TO: ALL HOLDERS OF TRAILING EDGE FLAP DRIVE ANGLE GEARBOX ASSEMBLY COMPONENT MAINTENANCE MANUAL 27-51-35

REVISION NO. 8 DATED JAN 01/88

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 number and date on the Record of Revision Sheet.

CHAPTER/SECTION AND PAGE NO.	DESCRIPTION OF CHANGE
REPAIR-GEN 603	Update True Position Dimensioning Symbols.
REPAIR 3-1 602	Changed bevel gear phosphate coating.

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BOEING

COMPONENT
MAINTENANCE MANUAL

TRAILING EDGE FLAP DRIVE ANGLE GEARBOX ASSEMBLY

PART NUMBER 256T3410-2, -4

COMPONENT MAINTENANCE MANUAL
WITH
ILLUSTRATED PARTS LIST

13637

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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.

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

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TEMPORARY REVISION AND SERVICE BULLETIN RECORD

BOEING SERVICE BULLETIN	BOEING TEMPORARY REVISION	OTHER DIRECTIVE	DATE OF INCORPORATION INTO MANUAL
		PRRB10112	JUL 10/81

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TABLE OF CONTENTS

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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. An asterisked flagnote *[ ] in place of the page number indicates that no special instructions are provided since the function can be performed using standard industry practices.

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

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

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

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

Verification:

Disassembly	Aug 5/82
Assembly	Aug 5/82

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TRAILING EDGE FLAP DRIVE ANGLE GEARBOX ASSEMBLY

DESCRIPTION AND OPERATION

1. The angle gearbox transmits torque through torque drive shafts from the power drive unit to the flap actuators on each wing. Power is delivered through the gearbox in an angular path by means of sliding couplings and a bevel gear train with an overall gear ratio of 1:1.

2. Leading Particulars (approximate)

   A. Length -- 10 inches

   B. Width -- 5 inches

   C. Height -- 7 inches

   D. Weight -- 4 pounds

   E. Operating RPM -- 600-700 rpm

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TESTING AND TROUBLE SHOOTING

1. Test Equipment and Materials

NOTE: Equivalent substitutes may be used.

A. Test Fixture -- A27046-140 (Consists of -156 fixture assembly plus usage placard)

B. Test Equipment -- A27046-8 (Includes -54 crank assembly, -55 brackets, -56 and -58 clamp assemblies, and -126 weight assemblies)

C. Grease -- MIL-G-23827 (Ref 20-60-03)

D. Sealant -- BMS 5-26 (Ref 20-60-04)

E. Lockwire -- MS20995C32

2. Visually check unit in accordance with standard industry practices.

3. Binding and Roughness Check

A. Apply a 8-12 pound tension load axially to the output shaft.

B. With no torque on the output shaft, operate the input shaft by hand through a minimum of 720 degrees in both directions. There shall be no significant binding or roughness.

C. If no corrective action is required, proceed with no-load torque check (par. 4); otherwise, replace parts per step D.

D. If roughness or binding exists, replace bearings (80, 85, IPL Fig. 1) as follows:

(1) Completely disassemble unit per DISASSEMBLY and remove gears and bearings.

(2) Examine gears for pitting and other signs of uneven wear. Bearing pattern is to be centered in the area of pitch diameter.

(3) Replace bearings and gears, if necessary, and assemble per ASSEMBLY steps 3.A. thru 3.G.

4. No-Load Torque Check

A. Apply a 8-12 pound tension load axially to the output shaft.

B. With no torque on the output shaft, the torque required at the input shaft to breakout and rotate the input shaft through a minimum of 720 degrees in both directions shall not exceed 2.0 pound-inches.

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5. Backlash Check

NOTE: Units "in service" refer to units removed from service for known or suspected malfunctioning characteristics and for which testing is desired to determine further disposition. Units that meet "in service" limits may be returned to service without overhaul.

Test limits for units in service are the same as for units overhauled unless otherwise noted.

A. Install gearbox assembly on test fixture assembly, A27046-156.

B. Attach clamp assemblies A27046-56, -58, crank assembly A27046-54, and brackets A27046-55 on shafts of bevel gears (50). Secure parts with washers (10) and nuts (5).

C. Using weight assembly A27046-126, or equivalent, apply a 25-35 lb outward axial load to gear shaft on cover (43, 45) side and clamp in position. Apply an equal outward axial load to the opposite shaft to seat gear firmly against shim(s) and housing (103, 105).

D. Using crank assembly, apply a 5-10 lb-in. torque to the shaft in each direction. Check that backlash measured at the scribe line on clamp assembly A27046-58 is 0.007-0.016 inch for units in service, or 0.007-0.013 for units overhauled, measured at three places approximately 120 degrees apart. Backlash is the total clearance measured from the torqued position in one direction to the torqued position in the other direction.

NOTE: Backlash specified is equivalent to 0.004-0.009 inch for units in service, or 0.004-0.007 inch for units overhauled, measured at the pitch line.

E. If no corrective procedures are required, check lubrication per par. 6. To correct backlash, adjust shim thickness as follows:

(1) Disassemble unit per DISASSEMBLY steps 2.A. thru 2.D.

(2) Adjust thickness of shims (55) as required to increase or decrease backlash and reassemble parts per ASSEMBLY steps 3.D. and 3.E.

NOTE: If bearings have been replaced, proceed with ASSEMBLY step 3.A.

To decrease backlash, increase shim thickness. To increase backlash, decrease shim thickness.

(3) Repeat backlash check.

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6. Unless already performed at step 5.E.(2), check that gear teeth and splines are filled with grease. Lubricate as necessary and assemble unit per ASSEMBLY steps 3.H. thru 3.K.

   CAUTION: DO NOT FILL HOUSING WITH GREASE OR OPERATION OF GEARBOX MAY BE ADVERSELY AFFECTED.

   A. Disassemble unit per DISASSEMBLY steps 2.A. thru 2.C.

   B. Fill gear teeth with grease.

   C. Secure cover to housing assembly using bolts (35) and washers (40). Install bolts with wet primer applied to all areas at both holes. Tighten bolts to 50-70 lb-in.

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DISASSEMBLY

NOTE: See TESTING AND TROUBLE SHOOTING to establish the condition of the component or most probable cause of its malfunction. This is to determine the extent of disassembly required without completely tearing down and rebuilding the component.

1. Parts Replacement

NOTE: The following parts are recommended for replacement. Unless otherwise noted, actual replacement of parts may be based on in-service experience.

A. Lockwire

B. Molded Sleeve (25)

C. Nut (5)

2. Disassemble Gearbox Assy (IPL Fig. 1)

A. Remove nuts (5) and washers (10).

B. Remove sleeves (20), coupling halves (15), molded sleeves (25), and bearing shields (30).

CAUTION: TO PREVENT DAMAGE TO BEVEL GEARS (50), DO NOT ALLOW BEVEL GEARS TO SLIP OUT OF HOUSING (93, 95) OR COVER (43, 45) DURING SEPARATION.

C. Remove lockwire, then remove bolts (35) and washers (40) and separate cover (43, 45) and housing assembly (93, 95).

D. Remove bevel gears (50) with attached parts. Remove shims (55) and tag to facilitate reassembly.

E. Remove bearings (80, 85) from bevel gears (50).

F. Do not remove identification plate (90) from cover, or shim (102) and inserts (100) from housing assembly unless necessary for repair or replacement.

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CLEANING

1. Clean all parts except bearings (80, 85) using standard industry practices and information contained in 20-30-03.

2. Clean sealed bearings (80, 85) per manufacturer's instructions.

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CHECK

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

2. Refer to FITS AND CLEARANCES for design dimensions and wear limits.

3. Penetrant check per 20-20-02 (IPL Fig. 1).

   A. Cover (43, 45)

   B. Housing (103, 105)

4. Magnetic particle check per 20-20-01 (IPL Fig. 1).

   A. Coupling (15)

   B. Bearing shield (30)

   C. Bevel gear (50)

5. Check gear teeth and splines for uneven wear. If spline bearing surfaces show visible signs of wear or pitting, replace both mating parts.

6. Check molded sleeve (25) and replace if dacron cover is torn, worn, or frayed.

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REPAIR - GENERAL

1. Content

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

P/N	NAME	REPAIR
256T3411	HOUSING	1-1
256T3412	COVER	2-1
256T3413	GEAR	3-1
256T3416	NAMEPLATE	4-1
256T3749	COUPLING HALF	5-1
- - -	MISC PARTS REFINISH	6-1

2. Standard Practices

   A. Refer to the following standard practices as applicable, for details of procedures in individual repairs.

   20-30-02 Stripping of Protective Finishes
   20-41-01 Decoding Table for Boeing Finish Codes
   20-41-03 Application of Corrosion Preventive to Closed-end Tubes
   20-42-02 Low Hydrogen Embrittlement Cadmium - Titanium Alloy Plating
   20-42-05 Bright Cadmium Plating
   20-43-01 Chromic Acid Anodizing
   20-50-10 Application of Stencils, Insignia, Silk Screen, Part Numbering, and Identification Markings
   20-50-12 Application of Adhesives

3. Materials

   NOTE: Equivalent substitutes may be used.

   A. Corrosion Preventive Compound -- MIL-C-11796 (Ref 20-60-03)

   B. Adhesive -- BMS 5-92 type 3 (Ref 20-60-04)

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C. Primer -- BMS 10-11 type 1 (Ref 20-60-02)

D. Sealant -- BMS 5-95 (Ref 20-60-04)

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4. Dimensioning Symbols

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

—	STRAIGHTNESS
▱	FLATNESS
⊥	PERPENDICULARITY (OR SQUARENESS)
//	PARALLELISM
○	ROUNDNESS
⌭	CYLINDRICITY
⌒	PROFILE OF A LINE
⌓	PROFILE OF A SURFACE
◎	CONCENTRICITY
⌯	SYMMETRY
∠	ANGULARITY
↗	RUNOUT
⌖	THEORETICAL EXACT POSITION OF A FEATURE (TRUE POSITION)
∅	DIAMETER
BASIC (BSC) OR [DIM]	A THEORETICALLY EXACT DIMENSION USED TO DESCRIBE SIZE, SHAPE OR LOCATION OF A FEATURE FROM WHICH PERMISSIBLE VARIATIONS ARE ESTABLISHED BY TOLERANCES ON OTHER DIMENSIONS OR NOTES.
[-A-]	DATUM
Ⓜ	MAXIMUM MATERIAL CONDITION (MMC)
Ⓢ	REGARDLESS OF FEATURE SIZE (RFS)
Ⓟ	PROJECTED TOLERANCE ZONE

EXAMPLES

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

True Position Dimensioning Symbols
Figure 601

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HOUSING ASSEMBLY - REPAIR 1-1

256T3411-1,-4

NOTE: Refer to REPAIR-GEN for list of applicable standard practices. For repair of surfaces which may only require stripping and restoration of original finish, refer to Refinish instruction, Fig. 601.

1. Shim Replacement (IPL Fig. 1)

   A. Remove shim (102) from housing assembly (93 only).

   B. Install replacement shim with sealant, BMS 5-95.

   C. Check shim ID after installation per Fig. 601.

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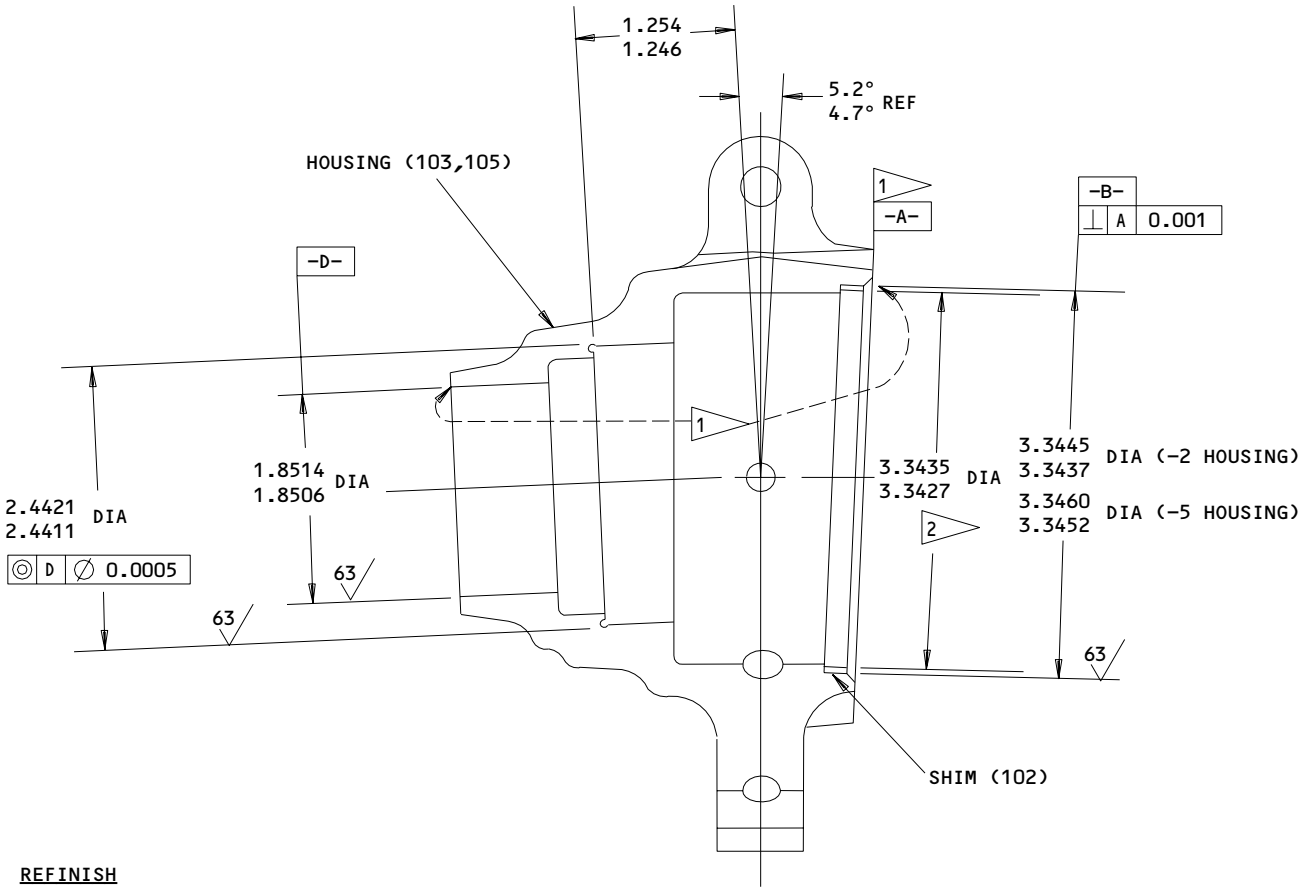

REFINISH

ANODIZE (F-17.05) ALL OVER. APPLY ONE COAT OF BMS 10-11, TYPE 1 PRIMER TO EXTERNAL SURFACES ONLY EXCEPT FOR HOLES AND SURFACES NOTED BY 1

1 NO PRIMER THIS SURFACE

2 INSIDE DIA OF SHIM (102)

MATERIAL: AL ALLOY

ALL DIMENSIONS ARE IN INCHES

Housing Assembly Repair
Figure 601

13646

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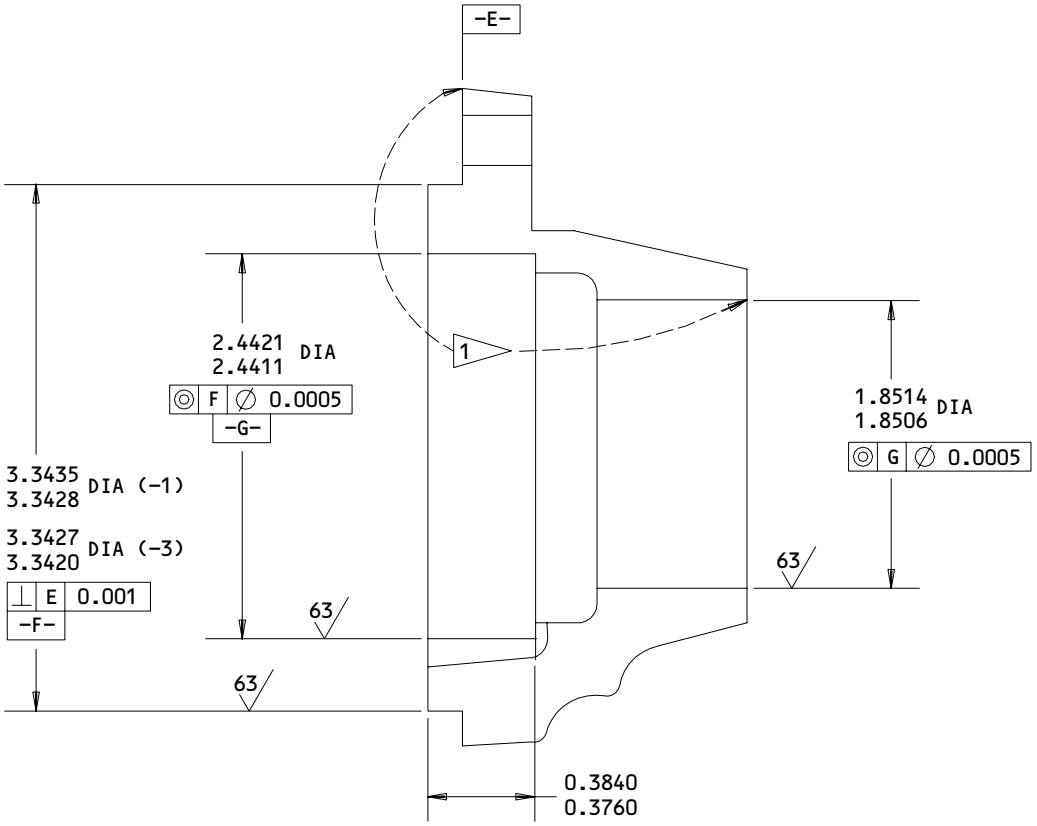
COVER - REPAIR 2-1

256T3412-1,-3

1. Plating Repair

NOTE: Repair consists of restoration of original finish. Refer to Refinish instructions, Fig. 601 and to REPAIR-GEN for list of applicable standard practices.



REFINISH

CHROMIC ACID ANODIZE ALL OVER (F-17.04) AND APPLY ONE COAT OF BMS 10-11, TYPE 1 PRIMER (F-20.02) TO OUTSIDE SURFACES ONLY, EXCEPT OMIT PRIMER FROM HOLES AND AS NOTED.

MATERIAL: AL ALLOY

ALL DIMENSIONS ARE IN INCHES

1 NO PRIMER THIS SURFACE

Cover Repair
Figure 601

13648

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BEVEL GEAR - REPAIR 3-1

256T3413-1

NOTE: Refer to REPAIR-GEN for list of applicable standard practices. For repair of surfaces which only require restoration of original finish, refer to Refinish instructions, Fig. 601.

1. Bearing Seat Repair (Fig. 601)

   A. Machine bearing seat as required, within repair limit shown, to remove defects.

   B. Shot peen as indicated.

   C. Build up repaired area with chrome plate, and grind to design dimensions and finish shown. Chrome plate must not exceed 0.015 inch after grinding.

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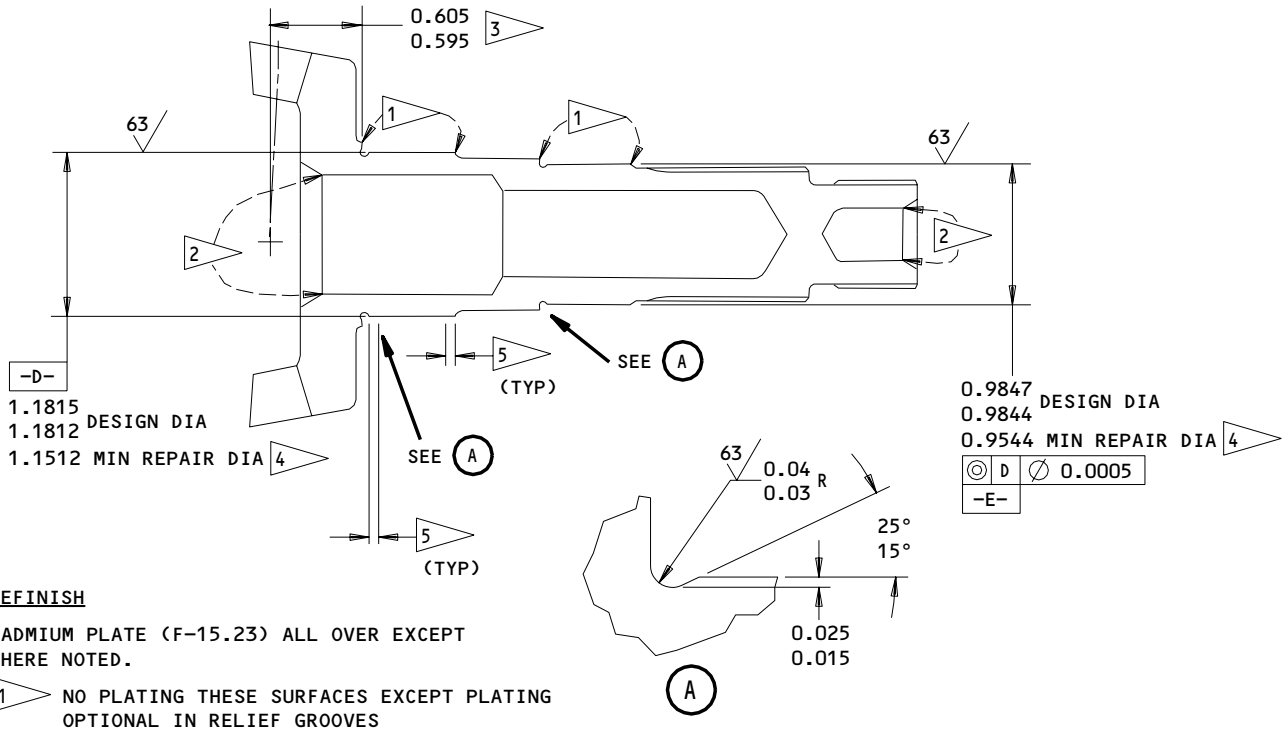

REFINISH

CADMIUM PLATE (F-15.23) ALL OVER EXCEPT WHERE NOTED.

1 NO PLATING THESE SURFACES EXCEPT PLATING OPTIONAL IN RELIEF GROOVES

2 APPLY LIGHT ZINC PHOSPHATE COATING (F-14.14) AND APPLY TWO COATS OF BMS 10-11, TYPE 1 PRIMER (F-20.03). COAT INTERNAL BORES WITH CORROSION PREVENTIVE COMPOUND (F-19.03).

3 ENGRAVED MOUNTING DISTANCE

4 BUILD UP WITH CHROME PLATE (F-15.03) AND GRIND TO DESIGN DIMENSION AND FINISH SHOWN. OBSERVE RUNOUT AT EDGES AND RELIEF GROOVE AS INDICATED

5 PLATING RUNOUT 0.00-0.08

REPAIR

REF 4 5

SHOT PEEN INFO: SHOT NO. 170-460
INTENSITY 0.014A
COVERAGE 2.0

MATERIAL: 9310 STEEL, 150-190 KSI GEAR TEETH CARBURIZED 0.030-0.050 DEEP

ALL DIMENSIONS ARE IN INCHES

256T3413-1
Bevel Gear Repair
Figure 601

13650

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NAMEPLATE - REPAIR 4-1

256T3416-1

1. Nameplate Replacement

NOTE: Refer to REPAIR-GEN for list of applicable standards.

A. Remove nameplate (90, IPL Fig. 1)

B. Steel stamp date of manufacture, serial number and assembly number on nameplate per 20-50-10. Bend to conform to housing cover (43, 45) contour.

C. Using adhesive, apply nameplate to same area from which damaged nameplate was removed.

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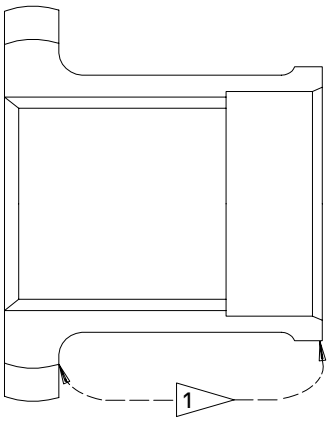
COUPLING HALF - REPAIR 5-1

256T3749-1

1. Plating Repair

NOTE: Repair consists of restoration of original finish. Refer to Refinish instructions, Fig. 601 and to REPAIR-GEN for list of applicable standard practices.



REFINISH

CADMIUM PLATE (F-15.02) ALL OVER AND APPLY 1 COAT OF BMS 10-11, TYPE 1 PRIMER (F-20.02) AS INDICATED BY 1

MATERIAL: 4340 STEEL, 150-170 KSI

256T3749-1

Coupling Half Repair
Figure 601

13652

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MISCELLANEOUS PARTS REFINISH - REPAIR 6-1

1. Repair of parts listed in Fig. 601 consists of restoration of original finish.

IPL FIG. & ITEM	MATERIAL	FINISH
Fig. 1 Coupling (20)	4140 Steel, 140-170 ksi	Cadmium plate (0.0002 to 0.0004 inch) (F-15.02).

Refinish Details
Figure 601

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ASSEMBLY

1. Materials

NOTE: Equivalent substitutes may be used.

A. Grease -- BMS 3-24 (Optional: MIL-G-23827) (Ref 20-60-03)

B. Sealant -- BMS 5-26 (Ref 20-60-04)

C. Lockwire -- MS20995C32

2. Equipment

NOTE: Equivalent substitutes may be used.

A. Bearing Width Checking Equipment -- A27040-1

B. Deleted

C. Deleted

3. Assembly (IPL Fig. 1)

A. Press bearings (80, 85) on bevel gears (50).

B. Determine shim S1 (55) thickness to be installed in housing assy (93, 95) as follows (Fig. 701):

NOTE: If no parts have been replaced, shim set removed in DISASSEMBLY may be re-installed.

(1) Measure bearing (85) width A using checking equipment A27040-1 as indicated with an axial load of 25-35 lb applied to the outer race in the direction of the gear.

(2) Find engraved dimension B on gear (50) to be installed in housing (105).

(3) Find engraved dimension on housing (103, 105) (Table 2).

(4) Shim thickness S1 = Engraved Housing Dimension - A - B.

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(5) Select shim thickness from Table 1.

C. Determine shim (55) thickness to be installed in cover (43, 45) as follows (Fig. 701):

NOTE: If no parts have been replaced, shim set removed in DISASSEMBLY may be re-installed.

(1) Measure bearing (85) width A using checking equipment A27040-1 as indicated with an axial load of 25-35 lb applied to the outer race in the direction of the gear.

(2) Find engraved dimension B on gear (50) to be installed in cover (43, 45).

(3) Find engraved dimension on cover (Table 3).

(4) Shim thickness S2 = Engraved Cover Dimension +0.880-B-A.

(5) Select shim thickness from Table 1.

D. Install bevel gears (50) and shims (55) into housing assembly and cover. Coat gear teeth with grease.

NOTE: Parts that were used to determine corresponding shim thickness (bevel gear with bearings and housing or cover) must be assembled together.

E. Secure cover to housing assembly using bolts (35) and washers (40). Install bolts with wet primer applied to all areas at both holes. Tighten bolts to 50-70 lb-in.

F. Check backlash per TESTING AND TROUBLE SHOOTING.

G. If backlash exceeds 0.013 inch, disassemble gearbox and replace shims (55) with next thicker shim or shim set. If backlash is less than 0.007 inch replace shims with next thinner shim or shim set. See Table 1, Fig. 701.

H. Install bearing shields (30). Fill cavity between shields and bearings (80) with grease. Coat bevel gear splines with grease.

I. Slide sleeves (20, 25) and couplings (15) over splines of bevel gears (50).

J. Install nuts (5) and washers (10). Tighten nuts to 600-800 lb-in.

K. Check that drain hole is clear of grease.

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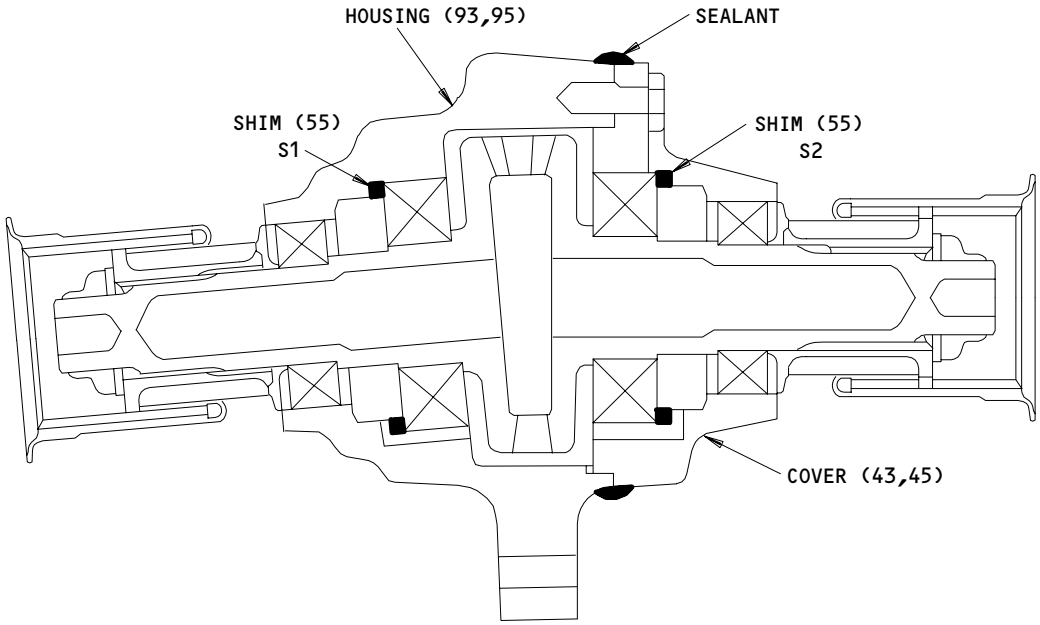
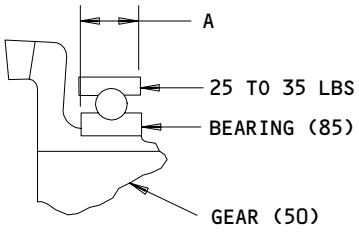
L. Seal cover-housing seam with bead of sealant. Lockwire bolts (35) per 20-50-02 using double-twist method.





Assembly Details and Shim Adjustment
Figure 701 (Sheet 1)

13656

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SHIM OR SHIM SET (55)	NOMINAL THICKNESS (INCHES)
256T3415-1	0.010
256T3415-2	0.012
256T3415-3	0.015
256T3415-4	0.020
256T3415-5	0.025
256T3415-1 & -2	0.022
256T3415-2 & -2	0.024
256T3415-2 & -3	0.027
256T3415-1 & -4	0.030
256T3415-2 & -4	0.032
256T3415-3 & -4	0.035
256T3415-2 & -5	0.037
256T3415-3 & -5	0.040

Table 1

ENGRAVED CODE	EQUIVALENT MEASURED DIMENSION (INCHES)
0	1.2500 - 1.2509
1	1.2510 - 1.2519
2	1.2520 - 1.2529
3	1.2530 - 1.2540
6	1.2460 - 1.2469
7	1.2470 - 1.2479
8	1.2480 - 1.2489
9	1.2490 - 1.2499

Housing Assy (93,95)
Table 2

ENGRAVED CODE	EQUIVALENT MEASURED DIMENSION (INCHES)
0	0.3800 - 0.3809
1	0.3810 - 0.3819
2	0.3820 - 0.3829
3	0.3830 - 0.3840
6	0.3760 - 0.3769
7	0.3770 - 0.3779
8	0.3780 - 0.3789
9	0.3790 - 0.3799

Cover (43,45)
Table 3

EXAMPLES

HOUSING

SHIM = ENGRAVED DIMENSION ON HOUSING (TABLE 2) - BEARING WIDTH A - ENGRAVED DIMENSION B ON GEAR

SHIM = 1.250 (CODE 0) - 0.625 - 0.600
= 0.025

USE SHIM 256T3415-5 (TABLE 1)

COVER

SHIM = ENGRAVED DIMENSION ON COVER (TABLE 3) +0.880 - BEARING WIDTH A - ENGRAVED DIMENSION B ON GEAR

SHIM = 0.382 (CODE 2) +0.880 - 0.626 - 0.601
= 0.035

USE SHIM SET 256T3415-3 & -4

Assembly Details and Shim Adjustment
Figure 701 (Sheet 2)

13641

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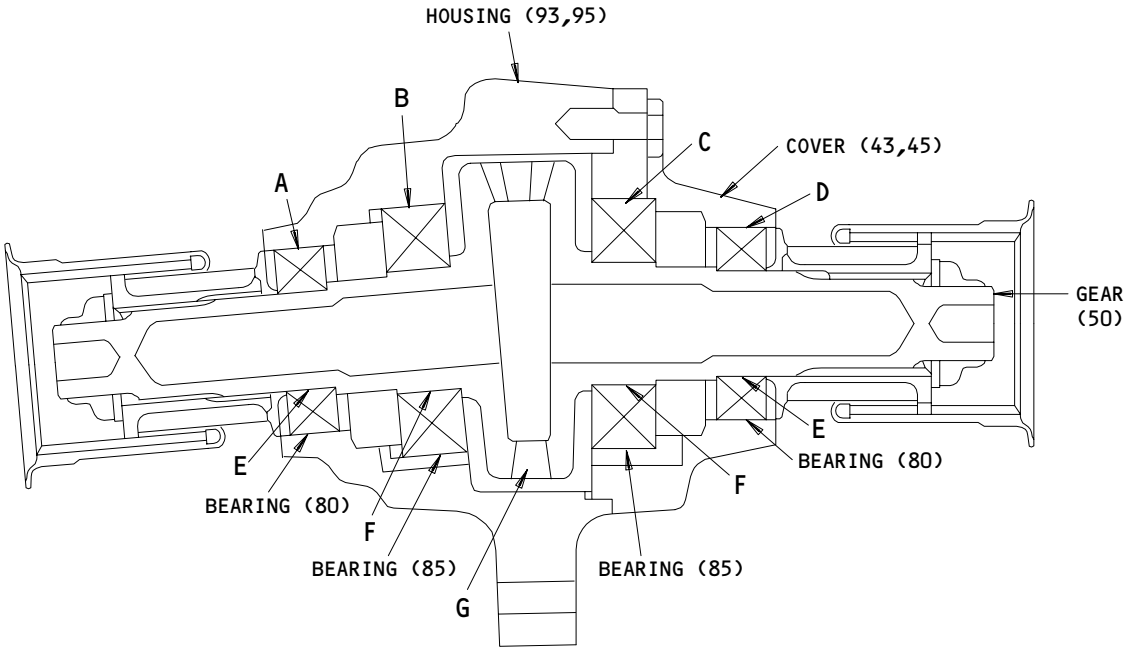
FITS AND CLEARANCES



Fits and Clearances
Figure 801 (Sheet 1)

13654

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Ref Letter Fig.801	Mating Item No. IPL Fig.1	Design Dimension				Service Wear Limit		
		Dimension		Assembly Clearance *[1]		Dimension		Maximum Clearance
		Min	Max	Min	Max	Min	Max	
A	ID 93,95 OD 80	1.8506 1.8499	1.8514 1.8504	0.0002	0.0015	1.8476	1.8534	0.0030
B	ID 93,95 OD 85	2.4411 2.4404	2.4421 2.4409	0.0002	0.0017	2.4381	2.4439	0.0030
C	ID 43,45 OD 85	2.4411 2.4404	2.4421 2.4409	0.0002	0.0017	2.4381	2.4439	0.0030
D	ID 43,45 OD 80	1.8506 1.8499	1.8514 1.8504	0.0002	0.0015	1.8476	1.8534	0.0030
E	ID 80 OD 50	0.9839 0.9844	0.9843 0.9847	-0.0008	-0.0001	0.9843	0.9844	0.0000
F	ID 85 OD 50	1.1807 1.1812	1.1811 1.1815	-0.0008	-0.0001	1.1811	1.1812	0.0000
G	50 *[2]	0.003	0.007					0.009

*[1] NEGATIVE NUMBERS DENOTE INTERFERENCE FIT
*[2] BACKLASH
ALL DIMENSIONS ARE IN INCHES

Fits and Clearances
Figure 801 (Sheet 2)

13642

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FOR TORQUE VALUES OF STANDARD FASTENERS, REFER TO 20-50-01			
ITEM NO. IPL FIG. 1	NAME	TORQUE	
		POUND-INCHES	POUND-FEET
5	NUT	600 - 800	
35	BOLT	50 - 70	

Torque Table
Figure 802

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SPECIAL TOOLS, FIXTURES, AND EQUIPMENT

NOTE: Equivalent substitutes may be used.

1. A27040-1 -- Bearing Width Checking Equipment
2. A27046-140 -- Test Fixture
3. A27046-8 -- Test Equipment

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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

08524 DEUTSCH FASTENER CORPORATION
PO BOX 92925 7001 WEST IMPERIAL HIGHWAY
LOS ANGELES, CALIFORNIA 90045

15653 KAYNAR MFG COMPANY INC KAYLOCK DIV
PO BOX 3001 800 SOUTH STATE COLLEGE BLVD
FULLERTON, CALIFORNIA 92634

21335 TEXTRON INC FAFNIR BEARING DIVISION
37 BOOTH STREET
NEW BRITAIN, CONNECTICUT 06050

21760 SCHATZ FEDERAL BEARINGS CO INC
FAIRVIEW AVENUE
POUGHKEEPSIE, NEW YORK 12602

29337 HOOVER UNIVERSAL INC BALL AND ROLLER DIV
ERWIN, TENNESSEE 37650

38443 TRW INC BEARING DIV
402 CHANDLER STREET
JAMESTOWN, NEW YORK 14701

43991 FAG BEARING INCORPORATED
HAMILTON AVENUE
STAMFORD, CONNECTICUT 06904

52828 REPUBLIC FASTENER MFG CORP
1300 RANCHO CONEJO BLVD
NEWBURY PARK, CALIFORNIA 91320

56878 SPS TECHNOLOGIES INC
HIGHLAND AVENUE
JENKINTOWN, PENNSYLVANIA 19046

72962 ESNA DIV OF AMERACE CORP
2330 VAUXHALL ROAD
UNION, NEW JERSEY 07083

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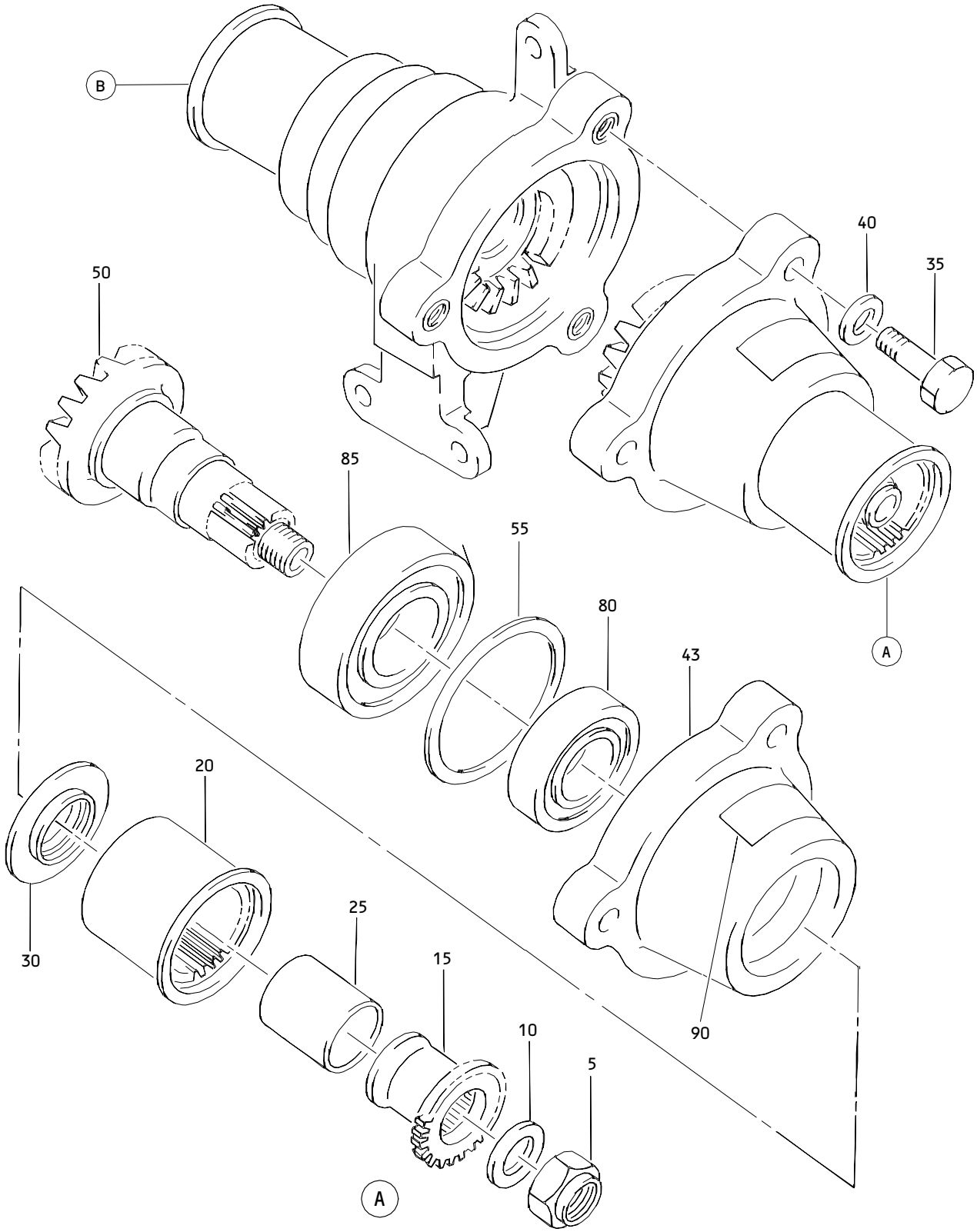

Trailing Edge Flap Drive Angle Gearbox Assembly
Figure 1 (Sheet 1)

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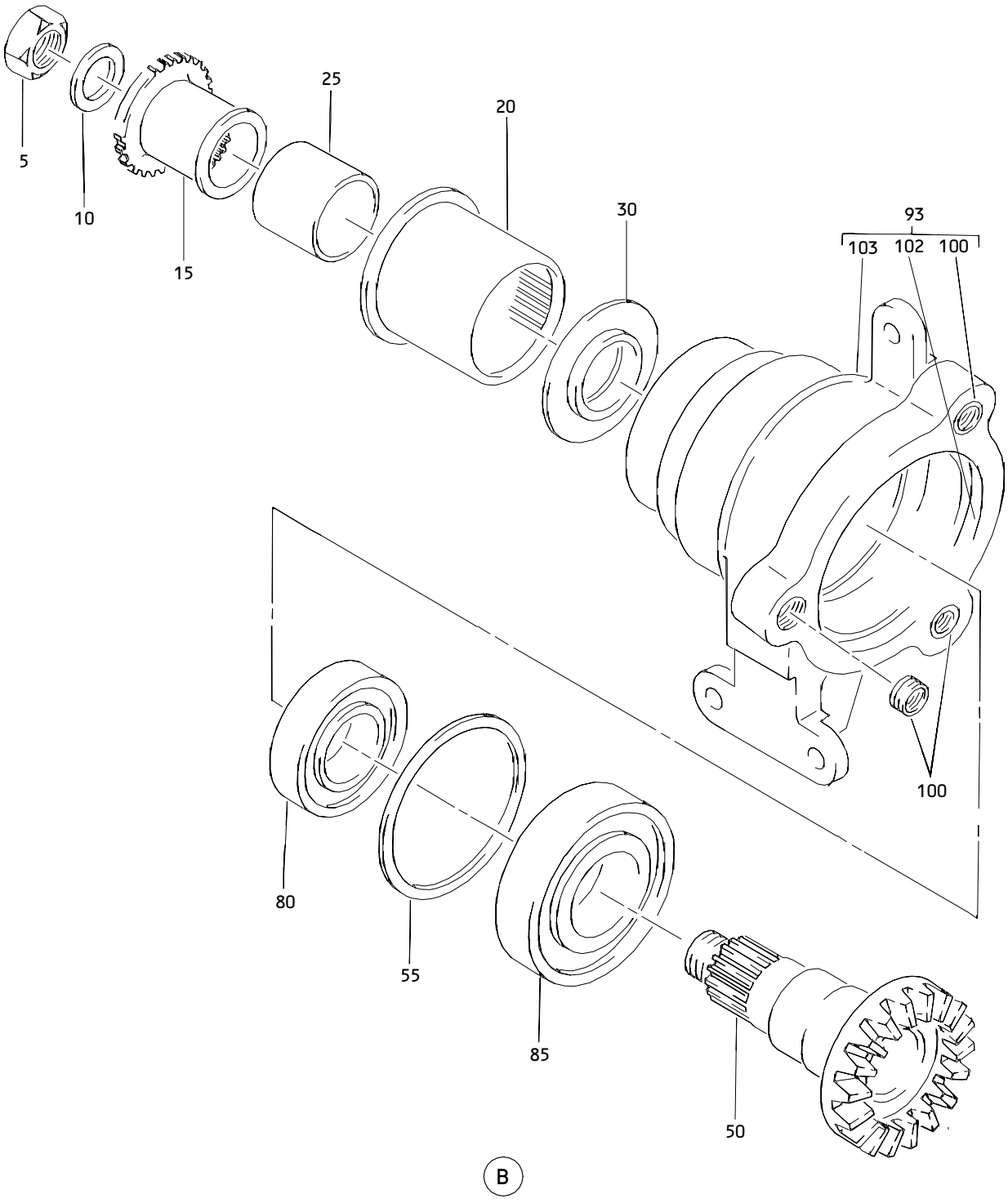

Trailing Edge Flap Drive Angle Gearbox Assembly
Figure 1 (Sheet 2)

T55358

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FIG. & ITEM	PART NO.	AIRLINE PART NUMBER	NOMENCLATURE 1234567	EFF CODE	QTY PER ASSY
01-					
-1	256T3410-2		GEARBOX ASSY-TE FLAP DRIVE ANGLE	A	RF
-1A	256T3410-4		GEARBOX ASSY-TE FLAP DRIVE ANGLE	B	RF
5	BRH10-12		.NUT- (V52828) (SPEC BACN10JC12) (OPT BMN4122AD3-12 (V08524)) (OPT BMN4122A12 (V08524)) (OPT H10-12BAC (V15653)) (OPT RMLH9074-12 (V72962)) (OPT 48FT1216 (V56878))		2
10	AN960-1216		.WASHER		2
15	256T3749-1		.COUPLING HALF		2
20	65B84034-3		.SLEEVE-CPLG		2
25	65B84033-18		.SLEEVE-MOLDED		2
30	256T3414-1		.SHIELD-BRG		2
35	NAS6604H8		.BOLT		3
40	AN960PD416		.WASHER		3
43	256T3412-3		.COVER	A	1
-45	256T3412-1		.COVER	B	1
50	256T3413-1		.GEAR-BEVEL		2
55	256T3415-1		.SHIM		AR
-55A	256T3415-2		.SHIM		AR
-55B	256T3415-3		.SHIM		AR
-55C	256T3415-4		.SHIM		AR
-55D	256T3415-5		.SHIM		AR

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FIG. & ITEM	PART NO.	AIRLINE PART NUMBER	NOMENCLATURE 1234567	EFF CODE	QTY PER ASSY
01-					
80	LL105KS		.BEARING- (V38443) (SPEC BACB10BA25PP) (OPT 6005TT (V43991)) (OPT 9105LLT1C1-01 (V21760)) (OPT 9105NPPFS428 (V21335)) (OPT 993L05 (V29337))		2
85	1206LLT1C1-01		.BEARING- (V21760) (SPEC BACB10AZ30PP) (OPT 206FTT (V43991)) (OPT 99206 (V29337))		2
90	256T3416-1		.PLATE-IDENT		1
93	256T3411-4		.HOUSING ASSY	A	1
-95	256T3411-1		.HOUSING ASSY	B	1
100	MS21209F4-15P		..INSERT		3
102	256T3411-6		..SHIM	A	1
103	256T3411-5		..HOUSING	A	1
-105	256T3411-2		..HOUSING	B	1

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