



UNIVERSITÄT  
BAYREUTH



## Case Study:

# Knorr-Bremse Commercial Vehicle Systems

Within a remanufacturing facility in Liberec (Czech Republic), the company remanufactures various products for commercial vehicles

## Company and Business Model

The company with the headquarter in Munich (Germany) has more than 110 years experience in the development, production, distribution and service of modern brake systems. In 2014, Knorr-Bremse Commercial Vehicle Systems had a turnover of approximately 5.2 billion Euros and more than 23,000 employees. The original equipment manufacturer remanufactures a wide range of different products in the company's plant in Liberec (Czech Republic). The remanufacturing activities take place in a remanufacturing facility with 9,000 square meters.

## Products

The range of remanufactured products includes spring brakes, one-cylinder as well as two-cylinder compressors, electronic clutch actuator, electronic air control and modules of the electronic braking systems. These products are for commercial vehicles like trucks and trailers.



## Remanufacturing Process

The remanufacturing process starts with a comprehensive sorting of the incoming cores. Within the sorting, the cores are graded according to different criteria (e.g. core class, quality). In the next step, the cores are disassembled into their single parts. After the disassembly, the single parts are cleaned and reconditioned. Within the reconditioning, comprehensive quality checks of the single parts take place. In the last step, the products are reassembled based on criteria which are applied to the production of new products. Moreover, some of the products are reassembled on the assembly line of the new products. This takes place in production plants that are also part of the Knorr-Bremse CVS Remanufacturing Production Network. This ensures a high quality of the remanufactured products.



Besides the comprehensive quality check of the incoming cores as well as of the single parts within the reconditioning, a visual quality check is performed by the workers within each remanufacturing process step.



## Unique Characteristic

Within the remanufacturing, know how as well as data and information regarding the technical and qualitative specifications based on the manufacturing of new products are accessible and rigorous applied.

Last but not least, to ensure a high efficient remanufacturing, Knorr-Bremse Commercial Vehicle Systems implemented strictly the company's own production system.

### Contact

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## Mobilität sicher zu machen – das ist der tägliche Auftrag von Knorr-Bremse.

Der Knorr-Bremse Konzern mit Firmensitz in München ist der weltweit führende Hersteller von Bremssystemen für Schienen- und Nutzfahrzeuge. Als technologischer Schrittmacher treibt Knorr-Bremse seit 110 Jahren maßgeblich Entwicklung, Produktion, Vertrieb und Service moderner Bremssysteme voran. 2014 erwirtschaftete der Konzern einen Umsatz von 5,2 Mrd. Euro und beschäftigte weltweit über 23.000 Mitarbeiter.

Die Kompetenzen werden in Liberec in der Tschechischen Republik zusammengeführt. Ein 9.000 Quadratmeter großes Fertigungsgebäude steht ausschließlich für die Wiederaufarbeitung zur Verfügung. Ein Großteil der Investition steckt in der aufwändigen Reinigungstechnik. Dazu zählen Brennöfen, mit denen sich Lackschichten herunterbrennen lassen.