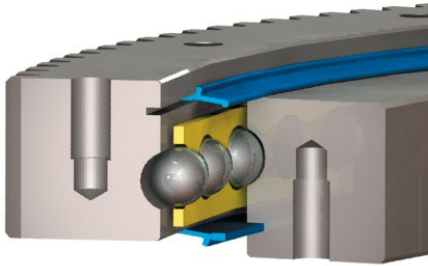


# KH Series

## Introduction

KH Series slewing ring bearings have a rectangular cross-section and range in size from 16 – 37 inches OD (400 – 950 mm). They provide precise positioning and repeatability in applications where rotation is constant, intermittent, or oscillating.



## Design Features

The internal configuration is a deep-groove gothic arch raceway, which provides four points of contact with the balls, enabling it to carry radial, thrust, and moment loads individually or simultaneously. The use of internal diametral preload provides for greater stiffness, which combined with tightly controlled radial and axial runouts, delivers accurate repeatability. The axial runouts are 0.001 inch TIR and the radial runouts for locating diameters are 0.002 inch TIR.

A separator is used to maintain consistent ball spacing interval, keep friction to a minimum, and minimize noise. Integral face riding seals are provided to assist in the exclusion of contaminants.

KH Series bearings are offered in non-geared and externally geared configurations. The gears have Full Depth Involute teeth and are manufactured to an AGMA Class Q8 quality, allowing for decreased backlash, more accurate positioning, and less noise while operating.

## Availability

KH Series bearings are generally available from stock.

## Applications

KH Series bearings have been used successfully in applications demanding higher precision, including:

- Precision rotary index tables
- Radar antennas
- Satellite antennas
- Robots
- Medical equipment
- Machine tool tables
- Any design where the KH bearing features will interface with other precision components.

# KH Series

## No Gear

| Kaydon<br>P/N     | OUTLINE DIMENSIONS AND WEIGHT |                        |                        |                        |                       | HOLE DATA              |                |                        |                | GEAR DATA              |                        |                | GEAR<br>TOOTH<br>RATING<br>F <sub>z</sub><br>(lbs) |
|-------------------|-------------------------------|------------------------|------------------------|------------------------|-----------------------|------------------------|----------------|------------------------|----------------|------------------------|------------------------|----------------|--|
|                   |                               |                        |                        |                        |                       | OUTER RING             |                | INNER RING             |                |                        |                        |                |  |
|                   | D <sub>o</sub><br>(in)        | d <sub>i</sub><br>(in) | D <sub>i</sub><br>(in) | d <sub>o</sub><br>(in) | G<br>APPROX.<br>(lbs) | L <sub>o</sub><br>(in) | n <sub>o</sub> | L <sub>i</sub><br>(in) | n <sub>i</sub> | D <sub>2</sub><br>(in) | b <sub>2</sub><br>(in) | z <sub>2</sub> |  |
| <b>KH-125P</b>    | 16.500                        | 8.625                  | 12.750                 | 12.250                 | 80                    | 14.750                 | 16             | 10.250                 | 16             | —                      | —                      | —              | —  |
| <b>KH-166P</b>    | 20.500                        | 12.750                 | 16.875                 | 16.375                 | 105                   | 18.875                 | 20             | 14.375                 | 20             | —                      | —                      | —              | —  |
| <b>KH-225P</b>    | 26.700                        | 18.500                 | 22.750                 | 22.250                 | 150                   | 24.500                 | 18             | 20.500                 | 18             | —                      | —                      | —              | —  |
| <b>KH-275P</b>    | 31.700                        | 23.500                 | 27.750                 | 27.250                 | 185                   | 29.500                 | 24             | 25.500                 | 24             | —                      | —                      | —              | —  |
| <b>KH-325P</b>    | 36.700                        | 28.500                 | 32.750                 | 32.250                 | 220                   | 34.500                 | 28             | 30.500                 | 28             | —                      | —                      | —              | —  |
| <b>TOLERANCES</b> | ±.050                         | ±.050                  | *Note                  | *Note                  |                       | ⊕ .030                 |                | ⊕ .030                 |                |                        |                        |                |  |

## External Gear

| Kaydon<br>P/N     | OUTLINE DIMENSIONS AND WEIGHT |                        |                        |                        |                       | HOLE DATA              |                |                        |                | GEAR DATA<br>- FD INVOLUTE           |                        |                | GEAR<br>TOOTH<br>RATING<br>F <sub>z</sub><br>(lbs) |
|-------------------|-------------------------------|------------------------|------------------------|------------------------|-----------------------|------------------------|----------------|------------------------|----------------|--------------------------------------|------------------------|----------------|--|
|                   |                               |                        |                        |                        |                       | OUTER RING             |                | INNER RING             |                | P <sub>d</sub> = 6, α = 20°, AGMA Q8 |                        |                |  |
|                   | D <sub>o</sub><br>(in)        | d <sub>i</sub><br>(in) | D <sub>i</sub><br>(in) | d <sub>o</sub><br>(in) | G<br>APPROX.<br>(lbs) | L <sub>o</sub><br>(in) | n <sub>o</sub> | L <sub>i</sub><br>(in) | n <sub>i</sub> | D <sub>2</sub><br>(in)               | b <sub>2</sub><br>(in) | z <sub>2</sub> |  |
| <b>KH-125E</b>    | 16.500                        | 8.625                  | 12.750                 | 12.250                 | 75                    | 14.750                 | 16             | 10.250                 | 16             | 16.167                               | 2.000                  | 97             | 5,480  |
| <b>KH-166E</b>    | 20.500                        | 12.750                 | 16.875                 | 16.375                 | 100                   | 18.875                 | 20             | 14.375                 | 20             | 20.167                               | 2.000                  | 121            | 5,570  |
| <b>KH-225E</b>    | 26.667                        | 18.500                 | 22.750                 | 22.250                 | 140                   | 24.500                 | 18             | 20.500                 | 18             | 26.333                               | 2.000                  | 158            | 5,670  |
| <b>KH-275E</b>    | 31.667                        | 23.500                 | 27.750                 | 27.250                 | 175                   | 29.500                 | 24             | 25.500                 | 24             | 31.333                               | 2.000                  | 188            | 5,700  |
| <b>KH-325E</b>    | 36.667                        | 28.500                 | 32.750                 | 32.250                 | 205                   | 34.500                 | 28             | 30.500                 | 28             | 36.333                               | 2.000                  | 218            | 5,730  |
| <b>TOLERANCES</b> | +0/-.020                      | ±.050                  | *Note                  | *Note                  |                       | ⊕ .030                 |                | ⊕ .030                 |                |                                      |                        |                | ±.030  |

## Dynamic and Intermittent Capacities

| Size          | Dynamic        |                    | Intermittent   |                    |
|---------------|----------------|--------------------|----------------|--------------------|
|               | Axial<br>(lbs) | Moment<br>(ft-lbs) | Axial<br>(lbs) | Moment<br>(ft-lbs) |
| <b>KH-125</b> | 32,000         | 13,100             | 60,000         | 25,800             |
| <b>KH-166</b> | 36,000         | 20,500             | 82,800         | 45,200             |
| <b>KH-225</b> | 40,000         | 30,500             | 115,200        | 56,000             |
| <b>KH-275</b> | 43,000         | 39,600             | 142,000        | 75,000             |
| <b>KH-325</b> | 45,000         | 48,100             | 167,000        | 92,000             |

\*Note:

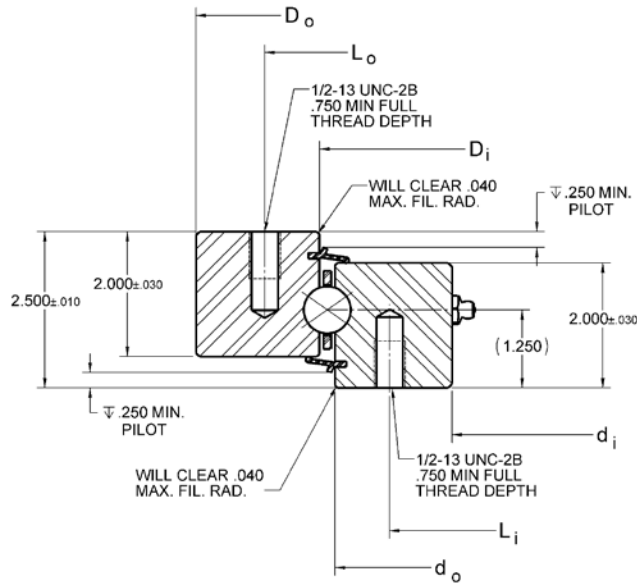
D<sub>i</sub> = d<sub>o</sub> = +0/-.002 tolerance for KH-125 through KH-225.

D<sub>i</sub> = d<sub>o</sub> = +0/-.003 tolerance for KH-275 through KH-325.

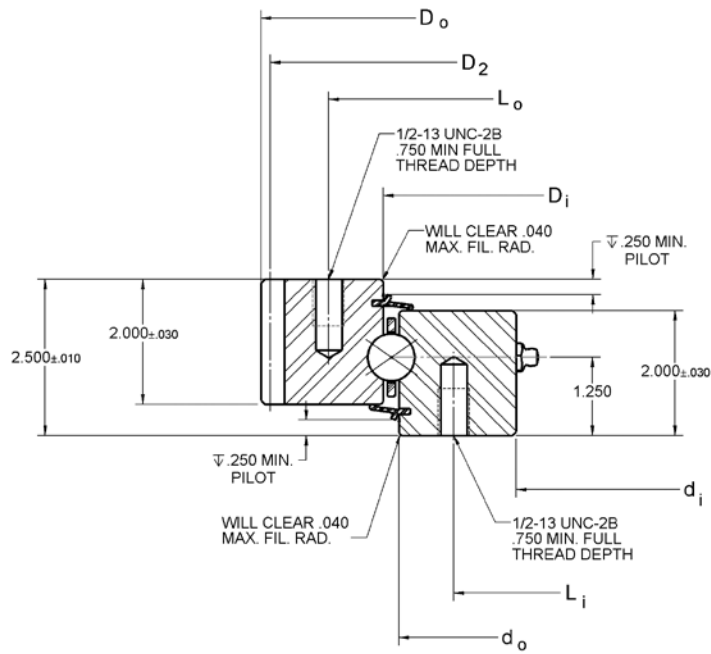
**Note:** Dynamic-L<sub>10</sub> capabilities based on million revolutions. Values do not apply simultaneously.

Intermittent-Individual capacity limits for maximum loading when normal mode of operation is an intermittent load application and rotation.

# KH Series



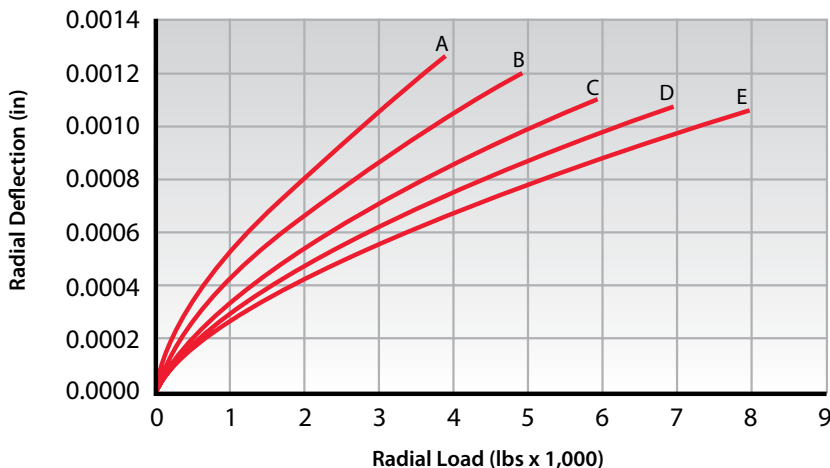
**Non-geared**



**External geared**

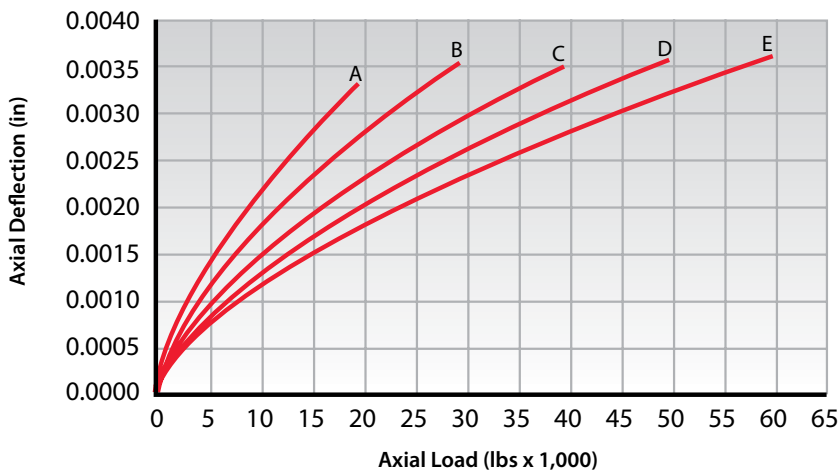
# KH Series Deflection Chart

### KH Series Radial Deflection



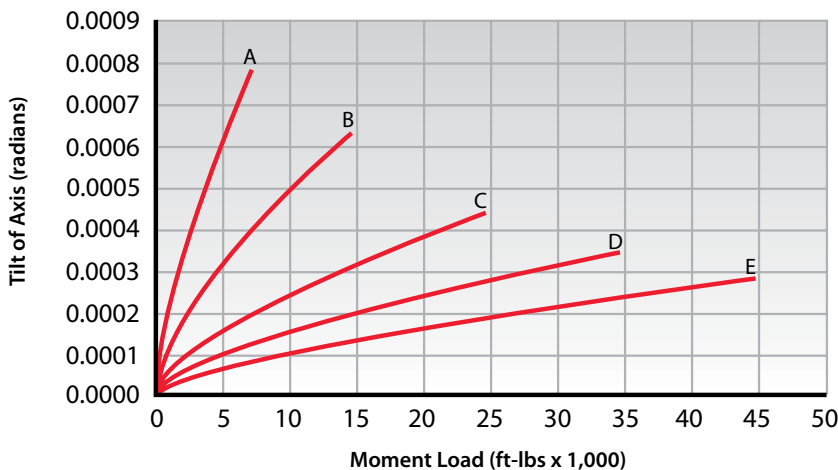
- (A) KH-125
- (B) KH-166
- (C) KH-225
- (D) KH-275
- (E) KH-325

### KH Series Axial Deflection



- (A) KH-125
- (B) KH-166
- (C) KH-225
- (D) KH-275
- (E) KH-325

### KH Series Tilt of Axis



- (A) KH-125
- (B) KH-166
- (C) KH-225
- (D) KH-275
- (E) KH-325