7414 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	2.756 in
Outside diameter	7.087 in
Width	1.654 in

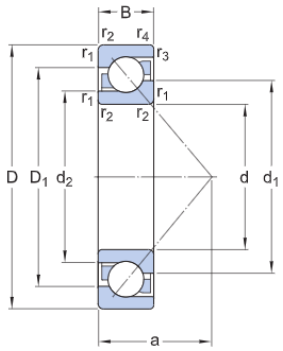
Performance

Basic dynamic load rating	35 745 lbf
Basic static load rating	28 551 lbf
Limiting speed	6 300 r/min
Reference speed	4 800 r/min

Properties

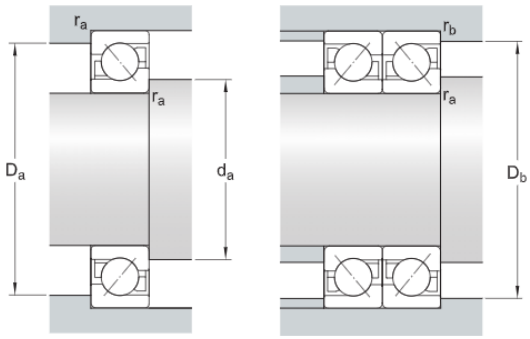
Axial internal clearance	Not applicable
Cage	Machined metal
Coating	Without
Contact type	Normal contact (two-point contact)
Locating feature, bearing outer ring	None
Lubricant	None
Matched arrangement	No
Material, bearing	Bearing steel
Number of rows	1
Relubrication feature	Without
Ring type	One-piece inner and outer rings
Sealing	Without
Universal matching bearing	Yes

Technical Specification



Dimensions

d	2.756 in	Bore diameter
D	7.087 in	Outside diameter
B	1.654 in	Width
d_1	≈ 4.4 in	Shoulder diameter of inner ring (large side face)
d_2	≈ 3.584 in	Shoulder diameter of inner ring (small side face)
D_1	≈ 5.53 in	Shoulder diameter of outer ring (large side face)
a	2.913 in	Distance side face to pressure point
$r_{1,2}$	min. 0.118 in	Chamfer dimension
$r_{3,4}$	min. 0.118 in	Chamfer dimension



Abutment dimensions

d_a	min. 3.307 in	Diameter of shaft abutment
D_a	max. 7.402 in	Abutment diameter housing
D_b	max. 5.689 in	Diameter of housing abutment
r_a	max. 0.079 in	Radius of fillet
r_b	max. 0.079 in	Radius of fillet

Calculation data

Basic dynamic load rating	C	35 745 lbf
Basic static load rating	C_0	28 551 lbf
Fatigue load limit	P_u	1 079 lbf
Reference speed		4 800 r/min

Limiting speed		6 300 r/min
Minimum axial load factor	A	0.31
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	12.787 lb

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