TO: ALL HOLDERS OF AILERON CONTROL LOAD LIMITER DRUM ASSEMBLY COMPONENT MAINTENANCE MANUAL 27-11-08

REVISION NO. 15 DATED MAR 01/04

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
1011,1014,1022	Revised IPL items (1H,1J,100A,100B,100C,100E,285D, and 285E) for part number compatability with CMM illustration drawings.

AILERON CONTROL LOAD LIMITER DRUM ASSEMBLY

PART NUMBER 253T1142-2 THRU -6,-9
015T0253-7,-8

COMPONENT MAINTENANCE MANUAL
WITH
ILLUSTRATED PARTS LIST

REVISION RECORD

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

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

TEMPORARY REVISION AND SERVICE BULLETIN RECORD

BOEING SERVICE BULLETIN	BOEING TEMPORARY REVISION	OTHER DIRECTIVE	DATE OF INCORPORATION INTO MANUAL
SB 27-29			APR 10/85
		PRR B11391	APR 10/86
		PRR B11476	APR 10/86
SB 27A62			JAN 01/88
SB 27-72			JAN 01/91
		PRR B13204	MAR 01/00

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TR & SB RECORD		
1	MAR 01/00	01.1
2	BLANK	
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*1014	MAR 01/04	01.1

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1018	JUL 01/00	01.1
1019	JUL 01/00	01.1
1020	JUL 01/00	01.1
1021	JUL 01/00	01.1
*1022	MAR 01/04	01.1

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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:

Testing/Trouble Shooting	FEB 14/83
Disassembly	FEB 14/83
Assembly	Feb 14/83

AILERON CONTROL LOAD LIMITER DRUM ASSEMBLY

DESCRIPTION AND OPERATION

1. The aileron control load limiter drum assembly consists of two drum assemblies and a bus crank assembly mounted on a common shaft and includes a spring shaft assembly and spiral spring.

2. The drum assembly provides First Officer Control of the aileron system via a bus rod. The spring shaft assembly allows independent control by either the captain or the first officer in case of a jam in either of their respective control systems.

3. Leading Particulars (Approximate)

   Height -- 11 inch
   Diameter -- 11 inch
   Weight -- 8 pounds

TESTING AND TROUBLE SHOOTING

1. Functional Test (IPL Fig. 1, Fig. 701)

WARNING: THE LOAD LIMITER ASSEMBLY CONTAINS A HEAVILY LOADED SPRING. DO NOT REMOVE THE SPRING ATTACHING FASTENERS EXCEPT WHEN THE ASSEMBLY IS MOUNTED IN FIXTURE A27029.

A. Clamp the bus crank (240) in a stationary position.

B. Turn the shaft (285), and measure the torque.

(1) On assemblies 253T1142-2 thru -5, and 015T0253-7, -8:

(a) Make sure that the initial breakout torque is 225.5-264.5 pound-inches in each direction.

(b) Make sure that the torque is not more than 244.1 pound-inches at 82.5 degrees in either direction from initial breakout.

NOTE: Do not turn the shaft more than 84 degrees in either direction from initial breakout.

(2) On assemblies 253T1142-6, -9, and assemblies reworked per SB 27-72:

(a) Make sure that the initial breakout torque is 228-290 pound-inches in each direction.

(b) Make sure that the torque is not more than 94 pound-inches at 82.5 degrees in either direction from initial breakout.

NOTE: Do not turn the shaft more than 84 degrees in either direction from initial breakout.

C. With the shaft vertical, turn the drum assembly (40) from stop to stop. Make sure that the required torque is not more than 2.5 pound-inches

DISASSEMBLY

1. 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. Lockwire

B. Bolt retainer (90)

2. Equipment

NOTE: Equivalent substitutes may be used.

A. Spring Removal and Installation Fixture -- A27029-28

B. Spanner Wrench -- A32045-79

3. Disassembly (IPL Fig. 1)

A. Remove nut (5) and washer (10).

B. Remove housing assembly (15) and housing (30).

NOTE: Do not remove bearing (20) from housing assembly (15) unless necessary for repair or replacement.

C. Remove nut (35) using wrench A32045-79.

D. Remove drum assembly (40), spacer (55), and bearing (60).

NOTE: Do not remove bearing (45A) from drum (50) unless necessary for repair or replacement.

E. Remove bolt (205 or 212), washer (206A or 213), and collar (210). Remove crank (199) if installed. Make sure the bolt is not damaged during removal.

F. Remove nut (225), using wrench A32045-79. Remove bearing (170), and pin (165).

G. Remove screws (180) and collar assembly (175).

WARNING: USE OF HEAT AND/OR DRY ICE TO BREAK BOND BETWEEN DRUM ASSEMBLY (200) AND OUTER SHAFT (285) MAY CAUSE INJURY TO PERSONNEL. INSULATED GLOVES AND OTHER APPROPRIATE MEASURES SHALL BE TAKEN TO PREVENT INJURY.

CAUTION: TO PREVENT DAMAGE TO COMPONENTS, DO NOT HAMMER OR STRIKE DRUM ASSEMBLY (200), CRANK ASSEMBLY (240) OR OUTER SHAFT (285).

H. Use heat to break bond, where drum assembly (200) is bonded to outer shaft (285). Heat hub of drum assembly (200) to 250°F maximum. Immediately after heating, break bond by rotating drum assembly (200) on outer shaft (285). Outer shaft may be clamped for support when rotating drum assembly.

NOTE: Drum assembly (200) may be heated using a hot air gun placed at a distance to produce 250°F air around the drum assembly (200). Direct heat at hub of drum assembly and avoid heating outer shaft (285). Optional to cool bore of outer shaft (285) with powdered dry ice during heating of drum assembly, to aid in disassembly.

WARNING: SPRING IS HEAVILY LOADED. MOUNT UNIT IN SPRING REMOVAL AND INSTALLATION FIXTURE PRIOR TO REMOVING NUT (160) OR SPRING (100).

I. Remove Spring Tension

(1) Remove inner attach bolt (65), washer (70), and collar (75). Inner attach bolt (65) is the one closest to center of shaft (155).

(2) Rotate fixture A27029 arm assembly until guide pin on arm assembly enters inner attach bolt hole emptied by step (1) above.

(3) Take up spring (100) load with fixture arm assembly and remove outer attach bolt (65), washer (70), and collar (75).

(4) Relax spring (100) tension by rotating fixture arm assembly.

(5) When tension has been released, remove radius block (80).

(6) End conditions:

(a) No tension in spring.

(b) Bolt (65), washer (70), collar (75), and radius block (80) are removed. Make sure bolt (65) is not damaged during removal.

J. Bend back tab of bolt retainer (90).

K. Remove bolts (85), bolt retainer (90), spring retainer (95), nut (160), bearing (230), and spacer (235) from crank assembly (240). Remove nut (160) using wrench A32045-79.

L. Withdraw simultaneously shaft (285) and spring (100) from crank assembly (240).

NOTE: Do not disassemble spring shaft assembly (125) unless necessary for repair or replacement.

M. Remove nut (105), washer (110), spacer (120), bearing (115), washer (150), and spring shaft assembly (125) from crank assembly (240).

NOTE: Do not remove bearings (250, 255, 260) from crank assembly (240) unless necessary for repair or replacement.

CLEANING

1. Materials

   A. Strippers -- Turco 5351, Thick (Ref 20-30-02)

2. Cleaning Instructions

   A. Clean all parts except bearings using standard industry practices (Ref 20-30-03) except for the bearings and the faying surface between drum assembly (200) and outer shaft (285).

   B. Clean all teflon-sealed bearings (20, 45, 60, 145, 170, 230, 255, 260, IPL Fig. 1) per manufacturer's instructions.

   C. If the bond between the drum assembly (200) and the outer shaft (285) is broken, clean the adhesive from the surfaces, using Turco 5351 per 20-30-02.

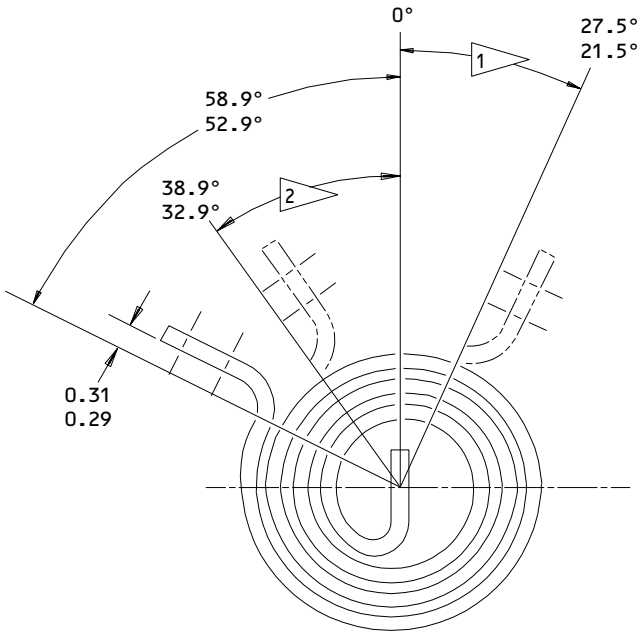
CHECK

1. Check all parts for obvious defects in accordance with standard industry practices. Refer to FITS AND CLEARANCES for design dimensions and wear limits.

2. Magnetic particle check per 20-20-01 -- spring (100, IPL Fig. 1), inner shaft (270), outer shaft (285), and collar (195).

3. Penetrant check per 20-20-02 -- Housings (25, 30), drum (50), spring shaft (155), and crank (199, 265).

4. Check spring (100) -- Fig. 501.



SPRING (100)

1 FOR 69B81284-2, WITH BOTH FLANGES CLAMPED IN CHECK FIXTURE A27028, CHECK THAT TORQUE IS 605-695 POUND-INCHES AT 0° AND 855-1015 POUND-INCHES AT 21.5°-27.5°

2 FOR 69B81284-3,-4, WITH BOTH FLANGES CLAMPED IN CHECK FIXTURE A27028, CHECK THAT TORQUE IS 216.4-284.4 POUND-INCHES AT 32.9°-38.9° AND 605-695 POUND-INCHES AT 0°

Spring Check
Figure 501

57389

REPAIR - GENERAL

1. Contents

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

P/N	NAME	REPAIR
253T1121	HOUSING	1-1
253T1125	SHAFT, OUTER	2-1
253T1127	SHAFT	3-1
253T1128	DRUM	4-1
253T1130	DRUM	5-1
253T1146	CRANK	6-1
BAC27ECT4	MARKER	7-1
253T1139	SHAFT, INNER	8-1
253T1140	COLLAR, ADAPTER	9-1
- - -	MISC PARTS REFINISH	10-1

2. Standard Practices

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

20-30-02 Stripping of Protective Finishes
20-30-03 General Cleaning Procedures
20-41-01 Decoding Table for Boeing Finish Codes
20-42-05 Bright Cadmium Plating
20-43-01 Chromic Acid Anodizing
20-50-03 Bearing and Bushing Replacement
20-50-05 Application of Aluminum Foil and Other Markers
20-50-08 Application of Dry Lubricant

3. Materials

NOTE: Equivalent substitutes may be used.

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

B. Solid Dry Film Lubricant -- BMS 3-8 (Ref 20-60-03)

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

4. Dimensioning Symbols

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

—	STRAIGHTNESS
▱	FLATNESS
⊥	PERPENDICULARITY (OR SQUARENESS)
//	PARALLELISM
○	ROUNDNESS
⌭	CYLINDRICITY
⌒	PROFILE OF A LINE
⌓	PROFILE OF A SURFACE
◎	CONCENTRICITY
≡	SYMMETRY
∠	ANGULARITY
↗	RUNOUT
↗↗	TOTAL RUNOUT
⌴	COUNTERBORE OR SPOTFACE
∨	COUNTERSINK
⌖	THEORETICAL EXACT POSITION OF A FEATURE (TRUE POSITION)
∅	DIAMETER
S ∅	SPHERICAL DIAMETER
R	RADIUS
SR	SPHERICAL RADIUS
()	REFERENCE
BASIC (BSC) OR [DIM]	A THEORETICALLY EXACT DIMENSION USED TO DESCRIBE SIZE, SHAPE OR LOCATION OF A FEATURE FROM 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
[⊥ | 0.002 | B]	PERPENDICULAR TO B WITHIN 0.002
[// | 0.002 | A]	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
[⌒ | 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 PLANE A
[⌓ | 0.020 | A]	SURFACES MUST LIE WITHIN PARALLEL BOUNDARIES 0.02 INCH APART AND EQUALLY DISPOSED ABOUT TRUE PROFILE
[◎ | ∅ 0.0005 | C]	CONCENTRIC TO C WITHIN 0.0005 DIAMETER
[≡ | 0.010 | A]	SYMMETRICAL WITH A WITHIN 0.010
[∠ | 0.005 | A]	ANGULAR TOLERANCE 0.005 WITH 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, AND EXTENDING 0.510-INCH ABOVE, DATUM A, MAXIMUM MATERIAL CONDITION
[2.000] OR 2.000 BSC	THEORETICALLY EXACT DIMENSION IS 2.000

NOTE: DATUM MAY APPEAR AT EITHER SIDE OF TOLERANCE FRAME [0.020 | A] [A | 0.020]

True Position Dimensioning Symbols
Figure 601

HOUSING ASSEMBLY - REPAIR 1-1

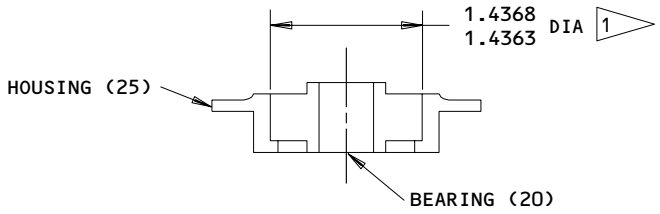
253T1121-1

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

1. Bearing Replacement (IPL Fig. 1, Fig. 601)

   A. Remove bearing (20).

   B. Install and roller swage new bearing per 20-50-03 except use BMS 10-11 type 1 primer (F-20.06).



REFINISH

HOUSING (25) -- CHROMIC ACID ANODIZE AND APPLY ONE COAT OF BMS 10-11, TYPE 1 PRIMER (F-18.13) EXCEPT AS NOTED.

MATERIAL: AL ALLOY

ALL DIMENSIONS ARE IN INCHES.

1 OMIT PRIMER

Housing Assembly - Bearing - Replacement/Refinish
Figure 601

57391

SHAFT, OUTER - REPAIR 2-1

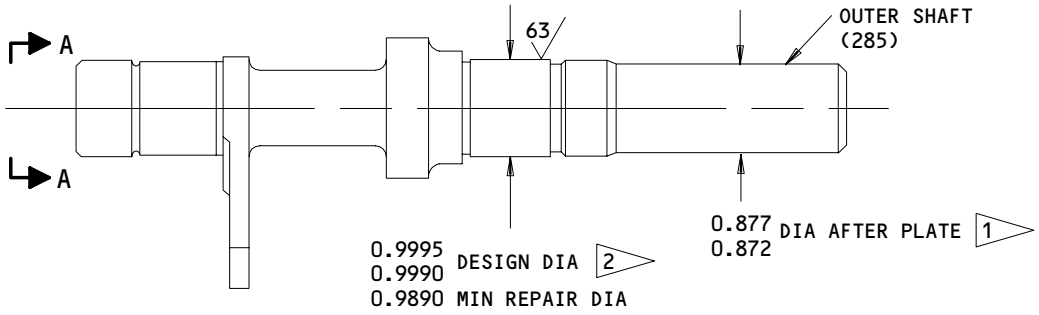
253T1125-6, -9, -10

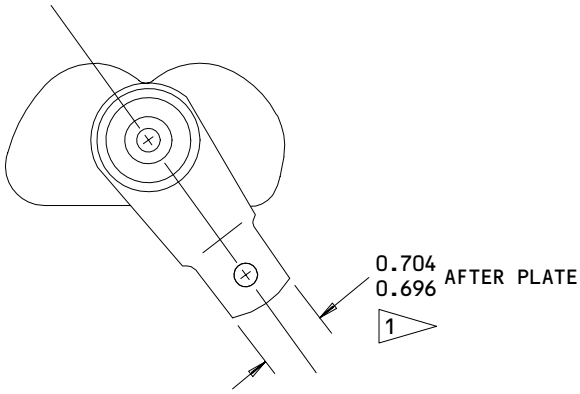
NOTE: Refer to REPAIR-GEN for list of applicable standard practices. For repair of surfaces which may only require restoration of original finish, refer to Refinish Instructions, Fig. 601.

1. Repair (Fig. 601)

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

   B. Chrome plate build up repaired surface and grind to dimension and finish shown.





A-A

REFINISH

PASSIVATE (F-17.09) ALL OVER. CADMIUM PLATE AND APPLY ONE COAT OF BMS 10-11, TYPE 1 PRIMER F-16.01) TO AREA INDICATED BY 1

2 CHROME PLATE BUILDUP AND GRIND TO DIMENSION AND FINISH SHOWN. CHROME PLATE RUNOUT 0.00-0.08. STOP CHROME PLATE 0.00-0.02 FROM FILLET RADIUS OR EDGE.

REPAIR

REF 2

MATERIAL: AISI 630 CRES

ALL DIMENSIONS ARE IN INCHES.

253T1125-6,-9,-10
Outer Shaft Repair
Figure 601

57392

SPRING SHAFT ASSEMBLY - REPAIR 3-1

253T1127-1, -4

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

1. Bearing Replacement (IPL Fig. 1, 601)

   A. Remove rivet (135), spacer (140), and bearing (145).

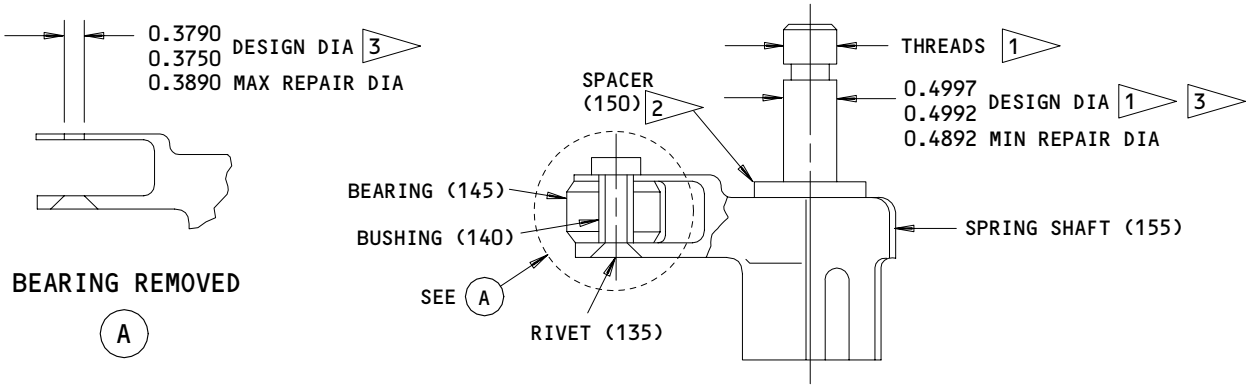
   B. Position new bearing (145) and install spacer (140).

   C. Install rivet (135). Bearing torque must not increase more than 5 pound-inches, after installation.

2. Repair (Fig. 601)

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

   B. Chrome plate build up repaired surface and grind to dimension and finish shown.



REFINISH

SPRING SHAFT (155) -- CHROMIC ACID ANODIZE (F-17.02) AND APPLY ONE COAT OF BMS 10-11, TYPE 1 PRIMER (F-20.02) EXCEPT OMIT PRIMER AS NOTED

REPAIR

REF 3

MATERIAL: AL ALLOY

ALL DIMENSIONS ARE IN INCHES

1 OMIT PRIMER

2 BOND PER 20-50-12, TYPE 70

3 BUILD UP WITH CHROME PLATE AND GRIND TO DIMENSION SHOWN. CHROME PLATE RUNOUT 0.00-0.08. STOP CHROME PLATE 0.00-0.02 FROM FILLET RADIUS OR EDGE

253T1127-1,-4
Spring Shaft Assembly Repair
Figure 601

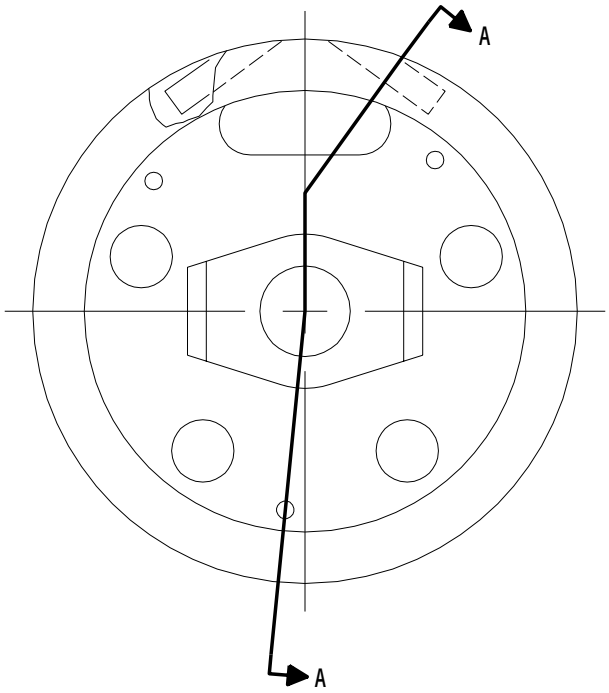
57393

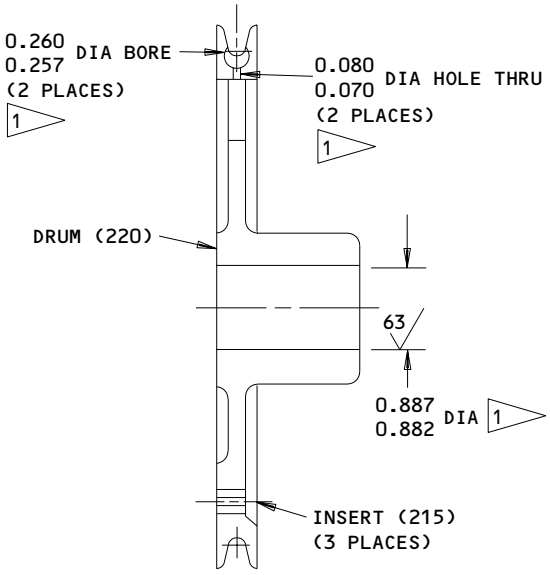
DRUM ASSEMBLY - REPAIR 4-1

253T1128-4, -7

1. Refinish

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





A-A

REFINISH

DRUM (220)--CHEMICAL TREAT OR CHROMIC ACID ANODIZE (F-17.01) AND APPLY BMS 10-11, TYPE 1 PRIMER (F-20.02) EXCEPT OMIT PRIMER AS NOTED.

DRUM (220A)--BORIC ACID-SULFURIC ACID ANODIZE OR CHROMIC ACID ANODIZE (F-17.31) AND APPLY BMS 10-11, TYPE 1 PRIMER (F-20.02) EXCEPT OMIT PRIMER AS NOTED.

1 OMIT PRIMER

MATERIAL: AL ALLOY

ALL DIMENSIONS ARE IN INCHES

Drum Assembly - Refinish
Figure 601

57394

DRUM ASSEMBLY - REPAIR 5-1

253T1130-4, -6

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

1. Bearing Replacement (IPL Fig. 1, 601)

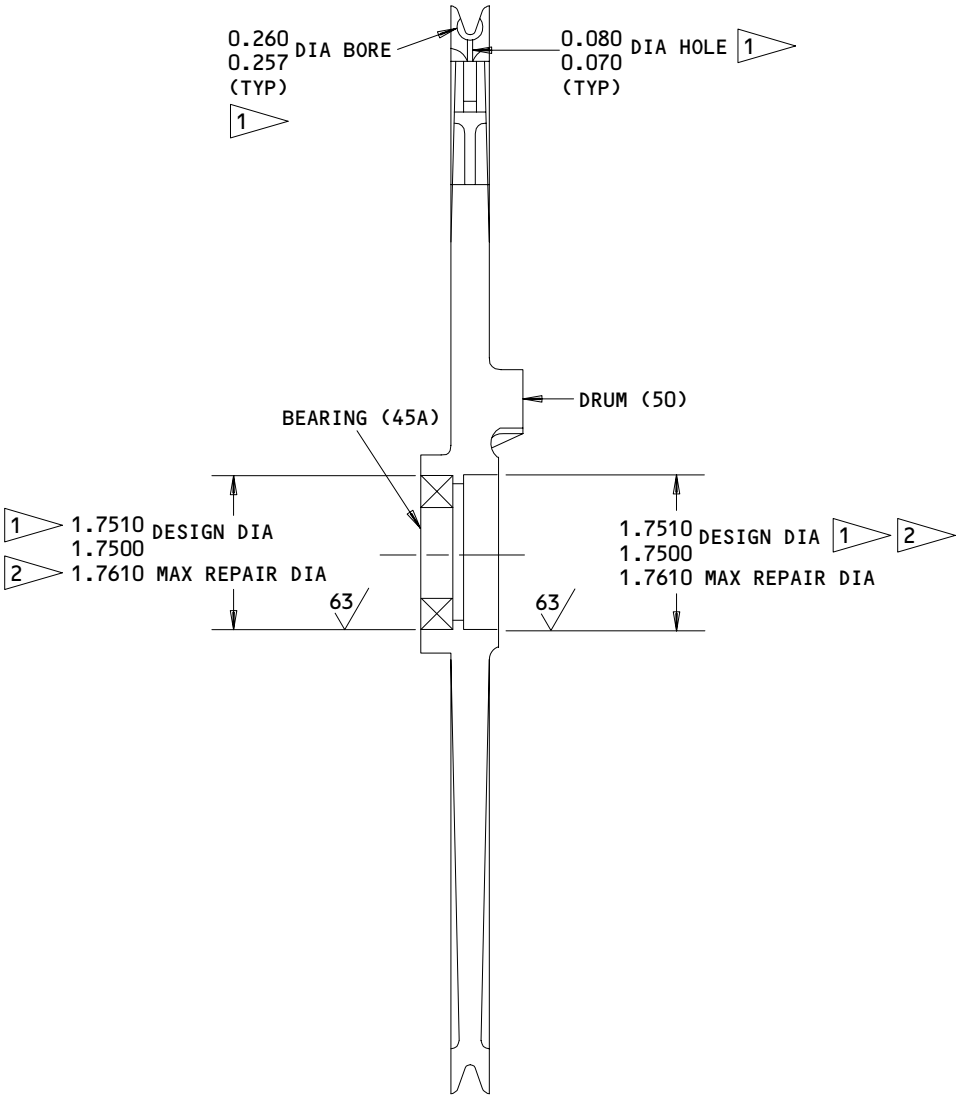
   A. Remove bearing (45A).

   B. Install new bearing and roller swage per 20-50-03 except use BMS 10-11 type 1 primer.

2. Repair (Fig. 601)

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

   B. Chrome plate build up repaired surface and grind to dimension and finish shown.



REFINISH

ANODIZE (F-17.05) AND APPLY ONE COAT OF BMS 10-11, TYPE 1 PRIMER (F-20.02) EXCEPT AS NOTED

1 OMIT PRIMER

2 BUILD UP WITH CHROME PLATE AND GRIND TO DIMENSION AND FINISH SHOWN. CHROME PLATE RUNOUT 0.00-0.08. STOP CHROME PLATE 0.00-0.02 FROM FILLET RADIUS OR EDGE

REPAIR

REF 2

MATERIAL: AL ALLOY

ALL DIMENSIONS ARE IN INCHES

253T1130-4,-6
Drum Assembly Repair
Figure 601

57396

CRANK ASSEMBLY - REPAIR 6-1

253T1146-1, -4

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

1. Bearing Replacement (IPL Fig. 1, 601)

   A. Remove bearing (250, 255, or 260).

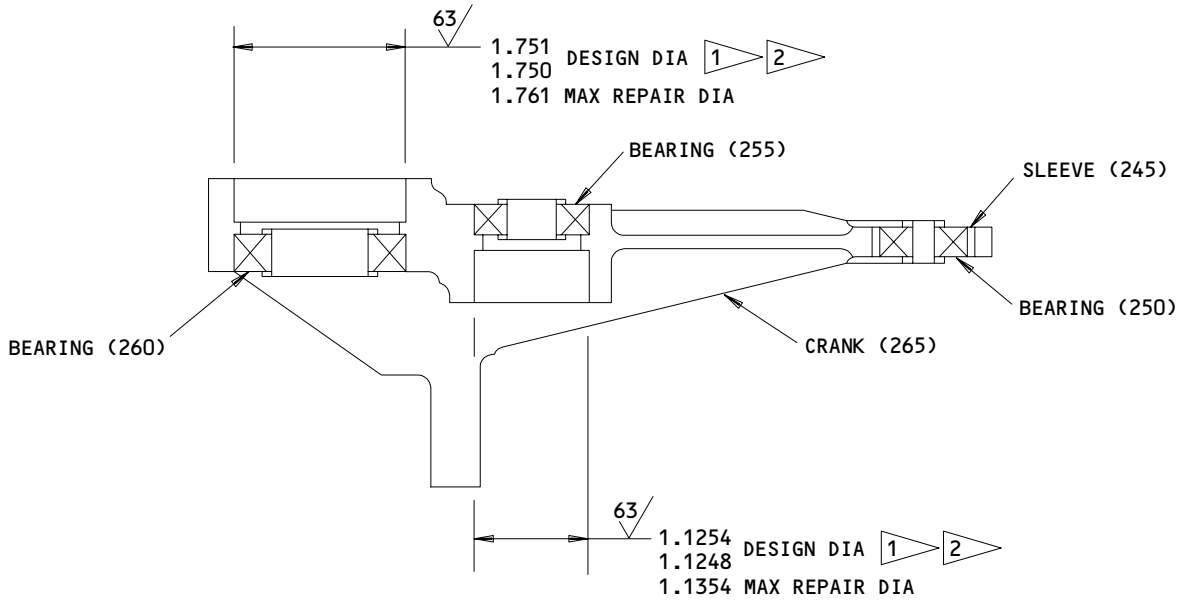
   B. Install new bearing (255 or 260), and roller swage per 20-50-03 except use BMS 10-11, Type 1 primer.

   C. Install new bearing (250) with sleeve (245) and sleeve swage per 20-50-03. Fill gap in sleeve with sealant.

2. Repair (IPL Fig. 1, 601)

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

   B. Chrome plate buildup repaired surface and grind to dimension and finish shown.



REFINISH

BUS CRANK (265) -- CHROMIC ACID ANODIZE (F-17.05) AND APPLY ONE COAT OF BMS 10-11, TYPE 1 PRIMER (F-20.02) EXCEPT OMIT PRIMER AS NOTED BY 1

REPAIR

REF 2

MATERIAL: AL ALLOY

ALL DIMENSIONS IN INCHES

1 OMIT PRIMER

2 BUILD UP WITH CHROME PLATE AND GRIND TO DIMENSION AND FINISH SHOWN. CHROME PLATE RUNOUT 0.00-0.08. STOP CHROME PLATE 0.00-0.02 FROM FILLET RADIUS OR EDGE

253T1146-1,-4
Bus Crank Repair
Figure 601

130943

MARKER - REPAIR 7-1

BAC27ECT4

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

1. Marker Replacement (IPL Fig. 1)

   A. Remove marker (290).

   B. Install new marker per 20-50-05.

SHAFT, INNER - REPAIR 8-1

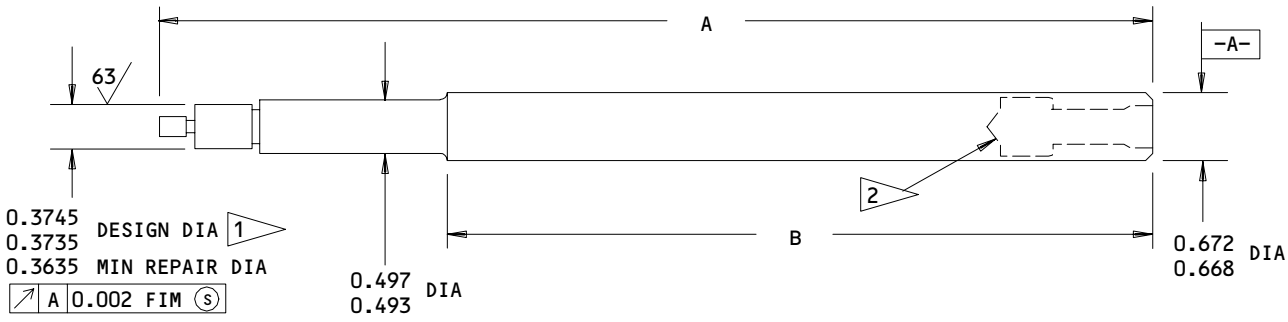
253T1139-3, -7

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

1. Repair (Fig. 601)

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

   B. Chrome plate build up repaired surface and grind to dimension and finish shown.



ASSY NO.	A	B
253T1139-3	9.44 9.42	4.90 4.88
253T1139-7	9.74 9.72	5.20 5.18

REFINISH

PASSIVATE (F-17.09) ALL OVER

1 BUILD UP WITH CHROME PLATE AND GRIND TO DIMENSION AND FINISH SHOWN. CHROME PLATE RUNOUT 0.00-0.08. STOP CHROME PLATE 0.00-0.02 FROM FILLET RADIUS OR EDGE

2 EXTENDED SPLINE, 253T1139-7 ONLY

REPAIR

REF 1

MATERIAL: 15-5PH CRES
180-200 KSI

ALL DIMENSIONS ARE IN INCHES

253T1139-3,-7

Inner Shaft - Repair
Figure 601

130945

ADAPTER COLLAR - REPAIR 9-1

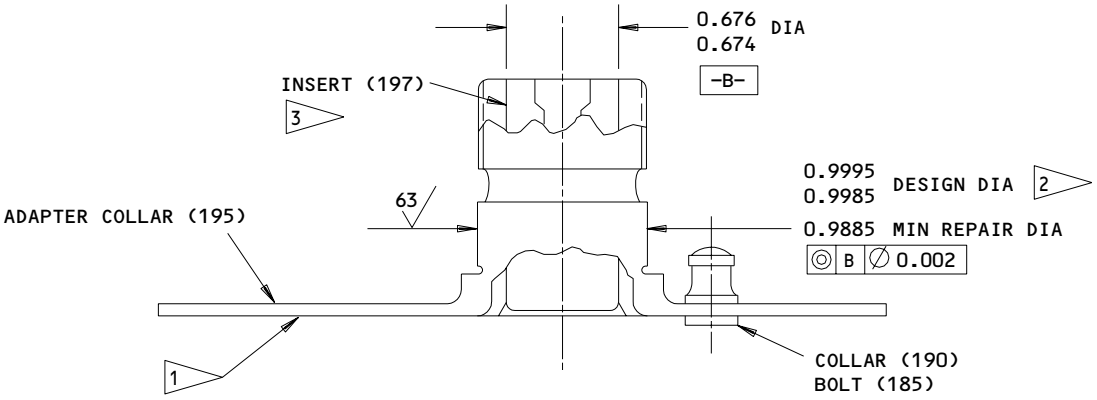
253T1140-2

NOTE: Refer to REPAIR-GEN for list of applicable standard practices. For repair of surfaces which may 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. Chrome plate build up repaired surface and grind to dimension and finish shown.



REFINISH

COLLAR (195) -- PASSIVATE (F-17.09) ALL OVER. CADMIUM PLATE AND APPLY ONE COAT OF BMS 10-11, TYPE 1 PRIMER TO SURFACE 1 ONLY

2 BUILD UP WITH CHROME PLATE AND GRIND TO DIMENSION AND FINISH SHOWN. CHROME PLATE RUNOUT 0.00-0.02. STOP CHROME PLATE 0.00-0.02 FROM FILLET RADIUS OR EDGE

3 INSERT (197) AND PIN (198) USED ON LIMITED ASSEMBLIES

REPAIR

REF 2

MATERIAL: 15-5PH CRES
180-200 KSI

ALL DIMENSIONS ARE IN INCHES

PIN (198) NOT SHOWN FOR CLARITY

Adapter Collar Repair
Figure 601

130959

MISCELLANEOUS PARTS REFINISH - REPAIR 10-1

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

IPL FIG. & ITEM	MATERIAL	FINISH
Fig. 1		
Housing (30)	Al alloy	Chromic acid anodize and apply one coat of BMS 10-11, Type 1 primer (F-18.13).
Block (80), spacer (55,235)	17-4PH CRES, 150-170 ksi	Passivate (F-17.09).
Spiral spring (100)	17-4PH CRES	Passivate (F-17.09) and apply BMS 3-8 solid dry film lubricant (F-19.10).
Retainer (90)	Al alloy	Treat surface and apply one coat of BMS 10-11 type 1 primer (F-18.06).
Retainer (95), spacer (120)	Al alloy	Treat surface and apply one coat of BMS 10-11 type 1 primer (F-18.05).
Crank (199)	Al alloy	Boric acid-sulfuric acid anodize or chromic acid anodize (F-17.35) and apply BMS 10-11, type 1 primer (F-20.03).

Refinish Details
Figure 601

ASSEMBLY

1. Materials

NOTE: Equivalent substitutes may be used.

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

Adhesive -- Type 70 (Ref 20-50-12)

Lockwire -- MS20995C32

2. Equipment

NOTE: Equivalent substitutes may be used.

A. Spring Removal and Installation Fixture -- A27029-28

B. Spanner Wrench -- A32045-79

3. Assembly (IPL Fig. 1, Fig. 701)

CAUTION: NUT (105) HAS LEFT-HAND THREADS.

A. Install spring shaft assembly (125), washer (150), bearing (115), spacer (120), washer (110), and nut (105) on crank assembly (240). Install bearing (115) per 20-50-03 except use BMS 10-11, Type 1 primer. Tighten nut (105) to 85-140 pound-inches counterclockwise.

B. Install spacer (235) and bearing (230) in crank assembly (240). Install bearing (230) per 20-50-03 except use BMS 10-11 Type 1 primer. Insert, simultaneously, untensioned spring (100) and shaft (285) into crank assembly (240). Install nut (160) and tighten to 350-450 pound-inches above run-on torque using wrench A32045-79.

C. Install spring retainer (95), bolt retainer (90), and bolts (85) on spring shaft assembly (125). Install lockwire per 20-50-02 double twist method. Lockwire must not extend above bolts (85). Bend bolt retainer (90) over bolts (85).

WARNING: USE EXTREME CARE WHEN PRELOADING SPRING. SPRING IS HEAVILY LOADED. MOUNT UNIT IN SPRING REMOVAL AND INSTALLATION FIXTURE PRIOR TO LOADING SPRING (100).

D. Preload Spring Tension

(1) Hold radius block (80) in correct position on spring (100) and rotate fixture A27029 arm assembly until guide pin on arm assembly slips thru hole in radius block (80) and enters inner attach bolt (65) hole. Inner attach bolt (65) hole is the one closest to center of shaft (155).

(2) Rotate fixture arm assembly until tab on spring (100) is tight against stop on crank (265).

(3) Secure spring (100) and radius block (80) by installing bolt (65), washer (70), and collar (75) in outer attach bolt (65) hole.

(4) Rotate fixture arm assembly out of the way and install bolt (65), washer (70), and collar (75) in inner attach bolt (65) hole.

(5) End condition will be that bearing (145) of spring shaft assembly (125) is on the groove of cam of outer shaft (285) and radius block (80) and bolts are installed.

E. Apply Type 70 adhesive to faying surfaces of drum assembly (200) and outer shaft (285) per 20-50-12. Position drum assembly (200) on outer shaft (285). Insert inner shaft assembly (270) into outer shaft. Install bolt (205) and collar (210) with BMS 10-11, Type 1 primer.

F. Install bearing (60), spacer (55), drum assembly (40), and nut (35). Install bearing (60) per 20-50-03 except use BMS 10-11, Type 1 primer. Position protrusion of shaft (285) in slot of drum assembly (40). Tighten nut (35) to 350-450 pound-inches above run-on torque using wrench A32045-79 .

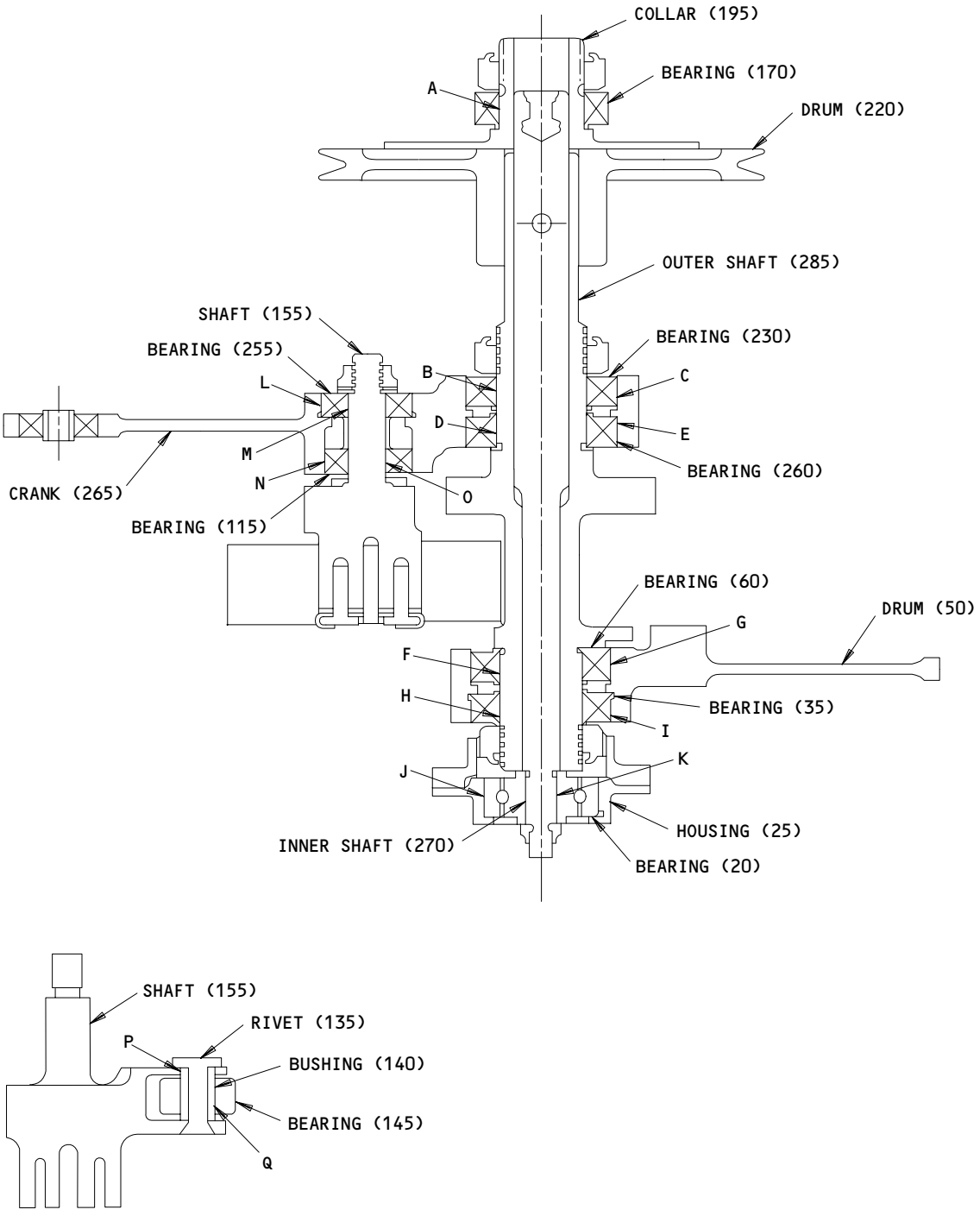
G. Install housing (30), housing assembly (15), washer (10), and nut (5) on outer shaft (285).

H. Install collar assembly (175) on drum assembly (200) with screws (180) and install pin (165).

I. Install bearing (170) on collar assembly (175) per 20-50-03 and install nut (225). Tighten nut to 350-450 pound-inches above run-on torque using wrench A32045-79.

J. Functional test per TESTING/TROUBLE SHOOTING.

4. Prepare and store component in accordance with standard industry practices.



Fits and Clearances
Figure 801 (Sheet 1)

Ref Letter Fig.801	Mating Item No. IPL Fig.	Design Dimension				Service Wear Limit		
		Dimension		Assembly Clearance		Dimension		Maximum Clearance
		Min	Max	Min	Max	Min	Max	
A	ID 170 OD 195	0.9995 0.9985	1.0000 0.9995	0.0000	0.0015	0.9980	1.0000	0.002
B	ID 230 OD 285	0.9995 0.9992	1.0000 0.9995	0.0000	0.0008	0.9987	1.0000	0.0013
C	ID 265 OD 230	1.7500 1.7490	1.7510 1.7500	0.0000	0.0020	1.7490	1.7518	0.0028
D	ID 260 OD 285	0.9995 0.9992	1.0000 0.9995	0.0000	0.0008	0.9987	1.0000	0.0013
E	ID 265 OD 260	1.7500 1.7490	1.7510 1.7500	0.0000	0.0020	1.7490	1.7520	0.0030
F	ID 60 OD 285	0.9990 0.9985	1.000 0.9990	0.0000	0.0015			
G	ID 50 OD 60	1.7500 1.7490	1.7510 1.7500	0.0000	0.0020	1.7490	1.7516	0.0030
H	ID 35 OD 285	0.999 0.9985	1.000 0.9990	0.0000	0.0015			
I	ID 50 OD 35	1.7500 1.7490	1.7510 1.7500	0.0000	0.0020	1.7440	1.7516	0.0030
J	ID 25 OD 20	1.4363 1.4370	1.4368 1.4375	-0.0012	-0.0002	1.4370	1.4370	0.0000
K	ID 20 OD 270	0.3745 0.3735	0.3750 0.3745	0.0000	0.0015	0.3730	0.3750	0.0020
L	ID 265 OD 255	1.1238 1.1246	1.1243 1.1250	-0.0012	-0.0003	1.1246	1.1246	0.000
M	ID 115 OD 155	1.4997 0.4992	0.5000 0.4997	0.0000	0.0008	0.4972	0.5000	0.0028

*[1] NEGATIVE VALUES DENOTE INTERFERENCE FIT

ALL DIMENSIONS ARE IN INCHES

Fits and Clearances
Figure 801 (Sheet 2)

130983

Ref Letter Fig.801	Mating Item No. IPL Fig.	Design Dimension				Service Wear Limit		
		Dimension		Assembly Clearance		Dimension		Maximum Clearance
		Min	Max	Min	Max	Min	Max	
N	ID 265 OD 115	1.1248 1.1246	1.1254 1.1250	-0.0002	0.0008	1.1246	1.1258	0.0012
O	ID 115 OD 125	0.4997 0.4992	0.5000 0.4997	0.0000	0.0008	0.4972	0.5000	0.0028
P	ID 155 OD 140	0.3750 0.3756	0.3790 0.3761	-0.0011	0.0034	0.3746	0.3810	0.0004
Q	ID 145 OD 140	0.3743 0.3756	0.3750 0.3761	-0.0018	-0.0006	0.3754	0.3753	-0.0001

*[1] NEGATIVE VALUES DENOTE INTERFERENCE FIT

ALL DIMENSIONS ARE IN INCHES

Fits and Clearances
Figure 801 (Sheet 3)

FOR TORQUE VALUES OF STANDARD FASTENERS, REFER TO 20-50-01			
ITEM NO. IPL FIG. 1	NAME	TORQUE	
		POUND-INCHES	POUND-FEET
35, 160, 225	NUT	350-450 ABOVE RUN-ON TORQUE	
105	NUT	85-140	

Torque Table
Figure 802

SPECIAL TOOLS

NOTE: Equivalent substitutes may be used.

1. A27029-28 -- Spring Removal and Installation Fixture (replaces A27029-1)
2. A27028-11 -- Spring Checking Fixture (replaces A27028-1)
3. A32045-79 -- Spanner Wrench

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 listed 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

K8455 RHP BEARINGS PLC RHP AEROSPACE
OLDENDS LANE
STONEHOUSE GL10 3RM UK

0PTK6 SPS TECHNOLOGIES INC AEROSPACE PRODUCTS DIV
5195 W 4700 SPO BOX 18459
KEARNS, UTAH 84118

06725 AIR INDUSTRIES CORPORATION
12570 KNOTT STREET
GARDEN GROVE, CALIFORNIA 92641-3932

08524 DEUTSCH FASTENER CORP SEE CODE V97928

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

30163 VALENTEC DAYRON INC
333 MAGUIRE BLVD PO BOX 140394
ORLANDO, FLORIDA 32814-0394

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

5M902 FAIRCHILD IND INC FAIRCHILD AEROSPACE FASTENER DIV
3016 W LOMITA BLVD
TORRANCE, CALIFORNIA 90505-5103

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

VENDORS

60380 TORRINGTON CO BEARINGS DIV SUBSIDIARY OF INGERSOLL-RAND CORP
59 FIELD STREET PO BOX 1008
TORRINGTON, CONNECTICUT 06790-4942

60516 WEST COAST AEROSPACE INC
812 MIRAFLORES STREET
SAN PEDRO, CALIFORNIA 90731-1439

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

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

73197 HI-SHEAR TECHNOLOGY CORP
2600 SKYPARK DRIVE
TORRANCE, CALIFORNIA 90509

77896 REXNORD INC BEARING OPERATION
2400 CURTIS STREET
DOWNERS GROVE, ILLINOIS 60515-4005

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

9N513 VOI SHAN/CHATSWORTH DIV OF VSI CORP SUB OF FAIRCHILD IND
CHATSWORTH, CALIFORNIA 91311-5013
COMPANY NO LONGER WISHES TO BE CONSIDERED FOR FED CONTRCTG

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

92563 MCGILL MFG CO INC BEARINGS DIV
909 LAFAYETTE STREET
VALPARAISO, INDIANA 46383-4210

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

VENDORS

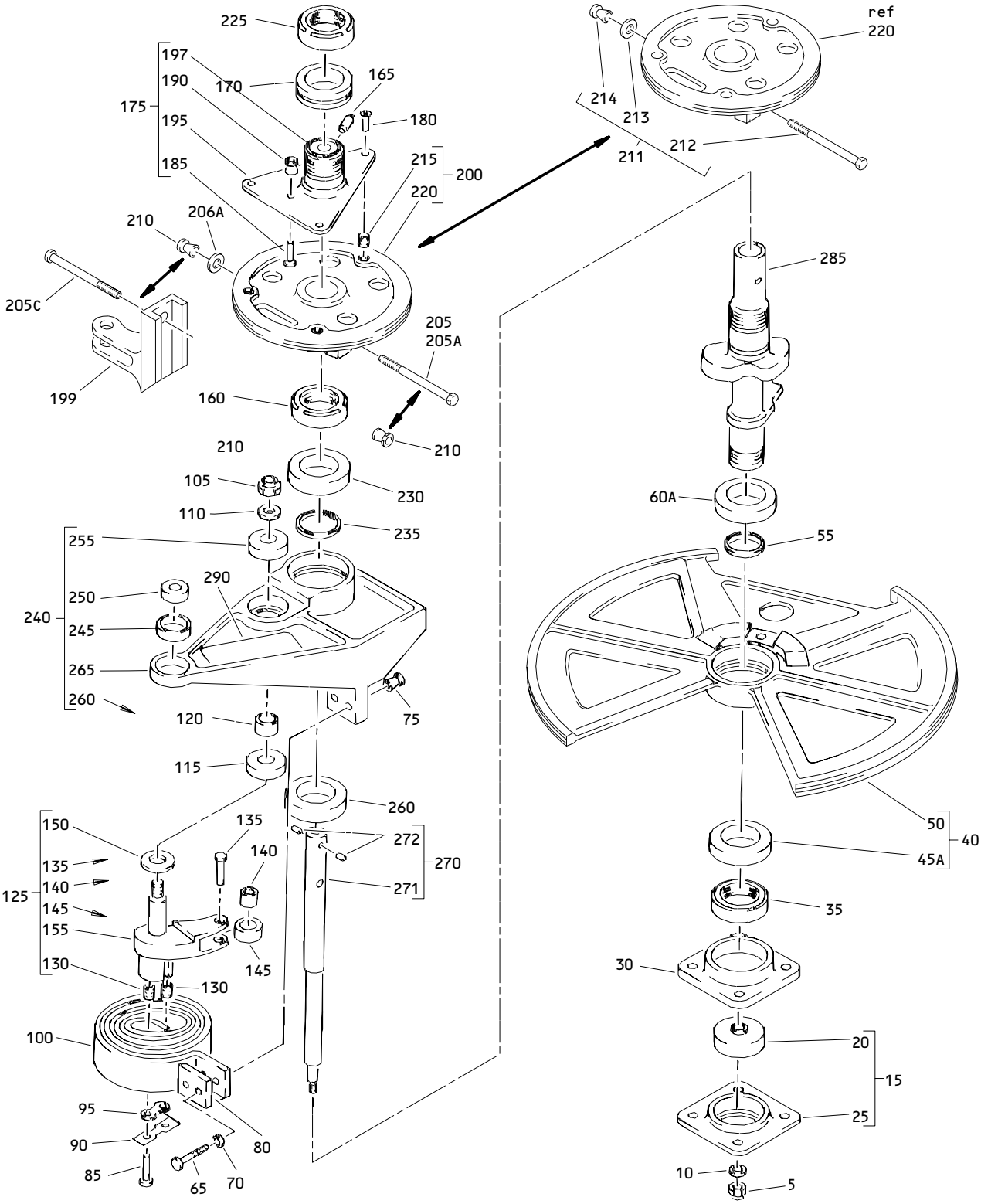
97928 DEUTSCH FASTENER CORP
3969 PARAMONT BOULEVARD
LAKEWOOD, CALIFORNIA 90712-4193

PART NUMBER	AIRLINE PART NO.	FIG.	ITEM	TTL REQ
AN960PD416		1	206A	1
		1	213	1
BACB10AC4		1	250	1
BACB10AC6		1	20	1
BACB10AP08		1	115A	1
BACB10AP8		1	115	1
		1	255	1
BACB10AU16		1	230	1
		1	260	1
BACB10CC6E		1	145	1
BACB10CJ16		1	170	1
BACB28Y4C069		1	140	1
BACB30LJ3H2		1	85	2
BACB30MB6A15		1	65	2
BACB30MY6K2		1	185	1
BACB30MY8K34		1	205	1
		1	212A	1
BACB30MY8K35		1	205A	1
		1	212	1
BACB30NH3HK2		1	85A	2
BACB30NT3K1		1	180A	3
BACB30VT8K37		1	205C	1
BACC30BH6		1	75A	2
BACC30BL8		1	210A	1
BACC30M6		1	190	1
BACC30M8		1	210	1
		1	214	1
BACC30X6		1	75	2
BACN10JC4		1	5	1
BACN10RF16		1	35	1
		1	160	1
		1	225	1
BACN10YR4CD		1	5A	1
BACR15CE8M18		1	135	1
BACW10BP3DP		1	70	2
BACW10BP4DP		1	10	1
BACW10BP7DP		1	110	1
BAC27ECT47		1	290	1
BR9080-16		1	35	1
		1	160	1
		1	225	1
DAT16-26A4		1	170	1
HHKSP4		1	250	1
HHKSP6		1	20	1
HL10VAZ6-2		1	185	1
HL10VAZ8-34		1	205	1
		1	212A	1

PART NUMBER	AIRLINE PART NO.	FIG.	ITEM	TTL REQ
HL10VAZ8-35		1	205A	1
		1	212	1
HL1087-6		1	75A	2
HL448UC6-15		1	65	2
HL79-6		1	190	1
HL79-8		1	210	1
		1	214	1
HL87-6		1	75	2
HST10AG8-37		1	205C	1
HST79-8		1	210A	1
HST79CY8		1	210A	1
H52732-4CD		1	5A	1
KP16BA3223		1	45A	1
		1	60A	1
KSP4		1	250	1
KSP6		1	20	1
KSP6-2TS		1	20	1
KSP6E9440		1	20	1
KSP6FS428		1	20	1
KSP6G27		1	20	1
LLMKP16B		1	230	1
		1	260	1
LLMKP8A		1	115	1
		1	255	1
MCS28E		1	115	1
		1	255	1
MKP16BE9273-16		1	230	1
		1	260	1
MKP16BTT		1	230	1
		1	260	1
MKP16BOO5M		1	230	1
		1	260	1
MKP16B2TS		1	230	1
		1	260	1
MKP8A		1	115	1
		1	255	1
MKP8AFS428		1	115	1
		1	255	1
MKP8AG20		1	115	1
		1	255	1
MKP8ALY196		1	115	1
		1	255	1
MKP8ATT		1	115	1
		1	255	1

PART NUMBER	AIRLINE PART NO.	FIG.	ITEM	TTL REQ
MKP8A2TS		1	115	1
		1	255	1
MKP8E6531		1	115	1
		1	255	1
MS16562-209		1	165	1
		1	198	1
MS21209F1-10		1	215	3
MS21209F1-20		1	130	2
MS39086-125		1	165A	1
NAS623-3-1		1	180	3
PLH54CD		1	5A	1
SA4-14A4		1	250A	1
SL2822-16		1	35	1
		1	160	1
		1	225	1
WC4486-15		1	65	2
015T0253-7		1	1G	RF
015T0253-8		1	1F	RF
21NTE070LH		1	105	1
253T1121-1		1	15	1
253T1121-2		1	25	1
253T1121-6		1	30	1
253T1125-10		1	285C	1
		1	285D	1
253T1125-5		1	272	2
253T1125-6		1	285	1
253T1125-9		1	285B	1
		1	285E	1
253T1127-1		1	125	1
253T1127-2		1	155	1
253T1127-4		1	125A	1
253T1127-5		1	155A	1
253T1128-4		1	200	1
253T1128-5		1	220	1
253T1128-7		1	200A	1
253T1128-8		1	220A	1
253T1130-4		1	40	1
253T1130-5		1	50	1
253T1130-6		1	43	1
253T1130-7		1	53	1
253T1131-1		1	90	1
253T1132-5		1	55	1
		1	235	1

PART NUMBER	AIRLINE PART NO.	FIG.	ITEM	TTL REQ
253T1139-3		1	270	1
253T1139-4		1	271	1
253T1139-7		1	270A	1
253T1139-8		1	271A	1
253T1140-1		1	175	1
253T1140-2		1	195	1
253T1142-2		1	1A	RF
253T1142-3		1	1B	RF
253T1142-4		1	1C	RF
253T1142-5		1	1D	RF
		1	1H	RF
253T1142-6		1	1E	RF
253T1142-7		1	211	1
253T1142-8		1	211A	1
253T1142-9		1	1J	RF
253T1146-1		1	240	1
253T1146-2		1	265	1
253T1146-4		1	240A	1
253T1151-1		1	197	1
253T4013-4		1	199	1
6NBC914YJ		1	145	1
60B00179-15		1	45A	1
		1	60A	1
66014-6		1	190	1
66014-8		1	210	1
		1	214	1
69-38919-20		1	245	1
69B81284-2		1	100	1
		1	100E	1
69B81284-3		1	100A	1
		1	100C	1
69B81284-4		1	100B	1
		1	100D	1
		1	100F	1
69B81289-1		1	95	1
69B81814-1		1	80	1
69B81820-2		1	120	1
69B81820-3		1	150	1
69308-6A15		1	65	2
82631-1612		1	35	1
		1	160	1
82631-1612		1	225	1



Aileron Control Load Limiter Drum Assembly
Figure 1

T64771

	FIG. & ITEM	PART NO.	AIRLINE PART NUMBER	NOMENCLATURE 1234567	EFF CODE	QTY PER ASSY
	01-					
	-1	253T1142-1		DELETED		
R	-1A	253T1142-2		DRUM ASSY-AIL. CONT LOAD LIMITER (PRE SB 767-27-0029) (PRE SB 767-27A0062)	A	RF
R	-1B	253T1142-3		DRUM ASSY-AIL. CONT LOAD LIMITER (PRE SB 767-27-0029) (PRE SB 767-27A0062)	B	RF
R	-1C	253T1142-4		DRUM ASSY-AIL. CONT LOAD LIMITER (POST SB 767-27-0029) (PRE SB 767-27A0062)	C	RF
R	-1D	253T1142-5		DRUM ASSY-AIL. CONT LOAD LIMITER	D	RF
R	-1E	253T1142-6		DRUM ASSY-AIL. CONT LOAD LIMITER	E	RF
R	-1F	015T0253-8		DRUM ASSY-AIL. CONT LOAD LIMITER (POST SB 767-27A0062)	F	RF
R	-1G	015T0253-7		DRUM ASSY-AIL. CONT LOAD LIMITER (POST SB 767-27A0062)	G	RF
R	-1H	253T1142-9		DRUM ASSY-AIL. CONT LOAD LIMITER	H	RF
R	-1J	253T1142-5		DRUM ASSY-AIL. CONT LOAD LIMITER REWORK *(1) (POST SB 767-27A0062)	J	RF
R	5	BACN10JC4		.NUT	A-G,J	1
R	-5A	H52732-4CD		.NUT- (V15653) (SPEC BACN10YR4CD) (OPT PLH54CD (V62554))	H	1
	10	BACW10BP4DP		.WASHER		1
	15	253T1121-1		.HOUSING ASSY		1

	FIG. & ITEM	PART NO.	AIRLINE PART NUMBER	NOMENCLATURE 1234567	EFF CODE	QTY PER ASSY
	01-					
	20	KSP6		..BEARING- (V38443) (SPEC BACB10AC6) (OPT HHKSP6 (V38443)) (OPT KSP6-2TS (V43991)) (OPT KSP6E944O (V21335)) (OPT KSP6FS428 (V21335)) (OPT KSP6G27 (V30163))		1
	25	253T1121-2		..HOUSING		1
	30	253T1121-6		.HOUSING		1
	35	SL2822-16		.NUT- (V97393) (SPEC BACN10RF16) (OPT BR9080-16 (V72962)) (OPT 82631-1612 (V56878))		1
	40	253T1130-4		.DRUM ASSY	A,F	1
R	-43	253T1130-6		.DRUM ASSY	B-E, G-J	1
	45	60B00179-15		DELETED		
R	45A	KP16BA3223		..BEARING- (V21335) (SPEC 60B00179-15)		1

	FIG. & ITEM	PART NO.	AIRLINE PART NUMBER	NOMENCLATURE 1234567	EFF CODE	QTY PER ASSY
	01-					
	50	253T1130-5		..DRUM	A,F	1
R	-53	253T1130-7		..DRUM	B-E, G-J	1
	55	253T1132-5		.SPACER		1
	60	60B00179-15		DELETED		
R	60A	KP16BA3223		.BEARING- (V21335) (SPEC 60B00179-15)		1
	65	HL448UC6-15		.BOLT- (V56878) (SPEC BACB30MB6A15) (OPT HL448UC6-15 (V73197)) (OPT HL448UC6-15 (V92215)) (OPT HL448UC6-15 (V97928)) (OPT 69308-6A15 (V56878)) (OPT HL448UC6-15 (V80539)) (OPT HL448UC6-15 (V08524)) (OPT HL448UC6-15 (V9N513)) (OPT WC4486-15 (V60516))		2
	70	BACW10BP3DP		.WASHER		2
R	75	HL1187-6		.COLLAR- (V73197) (SPEC BACC30X6) (OPT HL87-6 (V73197)) (OPT HL87-6 (V92215)) (OPT HL1187-6 (V56878)) (OPT HL1187-6 (V92215)) (OPT HL87-6 (V56878)) (OPT HL1187-6 (V5M902))	A-G,J	2

	FIG. & ITEM	PART NO.	AIRLINE PART NUMBER	NOMENCLATURE 1234567	EFF CODE	QTY PER ASSY
	01-					
R	-75A	HL1087-6		.COLLAR- (V73197) (SPEC BACC30BH6) (OPT HL1087-6 (V56878)) (OPT HL1087-6 (V92215)) (OPT HL1087-6 (V9N513))	H	2
	80	69B81814-1		.BLOCK-RADIUS		1
	85	BACB30LJ3H2		.BOLT	A-G,J	2
R	-85A	BACB30NH3HK2		.BOLT	H	2
	90	253T1131-1		.RETAINER-BOLT		1
R	95	69B81289-1		.RETAINER-SPRT		1
	100	69B81284-2		.SPRING-SPIRAL (PRE SB 767-27-0072)	A-C,F ,G,J	1
R	-100A	69B81284-4		.SPRING-SPIRAL (POST SB 767-27-0072)	A-D,F ,G,J	1
R	-100B	69B81284-2		.SPRING-SPIRAL (OPT ITEM 100A) (PRE SB 767-27-0072)	D	1
R	-100C	69B81284-3		.SPRING-SPIRAL (OPT ITEM 100E) (PRE SB 767-27-0072)	D	1
R	-100D	69B81284-4		.SPRING-SPIRAL (PREF) (OPT ITEM 100C)	E	1
R	-100E	69B81284-3		.SPRING-SPIRAL (OPT ITEM 100D)	E	1
R	-100F	69B81284-4		.SPRING-SPIRAL	H	1

	FIG. & ITEM	PART NO.	AIRLINE PART NUMBER	NOMENCLATURE 1234567	EFF CODE	QTY PER ASSY
	01-					
	105	21NTE070LH		.NUT-		1
				(V72962)		
	110	BACW10BP7DP		.WASHER		1
R	115	MKP8A		.BEARING-	A-G,J	1
				(V38443)		
				(SPEC BACB10AP8)		
				(OPT LLMKP8A		
				(V38443))		
				(OPT MKP8AFS428		
				(V21335))		
				(OPT MKP8ATT		
				(V43991))		
				(OPT MKP8A2TS		
				(V43991))		
				(OPT MKP8E6531		
				(V21335))		
				(OPT MKP8AG20		
				(V38443))		
				(OPT MKP8ALY196		
				(V40920))		
				(OPT MKP8A		
				(V38443))		
				(OPT MCS28E		
				(VK8455))		
R	-115A	BACB10AP08		.BEARING	H	1
	120	69B81820-2		.SPACER		1
R	125	253T1127-1		.SHAFT ASSY-SPR	A-D,F	1
				(PRE SB 767-27-0072)	,G,J	
R	-125A	253T1127-4		.SHAFT ASSY-SPR	E,H	1
R	-125B	253T1127-4		.SHAFT ASSY-SPR	A-D,F	1
				(POST SB 767-27-0072)	,G,J	
	130	MS21209F1-20		..INSERT		2
	135	BACR15CE8M18		..RIVET		1
	140	BACB28Y4C069		..BUSHING		1
	145	6NBC914YJ		..BEARING-		1
				(V60380)		
				(SPEC BACB10CC6E)		
				(OPT 6NBC914YJ		
				(V92563))		

	FIG. & ITEM	PART NO.	AIRLINE PART NUMBER	NOMENCLATURE 1234567	EFF CODE	QTY PER ASSY
	01-					
	150	69B81820-3		..SPACER		1
R	155	253T1127-2		..SHAFT	A-D,F ,G,J	1
R	-155A	253T1127-5		..SHAFT	E,H	1
	160	SL2822-16		.NUT- (V97393) (SPEC BACN10RF16) (OPT BR9080-16 (V72962)) (OPT 82631-1612 (V56878))		1
	165	MS16562-209		.PIN- (OPT ITEM 165A)	A-G,J	1
	-165A	MS39086-125		.PIN- (OPT ITEM 165)	A-G,J	1
R	-165B	MS39086-125		.PIN	H	1
	170	DAT16-26A4		.BEARING- (V77896) (SPEC BACB10CJ16)		1
	175	253T1140-1		.COLLAR ASSY-ADPTR ATTACHING PARTS		1
	180	NAS623-3-1		.SCREW	A-G,J	3
R	-180A	BACB30NT3K1		.SCREW -------*-------	H	3
	185	HL10VAZ6-2		..BOLT- (V60516) (SPEC BACB30MY6K2) (OPT HL10VAZ6-2 (VOPTK6))		1

	FIG. & ITEM	PART NO.	AIRLINE PART NUMBER	NOMENCLATURE 1234567	EFF CODE	QTY PER ASSY
	01-190	HL79-6		..COLLAR- (V56878) (SPEC BACC30M6) (OPT HL79-6 (V73197)) (OPT HL79-6 (V92215)) (OPT 66014-6 (V56878))		1
	195	253T1140-2		..COLLAR		1
R	-197	253T1151-1		..INSERT-*(1)	F,G,J	1
R	-198	MS16562-209		..PIN-SPRING *(1)	F,G,J	1
R	199	253T4013-4		.CRANK	H	1
	200	253T1128-4		.DRUM ASSY		1
R	-200A	253T1128-7		.DRUM ASSY ATTACHING PARTS	H	1
	205	HL10VAZ8-34		.BOLT- (V60516) (SPEC BACB30MY8K34) (OPT HL10VAZ8-34 (VOPTK6)) (OPT ITEM 205A USED WITH ITEM 206A) (PRE SB 767-27-0072)	A-D,F,G,J	1
R	-205A	HL10VAZ8-35		.BOLT- (V60516) (SPEC BACB30MY8K35) (OPT HL10VAZ8-35 (VOPTK6)) (OPT ITEM 205) (USED WITH ITEM 206A) (PRE SB 767-27-0072)	A-D,F,G,J	1
R	-205B	HL10VAZ8-34		.BOLT- (V60516) (SPEC BACB30MY8K34) (OPT HL10VAZ8-34 (VOPTK6)) (POST SB 767-27-0072)	A-D,F,G,J	1

	FIG. & ITEM	PART NO.	AIRLINE PART NUMBER	NOMENCLATURE 1234567	EFF CODE	QTY PER ASSY
R	01- -205C	HST10AG8-37		.BOLT- (V0PTK6) (SPEC BACB30VT8K37) (OPT HST10AG8-37 (V06725)) (OPT HST10AG8-37 (V56878)) (OPT HST10AG8-37 (V73197))	H	1
	206	AN960PD10		DELETED		
R	-206A	AN960PD416		.WASHER- (USED WITH ITEM 205A) (PRE SB 767-27-0072)	A-D,F ,G,J	1
	210	HL79-8		.COLLAR- (V56878) (SPEC BACC30M8) (OPT HL79-8 (V73197)) (OPT HL79-8 (V92215)) (OPT 66014-8 (V56878))	A-D,F ,G,J	1
R	-210A	HST79CY8		.COLLAR- (V73197) (SPEC BACC30BL8) (OPT HST79-8 (V92215)) (OPT HST79CY8 (V56878)) (OPT HST79CY8 (V5M902)) -------*-------	H	1

	FIG. & ITEM	PART NO.	AIRLINE PART NUMBER	NOMENCLATURE 1234567	EFF CODE	QTY PER ASSY
	01-					
R	211	253T1142-7		.KIT ASSY-SUBSTITUTE (OPT ITEM 211A)	E	1
R	-211A	253T1142-8		.KIT ASSY-SUBSTITUTE (OPT ITEM 211)	E	1
R	212	HL10VAZ8-35		..BOLT- (V60516) (SPEC BACB30MY8K35) (OPT HL10VAZ8-35 (VOPTK6)) (USED ON ITEM 211)	E	1
R	-212A	HL10VAZ8-34		..BOLT- (V60516) (SPEC BACB30MY8K34) (OPT HL10VAZ8-34 (VOPTK6)) (USED ON ITEM 211A)	E	1
R	213	AN960PD416		..WASHER- (USED ON ITEM 211)	E	1
R	214	HL79-8		..COLLAR- (V56878) (SPEC BACC30M8) (OPT HL79-8 (V73197)) (OPT HL79-8 (V92215)) (OPT 66014-8 (V56878))	E	1
	215	MS21209F1-10		..INSERT	A-G,J	3
R	-215A	MS21209F1-10P		..INSERT	H	3
	220	253T1128-5		..DRUM	A-G,J	1
R	-220A	253T1128-8		..DRUM	H	1
	225	SL2822-16		.NUT- (V97393) (SPEC BACN10RF16) (OPT BR9080-16 (V72962)) (OPT 82631-1612 (V56878))		1

	FIG. & ITEM	PART NO.	AIRLINE PART NUMBER	NOMENCLATURE 1234567	EFF CODE	QTY PER ASSY
	01-230	LLMKP16B		.BEARING- (V38443) (SPEC BACB10AU16) (OPT MKP16BTT (V43991)) (OPT MKP16B2TS (V43991)) (OPT MKP16BE9273-16 (V21335)) (OPT LLMKP16B (V38443)) (OPT MKP16BTT (V43991)) (OPT MKP16B2TS (V43991)) (OPT MKP16B005M (V40920))		1
	235	253T1132-5		.SPACER		1
	240	253T1146-1		.CRANK ASSY-BUS	A,B,F,G	1
R	-240A	253T1146-4		.CRANK ASSY-BUS	C-E,H,J	1
	245	69-38919-20		..SLEEVE- (MFD FROM SH AL QQ-A-250/11 OR 6061-O TUBING WW-T-700/6 OPTL MATL 6061-T6 ROD QQ-A-225/8 F25.01 .062 IN .490 IN 3.14 IN)		1
	250	KSP4		..BEARING- (V38443) (SPEC BACB10AC4) (OPT HHKSP4 (V38443)) (OPT KSP4-2TS (V43991)) (OPT KSP4E9440A (V21335)) (OPT KSP4FS428 (V21335)) (OPT KSP4G27 (V30163))	A,B,F,G	1
R	-250A	SA4-14A4		..BEARING- (V77896)	C-E,H,J	1

	FIG. & ITEM	PART NO.	AIRLINE PART NUMBER	NOMENCLATURE 1234567	EFF CODE	QTY PER ASSY
	01-					
R	255	MKP8A		..BEARING- (V38443) (SPEC BACB10AP8) (OPT LLMKP8A (V38443)) (OPT MKP8AFS428 (V21335)) (OPT MKP8ATT (V43991)) (OPT MKP8A2TS (V43991)) (OPT MKP8E6531 (V21335)) (OPT MKP8AG20 (V38443)) (OPT MKP8ALY196 (V40920)) (OPT MKP8A (V38443)) (OPT MCS28E (VK8455))		1
	260	LLMKP16B		..BEARING- (V38443) (SPEC BACB10AU16) (OPT MKP16BTT (V43991)) (OPT MKP16B2TS (V43991)) (OPT MKP16BE9273-16 (V21335)) (OPT LLMKP16B (V38443)) (OPT MKP16BTT (V43991)) (OPT MKP16B2TS (V43991)) (OPT MKP16B005M (V40920))		1
	265	253T1146-2		..CRANK		1
R	270	253T1139-3		.SHAFT ASSY-INNER *(1)	A-C,F ,G,J	1
R	-270A	253T1139-7		.SHAFT ASSY-INNER *(1)	D,E,H	1
	271	253T1139-4		..SHAFT	A-C,F ,G,J	1
R	-271A	253T1139-8		..SHAFT	D,E,H	1

	FIG. & ITEM	PART NO.	AIRLINE PART NUMBER	NOMENCLATURE 1234567	EFF CODE	QTY PER ASSY
	01-					
R	272	253T1125-5		..PLUG		2
	285	253T1125-6		.SHAFT-OUTER (OPT ITEM 285B) (PRE SB 767-27-0072)	A-C,F ,G,J	1
	-285A	253T1125-8		DELETED		
R	-285B	253T1125-9		.SHAFT-OUTER (OPT ITEM 285) (PRE SB 767-27-0072)	A-C,F ,G,J	1
R	-285C	253T1125-10		.SHAFT-OUTER	E,H	1
R	-285D	253T1125-9		.SHAFT-OUTER (PRE SB 767-27-0072)	D	1
R	-285E	253T1125-10		.SHAFT-OUTER (POST SB 767-27-0072)	A-D,F ,G,J	1
	290	BAC27ECT47		.MARKER		1

- Item Not Illustrated

*(1) PRODUCTION DRUM ASSY 253T1142-5 (ITEM 001D) CONTAINS SHAFT ASSY 253T1139-7. REWORK DRUM ASSY 253T1142-5 (ITEM 001J) POST SB 767-27-A0062, MADE FROM DRUM ASSY 253T1142-5 (POST SB 767-27-A0062) CONTAINS SHAFT ASSY 253T1139-3 PLUS INSERT 253T1151-1 AND SPRING PIN MS16562-209.