TO: ALL HOLDERS OF TRAILING EDGE FLAP DRIVE TRANSMISSION ASSEMBLIES NO. 2 AND 7 OVERHAUL MANUAL, 27-55-56

REVISION NO. 40, DATED MAR 1/05

HIGHLIGHTS

DESCRIPTION OF CHANGE	TOPICS AFFECTED												
	D & O	D / Assy	Cleaning	Insp/Chk	Repair	Assy	F/C	Test	T/Shooting	S/Tools	Storage	IPL	L/Overhaul
Revised Page 102 step E.(1) from shaft (122) to shaft (12)					X								
Updated vendors												X	
Added details to the lockout torque test to clarify requirements at minimum lockout and maximum lockout								X					

TRAILING EDGE FLAP DRIVE TRANSMISSION ASSEMBLIES NOS. 2 AND 7

27-55-56

BOEING P/N 65-50302-2 thru -7
65-50307-2 thru -7
65-50322-2 thru -12, -14
65-50327-2 thru -12, -14

AIRLINE P/N

THE FOLLOWING DIRECTIVES APPLY TO THIS SUBJECT:

BOEING SERVICE BULLETIN	BOEING TEMPORARY REVISION	OTHER DIRECTIVES	DATE DIRECTIVE INCORPORATED INTO TEXT
		PRR 31291-1	May 15/69
		PRR 31619	May 15/69
		PRR 31581	Nov 10/69
27-1015, Rev 2		PRR 31291	Mar 10/70
		PRR 31983	Dec 10/70
27-1048, Rev 1		PRR 32017	Jun 25/74
		PRR 32121-10	Jun 10/72
		PRR 32039	Mar 25/74
27-1069		PRR 32358	Dec 25/75
		PRR 33451	Dec 5/83
		PRR 34103-1	Sep 5/87

LIST OF EFFECTIVE PAGES

* Indicates pages revised, added or deleted in latest revision
F Indicates foldout pages - print one side only

	PAGE	DATE		PAGE	DATE		PAGE	DATE
	27-55-56			418	Nov 1/00		1108	Nov 1/99
	T-1	Sep 5/87		419	Sep 5/87		1109	Sep 5/87
	T-2	BLANK		420	Nov 1/00		1110	Jul 1/00
*	LEP-1	Mar 1/05		501	Dec 5/85		1111	Jul 1/00
	LEP-2	BLANK		502	Sep 1/96		1112	Jul 1/00
	T/C-1	Jan 5/81		502A	Sep 1/96		1113	Jul 1/00
	T/C-2	BLANK		502B	Mar 10/72		1114	Jul 1/00
	1	Sep 25/74		503	BLANK	*	1115	Mar 1/05
	2	Mar 10/72		504	Dec 1/96		1116	Jul 1/00
	101	Dec 5/92		505	Jan 5/77		1117	Dec 1/96
*	102	Mar 1/05		506	Dec 5/92		1118	Nov 1/99
	103	Dec 1/96		507	Jun 1/96		1119	Nov 1/99
	104	May 15/69		508	Sep 1/96		1120	BLANK
	201	Jan 5/81		509	Mar 1/96			
	202	BLANK		510	Mar 10/70			
	301	Dec 1/96		511	Jun 1/96			
	302	BLANK		512	Jan 5/77			
	401	Nov 1/00		513	Sep 5/84			
	402	Nov 1/00		514	Dec 5/92			
	402A	Nov 1/00		601	Dec 5/92			
	402B	Mar 5/93		602	Jul 1/00			
	402C	Mar 5/93		603	Sep 5/86			
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	403	Nov 1/00		605	Jul 1/00			
	404	Sep 5/87		606	Sep 5/86			
	404A	Jun 5/86		607	Jul 1/00			
	404B	BLANK		608	BLANK			
	405	Nov 1/00	*	701	Mar 1/05			
	406	Nov 1/00	*	702	Mar 1/05			
	407	Nov 1/00		703	Jul 5/77			
	408	Dec 5/87		704	Mar 25/74			
	409	Dec 5/87		801	Sep 5/91			
	410	Dec 1/96		802	BLANK			
	411	Dec 1/96		1001	Jan 5/77			
	412	Dec 1/96		1002	BLANK			
	413	Dec 1/96		1101	Dec 1/96			
	414	BLANK		1102	BLANK			
	414A	Sep 5/86		1103	Jan 5/81			
	414B	Dec 1/94		1104	Dec 1/96			
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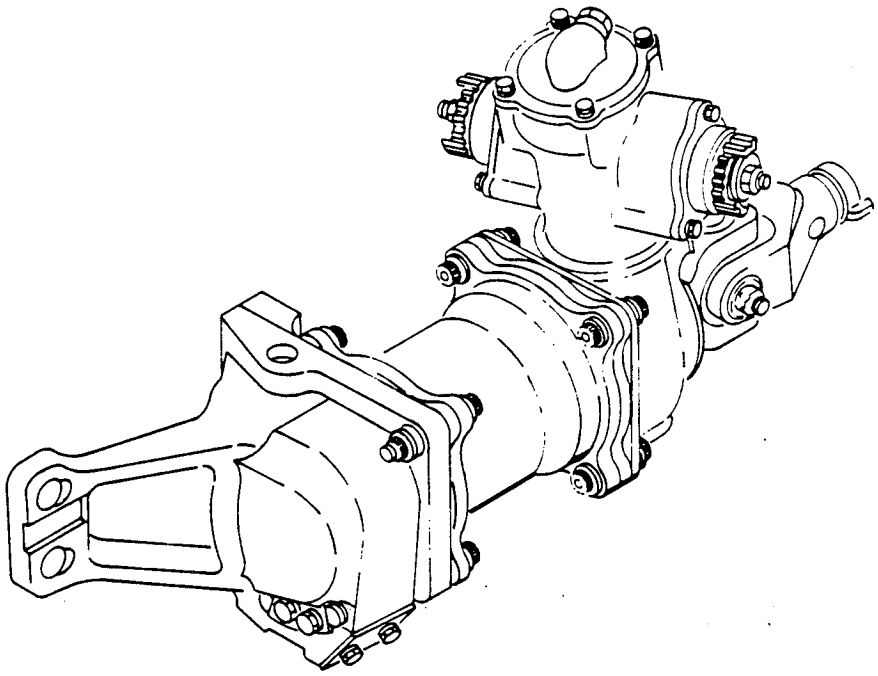
*[1] Special instructions not required. Use standard industry practices and the information contained in 20-44-02 and 20-70-01.

TRAILING EDGE FLAP DRIVE TRANSMISSION ASSEMBLIES NO. 2 AND 7



Trailing Edge Flap Drive Transmission Assemblies No. 2 and 7
Figure 1

DESCRIPTION AND OPERATION

1. Description

   A. The trailing edge flap drive transmission assemblies No. 2 and 7 consist of five bevel gears, a no-back ratchet mechanism, and a torque brake assembly housed in a sealed, lubricant filled housing. The bevel gears are bearing-mounted and the torque brake assembly is installed around the output shaft. A universal joint assembly is provided at the end of the output shaft and splined coupling is provided to drive the input shaft. A second splined coupling is provided to drive the flap drive torque tube to the outboard flap outboard transmission assembly.

2. Operation

A. The trailing edge flap drive transmission assemblies Nos. 2 and 7 provide a change in direction and an offset of the flap drive torque tubes rotary motion. Each assembly functions to transmit flap drive torque tube rotary motion to a ball screw and nut assembly. Torque tube rotary motion is also transmitted through the assemblies to the flap transmission assemblies Nos. 1 and 8. The torque brake assembly limits the amount of torque applied to the ball screw and nut assembly. The no-back ratchet mechanism prevents flap retraction until reverse rotary motion is applied by the flap drive torque tubes. The assemblies are located inboard on the outboard flaps.

3. Leading Particulars

Overall Dimensions -- 9-1/2 X 11 X 19-1/2 inches
Weight:
Assemblies P/N 65-50302-( ) and 65-50307-( ) -- 38.8 pounds (wet)
Assemblies P/N 65-50322-( ) and 65-50327-( ) -- 39.8 pounds (wet)

DISASSEMBLY

1. General (Fig. 1101)

   A. Prior to disassembly, measure and note the backlashes of gears (19 and 35) and gear (58). Refer to Fig. 601 for procedure and for backlash wear limits.

   B. Remove all lockwire.

   C. Remove plugs (1 and 3), O-rings (2 and 4), and drain hydraulic fluid from assembly.

2. Disassembly (Fig. 1101)

   A. Disassemble universal joint assembly (5) as follows:

      (1) Remove nut (7), bolt (9), spacer (10) from shaft (12).

      (2) Remove pin (11) and cross (13) from yoke (14).

         NOTE: Do not remove bushings (15) from shaft (12) or yoke (14) unless replacement is necessary.

      (3) If installed, remove placard (8) from yoke (14) and discard.

   B. Remove and disassemble gear (19) as follows:

      (1) Hold coupling (16) with Splined Coupling Wrench F71228, or equivalent, and remove nut (17), washer (18) and coupling (16).

      (2) Remove bolts (20), washers (21) and retainer (22).

      (3) Remove O-ring (23), seal (24) and shim (25) from retainer (22). Measure and note thickness of shim (25) to facilitate reassembly.

      (4) Remove gear (19) from housing (143).

      (5) Remove bearing (29) and bearing (31) from gear (19).

   C. Remove and disassemble gear (35) as follows:

      (1) Hold coupling (32) with Splined Coupling Wrench F71228, or equivalent, and remove nut (33), washer (34) and coupling (32).

(2) Remove bolts (36), washers (37) and retainer (38).

(3) Remove O-ring (39), seal (40) and shim (41) from retainer (38). Measure and note thickness of shim (41) to facilitate reassembly.

(4) Remove gear (35) from housing (143).

(5) Remove bearing (45) and bearing (47) from gear (35).

D. Remove and disassemble housing (68) as follows:

(1) Remove bolts (62), washers (63), retainers (64) and springs (66).

(2) Remove O-rings (65) from retainers (64).

(3) Remove nut (71), washer (72), bolts (73, 75, 76, 77) and nuts (74, 78).

(4) Separate housing (68) from support (109).

NOTE: Do not remove inserts (69, 70) from housing (68), unless repair or replacement is necessary.

(5) Remove bolts (79), washers (80), retainer (81), pins (82), pawl assemblies (84) and washers (88). Remove O-rings (83) from pins (82).

NOTE: Do not remove guides (85) or bearings (87) from pawls (86) unless repair or replacement is necessary.

E. Remove and disassemble no-back ratchet mechanism as follows:

(1) Straighten tangs of washer (89), hold shaft (12), and, using Torque Wrench Adapter ST6105-1, remove nut (90), washer (89), shim (94) and race (91). Measure and note thickness of shim (94) to facilitate reassembly. Discard washer (89).

(2) Remove bearing (93) from race (91). Remove retainer (95) and ratchet (100).

NOTE: Do not remove dowel (92) from race (91) unless repair or replacement is necessary.

(3) Remove bearing (98) from ratchet (100).

(4) Remove bearing (101), washer (102) and driver (104).

(5) Remove plate (107). Remove bearing (105) from plate (107). Remove support (106).

F. Tap end of output shaft (12) and remove shaft (12) from housing (143) and from torque brake assembly (108).

G. Remove and disassemble torque brake assembly (108) as follows:

(1) Remove nuts (122), washers (123) and bolts (124). Carefully separate torque brake housing (113) with attached parts from support (111). Temporarily reinstall nuts (122), washers (123) and bolts (124) to hold support (111) on housing (143). Use temporary spacers, approximately same thickness as lugs of housing (113), or use temporary bolts. Tighten nuts (122) to a torque range of 180-250 lb-in.

(2) Remove support (109) from housing (113). Remove O-rings (120, 121) from support (109).

(3) Place torque brake assy (108) on arbor press and support housing (113) to provide clearance for internal parts. Disassemble torque brake by pressing on sleeve (118) until sleeve and spring pack assembly are free of housing. Remove rings (115) from housing. Tap rings (115) with plastic mallet until free from spring pack (114). Remove shims.

NOTE: There may be up to two shims in each end or no shims at all. Note number, location and thickness of shims to facilitate re-assembly.

(4) Install spring pack (114) into Spring Expansion Fixture, ST6107 (Fig. 502). If necessary tap spring pack assy with a soft drift until spring turns are aligned with fixture Spring Stops , ST6107-( ). Move stops inward to position them for spring engagement and lock stops in position. Rotate fixture drive shaft until stops contact spring set ends. Continue to wind springs until adapter (119A) is free. Remove adapter (119A) and sleeves (116, 118).

(5) Rotate fixture drive shaft in reverse to unwind spring until spring stops are free of spring ends.

(6) Loosen all four spring stops and move outward clear of spring set. Remove spring set (119) from fixture by tapping lightly with plastic mallet.

NOTE: Spring set (119) is a matched assembly. Identify as matched parts.

H. Hold gear (55) to prevent any motion. Measure and note backlash of gears (55) and (128). See figure 601 for procedure and for backlash wear limit.

J. Remove and disassemble gear (55) as follows:

(1) Remove bolts (48), washers (49) and cover assembly (50). Remove O-ring (53) from cover assembly (50).

NOTE: Do not remove tube (52) from cover assembly (50) unless repair or replacement is necessary.

(2) Remove gear (55) with attached parts and shim (60) from housing (143). Remove bearing (54) from gear (55). Remove gear (58), bearing (59) and shim (61) from gear (55). Measure and note thickness of shims (60 and 61) to facilitate reassembly.

K. Remove and disassemble gear (128) as follows:

(1) Remove nuts (122), washers (123), bolts (124) and support (111) from housing (143). Remove O-rings (125 and 126) and shim (127) from support (111). Measure and note thickness of shim (127) to facilitate reassembly.

(2) Remove gear (128) from housing (143). Use needle-nosed pliers to bend up one end of retaining ring (129) and work ring around grooves in gear (128) and coupling (112) until ring is free. Pull coupling (112) from assembled parts.

L. Remove bearing (130) from gear (128) and bearing (131) from housing (143).

M. Remove nuts (132), washers (133) and screws (134) from housing (143).

N. Remove retainer (135) and support (136) with attached parts.

P. Remove O-rings (137 and 138) from housing (143).

Q. Remove bearing (139), spacer (140) and seal (141) from support (136).

NOTE: Do not remove inserts (144) or nameplate (146) from housing (143), unless repair or replacement is necessary.

CLEANING

1. Clean all parts in accordance with standard industry practices and the information contained in 20-30-01 and 20-30-03.

2. Lubricate all bearings except bearing (139) with hydraulic fluid MIL-H-5606. Lubricate bearing (139) in accordance with appropriate vendor's instructions.

INSPECTION/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. Penetrant check per 20-20-02 -- retainers (22, 38, 64, 81, 135), cover (51), housings (68, 143), supports (109, 111), spacer (140).

3. Magnetic particle check per 20-20-01 -- bolt (9), shaft (12), yoke (14), couplings (16, 32, 112), gears (19, 35, 55, 58, 128), pins (82), pawls (86), race (91), retainer (95), ratchet (100), driver (104), supports (106, 136), plate (107), adapter (119A), housing (113), rings (115), sleeves (116, 118), spring set (119).

REPAIR

1. Repair

   A. Repair minor defects in accordance with standard industry practices. Refer to SOPM 20-10-01 for applicable instructions for rework and repair of high strength steel parts (180 ksi and above).

   B. Cross (13) ID's for bolt (9), spacer (10) and pin (11) (Fig. 401).

      (1) Machine as required per SOPM 20-10-02, within repair limits, to remove defects. No step or mismatch allowed.

      (2) Stress relieve per Fig. 406.

      (3) Shot peen using size and intensity specified.

      (4) Nickel plate per SOPM 20-42-09, 0.004-0.006 inch single plate thickness.

      (5) Chrome plate per SOPM 20-42-03. Grind to design diameter and finish. Total plating thickness (nickel and chrome) after grinding to be 0.015 max.

      (6) Magnetic particle examine per SOPM 20-20-01.

   C. Bolt (9), spacer (10), pin (11) and cross (13) exterior dimensions (Fig. 401).

      (1) Machine, as required within repair limits shown, to remove corrosion of defects per SOPM 20-10-02. Observe surface finish requirements. Remove burrs and sharp edges. Smoothly blend all mismatch areas.

      (2) Stress relieve per Fig. 406.

      (3) Shot peen using shot size and intensity indicated.

      (4) Restore reworked surface, unless otherwise noted, by plating and machining to design dimensions and finish noted.

   D. Shaft (12) bearing and seal OD, lug holes (Fig. 404); support (136) OD (Fig. 405).

      (1) Magnetic particle examine per SOPM 20-20-01.

      (2) Machine as required per SOPM 20-10-02, within repair limits, to remove defects.

      (3) Magnetic particle examine per SOPM 20-20-01.

(4) Stress relieve per Fig. 406.

(5) Shot peen using size and intensity specified.

(6) Chrome plate per SOPM 20-42-03. Grind to design diameter and finish noted.

(7) Magnetic particle examine per SOPM 20-20-01.

E. Gear (19, 35) (Fig. 402A)

(1) Magnetic particle examine per SOPM 20-20-01.

2) Machine gear OD as required per SOPM 20-10-02, within repair limit, to remove defects. Finish should be 8 microinches or better. No step or mismatch is allowed.

(3) Shot peen machined area (including fillet radius) using size and intensity specified.

(4) Build up OD with chrome plate per SOPM 20-42-03.

(5) Grind OD to design diameter and finish noted.

(6) Magnetic particle examine per SOPM 20-20-01.

F. Pawl assembly (84) worn bearing (87) as follows:

(1) Remove worn bearing.

(2) Make a new aluminum bronze bearing having an ID of 0.300-0.305 inch, and interference fit with pawl (86) ID of 0.0005-0.0015 inch, and length of 0.410-0.420 inch. Break sharp corners of OD.

(3) Assemble bearing into pawl (86) flush with adjacent surfaces. Machine bearing ID to 0.3125-0.3130 inch.

G. Repair pawl (86) 0.05- to 0.07-inch tip radii by grinding per SOPM 20-10-02 to a surface finish of 125 microinches. Grinding beyond service limit shown in Fig. 601 is not permitted. Stress relieve per Fig. 406.

H. Repair ratchet (100) surfaces by grinding per SOPM 20-10-02 to a surface finish of 125 microinches. Grind thrust faces to surface finish of 32 microinches. Grinding beyond service limits shown in Fig. 601 is not permitted. Stress relieve per Fig. 406.

I. Repair thrust faces of driver (104) and plate (107), depth of race (91) and width of retainer (95) by grinding per SOPM 20-10-02 to a surface finish of 16 microinches. Grinding beyond service limits shown in Fig. 601 is not permitted. Stress relieve per Fig. 406.

J. Torque Brake Rework (108) (Fig. 402)

CAUTION: REWORK PER FOLLOWING PROCEDURES MAY AFFECT INTERCHANGEABILITY IN ANY FUTURE OVERHAUL OR REPLACEMENT.

(1) To shift torque lockout level to a higher value, machine housing (113) surface as indicated on repair figure per SOPM 20-10-02. Maintain finish and dimensions shown.

(2) To shift torque lockout level to a lower value:

(a) Machine spring set (119) and stress relieve as indicated (note amount of material removed).

(b) Buildup OD of sleeves (116, 118) with chrome plate as required to obtain finish diameter (after machining) equal to original OD plus amount that ID of spring set (119) was increased (+0.0000/-0.0005). A shift of torque lockout level relatively affects maximum or minimum lockout levels a corresponding amount.

K. Yoke (14)

(1) Attachment bolt hole rework

(a) Machine attachment bolt holes to 0.3432-0.3442 per SOPM 20-10-02. Break sharp edges of reworked holes 0.003-0.020.

(b) Attach tag to reworked yoke, stating "Bolt holes are oversize. Use oversize bolts, NAS3005E23 or equivalent, to attach ballscrew. Bolt holes in ballscrew must be 0.3432-0.3442 in. diameter to match."

(2) Yoke ID corrosion removal (Fig. 402B)

(a) Machine the yoke ID as required per SOPM 20-10-02, within repair limit, to remove defects. Finish should be 32 microinches or better. No step or mismatch is allowed. Break sharp edges.

(b) Surface temper etch with ammonium persulphate per SOPM 20-10-02.

(c) Stress relieve at 350-400°F for 4 hours per SOPM 20-10-02.

(d) Magnetic particle check per SOPM 20-20-01, class B.

(e) Shot peen machined area per SOPM 20-10-03. Observe material heat treat criteria specified.

(f) Check if mating part (jackscrew) has been chrome plated. Use optional repair method for yoke if mating part has been chrome plated.

1) Build up ID with chrome plate per 20-42-03. Chrome plate runout 0.01-0.03 inch around edges of ID and all holes.

2) Optional Repair: Build up ID using electrodeposited nickel plate per 20-42-09, Type 3. Nickel plate runout 0.01-0.03 inch around edges of ID and all holes.

(g) Stress relieve per 20-10-02 within 10 hours of plating. Stress relieve bake at 350-400°F for 12 hours per 20-10-02.

(h) Grind yoke ID per 20-10-04 to design diameter shown. Surface finish to be 63 microinches or better.

(i) Magnetic particle check per 20-20-01, class B.

(j) Low hydrogen embrittlement stylus cad plate per 20-42-10 any unplated areas created due to chrome pate stops. Observe post plate bake requirements in 20-42-03.

(3) Trunnion hole corrosion removal

(a) Machine trunnion hole per 20-10-02 as required to remove corrosion within maximum repair limit shown. Finish to 32 microinches. Break sharp edges.

NOTE: Remove only enough material that is necessary to remove corrosion.

(b) Surface temper etch the machined area with ammonium persulphate per 20-10-02.

(c) Stress relieve at 350-400°F for 4 hours per 20-10-02.

(d) Magnetic particle check the machined area per 20-20-01, class B.

(e) Shot peen the area shown using size, intensity and coverage specified per 20-10-03. Observe material heat treat criteria specified.

(f) Build up the hole diameter with chrome plate per 20-42-03. Chrome plate runout 0.01-0.02 inch around edges of hole. Do not chrome plate chamferred area.

(g) Stress relieve per 20-10-02 within 10 hours of plating. Stress relieve bake at 350-400°F for 12 hours per 20-10-02.

(h) Grind hole ID per 20-10-04 to the after plating design diameter shown. Surface finish to be 63 microinches or better.

(i) Magnetic particle check per 20-20-01 class B.

(j) Low hydrogen embrittlement stylus cad plate per 20-42-10 any unplated areas created due to chrome plate stops. Observe post plate bake requirements in 20-42-03 (section 7).

2. Refinish (Fig. 1101)

NOTE: Refer to SOPM 20-30-02 for stripping of protective coatings, and to SOPM 20-41-01 for explanation of F and SRF finish codes and to Aeronautical Material Specifications for AMS references.

A. Bolt (9), spacer (10), cross pin (11), trunnion cross (13) -- Fig. 401

B. Couplings (16, 32), retainers (22, 38), cover (51), driver (104), supports (109, 111), housing (113) -- Fig. 403

C. Shaft (12) -- Fig. 404

D. Support (136; 69-37669) -- Fig. 405

E. Washers (18, 34) -- Cadmium titanium plate (F-1.181) all over. Material: 4130 steel, 120-150 ksi.

F. Deleted.

G. Spacer (140), tube (52) -- Anodize (AMS 2470). Material: Al alloy

H. Retainers (64, 81) -- Anodize (AMS 2470) all over, plus one coat primer, BMS 10-11, Type 1 (SRF-12.205) on external surfaces only. Material: Al alloy

I. Housings (68, 143) -- Anodize (F-2.202, Type 2), plus primer, BMS 10-11, Type 1 (SRF-12.205), on external surfaces only. On 65-50267-7 thru -12 only: Enamel, BMS 10-11, Type 2, gray (SRF-12.63) on external surfaces only. Apply no primer or enamel to machined external surfaces. Material: Al alloy

J. Pin (82) -- One coat primer, BMS 10-11, Type 1 (SRF-12.205) on external surfaces of head only.

K. Retainer (135; 69-37686-2) -- Anodize (MIL-A-8625, Type II) apply one coat primer, BMS 10-11, Type 1 (F-20.02) all over. Material: Al alloy

L. Spring set (119) -- Fig. 402

M. Yoke (14) -- Fig. 402B

N. Gears (19, 35) -- Fig. 402A

O. Support (136; 69-62733) -- Fig. 405A

P. Retainer (135; 69-62757-1, -2) -- Fig. 403

3. Replacement (Fig. 1101)

A. Replace all O-rings and seals.

B. Replace ring (129) and washer (89).

C. Replace all unserviceable items.

D. If nameplate (146) requires replacement, proceed as follows.

(1) Using suitable knife or scraper remove nameplate (146).

(2) Remove old adhesive using Turco 4669 or equivalent. Wipe all traces of adhesive and paint remover from housing with a clean cloth soaked with water.

(3) Clean faying surfaces of housing (143) and nameplate (146) with a clean cloth moistened with methyl ethyl ketone. Wipe dry with a clean dry cloth.

(4) Mix adhesive, Epon 901 and Catalyst B1 in accordance with manufacturer's directions.

(5) Stamp nameplate as required, and bend to conform to housing contour.

(6) Apply prepared adhesive to faying surfaces of nameplate and housing.

(7) Install nameplate on housing.

(8) Remove excess adhesive with a clean gauze or cheesecloth pad moistened with methyl ethyl KETONE.

(9) Allow adhesive to cure.

E. If inserts (69, 70, or 144) require replacement, proceed as follows:

(1) Remove damaged insert.

(2) Clean and check threads in bore of housing.

(3) Apply primer, Specification BMS 10-11, type 1, to bore of housing and to insert. Install insert 1/4 to 1/2 turn below surface of housing while primer is wet. Cut tang.

F. If tube (52) requires replacement, proceed as follows:

(1) Remove tube from cover.

(2) Clean and check condition of bore in cover.

(3) Apply adhesive, Eccobond 104 to bore of cover and to outer surface of tube for a length of 0.37 inch.

(4) Insert tube in bore of cover to a depth of 0.37 inch and remove excess adhesive.

(5) Position cover assembly so that tube is upward and cure adhesive at 250°F for 6 hours.

G. If dowel (92) requires replacement, proceed as follows:

(1) Press dowel from race.

(2) Check condition of bore in race.

(3) Press new dowel in race. End of dowel to be flush with outer surface of race.

H. Replace bushings (15) as follows:

(1) If installed bushings (15) meet Inspection/Check requirements, and the service wear limits are less than those shown in Fig. 601, mark position of bushings (15) in yoke (14) and shaft (12), rotate bushings 180 degrees, and reinstall per Subject 20-50-03, Bearing Installation and Retention, using wet BMS 10-11, type 1, primer.

(2) If bushings (15) are damaged, or are worn beyond limits shown in Fig. 601, install new bushings (15) in yoke (14) and/or shaft (12), using wet BMS 10-11, type 1, primer per Bearing Installation and Retention, Subject 20-50-03.

4. Materials

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

B. Paint Remover - Turco 4669 (Ref 20-60-01)

C. Adhesive -- Epon 901 and Catalyst B1 (Ref 20-60-04)

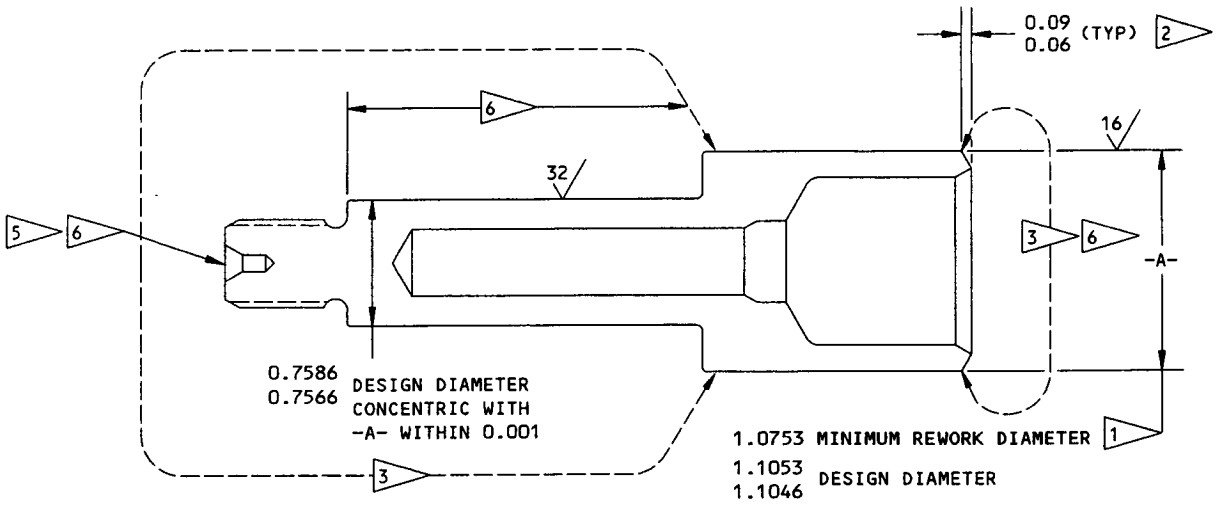
D. Adhesive -- Eccobond 104 (Ref 20-60-04)

E. Solvent -- Methyl Ethyl Ketone, TT-M-261 (Ref 20-60-01)

F. Enamel -- BMS 10-60, type 1, black (Ref 20-60-02)

G. Enamel -- BMS 10-60, BAC707 gray (Ref 20-60-02)

H. Topcoating -- Clear Skydrol-resistant, type 41 (Ref 20-60-02)



REFINISH

CHROME PLATE (F-15.04) DIAMETER -A-.
CADMIUM-TITANIUM PLATE ALL OTHER
SURFACES PER 3. APPLY PRIMER
AND PAINT PER 6.

REPAIR

AS NOTED BY 1 2

SHOT PEEN: (20-10-03)
0.017-0.033 SHOT SIZE
0.015 A2 INTENSITY

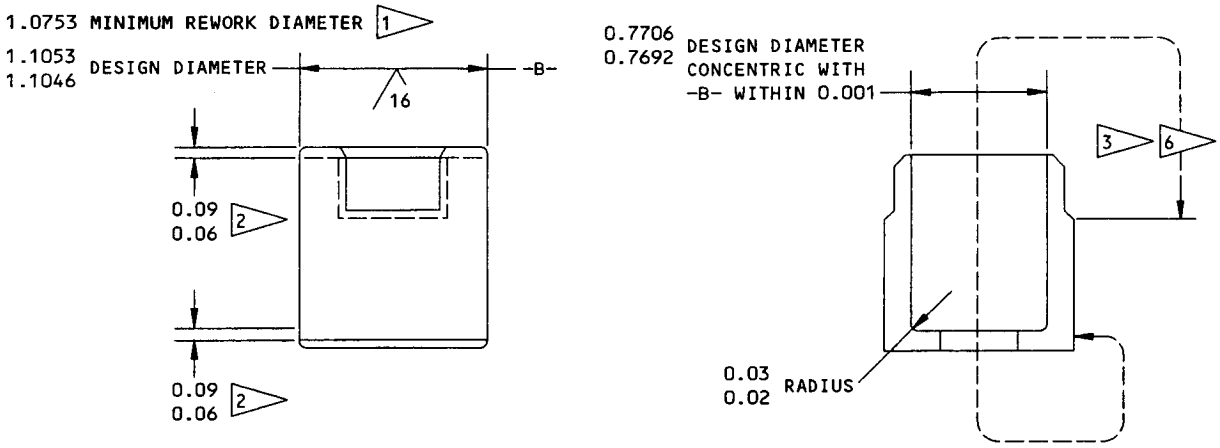
MATERIAL: (65-76606-1) 4340M STEEL
(275-300 KSI)

(69-52419-2) MOD H-11 STEEL
(RC 54-56)

BOLT (9)

Bolt, Spacer, Pin and Cross - Repair and Refinish
Figure 401 (Sheet 1)

L40814



REFINISH

CHROME PLATE (F-15.04) DIAMETER -B-. CADMIUM-TITANIUM PLATE ALL OTHER SURFACES PER 3. APPLY PRIMER AND PAINT PER 6.

REPAIR

AS NOTED BY 1 2

SHOT PEEN: (20-10-03)
0.017-0.033 SHOT SIZE
0.015 A2 INTENSITY

BREAK SHARP EDGES 0.005-0.015 RADIUS.

MATERIAL: (69-52418-1) MOD H-11 STEEL (RC 54-56) OPTIONAL 4340M STEEL (270-300 KSI)

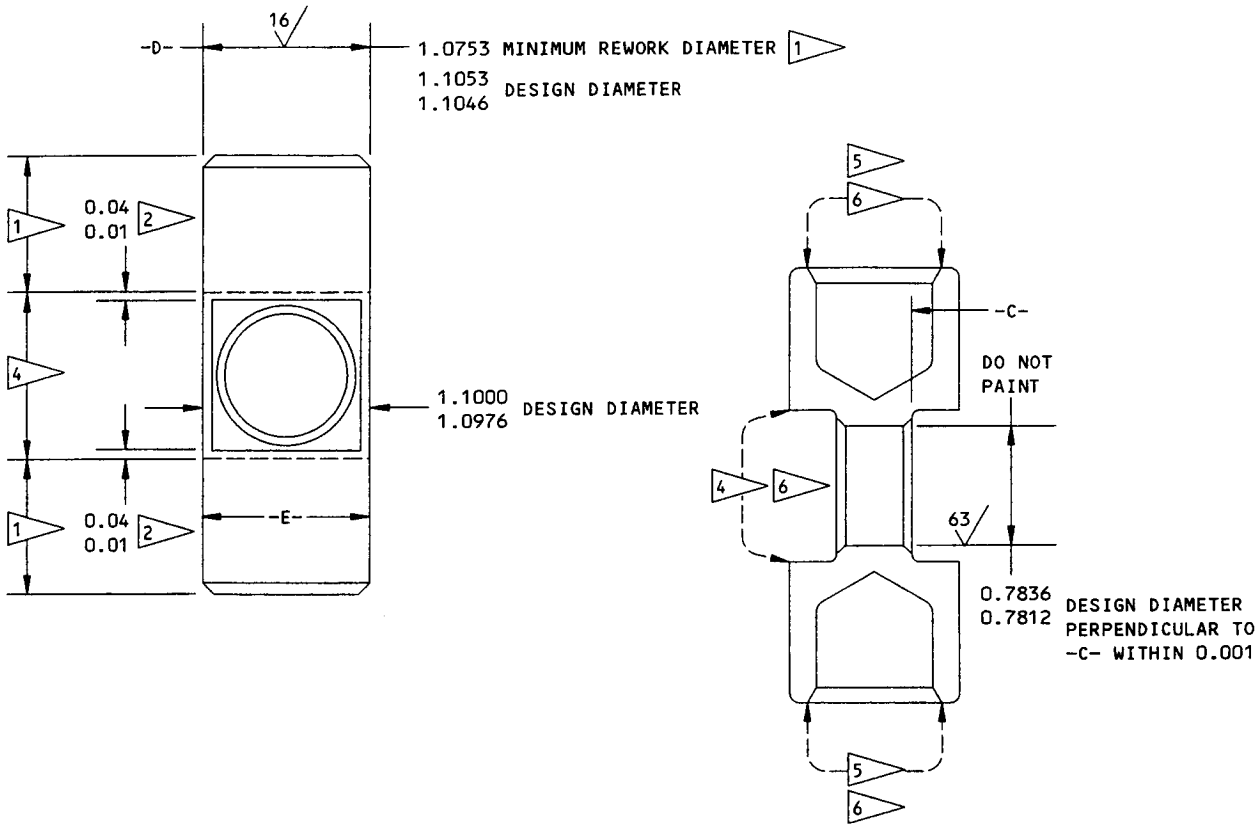
(69-60052-1) MOD H-11 STEEL (RC 54-56)

(69-60052-2) 4340M STEEL (270-300 KSI)

SPACER (10)

Bolt, Spacer, Pin and Cross - Repair and Refinish
Figure 401 (Sheet 2)

L40819



REFINISH

CHROME PLATE (F-15.04) DIAMETERS -D- AND -E-. CADMIUM-TITANIUM PLATE ALL OTHER SURFACES PER 4. APPLY PRIMER AND PAINT PER 6.

REPAIR

AS NOTED BY 1 2

SHOT PEEN: (20-10-03)
0.017 - 0.033 SHOT SIZE
0.015 A2 INTENSITY

BREAK SHARP EDGES 0.005-0.015 RADIUS.

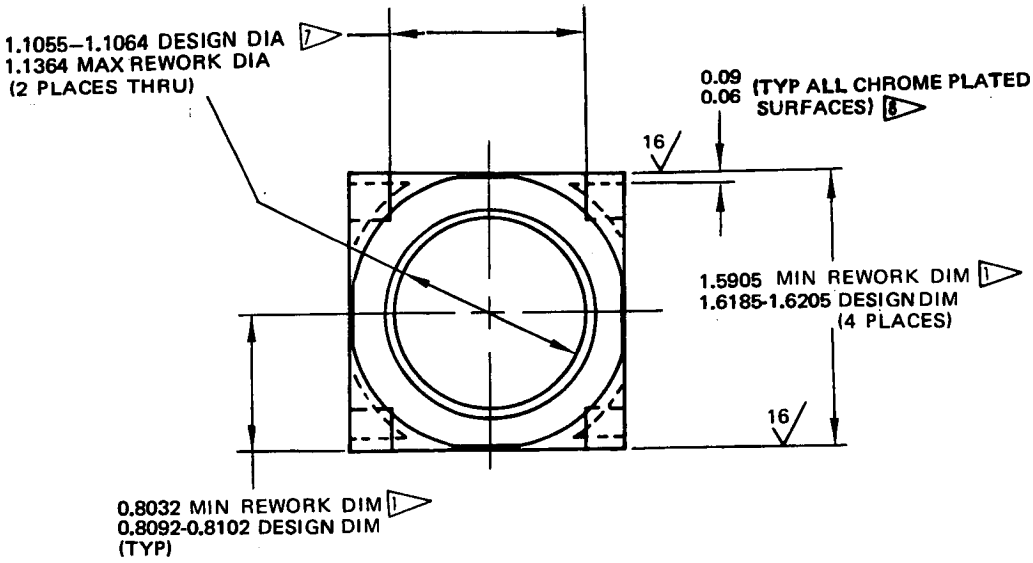
MATERIAL: (69-52423-1) MOD H-11 STEEL
(RC 54-56)
OPTIONAL 4340M STEEL
(270-300 KSI)

(69-60056-1) MOD H-11 STEEL
(RC 54-56)

(69-60056-2) 4340M STEEL
(270-300 KSI)

PIN (11)

Bolt, Spacer, Pin and Cross - Repair and Refinish
Figure 401 (Sheet 3)



REFINISH

CHROME PLATE (F-15.04) OUTER SURFACES. PER F-1.842 (0.003–0.005 PLATE THICKNESS) (20-42-03)

REPAIR

AS NOTED BY 1

SHOT PEEN: (20-10-03)

0.017–0.033 SHOT SIZE
0.012 A2 INTENSITY

BREAK SHARP EDGES

MATERIAL: (69-52411-1) MOD H-11 STEEL (RC 54-56)

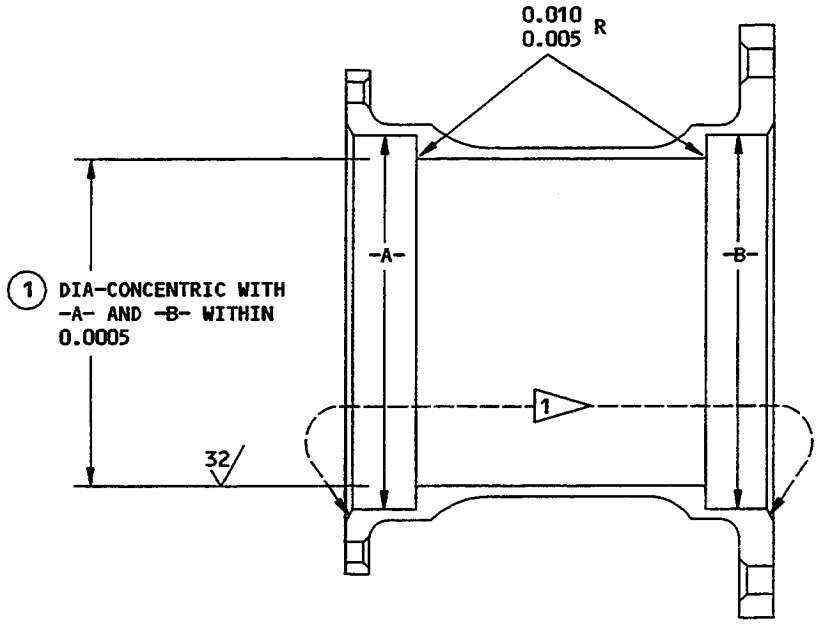
(69-60058-1) 15-5PH CRES (150–170 KSI)

CROSS (13)

Bolt, Spacer, Pin and Cross - Repair and Refinish
Figure 401 (Sheet 4)

1. BUILD UP WITH CHROME PLATE (20-42-03) AND GRIND TO FINISH AND DIMENSIONS SHOWN. OBSERVE PLATING RUNOUT AS NOTED.
2. CHROME PLATE RUNOUT
3. CADMIUM-TITANIUM PLATE (F-1.18) 0.0003–0.0005 THICKNESS (20-42-02)
4. CADMIUM-TITANIUM PLATE (F-1.181) 0.0005–0.0007 THICKNESS (20-42-02)
5. CADMIUM-TITANIUM PLATE THROW IN PREFERRED IN THESE AREAS.
6. AFTER PLATING APPLY PRIMER (SRF-12.205) BMS 10-11, TYPE 1 AND PAINT (SRF-12.63) BMS 10-11, TYPE 2.
7. BUILD UP WITH NICKEL PLATE (20-42-09) (0.004–0.006 THICK) AND CHROME PLATE (20-42-03) AND MACHINE TO DESIGN DIMENSIONS SHOWN. TOTAL PLATE THICKNESS AFTER MACHINING TO BE 0.015 MAX
8. CHROME PLATE STOP–OFF AREA

ALL DIMENSIONS ARE IN INCHES



		1
175735,-1	DESIGN DIM	3.5255 3.5250
	REWORK LIMIT	3.5315
176632	DESIGN DIM	3.5347 3.5342
	REWORK LIMIT	3.5427

REWORK

MACHINE ID AS REQUIRED TO INCREASE THE TORQUE SETTING THE DESIRED AMOUNT (VALUE INCREASES 8.2 POUND INCHES FOR EACH 0.001 INCREASE OF ID)

MATERIAL: 9310 STEEL PER AMS 6265
RC 32-43 CORE HARDNESS
CARBURIZED, RC 60 MIN AS NOTED

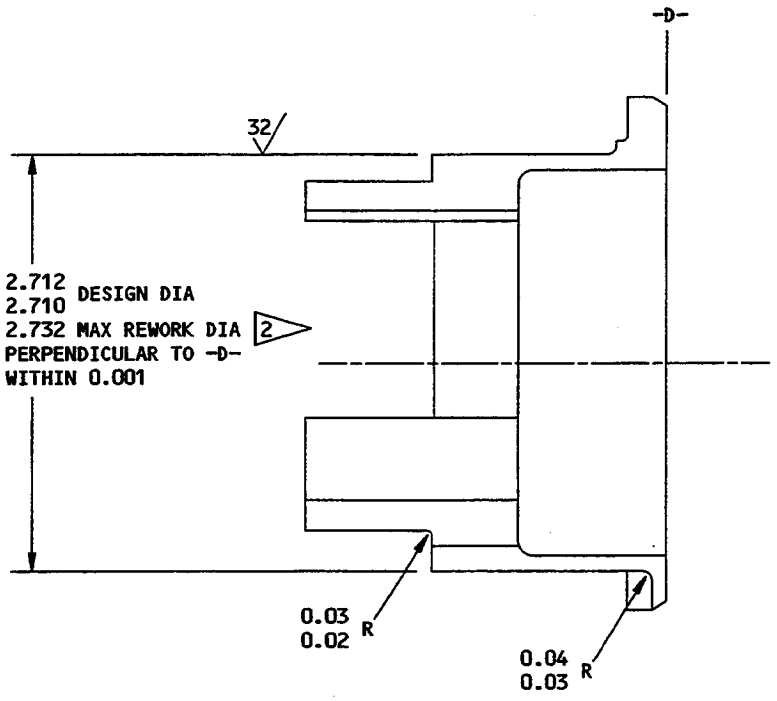
BREAK SHARP EDGES 0.01-0.02 R UNLESS OTHERWISE NOTED

1 CARBURIZED, 0.025-0.035 DEEP

TORQUE BRAKE HOUSING (113)

Torque Brake - Rework
Figure 402 (Sheet 1)

G17382



REPAIR

AS NOTED BY 2

MATERIAL: STEEL (HT 290-300 KSI)

BREAK SHARP EDGES 0.005-0.015 R

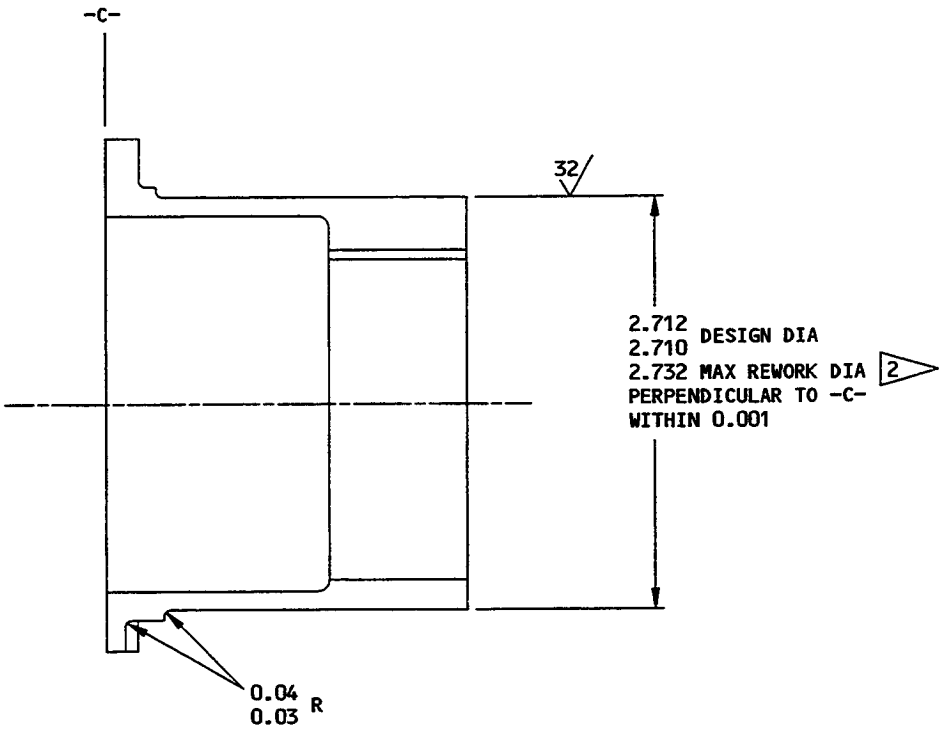
SHOT PEEN: (REFER TO 20-10-03)

0.010-0.019 SHOT SIZE
0.012-0.015 A2 INTENSITY

175740,-1, 176650
SLEEVE (116)

Torque Brake - Rework
Figure 402 (Sheet 2)

G17390



REPAIR

AS NOTED BY 2

MATERIAL: STEEL (HT 290-300 KSI)

BREAK SHARP EDGES 0.005-0.015 R

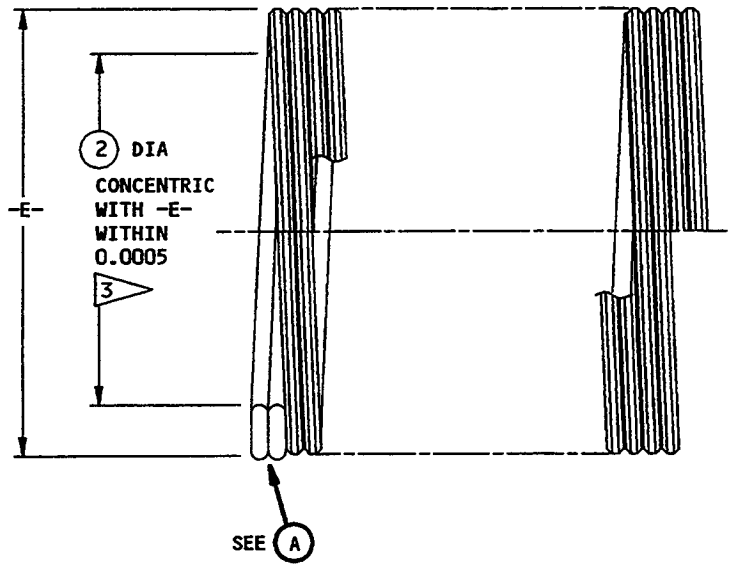
SHOT PEEN: (REFER TO 20-10-03)

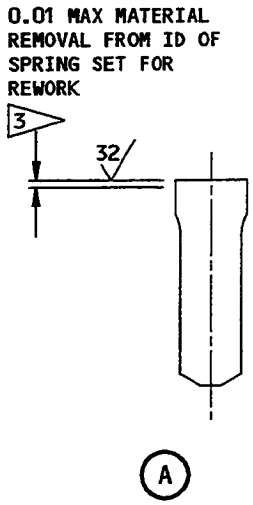
0.010-0.019 SHOT SIZE
0.012-0.015 A2 INTENSITY

175732,-1, 176649
SLEEVE (118)

Torque Brake - Rework
Figure 402 (Sheet 3)

G17397





REFINISH

CADMIUM-TITANIUM PLATE (0.0003-0.0005 THICK) ID AND SPRING FLANKS PER 20-42-02

		2
175734, -1	DESIGN DIM	2.641 2.640
	REWORK LIMIT	2.661
176641, -1	DESIGN DIM	2.636 2.635
	REWORK LIMIT	2.656

REWORK

1. MACHINE ID AS REQUIRED TO DECREASE TORQUE LEVEL BY DESIRED INCREMENT (VALUE DECREASES 2.8 INCH POUNDS FOR P/N 175734, -1 AND 3.7 INCH POUNDS FOR P/N 176641, -1 FOR EACH 0.001 INCREASE OF ID) 3
2. STRESS RELIEVE IN FOLLOWING ORDER:
   A. 320°-330°F FOR 1 HOUR
   B. 625°-675°F FOR 1 HOUR
   C. 920°-930°F FOR 2 HOURS
   D. AIR COOL AT 65°-75°F
3. REFINISH MACHINED AREA

MATERIAL: STEEL (HT 290-300 KSI)

BREAK SHARP EDGES 0.005-0.015 R

ALL DIMENSIONS ARE IN INCHES

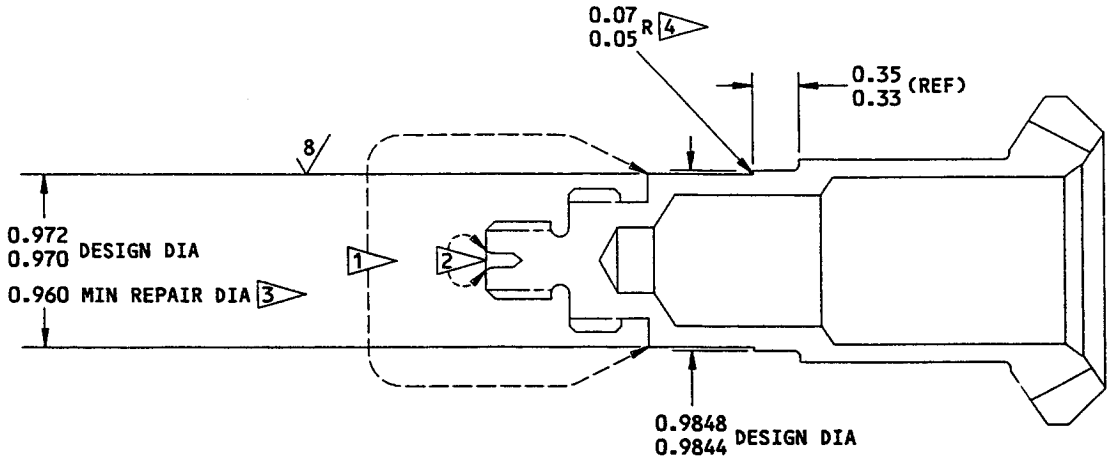
175734, -1; 176641, -1
SPRING SET (119)

2 BUILD UP WITH HARD CHROME PLATE (REFER TO 20-42-03) AS REQUIRED TO OBTAIN FINISH DIA (AFTER MACHINING) EQUAL TO MEASURED OD PLUS AMOUNT THAT ID OF SPRING SET (119) WAS INCREASED (+0.0000,-0.0005)

3 NOTE AMOUNT ID IS INCREASED TO DETERMINE REWORK OF SLEEVES (116, 118)

Torque Brake - Rework
Figure 402 (Sheet 4)

G17460



REFINISH

CADMIUM-TITANIUM ALLOY PLATE AS NOTED. APPLY PRIMER TO DRILL CENTER AS NOTED

1> CADMIUM-TITANIUM ALLOY PLATE (F-1.181) 0.0005-0.0007 THICK THIS AREA

2> PLATING OPTIONAL THIS AREA. APPLY ONE COAT PRIMER, BMS 10-11, TYPE 1 (SRF-12.205)

3> BUILD UP WITH HARD CHROME PLATE (REF 20-42-03) AND GRIND TO FINISH AND DIMENSIONS SHOWN. STOP CHROME PLATE 0.03 MINIMUM BEFORE FILLET RADIUS

4> MAINTAIN RADIUS IN TRANSITION BETWEEN DIAMETERS

REPAIR

REF 3> 4>

BREAK SHARP EDGES 0.003-0.020

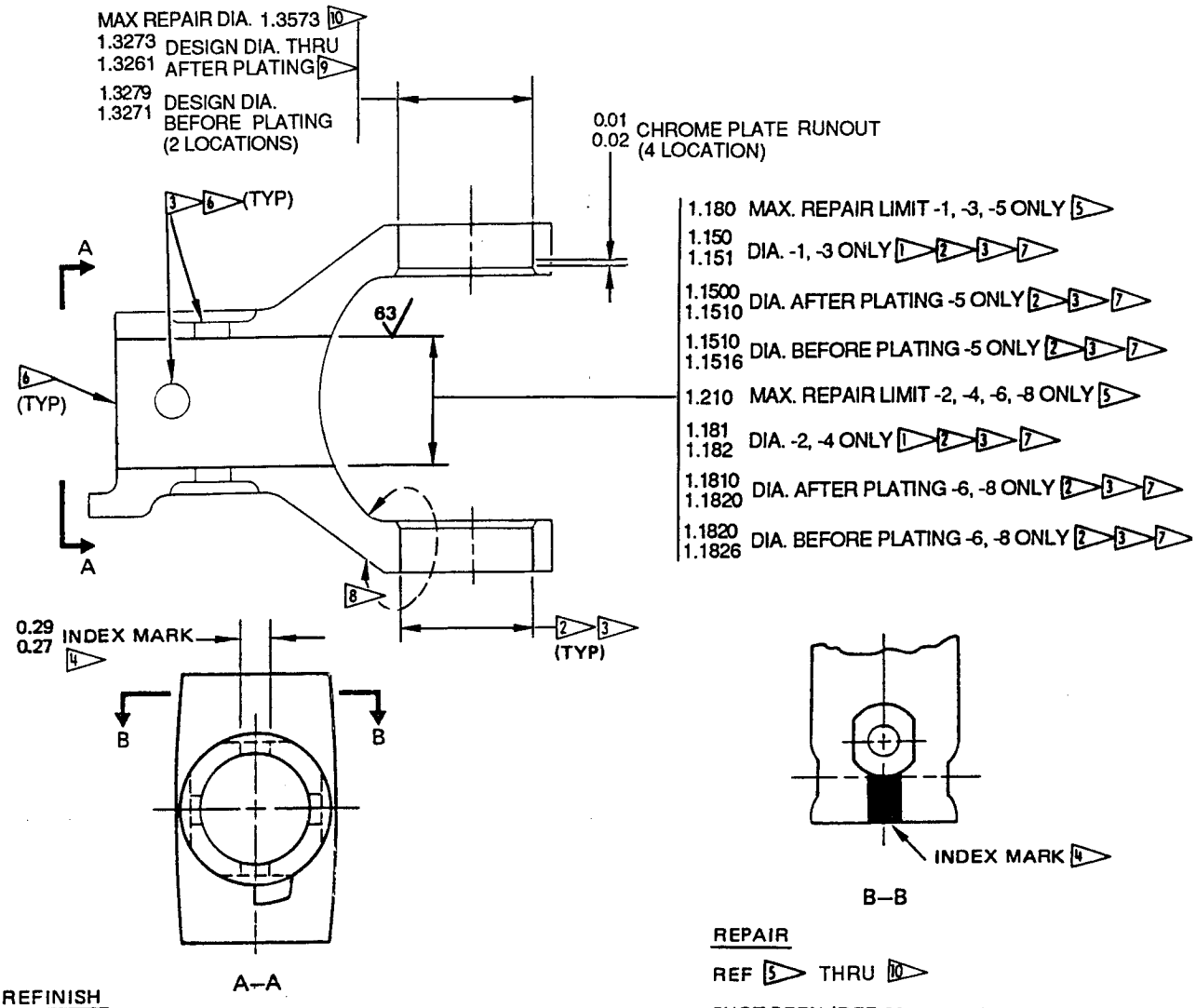
SHOT PEEN (REF 20-10-03)
0.017-0.033 SIZE
0.014 A2 INTENSITY
2.0 COVERAGE

MATERIAL: (69-52404-1) MOD H-11 STEEL (RC 54-56)
(69-52404-2) 4340M STEEL (270-300 KSI)

ALL DIMENSIONS ARE IN INCHES

69-52404-1,-2

Bevel Gear Repair
Figure 402A



A–A

B–B

REFINISH

CADMIUM–TITANIUM ALLOY PLATE (F–15.01)
ALL OVER EXCEPT AS NOTED

(69–52414–1, –2) APPLY ONE COAT
PRIMER, BMS 10–11, TYPE 1 (F–20.02)
ALL OVER EXCEPT AS INDICATED

(69–52414–3, –4, –5, –6, –8) APPLY TWO COATS
PRIMER, BMS 10–11, TYPE 1 (F–20.03)
ALL OVER EXCEPT AS INDICATED

1. NO CADMIUM-TITANIUM PLATING THIS SURFACE -1, -2 ONLY
2. CADMIUM-TITANIUM PLATE 0.0003-0.0005 INCH THICK
3. NO PRIMER AND NO SHOT PEEN THIS SURFACE
4. APPLY ENAMEL, BMS 10-60, TYPE I, BLACK, IN LOCATION SHOWN. TOPCOAT PER 20-44-01, TYPE 41
5. BUILD UP WITH HARD CHROME PLATE (REF 20-42-03) (OPTIONAL: ELECTRODEPOSITED NICKEL PLATE (20-42-09)) AND GRIND TO FINISH AND DIMENSIONS SHOWN

REPAIR

REF 5 THRU 10

SHOT PEEN (REF 20–10–03)

MATERIAL: (69–52414–1 THRU –4)
MOD H-11 STEEL 270-300 KSI

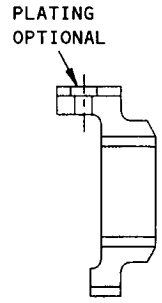
(69–52414–5, –6, –8)
4340M STEEL 270–300 KSI

ALL DIMENSIONS ARE IN INCHES

6. PLATING RUNOUT IS 0.01-0.03 INCH AROUND EDGES OF ID AND ALL HOLES
7. OMIT CADMIUM-TITANIUM PLATING IF THIS SURFACE IS REPAIRED
8. SHOT PEEN AREA ALL AROUND HOLE AS SHOWN, 2 LOCATIONS
9. NO CAD-TI PLATING OR PRIMER IF THIS SURFACE IS REPAIRED
10. BUILD UP CHROME PLATE (REF 20-42-03)

YOKE (14)

Yoke Repair
Figure 402B

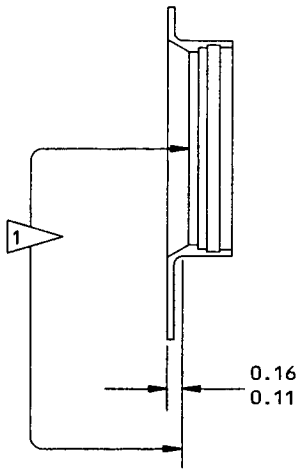


REFINISH

CADMIUM-TITANIUM PLATE (F-1.18) AS NOTED

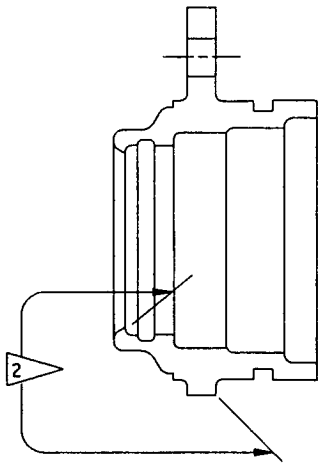
MATERIAL: 4340 STEEL (150-180 KSI)

COUPLINGS (16, 32)

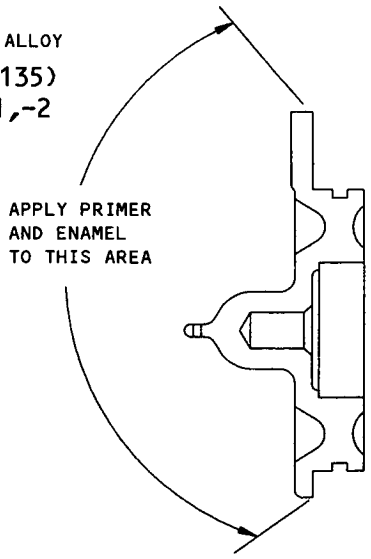


MATERIAL: AL ALLOY

RETAINER (135)
69-62757-1,-2



RETAINER (22, 38)



COVER (51)

REFINISH

CHROMIC ACID OR SULFURIC ACID ANODIZE (F-17.05). APPLY ONE LAYER OF BMS 10-11, TYPE 1 PRIMER (F-20.02) TO THE AREA SHOWN.

69-37696-3 ONLY: APPLY ONE LAYER OF BMS 10-11, TYPE 2 ENAMEL, BAC707 GRAY GLOSS (F-21.02) TO THE AREA SHOWN.

MATERIAL: AL ALLOY

REFINISH

SULFURIC ACID ANODIZE (F-17.03). APPLY ONE LAYER OF BMS 10-11, TYPE 1 PRIMER (F-20.02) TO AREA SHOWN.

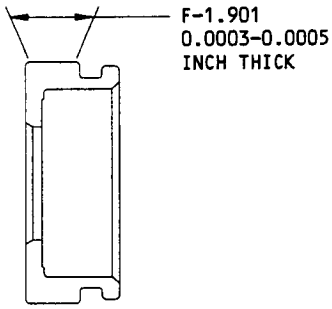
69-37634-7 ONLY: APPLY ONE LAYER OF BMS 10-11, TYPE 2 ENAMEL, BAC707 GRAY GLOSS, TO AREA SHOWN.

MATERIAL: AL ALLOY

1 ANODIZE (F-17.05) ALL OVER. APPLY PRIMER (F-20.02) TO INDICATED AREA.

2 PAINT THIS AREA ONLY.

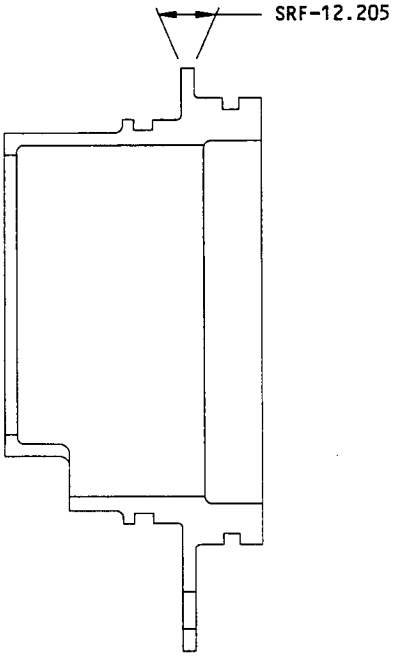
Repair and Refinish
Figure 403 (Sheet 1)



MATERIAL: STEEL PER AMS 6470

F-1.901 AS NOTED

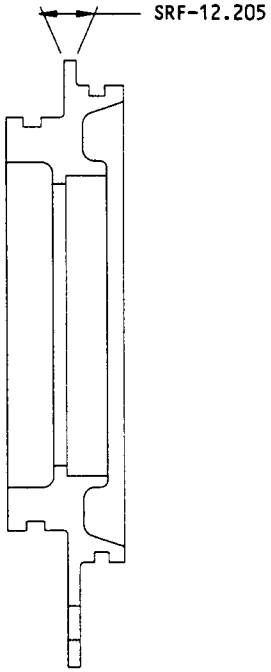
69-52433-1
DRIVER (104)



ANODIZE PER AMS 2470 ALL OVER, PLUS SRF-12.205 AS NOTED

MATERIAL: AL ALLOY

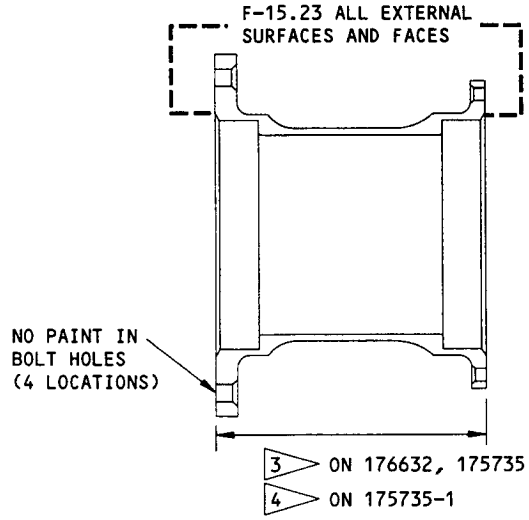
178483,-1,-2
SUPPORT (109)



ANODIZE PER AMS 2470 PLUS SRF-12.205 AS NOTED

MATERIAL: AL ALLOY

176827, -1,-2
SUPPORT (111)



MATERIAL: 9310 STEEL PER AMS 6265

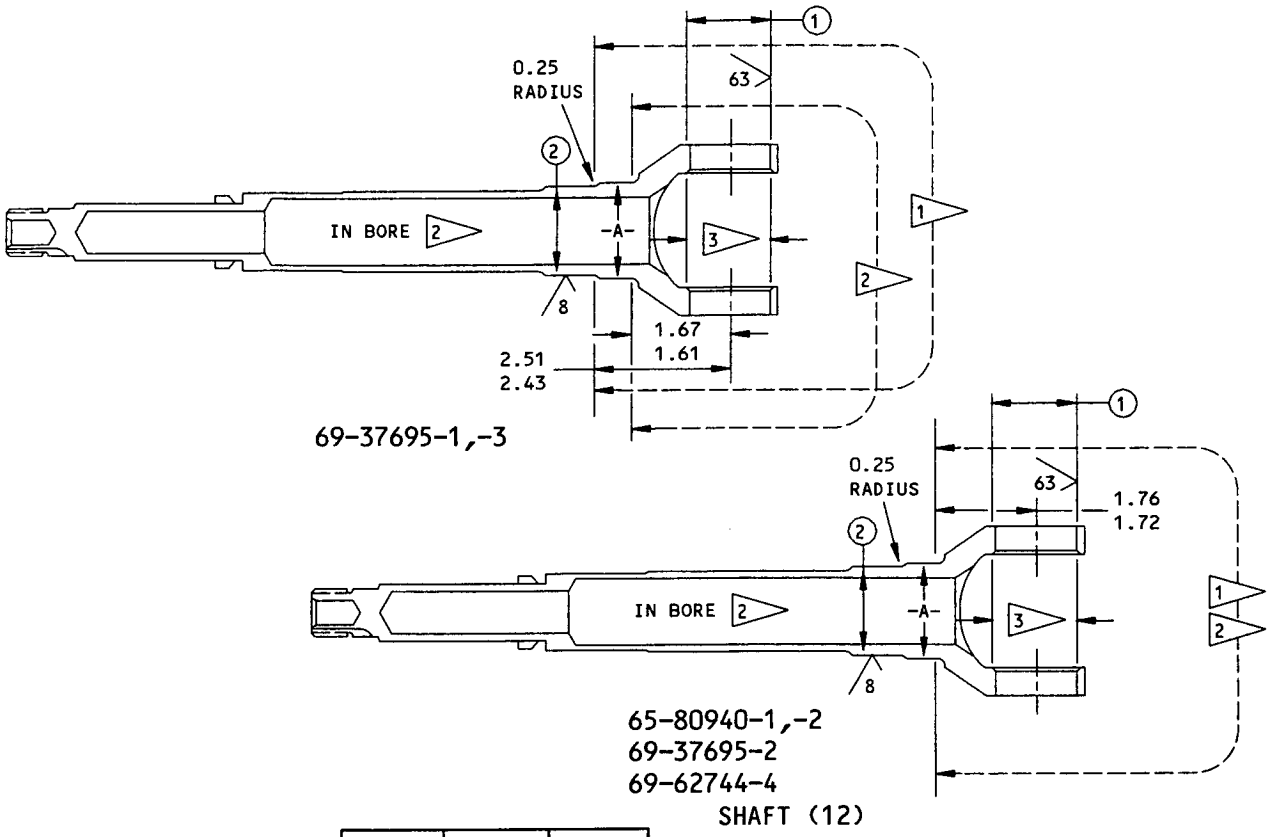
175735,-1, 176632
HOUSING (113)

3 APPLY ONE COAT OF BMS 10-11, TYPE 1 PRIMER (F-20.02)

4 APPLY ONE COAT OF BMS 10-11, TYPE 1 PRIMER (F-20.02) PLUS ONE COAT OF BMS 10-11, TYPE 2 ENAMEL, COLOR 707 GRAY GLOSS (F-21.02)

Refinish and Repair
Figure 403 (Sheet 2)

G17520



		1 5	2 6	-A-
69-37695-1 69-37695-3	DESIGN DIAMETER	1.3279 1.3271	1.378 1.376	1.5744 1.5735
	REPAIR LIMIT 4	1.3501	1.3465	1.5425
69-37695-2 69-62744-4 65-80940-1,-2	DESIGN DIAMETER	1.3279 1.3271	1.3774 1.3765	1.563 1.561
	REPAIR LIMIT 4	1.3501	1.3465	1.533

REFINISH

CADMIUM-TITANIUM PLATE SURFACES AS NOTED 1

APPLY PRIMER AND ENAMEL PER 2 EXCEPT AS NOTED 3

(PLATING OPTIONAL IN BORES)

1 CADMIUM-TITANIUM PLATE (F-15.01) 0.0005-0.0007 THICK ON DIAMETER -A-, 0.0003-0.0005 THICK ON DIAMETER (1)

2 APPLY PRIMER BMS 10-11, TYPE 1 (F-20.02) AND ENAMEL BMS 10-11, TYPE 2, COLOR GRAY (SRF-14.9813).

REPAIR

REF 4

SHOT PEEN (REF 20-10-03):
0.017-0.046 SHOT SIZE
0.012-0.015A INTENSITY
2.0 COVERAGE

MATERIAL: (69-37695-3) 4340M STEEL (270-300 KSI)
(69-37695-1,-2, 69-62744-4) MOD H-11 STEEL (RC 54-56)
(65-80940-1,-2) 430M STEEL (275-300 KSI)

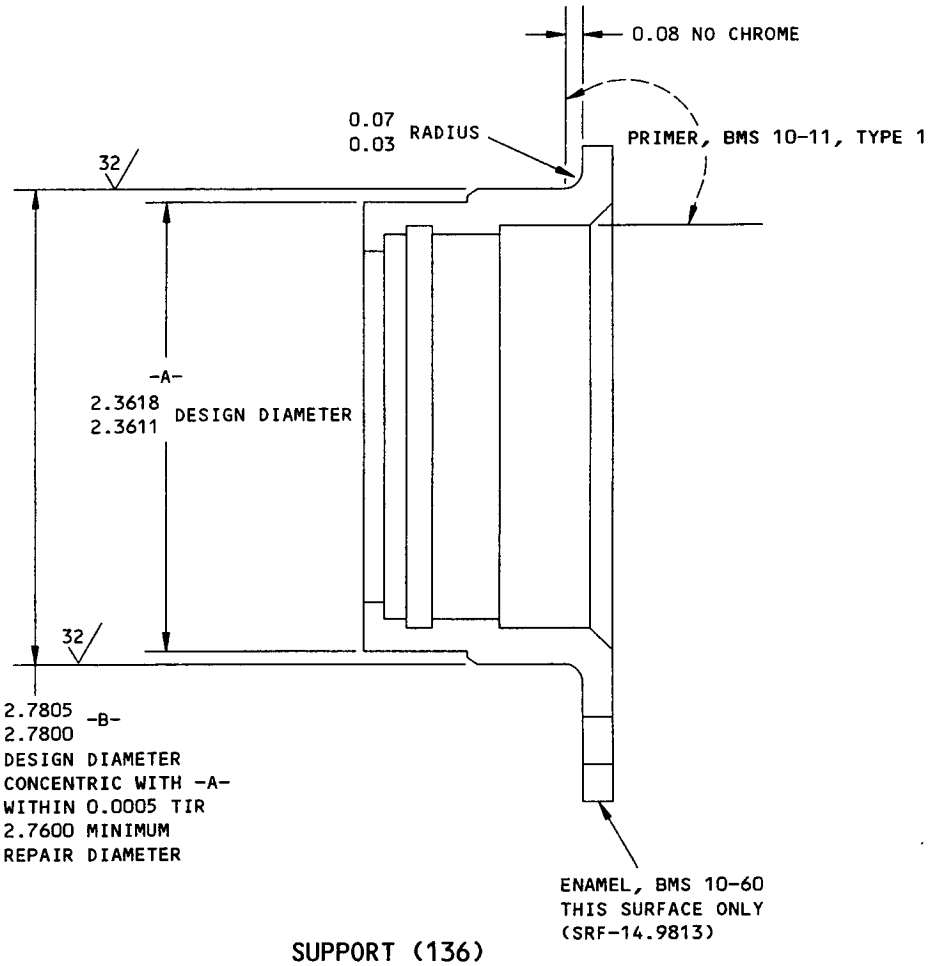
3 DO NOT APPLY PRIMER OR ENAMEL.

4 BUILDUP WITH CHROME PLATE (REF 20-42-03) AND GRIND TO DESIGN DIMENSIONS.

5 THRU IN-LINE PERPENDICULAR TO DIAMETER -A- WITHIN 0.001

6 CONCENTRIC TO DIAMETER -A- WITHIN 0.002 TIR

Shaft Repair and Refinish
Figure 404



SUPPORT (136)
69-37669 ONLY

REFINISH

NO FINISH EXCEPT PRIMER AND ENAMEL AS SHOWN (F-20.02) (SRF-14.9813

1 BUILDUP WITH CHROME PLATE (REF 20-42-03) AND GRIND TO DESIGN DIM. OBSERVE MINIMUM PLATING RUNOUT AT FILLET RADIUS.

REPAIR

AS NOTED 1

BREAK SHARP EDGES 0.003-0.020 R

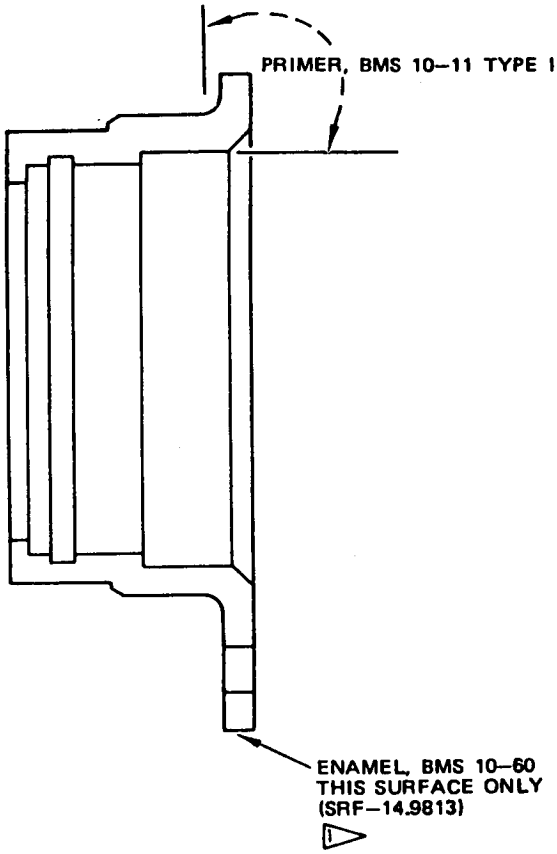
SHOT PEEN (REF 20-10-03)
0.017-0.039 SHOT SIZE
0.010 A2 INTENSITY

MATERIAL: (69-37669-3,-4,-6)
MOD H-11 STEEL (RC 54-56)
(69-37669-5) 4340M STEEL
(270-300 KSI)

ALL DIMENSIONS ARE IN INCHES.

Refinish and Repair
Figure 405

L40903



SUPPORT (136)
69-62733 ONLY

REFINISH

69-62733-1, -2: CHEMICALLY TREAT (F-17.01). APPLY ONE LAYER OF BMS 10-11, TYPE 1 PRIMER (F-20.02) TO AREA SHOWN. APPLY ENAMEL TO AREA SHOWN

69-62733-3:
CAD-TI PLATE (F-15.01) (REF 20-42-02). APPLY ONE LAYER OF BMS 10-11, TYPE 1 PRIMER (F-20.02) TO THE AREA SHOWN

1 69-62733-2 ONLY

MATERIAL: (69-62733-1, -2)
AL ALLOY

(69-62733-3)
4340M STEEL (270-300 KSI)

ALL DIMENSIONS ARE IN INCHES

Index No. Fig. 1101	Part Number	Part Name	Material	Tensile Strength	Stress Relief After Base Material Rework*	
					Temperature (° F)	Time (Hours)
9	65-76606-1	Bolt	4340M	275 to 300	500 to 550	4
	69-52419-2		MOD H-11	RC 54-56	850 to 900	4
10	69-42418-1	Spacer	MOD H-11 Optional 4340M	RC 54-56	500 to 550	8
				270 to 300		
	69-60552-1		MOD H-11	RC 54-56	850 to 900	4
	69-60052-2		4340M	270 to 300	500 to 550	4
11	69-52423-1	Pin	MOD H-11 Optional 4340M	RC 54-56	500 to 550	8
				270 to 300		
	69-60056-1		MOD H-11	RC 54-56	850 to 900	4
	69-60056-2		4340M	270 to 300	500 to 550	4
12	69-37695-1 69-37695-2 69-62744-4	Shaft	MOD H-11	RC 54-56	850 to 900	4
	69-37695-3		4340M	270 to 300	500 to 550	4
	65-80940-1 65-80940-2		4340M	275 to 300	500 to 550	4
13	69-52411-1	Cross	MOD H-11	RC 54-56	850 to 900	4
	69-60058-1		15-5 PH	150 to 170	---	---
19, 35	69-52404-1	Gear	MOD H-11	RC 54-56	850 to 900	4
	69-52404-2		4340M	270 to 300	500 to 550	4
86	66-23901-2	Pawl	MOD H-11	RC 54-56	850 to 900	4
100	69-52440-1	Ratchet	MOD H-11	RC 54-56	850 to 900	4
	69-52440-2		4340M	270 to 300	500 to 550	4
104	69-52433-1	Driver	MOD H-11	RC 54-56	850 to 900	4
107	69-52438-1	Plate	MOD H-11	RC 54-56	850 to 900	4
136	69-37669-3, -4, -6	Support	MOD H-11	RC 54-56	850 to 900	4
	69-37669-5		4340M	270 to 300	500 to 550	4

* After stress relieving, air cool part at 65°F-75°F and magnetic particle examine per SOPM 20-20-01.

Stress Relief Data
Figure 406

ASSEMBLY

1. General

   A. Immerse all O-rings and internally installed parts in hydraulic fluid, Specification MIL-H-5606. These parts are installed wet.

   B. Apply primer, Specification BMS 10-11, type 1, on faying surfaces, from O-ring groove to outer edge, where required by reassembly procedures. Mate and install while primer is wet. Do not allow primer in O-ring grooves, on O-rings, or on sealing surfaces.

   C. Apply primer, Specification BMS 10-11, type 1, to shank and threads of bolts, where required by reassembly procedures, and install while primer is wet.

   D. Lockwire bolts and plugs, where required by reassembly procedures, using double wire twist method.

2. Assembly (See Fig. 1101.)

   A. Install and adjust gears (55 and 58) as follows:

      (1) Install gear (58) and bearing (59) on gear (55). See Fig. 501, diagram No. 1, and determine thickness of shim (60).

      NOTE: Deleted

      (2) See Fig. 501, diagram No. 2, and determine thickness of shim (61). Install gear (55), shims (60 and 61), bearing (59) and gear (58).

      (3) Install bearing (54) on gear (55). Apply primer to faying surfaces and install cover assembly (50) on housing (143). Install bolts (48) and washers (49). Tighten bolts (48) to a torque range of 80 to 100 pound-inches. Lockwire bolts, in pairs.

   B. Install and adjust gears (19 and 35) as follows:

      (1) Preassemble bearing (31) and bearing (29) on gear (19).

      (2) See Fig. 501, diagram No. 3, and determine thickness of shim (25).

      (3) Install gear (19), bearings (29 and 31) and shim (25) into housing (143). Install O-ring (23) on retainer (22) and install retainer (22), washers (21) and bolts (20) on housing (143). Tighten bolts (20) to a torque range of 80 to 100 pound-inches.

(4) Preassemble bearings (47 and 45) on gear (35).

(5) See figure 501, diagram No. 3, and determine thickness of shim (41).

(6) Install gear (35), bearings (45 and 47) and shim (41) into housing (143). Install O-ring (39) on retainer (38) and install retainer (38), washers (37) and bolts (36) on housing (143). Tighten bolts (36) to a torque range of 80 to 100 pound-inches.

(7) Hold gear (55) securely by wedging between top of gear teeth and housing (143), pushing gear (55) toward gear (58).

(8) Check backlash between gears (19 and 35) and gear (58). See figure 601 for backlash limits.

NOTE: If backlash is not within limits, adjust thickness of shims (25 or 41) accordingly.

(9) Remove bolts (20), washers (21) and retainer (22) from housing (143). Apply sealant, BMS 5-95, to fill faying surface groove in retainer (22) and install seal (24) in retainer (22).

(10) Apply primer on faying surfaces and mate retainer (22) to housing (143). Apply primer to bolts (20) and washers (21). Tighten bolts (20) to a torque range of 80 to 100 pound-inches. Lockwire bolts (20) together.

(11) Remove bolts (36), washers (37) and retainer (38) from housing (143). Apply sealant BMS 5-95, to fill faying surface groove in retainer (38) and install seal (40) in retainer (38).

(12) Apply primer on faying surfaces and mate retainer (38) to housing (143). Apply primer on bolts and install bolts (36) and washers (37). Tighten bolts (36) to a torque range of 80 to 100 pound-inches. Lockwire bolts (36) together.

C. Install coupling (16), washer (18) and nut (17) on gear (19). Hold coupling (16) with splined coupling wrench F71228, or equivalent, and tighten nut (17) to a torque range of 160 to 190 pound-inches.

D. Install coupling (32), washer (34) and nut (33) on gear (35). Hold coupling (32) with splined coupling wrench F71228, or equivalent, and tighten nut (33) to a torque range of 160 to 190 pound-inches.

E. Install components in support (136) (Fig. 505).

(1) To install retainer (135), bearing (139), spacer (140) and seal (141) in support (136, 69-37669-3, -5).

(a) Apply sealant, BMS 5-95, to fill groove in support (136) and install seal (141) in support (136). Remove excess sealant.

(b) Coat faying surfaces of support (136) and bearing (139) with MIL-G-23827 grease.

(c) Install spacer (140), bearing (139) and retainer (135) in support (136).

(2) To install retainer (135), O-ring (138A), seal (139A), spacer (140) and bearing (141A) in support (136, 69-62733-1, -2, -3 or 69-37669-4,-6).

(a) Coat faying surfaces of support (136) and bearing (141A) with MIL-G-23827 grease.

(b) Install bearing (141A) and spacer (140) in support (136).

(c) Apply sealant, BMS 5-95, to fill groove in retainer (135) and install seal (139A) in retainer (135). Remove excess sealant.

(d) Install O-ring (138A) in support (136).

(e) Install retainer from step 2.(c) in support (136).

F. Install O-ring (138) in housing (153).

G. Install screws (134) and O-rings (137) into housing (143). Carefully install items from step E into housing.

H. Install washers (133) and nuts (132) on screws (134). Tighten nuts (132) to 50-70 lb-in.

J. Install and adjust gear (128) as follows:

(1) See Fig. 501, diag. No. 4, and determine thickness of shim (127).

(2) Install bearings (130, 131) on gear (128).

(3) Install preassembled gear (128), shim (127), support (111), bolts (124), washers (123) and nuts (122) in housing (143). Tighten nuts (122) to a torque range of 180 to 250 pound-inches. Use temporary spacers, approximately same thickness as lugs of housing (113), or use temporary bolts.

(4) Hold gear (55), to prevent any motion, by applying a locking torque to coupling (16 or 32). Measure and record backlash of gears (55) and (128). See figure 601 for procedure and for backlash limits.

NOTE: If backlash is not within limits, adjust thickness of shim (127) accordingly.

(5) Remove nuts (122), washers (123), bolts (124), support (111), shim (127) and gear (128).

(6) Insert short splined end of coupling (112) into internally splined end of gear (128). Do not allow coupling (112) to cover ring groove on gear (128).

(7) Install ring (129) into groove of gear (128) and simultaneously push coupling (112) into position. Make sure that ring (129) engages groove of coupling (112).

(8) Position preassembled gear (128), coupling (112) and ring (129) in housing (143).

(9) Install shim (127) and O-rings (125, 126) on support (111). Apply primer to mating surfaces and mate support (111) to housing (143).

K. Assemble and install torque brake assy (108) as follows:

(1) Position ends of springs in spring set (119) approx 180 degrees apart.

NOTE: Spring set (119) consists of two matched springs coiled together.

(2) Coat spring set with hydraulic oil, MIL-H-5606 and place into Spring Expansion Fixture, ST6107 (Fig. 502).

(3) Move fixture spring stops , ST6107-( ), inward so that stops contact spring ends when springs are wound. Snug all four stops sufficiently to hold.

(4) Wind spring by rotating fixture drive shaft with socket wrench until OD of spring set snugs against fixture sleeve, ST6107-12. Lock drive shaft with lock screws.

(5) Using aluminum drift, tap all four spring ends axially to snug spring coils together.

(6) Insert sleeve (118) into spring set on left side until flange is properly seated.

(7) Insert sleeve (116) into spring set on right side until flange is properly seated.

(8) Insert adapter (119A) into sleeve (116) partially engaging lugs, leaving splined end protruding on right side approx. 1.0 inch from sleeve flange. While supporting adapter in position, unlock drive shaft with allen wrench and unwind spring set (119) until adapter (119A) is held firmly.

(9) Loosen spring stops on both sides of fixture and move stops outward to clear spring pack assy.

(10) Remove spring pack assy from fixture by tapping with aluminum drift. Do not drop spring pack as reassembly may be necessary.

(11) Deleted

(12) Deleted

(13) Deleted

(14) Place assembled parts in arbor press. Protect flanged faces of sleeves (116, 118) and apply end loads below to stack springs tight.

For assemblies 175701 -- 75-100 pounds
For assemblies 176662 -- 300-500 pounds

(15) Install rings (115) over spring set and press down to remove clearance and end play.

(16) Measure stacked height of assembled parts. Select shims (117) to provide dimension of 4.137-4.149 inches for 175701 and 3.394-3.406 inches for 176662 between outer faces of rings (115), after installation. Remove end rings (115) and install shims as shown in Fig. 504. Shims used on same end of assembly are to be identical at two places 180 degrees opposite. Use the least quantity of shims required by selecting the larger sizes of shims. The dimension may be met without requiring shims, or with shims at one end only. When more than one shim is required, use same thickness at each end within 0.01 inch. Two shims may be stacked together to increase range. Maximum permissible shimming is 0.09 inch at each end (one 0.04-inch shim and one 0.05-inch shim). Trim ends of stacked shims as required so they do not protrude beyond spring OD.

(17) Position spring pack assembly in housing (113) with sleeve (116) toward large end of housing (113).

(18) Install rings (115) on spring pack assembly (114).

(19) Insert shaft (12) through housing (143), gear (128), and support (111).

(20) Position torque brake assembly on shaft (12). Apply primer to faying surfaces and mate housing (113) to support (111).

(21) Install bolts (124), washers (123) and nuts (122). Tighten nuts (122) to 180-250 lb-in.

(22) See Fig. 501, diagram No. 6, and determine thickness of shim (97).

(23) Install O-rings (120 and 121) on support (109). Apply primer to faying surfaces and mate support (109) to housing (113).

L. Assemble universal joint assembly (5).

(1) Coat shank of bolt (9) and threads of nut (7) with MIL-C-11796, corrosion preventive compound. Position yoke (14) on cross (13) and install pin (11), bolt (9), spacer (10) and nut (7) as shown on Fig. 1101. Tighten nut (7) as follows:

(a) The self-locking mechanism of the nut must develop a torque between 25-100 lb-in. at room temperature with no axial load on the nut and the thread fully engaged. The full chamfer of the bolt thread must protrude beyond the locking mechanism of the nut.

(b) Tighten nut to 170-200 lb-in.

(c) Deleted.

M. Determine proper thickness of shim (94)

(1) Install plate (107), bearing (105), driver (104), washer (102), bearing (101), ratchet (100), support (109), bearing (98), shim (94), and retainer (95) on shaft (12).

(2) Install bearing (93) on race (91), and install race (91), new washer (89) and nut (90) on shaft (12). Tighten nut (90) to 50-70 lb-in., using wrench adapter ST6105-1.

(3) Measure the axial free play of the shaft (12) between bearing (93) and bearing (105) as shown in Fig. 501, diagram No. 5. Adjust shim (94), if necessary. Make sure that the bearing (98) position is fixed so the axial play of the bearing is not a factor when establishing the 0.002 to 0.005 axial play.

(a) Make a record of the bearing (98) part number to be used when you do a check of the shaft axial play as specified in par. 3.D. of the functional test procedure.

(4) Remove previously installed parts from output shaft and insert universal joint assembly (5) through gear housing and torque brake assembly.

(5) Install support (106) on output shaft, making sure support engages adapter (110).

CAUTION: DO NOT USE PREVIOUSLY INSTALLED WASHER (89), OR FAILURE OF TANGS AND LOSS OF NUT RETENTION MAY OCCUR.

(6) Install parts removed in step (4). Tighten nut (90) to 200-240 lb-in and bend tangs of washer (89) to secure nut (90).

N. Assemble and install housing (68) as follows:

(1) Position shim (97) in support (109) and mate housing (68) to support.

(2) Remove housing (68).

(3) Install O-rings (83) on pins (82).

(4) Install pawls (84), washers (88), and pins (82) on housing (68).

(5) Apply primer on faying surfaces and mate retainers (81) to housing (68).

(6) Apply primer to bolts and install bolts (79) and washers (80). Lockwire bolts.

(7) Apply primer to faying surfaces and mate housing (68) to support (109).

(8) Apply primer to bolts and install bolts (77, 76 , 75, 73), washer (72), and nuts (78, 74, 71).

(9) For assemblies 65-50322 and 65-50327 tighten bolts (77, 76) to 225-275 lb-in. and bolt (75) to 450-550 lb-in.

(10) For assemblies 65-50302 and 65-50307 tighten bolt (77) to 225-275 lb-in. and bolts (75, 76) to 450-550 lb-in.

(11) Tighten nut (71) to 300-500 lb-in.

(12) Install O-rings (65) on retainers (64).

(13) Insert springs (66) into housing (68).

(14) Apply primer to faying surfaces and mate retainers (64) to housing (68).

(15) Apply primer to bolts and install bolts (62) and washers (63).

(16) Install O-rings (4) and plugs (3). On ratchet end, lockwire bolts (62) and plug (3) together. On universal joint end, lockwire plug (3) to housing (143).

O. Service Transmission Assembly

(1) Position assembly with yoke end of shaft (12) 3 degrees below horizontal plane. Remove plug (1) on upper filler port.

(2) Fill assembly through upper filler port, with hydraulic fluid, MIL-H-5606, until fluid is at filler port level. Nominal capacity is 24 ounces.

(3) Install plug (1). Lockwire plug (l) to housing (143).

(4) Repair or touch-up any damaged or omitted finished surface.

(5) Apply Glyptal across exposed bolt threads and nuts, and to lockwire ends, fasteners and plugs, as applicable.

3. Materials

A. Hydraulic Fluid -- MIL-H-5606 (Ref 20-60-03)

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

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

D. Sealant -- BMS 5-95 (Ref 20-60-04), replaces Permatex No. 2.

E. Paint -- Glyptal (General Electric Co., Insulating Materials Department, Downey, California)

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

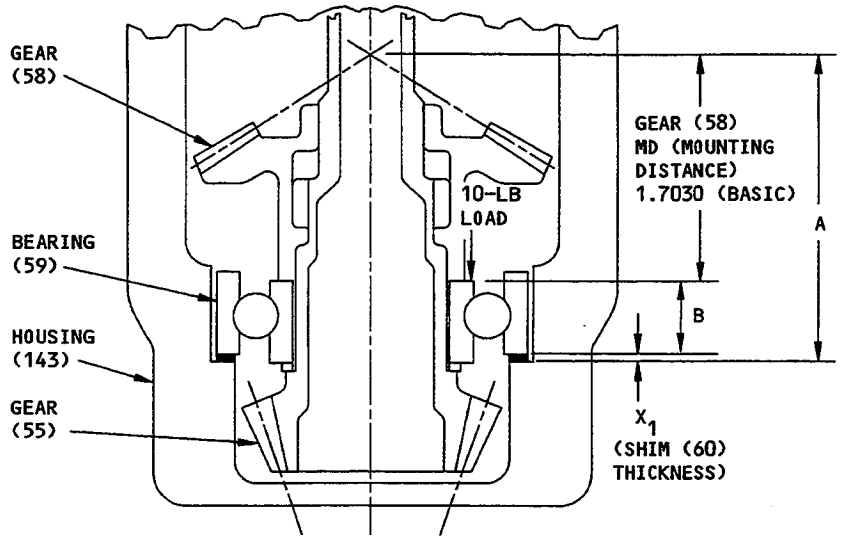


DIAGRAM NUMBER 1

SHIMMING CALCULATION:

$X_1 = A - MD - B \begin{matrix}(+0.000 \\ -0.003)\end{matrix}$

WHERE:
A = MARKED ON HOUSING
B = MEASURED AS SHOWN
MD = MOUNTING DISTANCE

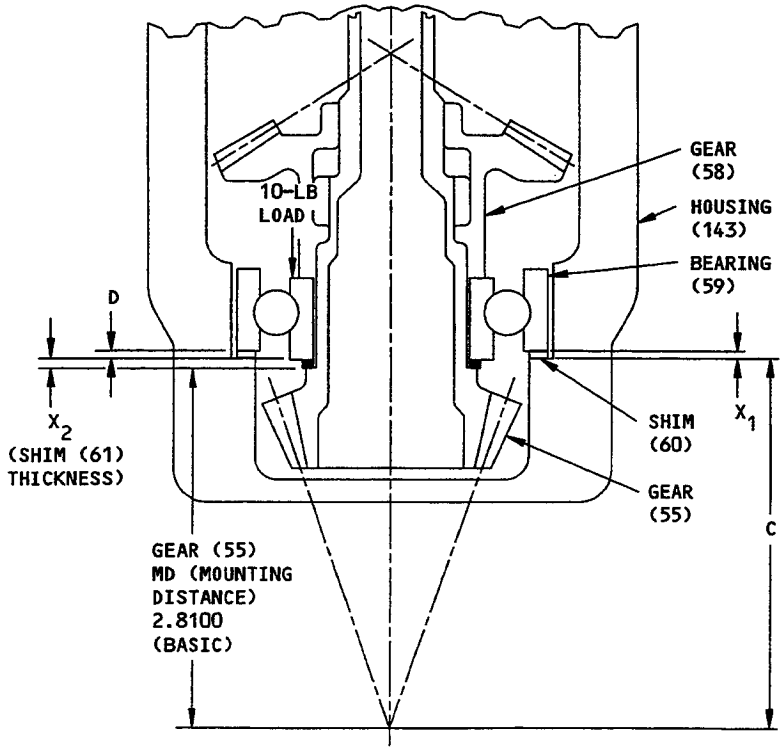


DIAGRAM NUMBER 2

SHIMMING CALCULATION:

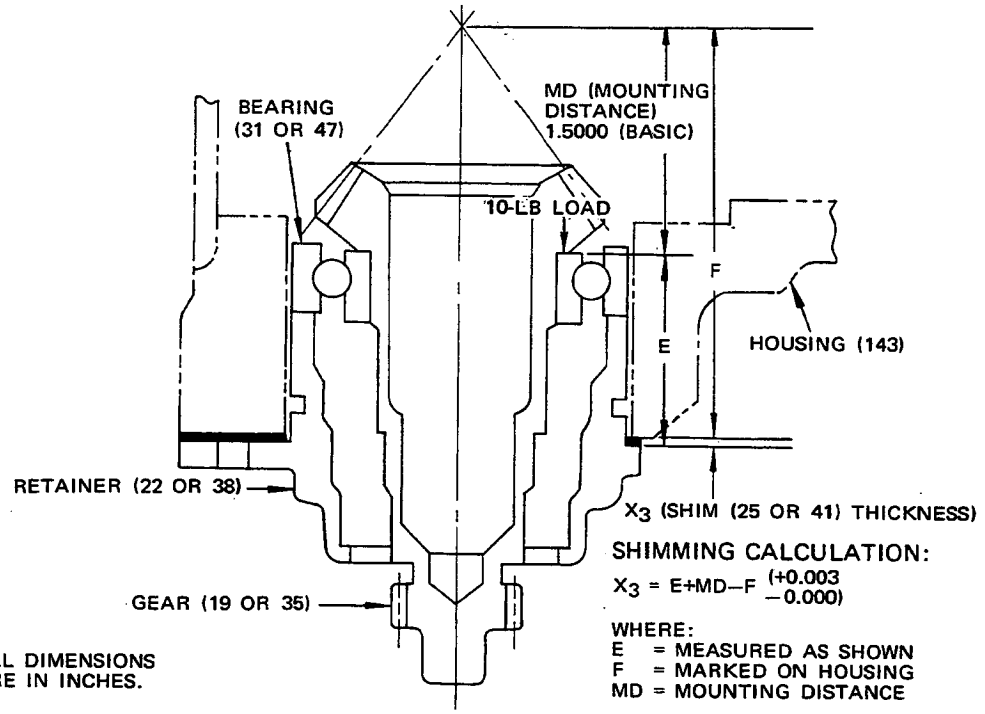
$X_2 = C + X_1 - D - MD \begin{matrix}(+0.000 \\ -0.003)\end{matrix}$

WHERE:
C = MARKED ON HOUSING
D = MEASURED AS SHOWN (DISTANCE FROM BEARING (59) INNER RACE TO OUTER RACE)
MD = MOUNTING DISTANCE
X_1 = VALUE FROM DIAGRAM NUMBER 1

ALL DIMENSIONS ARE IN INCHES

Shimming Diagrams
Figure 501 (Sheet 1)

F47337



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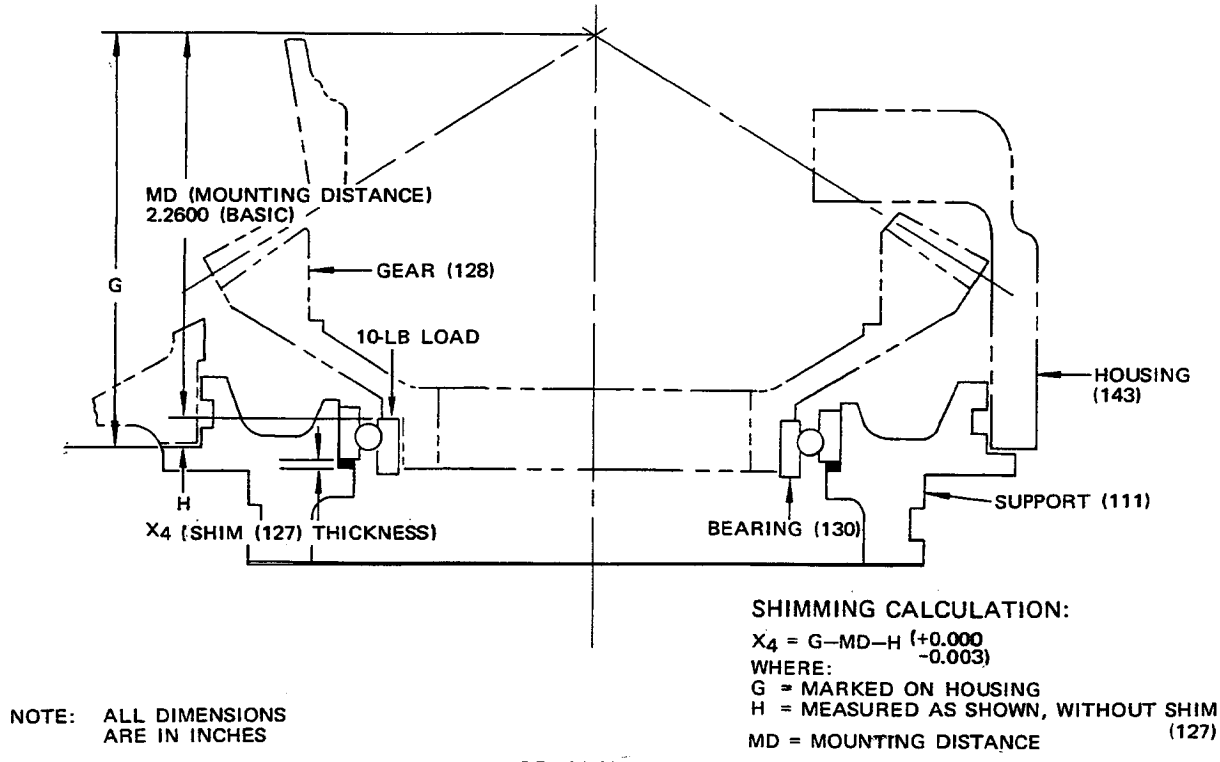


DIAGRAM NUMBER 4

Shimming Diagrams
Figure 501 (Sheet 2)

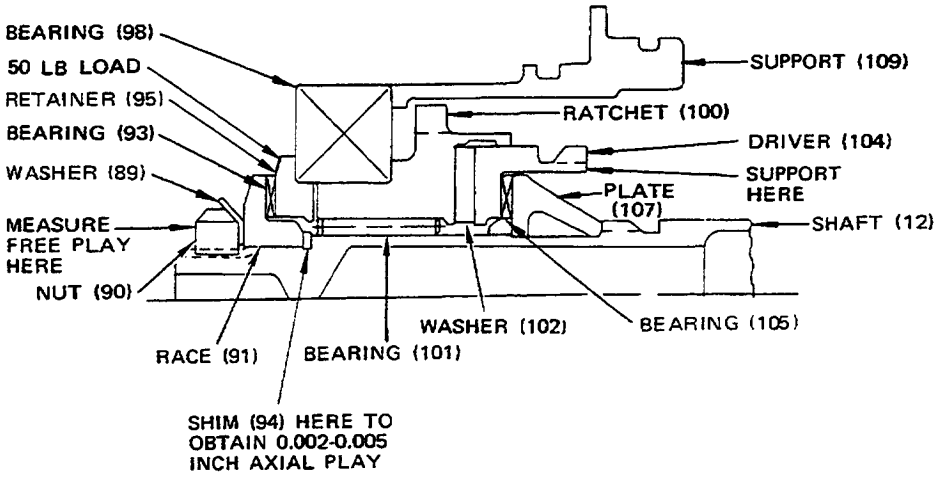
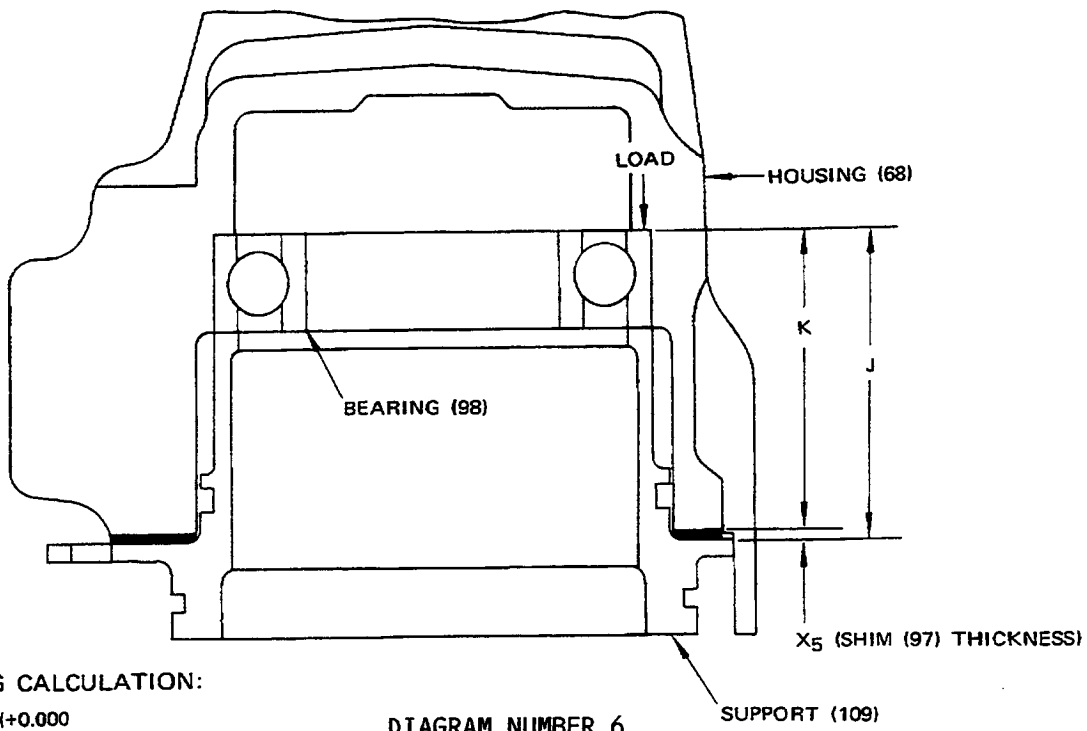


DIAGRAM NUMBER 5



SHIMMING CALCULATION:

$X_5 = J-K \begin{pmatrix} +0.000 \\ -0.003 \end{pmatrix}$

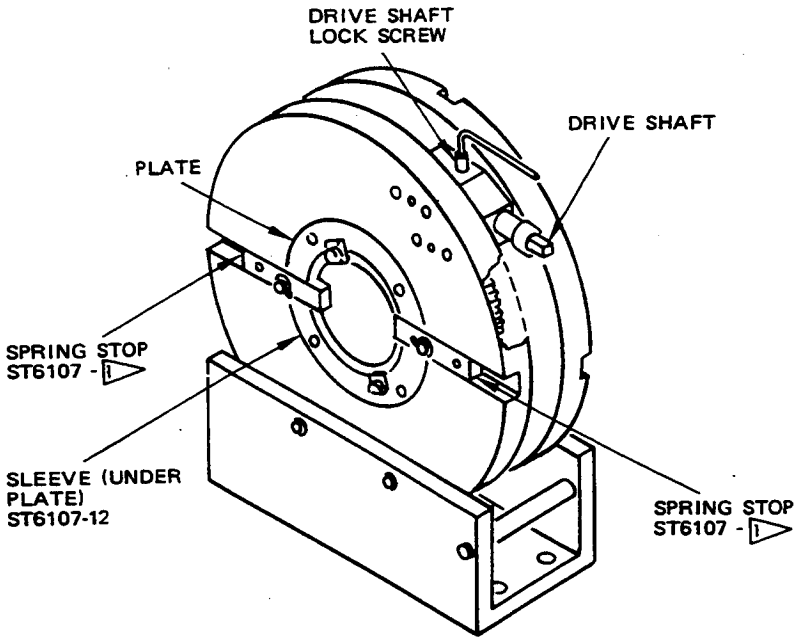
DIAGRAM NUMBER 6

WHERE:
J = MEASURED BY STACKING BEARING (98) ON SUPPORT (109)

K = MEASURED ON HOUSING (68)

Shimming Diagrams
Figure 501 (Sheet 3)

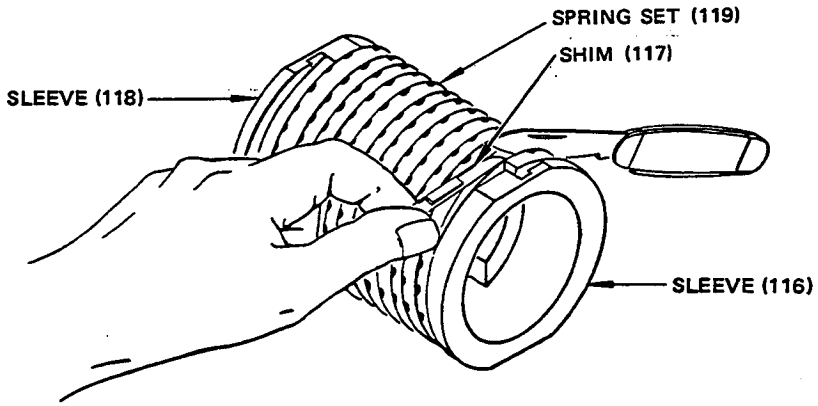
F78584



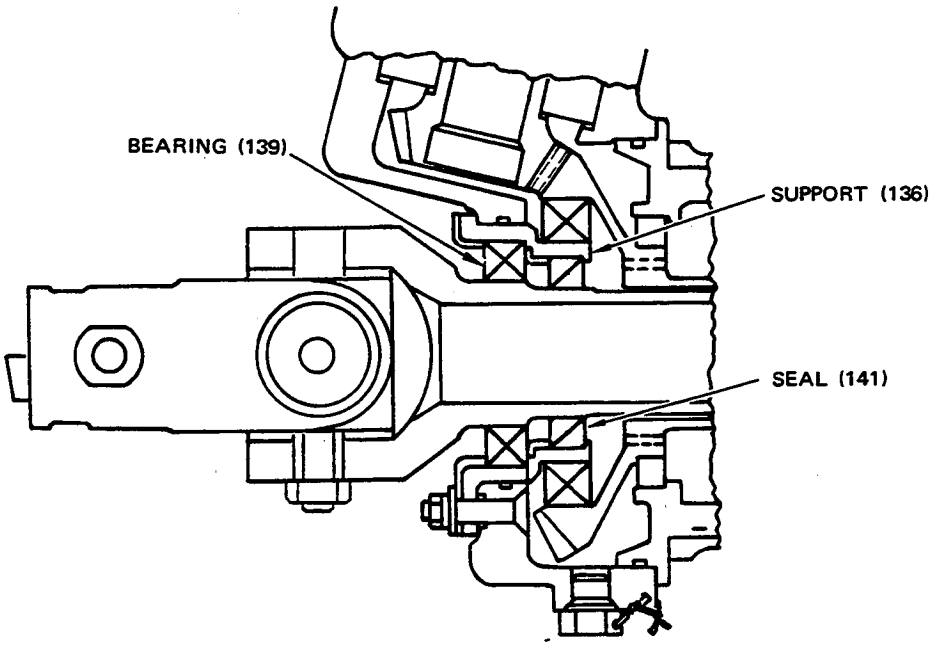
1 ST6107-16 FOR TORQUE BRAKE ASSY, 176666
ST6107-15 FOR TORQUE BRAKE ASSY, 178487-1,-2,-3

Spring Expansion Fixture, ST6107
Figure 502

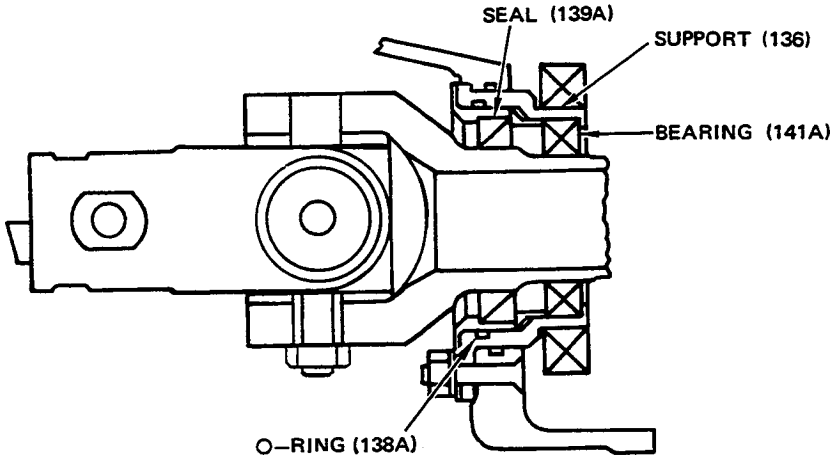
Figure 503 Deleted



Spring Pack Shim Installation
Figure 504



69-37669-3



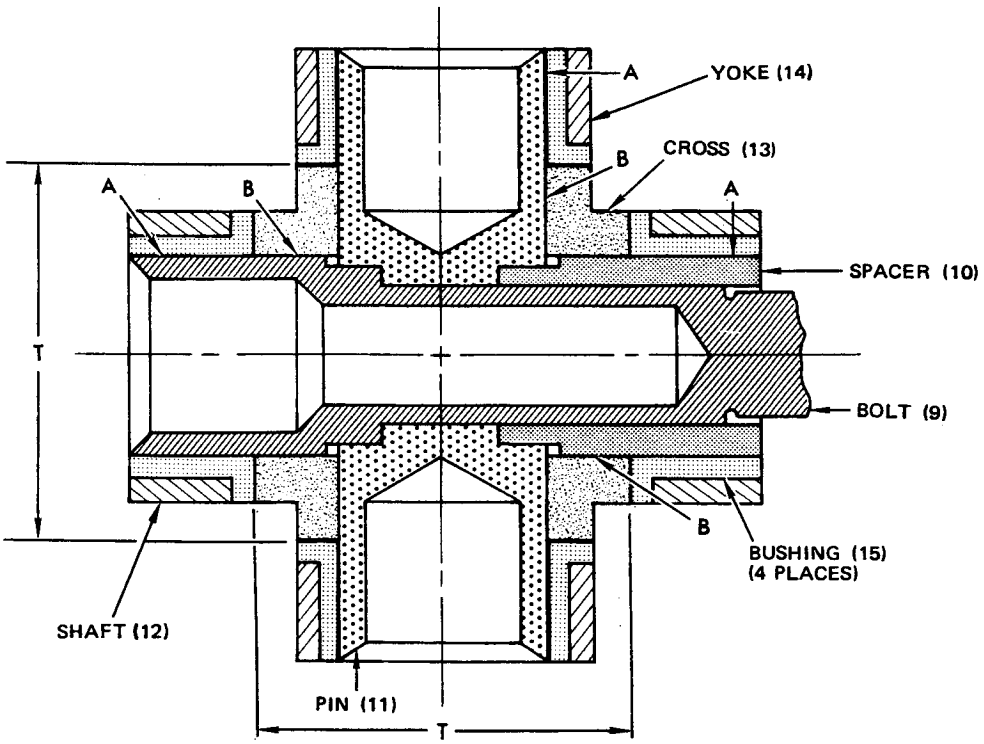
69-62733-1 OR 69-37669-4

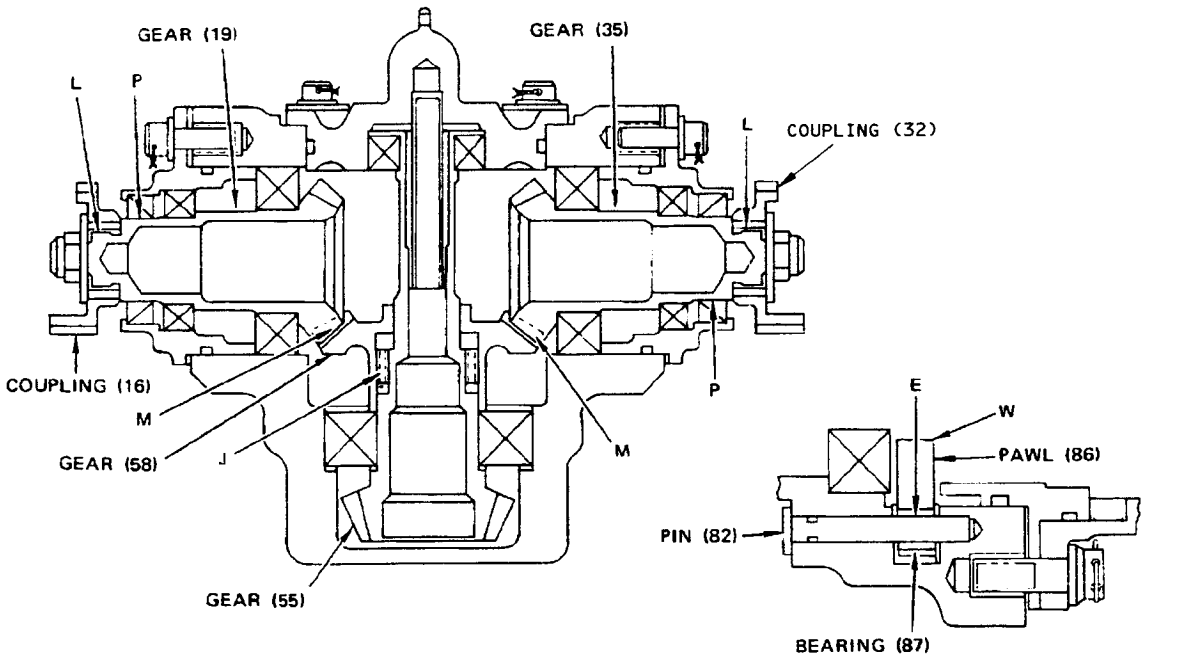
Bearing/Seal Installation in Support
Figure 505

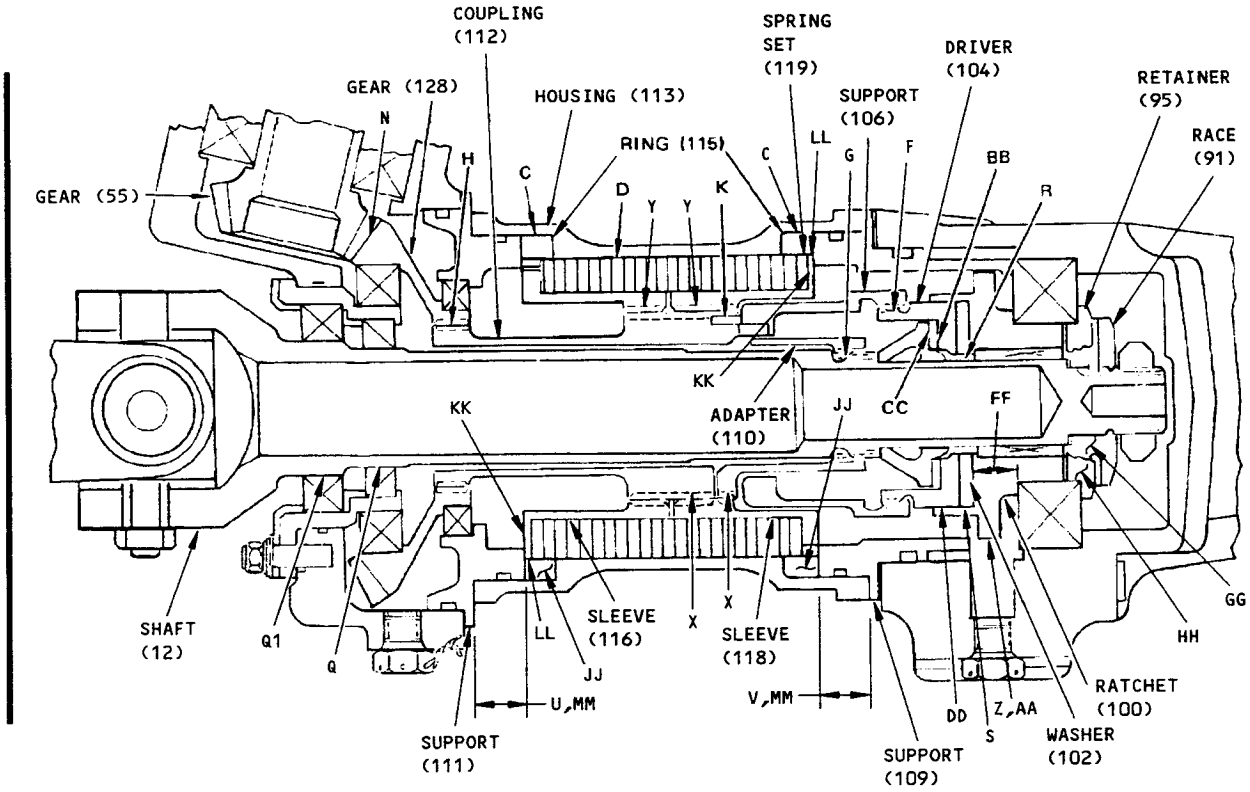
FITS AND CLEARANCES

1. The fits and clearances table lists design dimensions and service wear limits for close tolerance parts of the assembly that are subject to wear or corrosion. Unless otherwise specified, parts should be returned to the design dimensions whenever rework is accomplished.

2. Clearances are given to aid assembly of the components. The values given in the Maximum Allowable Clearance column are the maximum permitted to ensure proper functioning of the unit. If assembled parts fail to meet this requirement, one or more of the parts must be rejected. Parts that are rejected should be reworked if within the rework limits given in the Repair procedure; if not within rework limits, the parts should be scrapped. It is recommended that the design clearances be used as the guiding assembly criteria when newly reworked parts are assembled.







Fits and Clearances
Figure 601 (Sheet 2)

Ref Letter Fig.601	Mating Item No. Fig. 1101	Design Dimensions				Service Wear Limits		
		Dimensions (inches)		Assembly Clearance (inch)		Dimension Limits (inches)		Maximum Allowable Clearance (inch)
		Min	Max	Min	Max	Min	Max	
A	ID 15*[29]	1.1083	1.1093	0.0007	0.0045		1.1156	0.0120
	OD 9,10,11	1.1046	1.1053			1.1036		
B	ID 13	1.1055	1.1064	0.0002	0.0018		1.1079	0.0043
*[12]	OD 9,10,11	1.1046	1.1053			1.1036		
C	ID 113 *[27]	4.000	4.001	0.008	0.011		4.002	0.013
	OD 115	3.990	3.992			3.989		
C	ID 113 *[28]	4.000	4.001	0.006	0.008		4.002	0.010
	OD 115	3.993	3.994			3.992		
D	ID 113 *[25]	3.5342	3.5347	0.1045	0.1060		3.5352	0.1070
	OD 119 *[24]	3.4287	3.4297			3.4282		
D	ID 113 *[26]	3.5230	3.5235	0.0810	0.0825		3.5240	0.0835
	OD 119 *[24]	3.4410	3.4420			3.4405		
E	ID 87	0.3125	0.3130	0.0005	0.0020		0.3130	0.0030
	OD 82	0.3110	0.3120			0.3100		
F	104 *[1] 106			0.0013	0.0067			0.0078
G	110 *[2] 12			0.0015	0.0071			0.0090
H	128 *[3] 112			0.0015	0.0075			0.0090

		Design Dimensions				Service Wear Limits		
Ref Letter Fig. 601	Mating Item No. Fig. 1101	Dimensions (inches)		Assembly Clearance (inch)		Dimension Limits (inch)		Maximum Allowable Clearance (inch)
		Min	Max	Min	Max	Min	Max	
J	58 *[4] 55			0.0000	0.0137			0.0180
K	106 *[5] 112			0.0000	0.0140			0.0250
L	16,19 *[6] 32,35			0.0000	0.0052			0.0090
M	19,35 *[7] 58			0.0009	0.0036			0.0054
N	128 *[8] 55			0.0008	0.0033			0.0050
P	OD 19,35	0.970	0.972			0.966		
Q	*[19] 12 *[20]	1.3760 1.3765	1.3780 1.3774			1.3720 1.3765		
Q1	*[21] 12 *[22]	1.5735 1.5610	1.5744 1.5630			1.5733 1.5590		
R	OD 12	0.9995	1.0000			0.9992		
S	*[18] 102	0.154	0.158			0.135		
T	*[11] 13	1.6185	1.6205			1.6160		
U	111 *[30]	0.580	0.582			0.575		

Fits and Clearances
Figure 601 (Sheet 4)

Ref Letter Fig. 601	Mating Item No. Fig. 1101	Design Dimensions				Service Wear Limits		
		Dimensions (inches)		Assembly Clearance (inch)		Dimension Limits (inch)		Maximum Allowable Clearance (inch)
		Min	Max	Min	Max	Min	Max	
V	109 *[31]	0.580	0.582			0.575		
W	*[13] 86	0.050	0.070			0.075		
X	*[9] 110, 112	0.700	0.704			0.692		
Y	*[10] 116, 118	0.958	0.962			0.950		
Z	*[14] 100	3.085	3.105			3.075		
AA	*[15] 100	0.190	0.210				0.225	
BB	*[11] 104	0.215	0.220			0.211		
CC	*[11] 107	0.695	0.700			0.693		
DD	ID 100 OD 104	2.470 2.465	2.472 2.467	0.003	0.007	2.463	2.474	0.011
FF	*[11] 100	0.495	0.505			0.493		
GG	*[23] 91	0.285	0.290				0.292	
HH	*[11] 95	0.170	0.175			0.168		
JJ	*[11] 115	0.374	0.375			0.372		
KK	*[11] 116, 118	0.118	0.120			0.116		
LL	*[33] 115 *[34]	0.090	0.092			0.088		
MM	109, 111 *[34]	0.208	0.211			0.202		

Fits and Clearances
Figure 601 (Sheet 5)

*[1] Spline backlash, measured at 1.96- to 1.95-inch diameter of support (106) while driver (104) is fixed.

*[2] Spline backlash, measured at 1.1875-inch pitch diameter of spline on shaft (12) while adapter (110) is fixed.

*[3] Spline backlash, measured at 1.8750-inch pitch diameter of spline on gear (128), while coupling (112) is fixed.

*[4] Spline backlash, measured at 2.700-inch pitch diameter of gear (58), while gear (55) is fixed.

*[5] Backlash, measured at 1.70-inch diameter of slots in support (106) or of lugs on coupling (112).

*[6] Spline backlash, measured at 0.8125-inch pitch diameter of internal spline on coupling (16 or 32), while mating gear (19 or 35) is fixed.

*[7] Gear backlash, measured at 0.8125-inch pitch diameter of spline on gear (19 or 35), prior to disassembly. Backlash beyond service limit requires check of wear of each gear in the pair. Lock output shaft and remove all other backlash in gearbox by applying 20 lb-in. torque to bevel gear not being checked.

*[8] Gear backlash, measured at 1.8750-inch pitch diameter of spline of gear (128) prior to complete disassembly. Backlash beyond service limit requires check of wear of each gear in the pair. Partially disassemble gearbox to permit fixing gear (55) and expose spline on gear (128).

*[9] Chordal tooth thickness measured at pitch diameter of 2.125 inches.

*[10] Circular tooth thickness measured at pitch diameter of 2.125 inches.

*[11] Width

*[12] Used for universal joint assembly 69-52403-5 only

*[13] Tip radii of pawls (86)

*[14] OD of ratchet (100) teeth

*[15] Height of ratchet (100) teeth

*[16] Deleted

*[17] 0.004-inch maximum wear on bearing face

*[18] Thickness

*[19] OD of shaft (12, 69-37695-1)

*[20] OD of shaft (12, 69-37695-2, 69-62744-4, 65-80940-1)

*[21] OD of shaft (12, 69-37695-1)

*[22] OD of shaft (12, 69-37695-2, 69-62744-4, 65-80940-1)

*[23] Depth

*[24] Spring measured in free condition

*[25] Housing 176632 and spring set 176641

*[26] Housing 175735 and spring set 175734

*[27] Housing 175735, 175735-1, and ring set 175739

*[28] Housing 176632 and 176643-2

*[29] Bushing DBAF-18-031, 90717

*[30] Support 176572

*[31] Support 176571

*[32] Support 176827 and 178483

*[33] Thickness of inner flange

*[34] Ring 175739 and 175739-1

TESTING

1. Test Equipment

   NOTE: Equivalent substitutes may be used.

   A. Compressed air source: controlled at 0 to 15 psi

   B. Air valve adapter

   C. ST6396: Transmission Tester (Curtiss-Wright Corp., Caldwell Facility, 300 Fairfield Road, Caldwell, New Jersey 07006)

   D. X-Y Recorder:

      (1) Model HP7090A (X-Y Recorder, Hewlett Packard Co., 3000 Hanover St., Palo Alto, California 94304)(Replaces HP7004B)

      (2) Model 6423 DIN A3 (X-Y Recorder, Soltec Corp., Sol Vista Park, 12977 Arroyo St., San Fernando, California 91340-1597). Replaces XY530T (Esterline Corporation, Esterlin-Angus Division, P.O. Box 24000, 1201 Main St., Indianapolis, Indiana 46224)

   E. Model 870 Signal Conditioner (Daytronic Corp., 2589 Corporate Drive Place, Miamisburg, Ohio 45342) (2 required). No longer available, see G. below.

   F. Model 801 Adapter (Daytronic Corp., 2589 Corporate Drive Place, Miamisburg, Ohio 45342). No longer available, see G. below.

   G. Model 3170 or 3270 Strain Gage Conditioner (Daytronic Corp., 2589 Corporate Drive Place, Miamisburg, Ohio 45342). Replaces conditioner and adapter listed in E. and F.

2. Preparation for Test

   A. Ensure that unit has been serviced with hydraulic fluid.

   B. Install air valve adapter in upper filler port.

   C. Turn over couplings, by hand, in both directions. Gears and bearings must be free running without evidence of binding in any position.

   D. With the output and universal shafts free, torque required to rotate input shaft in both directions shall not exceed 12 lb-in.

3. Functional Test (Fig. 1101)

   A. Connect air hose to air valve adapter in upper filler port, and pressurize with filtered air at 14.5-15.5 psi for minimum of 3 minutes. There shall be no leakage. Remove adapter and install plug (1) and O-ring (2) in upper filler port. Lockwire plug (1). Apply Glyptal to lockwire ends.

   B. Rotate input shaft 10 revolutions in each direction. Allow unit to stand for 8 hours. There shall be no leakage at the end of this period.

C. With universal shaft locked, apply 45-50 lb-in. torque to input shaft in clockwise direction. Mark position of input shaft. Apply same torque in counterclockwise direction. Input rotational backlash shall not exceed 20 degrees.

D. Alternately apply 45-50 lb tension and compression load to the universal shaft and do a check to make sure the shaft axial play is as follows:

BEARING ITEM (98)	BEARING (98) AXIAL PLAY	AXIAL PLAY OF UNIVERSAL SHAFT DURING THE FUNCTIONAL TEST
9209H	0.0087-0.0100 inch	0.011 to 0.016 inch
209W	0.0023-0.0089 inch	0.004 to 0.014 inch
209M	0.007-0.011 inch	0.009 to 0.016 inch

NOTE: The shaft axial play is a combination of the 0.002 to 0.005 inch axial play obtained in assembly par. 2.L.3 and the axial play of the bearing (98). The axial play of the bearing (98) is a function of the bearing itself; the axial plays of the different possible bearings are different as shown above.

E. With output and universal shafts free to rotate, check that input torque required to rotate universal shaft in both clockwise and counterclockwise directions does not exceed 12 lb-in.

F. Apply a 50 lb compression load to universal shaft and rotate shaft counterclockwise. A ratcheting sound shall be audible.

G. Mount assembly in test fixture (Fig. 702). Connect torque transducers to X-Y recorder.

H. Connect transmission input shaft to calibrated input torque transducer, and transmission output shaft to calibrated output transducer.

I. Check that X-Y recorder is zeroed before any torque is applied to transmission.

J. Draw vertical lines on X-Y recorder paper at minimum lockout input torque (230 lb-in., 65-50322, 65-50327) (280 lb-in., 65-50302, 65-50307) and at maximum input limits (2510, 3000 lb-in. Fig. 701).

K. Install manual input torque arm.

CAUTION: DO NOT EXCEED MAX INPUT TORQUE (FIG. 701) OR DAMAGE TO UNIT MAY OCCUR.

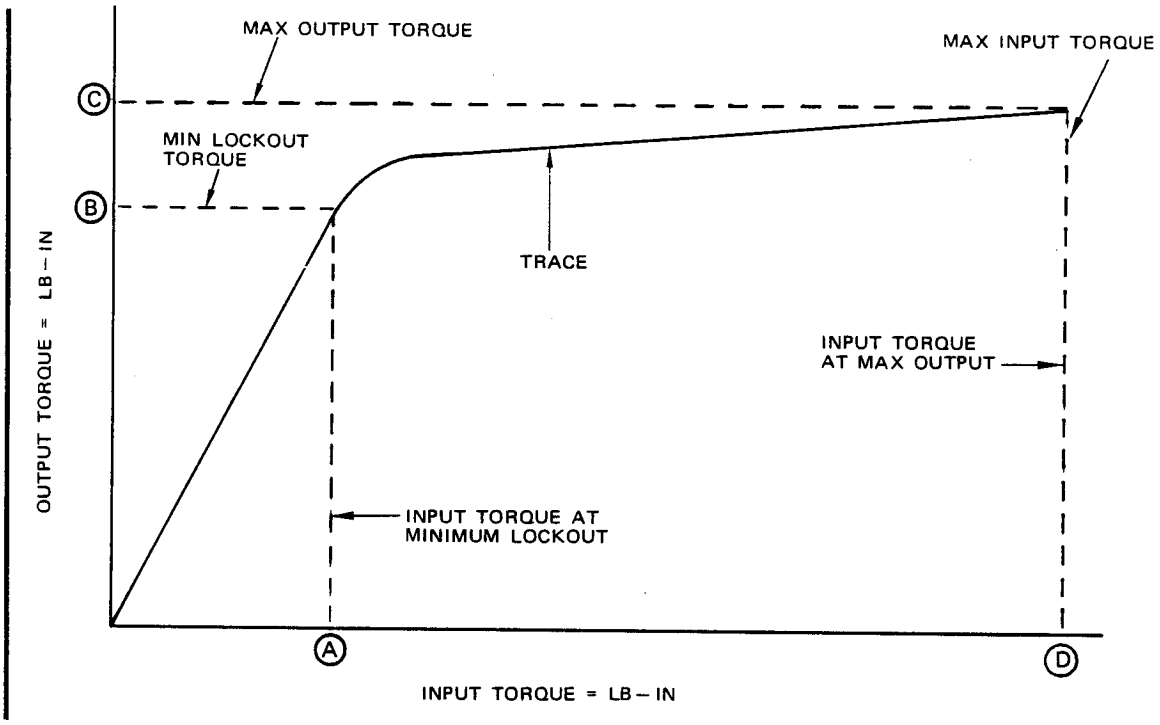
L. Slowly turn the manual input torque arm in the clockwise direction until the input torque is at the maximum limit (Fig. 701).

M. Make sure that the output torque at minimum lockout is not less than 660 lb-in. (65-50322, 65-50327) or 800 lb-in. (65-50302, 65-50307) with a minimum input torque of 230 or 280 lb-in., respectively.

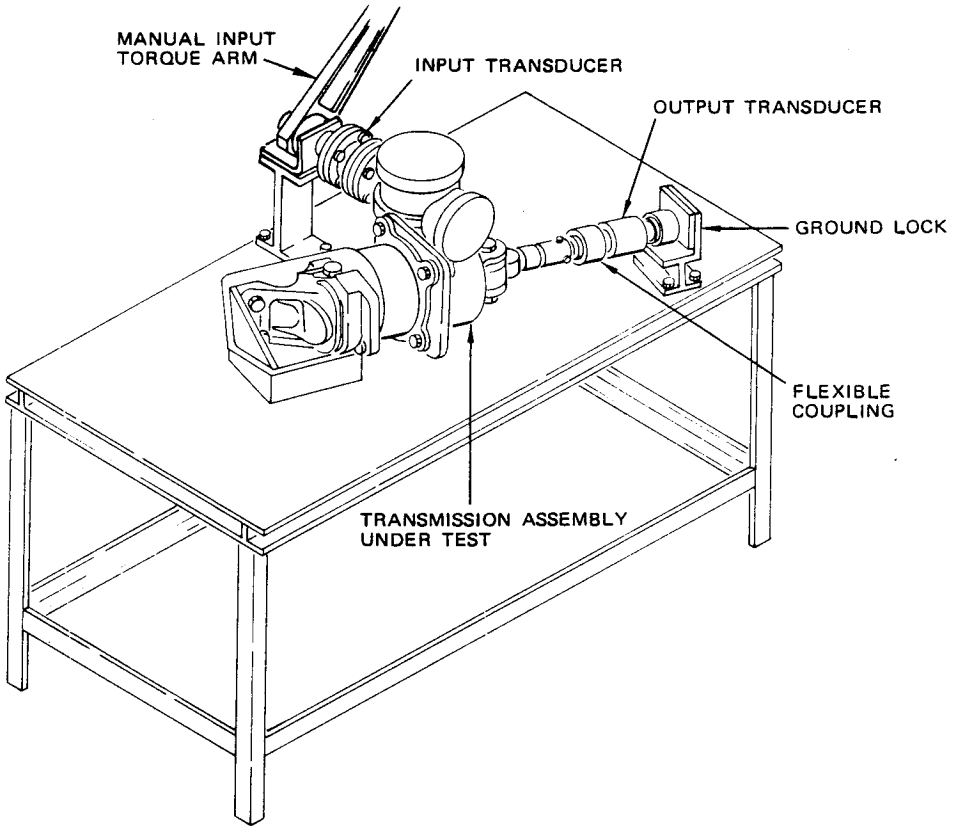
N. Make sure that the output torque is not more than 721 lb-in. (65-50322, 65-50327) or 899 lb-in. (65-50302, 65-50307) with a maximum input torque of 2510 or 3000 lb-in, respectively.

O. Repeat steps L thru N with counterclockwise input torque.

4. Deleted



	65-50322 65-50327	65-50302 65-50307
INPUT (A)	230	280
LOCKOUT (B)	660	800
OUTPUT (C)	721	899
MAX INPUT (D)	2510	3000



Test Fixture
Figure 702

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Figure 703

TROUBLE SHOOTING

1. Trouble shooting is keyed to individual steps of the test procedure. Referenced paragraphs show test procedure in which noted trouble would appear.

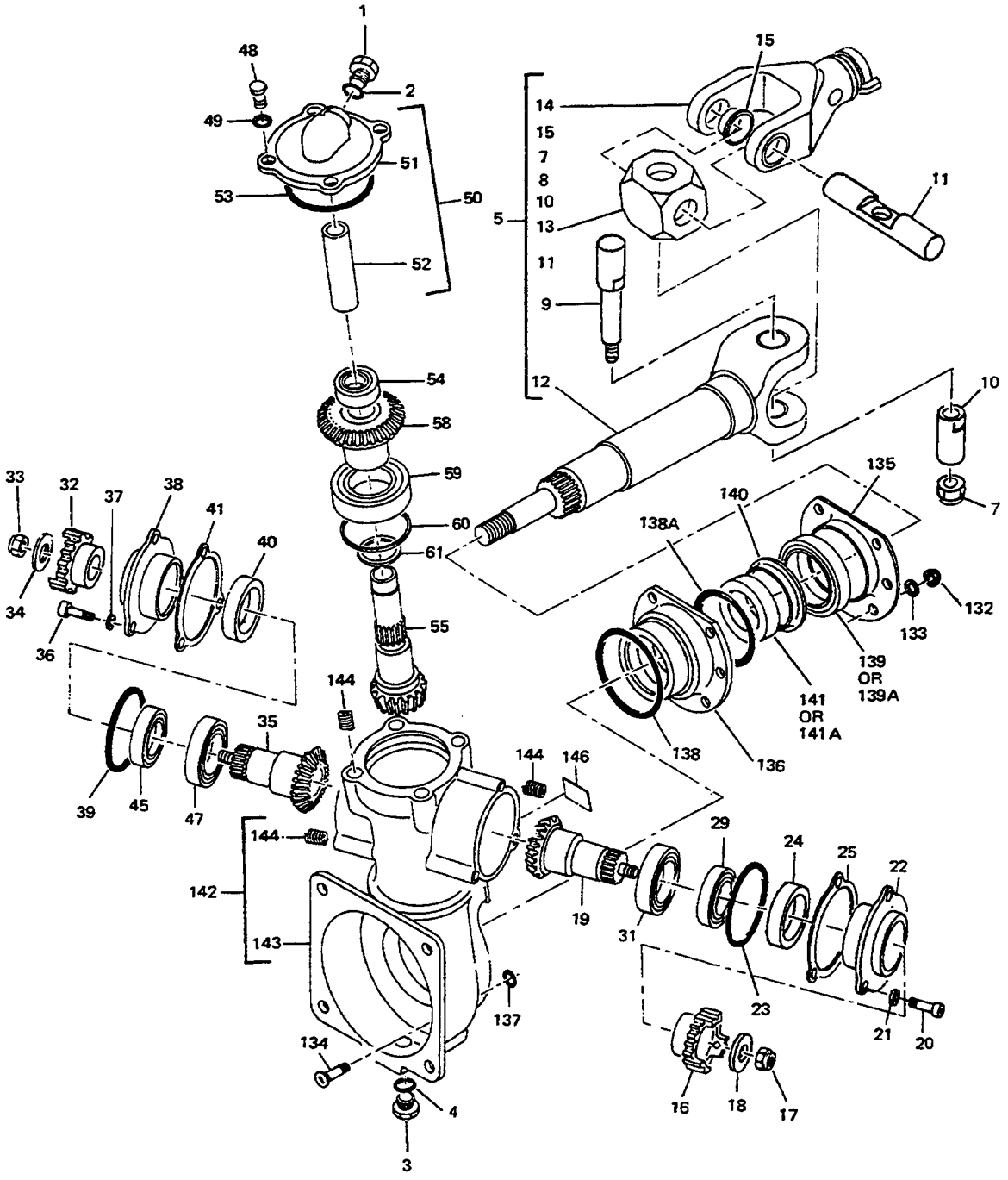
	Trouble	Possible Cause	Correction
A.	External leakage, par. 3.A., B.	Defective O-rings or seals	Replace O-rings or seals
B.	Binding or rough movement, par. 2.C.	Improperly installed or defective components	Correct condition
C.	Excessive backlash, par. 3.C.	Inadequate shims or excessively worn components	Replace shims or other component
D.	Lockout occurs outside of minimum or maximum limits, par. 3.M., N.	Defective torque brake assembly	Replace or repair torque brake assembly

SPECIAL TOOLS, FIXTURES, AND EQUIPMENT

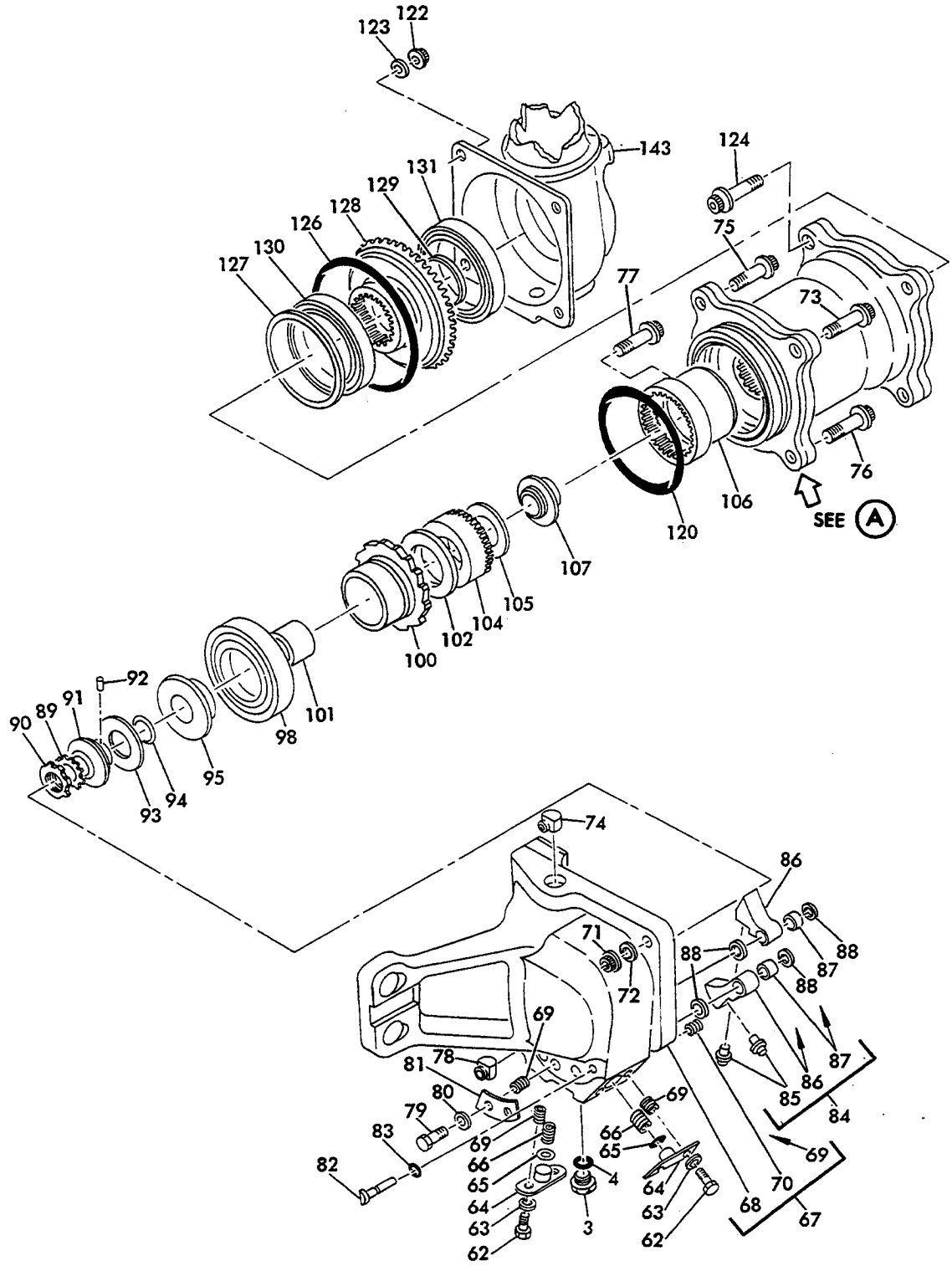
NOTE: Equivalent substitutes may be used for listed items. Refer to Testing for special tools and equipment required for component test.

1. F71228 -- Splined Coupling Wrench (Boeing)
2. ST6107 -- Spring Expansion Fixture *[1]
3. ST6107-12 -- Fixture Sleeve *[1]
4. ST6107-15, -16 -- Spring Stops *[1]
5. ST6105-1 -- Torque Wrench Adapter *[1]

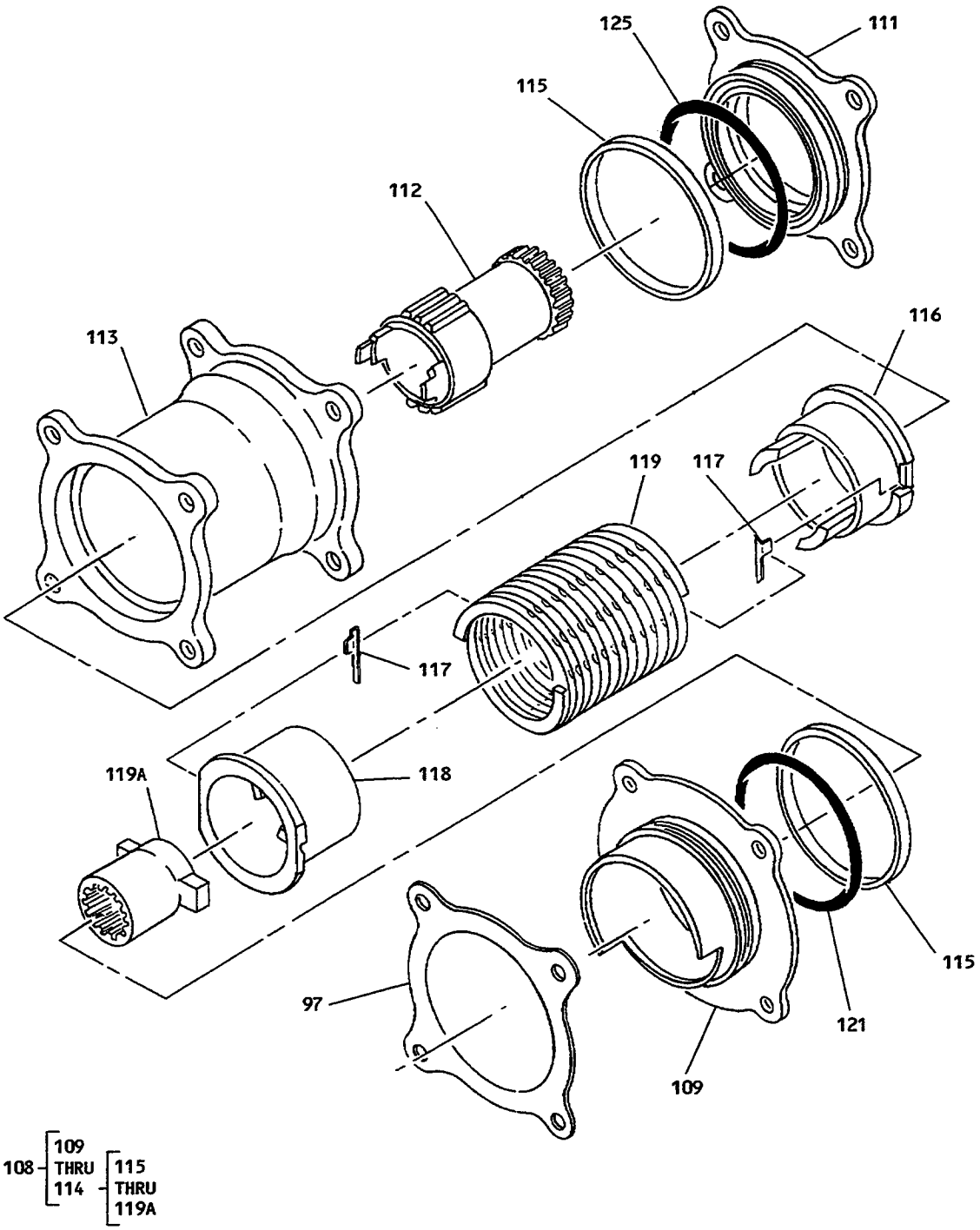
*[1] Curtiss-Wright Corp., Caldwell Facility, 300 Fairfield Rd., Caldwell, New Jersey 07006



Trailing Edge Flap Drive Transmission Assemblies Nos. 2 and 7
Figure 1101 (Sheet 1)



Trailing Edge Flap Drive Transmission Assemblies Nos. 2 and 7
Figure 1101 (Sheet 2)



Trailing Edge Flap Drive Transmission Assemblies Nos. 2 and 7
Figure 1101 (Sheet 3)

G17593

FIG. & ITEM NO.	PART NO.	AIRLINE PART NUMBER	NOMENCLATURE 1 2 3 4 5 6 7	USE CODE	QTY PER ASSY
1101-					
	65-50302-2		TRANSMISSION ASSY, TE FLAP DRIVE NO. 2 (SB 27-1015)	A	RF
	65-50307-2		TRANSMISSION ASSY, TE FLAP DRIVE NO. 7 (SB 27-1015)	B	RF
	65-50302-3		TRANSMISSION ASSY, TE FLAP DRIVE NO. 2	C	RF
	65-50307-3		TRANSMISSION ASSY, TE FLAP DRIVE NO. 7	D	RF
	65-50302-4		TRANSMISSION ASSY, TE FLAP DRIVE NO. 2	E	RF
	65-50307-4		TRANSMISSION ASSY, TE FLAP DRIVE NO. 7	F	RF
	65-50302-5		TRANSMISSION ASSY, TE FLAP DRIVE NO. 2	G	RF
	65-50307-5		TRANSMISSION ASSY, TE FLAP DRIVE NO. 7	H	RF
	65-50302-6		TRANSMISSION ASSY, TE FLAP DRIVE NO. 2	I	RF
	65-50307-6		TRANSMISSION ASSY, TE FLAP DRIVE NO. 7	J	RF
	65-50302-7		TRANSMISSION ASSY, TE FLAP DRIVE NO. 2	K	RF
	65-50307-7		TRANSMISSION ASSY, TE FLAP DRIVE NO. 7	L	RF
	65-50322-2		TRANSMISSION ASSY, TE FLAP DRIVE NO. 2	M	RF
	65-50327-2		TRANSMISSION ASSY, TE FLAP DRIVE NO. 7	N	RF
	65-50322-3		TRANSMISSION ASSY, TE FLAP DRIVE NO. 2	O	RF
	65-50327-3		TRANSMISSION ASSY, TE FLAP DRIVE NO. 7	P	RF
	65-50322-4		TRANSMISSION ASSY, TE FLAP DRIVE NO. 2	Q	RF
	65-50327-4		TRANSMISSION ASSY, TE FLAP DRIVE NO. 7	R	RF
	65-50322-5		TRANSMISSION ASSY, TE FLAP DRIVE NO. 2	S	RF
	65-50327-5		TRANSMISSION ASSY, TE FLAP DRIVE NO. 7	T	RF
	65-50322-6		TRANSMISSION ASSY, TE FLAP DRIVE NO. 2	U	RF

FIG. & ITEM NO.	PART NO.	AIRLINE PART NUMBER	NOMENCLATURE 1 2 3 4 5 6 7	USE CODE	QTY PER ASSY
1101-					
	65-50327-6		TRANSMISSION ASSY, TE FLAP DRIVE NO. 7	V	RF
	65-50322-7		TRANSMISSION ASSY, TE FLAP DRIVE NO. 2	W	RF
	65-50327-7		TRANSMISSION ASSY, TE FLAP DRIVE NO. 7	X	RF
	65-50322-8		TRANSMISSION ASSY, TE FLAP DRIVE NO. 2	Y	RF
	65-50327-8		TRANSMISSION ASSY, TE FLAP DRIVE NO. 7	Z	RF
	65-50322-9		TRANSMISSION ASSY, TE FLAP DRIVE NO. 2 (SB 27-1069)	BA	RF
	65-50327-9		TRANSMISSION ASSY, TE FLAP DRIVE NO. 7 (SB 27-1069)	CA	RF
	65-50322-10		TRANSMISSION ASSY, TE FLAP DRIVE NO. 2	DA	RF
	65-50327-10		TRANSMISSION ASSY, TE FLAP DRIVE NO. 7	EA	RF
	65-50322-11		TRANSMISSION ASSY, TE FLAP DRIVE NO. 2	FA	RF
	65-50327-11		TRANSMISSION ASSY, TE FLAP DRIVE NO. 7	GA	RF
	65-50322-12		TRANSMISSION ASSY, TE FLAP DRIVE NO. 2	HA	RF
	65-50327-12		TRANSMISSION ASSY, TE FLAP DRIVE NO. 7	IA	RF
	65-50322-14		TRANSMISSION ASSY, TE FLAP DRIVE NO. 2	JA	RF
	65-50327-14		TRANSMISSION ASSY, TE FLAP DRIVE NO. 7	KA	RF
	65-80946-5		DELETED		
1	AN814-4DL		. PLUG		1
2	MS28778-4		. PACKING, O-RING		1
3	AN814-4DL		. PLUG		2
4	MS28778-4		. PACKING, O-RING		2
5	69-52403-5		. UNIVERSAL JOINT ASSY	ABEF	1
5	65-76602-2		. UNIVERSAL JOINT ASSY	CDG-J	1
5	65-76602-3		. UNIVERSAL JOINT ASSY	MN	1
5	65-76602-5		. UNIVERSAL JOINT ASSY	OP	1
5	65-76602-6		. UNIVERSAL JOINT ASSY	KLQRU VYZ	1
5	65-76602-8		. UNIVERSAL JOINT ASSY	STWX	1
5	65-76602-10		. UNIVERSAL JOINT ASSY	BA-KA	1
7	BACN10JC7		. . NUT		1
8	BAC27DCT48		DELETED		

FIG. & ITEM NO.	PART NO.	AIRLINE PART NUMBER	NOMENCLATURE 1 2 3 4 5 6 7	USE CODE	QTY PER ASSY
1101-					
9	69-52419-2		. . BOLT (USED ON 69-52403-5)		1
9	65-76606-1		. . BOLT (USED ON 65-76602-2,-3,-5, -6,-8,-10)		1
10	69-52418-1		. . SPACER (USED ON 69-52403-5)		1
10	69-60052-2		. . SPACER (USED ON 65-76602-2,-3, -5,-6,-8,-10)		1
10	69-60052-1		. . SPACER (OPT)(USED ON 65-76602-2, -3,-5,-6,-8,-10)		1
11	69-52423-1		. . PIN, CROSS(USED ON 69-52403-5)		1
11	69-60056-2		. . PIN, CROSS (USED ON 65-76602-2, -3,-5,-6,-8,-10)		1
11	69-60056-1		. . PIN, CROSS (OPT)(USED ON 65-76602-2,-3,-5,-6,-8,-10)		1
12	69-37695-3		. . SHAFT (USED ON 65-77602-2,-3)		1
12	65-80940-1		. . SHAFT (OPT)(USED ON 65-76602-5, -6,-8,-10)		1
12	65-80940-2		. . SHAFT (USED ON 65-76602-5,-6,-8, -10)		1
12	69-37695-1		. . SHAFT (USED ON 69-52403-5, 65-76602-2,-3)		1
12	69-37695-2		. . SHAFT (OPT) (USED ON 65-76602-5, -6,-8,-10)		1
12	69-62744-4		. . SHAFT (REPLS 69-37695-1)(POST SB 27-1048)(USED ON 69-52403-5, 65-76602-2,-3)		1
13	69-52411-1		. . CROSS, TRUNNION (USED ON 69-52403-5)		1
13	69-60058-1		. . CROSS, TRUNNION (USED ON 65-76602-2,-3,-5,-6,-8,-10)		1
14	69-52414-1		. . YOKE (OPT)(USED ON 65-76602-3, -6)		1
14	69-52414-2		. . YOKE (USED ON 69-52403-5)		1
14	69-52414-2		. . YOKE (OPT)(USED ON 65-76602-2,-5)		1
14	69-52414-3		. . YOKE (OPT)(USED ON 65-76602-3,-6)		1
14	69-52414-4		. . YOKE (OPT)(USED ON 65-76602-2, -5,-8,-10)		1
14	69-52414-5		. . YOKE (USED ON 65-76602-3,-6)		1
14	69-52414-6		. . YOKE (USED ON 65-76602-2,-5,-8)		1
14	69-52414-6		. . YOKE (OPT)(USED ON 65-76602-10)		1
14	69-52414-8		. . YOKE (USED ON 65-76602-10)		1
15	AJF18A101		. . BUSHING, V50294 *[1]		4
15	DBAF18-031		. . BUSHING, V81376 *[1]		4
15	FBR18A15BA		. . BUSHING, V73134 *[1]		4
15	NHLF18-203A		. . BUSHING, V15860 *[1]		4

FIG. & ITEM NO.	PART NO.	AIRLINE PART NUMBER	NOMENCLATURE 1 2 3 4 5 6 7	USE CODE	QTY PER ASSY
1101-					
15	90717		. . BUSHING, V09455 *[1]		4
15	AFDU17-3-14		. . BUSHING, V15860 *[2]		4
15	AJF18A106DU		. . BUSHING, V50294 *[2]		4
15	HJF18DU103		. . BUSHING, V02758 *[2]		4
16	69-52427-1		. COUPLING		1
17	BACN10JC6		. NUT (REPLS NAS679A6)		1
18	66-24715-1		. WASHER		1
19	69-52404-1		. GEAR (OPT)		1
19	69-52404-2		. GEAR		1
20	NAS1351-4H12P		. BOLT		3
21	AN960-416		. WASHER		3
22	69-37696-1		. RETAINER	A-R	1
22	69-37696-3		. RETAINER	S-V	1
22	69-37696-4		. RETAINER	W-KA	1
23	MS28775-135		. O-RING		1
24	21959-0269		. SEAL, V73680 (OPT TO 69-73393-2)	A-GA	1
24	69-73393-2		. SEAL		1
25	69-52425-1		. SHIM		1
29	BACB10BB25		. BEARING (REPLS BACB10A345, BACB10A407)		1
31	BACB10BA30		. BEARING (REPLS BACB10A17)		1
32	69-52427-1		. COUPLING		1
33	BACN10JC6		. NUT (REPLS NAS679A6)		1
34	66-24715-1		. WASHER		1
35	69-52404-2		. GEAR		1
35	69-52404-1		. GEAR (OPT)		1
36	NAS1351-4H12P		. BOLT		3
37	AN960-416		. WASHER		3
38	69-37696-1		. RETAINER	A-D I-R	1
38	69-37696-2		. RETAINER	E-H	1
38	69-37696-3		. RETAINER	W-KA	1
38	69-37696-4		. RETAINER		1
39	MS28775-135		. PACKING, O-RING		1
40	21959-0269		. SEAL, V73680 (OPT TO 69-73393-2)	A-GA	1
40	69-73393-2		. SEAL		1
41	69-52425-1		. SHIM	A-D I-KA	1
41	69-52425-2		. SHIM	E-H	1
45	BACB10BB25		. BEARING (REPLS BACB10A345, BACB10A407)		1
47	BACB10BA30		. BEARING (REPLS BACB10A17)		1
48	NAS1351-4H12P		. BOLT		4
49	AN960-416		. WASHER		4
50	69-37685-2		. COVER ASSY	A-R	1
50	69-37685-4		. COVER ASSY	S-KA	1

FIG. & ITEM NO.	PART NO.	AIRLINE PART NUMBER	NOMENCLATURE 1 2 3 4 5 6 7	USE CODE	QTY PER ASSY
1101-					
51	69-37634-5		. . COVER (PREF) (USED ON 69-37685-2,-4)		1
51	69-37634-8		. . COVER (OPT) (USED ON 69-37685-4)		1
51	69-37634-7		. . COVER (OPT) (USED ON 69-37685-4)		1
52	66-25130-2		. . TUBE		1
53	MS28775-146		. PACKING, O-RING		1
54	BACB10BA17		. BEARING (REPLS BACB10A333)		1
55	69-52406-2		. GEAR	M-KA	1
55	69-52406-1		. GEAR (OPT)		1
58	69-52405-2		. GEAR	W-KA	1
58	69-52405-1		. GEAR (OPT)		1
59	BACB10AZ30		. BEARING (REPLS BACB10A13)		1
60	66-23946-1		. SHIM		1
61	66-24700-1		. SHIM		1
62	NAS1351-3H6P		. BOLT		4
63	AN960-10		. WASHER		4
64	66-24729-1		. RETAINER	A-R	2
64	66-24729-2		. RETAINER	S-KA	2
65	MS28775-012		. PACKING, O-RING		2
66	66-23937-1		. SPRING		2
67	69-52457-1		. HOUSING ASSY	ACEGIK	1
67	69-52457-2		. HOUSING ASSY	BDFHJL	1
67	69-52457-5		. HOUSING ASSY	MOQ	1
67	69-52457-6		. HOUSING ASSY	NPR	1
67	69-52457-7		. HOUSING ASSY	SU	1
67	69-52457-8		. HOUSING ASSY	TV	1
67	69-52457-9		. HOUSING ASSY	SU	1
67	69-52457-10		. HOUSING ASSY	TV	1
67	69-52457-11		. HOUSING ASSY	WYBA	1
67	69-52457-12		. HOUSING ASSY	XZ CA	1
67	69-52457-13		. HOUSING ASSY	DA	1
67	69-52457-14		. HOUSING ASSY	EA	1
67	69-52457-15		. HOUSING ASSY	FA HA JA	1
67	69-52457-16		. HOUSING ASSY	GA IA KA	1
68	65-50267-1		. . HOUSING (USED ON 69-52457-1)		1
68	65-50267-2		. . HOUSING (USED ON 69-52457-2)		1
68	65-50267-5		. . HOUSING (USED ON 69-52457-5)		1
68	65-50267-6		. . HOUSING (USED ON 69-52457-6)		1
68	65-50267-7		. . HOUSING (USED ON 69-52457-7,-9)		1
68	65-50267-8		. . HOUSING (USED ON 69-52457-8,-10)		1
68	65-50267-9		. . HOUSING (USED ON 69-52457-11)		1
68	65-50267-10		. . HOUSING (USED ON 69-52457-12)		1

FIG. & ITEM NO.	PART NO.	AIRLINE PART NUMBER	NOMENCLATURE 1 2 3 4 5 6 7	USE CODE	QTY PER ASSY
1101-					
	65-50267-11		. . HOUSING (USED ON 69-52457-13)		1
68	65-50267-12		. . HOUSING (USED ON 69-52457-14)		1
68	65-50267-13		. . HOUSING (USED ON 69-52457-15)		1
68	65-50267-14		. . HOUSING (USED ON 69-52457-16)		1
69	MS21208F1-15		. . INSERT		6
70	MS21208F6-15		. . INSERT (USED ON 69-52457-1,-2)		1
70	MS21208F5-15		. . INSERT (USED ON 59-52457-5,-6,-9 THRU -16)		1
71	BACN10HR6		. NUT		1
72	BACW10BN6P		. WASHER		1
73	BACB30MT6T14		. BOLT	A-IA	1
73	BACB30LE6-14		. BOLT	JA KA	1
74	NAS577-6A		. NUT (REPLS NAS577-6) (REPLD BY NAS577B6A)		1
74	NAS577B6A		. NUT (REPLS NAS577-6A)		1
75	BACB30MT6T10		. BOLT	A-IA	1
75	BACB30LE6-10		. BOLT	JA KA	1
76	BACB30MT5HT6		. BOLT	M-IA	1
76	BACB30MT6HT6		. BOLT	A-L	1
76	BACB30LE5H6		. BOLT	JA KA	1
77	BACB30MT6T10		. BOLT	A-L	1
77	BACB30MT5T10		. BOLT	M-KA	1
77	BACB30LE5-10		. BOLT	JA KA	1
78	NAS577-6A		. NUT (REPLS NAS577-6) (REPLD BY NAS577B6A)	A-L	1
78	NAS577B6A		. NUT (REPLS NAS577-6A)	A-L	
78	NAS577-5A		. NUT (REPLS NAS577-5) (REPLD BY NAS577B5A)	M-IA	1
78	NAS577B5A		. NUT (REPLS NAS577-5A)	M-KA	
79	NAS1351-3H6P		. BOLT		2
80	AN960-10		. WASHER		2
81	66-24728-1		. RETAINER	A-R	1
81	66-24728-2		. PLATE	S-KA	1
82	66-24717-3		. PIN	W-KA	2
82	66-24717-2		. PIN (OPT)		2
83	MS28775-009		. PACKING, O-RING		2
84	66-24736-2		. PAWL ASSY		2
85	66-23908-1		. . GUIDE		1
86	66-23901-2		. . PAWL		1
87	66-25126-1		. . BEARING		1
88	66-23929-2		. WASHER		4
89	MS172275		. WASHER		1
90	69-52442-1		. NUT		1
91	69-52436-1		. RACE		1
92	AN122691		. DOWEL (		1
93	NTA2031		. BEARING, V60380		1

FIG. & ITEM NO.	PART NO.	AIRLINE PART NUMBER	NOMENCLATURE 1 2 3 4 5 6 7	USE CODE	QTY PER ASSY
1101-					
94	69-52444-1		. SHIM		1
95	69-52429-1		. RETAINER		1
97	69-52452-1		. SHIM		1
98	9209H		. BEARING, V38443		1
98	209W		. BEARING, V21335 (OPT TO 9209H)		1
98	209M		. BEARING, V38443 (OPT TO 209W)		1
100	69-52440-2		. RATCHET	W-KA	1
100	69-52440-1		. RATCHET (OPT)		1
101	J1616		. BEARING, V60380		1
102	69-52443-1		. WASHER		1
104	69-52433-1		. DRIVER		1
105	NTA2031		. BEARING, V60380		1
106	69-37663-3		. SUPPORT	M-KA	1
106	69-37663-2		. SUPPORT (OPT)		1
107	69-52438-1		. PLATE		1
108	176666		. BRAKE ASSY, TORQUE, V71791	A-L	1
108	178487-1		. BRAKE ASSY, TORQUE, V71791	M-R	1
108	178487-2		. BRAKE ASSY, TORQUE, V71791	S-V	1
108	178487-3		. BRAKE ASSY, TORQUE, V71791	W-KA	1
109	176571		. . SUPPORT, V71791 (USED ON 176666)		1
109	178483		. . SUPPORT, V71791 (USED ON 178487-1)		1
109	178483-1		. . SUPPORT, V71791 (USED ON 178487-2)		1
109	178483-2		. . SUPPORT, V71791 (USED ON 178487-3)		1
110	175720		DELETED		
111	176572		. . SUPPORT, V71791 (USED ON 176666)		1
111	176827		. . SUPPORT, V71791 (USED ON 178487-1)		1
111	176827-1		. . SUPPORT, V71791 (USED ON 178487-2)		1
111	176827-2		. . SUPPORT, V71791 (USED ON 178487-3)		1
112	175773		. . COUPLING, V71791 (USED ON 176666)	A-L	1
112	175773-1		. . COUPLING, V71791 (USED ON 178487-1,-2,-3) (PREF)	M-KA	1
112	175773		. . COUPLING, V71791 (OPT TO 175773-1)	M-KA	1

FIG. & ITEM NO.	PART NO.	AIRLINE PART NUMBER	NOMENCLATURE 1 2 3 4 5 6 7	USE CODE	QTY PER ASSY
1101-					
113	176632		. . HOUSING, V71791 (USED ON 176666)		1
113	175735		. . HOUSING, V71791 (USED ON 178487-1)		1
113	175735		. . HOUSING, V71791 (USED ON 178487-2,-3) (OPT TO 175735-1)		1
113	175735-1		. . HOUSING, V71791 (USED ON 178487-2,-3) (OPT TO 175735)		1
114	176662		. . SPRING PACK ASSY, V71791 (USED ON 176666)		1
114	175701		. . SPRING PACK ASSY, V71791 (USED ON 178487-1,-2,-3)		1
115	176643-2		. . . RING, V71791 (USED ON 176662)		2
115	175739		. . . RING, V71791 (USED ON 175701) (OPT TO 175739-1)		2
115	175739-1		. . . RING, V71791 (USED ON 175701) (OPT TO 175739)		2
116	176650		. . . SLEEVE, V71791 (USED ON 176662)		1
116	175740		. . . SLEEVE, V71791 (USED ON 175701)		1
116	175740-1		. . . SLEEVE, V71791 (USED ON 175701) (OPT TO 175740)		1
117	176278X		. . . SHIM, V71791		AR
118	176649		. . . SLEEVE, V71791 (USED ON 176662)		1
118	175732		. . . SLEEVE, V71791 (USED ON 175701) (OPT TO 175732-1)		1
118	175732-1		. . . SLEEVE, V71791 (USED ON 175701) (OPT TO 175732)		1
119	176641		. . . SPRING SET, V71791 (USED ON 176662) (OPT TO 176641-1)		1
119	176641-1		. . . SPRING SET, V71791 (USED ON 176662) (OPT TO 176641)		1
119	175734		. . . SPRING SET, V71791 (USED ON 175701) (OPT TO 175734-1)		1
119	175734-1		. . . SPRING SET, V71791 (USED ON 175701) (OPT TO 175734)		1
119A	175720		. . . ADAPTER, V71791 (USED ON 176662)		1
119A	175720		. . . ADAPTER, V71791 (USED ON 175701) (OPT TO 175720-1)		1
119A	175720-1		. . . ADAPTER, V71791 (USED ON 175701) (OPT TO 175720)		1

FIG. & ITEM NO.	PART NO.	AIRLINE PART NUMBER	NOMENCLATURE 1 2 3 4 5 6 7	USE CODE	QTY PER ASSY
1101-					
120	MS28775-237		. PACKING, O-RING		1
121	2-154N304-75		. O-RING, V83259	A-L	1
121	2-154N304-7		. O-RING, V83259 (OPT)	A-L	1
121	2-045N304-75		. O-RING, V83259	M-KA	1
121	2-045N304-7		. O-RING, V83259 (OPT)	M-KA	1
122	BACN10HR5		. NUT		4
123	AN960-516		. WASHER		4
124	BACB30MT5T12		. BOLT	A-IA	4
124	BACB30LE5-12		. BOLT	JA KA	4
125	2-154N304-75		. O-RING, V83259	A-L	1
125	2-154N304-7		. O-RING, V83259 (OPT)	A-L	1
125	2-045N304-75		. O-RING, V83259	M-KA	1
125	2-045N304-7		. O-RING, V83259 (OPT)	M-KA	1
126	2-156N304-75		. O-RING, V83259		1
126	2-156N304-7		. O-RING, V83259 (OPT)		1
127	69-52450-1		. SHIM		1
128	69-52410-2		. GEAR	W-KA	1
128	69-52410-1		. GEAR (OPT)		1
129	RR187		. RING, V80756		1
130	111GE		. BEARING, V21335		1
131	BACB10BB60		. BEARING (REPLS BACB10A352)		1
132	BACN10JC4		. NUT (REPLS NAS679A4W)		7
133	AN960-416		. WASHER		7
134	NAS584-11		. SCREW		7
134	BACB30JC8-12		. SCREW (REPLS NAS584-11) (POST SB 27-1048)		7
135	69-37686-2		. RETAINER	A-J	1
135	69-62757-1		. RETAINER (REPLS 69-37686-2) (POST SB 27-1048)	K-R	1
135	69-62757-2		. RETAINER	S-KA	1
136	69-37669-3		. SUPPORT (OPT TO 69-37669-5)	A-JMN	1
136	69-37669-5		. SUPPORT	A-JMN	1
136	69-62733-1		. SUPPORT	KLO-R	1
136	69-37669-4		. SUPPORT (OPT)	KLO-R	1
136	69-37669-6		. SUPPORT (OPT)	S-KA	1
136	69-62733-2		. SUPPORT	S-Z	1
136	69-62733-2		. SUPPORT (OPT)	BA-IA	1
136	69-62733-3		. SUPPORT (OPT)	BA-IA	1
136	69-62733-1		. SUPPORT (PREF)	HA-KA	1
137	MS28775-010		. PACKING, O-RING		7
138	2-039N304-75		. O-RING, V83259		1
138	2-039N304-7		. O-RING, V83259 (OPT)		1
138A	MS28775-143		. PACKING, O-RING (POST SB 27-1048)	KL O-KA	1

FIG. & ITEM NO.	PART NO.	AIRLINE PART NUMBER	NOMENCLATURE 1 2 3 4 5 6 7	USE CODE	QTY PER ASSY
1101-					
139	HDFZZ008-8		. BEARING, V40920	A-JMN	1
139A	21959-0700		. SEAL (POST SB 27-1048) (OPT TO 69-73393-5)	KLO-GA	1
139A	69-73393-5		. SEAL	KLO-KA	1
140	66-23925-2		. SPACER	A-JMN	1
140	69-62758-1		. SPACER (POST SB 27-1048)	KLO-KA	1
141	21959-0535		. SEAL, V73680 (OPT TO 69-73393-4)	A-JMN	1
141	69-73393-4		. SEAL	A-JMN	1
141A	HDF007P3		. BEARING (POST SB 27-1048)	KLO-KA	1
141A	HDFZZ007-9		. BEARING (OPT)	KLO-KA	1
142	65-50274-1		. HOUSING ASSY	AC	1
142	65-50274-2		. HOUSING ASSY	BD	1
142	65-50274-3		. HOUSING ASSY	EG	1
142	65-50274-4		. HOUSING ASSY	FH	1
142	65-50274-5		. HOUSING ASSY	IKMOQ	1
142	65-50274-6		. HOUSING ASSY	JLNPR	1
142	65-50274-9		. HOUSING ASSY	SUWY BA DA FA HA JA	1
142	65-50274-10		. HOUSING ASSY	TV XZ CA EA GA IA KA	1
143	65-50262-1		. . HOUSING (USED ON 65-50274-1)		1
143	65-50262-2		. . HOUSING (USED ON 65-50274-2)		1
143	65-50262-3		. . HOUSING (USED ON 65-50274-3)		1
143	65-50262-4		. . HOUSING (USED ON 65-50274-4)		1
143	65-50262-5		. . HOUSING (USED ON 65-50274-5)		1
143	65-50262-6		. . HOUSING (USED ON 65-50274-6)		1
143	65-50262-7		. . HOUSING (USED ON 65-50274-9)		1
143	65-50262-8		. . HOUSING (USED ON 65-50274-10)		1
144	MS21208F4-15		. . INSERT		10
146	69-52461-1		. NAMEPLATE		1

*[1] BOEING 10-60516-263 (OPT EXCEPT ON 65-76602-10)
*[2] BOEING 10-61899-14 (REPLS 10-60516-263)

VENDORS

V02758	NETWORK ELECTRONIC CORP., U.S. BEARING DIV., 9750 DESOTO AVE., CHATSWORTH, CALIFORNIA 91311
V09455	LEAR SIEGLER, INC., TRANSPORT DYNAMICS DIV., P.O. BOX 1953, 3131 W. SEGERSTROM AVE., SANTA ANA, CALIFORNIA 92702
V15860	NEW HAMPSHIRE BALL BEARINGS, INC., ASTRO DIV., 155 LEXINGTON AVE., LACONIA, NEW HAMPSHIRE 03246
V21335	TIMKEN US CORP., FAFNIR DIV., 59 FIELD ST., TORRINGTON, CONNECTICUT 06790
V38443	MRC BEARINGS, INC., 402 CHANDLER ST., JAMESTOWN, NEW YORK 14701
V40920	TIMKEN SUPER PRECISION, 7 OPTICAL AVE., KEENE, NEW HAMPSHIRE 03431
V50294	NMB AMERICA, INC., 9730 INDEPENDENCE AVE., CHATSWORTH, CALIFORNIA 91311
V60380	TIMKEN US CORP., 59 FIELD ST., TORRINGTON, CONNECTICUT 06790
V71791	CURTISS-WRIGHT FLIGHT SYSTEMS, INC., 19 CHAPIN RD., BUILDING C, PINEBROOK, NEW JERSEY 07058
V73134	RBC OF AMERICA, RBC HEIM BEARINGS, 60 ROUND HILL RD., FAIRFIELD, CONNECTICUT 06430
V73680	GARLOCK, INC., 1666 DIVISION ST., PALMYRA, NEW YORK 14522
V80756	KAYDON CORP., SPIROLOX DIV., 29 CASSENS CT., ST. LOUIS, MISSOURI 63026
V81376	SMITH ACQUISITION CO., 2240 BUENA VISTA, IRWINDALE, CALIFORNIA 91016
V83259	PARKER-HANNIFIN CORP., COMPOSITE SEALING SYSTEMS DIV., 7664 PANASONIC WAY, SAN DIEGO, CALIFORNIA 92154

Part No.	Fig. and Index No.	Qty. per Assy.
AFDU18A106DU	1101–15	4
AJF18A101	15	4
AN122691		AR
AN814-4DL		AR
AN960-10		AR
AN960-416		AR
AN960-516		AR
BACB10A13	59	1
BACB10A17	31	1
BACB10A17	47	1
BACB10A333	54	1
BACB10A345	29	1
BACB10A345	45	1
BACB10A352	131	1
BACB10A407	29	1
BACB10A407	45	1
BACB30LE5-10	77	1
BACB30LE5-12	124	4
BACB30LE5H6	76	1
BACB30LE6-10	75	1
BACB30LE6-14	73	1
BACB30MT5HT6	76	1
BACB30MT5T10	77	1
BACB30MT5T12	124	4
BACB30MT6T10	75	1
BACB30MT6T10	77	1
BACB30MT6T14	73	1
BACN10HR5	122	4
BACN10HR6	71	1
BACN10JC7	7	1
BACN10JC4	132	7
BACN10JC6	17	1
BACN10JC6	33	1
BACW10BN6P	72	1
DBAF18-031	15	4
FBR18A15BA	15	4
HDF007P3	141A	
HDFZZ007-9	141A	
HDFZZ008-8	139	
HJF18DU103	15	
J1616	101	1
MS172275		AR
MS21208F1-15		AR
MS21208F4-15		AR
MS21208F5-15		AR

Part No.	Fig. and Index No.	Qty. per Assy.
MS21208F6-15		AR
MS28775-009		AR
MS28775-010		AR
MS28775-012		AR
MS28775-135		AR
MS28775-143		AR
MS28775-146		AR
MS28775-237		AR
MS28778-4		AR
NAS1351-3H6P		AR
NAS1351-4H12P		AR
NAS577-5A		AR
NAS577B5B		AR
NAS577-6A		AR
NAS577-B6B		AR
NAS584-11		AR
NHLF18-203A	15	4
NTA2031	93	1
NTA2031	105	1
RR187	129	
10-60516-263	15	4
10-61899-14	15	4
111GE	130	1
175701	114	1
175720	119A	1
175720-1	119A	1
175732	118	1
175732-1	118	1
175734	119	1
175734-1	119	1
175735	113	1
175739	115	1
175739-1	115	2
175740	116	1
175740-1	116	1
175773	112	1
175773-1	112	1
176278X	117	AR
176571	109	1
176572	111	1
176632	113	1
176641	119	1
176641-1	119	1
176643-2	115	2
176649	118	1
176650	116	1

Part No.	Fig. and Index No.	Qty. per Assy.
176662	1101–114	1
176666	108	1
176827	111	1
176827-1	111	1
178483	109	1
178483-1	109	1
178487-1	108	1
178487-2	108	1
178487-3	108	1
2-039N304-7	138	1
2-039N304-75	138	1
2-045N304-7	121	1
2-045N304-7	125	1
2-154N304-7	121	1
2-154N304-7	125	1
2-156N304-7	126	1
2-154N304-75	121	1
2-154N304-75	125	1
2-156N304-75	126	1
2-45N304-75	121	1
2-45N304-75	125	1
209W	98	1
209M	98	1
21959-0269	24	1
21959-0269	40	1
21959-0535	141	1
21959-0700	139A	1
65-50262-1	143	1
65-50262-2	143	1
65-50262-3	143	1
65-50262-4	143	1
65-50262-5	143	1
65-50262-6	143	1
65-50262-7	143	1
65-50262-8	143	1
65-50267-1	68	1
65-50267-10	68	1
65-50267-11	68	1
65-50267-12	68	1
65-50267-13	68	1
65-50267-14	68	1
65-50267-2	68	1
65-50267-5	68	1
65-50267-6	68	1
65-50267-7	68	1
65-50267-8	68	1
65-50267-9	68	1

Part No.	Fig. and Index No.	Qty. per Assy.
65-50274-1	142	1
65-50274-10	142	1
65-50274-2	142	1
65-50274-3	142	1
65-50274-4	142	1
65-50274-5	142	1
65-50274-6	142	1
65-50274-9	142	1
65-50302-2	1101	RF
65-50302-3	1101	RF
65-50302-4	1101	RF
65-50302-5	1101	RF
65-50302-6	1101	RF
65-50302-7	1101	RF
65-50307-2	1101	RF
65-50307-3	1101	RF
65-50307-4	1101	RF
65-50307-5	1101	RF
65-50307-6	1101	RF
65-50307-7	1101	RF
65-50322-10	1101	RF
65-50322-11	1101	RF
65-50322-12	1101	RF
65-50322-14	1101	RF
65-50322-2	1101	RF
65-50322-3	1101	RF
65-50322-4	1101	RF
65-50322-5	1101	RF
65-50322-6	1101	RF
65-50322-7	1101	RF
65-50322-8	1101	RF
65-50322-9	1101	RF
65-50327-10	1101	RF
65-50327-11	1101	RF
65-50327-12	1101	RF
65-50327-14	1101	RF
65-50327-2	1101	RF
65-50327-3	1101	RF
65-50327-4	1101	RF
65-50327-5	1101	RF
65-50327-6	1101	RF
65-50327-7	1101	RF
65-50327-8	1101	RF
65-50327-9	1101	RF
65-76602-10	5	1
65-76602-2	5	1
65-76602-3	5	1
65-76602-5	5	1

Part No.	Fig. and Index No.	Qty. per Assy.
65-76602-6	1101-5	1
65-76602-8	5	1
65-76606-1	9	1
65-80940-1	12	1
65-80940-2	12	1
66-23901-2	86	1
66-23908-1	85	1
66-23905-2	140	1
66-23929-2	88	4
66-23937-1	66	2
66-23946-1	60	1
66-24700-1	61	1
66-24715-1	18	1
66-24715-1	34	1
66-24717-2	82	1
66-24717-3	82	1
66-24728-1	81	1
66-24728-2	81	1
66-25729-1	64	2
66-24729-2	62	2
66-24736-2	84	2
66-25126-1	87	1
66-25130-2	52	1
69-37634-5	51	1
69-37663-2	106	1
69-37663-3	106	1
69-37669-3	136	1
69-37669-4	136	1
69-37669-5	136	1
69-37669-6	136	1
69-37685-2	50	1
69-37685-4	50	1
69-37686-2	135	1
69-37695-1	12	1
69-37695-2	12	1
69-37696-3	12	1
69-37696-1	22	1
69-37696-1	38	1
69-37696-2	38	1
69-37696-3	22	1
69-37696-4	22	1
69-37696-4	38	1
69-52403-5	5	1
69-52404-1	19	1
69-52404-1	35	1
69-52404-2	19	1
69-52404-2	35	1
69-52405-1	58	1
69-52406-2	58	1

Part No.	Fig. and Index No.	Qty. per Assy.
69-52406-1	55	1
69-52406-2	55	2
69-52401-1	128	1
69-52401-2	128	1
69-52411-1	13	1
69-52414-1	14	1
69-52414-2	14	1
69-52414-3	14	1
69-52414-4	14	1
69-52414-5	14	1
69-52414-6	14	1
69-52414-8	14	1
69-52418-1	10	1
69-52419-2	9	1
69-52423-1	11	1
69-52425-1	25	1
69-52425-1	41	1
69-52425-2	41	1
69-52427-1	16	1
69-52427-1	32	1
69-52429-1	95	1
69-52433-1	104	1
69-52436-1	91	1
69-52438-1	107	1
69-52440-1	100	1
69-52440-2	100	1
69-52442-1	90	1
69-52443-1	102	1
69-52444-1	94	1
69-52450-1	127	1
69-52452-1	97	1
69-52457-1	67	1
69-52457-10	67	1
69-52457-11	67	1
69-52457-12	67	1
69-52457-13	67	1
69-52457-14	67	1
69-52457-15	67	1
69-52457-16	67	1
69-52457-2	67	1
69-52457-5	67	1
69-52457-6	67	1
69-52457-7	67	1
69-52457-8	67	1
69-52457-9	67	1
69-52461-1	146	1
69-60052-1	10	1
69-60052-2	10	1
69-60056-1	11	1

Part No.	Fig. and Index No.	Qty. per Assy.
69-60056-2	1101-11	1
69-60058-1	13	1
69-62733-1	136	1
69-62733-2	136	1
69-62733-3	136	1
69-62744-4	12	1
69-62757-1	135	1
69-62757-2	135	1
69-62758-1	140	1
69-73393-2	40	1
69-73393-4	141	1
69-73393-5	139A	1
90717	15	4
9209H	98	1

Part No.	Fig. and Index No.	Qty. per Assy.