7005 CD/P4A

Angular contact ball bearings, super-precision

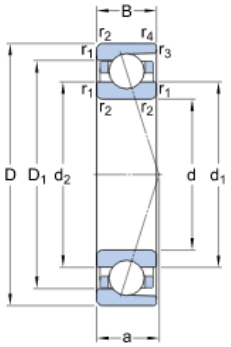
Product details

Tolerances,
P4A, P4B, P4, PA9A, P2, D design, E design, B design,
direct oil-air lubrication

Principles of bearing selection and application

Chamfer dimensions,
Seat tolerances for standard conditions,
shafts, housings, shafts, housings,
Initial grease fill

Technical specification

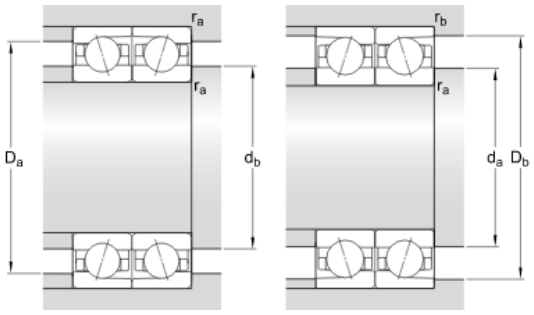


DIMENSIONS

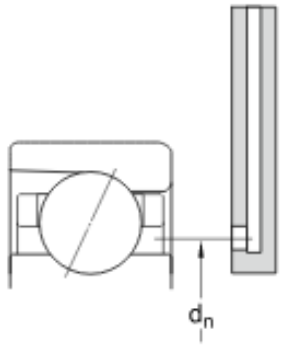
d	25 mm
D	47 mm
B	12 mm
d_1	32.1 mm
d_2	32.1 mm
D_1	39.9 mm
$r_{1,2}$	min. 0.6 mm
$r_{3,4}$	min. 0.3 mm
a	10.9 mm

ABUTMENT DIMENSIONS

d_a	min. 28.2 mm
d_b	min. 28.2 mm
D_a	max. 43.8 mm
D_b	max. 45 mm
r_a	max. 0.6 mm



r_b	max. 0.3 mm
d_n	33.4 mm



CALCULATION DATA

Basic dynamic load rating	C	9.56 kN
Basic static load rating	C_0	5.2 kN
Fatigue load limit	P_u	0.22 kN
Attainable speed for grease lubrication		36000 r/min
Attainable speed for oil-air lubrication		56000 r/min
Contact angle	α	15 °
Ball diameter	D_w	6.35 mm
Number of balls	z	14
Reference grease quantity	G_{ref}	1.02 cm

PRELOAD AND STIFFNESS (BACK-TO-BACK, FACE-TO-FACE)

Preload class A	G_A	35 N

Static axial stiffness, preload class A		25 N/µm
Preload class B	G_B	70 N
Static axial stiffness, preload class B		33 N/µm
Preload class C	G_C	140 N
Static axial stiffness, preload class C		46 N/µm
Preload class D	G_D	280 N
Static axial stiffness, preload class D		64 N/µm

CALCULATION FACTORS

Calculation factor	f	1.05
Calculation factor	f_1	1
Calculation factor	f_{2A}	1
Calculation factor	f_{2B}	1.02
Calculation factor	f_{2C}	1.05
Calculation factor	f_{2D}	1.09
Calculation factor	f_{HC}	1
Calculation factor	f_0	9.6

MASS

Mass bearing	0.079 kg

More information

Product details

- Designs and variants
- Markings on bearings and bearing sets
- Bearing data
- Preload, clearance, and stiffness
- Loads
- Attainable speeds
- Mounting
- Designation system

Engineering information

- Principles of bearing selection and application
- General bearing knowledge
- Bearing selection process
- Bearing failure and how to prevent it

Tools

- SimPro Quick
- SimPro Spindle
- Engineering Calculator
- LubeSelect for SKF greases
- Heater selection tool

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