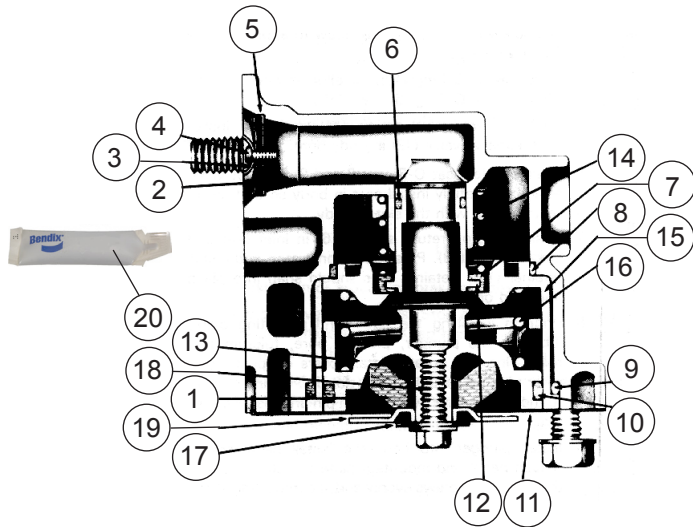


# Installation Instructions

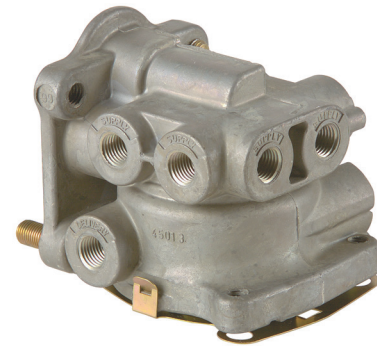


## BENDIX® E-5™ BRAKE VALVE MAINTENANCE KITS



Minor Kit - 281084N

Kit Contents		
Item No.	Description	Qty.
1	Rubber Spring	1
2	Diaphragm	1
3	Washer	1
4	Screw	1
5	Diaphragm Retainer	1
6	O-Ring (.750" O.D.)	1
7	Valve Retainer	1
8	O-Ring (Upper 2.25" O.D.)	1
9	O-Ring (Lower 2.75" O.D.)	1
10	Retainer	1
11	O-Ring (Piston) (2.375" O.D.)	1
12	Inlet Exhaust Valve	1
20	Lubricant (BW-650M)	1



Bendix® E-5™ Brake Valve

Major Kit - 289334N

Kit Contents		
Item No.	Description	Qty.
	Minor Repair Kit	1
13	Piston	1
14	Valve Spring	1
15	Inlet Valve Seat	1
16	Piston Return Spring	1
17	Washer	1
18	Cap Screw	1
19	Spring Seat	1

Major Kit (289334N)  
Kit Contents

Minor Kit (281084N)  
Kit Contents



Figure 1 – Bendix® E-5™ Brake 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 and exhaust air pressure from reservoirs.
2. Disconnect air lines to brake valve, remove mounting bolts, remove valve.

## DISASSEMBLY

NOTE: Pedal parts are not included in the kit; however, it is recommended that the treadle be dismantled, cleaned and parts inspected. Replace parts as necessary.

1. Remove the fulcrum pin cotter, fulcrum pin, and pedal.
2. Remove the cotter pin, roller pin, rollers, and pedal cover.
3. Remove the three (3) mounting plate cap screws; remove the mounting plate with plunger.
4. Depress and release the retainer (11) tabs from the body of the valve.
5. Remove the spring seat (19), piston (13), piston return spring (16), inlet valve seat (15), and the inlet/exhaust valve (12) and spring.
6. Remove the piston o-ring (10) and dismantle the piston assembly, removing cap screw (18), washer (17), spring seat (19) and rubber spring (1) from the piston (13).
7. Remove o-rings (8 and 9) from the inlet valve seat. Remove the inlet valve stem o-ring (6) and the inlet valve retainer (7).
8. Remove the exhaust check valve screw (4), washer (3), diaphragm retainer (5), and diaphragm (2) from the valve body.

## CLEANING AND INSPECTION

Wash all metal parts in cleaning solvent and dry.

Inspect all parts to be reused (those not furnished in kit) for wear or deterioration and replace as necessary.

## ASSEMBLY

1. Prior to assembly, using lubricant (20) furnished, lightly lubricate all body bores, inlet/exhaust valve stem, o-rings, inlet seat and piston. DO NOT APPLY LUBRICANT on the rubber spring.
2. Position rubber spring (1) in piston (13); install spring seat (19) with detent down on top of rubber spring (1).
3. Position washer (17) on spring seat (19) and install cap screw (18). Torque cap screw to approximately 50 in-lbs.
4. Install the piston o-ring (10). Install the inlet valve retainer (7) and stem o-ring (6).
5. Position inlet valve spring (14) in body. Install inlet / exhaust valve (12) in body bore.

6. Position the inlet seat o-rings (8 and 9) on the inlet valve seat and carefully install the seat in the body so that the tab in the seat lines up with the slot in the body.
7. Position the piston return spring (16) in the inlet seat and install the piston (13). Press down on the piston and install the retainer (11). Retainer tabs should snap into place and hold on the body.
8. Prior to installing the pedal and mounting plate, lubricate the plunger, plunger bore, fulcrum and roller pins and bores. Install the rollers on the pedal with the roller pin and secure with the cotter pin. Connect the pedal to the mounting plate with the fulcrum pin and install the cotter pin.
9. Install the plunger into the bore and install the pedal cover. Attach the pedal and mounting plate to the valve. Tighten the three cap screws evenly and securely. Adjust the stop button until the rollers are in contact with the valve plunger if necessary.

## TESTING FOR SERVICEABILITY

Charge the air brake system to govern or cut-out and test valve as follows:

## SERVICE CHECKS

### OPERATING

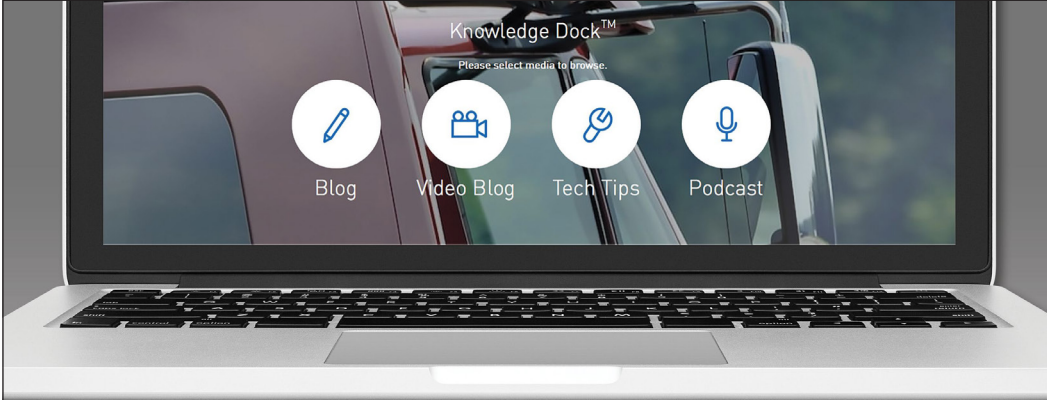
Check the delivery pressure of the brake valve using a test gauge known to be accurate. Depress the pedal to several positions between the fully released and fully applied positions and check the delivered pressure on the test gauge to see that it varies proportionately with the movement of the pedal. When the pedal is fully applied, the reading on the test gauge should be approximately that of full reservoir pressure. The reading on the test gauge should fall off to zero when the application is released.

### LEAKAGE TEST


With the E-5™ valve fully released, check the exhaust port for leakage. Leakage of 1-inch bubble in 5 seconds is permissible.

Make and hold a pedal application, then coat the exhaust port with soapsuds. Leakage of 1-inch bubble in 3 seconds is permissible. Also, while the application is being held, leakage checks should be made around the plunger and between the mounting plate and valve body. No leakage is permitted.

For complete details on the operation and maintenance of this device, refer to *Bendix Service Data Sheet SD-03-816* available on [bendix.com](http://bendix.com).



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