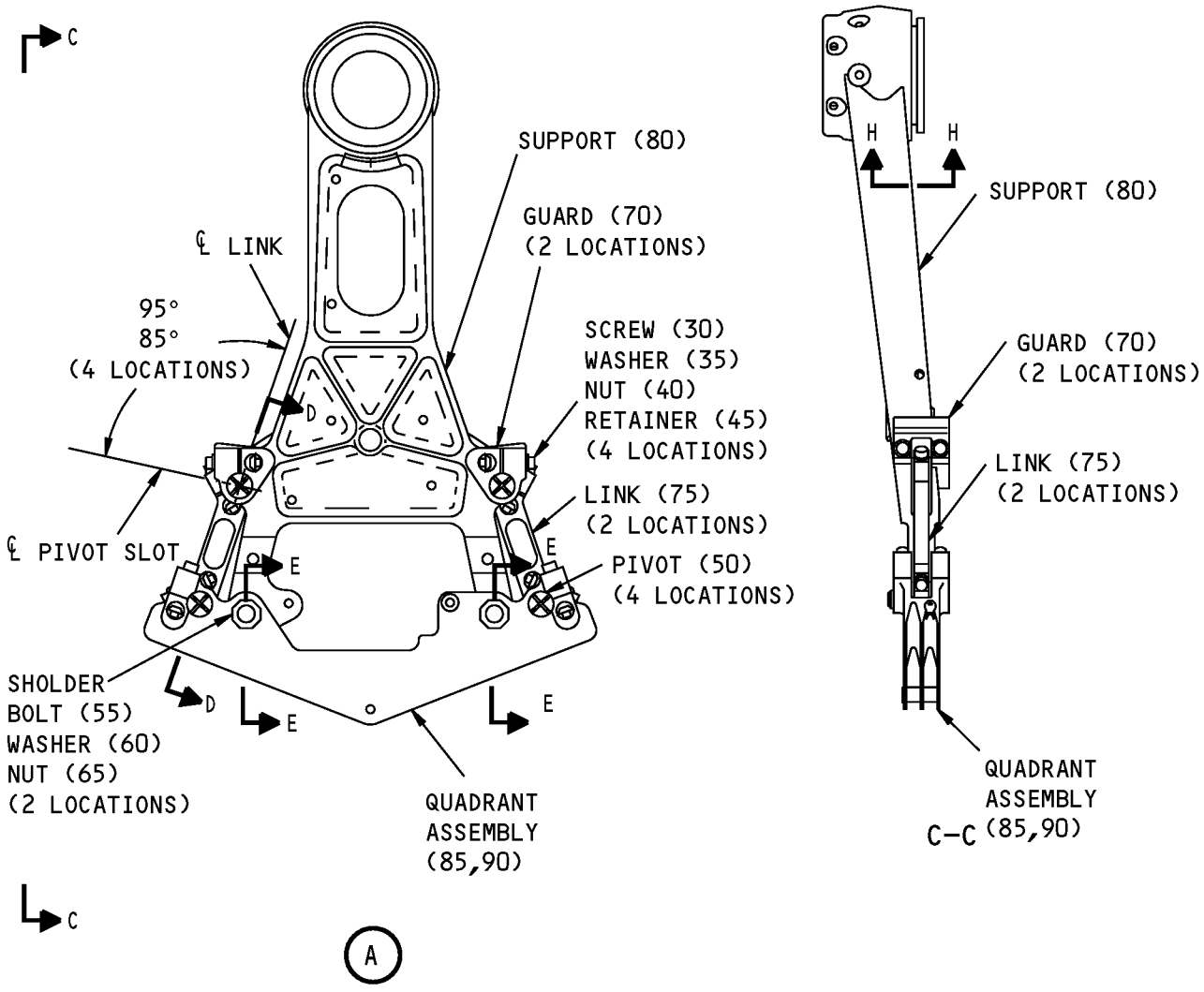
ITEM NUMBERS REFER TO IPL FIG. 1

ALL DIMENSIONS ARE IN INCHES

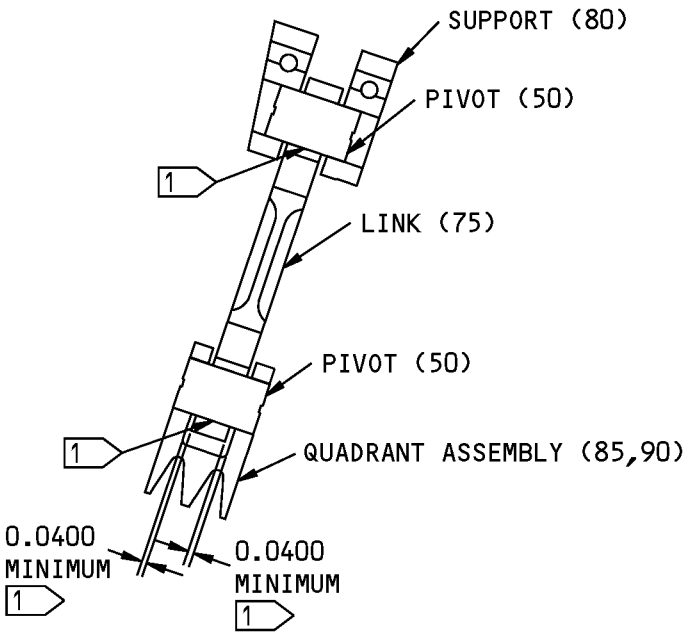
Column Override Assembly
Figure 703 (Sheet 2 of 2)



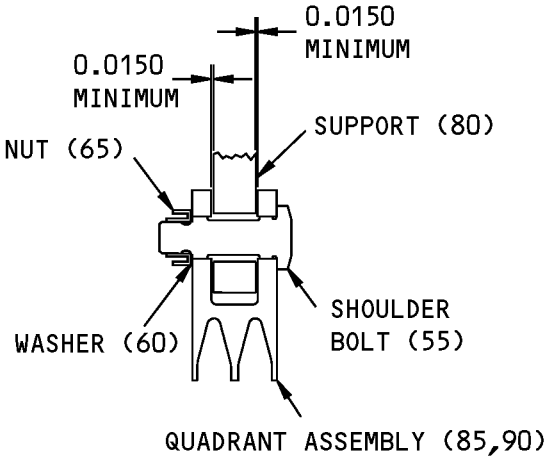
Elevator Controls Quadrant Assembly
Figure 704 (Sheet 1 of 5)



Elevator Controls Quadrant Assembly
Figure 704 (Sheet 2 of 5)

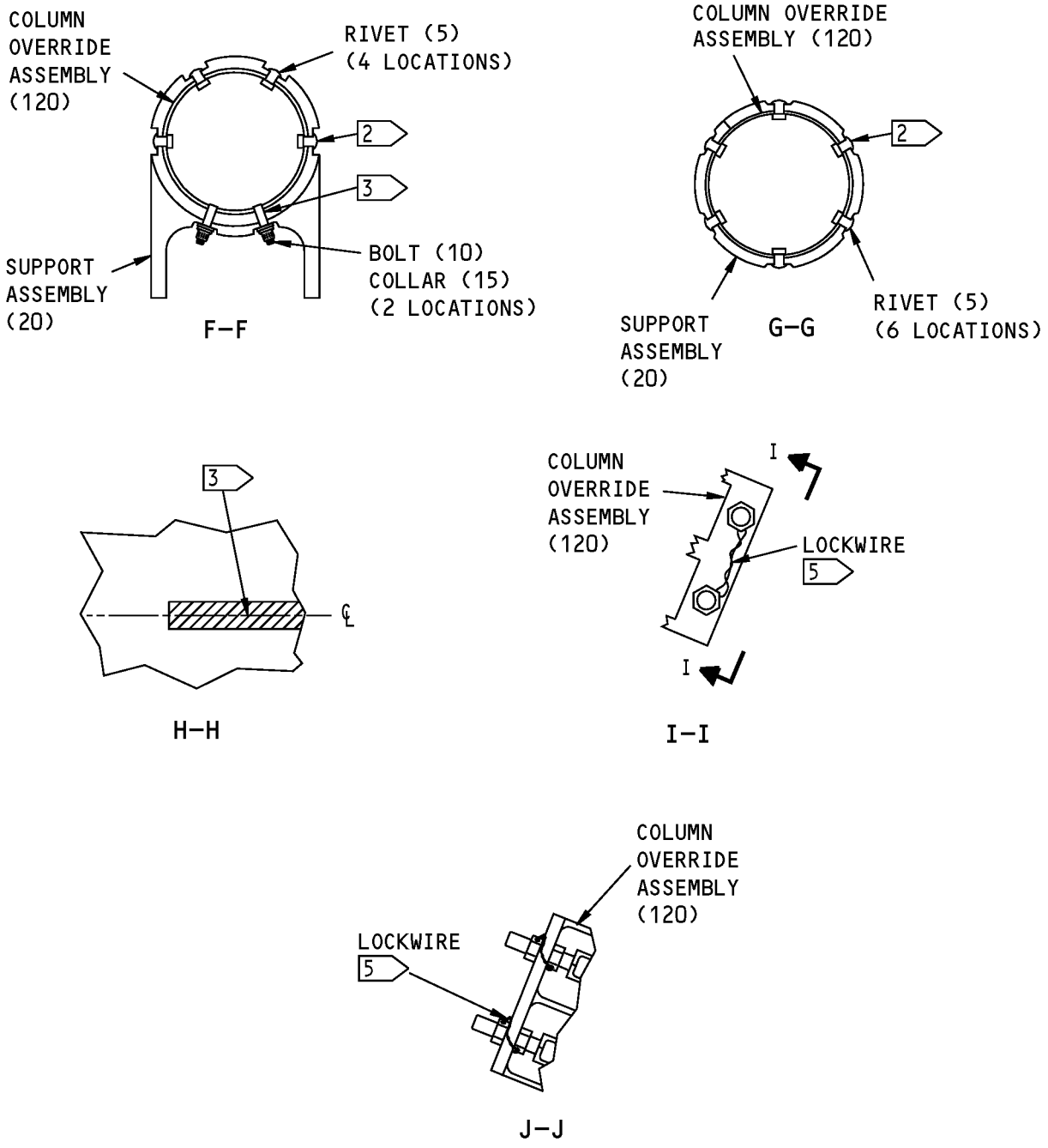


D–D



E–E

Elevator Controls Quadrant Assembly
Figure 704 (Sheet 3 of 5)



Elevator Controls Quadrant Assembly
Figure 704 (Sheet 4 of 5)

1 INSTALL PIVOT WITH WET BMS 10-11, TYPE I PRIMER (F-20.06) AS SHOWN IN SOPM 20-41-02. THEN APPLY MIL-C-11796, CLASS 3 CORROSION PREVENTIVE COMPOUND (F-19.11) TO ALL AREAS OF HOLE AS SHOWN IN SOPM 20-41-05. THIS INCLUDES COUNTERSINK, COUNTERBORE, OR OTHER RECESS AFTER THE PRIMER DRIES.

2 USE HOLES LOCATED ON THE SUPPORT TO INSTALL THE RIVETS.

3 DRILL 0.187-0.190 HOLE THROUGH THE COLUMN OVERRIDE ASSEMBLY, USE THE HOLES LOCATED ON THE SUPPORT. COUNTERSINK HOLE 100° x 0.2995-0.305 DIA ON THE INSIDE DIAMETER OF THE COLUMN OVERRIDE ASSEMBLY.

4 RUBBER STAMP AN AREA 1/2 TOOTH WIDE EITHER SIDE OF THE VALLEY WITH YELLOW INK AS SHOWN IN SOPM 20-50-10.

5 USE THE DOUBLE TWIST METHOD TO INSTALL THE LOCKWIRE AS SHOWN IN SOPM 20-50-02.

6 DISTANCES TO BE EQUAL ± 0.06 INCHES

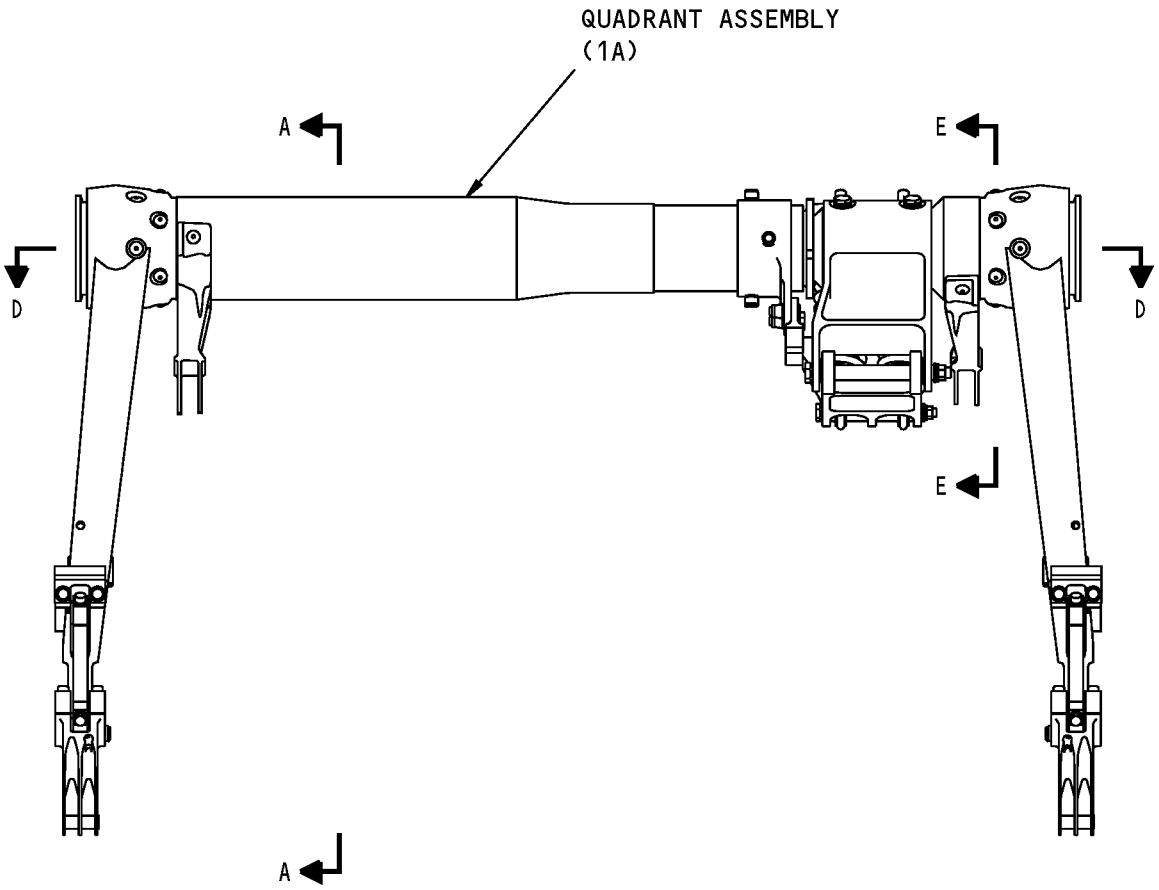
125 ALL MACHINED SURFACES UNLESS SHOWN DIFFERENTLY

BREAK ALL SHARP EDGES

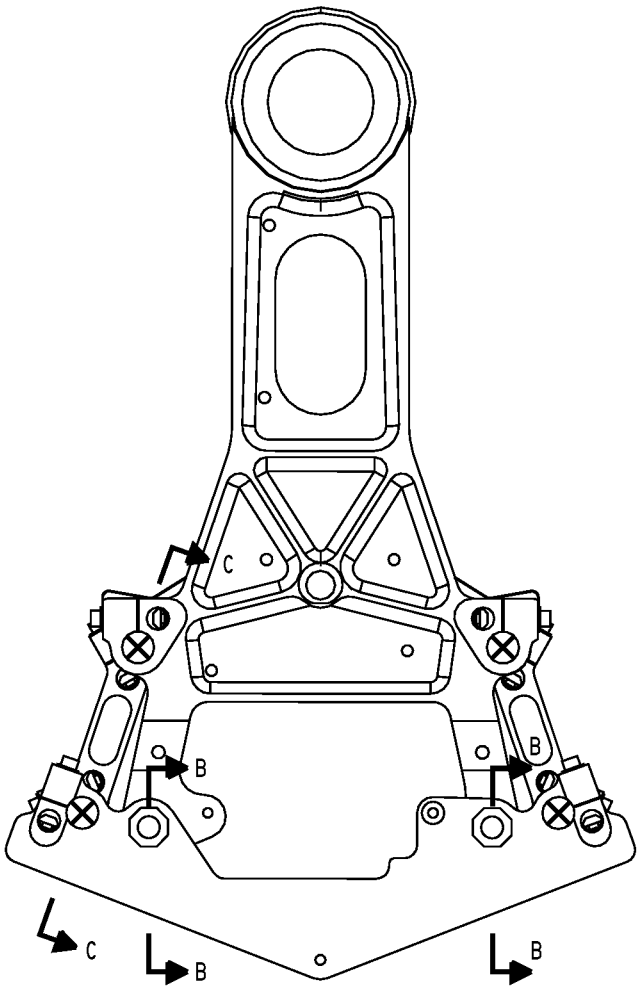
ITEM NUMBERS REFER TO IPL FIG. 1

ALL DIMENSIONS ARE IN INCHES

Elevator Controls Quadrant Assembly
Figure 704 (Sheet 5 of 5)

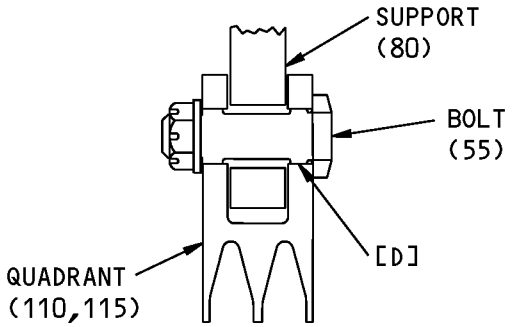


Fits and Clearances
Figure 801 (Sheet 1 of 7)

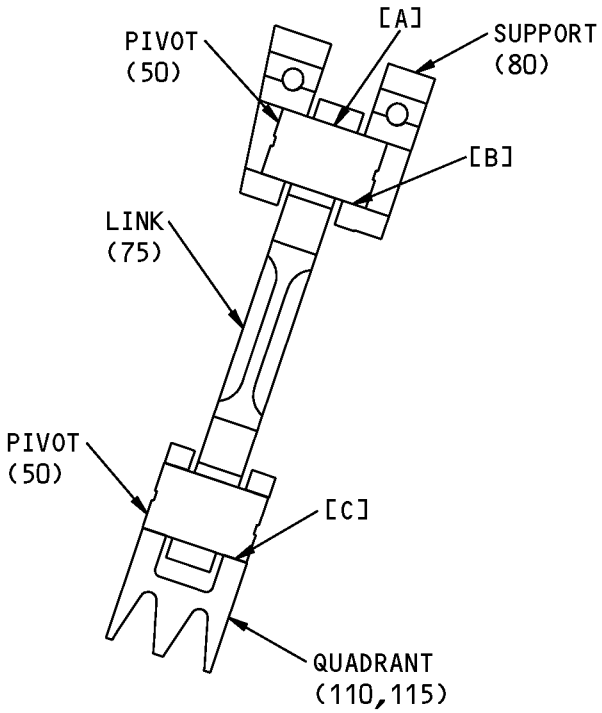


A–A

Fits and Clearances
Figure 801 (Sheet 2 of 7)

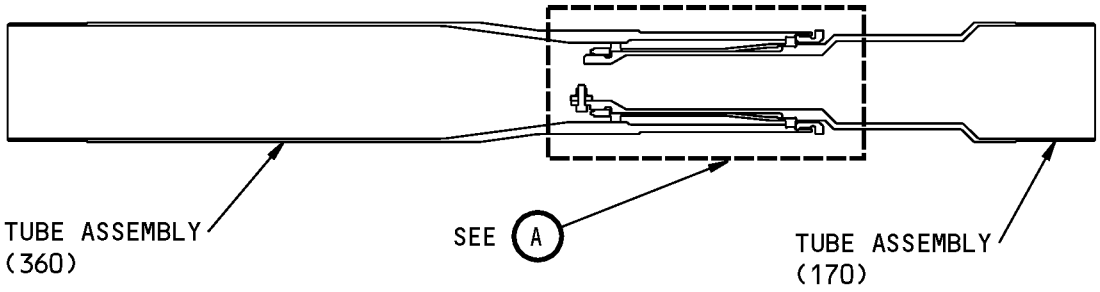


B–B

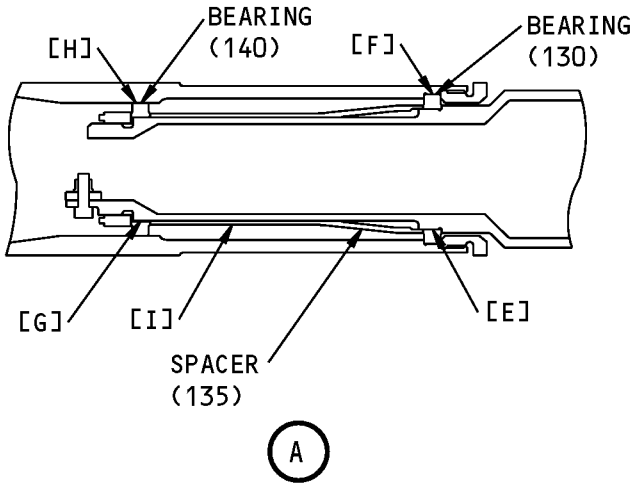


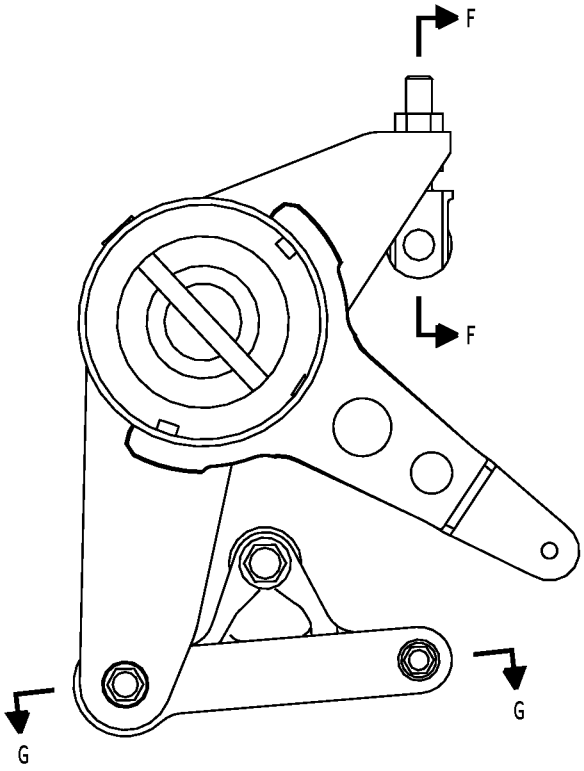
C–C

Fits and Clearances
Figure 801 (Sheet 3 of 7)



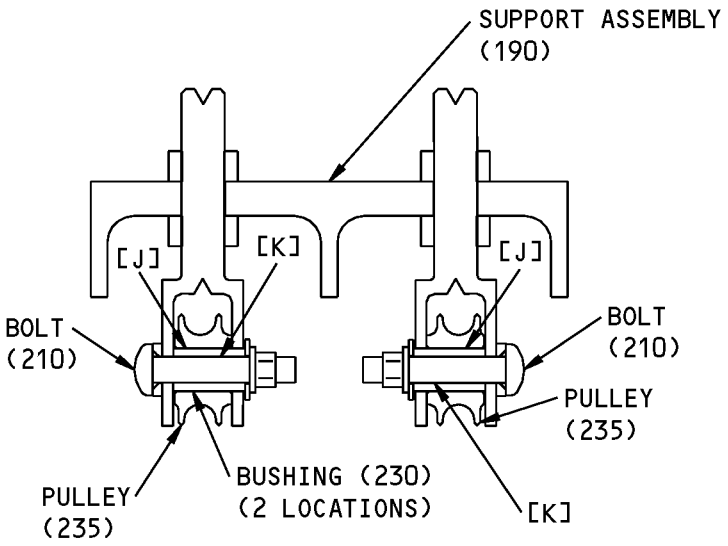
D–D



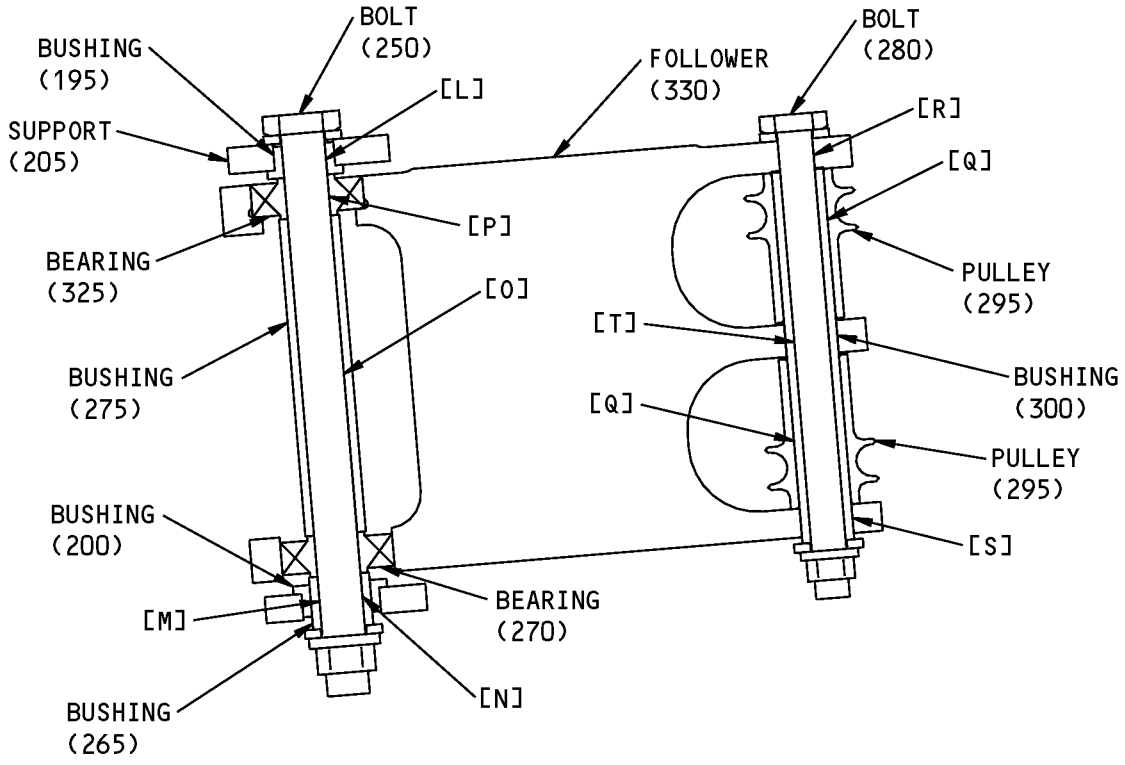


E–E

Fits and Clearances
Figure 801 (Sheet 4 of 7)



F–F



G–G

Fits and Clearances
Figure 801 (Sheet 5 of 7)

REF LETTER	REF IPL FIG. 1, MATING ITEM NO.		DESIGN DIMENSION*				SERVICE WEAR LIMIT*		
			DIMENSION		ASSEMBLY CLEARANCE [1]		DIMENSION		MAXIMUM CLEARANCE
			MIN	MAX	MIN	MAX	MIN	MAX	
[A]	ID	75	0.6253	0.6263	TBD	TBD			
	OD	50	TBD	TBD					
[B]	ID	80	0.6253	0.6263	TBD	TBD			
	OD	50	TBD	TBD					
[C]	ID	110,115	0.6253	0.6263	TBD	TBD			
	OD	50	TBD	TBD					
[D]	ID	110,115	0.4995	0.5005	0.0002	0.0022			
	OD	55	0.4983	0.4993					
[E]	ID	130	1.8117	1.8125	-0.0003	0.0015			
	OD	170	1.8110	1.8120					
[F]	ID	360	2.2500	2.2510	0.0000	0.0017			
	OD	130	2.2493	2.2500					
[G]	ID	140	1.5620	1.5625	0.0000	0.0015			
	OD	170	1.5610	1.5620					
[H]	ID	360	2.0000	2.0010	0.0000	0.0015			
	OD	140	1.9995	2.0000					
[I]	ID	135	1.5800	1.5900	0.0180	0.0290			
	OD	170	1.5610	1.5620					
[J]	ID	235	0.3120	0.3160	0.0000	0.0045			
	OD	230	0.3115	0.3120					
[K]	ID	230	0.1900	0.1905	0.0005	0.0015			
	OD	210	0.1890	0.1895					

Fits and Clearances
Figure 801 (Sheet 6 of 7)

REF LETTER	REF IPL FIG. 1, MATING ITEM NO.		DESIGN DIMENSION*				SERVICE WEAR LIMIT*		
			DIMENSION		ASSEMBLY CLEARANCE 1		DIMENSION		MAXIMUM CLEARANCE
			MIN	MAX	MIN	MAX	MIN	MAX	
[L]	ID	195	0.2970	0.3030	-0.0150	-0.0080			
	OD	250	0.3110	0.3120					
[M]	ID	200	0.4220	0.4280	-0.0150	-0.0085			
	OD	265	0.4365	0.4370					
[N]	ID	265	0.3125	0.3130	0.0005	0.0020			
	OD	250	0.3110	0.3120					
[O]	ID	275	0.3125	0.3130	0.0005	0.0020			
	OD	250	0.3110	0.3120					
[P]	ID	325	0.3122	0.3125	0.0002	0.0005			
	OD	250	0.3110	0.3120					
[Q]	ID	295	0.3750	0.3790	0.0005	0.0050			
	OD	300	0.3740	0.3745					
[R]	ID	330	0.2500	0.2540	0.0005	0.0055			
	OD	280	0.2485	0.2495					
[S]	ID	330	0.3750	0.3790	0.0005	0.0050			
	OD	300	0.3740	0.3745					
[T]	ID	300	0.2500	0.2505	0.0005	0.0020			
	OD	280	0.2485	0.2495					

* ALL DIMENSIONS ARE IN INCHES

1 NEGATIVE VALUES INDICATE INTERFERENCE FIT

Fits and Clearances
Figure 801 (Sheet 7 of 7)

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-5392	Elevator Controls Quadrant Assembly Test Equipment	C27073-1	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
06144	INDUSTRIAL TECTONICS BEARING CORP 18301 SOUTH SANTA FE AVENUE RANCHO DOMINGUEZ, CALIFORNIA 90221 FORMERLY IN COMPTON, CALIFORNIA
06725	AIR INDUSTRIES CORPORATION 12570 KNOTT STREET GARDEN GROVE, CALIFORNIA 92641-3932 FORMERLY AIR INDUSTRIES OF CALIF IN GARDENA, CALIF.
07484	ACCURATE BUSHING CO INC 443 NORTH AVENUE GARWOOD, NEW JERSEY 07027-1014 FORMERLY V83132 SMITH BRG DIV OF ACCURATE BUSHING CO
0PTK6	SPS TECHNOLOGIES INC AEROSPACE PRODUCTS DIV 5195 W 4700 SALT LAKE CITY, UTAH 94118 SEE V56878 SPS TECHNOLOGIES INC
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
17446	HUCK INTL INC AEROSPACE FASTENER DIV 900 WATSON CENTER ROAD CARSON, CALIFORNIA 90745-4201 FORMERLY V32134 REXNORD INC; FORMERLY V97928 HUCK INTL

Code	Name
21335	TIMKEN US CORPORATION DIV FAFNIR 336 MECHANIC STREET LEBANON, NH 03766-0267 FORMERLY FAFNIR BRG AND TEXTRON INC FAFNIR DIV IN NEW BRITAIN, CONNECTICUT ; FORMERLY TORRINGTON CO THE SPECIAL PRODUCTS DIV SUB OF THE INGERSOLL-RAND CO V8D210 FORMERLY TORRINGTON CO FAFNIR BEARING DIV IN TORRINGTON, CT
21760	SCHATZ BEARING CORP 10 FAIRVIEW AVENUE PO BOX 1191 POUGHKEEPSIE, NEW YORK 12601-1312 FORMERLY FEDERAL BRG CO AND SCHATZ MFG CO V53268 FORMERLY SCHATZ MFG CO
38443	MRC BEARINGS 402 CHANDLER STREET JAMESTOWN, NEW YORK 14701-3802 FORMERLY MARLIN-ROCKWELL CORP DIV TRW AND TRW INC
40920	MPB MINIATURE PRECISION BEARING DIV PRECISION PARK PO BOX 547 KEENE, NEW HAMPSHIRE 03431 FORMERLY MPB CORP AND MINIATURE BRG DIV MPB CORP
43991	FAG BEARING INCORPORATED 118 HAMILTON AVENUE STAMFORD, CONNECTICUT 06904 FORMERLY NORMA-HOFFMAN BEARING CORPORATION FORMERLY NORMA FAG BEARINGS CORPORATION
52828	REPUBLIC FASTENER MFG CORP 1300 RANCHO CONEJO BLVD NEWBURY PARK, CALIFORNIA 91320-1405 FORMERLY IN SYLMAR, CALIFORNIA
56878	SPS TECHNOLOGIES INC AEROSPACE AND INDUSTRIAL PRODUCTS DIV 301 HIGHLAND AVE JENKINTOWN, PENNSYLVANIA 19046 FORMERLY STANDARD PRESSED STEEL FORMERLY IN SALT LAKE, UTAH

Code	Name
5M902	ALCOA GLOBAL FASTENERS INC, DIV OF VOI-SHAN PRODUCTS 3000 W LOMITA BLVD TORRANCE, CALIFORNIA 90505-5103 FORMERLY FAIRCHILD INC INC FAIRCHILD AEROSPACE FASTENERS DIV
60380	TORRINGTON CO BEARINGS DIV SUBSIDIARY OF INGERSOLL-RAND CORP 59 FIELD STREET PO BOX 1008 TORRINGTON, CONNECTICUT 06790-1008 FORMERLY TORRINGTON BEARING COMPANY
60516	WEST COAST AEROSPACE INC 812 MIRAFLORES STREET SAN PEDRO, CALIFORNIA 90731-1439
62554	SIMMONDS MECAERO FASTENERS INC 1734 SEQUOIA AVENUE ORANGE, CALIFORNIA 92668
72962	HARVARD INDUSTRIES INC 3 WERNER WAY SUITE 210 LEBANON, NEW JERSEY 08833 FORMERLY ESNA V7A079 FORMERLY ELASTIC STOP NUT IN UNION, NJ
73197	HI-SHEAR TECHNOLOGY CORP 2600 SKYPARK DRIVE TORRANCE, CALIFORNIA 90509
83086	NEW HAMPSHIRE BALL BEARING, INC HITECH DIVISION 172 JAFFREY ROAD 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

Code	Name
97393	SHUR-LOK CORPORATION 2541 WHITE ROAD PO BOX 19584 IRVINE, CALIFORNIA 92623-9584 FORMERLY SHUR LOK CORP VB0060 FORMERLY IN SANTA ANA, CALIFORNIA 92714
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
99551	GOODRICH CORP, DBA GOODRICH CORP DIV GOODRICH 104 OTIS STREET ROME, NEW YORK 13441-4714 FORMERLY BENDIX CORP THE UTICA DIDISION
K8455	RHP BEARINGS PLC RHP AEROSPACE OLDENDS LANE STONEHOUSE GL10 3RM UK

NUMERICAL INDEX

PART NUMBER	AIRLINE PART NUMBER	FIGURE	ITEM	UNITS PER ASSEMBLY
251A2185-1		1	120	1
251A2186-1		1	170	1
251A2187-1		1	360	1
251A2188-1		1	425	1
251A2189-1		1	355	1
251A2191-1		1	400	1
251A2192-1		1	375	1
251A2193-1		1	190	1
251A2193-2		1	205	1
251A2194-1		1	305	1
251A2194-2		1	330	1
251A2195-1		1	165	2
251A2196-1		1	1A	RF
251A2196-2		1	1B	RF
251A2197-1		1	20	1
251A2197-2		1	25	1
251A2197-3		1	20A	1
251A2197-4		1	25A	1
251N1084-1		1	135	1
251N1115-1		1	125	1
251T3741-41		1	300A	1
253W2314-2		1	245	2
253W2316-1		1	235	2
253W2316-2		1	295	2
3SLCC8		1	370	4
		1	370	4
6020-400		1	50A	4
6020-400X		1	50	4
65-52995-13		1	80	1
65-53397-4		1	75	2
65-53592-1		1	85	1
65-53592-2		1	90	1
65-53592-3		1	110	1
65-53592-4		1	115	1

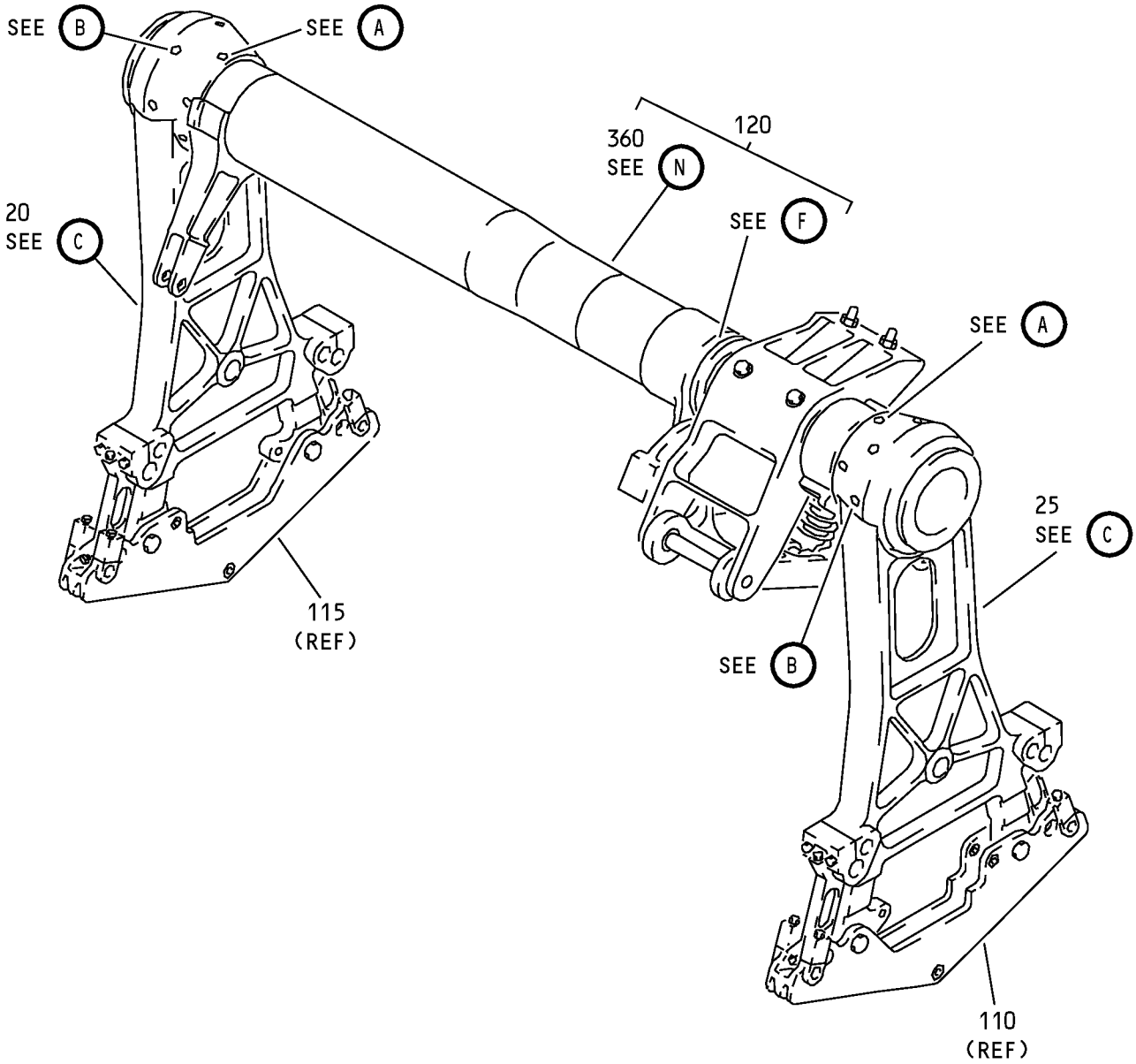
PART NUMBER	AIRLINE PART NUMBER	FIGURE	ITEM	UNITS PER ASSEMBLY
65C25546-1		1	350	1
		1	420	1
65C25546-2		1	350A	1
		1	420A	1
66-12478-11		1	155	1
66014-8		1	395	2
69-40263-1		1	55	2
69-40263-2		1	55A	2
69-60170-1		1	70	2
8065-02RET		1	45	12
82631-2212		1	145	1
94263-1032		1	40	12
ACMB543DDP818LY		1	140	1
ACMB544DDP818LY		1	130	1
ACMKP5AP510LY19		1	270	1
		1	325	1
B30MY8K7		1	385	1
BACB10AS25		1	140A	1
BACB10AS29		1	130A	1
BACB10FK6K8HS		1	310A	1
BACB10FK6N8HS		1	310	1
BACB10FS5		1	270	1
		1	325	1
BACB10FU25		1	140	1
BACB10FU29		1	130	1
BACB28AK03-052		1	230	2
BACB28AK05-038		1	265	1
BACB28AK05-230		1	275	1
BACB28AT05B017C		1	195	1
BACB28AT07B017C		1	200	1
BACB28BA0406270		1	300	1
BACB28X3D45		1	105	2
BACB30LJ4-43		1	175	2
BACB30LK3-11		1	210	2
BACB30MY8K7		1	385	1

PART NUMBER	AIRLINE PART NUMBER	FIGURE	ITEM	UNITS PER ASSEMBLY
BACB30NR4HK8		1	380	1
BACB30NR4K48		1	280	1
BACB30VU6K4		1	335	1
		1	410	1
BACB30VU6K8		1	10	4
BACB30VU8K6		1	365A	4
BACB30XT8K6		1	365	4
BACC30BK8		1	370	4
BACC30BL6		1	15	4
		1	340	1
		1	415	1
BACC30BL8		1	370A	4
BACC30M8		1	395	2
BACN10HC3		1	40	12
BACN10JC6CD		1	65	2
BACN10RF22		1	145	1
BACN10YR08CD		1	160	1
BACN10YR3CD		1	225	2
BACN10YR4CD		1	185	2
		1	290	1
BACN10YR5CD		1	260	1
BACN10YR6CD		1	320	1
BACR10V3R		1	45	12
BACR15BB6D		1	5	20
		1	345	2
		1	405	2
BACW10BP3CD		1	215	2
BR9080-22		1	145	1
BRH10C6D		1	65	2
CHRS4CTKR8		1	310A	1
		1	310A	1
H51650-6BAC		1	65	2
H52732-08CD		1	160	1
H52732-3CD		1	225	2
H52732-4CD		1	185	2

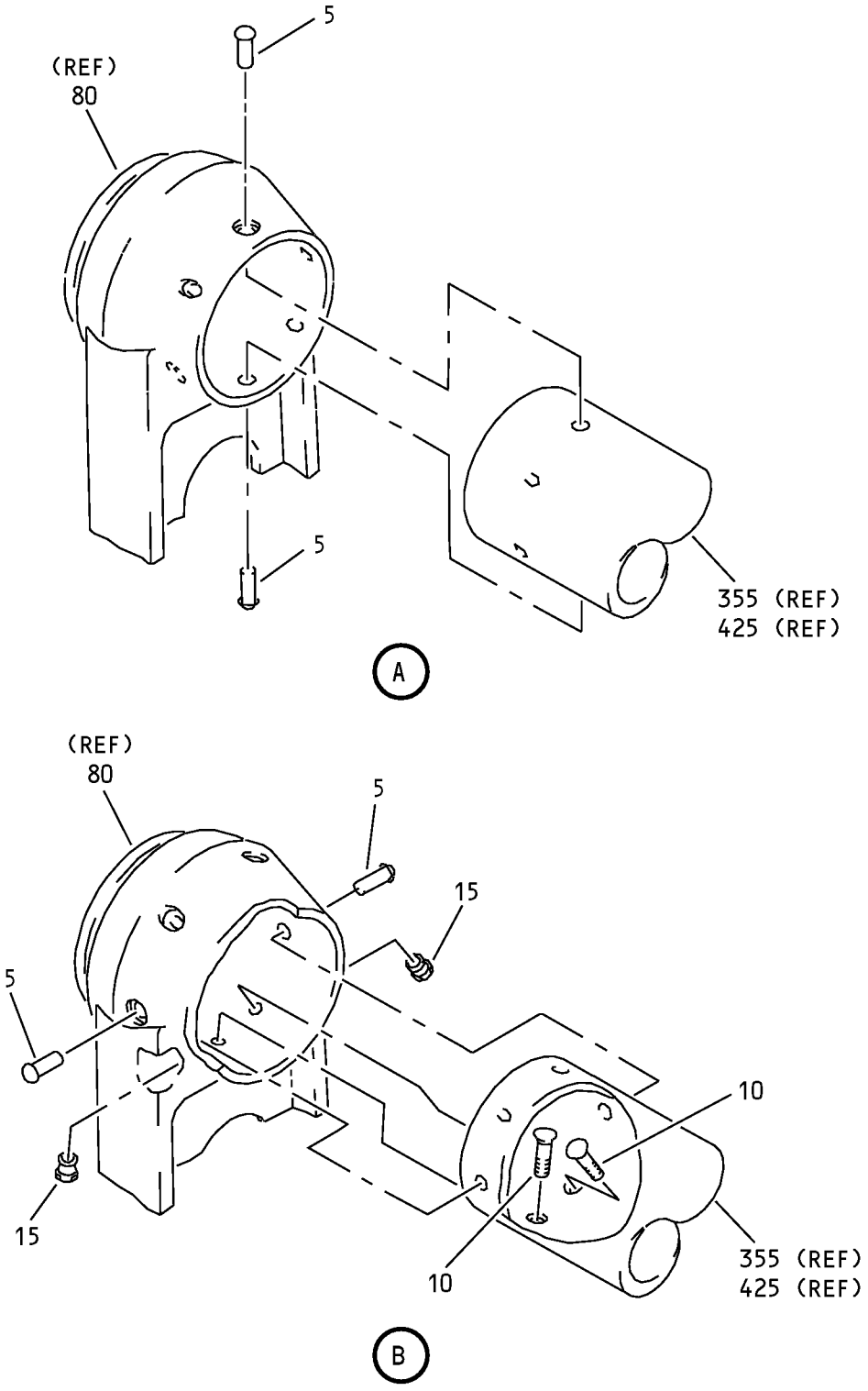
PART NUMBER	AIRLINE PART NUMBER	FIGURE	ITEM	UNITS PER ASSEMBLY
		1	290	1
H52732-5CD		1	260	1
H52732-6CD		1	320	1
HL10VAZ8-7		1	385	1
HL79-8		1	395	2
		1	395	2
		1	395	2
		1	395	2
HRSC4CTKR8		1	310A	1
HST11AG6-4		1	335	1
		1	335	1
		1	335	1
		1	335	1
		1	410	1
		1	410	1
		1	410	1
		1	410	1
HST11AG6-8		1	10	4
		1	10	4
		1	10	4
		1	10	4
HST11AG8-6		1	365A	4
		1	365A	4
		1	365A	4
		1	365A	4
HST79-6		1	15	4
		1	15	4
		1	15	4
		1	340	1
		1	340	1
		1	340	1
		1	415	1
		1	415	1
		1	415	1
HST79-8		1	370A	4

PART NUMBER	AIRLINE PART NUMBER	FIGURE	ITEM	UNITS PER ASSEMBLY
		1	370A	4
		1	370A	4
HST79CY6		1	15	4
		1	340	1
		1	415	1
HST79CY8		1	370A	4
LH8065-02		1	40	12
LLMB543		1	140A	1
LLMB544		1	130A	1
MB541DDSD610		1	140A	1
MB543-2TS		1	140A	1
MB543DD		1	140A	1
MB543DDFS428		1	140A	1
MB543DDG20		1	140A	1
MB543DDLY196		1	140A	1
MB543DDNJC		1	140A	1
MB543TT		1	140A	1
MB544-2TS		1	130A	1
MB544DD		1	130A	1
MB544DDFS428		1	130A	1
MB544DDG20		1	130A	1
MB544DDLY196		1	130A	1
MB544DDNJC		1	130A	1
MB544DDSD610		1	130A	1
MB544TT		1	130A	1
MS20470A6		1	95	1
MT343E		1	140A	1
MT344E		1	130A	1
NAS1149D0332J		1	35	12
NAS1149D0463J		1	180	4
		1	285	2
		1	390	1
NAS1149D0516J		1	237	4
NAS1149D0563J		1	255	2
NAS1149D0616J		1	60	2

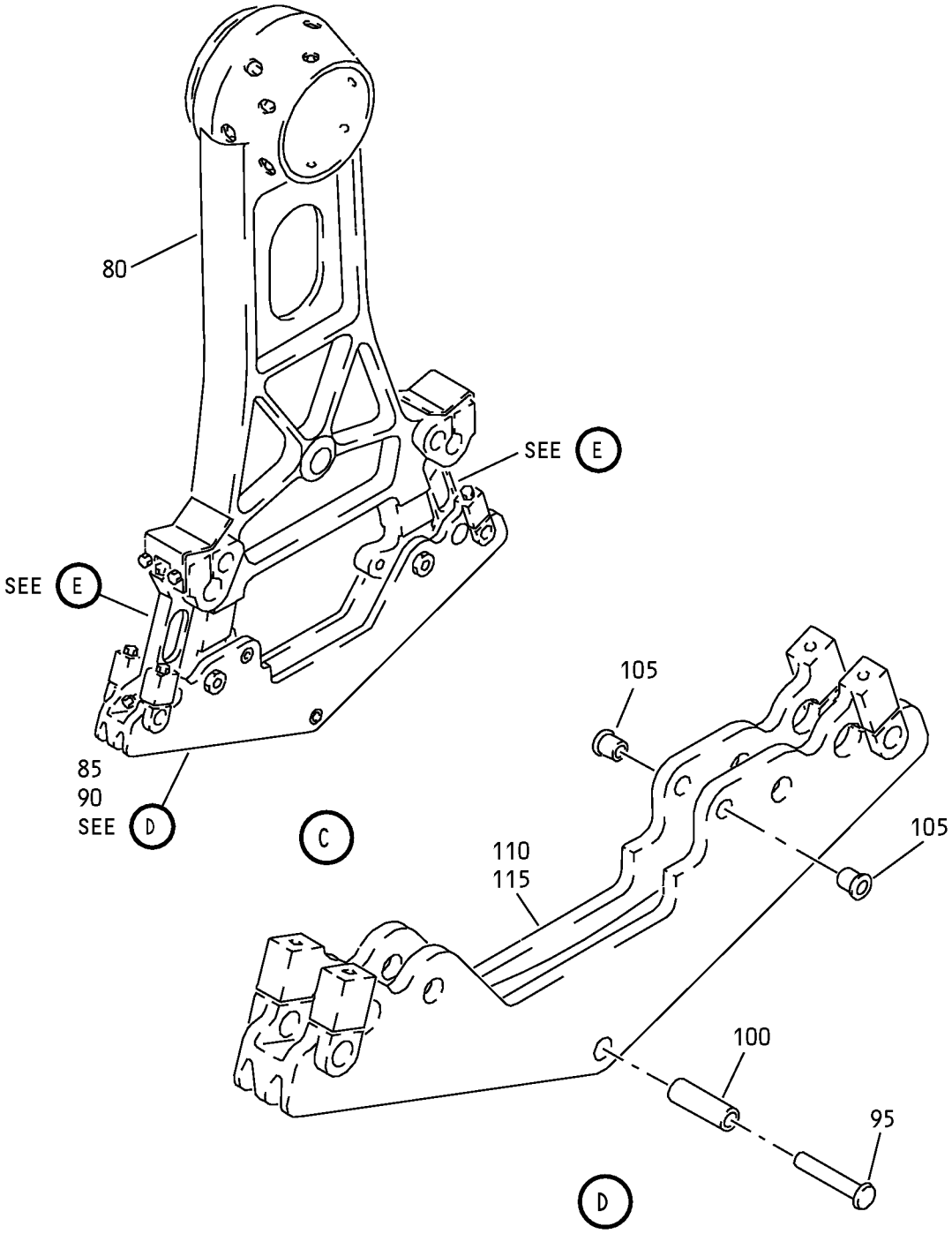
PART NUMBER	AIRLINE PART NUMBER	FIGURE	ITEM	UNITS PER ASSEMBLY
NAS1149D0632J		1	315	1
NAS1149E0332P		1	220	2
NAS1351N3-20P		1	30	12
NAS1352N08-8P		1	150	1
NAS42DD6-62		1	100	1
NAS509-5		1	240	4
NAS6705-58		1	250	1
PACMB543DDA3908		1	140	1
PACMB543DDFS428		1	140	1
PACMB544DDA3908		1	130	1
PACMB544DDFS428		1	130	1
PACMKP5AA3908		1	270	1
		1	325	1
PACMKP5AFS428		1	270	1
		1	325	1
PLH508CD		1	160	1
PLH53CD		1	225	2
PLH54CD		1	185	2
		1	290	1
PLH55CD		1	260	1
PLH56CD		1	320	1
SL2822-22		1	145	1
SL414-3		1	40	12
SSMB543DDSD705		1	140	1
SSMB544DDSD705		1	130	1
SSMKP5AP		1	270	1
		1	325	1
SSMKP5ASD705		1	270	1
		1	325	1



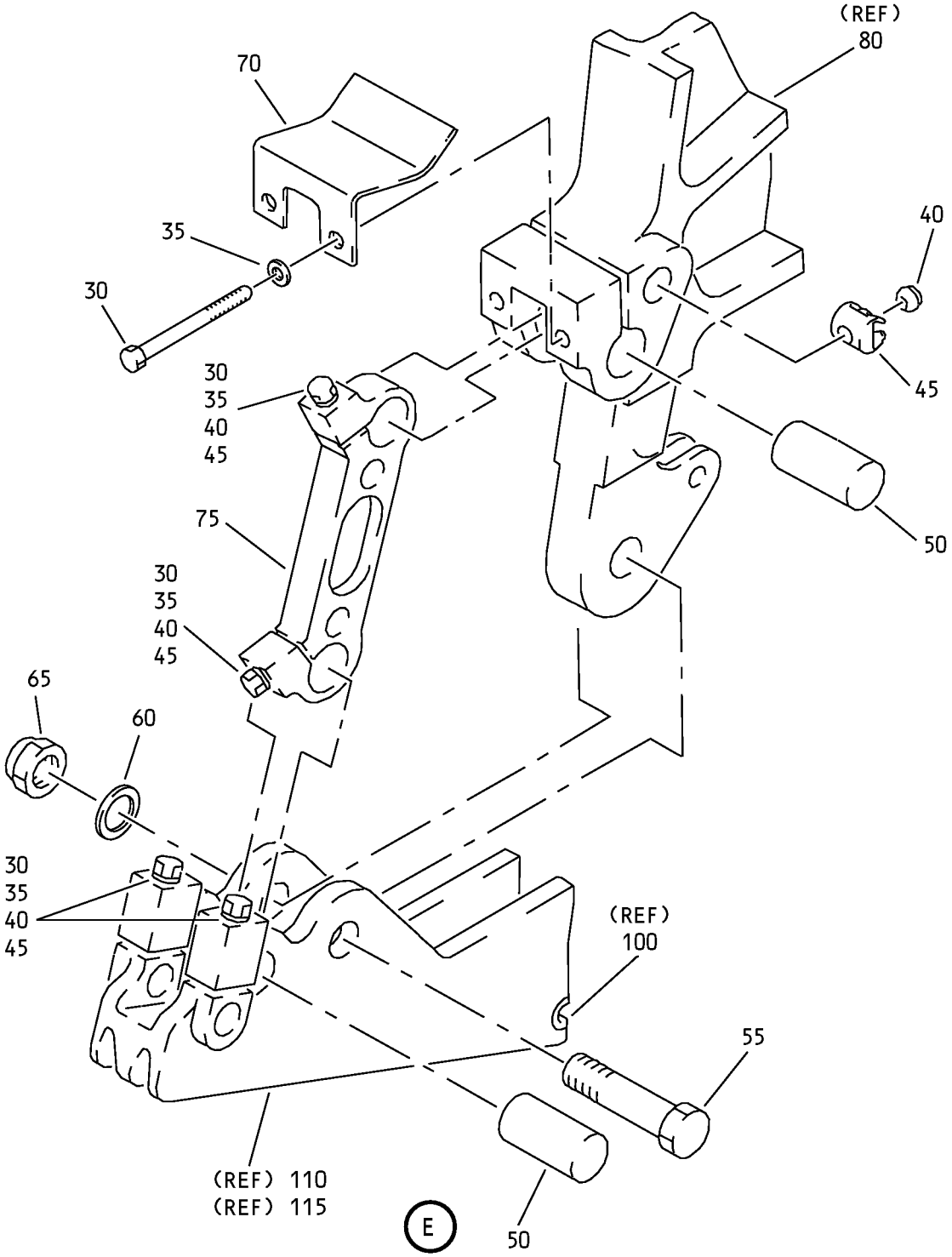
Elevator Controls Quadrant Assembly
IPL Figure 1 (Sheet 1 of 9)



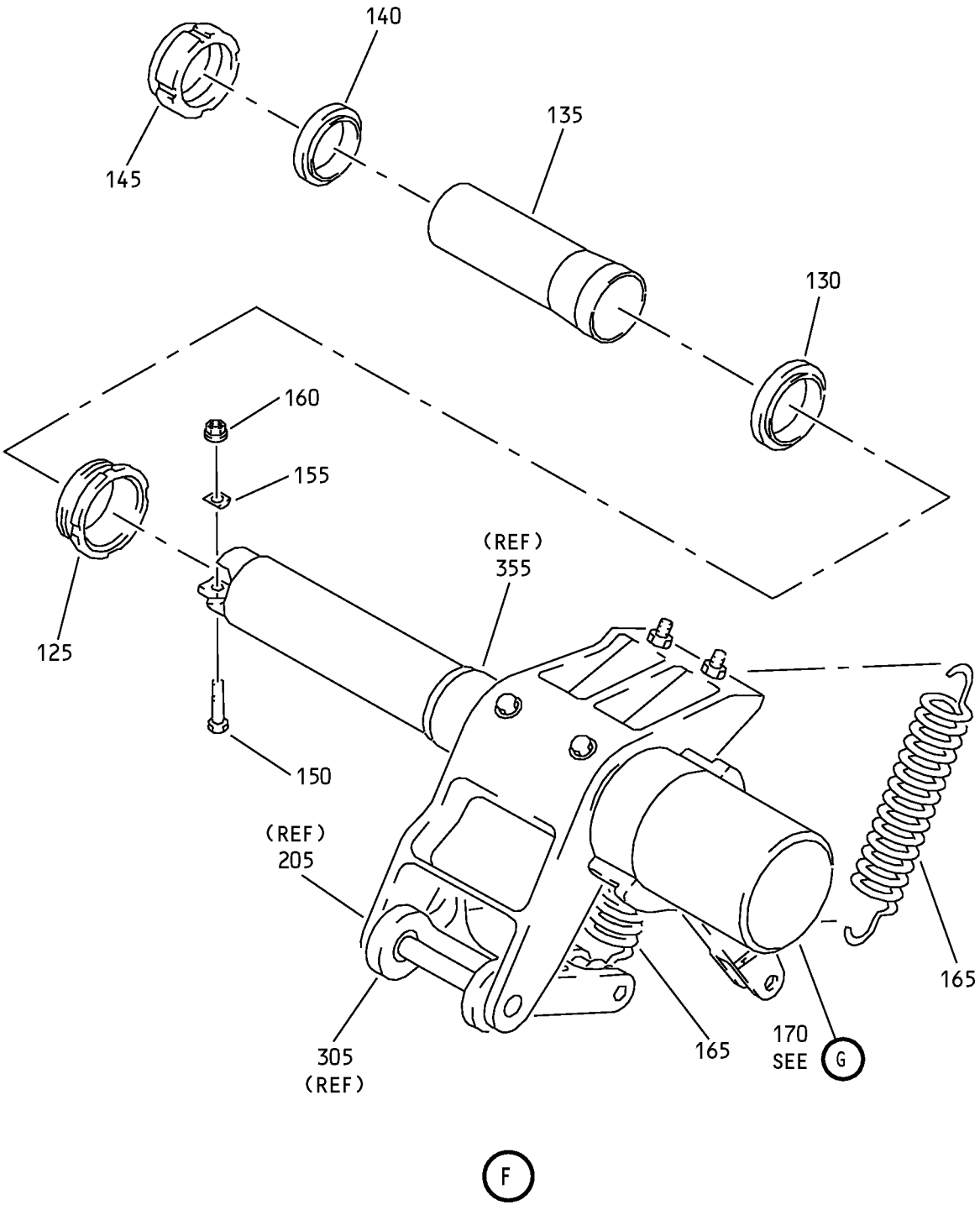
Elevator Controls Quadrant Assembly
IPL Figure 1 (Sheet 2 of 9)



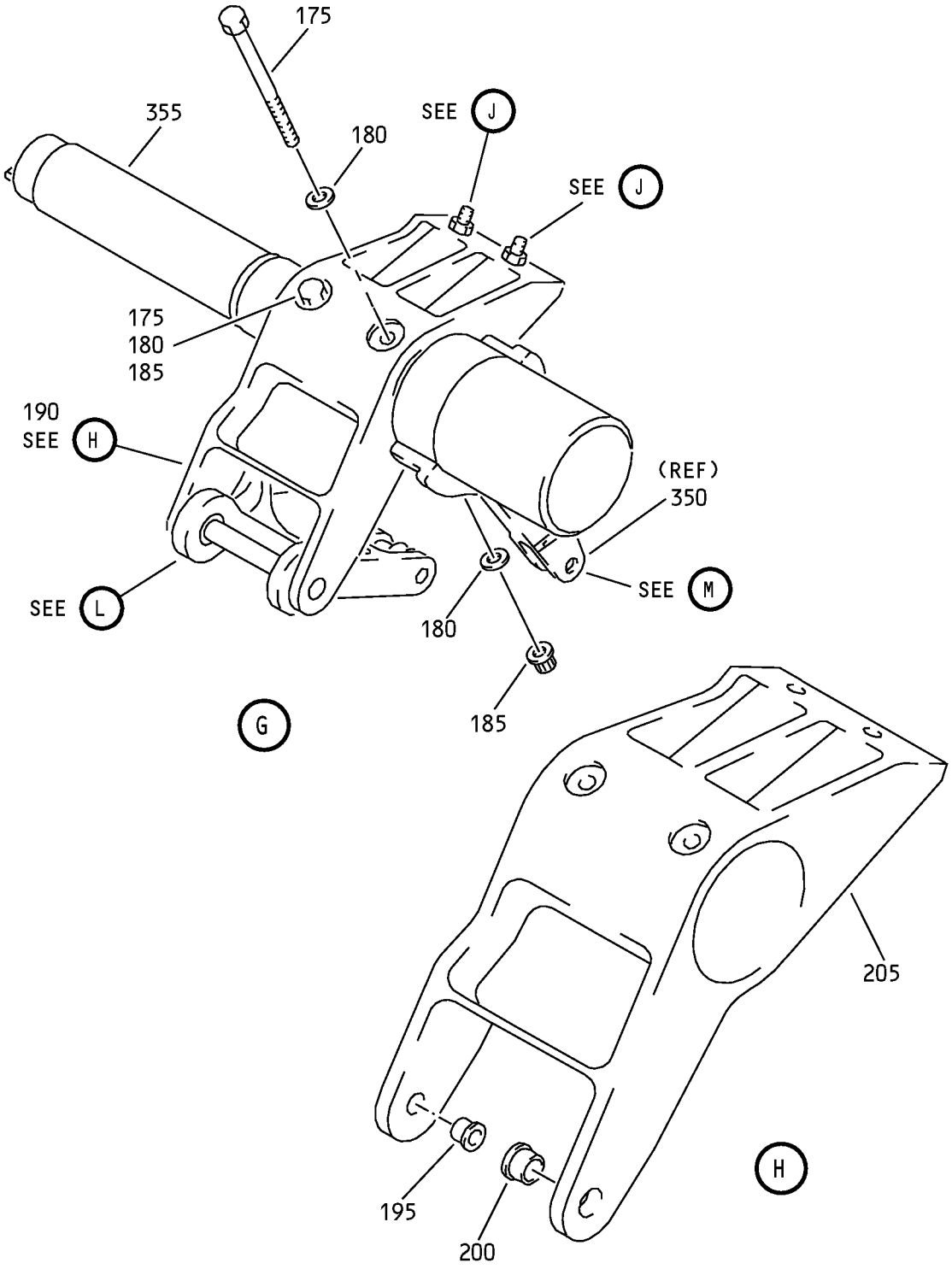
Elevator Controls Quadrant Assembly
IPL Figure 1 (Sheet 3 of 9)



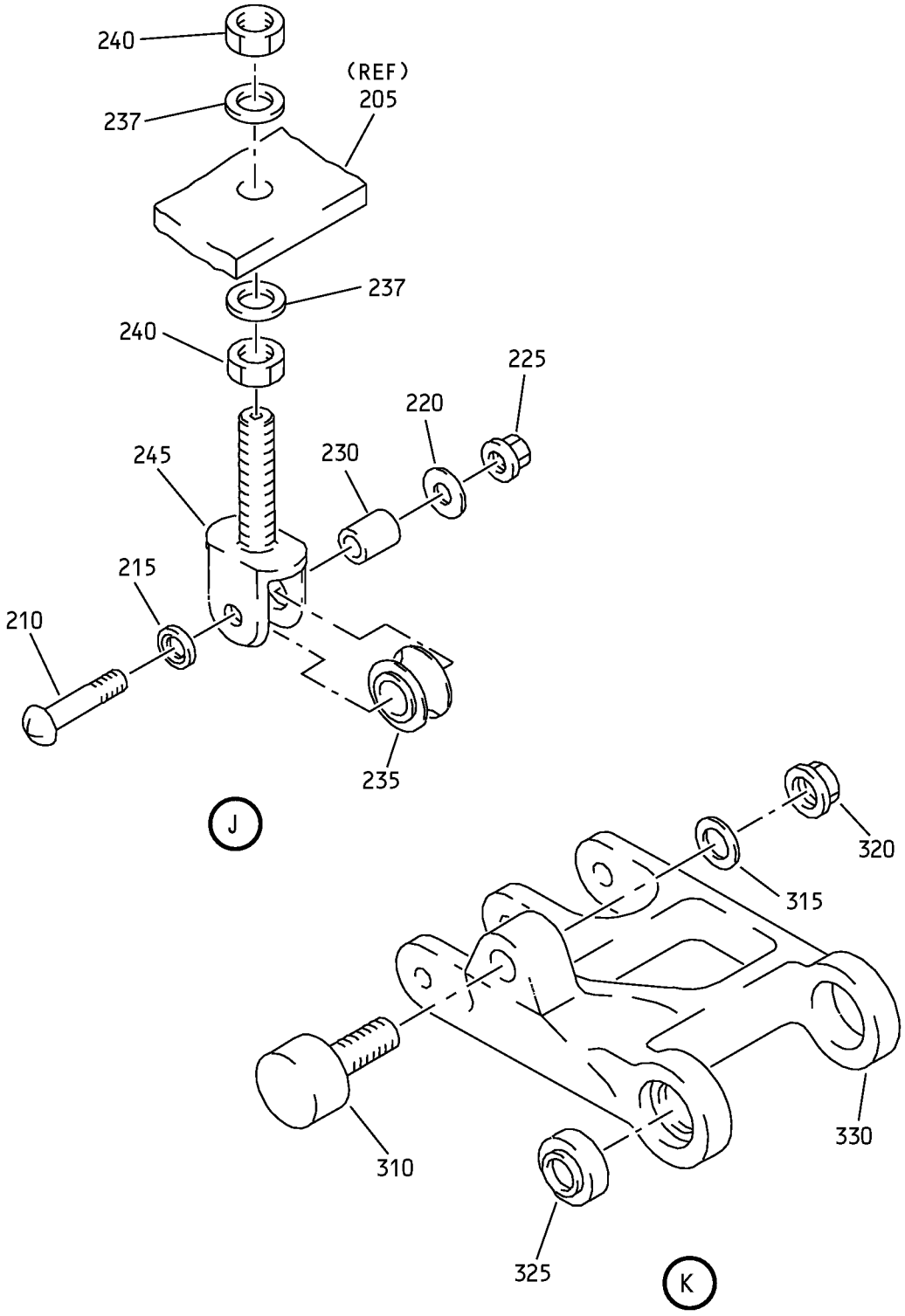
Elevator Controls Quadrant Assembly
IPL Figure 1 (Sheet 4 of 9)



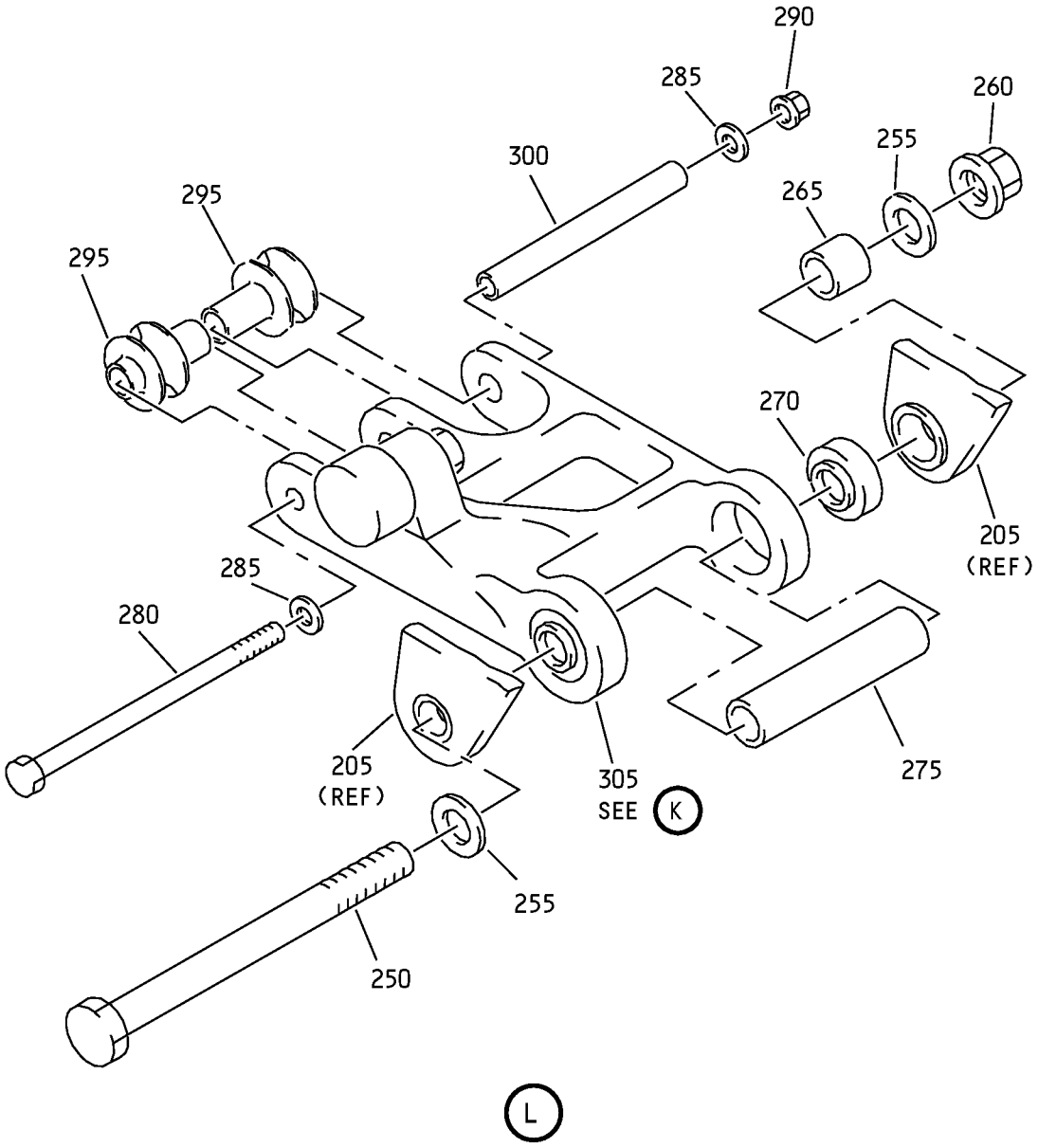
Elevator Controls Quadrant Assembly
IPL Figure 1 (Sheet 5 of 9)



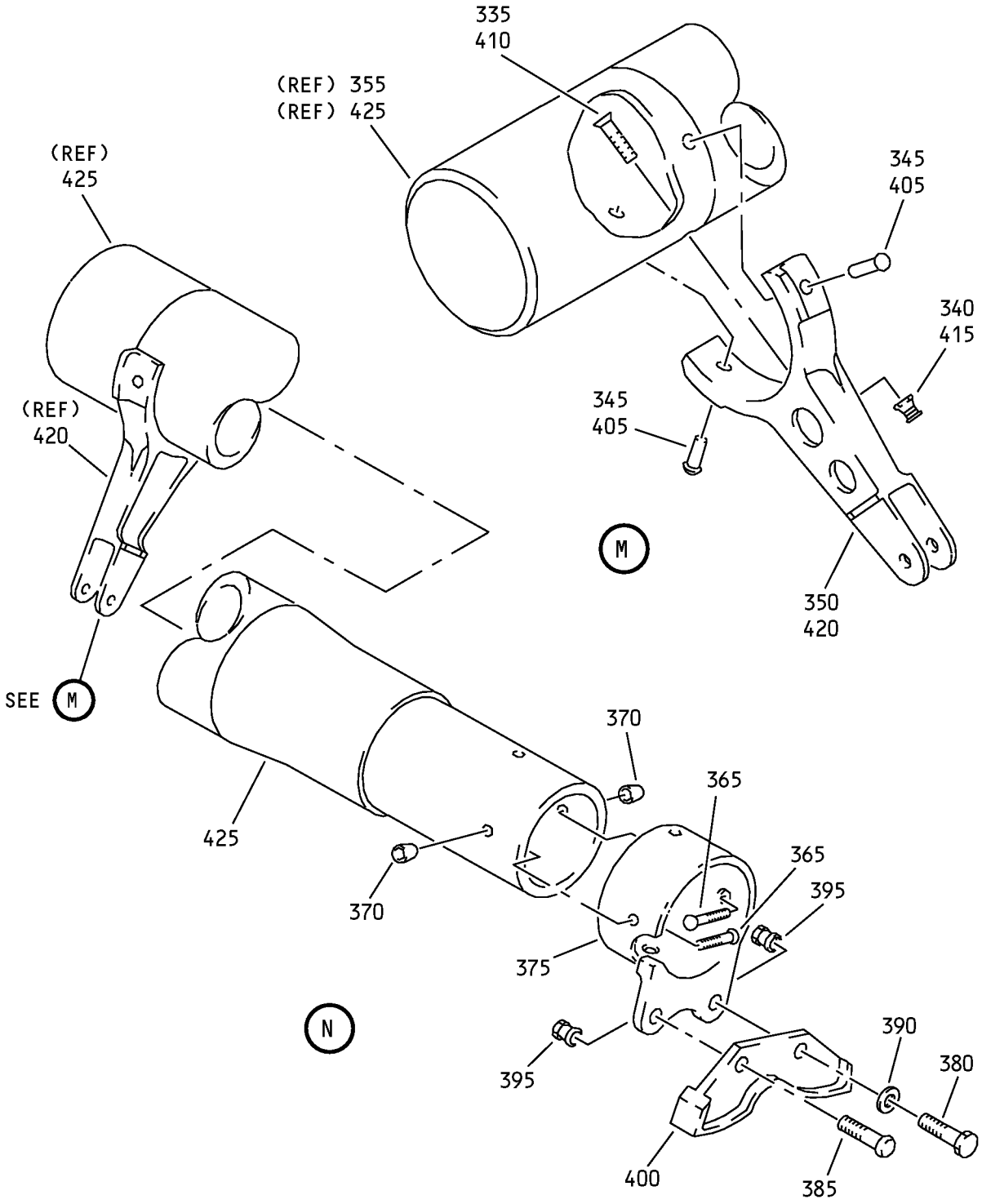
Elevator Controls Quadrant Assembly
IPL Figure 1 (Sheet 6 of 9)



Elevator Controls Quadrant Assembly
IPL Figure 1 (Sheet 7 of 9)



Elevator Controls Quadrant Assembly
IPL Figure 1 (Sheet 8 of 9)



Elevator Controls Quadrant Assembly
IPL Figure 1 (Sheet 9 of 9)

FIG/ ITEM	PART NUMBER	AIRLINE PART NUMBER	NOMENCLATURE 1 2 3 4 5 6 7	USAGE CODE	UNITS PER ASSY
1–					
–1A	251A2196-1		QUADRANT ASSY-ELEVATOR CONT	A	RF
–1B	251A2196-2		QUADRANT ASSY-ELEVATOR CONT	B	RF
5	BACR15BB6D		. RIVET (SIZE DETERMINED ON INST)		20
10	HST11AG6-8		. BOLT (V06725) (SPEC BACB30VU6K8) (OPT HST11AG6-8 (V73197)) (OPT HST11AG6-8 (V56878)) (OPT HST11AG6-8 (V0PTK6))		4
15	HST79CY6		. COLLAR (V73197) (SPEC BACC30BL6) (OPT HST79-6 (V56878)) (OPT HST79-6 (V92215)) (OPT HST79-6 (V5M902))		4
20	251A2197-1		. SUPPORT ASSY-L	A	1
–20A	251A2197-3		. SUPPORT ASSY-L	B	1
25	251A2197-2		. SUPPORT ASSY-R	A	1
–25A	251A2197-4		. SUPPORT ASSY-R	B	1
30	NAS1351N3-20P		. . SCREW		12
35	NAS1149D0332J		. . WASHER		12
40	LH8065-02		. . NUT (V72962) (SPEC BACN10HC3) (OPT SL414-3 (V97393)) (OPT 94263-1032 (V56878))		12
45	8065-02RET		. . RETAINER (V72962) (SPEC BACR10V3R)		12
50	6020-400X		. . PIVOT (V99551) (OPT ITEM 50A)		4
–50A	6020-400		. . PIVOT (V99551) (OPT ITEM 50)		4
55	69-40263-1		. . PIN	A	2
–55A	69-40263-2		. . PIN	B	2

–Item not Illustrated

FIG/ ITEM	PART NUMBER	AIRLINE PART NUMBER	NOMENCLATURE 1 2 3 4 5 6 7	USAGE CODE	UNITS PER ASSY
1–					
60	NAS1149D0616J		. . WASHER		2
65	BRH10C6D		. . NUT (V52828) (SPEC BACN10JC6CD) (OPT H51650-6BAC (V15653))		2
70	69-60170-1		. . GUARD		2
75	65-53397-4		. . LINK		2
80	65-52995-13		. . SUPPORT		1
85	65-53592-1		. . QUADRANT ASSY		1
90	65-53592-2		. . QUADRANT ASSY		1
95	MS20470A6		. . . RIVET		1
100	NAS42DD6-62		. . . RIVET-SPACER		1
105	BACB28X3D45		. . . BUSHING		2
110	65-53592-3		. . . QUADRANT		1
115	65-53592-4		. . . QUADRANT		1
120	251A2185-1		. OVERRIDE ASSY-COLUMN		1
125	251N1115-1		. . NUT-JAM		1
130	PACMB544DDF˜ S428		. . BEARING (V21335) (SPEC BACB10FU29) (OPT ACMB544DDP818LY (V40920)) (OPT SSMB544DDSD705 (V83086)) (OPT PACMB544DDA3908 (V21335)) (OPT ITEM 130A)		1
–130A	MB544DDNJC		. . BEARING (V06144) (SPEC BACB10AS29) (OPT LLMB544 (V38443)) (OPT MB544-2TS (V43991)) (OPT MB544DDFS428 (V21335)) (OPT MB544TT (V43991)) (OPT MB544DDG20 (V38443)) (OPT MT344E (VK8455)) (OPT MB544DDLY196 (V40920)) (OPT MB544DD (V06144)) (OPT MB544DDSD610 (V83086)) (OPT ITEM 130)		1
135	251N1084-1		. . SPACER-TORQUE TUBE		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–					
140	PACMB543DDF˜ S428		. . BEARING (V21335) (SPEC BACB10FU25) (OPT SSMB543DDSD705 (V83086)) (OPT PACMB543DDA3908 (V21335)) (OPT ACMB543DDP818LY (V40920)) (OPT ITEM 140A)		1
–140A	MB543DDNJC		. . BEARING (V06144) (SPEC BACB10AS25) (OPT LLMB543 (V38443)) (OPT MB543-2TS (V43991)) (OPT MB543DDFS428 (V21335)) (OPT MB543TT (V43991)) (OPT MB543DDG20 (V38443)) (OPT MT343E (VK8455)) (OPT MB543DDLY196 (V40920)) (OPT MB543DD (V06144)) (OPT MB541DDSD610 (V83086)) (OPT ITEM 140)		1
145	SL2822-22		. . NUT-JAM (V97393) (SPEC BACN10RF22) (OPT 82631-2212 (V56878)) (OPT BR9080-22 (V72962))		1
150	NAS1352N08-8P		. . BOLT-CAP		1
155	66-12478-11		. . FILLER		1
160	H52732-08CD		. . NUT (V15653) (SPEC BACN10YR08CD) (OPT PLH508CD (V62554))		1
165	251A2195-1		. . SPRING		2
170	251A2186-1		. . TUBE ASSY-LEFT SIDE		1
175	BACB30LJ4-43		. . . BOLT		2
180	NAS1149D0463J		. . . WASHER		4
185	H52732-4CD		. . . NUT (V15653) (SPEC BACN10YR4CD) (OPT PLH54CD (V62554))		2
190	251A2193-1		. . . SUPPORT ASSY		1
195	BACB28AT05B017C		. . . . BUSHING		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–					
200	BACB28AT07B017C		. . . . BUSHING		1
205	251A2193-2		. . . . SUPPORT		1
210	BACB30LK3-11		. . . BOLT		2
215	BACW10BP3CD		. . . WASHER		2
220	NAS1149E0332P		. . . WASHER		2
225	H52732-3CD		. . . NUT (V15653) (SPEC BACN10YR3CD) (OPT PLH53CD (V62554))		2
230	BACB28AK03-052		. . . BUSHING		2
235	253W2316-1		. . . PULLEY		2
237	NAS1149D0516J		. . . WASHER		4
240	NAS509-5		. . . NUT		4
245	253W2314-2		. . . BOLT-CLEVIS		2
250	NAS6705-58		. . . BOLT		1
255	NAS1149D0563J		. . . WASHER		2
260	H52732-5CD		. . . NUT (V15653) (SPEC BACN10YR5CD) (OPT PLH55CD (V62554))		1
265	BACB28AK05-038		. . . BUSHING		1
270	SSMKP5ASD705		. . . BEARING (V83086) (SPEC BACB10FS5) (OPT ACMKP5AP510LY19 (V40920)) (OPT PACMKP5AA3908 (V21335)) (OPT PACMKP5AFS428 (V21335)) (OPT SSMKP5AP (V21760))		1
275	BACB28AK05-230		. . . BUSHING		1
280	BACB30NR4K48		. . . BOLT		1
285	NAS1149D0463J		. . . WASHER		2
290	H52732-4CD		. . . NUT (V15653) (SPEC BACN10YR4CD) (OPT PLH54CD (V62554))		1
295	253W2316-2		. . . PULLEY		2

–Item not Illustrated

FIG/ ITEM	PART NUMBER	AIRLINE PART NUMBER	NOMENCLATURE 1 2 3 4 5 6 7	USAGE CODE	UNITS PER ASSY
1–					
300	BACB28BA0406270		. . . BUSHING (OPT ITEM 300A)		1
–300A	251T3741-41		. . . BUSHING (OPT ITEM 300)		1
305	251A2194-1		. . . FOLLOWER ASSY		1
310	BACB10FK6N8HS		. . . . CAM (OPT ITEM 310A)		1
–310A	HRSC4CTKR8		. . . . CAM (V60380) (SPEC BACB10FK6K8HS) (OPT CHRS4CTKR8 (V92563)) (OPT CHRS4CTKR8 (V07484)) (OPT ITEM 310)		1
315	NAS1149D0632J		. . . . WASHER		1
320	H52732-6CD		. . . . NUT (V15653) (SPEC BACN10YR6CD) (OPT PLH56CD (V62554))		1
325	SSMKP5ASD705		. . . . BEARING (V83086) (SPEC BACB10FS5) (OPT ACMKP5AP510LY19 (V40920)) (OPT PACMKP5AA3908 (V21335)) (OPT PACMKP5AFS428 (V21335)) (OPT SSMKP5AP (V21760))		1
330	251A2194-2		. . . . FOLLOWER		1
335	HST11AG6-4		. . . BOLT (V06725) (SPEC BACB30VU6K4) (OPT HST11AG6-4 (V73197)) (OPT HST11AG6-4 (V56878)) (OPT HST11AG6-4 (V0PTK6))		1
340	HST79CY6		. . . COLLAR (V73197) (SPEC BACC30BL6) (OPT HST79-6 (V56878)) (OPT HST79-6 (V92215)) (OPT HST79-6 (V5M902))		1
345	BACR15BB6D		. . . RIVET (SIZE DETERMINED ON INST)		2

–Item not Illustrated

FIG/ ITEM	PART NUMBER	AIRLINE PART NUMBER	NOMENCLATURE 1 2 3 4 5 6 7	USAGE CODE	UNITS PER ASSY
1–					
350	65C25546-1		. . . CRANK-INPUT (OPT ITEM 350A)		1
–350A	65C25546-2		. . . CRANK-INPUT (OPT ITEM 350)		1
355	251A2189-1		. . . BARREL-RIGHT SIDE		1
360	251A2187-1		. . TUBE ASSY-RIGHT SIDE		1
365	BACB30XT8K6		. . . BOLT (OPT ITEM 365A)		4
–365A	HST11AG8-6		. . . BOLT (V0PTK6) (SPEC BACB30VU8K6) (OPT HST11AG8-6 (V73197)) (OPT HST11AG8-6 (V56878)) (OPT HST11AG8-6 (V06725)) (OPT ITEM 365)		4
370	3SLCC8		. . . COLLAR (V17446) (SPEC BACC30BK8) (OPT 3SLCC8 (V92215)) (OPT ITEM 370A)		4
–370A	HST79CY8		. . . COLLAR (V73197) (SPEC BACC30BL8) (OPT HST79-8 (V56878)) (OPT HST79-8 (V92215)) (OPT HST79-8 (V5M902)) (OPT ITEM 370)		4
375	251A2192-1		. . . CAM ARM		1
380	BACB30NR4HK8		. . . BOLT		1
385	HL10VAZ8-7		. . . BOLT (V60516) (SPEC BACB30MY8K7) (OPT B30MY8K7 (V97928))		1
390	NAS1149D0463J		. . . WASHER		1
395	HL79-8		. . . COLLAR (V5M902) (SPEC BACC30M8) (OPT HL79-8 (V73197)) (OPT HL79-8 (V92215)) (OPT 66014-8 (V56878)) (OPT HL79-8 (V56878))		2

–Item not Illustrated

FIG/ ITEM	PART NUMBER	AIRLINE PART NUMBER	NOMENCLATURE 1 2 3 4 5 6 7	USAGE CODE	UNITS PER ASSY
1–					
400	251A2191-1		. . . CAM		1
405	BACR15BB6D		. . . RIVET (SIZE DETERMINED ON INST)		2
410	HST11AG6-4		. . . BOLT (V06725) (SPEC BACB30VU6K4) (OPT HST11AG6-4 (V73197)) (OPT HST11AG6-4 (V56878)) (OPT HST11AG6-4 (V0PTK6))		1
415	HST79CY6		. . . COLLAR (V73197) (SPEC BACC30BL6) (OPT HST79-6 (V56878)) (OPT HST79-6 (V92215)) (OPT HST79-6 (V5M902))		1
420	65C25546-1		. . . CRANK-INPUT (OPT ITEM 420A)		1
–420A	65C25546-2		. . . CRANK-INPUT (OPT ITEM 420)		1
425	251A2188-1		. . . BARREL-LEFT SIDE		1

–Item not Illustrated