TO: ALL HOLDERS OF TRAILING EDGE FLAP DRIVE ANGLE GEARBOX AND AILERON DROOP INPUT CONTROL MECHANISM ASSEMBLY COMPONENT MAINTENANCE MANUAL 27-31-39

REVISION NO. 2 DATED JUL 01/03

HIGHLIGHTS

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

CHAPTER/SECTION AND PAGE NO.	DESCRIPTION OF CHANGE
101 901	Revised text fixture from A27046-141 and -163 to A27046-191 and -192.

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BOEING

COMPONENT
MAINTENANCE MANUAL

TRAILING EDGE FLAP DRIVE ANGLE GEARBOX AND AILERON DROOP INPUT CONTROL MECHANISM ASSEMBLY

PART NUMBERS 256T6640-1,-2

COMPONENT MAINTENANCE MANUAL
WITH
ILLUSTRATED PARTS LIST

K34113

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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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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.

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TRAILING EDGE FLAP DRIVE
ANGLE GEARBOX AND AILERON DROOP INPUT CONTROL MECHANISM ASSEMBLY

DESCRIPTION AND OPERATION

1. Description

   A. The trailing edge flap drive angle gearbox and aileron droop input control mechanism assembly has bevel gears, a reduction gear train, and a cam system in a housing assembly. An output crank is installed externally, on the same splined shaft as the cam follower.

   B. A shear pin in the gear train lets the trailing-edge-flap-drive system continue to operate if there is a jam in the aileron droop mechanism.

2. Operation

   A. The bevel gears change the direction of the trailing-edge-flap-drive line by 20 degrees.

   B. A spur gear on the output bevel gear operates the reduction gear train for the aileron droop input. As the trailing-edge-flap-drive system operates the flaps, the cam turns. The movement of the cam follower and the output crank gives the input for the droop of the inboard ailerons.

3. Leading Particulars (Approximate)

   A. Length -- 9 inches

   B. Width -- 12 inches

   C. Height -- 12 inches

   D. Weight -- 22 pounds

   E. Gear ratio -- 457.3 to 1 (input bevel gear to worm gear)

   F. Drive shaft angle -- 20 degrees (input bevel gear to output bevel gear)

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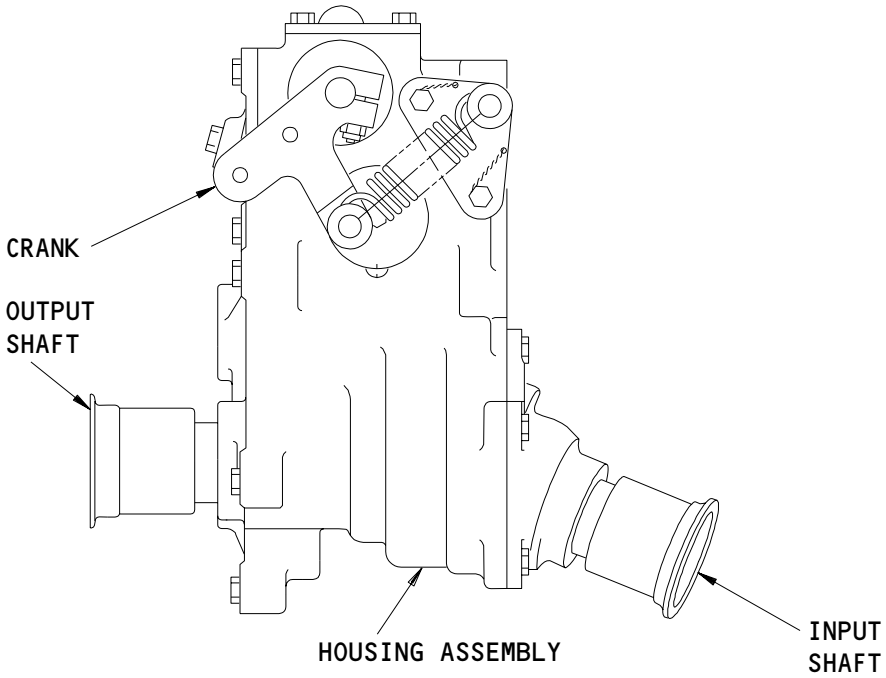
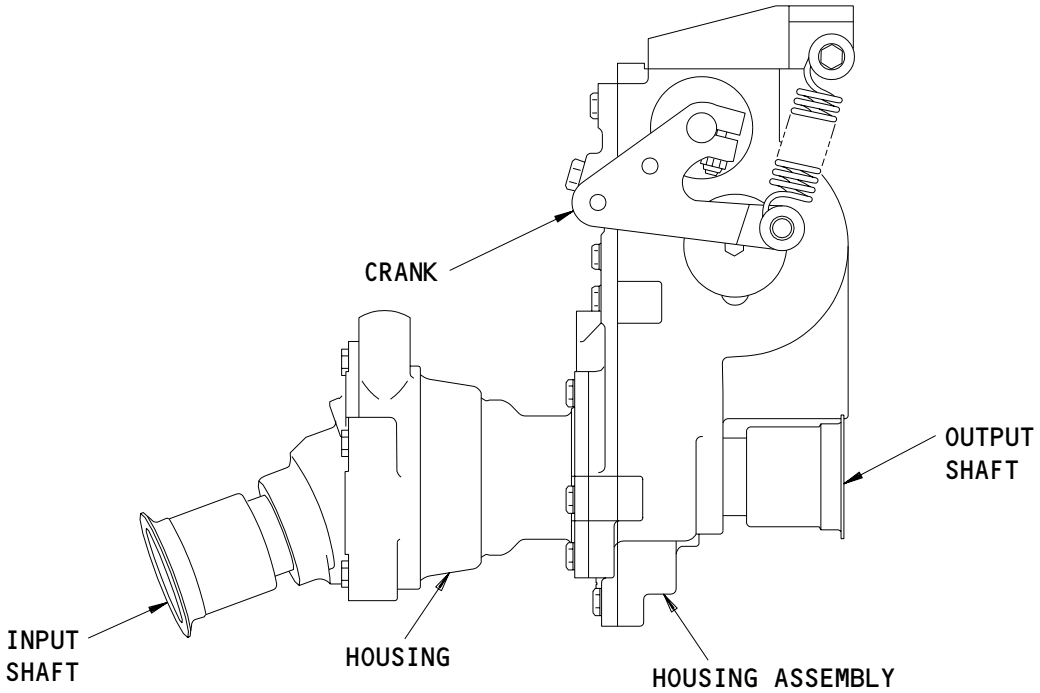


256T6640-1
(LEFT SIDE ASSEMBLY)



256T6640-2
(RIGHT SIDE ASSEMBLY)

Trailing Edge Flap Drive Angle Gearbox and
Aileron Droop Input Control Mechanism Assembly
Figure 1

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TESTING AND FAULT ISOLATION

1. General

   A. This procedure has the data necessary to do a test of the trailing-edge-flap-drive angle-gearbox-and-aileron-droop-input-control mechanism assembly after an overhaul or for fault isolation. The procedure applies to both the left side (256T6640-1) and right side (256T6640-2) assemblies.

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

2. Testing and Fault Isolation

   A. Special Tools and Equipment

      NOTE: Equivalent tools/equipment can be used.

      (1) A27046-8 -- Test Equipment (used with A27046-191 and -192)

      (2) A27046-191 -- Test Fixture (for left-side assembly 256T6640-1)

      (3) A27046-192 -- Test Fixture (for right-side assembly 256T6640-2)

   B. References

      (1) 27-51-39/301, DISASSEMBLY

      (2) 27-51-39/701, ASSEMBLY

   C. Procedures

      NOTE: In the procedures that follow, "input shaft" refers to the shaft of the input bevel gear (IPL Fig. 1; 190), (IPL Fig. 2; 175), and "output shaft" refers to the shaft of the output bevel gear (IPL Fig. 1; 205), (IPL Fig. 2; 180).

      (1) Use the Test Equipment A27046-8 to install the mechanism assembly in the Test Fixture A27046-191 or -192.

      (2) Do a check for binding and roughness.

         (a) Apply an 8-12 pound axial tension load to the output shaft.

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(b) With no torque applied to the output shaft, manually turn the input shaft through a minimum of 720 degrees in each direction.

(c) Make sure that the bevel gears (IPL Fig. 1; 190, 205), (IPL Fig. 2; 175, 180) turn freely and smoothly in each direction.

(3) Do a check of the no-load torque.

(a) Apply an 8-12 pound axial tension load to the output shaft.

(b) With no torque applied to the output shaft, turn the input shaft. Measure the torque at the input shaft as it starts to move (breakaway) and as it turns through a minimum of 720 degrees in each direction.

(c) Make sure that the breakaway and maximum running torque is not more than 2.25 lb-in. in each direction.

(4) Do a backlash check.

(a) Apply a 25-35 pound axial tension load to the bevel gear shafts.

(b) Apply a 5-10 lb-in. torque to the input shaft in each direction.

(c) Make sure that the backlash is 0.006-0.013 inch at the scribe line on the clamp assembly A27046-58, measured at 3 places approximately 120 degrees apart.

NOTE: The backlash is the total clearance measured from the torqued position in one direction to the torqued position in the opposite direction. The backlash measured at the scribe line is equivalent to 0.003-0.007 inch measured at the pitch diameter of the bevel gears.

(5) Do a check of the aileron droop input.

WARNING: THE SPRINGS TRANSMIT A LARGE FORCE WHEN THEY ARE INSTALLED. BE VERY CAREFUL WHEN YOU REMOVE THE SPRINGS OR INJURY TO PERSONNEL CAN OCCUR.

(a) Remove the springs (IPL Fig. 1; 20), (IPL Fig. 2; 5), then remove the fasteners (IPL Fig. 1; 80 thru 90), (IPL Fig. 2; 65 thru 75) and the crank assembly (IPL Fig. 1; 75), (IPL Fig. 2; 60).

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(b) Align the index marks on the indicator disc (IPL Fig. 1; 300), (IPL Fig. 2; 335) and the housing assembly (IPL Fig. 1; 420), (IPL Fig. 2; 445).

(c) Apply a 10 lb-in. torque to the splined shaft (IPL Fig. 1; 395), (IPL Fig. 2; 420), first in one direction, then in the opposite direction.

(d) Make sure that the angular movement of the splined shaft at a 1.8 inch radius is 0.010-0.025 inches

(e) Turn the input shaft approximately 120 degrees and do steps (a) thru (d) again.

(f) Turn the input shaft 120 degrees one more time, or to a position where there is too much backlash. Do steps (a) thru (d) again.

(6) Do a check of the output crank travel (Refer to Fig. 101).

(a) Turn the output shaft until the index marks on the indicator disc (IPL Fig. 1; 300), (IPL Fig. 2; 335) and the housing assembly (IPL Fig. 1; 420), (IPL Fig. 2; 445) are aligned. Make sure that the last half turn of the output shaft is in the extend direction.

NOTE: The extend direction is clockwise for the 265T6640-1 assembly and counterclockwise for the 265T6640-2 assembly, when you look at the output shaft.

(b) Measure the position of the farthest fastener hole (at 2.50 inches from the centerline of the splined hole) in the crank (IPL Fig. 1; 100), (IPL Fig. 2; 85). Use this fastener hole and the centerline of the splined shaft (IPL Fig. 1; 395), (IPL Fig. 2; 420) to measure the angular position of the crank. This is the baseline position for the steps that follow.

(c) Turn the output shaft 209.9-210.1 turns in the extend direction from the initial position with the index marks aligned.

(d) Measure the movement of the farthest fastener hole of the crank from the baseline position.

(e) Make sure that the crank did not move more than 0.005 inch.

(f) Turn the input shaft in the extend direction until the crank starts to move. Make sure that the last half turn of the input shaft is in the extend direction.

(g) Make sure that the input shaft moved 210.1-214.1 turns from the initial position with index marks aligned.

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(h) Turn the output shaft in the extend direction 256.1-256.3 turns from the initial position with index marks aligned.

(i) Turn the output shaft in the extend direction until the crank stops its movement. Make sure that the last half turn of the input shaft is in the extend direction.

(j) Make sure that the input shaft moved 256.3-260.3 turns from the initial position with index marks aligned.

(k) Measure the angular movement of the crank from the baseline position.

(l) Make sure that the angular movement of the crank is 10.32-11.32 degrees (for 265T6640-1), or 11.77-12.77 degrees (for 265T6640-2).

(m) Turn the output shaft in the extend direction 397.5-397.7 turns from the initial position with index marks aligned.

(n) Measure the movement of the farthest fastener hole of the crank from the position at the end of step (i).

(o) Make sure that the crank did not move more than 0.005 inch.

(p) Turn the output shaft in the extend direction until the crank starts to move. Make sure that the last half turn of the output shaft is in the extend direction.

(q) Make sure that the output shaft moved 397.7-401.7 turns from the initial position with index marks aligned.

(r) Turn the output shaft in the extend direction approximately 57 turns, until the index marks are aligned.

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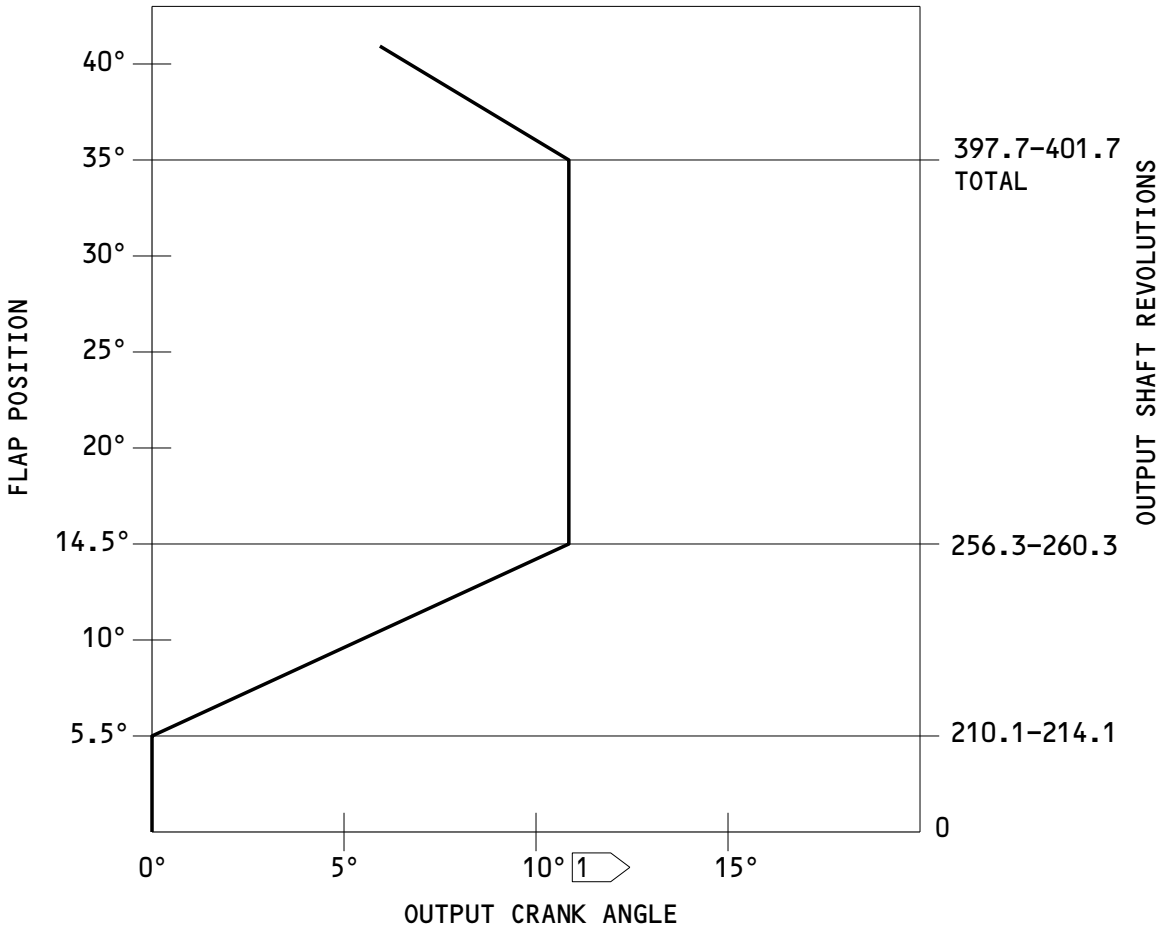

256T6640-1 ASSEMBLY

Output Crank Travel
Figure 101 (Sheet 1)

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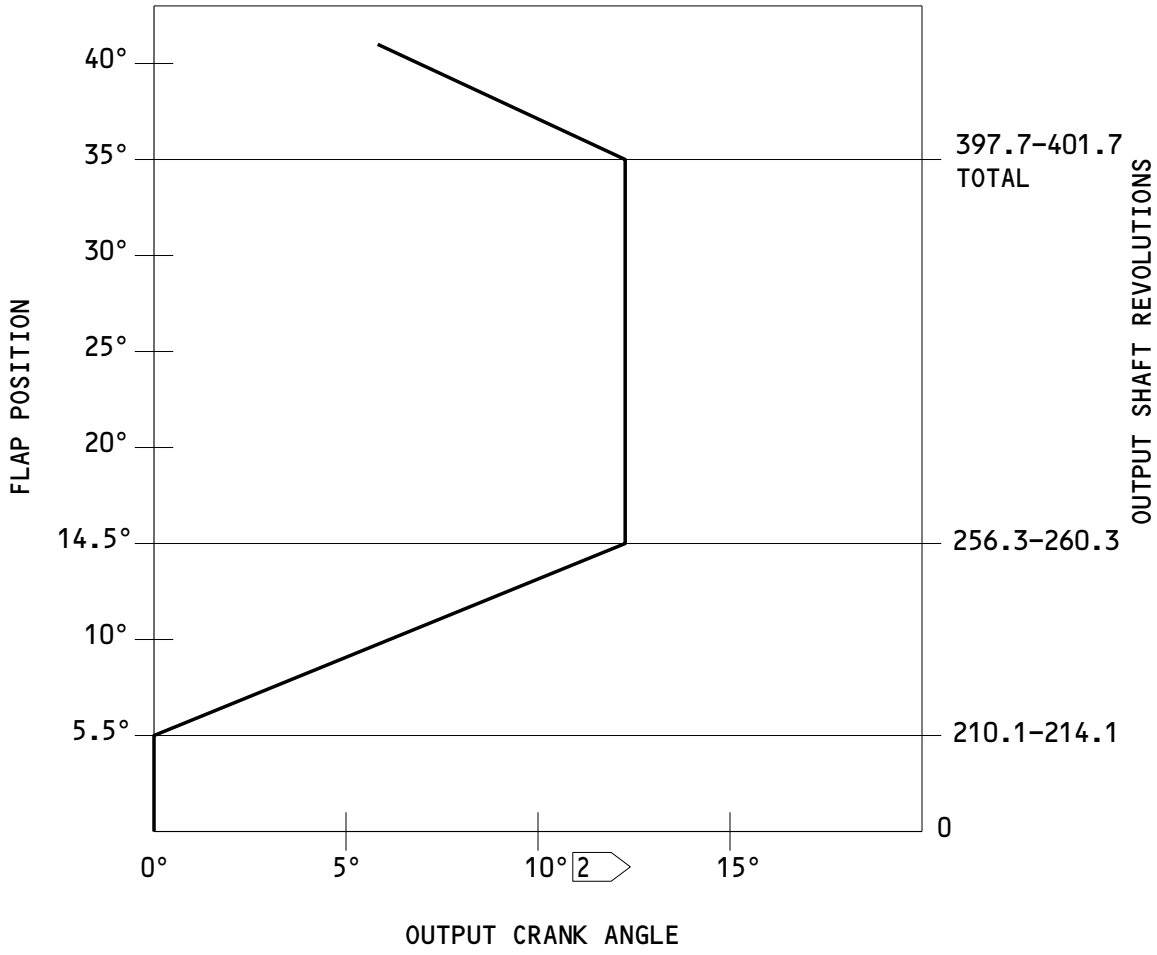

256T6640–2 ASSEMBLY

1 FULL AILERON DROOP IS AT 10.32°–11.32° CRANK TRAVEL

2 FULL AILERON DROOP IS AT 11.77°–12.77° CRANK TRAVEL

Output Crank Travel
Figure 101 (Sheet 2)

K34121

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D. Fault Isolation and Correction

(1) General

(a) Refer to Table 101 to do fault isolation and correction with the test results.

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TROUBLE	PROBABLE CAUSE	CORRECTION
Shafts do not turn smoothly or move freely	Lubrication is not sufficient	Lubricate the assembly. Refer to ASSEMBLY, par. 2.D.
	Worn or defective bearings (IPL Fig. 1; 175,185,270, 360,415), (IPL Fig. 2; 160, 170,305,440)	Disassemble and replace the bearings, as applicable.
	Worn or defective gears (IPL Fig. 1; 190,195,205,275,280, 285,320), (IPL Fig. 2; 175, 180,190,310,315,320,355)	Disassemble and replace the gears, as applicable.
Breakaway or maximum running torque is more than 2.25 lb-in.	Worn or defective bearings (IPL Fig. 1; 175,185,270, 360), (IPL Fig. 2; 160,170, 305)	Disassemble and replace the bearings, as applicable.
Incorrect backlash	Incorrect shim (IPL Fig. 1; 180), (IPL Fig. 2; 165) thickness	Adjust shim thickness. Refer to ASSEMBLY par. 2.E.(4)(a) or 2.F.(4)(a).
	Worn or defective bevel gears Fig. 1; 190,205), (IPL Fig. 2; 175,180)	Disassemble and replace the gears, as applicable.
Movement of splined shaft is not 0.010-0.025 in.	Incorrect shim (IPL Fig. 1; 215), (IPL Fig. 2; 240) thickness	Adjust shim thickness. Refer to ASSEMBLY par. 2.E.(7)(b) or 2.F.(7)(b).
Incorrect output crank travel	Defective cam (IPL Fig. 1; 355), (IPL Fig. 2; 390) or cam follower bearing (IPL Fig. 1; 415), (IPL Fig. 2; 440)	Disassemble and replace the cam or the bearing.

Fault Isolation Chart
Figure 102

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DISASSEMBLY

1. General

A. This procedure has the data necessary to disassemble the trailing-edge-flap-drive angle-gearbox-and-aileron-droop-input-control mechanism assembly.

B. Disassemble this component sufficiently to isolate the defects, do the necessary repairs, and put the component back to a serviceable condition.

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

2. Disassembly

A. Parts Replacement

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

(1) Seal (IPL Fig. 1; 305), (IPL Fig. 2; 340)

(2) Cotter pin (IPL Fig. 1; 370), (IPL Fig. 2; 395)

B. References

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

C. Procedure

(1) Disassembly of 256T6640-1 (IPL Fig. 1).

(a) Cut and remove the lockwire from the assembly.

WARNING: THE SPRINGS (20) TRANSMIT A LARGE FORCE WHEN THEY ARE INSTALLED. BE VERY CAREFUL WHEN YOU REMOVE THE SPRINGS OR INJURY TO PERSONNEL CAN OCCUR.

(b) Remove the springs (20) from the bracket assembly (50) and crank assembly (75).

(c) Remove the bolts (55), washers (60), and bracket assembly (50) from the housing assembly (420).

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(d) Remove the bolt (80), washer (85), and nut (90), then remove the crank assembly (75), shim (105), and bearing shield (110) from the splined shaft (395).

(e) Remove the bolts (25), washers (30), nuts (35), retainers (40), and bushings (45) from the bracket assembly (50) and crank assembly (75).

NOTE: Do not remove the bushings (65, 95) from the bracket assembly (50) or the crank assembly (75) unless repair or replacement is necessary.

(f) Remove the nuts (135), washers (140), coupling halves (145), molded sleeves (150), and coupling sleeves (130) from the bevel gears (190, 205).

(g) Remove the bolts (160) and washers (165), then remove the housing (170) and the bevel gear (190) from the housing assembly (420).

(h) Remove the bevel gear (190) with installed parts from the housing (170).

(i) Remove the bevel gear (205) with installed parts from the housing assembly (420).

(j) Remove the bearing shield (155), shims (180), and bearings (175, 185) from the bevel gear (190). (SOPM 20-50-03).

(k) Remove the bearing shield (155), spur gear (195), spacer (200), shims (180), and bearings (175, 185) from the bevel gear (205). (SOPM 20-50-03).

(l) Measure and record the thicknesses of the shim stacks, S1 and S2. S1 is the thickness of the shims (180) on the bevel gear (190). S2 is the thickness of the shims (180) on the bevel gear (205).

(m) Keep each set of bearings and shims together with the applicable bevel gear to help during assembly of the unit.

(n) Remove the bolts (225), washers (230), and the cover assembly (220) from the housing assembly (420).

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(o) Remove the shims (265) from the cover assembly (220). Measure and record the thickness of the shims to help during assembly of the unit.

(p) Remove the worm gearshaft (285) with the spur gear (275) and bearings (270) from the housing assembly (420). Remove the spur gear and bearings from the worm gearshaft.

(q) Remove the spur gear (280) with the bearings (270) from the housing assembly (420).

(r) Remove the bolts (245), washers (250), and bearing housings (255, 260) from the housing assembly (420).

(s) Remove the shims (265) from the bearing housing (255, 260). Measure and record the thickness of the shims to help during assembly of the unit.

(t) Remove the bolt (290), washer (295), and indicator disc (300) from the end of the worm gear assembly (310).

(u) Remove the worm gear assembly (310) with the spacer retainer (340), cam assembly (345), bearing (360), and shim (365) from the housing assembly (420).

(v) Measure and record the thickness of the shim (365) to help during assembly of the unit.

(w) Remove the bearing (360), cam assembly (345), and retainer (340) from the worm gear assembly (310).

NOTE: Do not disassemble the worm gear assembly (310) or the cam assembly (345) unless repair or replacement is necessary.

(x) Remove the bolt (385) and washer (390) from the arm assembly (400).

(y) Move the splined shaft (395) with the bearing (270) laterally out of the arm assembly (400), then remove the splined shaft, bearing, and arm assembly from the housing assembly (420).

(z) Remove the bearing (270) from the housing assembly (420).

(aa) Remove the cotter pin (370), nut (380), washer (375), and cam follower bearing (415) from the arm assembly (400).

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(ab) Remove the seal (305) from the housing assembly (420).

(ac) Remove the bolts (5), washers (10), and cover (15) from the housing assembly (420).

(ad) Remove the bolts (115), washers (120) and drain cover (125) from the housing assembly (420).

NOTE: Do not remove the markers (455, 460) or disassemble the housing assembly (420) unless repair or replacement is necessary.

(2) Disassembly of 256T6640-2 (IPL Fig. 2).

(a) Cut and remove the lockwire from the assembly.

WARNING: THE SPRINGS (5) TRANSMIT A LARGE FORCE WHEN THEY ARE INSTALLED. BE VERY CAREFUL WHEN YOU REMOVE THE SPRINGS OR INJURY TO PERSONNEL CAN OCCUR.

(b) Remove the springs (5) from the bracket assembly (35) and crank assembly (60).

(c) Remove the bolts (40), washers (45), and bracket assembly (35) from the housing assembly (445).

(d) Remove the bolt (65), washer (70), and nut (75), then remove the crank assembly (60), shim (90), and bearing shield (95) from the splined shaft (420).

(e) Remove the bolts (10), washers (15), nuts (20), retainers (25), and bushings (30) from the bracket assembly (35) and crank assembly (60).

NOTE: Do not remove the bushings (50, 80) from the bracket assembly (35) or the crank assembly (60) unless repair or replacement is necessary.

(f) Remove the nuts (120), washers (125), coupling halves (130), molded sleeves (135), and coupling sleeves (115) from the bevel gears (175, 180).

(g) Remove the bolts (145) and washers (150), then remove the housing (155) and the bevel gear (175) from the housing assembly (195).

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(h) Remove the bevel gear (175) with installed parts from the housing (155).

(i) Remove the bevel gear (180) with installed parts from the housing assembly (195).

(j) Remove the bearing shield (140), shims (165), and bearings (160, 170) from the bevel gear (175). (SOPM 20-50-03).

(k) Remove the bearing shield (140), spur gear (190), spacer (185), shims (165), and bearings (160, 170) from the bevel gear (180). (SOPM 20-50-03).

(l) Measure and record the thicknesses of the shim stacks, S1 and S2. S1 is the thickness of the shims (165) on the bevel gear (175). S2 is the thickness of the shims (165) on the bevel gear (180).

(m) Keep each set of bearings and shims together with the applicable bevel gear to help during assembly of the unit.

(n) Remove the bolts (200, 205) and washers (210), then remove the housing assembly (195) from the cover assembly (245).

(o) Remove the bolts (250), washers (255), and the cover assembly (245) from the housing assembly (445).

(p) Remove the shims (300) from the cover assembly (245). Measure and record the thickness of the shims to help during assembly of the unit.

(q) Remove the worm gearshaft (320) with the spur gear (310) and bearings (305) from the housing assembly (445). Remove the spur gear and bearings from the worm gearshaft.

(r) Remove the spur gear (315) with the bearings (305) from the housing assembly (445).

(s) Remove the bolts (280), washers (285), and bearing housings (290, 295) from the housing assembly (445).

(t) Remove the shims (300) from the bearing housing (290, 295). Measure and record the thickness of the shims to help during assembly of the unit.

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(u) Remove the bolt (325), washer (330), and indicator disc (335) from the end of the worm gear assembly (345).

(v) Remove the worm gear assembly (345) with the spacer retainer (375), cam assembly (380), bearing (305), and shim (300) from the housing assembly (445).

(w) Measure and record the thickness of the shim (300) to help during assembly of the unit.

(x) Remove the bearing (305), cam assembly (380), and spacer retainer (375) from the worm gear assembly (345).

NOTE: Do not disassemble the worm gear assembly (345) or the cam assembly (380) unless repair or replacement is necessary.

(y) Remove the bolt (410) and washer (415) from the arm assembly (425).

(z) Move the splined shaft (420) with the bearing (305) laterally out of the arm assembly (425), then remove the splined shaft, bearing, and arm assembly from the housing assembly (445).

(aa) Remove the bearing (305) from the housing assembly (445).

(ab) Remove the cotter pin (395), nut (400), washer (405), and cam follower bearing (440) from the arm assembly (425).

(ac) Remove the seal (340) from the housing assembly (445).

(ad) Remove the bolts (100), washers (105) and drain cover (110) from the housing assembly (445).

NOTE: Do not remove the markers (480, 485) or disassemble the housing assembly (445) unless repair or replacement is necessary.

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CLEANING

1. General

   A. This procedure has the data necessary to clean the trailing edge flap drive angle gearbox and aileron droop input control mechanism assembly.

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

2. Cleaning

   A. References

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

   B. Procedure

      (1) Refer to the manufacturer's instructions to clean the bearings (IPL Fig. 1; 175, 185, 270, 360, 415), (IPL Fig. 2; 160, 170, 305, 440).

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

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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.

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) Spring (IPL Fig. 1; 20), (IPL Fig. 2; 5)

         (b) Coupling sleeve (IPL Fig. 1; 130), (IPL Fig. 2; 115)

         (c) Coupling half (IPL Fig. 1; 145), (IPL Fig. 2; 130)

         (d) Bearing shield (IPL Fig. 1; 155), (IPL Fig. 2; 140)

         (e) Gear (IPL Fig. 1; 190, 195, 205, 275, 280), (IPL Fig. 2; 175, 180, 190, 310, 315)

         (f) Worm gearshaft (IPL Fig. 1; 285), (IPL Fig. 2; 320)

         (g) Shear pin (IPL Fig. 1; 315), (IPL Fig. 2; 350)

         (h) Shaft (IPL Fig. 1; 335), (IPL Fig. 2; 370)

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(i) Bushing (IPL Fig. 1; 350), (IPL Fig. 2; 385)

(j) Cam (IPL Fig. 1; 355), (IPL Fig. 2; 390)

(k) Splined shaft (IPL Fig. 1; 395), (IPL Fig. 2; 420)

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

(a) Retainer (IPL Fig. 1; 40), (IPL Fig. 2; 25)

(b) Bracket (IPL Fig. 1; 70), (IPL Fig. 2; 55)

(c) Crank (IPL Fig. 1; 100), (IPL Fig. 2; 85)

(d) Bearing shield (IPL Fig. 1; 110), (IPL Fig. 2; 95)

(e) Drain cover (IPL Fig. 1; 125), (IPL Fig. 2; 110)

(f) Housing (IPL Fig. 1; 170, 450), (IPL Fig. 2; 155, 230, 475)

(g) Cover (IPL Fig. 1; 240), (IPL Fig. 2; 275)

(h) Bearing housing (IPL Fig. 1; 255, 260), (IPL Fig. 2; 290, 295)

(i) Indicator disc (IPL Fig. 1; 300), (IPL Fig. 2; 335)

(j) Worm gear (IPL Fig. 1; 320), (IPL Fig. 2; 355)

(k) Spacer retainer (IPL Fig. 1; 340), (IPL Fig. 2; 375)

(l) Arm (IPL Fig. 1; 410), (IPL Fig. 2; 435)

(4) Do a check of the spring (IPL Fig. 1; 20), (IPL Fig. 2; 5).

NOTE: The length is measured between the inner surfaces of the end hooks of the spring.

(a) Extend the spring to 3.72 inches, and make sure that the load is 29.15-35.55 pounds.

(b) Extend the spring to 4.15 inches, and make sure that the load is 40.75-49.75 pounds.

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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
256T3414	SHIELD, BEARING	2-1
256T3435 256T3437	COVER	3-1
256T3438	HOUSING	4-1
256T3440	HOUSING	5-1
256T3441	HOUSING, BEARING	6-1
256T3442 256T3443 256T3444	GEAR, BEVEL	7-1
256T3447	GEAR, SPUR	8-1
256T3450 256T3475	DISC, INDICATOR	9-1
256T3451 256T3473	SHAFT	10-1
256T3452	SHAFT, SPLINED	11-1
256T3454	SHIELD, BEARING	12-1
256T3456 256T3466	CRANK	13-1
256T3465	BRACKET	14-1
256T3470	BRACKET	15-1
256T3749	COUPLING HALF	16-1

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256T5124	MARKER	17-1
256T6641 256T6642	HOUSING	18-1
256T6645 256T6646	CAM	19-1
256T6647 256T6648	GEAR, WORM	20-1
256T6653	GEARSHAFT, WORM	21-1
65B81978	COVER, DRAIN	22-1

2. Dimensioning Symbols

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

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—	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

K66151

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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.

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. References

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

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

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

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

   C. Procedure

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IPL FIG. & ITEM	MATERIAL	FINISH
IPL Fig. 1		
Spring (20)	17-7PH CRES wire	Passivate (F-17.25, which replaces F-17.09).
Sleeve (130)	4140 Steel, 150-170 ksi	Cadmium plate (F-15.02).
Spur gear (195,275)	4340 Steel, 150-170 ksi	Cadmium plate (F-15.02), but not on the plain (not splined) inner diameter.
Spacer (200)	4340 Steel, 150-170 ksi	Cadmium plate (F-15.06).
Retainer (340)	Aluminum alloy	Anodize (F-17.05).
Pin (315)	4340 Steel, 180-200 ksi	Cadmium plate (F-15.23) all over. Make sure outer diameter is 0.2359-0.2360 inch after plating.
IPL Fig. 2		
Spring (5)	17-7PH CRES wire	Passivate (F-17.25, which replaces F-17.09).
Sleeve (115)	4140 Steel, 150-170 ksi	Cadmium plate (F-15.02).
Spacer (185)	4340 Steel, 150-170 ksi	Cadmium plate (F-15.06).
Spur gear (190,310)	4340 Steel, 150-170 ksi	Cadmium plate (F-15.02), but not on the plain (not splined) inner diameter.
Retainer (375)	Aluminum alloy	Anodize (F-17.05).
Pin (350)	4340 Steel, 180-200 ksi	Cadmium plate (F-15.23) all over. Make sure outer diameter is 0.2359-0.2360 inch after plating.

Refinish Details
Table 601

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BEARING SHIELD - REPAIR 2-1

256T3414-1

1. General

A. This procedure has the data necessary to refinish the bearing shield (IPL Fig. 1; 155), (IPL Fig. 2; 140).

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 (27-51-39/601, REPAIR - GENERAL) for the Standard True Position Dimensioning Symbols shown in the repair.

D. General repair details:

(1) Material: 4340 Steel, 125-145 ksi

2. Bearing Shield 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 Finishes

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

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

C. Procedure (Fig. 601)

(1) Cadmium plate (F-15.02) all over.

(2) Apply BMS 10-11, type 1 primer (F-20.02) on the surfaces shown in Fig. 601.

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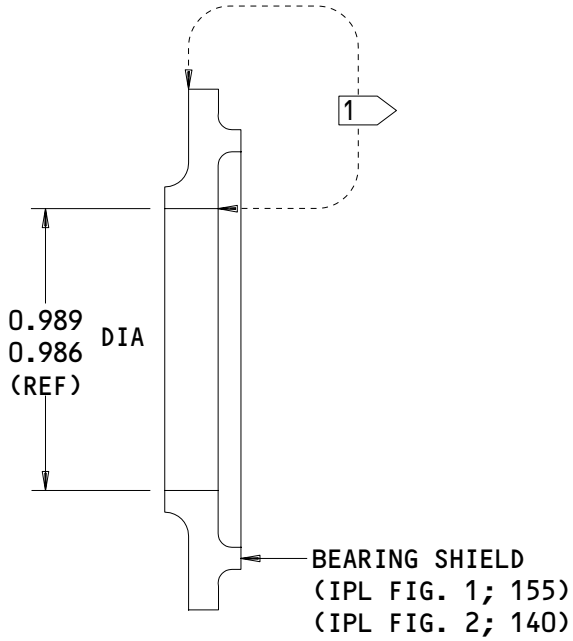

1 APPLY PRIMER ON THESE SURFACES

ALL DIMENSIONS ARE IN INCHES

256T3414-1
Bearing Shield Refinish
Figure 601

K34125

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COVER ASSEMBLY - REPAIR 3-1

256T3435-1
256T3437-1

1. General

   A. This procedure has the data necessary to repair and refinish the cover assembly (IPL Fig. 1; 220), (IPL Fig. 2; 245).

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

   C. General repair details:

      (1) Material: Aluminum alloy

2. Pin Replacement (256T3437-1 only)

   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 20-60-02, Finishing Materials

   C. Procedure

      (1) Remove the pin (IPL Fig. 2; 260).

      (2) Install the new pin with BMS 10-11, type 1 primer as shown in Fig. 601.

3. Cover Refinish

   A. Consumable Materials

      NOTE: Equivalent material can be used.

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

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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 Finishes

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

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

C. Procedure

(1) Anodize (F-17.05) all over.

(2) Apply BMS 10-11, type 1 primer (F-20.02) to the external surfaces, but not in the holes and other surfaces shown in Fig. 601.

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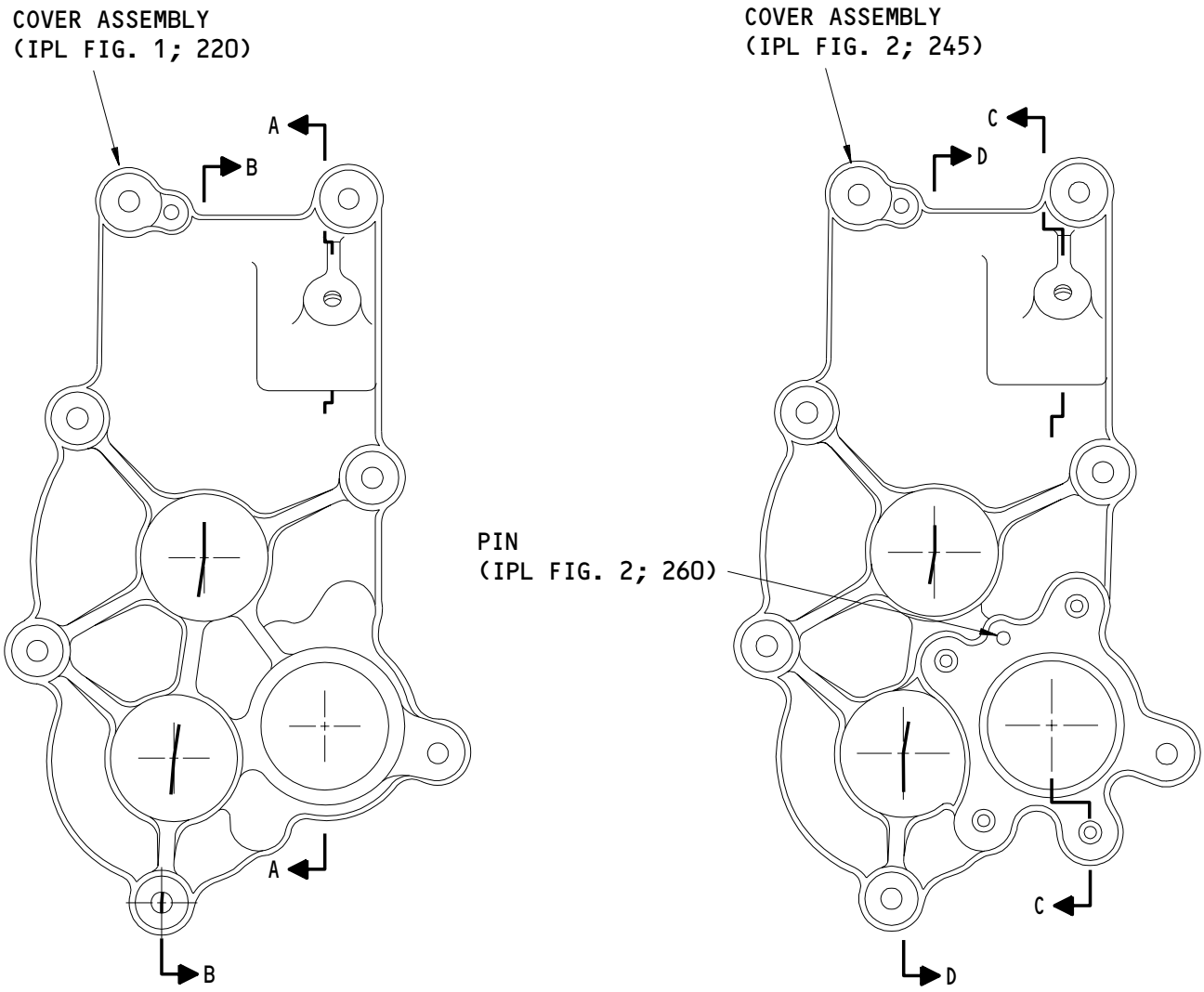

256T3435-1
256T3437-1
Cover Assembly - Pin Replacement and Refinish
Figure 601 (Sheet 1)

K34165

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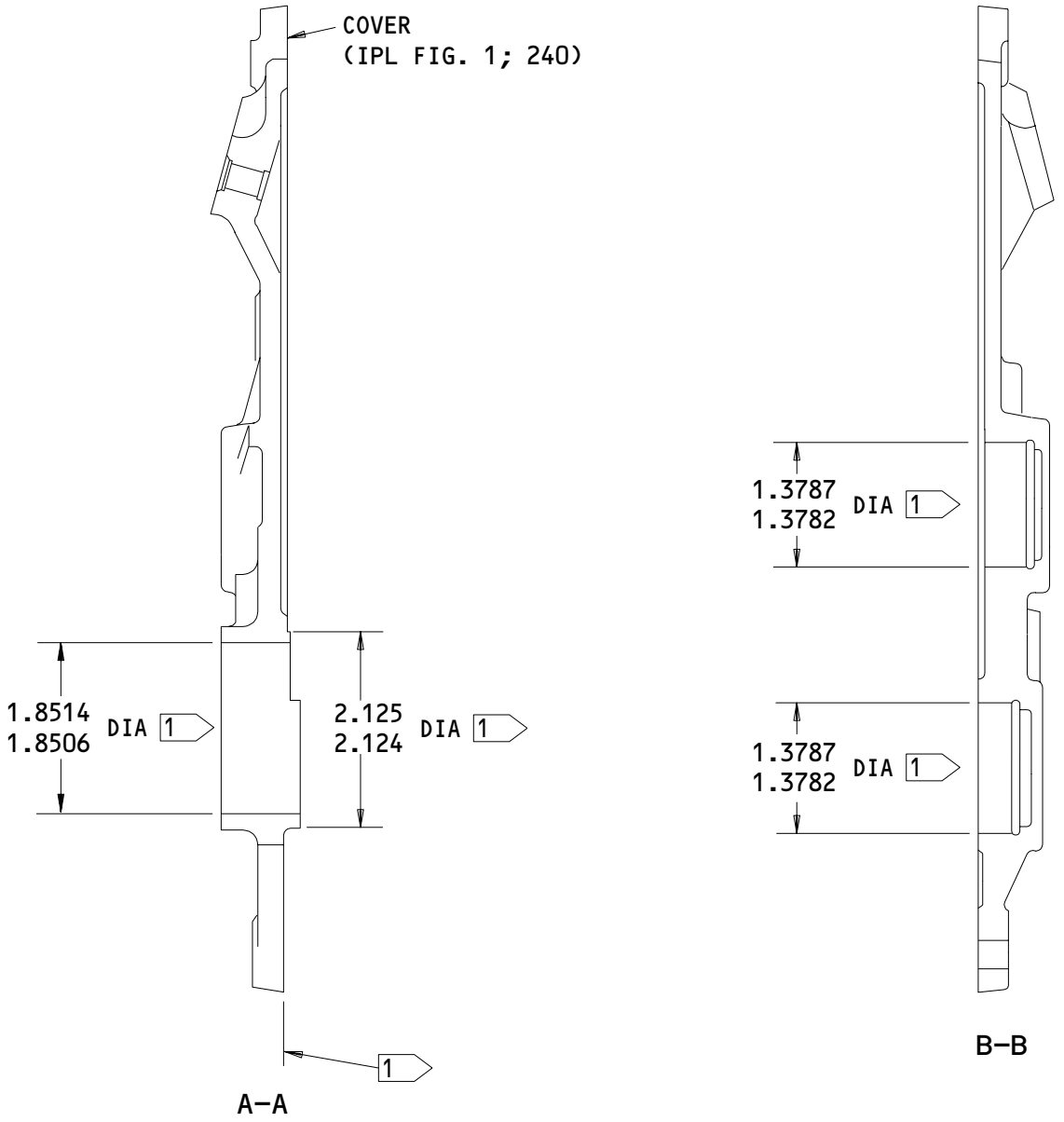

256T3435-1
256T3437-1
Cover Assembly – Pin Replacement and Refinish
Figure 601 (Sheet 2)

K34168

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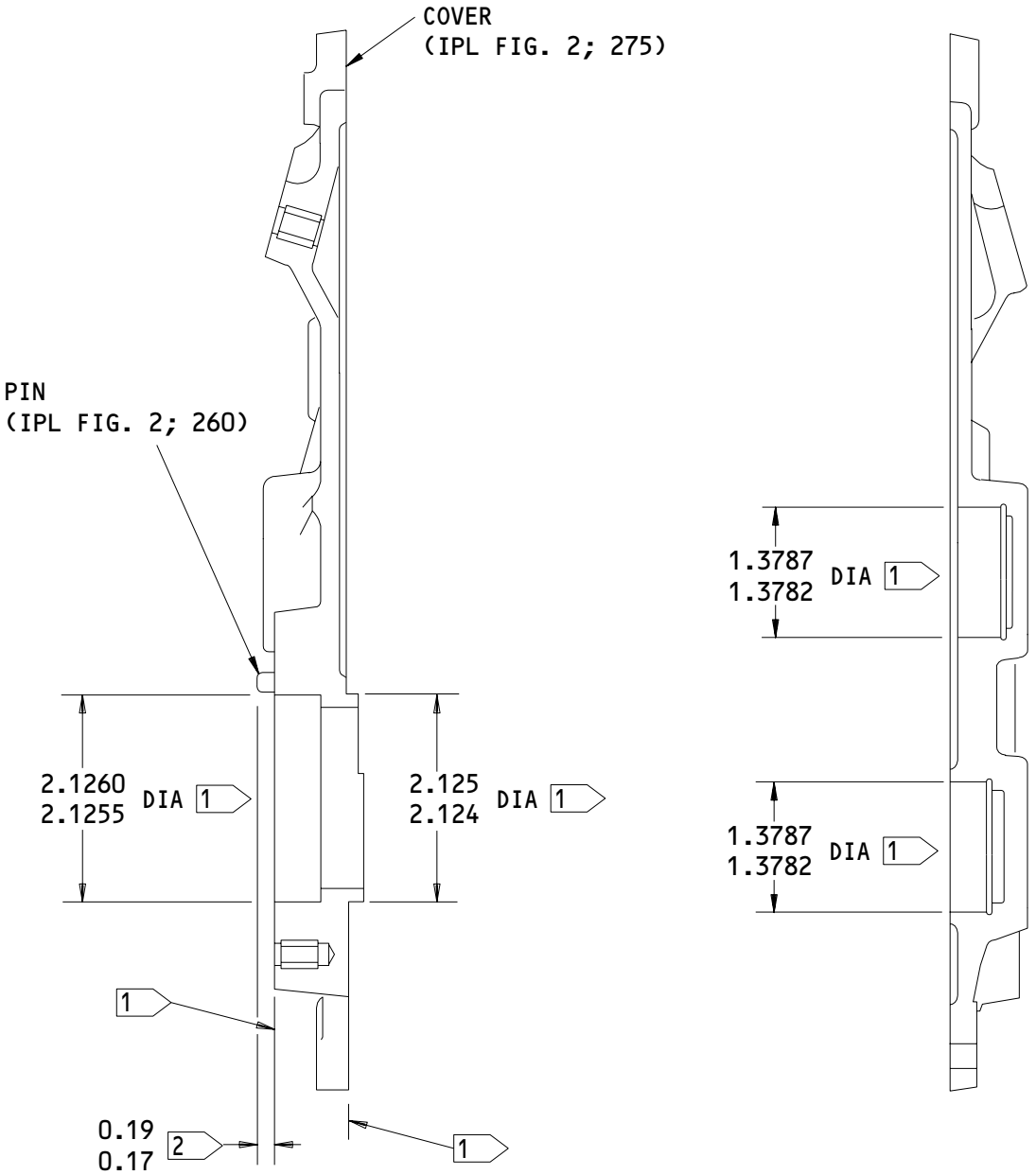

1 NO PRIMER ON THIS SURFACE

2 PIN HEIGHT

ALL DIMENSIONS ARE IN INCHES

256T3435-1
256T3437-1
Cover Assembly – Pin Replacement and Refinish
Figure 601 (Sheet 3)

K34171

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HOUSING - REPAIR 4-1

256T3438-1, -2

1. General

A. This procedure has the data necessary to refinish the housing (IPL Fig. 1; 170), (IPL Fig. 2; 155).

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 (27-51-39/601, REPAIR - GENERAL) for the Standard True Position Dimensioning Symbols shown in the repair.

D. 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 Finishes

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

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

C. Procedure (Fig. 601)

(1) Anodize (F-17.05) all over.

(2) Apply BMS 10-11, type 1 primer (F-20.02) on the external surfaces, but not in the holes and other surfaces shown in Fig. 601.

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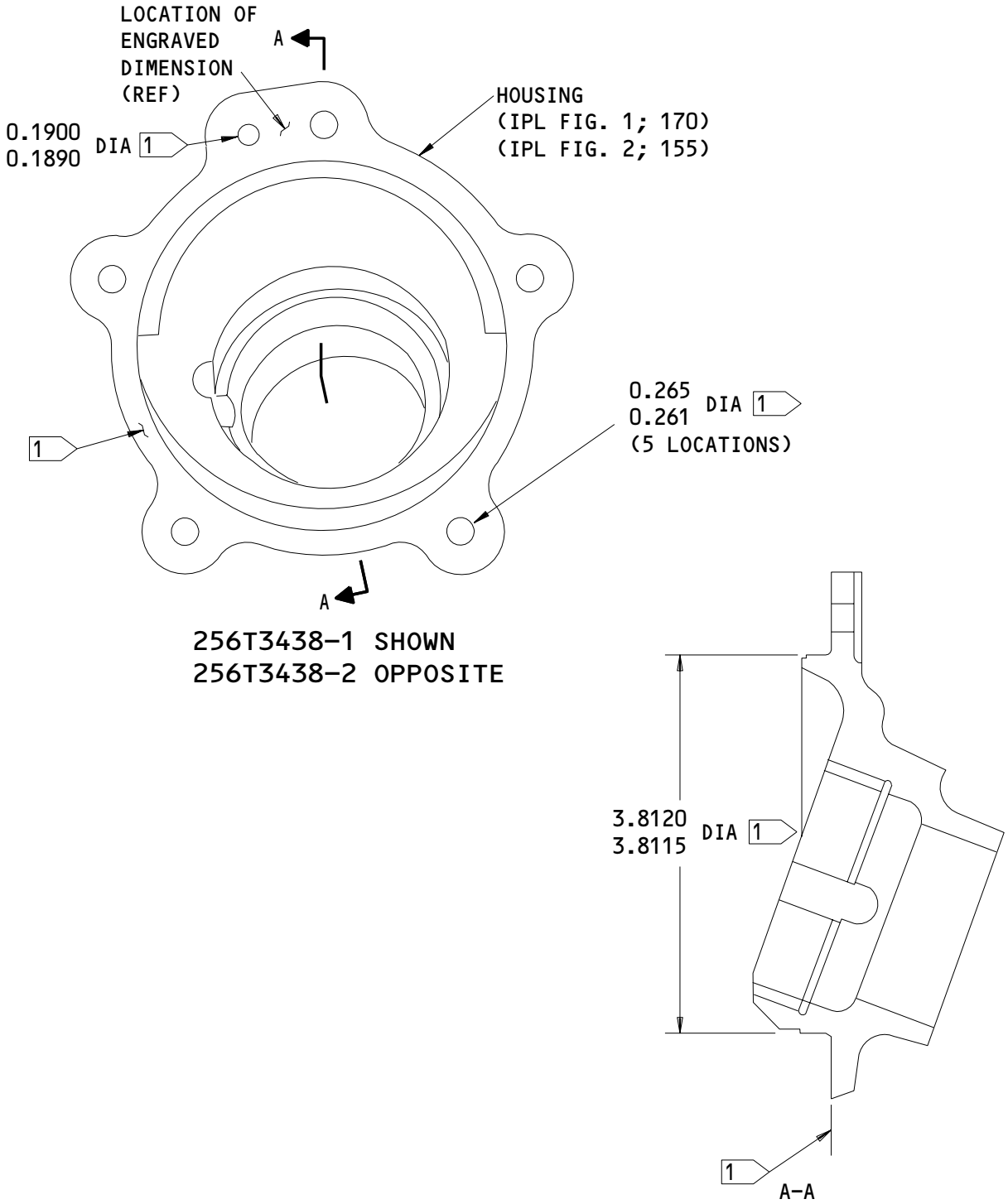

256T3438-1 SHOWN
256T3438-2 OPPOSITE

1 NO PRIMER ON THIS SURFACE

ALL DIMENSIONS ARE IN INCHES

256T3438-1,-2
Housing Refinish
Figure 601

K34195

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HOUSING ASSEMBLY - REPAIR 5-1

256T3440-1

1. General

A. This procedure has the data necessary to repair and refinish the housing assembly (195).

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

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

D. General repair details:

(1) Material: Aluminum alloy

2. Pin 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 20-60-02, Finishing Materials

C. Procedure (Fig. 601)

(1) Remove the pin (215).

(2) Install the new pin with BMS 10-11, type 1 primer as shown in Fig. 601.

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3. Housing (230) 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 Finishes

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

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

C. Procedure

(1) Anodize (F-17.05) all over.

(2) Apply BMS 10-11, type 1 primer (F-20.02) to the external surfaces, but not in the holes and other surfaces shown in Fig. 601.

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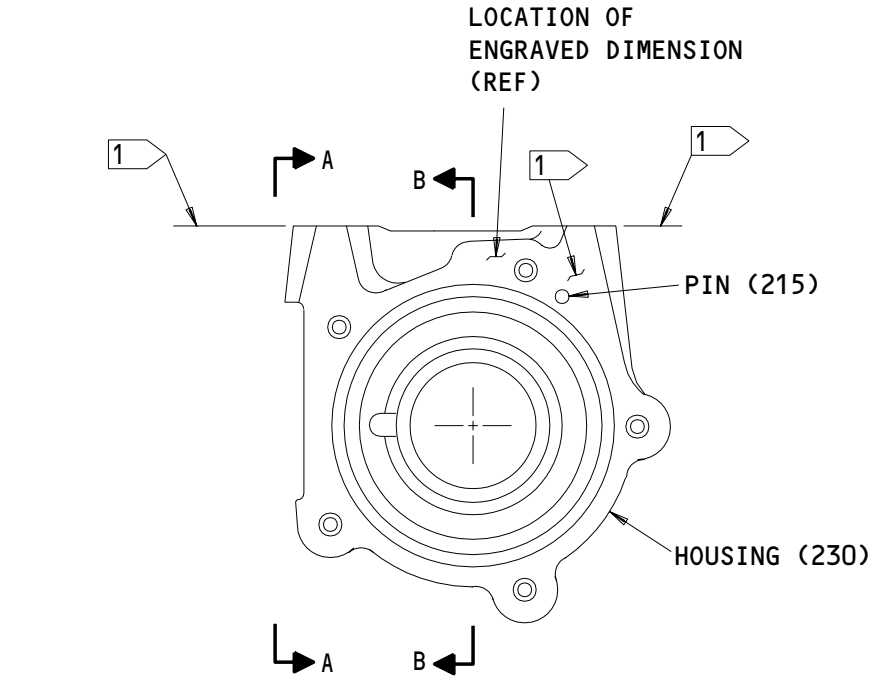

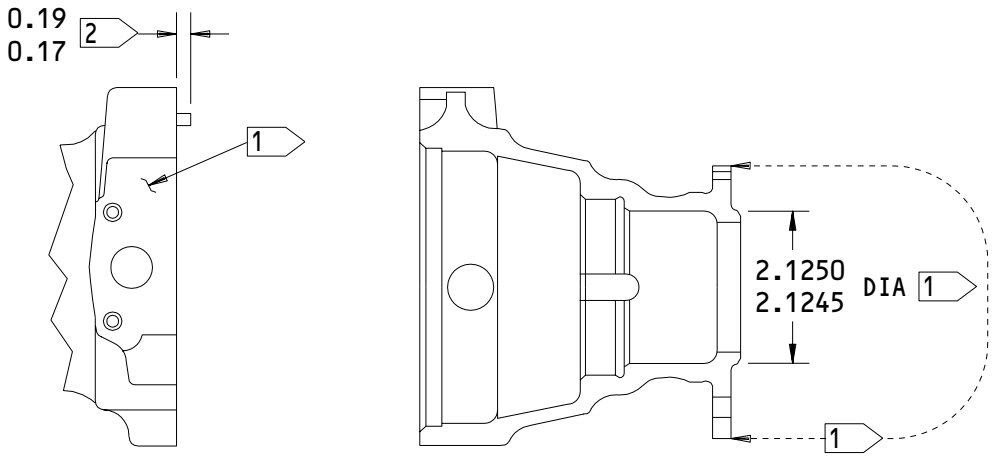

A–A

B–B

1 NO PRIMER ON THIS SURFACE

2 PIN HEIGHT

ITEM NUMBERS REFER TO IPL FIG. 2

ALL DIMENSIONS ARE IN INCHES

256T3440-1
Housing Assembly – Pin Replacement and Refinish
Figure 601

K34198

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BEARING HOUSING - REPAIR 6-1

256T3441-1, -2

1. General

A. This procedure has the data necessary to refinish the bearing housing (IPL Fig. 1; 255, 260), (IPL Fig. 2; 290, 295).

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 (27-51-39/601, REPAIR - GENERAL) for the Standard True Position Dimensioning Symbols shown in the repair.

D. General repair details:

(1) Material: Aluminum alloy

2. Bearing 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 Finishes

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

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

C. Procedure (Fig. 601)

(1) Anodize (F-17.05) all over.

(2) Apply BMS 10-11, type 1 primer (F-20.02) on the surfaces shown in Fig. 601.

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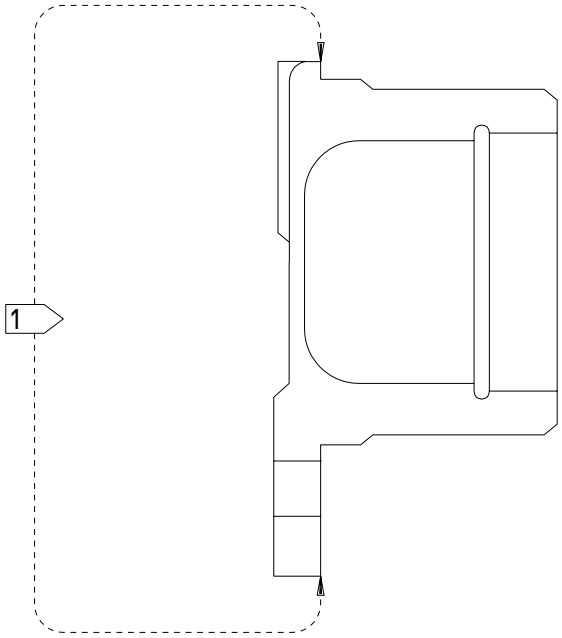

256T3441-1 SHOWN

1 APPLY PRIMER ON THESE SURFACES

256T3441-1,-2
Bearing Housing Refinish
Figure 601

K34204

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BEVEL GEAR - REPAIR 7-1

256T3442-1
256T3443-1
256T3444-1

1. General

A. This procedure has the data necessary to repair and refinish the bevel gear (IPL Fig. 1; 190, 205), (IPL Fig. 2; 175, 180).

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 (27-51-39/601, REPAIR - GENERAL) for the Standard True Position Dimensioning Symbols shown in the repair.

D. General repair details:

(1) Material: 9310 Steel, 150-190 ksi

(2) Shot peen: All repaired surfaces
Shot size 0.017-0.046
Intensity 0.016A
Coverage 2.0

2. Bevel Gear Repair

A. References

(1) SOPM 20-10-01, Repair and Refinish of High Strength Steel Parts

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

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

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

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

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

B. Procedure

(1) Machine the bevel gear (IPL Fig. 1; 190, 205), (IPL Fig. 2; 175, 180) to the repair dimensions shown in Fig. 601 to remove defects.

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(2) Break all sharp edges to a 0.01-0.02 inch radius.

(3) Do a magnetic particle check of the bevel gear. Refer to SOPM 20-20-01.

(4) Shot peen the machined area. Refer to SOPM 20-10-03.

(5) Apply chrome plate (F-15.03) to the machined area. Make sure that the plate runout is as shown in Fig. 601. Chrome plate is not permitted in the fillet radii or on the edges of the part.

(6) Grind the chrome plate to the design dimensions and finish shown in Fig. 601. The maximum permitted thickness of the chrome plate is 0.015 inch after grinding. Refer to SOPM 20-10-04.

3. Refinish

A. Consumable Materials

NOTE: Equivalent material can be used.

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

(2) C00308 Compound -- Corrosion Preventive, MIL-C-11796 (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 Finishes

(4) SOPM 20-41-03, Application of Corrosion Preventives to Interior of Closed End Tubes

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

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

C. Procedure (Fig. 601)

(1) Apply cadmium plate (F-15.23) on all surfaces unless shown differently. Control of the plating in the bores is not necessary.

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(2) Apply phosphate coating (F-14.14) to the bores, as shown in Fig. 601.

(3) Apply BMS 10-11, type 1 primer (F-20.03) to the bores.

(4) Apply MIL-C-11796 class 1 corrosion preventive compound (F-19.03) to the bores.

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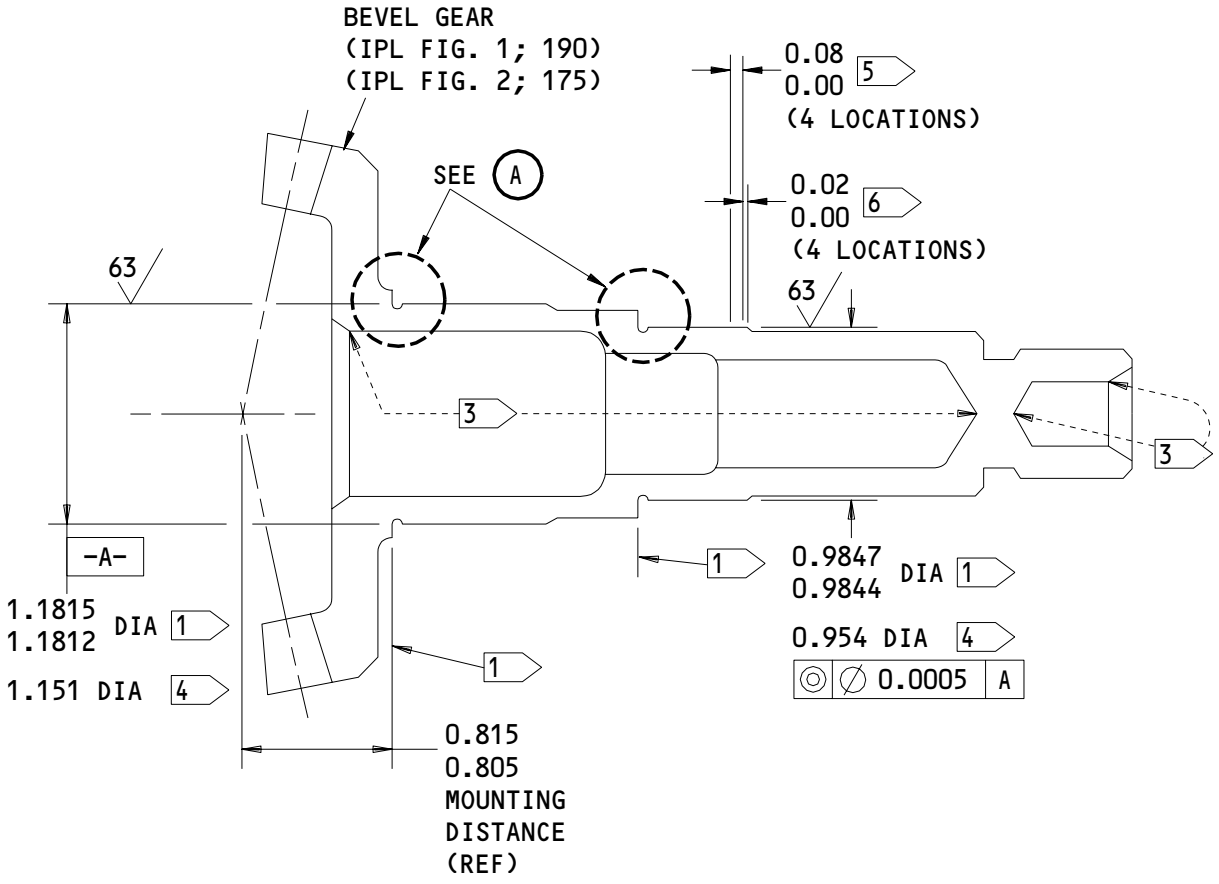
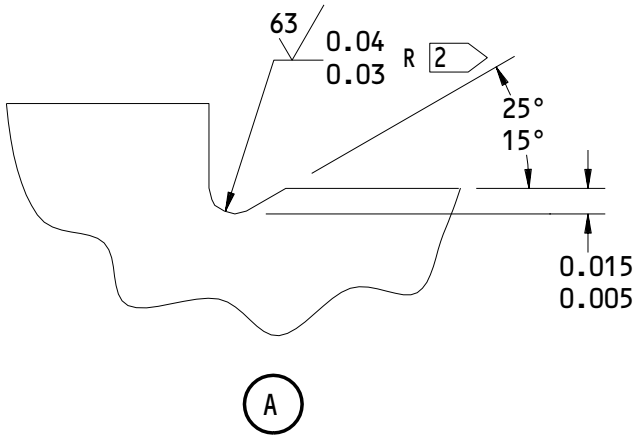


256T3442-1



256T3442-1; 256T3443-1; 256T3444-1
Bevel Gear Repair
Figure 601 (Sheet 1)

K34210

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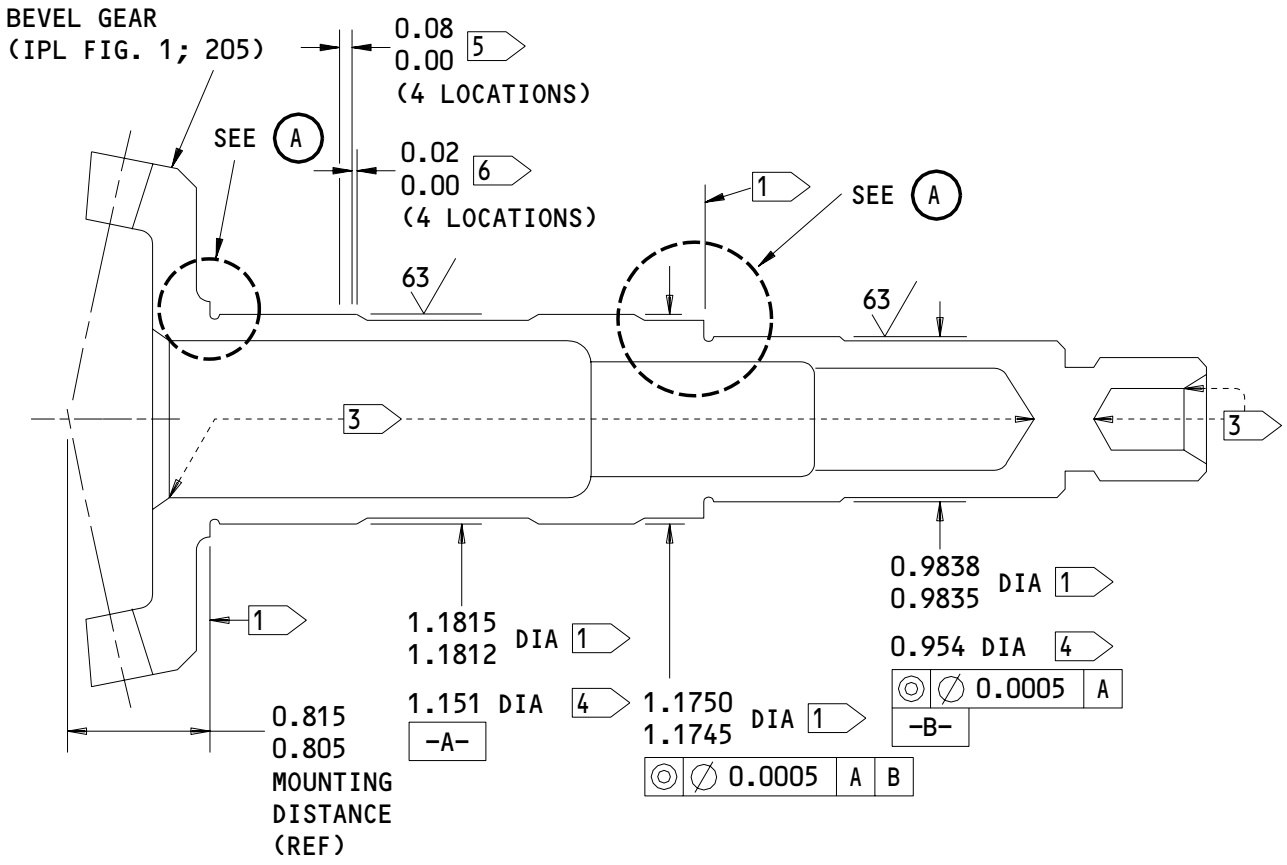

256T3443-1

256T3442-1; 256T3443-1; 256T3444-1
Bevel Gear Repair
Figure 601 (Sheet 2)

K34225

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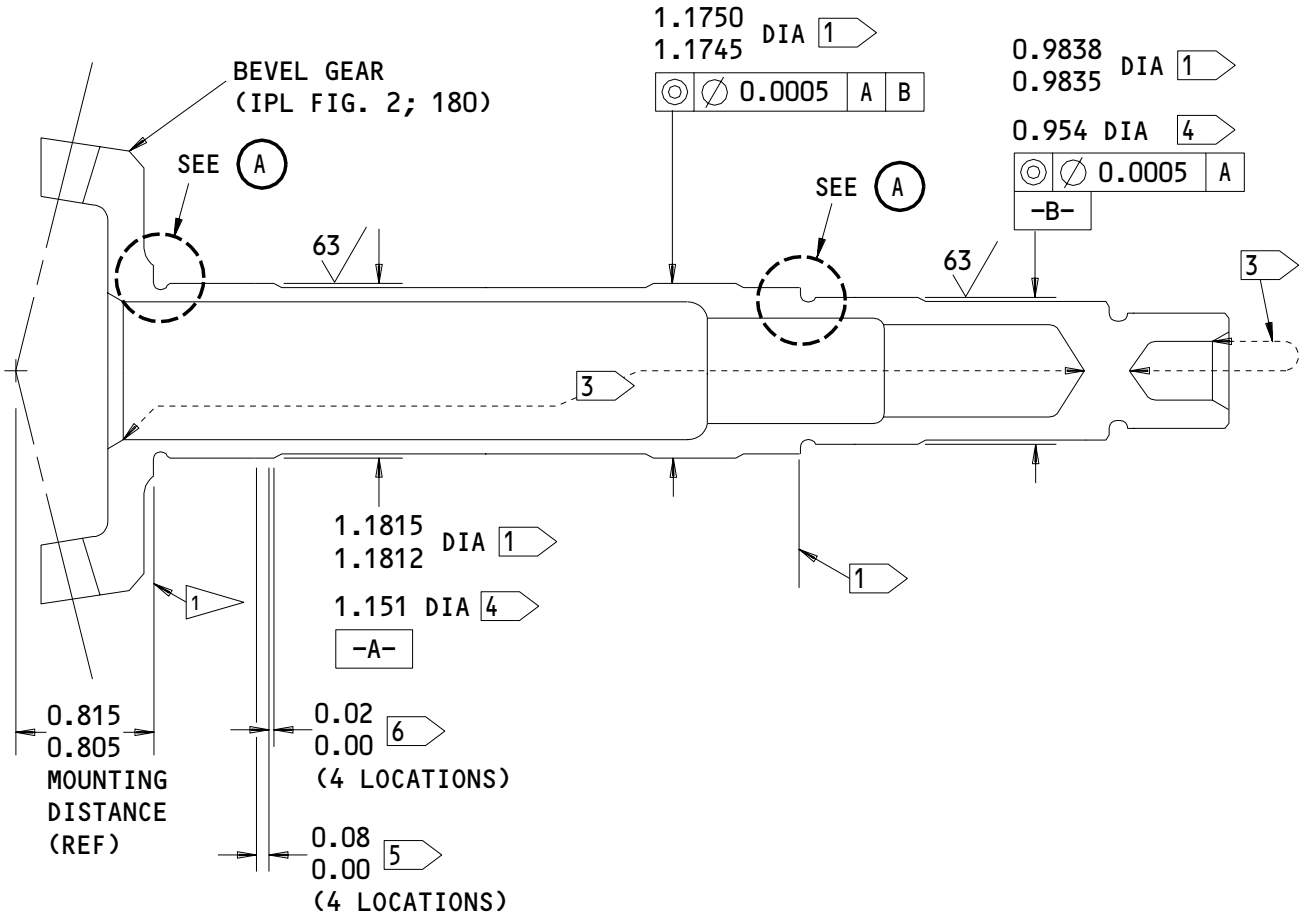

256T3444-1

1 NO CADMIUM PLATE ON THIS SURFACE

2 CADMIUM PLATE IS OPTIONAL IN THIS AREA

3 APPLY PHOSPHATE COAT (F-14.14), BMS 10-11, TYPE 1 PRIMER (F-20.03), AND MIL-C-11796 CLASS 1 CORROSION PREVENTIVE COMPOUND (F-19.03)

4 REPAIR LIMIT

5 CHROME PLATE RUNOUT

6 END OF CHROME PLATE

125 ALL MACHINED SURFACES UNLESS SHOWN DIFFERENTLY

ALL DIMENSIONS ARE IN INCHES

256T3442-1; 256T3443-1; 256T3444-1
Bevel Gear Repair
Figure 601 (Sheet 3)

K34325

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SPUR GEAR - REPAIR 8-1

256T3447-1

1. General

A. This procedure has the data necessary to repair and refinish the spur gear (IPL Fig. 1; 280), (IPL Fig. 2; 315).

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 (27-51-39/601, REPAIR - GENERAL) for the Standard True Position Dimensioning Symbols shown in the repair.

D. General repair details:

(1) Material: 4340 Steel, 150-170 ksi

(2) Shot peen: All repaired surfaces
Shot size 0.017-0.046
Intensity 0.016A
Coverage 2.0

2. Spur Gear Repair

A. References

(1) SOPM 20-10-01, Repair and Refinish of High Strength Steel Parts

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

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

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

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

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

B. Procedure

(1) Machine the spur gear (IPL Fig. 1; 280), (IPL Fig. 2; 315) to the repair dimensions shown in Fig. 601 to remove defects.

(2) Break all sharp edges to a 0.01-0.02 inch radius.

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(3) Do a magnetic particle check of the spur gear. Refer to SOPM 20-20-01.

(4) Shot peen the machined area. Refer to SOPM 20-10-03.

(5) Apply chrome plate (F-15.03) to the machined area. Make sure that the plate runout is as shown in Fig. 601. Chrome plate is not permitted in the fillet radii or on the edges of the part.

(6) Grind the chrome plate to the design dimensions and finish shown in Fig. 601. The maximum permitted thickness of the chrome plate is 0.015 inch after grinding. Refer to SOPM 20-10-04.

3. Refinish

A. Consumable Materials

NOTE: Equivalent material can be used.

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

(2) C00308 Compound -- Corrosion Preventive, MIL-C-11796 (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 Finishes

(4) SOPM 20-41-03, Application of Corrosion Preventives to Interior of Closed End Tubes

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

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

C. Procedure (Fig. 601)

(1) Apply cadmium plate (F-15.02) on all surfaces unless shown differently. Control of the plating in the bore is not necessary.

(2) Apply phosphate coating (F-14.14) to the bore, as shown in Fig. 601.

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(3) Apply BMS 10-11, type 1 primer (F-20.03) to the bore.

(4) Apply MIL-C-11796 class 1 corrosion preventive compound (F-19.03) to the bore.

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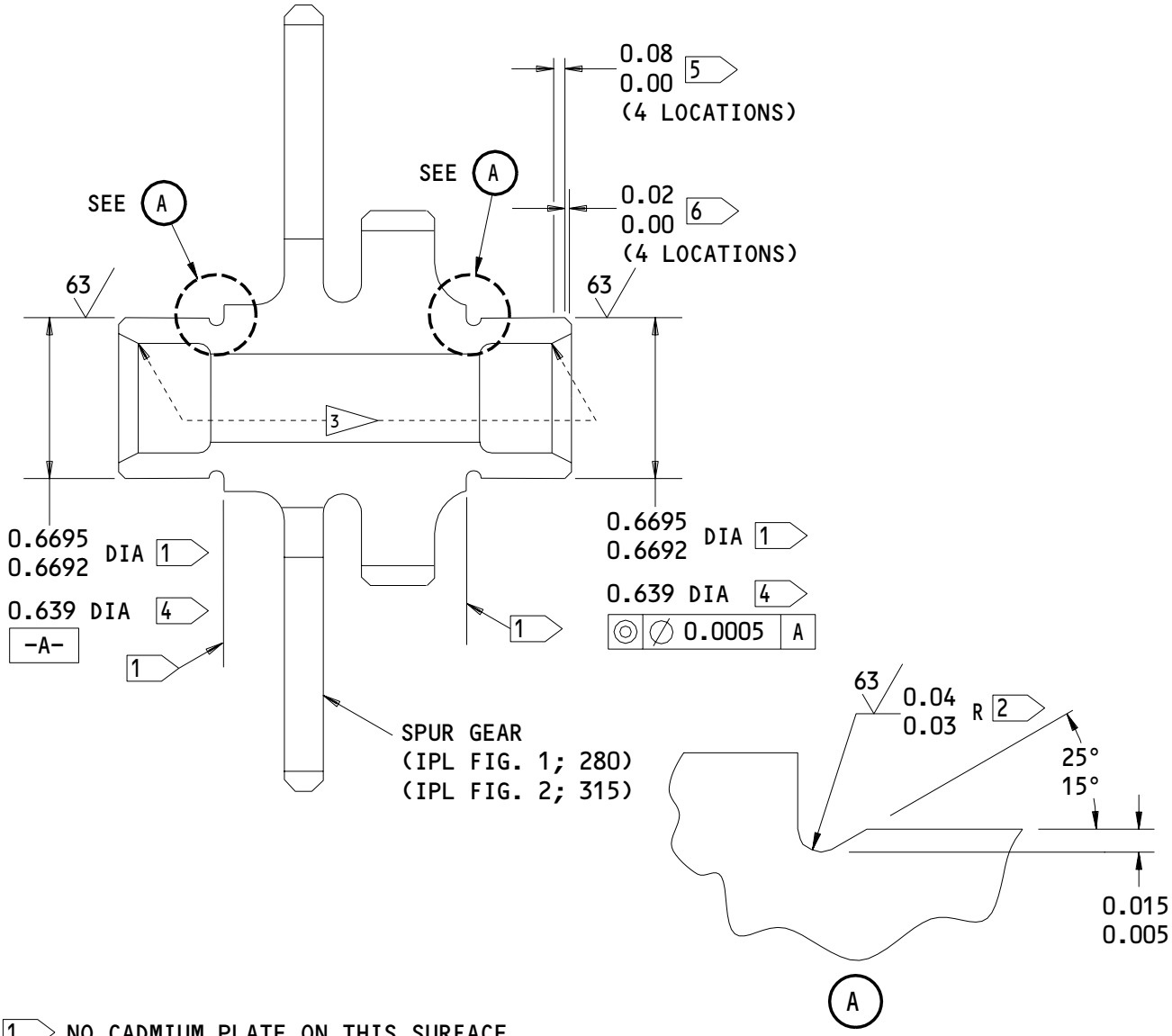

1 NO CADMIUM PLATE ON THIS SURFACE

2 CADMIUM PLATE IS OPTIONAL IN THIS AREA

3 APPLY PHOSPHATE COAT (F-14.14), BMS 10-11, TYPE 1 PRIMER (F-20.03), AND MIL-C-11796 CLASS 1 CORROSION PREVENTIVE COMPOUND (F-19.03)

4 REPAIR LIMIT

5 CHROME PLATE RUNOUT

6 END OF CHROME PLATE

125 ALL MACHINED SURFACES UNLESS SHOWN DIFFERENTLY

ALL DIMENSIONS ARE IN INCHES

256T3447-1
Spur Gear Repair
Figure 601

K34350

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INDICATOR DISC - REPAIR 9-1

256T3450-1
256T3475-1

1. General

   A. This procedure has the data necessary to refinish the indicator disc (IPL Fig. 1; 300), (IPL Fig. 2; 335).

   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 (27-51-39/601, REPAIR - GENERAL) for the Standard True Position Dimensioning Symbols shown in the repair.

   D. General repair details:

      (1) Material: Aluminum alloy

2. Indicator Disc Refinish

   A. Consumable Materials

      NOTE: Equivalent material can be used.

      (1) C00032 Enamel -- BMS 10-60, color insignia red (SOPM 20-60-02)

      (2) 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 Finishes

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

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

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C. Procedure (256T3450-1)

(1) Anodize (F-17.05) and apply BMS 10-11, type 1 primer (F-20.02) all over.

(2) Apply BMS 10-60 enamel (SRF-14.9815-101) in the slot, as shown in Fig. 601.

D. Procedure (256T3475-1)

(1) Hard anodize (F-17.06) the 0.6227-0.6233 inch diameter surface, as shown in Fig. 601.

(2) Anodize (F-17.05) the remaining surfaces.

(3) Apply BMS 10-11, type 1 primer (F-20.02) on the surfaces shown in Fig. 601.

(4) Apply BMS 10-60 enamel (SRF-14.9815-101) in the slot, as shown in Fig. 601.

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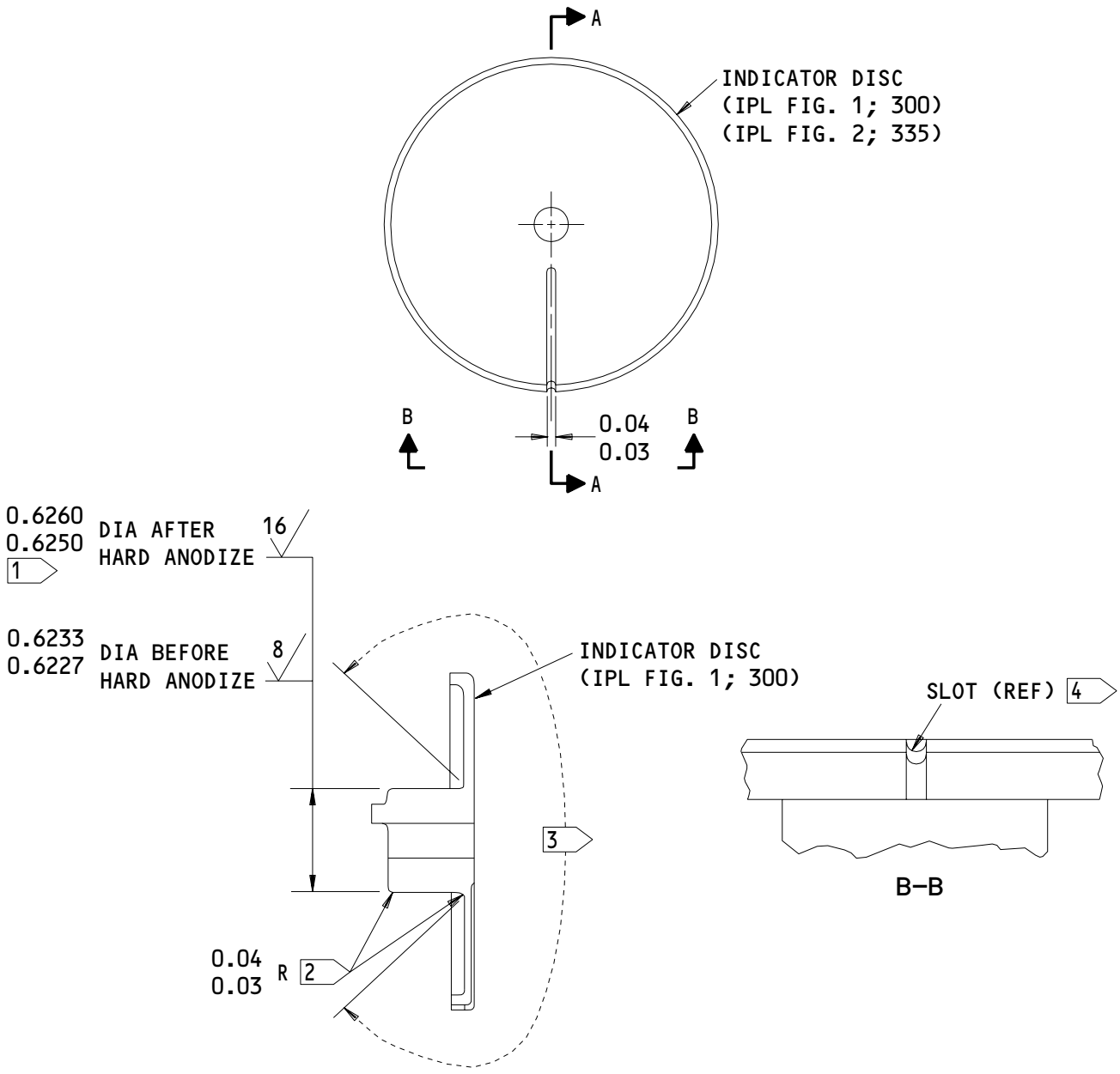

1 HARD ANODIZE 0.0023-0.0027 THICK

2 HARD ANODIZE RUNOUT IN THIS AREA

3 APPLY PRIMER TO THESE SURFACES

4 APPLY RED ENAMEL IN THE SLOT

ALL DIMENSIONS ARE IN INCHES

256T3450-1
256T3475-1
Indicator Disc Refinish
Figure 601

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SHAFT ASSEMBLY - REPAIR 10-1

256T3451-1
256T3473-1

1. General

A. This procedure has the data necessary to repair and refinish the shaft (IPL Fig. 1; 335), (IPL Fig. 2; 370).

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 (27-51-39/601, REPAIR - GENERAL) for the Standard True Position Dimensioning Symbols shown in the repair.

D. General repair details:

(1) Material: 4340 Steel, 150-170 ksi

(2) Shot peen: All repaired surfaces
Shot size 0.017-0.046
Intensity 0.016A
Coverage 2.0

2. Shaft Repair

A. References

(1) SOPM 20-10-01, Repair and Refinish of High Strength Steel Parts

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

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

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

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

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

B. Procedure

(1) Machine the shaft (IPL Fig. 1; 335), (IPL Fig. 2; 370) to the repair dimensions shown in Fig. 601 to remove defects.

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(2) Break all sharp edges to a 0.01-0.02 inch radius.

(3) Do a magnetic particle check of the shaft. Refer to SOPM 20-20-01.

(4) Shot peen the machined area. Refer to SOPM 20-10-03.

(5) Apply chrome plate (F-15.03) to the machined area. Make sure that the plate runout is as shown in Fig. 601. Chrome plate is not permitted in the fillet radii or on the edges of the part.

(6) Grind the chrome plate to the design dimensions and finish shown in Fig. 601. The maximum permitted thickness of the chrome plate is 0.015 inch after grinding. Refer to SOPM 20-10-04.

3. Refinish

A. Consumable Materials

NOTE: Equivalent material can be used.

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

(2) C00308 Compound -- MIL-C-11796 (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 Finishes

(4) SOPM 20-41-03, Application of Corrosion Preventives to Interior of Closed End Tubes

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

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

C. Procedure (Fig. 601)

(1) Apply cadmium plate (F-15.02) on all surfaces unless shown differently. Control of the plating in the bores is not necessary.

(2) Apply chrome plate (F-15.03) to the surfaces shown.

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(3) Apply phosphate coating (F-14.14) to the bores, as shown in Fig. 601.

(4) Apply BMS 10-11, type 1 primer (F-20.03) to the bores.

(5) Apply MIL-C-11796 class 1 corrosion preventive compound (F-19.03) to the bores.

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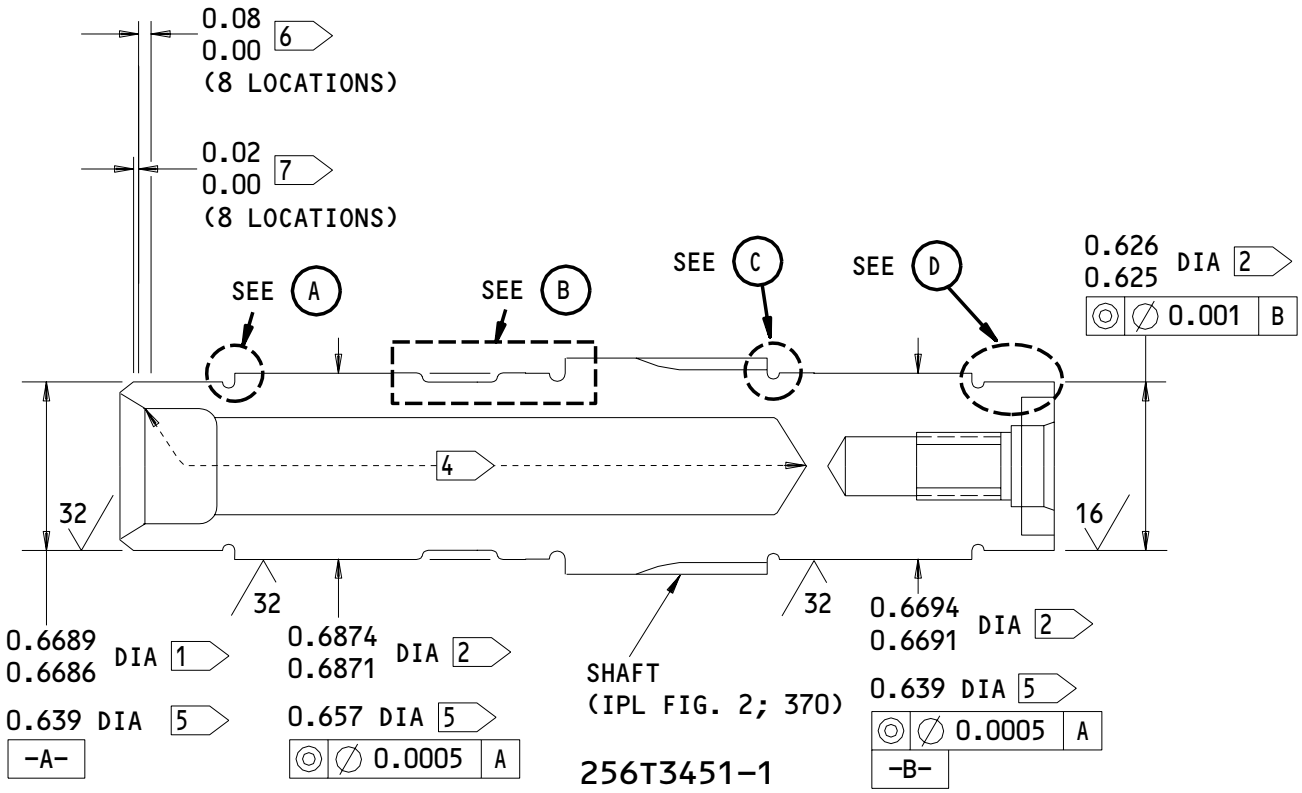
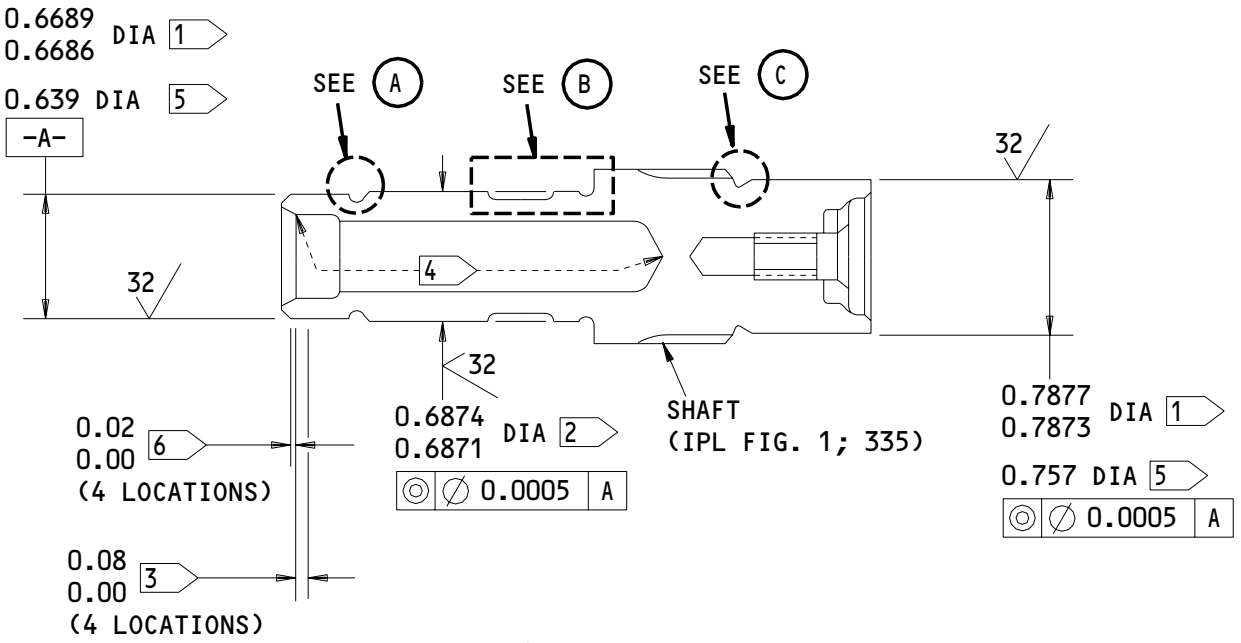


256T3451-1



256T3473-1

256T3451-1
256T3473-1
Shaft Assembly Repair
Figure 601 (Sheet 1)

K34463

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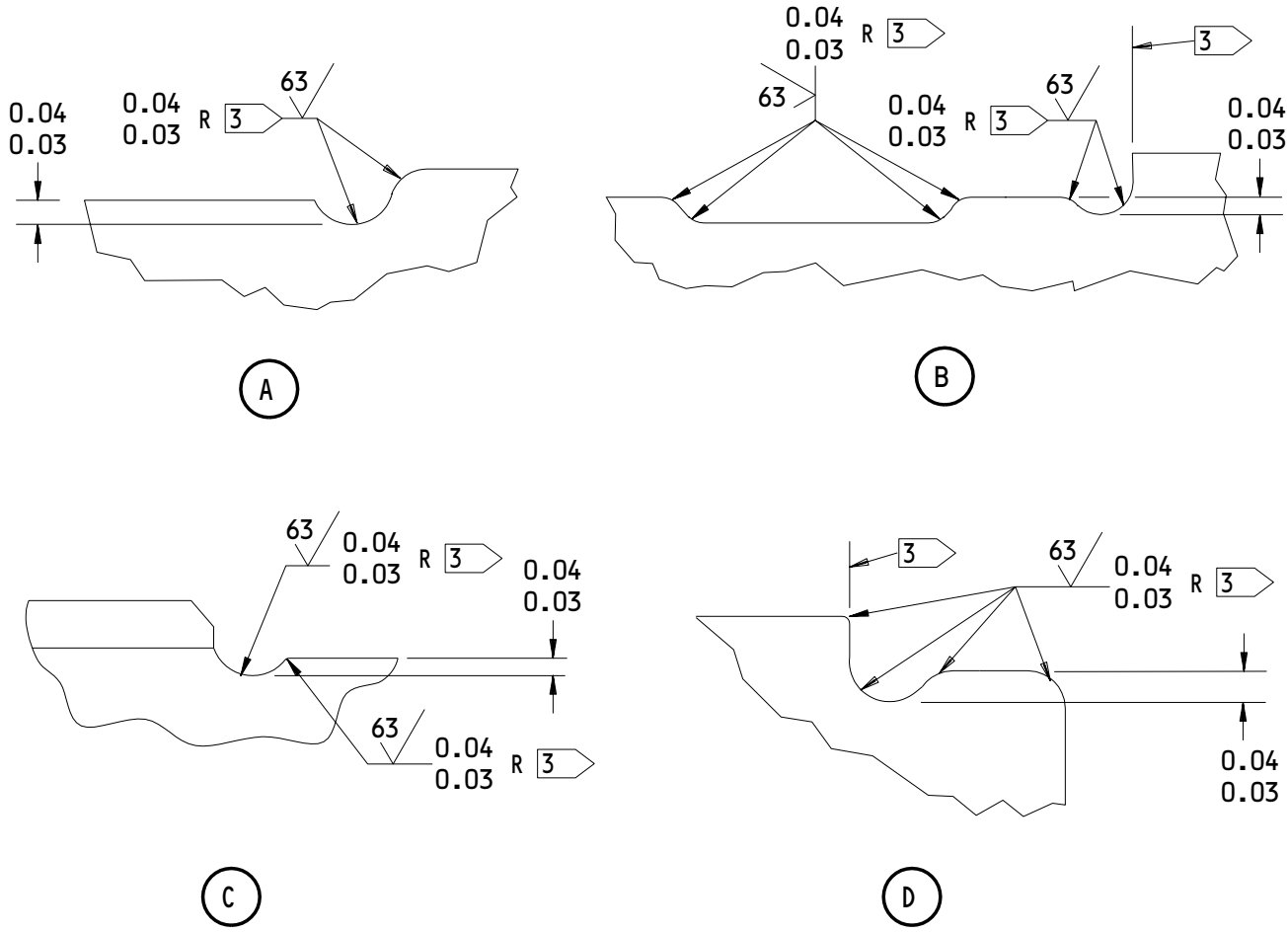

1 NO CADMIUM PLATE ON THIS SURFACE

2 CHROME PLATE (F-15.03) THIS SURFACE. 0.003 MINIMUM THICKNESS AFTER GRINDING

3 CHROME PLATE RUNOUT FOR REFINISH

4 APPLY PHOSPHATE COAT (F-14.14), BMS 10-11, TYPE 1 PRIMER (F-20.03), AND MIL-C-11796 CLASS 1 CORROSION PREVENTIVE COMPOUND (F-19.03)

5 REPAIR LIMIT

6 CHROME PLATE RUNOUT FOR REPAIR

7 END OF CHROME PLATE

125 ALL MACHINED SURFACES UNLESS SHOWN DIFFERENTLY

ALL DIMENSIONS ARE IN INCHES

256T3451-1
256T3473-1
Shaft Assembly Repair
Figure 601 (Sheet 2)

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SPLINED SHAFT - REPAIR 11-1

256T3452-1, -2

1. General

A. This procedure has the data necessary to repair and refinish the splined shaft (IPL Fig. 1; 395), (IPL Fig. 2; 420).

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 (27-51-39/601, REPAIR - GENERAL) for the Standard True Position Dimensioning Symbols shown in the repair.

D. General repair details:

(1) Material: 4340 Steel, 150-170 ksi

(2) Shot peen: All repaired surfaces
Shot size 0.017-0.046
Intensity 0.016A
Coverage 2.0

2. Splined Shaft Repair

A. References

(1) SOPM 20-10-01, Repair and Refinish of High Strength Steel Parts

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

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

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

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

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

B. Procedure

(1) Machine the splined shaft (IPL Fig. 1; 395), (IPL Fig. 2; 420) to the repair dimensions shown in Fig. 601 to remove defects.

(2) Break all sharp edges to a 0.01-0.02 inch radius.

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(3) Do a magnetic particle check of the splined shaft. Refer to SOPM 20-20-01.

(4) Shot peen the machined area. Refer to SOPM 20-10-03.

(5) Apply chrome plate (F-15.03) to the machined area. Make sure that the plate runout is as shown in Fig. 601. Chrome plate is not permitted in the fillet radii or on the edges of the part.

(6) Grind the chrome plate to the design dimensions and finish shown in Fig. 601. The maximum permitted thickness of the chrome plate is 0.015 inch after grinding. Refer to SOPM 20-10-04.

3. Refinish

A. Consumable Materials

NOTE: Equivalent material can be used.

(1) COO259 Primer -- BMS 10-11, Type 1 (SOPM 20-60-02)

(2) COO308 Compound -- MIL-C-11796 (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 Finishes

(4) SOPM 20-41-03, Application of Corrosion Preventives to Interior of Closed End Tubes

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

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

C. Procedure (Fig. 601)

(1) Apply cadmium plate (F-15.02) on all surfaces unless shown differently. Control of the plating in the bore is not necessary.

(2) Apply phosphate coating (F-14.14) to the bore, as shown in Fig. 601.

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(3) Apply BMS 10-11, type 1 primer (F-20.03) to the bore.

(4) Apply MIL-C-11796 class 1 corrosion preventive compound (F-19.03) to the bore.

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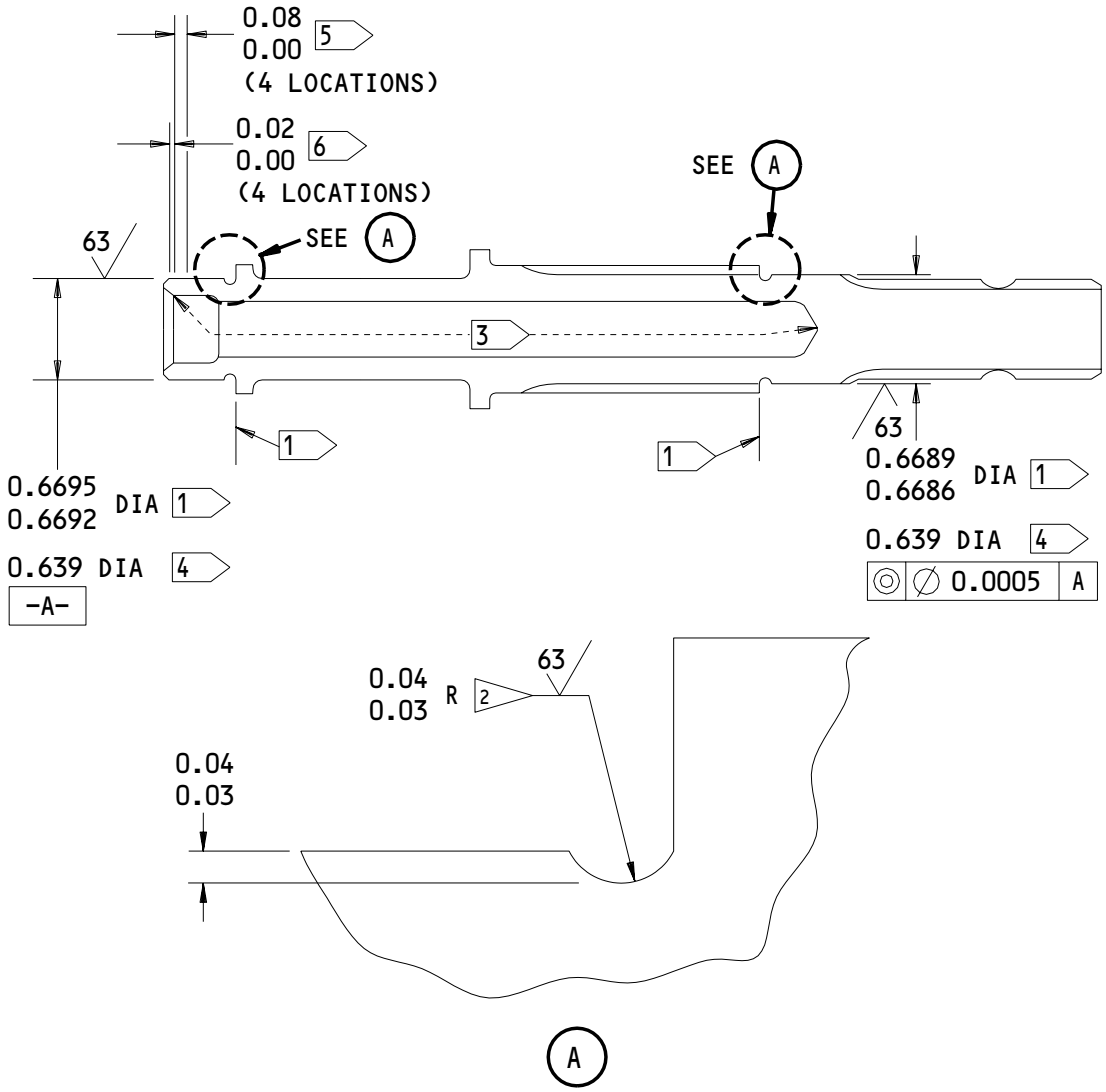

1 NO CADMIUM PLATE ON THIS SURFACE

2 CADMIUM PLATE IS OPTIONAL IN THIS AREA

3 APPLY PHOSPHATE COAT (F-14.14), BMS 10-11, TYPE 1 PRIMER (F-20.03), AND MIL-C-11796 CLASS 1 CORROSION PREVENTIVE COMPOUND (F-19.03)

4 REPAIR LIMIT

5 CHROME PLATE RUNOUT

6 END OF CHROME PLATE

125 ALL MACHINED SURFACES UNLESS SHOWN DIFFERENTLY

ALL DIMENSIONS ARE IN INCHES

256T3452-1,-2
Splined Shaft Repair
Figure 601

K34483

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BEARING SHIELD - REPAIR 12-1

256T3454-1

1. General

   A. This procedure has the data necessary to refinish the bearing shield (IPL Fig. 1; 110), (IPL Fig. 2; 95).

   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 (27-51-39/601, REPAIR - GENERAL) for the Standard True Position Dimensioning Symbols shown in the repair.

   D. General repair details:

      (1) Material: Aluminum alloy

2. Bearing Shield 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 Finishes

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

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

   C. Procedure (Fig. 601)

      (1) Anodize (F-17.05) all over.

      (2) Apply BMS 10-11, type 1 primer (F-20.02) on the surfaces shown in Fig. 601.

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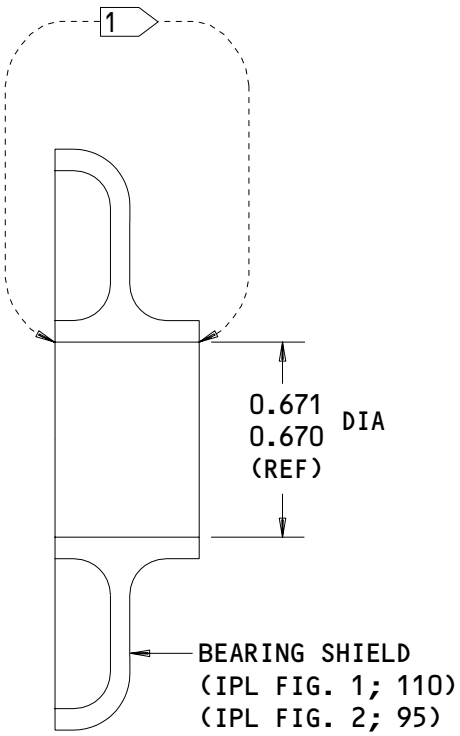

1 APPLY PRIMER ON THESE SURFACES

ALL DIMENSIONS ARE IN INCHES

256T3454-1
Bearing Shield Refinish
Figure 601

K34487

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CRANK ASSEMBLY - REPAIR 13-1

256T3456-1
256T3466-1

1. General

A. This procedure has the data necessary to repair and refinish the crank assembly (IPL Fig. 1; 75), (IPL Fig. 2; 60).

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 (27-51-39/601, REPAIR - GENERAL) for the Standard True Position Dimensioning Symbols shown in the repair.

D. General repair details:

(1) Material: Aluminum alloy

2. Bushing Replacement

A. References

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

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

B. Procedure

(1) Remove the bushing (IPL Fig. 1; 95), (IPL Fig. 2; 80) from the crank (IPL Fig. 1; 100), (IPL Fig. 2; 85).

(2) Install the replacement bushing. Refer to SOPM 20-50-03.

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

3. Crank (IPL Fig. 1; 100), (IPL Fig. 2; 85) Refinish

A. Consumable Materials

NOTE: Equivalent material can be used.

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

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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 Finishes

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

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

C. Procedure (Fig. 601)

(1) Anodize (F-17.05) all over.

(2) Apply primer BMS 10-11, type 1 (F-20.02) all over, but not in the holes or on the surfaces shown in Fig. 601.

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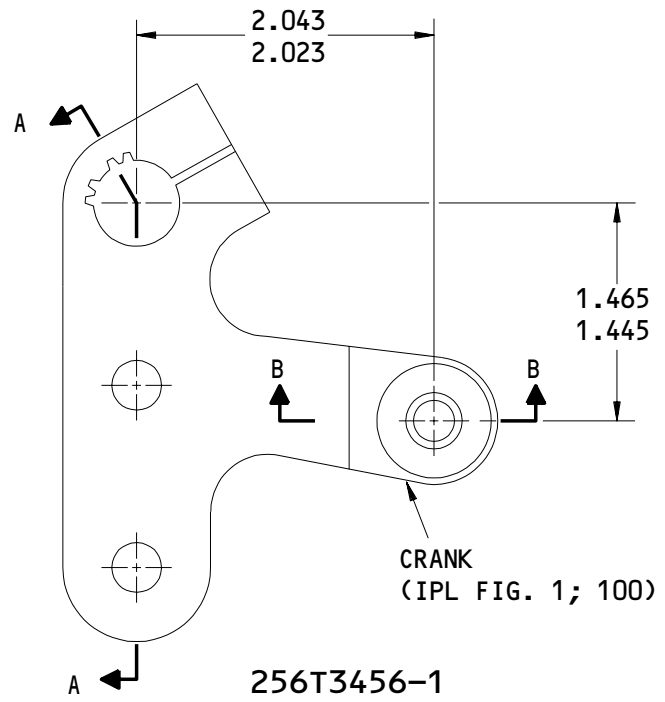

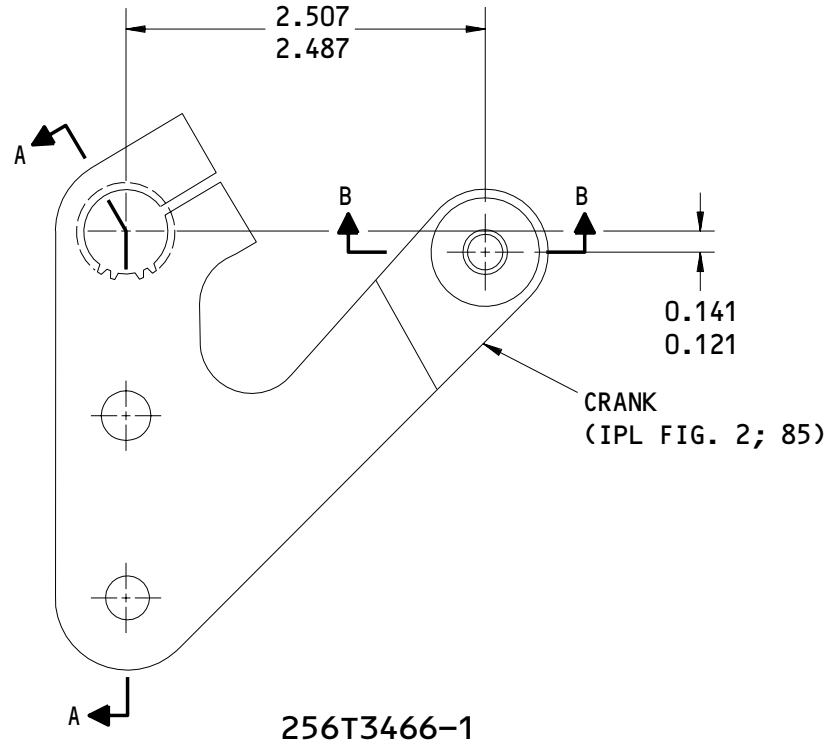

256T3456-1
256T3466-1
Crank Assembly - Bushing Replacement and Refinish
Figure 601 (Sheet 1)

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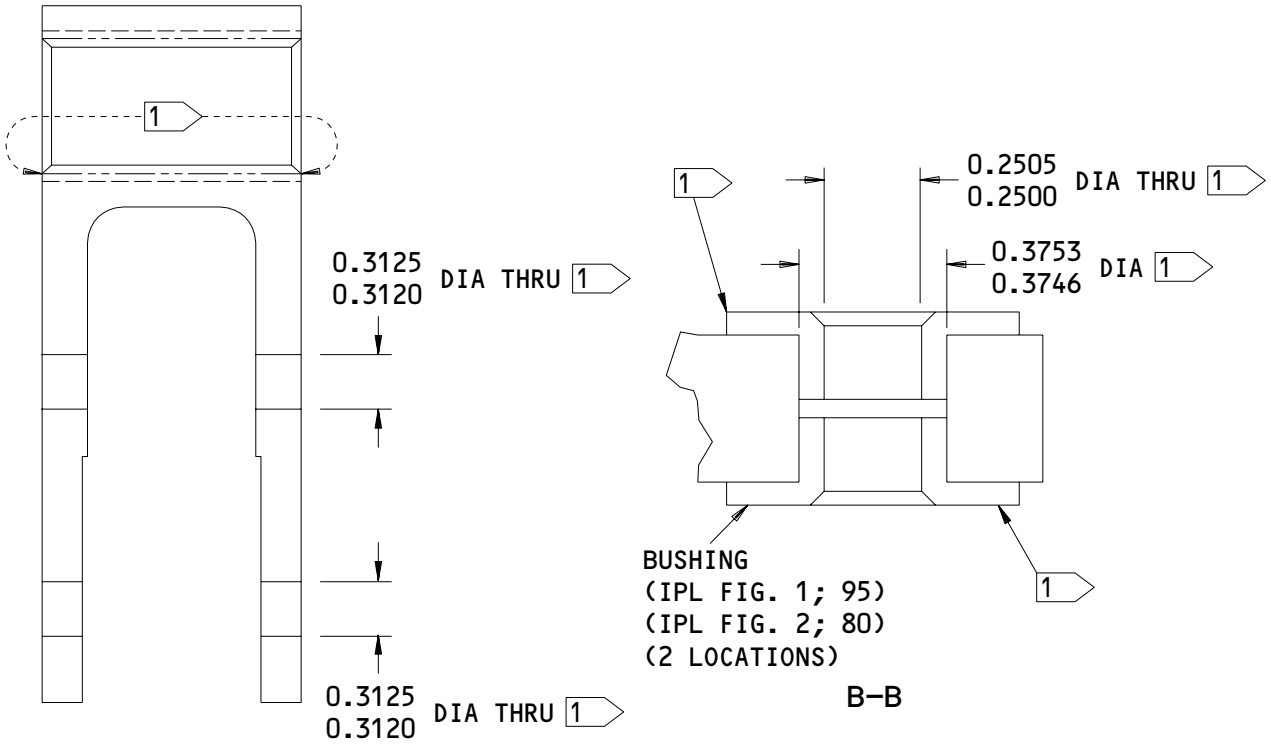

1 NO PRIMER ON THIS SURFACE

125 ALL MACHINED SURFACES UNLESS SHOWN DIFFERENTLY

ALL DIMENSIONS ARE IN INCHES

256T3456-1
256T3466-1
Crank Assembly – Bushing Replacement and Refinish
Figure 601 (Sheet 2)

K34493

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BRACKET ASSEMBLY - REPAIR 14-1

256T3465-1, -3

1. General

A. This procedure has the data necessary to repair and refinish the bracket assembly (50).

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 (27-51-39/601, 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. Bushing Replacement

A. References

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

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

B. Procedure

(1) Remove the bushing (65) from the bracket (70).

(2) Install the replacement bushing (65). Refer to SOPM 20-50-03.

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

3. Bracket Refinish

A. Consumable Materials

NOTE: Equivalent material can be used.

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

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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 Finishes

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

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

C. Procedure (Fig. 601)

(1) Anodize (F-17.05) all over.

(2) Apply primer BMS 10-11, type 1 (F-20.02) all over unless shown differently.

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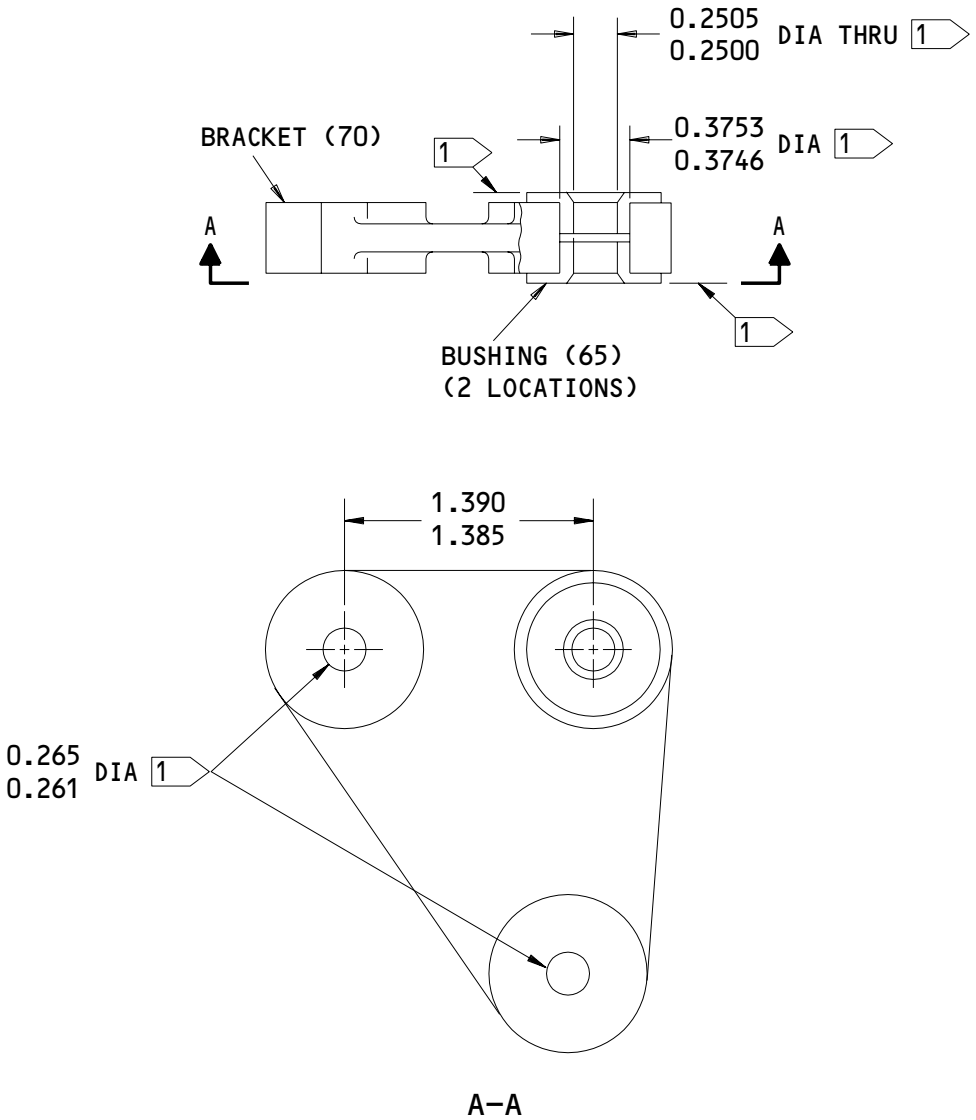

A–A

1 NO PRIMER ON THIS SURFACE

125 ALL MACHINED SURFACES UNLESS SHOWN DIFFERENTLY

ITEM NUMBERS REFER TO IPL FIG. 1

ALL DIMENSIONS ARE IN INCHES

256T3465-1,-3
Bracket Assembly – Bushing Replacement and Refinish
Figure 601

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BRACKET ASSEMBLY - REPAIR 15-1

256T3470-1

1. General

A. This procedure has the data necessary to repair and refinish the bracket assembly (35).

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 (27-51-39/601, REPAIR - GENERAL) for the Standard True Position Dimensioning Symbols shown in the repair.

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

E. General repair details:

(1) Material: Aluminum alloy

2. Bushing Replacement

A. References

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

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

B. Procedure

(1) Remove the bushing (50) from the bracket (55).

(2) Install the replacement bushing (50). Refer to SOPM 20-50-03.

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

3. Bracket (50) Refinish

A. Consumable Materials

NOTE: Equivalent material can be used.

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

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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 Finishes

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

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

C. Procedure (Fig. 601)

(1) Anodize (F-17.05) all over.

(2) Apply primer BMS 10-11, type 1 (F-20.02) all over, but not in the holes or on the surfaces shown in Fig. 601.

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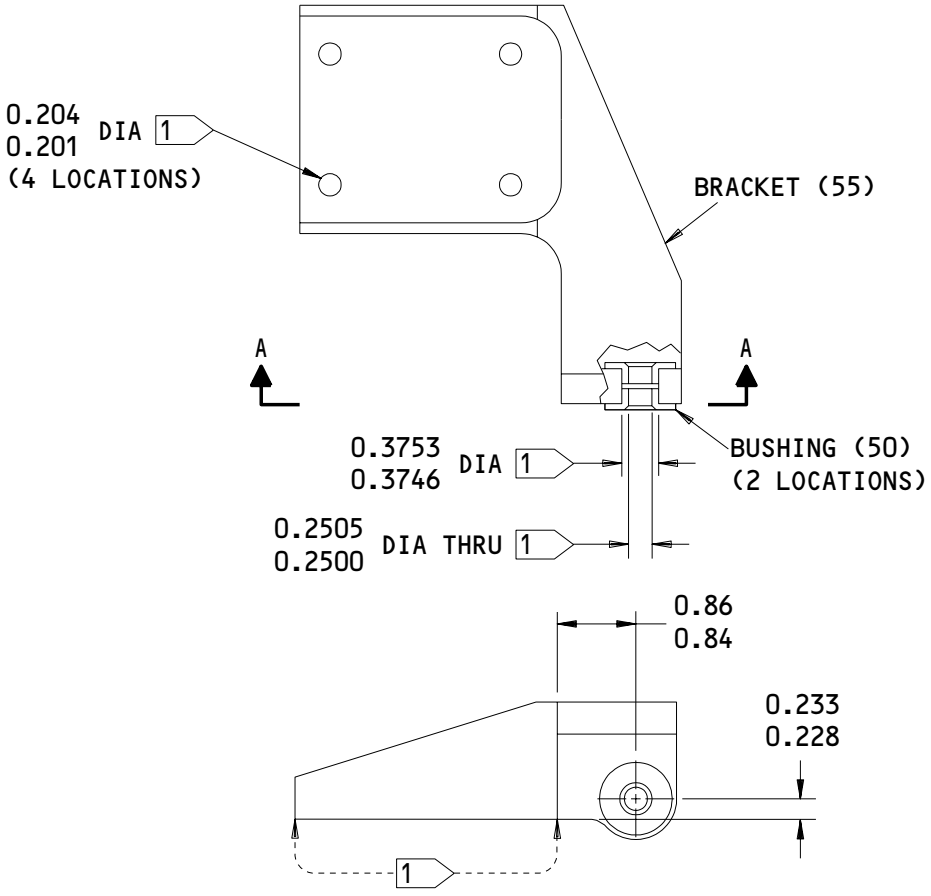

A–A

1 NO PRIMER ON THIS SURFACE

ITEM NUMBERS REFER TO IPL FIG. 2

ALL DIMENSIONS ARE IN INCHES

256T3470-1
Bracket Assembly – Bushing Replacement and Refinish
Figure 601

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COUPLING HALF - REPAIR 16-1

256T3749-1

1. General

A. This procedure has the data necessary to refinish the coupling half (IPL Fig. 1; 145), (IPL Fig. 2; 130).

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 (27-51-39/601, REPAIR - GENERAL) for the Standard True Position Dimensioning Symbols shown in the repair.

D. General repair details:

(1) Material: 4340 Steel, 150-170 ksi

2. Coupling Half (IPL Fig. 1; 155), (IPL Fig. 2; 140) 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 Finishes

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

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

C. Procedure (Fig. 601)

(1) Cadmium plate (F-15.02) all over.

(2) Apply BMS 10-11, type 1 primer (F-20.02) on the surfaces shown in Fig. 601.

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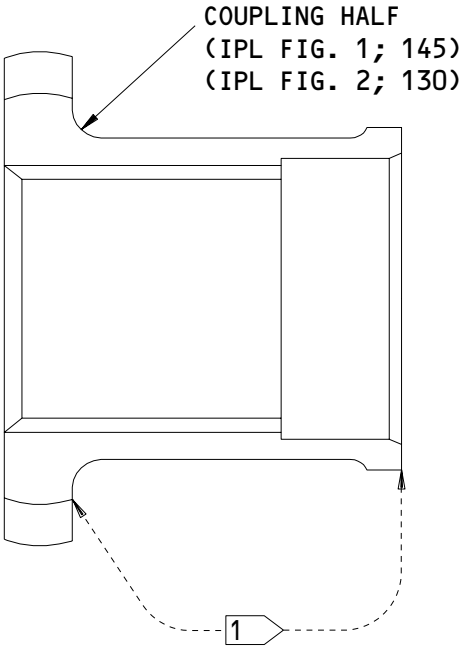

1 APPLY PRIMER TO THIS AREA

256T3749-1
Coupling Half Refinish
Figure 601

K34578

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MARKER - REPAIR 17-1

256T5124-5,-6,-7

1. General

A. This procedure has the data necessary to replace the markers (IPL Fig. 1; 455, 460), (IPL Fig. 2; 480, 485).

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 (27-51-39/601, REPAIR - GENERAL) for the Standard True Position Dimensioning Symbols shown in the repair.

2. Marker Replacement

A. Consumable Materials

NOTE: Equivalent material can be used.

(1) A00292 Adhesive -- Type 89 (BMS 5-105) (SOPM 20-50-12)

(2) A00554 Adhesive -- Type 70 (BMS 5-92) (SOPM 20-60-04)

B. References

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

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

C. Procedure

(1) Deleted.

(2) Remove the marker (IPL Fig. 1; 455, 460), (IPL Fig. 2; 480, 485) from the housing assembly (IPL Fig. 1; 420), (IPL Fig. 2; 445).

(3) Deleted.

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(4) Bend the marker to the contour of the housing assembly, as necessary.

(5) Bond the marker to the housing assembly with Type 89 or Type 70 adhesive, as shown in Fig. 601. Make sure that the adhesive is applied to 100 percent of the faying surface. Refer to SOPM 20-50-12.

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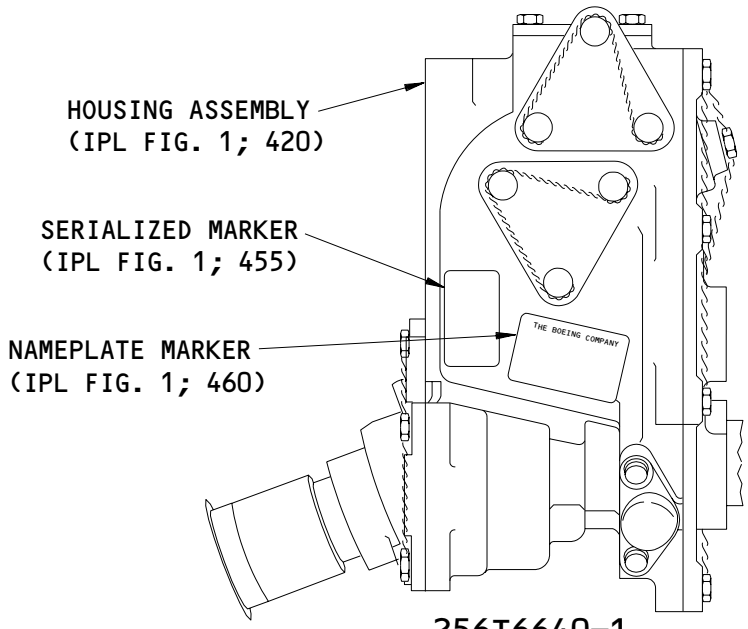
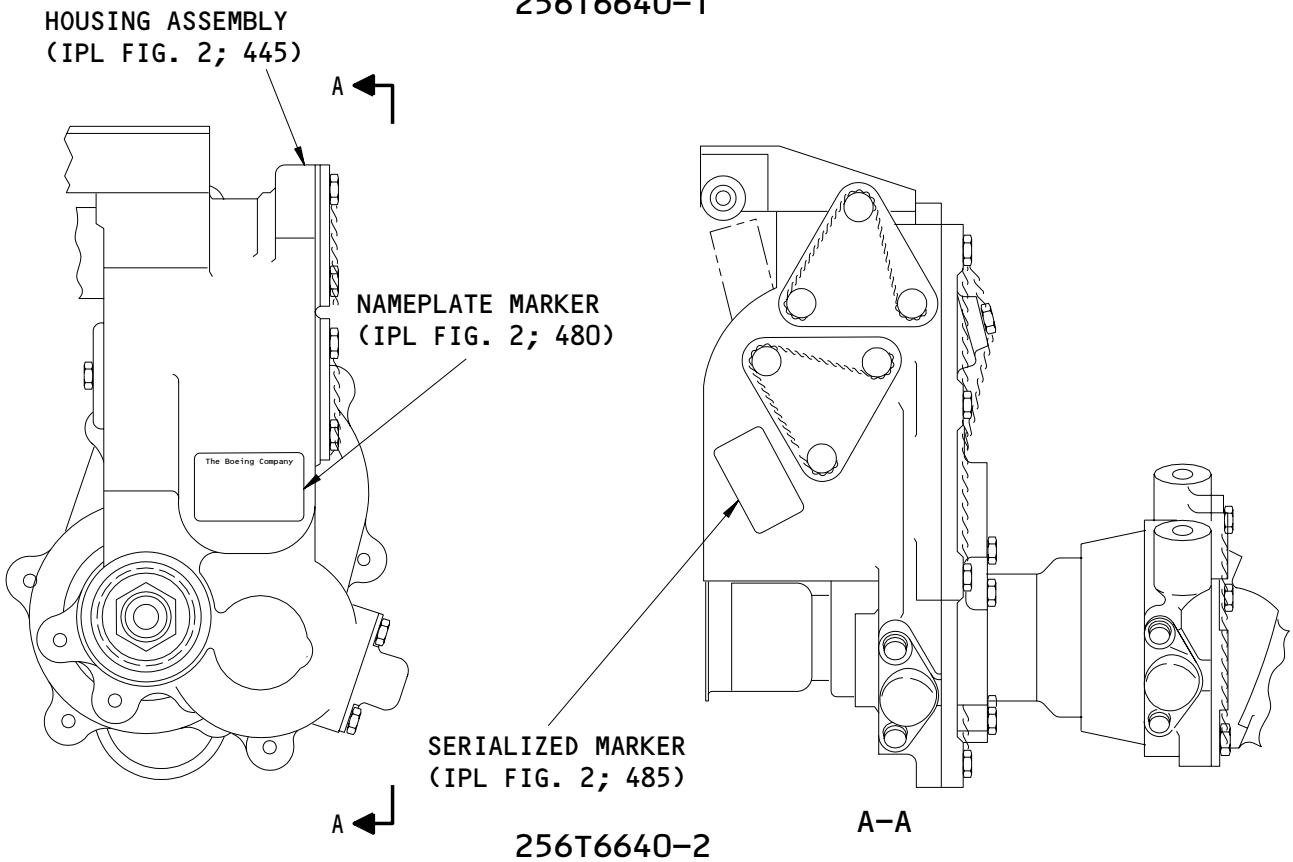


256T6640-1



256T6640-2

256T5124-5,-6,-7
Marker Replacement
Figure 601

K35066

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HOUSING ASSEMBLY - REPAIR 18-1

256T6641-1
256T6642-1

1. General

A. This procedure has the data necessary to repair and refinish the housing assembly (IPL Fig. 1; 420), (IPL Fig. 2; 445).

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

C. General repair details:

(1) Material: Aluminum alloy

2. Pin 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 20-60-02, Finishing Materials

C. Procedure (Fig. 601)

(1) Remove the pin (IPL Fig. 1; 425, 430), (IPL Fig. 2; 450, 455).

(2) Install the new pin with BMS 10-11, type 1 primer as shown in Fig. 601.

3. Housing Refinish

A. Consumable Materials

NOTE: Equivalent material can be used.

(1) C00032 Enamel -- BMS 10-60, color insignia red (SOPM 20-60-02)

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(2) 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 Finishes

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

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

C. Procedure (Fig. 601)

(1) Anodize (F-17.05) all over.

(2) Apply BMS 10-11, type 1 primer (F-20.02) to the external surfaces, but not in the holes and other surfaces shown in Fig. 601.

(3) Apply BMS 10-60 enamel (SRF-14.9815-101) in the slot, as shown in Fig. 601.

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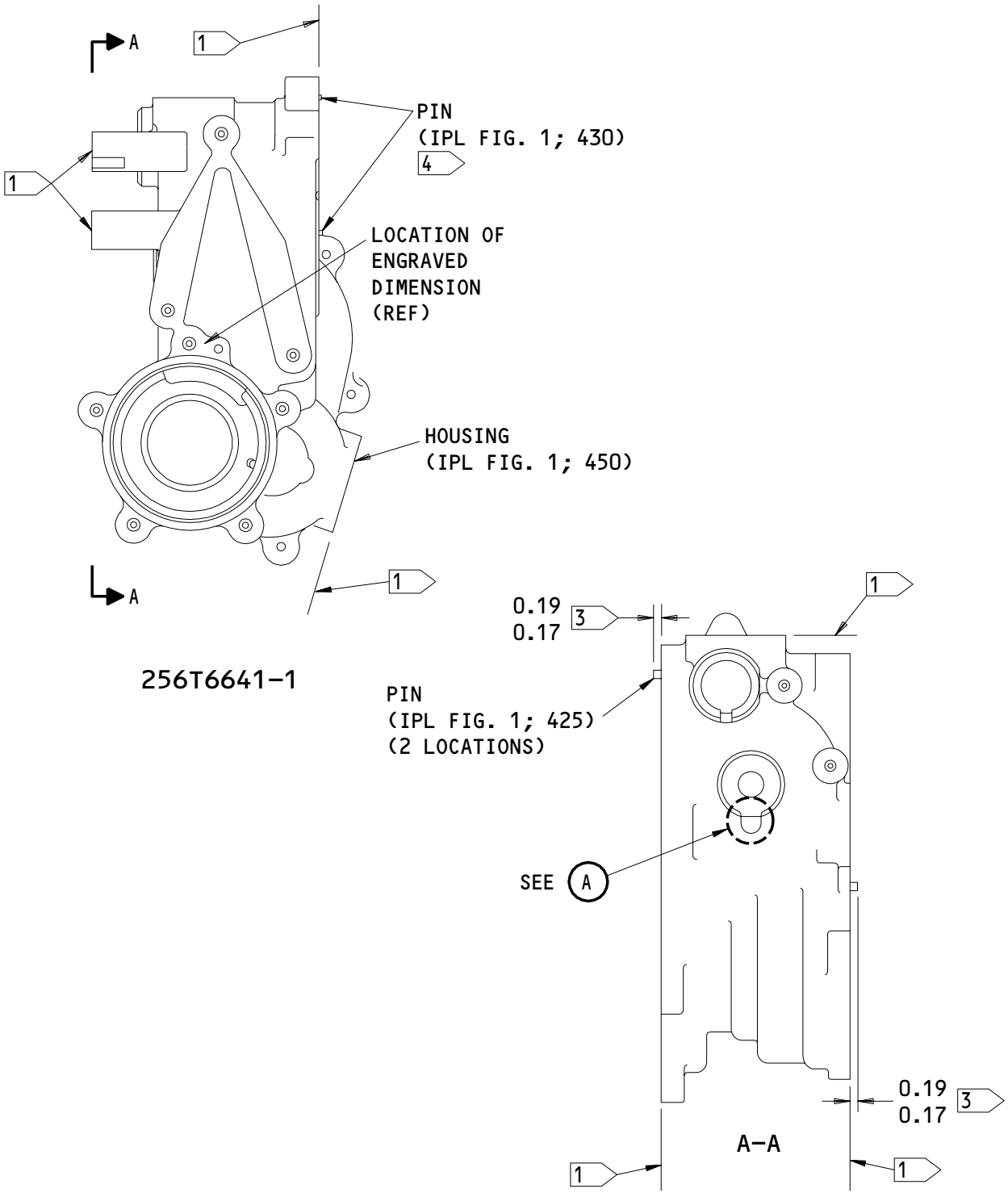

256T6641-1
256T6642-1
Housing Assembly - Pin Replacement and Refinish
Figure 601 (Sheet 1)

K34898

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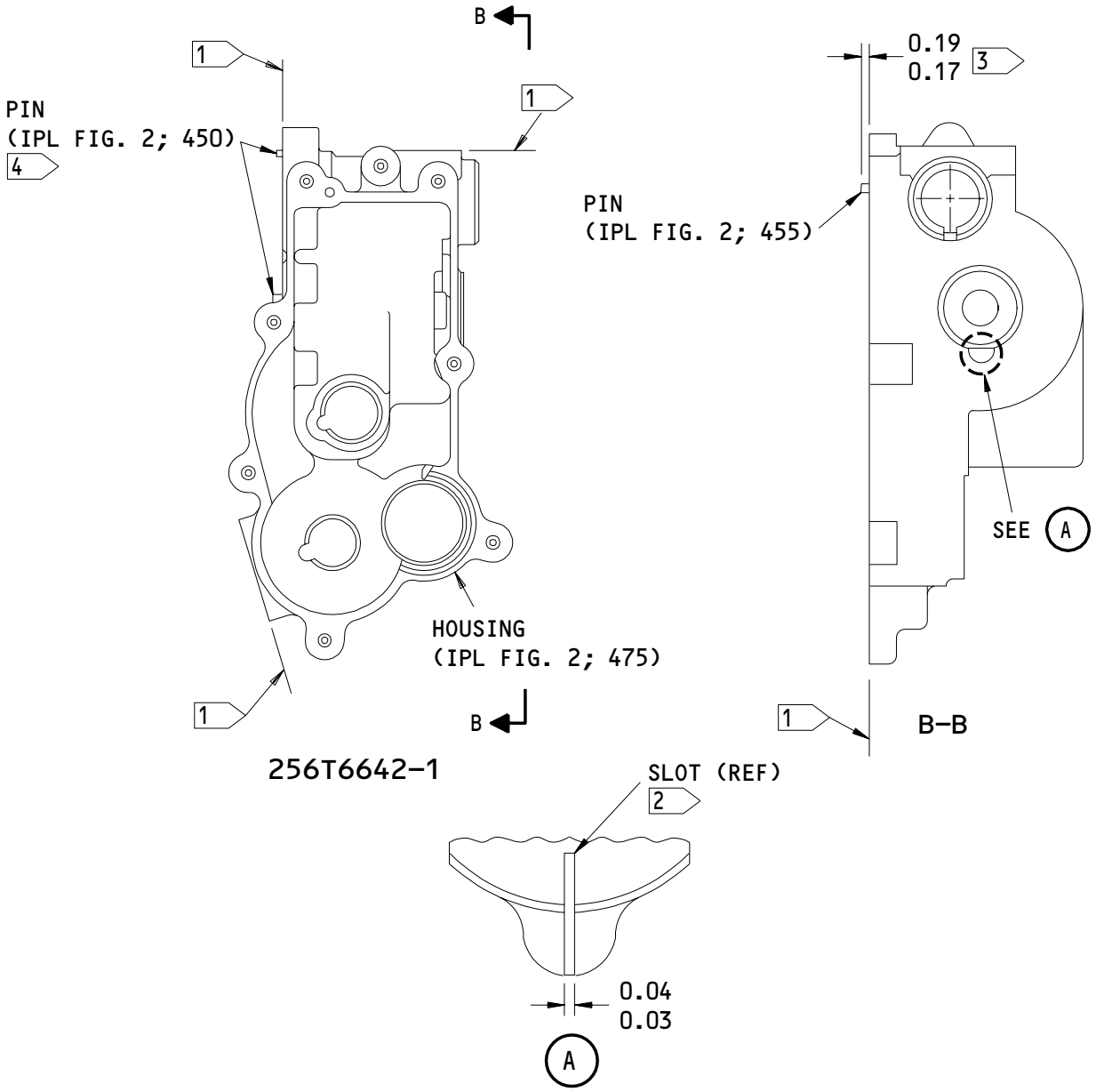

1 NO PRIMER ON THIS SURFACE

2 APPLY RED ENAMEL IN THE SLOT

3 PIN HEIGHT

4 INSTALL THE PIN AGAINST THE BOTTOM OF THE HOLE

ALL DIMENSIONS ARE IN INCHES.

256T6641-1
256T6642-1
Housing Assembly - Pin Replacement and Refinish
Figure 601 (Sheet 2)

K34893

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CAM ASSEMBLY - REPAIR 19-1

256T6645-1
256T6646-1

1. General

A. This procedure has the data necessary to repair and refinish the cam assembly (IPL Fig. 1; 345), (IPL Fig. 2; 380).

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 (27-51 39/601, REPAIR - GENERAL) for the Standard True Position Dimensioning Symbols shown in the repair.

D. General repair details:

(1) Material: Cam (IPL Fig. 1; 355), (IPL Fig. 2; 390)
15-5PH CRES, 180-200 ksi
Bushing (IPL Fig. 1; 350), (IPL Fig. 2; 385)
15-5PH CRES, 180-200 ksi

2. Bushing Replacement

A. References

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

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

B. Procedure

(1) Remove the bushing (IPL Fig. 1; 350), (IPL Fig. 2; 385) from the cam (IPL Fig. 1; 355), (IPL Fig. 2; 390).

(2) Install the replacement bushing. Use the shrink-fit procedure. Refer to SOPM 20-50-03.

(3) Machine the face and the inner diameter of the bushing to the design dimensions and finish shown in Fig. 601.

(4) Machine the relief radius on the outside corner of the bushing as shown.

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3. Cam Refinish

A. References

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

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

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

B. Procedure (Fig. 601)

(1) Passivate (F-17.25).

(2) Cadmium plate (F-15.06) the tops, sides, and roots of the spline teeth. Plating is optional on the ends and chamfers of the spline teeth.

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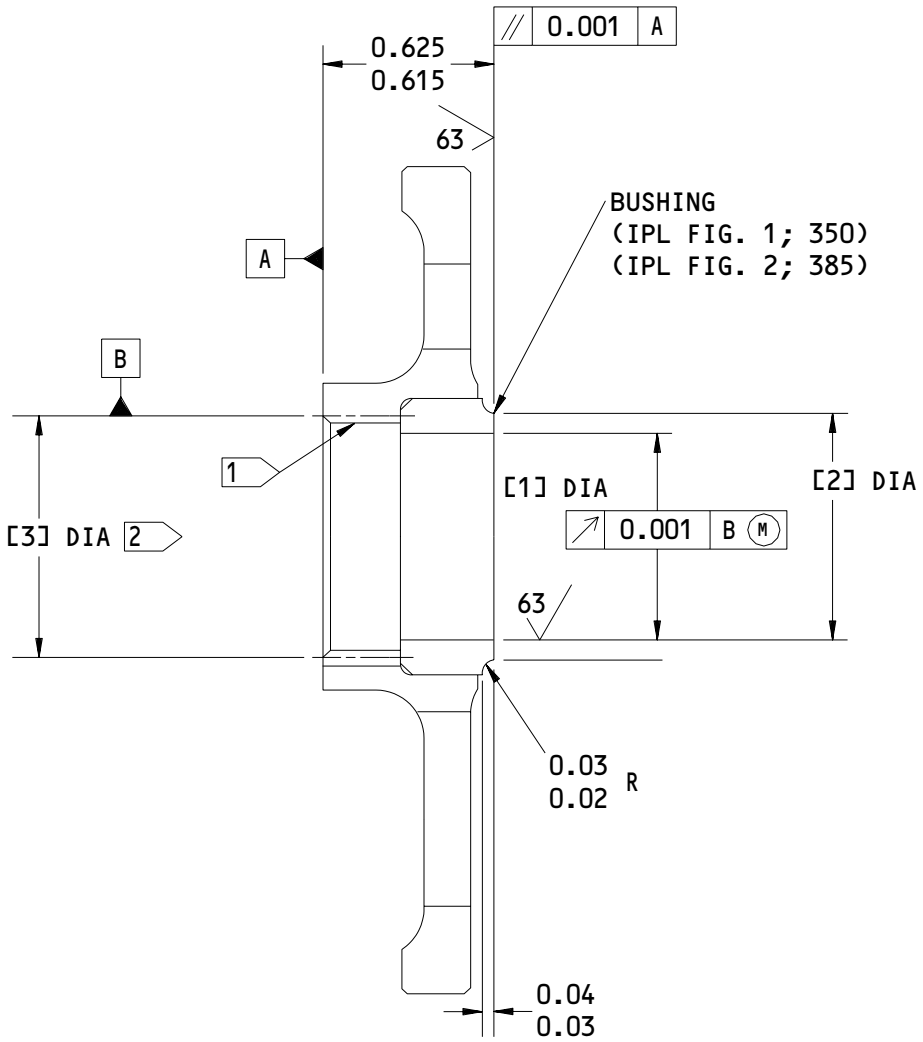

PART NUMBER	[1]	[2]	[3]
256T6645-1	0.7892 0.7887	0.93 0.91	0.8750 (REF)
256T6646-1	0.6710 0.6705	0.81 0.79	0.7500 (REF)

1 CADMIUM PLATE (F-15.06) THE SPLINE SURFACES

2 PITCH DIAMETER OF THE SPLINE

125 ALL MACHINED SURFACES UNLESS SHOWN DIFFERENTLY

ALL DIMENSIONS ARE IN INCHES

256T6645-1
256T6646-1
Cam Assembly - Bushing Replacement and Refinish
Figure 601

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WORM GEAR ASSEMBLY - REPAIR 20-1

256T6647-1
256T6648-1

1. General

A. This procedure has the data necessary to disassemble the worm gear assembly (IPL Fig. 1; 310), (IPL Fig. 2; 345) and replace its parts.

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

C. General repair details:

(1) Material: Shaft (IPL Fig. 1; 335), (IPL Fig. 2; 370)
4340 Steel, 150-170 ksi

2. Parts Replacement

A. Consumable Materials

NOTE: Equivalent material can be used.

(1) D00013 Grease -- MIL-G-23817 (SOPM 20-60-03)

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

B. References

(1) SOPM 20-10-01, Repair and Refinish of High Strength Steel Parts

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

(3) SOPM 20-60-03, Lubricants

C. Procedure (Fig. 601)

(1) Remove the pin (IPL Fig. 1; 315), (IPL Fig. 2; 350) from the worm gear assembly (IPL Fig. 1; 310), (IPL Fig. 2; 345).

(2) Remove the worm gear (IPL Fig. 1; 320), (IPL Fig. 2; 355) from the shaft assembly (IPL Fig. 1; 325), (IPL Fig. 2; 360).

(3) Repair or replace parts as necessary.

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(4) Apply BMS 3-33 grease (MIL-G-23827 optional) to the bore of the worm gear and to the mating outer diameter of the shaft assembly. Fill the groove around the shaft at the pin location with grease.

(5) Install the worm gear on the shaft assembly. Make sure that the holes for the pin are aligned. If a new shaft assembly is installed, machine the hole for the pin as follows.

(a) Push and hold the worm gear against the shoulder of the shaft.

(b) Machine the hole for the pin as shown in Fig. 601. Use the hole in the worm gear as a pattern.

NOTE: If replacement of the worm gear is necessary, we recommend that you replace the worm gear assembly. This is to make sure that the holes for the pin will be aligned after they are machined.

(6) Install the pin through the holes in the worm gear and the shaft assembly as follows.

(a) Heat the assembled worm gear and shaft assembly to 290-310 degrees F for one hour.

(b) Apply BMS 3-33 grease (MIL-G-23827 optional) to the outer diameter and grooves of the pin. Install the pin while the assembly is hot. Make sure that the ends of the pin are flush with the 1.07 inch diameter surface of the shaft assembly.

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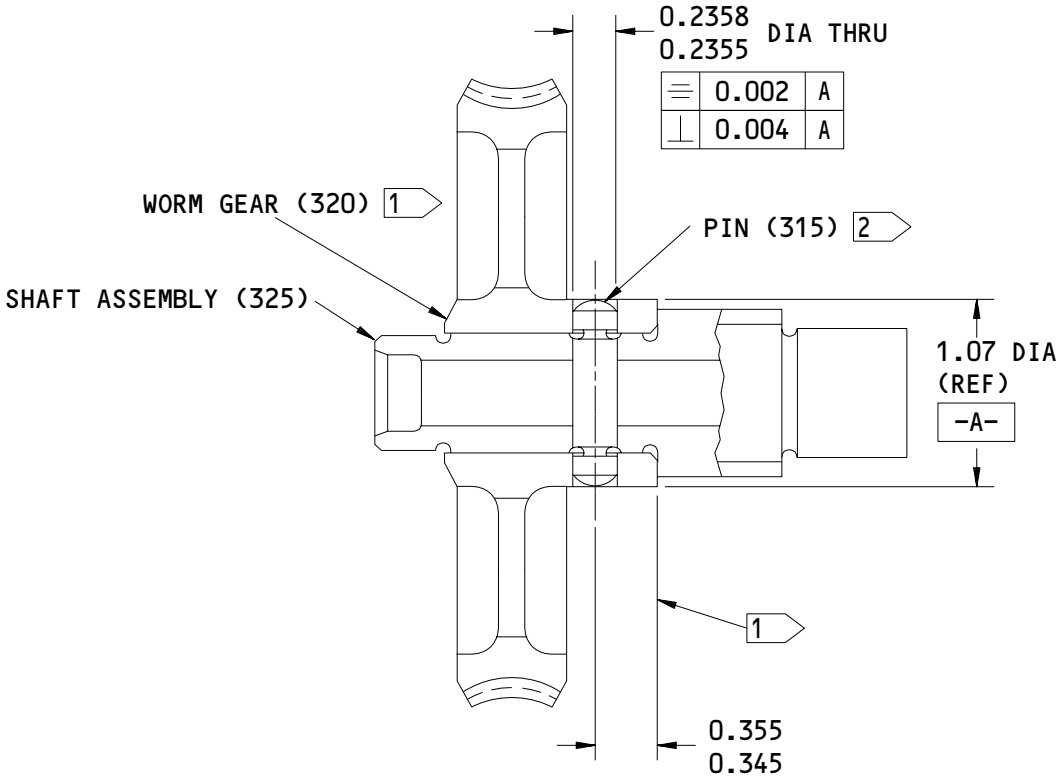

256T6647-1 SHOWN

1 PUSH THE WORM GEAR AGAINST THE SHOULDER OF THE SHAFT ASSEMBLY

2 INSTALL THE PIN FLUSH WITH 1.07 DIAMETER

ITEM NUMBERS REFER TO IPL FIG. 1

ALL DIMENSIONS ARE IN INCHES

256T6647-1
256T6648-1
Worm Gear Assembly - Replacement Details
Figure 601

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WORM GEARSHAFT - REPAIR 21-1

256T6653-1

1. General

A. This procedure has the data necessary to repair and refinish the worm gearshaft (IPL Fig. 1; 285), (IPL Fig. 2; 320).

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 (27-51-39/601, REPAIR - GENERAL) for the Standard True Position Dimensioning Symbols shown in the repair.

D. General repair details:

(1) Material: 4340 Steel, 150-170 ksi

(2) Shot peen: All repaired surfaces
Shot size 0.017-0.046
Intensity 0.016A
Coverage 2.0

2. Worm Gearshaft Repair

A. References

(1) SOPM 20-10-01, Repair and Refinish of High Strength Steel Parts

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

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

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

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

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

B. Procedure

(1) Machine the worm gearshaft (IPL Fig. 1; 285), (IPL Fig. 2; 320) to the repair dimensions shown in Fig. 601 to remove defects.

(2) Break all sharp edges to a 0.01-0.02 inch radius.

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(3) Do a magnetic particle check of the worm gearshaft. Refer to SOPM 20-20-01.

(4) Shot peen the machined area. Refer to SOPM 20-10-03.

(5) Apply chrome plate (F-15.03) to the machined area. Make sure that the plate runout is as shown in Fig. 601. Chrome plate is not permitted in the fillet radii or on the edges of the part.

(6) Grind the chrome plate to the design dimensions and finish shown in Fig. 601. The maximum permitted thickness of the chrome plate is 0.015 inch after grinding. Refer to SOPM 20-10-04.

3. Refinish

A. Consumable Materials

NOTE: Equivalent material can be used.

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

(2) C00308 Compound -- MIL-C-11796 (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 Finishes

(4) SOPM 20-41-03, Application of Corrosion Preventives to Interior of Closed End Tubes

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

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

C. Procedure (Fig. 601)

(1) Apply cadmium plate (F-15.02) on all surfaces unless shown differently. Control of the plating in the bores is not necessary.

(2) Apply phosphate coating (F-14.14) to the bores, as shown in Fig. 601.

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(3) Apply BMS 10-11, type 1 primer (F-20.03) to the bores.

(4) Apply MIL-C-11796 class 1 corrosion preventive compound (F-19.03) to the bores.

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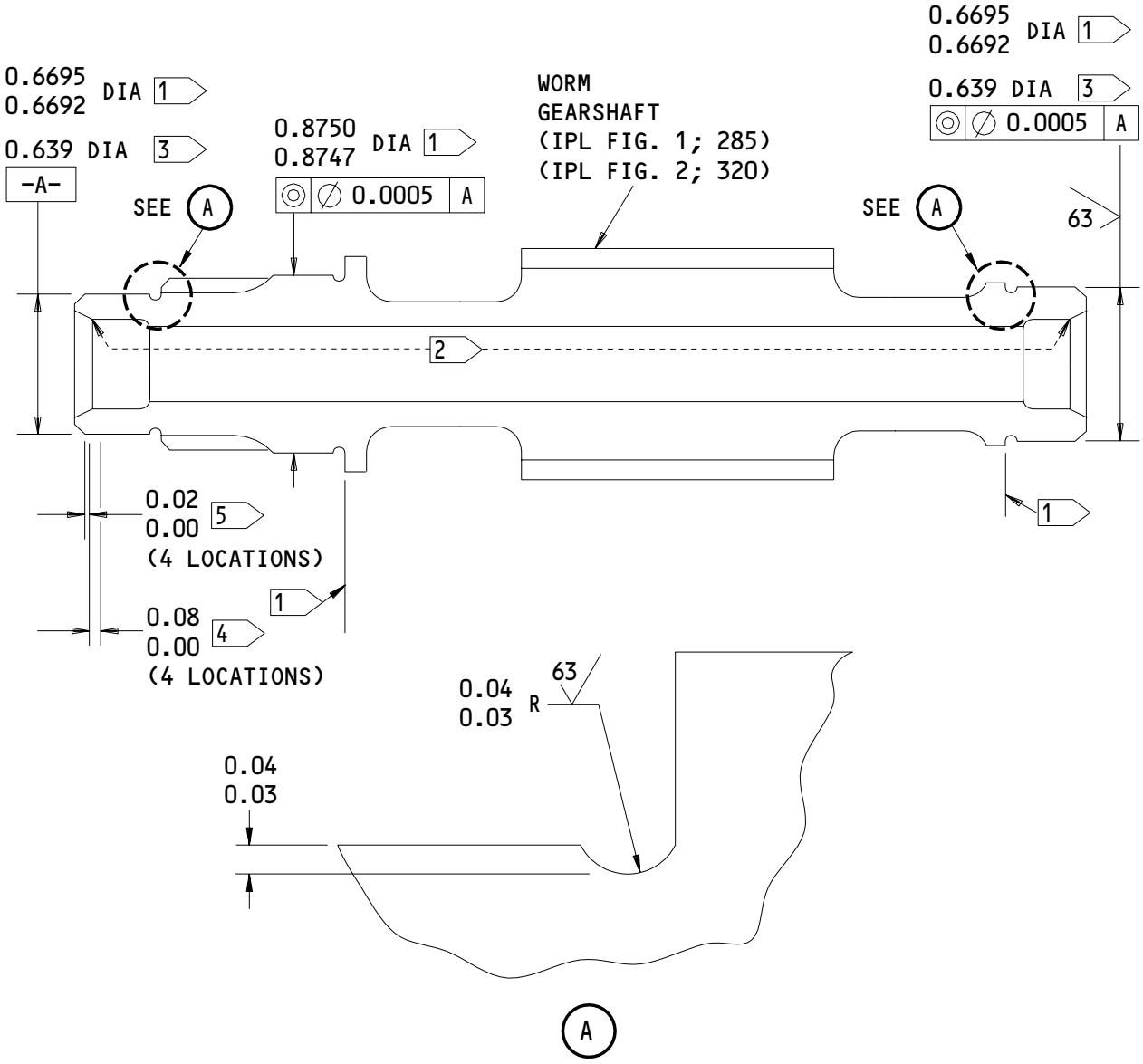

1 NO CADMIUM PLATE ON THIS SURFACE

2 APPLY PHOSPHATE COAT (F-14.14), BMS 10-11, TYPE 1 PRIMER (F-20.03), AND MIL-C-11796 CLASS 1 CORROSION PREVENTIVE COMPOUND (F-19.03)

3 REPAIR LIMIT

4 CHROME PLATE RUNOUT

5 END OF CHROME PLATE

125 ALL MACHINED SURFACES UNLESS SHOWN DIFFERENTLY

ALL DIMENSIONS ARE IN INCHES

256T6653-1
Worm Gearshaft Repair
Figure 601

K35107

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DRAIN COVER - REPAIR 22-1

65B81978-3

1. General

   A. This procedure has the data necessary to refinish the drain cover (IPL Fig. 1; 125), (IPL Fig. 2; 110).

   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 (27-51-39/601, REPAIR - GENERAL) for the Standard True Position Dimensioning Symbols shown in the repair.

   D. General repair details:

      (1) Material: Aluminum alloy

2. Drain Cover 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 Finishes

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

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

   C. Procedure (Fig. 601)

      (1) Chromic acid anodize (F-17.02) all over.

      (2) Apply BMS 10-11, type 1 primer (F-20.02) on the surfaces shown in Fig. 601.

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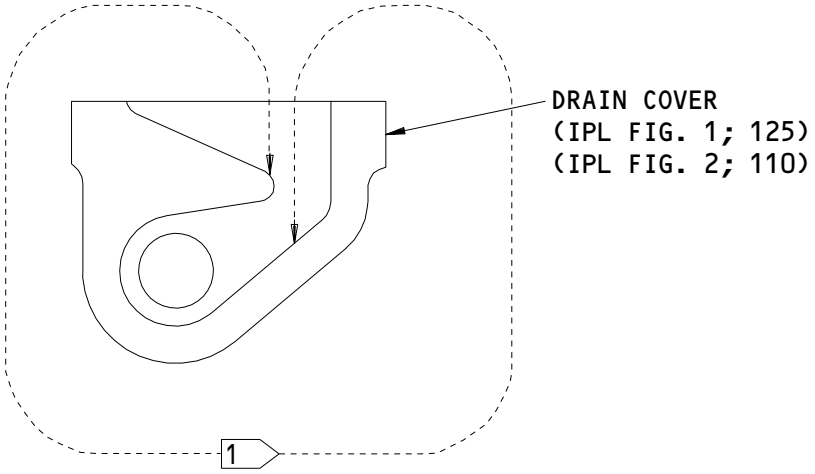

1 APPLY PRIMER TO THESE SURFACES ONLY

65B81978-3
Drain Cover Refinish
Figure 601

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ASSEMBLY

1. General

   A. This procedure has the data necessary to assemble the angle-gearbox-and-aileron-droop-input-control mechanism assembly.

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

2. Assembly

   A. Consumable Materials

      NOTE: Equivalent materials can be used.

      (1) A00395 Sealant -- BMS 5-95 or MIL-S-8802 (SOPM 20-60-04)

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

      (3) D00013 Grease -- MIL-G-23827 (SOPM 20-60-03) (optional to BMS 3-33)

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

      (5) G00376 Lockwire -- MS20995C32

   B. References

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

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

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

      (4) SOPM 20-50-06, Installation of O-Rings and Teflon Seals

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

      (6) SOPM 20-60-03, Lubricants

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

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C. Special Tools and Equipment

NOTE: Equivalent tools/equipment can be used.

(1) A27040-1 -- Checking Equipment, Bearing Width

(2) A27046-8 -- Test Equipment

(3) A27055-1 -- Shim Thickness Fixture, Worm Gear

CAUTION: DO NOT FILL THE HOUSING ASSEMBLY (420) WITH GREASE OR THE GEARBOX CAN OPERATE UNSATISFACTORILY.

D. Lubrication

(1) Fill the gear teeth and splines with grease.

(2) Apply grease to the faying surfaces and to bare steel surfaces to fill the holes and spaces.

E. Assembly Procedure for 256T6640-1 (IPL Fig. 1) (Fig. 701)

(1) Install the splined shaft (395) and the arm assembly (400).

(a) Install the bearing (270) on the plain end of the splined shaft (395) with grease. Refer to SOPM 20-50-03.

(b) Install the bearing (270) in the housing assembly (420) with grease. Refer to SOPM 20-50-03.

(c) Install the cam follower bearing (415) on the arm assembly (400) with the washer (375) and nut (380).

(d) Tighten the nut (380) to 50-70 lb-in and install the cotter pin (370). Refer to SOPM 20-50-02.

(e) Put the arm assembly (400) in its correct position inside the housing assembly (420).

(f) Install the splined shaft (395) through the arm assembly (400) and the bearing (270) in the housing assembly (420).

(g) Push the arm assembly (400) against the shoulder on the splined shaft (395),then install the bolt (385) and washer (390). Tighten the bolt to 50-70 lb-in.

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(h) Install lockwire from the bolt (385) to the arm assembly (400). Use the double-twist procedure. Refer to SOPM 20-50-02.

(i) Install the shim (265) in the bearing housing (255). For the initial adjustment, use the same thickness shim as was recorded during disassembly. Refer to 27-51-39/301, DISASSEMBLY.

(j) Install the bearing housing (255) on the housing assembly (420) with bolts (245) and washers (250). Install the bolts with primer on all areas of the holes. Tighten the bolts to 50-70 lb-in.

(k) Measure the end play of the splined shaft (395). If the end play is not 0.002-0.005 inch, adjust the thickness of the shim (265) until the measurement is in the correct range.

(2) Install the worm gear assembly (310) and the cam assembly (345).

(a) Install the spacer retainer (340) and the cam assembly (345) on the worm gear assembly (310).

(b) Install the bearing (360) on the worm gear assembly (310) with grease. Refer to SOPM 20-50-03.

(c) Install the seal (305) in the housing assembly (420) with grease. Make sure that the open end of the seal faces the outer surface of the housing.

(d) Install the worm gear assembly (310), cam assembly (345), and bearing (360) in the housing assembly (420).

(e) Install the bearing (270) in the bearing housing (260) with grease. Refer to SOPM 20-50-03.

(f) Install the bearing housing (260) on the housing assembly (420) with bolts (245) and washers (250).

(g) Use the shim thickness fixture A27055-1 to find the thickness of the shim (365) necessary to align the worm gear (320) with the worm gearshaft (285) to 0.001 inch or less.

(h) Remove the bearing housing (260) and the worm gear assembly (310) from the housing assembly (420).

(i) Install the shim (365) of the correct thickness in the housing assembly (420).

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(j) Install the worm gear assembly (310), cam assembly (345), and bearing (360) again.

(k) Remove the bearing (270) from the bearing housing (260). Refer to SOPM 20-50-03.

(l) Install the shim (265) in the bearing housing (255). For the initial adjustment, use the same thickness shim as was recorded during disassembly. Refer to 27-51-39/301, DISASSEMBLY.

(m) Install the bearing (270) in the bearing housing (260) with grease. Refer to SOPM 20-50-03.

(n) Install the bearing housing (260) on the housing assembly (420) with bolts (245) and washers (250). Install the bolts with primer on all areas of the holes. Tighten the bolts to 50-70 lb-in.

(o) Do a check of the end play of the worm gear assembly (310). If the end play is not zero, remove the bearing housing (260) and the bearing (270), and adjust the thickness of the shim (265) until the end play is removed.

(p) Install the indicator disc (300) on the worm gear assembly (310) with the bolt (290) and washer (295). Tighten the bolt to 20-25 lb-in.

(3) Install the worm gearshaft (285) and the spur gears (275, 280).

(a) Install two bearings (270) on the spur gear (280) with grease. Refer to SOPM 20-50-03.

(b) Install the spur gear (280) and bearings (270) in the housing assembly (420).

(c) Install the spur gear (275) on the worm gearshaft (285).

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(d) Install bearings (270) on the worm gearshaft (285) with grease. Refer to SOPM 20-50-03.

(e) Apply a gear marking compound to the tooth on the worm gearshaft (285).

NOTE: The compound is applied for a check of the tooth contact pattern. Other parts must be installed before the check can be done.

(f) Install the worm gearshaft (285) and the spur gear (275) in the housing assembly (420).

(g) Install the cover assembly (220).

1) Install shims (265) in the cover assembly (220). For the initial adjustment, use the same thickness shim as was recorded during disassembly. Refer to 27-51-39/301, DISASSEMBLY.

2) Install the cover assembly (220) on housing assembly (420) with the bolts (225) and washers (230). Install the bolts with primer on all areas of the holes. Tighten the bolts to 50-70 lb-in.

3) Do a check of the end play of the worm gearshaft (285) and the spur gear (280). If the end play of the worm gearshaft is not zero, remove the cover assembly (220) and adjust the thickness of the applicable shim (265) until the end play is removed. If the end play of the spur gear is not 0.002-0.005 inch, adjust the thickness of the applicable shim (265) until the measurement is in the correct range.

4) Install the cover assembly (220) on the housing assembly (420) with the bolts (225) and washers (230). Install the bolts with primer on all areas of the holes. Tighten the bolts to 50-70 lb-in.

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(4) Install the bevel gears (190, 205).

(a) Calculate the necessary thicknesses S1 and S2 for the shims (180).

NOTE: Use the same thicknesses of shims as were recorded during disassembly (Refer to 27-51-39/301, DISASSEMBLY), unless the housing (170), bearings (185), bevel gears (190, 205), or the housing assembly (420) were replaced.

1) Use the bearing width checking equipment A27040-1 to apply a 25-30 pound axial force across the bearing (185) races. Measure the bearing from one side of the inner race to the opposite side of the outer race to a tolerance of 0.001 inch. Refer to Fig. 702.

2) Use the width A of the bearing (185) to be installed in the housing (170), to calculate the shim thickness S1, as shown in Fig. 702.

3) Use the width B of the bearing (185) to be installed in the housing assembly (420) to calculate the shim thickness S2, as shown in Fig. 702.

4) Mix the minimum number of different shims (180 thru 180D) to get approximately the calculated values S1 and S2. The difference between the thickness of each shim stack and S1 or S2 must be 0.0015 inch or less.

(b) Install the shims (180) in the housing (170) and the housing assembly (420). Make sure that the correct shim thickness S1 or S2 is used in the applicable location.

(c) Install the bearings (185) on the gears (190, 205) with grease. Refer to SOPM 20-50-03. Make sure that each bearing is installed on the bevel gear used to calculate the applicable shim thickness.

(d) Install the bevel gear (205) in the housing assembly (420).

(e) Install the spacer (200) and the spur gear (195) on the bevel gear (205).

(f) Install the bearing (175) on the bevel gear (205) with grease. Refer to SOPM 20-50-03.

(g) Install the bearing (175) on the bevel gear (190) with grease. Refer to SOPM 20-50-03.

(h) Install the bevel gear (190) in the housing (170).

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(i) Install the bearing shields (155) against the bearings (175) on the bevel gears (190, 205). Fill the spaces between the bearing shields and the bearings with grease.

(j) Install the molded sleeves (150) on the coupling halves (145).

(k) Install the coupling sleeves (130) on the coupling halves (145).

(l) Install the coupling halves (145) with the coupling sleeves (130) on the bevel gears (190, 205).

(m) Install washers (140) and nuts (135) on the bevel gears (190, 205). Tighten the nuts (135) to 600-800 lb-in.

(n) Install the housing (170) and bevel gear (190) on the housing assembly (420) with bolts (160) and washers (165). Install the bolts with primer on all areas of the holes. Tighten the bolts to 50-70 lb-in.

(5) Do a check of the worm gear tooth contact pattern.

(a) Apply a 5-20 lb-in. resistance load to the worm gear assembly (310).

(b) Turn the output shaft five or more turns in each direction.

(c) Remove the cover assembly (220) and examine the tooth contact pattern on the worm gear.

(d) Make sure that the pattern is a minimum of 50 percent of the width of the tooth face. Also make sure that the pattern does not go off the edge of the tooth.

(e) Clean the gears until no marking compound can be seen. Refer to SOPM 20-30- 03.

NOTE: If Prussian Blue is used, then it is not necessary to completely remove all indications of the compound.

(f) Assemble the parts that were removed for the check.

(6) Do a check of the backlash. Refer to 27-51-39/101, TESTING & FAULT ISOLATION.

(a) If the backlash is not 0.003-0.007 inch at the pitch diameter of the bevel gears (190, 205), disassemble the housing (170) and bevel gears from the housing assembly (420).

(b) Add or remove shims (180) to get the correct 0.003-0.007 inch backlash.

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(7) Complete the assembly.

(a) Install the bolt (210) and shim (215) on the cover assembly (220).

(b) Adjust the thickness of the shim (215) to get 0.010-0.025 inch clearance between the bolt (210) and the cam follower bearing (415) as shown in Fig. 701.

(c) Remove the bolt (210) and install it with primer on all areas of the hole. Tighten the bolt to 20-25 lb-in.

(d) Install the cover (15) on the housing assembly (420) with bolts (5) and washers (10). Install the bolts with primer on all areas of the holes. Tighten the bolts to 20-25 lb-in.

(e) Make sure that the drain hole is free from grease, then install the drain cover (125) with bolts (115) and washers (120). Install the bolts with primer on all areas of the holes. Tighten the bolts to 20-25 lb-in.

(f) Install bushings (45) in the retainers (40). Install the retainers (40) on the bracket assembly (50) and the crank assembly (75) with bolts (25), washers (30), and nuts (35). Tighten the nuts to 50-70 lb-in.

(g) Install the bracket assembly (50) on the housing assembly (420) with bolts (55) and washers (60). Install the bolts with primer on all areas of the holes. Tighten the bolts to 50-70 lb-in.

(h) Install the bearing shield (110) against the bearing (270) on the splined shaft (395). Fill the space between the bearing shield and the bearing with grease.

(i) Install the shim (105) and the crank assembly (75) on the splined shaft (395) with the bolt (80), washer (85), and nut (90). Adjust the thickness of the shim to fill the space between the bearing shield and the crank assembly. Tighten the nut to 50-70 lb-in.

WARNING: THE SPRINGS (20) TRANSMIT A LARGE FORCE WHEN THEY ARE INSTALLED. BE VERY CAREFUL WHEN YOU INSTALL THE SPRINGS OR INJURY TO PERSONNEL CAN OCCUR.

(j) Install the springs (20) on the retainers (40) on the bracket assembly (50) and the crank assembly (75).

(8) Do the functional test on the assembly. Refer to 27-51-39/101, TESTING & FAULT ISOLATION.

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(9) Fillet seal the seams between the cover (15), housing (170), cover assembly (220), and the housing assembly (420) with sealant, as shown in Fig. 701.

(10) Fill the dowel pin holes in the cover assembly (220) and the housing (170) with sealant.

(11) Install lockwire on the bolts (5, 55, 160, 210, 225, 245) as shown in Fig. 703. Use the double-twist procedure. Refer to SOPM 20-50-02.

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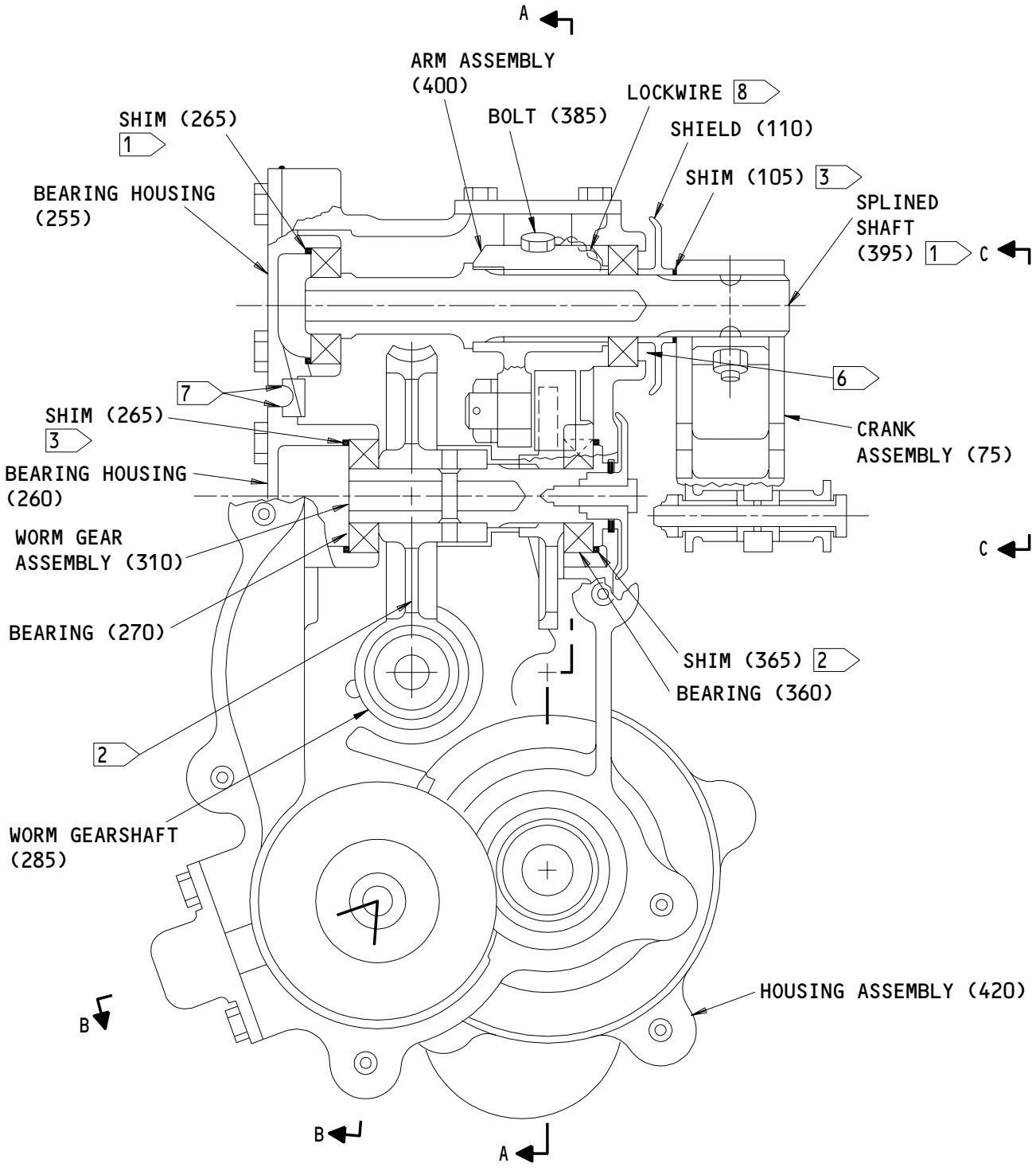

Assembly Details
Figure 701 (Sheet 1)

K37431

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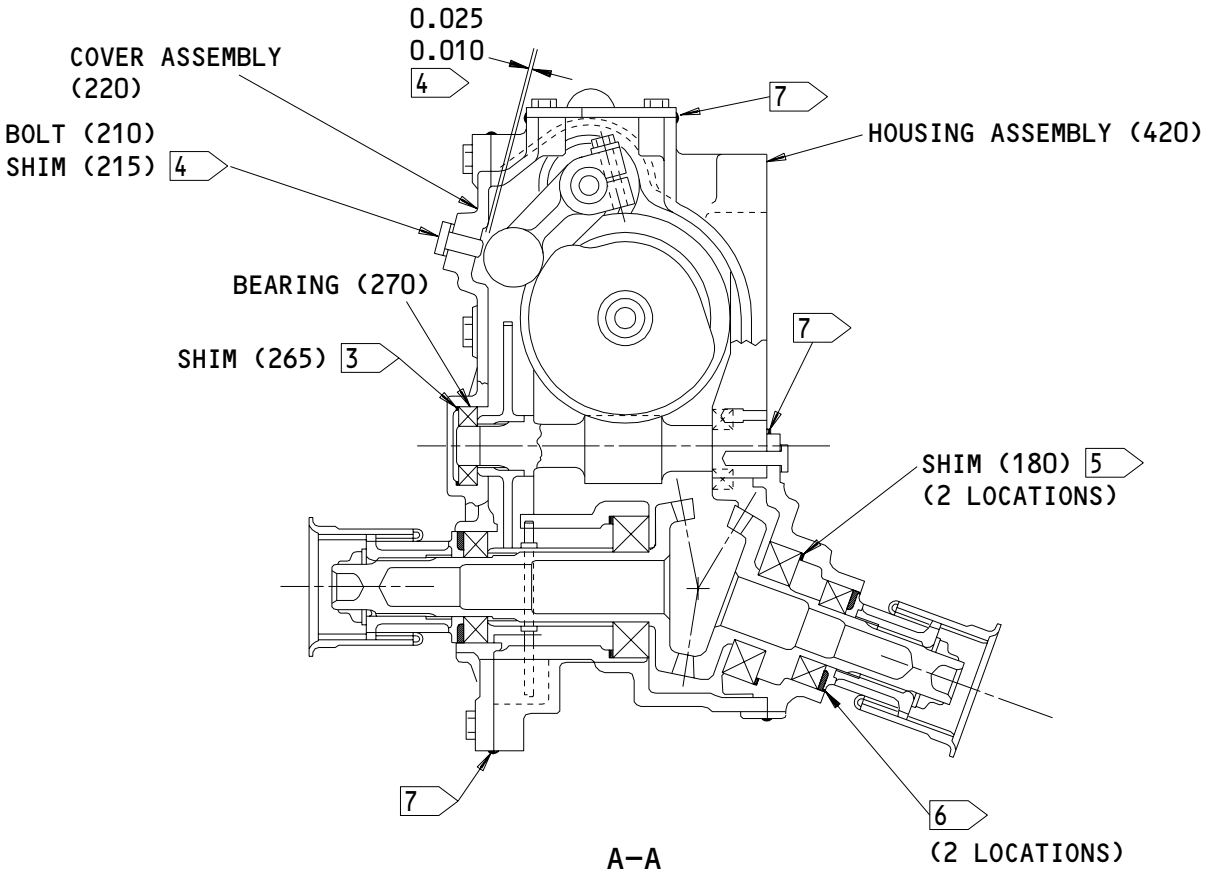
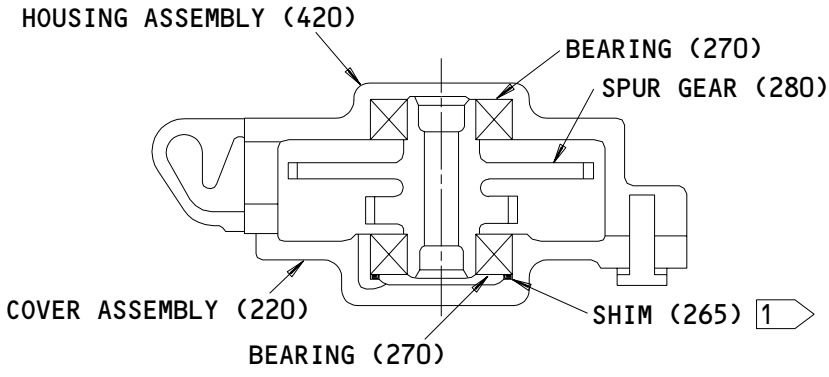


A–A



B–B

Assembly Details
Figure 701 (Sheet 2)

K35064

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1 ADJUST THE SHIM THICKNESS TO GET 0.002-0.005 END PLAY

2 ADJUST THE SHIM THICKNESS TO ALIGN THE WORM GEAR AND THE WORM GEARSHAFT

3 ADJUST THE SHIM THICKNESS TO GET ZERO END PLAY

4 ADJUST THE SHIM THICKNESS TO GET THE CLEARANCE SHOWN

5 REFER TO FIG. 702 FOR THE SHIM ADJUSTMENT PROCEDURE

6 FILL THIS SPACE WITH GREASE

7 FILLET SEAL THE SEAM WITH SEALANT

8 USE THE DOUBLE-TWIST PROCEDURE. REFER TO SOPM 20-50-02

ITEM NUMBERS REFER TO IPL FIG. 1

ALL DIMENSIONS ARE IN INCHES

Assembly Details
Figure 701 (Sheet 3)

K35073

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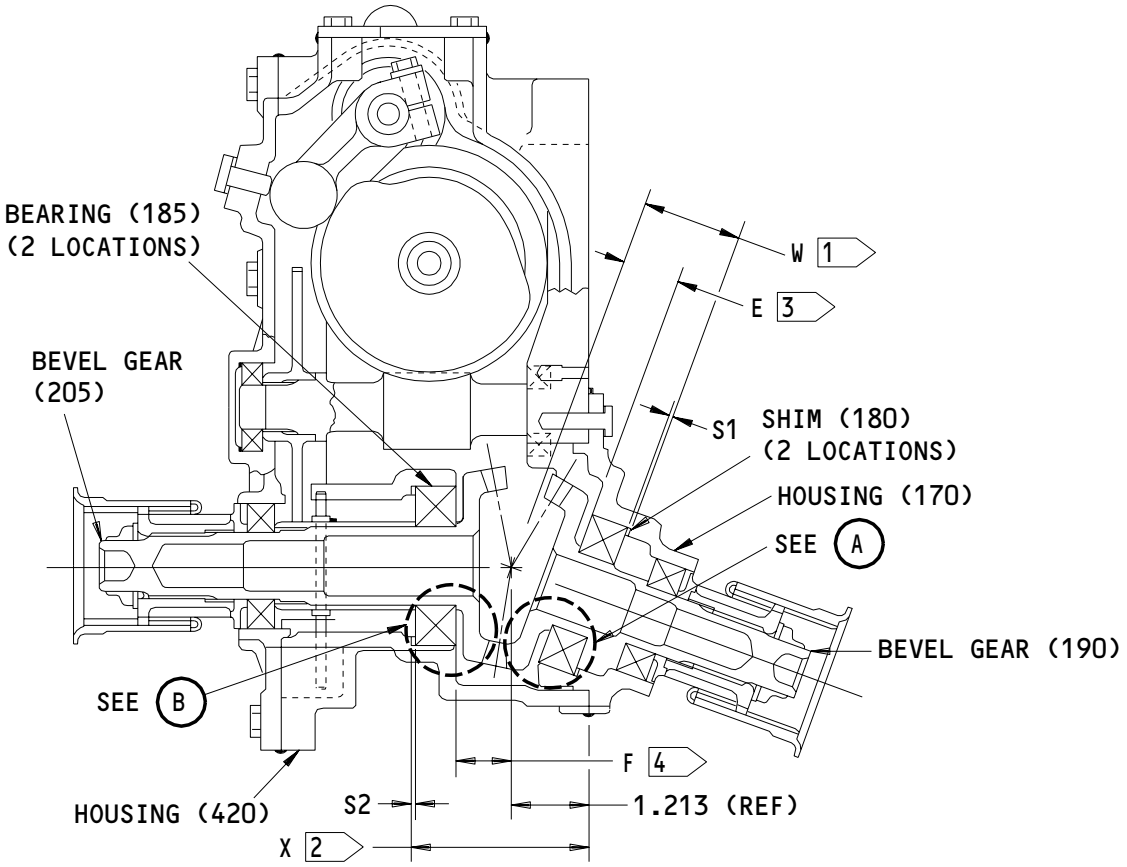

256T6640-1

Bevel Gear Shim Selection
Figure 702 (Sheet 1)

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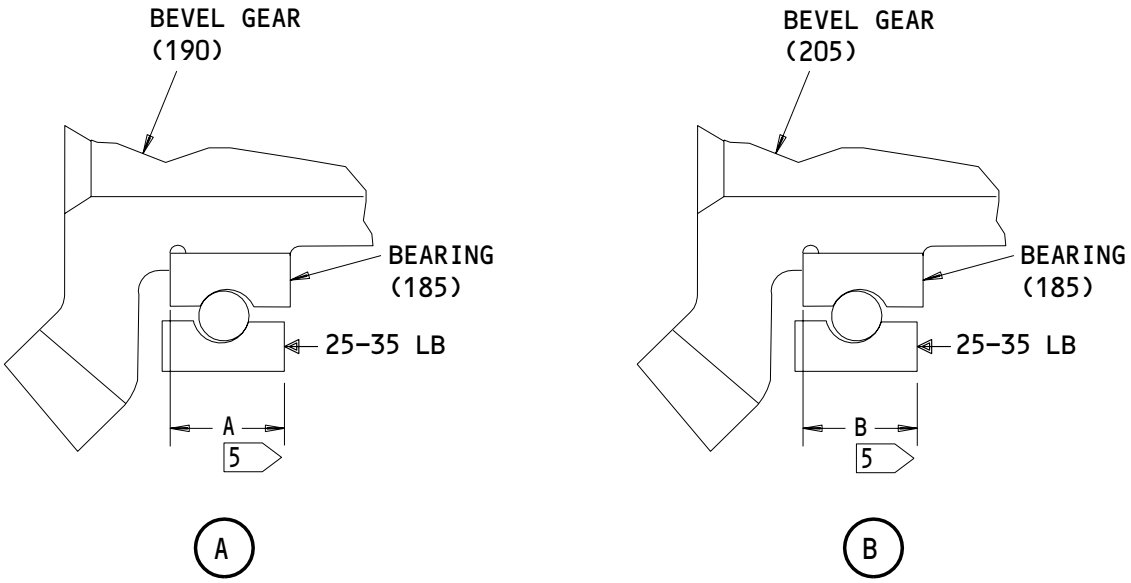

SHIM THICKNESS CALCULATIONS

S1 = W - E - A
S2 = X - F - B - 1.213

1 ENGRAVED DIMENSION ON HOUSING (170)
2 ENGRAVED DIMENSION ON HOUSING (450)
3 ENGRAVED DIMENSION ON BEVEL GEAR (190)
4 ENGRAVED DIMENSION ON BEVEL GEAR (205)
5 MEASURED WIDTH OF BEARING (185)

ITEM NUMBERS REFER TO IPL FIG. 1

ALL DIMENSIONS ARE IN INCHES

Bevel Gear Shim Selection
Figure 702 (Sheet 2)

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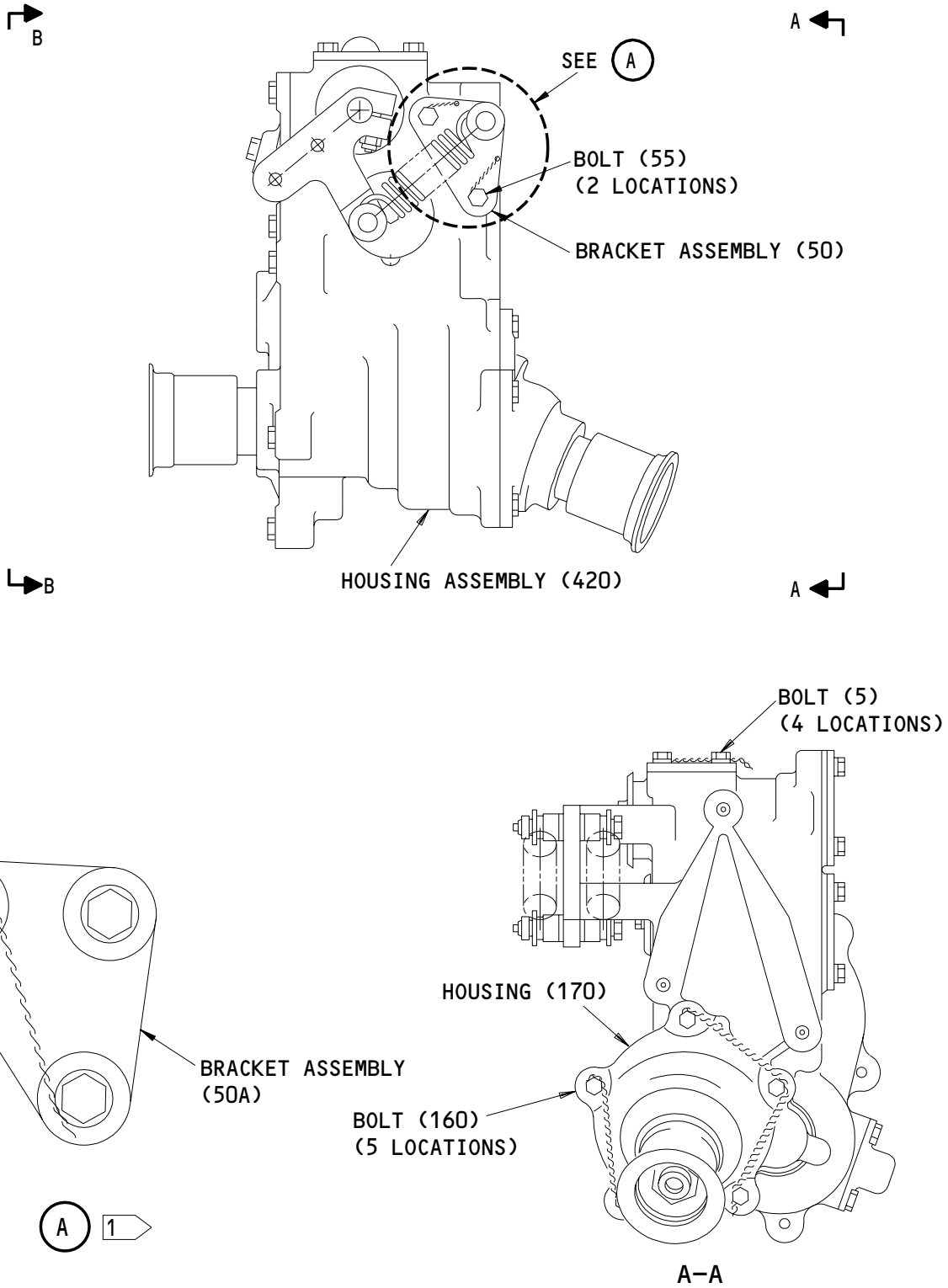

Lockwire Installation Details
Figure 703 (Sheet 1)

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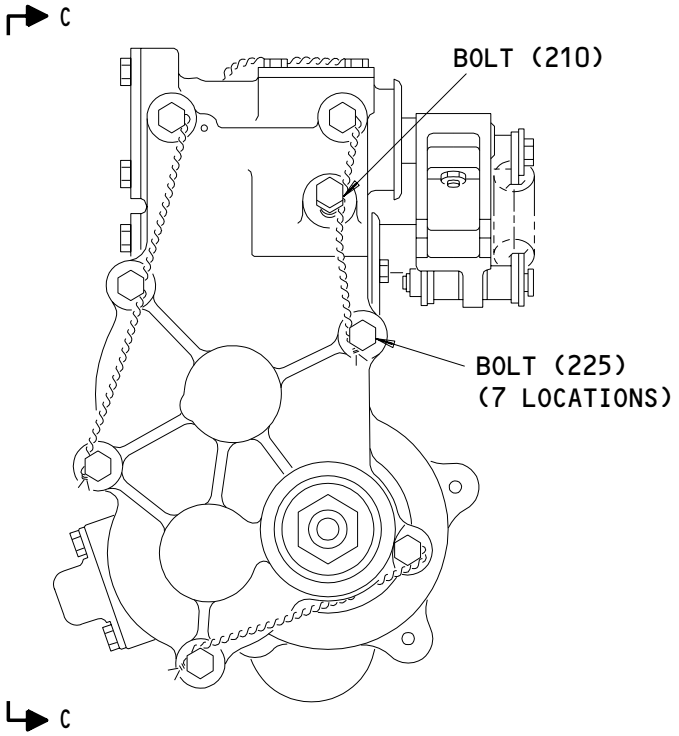
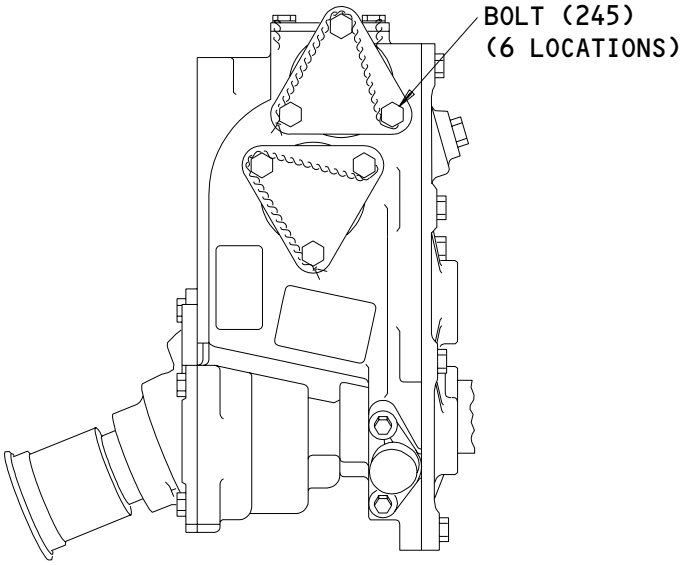


B–B



C–C

NOTE: INSTALL MS20995C32 LOCKWIRE.
USE DOUBLE-TWIST PROCEDURE.
REFER TO SOPM 20-50-02.

ITEM NUMBERS REFER TO IPL FIG. 1

1 ALTERNATIVE LOCKWIRE CONFIGURATION
USED WITH OPTIONAL BRACKET ASSEMBLY

Lockwire Installation Details
Figure 703 (Sheet 2)

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F. Assembly Procedure for 256T6640-2 (IPL Fig. 2) (Fig. 704)

(1) Install the splined shaft (420) and the arm assembly (425).

(a) Install the bearing (305) on the plain end of the splined shaft (420) with grease. Refer to SOPM 20-50-03.

(b) Install the bearing (305) in the housing assembly (445) with grease. Refer to SOPM 20-50-03.

(c) Install the cam follower bearing (440) on the arm assembly (425) with the washer (405) and nut (400).

(d) Tighten the nut (400) to 50-70 lb-in and install the cotter pin (395). Refer to SOPM 20-50-02.

(e) Put the arm assembly (425) in its correct position inside the housing assembly (445).

(f) Install the splined shaft (420) through the arm assembly (425) and the bearing (305) in the housing assembly (445).

(g) Push the arm assembly (425) against the shoulder on the splined shaft (420),then install the bolt (410) and washer (415). Tighten the bolt to 50-70 lb-in.

(h) Install lockwire from the bolt (410) to the arm assembly (425). Use the double-twist procedure. Refer to SOPM 20-50-02.

(i) Install the shim (300) in the bearing housing (290). For the initial adjustment, use the same thickness shim as was recorded during disassembly. Refer to 27-51-39/301, DISASSEMBLY.

(j) Install the bearing housing (290) on the housing assembly (445) with bolts (280) and washers (285). Install the bolts with primer on all areas of the holes. Tighten the bolts to 50-70 lb-in.

(k) Measure the end play of the splined shaft (420). If the end play is not 0.002-0.005 inch, adjust the thickness of the shim (300) until the measurement is in the correct range.

(2) Install the worm gear assembly (345) and the cam assembly (380).

(a) Install the spacer retainer (375) and the cam assembly (380) on the worm gear assembly (345).

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(b) Install the bearing (305) on the worm gear assembly (345) with grease. Refer to SOPM 20-50-03.

(c) Install the seal (340) in the housing assembly (445) with grease. Make sure that the open end of the seal faces the outer surface of the housing.

(d) Install the worm gear assembly (345), cam assembly (380), and bearing (305) in the housing assembly (445).

(e) Install the bearing (305) in the bearing housing (295) with grease. Refer to SOPM 20-50-03.

(f) Install the bearing housing (295) on the housing assembly (445) with bolts (280) and washers (285).

(g) Use the shim thickness fixture A27055-1 to find the thickness of the shim (300) necessary to align the worm gear (355) with the worm gearshaft (320) within 0.001 in.

(h) Remove the bearing housing (295) and the worm gear assembly (345) from the housing assembly (445).

(i) Install the shim (300) of the correct thickness in the housing assembly (445).

(j) Install the worm gear assembly (345), cam assembly (380), and bearing (305) again.

(k) Remove the bearing (305) from the bearing housing (295). Refer to SOPM 20-50-03.

(l) Install the shim (300) in the bearing housing (295). For the initial adjustment, use the same thickness shim as was recorded during disassembly. Refer to 27-51-39/301, DISASSEMBLY.

(m) Install the bearing (305) in the bearing housing (295) with grease. Refer to SOPM 20-50-03.

(n) Install the bearing housing (295) on the housing assembly (445) with bolts (280) and washers (285). Install the bolts with primer on all areas of the holes. Tighten the bolts to 50-70 lb-in.

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(o) Do a check of the end play of the worm gear assembly (345). If the end play is not zero, remove the bearing housing (295) and the bearing (305), and adjust the thickness of the shim (300) until the end play is removed.

(p) Install the indicator disc (335) on the worm gear assembly (345) with the bolt (325) and washer (330). Tighten the bolt to 20-25 lb-in.

(3) Install the worm gearshaft (320) and the spur gears (310, 315).

(a) Install two bearings (305) on the spur gear (315) with grease. Refer to SOPM 20-50-03.

(b) Install the spur gear (315) and bearings (305) in the housing assembly (445).

(c) Install the spur gear (310) on the worm gearshaft (320).

(d) Install bearings (305) on the worm gearshaft (320) with grease. Refer to SOPM 20-50-03.

(e) Apply a gear marking compound to the tooth on the worm gearshaft (320).

NOTE: The compound is applied for a check of the tooth contact pattern. Other parts must be installed before the check can be done.

(f) Install the worm gearshaft (320) and the spur gear (310) in the housing assembly (445).

(g) Install the cover assembly (245).

1) Install shims (300) in the cover assembly (245). For the initial adjustment, use the same thickness shim as was recorded during disassembly. Refer to 27-51-39/301, DISASSEMBLY.

2) Install the cover assembly (245) on housing assembly (445) with the bolts (250) and washers (255). Install the bolts with primer on all areas of the holes. Tighten the bolts to 50-70 lb-in.

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3) Do a check of the end play of the worm gearshaft (320) and the spur gear (315). If the end play of the worm gearshaft is not zero, remove the cover assembly (245) and adjust the thickness of the applicable shim (300) until the end play is removed. If the end play of the spur gear is not 0.002-0.005 inch, adjust the thickness of the applicable shim (300) until the measurement is in the correct range.

4) Install the cover assembly (245) on the housing assembly (445) with the bolts (250) and washers (255). Install the bolts with primer on all areas of the holes. Tighten the bolts to 50-70 lb-in.

5) Install the housing assembly (195) on the cover assembly (245) with bolts (200, 205) and washers (210). Install the bolts with primer on all areas of the holes. Tighten the bolts to 50-70 lb-in.

(4) Install the bevel gears (175, 180).

(a) Calculate the necessary thicknesses S3 and S4 for the shims (165).

NOTE: Use the same thicknesses of shims as were recorded during disassembly (Refer to 27-51-39/301, DISASSEMBLY), unless the housing (155), bearings (170), bevel gears (175, 180), or the housing assembly (195) were replaced.

1) Use the bearing width checking equipment A27040-1 to apply a 25-30 pound axial force across the bearing (170) races. Measure the bearing from one side of the inner race to the opposite side of the outer race to a tolerance of 0.001 inch. Refer to Fig. 705.

2) Use the width C of the bearing (170) to be installed in the housing (155), to calculate the shim thickness S3, as shown in Fig. 705.

3) Use the width D of the bearing (170) to be installed in the housing assembly (195) to calculate the shim thickness S4, as shown in Fig. 705.

4) Mix the minimum number of different shims (165 thru 165D) to get approximately the calculated values S3 and S4. The difference between the thickness of each shim stack and S3 or S4 must be 0.0015 inch or less.

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(b) Install the shims (165) in the housing (155) and the housing assembly (195). Make sure that the correct shim thickness S3 or S4 is used in the applicable location.

(c) Install the bearings (170) on the gears (175, 180) with grease. Refer to SOPM 20-50-03. Make sure that each bearing is installed on the bevel gear used to calculate the applicable shim thickness.

(d) Install the bevel gear (180) in the housing assembly (195).

(e) Install the spacer (185) and the spur gear (190) on the bevel gear (180).

(f) Install the bearing (160) on the bevel gear (180) with grease. Refer to SOPM 20-50-03.

(g) Install the bearing (160) on the bevel gear (175) with grease. Refer to SOPM 20-50-03.

(h) Install the bevel gear (175) in the housing (155).

(i) Install the bearing shields (140) against the bearings (160) on the bevel gears (175, 180). Fill the spaces between the bearing shields and the bearings with grease.

(j) Install the molded sleeves (135) on the coupling halves (130).

(k) Install the coupling sleeves (115) on the coupling halves (130).

(l) Install the coupling halves (130) with the coupling sleeves (115) on the bevel gears (175, 180).

(m) Install washers (125) and nuts (120) on the bevel gears (175, 180). Tighten the nuts (120) to 600-800 lb-in.

(n) Install the housing (155) and bevel gear (175) on the housing assembly (195) with bolts (145) and washers (150). Install the bolts with primer on all areas of the holes. Tighten the bolts to 50-70 lb-in.

(5) Do a check of the worm gear tooth contact pattern.

(a) Apply a 5-20 lb-in. resistance load to the worm gear assembly (345).

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(b) Turn the output shaft five or more turns in each direction.

(c) Remove the cover assembly (245) and examine the tooth contact pattern on the worm gear.

(d) Make sure that the pattern is a minimum of 50 percent of the width of the tooth face. Also make sure that the pattern does not go off the edge of the tooth.

(e) Clean the gears until no marking compound can be seen. Refer to SOPM 20-30- 03.

NOTE: If Prussian Blue is used, then it is not necessary to completely remove all indications of the compound.

(f) Assemble the parts that were removed for the check.

(6) Do a check of the backlash. Refer to 27-51-39/101, TESTING & FAULT ISOLATION.

(a) If the backlash is not 0.003-0.007 inch at the pitch diameter of the bevel gears (175, 180), disassemble the housing (155) and bevel gears from the housing assembly (195).

(b) Add or remove shims (165) to get the correct 0.003-0.007 inch backlash.

(7) Complete the assembly.

(a) Install the bolt (235) and shim (240) on the cover assembly (245).

(b) Adjust the thickness of the shim (240) to get 0.010-0.025 inch clearance between the bolt (235) and the cam follower bearing (440) as shown in Fig. 704.

(c) Remove the bolt (235) and install it with primer on all areas of the hole. Tighten the bolt to 20-25 lb-in.

(d) Make sure that the drain holes are free from grease, then install the drain covers (110) on the housing assemblies (195, 445) with the bolts (100) and washers (105). Install the bolts with primer on all areas of the holes. Tighten the bolts to 20-25 lb-in.

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(e) Install the bushings (30) in the retainers (25). Install the retainers on the bracket assembly (35) and the crank assembly (60) with bolts (10), washers (15), and nuts (20). Tighten the nuts to 20-25 lb-in.

(f) Install the bearing shield (95) against the bearing (305) on the splined shaft (420). Fill the space between the bearing shield and the bearing with grease.

(g) Install the shim (90) and the crank assembly (60) on the splined shaft (420) with the bolt (65), washer (70), and nut (75). Adjust the thickness of the shim to fill the space between the bearing shield and the crank assembly. Tighten the nut to 50-70 lb-in.

(h) Install the bracket assembly (35) on the housing assembly (445) with bolts (40) and washers (45). Install the bolts with primer on all areas of the holes. Tighten the bolts to 20-25 lb-in.

WARNING: THE SPRINGS (5) TRANSMIT A LARGE FORCE WHEN THEY ARE INSTALLED. BE VERY CAREFUL WHEN YOU INSTALL THE SPRINGS OR INJURY TO PERSONNEL CAN OCCUR.

(i) Install the springs (5) on the retainers (25) on the bracket assembly (35) and the crank assembly (60).

(8) Do the functional test on the assembly. Refer to 27-51-39/101 TESTING & FAULT ISOLATION.

(9) Fillet seal the seams between the bracket assembly (35), housing (155), cover assembly (245), and the housing assemblies (195, 445) with sealant, as shown in Fig. 704.

(10) Fill the dowel pin holes in the housing (155), the housing assembly (195), and the cover assembly (245) with sealant.

(11) Install lockwire on the bolts (40, 145, 200, 205, 235, 250, 280) as shown in Fig. 706. Use the double-twist procedure. Refer to SOPM 20-50-02.

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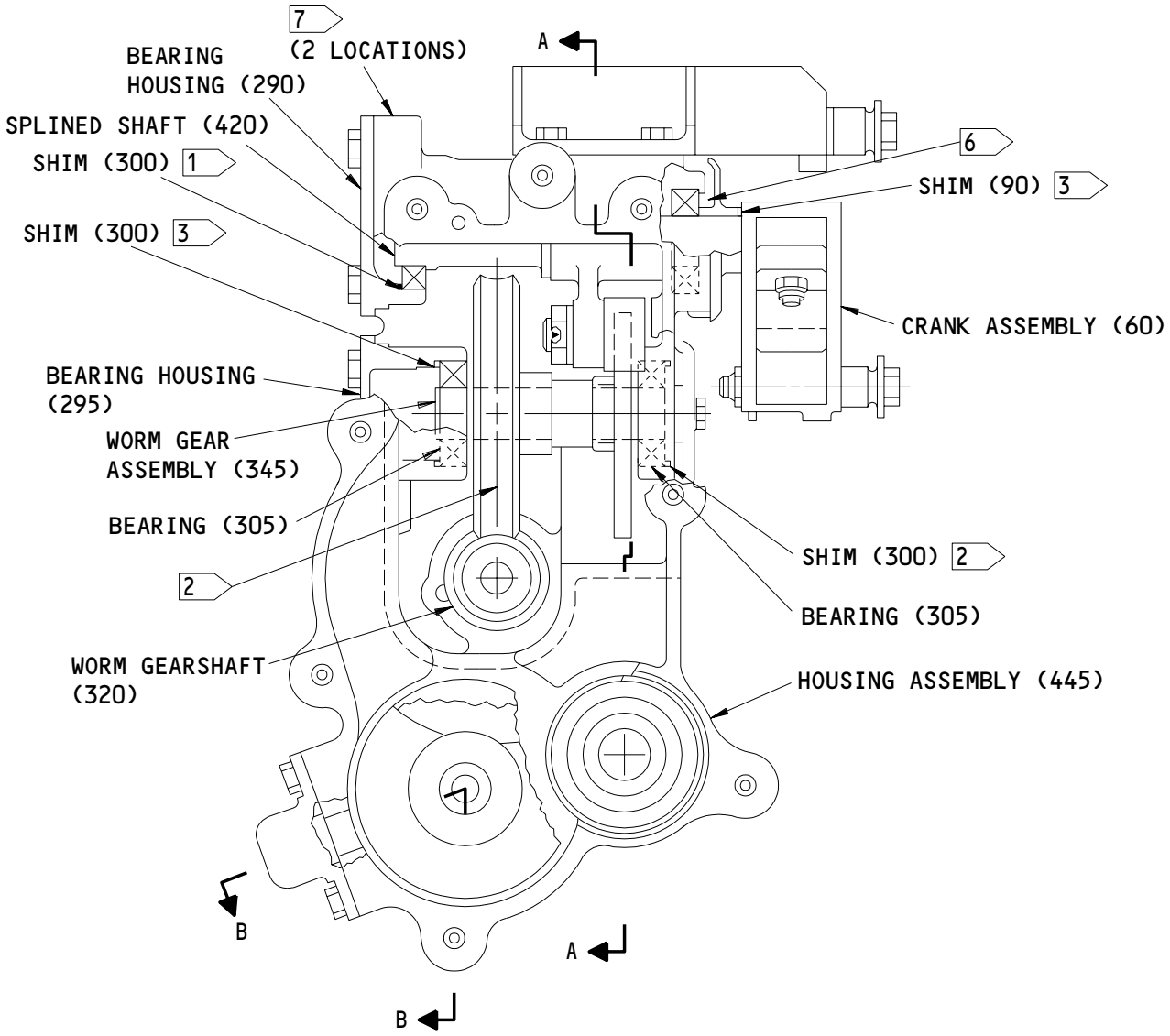

Assembly Details
Figure 704 (Sheet 1)

K35297

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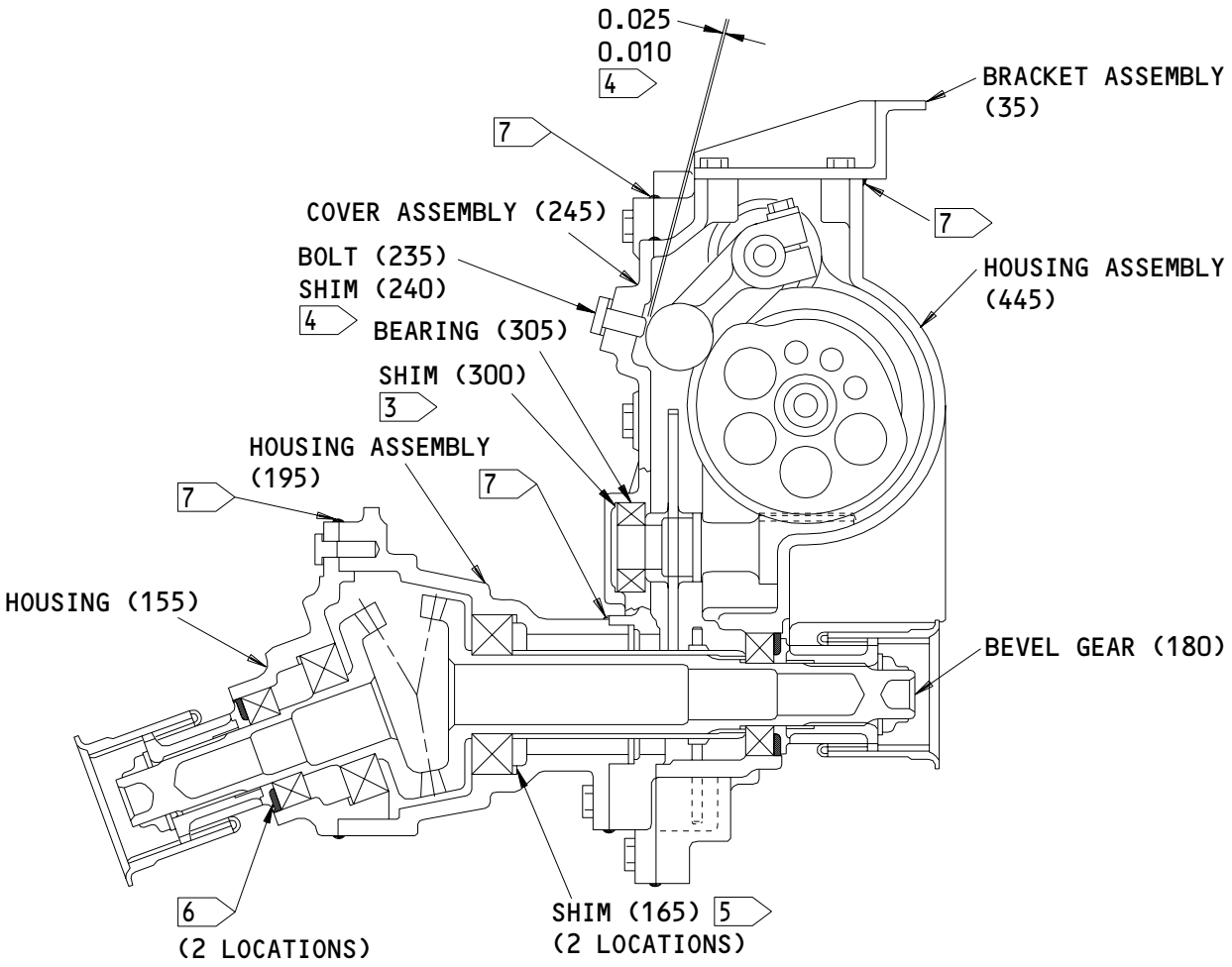
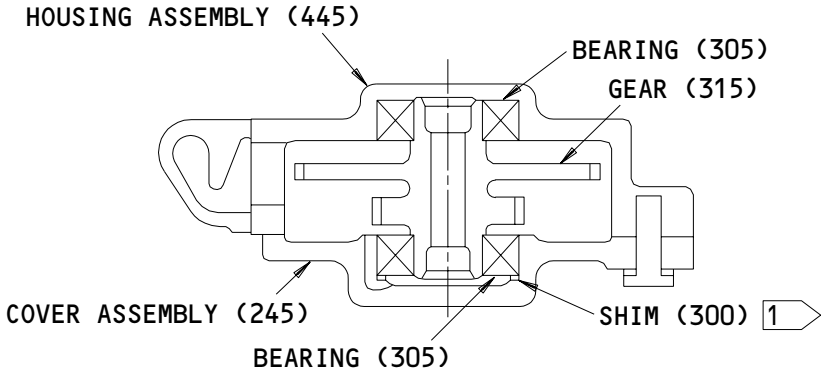


A–A



B–B

Assembly Details
Figure 704 (Sheet 2)

K35382

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1 ADJUST THE SHIM THICKNESS TO GET 0.002-0.005 END PLAY

2 ADJUST THE SHIM THICKNESS TO ALIGN THE WORM GEAR AND THE WORM GEARSHAFT

3 ADJUST THE SHIM THICKNESS TO GET ZERO END PLAY

4 ADJUST THE SHIM THICKNESS TO GET THE CLEARANCE SHOWN

5 REFER TO FIG. 705 FOR THE SHIM ADJUSTMENT PROCEDURE

6 FILL THIS SPACE WITH GREASE

7 FILLET SEAL THE SEAM WITH SEALANT

8 USE THE DOUBLE-TWIST PROCEDURE. REFER TO SOPM 20-50-02

ITEM NUMBERS REFER TO IPL FIG. 2

ALL DIMENSIONS ARE IN INCHES

Assembly Details
Figure 704 (Sheet 3)

K35387

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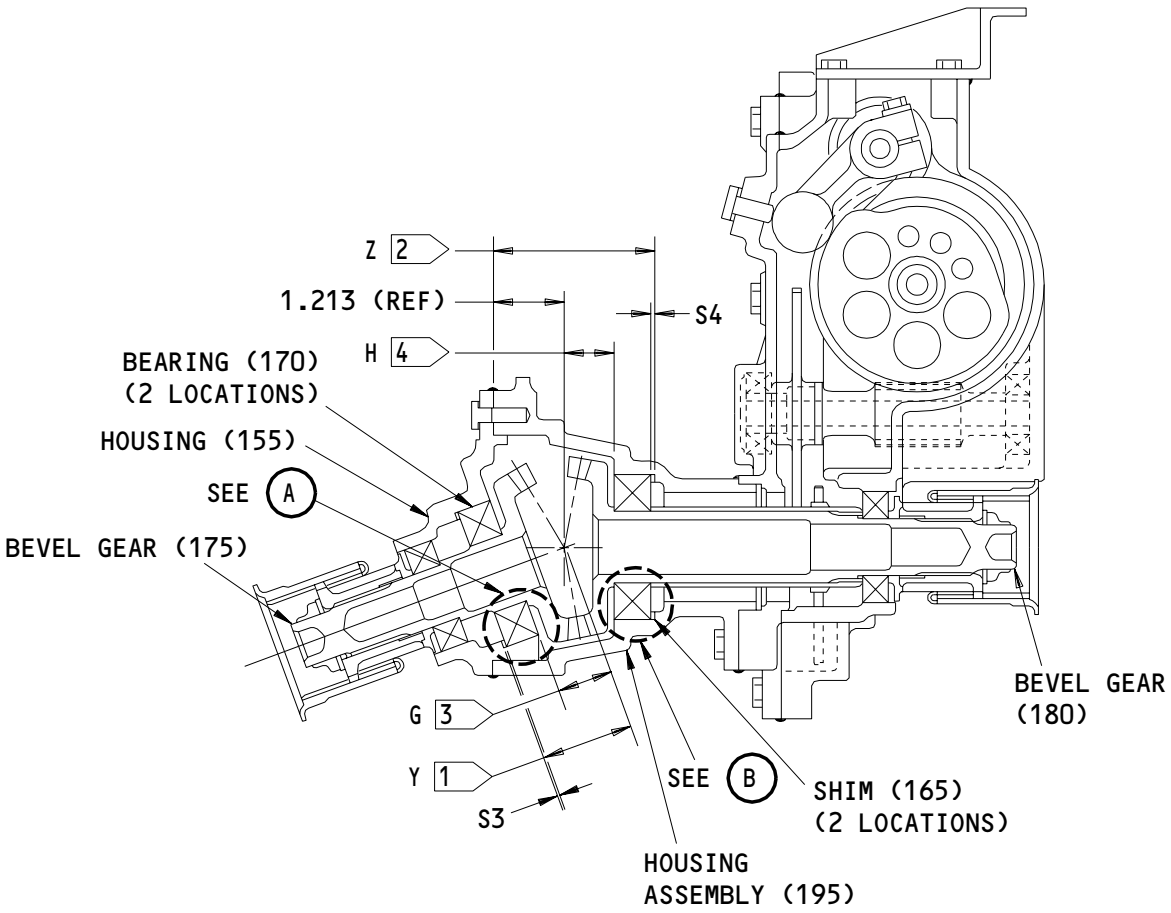

256T6640-2

Bevel Gear Shim Selection
Figure 705 (Sheet 1)

K35402

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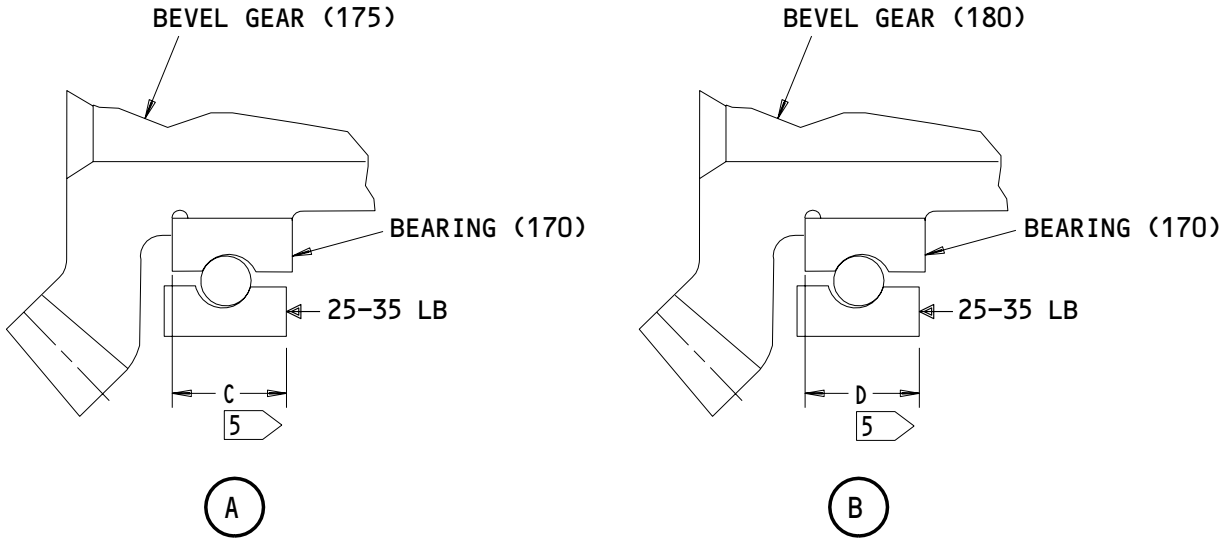

SHIM THICKNESS CALCULATIONS

S3 = Y - G - C
S4 = Z - H - D - 1.213

1 ENGRAVED DIMENSION ON HOUSING (155)

2 ENGRAVED DIMENSION ON HOUSING ASSEMBLY (195)

3 ENGRAVED DIMENSION ON BEVEL GEAR (175)

4 ENGRAVED DIMENSION ON BEVEL GEAR (180)

5 MEASURED WIDTH OF BEARING (170)

ITEM NUMBERS REFER TO IPL FIG. 2

ALL DIMENSIONS ARE IN INCHES

Bevel Gear Shim Selection
Figure 705 (Sheet 2)

K35407

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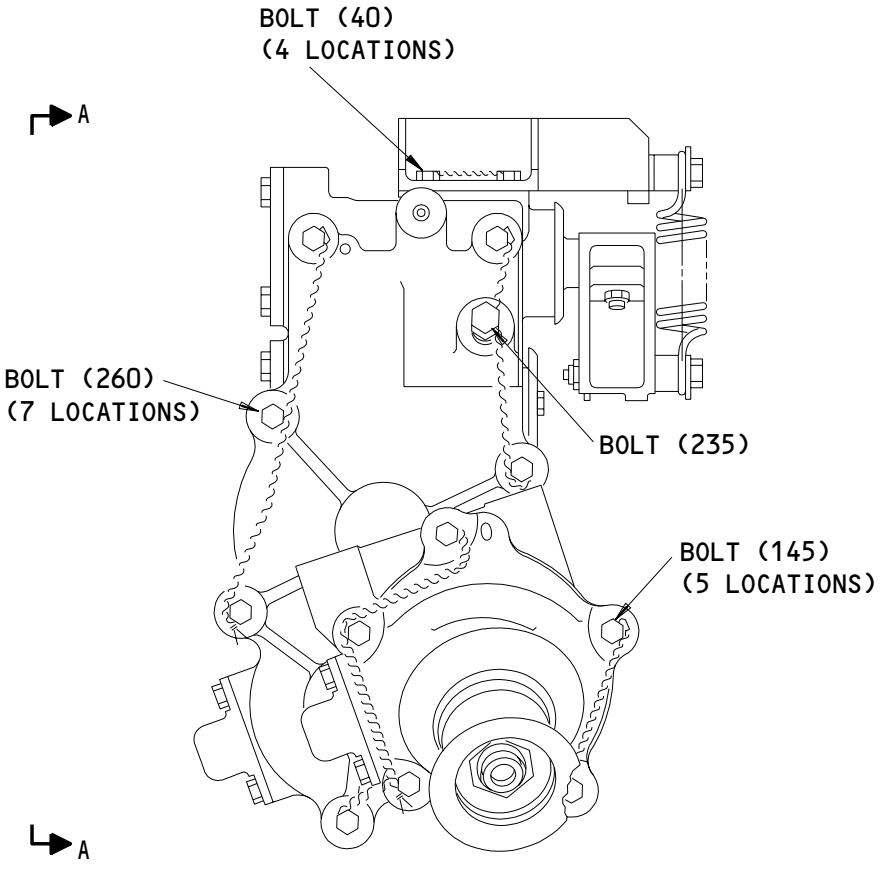

Lockwire Installation Details
Figure 706 (Sheet 1)

K35413

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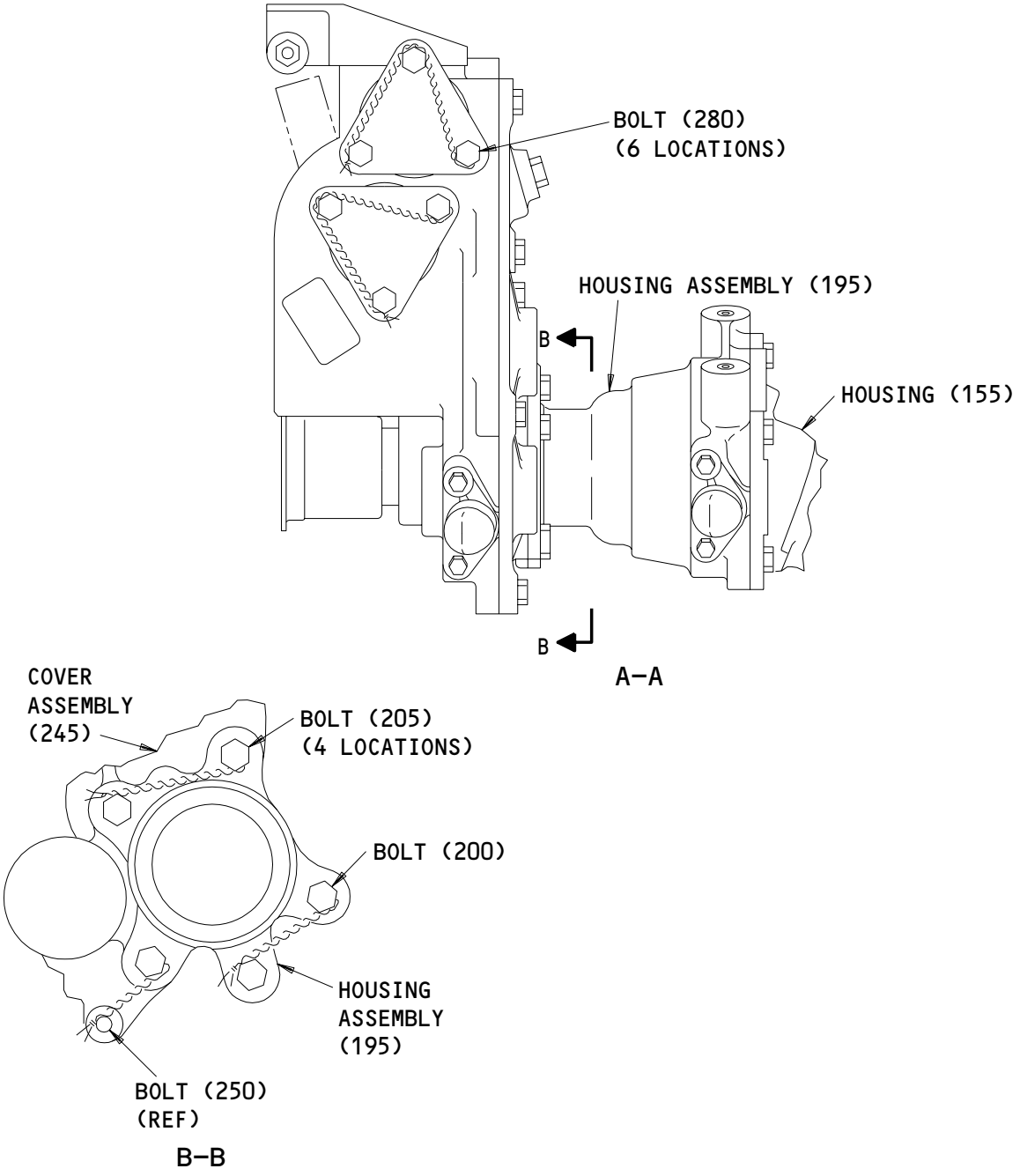

NOTE: INSTALL M520995C32 LOCKWIRE.
USE DOUBLE-TWIST PROCEDURE.
REFER TO SOPM 20-50-02

ITEM NUMBERS REFER TO IPL FIG. 2

Lockwire Installation Details
Figure 706 (Sheet 2)

K35419

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3. Storage

A. Reference

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

B. Procedure

(1) Use standard industry procedures and the information in SOPM 20-44-02 to store this component.

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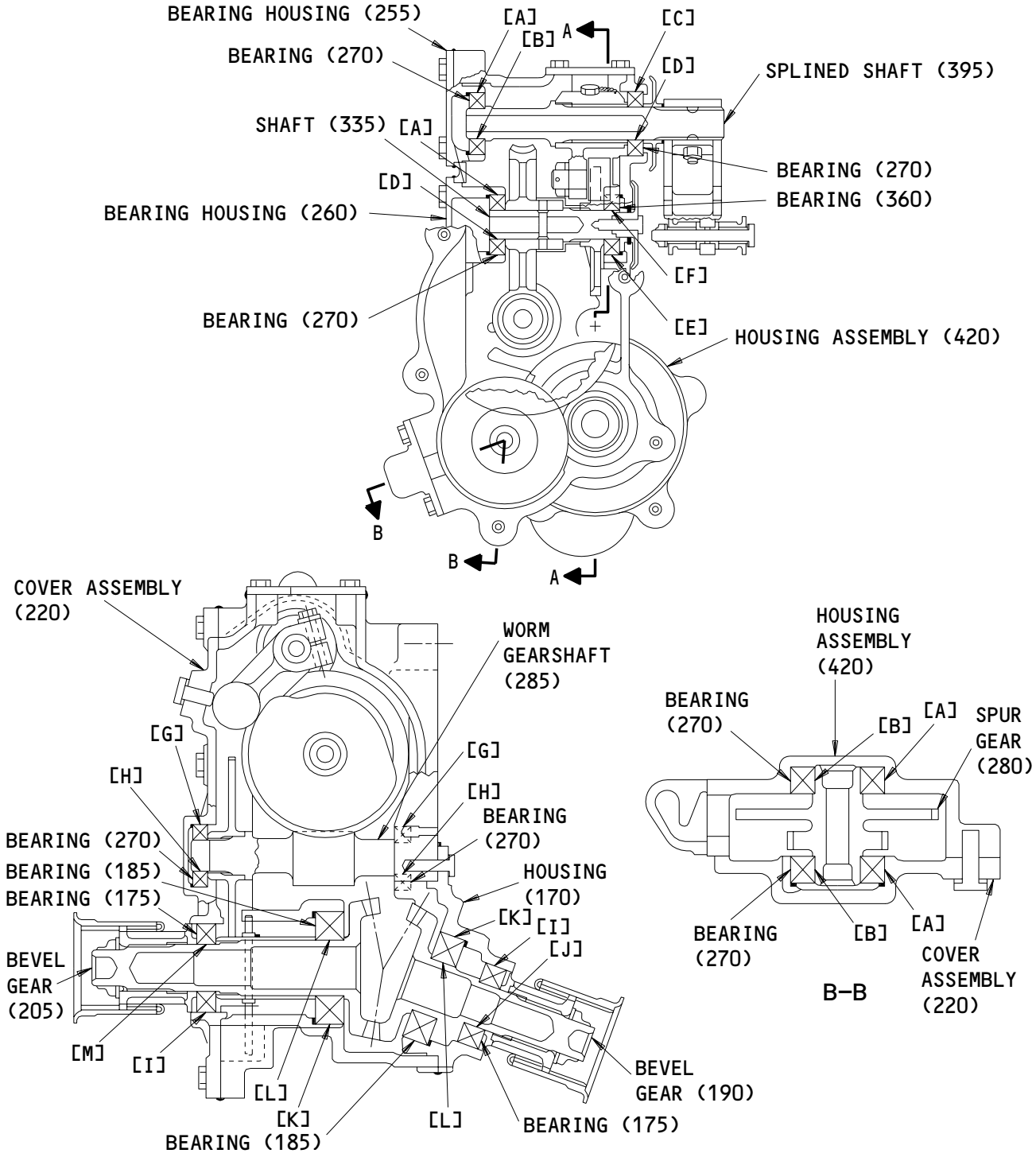

Fits and Clearances
Figure 801 (Sheet 1)

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REF LETTER	REF IPL FIG. 1, MATING ITEM NO.	DESIGN DIMENSION*				SERVICE WEAR LIMIT*		
		DIMENSION		ASSEMBLY CLEARANCE 1		DIMENSION		MAXIMUM CLEARANCE
		MIN	MAX	MIN	MAX	MIN	MAX	
[A]	ID 220,255, 260,420	1.3782	1.3787	0.0002	0.0012		1.3810	0.0030
	OD 270	1.3775	1.3780			1.3752		
[B]	ID 270	0.6690	0.6693	−0.0005	0.0001		0.6696	0.0001
	OD 280,395	0.6692	0.6695			0.6680		
[C]	ID 420	1.3770	1.3775	−0.0010	0.0000		1.3775	0.0000
	OD 270	1.3775	1.3780			1.3775		
[D]	ID 270	0.6690	0.6693	0.0001	0.0007		0.6703	0.0014
	OD 335,395	0.6686	0.6689			0.6676		
[E]	ID 420	1.4569	1.4574	0.0002	0.0012		1.4597	0.003
	OD 360	1.4562	1.4567			1.4540		
[F]	ID 360	0.7870	0.7874	−0.0007	0.0001		0.7877	0.0001
	OD 335	0.7873	0.7877			0.7860		
[G]	ID 220,420	1.3782	1.3787	0.0002	0.0012		1.3810	0.0030
	OD 270	1.3775	1.3780			1.3752		
[H]	ID 270	0.6690	0.6693	−0.0005	0.0001		0.6696	0.0001
	OD 285	0.6692	0.6695			0.6680		
[I]	ID 220,170	1.8506	1.8514	0.0002	0.0015		1.8534	0.0030
	OD 175	1.8499	1.8504			1.8746		

Fits and Clearances
Figure 801 (Sheet 2)

K35797

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REF LETTER	REF IPL FIG. 1, MATING ITEM NO.	DESIGN DIMENSION*				SERVICE WEAR LIMIT*		
		DIMENSION		ASSEMBLY CLEARANCE 1		DIMENSION		MAXIMUM CLEARANCE
		MIN	MAX	MIN	MAX	MIN	MAX	
[J]	ID 175	0.9839	0.9843	-0.0008	-0.0001		0.9848	0.0000
	OD 190	0.9844	0.9847			0.9838		
[K]	ID 170,420	2.4411	2.4421	0.0002	0.0017		2.4439	0.0030
	OD 185	2.4404	2.4409			2.4381		
[L]	ID 185	1.1807	1.1811	-0.0008	-0.0001		1.1812	0.0000
	OD 190,205	0.1812	1.1815			1.1811		
[M]	ID 175	0.9839	0.9843	0.0001	0.0008		0.9853	0.0014
	OD 205	0.9835	0.9838			0.9825		

* ALL DIMENSIONS ARE IN INCHES

1 NEGATIVE VALUES INDICATE INTERFERENCE FIT

Fits and Clearances
Figure 801 (Sheet 3)

K35809

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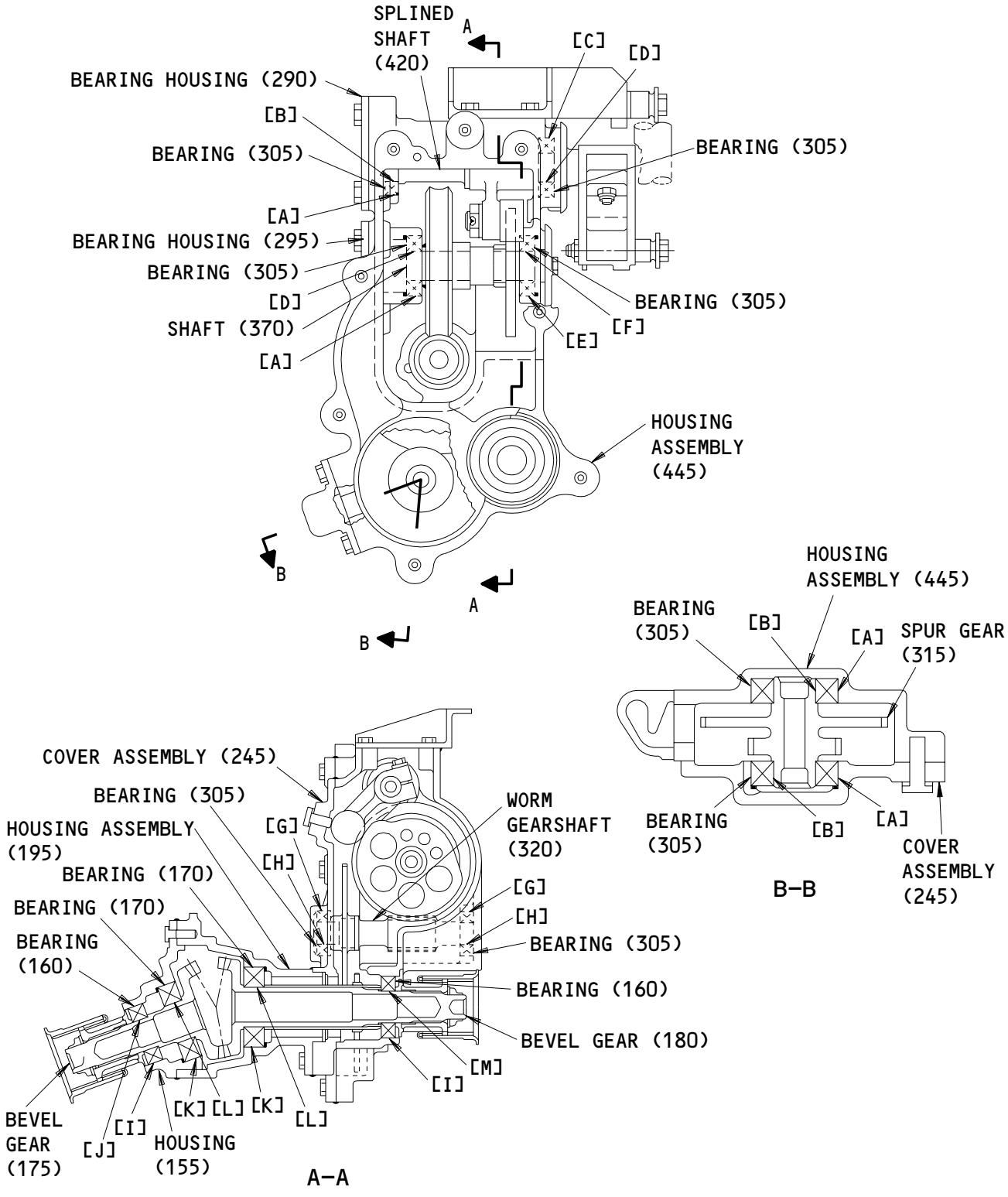

Fits and Clearances
Figure 802 (Sheet 1)

K35431

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REF LETTER	REF IPL FIG. 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]	ID 245,290, 295,445 OD 305	1.3782 1.3775	1.3787 1.3780	0.0002	0.0012	1.3752	1.3810	0.0030
[B]	ID 305 OD 315,420	0.6690 0.6692	0.6693 0.6695	-0.0005	0.0001	0.6686	0.6696	0.0001
[C]	ID 445 OD 305	1.3770 1.3775	1.3775 1.3780	-0.0010	0.0000	1.3775	1.3775	0.0000
[D]	ID 305 OD 370,420	0.6690 0.6686	0.6693 0.6689	0.0001	0.0007	0.6676	0.6703	0.0014
[E]	ID 445 OD 305	1.3782 1.3775	1.3787 1.3780	0.0002	0.0012	1.3752	1.3810	0.0030
[F]	ID 305 OD 370	0.6690 0.6691	0.6693 0.6694	-0.0004	0.0002	0.6686	0.6698	0.0004
[G]	ID 245,445 OD 305	1.3782 1.3775	1.3787 1.3780	0.0002	0.0012	1.3752	1.3810	0.0030
[H]	ID 305 OD 320	0.6690 0.6692	0.6693 0.6695	-0.0005	0.0001	0.6689	0.6696	0.0001
[I]	ID 155,445 OD 160	1.8506 1.8499	1.8514 1.8504	0.0002	0.0015	1.8476	1.8534	0.0030

Fits and Clearances
Figure 802 (Sheet 2)

K35445

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REF LETTER	REF IPL FIG. 2, MATING ITEM NO.	DESIGN DIMENSION*				SERVICE WEAR LIMIT*		
		DIMENSION		ASSEMBLY CLEARANCE 1		DIMENSION		MAXIMUM CLEARANCE
		MIN	MAX	MIN	MAX	MIN	MAX	
[J]	ID 160	0.9839	0.9843	-0.0008	-0.0001		0.9848	0.0000
	OD 175	0.9844	0.9847			0.9838		
[K]	ID 155,195	2.4411	2.4421	0.0002	0.0017		2.4439	0.0030
	OD 170	2.4404	2.4409			2.4381		
[L]	ID 170	1.1807	1.1811	-0.0008	-0.0001		1.1812	0.0000
	OD 175,180	0.1812	1.1815			1.1811		
[M]	ID 160	0.9839	0.9843	0.0001	0.0008		0.9853	0.0014
	OD 180	0.9835	0.9838			0.9825		

* ALL DIMENSIONS ARE IN INCHES

1 NEGATIVE VALUES INDICATE INTERFERENCE FIT

Fits and Clearances
Figure 802 (Sheet 3)

K35448

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REF IPL		NAME	TORQUE*	
FIG. NO.	ITEM NO.		POUND-INCHES	POUND-FEET
1	5,115,210, 290	Bolt	20-25	
1	55,160, 225,245, 385	Bolt	50-70	
1	35,90,380	Nut	50-70	
1	135	Nut	600-800	
2	100,235, 325	Bolt	20-25	
2	40,145, 200,205, 250,280, 410	Bolt	50-70	
2	20,75,400	Nut	50-70	
2	120	Nut	600-800	

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

Torque Table
Figure 803

K35811

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SPECIAL TOOLS AND EQUIPMENT

NOTE: Equivalent tools and equipment can be used.

1. A27040-1 -- Checking Equipment, Bearing Width
2. A27046-8 -- Test Equipment (used with A27046-191 and -192)
3. A27046-191 -- Test Fixture (for left-side assembly 256T6640-1)
4. A27046-192 -- Test Fixture (for right-side assembly 256T6640-2)
5. A27055-1 -- Shim Thickness Fixture, Worm Gear

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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.

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VENDORS

05939 FURON CO MECHANICAL SEAL DIV
4412 CORPORATE CENTER DRIVE PO BOX 520
LOS ALAMITOS, CALIFORNIA 90720-2410

15653 KAYNAR TECHNOLOGY KAYNAR DIV
800 SOUTH STATE COLLEGE BLVD PO BOX 3001
FULLERTON, CALIFORNIA 92634-3001

21335 TORRINGTON CO FAFNIR BEARING DIV
59 FIELD STREET
TORRINGTON, CONNECTICUT 06790-4942

21760 SCHATZ MANUFACTURING CO
FAIRVIEW AVENUE PO BOX 1191
POUGHKEEPSIE, NEW YORK 12601

29337 HOOVER GROUP INC BALL AND ROLLER DIV
2220 PENDLEY ROAD PO BOX 899
CUMMING, GEORGIA 30130-8671

38443 MRC BEARINGS
402 CHANDLER STREET
JAMESTOWN, NEW YORK 14701-3802

40920 MPB MINIATURE PRECISION BEARING DIV
PRECISION PARK PO BOX 547
KEENE, NEW HAMPSHIRE 03431

43991 FAG BEARING INCORPORATED
118 HAMILTON AVENUE
STAMFORD, CONNECTICUT 06904

72962 HARVARD INDUSTRIES INC
3 WERNER WAY SUITE 210
LEBANON, NEW JERSEY 08833

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

92215 FAIRCHILD IND INC FAIRCHILD AEROSPACE FASTENER DIV
3010 W LOMITA BLVD
TORRANCE, CALIFORNIA 90505-5102

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VENDORS

97928 DEUTSCH FASTENER CORP
3969 PARAMONT BOULEVARD
LAKEWOOD, CALIFORNIA 90712-4193

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PART NUMBER	AIRLINE PART NO.	FIG.	ITEM	TTL REQ
AR10400-016GC		1	305	1
		2	340	1
BACB10AZ30PP		1	185	2
		2	170	2
BACB10BA17PP		1	270	7
		2	305	8
BACB10BA25PP		1	175	2
		2	160	2
BACB10BB20PP		1	360	1
BACB10FK7F8HS		1	415	1
		2	440	1
BACB28AA4C016		1	65	2
		1	95	2
		2	50	2
		2	80	2
BACB28AK04-068		1	45	4
		2	30	4
BACB30LU4-15		1	80	1
		2	65	1
BACB30NF4-30		1	25	2
		2	10	2
BACN10JC12CD		1	135	2
		2	120	2
BACN10JC4CD		1	35	2
		1	90	1
		2	20	2
		2	75	1
BACN11N107CD		1	380	1
		2	400	1
BACP18BC03A08P		1	370	1
		2	395	1
BMN4122CPD8-12		1	135	2
		2	120	2
C004RRP0ZZ		1	360	1
C103RRP0ZZ		1	270	7
		2	305	8
C103RRP1P17LY19		1	270	7
		2	305	8
C105RRPP1P28LY1		1	175	2
		2	160	2

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PART NUMBER	AIRLINE PART NO.	FIG.	ITEM	TTL REQ
C105RRP0ZZ		1	175	2
		2	160	2
H51650-12BAC		1	135	2
		2	120	2
LL103KS		1	270	7
LL103KS		2	305	8
LL103KSG20		1	270	7
		2	305	8
LL105KS		1	175	2
		2	160	2
LL206S		1	185	2
		2	170	2
MS16562-21		1	430	2
		2	450	2
MS21209F1-10P		1	440	2
		2	225	2
		2	470	2
MS21209F1-15P		1	330	1
		1	445	4
		2	365	1
		2	465	4
MS21209F4-15P		1	405	1
		1	435	23
		2	220	7
		2	270	4
		2	430	1
		2	460	14
MS21209F5-10P		1	235	1
		2	265	1
NAS1149D0363J		1	10	4
		1	120	2
		1	295	1
		2	45	4
		2	105	4
		2	330	1

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PART NUMBER	AIRLINE PART NO.	FIG.	ITEM	TTL REQ
NAS1149D0463J		1	30	4
		1	60	2
		1	85	1
		1	165	5
		1	230	7
		1	250	6
		1	390	1
		2	15	4
		2	70	1
		2	150	5
		2	210	5
		2	255	6
		2	285	6
		2	415	1
NAS1149D0763J		1	375	1
NAS1149D0763J		2	405	1
NAS1149F1290P		1	140	2
		2	125	2
NAS565-21		1	210	1
		2	235	1
NAS607-3-4P		1	425	2
		2	455	1
NAS607-3-5P		2	215	1
		2	260	1
NAS6603-10		1	290	1
NAS6603-2		1	115	2
		2	100	4
NAS6603-4		2	325	1
NAS6603H2		1	5	4
NAS6603H3		2	40	4
NAS6604H10		1	385	1
		2	410	1
NAS6604H16		2	200	1
NAS6604H4		1	160	5
		1	245	6
		2	145	5
		2	205	4
		2	280	6

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PART NUMBER	AIRLINE PART NO.	FIG.	ITEM	TTL REQ
NAS6604H5		1	225	7
		2	250	6
NAS6604H6		1	55	2
PKTLL004P1		1	360	1
PKTLL103P1		1	270	7
		2	305	8
PKTLL105P1		1	175	2
		2	160	2
102LH9074-12		1	135	2
		2	120	2
1206LLT1C1-01		1	185	2
		2	170	2
1904LLT1C1-01		1	360	1
206FTT		1	185	2
		2	170	2
256T3414-1		1	155	2
		2	140	2
256T3415-1		1	180	2
		2	165	2
256T3415-2		1	180A	2
		2	165A	2
256T3415-3		1	180B	2
256T3415-3		2	165B	2
256T3415-4		1	180C	2
		2	165C	2
256T3415-5		1	180D	2
		2	165D	2
256T3435-1		1	220	1
256T3435-2		1	240	1
256T3437-1		2	245	1
256T3437-2		2	275	1
256T3438-1		1	170	1
256T3438-2		2	155	1
256T3440-1		2	195	1
256T3440-2		2	230	1
256T3441-1		1	260	1
		2	295	1
256T3441-2		1	255	1
		2	290	1
256T3442-1		1	190	1
		2	175	1
256T3443-1		1	205	1

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PART NUMBER	AIRLINE PART NO.	FIG.	ITEM	TTL REQ
256T3444-1		2	180	1
256T3446-1		1	195	1
		2	190	1
256T3447-1		1	280	1
		2	315	1
256T3448-1		1	275	1
		2	310	1
256T3450-1		2	335	1
256T3451-1		2	360	1
256T3451-2		2	370	1
256T3452-1		1	395	1
256T3452-2		2	420	1
256T3453-1		1	200	1
256T3453-2		2	185	1
256T3454-1		1	110	1
		2	95	1
256T3455-1		2	375	1
256T3456-1		1	75	1
256T3456-2		1	100	1
256T3457-1		1	400	1
		2	425	1
256T3457-2		1	410	1
		2	435	1
256T3458-1		1	315	1
		2	350	1
256T3459-1		1	265	4
		2	300	5
256T3459-2		1	265A	4
		2	300A	5
256T3459-3		1	265B	4
		2	300B	5
256T3459-4		1	265C	4
		2	300C	5
256T3459-5		1	265D	4
		2	300D	5
256T3460-1		1	105	1
		2	90	1
256T3460-2		1	105A	1
		2	90A	1

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PART NUMBER	AIRLINE PART NO.	FIG.	ITEM	TTL REQ
256T3460-3		1	105B	1
		2	90B	1
256T3460-4		1	105C	1
		2	90C	1
256T3460-5		1	105D	1
		2	90D	1
256T3462-1		1	215	1
		2	240	1
256T3462-2		1	215A	1
		2	240A	1
256T3462-3		1	215B	1
		2	240B	1
256T3462-4		1	215C	1
		2	240C	1
256T3462-5		1	215D	1
		2	240D	1
256T3463-1		1	20	2
		2	5	2
256T3464-1		1	40	4
		2	25	4
256T3465-1		1	50A	1
256T3465-2		1	70A	1
256T3465-3		1	50	1
256T3465-4		1	70	1
256T3466-1		2	60	1
256T3466-2		2	85	1
256T3467-1		1	15	1
256T3470-1		2	35	1
256T3470-2		2	55	1
256T3471-1		2	385	1
256T3471-2		1	350	1
256T3473-1		1	325	1
256T3473-2		1	335	1
256T3475-1		1	300	1
256T3476-1		1	340	1
256T3477-1		1	365	1
256T3477-2		1	365A	1
256T3477-3		1	365B	1

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PART NUMBER	AIRLINE PART NO.	FIG.	ITEM	TTL REQ
256T3477-4		1	365C	1
256T3477-5		1	365D	1
256T3749-1		1	145	2
		2	130	2
256T5124-5		1	460A	1
256T5124-6		2	480	1
256T5124-7		1	455	1
		2	485	1
256T6640-1		1	1A	RF
		2	1	RF
256T6641-1		1	420	1
256T6641-2		1	450	1
256T6642-1		2	445	1
256T6642-2		2	475	1
256T6645-1		1	345	1
256T6645-2		1	355	1
256T6646-1		2	380	1
256T6646-2		2	390	1
256T6647-1		1	310	1
256T6648-1		2	345	1
256T6649-1		1	320	1
		2	355	1
256T6653-1		1	285	1
		2	320	1
6003TT		1	270	7
		2	305	8
6005TT		1	175	2
		2	160	2
65B81978-3		1	125	1
		2	110	2
65B84033-18		1	150	2
		2	135	2
65B84034-3		1	130	2
		2	115	2
69235-1216CD		1	135	2
		2	120	2
9103LLT1C1-01		1	270	7
9103LLT1C1-01		2	305	8
9103NPPFS428		1	270	6
		2	305	8
9105LLT1C1-01		1	175	2
		2	160	2

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PART NUMBER	AIRLINE PART NO.	FIG.	ITEM	TTL REQ
9105NPPFS428		1	175	2
		2	160	2
9304PPPRBFS428		1	360	1
99206		1	185	2
		2	170	2
993L03		1	270	7
		2	305	8
993L05		1	175	2
		2	160	2

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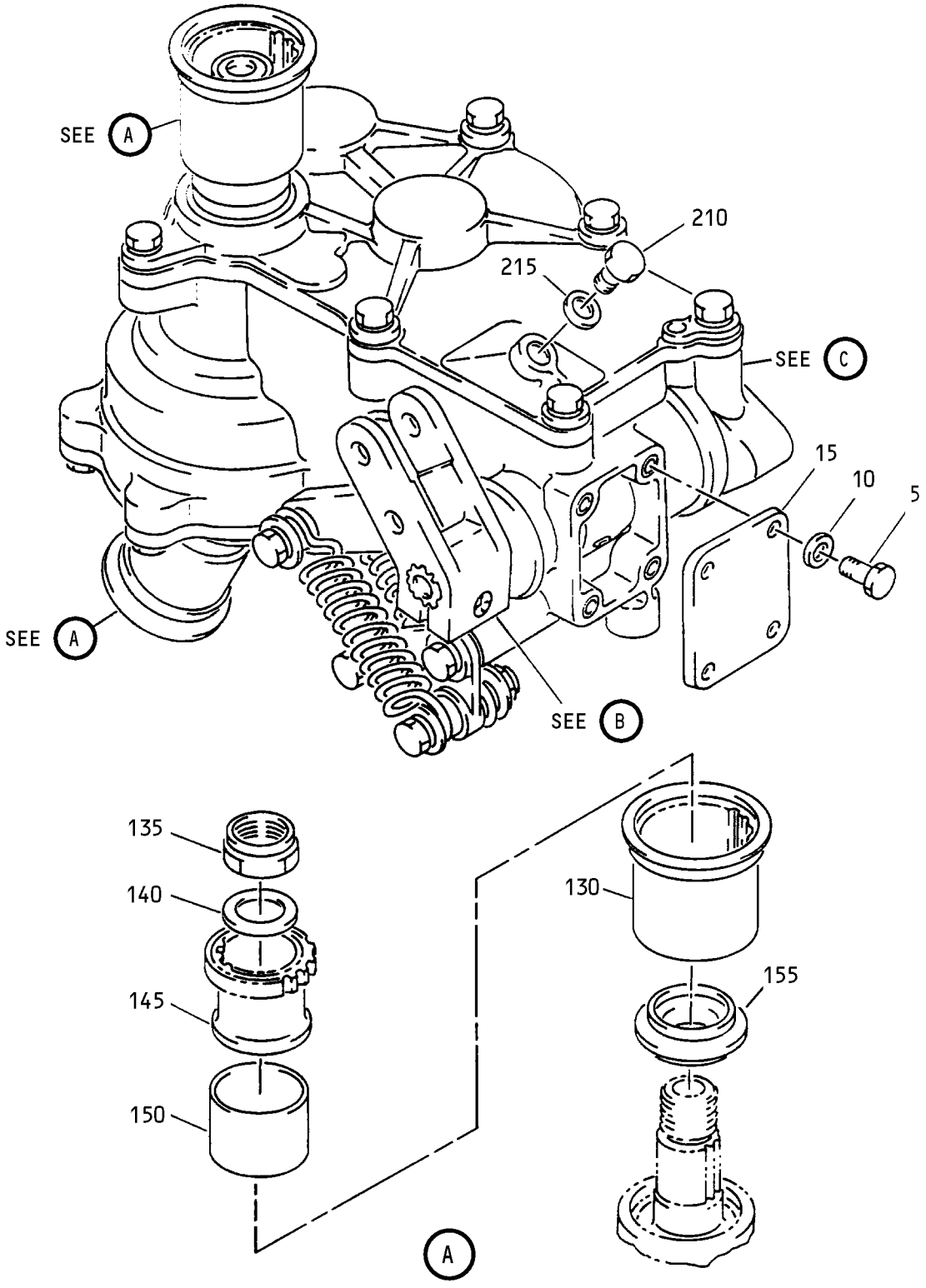

Trailing Edge Flap Drive Angle Gearbox and
Aileron Droop Input Control Mechanism Assembly
Figure 1 (Sheet 1)

K38976

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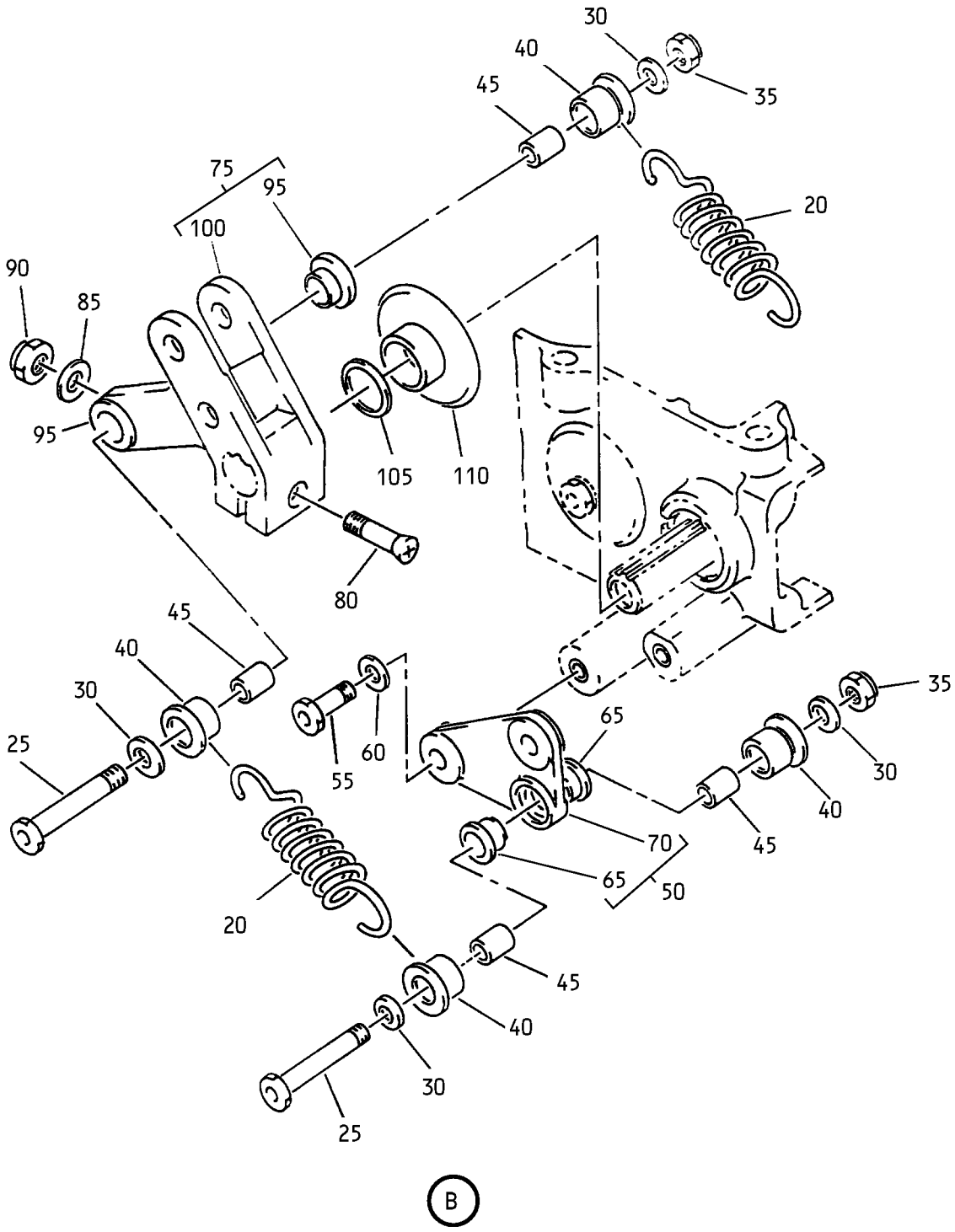

Trailing Edge Flap Drive Angle Gearbox and
Aileron Droop Input Control Mechanism Assembly
Figure 1 (Sheet 2)

K38981

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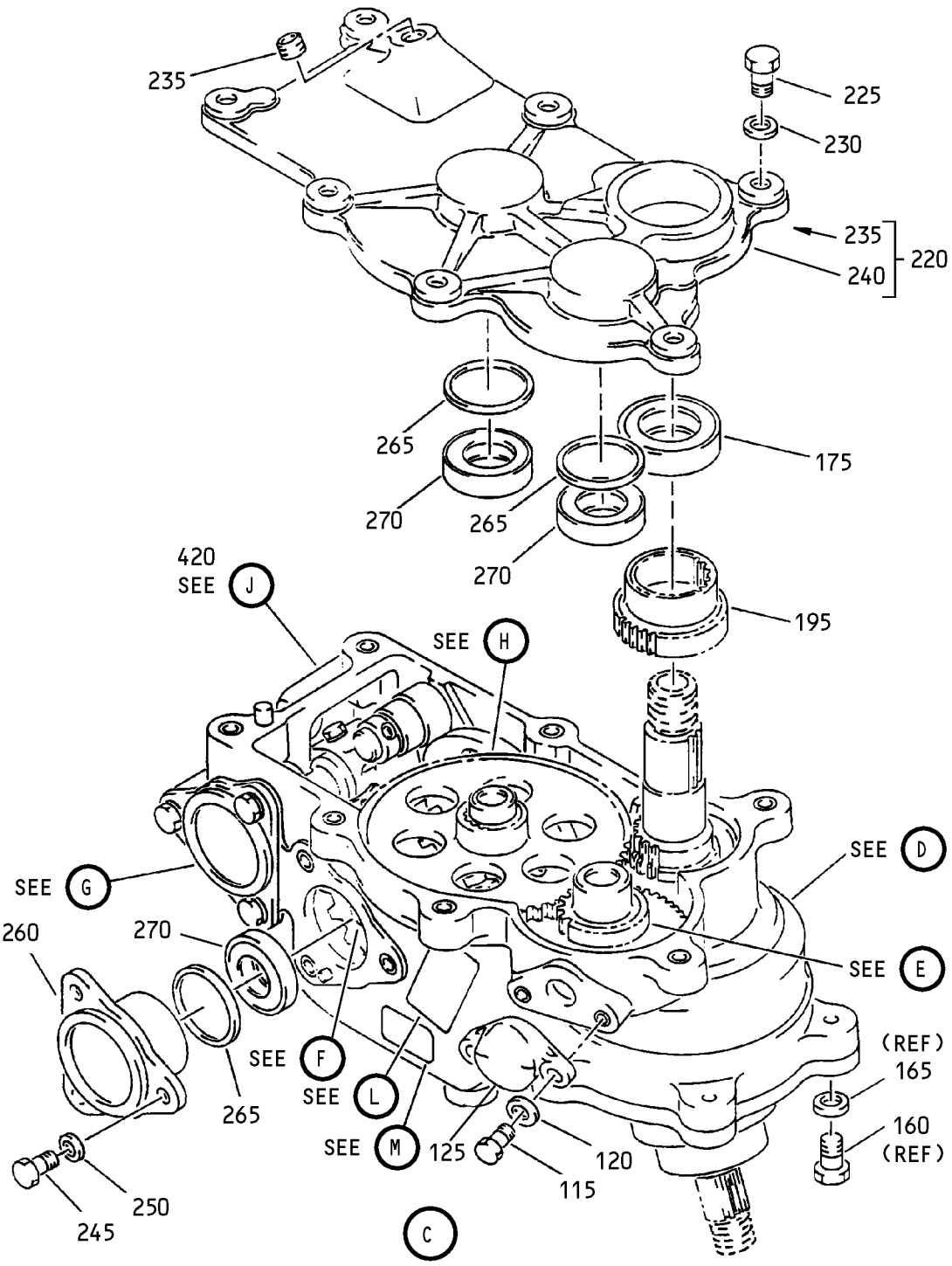

Trailing Edge Flap Drive Angle Gearbox and
Aileron Droop Input Control Mechanism Assembly
Figure 1 (Sheet 3)

K38987

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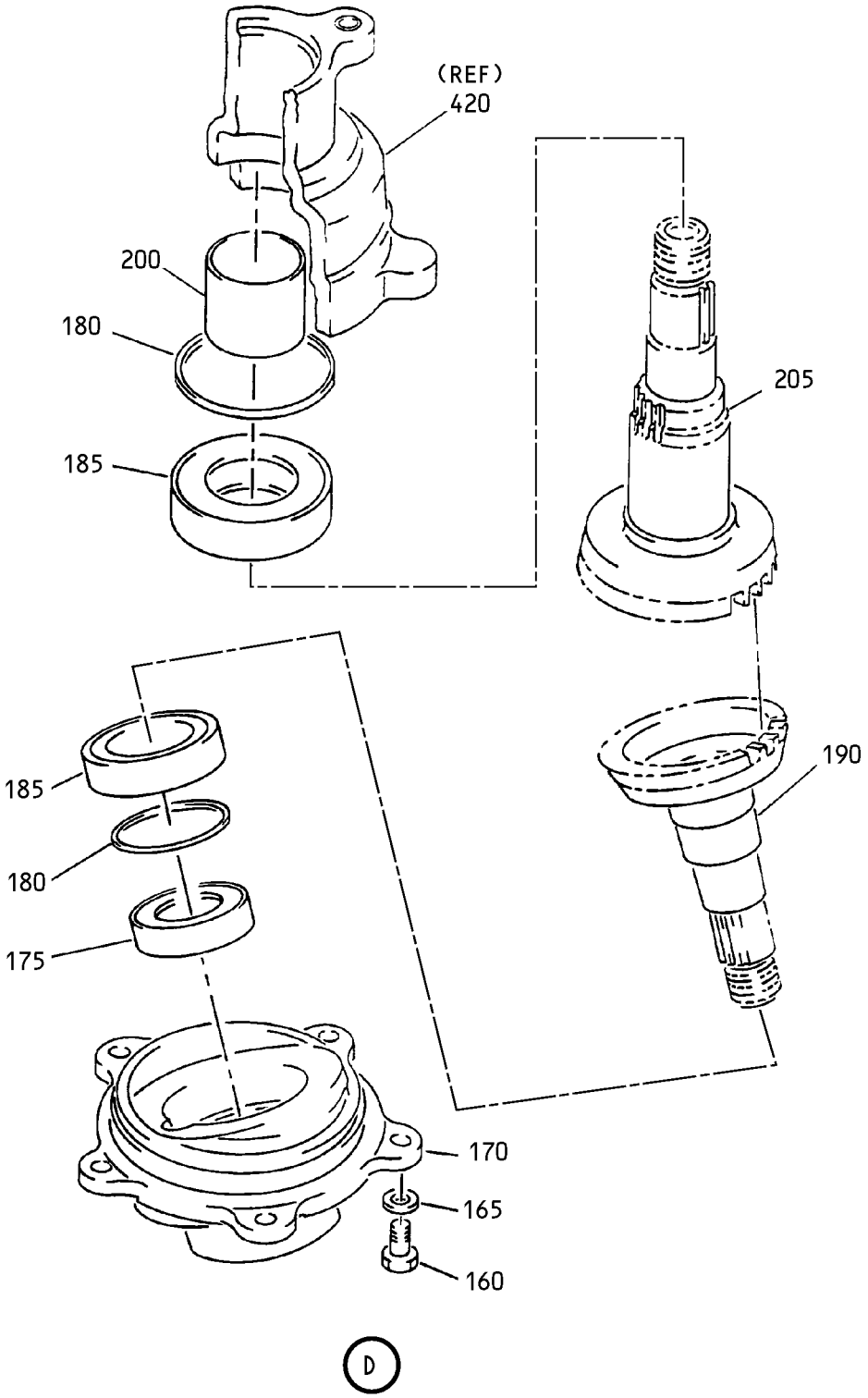

Trailing Edge Flap Drive Angle Gearbox and
Aileron Droop Input Control Mechanism Assembly
Figure 1 (Sheet 4)

K38995

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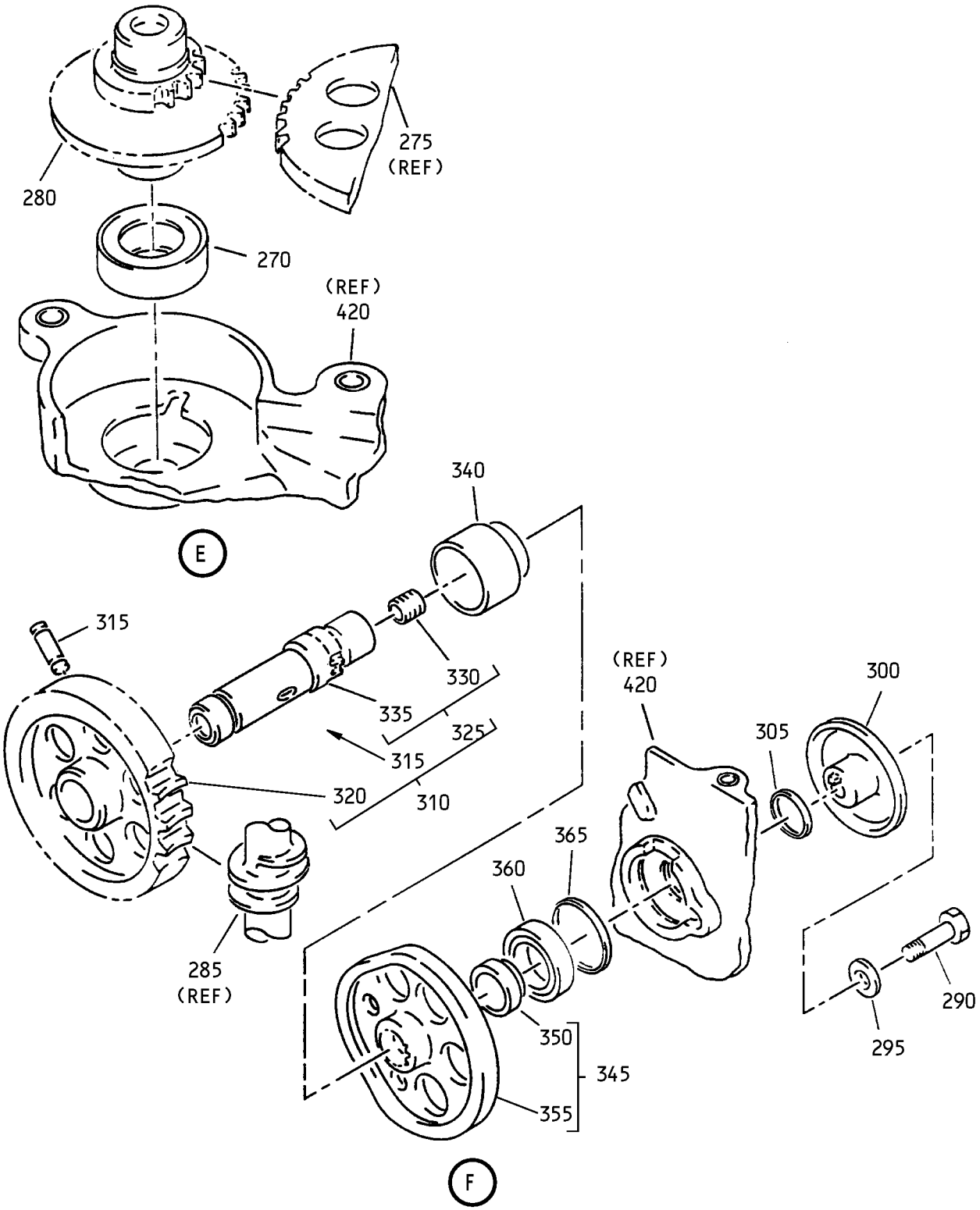

Trailing Edge Flap Drive Angle Gearbox and
Aileron Droop Input Control Mechanism Assembly
Figure 1 (Sheet 5)

K38999

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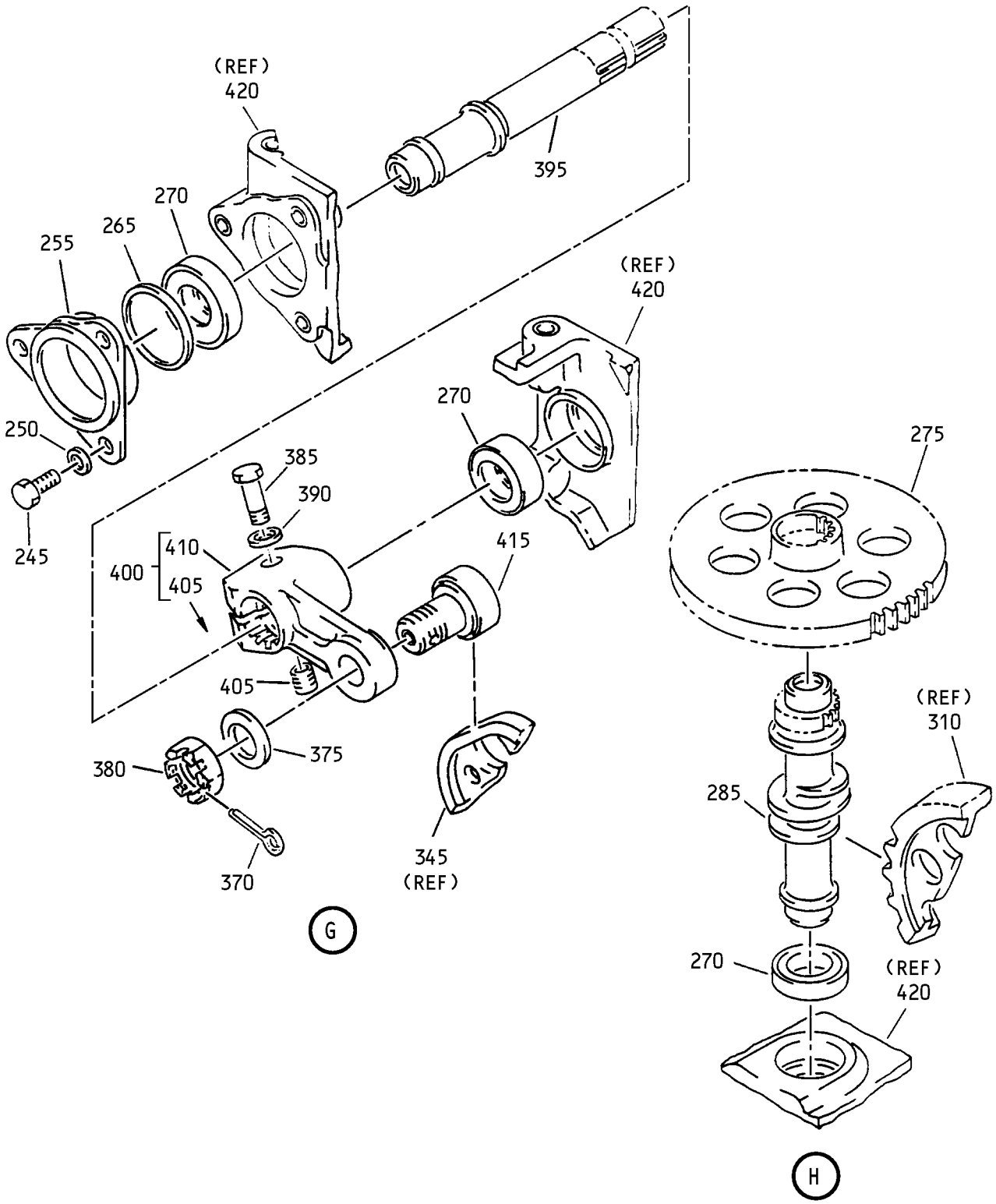

Trailing Edge Flap Drive Angle Gearbox and
Aileron Droop Input Control Mechanism Assembly
Figure 1 (Sheet 6)

K39007

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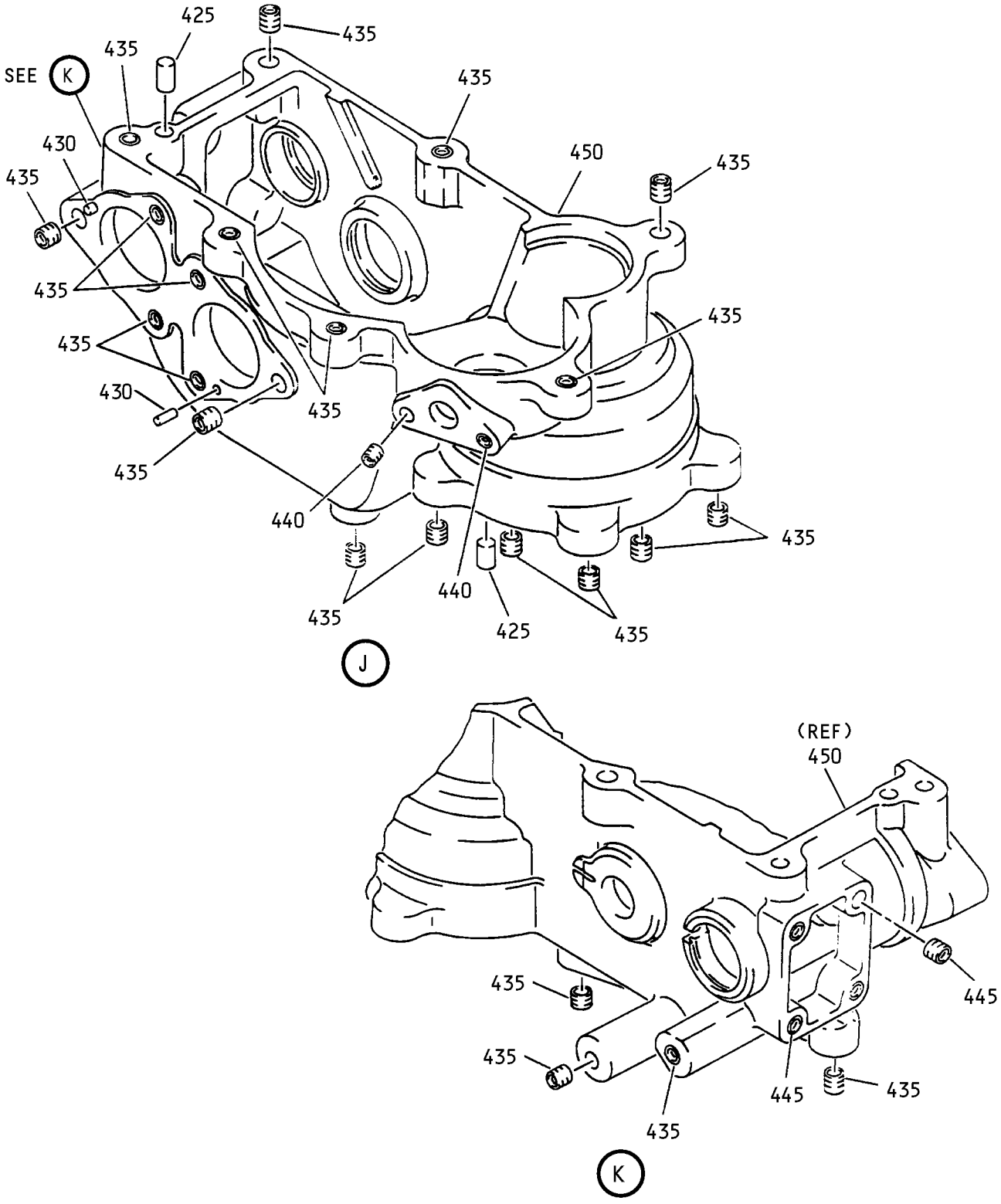

Trailing Edge Flap Drive Angle Gearbox and
Aileron Droop Input Control Mechanism Assembly
Figure 1 (Sheet 7)

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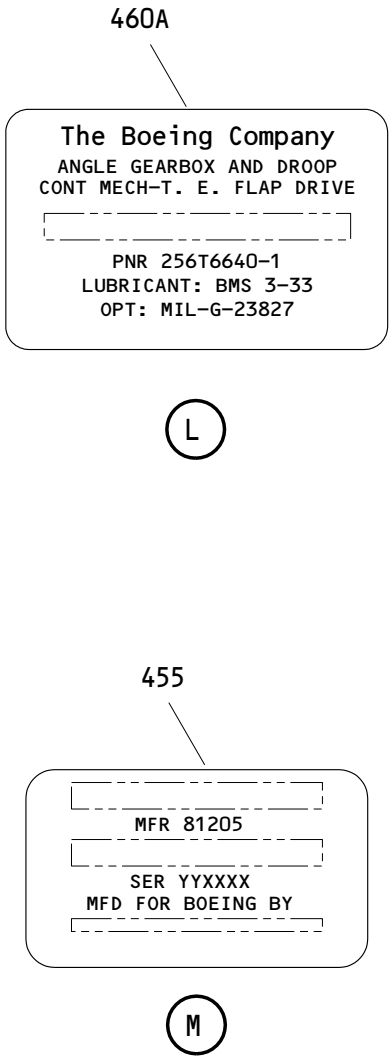

Trailing Edge Flap Drive Angle Gearbox and
Aileron Droop Input Control Mechanism Assembly
Figure 1 (Sheet 8)

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FIG. & ITEM	PART NO.	AIRLINE PART NUMBER	NOMENCLATURE 1234567	EFF CODE	QTY PER ASSY
01-					
-1A	256T6640-1		MECHANISM ASSY-TE FLAP DRIVE ANGLE GEARBOX AND AIL. DROOP INPUT CONT L SIDE	A	RF
-1B	256T6640-2		MECHANISM ASSY-TE FLAP DRIVE ANGLE GEARBOX AND AIL. DROOP INPUT CONT R SIDE (FOR DETAILS SEE FIG. 2)	B	RF
5	NAS6603H2		.BOLT	A	4
10	NAS1149D0363J		.WASHER	A	4
15	256T3467-1		.COVER	A	1
20	256T3463-1		.SPRING-EXTENSION	A	2
25	BACB30NF4-30		.BOLT	A	2
30	NAS1149D0463J		.WASHER	A	4
35	BACN10JC4CD		.NUT	A	2
40	256T3464-1		.RETAINER	A	4
45	BACB28AK04-068		.BUSHING	A	4
50	256T3465-3		.BRACKET ASSY- (OPT ITEM 50A)	A	1
-50A	256T3465-1		.BRACKET ASSY- (OPT ITEM 50) ATTACHING PARTS	A	1
55	NAS6604H6		.BOLT	A	2
60	NAS1149D0463J		.WASHER -------*-------	A	2
65	BACB28AA4C016		..BUSHING	A	2
70	256T3465-4		..BRACKET- (USED ON ITEM 50)	A	1
-70A	256T3465-2		..BRACKET- (USED ON ITEM 50A)	A	1
75	256T3456-1		.CRANK ASSY ATTACHING PARTS	A	1
80	BACB30LU4-15		.BOLT	A	1
85	NAS1149D0463J		.WASHER	A	1
90	BACN10JC4CD		.NUT -------*-------	A	1

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FIG. & ITEM	PART NO.	AIRLINE PART NUMBER	NOMENCLATURE 1234567	EFF CODE	QTY PER ASSY
01-					
95	BACB28AA4C016		..BUSHING	A	2
100	256T3456-2		..CRANK	A	1
105	256T3460-1		.SHIM	A	AR
-105A	256T3460-2		.SHIM	A	AR
-105B	256T3460-3		.SHIM	A	AR
-105C	256T3460-4		.SHIM	A	AR
-105D	256T3460-5		.SHIM	A	AR
110	256T3454-1		.SHIELD-BRG	A	1
115	NAS6603-2		.BOLT	A	2
120	NAS1149D0363J		.WASHER	A	2
125	65B81978-3		.COVER-DRAIN	A	1
130	65B84034-3		.SLEEVE-CPLG	A	2
135	H51650-12BAC		.NUT- (V15653) (SPEC BACN10JC12CD) (OPT 102LH9074-12 (V72962)) (OPT 69235-1216CD (V92215)) (OPT BMN4122CPD8-12 (V97928))	A	2
140	NAS1149F1290P		.WASHER	A	2
145	256T3749-1		.COUPLING HALF	A	2
150	65B84033-18		.SLEEVE-MOLDED	A	2
155	256T3414-1		.SHIELD-BRG	A	2
160	NAS6604H4		.BOLT	A	5
165	NAS1149D0463J		.WASHER	A	5
170	256T3438-1		.HOUSING	A	1
175	9105NPPFS428		.BEARING- (V21335) (SPEC BACB10BA25PP) (OPT PKTLL105P1 (V78118)) (OPT C105RRPP1P28LY1 (V40920)) (OPT LL105KS (V38443)) (OPT 6005TT (V43991)) (OPT 9105LLT1C1-01 (V21760)) (OPT 993L05 (V29337)) (OPT C105RRP0ZZ (V40920))	A	2

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FIG. & ITEM	PART NO.	AIRLINE PART NUMBER	NOMENCLATURE 1234567	EFF CODE	QTY PER ASSY
01-					
180	256T3415-1		.SHIM	A	AR
-180A	256T3415-2		.SHIM	A	AR
-180B	256T3415-3		.SHIM	A	AR
-180C	256T3415-4		.SHIM	A	AR
-180D	256T3415-5		.SHIM	A	AR
185	1206LLT1C1-01		.BEARING- (V21760) (SPEC BACB10AZ30PP) (OPT 206FTT (V43991)) (OPT 99206 (V29337)) (OPT LL206S (V38443))	A	2
190	256T3442-1		.GEAR-BEVEL	A	1
195	256T3446-1		.GEAR-SPUR	A	1
200	256T3453-1		.SPACER-SLEEVE	A	1
205	256T3443-1		.GEAR-BEVEL	A	1
210	NAS565-21		.BOLT	A	1
215	256T3462-1		.SHIM	A	AR
-215A	256T3462-2		.SHIM	A	AR
-215B	256T3462-3		.SHIM	A	AR
-215C	256T3462-4		.SHIM	A	AR
-215D	256T3462-5		.SHIM	A	AR
220	256T3435-1		.COVER ASSY ATTACHING PARTS	A	1
225	NAS6604H5		.BOLT	A	7
230	NAS1149D0463J		.WASHER -------*-------	A	7
235	MS21209F5-10P		..INSERT	A	1
240	256T3435-2		..COVER	A	1
245	NAS6604H4		.BOLT	A	6
250	NAS1149D0463J		.WASHER	A	6
255	256T3441-2		.HOUSING-BRG	A	1
260	256T3441-1		.HOUSING-BRG	A	1
265	256T3459-1		.SHIM	A	AR
-265A	256T3459-2		.SHIM	A	AR
-265B	256T3459-3		.SHIM	A	AR
-265C	256T3459-4		.SHIM	A	AR
-265D	256T3459-5		.SHIM	A	AR

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FIG. & ITEM	PART NO.	AIRLINE PART NUMBER	NOMENCLATURE 1234567	EFF CODE	QTY PER ASSY
01-					
270	LL103KSG20		.BEARING- (V38443) (SPEC BACB10BA17PP) (OPT LL103KS (V38443)) (OPT 6003TT (V43991)) (OPT 9103LLT1C1-01 (V21760)) (OPT 9103NPPFS428 (V21335)) (OPT 993L03 (V29337)) (OPT PKTLL103P1 (V78118)) (OPT C103RRP0ZZ (V40920)) (OPT C103RRP1P17LY19 (V40920))	A	7
275	256T3448-1		.GEAR-SPUR	A	1
280	256T3447-1		.GEAR-SPUR	A	1
285	256T6653-1		.GEAR SHAFT-WORM	A	1
290	NAS6603-10		.BOLT	A	1
295	NAS1149D0363J		.WASHER	A	1
300	256T3475-1		.DISC-IND	A	1
305	AR10400-016GC		.SEAL- (V05939)	A	1
310	256T6647-1		.GEAR ASSY-WORM	A	1
315	256T3458-1		..PIN	A	1
320	256T6649-1		..GEAR	A	1
325	256T3473-1		..SHAFT ASSY	A	1
330	MS21209F1-15P		...INSERT	A	1
335	256T3473-2		...SHAFT	A	1
340	256T3476-1		.RETAINER-SPACER	A	1
345	256T6645-1		.CAM ASSY	A	1
350	256T3471-2		..BUSHING	A	1
355	256T6645-2		..CAM	A	1

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FIG. & ITEM	PART NO.	AIRLINE PART NUMBER	NOMENCLATURE 1234567	EFF CODE	QTY PER ASSY
01-					
360	1904LLT1C1-01		.BEARING- (V21760) (SPEC BACB10BB20PP) (OPT 9304PPPRBFS428 (V21335)) (OPT PKTLL004P1 (V78118)) (OPT C004RRP0ZZ (V40920))	A	1
365	256T3477-1		.SHIM	A	AR
-365A	256T3477-2		.SHIM	A	AR
-365B	256T3477-3		.SHIM	A	AR
-365C	256T3477-4		.SHIM	A	AR
-365D	256T3477-5		.SHIM	A	AR
370	BACP18BC03A08P		.PIN-COTTER	A	1
375	NAS1149D0763J		.WASHER	A	1
380	BACN11N107CD		.NUT	A	1
385	NAS6604H10		.BOLT	A	1
390	NAS1149D0463J		.WASHER	A	1
395	256T3452-1		.SHAFT-SPLINED	A	1
400	256T3457-1		.ARM ASSY	A	1
405	MS21209F4-15P		..INSERT	A	1
410	256T3457-2		..ARM	A	1
415	BACB10FK7F8HS		.BEARING	A	1
420	256T6641-1		.HOUSING ASSY	A	1
425	NAS607-3-4P		..PIN	A	2
430	MS16562-21		..PIN	A	2
435	MS21209F4-15P		..INSERT	A	23
440	MS21209F1-10P		..INSERT	A	2
445	MS21209F1-15P		..INSERT	A	4
450	256T6641-2		.HOUSING	A	1
455	256T5124-7		.MARKER-SERIALIZED	A	1
460	256T5124-3		DELETED		
460A	256T5124-5		.MARKER-NAMEPLATE	A	1

- Item Not Illustrated

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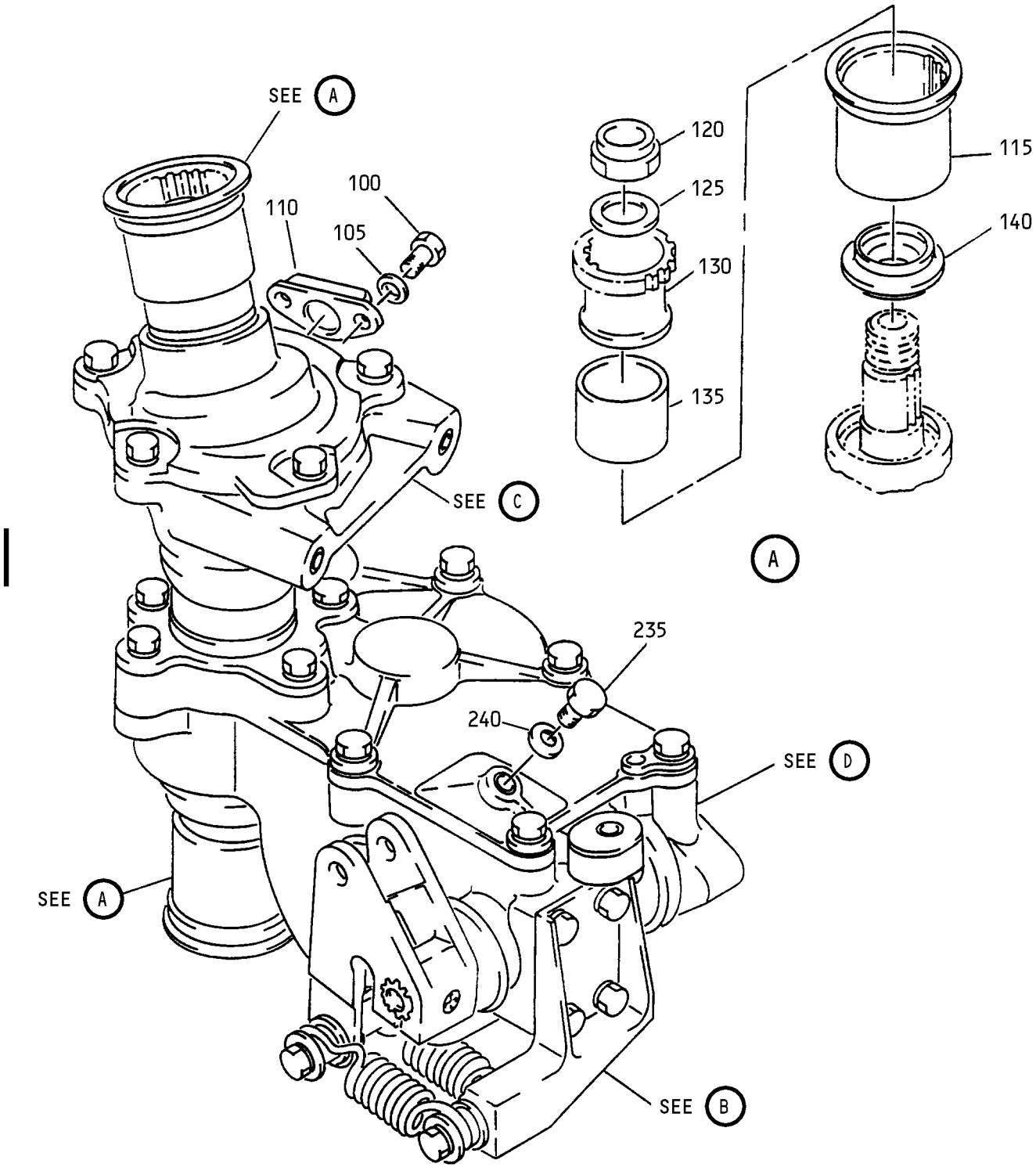

Trailing Edge Flap Drive Angle Gearbox and
Aileron Droop Input Control Mechanism Assembly
Figure 2 (Sheet 1)

K37011

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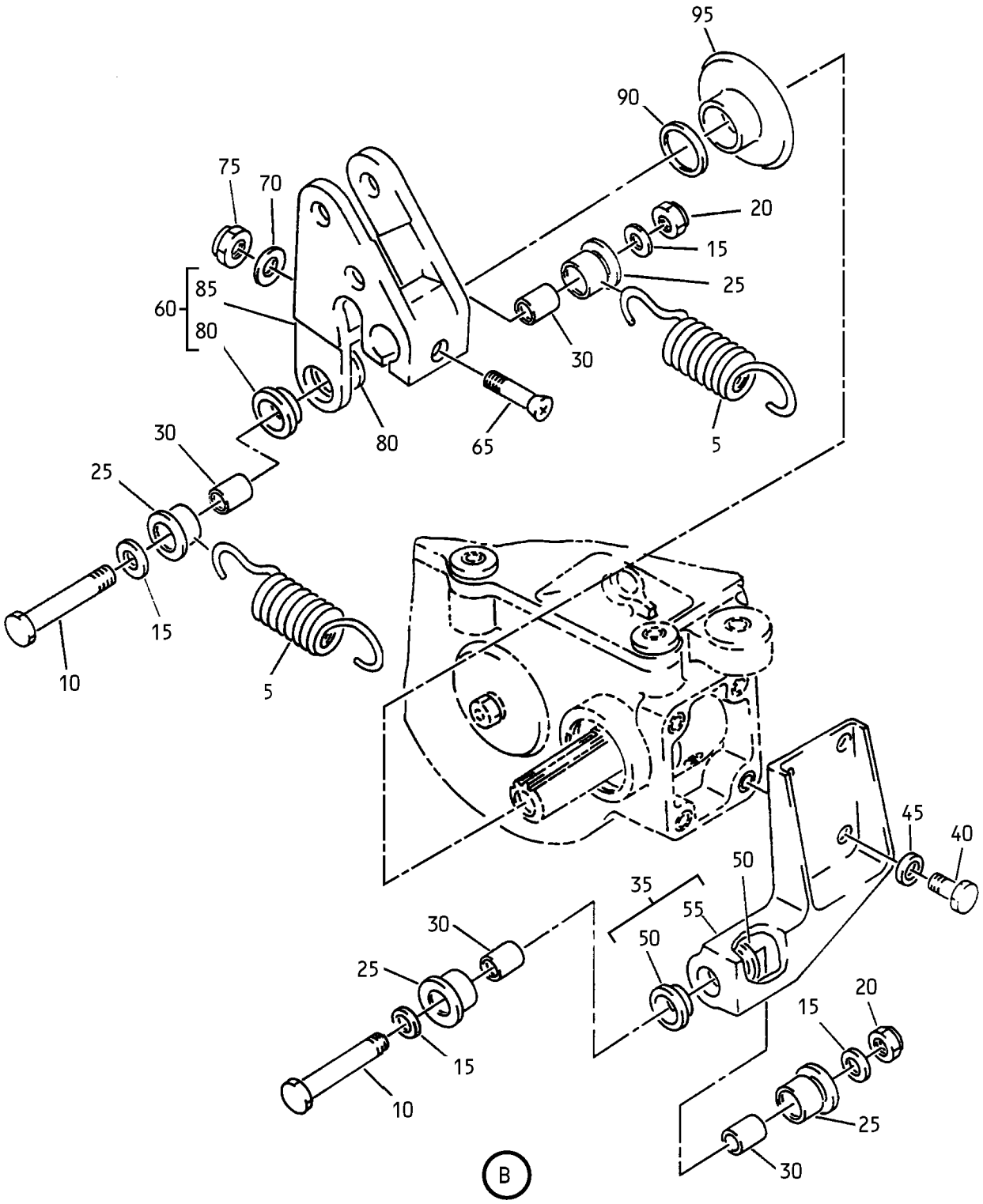

Trailing Edge Flap Drive Angle Gearbox and
Aileron Droop Input Control Mechanism Assembly
Figure 2 (Sheet 2)

K37015

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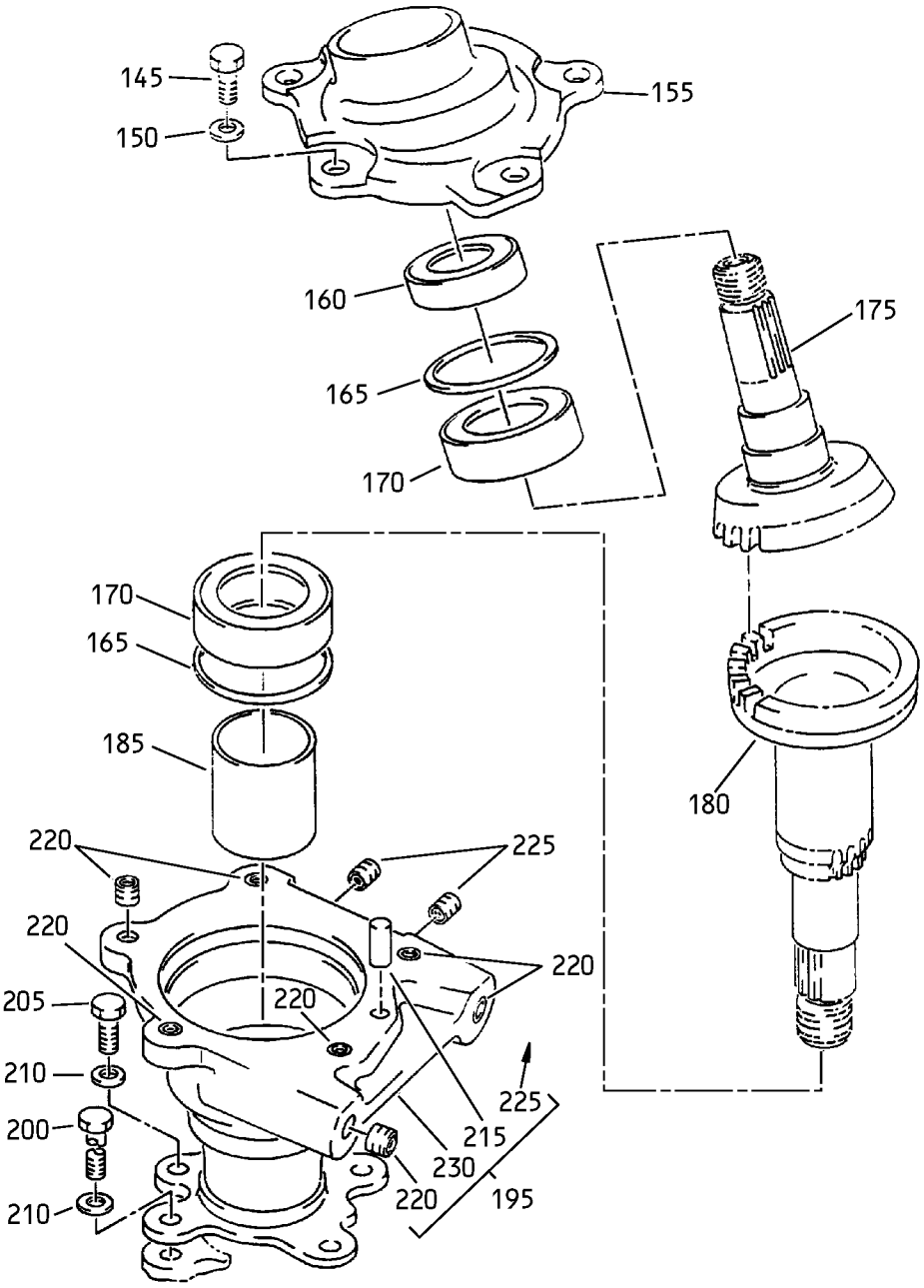

Trailing Edge Flap Drive Angle Gearbox and
Aileron Droop Input Control Mechanism Assembly
Figure 2 (Sheet 3)

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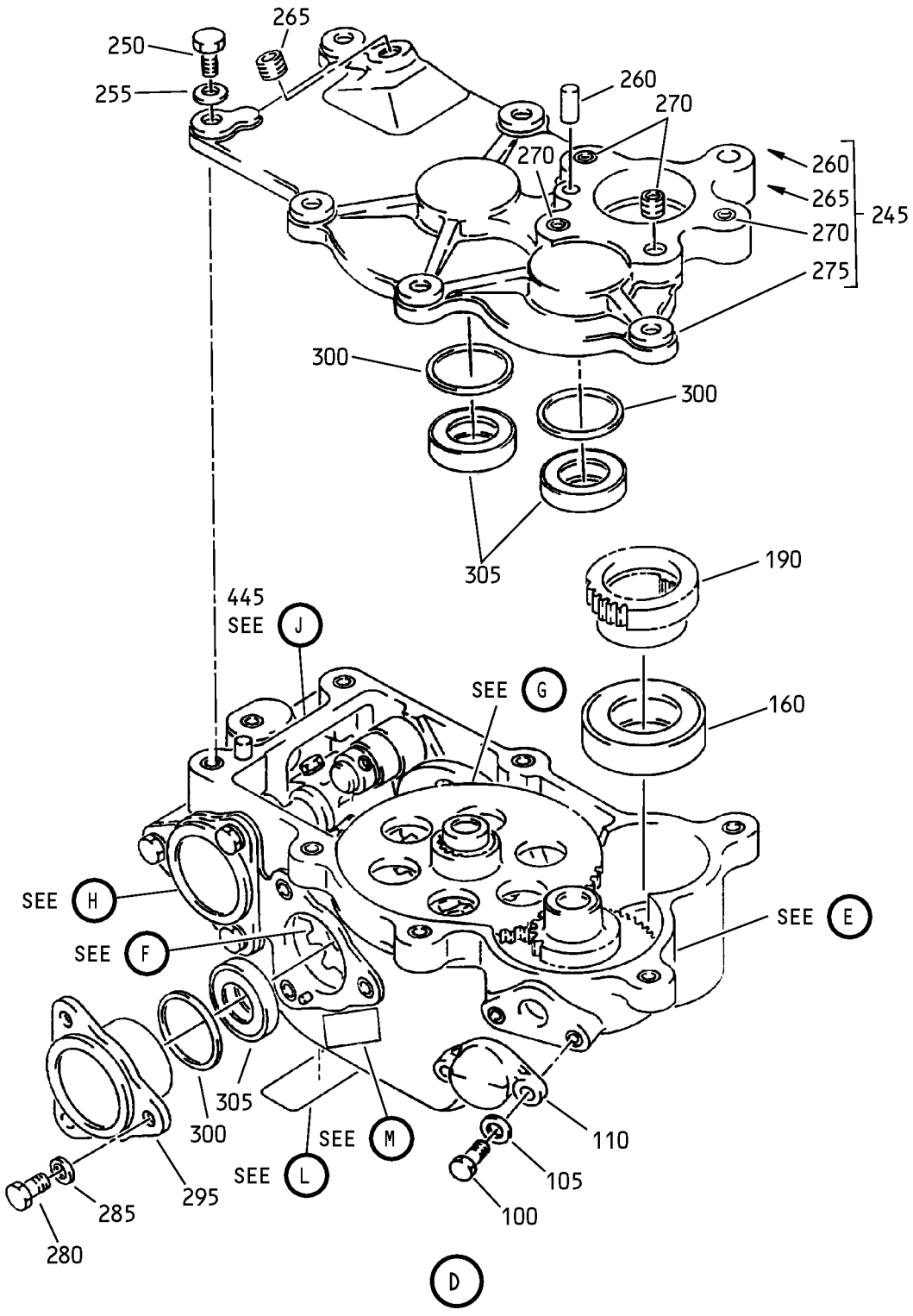

Trailing Edge Flap Drive Angle Gearbox and
Aileron Droop Input Control Mechanism Assembly
Figure 2 (Sheet 4)

K37029

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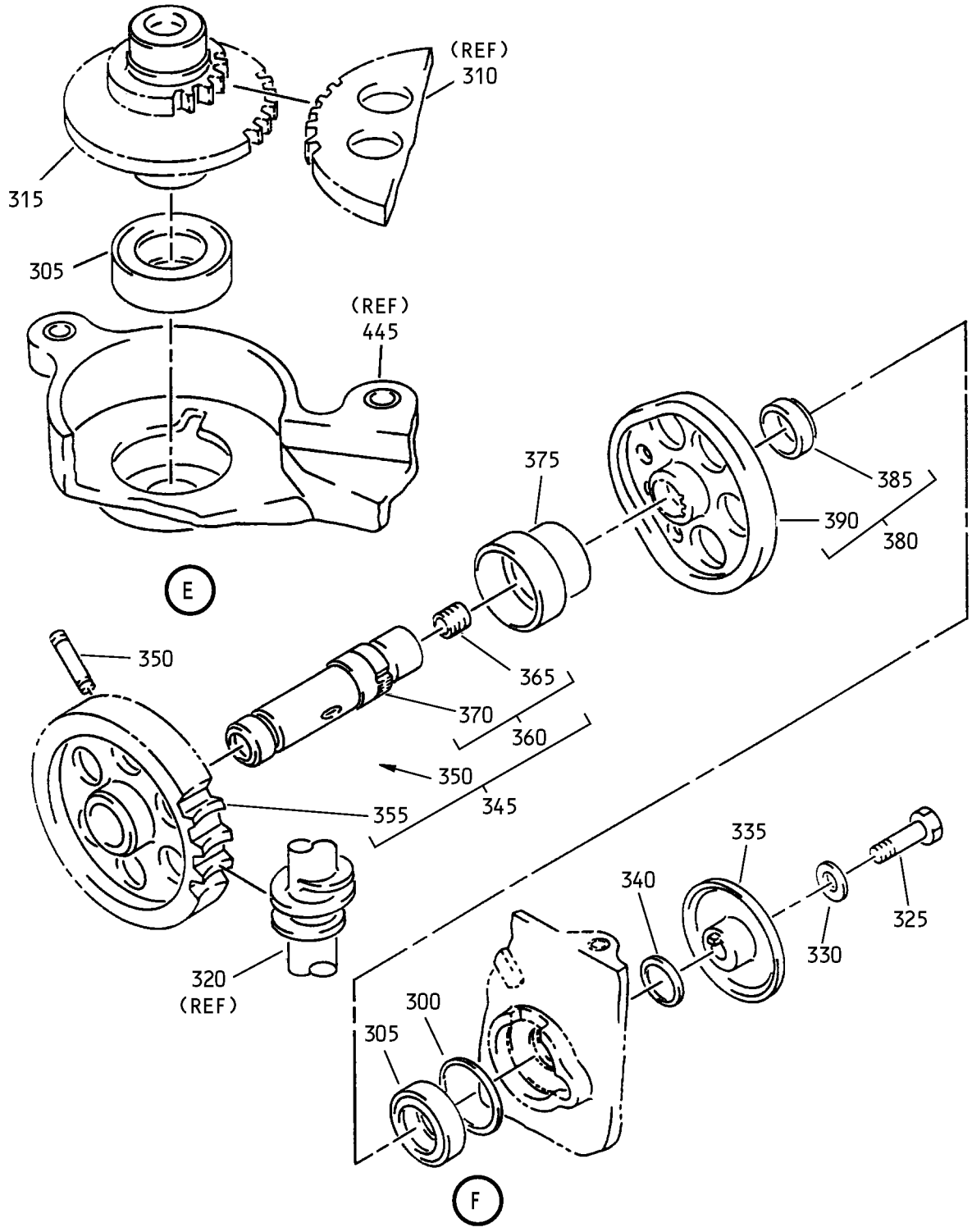

Trailing Edge Flap Drive Angle Gearbox and
Aileron Droop Input Control Mechanism Assembly
Figure 2 (Sheet 5)

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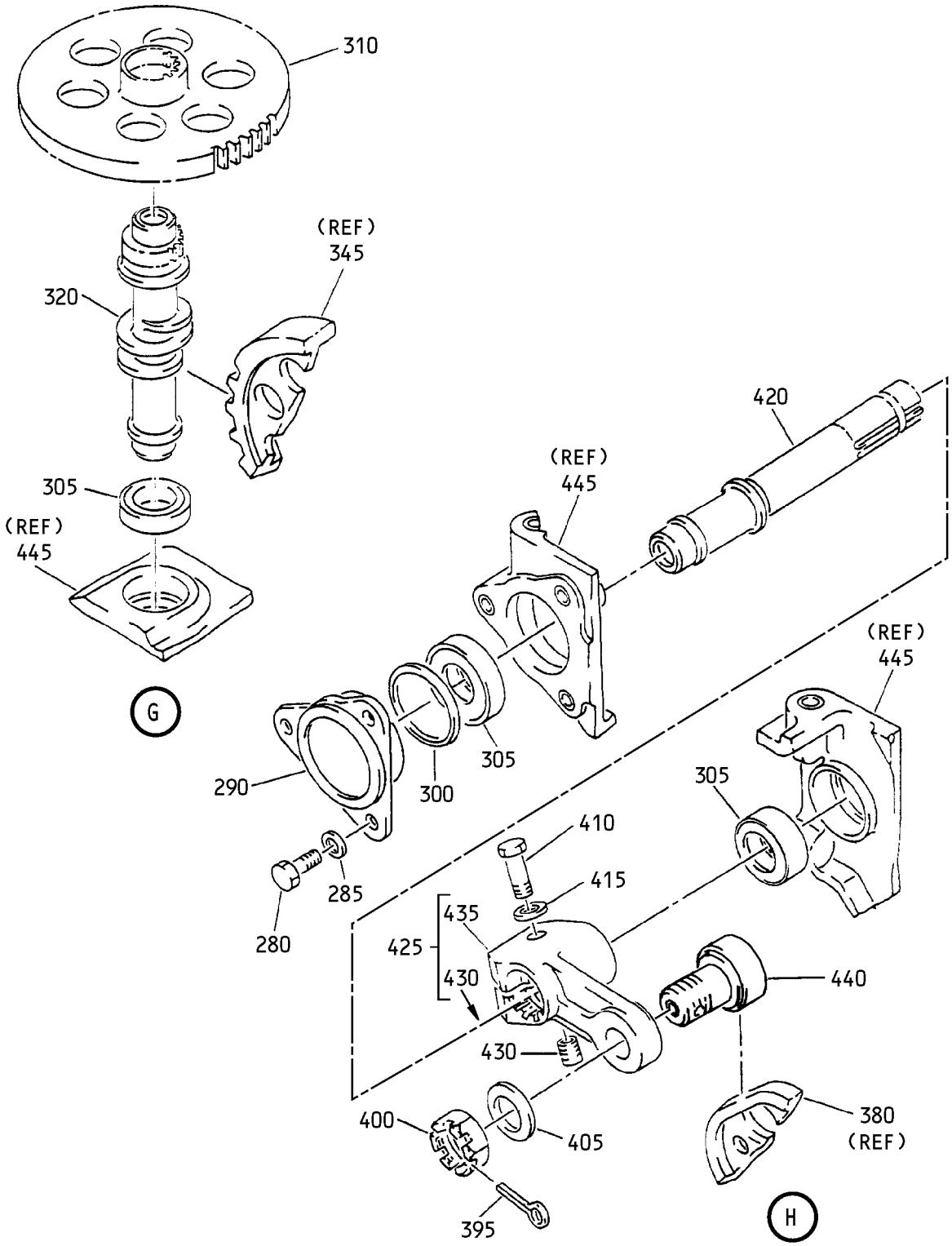

Trailing Edge Flap Drive Angle Gearbox and
Aileron Droop Input Control Mechanism Assembly
Figure 2 (Sheet 6)

K36952

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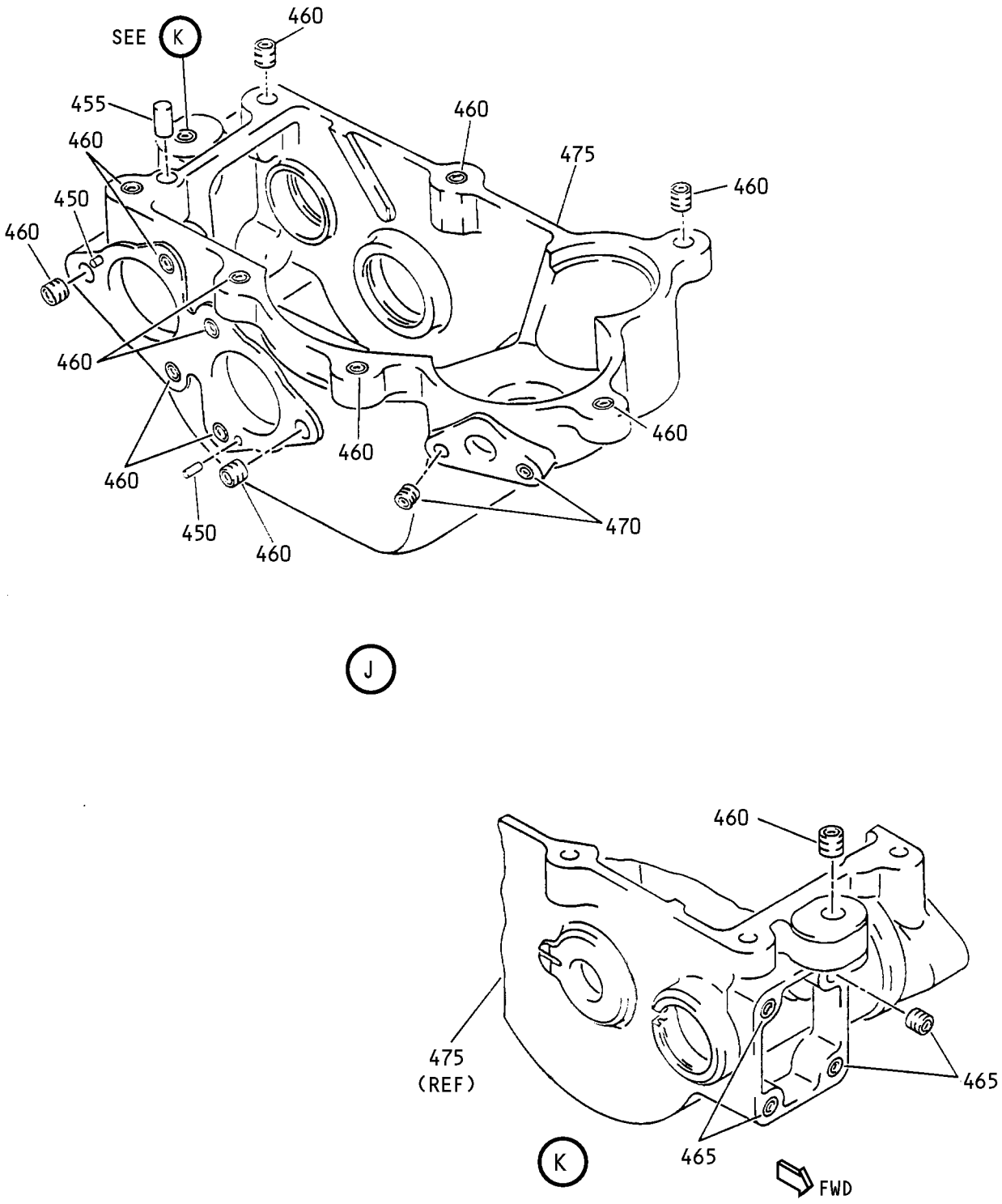

Trailing Edge Flap Drive Angle Gearbox and
Aileron Droop Input Control Mechanism Assembly
Figure 2 (Sheet 7)

K36961

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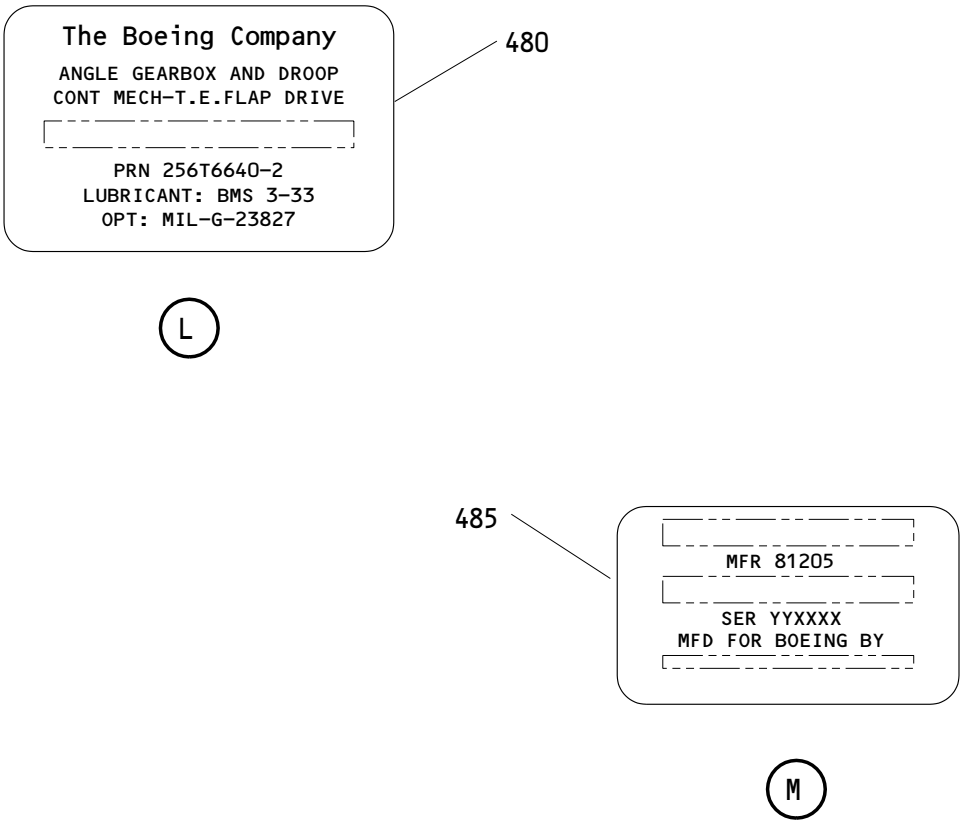

Trailing Edge Flap Drive Angle Gearbox and
Aileron Droop Input Control Mechanism Assembly
Figure 2 (Sheet 8)

K36962

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FIG. & ITEM	PART NO.	AIRLINE PART NUMBER	NOMENCLATURE 1234567	EFF CODE	QTY PER ASSY
02-					
-1	256T6640-2		MECHANISM ASSY-TE FLAP DRIVE ANGLE GEARBOX AND AIL. DROOP INPUT CONT R SIDE	B	RF
5	256T3463-1		.SPRING-EXTENSION	B	2
10	BACB30NF4-30		.BOLT	B	2
15	NAS1149D0463J		.WASHER	B	4
20	BACN10JC4CD		.NUT	B	2
25	256T3464-1		.RETAINER	B	4
30	BACB28AK04-068		.BUSHING	B	4
35	256T3470-1		.BRACKET ASSY	B	1
			ATTACHING PARTS		
40	NAS6603H3		.BOLT	B	4
45	NAS1149D0363J		.WASHER	B	4
			-------*-------		
50	BACB28AA4C016		..BUSHING	B	2
55	256T3470-2		..BRACKET	B	1
60	256T3466-1		.CRANK ASSY	B	1
			ATTACHING PARTS		
65	BACB30LU4-15		.BOLT	B	1
70	NAS1149D0463J		.WASHER	B	1
75	BACN10JC4CD		.NUT	B	1
			-------*-------		
80	BACB28AA4C016		..BUSHING	B	2
85	256T3466-2		..CRANK	B	1
90	256T3460-1		.SHIM	B	AR
-90A	256T3460-2		.SHIM	B	AR
-90B	256T3460-3		.SHIM	B	AR
-90C	256T3460-4		.SHIM	B	AR
-90D	256T3460-5		.SHIM	B	AR
95	256T3454-1		.SHIELD-BRG	B	1
100	NAS6603-2		.BOLT	B	4
105	NAS1149D0363J		.WASHER	B	4
110	65B81978-3		.COVER-DRAIN	B	2
115	65B84034-3		.SLEEVE-COUPLING	B	2

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FIG. & ITEM	PART NO.	AIRLINE PART NUMBER	NOMENCLATURE 1234567	EFF CODE	QTY PER ASSY
02-					
120	H5165O-12BAC		.NUT- (V15653) (SPEC BACN1OJC12CD) (OPT 1O2LH9O74-12 (V72962)) (OPT 69235-1216CD (V92215)) (OPT BMN4122CPD8-12 (V97928))	B	2
125	NAS1149F129OP		.WASHER	B	2
130	256T3749-1		.COUPLING HALF	B	2
135	65B84033-18		.SLEEVE-MOLDED	B	2
140	256T3414-1		.SHIELD-BRG	B	2
145	NAS6604H4		.BOLT	B	5
150	NAS1149DO463J		.WASHER	B	5
155	256T3438-2		.HOUSING	B	1
160	9105NPPFS428		.BEARING- (V21335) (SPEC BACB1OBA25PP) (OPT PKTLL1O5P1 (V78118)) (OPT C1O5RRPP1P28LY1 (V4092O)) (OPT LL1O5KS (V38443)) (OPT 6OO5TT (V43991)) (OPT 9105LLT1C1-01 (V2176O)) (OPT 993LO5 (V29337)) (OPT C1O5RRPOZZ (V4092O))	B	2
165	256T3415-1		.SHIM	B	AR
-165A	256T3415-2		.SHIM	B	AR
-165B	256T3415-3		.SHIM	B	AR
-165C	256T3415-4		.SHIM	B	AR
-165D	256T3415-5		.SHIM	B	AR

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FIG. & ITEM	PART NO.	AIRLINE PART NUMBER	NOMENCLATURE 1234567	EFF CODE	QTY PER ASSY
02-					
170	1206LLT1C1-01		.BEARING- (V21760) (SPEC BACB10AZ30PP) (OPT 206FTT (V43991)) (OPT 99206 (V29337)) (OPT LL206S (V38443))	B	2
175	256T3442-1		.GEAR-BEVEL	B	1
180	256T3444-1		.GEAR-BEVEL	B	1
185	256T3453-2		.SPACER-SLEEVE	B	1
190	256T3446-1		.GEAR-SPUR	B	1
195	256T3440-1		.HOUSING ASSY	B	1
			ATTACHING PARTS		
200	NAS6604H16		.BOLT	B	1
205	NAS6604H4		.BOLT	B	4
210	NAS1149D0463J		.WASHER	B	5
			-------*-------		
215	NAS607-3-5P		..PIN	B	1
220	MS21209F4-15P		..INSERT	B	7
225	MS21209F1-10P		..INSERT	B	2
230	256T3440-2		..HOUSING	B	1
235	NAS565-21		.BOLT	B	1
240	256T3462-1		.SHIM	B	AR
-240A	256T3462-2		.SHIM	B	AR
-240B	256T3462-3		.SHIM	B	AR
-240C	256T3462-4		.SHIM	B	AR
-240D	256T3462-5		.SHIM	B	AR
245	256T3437-1		.COVER ASSY	B	1
			ATTACHING PARTS		
250	NAS6604H5		.BOLT	B	6
255	NAS1149D0463J		.WASHER	B	6
			-------*-------		
260	NAS607-3-5P		..PIN	B	1
265	MS21209F5-10P		..INSERT	B	1
270	MS21209F4-15P		..INSERT	B	4

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FIG. & ITEM	PART NO.	AIRLINE PART NUMBER	NOMENCLATURE 1234567	EFF CODE	QTY PER ASSY
02-					
275	256T3437-2		..COVER	B	1
280	NAS6604H4		.BOLT	B	6
285	NAS1149D0463J		.WASHER	B	6
290	256T3441-2		.HOUSING-BRG	B	1
295	256T3441-1		.HOUSING-BRG	B	1
300	256T3459-1		.SHIM	B	AR
-300A	256T3459-2		.SHIM	B	AR
-300B	256T3459-3		.SHIM	B	AR
-300C	256T3459-4		.SHIM	B	AR
-300D	256T3459-5		.SHIM	B	AR
305	LL103KSG20		.BEARING- (V38443) (SPEC BACB10BA17PP) (OPT LL103KS (V38443)) (OPT 6003TT (V43991)) (OPT 9103LLT1C1-01 (V21760)) (OPT 9103NPPFS428 (V21335)) (OPT 993L03 (V29337)) (OPT PKTLL103P1 (V78118)) (OPT C103RRP0ZZ (V40920)) (OPT C103RRP1P17LY19 (V40920))	B	8
310	256T3448-1		.GEAR-SPUR	B	1
315	256T3447-1		.GEAR-SPUR	B	1
320	256T6653-1		.GEAR SHAFT-WORM	B	1
325	NAS6603-4		.BOLT	B	1
330	NAS1149D0363J		.WASHER	B	1
335	256T3450-1		.DISC-IND	B	1
340	AR10400-016GC		.SEAL- (V05939)	B	1
345	256T6648-1		.GEAR ASSY-WORM	B	1
350	256T3458-1		..PIN	B	1

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FIG. & ITEM	PART NO.	AIRLINE PART NUMBER	NOMENCLATURE 1234567	EFF CODE	QTY PER ASSY
02-					
355	256T6649-1		..GEAR	B	1
360	256T3451-1		..SHAFT ASSY	B	1
365	MS21209F1-15P		...INSERT	B	1
370	256T3451-2		...SHAFT	B	1
375	256T3455-1		.RETAINER-SPACER	B	1
380	256T6646-1		.CAM ASSY	B	1
385	256T3471-1		..BUSHING	B	1
390	256T6646-2		..CAM	B	1
395	BACP18BC03A08P		.PIN-COTTER	B	1
400	BACN11N107CD		.NUT	B	1
405	NAS1149D0763J		.WASHER	B	1
410	NAS6604H10		.BOLT	B	1
415	NAS1149D0463J		.WASHER	B	1
420	256T3452-2		.SHAFT-SPLINED	B	1
425	256T3457-1		.ARM ASSY	B	1
430	MS21209F4-15P		..INSERT	B	1
435	256T3457-2		..ARM	B	1
440	BACB10FK7F8HS		.BEARING	B	1
445	256T6642-1		.HOUSING ASSY	B	1
450	MS16562-21		..PIN	B	2
455	NAS607-3-4P		..PIN	B	1
460	MS21209F4-15P		..INSERT	B	14
465	MS21209F1-15P		..INSERT	B	4
470	MS21209F1-10P		..INSERT	B	2
475	256T6642-2		..HOUSING	B	1
480	256T5124-6		.MARKER-NAMEPLATE	B	1
485	256T5124-7		.MARKER-SERIALIZED	B	1

- Item Not Illustrated

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