71910 ACD/P4A

Angular contact ball bearings, super-precision

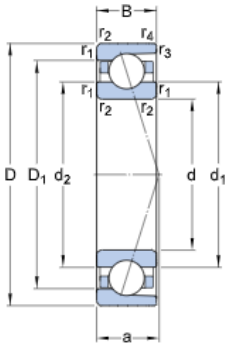
Product details

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

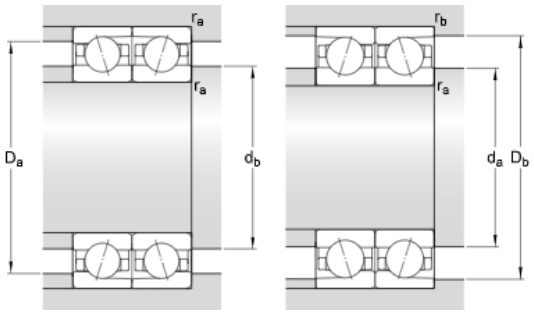


DIMENSIONS

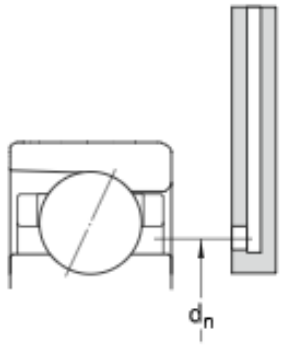
d	50 mm	Bore diameter
D	72 mm	Outside diameter
B	12 mm	Width
d1	57.1 mm	Shoulder diameter of inner ring (large side face)
d2	57.1 mm	Shoulder diameter of inner ring (small side face)
D1	64.9 mm	Shoulder diameter of outer ring (large side face)
r1,2	min.0.6 mm	Chamfer dimension (large side face)
r3,4	min.0.3 mm	Chamfer dimension (small side face)
a	20.3 mm	Distance from side face to pressure point

ABUTMENT DIMENSIONS

da	min.53.2 mm	Diameter of shaft abutment



db	min.53.2 mm	Diameter of shaft abutment
Da	max.68.8 mm	Diameter of housing abutment
Db	max.70.6 mm	Diameter of housing abutment
ra	max.0.6 mm	Radius of fillet
rb	max.0.3 mm	Radius of fillet
d_n	58.7 mm	Psition of oil nozzle



CALCULATION DATA

Basic dynamic load rating	C	12.7 kN
Basic static load rating	C_0	9.8 kN
Fatigue load limit	P_u	0.415 kN
Attainable speed for grease lubrication		16 000 r/min
Attainable speed for oil-air lubrication		26 000 r/min
Contact angle	α	25 °
Ball diameter	D_w	6.35 mm
Number of balls	z	25
Reference grease quantity	G_{ref}	1.74 cm

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

Preload class A	G_A	80 N
Static axial stiffness, preload class A		105 N/µm
Preload class B	G_B	160 N
Static axial stiffness, preload class B		137 N/µm
Preload class C	G_C	320 N
Static axial stiffness, preload class C		180 N/µm
Preload class D	G_D	640 N
Static axial stiffness, preload class D		240 N/µm

CALCULATION FACTORS

Correction factor dependent on bearing series and size	f	1.13
Correction factor dependent on contact angle	f1	0.98
Correction factor, preload class A	f2A	1
Correction factor, preload class B	f2B	1.04
Correction factor, preload class C	f2C	1.08
Correction factor, preload class D	f2D	1.14
Correction factor for hybrid bearings	fHC	1
Limiting value	e	0.68
Axial load factor (single, tandem)	Y2	0.87
Axial load factor (single, tandem)	Y0	0.38
Radial load factor (single, tandem)	X2	0.41
Axial load factor (back-to-back, face-to-face)	Y1	0.92
Axial load factor (back-to-back, face-to-face)	Y2	1.41

Axial load factor (back-to-back, face-to-face)	Y0	0.76
Radial load factor (back-to-back, face-to-face)	X2	0.67

MASS

Mass	0.13 kg

More information

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

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Engineering information

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

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Tools

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- LubeSelect for SKF greases
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