Locomotives

Answers for a World of Mobility

www.knorr-bremse.com
Why are more and more locomotive manufacturers and operators putting their faith in Knorr-Bremse systems?

Because we simply find the right answers to complex challenges.

Locomotives have a key role to play in coping with increased demand for rail transportation worldwide. For high-speed passenger trains and heavy freight transportation, operators need economical vehicles that have been customized to their specific needs. Manufacturers therefore produce modular vehicle platforms that can be easily adapted to regional conditions but at the same time are suitable for cross-border operation. This is where Knorr-Bremse braking systems come in. On a basis of tried and tested technologies we develop innovative solutions offering top levels of safety, reliability and economy. The systems we have developed are so efficient they also score top marks for environment-friendliness. Customers enjoy full support from a single source – from the initial planning stage via commissioning right down to aftermarket services. Operator and customer audits world-wide regularly single out the consist quality of our products and services for praise – and this is confirmed by our EN 50126 (RAMS & LCC) certification.
What is Knorr-Bremse’s complete “one-stop solution” for locomotives?

A perfect balance of high-quality systems and services.

Knorr-Bremse’s expertise in the field has gone into every single component and system. Top-quality components operate smoothly together to guarantee optimum functionality, high reliability and maximum safety. Complex electronic control systems such as blending and brake management reduce wear to a minimum by ensuring balanced operation of all systems. The system can be configured either to use the vehicle bus system or a separate bus exclusive to the braking system. For each project, customers are closely consulted at the design stage. And it goes without saying that Knorr-Bremse offers support during the homologation process as well as all the necessary on-site services across the entire product lifecycle.
Brake Control

CCB II for America

CCB II is New York Air Brake’s electro-
nic control system for the AAR market.
As with MBS, its European equivalent,
each of the LRU modules is capable of
diagnosis. Faults can be quickly
identified and defective modules
rapidly replaced. Software paramete-
ration enables the best-selling brake
control system in the USA to be easily
adapted to a variety of operating
conditions.

MBS for Europe

The modular design of the European
equivalent to CCB II in America – MBS
– reduces the number of components
required. This also simplifies the
brake panel layout and considerably
reduces the cost of installation, com-
misioning, maintenance and repair,
while at the same improving vehicle
availability. Emergency brake control
remains completely functional even in
the case of failure.

Compressors

The first oil-free Compressor

Knorr-Bremse was the first company
in the rail vehicle industry to develop
a compressor that operates without
any oil. Lubrication is replaced by a
special coating, and the unit is cooled
by air taken in via the crankcase.
This innovative product is a winner
in both environmental and economic
terms. The expense of oil changes, oil
separation and condensate disposal
is avoided, and energy consumption,
weight and installation space are
significantly reduced.

Driver-Assist Systems

Savings with LEADER

LEADER makes an important contri-
bution towards reducing costs in the
heavy freight segment. It supplies the
driver with real-time data on in-train
forces, acceleration rates, brake
pressures etc. and recommends brake
and traction settings, thus training
him to adopt an economical driving
style. Energy savings are usually in the
order of 8% to 12%. All vehicle data is
transmitted to a base station and can
be used at a later date for simulator
training.

Innovations that pay their way,
Reducing wear and tear and maintenance costs is a good way of saving money. More than any other manufac-
turer, Knorr-Bremse has succeeded in finely coordinating the complex interplay of different braking systems. Brake com-
ponents that are prone to wear are only used when the wear-free motor generator cannot cope on its own. Even then,
patented Flexpad brake pads have proved much more durable than conventional materials. Brake pads and discs require
replacement more rarely, and their design enables them to be serviced rapidly. The brake calipers themselves require low
maintenance. These examples demonstrate that if all the relevant factors are included in the calculation, the bottom line
is savings for the customer.

Fritz Königsbauer
Team Leader Client Project
Management
“The ability to carry out cross-
border freight operations
without having to change
locomotives at frontiers is
becoming increasingly impor-
tant. This is where our flexible
solutions come in.”

Leading-edge technologies

Brake Control

CCB II for America

Brake Control

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Is it true that Knorr-
Bremse’s locomotive
solutions are also world-
leaders in terms
of economy

Customized service packages ensure that all Knorr-Bremse systems function smooth-
ly for anything up to 30 years – anywhere in the world. The secret is our combination
of OEM expertise and a highly efficient service infrastructure.
The safest and most economical solutions always win in the end. Knorr-Bremse’s rail vehicle systems are not only cutting-edge in terms of technology – they are also market leaders. All over the world, when manufacturers and operators are making purchasing decisions they take a wide range of safety- and economy-related factors into consideration. And again and again they find the best results are offered by Knorr-Bremse’s unique combination of experience and innovation. Many customers opt for the full range of Knorr-Bremse systems and components for their locomotives – from air supply and brake control right down to bogie equipment. Examples: Deutsche Bahn’s BR 185.2, ER20CF for Lithuanian Railways, DJ3 for Chinese Railways, TRAXX for leasing companies in Europe, G2000 for various operators in Europe, and the Blue Tiger, e.g. for Pakistan and Malaysia.
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Satisfied customers, supplied with excellent products.
Where have Knorr-Bremse solutions already been tried and tested?

What prospects for the future can Knorr-Bremse offer in the locomotive segment?

Technology for the future.
Few areas have as many different regulations as cross-border rail transportation. As a manufacturer of innovative systems with more than 100 years experience, Knorr-Bremse has the necessary expertise. Constant improvements to processes and high levels of R&D investment guarantee the high quality of our products. Whenever it is to the customer’s advantage Knorr-Bremse further standardizes its products. And where wear and tear is unavoidable, we reduce it to a minimum. New maintenance concepts increasingly require only the replacement of easy-access, cost-optimized modules, thereby further improving vehicle availability. And with railservices Knorr-Bremse guarantees to keep all braking and on-board systems running for the next 30 years.