TO: ALL HOLDERS OF LEADING EDGE AND TRAILING EDGE FLAPS CONTROL ASSEMBLY OVERHAUL MANUAL, 27-54-12

REVISION NO. 11, DATED JUL 1/01

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 |
| Added SB 27-1241 | | | | | | | | | | | | X | |
| Added information to clarify the hole on crank assembly (565) for bolt (535) installation | | | | | | X | | | | | | X | |
| Edited without technical change | | X | | | | | | | | | | | |

# LEADING EDGE AND TRAILING EDGE FLAPS CONTROL ASSEMBLY

# 27-54-12

BOEING P/N 65-51602-39, -43, -47, -49, -51, -53

AIRLINE P/N

THE FOLLOWING DIRECTIVES APPLY TO THIS SUBJECT:

| BOEING SERVICE BULLETIN | BOEING TEMPORARY REVISION | OTHER DIRECTIVES | DATE DIRECTIVE INCORPORATED INTO TEXT |
|---|---|---|---|
| | | PRR 33532 | Dec 5/84 |
| | | PRR 33813 | Jun 5/85 |
| | | PRR 34494 | Jun 5/89 |
| | | PRR 34494 | Sep 5/90 |
| 27-1180 | | | Sep 5/92 |
| 27-1241 | | | Jul 1/01 |

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 |
|---|---|---|---|---|---|
| 27-54-12 | | | | | |
| * T-1 | Jul 1/01 | | | | |
| T-2 | BLANK | | | | |
| * LEP-1 | Jul 1/01 | | | | |
| LEP-2 | BLANK | | | | |
| T/C-1 | Jun 5/84 | | | | |
| T/C-2 | BLANK | | | | |
| * 1 | Jul 1/01 | | | | |
| 2 | Jun 5/84 | | | | |
| 3 | Dec 5/84 | | | | |
| 4 | Sep 5/88 | | | | |
| 5 | Sep 5/88 | | | | |
| * 6 | Jul 1/01 | | | | |
| 7 | Sep 5/90 | | | | |
| 8 | Sep 5/90 | | | | |
| 9 | Sep 5/88 | | | | |
| 10 | Sep 5/90 | | | | |
| 11 | Dec 5/84 | | | | |
| 12 | Dec 5/84 | | | | |
| 13 | Jun 5/84 | | | | |
| 14 | Sep 5/90 | | | | |
| 15 | BLANK | | | | |
| * 16 | Jul 1/01 | | | | |
| * 17 | Jul 1/01 | | | | |
| * 18 | Jul 1/01 | | | | |
| * 19 | Jul 1/01 | | | | |
| * 20 | Jul 1/01 | | | | |
| * 21 | Jul 1/01 | | | | |
| * 22 | Jul 1/01 | | | | |

TABLE OF CONTENTS



*[1] Special instructions not required. Use standard industry practices and information contained in 20-30-01 and 20-30-03.

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

# LEADING EDGE AND TRAILING EDGE FLAPS CONTROL ASSEMBLY

1. Description and Operation

   A. The LE and TE flaps control assembly consists of a control assembly, a TE flap control valve assembly, and a LE flap control valve assembly.

   B. Inside the control assembly is an input and follow-up linkage for the TE flaps control valve and a control linkage for the LE flaps control valve. A shaft supported by ball bearings in the housing carries five switch cams and two valve cams. The shaft end which protrudes through the housing carries a cable drum. Attached to the housing is a cable guard protecting the drum.

   C. A mechanical input positions the TE flap control valve which directs (available) hydraulic pressure to the TE flap actuators. Motion of the TE flaps, through a follow-up system, limits amount of flap actuation and sequentially positions the LE flap control valve, which directs hydraulic pressure to the LE flaps for coordinated action with the TE flaps . Integral cams, in turn, actuate appropriate switches (not part of assembly) to indicate system direction and to signal improper conditions for flap positioning.

   D. Leading particulars (approximate)

      Length (overall) -- 16 inches
      Height (overall) -- 13 inches
      Width (overall) -- 9.5 inches
      Weight (approx) -- 20 pounds

2. Disassembly (Fig. 3)

   A. Remove screws (60), cover assembly (65) and pan assembly (80).

   B. Remove bolts (95), washers (100) and drum guard (105).

   C. Remove nut (150), washer (155), eyebolt (160) and spring (115).

   D. Remove nut (120), washer (125), bolt (130). Remove bolts (1), washers (5) and valve assembly (10). Remove parts (15 thru 30) from valve assembly (35) as required.

   E. Remove plugs (165) then remove parts (170 thru 185). Remove bolts (40), washers (45) and valve assembly (50) from housing assembly (690).

      NOTE: Refer to 27-53-12 for overhaul procedures for valve assembly (50).

F. Remove nut (190), washer (195) and bolt (200). Loosen nut (210) and separate link assembly (135) from bearing (215).

NOTE: Do not remove bearing (140) from link (135) unless necessary for repair or replacement.

G. Remove parts (220 thru 300).

NOTE: Do not remove bushings (305) from lever (310) unless necessary for repair or replacement.

H. Remove parts (315 thru 335) and follower arm assemblies (365, 410).

I. Remove nut (350), washer (355), bearing (360), tee (362), bearing (340) and bushing (345) from arm assembly (365).

NOTE: Do not remove bearing (370) from arm (375) unless necessary for repair or replacement.

J. Remove nut (395), washer (400), bearings (380, 405), spacer (385, 390) from arm assembly (410).

NOTE: Do not remove bearing (415) from arm (420) unless necessary for repair or replacement.

K. Remove cotter pin (425), nut (430) from shaft (510). Remove parts (435 thru 470) and remove shaft (510) from housing assembly (690). Remove parts (475 thru 490).

L. Remove drum (495) from shaft (510). Remove pin (500) and plug (505).

M. Remove screws (515), plate (520) and input crank (565) from housing assembly (690). Remove parts (525 thru 535) and separate link assembly (540) from input crank (565).

NOTE: Do not disassemble link assembly (540) or crank assembly (565) unless necessary for repair or replacement.

N. Remove parts (590 thru 635, 685) from housing assembly (690).

NOTE: Do not disassemble housing assembly (690) unless necessary for repair or replacement.

3. Inspection/Check

A. Check all parts for obvious defects in accordance with standard industry practices.

B. Penetrant check per 20-20-02 -- guard (105), tee (362), links (145, 270, 550), sleeve (255), lever (310), arms (375, 420), drum (495), shaft (510), crank (585) and housing (715).

C. Magnetic particle check per 20-20-01 -- cams (475, 485), pin (500).

D. Check springs (110, 115) per Fig. 1.

| Spring Data | Spring (110) | Spring (115) |
|---|---|---|
| Free length inside hooks (inches) (Suggested specification) | 3.24 | 3.07 |
| Initial tension (pounds) | 3.40 - 4.60 | 3.50 - 4.50 |
| Load at 4.12 inches (pounds) | 9 - 11 | |
| Load at 4.82 inches (pounds) | | 18 - 22 |
| Load at 5.85 inches (pounds) | 20 - 24 | |
| Maximum extended length Without permanent set (inches) | | 5.25 |

Spring Check Data
Figure 1

4. Repair

A. Repair minor defects in accordance with standard industry practices.

B. Refinish

NOTE: Refer to 20-30-02 for stripping of protective finish and to 20-41-01 for decoding Boeing finish codes.

(1) Cover (75), pan (80, 90, 65-51617-2 only), tee (362), spacers (440, 470, 480, 490), plates (520, 615) -- Alodize or chromic acid anodize and apply 1 coat of BMS 10-11, type 1, (F-2.30) all over. Material: Al alloy.

(2) Guard (105), lever (310), arm (375) -- Chromic or sulfuric acid anodize (F-17.05) and apply 1 coat of primer, BMS 10-11, type 1 (F-20.02) all over. Material: Al alloy.

(3) Springs (110, 115, 290) -- Cadmium plate and apply 1 coat of primer, BMS 10-11, type 1 (SRF-1.92) all over. Material: Steel wire per QQ-W-470.

(4) Link (145) -- Passivate (F-17.09) all over. Material: 17-4PH CRES, 150-170 ksi.

(5) Sleeve (255) -- Passivate (F-8.07) all over. Material: 303 CRES.

(6) Link (270) -- Chromic or sulfuric acid anodize (F-17.05) and apply 1 coat of primer, BMS 10-11, type 1 (F-20.02) except omit primer on threads. Material: Al alloy.

(7) Cams (445 thru 465, 65-51618-1, -4, -5, -7, -9, -10) -- Hard anodize (F-2.204) on peripheral surface only. Flash hard coat 0.0002-0.0004 in. thick and seal with sodium dichromate per MIL-A-8625 all other surfaces. Material: Al alloy.

(8) Cam (467, 65-51618-12) -- Hard anodize (F-17.06) on peripheral surface only. Flash hard coat 0.0002-0.0004 in. thick and seal with sodium dichromate per MIL-A-8625 all other surfaces. Material: Al alloy.

(9) Cams (445 thru 467, 65-51618-13 thru -19) -- Cadmium plate 0.0002 to 0.0004 inch thick (F-15.02) all over. Material: CRES.

(10) Cam (475) -- Passivate (F-8.07) all over and cadmium plate (F-15.02) on splines and both sides within 0.75 in. radius only. Material: 15-5 CRES, 180-200 ksi.

(11) Cam (485) -- Passivate (F-8.07) all over and cadmium plate (F-1.1926) on splines and both sides within 0.75 in. radius only. Material: 17-7PH or 17-4PH CRES, 180-200 ksi.

(12) Drum (495) -- Chromic or sulfuric acid anodize (F-17.05) and apply 1 coat of primer, BMS 10-11, type 1 (F-20.02) all over except omit primer on splines. Material: Al alloy.

(13) Pin (500) -- Cadmium plate (F-1.1926) all over. Material: 4340 steel, 125-145 ksi.

(14) Plug (505) -- Chromic acid anodize (F-2.26) all over and apply 1 coat of primer, BMS 10-11, type 1 (SRF-12.205) on all external surfaces. Material: Al alloy.

(15) Shaft (510) -- Chromic acid anodize (F-2.26) all over and apply 1 coat of primer, BMS 10-11, type 1 (SRF-12.205) except no primer on splines and threads. Material: Al alloy.

(16) Link (550) -- Chromic acid anodize and apply 1 coat of primer, BMS 10-11, type 1 (F-18.13) except omit primer in bores for bearings. Material: Al alloy.

(17) Crank (585) -- Chromic or sulfuric acid anodize (F-17.05) and apply 1 coat of primer, BMS 10-11, type 1 (F-20.02) except no primer on splines, bearing seats or 0.2495-0.2505 and 0.257 inch diameter holes. Material: Al alloy.

(18) Housing (715) -- Chromic or sulfuric acid anodize (F-17.05) and apply 1 coat of primer, BMS 10-11, type 1 (F-20.02) except omit primer in holes. Material: Al alloy.

(19) Arm (420) -- Anodize (F-17.05) and apply primer (F-20.02) except omit primer on bearing seat.

(20) Cover Pan (80, 65-51617-4 and 65C32708-1) -- Chemical treat and apply one coat of primer, BMS 10-11, type 1 (F-18.06) all over. Material: Al alloy.

C. Replacement

(1) Bearing (140) - Install replacement bearing with BMS 5-95 sealant and point stake per 20-50-03.

(2) Bearings (370, 415, 545) -- Install replacement bearings with BMS 5-95 sealant and roller swage per 20-50-03.

(3) Bearing (575) -- Install replacement bearing with BMS 5-95 sealant and swage ring (570) per 20-50-03.

(4) Nameplates (655 thru 682) -- Install replacement nameplates and bond per 20-50-12, type 70. Fay surface coverage of 100 percent and edge squeeze-out is required. If required, steel stamps assembly number and serial number on nameplate (682) as given in SOPM 20-50-10.

(5) Bushings (305) -- Install replacement bushing as given in SOPM 20-50-03 and machine bushing I.D. thru to 0.4370-0.4380 inch diameter.

5. Assembly (Fig. 3)

A. Install retainer assembly (635) in housing assembly (690) and secure with bolts (625) and washers (630) using BMS 5-95 sealant.

B. Install bearings (620) in housing assembly (690) with sealant. Install retainer (615) and secure with screws (605) and washers (610). Install screws (605) and washers (610) with sealant.

C. Install bolt (590), washer (595) and spacer (600) in housing assembly (690).

D. Assemble the link assembly (540) on the crank assembly (565). Crank assembly (565) has two holes. The 0.2495-0.2505 inch diameter hole is used for bolt (535), the 0.323-0.327 inch diameter hole is for a rig pin that is used in rigging the valve assemblies (10) and (50). Make sure that bolt (535) is installed into the correct hole. Install bolt (535), washer (530) and nut (525) with BMS 5-95 sealant.

CAUTION: DO NOT TIGHTEN BOLT (555) OR DAMAGE TO INPUT CRANK ASSEMBLY (565) WILL RESULT.

E. Install bolt (555), washer (560) on input crank assembly (565). Do not tighten bolt (555). Assemble input crank assembly (565) in housing assembly (690) and secure with plate (520) and screws (515).

F. Assemble shaft (510) and cams (475, 485).

(1) Install plug (505) and join (500) on shaft (510) with sealant.

(2) Coat splines of drum (495) with grease BMS 3-24 and install drum on shaft (510).

(3) Apply a coat of grease MIL-G-23827 to cam surface and grease BMS 3-24 to splines of cams (475, 485). Position spacers (472, 480, 490) and cams (475, 485) in housing assembly (690) and install shaft (510) with attached drum (495).

(4) Apply a coat of grease MIL-G-23827 to cam surface and grease BMS 3-24 to splines of cams (445 thru 467). Install spacer (470) and cams (445 thru 467) on shaft (510). Install cams (445 thru 467) with identification numeral facing outward.

(5) Install spacer (440), washers (435) and nut (430) on shaft (510). Install nut (430) with grease BMS 3-24 and tighten to 250-400 lb-ins. Install cotter pin (425).

NOTE: Use washers AN960D1616L as required with washers (435) to facilitate installation of cotter pin.

G. Lightly lubricate bearing (405) with grease, MIL-G-23827 and install on follower arm assembly (410). Secure bearing with washer (400) and nut (395). Install bearings (380) and spacers (385, 390).

H. Lightly lubricate bearing (360) with grease, MIL-G-23827 and install on follower arm assembly (365). Position tee (362) on follower arm assembly (365) and install washer (355) and nut (350) to secure bearing (360). Install bearing (340) and spacer (345).

I. Position follower arm assemblies (365, 410) in housing assembly (690) and secure with bolt (325), washers (320), bushings (330, 335) and nut (315).

J. Install bushings (295), leaf spring (290), eyebolt (285), washers (280) and nut (275) on summing lever assembly (310). Install bushings (295) with grease, MIL-G-23827.

K. Assemble nut (260), sleeve (255), washer (245), nut (250) and bearing (240) on link (270).

NOTE: Do not tighten nuts (260, 250).

L. Position link (270) on follower arm assembly (410) and secure with bushing (265), bolt (235), washer (225) and nut (220).

M. Position summing lever assembly (300) on link assembly (540) and secure with parts (220, 225, 230).

N. Lightly coat packings (30) with hydraulic fluid, BMS 3-11 and install on reducers (20, 25) and union or reducer (15). Install parts (15, 20, 25) on valve assembly (35).

O. Install valve assemblies (10, 50) on housing assembly (690) and secure with bolts (1, 40) and washers (5, 45). Install bolts (1, 40) and washers (5, 45) with sealant.

P. Connect valve assembly (50) to summing lever assembly (300) with bolt (185), washer (180), nut (175), and cotter pin (170).

Q. Assemble bearing (215), washer (205), nut (210) on link assembly (135).

R. Install link assembly (135) on valve assembly (10) and secure with bolt (130), washer (125) and nut (120) using BMS 5-95 sealant.

S. Rigging valve assemblies (10, 50).

(1) Install 0.309-0.311 in. diameter rigging pin thru hole in housing assembly (690) to secure input crank assembly (565).

(2) Install a rigging pin (MS20392 or equivalent) thru cam (485) and follower arm assembly (410).

(3) Rigging procedures for valve assembly (50).

(a) Turn bearing (240) in 180 degree increments. Install bolt (235) and check that slide of valve assembly (50) aligns with index surfaces (Fig. 2).

(b) When approximate position of slide is reached, install parts (220, 225, 230) thru summing lever assembly (300) and bearing (240).

(c) Rotate sleeve (255) to obtain exact position of slide then tighten nuts (250, 260).

(4) Rigging procedures for valve assembly (10)

(a) Rotate bearing (215) in 180 degrees increment. Install bolt (200) and check that slide aligns with index surface shown in Fig. 2.

(b) When proper slide position is obtained, attach bearing (215) to follower arm assembly (365) with bolt (200), washer (195) and nut (190). Use BMS 5-95 sealant with nut (190).

(5) Remove rigging pins.

T. Install eyebolt (160) in housing assembly (690) and secure with washer (155) and nut (150). Install springs (110, 115).

U. Install guard (105) and secure with bolts (95) and washers (100).

V. Check that unit operates smoothly when cable drum (495) is rotated in both directions.

W. Lockwire the following parts with MS20995NC32 using double twist method per 20-50-02.

(1) Nut (260) to link (270).

(2) Nut (250) to lockwasher (245).

(3) Nut (210) to lockwasher (205).

X. When using the optional cover assembly (65, 69-38188-1), or cover pan assembly (80, 65-51617-1), coat surface of gaskets (70, 85) with grease, MIL-G-23827. Install cover (65) and cover pan (80) on housing assembly (690) and secure with screws (60). Install screws (60) with sealant.

Y. Install plugs (165, 685) on housing assembly (690) and fillet seal seam around plugs with sealant.

Z. Materials.

NOTE: Equivalent substitutes may be used.

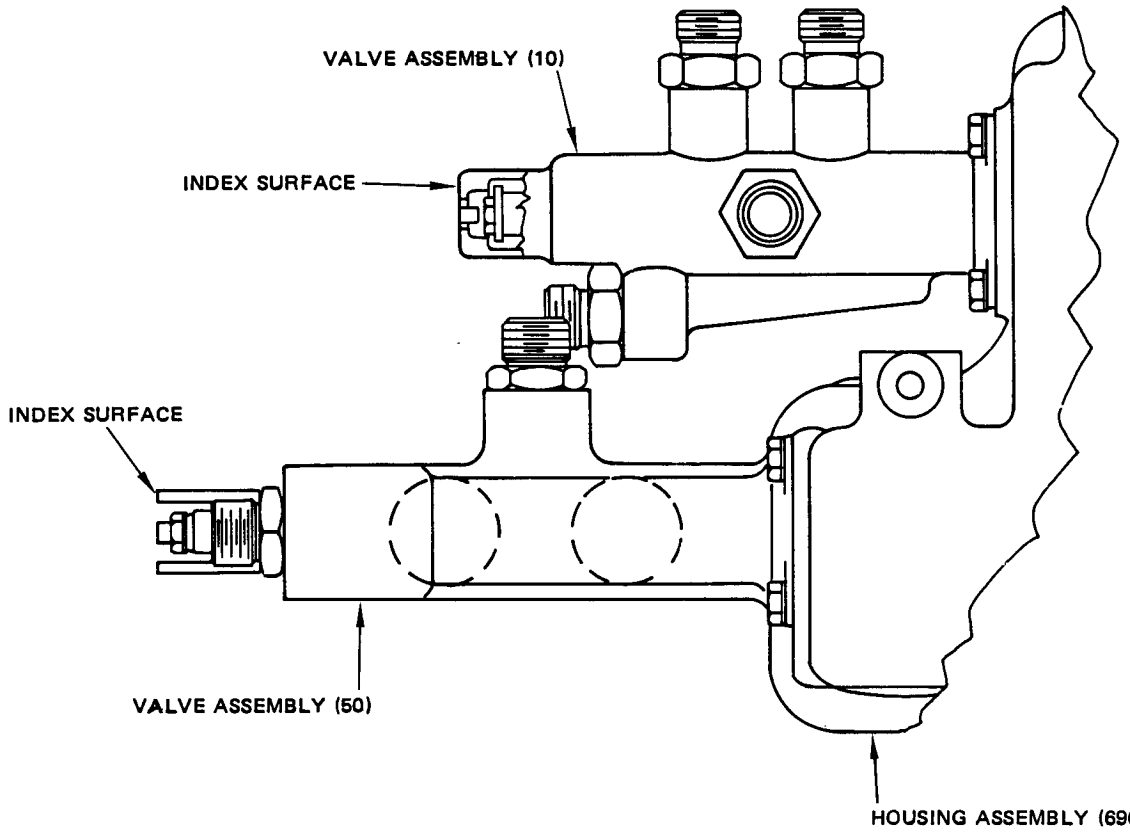
(1) Grease -- MIL-G-23827 (Ref 20-60-03).

(2) Grease -- BMS 3-24 (Ref 20-60-03).

(3) Hydraulic fluid -- BMS 3-11 (Optional: Skydrol assembly lube MCS 352) (Ref 20-60-03).

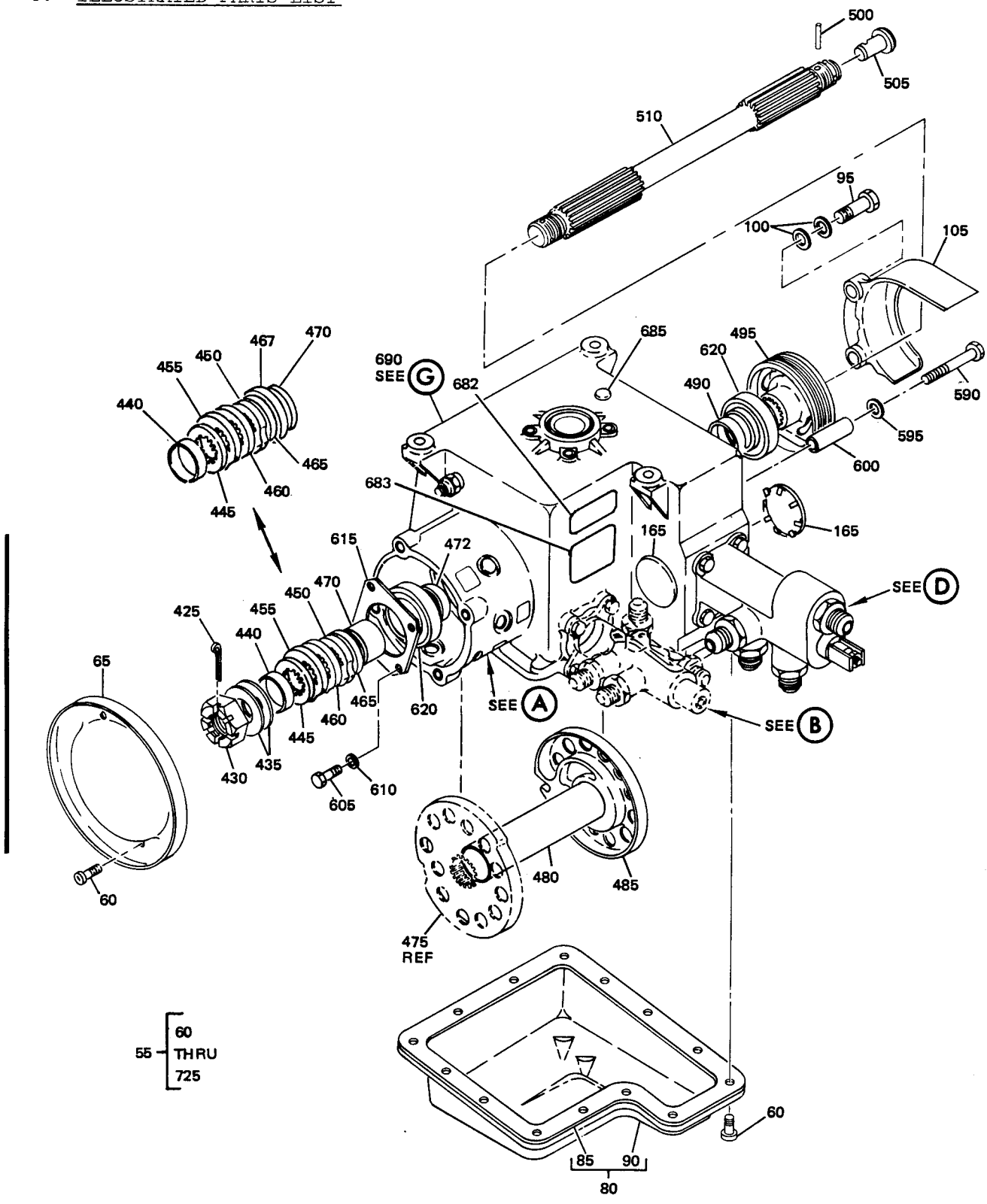
(4) Sealant -- BMS 5-95 (Ref 20-60-04).

(5) Lockwire -- MS20995NC32.

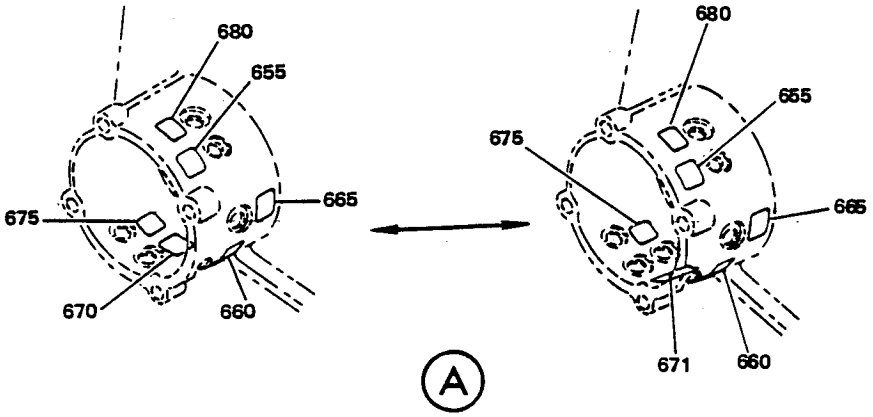


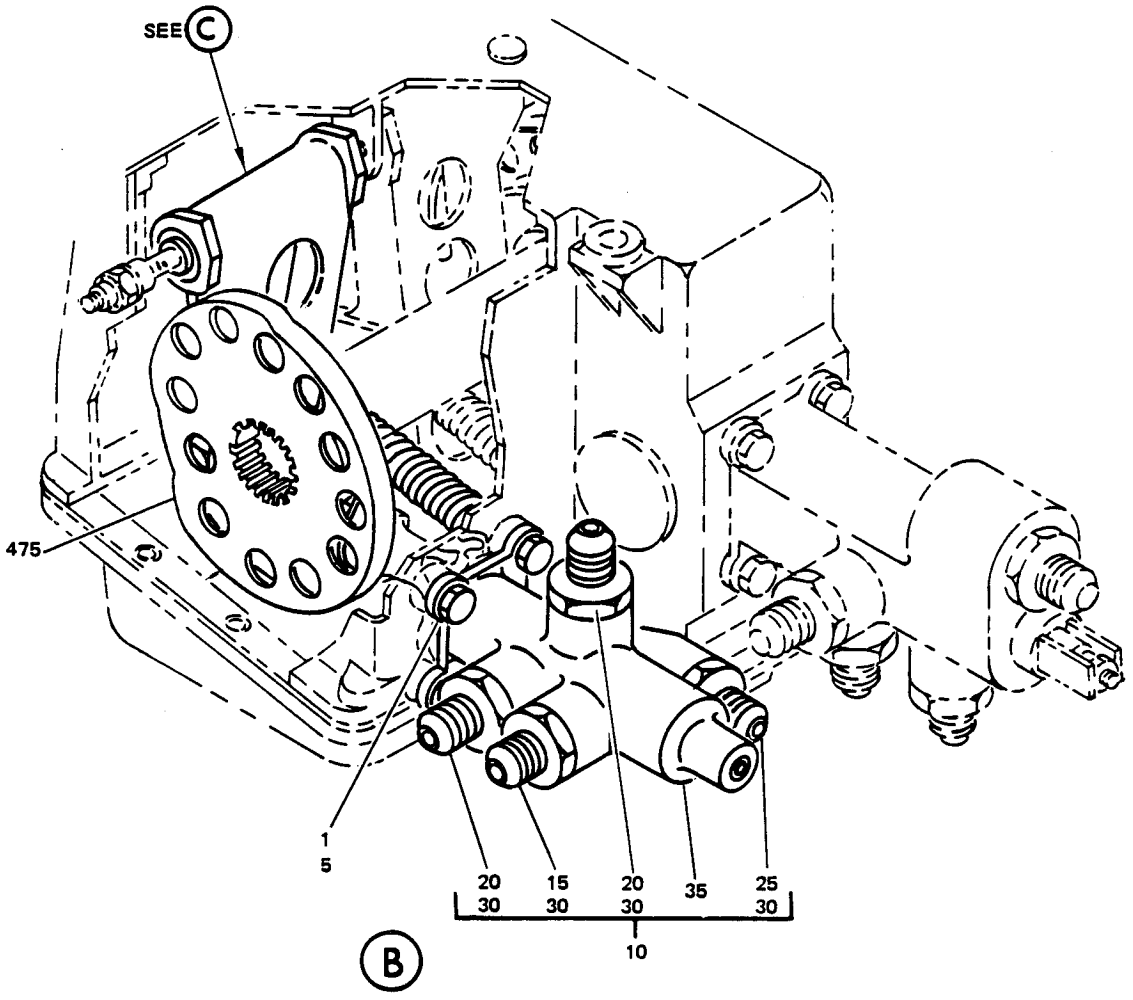

Rigging Diagram
Figure 2

6. ILLUSTRATED PARTS LIST

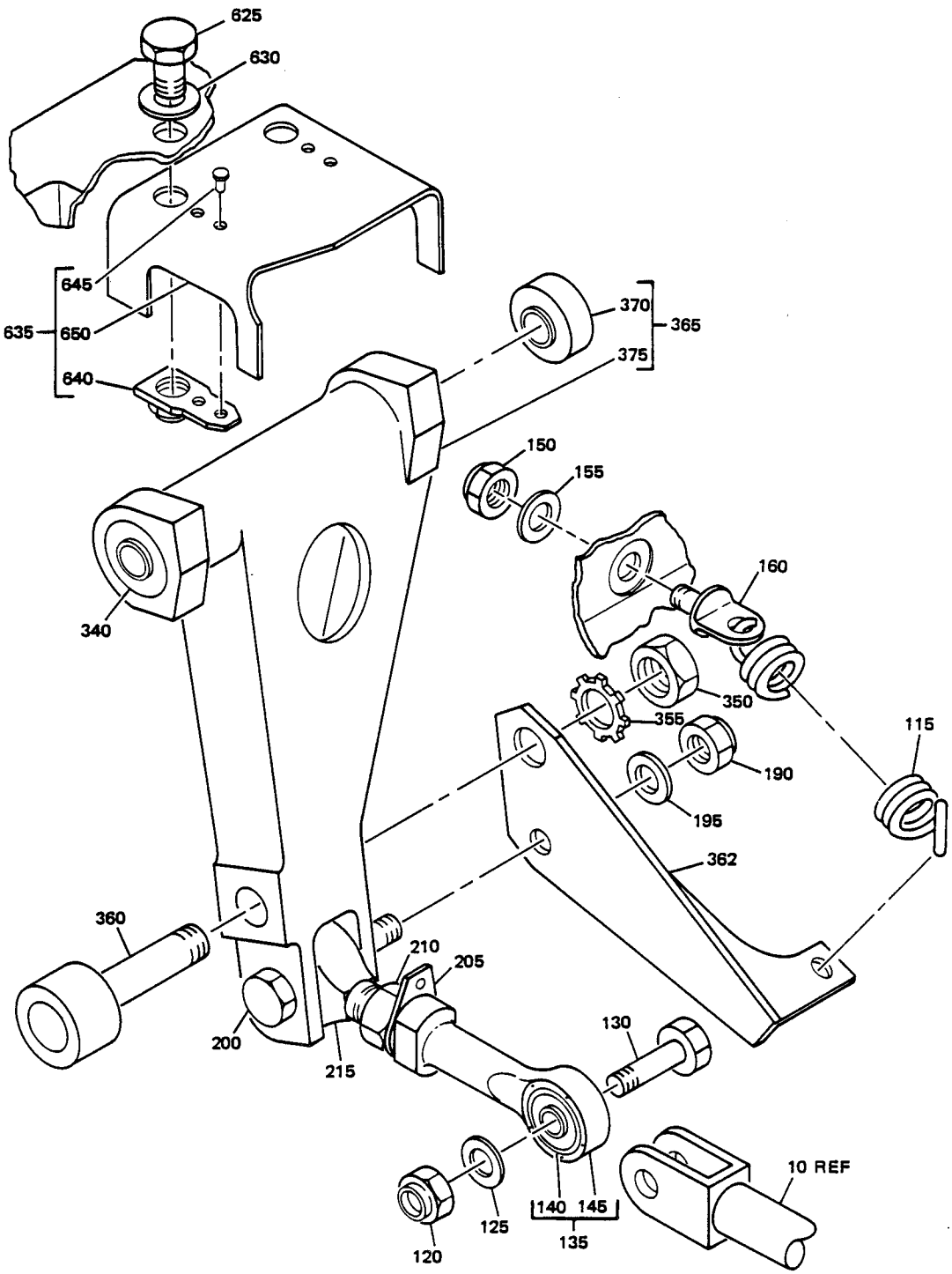



Leading Edge and Trailing Edge Flaps Control Assembly
Figure 3 (Sheet 1)



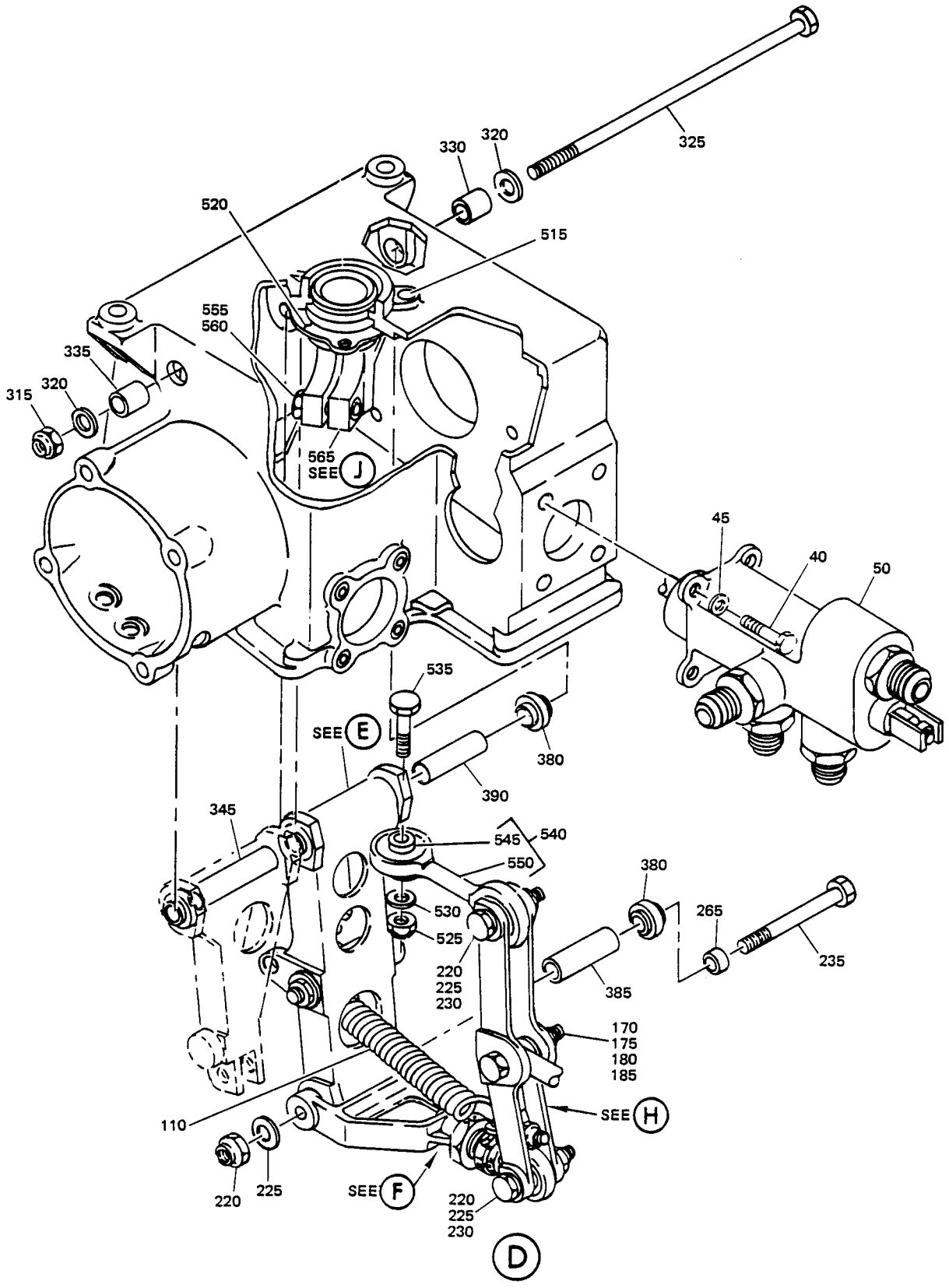




Leading Edge and Trailing Edge Flaps Control Assembly
Figure 3 (Sheet 2)

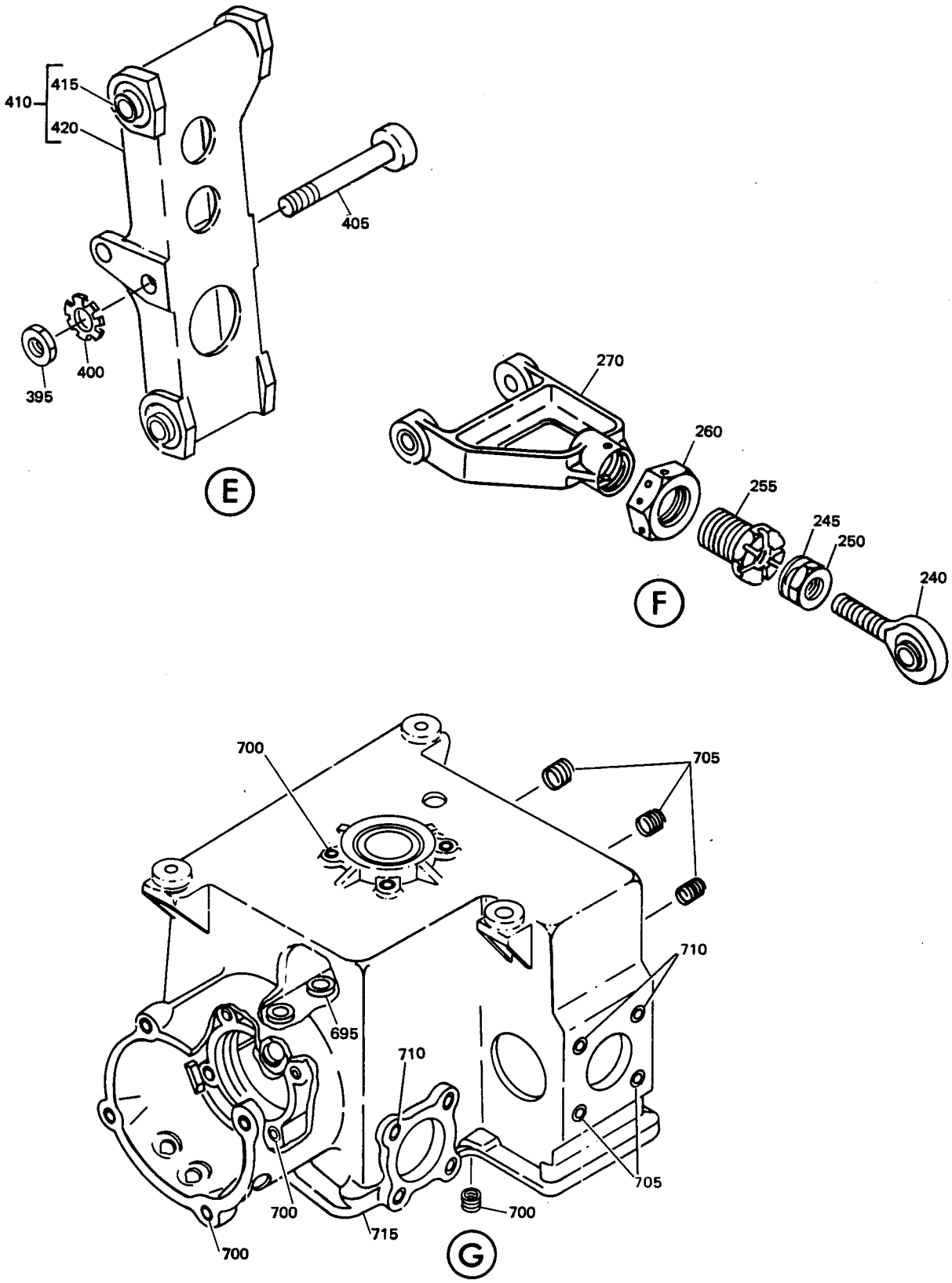




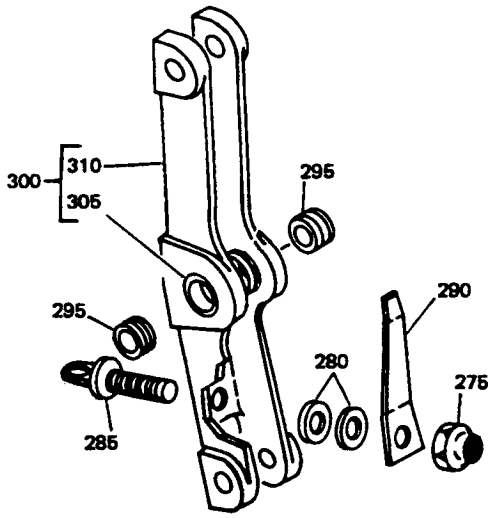

Leading Edge and Trailing Edge Flaps Control Assembly
Figure 3 (Sheet 3)




Leading Edge and Trailing Edge Flaps Control Assembly
Figure 3 (Sheet 4)




Leading Edge and Trailing Edge Flaps Control Assembly
Figure 3 (Sheet 5)

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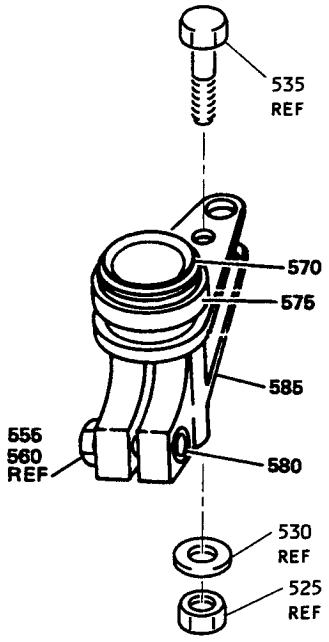


J

Leading Edge and Trailing Edge Flaps Control Assembly
Figure 3 (Sheet 6)

| FIG. & ITEM NO. | PART NO. | AIRLINE PART NUMBER | NOMENCLATURE 1 2 3 4 5 6 7 | USE CODE | QTY PER ASSY |
|---|---|---|---|---|---|
| 3- | | | | | |
| | 65-51602-37 | | DELETED | | |
| | 65-51602-39 | | CONTROL ASSY, LE AND TE FLAP | A | RF |
| | 65-51602-41 | | DELETED | | |
| | 65-51602-43 | | CONTROL ASSY, LE AND TE FLAPS | B | RF |
| | 65-51602-49 | | CONTROL ASSY, LE AND TE FLAPS (POST SB 27-1180)(POST SB 27-1241) | C | RF |
| | 65-51602-47 | | CONTROL ASSY, LE AND TE FLAPS | D | RF |
| | 65-51602-51 | | CONTROL ASSY, LE AND TE FLAPS (PRE SB 27-1180)(PRE SB 27-1241) | E | RF |
| | 65-51602-53 | | CONTROL ASSY, LE AND TE FLAPS | F | RF |
| 1 | NAS6604-4 | | . BOLT | | 4 |
| 1 | NAS1304-4H | | DELETED | | |
| 5 | AN960D416 | | . WASHER | | 4 |
| 10 | 65-51602-38 | | . VALVE ASSY, LE FLAP CONTROL | B-EF | 1 |
| 10 | 65-51602-3 | | . VALVE ASSY, LE FLAP CONTROL | A | 1 |
| 15 | MS21916-8-6 | | . . REDUCER | B-EF | 1 |
| 15 | MS21902-6 | | . . UNION | A | 1 |
| 20 | MS21916-8-6 | | . . REDUCER | | 2 |
| 25 | MS21916D8-6 | | . . REDUCER | | 1 |
| 30 | NAS1612-6 | | . . PACKING | | 4 |
| 35 | 4163DA | | . . VALVE ASSY, V78062 (BOEING 10-60598-1) | | 1 |
| 40 | NAS6604-3 | | . BOLT | | 4 |
| 40 | NAS1304-3H | | DELETED | | |
| 45 | AN960D416 | | . WASHER | | 4 |
| 50 | 65-51602-11 | | . VALVE ASSY (REF 27-53-12) | | 1 |
| 55 | 65-51602-40 | | . CONTROL ASSY | A | 1 |
| 55 | 65-51602-42 | | DELETED | | |
| 55 | 65-51602-44 | | . CONTROL ASSY | B | 1 |
| 55 | 65-51602-46 | | . CONTROL ASSY | D | 1 |
| 55 | 65-51602-50 | | . CONTROL ASSY | C | 1 |
| 55 | 65-51602-52 | | . CONTROL ASSY | E | 1 |
| 55 | 65-51602-54 | | . CONTROL ASSY | F | 1 |
| 60 | NAS1801-3-7 | | . . SCREW *[1] | | AR |
| 65 | 69-38188-2 | | . . COVER | | 1 |
| 65 | 69-38188-1 | | DELETED | | |
| 70 | 69-38188-3 | | DELETED | | |
| 75 | 69-38188-2 | | DELETED | | |
| 80 | 65C32708-1 | | . . PAN, COVER | | 1 |
| 80 | 65-51617-2 | | . . PAN, COVER (OPT) | A | 1 |
| 80 | 65-51617-4 | | . . PAN, COVER (OPT) | | 1 |
| 80 | 65-51617-1 | | . . PAN ASSY, COVER (OPT) | A | 1 |
| 85 | 65-51617-3 | | . . . GASKET (USED ON 65-51617-1) | | 1 |

| FIG. & ITEM NO. | PART NO. | AIRLINE PART NUMBER | NOMENCLATURE 1 2 3 4 5 6 7 | USE CODE | QTY PER ASSY |
|---|---|---|---|---|---|
| 3-90 | 65-51617-2 | | . . . PAN, COVER (USED ON 65-51617-1) | 1 | |
| 95 | NAS1304-7 | | . . DELETED | | |
| 95 | NAS1304-5 | | . . BOLT | | 2 |
| 100 | AN960D416 | | . . DELETED | | |
| 100 | AN960D416L | | . . WASHER | | 2 |
| 105 | 65-51615-1 | | . . GUARD, DRUM | | 1 |
| 110 | 69-38184-1 | | . . SPRING | | 1 |
| 115 | 69-57953-1 | | . . SPRING | | 1 |
| 120 | BACN10JC4 | | . . NUT | | 1 |
| 125 | AN960D416 | | . . WASHER | | 1 |
| 130 | NAS1104-8 | | . . BOLT | | 1 |
| 135 | 69-38185-1 | | . . LINK ASSY | | 1 |
| 140 | BACB10AC4A | | . . . BEARING | | 1 |
| 145 | 69-38185-2 | | . . . LINK | | 1 |
| 150 | BACN10JC4 | | . . NUT | | 1 |
| 155 | AN960PD416 | | . . WASHER | | 1 |
| 160 | AN43B4 | | . . EYEBOLT | | 1 |
| 165 | BACP20B33 | | . . PLUG | | 2 |
| 170 | MS24665-134 | | . . PIN, COTTER | | 1 |
| 175 | AN320-4 | | . . NUT | | 1 |
| 180 | AN960-416L | | . . WASHER | | 2 |
| 185 | NAS1104-19D | | . . BOLT | | 1 |
| 190 | NAS679A4W | | . . NUT | | 1 |
| 195 | AN960D416L | | . . WASHER | | 1 |
| 200 | NAS1104-15 | | . . BOLT | | 1 |
| 205 | NAS513-6 | | . . LOCKWASHER | | 1 |
| 210 | NAS509-6 | | . . NUT | | 1 |
| 215 | BACB10A446H | | . . BEARING | | 1 |
| 220 | NAS679A4W | | . . NUT | | 3 |
| 225 | AN960D416 | | . . WASHER | | 3 |
| 230 | NAS1104-18 | | . . BOLT | | 2 |
| 235 | NAS1104-44 | | . . BOLT | | 1 |
| 240 | BACB10A446H | | . . BEARING | | 1 |
| 245 | NAS513-6 | | . . LOCKWASHER | | 1 |
| 250 | NAS509-6 | | . . NUT | | 1 |
| 255 | 69-38187-2 | | . . SLEEVE | | 1 |
| 255 | 69-38187-1 | | . . SLEEVE (OPT) | A-D | 1 |
| 260 | NAS509-10 | | . . NUT | | 1 |
| 265 | NAS75-4-008 | | . . BUSHING | | 1 |
| 270 | 65-51611-4 | | . . LINK, TE CAM | | 1 |
| 275 | NAS679A3W | | . . NUT | | 1 |
| 280 | AN960D10 | | . . WASHER | | 2 |
| 285 | AN42B5A | | . . EYEBOLT | | 1 |
| 290 | 69-38193-1 | | . . SPRING, LEAF | | 1 |

| FIG. & ITEM NO. | PART NO. | AIRLINE PART NUMBER | NOMENCLATURE 1 2 3 4 5 6 7 | USE CODE | QTY PER ASSY |
|---|---|---|---|---|---|
| 3- | | | | | |
| 295 | NAS73-4-006 | | . . BUSHING | | 2 |
| 300 | 65-51616-6 | | . . LEVER ASSY, CAM SUMMING | | 1 |
| 305 | NAS538B7P032 | | . . . BUSHING | | 2 |
| 310 | 65-51616-7 | | . . . LEVER | | 1 |
| 315 | NAS679A4W | | . . NUT | | 1 |
| 320 | AN960-416L | | . . WASHER | | 2 |
| 325 | NAS6604-118 | | . . BOLT | | 1 |
| 330 | NAS73-4E007 | | . . BUSHING | | 1 |
| 335 | NAS73-4-005 | | . . BUSHING | | 1 |
| 340 | BACB10A661 | | . . BEARING | | 1 |
| 345 | NAS43DD4-174 | | . . BUSHING | | 1 |
| 350 | AN316-6R | | . . NUT | | 1 |
| 355 | MS27111-3 | | . . WASHER | | 1 |
| 360 | BACB10AF6K16 HS | | . . BEARING | ABC | 1 |
| 360 | BACB10AF6K16H | | . . BEARING (OPT) | ABC | 1 |
| 360 | BACB10B60TK11 | | . . BEARING (OPT) | ABC | 1 |
| 360 | BACB10FK6K16 HS | | . . BEARING | DEF | 1 |
| 362 | 69-57951-1 | | . . TEE | | 1 |
| 365 | 65-51607-6 | | . . ARM ASSY, FOLLOWER | | 1 |
| 370 | BACB10A661 | | . . . BEARING | | 1 |
| 375 | 65-51607-7 | | . . . ARM | | 1 |
| 380 | BACB10A661 | | . . BEARING | | 2 |
| 385 | NAS43DD4-109 | | . . SPACER | | 1 |
| 390 | NAS43DD4-162 | | . . SPACER | | 1 |
| 395 | AN316-6R | | . . NUT | | 1 |
| 400 | MS27111-3 | | . . WASHER | | 1 |
| 405 | BACB10AF6K34H | | . . BEARING | ABC | 1 |
| 405 | BACB10B60TK20 | | . . BEARING (OPT) | ABC | 1 |
| 405 | BACB10FK6K34 HS | | . . BEARING | DEF | 1 |
| 410 | 65-51606-4 | | . . ARM ASSY, FOLLOWER | | 1 |
| 415 | BACB10A661 | | . . . BEARING | | 1 |
| 420 | 65-51606-5 | | . . . ARM | | 1 |
| 425 | MS24665-360 | | . . PIN, COTTER | | 1 |
| 430 | AN320-16 | | . . NUT | | 1 |
| 435 | AN960D1616 | | . . WASHER | | 2 |
| 440 | 69-38191-4 | | . . SPACER | | 1 |
| 445 | 65-51618-13 | | . . CAM, SWITCH | | 1 |
| 445 | 65-51618-1 | | . . CAM, SWITCH (OPT) | | 1 |
| 450 | 65-51618-14 | | . . CAM, SWITCH | | 1 |
| 450 | 65-51618-4 | | . . CAM, SWITCH (OPT) | | 1 |
| 455 | 65-51618-16 | | . . CAM, SWITCH | A | 1 |
| 455 | 65-51618-7 | | . . CAM, SWITCH (OPT) | A | 1 |

| FIG. & ITEM NO. | PART NO. | AIRLINE PART NUMBER | NOMENCLATURE 1 2 3 4 5 6 7 | USE CODE | QTY PER ASSY |
|---|---|---|---|---|---|
| 3- | | | | | |
| 455 | 65-51618-15 | | . . CAM, SWITCH | BCF | 1 |
| 455 | 65-51618-5 | | . . CAM, SWITCH (OPT) | BC | 1 |
| 455 | 65-51618-20 | | . . CAM, SWITCH | DE | 1 |
| 460 | 65-51618-17 | | . . CAM, SWITCH | | 1 |
| 460 | 65-51618-9 | | . . CAM, SWITCH (OPT) | ABC | 1 |
| 465 | 65-51618-18 | | . . CAM, SWITCH | | 1 |
| 465 | 65-51618-10 | | . . CAM, SWITCH (OPT) | ABC | 1 |
| 467 | 65-51618-19 | | . . CAM, SWITCH | B-EF | 1 |
| 467 | 65-51618-12 | | . . CAM, SWITCH (OPT) | BC | 1 |
| 470 | 69-38191-6 | | . . SPACER | A | 1 |
| 470 | 69-38191-7 | | . . SPACER | B-F | 1 |
| 472 | 69-38191-4 | | . . SPACER | | 1 |
| 475 | 65-51608-8 | | . . CAM, LE VALVE | | 1 |
| 475 | 65-51608-10 | | . . CAM, LE VALVE (OPT) | | 1 |
| 475 | 65-51608-12 | | . . CAM, LE VALVE (OPT) | | 1 |
| 480 | 69-38191-1 | | . . SPACER | | 1 |
| 485 | 65-51609-4 | | . . CAM, TE VALVE | ABD | 1 |
| 485 | 65-51609-5 | | . . CAM, TE VALVE | CEF | 1 |
| 490 | 69-38191-3 | | . . SPACER | | 1 |
| 495 | 65-51613-3 | | . . DRUM | | 1 |
| 500 | 69-52260-1 | | . . PIN | | 1 |
| 505 | 69-52259-1 | | . . PLUG | | 1 |
| 510 | 65-51610-4 | | . . SHAFT | | 1 |
| 510 | 65-51610-3 | | . . SHAFT (OPT) | | 1 |
| 515 | NAS514P1032-7 | | . . SCREW | | 3 |
| 520 | 69-38190-1 | | . . PLATE | | 1 |
| 525 | BACN10JC4 | | . . NUT | | 1 |
| 530 | AN960D416 | | . . WASHER | | 1 |
| 535 | NAS1104-16 | | . . BOLT | | 1 |
| 540 | 69-38186-1 | | . . LINK ASSY | | 1 |
| 545 | BACB10A561 | | . . . BEARING | | 2 |
| 550 | 69-38186-2 | | . . . LINK | | 1 |
| 555 | BACB10NE-10 | | DELETED | | |
| 555 | BACB30NE4-10 | | . . BOLT | | 1 |
| 560 | AN960D416 | | . . WASHER | | 1 |
| 565 | 65-51612-1 | | . . CRANK ASSY | | 1 |
| 570 | BACR12Y84 | | . . . RING | | 1 |
| 575 | BACB10A30DDH | | . . . BEARING | | 1 |
| 580 | MS21209F4-20 | | . . . INSERT | | 1 |
| 585 | 65-51612-2 | | . . . CRANK | | 1 |
| 590 | NAS1304-21 | | . . BOLT | | 1 |
| 595 | AN960D416 | | . . WASHER | | 1 |
| 600 | NAS43DD4-84 | | . . SPACER | | 1 |
| 605 | NAS1351-3-10 | | . . SCREW | | 4 |
| 605 | MS24678-11 | | DELETED | | |

| FIG. & ITEM NO. | PART NO. | AIRLINE PART NUMBER | NOMENCLATURE 1 2 3 4 5 6 7 | USE CODE | QTY PER ASSY |
|---|---|---|---|---|---|
| 3- | | | | | |
| 610 | AN960D10 | | . . WASHER | | 4 |
| 615 | 69-38189-1 | | . . PLATE | | 1 |
| 620 | BACB10A687 | | . . BEARING | | 2 |
| 625 | NAS1104-3 | | . . BOLT | | 2 |
| 630 | AN960D416 | | . . WASHER | | 2 |
| 635 | 69-57952-1 | | . . RETAINER ASSY | | 1 |
| 640 | BACN10LGP45 | | DELETED | | |
| 640 | BACN10KB4 | | . . . NUTPLATE | | 2 |
| 645 | MS20426D | | . . . RIVET | | 4 |
| 650 | 69-57952-2 | | . . . RETAINER | | 1 |
| 655 | BAC27DCT0430 | | . . NAMEPLATE | | 1 |
| 655 | BAC27DCT125 | | DELETED | | |
| 660 | BAC27DCT0426 | | . . NAMEPLATE (REPLS BACM10S3ABK) | | 1 |
| 660 | BACM10S3ABK | | DELETED | | |
| 665 | BAC27DCT0427 | | . . NAMEPLATE | | 1 |
| 665 | BACM10S3ABL | | DELETED | | |
| 670 | BAC27DCT0428 | | . . NAMEPLATE | A | 1 |
| 670 | BACM10S3ACT | | DELETED | | |
| 671 | BAC27DCT0432 | | . . NAMEPLATE | B-F | 1 |
| 671 | BAC27DCT0367 | | DELETED | | |
| 675 | BAC27DCT0429 | | . . NAMEPLATE (REPLS BACM10S3ACU) | | 1 |
| 675 | BACM10S3ACU | | . . MARKER (REPLD BY BAC27DCT0429) | AB | 1 |
| 680 | BAC27DCT0431 | | . . NAMEPLATE (REPLS BAC27DCT183) | | 1 |
| 680 | BAC27DCT183 | | . . MARKER (REPLD BY BAC27DCT0431) | AB | 1 |
| 682 | BAC27DCT0433 | | . . NAMEPLATE | | 1 |
| 683 | BAC27DCT0441 | | . . DECAL - CAUTION | DE | 1 |
| 685 | BACP20B3 | | . . PLUG | | 1 |
| 690 | 65-51603-7 | | . . HOUSING ASSY | A | 1 |
| 690 | 65-51603-10 | | . . HOUSING ASSY | BC | 1 |
| 690 | 65-51603-12 | | . . HOUSING ASSY | DE | 1 |
| 690 | 65-51603-16 | | . . HOUSING ASSY | F | 1 |
| 695 | NAS77A3-009P | | . . . BUSHING | | 1 |
| 700 | MS21209F1-15 | | . . . INSERT | | 25 |
| 705 | MS21209F4-15 | | . . . INSERT | | 5 |
| 710 | MS21209F4-20 | | . . . INSERT | | 6 |
| 715 | 65-51603-8 | | . . . HOUSING | A | 1 |
| 715 | 65-51603-9 | | . . . HOUSING (OPT) | A | 1 |
| 715 | 65-51603-11 | | . . . HOUSING | BCF | 1 |
| 715 | 65-51603-14 | | . . . HOUSING (OPT) | BCF | 1 |
| 715 | 65-51603-13 | | . . . HOUSING | DE | 1 |
| 715 | 65-51603-15 | | . . . HOUSING (OPT) | DE | 1 |

*[1] QUANTITY OF 18 NAS1801-3-7 SCREWS OPTIONAL TO QUANTITY OF 9 NAS1801-3-7 SCREWS (ONLY 5 SCREWS REQUIRED ON PREFERRED PART 65C32708 COVER PAN VERSUS 14 SCREWS REQUIRED ON OPTIONAL PART 65-51617 COVER PAN).

VENDORS

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