TO: ALL HOLDERS OF THE OUTBOARD LEADING EDGE SLAT DRIVE NO-BACK/OFFSET GEARBOX ASSEMBLY COMPONENT MAINTENANCE MANUAL 27-81-62.

REVISION NO. 2 DATED MAR 01/05

HIGHTLIGHTS

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
101-102 701-702	Updated the consumable materials list
102,107,109 302-303 705,711	Updated the item number
105	Deleted unnecessary efficiency test
106-109 301-302 401 501-502 REPAIR 1-1 601 REPAIR 3-1 601 REPAIR 3-2 601 REPAIR 4-1 601 REPAIR 6-1 602 REPAIR 7-1 601-602 704,716,720,725	Edited without technical change

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801,805-806	HIGHLIGHT CONTINUED FROM PREVIOUS PAGE
107 714	Added storage information
302-303 501 REPAIR 1-1 602,604 706,712 1021,1035	Replaced dead shaft 256T2259-1 with 256T2259-3, with changed finish
303-304	Added details to the disassembly procedure
502	Updated the check procedures
REPAIR 1-1 602-606,609-610	Updated the finish requirements
REPAIR 2-1 601 REPAIR 5-1 601 REPAIR 6-1 601 REPAIR 8-1 601 702	Updated the references to the Standard Practices

CHAPTER/SECTION AND PAGE NO.	DESCRIPTION OF CHANGE
REPAIR 3-2 603-604 REPAIR 4-1 603-605 REPAIR 7-1 604-605	Added details of the chrome plate repair
REPAIR 7-1 603,606-607	Added details of the refinish
702	Added general procedures for seal installation
703	Added general procedures to seal the retainers and housings
705,707-708,710, 713,721,726	Added BMS 3-33 grease as an option to Mobilgrease 28 or BMS 3-24
705-708,710-713, 721,726	Added BMS 3-38 corrision-inhibiting paste as an option to BMS 3-27 compound
708-709,714,718, 723	Added details to the assembly procedure
710,714	Added Type 70 adhesive as an option to Type 89
1002-1004	Updated the Vendors list
1005-1010,1019-1024, 1033-1038	Updated the parts list

CHAPTER/SECTION AND PAGE NO.	DESCRIPTION OF CHANGE
1019-1020,1024,1033, 1037	Added optional seals
1022,1036	Added optional bearings

BOEING

COMPONENT
MAINTENANCE MANUAL

OUTBOARD LEADING EDGE SLAT DRIVE NO-BACK/OFFSET GEARBOX ASSEMBLY

PART NUMBERS 256T5220-1
256T5240-1

COMPONENT MAINTENANCE MANUAL
WITH
ILLUSTRATED PARTS LIST

K06411

COMPONENT
MAINTENANCE MANUAL

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.

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BOEING

COMPONENT
MAINTENANCE MANUAL

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TABLE OF CONTENTS

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:

OUTBOARD LEADING EDGE SLAT DRIVE NO-BACK/OFFSET GEARBOX ASSEMBLY

DESCRIPTION AND OPERATION

1. Description

   A. The Outboard No-Back/Offset Gearbox Assemblies covered in this component maintenance manual (CMM) consist of two types of gearbox assemblies. The 256T5220 gearbox assembly consist of input couplings, an input shaft, a pinion gear, a dead shaft, a second stage gear, a stator, bearings, brake cover plate and seals assembled inside the left and right housing assemblies. It also has a brake assembly installed inside brake housing assembly attached to the right housing assembly and the input shaft.

   B. The 256T5240 gearbox assembly is similar to the 256T5220 gearbox assembly except for a shorter input shaft and a slightly different left housing assembly. It does not have the extra brake cover plate, packing, and seal.

2. Operation

   A. The Outboard No-Back/Offset Gearbox Assemblies support the outboard leading edge slat drive system of the aircraft. The assembly receives inputs from the leading edge slat and provides an input into the leading slat rotary actuators and torque tube assemblies connected to it. These gearboxes have no-back brake assemblies so air loads on the slats will not turn the gears in a backward direction. They contain a shearout to prevent damage to the unit if to much force is applied to the gears.

3. Leading Particulars (Approximate)

   A. Length -- 8 inches

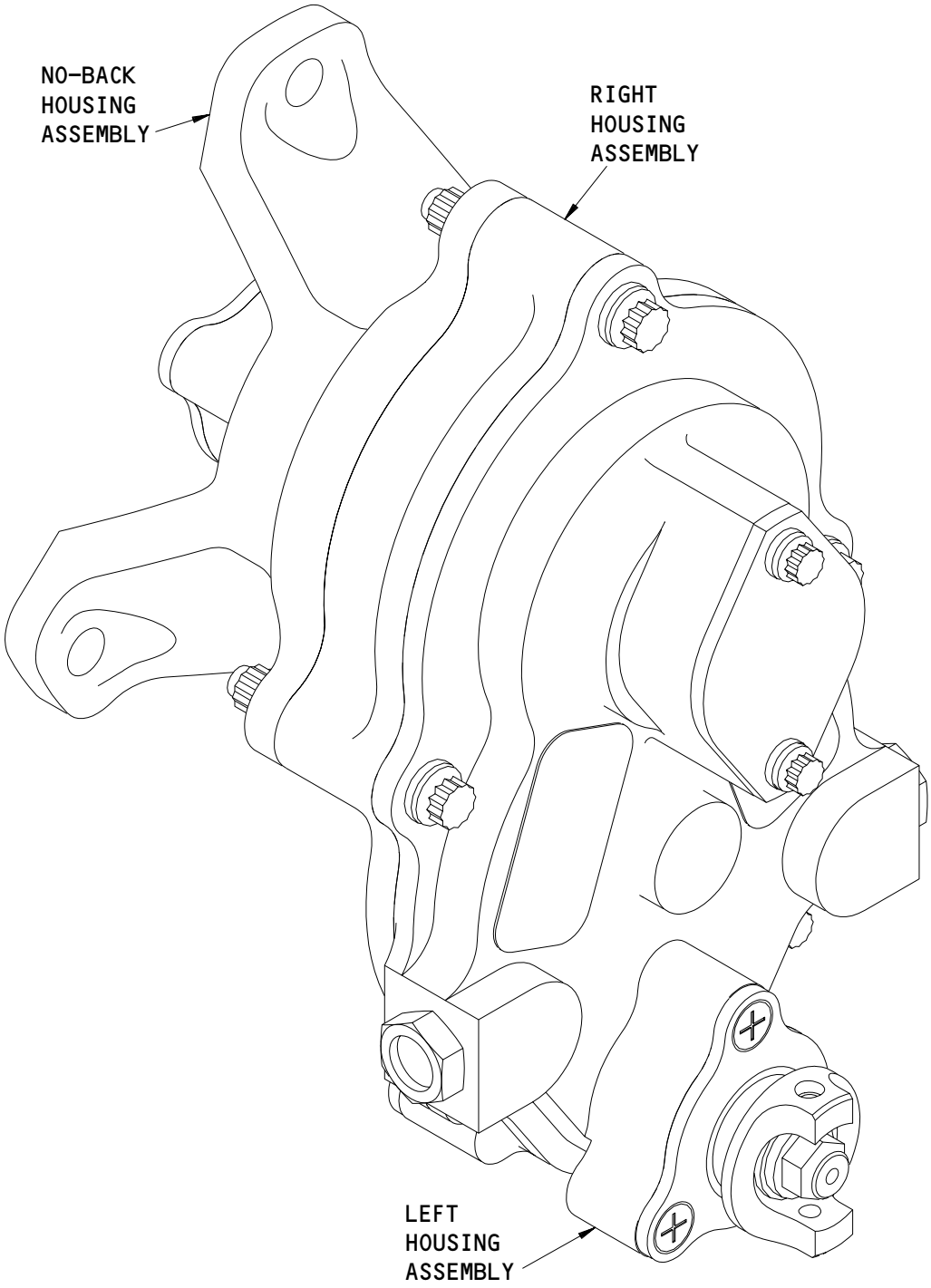
   B. Width -- 10 inches

   C. Height -- 6 inches

   D. Weight

      (1) 256T5220 -- 7.23 pounds

      (2) 256T5240 -- 7.13 pounds



256T5220-1 SHOWN
256T5240-1 SIMILAR

Outboard Leading Edge Slat Drive No-Back/Offset Gearbox Assembly
Figure 1

TESTING AND FAULT ISOLATION

1. General

   A. This procedure contains the data necessary to do a test of the outboard no-back/offset gearbox assembly after an overhaul or for fault isolation. There are three parts:

      (1) Assembly Test

         (a) Wear-In Test

         (b) Lost Motion Test

         (c) Lockup Motion Test

         (d) No-Load Drag Torque Test

         (e) Efficiency Test

         (f) Pressure Test

      (2) Fault Isolation

      (3) Fault Correction

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

   C. Refer to IPL Figs. 1 and 2 for item numbers.

2. Outboard No-Back/Offset Gearbox Assembly Test

   A. Special Tools and Equipment

      NOTE: Equivalent tool and equipment can be used.

      (1) J27054-1 -- Pressure Test Equipment

   B. Consumable Materials

      NOTE: Equivalent material can be used.

      (1) D00590 Fluid -- Brayco 795 (SOPM 20-60-03)

(2) D00633 Grease -- BMS 3-33 (SOPM 20-60-03)

C. References

(1) 27-81-62/301, Disassembly

(2) 27-81-62/701, Assembly

(3) SOPM 20-60-03 -- Lubricants

D. Prepare for Test

(1) Install the gearbox assembly on the test fixture.

(2) The seal (285A) in the brake access space of the no-back/offset gearbox assembly must be open to air pressure for the length of the tests.

(a) Remove the screws (275) and the seal retainer (280) from the gearbox assembly.

(b) Make sure that the seal (285) stays axially clamped in the no-back housing assembly (315) during the test.

E. Procedure

NOTE: Do all functional tests at room temperature.

(1) For all functional tests, clockwise rotation is defined as the clockwise direction of rotation when looking at the output shaft side of the gearbox.

(2) Do the Wear-In Test.

(a) If any of the gears or brake disks are replaced, a loaded wear-in test must be done as follows; otherwise, do the standard wear-in test.

1) Turn the input shaft (115) clockwise at a speed of 760-925 RPM with a load of 680-720 pound-inches of torque against the output shaft (265) for 7 seconds.

2) After 7 seconds, let the gearbox assembly come to a stop.

3) Permit the gearbox assembly to stay stopped for 10 seconds.

4) Turn the input shaft (115) clockwise at a speed of 760-925 RPM with a load of 330-370 pound-inches of torque against the output shaft (265) for 7 seconds.

5) After 7 seconds, let the gearbox assembly come to a stop.

6) Permit the gearbox assembly to stay stopped for 10 seconds.

7) Do the Wear-In steps above for nine more times and then continue with the Lost Motion test below.

8) Reverse the direction and order of the output shaft load levels and then to the wear-in steps clockwise and counterclockwise 10 times.

(b) Standard Wear-In Test

1) Turn the input shaft (115) clockwise at a speed of 760-925 RPM for 7 seconds.

2) After 7 seconds, let the gearbox come to a stop.

3) Let gearbox remain stopped for 10 seconds.

4) Turn the input shaft (115) counterclockwise at a speed of 760-925 RPM for 7 seconds.

5) After 7 seconds, let the gearbox come to a stop.

6) Let gearbox remain stopped for 10 seconds.

7) Do the above wear-in steps nine more times and then continue on with the Lost of Motion Test.

(3) Do the Lost Motion Test.

(a) Make sure the output shaft (265) can turn freely.

(b) Adjust the input shaft (115) sensor to zero.

1) Turn the input shaft (115) a minimum of one turn in the counter clockwise direction.

2) Record the position the input shaft (115) stopped.

(c) Do the following at the same time:

1) Turn the input shaft (115) a minimum of one turn in the clockwise direction.

2) Monitor the output shaft (265) for movement.

(d) When the output shaft (265) moves, stop turning input shaft (115).

(e) Measure the angle that the input shaft (115) turned from zero position.

(f) Write the angle that the input shaft (115) turned on a piece of paper.

(g) Repeat the steps (b) thru (f) above in the opposite direction.

(h) Make sure the angle that the input shaft (115) turns in each direction is between 200 and 219 degrees.

(4) Do the Lock-Up Motion Test.

CAUTION: TO PREVENT DAMAGE TO THE BRAKE ASSEMBLY (170) DURING LOCKUP MOTION TEST, MAKE SURE THE TORQUE APPLIED TO THE OUTPUT SHAFT (265) IS NOT MORE THAN 1200 POUND-INCHES.

(a) Make sure the input shaft (115) can turn freely.

(b) Position yourself on the side of the gearbox assembly that has no-back housing assembly (315).

(c) Turn the input shaft (115) a minimum of one turn in the counter clockwise direction.

(d) Apply 880-920 pound-inches of load to the output shaft (265) in the clockwise direction.

1) Use the inside hex hole in the end of the output shaft (265) to apply the load.

(e) Measure the angle of the output shaft (265) turned in the clockwise rotation.

(f) Write the angle of the output shaft (265) turned in the clockwise rotation on a piece of paper.

(g) Monitor the output shaft (265) for 10 seconds while the load is applied.

1) Make sure that the output shaft (265) does not move.

(h) Adjust the input shaft (115) sensor to zero.

(i) Repeat steps (a) thru (g) above in the opposite direction.

(j) Make sure that the angle the output shaft (265) turned is not greater than 17 degrees in either direction.

(5) Do the No-Load Drag Torque Test.

(a) Make sure the input shaft (115) can turn freely.

(b) Turn the input shaft (115) a minimum of two turns in the clockwise direction at speed no more than 10 RPM.

(c) Make sure the output shaft (265) operates smoothly with no evidence of binding or rough operation.

(d) Measure the torque required to turn the input shaft (115).

(e) Make sure the torque required to turn the input shaft (115) is 8-13 pound-inches.

(f) Repeat the steps above in the opposite direction.

(6) Deleted.

(7) Do the Pressure Test

(a) Drain and clean out all the oil from the gearbox.

(b) Refill the gearbox with 255-295 cubic centimeters of Brayco 795 oil.

(c) Stabilize the gearbox at a temperature of 60-80 °F.

(d) Apply pressure to the gearbox assembly through an oil plug (330) hole with the pressure test equipment.

1) Use 14-16 psig of clean, dry air.

(e) Close the pressure valve to the gearbox assembly.

(f) Monitor the pressurized gearbox assembly for a minimum of 30 minutes.

1) Visually examine the gearbox assembly for signs of air leakage.

2) Listen for sounds of air leakage.

3) Make sure that there is no air leakage in the gearbox assembly.

(g) Measure the air pressure after 30 minutes.

1) The pressure in the gearbox assembly shall not decrease more than 0.5 psig.

F. After you complete the functional tests, apply a large quantity of BMS 3-33 grease to the splines on the inside of the output shaft (265).

G. Refer to 27-81-62/ASSEMBLY for information on storage of this component.

3. Fault Isolation

TROUBLE	PROBABLE CAUSE	CORRECTION
Gears do not turn smoothly or move freely	Defective bearings (110, 125,145,155,270)	Disassemble and replace the defective bearings (110,125, 145,155,270).
Lost motion is not correct	Defective gears (120, 150); defective shafts (115,265)	Disassemble and replace the defective gears (120,150). Disassemble and replace the defective shafts (115,265).
No-back brake assembly does not hold or lockup is greater tnan 17 degrees	Worn stator (165) and/or disk (210,245)	Disassemble and replace the defective stator (160). Disassemble and replace the defective disk (210,245).
No-load drag torque is not correct	Defective bearings (110, 125,145,155,270), gears (120,150), shafts (115, 265), brake assembly (170) is incorrectly shimmed	Disassemble and replace the defective bearings (110,125, 145,155,270), gears (120, 150), shafts (115,265). Reshim brake assembly (170).
Leakage occurs	Defective packings (20, 290A,295A,335); defective seals (25,55,285A)	Disassemble and replace the defective packings (20,290A, 295A,335). Disassemble and replace the defective seals (25,55,285A).

Fault Isolation Chart
Table 101

4. Fault Correction

A. Procedure

(1) If the gears (120, 150), or shafts (115, 265) do not move freely or do not turn smoothly, replace the bearing(s) (110, 125, 145, 155, 270) as follows:

(a) Disassemble the gearbox assembly.

(b) Replace the defective bearing(s) (110, 125, 145, 155, 270) if it is necessary.

(c) Assemble the gearbox assembly.

(d) Do the test in paragraph 2.

(2) If the lost motion is not between 200 and 219 degrees, do the following:

(a) Disassemble the gearbox assembly.

(b) Replace the defective gear(s) (120, 150) if it is necessary.

(c) Replace the defective shaft(s) (115, 265) if it is necessary.

(d) Assemble the gearbox assembly.

(e) Do the test in paragraph 2.

(3) If the brake assembly (170) does not hold or lockup is greater than 17 degrees, do the following:

(a) Disassemble the gearbox assembly.

(b) Replace the defective stator (165) and/or disk(s) (210, 245) as necessary.

(c) Assemble the gearbox assembly.

(d) Do the test in paragraph 2.

(4) If the No-load drag torque is not correct, do the following:

(a) Disassemble the gearbox assembly.

(b) Replace the defective bearing(s) (110, 125, 145, 155, 270), gear(s) (120, 150), and shaft(s) (115, 265).

(c) Reshim the brake assembly (170).

(d) Assemble the gearbox assembly.

(e) Do the test in paragraph 2.

(5) If the gearbox assembly leaks, do the following:

(a) Disassemble the gearbox assembly.

(b) Replace the defective packing(s) (20, 290A, 295A, 335) and seal(s) (25, 55, 285A).

(c) If necessary, replace the faying surface sealant between the housing assemblies (90, 300, 315).

(d) Assemble the gearbox assembly.

(e) Do the test in paragraph 2.

DISASSEMBLY

1. General

   A. This procedure has the necessary data necessary to disassemble the leading edge slat drive no-back/offset gearbox assemblies.

   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 the Standard Overhaul Practices Manual (SOPM) for details of the SOPM chapters identified in this procedure.

   D. Refer to IPL Figs. 1 and 2 for item numbers.

2. Disassembly

   A. Parts Replacement

      NOTE: The parts that follow are recommended for replacement. Unless a replacement tells you to replace a part, replacement is optional.

      (1) Packing (IPL Fig. 1; 20, 290A, 295A, 335), (IPL Fig. 2; 290A, 295A, 335)

      (2) Seal (IPL Fig. 1; 25, 55, 285A), (IPL Fig. 2; 55, 285A)

   B. Reference

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

   C. Procedure

      (1) Use standard industry procedures and the steps shown below to disassemble this component.

      (2) Disassemble the 256T5220 gearbox assembly, as follows (IPL Fig. 1):

         (a) Remove the oil plugs (330) and packings (335) to drain the fluid from the gearbox assembly.

         (b) Remove the bolts (5), washers (10), and the brake cover plate (15) from the left housing assembly (90).

         (c) Remove the packing (20) from the brake cover plate (15) and the seal (25) from the left housing assembly (90).

(d) Remove the nuts (30), the washers (35), and the input couplings (45) from the input shaft (115). Remove the screws (40), the seal retainers (50), and the seals (55) from the left and right housing assemblies (90, 300).

(e) Remove the bolts (60, 75), the washers (65, 80), the nuts (70, 85), and the left housing assembly (90) from the right housing assembly (300).

(f) Remove the bearings (110, 145) from the left housing assembly (90). Remove the input shaft (115) from the right housing assembly.

(g) Remove the thrust washers (130), the pinion gear (120), the dead shaft (135A), and the spring pin (140) from the right housing assembly (300). Remove the needle bearings (125) from the pinion gear (120).

(h) Remove the second stage gear assembly (150) from the output shaft (265).

(i) Remove the bearing (155) from the right housing assembly (300). Remove the right housing assembly (300) and the packings (290A, 295A) from the no-back housing assembly (315).

(j) Remove the pin (160), stator (165), brake assembly (170), and the output shaft (265) from the no-back housing assembly (315) (315). Refer to Para. (4) for disassembly of the brake assembly.

(k) Remove the bearing (270), screws (275), seal retainer (280), and seal (285A) from the no-back housing assembly (315).

(l) Deleted.

(m) If necessary, remove damaged markers (340, 345) from the left housing assembly (90).

(3) Disassemble the 256T5240 gearbox assembly, as follows (IPL Fig. 2):

(a) Remove the oil plugs (330) and packings (335) to drain the fluid from the gearbox assembly.

(b) Remove the nuts (25), the washers (30), and the input couplings (40) from the input shaft (115). Remove the screws (35), the seal retainers (45, 50), and the seals (55) from the left and right housing assemblies (90, 300).

(c) Remove the bolts (60, 75), the washers (65, 80), the nuts (70, 85), and the left housing assembly (90) from the right housing assembly (300).

(d) Remove the bearings (110, 145) from the left housing assembly (90). Remove the input shaft (115) from the right housing assembly.

NOTE: Make a note of how the input shaft was installed so it can be installed in the same direction during assembly. This will allow the pinion gear (120) to contact wear surfaces that match its gear teeth.

(e) Remove the thrust washers (130), the pinion gear (120), the dead shaft (135A), and the spring pin (140) from the right housing assembly (300). Remove the needle bearings (125) from the pinion gear (120).

(f) Remove the second stage gear (153) and the bushing (152) from the output shaft (265).

(g) Remove the bearing (155) from the right housing assembly (300). Remove the right housing assembly (300) and the packings (290A, 295A) from the no-back housing assembly (315).

(h) Remove the pin (160), stator (165), brake assembly (170), and the output shaft (265) from the no-back housing assembly (315) (315). Refer to Para. (4) for disassembly of the brake assembly.

(i) Remove the bearing (270), screws (275), seal retainer (280), and seal (285A) from the no-back housing assembly (315).

(j) Deleted.

(k) If necessary, remove damaged markers (340, 345) from the left housing assembly (90).

(4) For the 256T5220 and 256T5240 gearbox assemblies, disassemble the brake assembly (IPL Figs. 1 and 2; 170) as follows:

(a) Put the brake assembly (170) in a vertical position so that the lock ring retainer (175) is up.

(b) Remove the lock ring retainer (175) and the lock rings (180) from the output shaft (265).

CAUTION: BE CAREFUL WHEN YOU REMOVE THE BALL RAMP PLATE (185) FROM THE OUTPUT SHAFT (265). THE THREE BALLS (190) CAN FALL OUT AND BE DAMAGED OR LOST.

(c) Remove the ball ramp plate (185) and the three balls (190) from the output shaft (265).

(d) Remove the reaction plate (195) with installed parts from the output shaft (265).

(e) Remove the retaining ring (220), then remove the shim (215), large disks (210), and two stator plate assemblies (230) from the reaction plate.

CAUTION: BE CAREFUL WHEN YOU REMOVE THE PRESSURE PLATE (205) FROM THE REACTION PLATE (195). THE NINE SPRINGS (190) CAN FALL OUT AND BE DAMAGED OR LOST.

(f) Remove the pressure plate (205) and the nine springs (200) from the reaction plate (195).

(g) Remove the stator disk (225), the other stator plate assemblies (230), the small disks (245), the spring (250), stop (255), and shim (260) from the output shaft (265).

CLEANING

1. General

   A. This procedure has the necessary data to clean the leading edge slat drive no-back/offset gearbox assemblies.

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

   C. Refer to IPL Figs. 1 and 2 for item numbers.

2. Cleaning

   A. References

      (1) SOPM 20-30-01, Cleaning and Relubricating Anti-Friction Bearings

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

   B. Procedure

      (1) Clean the bearings (110, 125, 145, 155, 270) as shown in SOPM 20-30-01.

      (2) Use standard industry procedures and refer to SOPM 20-30-03 to clean all the other parts.

CHECK

1. General

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

   B. Refer to FITS AND CLEARANCES for the design dimension and wear limits.

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

   D. Refer to IPL Figs. 1 and 2 for item numbers.

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 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 suspect possible damage on the parts listed below.

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

      (a) Input shaft (115)

      (b) Pinion gear (120)

      (c) Dead shaft (135A)

      (d) Pin (160)

      (e) Second stage gear (153)

      (f) Stator (165)

      (g) Lock ring retainer (175)

      (h) Lock ring (180)

(i) Ball ramp plate (185)

(j) Reaction plate (195)

(k) Pressure late (205)

(l) Large disk (210)

(m) Stator plate (225, 235)

(n) Small disk (245)

(o) Belleville stop (255)

(p) Output shaft (265)

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

(a) Plate (IPL Fig. 1; 15)

(b) Input coupling (IPL Fig. 1; 45), (IPL Fig. 2;, 40)

(c) Seal retainer (IPL Fig. 1, 50 280; IPL Fig. 2, 45, 50, 280)

(d) Housing (105, 310, 325)

(e) Plug (330)

(4) Do a visual check of the gear teeth and splines for sign of wear, pitting, or other damage. Make sure that the center of contact pattern on the gear teeth is approximately at the pitch diameter. Replace the part if the visualcheck is not satisfactory.

(5) Put the check pins between the gear teeth on the input shaft (115), pinion gear (120), and the second stage gear (153) to measure the wear on the gear teeth. Refer to Fig. 801 for the size of the pins.

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
256T5212	HOUSING ASSEMBLY	2-1, 2-2
256T5215	SECOND STAGE GEAR ASSEMBLY	3-1, 3-2
256T5216	INPUT SHAFT	4-1
256T5221	HOUSING ASSEMBLY	5-1, 5-2
256T5223	HOUSING ASSEMBLY	6-1, 6-2
256T5231	OUTPUT SHAFT	7-1
256T5241	HOUSING ASSEMBLY	8-1, 8-2

2. Dimensioning Symbols

A. Standard True Position Dimensioning Symbols used in the applicable repair procedures are shown in Fig. 601.

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

EXAMPLES

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

True Position Dimensioning Symbols
Figure 601

KD6406

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 chapters identified in this procedure.

   C. Refer to IPL Figs. 1 and 2 for item numbers.

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

      (2) C00769 Coating -- MIL-C-5541, Class 1A Chemical Conversion (SOPM 20-60-02)

      (3) D00013 Grease -- MIL-PRF-23827 (SOPM 20-60-03)

      (4) D00113 Lubricant -- BMS 3-8, Solid Film (SOPM 20-60-03)

   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 20-42-05, Bright Cadmium Plating

(6) SOPM 20-43-03, Chemical Conversion Coatings for Aluminum

(7) SOPM 20-50-07, Lubrication

(8) SOPM 20-50-08, Application of Bonded Solid Film Lubricants

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

(10) SOPM 20-60-03, Lubricants

D. Procedure

IPL FIG. & ITEM	MATERIAL	FINISH
IPL Fig. 1		
Cover Plate (15)	Aluminum alloy	Chemical treat (F-17.26) all surfaces, and apply BMS 10-11, Type 1 primer (F-20.03) to the surfaces identified by flagnote 1 in Fig. 601.
Input Coupling (45)	4330M steel 180-200 ksi	Cadmium plate (F-15.36) and apply BMS 10-11, Type 1 primer (F-20.02) to all surfaces but not on splines or in fastener holes.
Seal Retainer (50,280)	Aluminum alloy	Chemical treat (F-17.26) all surfaces, and apply BMS 10-11, Type 1 primer (F-20.03).
Pinion Gear (120)	9310 steel Core: 160-190 ksi Case: RA 81 min	Cadmium plate (F-15.23) all surfaces, but not on surface identified by flagnote in Fig. 602.
Dead Shaft (135A)	9310 steel Core: 150-190 ksi Case: RC 58 min	Phosphate treat (F-16.10), and apply BMS 10-11, Type 1 primer (F-20.03) to surface identified by flagnote 1 in Fig. 603. Apply grease to O.D. for storage or transportation only.

Refinish Details
Table 601

IPL FIG. & ITEM	MATERIAL	FINISH
IPL Fig. 1 (Cont)		
Pin (160)	15-5PH CRES H1025 condition	Passivate (F-17.25).
Stator (165)	15-5PH CRES 150-170 ksi	Passivate (F-17.25).
Lock Ring Retainer (175)	4130 steel 150-170 ksi	Cadmium plate (F-15.06).
Lock Ring (180)	4130 steel 150-170 ksi	Cadmium plate (F-15.06).
Ball Ramp Plate (185)	9310 steel Core: 160-190 ksi Case: RA 81 min	Cadmium plate (F-15.42) all over, but not on pocket surfaces. Plating is optional on 0.062 dia holes in pockets.
Reaction Plate (195)	9310 steel Core: 160-190 ksi Case: RA 81 min	Cadmium plate (F-15.42) all over, but not on pocket surfaces. Plating is optional on 0.062 dia holes in pockets, as shown by flagnotes in Fig. 604.
Pressure Plate (205)	15-5PH CRES 150-170 ksi	Passivate (F-17.25).
Large disk (210), Small disk (245)	17-7PH CRES 158-170 ksi	Passivate (F-17.25).
Shim (215, 260)	17-7PH CRES 150-170 ksi	Passivate (F-17.25).
Stator disk (225, 235)	17-7PH CRES 150-170 ksi	Passivate (F-17.25).
Spring (250)	17-7PH CRES TH1050 condition	Passivate (F-17.25). Apply BMS 3-8 dry film lubricant (F-19.10).

Refinish Details
Table 601

IPL FIG. & ITEM	MATERIAL	FINISH
IPL Fig. 1 (Cont)		
Stop (255)	15-5PH CRES 150-170 ksi	Passivate (F-17.25).
Oil plug (330)	15-5PH CRES H1025 condition	Passivate (F-17.25).
IPL Fig. 2		
Input Coupling (40)	4330M steel 180-200 ksi	Cadmium plate (F-15.36) and apply BMS 10-11, Type 1 primer (F-20.02) to all surfaces but not on splines or in fastener holes.
Seal Retainer (45, 50,280)	Aluminum alloy	Chemical treat (F-17.26) all surfaces, and apply BMS 10-11, Type 1 primer (F-20.03).
Pinion Gear (120)	9310 steel Core: 160-190 ksi Case: RA 81 min	Cadmium plate (F-15.32) all surfaces, but not on surface identified by flagnote in Fig. 602.
Dead Shaft (135A)	9310 steel Core: 150-190 ksi Case: RC 58 min	Phosphate treat (F-16.10), and apply BMS 10-11, Type 1 primer (F-20.03) to surface identified by flagnote 1 in Fig. 603. Apply grease to O.D. for storage or transportation only.
Pin (160)	15-5PH CRES H1025 condition	Passivate (F-17.25).
Stator (165)	15-5PH CRES 150-170 ksi	Passivate (F-17.25).

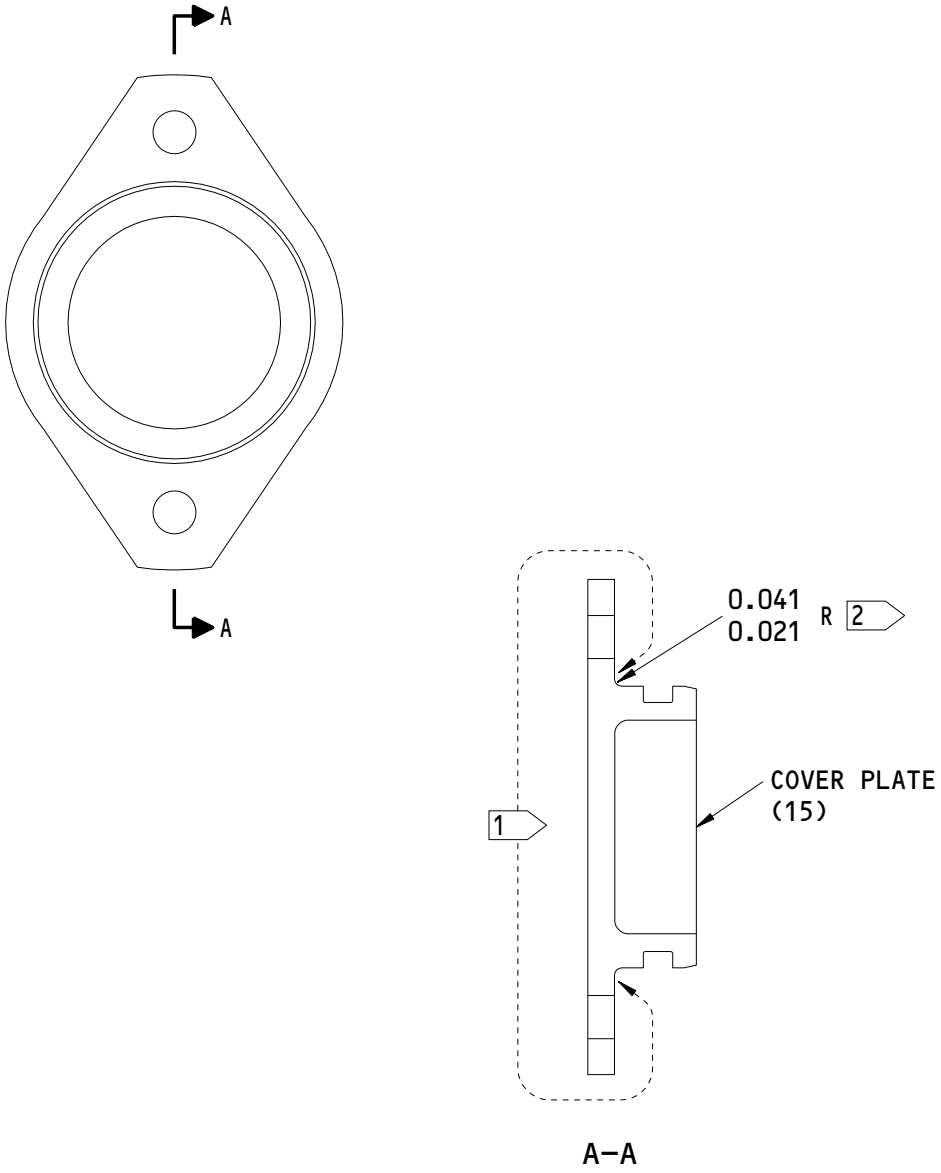
Refinish Details
Table 601

IPL FIG. & ITEM	MATERIAL	FINISH
IPL Fig. 2 (Cont)		
Lock Ring Retainer (175)	4130 steel 150-170 ksi	Cadmium plate (F-15.06).
Lock Ring (180)	4130 steel 150-170 ksi	Cadmium plate (F-15.06).
Ball Ramp Plate (185)	9310 steel Core: 160-190 ksi Case: RA 81 min	Cadmium plate (F-15.42) all over, but not on pocket surfaces. Plating is optional on 0.062 dia holes in pockets.
Reaction Plate (195)	9310 steel Core: 160-190 ksi Case: RA 81 min	Cadmium plate (F-15.42) all over, but not on pocket surfaces. Plating is optional on 0.062 dia holes in pockets, as shown by flagnotes in Fig. 604.
Pressure Plate (205)	15-5PH CRES 150-170 ksi	Passivate (F-17.25).
Large disk (210), Small disk (245)	17-7PH CRES 158-170 ksi	Passivate (F-17.25).
Shim (215, 260)	17-7PH CRES 150-170 ksi	Passivate (F-17.25).
Stator disk (225, 235)	17-7PH CRES 150-170 ksi	Passivate (F-17.25).
Spring (250)	17-7PH CRES TH1050 condition	Passivate (F-17.25). Apply BMS 3-8 dry film lubricant (F-19.10).

Refinish Details
Table 601

IPL FIG. & ITEM	MATERIAL	FINISH
IPL Fig. 2 (Cont)		
Stop (255)	15-5PH CRES 150-170 ksi	Passivate (F-17.25).
Oil plug (330)	15-5PH CRES H1025 condition	Passivate (F-17.25).

Refinish Details
Table 601



A–A

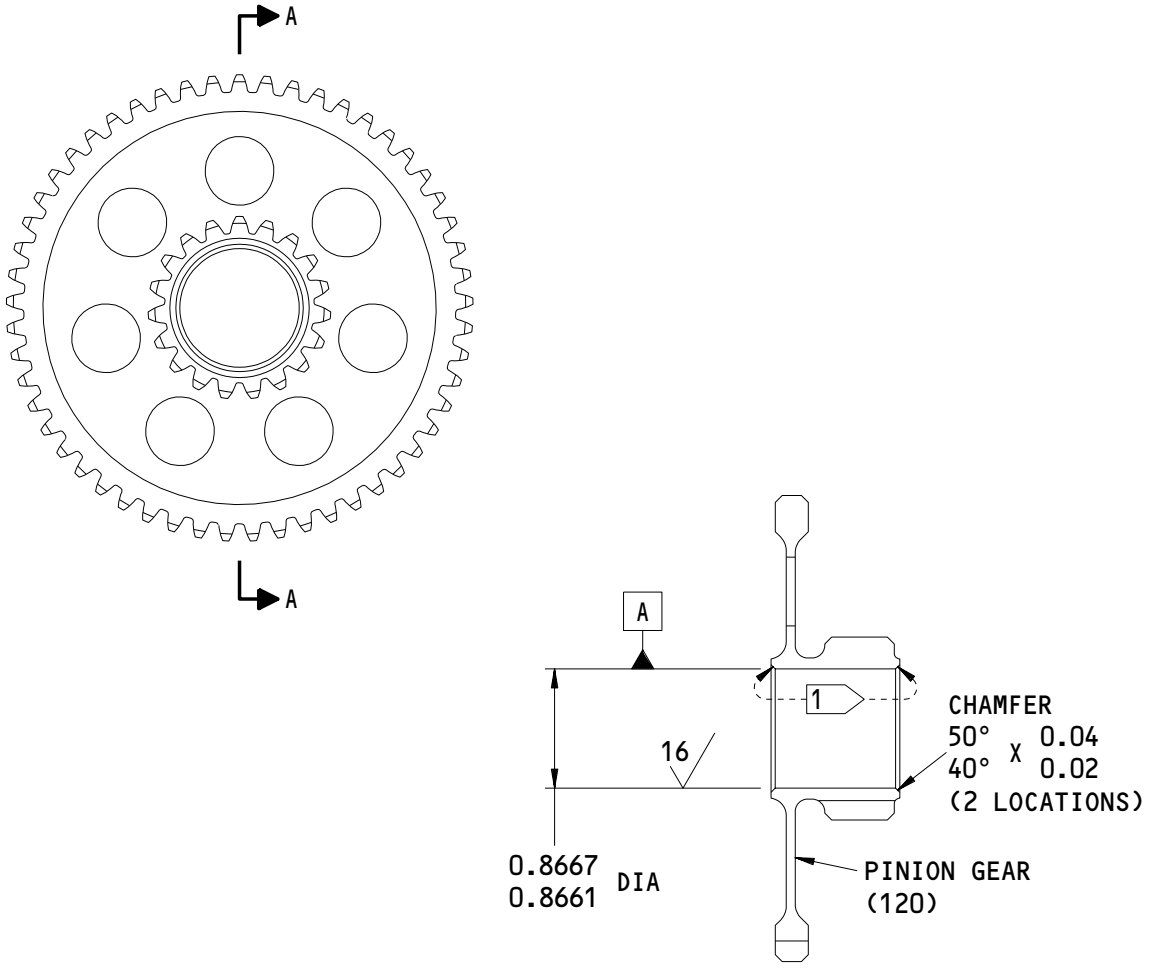
1 APPLY TWO LAYERS OF BMS 10–11, TYPE 1 PRIMER (F–20.03) ON THIS SURFACE

2 OVERSPRAY IS ALLOWED ON THIS SURFACE

ITEM NUMBERS REFER TO IPL FIG. 1,2

ALL DIMENSIONS ARE IN INCHES

256W2245–1
Cover Plate Refinish
Figure 601



A–A

1 APPLY NO FINISH (F-25.01) ON THIS SURFACE

125 ALL MACHINED SURFACES UNLESS SHOWN DIFFERENTLY

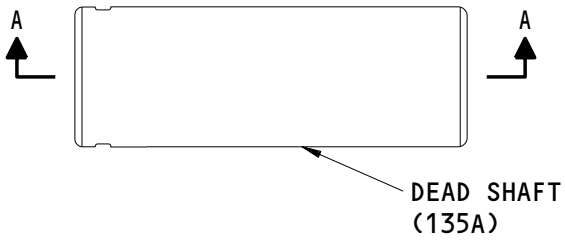
BREAK ALL SHARP EDGES

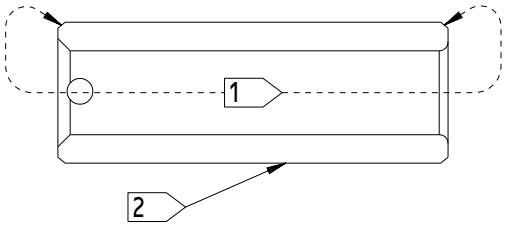
ITEM NUMBERS REFER TO IPL FIG. 1,2

ALL DIMENSIONS ARE IN INCHES

256T2254-2
Pinion Gear Refinish
Figure 602

K32349





A–A

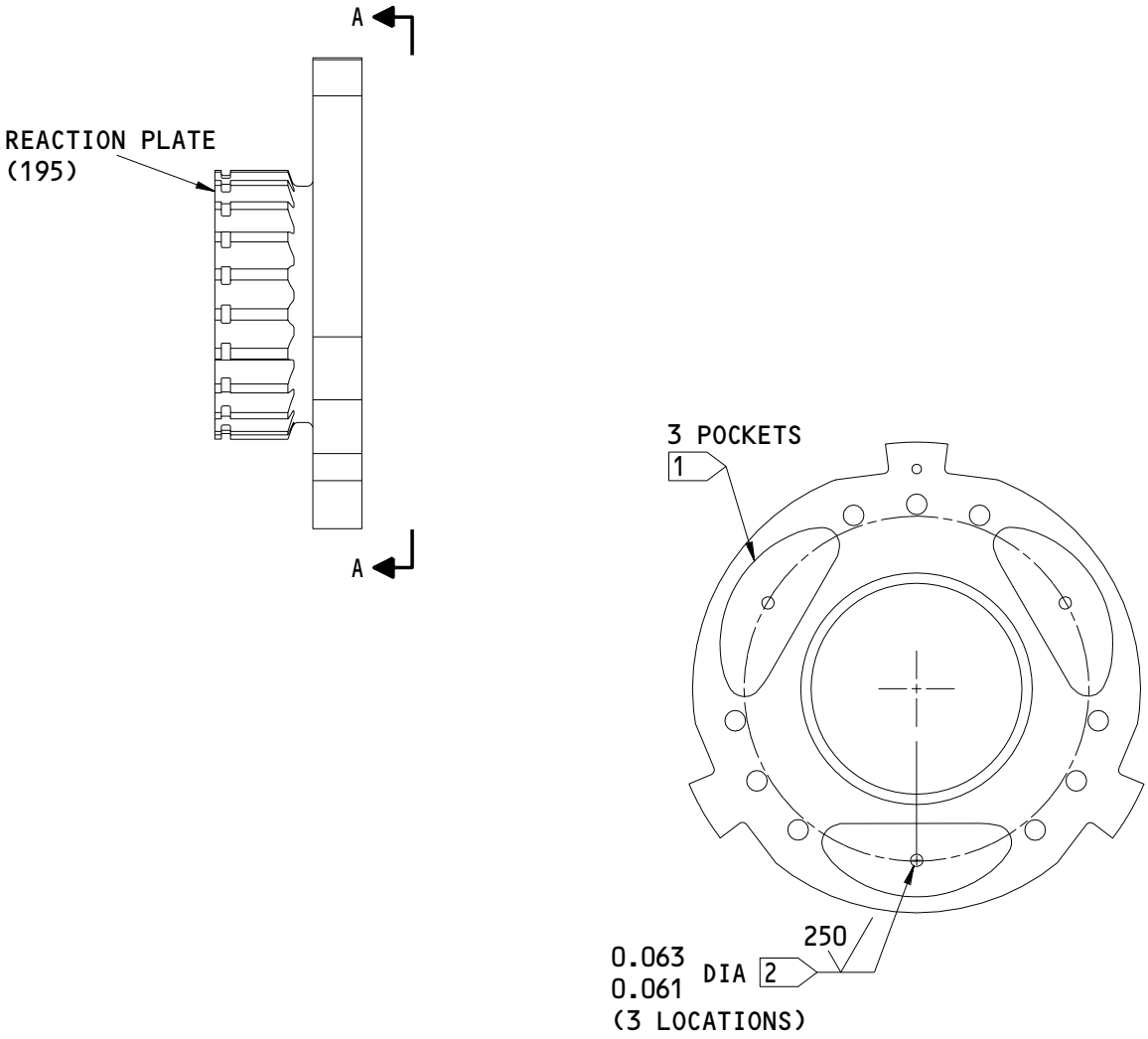
ITEM NUMBERS REFER TO IPL FIG. 1,2

1 PHOSPHATE TREAT (F-16.10) AND APPLY BMS 10-11, TYPE 1 PRIMER (F-20.03) TO THESE SURFACES

2 APPLY A THIN LAYER OF MIL-PRF-23827 GREASE (F-19.08) TO THIS SURFACE

256T2259-3
Dead Shaft Refinish
Figure 603

K32378



A–A

1 APPLY NO FINISH (F-25.01) ON THIS SURFACE

2 CADMIUM PLATE (F-15.42) OPTIONAL IN HOLE

ITEM NUMBERS REFER TO IPL FIG. 1

ALL DIMENSIONS ARE IN INCHES

256T5232-1
Reaction Plate Refinish
Figure 604

HOUSING ASSEMBLY - REPAIR 2-1

256T5212-1

1. General

A. This procedure has the data necessary to repair the right housing assembly (300).

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

C. Refer to the REPAIR - GENERAL (27-81-62/601, REPAIR - GENERAL) for the Standard True Position Dimensioning Symbols shown in the repair.

D. Refer to IPL Figs. 1 and 2 for item numbers.

2. Insert Replacement

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 20-41-02, Application of Chemical and Solvent Resistant Finishes

(2) SOPM 20-50-22, How to Install Threaded Inserts

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

C. Procedure

(1) Remove the insert(s) (305) from the housing assembly (300) as shown in Fig. 601.

(2) Install new insert(s) (305) into the housing (310) with wet BMS 10-11, type 1 primer as shown in SOPM 20-50-22.

(3) Obey all flagnotes in Fig. 601.

3. Housing Assembly Refinish

A. References

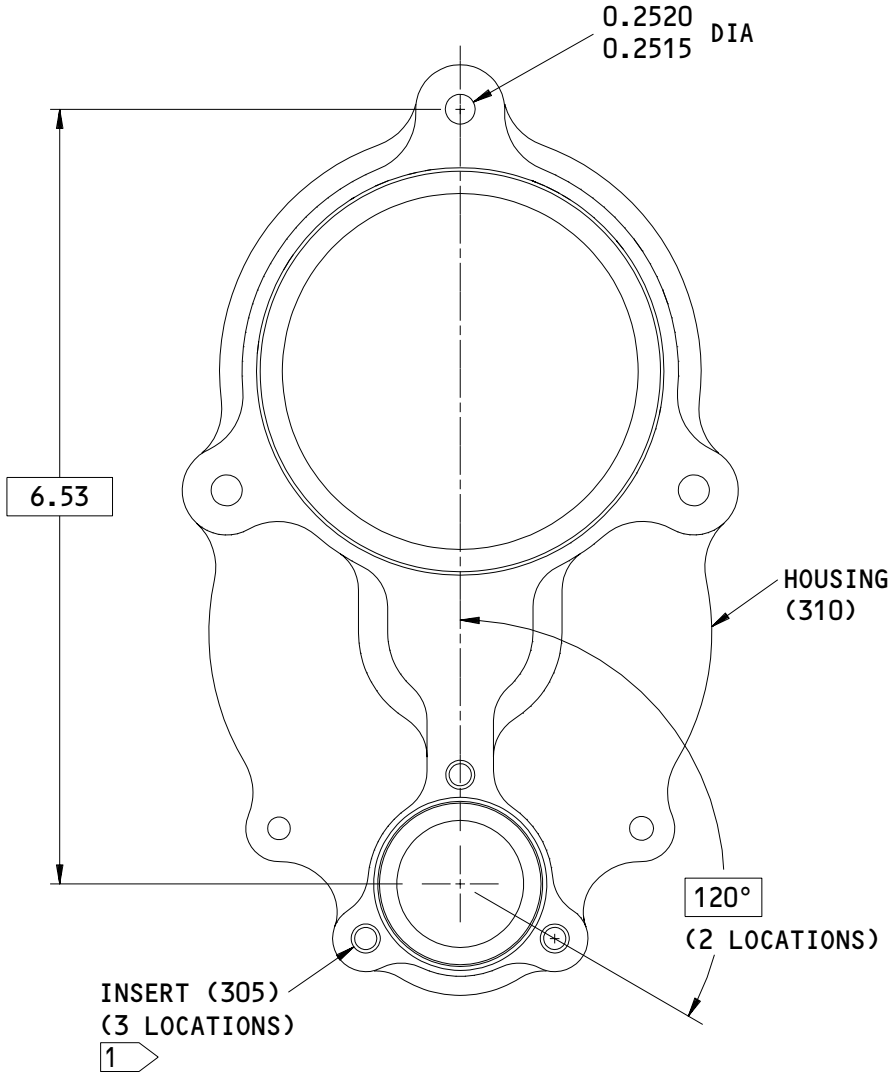
(1) SOPM 20-30-02, Stripping of Protective Finish

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

(3) SOPM 20-44-02, Temporary Protective Coatings

B. Procedure

(1) Apply no finish (F-25.01) but that temporary coatings may be applied for protection during handling, transportation, and storage.



1 INSTALL INSERTS WITH BMS 10-11, TYPE 1 PRIMER

ITEM NUMBERS REFER TO IPL FIG. 1,2

ALL DIMENSIONS ARE IN INCHES

256T5212-1
Housing Assembly Repair
Figure 601

HOUSING - REPAIR 2-2

256T5212-2

1. General

A. This procedure has the data necessary to refinish the housing (105).

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

C. Refer to the REPAIR - GENERAL (27-81-62/601, REPAIR - GENERAL) for the Standard True Position Dimensioning Symbols shown in the repair.

D. Refer to IPL Figs. 1 and 2 for item numbers.

E. General repair details:

(1) Material: Aluminum alloy

2. Housing 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 Chemical and Solvent Resistant Finish

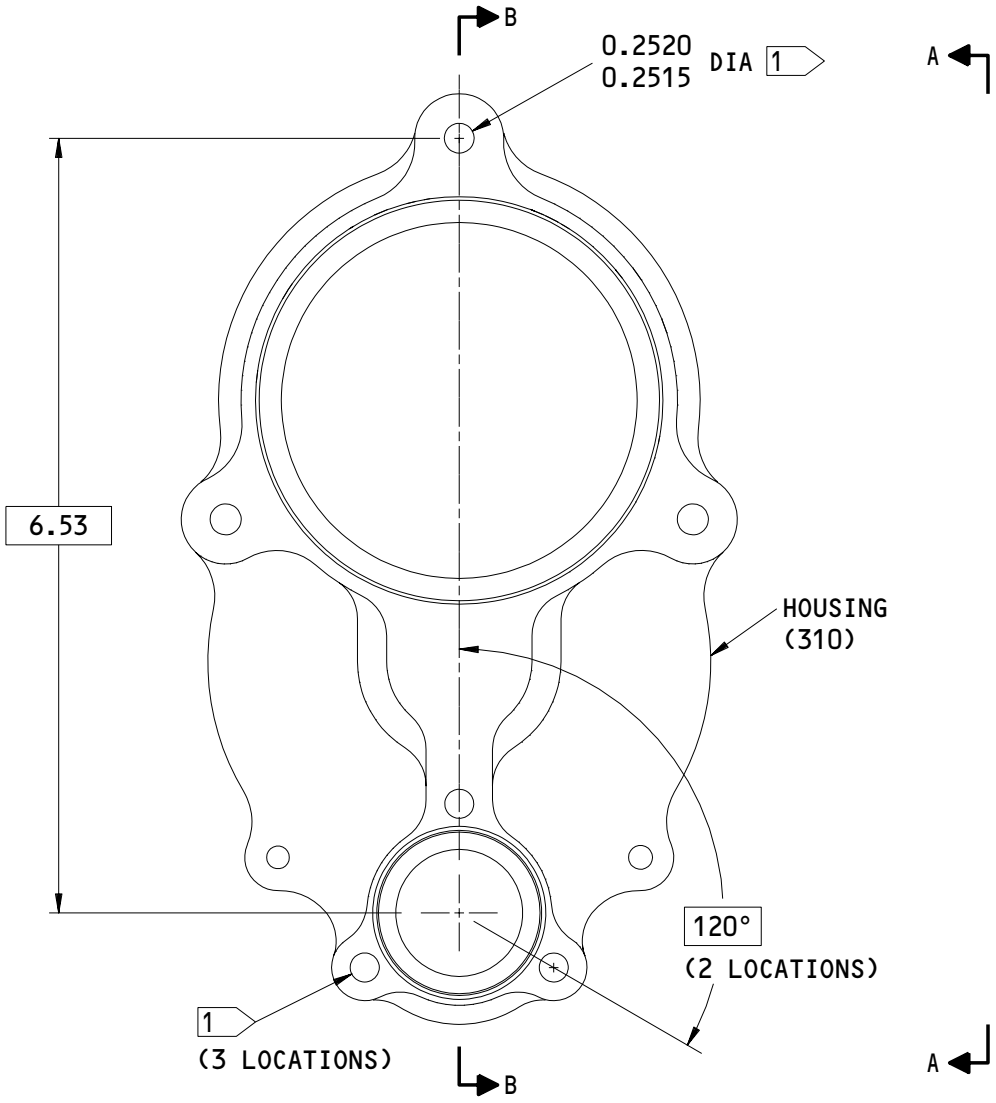
(4) SOPM 20-43-03, Chemical Conversion Coatings for Aluminum

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

C. Procedures

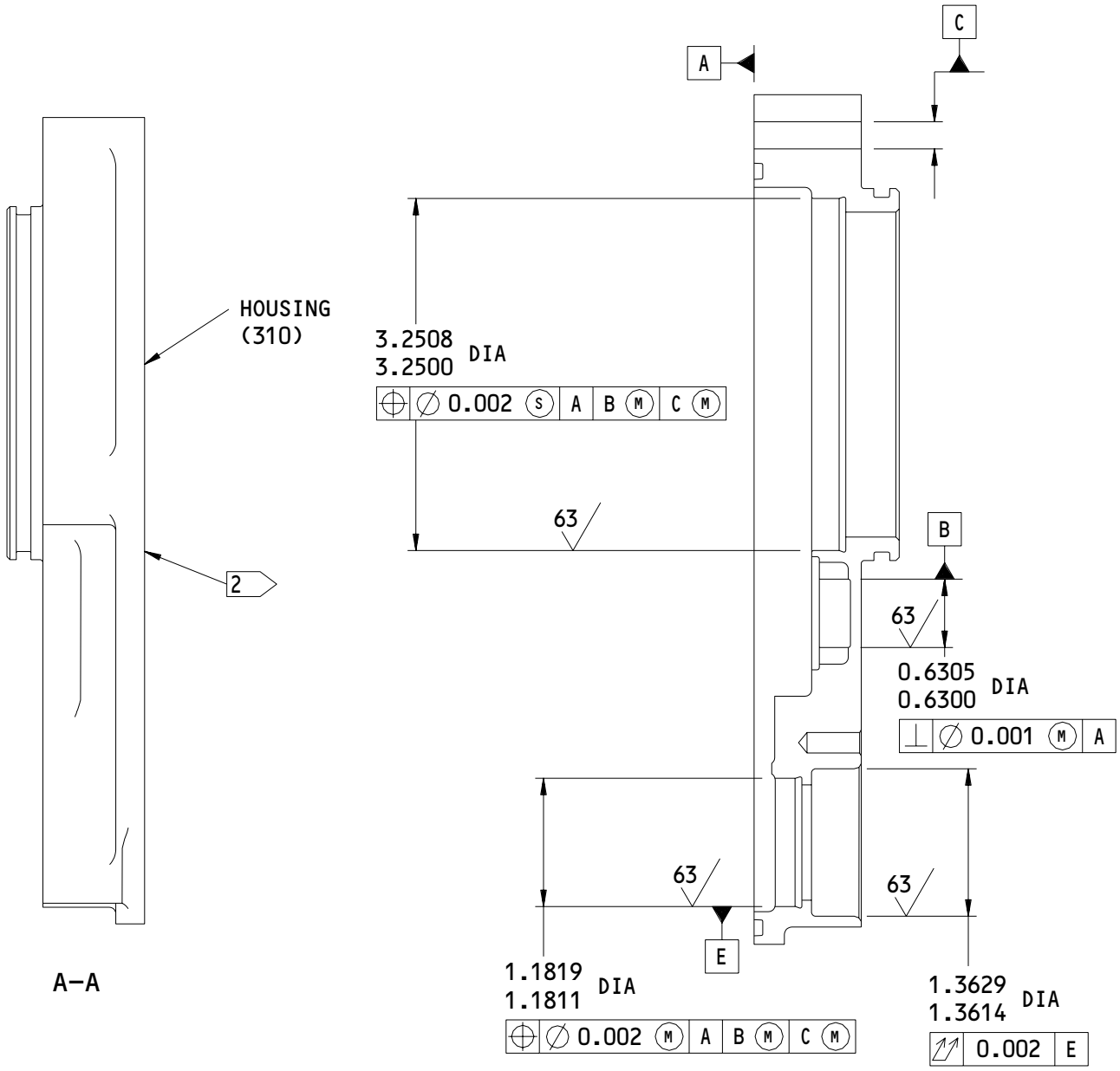
(1) Chemical treat (F-17.26) all surfaces as shown in SOPM 20-43-03.

(2) Apply two layers of BMS 10-11, type 1 primer (F-20.03) to all outside surfaces as shown in SOPM 20-41-02, but not in holes or surfaces identified by flagnotes 1 and 2 in Fig. 601.



256T5212-2
Housing Refinish
Figure 601 (Sheet 1)

K33403



1 DO NOT PUT PRIMER IN THESE HOLES

2 DO NOT PUT PRIMER ON THIS SURFACE

125 ALL MACHINED SURFACES UNLESS SHOWN DIFFERENTLY

BREAK ALL SHARP EDGES

ITEM NUMBERS REFER TO IPL FIG. 1,2

ALL DIMENSIONS ARE IN INCHES

256T5212-2
Housing Refinish
Figure 601 (Sheet 2)

SECOND STAGE GEAR ASSEMBLY - REPAIR 3-1

256T5215-1

1. General

A. This procedure has the data necessary to repair the second stage gear assembly (150).

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

C. Refer to the REPAIR - GENERAL (27-81-62/601, REPAIR - GENERAL) for the Standard True Position Dimensioning Symbols shown in the repair.

D. Refer to IPL Figs. 1 and 2 for item numbers.

2. Bushing Replacement

A. References

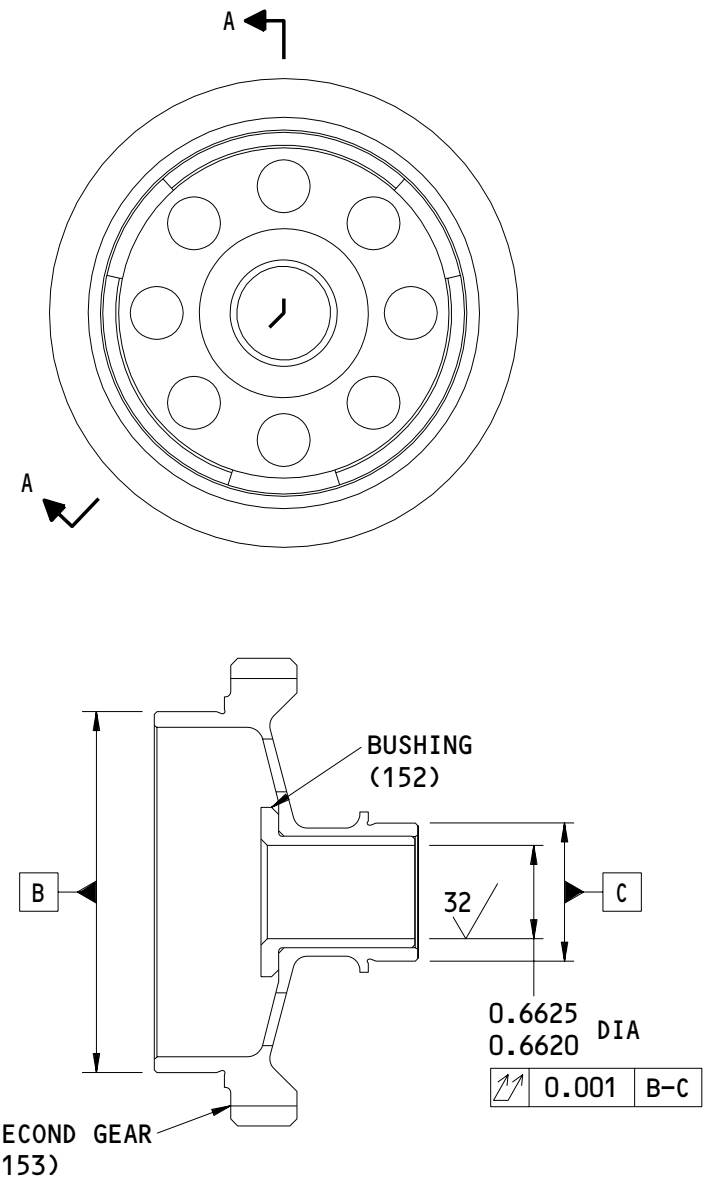
(1) SOPM 20-50-03, Bushing and Bearing Replacement

B. Procedures

(1) Remove the bushing (152) from the second gear (153) as shown in Fig. 601.

(2) Install new bushing (152) into the second gear (153) by shrink-fit procedure as shown in SOPM 20-50-03.

(3) Machine the inside diameter of the bushing (152) to the dimensions and finish shown in Fig. 601.



A-A

125 ALL MACHINED SURFACES UNLESS SHOWN DIFFERENTLY

BREAK ALL SHARP EDGES

ITEM NUMBERS REFER TO IPL FIG. 1,2

ALL DIMENSIONS ARE IN INCHES

256T5215-1
Second Stage Gear Assembly Repair
Figure 601

SECOND STAGE GEAR - REPAIR 3-2

256T5215-2

1. General

A. This procedure has the data necessary to repair and refinish the second stage gear (153).

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

C. Refer to IPL Fig. 1 and 2 for item numbers.

D. General repair details:

(1) Material: 9310 steel, 160-190 ksi

(2) Shot peen: Intensity: 0.006A
Coverage: 2.0

2. Gear Repair

A. References

(1) SOPM 20-10-02, Machining of Alloy Steel

(2) SOPM 20-10-03, Shot Peening

(3) SOPM 20-10-04, Grinding of Chrome Plated Parts

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

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

(6) SOPM 20-42-03, Hard Chrome Plating

B. Procedures (Fig. 601)

(1) Machine as necessary, within the repair limits shown in Fig. 601, to remove the damaged area.

(2) Do a magnetic particle check of the machined surface as shown in SOPM 20-20-01.

(3) Shot peen the machined surface as shown in SOPM 20-10-03.

(4) Hard chrome plate, class 3, the machined surface as shown in SOPM 20-42-03. Chrome plate runout must be 0.015-0.030 inch. Chrome plate not allowed on fillet radii or on part edges.

(5) Grind the chrome plate to the design dimensions and finish shown. Make sure that the chrome plate thickness is not more than 0.015 inch after you grind the plate.

(6) Do a magnetic particle check after final grind as shown in SOPM 20-20-01.

3. Gear Refinish

A. References

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

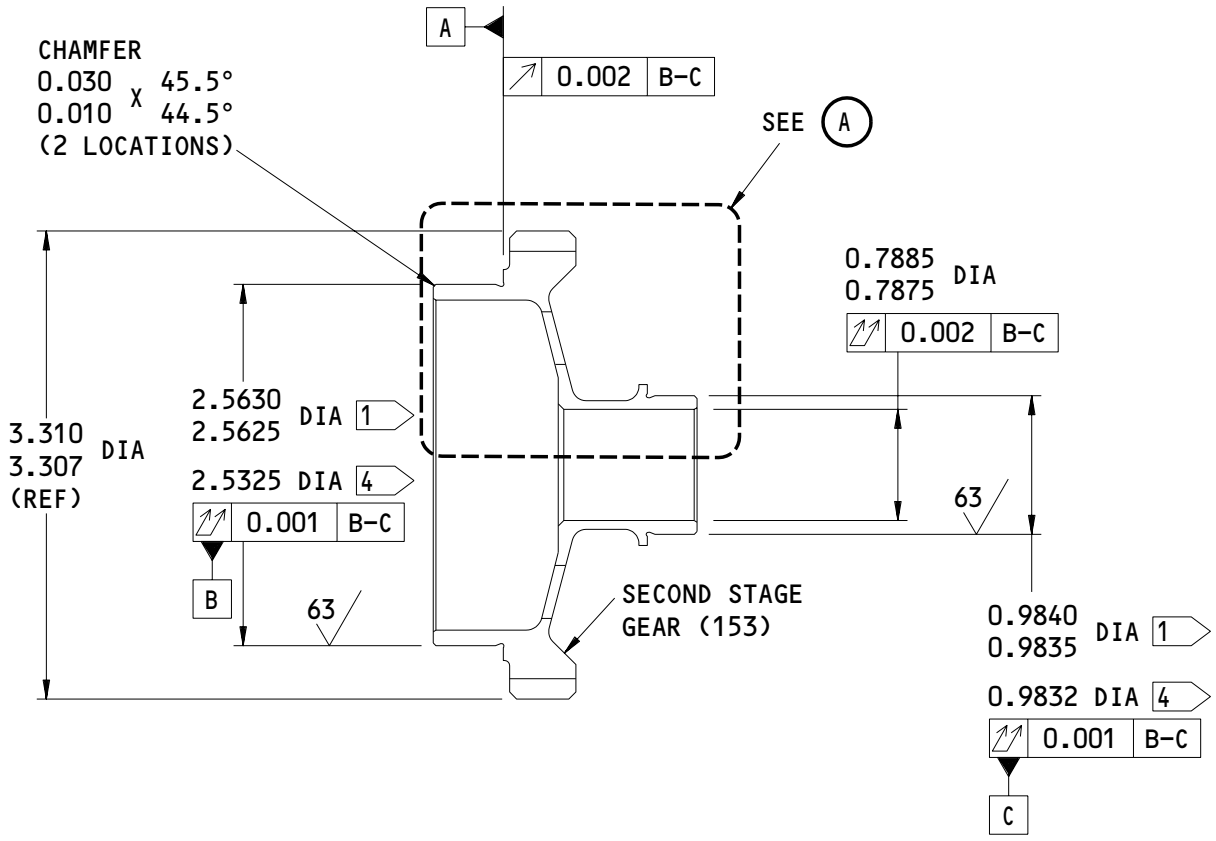
(2) SOPM 20-41-01, Decoding Table for Boeing Finish Codes

(3) SOPM 20-42-05, Bright Cadmium Plating

(4) SOPM 20-44-02, Temporary Protective Coatings

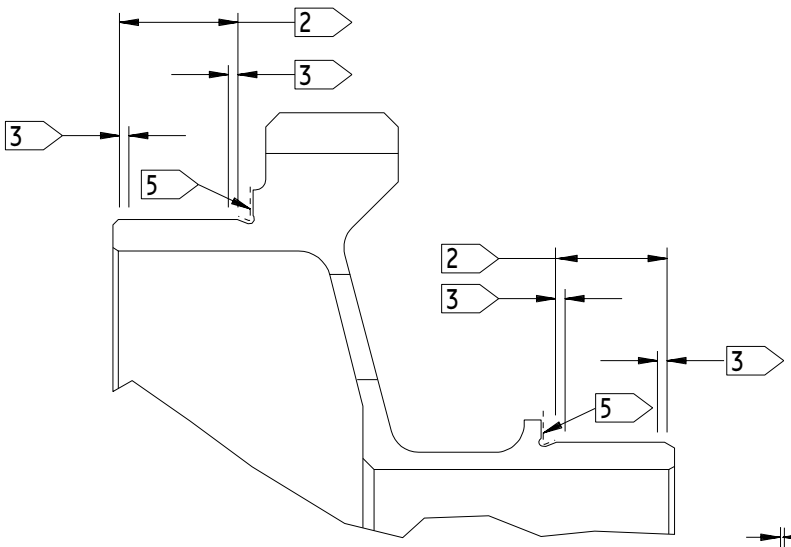
B. Procedure

(1) Cadmium plate (F-15.42) all over, but not on the surfaces to be chrome plated during repair procedures. Obey all flagnotes.



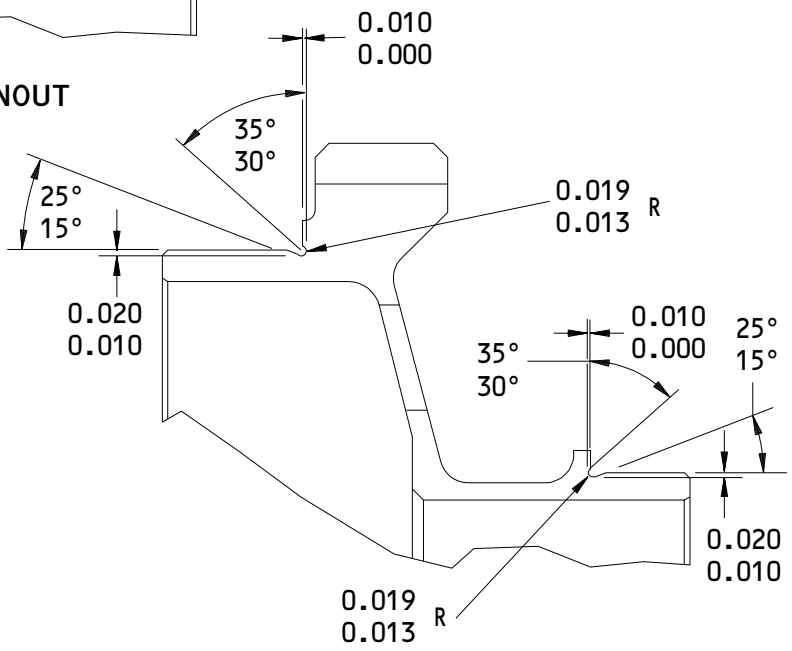
256T5215-2
Second Stage Gear Repair
Figure 601 (Sheet 1)

K33455



CHROME PLATE RUNOUT

A



RELIEF DIMENSIONS

A

1 F-25.01 TEMPORARY COATING AREA

2 CHROME PLATE REPAIR AREA

3 CHROME PLATE RUNOUT 0.015-0.030 INCHES

4 REPAIR LIMIT

5 CADMIUM PLATE (F-15.42) OPTIONAL THIS SURFACE

125 ALL MACHINED SURFACES UNLESS SHOWN DIFFERENTLY

BREAK ALL SHARP EDGES

ITEM NUMBERS REFER TO IPL FIG. 1,2

ALL DIMENSIONS ARE IN INCHES

256T5215-2
Second Stage Gear Repair
Figure 601 (Sheet 2)

INPUT SHAFT - REPAIR 4-1

256T5216-1

1. General

A. This procedure has the data necessary to repair and refinish the input shaft (115).

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

C. Refer to IPL Fig. 1 and 2 for item numbers.

D. General repair details:

(1) Material: 9310 steel, 160-190 ksi

(2) Shot peen: Intensity: 0.006A
Coverage: 2.0

2. Shaft Repair

A. References

(1) SOPM 20-10-02, Machining of Alloy Steel

(2) SOPM 20-10-03, Shot Peening

(3) SOPM 20-10-04, Grinding of Chrome Plated Parts

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

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

(6) SOPM 20-42-03, Hard Chrome Plating

B. Procedures (Fig. 601)

(1) Machine as necessary, within the repair limits shown in Fig. 601, to remove the damaged area.

(2) Do a magnetic particle check of the machined surface as shown in SOPM 20-20-01.

(3) Shot peen the machined surface as shown in SOPM 20-10-03.

(4) Hard chrome plate, class 3, the machined surface as shown in SOPM 20-42-03. Chrome plate runout must be 0.015-0.030 inch. Chrome plate not allowed on fillet radii or on part edges.

(5) Plung grind the chrome plate to the design dimensions and finish shown. Make sure that the chrome plate thickness is not more than 0.015 inch after you grind the plate.

(6) Do a magnetic particle check after final grind as shown in SOPM 20-20-01.

3. Shaft Refinish

A. References

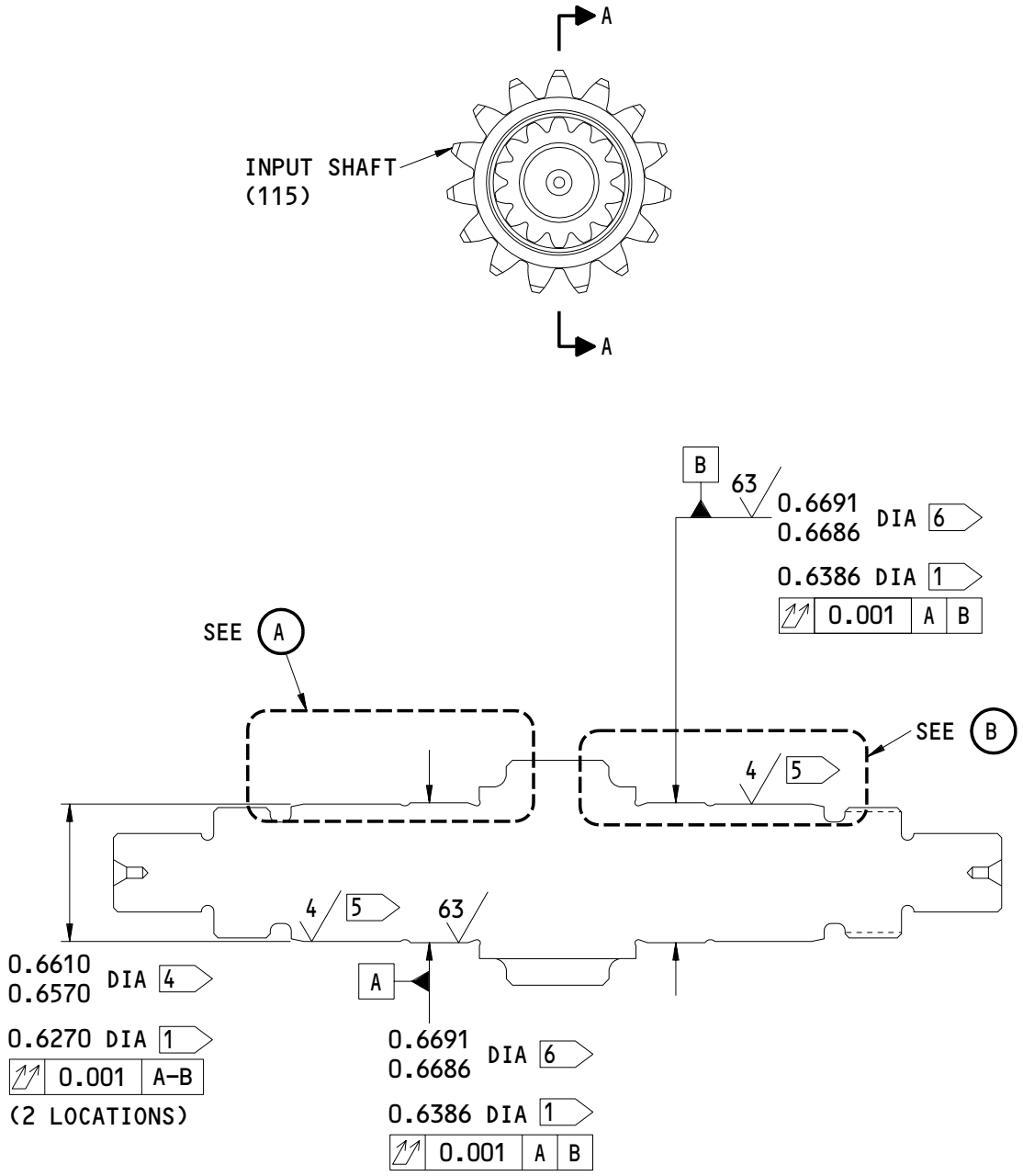
(1) SOPM 20-30-02, Stripping of Protective Finishes

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

(3) SOPM 20-42-05, Bright Cadmium Plating

B. Procedure

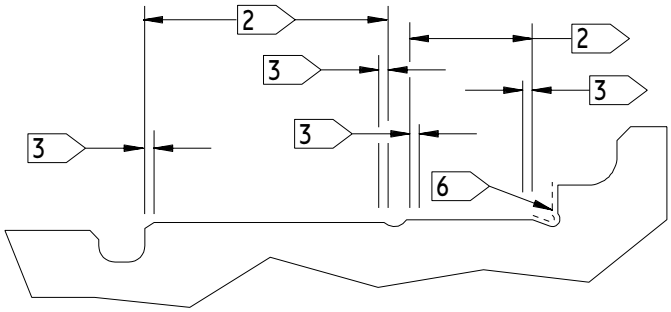
(1) Cadmium plate (F-15.42) all over, but not on the surfaces to be chrome plated during repair procedures.



A-A

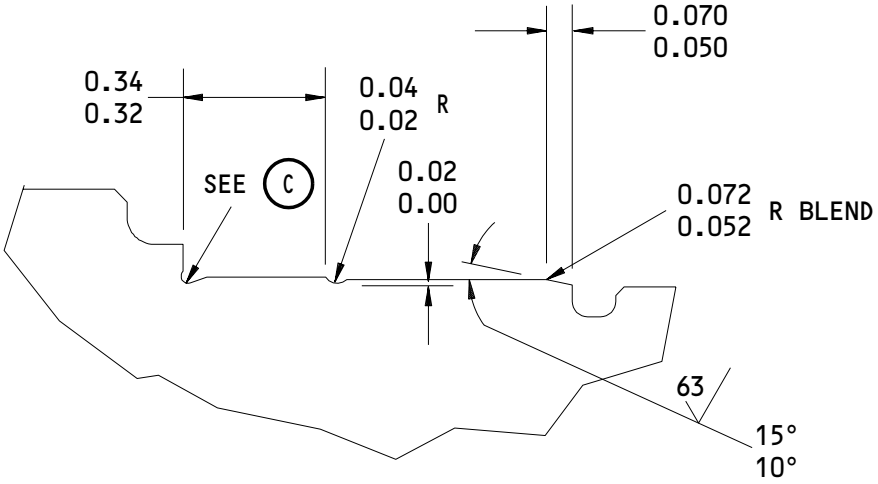
256T5216-1
Input Shaft Repair
Figure 601 (Sheet 1)

K33502



CHROME PLATE RUNOUT
(2 LOCATIONS)

A

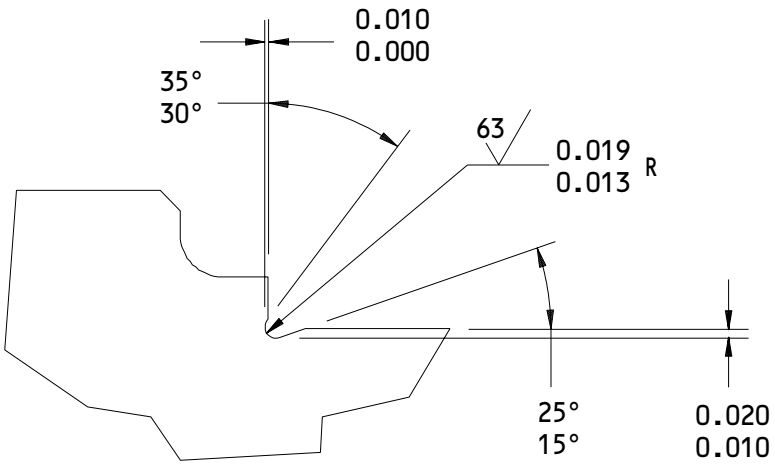


RELIEF DETAILS
(2 LOCATIONS)

B

256T5216-1
Input Shaft Repair
Figure 601 (Sheet 2)

K52714



1 > REPAIR LIMIT

2 > CHROME PLATE REPAIR AREA

3 > CHROME PLATE RUNOUT 0.015-0.030 INCHES

4 > CARBURIZED AREA

5 > SURFACE FINISH CAN BE 4 TO 16 MICROINCHES

6 > CADMIUM PLATE (F-15.42) OPTIONAL THIS SURFACE

125 ALL MACHINED SURFACES UNLESS SHOWN DIFFERENTLY

BREAK ALL SHARP EDGES

ITEM NUMBERS REFER TO IPL FIG. 1,2

ALL DIMENSIONS ARE IN INCHES

256T5216-1
Input Shaft Repair
Figure 601 (Sheet 3)

HOUSING ASSEMBLY - REPAIR 5-1

256T5221-1

1. General

A. This procedure has the data necessary to repair the left housing assembly (90).

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

C. Refer to the REPAIR - GENERAL (27-81-62/601, REPAIR - GENERAL) for the Standard True Position Dimensioning Symbols shown in the repair.

D. Refer to IPL Fig. 1 for item numbers.

2. Insert Replacement

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 20-41-02, Application of Chemical and Solvent Resistant Finishes

(2) SOPM 20-50-22, How to Install Threaded Inserts

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

C. Procedures

(1) Remove the insert(s) (95, 100) from the housing (105) as shown in Fig. 601.

(2) Install new insert(s) (95) into the housing assembly (90) with wet BMS 10-11, type 1 primer as shown in SOPM 20-50-22.

(3) Install new insert(s) (100) into the housing (105) with wet BMS 10-11, type 1 primer to the depth shown in Fig. 601, and as shown in SOPM 20-50-22.

3. Housing Assembly Refinish

A. References

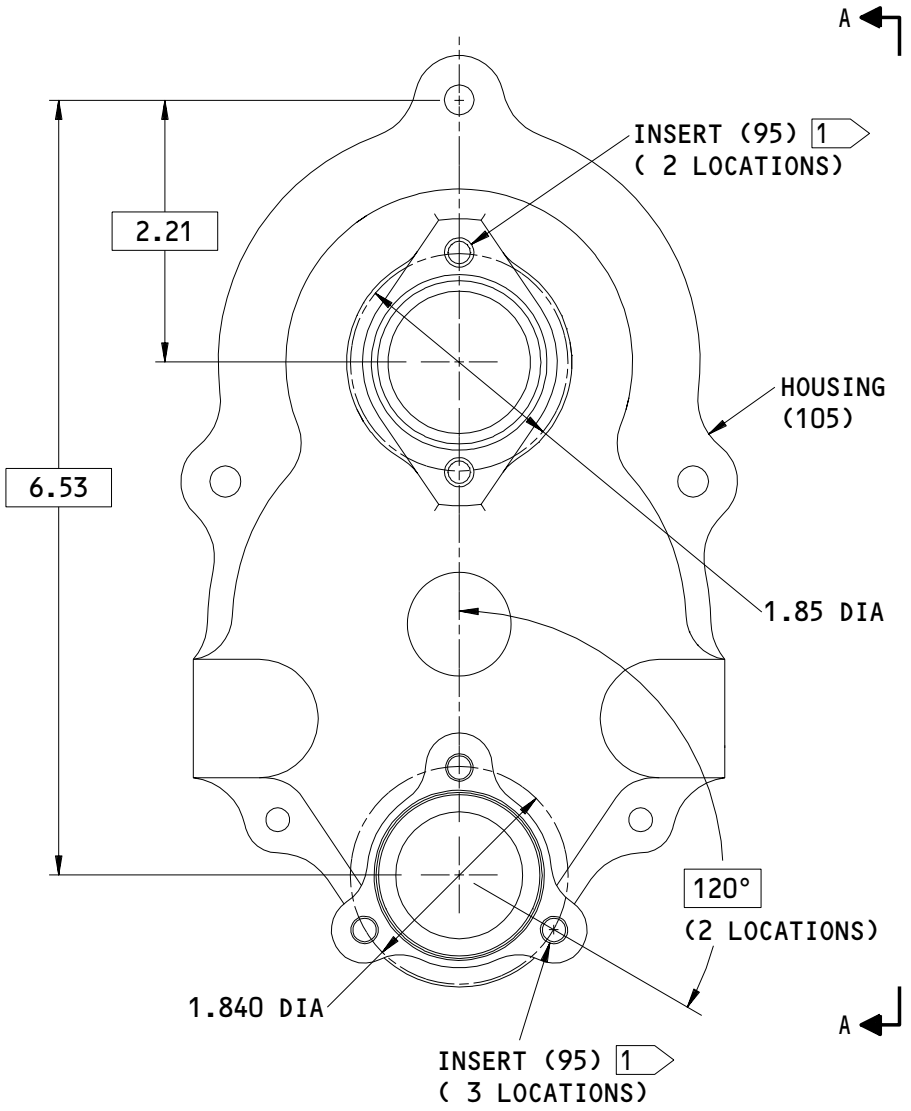
(1) SOPM 20-30-02, Stripping of Protective Finish

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

(3) SOPM 20-44-02, Temporary Protective Coatings

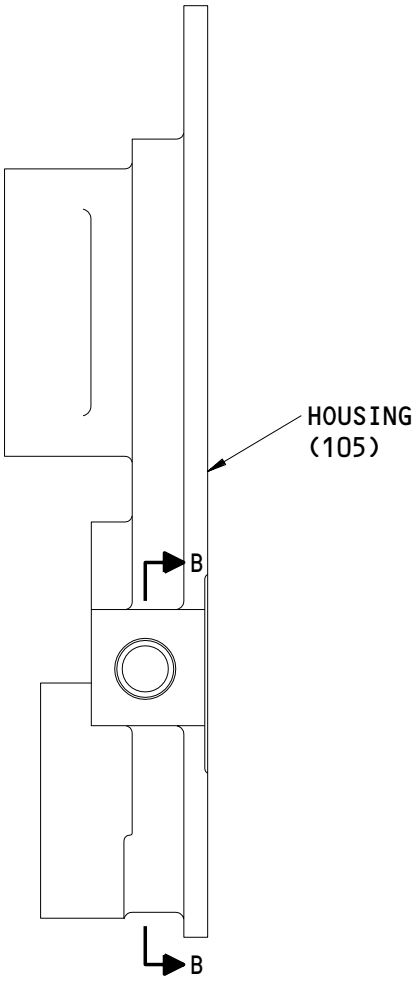
B. Procedure

(1) Apply no finish (F-25.01) but that temporary coatings may be applied for protection during handling, transportation, and storage.



256T5221-1
Housing Assembly Repair
Figure 601 (Sheet 1)

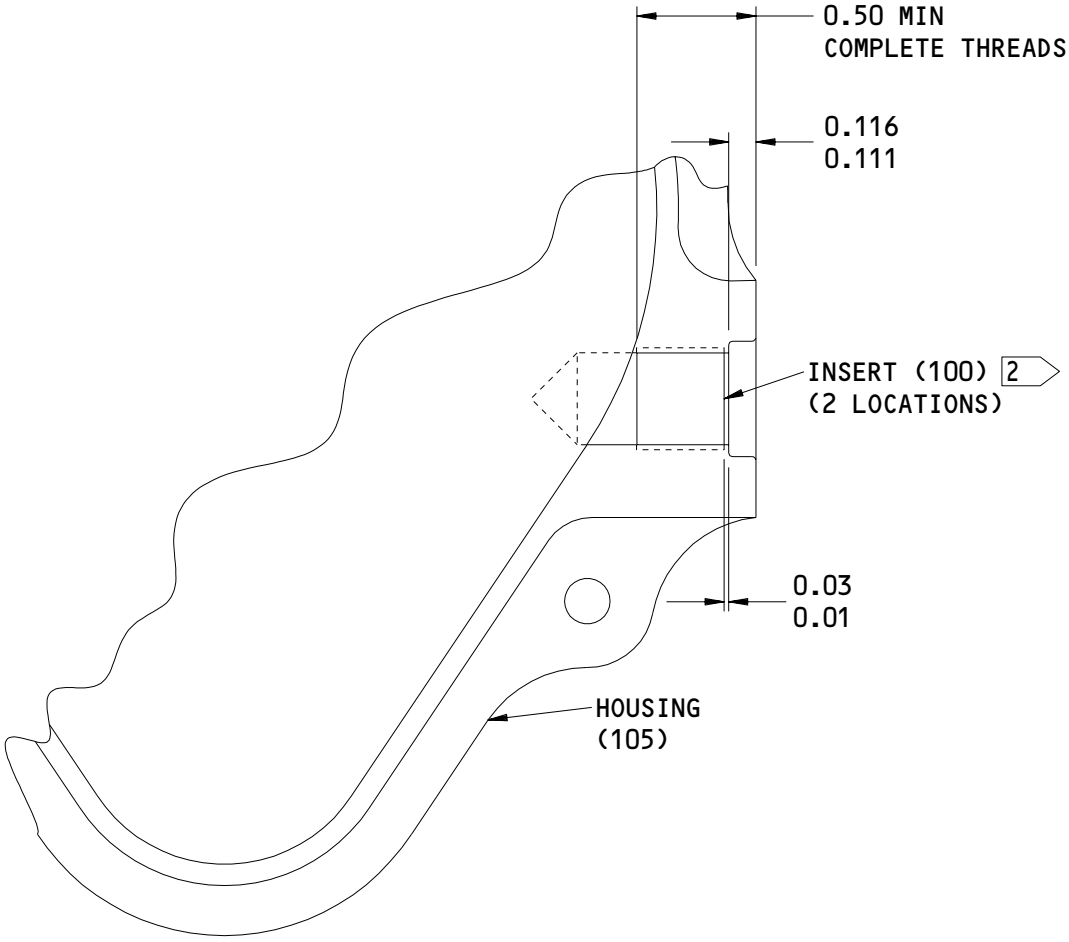
K33707



A–A

256T5221–1
Housing Assembly Repair
Figure 601 (Sheet 2)

K33710



B–B

1 INSTALL THIS INSERT WITH WET BMS 10–11, TYPE 1 PRIMER

2 INSTALL THIS INSERT WITH WET BMS 10–11, TYPE 1 PRIMER TO THE DEPTH SHOWN

ITEM NUMBERS REFER TO IPL FIG. 1

ALL DIMENSIONS ARE IN INCHES

256T5221–1
Housing Assembly Repair
Figure 601 (Sheet 3)

K33718

HOUSING - REPAIR 5-2

256T5221-2

1. General

   A. This procedure has the data necessary to refinish the housing (105).

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

   C. Refer to the REPAIR - GENERAL (27-81-62/601, REPAIR - GENERAL) for the Standard True Position Dimensioning Symbols shown in the repair.

   D. Refer to IPL Fig. 1 for item numbers.

   E. General repair details:

      (1) Materials: Aluminum alloy

2. Housing 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 Chemical and Solvent Resistant Finish

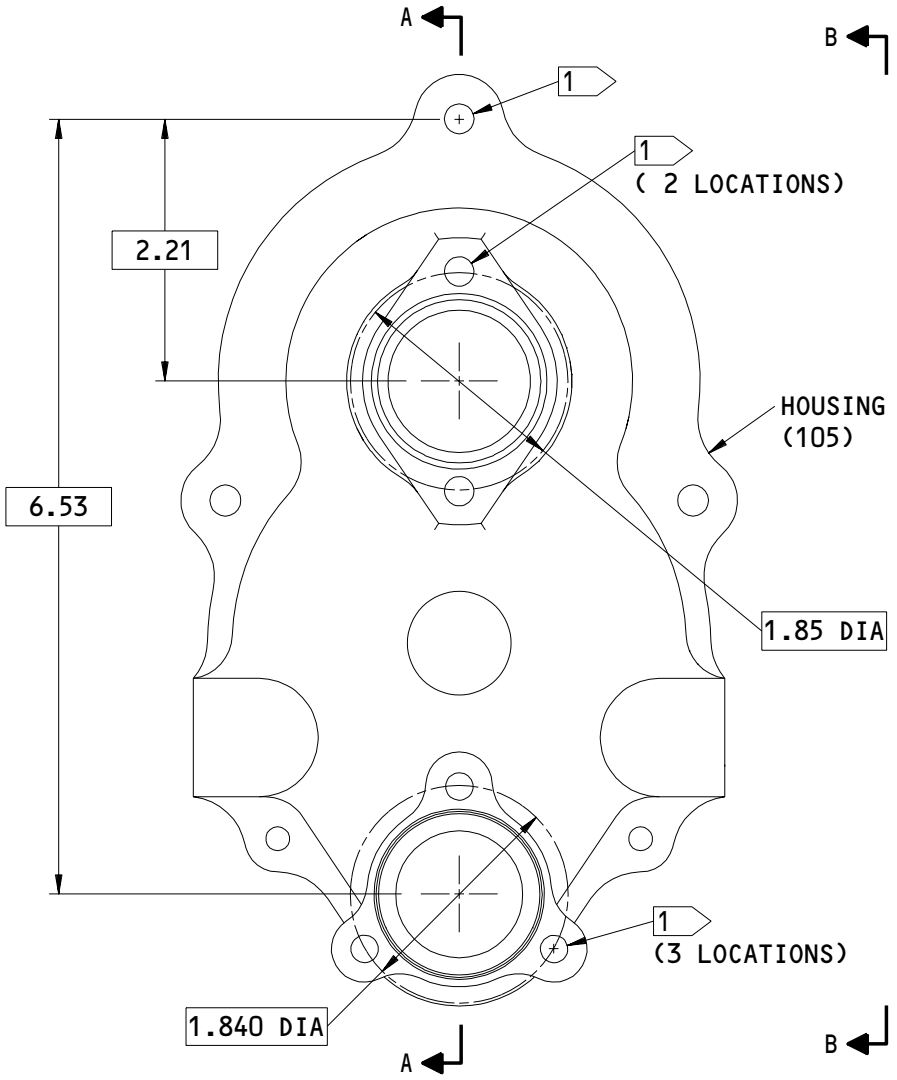
      (4) SOPM 20-43-03, Chemical Conversion Coatings for Aluminum

   C. Procedures

      (1) Chemical treat (F-17.26) all surfaces as shown in SOPM 20-43-03.

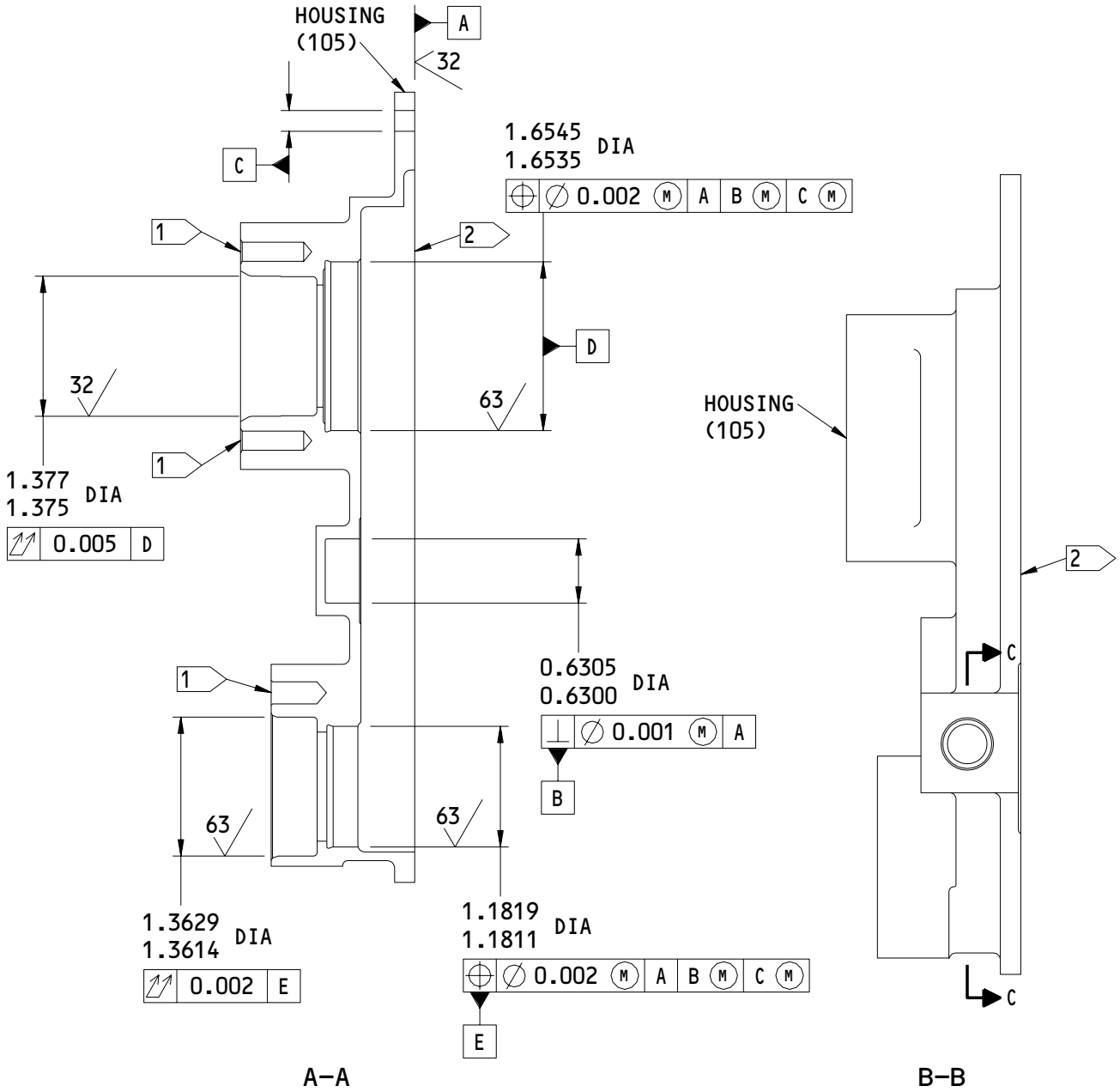
      (2) Apply two layers of BMS 10-11, type 1 primer (F-20.03) to all outside surfaces as shown in SOPM 20-41-02, but not in holes identified by flagnote 1 in Fig. 601.

(3) Do not put BMS 10-11, type 1 primer (F-20.03) to surface identified by flagnote 2 in Fig. 601.



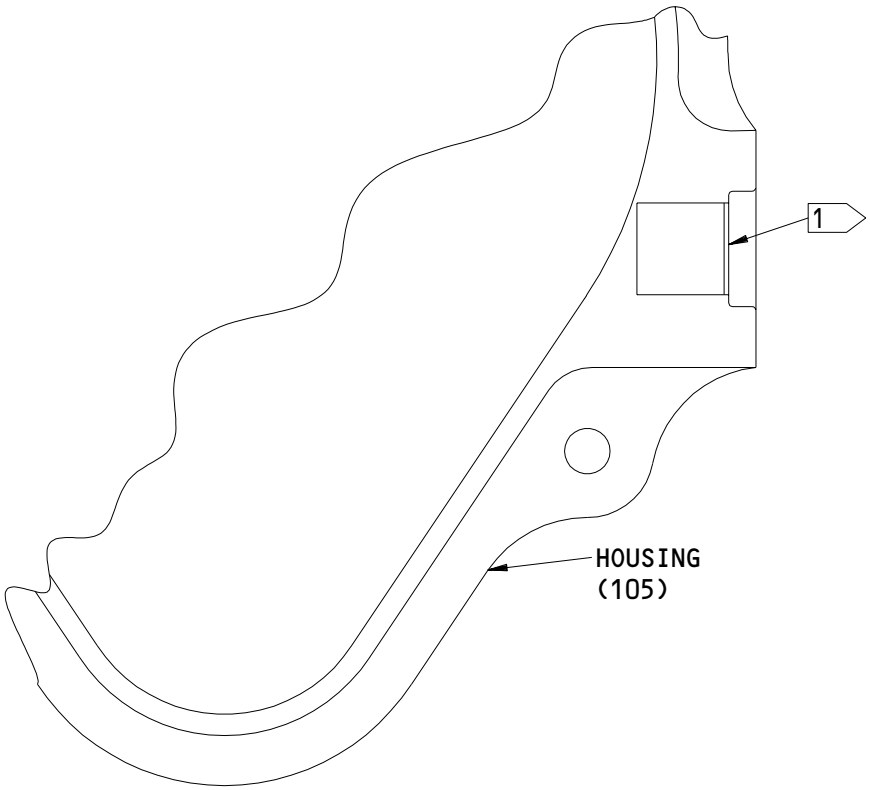
256T5221-2
Housing Refinish
Figure 601 (Sheet 1)

K33740



256T5221-2
Housing Refinish
Figure 601 (Sheet 2)

K33762



C–C

1 DO NOT PUT PRIMER IN THIS HOLE

2 DO NOT PUT PRIMER ON THIS SURFACE

125 ALL MACHINED SURFACES UNLESS SHOWN DIFFERENTLY

BREAK ALL SHARP EDGES

ITEM NUMBERS REFER TO IPL FIG. 1

ALL DIMENSIONS ARE IN INCHES

256T5221-2
Housing Refinish
Figure 601 (Sheet 3)

K33771

HOUSING ASSEMBLY - REPAIR 6-1

256T5223-1

1. General

A. This procedure has the data necessary to repair the no-back housing assembly (315).

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

C. Refer to the REPAIR - GENERAL (27-81-62/601, REPAIR - GENERAL) for the Standard True Position Dimensioning Symbols shown in the repair.

D. Refer to IPL Figs. 1 and 2 for item numbers.

2. Insert Replacement

A. Consumable Materials

NOTE: Equivalent material can be used.

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

B. References

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

(2) SOPM 20-50-22, How to Install Threaded Inserts

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

C. Procedures

(1) Remove the insert(s) (320) from the housing assembly (315) as shown in Fig. 601.

(2) Install new insert(s) (320) into the housing (325) with wet BMS 10-11, type 1 primer as shown in SOPM 20-50-22.

3. Housing Assembly Refinish

A. References

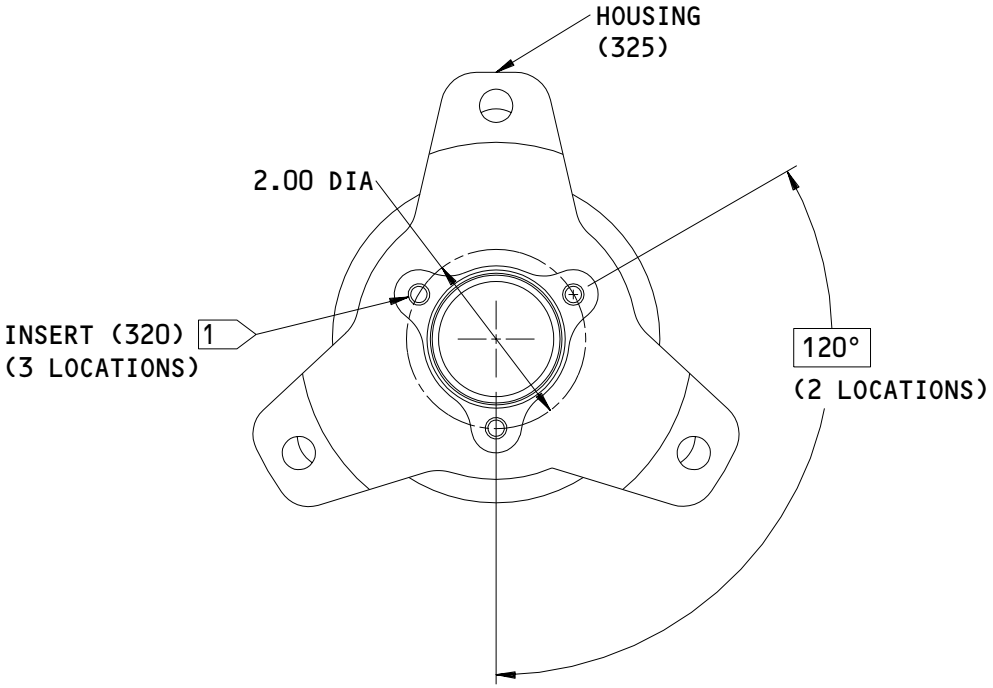
(1) SOPM 20-30-02, Stripping of Protective Finish

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

(3) SOPM 20-44-02, Temporary Protective Coatings

B. Procedure

(1) Apply no finish (F-25.01) but temporary coatings may be applied for protection during handling, transportation, and storage.



1 INSTALL THIS INSERT WITH WET BMS 10-11, TYPE 1 PRIMER

125 ALL MACHINED SURFACES UNLESS SHOWN DIFFERENTLY

BREAK ALL SHARP EDGES

ITEM NUMBERS REFER TO IPL FIG. 1,2

ALL DIMENSIONS ARE IN INCHES

256T5223-1
No-Back Housing Assembly Repair
Figure 601

K33786

HOUSING - REPAIR 6-2

256T5223-2

1. General

A. This procedure has the data necessary to refinish the housing (325).

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

C. Refer to the REPAIR - GENERAL (27-81-62/601, REPAIR - GENERAL) for the Standard True Position Dimensioning Symbols shown in the repair.

D. Refer to IPL Figs. 1 and 2 for item numbers.

E. General repair details:

(1) Material: Aluminum alloy

2. Housing Refinish

A. Consumable Materials

(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 Chemical and Solvent Resistant Finish

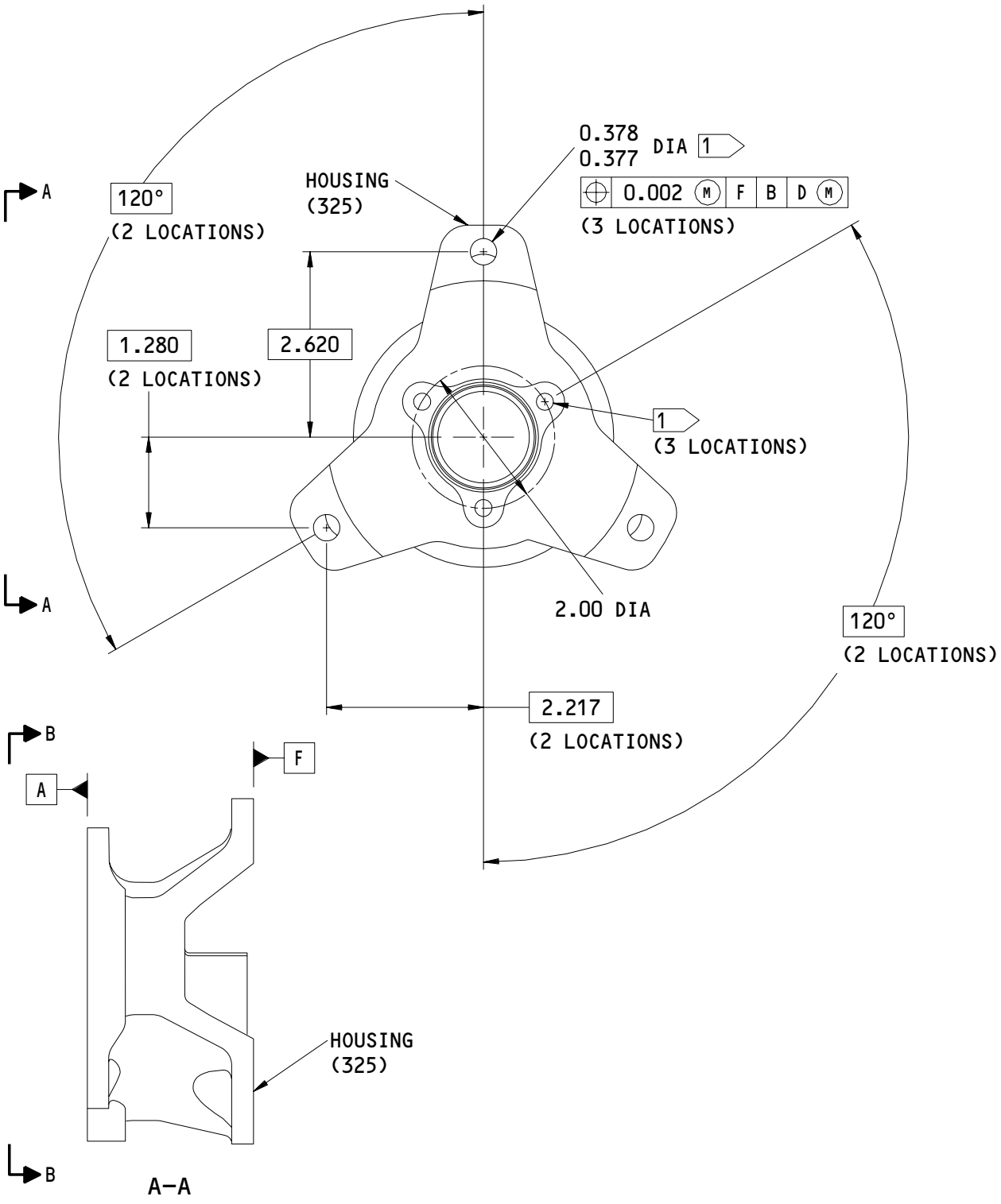
(4) SOPM 20-43-03, Chemical Conversion Coatings for Aluminum

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

C. Procedures

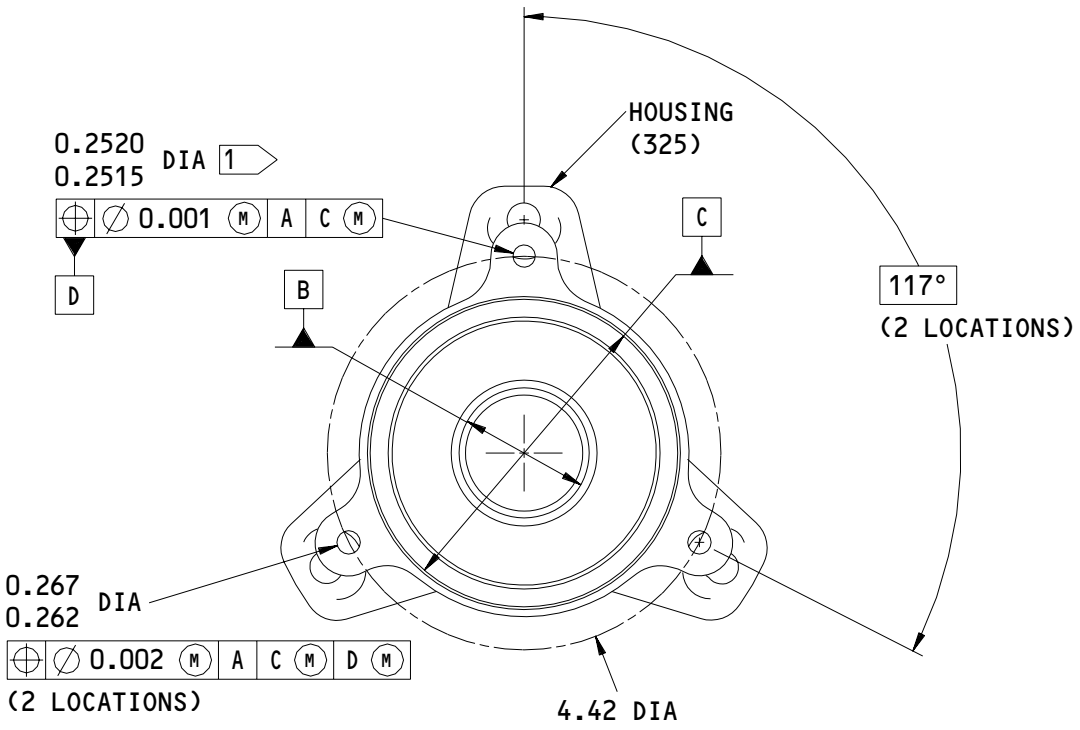
(1) Chemical treat (F-17.26) all surfaces as shown in SOPM 20-43-03.

(2) Apply two layers of BMS 10-11, type 1 primer (F-20.03) to all outside surfaces as shown in SOPM 20-41-02, but not in holes identified by flagnote 1 in Fig. 601.



256T5223-2
Housing Refinish
Figure 601 (Sheet 1)

K33817



B–B

1 DO NOT PUT PRIMER IN THIS HOLE

ITEM NUMBERS REFER TO IPL FIG. 1,2

ALL DIMENSIONS ARE IN INCHES

256T5223-2
Housing Refinish
Figure 601 (Sheet 2)

K33816

OUTPUT SHAFT - REPAIR 7-1

256T5231-1, -2

1. General

A. This procedure has the data necessary to refinish the output shaft (265).

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

C. Refer to the REPAIR - GENERAL (27-81-62/601, REPAIR - GENERAL) for the Standard True Position Dimensioning Symbols shown in the repair.

D. Refer to IPL Figs. 1 and 2 for item numbers.

E. General repair details:

(1) Materials: 4340M steel, 275-300 ksi

(2) Shot peen: Shot size: Hard shot (Rc 55-65)
Intensity: 0.006A
Coverage: 2.0

2. Shaft Repair

A. References

(1) SOPM 20-10-02, Machining of Alloy Steel

(2) SOPM 20-10-03, Shot Peening

(3) SOPM 20-10-04, Grinding of Chrome Plated parts

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

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

(6) SOPM 20-42-03, Hard Chrome Plating

B. Procedures (Fig. 601)

(1) Machine as necessary, within the repair limits shown in Fig. 601, to remove the damage area.

(2) Do magnetic particle check of the machined surface as shown in SOPM 20-20-01.

(3) Shot peen the machined surface as shown in SOPM 20-10-03.

(4) Hard chrome plate, class 3, the machined surface as shown in SOPM 20-43-03. Chrome plate runout must be 0.015-0.030 inch. Chrome plate is not allowed in fillet radii or on part edges.

(5) Plunge grind the chrome plate to the design dimensions and finish shown. Make sure that the chrome plate thickness is not more than 0.015 inch after you grind the plate.

(6) Do a magnetic particle check after the final grind as shown in SOPM 20-20-01.

3. Output Shaft 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 20-42-02, Low Hydrogen Embrittlement Cadmium-Titanium Alloy Plating

(4) SOPM 20-42-05, Bright Cadmium Plating

(5) SOPM 20-44-02, Temporary Protective Coatings

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

C. Procedures (Fig. 602)

CAUTION: BE CAREFUL TO PROTECT THE SEAL SURFACES. DAMAGE TO THESE SURFACES CAN CAUSE LEAKAGE.

(1) Apply no finish (F-25.01) to surfaces identified by flagnote 1. Mask this surface to protect it from damage if you do abrasive cleaning. The mask material must cover the indicated surface, to 0.03 inch of the edge, or less.

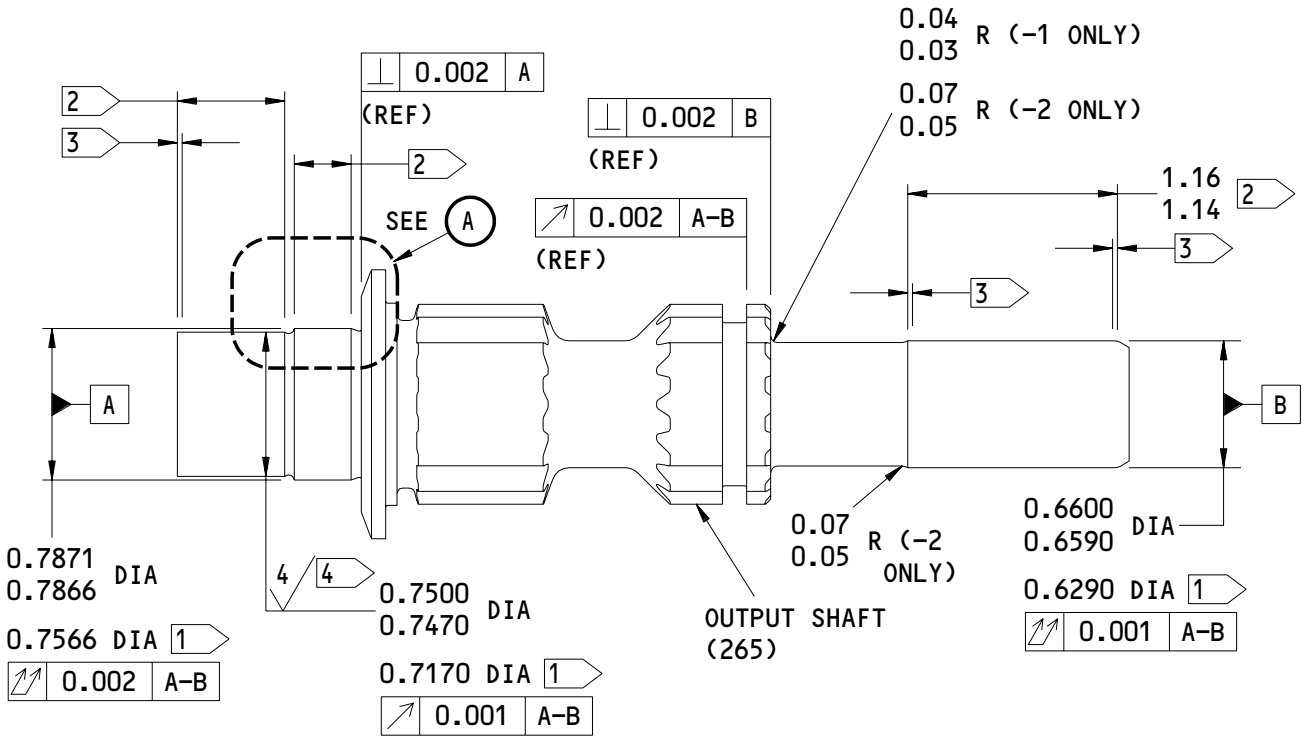
(2) Apply no finish (F-25.01) to the surface identified by flagnote 2, but a temporary coating can be applied.

(3) Cadmium plate (F-15.32) all surfaces, but not the surfaces identified by flagnotes on Fig. 602.

(4) Cadmium plate (F-15.32) throw-in is allowed on surfaces identified by flagnote 3.

(5) Cadmium-titanium plate (F-15.01) and apply BMS 10-11, type 1 primer (F-20.01) to the inside surfaces identified by flagnote 4. Plating thickness can be uncontrolled. Spline surfaces must have full plate coverage.

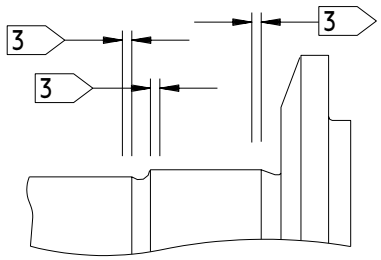
(6) Cadmium plate (F-15-32) is optional on surfaces identified by flagnote 5.



256T5231-2 SHOWN
256T5231-1 SIMILAR

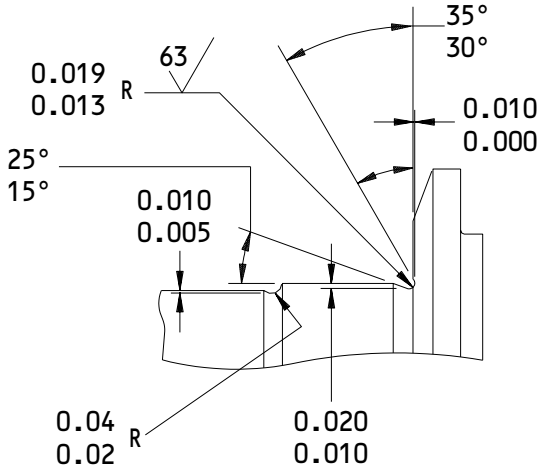
256T5231-1,-2
Output Shaft Repair
Figure 601 (Sheet 1)

K33914



CHROME PLATE RUNOUT

A



RELIEF DIMENSIONS

A

1 > REPAIR LIMIT

2 > CHROME PLATE REPAIR AREA

3 > CHROME PLATE RUNOUT 0.015–0.030 INCHES

4 > SURFACE FINISH CAN BE 4 TO 16 MICROINCHES

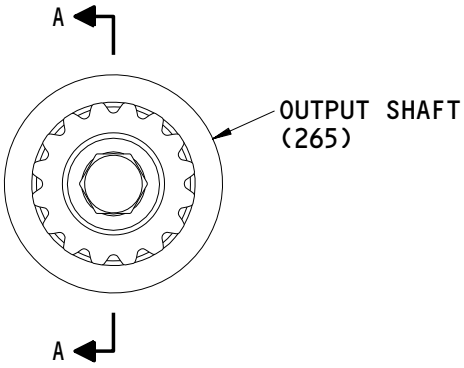
125 ALL MACHINED SURFACES UNLESS SHOWN DIFFERENTLY

BREAK ALL SHARP EDGES

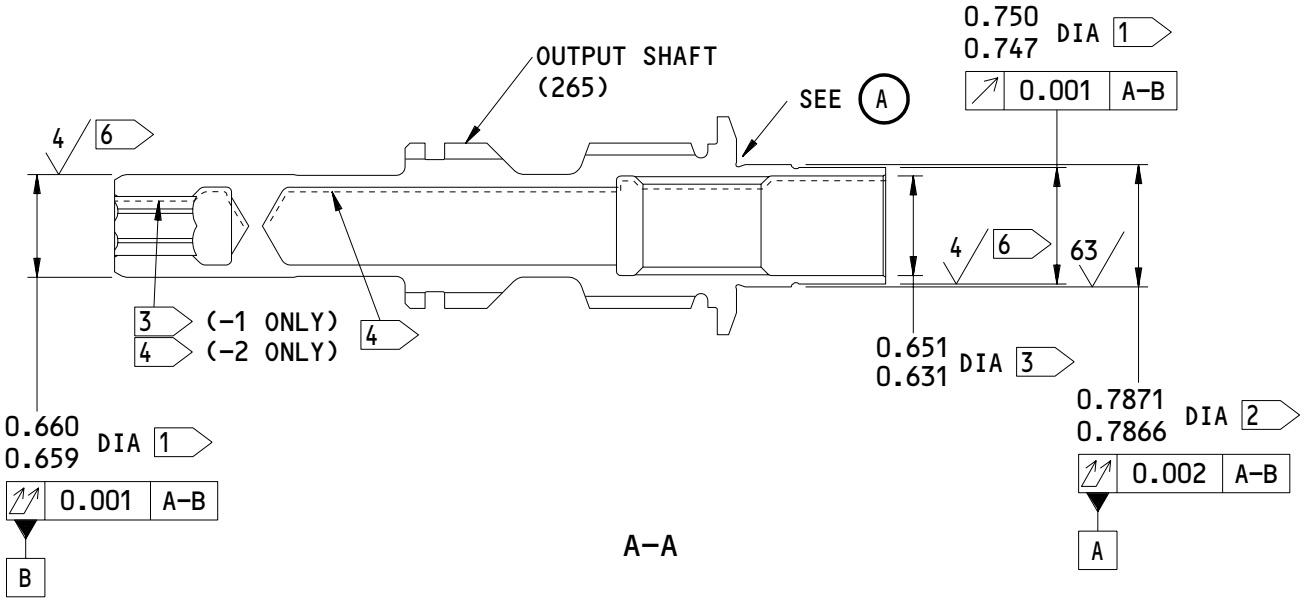
ITEM NUMBERS REFER TO IPL FIG. 1,2

ALL DIMENSIONS ARE IN INCHES

256T5231-1,-2
Output Shaft Repair
Figure 601 (Sheet 2)

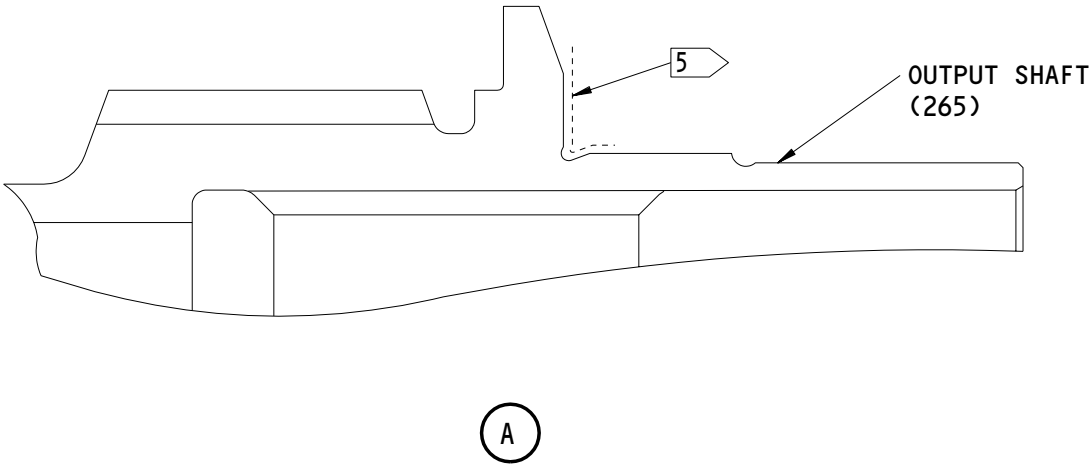


256T5231-2 SHOWN
256T5231-1 SIMILAR



256T5231-1,-2
Output Shaft Refinish
Figure 602 (Sheet 1)

K52836



1 APPLY NO FINISH (F-25.01) ON THIS SURFACE. MASK THIS SURFACE IF YOU DO ABRASIVE CLEANING

2 APPLY NO FINISH (F-25.01) BUT TEMPORARY PROTECTIVE COATING CAN BE APPLIED ON THIS SURFACE

3 CADMIUM PLATE (F-15.32) THROW-IN IS ALLOWED ON THESE SURFACES

4 CADMIUM-TITANIUM PLATE (F-15.01) AND APPLY BMS 10-11, TYPE 1 PRIMER (F-20.01) TO THESE SURFACES

5 CADMIUM PLATE (F-15.32) IS OPTIONAL ON TO THESE SURFACES

6 SURFACE FINISH CAN BE 4 TO 16 MICROINCHES

125 ALL MACHINED SURFACES UNLESS SHOWN DIFFERENTLY

ITEM NUMBERS REFER TO IPL FIG. 1,2

ALL DIMENSIONS ARE IN INCHES

256T5231-1,-2
Output Shaft Refinish
Figure 602 (Sheet 2)

K33886

HOUSING ASSEMBLY - REPAIR 8-1

256T5241-1

1. General

A. This procedure has the data necessary to repair the left housing assembly (90).

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

C. Refer to the REPAIR - GENERAL (27-81-62/601, REPAIR - GENERAL) for the Standard True Position Dimensioning Symbols shown in the repair.

D. Refer to IPL Fig. 2 for item numbers.

2. Insert Replacement

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 20-41-02, Application of Chemical and Solvent Resistant Finishes

(2) SOPM 20-50-22, How to Install Threaded Inserts

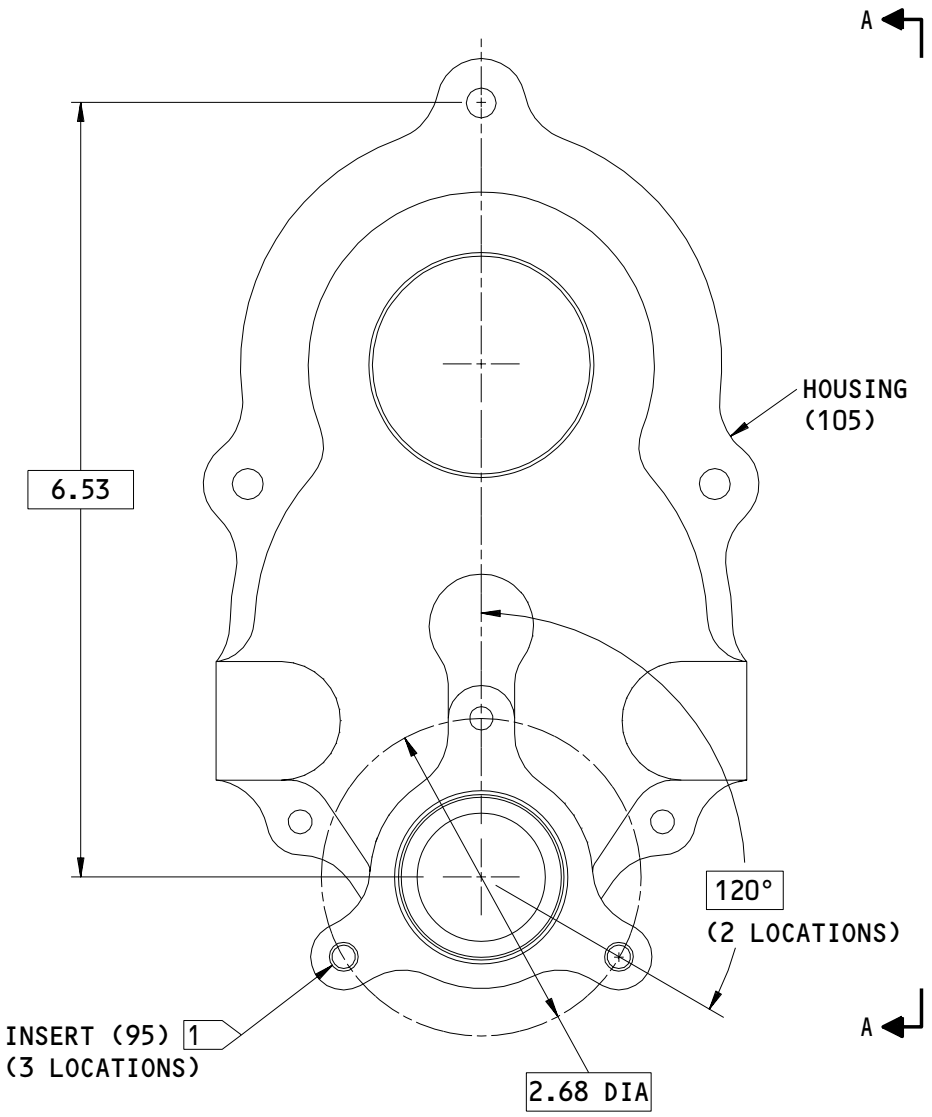
(3) SOPM 20-60-02, Finishing Materials

C. Procedures

(1) Remove the insert(s) (95, 100) from the housing (105) as shown in Fig. 601.

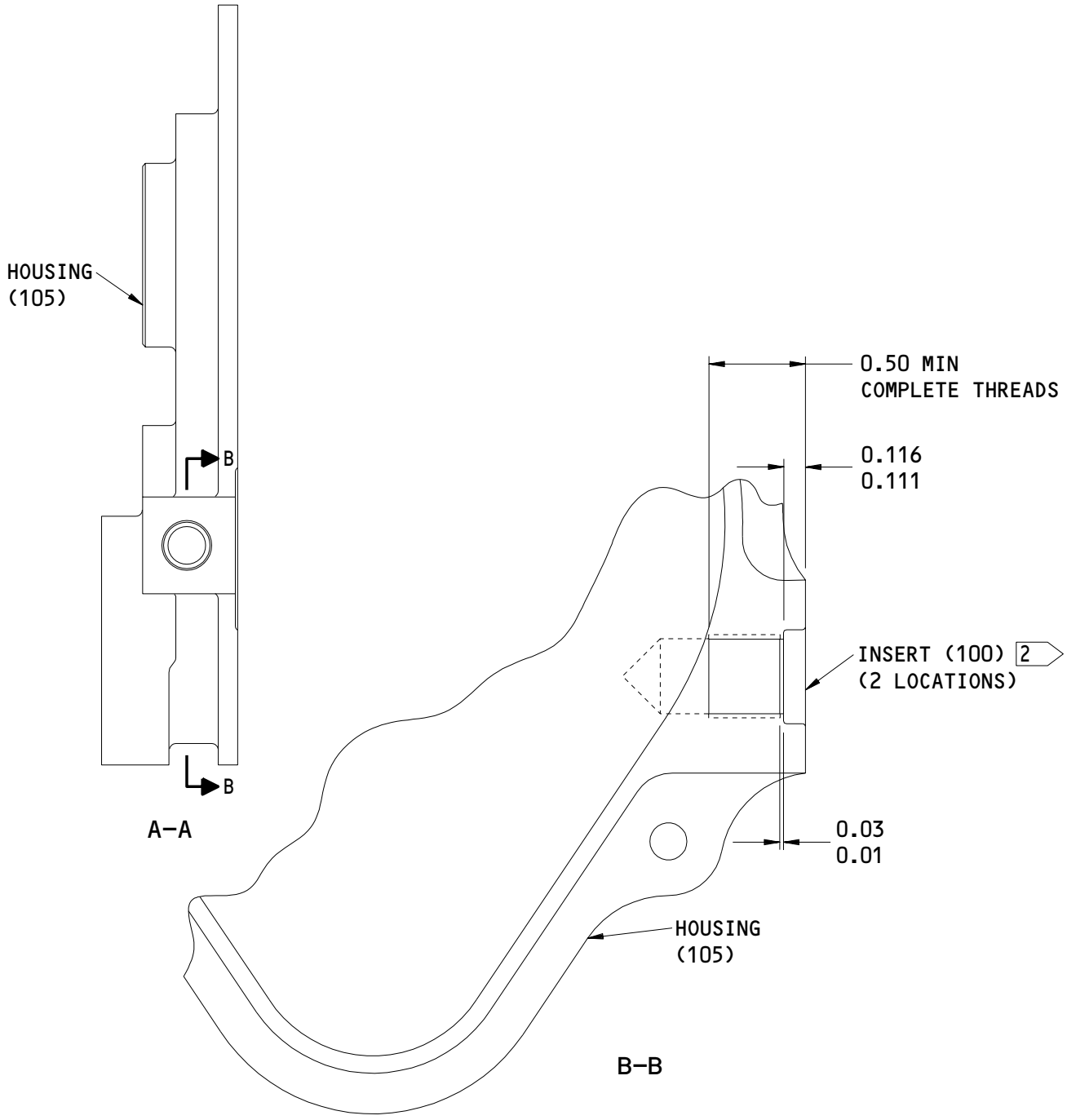
(2) Install new insert(s) (95) into the housing (105) with wet BMS 10-11, type 1 primer as shown in SOPM 20-50-22.

(3) Install new insert(s) (100) into the housing (105) with wet BMS 10-11, type 1 primer to the depth shown in Fig. 601, and as shown in SOPM 20-50-22.



256T5241-1
Housing Assembly Repair
Figure 601 (Sheet 1)

K33980



1 INSTALL THIS INSERT WITH WET BMS 10-11, TYPE 1 PRIMER

2 INSTALL THIS INSERT WITH WET BMS 10-11, TYPE 1 PRIMER TO THE DEPTH SHOWN

ITEM NUMBERS REFER TO IPL FIG. 2

ALL DIMENSIONS ARE IN INCHES

256T5241-1
Housing Assembly Repair
Figure 601 (Sheet 2)

K33984

HOUSING - REPAIR 8-2

256T5241-2

1. General

A. This procedure has the data necessary to refinish the housing (105).

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

C. Refer to the REPAIR - GENERAL (27-81-62/601, REPAIR - GENERAL) for the Standard True Position Dimensioning Symbols shown in the repair.

D. Refer to IPL Fig. 1 for item numbers.

E. General repair details:

(1) Material: Aluminum alloy

2. Housing 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

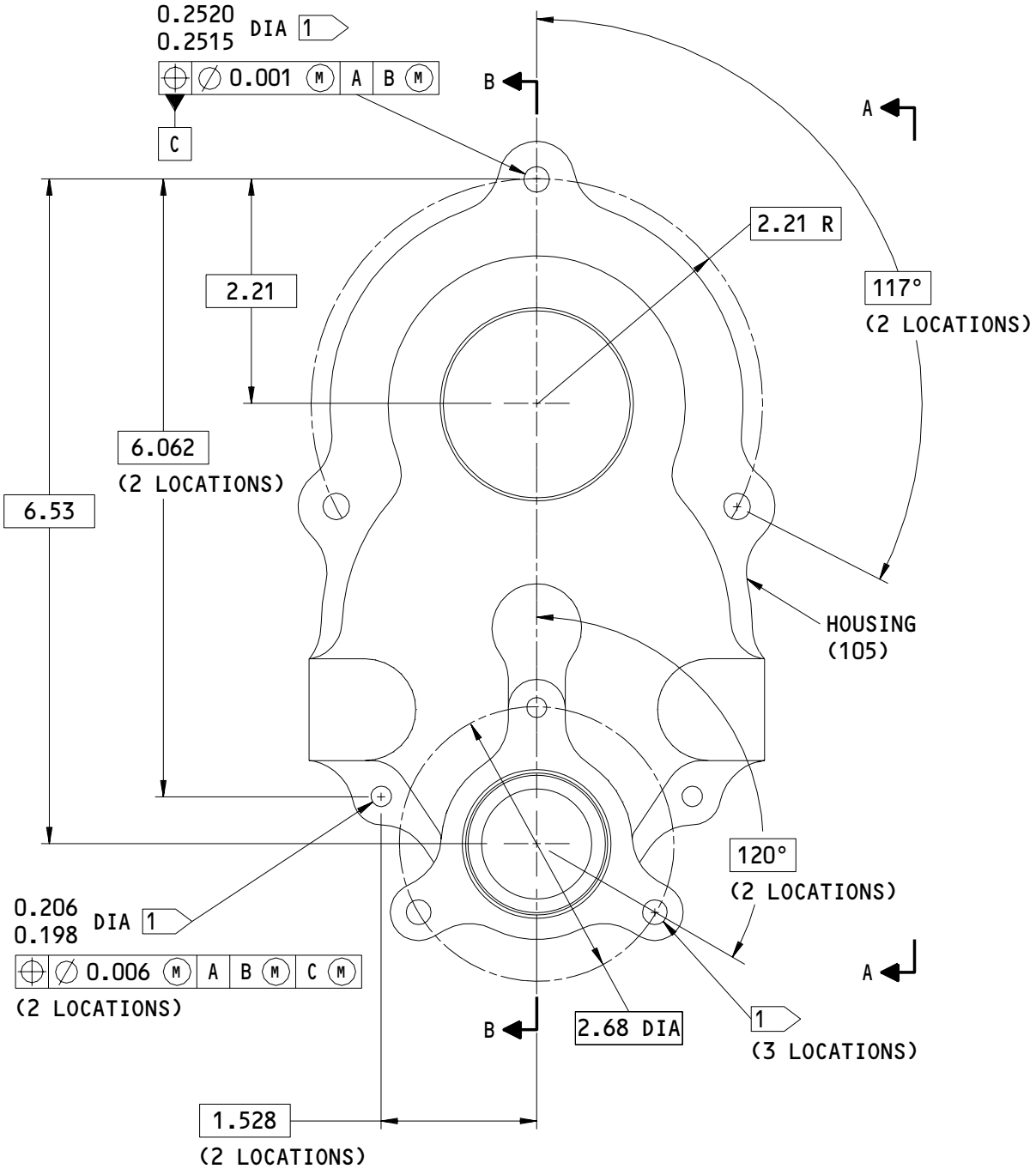
(3) SOPM 20-41-02, Application of Chemical and Solvent Resistant Finish

(4) SOPM 20-43-03, Chemical Conversion Coatings for Aluminum

C. Procedures

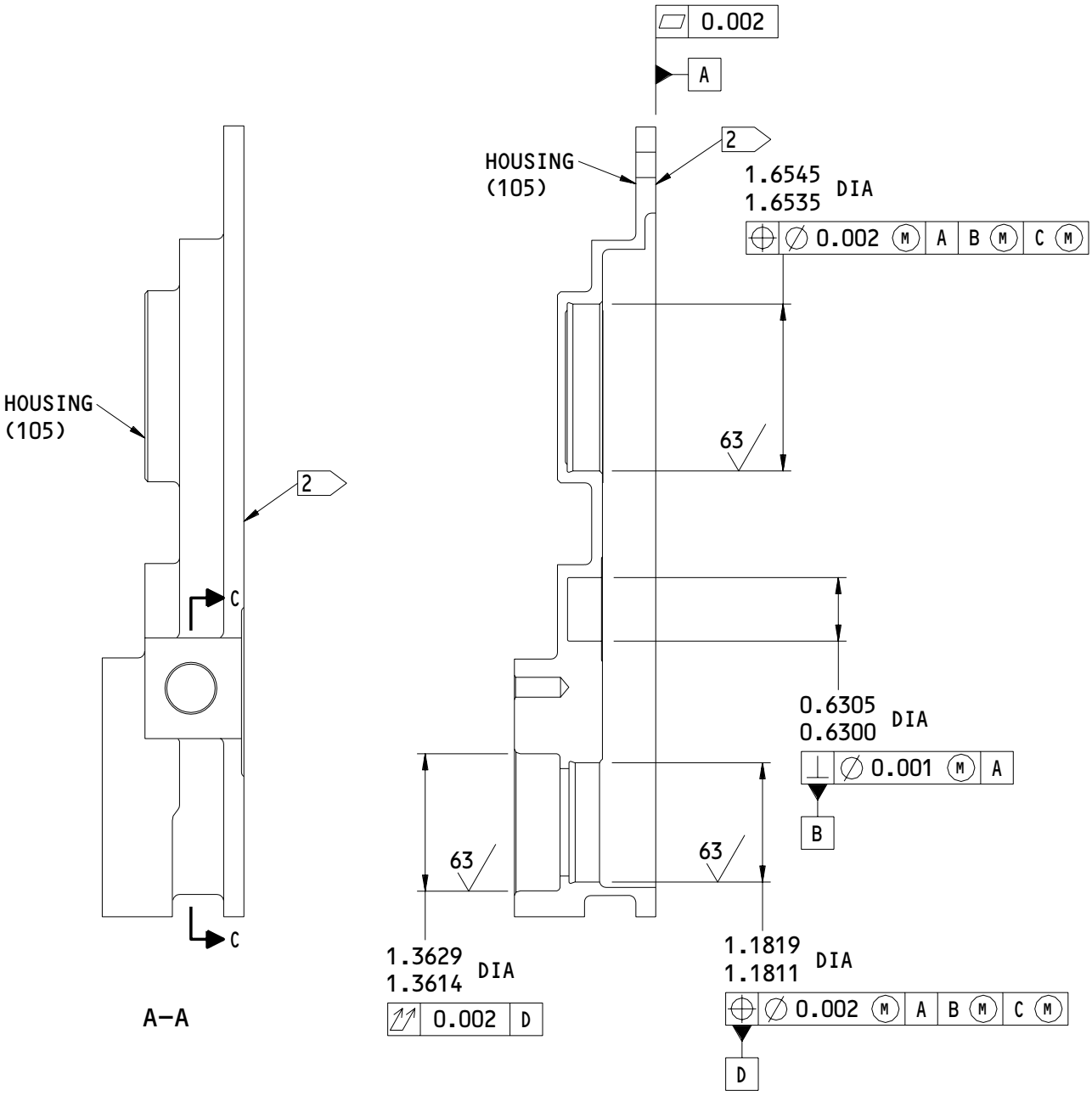
(1) Chemical treat (F-17.26) all surfaces as shown in SOPM 20-43-03.

(2) Apply two layers of BMS 10-11, type 1 primer (F-20.03) to all outside surfaces as shown in SOPM 20-41-02, but not in holes and surfaces identified by flagnotes 1 and 2 in Fig. 601.



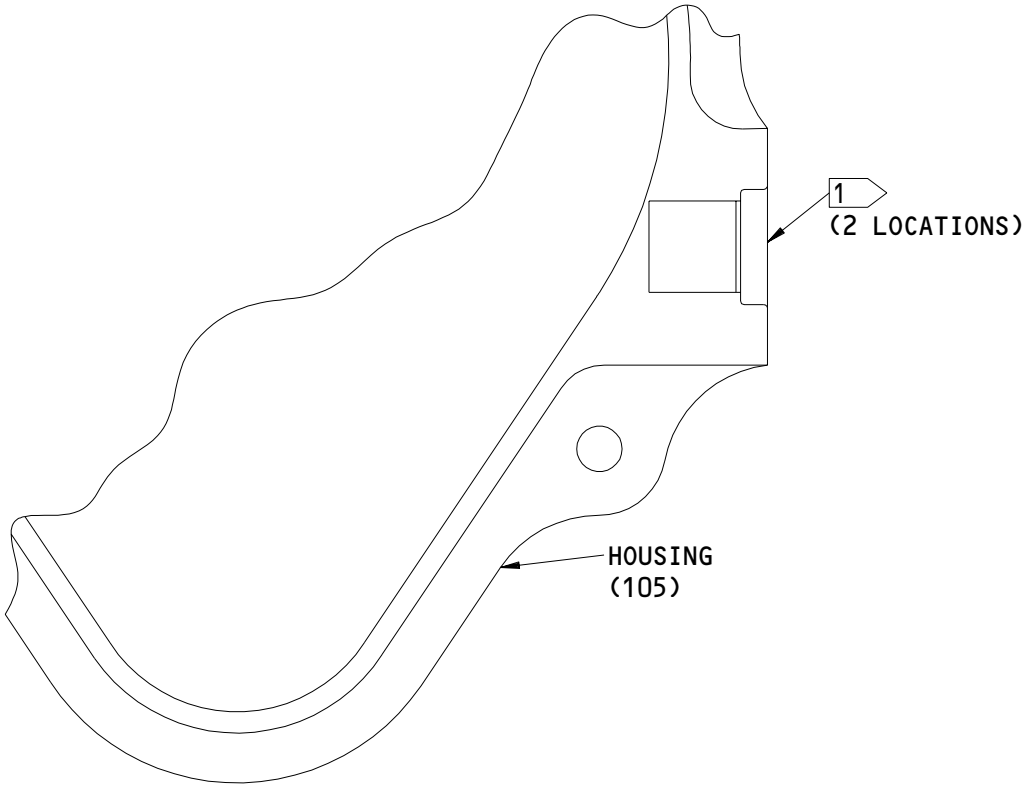
256T5241-2
Housing Refinish
Figure 601 (Sheet 1)

K34046



256T5241-2
Housing Refinish
Figure 601 (Sheet 2)

K34050



C–C

1 DO NOT PUT PRIMER IN THIS HOLE

2 DO NOT PUT PRIMER ON THIS SURFACE

125 ALL MACHINED SURFACES UNLESS SHOWN DIFFERENTLY

BREAK ALL SHARP EDGES

ITEM NUMBERS REFER TO IPL FIG. 2

ALL DIMENSIONS ARE IN INCHES

256T5241-2
Housing Refinish
Figure 601 (Sheet 3)

ASSEMBLY

1. General

A. This procedure has the data necessary to assemble the outboard leading edge slat drive no-back/offset gearbox assembly.

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

C. Refer to IPL Fig. 1 and 2 for item numbers.

2. Assembly

A. Special Tools

NOTE: Equivalent tools can be used.

(1) A27121-1 -- Seal Installation Tool

B. Consumable Materials

NOTE: Equivalent materials can be used.

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

(2) A00554 Adhesive -- Type 70 (SOPM 20-50-12)

(3) A00750 Adhesive -- Type 89 (SOPM 20-50-12)

(4) C00913 Compound -- BMS 3-27 Corrosion Inhibiting (SOPM 20-60-04)

(5) D00015 Grease -- BMS 3-24 (SOPM 20-60-03)

(6) D00016 Grease -- MIL-G-81322, Mobil 28 (SOPM 20-60-03)

(7) D00467 Fluid -- BMS 3-32, Type 2 Shock Strut (SOPM 20-60-03)

(8) D00590 Lubricant -- Brayco 795 (SOPM 20-60-03)

(9) D00633 Grease -- BMS 3-33 (SOPM 20-60-03)

(10) G00034 Cheese Cloth -- BMS 15-5 (SOPM 20-60-04)

(11) G51036 Paste -- BMS 3-38 Corrosion Inhibiting (SOPM 20-60-02)

C. References

(1) SOPM 20-30-01, Cleaning and Relubricating Antifriction Bearings

(2) SOPM 20-41-05, Application of Corrosion Inhibiting Compounds

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

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

(5) SOPM 20-50-05, Application of Aluminum Foil and Other Markers

(6) SOPM 20-50-06, Installation of O-rings and Teflon Seals

(7) SOPM 20-50-07, Lubrication

(8) SOPM 20-50-12, Application of Adhesives

(9) SOPM 20-50-19, General Sealing

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

(11) SOPM 20-60-03, Lubricants

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

D. Procedures

(1) General

(a) Use standard industry procedures and the steps given in this procedure to assemble this component.

(b) Install seals (IPL Fig. 1; 25, 55, 285A), (IPL Fig./2; 55, 285A) as shown in SOPM 20-50-06, and also use these precautions:

1) Clean and lubricate the seal lip and all seal contact surfaces in the housing with BMS 3-33 grease or Mobilgrease 28. Do not mix the two greases.

2) Install the seal as shown in Fig. 702, with the open side to the inside of the gearbox.

3) Be careful to prevent damage to the lip of the seal during installation. Use the seal installation tool to protect the seal lip from damage, and to apply pressure equally to the full circumference of the seal.

4) Apply a large quantity of grease to the lip of the seal.

(c) Seal the retainers (IPL Fig./1; 50, 280), (IPL Fig./2; 45, 50, 280) to the housing assemblies (90, 300, 315), and the housing assemblies to each other, with BMS 3-27 compound or BMS 3-38 paste. Apply the material as follows:

1) Apply the compound or paste as a thin film to the faying surface of the seal retainer and the housing. Apply the material from the outer profile to approximately 0.05 inch from the fillet radius.

2) Apply the compound or paste as a thin film to the faying surface between the housing assemblies. Apply the material from the outer profile to approximately 0.05 inch from the O-ring groove. Remove the unwanted material after assembly.

(2) Assemble the brake assembly (170), as follows:

(a) Put the plate assemblies (230) in a container filled with Brayco 795 oil for a minimum of 24 hours before assembly.

NOTE: This step is necessary only for new plate assemblies.

(b) Install the shim (260), stop (255), spring (250), small disks (245), and the plate assemblies (230) on the output shaft (265), as shown in Fig. 701.

NOTE: If necessary, machine the shim (260) to get the 0.005-0.015 inch gap between the shim (260) and the output shaft (265).

(c) Install the helical springs (200), pressure plate (205), plate assemblies (230), large disks (210), shim (215), and retaining ring (220) on the reaction plate (195).

NOTE: If necessary, machine the shim (215) to get the 0.005-0.015 inch gap between the pressure plate (205) and the reaction plate (195).

NOTE: Make sure to align the index marks on the pressure plate (205) and the reaction plate (195), as shown in Fig. 701.

(d) Install the above assembly on the output shaft (265), as shown in Fig. 701.

(e) Install the balls (190) between the reaction plate (195) and the ball ramp plate (185) on the output shaft (265). Make sure that the assembly index marks are aligned as shown in Fig. 701.

(f) Install the lock rings (180) and the lock ring retainer (175) on the output shaft (265).

(3) Assemble the 256T5220-1 gearbox assembly (IPL Fig./1), as follows:

(a) Clean the bearings (110, 125, 145, 155, 270) as shown in SOPM 20-30-01. Put the bearings in a container filled with Brayco 795 fluid as shown in SOPM 20-50-07.

(b) Heat the no-back housing assembly (315) to a maximum of 325°F for not more than ten hours to install the stator (165) and the pin (160) as shown in Fig. 702.

(c) Install the bearing (270) in the no-back housing assembly (315) by the shrink-fit procedure as shown in SOPM 20-50-03.

(d) Install the brake assembly (170) in the no-back housing assembly (315) through the bearing (270).

(e) Use the seal installation tool to install the seal (285A) in the no-back housing assembly (315). Fill the space outside the seal with BMS 3-33 grease or Mobilgrease 28, as indicated by flagnote 3 in Fig. 702. Do not mix the greases.

WARNING: BMS 3-27 CORROSION INHIBITING COMPOUND CONTAINS SOLVENTS, CHROMATES AND A SMALL AMOUNT OF BOUND ASBESTOS. CONSULT THE APPLICABLE SAFETY STANDARDS FOR APPROVED HANDLING PROCEDURES.

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

(f) Apply a thin layer of BMS 3-27 compound or BMS 3-38 paste to the faying surfaces of the seal retainer (280) and the no-back housing assembly (315).

(g) Apply BMS 3-27 compound or BMS 3-38 paste to the shank and the bottom of the head of the screws (275). Install the seal retainer (280) on the no-back housing assembly (315) with the screws. Tighten the screws to 20-25 pound-inches more than the run-on torque.

NOTE: Gradually tighten each screw in sequence until each screw is fully tightened.

(h) Install the bearings (110, 155) on the right housing assembly (300) as shown in SOPM 20-50-03.

(i) Install the packings (290A, 295A) on the right housing assembly (300) as shown in SOPM 20-50-06.

WARNING: BMS 3-27 CORROSION INHIBITING COMPOUND CONTAINS SOLVENTS, CHROMATES AND A SMALL AMOUNT OF BOUND ASBESTOS. CONSULT THE APPLICABLE SAFETY STANDARDS FOR APPROVED HANDLING PROCEDURES.

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

(j) Apply a thin layer of BMS 3-27 compound or BMS 3-38 paste to the faying surfaces of the right housing assembly (300) and the no-back housing assembly (315), as shown by flagnote 6 in Fig. 702. Remove unwanted compound or paste with clean BMS 5-15 cheese cloth.

(k) Carefully put the right housing assembly (300), with the brake assembly (170) installed in it, on the no-back housing assembly (315). Install the second-stage gear assembly (150) on the brake assembly (170), as shown in Fig. 702.

CAUTION: PREVENT DAMAGE TO 0.6686-0.6691 INCH DIAMETER SEAL SURFACES OF THE INPUT SHAFT (115). DAMAGE TO THE SHAFT SEAL SURFACES CAN CAUSE SEAL LEAKAGE AFTER GEARBOX IS ASSEMBLED.

(l) Install the needle bearings (125) in the pinion gear (120). Install the spring pin (140) in the dead shaft (135A). Install the dead shaft, thrust washers (130), pinion gear, and the input shaft (115) in the right housing assembly (300). Make sure that the input shaft is installed in the same orientation that it was removed, to align the wear patterns on the mating gears.

(m) Install the bearings (110, 145) in the left housing assembly (90) as shown in SOPM 20-50-03.

WARNING: BMS 3-27 CORROSION INHIBITING COMPOUND CONTAINS SOLVENTS, CHROMATES AND A SMALL AMOUNT OF BOUND ASBESTOS. CONSULT THE APPLICABLE SAFETY STANDARDS FOR APPROVED HANDLING PROCEDURES.

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

(n) Apply a thin layer of BMS 3-27 compound or BMS 3-38 paste to the faying surfaces of the right housing assembly (300) and the left housing assembly (90) as shown by flagnote 6 in Fig. 702. Remove unwanted compound or paste with clean BMS 5-15 cheese cloth.

(o) Apply BMS 5-95 sealant to the bolts (60, 75), washers (65, 80), and nuts (70, 85), as shown in SOPM 20-50-19.

(p) Install the left housing assembly (90) on the right housing assembly (300) with the bolts (60, 75), washers (65, 80), and nuts (70, 85). Install the washers as shown by flagnotes 7 and 8 in Fig. 702. Tighten the nuts (70) to 50-70 pound-inches more than the run-on torque. Tighten the nuts (85) to 20-25 pound-inches more than the run-on torque.

NOTE: Gradually tighten each nut in sequence until each nut is fully tightened.

CAUTION: DO NOT LET THE SPLINE TEETH OF THE INPUT SHAFT ASSEMBLY (115) CAUSE DAMAGE TO THE INSIDE DIAMETER SURFACES OF THE SHAFT SEAL (55). DAMAGE CAN CAUSE SEAL LEAKAGE AFTER GEARBOX IS ASSEMBLED.

(q) Use the seal installation tool to install the seal (55) in the left and right housing assemblies (90, 300) (SOPM 20-50-06). Fill the volume outside the seals with BMS 3-33 grease or Mobilgrease 28, as indicated by flagnote 9 in Fig. 702. Do not mix the greases.

WARNING: BMS 3-27 CORROSION INHIBITING COMPOUND CONTAINS SOLVENTS, CHROMATES AND A SMALL AMOUNT OF BOUND ASBESTOS. CONSULT THE APPLICABLE SAFETY STANDARDS FOR APPROVED HANDLING PROCEDURES.

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

(r) Apply a thin layer of BMS 3-27 compound or BMS 3-38 paste to the faying surfaces of the seal retainers (50) and the left and right housing assemblies (90, 300).

(s) Apply BMS 3-27 compound or BMS 3-38 paste to the shank and the bottom of the head of the screws (40). Install the seal retainers (50) on the left and right housing assemblies (90, 300) with the screws. Tighten the screws to 20-25 pound-inches more than the run-on torque.

(t) Apply BMS 3-33 grease or Mobilgrease 28 to the spline teeth and threads at each end of the input shaft (115). Do not mix the greases.

(u) Install the input couplings (45) on the input shaft (115) with the washers (35) and nuts (30). Tighten the nuts to 150-250 pound-inches more than the run-on torque.

(v) Use the seal installation tool to install the seal (25) in the left housing assembly (90).

(w) Install the packing (20) on the cover plate (15) as shown in Fig. 702.

(x) Apply a thin layer of BMS 3-24 or BMS 3-33 grease to the faying surfaces of the cover plate (15) and the left housing assembly (90) as shown in Fig. 702. Do not mix the greases.

WARNING: BMS 3-27 CORROSION INHIBITING COMPOUND CONTAINS SOLVENTS, CHROMATES AND A SMALL AMOUNT OF BOUND ASBESTOS. CONSULT THE APPLICABLE SAFETY STANDARDS FOR APPROVED HANDLING PROCEDURES.

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

(y) Apply a thin layer of BMS 3-27 compound or BMS 3-38 paste to the shank and the bottom of the head of the bolts (5). Install the cover plate (15) on the left housing assembly (90) with the bolts and washers (10). Tighten the bolts to 20-25 pound-inches more than the run-on torque. Partially tighten one bolt then the other, until each bolt is fully tightened.

(z) Apply Brayco 795 fluid to the threads of one oil plug (330), one packing (335), and to the seat for the packing in one of the oil plug holes in the left housing assembly (90). Refer to SOPM 20-50-06. Install the oil plug and the packing in the oil plug hole and tighten the oil plug to 100-110 pound-inches.

(aa) Fill the gearbox assembly with 260-280 cc of Brayco 795 fluid through the other oil plug hole in the left housing assembly (900). Apply Brayco 795 fluid to the threads of the other oil plug (330) and packing (335), and to the seat for the packing in the oil plug hole. Refer to SOPM 20-50-06. Install the oil plug and the packing in the oil plug hole and tighten the oil plug to 100-110 pound-inches.

NOTE: Use Brayco 795 fluid for the initial fill of the the gearbox after each overhaul. BMS 3-32 fluid is optional for service topping.

(ab) If necessary, remove a damaged or defective marker (340, 345). Apply Type 89 adhesive (Type 70 optional) to the entire faying surfaces of the replacement marker and the left housing assembly (90) as shown in SOPM 20-50-05. Install the new marker on the left housing assembly as shown in Fig. 702.

(ac) Apply a large quantity of BMS 3-33 grease to the splines on the inside of the output shaft (265).

(4) Assemble the 256T5240-1 gearbox assembly (IPL Fig./2), as follows:

(a) Clean the bearings (110, 125, 145, 155, 270) as shown in SOPM 20-30-01. Put the bearings in a container filled with Brayco 795 oil as shown in SOPM 20-50-07.

(b) Heat the no-back housing assembly (315) to a maximum of 325 °F for not more than ten hours to install the stator (165) and the pin (160) as shown in Fig. 703.

(c) Install the bearing (270) in the no-back housing assembly (315) as shown in SOPM 20-50-03.

(d) Install the brake assembly (170) in the no-back housing assembly (315) through the bearing (270).

(e) Use the seal installation tool to install the seal (285A) in the no-back housing (315). Fill the space outside the seal with BMS 3-33 grease or Mobilgrease 28, as indicated by flagnote 3 in Fig. 703. Do not mix the greases.

WARNING: BMS 3-27 CORROSION INHIBITING COMPOUND CONTAINS SOLVENTS, CHROMATES AND A SMALL AMOUNT OF BOUND ASBESTOS. CONSULT THE APPLICABLE SAFETY STANDARDS FOR APPROVED HANDLING PROCEDURES.

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

(f) Apply a thin layer of BMS 3-27 compound or BMS 3-38 paste to the faying surfaces of the seal retainer (280) and the no-back housing assembly (315).

(g) Apply BMS 3-27 compound or BMS 3-38 paste to the shank and the bottom of the head of the screws (275). Install the seal retainer (280) onto the no-back housing assembly (315) with the screws. Tighten the screws to 20-25 pound-inches more than the run-on torque.

NOTE: Gradually tighten each screw in sequence until each screw is fully tightened.

(h) Install the bearings (110, 155) in the right housing assembly (300) as shown in SOPM 20-50-03.

(i) Install the packings (290A, 295A) on the right housing assembly (300) as shown in SOPM 20-50-06.

WARNING: BMS 3-27 CORROSION INHIBITING COMPOUND CONTAINS SOLVENTS, CHROMATES AND A SMALLAMOUNT OF BOUND ASBESTOS. CONSULT THE APPLICABLE SAFETY STANDARDS FOR APPROVED HANDLING PROCEDURES.

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

(j) Apply a thin layer of BMS 3-27 compound or BMS 3-38 paste to the faying surfaces of the right housing assembly (300) and the no-back housing assembly (315) as shown by flagnote 6 in Fig. 702. Remove unwanted compound or paste with clean BMS 5-15 cheese cloth.

(k) Carefully put the right housing assembly (300), with the brake assembly (170) installed in it, on the no-back housing assembly (315). Install the second stage gear assembly (150) on the brake assembly (170) as shown in Fig. 703.

CAUTION: PREVENT DAMAGE TO 0.6686-0.6691 INCH-DIAMETER SEAL SURFACES OF THE INPUT SHAFT (115). DAMAGE TO THE SHAFT SEAL SURFACES CAN CAUSE SEAL LEAKAGE AFTER GEARBOX IS ASSEMBLED.

(l) Install the needle bearings (125) in the pinion gear (120). Install the spring pin (140) in the dead shaft (135A). Install the dead shaft (135), thrust washers (130), pinion gear (120), and the input shaft (115) in the right housing assembly (300). Make sure that the input shaft is installed in the same orientation that it was removed, to align the wear patterns on the mating gears.

(m) Install the bearings (110, 145) into the left housing assembly (90) as shown in SOPM 20-50-03.

WARNING: BMS 3-27 CORROSION INHIBITING COMPOUND CONTAINS SOLVENTS, CHROMATES AND A SMALL AMOUNT OF BOUND ASBESTOS. CONSULT THE APPLICABLE SAFETY STANDARDS FOR APPROVED HANDLING PROCEDURES.

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

(n) Apply a thin layer of BMS 3-27 compound or BMS 3-38 paste to the faying surfaces of the right housing assembly (300) and the left housing assembly (90) as shown by flagnote 6 in Fig. 703. Remove unwanted compound or paste with clean BMS 5-15 cheese cloth.

(o) Apply BMS 5-95 sealant to the bolts (60, 75), washers (65, 80), and nuts (70, 85), as shown in SOPM 20-50-19.

(p) Install the left housing assembly (90) on the right housing assembly (300) with the bolts (60, 75), washers (65, 80), and nuts (70, 85). Install the washers as shown by flagnotes 7 and 8 in Fig. 703. Tighten the nuts (70) to 50-70 pound-inches more than the run-on torque. Tighten the nuts (85) to 20-25 pound-inches more than the run-on torque.

NOTE: Gradually tighten each nut in sequence until each nut is fully tightened.

CAUTION: DO NOT LET THE SPLINE TEETH OF THE INPUT SHAFT ASSEMBLY (115) CAUSE DAMAGE TO THE INSIDE DIAMETER SURFACES OF THE SHAFT SEAL (55). DAMAGE CAN CAUSE SEAL LEAKAGE AFTER GEARBOX IS ASSEMBLED.

(q) Use the seal installation tool to install the seal (55) in the left and right housing assemblies (90, 300) (SOPM 20-50-06). Fill the volume outside the seals with BMS 3-33 grease or Mobilgrease 28, as indicated by flagnote 9 in Fig. 703.

WARNING: BMS 3-27 CORROSION INHIBITING COMPOUND CONTAINS SOLVENTS, CHROMATES AND A SMALL AMOUNT OF BOUND ASBESTOS. CONSULT THE APPLICABLE SAFETY STANDARDS FOR APPROVED HANDLING PROCEDURES.

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

(r) Apply a thin layer of BMS 3-27 compound or BMS 3-38 paste to the faying surfaces of the seal retainers (50) and the left and right housing assemblies (90, 300).

(s) Apply BMS 3-27 compound or BMS 3-38 paste to the shank and the bottom of the head of the screws (40). Install the seal retainers (50) on the left and right housing assemblies (90, 300) with the screws. Tighten the screws to 20-25 pound-inches more than the run-on torque.

NOTE: Gradually tighten each screw in sequence until each screw is fully tightened.

(t) Apply BMS 3-33 grease or Mobilgrease 28 to the spline teeth and threads at each end of the input shaft (115). Do not mix the greases.

(u) Install the input couplings (45) on the input shaft (115) with the washers (35) and nuts (30). Tighten the nuts to 150-250 pound-inches more than the run-on torque.

(v) Apply Brayco 795 fluid to the threads of one oil plug (330), one packing (335), and to the seat for the packing in one of the oil plug holes in the left housing assembly (90). Refer to SOPM 20-50-06. Install the oil plug and the packing in the oil plug hole and tighten the oil plug to 100-110 pound-inches.

(w) Fill the gearbox assembly with 260-280 cc of Brayco 795 fluid through the other oil plug hole in the left housing assembly (900). Apply Brayco 795 fluid to the threads of the other oil plug (330) and packing (335), and to the seat for the packing in the oil plug hole. Refer to SOPM 20-50-06. Install the oil plug and the packing in the oil plug hole and tighten the oil plug to 100-110 pound-inches.

NOTE: Use Brayco 795 fluid for the initial fill of the the gearbox after each overhaul. BMS 3-32 fluid is optional for service topping.

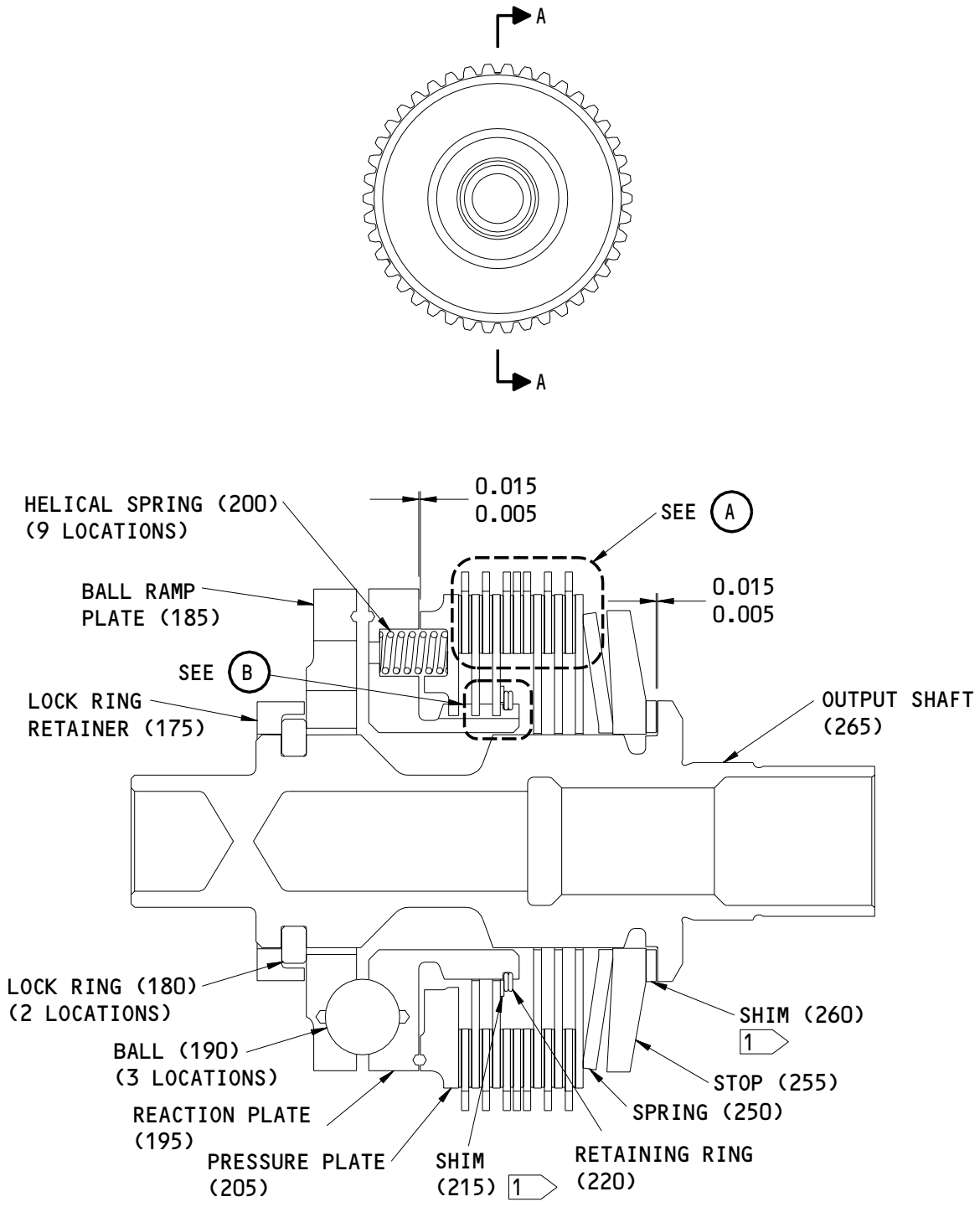
(x) If necessary, remove a damaged or defective marker (340, 345). Apply Type 89 adhesive (Type 70 optional) to the entire faying surfaces of the replacement marker and the left housing assembly (90) as shown in SOPM 20-50-05. Install the new marker on the left housing assembly as shown in Fig. 702.

(y) Apply a large quantity of BMS 3-33 grease to the splines on the inside of the output shaft (265).

E. Do the functional test ot the gearbox assembly (27-81-62/TESTING & FAULT ISOLATION).

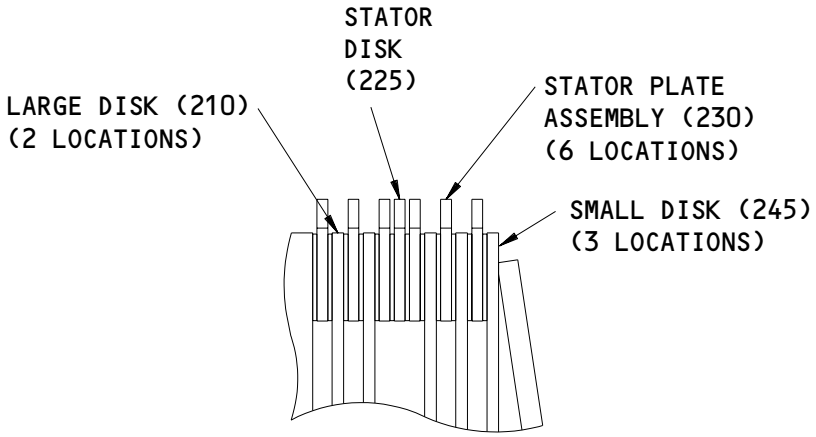
3. Storage

A. Use standard industry procedures to store this component.

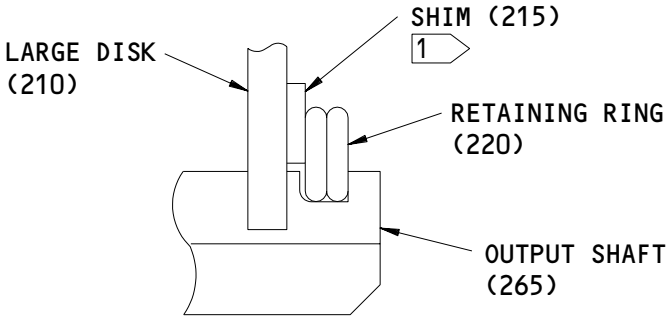


A-A

No-Back Brake Assembly
Figure 701 (Sheet 1)



A



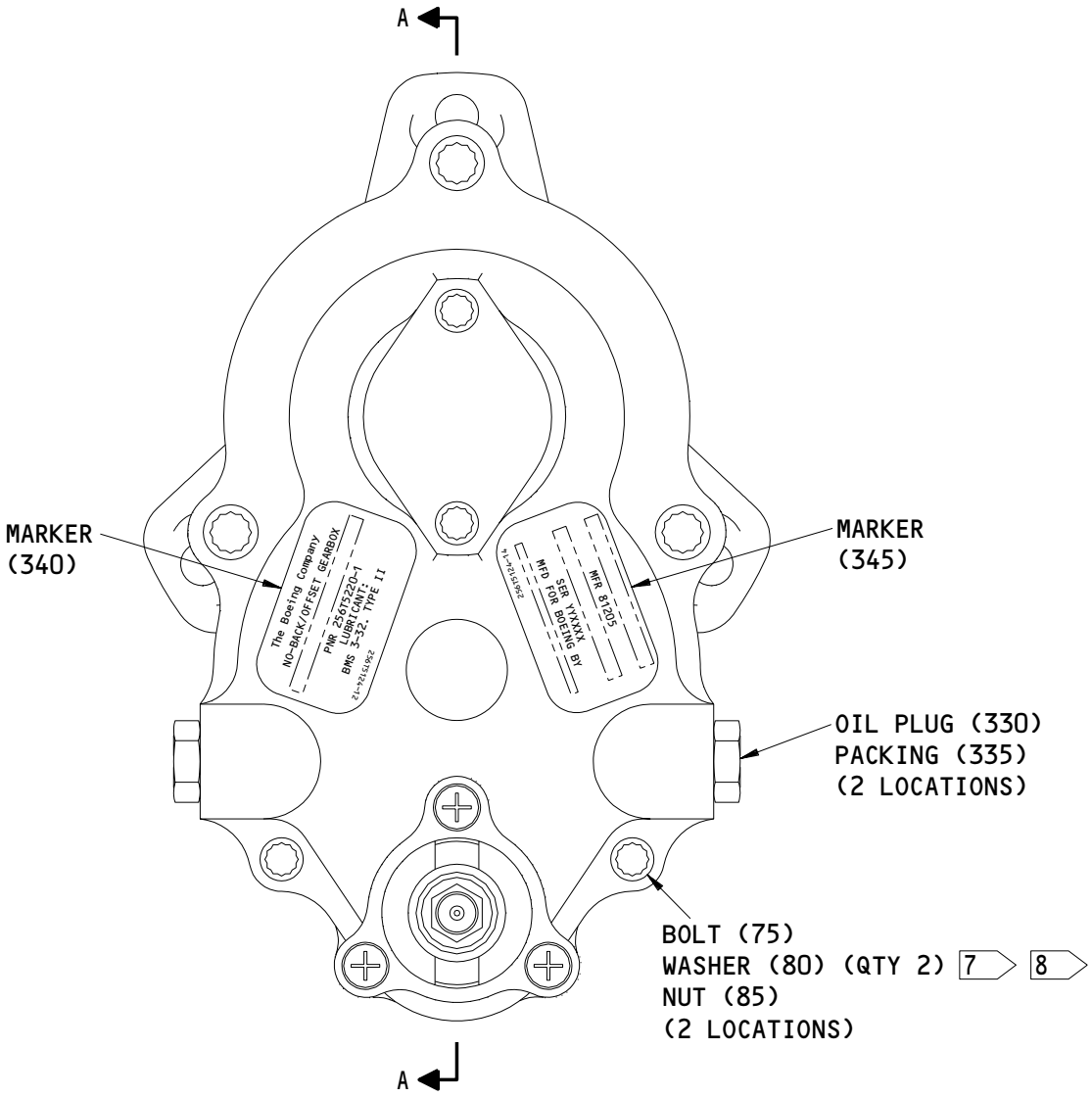
B

1 MACHINE THIS SHIM TO OBTAIN THE 0.005-0.015 INCH GAP BETWEEN THE REACTION PLATE, PRESSURE PLATE, THE STOP AND OUTPUT SHAFT

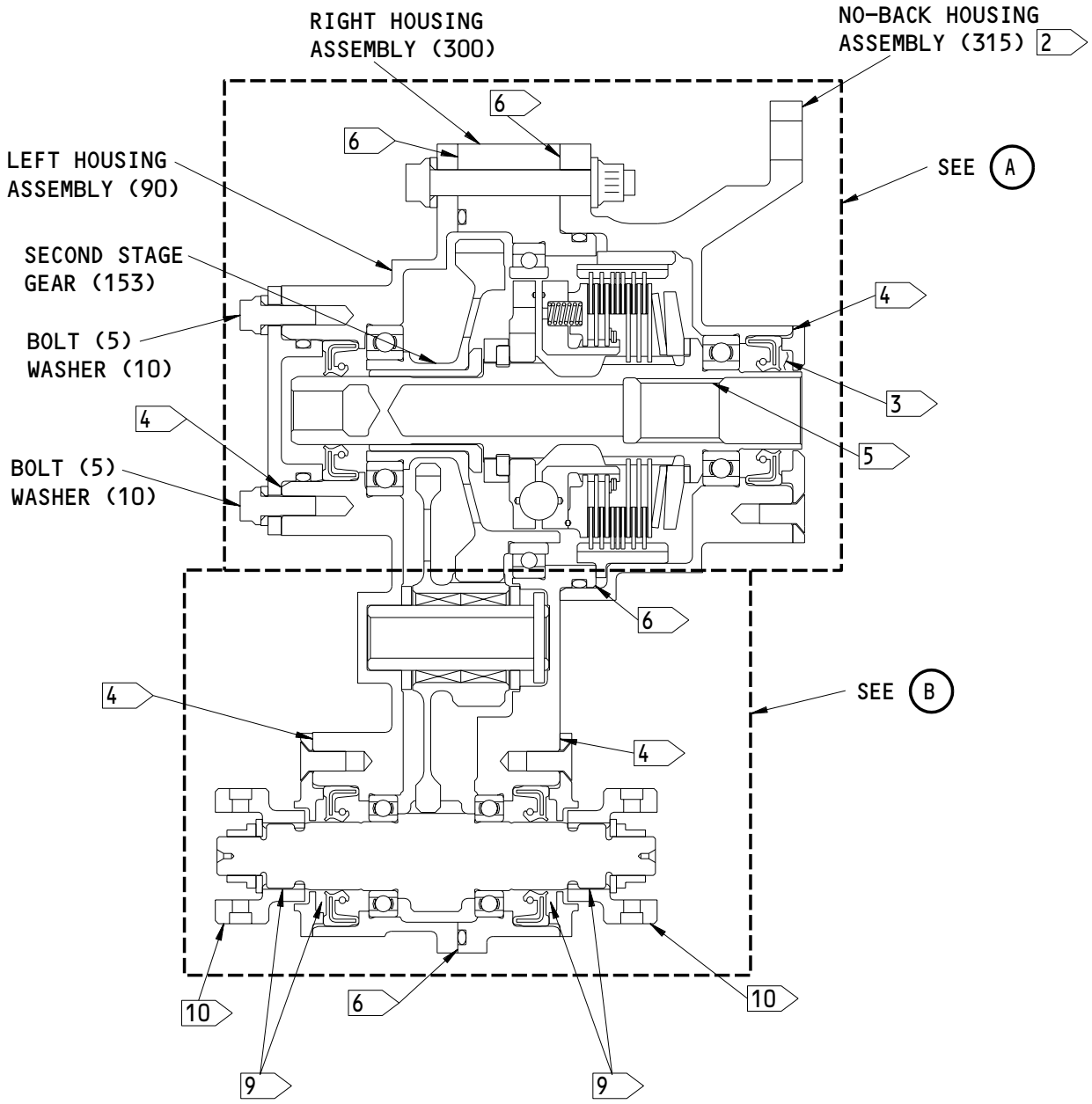
ITEM NUMBERS REFER TO IPL FIG. 1,2

ALL DIMENSIONS ARE IN INCHES

No-Back Brake Assembly
Figure 701 (Sheet 2)



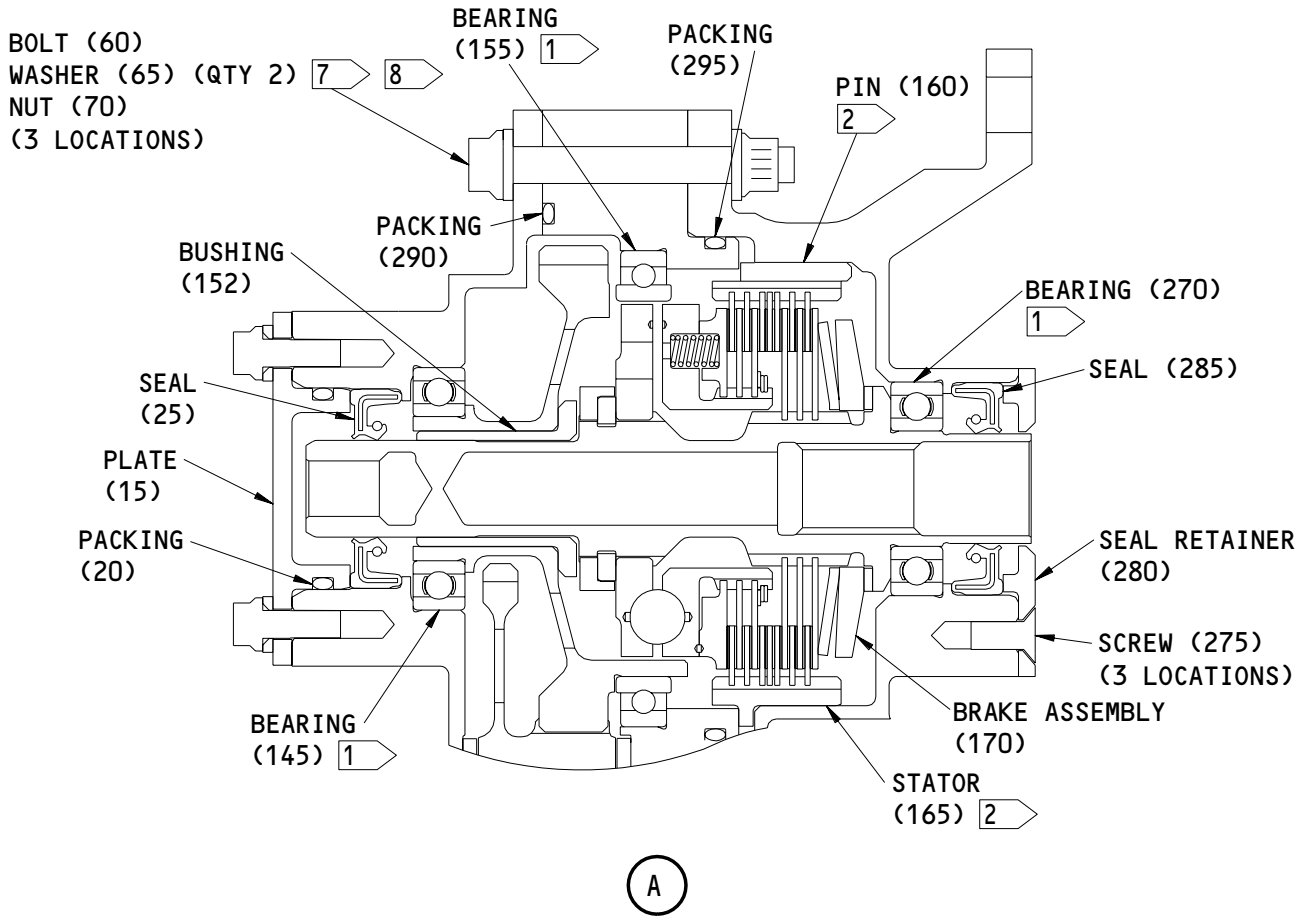
256T5220
Gearbox Assembly
Figure 702 (Sheet 1)



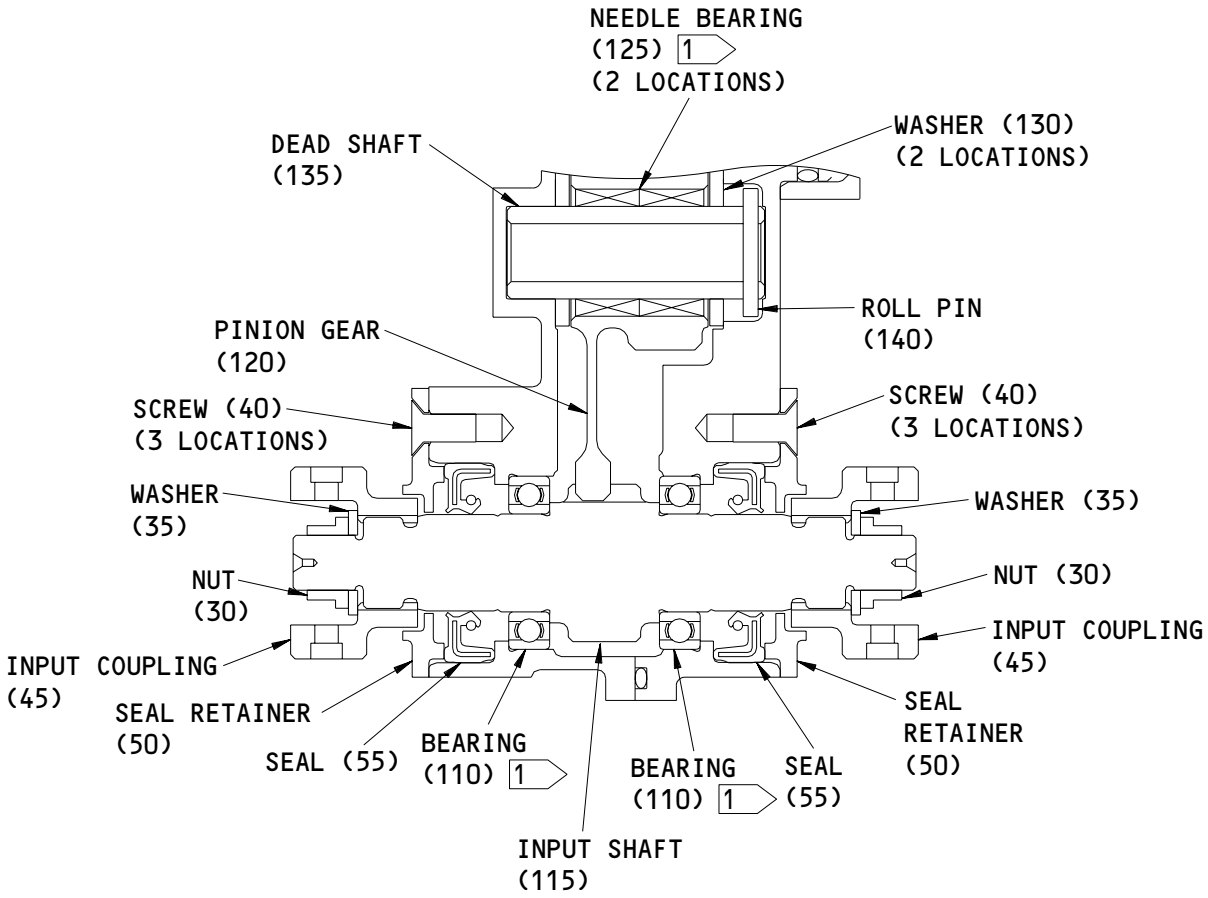
A-A

256T5220
Gearbox Assembly
Figure 702 (Sheet 2)

K31462



256T5220
Gearbox Assembly
Figure 702 (Sheet 3)



256T5220
Gearbox Assembly
Figure 702 (Sheet 4)

ITEM NUMBERS REFER TO IPL FIG. 1

1 CLEAN THIS BEARING AS SHOWN IN SOPM 20-30-01. PUT BEARINGS IN A CONTAINER FILLED WITH BRAYCO 795 OIL BEFORE INSTALLATION

2 HEAT THE NO-BACK HOUSING ASSEMBLY AT 325°F FOR MAXIMUM OF TEN HOURS TO INSTALL STATOR AND PIN

3 FILL THIS VOLUME WITH BMS 3-33 OR MOBILGREASE 28

4 APPLY A THIN LAYER OF BMS 3-27 COMPOUND OR BMS 3-38 PASTE TO THE FAYING SURFACES OF THE SEAL RETAINER, COVER PLATE AND THE HOUSING ASSEMBLY

5 APPLY A LARGE QUANTITY OF BMS 3-33 GREASE TO THE SPLINE TEETH OF THE OUTPUT SHAFT

6 APPLY A THIN LAYER OF BMS 3-27 COMPOUND OR BMS 3-38 PASTE TO THESE FAYING SURFACES

7 UNDER BOLT HEAD

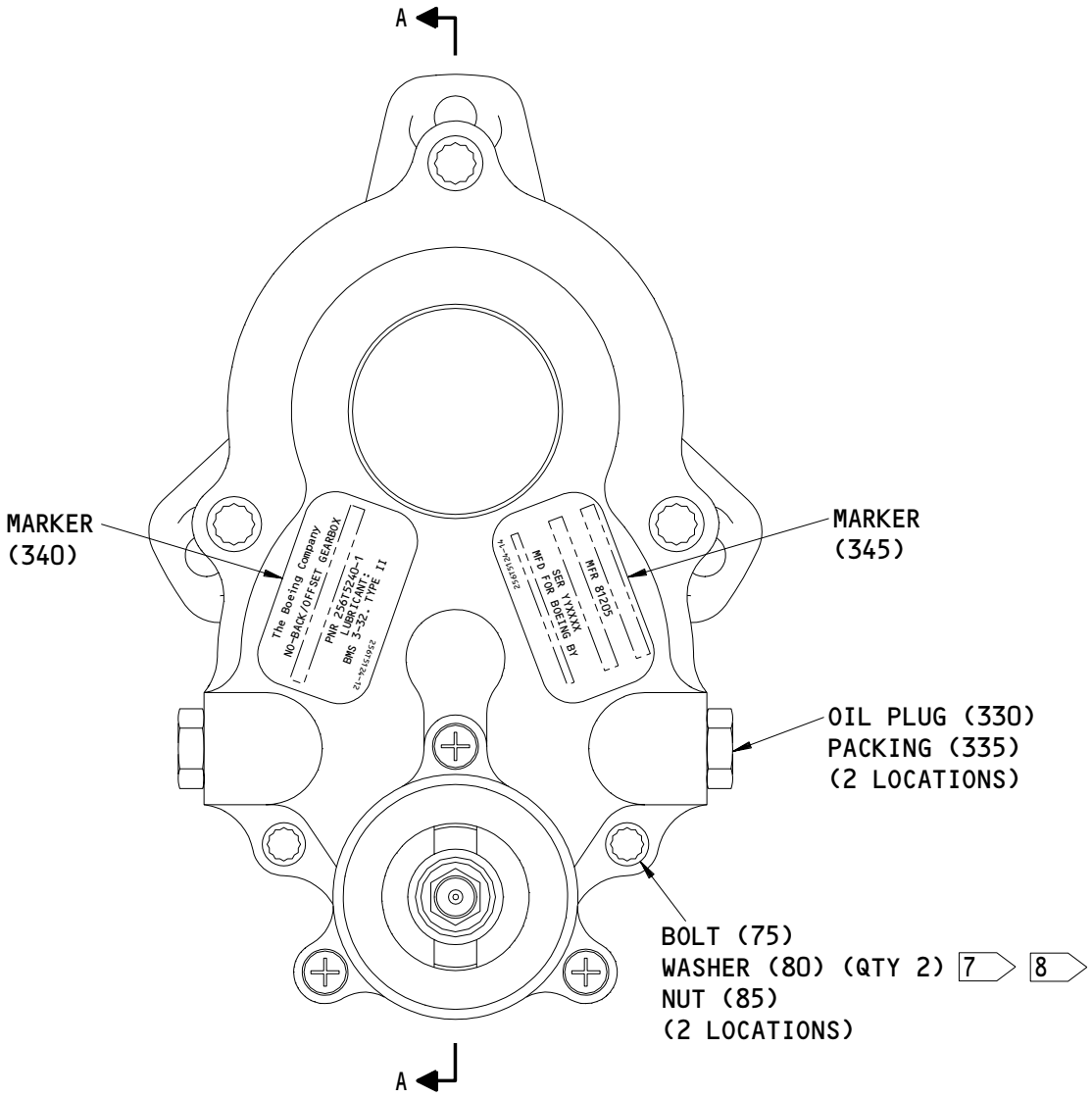
8 UNDER NUT

9 FILL THIS VOLUME AND THE SPLINE TEETH OF THE INPUT SHAFT WITH BMS 3-33 OR MOBILGREASE 28

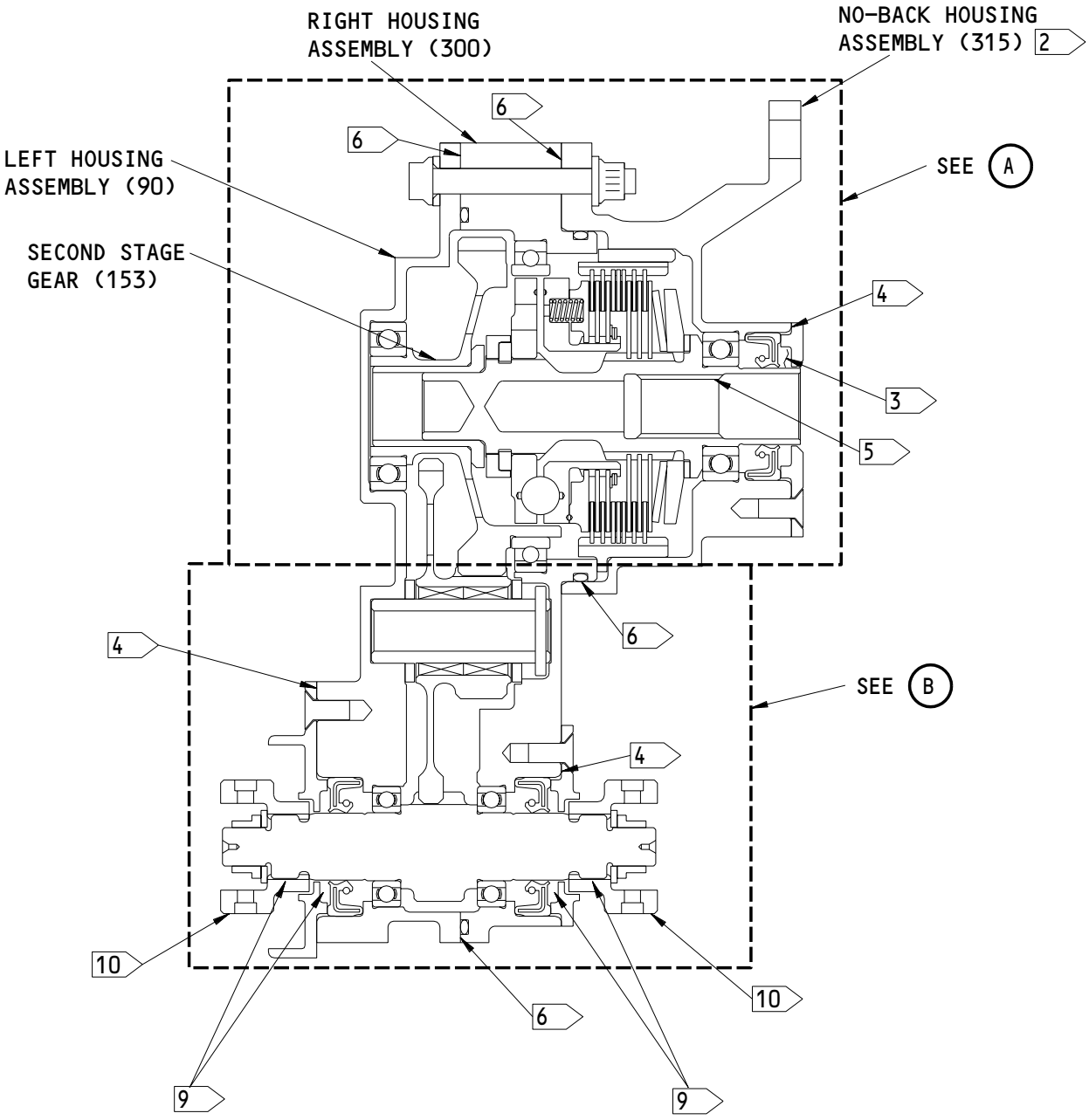
10 APPLY BMS 3-33 TO THE SPLINE TEETH OF THE INPUT COUPLING

256T5220
Gearbox Assembly
Figure 702 (Sheet 5)

K31499



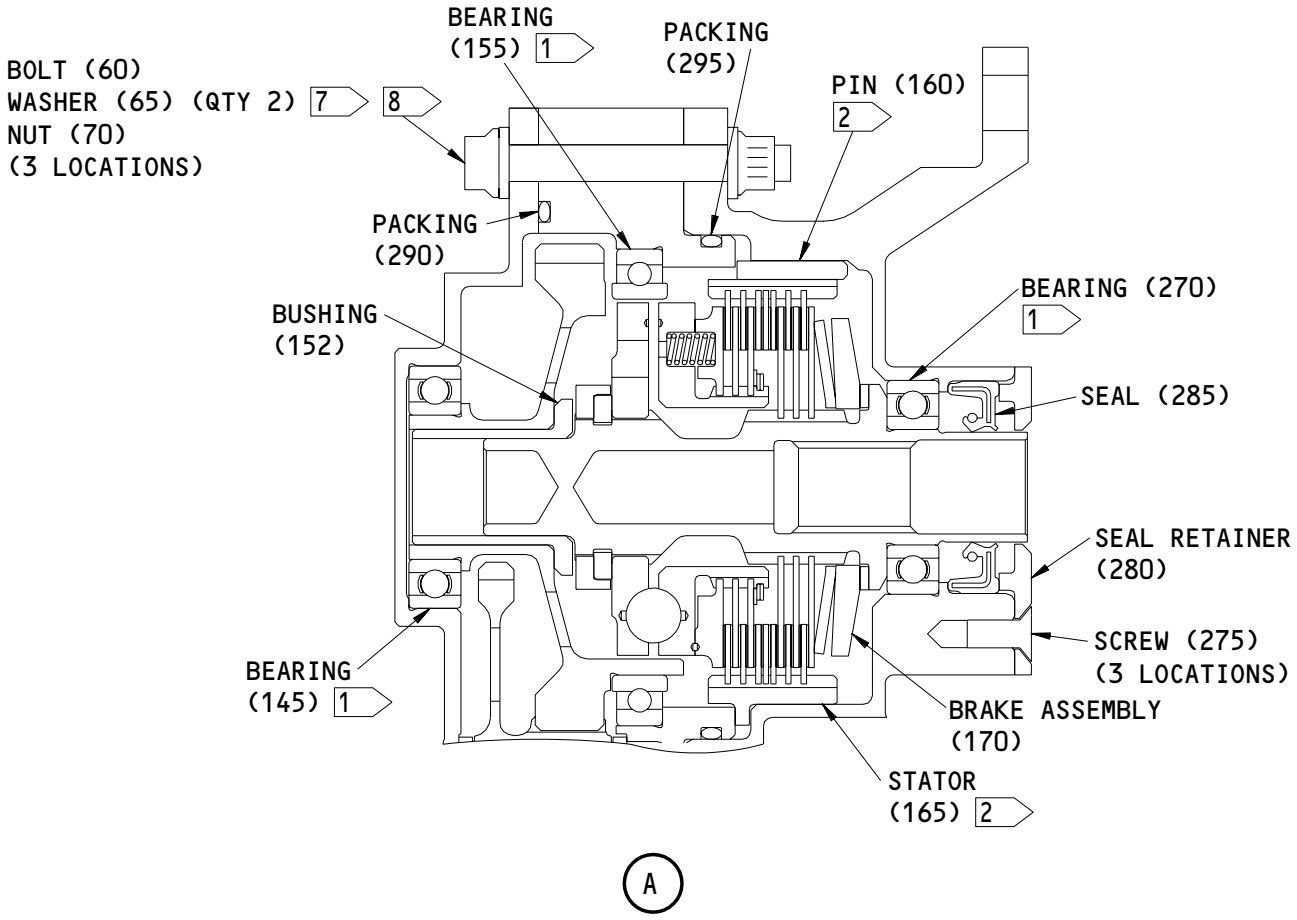
256T5240
Gearbox Assembly
Figure 703 (Sheet 1)



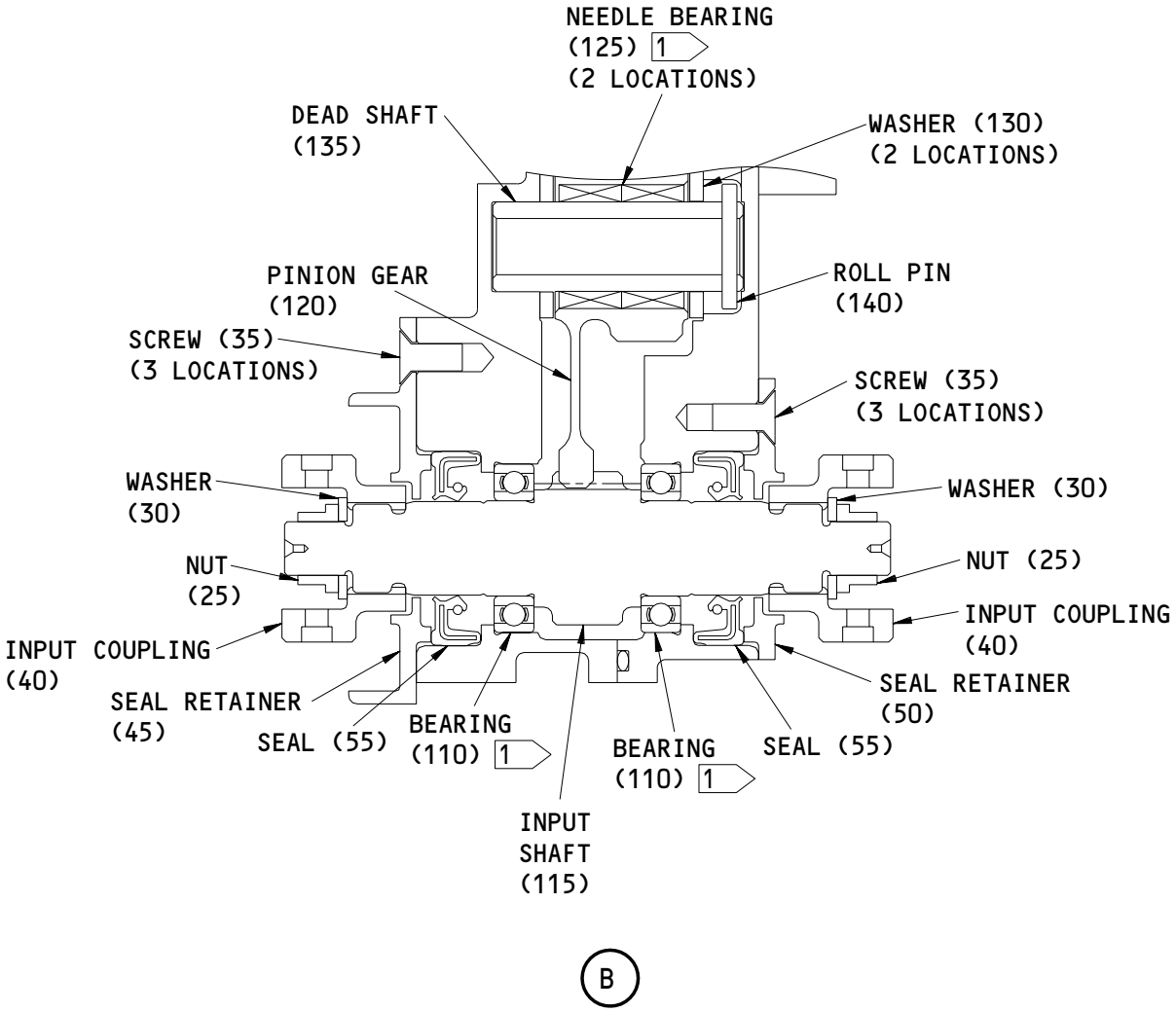
A-A

256T5420
Gearbox Assembly
Figure 703 (Sheet 2)

K31531



256T5240
Gearbox Assembly
Figure 703 (Sheet 3)



256T5240
Gearbox Assembly
Figure 703 (Sheet 4)

K31551

ITEM NUMBERS REFER TO IPL FIG. 2

1 > CLEAN THIS BEARING AS SHOWN IN SOPM 20-30-01. PUT BEARINGS IN A CONTAINER FILLED WITH BRAYCO 795 OIL BEFORE INSTALLATION

2 > HEAT THE NO-BACK HOUSING ASSEMBLY AT 325°F FOR MAXIMUM OF TEN HOURS TO INSTALL STATOR AND PIN

3 > FILL THIS VOLUME WITH BMS 3-33 OR MOBILGREASE 28

4 > APPLY A THIN LAYER OF BMS 3-27 COMPOUND OR BMS 3-38 PASTE TO THE FAYING SURFACES OF THE SEAL RETAINER AND THE HOUSING ASSEMBLY

5 > APPLY A LARGE QUANTITY OF BMS 3-33 GREASE TO THE SPLINE TEETH OF THE OUTPUT SHAFT

6 > APPLY A THIN LAYER OF BMS 3-27 COMPOUND OR BMS 3-38 PASTE TO THESE FAYING SURFACES

7 > UNDER BOLT HEAD

8 > UNDER NUT

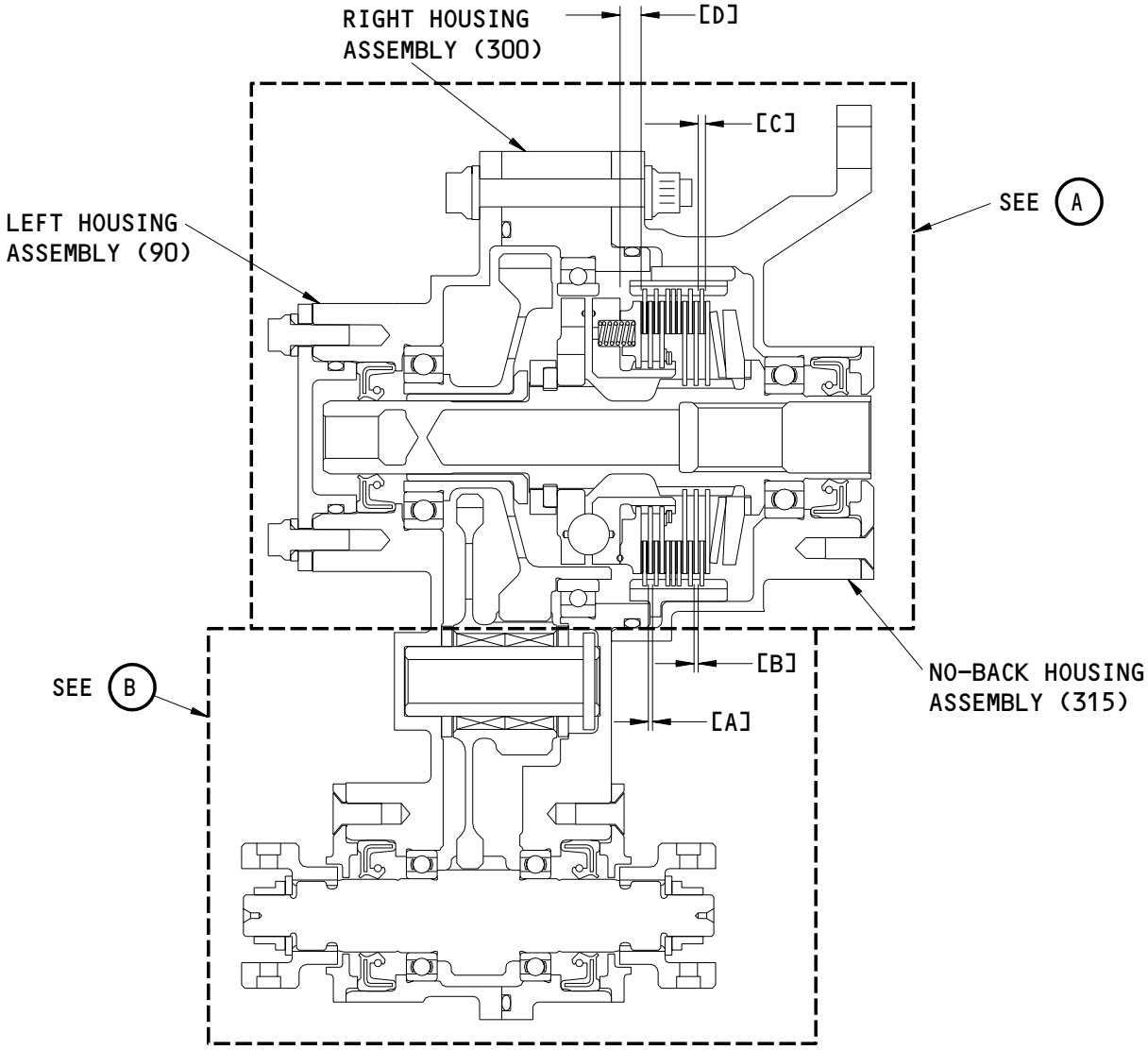
9 > FILL THIS VOLUME AND THE SPLINE TEETH OF THE INPUT SHAFT WITH BMS 3-33 OR MOBILGREASE 28

10 > APPLY BMS 3-33 TO THE SPLINE TEETH OF THE INPUT COUPLING

256T5240
Gearbox Assembly
Figure 703 (Sheet 5)

K31552

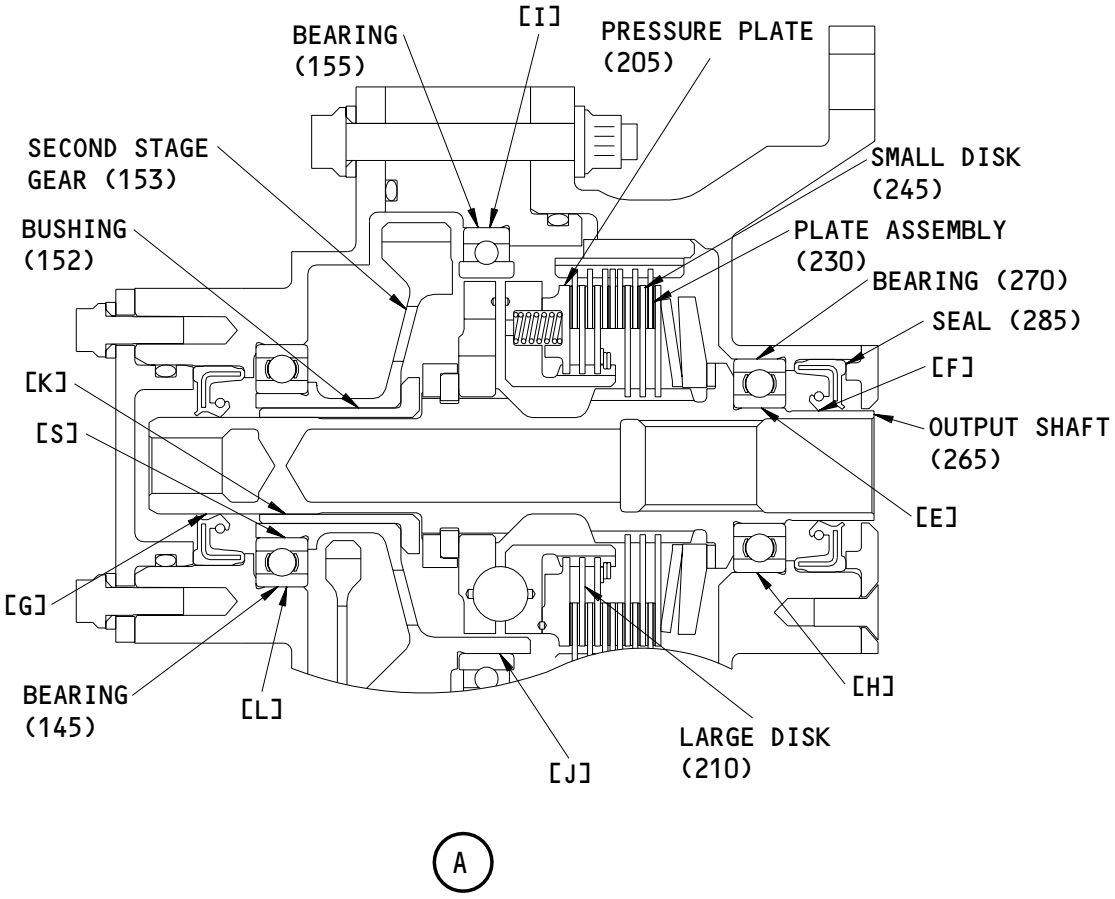
FITS AND CLEARANCES



256T5220 SHOWN
256T5240 SIMILAR

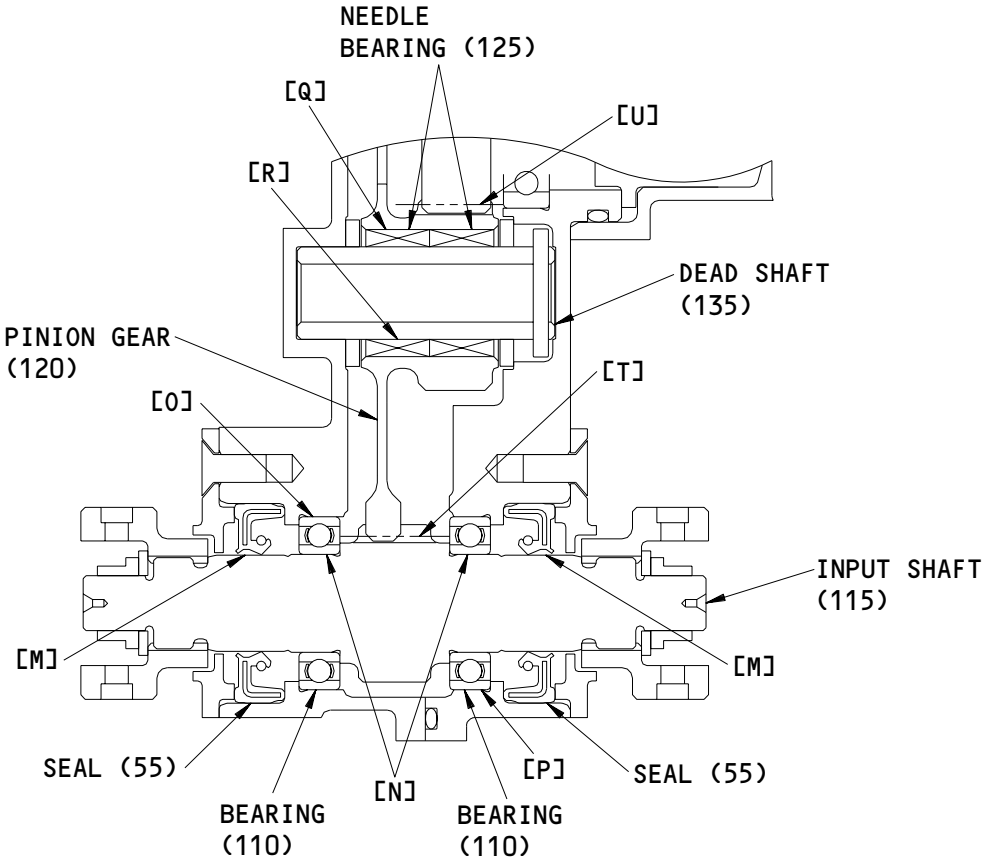
Fits and Clearances
Figure 801 (Sheet 1)

K31512



Fits and Clearances
Figure 801 (Sheet 2)

K31229



Fits and Clearances
Figure 801 (Sheet 3)

K31250

REF LETTER	REF IPL FIGS. 1 AND 2, MATING ITEM NO.	DESIGN DIMENSION* DIMENSION MIN	DESIGN DIMENSION* DIMENSION MAX	DESIGN DIMENSION* ASSEMBLY CLEARANCE 1 MIN	DESIGN DIMENSION* ASSEMBLY CLEARANCE 1 MAX	SERVICE WEAR LIMIT* DIMENSION MIN	SERVICE WEAR LIMIT* DIMENSION MAX	SERVICE WEAR LIMIT* MAXIMUM CLEARANCE
[A]	210 2	0.0380	0.0400			0.0370		
[B]	245 2	0.0380	0.0400			0.0370		
[C]	230 2	0.0620	0.0680			0.0590		
[D]	205 2	0.1880	0.1930			0.1855		
[E]	ID 270 OD 265	0.7870 0.7866	0.7874 0.7871	−0.0008	0.0001	0.7868	0.7874	0.0004
[F]	ID 285 OD 265	0.7470 0.7470	0.7500 0.7500	−0.0030	0.0030	0.7547	0.7453	0.0047
[G]	ID 25 3 OD 265 3	0.6580 0.6600	0.6610 0.6610	−0.0030	0.0010	0.6636	0.6584	0.0026
[H]	ID 315 OD 270	1.4567 1.4562	1.4577 1.4567	0.0000	0.0015	1.4559	1.4582	0.0018
[I]	ID 300 OD 155	3.2500 3.2492	3.2508 3.2500	0.0000	0.0016	3.2488	3.2512	0.0016
[J]	ID 155 OD 153	2.5621 2.5625	2.5627 2.5630	−0.0009	0.0002	2.5622	2.5630	0.0003
[K]	ID 152 OD 265	0.6620 0.6600	0.6625 0.6610	0.0010	0.0025	0.6595	0.6628	0.0025

Fits and Clearances
Figure 801 (Sheet 4)

K31272

REF LETTER	REF IPL FIGS. 1 AND 2, MATING ITEM NO.	DESIGN DIMENSION* DIMENSION MIN	DESIGN DIMENSION* DIMENSION MAX	DESIGN DIMENSION* ASSEMBLY CLEARANCE 1 MIN	DESIGN DIMENSION* ASSEMBLY CLEARANCE 1 MAX	SERVICE WEAR LIMIT* DIMENSION MIN	SERVICE WEAR LIMIT* DIMENSION MAX	SERVICE WEAR LIMIT* MAXIMUM CLEARANCE
[L]	ID 90	1.6535	1.6545	0.0000	0.0015		1.6550	0.0018
	OD 145	1.6530	1.6535			1.6527		
[M]	ID 55	0.6570	0.6610	-0.0040	0.0040		0.6666	0.0056
	OD 115	0.6570	0.6610			0.6554		
[N]	ID 110	0.6693	0.6695	0.0002	0.0009		0.6697	0.0010
	OD 115	0.6686	0.6691			0.6683		
[O]	ID 90	1.1811	1.1819	0.0000	0.0012		1.1823	0.0014
	OD 110	1.1807	1.1811			1.1805		
[P]	ID 300	1.1811	1.1819	0.0000	0.0012		1.1823	0.0014
	OD 110	1.1807	1.1811			1.1805		
[Q]	ID 120	0.8661	0.8667	-0.0008	0.0003		0.8691	0.0022
	OD 125	0.8664	0.8669			0.8645		
[R]	ID 125	0.6296	0.6299	-0.0004	0.0003		0.6319	0.0019
	OD 135	0.6296	0.6300			0.6290		
[S]	ID 145	0.9839	0.9843	-0.0001	0.0008		0.9845	0.0008
	OD 153	0.9835	0.9840			0.9832		
[T]	115 4	1.1378	1.1390			1.1349		
	120 4	3.4504	3.4536			3.4464		
[U]	120 4	1.3915	1.3941			1.3889		
	153 4	3.3692	3.3723			3.3660		

* ALL DIMENSIONS ARE IN INCHES

1 > NEGATIVE NUMBERS DENOTE INTERFERENCE FIT

2 > DIMENSION REFERS TO THICKNESS

3 > 256T5220

4 > MEASURE DIMENSION OVER TWO 0.1200 DIAMETER PINS. REFER TO CHECK SECTION FOR PROCEDURE

Fits and Clearances
Figure 801 (Sheet 5)

K31286

REF IPL		NAME	TORQUE*	
FIG. NO.	ITEM NO.		POUND-INCHES	POUND-FEET
1	5	Bolt	20-25	
1	30	Nut	150-250	
1	40	Screw	20-25	
1	70	Nut	50-70	
1	85	Nut	20-25	
1	275	Screw	20-25	
1	330	Oil Plug	100-110	
2	25	Nut	150-250	
2	35	Screw	20-25	
2	70	Nut	50-70	
2	85	Nut	20-25	
2	275	Screw	20-25	
2	330	Oil Plug	100-110	

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

Torque Table
Figure 802

K31382

SPECIAL TOOLS, FIXTURES, AND EQUIPMENT

1. General

   A. This is a list of the special tools, fixtures, and equipment used in this manual.

   B. Equivalent alternatives can be used.

      (1) J27054-1 -- Pressure Test Equipment

      (2) A27121-1 -- Seal Installation Tool

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

S5211 NIPPON THOMPSON CO LTD IKO BEARINGS
19-19 TAKANAWA 2 CHOME MINATO-KU
TOKYO, 108 JAPAN

U1068 DOWTY SEALS LTD
ASHCHURCH, TEWKESBURY GLOS GL20 8JS ENGLAND

15653 ALOCA GLOBAL FASTEMERS INC DIV KAYNARE PRODUCTS
800 S STATE COLLEGE BLVD
FULLERTON, CALIFORNIA 92831-3001
FORMERLY VK6405 MICRODOT AEROSP LTD; FORMERLY KAYNAR TECH
FORMERLY FAIRCHILD FASTENERS KAYNAR DIV

21335 TORRINGTON CO FAFNIR BEARING DIV
59 FIELD STREET
TORRINGTON, CONNECTICUT 06790-1008
FORMERLY FAFNIR BRG AND TEXTRON INC FAFNIR DIV IN
NEW BRITAIN, CONNECTICUT

21760 SCHATZ BEARING CORP
10 FAIRVIEW AVENUE PO BOX 1191
POUGHKEEPSIE, NEW YORK 12601-1312
FORMERLY FEDERAL BRG CO AND SCHATZ MFG CO V53268
FORMERLY SCHATZ MFG CO

27737 INA BEARING COMPANY INC
1 INA DRIVE
CHERAW, SOUTH CAROLINA 29520
FORMERLY FAFNIR INA NEEDLE ROLLER BEARING CO.

38443 MRC BEARINGS
402 CHANDLER STREET
JAMESTOWN, NEW YORK 14701-3802
FORMERLY MARLIN-ROCKWELL CORP DIV TRW AND TRW INC

VENDORS

40920 MPB MINIATURE PRECISION BEARING DIV
PRECISION PARK PO BOX 547
KEENE, NEW HAMPSHIRE 03431
FORMERLY MPB CORP AND MINIATURE BRG DIV MPB CORP

52676 SKF INDUSTRIES INC
1100 FIRST AVENUE
KING OF PRUSSIA, PENNSYLVANIA 19406-1312
FORMERLY ATLAS BALL DIV OF SKF IND V70648 AND VB0017
FORMERLY SKF INDUSTRIES INC FRANDFORD PLANT
FORMERLY IN PHILADELPHIA, PENNSYLVANIA

60380 TORRINGTON CO BEARINGS DIV SUBSIDIARY OF INGERSOLL-RAND CORP
59 FIELD STREET PO BOX 1008
TORRINGTON, CONNECTICUT 06790-1008
FORMERLY TORRINGTON BEARING COMPANY

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

78118 SPLIT BALL BEARING DIV OF MPB CORP
HIGHWAY 4
LEBANON, NEW HAMPSHIRE 03766-7301

80756 SPIROLOX DIV OF KAYDON CORP
29 CASSENS COURT
FENTON, MISSOURI 63026-2543
FORMERLY RAMSEY CORP, TRW INC RAMSEY CORP IN MANCHESTER MO.

9V013 TEXTRON INC FAFNIR BEARING DIV
US RT 41 S
CALHOUN, GEORGIA 30701-9145

VENDORS

91251 FREUDENBERG-NOK GENERAL PARTNERSHIP
PLEASANT STREET PO BOX B
BRISTOL, NEW HAMPSHIRE 03222-0501

PART NUMBER	AIRLINE PART NO.	FIG.	ITEM	TTL REQ
BACB10BB17		1	110	2
		2	110	2
BACB10BB20		1	270	1
		2	270	1
BACB10BB25		1	145	1
		2	145	1
BACB10TCP24A		1	190	3
		2	190	3
BACB30MR3K3		1	5	2
BACB30MR3K9		1	75	2
		2	75	2
BACB30MR4K25		1	60	3
		2	60	3
BACN10YR6CD		1	30	2
		2	25	2
BACS12ER3K7		1	40	6
		1	275	3
		2	35	6
		2	275	3
BACW10BP3CD		1	10	2
		1	80	4
		2	80	4
BACW10BP4CD		1	65	6
		2	65	6
BCREF15848		1	155	1
		2	155	1
BCREF15849		1	155A	1
		2	155A	1
BCREF50256		1	155C	1
		2	155C	1
BCREF50257		1	155B	1
		2	155B	1
C003RRP0		1	110	2
		2	110	2
C003R1P17LY331		1	110	2
		2	110	2
C004RRP0		1	270	1
		2	270	1
C004RR1P28LY331		1	270	1
		2	270	1
C005RRP0		1	145	1
		2	145	1

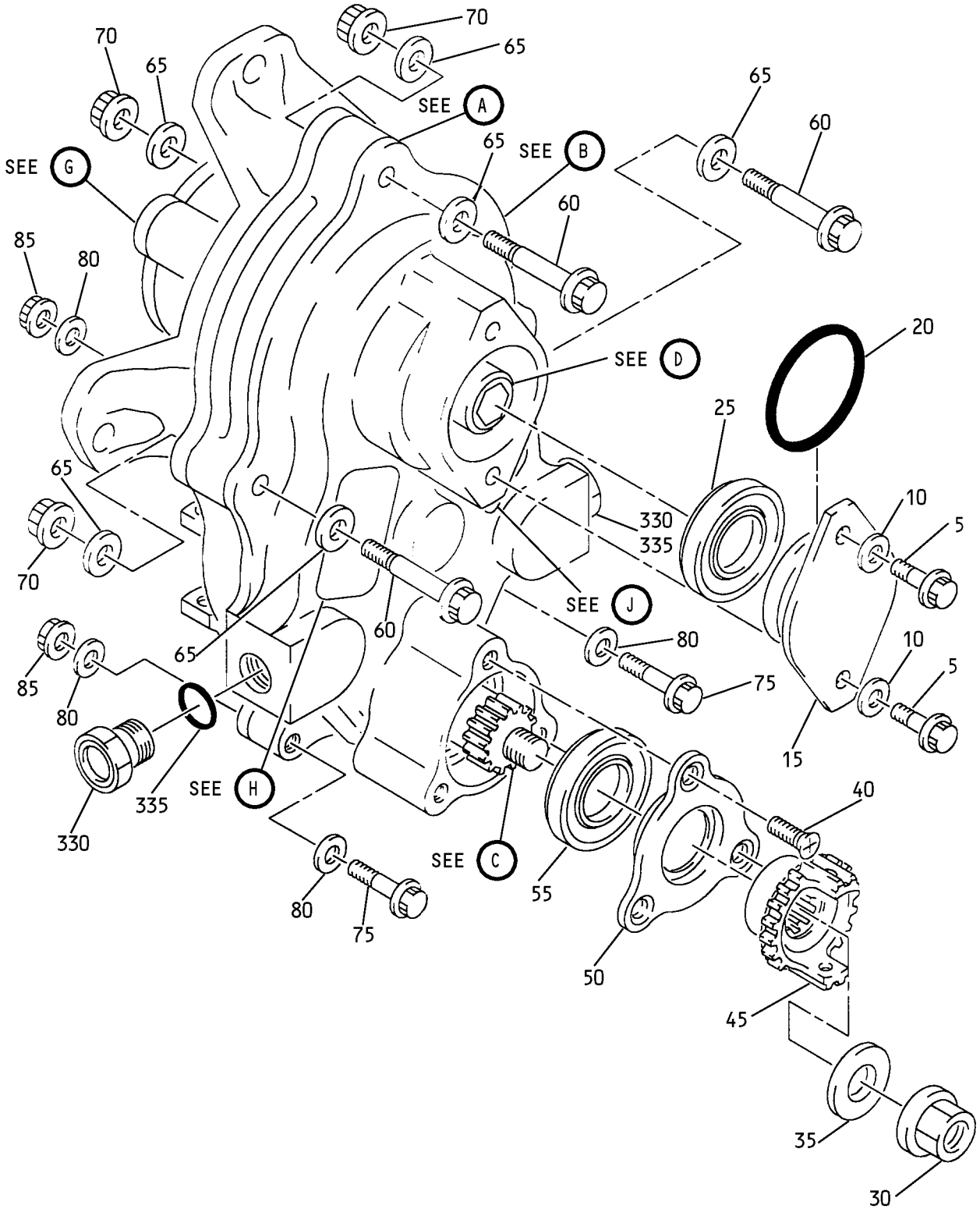
PART NUMBER	AIRLINE PART NO.	FIG.	ITEM	TTL REQ
C005RR1P28LY331		1	145	1
		2	145	1
C4152BSTE3P12-2		1	155C	1
C4152BSTE3P12-2		2	155C	1
C4152BSTE3P12-2		1	155	1
		2	155	1
C4152STE3P12-20		1	155B	1
		2	155B	1
C4152STE3P12-20		1	155A	1
		2	155A	1
FWJ162212		1	125C	2
		2	125C	2
H52732-6CD		1	30	2
		2	25	2
KT162212EGB2		1	125B	2
		2	125B	2
KZK16X22X12		1	125	2
		2	125	2
KZK16X22X12AG		1	125A	2
		2	125A	2
MS21209F1-15P		1	95	5
		1	305	3
		1	320	3
		2	95	3
		2	305	3
		2	320	3
MS21209F6-10P		1	100	2
		2	100	2
MS21299-6K		1	35	2
		2	30	2
MS24585C70		1	200	9
		2	200	9
MS28775-109		1	335	2
		2	335	2
MS28775-123		1	20	1
MS39086-133		1	140	1
		2	140	1
M83461-1-152		1	295A	1
		2	295A	1
M83461-1-161		1	290A	1
		2	290A	1
NAS1805-3L		1	85	2
		2	85	2

PART NUMBER	AIRLINE PART NO.	FIG.	ITEM	TTL REQ
NAS1805-4L		1	70	3
		2	70	3
PKT003P1		1	110	2
		2	110	2
PKT004P1		1	270	1
PKT004P1		2	270	1
PKT005P1		1	145	1
		2	145	1
PLH56CD		1	30	2
		2	25	2
RS137SP		1	220	1
		2	220	1
R9303KA4298		1	110	2
		2	110	2
R9304KA4298		1	270	1
		2	270	1
R9305KA4298		1	145	1
		2	145	1
S256W410-1		1	55	2
		2	55	2
S256W410-2		1	25	1
S256W410-3		1	285A	1
		2	285A	1
1002423606100		1	55	2
		2	55	2
1002423606200		1	25	1
1002423606300		1	285A	1
		2	285A	1
1903-1B1-01		1	110	2
		2	110	2
1903S		1	110	2
		2	110	2

PART NUMBER	AIRLINE PART NO.	FIG.	ITEM	TTL REQ
1904-1B1-01		1	270	1
		2	270	1
1904S		1	270	1
		2	270	1
1905-1B1-01		1	145	1
		2	145	1
1905S		1	145	1
		2	145	1
256T2254-2		1	120	1
		2	120	1
256T2259-3		1	135A	1
		2	135A	1
256T2262-2		1	210	2
		2	210	2
256T2263-2		1	245	3
		2	245	3
256T2266-1		1	180	2
		2	180	2
256T2270-1		1	175	1
		2	175	1
256T2278-1		1	130	2
		2	130	2
256T2289-1		1	250	1
		2	250	1
256T5124-12		1	340	1
256T5124-13		2	340	1
256T5124-14		1	345	1
		2	345	1
256T5212-1		1	300	1
		2	300	1
256T5212-2		1	310	1
		2	310	1
256T5215-1		1	150	1
		2	150	1
256T5215-2		1	153	1
		2	153	1

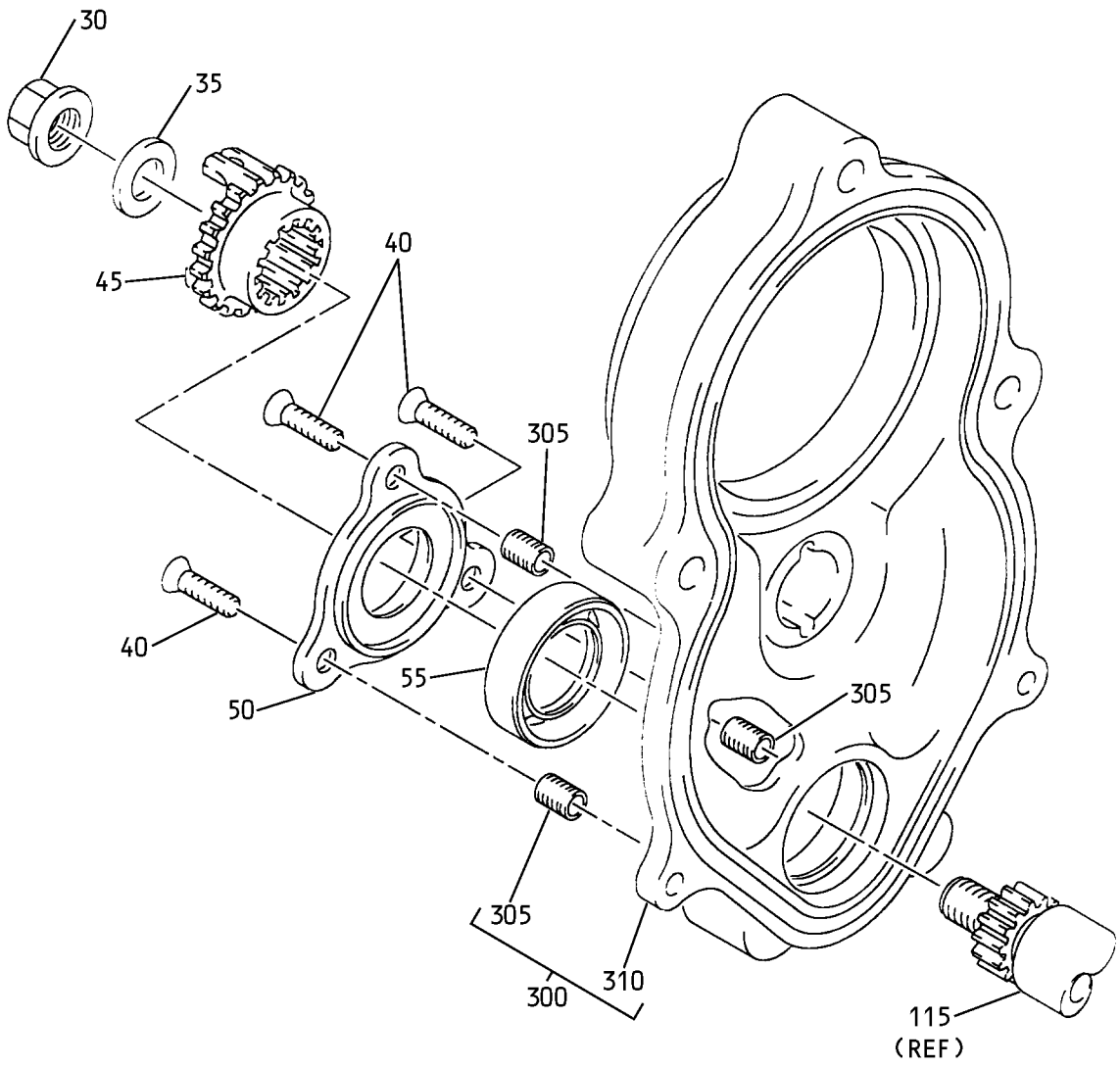
PART NUMBER	AIRLINE PART NO.	FIG.	ITEM	TTL REQ
256T5216-1		1	115	1
		2	115	1
256T5217-1		1	45	2
		2	40	2
256T5220-1		1	1A	RF
256T5221-1		1	90	1
256T5221-2		1	105	1
256T5223-1		1	315	1
		2	315	1
256T5223-2		1	325	1
		2	325	1
256T5224-1		1	165	1
		2	165	1
256T5225-1		1	50	2
		2	50	1
256T5225-2		1	280	1
		2	280	1
256T5225-3		2	45	1
256T5226-1		1	152	1
		2	152	1
256T5230-1		2	170	1
256T5230-2		1	170	1
256T5231-1		2	265	1
256T5231-2		1	265	1
256T5232-1		1	195	1
		2	195	1
256T5233-1		1	185	1
		2	185	1
256T5234-1		1	205	1
		2	205	1
256T5235-1		1	230	6
		2	230	6
256T5235-2		1	225	1
		1	235	6
		2	225	1
		2	235	6

PART NUMBER	AIRLINE PART NO.	FIG.	ITEM	TTL REQ
256T5235-3		1	240	12
		2	240	12
256T5236-1		1	255	1
		2	255	1
256T5240-1		1	1B	RF
		2	1	RF
256T5241-1		2	90	1
256T5241-2		2	105	1
256T6147-4		1	260	1
		2	260	1
256T6147-5		1	215	1
		2	215	1
256W2192-3		1	160	1
		2	160	1
256W2197-1		1	330	2
		2	330	2
256W2245-1		1	15	1
6903LC		1	110	2
		2	110	2
6904LC		1	270	1
		2	270	1
6905LC		1	145	1
		2	145	1
700-854-8862-99		1	55A	2
		2	55A	2
700-855-2272-99		1	25A	1
700-856-2272-99		1	285B	1
		2	285B	1
9303K		1	110	2
		2	110	2
9304KPRB		1	270	1
		2	270	1
9305K		1	145	1
		2	145	1



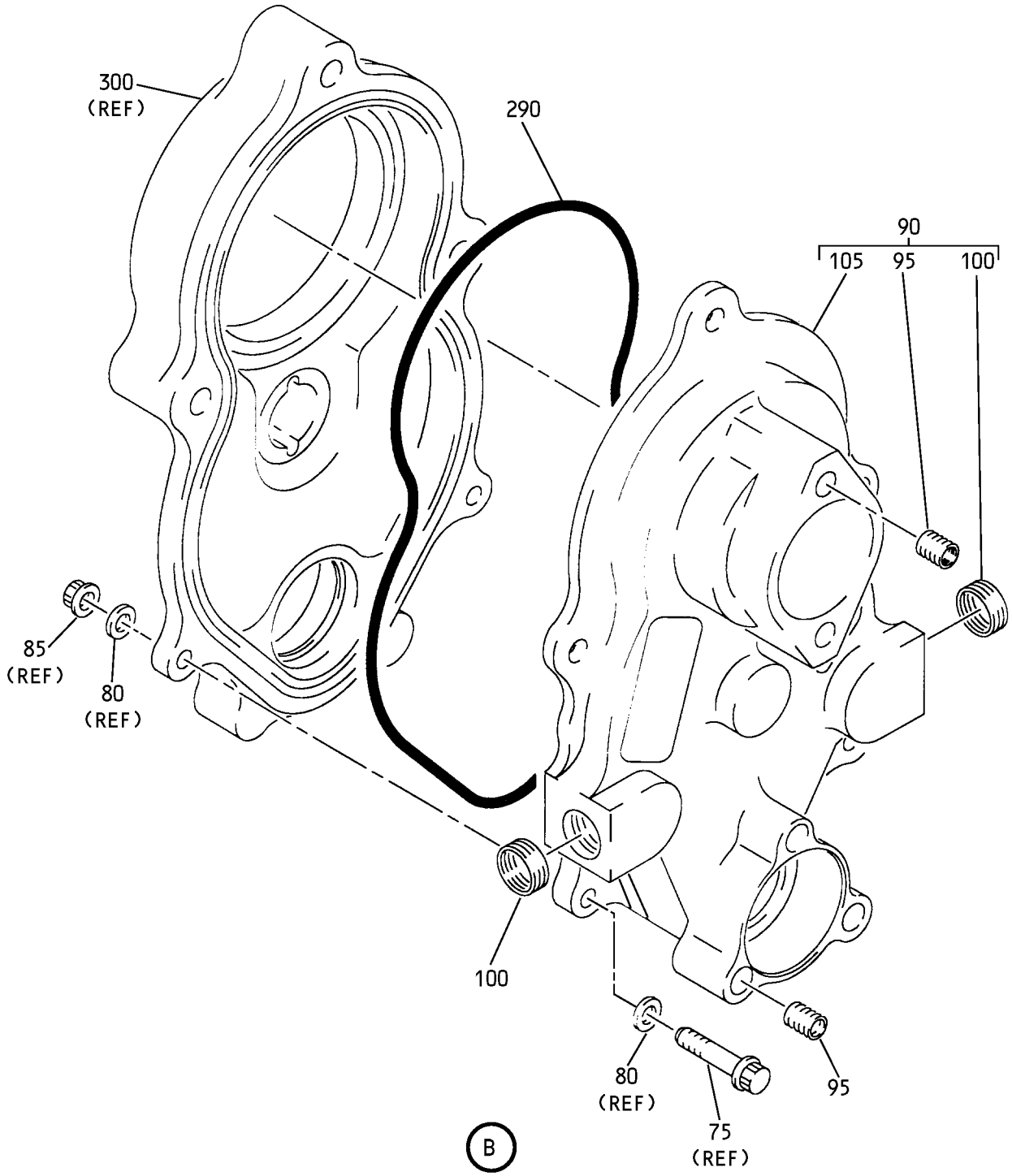
256T5220
Gearbox Assembly
Figure 1 (Sheet 1)

K31564



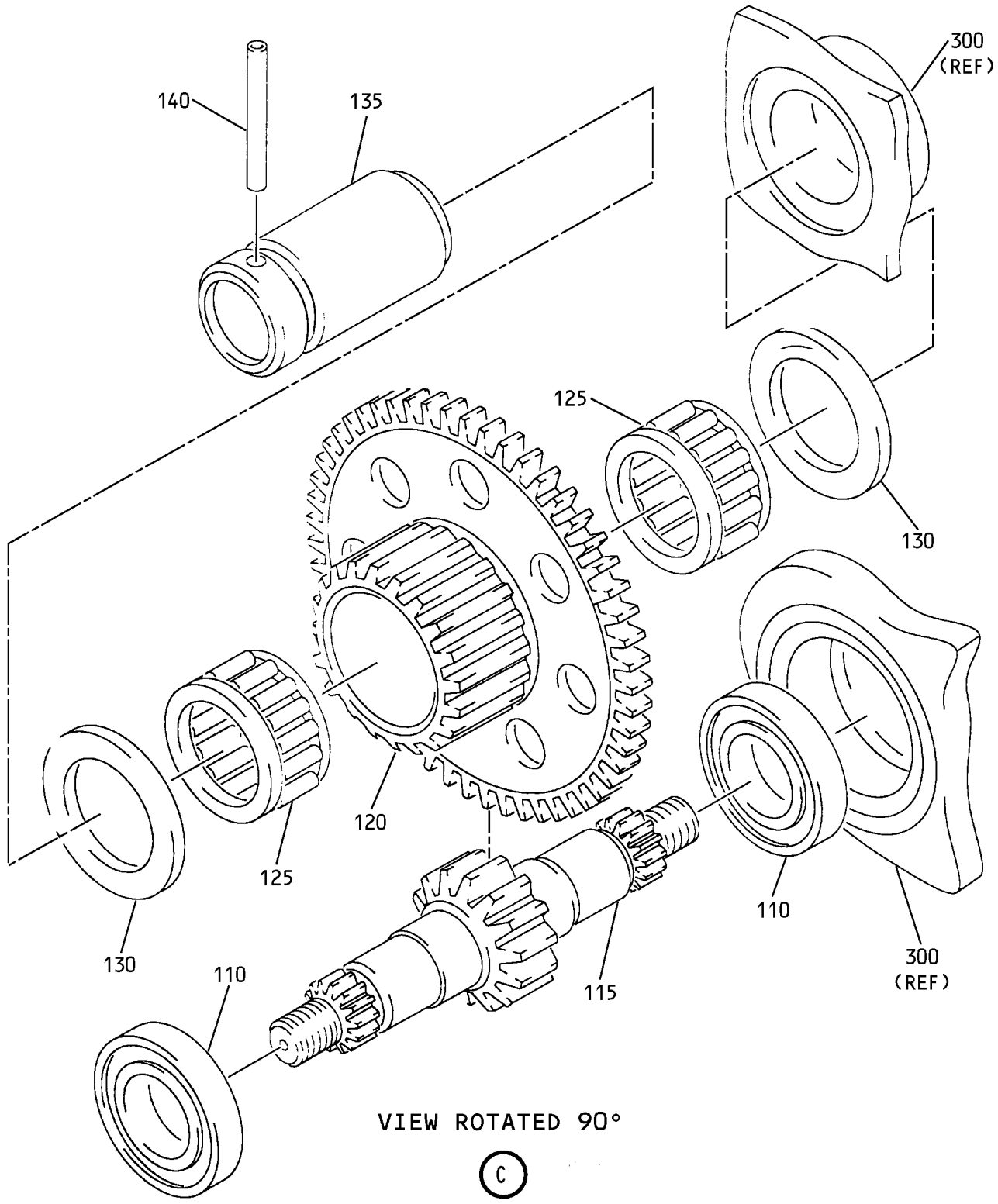
256T5220
Gearbox Assembly
Figure 1 (Sheet 2)

K31568



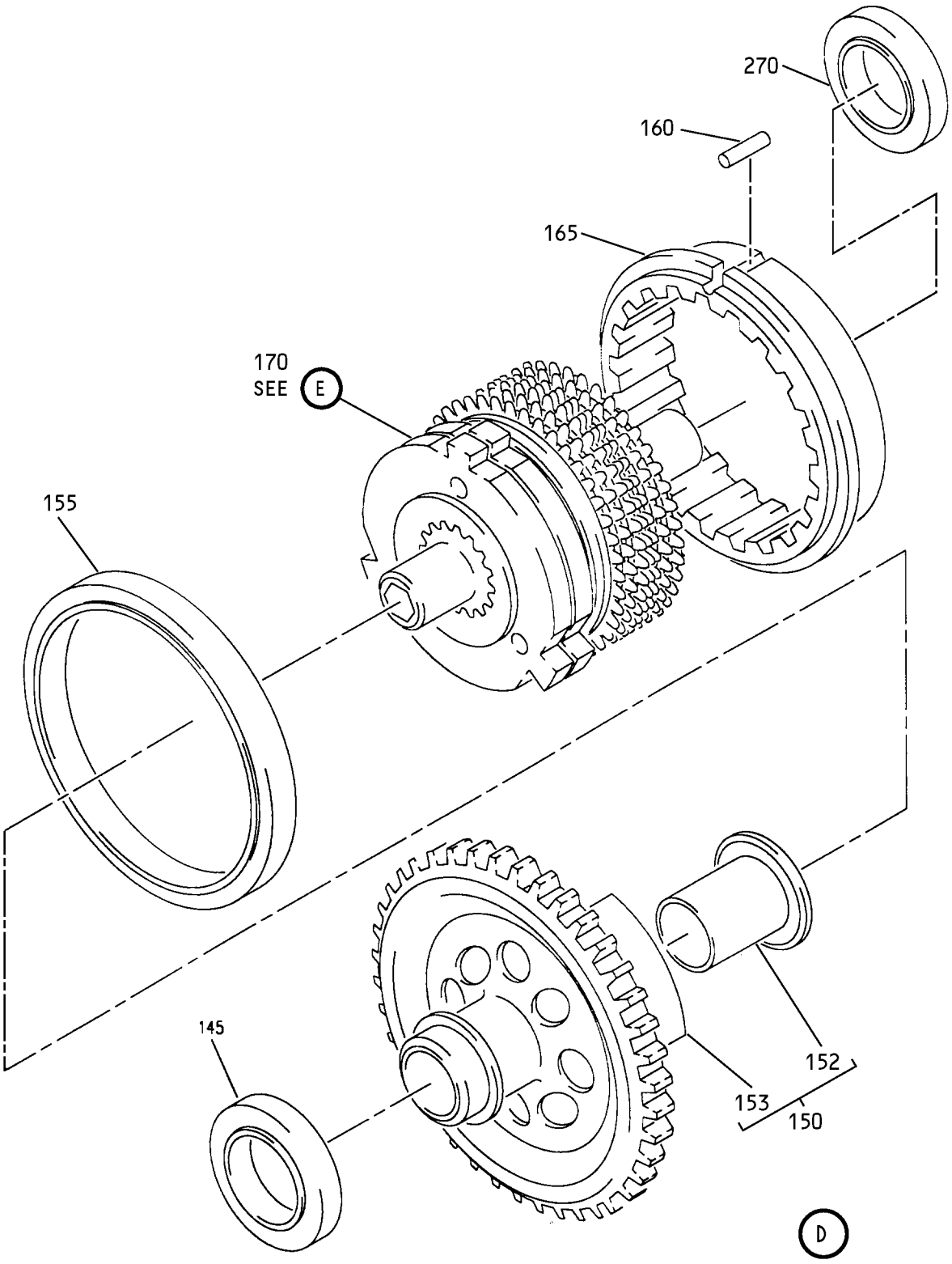
256T5220
Gearbox Assembly
Figure 1 (Sheet 3)

K31577



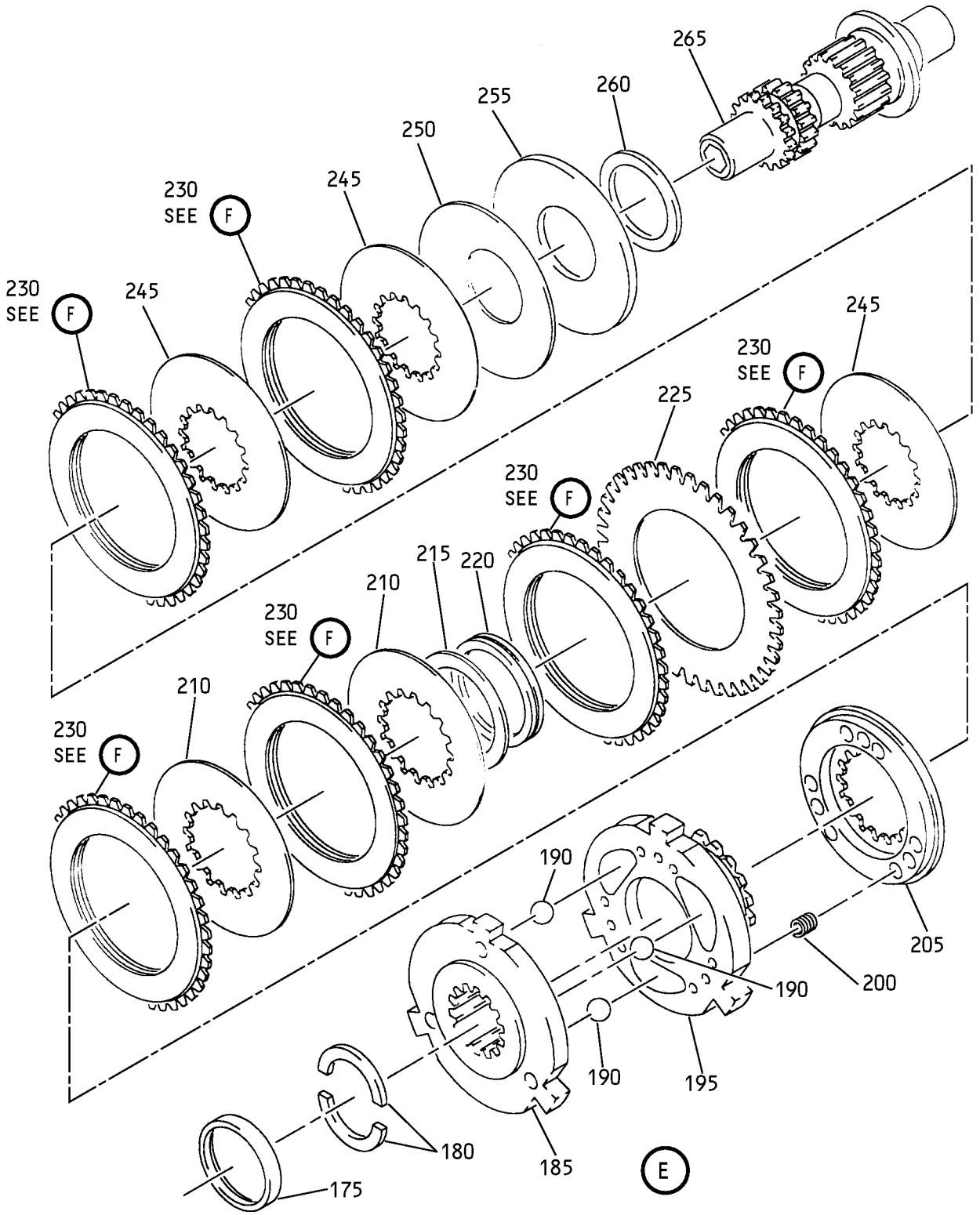
256T5220
Gearbox Assembly
Figure 1 (Sheet 4)

K32083



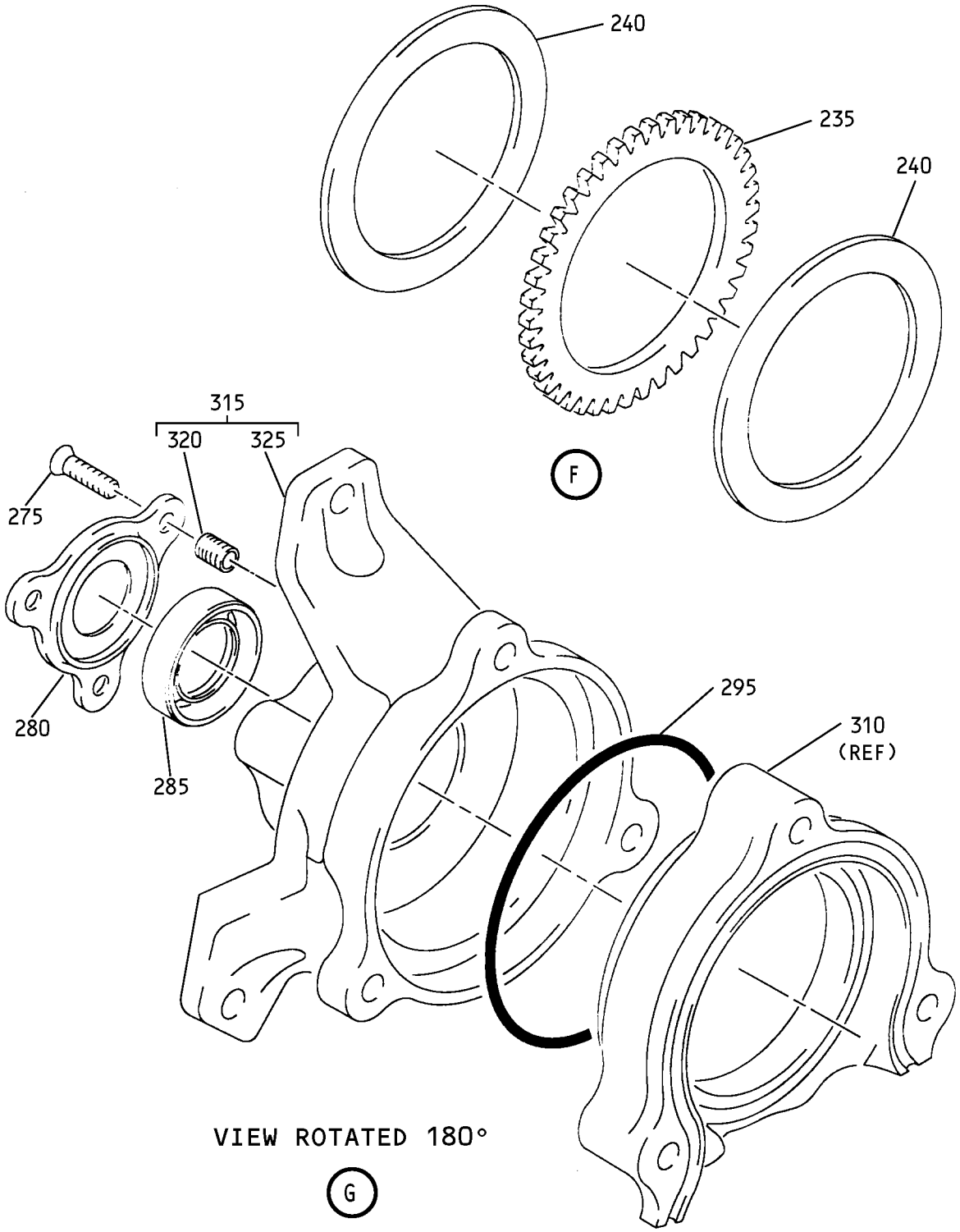
256T5220
Gearbox Assembly
Figure 1 (Sheet 5)

K32088



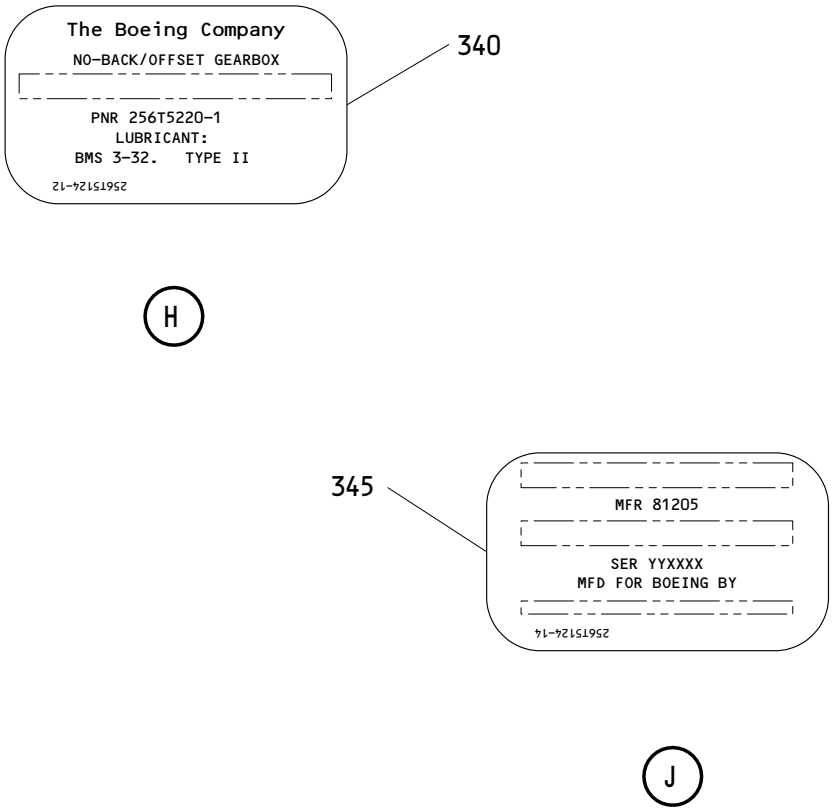
256T5220
Gearbox Assembly
Figure 1 (Sheet 6)

K32119



256T5220
Gearbox Assembly
Figure 1 (Sheet 7)

K32125



256T5220
Gearbox Assembly
Figure 1 (Sheet 8)

K32128

	FIG. & ITEM	PART NO.	AIRLINE PART NUMBER	NOMENCLATURE 1234567	EFF CODE	QTY PER ASSY
	01-					
	-1A	256T5220-1		GEARBOX ASSY-OUTBD LE SLAT DRIVE NO-BACK/OFFSET	A	RF
	-1B	256T5240-1		GEARBOX ASSY-OUTBD VAPOR SEAL LE SLAT DRIVE NO-BACK/OFFSET (FOR DETAILS SEE FIG. 2)	B	RF
	5	BACB30MR3K3		.BOLT	A	2
	10	BACW10BP3CD		.WASHER	A	2
	15	256W2245-1		.PLATE-BRAKE COVER	A	1
	20	MS28775-123		.PACKING	A	1
	25	1002423606200		.SEAL- (V91251) (SPEC S256W410-2) (OPT ITEM 25A)	A	1
R	25A	700-855-2272-99		.SEAL- (VU1068) (OPT ITEM 25)	A	1
	30	H52732-6CD		.NUT- (V15653) (SPEC BACN10YR6CD) (OPT PLH56CD (V62554))	A	2
	35	MS21299-6K		.WASHER	A	2
	40	BACS12ER3K7		.SCREW	A	6
	45	256T5217-1		.COUPLING-INPUT	A	2
	50	256T5225-1		.RETAINER-SEAL	A	2
	55	1002423606100		.SEAL- (V91251) (SPEC S256W410-1) (OPT ITEM 55A)	A	2

	FIG. & ITEM	PART NO.	AIRLINE PART NUMBER	NOMENCLATURE 1234567	EFF CODE	QTY PER ASSY
R	01-55A	700-854-8862-99		.SEAL- (VU1068) (OPT ITEM 55)	A	2
	60	BACB30MR4K25		.BOLT	A	3
	65	BACW10BP4CD		.WASHER	A	6
	70	NAS1805-4L		.NUT	A	3
	75	BACB30MR3K9		.BOLT	A	2
	80	BACW10BP3CD		.WASHER	A	4
	85	NAS1805-3L		.NUT	A	2
	90	256T5221-1		.HOUSING ASSY-L	A	1
	95	MS21209F1-15P		..INSERT	A	5
	100	MS21209F6-10P		..INSERT	A	2
	105	256T5221-2		..HOUSING-HALF	A	1
	110	R9303KA4298		.BEARING- (V21335) (SPEC BACB10BB17) (OPT 1903S (V38443)) (OPT 6903LC (V52676)) (OPT 9303K (V21335)) (OPT PKT003P1 (V78118)) (OPT C003RRP0 (V40920)) (OPT R9303KA4298 (V9V013)) (OPT C003R1P17LY331 (V40920)) (OPT 1903-1B1-01 (V21760))	A	2

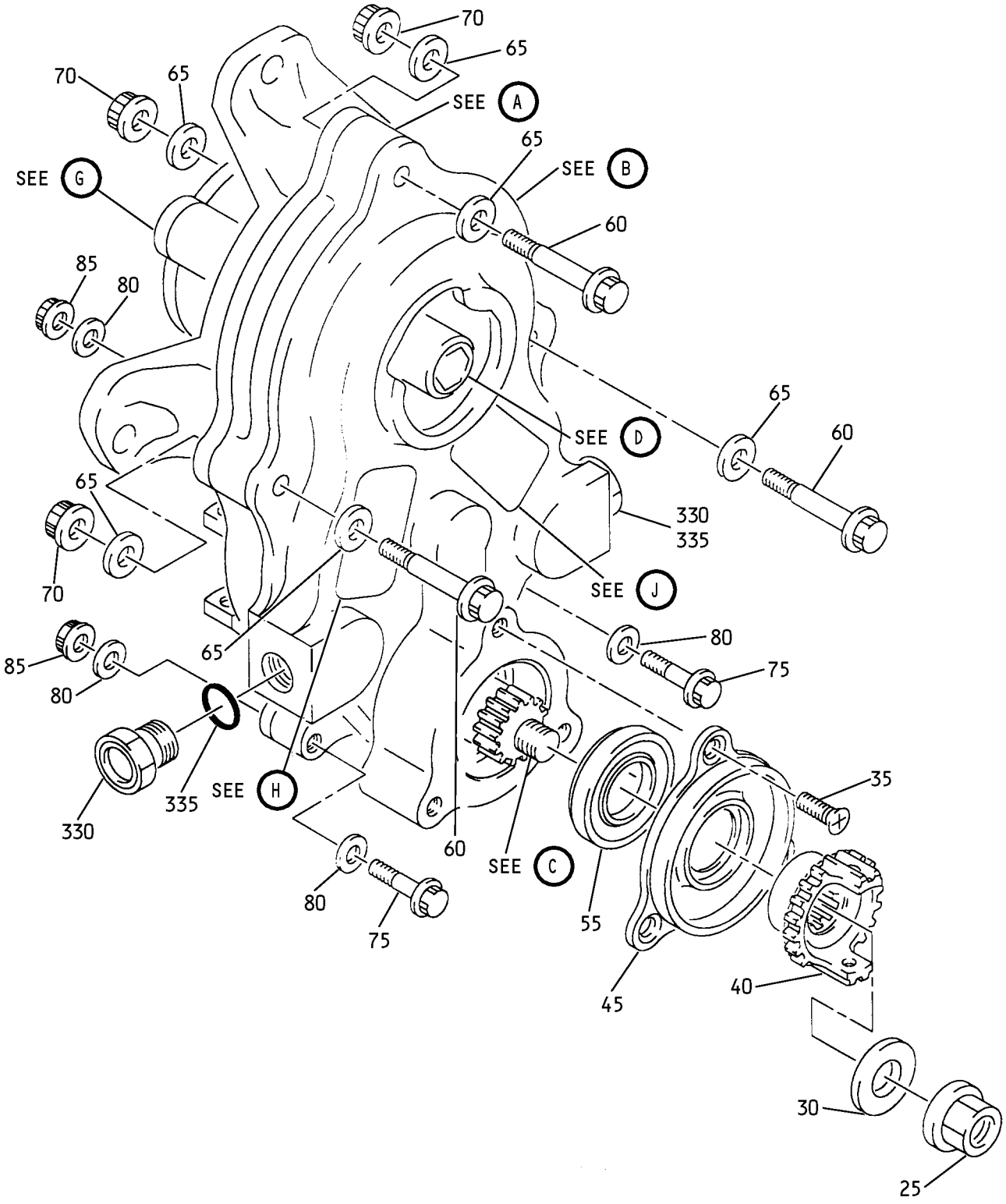
	FIG. & ITEM	PART NO.	AIRLINE PART NUMBER	NOMENCLATURE 1234567	EFF CODE	QTY PER ASSY
	01-					
	115	256T5216-1		.SHAFT-INPUT	A	1
	120	256T2254-2		.GEAR-PINION	A	1
	125	KZK16X22X12		.BEARING-NEEDLE (V27737) (OPT ITEMS 125A, 125B, 125C)	A	2
	-125A	KZK16X22X12AG		.BEARING-NEEDLE (V27737) (OPT ITEMS 125, 125B, 125C)	A	2
	-125B	KT162212EGB2		.BEARING-NEEDLE (VS5211) (OPT ITEMS 125, 125A, 125C)	A	2
	-125C	FWJ162212		.BEARING-NEEDLE (V60380) (OPT ITEMS 125, 125A, 125B)	A	2
	130	256T2278-1		.WASHER-THRUST	A	2
	135	256T2259-1		DELETED		
R	135A	256T2259-3		.SHAFT-DEAD	A	1
R	140	MS39086-133		.PIN-SPR	A	1
	145	R9305KA4298		.BEARING- (V21335) (SPEC BACB10BB25) (OPT 1905S (V38443)) (OPT 6905LC (V52676)) (OPT 9305K (V21335)) (OPT PKT005P1 (V78118)) (OPT C005RRP0 (V40920)) (OPT C005RR1P28LY331 (V40920)) (OPT R9305KA4298 (V9V013)) (OPT 1905-1B1-01 (V21760))	A	1

	FIG. & ITEM	PART NO.	AIRLINE PART NUMBER	NOMENCLATURE 1234567	EFF CODE	QTY PER ASSY
	01-					
	150	256T5215-1		.GEAR ASSY-2ND STAGE	A	1
	152	256T5226-1		..BUSHING		1
R	153	256T5215-2		..GEAR		1
	155	BCREF15848		.BEARING- (V40920) (C4152BSTE3P12-20L02) (OPT ITEMS 155A, 155B, 155C)	A	1
	-155A	BCREF15849		.BEARING- (V40920) (C4152STE3P12-20L02) (OPT ITEMS 155, 155B, 155C)	A	1
R	-155B	BCREF50257		.BEARING- (V40920) (C4152STE3P12-20L01) (OPT ITEMS 155, 155A, 155C)	A	1
R	-155C	BCREF50256		.BEARING- (V40920) (C4152BSTE3P12-20L01) (OPT ITEMS 155, 155A, 155B)	A	1
	160	256W2192-3		.PIN	A	1
	165	256T5224-1		.STATOR	A	1
R	170	256T5230-2		.BRAKE ASSY-NO BACK	A	1
	175	256T2270-1		..RETAINER-LOCK RING	A	1
	180	256T2266-1		..RING-LOCK	A	2
	185	256T5233-1		..PLATE-BALL RAMP	A	1
	190	BACB10TCP24A		..BALL	A	3
	195	256T5232-1		..PLATE-REACTION	A	1

	FIG. & ITEM	PART NO.	AIRLINE PART NUMBER	NOMENCLATURE 1234567	EFF CODE	QTY PER ASSY
	01-					
R	200	MS24585C70		..SPRING	A	9
	205	256T5234-1		..PLATE-PRESSURE	A	1
	210	256T2262-2		..DISK-LARGE	A	2
	215	256T6147-5		..SHIM	A	1
	220	RS137SP		..RING-RETAINING (V80756)	A	1
	225	256T5235-2		..DISK-STATOR	A	1
	230	256T5235-1		..PLATE ASSY-STATOR	A	6
	235	256T5235-2		...DISK	A	1
	240	256T5235-3		...FACING	A	2
	245	256T2263-2		..DISK-SMALL	A	3
	250	256T2289-1		..SPRING-BELLEVILLE	A	1
	255	256T5236-1		..STOP-BELLEVILLE	A	1
	260	256T6147-4		..SHIM	A	1
	265	256T5231-2		..SHAFT-OUTPUT	A	1
	270	R9304KA4298		.BEARING- (V21335) (SPEC BACB10BB20) (OPT 1904S (V38443)) (OPT 6904LC (V52676)) (OPT 9304KPRB (V21335)) (OPT PKT004P1 (V78118)) (OPT C004RRP0 (V40920)) (OPT C004RR1P28LY331 (V40920)) (OPT R9304KA4298 (V9V013)) (OPT 1904-1B1-01 (V21760))	A	1

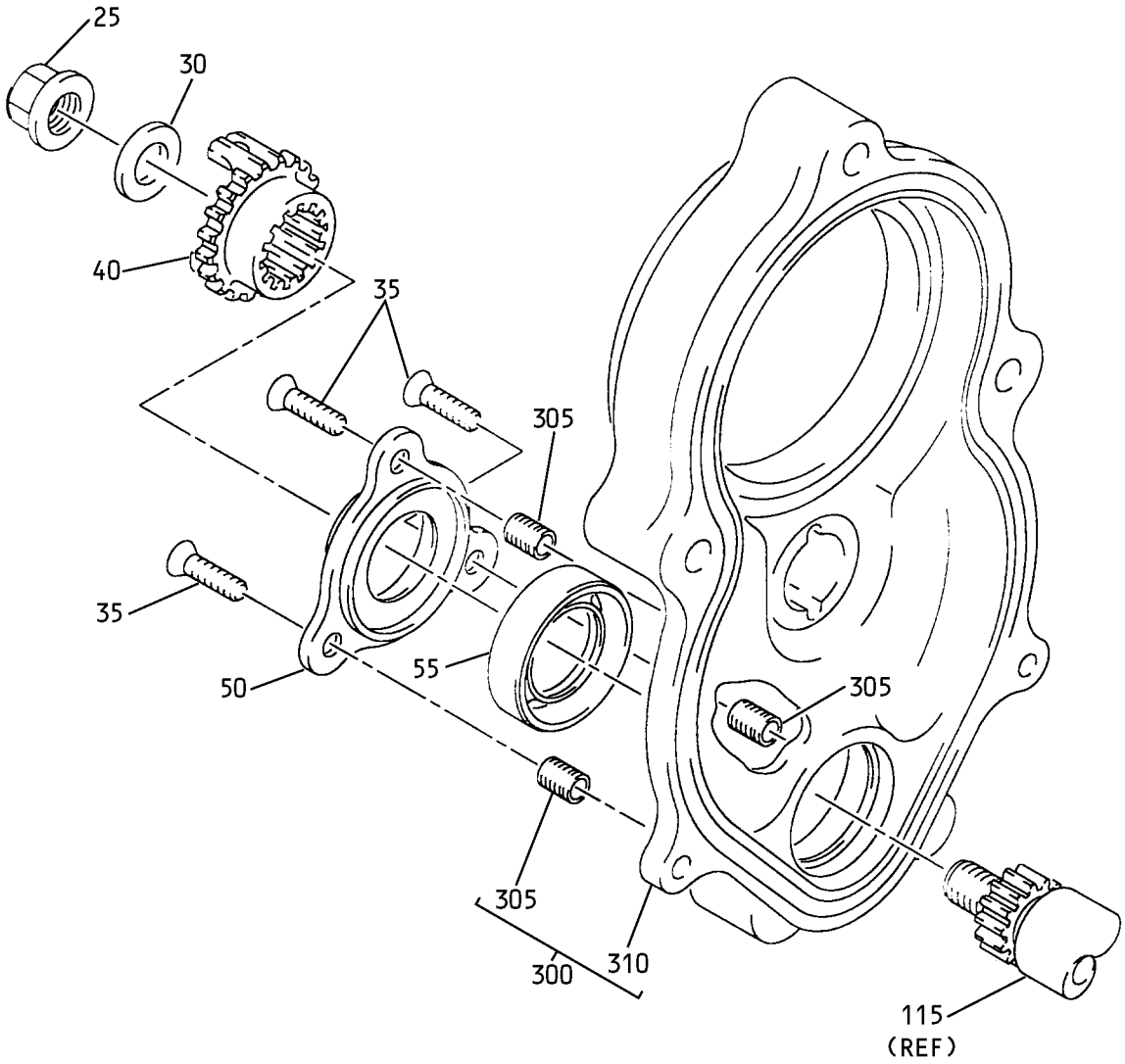
	FIG. & ITEM	PART NO.	AIRLINE PART NUMBER	NOMENCLATURE 1234567	EFF CODE	QTY PER ASSY
	01-					
	275	BACS12ER3K7		.SCREW	A	3
	280	256T5225-2		.RETAINER-SEAL	A	1
	285	1002123606300		DELETED		
R	285A	1002423606300		.SEAL- (V91251) (SPEC S256W410-3) (OPT ITEM 285B)	A	1
R	285B	700-856-2272-99		.SEAL- (VU1068) (OPT ITEM 285A)	A	1
	290	M3461-1-161		DELETED		
R	290A	M83461-1-161		.PACKING	A	1
	295	M83461-1-235		DELETED		
R	295A	M83461-1-152		.PACKING	A	1
	300	256T5212-1		.HOUSING ASSY-R	A	1
	305	MS21209F1-15P		..INSERT	A	3
	310	256T5212-2		..HOUSING	A	1
	315	256T5223-1		.HOUSING ASSY-NO-BACK	A	1
	320	MS21209F1-15P		..INSERT	A	3
	325	256T5223-2		..HOUSING	A	1
R	330	256W2197-1		.PLUG-OIL	A	2
	335	MS28775-109		.PACKING	A	2
R	340	256T5124-12		.MARKER-NAMEPLATE	A	1
R	345	256T5124-14		.MARKER-SERIALIZED	A	1

- Item Not Illustrated



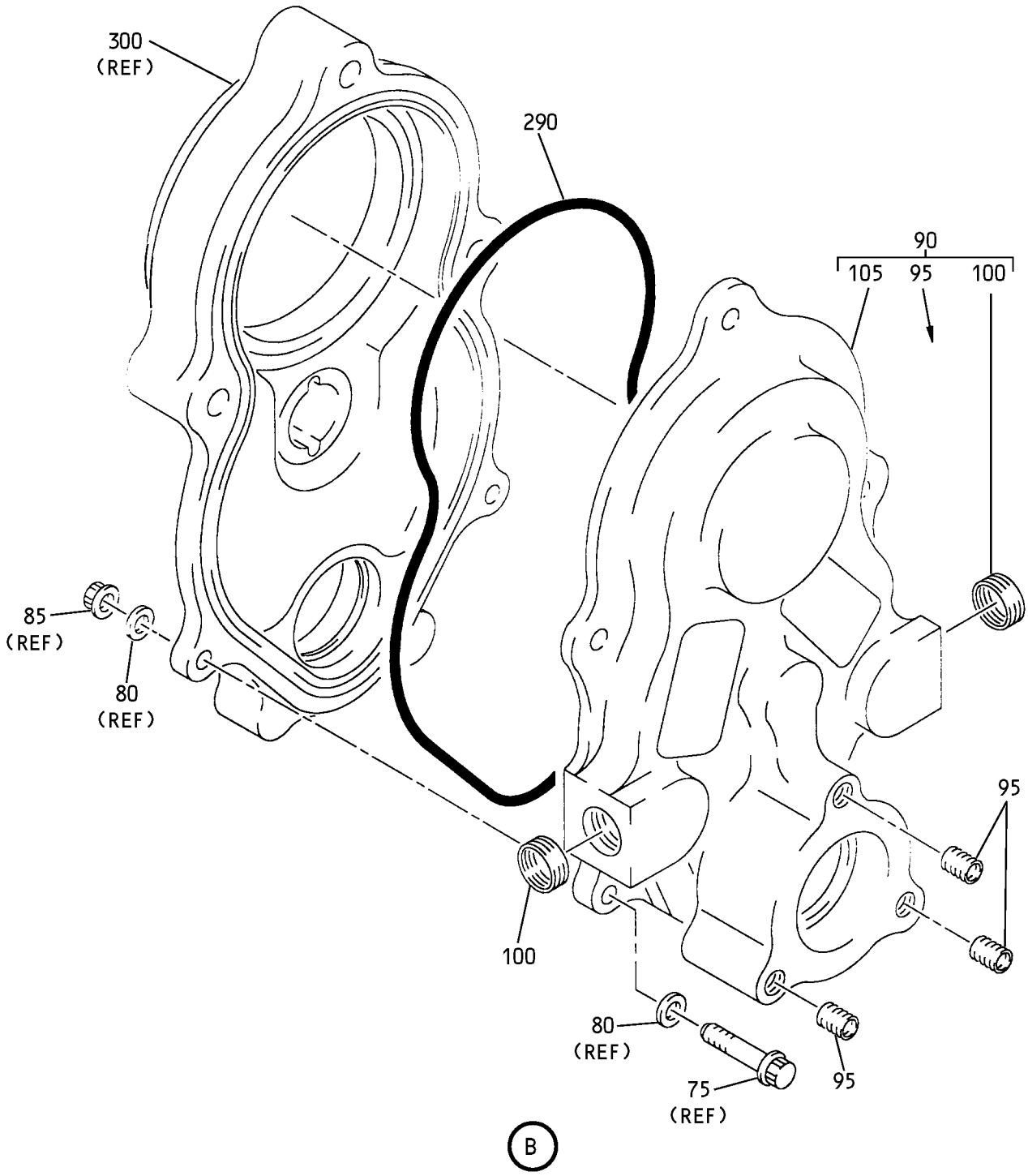
256T5240
Gearbox Assembly
Figure 2 (Sheet 1)

K32267



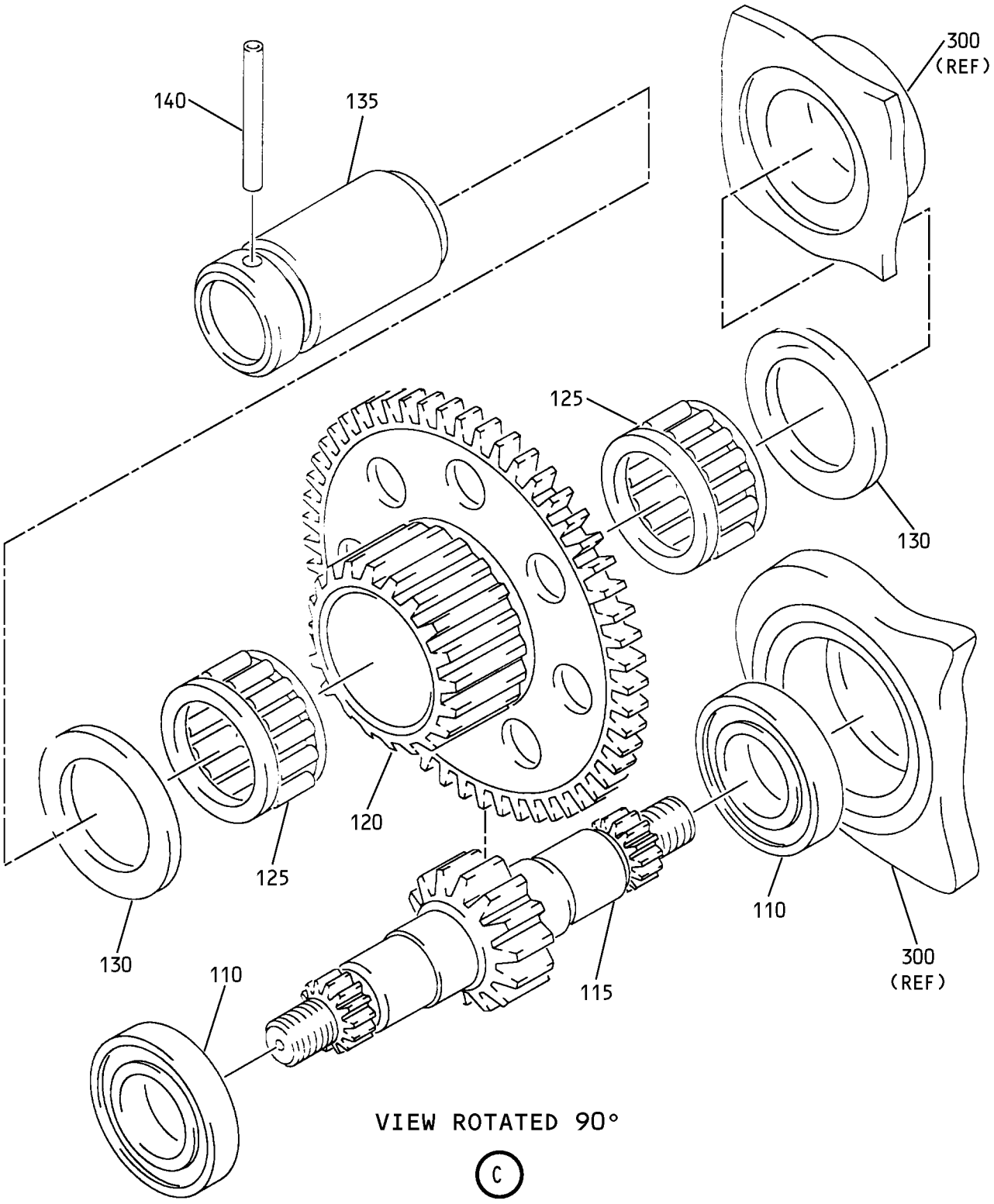
256T5240
Gearbox Assembly
Figure 2 (Sheet 2)

K32276



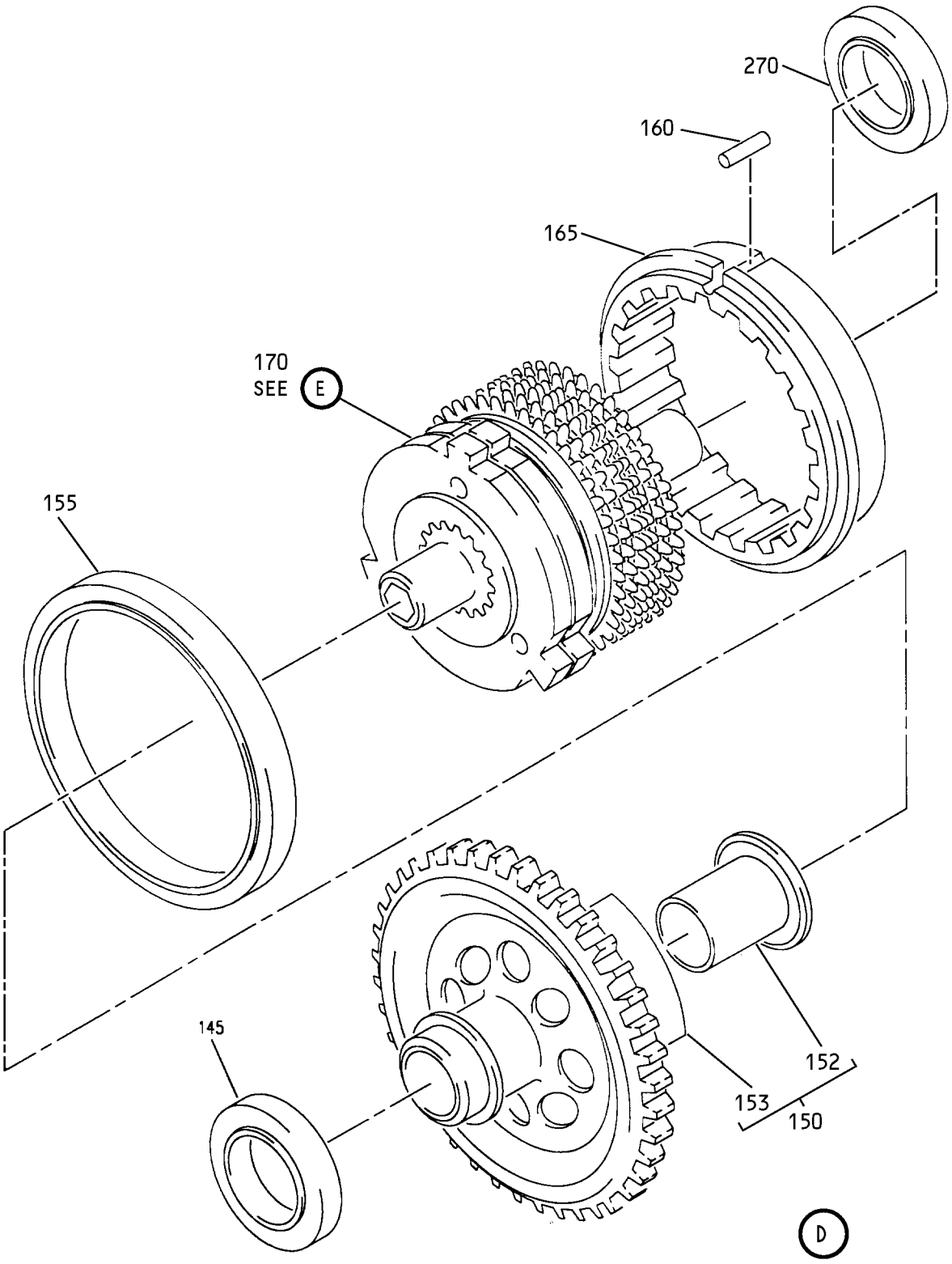
256T5240
Gearbox Assembly
Figure 2 (Sheet 3)

K32279



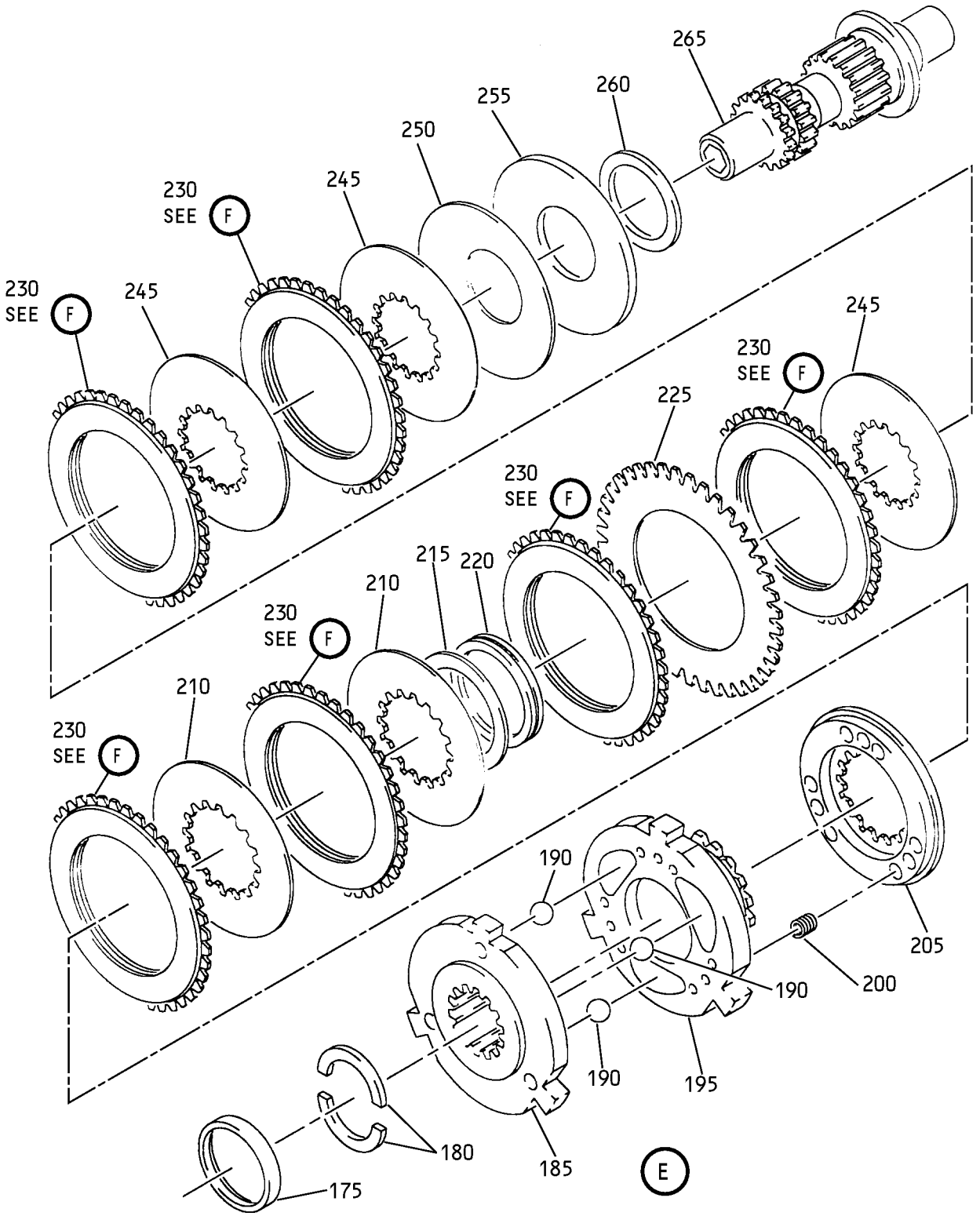
256T5240
Gearbox Assembly
Figure 2 (Sheet 4)

K32281



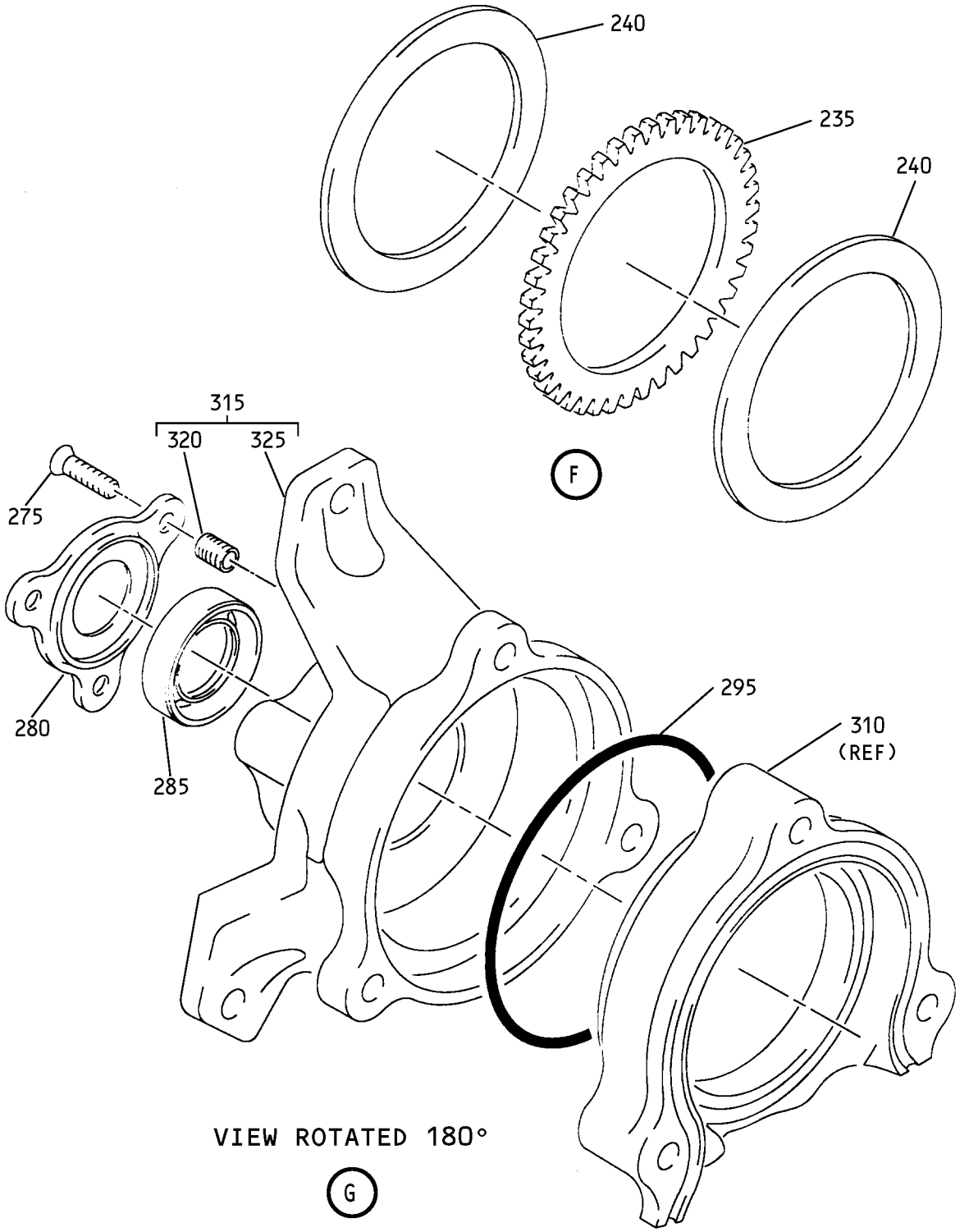
256T5240
Gearbox Assembly
Figure 2 (Sheet 5)

K32291



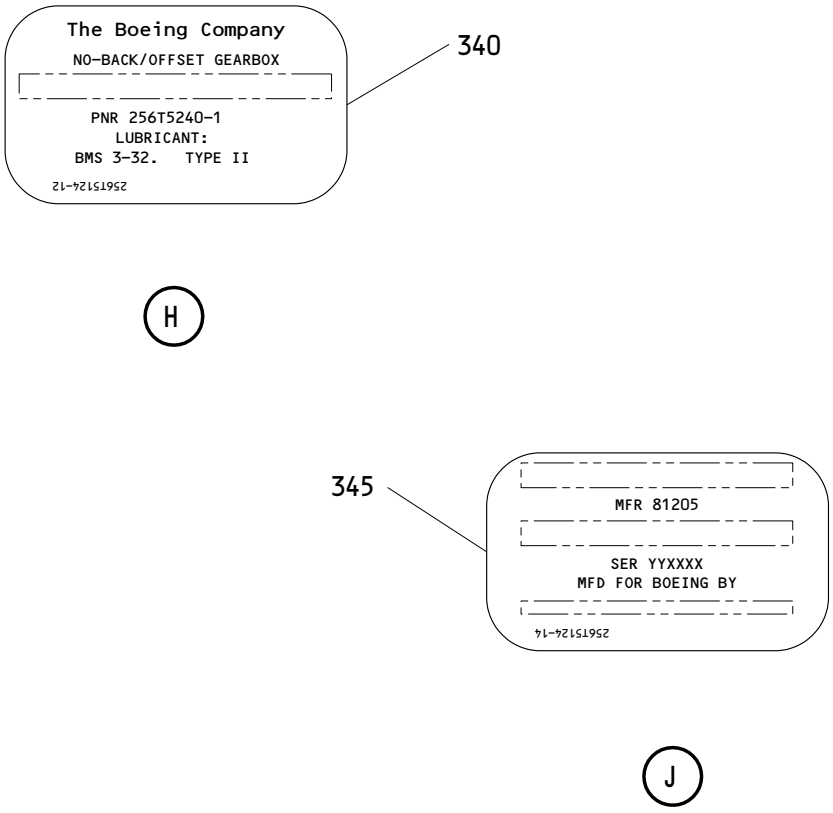
256T5240
Gearbox Assembly
Figure 2 (Sheet 6)

K32295



256T5240
Gearbox Assembly
Figure 2 (Sheet 7)

K32299



256T5240
Gearbox Assembly
Figure 2 (Sheet 8)

K32133

	FIG. & ITEM	PART NO.	AIRLINE PART NUMBER	NOMENCLATURE 1234567	EFF CODE	QTY PER ASSY
	02- -1	256T5240-1		GEARBOX ASSY-OUTBD VAPOR SEAL LE SLAT DRIVE NO-BACK/OFFSET	B	RF
	25	H52732-6CD		.NUT- (V15653) (SPEC BACN10YR6CD) (OPT PLH56CD (V62554))	B	2
	30	MS21299-6K		.WASHER	B	2
	35	BACS12ER3K7		.SCREW	B	6
	40	256T5217-1		.COUPLING-INPUT	B	2
	45	256T5225-3		.RETAINER-SEAL	B	1
	50	256T5225-1		.RETAINER-SEAL	B	1
	55	1002423606100		.SEAL- (V91251) (SPEC S256W410-1) (OPT ITEM 55A)	B	2
R	-55A	700-854-8862-99		.SEAL- (VU1068) (OPT ITEM 55)	B	2
	60	BACB30MR4K25		.BOLT	B	3
	65	BACW10BP4CD		.WASHER	B	6
	70	NAS1805-4L		.NUT	B	3
	75	BACB30MR3K9		.BOLT	B	2
	80	BACW10BP3CD		.WASHER	B	4
	85	NAS1805-3L		.NUT	B	2
	90	256T5241-1		.HOUSING ASSY-L	B	1
	95	MS21209F1-15P		..INSERT	B	3
	100	MS21209F6-10P		..INSERT	B	2
	105	256T5241-2		..HOUSING-HALF	B	1

FIG. & ITEM	PART NO.	AIRLINE PART NUMBER	NOMENCLATURE 1234567	EFF CODE	QTY PER ASSY
02-					
110	R9303KA4298		.BEARING- (V21335) (SPEC BACB10BB17) (OPT 1903S (V38443)) (OPT 6903LC (V52676)) (OPT 9303K (V21335)) (OPT PKT003P1 (V78118)) (OPT C003RRP0 (V40920)) (OPT R9303KA4298 (V9V013)) (OPT C003R1P17LY331 (V40920)) (OPT 1903-1B1-01 (V21760))	B	2
115	256T5216-1		.SHAFT-INPUT	B	1
120	256T2254-2		.GEAR-PINION	B	1
125	KZK16X22X12		.BEARING-NEEDLE (V27737) (OPT ITEMS 125A, 125B, 125C)	B	2
-125A	KZK16X22X12AG		.BEARING-NEEDLE (V27737) (OPT ITEMS 125, 125B, 125C)	B	2
-125B	KT162212EGB2		.BEARING-NEEDLE (V55211) (OPT ITEMS 125, 125A, 125C)	B	2
-125C	FWJ162212		.BEARING-NEEDLE (V60380) (OPT ITEMS 125, 125A, 125B)	B	2

	FIG. & ITEM	PART NO.	AIRLINE PART NUMBER	NOMENCLATURE 1234567	EFF CODE	QTY PER ASSY
	02-					
	130	256T2278-1		.WASHER-THRUST	B	2
	135	256T2259-1		DELETED		
R	135A	256T2259-3		.SHAFT-DEAD	B	1
R	140	MS39086-133		.PIN-SPR	B	1
	145	R9305KA4298		.BEARING- (V21335) (SPEC BACB10BB25) (OPT 1905S (V38443)) (OPT 6905LC (V52676)) (OPT 9305K (V21335)) (OPT PKT005P1 (V78118)) (OPT C005RRP0 (V40920)) (OPT C005RR1P28LY331 (V40920)) (OPT R9305KA4298 (V9V013)) (OPT 1905-1B1-01 (V21760))	B	1
	150	256T5215-1		.GEAR ASSY-2ND STAGE	B	1
	152	256T5226-1		..BUSHING		1
R	153	256T5215-2		..GEAR		1
	155	BCREF15848		.BEARING- (V40920) (C4152BSTE3P12-20L02) (OPT ITEMS 155A, 155B, 155C)	B	1

	FIG. & ITEM	PART NO.	AIRLINE PART NUMBER	NOMENCLATURE 1234567	EFF CODE	QTY PER ASSY
	02-					
	-155A	BCREF15849		.BEARING- (V40920) (C4152STE3P12-20L02) (OPT ITEMS 155, 155B, 155C)	B	1
R	-155B	BCREF50257		.BEARING- (V40920) (C4152STE3P12-20L01) (OPT ITEMS 155, 155A, 155C)	B	1
R	-155C	BCREF50256		.BEARING- (V40920) (C4152BSTE3P12-20L01) (OPT ITEMS 155, 155A, 155B)	B	1
	160	256W2192-3		.PIN	B	1
	165	256T5224-1		.STATOR	B	1
R	170	256T5230-1		.BRAKE ASSY-NO BACK	B	1
	175	256T2270-1		..RETAINER-LOCK RING	B	1
	180	256T2266-1		..RING-LOCK	B	2
	185	256T5233-1		..PLATE-BALL RAMP	B	1
	190	BACB10TCP24A		..BALL	B	3
	195	256T5232-1		..PLATE-REACTION	B	1
R	200	MS24585C70		..SPRING	B	9
	205	256T5234-1		..PLATE-PRESSURE	B	1
	210	256T2262-2		..DISK-LARGE	B	2
	215	256T6147-5		..SHIM	B	1
	220	RS137SP		..RING-RETAINING (V80756)	B	1
	225	256T5235-2		..DISK-STATOR	B	1
	230	256T5235-1		..PLATE ASSY	B	6
	235	256T5235-2		...DISK-STATOR	B	1
	240	256T5235-3		...FACING	B	2
	245	256T2263-2		..DISK-SMALL	B	3

	FIG. & ITEM	PART NO.	AIRLINE PART NUMBER	NOMENCLATURE 1234567	EFF CODE	QTY PER ASSY
	02-					
	250	256T2289-1		..SPRING-BELLEVILLE	B	1
	255	256T5236-1		..STOP-BELLEVILLE	B	1
	260	256T6147-4		..SHIM	B	1
	265	256T5231-1		..SHAFT-OUTPUT	B	1
	270	R9304KA4298		.BEARING- (V21335) (SPEC BACB10BB20) (OPT 1904S (V38443)) (OPT 6904LC (V52676)) (OPT 9304KPRB (V21335)) (OPT PKT004P1 (V78118)) (OPT C004RRP0 (V40920)) (OPT C004RR1P28LY331 (V40920)) (OPT R9304KA4298 (V9V013)) (OPT 1904-1B1-01 (V21760))	B	1
	275	BACS12ER3K7		.SCREW	B	3
	280	256T5225-2		.RETAINER-SEAL	B	1
	285	1002123606300		DELETED		
R	285A	1002423606300		.SEAL- (V91251) (SPEC S256W410-3) (OPT ITEM 285B)	B	1
R	-285B	700-856-2272-99		.SEAL- (VU1068) (OPT ITEM 285A)	B	1
	290	M3461-1-161		DELETED		
R	290A	M83461-1-161		.PACKING	B	1
	295	M83461-1-235		DELETED		
R	295A	M83461-1-152		.PACKING	B	1
	300	256T5212-1		.HOUSING ASSY-R	B	1
	305	MS21209F1-15P		..INSERT	B	3
	310	256T5212-2		..HOUSING	B	1
R	315	256T5223-1		.HOUSING ASSY-NO BACK	B	1
	320	MS21209F1-15P		..INSERT	B	3
	325	256T5223-2		..HOUSING	B	1

	FIG. & ITEM	PART NO.	AIRLINE PART NUMBER	NOMENCLATURE 1234567	EFF CODE	QTY PER ASSY
	02-					
R	330	256W2197-1		.PLUG-OIL	B	2
	335	MS28775-109		.PACKING	B	2
R	340	256T5124-13		.MARKER-NAMEPLATE	B	1
R	345	256T5124-14		.MARKER-SERIALIZED	B	1

- Item Not Illustrated