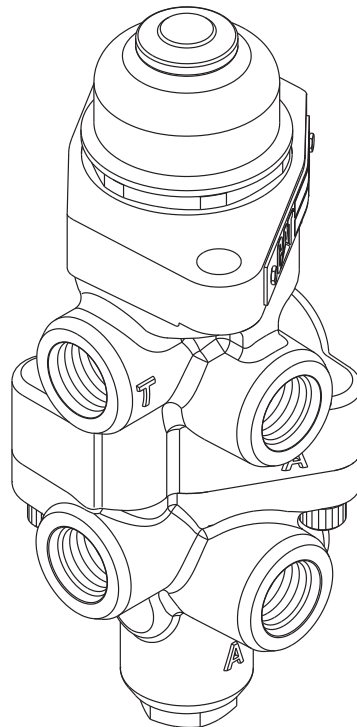
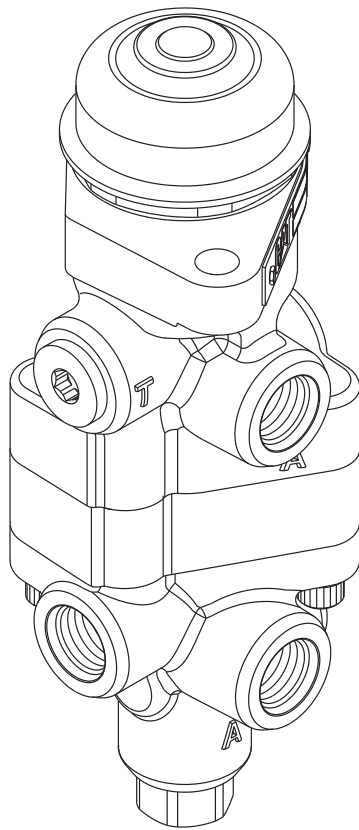


Tandem POWER BRAKE VALVE Service Instructions

TABLE 1 (Specifications)

Caterpillar Valve Part Number	Caterpillar Repair Kit Part Number	Brake Pressure Setting		Refer to Figures
		bar	(PSI)	
375-2816	397-2326	55.2 ± 3.5	(800 ± 50)	1 and 4
375-2814	397-2326	87.9 ± 3.5	(1275 ± 50)	2 and 5
375-2817	397-2327	55.2 ± 2.8	(800 ± 40)	3 and 6
555-5494	397-2326	55.2 ± 3.5	(800 ± 50)	2 and 5



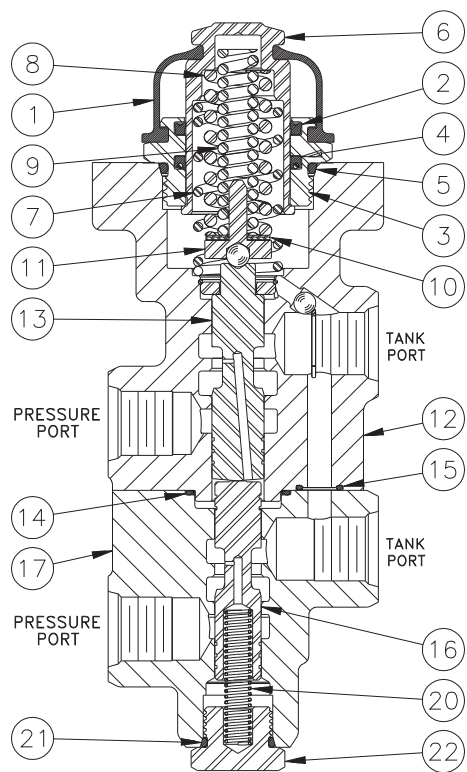


FIGURE 1
(375-2816 shown)

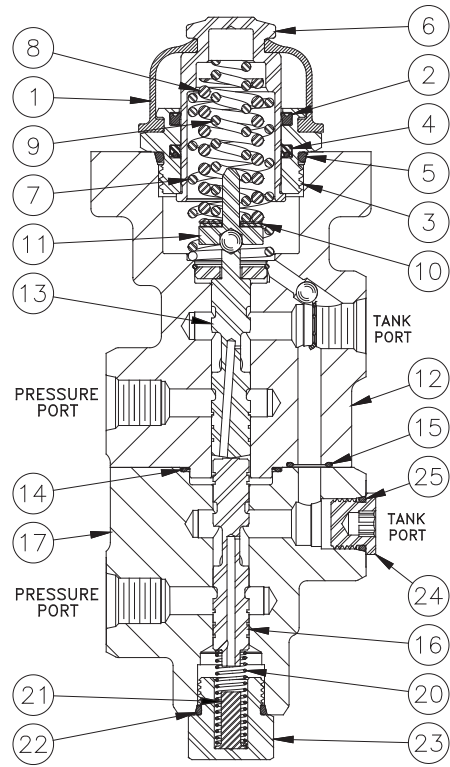


FIGURE 2
(375-2814 shown)

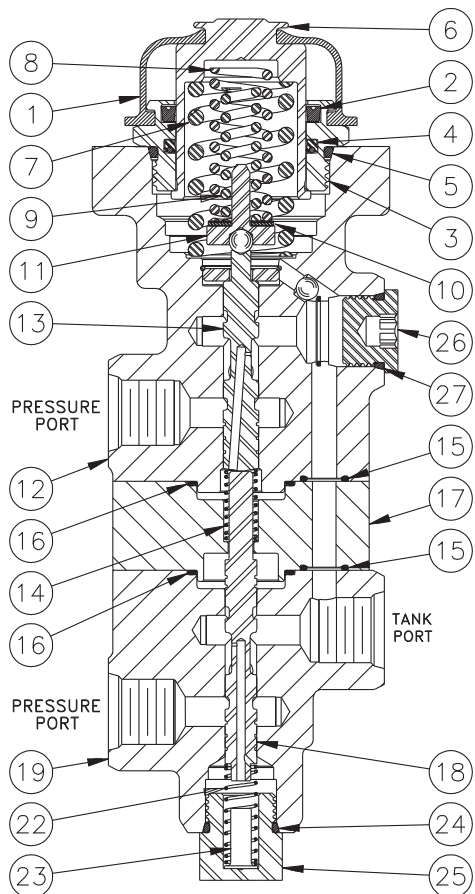


FIGURE 3
(375-2817 shown)

Part Number: 375-2816

NOTE

Housings (12 & 17) and spools (13 & 16) are manufactured as matched sets. These sets must not be intermixed with other parts.

DISASSEMBLY

(Refer to Figures 1 and 4)

1. Remove boot (1) from retainer (3) and piston (6).
2. Remove retainer (3), piston (6), springs (7, 8, & 9), shim(s) (10), and retainer assembly (11) from housing (12).
NOTE: Be aware of the number of shim(s) that are being removed from housing.
3. Carefully remove cups (2 & 4) and o-ring (5) from retainer (3). Note direction and order of cups (2 & 4). **NOTE: Be careful not to scratch or mar retainer bore.**
4. Remove end plug (22) and spring (20) from housing (17). Remove o-ring (21) from end plug (22).
5. Separate housings (12 & 17) by removing cap screws (19) and washers (18). Remove o-rings (14 & 15) from housings (12 & 17).
6. Carefully remove spools (13 & 16) from housings (12 & 17).
NOTE: Be careful not to damage spools or housing bores.

CAUTION

Do not intermix spools and housings. Spool (13) and housing (12) are a matched set, as well as spool (16) and housing (17).

ASSEMBLY

(Refer to Figures 1 and 4)

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

1. Clean all parts thoroughly before assembling.
2. Lubricate spool (13) with clean system fluid and carefully slide into bottom side of housing (12) bore. Note direction of spool (13). **NOTE: Spool must slide freely into housing bore. If either part is damaged, a new valve assembly may be required.**
3. Install new o-rings (14 & 15) in the proper o-ring pockets on housings (12 & 17). Reassemble housings (12 & 17) using cap screws (19) and washers (18). Use Loctite 242 or equivalent on cap screws (19) and torque 27.1-33.9 N·m (22-25 lb·ft). **NOTE: Be sure housings lineup correctly and that o-rings (14 & 15) remain in the pockets during assembly.**
4. Lubricate spool (16) with clean system fluid and carefully slide into housing (17) bore. Note direction of spool (16).
NOTE: If spool or housing bore are damaged, a new valve assembly may be required.
5. Install new o-ring (21) on end plug (22).
6. Install spring (20) and end plug (22) into housing (17). Torque end plug (22) 47.5-54.2 N·m (35-40 lb·ft).
7. Carefully install new cups (2 & 4) and new o-ring (5) on retainer (3). Note direction and order of cups (2 & 4).
NOTE: Be careful not to scratch or mar retainer bore.

Items included in Repair Kit

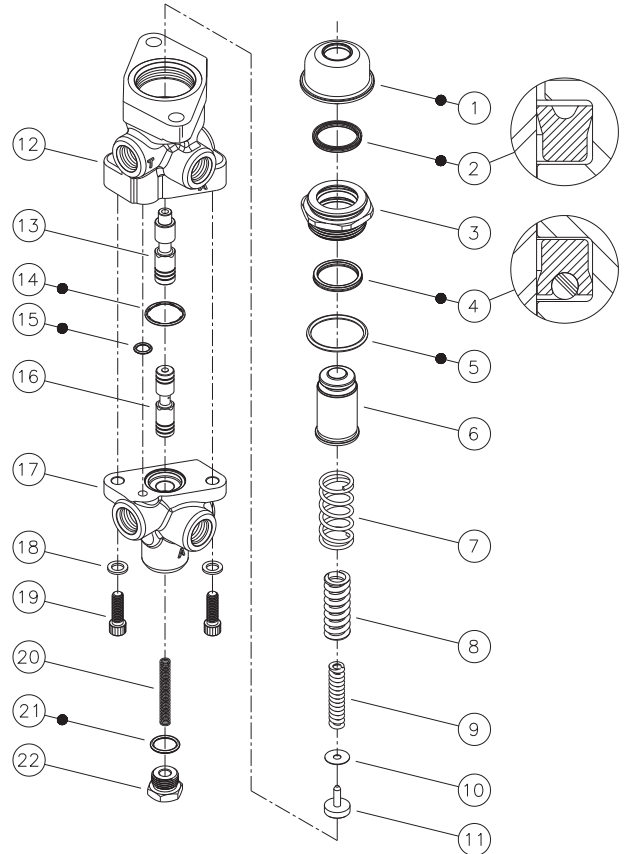


FIGURE 4

8. Assemble springs (7, 8, & 9), shim(s) (10), and retainer assembly (11) in piston (6). Be sure to install the same number of shim(s) as were removed.
9. Carefully install retainer (3) over piston (6) and install retainer (3) assembly into housing (12). Torque retainer (3) 81.4-94.9 N·m (60-70 lb·ft).
10. Install new boot (1) on retainer (3) and piston (6).

NOTE

After service, the valve must develop the brake pressure indicated in the specifications, Table 1. Shim(s) (10) are used to obtain the correct pressure setting. Contact MICO if brake pressure is no able to be obtained.

NOTE

Housings (12 & 17) and spools (13 & 16) are manufactured as matched sets. These sets must not be intermixed with other parts.

DISASSEMBLY

(Refer to Figures 2 and 5)

1. Remove boot (1) from retainer (3) and piston (6).
2. Remove retainer (3), piston (6), springs (7, 8, & 9), shim(s) (10), and retainer assembly (11) from housing (12).
NOTE: Be aware of the number of shim(s) that are being removed from housing.
3. Carefully remove cups (2 & 4) and o-ring (5) from retainer (3). Note direction and order of cups (2 & 4). **NOTE: Be careful not to scratch or mar retainer bore.**
4. Remove end plug (23), retainer (21), and spring (20) from housing (17). Remove o-ring (21) from end plug (22).
5. Separate housings (12 & 17) by removing cap screws (19) and washers (18). Remove o-rings (14 & 15) from housings (12 & 17).
6. Carefully remove spools (13 & 16) from housings (12 & 17).
NOTE: Be careful not to damage spools or housing bores.

CAUTION

Do not intermix spools and housings. Spool (13) and housing (12) are a matched set, as well as spool (16) and housing (17).

7. Remove plug (24) from housing (17). Remove o-ring (25) from plug (24).

ASSEMBLY

(Refer to Figures 2 and 5)

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

1. Clean all parts thoroughly before assembling.
2. Lubricate spool (13) with clean system fluid and carefully slide into bottom side of housing (12) bore. Note direction of spool (13). **NOTE: Spool must slide freely into housing bore. If either part is damaged, a new valve assembly may be required.**
3. Install new o-rings (14 & 15) in the proper o-ring pockets on housings (12 & 17). Reassemble housings (12 & 17) using cap screws (19) and washers (18). Use Loctite 242 or equivalent on cap screws (19) and torque 27.1-33.9 N·m (22-25 lb·ft). **NOTE: Be sure housings lineup correctly and that o-rings (14 & 15) remain in the pockets during assembly.**
4. Lubricate spool (16) with clean system fluid and carefully slide into housing (17) bore. Note direction of spool (16).
NOTE: If spool or housing bore are damaged, a new valve assembly may be required.
5. Install new o-ring (22) on end plug (23).
6. Install spring (20), retainer (21), and end plug (23) into housing (17). Torque end plug (23) 47.5-54.2 N·m (35-40 lb·ft).
7. Carefully install new cups (2 & 4) and new o-ring (5) on retainer (3). Note direction and order of cups (2 & 4).
NOTE: Be careful not to scratch or mar retainer bore.

Items included in Repair Kit

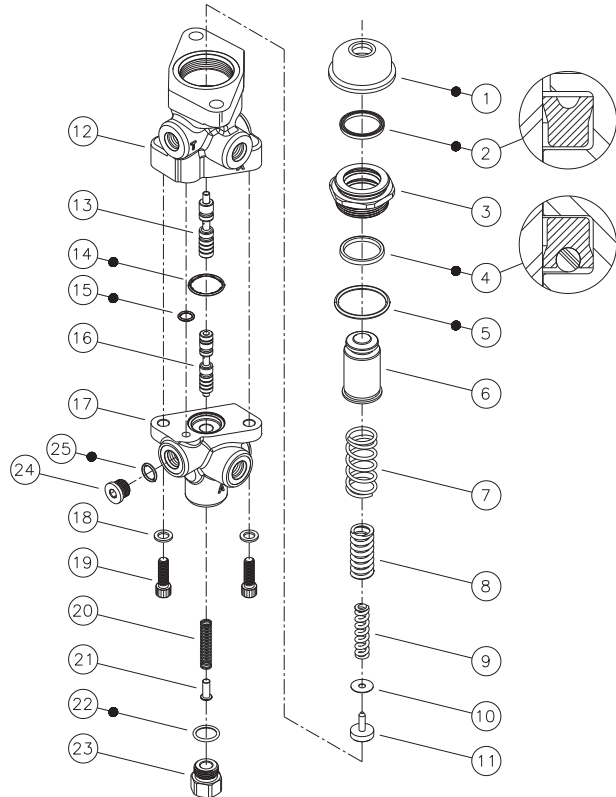


FIGURE 5

8. Assemble springs (7, 8, & 9), shim(s) (10), and retainer assembly (11) in piston (6). Be sure to install the same number of shim(s) as were removed.
9. Carefully install retainer (3) over piston (6) and install retainer (3) assembly into housing (12). Torque retainer (3) 81.4-94.9 N·m (60-70 lb·ft).
10. Install new boot (1) on retainer (3) and piston (6).
11. Install new o-ring (25) on plug (24). Install plug (24) in housing (17) and torque 20.3-27.1 N·m (15-20 lb·ft).

NOTE

After service, the valve must develop the brake pressure indicated in the specifications, Table 1. Shim(s) (10) are used to obtain the correct pressure setting. Contact MICO if brake pressure is no able to be obtained.

NOTE

Housings (12 & 19) and spools (13 & 18) are manufactured as matched sets. These sets must not be intermixed with other parts.

DISASSEMBLY

(Refer to Figures 3 and 6)

1. Remove boot (1) from retainer (3) and piston (6).
2. Remove retainer (3), piston (6), springs (7, 8, & 9), shim(s) (10), and retainer assembly (11) from housing (12).
NOTE: Be aware of the number of shim(s) that are being removed from housing.
3. Carefully remove cups (2 & 4) and o-ring (5) from retainer (3). Note direction and order of cups (2 & 4). **NOTE: Be careful not to scratch or mar retainer bore.**
4. Remove end plug (25), retainer (23), and spring (22) from housing (19). Remove o-ring (24) from end plug (25).
5. Separate housings (12 & 19) and spacer (17) by removing cap screws (21) and washers (20). Remove o-rings (15 & 16) from housings (12 & 19).
6. Carefully remove spools (13 & 18) from housings (12 & 19).
NOTE: Be careful not to damage spools or housing bores.

CAUTION

Do not intermix spools and housings. Spool (13) and housing (12) are a matched set, as well as spool (18) and housing (19).

7. Remove plug (26) from housing (12). Remove o-ring (27) from plug (26).

ASSEMBLY

(Refer to Figures 3 and 6)

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

1. Clean all parts thoroughly before assembling.
2. Lubricate spool (13) with clean system fluid and carefully slide into bottom side of housing (12) bore. Note direction of spool (13). **NOTE: Spool must slide freely into housing bore. If either part is damaged, a new valve assembly may be required.**
3. Install two new o-rings (15 & 16) in the proper o-ring pockets on housings (12 & 19).
4. Install spring (14) in spacer (17) bore and reassemble housings (12 & 19) and spacer (17) using cap screws (21) and washers (20). Use Loctite 242 or equivalent on cap screws (21) and torque 27.1-33.9 N·m (22-25 lb·ft).
NOTE: Be sure housings lineup correctly and that o-rings (15 & 16) remain in the pockets during assembly.
5. Lubricate spool (18) with clean system fluid and carefully slide into housing (19) bore. Note direction of spool (18).
NOTE: If spool or housing bore are damaged, a new valve assembly may be required.
6. Install new o-ring (24) on end plug (25).
7. Install spring (22), retainer (23), and end plug (25) into housing (19). Torque end plug (25) 47.5-54.2 N·m (35-40 lb·ft).

Items included in Repair Kit

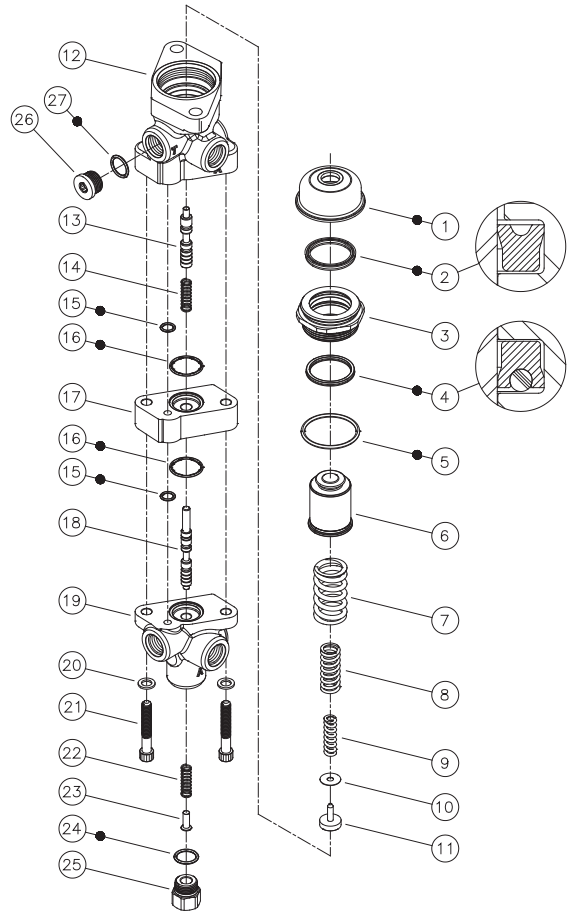


FIGURE 6

8. Carefully install new cups (2 & 4) and new o-ring (5) on retainer (3). Note direction and order of cups (2 & 4).
NOTE: Be careful not to scratch or mar retainer bore.
9. Assemble springs (7, 8, & 9), shim(s) (10), and retainer assembly (11) in piston (6). Be sure to install the same number of shim(s) as were removed.
10. Carefully install retainer (3) over piston (6) and install retainer (3) assembly into housing (12). Torque retainer (3) 81.4-94.9 N·m (60-70 lb·ft).
11. Install new boot (1) on retainer (3) and piston (6).
12. Install new o-ring (27) on plug (26). Install plug (26) in housing (12) and torque 27.1-32.5 N·m (20-24 lb·ft).

NOTE

After service, the valve must develop the brake pressure indicated in the specifications, Table 1. Shim(s) (10) are used to obtain the correct pressure setting. Contact MICO if brake pressure is no able to be obtained.

