

# Restore the full useful life of bearings

Remanufactured by SKF – reduce costs, downtime and CO<sub>2</sub> emissions



# Extend the service life of industrial bearings and reduce the impact on the environment

With remanufacturing, you can restore the full useful life of your bearings at a lower cost and with minimised lead times compared to buying new bearings. All while reducing your carbon footprint. You get reliable remanufactured bearings according to SKF standards, documented CO<sub>2</sub> emissions reduction, and SKF Warranty with the same duration as for new bearings.

## Minimise operation and maintenance costs

Operation and maintenance costs are often extensive. But by using remanufactured bearings, you can make significant cost savings – with the size of the savings depending on bearing size, complexity, bearing condition and price. With remanufactured bearings, you can:

- reduce total life cycle costs
- extend bearing service life
- reduce machine downtime
- maintain stock value of spare bearings
- improve overall asset reliability

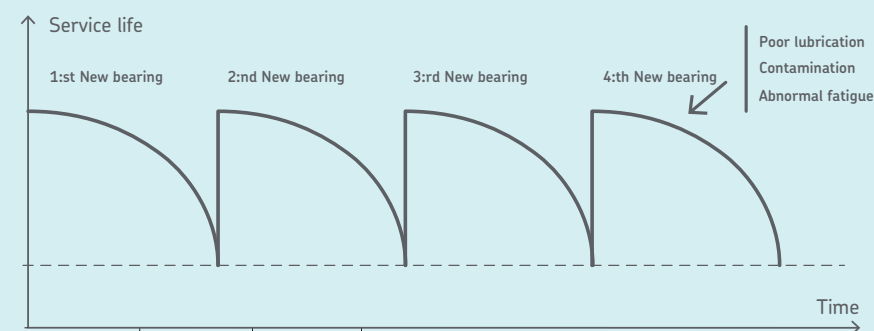
With remanufacturing, the service life of bearings can be extended, restoring the full useful life of the product, as illustrated in **diagram 1**.



Diagram 1

### Remanufacturing restores the full useful life of the product

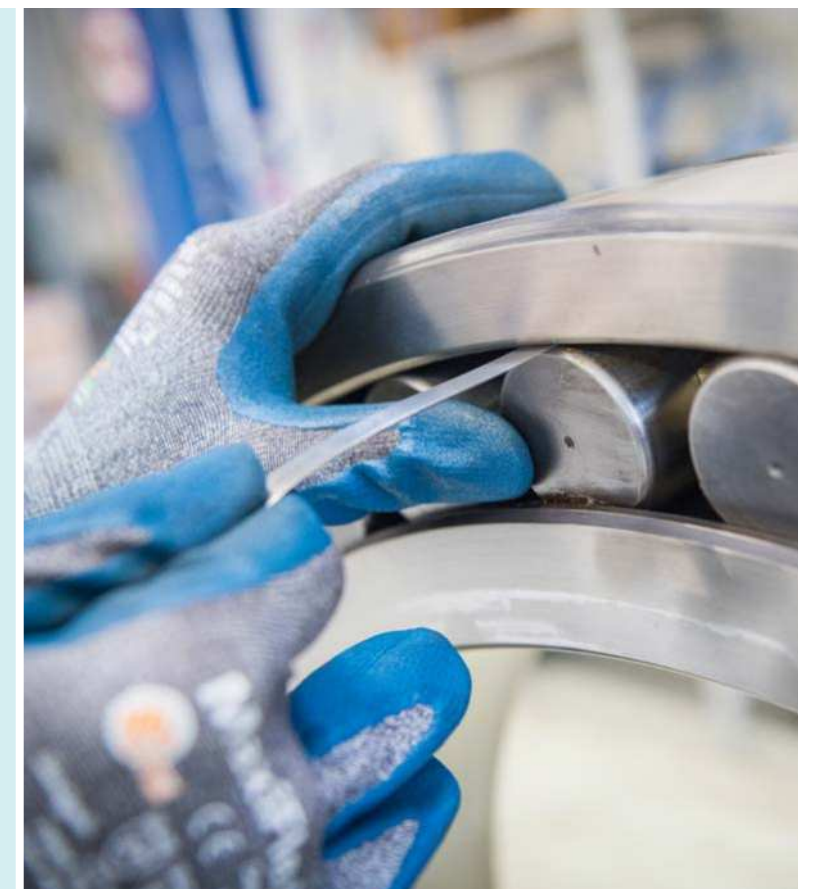
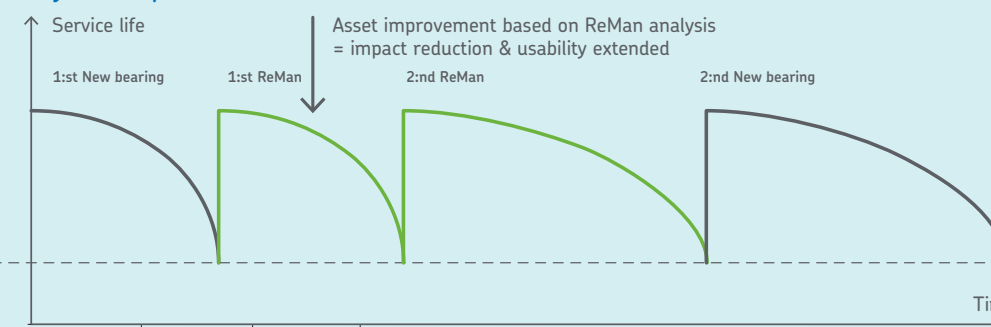
#### Why we change bearings?



#### Why not a more sustainable model? Extend usability with less CO<sub>2</sub> and cost



#### Why not an optimized model?





# The sustainable choice that shortens lead times

## Move from a linear to a circular economy

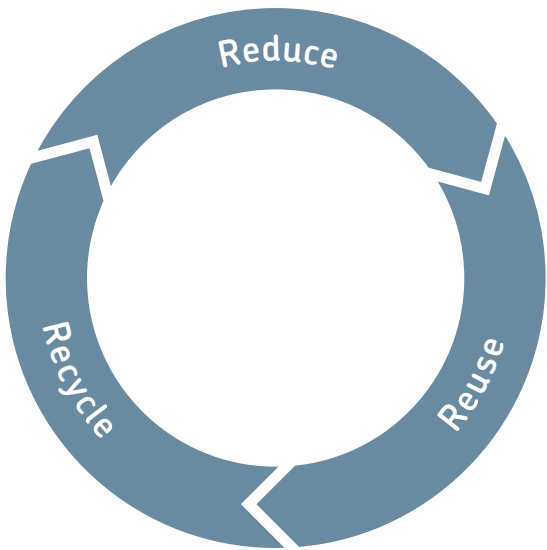
With our remanufacturing process, you take a step away from the old linear economy. In the old way, you take new resources, make a new product, use it and then throw it away. The SKF way of remanufacturing – to rebuild a product to its original specifications using reused, repaired and new parts – is part of the new circular economy. We reduce the amount of new material, reuse old parts, and recycle scrap material.

Remanufacturing means significant savings for the environment. Depending on the amount of remanufacturing required, a remanufactured bearing reduces the carbon footprint by up to 90% compared to a new one. Remanufacturing also consumes up to 90% less energy.

In addition to reducing the carbon footprint and energy use, SKF's remanufacturing services help protect the environment by means of the responsible cleaning of bearings and handling of waste. Remanufacturing can result in significant reductions in terms of resources, energy, and waste, as illustrated in **diagram 2**.

## Minimise lead times on components for fast repairs

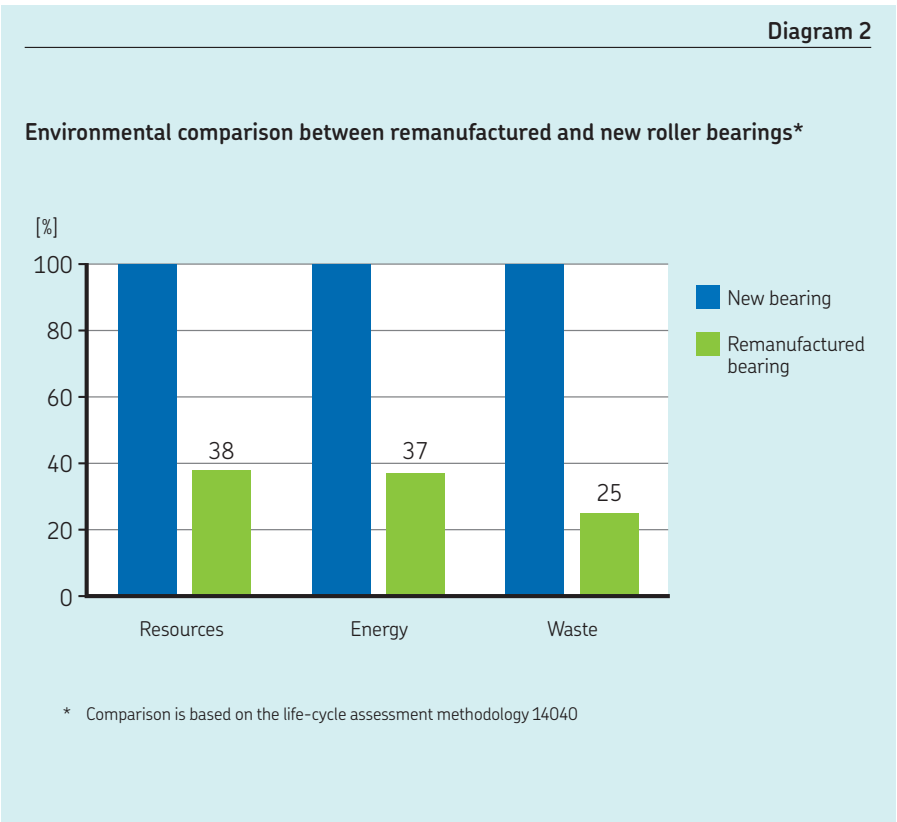
If you need to replace a bearing due to a breakdown, the quickest way to get it back into production is often to remanufacture it, especially when it comes to bearings that are not in stock. The remanufacturing process is faster and ensures the same quality as the manufacturing process for new products.



Bearing before remanufacturing



Bearing after remanufacturing



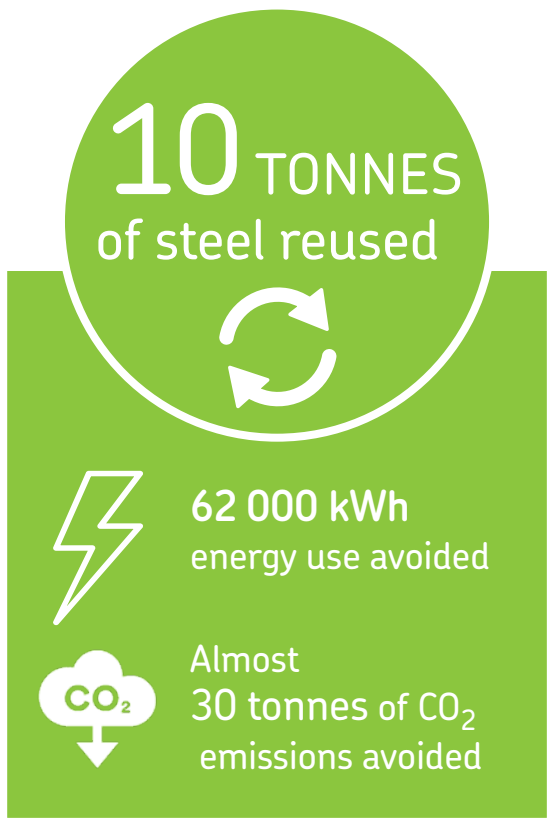


# Two remanufacturing examples from our customers

## On the hunt to reduce every source of CO<sub>2</sub> emissions

In one large European company, maintenance personnel replace about 2,000 bearings each year. But since half of the replacements are remanufactured bearings instead of new ones, the plant prevents 30 tonnes of CO<sub>2</sub> emissions yearly – an essential step towards their challenging goal of reducing CO<sub>2</sub> emissions by a third.

Annual circular economy contributions:



## Reducing the carbon footprint while saving time and money

Instead of ordering new bearings for a broken-down critical piece of equipment, one of our customers decided to let SKF remanufacture their existing bearings instead. The bearings were sent to SKF for remanufacturing and returned in as-new condition, but at a significantly lower cost than new ones, and with a considerably lower carbon footprint.

Circular economy contributions:





# How we remanufacture bearings

Wear, rust, indentations, microcracks. Certain application conditions – like contamination or sporadic metal-to-metal contact in the rolling contact zone – can cause all sorts of damage to your bearings. A thorough analysis followed by appropriate remanufacturing steps restores them to their original performance level, with SKF-guaranteed quality.

## Meeting SKF standards

SKF's experienced bearing analysts evaluate your bearing and define which remanufacturing process will be the most efficient for restoring your bearing to being compatible with the application requirements. Through SKF's remanufacturing operations, relevant functional surfaces are remanufactured, including, if necessary, the replacement of bearing components.

As the basis for our bearing remanufacturing, we use the same standards,

dedicated processes, special equipment, quality assurance, knowledge and competence as when we manufacture new bearings. This includes acceptance criteria that deliver high-quality results, even when extensive remanufacturing is needed.

## Full traceability

To provide full traceability, SKF uses an advanced management system. By uniquely marking each asset during the remanufacturing process, you will be able to trace your bearing through its future life cycle.

## Tailored to your needs

In addition to standard remanufacturing, we can also remanufacture your bearings to a new or higher specification, as well as application-specific requirements. This can include enhancements of the original product, such as adding special coatings, improved sealing solutions or lubrication, or remanufacturing to other specifications. We even remanufacture non-SKF bearings.

You decide what level of remanufacturing you want, depending on the needs of your application.

## The remanufacturing process

### Analysis

1. Cleaning
2. Inspection
3. Documentation
4. Remanufacturing recommendation

### Remanufacturing

1. Remanufacturing of all components
2. Quality checks
3. Assembly
4. Preservation
5. Packing and shipping
6. SKF Warranty



Almost all types of rolling bearings can be remanufactured. These are a few examples.



Large size bearing



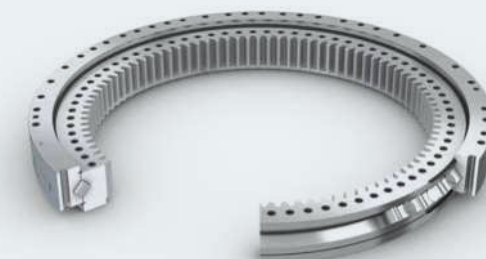
Application Specific bearings



Housings



Sealed bearings



Slewing bearing



Special Bearing Units

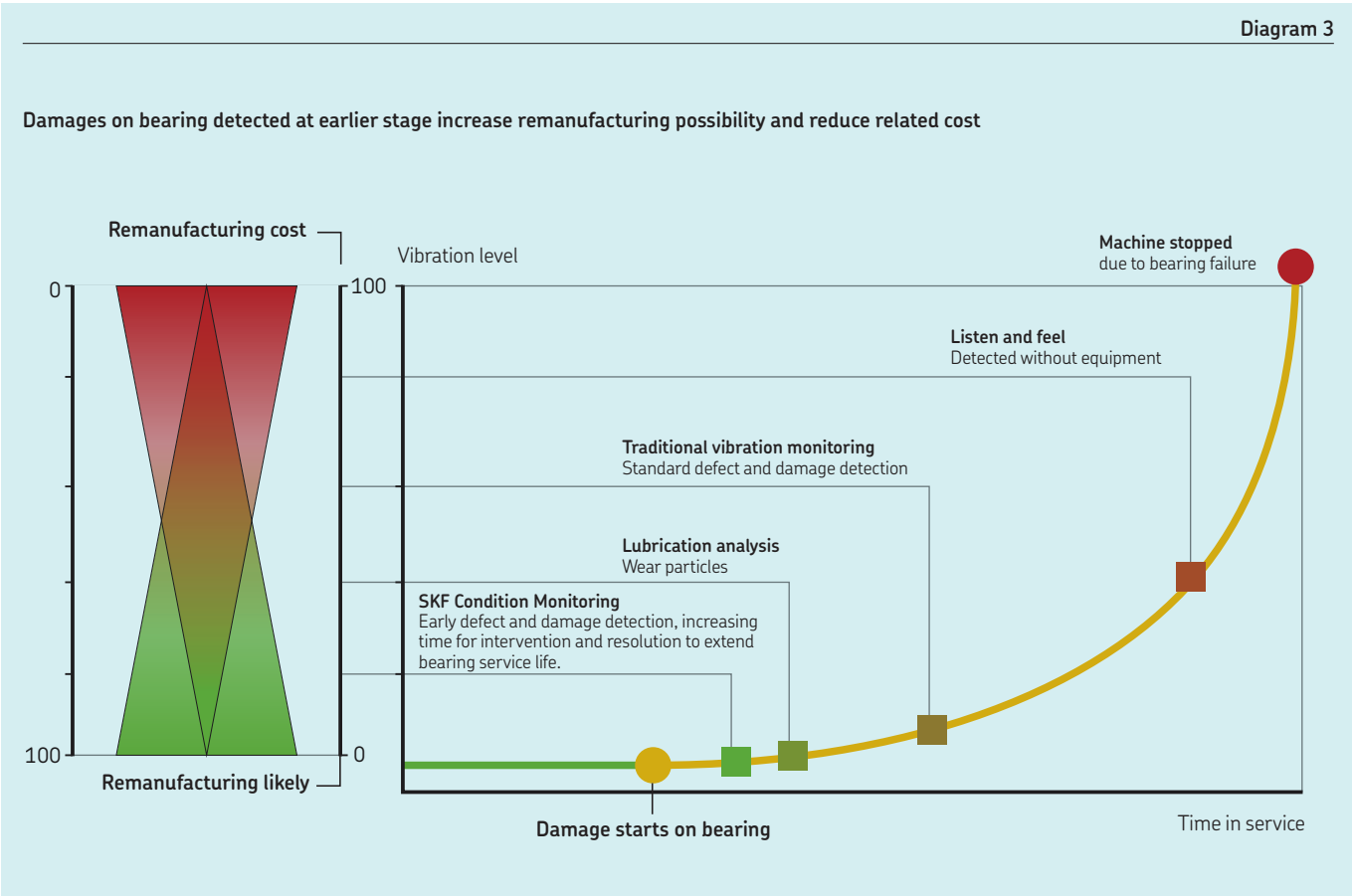
# When to take out a bearing for remanufacturing

The correct timing for bearing removal and remanufacturing is essential in order to achieve the optimum balance of long service life and low operating costs. **Diagram 3** below shows how the time in service for a damaged bearing impacts cost and the likelihood of remanufacturing.

## Predictive maintenance helps you find the sweet spot

The full benefits of using remanufactured bearings come when you also use SKF Predictive Maintenance to ensure that you always know the status of your plant machinery.

In addition, SKF’s root cause failure analysis (RCFA) service can deliver a set of causes and effects, plus a comprehensive plan of corrective actions to prevent the recurrence of damage.



# Purchase performance, not bearings

A new business model from SKF lets you finance bearing and condition monitoring investments through the operating budget instead of through capital expenditure. Instead of purchasing bearings at unit price, you get a long-term, performance-based contract based on a monthly fee. A contract that combines bearing technology, failure detectability, reliability and remanufacturing services in one integrated package.

A performance-based contract can be built based on your most important key performance indicators (KPIs), like your goals for machine availability, for extending maintenance intervals or for reducing the number of unplanned stops, or whatever is most relevant for you. The overall goal is to reduce your rotating equipment’s total cost of ownership (TCO) over an agreed period.

Part of the savings come from increased machine availability, and part come from reducing capital outlay by optimising your spare parts inventory and minimising waste. To achieve the agreed goals, we combine our knowledge of bearings, application engineering and rotating equipment reliability with enablers, such as condition monitoring, root cause analysis, bearing remanufacturing and other core SKF capabilities.

With a performance-based contract, your ambitions and needs align with ours. As in any true partnership, we share the benefits but also the risks.





# A global network with more than 20 years of experience

There are SKF Industrial Bearing Remanufacturing Centres in most parts of the world, and our network is continuously expanding with new centres.

Operating as a global network, we apply common processes, standards and technology, and we share knowledge and capability development. All our teams are dedicated, highly specialised and competent.

Our remanufacturing centres deliver remanufactured bearings for customers in many industries, such as:

- Metal
- Pulp & Paper
- Energy
- Mining
- Marine
- Cement
- Food & beverage
- Railway

The SKF remanufacturing network offers the agility and flexibility of a small service company, but with the capacity, core competence and peace of mind achieved through working with an industry leader.

[www.skf.com/remanufacturing](http://www.skf.com/remanufacturing)

