TO: ALL HOLDERS OF MAIN GEAR DAMPER ASSEMBLY OVERHAUL MANUAL, 32-30-61

REVISION NO. 37, DATED JUL 1/06

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
Changed a repair limit on pistons 65-44769-2, -3, -6 to be the most possible material removed					X								

MAIN GEAR DAMPER ASSEMBLY

32-30-61

BOEING P/N 65-44504-1, -2, -3, -5
65-44771-2, -3, -4
65-44898-2, -3, -5, -7, -8

AIRLINE P/N

THE FOLLOWING DIRECTIVES APPLY TO THIS SUBJECT:

BOEING SERVICE BULLETIN	BOEING TEMPORARY REVISION	OTHER DIRECTIVES	DATE DIRECTIVE INCORPORATED INTO TEXT
		PRR 30624	Nov 15/68
		PRR 31941	Dec 10/71
		PRR 32152	Jun 10/73
32-1193		PRR 34209	Jun 5/88
32-1193, Rev. 1			Sep 5/88

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
	32-30-61			801	Dec 5/87			
	T-1	Sep 5/88		802	BLANK			
	T-2	BLANK		901	Jul 1/98			
*	LEP-1	Jul 1/06		902	BLANK			
	LEP-2	BLANK		1101	Dec 5/87			
	T/C-1	Mar 5/93		1102	Mar 5/90			
	T/C-2	BLANK		1103	Dec 5/87			
	1	Dec 5/87		1104	Mar 1/03			
	2	Dec 5/87		1105	Mar 5/90			
	101	Jul 1/99		1106	Dec 5/87			
	102	BLANK		1107	Jul 1/05			
	301	Dec 5/87		1108	Dec 5/87			
	302	BLANK		1109	Nov 1/00			
	401	Nov 1/04		1110	BLANK			
	402	Nov 1/04						
	402A	Nov 1/04						
	402B	BLANK						
	403	Jul 1/99						
	404	Nov 1/02						
*	404A	Jul 1/06						
*	404B	BLANK						
*	405	Jul 1/06						
	406	Mar 1/03						
	407	Nov 1/00						
	408	Mar 1/03						
	409	Mar 1/06						
	410	Jul 1/99						
	411	Nov 1/04						
	412	Nov 1/04						
	413	Nov 1/04						
	414	BLANK						
	501	Mar 1/04						
	502	Nov 1/99						
	503	Dec 5/87						
	504	Dec 5/87						
	505	Dec 5/87						
	506	Dec 5/87						
	601	Dec 5/87						
	602	Dec 5/87						
	603	Mar 1/04						
	604	BLANK						
	701	Jul 1/98						
	702	Dec 5/83						
	703	Dec 5/83						
	704	Dec 5/87						

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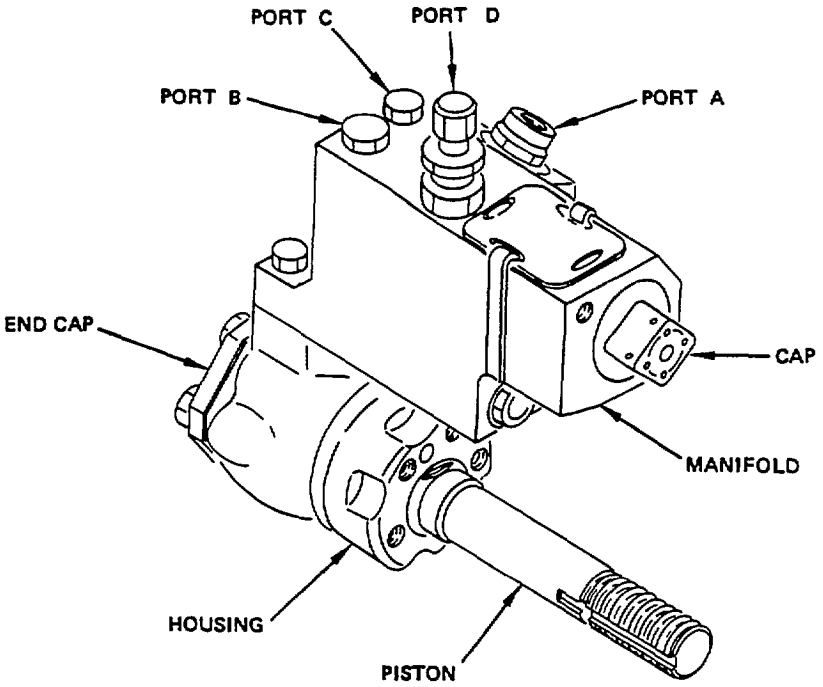
*[1] Special instructions not required. Use standard industry practices and the information contained in 20-30-03.

*[2] Special instructions not required. Use standard industry practices and the information contained in 20-44-02 and 20-70-01.

MAIN GEAR DAMPER ASSEMBLY



Main Gear Damper Assembly
Figure 1

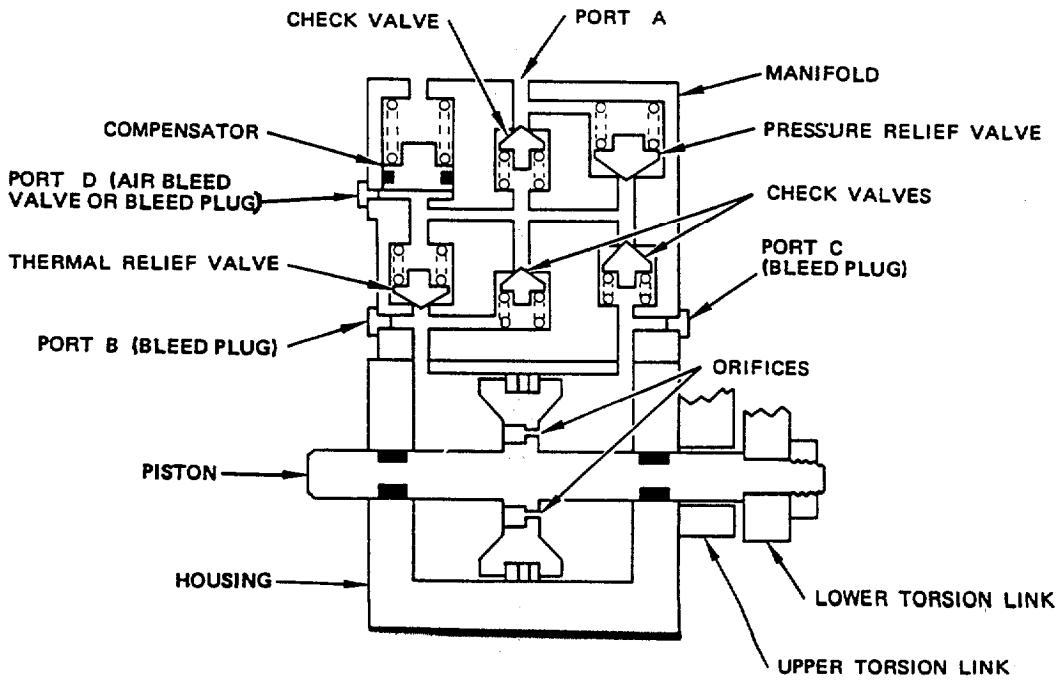
DESCRIPTION AND OPERATION

1. The main gear damper assembly consists of a two-way hydraulic piston with seals and bearings in a cylinder within a housing. An attached manifold contains compensator, thermal relief valve, check valves, bleed plugs, and pressure relief valve.

2. The main gear damper provides hydraulic damping of shimmy between the main gear upper and lower torsion links. Hydraulic fluid confined in the cylinder on both sides of the piston is forced through orifices in the piston head. Check valves regulate fluid flow into each end of the cylinder. The thermal relief valve limits pressure buildup, due to thermal expansion of the confined fluid in the cylinder. The compensator holds and delivers reserve fluid in event of supply failure, while check valve at the supply port prevents loss of pressure. The pressure relief valve prevents excessive pressure buildup in the unit.

3. Leading Particulars (Approximate)

   Length -- 9 inches
   Height -- 9 inches
   Width -- 4 inches
   Weight -- 11 pounds



Schematic Diagram
Figure 2

DISASSEMBLY

NOTE: Unless shown differently, refer to Fig. 1101 for item numbers.

1. Remove items (1 and 2, Fig. 1102).

2. Remove items (1 thru 24) from manifold (53).

3. Remove items (23 thru 26) and housing (82) from manifold (53).

   CAUTION: SEATS (37) AND POPPETS (40) ARE PRECISION PARTS AND MUST BE PROTECTED TO PREVENT DAMAGE.

4. Remove items (27 thru 50) from manifold (53).

5. Remove items (57 thru 62) and items (65 thru 81) from housing (82).

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. Magnetic particle examine per 20-20-01 -- Seats (6, 37, 48), cap (12), slide (16), poppets (19, 40, 47), body (21), pistons (33, 71), washer (36), sleeve (46), and housing (85).

3. Penetrant examine per 20-20-02 -- Cap (27), sleeve (30), plug (42), manifold (56), tubes (57), end cap (64), and bearings (67, 78).

4. Check springs (15, 20, 29, 41, 45) per Fig. 301.

Item No. Fig. 1101	Test Length (inches)	Load Limits (pounds)
15	1.00 0.92	33.2 - 38.4 38.0 - 42.0
20	0.23	1.22 - 1.50
29	3.29 2.29	24.5 - 30.1 43.4 - 53.1
41	0.62 0.37	0.18 - 0.24 0.37 - 0.47
45 (69-54503-1)	2.45 1.71	9.0 - 11.0 18.0 - 22.0
45 (66-25548-1)	1.83 1.61	18.0 - 22.0 32.8 - 40.0

Spring Check
Figure 301

REPAIR

1. Repair

A. Repair small defects by standard industry practices. Refer to Fits and Clearances for design dimensions and wear limits. Refer to SOPM 20-10-01 and CMM 32-00-05 for repair of high strength steel parts.

B. Compensator Piston (33) (Fig. 401)

(1) Machine lands of piston as required, within repair limits, to remove defects.

(2) Shot peen as indicated.

(3) Build up with chrome plate per SOPM 20-42-03 and grind to design dimensions and finish.

C. Damper Piston (71) (Fig. 401A, 401B)

(1) Diameters -A- ,-B- ,-C-

(a) Machine as required, within repair limits, to remove defects.

(b) Shot peen as indicated.

(c) Build up machined areas with chrome plate per SOPM 20-42-03 and grind to design dimensions and finish.

(2) Diameter -D-

(a) Machine as required, within the repair limit, to remove defects. No sharp discontinuity between the machined surface and the original surface is permitted.

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

(c) Shot peen as indicated.

(d) Chrome plate and grind to design dimensions. Make sure there is a smooth transition between the chrome plate and the original material.

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

(f) Refinish as indicated.

(3) Piston faces

(a) Machine as required, within repair limits, to remove defects.

(b) Refinish as indicated.

D. Housing (85) (Fig. 402, 402A)

(1) Method 1 -- Chrome Plate Buildup

(a) Machine housing as required, within repair limits, to remove defects.

(b) Stress relieve (SOPM 20-10-02).

(c) Shot peen as indicated.

(d) Build up machined areas with chrome plate (SOPM 20-42-03) and grind (SOPM 20-10-04) to design dimensions and finish.

(2) Method 2 -- Bottom of Large bore.

(a) Machine as required, within repair limits, to remove defects.

(b) Refinish as indicated.

2. Refinish (Fig. 1101)

NOTE: Refer to SOPM 20-30-02 for stripping of protective finishes. Refer to SOPM 20-41-01 for explanation of F and SRF finish codes.

A. Caps (1, 27, 42), tube (57) -- Anodize (F-2.26) all over. Material: Al alloy.

B. Seat (6) -- Cadmium plate (F-1.1929) all over. Material: 1018 or 1020, 1025 steel.

C. Cap (12), body (21), sleeve (30) -- Fig. 403.

CAUTION: TO PREVENT CRACKING, DO NOT FLEX SPRINGS BEFORE BAKING.

D. Springs (15, 20) -- Cadmium plate (F-1.20) all over. After plating, bake the springs at 350-400°F for 3 hours. Material: Music wire per MIL-W-6101.

E. Piston (33) -- Fig. 401.

F. Manifold assembly (53) -- Fig. 404.

G. End cap (64) -- Anodize (F-2.26) all over. Apply BMS 10-11, Type 1 primer (SRF-12.205) and BMS 10-11, Type 2, gray enamel (SRF-12.63) on external surfaces, but not on mating surfaces. Material: Al alloy.

H. End cap (62) (69-54742-1) -- Cadmium plate (F-15.02) but bake 12 hours. Apply BMS 10-11, Type 1 primer (SRF-12.205) and BMS 10-11, Type 2 gray enamel (SRF-12.63) on all external surfaces. Material: 4340 steel, 180-200 ksi.

I. Bearing (67)

(1) 69-35842-1 -- Cadmium plate (F-4.201) exterior surfaces only. Material: Al-Ni-Bronze per AMS 4640.

(2) 69-63594-1 -- No finish. Material: Al-Ni-Bronze per AMS 4640.

J. Piston (71) (65-44576) -- Fig. 401A.

K. Piston (71) (65-44769) -- Fig. 401B.

L. Bearing (78) -- No finish. Material: Al-Ni-Bronze per AMS 4640.

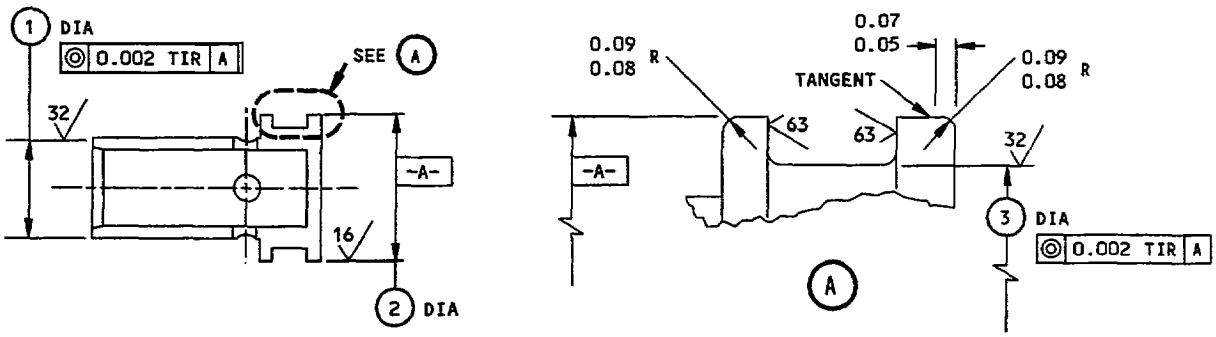
M. Housing (85) -- Fig. 402

3. Replacement (Fig. 1101)

A. Nameplate (52) -- Install with strap (51) on housing (56).

B. Inserts (54, 55, 63) -- Install with wet BMS 10-11, Type 1 primer on faying surfaces, with the top coil 3/4 to 1-1/2 turns below the top surface of the bore. Remove the tang.

C. Pin (83) and plug (84) -- Install replacements in housing (85) (SOPM 20-50-04).



	1	2	3
DESIGN DIM	0.975 0.970	1.364 1.362	1.123 1.121
REPAIR LIMIT	—	1.342 1	—

REFINISH

PASSIVATE (F-17.09)

1 LIMIT FOR CHROME PLATE BUILDUP (REF SOPM 20-42-03). GRIND TO DESIGN DIMENSIONS AND FINISH. PUT A 0.06 PLATING RUNOUT AT EDGES.

REPAIR

REF 1

125 ALL MACHINED SURFACES UNLESS SHOWN DIFFERENTLY

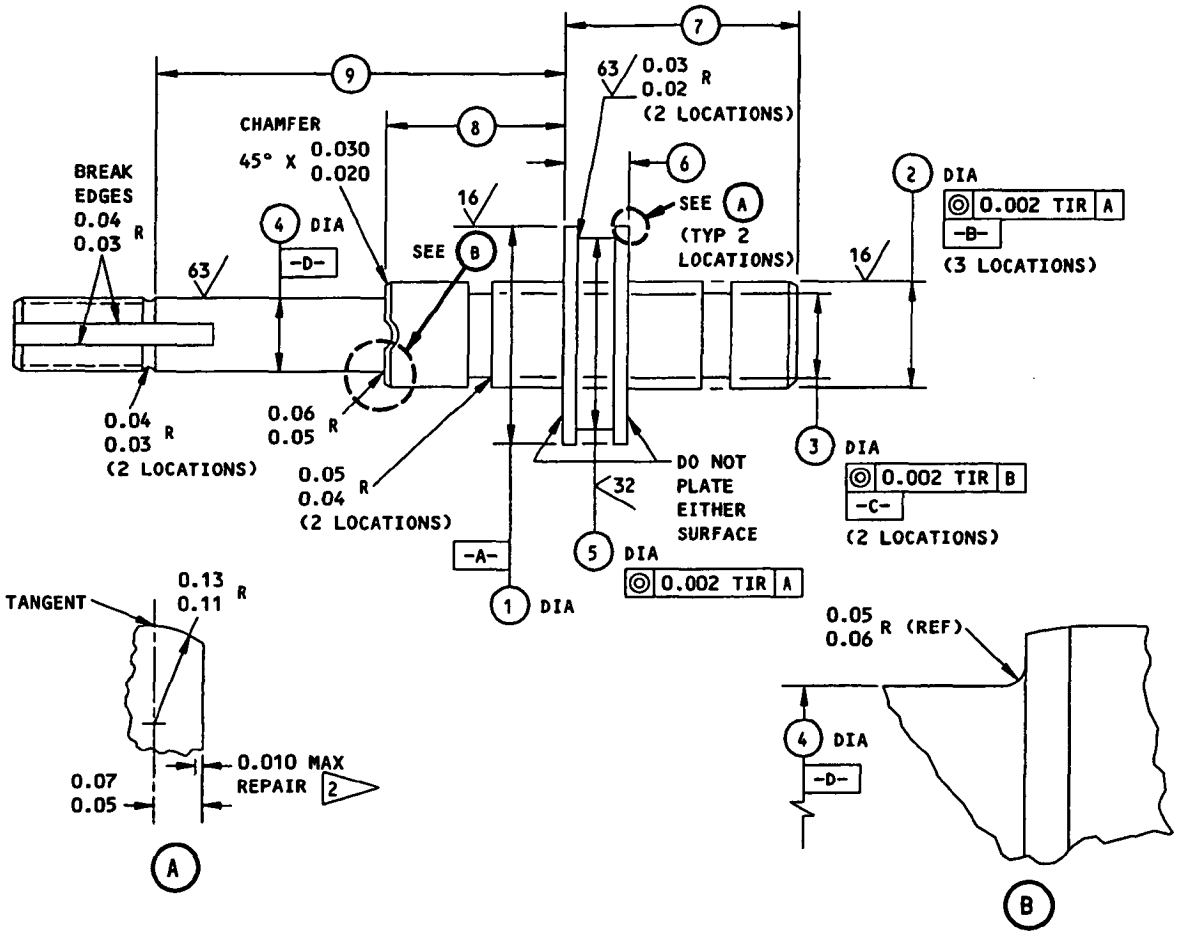
SHOT PEEN: (REF SOPM 20-10-03)
0.016-0.033 SHOT SIZE
0.009-0.015 A2 INTENSITY

MATERIAL: 17-4PH CRES PER AMS 5643, 180-200 KSI

ALL DIMENSIONS ARE IN INCHES.

PISTON (33)

Compensator Piston Repair and Refinish
Figure 401



	1	2	3	4	5	6	7	8	9
DESIGN DIM	2.617 2.615	1.239 1.237	0.998 0.996	0.875 0.873	2.248 2.246	0.730 0.710	2.79 2.77	2.08 2.07	4.86 4.84
REPAIR LIMIT	2.595 1	1.217 1	—	0.853 1	—	0.690 2	—	—	—

REFINISH

PASSIVATE (F-17.09)

1 LIMIT FOR CHROME PLATE BUILDUP (REF SOPM 20-42-03). GRIND TO DESIGN DIMENSIONS AND FINISH. PUT A 0.06 PLATING RUNOUT AT EDGES, HOLES AND RELIEFS.

2 RESTORATION TO DESIGN DIMENSIONS NOT REQUIRED

REPAIR

REF 1 2

125 ALL MACHINED SURFACES UNLESS SHOWN DIFFERENTLY

SHOT PEEN: (REF SOPM 20-10-03)
0.023 SHOT SIZE
0.016 A2 INTENSITY

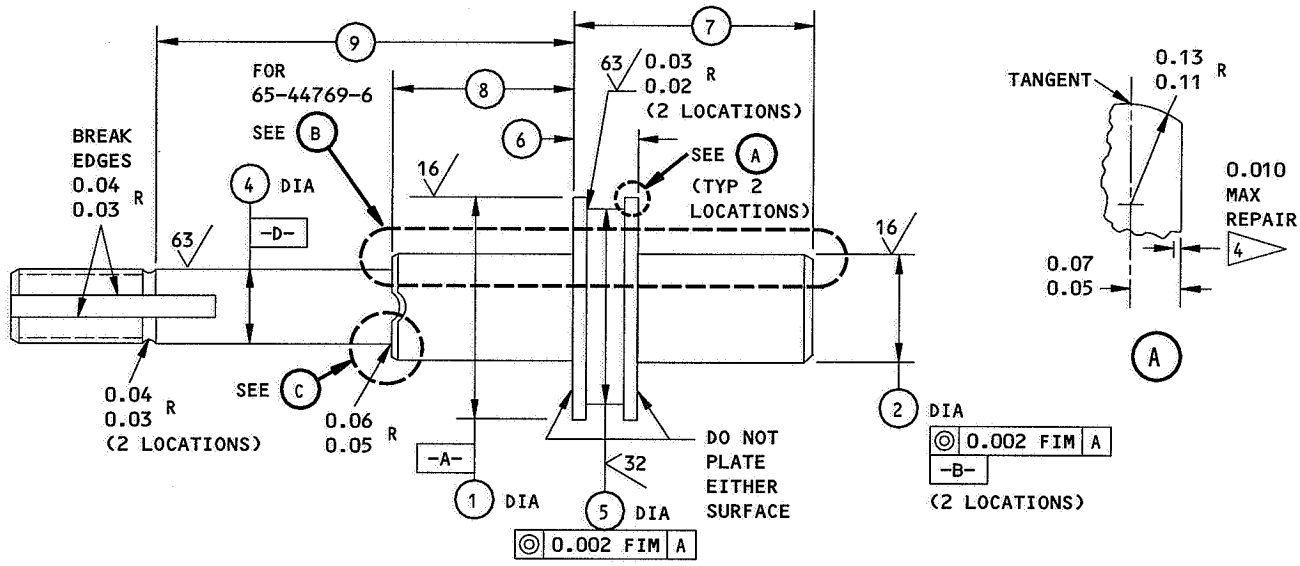
MATERIAL: 17-4PH CRES PER AMS 5643, 180-200 KSI

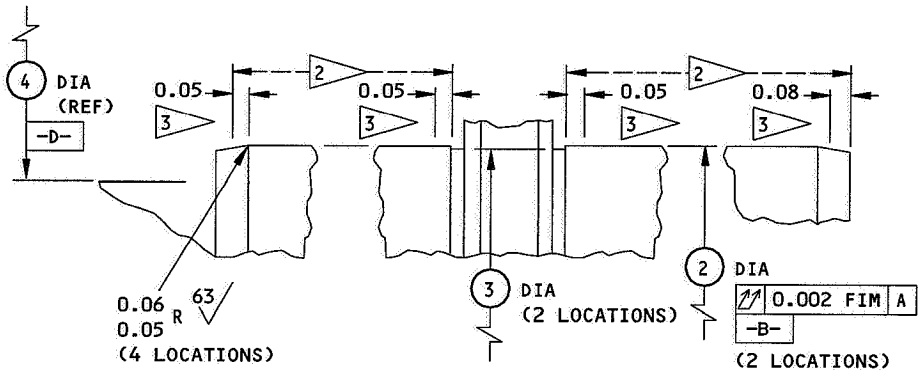
ALL DIMENSIONS ARE IN INCHES.

PISTON (71)
65-44576-2

Piston Repair and Refinish
Figure 401A

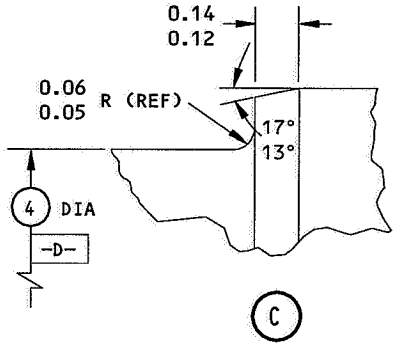
K26357





65-44769-6

B



C

PISTON (71)
65-44769-2,-3,-6

Piston Repair and Refinish
Figure 401B (Sheet 1)

	①	②	③	④	⑤	⑥	⑦	⑧	⑨
DESIGN DIM	3.240 3.238	1.373 1.371	1.367 1.365	0.875 0.873	2.871 2.869	0.730 0.710	3.41 3.39	2.660 2.650	5.31 5.29
REPAIR LIMIT	3.218 ▷1	1.351 ▷1 1.340 ▷5	1.350 ▷4	0.853 ▷1 ▷6	2.855 ▷1	0.690 ▷4	—	—	—

REFINISH

PASSIVATE (F-8.07 OR F-17.09). ON 65-44769-6 ONLY, CHROME PLATE DIA -B- AS SHOWN BY ▷2

▷1 LIMIT FOR CHROME PLATE BUILDUP (SOPM 20-42-03). GRIND TO DESIGN DIMENSIONS AND FINISH. PUT A 0.06 PLATING RUNOUT AT EDGES AND RELIEFS UNLESS SHOWN DIFFERENTLY.

▷2 CHROME PLATE (F-15.03) THIS AREA WITH CHROME PLATE RUNOUT AS SHOWN BY ▷3.

▷3 CHROME PLATE RUNOUT

▷4 RESTORATION TO DESIGN DIMENSIONS NOT REQUIRED.

▷5 LIMIT FOR NICKEL PLATE BUILDUP (SOPM 20-42-03) AND MACHINE TO 1.360-1.365 DIA, THEN CHROME PLATE (SOPM 20-42-03) AND GRIND TO DESIGN DIMENSIONS AND FINISH.

▷6 IF MORE MATERIAL THAN THIS LIMIT MUST BE REMOVED, THE PART MUST BE SCRAPPED.

REPAIR

AS NOTED BY ▷1 ▷4 ▷5 ▷6

125 ALL MACHINED SURFACES UNLESS SHOWN DIFFERENTLY

SHOT PEEN: (SOPM 20-10-03)
0.023 SHOT SIZE
0.016 A2 INTENSITY

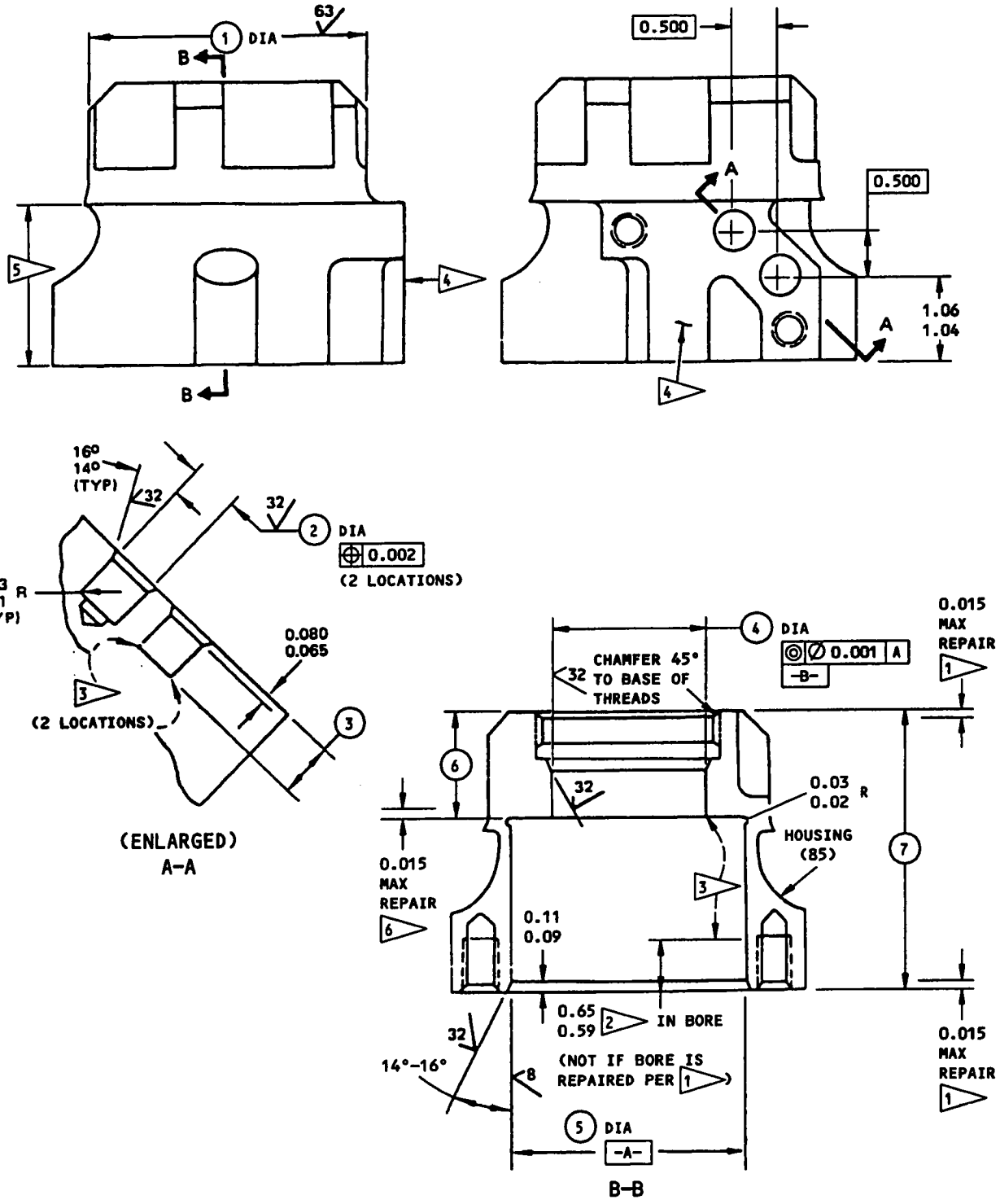
MATERIAL: 17-4PH OR 15-5PH CRES (AMS 5643), 180-200 KSI

ALL DIMENSIONS ARE IN INCHES.

PISTON (71)
65-44769-2,-3,-6

Piston Repair and Refinish
Figure 401B (Sheet 2)

K26387



HOUSING (85)
65-44577-2

Housing Repair and Refinish
Figure 402 (Sheet 1)

	①	②	③	④	⑤	⑥	⑦
DESIGN DIM	3.120 3.115	0.423 0.422	0.465 0.460	1.680 1.678	2.622 2.620	1.175 1.165	3.105 3.095
REPAIR LIMIT	3.085 ▷7	0.453 ▷1 0.500 ▷8	--	--	2.642 ▷1	1.150 ▷6	3.065 ▷1

REFINISH

CADMIUM PLATE BORE AS NOTED AND ALL OTHER SURFACES PER ▷2 UNLESS SHOWN BY ▷3. APPLY PRIMER AND ENAMEL PER ▷5.

▷1 LIMIT FOR CHROME PLATE BUILDUP (REF SOPM 20-42-03). GRIND TO DESIGN DIMENSIONS AND FINISH. PUT A 0.06 PLATING RUNOUT.

▷2 CADMIUM PLATE (F-1.1926) THIS AREA.

▷3 NO CADMIUM PLATE THIS AREA.

▷4 NO PRIMER OR ENAMEL THIS SURFACE.

▷5 AFTER CADMIUM PLATING, APPLY BMS 10-11, TYPE 1 PRIMER (SFR-12.205) AND BMS 10-11, TYPE 2 ENAMEL (SRF-12.63) TO THESE AREAS.

▷6 RESTORATION TO DESIGN DIMENSIONS NOT REQUIRED.

▷7 LIMIT FOR APPROXIMATELY 0.005 THICK NICKEL PLATE BUILDUP (SOPM 20-42-09) FOLLOWED BY CHROME PLATE BUILDUP PER ▷1.

▷8 LIMIT FOR NICKEL PLATE BUILDUP (SOPM 20-42-09) AND MACHINE TO DESIGN DIMENSIONS AND FINISH.

REPAIR

REF ▷1 ▷6 ▷7 ▷8

125√ ALL MACHINED SURFACES UNLESS SHOWN DIFFERENTLY

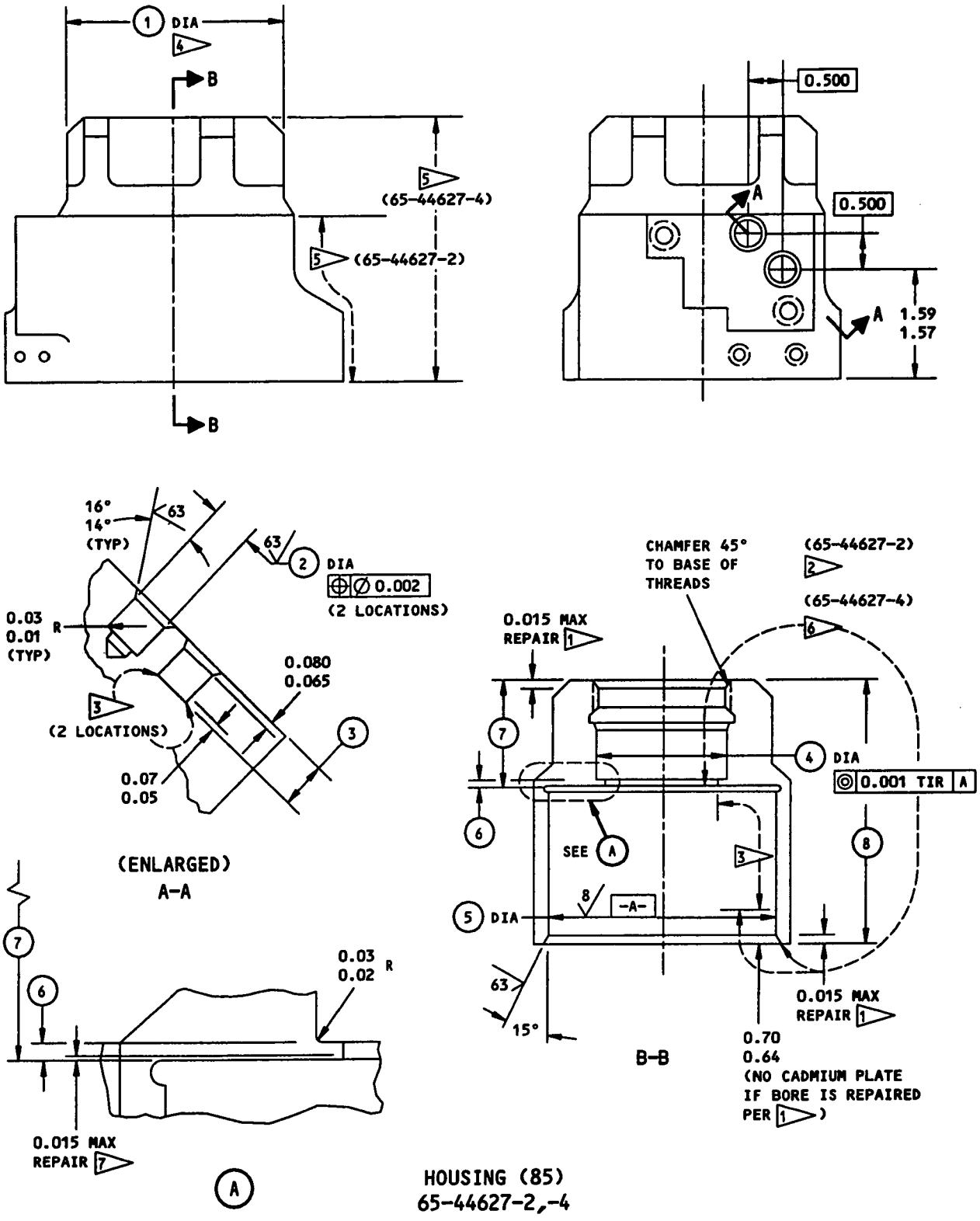
SHOT PEEN: (REF SOPM 20-10-03)
0.016-0.033 SHOT SIZE
0.009-0.015 A2 INTENSITY

MATERIAL: 4340 STEEL, 180-200 KSI

ALL DIMENSIONS ARE IN INCHES.

HOUSING (85)
65-44577-2

Housing Repair and Refinish
Figure 402 (Sheet 2)



HOUSING (85)
65-44627-2,-4

Housing Repair and Refinish
Figure 402A (Sheet 1)

	(1) 65-44627-2	(1) 65-44627-4	(2)	(3)	(4)	(5)	(6)	(7)	(8)
DESIGN DIM	3.120 3.115	3.119 3.115	0.423 0.422	0.465 0.460	1.869 1.867	3.245 3.243	0.110 0.090	1.505 1.495	3.77 3.75
REPAIR LIMIT	3.085 ▷8	3.085 ▷8	0.453 ▷1 0.500 ▷9	—	—	3.265 ▷1	0.075 ▷7	1.480 ▷1	3.72 ▷1

REFINISH

65-44627-2:
CADMIUM PLATE AREAS PER ▷2
APPLY PRIMER AND ENAMEL PER ▷5

65-44627-4:
CADMIUM PLATE AREAS PER ▷6
APPLY PRIMER AND ENAMEL PER ▷5

▷1 LIMIT FOR CHROME PLATE BUILDUP (REF SOPM 20-42-03). GRIND TO DESIGN DIMENSIONS AND FINISH. PUT A 0.06 PLATING RUNOUT AT EDGES.

▷2 (65-44627-2) CADMIUM PLATE (F-1.1926) THIS AREA

▷3 NO CADMIUM PLATE THIS AREA

▷4 NO PRIMER OR ENAMEL THIS SURFACE

▷5 AFTER CADMIUM PLATING APPLY BMS 10-11, TYPE 1 PRIMER (SRF-12.205 OR F-20.02) AND BMS 10-11, TYPE 2 ENAMEL (SRF-12.63 OR F-21.02) AS NOTED.

▷6 (65-44627-4) CADMIUM PLATE (F-15.02) AND BAKE 12 HOURS AT 350-400°F.

▷7 RESTORATION TO DESIGN DIMENSIONS NOT REQUIRED

▷8 LIMIT FOR APPROXIMATELY 0.005 THICK NICKEL PLATE BUILDUP (SOPM 20-42-09) FOLLOWED BY CHROME PLATE BUILDUP PER. ▷1
OR NICKEL PLATE (SOPM 20-42-09), 0.005 MINIMUM THICK, THEN CHROME PLATE (SOPM 20-42-03), 0.003-0.005 THICK.

▷9 LIMIT FOR NICKEL PLATE BUILDUP (SOPM 20-42-09) AND MACHINE TO DESIGN DIMENSIONS AND FINISH.

REPAIR

REF ▷1 ▷7 ▷8 ▷9

125 ALL MACHINED SURFACES UNLESS SHOWN DIFFERENTLY

MATERIAL: (65-44627-2) 4340 STEEL, 180-200 KSI
(65-44627-4) 4330M STEEL, 180-200 KSI

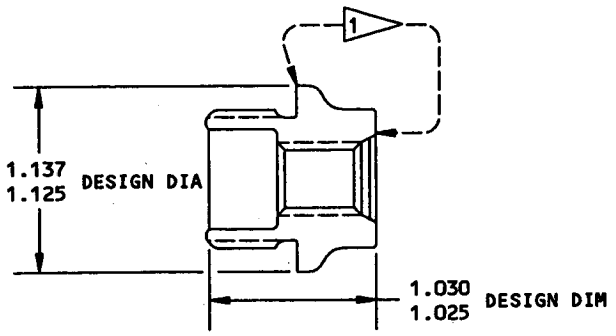
SHOT PEEN: (SOPM 20-10-03)
0.016-0.033 SHOT SIZE
0.009-0.015 A2 INTENSITY

ALL DIMENSIONS ARE IN INCHES.

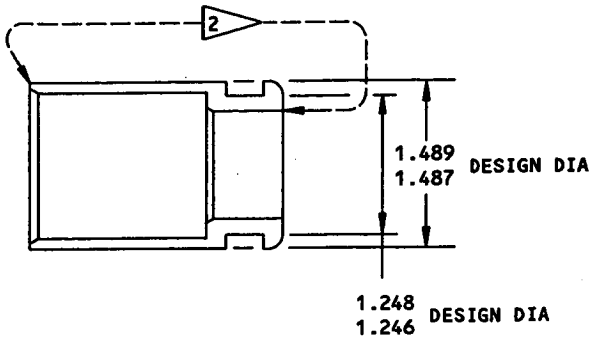
HOUSING (85)
65-44627-2,-4

Housing Repair and Refinish
Figure 402A (Sheet 2)

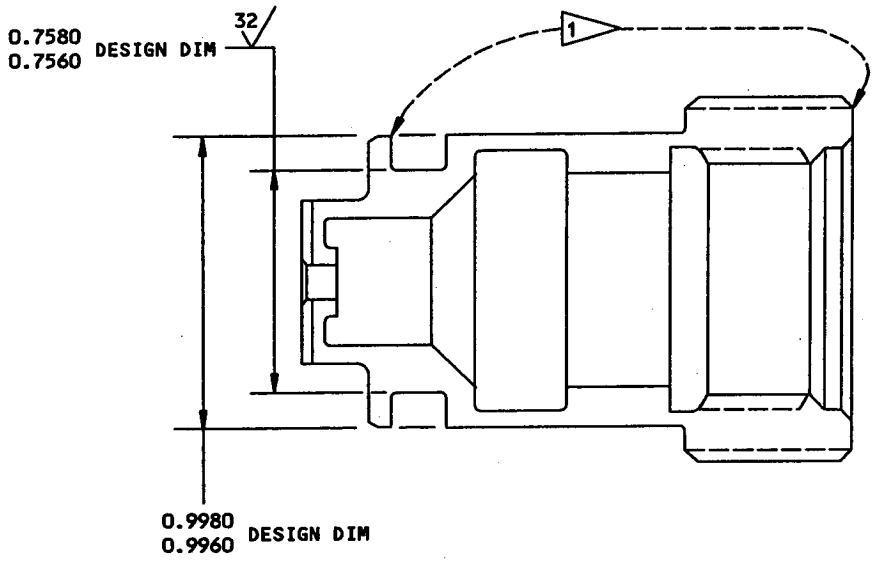
K26592



CAP (12)



SLEEVE (30)



BODY (21)

REFINISH

CADMIUM PLATE AS NOTED BY 1 2

NO FINISH OTHER SUFRACES

1 CADMIUM PLATE (F-1.20) (0.0003-0.0005 THICK) AREAS AS NOTED

2 CADMIUM PLATE (F-15.02) THIS AREA

REPAIR

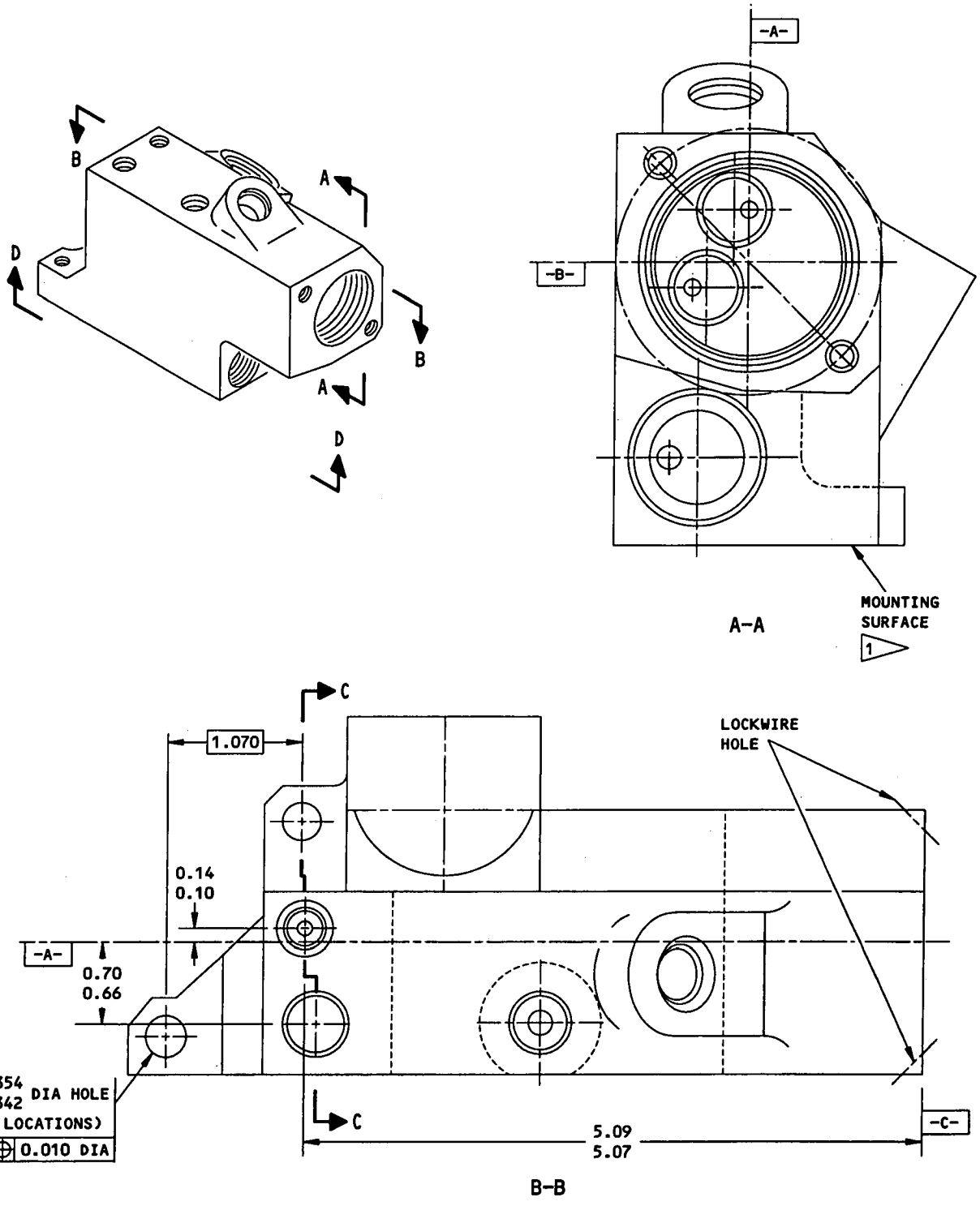
125 ALL MACHINED SURFACES UNLESS SHOWN DIFFERENTLY

MATERIAL: CAP (12), BODY (21):
4340 OR 4140 STEEL, 124-145 KSI
SLEEVE (30):
AL-NI-BRZ PER AMS 4640

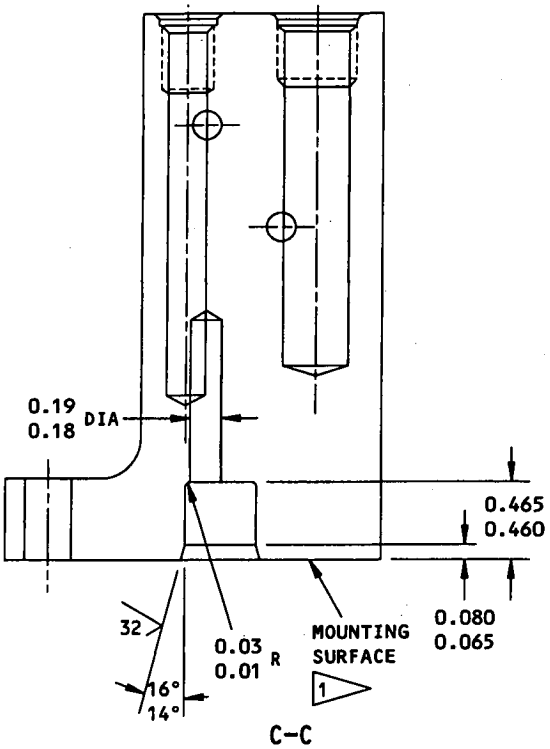
ALL DIMENSIONS ARE IN INCHES.

ITEM NUMBERS REFER TO FIG. 1101.

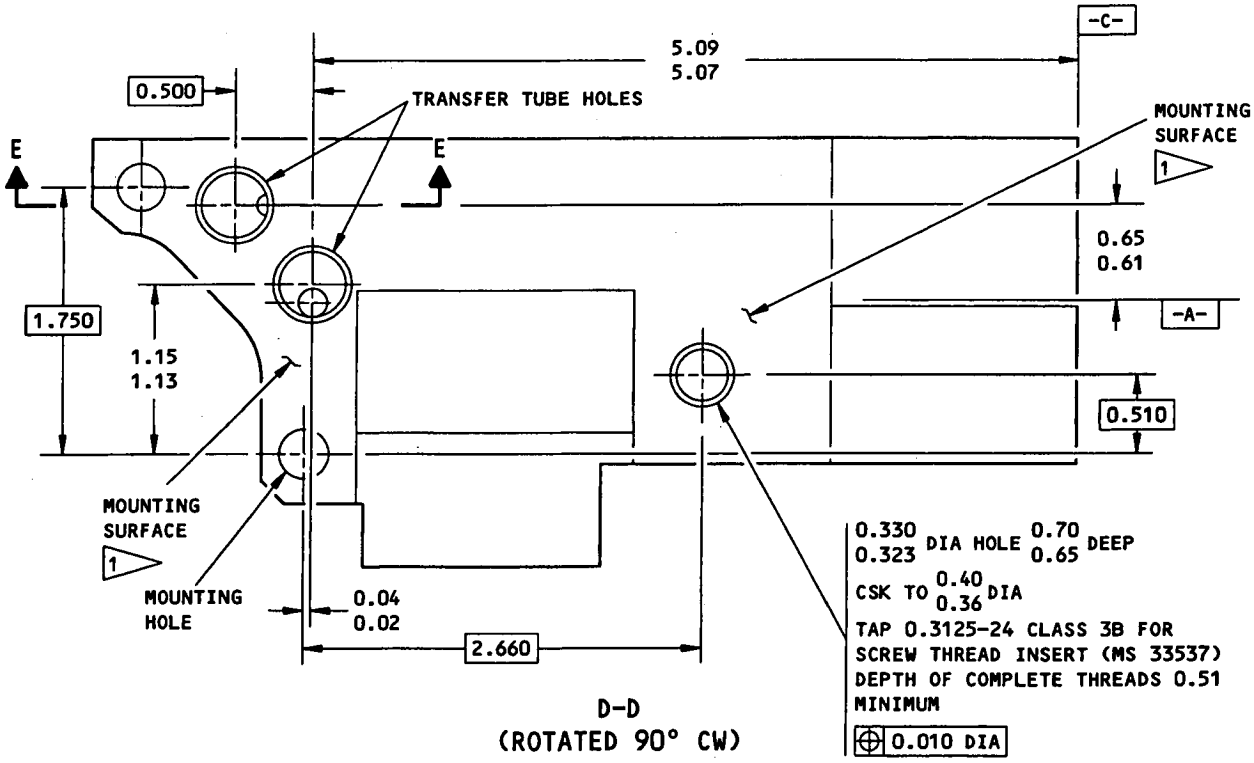
Body, Cap, Sleeve Refinish
Figure 403



MANIFOLD (56)
Manifold Repair and Refinish
Figure 404 (Sheet 1)



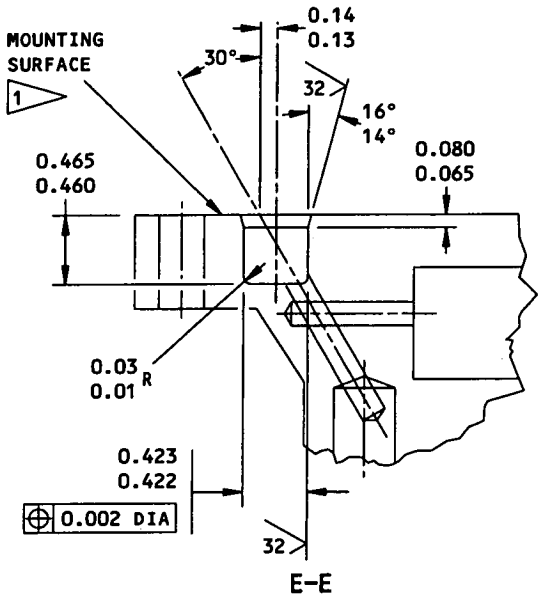
C-C
(ROTATED 90° CCW)



D-D
(ROTATED 90° CW)

MANIFOLD (56)

Manifold Repair and Refinish
Figure 404 (Sheet 2)



REFINISH

CHROMIC ACID ANODIZE (F-17.04 OR F-17.02). APPLY BMS 10-11, TYPE 1 PRIMER (F-20.02) AND BMS 10-11 TYPE 2 ENAMEL (SRF-12.63) ON EXTERNAL SURFACES, BUT NOT ON MOUNTING SURFACE MATING WITH HOUSING (82).

1 NO PRIMER OR ENAMEL

REPAIR

125 ALL MACHINED SURFACES UNLESS SHOWN DIFFERENTLY

BREAK SHARP EDGES

MATERIAL: AL ALLOY

ALL DIMENSIONS ARE IN INCHES

MANIFOLD (56)

Manifold Repair and Refinish
Figure 404 (Sheet 3)

ASSEMBLY

NOTE: Refer to Fig. 1101 for item numbers, unless shown differently.

1. Lightly lubricate all packings and seals with hydraulic fluid BMS 3-11 or Assembly Lube MCS 352 as you install these parts.

2. Install scraper (81), backup rings (80), and O-ring (79) on bearing (78). On 65-44771-series dampers, install seals (75A) inside bearing (78). Then install the bearing in housing (82). Tighten bearing (78) to 50-100 lb-in (65-44504-series dampers) or to 400-500 lb-in (65-44771-series dampers).

3. On 65-44504-series dampers, install seals (75A) on piston (71). On 65-44504-series dampers, O-rings (77) and channel seals (76) are optional to seal (75A). Install key (75) and seals (73, 74) per Fig. 501 on the large OD of the piston, then slide piston (71) into housing (82).

4. Install backup rings (70), O-rings (69) and scraper (68) on bearing (67) and install the bearing in end cap (62). Tighten bearing (67) to 50-100 lb-in. (65-44504 dampers), to 400-500 lb-in. (65-44771 dampers).

5. Install backup rings (66) and O-ring (65) on cap (62), then install the cap on housing with inserts (63) up and to the right as shown (Fig. 1101).

6. Install washers (61 or 61A) (if applicable) and bolts (60).

7. Install backup rings (59) and O-rings (58) on transfer tubes (57), then install the transfer tube in housing (82).

8. Install backup rings (50) and O-ring (49) on seat (48), then install the seat in housing (53) with spacer (47A).

9. Install poppet (47), sleeve (46), and spring (45).

10. Install backup rings (44) and O-ring (43) on plug (42), then install the plug (42). Do not tighten the plug to final torque, because it will be removed during the test.

11. Install backup rings (39) and O-rings (38) on seats (37). Install springs (41), poppets (40), seats (37) and washer (36) in manifold (53).

12. Install backup rings (35) and O-ring (34) on piston (33).

13. Install backup rings (32) and O-ring (31) on sleeve (30), install piston (33) into sleeve, and install these parts as a unit into the manifold.

14. Install spring (29), washer (28) and cap (27). Tighten the cap to 50-100 lb-in.

15. Put manifold assembly (53) on housing assembly (82), and install washer and bolts (24, 23) (26, 25).

16. Install O-ring (18) on poppet (19) and O-ring (17) on sleeve (16). Install spring (20), poppet (19) and sleeve (16) in body (21).

17. Install spring (15) and filter disk (14) in cap (12). Make sure the coarse mesh of filter disk (14) is against spring (15).

18. Install O-ring (13) on cap (12). Then install the cap into body (21), and tighten to 50-100 lb-in.

19. Install O-ring (22) and body (21) in manifold assembly (53), and tighten to 50-100 lb-in.

20. Do the functional test.

21. After the testing, fill the unit with BMS 3-11 hydraulic fluid. If Skydrol 7000 was used in the test, fully drain the unit before you fill with BMS 3-11 hydraulic fluid.

22. Install O-ring packings and plugs (8 thru 11).

23. Install O-ring packing (7) on seat (6) or plug (2A). Install seat (6), valve (5), washer (3), and screw (2); or valve (4) and cap (l); or plug (2A). Tighten seat (6) and valve (5) to 50-100 lb-in.

24. Apply sealant to caps (12, 27, 42), body (21) and bearings (67, 78) per SOPM 20-50-19 (Fig. 502). Apply a fillet of sealant all around the edges of threaded areas and mating parts.

25. Install lockwire per SOPM 20-50-02 as follows (Fig. 503):

    A. Plug (2A), valve (4) or seat (6) to plug (8), and plug (10) to plug (8).

    B. Bolts (23, 25), cap (27), plug (42) to manifold (56).

    C. Bolts (60) to each other in pairs, and bearing (67) to diametrically opposite bolts (60).

26. Materials and Equipment

    NOTE: Equivalent substitutes can be used.

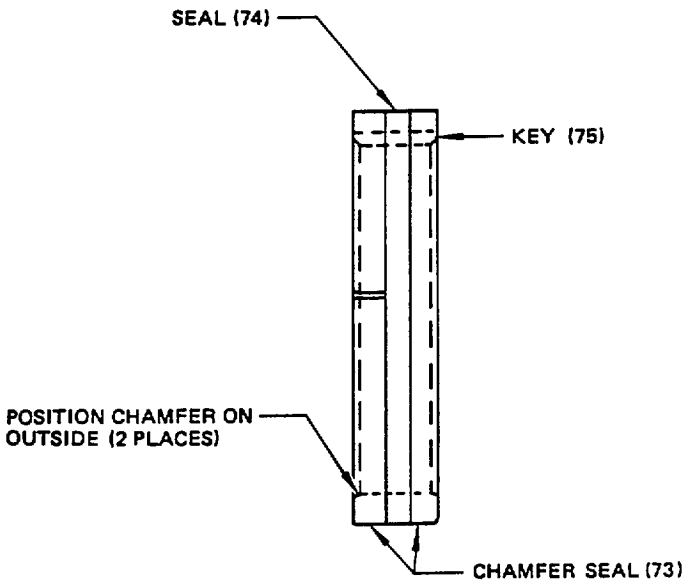
    A. Hydraulic fluid -- BMS 3-11 (SOPM 20-60-02)

    B. Assembly lube -- MCS 352 (SOPM 20-60-02)

    C. Primer -- BMS 10-11, type 1 (SOPM 20-60-03)

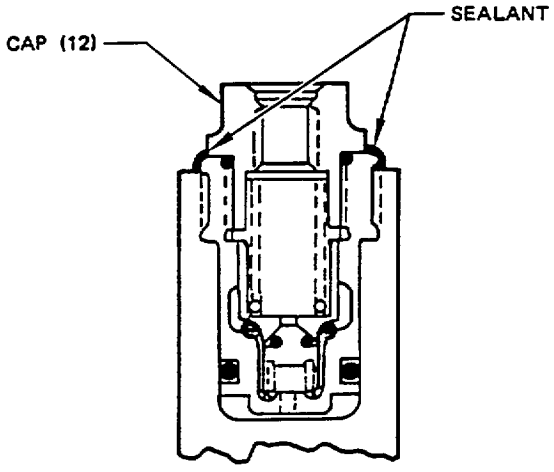
    D. Sealant -- General Electric RTV 162 (Optional: Dow Corning Q3-0121 Replacements) (SOPM 20-60-04)

    E. Holding Fixture -- C32008-1



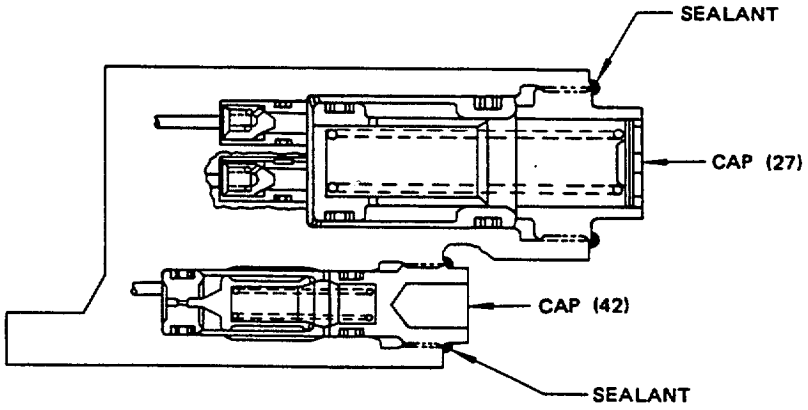
ITEM NUMBERS REFER TO FIG. 1101

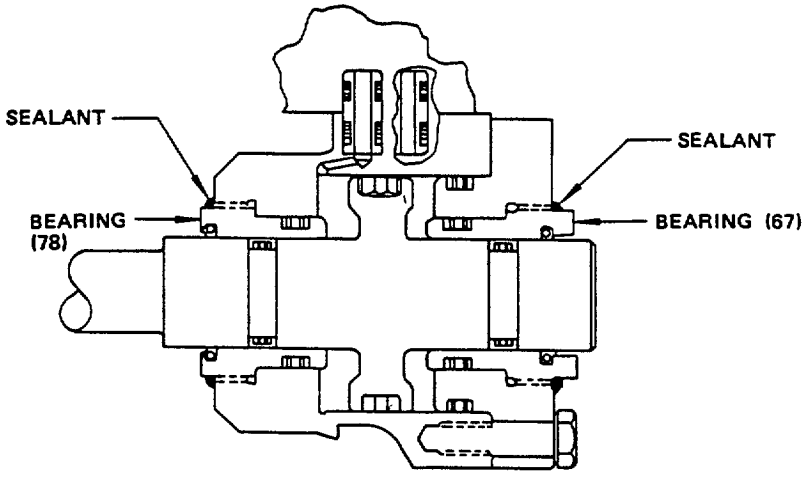
Piston Seal Assembly Details
Figure 501



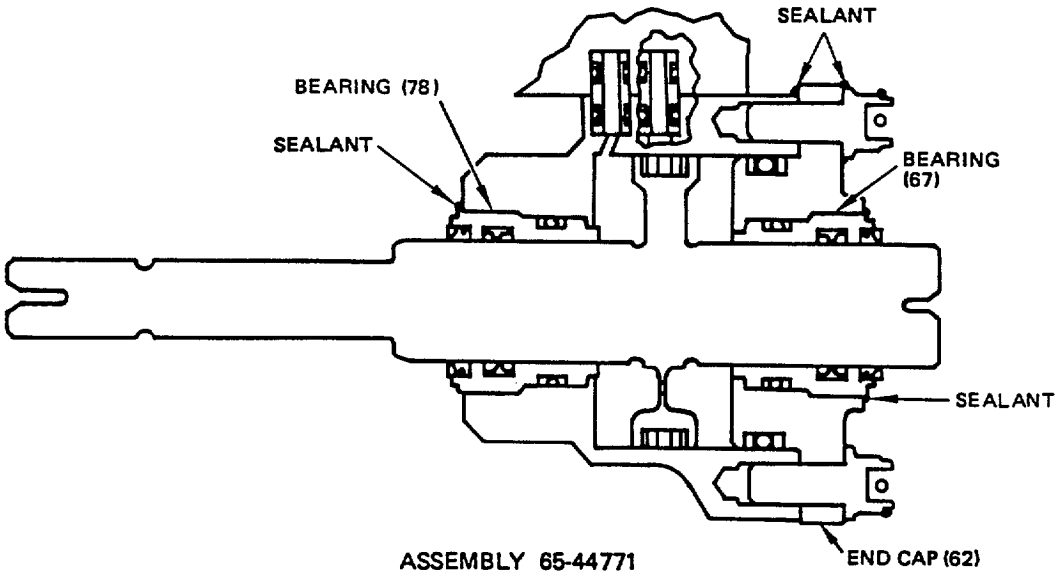
ITEM NUMBERS REFER TO FIG. 1101

Sealant Application
Figure 502 (Sheet 1)





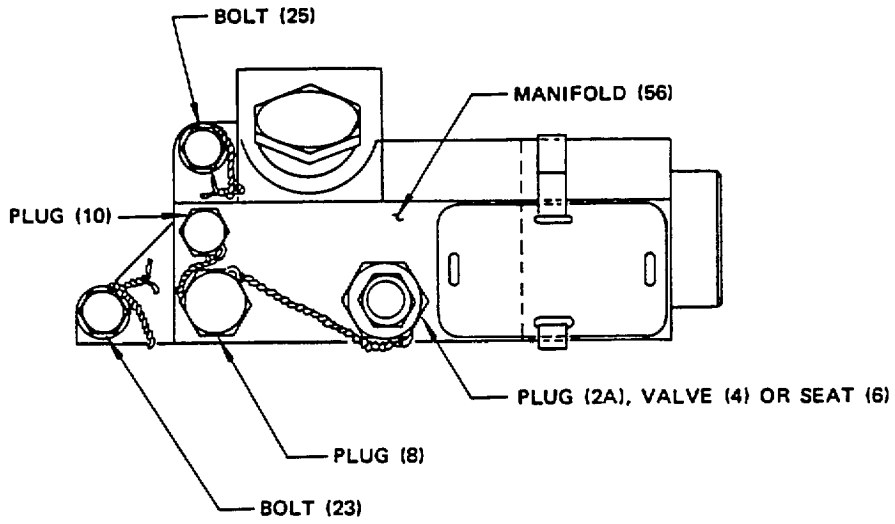
ASSEMBLY 65-44504

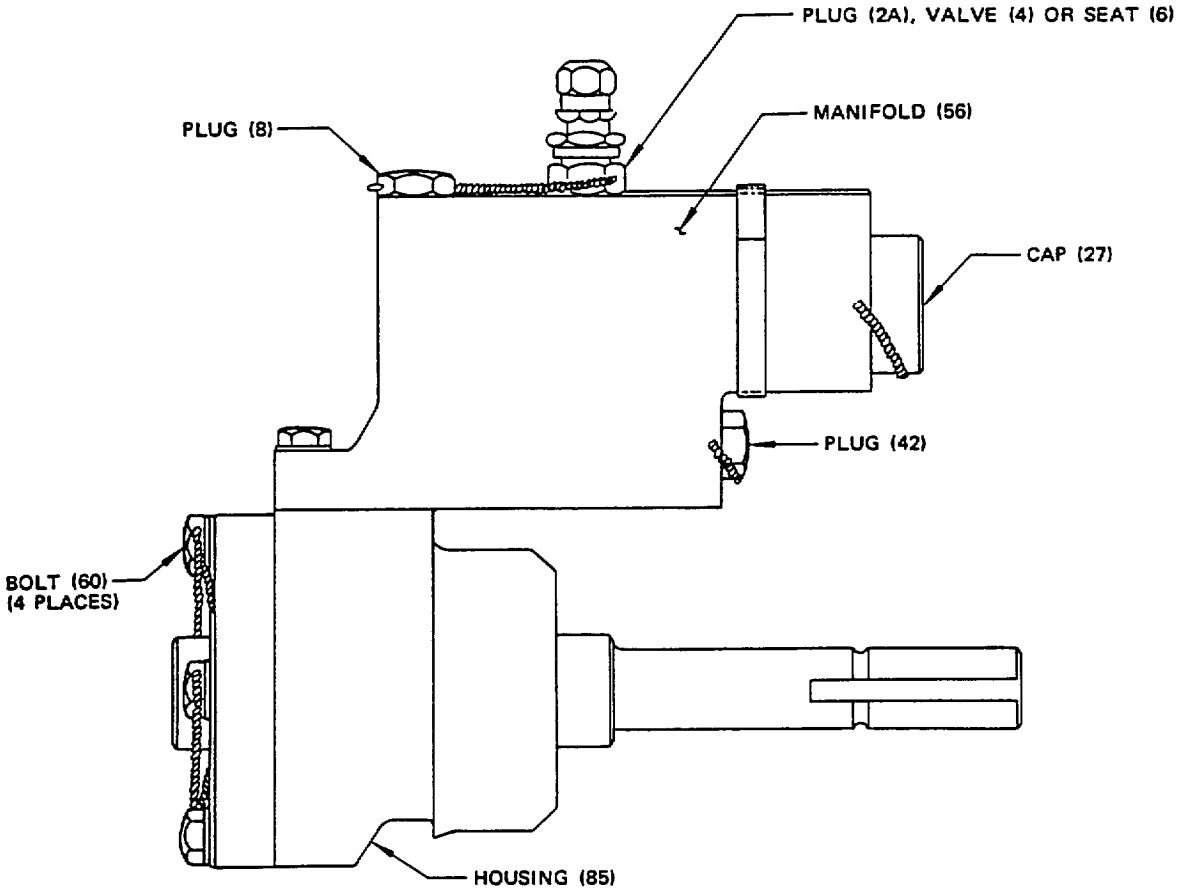


ASSEMBLY 65-44771

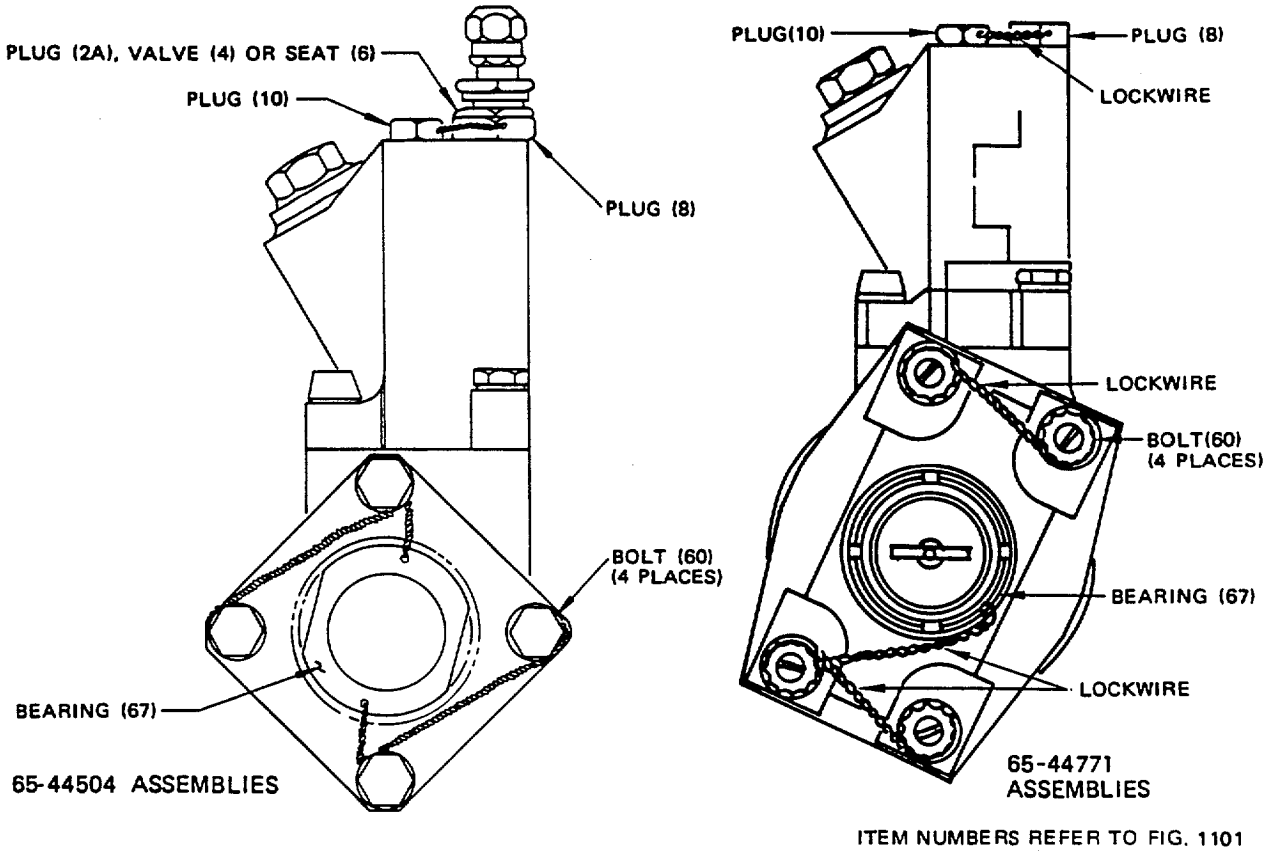
ITEM NUMBERS REFER TO FIG. 1101

Sealant Application
Figure 502 (Sheet 2)



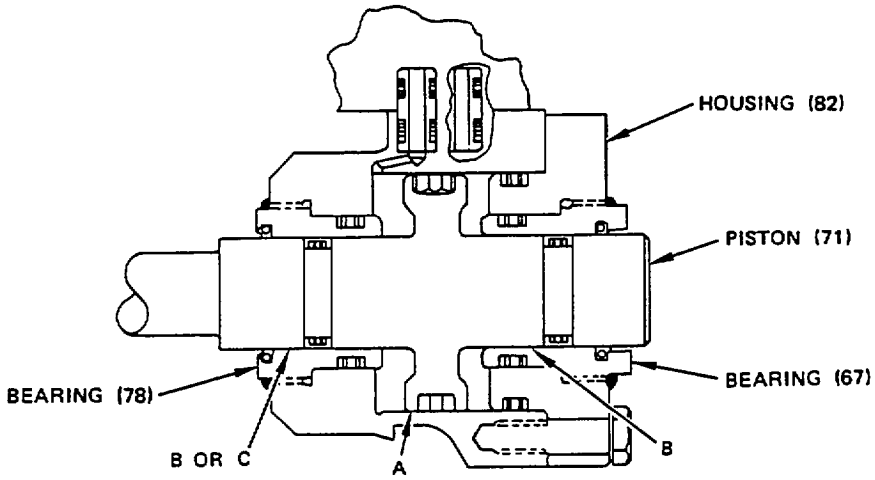


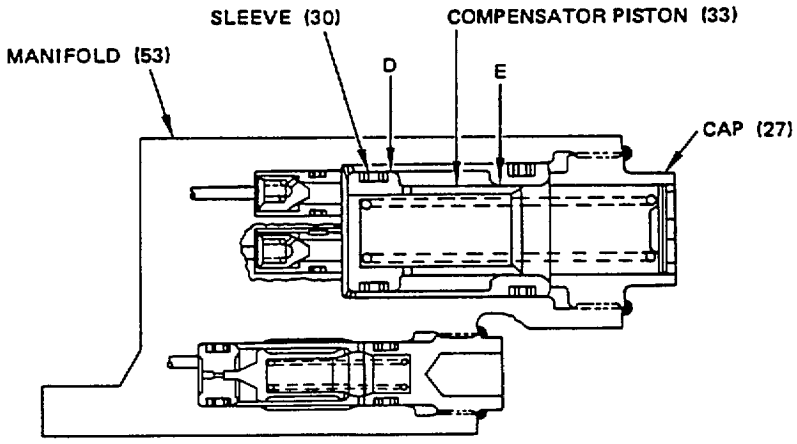
ITEM NUMBERS REFER TO FIG. 1101



ITEM NUMBERS REFER TO FIG. 1101

FITS AND CLEARANCES





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 82 *[1] OD 71 *[2]	2.620 2.615	2.622 2.617	0.003	0.007	2.611	2.626	0.009
A	ID 82 *[5] OD 71 *[6]	3.243 3.238	3.245 3.240	0.003	0.007	3.234	3.249	0.009
B	ID 67 *[3] OD 71 *[2]	1.241 1.237	1.243 1.239	0.002	0.006	1.233	1.247	0.008
B	ID 67, 78 *[7] OD 71 *[6]	1.375 1.371	1.376 1.373	0.002	0.005	1.367	1.381	0.008
C	ID 78 *[4] OD 71 *[2]	1.241 1.237	1.243 1.239	0.002	0.006	1.233	1.247	0.008
D	ID 30 OD 33	1.366 1.362	1.368 1.364	0.002	0.006	1.358	1.372	0.008
E	ID 30 OD 33	0.980 0.970	0.985 0.975	0.005	0.015			

*[1] 65-44577-SERIES HOUSING
*[2] 65-44576-SERIES PISTON
*[3] 69-35842-SERIES OUTER BEARING
*[4] 69-35889-SERIES INNER BEARING
*[5] 65-44627-SERIES HOUSING
*[6] 65-44769-SERIES PISTON
*[7] 69-63594-SERIES BEARING

Fits and Clearances
Figure 601 (Sheet 2)

REF IPL		NAME	TORQUE*	
FIG. NO.	ITEM NO.		POUND-INCHES	POUND-FEET
1101	5	VALVE	50-100	
1101	6	SEAT	50-100	
1101	12	CAP	50-100	
1101	21	CAP	50-100	
1101	27	CAP	50-100	
1101	42	PLUG	50-100	
1101	67 [1]	NUT	50-100	
1101	67 [2]	NUT	400-500	
1101	78 [1]	NUT	50-100	
1101	78 [2]	NUT	400-500	

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

[1] 65-44504 DAMPER ASSEMBLIES
[2] 65-44771 DAMPER ASSEMBLIES

Torque Table
Figure 602

W76136

TESTING

1. Test Equipment (Fig. 1101)

NOTE: Equivalent substitutes can be used.

A. Hydraulic test stand that supplies hydraulic fluid flow of one gpm minimum at 70-120°F and at controlled pressures from zero to proof pressure value

B. Calibrated pressure gages 0-100 psi and 0-6000 psi

C. C32008-1 -- Holding Fixture

D. F80193-1 -- Test Plug (replaces SE32-7004-1)

E. Test fluid -- Hydraulic Fluid BMS 3-11 (Skydrol 7000 optional) (Ref 20-60-03)

F. Assembly lube -- MCS 352 (Ref 20-60-03)

2. Preparation for Test

A. Apply hydraulic fluid BMS 3-11 or assembly lube to O-ring (2), threads of union (1), and install per Fig. 1102.

B. Install damper assembly in holding fixture C32008-1.

C. Fill unit with test fluid and bleed off all air.

WARNING: DO NOT APPLY AIR PRESSURE TO THE DAMPER ASSEMBLY AT ANY TIME OR CYCLE THE UNIT WITH PROOF PRESSURE APPLIED, BECAUSE THE UNIT COULD BREAK AND INJURY TO PERSONNEL COULD OCCUR.

3. Proof Pressure Test (Fig. 1101 and 701).

A. Remove plug (42), spring (45), sleeve (46), poppet (47), seat (48), packing (49) and rings (50). Install test plug F80193-1, O-ring packing and backup rings instead of seat (48) and install sleeve (46), packing (43), rings (44) and plug (42). Do not use poppet (47) and spring (45) for this test.

B. Connect pressure source to port B or port C. Close port D and unused port B or C and set damper piston in one extreme position. Keep port A open.

C. Apply hydraulic pressure of 5400 psi (65-44504 assemblies) or 6000 psi (65-44771 assemblies) to port B and hold for 2 minutes. There must be no external leakage.

D. Decrease the applied pressure to 10 psi and hold for 2 minutes. There must be no external leakage. Release pressure.

E. Set damper piston in opposite extreme position and repeat steps C and D.

F. Remove plug (42), sleeve (46), test plug F80193-1 and seals. Install seat (48), packing (49), ring (50), poppet (47), sleeve (46), spring (45), plug (42), packing (43) and rings (44). Tighten plug to 50-100 lb-in.

4. Perform External Leakage Test (Fig. 701).

WARNING: DO NOT APPLY AIR PRESSURE TO DAMPER ASSEMBLY AT ANY TIME AS FRAGMENTATION AND INJURY TO PERSONNEL MAY RESULT.

A. Close ports B, C and D.

B. Apply 900-psi hydraulic pressure to port A and hold for at least 2 minutes. There shall be no external leakage.

C. Reduce applied pressure to 10 psi and hold for 2 minutes. There shall be no external leakage.

5. Perform Thermal Relief and Check Valve Leakage Test

WARNING: DO NOT APPLY AIR PRESSURE TO DAMPER ASSEMBLY AT ANY TIME AS FRAGMENTATION AND INJURY TO PERSONNEL MAY RESULT.

A. Connect hydraulic pressure supply to port B or port C. Open port D. Close port A and unused port B or C.

B. Apply hydraulic pressure of 2400 psi (for 65-44504 assemblies) or 3000 psi (for 65-44771 assemblies) to port B or C. There must be no flow from port D (65-44504 assemblies or no more than 10 cc per minute flow from port D (65-44771 assemblies).

C. On 65-44771 assemblies, slowly increase pressure until an increase in flow from port D occurs. At this point, check that applied pressure is 3400-4600 psi. Reduce pressure to 3000 psi. After a one-minute seating period, check that flow from port D does not exceed 10 cc per minute.

6. Perform Piston Friction and Dynamic Leakage Test (Fig. 701).

WARNING: DO NOT APPLY AIR PRESSURE TO DAMPER ASSEMBLY AT ANY TIME AS FRAGMENTATION AND INJURY TO PERSONNEL MAY RESULT.

A. Connect pressure supply to port B or port C. Open port D, close port A and unused port B or C.

B. Apply 1500 psi hydraulic pressure to port B or C and using a suitable spring scale or force transducer, check that force required to move piston through its full stroke does not exceed 130 pounds (for 65-44504 assemblies), or 160 pounds (for 65-44771 assemblies).

C. Raise applied pressure to 2400 psi (for 65-44504 assemblies) or 3000 psi (for 65-44771 assemblies) and cycle the piston through full stroke 25 times. Leakage at each piston rod end shall not exceed 2 drops.

NOTE: One full stroke is movement of piston from one extreme position to the opposite extreme and back again.

7. Perform Thermal Relief Valve Test (Fig. 701)

WARNING: DO NOT APPLY AIR PRESSURE TO DAMPER ASSEMBLY AT ANY TIME AS FRAGMENTATION AND INJURY TO PERSONNEL MAY RESULT.

A. Connect pressure supply to port B or port C. Open port D, close port A and unused port B or C.

B. Apply slowly increasing hydraulic pressure to port B or C until flow starts from port D. Check that pressure at which flow starts is 2600-3600 psi (for 65-44504 assemblies) or 3400-4600 psi (for 65-44771 assemblies).

C. For 65-44504 assemblies, decrease pressure slowly until flow from port D decreases to less than 10 drops per minute. Reseat pressure must not be more than 300 psi below the pressure obtained in step B above.

8. Perform Pressure Relief Valve Test (Fig. 701)

WARNING: DO NOT APPLY AIR PRESSURE TO DAMPER ASSEMBLY AT ANY TIME AS FRAGMENTATION AND INJURY TO PERSONNEL MAY RESULT.

A. Open port A and close ports B and C.

B. Apply 45 psi hydraulic pressure to port D. There shall be no flow from port A.

C. Slowly increase applied pressure to port D until flow starts from port A. The pressure at which flow starts from port A shall be 60-120 psi.

D. Decrease applied pressure to port D until flow decreases to less than 10 drops per minute. The reseat pressure shall not be more than 35 psi less than pressure obtained in step C and shall not be less than 45 psi.

9. Perform Check Valve Cracking Pressure Test (Fig. 701)

WARNING: DO NOT APPLY AIR PRESSURE TO DAMPER ASSEMBLY AT ANY TIME AS FRAGMENTATION AND INJURY TO PERSONNEL MAY RESULT.

A. Open port B and close ports C and D.

B. Slowly apply hydraulic pressure to port A until flow starts from port B. Flow shall begin at port B when applied pressure reaches 25 psi or less.

10. Perform Compensator Test (Fig. 701)

WARNING: DO NOT APPLY AIR PRESSURE TO DAMPER ASSEMBLY AT ANY TIME AS FRAGMENTATION AND INJURY TO PERSONNEL MAY RESULT.

A. Connect hydraulic pressure source to port A. Install a 0- to 100-psi range pressure gage to port D and a manual shutoff valve to port B. Close port C and close manual shutoff valve.

B. Apply hydraulic fluid at 45- to 50-psi pressure to port A for a short period. Disconnect pressure source from port A.

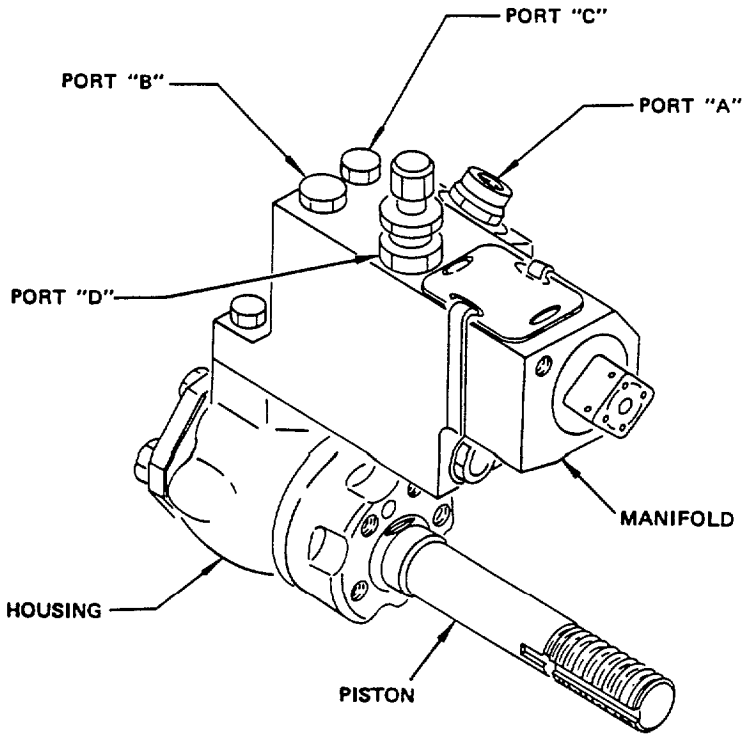
C. Tap 1 to 2 cc of fluid from shutoff valve at port B. Pressure at port D shall be 28 to 38 psi.

D. Tap an additional 20 cc of fluid from shutoff valve at port B. Pressure at port D shall be 15 to 23 psi.

11. Perform Piston Stroke Measurement (Fig. 1101)

A. Place piston (71) in one extreme position and using suitable gage, measure distance piston moves when placed in the opposite extreme position. Total piston stroke must be 0.53 to 0.59 inches (for 65-44504 assemblies) or 0.75 to 0.81 inch (for 65-44771 assemblies).

12. After testing, continue with assembly (Ref ASSEMBLY, par. 21).



Port Locations
Figure 701

NOTE: Refer to Fig. 1101 for item numbers.

Trouble	Possible Cause	Correction
External leakage	Defective O-ring packings (7, 9, 11, 13, 22, 31, 34, or 43), or seals (75A or 76)	Check and replace packings or seals as necessary
Leakage from port D with less than prescribed pressure applied to port B or C	Defective check valve poppets (40), seats (37) or O-ring packings (38)	Check poppets and seats for damaged seal and replace if necessary
	Weak spring (15)	Check spring (15) and replace if necessary
Excessive force required to cycle damper piston	Foreign material in bearing areas	Check and repair or replace parts as necessary
	Foreign material in orifice holes of piston	
Thermal relief valve reseat pressure too low	Weak spring (15)	Check spring (15) and replace if necessary
Flow from pressure relief valve before stated pressure is reached	Weak spring (45)	Check spring (45) and replace if necessary
	Defective seat (48), poppet (47) or O-ring packing (49)	Check and repair or replace as necessary
Excessive pressure required to start flow through check valves	Poppets (19) or (40) sticking	Check poppets (19 and 40) for proper fit and clean, repair or replace as necessary
Excessive drop in pressure on compensator test	Foreign material causing piston (33) to stick in sleeve (30)	Check piston (33) and sleeve (30) and clean, repair or replace as necessary

SPECIAL TOOLS, FIXTURES, AND EQUIPMENT

NOTE: Equivalent substitutes can be used.

1. C32008-1 -- Holding Fixture, Main Landing Gear Damper Assembly
2. F80193-1 -- Test Plug (replaces SE 32-7004-1)

ILLUSTRATED PARTS LIST

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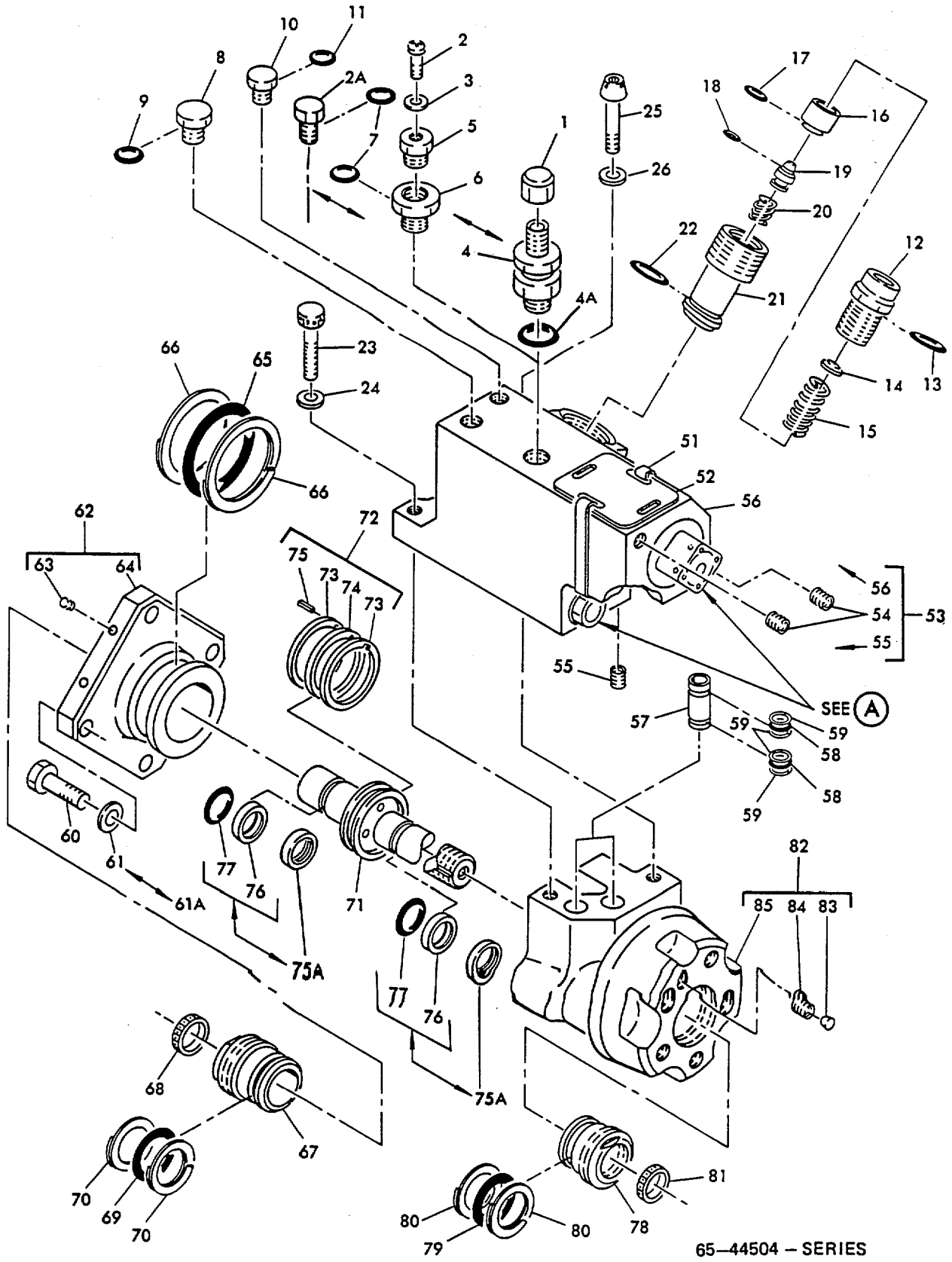
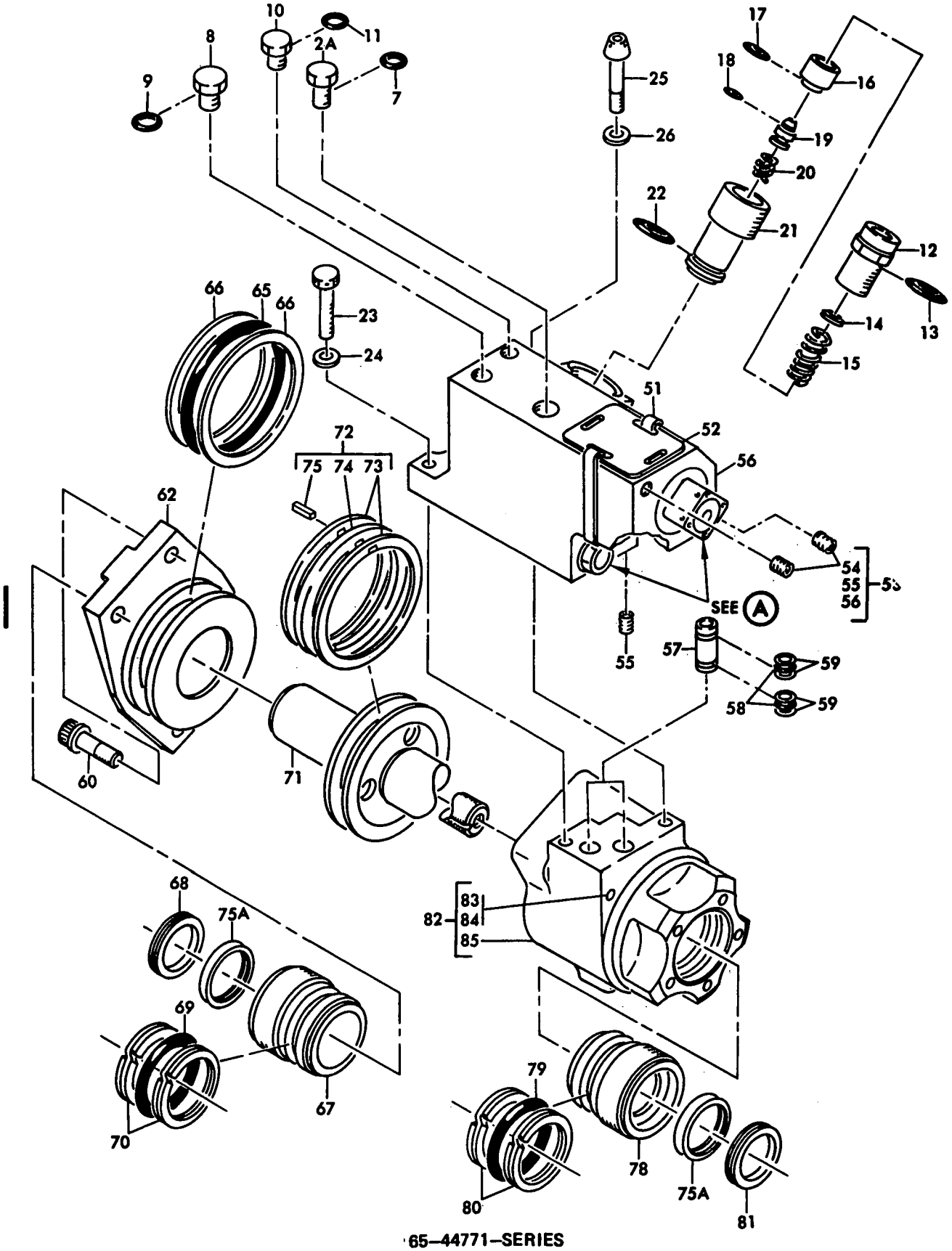
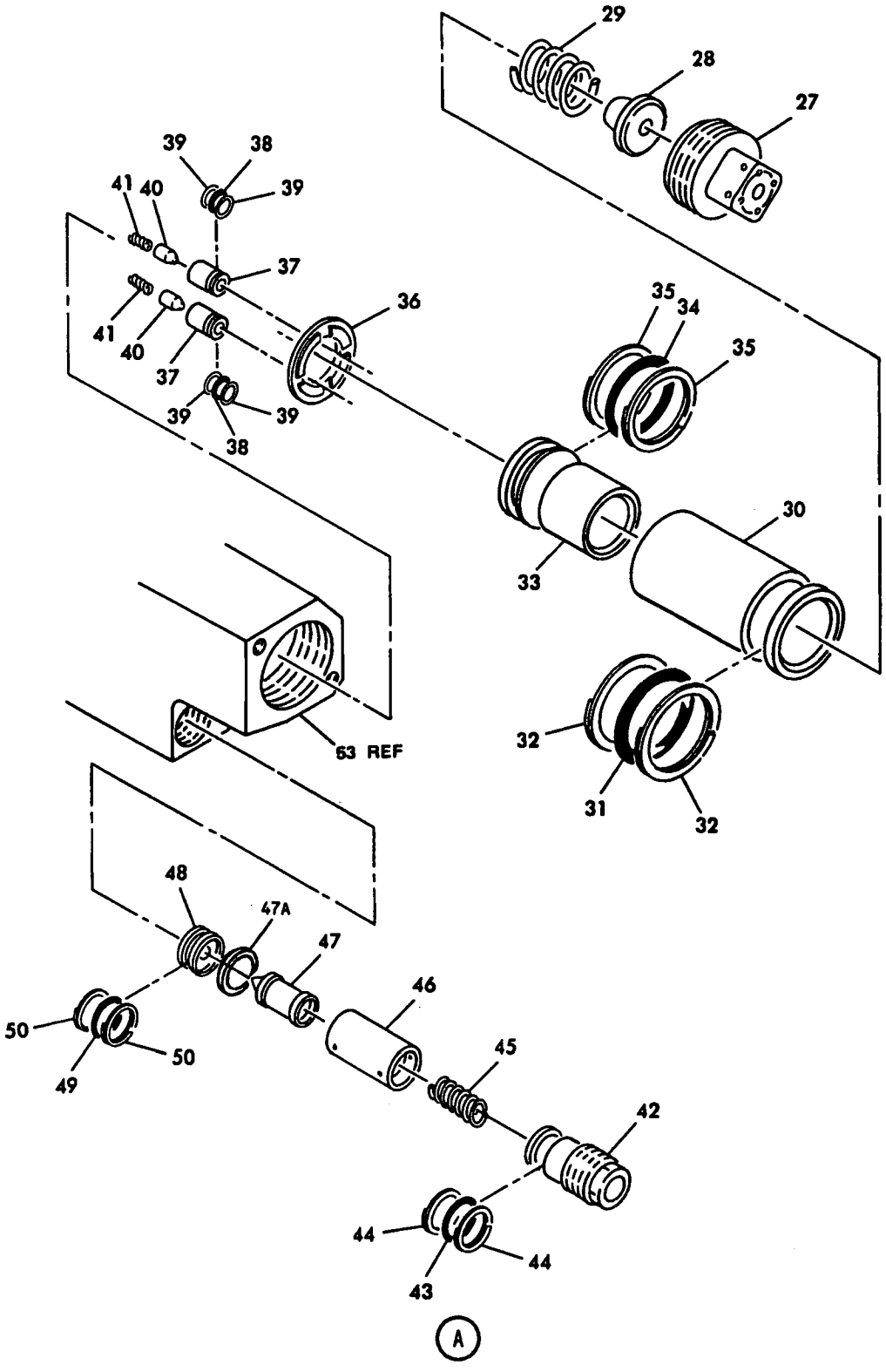


Main Gear Damper Assembly
Figure 1101 (Sheet 1)



65–44771–SERIES

Main Gear Damper Assembly
Figure 1101 (Sheet 2)



Main Gear Damper Assembly
Figure 1101 (Sheet 3)

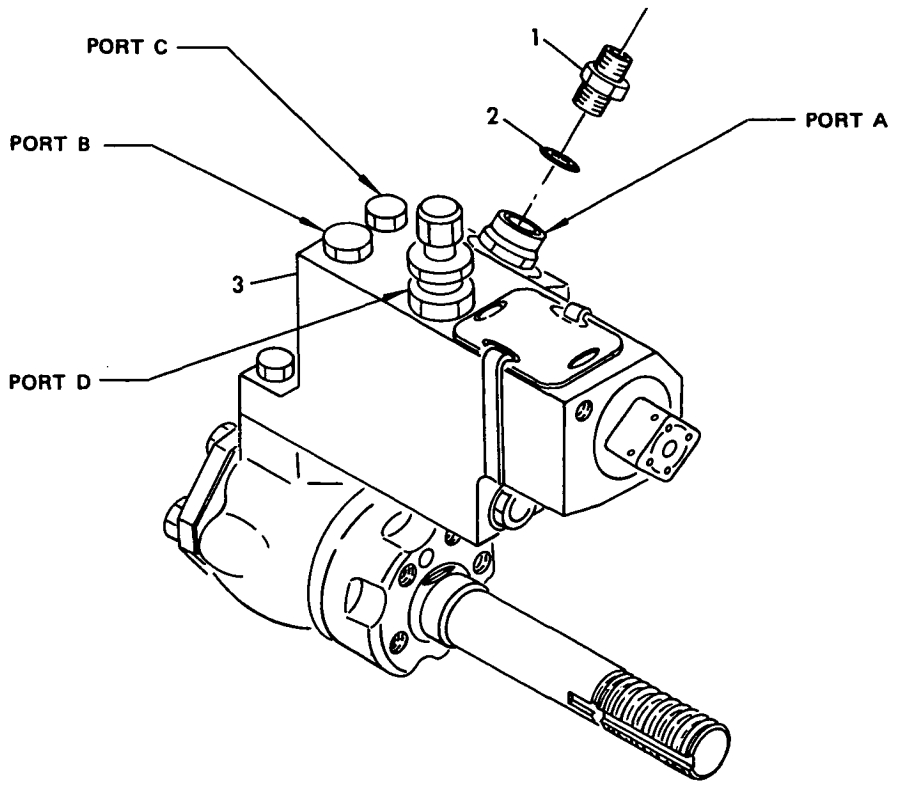
FIG. & ITEM NO.	PART NO.	AIRLINE PART NUMBER	NOMENCLATURE 1 2 3 4 5 6 7	USE CODE	QTY PER ASSY
1101-					
	65-44504-1		DAMPER ASSY, MAIN GEAR	A	RF
	65-44504-2		DAMPER ASSY, MAIN GEAR	B	RF
	65-44504-3		DAMPER ASSY, MAIN GEAR	C	RF
	65-44504-5		DAMPER ASSY, MAIN GEAR	D	RF
	65-44771-2		DAMPER ASSY, MAIN GEAR (PRE SB 32-1193)	E	RF
	65-44771-3		DAMPER ASSY, MAIN GEAR (SB 32-1064, PRE SB 32-1193)	F	RF
	65-44771-4		DAMPER ASSY, MAIN GEAR (POST SB 32-1193)	G	RF
1	69-35650-1		. CAP, DUST	AB	1
2	NAS603-6		. SCREW	C	1
2A	AN814-6DL		. PLUG	D-G	1
3	AN960-10L		. WASHER	C	1
4	BACV10T1		. VALVE, AIR	AB	1
4A	NAS1612-6		. PACKING, O-RING	AB	1
5	AN6204-1		. VALVE, BLEEDER	C	1
6	69-35702-1		. SEAT	C	1
7	NAS1612-6		. PACKING, O-RING	C-G	1
8	AN814-5DL		. PLUG		1
9	NAS1612-5		. PACKING, O-RING		1
10	AN814-2DL		. PLUG		1
11	NAS1612-2		. PACKING, O-RING		1
12	66-8654		. CAP, VALVE		1
13	NAS1612-10		. PACKING, O-RING		1
14	62261		. DISC, FILTER, V81321 (PREF)		1
14	AA70-1908EI		. DISC, FILTER, V01414 (OPT)		1
15	63-8353		. SPRING		1
16	66-8652		. SLIDE, VALVE		1
17	NAS1611-111		. PACKING, O-RING		1
18	NAS1611-008		. PACKING, O-RING		1
19	66-8653		. POPPET, VALVE		1
20	63-8352		. SPRING		1
21	66-8655		. BODY, VALVE		1
22	NAS1611-210		. PACKING, O-RING		1
23	BACB30NE5H9		. BOLT		1
24	AN960PD516		. WASHER		1
25	MS20005H8		. BOLT	A-D	1
25	MS20005H6		. BOLT	EFG	1
26	AN960PD516L		. WASHER	A-D	1
26	BACW10BP5C		. WASHER	EFG	1
27	69-54538-1		. CAP		1
28	69-54525-1		. WASHER, COMPENSATOR SPRING		1
29	69-54508-1		. SPRING, COMPENSATOR		1
30	69-54512-1		. SLEEVE		1
31	NAS1611-218		. PACKING, O-RING		1
32	MS28782-23		. RING, BACKUP		2
32	BACR12BM218		. RING, BACKUP (OPT)	FG	2

FIG. & ITEM NO.	PART NO.	AIRLINE PART NUMBER	NOMENCLATURE 1 2 3 4 5 6 7	USE CODE	QTY PER ASSY
1101-					
33	69-54506-1		. PISTON, COMPENSATOR		1
34	NAS1611-216		. PACKING, O-RING		1
35	MS28782-21		. RING, BACKUP		2
35	BACR12BM216		. RING, BACKUP (OPT)	FG	2
36	69-54536-1		. WASHER, COMPENSATOR	A	1
36	69-54587-1		. WASHER, COMPENSATOR	B-G	1
37	69-54509-1		. SEAT, CHECK VALVE		2
38	NAS1611-012		. PACKING, O-RING		2
39	MS28782-7		. RING, BACKUP		4
39	BACR12BM012		. RING, BACKUP (OPT)	FG	4
40	69-54510-1		. POPPET, CHECK VALVE		2
41	69-54511-1		. SPRING, CHECK VALVE		2
42	69-54505-1		. PLUG, RELIEF VALVE		1
43	NAS1611-113		. PACKING, O-RING		1
44	MS28782-11		. RING, BACKUP		2
44	BACR12BM113		. RING, BACKUP (OPT)	FG	2
45	69-54503-1		. SPRING, RELIEF VALVE	A-D	1
45	66-25548-1		. SPRING, RELIEF VALVE	EFG	1
46	69-54527-1		. SLEEVE, RELIEF VALVE		1
47	69-54502-1		. POPPET, RELIEF VALVE		1
47A	63-12110-1		. SPACER, VALVE SPRING	EFG	1
48	69-54504-1		. SEAT, RELIEF VALVE		1
49	NAS1611-113		. PACKING, O-RING		1
50	MS28782-11		. RING, BACKUP		2
50	BACR12BM113		. RING, BACKUP (OPT)	FG	2
51	69-35587-5		. STRAP	A-E	1
51	69-35587-5		. STRAP (OPT)	FG	1
51	69-35587-6		. STRAP	FG	1
52	BAC27DHY94		. NAMEPLATE	A-D	1
52	BAC27DHY191		DELETED		
52	BAC27DHY237		. NAMEPLATE	EFG	1
53	65-44578-1		. MANIFOLD ASSY	AB	1
53	65-44578-6		. MANIFOLD ASSY	CE	1
53	65-44578-7		. MANIFOLD ASSY	DFG	1
54	MS21209F4-15		. . INSERT, THREAD		2
55	MS21209F5-15		. . INSERT, THREAD		1
56	65-44578-2		. . HOUSING (USED ON 65-44578-1)		1
56	65-44578-5		. . HOUSING (USED ON 65-44578-6)		1
56	65-44578-8		. . HOUSING (USED ON 65-44578-7)		1
57	69-54528-1		. TUBE, TRANSFER		2
58	NAS1611-011		. PACKING, O-RING		4
59	MS28782-6		. RING, BACKUP		8
59	BACR12BM011		. RING, BACKUP (OPT)	F	8

FIG. & ITEM NO.	PART NO.	AIRLINE PART NUMBER	NOMENCLATURE 1 2 3 4 5 6 7	USE CODE	QTY PER ASSY
1101-					
60	BACB30FD6H10		. BOLT	A-D	4
60	BACB30FD7H7		. BOLT	EFG	4
61	BACW10BP6C		. WASHER (REPLS AN960PD616)	A-D	4
61A	65-44504-4		. WASHER (OPT TO ITEM 61)	A-D	4
62	69-54742-1		. CAP, END	EFG	1
62	69-54501-1		. CAP ASSY, END	A-D	1
63	MS21209F4-15		. . INSERT, THREAD (USED ON 69-54501-1)		2
64	69-54501-2		. . CAP (USED ON 69-54501-1)		1
65	NAS1611-229		. PACKING, O-RING	A-D	1
65	NAS1611-336		. PACKING	EFG	1
66	MS28783-7		. RING, BACKUP	A-D	2
66	MS28782-39		. RING, BACKUP	EFG	2
66	BACR12BM336		. RING, BACKUP (OPT)	FG	2
67	69-35842-1		. BEARING, OUTER	A-D	1
67	69-63594-1		. BEARING	EFG	1
68	BACS34A13A		. SCRAPER	A-D	1
68	BACS34A15A		. SCRAPER	EFG	1
69	NAS1611-221		. PACKING, O-RING	A-D	1
69	NAS1611-131		. PACKING, O-RING	EFG	1
70	MS28782-26		. RING, BACKUP	A-D	2
70	BACR12BM131		. RING, BACKUP	EFG	2
71	65-44576-2		. PISTON	A-D	1
71	65-44769-2		. PISTON	EF	1
71	65-44769-3		. PISTON ASSY (WELDED ASSY) (OPT TO 65-44769-2)	EF	1
71	65-44769-6		. PISTON	G	1
72	65-44583-6		. SEAL ASSY, PISTON	A-D	1
72	65-44583-7		. SEAL ASSY, PISTON	EFG	1
73	65-44583-21		. . SEAL (USED ON 65-44583-6)		2
73	65-44583-24		. . SEAL (USED ON 65-44583-7)		2
74	65-44583-22		. . SEAL (USED ON 65-44583-6)		1
74	65-44583-25		. . SEAL (USED ON 65-44583-7)		1
75	65-44583-23		. . KEY		1
75A	7214MT952T		. SEAL ASSY, V72902 *[1]	A-D	2
75A	7220FT952T		. SEAL ASSY, V72902	EF	2
75A	S34572-220H99		. SEAL ASSY, V97820	G	2
75A	595-22000-952-022-0		. SEAL ASSY, V72902 (OPT)	G	2
76	69-54533-1		. SEAL, CHANNEL *[1]	A-D	2
77	NAS1611-214		. PACKING, O-RING *[1]	A-D	2
78	69-35889-1		. BEARING, INNER	A-D	1
78	69-63594-1		. BEARING	EFG	1

FIG. & ITEM NO.	PART NO.	AIRLINE PART NUMBER	NOMENCLATURE 1 2 3 4 5 6 7	USE CODE	QTY PER ASSY
1101-					
79	NAS1611-221		. PACKING, O-RING	A-D	1
79	NAS1611-131		. PACKING, O-RING	EFG	1
80	MS28782-26		. RING, BACKUP	A-D	2
80	BACR12BM131		. RING, BACKUP	EFG	2
81	BACS34A13A		. SCRAPER	A-D	1
81	BACS34A15A		. SCRAPER	EFG	1
82	65-44577-1		. HOUSING ASSY	A-D	1
82	65-44627-3		. HOUSING ASSY	EFG	1
83	BACP20AX12P		. . PIN		1
84	BACP20AX12		. . PLUG		1
85	65-44577-2		. . HOUSING (USED ON 65-44577-1)		1
85	65-44627-4		. . HOUSING (USED ON 65-44627-3)		1

*[1] ITEM 76 (69-54533-1) AND ITEM 77 (NAS1611-214) USED TOGETHER ARE OPTIONAL TO ITEM 75A (7214MT952T) FOR USE CODES A-D.



Main Gear Damper Assembly
Figure 1102

FIG. & ITEM NO.	PART NO.	AIRLINE PART NUMBER	NOMENCLATURE 1 2 3 4 5 6 7	USE CODE	QTY PER ASSY
1102-					
	65-44898-2		MAIN GEAR DAMPER ASSY (PRE SB 32-1064)	A	RF
	65-44898-3		MAIN GEAR DAMPER ASSY	B	RF
	65-44898-5		MAIN GEAR DAMPER ASSY (PRE SB 32-1064)	C	RF
	65-44898-7		MAIN GEAR DAMPER ASSY (POST SB 32-1064) (OPT)	D	RF
	65-44898-8		MAIN GEAR DAMPER ASSY (POST SB 32-1064)	E	RF
1	MS21902-4		. UNION		1
2	NAS1612-4		. PACKING, O-RING		1
3	65-44504-2		. DAMPER ASSY (FIG. 1101)	A	1
3	65-44504-1		. DAMPER ASSY (FIG. 1101)(OPT)	A	1
3	65-44504-3		. DAMPER ASSY (FIG. 1101)	B	1
3	65-44504-5		. DAMPER ASSY (FIG. 1101)	C	1
3	65-44771-2		. DAMPER ASSY (FIG. 1101) (PRE SB 32-1193)	D	1
3	65-44771-3		. DAMPER ASSY (FIG. 1101)(LIMITED) (PRE SB 32-1193)	E	1
3	65-44771-4		. DAMPER ASSY (FIG. 1101)(LIMITED) (POST SB 32-1193)	E	1

VENDORS

V01414 AIRCRAFT POROUS MEDIA, INC., 2200 NORTHERN BLVD., EAST HILLS, NEW YORK 11548-1209

V72902 GREENE, TWEED AND CO. INC., 320 ELM AVE., NORTH WALES, PENNSYLVANIA 19454-3332

V81321 PUROLATOR INC., 970 NEW BRUNSWICK AVE., RAHWAY, NEW JERSEY 07065-3822

V97820 W.S. SHAMBAN & CO., 711 MITCHELL RD., P.O. BOX 665, NEWBURY PARK, CALIFORNIA 91320-2214