Brake valves

suitable for: DAF, Iveco, MAN, Mercedes-Benz, Renault, Scania, Volvo etc.

Maximum braking force thanks to pneumatic systems

There can be no compromises when it comes to the braking system of a commercial vehicle. Brake valves are central elements of the pneumatic braking system and perform as an essential control function for safe and precise braking.

In the new PS Tips video, Parts Specialist Niklas explains the most important brake valves in the pneumatic brake system. More than 200 brake valves are available via the Diesel Technic Partner Portal – suitable for brands such as DAF, Iveco, MAN, Mercedes-Benz, Renault, Scania and Volvo. The range includes handbrake valves, trailer control valves, foot brake valves as complete sets with pedals and pneumatic extensions, and repair kits. "If you want to be on the safe side when it comes to brakes, you'll find the right solution here," summarises Niklas.

Pneumatic braking systems are standard in commercial vehicles because they offer significant advantages over hydraulic systems. An integrated compressor continuously supplies compressed air, which is stored in pressure vessels and functions as an energy reserve. This provides a high actuating force during braking. The foot pedal is used to apply the entire amount of stored pressure to the brakes. "Small leaks in the system are automatically compensated for, leaks are less harmful to the environment than with hydraulic brakes, and there is no need for a deflation process when connecting a trailer," explains the Parts Specialist.

The foot brake valve plays a central role in the pneumatic brake system. It has several connections for pressure inputs and outputs, which are used to precisely control the braking force. "One important function is the preliminary braking function, which ensures that the trailer is pre-braked slightly to guarantee stable general braking," explains Niklas. In addition to its pneumatic tasks, the valve also fulfils electrical functions. An oscilloscope can be used to read the pedal travel, while a multimeter displays the output voltage corresponding to the pedal position. In addition, the system deactivates the speed control system when braking and activates the brake light circuit.

The handbrake valve is checked out in the test lab. At an input pressure of 10 bar, it's initially in the drive position, with the spring accumulators released. "When the handbrake is applied and set to the parking position, the pressure drops to zero and the spring accumulators slow down the vehicle," Niklas shows in the PS Tip. An additional test position allows the trailer to be unlocked (trailer brake is released) in order to check the holding force of the towing vehicle. The parking brake of the towing vehicle must be able to secure the entire trailer.

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