COMPONENT MAINTENANCE MANUAL WITH ILLUSTRATED PARTS LIST

HORIZONTAL TAIL CENTER SECTION ASSEMBLY

PART NUMBER 65-73781–7

PUBLISHED BY BOEING COMMERCIAL AIRPLANES GROUP, SEATTLE, WASHINGTON, USA
A DIVISION OF THE BOEING COMPANY
PAGE DATE: Jul 01/2009

COMPONENT MAINTENANCE MANUAL

Revision No. 16
Jul 01/2009

To: All holders of HORIZONTAL TAIL CENTER SECTION ASSEMBLY 55-10-06.

Attached is the current revision to this COMPONENT MAINTENANCE MANUAL

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For printed manuals, changes are indicated on the List of Effective Pages (LEP). The pages which are revised will be identified on the LEP by an R (Revised), A (Added), O (Overflow, i.e. changes to the document structure and/or page layout), or D (Deleted). Each page in the LEP is identified by Chapter-Section-Subject number, page number and page date.

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Location of Change	Description of Change
	NO HIGHLIGHTS

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

Subject/Page	Date	Subject/Page	Date	Subject/Page	Date
55-10-06 ILLUSTRATED PARTS LIST (cont)					
1006	Mar 01/2006				
1007	Mar 01/2006				
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TEMPORARY REVISION AND SERVICE BULLETIN RECORD

BOEING SERVICE BULLETIN	BOEING TEMPORARY REVISION	OTHER DIRECTIVE	DATE OF INCORPORATION INTO MANUAL
737-55-1058			JUL 01/1998
		PRR 35005-136	NOV 01/1998

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

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

Revision		Filed		Revision		Filed	
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Temporary Revision		Inserted		Removed	
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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.

HORIZONTAL TAIL CENTER SECTION ASSEMBLY - DESCRIPTION AND OPERATION

1. **Description**

   A. The horizontal tail center section assembly consists of front and rear spar sections with bushed fittings for attaching the stabilizer panels; longitudinal and diagonal members to connect the spar sections and provide rigidity for the entire structure; hinge fittings attached to the aft side of the rear spar with bushed holes at the stabilizer pivot axis.

2. **Operation**

   A. The horizontal tail center section is not operational when removed from the airplane.

3. **Leading particulars (Approximate)**

   A. Width – 61 inches

   B. Length – 55 inches

   C. Height – 15 inches

   D. Weight – 248 pounds

(NOT APPLICABLE)

DISASSEMBLY

1. General

A. This procedure has the data necessary to disassemble the horizontal tail center section assembly.

B. Disassemble this component only as necessary to complete fault isolation, determine the servicability of parts, do the necessary repairs, and put the component back to a serviceable condition.

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

D. Refer to IPL Figure 1 for item numbers.

2. Disassembly

A. Tools/Equipment

NOTE: Equivalent substitutes may be used.

Reference	Description
SPL-5383	Hinge Bearing Horizontal Stab Spanner Wrench (Part #: C27039-1, Supplier: 81205)

B. Procedure

CAUTION: REPAIR OF THE HORIZONTAL TAIL SECTION ASSEMBLY IS LIMITED TO REFINISHING COMPONENTS FOR PROTECTION AGAINST CORROSION, AND REPLACEMENT OF DEFECTIVE PARTS THAT CAN BE REMOVED WITHOUT DISTURBING THE STRUCTURAL INTEGRITY OR DIMENSIONAL ACCURACY OF THE BOX STRUCTURE.

(1) Use standard industry practices for disassembly of this component.

(2) Do not remove front spar assembly (280) or rear spar assembly (300) from basic structure.

(3) Remove nut (245) using Spanner Wrench, SPL-5383.

CLEANING

1. General

A. This procedure has the data necessary to clean the horizontal tail center section assembly.

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

2. CLEANING

A. References

Reference	Title
SOPM 20-30-03	GENERAL CLEANING PROCEDURES

B. Procedure

(1) Clean all parts in accordance with standard industry practices and information contained in SOPM 20-30-03.

CHECK

1. General

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

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. Check

A. References

Reference	Title
SOPM 20-20-01	MAGNETIC PARTICLE INSPECTION
SOPM 20-20-02	PENETRANT METHODS OF INSPECTION
737 SRM 51-70-11	Structural Repair Manual
737 SRM 51-70-12	Structural Repair Manual

B. Procedure

(1) Check all parts for obvious defects in accordance with standard industry practices.

(2) Perform magnetic particle check per SOPM 20-20-01 of bolts (345), nuts (245).

(3) Perform penetrant check per SOPM 20-20-02 of fittings (25, 25A, 25B, 25C, 40, 40A, 80, 80A, 240, 240A, 240B, 360A, 360B, 360C, 370, 370A) and link (155).

(4) Refer to Structural Repair Manual 737 SRM 51-70-11 and 737 SRM 51-70-12 for allowable repair data and limits.

REPAIR

1. Content

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

Table 601:

P/N	NAME	REPAIR
65C25154	THRUST BRACE FITTING ASSEMBLY	1-1
65C25158	THRUST BRACE FITTING ASSEMBLY	2-1
65C25170	HINGE HOUSING ASSEMBLY	3-1
65-47595 65-49925 65-49927	REAR SPAR ASSEMBLY	4-1, 4-2
65-47596	FRONT SPAR FITTING	5-1
–	MISCELLANEOUS PARTS	6-1
65-73157	LINK ASSEMBLY, FAIL-SAFE	7-1

2. Dimensioning Symbols

A. Standard True Position Dimensioning Symbols used in the applicable repair procedures are shown in REPAIR-GENERAL, Figure 601.

—	STRAIGHTNESS
▱	FLATNESS
⊥	PERPENDICULARITY (OR SQUARENESS)
//	PARALLELISM
○	ROUNDNESS
⌭	CYLINDRICITY
⌒	PROFILE OF A LINE
⌓	PROFILE OF A SURFACE
◎	CONCENTRICITY
⌯	SYMMETRY
∠	ANGULARITY
↗	RUNOUT
↗↗	TOTAL RUNOUT
⌴	COUNTERBORE OR SPOTFACE
⌵	COUNTERSINK
⌖	THEORETICAL EXACT POSITION OF A FEATURE (TRUE POSITION)
Ø	DIAMETER
S Ø	SPHERICAL DIAMETER
R	RADIUS
SR	SPHERICAL RADIUS
()	REFERENCE
BASIC (BSC) OR [DIM]	A THEORETICALLY EXACT DIMENSION USED TO DESCRIBE SIZE, SHAPE OR LOCATION OF A FEATURE FROM WHICH PERMISSIBLE VARIATIONS ARE ESTABLISHED BY TOLERANCES ON OTHER DIMENSIONS OR NOTES.
[-A-]	DATUM
Ⓜ	MAXIMUM MATERIAL CONDITION (MMC)
Ⓛ	LEAST MATERIAL CONDITION (LMC)
Ⓢ	REGARDLESS OF FEATURE SIZE (RFS)
Ⓟ	PROJECTED TOLERANCE ZONE
FIM	FULL INDICATOR MOVEMENT
TIR	TOTAL INDICATOR READING

EXAMPLES

[— | 0.002]	STRAIGHT WITHIN 0.002
[⊥ | 0.002 | B]	PERPENDICULAR TO B WITHIN 0.002
[// | 0.002 | A]	PARALLEL TO A WITHIN 0.002
[○ | 0.002]	ROUND WITHIN 0.002
[⌭ | 0.010]	CYLINDRICAL SURFACE MUST LIE BETWEEN TWO CONCENTRIC CYLINDERS, ONE OF WHICH HAS A RADIUS 0.010 INCH GREATER THAN THE OTHER
[⌒ | 0.006 | A]	EACH LINE ELEMENT OF THE SURFACE AT ANY CROSS SECTION MUST LIE BETWEEN TWO PROFILE BOUNDARIES 0.006 INCH APART RELATIVE TO DATUM PLANE A
[⌓ | 0.020 | A]	SURFACES MUST LIE WITHIN PARALLEL BOUNDARIES 0.02 INCH APART AND EQUALLY DISPOSED ABOUT TRUE PROFILE
[◎ | Ø 0.0005 | C]	CONCENTRIC TO C WITHIN 0.0005 DIAMETER
[⌯ | 0.010 | A]	SYMMETRICAL WITH A WITHIN 0.010
[∠ | 0.005 | A]	ANGULAR TOLERANCE 0.005 WITH A
[⌖ | Ø 0.002 Ⓢ | B]	LOCATED AT TRUE POSITION WITHIN 0.002 DIA RELATIVE TO DATUM B, REGARDLESS OF FEATURE SIZE
[⊥ | Ø 0.010 Ⓜ | A] [0.510 Ⓟ]	AXIS IS TOTALLY WITHIN A CYLINDER OF 0.010-INCH DIAMETER, PERPENDICULAR TO, AND EXTENDING 0.510-INCH ABOVE, DATUM A, MAXIMUM MATERIAL CONDITION
[2.000] OR 2.000 BSC	THEORETICALLY EXACT DIMENSION IS 2.000

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

True Position Dimensioning Symbols
Figure 601

THRUST BRACE FITTING ASSEMBLY - REPAIR 1-1

65C25154–1, –2, –3, –4, –11, –13

1. General

A. This procedure has the data necessary to repair the thrust brace fitting assembly.

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

C. Refer to the REPAIR-GENERAL, Figure 601 for the Standard True Position Dimensioning Symbols shown in the 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 20-50-03	BEARING AND BUSHING REPLACEMENT
SOPM 20-60-04	MISCELLANEOUS MATERIALS

C. Procedure

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

(1) Remove bushings (30, 45).

(2) Install bushings per SOPM 20-50-03 with wet sealant, A00247.

(3) Machine inside diameter of bushings per REPAIR 1-1, Figure 601.

(4) Fillet seal bushing with sealant, A00247.

3. Refinsih

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

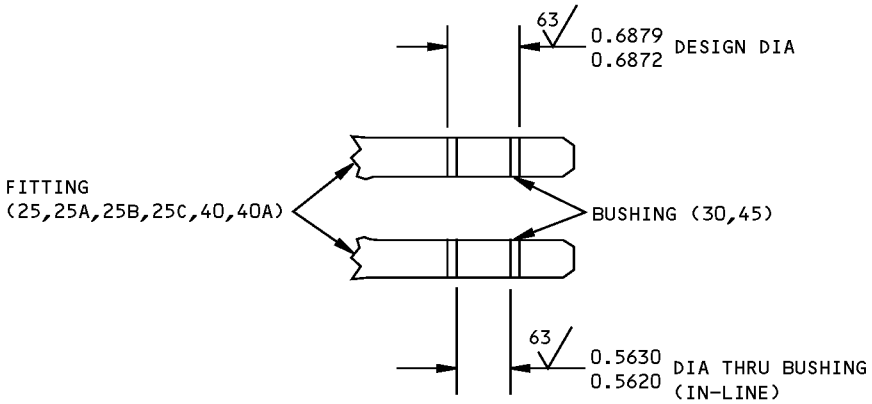
B. References

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) Fitting (25, 25A, 25B, 25C, 40, 40A) – Chromic acid anodize, and apply primer, C00259 (F-18.13). Except no primer in bushing holes. Material: Al alloy.



ALL DIMENSIONS ARE IN INCHES

BREAK SHARP EDGES

Replacement Bushing for Bushing (30,45)
Figure 601

THRUST BRACE FITTING ASSEMBLY - REPAIR 2-1

65C25158–1, –2

1. General

A. This procedure has the data necessary to repair the thrust brace fitting assembly.

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

C. Refer to REPAIR-GENERAL, Figure 601 for the Standard True Position Dimensioning Symbols shown in the 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 20-50-03	BEARING AND BUSHING REPLACEMENT
SOPM 20-60-04	MISCELLANEOUS MATERIALS

C. Procedure

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

(1) Remove bushings (85).

(2) Install bushings per SOPM 20-50-03 with wet sealant, A00247.

(3) Machine inside diameter of bushings as specified in REPAIR 2-1, Figure 601.

(4) Fillet seal the bushing with sealant, A00247.

3. 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

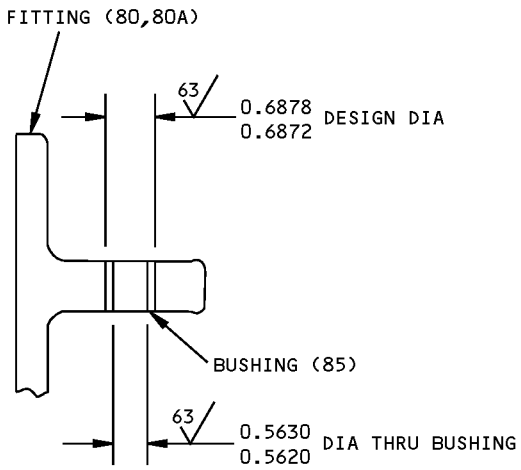
B. References

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

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) Fitting (80, 80A) – Chromic acid anodize, and apply primer, C00259 (F-18.13). Except omit primer from bushing holes. Material: Al alloy.



ALL DIMENSIONS ARE IN INCHES

BREAK ALL SHARP EDGES

Replacement Bushing for Bushing (85)
Figure 601

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HINGE HOUSING ASSEMBLY - REPAIR 3-1

65C25170–5, –6, –9, –10, –11, –12, –501, –502

1. General

A. This procedure has the data necessary to repair the hinge housing assembly.

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

C. Refer to the REPAIR-GENERAL, Figure 601 for the Standard True Position Dimensioning Symbols shown in the repair.

D. Refer to IPL Figure 1 for item numbers.

2. Bearing Replacement

A. Tools/Equipment

NOTE: Equivalent substitutes may be used.

Reference	Description
SPL-5383	Hinge Bearing Horizontal Stab Spanner Wrench (Part #: C27039-1, Supplier: 81205)

B. Consumable Materials

NOTE: Equivalent substitutes may be used.

Reference	Description	Specification
A00247	Sealant - Pressure And Environmental - Chromate Type	BMS 5-95
D00013	Grease - Aircraft And Instrument Grease	MIL-PRF-23827 (NATO G-354) (Supersedes MIL-G-23827)
D50004	Compound - Antiseize	BMS3-28

C. References

Reference	Title
SOPM 20-50-03	BEARING AND BUSHING REPLACEMENT
SOPM 20-60-02	FINISHING MATERIALS
SOPM 20-60-03	LUBRICANTS
SOPM 20-60-04	MISCELLANEOUS MATERIALS

D. Procedure

NOTE: 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) Remove bearing (250).

(2) Coat outer surface of bearing (250) outer races with grease, D00013.

(3) Install bearing (250) as specified in SOPM 20-50-03 with wet sealant, A00247. Make sure the sealant, A00247 beads out around the faying surface of the bearing flange (to make a moisture barrier). Do not apply sealant, A00247 to the bearing threads.

NOTE: Install the lockplates (255) as specified in REPAIR 3-1, Paragraph 2.D.(5) before the sealant, A00247 cures.

(4) Install nut (245) using Spanner Wrench, SPL-5383. Apply sealant, A00247 on the nut faying surface and antiseize thread compound, D50004 on the threads. Make sure the sealant, A00247 beads out around the faying surface of the nut (245) (to make a moisture barrier). Tighten nut (245) to 1200-2200 pound-inches.

NOTE: Install the lockplates (255) as specified in REPAIR 3-1, Paragraph 2.D.(5) before the sealant cures.

(5) Install lockplates (255) with bolt (265), washers (235) and nut (230). Position lockplates (255) to engage nut (245) and bearing (250).

(6) Install cotter pin (225).

3. 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 (IPL Figure 1)

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

(1) Remove bushings (270A, 275, 278).

(2) Install bushings (270A, 275, 278) with wet sealant, A00247 as specified in SOPM 20-50-03 (Shrink Fit Method). Install bushings flush to 0.005 inch below flush.

(3) Machine the inside diameter of bushings (270A, 275, 278) as specified in REPAIR 3-1, Figure 601.

(4) Fillet seal bushings (270A, 275, 278) with sealant, A00247.

4. 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

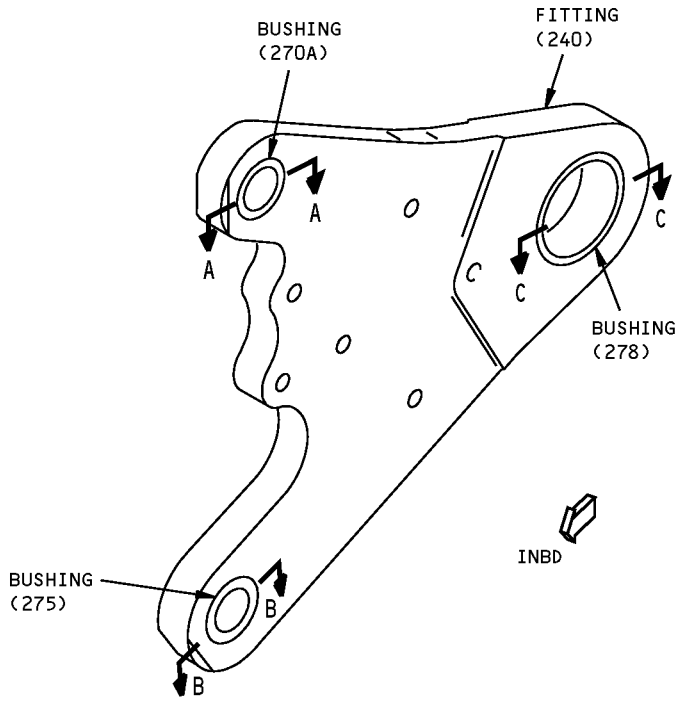
C. Procedure

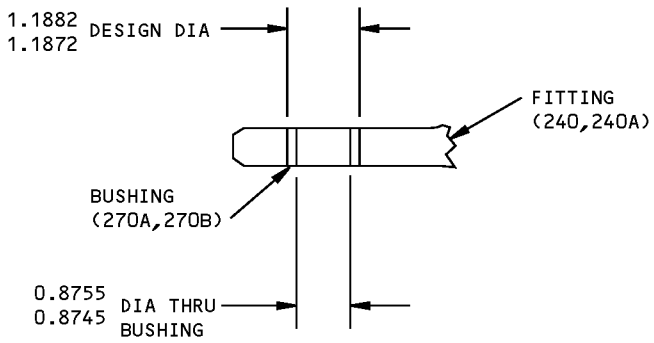
NOTE: For stripping of protective finishes, refer to SOPM 20-30-02. For the decoding table for Boeing finish codes, refer to SOPM 20-41-01. For finishing materials, refer to SOPM 20-60-02.

(1) Fitting (240) – Chromic acid anodize, and apply primer, C00259 (F-20.03). Except omit primer from bushing hole. Material: Al alloy.

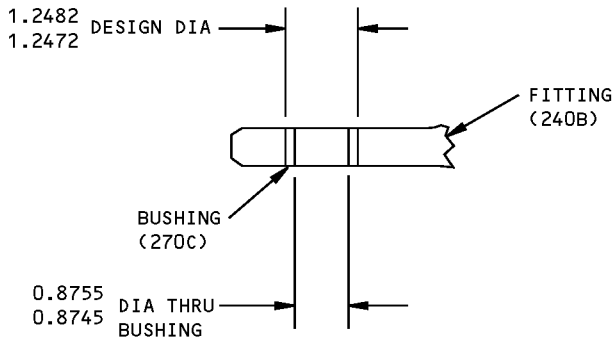
(2) Bearing Retainer Nut (245) – Passivate (F-17.09). Material: 15-5 PH CRES

(3) Lockplate (255) – Passivate (F-17.09). Material: Type 301 CRES





HINGE HOUSING ASSEMBLY ITEMS
220,220A,220B,222,222A,222B
A-A

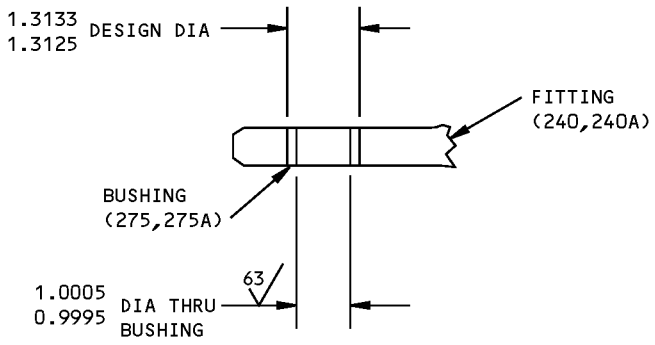


HINGE HOUSING ASSEMBLY ITEMS
220C,222C
A-A

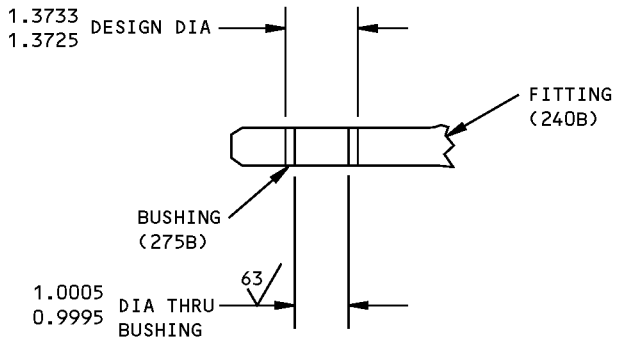
BREAK ALL SHARP EDGES

ALL DIMENSIONS ARE IN INCHES

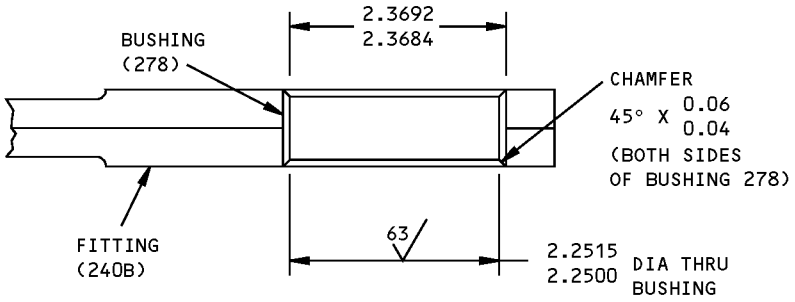
Replacement Bushing for Bushing (270A, 275, 278)
Figure 601 (Sheet 1 of 2)



HINGE HOUSING ASSEMBLY ITEMS
220,220A,220B,222,222A,222B
B-B



HINGE HOUSING ASSEMBLY ITEMS
220C,222C
B-B



C-C

BREAK ALL SHARP EDGES

ALL DIMENSIONS ARE IN INCHES

Replacement Bushing for Bushing (270A, 275, 278)
Figure 601 (Sheet 2 of 2)

REAR SPAR ASSEMBLY - REPAIR 4-1

65-47595–5

1. General

A. This procedure has the data necessary to repair the rear spar assembly.

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

C. Refer to REPAIR-GENERAL, Figure 601 for the Standard True Position Dimensioning Symbols shown in the 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
C00064	Coating - Aluminum Chemical Conversion	BAC5719, Type II, Class A (MIL-C-5541, Class A)
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 20-50-03	BEARING AND BUSHING REPLACEMENT
SOPM 20-60-02	FINISHING MATERIALS
SOPM 20-60-04	MISCELLANEOUS 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. For miscellaneous materials, refer to SOPM 20-60-04.

(1) Remove bushings (305A, 310, 315A, 320, 400, 405, 410).

(2) Apply a chemical coating, C00064 (F-17.10) to the fitting (360A, 370) hole.

(3) Install bushings as specified in SOPM 20-50-03 with wet sealant, A00247.

(4) Machine the inside diameter of bushings (310, 315A, 320, 400, 405, 410) as specified in REPAIR 4-1, Figure 601.

(5) Fillet seal the bushing (400, 405, 410) flanges with sealant, A00247. Apply primer, C00259 on sealant, A00247 as shown in REPAIR 4-1, Figure 601.

3. Bonded Washer Replacement

A. Consumable Materials

NOTE: Equivalent substitutes may be used.

Reference	Description	Specification
A00924	Adhesive - Silicone, Flame Retardant, 1-Part - RTV 133	BAC5010, Type 98

B. References

Reference	Title
SOPM 20-50-12	APPLICATION OF ADHESIVES
SOPM 20-60-04	MISCELLANEOUS MATERIALS

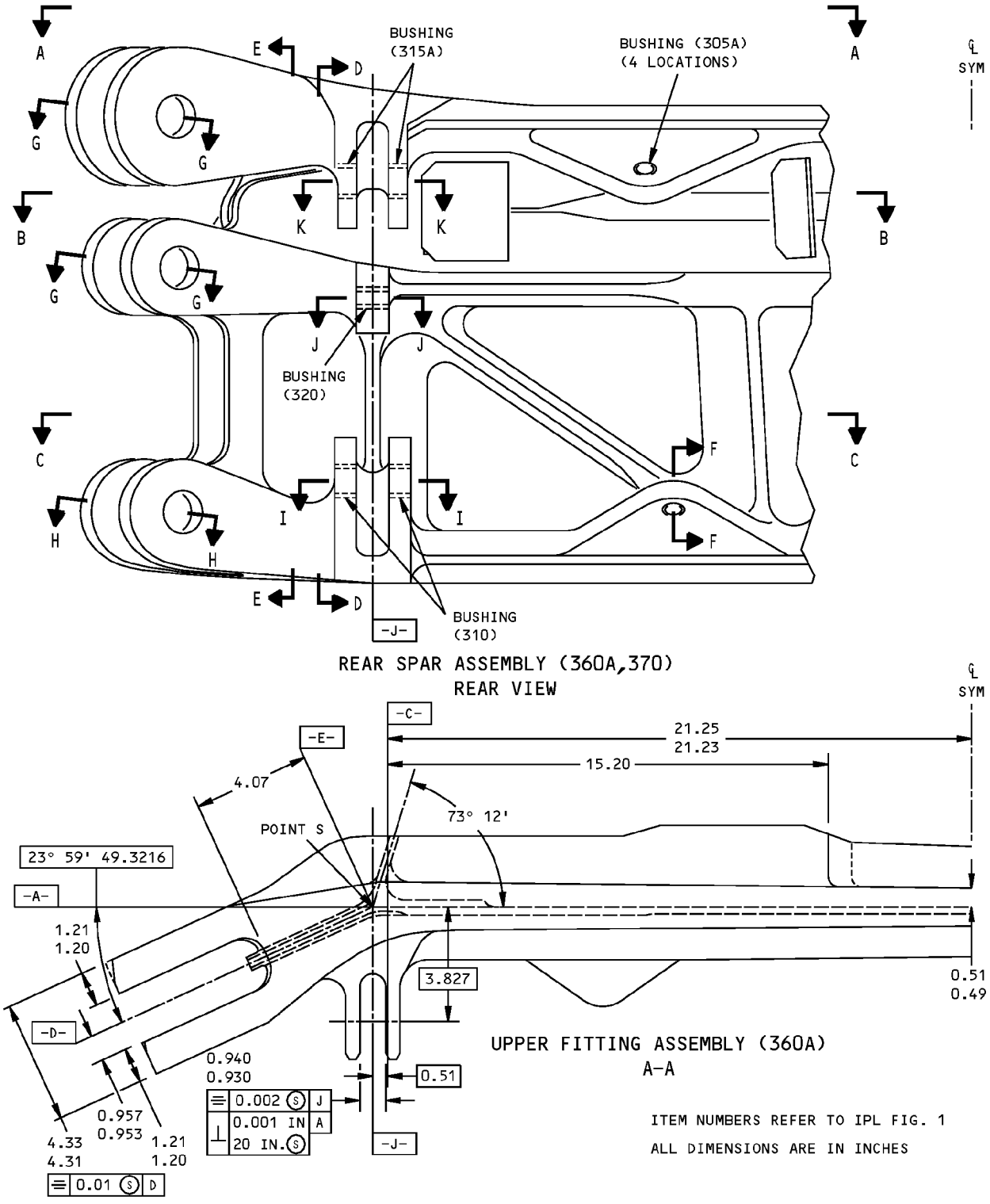
C. Procedure

NOTE: Perform the following steps if the bonded washers were removed for any reason.

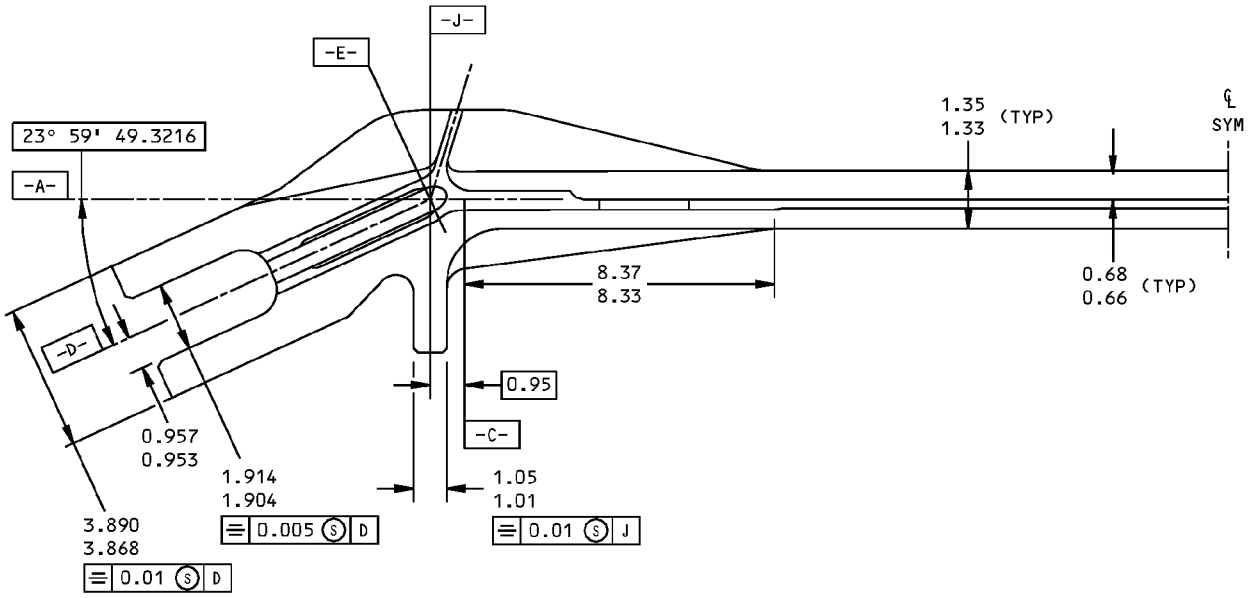
NOTE: For miscellaneous materials, refer to SOPM 20-60-04.

(1) Bond the washer (425, 430) to the fitting assembly (360A, 360B, 360C, 370, 370A) as specified in the SOPM 20-50-12 using wet RTV 133 adhesive, A00924.

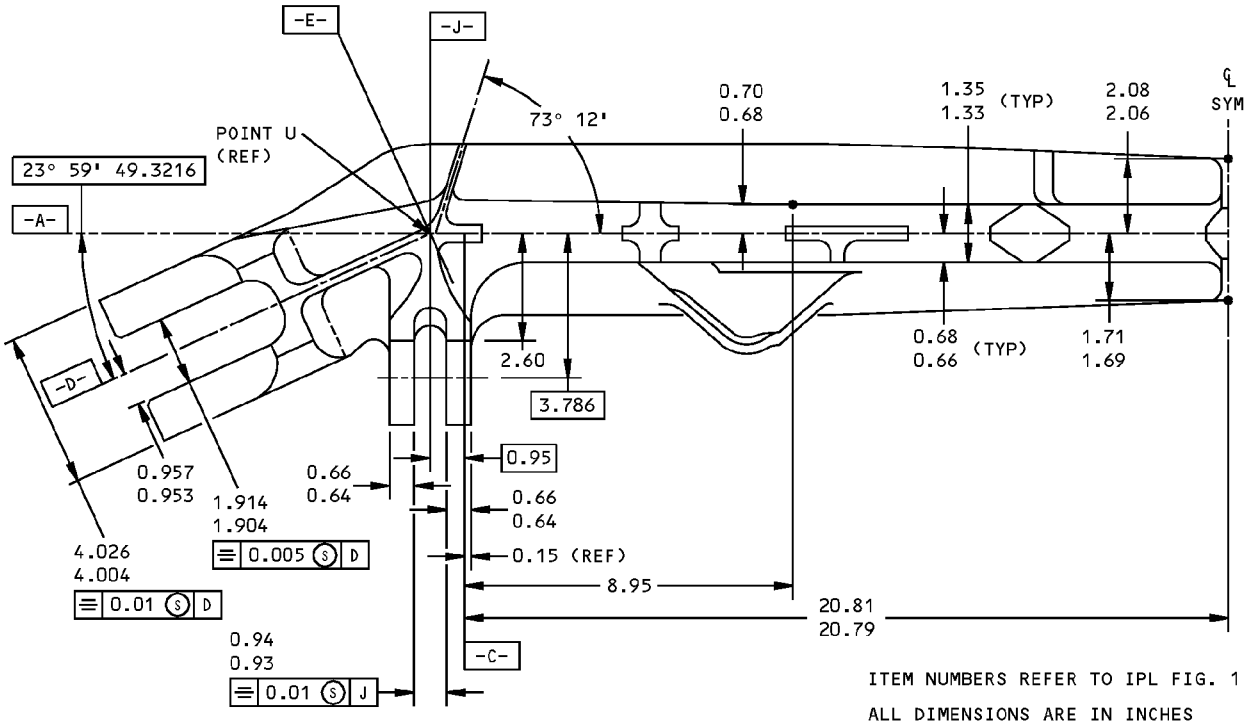
(2) Fillet seal the washer (425, 430) as shown in REPAIR 4-1, Figure 601 using wet RTV 133 adhesive, A00924.



Rear Spar Assembly - Bushing Replacement
Figure 601 (Sheet 1 of 6)

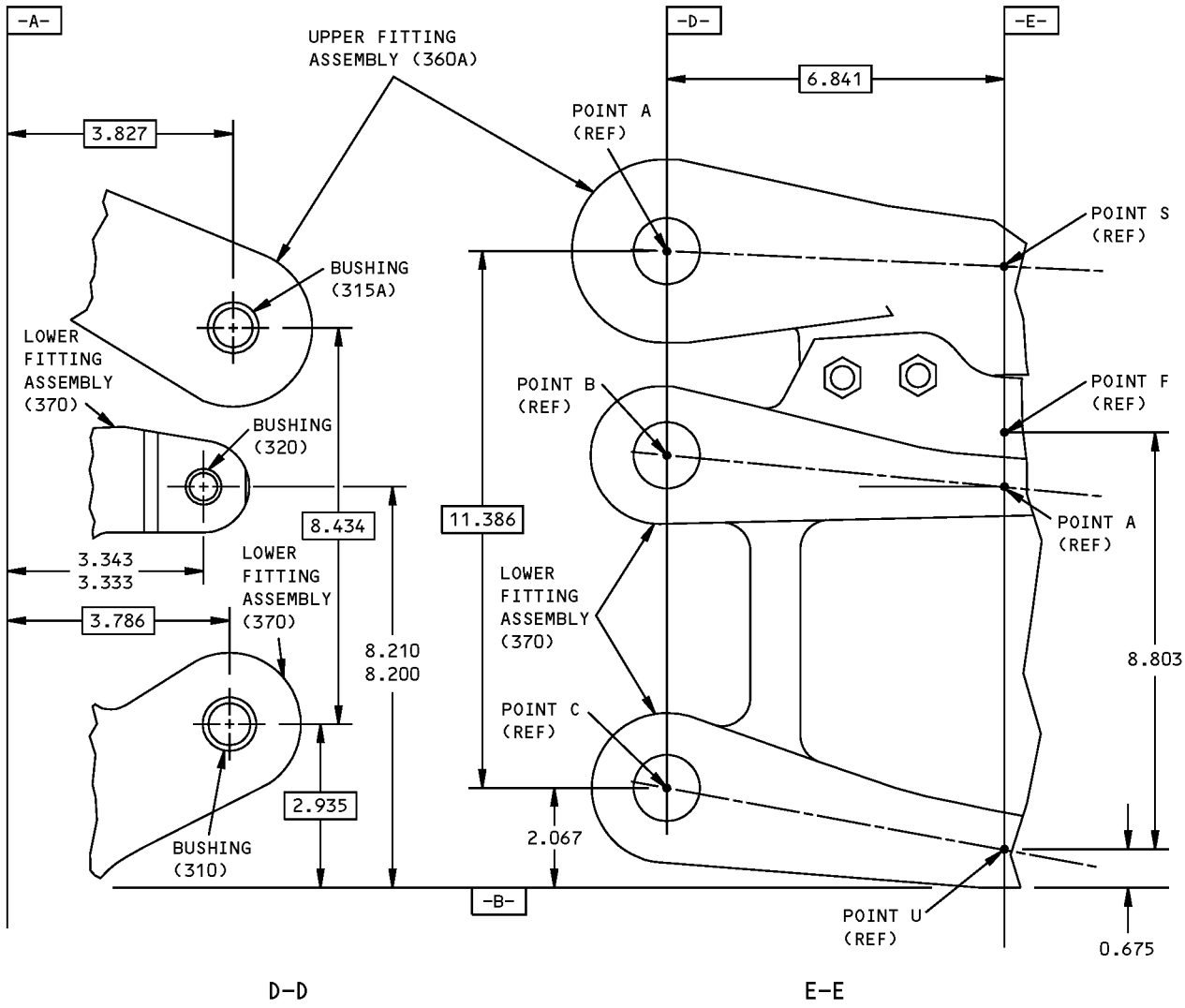


LOWER FITTING ASSEMBLY (370)
B-B



LOWER FITTING ASSEMBLY (370)
C-C

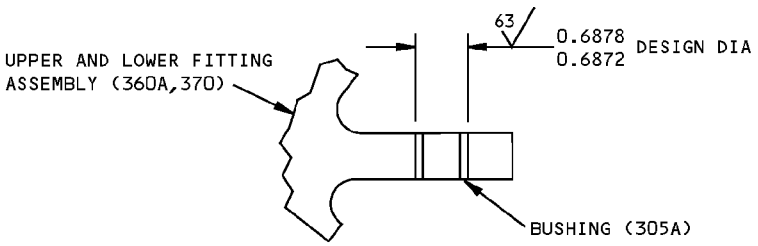
Rear Spar Assembly - Bushing Replacement
Figure 601 (Sheet 2 of 6)



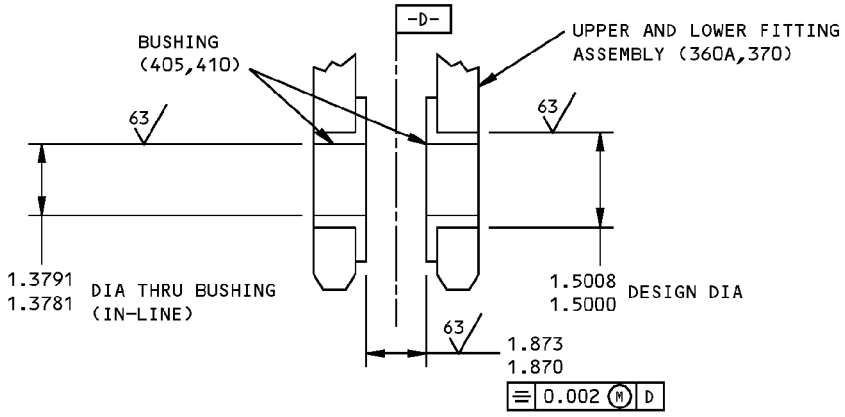
ITEM NUMBERS REFER TO IPL FIG. 1

ALL DIMENSIONS ARE IN INCHES

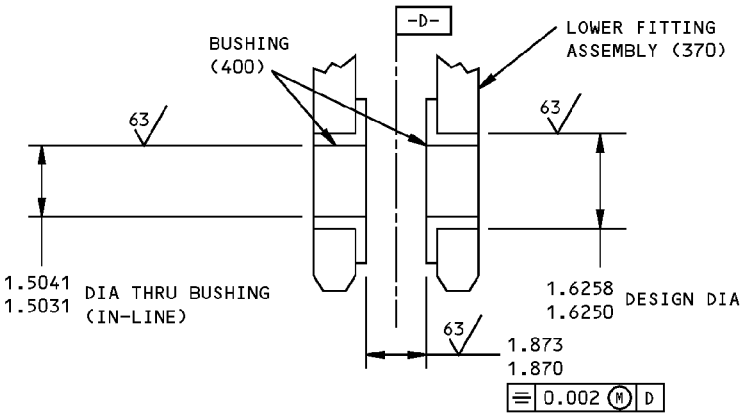
Rear Spar Assembly - Bushing Replacement
Figure 601 (Sheet 3 of 6)



F-F



G-G



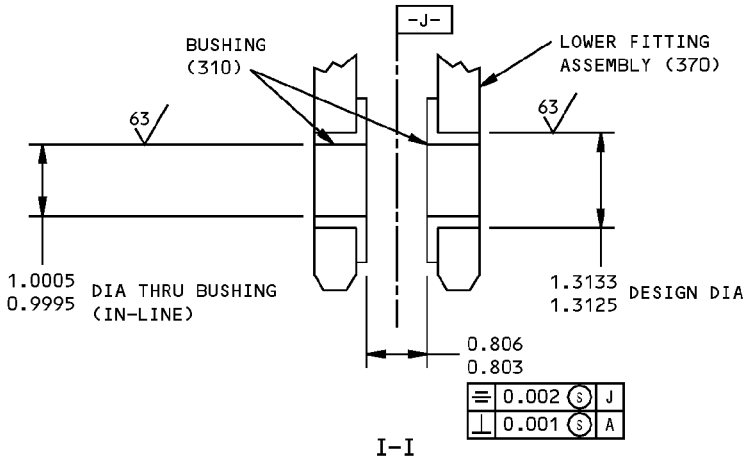
H-H

ITEM NUMBERS REFER TO IPL FIG. 1

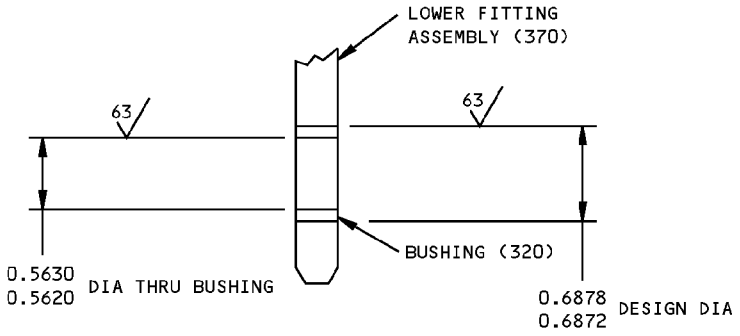
ALL DIMENSIONS ARE IN INCHES

REPLACEMENT BUSHING FOR BUSHINGS (305A,400,405,410)

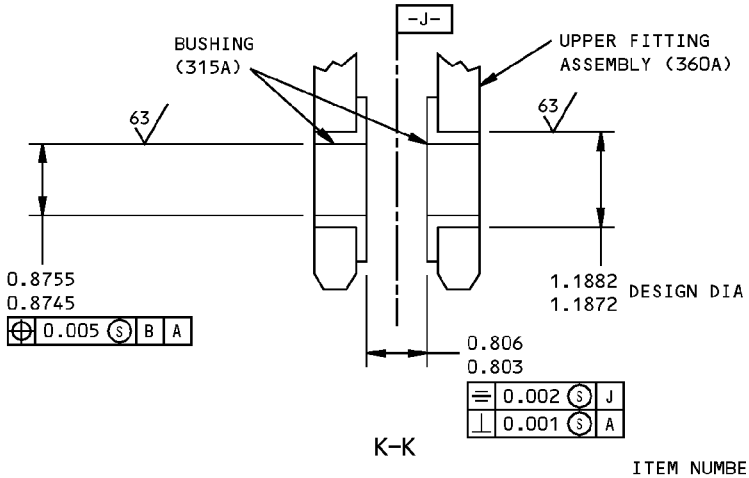
Rear Spar Assembly - Bushing Replacement
Figure 601 (Sheet 4 of 6)



I-I



J-J



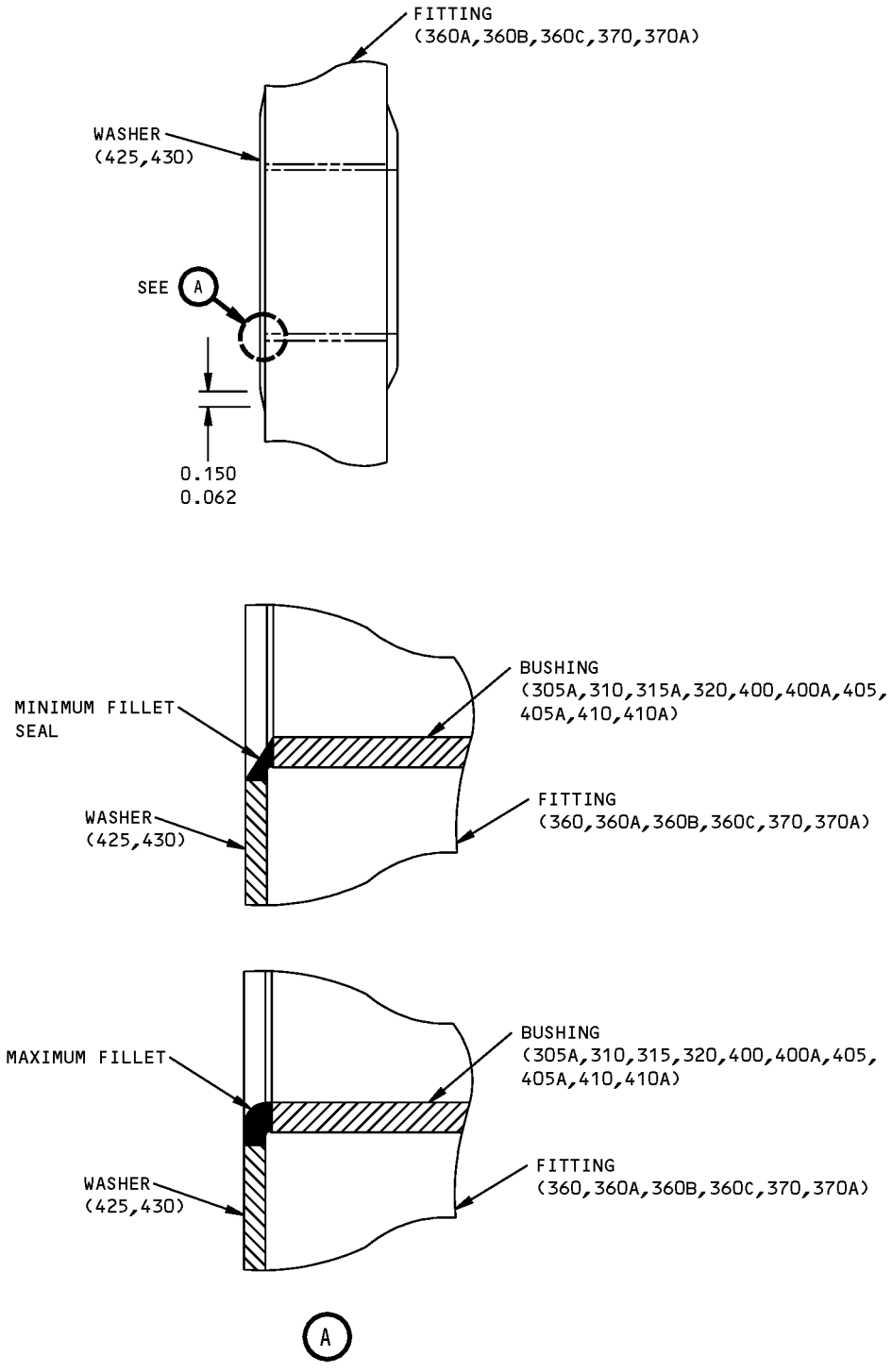
K-K

ITEM NUMBERS REFER TO IPL FIG. 1

ALL DIMENSIONS ARE IN INCHES

REPLACEMENT BUSHING FOR BUSHING (310,315A,320)

Rear Spar Assembly - Bushing Replacement
Figure 601 (Sheet 5 of 6)



Rear Spar Assembly - Bushing Replacement
Figure 601 (Sheet 6 of 6)

UPPER AND LOWER FITTING ASSEMBLY-REPAIR 4-2

65-49925–11, –507, –9, 65-49927–5

1. General

A. This procedure has the data necessary to repair the upper and lower fitting assembly.

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

C. Refer to REPAIR-GENERAL, Figure 601 for the Standard True Position Dimensioning Symbols shown in the repair.

D. Refer to IPL Figure 1 for item numbers.

2. Bushed Hole Repair

A. Consumable Materials

NOTE: Equivalent substitutes may be used.

Reference	Description	Specification
C00064	Coating - Aluminum Chemical Conversion	BAC5719, Type II, Class A (MIL-C-5541, Class A)

B. References

Reference	Title
SOPM 20-10-03	SHOT PEENING
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) Machine the hole as necessary to remove defects. Do not make the hole larger than the hole repair limit (REPAIR 4-2, Figure 601).

(2) Break sharp edges.

(3) Shotpeen the hole per SOPM 20-10-03. You can remove as much as 0.004 inch from the hole diameter after you shotpeen to get the last hole diameter.

(4) Apply a chemical coating, C00064 to the bushing hole (F-17.10).

(5) Make a bushing (REPAIR 4-2, Figure 602) the size that is necessary to make up the difference for the material removed in REPAIR 4-2, Paragraph 2.C.(1) and to get the necessary interference.

(6) Install the bushings as specified in REPAIR 4-1.

3. Refinish

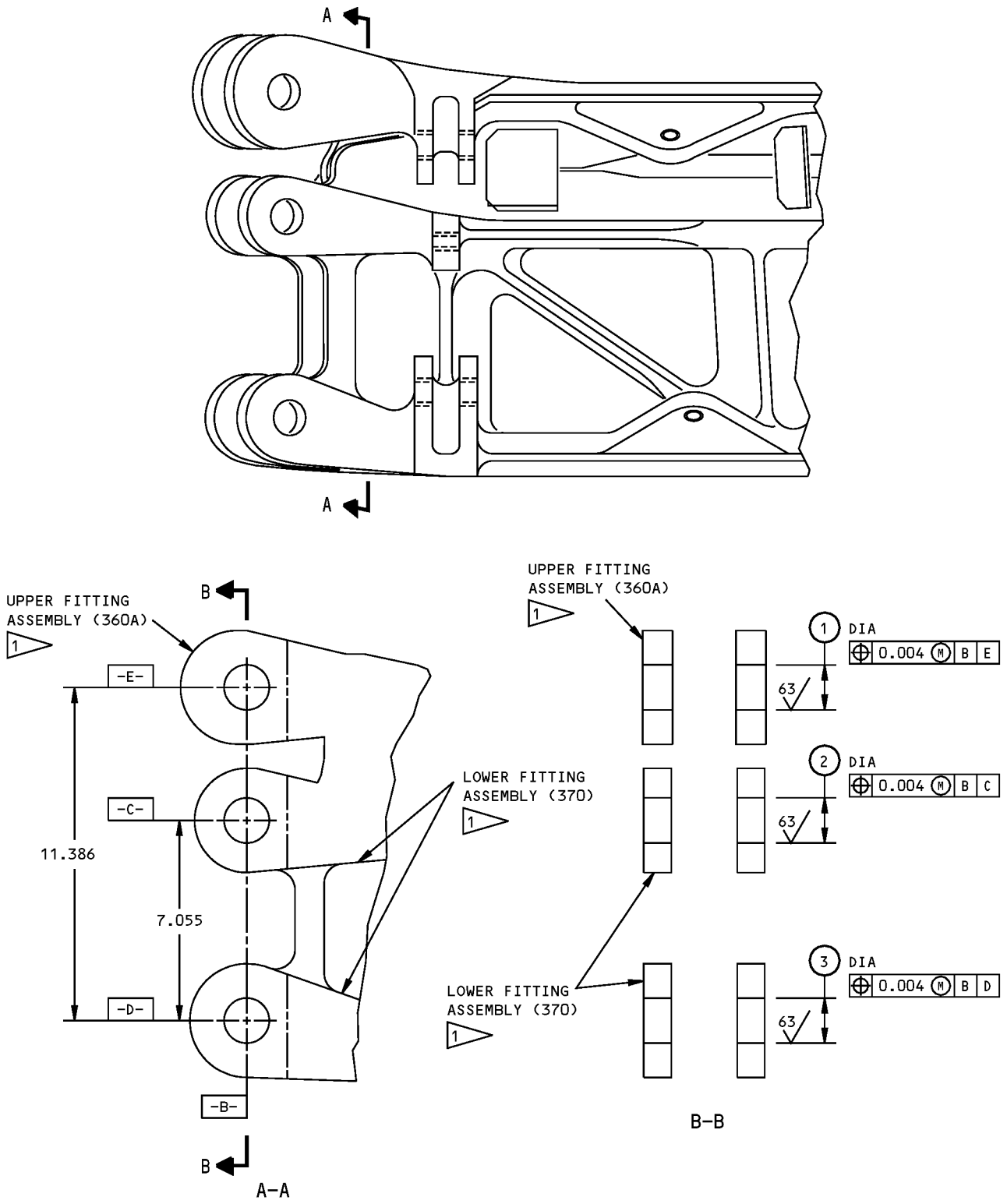
A. References

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

B. 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) For repair of surfaces that need only restoration of the original finish, refer to Refinish instructions, REPAIR 4-2, Figure 601.



65-47595-5 Bushed Hole Repair
Figure 601 (Sheet 1 of 2)

	(1)	(2)	(3)
DESIGN DIM	1.5008 1.5000	1.5008 1.5000	1.6258 1.6250
REPAIR LIMIT	1.5608	1.5608	1.6858

REFINISH

APPLY A COLORED CHEMICAL COATING TO THE BUSHING HOLE (F-17.10).

1 CHROMIC ACID ANODIZE AND APPLY ONE COAT OF BMS 10-11, TYPE 1 PRIMER (F-18.13) BUT DO NOT PUT PRIMER IN BUSHING HOLES.

REPAIR

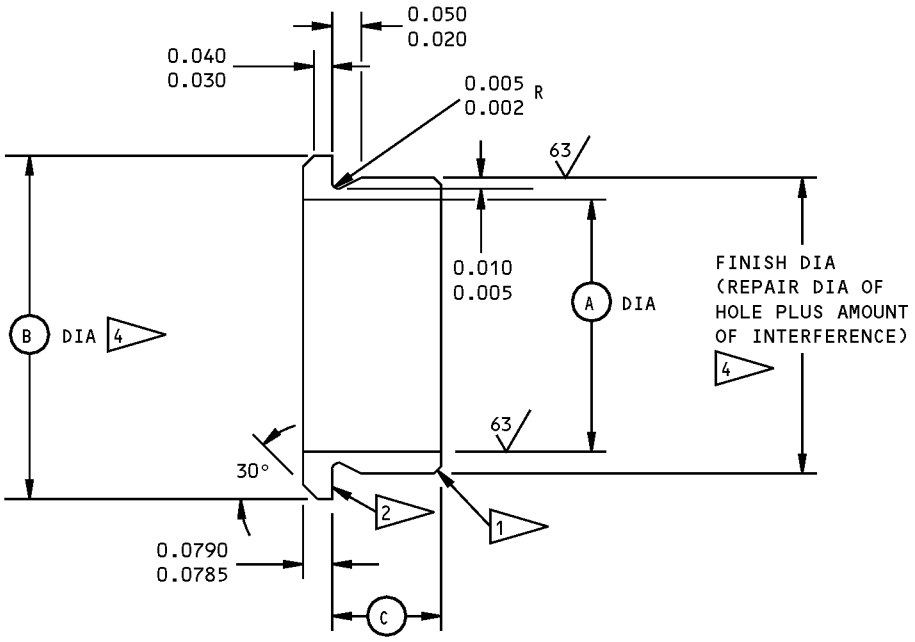
BREAK ALL SHARP EDGES 0.01-0.02 R

SHOT PEEN: SHOT NUMBER 230-550;
0.014A INTENSITY;
2.0 COVERAGE

ITEM NUMBERS REFER TO IPL FIG. 1

ALL DIMENSIONS ARE IN INCHES

65-47595-5 Bushed Hole Repair
Figure 601 (Sheet 2 of 2)



HOLE LOCATION (FIG. 601)	A	B 3	C	INTERFERENCE
1	1.3791 1.3781	2.41 2.39	1.095 1.090	0.0026 0.0009
2	1.3791 1.3781	2.41 2.39	0.875 0.870	0.0026 0.0009
3	1.5041 1.5031	2.61 2.59	0.943 0.938	0.0027 0.0010

1. CHAMFER ALL CORNERS ON THE OUTSIDE DIAMETERS 0.005–0.015 BY 45 DEGREES
2. MAKE THIS SURFACE PERPENDICULAR WITHIN 0.001 TRUE INDICATED READING (T.I.R.) TO "FINISH DIAMETER"
3. DIAMETER AFTER PLATING
4. CADMIUM PLATE OUTSIDE DIAMETER (SINGLE PLATE THICKNESS 0.0002–0.0003) (F–15.02). THROW–IN PERMITTED ON INSIDE DIAMETER

125 MACHINED SURFACES EXCEPT AS NOTED

MATERIAL: ALUMIMUM–NICKEL–BRONZE

PENETRANT CHECK BEFORE PLATING

ALL DIMENSIONS ARE IN INCHES

INSIDE DIAMETER, OUTSIDE DIAMETER AND FLANGE OUTSIDE DIAMETER TO BE CONCENTRIC WITHIN 0.001 T.I.R.

65-47595-5 Oversize Bushing Detail
Figure 602

FRONT SPAR ASSEMBLY - REPAIR 5-1

65-47596–6

1. General

A. This procedure has the data necessary to repair the front spar assembly.

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

C. Refer to REPAIR-GENERAL, Figure 601 for the Standard True Position Dimensioning Symbols shown in the 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 20-50-03	BEARING AND BUSHING REPLACEMENT
SOPM 20-60-04	MISCELLANEOUS MATERIALS

C. Procedure

NOTE: Bushings (415, 420) are parts of hole installation 65-52857-7 and -8 (Items 390, 395).

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

(1) Remove bushings (415, 420).

(2) Install bushings as specified in SOPM 20-50-03 with wet sealant, A00247.

(3) Machine the inside diameter of bushings as specified in REPAIR 5-1, Figure 601.

(4) Fillet seal bushing flanges with sealant, A00247 as shown in REPAIR 5-1, Figure 601.

3. Bonded Washer Replacement

A. Consumable Materials

NOTE: Equivalent substitutes may be used.

Reference	Description	Specification
A01076	Adhesive - Synthetic Rubber	BAC5010, Type 93 (BMS5-95, Class B)

B. References

Reference	Title
SOPM 20-50-12	APPLICATION OF ADHESIVES
SOPM 20-60-04	MISCELLANEOUS MATERIALS

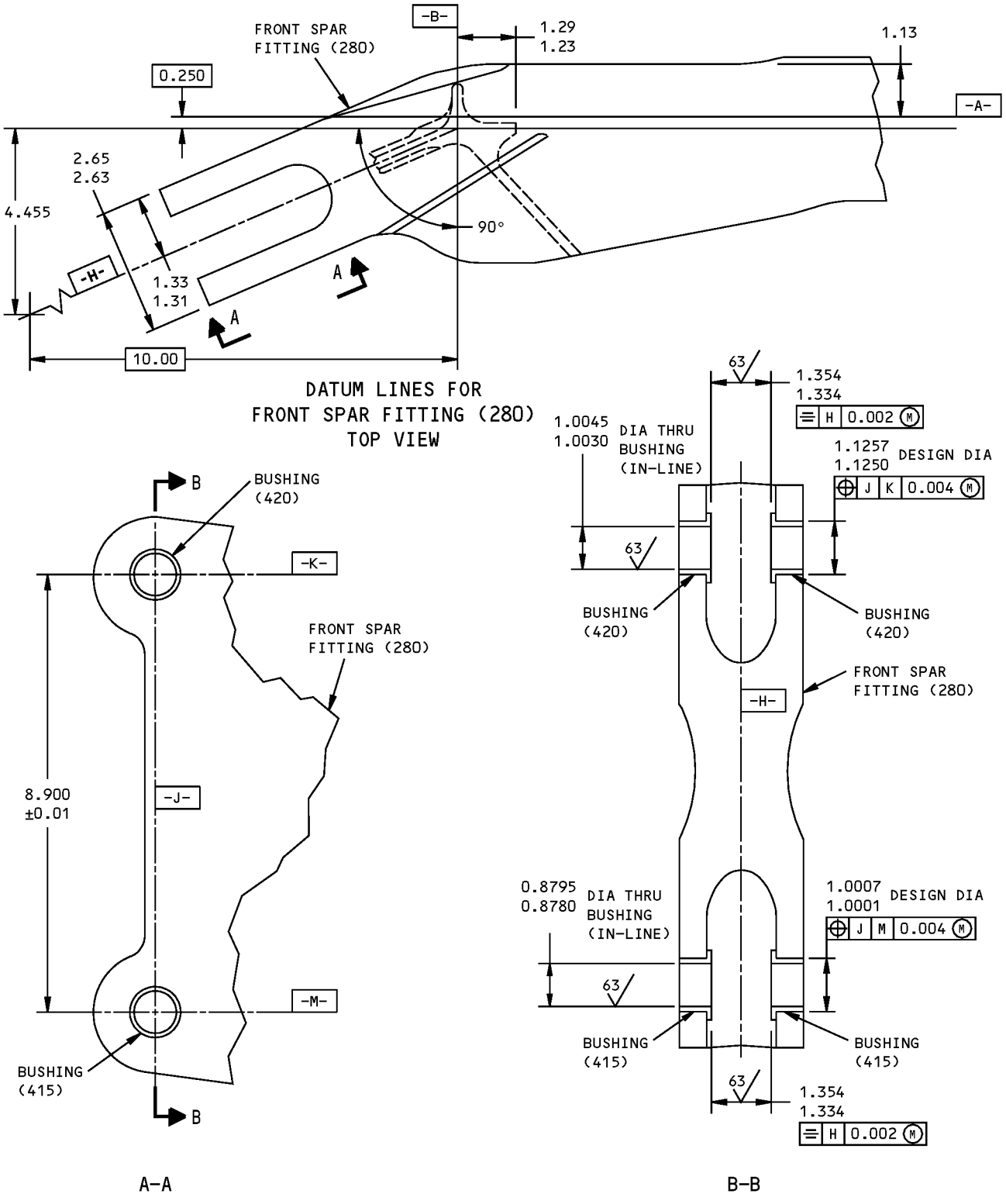
C. Procedure

NOTE: Perform the following steps if the bonded washers were removed for any reason.

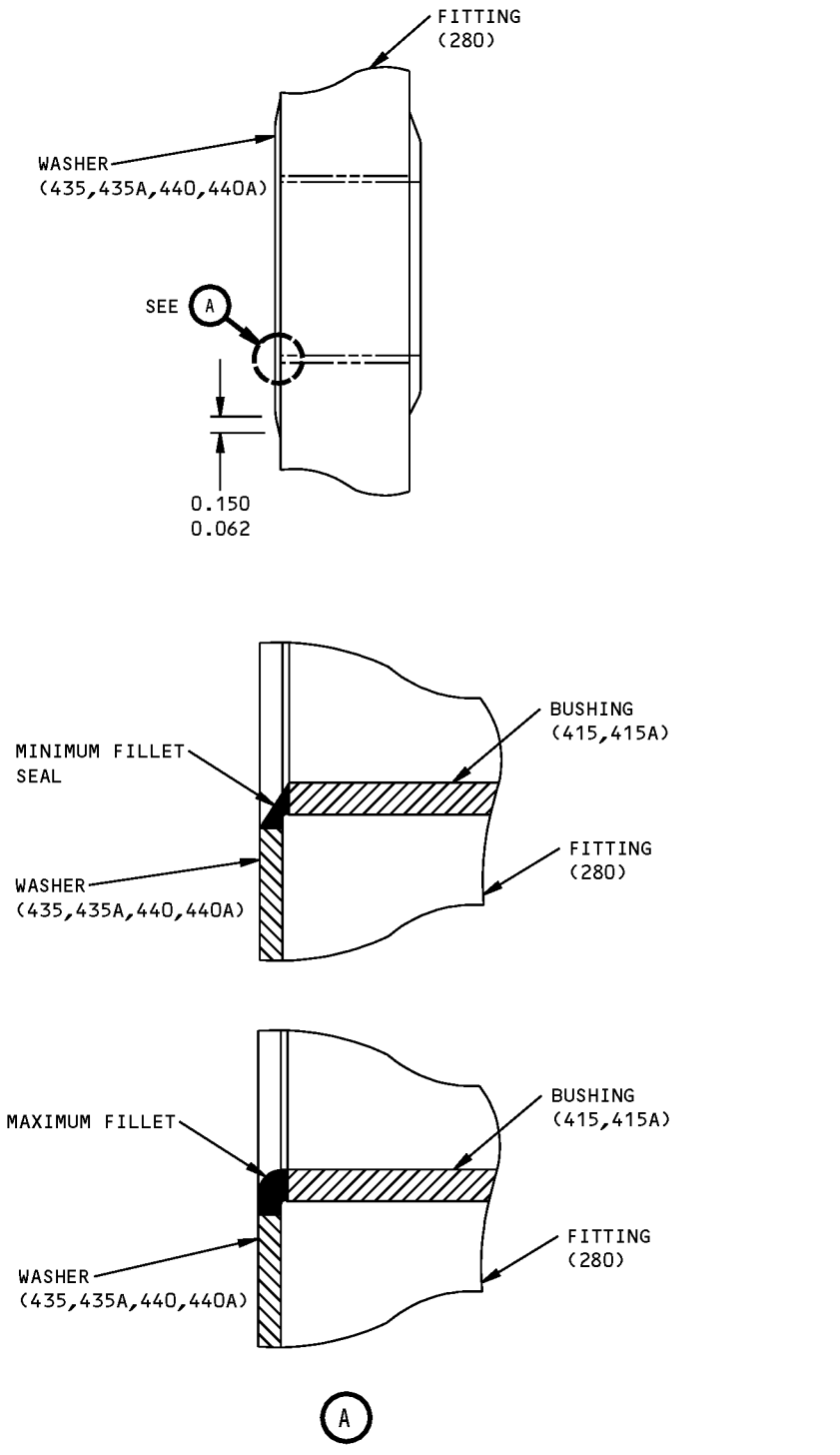
NOTE: For miscellaneous materials, refer to SOPM 20-60-04.

(1) Bond the washer (435, 435A, 440, 440A) to the fitting assembly (280) as specified in the SOPM 20-50-12 using wet adhesive, A01076.

(2) Fillet seal the washer (435, 435A, 440, 440A) as shown in REPAIR 5-1, Figure 601 using wet adhesive, A01076.



65-47595-6 Replacement Bushing for Bushing (285, 290)
Figure 601 (Sheet 1 of 2)



65-47595-6 Replacement Bushing for Bushing (285, 290)
Figure 601 (Sheet 2 of 2)

FRONT SPAR FITTING ASSEMBLY - REPAIR 5-2

65-47596–6

1. General

A. This procedure has the data necessary to repair the front spar fitting assembly.

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

C. Refer to REPAIR-GENERAL, Figure 601 for the Standard True Position Dimensioning Symbols shown in the repair.

D. Refer to IPL Figure 1 for item numbers.

2. Bushed Hole Repair

A. Consumable Materials

NOTE: Equivalent substitutes may be used.

Reference	Description	Specification
C00064	Coating - Aluminum Chemical Conversion	BAC5719, Type II, Class A (MIL-C-5541, Class A)

B. References

Reference	Title
SOPM 20-10-03	SHOT PEENING
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) Machine the hole as necessary to remove defects. Do not make the hole larger than the hole repair limit (REPAIR 5-2, Figure 601).

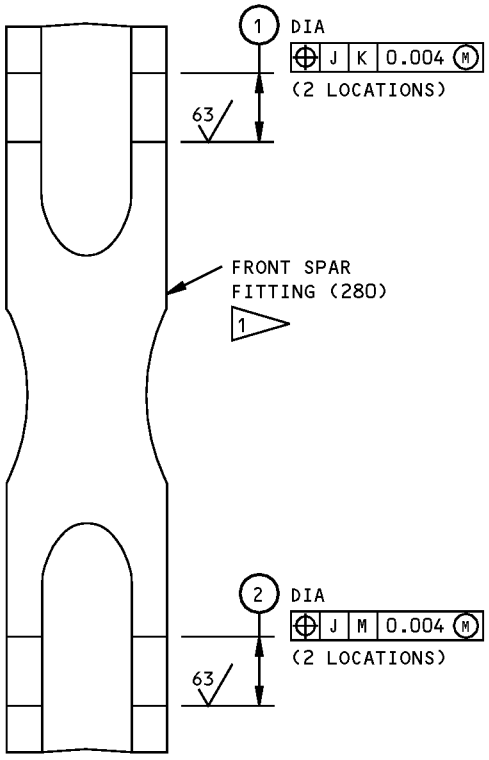
(2) Break sharp edges.

(3) Shotpeen the hole per SOPM 20-10-03. You can remove as much as 0.004 inch from the hole diameter after you shotpeen to get the last hole diameter.

(4) Apply a colored chemical coating, C00064 to the bushing hole (F-17.10).

(5) Make a bushing (REPAIR 5-2, Figure 602) a size necessary to make up the difference for the material removed in REPAIR 5-2, Paragraph 2.C.(1) and to get the necessary interference.

(6) Install the bushings as specified in Bushing Replacement REPAIR 5-1, Paragraph 2..



BUSHED HOLE REPAIR

	1	2
DESIGN DIM	1.1257 1.1250	1.0007 1.0001
REPAIR LIMIT	1.1857	1.0607

REFINISH

APPLY A COLORED CHEMICAL COATING TO THE BUSHING HOLE (F-17.10).

1 CHROMIC ACID ANODIZE AND APPLY ONE COAT OF BMS 10-11 TYPE I PRIMER (F-18.13), BUT DO NOT PUT PRIMER IN BUSHING HOLES.

REPAIR

MATERIAL: AL ALLOY

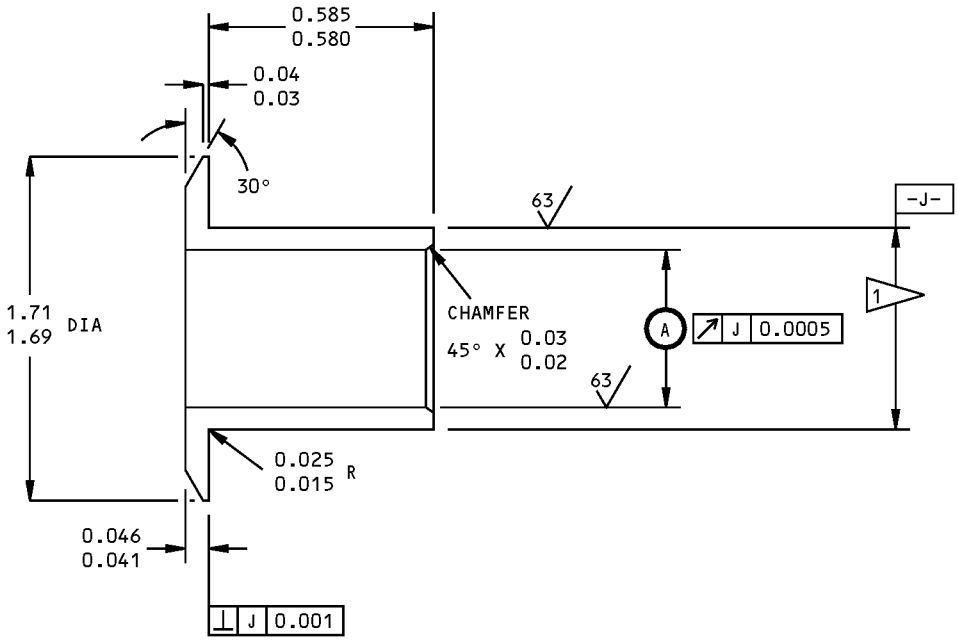
BREAK ALL SHARP EDGES 0.01-0.02 R

SHOT PEEN: SHOT NUMBER 230-550, 0.014A INTENSITY, 2.0 COVERAGE

ITEM NUMBERS REFER TO IPL FIG. 1

ALL DIMENSIONS ARE IN INCHES

65-47596-6 Bushed Hole Repair
Figure 601



HOLE LOCATION (FIG. 601)	(A)	INTERFERENCE (1)
(1)	1.0045 1.0030	0.0022 0.0008
(2)	0.8795 0.8780	0.0021 0.0007

FINISH

CADMIUM PLATE (F-15.06) BUT, DO NOT PLATE INNER DIAMETER.

(1) FINISH DIAMETER: REPAIR DIAMETER OF THE HOLE PLUS THE AMOUNT OF INTERFERENCE. THE FINISH DIAMETER INCLUDES THE PLATE THICKNESS.

125 MACHINED SURFACES EXCEPT AS NOTED

MATERIAL: ALUMIMUM-NICKEL-BRONZE

PENETRANT CHECK

BREAK ALL SHARP EDGES

ALL DIMENSIONS ARE IN INCHES

65-47596-6 Oversize Bushing Detail
Figure 602

MISCELLANEOUS PARTS REFINISH - REPAIR 6-1

1. General

A. This procedure has the data necessary to refinish the parts which are not given in the specified repairs.

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

C. Refer to IPL Figure 1 for item numbers.

2. Refinish

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.

A. Repair of parts listed in REPAIR 6-1, Table 601 consists of restoration of the original finish.

Table 601: Refinish Details

IPL FIG. & ITEM	MATERIAL	FINISH
Fig. 1		
Fittings (25,25A, 25B,25C,40,40A,80,80˜A,280,360,370)	Al alloy	Chromic acid anodize and apply primer, C00259 (F-18.13). Except omit primer from holes.
Filler (147)	CRES Type 301	Passivate (F-17.09) and apply primer, C00259(F-20.02).
Fittings (240)	Al alloy	Apply primer, C00259 (F-20.03) but do not put the primer in holes.
Fittings (300)	Al alloy	Apply primer, C00259 (F-20.02).

FAIL SAFE LINK ASSEMBLY - REPAIR 7-1

69-73157–1

1. General

A. This procedure has the data necessary to repair the fail safe link assembly.

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

C. Refer to REPAIR-GENERAL, Figure 601 for the Standard True Position Dimensioning Symbols shown in the 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 20-50-03	BEARING AND BUSHING REPLACEMENT
SOPM 20-60-04	MISCELLANEOUS MATERIALS

C. Procedure

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

(1) Remove bushing (160).

(2) Use the shrink fit method to install bushing (160) as specified in SOPM 20-50-03. Install the bushing with wet sealant, A00247.

(3) Machine the inside diameter of bushing (160) as specified in REPAIR 7-1, Figure 601.

(4) Break sharp edges.

3. 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

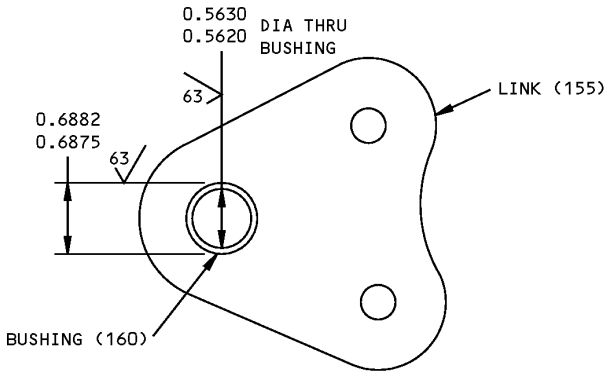
Reference	Title
SOPM 20-30-02	STRIPPING OF PROTECTIVE FINISHES
SOPM 20-41-01	DECODING TABLE FOR BOEING FINISH CODES

Reference	Title
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) Link (155) – Chromic acid anodize and apply primer, C00259 but do not put primer in the hole for the bushing (F-18.13). Material: 7075-T651 Plate



Fail Safe Link Assembly - Bushing Replacement
Figure 601

ASSEMBLY

1. General

A. This procedure has the data necessary to assemble the horizontal tail center section 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. Tools/Equipment

NOTE: Equivalent substitutes may be used.

Reference	Description
SPL-5383	Hinge Bearing Horizontal Stab Spanner Wrench (Part #: C27039-1, Supplier: 81205)

B. Consumable Materials

NOTE: Equivalent substitutes may be used.

Reference	Description	Specification
A00247	Sealant - Pressure And Environmental - Chromate Type	BMS 5-95
C00259	Primer - Chemical And Solvent Resistant Finish, Epoxy Resin	BMS10-11, Type I
D00013	Grease - Aircraft And Instrument Grease	MIL-PRF-23827 (NATO G-354) (Supersedes MIL-G-23827)
D50004	Compound - Antiseize	BMS3-28

C. References

Reference	Title
SOPM 20-60-02	FINISHING MATERIALS
SOPM 20-60-03	LUBRICANTS
SOPM 20-60-04	MISCELLANEOUS MATERIALS

D. Procedure

(1) Assemble this component using standard industry practices and additional procedures in following steps:

(2) Install bolts (345) with wet primer, C00259 (SOPM 20-60-02), with washers (340) under heads and washers (330) under nuts (325). Tighten nuts (325) to 95-100 pound-inches.

NOTE: With no gap at head end of bolts (345) a gap of 0.01-0.04 inch is permissible under washers (330).

(3) Preassemble hinge housing assemblies (220, 222).

(a) Coat the outer surface of the bearing (250) outer races with grease, D00013 (SOPM 20-60-03).

(b) Install bearing (250) in fitting assembly (240) as specified in 20-50-03 with wet sealant, A00247 (SOPM 20-60-04). Make sure the sealant, A00247 beads out around the faying surface of the bearing flange (to make a moisture barrier). Do not apply sealant, A00247 to the bearing threads.

NOTE: Install the lockplates (255) specified in ASSEMBLY, Paragraph 2.D.(3)(d) before the sealant, A00247 cures.

(c) Install nut (245) with Spanner Wrench, SPL-5383. Apply sealant, A00247 on the nut faying surface and antiseize thread compound, D50004 on the threads. Make sure the sealant, A00247 beads out around the faying surface of the nut (245) (to make a moisture barrier). Tighten nut (245) to 1200-2200 pound-inches.

NOTE: Install the lockplates (255) specified in ASSEMBLY, Paragraph 2.D.(3)(d) before the sealant, A00247 cures.

(d) Install lockplates (255) with bolt (265), washers (235) and nut (230). Position lockplates (255) to engage nut (245) and bearing (250).

(e) Install cotter pin (225).

(4) Assemble hinge housing assemblies (220, 222) to rear spar assembly (300).

(a) Apply coat of grease, D00013 to shank and threads of bolts (215); install with washers (210) under heads and washers (205) under nuts (200). Tighten nuts (200) to 1500-1800 pound-inches.

NOTE: If required for alignment of cotter pin holes, torque may be increased to 2150 pound-inches, maximum.

(5) Install failsafe link assembly (150).

(a) Fay seal the filler (147) to the failsafe link assembly (150) with sealant, A00247 (SOPM 20-60-04). Delaminate the filler (147) as necessary to fill the gap between the failsafe link assembly (150) and the hinge housing assembly (220). The maximum gap after shimming is 0.01 inch.

(b) Apply coat of grease, D00013 (SOPM 20-60-03) to shank and threads of bolts (110); install with washers (105) under heads and washers (100) under nuts. Tighten nuts (95) to 480-600 pound-inches.

NOTE: If required for alignment of cotter pin holes, torque may be increased to 920 pound-inches, maximum.

(c) Apply primer, C00259 (SOPM 20-60-02) to shank of bolts (145) and install wet, with washers (140) under heads and washers (135) , jumper assembly (130), washer (125) and nut (120).

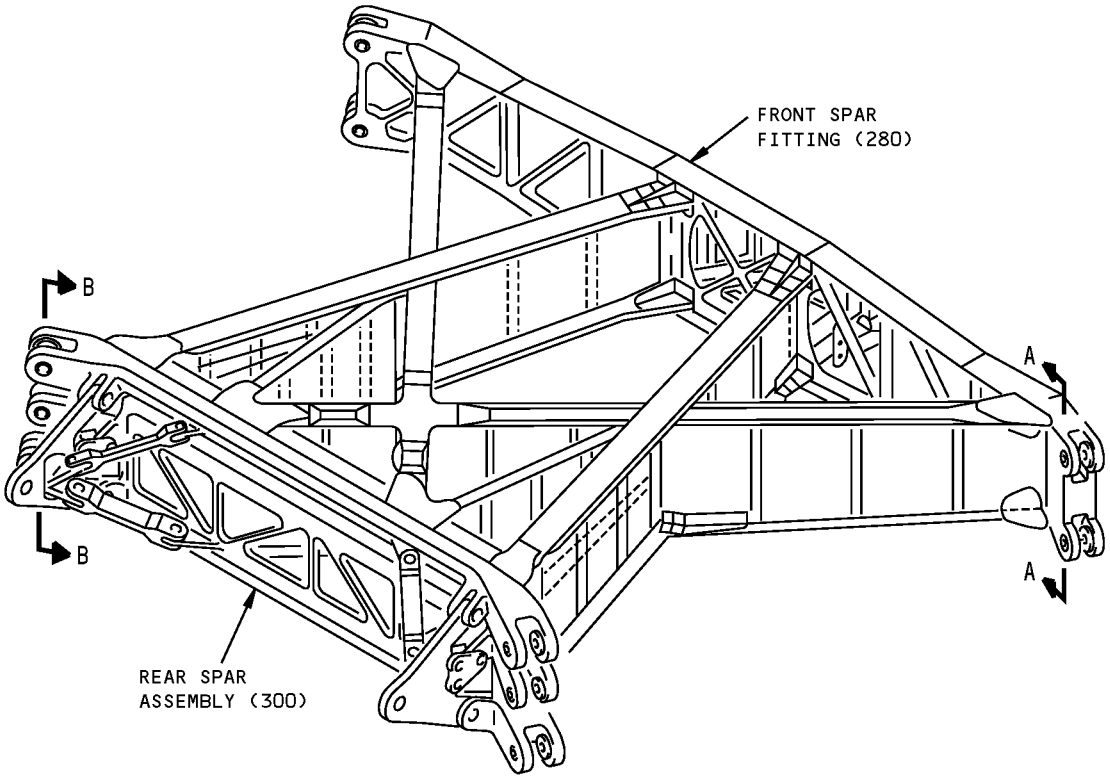
(6) Install thrust brace fitting assemblies (20, 20A, 20B, 20C, 35, 35A).

(a) Apply coating of grease, D00013 (SOPM 20-60-03), to shank and threads of bolts (15) prior to installation.

(b) Tighten nuts (5) to 270-300 pound-inches. Back off to nearest castellation, if necessary, to align castellations and cotter pin hole.

NOTE: With no gap at head end of bolts (15) a gap of 0.01-0.04 inch is permissible under washers (10).

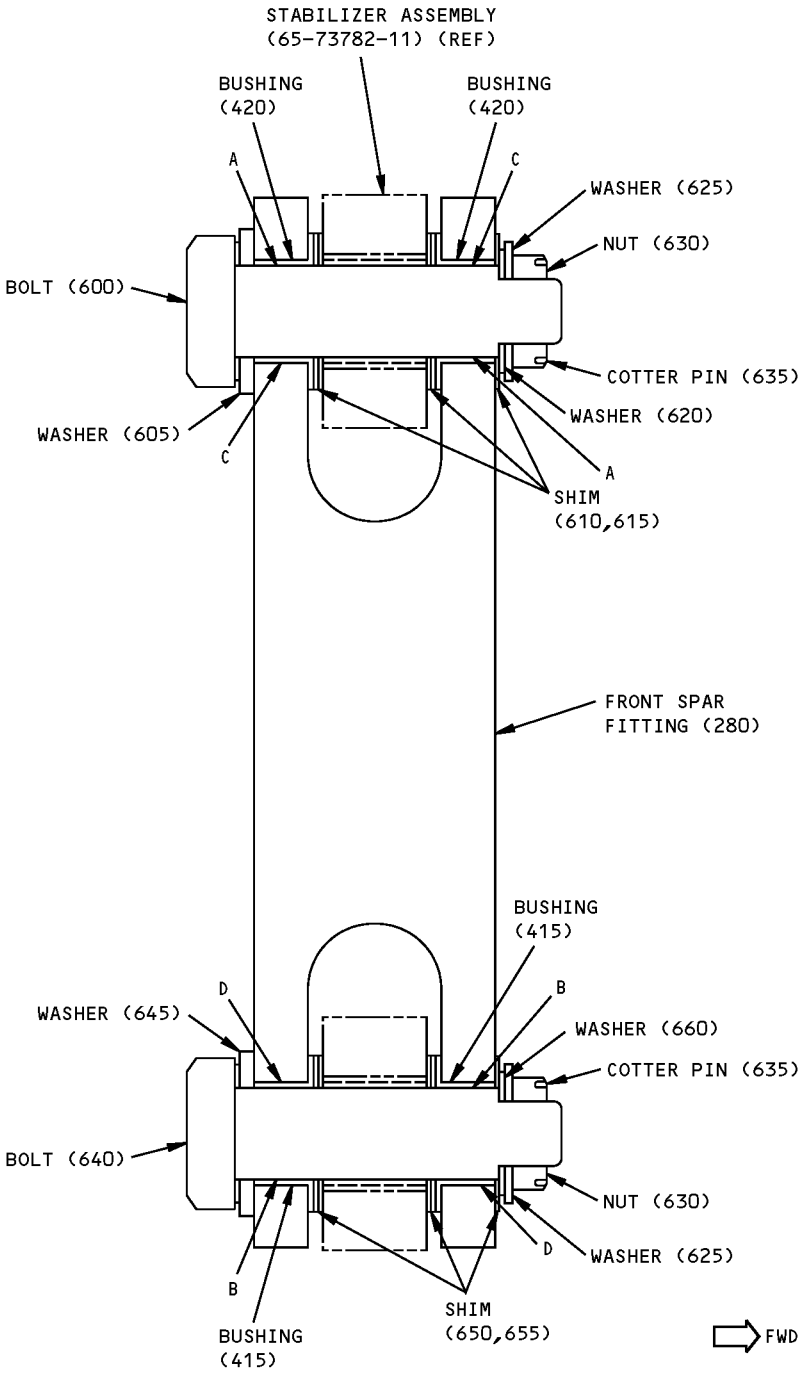
FITS AND CLEARANCES



HORIZONTAL TAIL CENTER SECTION

ITEM NUMBERS REFER TO IPL FIG. 1

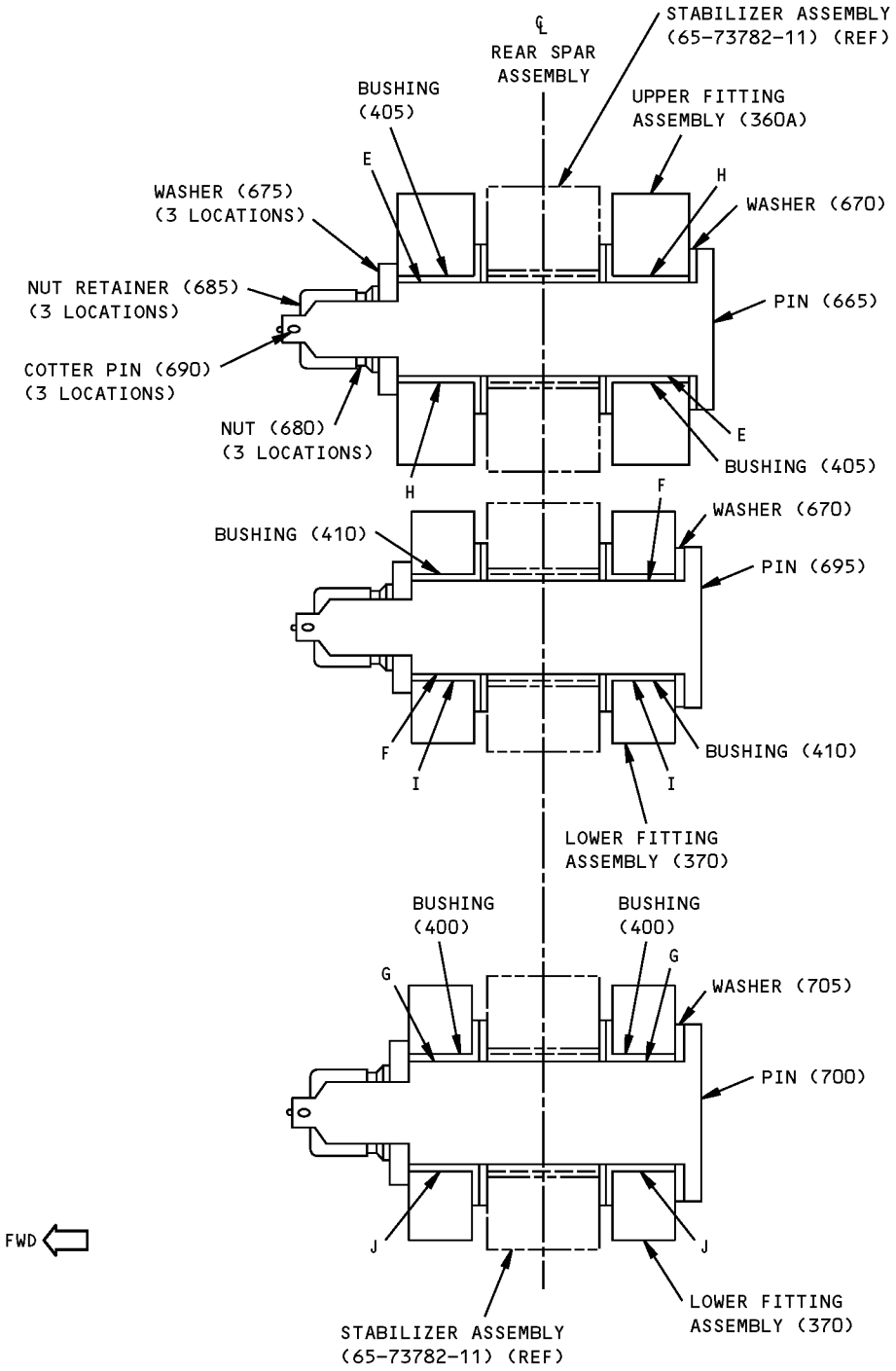
Fits and Clearances
Figure 801 (Sheet 1 of 4)



FRONT SPAR FITTING (280)
A-A

ITEM NUMBERS REFER TO IPL FIG. 1

Fits and Clearances
Figure 801 (Sheet 2 of 4)



REAR SPAR ASSEMBLY (300)
B-B

ITEM NUMBERS REFER TO IPL FIG. 1

Fits and Clearances
Figure 801 (Sheet 3 of 4)

Ref Letter Fig.801	Mating Item No.	IPL Fig. No.	Design Dimension				Service Wear Limit		
			Dimensions		Assembly Clearance		Dimension Limits		Maximum Allowable Clearance
			Min	Max	Min	Max	Min	Max	
A	ID 420 OD 600 [1]	1	1.0030 0.9985	1.0045 0.9990	0.0040	0.0060	0.9930	1.0090	0.010
B	ID 415 OD 640 [1]	1	0.8780 0.8735	0.8795 0.8740	0.0040	0.0060	0.8680	0.8840	0.010
C	ID 280 OD 420	1	1.1250 1.1265	1.1257 1.1272	-0.0022	-0.0008			0.0000
D	ID 280 OD 415	1	1.0001 1.0014	1.0007 1.0022	-0.0021	-0.0007			0.0000
E	ID 405 OD 665,665A [2]	1	1.3781 1.3725	1.3791 1.3740	0.0041	0.0066	1.3681 [3]	1.3840	0.010
F	ID 410 OD 695,695A [2]	1	1.3781 1.3725	1.3791 1.3740	0.0041	0.0066	1.3681 [4]	1.3840	0.010
G	ID 400 OD 700,700A, 700B [2]	1	1.5031 1.4975	1.5041 1.4990	0.0041	0.0066	1.4931 [5]	1.5090	0.010
H	ID 360A, 360B, 360C OD 405	1	1.5000 1.5017	1.5008 1.5026	-0.0026	-0.0009			0.0000
I	ID 370,370A OD 410	1	1.5000 1.5017	1.5008 1.5026	-0.0026	-0.0009			0.0000
J	ID 370,370A OD 400	1	1.6250 1.6268	1.6258 1.6277	-0.0027	-0.0010			0.0000

ALL DIMENSIONS ARE IN INCHES

[1] 69-73697-1,-2 BOLTS USED ON INSTALLATION
[2] 69-73071-7,-8,-9,-12 THRU -15 PINS USED ON INSTALLATION
[3] REPLACE WITH NEW 69-73071-12 PIN
[4] REPLACE WITH NEW 69-73071-13 PIN
[5] REPLACE WITH NEW 69-73071-15 PIN

Fits and Clearances
Figure 801 (Sheet 4 of 4)

REF IPL		NAME	TORQUE*	
FIG. NO.	ITEM NO.		POUND-INCHES	POUND-FEET
1	5	Nut	290-510	
1	50	Nut	630-1070	
1	95	Nut	480-600	
1	170	Nut	2200-3300	
1	200	Nut	1500-1800	
1	245	Nut	1200-2200	
1	325	Nut	95-110	

* REFER TO SOPM 20-50-01 FOR TORQUE VALUES OF STANDARD FASTENERS.

Torque Table
Figure 802

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-5383	Hinge Bearing Horizontal Stab Spanner Wrench	C27039-1	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
15860	NEW HAMPSHIRE BALL BEARINGS, INC ASTRO DIVISION 155 LEXINGTON AVENUE LACONIA, NEW HAMPSHIRE 03246-2937 FORMERLY ASTRO BEARING CORP, LOS ANGELES, CALIF.

NUMERICAL INDEX

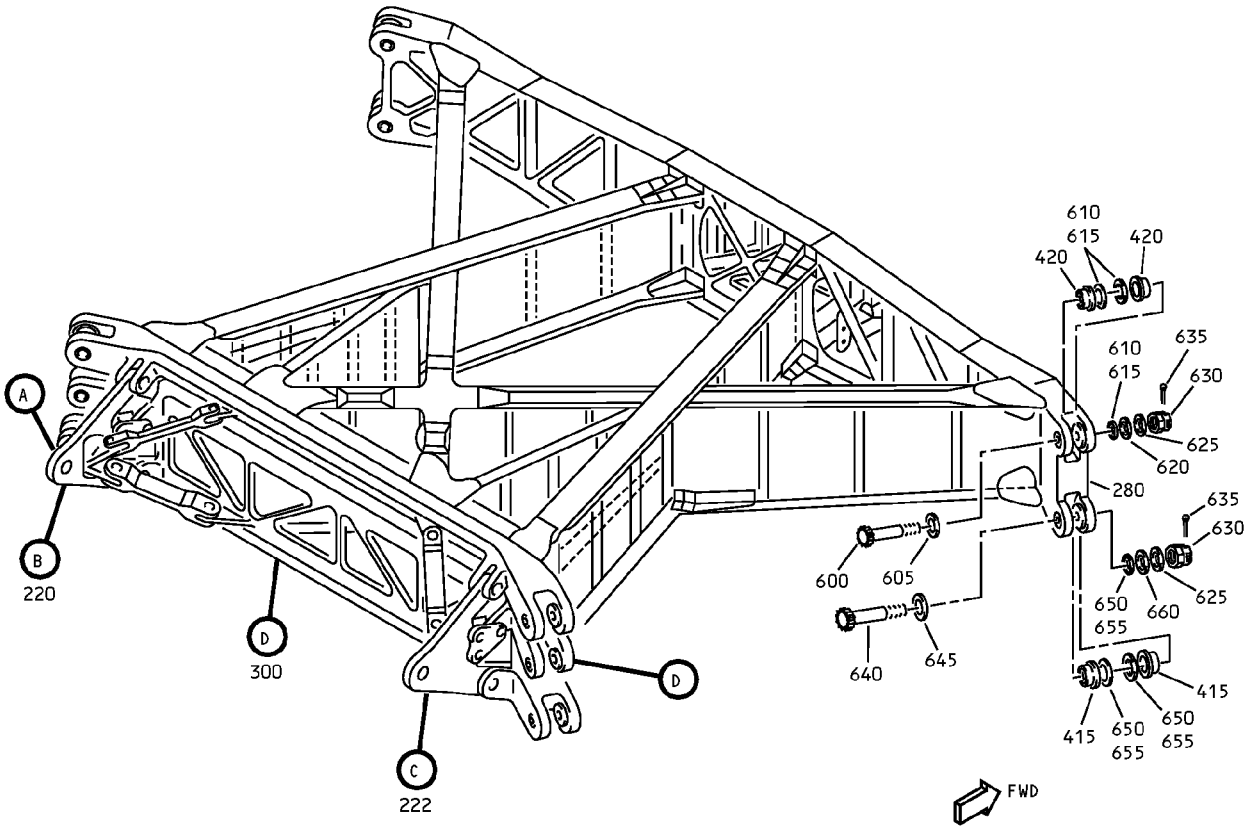
PART NUMBER	AIRLINE PART NUMBER	FIGURE	ITEM	UNITS PER ASSEMBLY
10-60545-93A		1	250	1
65-47595-5		1	300	1
65-47596-6		1	280	1
65-49925-11		1	360A	1
65-49925-507		1	360B	1
65-49925-9		1	360C	1
65-49927-3		1	370	1
65-49927-5		1	370A	1
65-52857-25		1	390A	1
65-52857-26		1	395A	1
65-52857-7		1	390	1
65-52857-8		1	395	1
65-73781-502		1	175B	2
65-73781-7		1	1	RF
		1	1A	RF
65-73781-9		1	130	2
65C25154-1		1	20	2
65C25154-10		1	25B	1
65C25154-11		1	20B	2
65C25154-12		1	25C	1
65C25154-13		1	20C	2
65C25154-2		1	35	2
65C25154-3		1	20A	2
65C25154-4		1	35A	2
65C25154-5		1	25	1
65C25154-6		1	40	1
65C25154-7		1	25A	1
65C25154-8		1	40A	1
65C25158-1		1	70	2
65C25158-2		1	70A	2
65C25158-3		1	80	1
65C25170-10		1	222B	1
65C25170-11		1	220C	1
65C25170-12		1	222C	1

PART NUMBER	AIRLINE PART NUMBER	FIGURE	ITEM	UNITS PER ASSEMBLY
65C25170-13		1	240B	1
65C25170-2		1	240	1
65C25170-5		1	220	1
65C25170-501		1	220A	1
65C25170-502		1	222A	1
65C25170-503		1	240A	1
65C25170-6		1	222	1
65C25170-9		1	220B	1
69-38967-12		1	400	2
		1	400A	2
69-38967-15		1	405	2
		1	405A	2
69-38967-18		1	410	2
		1	410A	2
69-38967-19		1	30	4
		1	45	4
69-38967-20		1	85	2
		1	305A	4
69-38967-21		1	275	1
69-38967-23		1	310	4
69-38967-25		1	320	2
69-38967-26		1	275A	1
69-38967-27		1	270B	1
69-38967-28		1	278	1
69-38967-29		1	270C	1
69-38967-30		1	275B	1
69-38967-504		1	270A	1
69-38967-505		1	315A	4
69-39495-501		1	345	4
69-41369-1		1	645	2
69-41369-2		1	605	2
69-41369-3		1	425	4
		1	710	2
69-41369-4		1	430	2
		1	715	1

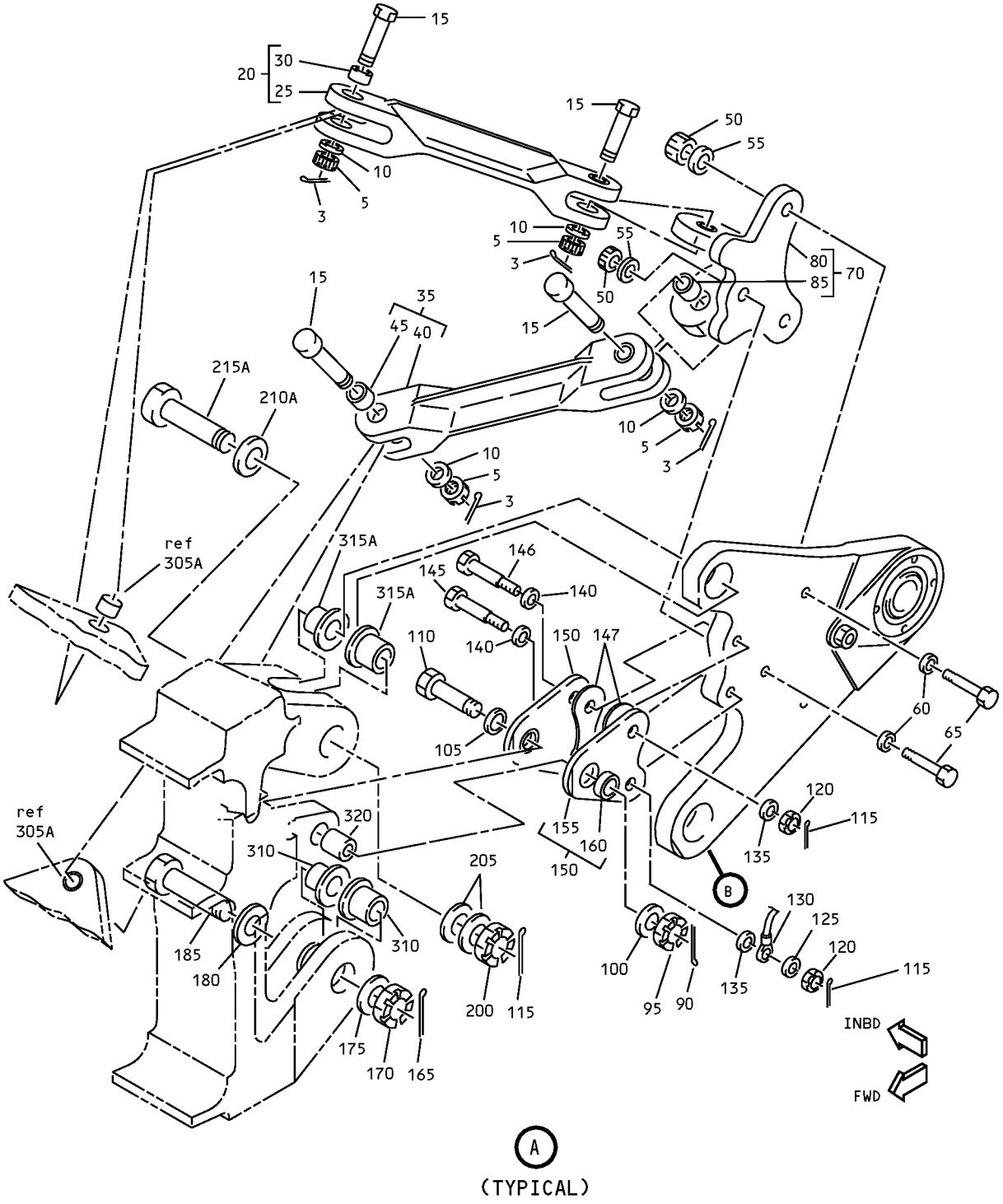
PART NUMBER	AIRLINE PART NUMBER	FIGURE	ITEM	UNITS PER ASSEMBLY
69-41369-5		1	435	2
69-41369-6		1	440	2
69-41369-7		1	435A	2
69-41369-8		1	440A	2
69-41379-1		1	650	2
		1	650A	AR
69-41379-2		1	655A	AR
69-41379-3		1	610	AR
69-41379-4		1	615	AR
69-41379-6		1	655	AR
69-41379-7		1	610A	AR
69-41379-8		1	615A	AR
69-72039-28		1	415	2
		1	415A	2
69-72039-29		1	420	2
		1	420A	2
69-73071-12		1	665A	2
69-73071-13		1	695A	2
69-73071-14		1	700A	2
69-73071-15		1	700B	2
69-73071-16		1	665B	2
69-73071-17		1	695B	2
69-73071-18		1	700C	2
69-73071-7		1	695	2
69-73071-8		1	700	2
69-73071-9		1	665	2
69-73076-1		1	245	1
69-73077-1		1	685	6
69-73077-2		1	685A	3
69-73081-1		1	675	6
69-73086-1		1	255	2
69-73157-1		1	150	4
69-73157-2		1	155	1
69-73160-1		1	15	8
69-73166-2		1	147	4

PART NUMBER	AIRLINE PART NUMBER	FIGURE	ITEM	UNITS PER ASSEMBLY
69-73697-1		1	600	2
69-73697-2		1	640	2
69-76162-1		1	675A	6
69C25158-4		1	80A	1
AN960-716		1	10	8
AN960KD716		1	140	4
AN960KD716L		1	125	2
		1	135	4
AN960XC416L		1	235	2
BACB28U8B34		1	350	8
BACB28U8B49		1	355	4
BACB28U9B34		1	160	1
BACB30LM8K20		1	65	6
BACB30NM7DK23		1	146	2
BACB30NM7DK25		1	145	2
BACB30NR4K17		1	265	1
BACB30UU14-32D		1	215A	2
BACB30UU16-37D		1	185	2
BACB30UU9-23D		1	110	2
BACN10JD104		1	230	1
BACN10JD109CD		1	95	2
BACN10JD112		1	630	4
BACN10JD114CD		1	200	2
BACN10JD116CD		1	170	2
BACN10JD7		1	120	4
BACN10JD7CD		1	5	8
BACW10BN12P		1	625	4
BACW10BN14SC		1	210A	2
BACW10BN14SP		1	205	2
BACW10BN16SC		1	180	2
BACW10BN16SP		1	175	2
		1	175A	2
BACW10BN22SC		1	670A	2
BACW10BN22UC		1	670	4
BACW10BN24SC		1	705A	1

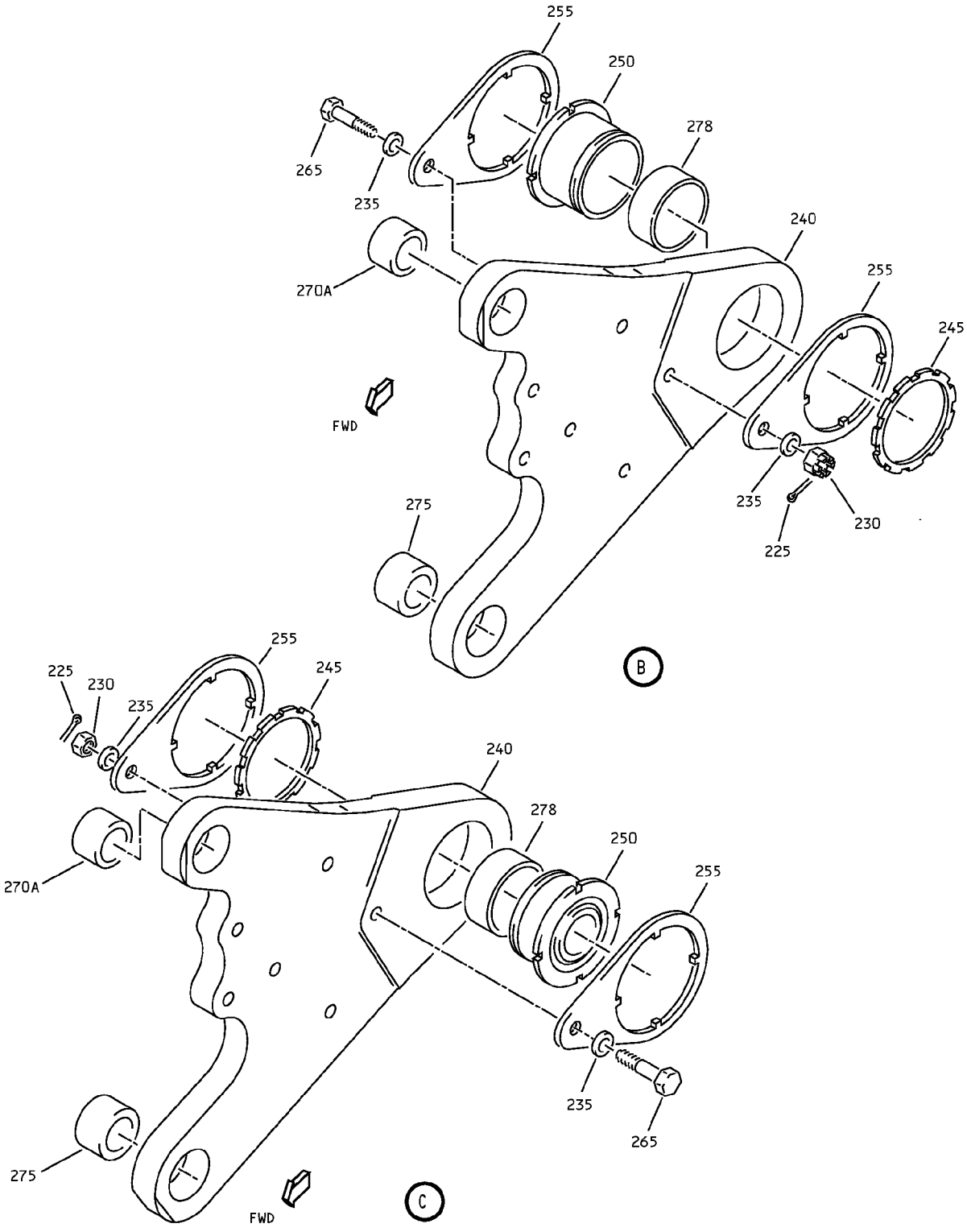
PART NUMBER	AIRLINE PART NUMBER	FIGURE	ITEM	UNITS PER ASSEMBLY
BACW10BN24UC		1	705	2
BACW10BN9SC		1	105	2
BACW10BN9SP		1	100	2
BACW10BP14CD		1	210B	2
BACW10BP14DP		1	205A	2
BACW10BP8ACU		1	60	6
BACW10BP8DP		1	55	6
BACW10P224AM		1	660	2
BACW10P266TF		1	335	8
BACW10P283AZ		1	620	2
MS20002-6		1	330	4
MS20002C8		1	340	4
MS21042L6		1	325A	4
MS24665-155		1	225	1
MS24665-287		1	3	8
		1	115	4
		1	690	6
MS24665-357		1	90	2
MS24665-359		1	190	2
		1	635	4
MS24665-360		1	165	2
NAS1805-12L		1	680	6
NAS1805-8N		1	50	6
NAS679A6		1	325	4



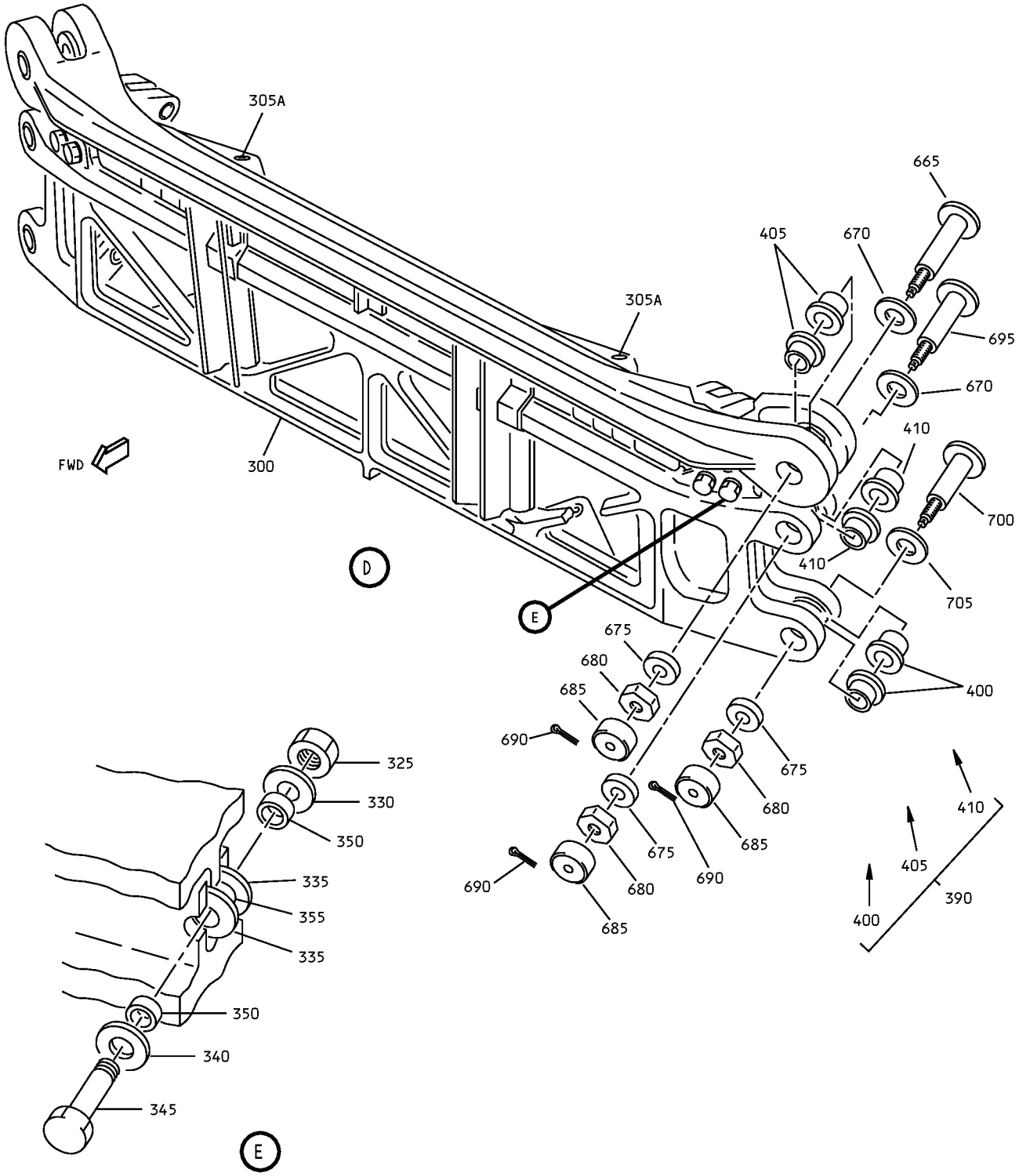
Horizontal Tail Center Section
IPL Figure 1 (Sheet 1 of 4)



Horizontal Tail Center Section
IPL Figure 1 (Sheet 2 of 4)



Horizontal Tail Center Section
IPL Figure 1 (Sheet 3 of 4)



Horizontal Tail Center Section
IPL Figure 1 (Sheet 4 of 4)

FIG/ ITEM	PART NUMBER	AIRLINE PART NUMBER	NOMENCLATURE 1 2 3 4 5 6 7	USAGE CODE	UNITS PER ASSY
1–					
–1	65-73781-7		HORIZONTAL TAIL CENTER SECTION ASSEMBLY (PRE SB 737-55-1058)	A	RF
–1A	65-73781-7		HORIZONTAL TAIL CENTER SECTION ASSEMBLY (POST SB 737-55-1058) (CENTER SECTION WAS REWORKED PER SB 737-55-1058 BUT PART NUMBER DID NOT CHANGE.)	A	RF
3	MS24665-287		. PIN COTTER		8
5	BACN10JD7CD		. NUT		8
10	AN960-716		. WASHER		8
15	69-73160-1		. BOLT		8
20	65C25154-1		. FITTING ASSY-THRUST BRACE (LIMITED USAGE) (OPT ITEM 20B)	A	2
–20A	65C25154-3		. FITTING ASSY-THRUST BRACE (LIMITED USAGE) (OPT ITEM 20B)	A	2
–20B	65C25154-11		. FITTING ASSY-THRUST BRACE (LIMITED USAGE) (PREFERED)	A	2
–20C	65C25154-13		. FITTING ASSY-THRUST BRACE (LIMITED USAGE) (OPT ITEM 20B)	A	2
25	65C25154-5		. . FITTING (USED ON ITEM 20)		1
–25A	65C25154-7		. . FITTING (USED ON ITEM 20A)		1
–25B	65C25154-10		. . FITTING (USED ON ITEM 20B)		1
–25C	65C25154-12		. . FITTING (USED ON ITEM 20C)		1
30	69-38967-19		. . BUSHING		4
35	65C25154-2		. FITTING ASSY-THRUST BRACE (PREF)	A	2
–35A	65C25154-4		. FITTING ASSY-THRUST BRACE (OPT ITEM 35)	A	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–					
40	65C25154-6		. . FITTING (USED ON ITEM 35)		1
–40A	65C25154-8		. . FITTING (USED ON ITEM 35A)		1
45	69-38967-19		. . BUSHING		4
50	NAS1805-8N		. NUT		6
55	BACW10BP8DP		. WASHER		6
60	BACW10BP8ACU		. WASHER		6
65	BACB30LM8K20		. BOLT		6
70	65C25158-1		. FITTING ASSY-THRUST BRACE ATTACH (PREFERED)	A	2
–70A	65C25158-2		. FITTING ASSY-THRUST BRACE ATTACH (OPT ITEM 70) (LIMITED USAGE)	A	2
80	65C25158-3		. . FITTING (USED ON ITEM 70)		1
–80A	69C25158-4		. . FITTING (USED ON ITEM 70A)		1
85	69-38967-20		. . BUSHING		2
90	MS24665-357		. PIN-COTTER		2
95	BACN10JD109CD		. NUT		2
100	BACW10BN9SP		. WASHER (USE A MAXIMUM OF 3 UNDER EACH NUT)		
105	BACW10BN9SC		. WASHER		2
110	BACB30UU9-23D		. BOLT		2
115	MS24665-287		. PIN-COTTER		4
120	BACN10JD7		. NUT		4
125	AN960KD716L		. WASHER		2
130	65-73781-9		. JUMPER ASSY-BONDING	A	2
135	AN960KD716L		. WASHER		4
140	AN960KD716		. WASHER		4
145	BACB30NM7DK25		. BOLT		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–					
146	BACB30NM7DK23		. BOLT		2
147	69-73166-2		. FILLER		4
150	69-73157-1		. LINK ASSY-FAIL SAFE	A	4
155	69-73157-2		. . LINK		1
160	BACB28U9B34		. . BUSHING		1
165	MS24665-360		. PIN-COTTER		2
170	BACN10JD116CD		. NUT		2
175	BACW10BN16SP		. WASHER (LIMITED USAGE) (USE A MAXIMUM OF 3 UNDER EACH NUT)		
175A	BACW10BN16SP		. WASHER (LIMITED USAGE) (USED WITH ITEM 175B) (USE A MAXIMUM OF 2 UNDER EACH NUT)		
175B	65-73781-502		. WASHER-SPECIAL (LIMITED USAGE) (USED WITH ITEM 175A)		2
180	BACW10BN16SC		. WASHER		2
185	BACB30UU16-37D		. BOLT		2
190	MS24665-359		. PIN-COTTER		2
200	BACN10JD114CD		. NUT		2
205	BACW10BN14SP		. WASHER (LIMITED USAGE) (USE A MAXIMUM OF 3 UNDER EACH NUT)		
205A	BACW10BP14DP		. WASHER (LIMITED USAGE) (USE A MAXIMUM OF 3 UNDER EACH NUT)		
210	AN960KD716		DELETED		
210A	BACW10BN14SC		. WASHER (LIMITED USAGE)		2
210B	BACW10BP14CD		. WASHER (LIMITED USAGE)		2
215	BACB30NM7DK23		DELETED		

–Item not Illustrated

FIG/ ITEM	PART NUMBER	AIRLINE PART NUMBER	NOMENCLATURE 1 2 3 4 5 6 7	USAGE CODE	UNITS PER ASSY
1–					
215A	BACB30UU14-32D		. BOLT		2
220	65C25170-5		. HOUSING ASSY-HINGE (LH) (LIMITED USAGE)	A	1
220A	65C25170-501		. HOUSING ASSY-HINGE (LH) (LIMITED USAGE)		1
220B	65C25170-9		. HOUSING ASSY-HINGE (LH) (LIMITED USAGE) (PREFERED)		1
220C	65C25170-11		. HOUSING ASSY-HINGE (LH) (LIMITED USAGE) (OPT ITEM 220B)		1
–222	65C25170-6		. HOUSING ASSY-HINGE (RH) (LIMITED USAGE)	A	1
222A	65C25170-502		. HOUSING ASSY-HINGE (RH) (LIMITED USAGE)		1
222B	65C25170-10		. HOUSING ASSY-HINGE (RH) (LIMITED USAGE) (PREFERED)		1
222C	65C25170-12		. HOUSING ASSY-HINGE (RH) (LIMITED USAGE) (OPT ITEM 225B)		1
225	MS24665-155		. . PIN-COTTER		1
230	BACN10JD104		. . NUT-CASTELLATED		1
235	AN960XC416L		. . WASHER		2
240	65C25170-2		. . FITTING ASSY (USED ON ITEMS 220,222)		1
240A	65C25170-503		. . FITTING ASSY (USED ON ITEMS 220A,220B,222A,222B)		1
240B	65C25170-13		. . FITTING ASSY (USED ON ITEMS 220C,222C)		1
245	69-73076-1		. . NUT-BEARING, 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–					
250	10-60545-93A		. . BEARING (V15860)		1
255	69-73086-1		. . PLATE-LOCK		2
260	AN960XC416L		DELETED		
265	BACB30NR4K17		. . BOLT		1
270	69-38967-22		DELETED		
270A	69-38967-504		. . BUSHING (USED ON ITEMS 220,220A,222,222A)		1
270B	69-38967-27		. . BUSHING (USED ON ITEMS 220B,222B)		1
270C	69-38967-29		. . BUSHING (USED ON ITEMS 220C,222C)		1
275	69-38967-21		. . BUSHING (USED ON ITEMS 220,220A,222,222A)		1
275A	69-38967-26		. . BUSHING (USED ON ITEMS 220B,222B)		1
275B	69-38967-30		. . BUSHING (USED ON ITEMS 220C,222C)		1
278	69-38967-28		. . BUSHING (USED ON ITEMS 220C,222C ONLY)		1
280	65-47596-6		. SPAR FITTING-FRONT	A	1
285	69-72039-29		DELETED		
290	69-72039-28		DELETED		
300	65-47595-5		. SPAR ASSY-REAR (ONE OR MORE COMPONENTS OF THIS ASSEMBLY ARE PERMANENTLY INSTALLED STRUCTURE AND ARE NOT IDENTIFIED IN THIS PARTS LIST.)	A	1
305	69-38967-5		DELETED		
305A	69-38967-20		. . BUSHING		4
310	69-38967-23		. . BUSHING		4
315	65-38967-24		DELETED		
315A	69-38967-505		. . BUSHING		4

–Item not Illustrated

FIG/ ITEM	PART NUMBER	AIRLINE PART NUMBER	NOMENCLATURE 1 2 3 4 5 6 7	USAGE CODE	UNITS PER ASSY
1–					
320	69-38967-25		. . BUSHING		2
325	NAS679A6		. . NUT (REPLACED BY MS21042L6)		4
325A	MS21042L6		. . NUT (REPLACES NAS679A6)		4
330	MS20002-6		. . WASHER		4
335	BACW10P266TF		. . WASHER		8
340	MS20002C8		. . WASHER		4
345	69-39495-501		. . BOLT-SHOULDER		4
350	BACB28U8B34		. . BUSHING		8
355	BACB28U8B49		. . BUSHING		4
360	65-49925-7		DELETED		
360A	65-49925-11		. . FITTING ASSY-UPPER (LIMITED USAGE)	A	1
360B	65-49925-507		. . FITTING ASSY-UPPER (LIMITED USAGE)	A	1
360C	65-49925-9		. . FITTING ASSY-UPPER (LIMITED USAGE)	A	1
365	69-38967-15		DELETED		
370	65-49927-3		. . FITTING ASSY-LOWER (LIMITED USAGE)	A	1
370A	65-49927-5		. . FITTING ASSY-LOWER (LIMITED USAGE)	A	1
375	69-38967-18		DELETED		
380	69-38967-12		DELETED		
390	65-52857-7		. HOLE INSTL (LH) (LIMITED USAGE)	A	1
–390A	65-52857-25		. HOLE INSTL (LH) (LIMITED USAGE)	A	1
395	65-52857-8		. HOLE INSTL (RH) (LIMITED USAGE)	A	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–					
–395A	65-52857-26		. HOLE INSTL (RH) (LIMITED USAGE)	A	1
400	69-38967-12		. . BUSHING		2
–400A	69-38967-12		. . BUSHING (LIMITED USAGE)		2
405	69-38967-15		. . BUSHING		2
–405A	69-38967-15		. . BUSHING (LIMITED USAGE)		2
410	69-38967-18		. . BUSHING		2
–410A	69-38967-18		. . BUSHING (LIMITED USAGE)		2
415	69-72039-28		. . BUSHING		2
–415A	69-72039-28		. . BUSHING (LIMITED USAGE)		2
420	69-72039-29		. . BUSHING		2
–420A	69-72039-29		. . BUSHING (LIMITED USAGE)		2
–425	69-41369-3		. . WASHER (LIMITED USAGE)		4
–430	69-41369-4		. . WASHER (LIMITED USAGE)		2
–435	69-41369-5		. . WASHER (LIMITED USAGE)		2
–435A	69-41369-7		. . WASHER (LIMITED USAGE)		2
–440	69-41369-6		. . WASHER (LIMITED USAGE)		2
–440A	69-41369-8		. . WASHER (LIMITED USAGE)		2
			INSTALLATION PARTS		
600	69-73697-1		BOLT		2
605	69-41369-2		WASHER (LIMITED USAGE)		2
610	69-41379-3		SHIM (LIMITED USAGE)		AR

–Item not Illustrated

FIG/ ITEM	PART NUMBER	AIRLINE PART NUMBER	NOMENCLATURE 1 2 3 4 5 6 7	USAGE CODE	UNITS PER ASSY
1–					
–610A	69-41379-7		SHIM (LIMITED USAGE)		AR
615	69-41379-4		SHIM (LIMITED USAGE)		AR
–615A	69-41379-8		SHIM (LIMITED USAGE)		AR
620	BACW10P283AZ		WASHER (LIMITED USAGE)		2
625	BACW10BN12P		WASHER (LIMITED USAGE)		4
630	BACN10JD112		NUT		4
635	MS24665-359		COTTER PIN		4
640	69-73697-2		BOLT		2
645	69-41369-1		WASHER (LIMITED USAGE)		2
650	69-41379-1		WASHER (LIMITED USAGE)		2
–650A	69-41379-1		SHIM (LIMITED USAGE)		AR
655	69-41379-6		SHIM (LIMITED USAGE)		AR
–655A	69-41379-2		SHIM (LIMITED USAGE)		AR
660	BACW10P224AM		WASHER (LIMITED USAGE)		2
665	69-73071-9		PIN (LIMITED USAGE) (PRE SB 737-55-1058)		2
–665A	69-73071-12		PIN (LIMITED USAGE) (PRE SB 737-55-1058)		2
–665B	69-73071-16		PIN (LIMITED USAGE) (POST SB 737-55-1058)		2
670	BACW10BN22UC		WASHER (LIMITED USAGE)		4
–670A	BACW10BN22SC		WASHER (LIMITED USAGE)		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–					
675	69-73081-1		WASHER (LIMITED USAGE)		6
–675A	69-76162-1		WASHER (LIMITED USAGE)		6
680	NAS1805-12L		NUT		6
685	69-73077-1		NUT RETAINER (LIMITED USAGE)		6
–685A	69-73077-2		NUT RETAINER		3
690	MS24665-287		COTTER PIN		6
695	69-73071-7		PIN (LIMITED USAGE) (PRE SB 737-55-1058)		2
–695A	69-73071-13		PIN (LIMITED USAGE) (PRE SB 737-55-1058)		2
–695B	69-73071-17		PIN (LIMITED USAGE) (POST SB 737-55-1058)		2
700	69-73071-8		PIN (LIMITED USAGE) (PRE SB 737-55-1058)		2
–700A	69-73071-14		PIN (LIMITED USAGE) (PRE SB 737-55-1058)		2
–700B	69-73071-15		PIN (LIMITED USAGE) (PRE SB 737-55-1058)		2
–700C	69-73071-18		PIN (LIMITED USAGE) (POST SB 737-55-1058)		2
705	BACW10BN24UC		WASHER		2
–705A	BACW10BN24SC		WASHER (LIMITED USAGE)		1
–710	69-41369-3		WASHER (LIMITED USAGE)		2
–715	69-41369-4		WASHER (LIMITED USAGE)		1

–Item not Illustrated