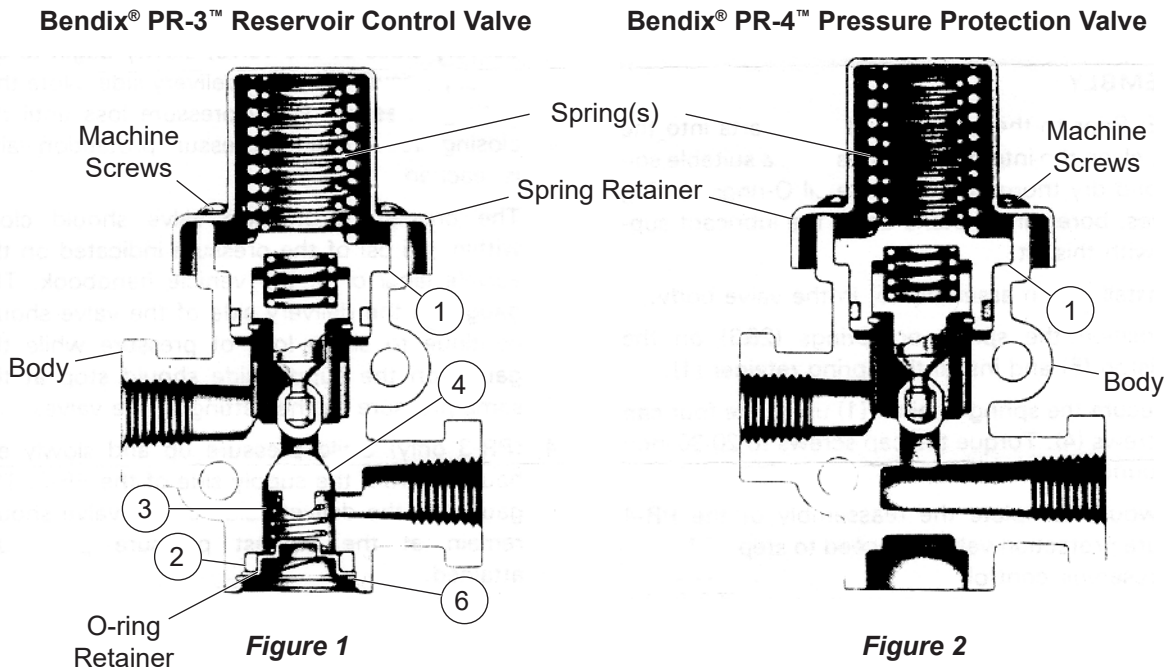


# Installation Instructions



## Bendix® PR-3™ and PR-4™ Valve Maintenance Kit



Kit Contents		
Item No.	Description	Qty.
1	Piston Assembly with O-ring	1
2	O-ring	1
3	Spring	1
4	Check Valve	1
5	Tube of Lubricant	1
6	Retaining Ring	1

This kit will service both the Bendix® PR-3™ Reservoir Control Valve and the Bendix® PR-4™ Pressure Protection Valve. The principle difference between the two (2) valves is the inclusion of the check valve components in the PR-3 reservoir control valve. See *Figures 1 and 2*. When this kit is used for the repair of a PR-4 pressure protection valve, pressure protection valve (*Figure 2*) items 2, 3, and 4 will not be used.

This kit consists of the items which are keyed to the sectional views of both valves, by the *circled* key numbers.

## GENERAL SAFETY GUIDELINES



**WARNING! PLEASE READ AND FOLLOW THESE INSTRUCTIONS**



**TO AVOID PERSONAL INJURY OR DEATH:**

When working on or around a vehicle, the following guidelines should be observed **AT ALL TIMES**:

- ▲ Park the vehicle on a level surface, apply the parking brakes, and always block the wheels. Always wear personal protection equipment.
- ▲ Stop the engine and remove the ignition key when working under or around the vehicle. When working in the engine compartment, the engine should be shut off and the ignition key should be removed. 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.
- ▲ 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.
- ▲ If the work is being performed on the vehicle's air brake system, or any auxiliary pressurized air systems, make certain to drain the air pressure from all reservoirs before beginning ANY work on the vehicle. If the vehicle is equipped with a Bendix® AD-IS® air dryer system, a Bendix® DRM™ dryer reservoir module, a Bendix® AD-9si®, AD-HF®, or AD-HFi™ air dryer, be sure to drain the purge reservoir.
- ▲ Following the vehicle manufacturer's recommended procedures, deactivate the electrical system in a manner that safely removes all electrical power from the vehicle.
- ▲ Never exceed manufacturer's recommended pressures.
- ▲ You should consult the vehicle manufacturer's operating and service manuals, and any related literature, in conjunction with the Guidelines above.
- ▲ Never connect or disconnect a hose or line containing pressure; it may whip and/or cause hazardous airborne dust and dirt particles. Wear eye protection. Slowly open connections with care, and verify that no pressure is present. Never remove a component or plug unless you are certain all system pressure has been depleted.
- ▲ Use only genuine Bendix® brand replacement parts, components, and kits. Replacement hardware, tubing, hose, fittings, wiring, etc. must be of equivalent size, type, and strength as original equipment and be designed specifically for such applications and systems.
- ▲ Components with stripped threads or damaged parts should be replaced rather than repaired. Do not attempt repairs requiring machining or welding unless specifically stated and approved by the vehicle and component manufacturer.
- ▲ Prior to returning the vehicle to service, make certain all components and systems are restored to their proper operating condition.
- ▲ For vehicles with Automatic Traction Control (ATC), the ATC function must be disabled (ATC indicator lamp should be ON) prior to performing any vehicle maintenance where one or more wheels on a drive axle are lifted off the ground and moving.
- ▲ The power **MUST** be temporarily disconnected from the radar sensor whenever any tests **USING A DYNAMOMETER** are conducted on a vehicle equipped with a Bendix® Wingman® system.

## REMOVAL

Before removing the valve, park the vehicle and drain the air system completely, *follow the safety guidelines on page 2*.

1. To aid in the installation of the valve, mark the air lines and their respective ports before disconnecting.
2. Remove and retain the mounting hardware.
3. Remove the valve from the vehicle.

## DISASSEMBLY

1. Remove the four (4) round head machine screws while holding the spring retainer to the body. Remove the spring retainer.



**The spring retainer is under a spring load and must be removed carefully.**

2. Remove and retain the spring(s) under the retainer for reuse.

**NOTE:** Some Bendix® PR-3™ Reservoir Control Valves and Bendix® PR-4™ Pressure Protection Valves have only one (1) spring and some will have two (2).

3. Remove and discard the piston assembly.

**NOTE:** This would conclude the disassembly procedure for a PR-4 pressure protection valve (*Figure 2*). The following steps are for the PR-3 reservoir control valve (*Figure 1*).

4. Discard the retaining ring.
5. Remove and reuse the o-ring retainer.
6. Remove and discard the o-ring, spring, and check valve.

## ASSEMBLY

**NOTE:** Prior to the assembly of new parts into the valve, clean the internal passages with a suitable solvent and dry thoroughly. Grease all o-rings, o-ring grooves, bores, and pistons using the lubricant supplied with this kit.

1. Install the piston assembly in the valve body.
2. Position the spring(s) on the piston and install the spring retainer.
3. Secure the spring retainer using the four (4) round head machine screws. Torque the screws to 20-30 in-lbs (2.3-3.4 N•m).

This completes the reassembly of the PR-4 pressure protection valve. *Proceed to step 4* for the PR-3 reservoir control valve.

4. Install the spring on the check valve and install in the valve body.
5. Install the o-ring in the valve body.
6. Install the o-ring retainer taking care that the spring fits in the protrusion provided on the o-ring retainer (*See Figure 1*).
7. Install the retaining ring.

## INSTALLATION

1. Clean the air lines connecting to valve.
2. Inspect all lines and/or hoses for damage and replace as necessary.
3. Install the valve and tighten the mounting bolts.
4. Connect the air lines to the valve.

## OPERATING AND LEAKAGE CHECKS

### OPERATING CHECKS

1. Provide a pressure gauge and drain the valve at the supply side and delivery side of the pressure protection valve being checked.
2. Build up the air system to full pressure and shut off the engine.
3. While watching the gauges on the supply and delivery sides of the valve, slowly begin to exhaust pressure from the delivery side. Note that both gauges will show pressure loss until the closing pressure of the pressure protection valve is reached.  
The pressure protection valve should close within  $\pm 5$  psi of the pressure indicated on the valve's label or in the vehicle handbook. The gauge on the delivery side of the valve should continue to show loss of pressure while the gauge on the supply side should stop at the same pressure as the setting of the valve.
4. (*PR-3 reservoir control valve only*) Build pressure up and slowly exhaust air from the supply side of the PR-3 reservoir control valve. The gauge on the delivery side of the valve should remain at the highest pressure previously attained.

### LEAKAGE CHECKS

1. Build up the air system to full pressure and shut off the engine.
2. Apply a soap solution around the cap of the pressure protection valve. A one (1) in. (2.54 cm) bubble in three (3) seconds or longer is acceptable. No leakage is permissible at the bottom of the PR-3 reservoir control valve.
3. Drain the air pressure from the delivery side of the pressure protection valve and disconnect the air line to it.
4. Apply a soap solution to the delivery port. A one (1) in. (2.54 cm) bubble in five (5) seconds or longer is acceptable.

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