

7224 BCBM

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	120 mm
Outside diameter	215 mm
Width	40 mm
Contact angle	40 °

Performance

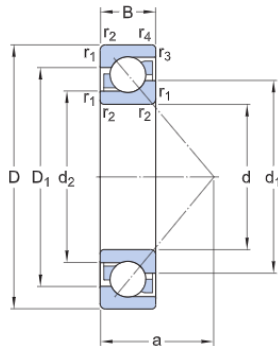
Basic dynamic load rating	165 kN
Basic static load rating	163 kN
Reference speed	3 600 r/min
Limiting speed	4 000 r/min

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
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

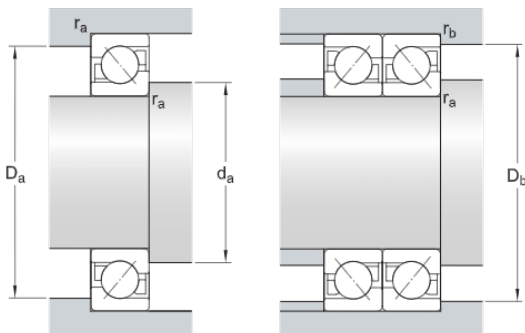
Technical Specification



Dimensions

d	120 mm	Bore diameter
D	215 mm	Outside diameter
B	40 mm	Width
d ₁	≈ 157 mm	Shoulder diameter of inner ring (large side face)
d ₂	≈ 138.6 mm	Shoulder diameter of inner ring (small side face)
D ₁	≈ 179.4 mm	Shoulder diameter of outer ring (large side face)
a	90 mm	Distance side face to pressure point
r _{1,2}	min. 2.1 mm	Chamfer dimension
r _{3,4}	min. 1.1 mm	Chamfer dimension

Abutment dimensions



d _a	min. 132 mm	Diameter of shaft abutment
D _a	max. 203 mm	Abutment diameter housing
D _b	max. 208 mm	Diameter of housing abutment
r _a	max. 2 mm	Radius of fillet
r _b	max. 1 mm	Radius of fillet

Calculation data

Basic dynamic load rating	C	165 kN
Basic static load rating	C ₀	163 kN
Fatigue load limit	P _u	5.3 kN
Reference speed		3 600 r/min

Limiting speed		4 000 r/min
Minimum axial load factor	A	0.45
Minimum radial load factor	k_r	0.08
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	5.89 kg
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