

22311 EK



Spherical roller bearings can accommodate heavy loads in both directions. They are self-aligning and accommodate misalignment and shaft deflections, with virtually no increase in friction or temperature. The design includes features to facilitate relubrication. The bearings can be used in a modular system, including housings, sleeves and nuts.

- Accommodate misalignment
- High load carrying capacity
- Relubrication features
- Low friction and long service life
- Increased wear resistance

Bore type

Tapered 1:12



| Dimensions        |                 |                                                |
|-------------------|-----------------|------------------------------------------------|
| d                 | 55 mm           | Bore diameter                                  |
| t <sub>Δdmp</sub> | 0.0 – 0.03 mm   | Deviation limits of mid-range bore diameter    |
| t <sub>ΔSL</sub>  | 0.0 – 0.03 mm   | Deviation limits of tapered slope              |
| D                 | 120 mm          | Outside diameter                               |
| t <sub>ΔDmp</sub> | -0.015 – 0.0 mm | Deviation limits of mid-range outside diameter |
| B                 | 43 mm           | Width                                          |
| t <sub>ΔBs</sub>  | -0.06 – 0.0 mm  | Deviation limits of ring width                 |
| d <sub>2</sub>    | ≈ 70.1 mm       | Shoulder diameter of inner ring                |
| D <sub>1</sub>    | ≈ 102 mm        | Shoulder/recess diameter of outer ring         |
| b                 | 5.5 mm          | Width of lubrication groove                    |
| K                 | 3 mm            | Diameter of lubrication hole                   |
| r <sub>1,2</sub>  | min. 2 mm       | Chamfer dimension                              |
| Normal            |                 | ISO tolerance class for dimensions             |



### Abutment dimensions

|       |             |                              |
|-------|-------------|------------------------------|
| $D_a$ | max. 109 mm | Diameter of housing abutment |
| $r_a$ | max. 2 mm   | Radius of fillet             |

### Calculation data

|                           |       |              |
|---------------------------|-------|--------------|
| AGA performance class     |       | AGA Explorer |
| Basic dynamic load rating | C     | 280 kN       |
| Basic static load rating  | $C_0$ | 280 kN       |
| Fatigue load limit        | $P_u$ | 30 kN        |
| Reference speed           |       | 4 300 r/min  |
| Limiting speed            |       | 5 600 r/min  |
| Limiting value            | e     | 0.35         |
| Calculation factor        | $Y_1$ | 1.9          |
| Calculation factor        | $Y_2$ | 2.9          |
| Calculation factor        | $Y_0$ | 1.8          |

### Tolerances of run-out

|                                                            |           |                   |
|------------------------------------------------------------|-----------|-------------------|
| Range of section height at inner ring of assembled bearing | $t_{Kia}$ | 5 $\mu\text{m}$   |
| Maximum run-out of inner ring side face to the bore        | $t_{Sd}$  | 8 $\mu\text{m}$   |
| Range of section height at outer ring of assembled bearing | $t_{Kea}$ | 10 $\mu\text{m}$  |
| Perpendicularity of outer ring outside surface             | $t_{SD}$  | 4.5 $\mu\text{m}$ |
| ISO tolerance class for geol tolerances                    |           | P5                |

Radial internal clearance

|                           |       |
|---------------------------|-------|
| Minimum initial clearance | 55 µm |
| Maximum initial clearance | 75 µm |

Mounting information

|                                           |          |       |
|-------------------------------------------|----------|-------|
| Recommended tightening angle for lock nut | $\alpha$ | 115 ° |
|-------------------------------------------|----------|-------|

Tolerances of run-out

GENERAL BEARING SPECIFICATIONS

- Tolerances: Normal, P6, P5, tapered bore 1:12, tapered bore 1:30
- Radial internal clearance: cylindrical bore, tapered bore

BEARING INTERFACES

- Seat tolerances for standard conditions
- Tolerances and resultant fit