

71904 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	0.787 in
Outside diameter	1.457 in
Width	0.354 in

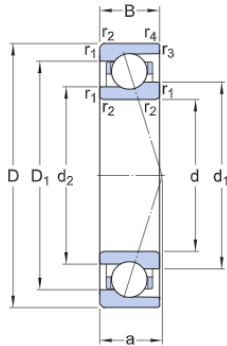
Performance

Basic dynamic load rating	1 111 lbf
Basic static load rating	531 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

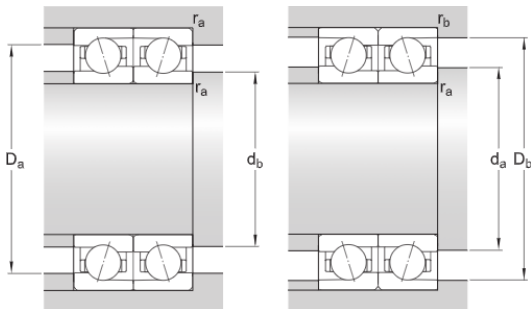
Technical Specification



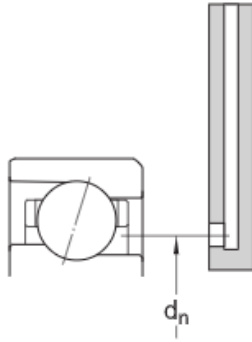
Dimensions

d	0.787 in	Bore diameter
D	1.457 in	Outside diameter
B	0.354 in	Width
d ₁	1.01 in	Shoulder diameter of inner ring (large side face)
d ₂	0.961 in	Shoulder diameter of inner ring (small side face)
D ₁	1.24 in	Shoulder diameter of outer ring (large side face)
r _{1,2}	min. 0.012 in	Chamfer dimension (large side face)
r _{3,4}	min. 0.006 in	Chamfer dimension (small side face)
a	0.327 in	Distance from side face to pressure point

Abutment dimensions



d _a	min. 0.866 in	Diameter of shaft abutment
d _b	min. 0.866 in	Diameter of shaft abutment
D _a	max. 1.378 in	Diameter of housing abutment
D _b	max. 1.425 in	Diameter of housing abutment
r _a	max. 0.012 in	Radius of fillet
r _b	max. 0.006 in	Radius of fillet
d _n	1.051 in	Position of oil nozzle



Calculation data

Basic dynamic load rating	C	1 111 lbf
Basic static load rating	C_0	531 lbf
Fatigue load limit	P_u	16 lbf
Contact angle	α	15 °
Ball diameter	D_w	0.187 in
Number of balls	z	14
Reference grease quantity	G_{ref}	0.03051 in

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

Preload class A	G_A	5.8 lbf
Axial stiffness for preload A (sets of two brgs back-to-back or face-to-face)		114 202.943 lbf/in

Calculation factors

Correction factor dependent on bearing series and size	f	1.04
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	7.7
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	0.071 lb
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