

PRESSURE MODULATING VALVE (Reverse Modulating)

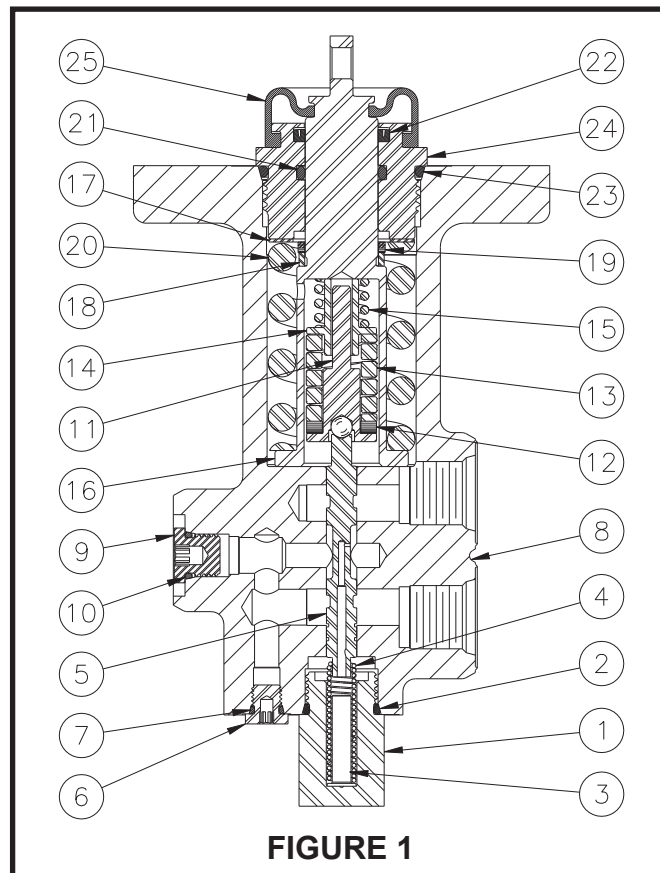


Service Instructions

TABLE 1 (Specifications)

Model Number	Repair Kit Number	Brake Pressure Setting	
		bar	(PSI)
20-200-286	06-400-516	186 ± 7	(2700 ± 100)
407 101 017 2	06-400-516	186 ± 7	(2700 ± 100)

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



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ZF Off-Highway Solutions Minnesota Inc.

1911 Lee Boulevard / North Mankato, MN U.S.A. 56003

Tel: +1 507 625 6426 **Fax:** +1 507 625 3212

DISASSEMBLY

(Refer to Figures 1 and 2)

NOTE

Housing (8) and spool (5) are manufactured as a matched set. This set, housing and spool, must not be intermixed with other parts.

1. Remove boot (25) from plug (24) and push rod (16).
2. Remove plug (24) from housing (8). Push rod (16), washer (17), spacer (18), shim(s) 19, and spring (20) should remain part of plug (24) assembly.
3. Carefully separate plug (24), spring (20), shim(s) (19) spacer (8), and washer (17) from plug (24). Note the number of (19) shim(s) removed for reassembly purposes
4. Carefully remove o-rings (21 & 23) and cup (22) from plug (24). **NOTE: Be careful not to damage plug bore or seal grooves.**
5. Remove spring (15), retainer (14), spring (13), shim(s) (12), and retainer (11) from housing (8) bore. Note the number of shim(s) (12) removed for reassembly purposes.
6. Remove end plug (1), retainer (3), spring (4), and spool (5) from housing (8). **NOTE: Be careful not to scratch or mar housing bore or spool.**

CAUTION

Do not intermix spools and housings. Spool (5) and housing (8) are a matched set.

7. Remove o-ring (2) from end plug (1).
8. Remove plug (6) from housing (8). Remove o-ring (7) from plug (6).
9. Remove plug (9) from housing (8). Remove o-ring (10) from plug (9).

ASSEMBLY

(Refer to Figures 1 and 2)

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

1. Clean all parts thoroughly before assembling.
2. Carefully install new o-rings (21 & 23) and new cup (22) on plug (24). Note direction of cup (22). **NOTE: Be careful not to damage plug bore or seal grooves.**
3. Install washer (17), spacer (18), shim(s) (19), and spring (20) over push rod (16). Carefully slide push rod into plug (24). Note the direction of push rod (16) and plug (24). Be sure to install the same number of shim(s) (19) as were removed during disassembly.
4. Install spring (15), retainer (14), spring (13), shim(s) (12), and retainer (11) into push rod (16). Note direction of assembly. Carefully install assembly in housing (8) and torque plug (24) 81.4-101.7 N·m (60-75 lb-ft). Be sure to install the same number of shim(s) (12) as were removed during disassembly.
5. Install new boot (25) over push rod (16) and attach to plug (24).
6. Lubricate spool (5) and carefully install in housing (8) bore. Note direction of spool (5). **NOTE: Spool must slide freely into bore. If either part is damaged, a new valve assembly may be required.**
7. Install new o-ring (2) on end plug (1).
8. Install spring (4), retainer (3), and end plug (1) into housing (8) bore. Note direction of retainer (3). Torque end plug (1) 47.5-61.0 N·m (35-45 lb-ft).
9. Install new o-ring (7) on plug (6). Install plug (6) in housing (8) and torque 6.8-8.5 N·m (60-75 lb-in).
10. Install new o-ring (10) on plug (9). Install plug (9) in housing (8) and torque 47.5-61.0 N·m (35-45 lb-ft).

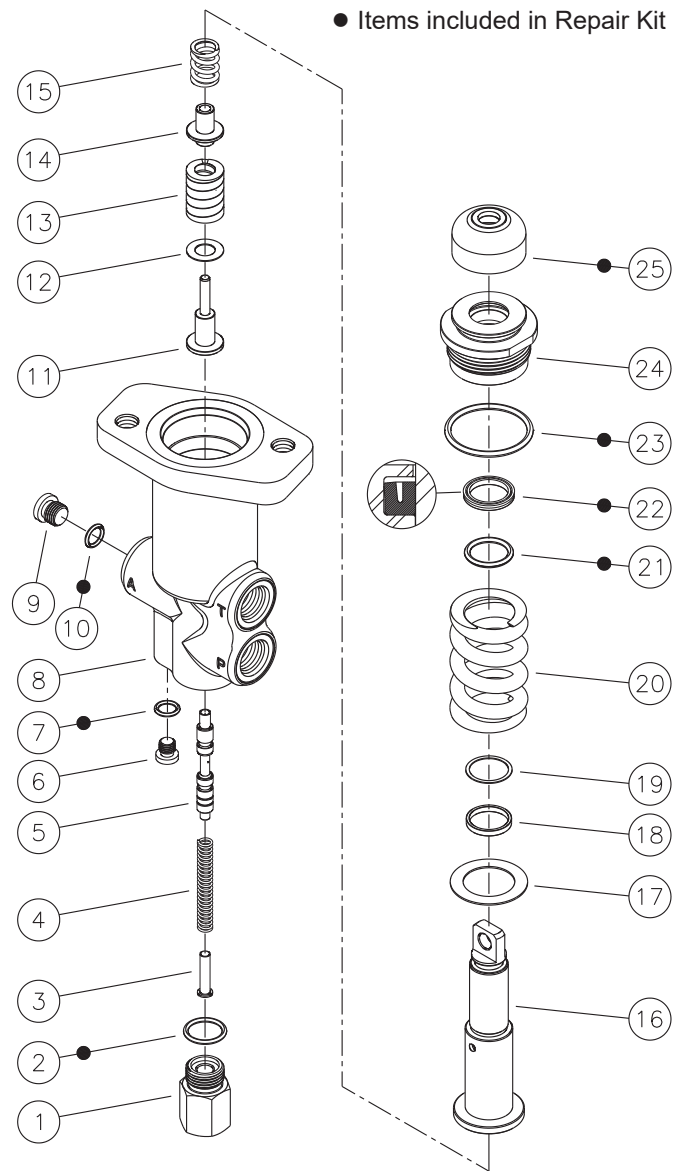


FIGURE 2

NOTE

After service, the valve must develop the pressures indicated in the specifications TABLE 1. Shim(s) (12) are used to obtain the correct high pressure setting. Spacer (18) and shim(s) (19) are used to obtain the correct low pressure setting. Contact ZF Off-Highway Solutions Minnesota Inc. if the correct pressure settings are not able to be obtained.