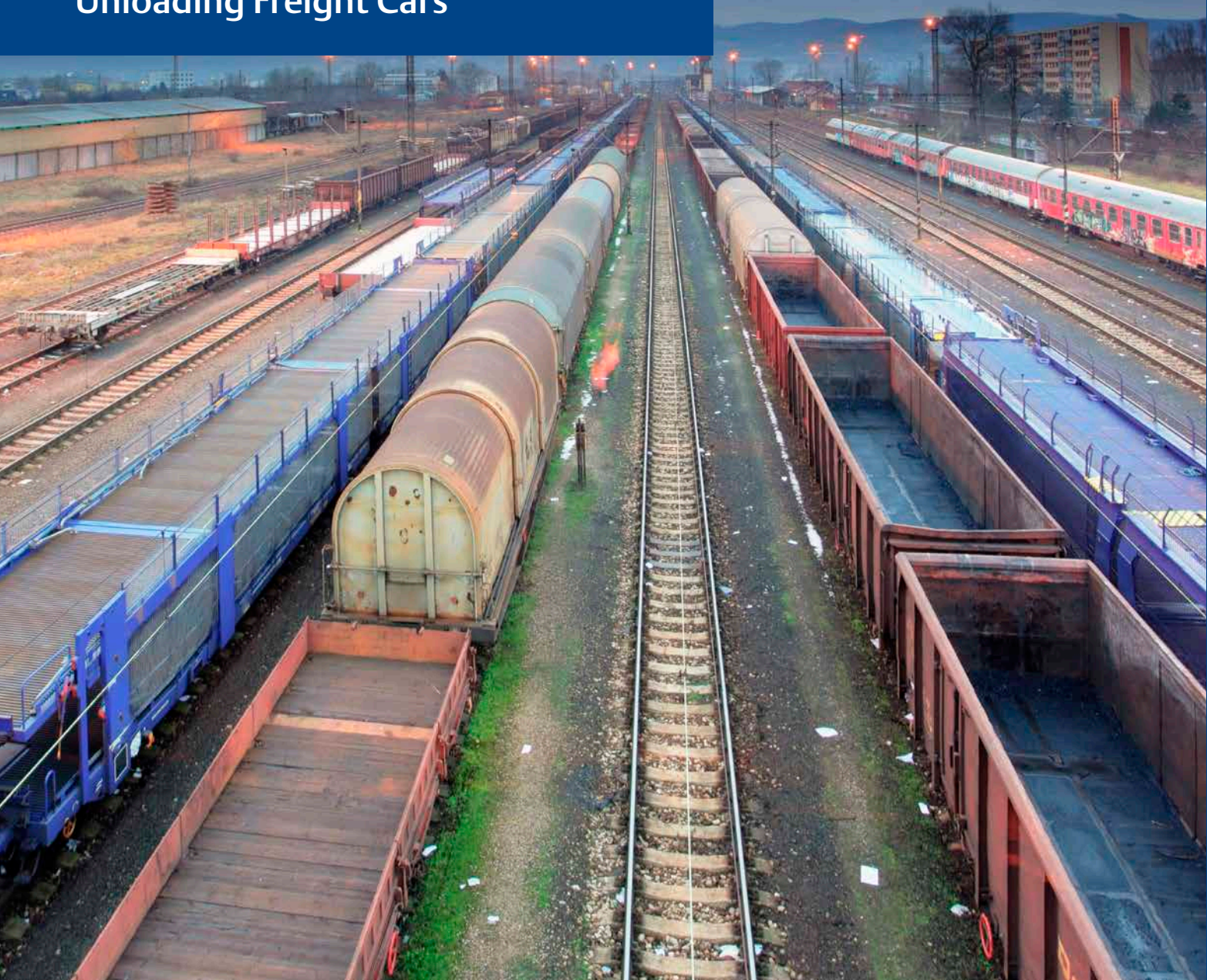


Pneumatic Solutions For Unloading Freight Cars



Pneumatic Solutions For The Railway Industry

Switch and move – pneumatics is the top choice in freight cars.





Switch and move – pneumatics is the top choice in freight cars

We know what matters in the railway industry

Having to move a lot every day means you need partners and a technology you can rely on. That's where pneumatics comes in – a robust and intelligent technology. Having to move a lot every day means you need partners and a technology you can rely on. That's where pneumatics comes in, a robust and intelligent technology, provided by Emerson – your innovative and experienced partner. Our product range is optimized for the special requirements of the railway industry.

Safety comes first, both for people and functions. Maximum reliability in all areas is essential. Our pneumatic components have been tried and tested, they meet the highest levels of the relevant standards and fulfill all expectations. They feature low-maintenance, economical continuous operation, and low life cycle costs thanks to their longevity.

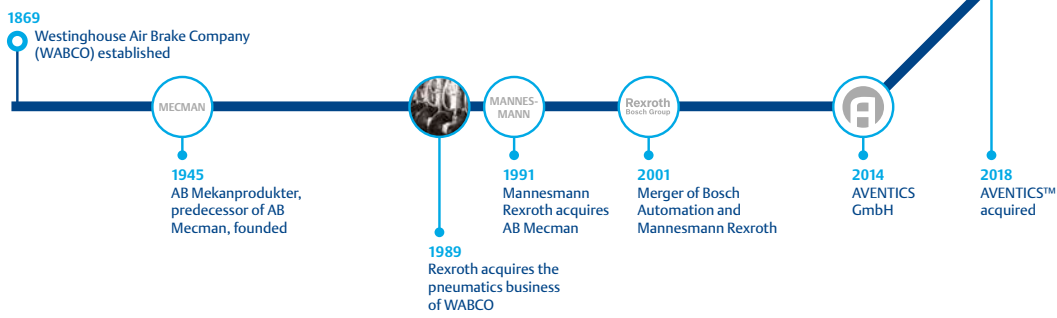
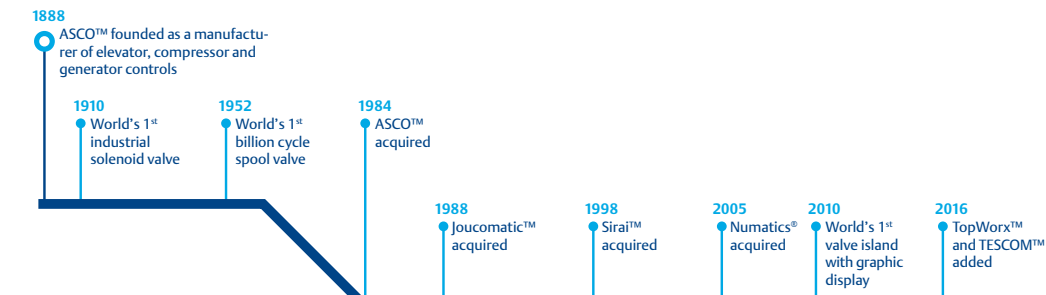
- Designed for extreme temperature ranges
- Reliable function even under extremely difficult ambient conditions
- Resistant to shock and vibration

Railway-specific standards



- ✓ Requirements for electronic and mechanical components acc. to **EN 50155**
- ✓ Electromagnetic compatibility acc. to **EN 50121-3-2**
- ✓ Cold-resistant to -40°C acc. to **EN 60068-2-1**
- ✓ Heat-resistant to +85°C acc. to **EN 60068-2-2**
- ✓ Fire protection standards and requirements for rail vehicles acc. to **EN 45545** and **NFPA 130**
- ✓ Special requirements for shock and vibration acc. to **EN 61373** and **MIL-STD-810G**
- ✓ Corrosion resistance for > 500 hours acc. to **ISO 9227**
- ✓ Voltage tolerances +25% / -30%
- ✓ Protection class IP65 or higher
- ✓ Resistant to high humidity

Emerson – A Respected Heritage of Fluid Control & Pneumatics Solutions



With our experience, you are on the safe side

Quality and reliability – our tradition

The history of our company goes back to the invention of the pneumatic brake for trains, one of the first industrial applications for pneumatics. Today, we offer an extensive range of products that not only set standards for quality and functionality in railway technology, but also offer cost-effectiveness.

- We know the special requirements and standards.
- We have industrial expertise and speak our customers' language.
- We offer established application support.

To us, close collaboration with our customers and partners is one of the key factors for global success.



“We have a long history of working with our customers to solve specific problems for the freight car industry.”

Wayne Precure – Emerson Sector Head Railway Americas

Freight car door controls

Unloading bulk freight is a harsh and unforging task in which only toughest material and designs can survive

Our products' robust design is based on proven materials and ensures peace of mind for users as they can count on trouble-free continuous operation with very long maintenance intervals. This applies both to actuators, valves, and valve systems, as well as key accessories, including tubing, fittings, filters, and regulators.

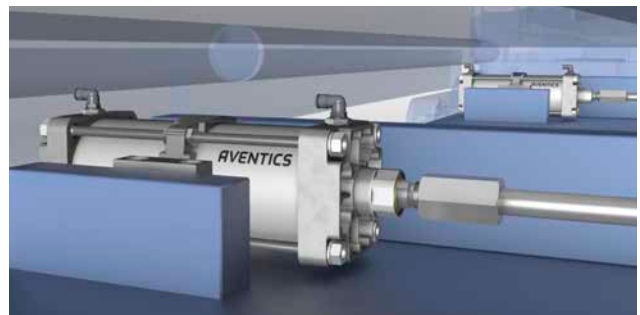
The sturdy and powerful actuators are available in custom versions in various stroke lengths and sizes. Apart from being robust and designed for temperatures to 70 °C, the valve components of the fifth generation offer many other practical advantages. These include manifold designs with common supply and exhaust ports, integrated diodes for easy installation and replacement, and a manual operator that also acts as an „dooropen“ indicator. Quality and safety.

- Specialized products with long proven track record
- Pre-tested components ready for bolt-on delivery
- Worldwide individual products tested to required specifications
- Long life and service interval, thanks to robust design and material selection



Robust and proven components for your applications

Large-dimension cylinders up to 14 inch, specially designed valve components, and matching accessories – every detail counts. The components in our pneumatic solutions are perfectly matched and ensure smooth operation of the entire system. Frequently used components include AVENTICS™ RCV (RailCarValve) series valves, pilot valves for 2-door and 3-door applications (SUPERSPOOL™), as well as AVENTICS™ profile and tie rod cylinders (TRB-Rail/ITS-Rail).



Railcar cylinder with lightweight fiberglass tube used to operate the bottom discharge doors.



Railcar pneumatic cylinders:

The special cylinders have been designed to withstand extreme conditions. End covers are made of hard cast material, piston rods are made of chrome-plated steel or stainless steel. A particular feature: the cylinder tubes are made of a special, lightweight fiber glass material, providing the cylinders with a highly resistant, elastic surface. In addition to having a natural high lubricity, this material also withstands the damage and dents often seen on steel and aluminum tubes caused by stray ballast or aggregate.

Our expertise is your benefit

Extreme temperatures, high voltage tolerances, demanding railway standards, bolted-on products, or the trend towards condition-based monitoring – as a specialist for pneumatics and railway technology, Emerson is familiar with all challenges. We cover everything that can be sensibly controlled, regulated, and safely moved in trains with the help of pneumatics. From consultation to delivery of ready-to-use solutions – talk to us about your applications!

- Standard products tailored to specific trains
- Solutions precisely tailored to the application
- Bolted-on components and products for pipe mounting

Brake control:

Cost efficient control panels for direct and blended EP-brake.



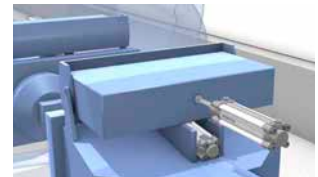
Electronic control of pneumatic suspension:

Active platform height and suspension control for easy access.



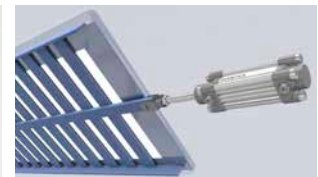
Train coupling control and drive:

Cylinder controls to open and close the front ends, as well as actuate and lock the coupling mechanism.



Ventilation flap control and drive:

Sensor-controlled cylinders for automatic opening and closing of the ventilation flaps for air conditioning and ventilation systems.



Door control and drive:

Special cylinders for safe opening, closing, and locking of doors.



Pantograph control and drive:





Complete system for precise, situation-specific contact force control with electropneumatic components and bellows actuators.



**Pneumatics is the top choice in rail vehicles.
With our experience, you are on the safe side**



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