



TAPERED
ROLLER BEARINGS

designed to endure the unbearable



www.ntn-snr.com



With You

NTN-SNR

THE STRENGTH OF A GROUP

As expert in managing the life cycle of a product, NTN in Europe is characterised by the proximity and commitment of its teams. We anticipate development projects on your strategic markets. Our engineers design with you solutions adapted to the most demanding applications, in fields such as construction or agriculture equipment.

With:

- Almost 100 million tapered roller bearings manufactured every year
- A complete range in inch and metric dimensions
- Production tools installed in Europe and in Japan
- Intermediary warehouses fully dedicated to the industry

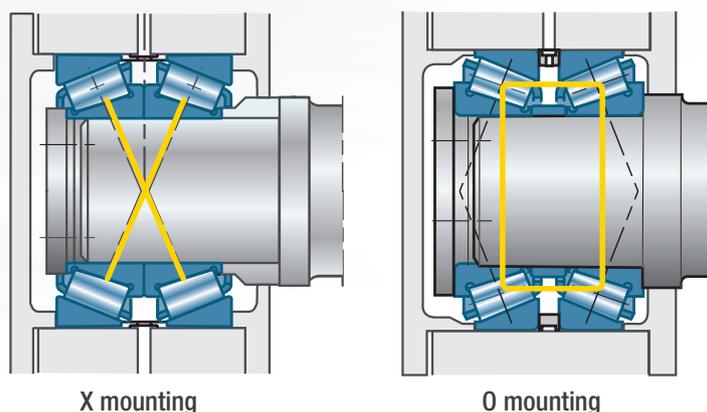
NTN-SNR leads you towards reliability and performance.

The product

Designed to withstand a combination of high axial and radial loads, our tapered roller bearings are made up of two separable parts (Cone & Cup) that ensure easy installation.

With 1, 2 or 4 rows, our tapered roller bearings may be installed in X or O configuration depending on the loads applied.

The choice of steel and heat treatment (through hardening, case hardening or carbonitriding) improve the properties of bearings (surface hardness, dimensional stability, resistance to temperature variations).



The range

Dimensions :

- Metric up to 850mm bore
- In inches up to 1400mm bore

Series to be noted: T7FC, 313xx (Europe range), 303xxD (Japan range) for increased angles.

Prefix to be retained: 4T for case hardened steel (adapted to extreme conditions) and available over almost the entire range.

Suffix to be retained: U for NTN ref. designates through hardened steel, in SNR no suffix for this steel.

For more information, refer to our catalogues!

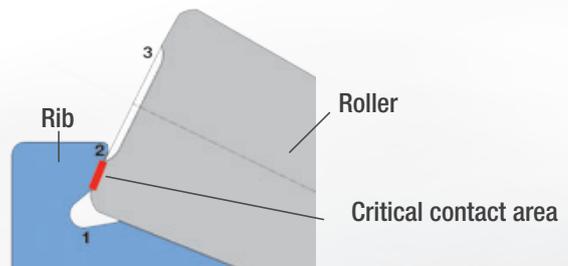
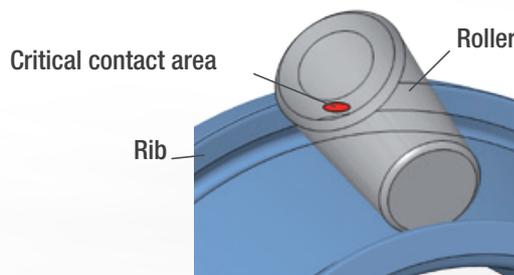
3 REASONS TO CHOOSE OUR TAPERED ROLLER BEARINGS

CONTROLLED INTERNAL GEOMETRY

A decade of research and experience has given us perfect control over the internal geometry of our bearings. One of the critical points is the roller-rib contact. It is by optimising this contact that we reduce the torque to reduce the dissipated power and offer improved efficiencies.

3 benefits of a good roller/rib contact:

- Minimising the sliding velocities and the pressures at the roller-rib contact thanks to an optimum definition of the rib angle and radius of the sphere of the large roller face
- Facilitating the arrival of lubrication by a rib (groove¹, chamfer²) and the roller (recess³) geometry
- Reducing the friction coefficient thanks to the quality of surface conditions (roughness, geometrical precision)



OPTIMUM STATIC AND DYNAMIC CAPACITIES

NTN-SNR has continued to increase static and dynamic capacities by increasing the number and size of rollers present in a bearing of the same dimensions.

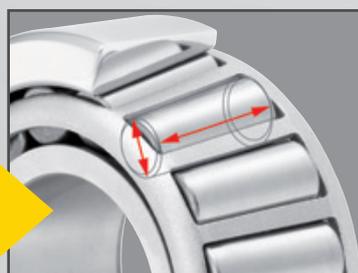
Today, more lines of development are under review such as roller profiles or surface treatments.

Gilles Landragin / Design Expert

«Take the example of a tapered 32207: on the left, the older generation bearing with 15 rollers, on the right the current bearing with 17 rollers. With 2 additional rollers of larger size, the gain on dynamic capacities is 34%. This type of design is possible, thanks to the optimisation of the cage geometry, allowing reduction in thickness of its bridges, while improving its mechanical resistance. In practical terms on this example, the service life was multiplied by 2.65.»



32207 - 15 rollers



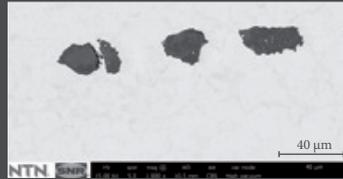
32207 - 17 rollers



Pierre Dierickx / Laboratory Expert Materials and Measurements

«NTN-SNR has always been very sensitive to the quality of its steel. The approval procedure for our suppliers is very strict and allows the selection of only the best ones. Thus, we guarantee our customers a high level of reliability for our bearings thanks, among others, to an impeccable inclusion cleanliness. Here are two extreme examples of aluminate inclusions with a SEM (Scanning Electron Microscope).

Our objective: retain the cleanest steel, thus that which tends to the image on the right.»



SEM views of aluminate inclusions taken at the same scale.

OUR EXPERIENCE IN AGRICULTURAL EQUIPMENT

High power tractor axles

«As application engineer, I have developed, in close collaboration with our customer, solutions adapted to the extreme conditions of this tractor. The size of wheels lets you imagine what our bearings withstand every day. The powers of tractors are constantly increasing. The difficulty for the manufacturers is to transmit this power to the ground via the axle shafts whose bearings must withstand rotary bending 8 times greater than that generally accepted by our «catalogue» bearings. Our expertise lies in our ability to take into account these constraints outside the standards and to propose appropriate technologies.»

**A new challenge for us?
We are ready!**



Gonzague Huyghe
Agricultural Application Expert



Other applications that we are proud of:

Railway: CITADIS™ tramway hubs for Alstom

Transmission: Drive pinions on ZF gearbox

Steel : ThyssenKrupp Steel Europe AG hot strip mill

Wind: Main wind turbine shaft at Alstom Power

