



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

2309 EM

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	45 mm
Outside diameter	100 mm
Width	36 mm

Performance

Basic dynamic load rating	63.7 kN
Basic static load rating	19.3 kN
Reference speed	13 000 r/min
Limiting speed	9 000 r/min

Properties

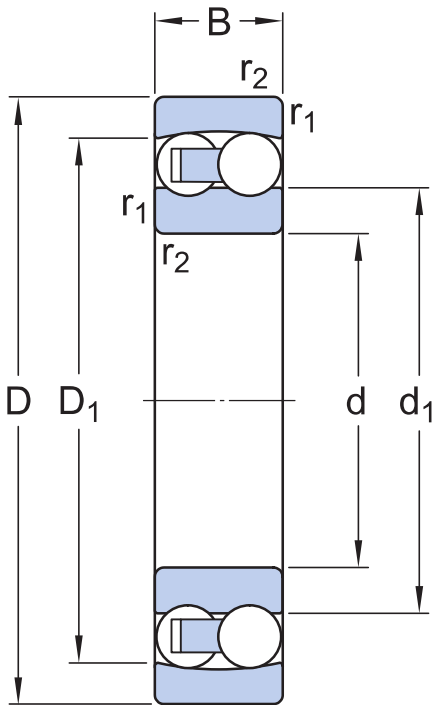
Retaining feature, inner ring	None
Locating feature, bearing outer ring	None
Number of rows	2
Bore type	Cylindrical
Cage	Machined metal
Radial internal clearance	CN
Tolerance class	Normal
Material, bearing	Bearing steel
Coating	Without
Sealing	Without
Lubricant	None
Relubrication feature	Without

Logistics

Product net weight	1.31 kg
eClass code	23-05-08-06
UNSPSC code	31171532

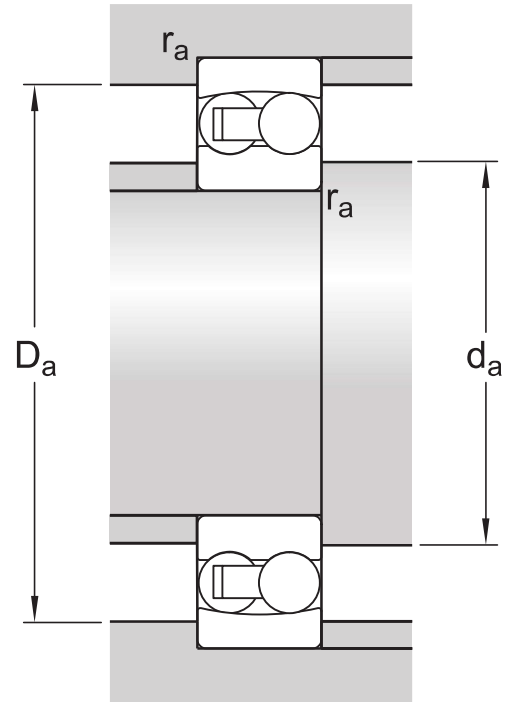
Technical specification

Bore type	Cylindrical
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Dimensions

d	45 mm	Bore diameter
D	100 mm	Outside diameter
B	36 mm	Width
d ₁	≈ 60.16 mm	Shoulder diameter inner ring
D ₁	≈ 86 mm	Shoulder diameter outer ring
r _{1,2}	min. 1.5 mm	Chamfer dimension



Abutment dimensions

d_a	min. 54 mm	Abutment diameter shaft
D_a	max. 91 mm	Abutment diameter housing
r_a	max. 1.5 mm	Fillet radius

Calculation data

Basic dynamic load rating	C	63.7 kN
Basic static load rating	C_0	19.3 kN
Fatigue load limit	P_u	1 kN
Reference speed		13 000 r/min
Limiting speed		9 000 r/min
Permissible angular misalignment	α	3 °
Calculation factor	k_r	0.05
Limiting value	e	0.33
Calculation factor	Y_0	2
Calculation factor	Y_1	1.9
Calculation factor	Y_2	3

Tolerances and clearances

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



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