7. Place back-up washers (8) and o-ring (9) in groove in inside of piston (10).

8. Lubricate back-up washers (8) and o-ring (9) in piston and carefully slide piston onto shaft.

9. Place compression nut (12) into cylinder tube (14) past wire ring groove.

10. Lubricate v-pack set (11) and slide v-pack into cylinder tube (14) against compression nut (12) one at a time.

    NOTE: *Lips on v-pack must face piston.*

11. Thread cylinder shaft assembly into the compression nut (12) several turns.

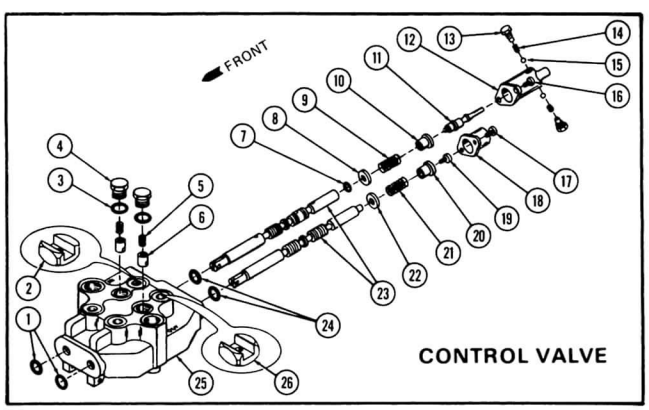
12. Lubricate o-ring (7) on head and slide head assembly into cylinder tube (14). Insert metal shaft through base port into hole in compression nut (12). Turn piston shaft (1) tightly into compression nut to approximately 180-220 ft./lbs.

13. Insert wire retaining ring (13) into the slot in the cylinder tube and turn cylinder head to thread the wire ring into the groove.

CONTROL VALVE SERVICE

The optional control valve is designed to be reliable and easy to service. The valve body and spools are not sold as separate repair items, because the body is factory honed to fit the spools. If the valve should malfunction during the warranty period, return the complete valve assembly, without disassembling, to your authorized service department or contact your authorized service department for instructions. Unauthorized disassembly of the valve in the warranty period will VOID WARRANTY.

Follow the following procedure to disassemble and reassemble the valve.



CONTROL VALVE

● CONTROL VALVE DISASSEMBLY

NOTE: *It is advisable to mark or tag all hoses and parts so they will be reinstalled in their proper location.*

1. Remove 1-way restrictor plate with .109 hole (2) from working port "B" and 1-way restrictor plate with .062 hole (26) from working port "D" of valve body (25) by holding the valve body upside down and lightly tapping the valve body on the bottom.

2. Remove detent screws (13), detent springs (14) and steel balls (15) from both sides of detent end cap (12).

3. Remove detent end cap (12) and end cap (18) from rear of valve body by removing two screws (16 & 17) from each end cap.

4. Remove detent stud (11), spring spacer (10), detent centering spring (9), flat washer (8) and o-ring (7) from the detent spool. Remove screw (19), spring spacer (20), centering spring (21) and flat washer (22) from the other spool.

    NOTE: *If spring centering parts are not damaged, it is advisable not to remove the parts from the spools, because detent stud (11) and screw (19) are installed with loctite.*

5. Push spools (23) into valve body (25) from the rear until rear spool o-rings (24) are exposed, then remove o-rings by using a wire hook and a screwdriver. Push spools back into valve body from the front and pull spools out of valve body from the rear. Remove front spool o-rings (1) with wire hook and screwdriver.

    NOTE: *Be careful not to damage or scratch body spool bore.*

6. Remove load check plugs (4), load check springs (5) and load check poppets (6) from the top of valve body. Remove load check plug o-rings (3) from plugs only if o-rings are damaged.

7. Clean all parts, including valve body, in a suitable cleaning solvent. After cleaning parts with solvent, use air pressure to blow any dirt or excess solvent from all parts, including inside of valve body.

● CONTROL VALVE REASSEMBLY

1. Examine all parts for wear and damage and replace if necessary.

2. Lubricate all o-rings and spools with oil, to prevent DAMAGE when assembling.

3. Lubricate all detent and spring centering parts with a light coat of grease before assembling.

4. Reassemble all parts in reverse order of disassembly.

    NOTE: *If spring centering parts were removed from the spools, then detent stud (11) and screw (19) must be installed with 242 loctite and torqued to 2-3 ft./lbs.*