

# 2316 Self-aligning ball bearing



## 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	58 mm

### Performance

Basic dynamic load rating	135 kN
Basic static load rating	49 kN
Reference speed	7 000 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	58 mm	Width
$d_1$	≈ 104.4 mm	Shoulder diameter inner ring
$D_1$	≈ 145.1 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	135 kN
Basic static load rating	$C_0$	49 kN
Fatigue load limit	$P_u$	2.24 kN
Reference speed		7 000 r/min

Limiting speed		5 300 r/min
Permissible angular misalignment	$\alpha$	3 °
Calculation factor	$k_r$	0.05
Limiting value	$e$	0.37
Calculation factor	$Y_0$	1.8
Calculation factor	$Y_1$	1.7
Calculation factor	$Y_2$	2.6

## Mass

Mass bearing		6.1 kg
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