7006 CEGA/HCP4A

Super-precision, high-speed, E design, universally matchable single row angular contact ball bearing

These super-precision, high-speed, E design, 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 for high-speed operation and, compared to SKF B design high-speed bearings, have a slightly higher speed capability and can accommodate heavier loads. Being universally matchable, they can be used together in arrangements 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
- Accommodate very high speeds
- Universally matchable

Overview

Dimensions

Bore diameter	1.181 in
Outside diameter	2.165 in
Width	0.512 in

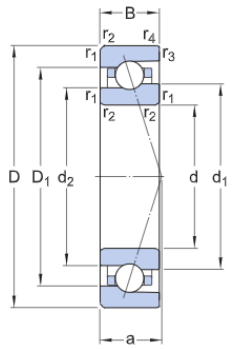
Performance

Basic dynamic load rating	2 104 lbf
Basic static load rating	1 169 lbf

Properties

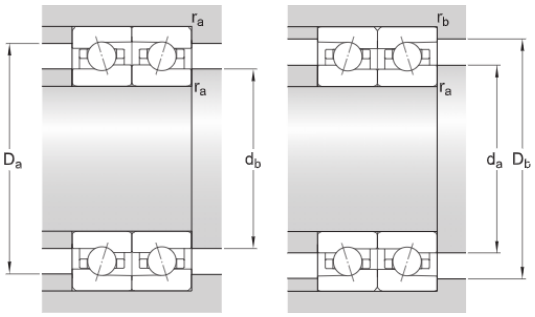
Coating	Without
Contact type	Normal contact (two-point contact)
Design	High-speed E
Lubricant	None
Matched arrangement	No
Matched condition (axial clearance/ preload)	Measuring load, class A
Material, bearing	Hybrid
Number of rows	1
Ring type	One-piece inner and outer rings
Sealing	Without
Tolerance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

Technical Specification



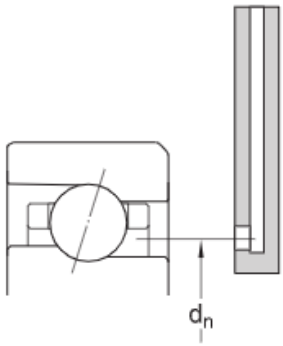
Dimensions

d	1.181 in	Bore diameter
D	2.165 in	Outside diameter
B	0.512 in	Width
d_1	1.504 in	Shoulder diameter of inner ring (large side face)
d_2	1.433 in	Shoulder diameter of inner ring (small side face)
D_1	1.804 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. 0.024 in	Chamfer dimension (small side face)
a	0.48 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 in	Diameter of housing abutment
r_a	max. 0.039 in	Radius of fillet
r_b	max. 0.024 in	Radius of fillet
d_n	1.571 in	Position of oil nozzle



Calculation data

Basic dynamic load rating	C	2 104 lbf
Basic static load rating	C_0	1 169 lbf
Fatigue load limit	P_u	36 lbf
Contact angle	α	15 °
Ball diameter	D_w	0.25 in
Number of balls	z	17
Reference grease quantity	G_{ref}	0.1037 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)		177 014.562 lbf/in

Calculation factors

Correction factor dependent on bearing series and size	f	1.05
Correction factor dependent on contact angle	f_1	1
Correction factor, preload class A	f_{2A}	1
Correction factor for hybrid bearings	f_{HC}	1.01
Calculation factor	f_0	7.9
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	0.227 lb

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