

**Eaton  
Hydraulics  
Division**

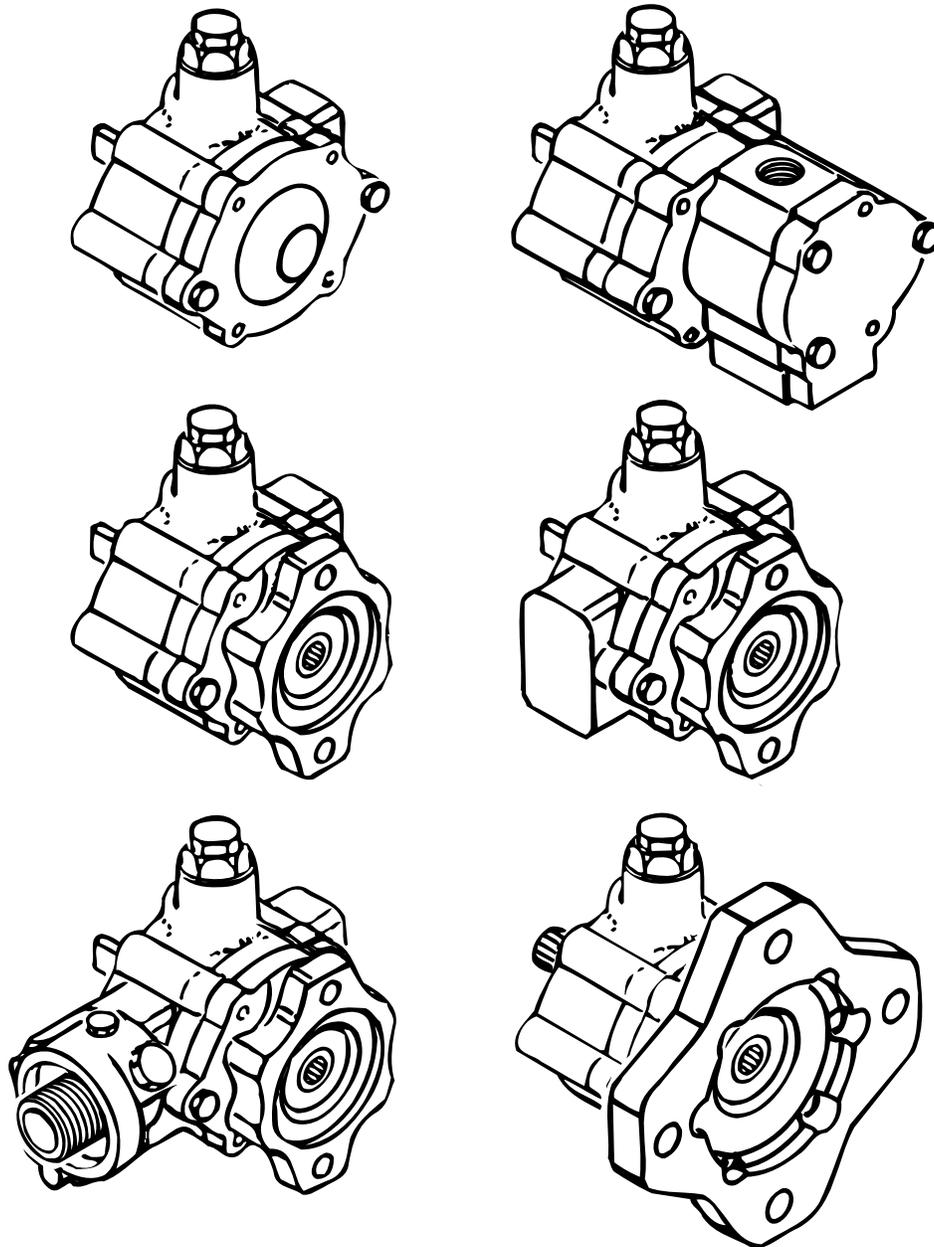
# Repair Information

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## Eaton Hydrostatic Transmission – Charge Pumps

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for Models 33 thru 76



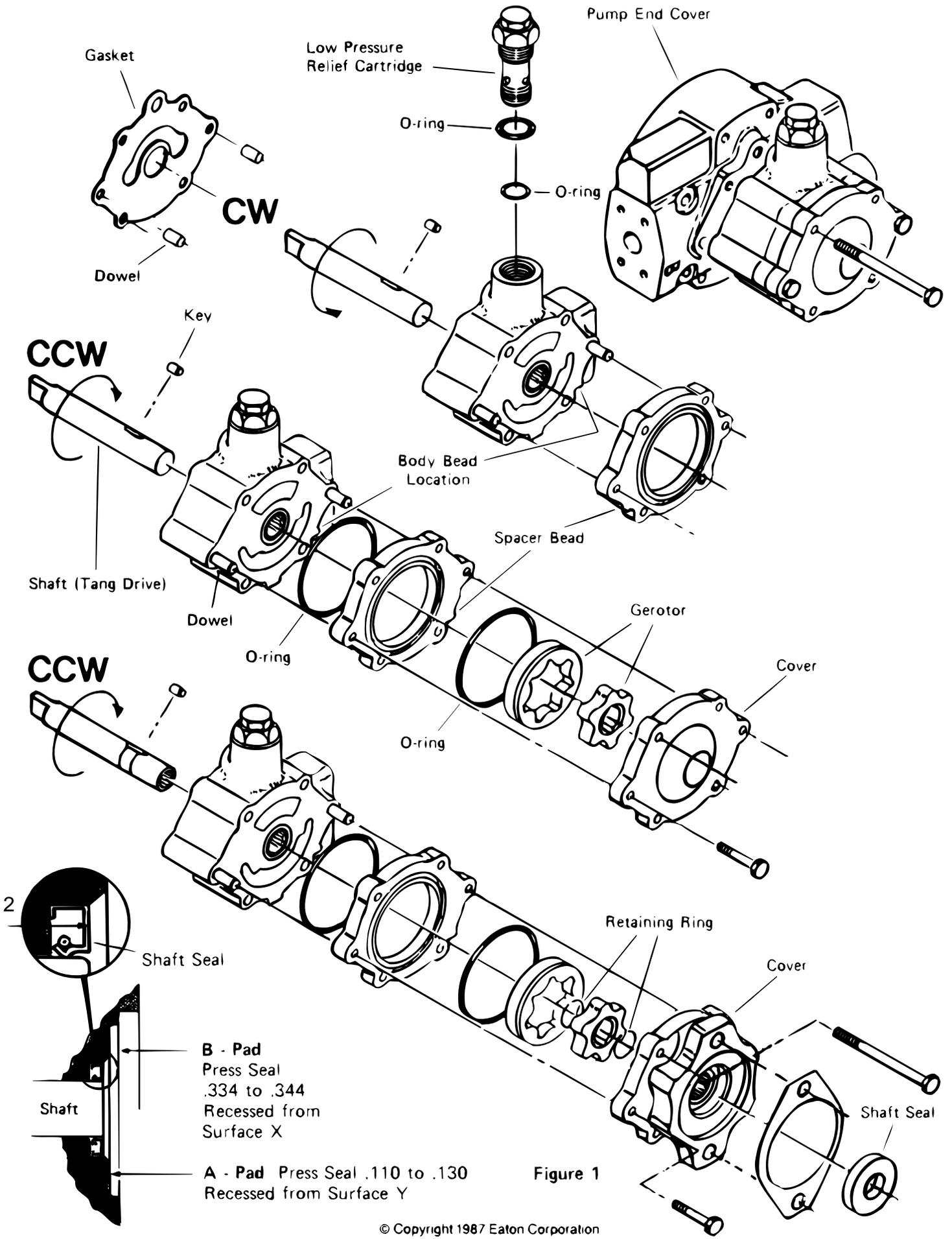


Figure 1

## Disassembly

**1** Remove the low pressure relief valve cartridge. Remove the o-rings from the valve and discard. Further disassembly of the relief valve is not usually necessary and is not recommended.

Maximum Pressure Setting identifications:  
The charge pressure relief valves are factory preset. The pressure code is stamped on the hex plug located on the end of the valve cartridge. To determine the pressure setting, add a zero to the right of the stamped number.

### System Pressure Examples

022 = 220 PSI Setting [15 Bar]

034 = 340 PSI Setting [23 Bar]

- 2** Loosen all cap screws.
- 3** Remove only the four corner cap screws.
- 4** Remove the entire charge pump assembly from the pump end cover. Remove the gasket and two dowels from the body if they did not remain in the end cover.
- 5** To disassemble the charge pump assembly, remove the two remaining cap screws.
- 6** Remove the cover. The A and B Pad charge pumps have a seal in the cover. If you are repairing the charge pump, remove the shaft seal from the cover. If you are only changing the rotation, there is usually no need to remove the seal.
- 7** Remove the shaft and key. On the A and B Pad charge pumps, retaining rings hold the inner gerotor star to the shaft.
- 8** Remove the gerotor.
- 9** Remove the spacer.
- 10** Remove the o-rings from the spacer and discard them.
- 11** Remove the two hollow dowels from the spacer.

## Reassembly

- 1** Install the hollow dowels in the body.
- 2** Lubricate and install the new o-rings in the spacer.
- 3** Install the spacer per the desired rotation. Refer to figure 1. For counterclockwise (CCW) rotation, align the beads on the spacer and body. For clockwise (CW) rotation, do not align the beads on the spacer and body.
- 4** Install the gerotor into the spacer.  
Note: On the A and B Pad charge pumps, retaining rings hold the inner gerotor star to the shaft.
- 5** Install the key in the keyway, aligning the key with the rounded notch in the gerotor star.
- 6** Install the shaft in the gerotor.
- 7** If the shaft seal was removed, install the new seal in the cover counterbore with the lip of the seal facing inward. On the A Pad charge pump, press the seal into the counterbore until it is recessed .110 to .130 inch [2,7 to 3,3 mm] from the Y surface (see illustration). On the B Pad charge pump, the seal must be recessed .334 to .344 inch [8,5 to 8,7 mm] from the X surface.
- 8** Install the cover. The larger kidney cast in the cover must face the inlet. To prevent misassembly, the bolt holes in the cover, spacer section and body are not symmetrical.
- 9** Install the two cap screws that retain the charge pump assembly. Torque them to 16 lb-ft [22 N·m].
- 10** Install the gasket and solid dowels in the end cover, if they were removed.
- 11** Install the charge pump on the main pump, aligning the charge pressure drain port and also aligning the tank on the charge pump shaft with the slot in the main pump shaft.  
**Note:** Pad B charge pumps use a splined drive rather than a tang drive.
- 12** Install the four corner cap screws and torque to 16 lb-ft [22 N·m].

# Dual Element Charge Pump

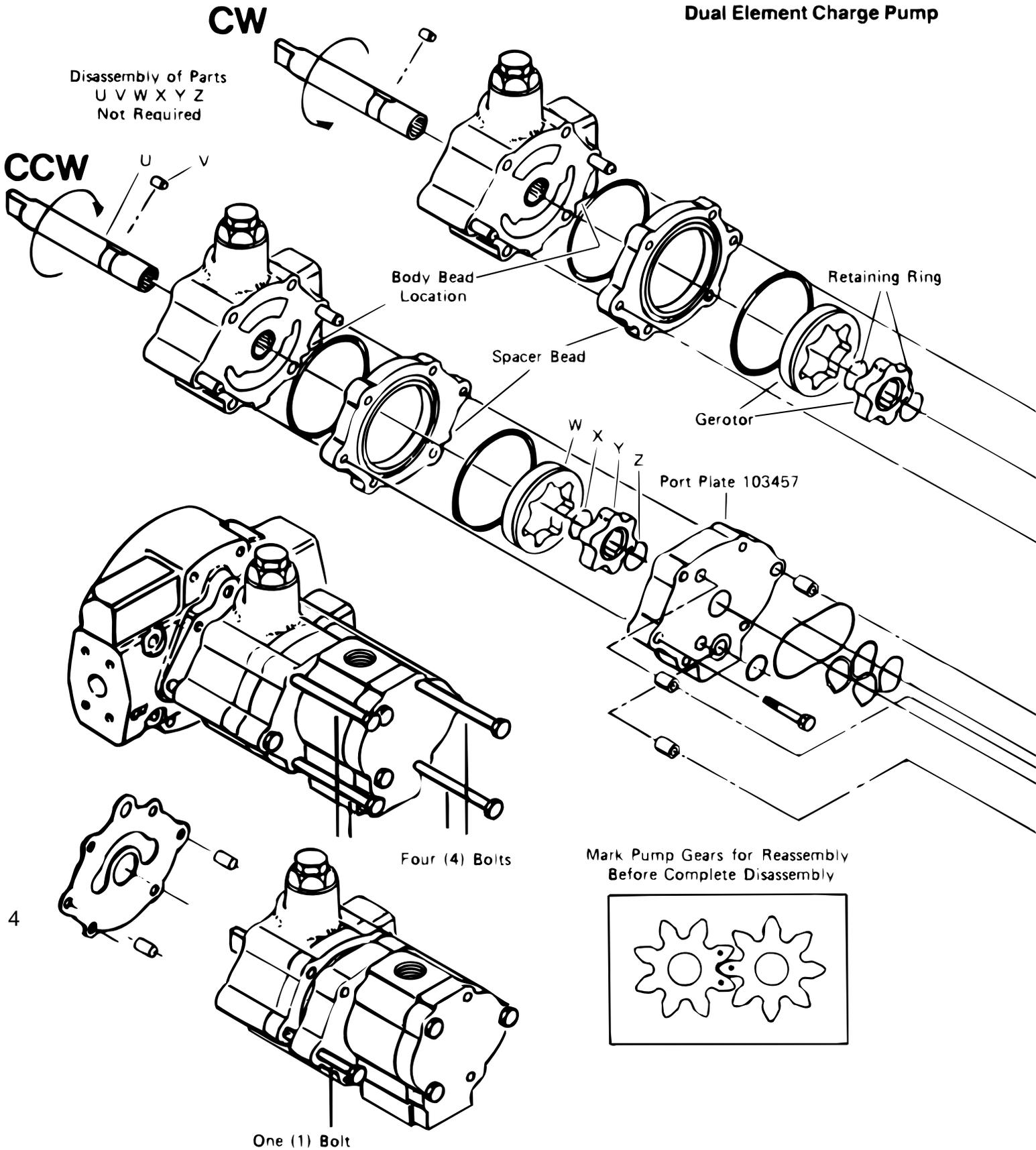
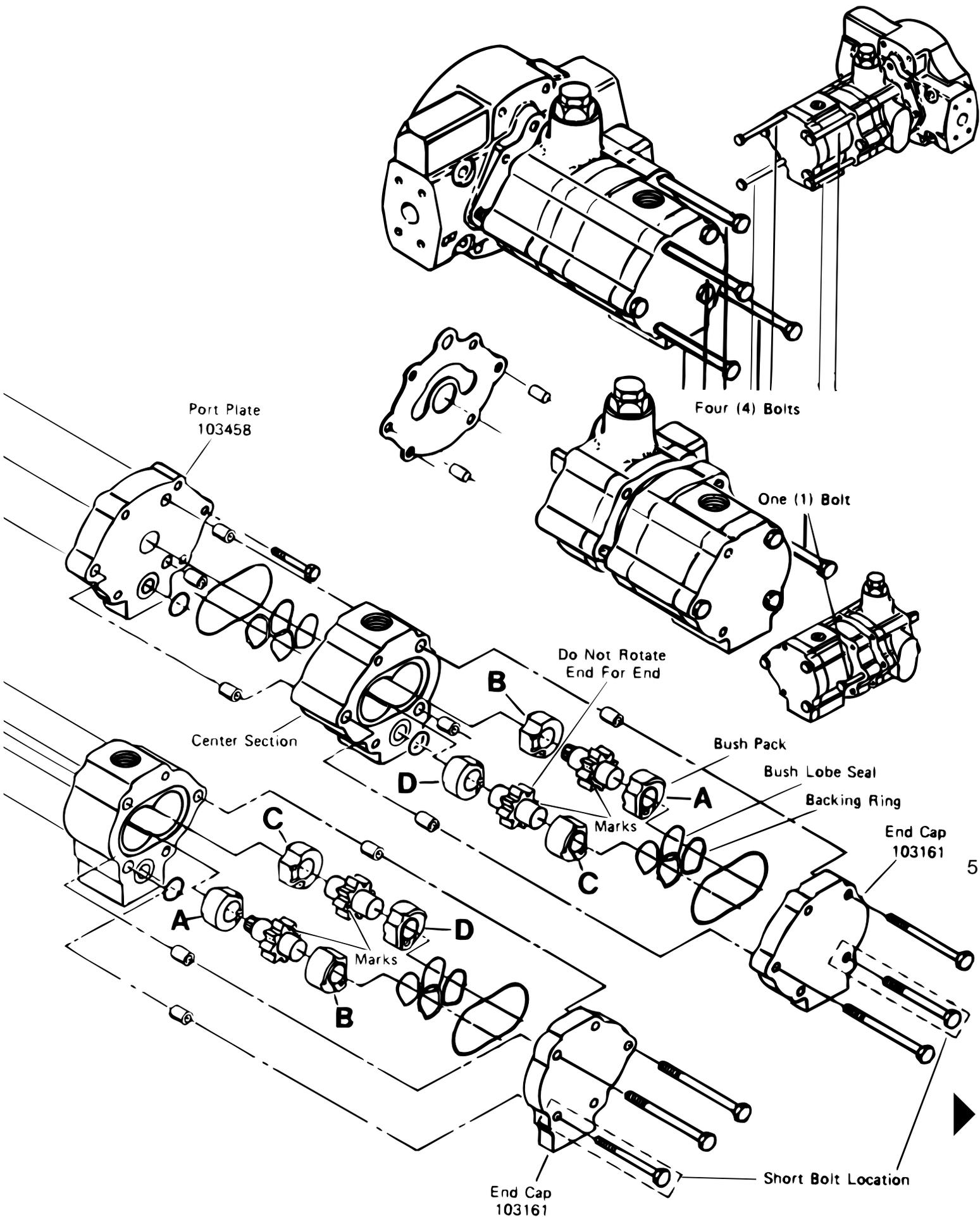


Figure 2





## **Disassembly - Dual Element Charge Pump**

**1** Remove the four mounting bolts that run through the standard charge pump (front section) and the rear pump (rear section).

**2** Remove the single bolt holding the rear pump to the standard charge pump. Remove the rear pump.

**3** Remove the three end cover bolts.

**4** Remove the end cover.

**5** Remove the o-ring, backing ring and bush lobe seals.

**6** Mark the bush packs and gears for correct reassembly. The same bush packs must remain with the same gears because of the wear pattern. Remove the bush packs.

**7** Remove the center section from the port plate.

**8** Remove the hollow dowels from the center section.

**9** Remove the o-ring, backing rings and bush lobe seal from the other side of the center section.

**10** Remove the bush packs and driven and drive gears from the center section. The drive gear has a splined shaft.

## **Reassembly**

**1** Reassembly the charge pump, aligning the charge pump spacer for the desired rotation.

Note: Instructional information Form No. 2-600 describes rotation change procedure.

**2** Install the hollow dowels in the center section of the rear pump. Make sure this side of the center section faces the port plate.

**3** Install the bush packs in the center section. The same bush packs must stay with the same gears because of the wear pattern. The bush pack opening must face the outlet side of the center section.

**4** Install the bush lobe seals, backing ring and o-ring on the side of the center section facing the port plate.

**5** Install the driven and drive gears.

**6** Install the last two bush packs. Once again, the bush pack opening must face the outlet side of the center section.

**7** Install bush lobe seals, backing ring and o-ring.

**8** Install the end cover.

**9** install the three end cover bolts.

**10** Install the rear pump on the charge pump. Install the bolt that holds the rear pump to the charge pump. Tighten it 22 to 24 lb-ft [2,5 to 2,7 N·m] for dry threads and 20 to 22 lb-ft [2,3 to 2,5 N·m] for lubricated threads.

**11** Install the four mounting bolts that run through the charge pump and rear pump. tighten them 22 to 23 lb-ft [2,5 to 2,7 N·m] for dry threads and 20 to 22 lb-ft [2,3 to 2,5 N·m] for lubricated threads.

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