Press release

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Knorr-Bremse at InnoTrans 2008: Responding to megatrends: urbanization, environment, safety and globalization

Knorr-Bremse Rail Vehicle Systems will be attending InnoTrans 2008, the world’s biggest international trade fair for rail vehicle technology, which takes place from September 23-26, 2008 in Berlin (Hall 1.2, Stand 202). The company will be presenting an extensive portfolio of innovative solutions from the Knorr-Bremse Rail Vehicle Systems division represented by the Westinghouse Platform Screen Doors, Merak, IFE, Microeletrica and Zelisko brands.

The various global megatrends affecting business in the rail vehicle sector over the next few years represent a major challenge. At InnoTrans 2008, Knorr-Bremse will be demonstrating its response to some of these – in particular urbanization, environment, safety and globalization – with solutions tailored to the demands and requirements of customers in the city transport, multiple unit, locomotive, car and service segments. In doing so, the company has drawn on the experience and expertise in systems, technologies, global markets and platforms that it has acquired over the past hundred years. A feature of Knorr-Bremse systems are a high degree of standardization combined with flexibility and low operating costs.

In addition to braking systems, Knorr-Bremse also offers a wide range of rail vehicle on-board systems, including doors for urban and mainline trains from IFE Automatic Door Systems, air conditioning systems from Merak and power supply systems from Microeletrica. In the field of rail infrastructure, Knorr-Bremse is represented by platform screen door systems from Westinghouse Platform Screen Doors and safety systems from Zelisko.

City Transport

Global growth in economic centers is causing traffic volumes to increase, and there is a growing need for transport infrastructure – especially mass transit systems – to be expanded as well. Knorr-Bremse’s response to the challenges of urbanization has been to develop highly reliable, state-of-the-art braking and on-board systems.

These include the EP2002 brake control system for metros, which combines mechatronic and electronic elements into a single, extremely compact unit that enables decentralized control via a bogie-mounted module. One new development that will also be presented at InnoTrans is the EP Compact Lite system, a brake control unit for metros with central cylinder pressure generation.
There are a number of further developments that will benefit local transport systems: the compact, lightweight SLK6 screw compressor, with its flat design and low noise and vibration levels, is well suited to metros and street cars. And the new HC1P45 Plus spring applied brake caliper with lever type design is a hydraulic spring caliper that generates strong braking force despite its small installation space.

In metro stations all over the world, platform door systems from Westinghouse Platform Screen Doors are becoming increasingly popular. These reduce energy requirements on air-conditioned platforms and enhance the comfort and safety of waiting passengers. The new platform screen doors on display at InnoTrans also offer the option of high-definition screens for advertising or passenger information.

**Multiple units**

The spread of densely populated urban areas increases the need for high-speed travel between industrial centers. Many countries are currently constructing rail links for high-speed trains travelling at 300 km/h or more. The challenges involved in such systems call for top-performance, perfectly balanced braking and on-board systems offering optimum functionality, high availability and maximum safety.

The modular, flexibly configurable EP Compact brake control system is suitable for a wide range of vehicle types and offers a choice of central (car) or decentralized (bogie) brake control.

In the field of chassis diagnostics Knorr-Bremse will be presenting a bogie diagnostics system at InnoTrans that it has developed in cooperation with SKF. Amongst other things this offers in-service remote monitoring and data storage for each individual chassis or bogie, enabling the locomotive engineer or train operator to identify faults at an early stage and avoid or reduce the problems resulting from component malfunction. The new system enables operators to carry out maintenance work when and as required, effectively reducing life-cycle costs.

Knorr-Bremse is currently developing innovative technologies that reduce the environmental impact of its products. It was the first company in the rail vehicle sector to develop a compressor that operates without any need for oil lubrication. In terms of economy, efficiency and environmental friendliness, the oil-free compressor is far superior to conventional ones. The use of specially coated pistons, cylinders and Teflon piston rings removes any need for oil lubrication – which means there are no costs related to oil and oil filters, their replacement and disposal.

A further contribution to reducing the environmental impact of rail vehicles is made by modern sanding systems with lower fine dust emissions.

Globalization has brought new markets to the fore, above all in China and Russia. In these countries heavy demands are made on systems design because of the extreme climatic conditions involved. Components and systems for the Russian rail market, for example, have to function reliably at winter temperatures down to -55°C and summer temperatures up to +40°C. Knorr-Bremse is supplying complete braking systems, door systems, air-conditioning equipment and power supply components for two high-speed projects for Russia.
Locomotives and cars

Globalization means that economies are converging the world over, and global trade volumes are set to grow yet further. The resulting rise in demand for goods transportation represents a challenge for the freight industry. Low maintenance, safety critical systems with optimized life-cycle costs are becoming increasingly important. In this context Knorr-Bremse is developing innovative technical solutions to enhance the efficiency and capacity of rail freight. Modern technologies are also contributing towards reducing energy consumption.

The MBS modular brake control system enables operators to reduce maintenance downtimes and life-cycle costs. The modular, flexible design of MBS makes it adaptable to a wide range of different requirements for cross-border transportation throughout Europe.

The CFCB compact freight car brake represents a significant improvement for vehicle builders and operators: It is more effective, considerably quieter and requires less maintenance than conventional freight car brakes – and the lightweight design enables the weight of individual cars to be reduced by more than 1,000 kg. Customers benefit from reduced installation costs, and the operating costs are also low, thanks to maintenance-free operation for many years.

Specially designed for extremely long and heavy freight trains, the EP-60 electro-pneumatic freight car brake is increasingly popular, especially in North America and South Africa, where it makes graduated braking possible, enhances safety and increases load-carrying capacity.

Another system contributing towards greater safety for rail freight is the EDT101 derailment detector, which significantly reduces the damage caused by derailment and improves the safety of rail freight transportation. On November 21, 2007 a decision was made by the RID Committee of Experts for the Transport of Dangerous Goods at a meeting in Zagreb to require all trains transporting certain classes of dangerous goods in Europe to be fitted with derailment detectors from 2011.

A further innovation for freight trains is the EP1001 wheel flat protection for freight cars. This stand-alone system prevents the development of wheel flats and reduces damage to track and wheels. Freight companies using EP1001 can reduce the amount of maintenance required by their rolling stock, thus cutting costs. The system can also help reduce the fees payable in certain countries such as the UK for wear and tear of the rail infrastructure. Noise caused by wheel flats can also be avoided.

Service

In the service and aftermarket segment, Knorr-Bremse “rail services” offers a wide range of services ranging from OEM spare parts to maintenance contracts and assumption of complete responsibility for the life-cycle costs of entire systems. Customers benefit from a comprehensive high-quality network of service centers. Two new services will also be shown at InnoTrans: Original spare parts kits offer a standardized package of spare parts for maintenance work that includes all A, B and C parts likely to require replacement according to the Knorr-Bremse maintenance guidelines. And the so-called crate concept is a new logistics service aimed at speeding up overhaul of KE distributor valves.
Knorr-Bremse Group
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 and marketing of state-of-the-art braking systems. Other lines of business include automatic door systems, rail vehicle air conditioning systems and torsional vibration dampers for internal combustion engines. In 2007 the Group posted sales of EUR 3.25 billion and employed a workforce of 14,000.

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