TO: ALL HOLDERS OF ENGINE CONTROL AUTOTHROTTLE CLUTCH ASSEMBLY COMPONENT MAINTENANCE MANUAL 22-32-51

REVISION NO. 25 DATED JUL 01/05

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
501	Deleted the unnecessary magnetic particle check of the brake arm

ENGINE CONTROL AUTOTHROTTLE CLUTCH ASSEMBLY

PART NUMBER 253T7201-5 THRU -8,-11 THRU -14

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
	22-5	PRR B10924 PRR B11758	JUL 10/83 OCT 01/88 OCT 01/90

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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, 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 the alpha-variants unless otherwise indicated.

Verification:

Assembly	May 28/82
	May 10/90

ENGINE CONTROL AUTOTHROTTLE CLUTCH ASSEMBLY

DESCRIPTION AND OPERATION

1. The engine control autothrottle clutch assembly is part of the autothrottle assembly. The clutch assembly consists of a cammed housing assembly, release arm assembly, splined drum and two arm-shoe assemblies.

2. When the autothrottle assembly is engaged, the thrust management computer causes the splined drum to rotate. The two arm-shoes are clamped to the drum, and transmit its rotation to the cammed housing assembly. Movement of the cammed surface causes the engine thrust to change.

   The release arm assembly is slaved to the cockpit thrust levers. Manual movement of the thrust levers causes the release arm assembly to pull the arm-shoe assemblies away from the splined drum, thus overriding the autothrottle assembly.

3. Leading Particulars (Approximate)

   A. Diameter -- 14 inches

   B. Thickness -- 1 inch

   C. Weight -- 6 lb.

TESTING/TROUBLE SHOOTING

1. Equipment

NOTE: Equivalent substitutes may be used.

A. Torque Rack Assembly -- A22003-23

B. Spindle -- A22003-3

2. Pre-Disassembly Test (Fig. 701, 702)

NOTE: Item numbers refer to IPL Fig. 1, unless shown differently.

A. Remove screws (45) and cover (345A or 350A) from housing assembly (50 or 55). Place housing assembly (50 or 55) on torque rack assembly A22003-23 and spindle A22003-3.

B. Make sure that the gap between actuator (255) and each support (305, 310), (IPL Fig. 2; 65, 70) is at least 0.0035 inch on assemblies 253T7201-5 thru -8, -11, -12 and 0.004 inch on assemblies 253T7201-13, -14 with drum (340) in any position. Lock housing assembly (50 or 55) with stop pin of torque rack assembly A22003-23.

NOTE: Equivalent values in pound-feet can be used instead of pound-inches when doing torque measurements.

C. With a 1.4-1.6 pound load for clutch assembly 253T7201-5, -6, -11 thru -14 (only) or a 2.0-2.2 pound load for clutch assembly 253T7201-7, -8 (only) applied at position C (Fig. 701) downwards, rotate the drum (340) shaft using spindle A22003-3. Measure the slip torque at breakaway and at a drum rotation speed of 8-12 degrees per second in both clockwise and counterclockwise directions. The slip torque must be between 125-320 pound-inches (-5 thru -8, -11, -12) at all positions of rotation and 180-320 pound-inches for assemblies -13 and -14.

D. If the slip torque is not within 125-320 pound-inches (-5 thru -8, -11, -12) or 180-320 pound-inches (-13, -14), adjust screw (180), (IPL Fig. 2; 5) as required to bring into limits. Recheck gap between actuator (255) and each support (305, 310), (IPL Fig. 2; 65, 70) is greater than 0.0035 inch on assemblies 253T7201-5 thru -8, -11, -12 and at least 0.004 inch on assemblies 253T7201-13, -14.

NOTE: You can install cover (345A or 350A) prior to final slip torque verification in step E.

E. Repeat the above check par. 2.C. after a minimum time of 2 hours (-5 thru -8, -11, -12) and 72 hours (-13, -14). Verify that all torque readings remain in the 125-320 pound-inches (-5 thru -8, -11, -12) or 180-320 pound-inches (-13, -14).

F. Reinstall cover (345A or 350A) and screws (45).

3. Trouble Shooting

NOTE: Item numbers refer to IPL Fig. 1, unless shown differently.

	Trouble	Possible Cause	Correction
A.	Slip torque of drum (340) is less than 125 lb-in. (-5 thru -8,-11,-12) or 180 lb-in. (-13,-14).	Screws (220A) incorrectly set to load release arm assembly (145 or 150).	Adjust screws to provide correct gap with release arm assembly.
		Oil, grease or dirt on lining (330), (IPL Fig. 2; 90) or drum (340).	Clean drum and lining. Replace lining or shoe assembly (325), (IPL Fig. 2; 85).
		Too much clearance between pin (260) and support (305,310), (IPL Fig. 2; 65,70). Spring (210), (IPL Fig. 2; 20) defective.	Replace parts.
		Too much or uneven wear of lining (330), (IPL Fig. 2; 90).	Replace lining or shoe assembly (325), (IPL Fig. 2; 85).
		Gap between supports (305, 310), (IPL Fig. 2; (65,70) and actuator (255) is too large.	Adjust bolt (275), (IPL Fig. 2; 35) to obtain correct gap.
B.	Slip torque of drum (340) is greater than 320 lb-in.	Gap between supports (305, 310), (IPL Fig. 2; (65,70) and actuator (255) is too small.	Adjust bolt (275), (IPL Fig. 2; 35) to obtain correct gap.
		Foreign matter on lining (330), (IPL Fig. 2; 90) or drum (340).	Clean drum and lining. Replace lining or shoe assembly (325), (IPL Fig. 2; 85).
C.	Either CW or CCW slip torque is not in the range 125-320 lb-in. (-5 thru -8,-11, -12) or 180-320 lb-in. (-13,-14).	Actuator (255) is not centered. Uneven wear of lining (330), (IPL Fig. 2; 90).	Adjust capsule assemblies (230) and screws (220A) to center the supports (305, 310), (IPL Fig. 2; 65,70).

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. Bearing (25)

C. Packing (315)

2. Disassembly (IPL Fig. 1)

NOTE: Item numbers refer to IPL Fig. 1, unless shown differently.

A. Remove screws (45) and cover (345A or 350A) from housing assembly (50 or 55).

B. Remove plug (215) from housing assembly (50 or 55).

C. Remove screw (180), washer (185), spring (210), barrel washer (190) and barrel nut assembly (195).

D. Remove the actuator support (75) and fasteners (60, 65, 70) from the housing assembly (50 or 55).

NOTE: The housing assembly (95, 100) and actuator support (75), together with the installed actuator bushings (80, 85), make a matched set. Keep the parts together to make sure that the housing assembly (50, 55) can be assembled correctly.

E. Remove lockwire, screw (135), actuator arm (140), and actuator (255). Re-install actuator support (75) on housing assembly (50 or 55) with fasteners (60, 65, 70).

F. Remove nut (10) using adaptor A22003-6, bearing (20), spacer (35) and release arm assembly (145 or 150).

NOTE: Do not disassemble release arm assembly (145, 150) unless necessary for repair or replacement.

G. Remove nut (15) using adaptor A22003-5, spacer (30), bearing (25), spacer (40), and drum (340).

H. Remove screws (220A), shims (225) and capsule assemblies (230).

I. Remove screw assembly (240), spring (245), and pin (250) from housing (235).

J. Remove pins (260) and arm-shoe assemblies (265, 267, 270, 272), (IPL Fig. 2; 25, 30) from housing assemblies (50 or 55).

NOTE: Do not disassemble housing assembly (50 or 55) unless necessary for repair or replacement.

K. Disassemble arm-shoe assemblies (265, 267, 270, 272), (IPL Fig. 2; 25, 30).

(1) Remove bolts (275, 280A), washers (285A), nuts (290A), packing (315), eccentric (320), rivet (295A), bushing (300) and brake shoe assembly (325) from support (305 or 310). Refer to IPL Fig. 1.

(2) Remove bolts (35, 40), washers (45), nuts (50), packing (80), eccentric (75), rivet (55), bushing (60) and brake shoe assembly (85) from support (65, 70). Refer to IPL Fig. 2.

CLEANING

1. Clean all parts except bearings using standard industry practices (Ref 20-30-03) and additional procedure in following step.

2. Clean all sealed bearings (20, 155, IPL Fig. 1) per manufacturer's instructions.

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. Do a magnetic particle check per SOPM 20-20-01 (Ref IPL Fig. 1, unless shown differently) -- spacer (30, 35, 40), actuator arm (140), bushing (160), release arm (170, 175), housing (235), screw assembly (240), pin (250), actuator (255), support (305, 310), (IPL Fig. 2; 65, 70), eccentric (320), (IPL Fig. 2; 75), and drum (340).

3. Do a penetrant check per SOPM 20-20-02 (Ref IPL Fig. 1, unless shown differently) -- support (75), bushing (80, 85), housing (125 or 130), spring guide (207), (IPL Fig. 2; 15), barrel washer (190), barrel nut (205), and pin (260).

4. Do a check of the springs (IPL Fig. 1; 210, 245, 245A), (IPL Fig. 2; 20).

   A. Compress spring (IPL Fig. 1; 210, P/N MS24585-1259), (IPL Fig. 2; 20) to 0.34-0.39 in. and make sure that the load is 10 lb.

   B. Compress spring (IPL Fig. 1; 210A, P/N 253T7202-1) to 0.593 in. and make sure that the load is 14.4-17.6 lb.

   C. Compress spring (IPL Fig. 1; 210A, P/N 253T7202-1) to 0.638 in. and make sure that the load is 12.86-15.72 lb.

   D. Compress spring (IPL Fig. 1; 245) to 0.29-0.35 in. and make sure that the load is 3.2 lb.

   E. Compress spring (245A) to 0.29-0.33 in. and make sure that the load is 5.7 lb.

REPAIR - GENERAL

1. Contents

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

P/N	NAME	REPAIR
253T7213	ARM, RELEASE	1-1
253T7218	ARM, ACTUATOR	2-1
65B80805	ACTUATOR	3-1
65B80817	DRUM	4-1
65B80818	SUPPORT	5-1
65B82674	HOUSING	6-1
65B82675	HOUSING	7-1
DELETED		8-1
69B81948	PIN	9-1
69B84046	SUPPORT, ACTUATOR	10-1
69B84021	SPACER	11-1
BAC27ECT291 BAC27ECT464	NAMEPLATE	12-1
- - -	MISC PARTS REFINISH	13-1

2. Standard Practices

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

B. 20-10-01 Repair and Refinish of High Strength Steel Parts
20-10-02 Machining of Alloy Steel
20-10-04 Grinding of Chrome Plated Parts
20-10-05 Application and Finishing of Thermal Spray Coatings
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
20-43-01 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 Bonded Solid Film Lubricants
20-50-12 Application of Adhesives
20-60-02 Finishing Materials
20-60-03 Lubricants
20-60-04 Miscellaneous Materials

3. Materials

NOTE: Equivalent substitutes may be used.

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

B. Corrosion Preventive Compound -- MIL-C-11796, Class 3 (Ref 20-60-03)

C. Dry Film Lubricant -- BMS 3-8, Class A (Ref 20-60-03)

D. Sealer -- Scotchlite 776 (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

20194

RELEASE ARM ASSEMBLY - REPAIR 1-1

253T7213-7, -8, -11, -12

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

   A. Remove rivet (165, 165A)

   B. Remove bushing (160)

   C. Apply wet BMS 10-11, Type 1 primer to all areas of the hole including countersink and on faying surfaces of new bushing.

   D. Position new bushing and immediately install rivet. In addition, for rivet (165A) installation: formed countersink head must be 0.20 inch minimum diameter and both rivet heads must be flush to 0.015 inch above surface of release arm (170 or 175).

   E. Apply wet BMS 10-11, Type 1 primer over head areas of installed rivet.

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

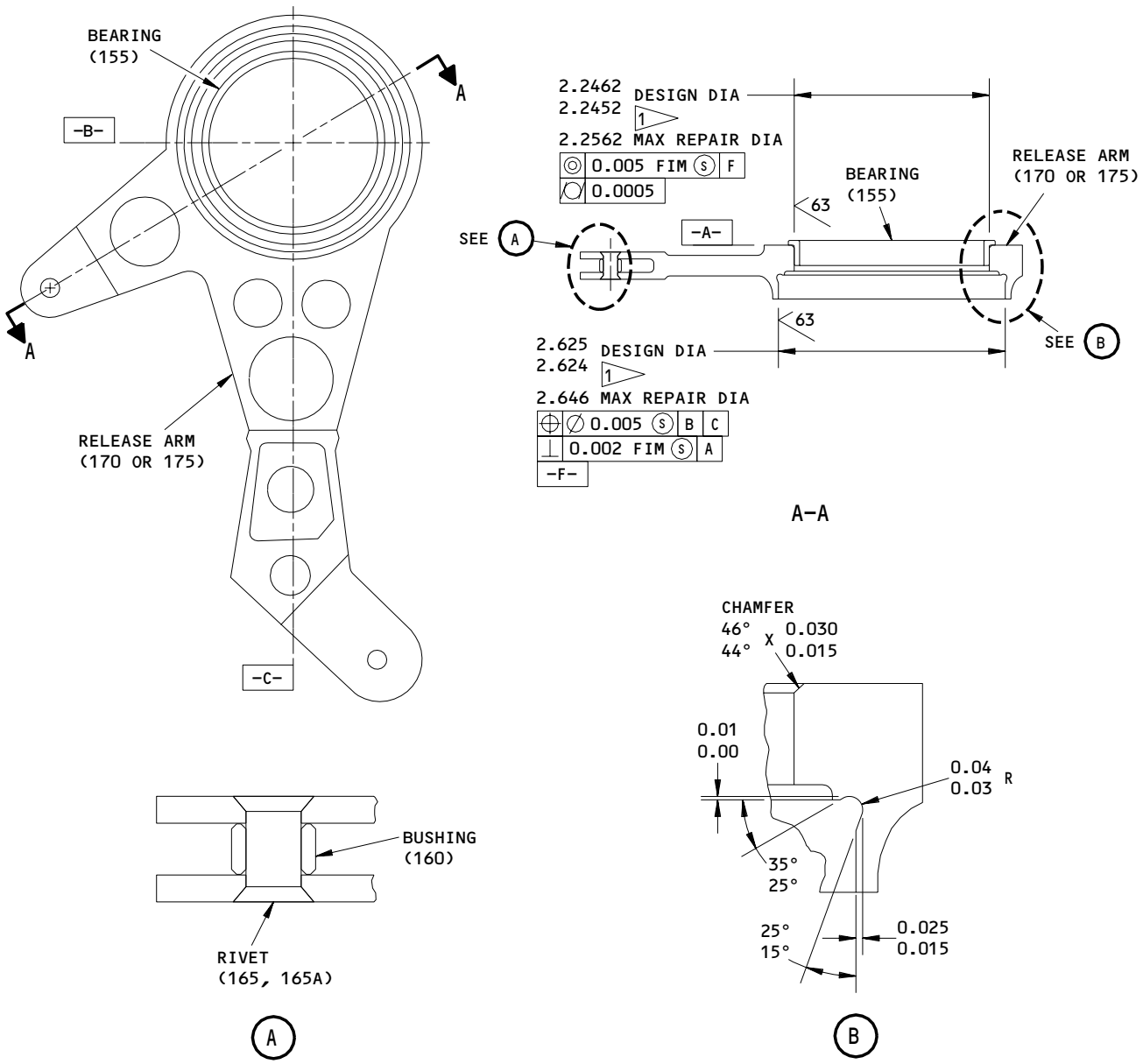
   A. Remove bearing (155).

   B. Install new bearing (also called journal bushing) with BMS 10-11, Type 1 wet primer.

3. Repair (IPL Fig. 1, Fig. 601)

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

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



REFINISH

RELEASE ARM (170 OR 175) --
PASSIVATE (F-17.09)

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.

REPAIR

REF 1

MATERIAL: 17-4 PH CRES, 150-170 KSI

ITEM NUMBERS REFER TO IPL FIG. 1

ALL DIMENSIONS ARE IN INCHES

253T7213-7,-8,-11,-12
Release Arm Assembly Repair
Figure 601

19978

ARM, ACTUATOR - REPAIR 2-1

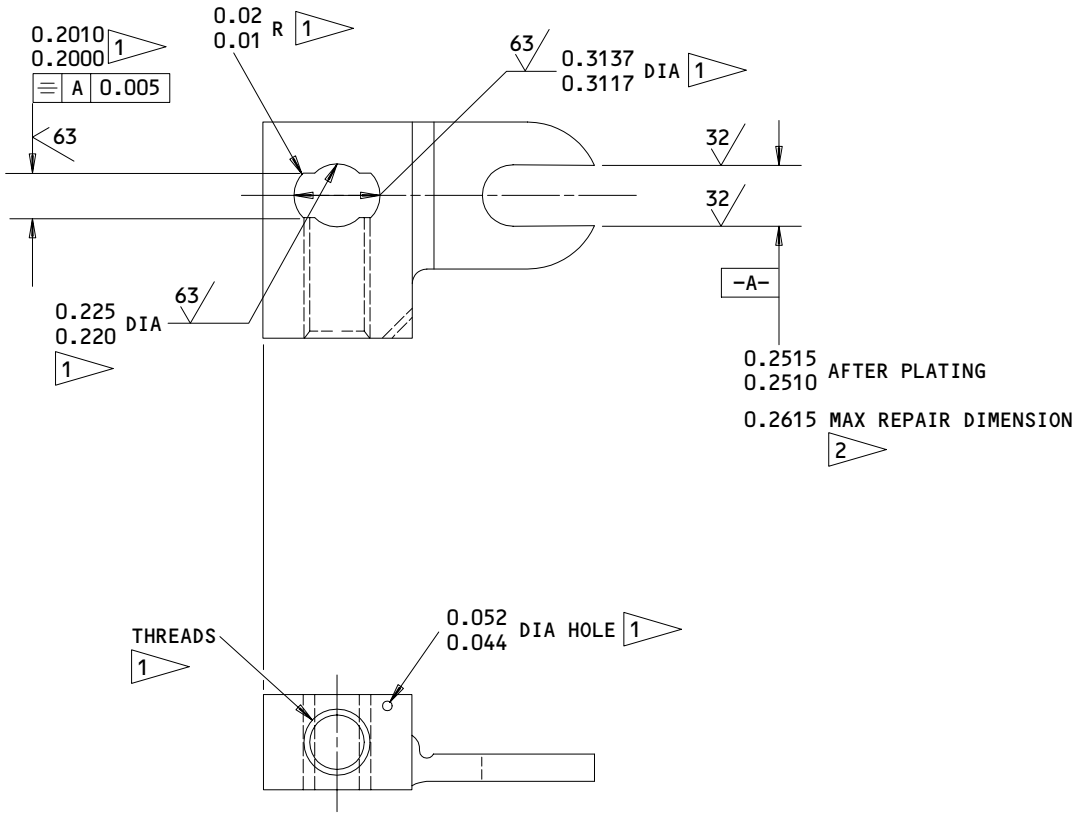
253T7218-1

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 instruction, Fig. 601.

1. Repair (Fig. 601)

   A. Machine slot face as required, within repair limits shown to remove defects.

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



REFINISH

PASSIVATE (F-17.09) AND CHROMIUM PLATE (F-15.03) 0.0005-0.0007 THICK EXCEPT AS NOTED

1 OMIT CHROMIUM PLATING THIS AREA

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: 17-4 PH CRES, 150-170 KSI

ALL DIMENSIONS ARE IN INCHES

253T7218-1
Actuator Arm - Repair
Figure 601

19981

ACTUATOR - REPAIR 3-1

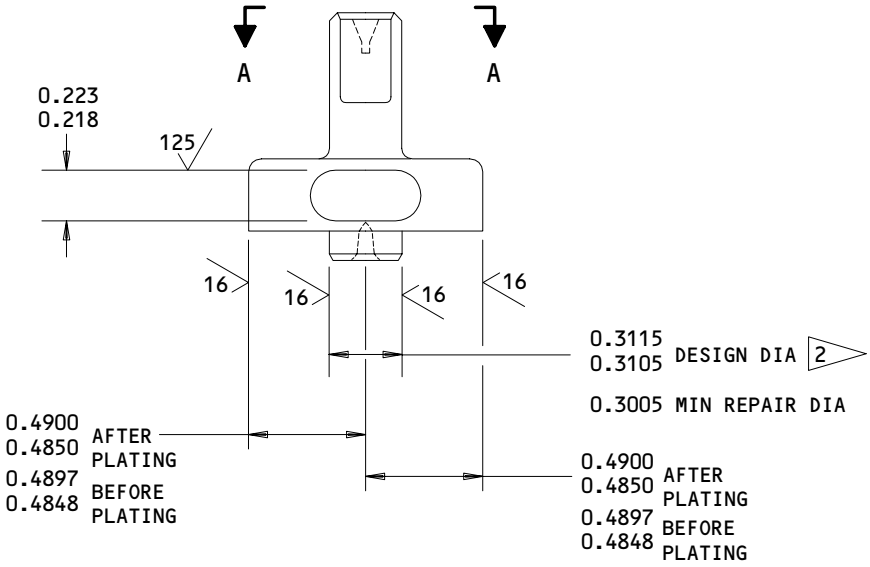
65B80805-3, -4, -6

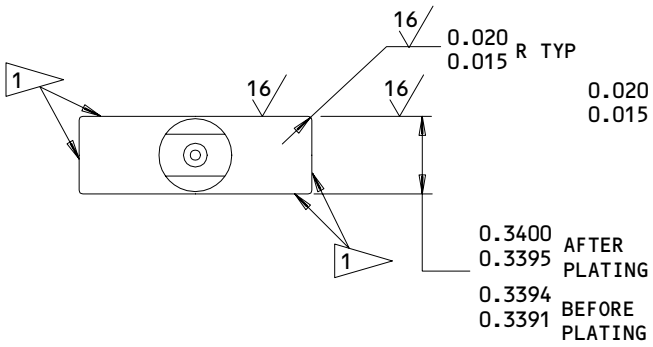
NOTE: Refer to REPAIR-GEN for list of applicable standard practices. For repair of surfaces which may only require restoration of original finish, refer to Refinish instruction, Fig. 601, 602.

1. Repair (Fig. 601, 602)

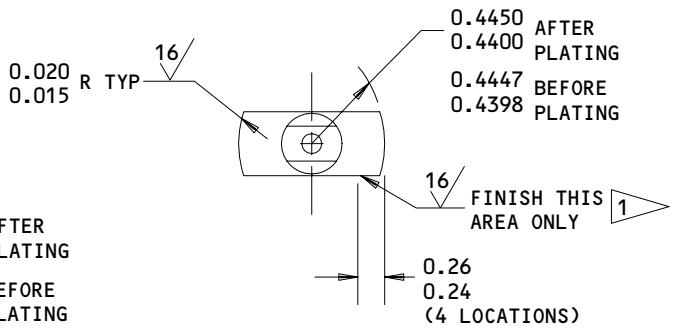
   A. Machine shaft as required, within repair limits shown to remove defects.

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





65B80805-3
A-A



65B80805-4
A-A

REFINISH

PASSIVATE (F-17.09) ALL OVER AND APPLY THIN DENSE CHROMIUM PLATING OF MINIMUM Rc 67 HARDNESS TO THE THICKNESS OF 0.0002-0.0003 (F-14.892) IN AREAS 1

1 AREA FOR CHROME PLATING.

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.

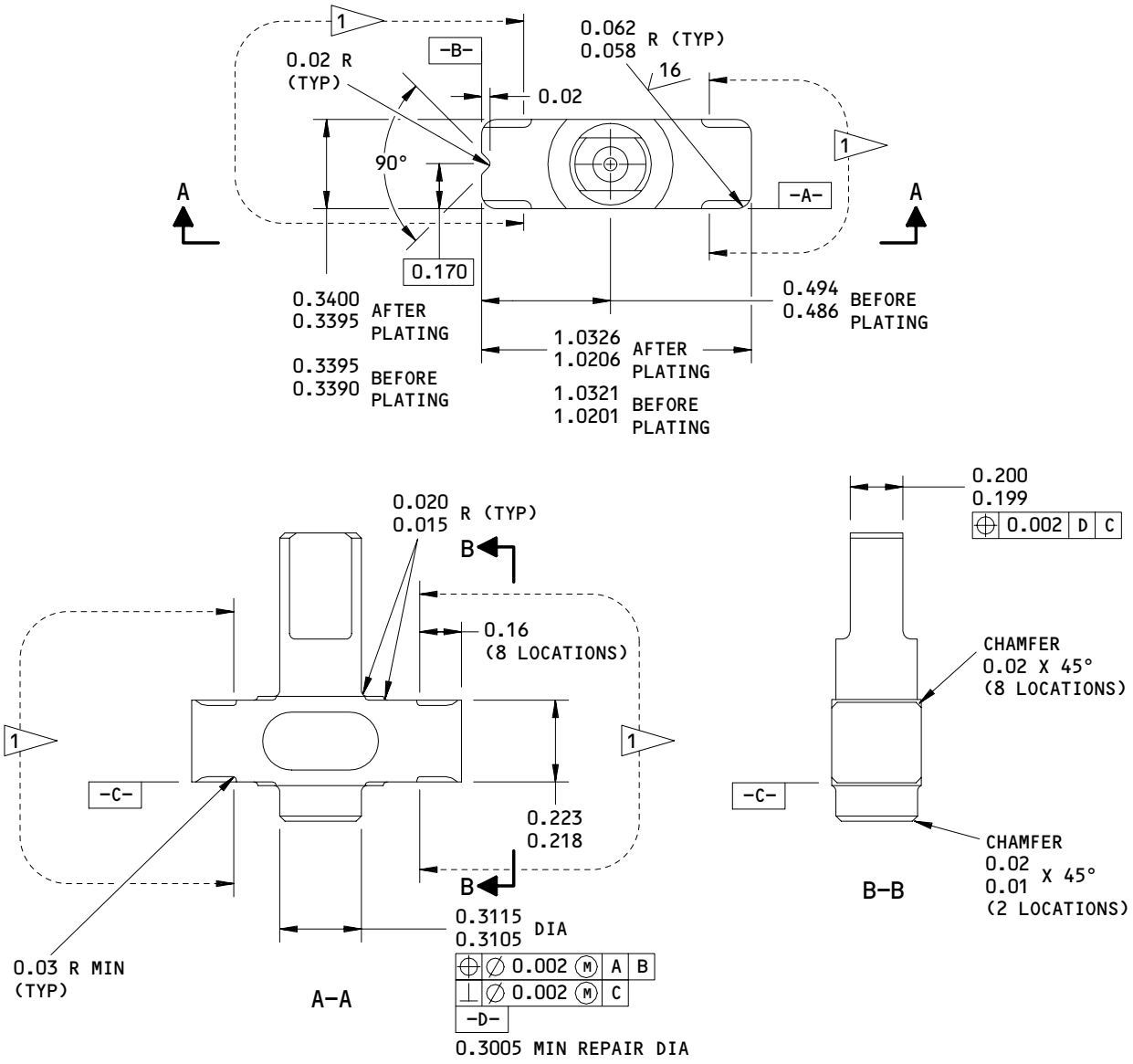
REPAIR

REF 2

MATERIAL: 17-4 PH CRES, 180-200 KSI

ALL DIMENSIONS ARE IN INCHES

65B80805-3,-4
Actuator - Repair
Figure 601



REFINISH

PASSIVATE (F-17.09) ALL OVER AND APPLY THIN DENSE CHROMIUM PLATING OF MINIMUM Rc 67 HARDNESS TO THE THICKNESS OF 0.0002-0.0003 (F-14.892) IN AREAS 1

1 AREA FOR CHROME PLATING.

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: 15-5 PH CRES, 180-200 KSI

ALL DIMENSIONS ARE IN INCHES

65B80805-6
Actuator - Repair
Figure 602

D08842

DRUM - REPAIR 4-1

65B80817-3

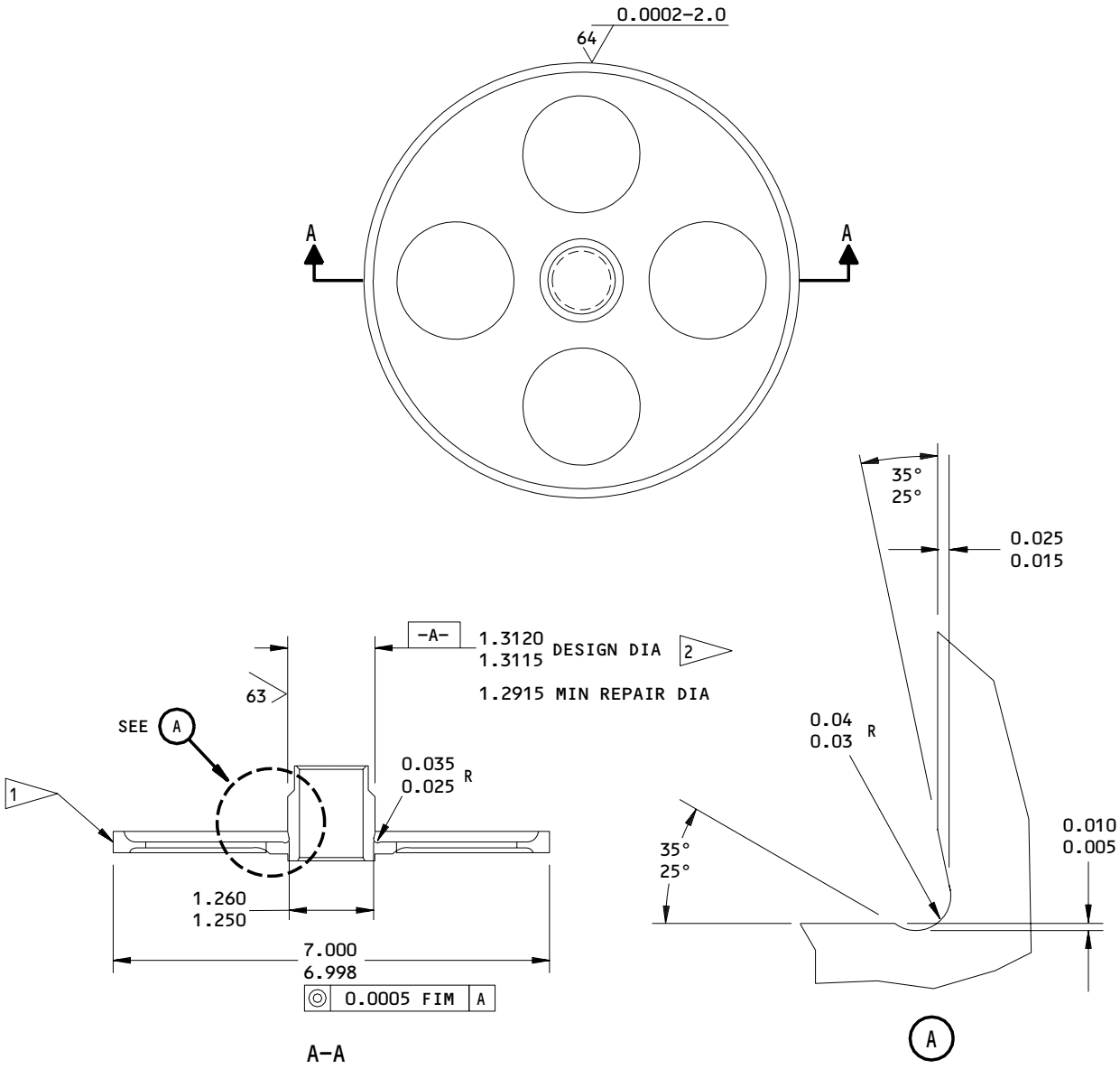
NOTE: Refer to REPAIR-GEN for list of applicable standard practices. For repair of surfaces which may only require restoration of original finish, refer to Refinish instruction, Fig. 601.

1. Repair (Fig. 601)

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

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

   C. Deleted.



REFINISH

PASSIVATE (F-17.09) ALL OVER AND CHROME PLATE (F-15.04) (0.003 MINIMUM THICKNESS) ON SURFACES NOTED BY 1. GRIND PER SOPM 20-10-04.

1 CHROME PLATE THIS SURFACE ONLY

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: 17-4PH CRES

ALL DIMENSIONS ARE IN INCHES

65B80817-3
Drum - Repair
Figure 601

19988

SUPPORT - REPAIR 5-1

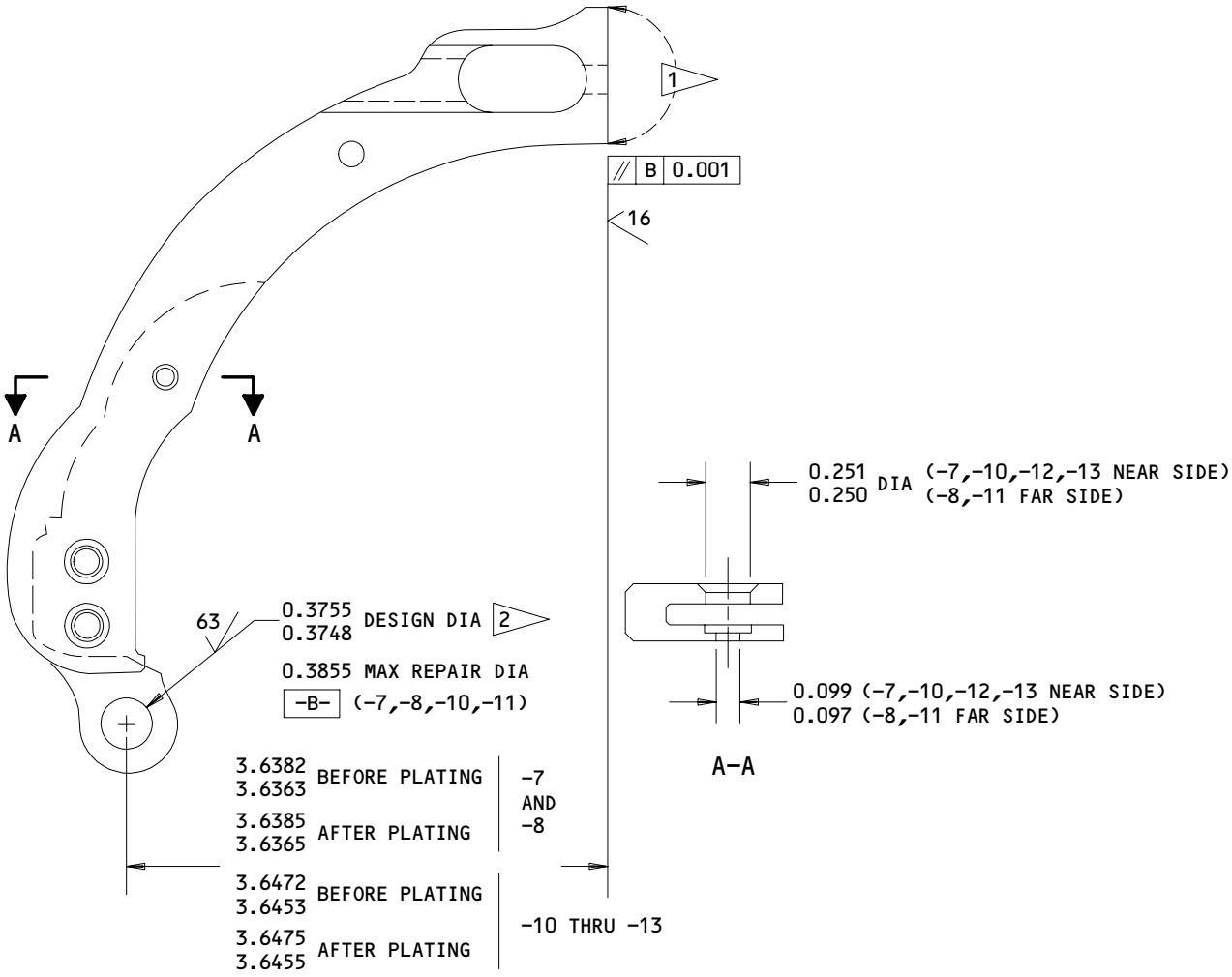
65B80818-7, -8, -10 thru -13

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 instruction, Fig. 601.

1. Repair (Fig. 601)

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

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



REFINISH

PASSIVATE (F-17.09) ALL OVER AND CHROME PLATE (F-15.04) ON SURFACE NOTED 1

OPTION : THIN DENSE CHROME PLATE (F-14.892) (0.0002-0.0003 THICK) IN PLACE OF F-15.04

2 BUILDUP WITH CROME 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

REPAIR

REF 2

MATERIAL : 17-4PH CRES, 180-200 KSI

ALL DIMENSIONS ARE IN INCHES

65B80818-7,-8,-10 THRU -13
Support - Repair
Figure 601

HOUSING ASSEMBLY - REPAIR 6-1

65B82674-15, -16

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 instruction, Fig. 601.

1. Bearing Seat Repair (Fig. 601)

   NOTE: This repair is not applicable for the bearing (90) seat. The housing at that location must be swaged over the bearing, so the thermal spray buidup cannot be used.

   A. Machine the bearing seat as required, for bearings (25, 155) only, to remove defects. Do not machine more than the limit shown.

   B. Build up the machined surface with BMS 10-67, Type 10 thermal spray (Ref SOPM 20-10-05).

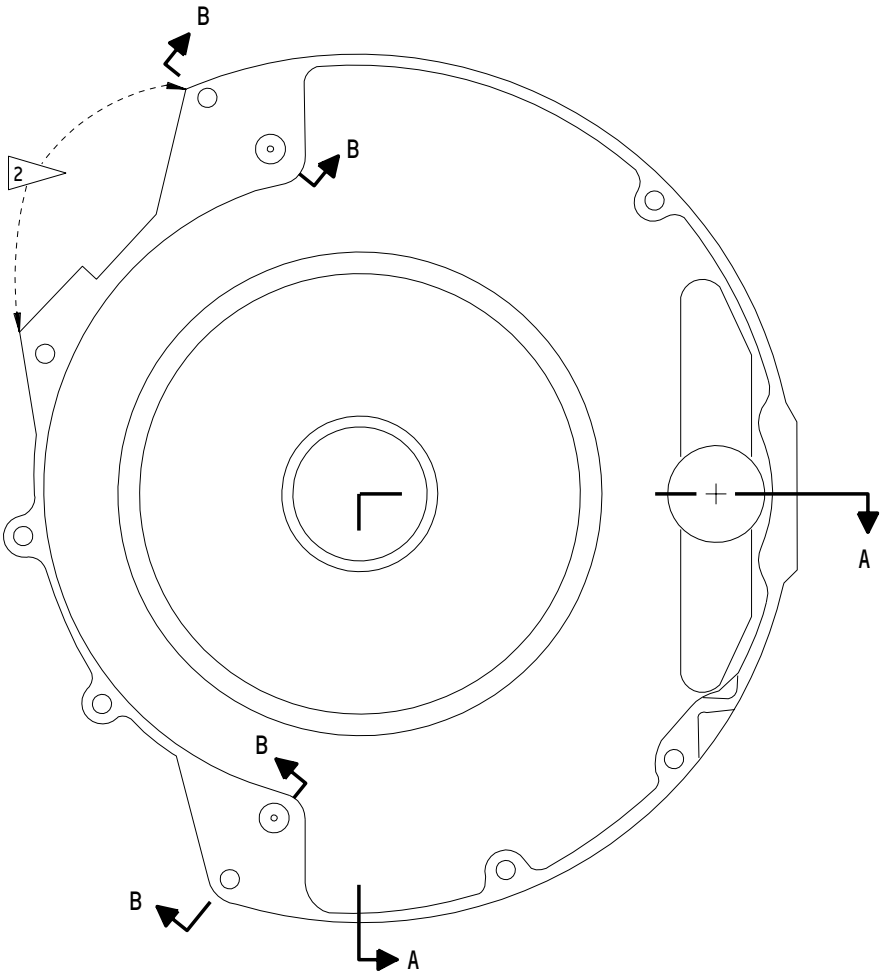
   C. Grind the repaired surface to the design dimensions and finish shown.

2. Pin (260) Hole Repair (Fig. 601)

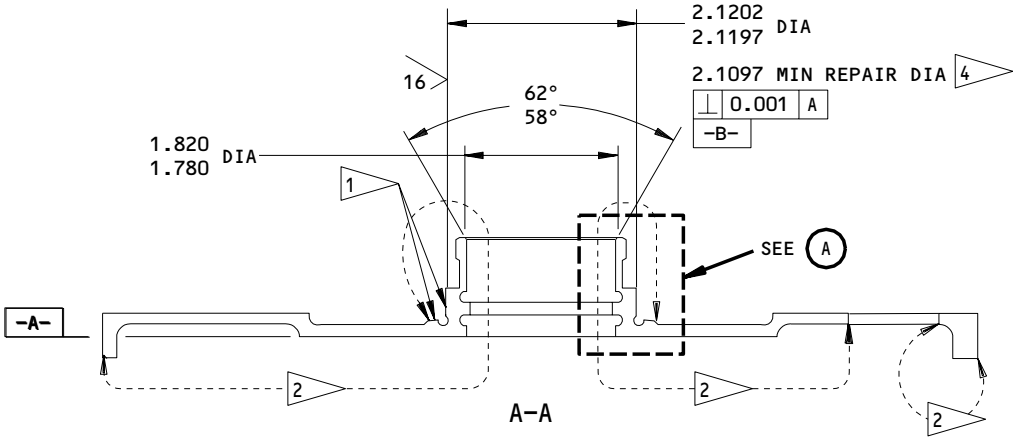
   A. Machine the hole for the pin (260) as required to remove defects. Do not machine more than the limit shown.

   B. Build up the machined surface with BMS 10-67, Type 10 thermal spray (Ref SOPM 20-10-05).

   C. Grind the repaired surface to the design dimensions and finish shown.

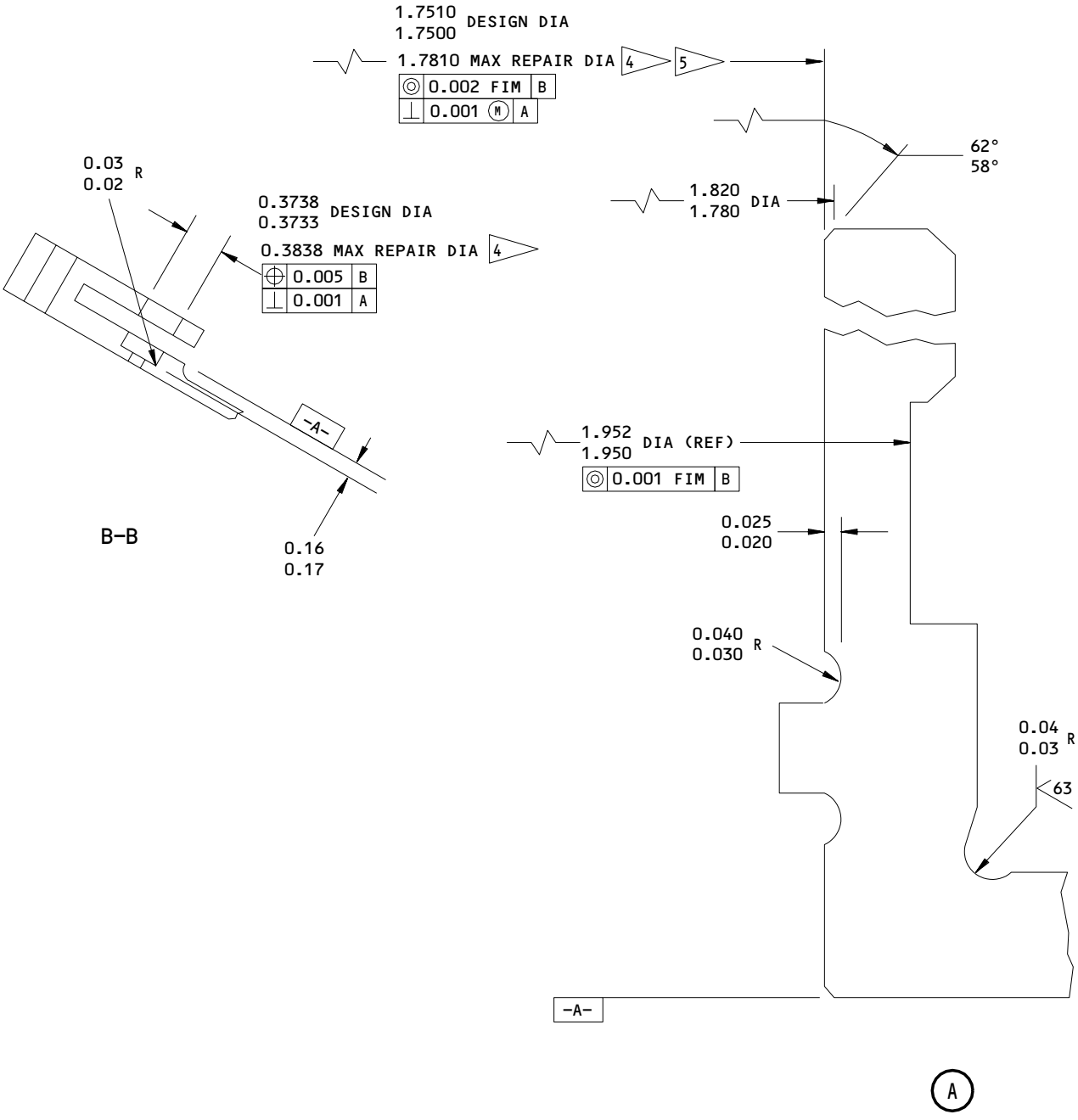


FRONT VIEW



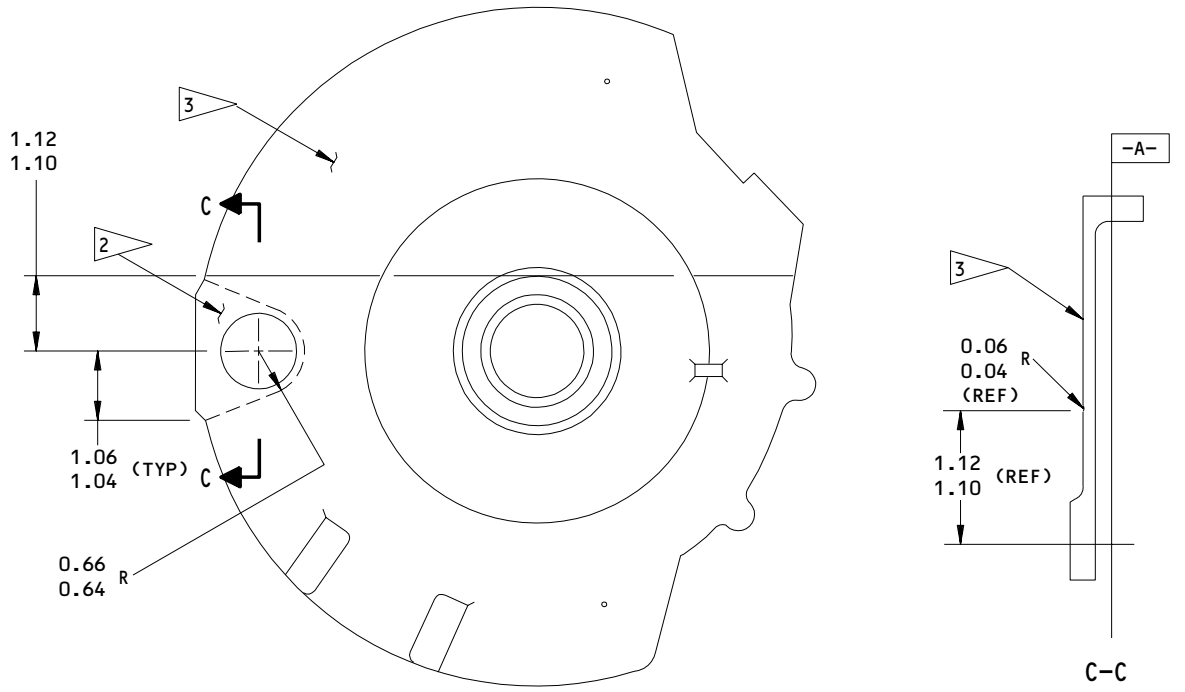
A-A

65B82674-15,-16
Housing Assembly - Repair
Figure 601 (Sheet 1)



65B82674-15,-16
Housing Assembly - Repair
Figure 601 (Sheet 2)

W56198



REFINISH

HOUSING (125, 130) -- HARD ANODIZE 0.002-0.004 THICK (F-17.06) AND APPLY ONE COAT OF BMS 10-11, TYPE 1 PRIMER (F-20.02) EXCEPT AS NOTED IN 1 2 3 4

1. HARD ANODIZE 0.002-0.003 THICK (F-17.06)
2. OMIT PRIMER FROM ENCLOSED AREA
3. CHEMICAL TREAT AND APPLY BMS 10-11, TYPE 1 PRIMER (F-18.01)
4. BUILD UP WITH BMS 10-67, TYPE 10 THERMAL SPRAY (REF SOPM 20-10-05) AND GRIND TO THE DIMENSION AND FINISH SHOWN
5. REPAIR APPLIES TO BEARING SEAT FOR BEARING (25) ONLY

REPAIR

REF 4

125 ALL MACHINED SURFACES UNLESS SHOWN DIFFERENTLY

MATERIAL: AL ALLOY

ITEM NUMBERS REFER TO IPL FIG. 1

ALL DIMENSIONS ARE IN INCHES

65B82674-15,-16
Housing Assembly - Repair
Figure 601 (Sheet 3)

HOUSING ASSEMBLY - REPAIR 7-1

65B82675-13, -14

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

   NOTE: The housing assembly (95, 100) and actuator support (75), together with the installed actuator bushings (80, 85), make a matched set. Keep the parts together to make sure that the housing assembly (50, 55) can be assembled correctly.

   A. Remove the fasteners (60 thru 70) and the actuator support (75) from the housing assembly (50, 55).

   B. Remove the bushings (80, 85) from the actuator support and the housing assembly.

   C. Install the new bushings with wet primer per SOPM 20-50-03.

   D. Install the actuator support on the housing assembly.

   E. Machine the bushings in-line to the dimensions and finish shown.

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

   A. Remove the bearing (90) from the housing assembly (50, 55).

   B. Install the new bearing with primer per SOPM 20-50-03.

   C. Roller swage the housing over the bearing per SOPM 20-50-03, groove type 2.

3. Actuator Support Replacement (IPL Fig. 1, Fig. 601)

   NOTE: The housing assembly (95, 100) and actuator support (75), together with the installed actuator bushings (80, 85), make a matched set. Keep the parts together to make sure that the housing assembly (50, 55) can be assembled correctly.

   A. Remove the fasteners (60 thru 70) and the actuator support (75) from the housing assembly (50, 55).

   B. If a new housing assembly (95, 100) is also being installed, machine two 0.1895-0.1905 inch diameter holes through the housing assembly as shown (Fig. 601).

C. Attach the new actuator support to the housing assmbly with the fasteners (60 thru 70).

D. Machine the hole in the actuator support (75) to the dimensions and finish shown.

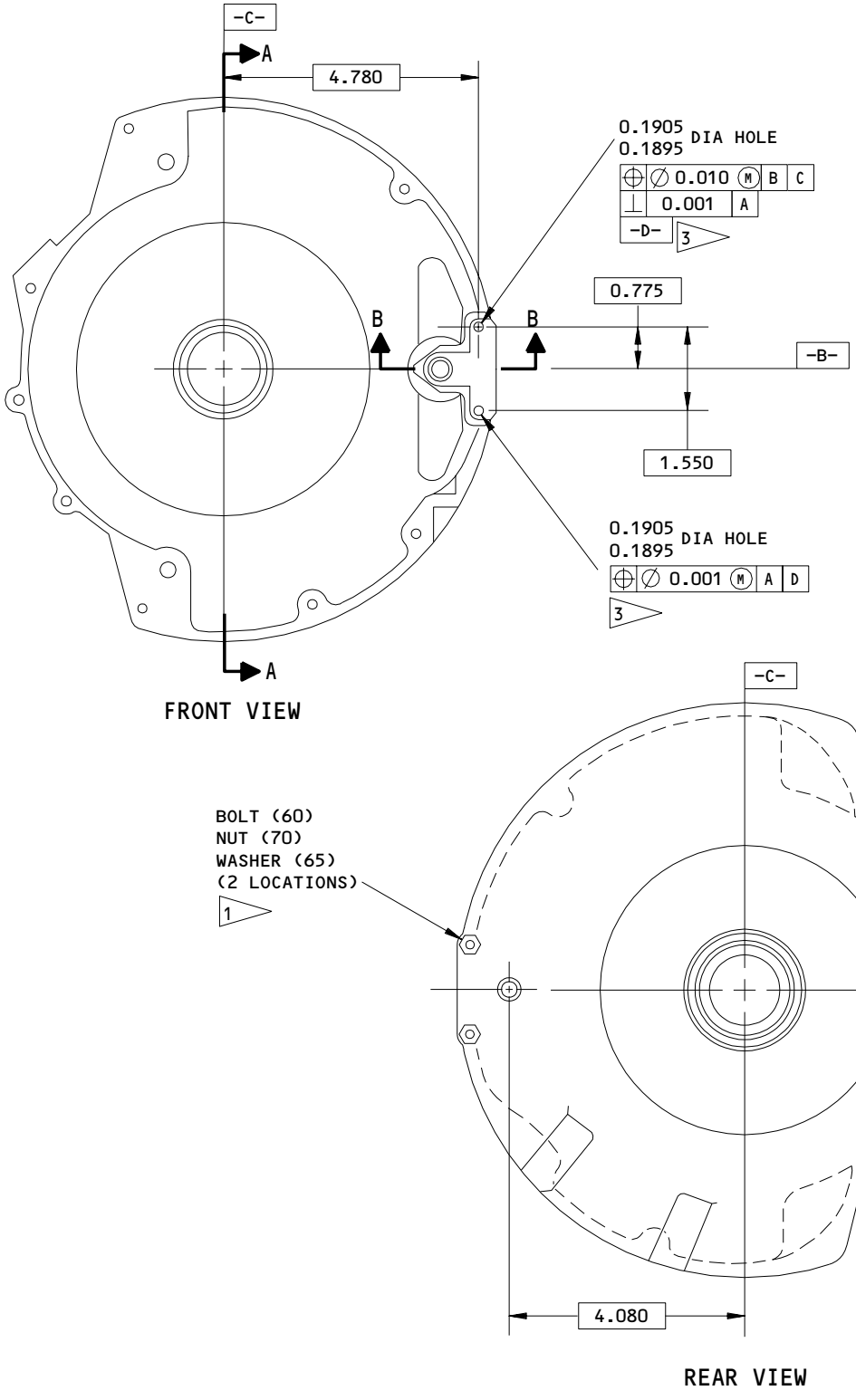
E. Install the new bushing (80) and machine the bushing per paragraph 1.

4. Bushing Hole Repair (Fig. 601)

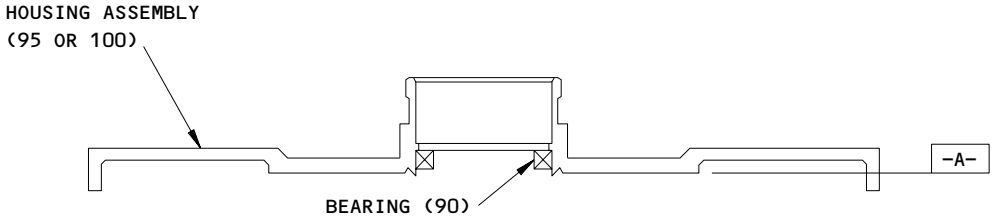
A. Machine the bushing holes through the actuator support (75) and the housing assembly (95, 100) as required to remove defects. Do not machine more than the limit shown.

B. Build up the machined surface with BMS 10-67 thermal spray (Ref SOPM 20-10-05).

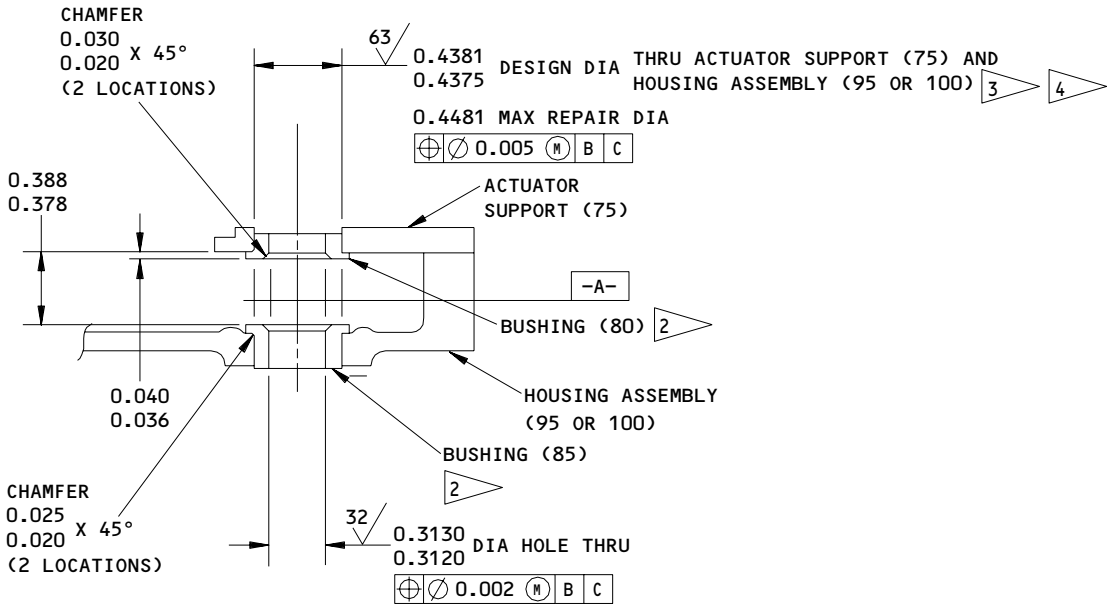
C. Grind the repaired surface to the design dimensions and finish shown.



65B82675-13, -14
Housing Assembly - Repair
Figure 601 (Sheet 1)



ROTATED 90° CLOCKWISE
A-A



B-B

1. INSTALL WITH MIL-C-11796 CLASS 3 CORROSION PREVENTIVE COMPOUND
2. INSTALL WITH BMS 10-11, TYPE 1 PRIMER
3. HOLES TO BE DRILLED PRIOR TO INSTALLATION OF BUSHING (80,85)
4. BUILD UP WITH BMS 10-67, TYPE 10 THERMAL SPRAY (REF SOPM 20-10-05) AND GRIND TO THE DIMENSION AND FINISH SHOWN

REPAIR

REF 4

125 ALL MACHINED SURFACES UNLESS SHOWN DIFFERENTLY

MATERIAL: AL ALLOY

ITEM NUMBERS REFER TO IPL FIG. 1

ALL DIMENSIONS ARE IN INCHES

65B82675-13, -14
Housing Assembly - Repair
Figure 601 (Sheet 2)

PIN - REPAIR 9-1

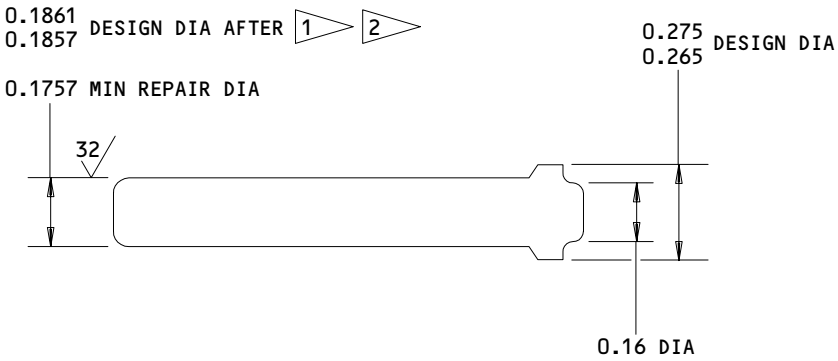
NOTE: Refer to REPAIR-GEN for list of applicable standard practices. For repair of surfaces which may only require restoration of original finish, refer to Refinish instruction, Fig. 601.

1. Pin Repair (Fig. 601)

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

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

   C. Apply dry film lubricant.



REFINISH

PASSIVATE (F-17.09) ALL OVER.

1 APPLY BMS 3-8, CLASS A, DRY FILM LUBRICANT 0.0002-0.0005 THICK (F-19.10)

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: 17-4 PH CRES, 180-200 KSI

ALL DIMENSIONS ARE IN INCHES

Pin - Repair
Figure 601

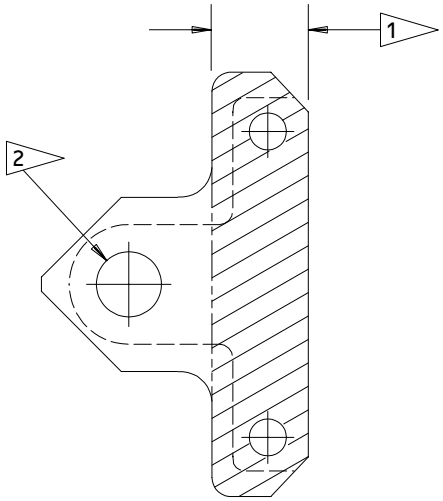
131065

SUPPORT, ACTUATOR - REPAIR 10-1

69B84046-1

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

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

MATERIAL : AL ALLOY

1 OMIT PRIMER FROM THIS AREA (FAR SIDE ONLY)

2 OMIT PLATING OR PRIMER FROM 0.4375-0.4381 IN. DIAMETER HOLE (HOLE WAS DRILLED IN HOUSING ASSEMBLY, REPAIR 7-1)

Actuator Support - Plating Repair
Figure 601

20247

SPACER - REPAIR 11-1

69B84021-2

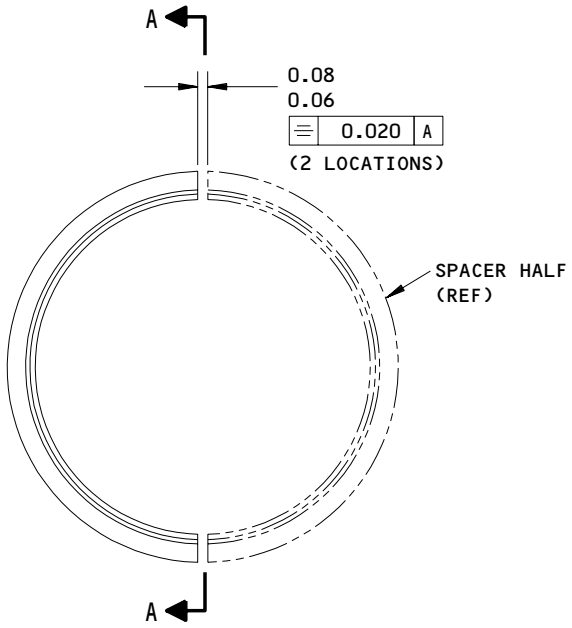
NOTE: Refer to REPAIR-GEN for list of applicable standard practices. For repair of surfaces which may only require restoration of original finish, refer to Refinish instruction, Fig. 601.

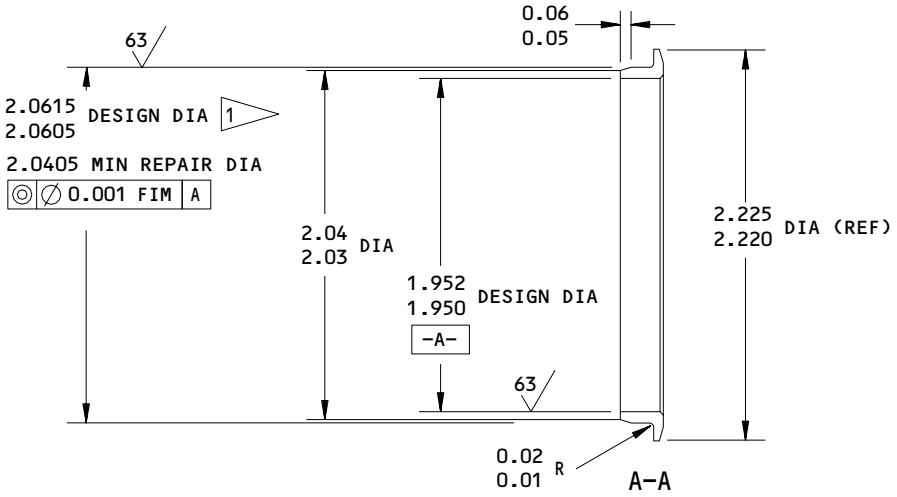
1. Repair (Fig. 601)

   A. Hold the two halves of the spacer (35) with the gaps as shown, so that the inner and outer surfaces are circular.

   B. Machine the outer diameter bearing seat as required to remove defects. Do not machine more than the limit shown.

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





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

REPAIR

REF 1

125 ALL MACHINED SURFACES UNLESS SHOWN DIFFERENTLY

MATERIAL: 15-5PH CRES
125-145 KSI

ALL DIMENSIONS ARE IN INCHES

69B84021-2
Spacer - Repair
Figure 601

131066

NAMEPLATE - REPAIR 12-1

BAC27ECT291
BAC27ECT464

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

1. Nameplate Replacement (IPL Fig. 1)

   A. Remove nameplate (355).

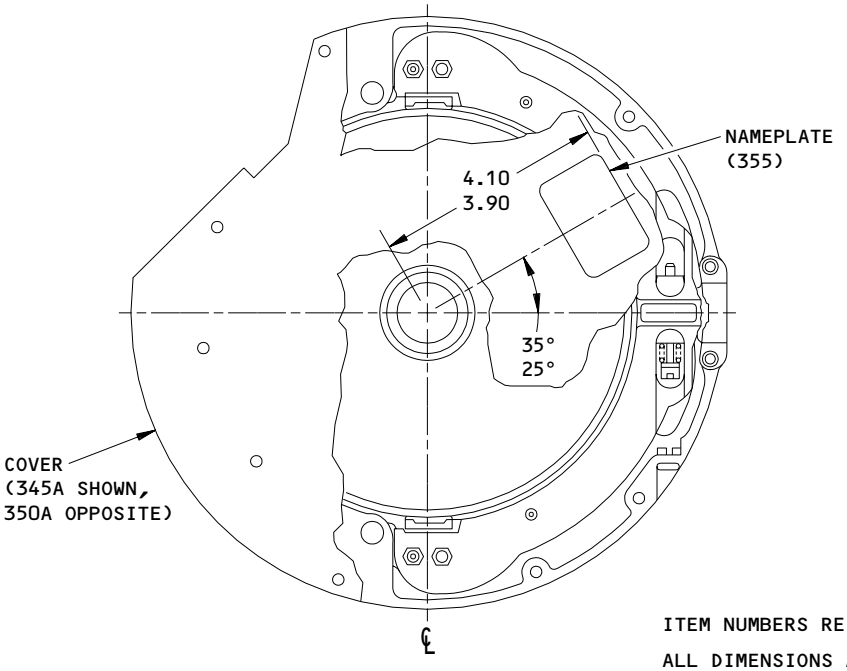
   B. Install new nameplate per 20-50-05 in location shown (Fig. 601).

2. Decal Replacement

   A. Remove worn or damaged decal (360).

   B. Install new decal per 20-50-05 in general area of removed decal.

   C. Apply sealer, Scotchlite 776, over decal.



BAC27ECT291
Nameplate Replacement
Figure 601

243407

MISC PARTS REFINISH - REPAIR 13-1

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

IPL FIG. & ITEM	MATERIAL	FINISH
Fig. 1		
Spacer (30)	17-4PH CRES, 180-200 ksi	Passivate (F-17.09) all over.
Spacer (40)	17-4PH CRES, 180-200 ksi	Passivate (F-17.09) all over.
Guide (207)	304 CRES	Passivate (F-17.09) all over.
Bushing (300)	15-5PH CRES, 150-170 ksi	Passivate (F-17.09) all over.
Cover (345A, 350A)	Al alloy	Chromic acid anodize (F-17.02) and apply one coat of BMS 10-11, type 1 primer (F-20.02) all over.
Housing (235)	17-4 PH CRES, 180-200 ksi	Passivate (F-17.09) all over.
Fig. 2		
Guide (15)	304 CRES	Passivate (F-17.09) all over.
Bushing (60)	15-5PH CRES, 150-170 ksi	Passivate (F-17.09) all over.

Refinish Details
Figure 601

ASSEMBLY

1. Materials

NOTE: Equivalent substitutes may be used.

A. Corrosion Preventive Compound -- MIL-C-11796, Class 3 (Ref 20-60-03)
-- MIL-C-16173, Grade 1 (Ref 20-60-03)
-- MIL-C-16173, Grade 2 (Ref 20-60-03)

B. Anti-Seize Thread Compound -- Molykote, Dow Corning Corp., 45 Commerce Dr., Trumble, CT 06601 (optional -- C5-A, Felpro inc., 7450 N. McCormick Boulevard, Skokie, Illinois 60076)

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

D. Grease -- MIL-G-23827 (Ref 20-60-03)
-- MIL-G-81322 (Ref 20-60-03)
-- BMS 3-24 (Ref 20-60-03)

E. Abrasive -- Scotch Brite Pad, Type A, Very Fine (Ref 20-60-04)
-- Emery Cloth, 400-600 Grit (Ref 20-60-04)

F. Solvent -- Methyl Ethyl Ketone (MEK) or Methyl Propyl Ketone (MPK)

2. Equipment

NOTE: Equivalent substitutes may be used.

A. Autothrottle Clutch Component Maintenance Equipment -- A22003-22

(1) Torque Rack Assembly -- A22003-23

(2) Spindle -- A22003-3

(3) Lapping Wheel Assembly -- A22003-24

(4) Adapter -- A22003-5.

(5) Adapter -- A22003-6.

3. Assembly (Fig. 701, 702)

NOTE: Item numbers refer to IPL Fig. 1, unless shown differently.

CAUTION: DO NOT CONTAMINATE O.D. OF DRUM (340) OR SURFACES OF LININGS (330), (IPL FIG. 2; 90) WITH GREASE, OIL, WATER, OR CLEANING COMPOUNDS. CONTAMINATION IS DETRIMENTAL TO FRICTION CHARACTERISTICS.

A. Assemble arm-shoe assemblies (265, 267, 270, 272), (IPL Fig. 2; 25, 30).

(1) Install brake shoe assembly (325), (IPL Fig. 2; 85) on support (305, 310), (IPL Fig. 2; 65, 70) with bushing (300), (IPL Fig. 2; 60) and rivet (295A), (IPL Fig. 2; 55).

(2) Apply a very light film of MIL-G-23827 grease to the surface of packing (315), (IPL Fig. 2; 80). Put the packing and eccentric (320), (IPL Fig. 2; 75) on the brake shoe assembly (325) , (IPL Fig. 2; 85).

(3) Install the bolts (275, 280A), (IPL Fig. 2; 35, 40), washers (285A), (IPL Fig. 2; 45), and nuts (290A), (IPL Fig. 2; 50). Tighten the nut on bolt (275), (IPL Fig. 2; 35) finger-tight. Tighten the nut on bolt (280A), (IPL Fig. 2; 40) to 5-15 lb-in. more than the run-on torque.

NOTE: The nut on bolt (275), (IPL Fig. 2; 35) will be tightened to the final value during the clutch adjustment procedure (par. 3.N.).

B. Remove actuator support (75) and fasteners (60, 65, 70) from housing assembly (50, 55).

NOTE: Replacement of actuator (255, 255A, P/N 65B80805-3, -4) with actuator (255B, 255C, P/N 65B80805-6) is recommended for improved operation of the autothrottle clutch assembly.

C. Install the arm-shoe assemblies (265, 267, 270, 272), (IPL Fig. 2; 25, 30) that were assembled in paragraph 3.A., in housing assembly (50 or 55) with pins (260). Install actuator (255) in housing assembly (50 or 55). Actuator (255, P/N 65B80805-6) has a notched end (short lobe) which must be positioned inward toward the drum. This position is critical to clutch performance.

CAUTION: THE ACTUATOR SUPPORT (75) AND THE HOUSING ASSEMBLY (95, 100), TOGETHER WITH THE INSTALLED AND MACHINED ACTUATOR BUSHINGS (80, 85), MAKE A MATCHED SET. KEEP THESE PARTS TOGETHER TO MAKE SURE THE HOUSING ASSEMBLY (50, 55) CAN BE ASSEMBLED CORRECTLY.

D. Install actuator support (75) with fasteners (60, 65, 70). Use MIL-C-11796, class 3 corrosion preventive compound while installing bolt (60).

E. Install the screw (180), (IPL Fig. 2; 5), washer (185), (IPL Fig. 2; 10) or spring guide (207), (IPL Fig. 2; 15), a suitable 0.35-inch long spacer in place of the spring (210), (IPL Fig. 2; 20), , the barrel washer (190), and the barrel nut assembly (195). Make sure that you use the correct combination of screw, washer or spring guide, and arm-shoe assembly, as shown in the IPL.

NOTE: The spring (210), (IPL Fig. 2; 20) will be installed during the adjustment procedure.

F. Install spacer (40) and bearing (25) in housing assembly (50 or 55). Install drum (340) inside bearings (25, 90) in housing assembly (50 or 55).

NOTE: Bearing (25B) is the preferred bearing. The bearing (25A) may be reworked by removing the grease and repacking 50 to 70 percent full with Mobil 28 per MIL-G-81322.

G. Install spacer (30) and nut (15) on drum (340) with a light film of MIL-G-23827 grease. Use adaptor A22003-5 to tighten the nut (15) to 380-480 lb-in more than the run-on torque.

H. Install release arm assembly (145 or 150) on housing assembly (50 or 55) with long arm of release arm assembly (145 or 150) situated away from the normal position.

I. Check for free rotation of release arm assembly (145 or 150). If release arm assembly (145 or 150) does not rotate freely against housing assembly (50 or 55), remove release arm assembly (145 or 150) and burnish the ID of bearing (155) in release arm assembly (145 or 150) with a smooth surfaced rod. Repeat par. 3.H. and 3.I. as applicable.

J. Install the release arm assembly (145 or 150) on the housing assembly (50 or 55), and, at the same time, install the actuator arm (140) on the actuator (255). Install the screw (135) in the actuator arm to hold the actuator. On assemblies 253T7201-11 and -12, tighten the screw to 18-30 lb-in.

K. Install spacer (35) and bearing (20) on housing assembly (50 or 55). Install nut (10) on housing assembly (50 or 55). Tighten nut (10) to 500-600 pound-inches using adapter A22003-6.

L. Assemble Capsule -- Capsule Assembly (230)

(1) Insert pin (250) completely into housing (235).

(2) Lightly coat spring (245) with MIL-C-16173 grade 1 corrosion preventive compound. Lightly coat spring (245A) with either MIL-C-16173 grade 2 corrosion preventive compound or BMS 3-24 grease. Install the spring (245 or 245A) against the pin (250) in the housing (235).

(3) Install screw assembly (240) into housing (235).

(4) For capsule assembly (230), compress pin (250) to 0.09-0.11 in. (Fig. 701). Adjust screw assembly (240) until spring force equals 4.00 lb. For capsule assembly (230A), compress pin (250) to 0.01-0.02 in. Adjust screw assembly (240) until spring force equals 4.38 lb.

M. Apply a light coat of anti-seize thread compound to threads of capsule assemblies (230) and screws (220A). Install capsule assemblies (230) and screws (220A) as shown (Fig. 701).

N. Adjustment Procedure

NOTE: Item numbers refer to IPL Fig. 1, unless shown differently.

NOTE: Equivalent values in pound-feet can be used instead of pound-inches when doing torque measurements.

CAUTION: SHOE ASSEMBLY (325), (IPL FIG. 2; 85) MAY SQUEAK WHEN DRUM (340) IS ROTATED. DO NOT LUBRICATE CLUTCH ASSEMBLY OR LOSS OF FRICTION CHARACTERISTICS WILL RESULT IN IMPROPER OPERATION.

(1) Place the housing assembly (50, 55) on the torque rack assembly A22003-23 and spindle A22003-3. With the shoe assemblies (325), (IPL Fig. 2; 85) loose in the supports (305, 310), (IPL Fig. 2; 65, 70) and clear of the drum (340), insert a 0.005 inch thick shim at 2 places between the supports and the actuator (255). Hold the supports firmly against the actuator with the screw (180), barrel washer (190), and barrel nut (195).

(2) Adjust capsule assemblies (230) so that pins (250) touch release arm assembly (145 or 150) without deflecting pins.

(3) Adjust screws (220A) so that they touch release arm assembly (145 or 150). Screws shall not apply load to release arm assembly.

(4) Make sure that shoe assemblies (325), (IPL Fig. 2; 85) are fully backed off from drum (340). Remove drum and nut (15) using adapter A22003-5 and install lapping wheel assembly A22003-24 into housing assembly (50 or 55). Insert four 1.0 x 0.5 inch Scotchbrite pads as shown (Fig. 702), on each side of the brake shoes to clean the lapping tool as it is rotated during lapping procedures.

(5) With clutch assembly oriented as shown (Fig. 702), rotate shoe adjustment bolt (275), (IPL Fig. 2; 35) at position A in counterclockwise (CCW) direction until lining (330), (IPL Fig. 2; 90) contacts the surface of the lapping wheel. While maintaining pressure on bolt in CCW direction, rotate the lapping wheel in CW direction until a minimum of 75% full surface contact between lining and the lapping wheel is established. Back the shoe assembly (325), (IPL Fig. 2; 85) completely away from the lapping wheel at position A and lock the adjustment bolt with nut (290A), (IPL Fig. 2; 50) . Optional procedure for assemblies 253T7201-13, -14: with clutch assembly oriented as shown (Fig. 702), rotate both shoe adjustment bolts (275) at position A and B in a counterclockwise (CCW) direction until lining (330) contacts the surface of the lapping wheel. While maintaining pressure on bolts in a CCW direction, rotate lapping wheel a minimum, but equal, number of times in the CW and CCW directions until a minimum of 90% full surface contact between lining (330) and lapping wheel is established. Back the shoe assembly (325) completely away from lapping wheel at position A and B and lock the bolts (275) with nuts (290A). Omit par. (6) and go to par. (7).

(6) Rotate shoe adjustment bolt (275), (IPL Fig. 2; 35) at position B in CCW direction until lining (330), (IPL Fig. 2; 90) contacts the surface of the lapping wheel. While maintaining pressure on bolt in CCW direction, rotate the lapping wheel in CCW direction until a minimum of 75% full surface contact between lining and the lapping wheel is established. Back off shoe assembly (325), (IPL Fig. 2; 85) completely away from the lapping wheel at position B and lock adjustment bolt with nut (290A), (IPL Fig. 2; 50).

NOTE: Simultaneous operation of par. (5) and (6) is recommended. Make sure to keep debris out of the housing by using Scotchbrite cloth on each side of linings while rotating lapping wheel.

(7) Remove the screw (180), (IPL Fig. 2; 5) and the 0.35 inch long spacer from the arm-shoe assemblies (265, 267, 270, 272) , (IPL Fig. 2; 25, 30) . Remove the lapping wheel assembly from housing assembly (50 or 55). Clean shoe contact surface with Scotchbrite cloth. Optional for assemblies 253T7201-13, -14: hand polish shoe contact surface with emery cloth to remove lapping tool marks, then clean linings (330), (IPL Fig. 2; 90) with Methyl Ethyl Ketone (MEK) or Methyl Propyl Ketone (MPK). Vacuum debris out of housing assembly.

(8) Apply a light film of MIL-G-23827 grease to threads of nut (15). Install drum (340), spacers (30, 40), bearing (25) and nut. Tighten nut to 380-480 lb-in. using adapter A22003-5.

(9) Install the screw (180), (IPL Fig. 2; 5), spring (210) , (IPL Fig. 2; 20) , washer (185), (IPL Fig. 2; 10) or spring guide (207), (IPL Fig. 2; 15), barrel washer (190), and barrel nut assembly (195). Make sure that you use the correct combination of screw, washer or spring guide, and arm-shoe assembly, as shown in the IPL. Adjust the screw until spring is compressed to 0.35 inch (P/N MS24585-1259) or 0.74 inch (P/N 253T7202-1), as shown in View C, Fig. 701.

(10) Put a pencil mark on the rim of the drum (340), adjacent to the actuator (255). Do not allow the drum (340) to move from this position. At position A, rotate the bolt (275), (IPL Fig. 2; 35) in the CCW direction until you get a gap of 0.005 in. between the support (305), (IPL Fig. 2; 65) and the actuator (255). Lock the bolt with the nut (290A), (IPL Fig. 2; 50).

(11) Adjust the screws (220A) to obtain a 0.04-0.06 in. gap, as shown in View B, Fig. 701. Measure the spaces under the screw heads. Adjust the thickness of the shims (225) to fill the spaces. Remove the screws, then install them with the measured shims. On assemblies 253T7201-11 and -12, tighten the screws to 25-35 lb-in. more than the run-on torque.

(12) With pencil mark on rim of drum (340) still adjacent to actuator (255), repeat procedure described in paragraph (10) for bolt (275), (IPL Fig. 2; 35) at position B.

CAUTION: DO NOT CONTAMINATE O.D. OF DRUM (340) OR SURFACES OF LINING (330), (IPL FIG. 2; 90) WITH GREASE, OIL, WATER, CLEANING COMPOUNDS, OR TOUCH WITH FINGERS. CONTAMINATION IS DETRIMENTAL TO FRICTION CHARACTERISTICS.

(13) Place stop pin in torque rack assembly A22003-23 to restrain housing assembly (50 or 55). Do not disturb shoe assembly (325) settings. Lap the linings (330), (IPL Fig. 2; 90) with drum (340) as follows:

(a) Using spindle A22003-3, rotate drum three full revolutions in each direction. Repeat three times. On assemblies 253T7201-5 thru -8, -11, -12 check for minimum of 75 percent brake shoe contact. On assemblies 253T7201-13, -14, check brake shoe contact for a minimum of 75 percent over the length and 90 percent over the width. If correct brake shoe contact is not obtained: Remove drum and clean drum and linings. On assemblies 253T7201-5 thru -8, -11, -12 clean drum and linings with Scotchbrite cloth and vacuum all debris from housing assembly; and reassemble drum. On assemblies 253T7201-13, -14 clean drum and linings with MEK or MPK, if required polish linings with emery cloth to remove high spots followed by cleaning with MEK or MPK. Vacuum all debris from housing and reassemble drum. Make sure that gap between support arm (305, 310), (IPL Fig. 2; 65, 70) and actuator (255) is 0.0035-0.005 inch (-5 thru -8, -11, -12 assemblies only) and .005 (-13, -14 assemblies only). Repeat above rotation procedure until correct brake shoe contact is achieved. Remove drum. Clean linings and drum.

(b) Reassemble drum and make sure that gap between support and actuator (255) is 0.0035-0.005 inch (-5 thru -8, -11, -12 assemblies only) and 0.005 inch (-13, -14 assemblies only).

(c) Compress spring (210), (IPL Fig. 2; 20) to 0.35 inch (P/N MS24585-1259) or 0.74 inch (P/N 253T7202-1) and rotate drum three times CW and three times CCW. Repeat this cycle of rotations until slip torque stabilizes for four cycles.

NOTE: Torque can rise and then fall before stabilizing.

(d) Vacuum debris out of clutch assembly. Adjust screw (180), (IPL Fig. 2; 5) to change spring tension and obtain clutch slip torque as follows: With a 1.4-1.6-pound load for clutch assembly 253T7201-5, -6, -11 thru -14 (only) or a 2.0-2.2-pound load for clutch assembly 253T7201-7, -8 (only) applied at position C (Fig. 701) downwards, rotate the drum shaft using spindle A22003-3. Measure the slip torque at breakaway and at a drum rotation speed of 8-12 degrees per second in both clockwise and counterclockwise directions. The slip torque must be 125-320 pound-inches (-5 thru -8, -11, -12 assemblies only) and 180-320 pound-inches (-13, -14 assemblies only) at all positions of rotation. Check that gap between supports (305, 310), (IPL Fig. 2; 65, 70) and actuator (255) is greater than 0.0035 (-5 thru -8, -11, -12, assemblies only) and at least 0.004 (-13, -14 assemblies only).

(e) <u>For 253T7201-7, -8, -13, -14 only</u>:

1) Pull on arm (170) at position C in the direction shown by line D (Rear View, Fig. 701) until arm is 0.005 inch from stop screw (220A). Check that force required is not greater than 11.0 pounds (-7, -8 assemblies only) or 12.0 pounds (-13, -14 assemblies only).

2) If value is greater than 11.0 pounds (-7, -8) or 12.0 pounds (-13, -14), adjust screw (180) as required. After each adjustment, check clutch slip torque per (12)(d) above.

3) Ensure that gap between support (305, 310) and actuator (255) is at least 0.0035 inch (-7, -8 assemblies only) or 0.004 inch (-13, -14 assemblies only) with the drum (340) in any position.

(f) Using the spindle A22003-3 with the A22003-23 lock pin in place, check maximum input force in either direction on arm (170) at position C to cause the assembly to rotate about the fixed spline shaft. The force shall not exceed:

For assemblies -5, -6, -11, -12 -- 7.5 pounds
For assemblies -7, -8 -- 8.5 pounds
For assemblies -13, -14 -- 9.0 pounds

(14) After a wait of 2 hours (-5 thru -8, -11, -12 assemblies only) and 72 hours (-13, -14 assemblies only), repeat par. 3.N.(12)(d) and (e). Verify that all slip torque values remain within the 125-320 pound-inches (-5 thru -8, -11, -12 assemblies only) or 180-320 pound-inches (-13, -14 assemblies only) range.

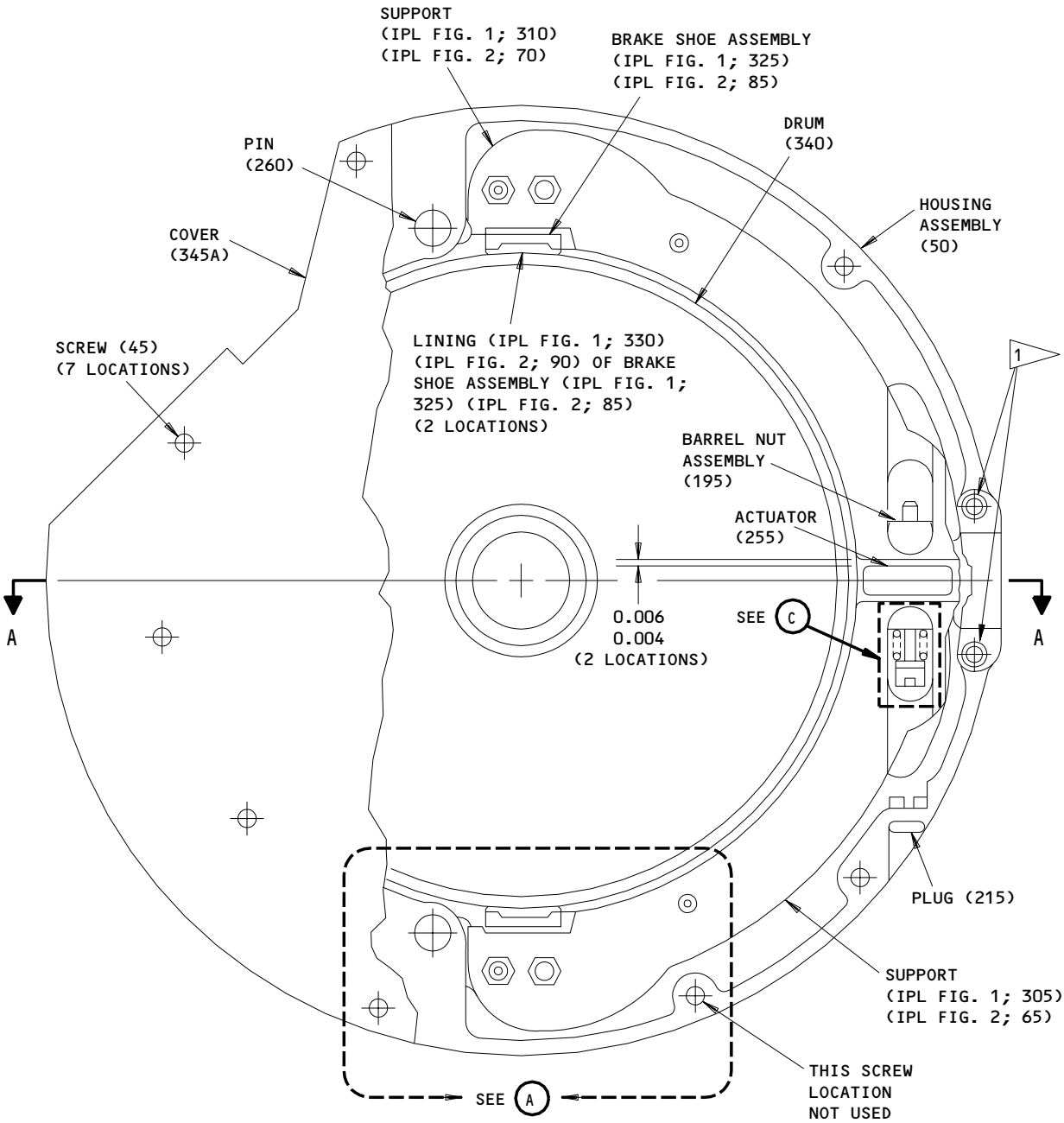
(15) Remove housing assembly (50 or 55) from torque rack assembly A22003-23. Ensure 0.04-0.06 inch gap as shown in View B, Fig. 701 has been achieved.

(16) Rotate arm (170) to within 0.002 inch of one stop screw (220A) (-5 thru -8, -11, -12 assemblies only) and up against one stop screw (220A) (-13, -14 assemblies only) and ensure that drum (340) is free to rotate with no evidence of drag or binding. Drag torque shall be no greater than 1.0 pound-inch. Repeat drag check with arm (170) rotated to within 0.002 inch of the other stop screw (220A) (-5 thru -8, -11, -12 assemblies only) and up against other stop screw (220A) (-13, -14 assemblies only). Install cover (345A or 350A) with screws (45).

O. Install plug (215).

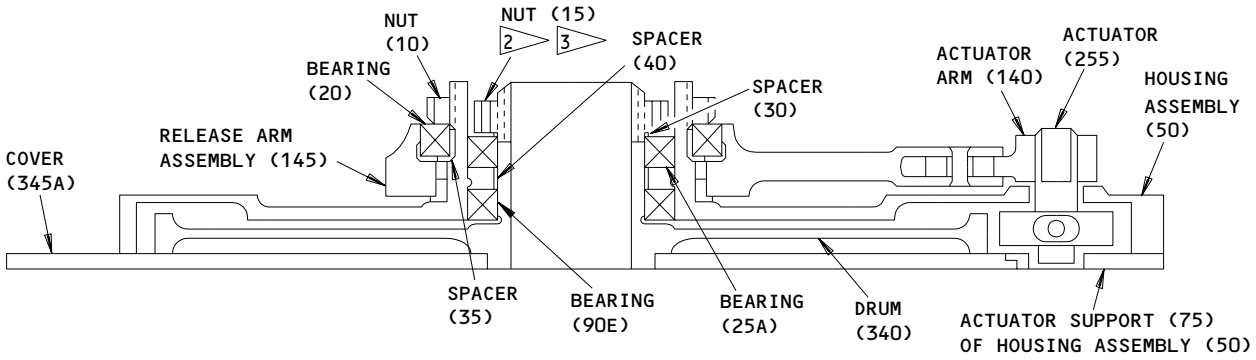
CAUTION: ALL CLUTCH ASSEMBLIES MUST BE KEPT CLEAN AND DRY UNTIL INDIVIDUALLY PACKAGED IN A MOISTURE VAPOR PROOF BAG.

4. Prepare and store component in moisture vapor proof bag. Each bag must contain the part number, desiccant and the following instructions, "THIS ASSEMBLY TO BE KEPT CLEAN AND DRY. AVOID CONTAMINATION WITH GREASE, OIL, WATER, OR CLEANING COMPOUND."

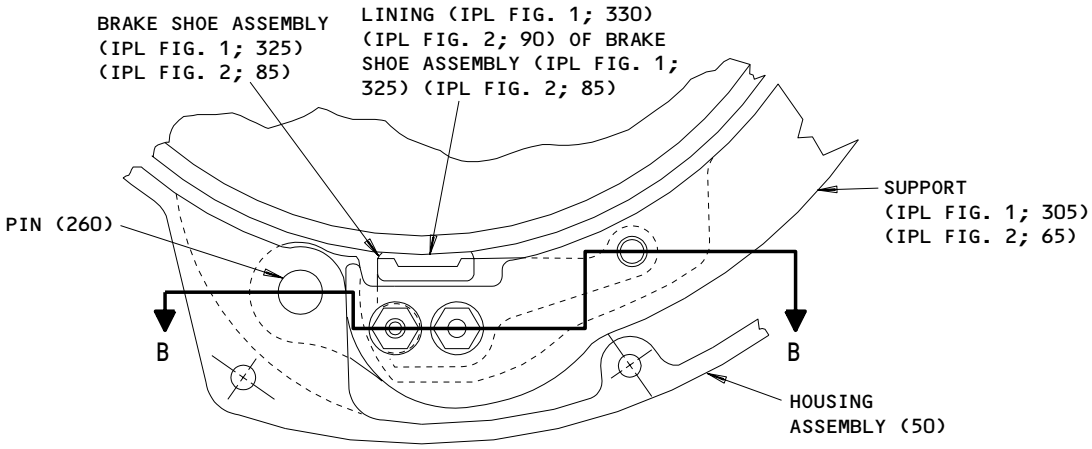


FRONT VIEW

Clutch Assembly
Figure 701 (Sheet 1)

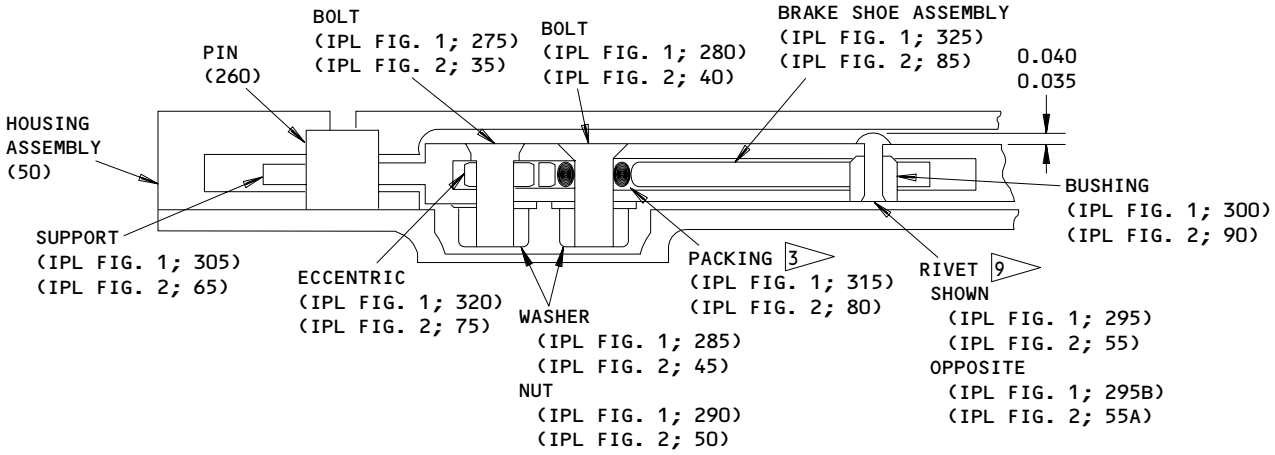


A–A



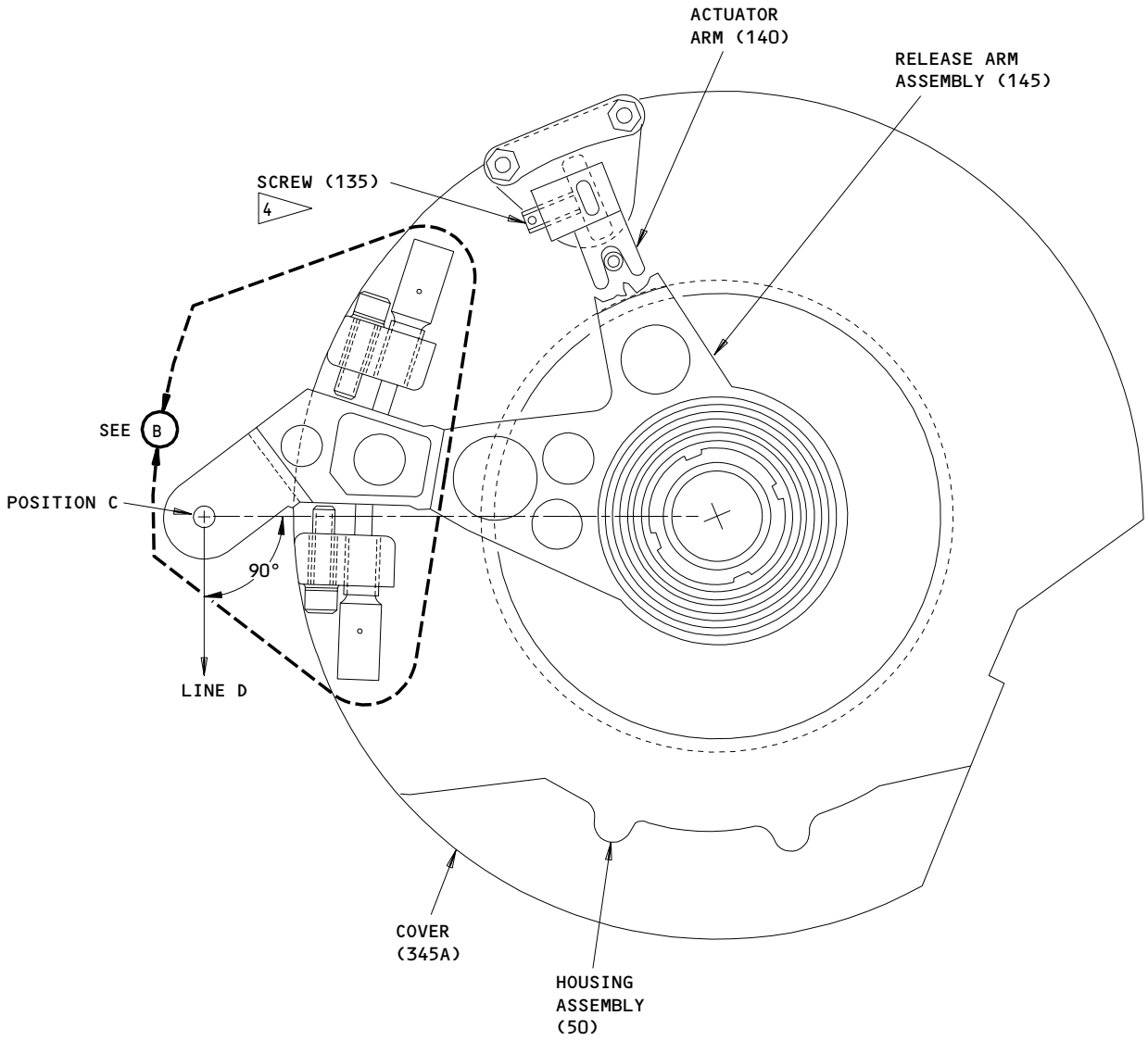
COVER (345A) OMITTED FOR CLARITY

(A)



B–B

Clutch Assembly
Figure 701 (Sheet 2)

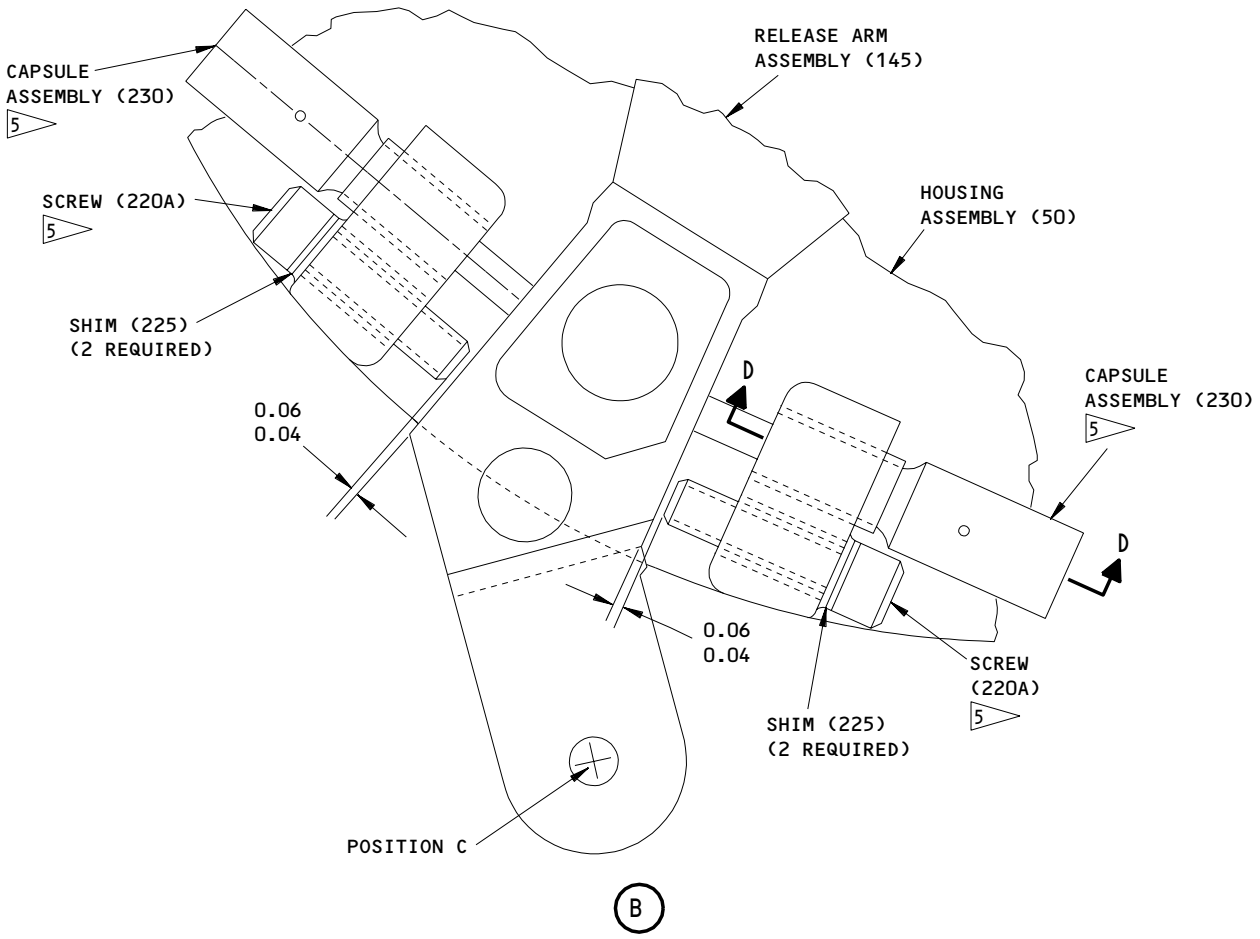


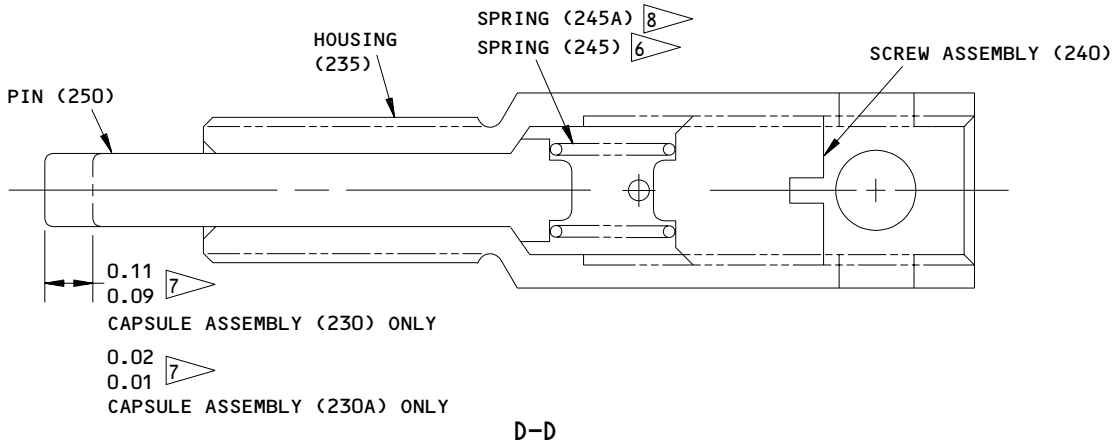
NOTE: CLUTCH ASSEMBLY SHOWN IN VERTICAL POSITION

REAR VIEW

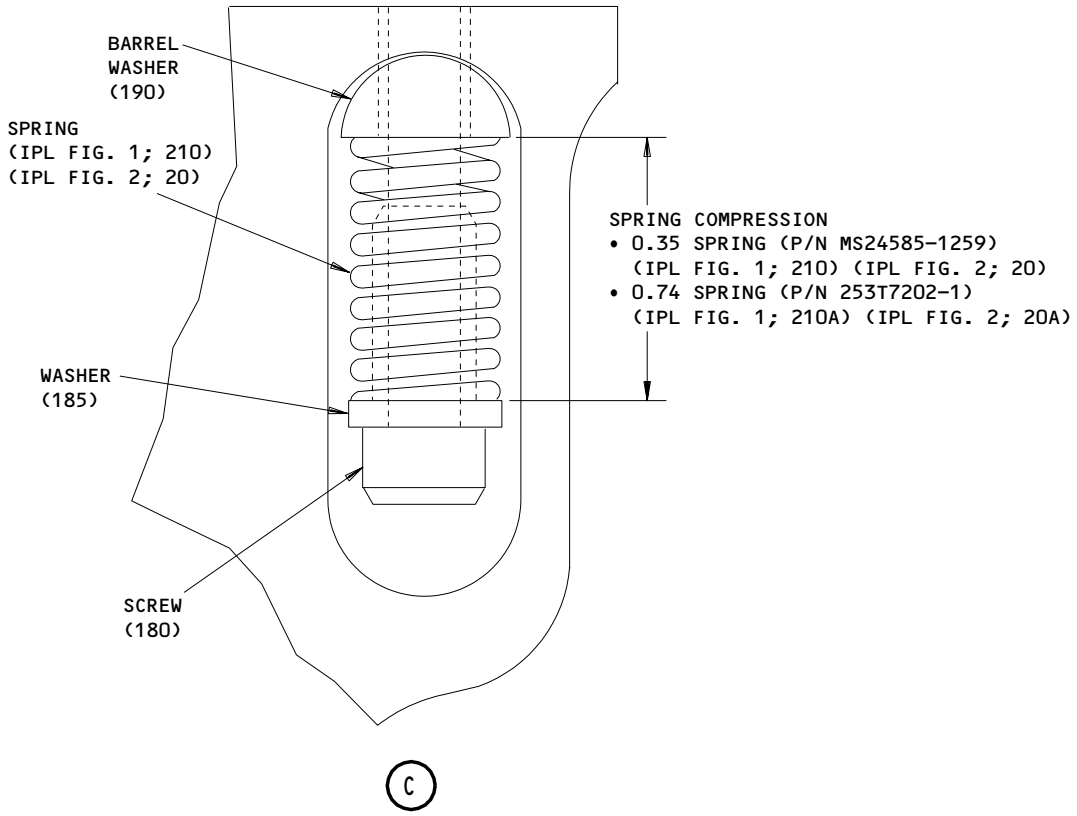
Clutch Assembly
Figure 701 (Sheet 3)

20267





Clutch Assembly
Figure 701 (Sheet 4)



1 AFTER REMOVING BOLTS (60) AND ACTUATOR SUPPORT (75) TO INSTALL ACTUATOR (255), REINSTALL BOLTS WITH MIL-C-11796 CORROSION PREVENTIVE COMPOUND ON ALL SURFACES (F-19.09). REFER TO REPAIR 7-1 FOR DETAILS OF HOUSING ASSEMBLY

2 TIGHTEN NUT (15) TO 380-480 LB-IN. USING MIT 65B81175 SPANNER SOCKET

3 COAT SURFACE WITH A LIGHT FILM OF MIL-G-23827 GREASE BEFORE THE INSTALLATION (F-19.08)

4 LOCKWIRE AS SHOWN IN SOPM 20-50-02

5 APPLY A LIGHT COAT OF MOLYKOTE ANTI-SEIZE THREAD COMPOUND TO THREADS

6 INSTALL WITH MIL-C-16173, GRADE 1 CORROSION PREVENTIVE COMPOUND

7 COMPRESS SPRING AS SHOWN. ADJUST SCREW UNTIL SPRING FORCE EQUALS 4.00 LB FOR CAPSULE ASSEMBLY (230) AND 4.38 LB FOR CAPSULE ASSEMBLY (230A)

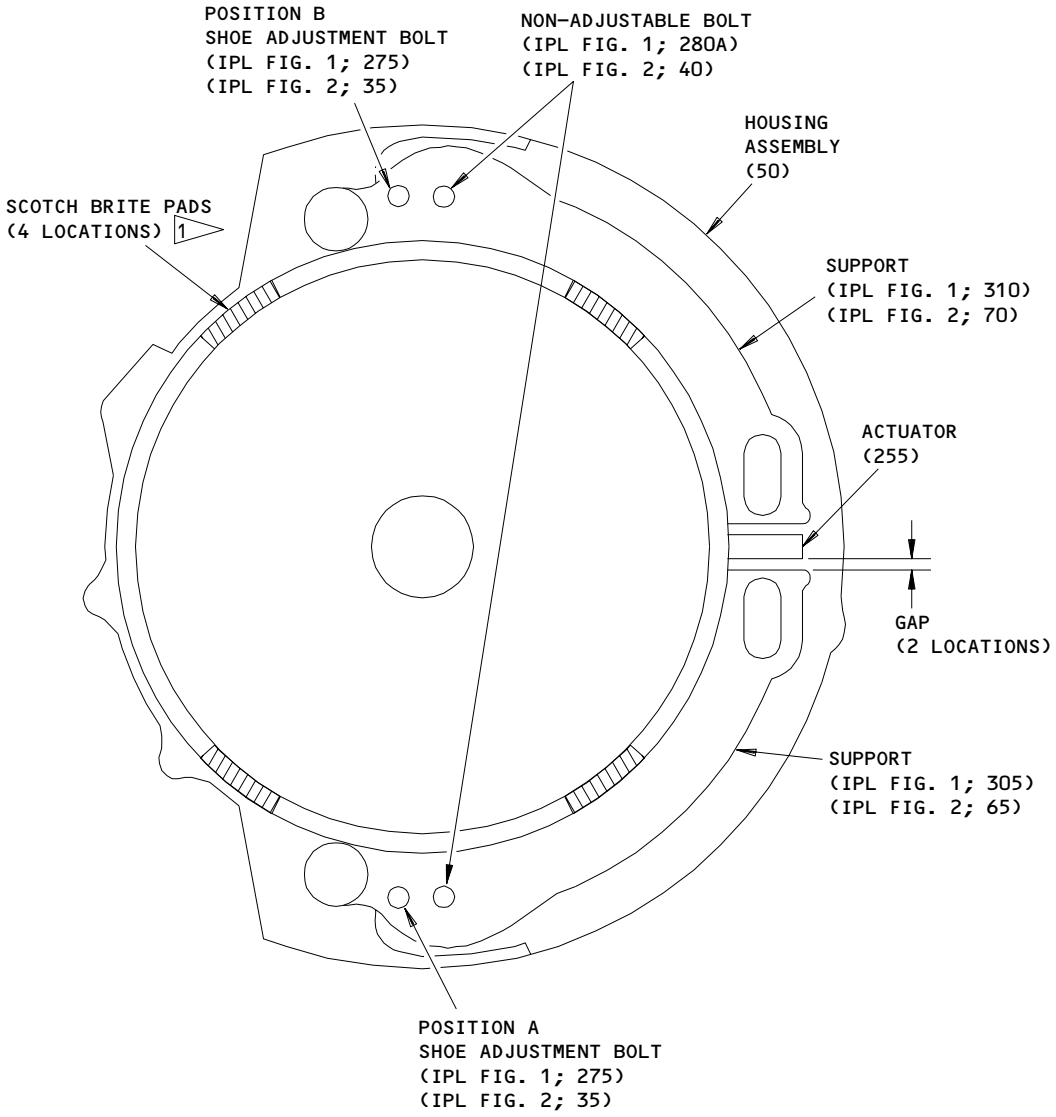
8 INSTALL WITH MIL-C-16173, GRADE 2 CORROSION PREVENTIVE COMPOUND OR BMS 3-24 GREASE

9 IF RIVET (IPL FIG 1; 295B) (IPL FIG. 2; 55A) IS USED AND SUPPORT (IPL FIG. 1; 305) (IPL FIG 2; 65) HAS BEEN REPLACED, COUNTERSINK SUPPORT (IPL FIG. 1;305) (IPL FIG. 2; 65) 0.15-0.16 DIA BY 91°-101° FAR SIDE. INSTALL RIVET (IPL FIG. 1; 295B) (IPL FIG. 2; 55A) MANUFACTURED HEAD FAR SIDE

ITEM NUMBERS REFER TO IPL FIG. 1 UNLESS SHOWN DIFFERENTLY

ALL DIMENSIONS ARE IN INCHES

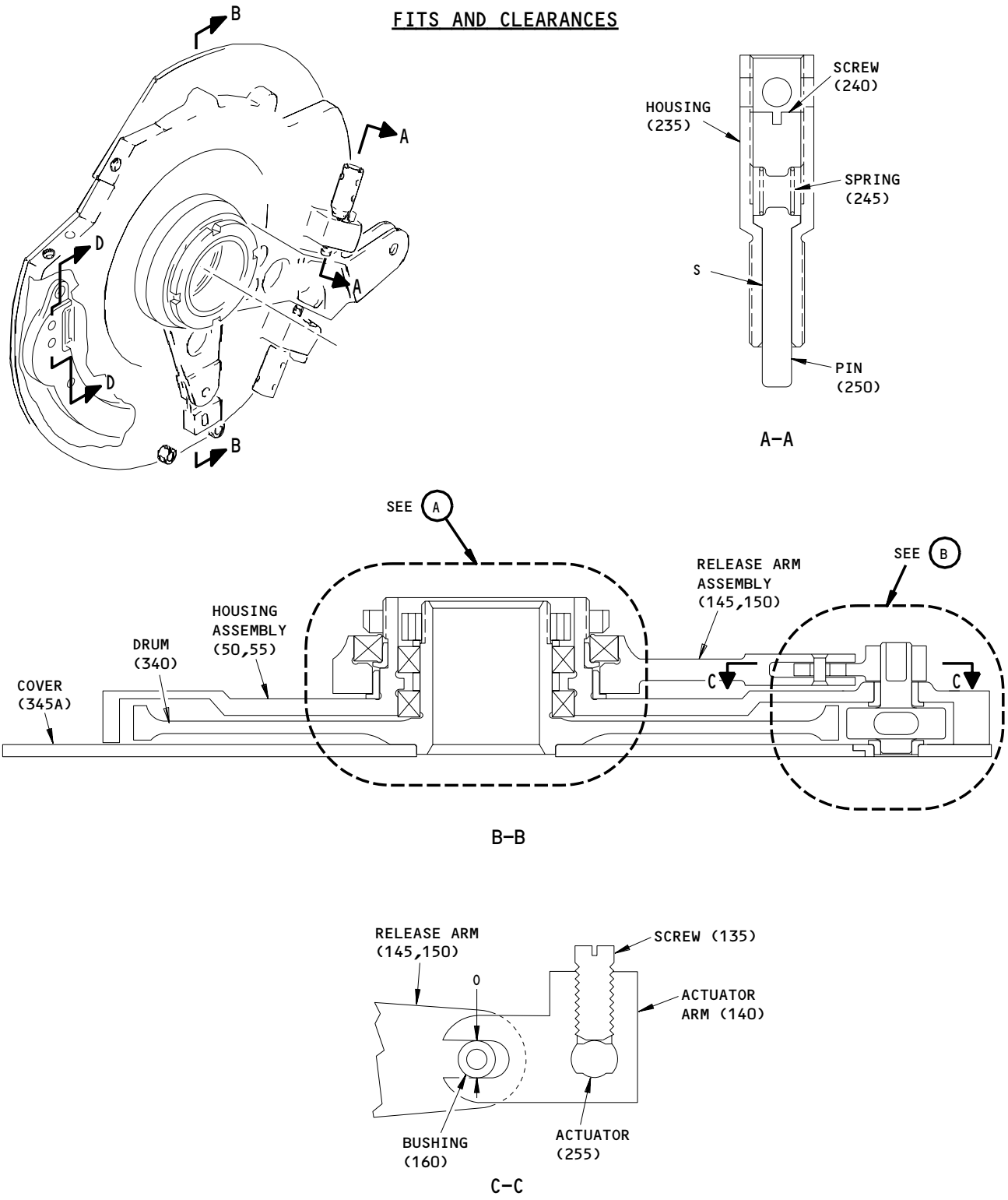
Clutch Assembly
Figure 701 (Sheet 5)



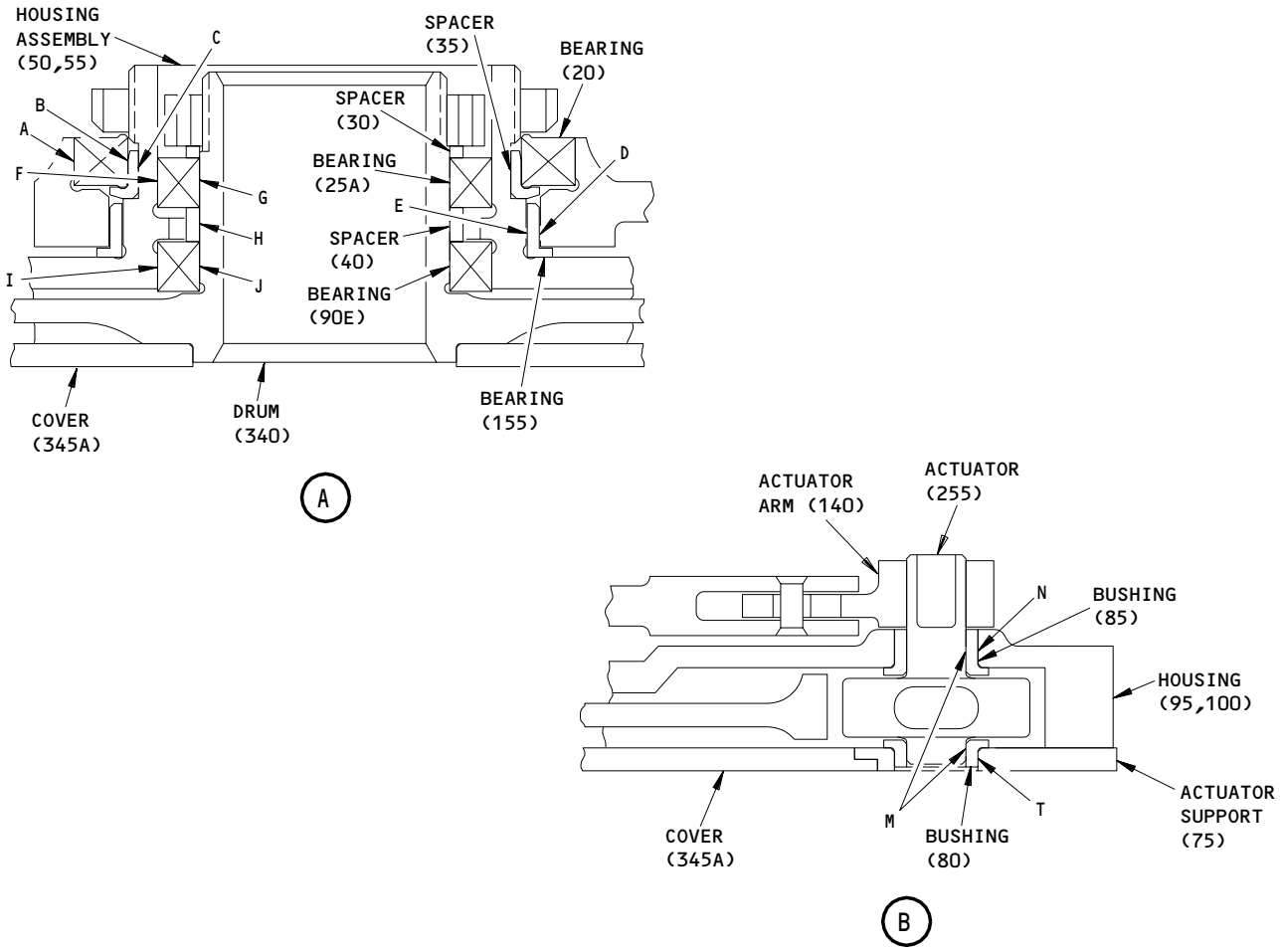
1 USED TO CLEAN LAPPING WHEEL DURING LAPPING PROCEDURE

ITEM NUMBERS REFER TO IPL FIG. 1 UNLESS SHOWN DIFFERENTLY

Clutch Adjustment Diagram
Figure 702



Fits and Clearances
Figure 801 (Sheet 1)



Fits and Clearances
Figure 801 (Sheet 2)

Ref Letter Fig. 801	Ref IPL		Design Dimension				Service Wear Limit		
	Fig. No.	Mating Item No.	Dimension		Assembly Clearance 1		Dimension		Maximum Clearance 1
			Min	Max	Min	Max	Min	Max	
A	1	ID 145,150 OD 20	2.6250 2.6235	2.6260 2.6250	0.0000	0.0025	2.6225	2.6280	0.0055
B	1	ID 20 OD 35 2	2.0615 2.0605	2.0635 2.0615	0.0000	0.0030	2.0585	2.0645	0.0060
C	1	ID 35 2 OD 50,55	1.950 1.950	1.952 1.952	-0.002	0.002			
D	1	ID 145,150 OD 155	2.2452 2.2467	2.2462 2.2477	-0.0025	-0.0005	2.2467	2.2465	-0.0002
E	1	ID 155 OD 50,55	2.1225 2.1197	2.1235 2.1202	0.0023	0.0038	2.1167	2.1260	0.0058
F	1	ID 50,55 OD 25A	1.7500 1.7490	1.7510 1.7500	0.0000	0.0020	1.7480	1.7530	0.0050
G	1	ID 25A OD 340	1.3118 1.3115	1.3132 1.3120	-0.0002	0.0017	1.3095	1.3142	0.0047
H	1	ID 40 OD 340	1.3280 1.3115	1.3320 1.3120	0.0160	0.0205			
I	1	ID 95,100 OD 90E	1.7500 1.7490	1.7510 1.7500	0.0000	0.0020			
J	1	ID 90E OD 340	1.3118 1.3115	1.3132 1.3120	-0.0002	0.0017			
K	1	ID 305,310 OD 260	0.3748 0.3741	0.3755 0.3747	0.0001	0.0014	0.3729	0.3766	0.0019
K	2	ID 65,70	0.3748 0.3741	0.3755 0.3747	0.0001	0.0014	0.3729	0.3766	0.0019
L	1	ID 50,55 OD 260	0.3733 0.3741	0.3738 0.3747	-0.0014	-0.0003	0.3734	0.3746	-0.0001
M	1	ID 80,85 OD 255	0.3120 0.3105	0.3130 0.3115	0.0005	0.0025	0.3085	0.3150	0.0035

Fits and Clearances
Figure 801 (Sheet 3)

Ref Letter Fig. 801	Ref IPL		Design Dimension				Service Wear Limit		
	Fig. No.	Mating Item No.	Dimension		Assembly Clearance 1		Dimension		Maximum Clearance 1
			Min	Max	Min	Max	Min	Max	
N	1	ID 95,100 OD 85	0.4375 0.4386	0.4381 0.4391	−0.0016	−0.0005	0.4386	0.4384	−0.0002
O	1	ID 145,150 OD 160	0.2510 0.2493	0.2515 0.2498	0.0012	0.0022	0.2478	0.2530	0.0032
P	1	ID 305,310 OD 275	0.240 0.233	0.245 0.238	0.002	0.012	0.231	0.247	0.016
P	2	ID 65,70 OD 35	0.240 0.233	0.245 0.238	0.002	0.012	0.231	0.247	0.016
Q	1	ID 305,310 OD 275	0.1895 0.1885	0.1905 0.1895	0.0000	0.0020	0.1885	0.1915	0.003
Q	2	ID 65,70 OD 35	0.1895 0.1885	0.1905 0.1895	0.0000	0.0020	0.1885	0.1915	0.003
R	1	ID 305,310,325 OD 300	0.2500 0.2490	0.2510 0.2495	0.0005	0.0020	0.2490	0.252	0.003
R	2	ID 65,70,85 OD 60	0.2500 0.2490	0.2510 0.2495	0.0005	0.0020	0.2490	0.252	0.003
S	1	ID 235 OD 250	0.1865 0.1857	0.1885 0.1861	0.0004	0.0028	0.1847	0.1895	0.0048
T	1	ID 75 OD 80	0.4375 0.4386	0.4381 0.4391	−0.0016	−0.0005	0.4386	0.4384	−0.0002

1 NEGATIVE VALUES SHOW INTERFERENCE FIT

ALL DIMENSIONS ARE IN INCHES

2 SPACER, ITEM 35 IS A SPLIT RING WITH A GAP OF 0.06–0.08 INCHES. SEE REPAIR 11-1 FOR DETAILS

Fits and Clearances
Figure 801 (Sheet 4)

482361

REFERENCE IPL		NAME	TORQUE*	
FIGURE NUMBER	ITEM NUMBER		POUND-INCHES	POUND-FEET
1	10	NUT	500-600	
1	15	NUT	380-480	
1	290A	NUT 1	5-15 2	
2	50	NUT 3		

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

1 ON BOLT (280A) ONLY
2 MORE THAN RUN-ON TORQUE
3 ON BOLT (40) ONLY

Torque Table
Figure 802

SPECIAL TOOLS, FIXTURES, AND EQUIPMENT

NOTE: Equivalent substitutes may be used.

1. A22003-22 -- Autothrottle Clutch Component Maintenance Equipment
2. A22003-23 -- Torque Rack Assembly
3. A22003-3 -- Spindle
4. A22003-24 -- Lapping Wheel Assembly
5. A22003-5 -- Adapter
6. A22003-6 -- Adapter

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

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

S0352 NIPPON MINIATURE BEARING CO LTD
TOKYO, JAPAN

06144 INDUSTRIAL TECTONICS BEARING CORP
18301 SOUTH SANTA FE AVENUE
RANCHO DOMINGUEZ, CALIFORNIA 90221
FORMERLY IN COMPTON, CALIFORNIA

06725 AIR INDUSTRIES CORPORATION
12570 KNOTT STREET
GARDEN GROVE, CALIFORNIA 92641-3932
FORMERLY AIR INDUSTRIES OF CALIF IN GARDENA, CALIF.

09455 RBC TRANSPORT DYNAMICS CORP
3131 W SEGERSTROM AVE
SANTA ANA, CALIFORNIA 92704-5872
FORMERLY TRANSPORT DYNAMICS AEROSPACE DIV; FABROID DIV
TRANSPORT DYNAMICS V17571 & LEAR SEIGLER INC TRANSPORT DIV
V98076; FORMERLY BFM TRANSPORT DYNAMICS

11815 CHERRY AEROSPACE FASTENERS DIV OF TEXTRON
1224 EAST WARNER AVENUE PO BOX 2157
SANTA ANA, CALIFORNIA 92707-0157
FORMERLY IN LOS ANGELES, CALIF , FORMERLY CHERRY FASTENERS
TOWNSEND DIV OF TEXTRON INC V71087

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

VENDORS

15860 NEW HAMPSHIRE BALL BEARINGS, INC ASTRO DIVISION
155 LEXINGTON AVENUE
LACONIA, NEW HAMPSHIRE 03246-2937
FORMERLY ASTRO BEARING CORP, LOS ANGELES, CALIF.

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

21760 SCHATZ MANUFACTURING CO
FAIRVIEW AVENUE PO BOX 1191
POUGHKEEPSIE, NEW YORK 12601
FORMERLY FEDERAL BRG CO AND SCHATZ MFG CO V53268
FORMERLY SCHATZ MFG CO

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
FORMERLY MARLIN-ROCKWELL CORP DIV TRW AND TRW INC

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

43991 FAG BEARING INCORPORATED
118 HAMILTON AVENUE
STAMFORD, CONNECTICUT 06904
FORMERLY NORMA-HOFFMAN BEARING CORPORATION
FORMERLY NORMA FAG BEARINGS CORPORATION

VENDORS

52828 REPUBLIC FASTENER MFG CORP
1300 RANCHO CONEJO BLVD
NEWBURY PARK, CALIFORNIA 91320-1405
FORMERLY IN SYLMAR, CALIFORNIA

56878 SPS TECHNOLOGIES INC AEROSPACE AND INDUSTRIAL PRODUCTS DIV
301 HIGHLAND AVE
JENKINTOWN, PENNSYLVANIA 19046
FORMERLY STANDARD PRESSED STEEL

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

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

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

72962 HARVARD INDUSTRIES INC
3 WERNER WAY SUITE 210
LEBANON, NEW JERSEY 08833
FORMERLY ESNA V7A079
FORMERLY ELASTIC STOP NUT IN UNION, NJ

73134 ROLLER BEARING COMPANYOF AMER DBA HEIM BEARINGS DIV
60 ROUND HILL RD
FAIRFIELD, CONNECTICUT 06430-0000
FORMERLY INCOM INTL HEIM DIV; HEIM UNIVERSAL CORP INCOM;
FORMERLY HEIM DIV INCOM INTL; IMO IND HEIM BEARINGS DIV

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

77896 REXNORD INC BEARING OPERATION
2400 CURTIS STREET
DOWNERS GROVE, ILLINOIS 60515-4005
FORMERLY SHAEFER BEARING DIV REX CHAINBELT
FORMERLY REX CHAINBELT INC BEARING DIV.

VENDORS

80539 SPS TECHNOLOGIES INC DIV AERPSOACE - SANTA ANA
2701 SOUTH HARBOR BOULEVARD
SANTA ANA, CALIFORNIA 92704-5803
FORMERLY NUTT-SHEL DIV OF SPC WESTERN CO V80539
AND STANDARD PRESSED STEEL WESTERN DIV V17279

81376 SMITH ACQUISITION COMPANY
2240 BUENA VISTA
BALDWIN PARK, CALIFORNIA 91706

83086 NEW HAMPSHIRE BALL BEARING, INC HITECH DIVISION
172 JAFFREY ROAD
PETERBOROUGH, NEW HAMPSHIRE 03458

92215 FAIRCHILD IND INC FAIRCHILD AEROSPACE FASTENER DIV
3010 W LOMITA BLVD
TORRANCE, CALIFORNIA 90505-5102
FORMERLY VOI-SHAN IN CULVER CITY, CALIF

97393 SHUR-LOK CORPORATION
2541 WHITE ROAD PO BOX 19584
IRVINE, CALIFORNIA 92623-9584
FORMERLY SHUR LOK CORP VB0060
FORMERLY IN SANTA ANA, CALIFORNIA 92714

97613 SARGENT CONTROLS & AEROSPACE/KAHR BEARING DIV
5675 W BURLINGAME RD
TUCSON, ARIZONA 85743
FORMERLY AETNA STEEL PROD KAHR BEARING DIV V96579
FORMERLY SARGENT IND KAHR BEARING DIV, BURBANK, CALIFORNIA

97928 HUCK INTL SEE V17446 HUCK INTL
SEE V17446 HUCK INTL
SEE V17446 HUCK INTL

PART NUMBER	AIRLINE PART NO.	FIG.	ITEM	TTL REQ
AJF34A102		1	155	1
AN960C10L		1	65	2
BACB10AS21		1	25A	1
BACB10CF33PP		1	20	1
BACB30FM6-9		1	60	2
BACB30LH3-3		1	280A	2
		2	40	2
BACB30NN3K3		1	280B	2
		2	40A	2
BACN10JC3		1	70	2
BACN10JC3CD		1	290A	4
		2	50	4
BACR15BA5D		1	165A	1
BACS12AA4-11		1	135	1
BACS12CK3-7		1	45A	7
BAC27ECT291		1	355	1
BAC27ECT464		1	360	1
BRH10A3		1	70	2
BRH10C3D		1	290A	4
		2	50	4
BR9247-3316		1	10	1
B545-2TS		1	20	1
B545DD		1	20	1
B545DDFS101		1	20	1
B545DDFS428		1	20	1
B545DDNJC		1	20	1
B545DDP		1	20	1
B545FS101		1	20	1
B545SSG27		1	20	1
DBAF34-034		1	155	1
FBJW68TF72-8		1	155	1

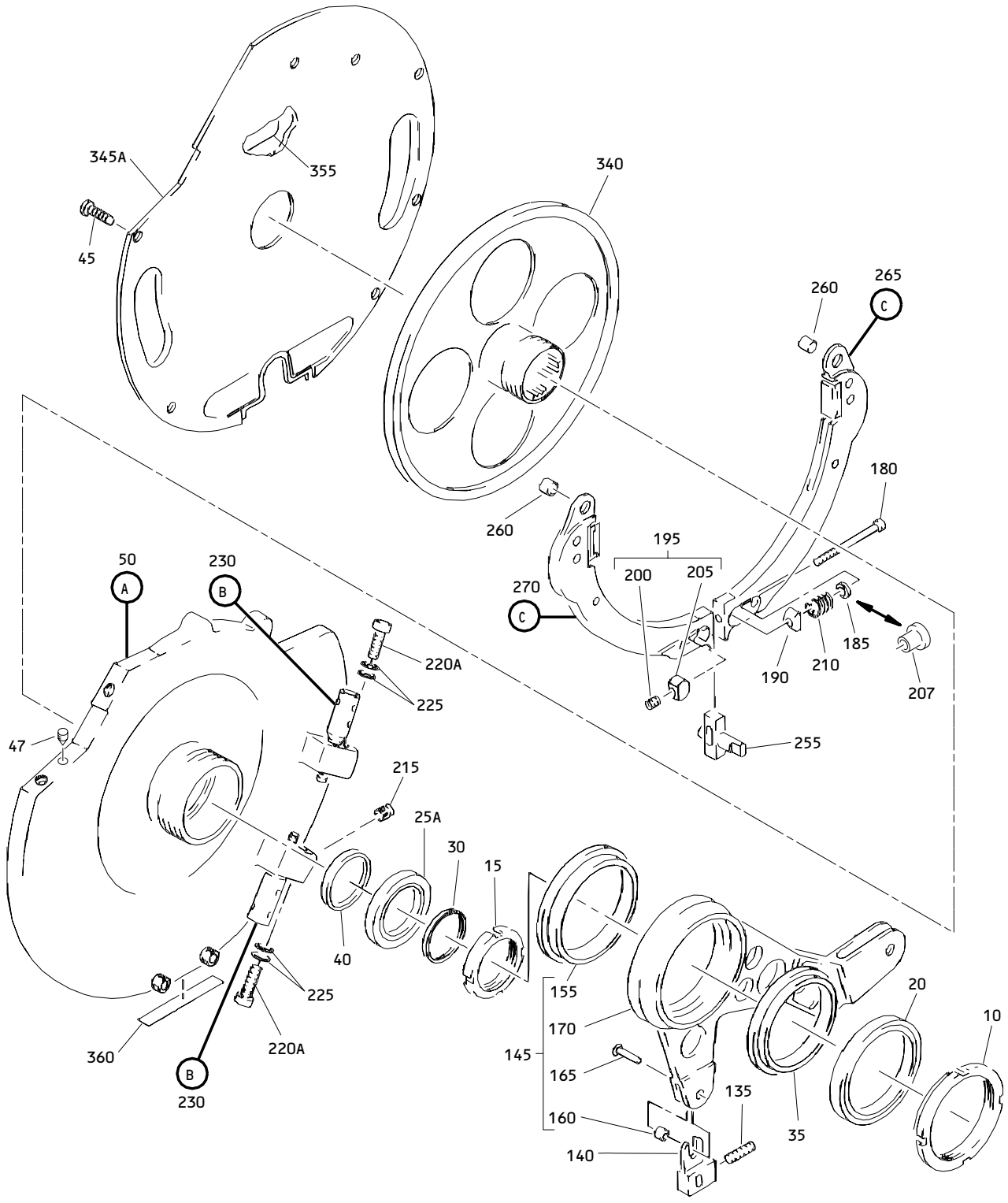
PART NUMBER	AIRLINE PART NO.	FIG.	ITEM	TTL REQ
FBR34A08BAC		1	155	1
HL18PB6-9		1	60	2
H10-3BAC		1	70	2
H51650-3BAC		1	290A	4
		2	50	4
KJN34-3		1	155	1
LLMB542		1	25A	1
L8056-9		1	60	2
MB542-2TS		1	25A	1
MB542DD		1	25A	1
		1	90E	1
MB542DDA4022		1	25H	1
		1	90E	1
MB542DDFS428		1	25A	1
		1	90E	1
MB542TT		1	25A	1
MS16998-45		1	220C	2
MS20427M3		1	295C	2
		2	55A	2
MS20427M5		1	165	1
MS20615-3M		1	295A	2
		2	55	2
MS21209F1-15		1	105	8
		1	200	1
MS21209F4-15		1	110	2
MS21209F4-20		1	120	2
MS21209F6-15		1	115	2
MS24585-1259		1	210	1
		2	20	1
MS24585C100		1	245A	2
MS51023-61		1	47	1
MT342E		1	25A	1

PART NUMBER	AIRLINE PART NO.	FIG.	ITEM	TTL REQ
NAS1149C0332R		1	285A	4
		2	45	4
NAS1351-3-28		1	180	1
		2	5	1
NAS1351-3-36		1	180B	1
		2	5A	1
NAS1351C4-16		1	220A	2
NAS1611-106		1	315	2
NAS1611-106A		2	80	2
NAS603-7P		1	45	7
NAS620C10L		1	185	1
		2	10	1
NHLF34-201A		1	155	1
NS202101-02		1	70	2
NS202486-02		1	290A	4
		2	50	4
RMLH9075-3W		1	70	2
SL2778-1		1	15	1
SL2778-3		1	10A	1
T345E		1	20	1
T6C1032JCD		1	290A	4
		2	50	4
T6S1032J		1	70	2
WC22-6-9		1	60	2
YTS807		1	155	1
10-60516-377		1	155	1
102LH9075-3W		1	290A	4
		2	50	4
253T7201-10		1	267A	1
		1	270B	1
		2	30	1
253T7201-11		1	1C	RF
253T7201-12		1	5C	RF

PART NUMBER	AIRLINE PART NO.	FIG.	ITEM	TTL REQ
253T7201-13		1	1D	RF
253T7201-14		1	5D	RF
253T7201-15		1	265C	1
		1	272D	1
		2	25A	1
253T7201-16		1	267D	1
		1	270D	1
		2	30A	1
253T7201-17		1	177	1
		2	1A	RF
253T7201-18		1	177A	1
		2	1B	RF
253T7201-3		1	265	1
		1	265E	1
		1	272	1
253T7201-4		1	267	1
253T7201-4		1	270	1
		1	270E	1
253T7201-5		1	1A	RF
253T7201-6		1	5A	RF
253T7201-7		1	1B	RF
253T7201-8		1	5B	RF
253T7201-9		1	265A	1
		1	272B	1
		2	25	1
253T7202-1		1	210A	1
		2	20A	1
253T7203-1		1	207	1
		2	15	1
253T7211-5		1	345A	1
253T7211-6		1	350A	1
253T7213-10		1	175	1
253T7213-11		1	145A	1
253T7213-12		1	150A	1
253T7213-13		1	170A	1
253T7213-14		1	175A	1
253T7213-15		1	170C	1
253T7213-16		1	175C	1
253T7213-17		1	170B	1
253T7213-18		1	175B	1
253T7213-7		1	145	1
253T7213-8		1	150	1

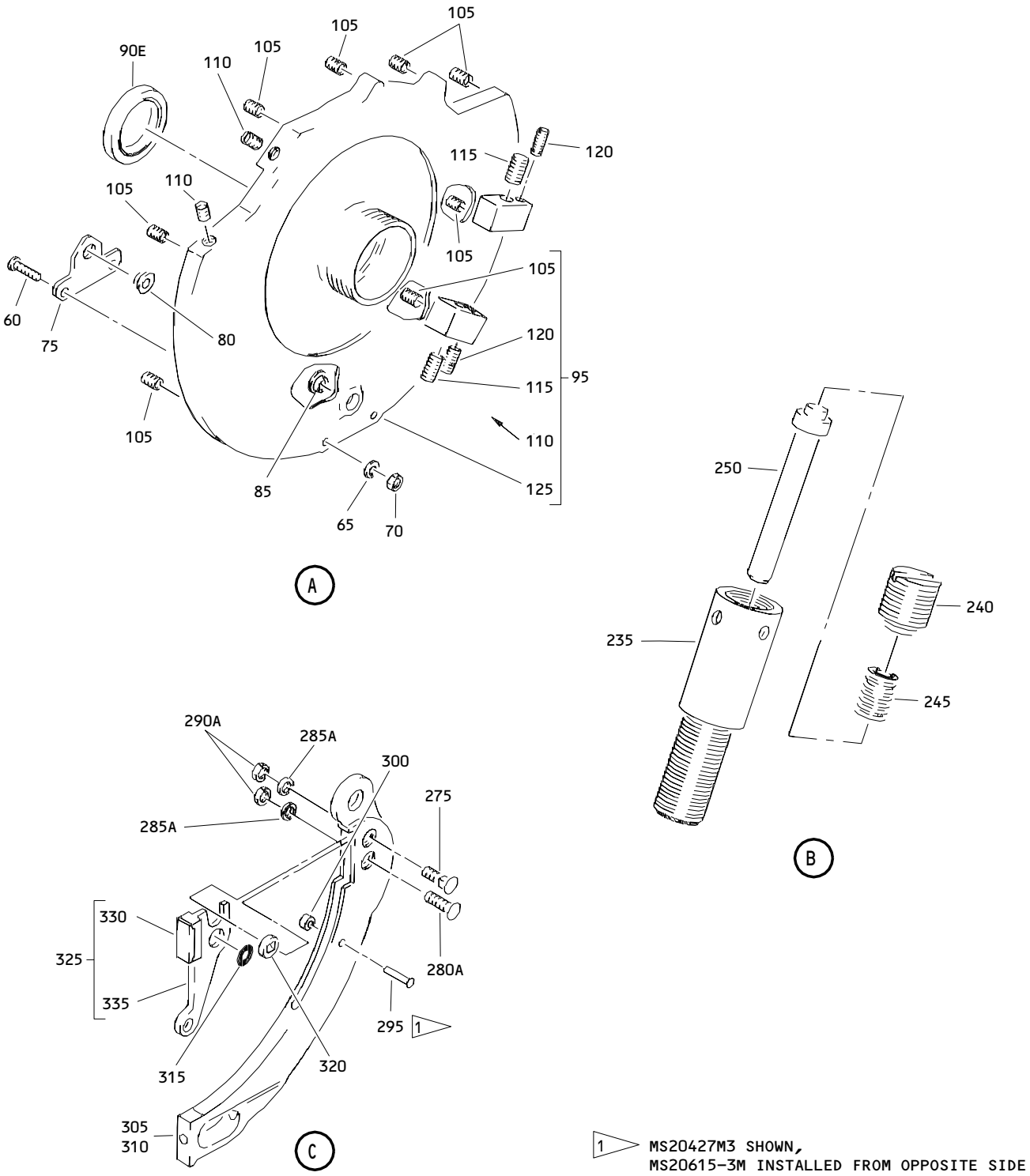
PART NUMBER	AIRLINE PART NO.	FIG.	ITEM	TTL REQ
253T7213-9		1	170	1
253T7218-1		1	140	1
60B00179-17		1	25H	1
		1	90E	1
62550-6-9		1	60	2
65B80805-3		1	255	1
65B80805-4		1	255A	1
65B80805-6		1	255B	1
65B80817-3		1	340	1
65B80818-10		1	305A	1
		2	65	1
65B80818-11		1	310A	1
		2	70	1
65B80818-12		1	305B	1
		2	65A	1
65B80818-13		1	310B	1
65B80818-13		2	70A	1
65B80818-7		1	305	1
65B80818-8		1	310	1
65B82674-15		1	95	1
65B82674-16		1	100	1
65B82674-17		1	125	1
65B82674-18		1	130	1
65B82675-13		1	50	1
65B82675-14		1	55	1
65B84589-1		1	325	2
		2	85	2
65B84589-2		1	335	2
		2	95	2
65B84589-4		1	330	2
		2	90	2
69B81372-1		1	80	1
69B81372-2		1	85	1
69B81381-1		1	230	2
69B81381-2		1	230A	2
69B81382-1		1	240	2
69B81398-1		1	225	4
69B81944-1		1	215	1
69B81945-1		1	275	2
		2	35	2
69B81946-1		1	235A	2
69B81947-1		1	260	2

PART NUMBER	AIRLINE PART NO.	FIG.	ITEM	TTL REQ
69B81948-1		1	250	2
69B81950-2		1	160	1
69B81952-1		1	190	1
69B81975-1		1	40	1
69B81975-4		1	30	1
69B81977-1		1	320	2
		2	75	2
69B82942-1		1	235	2
69B82949-1		1	195	1
69B82949-2		1	205	1
69B84019-1		1	300	2
		2	60	2
69B84021-2		1	35	1
69B84046-1		1	75	1
90874		1	155	1
96-02		1	70	2



Autothrottle Engine Control Clutch Assembly
Figure 1 (Sheet 1)

U15125



Autothrottle Engine Control Clutch Assembly
Figure 1 (Sheet 2)

T57403

	FIG. & ITEM	PART NO.	AIRLINE PART NUMBER	NOMENCLATURE 1234567	EFF CODE	QTY PER ASSY
	01-					
	-1	253T7201-1		DELETED		
	-1A	253T7201-5		CLUTCH ASSY-AUTOTHROTTLE ENG CONT	C	RF
	-1B	253T7201-7		CLUTCH ASSY-AUTOTHROTTLE	A	RF
	-1C	253T7201-11		CLUTCH ASSY-AUTOTHROTTLE	E	RF
	-1D	253T7201-13		CLUTCH ASSY-AUTOTHROTTLE	G	RF
	-5	253T7201-2		DELETED		
	-5A	253T7201-6		CLUTCH ASSY-AUTOTHROTTLE ENG CONT	D	RF
	-5B	253T7201-8		CLUTCH ASSY-AUTOTHROTTLE	B	RF
	-5C	253T7201-12		CLUTCH ASSY-AUTOTHROTTLE	F	RF
	-5D	253T7201-14		CLUTCH ASSY-AUTOTHROTTLE	H	RF
	10	BR9247-3316		.NUT- (V97393) (OPT ITEM 10A)		1
R	-10A	SL2778-3		.NUT- (V97393) (OPT ITEM 10)		1
	-12	SL2778-3		DELETED		
	15	SL2778-1		.NUT- (V97393)		1
	20	B545DDNJC		.BEARING- (V06144) (SPEC BACB10CF33PP) (OPT B545-2TS (V43991)) (OPT B545DDFS428 (V21335)) (OPT B545SSG27 (V30163)) (OPT T345E (VK8455)) (OPT B545DD (V38443)) (OPT B545SSG27 (V30163)) (OPT B545DDFS101 (V06144)) (OPT B545FS101 (V06144)) (OPT B545DDP (V21760))		1

FIG. & ITEM	PART NO.	AIRLINE PART NUMBER	NOMENCLATURE 1234567	EFF CODE	QTY PER ASSY
01-					
25	B542DD		DELETED		
25A	MB542DDNJC		.BEARING- (V06144) (SPEC BACB10AS21) (OPT LLMB542 (V38443)) (OPT MB542-2TS (V43991)) (OPT MB542DDFS428 (V21335)) (OPT MB542TT (V43991)) (OPT MB542DDG20 (V38443)) (OPT MT342E (VK8455)) (OPT MB542DDLY196 (V40920)) (OPT MB542DD (V06144)) (OPT MB542DDSD610 (V83086)) (60B00179-17 IS PREFERRED TO BACB10AS21 FOR SPARES ONLY)	A,B	1
-25B	60B00179-17		DELETED		
-25C	60B00179-17		DELETED		
-25D	MB542DDA4022		DELETED		
-25E	MB542DDA4022		DELETED		
-25F	MB542DD		DELETED		
-25G	MB542DD		DELETED		
-25H	MB542DD009M		.BEARING- (60B00179-17 IS PREFERRED TO BACB10AS21 FOR SPARES ONLY) (V40920) (SPEC 60B00179-17) (OPT MB542DDA4022 (V60380)) (OPT MB542DD (V40920))	A,B	1

	FIG. & ITEM	PART NO.	AIRLINE PART NUMBER	NOMENCLATURE 1234567	EFF CODE	QTY PER ASSY
	01-					
	-25J	MB542DD009M		.BEARING- (V40920) (SPEC 60B00179-17) (OPT MB542DDA4022 (V60380)) (OPT MB542DD (V40920))	C-H	1
	30	69B81975-4		.SPACER		1
	35	69B84021-2		.SPACER		1
	40	69B81975-1		.SPACER		1
	45	NAS603-7P		.SCREW	A-D,G,H	7
R	-45A	BACS12CK3-7		.SCREW	E,F	7
R	47	MS51023-61		.SETSCREW	C-H	1
	50	65B82675-13		.HOUSING ASSY	A,C,E,G	1
	-55	65B82675-14		.HOUSING ASSY	B,D,F,H	1
	60	HL18PB6-9		..BOLT- (V06725) (SPEC BACB30FM6-9) (OPT HL18PB6-9 (V73197)) (OPT HL18PB6-9 (V92215)) (OPT HL18PB6-9 (V97928)) (OPT HL18PB6-9 (V80539)) (OPT WC22-6-9 (V60516)) (OPT 62550-6-9 (V56878)) (OPT L8056-9 (V06725)) (OPT HL18PB6-9 (V56878))		2
	65	AN960C10L		..WASHER		2

	FIG. & ITEM	PART NO.	AIRLINE PART NUMBER	NOMENCLATURE 1234567	EFF CODE	QTY PER ASSY
	01-					
	70	H10-3BAC		..NUT-		2
				(V15653)		
				(SPEC BACN10JC3)		
				(OPT NS202101-02		
				(V80539))		
				(OPT RMLH9075-3W		
				(V72962))		
				(OPT T6S1032J		
				(V71087))		
				(OPT VN303A02		
				(V92215))		
				(OPT 96-02		
				(V80539))		
				(OPT BRH10A3		
				(V52828))		
R	75	69B84046-1		..SUPPORT-ACTR		1
				(MATCHED SET)		
	80	69B81372-1		..BUSHING-ACTR		1
				(MATCHED SET)		
	85	69B81372-2		..BUSHING-ACTR		1
				(MATCHED SET)		
	90	B542DDH		DELETED		
	-90A	60B00179-17		DELETED		
	-90B	MB542DDA4022		DELETED		
	90C	MB542DD		DELETED		
	-90D	MB542DDSD610		DELETED		
R	90E	MB542DD009M		..BEARING-		1
				(V40920)		
				(SPEC 60B00179-17)		
				(OPT MB542DDA4022		
				(V60380))		
				(OPT MB542DD		
				(V40920))		
	-90F	MB542DD14022		DELETED		
R	95	65B82674-15		..HOUSING ASSY-	A,C,E,G	1
				(MATCHED SET)		
R	-100	65B82674-16		..HOUSING ASSY-	B,D,F,H	1
				(MATCHED SET)		
	105	MS21209F1-15		...INSERT		8
	110	MS21209F4-15		...INSERT		2
	115	MS21209F6-15		...INSERT		2
	120	MS21209F4-20		...INSERT		2
	125	65B82674-17		...HOUSING	A,C,E,G	1

FIG. & ITEM	PART NO.	AIRLINE PART NUMBER	NOMENCLATURE 1234567	EFF CODE	QTY PER ASSY
01-					
-130	65B82674-18		...HOUSING	B,D,F,H	1
132	MS51023-61		DELETED		
135	BACS12AA4-11		.SCREW		1
140	253T7218-1		.ARM-ACTR		1
145	253T7213-7		.ARM ASSY-RELEASE (OPT ITEM 145A)	A,C,E,G	1
-145A	253T7213-11		.ARM ASSY-RELEASE (OPT ITEM 145)	A,C,E,G	1
-150	253T7213-8		.ARM ASSY-RELEASE (OPT ITEM 150A)	B,D,F,H	1
-150A	253T7213-12		.ARM ASSY-RELEASE (OPT ITEM 150)	B,D,F,H	1
155	KJN34-3		..BEARING- (V97613) (SPEC 10-60516-377) (OPT 90874 (V09455)) (OPT DBAF34-034 (V81376)) (OPT YTS807 (V77896)) (OPT FBJW68TF72-8 (V21335)) (OPT NHLF34-201A (V15860)) (OPT FBR34A08BAC (V73134)) (OPT AJF34A102 (VS0352))		1
160	69B81950-2		..BUSHING		1
165	MS20427M5		..RIVET- (SIZE DETERMINE ON INST) (USED ON ITEMS 145,150)		1
-165A	BACR15BA5D		..RIVET- (SIZE DETERMINE ON INST) (USED ON ITEMS 145A, 150A)		1
170	253T7213-9		..ARM-RELEASE- (OPT ITEM 170B) (USED ON ITEM 145)	A,C,E,G	1

	FIG. & ITEM	PART NO.	AIRLINE PART NUMBER	NOMENCLATURE 1234567	EFF CODE	QTY PER ASSY
	01-					
	-170A	253T7213-13		..ARM- (OPT ITEM 170C) (USED ON ITEM 145A)	A,C,E,G	1
R	-170B	253T7213-17		..ARM- (OPT ITEM 170) (USED ON ITEM 145)	A,C,E,G	1
R	-170C	253T7213-15		..ARM- (OPT ITEM 170A) (USED ON ITEM 145A)	A,C,E,G	1
	-175	253T7213-10		..ARM- (OPT ITEM 175B) (USED ON ITEM 150)	B,D,F,H	1
	-175A	253T7213-14		..ARM- (OPT ITEM 175C) (USED ON ITEM 150A)	B,D,F,H	1
	-175B	253T7213-18		..ARM- (OPT ITEM 175) (USED ON ITEM 150)	B,D,F,H	1
	-175C	253T7213-16		..ARM- (OPT ITEM 175A) (USED ON ITEM 150A)	B,D,F,H	1
R	-177	253T7201-17		.KIT ASSY-CLUTCH (OPT ITEM 177A) (FOR DETAILS SEE FIG. 2)	E,F	1
R	-177A	253T7201-18		.KIT ASSY-CLUTCH (OPT ITEM 177) (FOR DETAILS SEE FIG. 2)	E,F	1
	180	NAS1351-3-28		.SCREW	A-D	1
	180A	NAS1351-3-32		DELETED		
	-180B	NAS1351-3-36		.SCREW- (OPT ITEM 180C)	G,H	1
	-180C	NAS1351C3H36P		.SCREW- (OPT ITEM 180B)	G,H	1
	180D	NAS1351-3-36		DELETED		
	180E	NAS1351C3H36P		DELETED		
	180F	NAS1351C3H36P		DELETED		
	180G	NAS1351-3-28		DELETED		
	180H	NAS1351C3H36P		DELETED		
	180J	NAS1351-3-28		DELETED		

FIG. & ITEM	PART NO.	AIRLINE PART NUMBER	NOMENCLATURE 1234567	EFF CODE	QTY PER ASSY
01-					
185	NAS620C10L		.WASHER	A-D	1
185A	253T7203-1		DELETED		
185B	253T7203-1		DELETED		
185C	253T7203-1		DELETED		
185D	NAS620C10L		DELETED		
185E	253T7203-1		DELETED		
185F	NAS620C10L		DELETED		
190	69B81952-1		.WASHER-BARREL		1
195	69B82949-1		.NUT ASSY-BARREL		1
200	MS21209F1-15		..INSERT		1
205	69B82949-2		..NUT-BARREL		1
207	253T7203-1		.GUIDE	G,H	1
-207A	253T7203-1		DELETED		
-207B	NAS620C10L		DELETED		
210	MS24585-1259		.SPRING	A-D	1
-210A	253T7202-1		.SPRING	G,H	1
210B	253T7202-1		DELETED		
210C	253T7202-1		DELETED		
210D	MS24585-1259		DELETED		
210E	253T7202-1		DELETED		
210F	MS24585-1259		DELETED		
215	69B81944-1		.PLUG		1
220	MS24693C272		DELETED		
220A	NAS1351C4-16		.SCREW- (OPT ITEMS 220B, 220C)		2
-220B	NAS1351C4H16		.SCREW- (OPT ITEMS 220A, 220C)		2
-220C	MS16998-45		.SCREW- (OPT ITEMS 220A, 220B)		2
225	69B81398-1		.SHIM		4
230	69B81381-1		.CAPSULE ASSY	C-H	2
-230A	69B81381-2		.CAPSULE ASSY	A,B	2
235	69B82942-1		..HOUSING- (OPT ITEM 235A)	C-H	1
-235A	69B81946-1		..HOUSING- (OPT ITEM 235)	C-H	1
-235B	69B82942-2		..HOUSING	A,B	1
240	69B81382-1		..SCREW ASSY-SELF LOCKING		1
245	MS24585C92		..SPRING	C-H	1
-245A	MS24585C100		..SPRING	A,B	1
250	69B81948-1		..PIN		1

FIG. & ITEM	PART NO.	AIRLINE PART NUMBER	NOMENCLATURE 1234567	EFF CODE	QTY PER ASSY
01-					
255	65B80805-3		.ACTUATOR- (OPT ITEM 255B)	C-H	1
-255A	65B80805-4		.ACTUATOR- (OPT ITEM 255C)	A,B	1
-255B	65B80805-6		.ACTUATOR- (OPT ITEM 255)	C-H	1
-255C	65B80805-6		.ACTUATOR- (OPT ITEM 255A)	A,B	1
260	69B81947-1		.PIN		2
265	253T7201-3		.SHOE ASSY-ARM (253T7201-9 TOGETHER WITH 253T7201-10 I/W 253T7201-3 TOGETHER WITH 253T7201-4) (ITEM 265 USED WITH ITEM 270 IS OPTIONAL TO ITEM 265A USED WITH ITEM 270A)	A	1
-265A	253T7201-9		.SHOE ASSY-ARM (253T7201-9 TOGETHER WITH 253T7201-10 I/W 253T7201-3 TOGETHER WITH 253T7201-4) (ITEM 265 USED WITH ITEM 270 IS OPTIONAL TO ITEM 265A USED WITH ITEM 270A)	A	1
265B	253T7201-9		DELETED		
-265C	253T7201-15		.SHOE ASSY-ARM	G	1
265D	253T7201-15		DELETED		
-265E	253T7201-3		.SHOE ASSY-ARM (253T7201-9 TOGETHER WITH 253T7201-10 I/W 253T7201-3 TOGETHER WITH 253T7201-4)	C	1
265F	253T7201-15		DELETED		
265G	253T7201-9		DELETED		
265H	253T7201-15		DELETED		

FIG. & ITEM	PART NO.	AIRLINE PART NUMBER	NOMENCLATURE 1234567	EFF CODE	QTY PER ASSY
01-					
-267	253T7201-4		.SHOE ASSY-ARM (253T7201-9 TOGETHER WITH 253T7201-10 I/W 253T7201-3 TOGETHER WITH 253T7201-4)	D	1
-267A	253T7201-4		.SHOE ASSY-ARM (253T7201-9 TOGETHER WITH 253T7201-10 I/W 253T7201-3 TOGETHER WITH 253T7201-4) (ITEM 272A USED WITH ITEM 267A IS OPTIONAL TO ITEM 272B USED WITH ITEM 267B)	B	1
-267B	253T7201-10		.SHOE ASSY-ARM (253T7201-9 TOGETHER WITH 253T7201-10 I/W 253T7201-3 TOGETHER WITH 253T7201-4) (ITEM 272A USED WITH ITEM 267A IS OPTIONAL TO ITEM 272B USED WITH ITEM 267B)	B	1
-267C	253T7201-10		DELETED		
-267D	253T7201-16		.SHOE ASSY-ARM	H	1
-267E	253T7201-16		DELETED		
270	253T7201-4		.SHOE ASSY-ARM (253T7201-9 TOGETHER WITH 253T7201-10 I/W 253T7201-3 TOGETHER WITH 253T7201-4) (ITEM 265 USED WITH ITEM 270 IS OPTIONAL TO ITEM 265A USED WITH ITEM 270A)	A	1
-270A	253T7201-10		.SHOE ASSY-ARM (253T7201-9 TOGETHER WITH 253T7201-10 I/W 253T7201-3 TOGETHER WITH 253T7201-4) (ITEM 265 USED WITH ITEM 270 IS OPTIONAL TO ITEM 265A USED WITH ITEM 270A)	A	1

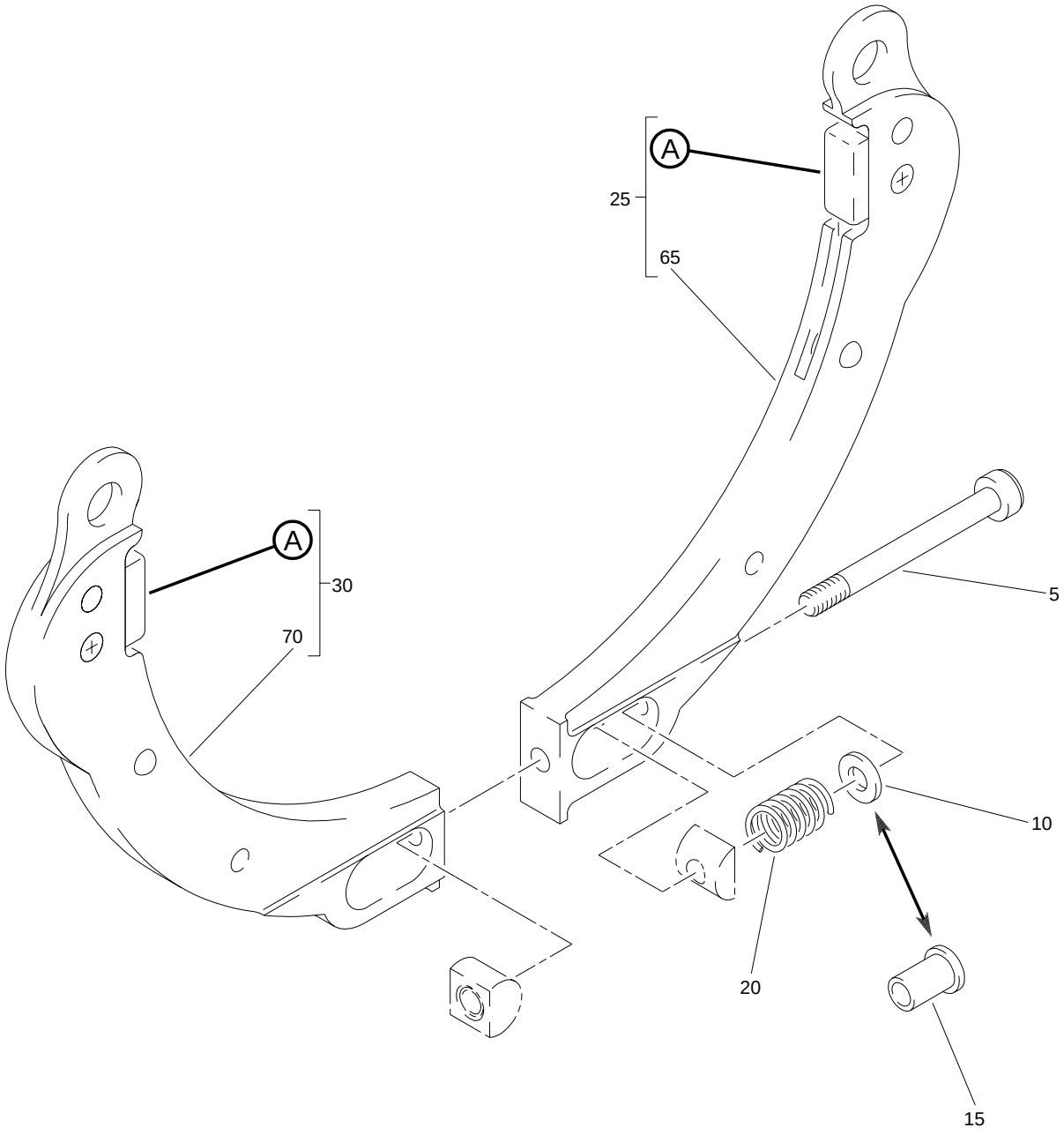
FIG. & ITEM	PART NO.	AIRLINE PART NUMBER	NOMENCLATURE 1234567	EFF CODE	QTY PER ASSY
01-					
-270B	253T7201-10		.SHOE ASSY-ARM (253T7201-9 TOGETHER WITH 253T7201-10 I/W 253T7201-3 TOGETHER WITH 253T7201-4) (OPT ITEM 270D)	G	1
270C	253T7201-16		DELETED		
-270D	253T7201-16		.SHOE ASSY-ARM (OPT ITEM 270B)	G	1
-270E	253T7201-4		.SHOE ASSY-ARM (253T7201-9 TOGETHER WITH 253T7201-10 I/W 253T7201-3 TOGETHER WITH 253T7201-4)	C	1
270F	253T7201-16		DELETED		
270G	253T7201-10		DELETED		
270H	253T7201-16		DELETED		
-272	253T7201-3		.SHOE ASSY-ARM (253T7201-9 TOGETHER WITH 253T7201-10 I/W 253T7201-3 TOGETHER WITH 253T7201-4)	D	1
-272A	253T7201-3		.SHOE ASSY-ARM (253T7201-9 TOGETHER WITH 253T7201-10 I/W 253T7201-3 TOGETHER WITH 253T7201-4) (ITEM 272A USED WITH ITEM 267A IS OPTIONAL TO ITEM 272B USED WITH ITEM 267B)	B	1

	FIG. & ITEM	PART NO.	AIRLINE PART NUMBER	NOMENCLATURE 1234567	EFF CODE	QTY PER ASSY
	01-					
	-272B	253T7201-9		.SHOE ASSY-ARM (253T7201-9 TOGETHER WITH 253T7201-10 I/W 253T7201-3 TOGETHER WITH 253T7201-4) (ITEM 272A USED WITH ITEM 267A IS OPTIONAL TO ITEM 272B USED WITH ITEM 267B)	B	1
	-272C	253T7201-9		.SHOE ASSY-ARM (253T7201-9 TOGETHER WITH 253T7201-10 I/W 253T7201-3 TOGETHER WITH 253T7201-4) (OPT ITEM 272D)	H	1
	-272D	253T7201-15		.SHOE ASSY-ARM (OPT ITEM 272C)	H	1
R	275	69B81945-1		..BOLT	A-D,G,H	1
	280	BACB30LU3-3		DELETED		
R	-280A	BACB30LH3-3		..BOLT	A-D	1
R	280B	BACB30LH3-3		DELETED		
R	-280C	BACB30NN3K3		..BOLT- (OPT ITEM 280D)	G,H	1
R	-280D	BACB30LH3-3		..BOLT- (OPT ITEM 280C)	G,H	1
	285	AN960C10L		DELETED		
R	285A	NAS1149C0332R		..WASHER	A-D,G,H	2

	FIG. & ITEM	PART NO.	AIRLINE PART NUMBER	NOMENCLATURE 1234567	EFF CODE	QTY PER ASSY
	01-					
	290	H10-3BAC		DELETED		
R	290A	BRH10C3D		..NUT- (V52828) (SPEC BACN10JC3CD) (OPT T6C1032JCD (V11815)) (OPT NS202486-02 (V80539)) (OPT 102LH9075-3W (V72962)) (OPT H51650-3BAC (V15653))	A-D,G,H	2
	295	MS206153M		DELETED		
R	295A	MS20615-3M		..RIVET- (SIZE DETERMINE ON INST) (OPT ITEM 295C)	A-D,G,H	1
	-295B	MS20426-3M		DELETED		
R	-295C	MS20427M3		..RIVET- (SIZE DETERMINE ON INST) (OPT ITEM 295A)	A-D,G,H	1
R	300	69B84019-1		..BUSHING	A-D,G,H	1
	305	65B80818-7		..SUPPORT- (65B80818-10 TOGETHER WITH 65B80818-11 I/W 65B80818-7 TOGETHER WITH 65B80818-8) (USED ON ITEMS 265, 265E, 272, 272A)	A-D	1
	-305A	65B80818-10		..SUPPORT- (65B80818-10 TOGETHER WITH 65B80818-11 I/W 65B80818-7 TOGETHER WITH 65B80818-8) (USED ON ITEMS 265A, 272B, 272C)	A,B,H	1
	-305B	65B80818-12		..SUPPORT- (USED ON ITEMS 265C, 272D)	G,H	1

	FIG. & ITEM	PART NO.	AIRLINE PART NUMBER	NOMENCLATURE 1234567	EFF CODE	QTY PER ASSY
	01-					
	-310	65B80818-8		..SUPPORT- (65B80818-10 TOGETHER WITH 65B80818-11 I/W 65B80818-7 TOGETHER WITH 65B80818-8) (USED ON ITEMS 267, 267A, 270, 270A)	A-D	1
	-310A	65B80818-11		..SUPPORT- (65B80818-10 TOGETHER WITH 65B80818-11 I/W 65B80818-7 TOGETHER WITH 65B80818-8) (USED ON ITEMS 267B, 267C, 270B, 270C)	A,B,G	1
	-310B	65B80818-13		..SUPPORT- (USED ON ITEMS 267D, 270D)	G,H	1
R	315	NAS1611-106		..PACKING	A-D,G,H	1
R	320	69B81977-1		..ECCENTRIC	A-D,G,H	1
R	325	65B84589-1		..SHOE ASSY-BRAKE	A-D,G,H	1
R	330	65B84589-4		...LINING	A-D,G,H	1
R	335	65B84589-2		...ARM	A-D,G,H	1
	340	65B80817-3		.DRUM		1
	345	253T7211-1		DELETED		
	345A	253T7211-5		.COVER	A,C,E,G	1
	-350	253T7211-2		DELETED		
	-350A	253T7211-6		.COVER	B,D,F,H	1
	355	BAC27ECT291		.NAMEPLATE		1
	360	BAC27ECT464		.DECAL-CAUTION DO NOT LUBRICATE		1

- Item Not Illustrated



Clutch Kit Assembly
Figure 2 (Sheet 1)

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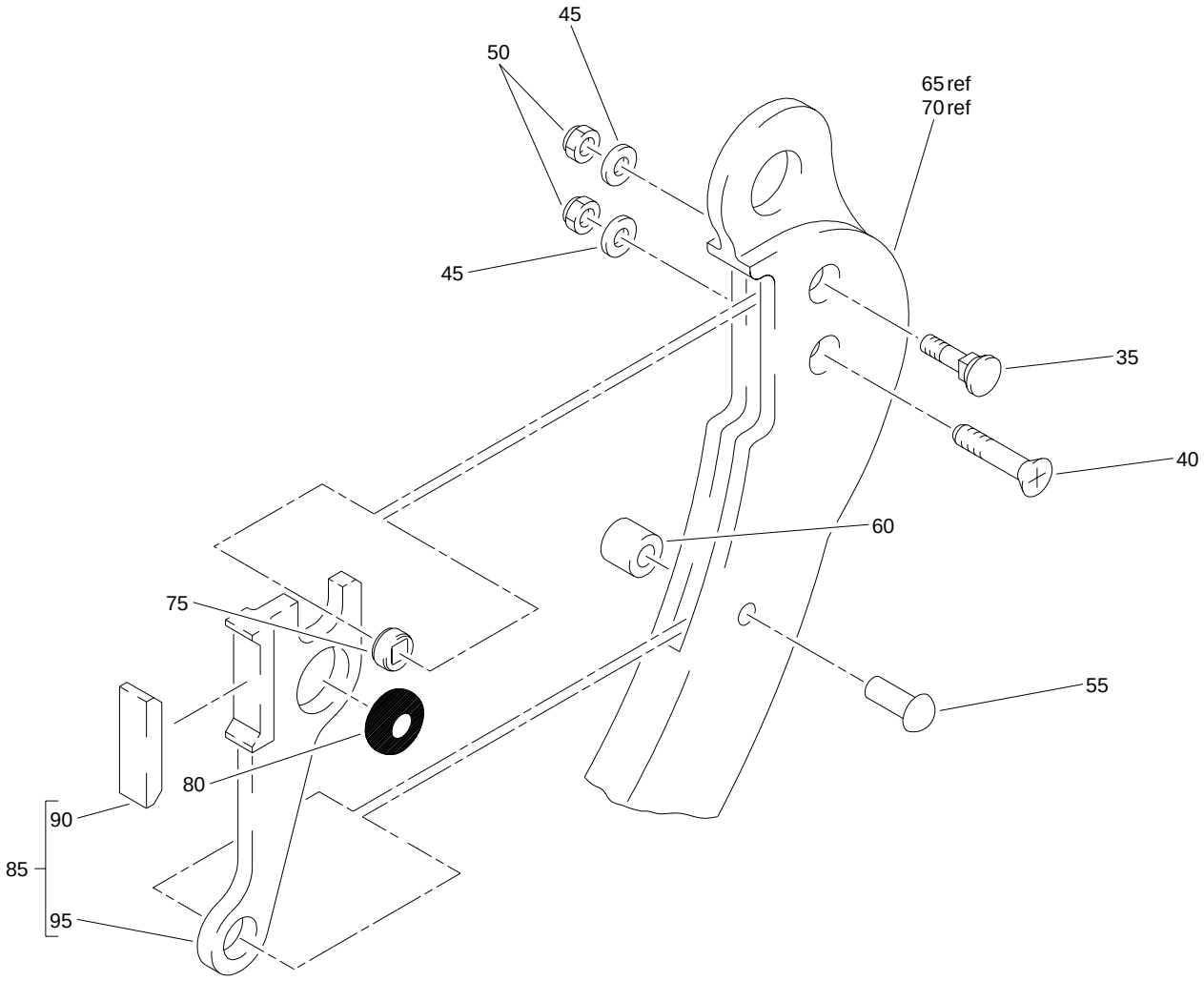

Clutch Kit Assembly
Figure 2 (Sheet 2)

446629

	FIG. & ITEM	PART NO.	AIRLINE PART NUMBER	NOMENCLATURE 1234567	EFF CODE	QTY PER ASSY
	02-					
R	-1A	253T7201-17		KIT ASSY-CLUTCH (OPT ITEM 1B)	E,F	RF
R	-1B	253T7201-18		KIT ASSY-CLUTCH (OPT ITEM 1A)	E,F	RF
R	5	NAS1351-3-28		.SCREW- (USED ON ITEM 1A)	E,F	1
R	-5A	NAS1351C3H36P		.SCREW- (USED ON ITEM 1B)	E,F	1
R	10	NAS620C10L		.WASHER- (USED ON ITEM 1A)	E,F	1
R	15	253T7203-1		.GUIDE-SPR (USED ON ITEM 1B)	E,F	1
R	20	MS24585-1259		.SPRING- (USED ON ITEM 1A)	E,F	1
R	-20A	253T7202-1		.SPRING- (USED ON ITEM 1B)	E,F	1
R	25	253T7201-9		.SHOE ASSY-ARM (253T7201-9 TOGETHER WITH 253T7201-10 I/W 253T7201-3 TOGETHER WITH 253T7201-4) (USED ON ITEM 1A)	E,F	1
R	-25A	253T7201-15		.SHOE ASSY-ARM (USED ON ITEM 1B)	E,F	1
R	30	253T7201-10		.SHOE ASSY-ARM (253T7201-9 TOGETHER WITH 253T7201-10 I/W 253T7201-3 TOGETHER WITH 253T7201-4) (USED ON ITEM 1A)	E,F	1
R	-30A	253T7201-16		.SHOE ASSY-ARM (USED ON ITEM 1B)	E,F	1
R	35	69B81945-1		..BOLT	E,F	1
R	40	BACB30LH3-3		..BOLT- (USED ON ITEMS 25, 30)	E,F	1

	FIG. & ITEM	PART NO.	AIRLINE PART NUMBER	NOMENCLATURE 1234567	EFF CODE	QTY PER ASSY
	02-					
R	-40A	BACB30NN3K3		..BOLT- (OPT ITEM 40B) (USED ON ITEMS 25A, 30A)	E,F	1
R	-40B	BACB30LH3-3		..BOLT- (OPT ITEM 40A) (USED ON ITEMS 25A, 30A)	E,F	1
R	45	NAS1149C0332R		..WASHER	E,F	2
R	50	BRH10C3D		..NUT- (V52828) (SPEC BACN10JC3CD) (OPT T6C1032JCD (V11815)) (OPT NS202486-02 (V80539)) (OPT 102LH9075-3W (V72962)) (OPT H51650-3BAC (V15653))	E,F	2
R	55	MS20615-3M		..RIVET- (SIZE DETERMINE ON INST) (OPT ITEM 55A)	E,F	1
R	-55A	MS20427M3		..RIVET- (SIZE DETERMINE ON INST) (OPT ITEM 55)	E,F	1
R	60	69B84019-1		..BUSHING	E,F	1
R	65	65B80818-10		..SUPPORT- (USED ON ITEM 25)	E,F	1
R	-65A	65B80818-12		..SUPPORT- (USED ON ITEM 25A)	E,F	1
R	70	65B80818-11		..SUPPORT- (USED ON ITEM 30)	E,F	1
R	-70A	65B80818-13		..SUPPORT- (USED ON ITEM 30A)	E,F	1
R	75	69B81977-1		..ECCENTRIC	E,F	1
R	80	NAS1611-106A		..PACKING	E,F	1
R	85	65B84589-1		..SHOE ASSY-BRAKE	E,F	1
R	90	65B84589-4		...LINING	E,F	1
R	95	65B84589-2		...ARM	E,F	1

- Item Not Illustrated