

# 7209 BECBJSingle row angular contact ball bearing

## Single row angular contact ball bearing



These single row angular contact ball bearings can accommodate radial and axial loads acting simultaneously, where the axial load acts in one direction only. They can operate at high speeds and, depending on the variant, even very high speeds. They are more suitable than deep groove ball bearings for supporting large axial forces acting in one direction.

- High-speed capability
- Accommodate relatively high radial loads and large unilateral axial loads

## Overview

### Dimensions

Bore diameter	45 mm
Outside diameter	85 mm
Width	19 mm
Contact angle	40 °

### Performance

Basic dynamic load rating	38 kN
Basic static load rating	28.5 kN
Reference speed	9 500 r/min
Limiting speed	10 000 r/min
SKF performance class	SKF Explorer

### Properties

Contact type	Normal contact (two-point contact)
Number of rows	1
Locating feature, bearing outer ring	None
Ring type	One-piece inner and outer rings
Cage	Steel sheet metal
Matched arrangement	No
Universal matching bearing	Yes
Axial internal clearance	Not applicable
Matched condition (axial clearance/ preload)	Axial clearance CB
Tolerance class	Class P6 (P6)

Material, bearing	Bearing steel
Coating	Without
Sealing	Without
Lubricant	None
Relubrication feature	Without

# Technical Specification

SKF performance class

SKF Explorer



## Dimensions

d	45 mm	Bore diameter
D	85 mm	Outside diameter
B	19 mm	Width
$d_1$	$\approx 60.85$ mm	Shoulder diameter of inner ring (large side face)
$d_2$	$\approx 52.68$ mm	Shoulder diameter of inner ring (small side face)
$D_1$	$\approx 70.15$ mm	Shoulder diameter of outer ring (large side face)
a	37 mm	Distance side face to pressure point
$r_{1,2}$	min. 1.1 mm	Chamfer dimension
$r_{3,4}$	min. 0.6 mm	Chamfer dimension

## Abutment dimensions

$d_a$	min. 52 mm	Diameter of shaft abutment
$D_a$	max. 78 mm	Abutment diameter housing
$D_b$	max. 80.8 mm	Diameter of housing abutment
$r_a$	max. 1 mm	Radius of fillet
$r_b$	max. 0.6 mm	Radius of fillet



## Calculation data

Basic dynamic load rating	C	38 kN
Basic static load rating	$C_0$	28.5 kN
Fatigue load limit	$P_u$	1.22 kN
Reference speed		9 500 r/min
Limiting speed		10 000 r/min
Minimum axial load factor	A	0.012
Minimum radial load factor	$k_r$	0.095
Limiting value	e	1.14

#### Single bearing or bearing pair arranged in tandem

Calculation factor (single, tandem)	X	0.35
Calculation factor (single, tandem)	$Y_0$	0.26
Calculation factor (single, tandem)	$Y_2$	0.57

#### Bearing pair arranged back-to-back or face-to-face

Calculation factor (back-to-back, face-to-face)	X	0.57
Calculation factor (back-to-back, face-to-face)	$Y_0$	0.52
Calculation factor (back-to-back, face-to-face)	$Y_1$	0.55
Calculation factor (back-to-back, face-to-face)	$Y_2$	0.93

## Mass

Mass	0.42 kg
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