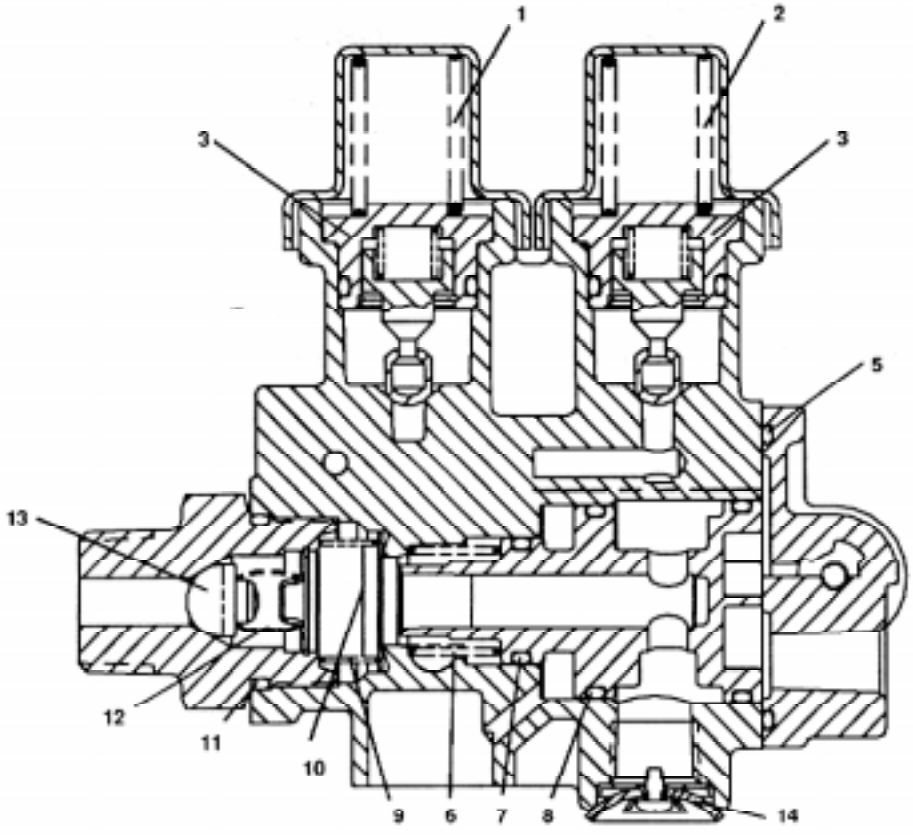
Installation Instructions

KIT PC. No. 108259

MAINTENANCE KIT FOR NEW CONFIGURATION SR-4 VALVE



Kit Component Callouts:

Key	Description	Qty.
1	Spring	1
2	Spring	1
3	Piston Assy.	2
4	Check Valve Assy.	4 (Shown in Figure 2)
5	Seal Ring	1
6	Spring	1
7	O-ring	1
8	O-ring	1
9	Spring	1
10	Inlet/Exhaust Valve	1
11	O-ring	1
12	Conical Spring	1
13	Check Valve	1
14	Diaphragm	1

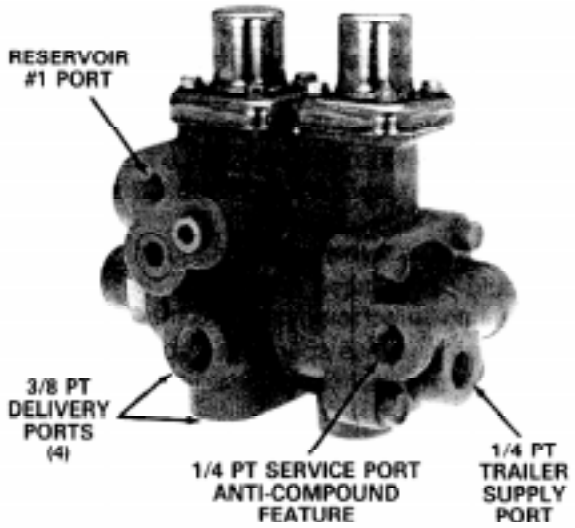


Figure 1 -- Interior & Exterior Views

IMPORTANT! PLEASE READ AND FOLLOW THESE NSTRUCTIONS TO AVOID PERSONAL INJURY OR DEATH:

When working on or around a vehicle, the following general precautions should be observed at all times.

1. **Park the vehicle on a level surface, apply the parking brakes, and always block the wheels.**
2. **Stop the engine when working around the vehicle.**
3. **If the vehicle is equipped with air brakes, make certain to drain the air pressure from all reservoirs before beginning ANY work on the vehicle.**
4. **Following the vehicle manufacturer's recommended procedures, deactivate the electrical system in manner that removes all electrical power from the vehicle.**
5. **When working in the engine compartment the engine should be shut off. Where circumstances require that the engine be in operation, EXTREME CAUTION should be used to prevent personal injury resulting from contact with moving, rotating, leaking, heated, or electrically charged components.**
6. **Never connect or disconnect a hose or line containing pressure; it may whip. Never remove a component or plug unless you are certain all system pressure has been depleted.**
7. **Never exceed recommended pressures and always wear safety glasses.**
8. **Do not attempt to install, remove, disassemble or assemble a component until you have read and thoroughly understand the recommended procedures. Use only the proper tools and observe all precautions pertaining to use of those tools.**
9. **Use only genuine Bendix replacement parts, components, and kits. Replacement hardware, tubing, hose, fittings, etc. should be of equivalent size, type, and strength as original equipment and be designed specifically for such applications and systems.**
10. **Components with stripped threads or damaged parts should be replaced rather than repaired. Repairs requiring machining or welding should not be attempted unless specifically approved and stated by the vehicle or component manufacturer.**
11. **Prior to returning the vehicle to service, make certain all components and systems are restored to their proper operating condition.**

REMOVAL

1. Block and hold unit by means other than air brakes.
2. Drain air brake system reservoirs.
3. Identify air lines to facilitate installation.
4. Disconnect air lines from valve.
5. Remove the SR-4 valve by utilizing a large wrench on the hex head of the fitting attaching the valve to the reservoir. CAUTION: DO NOT ATTEMPT TO REMOVE BY TWISTING VALVE WITHOUT A WRENCH ON THIS HEX FITTING.

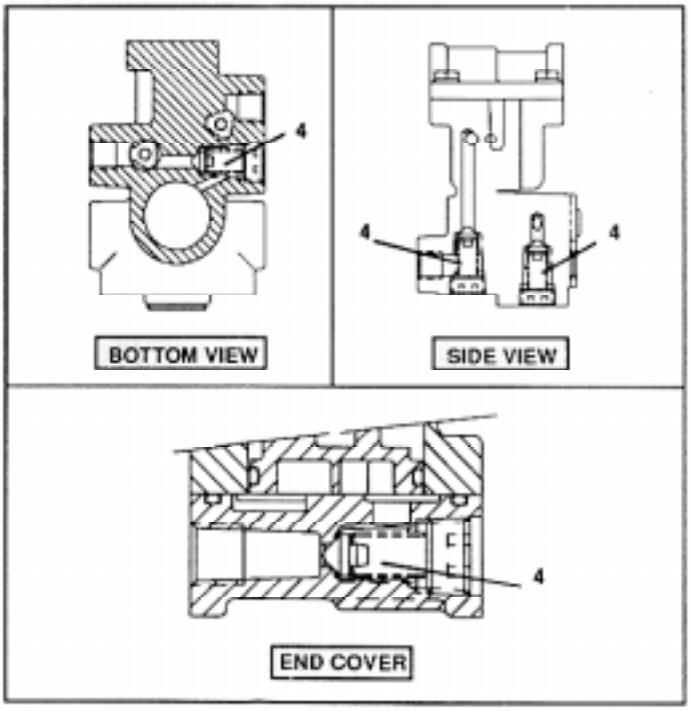


FIGURE 2 – LOCATION OF 4 CHECK VALVE ASSYS.
Note: Valves without anti-compound feature will not have item 4 in the end cover.

DISASSEMBLY

1. Remove and save the eight cap screws holding the two spring retainers in place. Remove the spring retainers and remove the springs(1 & 2) taking note of the differences and from which cavity it was removed. (One is color coded green the other white.)
2. With a pair of pliers, grasp the raised surface of the two piston assemblies(3) and remove them from the valve body housing.
3. Refer to Fig. 2. With a 5/16 inch Allen Wrench, remove the four 3/8 inch pipe plugs from the SR-4. (Three are in the main body and one is in the end cover). Trailers without anti-compounding feature will not have a check valve in the end cover. Remove the four check valve assemblies(4), one under each of the 3/8 inch pipe plugs.
4. Remove the four cap screws that retain the end cover to the main body. Remove the end cover from the body. Remove the sealing ring(5) from the end cover.
5. Remove the large piston from its bore by grasping the web with a pair of pliers and pulling. Remove the spring(6) from the base of the bore. Remove the o-rings (7 & 8) from the piston.
6. Remove the check valve assembly from the main body by lightly clamping the body in a vise and turning the check valve assembly counterclockwise with a 1-1/4 inch end wrench. Remove the spring(9) and the inlet/exhaust valve(10) from the housing. Remove the o-ring(11) from the O.D. of the check valve assembly.
7. With a pair of I. D. snap ring pliers, remove the snap ring in the end of the check valve assembly. Remove the spring seat, the conical spring(12) and the check valve(13).
8. Using a Phillips head screwdriver, remove the Phillips head screw and the diaphragm washer from the exhaust port of the SR-4 body. Remove the diaphragm(14).

CLEANING & INSPECTION

1. Using mineral spirits or an equivalent solvent, clean and thoroughly dry all metal parts.
2. Inspect the interior and exterior or all metal parts that will be reused for severe corrosion, pitting cracks. Superficial corrosion and or pitting on the exterior portion of the valve is acceptable.
3. Inspect the bores of the valve housing for deep scuffing or gouges.
4. Make certain that all valve housing and end cover passages are open and free of obstructions.
5. Inspect all pipe threads. Make certain they are clean and free of thread sealant.
6. Inspect all air line fittings for corrosion. Clean all old thread sealant from the pipe threads.

ASSEMBLY

Note: Prior to assembly, grease all o-rings, bores, pistons and internal parts with lubricant provided in the kit.

1. Install diaphragm(14) into the exhaust port of the SR-4 valve. Retain with the diaphragm washer and Phillips head screw. Tighten securely.
2. Twist the conical spring(12) onto the spring seat and the opposite end onto the check valve(13), install this subassembly into the check valve housing, depress the spring seat and install the snap ring making sure it is fully seated in its groove.
3. Install the inlet/exhaust valve(10) into the RES-1 port making sure the flat side of the valve is against the inlet seat. Install spring(9) into the valve making sure it is installed over the rubber protrusion of the valve(10).
4. Install the o-ring(11) into its groove on the check valve assembly. Thread the check valve assembly into the RES-1 port. Lightly clamp the SR-4 valve body in a vise and using a 1-1/4 inch end wrench torque to 150-400 in. lbs.
5. Place the spring(6) into the large bore of the SR-4 body making sure it is seated in the base of the bore. Install the o-rings(? & 8) onto the piston. Place the piston into the housing with the small end inside of the spring(6).
6. Install the sealing ring(5) into its groove on the end cover. Install the end cover over the piston, installed in Step 5, with the trailers supply port oriented towards the exhaust port. Retain with the four 1/4 inch cap screws, torque to 30-60 in. lbs.
7. Refer to Fig. 2. Install the four check valve assemblies(4) into the cavities of the SR-4 valve and retain with the 3/8 inch pipe plugs. Removed in Step 3 of "Disassembly". Apply a thread sealant or Teflon tape to the threads of the pipe plugs and torque to 130-170 in. lbs.
8. Install the two piston assemblies(3) into their cavities, place the spring(1 & 2) over the bosses of the piston assemblies. CAUTION: THE SPRING COLOR CODED WHITE MUST BE INSTALLED ON THE PISTON CLOSEST TO THE END COVER AND THE GREEN COLOR CODED SPRING ON THE PISTON AWAY FROM THE END COVER. Place the spring retainers over the springs and retain with the eight #10 cap screws. Torque to 20-30 in. lbs.

INSTALLATION

1. Clean air lines connecting to valve.
2. Inspect all lines and/or hoses for damage and replace as necessary.
3. Install valve and tighten.
4. Connect air lines to valve (plug any unused ports).
5. Test valve in accordance with the "Operating and Leakage Tests".

OPERATING AND LEAKAGE TESTS

Check the tractor dash gauge against a test gauge known to be accurate prior to performing these tests. Connect the tractor air lines to the trailer on which the SR-4 trailer spring brake valve is to be tested. Block all wheels, or otherwise hold both vehicles by a means other than air brakes during these tests.

1. Install two separate test gauges or one dual test gauge with one line to the front service reservoir and the other line to the rear service reservoir. Build the tractor and trailer to full system pressure by placing the trailer supply valve in the charge position and the parking control valve in the brakes released position.

   Note: As system pressure reaches approximately 55 p.s.i., the rear service reservoir and the spring brakes should build up to approximately 60 p.s.i. before the front service reservoir, (the reservoir the SR-4 valve is mounted on), begins to charge. When full system pressure has been reached and the spring brakes fully released, it is acceptable to have a slightly lower pressure reading in the service reservoirs than is registered on the dash gauge. Soap suds should be applied to the reservoir mounting cap nut, and each of the stamped spring retainer caps. No leakage permitted. Soap suds should be applied to the exhaust port. Leakage of a one inch soap bubble in five seconds is permissible.
2. Place the trailer supply valve in the exhaust position; the spring brakes should be applied. Disconnect the trailer supply line and soap the hose coupling to check for leaks. A one inch soap bubble in not less that five seconds is permissible.
3. Reconnect the trailer supply hose coupling and recharge the trailer system. The spring brakes should release. Shut off the engine, leaving the ignition on and open the drain cock on the front trailer reservoir. The tractor air system should bleed down to approximately 55 p.s.i. with low pressure indication occurring at or before 60 p.s.i. The rear service reservoir on the trailer should also bleed down to approximately 55 p.s.i., but, the spring brakes on tractor and trailer should remain released. After the system is stabilized, leakage at the open drain cock in the trailer should not exceed a one inch bubble in five seconds.

4. Close the drain cock on the trailer front reservoir, recharge the system, stop the engine and open the drain cock on the rear reservoir. Again, the tractor air system should bleed down to approximately 55 p.s.i., but the front reservoir on the trailer should remain fully charged. The spring brakes should remain released on both the tractor and trailer. Leakage at the open drain cock should not exceed a one inch bubble in five seconds. After this test is completed, close the drain cock on the trailer reservoir.