Tandem
Power Brake Valve

Service Instructions

TABLE 1 (Specifications)

Model Number	Brake Pressure Setting	
	bar	(PSI)
03-468-204	80.0 ± 5.2	(1160 ± 75)

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

⚠ WARNING

Installation and test note: Piston (18) must be retained mechanically. This will prevent it from blowing out at high velocity if an incorrect connection occurs from power source to tank port. **Be sure the tank port is connected directly to tank.** Failure to do this could result in serious injury or death.

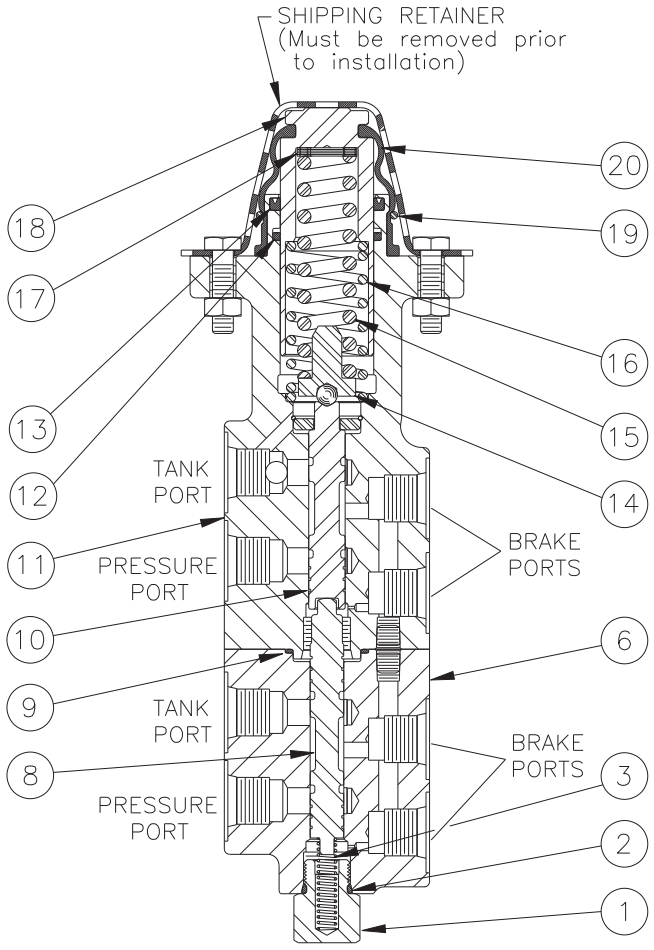

FIGURE 1

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DISASSEMBLY
(Refer to Figures 1 and 2)

NOTE
Housings (6 & 11) and spools (8 & 10) are manufactured as matched sets. These sets (housing & spool) must not be intermixed with other parts.

1. Remove boot (20) from piston (18) and housing (11) by removing retaining ring (19).
2. Remove piston (18), shim(s) (17), springs (15 & 16), and retainer assembly (14) from housing (11). **NOTE: Be aware of the number of shim(s) being removed from housing.**
3. Carefully remove cup (13) and quad ring (12) from housing (11) bore. **NOTE: Be careful not to scratch or mar housing bore.**
4. Separate housings (6 & 11) by removing cap screws (4) and washers (5). Remove o-rings (7 & 9) from housings (6 & 11). **Do not allow spools (8 & 10) to fall out housings, this may damage them.**
5. Carefully remove spools (8 & 10) from housings (6 & 11).

⚠ CAUTION
Do not intermix spools and housings. Spool (8) and housing (6) are a matched set as are spool (10) and housing (11).

6. Remove end plug (1) and spring (3) from housing (6). Remove o-ring (2) from end plug (1).

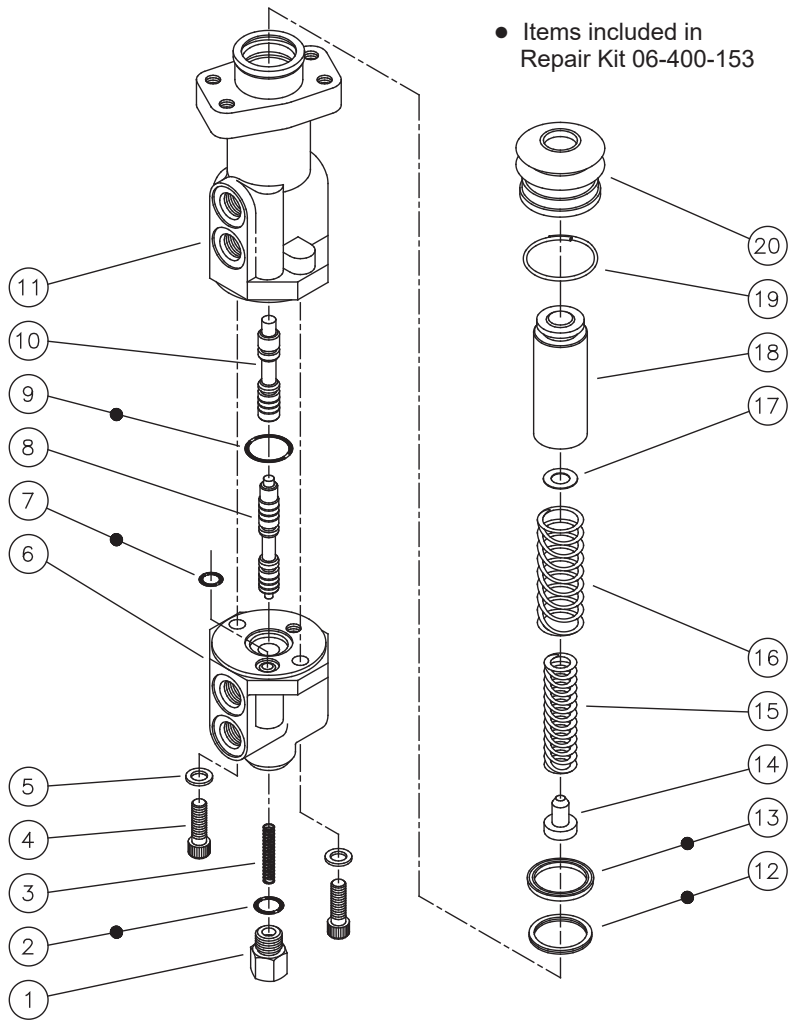

FIGURE 2

ASSEMBLY
(Refer to Figures 1 and 2)

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

1. Clean all parts thoroughly before assembling. **NOTE: Inspect spools (8 & 10) for damage or wear.**
2. Install new o-ring (2) on end plug (1).
3. Lubricate spool (10) with clean system fluid and carefully slide into bottom end of housing (11) bore. Note direction of spool (10). **NOTE: Spool must slide freely into bore. If either part is damaged, a new valve assembly may be required.**
4. Lubricate spool (8) with clean system fluid and carefully slide into bottom end of housing (6) bore. Note direction of spool (8). **NOTE: Spool must slide freely into bore. If either part is damaged, a new valve assembly may be required.**
5. Install new o-rings (7 & 9) in proper o-ring pockets on housing (6)
6. Reassemble housings (6 & 11) using cap screws (4) and washers (5). Use Loctite 242 or equivalent on cap screws and torque 28.9-33.9 N·m (22-25 lb·ft). **NOTE: Make sure housings and spools line up correctly and that o-rings (7 & 9) are properly sealed. After cap screws are torqued, spools must slide freely in both housings. Make sure this occurs.**
7. Install spring (3) and end plug (1) into housing (6). Torque end plug 27.1-32.5 N·m (20-24 lb·ft).
8. Carefully install new quad ring (12) and new cup (13) into housing (11) bore. Note direction and order of quad ring and cup. **NOTE: Be careful not to scratch or mar housing bore.**
9. Assemble shim(s) (17), springs (15 & 16), and retainer assembly (14) in piston (18).
10. Carefully install piston (18) assembly into housing (11) bore.
11. Install new boot (20) on housing (11) and piston (18) using retaining ring (19).

NOTE
After service, the valve must develop the pressure indicated in the specifications, TABLE 1. Shim(s) (17) are used to obtain the correct pressure setting. Contact ZF Off-Highway Solutions Minnesota Inc if brake pressure setting is not able to be obtained.