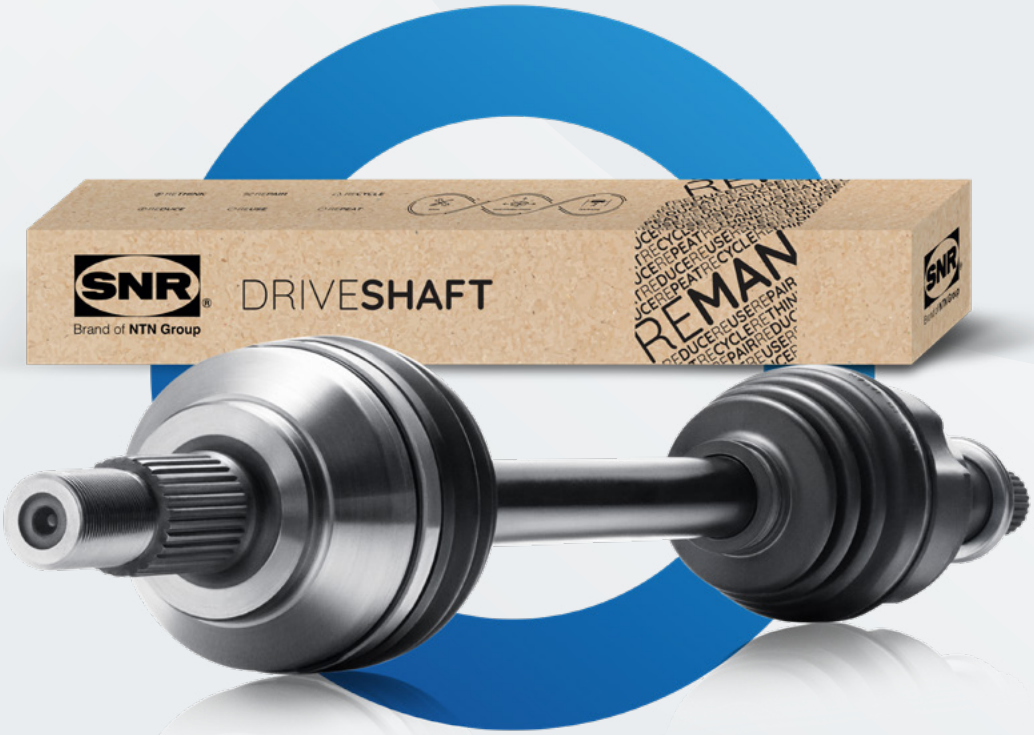
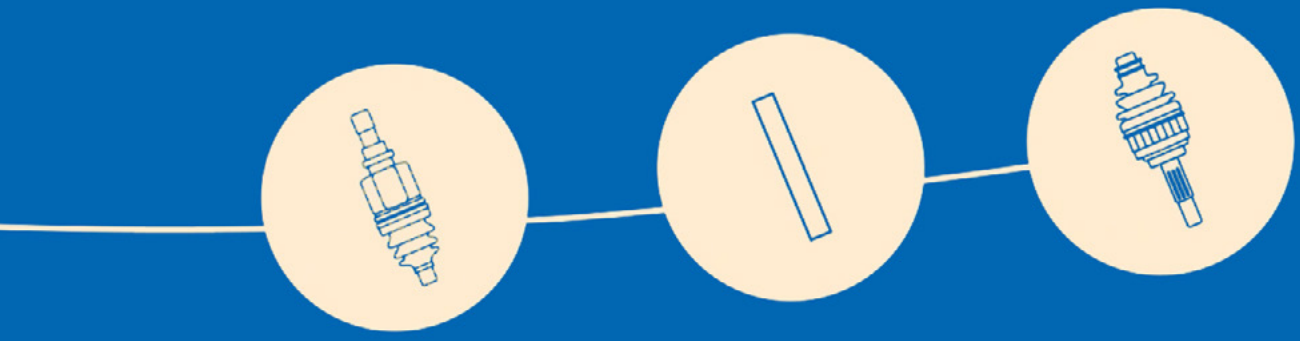
Brand of **NTN Group**

Reconditioned driveshafts

Rethink, recondition, reuse



RETHINK



Sustainable solutions for tomorrow's mobility

At NTN Europe, our products are synonymous with quality and reliability. As one of the worlds leading original equipment manufacturers in the driveshaft market, our expertise and commitment to quality are recognised worldwide. Building on this reputation, we are taking the next step by launching our range of remanufactured driveshafts.

A natural transition to remanufactured parts

Our knowledge is the result of decades of research, development and production of parts that meet the most stringent requirements of vehicle manufacturers, garages, and end-users. So it's natural for us to turn to remanufacturing, a process which combines our technical expertise with our commitment to sustainability.

A commitment to a sustainable future

The circular economy is not just a concept! It's a reality that we integrate into every aspect of our production. By choosing to remanufacture driveshafts, we are helping to reduce waste, conserve resources and reduce our carbon footprint. Our remanufactured range offers products that are not only high-performance but also environmentally friendly.

The promise of SNR quality

Our remanufactured driveshafts undergo a rigorous process of disassembly, cleaning, inspection and replacement of worn or damaged parts, the shaft then gets a final performance test to make sure everything is balanced. Each remanufactured driveshaft is restored to the highest standards, guaranteeing quality and performance equivalent with that od a new part.

By choosing SNR reconditioned driveshafts, you are opting for products that extend the life of components, reduce costs and contribute to a more sustainable future.

Circular economy: a change of model for a sustainable future

The circular economy is an innovative approach to minimising the environmental impact of products make throughout their life cycle. Unlike the traditional economic model based on the “produce-consume-discard” model, the circular economy aims to complete the life cycles of products and materials by promoting reuse, repair and recycling.

Environmental and economic issues

The automotive industry is at the heart of the sustainability challenges. Vehicles are made up of thousands of parts, many of which require energy- and resource-intensive materials and manufacturing processes. Implementing circular economy practices in this sector makes it possible to:

- **Reduce waste:** End-of-life products are reused or repackaged rather than thrown away.
- **Save resources:** Recovering and reusing components reduces the need to extract new raw materials.
- **Reduce CO^2 emissions:** Remanufacturing and recycling generally consume less energy than producing new components, which reduces greenhouse gas emissions.
- **Stimulate innovation:** The transition to circular models encourages more sustainable product design and manufacturing processes.

Market trends and regulations

The market for remanufactured automotive parts is expanding rapidly. They now account for 30 to 40% of the available supply. Several factors are contributing to this growth:

- **Maturity of the aftermarket :** The aftermarket for driveshafts, alternators, starters and other electronic components is well established, facilitating the adoption of remanufactured parts.
- **Consumer demand:** 7 out of 10 users are prepared to fit remanufactured parts in their vehicles.
- **European regulations:** European laws and action plans, such as the Circular Economy Action Plan adopted by the European Commission in 2020, aim to encourage more sustainable production practices. These regulations support the design of sustainable products, empower consumers in their choice, and promote cleaner production processes. In particular, the European Directive 2012/19/EU on waste electrical and electronic equipment (WEEE) imposes specific collection, reuse and recycling rates to encourage a circular economy.

Opportunities for motorists

For end-users, the adoption of remanufactured parts offers a number of advantages:

Lower cost:

Remanufactured parts offer a more economical alternative to new parts while maintaining equivalent quality.

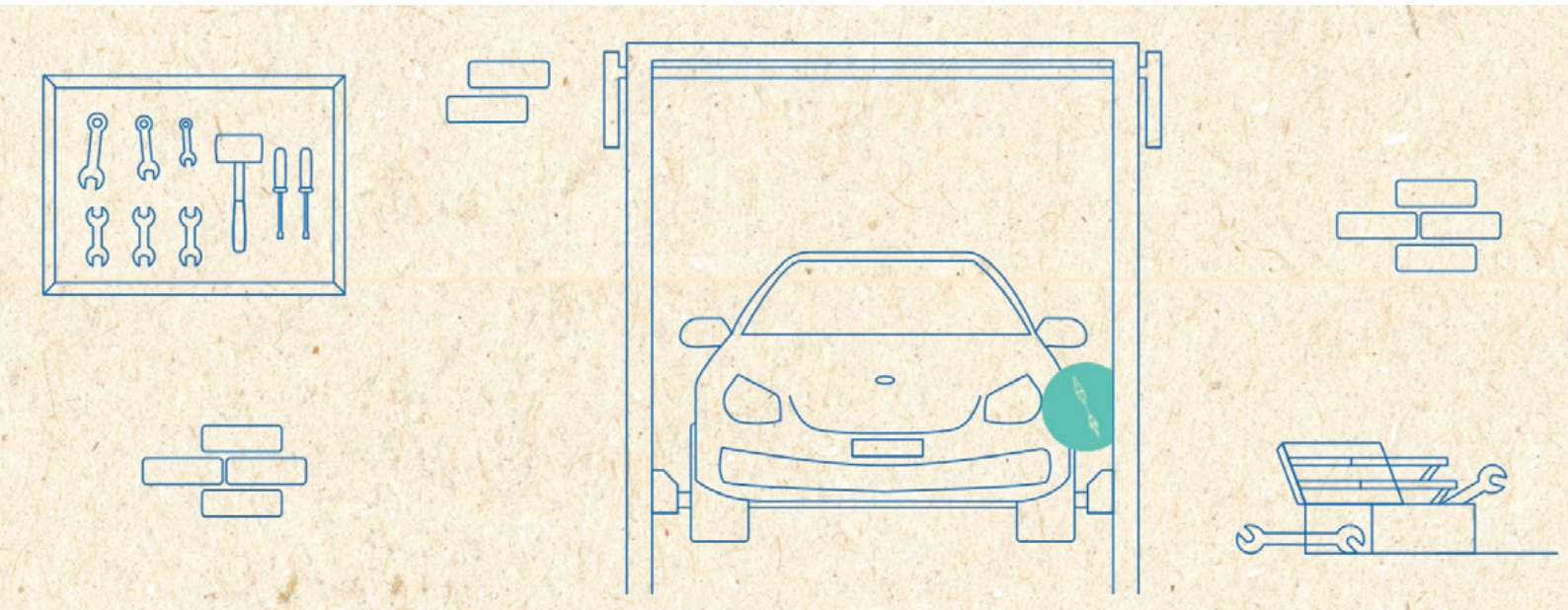
Quality and performance:

Thanks to rigorous reconditioning processes, remanufactured parts meet the same performance standards as original parts.

Positive environmental impact:

By choosing remanufactured parts, motorists actively contribute to reducing waste and preserving natural resources, while reducing their carbon footprint.

The adoption of the circular economy in the automotive industry is not only good for the environment, it also represents an opportunity for motorists to participate in a sustainable approach.



Our SNR remanufactured parts offer

A range combining performance and durability

At NTN, our commitment to the circular economy is reflected in our new range of remanufactured driveshafts. This range offers reliable and cost-effective solutions for a wide range of vehicle makes and types.

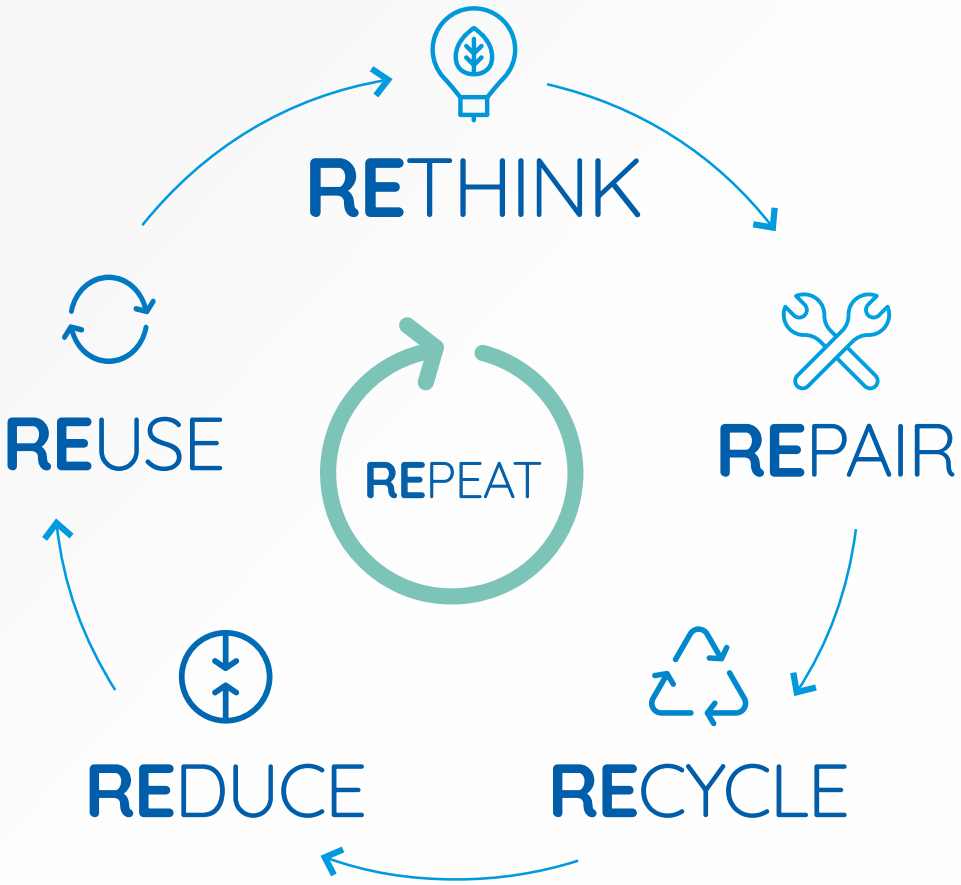
Label identification: **R-DKxxx.xxx**

Rigorous remanufacturing process

Our reconditioning process is based on strict standards to ensure that each part meets the same quality requirements as new components.

12 key stages in the process

1. **Collection of carcasses or old materials:** Recovery of cores from our distributors.
2. **Identification and validation:** Identification and validation of each carcass or old material according to the level of quality required for the refurbishment of the parts.
3. **Dismantling:** Careful dismantling of parts to allow detailed inspection.
4. **Initial check:** Components that are too damaged are discarded and certain worn parts are systematically replaced (boots, clamps, grease, etc.).
5. **Cleaning of components:** Rigorous cleaning of parts to eliminate any contamination
6. **Second check:** Visual inspection and visual testing of components to ensure conformity.
7. **Reconditioning of components:** Some parts are machined and ground, while others can be replaced.
8. **Manual reassembly:** Manual reassembly of cardan shafts to ensure a perfect fit.
9. **Measurements and control tests:** Rigorous tests are carried out on each part to check its performance and durability.
10. **Painting:** Painting of parts for extra protection against corrosion.
11. **Packaging:** Packing finished components securely for transport.
12. **Customer delivery:** The remanufactured parts are ready for customer shipment.



75%

A remanufactured driveshaft
reduces the carbon footprint by 75%
compared with a new one

Advantages of the R-DK range of remanufactured driveshafts

Choose SNR remanufactured driveshafts and benefit from a number of advantages:

- **Durability:** Our remanufacturing processes extend the life of components, providing an environmentally friendly solution.
- **Economy:** Remanufactured parts are often less expensive than new parts, providing significant savings without compromising quality.
- **Performance:** Thanks to rigorous controls and the use of high-quality parts, our remanufactured driveshafts offer performance equivalent to that of new parts.
- **Reduced environmental impact:** By choosing remanufactured products, our customers help to reduce waste and conserve natural resources, while reducing their carbon footprint.

Know-how from our standard range of constant velocity joint

As one of the world's leading suppliers of original equipment, NTN Europe offers a complete and innovative range, demonstrating our expertise and legitimacy in the market.

Our new 'standard' range includes :

- **OJK (fixed) wheel-side joints:** designed to reduce the overall dimensions and improve compactness, thus meeting the needs of car manufacturers.
- **IJK (sliding) joints on the differential side:** developed to improve torque transmission and limit vibration problems, while reducing temperature rise.
- **Patented 8-ball technology: our OJK 8-ball** joints have been developed to offer optimum comfort, reduce CO^2 emissions and improve fuel efficiency..

Kits available as spares:

- Complete driveshafts kits (DK)
- Wheel-side joint kits (OJK)
- Differential side joint kits (IJK)
- Bellows kits (OBK/IBK)
- Refurbished complete driveshafts kits (R-DK)

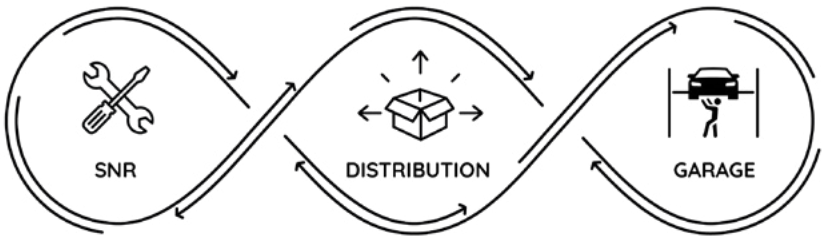
Our standard driveshaft offer covers a wide range of vehicles and is designed to meet the most demanding requirements in terms of performance, durability and reliability.

Redesigned packaging

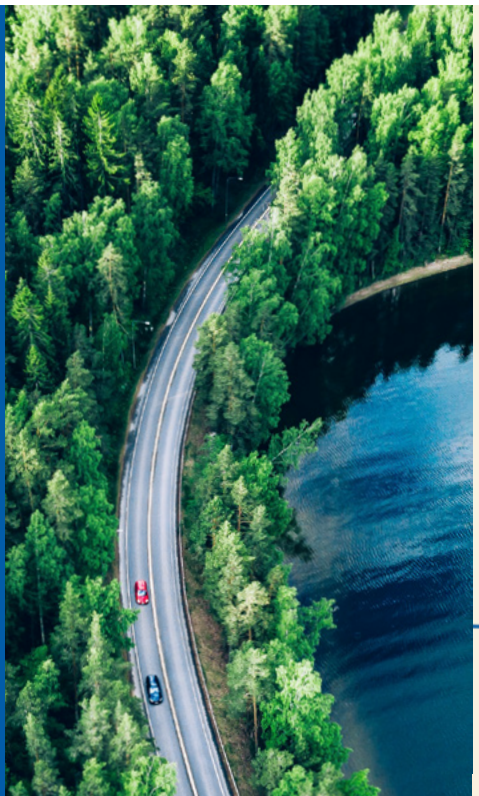
To underpin our commitment to the environment, we are launching craft packaging for the first time. This choice of material reflects our desire to reduce the environmental footprint of our products throughout their life cycle.

Each box features key words such as «re-think, reuse, reduce, repair, recycle, repeat», reflecting our commitment to sustainability and the circular economy.

A diagram represents the key players in this loop: SNR, the distributor and the garage owner, illustrating our vision of working together to maximise the reuse of resources and minimise waste.



Let's work together to create a virtuous circle that benefits both the environment and the economy.



REPACKING

SNR Brand of NTN Group

Tests: rigorous control

To ensure the quality and reliability of our reconditioned products, NTN Europe applies specific test procedures.

Here are the main categories of tests carried out on reconditioned driveshaft:

1. **Endurance and fatigue validation tests:**
    - These tests are essential to ensure the durability of components such as joints, complete driveshafts, boots, and connecting elements (tube, shaft), tripods, splines and welds.
    - They are carried out to check that the components are able to withstand prolonged operating conditions without failure.
2. **Static and quasi-static failure tests:**
    - Example: climbing a kerb with the wheels turned.
    - These tests are crucial for assessing the strength of joints and drive shafts under sudden static loads.
3. **Tests specific to boots:**
    - Since the boots are critical components of a driveshaft, several types of tests are dedicated to them to guarantee their performance.
    - Endurance validation and extreme temperature resistance tests: Boots are tested at temperatures ranging from -40°C to +135°C, and even +165°C, to ensure their reliability under severe conditions.
    - Expansion tests: This measures the deformation of the boot due to the centrifugation of grease, ensuring that the boot can withstand the mechanical and thermal stresses encountered in service.

See our tutorial on how to use the
CLAS OM8024 snap ring pliers

All our other tutorials on our YouTube channel:
SNR Automotive Aftermarket

Maintenance: specific tools

NTN Europe recommends following the manufacturer's recommendations (nut tightening torques, operating procedures, etc.) and in particular the use of CLAS brand tools:

Reference: CLAS OM8024

Shell clamp: compression of the snap ring to re-insert the wheel-side joint

References: CLAS OM9396 + OM 0780

Associated tools for tightening boot collars (Wheel and gearbox side)

Reference: CLAS OM8031

Tool kit: removal and reinstallation of joints on the pivot

Make the world **NAMERAKA**

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