MERITOR WABCO

Technical Bulletin

Service Procedures for Compact Relay Valve (RVC)

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 ArvinMeritor Customer Service Center at 866-OnTrac1 (668-7221) or visit our website, meritorwabco.com.

Description and Function

This Meritor WABCO compact relay valve is designed to speed up the application and release of delivery air pressure when the control pressure is applied and released. It is used in auxiliary air systems as well as in air brake systems. Figure 1.

This valve receives a control pressure signal which results in pressurized air being delivered from the supply reservoir to the delivery port. By controlling the air pressure to the relay valve control port, the delivery air pressure can be graduated. When the control air pressure is decreased, the air delivery is exhausted at the relay valve exhaust port. A “crack pressure” will increase the differential between control air pressure and delivery air pressure.

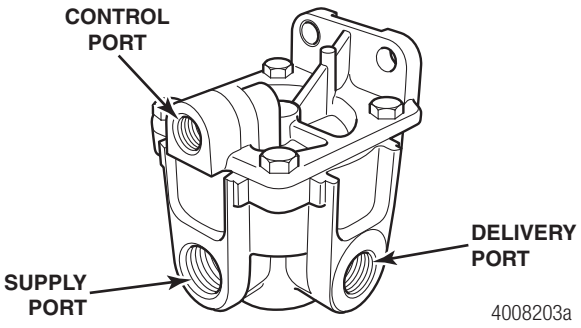

Figure 1

Service Procedures

Before servicing the Meritor WABCO compact relay valve, carefully read and follow all outlined procedures.

⚠ WARNING

To prevent serious eye injury, always wear safe 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 pressure from the air system before you disconnect any component. Pressurized air can cause serious personal injury.

Removing the Compact Relay Valve

1. Wear safe eye protection.
2. Block the wheels to prevent the vehicle from moving.
3. Drain the total 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 proper port on the replacement valve. Color-coded tubing is recommended for new installations.
6. Disconnect the air line tubing and cover all of the ends of the tubing to protect them against contamination.
7. Remove and save the mounting hardware that mounts the valve to the vehicle. Remove the valve assembly.

Installing the Compact Relay Valve

⚠ CAUTION

Only use the compact relay valve to replace another compact relay valve.

Be sure that the replacement compact valve has the same crack pressure as the valve being removed. The crack pressure is located on a tag or plate. A designation of RV050 designates a relay valve with a nominal crack pressure of 5.0 psi (0.34 bar). Using a different crack pressure valve may cause a change in operating characteristics. A typical crack pressure is 5.0 psi (0.34 bar).

1. Install the new compact relay valve using the hardware removed in Step 7 of the removal procedure.

⚠ WARNING

Do not kink the tubing. Kinked tubes can block the flow of air and cause a loss of braking resulting in loss of vehicle control.

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: Test gauges may need to be installed in some locations in order to check pressures.

1. With 15 ± 5 psi (1.034 ± 0.34 bar) in the valve's supply reservoir and no pressure at the control port, apply a soap solution to the exhaust port. Leakage of a one-inch bubble in three seconds is permissible. Repeat with 125 ± 5 psi (8.62 ± 0.34 bar) in the supply reservoir.
2. With 125 ± 5 psi (8.62 ± 0.34 bar) in the valve's supply reservoir, apply and hold 35 ± 5 psi (2.41 ± 0.34 bar) at the control port. Apply a soap solution to the exhaust port. Leakage of a one-inch bubble in three seconds is permissible. Delivery pressure must be equal to the control pressure minus one half of the nominal crack pressure. Repeat the above test except with 125 ± 5 psi (8.62 ± 0.34 bar) at the control port. Delivery pressure must be 125 ± 5 psi (8.62 ± 0.34 bar) and leakage of a one-inch bubble in three seconds is permissible.
3. With 125 ± 5 psi (8.62 ± 0.34 bar) in the valve's supply reservoir, quickly apply and release the control pressure. The pressure in the delivery must rise and fall promptly.

Troubleshooting

Troubleshooting the Compact Relay Valve

⚠ WARNING

The compact relay valve is an important part of the air system. Never ignore any symptom such as leakage or a change in operation. Loss of braking may occur resulting in loss of vehicle control.

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

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