

Press Release

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Knorr-Bremse at InnoTrans 2014: future-proof system solutions for the world's rail transportation markets

- **Products to improve safety, economy and reliability**
- **Portfolio expanded to include auxiliary power supply systems**
- **Customized service packages from RailServices**

Knorr-Bremse – Creative Systems – Globally: This is the motto under which Knorr-Bremse is showcasing a portfolio of pioneering products at this year's InnoTrans fair – on booth 104 in Hall 1.2. The focus is on solutions offering a high level of safety and low lifecycle costs.

Knorr-Bremse develops and manufactures braking, entrance, HVAC and auxiliary power supply systems in response to present and future market requirements. Combined with the aftermarket care provided by Knorr-Bremse RailServices, these products demonstrate the company's innovation leadership. It makes its worldwide expertise available to vehicle manufacturers and operators alike and customizes its products to meet the needs of local markets.

Braking systems

With more than **100 years of experience and expertise** in rail vehicle braking systems, Knorr-Bremse has positioned itself as a first mover in braking technology. As global market leader, the company offers highly integrated, intelligent systems based on proven solutions for the complete control and regulation of dynamic braking forces in rail vehicles. As the company's **expertise** ranges from **complete systems right down to individual components**, Knorr-Bremse is able to combine its products to form efficient overall solutions.

An example of this is the **brake control module with low-temperature capability** developed for the ambitious Chinese CRH380B high-speed train project. The brake module's ability to function at temperatures as low as minus 40°C has greatly expanded the range of geographical terrains in which it can be used. To date several thousand units of the basic versions of this brake module have already been supplied by Knorr-Bremse or are on the order books. That is what is understood by "proven technology". For the first time, Knorr-Bremse is also offering an air supply system, complete with compressor and air dryer, for the North American freight market (AAR). Both products have been developed and matched to maximize reliability and sustainability and extend maintenance cycles.

The **VV1000-T oil-free compressor** is a further development of the highly successful VV-T compressor series, of which more than 13,000 have already been sold. This is the first high-performance compressor for heavy-duty freight trains that functions entirely without oil and was specially developed for the requirements of the American market. With no oil contamination, the downstream braking system components enjoy a longer service life.

The **LD-1000 air dryer** continues to be equipped with an efficient pre-filtering system and also has an innovative control system that optimizes regenerated air requirements. In the case of both units, maintenance intervals have been significantly extended compared with traditional products.

At the trade fair the company is also showcasing new, leading-edge products that will soon be making their market debuts. These are geared to customer needs and market trends and focus on optimizing the safety, economic efficiency, and reliability of rail vehicles.

The new **MGS3 wheel slide protection system**, for example, ensures short braking distances even where adhesion is very low and the rails are slippery. The new **sanding system** features speed-dependent dosing, so that the sand is delivered far more efficiently between wheel and rail.

ESRA Evolution builds on the proven ESRA electronic brake control system and offers maximum interface integration. Access for maintenance and servicing is improved and updating of the software is easier and faster for users.

Door systems

The new **Generation 4 entrance system** from Knorr-Bremse subsidiary IFE delivers lower installation costs for vehicle builders, high reliability combined with reduced lifecycle costs for operators and top levels of comfort for passengers, thanks to its superior noise and heat insulation. Compared to its predecessor, the new system features a reduced installation height, while the number of components and the total weight has been almost halved. The system now also features impressive dirt- and dust-resistant linear guiding.

A complete E4 entrance system for regional and urban trains with door leaf, drive, and sliding step is on show at InnoTrans. The patented guide system for the sliding step eliminates sluggish movement and jamming and enables reliable weight detection to take place.

HVAC systems

Knorr-Bremse subsidiary Merak demonstrates its HVAC expertise with a special **self-cleaning sand filter system** which uses pulses of compressed air to clean the filters. The system, which was specially designed for extreme desert conditions, now helps to achieve HVAC system maintenance intervals that match the general vehicle maintenance cycles even in desert regions. The system will first see service in the Haramain High Speed Railway project in Saudi Arabia, for which Knorr-Bremse is also supplying the braking and entrance systems.

Power supply

Knorr-Bremse subsidiary Microelettrica Scientifica, a leading supplier of electronic and electromechanical control components for rail vehicle applications, is representing the **Control Components** segment at InnoTrans and presenting its maintenance-free energy-saving **ECOSystem**, which measures energy use and delivers the information to the train management system. With the acquisition of PCS Power Converter Solutions and Transtechnik GmbH & Co. KG early this year, Knorr-Bremse extended its portfolio to include electrical

systems that play a key role in **on-board power supplies** in modern rail vehicles. Knorr-Bremse will also be presenting new concepts in this segment at InnoTrans.

Auxiliary power supply products are on show at the Knorr-Bremse **booth No.104** in **Hall 1.2**. Microelettrica Scientifica is also showcasing other products on **booth 228** in **Hall 17**, while the two new subsidiaries in the field of high-performance on-board power supply systems are displaying their portfolios at **booths 212** and **214**, also in **Hall 17**.

Customized service packages from RailServices

Knorr-Bremse **RailServices** offers innovative and competitive solutions for the product and vehicle lifecycle worldwide. These include customized service packages for the maintenance, overhaul, and refurbishment of braking and on-board systems in all kinds of rail vehicles. At InnoTrans, RailServices is presenting an extended product portfolio as well as its latest solutions designed to generate a sustainable reduction in rail vehicle operating and lifecycle costs.

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 entrance systems, HVAC systems, auxiliary power supply systems, control components, and windscreen wiper systems, as well as platform screen doors, friction material, and driver advisory systems. 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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