

PRESSURE MODULATING VALVE



Service Instructions

TABLE 1 (Specifications)

Model Number	Repair Kit Number	Brake Pressure Setting	
		bar	(PSI)
* 06-460-338	06-400-098	103 ± 1.7	(1500 ± 25)
* 06-460-340	06-400-098	55 ± 1.7	(800 ± 25)
* 06-460-352	06-400-098	64 ± 1.7	(925 ± 25)
06-460-388	06-400-098	79 ± 3.5	(1150 ± 50)
** 06-460-416	06-400-146	103 ± 3.5	(1500 ± 50)
06-460-500	06-400-098	160 ± 3.5	(870 ± 50)

* Valve only, no pedal and base assembly.
 ** Uses two valves with a pilot apply section added.

NOTE: If your product number is not listed, contact ZF Off-Highway Solutions Minnesota Inc. for information.

Brake valve displacement is a variable specification with all Modulating Hydraulic Power Brake Valves. The determining factors include brake volume, accumulator capacity as it relates to brake pressure, the number of "off-power" stops, and brake response time required.

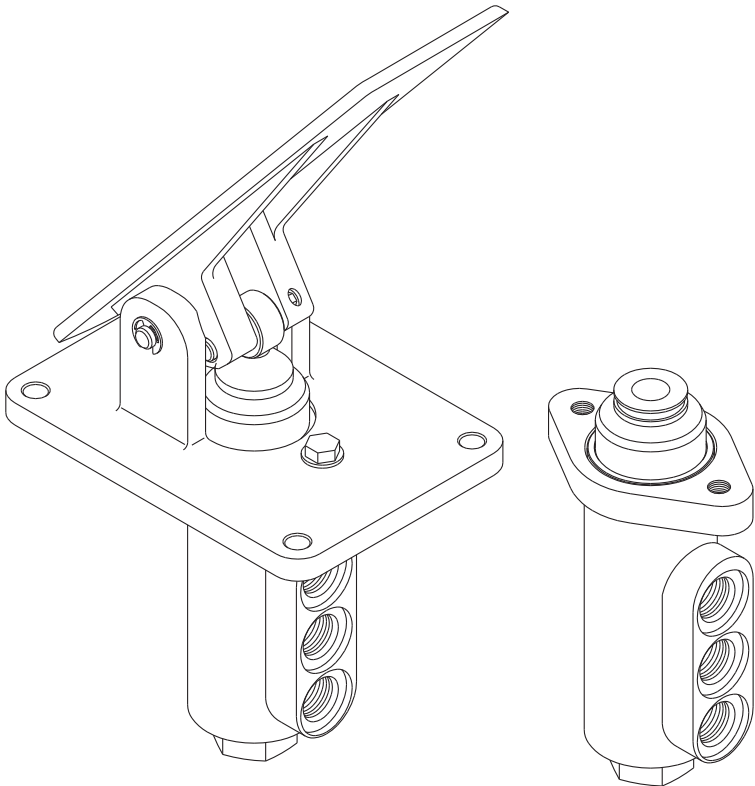


FIGURE 1

DISASSEMBLY

(Refer to Figure 2)

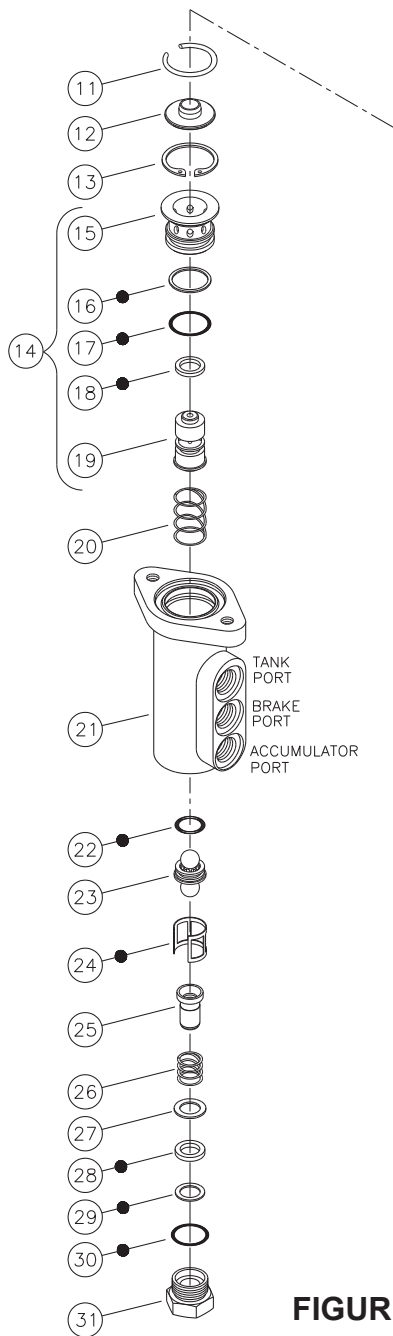
1. Separate pedal and base assembly (3) from the valve by removing cap screws (1) and lock washers (2).
2. Remove ring (4) and boot (5) from housing (21).
3. Remove input piston (6), shim(s) (7), spring (8), and spring (9) from housing (21). Note number of shim(s) removed for reassembly purposes. **NOTE: Not all models use spring (8). Piston (6) shown in Figure 2 may appear different than the piston removed from your valve.**
4. Remove o-ring (10) from housing (21). **NOTE: Be careful not to scratch housing bore.**
5. Remove retaining ring (11) and retainer (12) from housing (21). **NOTE: Some models use a flat washer in place of retainer (12). Be careful not to scratch housing bore.**
6. Remove retaining ring (13), piston assembly (14), and spring (20) from housing (21). **NOTE: Be careful not to scratch or mar piston assembly (14) or housing bore.**
7. Separate piston (19) from piston (15). Remove cup (18) from piston (19). Remove o-ring (17) and back-up ring (16) from piston (15). Note order and direction of components.
8. Remove plug (31) from housing (21).
9. Remove o-ring (30), cup (28), and back-up ring (29) from plug (31). Note direction of cup (28).
10. Remove washer (27), spring (26), guide (25), and spacer (24) from housing (21).
11. Remove ball valve assembly (23) from housing (21).
12. Remove o-ring (22) from ball valve assembly (23).
13. Disassembly of pedal and base assembly (3) is not necessary unless it is not working properly. Be sure cam is in good working order and moves freely.

ASSEMBLY

(Refer to Figure 2)

CLEAN AND INSPECT ALL PARTS FOR WEAR. LUBRICATE ALL RUBBER COMPONENTS FROM THE REPAIR KIT WITH CLEAN SYSTEM FLUID.

1. Install new o-ring (22) on ball valve assembly (23) and insert into housing bore. Note direction of valve assembly. **NOTE: Be sure valve assembly seat is fully seated into housing.**
2. Install new spacer (24) into housing (21).
3. Install new o-ring (30) on plug (31).
4. Install new back-up ring (29) and new cup (28) inside of plug (31). Note direction and order of back-up ring (29) and cup (28).
5. Install guide (25), spring (26), and washer (27) in plug (31). Install plug (31) in housing (21) and torque 54.2-67.8 N·m (40-50 lb-ft).
6. Install new cup (18) on piston (19). Note direction of cup (18).
7. Install new back-up ring (16) and new o-ring (17) on piston (15).
8. Install piston (19) in piston (15).
9. Install spring (20), piston assembly (14), and retaining ring (13) in housing (21). **NOTE: Be careful not to scratch piston assembly (14) or housing bore.**
10. Install retainer (12) and retaining ring (11) in housing (21). **NOTE: Some models use a flat washer in place of retainer (12). Be careful not to scratch housing bore.**
11. Install new o-ring (10) in housing (21).
12. Install spring (9), spring (8), shim(s) (7), and input piston (6) in housing (21). Be sure to install the same number of shim(s) as were removed during disassembly. **NOTE: Not all models use spring (8). Input piston (6) shown in Figure 2 may appear different than the piston removed from your valve.**
13. Install new boot (5) and new ring (4) on housing (21).
14. Attach pedal and base assembly (3) to valve using cap screws (1) and lock washers (2). Torque cap screws 29.8-36.6 N·m (22-27 lb-ft).



● Items included in Repair Kit

* Not used in all models

NOTE: Not all models include pedal and base assembly.

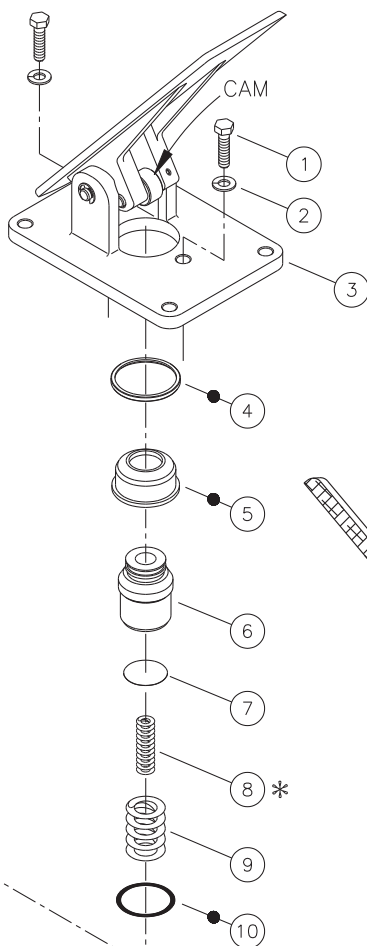


FIGURE 2

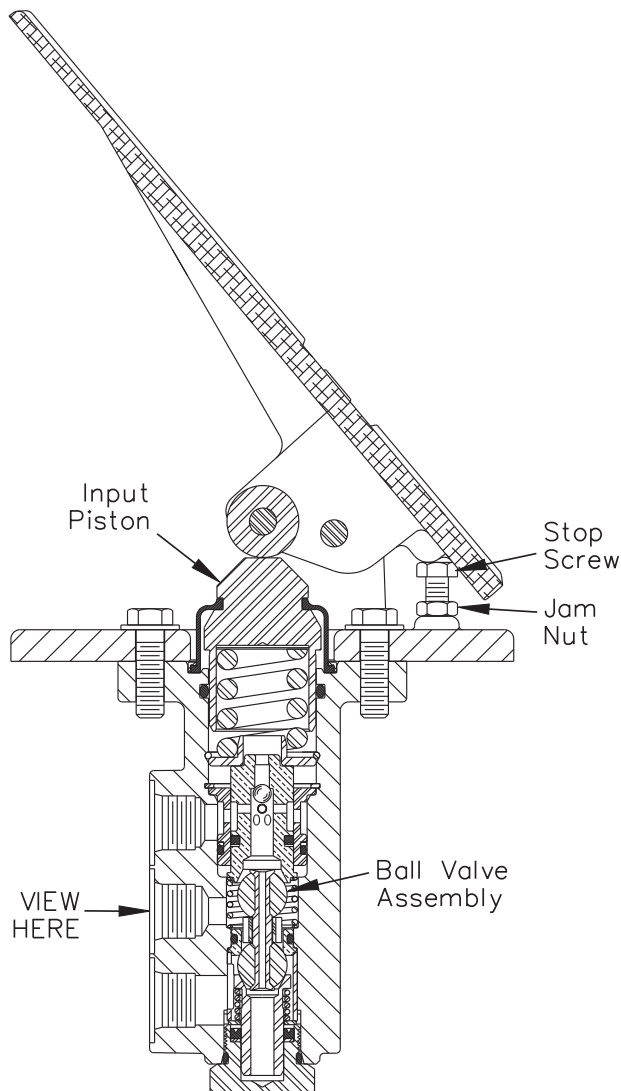


FIGURE 3

NOTE

If the stop screw or jam nut shown in Figure 3 are loosened or removed, they must be properly reset. Adjust stop screw and nut to allow 1.52 mm (0.060 in) minimum travel of input piston (6) before internal ball valve assembly (23) begins to move. Torque jam nut 24.4-29.8 N·m (18-22 lb·ft). The correct adjustment can be determined by viewing or feeling the ball valve assembly (23) through the port shown in Figure 3.

After service, the valve must develop the pressure indicated in the specifications, TABLE 1. Shim(s) (7) may be added or removed to obtain the correct pressure setting.

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