

1316

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	80 mm
Outside diameter	170 mm
Width	39 mm

Performance

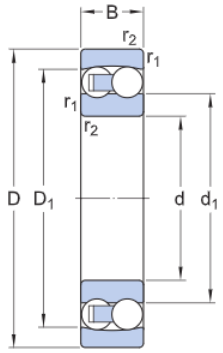
Basic dynamic load rating	88.4 kN
Basic static load rating	33.5 kN
Reference speed	7 500 r/min
Limiting speed	5 300 r/min

Properties

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

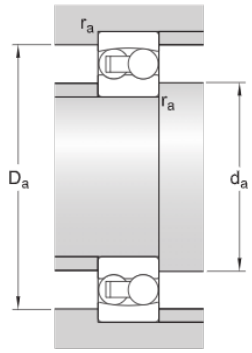
Technical Specification

Bore type	Cylindrical



Dimensions

d	80 mm	Bore diameter
D	170 mm	Outside diameter
B	39 mm	Width
d_1	≈ 110 mm	Shoulder diameter inner ring
D_1	≈ 144.4 mm	Shoulder diameter outer ring
$r_{1,2}$	min. 2.1 mm	Chamfer dimension



Abutment dimensions

d_a	min. 92 mm	Abutment diameter shaft
D_a	max. 158 mm	Abutment diameter housing
r_a	max. 2 mm	Fillet radius

Calculation data

Basic dynamic load rating	C	88.4 kN
Basic static load rating	C_0	33.5 kN
Fatigue load limit	P_u	1.5 kN
Reference speed		7 500 r/min

Limiting speed		5 300 r/min
Permissible angular misalignment	α	3 °
Calculation factor	k_r	0.045
Limiting value	e	0.22
Calculation factor	Y_0	2.8
Calculation factor	Y_1	2.9
Calculation factor	Y_2	4.5

Mass

Mass bearing	4.2 kg

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