

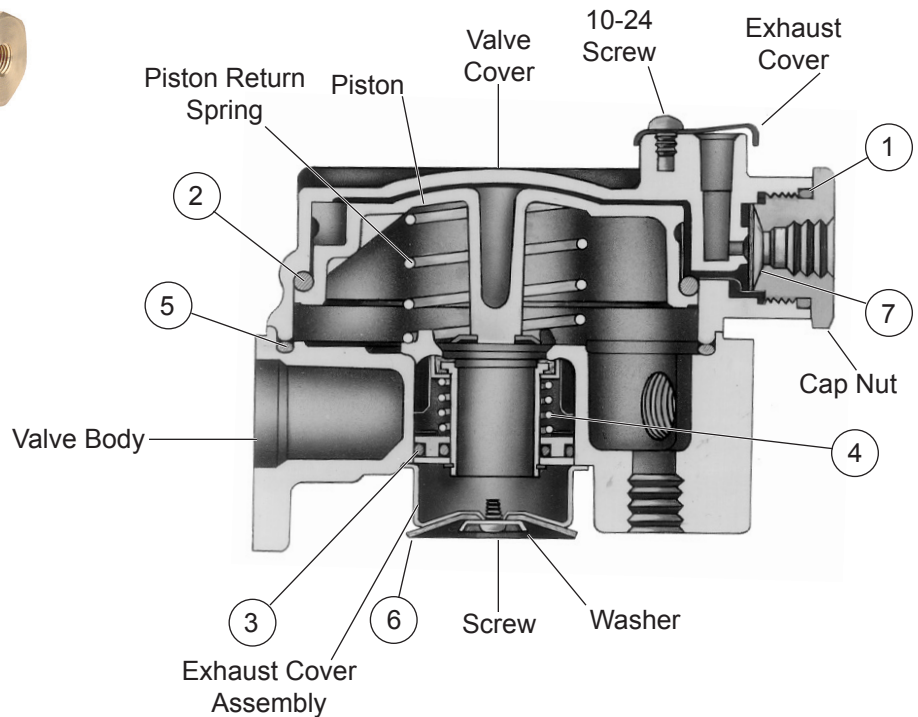
# Installation Instructions



## BENDIX® R-8™ RELAY VALVE MAINTENANCE KIT



**Bendix® R-8™ Relay Valve**



Kit Contents		
Item No.	Description	Qty.
1	O-Ring (.987" I.D.)	1
2	O-Ring (3.725" I.D.)	1
3	O-Ring (1.424" I.D.)	1
4	Inlet-Exhaust Valve Assy.	1
5	Sealing Ring (4.125" I.D.)	1
6	Exhaust Diaphragm	1
7	Diaphragm	1
8	Tube of Lubricant	1



**Figure 1 – Bendix® R-8™ Relay Valve Maintenance Kit Contents**

## 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, or a Bendix® AD-9si® 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

1. Block or hold the vehicle by means other than the air brakes.
2. Drain all air brake system reservoirs.
3. Identify, mark, and disconnect all air lines from the R-8™ relay valve.
4. Remove the R-8 valve from its mount on the vehicle.

## DISASSEMBLY OF VALVE

1. Note and mark position of the valve cover to the body.
2. Remove the four 5/16" - 18 hex screws and separate the cover from the body. Some valves have a piston return spring; if so, remove.
3. Remove the sealing ring (5) from the body.
4. Remove the piston, cap nut, and diaphragm (7) from the cover.
5. Remove the o-ring (1) from the cap nut and the o-ring (2) from the piston.
6. Remove the four 10-24 screws which secure the exhaust cover to the body.
7. Remove the screw, washer, and diaphragm (6) from the exhaust cover.
8. Remove the complete inlet and exhaust valve assembly (4) from the valve body.

## ASSEMBLY

Prior to assembly of new parts in the valve, clean all parts in a cleaning solvent equivalent to mineral spirits making sure all surfaces, bores, and passages are clean and dry. Grease all o-rings, bores, pistons and internal parts with the lubricant (8) supplied in the kit.

1. Install the o-ring (3) on the inlet and exhaust valve assembly (4).
2. Install the diaphragm (6) and diaphragm washer and secure with a screw. Torque screw to 15-25 in-lbs.
3. Install the inlet and exhaust valve assembly (4) in the valve body. Position exhaust cover assembly so that all holes are properly aligned and secure with four 10-24 screws. Torque screws to 20-30 in-lbs.
4. Install the sealing ring (5) in the valve body.
5. Install the piston return spring if the valve requires a spring. (See "Disassembly", Step 2.)
6. Install the o-ring (2) on the piston and then install the piston and o-ring in the cover.
7. Install the o-ring (1) on the cap nut.
8. Install the diaphragm (7) in the cover and install the cap nut. Make certain the diaphragm is free to move and is not pinched by the cap nut. Torque cap nut to 180-400 in-lbs.
9. If valve is so equipped, install the exhaust cover and secure it with a 10-24 screw. Torque screw to 15-24 in-lbs.
10. Install the cover assembly on the valve body as marked and secure with four 5/16" hex head screws. Torque to 120-150 in-lbs.

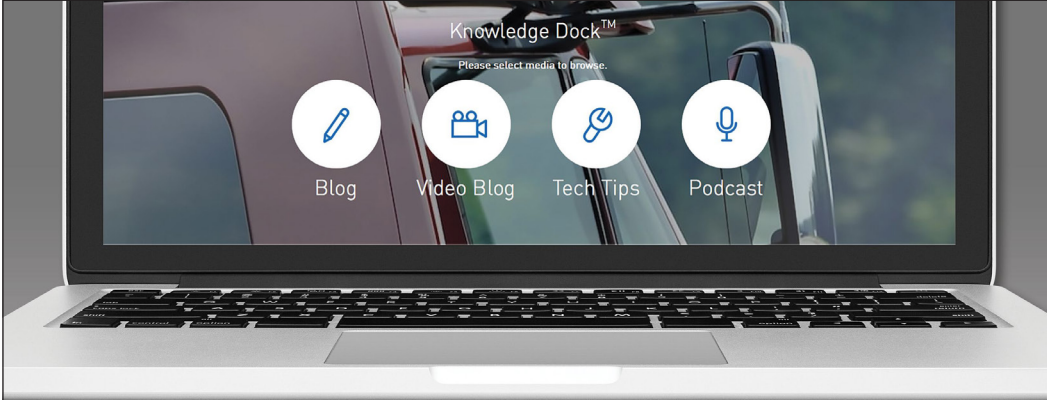
## INSTALLATION

1. Mount the Bendix® R-8™ valve on the vehicle.
2. Connect the air lines to the R-8 valve using the identification made during Step 3 of "Removal" instructions.
3. Perform "Operating and Leakage Checks" before placing the vehicle in service.


## OPERATING AND LEAKAGE TEST

1. Block the wheels and fully charge the air system. Adjust the brakes.
2. Apply and release the parking brakes several times and check for prompt response of the brakes at all appropriate wheels.
3. With the park control valve in the "brakes applied" position, coat the exhaust port with a soap solution to check for inlet valve and o-ring leakage; a 1" bubble in 5 seconds is permissible.
4. Place the park control valve in the "brakes released" position and again check at the exhaust port for leakage of the exhaust valve; a 1" bubble in 3 seconds is permissible. Apply a soap solution around the valve where the cover joins the body to check for seal ring leakage; no leakage permitted.
5. With the park control still in the "brakes released" position, apply a soap solution to the quick release exhaust port to check the diaphragm exhaust seat; a 1" bubble in 3 seconds is permitted.

**Note:** If the anti-compound feature is in use, the line attached to the R-8 quick release valve exhaust must be disconnected to perform this test.



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