

1. Bearing materials

The internal design of NIKO track rollers is the same as in single row or Double-row Angular Contact Ball Bearings.

The units can carry axial loads in both directions and, due to the thickness of the outer ring, large radial loads.

The standard products are produced from high quality bearing steel, with a hardness of 58 to 62 HRC. Some types are also available in stainless steel (440C) with hardness >58 HRC.

The track rollers contained in this catalogue are produced with standard tolerances (ISO 492) and standard clearance (C1).

The track rollers are produced in two distinct families. Cylindrical or crowned outer ring and profiled outer ring.

These track rollers are available in single and double row design. They are available with straight cylindrical OD or crowned profile OD. The crowned OD is used to reduce the edge stresses caused by possible misalignment errors. The cylindrical OD can provide increased support due to the longer contact profile.

These products are used typically on flat surfaces. Some of the most common applications are:

- transfer rolls
- idler rollers
- Support rollers
- Straightening rolls

2. Shields and seals

2.1 Types

2.1.1 Track rollers LR 2..NFP, LR 2..RRU

These single row ball track rollers are available in two different versions.

- LR2..NFP: cylindrical OD, with contact seals protected by a metal shield.
- LR2..RRU: crowned OD with contact seals protected by a metal shield, inner ring with increased width to allow additional lubricant storage.

2.1.2 Track rollers LR 52-53..NPFU, LR 52-53..KDD

These are double rows angular contact ball track rollers. Due to their internal design, they can carry axial loads of large magnitude. They are available in two versions:

- LR52-53..NPFU: crowned OD, contact seals protected by a metal shield.
- LR52-53..KDD: cylindrical OD, with metal shields.

The track rollers with profiled outer ring are basically Double-rows Angular Contact Ball Bearings with a reinforced and profiled outer ring. The outer ring profile allows the units to operate on round shafts or other type of profiled raceways. The outer profile can have three different designs:

- Track rollers with gothic arch groove - type LFR
- Track rollers with "V" shaped groove - type RV
- Track rollers with "W" profile - type RM

Type RV and RW can be supplied with the pertinent mounting hardware.
The largest portion of these products are used as linear guides.

2.2 Types

2.2.1 Track rollers LFR, mounting bolts and studs RC/RE

The track rollers series LFR can be used on round shafts with diameter from 4 mm to 50 mm. The contact between track roller gothic arch groove profile and shaft is on two points. This allows the units to carry loads in both axial and radial direction. The track rollers are available with either shields ZZ or contact seals 2RS.

2.2.2 Track rollers RV

The track rollers RV have a groove machined in the outer ring. The groove is "V" shaped with an included angle of 120 degrees. These units are predominantly used on shafts with diameters from 7 to 20 MM. The contact between track roller and shafts is on two points. In special cases, the units can run on profiled ways. The units are supplied with non contact shields.

2.2.3 Track rollers with "W" profile, type RM

The track rollers series RM have grooves machined in the outer ring of the unit with an included angle of 90 degree. They have been engineered to run on profiled steel elements that have identical shape. They can run on either the internal or the external surfaces of the outer ring.

They are available with either non-contacting shields ZZ or contact seals 2RS.

3. Bearing tolerances

3.1 Standard of tolerances

Track roller bearing "tolerances" or dimensional accuracy and running accuracy, are regulated by ISO and JIS standards (rolling bearing tolerances). For dimensional accuracy, these standards prescribe the tolerances necessary when installing bearings on shafts or in housings.

Running accuracy is defined as the allowable limits for bearing runout during operation.

Table 3.1 Comparison of tolerance classifications of national standards

Standard		Tolerance class				
Japanese industrial standard (JIS)	JIS	class 0.6X	class 6	class 5	class 4	class 2
International Organization for Standardization (ISO)	ISO	Normal class Class 6X	Class 6	Class 5	Class 4	Class 2
Deutsches Institut für Normung (DIN)	DIN	P0	P6	P5	P4	P2
American National Standards Institute (ANSI)	ANSI/ABMA	ABEC-1	ABEC-3	ABEC-5	ABEC-7	ABEC-9