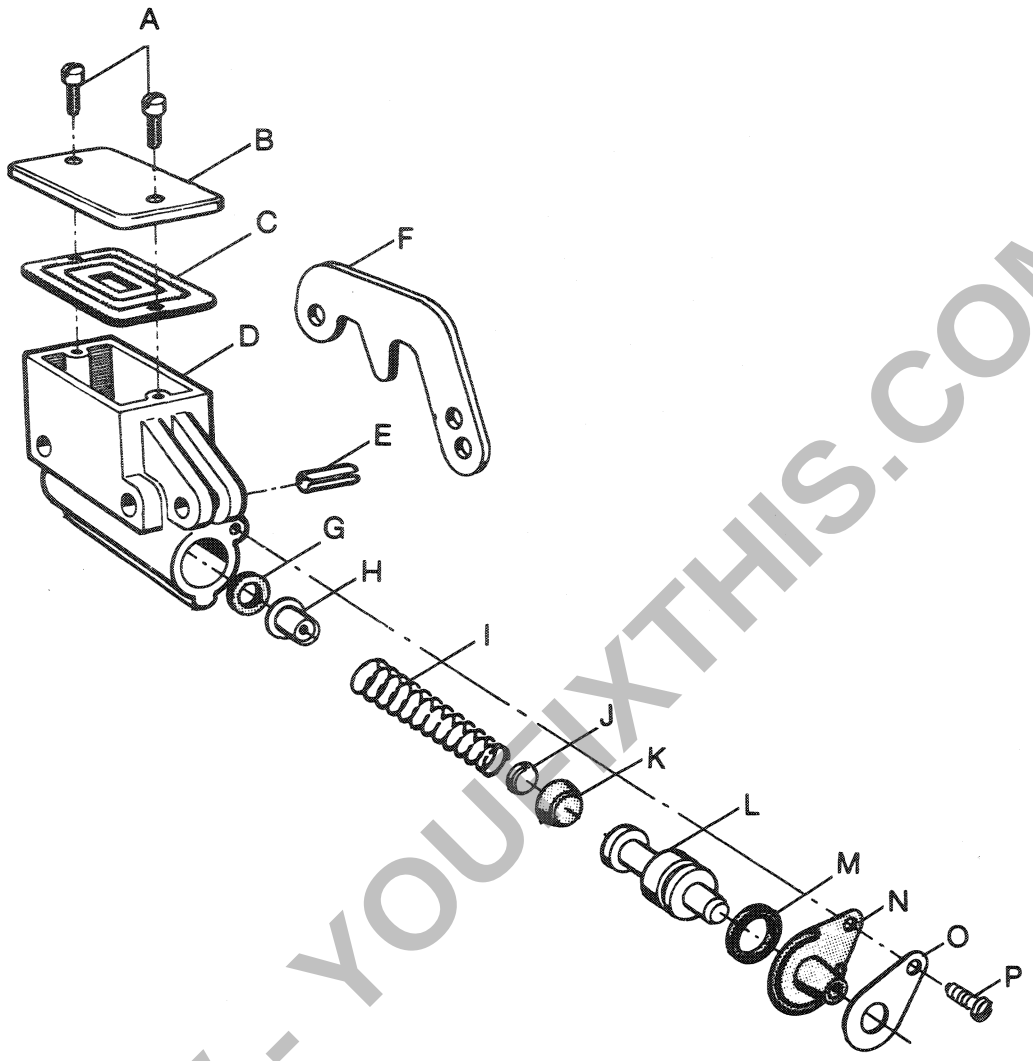



FIGURE 1-4

**Figure 1-4**

| Ref. | No. Used | Description |
|---|---|---|
| | | Master brake cylinder assembly |
| A | 2 | Screw, cover |
| B | 1 | Cover |
| C | 1 | Diaphragm, rubber |
| D | 1 | Housing |
| N.S.S.* | | |
| E | 1 | Roll pin |
| F | 1 | Lever |
| G | 1 | Seat, rubber |
| H | 1 | Valve, residual pressure |
| I | 1 | Spring |
| J | 1 | Cup protector |
| K | 1 | Cup |
| L | 1 | Piston |
| M | 1 | Quad seal |
| N | 1 | Boot, rubber |
| O | 1 | Retainer |
| P | 1 | Screw, retainer |

*N.S.S. - Not Serviced Separately

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# PLEASE READ CAREFULLY!

**INCLUDED THROUGHOUT THIS MANUAL AND ON MACHINE DECALS YOU WILL FIND PRECAUTIONARY STATEMENTS SUCH AS "CAUTION", "WARNING" AND "DANGER", FOLLOWED BY SPECIFIC INSTRUCTIONS.**

**THESE PRECAUTIONS ARE INTENDED FOR THE PERSONAL SAFETY OF YOU AND THOSE WORKING WITH YOU. PLEASE TAKE THE TIME TO READ THEM.**

## PERSONAL SAFETY!

**CAUTION: THE WORD "CAUTION" IS USED WHERE A SAFE BEHAVIORAL PRACTICE ACCORDING TO OPERATING AND MAINTENANCE INSTRUCTIONS AND COMMON SAFETY PRACTICES WILL PROTECT THE OPERATOR AND OTHERS FROM ACCIDENT INVOLVEMENT.**

**WARNING: THE WORD "WARNING" DENOTES A POTENTIAL OR HIDDEN HAZARD WHICH HAS A POTENTIAL FOR SERIOUS INJURY. IT IS USED TO WARN OPERATORS AND OTHERS TO EXERCISE EVERY APPROPRIATE MEANS TO AVOID A SURPRISE INVOLVEMENT WITH MACHINERY.**

**DANGER: THE WORD "DANGER" DENOTES A FORBIDDEN PRACTICE IN CONNECTION WITH A SERIOUS HAZARD.**

**ADDITIONAL PRECAUTIONARY STATEMENTS SUCH AS "ATTENTION" AND "IMPORTANT" ARE FOLLOWED BY SPECIFIC INSTRUCTIONS. THESE STATEMENTS ARE INTENDED FOR MACHINE SAFETY.**

## MACHINE SAFETY!

*ATTENTION: THE WORD "ATTENTION" IS USED TO WARN THE OPERATOR OF POTENTIAL MACHINE DAMAGE IF A CERTAIN PROCEDURE IS NOT FOLLOWED.*

*IMPORTANT: THE WORD "IMPORTANT" IS USED TO INFORM THE READER OF SOMETHING HE NEEDS TO KNOW TO PREVENT MINOR MACHINE DAMAGE IF A CERTAIN PROCEDURE IS NOT FOLLOWED.*

# IMPORTANT!

## FAILURE TO FOLLOW THE "CAUTION", "WARNING", AND "DANGER" INSTRUCTIONS MAY POSSIBLY RESULT IN SERIOUS BODILY INJURY OR DEATH.

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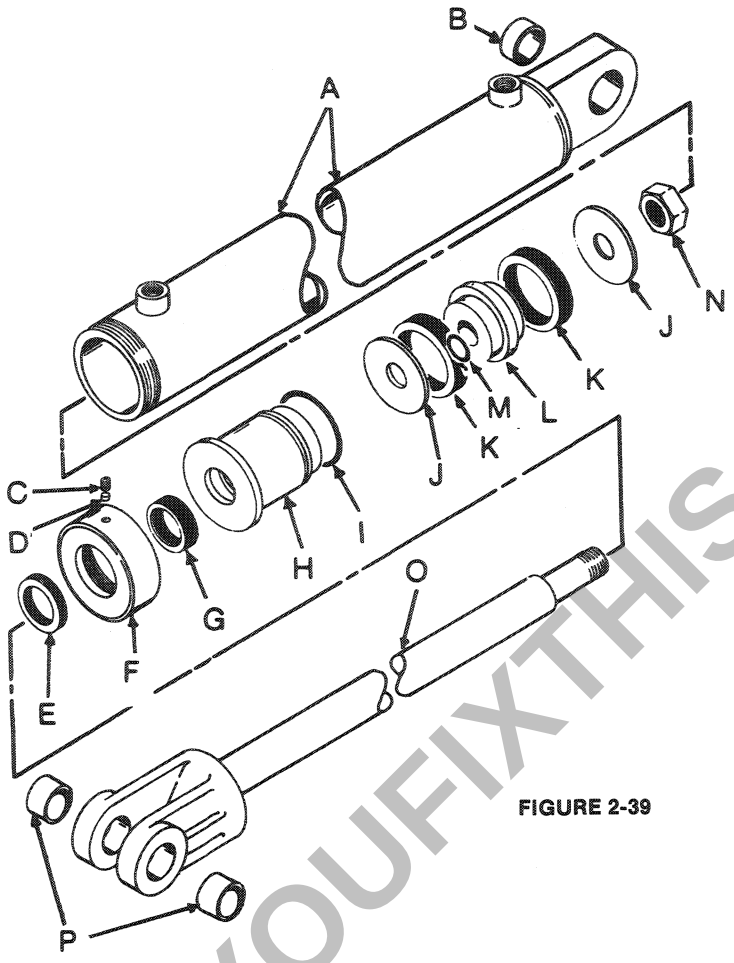



FIGURE 2-39

**Figure 2-39**

| Ref. | No. Used | Description |
|---|---|---|
| | | Loader cylinder assembly (Cross #UT0250-02075-0125-027258, includes references A through 0) |
| A N.S.S.* | 1 | Barrel weld assembly |
| B | 1 | Bushing |
| C | 1 | Setscrew |
| D* | 1 | Nylon plug |
| E N.S.S.* | 1 | Wiper |
| F | 1 | Cap, head |
| G N.S.S.* | 1 | U-cup |
| H | 1 | Head |
| I N.S.S.* | 1 | O ring |
| J | 2 | Plate, follower |
| K N.S.S.* | 2 | U-cup |
| L | 1 | Piston |
| M N.S.S.* | 1 | O ring |
| N | 1 | Hex nut |
| O | 1 | Piston rod weld assembly |
| P | 2 | Bushing |
| * | AR | Seal repair kit (includes all items with asterisk [*]) |

AR — As Required
*N.S.S. - Not Serviced Separately

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5. Check inner face, X, Figure 10-7, of back plate, A, and the O ring side of adaptor plate, K, Figure 10-4. Replace if the surface is worn or scratched.
6. Check shaft bushing, Y, Figure 10-7, in the back plate and front plate. Bushings are not replaceable if worn. It is usually better to replace a complete pump at this stage.
7. Inspect the inside of the front and rear bodies, C and O, Figure 10-4. Replace if worn or scratched.

After inspecting all parts, it is usually more economical to replace the new seal kits and one or both bodies than to replace the complete pump. If additional parts are needed, it may be more economical to replace the complete pump.

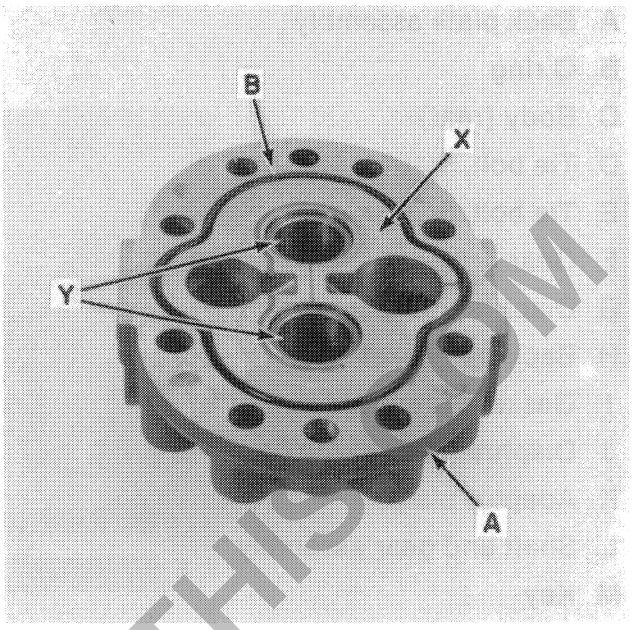



FIGURE 10-7

## ASSEMBLY

1. If the pump has low hours and was opened only for inspection or cleaning, reuse the original diaphragm and seals.
2. Normal repair of a used pump requires a new seal kit.
3. Install the shaft seal, A, in the front plate, Figure 10-9.
4. Install the diaphragms, G and P, back-up gaskets, H, and gasket protectors, I, in the front plate and the adaptor plate, Figures 10-4 and 10-6.
5. Install balls, R, and springs, Q, Figures 10-4 and 10-6, in the front plate.
6. Install the diaphragm seals, S and J, Figure 10-5, with the bronze side towards the gears in the front plate and adaptor plate. See diaphragm seal, J, in adaptor plate, K, Figure 10-8. Note the difference between the two diaphragm seals.
7. Install O rings, B, in the groove in the back plate and the adaptor plate as shown in Figure 10-7.

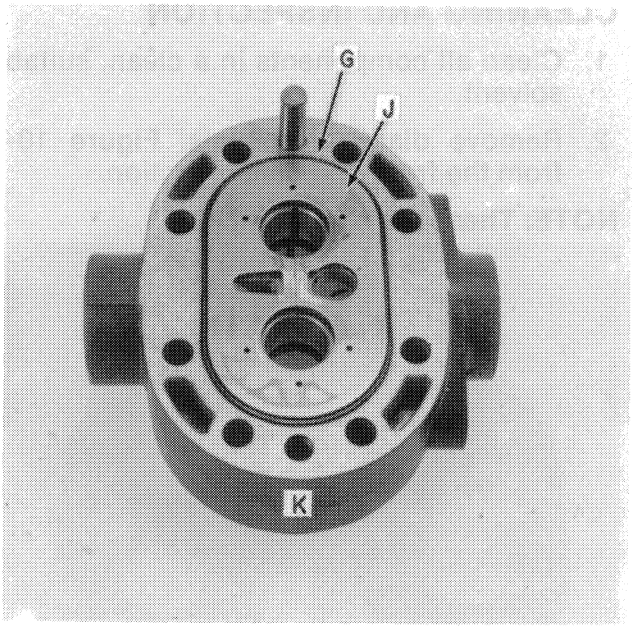



FIGURE 10-8

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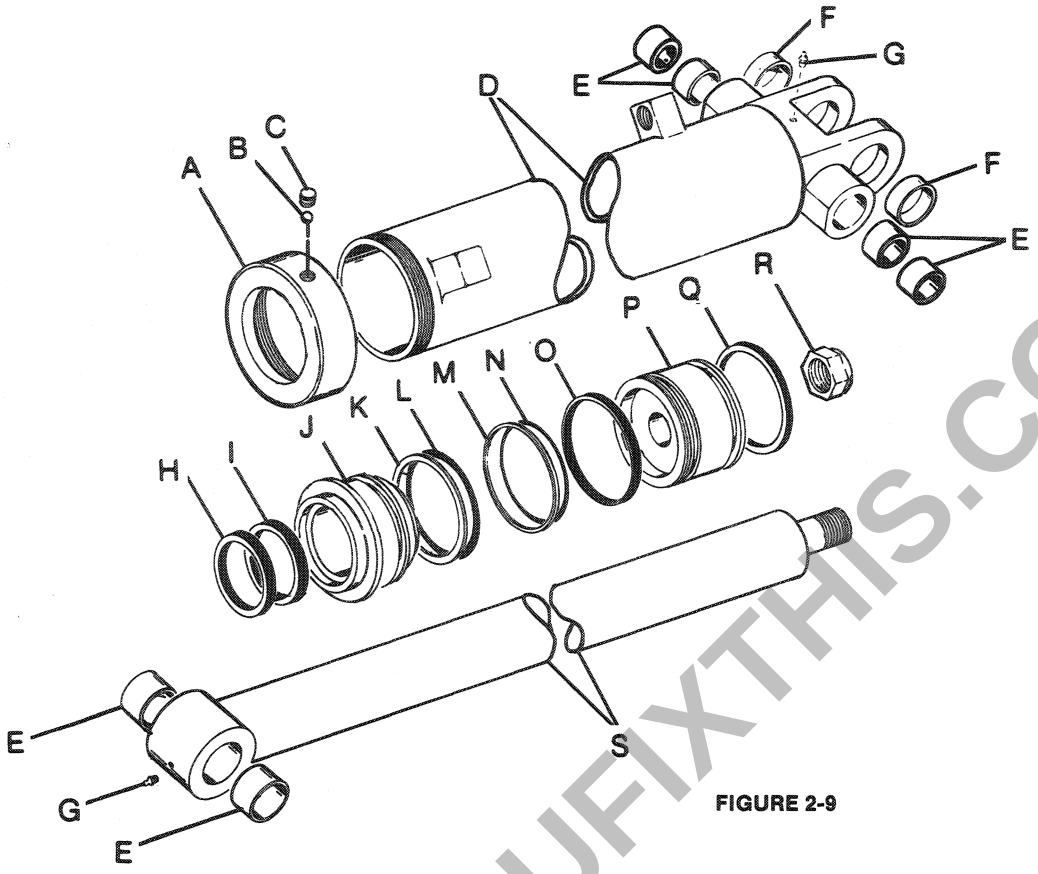



FIGURE 2-9

**Figure 2-9**

| Ref. | No. Used | Description |
|---|---|---|
| | | Boom cylinder assembly (Cross #WC0400-03700-0250-027103; includes references A through S) |
| A | 1 | Cap, head |
| B N.S.S.* | 1 | Nylon ball |
| C | 1 | Setscrew |
| D N.S.S.* | 1 | Barrel weld assembly |
| E | 6 | Bushing 1½" ID |
| F | 2 | Bushing 1¼" ID |
| G | 2 | Lube fitting |
| H N.S.S.* | 1 | Wiper |
| I N.S.S.* | 1 | U-cup |
| J | 1 | Head |
| K N.S.S.* | 1 | Washer, back-up |
| L N.S.S.* | 1 | O ring |
| M N.S.S.* | 1 | Teflon ring |
| N N.S.S.* | 1 | O ring |
| O N.S.S.* | 1 | Wear ring |
| P | 1 | Piston |
| Q N.S.S.* | 1 | C. I. ring |
| R | 1 | Hex nut |
| S | 1 | Piston rod assembly (includes two bushings, E) |
| * | AR | Seal repair kit (includes all items with asterisk [*]) |

AR - As Required

*N.S.S. - Not Serviced Separately.

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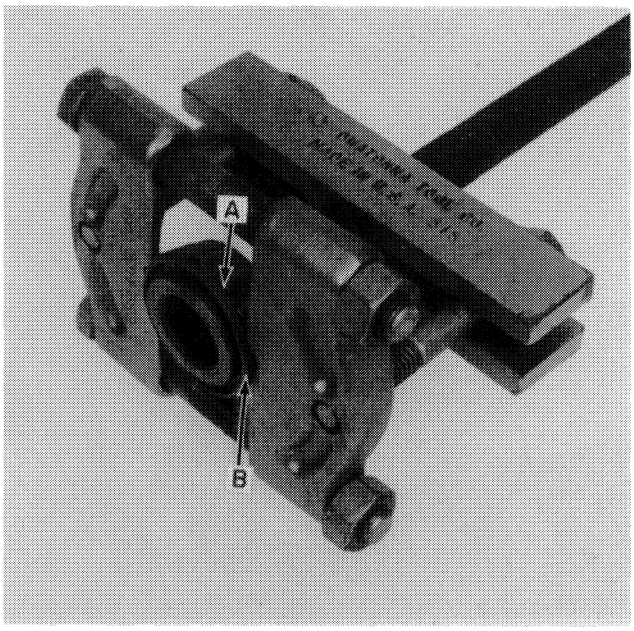



FIGURE 8-14

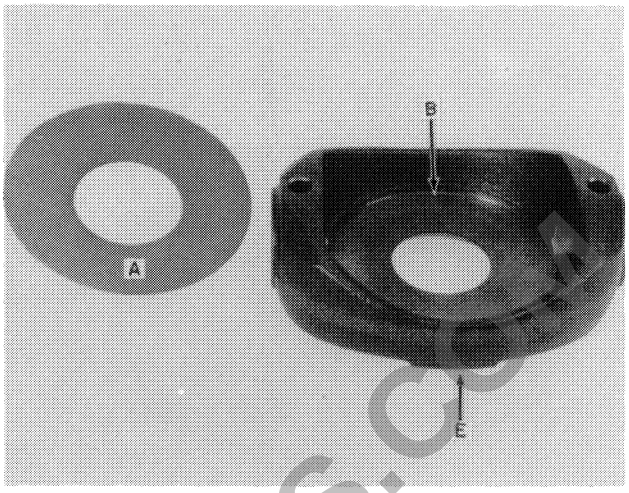



FIGURE 8-16

8. Lay the pump on its side and remove the cylinder block assembly (cylinder and pistons), Figure 8-15.
9. Figure 8-16 shows the thrust plate, A, removed from the swash plate, E. Remove the thrust plate (it may be stuck to the swash plate by oil).

   Thoroughly clean the case as shown in Figure 8-17, even though shaft, F, bearing, L, swash plate, E, and trunnion shafts, C, Figure 8-18, remain installed.
10. Remove these parts if the machine has 2000 hours of use or the parts are worn. Drive out the roll pins (two on each side) from one side and both roll pins from each trunnion will fall into the housing. See Figure 8-17.

    Drive out the trunnion shafts, C, from the inside with a punch.




FIGURE 8-15

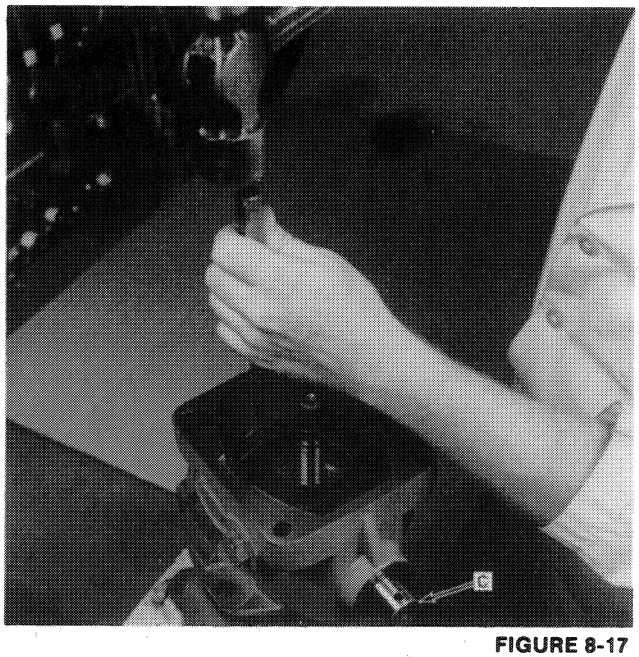



FIGURE 8-17



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FIGURE 9-7

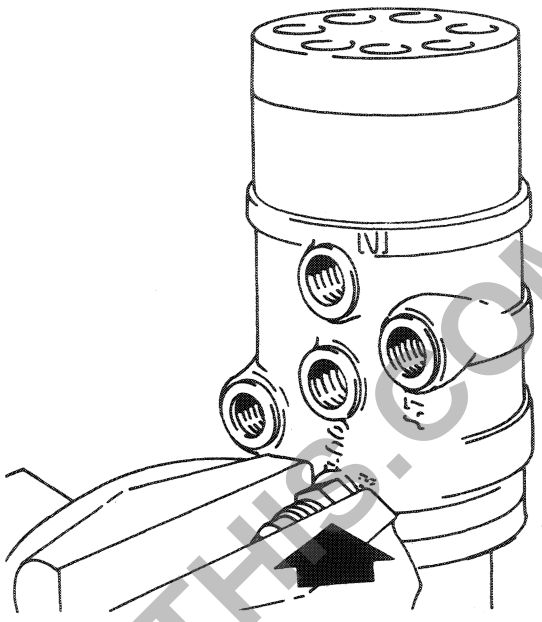


FIGURE 9-8

## SERVICING OF POWER STEERING UNIT

Refer to Figure 9-4 for parts identification.

The spool (22) and the housing (25), the commutator (34), and commutator ring (33), as well as the rotor (31) and the stator (31) are not separately replaceable because they are selectively fitted at the factory. If the spool or body needs to be replaced, the complete unit must be replaced. If the commutator or the commutator ring needs to be replaced, both must be replaced as a matched set. If the rotor or stator needs to be replaced, the complete rotor set (31) must be replaced. The pin in the end cover is not separately replaceable. If the pin or end cover needs to be replaced, the end cover and pin assembly (38) must be replaced.

## DISASSEMBLY PROCEDURE

Use the following procedure to prevent possible distortion or damage to the unit if placed directly in a vise.

1. Insert O ring tube fitting, with tube nut or fitting cap attached, into one of the four threaded ports in the housing. Clamp the fitting in a vise in a manner which will locate the seven end cover bolts in an upright position. See Figure 9-8.
2. Unscrew the seven special bolts (39) from the end cover (38).

   **NOTE: Use special care in the following steps to insure protection of the ground and lapped faces of the components. Avoid scratching or nicking finished surfaces.**
3. Remove end cover (38) by bumping it sideways with a soft hammer to loosen it from the rotor seal (36) and seal retainer (35), and lift from unit.

   *IMPORTANT: The washer (37) and commutator (34) may adhere to the end cover and may be removed with the end cover. Do not attempt to remove the pin because the pin is press fit in the plate and is non-serviceable. See Figure 9-9.*
4. Remove the rotor seal (36) and seal retainer (35), Figures 9-4 and 9-9, by bumping the retainer sideways with a soft hammer to loosen it from the valve body. Lift off the rotor seal and seal retainer. Discard the rotor seal.

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# SECTION 11
# VALVES
## BACKHOE VALVE STACK

The LB-620 has two different control valve stacks.

Machines on and below serial number 732878 use a Kontac valve stack. The hoses are attached directly into the valve ports. It is necessary to remove the valve with hoses attached.

Machines on and above serial number 732879 use a Gresen valve stack. The hoses are attached to the valve ports with swivel connectors. The hoses can be removed at the valve after the valve stack is unbolted and pulled about 2"-4" away from the backhoe frame.

Be sure to check the serial number range before starting to remove and repair these valve stacks.

The Kontac valve does not have the stabilizer cylinder locks in the valve body; therefore, the external stabilizer cylinder locks hold the stabilizer cylinder piston position even when the stack valve is removed.

The Gresen stack valve has the stabilizer cylinder locks in the stack valve.

**CAUTION: THE STABILIZER CYLINDERS CAN COLLAPSE WHEN THE STACK VALVE IS REMOVED ON UNITS WITH THE GRESEN VALVE.**

**BLOCK THE BACKHOE SECURELY BEFORE REMOVING THE STACK VALVE MADE BY GRESEN.**

**DANGER: ALWAYS ACTUATE THE BOOM LOCK BEFORE LEAVING A MACHINE WITH THE BOOM UP AND/OR WHEN SERVICING OR REPAIRING A UNIT WITH THE BOOM UP. FAILURE TO DO SO COULD RESULT IN SERIOUS INJURY OR DEATH.**

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## VALVE INSTALLATION - GRESEN VALVE

*IMPORTANT: Be sure the restricting orifices are correctly located in the correct ports. Both ports for the swing cylinder must have the restrictors with the flat face out. The bottom port of each stabilizer valve should have the spring to the outside with the flat face of the restrictor against the bottom of the port.*

1. Attach all the cylinder hoses to their original port locations. See Figure 11-18 for valve installation. If hoses were not identified before removal, hand trace any lines that may be difficult to identify.
2. Attach the backhoe to the base unit. Connect all the hoses and connect the control link to the extendable dipper valve if so equipped. See Figures 11-13 through 11-18 plus the text and reinstall all hoses, tubes, etc., in the reverse order of disassembly.
3. Start the machine and check for leaks. Check the reservoir oil level. Refill the reservoir to the proper level with the correct oil. See LB-620 operator's manual.

# LOADER BOOM/BUCKET CONTROL VALVE

The LB-620 has two types of loader boom/bucket control valves. On and below serial number 715836 the valve is a Kontac valve. On and above serial number 715867 the valve is a Victor Dukes valve.

## VALVE REMOVAL - KONTAC OR VICTOR DUKES

1. Raise the boom and engage boom locks, A, Figure 11-27.
2. Dump the bucket completely.
3. Remove the left battery and battery support and disconnect control cables at B, Figure 11-28.
4. Disconnect all connections at the valve ports. Cap all lines. Be sure the return line is tightly capped as oil may flow out of the reservoir.
5. Remove the valve mounting bolts and remove the valve.

**WARNING: ALL SERVICE SHOULD BE DONE WITH THE ENGINE SHUT OFF. ALWAYS INSTALL JACK STANDS OR BLOCKS WHEN SERVICING A LIFTED LOADER. BE SURE THE BOOM ARMS ARE SUPPORTED BY THE BOOM LOCKS WHEN SERVICING A UNIT WITH A RAISED BOOM. OTHERWISE, THE BOOM MAY FALL UNEXPECTEDLY AND CRUSH OR KILL YOU.**

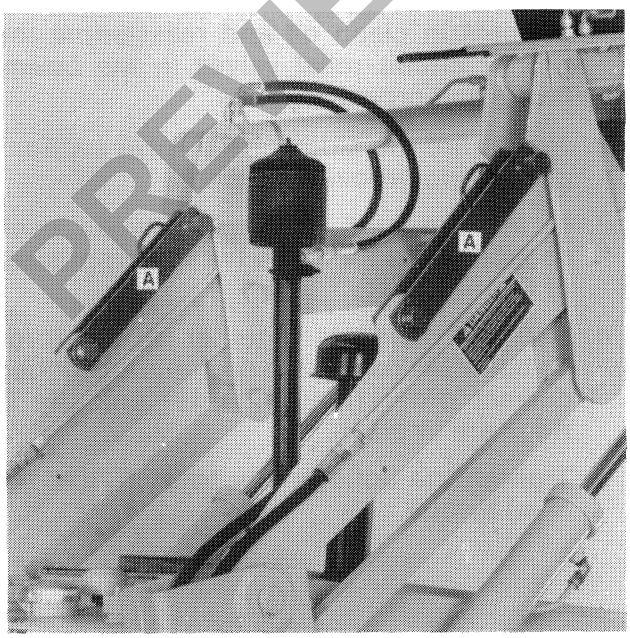



FIGURE 11-27

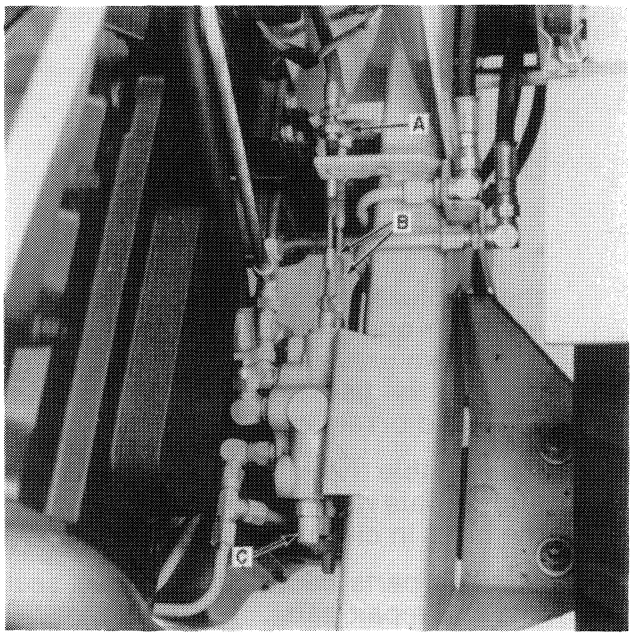



FIGURE 11-28



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