

Technical Bulletin

Bulletin No: TCH-003-051

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Subject: **Bendix Dash Valve Trip Pressure / DOT Inspections**

Bendix Commercial Vehicle Systems LLC periodically receives inquiries regarding straight trucks, tractors, and buses being cited for dash control valves not automatically “tripping” to the exhaust position at a pre-determined system pressure. This resulted in the Commercial Vehicle Safety Alliance (CVSA) issuing Safety Bulletin 97-1 to its member jurisdictions to cease testing the vehicle air brake system for YELLOW parking brake control “trip” pressure.

Parking Brake Control Valve (YELLOW Button):

Bendix is not aware of any federal legislation that specifies the pressure at which the YELLOW parking brake control valve must automatically “trip” to apply the vehicle parking brakes. This includes the Federal Motor Carrier Safety Regulations (FMCSR) for in-use vehicles, the CVSA out-of-service criteria, and the Federal Motor Vehicle Safety Standards (FMVSS) for newly manufactured vehicles.

Although the “trip” pressure for the parking brake control valve is not stipulated for in-use or newly manufactured vehicles, a parking brake control valve “trip” pressure of 20-40 psi is currently specified as part of the Commercial Driver License in the CDL Manual. The CDL Manual is not consistent with the regulations cited above.

While there appears to be no federal requirement for the YELLOW parking brake control valve, the recommended procedure for an operational checking of the “trip” pressure is as follows:

Take all normal precautions when working on or around heavy vehicles, see Bendix Service Data Sheet SD-03-3619 (PP-DC® valve) and SD-03-3415 (MV-3® valve) for details.

- Install an accurate pressure test gauge in the secondary service reservoir.
- With the YELLOW button pressed IN, thus releasing the vehicle parking brake, charge the system to governor cut-out, and turn OFF the engine.
- Open the manual drain valve (petcock) on the primary service reservoir allowing the reservoir to completely drain.
- Open the secondary reservoir’s manual drain valve creating a bleed rate of approximately 20-50 psi per minute as observed on the gauge.
- Monitor the pressure gauge noting the pressure at which the YELLOW parking brake control valve automatically “trips”. **Note:** The PP-DC® and MV-3® parking brake control valves used by most vehicle manufacturers typically will automatically “trip” between 20-40 psi as measured using an accurate test gauge.

(Over)

Tractor Protection Control Valve (RED Button):

For towing vehicles Federal Motor Carrier Safety Regulations; Title 49; Section 393.43 (b) stipulates that the red button shall “trip” at a system pressure between 20-45 psi with a loss of source. This section is intended to address activation of the tractor protection feature with a loss of the charging source (compressor), supply reservoir, or service reservoirs. It is not intended to include downstream failures such as a failed trailer supply coupling (breakaway).

Despite the wording in this section, the “breakaway” of the supply coupling is the most common means used to test the tractor protection feature. With a “breakaway” the RED button may “trip” at the specified pressure interval or more often may “trip” instantaneously at 100-130 psi to protect the tractor service braking system.

Bendix recommends the following test for verifying the operation of the RED tractor protection control valve:

Take all normal precautions when working on or around heavy vehicles, see Bendix Service Data Sheet SD-03-3415 (MV-3® valve) for details.

- Install an accurate pressure test gauge in the primary and secondary service reservoirs.
- With both the RED and YELLOW buttons pressed IN, charge the system to governor cut-out, and turn OFF the engine.
- Disconnect the SERVICE or CONTROL (Blue) line to the trailer leaving the SUPPLY or EMERGENCY (Red) line coupled to a trailer or suitable sealed (dummy) coupling.
- Take care to restrain the service coupling and direct the flow safely away while making and holding a full service brake application via the foot valve.
- As the service application is vented through the open gladhand, the service system pressure drops until the tractor protection control (RED) valve “trips” shutting off the leak through the open control coupling.
- Record the pressure in the service reservoirs at this point and disconnect the trailer supply coupling to verify that the SUPPLY or EMERGENCY (Red) coupling has been vented to atmosphere thereby activating the trailer emergency feature.

Bendix works continuously with industry working groups, legislative bodies, original equipment manufacturers, and fleets to develop best industry practices for the testing and maintenance of air brake vehicles. Note that the procedures currently used in practice by federal, state, or provincial inspection agencies may be different from the proposed procedures in this bulletin.

