

# Spindle ball bearing KH 6009 E TA P4+

16.07.2024



## Components

|                              |                            |
|------------------------------|----------------------------|
| Bearing designation:         | KH 6009 E TA               |
| Bearing design:              | KH                         |
| Series / size:               | 6009                       |
| Ball material:               | Steel 100Cr6               |
| Cage:                        | TA                         |
| Seal:                        | 2RZ optional (with grease) |
| Precision:                   | P4+                        |
| Main dimensions [d x D x B]: | 45 x 75 x 16 mm            |

## Load data

|                       |                            |
|-----------------------|----------------------------|
| Static load capacity  | $C_{0r}$ : 6700 N          |
| Dynamic load capacity | $C_r$ : 10300 N            |
| Fatigue load limit    | $C_U$ : 349 N              |
| Speed limit           | $n_{grease}$ : 24000 1/min |
| Speed limit           | $n_{oil}$ : 32000 1/min    |
| Light preload         | L: 90 N                    |
| Axial rigidity        | $C_{ax}$ : 92 N/ $\mu$ m   |
| Medium preload        | M: 260 N                   |
| Axial rigidity        | $C_{ax}$ : 135 N/ $\mu$ m  |
| Heavy preload         | S: 520 N                   |
| Axial rigidity        | $C_{ax}$ : 174 N/ $\mu$ m  |
| Spring preload        | Ff: 660 N (for $n_{max}$ ) |

## Geometrical Data

|  |                        |  |                         |
|--|------------------------|--|-------------------------|
| Bore diameter                            | d: 45 mm               | Oiling nozzle position                       | $d_7$ : 56.9 mm         |
| Outer diameter                           | D: 75 mm               | Pitch circle diameter                        | $d_m$ : 58.8 mm         |
| Width of single bearing                  | B: 16 mm               | Inner diameter of outer ring                 | $D_1$ : 63 mm           |
| Ball diameter                            | $D_w$ : 6.35 mm        | Undercut of associated component             | $r_{a max}$ : 1 mm      |
| Number of balls                          | Z: 22                  | Undercut of associated component (open side) | $r_{b max}$ : 0.6 mm    |
| Chamfer (min)                            | $r_{1,2 min}$ : 1 mm   | Abutment diameter inner ring                 | $d_{a,b min}$ : 49.5 mm |
| Chamfer (min), open side                 | $r_{3,4 min}$ : 0.6 mm | Abutment diameter outer ring                 | $D_{a,b max}$ : 71.1 mm |
| Outer diameter of inner ring             | $d_1$ : 54.7 mm        | Inner diameter of outer ring (open side)     | $D_2$ : 65.3 mm         |
| Outer diameter of inner ring (open side) | $d_2$ : 53 mm          | Bearing weight                               | m: 0.25 kg              |
|  |                        | Contact angle                                | Alpha 0: 25°            |



The given speed limits apply to individual bearings with spring preload. Correction factors must be considered for all properties which deviate from this.