

2. Install the cone valve, charge valve spring together with the hex head plug, and new "O" ring seal in the top right corner of the pump end cap.
- b. Models equipped for hydraulic lift:
1. Install the $\frac{7}{16}$ " ball valve and spring together with the hex plug and "O" ring in the top left corner of the pump end cap.
 2. Install the cone valve and spring in the top right corner of the pump end cap, then, making sure that the original shim pack is in the spring cavity of the plug, install the plug, "O" ring and shim assembly.

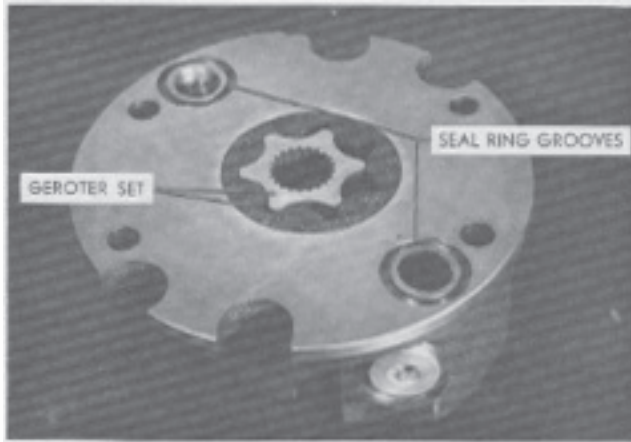


FIG. 62. Charge Pump Assembly

4. Install the gerotor set in the charge pump housing and install the pump housing and gerotor assembly on the pump end cap using new seal rings ("O" rings and back up rings) with the valve plate dowel pin toward the bottom. Install the two long and two short bolts and tighten evenly.

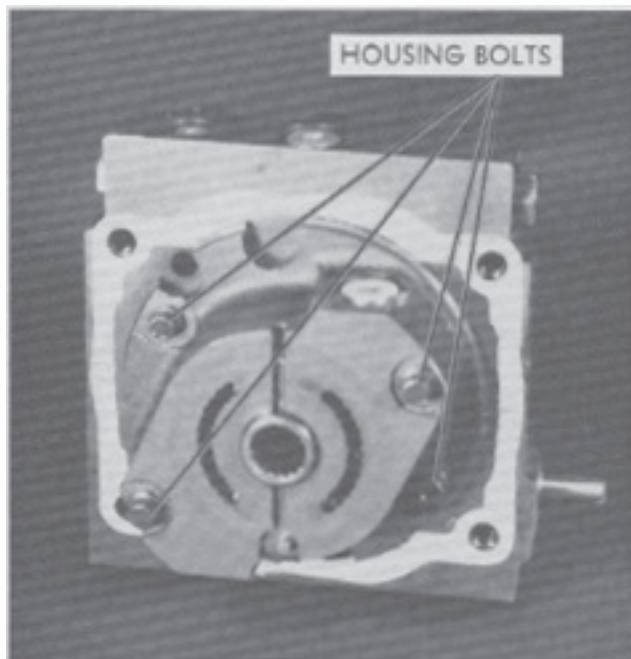


FIG. 63. Charge Pump Housing

5. Install the valve plate on the charge pump housing, centering it around the needle bearing with the steel face of the plate against the charge pump housing and the slot over the dowel pin to keep it from turning. Mounted properly, the plate should be flush against the housing so the cylinder block will operate on the bronze surface.

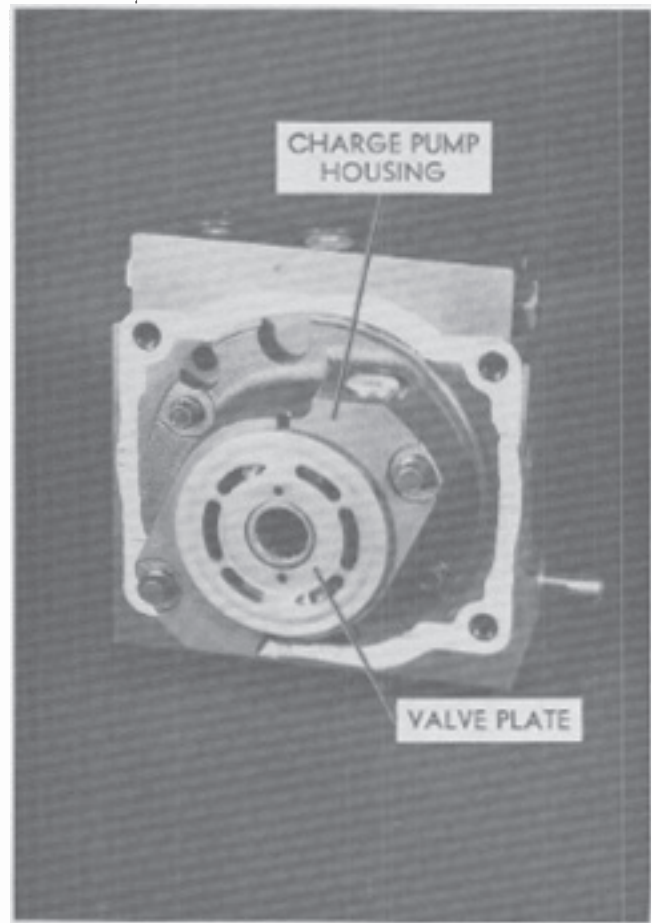


FIG. 64. Charge Pump Housing - With Valve Plate

6. Install a new pump-housing-to-end-cap gasket on the pump end cap.

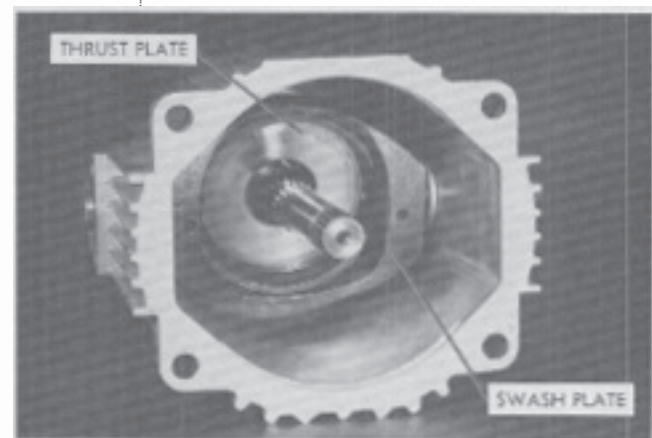


FIG. 65.

7. Apply oil to the thrust plate and place it on the swash plate.

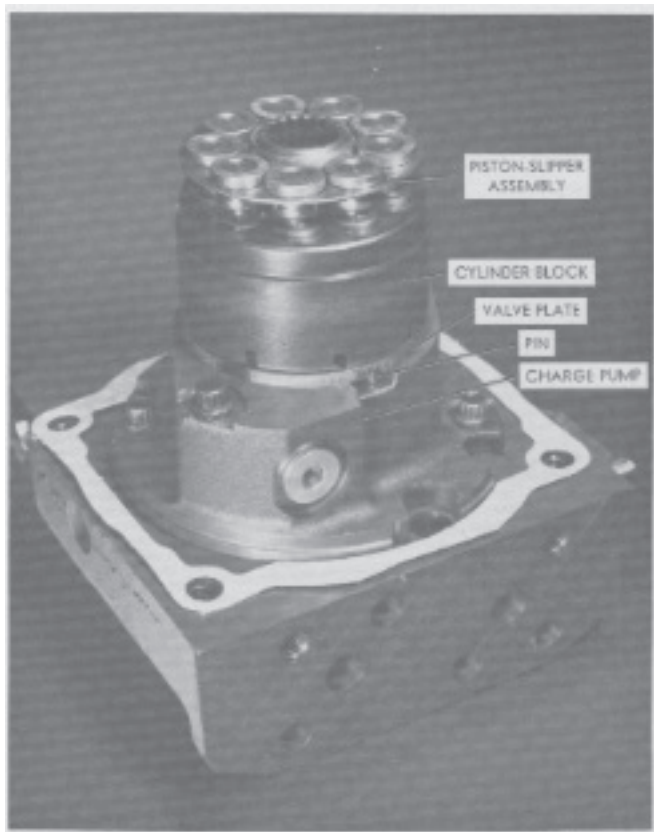


FIG. 66.

8. Lay the pump end cap on a flat surface and install the cylinder block with the piston and slipper assembly on the valve plate.

9. Center the charge pump gerotor drive so the shaft and spline can enter it.

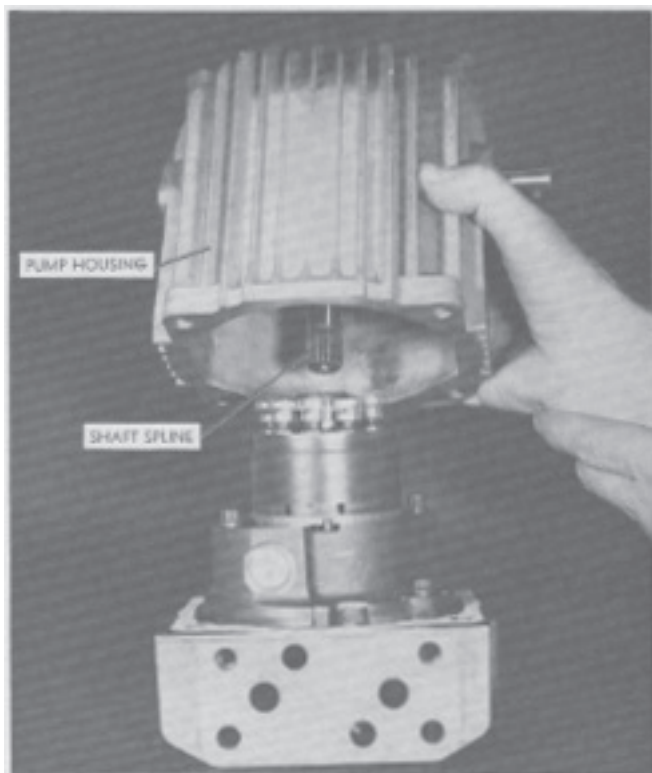


FIG. 67. Pump Housing Installation

10. Making sure the control shaft is on the correct side, carefully install the aluminum pump housing and shaft so the shaft spline enters the cylinder block and gerotor drive. Install the four pump housing cap screws to align the pump, gasket and end cap. Push the pump housing in place (it may be necessary to turn the pump shaft to align it with the charge pump spline). After the housing and shaft are pushed in place, tighten the four bolts evenly.

REMOVAL & REPLACEMENT OF ACCELERATION VALVES

NOTE: Although the acceleration valves look similar, they are not alike. The forward valve, located at the rear of the end cap housing, incorporates wider relief flats on the valve lands than does the reverse valve, located at the front of the end cap housing.

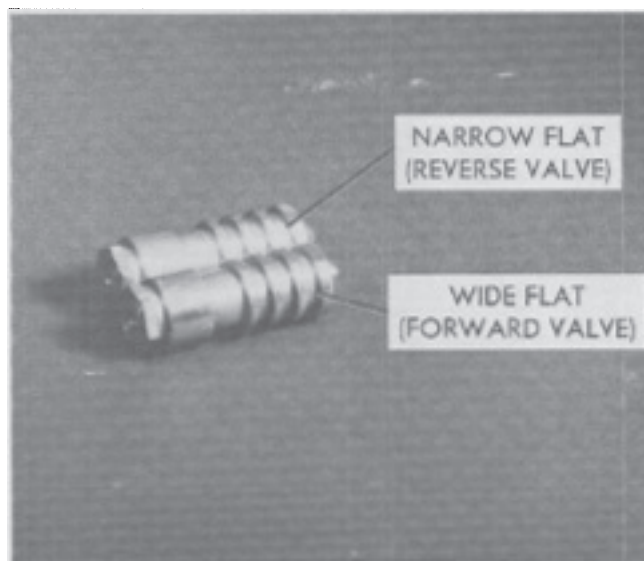


FIG. 68. Acceleration Valves

1. Remove the $\frac{7}{8}$ " hex head plug from each side of the motor end cap.

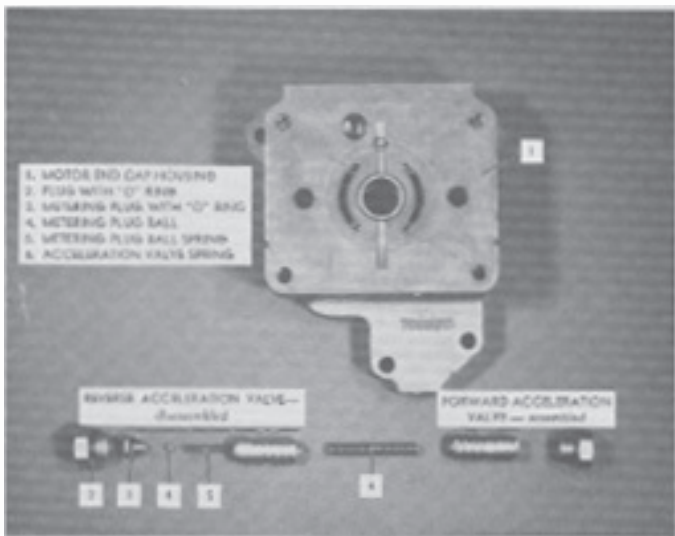


FIG. 69.

2. Remove the first valve by pulling it out. Remove the second valve by pushing it out with the spring and remove the spring. **NOTE:** To simplify removal of the forward valve, located at the rear of the end cap housing, move the tractor about an inch and oil pressure will force the valve to pop out.

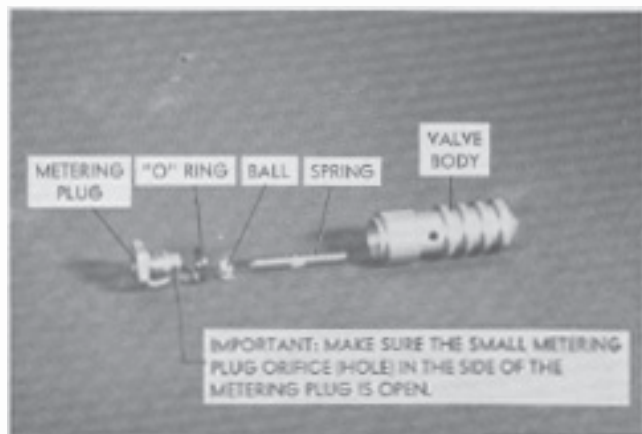


FIG. 70.

3. The acceleration valves may be disassembled for inspection and cleaning.

Disassembly

- a. Carefully hold the valve body wrapped in a cloth to protect it. Remove the metering plug, ball and spring.

Assembly

Important:

- a. Make sure the small metering plug orifice in side of the metering plug is open. (Fig. 70).
- b. Seat the ball in the end of the metering plug and install the spring and metering plug.

4. Install the forward acceleration valve assembly (the one with the wider relief flats) in the bore at the rear of the end cap housing.

Insert the reverse acceleration valve assembly (the one with the narrow relief flats) together with the spring into the bore at the front of the end cap housing.

Make sure the spring seats in the spring cavity of each valve. When properly seated each valve will have approximately four or five threads exposed so the $\frac{7}{8}$ " hex plugs may be easily installed.

5. Install both plugs using new "O" ring seals and tighten securely.

DISASSEMBLY AND ASSEMBLY OF HYDROSTATIC MOTOR

Disassembly of Motor

1. Remove the four 10-24 Allen head cap screws that retain the cover plate, and remove the cover plate.
2. Remove the large "O" ring seal from around the ball bearing.

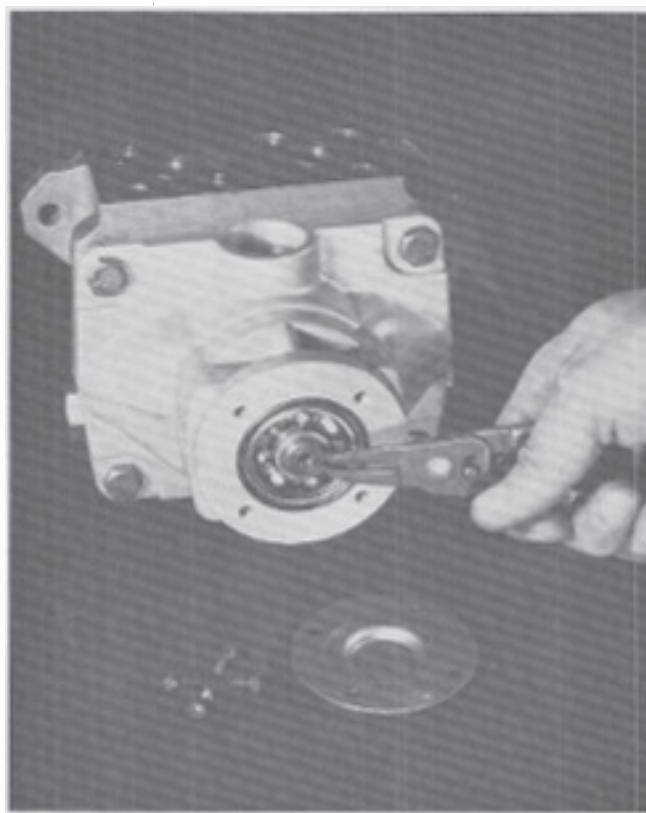


FIG. 71. Remove Snap Ring from Motor Shaft

3. Remove the snap ring from the end of the motor shaft.

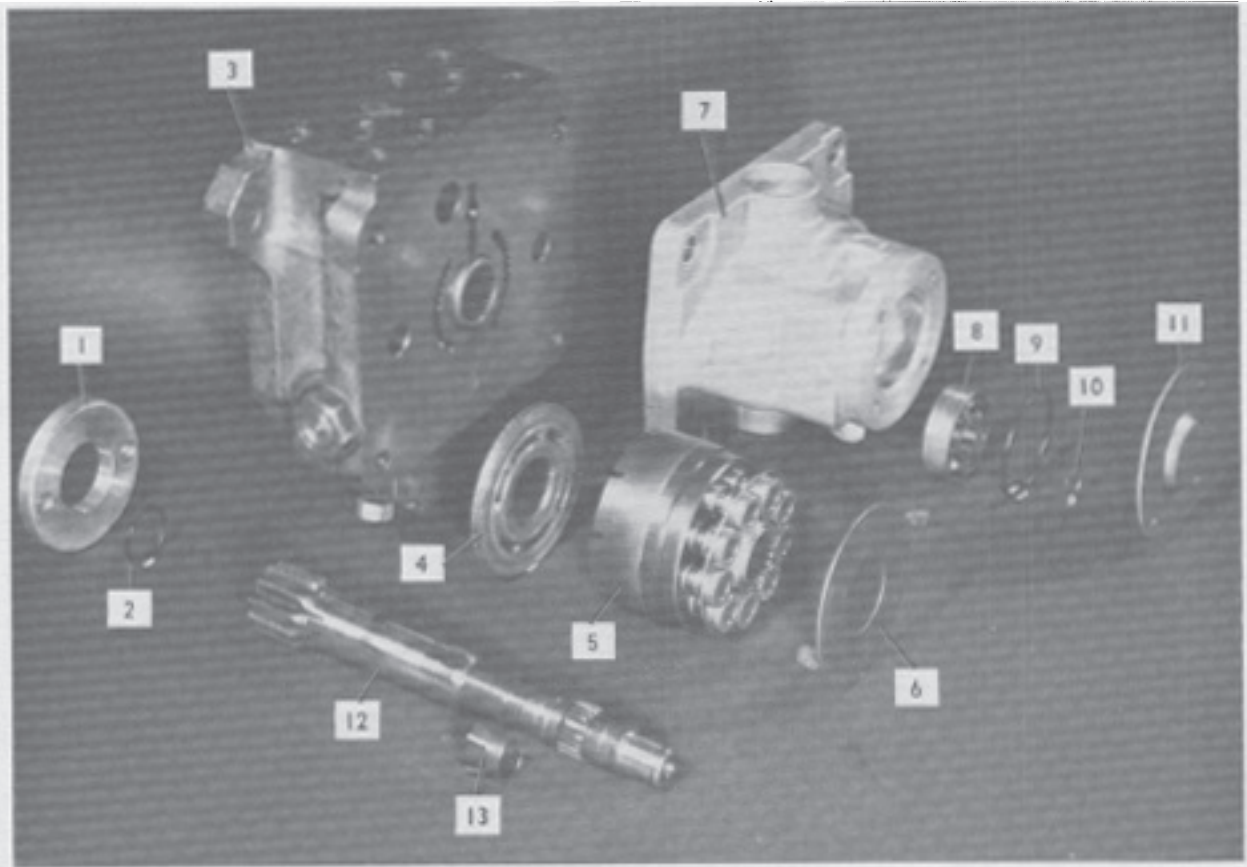


FIG. 72. Hydrostatic Motor — Exploded View

- | | |
|---|---|
| <ul style="list-style-type: none"> 1. Centering Pilot 2. "O" Ring 3. Motor End Cap 4. Valve Plate 5. Cylinder Block & Piston Assembly 6. Thrust Plate 7. Motor Housing | <ul style="list-style-type: none"> 8. Bearing 9. "O" Ring 10. Retaining Ring 11. Housing Plate 12. Motor Shaft 13. Motor Shaft Retaining Clip |
|---|---|

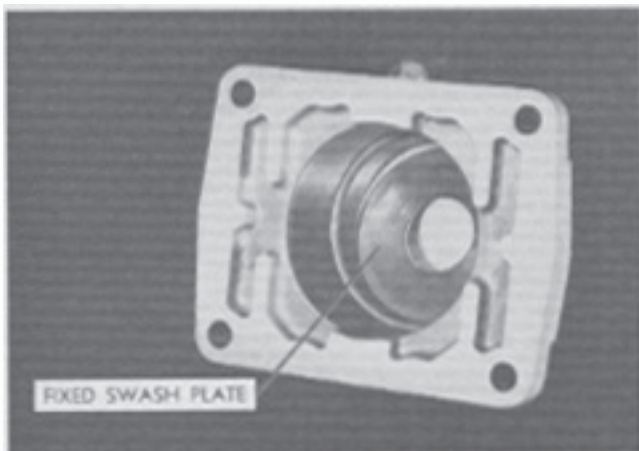


FIG. 73.

4. Remove the four $\frac{3}{8}$ -16 cap screws that retain the aluminum housing to the motor end cap (main iron housing) and remove the aluminum housing. Note the position of the housing. **It must be installed with the webbed section up.** If the cover is reversed, the

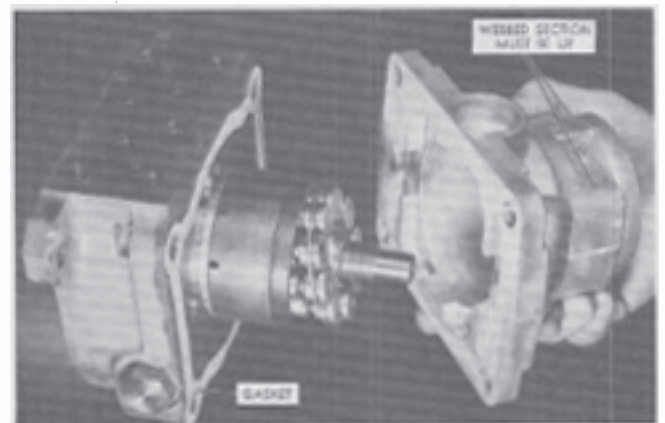


FIG. 74. Motor Housing

unit will operate in the opposite direction.

- 5. Remove the housing-to-end-cap gasket.
- 6. Remove the thrust plate from the fixed swash plate in the housing.
- 7. Remove the ball bearing from the aluminum housing.

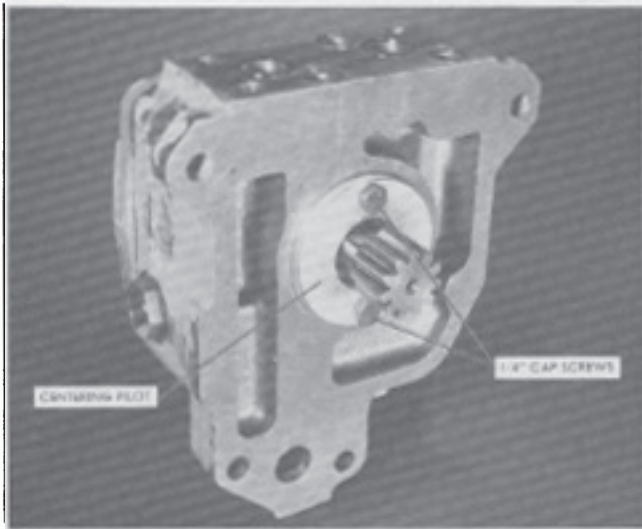


FIG. 75.

8. Remove the two $\frac{1}{4}$ " cap screws that fasten the aluminum pilot (centering ring) to the motor end cap and remove the pilot.

9. Place the end cap, cylinder block and motor shaft assembly in a press, making sure the cylinder block and valve plate are seated on the end cap housing.

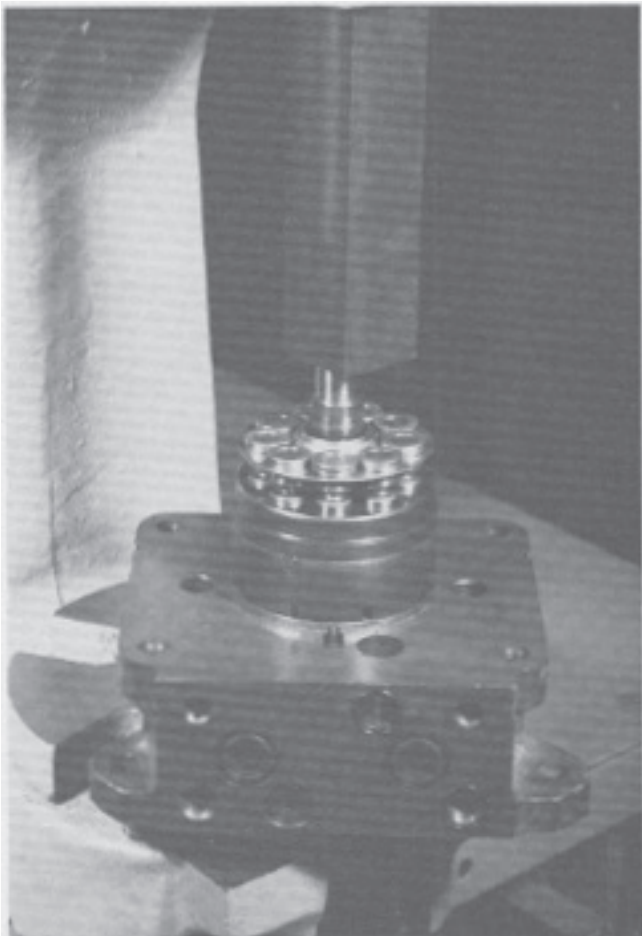


FIG. 76. Press Motor Shaft to release Retaining Clip

10. Press on the motor shaft until the motor shaft retaining spring clip pops loose from the retainer (in the center of the cylinder block). This pressing operation only requires moving the shaft a short distance. **CAUTION:** Do not press the shaft through the cylinder block at this time.

11. Remove the assembly from the press and remove the cylinder block.

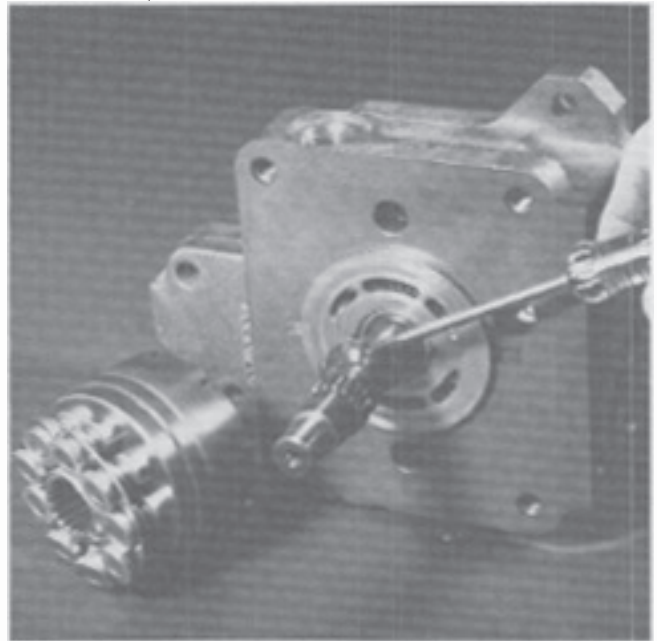


FIG. 77. Remove Spring Retaining Clip

12. Remove the spring retaining clip from the motor shaft.

13. Remove the motor shaft from the end cap housing.

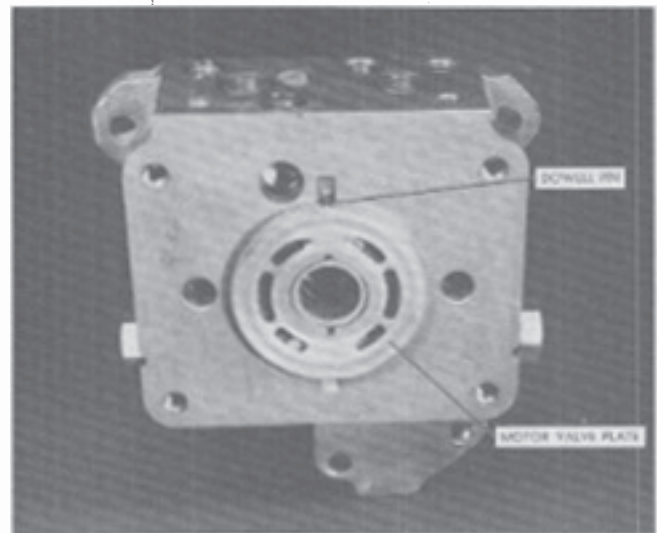


FIG. 78.

14. Remove the motor valve plate.



FIG. 79. Remove Seal Retainer "O" Ring

15. Remove the "O" ring from the seal retainer insert at the output end of the motor end cap.

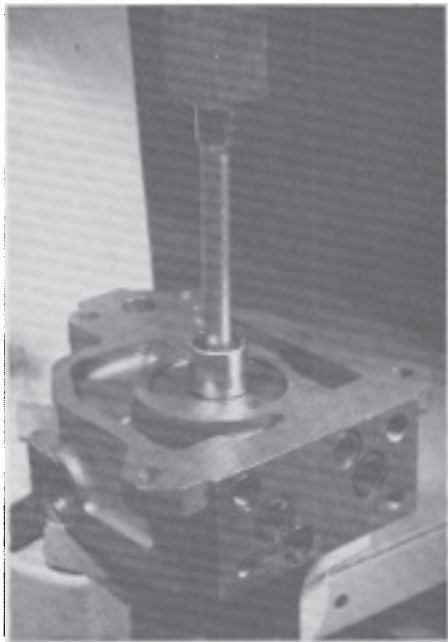


FIG. 80. Remove both Bearings and Seal Retainer

16. Bearing removal and replacement:

A. Removal —

If the motor end cap bearings are to be removed, they may be pressed out by using a suitable arbor placed against the seal retainer. Then press the seal retainer and both needle bearings out the cylinder block side of the end cap.

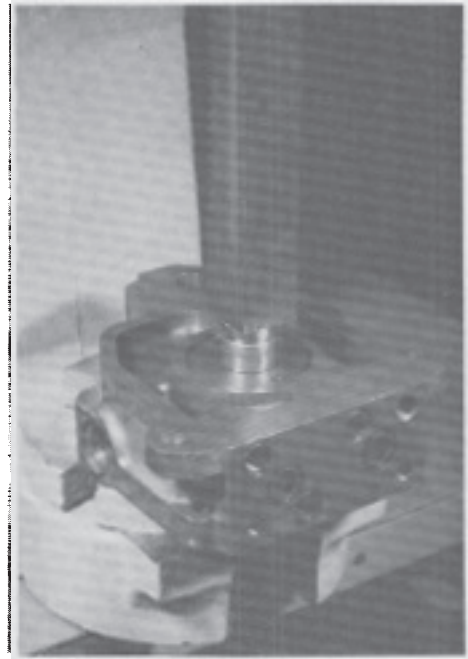


FIG. 81.

Install first Needle Bearing with Seal Retainer

B. Installation —

Install the first needle bearing into the output end of the motor end cap with the lettered end of the bearing out. Press the bearing in to the flush point. Then press the seal retainer insert in until it is flush with the end cap.*



FIG. 82. Install second Needle Bearing

Install the second needle bearing into the cylinder block end of the end cap and, pressing against the lettered end, press it into the housing leaving .100" protruding from the face of the end cap. To obtain the .100" protrusion try using a $\frac{3}{32}$ " cotter pin or washer as a stop for the press.

* For convenience, the seal retainer may be pressed in with the bearing.