SCHAEFFLER

We pioneer motion

Schaeffler Remanufacturing

Reconditioning and maintenance of rolling bearings

Just like new

Remanufacturing gets your bearings running again

What can you do if your bearing is damaged or has presumably reached the end of its operating life? A new rolling bearing can be expensive, and replacements aren't always available on short notice. Often, however, there's no need to buy a new one. Remanufacturing restores old or damaged bearings to a like-new condition. This process not only saves you money, but also quickly returns a fully functional bearing back to service.

Remanufacturing can be performed at any time and can also be scheduled as a fixed part of regularly scheduled maintenance. The service can even be contracted when the new bearing is purchased to extend its operating life right from the start. This allows any damage and wear to be detected and rectified quickly before it worsens and leads to unplanned downtime.

Your benefits with Schaeffler Remanufacturing

There are many reasons to have your used bearings remanufactured. It is not only cost-effective, but also sustainable. It also reduces downtime.

By using our remanufacturing service, you can achieve a longer operating life for your rolling bearings. This lowers your costs, because remanufacturing is often cheaper than a new bearing and reduces the total cost of ownership. Remanufacturing also contributes to greater sustainability, as the materials and energy required for new production are saved.

Because remanufacturing is often possible on short notice and only takes a few weeks, you'll receive a fully functional bearing faster – one that also meets the same requirements, undergoing the same tests and processes as a new bearing. Depending on their condition, rolling bearings can also be reconditioned several times and be used for much longer as a result.

Lower costs
Remanufacturing is often cheaper than buying new and reduces the total cost of ownership.

Faster availability
Remanufacturing takes just a few weeks and can often be done on short notice.

Proven quality
A remanufactured bearing meets the same requirements, norms, and standards as a new bearing.

Improved sustainability
Extending operating life saves material and energy and can reduce CO_2 emissions by up to 95%.

Remanufacturing at Schaeffler

Schaeffler is known as a rolling bearing manufacturer, but our portfolio also includes solutions for the entire lifecycle of the bearing.
Our Schaeffler Lifetime Solutions are seamlessly coordinated and help maximize the operating life of your bearings, prevent downtime, and keep your machines running.

Bearings are reconditioned here in accordance with Schaeffler's high standards.

During reconditioning, we draw on our experience and expertise in bearing production, applications, care, and maintenance. We also don't limit ourselves to Schaeffler rolling bearings and remanufacture your bearings regardless of manufacturer, across all sectors, and worldwide.

The four stages of bearing remanufacturing

The effort and processing time required for remanufacturing vary depending on the condition of the rolling bearing. After a detailed assessment, we'll provide you with a report on our findings and a list of any other measures required and their costs. At the end of the process, we will assemble, grease, preserve, and pack the bearing for you.

Level I – Requalifying

CO_2 reduction: up to 95%

Cost savings: up to 70%

Delivery time: up to 4 weeks

Level II –Refurbishment

CO_2 reduction: up to 95%

Cost savings: up to 50%

Delivery time: up to 4 weeks

Level III – Remanufacturing

CO_2 reduction: up to 65%

Cost savings: up to 25%

Delivery time: 12 –16 weeks

Level IV – Remanufacturing plus

CO_2 reduction: up to 35%

Cost savings: up to 20%

Delivery time: 12 –16 weeks

For more on reducing CO_2 emissions ›

Level I – Requalifying

The first step is to disassemble the incoming bearing. We thoroughly clean all components, removing lubricants and contaminants to prepare the bearing for inspection. We use special washing systems for TAROL units, back-up rollers, and large individual bearings.

Schaeffler experts then subject the rolling bearings to a thorough inspection for damage. Any damage found is recorded in an assessment report along with the methods used and measurement results. If no damage is found, then remanufacturing according to Level I is complete.

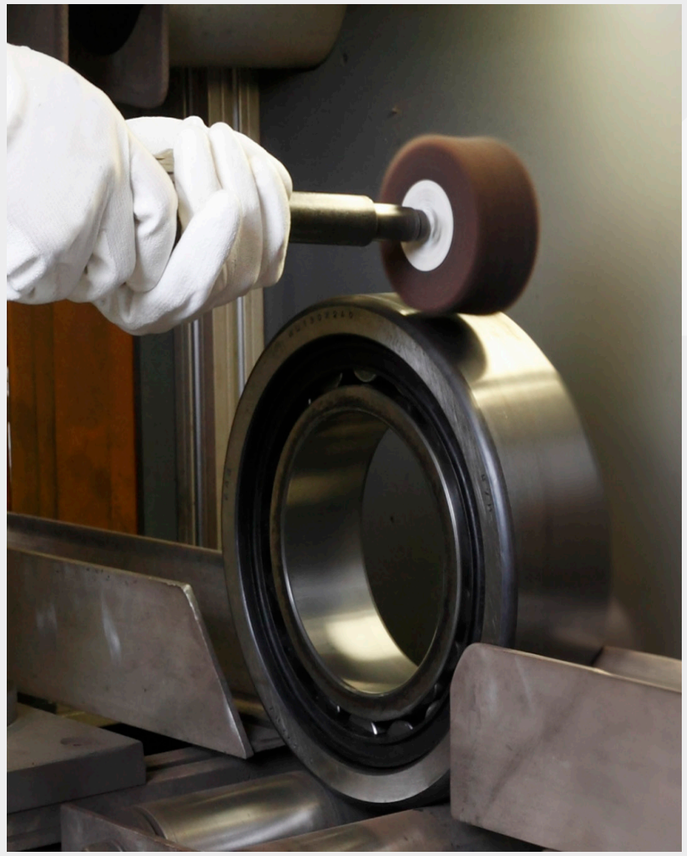
If damage is found, your assessment report will also contain the recommended measures for remanufacturing according to Levels II to IV.

We can archive the reports on request. Using a data matrix code – which is affixed to the bearing or can be newly created – the bearing's reconditioning cycles can also be digitally tracked and you'll receive a partial history of your bearing.

Level II – Refurbishment

If only minimal damage is detected in Level I, we'll perform maintenance measures. In this step, Schaeffler polishes components like rolling bearing rings and rolling elements, while removing running marks, fretting corrosion and corrosion from the functional surfaces. Surfaces that aren't functionally relevant are cleaned, and the seals are replaced.

Once this is complete, the dimensions and tolerances correspond to those of a new rolling bearing.



Level III – Remanufacturing

If significant damage to any of the functional surfaces is detected during inspection, Schaeffler will perform remanufacturing measures according to Level III, which include regrinding these surfaces. The same machines that are used to manufacture new rolling bearings are used during this step. That’s how we guarantee the same standards and processes as for new bearings and the full performance of the reconditioned bearings.

For this process, the production technicians coordinate with experts in the design and application departments. This ensures that design features like the hardening depth are taken into account during processing.

To restore the original bearing clearance, rolling elements must be replaced after regrinding the raceways. They’re manufactured with an oversize that corresponds to the material that was removed during regrinding. Other components like cages can also be replaced.

Level IV – Remanufacturing plus

In the event of extreme bearing damage, like eruptions and cracks due to material fatigue, Schaeffler will overhaul the bearing since it’s impossible to continue using badly damaged parts. Excessively damaged components like rolling bearing rings are replaced with new ones. The new components are manufactured by Schaeffler in accordance with all applicable quality standards. If necessary, the bearing is also recoated.

In addition, Schaeffler can perform application-specific reengineering of the bearing. This is always done in close consultation with experienced colleagues in the relevant design department and employees with technical responsibility for the application.

Our promise: Fully functional bearings

If you choose Schaeffler Remanufacturing, you'll receive a fully functional bearing back for every bearing that you send to us for reconditioning.

There are two options:

With Model 1.0, you'll get your own bearings back in like-new condition. If reconditioning isn't possible, you'll receive a replacement for the defective bearings. Your benefit: There's no need to stock replacement bearings.

With Model 2.0, we supply you with identical, already reconditioned bearings from a pool at the same time as your bearings are sent to us. A new warranty can be supplied for the bearings you receive. This significantly reduces your waiting period.

Other services

We offer more services in addition to general bearing remanufacturing.

Mating tapered roller bearings / manufacturing intermediate rings

The bearings are measured by trained specialists. The intermediate ring is then manufactured by Schaeffler to precise dimensions, and the bearings are matched. You benefit from fast availability and flexibility with regard to the inner diameter and the quantity that can be ordered.

Inserting a retaining slot

As part of our remanufacturing service, a retaining slot can be added to the outer or inner ring to prevent the ring from moving inadvertently during operation. Once again, our service scores points by making the desired bearing available faster.

Reworking the internal clearance

In addition to reconditioning, rolling bearings can also be modified. By reworking the internal clearance, the bearing is also suitable for other types of use or temperatures.

Coatings for protection and performance

Special coatings can prevent corrosion, reduce wear, or decrease friction and thereby contribute to higher energy efficiency of the bearing during operation. Schaeffler selects the most appropriate coating depending on the area of application and the requirements.

Long-term packaging

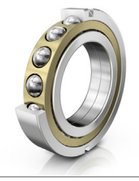
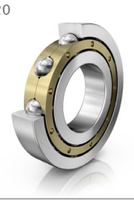
Long-term packaging is available on request instead of standard packaging. Special preservatives and desiccants that are modified for a variety of climate zones facilitate storage for several years.

Changing the load zone of component bearings

Component bearings are especially stressed in the load zone. As part of the reconditioning process, the load zone can be changed so you'll get the full benefit of the bearing's entire operating life.

These bearings can be remanufactured

Generally, rolling bearings with an inner diameter of 80 mm or more can be remanufactured. Bearings that have been remanufactured the maximum number of times, however, should be disposed of. How often a bearing can be reconditioned depends on factors like the load on the bearing in the respective application.

Spherical roller bearings, ID›80 	Cylindrical roller bearings, ID›100 	Double-row tapered roller bearings, ID›120 	Spherical plain bearings, ID›120 
Tapered roller bearings, ID›120 	Multi-row cylindrical roller bearings, ID›120 	Slewing rings, ID›180 	Axial spherical roller bearings, ID›360 
Crossed roller bearings, ID›420 	Ball bearings, ID›420 	Angular contact ball bearings, ID›460 	Four-point contact ball bearings, ID›460 
Bearings for screw drives, ID›460 	Deep groove ball bearings, ID›420 	Axial deep groove ball bearings, ID›400 	Axial cylindrical roller bearings, ID›80 

Special examples of bearing remanufacturing

Schaeffler offers remanufacturing services for more than just standard bearings. Reconditioning is often significantly cheaper, faster, and more sustainable, especially for bearings manufactured for a specific application, because production is complex and expensive and delivery can take longer.

TAROL units

TAROL units are used primarily as wheelset bearings in rail vehicles. Due to the harsh operating conditions, they suffer from corrosion, deposits, and wear. At Schaeffler, wheelset bearings are reconditioned in accordance with fixed cost rates and routines. Signs of surface wear are removed by polishing, and damaged components are disposed of and replaced at your request. The units are greased with a specified lubricant, assembled, and preserved and packaged based on your specifications. You'll benefit from established routines and receive your TAROL bearings back in full working order.

Tandem bearings for extruder screws

Tandem bearings consist of several axial cylindrical roller bearings arranged one behind the other that are custom-manufactured for each project. That's why remanufacturing them is usually the fastest and most economical alternative. During remanufacturing, the tolerances are precisely adhered to and the original production parameters are taken into account. We also ensure that the resilient system of precisely matched rings and washers is retained. This means that the bearings are optimally prepared for reuse.

YRTM axial-radial bearings

Precision bearings for combined loads have integrated measuring systems that include a hard magnetic layer that has to be protected from mechanical damage. To ensure safe dismounting and transportation, a protective tape needs to be applied to the dimensioning scale and the bearing must be shipped in special packaging: Schaeffler can manage both on request.

Assemblies

In the case of complex assemblies, we also prepare all components in addition to the bearings. For example, in the case of multi-roll mills, we accept the fully assembled back-up rolls and return them overhauled and assembled in a very short time.

Combined axial-radial super precision bearings

Use case –
Schaeffler Remanufacturing for rail operators

For wheelset bearings, which are often used in rail vehicles, the achievable mileage is limited by the lubricant's operating life. This requires regularly scheduled maintenance during which the bearings are replaced. However, instead of replacing the entire bearing, remanufacturing services can be performed as part of scheduled maintenance and the bearings can be relubricated.

Schaeffler has modified the process to meet the needs of rail operators. The reconditioning of bearings already in use is performed quickly, safely, and reliably. For an even shorter vehicle downtime, operators can receive identical reconditioned bearings from a pool at the same time as their bearings are shipped, and these bearings can be installed immediately. This corresponds to Model 2.0 of our 100% Return Concept. Thanks to the data matrix code (DMC) on the bearings, you can easily and digitally track how often a bearing has been remanufactured and any damage detected in the process. If a bearing doesn't have a DMC, it can be retrofitted as part of the remanufacturing process.

Customer success story

Swiss Federal Railways has worked with Schaeffler to digitalize the maintenance of its bearings with the help of the DMC. This has accelerated processes and made it easier to detect disproportionate wear. More than 2,500 bearings have already been reconditioned in accordance with Model 1.0 of the 100% Return Concept and over 500 metric tons of CO_2 have been saved in the process.

Read the full success story ›

Use case –
bearing remanufacturing in the metal industry

In the metal industry, bearings are exposed to numerous stresses, such as high loads, heat, dirt, scale, dust, and spray water. All of these factors can contribute to corrosion and wear. But new bearings are often expensive and sometimes take a long time to deliver – which means that reconditioning them is an economical and sustainable solution. Compared to manufacturing a new bearing, this conserves materials and reduces CO_2 emissions by up to 95%.

Customer success story

Schaeffler reconditioned damaged spherical roller bearings in the continuous casting machines at a Belgian stainless steel plant. Slightly damaged bearings were remanufactured according to Level II and bearings subject to greater stress according to Level III. They were quickly ready to be used again, and the customer saved about 50% of the costs they would have incurred for new bearings.

Read the full success story ›

Schaeffler Technologies AG & Co. KG
Georg-Schäfer-Straße 30
97421 Schweinfurt
Germany
medias.schaeffler.de/en/remanufacturing
lifetime.solutions@schaeffler.com
Phone +49 2407 9149-66

PSR / D-D /202407