



Improving rail efficiency and sustainability with bearing remanufacturing

Environmental benefits

- Reduced need for raw materials
- Reduced CO₂ emissions
- Reduced energy use
- Reduced scrap and waste

For every 3 million kilometers traveled, remanufactured wheel set bearings from SKF can cut CO₂ emissions by 269 kg vs. all-new bearings.



SKF railway wheel set bearing remanufacturing can reduce raw materials extraction and CO₂ emissions

When it's time to maintain railway wheel set bearings, operators have two choices: scrap the used bearings and replace them with new ones, or remanufacture and re-use the existing bearing.

Bearing remanufacturing offers the more eco-friendly option, as it saves raw materials and energy. To quantify just how much eco-friendlier remanufacturing can be, SKF has conducted a study comparing all-new SKF compact tapered roller bearing units with SKF remanufactured compact tapered roller bearing units.

The study measures the effect that each bearing type has over its life cycle on resource efficiency, emissions, waste generation and overall environmental impact. The results are based on compact tapered roller bearing units operating in an electric passenger car train for 3 million kilometers.

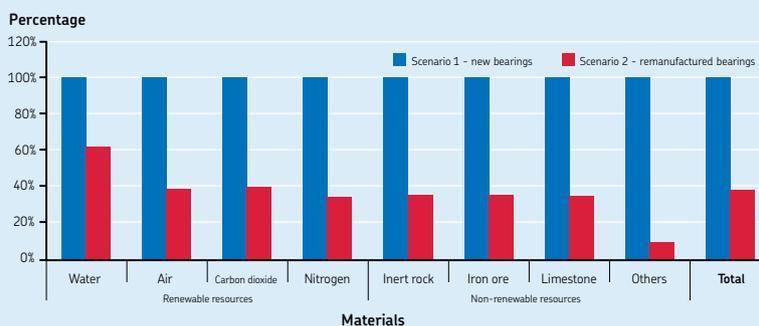
In scenario 1, the existing bearings are exchanged with new bearings during maintenance until reaching the maximum bearing life of 3 Mkm.

In Scenario 2, The existing bearings are removed, remanufactured and re-used, during maintenance until reaching 3 Mkm. (L10 life)

In every category, results favored the remanufactured bearings in Scenario 2. Remanufactured bearings used 62% fewer resources (→ **diagram 1**) and 63% less energy. Remanufactured bearings also generated 65% less waste, and cut CO₂ and SO₂ emissions by more than 60% each.

Diagram 1

Resource use – materials



SKF BeyondZero solutions can help reduce CO₂ emissions, preserve limited resources and protect the environment from the use and spread of toxic substances. For more details, including documentation of reduced environmental impact, visit www.beyondzero.com.



SKF railway wheel set bearing remanufacturing services

Operational features

- Remanufacturing performed by bearing OEM
- Wide availability of replacement components
- Bearing seals replaced with latest generation seal
- Seal, lubrication and cage upgrades available

Operational benefits

- Optimize assets to full potential
- Reduce life cycle costs and TCO
- Maintain reliability
- Reduce bearing lead times
- Full SKF warranty and technical support with global presence

Maximizing CTBU life cycles

The SKF compact tapered roller bearing unit (CTBU) is bringing several space- and weight-saving benefits to passenger and freight safety critical railway applications worldwide.

The SKF CTBU is a double row tapered bearing with one outer ring, and two inner rings with roller and cage assemblies. A spacer ring provides the correct axial clearance, and two SKF LL seals provide grease retention and protection against contamination. A backing ring correctly positions the unit axially on the journal.

In addition to extending maintenance intervals and maintaining reliability, CTBU remanufacturing enables the customer to reduce TCO by achieving the full operational life of the bearing unit.



Minimizing life cycle costs

In addition to their “built-in” energy savings, bearings remanufactured or reconditioned by SKF offer on average about 55% cost savings compared to new bearings.

SKF railway wheel set bearing remanufacturing services are performed by SKF on tapered bearing units according to SKF specifications. During the remanufacturing process, all components are inspected and replaced as necessary. Remanufactured bearings from SKF have the same properties and functionality as an all-new unit, except at a significantly lower cost.

By allowing the railway industry to save raw materials, energy and costs, SKF is helping to extend the inherent sustainability of rail travel.



Old bearing prior to remanufacturing



New bearing after remanufacturing

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PUB 42/57 14639 EN · May 2014

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