

2304 E-2RS1TN9 Self-aligning ball bearing with seals on both sides



Self-aligning ball bearing with seals on both sides

Self-aligning ball bearings, with seals on both sides, 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. The integral sealing can significantly prolong bearing service life because it keeps lubricant in the bearings and contaminants out.

- Accommodate static and dynamic misalignment
- Excellent high-speed performance
- Excellent light load performance
- Low friction
- Integral sealing results in reduced maintenance requirements and prolonged bearing service life

Overview

Dimensions

| | |
|------------------|-------|
| Bore diameter | 20 mm |
| Outside diameter | 52 mm |
| Width | 21 mm |

Performance

| | |
|---------------------------|--------------|
| Basic dynamic load rating | 14.3 kN |
| Basic static load rating | 4 kN |
| Reference speed | 24 000 r/min |
| Limiting speed | 9 000 r/min |

Properties

| | |
|--------------------------------------|--------------------|
| Retaining feature, inner ring | None |
| Locating feature, bearing outer ring | None |
| Number of rows | 2 |
| Bore type | Cylindrical |
| Cage | Non-metallic |
| Radial internal clearance | CN |
| Tolerance class | Normal |
| Material, bearing | Bearing steel |
| Coating | Without |
| Sealing | Seal on both sides |
| Sealing type | Contact |
| Lubricant | Grease |

Relubrication feature

Without

Technical Specification

Bore type

Cylindrical



Dimensions

| | | |
|-----------|-------------|----------------------------|
| d | 20 mm | Bore diameter |
| D | 52 mm | Outside diameter |
| B | 21 mm | Width |
| d_2 | ≈ 28.6 mm | Recess diameter inner ring |
| D_2 | ≈ 46.21 mm | Recess diameter outer ring |
| $r_{1,2}$ | min. 1.1 mm | Chamfer dimension |

Abutment dimensions

| | | |
|-------|--------------|---------------------------|
| d_a | min. 26.5 mm | Abutment diameter shaft |
| d_a | max. 28.5 mm | Abutment diameter shaft |
| D_a | max. 45 mm | Abutment diameter housing |
| r_a | max. 1.1 mm | Fillet radius |



Calculation data

| | | |
|---------------------------|-------|--------------|
| Basic dynamic load rating | C | 14.3 kN |
| Basic static load rating | C_0 | 4 kN |
| Fatigue load limit | P_u | 0.204 kN |
| Reference speed | | 24 000 r/min |

| | | |
|----------------------------------|----------|-------------|
| Limiting speed | | 9 000 r/min |
| Permissible angular misalignment | α | 1.5 ° |
| Calculation factor | k_r | 0.05 |
| Limiting value | e | 0.28 |
| Calculation factor | Y_0 | 2.5 |
| Calculation factor | Y_1 | 2.2 |
| Calculation factor | Y_2 | 3.5 |

Mass

| | | |
|--------------|--|---------|
| Mass bearing | | 0.21 kg |
|--------------|--|---------|

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