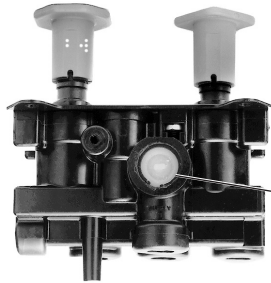




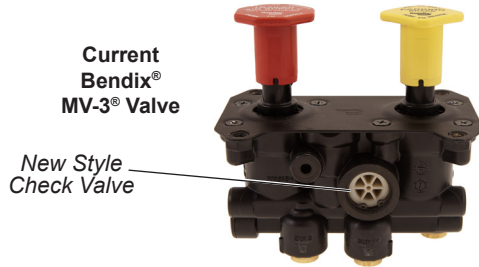
# Installation Instructions

## BENDIX® MV-3® VALVE MAINTENANCE KITS

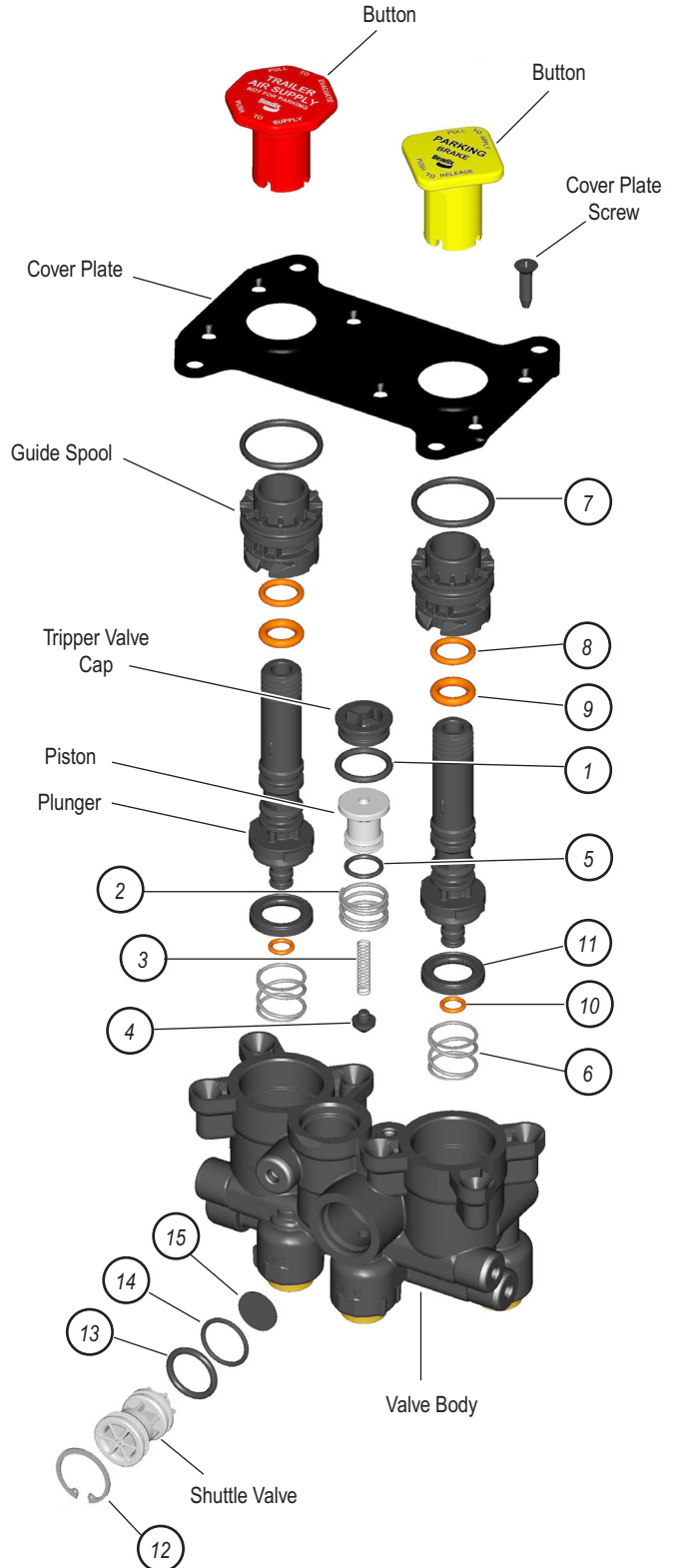


**Old Style Bendix® MV-3® Valve**  
 These kits can not be installed on the old style valve (pre-1998).

*Old Style Plastic Check Valve*



**Current Bendix® MV-3® Valve**  
*New Style Check Valve*



Key No.	Description	Qty.
<b>Valve Maintenance Kit Contents</b>		
1	O-ring	1
2	Override Spring	1
3	Spring	1
4	Check Valve	1
5	O-ring	1
6	Plunger Spring	2
7	O-ring	2
8	O-ring	2
9	O-ring	2
10	O-ring	2
11	Exhaust Seal	2
NS	Lubricant	1
<b>Shuttle Maintenance Kit Contents</b>		
12	Retaining Ring	1
13	O-ring	1
14	O-ring	1
15	Check Valve	1
NS	Lubricant	1

Figure 1 **Bendix® MV-3® Manifold Valve 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.
- ▲ 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.
- ▲ You should consult the vehicle manufacturer's operating and service manuals, and any related literature, in conjunction with the Guidelines above.

## DISASSEMBLY OF THE BENDIX® MV-3® VALVE (REFER TO FIGURE 1)

Before installing this kit, verify the valve being serviced is not a pre-1998 valve. Bendix® MV-3® valves manufactured prior to 1998 require different maintenance kits. (See Figure 1.)

If installing the *Valve Maintenance Kit*, follow steps 1 through 8 only of the disassembly section.

If installing the *Shuttle Maintenance Kit*, follow steps 1 through 3, then steps 9 and 10 (only) of disassembly section.

1. Remove the red and yellow buttons from the stems of the spools on the MV-3 valve by turning in a counter-clockwise direction.



**Note the orientation of the buttons in relation to the valve to be sure they will be replaced properly.**

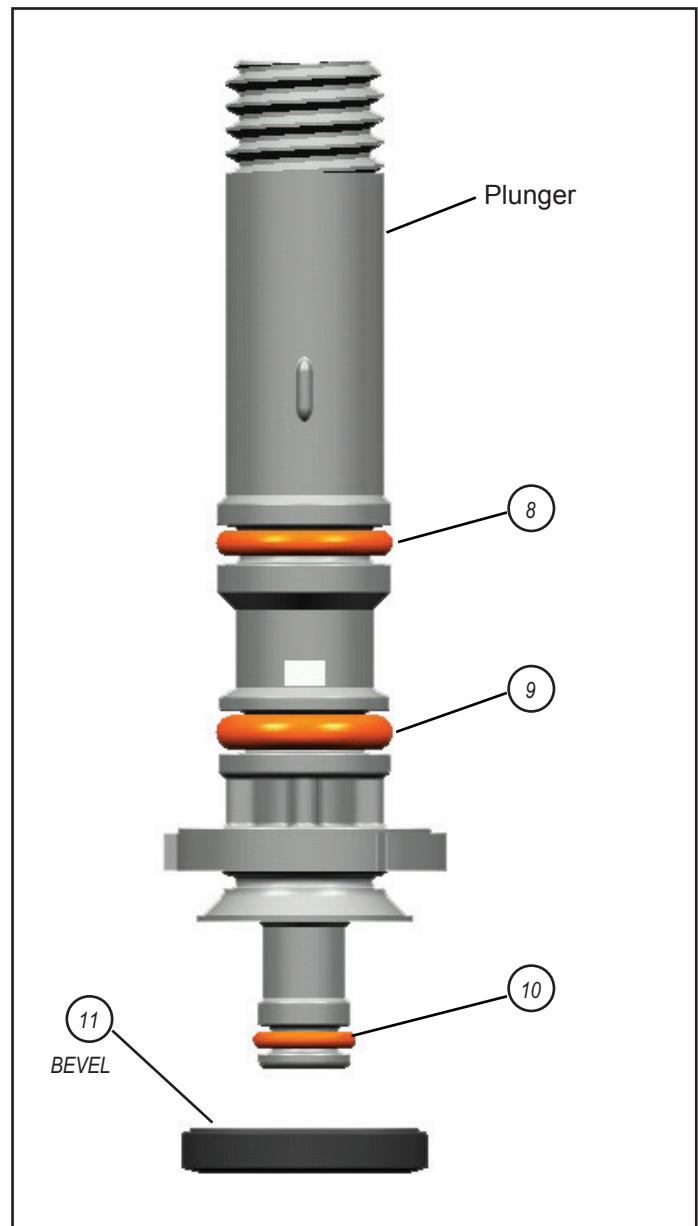


Figure 2 **Bendix® MV-3® Manifold Valve Plunger**

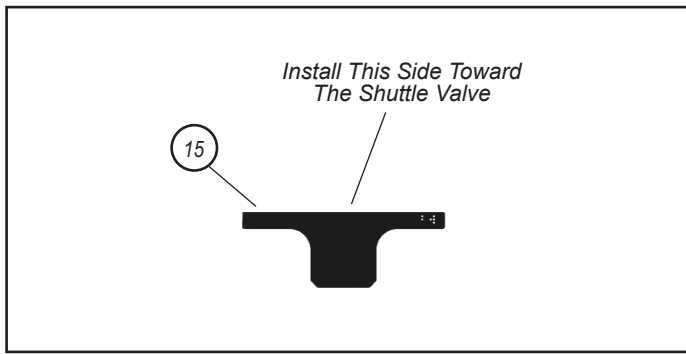


Figure 3 **Bendix® MV-3® Check Valve Installation**

2. Remove and save the mounting hardware from the four corners of the cover plate.
3. If removing the valve from the vehicle, remove, identify, and mark the air lines from the back of the valve.
4. Remove the six Phillips head screws from the cover plate and carefully remove the cover plate from the valve.
5. Remove the tripper valve cap and o-ring (1) from the bore of the tripper valve. Remove the piston, override spring (2), spring (3), and check valve (4). These parts will all fall out of the cavity of the Bendix® MV-3® valve by tilting the body forward. Remove the o-ring (5) from its groove on the piston.
6. Remove the two main spools from the body of the valve by grasping the plunger and pulling firmly. Remove the two springs (6) from the bottom of each spool cavity.
7. Pull the guide spool over the threaded end of one of the plungers. Remove the o-ring (7) from the guide spool. Remove o-rings (8, 9 & 10) and the exhaust seal (11) from the plunger. *Refer to Figure 2.*
8. Repeat step 7 on the remaining spool assembly.
9. Remove the retaining ring (12) from the cavity of the MV-3 valve body that contains the dual circuit supply valve.
10. Pull the shuttle valve seat assembly from the valve. Remove the two o-rings (13 and 14) from the shuttle valve assembly. Remove the check valve (15) from the MV-3 valve body.

### CLEANING & INSPECTION

Discard all parts that have replacements provided in the kit being used.

The non-metallic components which comprise most of the parts of the MV-3 valve should not be immersed in any solvent type cleaner. Old lubricant should be wiped out with a clean dry cloth.

If any visible damage to the body or the spools can be detected, the complete unit must be replaced.

### ASSEMBLY OF THE MV-3 VALVE (REFER TO FIGURE 1)

If installing the *Shuttle Maintenance Kit*, follow steps 1 through 4, then 13 through 15.

If installing the *Valve Maintenance Kit*, follow step 1, then steps 5 through 15.

1. Lubricate all o-rings, bores and sliding surfaces with silicone lubricant contained in the kit.

### SHUTTLE MAINTENANCE KIT

2. Place the check valve (15) into its seat in the body with its flat surface facing upward. If necessary, reach into the body to make sure the valve is seated evenly in the bore.
3. Install o-rings (13 & 14) onto the shuttle valve. Then install the assembly into its cavity in the valve body.
4. Install the snap ring (12) making sure it is fully seated in its groove.

### SPOOLS

5. Install o-rings (8, 9 & 10) and the exhaust seal (11) onto the stem of plungers.



***The exhaust seal (11) must be installed so that its beveled surface mates with the beveled surface of the plunger. See Figure 2.***

6. Install o-ring (7) onto the guide spool. Install the guide spool over the threaded end of the plunger and press down firmly until it snaps into place.
7. Install plunger spring (6) over the boss in the bottom of the spool cavity in the body of the MV-3 valve. Place the spool assembly into the body, keeping the spool square to the body, press and turn the stem until the spool is fully seated in its cavity. Note the assembly is keyed and may only be installed one way.
8. Repeat steps 5 through 7 with the remaining components for the opposite spool.

### SHUTTLE AND CHECK VALVE

9. Install the spring (3) on the boss of the check valve (4). Place these two items into the cavity in the body of the MV-3 valve (tapered end of check valve to enter cavity first). Make sure the spring (3) is centered in the bore.
10. Install the o-ring (5) into its groove on the piston. Install the override spring (2) on the piston.
11. Place the piston assembly into the tripper valve cavity making sure the spring (3) mates with the bore of the piston.
12. Install the o-ring (1) onto the tripper valve cap and place the cap over the piston.

## FINAL ASSEMBLY

13. Install the cover plate onto the valve body using the six Phillips head screws. Torque to 35 in-lbs.
14. Attach the red and yellow buttons onto the threaded stems of the spools, making sure that they are oriented correctly as noted in step 1 of the disassembly procedure.
15. Reattach the Bendix® MV-3® valve to the dash using the hardware removed in step 2 of the disassembly procedure. If air lines were removed during disassembly, reconnect to ports marked during disassembly. When reconnecting threaded ports use a liquid thread sealing compound, attach the air line until it is hand tight and then turn approximately one and a half turns further (or using a maximum of 10 ft-lbs of torque). Note: over torquing will crack the port.

## SERVICE TEST

Repeat the *Operational Test* procedures. Test drive the vehicle at a slow speed in a safe area prior to placing it back into service.

For additional information, refer to Technical Bulletin - *Bendix Dash Valve Trip Pressure TCH-003-051* or *Service Data Sheet SD-03-3415*.

## OPERATIONAL TEST

1. With supply pressure at 120 psi, push the red button in. The button must stay in.
2. Slowly reduce pressure in both service reservoirs. The red button must pop when supply pressure drops to 20 to 45 psi.  
**Note:** *The yellow button must not pop out before the red button.*
3. Hold the red button in and continue to reduce pressure in all service reservoirs. Air must start to escape from the exhaust port when the trailer supply line pressure reaches 20 psi minimum.
4. Release the red button and rebuild the supply pressure to at least 120 psi. Push in the yellow button; the yellow button must remain in.
5. Charge the system to 120 psi and push both buttons in. Pull the red button out. The yellow button must remain in.
6. Push the red button in and pull the yellow button out. The red button must pop out almost instantaneously.
7. Build both service reservoirs to 120 psi. Decrease the pressure at the secondary reservoir. The primary reservoir pressure should not drop below 100 psi. Repeat the test for decreasing primary reservoir pressure. The secondary reservoir pressure should not drop below 100 psi.
8. If the MV-3 valve fails to operate as described, replace or repair it using genuine Bendix® parts.
9. Close all reservoir drain cocks and deliberately caused leakage points before placing the vehicle back into service.

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