7006 CDGA/P4A

Super-precision, high-capacity, universally matchable single row angular contact ball bearing

These super-precision, high-capacity, single row angular contact ball bearings accommodate radial and axial loads acting simultaneously, where the axial load acts in one direction only. They are designed to accommodate heavy loads at relatively high speeds under low to moderate operating temperatures. Being universally matchable, they can be used together in arrangement to provide effective load sharing, within a predetermined preload range, without the use of shims or similar devices.

- 15° or 25° contact angle
- Very high running accuracy
- Very high load carrying capacity
- Relatively high speed and stiffness
- Universally matchable

Overview

Dimensions

Bore diameter	1.181 in
Outside diameter	2.165 in
Width	0.512 in

Performance

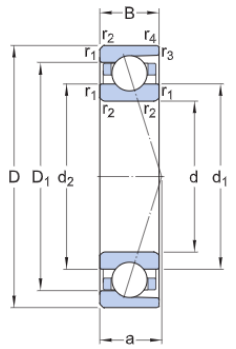
Basic dynamic load rating	3 215 lbf
Basic static load rating	1 798 lbf

Properties

Coating	Without
Contact type	Normal contact (two-point contact)
Design	High-capacity D
Lubricant	None
Matched arrangement	No
Matched condition (axial clearance/ preload)	Measuring load, class A
Material, bearing	Bearing steel
Number of rows	1
Ring type	One-piece inner and outer rings
Sealing	Without
Tolerance class	P4A

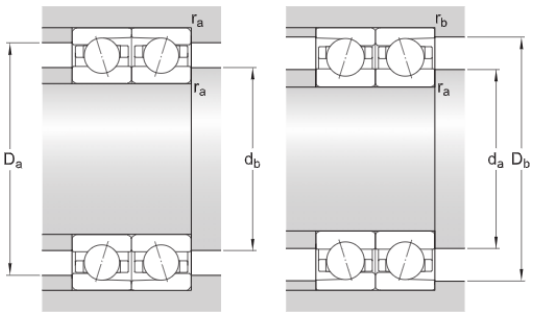
Universal matching bearing	Yes

Technical Specification



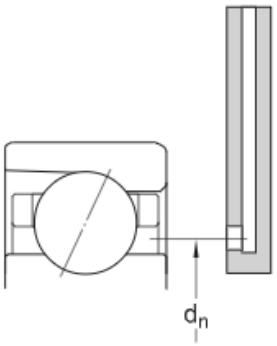
Dimensions

d	1.181 in	Bore diameter
D	2.165 in	Outside diameter
B	0.512 in	Width
d_1	1.484 in	Shoulder diameter of inner ring (large side face)
d_2	1.484 in	Shoulder diameter of inner ring (small side face)
D_1	1.862 in	Shoulder diameter of outer ring (large side face)
$r_{1,2}$	min. 0.039 in	Chamfer dimension (large side face)
$r_{3,4}$	min. 0.012 in	Chamfer dimension (small side face)
a	0.484 in	Distance from side face to pressure point



Abutment dimensions

d_a	min. 1.362 in	Diameter of shaft abutment
d_b	min. 1.362 in	Diameter of shaft abutment
D_a	max. 1.984 in	Diameter of housing abutment
D_b	max. 2.087 in	Diameter of housing abutment
r_a	max. 0.039 in	Radius of fillet
r_b	max. 0.012 in	Radius of fillet
d_n	1.547 in	Position of oil nozzle



Calculation data

Basic dynamic load rating	C	3 215 lbf
Basic static load rating	C_0	1 798 lbf
Fatigue load limit	P_u	76 lbf
Contact angle	α	15 °
Ball diameter	D_w	0.313 in
Number of balls	z	14
Reference grease quantity	G_{ref}	0.09703 in

Preload and stiffness (back-to-back, face-to-face)

Preload class A	G_A	11 lbf
Axial stiffness for preload A (sets of two brgs back-to-back or face-to-face)		171 304.415 lbf/in

Calculation factors

Correction factor dependent on bearing series and size	f	1.06
Correction factor dependent on contact angle	f_1	1
Correction factor, preload class A	f_{2A}	1
Correction factor for hybrid bearings	f_{HC}	1
Calculation factor	f_0	9.4
Axial load factor (single, tandem)	Y_1	0
Axial load factor (single, tandem)	Y_0	0.46
Radial load factor (single, tandem)	X_1	1

Radial load factor (single, tandem)	X_2	0.44
Radial load factor (single, tandem)	X_0	0.5
Axial load factor (back-to-back, face-to-face)	Y_0	0.92
Radial load factor (back-to-back, face-to-face)	X_1	1
Radial load factor (back-to-back, face-to-face)	X_2	0.72
Radial load factor (back-to-back, face-to-face)	X_0	1

Mass

Mass	0.247 lb

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