

# 7406 BCBMSingle 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	30 mm
Outside diameter	90 mm
Width	23 mm
Contact angle	40 °

### Performance

Basic dynamic load rating	47.5 kN
Basic static load rating	29 kN
Reference speed	10 000 r/min
Limiting speed	13 000 r/min

### 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	Machined brass
Matched arrangement	No
Universal matching bearing	Yes
Axial internal clearance	Not applicable
Tolerance class	Class P6 (P6)
Material, bearing	Bearing steel
Coating	Without

Sealing	Without
Lubricant	None
Relubrication feature	Without

# Technical Specification



## Dimensions

d	30 mm	Bore diameter
D	90 mm	Outside diameter
B	23 mm	Width
$d_1$	$\approx 54.3$ mm	Shoulder diameter of inner ring (large side face)
$d_2$	$\approx 44.6$ mm	Shoulder diameter of inner ring (small side face)
$D_1$	$\approx 66.6$ mm	Shoulder diameter of outer ring (large side face)
a	37 mm	Distance side face to pressure point
$r_{1,2}$	min. 1.5 mm	Chamfer dimension
$r_{3,4}$	min. 1.5 mm	Chamfer dimension

## Abutment dimensions

$d_a$	min. 55 mm	Diameter of shaft abutment
$D_a$	max. 110 mm	Abutment diameter housing
$D_b$	max. 77.5 mm	Diameter of housing abutment
$r_a$	max. 2 mm	Radius of fillet
$r_b$	max. 2 mm	Radius of fillet



## Calculation data

Basic dynamic load rating	C	47.5 kN
Basic static load rating	$C_0$	29 kN
Fatigue load limit	$P_u$	1.22 kN
Reference speed		10 000 r/min

Limiting speed		13 000 r/min
Minimum axial load factor	A	0.0162
Minimum radial load factor	$k_r$	0.1
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	0.83 kg
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