

2310 K

Self-aligning ball bearing with tapered bore



Self-aligning ball bearings, with a tapered bore, have two rows of balls, a common sphered raceway in the outer ring and two deep uninterrupted raceway grooves in the inner ring. They are insensitive to angular misalignment of the shaft relative to the housing, which can be caused, for example, by shaft deflection. The tapered bore facilitates ease of mounting via adapter sleeves or withdrawal sleeves.

- Ease of mounting via adapter sleeves or withdrawal sleeves
- Accommodate static and dynamic misalignment
- Excellent high-speed performance
- Excellent light load performance
- Low friction

Overview

Dimensions

| | |
|------------------|----------|
| Bore diameter | 1.969 in |
| Outside diameter | 4.331 in |
| Width | 1.575 in |

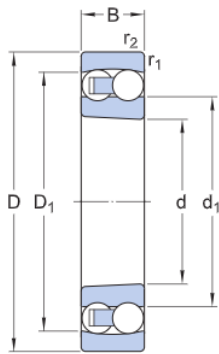
Properties

| | |
|--------------------------------------|---------------|
| Bore type | Tapered 1:12 |
| Cage | Sheet metal |
| Coating | Without |
| Locating feature, bearing outer ring | None |
| Lubricant | None |
| Material, bearing | Bearing steel |
| Radial internal clearance | CN |
| Relubrication feature | Without |
| Retaining feature, inner ring | None |
| Sealing | Without |
| Tolerance class | Normal |

Technical Specification

Bore type

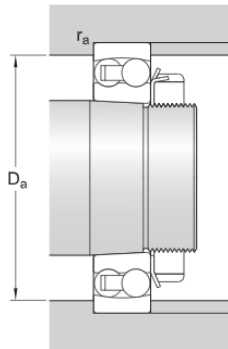
Tapered 1:12



Dimensions

| | | |
|------------------|---------------|------------------------------|
| d | 1.969 in | Bore diameter |
| D | 4.331 in | Outside diameter |
| B | 1.575 in | Width |
| d ₁ | ≈ 2.598 in | Shoulder diameter inner ring |
| D ₁ | ≈ 3.642 in | Shoulder diameter outer ring |
| r _{1,2} | min. 0.079 in | Chamfer dimension |

Abutment dimensions



| | | |
|----------------|---------------|---------------------------|
| D _a | max. 3.898 in | Abutment diameter housing |
| r _a | max. 0.079 in | Fillet radius |

Calculation data

| | | |
|---------------------------|----------------|--------------|
| Basic dynamic load rating | C | 14 320 lbf |
| Basic static load rating | C ₀ | 4 496 lbf |
| Fatigue load limit | P _u | 234 lbf |
| Reference speed | | 12 000 r/min |

| | | |
|----------------------------------|----------|-------------|
| Limiting speed | | 8 500 r/min |
| Permissible angular misalignment | α | 3 ° |
| Calculation factor | k_r | 0.05 |
| Limiting value | e | 0.43 |
| Calculation factor | Y_0 | 1.6 |
| Calculation factor | Y_1 | 1.5 |
| Calculation factor | Y_2 | 2.3 |

Mass

| | | |
|--------------|--|----------|
| Mass bearing | | 3.417 lb |
|--------------|--|----------|

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