

PRESSURE MODULATING VALVE



Service Instructions

TABLE 1 (Specifications)

Model Number	Repair Kit Number	Maximum Brake Pressure Setting		Push Rod Force at Maximum Pressure		Pedal Angle	Approximate Pedal force at Maximum Pressure		Total Pedal Travel
		bar	(PSI)	kgf	(lb)		kgf	(lb)	
* 06-460-306	06-400-085	32.8 ± 1.7	(475 ± 25)	141	(310)	n/a	n/a	n/a	n/a
* 06-460-310	06-400-085	81.0 ± 3.5	(1175 ± 50)	304	(670)	n/a	n/a	n/a	n/a
* 06-460-314	06-400-085	103.4 ± 3.5	(1500 ± 50)	363	(800)	n/a	n/a	n/a	n/a
* 06-460-342	06-400-085	77.2 ± 3.5	(1120 ± 50)	281	(620)	n/a	n/a	n/a	n/a
* 06-460-354	06-400-085	63.8 ± 1.7	(925 ± 25)	234	(515)	n/a	n/a	n/a	n/a
* 06-460-356	06-400-085	69.0 ± 3.5	(1000 ± 50)	254	(560)	n/a	n/a	n/a	n/a
06-460-374	06-400-085	51.7 ± 3.5	(750 ± 50)	n/a	n/a	50°	29	(63)	14°
06-460-386	06-400-085	48.3 ± 1.4	(700 ± 20)	n/a	n/a	50°	30	(67)	14°

* Valve only, no pedal and base assembly.

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

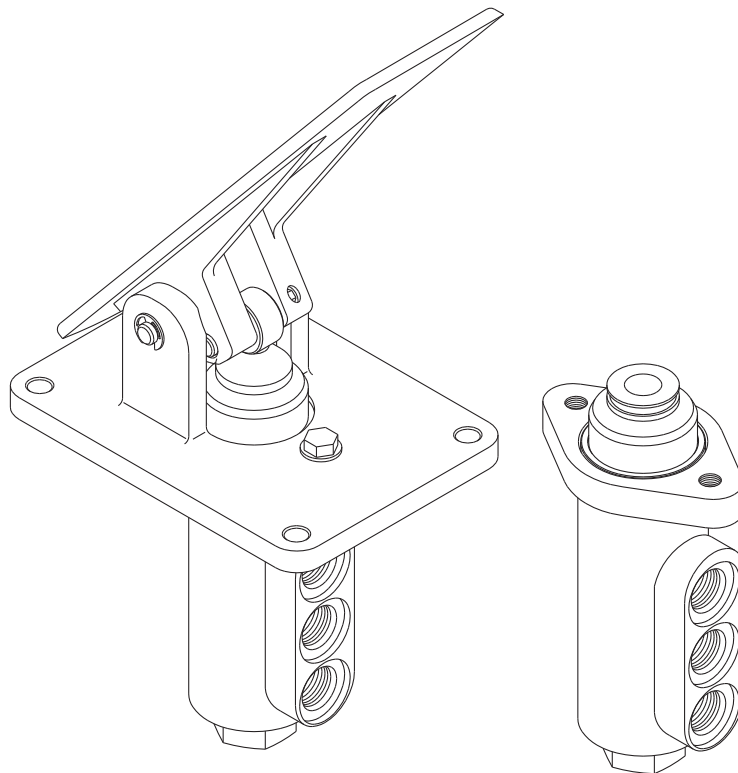


FIGURE 1

DISASSEMBLY

(Refer to Figure 2)

1. Separate pedal and base assembly (3) from valve by removing cap screws (1) and lock washers (2).
2. Remove ring (4) and boot (5) from housing (16).
3. Remove input piston (6), shim(s) (7), spring (8) and spring (9) from housing bore. Note number of shim(s) removed for reassembly purposes. **NOTE: Not all models use spring (9). Piston (6) shown in Figure 2 may appear different than the piston removed from your valve.**
4. Remove o-ring (10) from housing bore. **NOTE: Be careful not to scratch housing bore.**
5. Remove retaining ring (11) from housing bore. **NOTE: Be careful not to scratch housing bore.**
6. Remove cupped washer or spring retainer (12) from housing bore. **NOTE: Some models use a flat washer in place of cupped washer (12).**
7. Remove piston (13) from housing bore. **NOTE: Piston (13) in some models contain a spring pin and ball. It is not necessary to remove the spring pin or ball unless the ball is not moving freely. Ball must be clean and move freely.**
8. Remove spring (15) and cup (14) from piston (13). Note direction of cup (14).
9. Remove plug (26) from housing (16).
10. Remove o-ring (25), cup (23), and back-up ring (24) from plug (26).
11. Remove washer (22), spring (21), guide (20) and spacer (19) from housing bore.
12. Remove ball valve assembly (18) from housing bore.
13. Remove o-ring (17) from valve assembly (18).
14. 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 REPAIR KIT WITH CLEAN SYSTEM FLUID.

1. Install new o-ring (17) on ball valve assembly (18) 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 (19) into housing bore.
3. Install new o-ring (25) on plug (26).
4. Insert new back-up ring (24) and new cup (23) inside of plug (26). Note direction and order of back-up ring and cup.
5. Install guide (20), spring (21) and washer (22) in plug (26). Install plug (26) in housing bore and torque 54.2-67.8 N·m (40-50 lb·ft).
6. Install new cup (14) and spring (15) on piston (13). Note direction of cup (14).
7. Install piston (13) in housing bore. Note direction of piston (13).
8. Install cupped washer or spring retainer (12) in housing bore. **NOTE: Some models use a flat washer in place of cupped washer (12).**
9. Install retaining ring (11) in housing bore. **NOTE: Be careful not to scratch housing bore.**
10. Install new o-ring (10) in housing bore.
11. Install spring (9), spring (8), shim(s) (7) and input piston (6) in housing bore. Be sure to install the same number of shim(s) as were removed during disassembly. **NOTE: Not all models use spring (9). Input piston (6) shown in Figure 2 may appear different than the piston removed from your valve.**
12. Install new boot (5) and new ring (4) on housing (16).
13. Attach pedal and base assembly (3) to valve using cap screws (1) and lock washers (2). Torque cap screws 47.5-54.2 N·m (34-40 lb·ft).

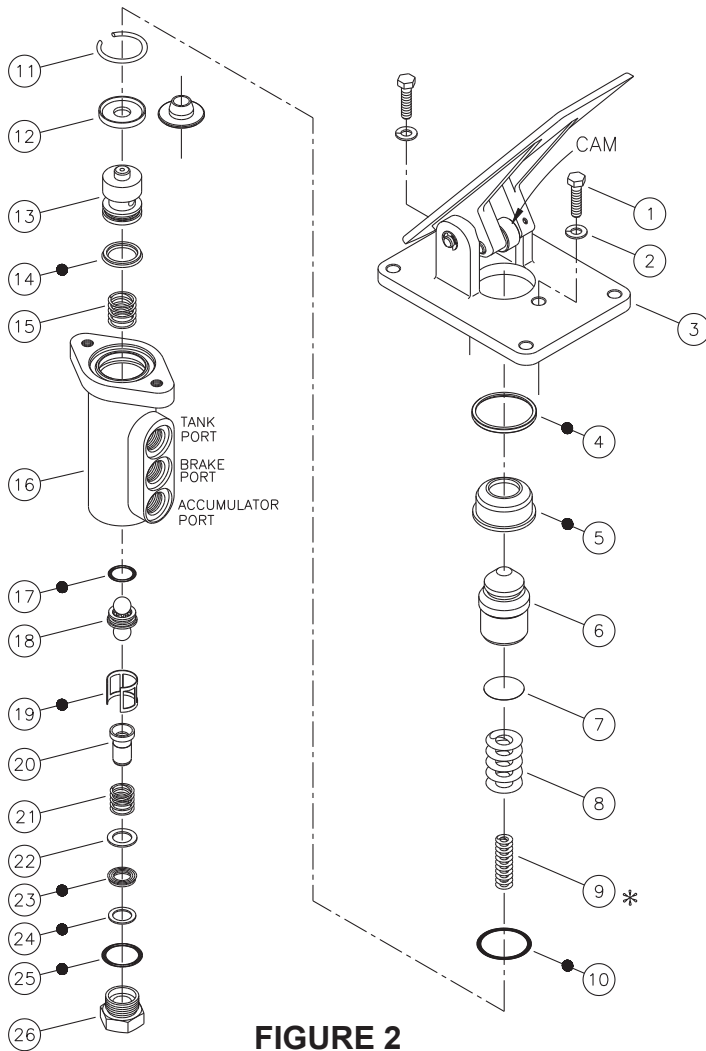


FIGURE 2

- Items included in Repair Kit
- * Not used in all models

NOTE: Not all models include pedal and base assembly.

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 (18) begins to move. Torque 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 (18) 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.

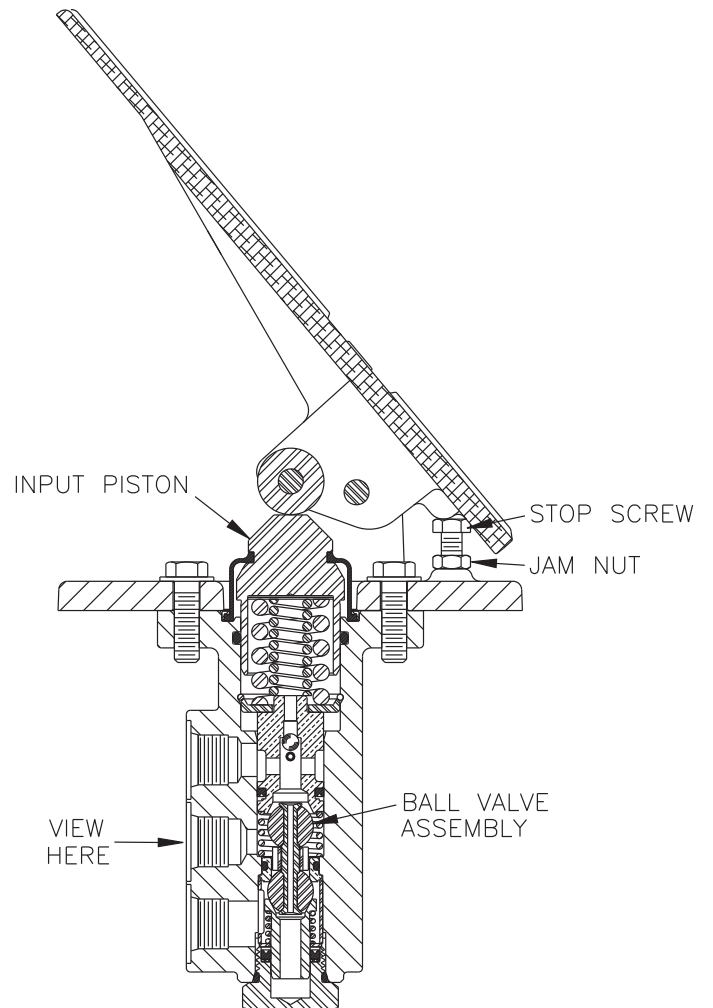


FIGURE 3

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