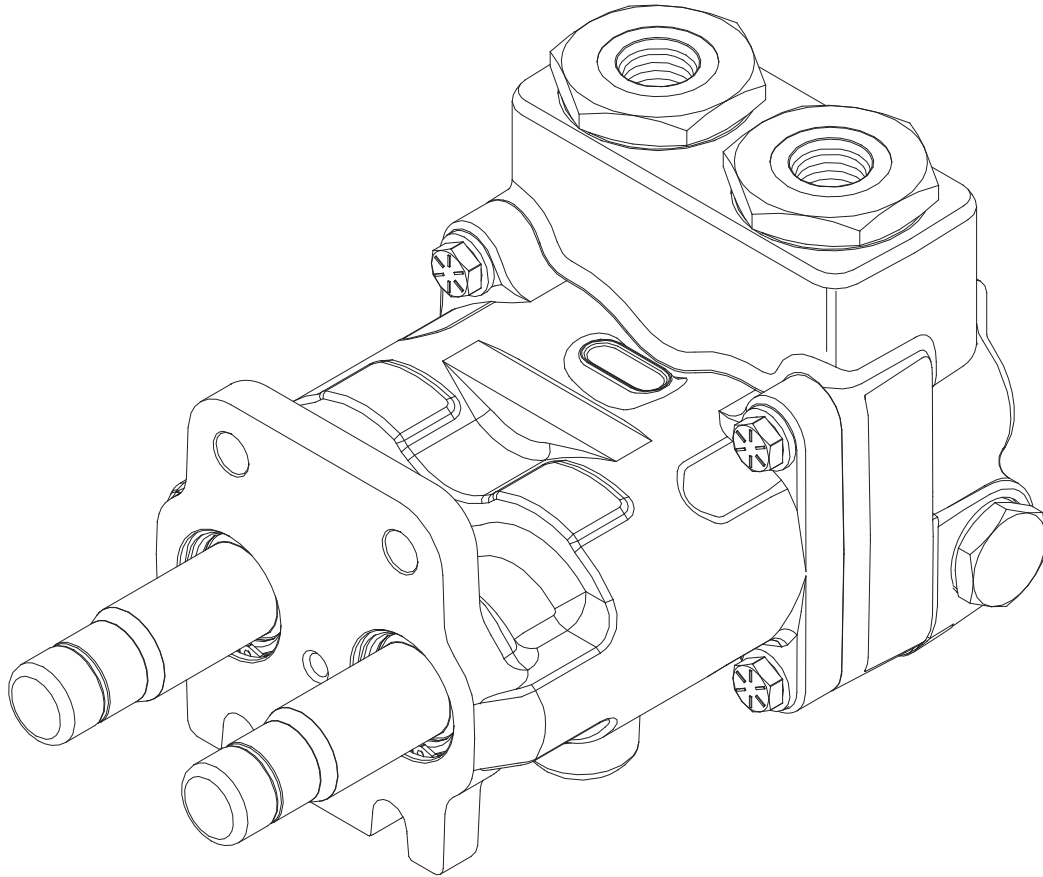


Dual Brake Valve



Service Instructions



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REFER TO MACHINE MANUFACTURE PROCEDURES AND RECOMMENDATIONS BEFORE REMOVING VALVE FROM MACHINE. PREVENT CONTAMINATION TO THE HYDRAULIC SYSTEM AND VALVE BY THOROUGHLY CLEANING THE VALVE AND SURROUNDING AREA OF ALL DIRT, GREASE, OIL, ETC. BEFORE REMOVING VALVE FROM MACHINE. AFTER REMOVAL, CAP HOSE AND LINE ENDS TO PREVENT ENTRY OF DIRT INTO THE HYDRAULIC SYSTEM.

DISASSEMBLY

(Refer to Figures 1, 2, and 3)

1. Remove valve assembly from machine by disconnecting necessary fluid lines. Remove mounting bolts and drain fluid from assembly.
2. Remove reservoir plugs (27) from housing (20). Remove o-rings (28) from reservoir plugs (27).
3. Remove tip valve assemblies (29) from housing (20). Tip valve assemblies (29) are not field serviceable. Service by replacement only.
4. Housings (7 & 20) are under spring tension. To separate housing halves, position mounting flange on housing (7) face down and clamp in a vise. Apply downward pressure on housing (20) while evenly loosening four cap screws (5). It may be necessary to twist on housing (20) to break the two sections apart. Remove four cap screws (5) and four washers (6) while carefully separating housing halves.
5. Remove springs (9), piston (14) assemblies, springs (17), o-rings (18), and retainers (19).
6. Remove retaining ring (11), washer (12), and ball (13) from pistons (14).
7. Remove piston ring (10), seal (16), and o-ring (15) from pistons (14).
8. Remove push rods (8) from housing (7). Do not remove retaining rings from push rods (8).
9. Retainer (3) need not be removed to service seals (2 & 4). Carefully remove wiper seal (2) by inserting a small screw driver along the outer perimeter of wiper seal (2) and prying out. Remove seal (4) using a dull pointed pick tool. See Figure 2. **NOTE: Be careful not to scratch or mar insert (2) or housing bore.** If retainers (3) require replacement, remove retaining rings (1) and seals (2 & 4) as indicated. With housing (7) flange face down in a vise, use a plastic or wooden dowel through housing (7) bore to evenly tap on retainers (3) to remove. An inside bearing puller can also be used to remove retainers (3).
10. Remove plugs (21), springs (23), and washers (24) from housing (20). Remove o-rings (22) from plugs (21).
11. Use a plastic or wooden dowel to carefully remove spool (26) from housing (20). Remove o-ring (25) from spool (26). **NOTE: Be careful not to scratch or mar spool (26) or housing bore.**
12. Install new o-ring (25) on spool (26). Carefully install spool (26) in housing (20). **NOTE: Be careful not to scratch or mar spool (26) or housing bore.**
13. Install new o-rings (22) on plugs (21). Install washers (24), springs (23), and plugs (21) in housing (20). Be sure washers (24) are properly positioned over spool (26). Torque plugs (21) 54.2-61.0 N·m (40-45 lb·ft).
14. Install new seals (4), new wiper seals (2), and retaining rings (1) in housing (7). Note direction of cups (4) and wiper seals (2). See Figure 2. If retainers (3) require replacement, install new seals (4) in new retainers (3) as shown. Place a thin coat of bearing grease on outside diameter of new retainers (3) and carefully tap into place. Install new wiper seals (2) and retaining rings (1). See Figure 2.
15. Install ball (13), washer (12), and retainer (11) into pistons (14). Be sure retainers (11) are properly seated in groove. See Figure 1.
16. Install new piston ring (10) and new o-ring (15) on pistons (14). Be sure the cut on piston rings (10) match the position as indicated in Figure 3 when installed into housing (7) bores.
17. Install seal (16) in pistons (14) groove over top o-rings (15). Seals (16) will stretch and become oversized when being installed. These seals must be resized before final assembly. To resize seals (16), lubricate seals (16), pistons (14) and housing (20) bores with clean type fluid used in the system. Carefully insert each piston (14) assembly in the proper housing (20) bore being careful not to extrude seal (16). Allow each piston (14) assembly to remain in the housing bores for at least 10 minutes. Proceed to next step while waiting.
18. Rub clean type fluid used in the system on the outer diameter of push rods (8) and housing (7) bores. Fully insert push rods (8) into housing (7) bores.
19. Place springs (9) into push rods (8).
20. Install retainers (19) in housing (20). Install new o-rings (18) over retainers (19).
21. Steps 11 & 12 must be done quickly so seals (16) remain the proper size and form. Remove piston (14) assemblies from housing (20) bores and install in housing (7) bores. Be sure the cut on piston rings (10) match the position as indicated in Figure 3 when installed into housing (7) bores.
22. Install springs (17). Place housing (20) over springs (17) and align housing (20) bores with pistons (14). Be careful not to damage seals (16). While applying downward pressure on housing (20), install two cap screws (5) and washers (6) diagonal from each other and finger tighten to hold the assembly together.
23. Install the remaining two cap screws (5) and washers (6). Evenly torque the four cap screws (5) 29.8-38.0 N·m (22-25 lb·ft).
24. While installing tip valve assemblies (29) in housing (20), push rods (8) inward approximately 1/2 inch. Torque tip valve assemblies (29) 40.7-47.5 N·m (30-35 lb·ft).
25. Install new o-rings (28) on reservoir plugs (27). Install reservoir plugs (27) in housing (20) and torque 61.0-81.4 N·m (45-60 lb·ft).
26. Properly reinstall valve on machine. Be sure all lines are properly connected and do not leak. Refer to machine manufacture procedures and recommendations for bleeding this valve.

ASSEMBLY

(Refer to Figures 1, 2, and 3)

LUBRICATE ALL RUBBER COMPONENTS WITH CLEAN TYPE FLUID USED IN THE SYSTEM.

1. Thoroughly clean housings and all parts with clean solvent and allow to dry before proceeding. Lubricate all parts and housing bores with clean type fluid used in the system.

