



SKF 7010 ACD/P4A

Super-precision, high-capacity, single row angular contact ball bearing

These super-precision, high-capacity, single row angular contact ball bearings, with 25° contact angle, accommodate radial and axial loads acting simultaneously, where the axial load acts in one direction only. They are designed to accommodate heavy loads at relatively high speeds under low to moderate operating temperatures.

Technical specifications

General	
Universal matching bearing(s)	No
Dimensions	
Bore diameter	50 mm
Outside diameter	80 mm
Width	16 mm
Shoulder diameter of inner ring (large side face)	59.2 mm
Shoulder diameter of inner ring (small side face)	59.2 mm
Shoulder diameter of outer ring (large side face)	70.8 mm
Chamfer dimension	1 mm
Chamfer dimension	0.3 mm
Distance from side face to pressure point	23.2 mm
Contact angle	25 °
Abutment dimensions	
Diameter of shaft abutment	54.6 mm
Diameter of shaft abutment	54.6 mm
Diameter of housing abutment	75.4 mm
Diameter of housing abutment	78 mm
Radius of fillet	1 mm
Radius of fillet	0.3 mm
Position of oil nozzle	61.2 mm
Calculation data	
Basic dynamic load rating	28.1 kN
Basic static load rating	23.2 kN
Fatigue load limit	0.98 kN
Attainable speed for grease lubrication	15000 r/min
Attainable speed for oil-air lubrication	24000 r/min
Contact angle	25 °
Ball diameter	9.525 mm
Number of rows	1
Number of balls (per bearing)	18
Reference grease quantity (per bearing)	3.6 cm ³
Preload, class A	180 N
Axial stiffness for preload A (sets of two brgs back to back or face to face)	141 N/μm
Preload, class B	360 N
Axial stiffness for preload B (sets of two brgs back-to-back or face-to-face)	184 N/μm
Preload, class C	720 N
Axial stiffness for preload C (sets of two brgs back-to-back or face-to-face)	244 N/μm
Preload, class D	1440 N
Axial stiffness for preload D (sets of two brgs back-to-back or face-to-face)	331 N/μm
Correction factor dependent on bearing series and size	1.1

Correction factor dependent on contact angle	0.99
Correction factor, preload class A	1
Correction factor, preload class B	1
Correction factor, preload class C	1.1
Correction factor, preload class D	1.1
Correction factor for hybrid bearings	1
Limiting value	0.68
Axial load factor (single, tandem)	0.87
Axial load factor (single, tandem)	0.38
Radial load factor (single, tandem)	0.41
Axial load factor (back-to-back, face-to-face)	0.92
Axial load factor (back-to-back, face-to-face)	1.4
Axial load factor (back-to-back, face-to-face)	0.76
Radial load factor (back-to-back, face-to-face)	0.67

Performance

Basic dynamic load rating	28.1 kN
Basic static load rating	23.2 kN
Attainable speed for grease lubrication	15000 r/min
Attainable speed for oil-air lubrication	24000 r/min

Properties

Contact type	Normal contact (two-point contact)
Number of rows	1
Ring type	One-piece inner and outer rings
Design	High-capacity D
Universal matching bearing	No
Matched arrangement	No
Matched condition (axial clearance/ preload)	Not applicable
Tolerance class	P4A
Material, bearing	Bearing steel
Coating	Without
Sealing	Without
Lubricant	None
Indicative carbon footprint for new product	0.9 kg CO ₂

Logistics

Product net weight	0.249 kg
eClass code	23-05-08-04
UNSPSC code	31171531

SKF drawings



