

Press Release

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Focus on propulsion: powertrain technologies from Knorr-Bremse

Knorr-Bremse is the go-to supplier for commercial vehicle manufacturers who are keen to cut emissions and make their powertrain systems more reliable and efficient or in other words fit for the future: Knorr-Bremse is systematically expanding its portfolio of transmission control systems and engine air management valves.

In 2015, one of the company's mechatronic transmission management systems went into volume production for a leading automotive supplier's automated gear box. Among other advantages, the modular system – comprising an electronic control module combined with a pneumatic and a sensor module integrated into one unit – helps reduce servicing costs. The gear shift module for the world's first dual clutch transmission for heavy-duty trucks has been in volume production since 2014. Fully automatic gear shifting is easier and faster and thus avoids any interruption in tractive power, enabling higher average speeds to be maintained.

At the 2016 IAA, for the first time Knorr-Bremse is presenting a retrofittable, integrated AMT control module for manual gear boxes that has been specially developed for the needs of emerging markets such as China. Observers of these markets, where manual gear shift units are still the norm, are expecting a significant increase in demand for automated manual transmissions in the future because of the advantages these offer in terms of fuel consumption, component wear and driving safety.

Service life 100 percent longer

The primary focus in Knorr-Bremse's new Clutch Servo Longlife unit is on a massive increase in the service life of the product. This new servo unit is capable of four million actuation cycles – twice as many as comparable products in the market. This 100 percent increase in service life is achieved mainly through a new sealing concept that achieves better separation of the two transmission media, compressed air and hydraulic fluid. This prevents the media carry-over that leads to the internal contamination, which in turn is a prime cause of wear in moving parts. Thanks to a range of adapter options, this product, which has been specially designed for the aftermarket, can be installed in any make of vehicle.

Expanding the portfolio

Knorr-Bremse has recently been adding to its existing powertrain portfolio. Part of this expansion concerns the integration of the products to be acquired through the planned takeover of Bosch Japan's transmission component business for on-highway trucks (the acquisition is still subject to approval by the antitrust authorities) and through the takeover of the UK-based GT Group, an acknowledged specialist in exhaust gas recirculation valves and exhaust brakes, which will also be joining the Knorr-Bremse range. At the IAA, components from both companies are set to make their first appearance at the Knorr-Bremse booth.

The planned acquisition of Bosch Japan's transmission component business for on-highway trucks will enable Knorr-Bremse to develop and manufacture gear shift units, clutch actuators, and transmission control units for trucks and buses locally for the Asian market. That is not all, because against the backdrop of specific regional market requirements, the planned acquisition also brings the company in-depth expertise, primarily in the fields of light and medium-heavy truck transmissions.

Given Knorr-Bremse's past focus on heavy-duty commercial vehicles, this neatly rounds out the company's know-how at the lower end of the (weight) scale, while the electric and hydraulic actuators make up the ideal complement for the existing Knorr-Bremse portfolio.

In the field of engine air management, too, Knorr-Bremse is supporting its customers' efforts to cut/lowe the emissions and fuel consumption of their diesel engines. This is made possible by the use of the very latest actuator technologies which enable rapid and precise control of the air mass flow in the engine air path. With the acquisition of the UK-based GT Group, Knorr-Bremse is further expanding its product range in this area and transitioning from a manufacturer of exhaust brake valves to a full-line supplier of engine air management valves, offering EGR valves, exhaust brake valves and air intake valves from a single source. In terms of actuation options, Knorr-Bremse can draw on extensive experience in series application of pneumatic, hydraulic and electric actuators.

Electric valve actuation in particular offers infrastructural advantages because CAN bus connections and power supply replace the piping required for the compressed air or hydraulics and the control valve. Electric actuation also makes it relatively easy (simple) to provide the engine control unit with information about the current throttle position.

Caption: The new Clutch Servo Longlife unit from Knorr-Bremse brings about a direct increase in efficiency by doubling the service life of the product. | © Knorr-Bremse

Knorr-Bremse is the world's leading manufacturer of braking systems for rail and commercial vehicles, with sales totaling almost €6 billion in 2015. In over 30 countries, some 25,000 employees develop, manufacture, and service braking, entrance, control, and energy supply systems, HVAC and driver assistance systems, as well as powertrain and transmission control solutions. As a technology leader, for more than 110 years now, through its products the company has been making a decisive contribution to greater safety by road and rail. Every day, more than one billion people around the world put their trust in systems made by Knorr-Bremse.

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