



SKF 7004 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	20 mm
Outside diameter	42 mm
Width	12 mm
Shoulder diameter of inner ring (large side face)	27.1 mm
Shoulder diameter of inner ring (small side face)	27.1 mm
Shoulder diameter of outer ring (large side face)	34.8 mm
Chamfer dimension	0.6 mm
Chamfer dimension	0.3 mm
Distance from side face to pressure point	13.3 mm
Contact angle	25 °

Abutment dimensions	
Diameter of shaft abutment	23.2 mm
Diameter of shaft abutment	23.2 mm
Diameter of housing abutment	38.8 mm
Diameter of housing abutment	40 mm
Radius of fillet	0.6 mm
Radius of fillet	0.3 mm
Position of oil nozzle	28.4 mm

Calculation data	
Basic dynamic load rating	8.32 kN
Basic static load rating	4.15 kN
Fatigue load limit	0.173 kN
Attainable speed for grease lubrication	38000 r/min
Attainable speed for oil-air lubrication	60000 r/min
Contact angle	25 °
Ball diameter	6.35 mm
Number of rows	1
Number of balls (per bearing)	12
Reference grease quantity (per bearing)	0.9 cm ³
Preload, class A	50 N
Axial stiffness for preload A (sets of two brgs back to back or face to face)	54 N/μm
Preload, class B	100 N
Axial stiffness for preload B (sets of two brgs back-to-back or face-to-face)	69 N/μm
Preload, class C	200 N
Axial stiffness for preload C (sets of two brgs back-to-back or face-to-face)	90 N/μm
Preload, class D	400 N
Axial stiffness for preload D (sets of two brgs back-to-back or face-to-face)	120 N/μm
Correction factor dependent on bearing series and size	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	8.32 kN
Basic static load rating	4.15 kN
Attainable speed for grease lubrication	38000 r/min
Attainable speed for oil-air lubrication	60000 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	0.24 kg CO ₂ e

Logistics	
Product net weight	0.066 kg
eClass code	23-05-08-04
UNSPSC code	31171531

SKF drawings



