COMPONENT MAINTENANCE MANUAL WITH ILLUSTRATED PARTS LIST

RUDDER CONTROL TORQUE TUBE ASSEMBLY

PART NUMBER 251A3440–1, –2, –3, –4, –5

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BOEING®

COMPONENT MAINTENANCE MANUAL

Revision No. 10
Jul 01/2009

To: All holders of RUDDER CONTROL TORQUE TUBE ASSEMBLY 27-27-06.

Attached is the current revision to this COMPONENT MAINTENANCE MANUAL

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COMPONENT MAINTENANCE MANUAL

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

Subject/Page	Date	Subject/Page	Date	Subject/Page	Date
27-27-06 ILLUSTRATED PARTS LIST (cont)					
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TEMPORARY REVISION AND SERVICE BULLETIN RECORD

BOEING SERVICE BULLETIN	BOEING TEMPORARY REVISION	OTHER DIRECTIVE	DATE OF INCORPORATION INTO MANUAL
		PRR 38325	JUL 01/02
27-1253		PRR 38488-1	JUL 01/03

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Revision		Filed	
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Temporary Revision		Inserted		Removed	
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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.

RUDDER CONTROL TORQUE TUBE ASSEMBLY - DESCRIPTION AND OPERATION

1. Description

A. The torque tube assembly includes a bonded inner and outer swaged tube, riveted sleeve, spacer sleeve, three actuator cranks, and sometimes a splined shaft bolted to the torque tubes. The latest units have springs on the actuator cranks. The torque tube acts as a dual load path.

2. Operation

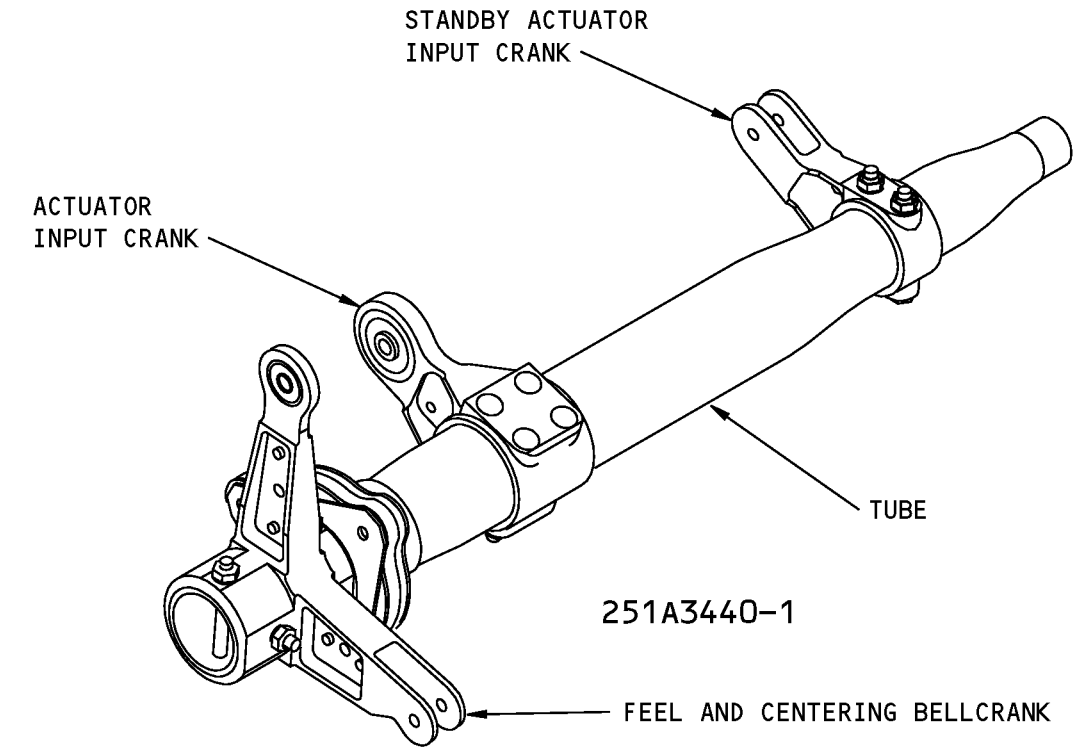
A. Rudder pedal or rudder trim movements are transferred from the aft rudder control quadrant to the actuator cranks on the rudder control torque tube, to turn the torque tube. As the torque tube turns, it operates the feel and centering unit, main rudder power control unit, and the standby power control unit linkage. On the latest torque tube assemblies, the spring-loaded cranks, or overrides, help the system sense problems in the main rudder power control unit to let the standby power control unit operate. The splined shaft at the end of the tube connects to a new servo actuator.

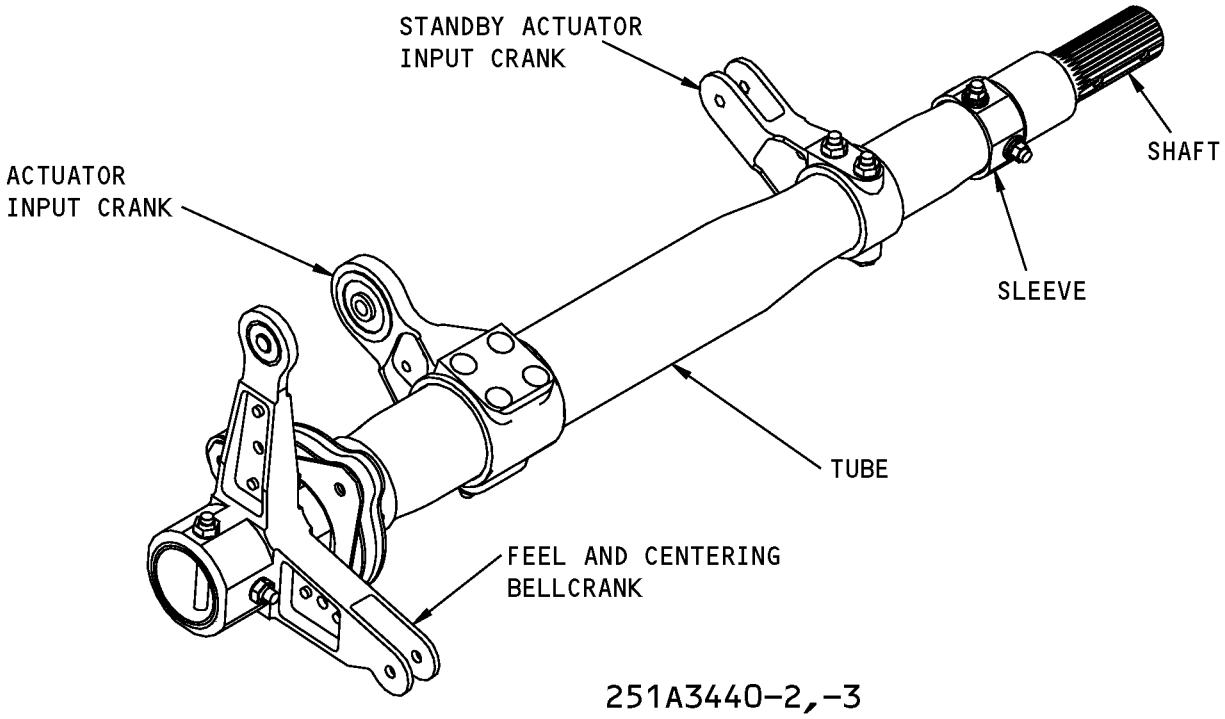
3. Leading Particulars (Approximate)

A. Width – 6 inches

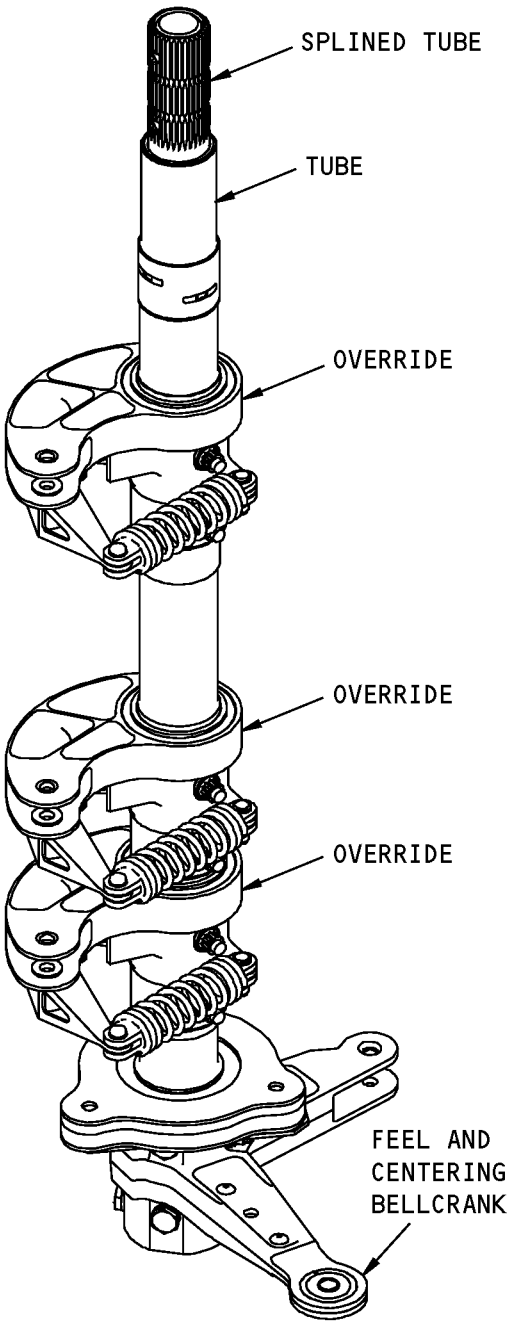
B. Height – 23 inches

C. Weight – 4 pounds





Rudder Control Torque Tube Assembly
Figure 1 (Sheet 1 of 2)



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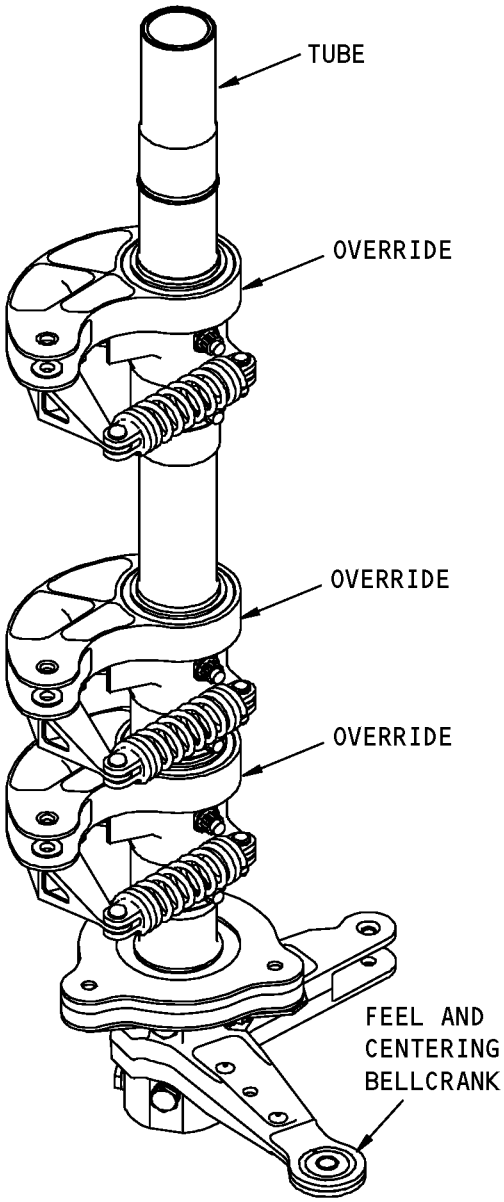


251A3440-5

Rudder Control Torque Tube Assembly
Figure 1 (Sheet 2 of 2)

(NOT APPLICABLE)

DISASSEMBLY

1. **General**

   A. This procedure has the data to disassemble the rudder control torque tube 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 or IPL Figure 2 for item numbers, as applicable.

2. **Disassembly Procedures**

   A. Rudder Torque Tube 251A3440-1, -2, -3 Disassembly (IPL Figure 1)

      (1) Part Replacement

         NOTE: These parts are recommended for replacement. Replacement of other parts can be by in-service experience.

         (a) Bearings (50, 90, 135)

         (b) Sleeves (55, 95, 165)

      (2) Procedure

         (a) If applicable, remove nuts (190), washers (185), bolts (180), sleeve (195) and shafts (200, 205).

         (b) Remove nuts (15), washers (10), bolts (5), and crank (20) from the tube assembly (155).

         (c) Remove the nuts (35), washers (30), bolts (25) and input crank assembly (40).

         (d) Remove the nuts (75), washers (70), bolts (65), and bellcrank assembly (80).

         (e) Remove the retaining plate (120), retainer (115), housing assembly (130) and the retaining plate (125).

   B. Rudder Torque Tube 251A3440-4, -5 Disassembly (IPL Figure 2)

      (1) Part Replacement

         NOTE: These parts are recommended for replacement. Replacement of other parts can be by in-service experience.

         (a) Bearings (100, 145, 180A, 215)

         (b) Sleeves (115, 185, 190, 255)

      (2) Procedure

         (a) If applicable, remove pins (260) and shaft (205).

         (b) Remove nuts (25), washers (20, 15), bolts (10, 5), and overrides (30) from the tube assembly (240).

         (c) Remove the nuts (170), washers (160, 165), bolts (155), and bellcrank assembly (175).

         (d) Remove the retaining plate (200), retainer (205), housing assembly (210) and the retaining plate (235).

CLEANING

1. General

A. This procedure has the data to clean the parts of the torque tube assembly.

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

C. Refer to IPL Figure 1 or IPL Figure 2 for item numbers, as applicable.

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 sealed bearings as specified by the vendor's instructions and the instructions in SOPM 20-30-01 .

(2) Clean all the other parts by standard industry practices 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 or IPL Figure 2 for item numbers, as applicable

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 magnetic particle check and penetrant check if the visual check shows possible defects.

(2) Magnetic particle check (SOPM 20-20-01):

(a) IPL Figure 1

1) Pin (210)

2) Shaft (215)

(b) IPL Figure 2

1) Fitting (62)

2) Fitting (110)

3) Fitting (130)

4) Arm (150)

5) Pin (245)

6) Shaft (250)

7) Pin (260)

8) Shaft (265)

(3) Penetrant check (SOPM 20-20-02) :

(a) IPL Figure 1

1) Crank (20)

2) Crank assembly (40)

3) Bellcrank (105, 110)

4) Retainer (115)

5) Retaining plate (120, 125, 140)

6) Tube assembly (155)

(b) IPL Figure 2

1) Spring (60). Be sure to extend the spring to look for defects between the coils. Do not extend the spring more than 3.913 inches between end fitting hole centers.
2) Bellcrank (195)
3) Housing (225)
4) Housing (230)

(c) Spring (60, IPL Figure 2)

1) Extend the spring to 3.100 inches. The load must be 27.66-30.56 pounds.
2) Extend the spring to 3.913 inches. The load must be 59.35-65.59 pounds.
3) Approximate free length is 2.391 inches. All lengths are measured between hole centers of the end fittings.

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
251A3441	CRANK	2-1
251A3442	CRANK ASSEMBLY	3-1, 3-2
251A3444	TUBE ASSEMBLY	4-1
65-70979	BELLCRANK ASSEMBLY	5-1
69-37288	HOUSING ASSEMBLY	6-1, 6-2

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 to refinish the parts which are not given in the specified repairs.

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

C. Refer to IPL Figure 1 or IPL Figure 2 for item numbers, as applicable.

2. Refinish of Other Parts

A. Consumable Materials

NOTE: Equivalent substitutes may be used.

Reference	Description	Specification
B00571	Coating - Clear Hydraulic Fluid Resistant Topcoat	BAC5710, Type 41
C00259	Primer - Chemical And Solvent Resistant Finish, Epoxy Resin	BMS10-11, Type I
D00113	Lubricant - Liquid Dispersed Solid Film Lubricant	BMS3-8, BAC 5811, TYPE VIII

B. References

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

C. Procedure

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

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

Table 601: Refinish Details

IPL FIG. & ITEM	MATERIAL	FINISH
IPL Fig. 1		
Retainer (115)	Al Alloy	Chemical treat or chromic acid anodize and apply primer, C00259 (F-18.05), or boric acid-sulfuric acid anodize or chromic acid anodize (F-17.31) and apply primer, C00259(F-20.02).
Retaining plate (120,125,140)	Al Alloy	Chemical treat or chromic acid anodize and apply primer, C00259 (F-18.05), or boric acid-sulfuric acid anodize or chromic acid anodize (F-17.31) and apply primer, C00259(F-20.02). No primer in bolt- holes.
Sleeve (195)	Al Alloy	Boric acid-sulfuric acid anodize or chromic acid anodize (F-17.31). Apply primer, C00259(F-20.02) on exterior only.

Table 601: Refinish Details (Continued)

IPL FIG. & ITEM	MATERIAL	FINISH
Shaft (200)	Al Alloy	Boric acid-sulfuric acid anodize or chromic acid anodize (F-17.31). Apply primer, C00259 (F-20.02) but not on splines.
Shaft (205)	15-5PH CRES 180-200 ksi	Cacmium plate (F-16.13). Apply primer, C00259 (F-20.02) to larger OD. Apply lubricant, D00113 (F-19.10) to splines.
Pin (210)	15-5PH CRES 180-200 ksi	Passivate (F-17.25).
Shaft (215)	15-5PH CRES 180-200 ksi	Cadmium plate (F-16.06).
IPL Fig. 2		
Spring assembly (60)	—	Apply coating, B00571 (F-21.14) to spring coils.
Fitting (62)	15-5PH CRES, 125-145 ksi	Passivate (F-17.25).
Spring (63)	Ti alloy	No finish.
Fittings (110,130), arm (150), tube assembly (270)	15-5PH CRES, 150-170 ksi	Passivate (F-17.25).
Bellcrank (195)	Al alloy	Chemical treat (F-17.10). Apply primer, C00259 (F-20.02).
Plates (200,220, 235), retainer (205), housings (225,230)	Al alloy	Boric acid-sulfuric acid anodize or chromic acid anodize (F-17.31). Apply primer, C00259 (F-20.02).
Pins (245,260), shaft (265)	15-5PH CRES 180-200 ksi	Passivate (F-17.25).
Shaft (250)	15-5PH CRES 180-200 ksi	Cadmium plate (F-16.13) at least the splines, or all over. Apply lubricant, D00113 (F-19.10) to the splines. Passivate (F-17.25) other surfaces.

CRANK - REPAIR 2-1

251A3441–1

1. General

A. This procedure has the data to refinish the crank (20).

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

C. Refer to IPL Figure 1 for item numbers.

D. General repair details:

(1) Material: Aluminum alloy

2. Crank 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

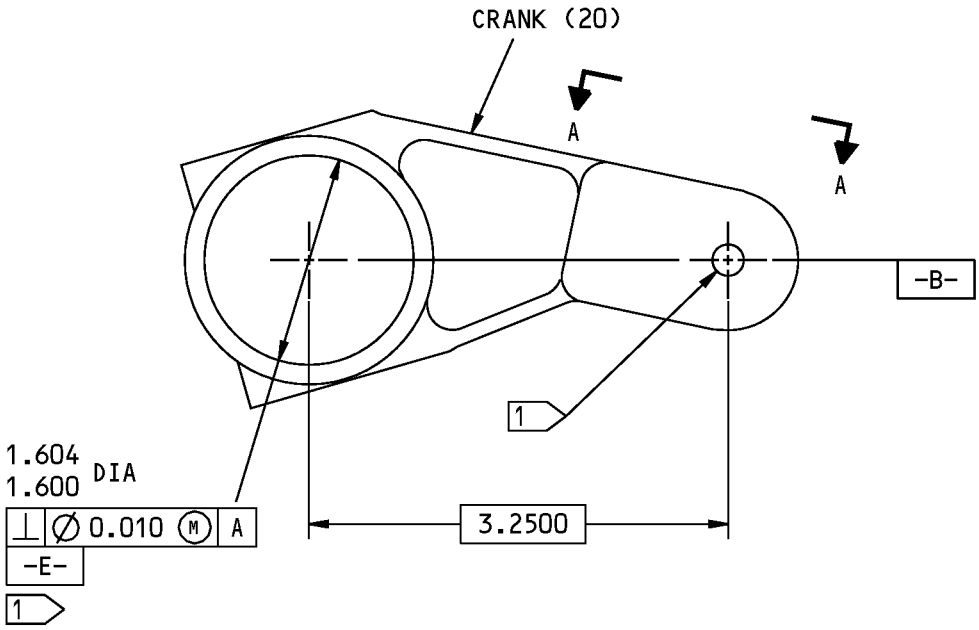
Reference	Title
SOPM 20-30-02	STRIPPING OF PROTECTIVE FINISHES
SOPM 20-41-01	DECODING TABLE FOR BOEING FINISH CODES
SOPM 20-60-02	FINISHING MATERIALS

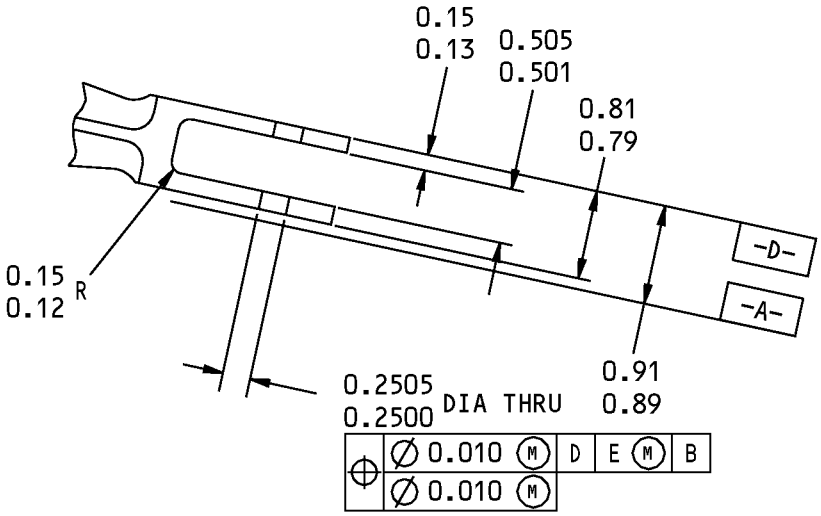
C. Procedure (REPAIR 2-1, Figure 601)

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. For finishing materials, refer to SOPM 20-60-02.

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

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





A–A

1 NO PRIMER

ITEM NUMBERS REFER TO IPL FIG. 1

ALL DIMENSIONS ARE IN INCHES

251A3441-1 Crank Repair and Refinish
Figure 601

CRANK ASSEMBLY - REPAIR 3-1

251A3442–1

1. General

A. This procedure has the data to repair the crank assembly (40).

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. Bearing/Sleeve Replacement

A. References

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

B. Procedure

(1) Remove the old bearing (50) and the sleeve (55) from the crank (60).

(2) If you find defects on the crank, refer to REPAIR 3-2 for repair instructions.

(3) Install a replacement bearing and sleeve in the crank and roller swage the sleeve (SOPM 20-50-03).

CRANK ASSEMBLY - REPAIR 3-2

251A3442–2, –3

1. General

A. This procedure has the data necessary to refinish the crank bonded assembly (60).

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

C. Refer to IPL Figure 1 for item numbers.

D. General repair details:

(1) Material: Aluminum Alloy

2. Crank Assembly 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

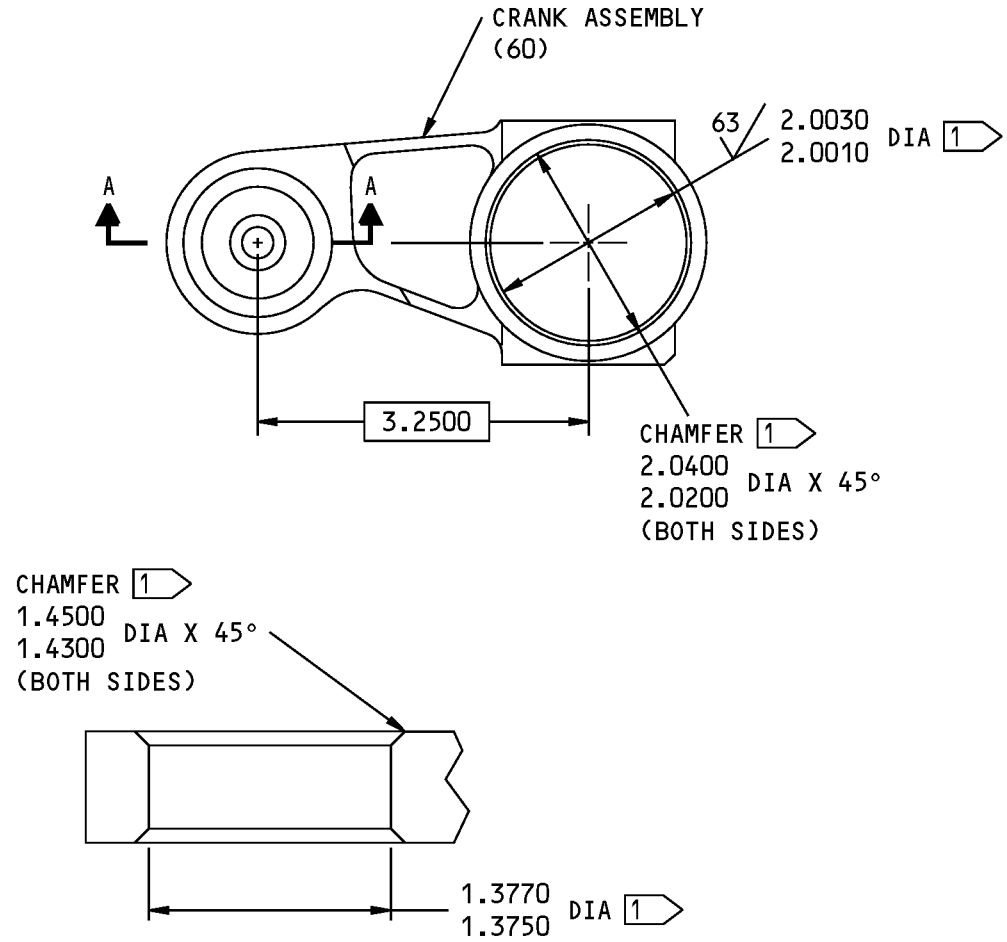
Reference	Title
SOPM 20-30-02	STRIPPING OF PROTECTIVE FINISHES
SOPM 20-41-01	DECODING TABLE FOR BOEING FINISH CODES
SOPM 20-60-02	FINISHING MATERIALS

C. Procedure (REPAIR 3-2, 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. For finishing materials, refer to SOPM 20-60-02.

(1) Chemical treat (F-17.10) bare aluminum surfaces.

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



1 NO PRIMER ON THIS SURFACE.

ITEM NUMBERS REFER TO IPL FIG. 1

ALL DIMENSIONS ARE IN INCHES

251A3442-2,-3 Crank Assembly Refinish
Figure 601

TUBE ASSEMBLY - REPAIR 4-1

251A3444–1, –4

1. General

A. This procedure has the data necessary to refinish the tube assembly (155).

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

C. Refer to IPL Figure 1 for item numbers.

D. General repair details:

(1) Material: Aluminum Alloy

2. Tube Assembly 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

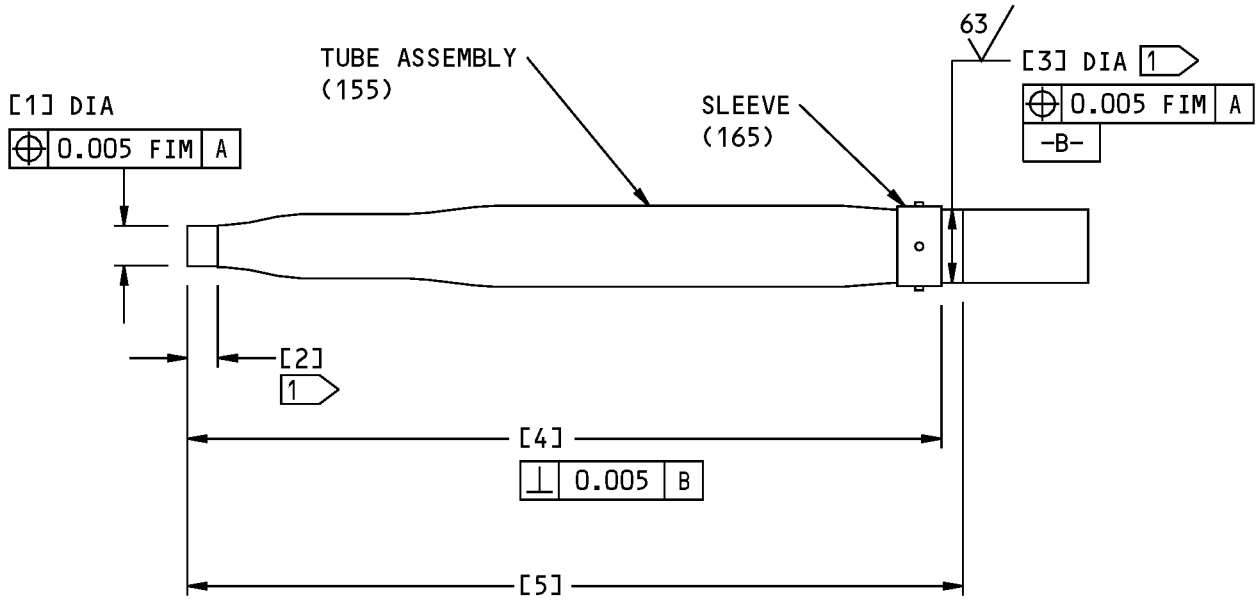
Reference	Title
SOPM 20-30-02	STRIPPING OF PROTECTIVE FINISHES
SOPM 20-41-01	DECODING TABLE FOR BOEING FINISH CODES
SOPM 20-60-02	FINISHING MATERIALS

C. Procedure (REPAIR 4-1, 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. For finishing materials, refer to SOPM 20-60-02.

(1) Chemical treat (F-17.10) bare aluminum surfaces.

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



REFERENCE NUMBER	[1]	[2]	[3]	[4]	[5]
251A3444-1	0.9995 0.9985	0.7600 0.7400	1.8120 1.8110	18.6800 18.6600	19.2100 19.1900
251A3444-4	1.4370 1.4360	1.3900 1.3700	1.8120 1.8110	19.7250 19.7050	20.2550 20.2350

1 NO PRIMER ON THIS SURFACE

ITEM NUMBERS REFER TO IPL FIG. 1

ALL DIMENSIONS ARE IN INCHES

251A3444-1,-4 Tube Assembly Refinish
Figure 601

BELLCRANK ASSEMBLY - REPAIR 5-1

65-70979–5

1. General

A. This procedure has the data to repair and refinish the bellcrank assembly (80).

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

C. Refer to IPL Figure 1 for item numbers.

D. General repair details:

(1) Material: Aluminum Alloy

2. Bearing/Sleeve Replacement

A. References

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

B. Procedure

(1) Remove the old bearing (90) and sleeve (95) from the bellcrank (100) (SOPM 20-50-03).

(2) Install a replacement bearing and sleeve in the bellcrank. Be sure to turn the slot as shown. Roller swage the sleeve (SOPM 20-50-03) .

3. Bellcrank Assembly 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

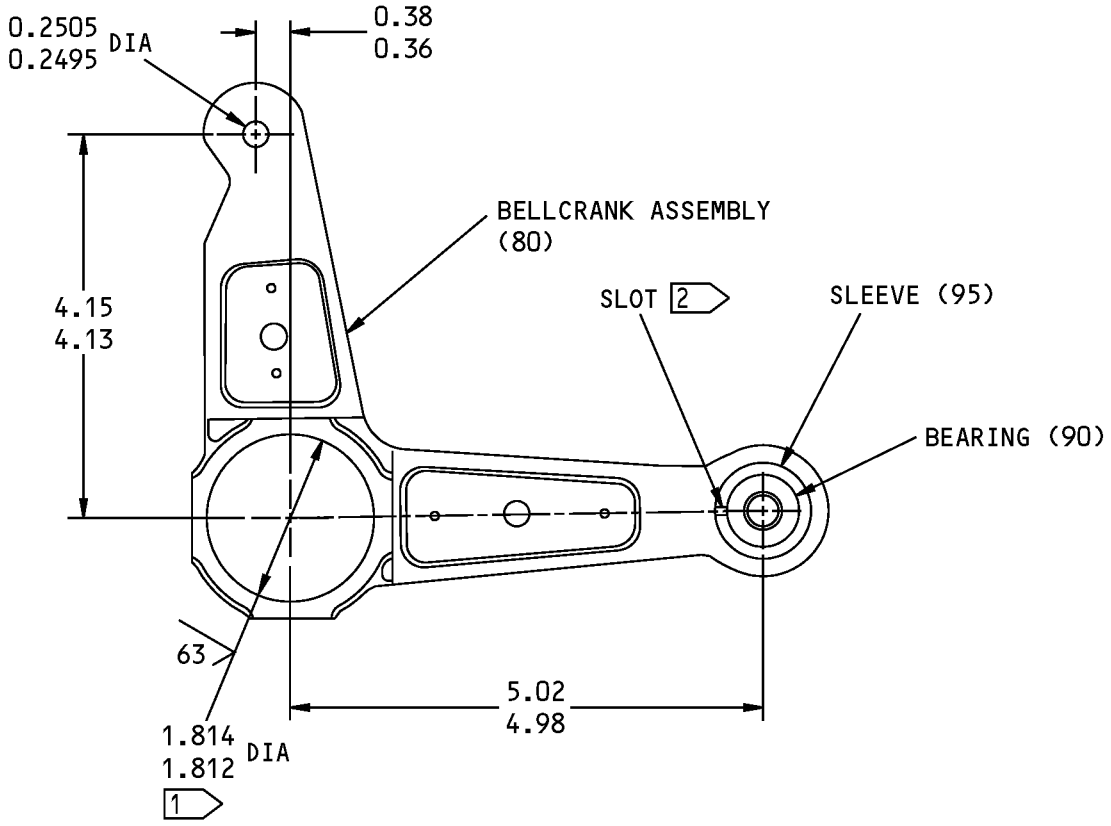
Reference	Title
SOPM 20-30-02	STRIPPING OF PROTECTIVE FINISHES
SOPM 20-41-01	DECODING TABLE FOR BOEING FINISH CODES
SOPM 20-60-02	FINISHING MATERIALS

C. Procedure (REPAIR 5-1, 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. For finishing materials, refer to SOPM 20-60-02.

(1) Chemical treat (F-17.10).

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



1 NO PRIMER THIS SURFACE

2 SLOT ON CENTERLINE WITHIN ±5°

ITEM NUMBERS REFER TO IPL FIG. 1

ALL DIMENSIONS ARE IN INCHES

65-70979-5 Bellcrank Assembly Repair and Refinish
Figure 601

HOUSING ASSEMBLY - REPAIR 6-1

69-37288–1

1. General

A. This procedure has the data to repair the housing assembly (130).

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. Bearing Replacement

A. References

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

B. Procedure

(1) Remove the old bearing (135) from the housing assembly (130) (SOPM 20-50-03).

(2) If you find defects on housing surfaces, refer to REPAIR 6-2 for repair instructions.

(3) Install and roller swage the replacement bearing in the housing assembly (130) per SOPM 20-50-03.

HOUSING - REPAIR 6-2

69-37288–2, –3

1. General

A. This procedure has the data to refinish the housing (145, 150).

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

C. Refer to IPL Figure 1 for item numbers.

D. General repair details:

(1) Material: Aluminum Alloy

2. Housing 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

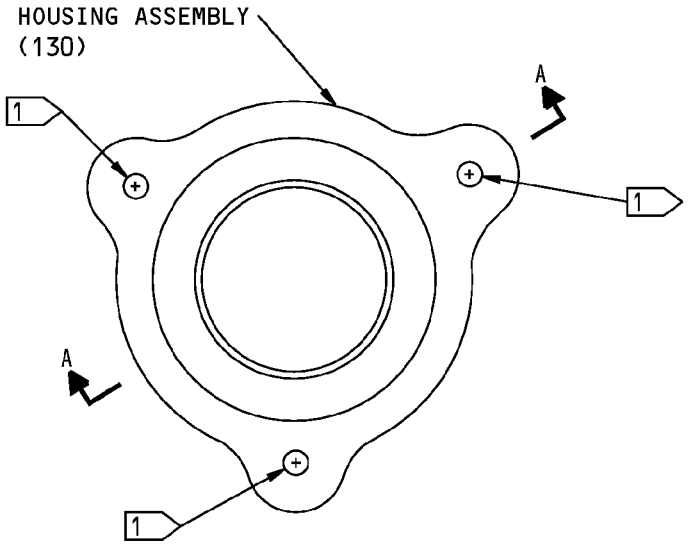
Reference	Title
SOPM 20-30-02	STRIPPING OF PROTECTIVE FINISHES
SOPM 20-41-01	DECODING TABLE FOR BOEING FINISH CODES
SOPM 20-60-02	FINISHING MATERIALS

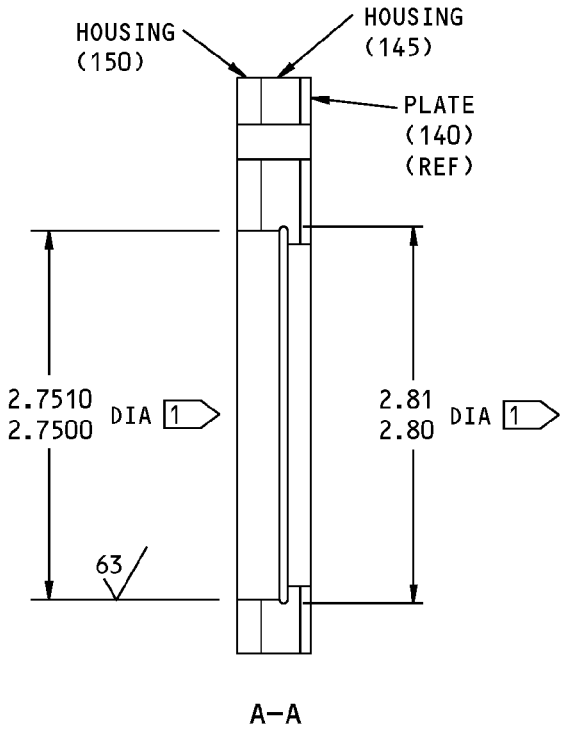
C. Procedure (REPAIR 6-2, Figure 601)

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. For finishing materials, refer to SOPM 20-60-02.

NOTE: Housing (145) and plate (140) are bonded to housing (150). Disassembly is not recommended.

(1) Chemical treat or chromic acid anodize and apply primer, C00259 (F-18.05). Or boric acid-sulfuric acid anodize or chromic acid anodize (F-17.31) and apply primer, C00259 (F-20.02), but no primer in locations shown.





A–A

1 NO PRIMER ON THIS SURFACE

125 ALL MACHINED SURFACES UNLESS SHOWN DIFFERENTLY

ITEM NUMBERS REFER TO IPL FIG. 1

ALL DIMENSIONS ARE IN INCHES

69-37288-2,-3 Housing Repair and Refinish
Figure 601

ASSEMBLY

1. General

A. This procedure contains the data to assemble the torque tube assembly.

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

C. Refer to IPL Figure 1 or IPL Figure 2 for item numbers, as applicable.

2. Assembly

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 20-50-01	BOLT AND NUT INSTALLATION
SOPM 20-60-04	MISCELLANEOUS MATERIALS

C. Procedures

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

(1) Procedure for 251A3440-1, -2, -3 torque tube assemblies (ASSEMBLY, Figure 701)

(a) Install the retaining plate (125), housing assembly (130), retainer (115) and retaining plate (120) on the tube assembly (155).

(b) Install the bellcrank assembly (80) on the tube assembly (155) as shown.

(c) Install the bolts (65), washers (70), and nuts (75) and hand tighten only.

(d) Install the input crank assembly (40) on the tube assembly (155) as shown.

NOTE: If you install a new crank assembly (40), drill fastener holes as shown with the holes in the tube assembly (155) as a guide. Refinish the new fastener holes (REPAIR 3-2).

(e) Install the bolts (25), washers (30), and nuts (35) and hand tighten only.

(f) Install the crank (20) on the tube assembly (155) as shown.

NOTE: If you install a new crank (20), drill fastener holes as shown with the holes in the tube assembly (155) as a guide. Refinish the new fastener holes (REPAIR 2-1).

(g) Install the bolts (5), washers (10) and nuts (15) and hand-tighten only.

(h) On assemblies 251A3440-2, install shaft (200) in tube (155) with sealant, A00247 on mating surfaces. Install sleeve (195) with bolts (180), washers (185), and nuts (190). Tighten the nuts hand tight.

(i) On assemblies 251A3440-3, put shafts (205, 215) together and install pins (210). Install this unit in tube (155) with sealant, A00247 on mating surfaces. Install sleeve (195) with bolts (180), washers (185), and nuts (190). Tighten the nuts hand tight.

(2) Procedure for 251A3440-4, -5 torque tube assemblies (ASSEMBLY, Figure 702)

(a) Install the retaining plate (235), housing assembly (210), retainer (205) and retaining plate (200) on the tube assembly (240).

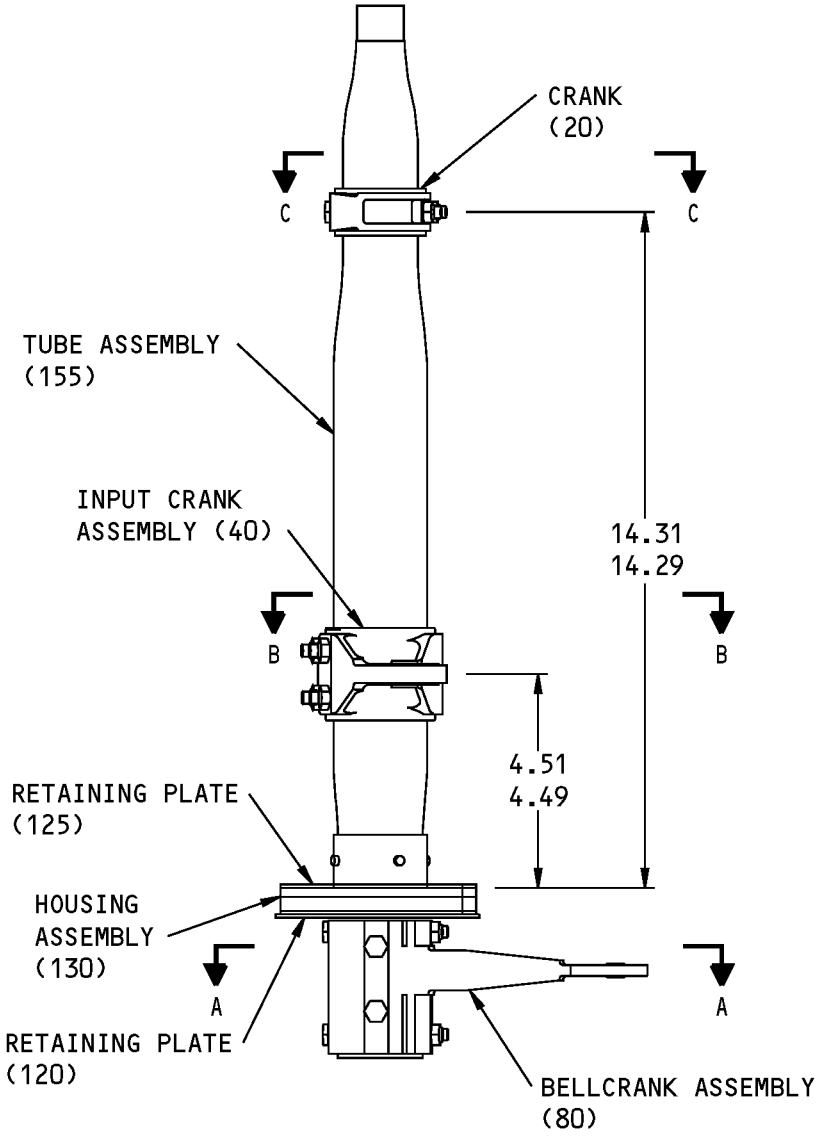
(b) Install the bellcrank assembly (175) on the tube assembly (240) as shown.

(c) Install the bolts (155), washers (160, 165), and nuts (170) and hand tighten only.

(d) Install the override assemblies (30) on the tube assembly (240) as shown.

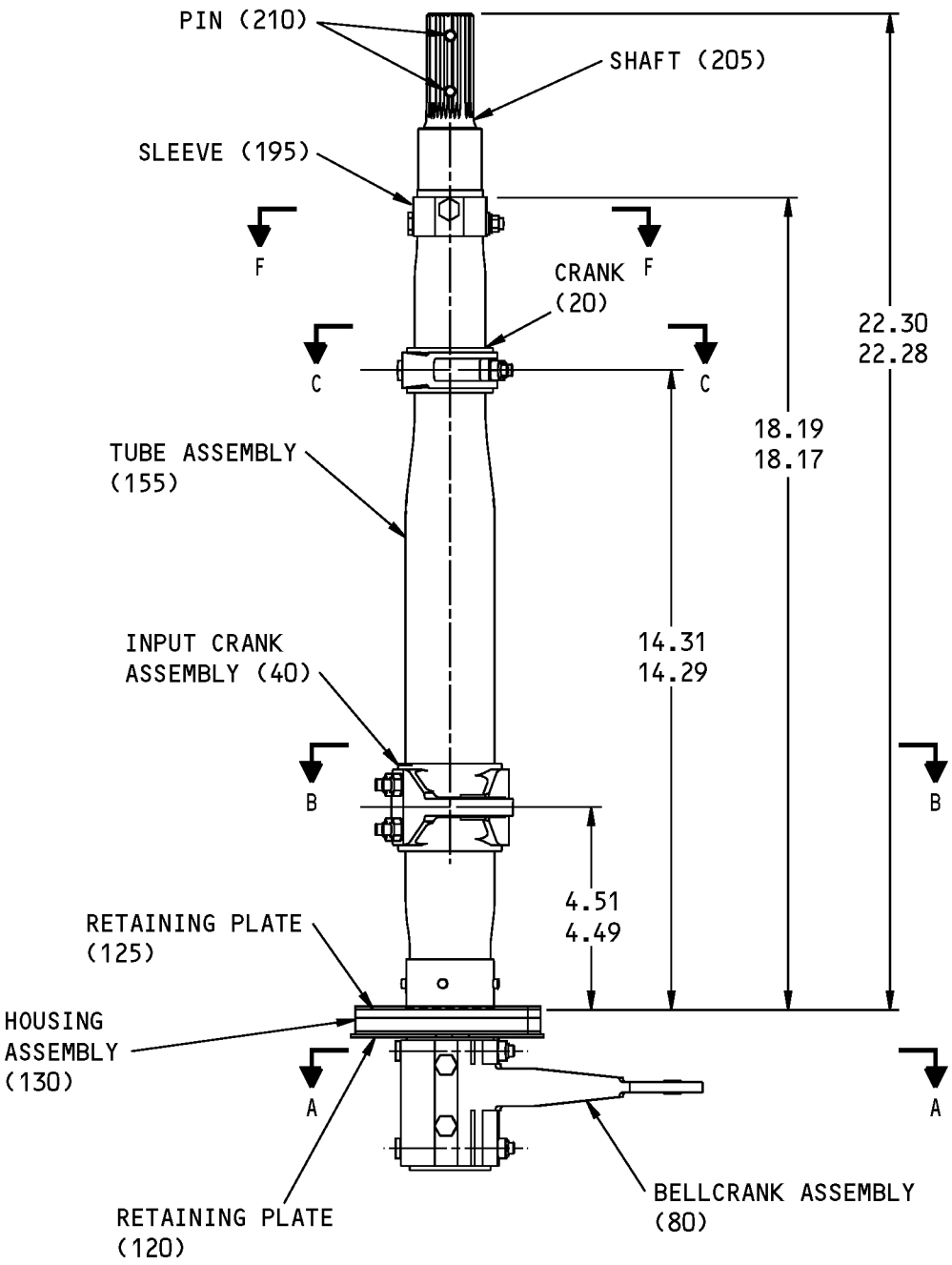
(e) Install the bolts (5, 10), washers (15, 20), and nuts (25) and hand tighten only.

(f) On assemblies 251A3440-4, put shafts (250, 265) together and install pins (260). Install this unit in tube (270) with sealant, A00247 on mating surfaces. Install pins (245).



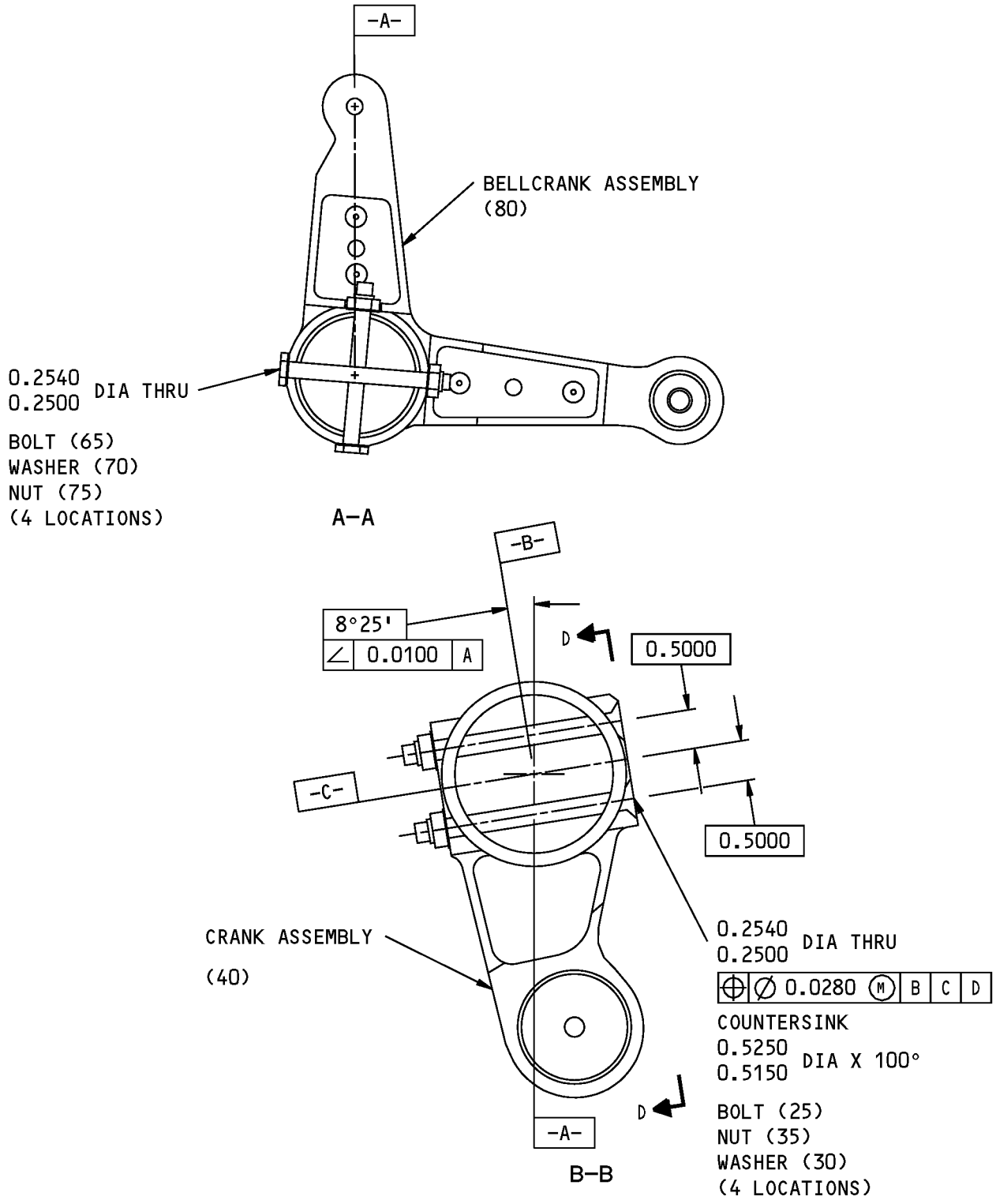
251A3440-1

251A3440-1,-2,-3 Assembly Details
Figure 701 (Sheet 1 of 5)

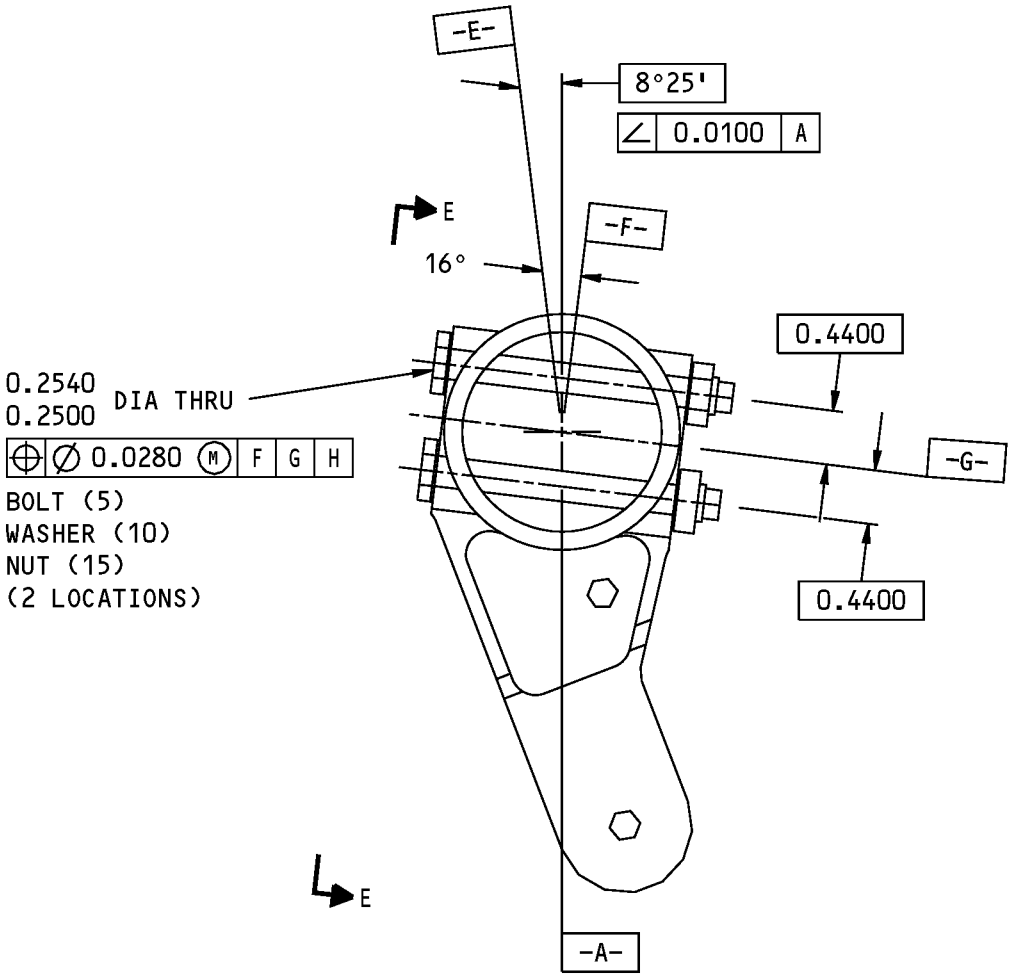


251A3440-2,-3

251A3440-1,-2,-3 Assembly Details
Figure 701 (Sheet 2 of 5)

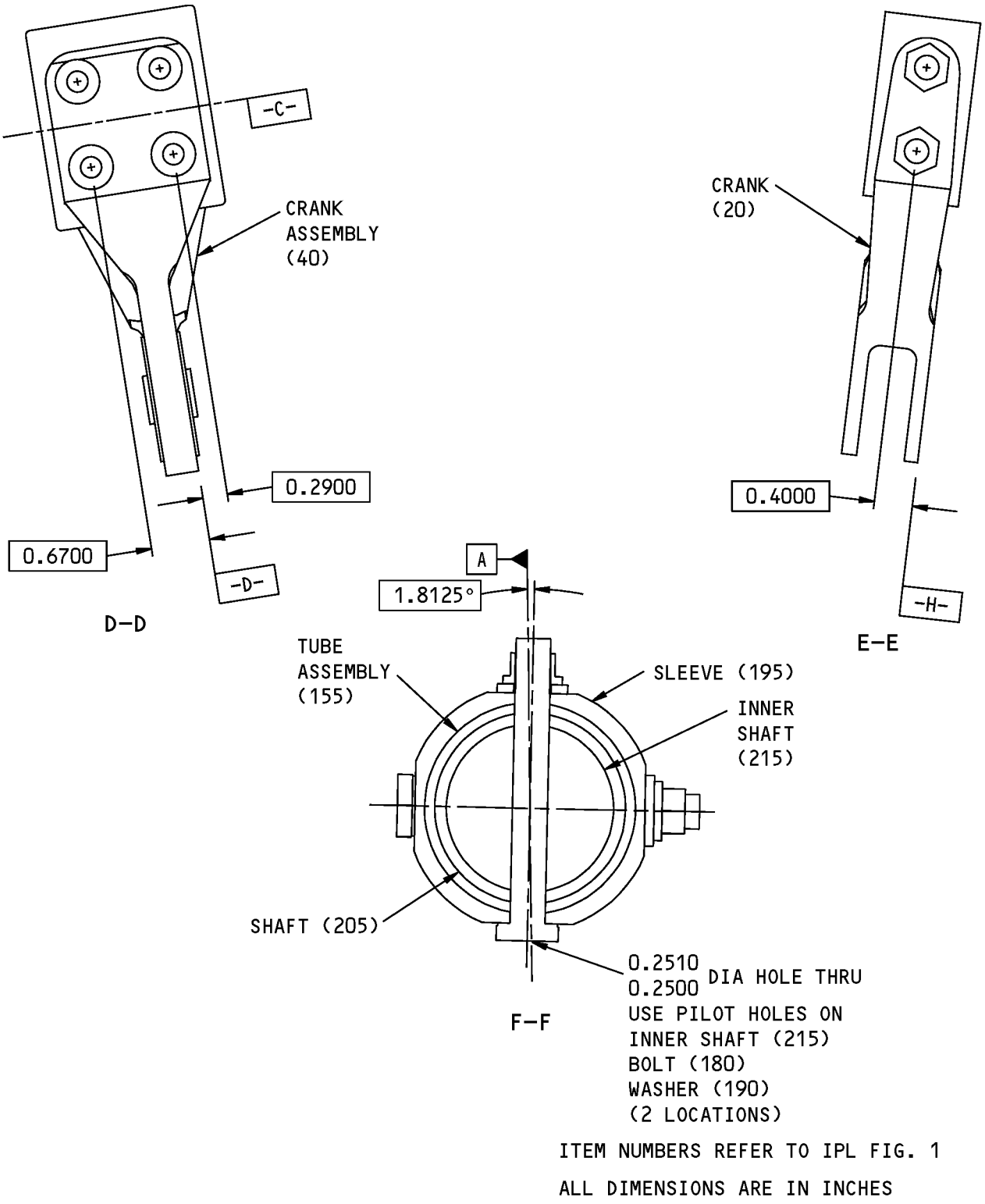


251A3440-1,-2,-3 Assembly Details
Figure 701 (Sheet 3 of 5)

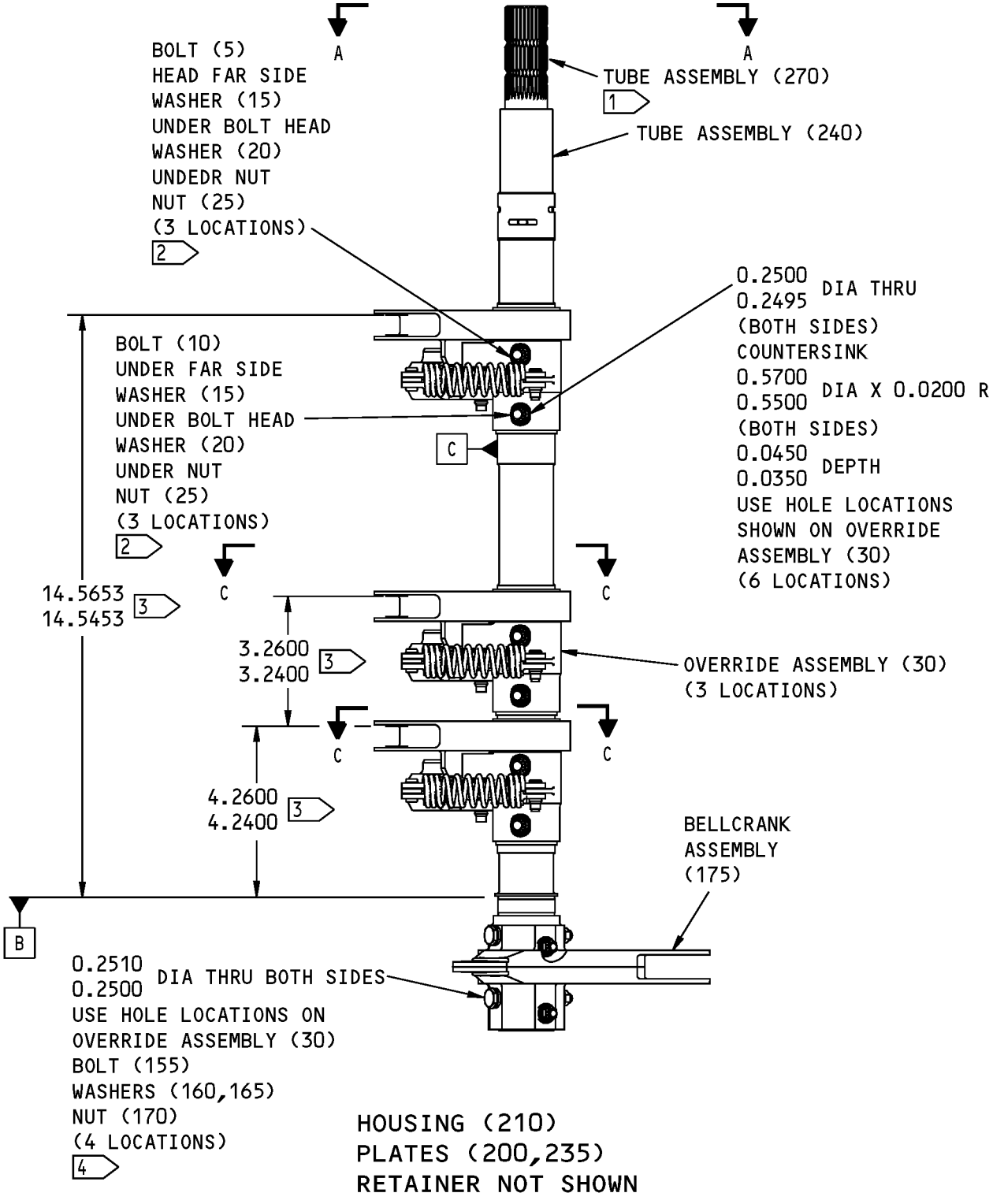


C–C

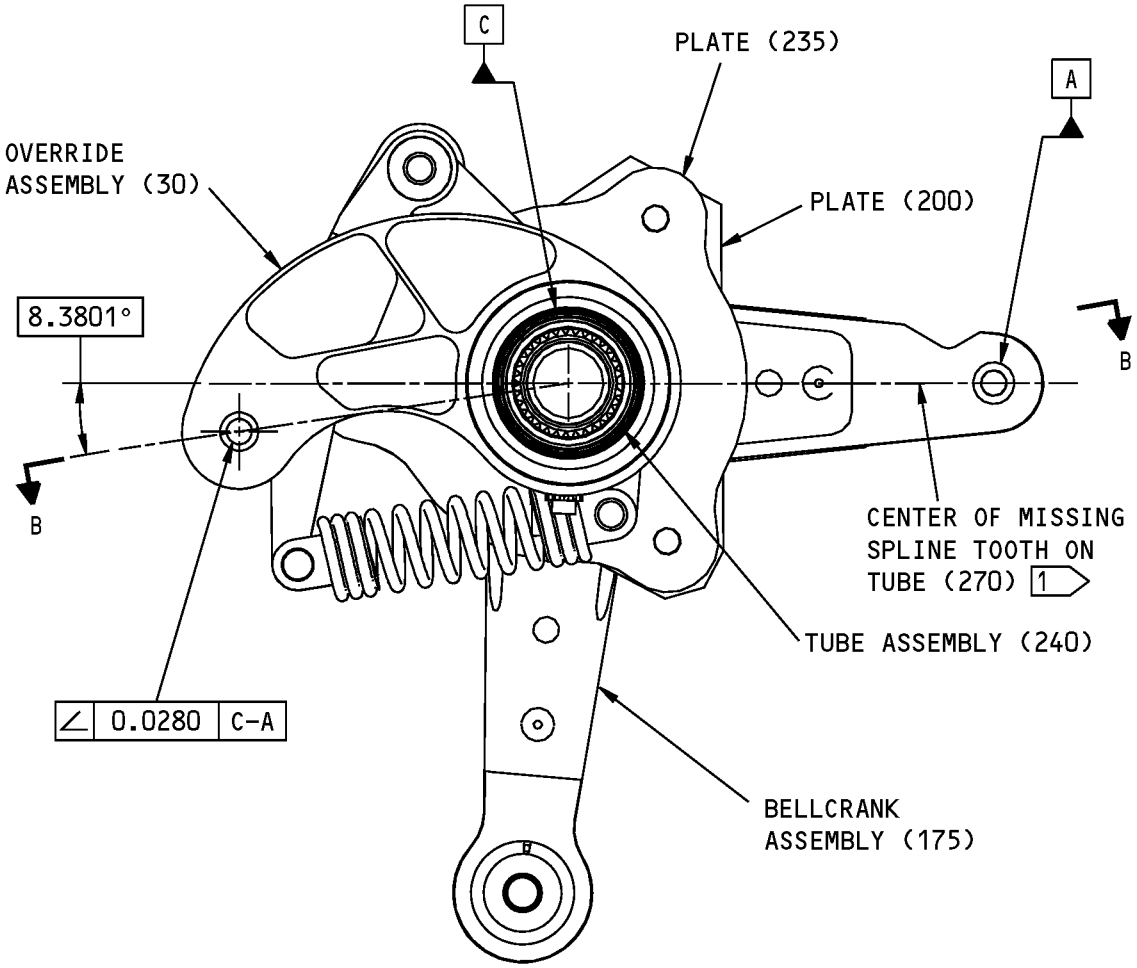
251A3440-1,-2,-3 Assembly Details
Figure 701 (Sheet 4 of 5)



251A3440-1,-2,-3 Assembly Details
Figure 701 (Sheet 5 of 5)

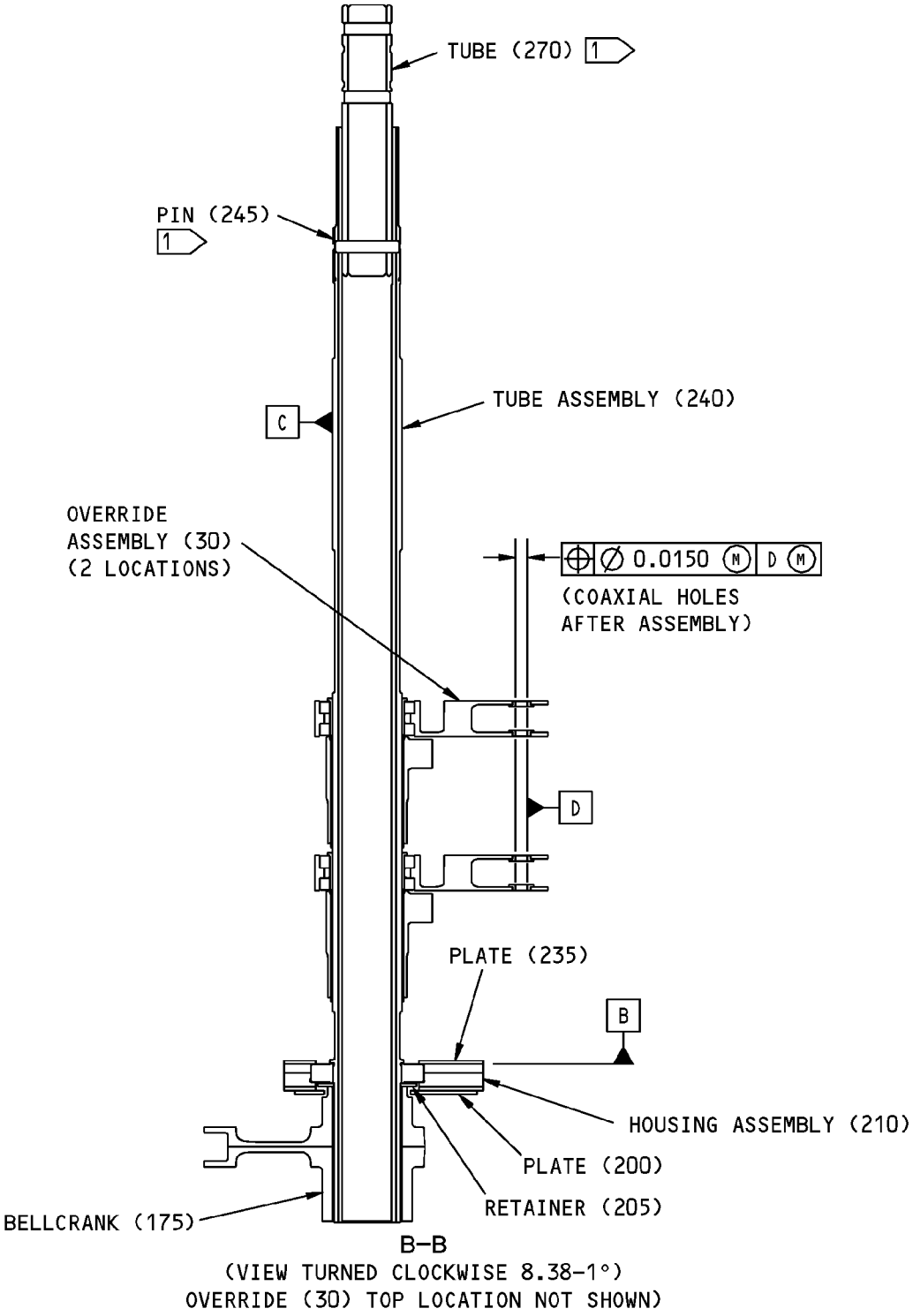


251A3440-4,-5 Assembly Details
Figure 702 (Sheet 1 of 4)

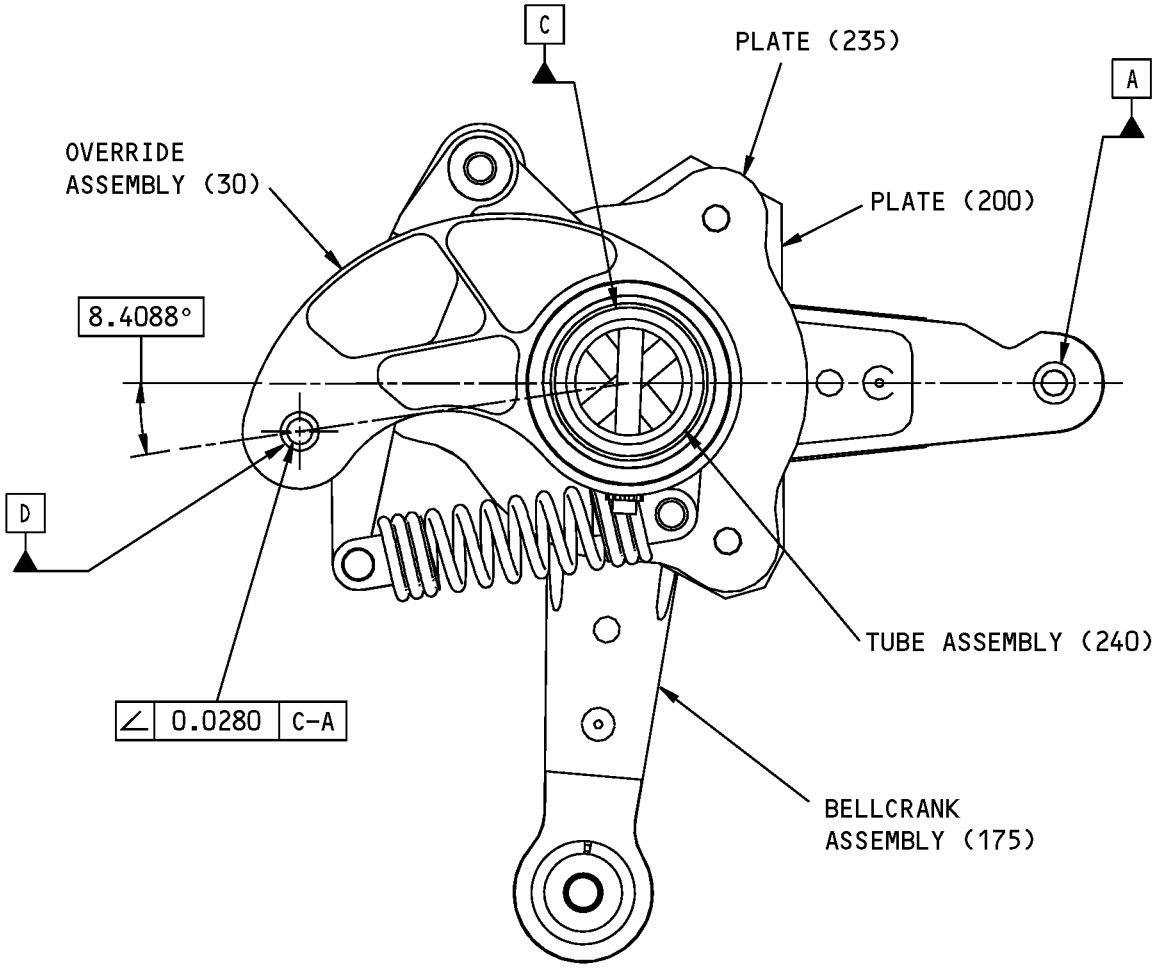


A–A

251A3440-4,-5 Assembly Details
Figure 702 (Sheet 2 of 4)



251A3440-4,-5 Assembly Details
Figure 702 (Sheet 3 of 4)



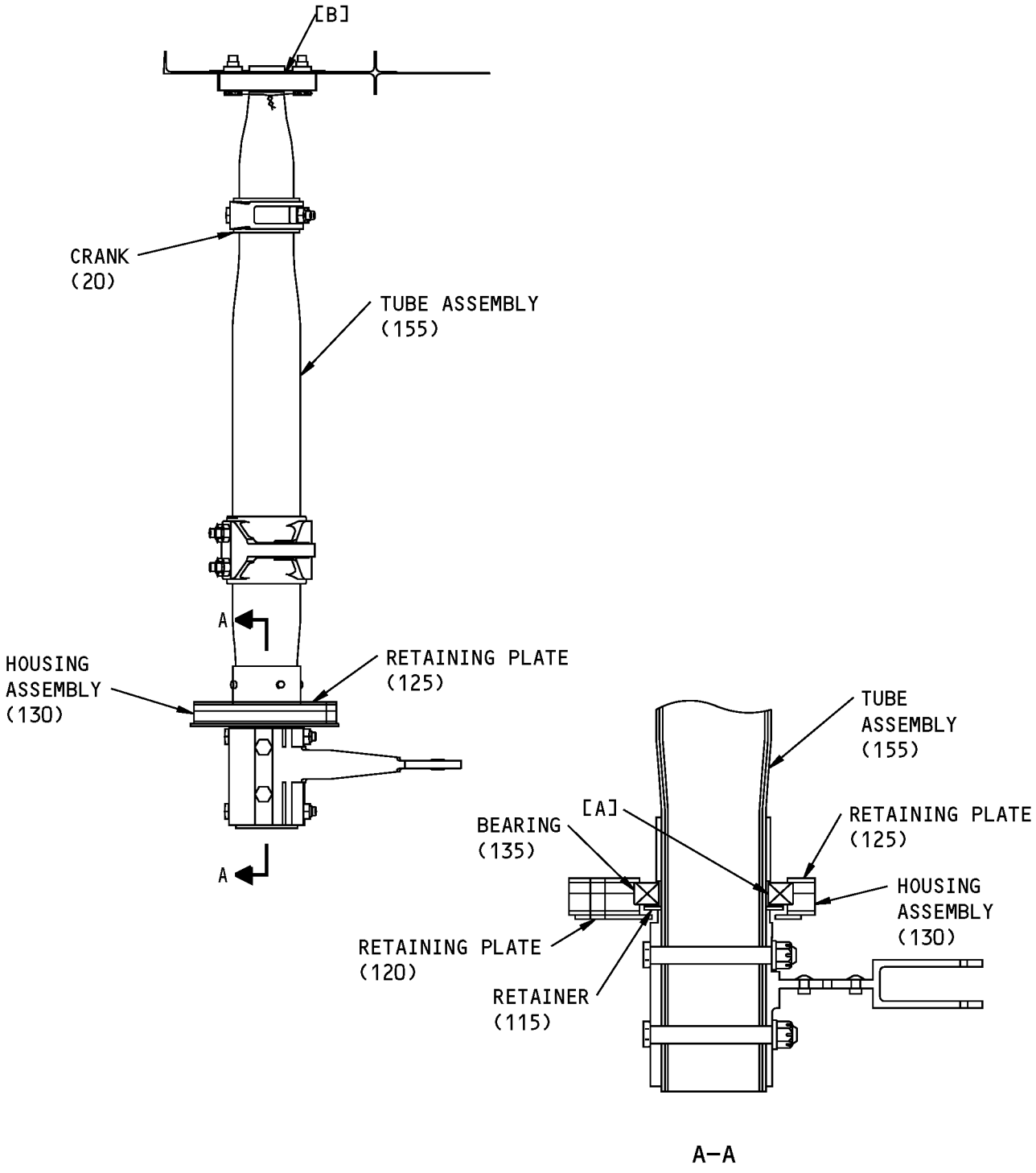
C-C

1. FOR 251A3440-4 ONLY
2. HAND TIGHTEN ONLY. OVERRIDES AND FASTENERS WILL BE REMOVED WHEN THE UNIT IS INSTALLED IN THE AIRPLANE
3. DIMENSION TO INSIDE FACE OF BUSHING FLANGES
4. INSTALL FASTENERS WITH BMS 5-95 SEALANT (SOPM 20-50-19, METHOD 2)

ITEM NUMBERS REFER TO IPL FIG. 2

ALL DIMENSIONS ARE IN INCHES

251A3440-4,-5 Assembly Details
Figure 702 (Sheet 4 of 4)



Fits and Clearances
Figure 801 (Sheet 1 of 2)

REF LETTER	REF IPL FIG. 1, MATING ITEM NO.	DESIGN DIMENSION* DIMENSION MIN	DESIGN DIMENSION* DIMENSION MAX	DESIGN DIMENSION* ASSEMBLY CLEARANCE 1 MIN	DESIGN DIMENSION* ASSEMBLY CLEARANCE 1 MAX	SERVICE WEAR LIMIT* DIMENSION MIN	SERVICE WEAR LIMIT* DIMENSION MAX	SERVICE WEAR LIMIT* MAXIMUM CLEARANCE
[A]	ID 135	1.812	1.813	0.000	0.002		1.816	0.004
	OD 155	1.811	1.812			1.808		
[B]	ID 2	0.9990	1.0000	-0.0005	0.0015		1.0030	0.0035
	OD 155	0.9985	0.9995			0.9955		

* ALL DIMENSIONS ARE IN INCHES

1 NEGATIVE NUMBERS ARE AN INTERFERENCE FIT

2 INSTALLATION BEARING BACB10EX16

Fits and Clearances
Figure 801 (Sheet 2 of 2)

COMPONENT MAINTENANCE MANUAL

SPECIAL TOOLS, FIXTURES, AND EQUIPMENT

(NOT APPLICABLE)

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
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
30163	VALENTEC DAYRON INC 333 MAGUIRE BLVD PO BOX 140394 ORLANDO, FLORIDA 32814-0394
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

Code	Name
83086	NEW HAMPSHIRE BALL BEARING, INC HITECH DIVISION 172 JAFFREY ROAD PETERBOROUGH, NEW HAMPSHIRE 03458

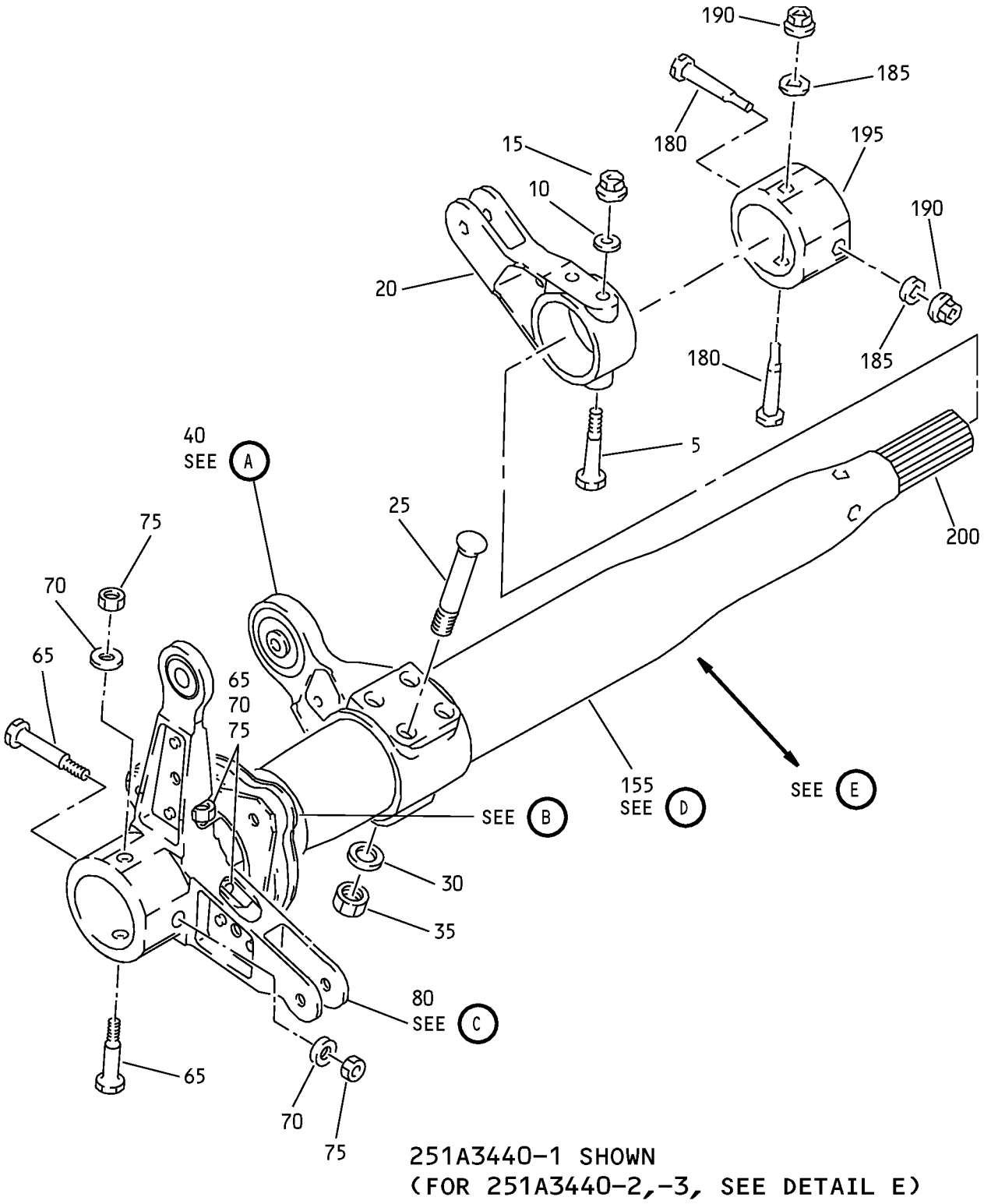
NUMERICAL INDEX

PART NUMBER	AIRLINE PART NUMBER	FIGURE	ITEM	UNITS PER ASSEMBLY
251A3401-1		2	190	1
251A3401-2		2	255	1
251A3435-1		1	210	2
		2	260	2
251A3435-2		2	245	2
251A3436-1		1	215	1
251A3436-2		2	265	1
251A3440-1		1	1A	RF
251A3440-2		1	1B	RF
251A3440-3		1	1C	RF
251A3440-4		1	1D	RF
		2	1A	RF
251A3440-5		1	1E	RF
		2	1B	RF
251A3441-1		1	20	1
251A3441-3		1	20A	1
251A3442-1		1	40	1
251A3442-2		1	60	1
251A3442-3		1	60A	1
251A3444-1		1	155	1
251A3444-10		2	240	1
251A3444-2		1	170	1
251A3444-3		1	175	1
251A3444-4		1	155A	1
251A3444-5		1	170A	1
251A3444-6		1	175A	1
251A3444-7		2	270	1
251A3445-1		1	200	1
251A3445-2		1	205	1
251A3445-3		2	250	1
251A3446-1		1	195	1
251A3452-1		2	60	1
251A3452-2		2	63	1
251A3454-1		2	62	2

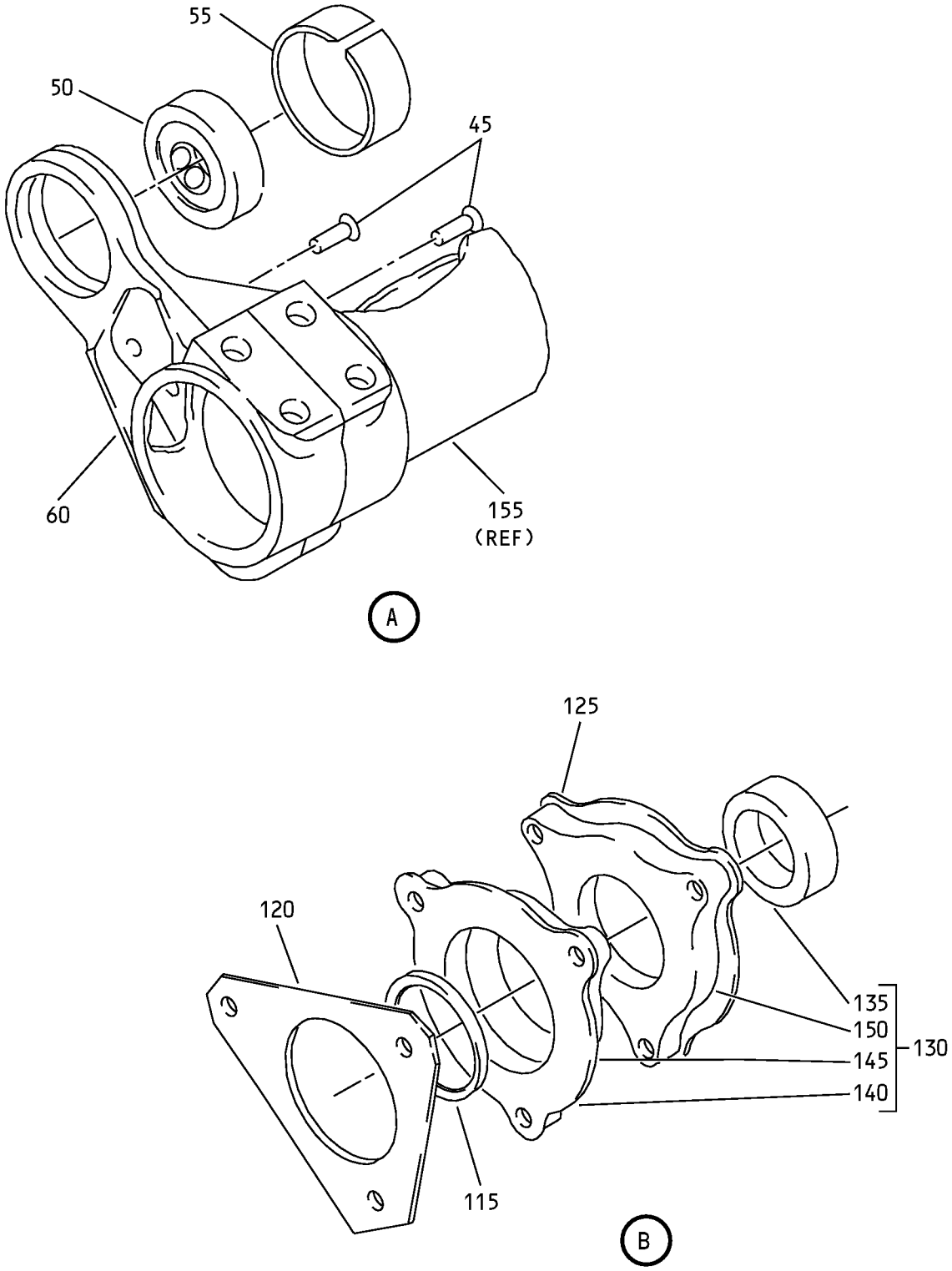
PART NUMBER	AIRLINE PART NUMBER	FIGURE	ITEM	UNITS PER ASSEMBLY
251A3455-1		2	210	1
251A3455-2		2	230	1
251A3455-3		2	225	1
251A3456-1		2	175	1
251A3456-2		2	195	1
251A3457-1		2	220	1
		2	235	1
251A3457-2		2	200	1
251A3458-1		2	205	1
251A3490-1		2	30	3
251A3491-1		2	75	1
251A3491-2		2	110	1
251A3492-1		2	115	1
251A3493-1		2	135	1
251A3493-2		2	150	1
251A3494-1		2	120	1
251A3494-2		2	130	1
251T3742-42		2	125	1
25AT3742-41		2	105	1
5AFS428		1	90	1
5FS428		1	50	1
65-45149-4		1	165	1
65-70978-1		1	105A	1
65-70978-2		1	110A	1
65-70979-2		1	100	1
65-70979-5		1	80	1
65-70981-1		1	105	1
65-70981-2		1	110	1
69-37286-1		1	125	1
		1	140	1
69-37286-2		1	120	1
69-37288-1		1	130	1
69-37288-2		1	145	1
69-37288-3		1	150	1
69-38919-1		1	55	1

PART NUMBER	AIRLINE PART NUMBER	FIGURE	ITEM	UNITS PER ASSEMBLY
69-38919-31		1	95	1
		2	185	1
69-60773-1		1	115	1
BACB10A831		1	135	1
BACB10AC5		1	50	1
BACB10AC5A		1	90	1
BACB10EX29		1	135A	1
BACB10FP05AJ		2	180A	1
BACB10FS03RJP		2	80	2
BACB10FU25J		2	145A	2
BACB10FU25JP		2	145	2
BACB10FV23J		2	215	1
BACB10HH03		2	100	1
BACB28AK03-029		2	40	1
		2	55	1
BACB28AP04-007		2	140	2
BACB30MR4K27		2	10A	3
BACB30MR4K28		2	5A	3
BACB30MR4S27		2	10	3
BACB30MR4S28		2	5	3
BACB30MS4K38		1	25	4
BACB30NR4K26		1	180	2
BACB30NR4K30		2	155	4
BACB30NR4K31		1	5	2
BACB30NR4K34		1	65	4
BACB30VT6K17		2	65	1
BACB30VT6K7		2	35	1
BACB30VT6K9		2	85	1
BACC30BS6S		2	45	1
		2	70	1
		2	95	1
BACN10JC4CD		1	15	2
		1	35	4
		1	75	4
		1	190	2

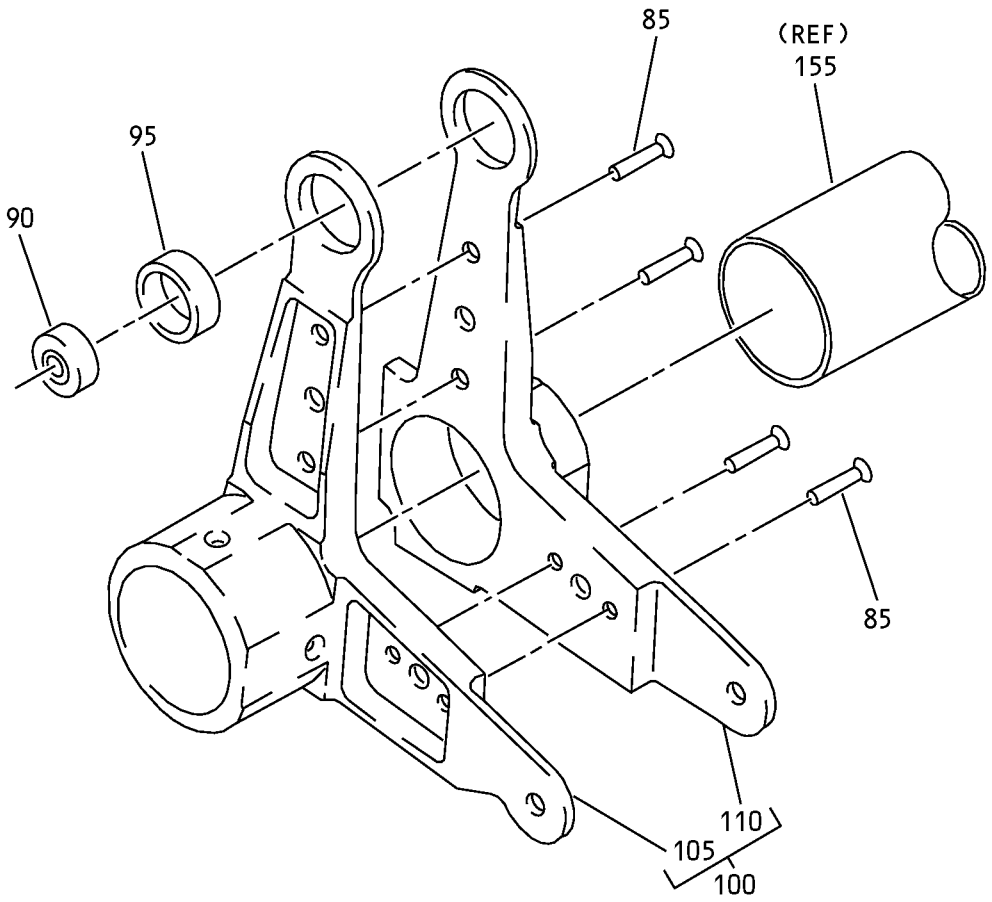
PART NUMBER	AIRLINE PART NUMBER	FIGURE	ITEM	UNITS PER ASSEMBLY
BACN10YR4CD		2	170	4
BACR15BB5D		1	45	2
BACR15BB5D4C		1	160D	4
BACR15BB5D7		1	160	4
BACW10BP4ACU		2	15	6
BACW10BP4APU		2	20	6
BACW10BP4CD		2	160	4
BACW10BP4DP		2	165	4
HHKSP5		1	50	1
HHKSP5A		1	90	1
KP29BS		1	135A	1
KP29BS2		1	135A	1
KP29BSFS428		1	135A	1
KP29BSLY196		1	135A	1
KP29BSSD610		1	135A	1
KSP5-2TS		1	50	1
KSP5A2TS		1	90	1
KSP5AE9440A		1	90	1
KSP5AFS428		1	90	1
KSP5AG27		1	90	1
KSP5ASD610		1	90	1
KSP5E9440		1	50	1
KSP5FS428		1	50	1
KSP5G27		1	50	1
KSP5SD610		1	50	1
MS20470D5		1	85	4
MS20615-6M		2	50	1
NAS1149D0416J		1	10	2
		1	30	4
		1	70	4
		1	185	2
NAS1149E0332R		2	90	1
NAS1398D5-7		1	160A	4
NAS1805-4		2	25	6



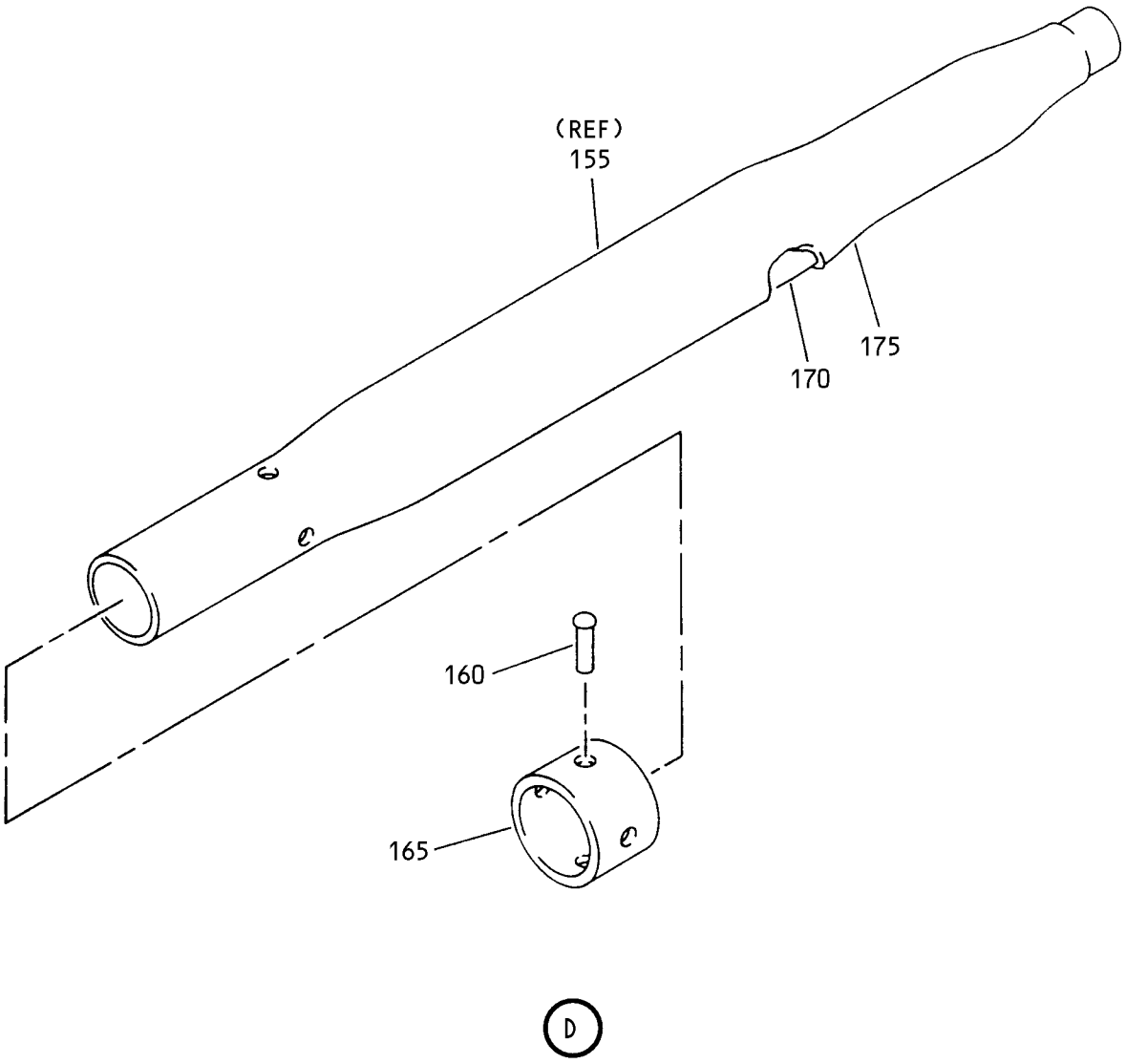
Rudder Control Torque Tube Assembly
IPL Figure 1 (Sheet 1 of 5)



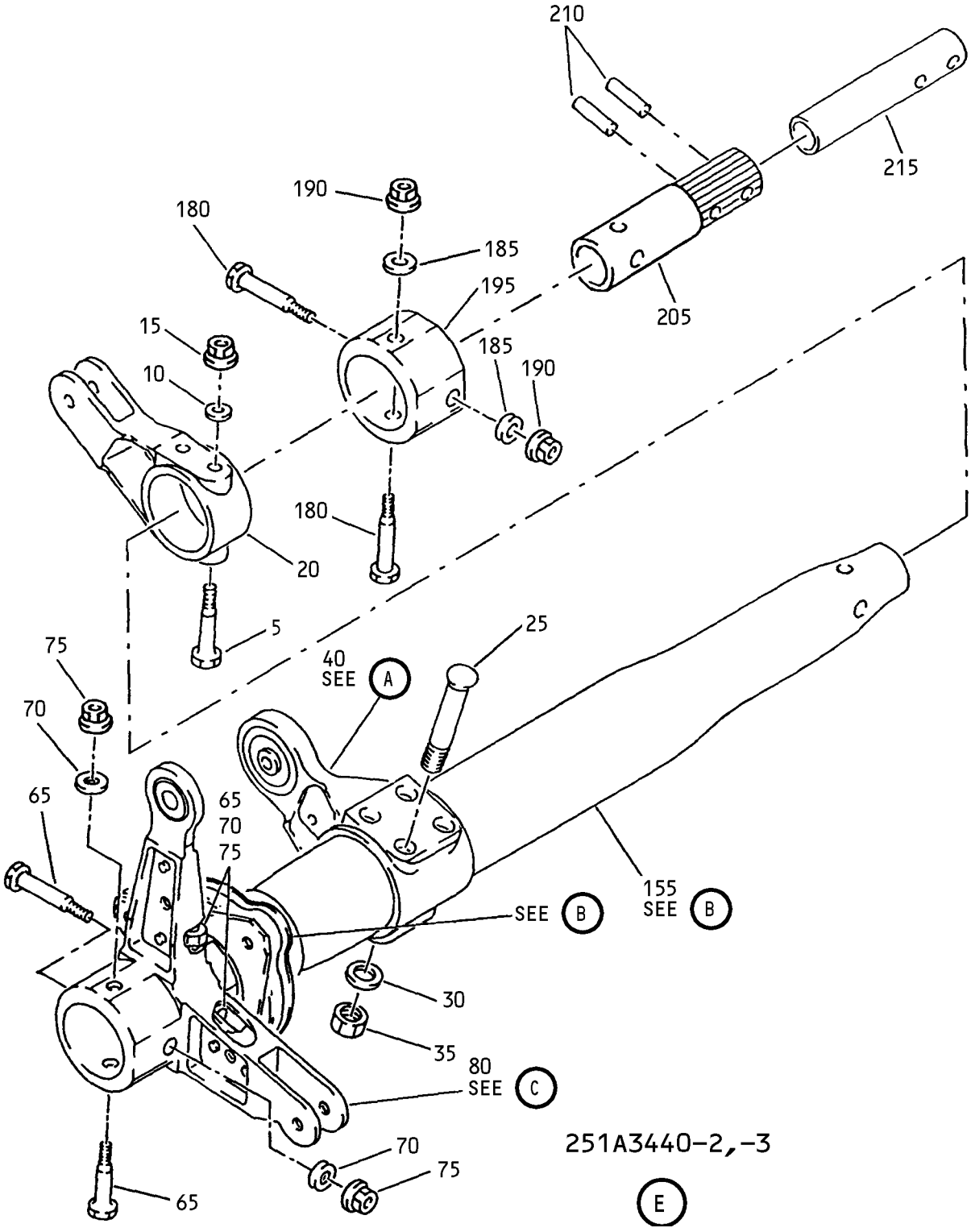
Rudder Control Torque Tube Assembly
IPL Figure 1 (Sheet 2 of 5)



Rudder Control Torque Tube Assembly
IPL Figure 1 (Sheet 3 of 5)



Rudder Control Torque Tube Assembly
IPL Figure 1 (Sheet 4 of 5)



Rudder Control Torque Tube Assembly
IPL Figure 1 (Sheet 5 of 5)

FIG/ ITEM	PART NUMBER	AIRLINE PART NUMBER	NOMENCLATURE 1 2 3 4 5 6 7	USAGE CODE	UNITS PER ASSY
1–					
–1A	251A3440-1		TUBE ASSY-TORQUE RUD CONT	A	RF
–1B	251A3440-2		TUBE ASSY-TORQUE RUD CONT	B	RF
–1C	251A3440-3		TUBE ASSY-TORQUE RUD CONT	C	RF
–1D	251A3440-4		TUBE ASSY-TORQUE RUD CONT (POST SB 737-27-1253) (FOR DETAILS SEE FIG. 2)	D	RF
–1E	251A3440-5		TUBE ASSY-TORQUE RUD CONT (POST SB 737-27-1253) (FOR DETAILS SEE FIG. 2)	E	RF
5	BACB30NR4K31		. BOLT		2
10	NAS1149D0416J		. WASHER		2
15	BACN10JC4CD		. NUT		2
20	251A3441-1		. CRANK (OPT ITEM 20A)		1
–20A	251A3441-3		. CRANK-HOGOUT (OPT ITEM 20)		1
25	BACB30MS4K38		. BOLT		4
30	NAS1149D0416J		. WASHER		4
35	BACN10JC4CD		. NUT		4
40	251A3442-1		. CRANK ASSY-ACTR INPUT		1
45	BACR15BB5D		. . RIVET (SIZE DETERMINED ON INST)		2
50	KSP5SD610		. . BEARING (V83086) (SPEC BACB10AC5) (OPT HHKSP5 (V38443)) (OPT KSP5-2TS (V43991)) (OPT KSP5E9440 (V21335)) (OPT KSP5FS428 (V21335)) (OPT KSP5G27 (V30163)) (OPT 5FS428 (V21335))		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–					
55	69-38919-1		. . SLEEVE (MAKE FROM 6061-0 SH PER QQ-A-250/11 OR 6061-0 TUBING PER WW-T-789.OPTL MATRL 6061-T6 ROD PER QQ-A-225/8 OR 6061-T6 TUBING PER WW-T-700/6 ANNEAL TO 6061-0 AFTER MACHINING)		1
60	251A3442-2		. . CRANK-BONDED ASSY (OPT ITEM 60A)		1
–60A	251A3442-3		. . CRANK-BONDED ASSY (OPT ITEM 60)		1
65	BACB30NR4K34		. BOLT		4
70	NAS1149D0416J		. WASHER		4
75	BACN10JC4CD		. NUT		4
80	65-70979-5		. BELLCRANK ASSY-FEEL AND CENTERING		1
85	MS20470D5		. . RIVET (SIZE DETERMINED ON INST)		4
90	KSP5ASD610		. . BEARING (V83086) (SPEC BACB10AC5A) (OPT HHKSP5A (V38443)) (OPT KSP5AE9440A (V21335)) (OPT KSP5AFS428 (V21335)) (OPT KSP5A2TS (V43991)) (OPT KSP5AG27 (V30163)) (OPT 5AFS428 (V21335))		1
95	69-38919-31		. . SLEEVE		1
100	65-70979-2		. . BONDED ASSY		1
105	65-70981-1		. . . BELLCRANK (OPT ITEM 105A)		1
–105A	65-70978-1		. . . BELLCRANK (OPT ITEM 105)		1
110	65-70981-2		. . . BELLCRANK (OPT ITEM 110A)		1
–110A	65-70978-2		. . . BELLCRANK (OPT ITEM 110)		1
115	69-60773-1		. RETAINER		1

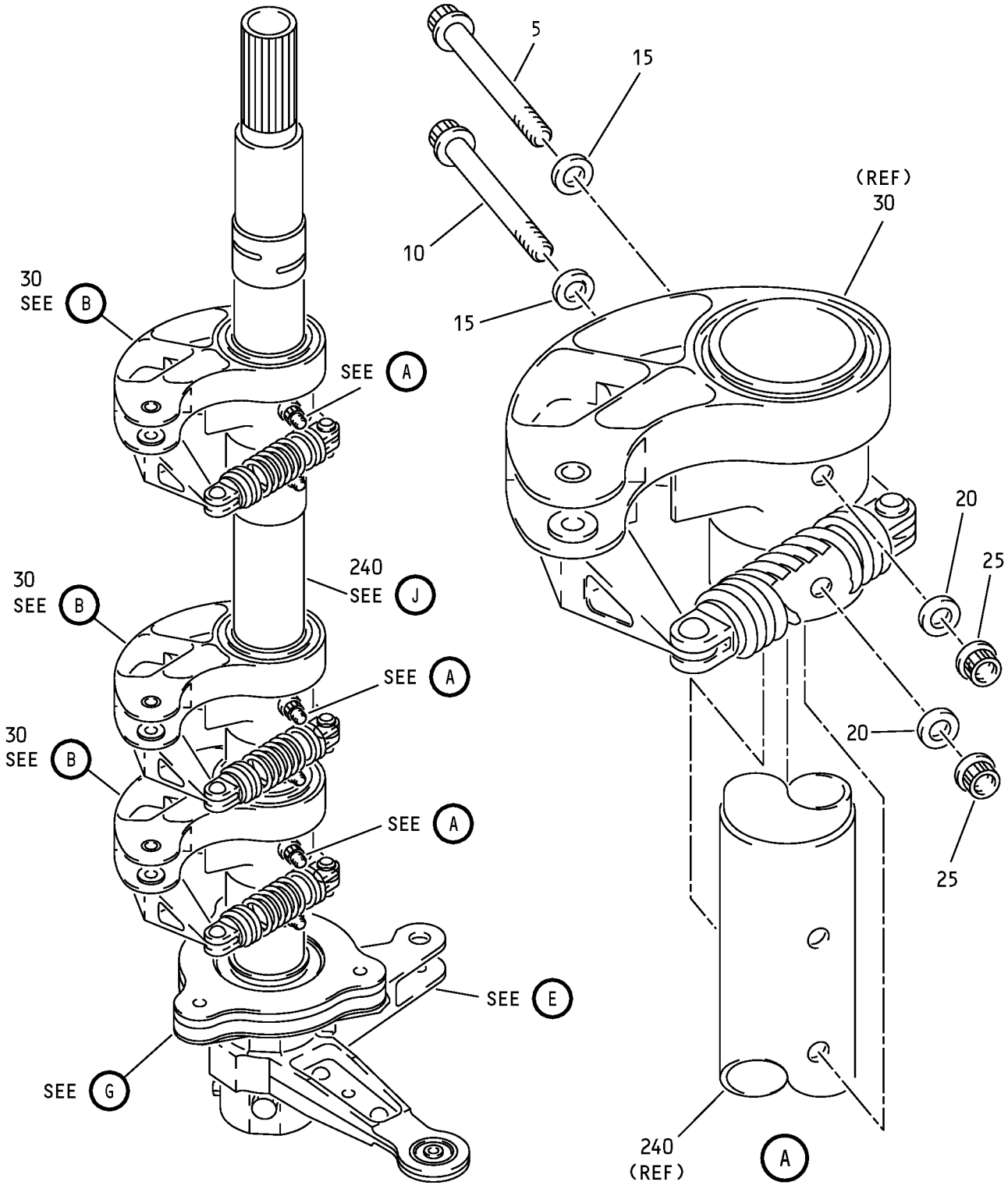
–Item not Illustrated

FIG/ ITEM	PART NUMBER	AIRLINE PART NUMBER	NOMENCLATURE 1 2 3 4 5 6 7	USAGE CODE	UNITS PER ASSY
1–					
120	69-37286-2		. PLATE-RETAINING		1
125	69-37286-1		. PLATE-RETAINING		1
130	69-37288-1		. HOUSING ASSY		1
135	BACB10A831		. . BEARING (OPT ITEM 135A)		1
–135A	KP29BSLY196		. . BEARING (V40920) (SPEC BACB10EX29) (OPT KP29BSSD610 (V83086)) (OPT KP29BS (V06144)) (OPT KP29BSFS428 (V21335)) (OPT KP29BS2 (V38443)) (OPT ITEM 135)		1
140	69-37286-1		. . PLATE-RETAINING		1
145	69-37288-2		. . HOUSING		1
150	69-37288-3		. . HOUSING		1
155	251A3444-1		. TUBE ASSY	A	1
–155A	251A3444-4		. TUBE ASSY	B, C	1
160	BACR15BB5D7		. . RIVET (OPT ITEM 160A)	A	4
–160A	NAS1398D5-7		. . RIVET (OPT ITEM 160)	A	4
–160B	BACR15BB5D7C		DELETED		
–160C	NAS1398D5A7		DELETED		
–160D	BACR15BB5D4C		. . RIVET	B, C	4
165	65-45149-4		. . SLEEVE		1
170	251A3444-2		. . TUBE-INNER	A	1
–170A	251A3444-5		. . TUBE-INNER	B, C	1
175	251A3444-3		. . TUBE-OUTER	A	1
–175A	251A3444-6		. . TUBE-OUTER	B, C	1
180	BACB30NR4K26		. BOLT	B, C	2
185	NAS1149D0416J		. WASHER	B, C	2
190	BACN10JC4CD		. NUT	B, C	2
195	251A3446-1		. SLEEVE	B, C	1
200	251A3445-1		. SHAFT-SPLINED	B	1

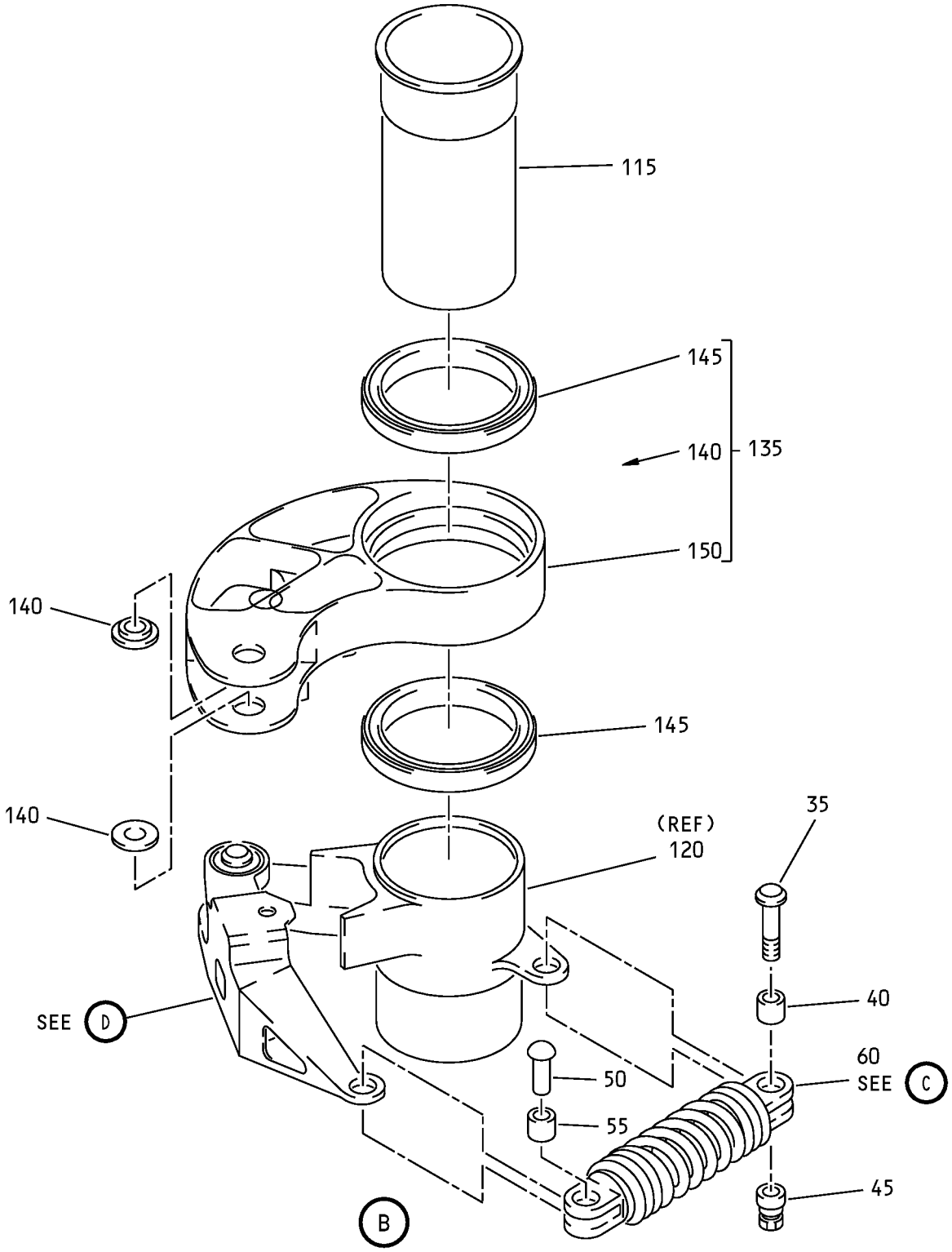
–Item not Illustrated

FIG/ ITEM	PART NUMBER	AIRLINE PART NUMBER	NOMENCLATURE 1 2 3 4 5 6 7	USAGE CODE	UNITS PER ASSY
1–					
205	251A3445-2		. SHAFT-SPLINED	C	1
210	251A3435-1		. PIN	C	2
215	251A3436-1		. SHAFT-INNER	C	1

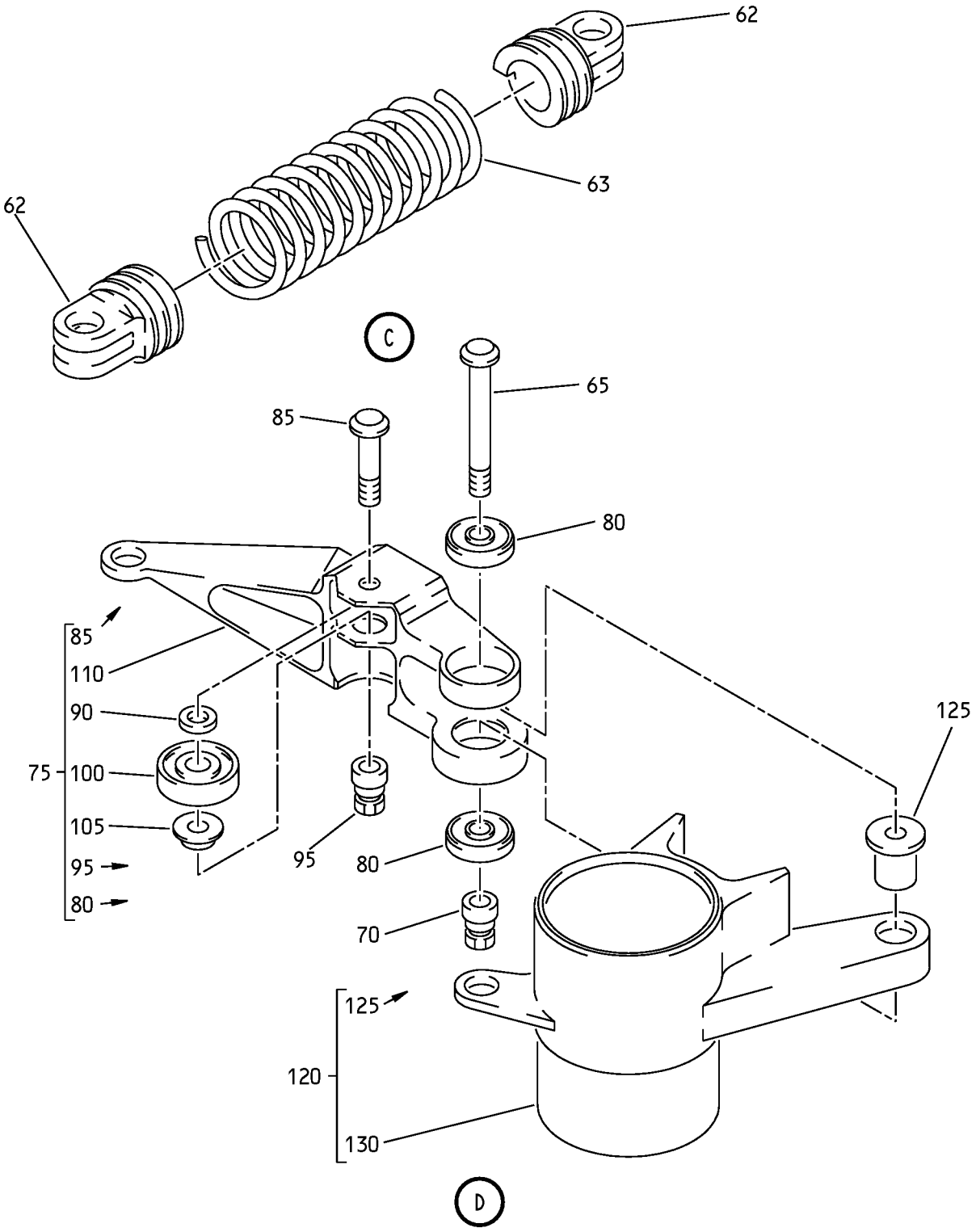
–Item not Illustrated



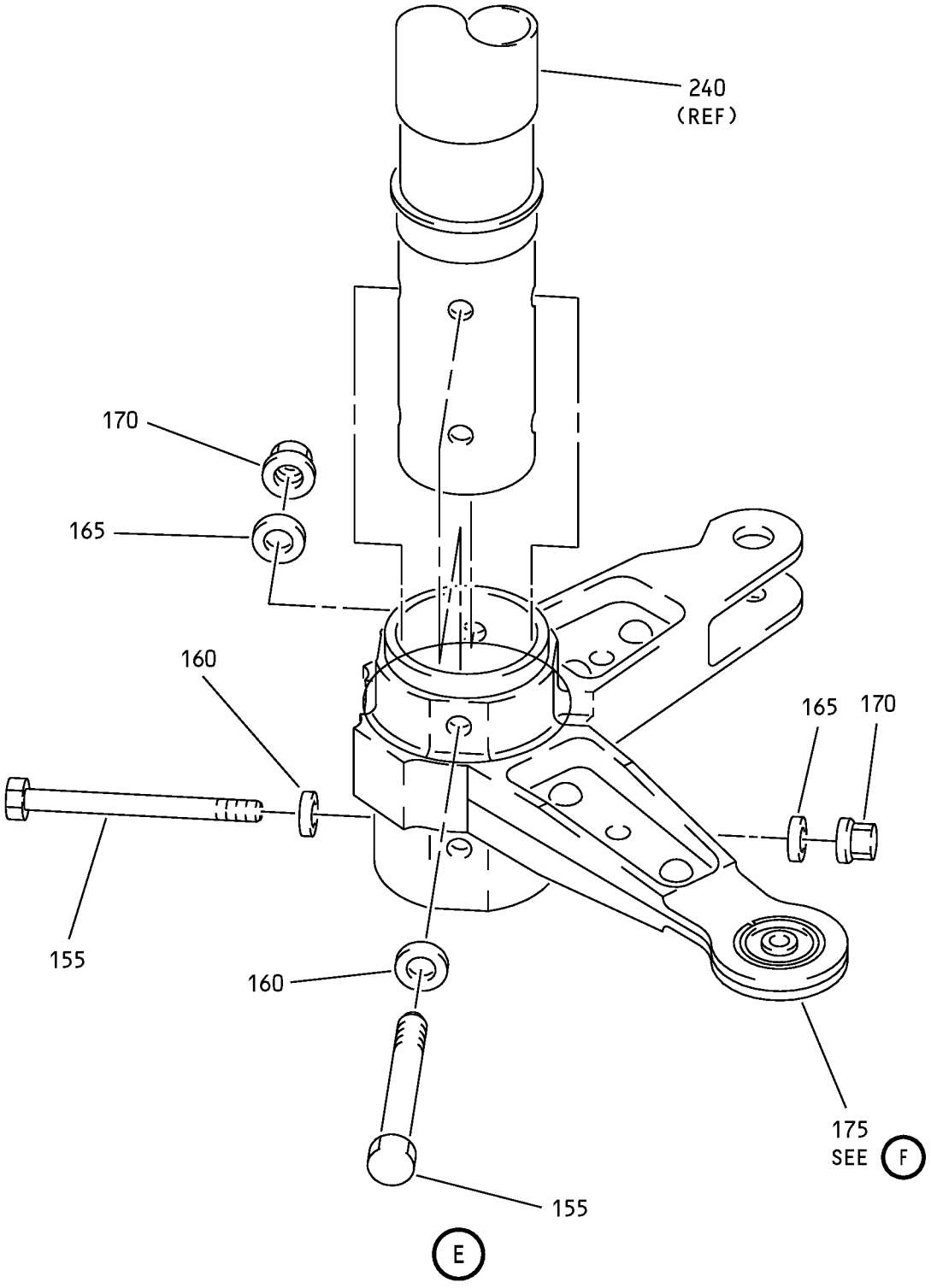
Rudder Control Torque Tube Assembly
IPL Figure 2 (Sheet 1 of 6)



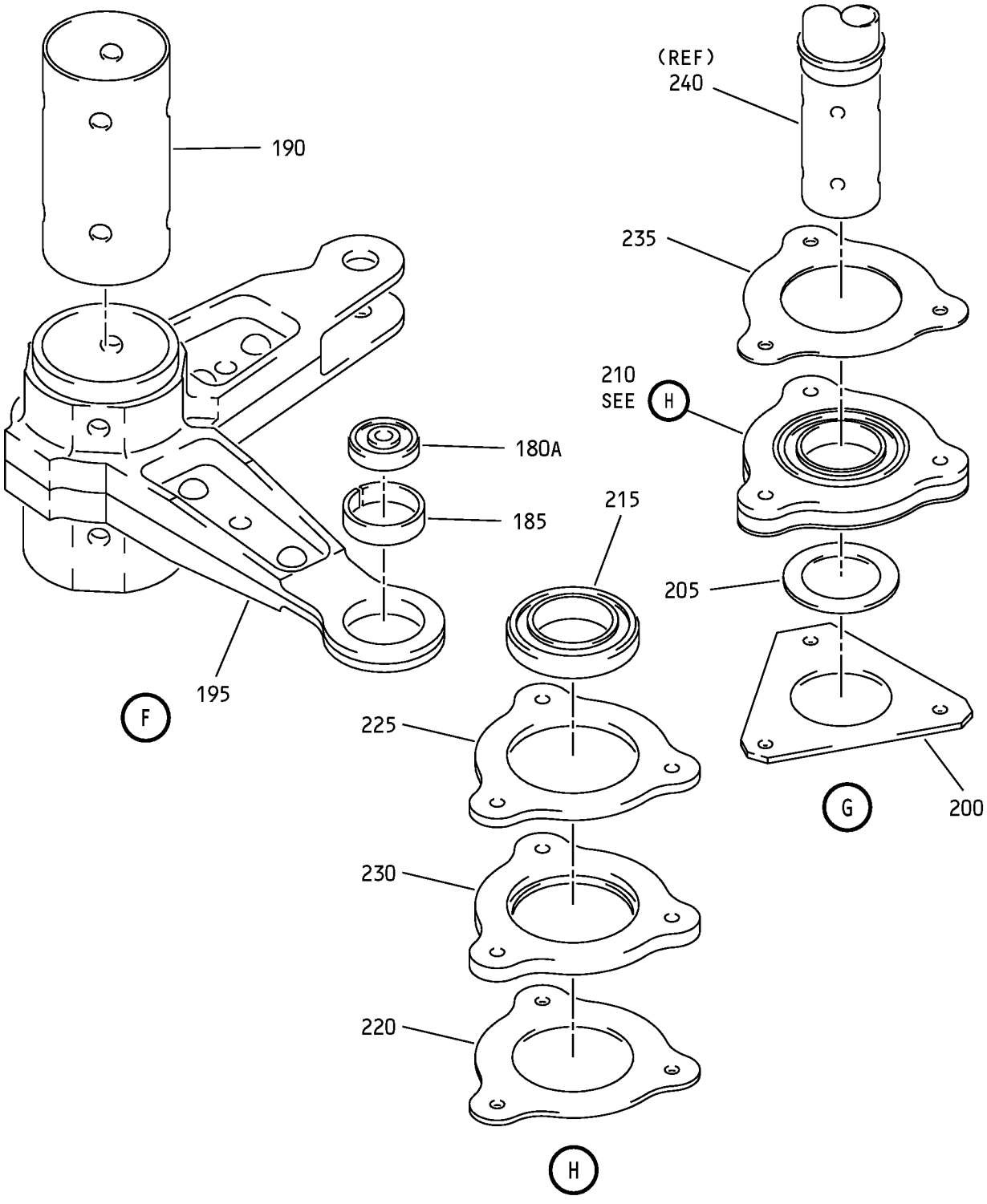
Rudder Control Torque Tube Assembly
IPL Figure 2 (Sheet 2 of 6)



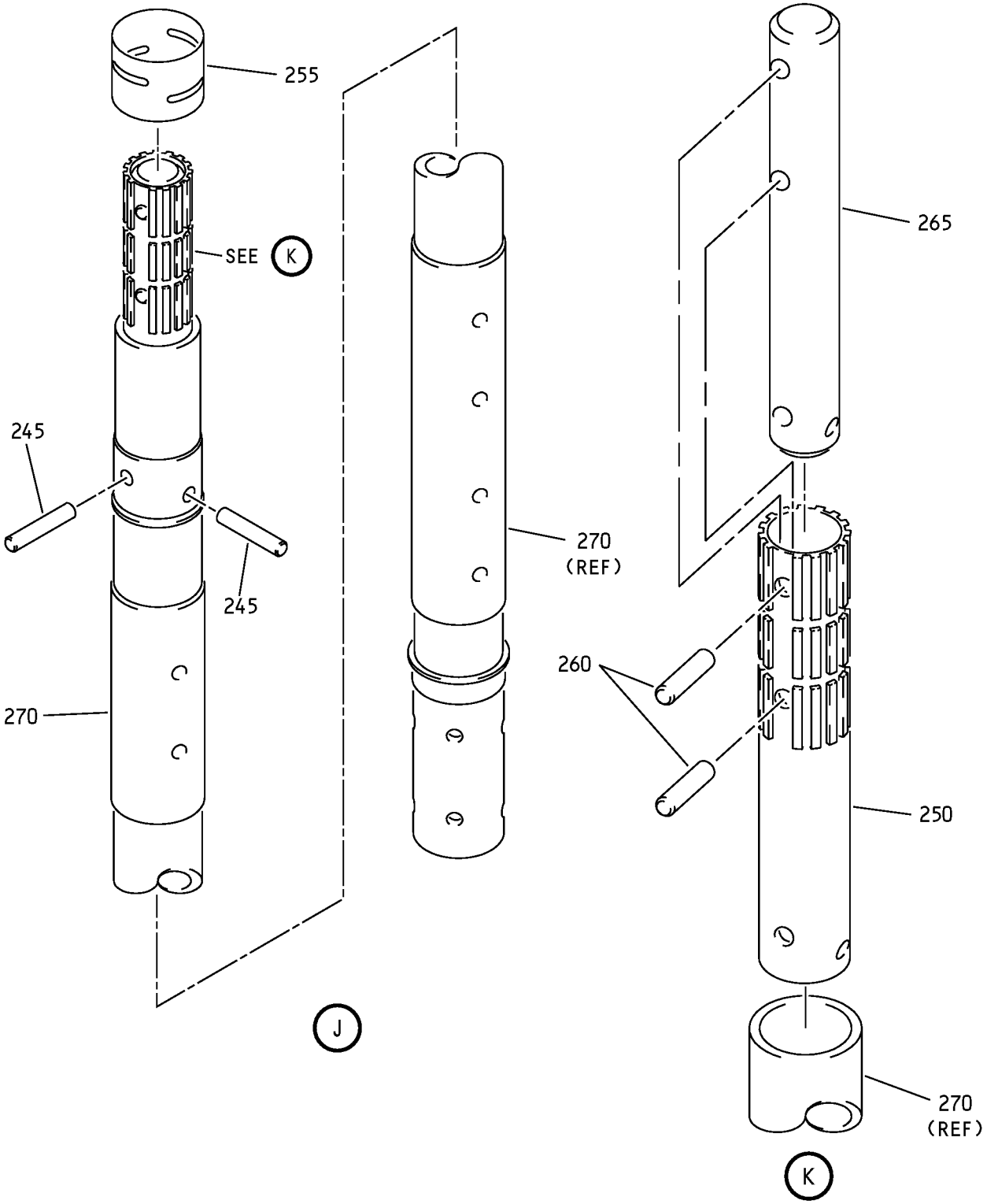
Rudder Control Torque Tube Assembly
IPL Figure 2 (Sheet 3 of 6)



Rudder Control Torque Tube Assembly
IPL Figure 2 (Sheet 4 of 6)



Rudder Control Torque Tube Assembly
IPL Figure 2 (Sheet 5 of 6)



Rudder Control Torque Tube Assembly
IPL Figure 2 (Sheet 6 of 6)

FIG/ ITEM	PART NUMBER	AIRLINE PART NUMBER	NOMENCLATURE 1 2 3 4 5 6 7	USAGE CODE	UNITS PER ASSY
2–					
–1A	251A3440-4		TUBE ASSY-TORQ RUD CONT (POST SB 737-27-1253)	D	RF
–1B	251A3440-5		TUBE ASSY-TORQ RUD CONT (POST SB 737-27-1253)	E	RF
5	BACB30MR4S28		. BOLT (OPT ITEM 5A)	D, E	3
5A	BACB30MR4K28		. BOLT (OPT ITEM 5)	D, E	3
10	BACB30MR4S27		. BOLT (OPT ITEM 10A)	D, E	3
10A	BACB30MR4K27		. BOLT (OPT ITEM 10)	D, E	3
15	BACW10BP4ACU		. WASHER	D, E	6
20	BACW10BP4APU		. WASHER	D, E	6
25	NAS1805-4		. NUT	D, E	6
30	251A3490-1		. OVERRIDE ASSY	D, E	3
35	BACB30VT6K7		. . BOLT		1
40	BACB28AK03-029		. . BUSHING		1
45	BACC30BS6S		. . COLLAR		1
50	MS20615-6M		. . RIVET		1
55	BACB28AK03-029		. . BUSHING		1
60	251A3452-1		. . . SPRING ASSY		1
62	251A3454-1		. . . FITTING-END		2
63	251A3452-2		. . . SPRING		1
65	BACB30VT6K17		. . BOLT		1
70	BACC30BS6S		. . COLLAR		1
75	251A3491-1		. . ARM ASSY-CARRIER		1
80	BACB10FS03RJP		. . . BEARING		2
85	BACB30VT6K9		. . . BOLT		1
90	NAS1149E0332R		. . . WASHER		1
95	BACC30BS6S		. . . COLLAR		1
100	BACB10HH03		. . . BEARING		1
105	25AT3742-41		. . . 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
2–					
110	251A3491-2		. . . FITTING-CARRIER ARM		1
115	251A3492-1		. . . FITTING-SLEEVE		1
120	251A3494-1		. . FITTING ASSY-BASE		1
125	251T3742-42		. . . BUSHING		1
130	251A3494-2		. . . FITTING		1
135	251A3493-1		. . ARM ASSY-CRANK		1
140	BACB28AP04-007		. . . BUSHING		2
145	BACB10FU25JP		. . . BEARING (OPT ITEM 145A)		2
145A	BACB10FU25J		. . . BEARING (OPT ITEM 145)		2
150	251A3493-2		. . . CRANK ARM		1
155	BACB30NR4K30		. BOLT	D, E	4
160	BACW10BP4CD		. WASHER	D, E	4
165	BACW10BP4DP		. WASHER	D, E	4
170	BACN10YR4CD		. NUT	D, E	4
175	251A3456-1		. BELLCRANK ASSY	D, E	1
180A	BACB10FP05AJ		. . BEARING		1
185	69-38919-31		. . SLEEVE		1
190	251A3401-1		. . SLEEVE		1
195	251A3456-2		. . BELLCRANK		1
200	251A3457-2		. PLATE-RETAINING	D, E	1
205	251A3458-1		. RETAINER	D, E	1
210	251A3455-1		. HOUSING ASSY-LWR BRG	D, E	1
215	BACB10FV23J		. . BEARING		1
220	251A3457-1		. . PLATE-RETAINING		1
225	251A3455-3		. . HOUSING		1
230	251A3455-2		. . HOUSING		1
235	251A3457-1		. PLATE	D, E	1
240	251A3444-10		. TUBE ASSY	D, E	1
245	251A3435-2		. . PIN		2
250	251A3445-3		. . SHAFT		1

–Item not Illustrated

FIG/ ITEM	PART NUMBER	AIRLINE PART NUMBER	NOMENCLATURE 1 2 3 4 5 6 7	USAGE CODE	UNITS PER ASSY
2–					
255	251A3401-2		. . SLEEVE		1
260	251A3435-1		. . PIN		2
265	251A3436-2		. . SHAFT		1
270	251A3444-7		. . TUBE ASSY		1

–Item not Illustrated