

NTN

RAILWAY SOLUTIONS

Performance that goes the distance



NTN®



Brands of
NTN Group

NTN Europe: expertise that leads the way

A single-minded organisation, inventive technology and global competence are the driving forces behind an innovative and efficient service which pushes back the barriers and crosses borders in a railway sector that is forever moving forwards.

NTN Europe is a global player in the bearings market. The success of the union between NTN and SNR is based on a number of noteworthy factors: shared values, a shared strategic vision, synergies of expertise and a strongly differentiated customer base.

The possibilities that result from these achievements lead us to accelerate our growth in the rail industry, based not only on a long history in this field, but also on our position as the undisputed leader in the high speed sector.

The convergence of our experience and our strengths give us an edge in the rail industry and enable us to look to the future.

Freely flowing solutions

From the London Underground to the Shinkansen in Tokyo, and encompassing the French regional rolling stock, the NTN Group and its European branch, supply throughout the world.

Our solutions cover every journey and every form of progress, with solutions that fit every bogie, satisfy every specific rail transport requirement and meet the standards of every country.



High speed



Intercity



Light rail vehicle (metro, tram)



Locomotives



Freight

REFERENCES : ABRF - ADTRANZ - ALSTOM - ARBEL - ASTRA - ATELIER DE JOIGNY - BOMBARDIER - CAF - CFD - DB - DYMOS - EUROTUNNEL - FAIVELEY - GHH - HITACHI - JAPAN RAILWAYS - KCRC - KORAIL - LUCCHINI - MITSUBISHI ELECTRIC - NOVATRANS - ONCF - RAILCARE - RATP - RENFE - ROTEM - SIEMENS - SMRT - SNCB - SNCF - TALGO - TEXELIS - TOSHIBA - TRANSMASHOLDING - VALDUNES- VOITH - VOSSLOH - WABTEC - WATTEEUW

A reputation built on breaking records...

NTN has been supplying trains on the Shinkansen network for 40 years. SNR, technical partner to TGV since its launch, worked with SNCF and ALSTOM to win the world rail speed record of 574.8 km/h, established in 2007.



Forward-moving solutions

Embodying expertise at the forefront of technology, our bearings satisfy the most demanding requirements. Designed to perform in every environment and over long and short-haul distances they cover the entire rail market.

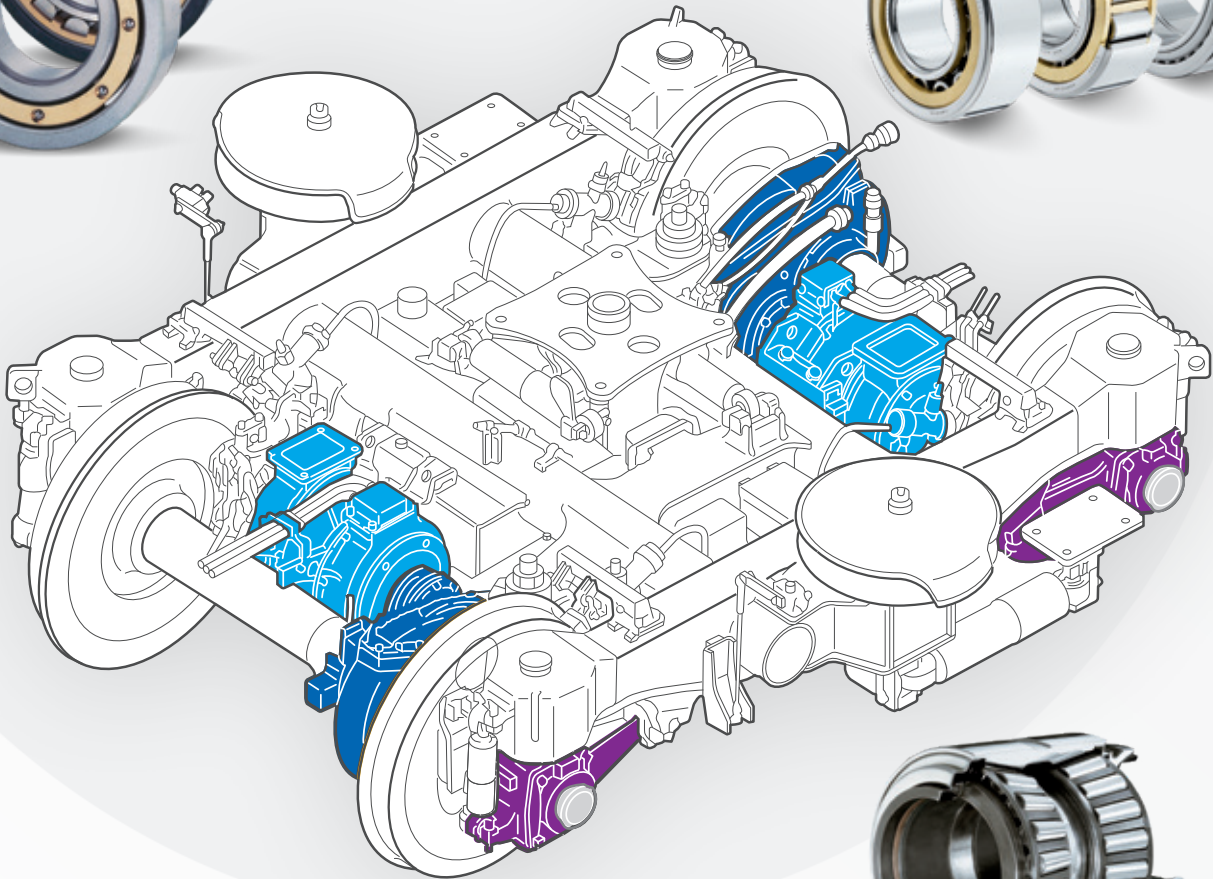
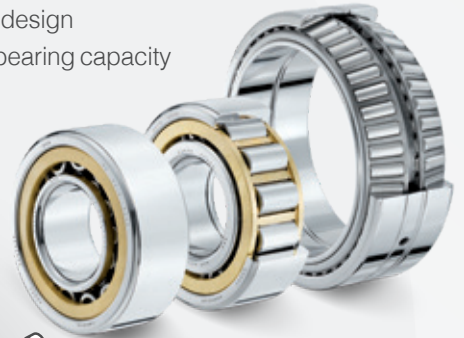
Our culture of innovation and service drives up reliability and enhanced safety as well as significantly decreasing life cycle costs (LCC) and the total cost of ownership (TCO).

● Traction motor bearings

- Optimised cage design
- Insulated bearings (ceramic or polymer insulation)

● Transmission bearings

- Optimised cage design
- Increased load-bearing capacity
- Large bearings



● Journal bearings

- Increased service life
- Reduced maintenance
- Anti-fretting solutions
- Optimized cage design
- Labyrinth & friction seals
- Metric or AAR dimensioning

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Performance that moves into top gear

NTN is the preferred partner of the major players in the railway world for both original equipment and replacement parts as well as collaborating on major projects that keep the world moving. Our reason to be and our way forward is to satisfy your requirements and shift your development into top gear.



With over 40 years of high-speed experience, NTN has demonstrated its ability to provide expert answers to complex problems while guaranteeing its customers exceptional quality and complete safety. IRIS (International Railway Industry Standard)-certified since 2010, our standards have received the highest acclaim: your trust.

Going the distance

Reliability is based on know-how that has been acquired, perpetuated and optimized, but also on a relationship of trust and closeness that enables everyone to get involved reactively and effectively in a project. Cultivating that reliability, regardless of where it is being applied, is one of the secrets of NTN's longevity. The world rail speed record is evidence of this, since the TGV was equipped with standard series bearings, approved for a commercial operation at a speed of 350 km/h, but having no special features. The NTN Group and its European branch, has, to its credit, never been involved in a major rail incident; this ensures a scale and presence on the world stage that is unmatched to this day.

Anticipating requirements

NTN has stepped up its research and development activities. With its advances in the field of high technology, it has become a powerful force for innovation in the railway sector:

- Anti-fretting solutions
- Megaohm TM Series
- Polyamide, steel, or solid single-block cages

Services to support you over time

Committed to be at your side, our teams not only offer innovative and effective products to meet the needs of a changing world. From the start of each project they are there with you, accompanying you at every stage, offering you all the services needed to make sure the project is well organised and proceeds at the correct pace.



1 Design and calculation

A calculation department is available to clients to help ensure research and development projects get off the ground and are successfully implemented. Application engineers support clients in their design calculations and in selecting the appropriate bearings. Cutting-edge application tools are available to them. For example, the SharcLab package, developed by NTN, is used to calculate the lifetime of a bearing taking into account various factors: loads, lubrication, geometry and micro-geometry of the bearing, axle deformation, etc.

2 Test bench

A COFRAC-accredited testing laboratory enables each bearing to be certified to European Standard EN 12082. It offers all the skills to satisfy customers' testing needs, guaranteeing them flexibility, timeliness and high-quality measurements. It conducts speed and load tests.

3 Bearing expertise

Our expert technical support service enables our customers to analyse, at any time, the reliability of a bearing by visual analysis, electron microscope analysis, molecular analysis, etc.

4 Training

A training module enables consultants to improve the design of bearings. We also offer a practical training module for installation and maintenance teams.

5 Client support

Thanks to the experience and expertise of our technical and sales teams, we offer personalized support for each of your projects, from the development phase right through to series production. For instance, we provide technical on-site support for the fitting of bearings to ensure that best practices are applied.

Services

Engineering

Railway bearings that have a long life is the daily target of the NTN application engineers. From calculation, lubrication & design to simulation, prototyping & testing, they are basing their work on the decades of experience in NTN railway engineering.



Technical Supports

Either to solve technical issues or to optimize maintenance efficiency, NTN railway experts ensure proper bearing installation & removal and provide maintenance teams with all recommendations to implement the right processes. NTN can also provide maintenance tools to guarantee a professional job.



Training

By providing 100% customized trainings, NTN ensure added value sessions and full trainee satisfaction & motivation. Trainings are mostly organized at customer facilities for practical maintenance topics or at NTN premises for engineering topics.



Expertise

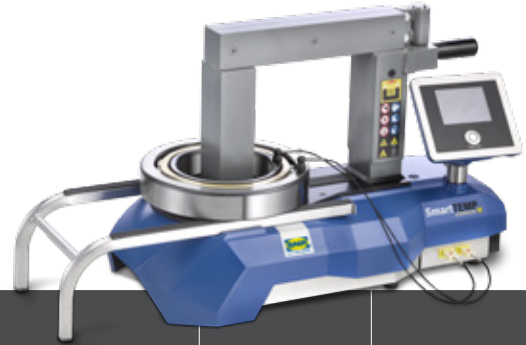
With decades of experience in the diagnosis of railways bearings, NTN provides failure modes analysis and recommendations to solve them. In depth testing is carried out at NTN facilities.

Reconditioning

To optimize the Total Cost of Ownership, railway bearings are designed more & more to operate for millions of kilometers before being changed. In their maintenance procedure, operators must disassemble the bearing and ensure that it can remain in operation until targeted overhaul mileage is reached. NTN can provide, to the operator, bearings reconditioning based on the experience of a railway bearing manufacturer.

Tooling

SmartTEMP
Induction heater

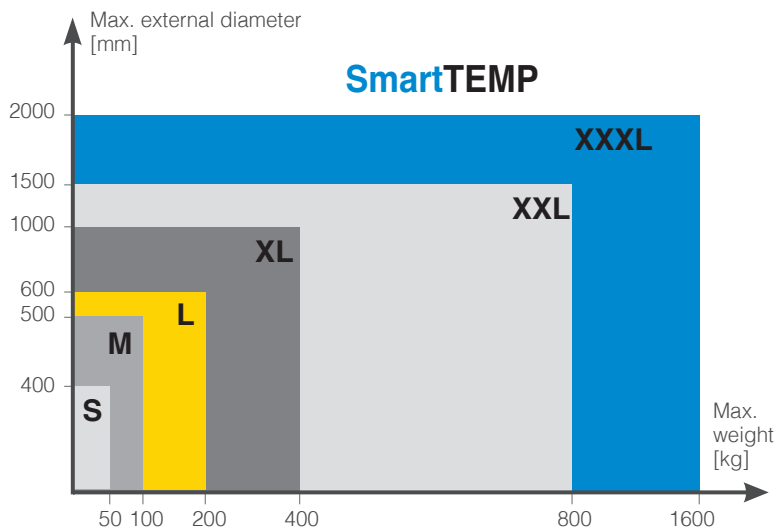


Technical characteristics

	SmartTEMP S	SmartTEMP M	SmartTEMP L	SmartTEMP XL & XL PIVOT	SmartTEMP XXL	SmartTEMP XXXL
Max. weight of workpiece (bearing, sprocket, ring...) (kg)	50	100	200	400	800	1600
Min. bore diameter (mm)	10	10	20	30	40	85
Max. outer diameter (mm)	400	500	600	1000	1500	2000
Power rating (kVa)	3	3.7	8	12.8	25.2	40
Facility power *	230V/13A	230V/16A	400V/20A	400V/32A	400V/63A	400V/100A
Temperature setting range	+40°C to 240°C	+40°C to 240°C	+40°C to 240°C	+40°C to 240°C	+40°C to 240°C	+40°C to 240°C
Included	<ul style="list-style-type: none"> 3 yokes: 14x14x200 mm, 25x24x200 mm, 40x38x200 mm 1 temperature sensor 1 pair of gloves 	<ul style="list-style-type: none"> 1 pivoting yoke: 50x48x280 mm 1 temperature sensor 1 pair of gloves 	<ul style="list-style-type: none"> 1 pivoting yoke: 70x70x350 mm 2 temperature sensors 1 pair of gloves 	<ul style="list-style-type: none"> 1 yoke (pivoting according to the model): 80x80x490 mm 2 temperature sensors 1 pair of gloves 	<ul style="list-style-type: none"> 1 yoke: 100x100x750 mm 2 temperature sensors 1 pair of gloves 	<ul style="list-style-type: none"> 1 yoke: 150x150x1080 mm 2 temperature sensors 1 pair of gloves

* Other voltage on demand

Selection guide for heaters



Accessories



Maintenance tool for bearing inspection

When the bearing inspection is part of the maintenance process, it is necessary to take particular care of the journal bearing during its disassembly and reassembly, especially when it is sealed.

Based on customer bearing design, NTN proposes the right tools to ensure the bearing will remain safe after the inspection procedure.

NTN

Make the world **NAMERAKA**



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BEARINGS

BOWER

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