TO: ALL HOLDERS OF MAIN LANDING GEAR BRAKE, WHEEL AND TIRE, INAXLE, HUB CAP INSTALLATIONS COMPONENT MAINTENANCE MANUAL 32-11-27.

REVISION NO. 2 DATED NOV 01/02

HIGHLIGHTS

Pages which have been added or revised are outlined below together with the highlights of the revision. Remove and insert the affected pages as listed and enter Revision No. and date on the Record of Revision Sheet.

CHAPTER/SECTION AND PAGE NO.	DESCRIPTION OF CHANGE
TITLE PAGE	Added 165T0002-2, -3.
1	
TR & SB RECORD	
1	
DESCRIPTION & OPERATION	Added clarifications and updated callouts.
1	
301-302	
401	
501	
REPAIR-GEN	
601	
REPAIR 1-1	
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REPAIR 4-1	HIGHLIGHT CONTINUED FROM PREVIOUS PAGE
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REPAIR 5-1	
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BOEING

COMPONENT
MAINTENANCE MANUAL

MAIN LANDING GEAR BRAKE, WHEEL AND TIRE, IN AXLE, HUB CAP INSTALLATIONS

PART NUMBERS 165T0001-1
165T0002-1,-2,-3
165T0003-1
165T0004-1

COMPONENT MAINTENANCE MANUAL
WITH
ILLUSTRATED PARTS LIST

K93438

REVISION RECORD

- Retain this record in front of manual. On receipt of revision, insert revised pages in the manual, and enter revision number, date inserted and initial.

REVISION NUMBER	REVISION DATE	DATE FILED	BY	REVISION NUMBER	REVISION DATE	DATE FILED	BY

TEMPORARY REVISION AND SERVICE BULLETIN RECORD

BOEING SERVICE BULLETIN	BOEING TEMPORARY REVISION	OTHER DIRECTIVE	DATE OF INCORPORATION INTO MANUAL
		MC 3245MP6099M	NOV 01/00

PAGE	DATE	CODE
32-11-27		
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2	BLANK	
TR & SB RECORD		
*1	NOV 01/02	01.1
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*1	NOV 01/02	01
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REPAIR 5-1		
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PAGE	DATE	CODE
ASSEMBLY		
*701	NOV 01/02	01.1
*702	NOV 01/02	01.1
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ILLUSTRATED PARTS LIST		
1001	MAR 01/00	01
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* = REVISED, ADDED OR DELETED

COMPONENT
MAINTENANCE MANUAL

TABLE OF CONTENTS

*[1] Not Applicable.

INTRODUCTION

The instructions in this manual provide the information necessary to perform maintenance functions ranging from simple checks and replacement to complete shop-type repair.

This manual is divided into separate sections:

1. Title Page
2. Record of Revisions
3. Temporary Revision & Service Bulletin Record
4. List of Effective Pages
5. Table of Contents
6. Introduction
7. Procedures & IPL Sections

Refer to the Table of Contents for the page location of applicable sections.

The beginning of the REPAIR section includes a list of the separate repairs, a list of applicable standard Boeing practices, and an explanation of the True Position Dimensioning symbols used.

An explanation of the use of the Illustrated Parts List is provided in the Introduction to that section.

All weights and measurements used in the manual are in English units, unless otherwise stated. When metric equivalents are given they will be in parentheses following the English units.

Design changes, optional parts, configuration differences and Service Bulletin modifications create alternate part numbers. These are identified in the Illustrated Parts List (IPL) by adding an alphabetical character to the basic item number. The resulting item number is called an alpha-variant. Throughout the manual, IPL basic item number references also apply to alpha-variants unless otherwise indicated.

Verification:

MAIN LANDING GEAR BRAKE,WHEEL AND TIRE, IN-AXLE, HUB CAP INSTALLATIONS

DESCRIPTION AND OPERATION

1. Description

   A. The main landing gear wheels/brakes/equipment installation components include hubcap installations, in-axle installations, wheel and tire assemblies, and brake installations. Because the wheel and tire assemblies and the brake assemblies are made by vendors, the repair procedures for these assemblies are covered by the vendor component maintenance manuals.

2. Operation

   A. The wheel and tire assemblies, the in-axle installations, and the brake assemblies support the airplane main landing gear during taxi, takeoff, and landing.

3. Leading Particulars (Approximate)

   A. Weight of each wheel/tire assembly -- 426 pounds

DISASSEMBLY

1. General

   A. This procedure has the data necessary to disassemble the main landing gear brake, wheel and tire, in-axle, and hub cap installation components.

   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 Fig. 1 thru 4 for item numbers.

2. Disassembly

   A. Procedure

      (1) Use standard industry procedures and these steps.

      (2) Remove the hub cap assembly (15, IPL Fig. 4) from the wheel and tire assembly (5, IPL Fig. 2).

         (a) Remove V-clamp (Fig. 4, 5), spacer (Fig. 4, 10), and hub cap assembly (Fig. 4, 15).

         (b) Remove bolts (Fig. 4, 20), washers (Fig. 4, 25), and hub cap assembly (Fig. 4, 30).

         (c) Remove screw (Fig. 4, 45), washer (Fig. 4, 50), and driver (Fig. 4, 60) from coupling assembly (Fig. 4, 65).

      (3) Remove the wheel and tire assemblies from each axle of the main landing gear.

      (4) Remove in-axle assembly (Fig. 3, 20) from the axle.

         (a) Remove bolts (Fig. 3, 5), washers (Fig. 3, 10), nuts (Fig. 3, 15).

(b) Pull out the in-axle assembly and disconnect it from the electrical lines.

(c) Remove screws (Fig. 3, 25), nuts (Fig. 3, 30), connector (Fig. 3, 32), screws (Fig. 3, 35) and plate (Fig. 3, 40).

(d) Remove nut-retainer (Fig. 3, 90), and antiskid assemby (Fig. 3, 65).

(e) Remove bolts (Fig. 3, 70), washers (Fig. 3, 75), transducer (Fig. 3, 85).

(5) Remove lockwire, bolts (Fig. 1, 20), washers (Fig. 1, 25), sensor (Fig. 1, 30) and brake assembly.

(6) Disconnect the hose half quick disconnect (QD) (Fig. 1, 35), remove bolts (Fig. 1, 45), washers (Fig. 1, 50), brake disconnect (Fig. 1, 55), brake assembly (Fig. 1, 60), backup ring (Fig. 1, 65), packing (Fig. 1, 70).

CLEANING

1. General

   A. This procedure has the data necessary to clean main landing gear wheels/brakes/hub cap/in-axle components.

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

2. Cleaning

   A. Reference

      (1) SOPM 20-30-03, General Cleaning Procedures

   B. Procedure

      (1) Clean all parts by standard industry practices and the instructions in SOPM 20-30-03.

CHECK

1. General

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

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

2. Check

   A. References

      (1) SOPM 20-20-01, Magnetic Particle Inspection

      (2) SOPM 20-20-02, Penetrant Methods of Inspection

   B. Procedure

      (1) Use standard industry practices to do a visual check of all the parts for defects. Do the penetrant or magnetic particle check if the visual check shows possible defects on the parts listed below:

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

         (a) Dog (85, IPL Fig. 3)

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

         (a) Adapter (60, 60A, IPL Fig. 3)

REPAIR - GENERAL

1. General

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

PART NUMBER	NAME	REPAIR
---	REFINISH OF OTHER PARTS	1-1
163U6003-1,-6	HUB CAP ASSEMBLY	2-1, 2-2
294W5142-1	HUB CAP ASSEMBLY	3-1, 3-2
294W5131-2	ADAPTER	4-1
294W5131-4	ADAPTER	5-1

2. Dimensioning Symbols

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

REFINISH OF OTHER PARTS - REPAIR 1-1

1. General

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

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

2. Refinish of Other Parts

   A. General

      (1) Instructions for the repair of the parts listed in Table 601 are for repair of the initial finish.

   B. Consumable Materials

      NOTE: Equivalent material can be used.

      (1) A00359 Sealant -- BMS 5-95 (SOPM 20-60-04)

   C. References

      (1) SOPM 20-30-02, Stripping of Protective Finishes

      (2) SOPM 20-30-03, General Cleaning Procedures

      (3) SOPM 20-41-01, Decoding Table for Boeing Finish Codes

      (4) SOPM 20-41-02, Application of Chemical and Solvent Resistant Finishes

      (5) SOPM 20-60-02, Finishing Materials

D. Procedure

IPL FIG. & ITEM	MATERIAL	FINISH
IPL Fig. 3		
Washer (70)	15-5PH CRES	Passivate (F-17.25, which replaces F-17.09).
Dog (80, 80A)	15-5PH CRES	Passivate (F-17.25, which replaces F-17.09).
IPL Fig. 4		
Washer (25, 50)	15-5PH CRES	Passivate (F-17.25, which replaces F-17.09).

Refinish Details
Table 601

HUB CAP ASSEMBLY - REPAIR 2-1

163U6003-1, -6

1. General

A. This procedure has the data necessary to replace the parts of the hub cap assembly (30, 30A).

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

C. Refer to IPL Fig. 4 for item numbers.

D. References

(1) SOPM 20-41-01, Decoding Table for Boeing Finish Codes

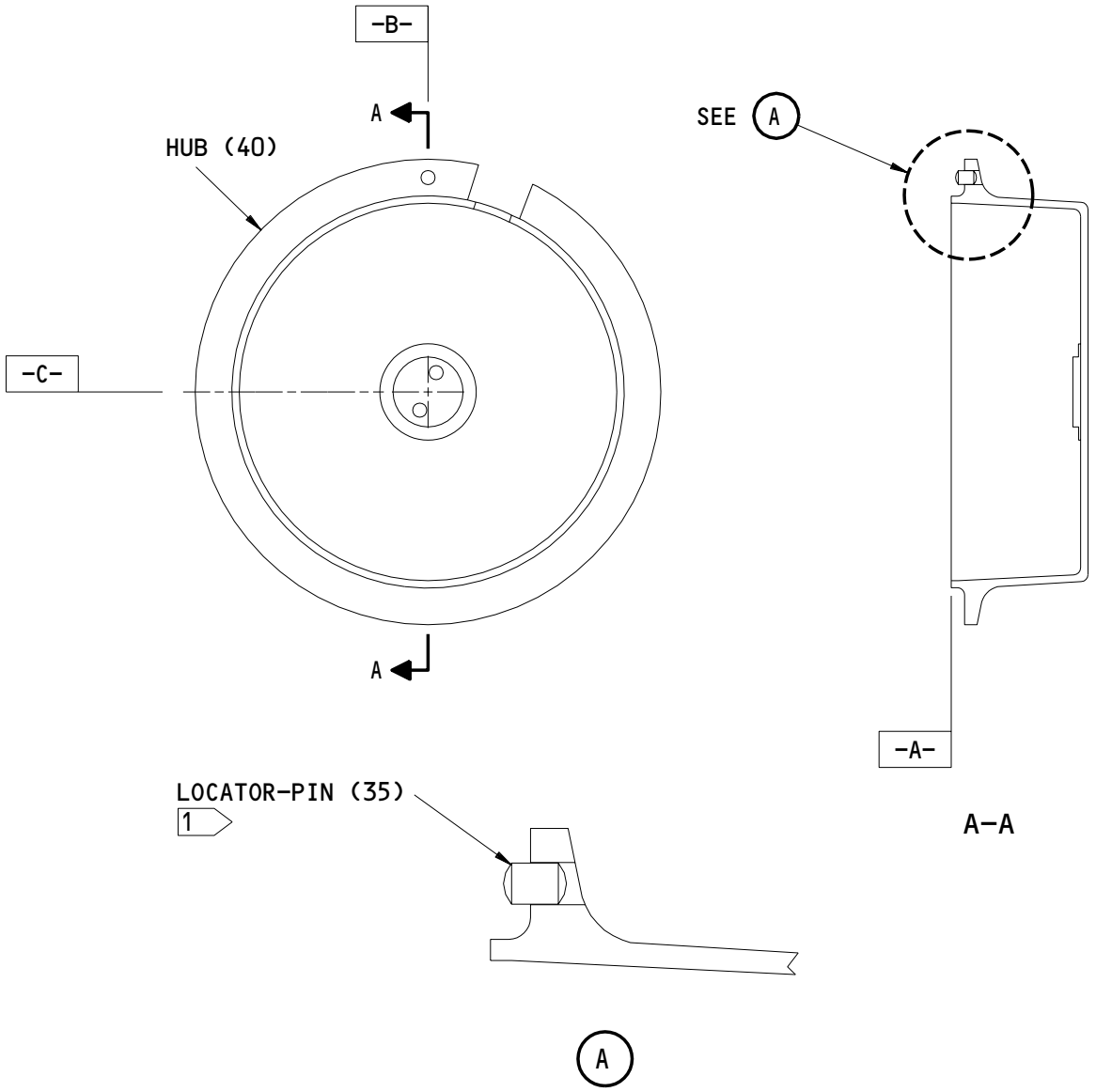
(2) SOPM 20-50-03, Bearing and Bushing Replacement

E. Procedure

(1) Remove the locator pin (35) from the hub cap.

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

(3) Install a replacement locator pin (35) in the hub cap by the shrink-fit method (SOPM 20-50-03).



1 INSTALL BY SHRINK FIT METHOD

ITEM NUMBERS REFER TO IPL FIG. 4

163U6003-1,-6
Hubcap Assembly Parts Replacement
Figure 601

K75334

HUB CAP - REPAIR 2-2

163T6003-3, -7

1. General

   A. This procedure has the data necessary to repair and refinish the hub cap (4O, 4OA).

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

   C. Refer to IPL Fig. 4 for item numbers.

   D. General repair details:

      (1) Material: Aluminum alloy

2. Hub Refinish

   A. Consumable Materials

      NOTE: Equivalent material can be used.

      (1) COO432 Primer -- BMS 1O-11, Type 1 (SOPM 2O-6O-O2)

      (2) COOO33 Enamel -- BMS 1O-6O, Type 1 (SOPM 2O-6O-O2)

   B. References

      (1) SOPM 2O-2O-O2, Penetrant Methods of Inspection

      (2) SOPM 2O-3O-O2, Stripping of Protective Finishes

      (3) SOPM 2O-3O-O3, General Cleaning Procedures

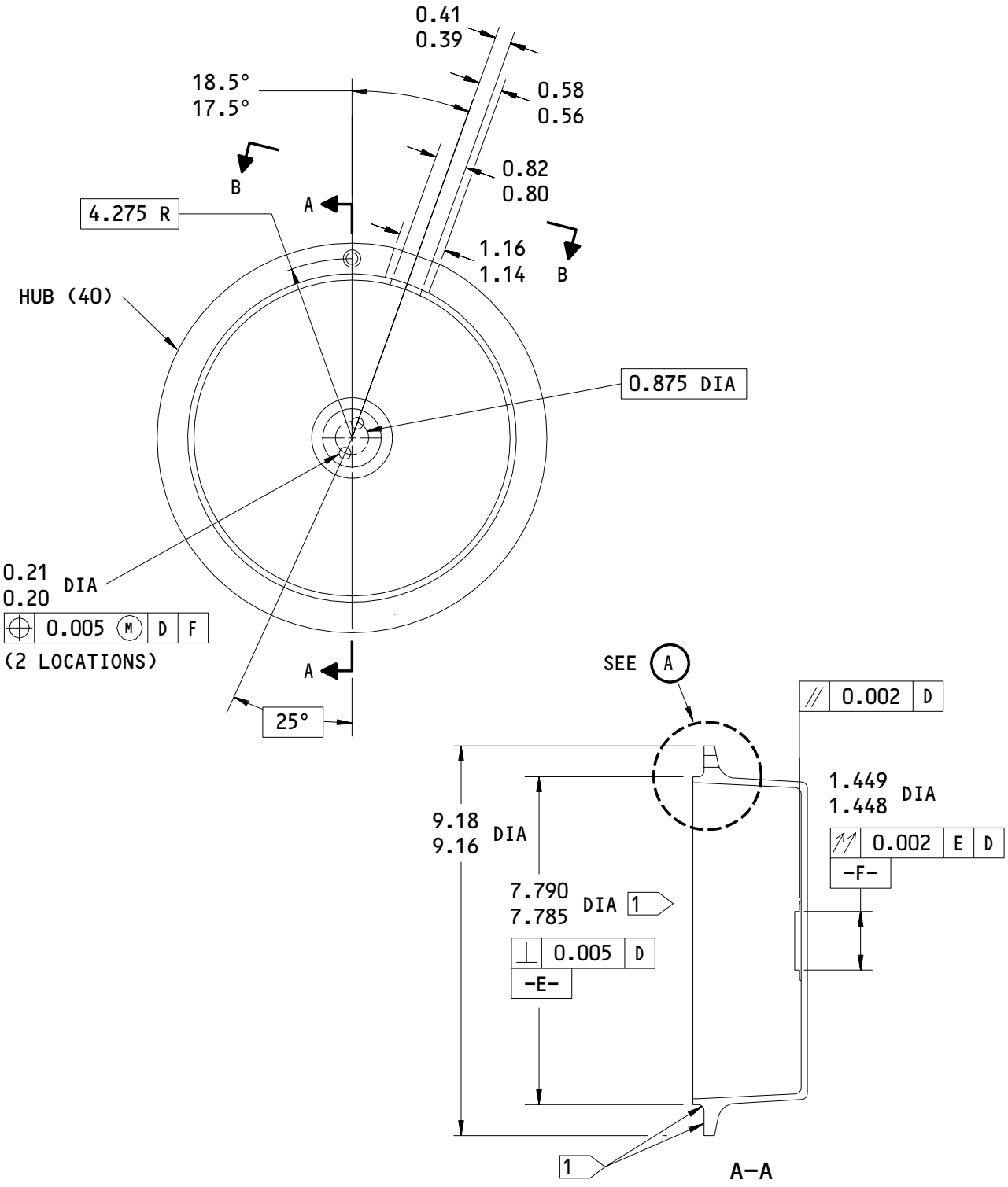
      (4) SOPM 2O-41-O1, Decoding Table For Boeing Finish Codes

      (5) SOPM 2O-6O-O2, Finishing Materials

C. Procedure (Fig. 601)

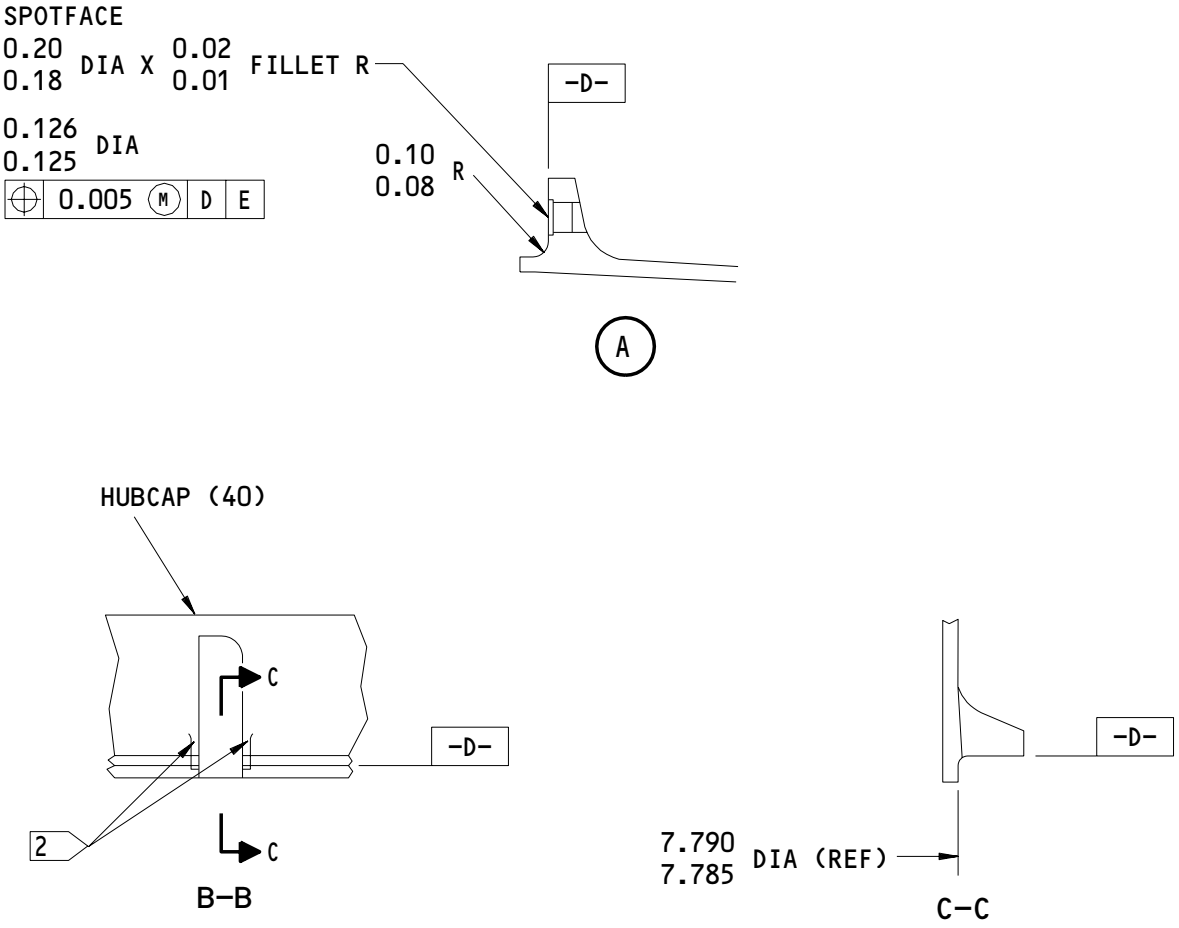
(1) Chromic acid anodize and apply primer BMS 10-11, Type 1 (F-18.13).

(2) Apply BMS 10-60, Type 1, gloss enamel (F-14.9813, which replaces SRF-14.9813).



163U6003-3,-7
Hubcap Repair
Figure 601 (Sheet 1)

K75962



1 NO ENAMEL IN THIS AREA AND ALL INTERIOR SURFACES

2 ALLOWED MISMATCH IN THIS AREA ±0.010

125 ALL MACHINED SURFACES UNLESS SHOWN DIFFERENTLY

BREAK ALL SHARP EDGES

ITEM NUMBERS REFER TO IPL FIG. 4

ALL DIMENSIONS ARE IN INCHES

163U6003-3,-7
Hubcap Repair
Figure 601 (Sheet 2)

K76059

HUB CAP ASSEMBLY - REPAIR 3-1

294W5142-1

1. General

A. This procedure has the data necessary to replace the parts of the hub cap assembly (30).

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

C. Refer to IPL Fig. 4 for item numbers.

D. References

(1) SOPM 20-41-01, Decoding Table for Boeing Finish Codes

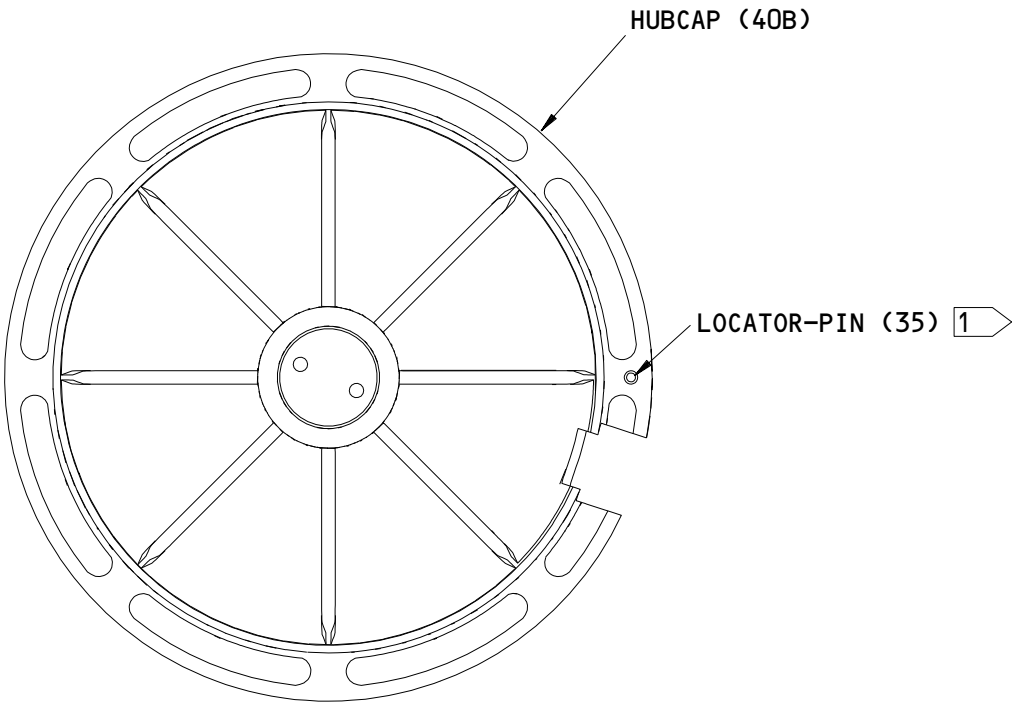
(2) SOPM 20-50-03, Bearing and Bushing Replacement

E. Procedure

(1) Remove the old locator pin (35) from the hub cap.

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

(3) Install a replacement locator pin (35) in the hub cap by the shrink-fit method (SOPM 20-50-03).



1 INSTALL THE PIN BY THE SHRINK FIT PROCEDURE (SOPM 20-50-03) WITH BMS 5-95 SEALANT

ITEM NUMBERS REFER TO IPL FIG. 4

294W5142-1
Hub Assembly Repair
Figure 601

K76072

HUB CAP - REPAIR 3-2

294W5142-2

1. General

A. This procedure has the data necessary to repair and refinish the hub cap (40).

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

C. Refer to IPL Fig. 4 for item numbers.

D. General repair details:

(1) Material: Aluminum alloy

2. Hub Refinish

A. Consumable Materials

NOTE: Equivalent material can be used.

(1) C00175 Coating -- BMS 10-79, Type 3 Primer (SOPM 20-60-02)

(2) C00033 Enamel -- BMS 10-60, Type 2, Color 707 (SOPM 20-60-02)

B. References

(1) SOPM 20-20-02, Penetrant Methods of Inspection

(2) SOPM 20-30-02, Stripping of Protective Finishes

(3) SOPM 20-30-03, General Cleaning Procedures

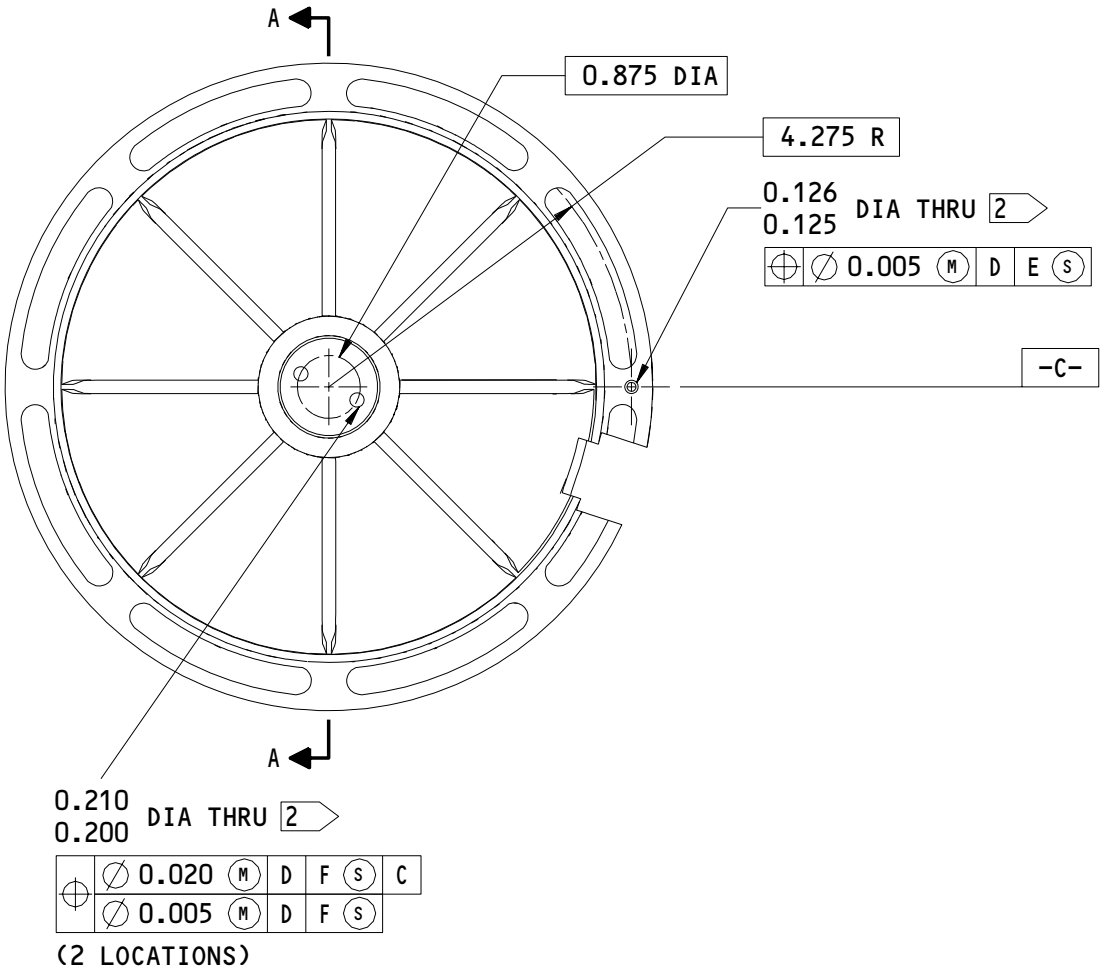
(4) SOPM 20-41-01, Decoding Table For Boeing Finish Codes

(5) SOPM 20-60-02, Finishing Materials

C. Procedure (Fig. 601)

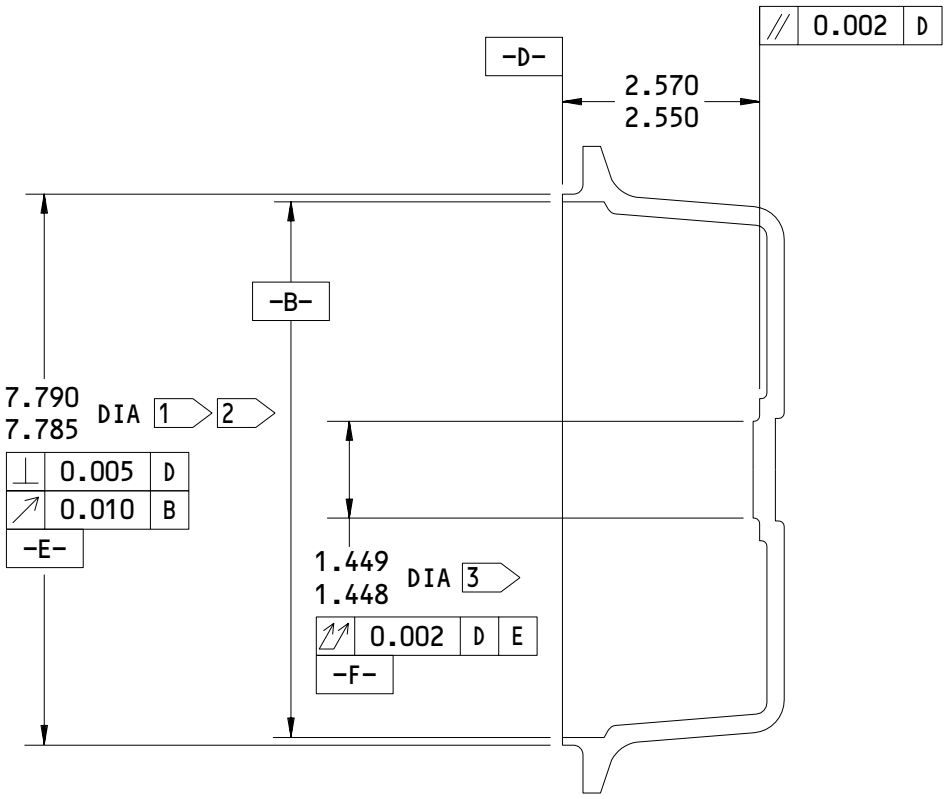
(1) Boric acid-sulfuric acid anodize (F-17.31).

(2) Apply BMS 10-79, Type 3, primer (F-19.47) and BMS 10-60, Type 2, gloss Enamel (F-19.39-707).



294W5142-2
Hubcap Repair
Figure 601 (Sheet 1)

K76272



A–A

1. DIMENSION MUST STAY WITHIN THESE LIMITS WITH THE PART IN UNRESTRAINED CONDITION
2. NO ENAMEL IN THIS AREA AND ALL INTERIOR SURFACES
3. RUNOUT CAN BE MEASURED WITH DATUM FEATURES HELD IN RESTRAINED POSITION

125 ALL MACHINED SURFACES UNLESS SHOWN DIFFERENTLY

BREAK ALL SHARP EDGES

ITEM NUMBERS REFER TO IPL FIG. 4

ALL DIMENSIONS ARE IN INCHES

294W5142-2
Hubcap Repair
Figure 601 (Sheet 2)

K76273

ADAPTER - REPAIR 4-1

294W5131-2

1. General

A. This procedure has the data necessary to refinish adapter (60).

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

C. Refer to IPL Fig. 3 for item numbers.

D. General repair details:

(1) Material: Aluminum alloy

2. Support Transducer Refinish

A. Consumable Materials

NOTE: Equivalent material can be used.

(1) C00259 Primer -- BMS 10-11, Type (SOPM 20-60-02)

B. References

(1) SOPM 20-30-02, Stripping of Protective Finishes

(2) SOPM 20-41-01, Decoding Table for Boeing Finish Codes

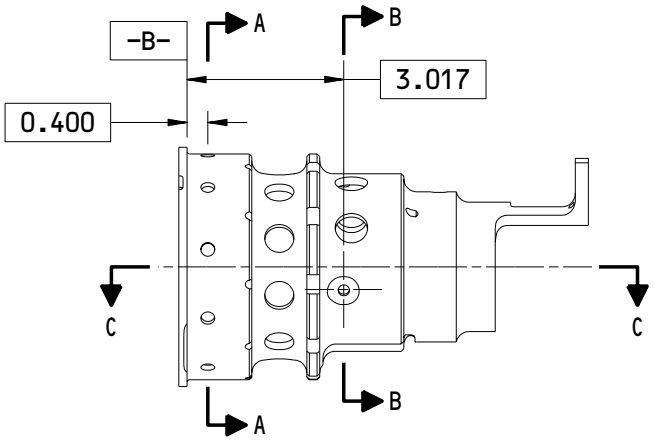
(3) SOPM 20-41-02, Application of Solvent and Chemical Resistant Finishes

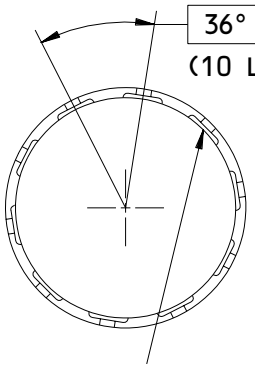
(4) SOPM 20-43-01, Chromic Acid Anodizing

C. Procedure (Fig. 601)

(1) Chromic acid anodize (F-17.05).

(2) Apply BMS 10-11, Type 1 primer (F-20.03) unless shown differently.





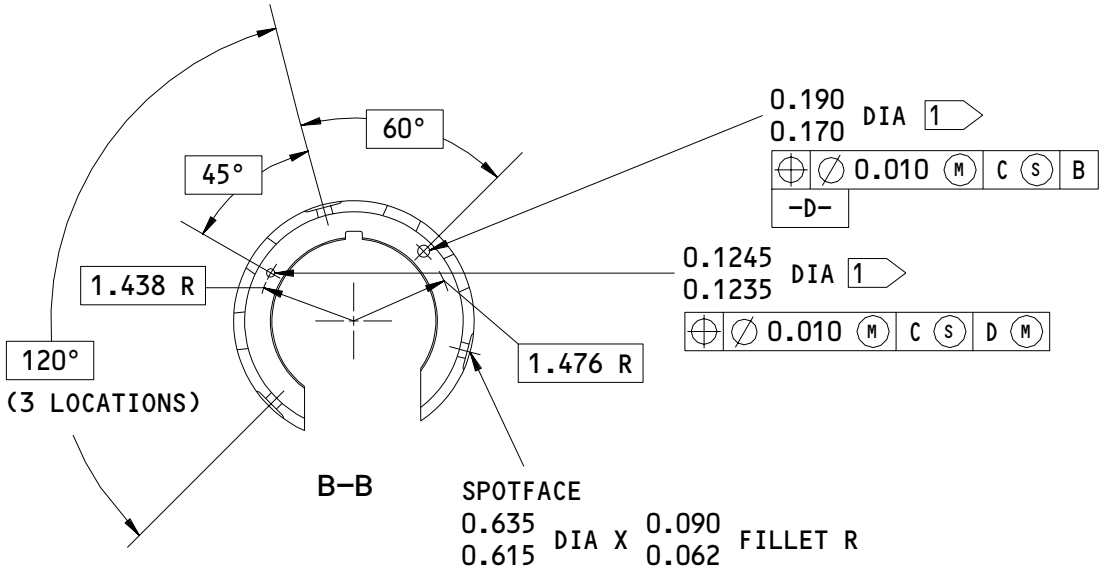
SPOTFACE
0.729
0.709 DIA X 0.090
0.062 FILLET R

0.277
0.267 DIA

⌖ ∅ 0.010 M A M B

(10 LOCATIONS)

A–A



B–B

SPOTFACE
0.635
0.615 DIA X 0.090
0.062 FILLET R

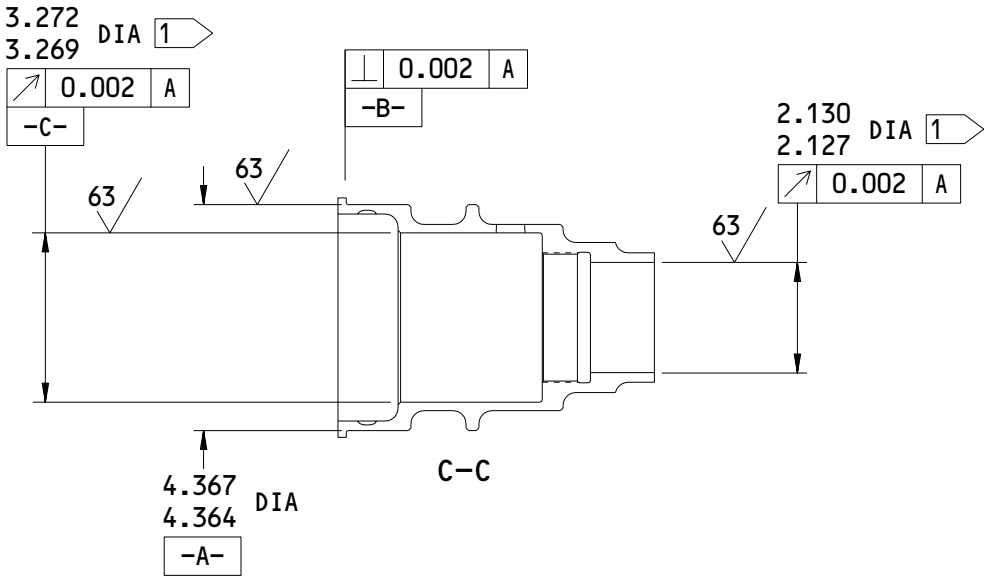
0.229
0.218 DIA

⌖ ∅ 0.010 M C S B D M

(3 LOCATIONS)

294W5131-2
Adapter Repair
Figure 601 (Sheet 1)

K76877



1 DO NOT PRIME THIS SURFACE

125 ALL MACHINED SURFACES UNLESS SHOWN DIFFERENTLY

BREAK ALL SHARP EDGES

ALL DIMENSIONS ARE IN INCHES

294W5131-2
Adapter Repair
Figure 601 (Sheet 2)

ADAPTER - REPAIR 5-1

294W5131-4

1. General

A. This procedure has the data necessary to refinish adapter (60).

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

C. Refer to IPL Fig. 3 for item numbers.

D. General repair details:

(1) Material: Aluminum alloy

2. Support Transducer Refinish

A. Consumable Materials

NOTE: Equivalent material can be used.

(1) C00259 Primer -- BMS 10-11, Type 1 (SOPM 20-60-02)

B. References

(1) SOPM 20-30-02, Stripping of Protective Finishes

(2) SOPM 20-41-01, Decoding Table for Boeing Finish Codes

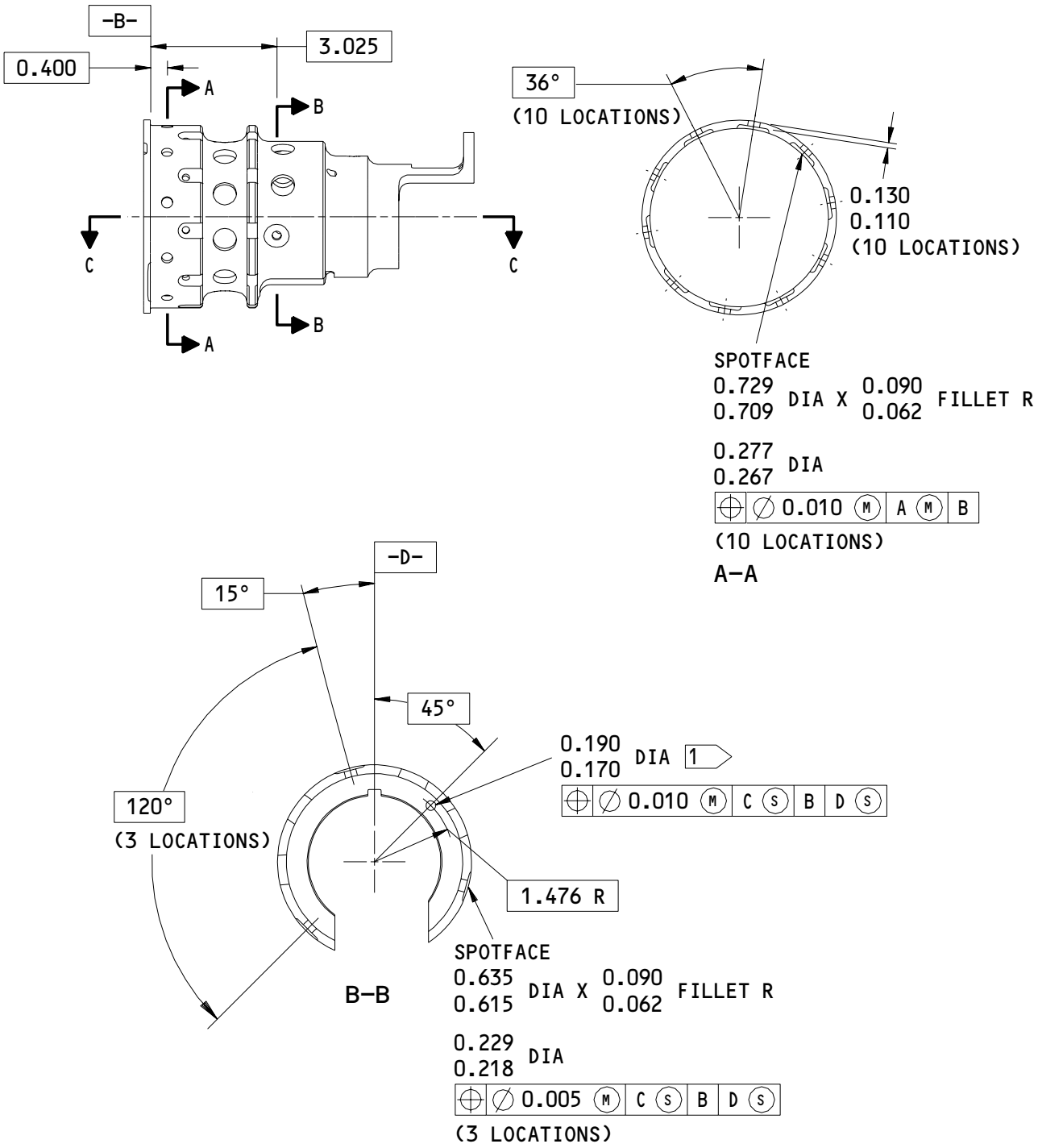
(3) SOPM 20-41-02, Application of Solvent and Chemical Resistant Finishes

(4) SOPM 20-43-01, Chromic Acid Anodizing

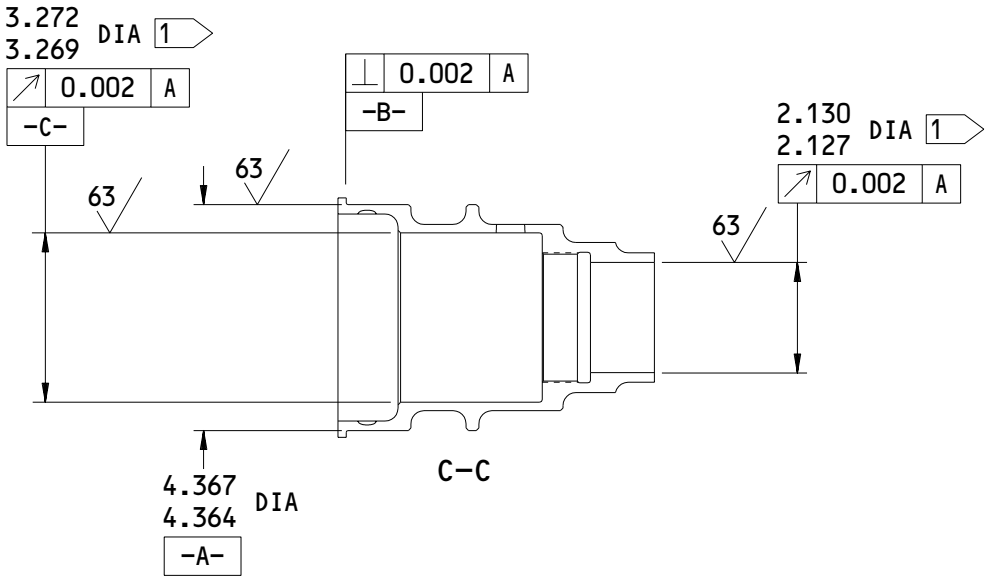
C. Procedure (Fig. 601)

(1) Chromic acid anodize (F-17.05).

(2) Apply BMS 10-11, Type 1 primer (F-20.03) unless shown differently.



294W5131-4
Adapter Repair
Figure 601 (Sheet 1)



1 DO NOT PRIME THIS SURFACE

125 ALL MACHINED SURFACES UNLESS SHOWN DIFFERENTLY

BREAK ALL SHARP EDGES

ALL DIMENSIONS ARE IN INCHES

294W5131-4
ADAI Adapter Repair
Figure 601 (Sheet 2)

ASSEMBLY

1. General

   A. This procedure has the data necessary to assemble the main landing gear brake, wheel and tire, in-axle, and hub cap installation components.

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

   C. Refer to IPL Fig. 1 thru 4 for item numbers.

2. Assembly

   A. Consumable Materials

      NOTE: Equivalent material can be used.

      (1) A00359 Sealant -- BMS 5-95 (SOPM 20-60-04)

      (2) D00378 Grease -- Aeroshell 22 or Mobil 28 (SOPM 20-60-03)

      (3) G01505 Wire -- MS20995N32 Lockwire (SOPM 20-60-04)

      (4) G01395 Compound -- BMS 3-27 Corrosion Inhibiting (SOPM 20-60-02)

   B. References

      (1) SOPM 20-50-01, Bolt and Nut Installation

      (2) SOPM 20-50-02, Installation of Safetying Devices

      (3) SOPM 20-60-04, Miscellaneous Materials

   C. Procedure

      (1) Use standard industry procedures and these steps.

      (2) Assemble the brake assembly (Fig. 701).

WARNING: BMS 3-27 CORROSION INHIBITING COMPOUND CONTAINS SOLVENTS, CHROMATES, AND A SMALL AMOUNT OF BOUND ASBESTOS. REFER TO THE APPLICABLE SAFETY STANDARDS FOR PRECAUTIONS.

CAUTION: BMS 3-27 COMPOUND IS USED ONLY IN STATIC JOINTS WHERE GREASE CANNOT BE APPLIED. BMS 3-27 COMPOUND IN DYNAMIC JOINTS WILL NOT LET THEM MOVE FREELY.

(a) Apply BMS 3-27 corrosion inhibiting compound on bolts (20), and washers (25).

(b) Install bolts, washers (25), sensor (30) to the brake assembly (60).

(c) Install lockwire on bolts (20) by the double-twist procedure.

WARNING: BMS 3-27 CORROSION INHIBITING COMPOUND CONTAINS SOLVENTS, CHROMATES, AND A SMALL AMOUNT OF BOUND ASBESTOS. REFER TO THE APPLICABLE SAFETY STANDARDS FOR PRECAUTIONS.

CAUTION: BMS 3-27 COMPOUND IS USED ONLY IN STATIC JOINTS WHERE GREASE CANNOT BE APPLIED. BMS 3-27 COMPOUND IN DYNAMIC JOINTS WILL NOT LET THEM MOVE FREELY.

(d) Apply BMS 3-27 corrosion inhibiting compound on bolts (45), and washers (50).

(e) Lubricate the packing (70) with BMS 3-11 hydraulic fluid. Install backup ring (65), packing (70), brake half and quick disconnect (QD) (55) on the brake assembly (60).

(f) Align the hole in the bulkhead half with the pin on the brake assembly and install bolts (45), washers (50).

(g) Install lockwire on bolts (45) by the double-twist procedure.

(3) Assemble in-axle assembly (Fig. 702).

(a) Install dog (80), washer (75), and bolt (70) on transducer (85).

(b) Install lockwire on bolt (70) and dog (80) by the double-twist procedure.

(c) Install antiskid assembly (65), adapter (60), and retainer nut (90). Tighten the nut to 480-720 pound-inches.

(d) Install lockwire on retainer nut (90) and to adapter (60) by the double-twist procedure.

(e) Install plate (40), and screws (35) to adapter assembly (45).

(f) Install connector (32) on plate (40) with screws (25) and nuts (30).

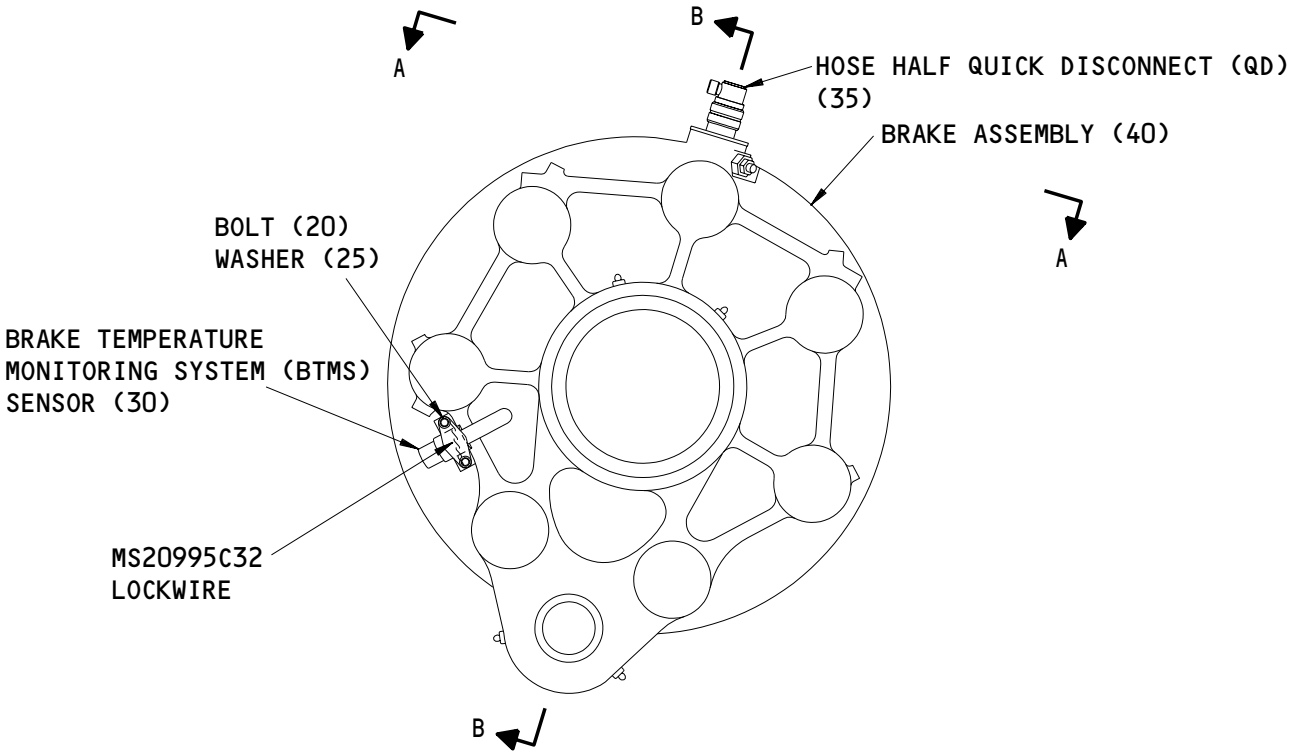
(4) Assemble the wheel and tire assembly (Fig. 703).

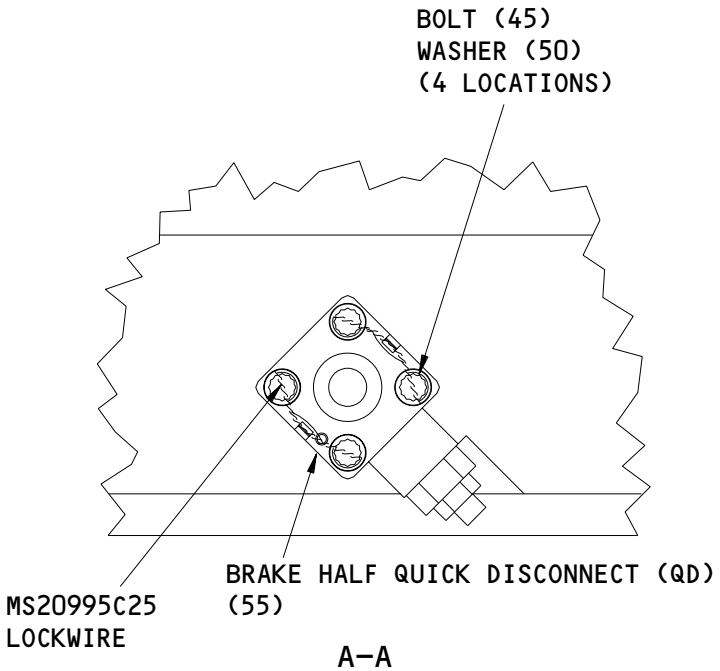
(a) Install coupling assembly (65), cup (55), washer (50), and screw (45). Tighten the screws (45) to 15-20 pound-inches. Do not lockwire.

(b) Install coupling assembly (65), driver (60) on hubcap assembly (30) with washers (25), and bolts (20) (Fig. 704). Tighten bolts (20) to 30-35 pound-inches. Install lockwire by the double-twist procedure.

(5) Install the wheel and assembly on the landing gear.

(6) Install hub cap assembly (15) on main landing gear with V-clamp (5) and spacer (10) (IPL Fig. 4).

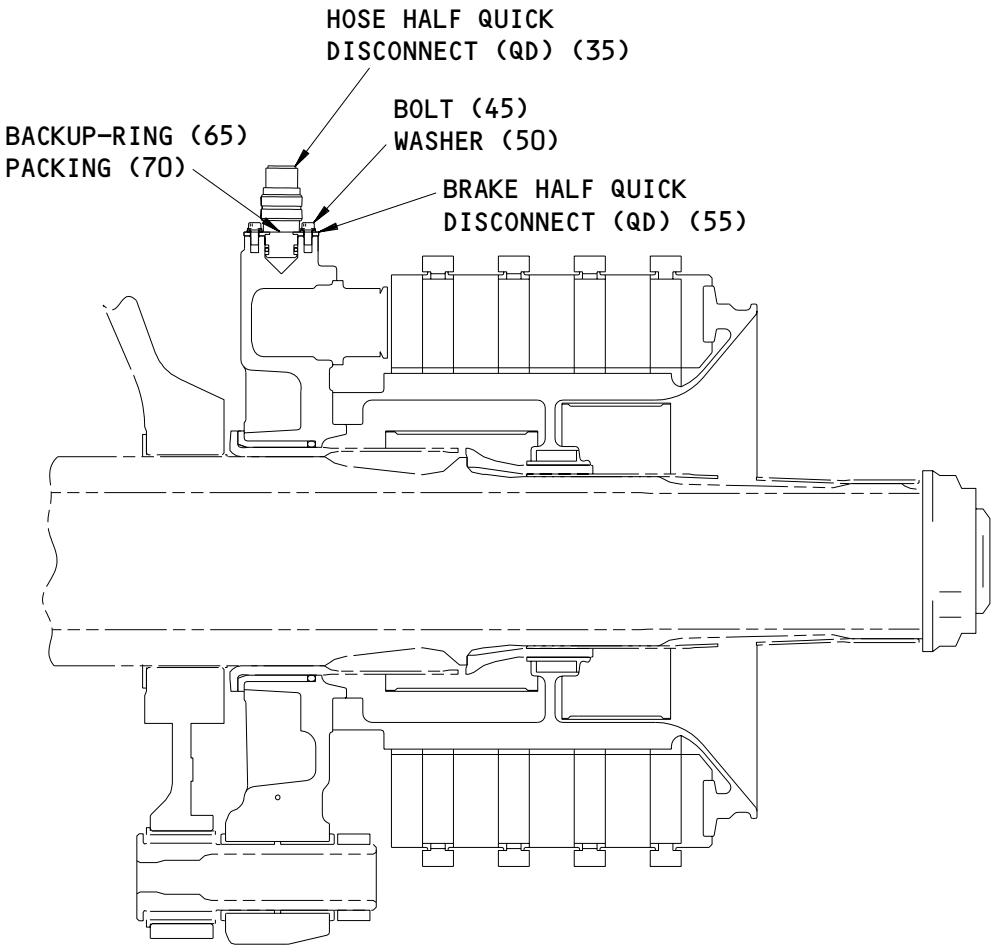




A–A

294W5120-3012
Main Landing Gear Brake Assembly
Figure 701 (Sheet 1)

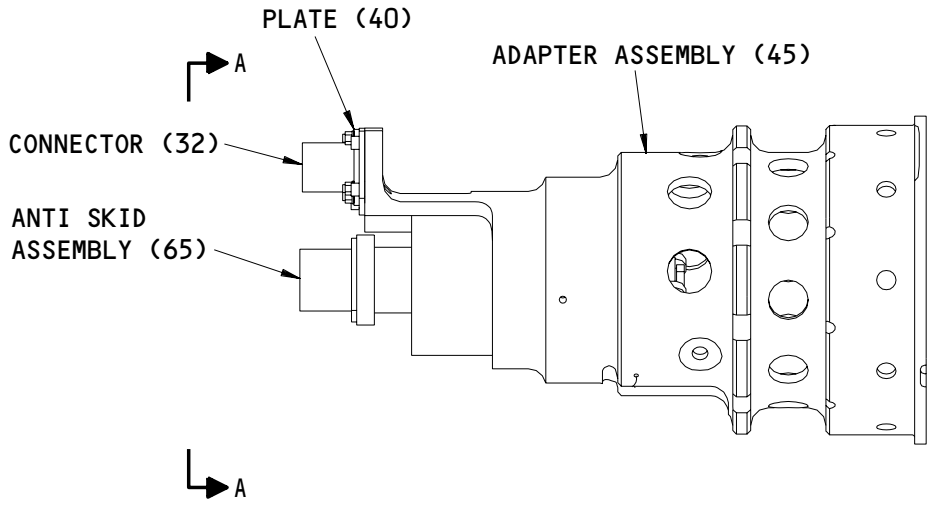
K77280

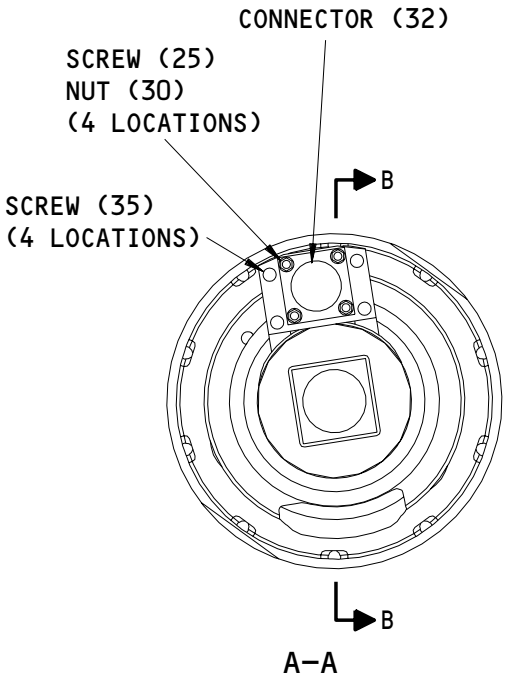


B-B

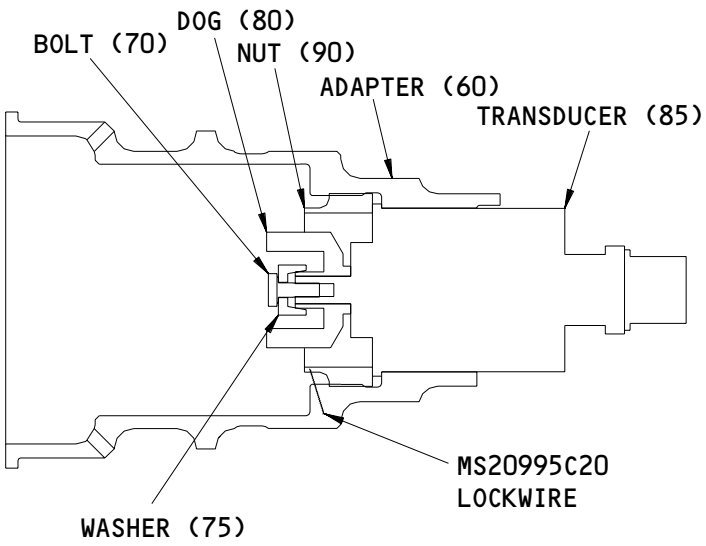
ITEM NUMBERS REFER TO IPL FIG. 1

294W5120-3012
Main Landing Gear Brake Assembly
Figure 701 (Sheet 2)





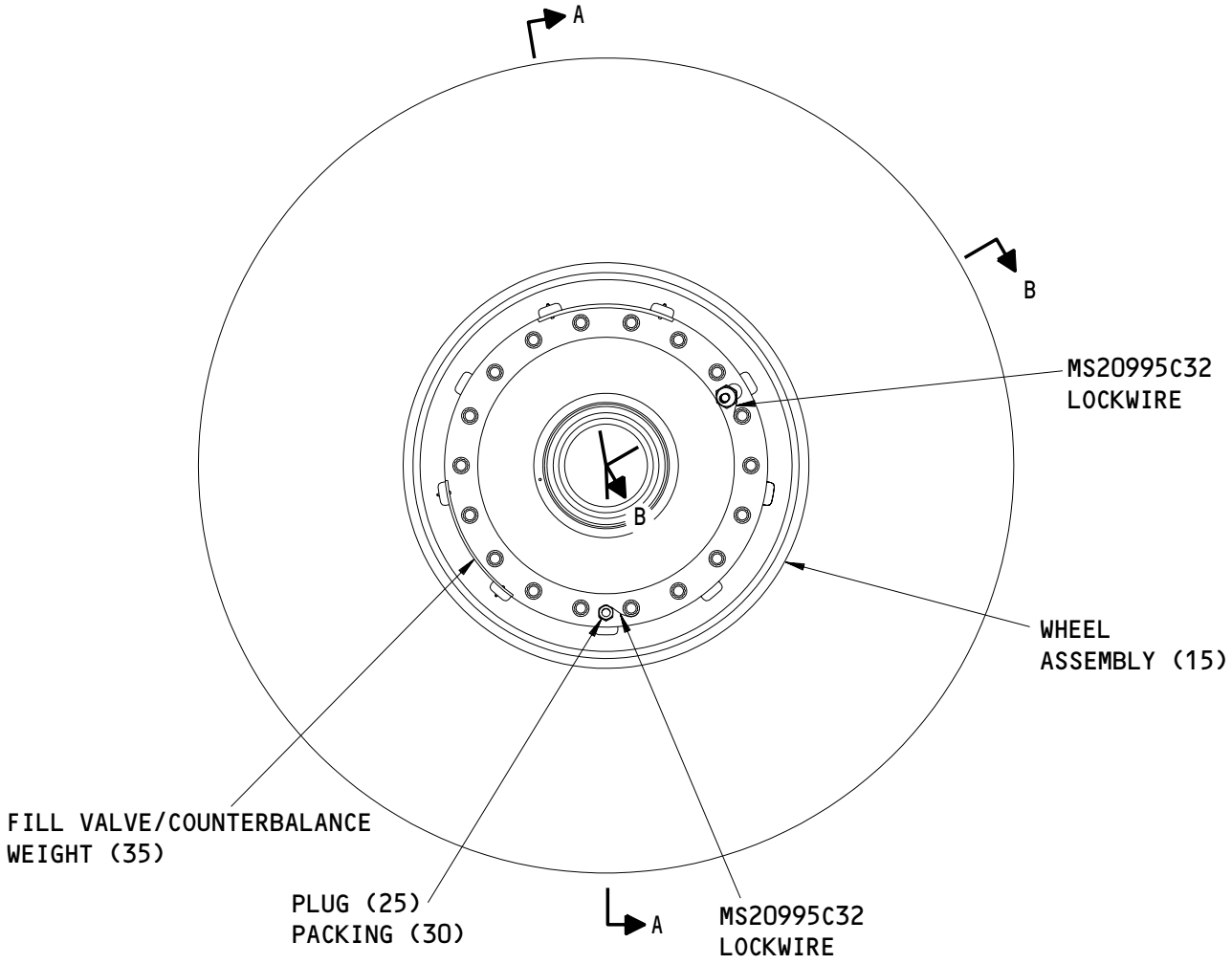
A–A



B–B

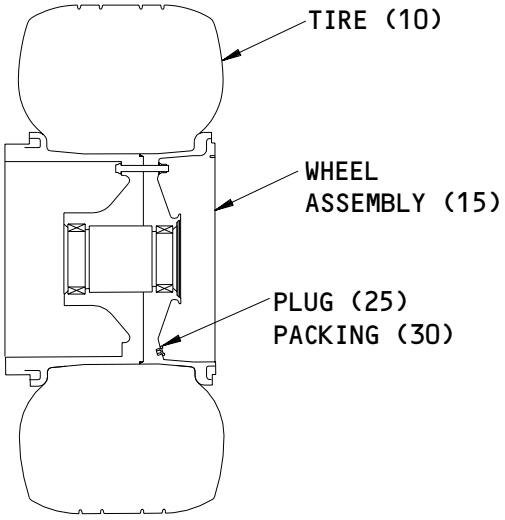
ITEM NUMBERS REFER TO IPL FIG. 3

294W5130-14
Main Landing Gear In-Axle Assembly
Figure 702

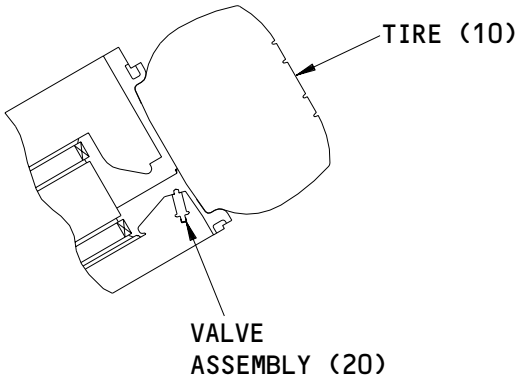


294W5110-374,-375,-376
Main Landing Gear Wheel and Tire Assembly
Figure 703 (Sheet 1)

K77297



A–A

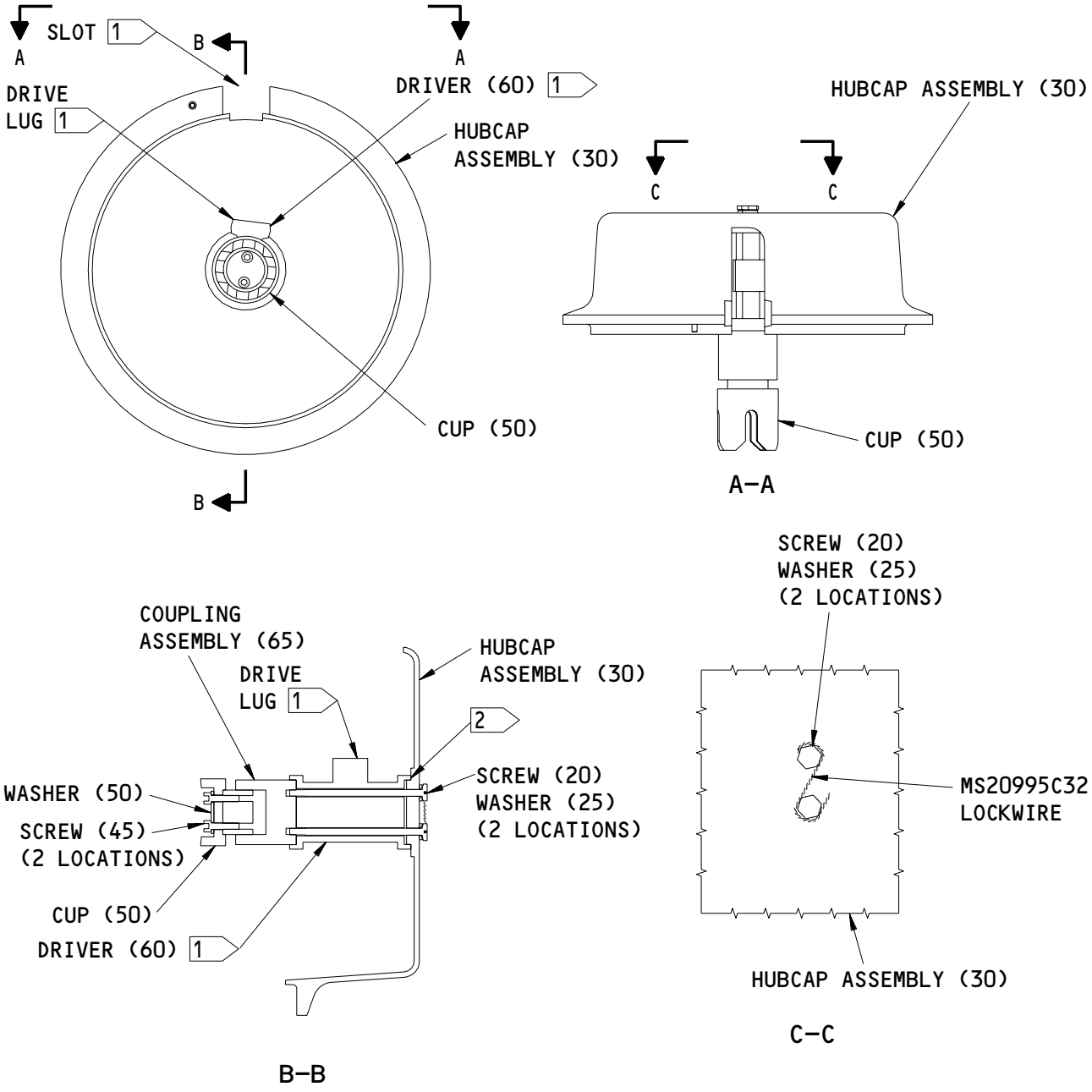


B–B

ITEM NUMBERS REFER TO IPL FIG. 2

294W5110-374,-375,-376
Main Landing Gear Wheel and Tire Assembly
Figure 703 (Sheet 2)

K77299



1 INSTALL DRIVER WITH ITS DRIVE LUG NEAREST TO THE SLOT IN THE HUB CAP

2 APPLY BMS 5-95 SEALANT TO FAYING SURFACE (SOPM 20-50-19)

ITEM NUMBERS REFER TO IPL FIG. 4

294W5140-12
Main Landing Gear Hub Cap Assembly
Figure 704

K78051

ILLUSTRATED PARTS LIST

1. This section lists and illustrates replaceable or repairable component parts. The Illustrated Parts Catalog contains a complete explanation of the Boeing part numbering system.

2. Indentures show parts relationships as follows:

    Assembly
      Detail Parts for Assembly
      Subassembly
      Attaching Parts for Subassembly
        Detail Parts for Subassembly

    Detail Installation Parts (Included only if installation parts may be returned to shop as part of assembly)

3. One use code letter (A, B, C, etc.) is assigned in the EFF CODE column for each variation of top assembly. All listed parts are used on all top assemblies except when limitations are shown by use code letter opposite individual part entries.

4. Letter suffixes (alpha-variants) are added to item numbers for optional parts, Service Bulletin modification parts, configuration differences (Except left- and right-hand parts), product improvement parts, and parts added between two sequential item numbers. The alpha-variant is not shown on illustrations when appearance and location of all variants of the part is the same.

5. Service Bulletin modifications are shown by the notations PRE SB XXXX and POST SB XXXX.

    A. When a new top assembly part number is assigned by Service Bulletin, the notations appear at the top assembly level only. The configuration differences at detail part level are then shown by use code letter.

    B. When the top assembly part number is not changed by the Service Bulletin, the notations appear at the detail part level.

6. Parts Interchangeability

Optional (OPT)	The parts are optional to and interchangeable with other parts having the same item number.
Supersedes, Superseded By (SUPSDS, SUPSD BY)	The part supersedes and is not interchangeable with the original part.
Replaces, Replaced By (REPLS, REPLD BY)	The part replaces and is interchangeable with, or is an alternate to, the original part.

VENDORS

FO217 LABINAL SA
5 AV NEWTON
78051 ST QUENTIN EN YVELINES, FRANCE
FORMERLY PRECISION MECANIQUE LABINAL IN CEDEX, FRANCE

S4233 BRIDGESTONE TIRE CO LTD
1 KYOBASHI 1-CHROME
CHUO-KU, TOKYO 104 JAPAN

0A1K8 MICHELIN AIRCRAFT TIRE CORP
1305 PERIMETER RD
GREENVILLE, SOUTH CAROLINA 29605
FORMERLY IN AKRON, OH; IN CHARLOTTE, NC

02107 FLOUROCARBON CO OHIO DIV
DOVER, OHIO 44622
CANCELLED NO REPLACEMENT
FORMERLY SPARTA MANUFACTURING CO

07128 TETRAFLUOR INC
2051 EAST MAPLE AVENUE
EL SEGUNDO, CALIFORNIA 90245-5009
FORMERLY ROYAL IND TETRAFLUOR DIV V0667B ENGLEWOOD CALIF

07649 SENIOR FLEXONICS METAL BELLOWS DIV
1075 PROVIDENCE HWY
SHARON, MASSACHUSETTS 02067
METAL BELLOWS SEE PARKER-HANNIFIN V92003

11362 PARKER-HANIFFIN CORP STRATOFLEX DIV
3353 OLD CONEJO ROAD
NEWBURY PARK, CALIFORNIA 91320-2162
FORMERLY SYMETRICS INC.

14242 VOSS INDUSTRIES INC
2168 WEST 25TH STREET
CLEVELAND, OHIO 44113-4115

15653 KAYNAR TECHNOLOGY KAYNAR DIV
800 SOUTH STATE COLLEGE BLVD PO BOX 3001
FULLERTON, CALIFORNIA 92831-3001
FORMERLY MICRODOT AEROSP LTD VK6405

22337 BRIDGESTONE/FIRESTONE INC GOV'T CONTRACTS 1
BRIDGESTONE PK
NASHVILLE, TENNESSEE 37214
FORMERLY FIRESTONE TIRE AND RUBBER CO GOVT CONTRACTS DIV
FORMERLY IN AKRON, OHIO

VENDORS

26303 GREENE TWEED IND INC ADVANTEC DIV
7101 PATTERSON DRIVE PO BOX 5037
GARDEN GROVE, CALIFORNIA 92645-5037
FORMERLY OHIO AIRCRAFT SUPPLIES INC IN INGLEWOOD, CALIFORNIA
FORMERLY ADVANTEC DIV OF IFP INC, LOS ANGELES, CA V5P801

26879 CORONADO MFG INC
11069 PENROSE AVENUE
SUN VALLEY, CALIFORNIA 90352-2722
FORMERLY CORONADO PLASTICS INC IN BURBANK, CALIFORNIA

27238 BRISTOL INDUSTRIES
630 EAST LAMBERT ROAD PO BOX 630
BREA, CALIFORNIA 92621-4119

35918 LEWIS ENGINEERING CO
238 WATER STREET
NAUGATUCK, CONNECTICUT 06770-2803
FORMERLY LEWIS ENGINEERING COMPANY V52778
FORMERLY LEWIS ELECTRONIC INSTRUMENTATION DIV OF COLT IND

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

8W928 AEROQUIP CORP AEROSPACE DIV TOCCOA PLANT
MEADOWBROOK INDUSTRIAL PK PO BOX 819
TOCCOA, GEORGIA 30577-0819

81982 CRANE COMPANY HYDRO-AIRE DIV
3000 WINONA AVENUE PO BOX 7722
BURBANK, CALIFORNIA 91510
FORMERLY HYDRO-AIRE DIV CRANE CO AND ADEL VALVE V00502

91816 CIRCLE SEAL CONTROLS INC A WATTS INDUSTRIES INC CO
2301 WARDLOW CIRCLE PO BOX 3300
CORONA, CALIFORNIA 91718
FORMERLY BRUNSWICK CORP CIRCLE SEAL DIV BRUNSWICK VALVE &
CONTROL; FORMERLY CIRCLE SEAL DIV BRUNSWICK VALVE & CONTROL
FORMERLY ZEVCO INC V62701

94878 RAYBESTOS-MANHATTAN INC PACIFIC COAST DIV
FULLERTON, CALIFORNIA 92631
BUSINESS DISCONTINUED

97153 GOODRICH BF ENGINEERED PRODUCTS GROUP
PO BOX 340 WACO STREET
TROY, OHIO 45373-3835

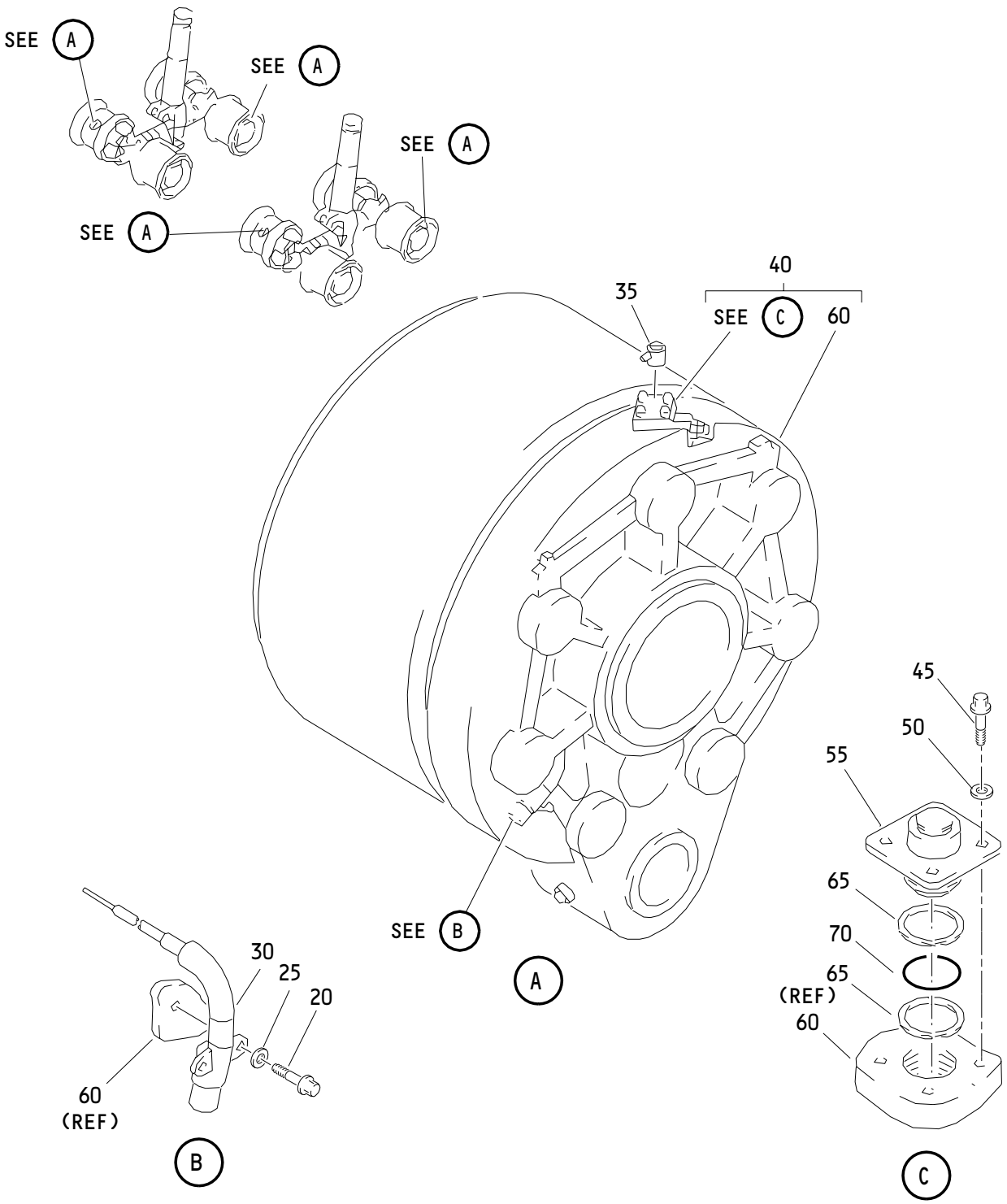
VENDORS

97820 BUSAK AND SHAMBAN INC BEARING DIV
711 MITCHELL ROAD PO BOX 665
NEWBURY PARK, CALIFORNIA 91320-2214
FORMERLY IN CULVER CITY, CALIF; FORMERLY SHAMBAN W S & CO

PART NUMBER	AIRLINE PART NO.	FIG.	ITEM	TTL REQ
APR07621		2	10	8
APR07626		2	10B	8
BACB30MR4HK2		1	20	16
		1	45	32
BACB30NR4K10		3	5	16
BACC10KG936WA		4	5	8
BACN10YR04CD		3	30	32
BACN10YR4CM		3	15A	16
BACN11AG3		2	50	16
BACR12BM211		1	65	16
BACS12ER04K5		3	25	32
BACW10BP3CD		4	25	16
BACW10BP4ACU		1	25	16
		1	50	32
BH00312-04		3	30	32
C11236-211B		1	65	16
H52732-04CD		3	30	32
H52732-4CM		3	15A	16
MS21209C0415P		3	50	32
MS21209F1-10P		3	55	8
M12301IND02		2	10A	8
M83723-61-110A		3	32	8
NAS1149C0332R		2	45	16
NAS1149C0463R		3	10	16
NAS1352N04-4P		3	35	32
NAS1352N08H10		4	45	16
NAS1611-211		1	70A	8
NAS1611-211A		1	70	8
NAS6603-8		2	40	16
NAS6603H2		3	70	8
NAS6703H44		4	20	16
NE103306-0930		4	5A	8
NH1008479-20		4	5	8
PLH54CM		3	15A	16
RMR12BM211		1	65	16
SPEC294W502-663		2	10A	8
STF800-211		1	65	16
S161T102-5		4	65	8
S274A102-13		1	55	8
S274A102-32		1	35	8
S283T001-10		3	85A	8
S283T001-15		3	85	8
S283T015-1		1	30	8
S294W502-6635		2	10	8
S294W511-310		1	60	8

PART NUMBER	AIRLINE PART NO.	FIG.	ITEM	TTL REQ
S294W511-370		2	15	8
S30294-211-1		1	65	16
TF450-211A		1	65	16
VC1296-930		4	5B	8
10-44		2	20	8
140-025-1		3	85A	8
140-025-2		3	85	8
161T1207-1		4	35	8
161T1209-1		3	90	8
161T1220-1		4	55	8
161T1221-1		3	80A	8
161T1221-3		3	80	8
161T1222-1		3	75	8
161T1223-1		4	50	8
163U6003-1		4	30	8
163U6003-3		4	40	8
163U6003-6		4	30A	8
163U6003-7		4	40A	8
163U6008-2		4	60	8
165T0001-1		1	1A	RF
165T0002-1		1	5	RF
		2	1	RF
165T0002-2		1	5A	RF
		2	1A	RF
165T0002-3		1	5B	RF
		2	1B	RF
165T0003-1		1	10	RF
		3	1	RF
165T0004-1		1	15	RF
		4	1	RF
165T0101-102		3	65	8
2-1566		1	60	8
2100-211		1	65	16
294W5110-374		2	5	8
294W5110-375		2	5A	8
294W5110-376		2	5B	8
294W5120-3012		1	40	8
294W5130-14		3	20	8
294W5131-2		3	60A	8
294W5131-3		3	45	8
294W5131-4		3	60	8
294W5132-1		3	40	8
294W5140-12		4	15	8
294W5141-1		4	10	8
294W5142-1		4	30B	8
294W5142-2		4	40B	8

PART NUMBER	AIRLINE PART NO.	FIG.	ITEM	TTL REQ
3-1540		2	15	8
3100152		1	30	8
4305901160		2	25A	8
4305910630		2	30A	8
49-319		2	25	8
591300-13		1	55	8
591300-32		1	35	8
60B10055-4		2	20	8
68-1313		2	30	8
84490-1		4	65	8
97-151		2	35	8



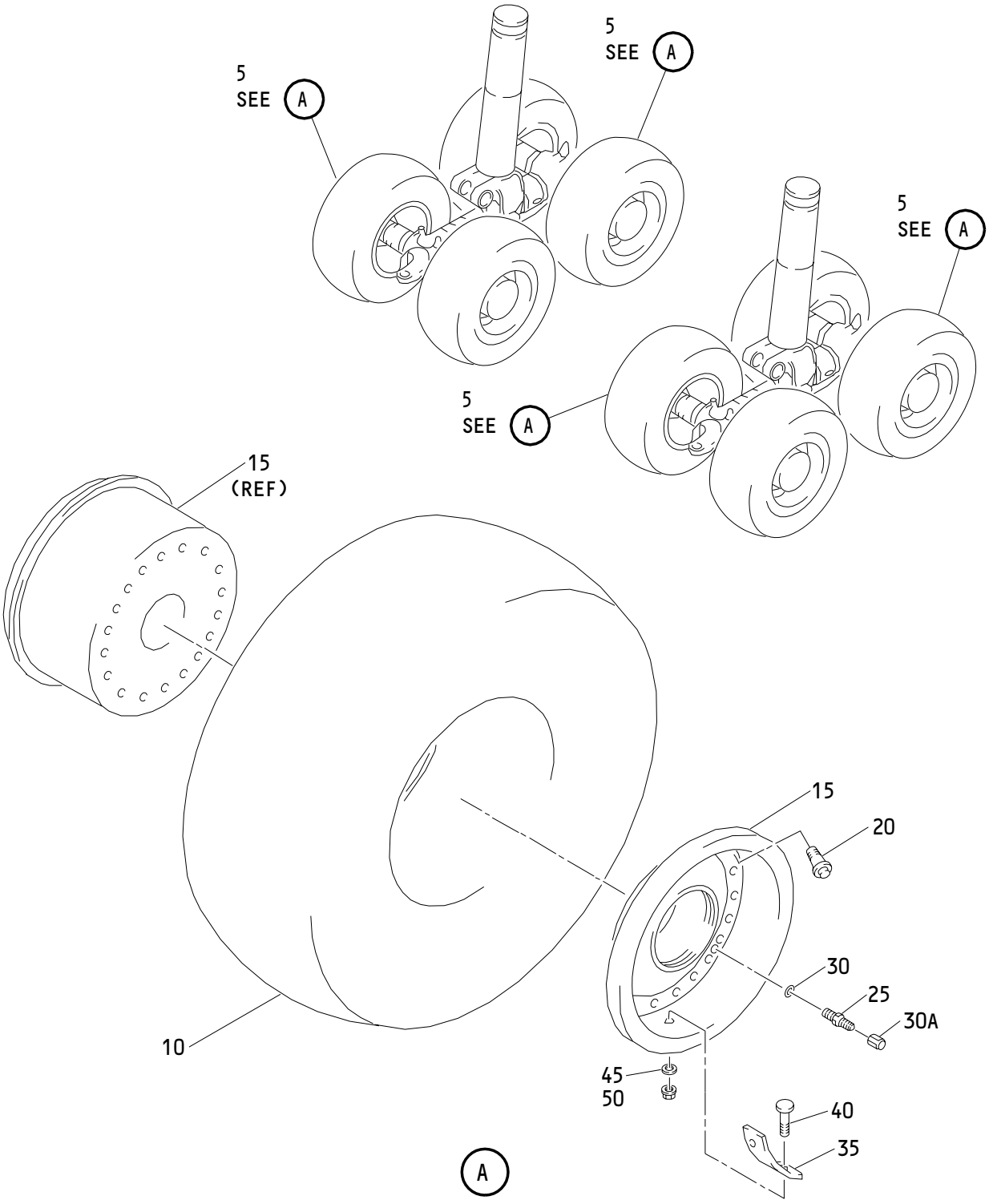
Main Landing Gear Brake Assembly
Figure 1

K73218

FIG. & ITEM	PART NO.	AIRLINE PART NUMBER	NOMENCLATURE 1234567	EFF CODE	QTY PER ASSY
01-			MAIN LANDING GEAR BRAKE,WHEEL AND TIRE, IN-AXLE, HUB CAP INSTL		
-1A	165T0001-1		BRAKE INSTL	A	RF
-5	165T0002-1		WHEEL AND TIRE INSTL-BFG R32, BS R32 NON-TPIS, SM BORE GAUGE, BFG HGW WHEEL (FOR DETAILS SEE FIG. 2)	B	RF
-5A	165T0002-2		WHEEL AND TIRE INSTL-BFG R32, MI R32 BFE TIRE, NON-TPIS, SM BORE FILL VALVE/GAUGE (FOR DETAILS SEE FIG. 2)	E	RF
-5B	165T0002-3		WHEEL AND TIRE INSTL-BFG R32, MI R32 BFE TIRE, W/TPIS SENSOR HOLDER, SM BORE FILL VALVE/GAUGE (FOR DETAILS SEE FIG. 2)	F	RF
-10	165T0003-1		IN AXLE INSTL- (NON TPIS) (FOR DETAILS SEE FIG. 3)	C	RF
-15	165T0004-1		HUB CAP INSTL- (FOR DETAILS SEE FIG. 4)	D	RF
20	BACB30MR4HK2		.BOLT	A	16
25	BACW10BP4ACU		.WASHER	A	16
30	3100152		.SENSOR-BTMS (V35918) (SPEC S283T015-1)	A	8
35	591300-32		.QD-HOSE HALF (V11362) (SPEC S274A102-32)	A	8
40	294W5120-3012		.BRAKE ASSY-BFG	A	8
45	BACB30MR4HK2		..BOLT	A	4
50	BACW10BP4ACU		..WASHER	A	4
55	591300-13		..QD-BRAKE HALF (V11362) (SPEC S274A102-13)	A	1
60	2-1566		..BRAKE ASSY-BFG (V97153) (SPEC S294W511-310)	A	1

FIG. & ITEM	PART NO.	AIRLINE PART NUMBER	NOMENCLATURE 1234567	EFF CODE	QTY PER ASSY
01-65	C11236-211B		..RING-BACKUP (V26879) (SPEC BACR12BM211) (OPT RMR12BM211 (V94878)) (OPT STF800-211 (V02107)) (OPT S30294-211-1 (V97820)) (OPT TF450-211A (V07128)) (OPT 2100-211 (V26303))	A	2
70	NAS1611-211A		..PACKING- (OPT ITEM 70A)	A	1
-70A	NAS1611-211		..PACKING- (OPT ITEM 70)	A	1

- Item Not Illustrated



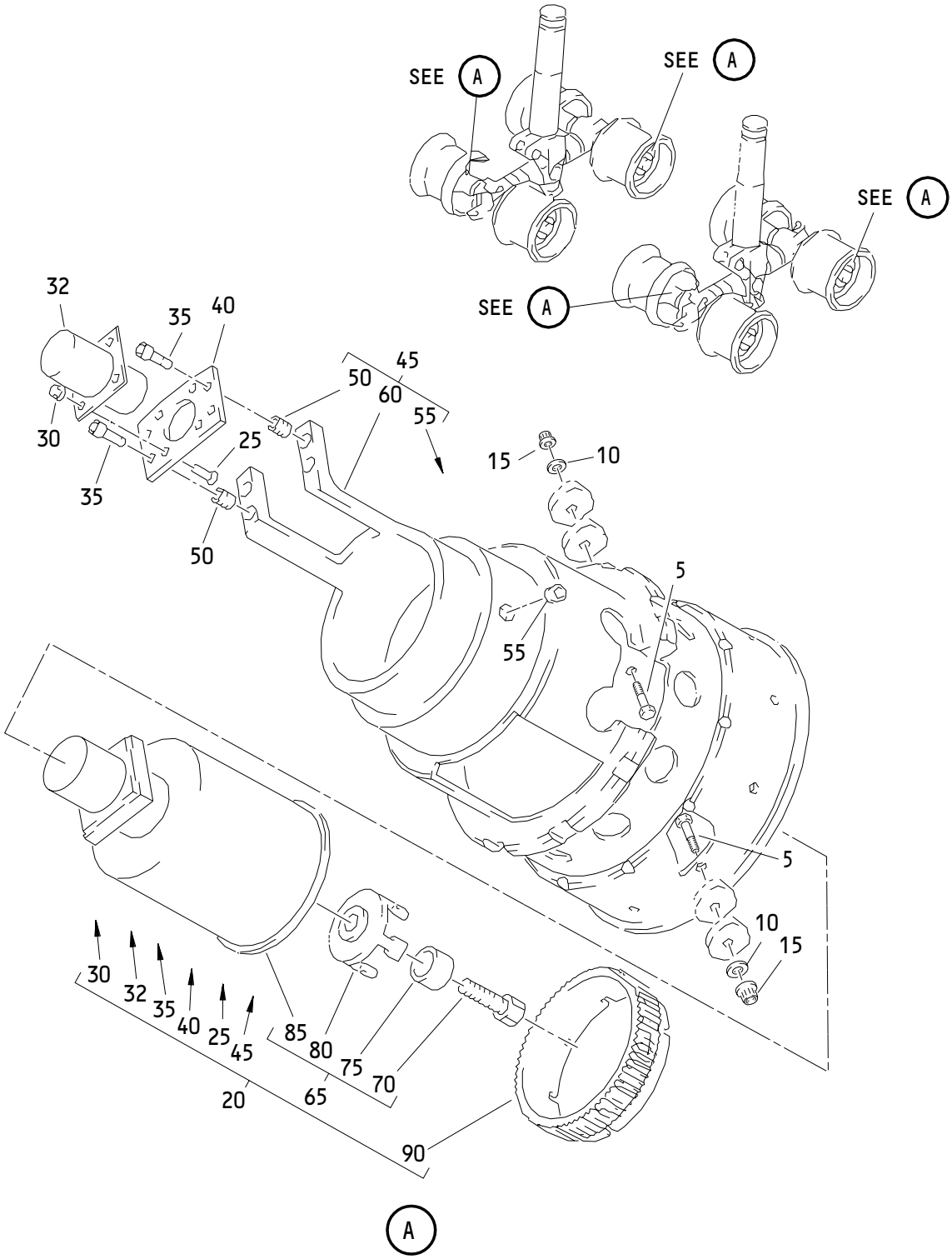
Main Landing Gear Wheel and Tire Assembly
Figure 2

K73046

FIG. & ITEM	PART NO.	AIRLINE PART NUMBER	NOMENCLATURE 1234567	EFF CODE	QTY PER ASSY
02-					
-1	165T0002-1		WHEEL AND TIRE INSTL-BFG R32, BS R32 NON-TPIS, SM BORE GUAGE, BFG HGW WHEEL	B	RF
-1A	165T0002-2		WHEEL AND TIRE INSTL-BFG R32, MI R32 BFE TIRE, NON-TPIS, SM BORE FILL VALVE/GAUGE	E	RF
-1B	165T0002-3		WHEEL AND TIRE INSTL-BFG R32, MI R32 BFE TIRE, W/TPIS SENSOR HOLDER, SM BORE FILL VALVE/GAUGE	F	RF
5	294W5110-374		.WHEEL AND TIRE ASSY	B	8
-5A	294W5110-375		.WHEEL AND TIRE ASSY	E	8
-5B	294W5110-376		.WHEEL AND TIRE ASSY	F	8
10	APR07621		..TIRE-RADIAL 32PR 50X20 R22 BRIDGESTONE (VS4233) (SPEC S294W502-6635)	B	1
-10A	M12301IND02		..TIRE-RADIAL 32PR 50X20 R22 MICHELIN (V0A1K8) (SPEC294W502-6634)	E,F	1
-10B	APR07626		..TIRE-RADIAL 32PR 50X20 R22 BRIDGESTONE (V22337) (SPEC S294W502-6635) (OPT APR07621 (VS4233))	B	1
15	3-1540		..WHEEL ASSY-RADICAL 32 BFG (V97153) (SPEC S294W511-370)	B,E,F	1
20	10-44		..VALVE ASSY-FILL/GAUGE SMALL BORE GSE INTERFACE (V91816) (SPEC 60B10055-4)	B,E,F	1

FIG. & ITEM	PART NO.	AIRLINE PART NUMBER	NOMENCLATURE 1234567	EFF CODE	QTY PER ASSY
02-					
25	49-319		..PLUG-TPIS PORT (V97153)	B,E	1
-25A	4305901160		..HOLDER-PRESSURE (VF0217)	F	1
30	68-1313		..PACKING-TPIS PORT (V97153)	B,E	1
30A	4305910630		..CAP-PRESSURE SEAL (VF0217)	F	1
35	97-151		..WEIGHT-BAL FILL PORT (V97153)	B,E,F	1
40	NAS6603-8		..BOLT	F	2
45	NAS1149C0332R		..WASHER	F	2
50	BACN11AG3		..NUT	F	2

- Item Not Illustrated

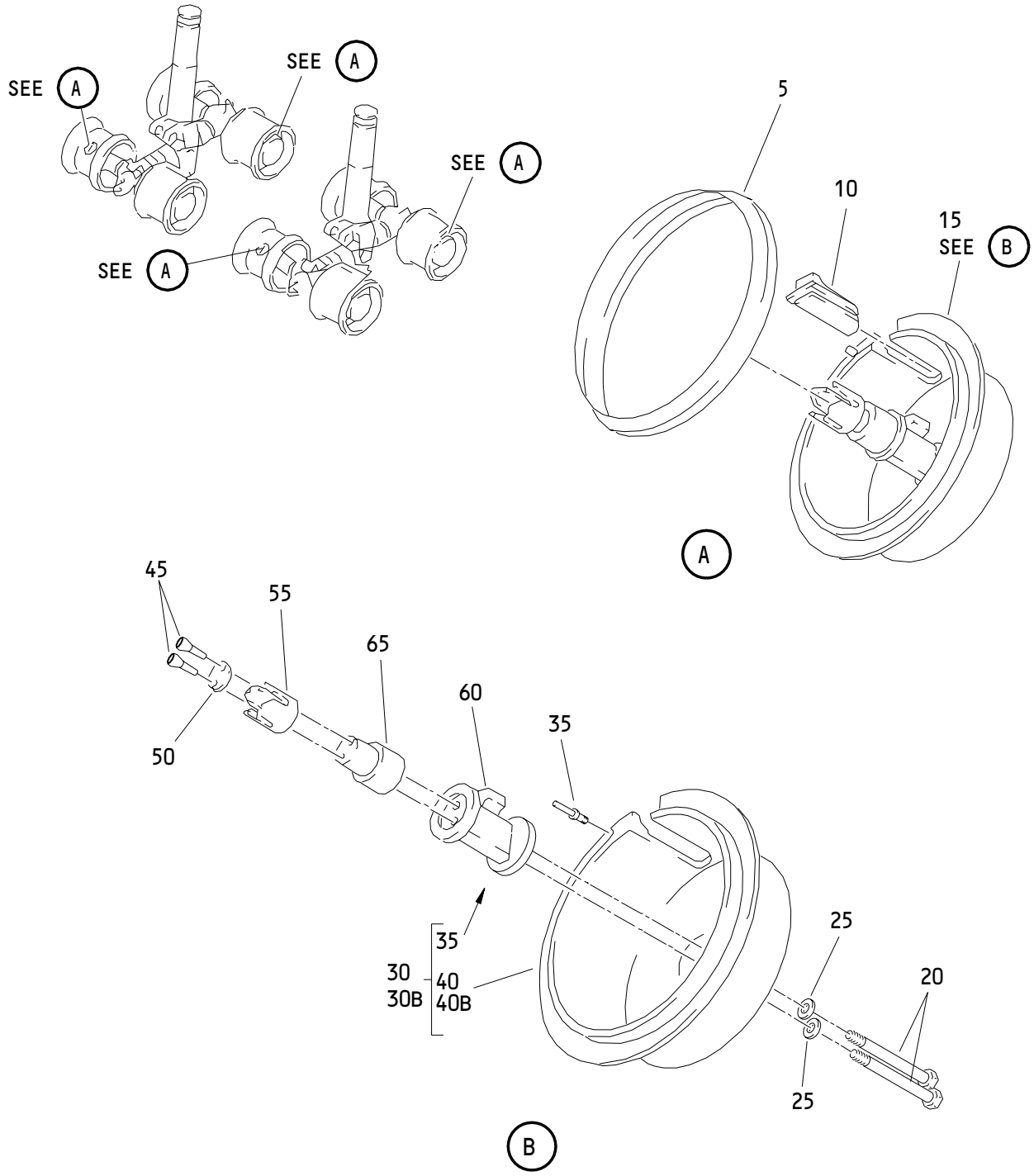


Main Landing Gear In-Axle Assembly
Figure 3

	FIG. & ITEM	PART NO.	AIRLINE PART NUMBER	NOMENCLATURE 1234567	EFF CODE	QTY PER ASSY
	03-					
	-1	165T0003-1		IN AXLE INSTL-NON TPIS	C	RF
	5	BACB30NR4K10		.BOLT	C	16
	10	NAS1149C0463R		.WASHER	C	16
	15	BACN10YR4CH		DELETED		
	15A	H52732-4CM		.NUT- (V15653) (SPEC BACN10YR4CM) (OPT PLH54CM (V62554))	C	16
	20	294W5130-14		.IN AXLE ASSY	C	8
	25	BACS12ER04K5		..SCREW	C	4
	30	H52732-04CD		..NUT- (V15653) (SPEC BACN10YR04CD) (OPT BH00312-04 (V27238))	C	4
	32	M83723-61-110A		..CONNECTOR-DUMMY	C	1
	35	NAS1352N04-4P		..SCREW	C	4
	40	294W5132-1		..PLATE	C	1
	45	294W5131-3		..ADAPTER ASSY	C	1
	50	MS21209C0415P		...INSERT	C	4
	55	MS21209F1-10P		...INSERT	C	1
	60	294W5131-4		...ADAPTER- (OPT ITEM 60A)	C	1
	-60A	294W5131-2		...ADAPTER- (OPT ITEM 60)	C	1
	65	165T0101-102		..ANTISKID ASSY	C	1
	70	NAS6603H2		...BOLT	C	1
R	75	161T1222-1		...WASHER	C	1
R	80	161T1221-3		...DOG- (OPT ITEM 80A)	C	1

	FIG. & ITEM	PART NO.	AIRLINE PART NUMBER	NOMENCLATURE 1234567	EFF CODE	QTY PER ASSY
	03-					
R	-80A	161T1221-1		...DOG- (OPT ITEM 80)	C	1
	85	140-025-2		...TRANSDUCER-ANTI-SKID (V81982) (SPEC S283T001-15) (OPT ITEM 085A)	C	1
	-85A	140-025-1		...TRANSDUCER-ANTI SKID (V81982) (SPEC S283T001-10) (OPT ITEM 085)	C	1
R	90	161T1209-1		..RETAINER	C	1

- Item Not Illustrated



Main Landing Gear Hub Cap Assembly
Figure 4

K73195

	FIG. & ITEM	PART NO.	AIRLINE PART NUMBER	NOMENCLATURE 1234567	EFF CODE	QTY PER ASSY
	04-					
	1	165T0004-1		HUB CAP INSTL	D	RF
	5	NH1008479-20		.CLAMP-V (V8W928) (SPEC BACC10KG936WA) (OPT ITEMS 5A, 5B)	D	8
	-5A	NE103306-0930		.CLAMP-V (OPT ITEMS 5, 5B)	D	8
	-5B	VC1296-930		.CLAMP-V (V14242) (OPT ITEMS 5, 5A)	D	8
	10	294W5141-1		.SPACER-LONG	D	8
	15	294W5140-12		.HUB CAP ASSY	D	8
	20	NAS6703H44		..BOLT	D	2
	25	BACW10BP3CD		..WASHER	D	2
	30	163U6003-1		..HUB ASSY- (OPT ITEMS 30A, 30B)	D	1
	-30A	163U6003-6		..HUB ASSY- (OPT ITEMS 30, 30B)	D	1
	-30B	294W5142-1		..HUB ASSY- (OPT ITEMS 30, 30A)	D	8
	35	161T1207-1		...PIN-LOCATOR	D	1
	40	163U6003-3		...HUB- (USED ON ITEM 30)	D	1
	-40A	163U6003-7		...HUB- (USED ON ITEM 30A)	D	1
	-40B	294W5142-2		...HUB- (USED ON ITEM 30B)	D	1
	45	NAS1352N08H10		..SCREW	D	2
R	50	161T1223-1		..WASHER	D	1
R	55	161T1220-1		..CUP	D	1
	60	163U6008-2		..DRIVER	D	1
	65	84490-1		..COUPLING ASSY- (V07649) (SPEC S161T102-5)	D	1

- Item Not Illustrated