



# Rail solutions

Increase your service life and reliability  
with NTN-SNR

40 years  
of experience  
working with you





# High added-value services

NTN-SNR work with our customers at all stages of their projects, providing them with the mix of services that they need.

## 1 - Design and calculation

A calculation department is available to customers to facilitate the progress and development of their research and development projects. Applications engineers are able to support them in their dimensioning analyses and in their choice of the right bearings. World-beating technology and tools are provided for them. For example, Sharc software, developed by SNR, is used to calculate the service life of a bearing by taking a range of different elements into consideration: stress, lubrication, the geometry and micro-geometry of the bearing, axle distortion etc.

## 2 - Test bed trials

A test laboratory, accredited by COFRAC, is used to certify that each bearing meets the European standard EN12082. The test bed offers all the expertise required to meet customers test needs by guaranteeing flexibility, compliance with lead times and high quality measurements. Full-scale tests are carried out in different load and speed conditions.

## 3 - Bearing audits

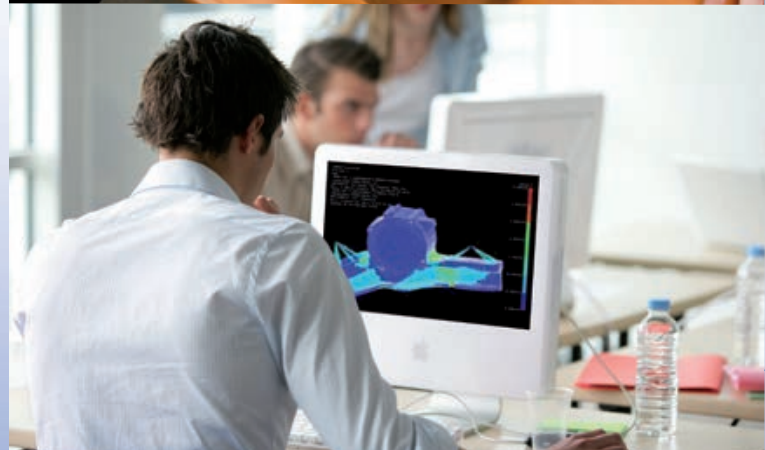
Our technical assistance department staffed by experts enables our customers to benefit at any time from bearing reliability audits that include visual, electron microscope and molecular analyses etc.

## 4 - Training

A theoretical training module enables design offices to improve bearing dimensioning. Practical training courses are also provided for fitting and maintenance crews.

## 5 - Customer support

Thanks to the experience and skills of our technical and sales teams, we are able to offer a personalised support on each of your projects, from the early development phase and throughout the product service life. We offer for example, an onsite technical support for bearing mounting, in order to guarantee the use of best practices.



# World rail speed record champion



NTN has equipped all the Shinkansen trains for the last 40 years. SNR has been a technical partner of the French TGV since its launch and worked closely with SNCF and ALSTOM to achieve the 2007 world rail speed record of 574.8 km/h.

## With **NTN**® **SNR**® the future is already on track

The group NTN and its European branch NTN-SNR have forged a single corporate entity becoming larger every day as a major contender in the worldwide bearings market.

The merger has been successful thanks to a number of special factors: our shared values, a mutual strategic vision, major skills synergies and a highly complementary customer base.

The potential released has caused us to accelerate our development in the rail industry, motivated not only by our long history in this field, but also by our position as the unrivalled leader in high-speed rail technology. The union of our experience and our strengths has enabled us to move ahead of the field in the rail industry and to anticipate the future as if it were happening now.



**High speed**



**Intercity**



**Underground rail and tram**



**Locomotives**



**Freight transport**

## A full range tailored for all types of rolling stock

From the London Underground through French intercity trains to the Tokyo Shinkansen, the group NTN and its European branch NTN-SNR offer a huge range suitable for all types of bogie, meeting the specific needs of each sector of rail transport and the standards in force in different countries.

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



# Efficient, reliable, high-tech solutions

NTN-SNR has developed a cutting-edge technological expertise to respond to the most rigorous demands of the industry and to design and develop bearings capable of covering the entire rail market.

## JOURNAL BEARINGS

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



## AXLE BOXES

- Design, calculation and manufacture

## MECHATRONIC SOLUTIONS

- Speed and temperature sensors
- Diagnosis systems  
(Condition Monitoring Systems)
- Wireless transmission



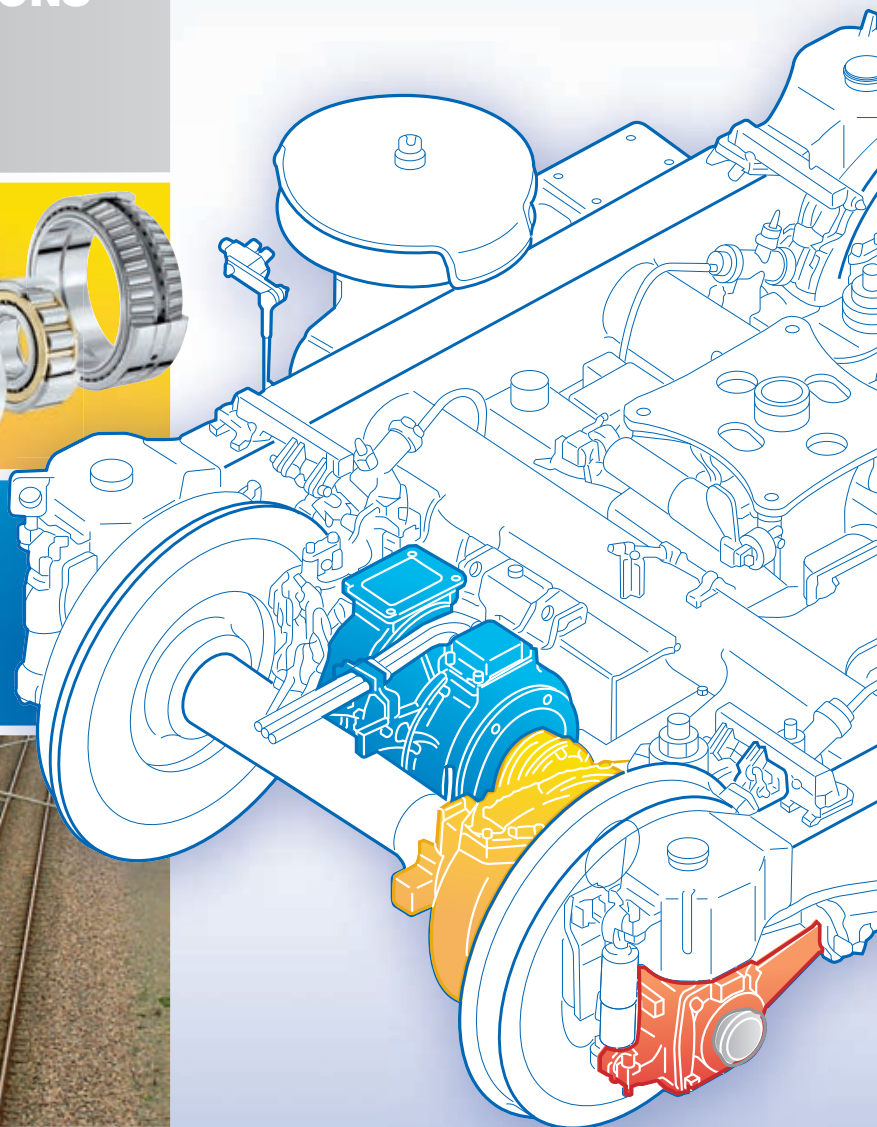
## TRANSMISSION BEARINGS

- Robust cage design
- Increased load capacity
- Large sizes



## TRACTION MOTOR BEARINGS

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



# More than 40 years of unequalled experience for railway requirements

NTN-SNR is a preferred partner, both for original equipment assembly and for parts supplies, with the most important players in all major international rail projects. With more than 40 years of experience, during which we have developed solutions that illustrate our ability to provide expert responses to complex issues, while guaranteeing our customers exceptional quality and total security.



## An uncompromising culture of reliability

Reliability is founded not only on the acquisition, communication and optimization of expertise, but also on a culture of trust and attention that enables each of us to undertake projects in the most reactive and effective manner. The culture of reliability at all levels is one of the secrets of the longevity of NTN-SNR. The world rail speed record bears witness to this: the record-breaking TGV was fitted with standard bearings, certified for service speeds of 350 km/h, without any special features. The group NTN and its European branch NTN-SNR can also justly be proud of not having been involved in any major railway incident ever: a fact which today underpins our unique worldwide reputation and presence.

## Research and innovation a driving force

NTN-SNR has intensified its research and development activities. Thanks to the advances we have made in the high technology sector, and more precisely in mechatronics, we have become a powerful engine for innovation in the rail industry:

- **Self-regulating sensor cartridges**

- Speed and temperature sensors
- On board diagnosis systems
- Wireless transmission

- **Anti-fretting solutions**

- **Megaohm™ Series**

- **Polyamide, steel or solid single-block cage**

