



Material-Driven Railway Solutions by Continental

Pioneering Rail Mobility With Material-Driven Railway Solutions

In a world of rapid change, three mega trends stand out: population growth, global connectivity, and the unstoppable force of globalization. These trends are reshaping industries, and rail transport is no exception. As we move towards a greener planet, the demand for sustainable, safe, comfortable, reliable, and affordable rail systems is soaring. At Continental, we want to be at the forefront of this trend with innovative solutions tailored to meet these evolving demands.

We bring our renowned technology and material expertise from the automotive sector and other key industries into the rail sector, creating a diverse and high-quality product portfolio. Our technologies are not just cutting-edge; they are crafted to enhance the performance and longevity of rail systems. We offer customer-engineered, material-driven solutions that exceed expectations, backed by comprehensive lifetime and refurbishment services as well as state-of-the-art in-house testing facilities.

Our commitment to sustainability is more than just a promise; it is a core principle. We adhere to the highest industry standards, ensuring minimal maintenance, increased safety, and reduced costs for our customers. This dedication, combined with over 150 years of engineering and material expertise, makes Continental the ideal partner to shape the future of rail mobility. Together, we can turn today's challenges into tomorrow's successes, revolutionizing rail transport for a better, brighter future.

Partnering for Success On the Same Track

Continental is the premier choice for material-driven railway solutions for the rail sector, leveraging expertise from the automotive and other industries. Our complex solutions combined with individual expert consulting make us a reliable partner with sustainable ambitions, while ensuring safe and comfortable rail transport.

In the railway segment, Continental offers its customers:

- › 150 years of brand heritage in engineering and material expertise
- › Longstanding experience in demanding markets
- › Leadership in innovation and technology
- › Certified in-house testing facilities

Internationally present in the EMEA region and always personally there for you – that is our definition of customer proximity. With Continental, you are partnering for success, on the same track!



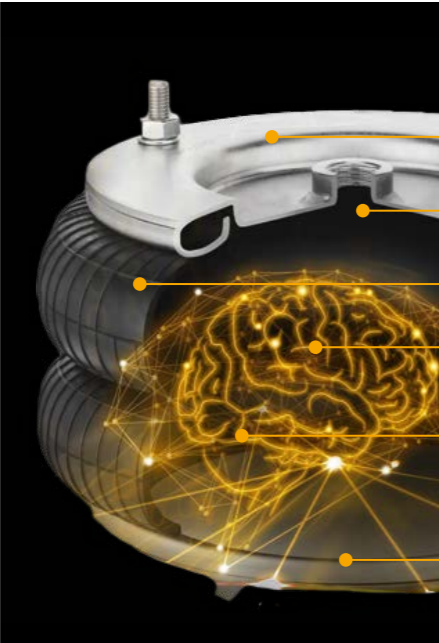
Products and Solutions for the Rail Industry

Our Highlight Products and Solutions

At Continental, we are continuously innovating for the rail market to improve rail transport and meet the needs of our customers and their applications. Whether it is our HPTA sensor, our hoses, hydraulic bushes, our refurbishment service, or fire protection: We demonstrate our innovative strength every day. Find further information on our highlight products and solutions below.

Smart Air Springs: The HPTA Sensor

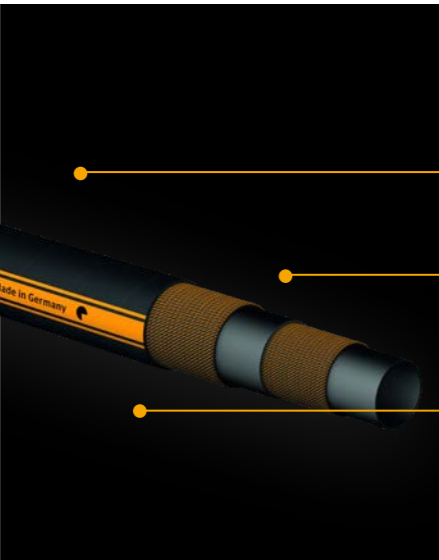
They carry massive loads, perform lifting operations and insulate vibrations – air springs are reliable components in industrial applications. Continental HPTA sensors can digitalize and transform traditional air springs into smart ones by measuring Height, Pressure, Temperature, and Acceleration, providing critical operating data. This status information is enormously valuable for users and gives our customers the opportunity to digitally map their processes. Find out more [here](#).



- More efficiency with condition monitoring
- Level control
- Leakage detection
- Alarm thresholds
- Safety: detection of malfunctions
- Calculation of oscillation, amplitudes, vibration, frequencies, weight etc.

High-Performance Hoses

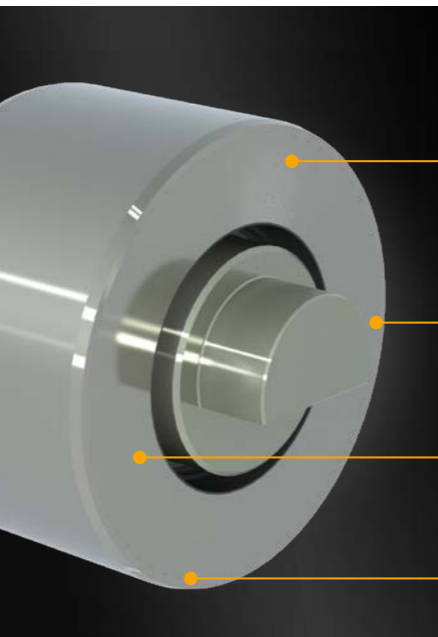
With a comprehensive range of high-quality railway hoses, we contribute to making passenger and cargo transport by rail safer and more convenient. The hoses are made of high-quality rubber compounds in line with the latest engineering standards and in compliance with national and international standards. They are subject to constant quality checks, meet the most stringent fire protection requirements, and have an impressive reliability, safety and durability record as well as being extremely flexible. Find out more [here](#).



- Wide range of hoses
- High-quality rubber compounds
- In compliance with national and international standards, meeting highest requirements

Hydraulic Bushing

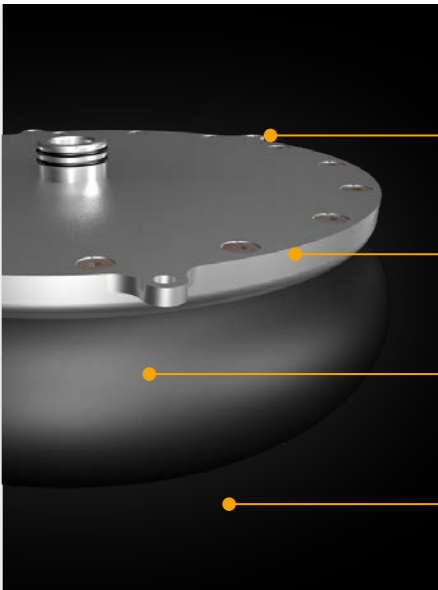
Continental is improving train suspension technologies with its Hydraulic Wheelset Guiding Bushes. Their advanced design ensures that hydraulic fluid works bilaterally, providing unmatched performance and longevity. The bushes are built to handle dynamic loads from all sides, making wheelsets and rail tracks more resilient to wear and tear. This means less frequent maintenance and replacement of wheelsets – resulting in lower costs. In addition, they ensure smooth articulation and reduce the impact of track irregularities, thus enhancing train safety. Find out more [here](#).



- Enhanced passenger comfort through superior vibration and noise reduction
- Increased lifespan of critical train components due to balanced and effective damping
- Reduced maintenance costs thanks to our bushes' durability and reliability
- Stiffness combination in one direction up to 15 times higher

Refurbishment Service


Regular maintenance of rail vehicle components is essential for compliance with the high safety standards. But it does not always have to be a new system. We recondition used air spring parts to OEM quality in our refurbishment service. With individual advice, our customers benefit from this service in several ways: significantly lower costs and components in OEM quality with the corresponding warranty. In addition, this service prevents waste and thus makes a positive contribution to the environment. Find out more [here](#).



- Up to 50 percent faster in lead time
- Cost savings of 30 percent on average
- Saves up to 100 kg of new material
- Reduces product carbon footprint (PCF) by more than 30 percent

Fire Protection for Maximum Safety

We at Continental develop robust and durable solutions. Through compliance with standards such as the European fire protection standard EN 45545, we ensure maximum safety while also realizing individual customer demands. To develop our fire safety solutions, we utilize the materials and longstanding development expertise of our business units. Once installed in trains, the solutions help to enhance safety and comfort. Find out more [here](#).



- Comprehensive product range including air spring systems, hoses, and more
- Optimized rubber compounds
- In compliance with national and European standards
- Constant quality controls


Extended Portfolio of Rail Vehicle Applications

Expertise Combined with Innovation Power


From the powertrain to the body to the bogie: with our systems and service solutions, we are present in many compartments of a rail vehicle. Our portfolio is extensive and continuously expanding. This makes us a key partner to the rail industry, ensuring that rail transport is not only safe and efficient, but also comfortable and sustainable.

Have a look at our wide range of rail application solutions below.


POWERTRAIN



Battery-electric Cooling

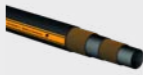


Bearings




Mounting Elements


BODY




Cable Protection Hoses




Cooling Water Hoses




Wastewater Hoses




Pneumatic Brake Hoses



Door Drive Belts




Actuators for Pantograph




Coupling Springs


BOGIE




Air Spring System




Primary Springs




Torque Supports




Traction Links




Lateral Bumper




Primary Bushings




Hydraulic Bushings



Coupling Articulation



Rolling Rubber Spring



Wheel Set Springs

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<https://www.continental-industry.com/en/industries/rail-transport>

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