

**Press Release**

Munich, November 15, 2011

**Knorr-Bremse makes agricultural trailers safer**

**Powerful tractors today pull increasingly heavy trailers at relatively high speeds. As a result, the requirements that agricultural trailers have to meet are becoming more and more similar to those of truck trailers, making it more important than ever for agricultural vehicles to be fitted with the latest safety-critical components. In response, Knorr-Bremse has engineered an innovative system for the agricultural sector – a new field of activity for the company – based on its proven electronic braking system for commercial vehicle trailers.**

At the core of the new electronic braking system (EBS) for agricultural trailers of 3.5 tonnes and over is Knorr-Bremse's EBS for trailers: TEBS G2.1. Optimized for easy installation and maintenance, the module comprises the electronic control unit, the sensor system and pneumatic braking system components.

Among the features of TEBS G2.1 is the ABS anti-lock braking system. This makes braking safer by ensuring that the wheels cannot lock-up under braking when the driver brakes too hard or the road surface is slippery, preventing the vehicle from skidding. Also, to counteract the risk of the vehicle rolling over when the driver turns the steering wheel sharply or has to take evasive action – a real danger when the center of gravity of the trailer is high – the RSP roll stability program has also been integrated. RSP can identify critical situations, brakes individual wheels automatically and thereby reduces both the speed of the vehicle and its lateral acceleration, making for greater stability.

The braking functions, the anti-lock braking system, the load recognition feature and the stability program are electronically controlled as integrated functionalities of TEBS G2.1. Compared to conventional braking systems this enables more precise and even regulation of the brake pressure. The trailer EBS system can be operated on 8 to 32 volts, which means it can be used worldwide.

The new TEBS G2.1 system also features an Operational Data Recorder (ODR) to record and evaluate vehicle data and brake operation. As an option, TEBS G2.1 can also be supplied with one pneumatic and three electrical outputs and up to seven electrical inputs. Other options include steering axle lock, tipping angle lock, lift axle control and an integrated speed switch and/or speed pulse generation.

TEBS G2.1 also permits automatic actuation of the spring brake if the trailer becomes detached from the tractor. The spring brake can also be operated by hand when the vehicle is parked. As an option, the TEBS G2.1 module can be used together with the Trailer Information Module TIM G2, providing read-outs without having to connect up a PC.

Trailers fitted with TEBS G2.1 can be pulled by tractors with ABS, EBS or conventional braking systems, on condition that the power supply to the trailer is provided via an ISO 7638 ABS socket. If the power supply fails completely, the trailer can also be braked entirely pneumatically, although without the benefit of ABS and ALB (automatic load-dependent braking).

The prototype of the new TEBS G2.1 electronic braking system has been fitted to a high-performance JUMBO series silage trailer built by Austrian agricultural machinery manufacturer Pöttinger. The trailer with TEBS G2.1 is scheduled to debut at the 2011 Agritechnica fair in Hanover from November 15 to 19.

The **Knorr-Bremse Group** is the world's leading manufacturer of braking systems for rail and commercial vehicles. For more than 100 years now the company has pioneered the development, production, marketing and servicing of state-of-the-art braking systems. In the rail vehicle systems sector, the product portfolio also includes intelligent door systems, control components, air conditioning systems and windscreen wiper systems, as well as platform screen doors. Knorr-Bremse also offers driving simulators and e-learning systems for optimum train crew training. In the commercial vehicle systems sector, the product range includes complete braking systems with driver assistance systems, as well as torsional vibration dampers, powertrain-related solutions and transmission control systems for enhanced energy efficiency and fuel economy.

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