

# 2312 K Self-aligning ball bearing with tapered bore



## 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	60 mm
Outside diameter	130 mm
Width	46 mm

### Performance

Basic dynamic load rating	87.1 kN
Basic static load rating	28.5 kN
Reference speed	9 500 r/min
Limiting speed	7 000 r/min

### Properties

Retaining feature, inner ring	None
Locating feature, bearing outer ring	None
Number of rows	2
Bore type	Tapered 1:12
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

Tapered 1:12



## Dimensions

d	60 mm	Bore diameter
D	130 mm	Outside diameter
B	46 mm	Width
$d_1$	≈ 77.1 mm	Shoulder diameter inner ring
$D_1$	≈ 109.2 mm	Shoulder diameter outer ring
$r_{1,2}$	min. 2.1 mm	Chamfer dimension

## Abutment dimensions

$D_a$	max. 118 mm	Abutment diameter housing
$r_a$	max. 2 mm	Fillet radius



## Calculation data

Basic dynamic load rating	C	87.1 kN
Basic static load rating	$C_0$	28.5 kN
Fatigue load limit	$P_u$	1.46 kN
Reference speed		9 500 r/min

Limiting speed		7 000 r/min
Permissible angular misalignment	$\alpha$	3 °
Calculation factor	$k_r$	0.05
Limiting value	$e$	0.4
Calculation factor	$Y_0$	1.6
Calculation factor	$Y_1$	1.6
Calculation factor	$Y_2$	2.4

## Mass

Mass bearing		2.5 kg
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