



Image may differ from product. See technical specification for details.

## 2304 TN9

### Self-aligning ball bearing

Self-aligning ball bearings have two rows of balls, a common sphered raceway in the outer ring and two deep uninterrupted raceway grooves in the inner ring. They are insensitive to angular misalignment of the shaft relative to the housing, which can be caused, for example, by shaft deflection.

- Accommodate static and dynamic misalignment
- Excellent high-speed performance
- Excellent light load performance
- Low friction

Overview

Dimensions

Bore diameter	20 mm
Outside diameter	52 mm
Width	21 mm

Performance

Basic dynamic load rating	18.2 kN
Basic static load rating	4.75 kN
Reference speed	26 000 r/min
Limiting speed	19 000 r/min

Properties

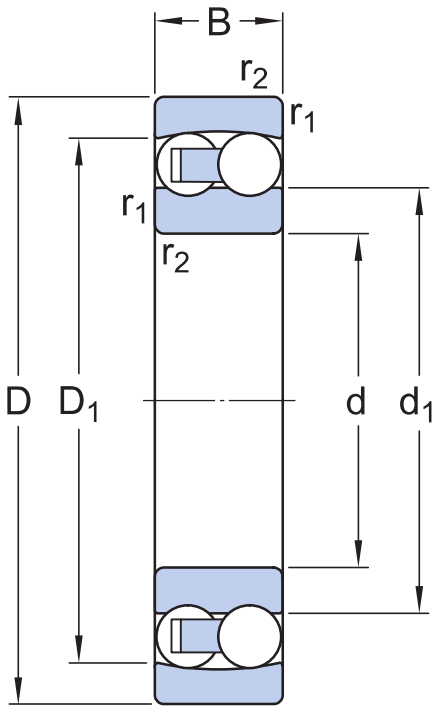
Retaining feature, inner ring	None
Locating feature, bearing outer ring	None
Number of rows	2
Bore type	Cylindrical
Cage	Non-metallic
Radial internal clearance	CN
Tolerance class	Normal
Material, bearing	Bearing steel
Coating	Without
Sealing	Without
Lubricant	None
Relubrication feature	Without

Logistics

Product net weight	0.22 kg
eClass code	23-05-08-06
UNSPSC code	31171532

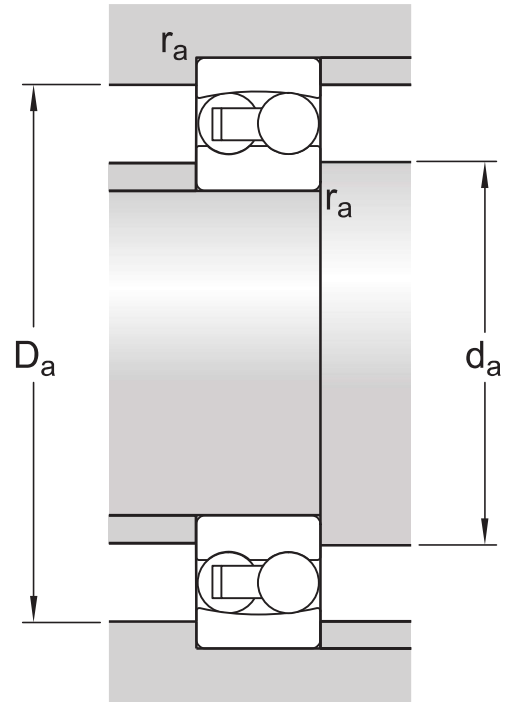
Technical specification

Bore type	Cylindrical
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Dimensions

$d$	20 mm	Bore diameter
$D$	52 mm	Outside diameter
$B$	21 mm	Width
$d_1$	$\approx 29.15$ mm	Shoulder diameter inner ring
$D_1$	$\approx 41.9$ mm	Shoulder diameter outer ring
$r_{1,2}$	min. 1.1 mm	Chamfer dimension



Abutment dimensions

$d_a$	min. 27 mm	Abutment diameter shaft
$D_a$	max. 45 mm	Abutment diameter housing
$r_a$	max. 1.1 mm	Fillet radius

Calculation data

Basic dynamic load rating	C	18.2 kN
Basic static load rating	$C_0$	4.75 kN
Fatigue load limit	$P_u$	0.24 kN
Reference speed		26 000 r/min
Limiting speed		19 000 r/min
Permissible angular misalignment	$\alpha$	3 °
Calculation factor	$k_r$	0.05
Limiting value	e	0.52
Calculation factor	$Y_0$	1.3
Calculation factor	$Y_1$	1.2
Calculation factor	$Y_2$	1.9

## Tolerances and clearances

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### GENERAL BEARING SPECIFICATIONS

- [Tolerances: Normal, JS7](#)
- [Radial internal clearance: table](#)

## BEARING INTERFACES

- [Seat tolerances for standard conditions](#)
- [Tolerances and resultant fits](#)

More Information

 Product details	 Engineering information	 Tools
<a href="#">Designs and variants</a>	<a href="#">Principles of rolling bearing selection</a>	<a href="#">SKF Product select - Select and evaluate bearing</a>
<a href="#">General bearing specifications</a>	<a href="#">General bearing knowledge</a>	<a href="#">SKF Product select - Combine housing with bearing</a>
<a href="#">Loads</a>	<a href="#">Bearing selection process</a>	<a href="#">SimPro Quick</a>
<a href="#">Temperature limits</a>	<a href="#">Bearing interfaces</a>	<a href="#">LubeSelect for SKF greases</a>
<a href="#">Permissible speed</a>	<a href="#">Seat tolerances for standard conditions</a>	<a href="#">Heater selection tool</a>
<a href="#">Design considerations</a>	<a href="#">Selecting internal clearance</a>	<a href="#">Drive-up Method Program</a>
<a href="#">Mounting</a>	<a href="#">Lubrication</a>	<a href="#">Oil Injection Method Program</a>
<a href="#">Designation system</a>	<a href="#">Sealing, mounting and dismounting</a>	<a href="#">Tool and Accessory Selector for sleeves and shafts</a>
	<a href="#">Bearing failure and how to prevent it</a>	



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