

2310 K

Self-aligning ball bearing with tapered bore



Self-aligning ball bearings, with a tapered bore, 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. The tapered bore facilitates ease of mounting via adapter sleeves or withdrawal sleeves.

- Ease of mounting via adapter sleeves or withdrawal sleeves
- Accommodate static and dynamic misalignment
- Excellent high-speed performance
- Excellent light load performance
- Low friction

Overview

Dimensions

Bore diameter	50 mm
Outside diameter	110 mm
Width	40 mm

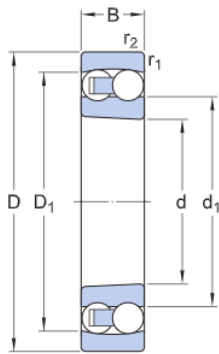
Properties

Bore type	Tapered 1:12
Cage	Sheet metal
Coating	Without
Locating feature, bearing outer ring	None
Lubricant	None
Material, bearing	Bearing steel
Radial internal clearance	CN
Relubrication feature	Without
Retaining feature, inner ring	None
Sealing	Without
Tolerance class	Normal

Technical Specification

Bore type

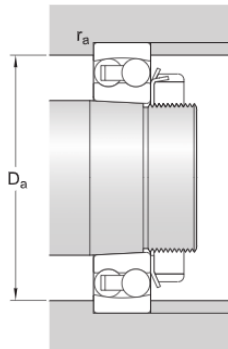
Tapered 1:12



Dimensions

d	50 mm	Bore diameter
D	110 mm	Outside diameter
B	40 mm	Width
d_1	≈ 66 mm	Shoulder diameter inner ring
D_1	≈ 92.5 mm	Shoulder diameter outer ring
$r_{1,2}$	min. 2 mm	Chamfer dimension

Abutment dimensions



D_a	max. 99 mm	Abutment diameter housing
r_a	max. 2 mm	Fillet radius

Calculation data

Basic dynamic load rating	C	63.7 kN
Basic static load rating	C_0	20 kN
Fatigue load limit	P_u	1.04 kN
Reference speed		12 000 r/min

Limiting speed		8 500 r/min
Permissible angular misalignment	α	3 °
Calculation factor	k_r	0.05
Limiting value	e	0.43
Calculation factor	Y_0	1.6
Calculation factor	Y_1	1.5
Calculation factor	Y_2	2.3

Mass

Mass bearing		1.55 kg
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