

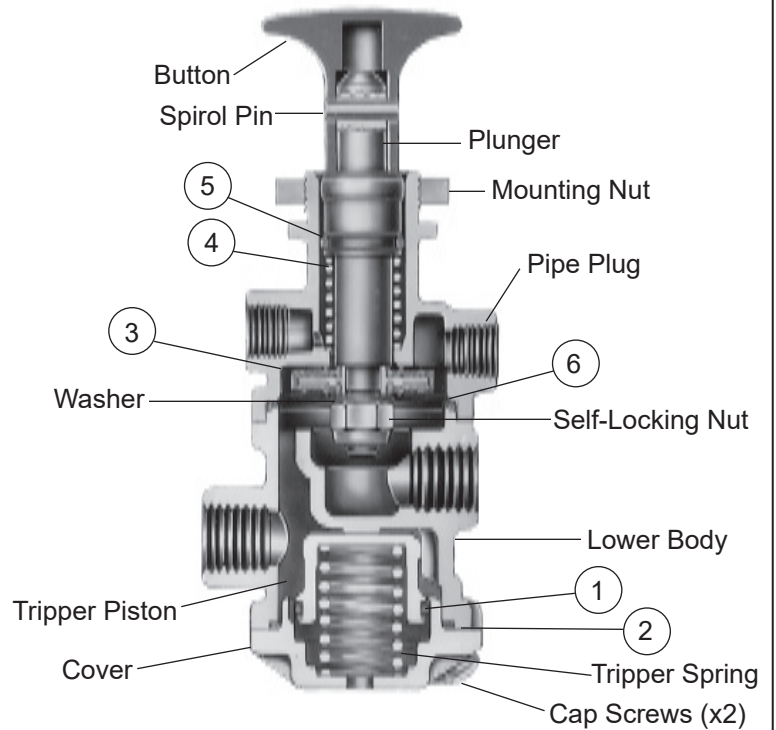
Installation Instructions



BENDIX® PP-3™ CONTROL VALVE MAINTENANCE KIT



**Bendix® PP-3™
Control Valve**



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



Figure 1 – Bendix® PP-3™ Control 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, a Bendix® AD-9si, AD-HF®, or AD-HF®i 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 and/or hold the vehicle by means other than the air brakes. Drain the air brake system.
2. Disconnect the supply and delivery lines from the Bendix® PP-3™ valve and identify them for ease of reinstallation.
3. Drive out the button roll pin and remove the button. Remove the mounting nut, then the PP-3 valve.

DISASSEMBLY

1. The button pin, button, and mounting nut are normally removed when the valve is removed from the vehicle.
2. Remove the two lower body cap screws and lock washers, then the lower body with the cover.
3. Remove the cover with the tripper piston from the lower body.
4. Remove the tripper piston and the spring from the cover.
5. Remove the tripper piston and the cover seal o-rings (1 & 2).
6. Insert the rod or punch in the upper plunger pin hole and hold the plunger from turning while the inlet and exhaust valve nut is removed.
7. Remove the washer and valve (3).
8. Pull the plunger from the upper body.
9. Remove the plunger spring (4) and o-ring (5).
10. Remove the upper body seal ring (6). Do not remove plugs from the ports marked "Del" in the upper body.

CLEANING AND INSPECTION OF PARTS

Wash all metal parts in mineral spirits and then dry them. Make sure the supply port in the valve's upper body, tripper by-pass slot, and tripper exhaust port in the cover are thoroughly cleaned and unrestricted.

ASSEMBLY

Prior to assembly, lubricate all o-rings and bearing surfaces with silicone lubricant (7), supplied in the kit.

1. Install the plunger o-ring (5).
2. Position the plunger spring (4) in the upper body, then press the plunger down inside the spring in the body.
3. Place the inlet and exhaust valve (3), then the washer over the threaded, protruding end of the plunger.
4. Install and tighten the self-locking nut. The torque on the nut should be 20-25 in-lbs.
5. Place the upper and lower body seal o-ring (6) in place.
6. Install the tripper piston o-ring (1).
7. Position the cover o-ring seal (2) on the cover.
8. Position the tripper spring in cover, then press tripper down over spring and into the cover bore.
9. Place the cover with tripper installed into the lower body.
10. Fasten the lower body and cover assembly to the upper assembly with cap screws and lockwashers. Tighten the cap screws evenly and securely.

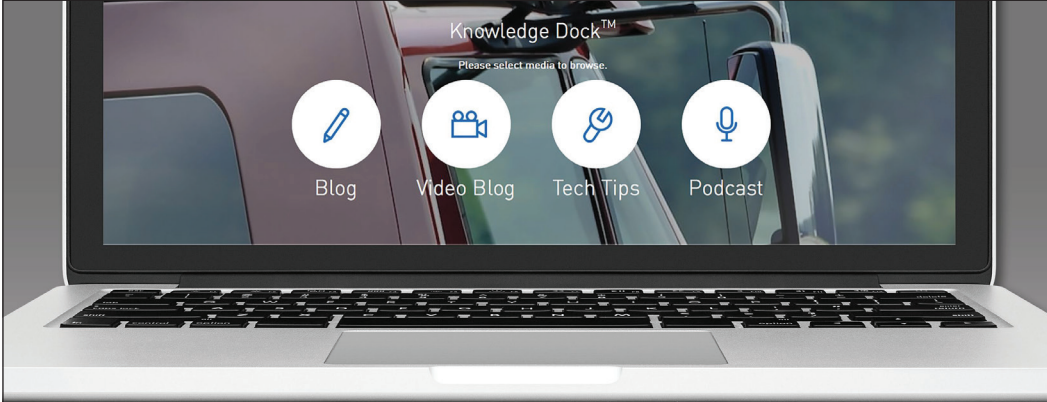
INSTALLATION

1. Install the PP-3 valve in the vehicle dash using the mounting nut.
2. Reconnect the supply and delivery lines to their proper ports using the identification marks made during removal.
3. Install the button using the spirol pin.


OPERATING AND LEAKAGE TESTS

To make the following operating and leakage checks, an accurate test gauge installed in a spare hose coupling is required. The vehicle dash gauge should be checked for accuracy against the test gauge prior to making these tests.

1. Block and/or hold the vehicle by a means other than the air brakes during these tests.
2. Drain the vehicle reservoir supply, then close the drain cocks.
3. Connect the assembled hose coupling and test gauge in the tractor emergency hose coupling. Start the engine and build up system pressure.
4. As reservoir pressure builds up, there should be no pressure reading on the test gauge. When the system pressure reaches the 30-40 psi range on the dash gauge, make and hold a foot or hand valve application and observe that no air escapes at the open trailer service hose coupling.
5. When the valve's system pressure reaches approximately 60 psi, the PP-3 valve button should be pushed in. System pressure should show at once on the test gauge connected in the emergency line, and the button of the PP-3 valve should remain in without being held.
6. Build the system pressure up to approximately 100 psi, then stop the engine. With the engine stopped, wait momentarily, then verify that the dash gauge and test gauge pressures are reading equal. While still in this position, make a foot or hand valve application and observe that air is delivered out the open trailer service coupling.
7. With the PP-3 valve button still in, check for leakage at the PP-3 valve's exhaust and tripper exhaust ports. Leakage should not exceed a 1-inch bubble in five seconds at either point.
8. With the PP-3 valve button still in, check for leakage at the Bendix® TP-3® valve exhaust and open service coupling. Leakage should not be more than a 1-inch bubble in five seconds at either point.
9. Pull the PP-3 valve button out: pressure on the test gauge connected in the emergency line should drop to zero. Make and hold a hand valve application and observe that air delivered at the open service coupling does not exceed a 1-inch bubble in five seconds. Release the foot or hand valve application.



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