



# VISIONLEAD

## APPLICATIONS

High-Speed Trains | Light Rail Vehicles | Locomotives | Metros | Monorails |  
People Movers | Regional and Commuter Trains | Special Vehicles



**KNORR-BREMSE**

# A clear view under all weather conditions



## Windscreen Wiper and Wash Systems

“Safety” provided by the windscreen wiper and wash system gets a totally new meaning when it comes to LRVs or streetcars being operated in the same traffic area together with cars, pedestrians and cyclists. This level of safety can only be achieved if the windscreen wiper and wash system is appropriately designed to provide the highest levels of system availability and reliability. Furthermore, high mechanical requirements resulting from the main system parameters (e.g. windscreen size and shape, wiping angle, as well as length of wiper arm and blade) are becoming more and more challenging. Traditional electric wiper systems, originally designed for the automotive industry, are no longer an appropriate, professional answer to those high mechanical loads. Therefore we offer a broad portfolio of fully railway-compliant electric and electro-pneumatic wiper systems which are typically maintenance-free over about a decade (core system). Furthermore our wiper systems are ready for condition-based maintenance to reduce service intervals, stock inventory and increase availability of the corresponding vehicles.

## All in one location

At its site in Mödling, Austria, Knorr-Bremse has built up decades of experience and know-how in windscreen wiper and wash systems.

The results are thousands of successful installations from Metro to very high-speed applications, which are in operation all over the world.

They represent the unique capabilities of Knorr-Bremse from OE system layout definition to modernization of existing systems.

## Customer benefits

- Tailor-made system solutions for each and every project
- Comprehensive system integration expertise covering OE design, modernization and retrofit needs
- Optimized total cost of ownership, ready for condition-based maintenance
- Full compliance with railway standards
- Global KB network for localization, after sales service, etc.
- Extensive range of optional features, e.g. rain sensors

**Leading technological competence**

- Experienced engineering team and comprehensive testing facilities

**Complete product range**

- Solutions for all vehicle types & requirements

**System Integration**

- We configure the best-fitting system for your needs

**Total life cycle support**

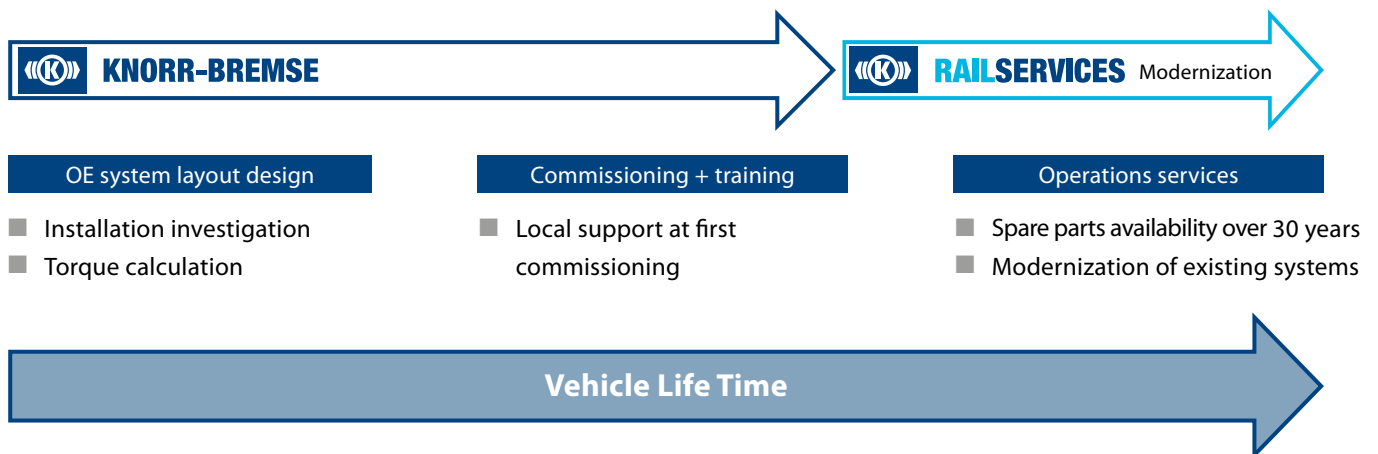
- One qualified partner for all needs along the life cycle

**Worldwide presence**

- Local support, just around the corner



**Knorr-Bremse provides support and services over the entire life time of vehicles**

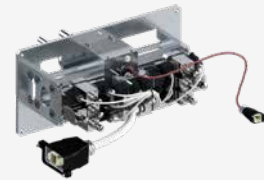


### Wiper Drives

VisionLead  
Electric



VisionLead  
Pneumatic



### VisionLead Accessories

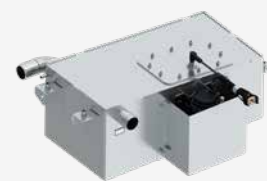
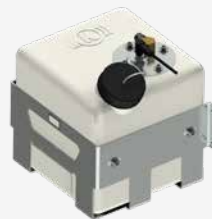
Wiper arms



Electronic  
control units



Water containers



Filler flaps  
and pumps

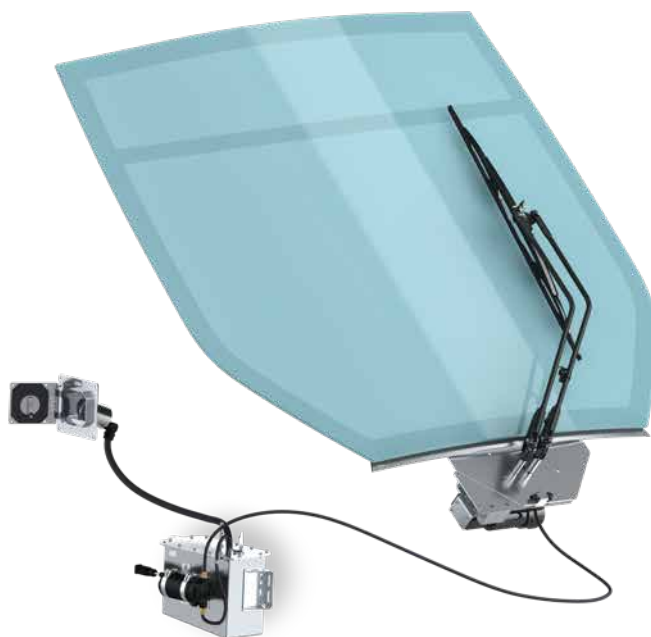


Wiper accessories





## **Knorr-Bremse – No.1 Wiper for Rail Best value – Safe – Global**



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 **KNORR-BREMSE**

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 **NEW YORK AIR BRAKE**

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 **IFE**

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 **MERAK**

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 **MICROELETTRICA**

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 **SELECTRON**

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 **KIEPE ELECTRIC**

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 **EVAC**

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 **ZELSKO**

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 **RAILSERVICES**

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