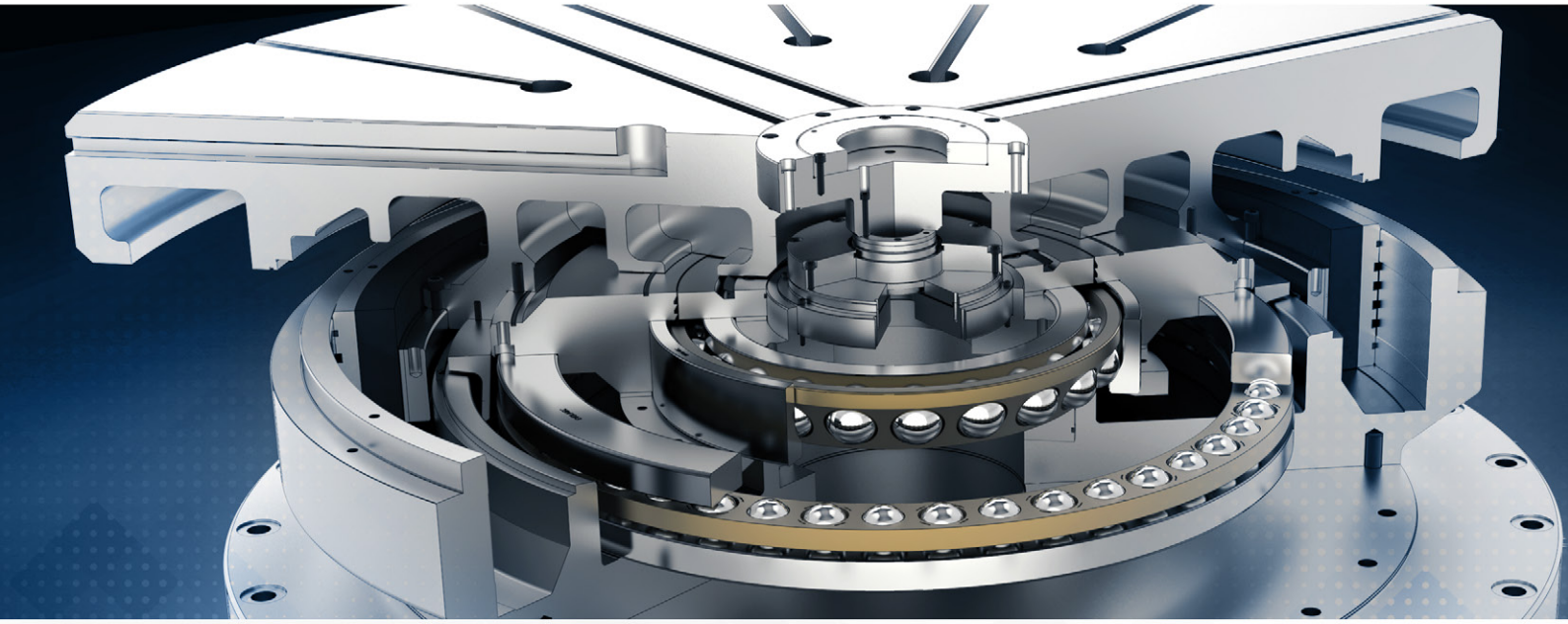
EVOLMEC®
EVOLUZIONE MECCANICA



MEDIUM AND LARGE SIZE
BEARINGS FOR MACHINE TOOLS

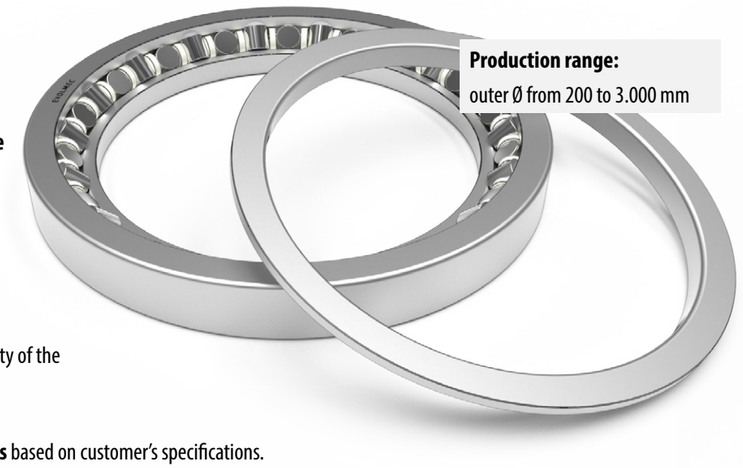
Tapered crossed roller bearings
Thrust ball bearings, single direction
Angular contact ball bearings
Thrust cylindrical roller bearings, single direction
Precision radial cylindrical roller bearings
Tapered roller bearings, single row

Tapered crossed roller bearings EVXR / EVJXR series

EVOLMEC precision tapered roller bearings are designed to provide **the highest level of running accuracy and stiffness** saving space and material costs at the same time, thanks to their capability to replace a pair of bearings with one only.

Able to withstand **high tilting moment loads**, the tapered crossed roller bearing is ideally suited for **rotary tables of machine tools**, including vertical boring machines and grinding machines.

It is especially suitable for oscillating applications and stands where the space is limited or the lowest possible center of gravity of the rotating mass is required.

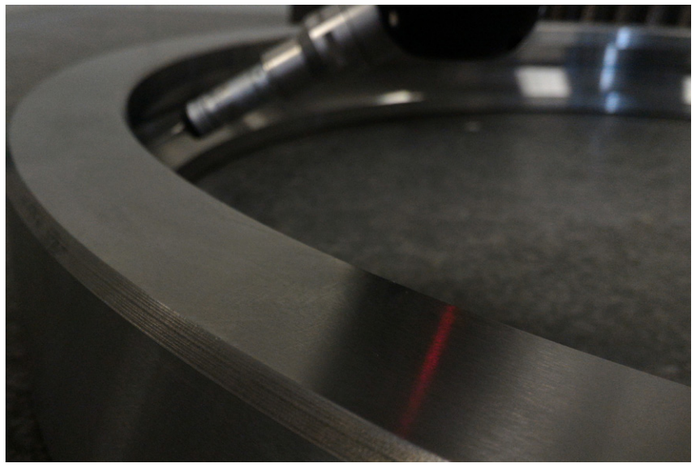


Production range:
outer Ø from 200 to 3.000 mm

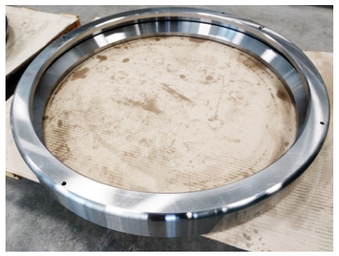
EVOLMEC can also provide **special solutions** based on customer's specifications.

Technical specifications:

- **Dimensional accuracy:**
  Up to P5 (DIN 620) / Class 3 (ABMA)
- **Running accuracy:**
  Up to P4 (DIN 620) / Class 0 (ABMA)
- **Preload:**
  According to tables and drawings
- **Rings and rollers material:**
  100Cr6 (UNI 3097 – WNr. 1.3505)
  100CrMn6 (UNI 3097 – WNr. 1.3520)
  100CrMo7 (UNI 3097 – WNr. 1.3537)
- **Heat treatment:**
  Hardening and tempering
- **Rings surface hardness:**
  58 / 64 HRc

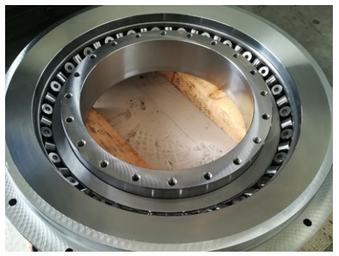


Measuring of the taper of a raceway.



EVXR / EVJXR bearings are able of withstand r**adial loads**, **axial loads** and **tilting moment loads**.

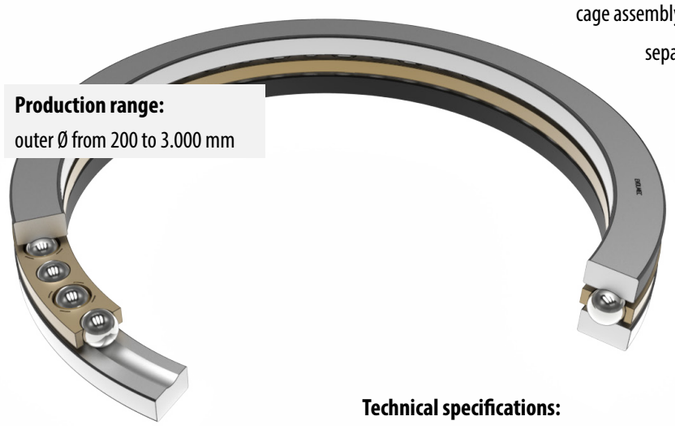
The polyamide resin spacers are inserted between the rollers to reduce the **roller-to-roller friction**.



The high mechanical precision and the high stiffness allow to minimize fitting errors.

Thrust ball bearings, single direction 511 series

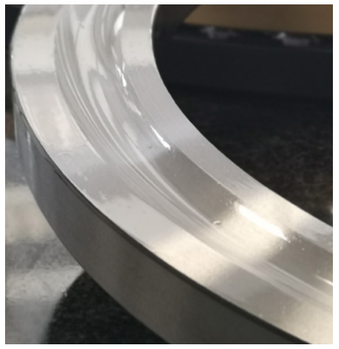
Thrust ball bearings comprise a shaft washer, a housing washer and a ball and cage assembly. The bearings are not self-retaining; the ball and cage assembly and bearing washers can therefore be mounted separately.



Production range:
outer Ø from 200 to 3.000 mm

Technical specifications:

- **Dimensional accuracy:**
  Up to P5 (DIN 620)
- **Running accuracy:**
  Up to P4A (DIN 620)
- **Rings and balls material:**
  100Cr6 (UNI 3097 – WNr. 1.3505)
  100CrMn6 (UNI 3097 – WNr. 1.3520)
  100CrMo7 (UNI 3097 – WNr. 1.3537)
- **Heat treatment:**
  Hardening and tempering
- **Rings surface hardness:**
  58 / 64 HRc



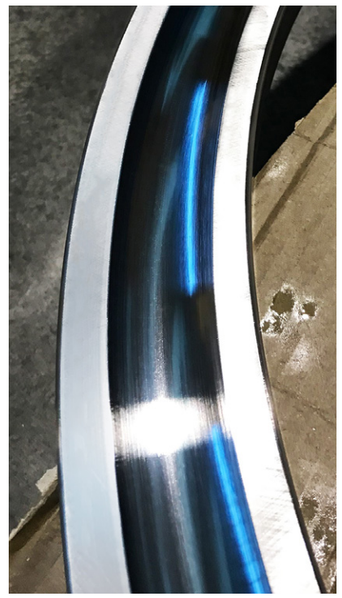
Detail of a thrust ball bearing **raceway**.

Single direction thrust ball bearings can support high axial loads in one direction, but must not be subjected to radial loads; radial loads must therefore be absorbed separately. They don't permit any angular misalignment between shaft and housing, nor can they accommodate any errors of angle between the support surfaces in the housing and on the shaft.

Large size single direction thrust ball bearings are supplied with **machined brass cage** (**M** and **MP** suffixes) or **steel cage** (**F** and **FP** suffixes).

EVOLMEC can also provide **special solutions** based on customer's specifications.

511-630.MP.P5 thrust ball bearing.



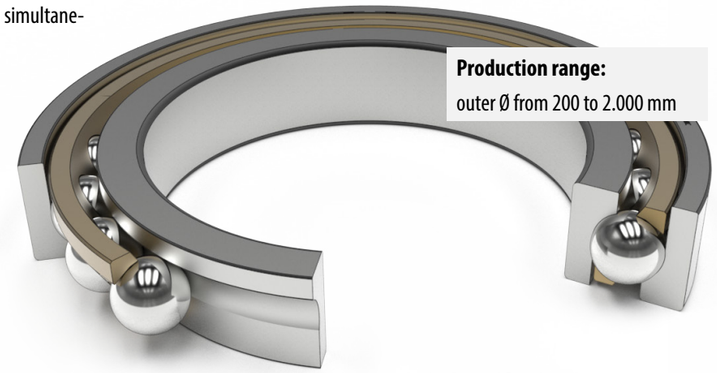
The **surface finishing** of the raceways is optimal in order to reduce friction and to limit heat generation.

Angular contact ball bearings 70, 719 series

Angular contact ball bearings have raceways in the inner and outer rings which are displaces with respect to each other in the direction of the bearing axis; this means that they are particularly suitable for the accommodation of **combined loads**, in other words simultaneously acting radial and axial loads.

MP suffix means that the bearing is provided with a ball centered machined brass cage, while **MPA** and **MPB** suffixes mean that the bearing is provided with a machined brass cage guided respectively by the outer ring or by the inner ring.

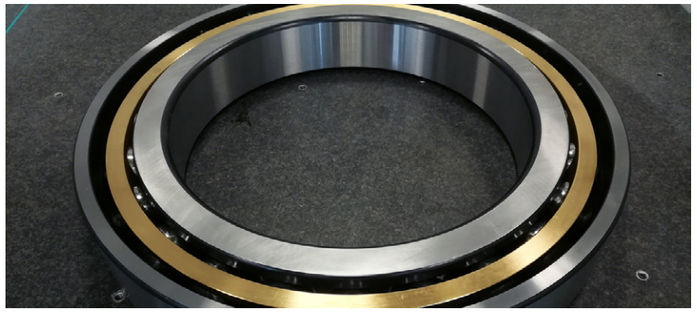
EVOLMEC can also provide **special solutions** based on customer's specifications.



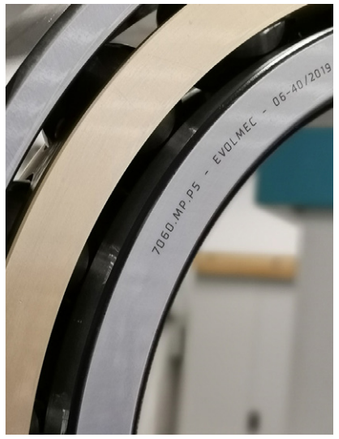
Production range:
outer Ø from 200 to 2.000 mm

Technical specifications:

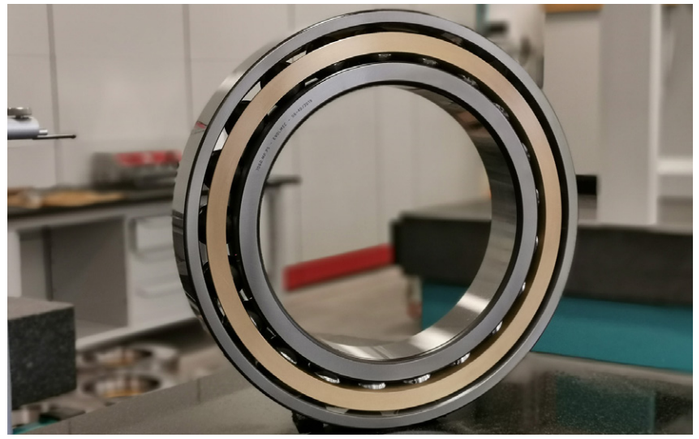
- **Dimensional accuracy:**
  Up to P5 (DIN 620)
- **Running accuracy:**
  Up to P4A (DIN 620)
- **Rings and balls material:**
  100Cr6 (UNI 3097 – WNr. 1.3505)
  100CrMn6 (UNI 3097 – WNr. 1.3520)
  100CrMo7 (UNI 3097 – WNr. 1.3537)
- **Heat treatment:**
  Hardening and tempering
- **Rings surface hardness:**
  58 / 64 HRc



They are bearing especially suited for **high speeds** and their parts are self-retaining.



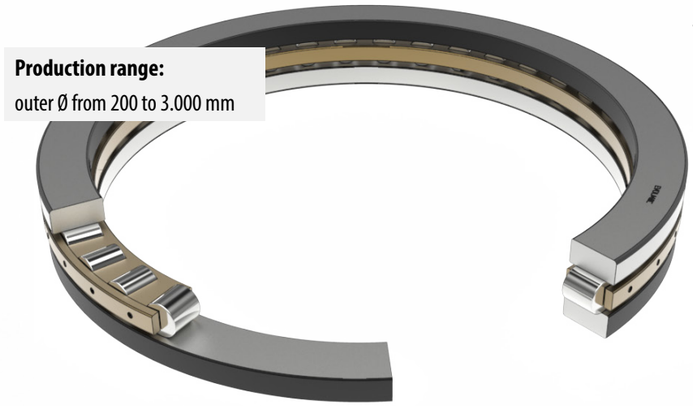
Our products are **laser marked** to facilitate identification and traceability of the supplied bearings.



The **axial load carring capacity** increases with increasing the contact angle.

Thrust cylindrical roller bearings, single direction 810, 811, 891 series

Thrust cylindrical roller bearings comprise **thrust cylindrical roller and cage assemblies K**, **housing washers GS** and **shaft washers WS.**
They are suitable for **applications with very high axial loads**



Production range:
outer Ø from 200 to 3.000 mm

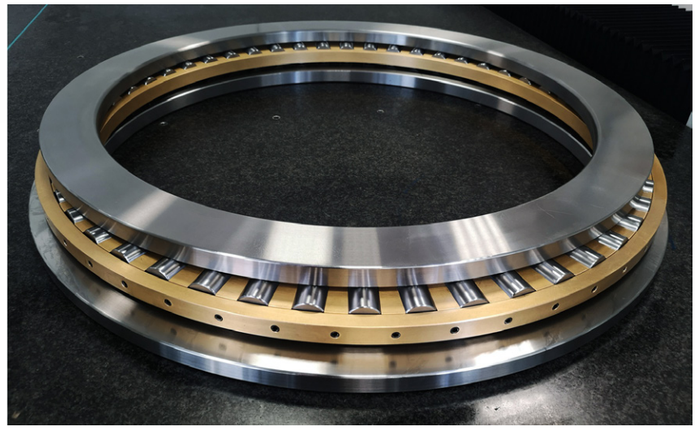
They have v**ery low axial section height**, **high rigidity** and **can support axial forces in one direction** but must not be subjected to radial loads; radial loads must therefore be absorbed separately. Thanks to their separability, they are easy to install.

They are generally provided with **brass cage** (**M** suffix).

EVOLMEC can also provide **special solutions** based on customer's specifications.

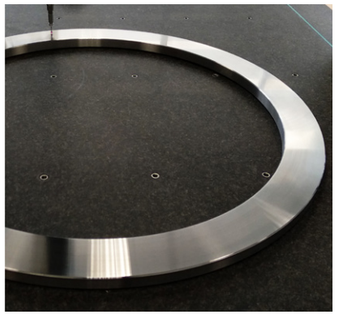
Technical specifications:

- **Dimensional accuracy:**
  Up to P5 (DIN 620)
- **Running accuracy:**
  Up to P4A (DIN 620)
- **Rings and rollers material:**
  100Cr6 (UNI 3097 – WNr. 1.3505)
  100CrMn6 (UNI 3097 – WNr. 1.3520)
  100CrMo7 (UNI 3097 – WNr. 1.3537)
- **Heat treatment:**
  Hardening and tempering
- **Rings surface hardness:**
  58 / 64 HRc



Due to the internal geometry of the bearings, high slippage forces are produced between raceway and rollers, which can be reduced by appropiate **lubrification**.

EVOLMEC medium and large size bearings are supplied in **wooden cases** to ensure maximum protection during transport



Measuring of the planarity of a washer's raceway.

Precision radial cylindrical roller bearings NN30, NNU49 series

Radial cylindrical roller bearings NN30 and NNU49 series are double row precision bearings for machine tools.

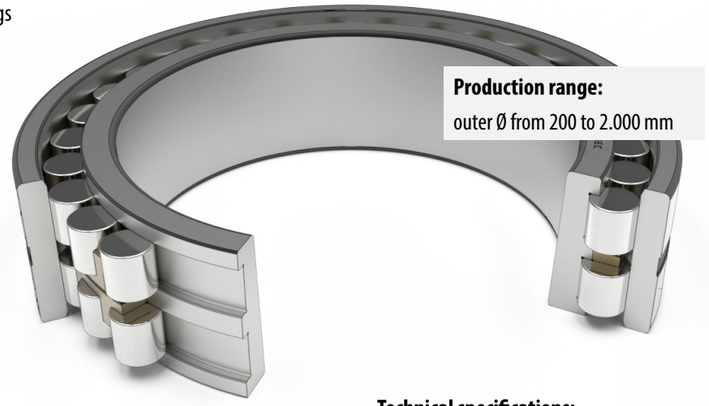
They comprise solid outer rings, solid inner rings generally provided with a tapered bore (taper 1:12 and 1:30, determined respectively by suffixes **K** and **K30**) and cylindrical roller and pronged machined brass cages guided by rollers (**M** suffix).

In the case of cylindrical roller bearing NN30, the outer ring is removable and can thus be mounted separately from the rest of the bearing package. In the case of the cylindrical roller bearing NNU49, the inner ring is removable.

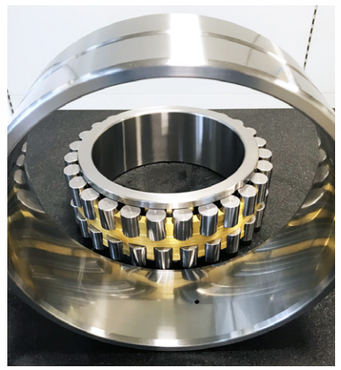
Precision radial cylindrical roller bearings are used when **very high precision under very high radial load is required**.

They facilitate bearing arrangements with high accuracy and high radial rigidity. They provide radial support for the main spindle.

EVOLMEC can also provide **special solutions** based on customer's specifications.



Production range:
outer Ø from 200 to 2.000 mm

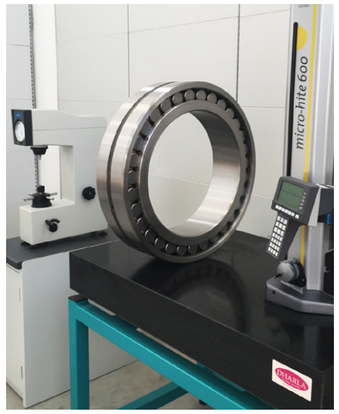


NN30 series double row precision radial cylindrical roller bearing.

Technical specifications:

- **Dimensional accuracy:**
  Up to P5 (DIN 620)
- **Running accuracy:**
  Up to P4A (DIN 620)
- **Rings and rollers material:**
  100Cr6 (UNI 3097 – WNr. 1.3505)
  100CrMn6 (UNI 3097 – WNr. 1.3520)
  100CrMo7 (UNI 3097 – WNr. 1.3537)
- **Heat treatment:**
  Hardening and tempering
- **Rings surface hardness:**
  58 / 64 HRc

EVOLMEC has its own **metrological lab**, equipped with **high tech instruments** in order to **test** its bearings



EVOLMEC can provide, on request, **testing and compliance reports** of the supplied bearings.

Tapered roller bearings, single row 320, 329 series

Single row tapered roller bearings comprise **solid inner and outer rings** with **tapered raceways** and **tapered rollers** with **cages** made from **pressed sheet steel**. The bearings are not self-retaining. As a result, the inner ring with the rollers and the cage can be fitted separately from the outer ring.

They are mostly used where a very high load capacity is required, as they can sustain **axial forces in one direction** and **high radial loads**.

The axial load carrying capacity is dependent on the contact angle; this means that the larger the angle, the higher the axial load to which the bearing can be subjected.

EVOLMEC can also provide **special solutions** based on customer's specifications.

Production range:
outer Ø from 200 to 2.000 mm

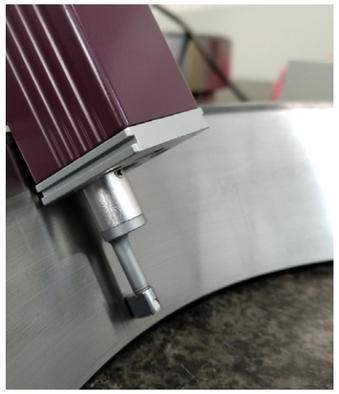
Technical specifications:

- **Dimensional accuracy:**
  Up to P5 (DIN 620)
- **Running accuracy:**
  Up to P4A (DIN 620)
- **Rings and rollers material:**
  100Cr6 (UNI 3097 – WNr. 1.3505)
  100CrMn6 (UNI 3097 – WNr. 1.3520)
  100CrMo7 (UNI 3097 – WNr. 1.3537)
- **Heat treatment:**
  Hardening and tempering
- **Rings surface hardness:**
  58 / 64 HRc

Tapered roller bearings **320 series**

Tapered roller bearings **in inch sizes** are manufactured according to ANSI/ABMA standards.

EVOLMEC products meet all the **international requirements for quality**. Our Quality Management System has been developed in accordance with **ISO 9001:2015**.



Inspection of the **surface roughness level** of an outer ring's raceway.

EVOLMEC ® MEDIUM AND LARGE SIZE BEARINGS FOR MACHINE TOOLS - October 2019

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