



# **COMPONENT MAINTENANCE MANUAL WITH ILLUSTRATED PARTS LIST**

## **APU SUPPORT STRUT ASSEMBLY**

**PART NUMBER**  
**352A1200-1, -2, -21, -22, -23, -3, -31, -32, -33, -41,**  
**-42, -43, -7, -9**

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PAGE DATE: Jul 01/2009

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## COMPONENT MAINTENANCE MANUAL

Revision No. 8  
Jul 01/2009

To: All holders of APU SUPPORT STRUT ASSEMBLY 49-13-12.

Attached is the current revision to this COMPONENT MAINTENANCE MANUAL

The COMPONENT MAINTENANCE MANUAL is furnished either as a printed manual, on microfilm, or digital products, or any combination of the three. This revision replaces all previous microfilm cartridges or digital products. All microfilm and digital products are reissued with all obsolete data deleted and all updated pages added.

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.

Pages replaced or made obsolete by this revision should be removed and destroyed.

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TRANSMITTAL LETTER

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Location of Change

Description of Change

NO HIGHLIGHTS

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All temporary revisions to this manual will be accompanied by a cover sheet bearing the temporary revision number. Enter the temporary revision number in numerical order, together with the temporary revision date, the date the temporary revision is inserted and the initials of the person filing. When the temporary revision is incorporated or cancelled, and the pages are removed, enter the date the pages are removed and the initials of the person who removed the temporary revision.

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## COMPONENT MAINTENANCE MANUAL

### 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.

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INTRODUCTION

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## COMPONENT MAINTENANCE MANUAL

### APU SUPPORT STRUT ASSEMBLIES - DESCRIPTION AND OPERATION

#### 1. Description

A. The APU support strut assemblies are tubular titanium parts which usually have one or two ends that are adjustable.

#### 2. Operation

A. The APU support struts connect the APU to hard structure at six locations.

#### 3. Leading Particulars (Approximate)

A. Leading Particular Values

**Table 1:** Dimension Table

| <b>A. ASSEMBLY</b> | <b>LENGTH</b> | <b>DIAMETER</b> | <b>WEIGHT</b> |
|--------------------|---------------|-----------------|---------------|
| -1,-21,-31, -41    | 13.8 inches   | 1.0 inch        | 1.34 lbs      |
| -2,-22,-32, -42    | 10.0 inches   | 1.0 inch        | 1.34 lbs      |
| -3,-23,-33, -43    | 8.8 inches    | 1.0 inch        | 0.57 lbs      |
| -7                 | 3.3 inches    | 0.6 inch        | 0.20 lbs      |
| -9                 | 8.4 inches    | 1.1 inches      | 0.20 lbs      |

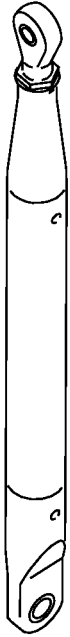
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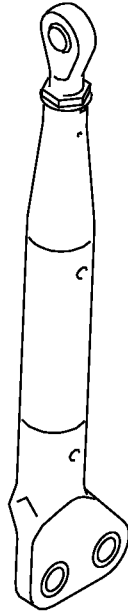
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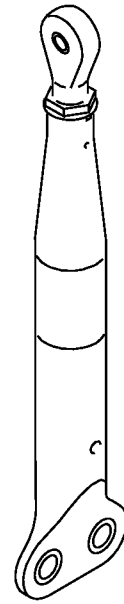
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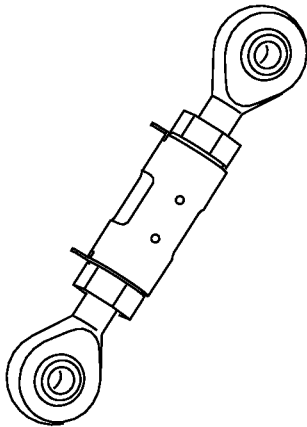
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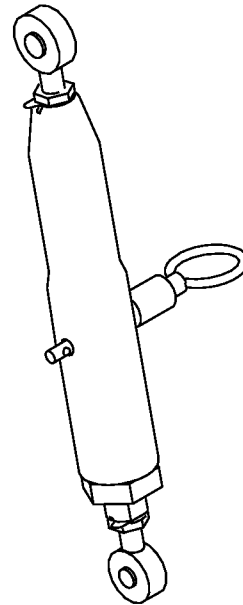
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APU Support Strut Assemblies  
Figure 1

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DESCRIPTION AND OPERATION

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**TESTING AND FAULT ISOLATION**

**(NOT APPLICABLE)**

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TESTING AND FAULT ISOLATION

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## COMPONENT MAINTENANCE MANUAL

### DISASSEMBLY

#### 1. General

- A. This procedure has the data to disassemble the APU support struts.
- 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 5 for item numbers.

#### 2. Disassembly

- A. Consumable Materials

**NOTE:** Equivalent substitutes may be used.

| Reference | Description                                   | Specification      |
|-----------|---|--------------------|
| G50347    | Lockwire - Nickel-copper, 0.032 inch diameter | NASM20995N~<br>C32 |

- B. Procedure

- (1) Use standard industry procedures and the steps shown below to disassemble this component.
- (2) Disassemble failsafe strut assembly (1A) if necessary to remove internal parts.
  - (a) Remove the rig pin (105) from the rod assembly.
  - (b) Remove the lockwire, G50347 from the nuts (5) and the lock washers (12).
  - (c) Loosen nuts (5) and remove rod ends (15, 20), nuts (5), washers (10), and lock washers (12).
  - (d) Loosen and remove the cap (25).
  - (e) Remove the plunger (35), o-ring (30), and spring (40).

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DISASSEMBLY

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## COMPONENT MAINTENANCE MANUAL

### CLEANING

#### 1. General

- A. This procedure has the data to clean the APU support struts.
- B. Refer to the Standard Overhaul Practices Manual (SOPM) for the SOPM subjects identified in this procedure.

#### 2. Procedure

- A. Cleaning
  - (1) Clean all parts but bearings by standard industry procedures and the instructions in SOPM 20-30-03.
  - (2) Clean bearings by the vendor's instructions.

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CLEANING  
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## COMPONENT MAINTENANCE MANUAL

### CHECK

#### 1. General

- A. This procedure has the data 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, 2, 3, 4, and 5 for item numbers.

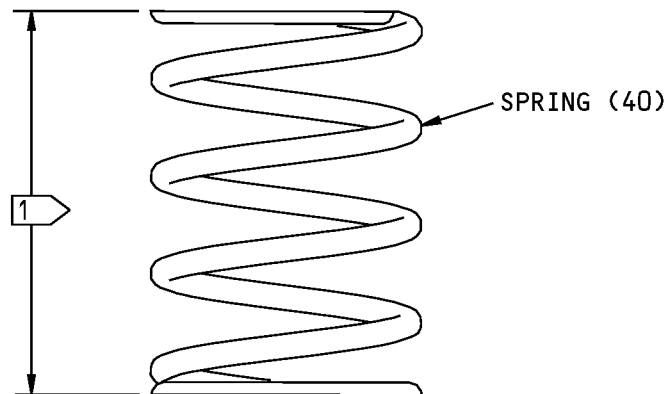
#### 2. Procedure


- A. Check
  - (1) Use standard industry procedures to do a visual check of all the parts for defects. Do the penetrant or magnetic particle check if the visual check shows possible damage or if you think there are defects.
  - (2) Do a magnetic particle check (SOPM 20-20-01) of these parts:
    - (a) IPL Figure 1:
      - 1) Struts (40A,40B) (CRES)
    - (b) IPL Figure 2:
      - 1) Struts (20A,20B) (CRES)
    - (c) IPL Figure 3:
      - 1) Struts (20A,20B) (CRES)
    - (d) IPL Figure 5:
      - 1) Cap (25)
      - 2) Spring (40)
  - (3) Do a penetrant check (SOPM 20-20-02) of these parts:
    - (a) IPL Figure 1:
      - 1) Strut (40) (titanium)
    - (b) IPL Figure 2:
      - 1) Strut (20) (titanium)
    - (c) IPL Figure 3:
      - 1) Strut (20) (titanium)
    - (d) IPL Figure 4:
      - 1) Strut (20)
    - (e) IPL Figure 5:
      - 1) Plunger (35)
      - 2) Spring (50)
  - (4) Do a check of the spring (IPL Figure 5; 40) (CHECK, Figure 501).

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## COMPONENT MAINTENANCE MANUAL



 FREE LENGTH = 1.075-1.095 INCHES  
SOLID LENGTH = 0.371-0.391 INCHES  
SPRING RATE = 26.0-30.0 POUNDS  
PER INCH

ITEM NUMBERS REFER TO IPL FIG. 5  
ALL DIMENSIONS ARE IN INCHES

352A1200-13 Spring Check  
Figure 501

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CHECK  
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## COMPONENT MAINTENANCE MANUAL

### REPAIR

#### 1. General

- A. Instructions for repair, refinish, and replacement of the specified subassembly parts are included in each REPAIR when applicable:

**Table 601:**

| <b>PART NUMBER</b> | <b>NAME</b>             | <b>REPAIR</b> |
|--------------------|-------------------------|---------------|
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| 352A1200           | APU SUPPORT STRUT ASSY  | 2-1, 2-2      |
| 352A1200           | APU SUPPORT STRUT ASSY  | 3-1, 3-2      |
| 352A1200           | APU SUPPORT STRUT ASSY  | 4-1, 4-2      |
| 352A1200           | APU SUPPORT STRUT ASSY  | 5-1           |
| 352A1200           | APU SUPPORT STRUT ASSY  | 6-1           |

#### 2. Dimensioning Symbols

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

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REPAIR - GENERAL

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## COMPONENT MAINTENANCE MANUAL

### 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 other repairs.
- B. Refer to the Standard Overhaul Practices Manual (SOPM) for details of the SOPM subjects identified in this procedure.
- C. Refer to IPL Figure 5 for item numbers.

#### 2. Procedure

**NOTE:** For decoding table for Boeing finish codes, refer to SOPM 20-41-01

##### A. References

| Reference     | Title                                  |
|---------------|--|
| SOPM 20-41-01 | DECODING TABLE FOR BOEING FINISH CODES |

##### B. Refinish of Other Parts

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

**Table 601:** Refinish Details

| IPL FIG. & ITEM | MATERIAL                              | FINISH               |
|-----------------|---------------------------------------|----------------------|
| IPL Fig. 5      |                                       |                      |
| Cap (25)        | 15-5PH CRES (AMS5659),<br>180-200 ksi | Passivate (F-17.25). |
| Spring (40)     | 17-7PH CRES (AMS5678),<br>CH 900      | Passivate (F-17.25). |

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REPAIR 1-1

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## COMPONENT MAINTENANCE MANUAL

### APU SUPPORT STRUT ASSEMBLY - REPAIR 2-1

352A1200-1, -21, -31, -41

#### 1. General

- A. This procedure has the data to replace the bushing (35) and the rod end (30A) in the support strut 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. Procedure REPAIR 2-1, Figure 601

##### A. Consumable Materials

**NOTE:** Equivalent substitutes may be used.

| Reference | Description   | Specification     |
|-----------|---|-------------------|
| G01048    | Lockwire - Corrosion Resistant Steel (0.032 In. Dia.) | NASM20995~<br>C32 |

##### B. References

| Reference     | Title                             |
|---------------|-----------------------------------|
| SOPM 20-50-02 | INSTALLATION OF SAFETYING DEVICES |
| SOPM 20-50-03 | BEARING AND BUSHING REPLACEMENT   |

##### C. Bushing Replacement

- (1) Remove the old bushing (35) from the strut (40).
- (2) If you find defects on the strut, refer to REPAIR 2-2 for repair instructions.
- (3) Install a replacement bushing (35) by the shrink-fit method (SOPM 20-50-03).
- (4) Machine the bushing (35) to design dimensions and finish.

##### D. Rod End Replacement

- (1) Remove the lockwire, G01048 from the nut (25) and the lock washer (27).
- (2) Loosen the nut (25).
- (3) Loosen and remove the old rod end (30A).
- (4) Install a replacement rod end (30A) with washer (26), lock washer (27), and nut (25). Be sure to engage the serrations on the washer (26) and lockwasher (27).
- (5) Adjust the rod end (30A) to the length shown. Make sure the threads of the rod end (30A) show in the inspection hole, then tighten the nut (25) and lockwire the nut (25) to the lockwasher (27) (SOPM 20-50-02).

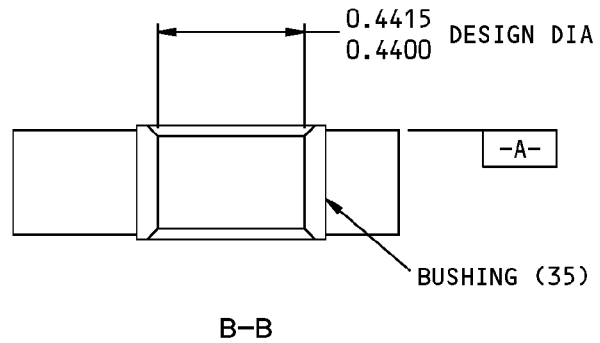
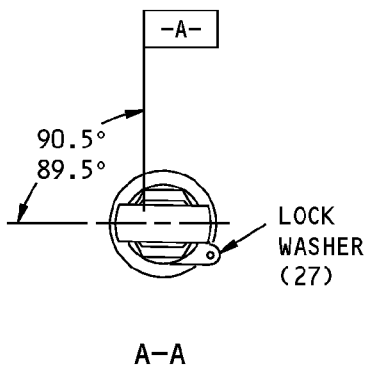
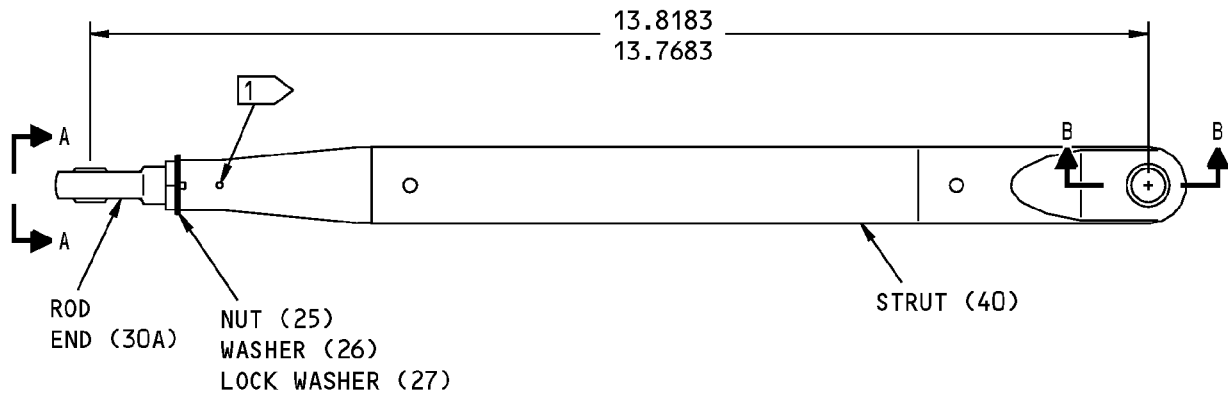
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REPAIR 2-1

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1 INSPECTION HOLE FOR MINIMUM  
THREAD ENGAGEMENT

125 ✓ ALL MACHINED SURFACES UNLESS  
SHOWN DIFFERENTLY

ITEM NUMBERS REFER TO IPL FIG. 1

ALL DIMENSIONS ARE IN INCHES

352A1200-1,-21,-31,-41 APU Support Strut Assembly Repair  
Figure 601

**49-13-12**

REPAIR 2-1

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## COMPONENT MAINTENANCE MANUAL

### STRUT - REPAIR 2-2

352A1200-4, -24, -34, -44

#### 1. General

- A. This procedure has the data to repair strut (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.
- D. General repair details:

**Table 601:** General Repair Detail

|                |   |
|----------------|---|
| (1) Material:  | 352A1200-4: Titanium alloy                    |
|                | 352A1200-24,-34,-44: 15-5PH CRES, 180-200 ksi |
| (1) Shot peen: | Intensity 0.014A2                             |
|                | Coverage 2.0                                  |
|                | Hard Shot (RC 55-65)                          |
|                | Shot Size 0.023-0.046                         |
|                | Overspray is permitted                        |

#### 2. Procedure (REPAIR 2-2, Figure 601)

**NOTE:** For repair and refinish of high strength steel parts, refer to SOPM 20-10-01. For machining of alloy steel, refer to SOPM 20-10-02. For machining of titanium, refer to SOPM 20-10-07. For magnetic particle inspection, refer to SOPM 20-20-01. For general cleaning procedures, refer to SOPM 20-30-03. For decoding table for Boeing finish codes, refer to SOPM 20-41-01.

##### 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 20-10-01 | REPAIR AND REFINISH OF HIGH STRENGTH STEEL PARTS |
| SOPM 20-10-02 | MACHINING OF ALLOY STEEL                         |
| SOPM 20-10-03 | SHOT PEENING                                     |
| SOPM 20-10-07 | MACHINING OF TITANIUM                            |
| SOPM 20-20-01 | MAGNETIC PARTICLE INSPECTION                     |
| SOPM 20-30-03 | GENERAL CLEANING PROCEDURES                      |
| SOPM 20-41-01 | DECODING TABLE FOR BOEING FINISH CODES           |

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REPAIR 2-2

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## COMPONENT MAINTENANCE MANUAL

### C. Lug Hole

- (1) Machine as necessary, within repair limits, to remove defects.
- (2) Magnetic particle examine (CRES) or penetrant examine (titanium) machined surfaces.
- (3) Shot peen (SOPM 20-10-03).
- (4) Make an oversize bushing (REPAIR 2-2, Figure 602).
- (5) Install the bushing (35) REPAIR 2-1.

### D. Corrosion Removal

- (1) Remove all signs of surface corrosion, within repair limits.
- (2) Smoothly blend the repaired area with a length to depth ratio of 20 to 1.
- (3) Refinish as indicated. For better corrosion resistance, apply the primer, C00259.

### E. Refinish

- (1) Titanium strut 352A1200-4: No finish (F-25.01).
- (2) CRES struts 352A1200-24, -34: Passivate (F-17.25). For more corrosion resistance, apply primer, C00259 (F-18.22) but not on threads or bushing holes.
- (3) CRES struts 352A1200-44: Passivate (F-17.25). Apply primer, C00259 (F-18.22) but not on threads or bushing holes.

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REPAIR 2-2

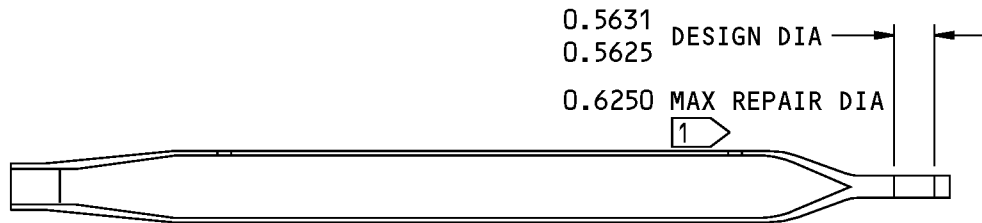
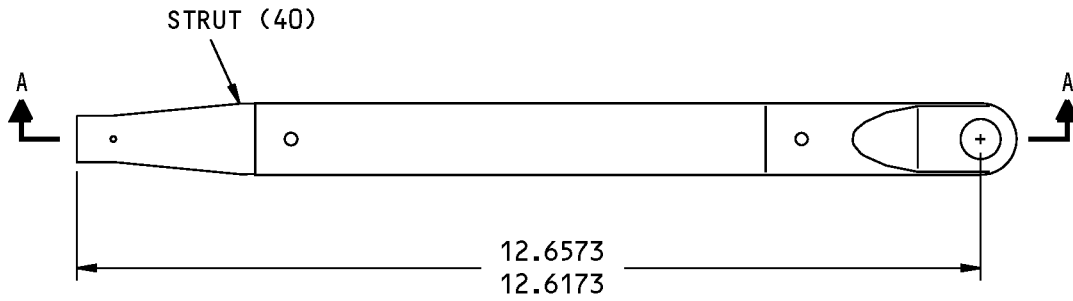
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COMPONENT MAINTENANCE MANUAL



A-A

| STRUT PART NUMBER | DAMAGE REMOVAL LIMITS (WALL THICKNESS REDUCTION) <span style="border: 1px solid black; padding: 0 2px;">2</span> |                 |                       |                 |              |
|-------------------|--|-----------------|-----------------------|-----------------|--------------|
|                   | $L \leq 1.0$   | $1.0 < L < 1.5$ | $1.5 \leq L \leq 2.0$ | $2.0 < L < 2.5$ | $L \geq 2.5$ |
| 352A1200-4        | 0.024  | 0.024           | 0.024                 | 0.024           | 0.024        |
| 352A1200-24       | 0.024  | 0.024           | 0.024                 | 0.024           | 0.024        |
| 352A1200-34       | 0.024  | 0.024           | 0.024                 | 0.024           | 0.024        |

1 LIMIT FOR INSTALLATION OF OVERSIZE BUSHING

2 L IS THE MAXIMUM DIMENSION OF THE BLENDED AREA

125/ ✓ ALL MACHINED SURFACES UNLESS SHOWN DIFFERENTLY

ITEM NUMBERS REFER TO IPL FIG. 1

ALL DIMENSIONS ARE IN INCHES

352A1200-4,-24,-34,-44 Strut Repair  
Figure 601

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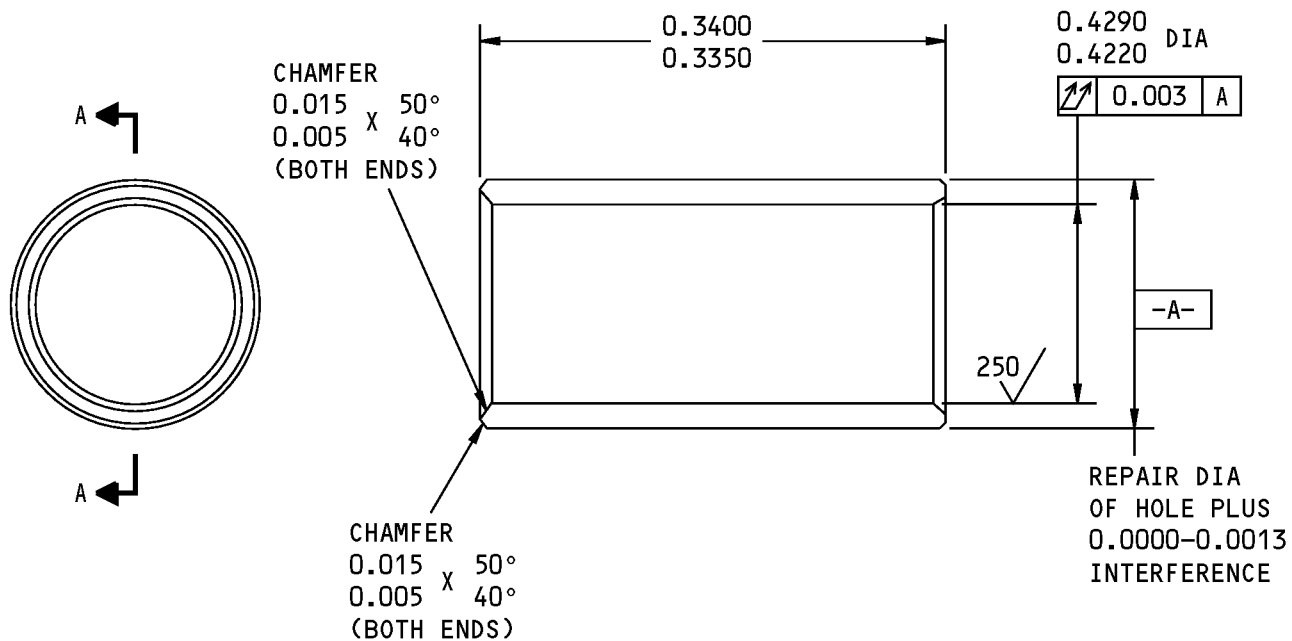
REPAIR 2-2

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A-A

63/ ALL MACHINED SURFACES UNLESS SHOWN DIFFERENTLY

MATERIAL: 17-4PH CRES (AMS 5643), 180-200 KSI

FINISH: PASSIVATE (F-17.13)

ALL DIMENSIONS ARE IN INCHES

REPLACES BUSHING (IPL FIG. 1; 35) BACB28U7E034

Oversize Bushing Details  
Figure 602

**49-13-12**

REPAIR 2-2  
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## COMPONENT MAINTENANCE MANUAL

### APU SUPPORT STRUT ASSEMBLY - REPAIR 3-1

352A1200-2, -22, -32, -42

#### 1. General

- A. This repair gives the data to replace the bushings (15) and the rod end (10A) in the support strut assembly.
- B. Refer to the Standard Overhaul Practices Manual (SOPM) for the standard subjects shown in the repair.
- C. Refer to the IPL Figure 2 for item numbers.

#### 2. Procedure (REPAIR 3-1, Figure 601)

**NOTE:** For installation of safety devices, refer to SOPM 20-50-02.

##### A. Consumable Materials

**NOTE:** Equivalent substitutes may be used.

| Reference | Description   | Specification     |
|-----------|---|-------------------|
| G01048    | Lockwire - Corrosion Resistant Steel (0.032 In. Dia.) | NASM20995~<br>C32 |

##### B. References

| Reference     | Title                             |
|---------------|-----------------------------------|
| SOPM 20-50-02 | INSTALLATION OF SAFETYING DEVICES |
| SOPM 20-50-03 | BEARING AND BUSHING REPLACEMENT   |

##### C. Bushing Replacement ( REPAIR 3-1, Figure 601

- (1) Remove the old bushings (15) from the strut (20).
- (2) If you find defects on the strut, refer to REPAIR 3-2 for repair instructions.
- (3) Install replacement bushings by the shrink fit method (SOPM 20-50-03).
- (4) Machine the bushings to design dimensions and finish.

##### D. Rod End Replacement

- (1) Remove the lockwire, G01048 from the nut (5) and the lock washer (7).
- (2) Loosen the nut (5).
- (3) Loosen and remove the old rod end (10A).
- (4) Install a replacement rod end (10A), with washer (6), lock washer (7), and nut (5). Be sure to engage the serrations on the washer (6) and the lock washer (7).
- (5) Adjust the rod end (10A) to the length shown. Make sure the threads of the rod end (10A) show in the inspection hole, then tighten the nut (5) and lockwire, G01048 the nut (5) to the lock washer (7) (SOPM 20-50-02).

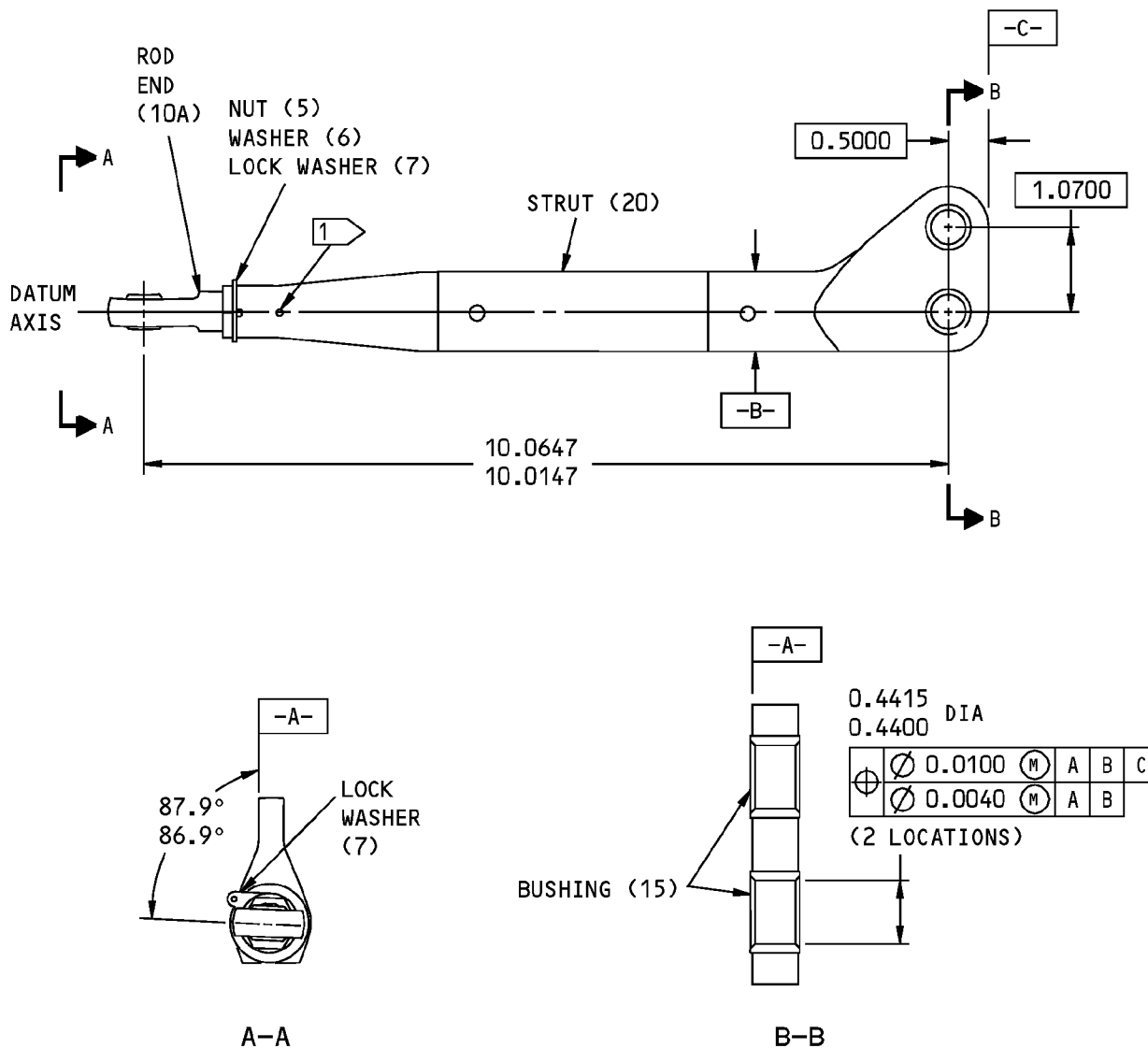
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REPAIR 3-1

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COMPONENT MAINTENANCE MANUAL



125 ✓ ALL MACHINED SURFACES UNLESS SHOWN DIFFERENTLY

ITEM NUMBERS REFER TO IPL FIG. 2

ALL DIMENSIONS ARE IN INCHES

1 INSPECTION HOLE FOR MINIMUM THREAD ENGAGEMENT

352A1200-2,-22,-32,-42 APU Support Strut Assembly Repair  
Figure 601

**49-13-12**

REPAIR 3-1

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## COMPONENT MAINTENANCE MANUAL

### STRUT - REPAIR 3-2

352A1200-5, -25, -35, -45

#### 1. General

- A. This procedure has the data to repair the strut (20).
- B. Refer to the Standard Overhaul Practices Manual (SOPM) for the standard practices shown in the repair.
- C. Refer to the IPL Figure 2 for item numbers.
- D. General repair details:

**Table 601:**

|                |   |
|----------------|---|
| (1) Material:  | 352A1200-5: Titanium alloy                    |
|                | 352A1200-25,-35,-45: 15-5PH CRES, 180-200 ksi |
| (1) Shot peen: | Intensity 0.014A2                             |
|                | Coverage 2.0                                  |
|                | Hard Shot (RC55-65)                           |
|                | Shot Size 0.023-0.046                         |
|                | Overspray is permitted                        |

#### 2. Procedure (REPAIR 3-2, Figure 601)

**NOTE:** For repair and refinish of high strength steel parts, refer to SOPM 20-10-01. For machining of alloy steel, refer to SOPM 20-10-02. For machining of titanium, refer to SOPM 20-10-07. For magnetic particle inspection, refer to SOPM 20-20-01. For general cleaning procedures, refer to SOPM 20-30-03. For decoding table for Boeing finish codes, refer to SOPM 20-41-01.

##### 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 20-10-01 | REPAIR AND REFINISH OF HIGH STRENGTH STEEL PARTS |
| SOPM 20-10-02 | MACHINING OF ALLOY STEEL                         |
| SOPM 20-10-03 | SHOT PEENING                                     |
| SOPM 20-10-07 | MACHINING OF TITANIUM                            |
| SOPM 20-20-01 | MAGNETIC PARTICLE INSPECTION                     |
| SOPM 20-30-03 | GENERAL CLEANING PROCEDURES                      |
| SOPM 20-41-01 | DECODING TABLE FOR BOEING FINISH CODES           |

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REPAIR 3-2

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## COMPONENT MAINTENANCE MANUAL

### C. Lug Holes

- (1) Machine as necessary, within repair limits, to remove defects.
- (2) Magnetic particle examine (CRES) or penetrant examine (titanium) machined surfaces.
- (3) Shot peen (SOPM 20-10-03).
- (4) Make oversize bushings (REPAIR 3-2, Figure 602).
- (5) Install the bushings (15) (REPAIR 3-1).

### D. Corrosion Removal

- (1) Remove all signs of surface corrosion, within repair limits.
- (2) Smoothly blend the repaired area with a length to depth ratio of 20 to 1.
- (3) Refinish as indicated. For better corrosion resistance, apply the primer, C00259.

### E. Refinish

- (1) Titanium strut 352A1200-5: No finish (F-25.01).
- (2) CRES struts 352A1200-25,-35: Passivate (F-17.25). For more corrosion resistance, apply primer, C00259 (F-18.22) but not on threads or bushing holes.
- (3) CRES struts 352A1200-45: Passivate (F-17.25). Apply primer, C00259 (F-18.22) but not on threads or bushing holes.

# 49-13-12

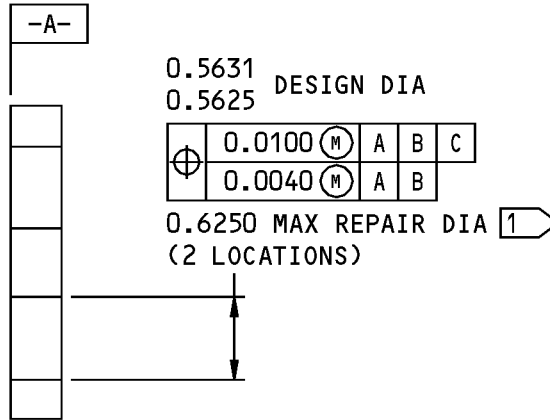
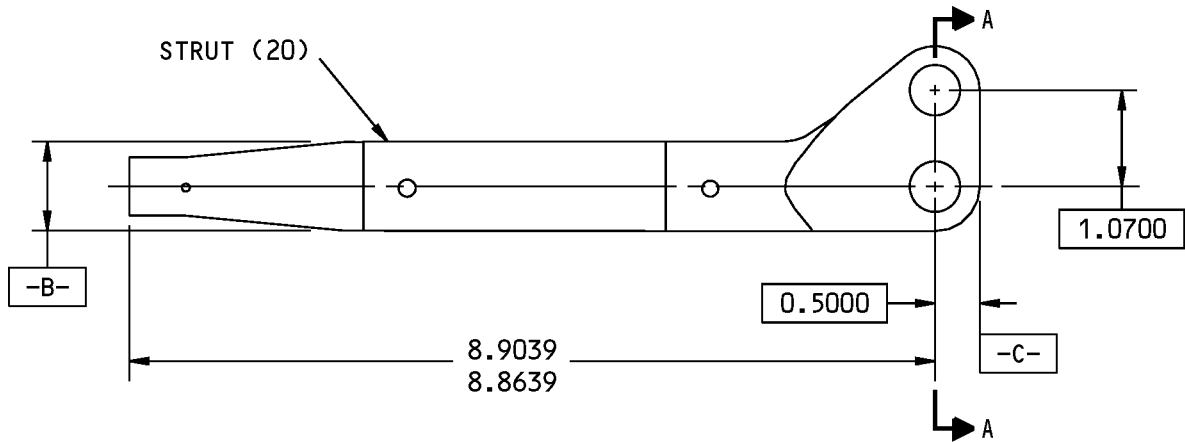
REPAIR 3-2

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COMPONENT MAINTENANCE MANUAL



A-A

| STRUT PART NUMBER | DAMAGE REMOVAL LIMITS<br>(WALL THICKNESS REDUCTION) 2 |               |               |               |         |
|-------------------|---|---------------|---------------|---------------|---------|
|                   | L ≤ 1.0   | 1.0 < L < 1.5 | 1.5 ≤ L ≤ 2.0 | 2.0 < L < 2.5 | L ≥ 2.5 |
| 352A1200-5        | ---   | ---           | ---           | ---           | ---     |
| 352A1200-25       | 0.024   | 0.016         | 0.012         | 0.009         | 0.008   |
| 352A1200-35       | 0.024   | 0.016         | 0.012         | 0.009         | 0.008   |

1 LIMIT FOR INSTALLATION OF OVERSIZE BUSHING

2 L IS THE MAXIMUM DIMENSION OF THE BLENDED AREA

125/ ALL MACHINED SURFACES UNLESS SHOWN DIFFERENTLY

ITEM NUMBERS REFER TO IPL FIG. 2

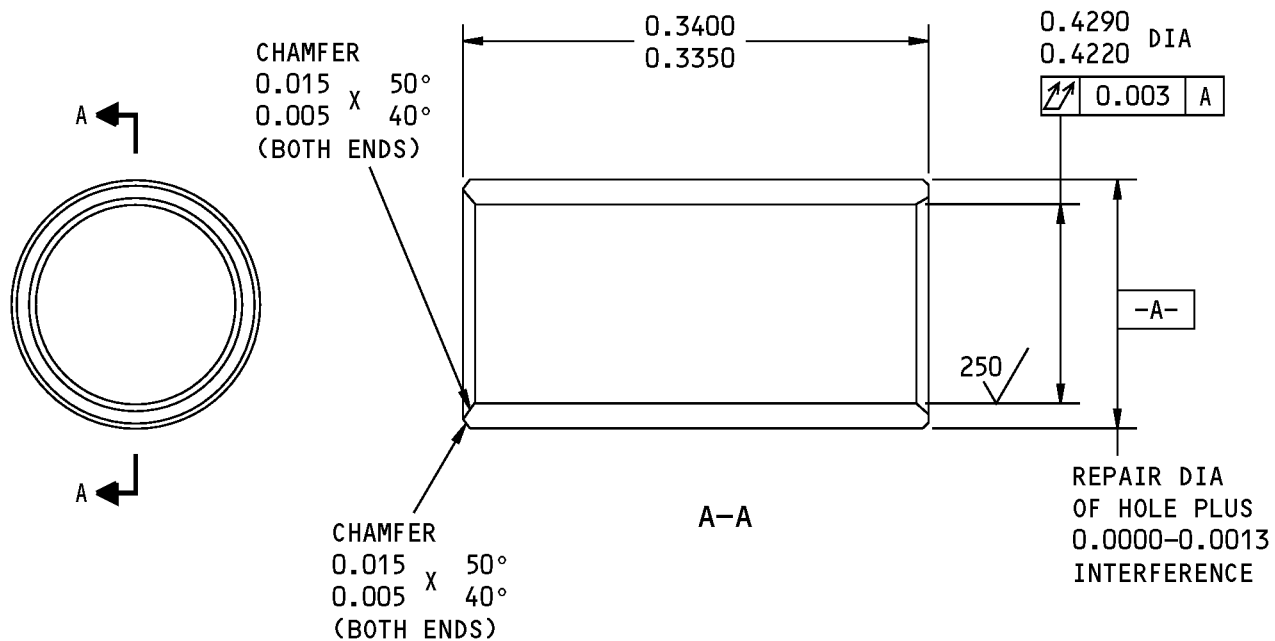
ALL DIMENSIONS ARE IN INCHES

352A1200-5,-25,-35,-45 Strut Repair  
Figure 601

**49-13-12**



COMPONENT MAINTENANCE MANUAL



63/ ALL MACHINED SURFACES UNLESS SHOWN DIFFERENTLY

MATERIAL: 17-4PH CRES (AMS 5643), 180-200 KSI

FINISH: PASSIVATE (F-17.13)

ALL DIMENSIONS ARE IN INCHES

REPLACES BUSHING (IPL FIG. 2; 15) BACB28U7E034

Oversize Bushing Details  
Figure 602

**49-13-12**

REPAIR 3-2

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## COMPONENT MAINTENANCE MANUAL

### APU SUPPORT STRUT ASSEMBLY - REPAIR 4-1

352A1200-3, -23, -33, -43

#### 1. General

- A. This repair gives the data to replace the bushings (15) and the rod end (10A) in the support strut assembly.
- B. Refer to the Standard Overhaul Practices Manual (SOPM) for the standard practices shown in the repair.
- C. Refer to the IPL Figure 3 for item numbers.

#### 2. Procedure (REPAIR 4-1, Figure 601)

##### A. Consumable Materials

**NOTE:** Equivalent substitutes may be used.

| Reference | Description   | Specification     |
|-----------|---|-------------------|
| G01048    | Lockwire - Corrosion Resistant Steel (0.032 In. Dia.) | NASM20995~<br>C32 |

##### B. References

| Reference     | Title                             |
|---------------|-----------------------------------|
| SOPM 20-50-02 | INSTALLATION OF SAFETYING DEVICES |
| SOPM 20-50-03 | BEARING AND BUSHING REPLACEMENT   |

##### C. Bushing Replacement

- (1) Remove the old bushings (15) from the strut (20).
- (2) If you find defects on the strut, refer to REPAIR 4-2 for repair instructions.
- (3) Install replacement bushings by the shrink-fit method (SOPM 20-50-03).
- (4) Machine the bushings to the design dimensions and finish.

##### D. Rod End Replacement

- (1) Remove the lockwire, G01048 from the nut (5) and the lockwasher (7).
- (2) Loosen the nut (5).
- (3) Loosen and remove the old rod end (10A).
- (4) Install a replacement end (10A) with washer (6), lockwasher (7), and nut (5). Be sure to engage the serrations on the washer (6) and the lockwasher (7).
- (5) Adjust the rod end (10A) to the length shown. Make sure the threads of the rod end (10A) show in the inspection hole, then tighten the nut (5) and lockwire the nut (5) to the lockwasher (7) (SOPM 20-50-02).

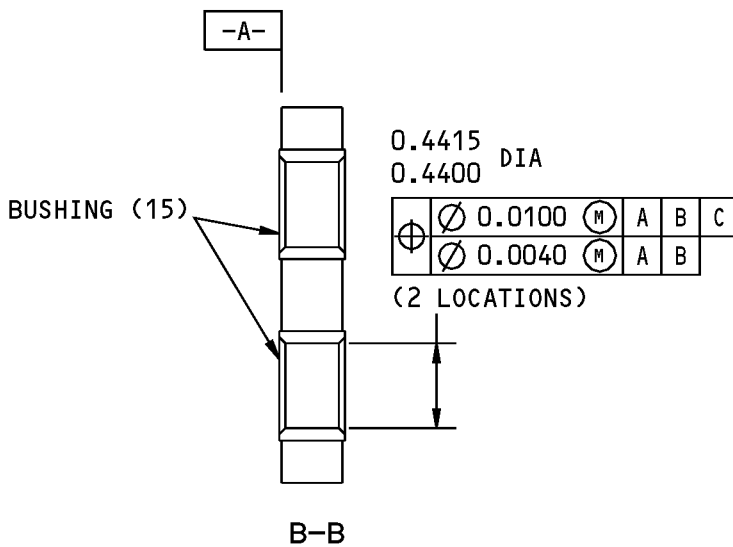
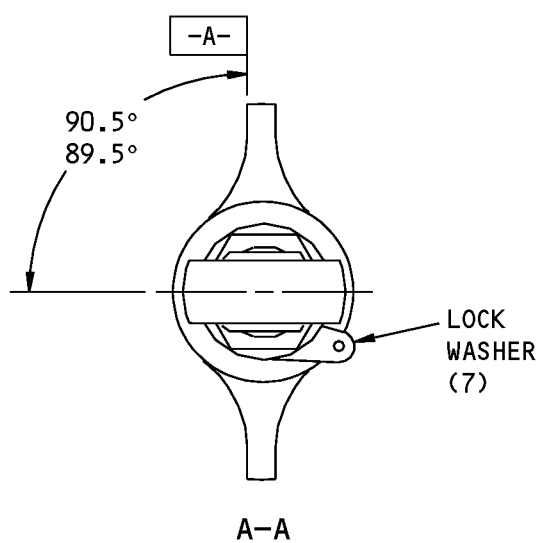
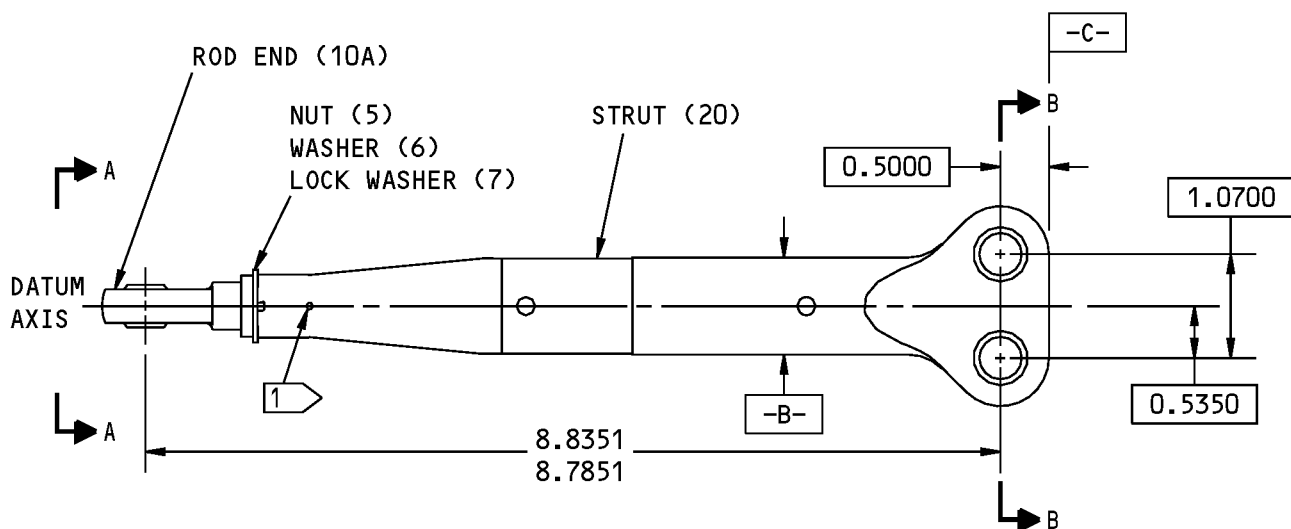
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REPAIR 4-1

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125 ✓ ALL MACHINED SURFACES UNLESS SHOWN DIFFERENTLY

ITEM NUMBERS REFER TO IPL FIG. 3  
 ALL DIMENSIONS ARE IN INCHES

1 INSPECTION HOLE FOR MINIMUM THREAD ENGAGEMENT

352A1200-3,-23,-33,-43 APU Support Strut Assembly Repair  
 Figure 601

**49-13-12**

REPAIR 4-1  
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## COMPONENT MAINTENANCE MANUAL

### STRUT - REPAIR 4-2

352A1200-6, -26, -36, -46

#### 1. General

- A. This procedure has the data to repair the strut (20).
- B. Refer to the Standard Overhaul Practices Manual (SOPM) for the standard practices shown in the repair.
- C. Refer to the IPL Figure 3 for item numbers.
- D. General repair details:

**Table 601:**

|                |   |
|----------------|---|
| (1) Material:  | 352A1200-6: Titanium alloy                    |
|                | 352A1200-26,-36,-46: 15-5PH CRES, 180-200 ksi |
| (1) Shot peen: | Intensity 0.014A2                             |
|                | Coverage 2.0                                  |
|                | Hard Shot (RC55-65)                           |
|                | Shot Size 0.023-0.046                         |
|                | Overspray is permitted                        |

#### 2. Procedure REPAIR 4-2, Figure 601

**NOTE:** For repair and refinish of high strength steel parts, refer to SOPM 20-10-01. For machining of alloy steel, refer to SOPM 20-10-02. For machining of titanium, refer to SOPM 20-10-07. For magnetic particle inspection, refer to SOPM 20-20-01. For general cleaning procedures, refer to SOPM 20-30-03. For decoding table for Boeing finish codes, refer to SOPM 20-41-01.

##### 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 20-10-01 | REPAIR AND REFINISH OF HIGH STRENGTH STEEL PARTS |
| SOPM 20-10-02 | MACHINING OF ALLOY STEEL                         |
| SOPM 20-10-03 | SHOT PEENING                                     |
| SOPM 20-10-07 | MACHINING OF TITANIUM                            |
| SOPM 20-20-01 | MAGNETIC PARTICLE INSPECTION                     |
| SOPM 20-30-03 | GENERAL CLEANING PROCEDURES                      |
| SOPM 20-41-01 | DECODING TABLE FOR BOEING FINISH CODES           |

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REPAIR 4-2

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### C. Strut Repair

- (1) Machine as necessary, within repair limits, to remove defects.
- (2) Magnetic particle examine (CRES) or penetrant examine (titanium) machined surfaces.
- (3) Shot peen (SOPM 20-10-03).
- (4) Make oversize bushings (REPAIR 4-2, Figure 602).
- (5) Install the bushings (15) REPAIR 4-1.

### D. Corrosion Removal

- (1) Remove all signs of surface corrosion, within repair limits.
- (2) Smoothly blend the repaired area with a length to depth ratio of 20 to 1.
- (3) Refinish as indicated. For better corrosion resistance, apply the primer, C00259.

### E. Refinish

- (1) Titanium strut 352A1200-6: No finish (F-25.01).
- (2) CRES struts 352A1200-26,-36: Passivate (F-17.25). For more corrosion resistance, apply primer, C00259 (F-18.22) but not on threads or bushing holes.
- (3) CRES struts 352A1200-46: Passivate (F-17.25). Apply primer, C00259 (F-18.22) but not on threads or bushing holes.

# 49-13-12

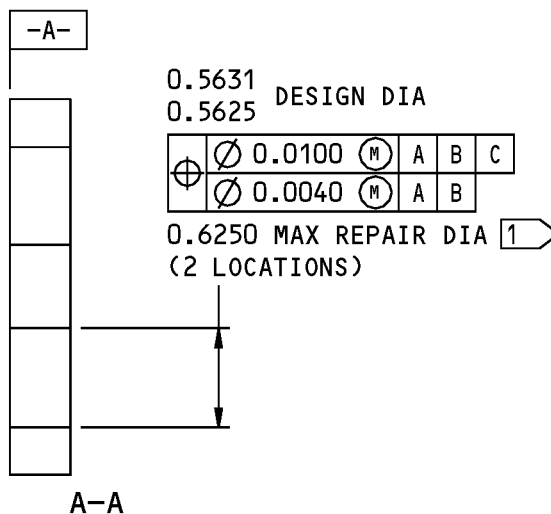
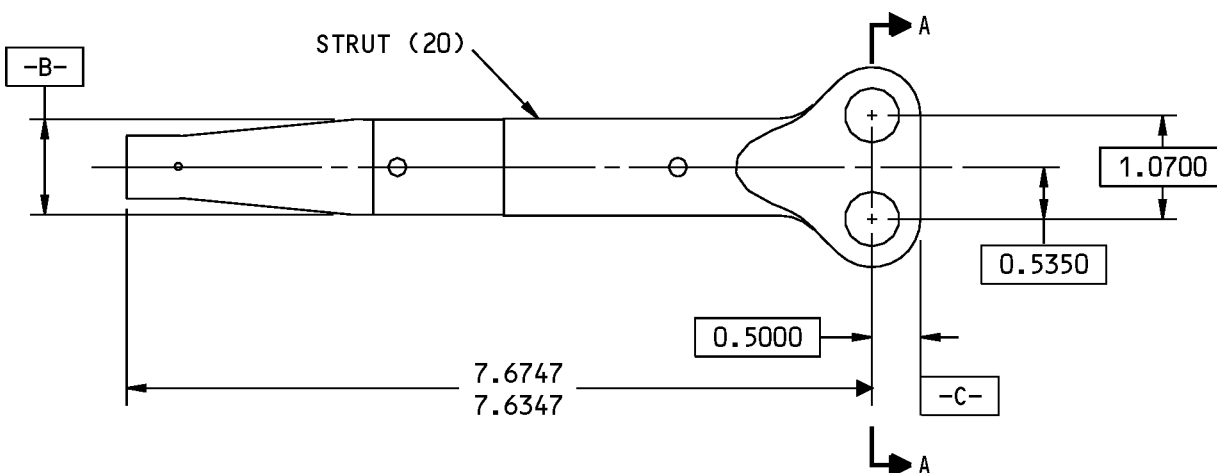
REPAIR 4-2

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COMPONENT MAINTENANCE MANUAL



| STRUT PART NUMBER | DAMAGE REMOVAL LIMITS<br>(WALL THICKNESS REDUCTION) <sup>2</sup> |               |               |               |         |
|-------------------|--|---------------|---------------|---------------|---------|
|                   | L ≤ 1.0  | 1.0 < L < 1.5 | 1.5 ≤ L ≤ 2.0 | 2.0 < L < 2.5 | L ≥ 2.5 |
| 352A1200-6        | ---  | ---           | ---           | ---           | ---     |
| 352A1200-26       | 0.024  | 0.016         | 0.012         | 0.009         | 0.008   |
| 352A1200-36       | 0.024  | 0.016         | 0.012         | 0.009         | 0.008   |

<sup>1</sup> LIMIT FOR INSTALLATION OF OVERSIZE BUSHING

<sup>2</sup> L IS THE MAXIMUM DIMENSION OF THE BLENDED AREA

125/ ✓ ALL MACHINED SURFACES UNLESS SHOWN DIFFERENTLY

ITEM NUMBERS REFER TO IPL FIG. 3

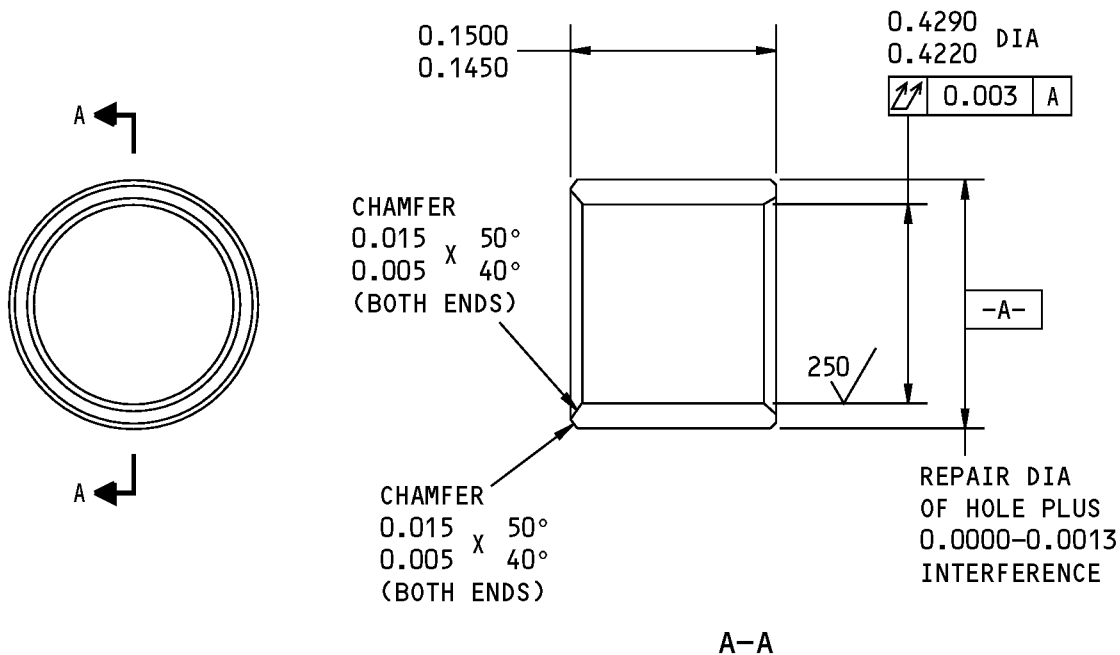
ALL DIMENSIONS ARE IN INCHES

352A1200-6,-26,-36,-46 Strut Repair  
Figure 601

**49-13-12**



COMPONENT MAINTENANCE MANUAL



63/ ALL MACHINED SURFACES UNLESS SHOWN DIFFERENTLY

MATERIAL: 17-4PH CRES (AMS 5643), 180-200 KSI

FINISH: PASSIVATE (F-17.13)

ALL DIMENSIONS ARE IN INCHES

REPLACES BUSHING (IPL FIG. 3; 15) BACB28U7E015

Oversize Bushing Details  
Figure 602

**49-13-12**

REPAIR 4-2

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## COMPONENT MAINTENANCE MANUAL

### APU SUPPORT STRUT ASSEMBLY - REPAIR 5-1

352A1200-7

#### 1. General

- A. This repair gives the data to replace the rod ends (15) in the support strut assembly.
- B. Refer to the Standard Overhaul Practices Manual (SOPM) for the standard practices shown in the repair.
- C. Refer to the IPL Figure 4 for item numbers.

#### 2. Procedure REPAIR 5-1, Figure 601

##### A. Consumable Materials

**NOTE:** Equivalent substitutes may be used.

| Reference | Description                                   | Specification      |
|-----------|---|--------------------|
| G50347    | Lockwire - Nickel-copper, 0.032 inch diameter | NASM20995N~<br>C32 |

##### B. References

| Reference     | Title                             |
|---------------|-----------------------------------|
| SOPM 20-50-02 | INSTALLATION OF SAFETYING DEVICES |

##### C. Rod End Replacement

- (1) Remove the lockwire, G50347 from the nut (5) and the lock washer (12).
- (2) Loosen the nuts (5).
- (3) Loosen and remove the rod ends (15).
- (4) Install replacement rod ends (15) with washers (10), lock washers (12), and nuts (5). Be sure to engage the serrations on the washer (10) and the lock washer (12).
- (5) Adjust the rod ends (15) to the length shown. Make sure the threads of the rod ends (15) show in the inspection holes, then tighten the nut (5) and lockwire, G50347 the nut (5) to the lock washer (12) (SOPM 20-50-02).

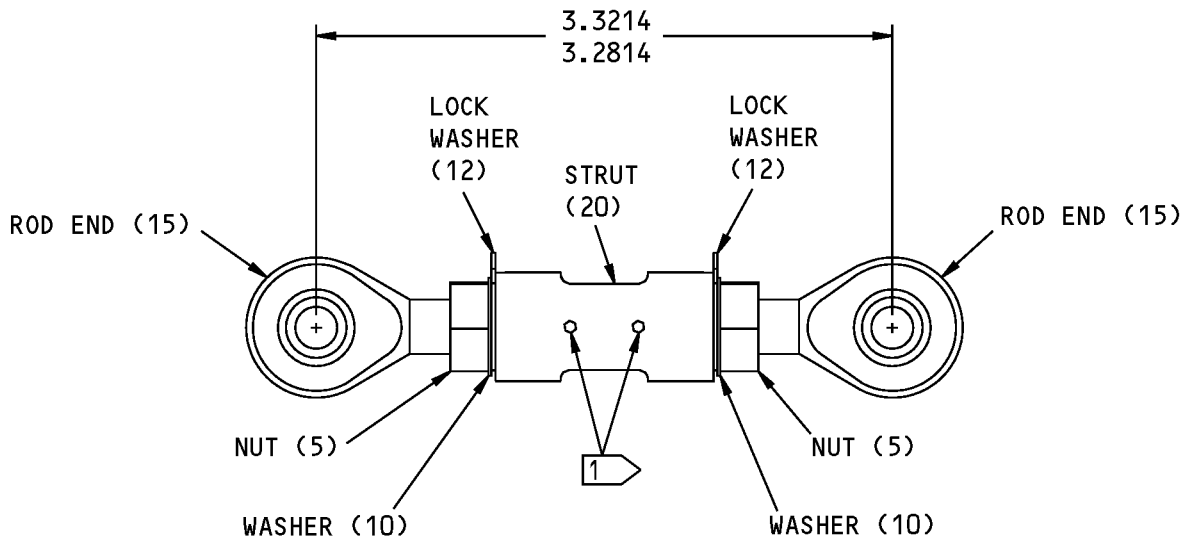
# 49-13-12

REPAIR 5-1

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COMPONENT MAINTENANCE MANUAL



**1** INSPECTION HOLE FOR MINIMUM  
THREAD ENGAGEMENT

125/ ALL MACHINED SURFACES UNLESS  
SHOWN DIFFERENTLY

ITEM NUMBERS REFER TO IPL FIG. 4

ALL DIMENSIONS ARE IN INCHES

352A1200-7 APU Support Strut Assembly Repair  
Figure 601

**49-13-12**

REPAIR 5-1

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## COMPONENT MAINTENANCE MANUAL

### APU SUPPORT STRUT ASSEMBLY - REPAIR 6-1

352A1200-9

#### 1. General

- A. This repair gives the data to replace the rod ends (15) and (20) in the support strut assembly.
- B. Refer to the Standard Overhaul Practices Manual (SOPM) for the standard practices shown in the repair.
- C. Refer to the IPL Figure 5 for item numbers.

#### 2. Procedure ( REPAIR 6-1, Figure 601)

##### A. Consumable Materials

**NOTE:** Equivalent substitutes may be used.

| Reference | Description                                   | Specification      |
|-----------|---|--------------------|
| G50347    | Lockwire - Nickel-copper, 0.032 inch diameter | NASM20995N~<br>C32 |

##### B. References

| Reference     | Title                             |
|---------------|-----------------------------------|
| SOPM 20-50-02 | INSTALLATION OF SAFETYING DEVICES |

##### C. Rod End Replacement

- (1) Remove the lockwire, G50347 from the nut (5) and the lock washer (12).
- (2) Loosen the nuts (5).
- (3) Loosen and remove the rod ends (15, 20).
- (4) Install replacement rod ends (15, 20) with washers (10), lock washers (12), and nuts (5). Be to engage the serrations on the washer (10) and the lock washer (12).
- (5) Adjust the rod ends (15, 20) to the length shown. Make sure the threads of the rod ends (15, 20) show in the inspection holes, then tighten the nuts (5) and lockwire, G50347 the nuts (5) to the lock washers (12) (SOPM 20-50-02).

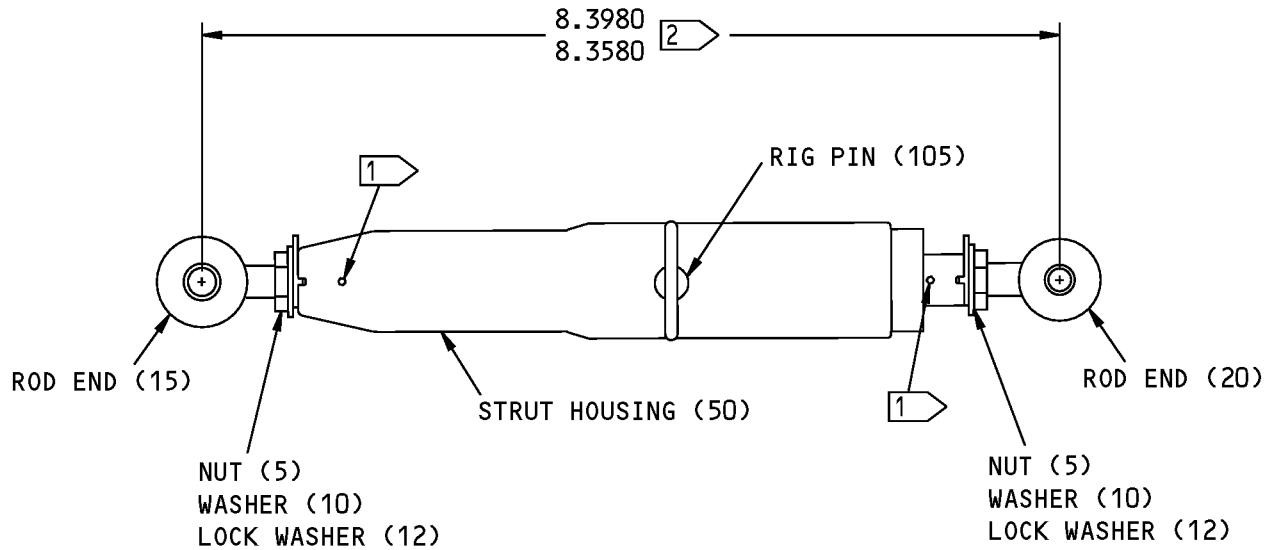
# 49-13-12

REPAIR 6-1

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COMPONENT MAINTENANCE MANUAL



1 INSPECTION HOLE FOR MINIMUM  
THREAD ENGAGEMENT

2 RIG PIN MUST BE INSTALLED TO  
SET THE LENGTH

125 ✓ ALL MACHINED SURFACES UNLESS  
SHOWN DIFFERENTLY

ITEM NUMBERS REFER TO IPL FIG. 5

ALL DIMENSIONS ARE IN INCHES

352A1200-9 APU Support Strut Assembly Repair  
Figure 601

**49-13-12**

REPAIR 6-1

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## COMPONENT MAINTENANCE MANUAL

### ASSEMBLY

#### 1. General

- A. This procedure has the data to assemble the APU support struts.
- B. Refer to the Standard Overhaul Practices Manual (SOPM) for details of the SOPM subjects identified in this procedure.
- C. Refer to IPL Figure 5 for item numbers.

#### 2. Procedure

**NOTE:** For bolt and nut installation, refer to SOPM 20-50-01. For installation of safety devices, refer to .SOPM 20-50-02. For lubrication, refer to SOPM 20-50-07. For lubricants, refer to SOPM 20-60-03.

##### A. Consumable Materials

**NOTE:** Equivalent substitutes may be used.

| Reference | Description          | Specification |
|-----------|----------------------|---------------|
| D50004    | Compound - Antiseize | BMS3-28       |

##### B. References

| Reference     | Title                             |
|---------------|-----------------------------------|
| SOPM 20-50-01 | BOLT AND NUT INSTALLATION         |
| SOPM 20-50-02 | INSTALLATION OF SAFETYING DEVICES |
| SOPM 20-50-07 | LUBRICATION                       |
| SOPM 20-60-03 | LUBRICANTS                        |

##### C. Assembly

- (1) Use standard industry procedures and these steps.
- (2) Assemble the failsafe strut assembly (1A).
  - (a) Put the spring (40) into the strut housing (50).
  - (b) Apply compound, D50004 to all of the plunger (35) and put it, with o-ring (30), into the strut housing (50).
  - (c) Install the rig pin (105) as shown in IPL Figure 5.
  - (d) Install the cap (25) into the strut housing (50), and tighten the cap (25) to 100-125 pound-inches.
  - (e) Install the rod ends (15, 20) with washers (10), lock washers (12), and nuts (5) and adjust the unit (REPAIR 6-1).

# 49-13-12

ASSEMBLY

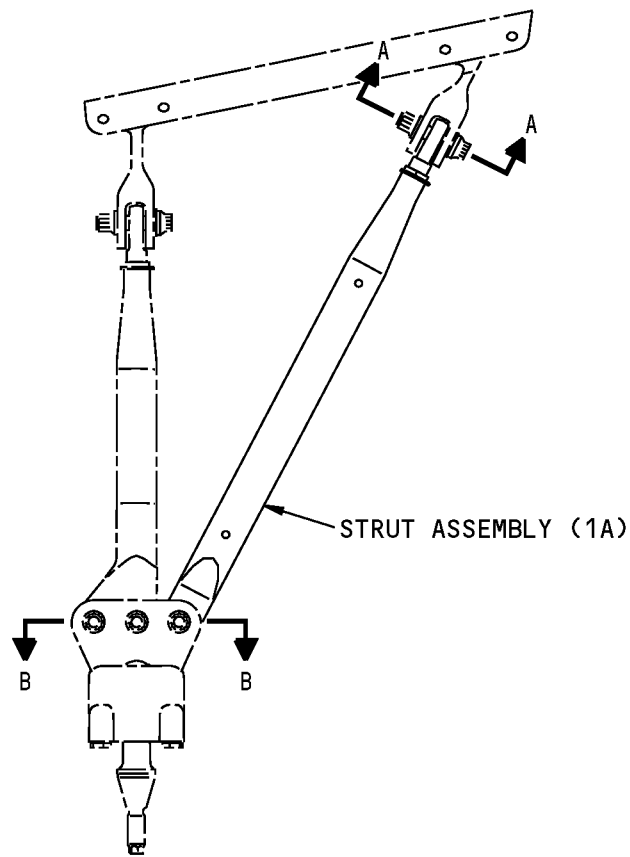
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COMPONENT MAINTENANCE MANUAL

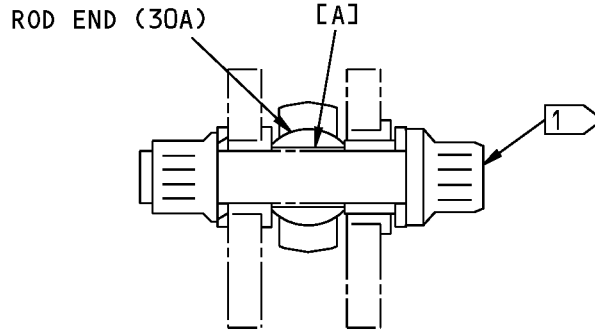
FITS AND CLEARANCES



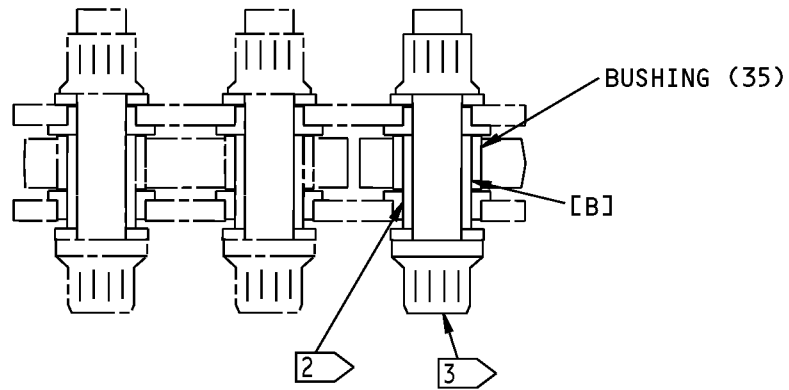
352A1200-1,-21,-31,-41

Fits and Clearances  
Figure 801 (Sheet 1 of 3)

COMPONENT MAINTENANCE MANUAL



A-A



B-B



ITEM NUMBERS REFER TO IPL FIG. 1

Fits and Clearances  
Figure 801 (Sheet 2 of 3)

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FITS AND CLEARANCES  
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## COMPONENT MAINTENANCE MANUAL

| REF LETTER | REF IPL  |  | DESIGN DIMENSION* |        |                    |        | SERVICE WEAR LIMIT* |        |                   |
|------------|----------|--|-------------------|--------|--------------------|--------|---------------------|--------|-------------------|
|            | FIG. NO. | ITEM NO.   | DIMENSION         |        | ASSEMBLY CLEARANCE |        | DIMENSION           |        | MAXIMUM CLEARANCE |
|            |          |  | MIN               | MAX    | MIN                | MAX    | MIN                 | MAX    |                   |
| [A]        | 1        | ID 30A   | 0.3120            | 0.3125 | 0.0000             | 0.0010 | --                  | 0.3175 | 0.0100            |
|            | --       | OD  | 0.3115            | 0.3120 |                    |        | 0.3060              | --     |                   |
| [B]        | 1        | ID 35  | 0.4400            | 0.4415 | 0.0030             | 0.0050 | --                  | 0.4465 | 0.0100            |
|            | --       | OD  | 0.4365            | 0.4370 |                    |        | 0.4315              | --     |                   |

\* ALL DIMENSIONS ARE IN INCHES

 INSTALLATION BOLT BACB30LE5U16

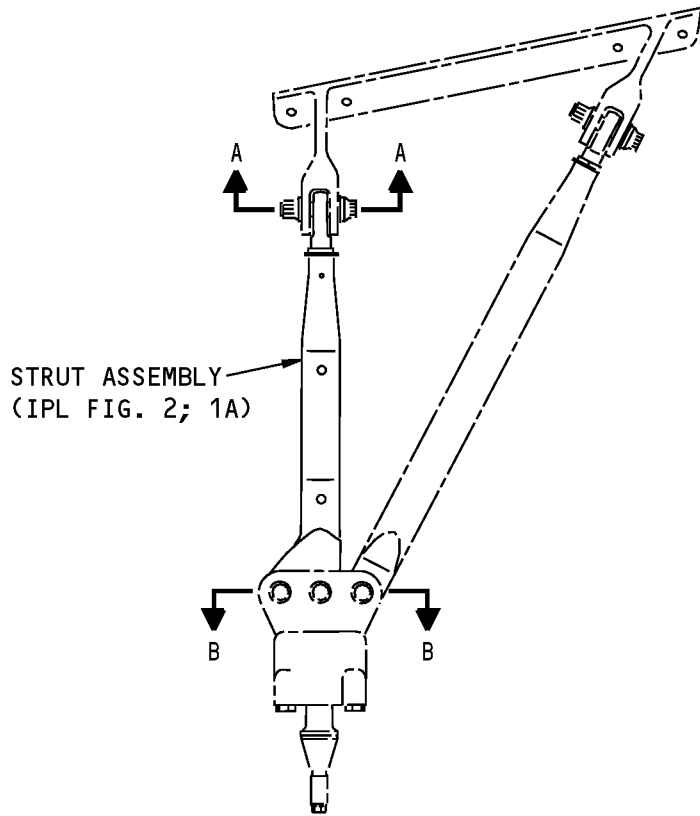
 INSTALLATION BUSHING BACB28AK05-060

 INSTALLATION BOLT BACB30LE5U14

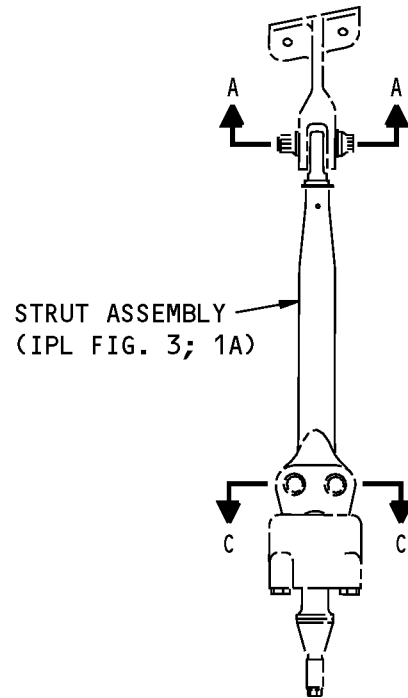
Fits and Clearances  
Figure 801 (Sheet 3 of 3)

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FITS AND CLEARANCES  
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COMPONENT MAINTENANCE MANUAL



352A1200-2,-22,-32,-42



352A1200-3,-23,-33,-43

Fits and Clearances  
Figure 802 (Sheet 1 of 3)

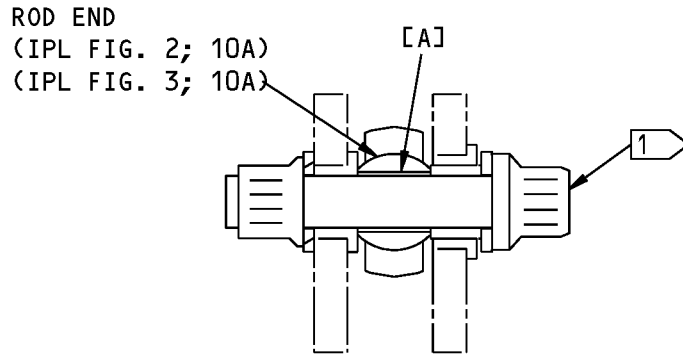
**49-13-12**

FITS AND CLEARANCES

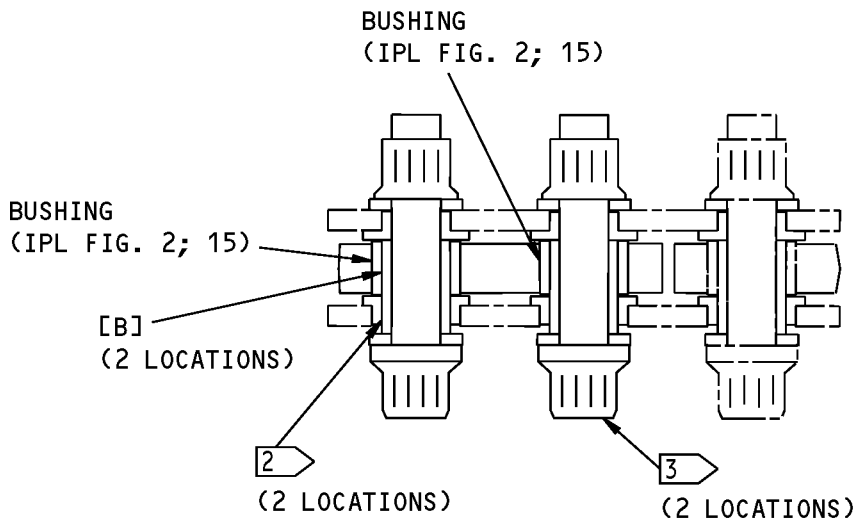
Page 804

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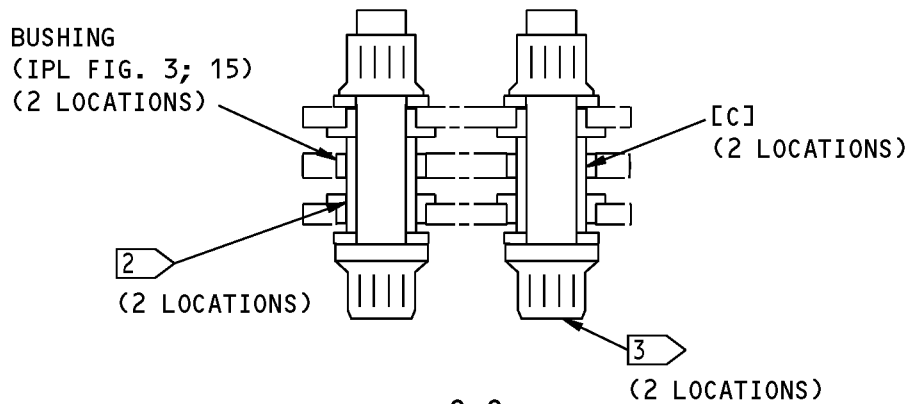
COMPONENT MAINTENANCE MANUAL



A-A



B-B



C-C

Fits and Clearances  
Figure 802 (Sheet 2 of 3)

**49-13-12**

FITS AND CLEARANCES




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






## COMPONENT MAINTENANCE MANUAL

| REF LETTER | REF IPL  |  | DESIGN DIMENSION* |        |                    |        | SERVICE WEAR LIMIT* |        |                   |
|------------|----------|--|-------------------|--------|--------------------|--------|---------------------|--------|-------------------|
|            | FIG. NO. | ITEM NO.   | DIMENSION         |        | ASSEMBLY CLEARANCE |        | DIMENSION           |        | MAXIMUM CLEARANCE |
|            |          |  | MIN               | MAX    | MIN                | MAX    | MIN                 | MAX    |                   |
| [A]        | 2, 3     | ID 10A   | 0.3120            | 0.3125 | 0.0000             | 0.0010 | --                  | 0.3175 | 0.0100            |
|            | --       | OD  | 0.3115            | 0.3120 |                    |        | 0.3060              | --     |                   |
| [B]        | 2        | ID 15  | 0.4400            | 0.4415 | 0.0030             | 0.0050 | --                  | 0.4465 | 0.0100            |
|            | --       | OD  | 0.4365            | 0.4370 |                    |        | 0.4315              | --     |                   |
| [C]        | 3        | ID 15  | 0.4400            | 0.4415 | 0.0030             | 0.0050 | --                  | 0.4465 | 0.0100            |
|            | --       | OD  | 0.4365            | 0.4370 |                    |        | 0.4315              | --     |                   |

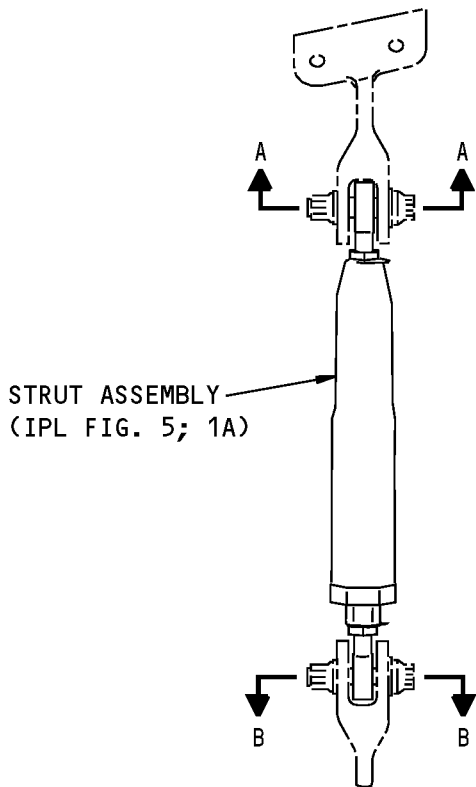
\* ALL DIMENSIONS ARE IN INCHES

-  INSTALLATION BOLT BACB30LE5U16
-  INSTALLATION BUSHING BACB28AK05-060
-  INSTALLATION BOLT BACB30LE5U14

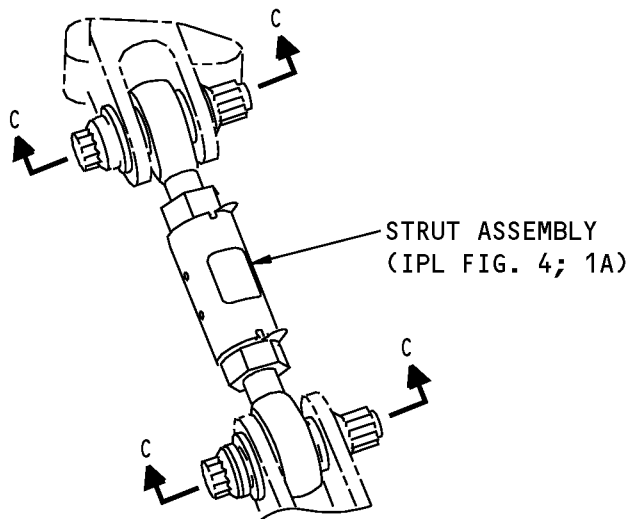
Fits and Clearances  
Figure 802 (Sheet 3 of 3)

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FITS AND CLEARANCES  
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352A1200-9

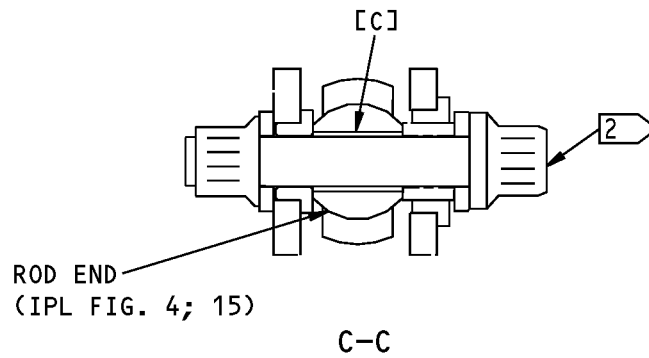
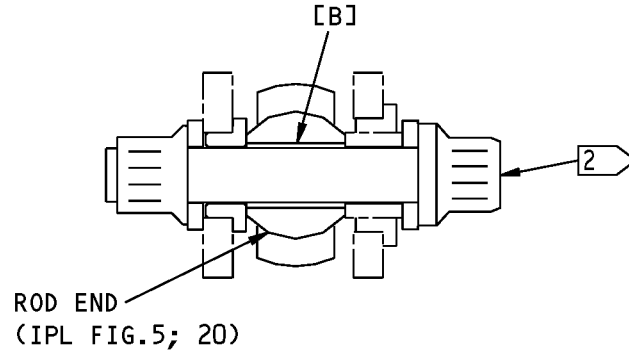
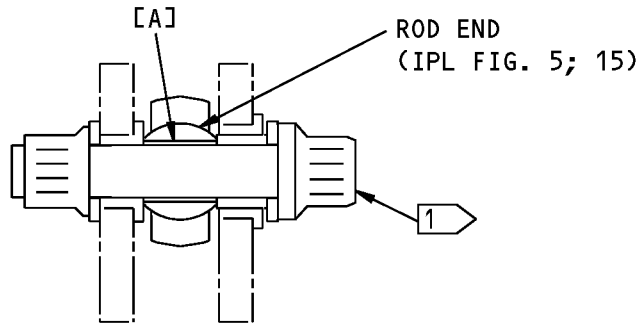


352A1200-7

Fits and Clearances  
Figure 803 (Sheet 1 of 3)






COMPONENT MAINTENANCE MANUAL



Fits and Clearances  
Figure 803 (Sheet 2 of 3)



## COMPONENT MAINTENANCE MANUAL

| REF LETTER | REF IPL  |  | DESIGN DIMENSION* |        |                    |        | SERVICE WEAR LIMIT* |        |                   |
|------------|----------|--|-------------------|--------|--------------------|--------|---------------------|--------|-------------------|
|            | FIG. NO. | ITEM NO.   | DIMENSION         |        | ASSEMBLY CLEARANCE |        | DIMENSION           |        | MAXIMUM CLEARANCE |
|            |          |  | MIN               | MAX    | MIN                | MAX    | MIN                 | MAX    |                   |
| [A]        | 5        | ID 15  | 0.3120            | 0.3125 | 0.0000             | 0.0010 | --                  | 0.3175 | 0.0100            |
|            | --       | OD  | 0.3115            | 0.3120 |                    |        | 0.3060              | --     |                   |
| [B]        | 5        | ID 20  | 0.2495            | 0.2500 | 0.0000             | 0.0010 | --                  | 0.2550 | 0.0100            |
|            | --       | OD  | 0.2490            | 0.2495 |                    |        | 0.2435              | --     |                   |
| [C]        | 4        | ID 15  | 0.2497            | 0.2500 | 0.0002             | 0.0012 | --                  | 0.2552 | 0.0100            |
|            | --       | OD  | 0.2490            | 0.2495 |                    |        | 0.2435              | --     |                   |

\* ALL DIMENSIONS ARE IN INCHES

 INSTALLATION BOLT BACB30LE5U14

 INSTALLATION BOLT BACB30LE4U14

Fits and Clearances  
Figure 803 (Sheet 3 of 3)

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FITS AND CLEARANCES  
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**COMPONENT MAINTENANCE MANUAL**

**SPECIAL TOOLS, FIXTURES, AND EQUIPMENT**

**(NOT APPLICABLE)**

**49-13-12**

SPECIAL TOOLS, FIXTURES, AND EQUIPMENT

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## COMPONENT MAINTENANCE MANUAL

### 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

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ILLUSTRATED PARTS LIST

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Nov 01/2008



## COMPONENT MAINTENANCE MANUAL

|  |  |
|--|--|
| Optional<br>(OPT)  | The part is optional to and interchangeable with other parts that have the same item number. |
| Replaces, Replaced by and not interchangeable with<br>(REPLACES, REPLACED BY AND NOT INTCHG/W) | The part replaces and is not interchangeable with the initial part.                          |
| Replaces, Replaced by<br>(REPLACES, REPLACED BY)   | The part replaces and is interchangeable with, or is an alternative to, the initial part.    |

### VENDOR CODES

| <b>Code</b> | <b>Name</b>   |
|-------------|---|
| 02758       | NETWORKS ELECTRONIC CORP U S BEARING DIV<br>9750 DE SOTO AVENUE<br>CHATSWORTH, CALIFORNIA 91311-4409<br>FORMERLY U S BEARING DIV NETWORKS ELEC CORP   |
| 06710       | LAMSON AND SESSIONS CO THE VALLEY-TODECO<br>12975 BRADLEY AVENUE<br>SYLMAR, CALIFORNIA 91342-3830<br>FORMERLY VALLEY BOLT CORP VB0097 IN NORTH HOLLYWOOD, CA  |
| 09455       | RBC TRANSPORT DYNAMICS CORP<br>3131 W SEGERSTROM AVE<br>SANTA ANA, CALIFORNIA 92704-5872<br>FORMERLY TRANSPORT DYNAMICS AEROSPACE DIV; FABROID DIV<br>TRANSPORT DYNAMICS V17571 & LEAR SEIGLER INC TRANSPORT DIV<br>V98076; FORMERLY BFM TRANSPORT DYNAMICS |
| 15860       | NEW HAMPSHIRE BALL BEARINGS, INC ASTRO DIVISION<br>155 LEXINGTON AVENUE<br>LACONIA, NEW HAMPSHIRE 03246-2937<br>FORMERLY ASTRO BEARING CORP, LOS ANGELES, CALIF.  |
| 16746       | SPECLINE INCORPORATED<br>2230 MOUTON DR<br>CARSON CITY, NV 89706<br>FORMERLY IN SUN VALLEY, CALIFORNIA  |
| 56644       | AURORA BEARING CO<br>970 SOUTH LAKE STREET<br>AURORA, ILLINOIS 60506-5929   |

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ILLUSTRATED PARTS LIST

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## COMPONENT MAINTENANCE MANUAL

| Code  | Name   |
|-------|--|
| 57606 | REXNORD CORP PSI BEARINGS DIV<br>2175 UNION PL<br>SIMI VALLEY, CALIFORNIA 93065-1661<br>FORMERLY PSI BEARINGS  |
| 73134 | ROLLER BEARING COMPANY OF AMER DBA HEIM BEARINGS DIV<br>60 ROUND HILL RD<br>FAIRFIELD, CONNECTICUT 06430-0000<br>FORMERLY INCOM INTL HEIM DIV; HEIM UNIVERSAL CORP INCOM;<br>FORMERLY HEIM DIV INCOM INTL; IMO IND HEIM BEARINGS DIV |
| 81205 | BOEING CO THE<br>7755 EAST MARGINAL WAY PO BOX 3707<br>SEATTLE, WASHINGTON 98124   |
| 81376 | SMITH ACQUISITION COMPANY<br>2240 BUENA VISTA<br>BALDWIN PARK, CALIFORNIA 91706  |
| 97613 | SARGENT CONTROLS & AEROSPACE/KAHR BEARING DIV<br>5675 W BURLINGAME RD<br>TUCSON, ARIZONA 85743<br>FORMERLY AETNA STEEL PROD KAHR BEARING DIV V96579<br>FORMERLY SARGENT IND KAHR BEARING DIV, BURBANK, CALIFORNIA                    |
| S0352 | NIPPON MINIATURE BEARING CO LTD<br>TOKYO, JAPAN  |

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### NUMERICAL INDEX

| PART NUMBER | AIRLINE PART NUMBER | FIGURE | ITEM | UNITS PER ASSEMBLY |
|-------------|---------------------|--------|------|--------------------|
| 10E4-116T   |                     | 5      | 20   | 1                  |
| 10E5-116T   |                     | 5      | 15   | 1                  |
| 352A1200-1  |                     | 1      | 1A   | RF                 |
| 352A1200-10 |                     | 5      | 50   | 1                  |
| 352A1200-11 |                     | 5      | 35   | 1                  |
| 352A1200-12 |                     | 5      | 25   | 1                  |
| 352A1200-13 |                     | 5      | 40   | 1                  |
| 352A1200-17 |                     | 4      | 20   | 1                  |
| 352A1200-2  |                     | 1      | 5    | RF                 |
|             |                     | 2      | 1A   | RF                 |
| 352A1200-21 |                     | 1      | 1B   | RF                 |
| 352A1200-22 |                     | 1      | 5A   | RF                 |
|             |                     | 2      | 1B   | RF                 |
| 352A1200-23 |                     | 1      | 10A  | RF                 |
|             |                     | 3      | 1B   | RF                 |
| 352A1200-24 |                     | 1      | 40A  | 1                  |
| 352A1200-25 |                     | 2      | 20A  | 1                  |
| 352A1200-26 |                     | 3      | 20A  | 1                  |
| 352A1200-3  |                     | 1      | 10   | RF                 |
|             |                     | 3      | 1A   | RF                 |
| 352A1200-31 |                     | 1      | 1C   | RF                 |
| 352A1200-32 |                     | 1      | 5B   | RF                 |
|             |                     | 2      | 1C   | RF                 |
| 352A1200-33 |                     | 1      | 10B  | RF                 |
|             |                     | 3      | 1C   | RF                 |
| 352A1200-34 |                     | 1      | 40B  | 1                  |
| 352A1200-35 |                     | 2      | 20B  | 1                  |
| 352A1200-36 |                     | 3      | 20B  | 1                  |
| 352A1200-4  |                     | 1      | 40   | 1                  |
| 352A1200-41 |                     | 1      | 1D   | RF                 |
| 352A1200-42 |                     | 1      | 5C   | RF                 |
|             |                     | 2      | 1D   | RF                 |
| 352A1200-43 |                     | 1      | 10C  | RF                 |
|             |                     | 3      | 1D   | RF                 |

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| PART NUMBER  | AIRLINE PART NUMBER | FIGURE | ITEM | UNITS PER ASSEMBLY |
|--------------|---------------------|--------|------|--------------------|
| 352A1200-44  |                     | 1      | 40C  | 1                  |
| 352A1200-45  |                     | 2      | 20C  | 1                  |
| 352A1200-46  |                     | 3      | 20C  | 1                  |
| 352A1200-5   |                     | 2      | 20   | 1                  |
| 352A1200-6   |                     | 3      | 20   | 1                  |
| 352A1200-7   |                     | 1      | 15   | RF                 |
|              |                     | 4      | 1A   | RF                 |
| 352A1200-9   |                     | 1      | 20   | RF                 |
|              |                     | 5      | 1A   | RF                 |
| 51588-041VL  |                     | 5      | 20   | 1                  |
| 51588-051VL  |                     | 5      | 15   | 1                  |
| AMBM4-4052   |                     | 4      | 15B  | 1                  |
| AMBM5-4035   |                     | 1      | 30B  | 1                  |
|              |                     | 1      | 30C  | 1                  |
|              |                     | 2      | 10B  | 1                  |
|              |                     | 2      | 10C  | 1                  |
|              |                     | 3      | 10B  | 1                  |
|              |                     | 3      | 10C  | 1                  |
| AR4E8W3      |                     | 5      | 20   | 1                  |
| AR5E8W3      |                     | 5      | 15   | 1                  |
| ARB4E60TW    |                     | 5      | 20   | 1                  |
| ARB5E60TW    |                     | 5      | 15   | 1                  |
| ARB5E60YW    |                     | 5      | 15   | 1                  |
| ASMK4-1DT    |                     | 5      | 20   | 1                  |
| ASMK5-1DT    |                     | 5      | 15   | 1                  |
| BACB10Y4T    |                     | 5      | 20   | 1                  |
| BACB10Y5T    |                     | 5      | 15   | 1                  |
| BACB28U7E015 |                     | 3      | 15   | 2                  |
| BACB28U7E034 |                     | 1      | 35   | 1                  |
|              |                     | 2      | 15   | 2                  |
| BACB28X5F050 |                     | 5      | 45   | 1                  |
| BACW10P209CC |                     | 1      | 26   | 1                  |
|              |                     | 2      | 6    | 1                  |
|              |                     | 3      | 6    | 1                  |
| BCREF12790   |                     | 4      | 15A  | 2                  |

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| PART NUMBER      | AIRLINE PART NUMBER | FIGURE | ITEM | UNITS PER ASSEMBLY |
|------------------|---------------------|--------|------|--------------------|
| BCREF12791       |                     | 1      | 30A  | 1                  |
|                  |                     | 2      | 10A  | 1                  |
|                  |                     | 3      | 10A  | 1                  |
| BRES4-2236EL1    |                     | 5      | 20   | 1                  |
| BRES5-2001EL1    |                     | 5      | 15   | 1                  |
| HB4E212KT        |                     | 5      | 20   | 1                  |
| HB5E212KT        |                     | 5      | 15   | 1                  |
| KBE4-150WT       |                     | 5      | 20   | 1                  |
| KBE5-150WT       |                     | 5      | 15   | 1                  |
| MS21340-07       |                     | 1      | 25   | 1                  |
|                  |                     | 2      | 5    | 1                  |
|                  |                     | 3      | 5    | 1                  |
| MSSK4AS2         |                     | 5      | 20   | 1                  |
| NAS1149E0516R    |                     | 4      | 10A  | 2                  |
|                  |                     | 5      | 10   | 2                  |
| NAS1193K5-1      |                     | 4      | 12   | 2                  |
|                  |                     | 5      | 12   | 2                  |
| NAS1193K8-1      |                     | 1      | 27   | 1                  |
|                  |                     | 2      | 7    | 1                  |
|                  |                     | 3      | 7    | 1                  |
| NAS1423C5        |                     | 5      | 5    | 2                  |
| NAS1611-204      |                     | 5      | 30   | 1                  |
| NAS509-5C        |                     | 4      | 5    | 2                  |
| P31780           |                     | 1      | 30B  | 1                  |
|                  |                     | 1      | 30C  | 1                  |
|                  |                     | 2      | 10B  | 1                  |
|                  |                     | 2      | 10C  | 1                  |
|                  |                     | 3      | 10B  | 1                  |
|                  |                     | 3      | 10C  | 1                  |
| P3A0180          |                     | 1      | 30D  | 1                  |
|                  |                     | 2      | 10D  | 1                  |
|                  |                     | 3      | 10D  | 1                  |
| P3A2650          |                     | 4      | 15B  | 1                  |
| S312N305A04M101  |                     | 4      | 15B  | 1                  |
| S312N305A04MC101 |                     | 4      | 15A  | 2                  |

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| PART NUMBER      | AIRLINE PART NUMBER | FIGURE | ITEM | UNITS PER ASSEMBLY |
|------------------|---------------------|--------|------|--------------------|
| S312N305A05M106  |                     | 1      | 30B  | 1                  |
|                  |                     | 1      | 30C  | 1                  |
|                  |                     | 2      | 10B  | 1                  |
|                  |                     | 2      | 10C  | 1                  |
|                  |                     | 3      | 10B  | 1                  |
|                  |                     | 3      | 10C  | 1                  |
| S312N305A05MC106 |                     | 1      | 30A  | 1                  |
|                  |                     | 2      | 10A  | 1                  |
|                  |                     | 3      | 10A  | 1                  |
| UT7035R3-125R    |                     | 5      | 105  | 1                  |
| VTA06070         |                     | 1      | 30B  | 1                  |
|                  |                     | 1      | 30C  | 1                  |
|                  |                     | 2      | 10B  | 1                  |
|                  |                     | 2      | 10C  | 1                  |
|                  |                     | 3      | 10B  | 1                  |
|                  |                     | 3      | 10C  | 1                  |
|                  |                     | 4      | 15B  | 1                  |
| VTA08320         |                     | 4      | 15B  | 1                  |

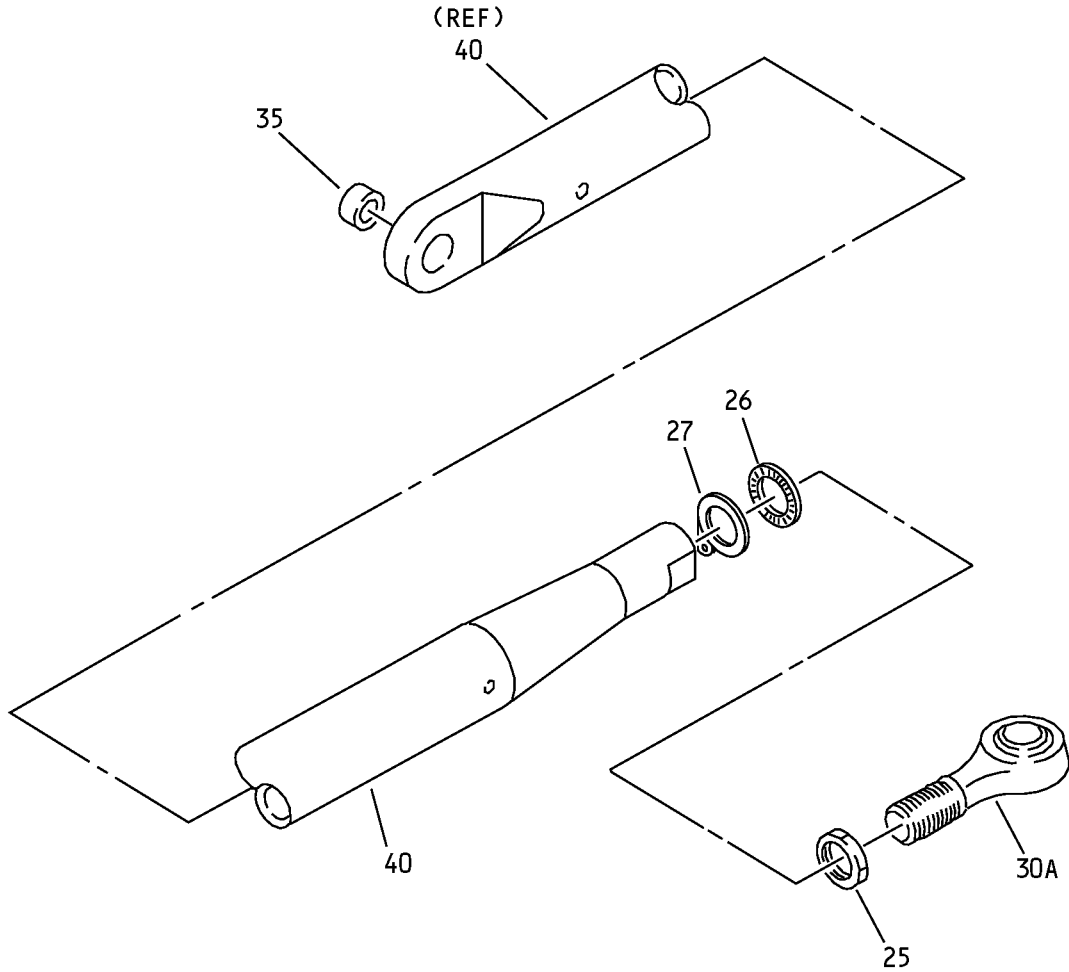
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Auxiliary Power Unit Support Strut Assembly  
IPL Figure 1

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| FIG/<br>ITEM | PART NUMBER  | AIRLINE<br>PART<br>NUMBER | NOMENCLATURE |   |   |   |   |   |   | USAGE<br>CODE | UNITS<br>PER<br>ASSY |
|--------------|--------------|---------------------------|--------------|---|---|---|---|---|---|---------------|----------------------|
|              |              |                           | 1            | 2 | 3 | 4 | 5 | 6 | 7 |               |                      |
| 1-           |              |                           |              |   |   |   |   |   |   |               |                      |
| -1A          | 352A1200-1   |                           |              |   |   |   |   |   |   | A             | RF                   |
| -1B          | 352A1200-21  |                           |              |   |   |   |   |   |   | F             | RF                   |
| -1C          | 352A1200-31  |                           |              |   |   |   |   |   |   | J             | RF                   |
| -1D          | 352A1200-41  |                           |              |   |   |   |   |   |   | M             | RF                   |
| -5           | 352A1200-2   |                           |              |   |   |   |   |   |   | B             | RF                   |
| -5A          | 352A1200-22  |                           |              |   |   |   |   |   |   | G             | RF                   |
| -5B          | 352A1200-32  |                           |              |   |   |   |   |   |   | K             | RF                   |
| -5C          | 352A1200-42  |                           |              |   |   |   |   |   |   | N             | RF                   |
| -10          | 352A1200-3   |                           |              |   |   |   |   |   |   | C             | RF                   |
| -10A         | 352A1200-23  |                           |              |   |   |   |   |   |   | H             | RF                   |
| -10B         | 352A1200-33  |                           |              |   |   |   |   |   |   | L             | RF                   |
| -10C         | 352A1200-43  |                           |              |   |   |   |   |   |   | P             | RF                   |
| -15          | 352A1200-7   |                           |              |   |   |   |   |   |   | D             | RF                   |
| -20          | 352A1200-9   |                           |              |   |   |   |   |   |   | E             | RF                   |
| 25           | MS21340-07   |                           |              |   |   |   |   |   |   | A, F, J, M    | 1                    |
| 26           | BACW10P209CC |                           |              |   |   |   |   |   |   | A, F, J, M    | 1                    |
| 27           | NAS1193K8-1  |                           |              |   |   |   |   |   |   | A, F, J, M    | 1                    |
| 30           | VTA06070     |                           |              |   |   |   |   |   |   |               |                      |
| 30A          | BCREF12791   |                           |              |   |   |   |   |   |   | A, F, J       | 1                    |

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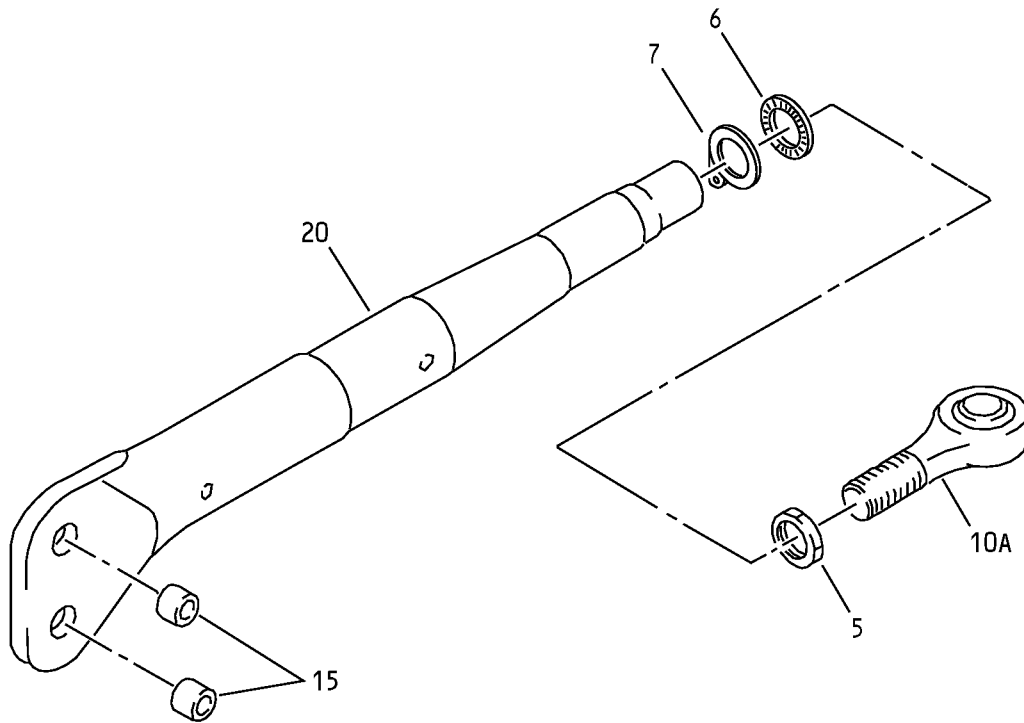


## COMPONENT MAINTENANCE MANUAL

| FIG/<br>ITEM | PART NUMBER   | AIRLINE<br>PART<br>NUMBER | NOMENCLATURE |                         |   |   |   |   |   | USAGE<br>CODE | UNITS<br>PER<br>ASSY |
|--------------|---------------|---------------------------|--------------|-------------------------|---|---|---|---|---|---------------|----------------------|
|              |               |                           | 1            | 2                       | 3 | 4 | 5 | 6 | 7 |               |                      |
| 1-           |               |                           |              |                         |   |   |   |   |   |               |                      |
| -30B         | AMBM5-4035    |                           | .            | END-ROD                 |   |   |   |   |   | A, F, J       | 1                    |
|              |               |                           |              | (V15860)                |   |   |   |   |   |               |                      |
|              |               |                           |              | (SPEC S312N305A05M106)  |   |   |   |   |   |               |                      |
|              |               |                           |              | (OPT P31780 (V57606))   |   |   |   |   |   |               |                      |
|              |               |                           |              | (OPT VTA06070 (V06710)) |   |   |   |   |   |               |                      |
|              |               |                           |              | (OPT ITEM 30A)          |   |   |   |   |   |               |                      |
| -30C         | AMBM5-4035    |                           | .            | END-ROD                 |   |   |   |   |   | M             | 1                    |
|              |               |                           |              | (V15860)                |   |   |   |   |   |               |                      |
|              |               |                           |              | (SPEC S312N305A05M106)  |   |   |   |   |   |               |                      |
|              |               |                           |              | (OPT P31780 (V57606))   |   |   |   |   |   |               |                      |
|              |               |                           |              | (OPT VTA06070 (V06710)) |   |   |   |   |   |               |                      |
|              |               |                           |              | (OPT ITEM 30D)          |   |   |   |   |   |               |                      |
| -30D         | P3A0180       |                           | .            | END-ROD                 |   |   |   |   |   | M             | 1                    |
|              |               |                           |              | (V57606)                |   |   |   |   |   |               |                      |
|              |               |                           |              | (OPT ITEM 30C)          |   |   |   |   |   |               |                      |
| 35           | BACB28U7E034  |                           | .            | BUSHING                 |   |   |   |   |   | A, F, J, M    | 1                    |
| 35A          | BACB28U7E034  |                           |              | DELETED                 |   |   |   |   |   |               |                      |
| 40           | 352A1200-4    |                           | .            | STRUT                   |   |   |   |   |   | A             | 1                    |
| -40A         | 352A1200-24   |                           | .            | STRUT                   |   |   |   |   |   | F             | 1                    |
| -40B         | 352A1200-34   |                           | .            | STRUT                   |   |   |   |   |   | J             | 1                    |
| -40C         | 352A1200-44   |                           | .            | STRUT DELETED           |   |   |   |   |   | M             | 1                    |
| 105          | VT7035R3-125R |                           |              | DELETED                 |   |   |   |   |   |               |                      |

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Auxiliary Power Unit Support Strut Assembly  
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| FIG/<br>ITEM | PART NUMBER  | AIRLINE<br>PART<br>NUMBER | NOMENCLATURE |   |   |   |   |   |   | USAGE<br>CODE  | UNITS<br>PER<br>ASSY |
|--------------|--------------|---------------------------|--------------|---|---|---|---|---|---|--|----------------------|
|              |              |                           | 1            | 2 | 3 | 4 | 5 | 6 | 7 |  |                      |
| 2-           |              |                           |              |   |   |   |   |   |   |  |                      |
| -1A          | 352A1200-2   |                           |              |   |   |   |   |   |   | B  | RF                   |
| -1B          | 352A1200-22  |                           |              |   |   |   |   |   |   | G  | RF                   |
| -1C          | 352A1200-32  |                           |              |   |   |   |   |   |   | K  | RF                   |
| -1D          | 352A1200-42  |                           |              |   |   |   |   |   |   | N  | RF                   |
| 5            | MS21340-07   |                           |              |   |   |   |   |   |   | B, G, K,<br>N  | 1                    |
| 6            | BACW10P209CC |                           |              |   |   |   |   |   |   | B, G, K,<br>N  | 1                    |
| 7            | NAS1193K8-1  |                           |              |   |   |   |   |   |   | B, G, K,<br>N  | 1                    |
| 10           | VTA06070     |                           |              |   |   |   |   |   |   | DELETED  |                      |
| 10A          | BCREF12791   |                           |              |   |   |   |   |   |   | B, G, K  | 1                    |
|              |              |                           |              |   |   |   |   |   |   | (V81205)<br>(S312N305A05MC106)<br>(OPT ITEM 10B)   |                      |
| -10B         | AMBM5-4035   |                           |              |   |   |   |   |   |   | B, G, K  | 1                    |
|              |              |                           |              |   |   |   |   |   |   | (V15860)<br>(SPEC S312N305A05M106)<br>(OPT P31780 (V57606))<br>(OPT VTA06070 (V06710))<br>(OPT ITEM 10A) |                      |
| -10C         | AMBM5-4035   |                           |              |   |   |   |   |   |   | N  | 1                    |
|              |              |                           |              |   |   |   |   |   |   | (V15860)<br>(SPEC S312N305A05M106)<br>(OPT P31780 (V57606))<br>(OPT VTA06070 (V06710))<br>(OPT ITEM 10D) |                      |
| -10D         | P3A0180      |                           |              |   |   |   |   |   |   | N  | 1                    |
|              |              |                           |              |   |   |   |   |   |   | (V57606)<br>(OPT ITEM 10C)   |                      |
| 15           | BACB28U7E034 |                           |              |   |   |   |   |   |   | B, G, K,<br>N  | 2                    |
| 15A          | BACB28U7E034 |                           |              |   |   |   |   |   |   | DELETED  |                      |
| 20           | 352A1200-5   |                           |              |   |   |   |   |   |   | B  | 1                    |
| -20A         | 352A1200-25  |                           |              |   |   |   |   |   |   | G  | 1                    |
| -20B         | 352A1200-35  |                           |              |   |   |   |   |   |   | K  | 1                    |
| -20C         | 352A1200-45  |                           |              |   |   |   |   |   |   | N  | 1                    |

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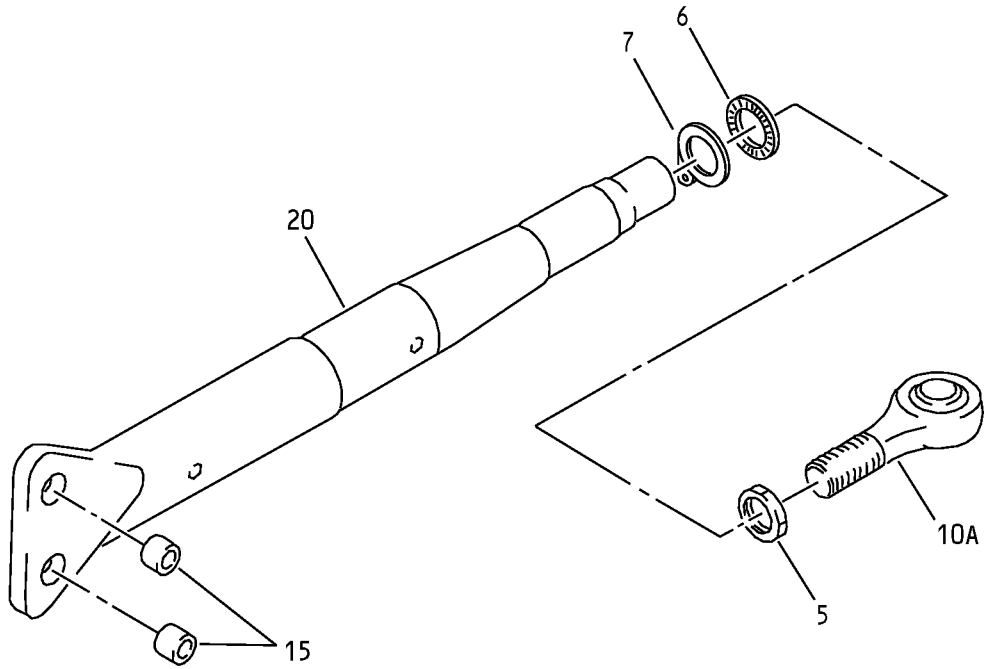
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| FIG/<br>ITEM | PART NUMBER  | AIRLINE<br>PART<br>NUMBER | NOMENCLATURE |   |   |   |   |   |   | USAGE<br>CODE | UNITS<br>PER<br>ASSY |
|--------------|--------------|---------------------------|--------------|---|---|---|---|---|---|---------------|----------------------|
|              |              |                           | 1            | 2 | 3 | 4 | 5 | 6 | 7 |               |                      |
| 3-           |              |                           |              |   |   |   |   |   |   |               |                      |
| -1A          | 352A1200-3   |                           |              |   |   |   |   |   |   | C             | RF                   |
| -1B          | 352A1200-23  |                           |              |   |   |   |   |   |   | H             | RF                   |
| -1C          | 352A1200-33  |                           |              |   |   |   |   |   |   | L             | RF                   |
| -1D          | 352A1200-43  |                           |              |   |   |   |   |   |   | P             | RF                   |
| 5            | MS21340-07   |                           |              |   |   |   |   |   |   | C, H, L, P    | 1                    |
| 6            | BACW10P209CC |                           |              |   |   |   |   |   |   | C, H, L, P    | 1                    |
| 7            | NAS1193K8-1  |                           |              |   |   |   |   |   |   | C, H, L, P    | 1                    |
| 10           | VTA06070     |                           |              |   |   |   |   |   |   |               |                      |
| 10A          | BCREF12791   |                           |              |   |   |   |   |   |   | C, H, L       | 1                    |
|              |              |                           |              |   |   |   |   |   |   |               |                      |
| -10B         | AMBM5-4035   |                           |              |   |   |   |   |   |   | C, H, L       | 1                    |
|              |              |                           |              |   |   |   |   |   |   |               |                      |
| -10C         | AMBM5-4035   |                           |              |   |   |   |   |   |   | P             | 1                    |
|              |              |                           |              |   |   |   |   |   |   |               |                      |
| -10D         | P3A0180      |                           |              |   |   |   |   |   |   | P             | 1                    |
|              |              |                           |              |   |   |   |   |   |   |               |                      |
| 15           | BACB28U7E015 |                           |              |   |   |   |   |   |   | C, H, L, P    | 2                    |
| 15A          | BACB28U7E015 |                           |              |   |   |   |   |   |   |               |                      |
| 20           | 352A1200-6   |                           |              |   |   |   |   |   |   | C             | 1                    |
| -20A         | 352A1200-26  |                           |              |   |   |   |   |   |   | H             | 1                    |
| -20B         | 352A1200-36  |                           |              |   |   |   |   |   |   | L             | 1                    |
| -20C         | 352A1200-46  |                           |              |   |   |   |   |   |   | P             | 1                    |

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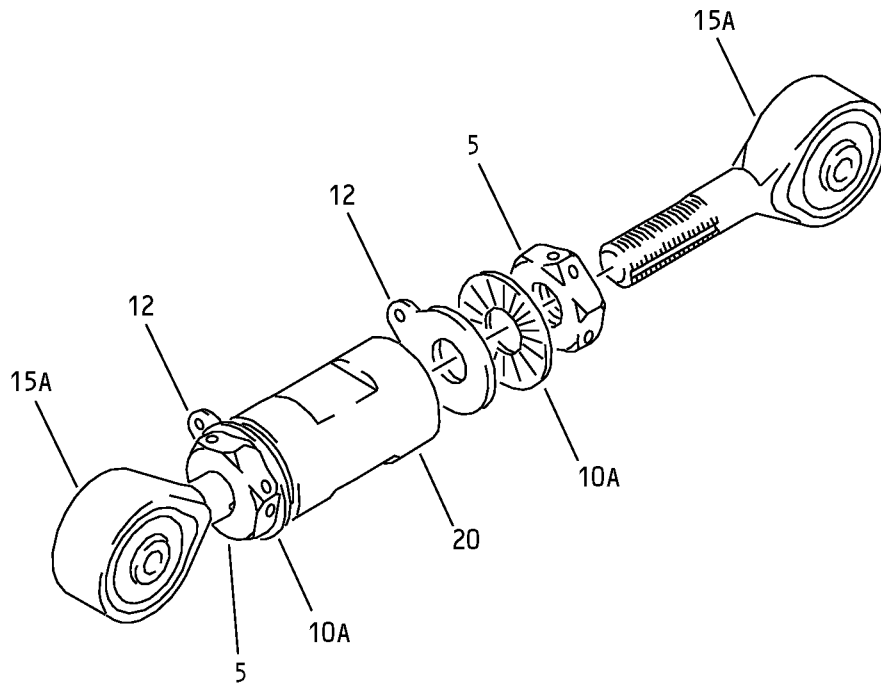
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Auxiliary Power Unit Support Strut Assembly  
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| FIG/<br>ITEM | PART NUMBER     | AIRLINE<br>PART<br>NUMBER | NOMENCLATURE |   |   |   |   |   |   | USAGE<br>CODE | UNITS<br>PER<br>ASSY |
|--------------|-----------------|---------------------------|--------------|---|---|---|---|---|---|---------------|----------------------|
|              |                 |                           | 1            | 2 | 3 | 4 | 5 | 6 | 7 |               |                      |
| 4-           |                 |                           |              |   |   |   |   |   |   |               |                      |
| -1A          | 352A1200-7      |                           |              |   |   |   |   |   |   | D             | RF                   |
| 5            | NAS509-5C       |                           |              |   |   |   |   |   |   | D             | 2                    |
| 10           | NAS1149C0516R   |                           |              |   |   |   |   |   |   |               |                      |
| 10A          | NAS1149E0516R   |                           |              |   |   |   |   |   |   | D             | 2                    |
| 12           | NAS1193K5-1     |                           |              |   |   |   |   |   |   | D             | 2                    |
| 15           | S312N305A04M101 |                           |              |   |   |   |   |   |   |               |                      |
| 15A          | BCREF12790      |                           |              |   |   |   |   |   |   | D             | 2                    |
|              |                 |                           |              |   |   |   |   |   |   |               |                      |
| -15B         | AMBM4-4052      |                           |              |   |   |   |   |   |   | D             | 1                    |
|              |                 |                           |              |   |   |   |   |   |   |               |                      |
| 20           | 352A1200-17     |                           |              |   |   |   |   |   |   | D             | 1                    |

-Item not Illustrated

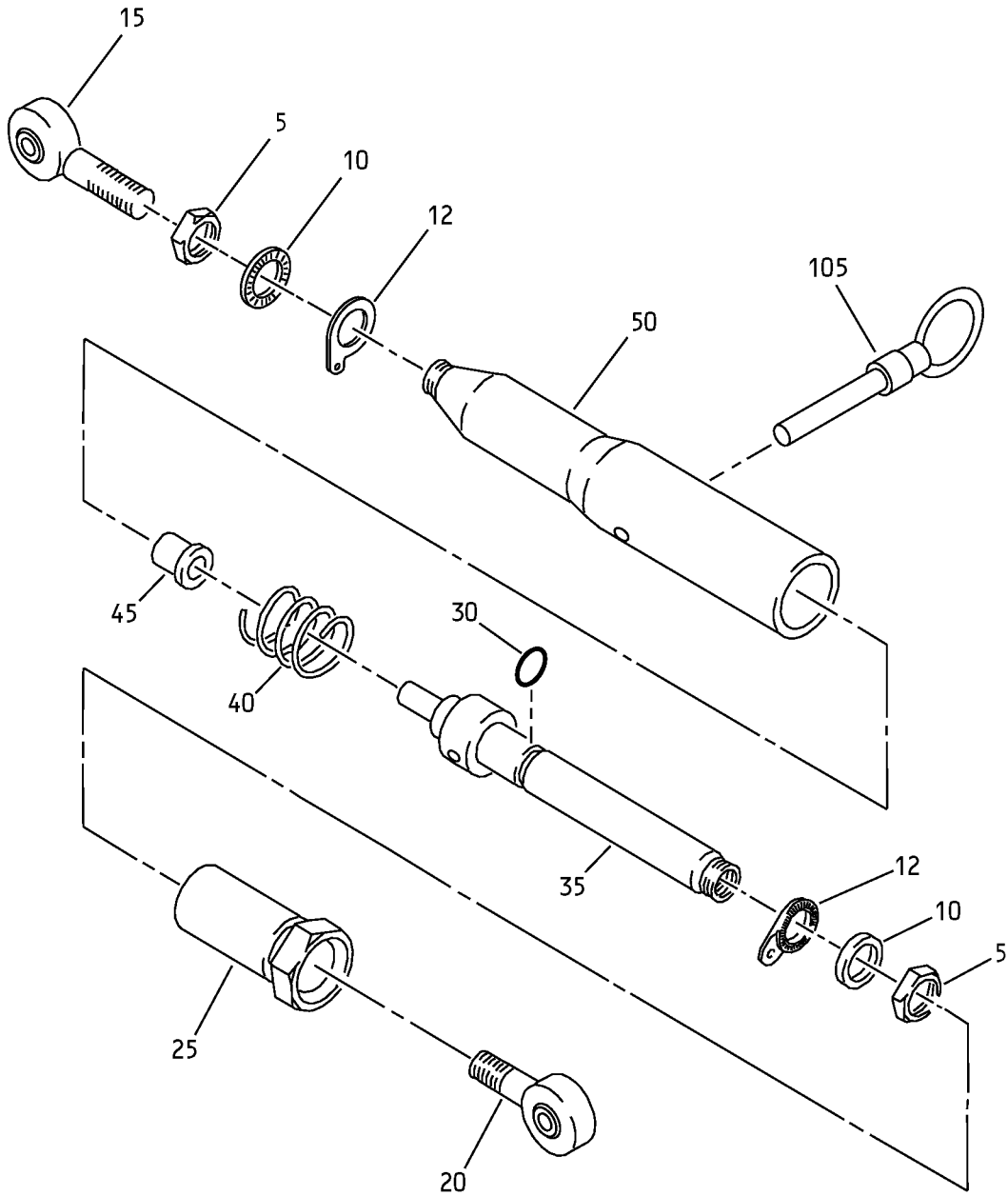
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COMPONENT MAINTENANCE MANUAL



Auxiliary Power Unit Support Strut Assembly  
IPL Figure 5

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