



ZF Damper Systems Preserve Vehicles and Freight Plus go Easy on the Budget

- **Variable damper systems in commercial vehicles lead to increased safety and preservation of freight.**
- **Contribution to risk management, leading to reduced costs in the transport business.**

Trucks booming on Germany's highways: Currently, three quarters of all freight is transported on the road. Not only motorists have started to notice this but also forwarders, logistics suppliers, and truckers. ZF products help handle this situation. For example in commercial vehicles, when the variable damper systems CDC and PDC by ZF Sachs are also on board. They make truckers' daily work easier - and above all safer. Moreover, they minimize the risks for the fleet operators.

The variable dampers CDC (Continuous Damping Control) and PDC (Pneumatic Damping Control) significantly reduce body movements and rolling motion of the prime mover and trailer, which can be considerable when the center of gravity is high; thus, they increase stability and safety. This is appreciated by the forwarders in particular. "CDC and PDC help prevent situations which bear risks", explains Wolfgang Thoma, CEO of the Ansoerge GmbH & Co. KG logistics & forwarding company. After all: In trucks equipped with ZF-Sachs systems, rolling and snaking movements are reduced, even in the case of fast braking maneuvers or when changing lanes. "This is something that goes down well with our drivers. It makes their workplace safer, more comfortable and more attractive", Mr. Thoma continues. The difference in vehicle handling with and without CDC and PDC is tremendous and – even looked at from the outside – obvious.

The technology

From a technical point of view, this is possible because CDC and PDC precisely adjust the dampers to the respective vehicle weight (PDC and CDC system) and driving situation within milliseconds

(CDC system). In the case of the CDC, sensors on the entire vehicle provide information on vehicle motion, road conditions as well as acceleration and deceleration data via the CAN bus. An electronic control unit uses these data to calculate, virtually with no time delay, the ideal damping of each axle, which is set just as quickly at the CDC dampers. In the dampers, a proportional valve controlled by the electronic unit continuously controls the oil flow in the damper and adjusts the damping hardness.

The PDC follows a technically slightly modified approach. With this system, the proportional valve control is performed in a load-dependent manner on the damper by means of pneumatic pressure in the air spring bellows; this means that the system does without sensors and electronic control unit. For this reason, the PDC is particularly suitable for trailers and semitrailers.

The advantages

In the meantime, also manufacturers, insurers, and leasing companies have become aware of these advantages: “When doing the risk analysis of their customers, many insurance companies are already taking into account whether the vehicles are equipped with CDC or PDC”, explains Thomas Diwersi, Managing Director of Consale Consulting GmbH, a company which consults forwarders on risk management. “However, the significance of modern safety technologies for long-term business success is still underestimated by many forwarders”, Diwersi continues. Therefore, the additional expenses for the damper systems CDC and PDC can pay off quickly.

“What is more important for us, however, is that we can better fulfill our duty of care as employers”, Mr. Thoma explains: “In our company, the damper systems are part of an entire safety package which significantly improves safety in the commercial vehicle as a workplace as well as road safety.”



Captions:

- 1.) Test drive to compare trucks with and without CDC at a ZF-Sachs driving demonstration: The different behavior of tractor unit and trailer with CDC (upper picture) and without CDC (below) becomes obvious just by looking at the pictures; in real life, the difference is even more impressive.
- 2.) An electronic control unit calculates, virtually with no time delay, the ideal damping of each axle, which is set just as quickly at the CDC dampers.
- 3.) Electronically controlled CDC dampers in the tractor vehicle are best supplemented by load-dependent PDC dampers in the trailer unit.
- 4.) Recommended range of application for CDC and PDC.

Photos: ZF

Press contact:

Thomas Wenzel, Manager Technical Press,
Phone: +49 7541 77-2543, Fax: +49 7541 77-90 2543 ;
E-Mail: thomas.wenzel@zf.com

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