TO: ALL HOLDERS OF OVERHEAD PASSENGER DOOR COUNTERBALANCE GEARBOX ASSEMBLY COMPONENT MAINTENANCE MANUAL 52-11-71

REVISION NO. 20 DATED NOV 01/02
HIGHLIGHTS

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

CHAPTER/SECTION AND PAGE NO.	DESCRIPTION OF CHANGE
101	Changed the Functional Test to specify items (200, 207) for the carrier 258T1113-1.
102	Changed par. 3.A. of the Check section to specify the carrier 258T1113-1 as the location to measure the backlash.
REPAIR 3-1 601-602	Updated Repair 3-1 with finish information for carrier (200, 207) and guard (208).

BOEING

COMPONENT
MAINTENANCE MANUAL

OVERHEAD PASSENGER DOOR COUNTERBALANCE GEARBOX ASSEMBLY

PART NUMBERS 258T1110-1,-3,-4,-5,-6

COMPONENT MAINTENANCE MANUAL
WITH
ILLUSTRATED PARTS LIST

T22026

BOEING
COMPONENT
MAINTENANCE MANUAL

REVISION RECORD

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

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

T22024

TEMPORARY REVISION AND SERVICE BULLETIN RECORD

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TABLE OF CONTENTS

INTRODUCTION

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

This manual is divided into separate sections:

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

Refer to the Table of Contents for the page location of applicable sections. 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 (Chapter 20), 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:

Testing/Ts	Aug 30/82
Assembly	Aug 30/82

OVERHEAD PASSENGER DOOR COUNTERBALANCE GEARBOX ASSEMBLY

DESCRIPTION AND OPERATION

1. Description and Operation

   A. The overhead passenger door counterbalance gearbox assembly is required to preload the torsion springs of the counterbalance assembly and control door speed. The counterbalance assembly is used to counter the weight of the overhead passenger door for easy opening and closing. The gearbox assembly consists of a planetary gear stage with an 11:1 gear ratio, a centrifugal brake, and a handwheel. The gears multiply the force applied to the handwheel for preload of the torsion springs. Spring force is monitored by an indicator gear and a pointer gear. The centrifugal brake is used to maintain a safe speed of door actuation.

2. Leading Particulars (Approximate)

   Height -- 19 inches
   Width -- 11 inches
   Length -- 6 inches
   Weight -- 30 pounds

TESTING AND TROUBLE SHOOTING

1. Material and Equipment

NOTE: Equivalent substitutes may be used.

A. Test Fixture -- A52017-1

B. Test Box -- A27081-3 *[1]

C. Cable Assemblies -- A27081-8, -10 *[1]

D. Power Supply -- 115v ac

E. D00108 Grease -- MIL-G-Z3827 (Ref 20-60-03)

*[1] Part of A27081-1 readout equipment

2. Functional Test (IPL, Fig. 1)

A. Mount gearbox with axis of pinion shaft (75) in horizontal plane in the test fixture A52017-1. Connect cable assemblies A27081-8, -10 to test fixture A52017-1 and test box A27081-3. Connect power supply to test box A27081-3.

B. Test gearbox assembly (258T1110-1, -3).

(1) Rotate carrier (200, 207) at 25 RPM clockwise, viewed from nut (205) end, and verify that torque required is 0-25 pound-inches.

(2) Repeat step B. rotating carrier counterclockwise.

CAUTION: TO PREVENT OVERHEATING BRAKE, ROTATIONS ABOVE 40 RPM MUST NOT EXCEED 60 SECONDS DURATION IN ANY 10 MINUTE PERIOD.

(3) Rotate carrier clockwise at 50 RPM and verify that torque required is 250-600 pound-inches.

(4) Rotate carrier counterclockwise at 50 RPM and verify that torque required is 150-500 pound-inches.

(5) Rotate carrier clockwise at 60-70 RPM and verify that torque required is 700 pound-inches minimum.

(6) Rotate carrier counterclockwise at 60-70 RPM and verify that torque required is 500 pound-inches minimum.

C. Test gearbox assembly (258T1110-4, -5, -6).

(1) Rotate carrier (200) at 25 RPM clockwise, viewed from nut (205) end, and verify that torque required is 0-25 pound-inches.

(2) Repeat step B. rotating carrier counterclockwise.

CAUTION: TO PREVENT OVERHEATING BRAKE, ROTATIONS ABOVE 40 RPM MUST NOT EXCEED 60 SECONDS DURATION IN ANY 10 MINUTE PERIOD.

(3) Rotate carrier clockwise at 50 RPM and verify that torque required is 150-500 pound-inches.

(4) Rotate carrier counterclockwise at 50 RPM and verify that torque required is 120-500 pound-inches.

(5) Rotate carrier clockwise at 60-70 RPM and verify that torque required is 600 pound-inches minimum.

(6) Rotate carrier counterclockwise at 60-70 RPM and verify that torque required is 400 pound-inches minimum.

D. If torque values are lower than minimum values specified, allow a 20-minute cooling period, then repeat functional test.

E. If torque values are still lower than minimum value, remove cover assembly (80) per DISASSEMBLY par. 2.A. thru 2.E., clean, lubricate with grease MIL-G-23827 and reinstall cover assembly per ASSEMBLY step 2.G. thru 2.L. and retest.

3. Backlash Check

NOTE: Perform this test prior to disassembly of gearbox only.

A. Lock handwheel (50) and apply 5-10 pound-inches torque to carrier (200, 207). Check that backlash measured at spline pitch diameter (1.250 inch) of carrier (200, 207) does not exceed 0.020 inch maximum.

B. If backlash exceeds 0.020 inch, disassemble and check gears (235, 260) and bearings (230) for wear. Replace parts if required.

4. Handwheel Backlash Check

NOTE: Perform this test prior to disassembly of gearbox only.

A. With handwheel (50) and its internal components removed from gearbox drive shaft (75) (Ref DISASSEMBLY, par. 2.A) but still mounted on shaft (35), check that maximum backlash for the gear train, measured at the outside diameter of the pointer gear (5), does not exceed 0.070 inch.

B. Replace gears (5, 25, 30) as required if backlash exceeds maximum wear limit.

DISASSEMBLY

NOTE: Refer to TESTING/TROUBLE SHOOTING to establish condition or probable cause of any malfunction and to determine extent of disassembly and repair.

1. Equipment

   NOTE: Equivalent substitutes may be used.

   A. Wrench, Spanner -- A32045-88

2. Parts Replacement

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

   A. Pins (10, 45, 140, 180, 190, IPL Fig. 1)

   B. Rivets (265)

3. Disassembly (IPL Fig. 1)

   A. Remove pin (10) and pull gear (5) from shaft (35). Remove carrier (20) with bushing (15), gears (25, 30) from shaft. Separate gears and bushing from carrier.

   B. Push shaft (35) out thru fitting (40) and remove pin (45) from shaft. Remove fitting from carrier (200).

   C. Restrain handwheel (50) and loosen nut (55). Remove nut (55), washer (60) and remove handwheel (50) from shaft (75).

   D. Lift pawl assembly (100) and remove ratchet (65) from shaft (75). Remove spring (70) from pawl assembly.

   E. Remove bolts (85A), washers (90) and nut (95A) and remove cover assembly (80) from housing assembly (270). Remove parts (100 thru 110A, 125 thru 160) from cover (165).

   F. Remove springs (170) from brake shoes (175) and arm (195 or 290). Remove parts (180 thru 190) and separate brake shoes from arm. Note thickness and number of shims (187) for use during assembly.

   G. Remove support arm (195 or 290) and shaft (75).

      NOTE: Do not disassemble support arm assembly (290) unless necessary for repair or replacement.

H. Restrain carrier (200) or carrier assembly (203) and remove nut (205) using wrench A32045-88. Remove carrier and attached gear assemblies (215) from housing assembly (270).

I. Remove bolts (220), washers (223), nuts (225) and gear assemblies (215) from carrier (200) or carrier assembly (203). Remove bearing (210).

NOTE: Do not disassemble gear assemblies (215) or carrier assembly (203) unless necessary for repair or replacement.

J. Remove bolts (255A), washers (257), retainer (250), bearings (240) and spacer (245).

K. Drill out rivets (265) and remove gear (260) from housing assembly (270).

NOTE: Do not disassemble housing assembly (270) unless necessary for repair or replacement.

CLEANING

1. Clean all parts except bearings using standard industry practices and informations contained in 20-30-03.

2. Clean all teflon-sealed bearings per manufacturer's instructions.

CHECK

1. Use standard industry practices to do a visual check for damage to all visible parts. Do the magnetic particle check or penetrant check if the visual check shows possible damage on the parts that follow:

   A. Magnetic particle check per 20-20-01 -- pawl (120, IPL Fig. 1), brake spring (170, 170A), planet carrier (200 or 207), gear (235), ring gear (260), pinion shaft (75), and ratchet (65).

   B. Penetrant check per 20-20-02 -- counter shaft (35), spring support (125), cover (165), spring (170, 170A), support arm (195, 320), spacer (245), housing (285) and stop (310).

2. Spring (170; 258T1135-1) Check

   NOTE: Free length of spring is 1.25 inches (approx).

   A. Extend spring to a length of 2.45 ±0.010 inches and check that load is 2.50 ±0.25 pounds.

   B. Extend spring to a length of 1.70 ±0.010 inches and check that load is 1.00 pound minimum.

3. Check gear teeth and splines for evidence of uneven wear or pitting.

4. Refer to military specifications in Boeing Part Standards for spring (170A; MS24586C129) criteria.

REPAIR - GENERAL

1. Content

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

P/N	NOMENCLATURE	REPAIR
258T1114	GEAR ASSEMBLY	1-1
258T1126	PAWL ASSEMBLY	2-1
- - -	MISCELLANEOUS PARTS	3-1
258T1112	SHAFT	4-1

2. Standard Practices

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

20-10-03 Shot Peening
20-10-04 Grinding of Chrome Plated Parts
20-30-02 Stripping of Protective Finishes
20-30-03 General Cleaning Procedures
20-41-01 Decoding Table for Boeing Finish Codes
20-41-02 Application of Chemical and Solvent Resistant Finishes
20-42-03 Hard Chrome Plating
20-42-05 Bright Cadmium Plating
20-43-01 Chromic Acid Anodizing
20-50-03 Bearing Installation and Retention

3. Materials

NOTE: Equivalent substitutes may be used.

A. A00964 Primer -- BMS 10-11, type 1 (20-60-02)

B. D00108 Grease -- MIL-G-23827 (20-60-03)

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
⌰	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 WHICH 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
⊥ 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 RELATIVE 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
⌯ 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 RELATIVE 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

(NOTE THAT ⌓ A 0.020 MAY ALSO APPEAR AS ⌓ 0.020 A)

True Position Dimensioning Symbols
Figure 601

T22030

GEAR ASSEMBLY - REPAIR 1-1

258T1114-1

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

1. Bearing (230) Replacement (IPL Fig. 1)

   A. Remove bearing.

   B. Install bearing and roller swage per 20-50-03. Assemble with BMS 10-11 primer on faying surfaces.

2. Refinish

   A. Gear (235) -- Cadmium plate (0.0002 to 0.0004 inch), type 2, class 3 (F-15.02), apply one coat BMS 10-11, type 1 primer (F-20.02), except omit primer from hole for bearing and teeth and apply a light coat of MIL-G-23827 grease to teeth. Material: 4340 steel, 180-200 ksi.

PAWL ASSEMBLY - REPAIR 2-1

258T1126-1, -5

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

1. Bearing (115) Replacement (IPL Fig. 1)

   A. Remove bearing.

   B. Install bearing with wet BMS 10-11, type 1 primer and roller swage per 20-50-03.

2. Refinish

   A. Pawl (120) -- Prepare surface and passivate (F-17.09). Material: 17-4PH CRES, 180 ksi minimum.

MISCELLANEOUS PARTS - REPAIR 3-1

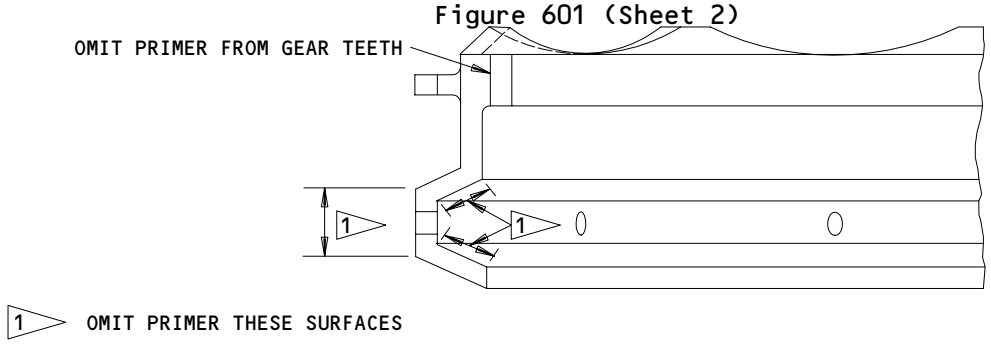
1. Repair of these parts consists of restoration of original finish.

IPL FIG. & ITEM	MATERIAL	FINISH
Fig. 1		
Counter shaft (35)	321 or 347 CRES	Prepare surface and passivate, type 2 (F-17.09), all over.
Ratchet (65)	17-4PH CRES 180 ksi min.	Prepare surface and passivate, type 2 (F-17.09), all over.
Support (125)	303 SE or 303 CRES or 304 CRES	Prepare surface and passivate, type 2 (F-17.09), all over.
Retainer (145,250)	Aluminum alloy	Chemical treat (colored film), apply one coat BMS 10-11, type 1 primer (F-18.06).
Cover (165)	Aluminum alloy	Chromic acid anodize, type 1 or sulfuric acid anodize, type 2 (F-17.05), all over. Apply one coat BMS 10-11, type 1 primer (F-20.02) except omit primer from bearing hole and 9 inch spigot diameter.
Arm (195,320)	Aluminum alloy	Chromic acid anodize, type 1, or sulfuric acid anodize, type 2 (F-17.05); apply one coat BMS 10-11, type 1 primer (F-20.02). Omit primer from teeth and from 0.25 inch diameter hole.
Spring (170)	302 Steel	Cadmium plate, type 2, class 2 (F-15.06), all over.

Refinish Details
Figure 601 (Sheet 1)

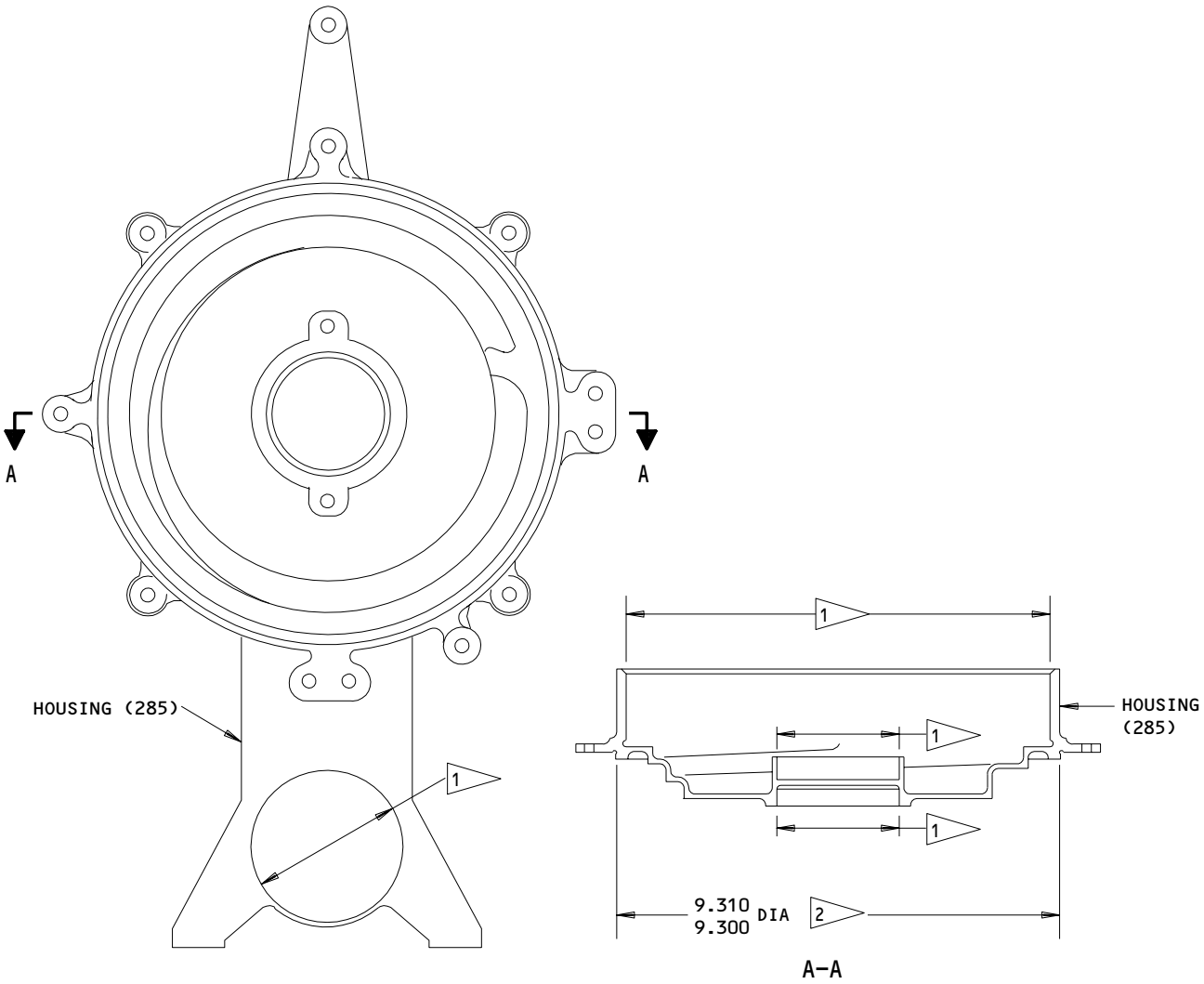
IPL FIG. & ITEM	MATERIAL	FINISH
Carrier (200,207)	17-4PH CRES, 180 ksi	Prepare surface and passivate, type 2 (F-17.09), all over.
Guard (208)	Al Alloy	Chemical treat (colored film), apply one coat BMS 10-11, type 1 primer (F-18.06).
Spacer (245)	Aluminum alloy	Chromic acid anodize, type 1; apply one coat BMS 10-11, type 1 primer (F-18.13), all over.
Gear (260)	4340 Steel	Cadmium plate (0.0002 to 0.0004 inch) type 2, class 3 (F-15.02), apply one coat BMS 10-11, type 1 primer (F-20.02), omit primer on surfaces as shown in Fig. 602.
Housing (285)	Aluminum alloy	Finish per Fig. 603.
Stop (310)	Aluminum alloy	Chromic acid anodize, type 1; apply one coat BMS 10-11, type 1 primer (F-18.13) all over, except omit primer from bolthole.
Stop (315)	Aluminum alloy	Chemically treat; apply one coat BMS 10-11, type 1 primer (F-18.06) all over, except omit primer from bolt-hole.

Refinish Details
Figure 601 (Sheet 2)



Refinish of Ring Gear
Figure 602

T15939



REFINISH

CHROMIC ACID ANODIZE, TYPE 1 OR SULFURIC ACID ANODIZE, TYPE 2 (F-17.05), AND APPLY ONE COAT BMS 10-11, TYPE 1 PRIMER (F-20.02), ALL OVER EXCEPT AS NOTED BY 1 2

1 OMIT PRIMER THESE SURFACES

2 APPLY 1 COAT OF ENAMEL (F-21.02) ON ALL SURFACES WITHIN INDICATED DIA EXCEPT OMIT PRIMER AND ENAMEL IN BORES (258T1111-5 ONLY)

MATERIAL: ALUMINUM ALLOY

ALL DIMENSIONS ARE IN INCHES

Refinish of Housing
Figure 603

SHAFT - REPAIR 4-1

258T1112-1

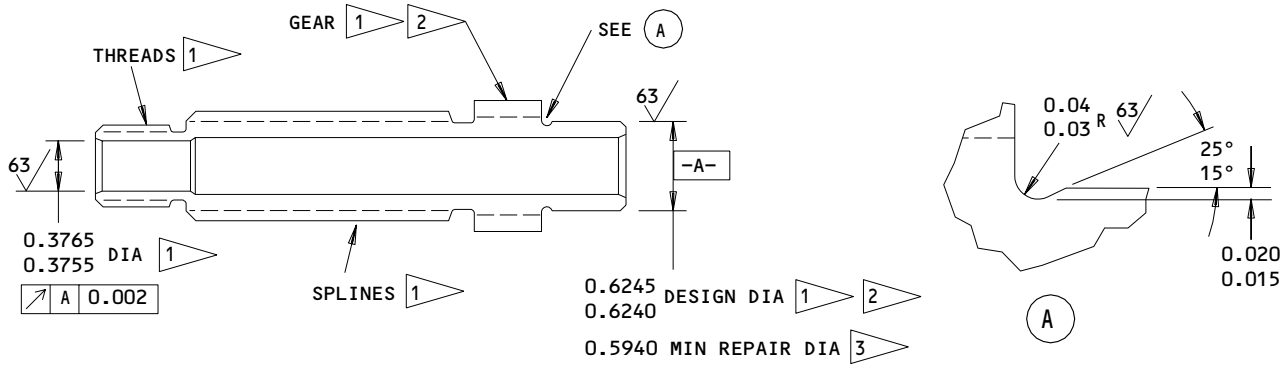
NOTE: Refer to REPAIR-GEN for list of applicable standard practices. For repair of surfaces which may only require stripping and restoration of original refinish, refer to REFINISH instruction, Fig. 601.

1. Bearing Seat Repair (Fig. 601)

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

B. Shot peen repaired surface as indicated.

C. Build up repaired surface with chrome plate and grind to design dimension and finish shown.



REFINISH

CADMIUM PLATE (F-15.02) AND APPLY 1 COAT OF PRIMER (F-20.02) ALL OVER EXCEPT AS NOTED

1 OMIT PRIMER THIS SURFACE

2 APPLY A LIGHT COATING OF GREASE TO THIS SURFACE

3 BUILD UP WITH CHROME PLATE AND GRIND TO DESIGN DIM AND FINISH SHOWN. CHROME PLATE RUN OUT 0.00-0.08. NO CHROME PLATE IN FILLET RADIUS OR EDGE

REPAIR

REF 3

SHOT PEEN: (REF 20-10-03)
0.017-0.046 SHOT SIZE
0.010A2 INTENSITY

125 ALL MACHINED SURFACES EXCEPT AS NOTED

BREAK ALL SHARP EDGES 0.008 R

MATERIAL: 4340 STEEL, 180-200 KSI

ALL DIMENSIONS ARE IN INCHES

Shaft Repair
Figure 601

158708

ASSEMBLY

1. Material and Equipment

NOTE: Equivalent substitutes may be used.

A. D00108 Grease -- MIL-G-23827 (Ref 20-60-03)

B. Shaft Support - - A52015-1

C. G00372 Lockwire -- MS20995C20 (Ref 20-60-04)

D. A00964 Primer -- BMS 10-11, type 1 (Ref 20-60-02)

E. Wrench, Spanner -- A32045-88

F. G50115 Lapping Compound -- Timesaver 111 fine (green label) (V2K985)

2. Assembly (IPL Fig. 1)

A. Assemble gear (260) on housing assembly (270) with drain holes in gear align with drain holes in housing. If housing assembly was replaced, drill 0.098-0.103 inch diameter rivet holes using holes in gear as guide. Install rivets (265) with manufacturer's head on gear. Coat gear teeth with grease.

B. Coat teeth of gear assemblies (215) with grease. Install bearing (210) and gear assemblies on carrier (200) or carrier assembly (203). Secure gear assemblies with bolts (220), washers (223) and nuts (225).

C. Install bearing (240) on housing assembly (270) and install retainer (250) and secure with bolts (255A) and washers (257).

D. Install bearing (240) and spacer (245) on carrier (200) or carrier assembly (203). Install carrier on housing assembly (270) with gear assemblies (215) mesh with gear (260). Install nut (205) on carrier and tighten to 800-1000 pound-inches using wrench A32045-88. If nut running torque exceeds 800-1000 pound-inches, tighten nut to 200-400 pound-inches above nut running torque.

E. Coat splines and gear teeth of shaft (75) with grease and install shaft.

F. Install brake shoes (175) and arm (195) as follows:

NOTE: See ASSEMBLY par. 2.G. for arm (290) installation.

(1) Install arm (195) on shaft (75). Position brake shoes (175) on arm (195) and install parts (180 thru 190).

(2) Install support A52015-1 on shaft (75). Extend brake shoes (175) until brake shoes contact V-groove of gear (260). Note position of brake shoes in V-groove of gear. Remove support A52015-1 and arm (195). Remove brake shoes and adjust shim (187) thickness as required to center brake shoes in V-groove of gear. Clearance between arm clevis and brake shoes must be effectively 0.000 with shims installed. Also check that brake shoes pivot freely without binding and contact both sides of V-groove when extended.

(3) Reassemble brake shoes (175) on arm (195) with parts (180 thru 190). Apply grease to contact surfaces of gear (260) and brake shoes (175) and arm (195) and reinstall arm and brake shoes on shaft (75).

(4) Install support A52015-1 on shaft (75) and recheck position of brake shoes (175) in V-groove of gear (260). Also check brake shoes for freedom of movement. Readjust shims (187) as required. Remove support A52015-1.

G. Install brake shoes (175) and arm (290) as follows:

(1) Install arm (290) on shaft (75). Position brake shoes (175) on arm (290) and install fasteners (180 thru 190).

(2) Apply grease to contact surfaces of gear (260) and brake shoes (175).

(3) Attach springs (170) to brake shoes (175) and arm (290).

(4) Check brake shoes (175) for freedom of movement.

H. Install bearing (160) in cover (165) with wet primer and install retainer (145), bolts (150) and nuts (155). Install spring support (125) on pawl assembly (100) and secure with pin (130), washer (135) and cotter pin (140). Position pawl assembly (100) on cover (165) and secure with bolt (105) and collar (110A).

I. Install cover assembly (80) on housing assembly (270) and secure with bolts (85A), washers (90) and nuts (95A).

J. Install spring (70) on pawl assembly (100) and install ratchet (65).

K. Install pin (45) on shaft (35) and insert shaft thru fitting (40) with pin seated in recess in fitting. Slide fitting in carrier (200).

L. Install handwheel (50) on shaft (75) and install washer (60) and nut (55). Torque nut (55) 250-350 pound-inches.

M. Assemble bushing (15) and gear (25) on carrier (20). Position gear (30) as shown in Fig. 701 and install carrier on shaft (35) with gear (25) meshes with gear (30).

N. Install pointer gear (5) on shaft (35) as shown in Fig. 701 and install pin (10) thru gear (5) and shaft (35).

O. Prepare unit for functional test by performing run-in procedure.

(1) Mount gearbox per TESTING AND TROUBLESHOOTING par. 2.A.

(2) Rotate carrier (207) clockwise at 50 RPM for 1 minute. Read torque. Rotate carrier counterclockwise at 50 RPM for 1 minute.

(3) If torque meets or exceeds value listed in Fig. 700, run-in procedure is complete.

(4) If torque does not meet value listed in Fig. 700:

(a) On assemblies -1, -3, if torque in clockwise direction is less than 250 pound-inches, continue run-in at 50 rpm for two minutes clockwise, and two minutes counterclockwise.

(b) On assemblies -4, -5, -6, if torque in clockwise direction is less than 150 pound-inches, remove cover (80), clean and apply a thin coat of lapping compound to brake (175), and housing groove on inside diameter of gear-ring (260). Run-in at 50-55 rpm in clockwise direction for twenty seconds, and twenty seconds in counterclockwise direction. Repeat run-in one time.

(5) After run-in completion, allow gearbox assembly to cool for 30 minutes. Remove cover assembly (80), clean and relubricate brakeshoes (175), and reassemble.

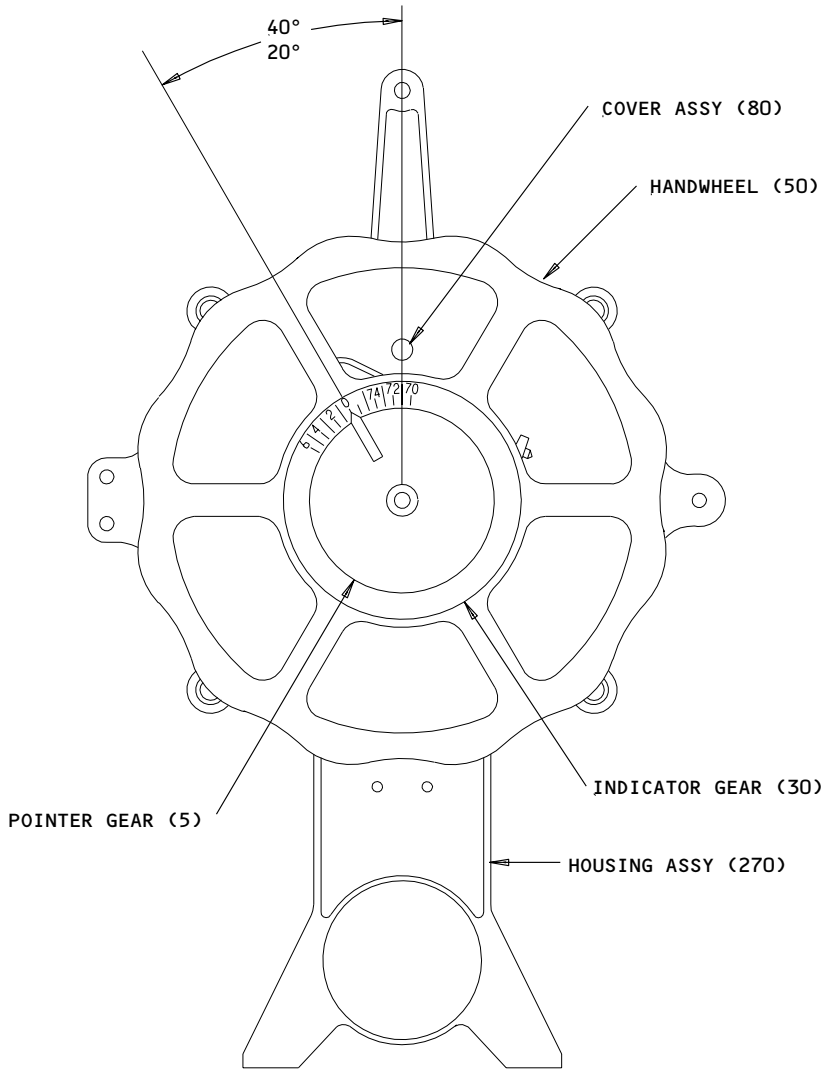
Part Number	Torque (pound-inches)
258T1110-1, -3	250 minimum
258T1110-4, -5, -6	150 minimum

Run-In Torque Values
Figure 700

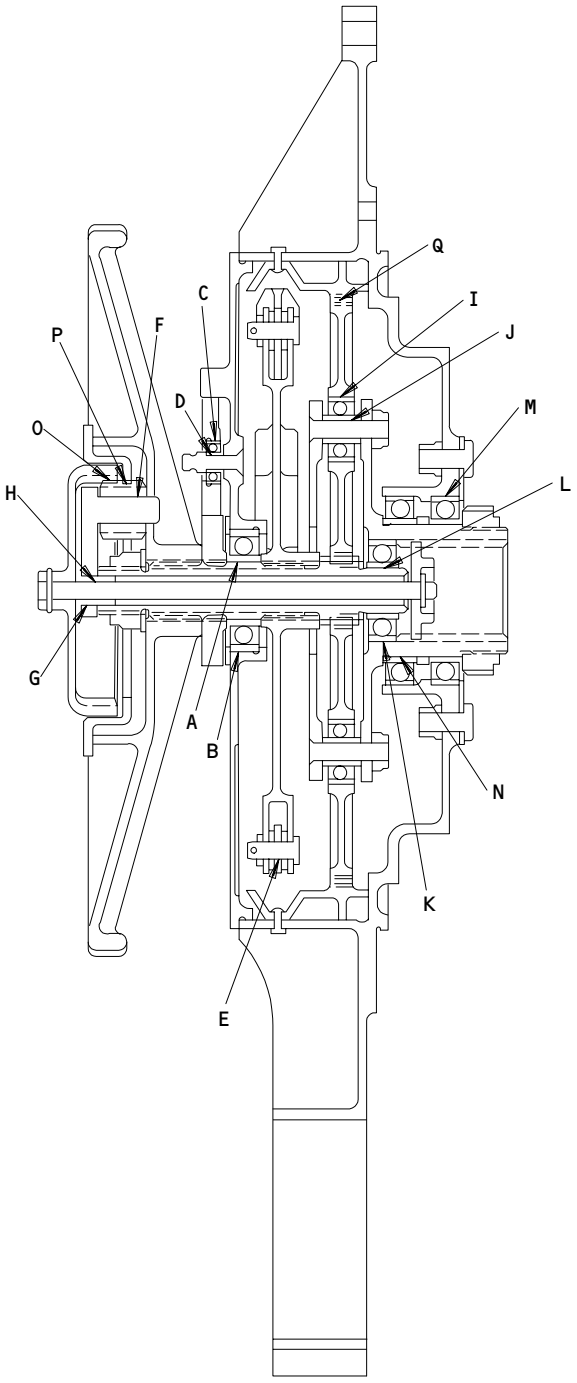
P. Test unit per TESTING/TROUBLE SHOOTING. If unit fails first functional test, repeat run-in procedure.

Q. Lockwire pin (10) using single twist method per 20-50-02.

3. Use standard industry practices and information contained in 20-44-02 to store this component.



Installation of Pointer Gear and Indicator Gear
Figure 701



Fits and Clearances
Figure 801 (Sheet 1)

Ref Letter Fig.801	Mating Item No. IPL Fig.	Design Dimension				Service Wear Limit		
		Dimension		Assembly Clearance *[1]		Dimension		Maximum Clearance
		Min	Max	Min	Max	Min	Max	
A	ID 160 OD 75	0.7495 0.7450	0.7500 0.7500	-0.0005	0.0050	0.7425	0.7570	0.0070
B	ID 165 OD 160	1.6238 1.6245	1.6243 1.6250	-0.0012	-0.0002	1.6243	1.6245	0.0000
C	ID 120 OD 115	0.6243 0.6245	0.6254 0.6250	-0.0007	0.0009	0.6223	0.6270	0.0020
D	ID 115 OD 105	0.1895 0.1890	0.1900 0.1895	0.0000	0.0010	0.1875	0.1915	0.0020
E	ID 195,290 OD 180	0.2480 0.2460	0.2500 0.2480	0.0000	0.0040	0.2400	0.2560	0.0080
F	ID 25 OD 20	0.3730 0.3660	0.3750 0.3720	0.0010	0.0090	0.3590	0.3860	0.0140
G	ID 20 OD 15	0.3750 0.3755	0.3790 0.3765	-0.0015	0.0035	0.3680	0.3835	0.0070
H	ID 15 OD 35	0.2505 0.2450	0.2515 0.2490	0.0015	0.0065	0.2405	0.2590	0.0100
I	ID 235 OD 230	0.9004 0.9009	0.9009 0.9014	-0.0010	0.0000	0.9009	0.9009	0.0000
J	ID 230 OD 220	0.2495 0.2485	0.2500 0.2495	0.0000	0.0015	0.2465	0.2525	0.0030
K	ID 200 OD 210	1.3748 1.3745	1.3753 1.3750	-0.0002	0.0008	1.3732	1.3766	0.0016
L	ID 210 OD 75	0.6245 0.6240	0.6250 0.6245	0.0000	0.0010	0.6225	0.6265	0.0020
M	ID 285 OD 240	2.5625 2.5615	2.5635 2.5625	0.0000	0.0020	2.5585	2.5665	0.0040

*[1] NEGATIVE VALUES DENOTE INTERFERENCE FIT

ALL DIMENSIONS ARE IN INCHES

Fits and Clearances
Figure 801 (Sheet 2)

158710

REF LETTER FIG.801	MATING ITEM NO. IPL FIG.	DESIGN DIMENSION*				SERVICE WEAR LIMIT*		
		DIMENSION		ASSEMBLY CLEARANCE ▷1◁		DIMENSION		MAXIMUM CLEARANCE
		MIN	MAX	MIN	MAX	MIN	MAX	
N	ID 240 OD 200	1.8120 1.8110	1.8130 1.8120	0.0000	0.0020	1.8080	1.8160	0.0040
O	5 25			0.004 ▷2◁	0.008 ▷2◁			▷3◁
P	25 30			0.004 ▷2◁	0.008 ▷2◁			▷3◁
Q	235 260			0.002 ▷2◁	0.004 ▷2◁			0.020 ▷2◁

* ALL DIMENSIONS ARE IN INCHES

▷1◁ NEGATIVE VALUES DENOTE INTERFERENCE FIT

▷2◁ BACKLASH AT PITCH DIAMETER

▷3◁ BACKLASH OF POINTER GEAR (5)
RELATIVE TO INDICATOR GEAR (30)
SHALL NOT EXCEED 0.070

Fits and Clearances
Figure 801 (Sheet 3)

158711

REF IPL		NAME	TORQUE*	
FIG. NO.	ITEM NO.		POUND-INCHES	POUND-FEET
1	55	NUT	250-350	
1	205	NUT	800-1000 ▷1◁	

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

▷1◁ IF NUT RUNNING TORQUE EXCEEDS 800-1000 LB-INS., TIGHTEN NUT 200-400 LB-INS. ABOVE RUNNING TORQUE.

Torque Table
Figure 802

158713

SPECIAL TOOLS, FIXTURES AND EQUIPMENT

NOTE: Equivalent substitutes may be used.

1. Test Fixture -- A52017-1

2. Assembly Tool - A52015-1

3. Test Box -- A27081-3 *[1]

4. Cable Assemblies -- A27081-8, -10 *[1]

5. Power Supply -- 115v ac

6. Spanner Wrench -- A32045-88

*[1] Part of A27081-1 readout equipment

ILLUSTRATED PARTS LIST

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

2. Indentures show parts relationships as follows:

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

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

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

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

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

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

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

6. Parts Interchangeability

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

VENDORS

06710 VALLEY-TODECO INCORPORATED
12975 BRADLEY AVENUE
SYLMAR,CALIFORNIA 91342

06725 AIR INDUSTRIES CORPORATION
12570 KNOTT STREET
GARDEN GROVE, CALIFORNIA 92641

06950 SCREWCORP VSI CORP AEROSPACE PRODUCTS DIV FAIRCHILD IND INC
13001 EAST TEMPLE AVE. PO BOX 730
CITY OF INDUSTRY, CALIFORNIA 91746

08524 DEUTSCH FASTENER CORP
1315 E GRAND AVE
EL SEGUNDO, CALIFORNIA 90245

09192 ALUMINUM COMPANY OF AMERICA VERNON WORKS
5151 ALCOA AVENUE
VERNON, CALIFORNIA 90058

11815 TOWNSEND DIV OF TEXTRON INC CHERRY FASTENER UNIT
BOX 2157 1224 EAST WARNER AVENUE
SANTA ANA, CALIFORNIA 92707

15653 KAYNAR MICRODOT AEROSPACE FASTENING SYSTEM
800 SOUTH COLLEGE BLVD PO BOX 3001
FULLERTON, CALIFORNIA 92634

15860 NEW HAMPSHIRE BALL BEARINGS, INCORPORATED ASTRO DIVISION
155 LEXINGTON AVENUE
LACONIA, NEW HAMPSHIRE 03246

17943 FEDERAL MANUFACTURING CORPORATION
6910 FARMDALE AVENUE
NORTH HOLLYWOOD, CALIFORNIA 91605

VENDORS

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

27624 PAUL R BRILES INC P.B. FASTENER DIV
1700 WEST 132ND STREET PO BOX 1157
GARDENA, CALIFORNIA 90249

30163 DAYRON CORP
333 MAGUIRE BLVD PO BOX 20394
ORLANDO, FLORIDA 32814

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

42838 NATIONAL RIVET AND MANUFACTURING COMPANY
1-21 EAST JEFFERSON STREET
WAUPUN, WISCONSIN 53963

43991 FAG BEARING INCORPORATED
HAMILTON AVENUE
STAMFORD, CONNECTICUT 06904

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

53551 ALLFAST FASTENING SYSTEMS INC
15200 DON JULIAN ROAD PO BOX 3166
CITY OF INDUSTRY, CALIFORNIA 91745

55580 BRILES RIVET CORP
2640 VISTA PACIFIC DRIVE
OCEANSIDE, CALIFORNIA 92056

56878 SPS TECHNOLOGIES INC AEROSPACE AND INDUSTRIAL PRODUCTS DIV
HIGHLAND AVENUE
JENKINTOWN, PENNSYLVANIA 19046

60516 WEST COAST AEROSPACE INC
812 MIRAFLORES STREET
SAN PEDRO, CALIFORNIA 90731

71087 BOOTS ACFT NUT DIV TOWNSEND CO SEE TEXTRON INC CHERRY
FASTENER TOWNSEND DIV V11815

VENDORS

72962 AMERACE CORP ESNA DIV
2330 VAUXHALL ROAD
UNION, NEW JERSEY 07083
ESNA DIV OF AMERACE CORP SEE AMERACE CORP ESNA DIV
ELASTIC STOP NUT DIV AMERACE CORP SEE ESNA DIV AMERACE CORP

73197 HI-SHEAR TECHNOLOGY CORP
2600 SKYPARK DRIVE
TORRANCE, CALIFORNIA 90505

80539 SPS TECHNOLOGIES INC AEROSPACE PRODUCTS DIV
2701 SOUTH HARBOR BOULEVARD PO BOX 1259
SANTA ANA, CALIFORNIA 92702

92215 VOI-SHAN DIV OF VSI CORP SUB OF FAIRCHILD INDUSTRIAL INC
8463 HIGUERA STREET
CULVER CITY, CALIFORNIA 90230

93907 TEXTRON INC CAMCAR DIV
600 18TH AVENUE
ROCKFORD, ILLINOIS 61101

97393 SHUR-LOK CORPORATION
2541 WHITE ROAD PO BOX 19584
IRVINE, CALIFORNIA 92713

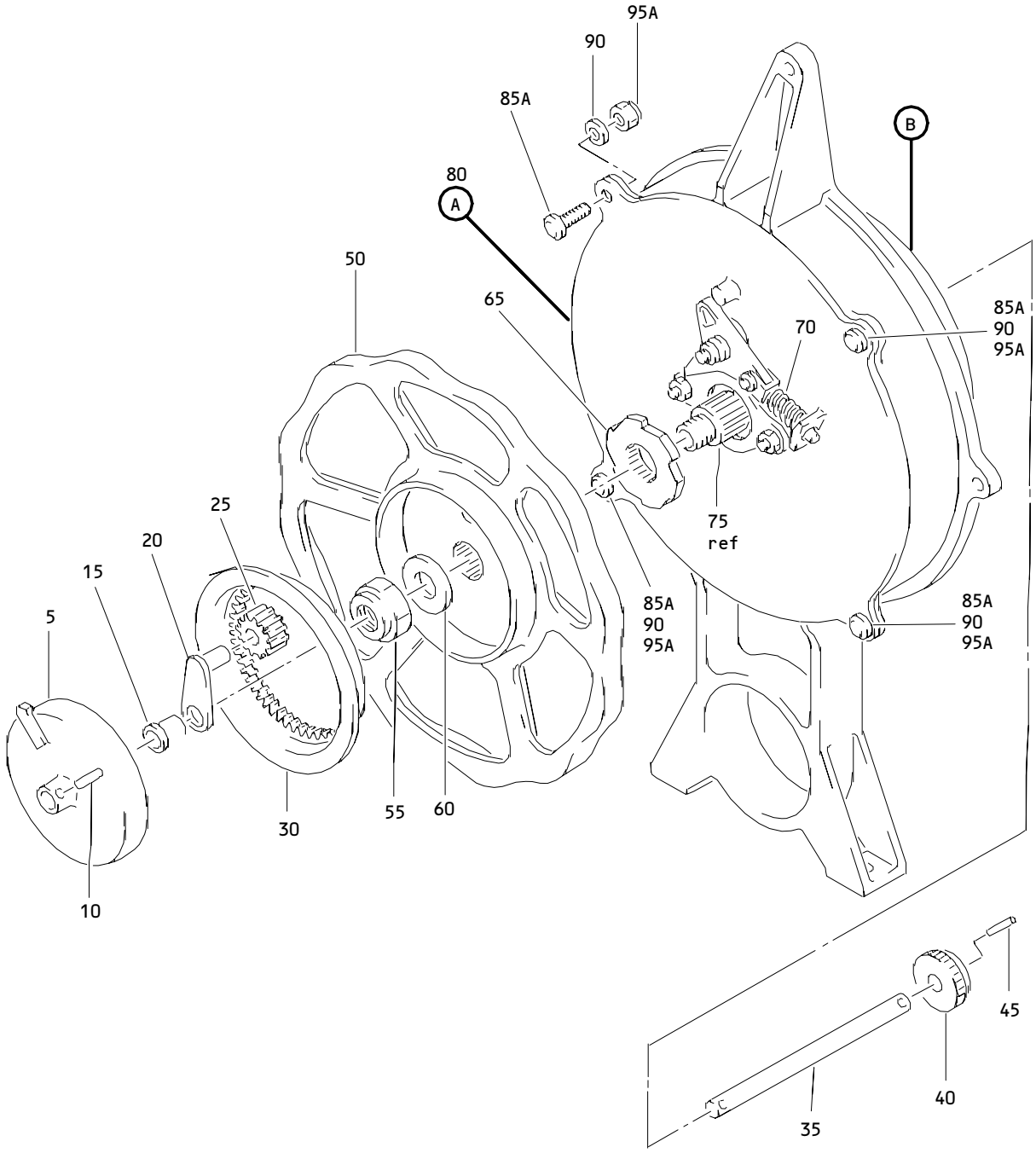
97928 DEUTSCH FASTENER CORP
3969 PARAMONT BOULEVARD
LAKEWOOD, CALIFORNIA 90712

PART NUMBER	AIRLINE PART NO.	FIG.	ITEM	TTL REQ
ADLF04A014		1	15	1
AN960D416		1	90	4
AN960D416L		1	185	4
AN960PD10L		1	135	1
AN960PD416L		1	90A	4
		1	223	2
		1	257	2
AN960PD916		1	60	1
BACB10BW29		1	240	2
BACB10BX10		1	210	1
BACB10BX12		1	160	1
BACB10BY3L		1	115	1
BACB10BY4		1	230	2
BACB30FN8-14		1	220	2
BACB30NF4-2		1	150	2
BACB30NR4K5		1	255A	2
BACB30NY6K8		1	105	1
BACB30VT8K3		1	85A	4
BACC30X6		1	110A	1
BACN10JC4		1	155	2
		1	225	2
BACN10JC9		1	55	1
BACN10JP4A		1	275	2
BACN10RF28		1	205	1
BACR15BA3AD6		1	280	4
BACR15BA4AD		1	206	4
		1	300	2
BACR15BB3D		1	265	8
BACR15BB4AD		1	305	2
BMN4122AD3-9		1	55	1
BRH10A4		1	155	2
		1	225	2
BRM200A4		1	275	2
HL13VAZ6-8		1	105	1
HL19PB8-14		1	220	2
HST10AG8-3		1	85A	4
HST10AZ8-3		1	85A	4
HST10A68-3		1	85A	4
H10-4BAC		1	155	2
		1	225	2
H10-9BAC		1	55	1
KP10A		1	210	1
KP10AFS428		1	210	1
KP10AG27		1	210	1
KP10A2TS		1	210	1

PART NUMBER	AIRLINE PART NO.	FIG.	ITEM	TTL REQ
KP12A		1	160	1
KP12AFS428		1	160	1
KP12AG27		1	160	1
KP12A2TS		1	160	1
KP29B		1	240	2
KP29BFS428		1	240	2
KP29BG27		1	240	2
KP29B2TS		1	240	2
KP3L		1	115	1
KP3LFS428		1	115	1
KP3LTT		1	115	1
KP3L2TS		1	115	1
KP4		1	230	2
KP4-2TS		1	230	2
KP4FS428		1	230	2
KP4G27		1	230	2
KP4TT		1	230	2
K3LG27		1	115	1
K3LTT		1	115	1
LLKP10A		1	210	1
LLKP12A		1	160	1
LLKP29B		1	240	2
LLKP3L		1	115	1
LLKP4		1	230	2
LLK3L		1	115	1
L801-6K8		1	105	1
MK1000-4BAC		1	275	2
MS20392-2C9		1	130	1
MS20392-3C15		1	180	2
MS21042L4		1	95A	4
MS24585-1180		1	70	1
MS24586C129		1	170A	2
MS24665-132		1	140	1
MS24665-134		1	190	2
MS51923-42		1	10	1
		1	45	1
NS103197-048		1	275	2
NS202101-048		1	155	2
		1	225	2
RMLH9074-9		1	55	1
RMLH9075-4W		1	155	2
		1	225	2
SL2822-28		1	205	1
T6S428J		1	155	2
		1	225	2
T8076S428		1	275	2
VN303A048		1	155	2

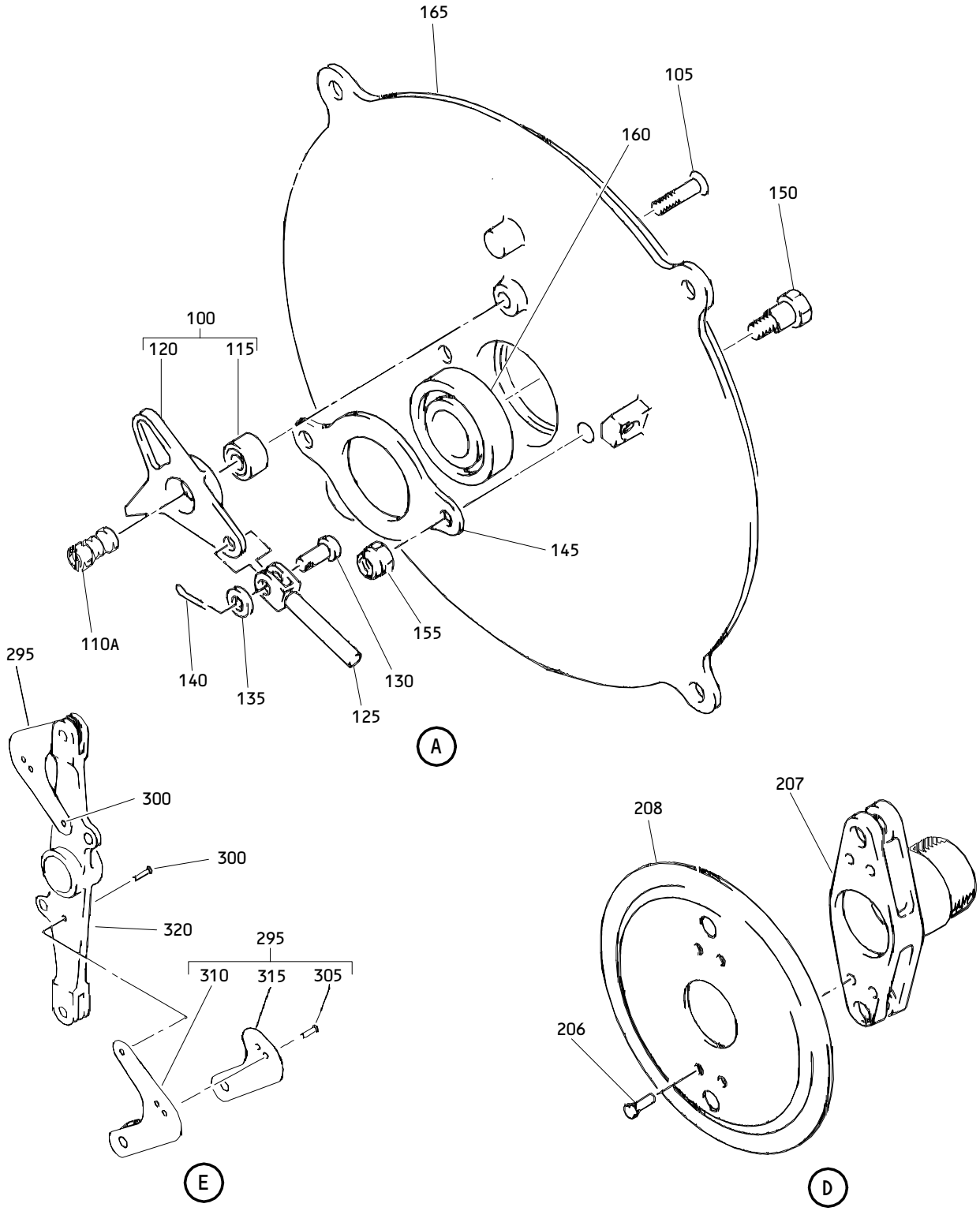
PART NUMBER	AIRLINE PART NO.	FIG.	ITEM	TTL REQ
VN303A048		1	225	2
WC258-14		1	220	2
258T1110-1		1	1	RF
258T1110-3		1	1A	RF
258T1110-4		1	3A	RF
258T1110-5		1	1B	RF
258T1110-6		1	3B	RF
258T1111-1		1	270	1
258T1111-2		1	285	1
258T1111-4		1	270A	1
258T1111-5		1	285A	1
258T1112-1		1	75	1
258T1113-1		1	200	1
		1	207	1
258T1114-1		1	215	2
258T1114-2		1	235	2
258T1115-1		1	260	1
258T1116-1		1	50	1
258T1117-1		1	195	1
258T1117-3		1	195A	1
		1	320	1
258T1117-5		1	320A	1
258T1117-6		1	195C	1
258T1118-3		1	175	2
258T1118-6		1	175E	2
258T1118-7		1	175F	2
258T1119-1		1	65	1
258T1122-2		1	245	1
258T1123-1		1	145	1
258T1123-2		1	250	1
258T1124-1		1	80	1
258T1125-1		1	165	1
258T1126-1		1	100	1
258T1126-2		1	120	1
258T1126-4		1	120A	1
258T1126-5		1	100A	1
258T1127-1		1	125	1
258T1128-1		1	25	1
258T1129-1		1	30	1
258T1131-1		1	5	1
258T1132-1		1	20	1
258T1133-1		1	35	1
258T1134-1		1	40	1
258T1135-1		1	170	2
258T1178-1		1	208	1

PART NUMBER	AIRLINE PART NO.	FIG.	ITEM	TTL REQ
258T1179-1		1	203	1
258T1191-1		1	295	2
258T1191-2		1	310	1
258T1191-3		1	315	1
258T1192-1		1	290	1
285T1125-3		1	165A	1
48FT918		1	55	1
62547-8-14		1	220	2
69-20153-20		1	187	4
82631-2812		1	205	1
96-048		1	155	2
		1	225	2



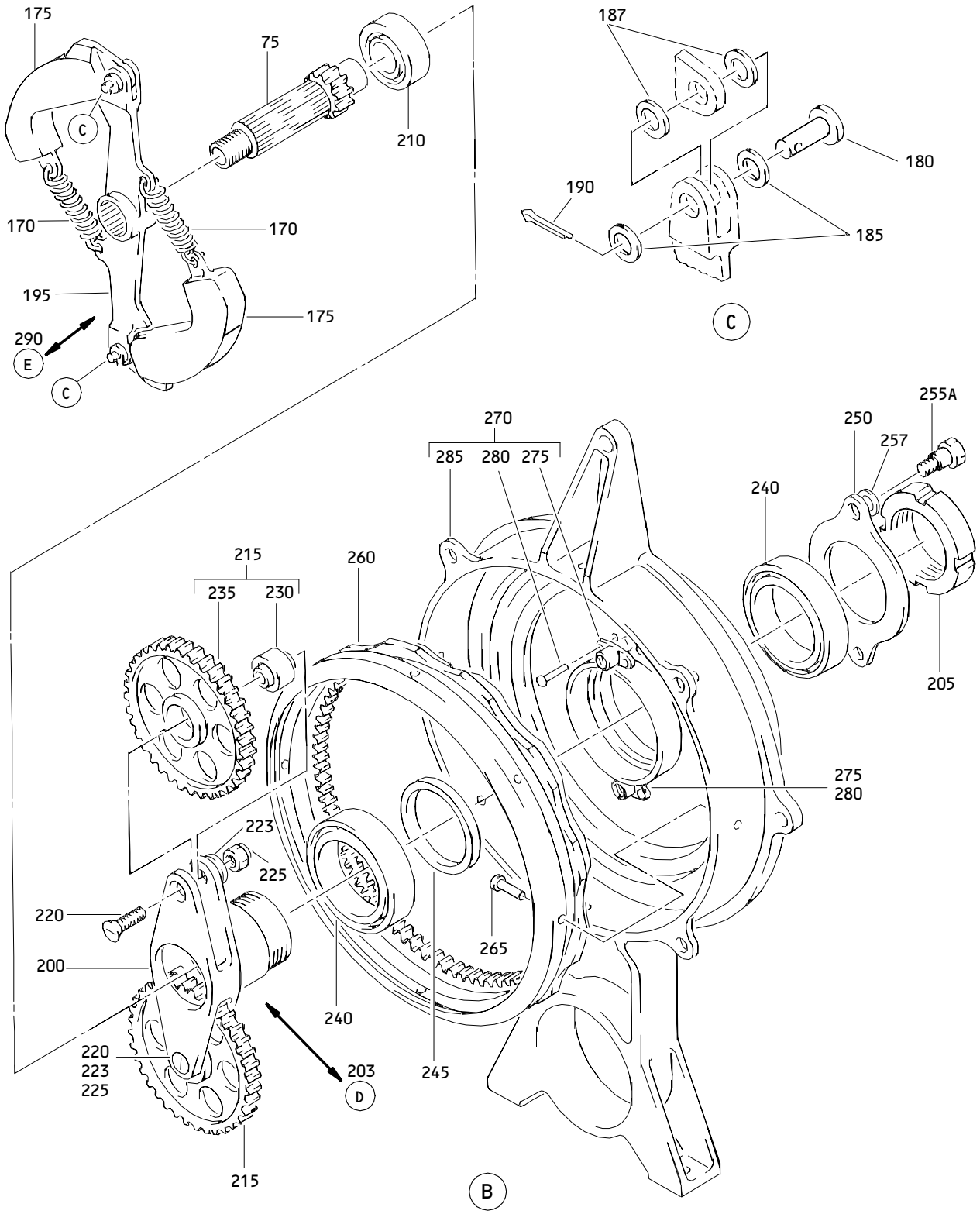
Overhead Passenger Door Counterbalance Gearbox Assy
Figure 1 (Sheet 1)

T22027



Overhead Passenger Door Counterbalance Gearbox Assembly
Figure 1 (Sheet 2)

T22028



Overhead Passenger Door Counterbalance Gearbox Assembly
Figure 1 (Sheet 3)

T55997

FIG. & ITEM	PART NO.	AIRLINE PART NUMBER	NOMENCLATURE 1234567	EFF CODE	QTY PER ASSY
01-					
-1	258T1110-1		GEARBOX ASSY-OVHD PASS. DOOR COUNTERBALANCE (PRE SB 52-29)	A	RF
-1A	258T1110-3		GEARBOX ASSY-OVHD PASS. DOOR COUNTERBALANCE (PRE SB 52-29)	C	RF
-1B	258T1110-5		GEARBOX ASSY-OVHD PASS. DOOR COUNTERBALANCE (POST SB 52-29)	D	RF
-3	258T1110-2		DELETED		
-3A	258T1110-4		GEARBOX ASSY-OVHD PASS. DOOR COUNTERBALANCE	B	RF
-3B	258T1110-6		GEARBOX ASSY-OVHD PASS.	E	RF
5	258T1131-1		.GEAR-POINTER ATTACHING PARTS		1
10	MS51923-42		.PIN-SPR -------*-------		1
15	ADLF04A014		.BUSHING-(MIL SPEC M81934/2-04A014) (V15860)		1
20	258T1132-1		.CARRIER		1
25	258T1128-1		.GEAR-PLANET		1
30	258T1129-1		.GEAR-IND		1
35	258T1133-1		.SHAFT-COUNTER		1
40	258T1134-1		.FITTING-SHAFT		1
45	MS51923-42		.PIN-SPR		1
50	258T1116-1		.HANDWHEEL ATTACHING PARTS		1
55	BMN4122AD3-9		.NUT- (V08524) (SPEC BACN10JC9) (OPT H10-9BAC (V15653)) (OPT RMLH9074-9 (V72962)) (OPT 48FT918 (V56878)) (OPT RMLH9074-9 (V72962)) (OPT 48FT918 (V56878))		1

	FIG. & ITEM	PART NO.	AIRLINE PART NUMBER	NOMENCLATURE 1234567	EFF CODE	QTY PER ASSY
	01-					
R	60	AN960PD916		.WASHER		1
				-------*-------		
	65	258T1119-1		.RATCHET		1
	70	MS24585-1180		.SPRING		1
	75	258T1112-1		.SHAFT-PINION		1
	80	258T1124-1		.COVER ASSY		1
				ATTACHING PARTS		
	85	HL18PB8-3		DELETED		
	85A	HST10AZ8-3		.BOLT-		4
				(V73197)		
				(SPEC BACB30VT8K3)		
				(OPT HST10AG8-3		
				(V06725))		
				(OPT HST10A68-3		
				(V73197))		
	90	AN960D416		.WASHER	A,C	4
	-90A	AN960PD416L		.WASHER	B,D,E	4
	95	H10-4BAC		DELETED		
	95A	MS21042L4		.NUT		4
				-------*-------		
	100	258T1126-1		..PAWL ASSY-		1
				(OPT ITEM 100A)		
	-100A	258T1126-5		..PAWL ASSY-		1
				(OPT ITEM 100)		
				ATTACHING PARTS		
	105	HL13VAZ6-8		..BOLT-		1
				(V56878)		
				(SPEC BACB30NY6K8)		
				(OPT HL13VAZ6-8		
				(V73197))		
				(OPT HL13VAZ6-8		
				(V92215))		
				(OPT HL13VAZ6-8		
				(V97928))		
				(OPT L801-6K8		
				(V06725))		
	110	HL1187N6		DELETED		
	110A	BACC30X6		..COLLAR		1
				-------*-------		

FIG. & ITEM	PART NO.	AIRLINE PART NUMBER	NOMENCLATURE 1234567	EFF CODE	QTY PER ASSY
01-					
115	LLK3L		...BEARING-		1
			(V38443)		
			(SPEC BACB10BY3L)		
			(OPT K3LTT		
			(V43991))		
			(OPT K3LTT		
			(V43991))		
			(OPT K3LG27		
			(V30163))		
			(OPT KP3L2TS		
			(V43991))		
			(OPT KP3LFS428		
			(V21335))		
			(OPT KP3LTT		
			(V43991))		
			(OPT LLKP3L		
			(V38443))		
			(OPT KP3L		
			(V38443))		
120	258T1126-2		...PAWL-		1
			(USED ON ITEM 100)		
-120A	258T1126-4		...PAWL-		1
			(USED ON ITEM 100A)		
125	258T1127-1		..SUPPORT-SPR		1
130	MS20392-2C9		..PIN-DRILLED SHANK		1
135	AN960PD10L		..WASHER		1
140	MS24665-132		..PIN-COTTER		1
145	258T1123-1		..RETAINER		1

FIG. & ITEM	PART NO.	AIRLINE PART NUMBER	NOMENCLATURE 1234567	EFF CODE	QTY PER ASSY
01-					
			ATTACHING PARTS		
150	BACB30NF4-2		..BOLT-		2
			(V06710)		
			(SPEC BACB30NF4-2)		
			(OPT BACB30NF4-2 (V06725))		
			(OPT BACB30NF4-2 (V06950))		
			(OPT BACB30NF4-2 (V08524))		
			(OPT BACB30NF4-2 (V17943))		
			(OPT BACB30NF4-2 (V27624))		
			(OPT BACB30NF4-2 (V56878))		
			(OPT BACB30NF4-2 (V80539))		
			(OPT BACB30NF4-2 (V92215))		
			(OPT BACB30NF4-2 (V97928))		
155	H10-4BAC		..NUT-		2
			(V15653)		
			(SPEC BACN10JC4)		
			(OPT NS202101-048 (V80539))		
			(OPT RMLH9075-4W (V72962))		
			(OPT T6S428J (V71087))		
			(OPT VN303A048 (V92215))		
			(OPT 96-048 (V80539))		
			(OPT BRH10A4 (V52828))		
			-------*-------		

FIG. & ITEM	PART NO.	AIRLINE PART NUMBER	NOMENCLATURE 1234567	EFF CODE	QTY PER ASSY
01-					
160	KP12AFS428		..BEARING- (V21335) (SPEC BACB10BX12) (OPT KP12A2TS (V43991)) (OPT LLKP12A (V38443)) (OPT KP12AG27 (V30163)) (OPT KP12A (V38443))		1
165	258T1125-1		..COVER- (OPT ITEM 165A)		1
-165A	285T1125-3		..COVER- (OPT ITEM 165)		1
170	258T1135-1		.SPRING-BRAKE	A,C	2
-170A	MS24586C129		.SPRING-BRAKE	B,D,E	2
175	258T1118-3		.SHOE-BRAKE (OPT ITEMS 175A, 175B, 175C)	A	2
-175A	258T1118-4		.SHOE-BRAKE (OPT ITEMS 175, 175B, 175C)	A	2
-175B	258T1118-6		.SHOE-BRAKE (OPT ITEMS 175, 175A, 175C)	A	2
-175C	258T1118-7		.SHOE-BRAKE (OPT ITEMS 175, 175A, 175B)	A	2
-175D	258T1118-7		.SHOE-BRAKE	B,D,E	2
-175E	258T1118-6		.SHOE-BRAKE (OPT ITEMS 175F)	C	2
-175F	258T1118-7		.SHOE-BRAKE (OPT ITEMS 175E)	C	2
			ATTACHING PARTS		
180	MS20392-3C15		.PIN-DRILLED SHANK		2
185	AN960D416L		.WASHER		4
187	69-20153-20		.SHIM	A,C	4
190	MS24665-134		.PIN-COTTER		2
			-------*-------		

FIG. & ITEM	PART NO.	AIRLINE PART NUMBER	NOMENCLATURE 1234567	EFF CODE	QTY PER ASSY
01-					
195	258T1117-1		.ARM-SPRT (OPT ITEM 195A)	A	1
-195A	258T1117-3		.ARM-SPRT (OPT ITEM 195)	A	1
-195B	258T1117-3		.ARM-SPRT	C	1
-195C	258T1117-6		.ARM-SPRT	E	1
200	258T1113-1		.CARRIER-PLANET	A,B,D,E	1
203	258T1179-1		.CARRIER ASSY-PLANET ATTACHING PARTS	C	1
205	SL2822-28		.NUT- (V97393) (SPEC BACN10RF28) (OPT 82631-2812 (V56878)) -------*-------		1
206	BACR15BA4AD		..RIVET- (SIZE DETERMINE IN INST)	C	4
207	258T1113-1		..CARRIER	C	1
208	258T1178-1		..GUARD	C	1
210	KP10AFS428		.BEARING- (V21335) (SPEC BACB10BX10) (OPT KP10A2TS (V43991)) (OPT LLKP10A (V38443)) (OPT KP10AG27 (V30163)) (OPT KP10A (V38443))		1

FIG. & ITEM	PART NO.	AIRLINE PART NUMBER	NOMENCLATURE 1234567	EFF CODE	QTY PER ASSY
01-					
215	258T1114-1		.GEAR ASSY-PLANET		2
			ATTACHING PARTS		
220	HL19PB8-14		.BOLT-		2
			(V56878)		
			(SPEC BACB30FN8-14)		
			(OPT HL19PB8-14		
			(V73197))		
			(OPT HL19PB8-14		
			(V92215))		
			(OPT HL19PB8-14		
			(V97928))		
			(OPT 62547-8-14		
			(V56878))		
			(OPT HL19PB8-14		
			(V80539))		
			(OPT WC258-14		
			(V60516))		
			(OPT HL19PB8-14		
			(V60516))		
223	AN960PD416L		.WASHER	B,D,E	2
225	H10-4BAC		.NUT-		2
			(V15653)		
			(SPEC BACN10JC4)		
			(OPT NS202101-048		
			(V80539))		
			(OPT RMLH9075-4W		
			(V72962))		
			(OPT T6S428J		
			(V71087))		
			(OPT VN303A048		
			(V92215))		
			(OPT 96-048		
			(V80539))		
			(OPT BRH10A4		
			(V52828))		
			-------*-------		

FIG. & ITEM	PART NO.	AIRLINE PART NUMBER	NOMENCLATURE 1234567	EFF CODE	QTY PER ASSY
01-					
230	KP4FS428		..BEARING- (V21335) (SPEC BACB10BY4) (OPT KP4-2TS (V43991)) (OPT KP4TT (V43991)) (OPT LLKP4 (V38443)) (OPT KP4G27 (V30163)) (OPT KP4 (V38443))		1
235	258T1114-2		..GEAR		1
240	KP29B		.BEARING- (V38443) (SPEC BACB10BW29) (OPT KP29B2TS (V43991)) (OPT LLKP29B (V38443)) (OPT KP29BG27 (V30163)) (OPT KP29BFS428 (V21335))		2
245	258T1122-2		.SPACER		1
250	258T1123-2		.RETAINER ATTACHING PARTS		1
255	BACB30NF4-5		DELETED		

FIG. & ITEM	PART NO.	AIRLINE PART NUMBER	NOMENCLATURE 1234567	EFF CODE	QTY PER ASSY
01-					
255A	BACB30NR4K5		.BOLT-		2
			(V06710)		
			(SPEC BACB30NR4K5)		
			(OPT BACB30NR4K5		
			(V06725))		
			(OPT BACB30NR4K5		
			(V06950))		
			(OPT BACB30NR4K5		
			(V08524))		
			(OPT BACB30NR4K5		
			(V27624))		
			(OPT BACB30NR4K5		
			(V56878))		
			(OPT BACB30NR4K5		
			(V73197))		
			(OPT BACB30NR4K5		
			(V80539))		
			(OPT BACB30NR4K5		
			(V92215))		
			(OPT BACB30NR4K5		
			(V93907))		
			(OPT BACB30NR4K5		
			(V97928))		
257	AN960PD416L		.WASHER	B,E	2
			-------*-------		
260	258T1115-1		.GEAR-RING		1
			ATTACHING PARTS		
265	BACR15BB3D		.RIVET-		8
			(SIZE DETERMINE ON INST)		
			-------*-------		
270	258T1111-1		.HOUSING ASSY	A,C,D	1
-270A	258T1111-4		.HOUSING ASSY	B,E	1
275	BRM200A4		..NUTPLATE-		2
			(V52828)		
			(SPEC BACN10JP4A)		
			(OPT MK1000-4BAC		
			(V15653))		
			(OPT NS103197-048		
			(V80539))		
			(OPT T8076S428		
			(V71087))		
			(OPT T8076S428		
			(V11815))		
			(OPT VN202A1-048		
			(V92215))		

FIG. & ITEM	PART NO.	AIRLINE PART NUMBER	NOMENCLATURE 1234567	EFF CODE	QTY PER ASSY
01-					
			ATTACHING PARTS		
280	BACR15BA3AD6		..RIVET-		4
			(V09192)		
			(SPEC BACR15BA3AD6)		
			(OPT BACR15BA3AD6		
			(V42838))		
			(OPT BACR15BA3AD6		
			(V53551))		
			(OPT BACR15BA3AD6		
			(V55580))		
			-------*-------		
285	258T1111-2		..HOUSING	A,C,D	1
-285A	258T1111-5		..HOUSING	B,E	1
290	258T1192-1		.ARM ASSY-BRAKE SHOE SPRT	B,D	1
295	258T1191-1		..STOP ASSY	B,D	2
			ATTACHING PARTS		
300	BACR15BA4AD		..RIVET-	B,D	2
			(SIZE DETERMINE ON INST)		
			-------*-------		
305	BACR15BB4AD		...RIVET-	B,D	2
			(SIZE DETERMINE ON INST)		
310	258T1191-2		...STOP	B,D	1
315	258T1191-3		...STOP	B,D	1
320	258T1117-3		..ARM	B,D	1
			(OPT ITEM 320A)		
-320A	258T1117-5		..ARM	B,D	1
			(OPT ITEM 320)		