

Installation Instructions



BENDIX® TW-2™, TH-3™ AND PE-4™ CONTROL VALVES MAINTENANCE KIT

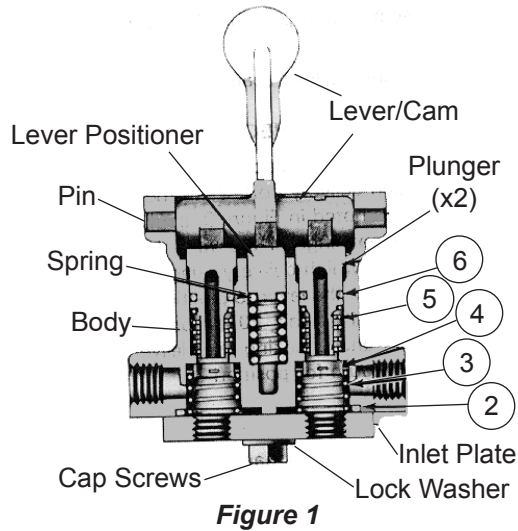


Figure 1

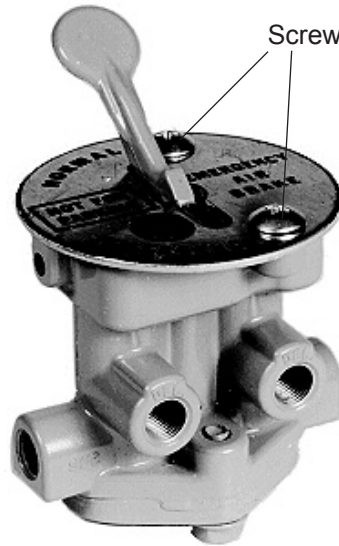


Figure 2

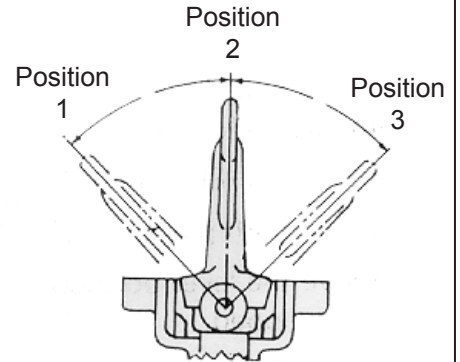


Figure 3

Kit Contents		
Item No.	Description	Qty.
2*	Inlet Plate O-Ring	1
2*	Inlet Plate O-Ring	2
3	Valve Spring	2
4	Valve	2
5	Plunger Spring	2
6	Plunger O-Ring	2
7	Tube of Lubricant	1

*NOTE: Some valves (TW-2, TH-3 and PE-4) use a single large inlet plate o-ring and some models use two smaller o-rings.



Figure 1 – Bendix® TW-2™, TH-3™ and PE-4™ Control Valves Maintenance Kit

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. With the vehicle on a level surface, park the vehicle by means other than the air brakes and drain **all** air pressure from **all** reservoirs.
2. Identify all air lines and their connections to the valve and disconnect.
3. Remove the two Phillips® head screws securing the dial plate to the valve and dash panel and remove the valve.

DISASSEMBLY

*NOTE: Before beginning disassembly of the valve, mark the relationship of the lever and cam to the body. The lever **must** be placed back in the valve body in the same position in order to ensure proper operation. DO NOT change the lever position end for end. Most lever/cams have a locating slot cut in them.*

1. Remove the cap screws and lock washer and remove the inlet plate. Note whether one or two inlet plate o-rings (2) are used. *See note on page 1.
2. Remove and discard the o-ring (2), both springs (3) and both inlet valves (4).
3. Remove the pin and lift the lever out of the body.
4. Remove both plungers and their return springs (5).
5. Remove the lever positioner and its spring, if the valve is so equipped.
6. Remove the o-ring (6) from both plungers and discard the o-rings.

ASSEMBLY

Prior to assembly, clean the lever and valve body in mineral spirits and dry thoroughly. Lubricate o-rings and o-ring bores with the lubricant (7) supplied with this kit.

1. Install both inlet valves (4) and inlet valve springs (3) in the valve body.
2. Install the o-ring or o-rings (see *NOTE** on page 1) in the valve body.

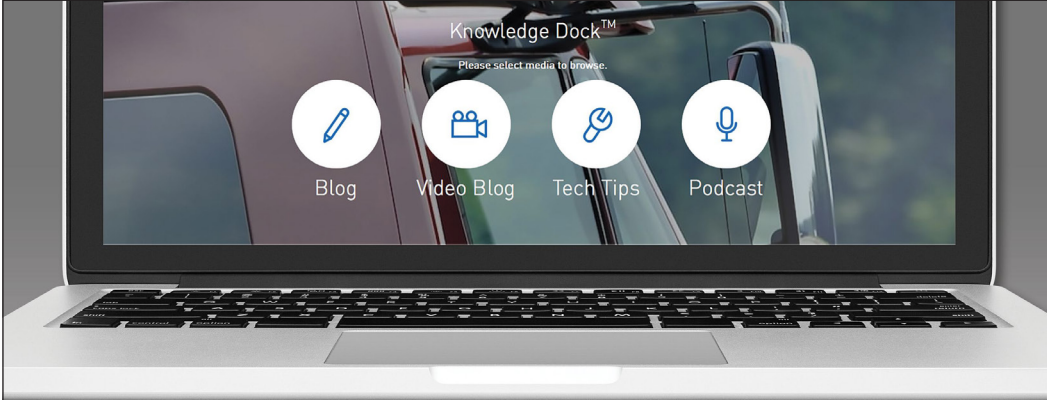
3. Install the inlet plate and secure with cap screws and washer. Torque to 50-180 in-lbs.
4. Install the o-ring (6) on the plungers.
5. Install the plunger return springs (5) and install the plungers in the valve body.
6. Install the lever positioner spring and lever positioner if valve is so equipped.
7. Note the markings made on the lever/cam and valve body during disassembly and position the lever in the valve body.
8. Install the pin to secure the lever/cam.

OPERATING AND LEAKAGE CHECKS


Connect a 100 psi air source to the supply port(s) and connect an air gauge to each delivery port. With the lever in the number 1 position, as noted in Figure 3, apply a soap solution to the exhaust openings in the valve body. No leakage is permitted. Note which delivery gauge registers pressure (if either do). Move the lever to position 2, if the valve has this position, and wait 20 seconds before applying a soap solution and checking the delivery port gauges. Repeat this procedure for position 3.

INSTALLATION

1. Remount the valve in the dash panel using the two Phillips head screws to secure the dial plate and valve.
2. Noting the air line identification made during removal, reconnect the air lines to the proper ports.
3. Before moving the vehicle, build the air system pressure and operate the valve to determine if it functions properly in the system. If operation is incorrect, check the lever/cam installation and the air line connections.



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