



SKF 7007 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 | 35 mm |
| Outside diameter | 62 mm |
| Width | 14 mm |
| Shoulder diameter of inner ring (large side face) | 43.7 mm |
| Shoulder diameter of inner ring (small side face) | 43.7 mm |
| Shoulder diameter of outer ring (large side face) | 53.3 mm |
| Chamfer dimension | 1 mm |
| Chamfer dimension | 0.3 mm |
| Distance from side face to pressure point | 18.5 mm |
| Contact angle | 25 ° |
| Abutment dimensions | |
| Diameter of shaft abutment | 39.6 mm |
| Diameter of shaft abutment | 39.6 mm |
| Diameter of housing abutment | 57.4 mm |
| Diameter of housing abutment | 60 mm |
| Radius of fillet | 1 mm |
| Radius of fillet | 0.3 mm |
| Position of oil nozzle | 45.3 mm |
| Calculation data | |
| Basic dynamic load rating | 14.8 kN |
| Basic static load rating | 9 kN |
| Fatigue load limit | 0.38 kN |
| Attainable speed for grease lubrication | 20000 r/min |
| Attainable speed for oil-air lubrication | 32000 r/min |
| Contact angle | 25 ° |
| Ball diameter | 7.938 mm |
| Number of rows | 1 |
| Number of balls (per bearing) | 16 |
| Reference grease quantity (per bearing) | 2 cm ³ |
| Preload, class A | 90 N |
| Axial stiffness for preload A (sets of two brgs back to back or face to face) | 86 N/μm |
| Preload, class B | 180 N |
| Axial stiffness for preload B (sets of two brgs back-to-back or face-to-face) | 110 N/μm |
| Preload, class C | 360 N |
| Axial stiffness for preload C (sets of two brgs back-to-back or face-to-face) | 144 N/μm |
| Preload, class D | 720 N |
| Axial stiffness for preload D (sets of two brgs back-to-back or face-to-face) | 190 N/μm |
| Correction factor dependent on bearing series and size | 1.1 |

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|---|------|
| 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 | 14.8 kN |
| Basic static load rating | 9 kN |
| Attainable speed for grease lubrication | 20000 r/min |
| Attainable speed for oil-air lubrication | 32000 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 | 0.54 kg CO ₂ e |

Logistics

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|--------------------|-------------|
| Product net weight | 0.15 kg |
| eClass code | 23-05-08-04 |
| UNSPSC code | 31171531 |

SKF drawings



