

Press Release

Schaeffler at InnoTrans, Hall 21, Booth 430

From more efficient product design to data-based reconditioning service: Sustainability as a driver of innovation in rail transport

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- Reconditioning of axlebox bearings extends their total mileage and minimizes the use of resources
- 100 percent return service enables highly efficient and sustainable maintenance planning
- On track for climate neutrality with Schaeffler system expertise in rail transport

The search for ecologically and economically sustainable solutions is one of the major drivers of innovation in the manufacture and operation of rail vehicles. All aspects of the development of products and services at Schaeffler pursue the goal of using resources as sparingly as possible, optimizing the service life of components and maximizing the mileage of rail vehicles. At InnoTrans 2022, Schaeffler will demonstrate how smart product design combined with an overarching digitalization approach and customer-friendly service concepts contribute effectively to meeting this goal.

Reconditioning of rail bearings saves resources, time, and money

Schaeffler offers OEMs and rail operators reliable, convenient service for reconditioning axlebox bearings. Because even if these bearings are designed for many millions of kilometers, the lubricant generally limits the mileage that is actually achievable. During reconditioning, the lubricant is replaced and the condition of all relevant bearing components examined. Damaged components are replaced by new parts if necessary. Thanks to this process, rail bearings can achieve many times their basic rating life without compromising operational reliability. This makes a significant contribution towards resource and climate protection, because reconditioning a bearing instead of manufacturing a new one can save up to 93% energy, 96% CO₂, and 97% water.

Reduced downtimes thanks to 100 percent return service

Schaeffler combines the ecological and economic potentials of reconditioning in its 100 percent return service, which is tailored flexibly to the respective customer requirements. For each bearing that Schaeffler takes into its professional

reconditioning process as part of the maintenance service, regardless of its condition, the customer gets back a fully functioning, reconditioned or new bearing.

Customers can choose between two service models. In the case of Model 1, the bearings sent in to Schaeffler are returned following reconditioning. Any defective bearings are replaced with new ones.

Model 2 also significantly reduces the throughput time for vehicle maintenance. The bearings to be inspected are registered for reconditioning in advance. The customer immediately receives the same number of reconditioned or new bearings from a rolling bearing pool.

In both service models, the manufacturing, assembly, operating, and maintenance data collected via the Data Matrix Code (DMC) and stored in the digital twin facilitate a maintenance process that is fast, predictable, and especially sparing of resources. Maintenance intervals can also be used to add initial DMCs to existing bearings. In recognition of this contribution to greater sustainability in rail operations, Schaeffler received the "Railsponsible Supplier Award" last year for its 100 percent return service in the category "Climate change and circular economy".

Schaeffler on track to achieving climate neutrality

The data-based reconditioning concept makes a valuable contribution towards achieving the sustainability goals formulated in Schaeffler's "Roadmap 2025". Another is the ongoing development and refinement of products to reduce material and energy use. In addition, Schaeffler also attaches great importance to minimizing transport distances. In various regions worldwide, plants and production facilities are being opened and maintained to enable products and components to be manufactured and delivered locally.

The interaction of digitalization, product design, service organization, and corporate development underpins the sustainability of all Schaeffler's business activities as well as those of its partners and customers.

Schaeffler Group – We pioneer motion The Schaeffler Group has been driving forward groundbreaking inventions and developments in the field of motion technology for over 75 years. With innovative technologies, products, and services for electric mobility, CO₂-efficient drives, chassis solutions, Industry 4.0, digitalization, and renewable energies, the company is a reliable partner for making motion more efficient, intelligent, and sustainable – over the entire life cycle. The Motion Technology Company manufactures high-precision components and systems for drive train and chassis applications as well as rolling and plain bearing solutions for a large number of industrial applications. The Schaeffler Group generated sales of EUR 16.3 billion in 2023. With around 83,400 employees, Schaeffler is one of the world's largest family-owned companies and one of Germany's most innovative companies.

Thanks to reconditioning, rail bearings can achieve many times their basic rating life without compromising operational reliability. The 100 percent return service means that customers receive already stocked, fully functioning reconditioned or new bearings. This significantly reduces maintenance duration and vehicle downtimes. Photo: Schaeffler

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The Data Matrix Code (DMC) provides the basis for the digitalization of the "rail system". The digital exchange of data reduces downtimes and improves the efficiency of rail transport. Photo: Schaeffler

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During reconditioning the lubricant is replaced and the condition of all relevant bearing components is examined. Damaged components are replaced by new parts if necessary. Photo: Schaeffler

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