

Load

The load capacity of the maintenance free bearing element parts is very high at normal ambient temperatures. These bearings absorb high forces and weigh only one fifth of traditional, metal bearing housings. The excellent dampening properties are based on the fact that the polymer material of the two part bearing can absorb vibrations differently than steel.

However, plastic specific properties, such as dependence on temperature and behaviour under long term stress must be taken into consideration when using these bearings. The load capacity of the rod end bearing should therefore be checked in a practical test, particularly if it will be used under continuous high loads and at elevated temperatures.

Chemical resistance

The moisture absorption is approximately 1.3% of weight in standard atmosphere. The saturation limit in water is 6.5%. This must be taken into account for these types of applications. The housing made of igumid G is resistant to weak alkalines, acids and fuels, as well as all types of lubricants.

| Medium | Resistance |
|---------------------------------|------------|
| Alcohol | + to 0 |
| Hydrocarbons | + |
| Greases, oils without additives | + |
| Fuels | + |
| Diluted acids | 0 to - |
| Strong acids | - |
| Diluted alkalines | + |
| Strong alkalines | 0 |

Chemical resistance of plain bearings.

+ resistant
0 conditionally resistant
- not resistant.

All data given at room temperature (20°C).

Radiation resistance

Self aligning plain bearings are resistant to radiation up to an intensity of 3×10^2 Gy.

Application temperatures

These bearings can be used in temperatures from -30°C to + 80°C. The table below shows the effect of temperature on the load capacity of the bearings.

| | |
|---------------------|--------|
| Minimum | -30°C |
| Maximum, long term | -80°C |
| Maximum, short term | +120°C |

Coefficients of sliding friction and speed

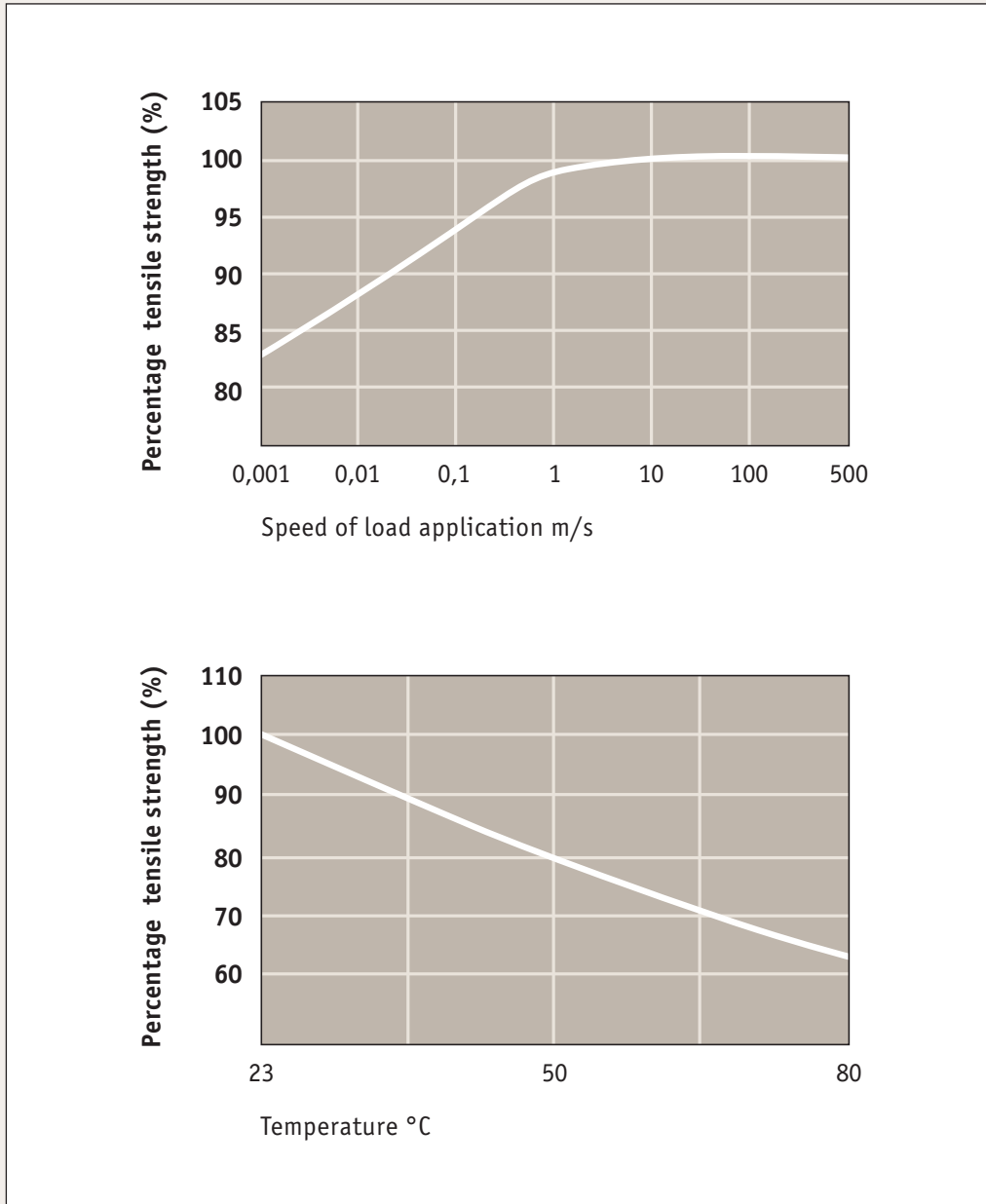
One important advantage of plastic spherical bearings is that rapid, rotary movements of a mounted shaft take place directly in the spherical portion. In metallic rod ends, rotary motion takes place between the race and the spherical bearing. High speeds can be achieved with plastic bearings.

These bearings are used in such a way that the angular movements of the spherical bearings take place at the outer diameter. By contrast, rotations of the shaft are supported directly in the I.D. 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.



UV resistance

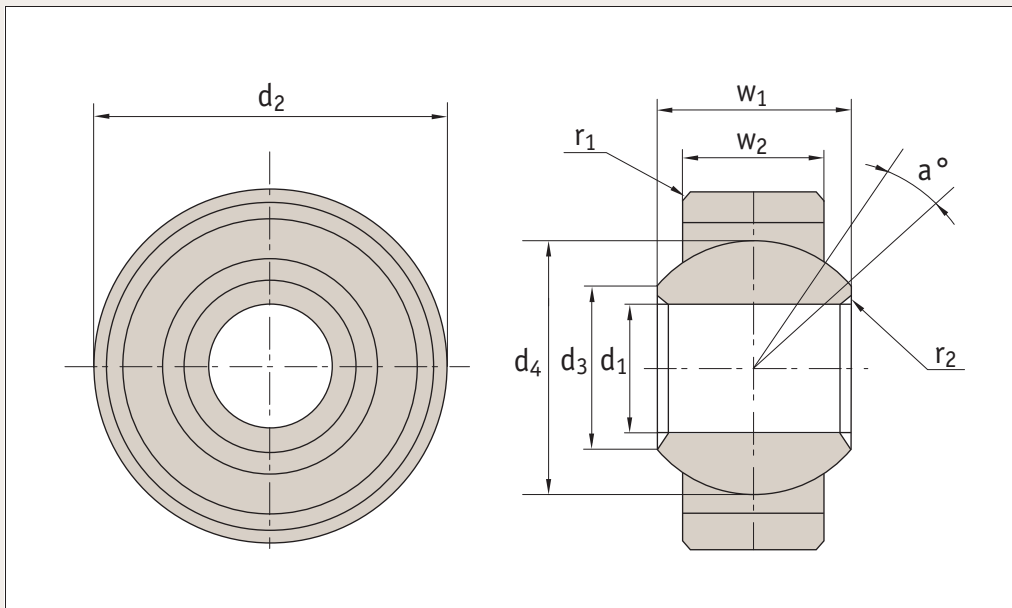
The corrosion resistance of these bearings makes them very useful for outside applications. They are permanently resistant to UV radiation. A small change in colour (dark colouration) of the spherical ball due to UV radiation does not affect the mechanical electrical or thermal properties.



Rod Ends from Springfix Linkages



R3640



Material

Housing: undercut steel 11SMnPb30K (1.0718) turned silver zinc plated.
 Ball: ball bearing steel 100Cr6 hardened, surface condition polished.
 Race: teflon.

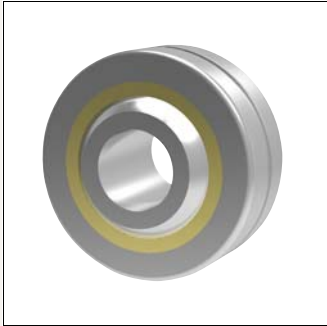
Technical Notes

To DIN 12240-1

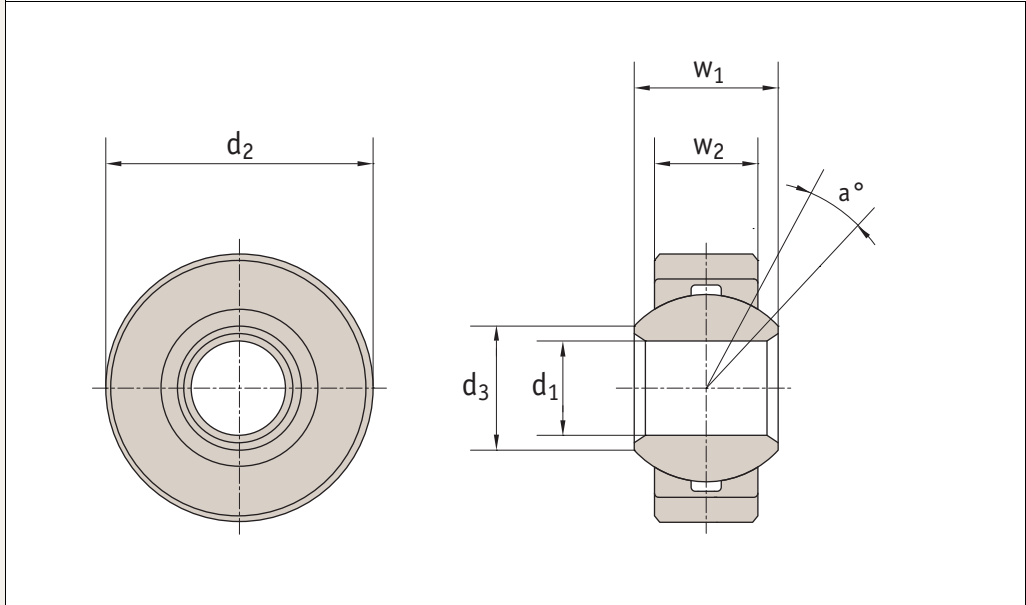
Tips

For stainless steel version see R3641

| Order No. | d ₁ h7 | d ₂ | d ₃ | d ₄ | w ₁ | w ₂ | r ₁ | r ₂ | a° | Max. static load C ₀ kN | ⚖ g |
|-----------|----------------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----|------------------------------------|--------|
| R3640.005 | 5 | 16 | 7,7 | 11,10 | 8 | 6 | 0,3 | 1,2 | 13 | 17 | 0,009 |
| R3640.006 | 6 | 18 | 8,9 | 12,70 | 9 | 6,75 | 0,3 | 1,2 | 13 | 22 | 0,013 |
| R3640.008 | 8 | 22 | 10,4 | 15,88 | 12 | 9 | 0,3 | 1,2 | 13 | 36 | 0,024 |
| R3640.010 | 10 | 26 | 12,9 | 19,05 | 14 | 10,5 | 0,3 | 1,2 | 13 | 50 | 0,04 |
| R3640.012 | 12 | 30 | 15,4 | 22,23 | 16 | 12 | 0,4 | 1,2 | 13 | 67 | 0,08 |
| R3640.014 | 14 | 34 | 16,8 | 25,40 | 19 | 13,5 | 0,4 | 1,2 | 15 | 86 | 0,11 |
| R3640.016 | 16 | 38 | 19,3 | 28,58 | 21 | 15 | 0,4 | 1,5 | 15 | 107 | 0,13 |
| R3640.018 | 18 | 42 | 21,8 | 31,75 | 23 | 16,5 | 0,4 | 1,5 | 15 | 131 | 0,17 |
| R3640.020 | 20 | 46 | 24,3 | 34,93 | 25 | 18 | 0,4 | 1,5 | 15 | 157 | 0,23 |
| R3640.022 | 22 | 50 | 25,8 | 38,10 | 28 | 20 | 0,4 | 2 | 15 | 191 | 0,28 |
| R3640.025 | 25 | 56 | 29,5 | 42,86 | 31 | 22 | 0,5 | 2 | 15 | 236 | 0,39 |
| R3640.030 | 30 | 66 | 29,5 | 50,80 | 37 | 25 | 0,5 | 2 | 15 | 318 | 0,49 |



R3642



Material

Housing: stainless steel (1.4305) turned.

Bearing shell: special brass CuSn8 surface coated with a PTFE foil.

Ball: ball bearing steel 100Cr6 hardened, surface condition polished, hard chrome plated.

Upon request: stainless steel (1.4034) hardened, surface condition polished.

Stainless steel (1.4401) not hardened, surface condition polished.

Technical Notes

Suitable for low speeds and high dynamic loads.

Maintenance free, series K similar to DIN 12240-1 (DIN 648)


Important Notes

Working range -50°C to +200°C

Recommended shaft tolerance: g6

External diameter of pivoting bearing: h6

Recommended housing tolerance: J7

| Order No. | d ₁ H7 | d ₂ | d ₃ | w ₁ | w ₂ | a° | Admissible rpm/min | Max static load C _{0kN} |  g |
|-----------|----------------------|----------------|----------------|----------------|----------------|----|--------------------|----------------------------------|---|
| R3642.004 | 4 | 14 | 6,5 | 7 | 5,25 | 14 | 700 | 9,5 | 5 |
| R3642.005 | 5 | 16 | 7,7 | 8 | 6 | 13 | 600 | 12,5 | 8 |
| R3642.006 | 6 | 18 | 8,9 | 9 | 6,75 | 13 | 530 | 15,5 | 12 |
| R3642.008 | 8 | 22 | 10,4 | 12 | 9 | 14 | 420 | 27,8 | 23 |
| R3642.010 | 10 | 26 | 12,9 | 14 | 10,5 | 13 | 350 | 39 | 38 |
| R3642.012 | 12 | 30 | 15,4 | 16 | 12 | 13 | 300 | 53,5 | 58 |
| R3642.014 | 14 | 34 | 16,8 | 19 | 13,5 | 16 | 260 | 70 | 83 |
| R3642.016 | 16 | 38 | 19,3 | 21 | 15 | 15 | 230 | 88 | 115 |
| R3642.018 | 18 | 42 | 21,8 | 23 | 16,5 | 15 | 210 | 106,5 | 150 |
| R3642.020 | 20 | 46 | 24,3 | 25 | 18 | 14 | 190 | 130 | 200 |
| R3642.022 | 22 | 50 | 25,8 | 28 | 20 | 15 | 170 | 162 | 270 |
| R3642.025 | 25 | 56 | 29,6 | 31 | 22 | 15 | 150 | 204 | 375 |
| R3642.030 | 30 | 66 | 34,8 | 37 | 25 | 17 | 130 | 281 | 540 |
| R3642.035 | 35 | 78 | 37,7 | 43 | 30 | 19 | 110 | 343 | 850 |
| R3642.040 | 40 | 87 | 42,2 | 49 | 35 | 16 | 100 | 495 | 1400 |