

7311 BECBM



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	55 mm
Outside diameter	120 mm
Width	29 mm
Contact angle	40 °

Performance

Basic dynamic load rating	85 kN
Basic static load rating	60 kN
Reference speed	7 000 r/min
Limiting speed	9 000 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	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

SKF performance class

SKF Explorer



Dimensions

d	55 mm	Bore diameter
D	120 mm	Outside diameter
B	29 mm	Width
d ₁	≈ 80.3 mm	Shoulder diameter of inner ring (large side face)
d ₂	≈ 66.66 mm	Shoulder diameter of inner ring (small side face)
D ₁	≈ 96.6 mm	Shoulder diameter of outer ring (large side face)
a	51 mm	Distance side face to pressure point
r _{1,2}	min. 2 mm	Chamfer dimension
r _{3,4}	min. 1 mm	Chamfer dimension

Abutment dimensions



d _a	min. 66 mm	Diameter of shaft abutment
D _a	max. 109 mm	Abutment diameter housing
D _b	max. 114 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	85 kN
Basic static load rating	C_0	60 kN
Fatigue load limit	P_u	2.55 kN
Reference speed		7 000 r/min
Limiting speed		9 000 r/min
Minimum axial load factor	A	0.0574
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	1.4 kg
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