71900 ACD/P4A

Angular contact ball bearings, super-precision

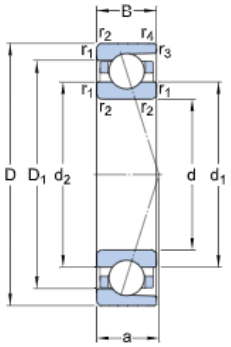
Product details

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

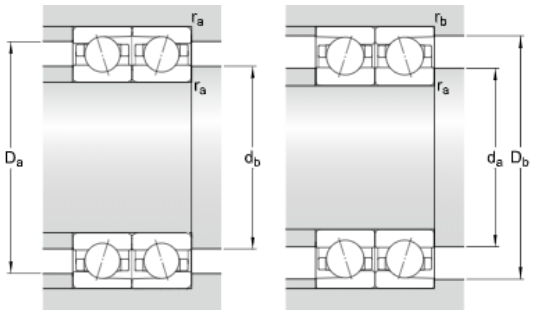


DIMENSIONS

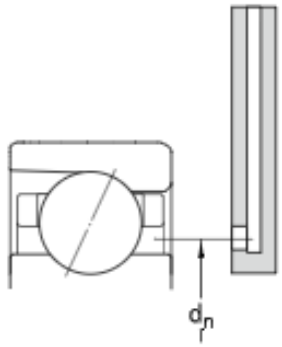
d	10 mm
D	22 mm
B	6 mm
d_1	14 mm
d_2	14 mm
D_1	18 mm
$r_{1,2}$	min. 0.3 mm
$r_{3,4}$	min. 0.2 mm
a	6.8 mm

ABUTMENT DIMENSIONS

d_a	min. 12 mm
d_b	min. 12 mm
D_a	max. 20 mm
D_b	max. 20.6 mm
r_a	max. 0.3 mm



r_b	max. 0.2 mm
d_n	14.8 mm



CALCULATION DATA

Basic dynamic load rating	C	2.42 kN
Basic static load rating	C_0	1.06 kN
Fatigue load limit	P_u	0.045 kN
Attainable speed for grease lubrication		63 000 r/min
Attainable speed for oil-air lubrication		95 000 r/min
Contact angle	α	25 °
Ball diameter	D_w	3.175 mm
Number of balls	z	12
Reference grease quantity	G_{ref}	0.12 cm

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

Preload class A	G_A	15 N

Static axial stiffness, preload class A		29 N/µm
Preload class B	G_B	30 N
Static axial stiffness, preload class B		38 N/µm
Preload class C	G_C	60 N
Static axial stiffness, preload class C		49 N/µm
Preload class D	G_D	120 N
Static axial stiffness, preload class D		65 N/µm

CALCULATION FACTORS

Calculation factor	f	1.03
Calculation factor	f_1	0.98
Calculation factor	f_{2A}	1
Calculation factor	f_{2B}	1.04
Calculation factor	f_{2C}	1.08
Calculation factor	f_{2D}	1.14
Calculation factor	f_{HC}	1
Calculation factor	e	0.68
Calculation factor (single, tandem)	Y_2	0.87
Calculation factor (single, tandem)	Y_0	0.38
Calculation factor (single, tandem)	X_2	0.41
Calculation factor (back-to-back, face-to-face)	Y_1	0.92
Calculation factor (back-to-back, face-to-face)	Y_2	1.41
Calculation factor (back-to-back, face-to-face)	Y_0	0.76
Calculation factor (back-to-back, face-to-face)	X_2	0.67

MASS

Mass bearing	0.009 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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