

Press Release

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Knorr-Bremse and Dongfeng join forces to develop automated manual transmissions for trucks in China

Dongfeng Motor Group Corporation Ltd., one of the world's biggest truck manufacturers, is partnering with Knorr-Bremse to develop the automated manual transmission for its new generation of heavy-duty trucks.

This decision will see the two companies prepare the way for automated manual transmissions to continue their triumphant advance in China, the world's biggest commercial vehicle market. "In Europe, automated manual transmissions have become widely established. They boost active safety by easing the load on the driver, cut fuel consumption by applying an optimized gear shift strategy and reduce clutch wear," says Dr. Peter Laier, Member of the Executive Board of Knorr-Bremse responsible for the Commercial Vehicle Systems division. "In our joint venture with Dongfeng Motor Group we are optimizing our transmission management system to meet the specific requirements of the Chinese market. This puts us in an excellent position to help automated manual transmissions finally achieve a breakthrough in China."

The transmission management system developed by Knorr-Bremse consists of an electro-pneumatic gear control unit and clutch actuator, a wide variety of sensors that gather the necessary status data, and an electronic control unit that contributes the gear shift strategy. The complete system is to be produced at the joint venture's own facility in Shiyang, China. "A vast amount of know-how and expertise goes into developing the transmission management system for a certain type of vehicle," explains Thorsten Seebars, Member of the Management Board of Knorr-Bremse Commercial Vehicle Systems responsible for the Powertrain unit.

Bao Ping Xu, Managing Director of Knorr-Bremse Commercial Vehicles Systems Shanghai and Member of the Board of Directors of Knorr-Bremse Asia-Pacific Holding, adds: "Integrating the system into the vehicle-specific environment and adapting it to the respective transmission requires a high degree of coordination within the international development team." Along with developing the individual mechatronic modules, another key part of the project is creating the software. The aim here is to always use the ideal gear to keep the engine running in its most efficient operating range for as long as possible and to shift between gears as fast as possible. The shorter the gear shift time, the shorter the interruption of the tractive force and the resulting loss of momentum. Taken together, these two factors make for extremely economical vehicle operation.

Knorr-Bremse DETC Commercial Vehicle Braking Technology, the joint venture between Knorr-Bremse and Dongfeng Motor Group, was founded in 2015. Initially it focused on manufacturing mechanical components such as brake valves and ABS systems, but the range of products it manufactures in China is steadily being expanded to include components for air management and brake control, as well as transmission systems.

At the end of fiscal 2016, the Dongfeng Group had 149,092 employees. In the same year it produced more than three million vehicles, including 369,100 commercial vehicles.

Dongfeng Electronic & Technology Co., Ltd. (DETC) is a subsidiary of Dongfeng Motor Group Co., Ltd. (DFG) and is listed on the Shanghai Stock Exchange. DETC owns subsidiaries with sites in Shanghai, Hubei and Guangdong. DFG holds 55 percent of the shares in Dongfeng Commercial Vehicle (DFCV), a joint venture with Volvo that is one of China's leading manufacturers of medium and heavy-duty commercial vehicles.

Caption: The object of the cooperation announced between Dongfeng and Knorr-Bremse is a module with which a manual transmission can be automated. It makes driving safer and more efficient thanks to an optimized gear shift strategy and extremely rapid shifting. | © Knorr-Bremse

Knorr-Bremse is the leading manufacturer of braking systems and supplier of additional sub-systems for rail and commercial vehicles, with sales totaling approximately EUR 5.5 billion in 2016. In 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 steering systems, and powertrain and transmission control solutions. As a technology leader, through its products the company has been making a decisive contribution to greater safety by road and rail since 1905. Every day, more than one billion people around the world put their trust in systems made by Knorr-Bremse.

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