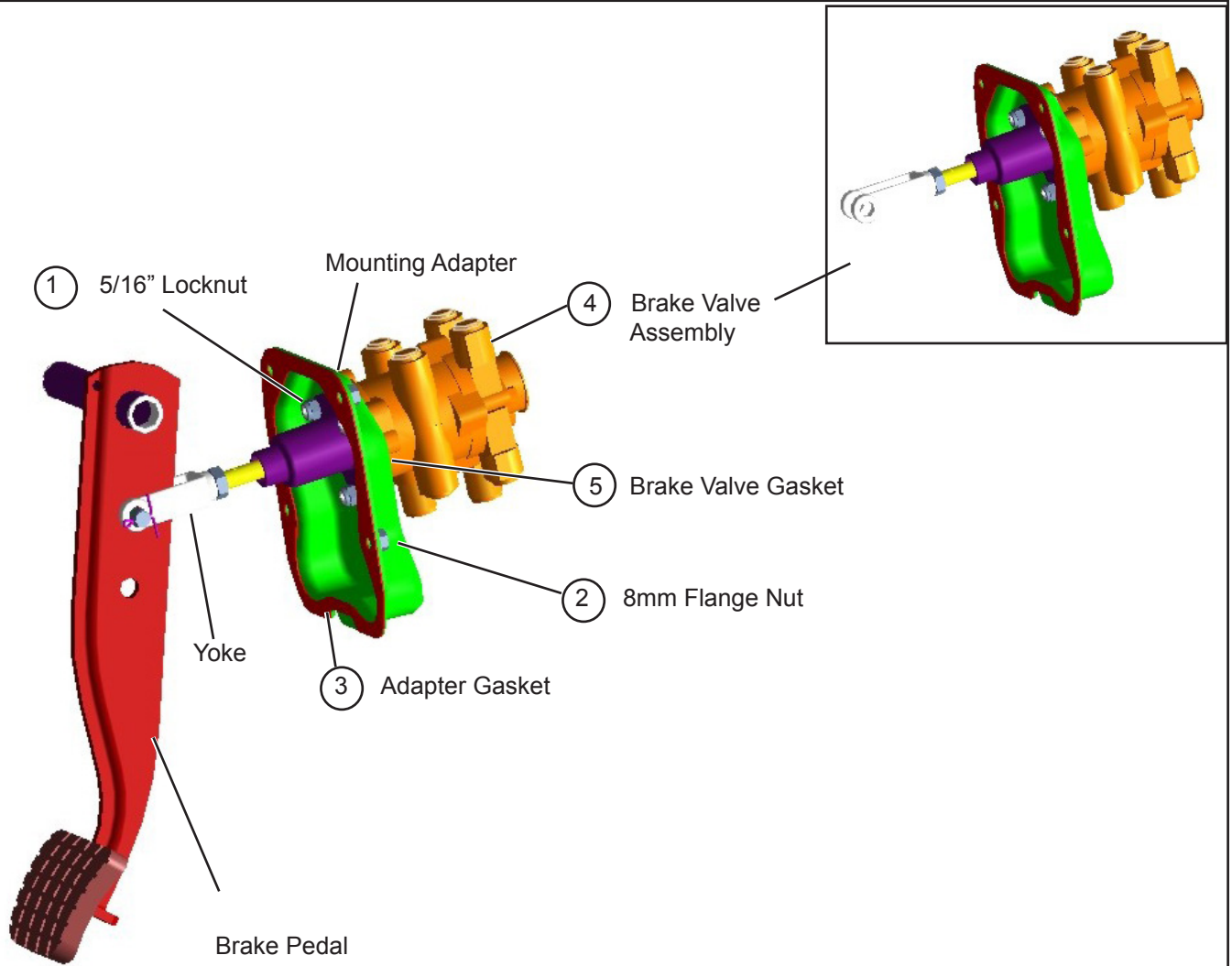




# Installation Instructions

## BRAKE VALVE KITS



Item No.	Description	Qty.	Contained in the Following Kits
1	5/16" Locknut	3	All
2	8mm Flange Nut	4	All
3	Adapter Gasket	1	All
4	Brake Valve Assembly	1	5008675 & 5008869
5	Brake Valve Gasket	1	All
6	Brake Valve Kit (not shown)	1	5008681 & 5008683

Figure 1 Brake Valve Kits

## 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.

## DESCRIPTION

This kit contains all of the components necessary to service the brake valve on International vehicles.

## DISASSEMBLY

1. Identify, mark and disconnect all of the air lines connected to the brake valve. The brake valve contains push-to-connect fittings. To disconnect, push the fitting toward the valve with one hand and pull the air line out, away from the valve, with the other. Be sure to note if an air line is connected to the auxiliary port of the brake valve.
2. From the passenger side of the cab, remove the brake valve cotter pin or rue ring, yoke pin and wave washer. A mallet and punch may be necessary for removal. *Refer to Figures 2 and 3.*
3. From the engine side of the dash panel, note and mark the orientation of the brake valve mounting adapter on the dash panel. Remove the four 8mm flange nuts (2) that secure the mounting adapter to the vehicle dash panel. Remove the brake valve assembly (4). Use caution when pulling the yoke through the dash panel.
4. Clean the dash panel area, removing any gasket material.

**For kit part numbers 5008675 and 5008869, proceed to the Assembly Instructions step 4.**

5. Mark the orientation of the brake valve to the brake valve mounting adapter. Remove the three locknuts that secure the yoke and plunger guide assembly to the brake valve mounting adapter. **Do not remove the yoke and locknut from brake pedal push rod.**
6. Separate the brake valve, brake valve gasket (5), mounting adapter and plunger. *Refer to Figure 5.*
7. Clean and remove any gasket material from the brake valve mounting adapter.
8. See the instruction sheet provided in the enclosed brake valve maintenance kit for servicing the brake valve before proceeding to the assembly instructions.

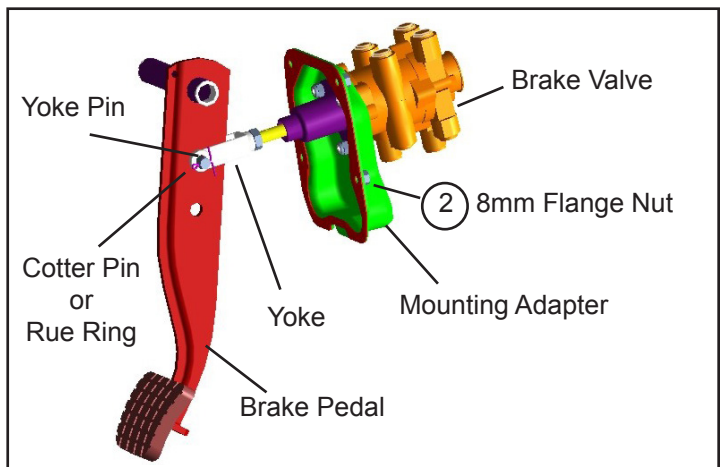


Figure 2 Brake Valve and Pedal Assembly

## ASSEMBLY

1. Place the brake valve gasket (5), if applicable, and brake valve on the brake valve mounting adapter in the proper orientation. *Note: Brake valve gasket (5) is not required if the brake valve retainer is rubber coated.* A black retainer indicates a rubber coating has been applied and a yellow retainer indicates a gasket is needed. Refer to Figure 5.
2. Lubricate the exterior of the brake valve plunger. Place the plunger in the plunger guide with the small recess towards the pedal rod.
3. Install the plunger guide and yoke assembly (with the plunger) on the brake valve mounting adapter, aligning the mounting holes with the brake valve studs. The plunger guide fits over the brake valve piston and spring. Secure with the three 5/16" locknuts (1). Tighten to 100-140 in-lbs.
4. From the engine side of the dash panel, place the adapter gasket (3) over the brake valve mounting adapter studs in the dash panel. Insert the yoke end of the brake valve assembly (4) through the opening in the dash panel, aligning the yoke so that it straddles the brake pedal. Exercise caution to prevent damage to the yoke and plunger guide.
5. Using the four 8mm flange nuts (2) secure the brake valve assembly to the dash panel. Tighten the nuts to 200-280 in-lbs.
6. From the driver's side of the cab, install the yoke pin through the wave washer and the yoke and brake pedal assembly. Gently tap with a mallet and punch if necessary.
7. Install the rue ring or cotter pin in the yoke pin. If using a cotter pin, bend the ends back to approximately 45°. If installing a rue ring, twist the legs of the rue ring to engage a secondary lock.
8. Reconnect the air lines. All of the brake valve ports contain push-to-connect fittings. To install the air lines, insert the air line into the fitting. When the air line can't be inserted further, pull back on the fitting to secure.

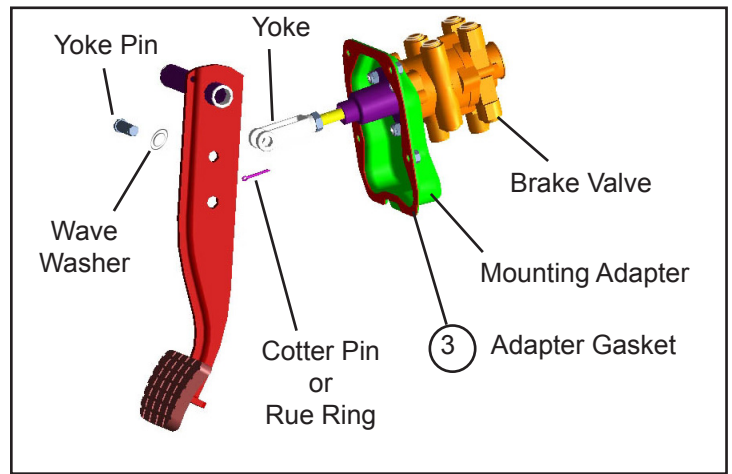


Figure 3 Brake Valve from the Cab Side of the Firewall

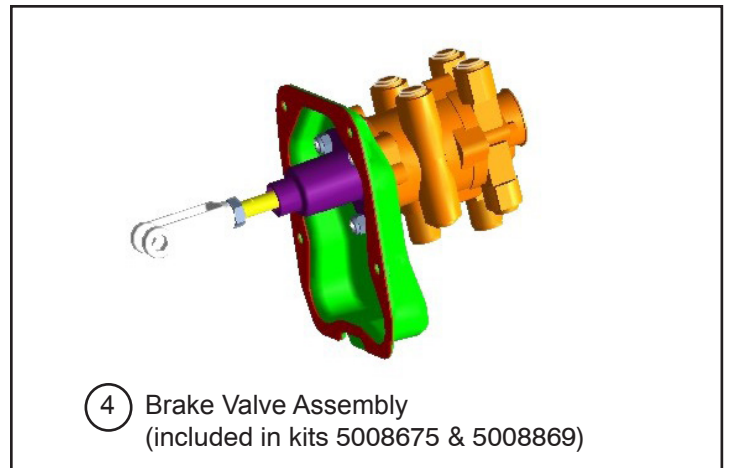


Figure 4 Brake Valve Assembly

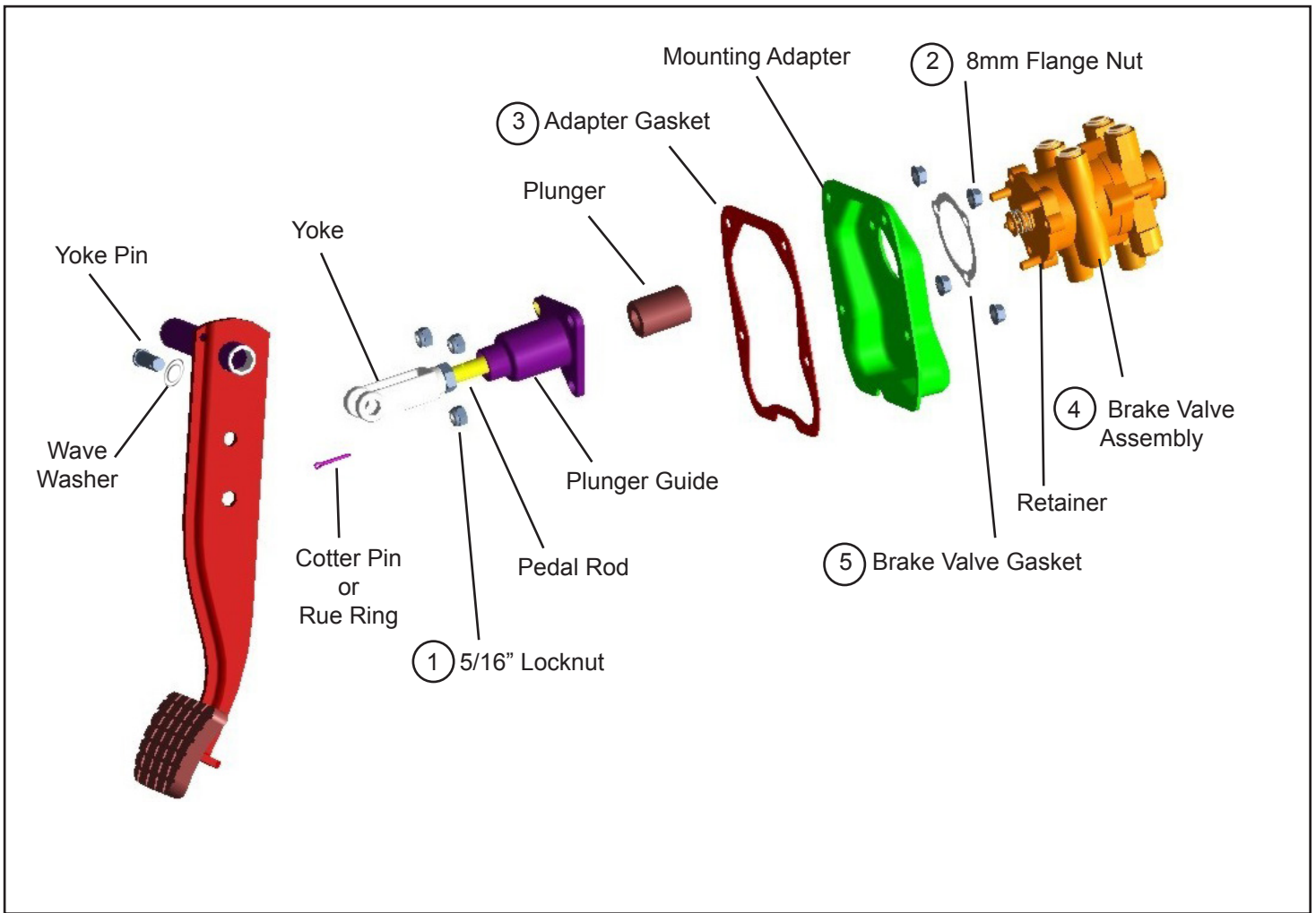


Figure 5 Brake Valve Exploded View

**TESTING FOR SERVICEABILITY**

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

**SERVICE CHECKS**

Check the delivery pressure of both upper and lower circuits 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 gauges 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 fall off to zero when the application is released. It should be noted that the upper circuit delivery pressure will be about 2.5 psi greater than the lower circuit delivery pressure with upper and lower circuit supply reservoirs at the same pressure. This is normal in this valve.

Build up air pressure in the system to approximately 100 psi. Drain the reservoir supplying the upper circuit to the brake valve. Make several full brake applications, and note pedal or treadle force required to make application is approximately the same as with both circuits operating. An increase in stopping distance, longer pedal travel, or the low pressure warning system indicates a malfunction in one or the other circuits.

**LEAKAGE CHECK**

Make and hold a high pressure application. Coat the exhaust port and top of the valve with a soap solution. No leakage is permitted on the top of the valve or body. Leakage of a one inch bubble in three seconds is permitted at the exhaust port in both the applied and released positions.