

igubal® Rod End Bearings



Maintenance-free, self-lubricating

High strength under impact loads

High tensile strength

Compensation for alignment errors

Compensation for edge loads

Light weight

igubal®
Rod End Bearings

Phone +49 - 22 03 - 96 49-145
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mm

Inch



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igus® GmbH
51147 Cologne

Internet www.igus.de
E-mail info@igus.de



Special properties of igubal® Rod End Bearings:

- Maintenance-free
- High strength under impact loads
- Very high tensile strength for varying loads
- Compensation for alignment errors
- Compensation for edge loads
- Resistant to dirt, dust and lint
- Resistant to corrosion and chemicals
- High vibration dampening capacity
- Suitable for rotating, oscillating and linear movements
- Light weight
- Dimensional series K and E, dimensions according to standard DIN ISO 12240

loads and high temperatures, the load capacity of igubal® rod end bearings should be tested in an experiment that simulates the application.

Loads

igubal® rod end bearings handle high loads at normal room temperatures, have excellent dampening properties and weigh only a fifth of traditional metallic rod end bearings. In applications with high continuous



Coefficients of Friction and Speed

One important advantage of igubal® spherical bearings is that rapid, rotary movements of a mounted shaft take place directly in the spherical portion, made of iglidur® W300. In metallic rod ends, rotary motion takes place between the race and the spherical bearing. High speeds can be achieved with igubal® bearings.

igubal® bearings are used in such a way that the angular movements of the spherical bearings take place at the spherical outer diameter. By contrast, rotations of the shaft are supported directly in the inner diameter of the spherical portion. The advantage therefore lies in the polymer vs. steel relationship. Polymer produces lower friction and permits high speeds, even when running dry. The maintenance-free igubal® bearing system is also suited for linear and oscillating shaft movements.

Product Range

igubal® rod end bearings are available in the dimensional series K and E for shaft diameters of 2 to 30 mm.

- Form A – with male threads
- Form B – with female threads.

The dimensional series K is available in imperial dimensions, as well as a special version containing a stainless steel sleeve in the inner race. This allows a significantly higher torque than for the standard polymer race. Please contact us for information on quantities, availability and pricing.

Tolerances

igubal® rod end bearings can be used at different tolerances depending on the individual application. In standard form, they are designed with a large amount of bearing clearance, which permits reliable operation even at high rotational speeds. The bore of the inner race is produced to a standard tolerance range. Shafts should also meet recommended tolerances. Please contact us if you have any questions regarding tolerances.



Picture 51.2: igubal® rod end bearings in a confectionery decorating machine



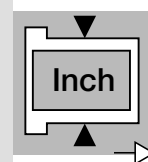
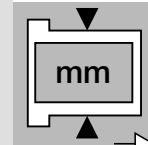
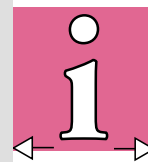
Picture 51.3: igubal® rod end bearings in the rear suspension mechanism of a bicycle



Picture 51.4: igubal® rod end bearings in the closing mechanism of an outdoor security gate

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igubal® Rod End Bearings with Female Thread



KBRM/KBLM
Dimensional Series K
Standard design

Page 51.6



KBRM/KBLM
Dimensional Series K
Standard design with
metal insert (MH)

Page 51.6



KBRI/KBLI
Dimensional Series K
Standard design with
inch dimensions

Page 51.14



EBRM/EBLM
Dimensional Series E

Page 51.12

igubal® Rod End Bearings with Male Thread



KARM/KALM
Dimensional Series K
Standard design

Page 51.8



KARM/KALM
Dimensional Series K
Standard design with
metal sleeve (MH)

Page 51.8



KARI/KALI
Dimensional Series K
Standard design with
inch dimensions

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EARM/EALM
Dimensional Series E

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igubal® Accessories for Rod End Bearings



Adapter bolt

Page 51.18



Clevis joint with
clevis pin and circlip

Page 52.4



Clevis joint with
spring-loaded pins

Page 52.7



AGRM

Page 51.20



WGRM
Page 51.19

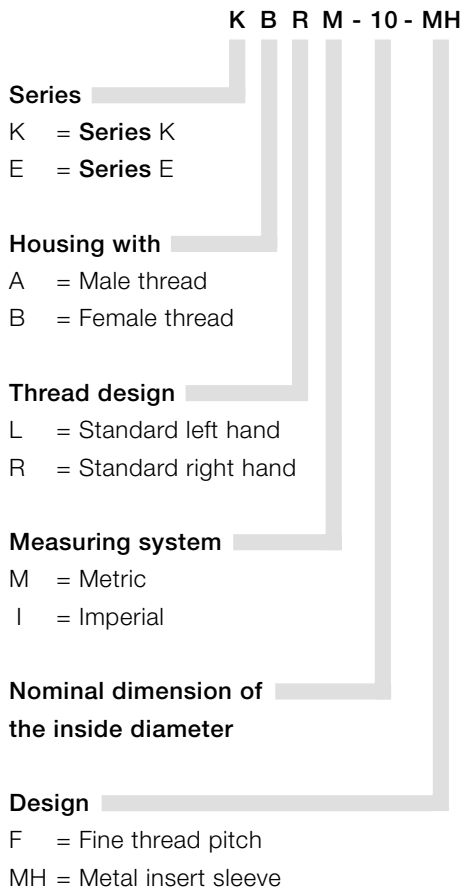


WGRM-LC
Page 51.20



Structure for Part Numbers for igubal® Rod End Bearings

The part numbers of igubal® rod end bearings are designed according to the following system:

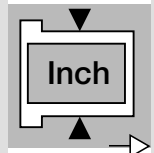
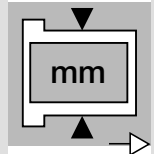


The example given is the number for a rod end bearing of the dimensional series K with metric female right hand thread. The inner diameter of the spherical ball is 10 mm. It is a special design with a metal insert sleeve.

In most cases, the thread diameter of the bolt corresponds to the inner diameter – here it is M10. However, please pay attention to the following tables.

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igubal® Rod End Bearings, mm

KA..M

KA..M

mm

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Standard design

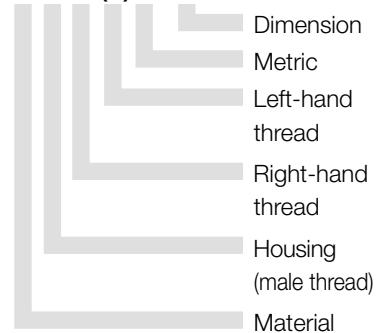


Design with metal housing (MH)

Data in mm

Structure – part no.

K A R (L)M-05



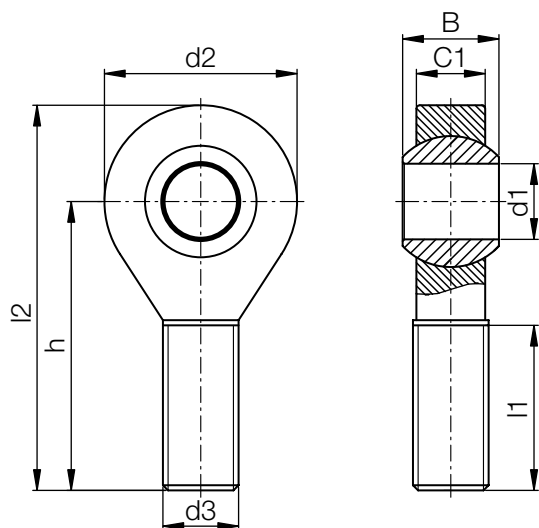
igubal® – Rod End Bearings:

- Maintenance-free, self-lubricating
- High strength under impact loads
- Very high tensile strength for varying loads
- Compensation for alignment errors
- Compensation for edge loads
- Resistant to dirt, dust and lint
- Resistant to corrosion and chemicals
- High vibration dampening capacity
- Suitable for rotating, oscillating, and linear movements
- Light weight
- Dimensional series K according to standard DIN ISO 12240
- Available with metal insert to take a higher torque

Load Data

igubal® - Rod End Bearings KARM / KALM

| Part Number | Maximum Static Tensile Strength | | Maximum Radial Load | | Minimum Thread Depth [mm] | Max. Torque Strength Outer Threading [Nm] | Max. Torque through Ball | |
|----------------|---------------------------------|---------------|---------------------|---------------|---------------------------|---|--------------------------|---------|
| | Short term [N] | Long term [N] | Short term [N] | Long term [N] | | | Standard [Nm] | MH [Nm] |
| | | | | | | | | |
| KAR(L)M-05 | 800 | 400 | 80 | 40 | 13 | 0,4 | 5 | 12 |
| KAR(L)M-06 | 1000 | 500 | 100 | 50 | 15 | 0,5 | 10 | 15 |
| KAR(L)M-08 | 1700 | 850 | 200 | 100 | 18 | 2,0 | 12 | 40 |
| KAR(L)M-10 | 2500 | 1250 | 300 | 150 | 20 | 5,0 | 20 | 50 |
| KAR(L)M-10 F | 2500 | 1250 | 300 | 150 | 20 | 3,0 | 20 | 50 |
| KAR(L)M-12 | 2700 | 1350 | 400 | 200 | 22 | 6,0 | 30 | 70 |
| KAR(L)M-12 F | 2700 | 1350 | 400 | 200 | 22 | 6,0 | 30 | 70 |
| KAR(L)M-14 | 3400 | 1700 | 700 | 350 | 25 | 12,0 | 35 | 75 |
| KAR(L)M-16 | 3900 | 1950 | 800 | 400 | 26 | 17,0 | 40 | 110 |
| KAR(L)M-16 F | 3900 | 1950 | 800 | 400 | 26 | 17,0 | 40 | 110 |
| KAR(L)M-18 | 4200 | 2100 | 1000 | 500 | 29 | 20,0 | 45 | 150 |
| KAR(L)M-20 | 6000 | 3000 | 1300 | 650 | 32 | 25,0 | 55 | 200 |
| KAR(L)M-20 M20 | 6000 | 3000 | 1300 | 650 | 32 | 25,0 | 55 | 200 |
| KAR(L)M-22 | 7200 | 3600 | 1500 | 750 | 34 | 25,0 | 60 | 225 |
| KAR(L)M-25 | 7500 | 3750 | 1900 | 950 | 39 | 45,0 | 65 | 260 |
| KAR(L)M-30 | 8800 | 4400 | 2300 | 1150 | 46 | 85,0 | 70 | 300 |



Rod End Bearings
mm
KA..M

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Dimensions [mm]

igubal® - Rod End Bearings KARM / KALM

| Part Number | d1 E10 | d2 | d3 | C1 | B | h | l1 | l2 | Maximum Angle of Pivot |
|----------------|-----------|----|------------|------|------|-----|----|-----|------------------------------|
| KAR(L)M-05 | 5 | 18 | M05 | 6,0 | 8,0 | 33 | 19 | 42 | 30° |
| KAR(L)M-06 | 6 | 20 | M06 | 7,0 | 9,0 | 36 | 21 | 46 | 29° |
| KAR(L)M-08 | 8 | 24 | M08 | 9,0 | 12,0 | 42 | 25 | 55 | 25° |
| KAR(L)M-10 | 10 | 30 | M10 | 10,5 | 14,0 | 48 | 28 | 63 | 25° |
| KAR(L)M-10 F | 10 | 30 | M10 x 1,25 | 10,5 | 14,0 | 48 | 28 | 63 | 25° |
| KAR(L)M-12 | 12 | 34 | M12 | 12,0 | 16,0 | 54 | 32 | 71 | 25° |
| KAR(L)M-12 F | 12 | 34 | M12 x 1,25 | 12,0 | 16,0 | 54 | 32 | 71 | 25° |
| KAR(L)M-14 | 14 | 38 | M14 | 13,5 | 19,0 | 61 | 36 | 79 | 25° |
| KAR(L)M-16 | 16 | 42 | M16 | 15,0 | 21,0 | 66 | 37 | 88 | 23° |
| KAR(L)M-16 F | 16 | 42 | M16 x 1,5 | 15,0 | 21,0 | 66 | 37 | 88 | 23° |
| KAR(L)M-18 | 18 | 46 | M18 x 1,5 | 16,5 | 23,0 | 72 | 41 | 96 | 23° |
| KAR(L)M-20 | 20 | 50 | M20 x 1,5 | 18,0 | 25,0 | 78 | 45 | 104 | 23° |
| KAR(L)M-20 M20 | 20 | 50 | M20 x 2,5 | 18,0 | 25,0 | 78 | 45 | 104 | 23° |
| KAR(L)M-22 | 22 | 56 | M22 x 1,5 | 20,0 | 28,0 | 84 | 48 | 112 | 22° |
| KAR(L)M-25 | 25 | 61 | M24 x 2,0 | 22,0 | 31,0 | 95 | 55 | 126 | 22° |
| KAR(L)M-30 | 30 | 71 | M30 x 2,0 | 25,0 | 37,5 | 112 | 66 | 147 | 22° |

Rod end bearings can be ordered in metric dimensions with metal insert with the addition of MH after the part numbers listed here, for example: KBRM-10 MH.

Available for delivery

Lifetime calculation, CAD files and much more support ► www.igus.de/en/karm

