WABCO

Technical Bulletin

Service Procedures for Push-Pull Valve with Double Check (PPDC)

Hazard Alert Messages

Read and observe all Warning and Caution hazard alert messages in this publication. They provide information that can help prevent serious personal injury, damage to components, or both.

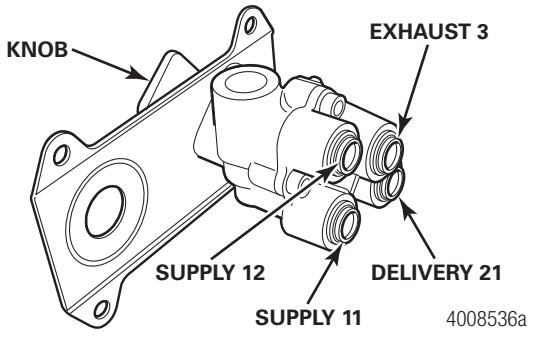
How to Obtain Additional Maintenance and Service Information

If you have any questions about the material covered in this publication, or for more information about the WABCO product line, please contact WABCO North America Customer Care at 855-228-3203 or visit our website, wabco-na.com.

Description and Function

The WABCO dash mounted push-pull valve with double check (PPDC) is designed to control application and release of the vehicle parking brakes.

When this push-pull valve knob is pushed in, the parking brakes are released and when the knob is pulled out, the parking brakes are applied. This valve receives air from the primary and secondary air brake systems. The air passes through an integral double check valve and is delivered to the parking brake system. The push-pull valve provides an automatic application of the vehicle parking brakes when the supply pressure drops to a predetermined pressure. Figure 1.



PUSH-PULL VALVE WITH DOUBLE CHECK (PPDC)

Figure 1

Service Procedures

Before servicing the WABCO push-pull valve with double check, carefully read and follow all outlined procedures.

⚠ WARNING

To prevent serious eye injury, always wear eye protection when you perform vehicle maintenance or service.

Park the vehicle on a level surface. Block the wheels to prevent the vehicle from moving. Support the vehicle with safety stands. Do not work under a vehicle supported only by jacks. Jacks can slip and fall over. Serious personal injury and damage to components can result.

Open drain valves on all reservoirs to remove all pressurized air from the air system before you disconnect any component. Pressurized air can cause serious personal injury.

Removing the Push-Pull Valve with Double Check

1. Wear safe eye protection.
2. Park the vehicle on a level surface. Block the wheels to prevent the vehicle from moving.
3. Drain the entire air system. Open all of the drain valves on all of the reservoirs.
4. Follow the vehicle manufacturer's recommendations for removing all electrical power from the vehicle.
5. Identify the ports and mark each air line tube so that it can be attached to the correct port on the replacement valve. Color-coded tubing is recommended for new installations.
6. Using a tubing removal tool or similar device, disconnect the push-to-connect air line tubing and cover the ends of the tubing to protect them against contamination.
7. Remove the assembly from the vehicle and save the mounting hardware.

Installing the Push-Pull Valve with Double Check

1. Install the new push-pull valve using the hardware removed in Step 7 of the removal procedure.

⚠ CAUTION

Tubing for push-to-connect fittings must be cut cleanly and end cuts must be perpendicular within seven degrees. Angles and sharp edges can damage the seal in the fitting and cause air leakage.

⚠ WARNING

Do not kink the tubing. Kinked tubing can block the flow of air which can cause a loss of braking function, resulting in loss of vehicle control. Serious personal injury can result.

Ensure that the tubing is connected correctly and securely. Insert the tubing into the push-to-connect fitting until it hits the stop in the fitting. After inserting the tubing, pull on the tubing to ensure that it is locked in the fitting. Unsecured tubing can cause excessive leakage which can lead to a loss of braking function, resulting in loss of vehicle control. Serious personal injury can result.

2. Connect the air line tubing to the corresponding ports identified during removal.
3. Before operating the vehicle, be sure all components and systems are restored to their correct operation.

Function and Leakage Test

NOTE: Install test gauges where pressure readings are required.

1. Apply and hold 15 ±5 psi (1.03 ±0.34 bar) at the primary supply port (#11). With the secondary supply port (#12) open and with the knob pulled out, apply a soap solution to the exhaust port (#3) and the secondary supply port. Leakage of a one-inch (25.4 mm) bubble in three seconds is permissible at each location. Repeat the leakage test with 125 ±5 psi (8.62 ±0.34 bar) at the primary supply port.
2. Apply 15 ±5 psi (1.03 ±0.34 bar) at the secondary supply port. With the primary supply port open and with the knob pulled out, apply a soap solution to the exhaust port and the primary supply port. Leakage of a one-inch (25.4 mm) bubble in three seconds is permissible at each location. Repeat the leakage test with 125 ±5 psi (8.62 ±0.34 bar) in the secondary supply port.
3. Apply 65 ±5 psi (4.48 ±0.34 bar) at both supply ports and push the knob in. The knob must stay in and the delivery port (#21) pressure must be 65 ±5 psi (4.48 ±0.34 bar). Apply a soap solution to the exhaust port. Leakage of a one-inch (25.4 mm) bubble in three seconds is permissible.
4. With 125 ±5 psi (8.62 ±0.34 bar) applied at both supply ports, push the knob in. The delivery port pressure must be 125 ±5 psi (8.62 ±0.34 bar). Apply a soap solution to the exhaust port. Leakage of a one-inch (25.4 mm) bubble in three seconds is permissible. Begin to exhaust the pressure at the supply ports. The knob must pop out when the supply pressure reaches 40 ±5 psi (2.76 ±0.34 bar).
5. With 125 ±5 psi (8.62 ±0.34 bar) applied at both supply ports, push the knob in. The pressure in the delivery port must rise promptly. Pull the knob out. The pressure in the delivery port must fall promptly.

Troubleshooting

Troubleshooting the Push-Pull Valve with Double Check

⚠ WARNING

The push-pull valve is an important part of the air brake system. Never ignore any symptom such as leakage or a change in operation. Loss of braking can occur resulting in loss of vehicle control. Serious personal injury can result.

1. Conduct the Function and Leakage Test when there is leakage or a change in operation.
2. Replace the valve if it does not meet the requirements of the Function and Leakage Test.

WABCO

WABCO North America
1220 Pacific Drive
Auburn Hills, MI 48326
855-228-3203
wabco-na.com

Printed in USA

TP-10137
Revised 09-18
(16579)