

# OVERHAUL OF 3RD CYLINDER

TRAINING TIME: 30 Min.

## TOOLS AND MATERIALS:

- a. Mechanic's Tool Set
- b. Replacement Parts
  1. Packing Nut Wiper—Part No. 192149
  2. Packing (Complete Set) Part No. 192128
  3. "O" Ring, Part No. 192144
  4. Piston Cups, Part No. 192142
- c. Drain Pan
- d. No. 30 Oil—1 to 2 qt.
- e. Quart Oil Can With Pour Spout

## JOB PROCEDURE:

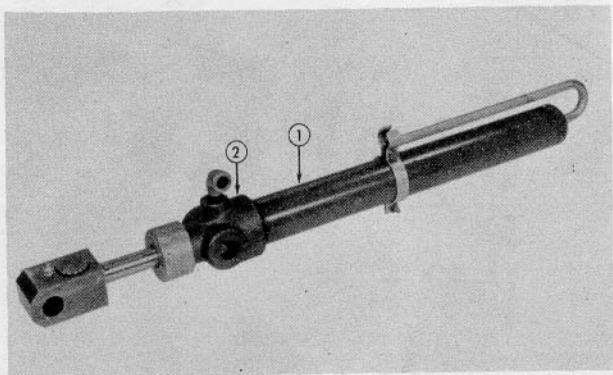


Fig. 14

Step 1—Remove 3rd cylinder from loader.

Step 2—Unscrew cylinder (1—Fig. 14) from cylinder yoke (2), and remove yoke and piston shaft from cylinder.

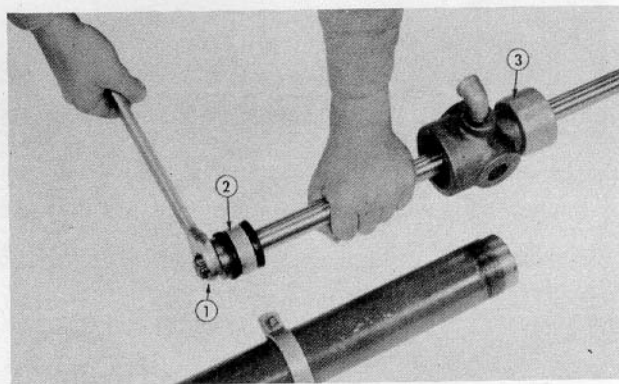


Fig. 15

Step 3—Remove nut (1—Fig. 15) and piston leather assembly (2) from piston.

Step 4—Loosen packing nut (3—Fig. 15) and remove piston from yoke assembly.

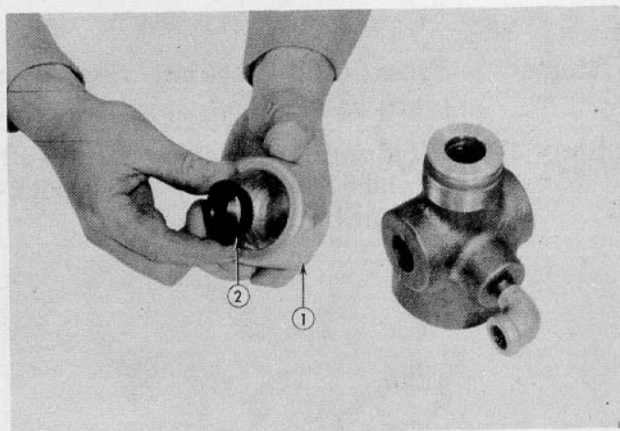


Fig. 16

Step 5—Remove packing nut (1—Fig. 16) from yoke.

Step 6—Remove wiper from packing nut and install new wiper (2—Fig. 16).

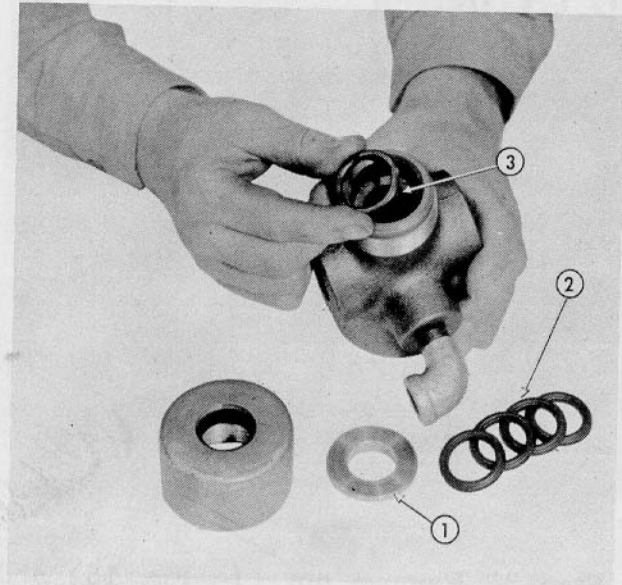


Fig. 17

Step 7—Remove aluminum packing gland (1—Fig. 17) and packing set.

Step 8—Install new packing set (2), flat bottom ring (3) first. Be sure “Y” face of rings is down.

Step 9—Press each packing ring into place as installed.

Step 10—Fit aluminum packing gland (1) in place and loosely screw packing nut onto yoke.



Fig. 18

Step 11—Remove old “O” ring and install new (1—Fig. 18).

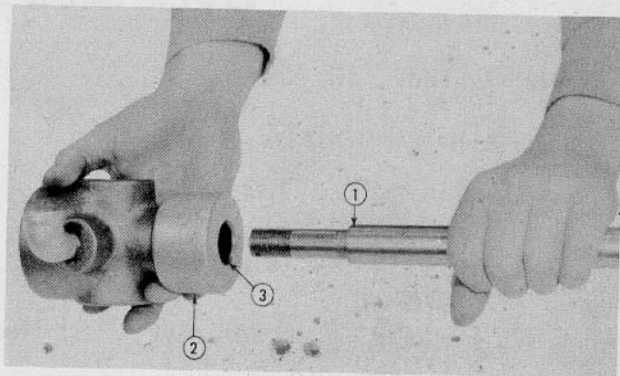


Fig. 19

Step 12—Install piston shaft (1—Fig. 19) in packing nut and yoke assembly, (2). Be careful not to damage wiper (3).

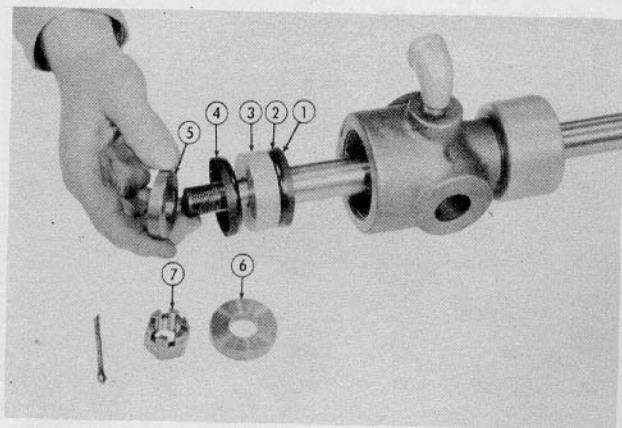


Fig. 20

Step 13—Install piston cup assembly on piston shaft, Fig. 20.

- a. Install washer (1) with rounded edge toward cylinder end of shaft.
- b. Install piston cup (2) over washer.
- c. Install aluminum spacer (3).
- d. Install piston cup (4) with cup face toward cylinder end.
- e. Install washer (5) with rounded edge toward cup.
- f. Install washer (6) tighten nut (7) and secure with cotter pin.

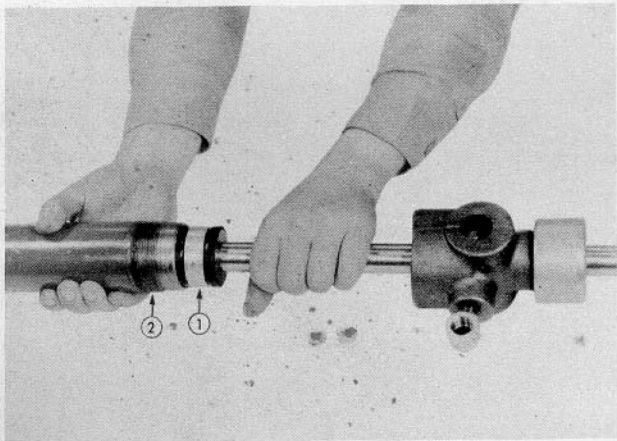


Fig. 21

- Step 14—Insert piston cup assembly (1—Fig. 21), into cylinder (2). Be careful not to damage the piston cups.
- Step 15—Hand tighten the cylinder onto the yoke.
- Step 16—Reinstall cylinder on loader.
- Step 17—Operate the loader and add oil to bring back up to proper oil level.

# OVERHAUL OF HYDRAULIC HOIST CYLINDER

**TRAINING TIME:** 20 Min.

## **TOOLS AND MATERIALS:**

- a. Mechanic's Wrench Set
- b. Drain Pan
- c. Packing Nut Wiper, Part No. 192130
- d. Packing (Complete Set), Part No. 192150
- e. "O" Ring, Part No. 192131

## **JOB PROCEDURE:**

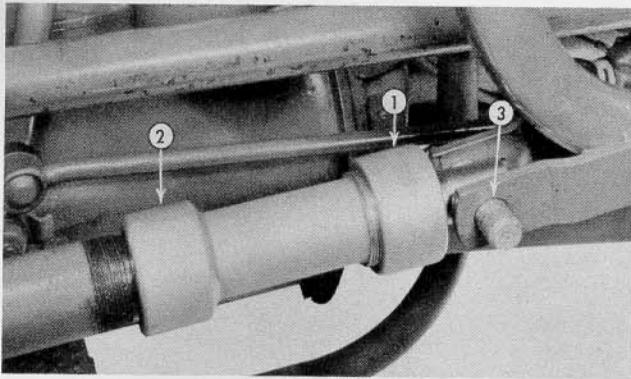


Fig. 7

Step 1—Loosen packing nut (1—Fig. 7). Unscrew stuffing box (2) from cylinder. Remove pin (3).

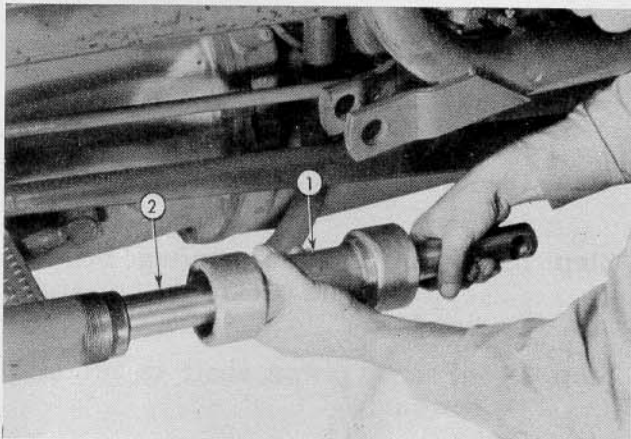


Fig. 8

Step 2—Remove stuffing box (1—Fig. 8) piston shaft (2) from cylinder as a unit.

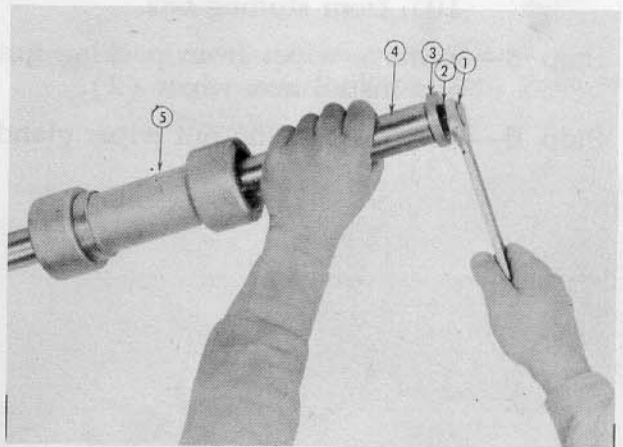


Fig. 9

Step 3—Remove stud (1—Fig. 9), lock washer (2), and stop (3) from end of shaft (4) and slide stuffing box assembly (5) off cylinder end of shaft.



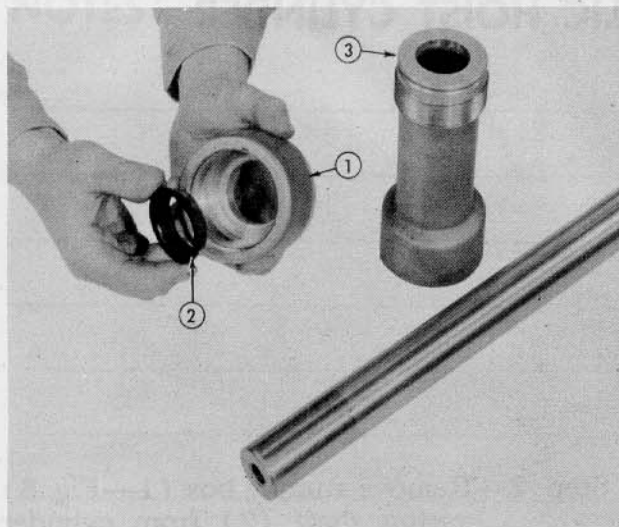


Fig. 10

Step 4—Remove packing nut (1—Fig. 10), from stuffing box.

Step 5—Remove wiper from packing nut and install new wiper (2).

Step 6—Remove packing nut wiper gland (3).

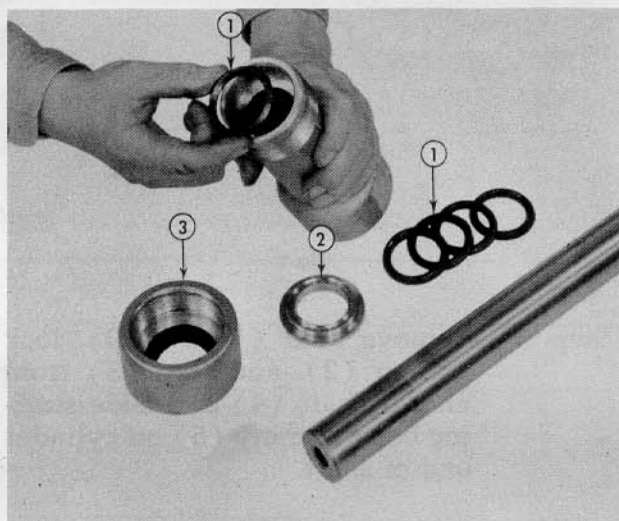


Fig. 11

Step 7—Remove packing rings from stuffing box and install new rings (1—Fig. 11). Flat ring first. Be sure “V” face of rings is down.

Step 8—Install packing nut wiper gland (2) and packing nut (3), on stuffing box.

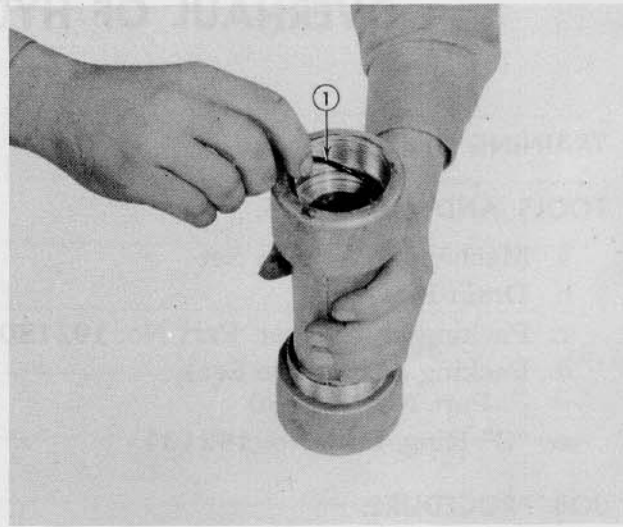


Fig. 12

Step 9—Remove and install new “O” ring (1—Fig. 12).

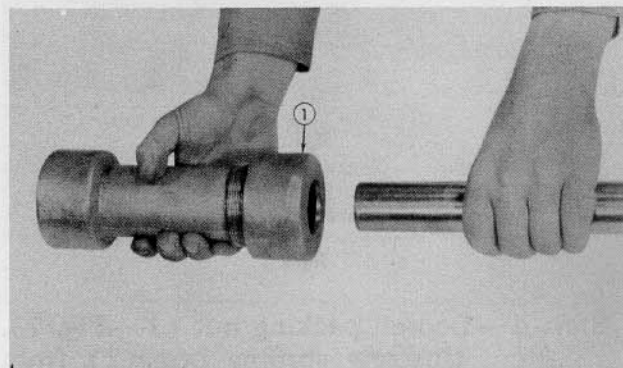


Fig. 13

Step 10—Wipe shaft and oil lightly.

Step 11—Slide stuffing box assembly (1—Fig. 13) over piston end of shaft. Be careful not to damage packing.

Step 12—Assemble shaft and stuffing box assembly to hydraulic cylinder.

Step 13—Hand tighten stuffing box on cylinder and packing nut on stuffing box.

Step 14—Fasten piston shaft to lift arm with pin.

Step 15—Check for correct operation and proper oil level.

# DISASSEMBLY AND ASSEMBLY OF THE HYDRAULIC PUMP (VICKERS)

Model 19-22 and 19-23 Loaders

**TRAINING TIME:** 35 Min.

## TOOLS AND MATERIALS:

- a. Mechanic's Wrench Set
- b. Drain Pan
- c. Oil Can with Pour Spout
- d. Arbor Press
- e. Oil Seal (Vickers No. 122626)
- f. "O" Ring (Vickers No. 84120-2 req'd)

## JOB PROCEDURE:

Step 1—Drain the oil from the loader.

Note: The high pressure section of the pump may be serviced without removing the pump assembly from the tractor, but for training purpose remove pump.

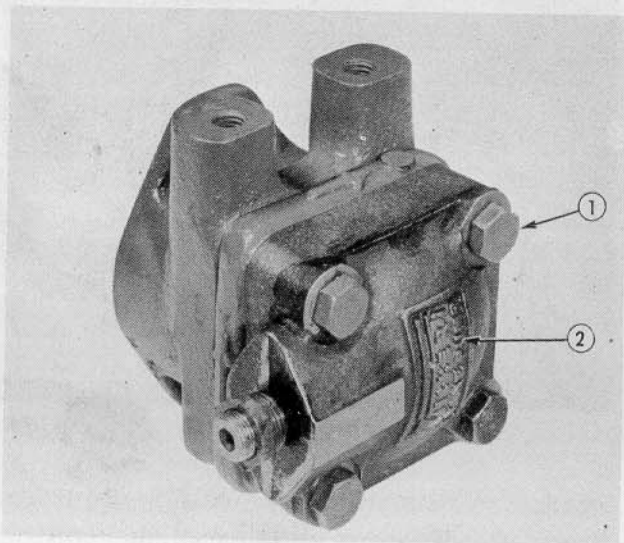


Fig. 28

Step 2—Remove the 4 cap screws, (1—Fig. 28) and remove the cover plate (2).

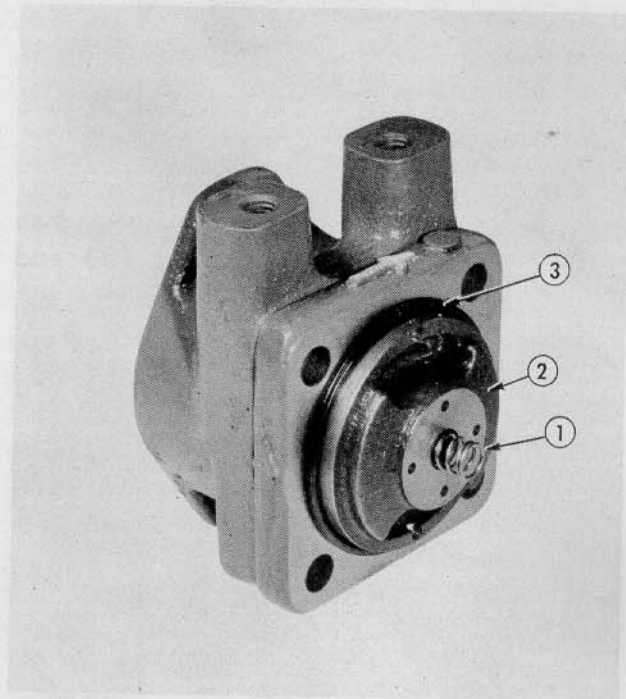


Fig. 29

Step 3—Remove the spring (1 — Fig. 29) pressure plate (2) and "O" ring seal (3).

Step 4—Before further disassembly, check the relative position of the ring, rotor and rotor vanes by checking the direction of the arrow on the ring.

# DISASSEMBLY OF THE HYDRAULIC PUMP (VICKERS)

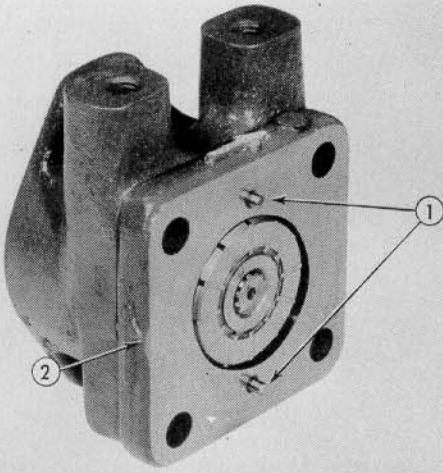


Fig. 30

Step 6—Remove locating pins (1—Fig. 30) and ring (2).

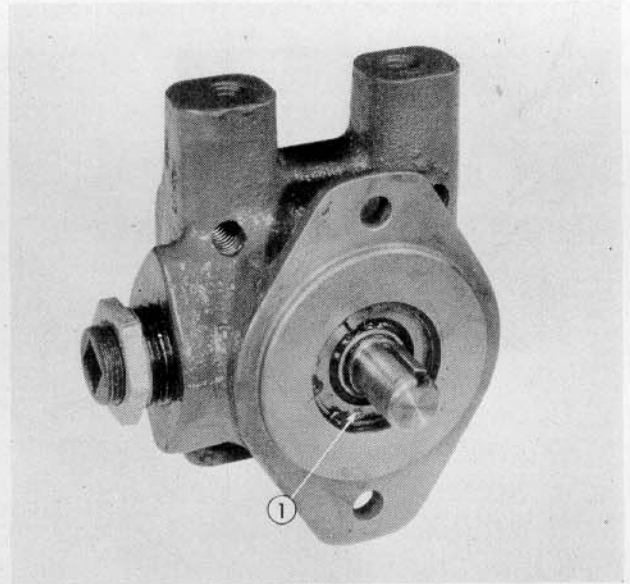


Fig. 32

Step 9—Remove the snap ring (1—Fig. 32).

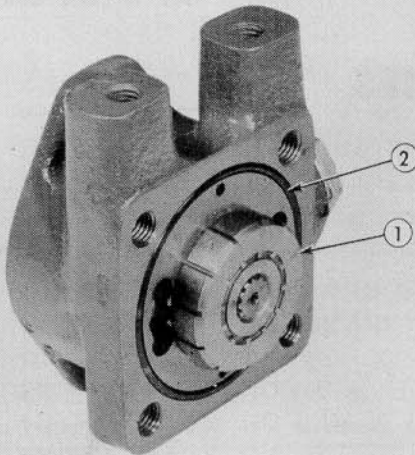


Fig. 31

Step 7—Remove the rotor (1—Fig. 31) being careful not to lose any of the vanes.

Step 8—Remove the "O" ring seal (2).

Note: The pump assembly must be removed from the tractor to service the low pressure end of the pump.

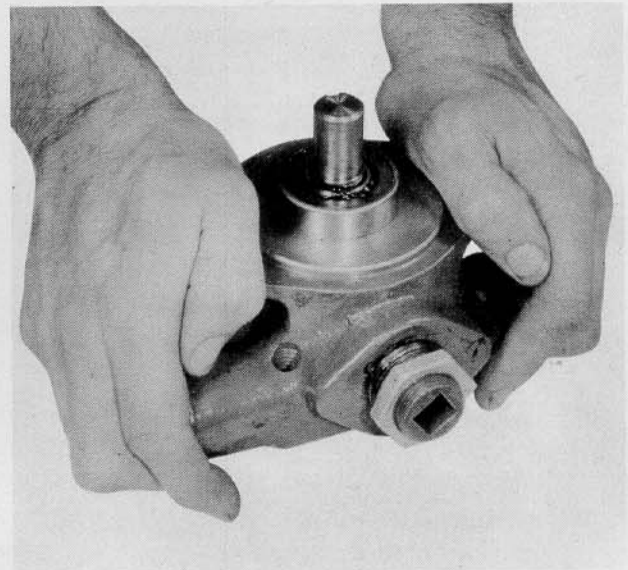


Fig. 33

Step 10—Remove the shaft and large bearing by placing the splined end of the shaft on a block of soft wood and pressing from the pump housing.







# ASSEMBLY OF THE HYDRAULIC PUMP (VICKERS)

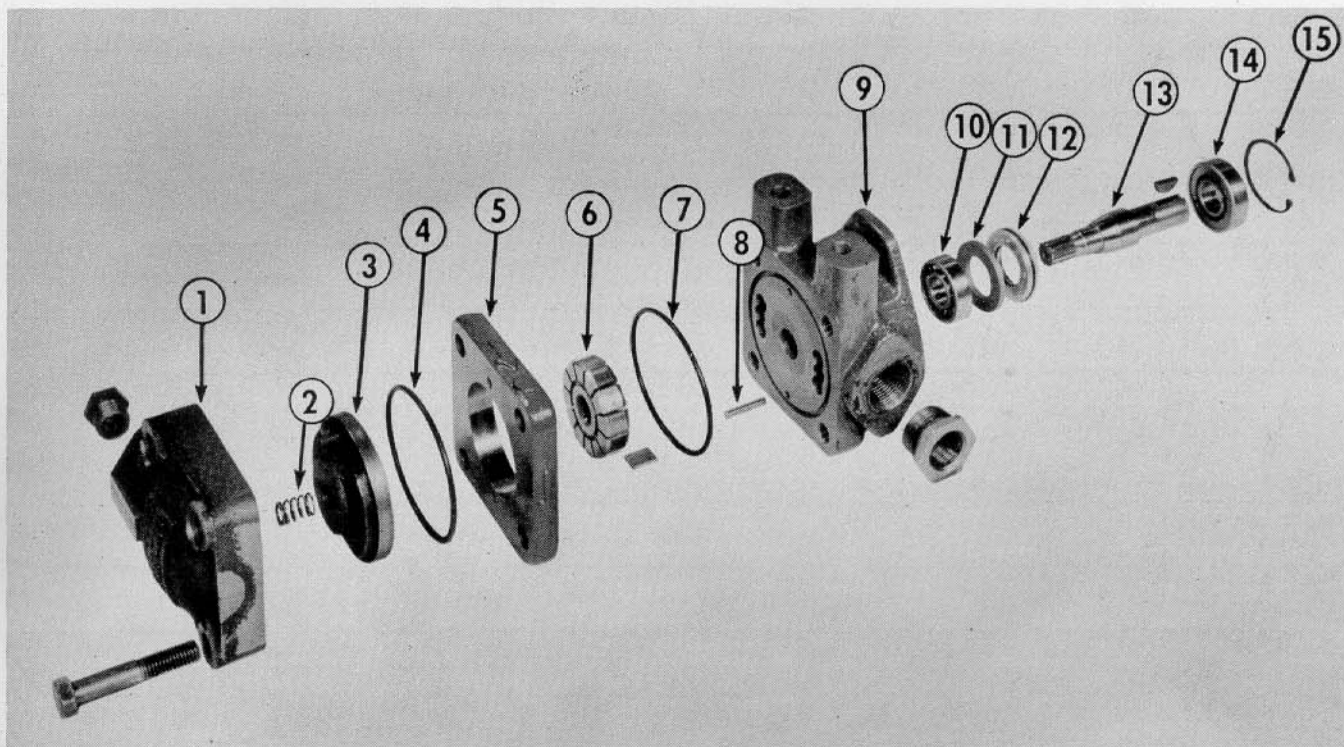


Fig. 37

Step 14—Reassembly of Low Pressure section of pump.

- Press bearing (10), into pump body (9).
- Install spacer (11), in pump body.
- Press oil seal (12), into pump body. Be sure sealing lip faces out.
- Using an arbor press, install bearing (14), on splined shaft (13).
- Install shaft and bearing assembly in pump body and tap in place with a soft hammer.
- Install snap ring (15), in place. See Step 9, Fig. 32.

Step 15—Assembly of high pressure section of the Hydraulic pump.

- Install "O" Ring seal (7), in pump body.

b. Install pins (8), in pump body.

c. Install rotor assembly (6), on splined end of shaft.

d. Install ring (5), in place on locating pins.

Be sure arrows on ring point in direction of crankshaft travel.

e. Install "O" ring (4).

f. Install pressure plate (3), on pins.

g. Install spring (2), and cap (1).

h. Tighten the 4 cap screws securely. Torqued to 110 ft. lbs.

Step 16—Install pump.

Step 17—Refill the system with oil and operate a few times with air vent screw loose to work air out of system.