

MERITOR WABCO

Technical Bulletin

Service Procedures for Quick Release Valves (QRP)

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.

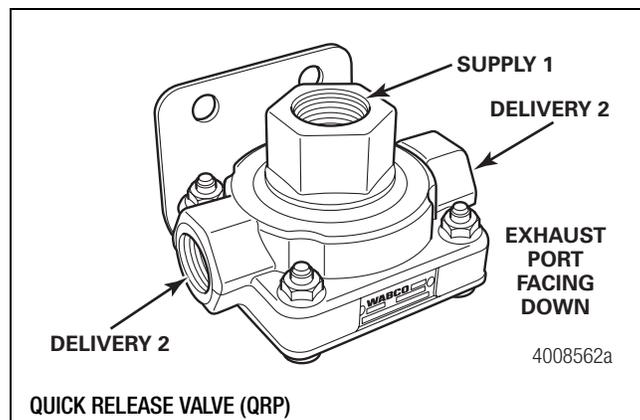
How to Obtain Additional Maintenance and Service Information

If you have any questions about the material covered in this publication, or for more information about the Meritor WABCO product line, please contact the OnTrac Customer Service Center at 866-OnTrac1 (668-7221) or visit our website, meritorwabco.com.

Description and Function

The Meritor WABCO plastic body quick release valve is designed to allow air to pass through it when supply pressure is applied. It speeds up the release of delivery air when the supply pressure to the valve is released.

This quick release valve is commonly used to receive supply pressure from the vehicle foot brake valve. The air from the foot brake valve passes through the quick release valve to the anti-lock modulators and then to the brake chambers. When the foot brake valve pressure is released, the supply air pressure to the quick release valve is decreased and the air from the brake chambers is exhausted at the quick release valve exhaust port. A “crack pressure” will increase the differential between supply air pressure and delivery pressure.



Service Procedures

Before servicing the Meritor WABCO quick release valve, 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 Quick Release Valve

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.

- Follow the vehicle manufacturer's recommendations for removing all electrical power from the vehicle.
- 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.
- Using a tubing removal tool or similar device, disconnect the push-to-connect air line tubing. Disconnect the remaining air line tubing and cover the ends of the tubing to protect them against contamination.
- Remove and save the mounting hardware that mounts the valve to the vehicle. Remove the valve assembly.
- Connect the air line tubing to the corresponding ports identified during removal.
- 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.

- Apply and hold 35 ±5 psi (2.41 ±0.34 bar) at the supply port. Apply a soap solution to the exhaust port. Leakage of a one-inch (25.4 mm) bubble in three seconds is permissible. Delivery pressure must be equal to the supply port pressure minus the nominal "crack pressure." Repeat the function and leakage test with 125 ±5 psi (8.62 ±0.34 bar) at the supply port. Delivery pressure must be 125 ±5 psi (8.62 ±0.34 bar) minus the "crack pressure."
- Quickly apply and release 125 ±5 psi (8.62 ±0.34 bar) at the supply port. The delivery pressure must rise and fall promptly.

Installing the Quick Release Valve

CAUTION

Be sure that the replacement valve has the same "crack pressure" as the valve being removed. The "crack pressure" is located on a tag or plate. A designation of QR030 designates a quick release valve with a nominal "crack pressure" of 3.0 psi. Using a different "crack pressure" valve may cause a change in braking characteristics. Typical "crack pressures" are 0.0, 1.0, 3.0 and 6.0 psi.

- Install the new quick release valve using the hardware removed in Step 7 of the removal procedure. Tighten the mounting bolts from 17 ft-lb (23 N•m) minimum to 19 ft-lb (26 N•m) maximum (5/16 SAE Grade 5 bolts). 

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, 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, resulting in loss of vehicle control. Serious personal injury can result.

Troubleshooting

Troubleshooting the Quick Release Valve

WARNING

The quick release 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.

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

MERITOR WABCO

Meritor WABCO Vehicle Control Systems
2135 West Maple Road
Troy, MI 48084-7121 USA
866-OnTrac1 (668-7221)
meritorwabco.com

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