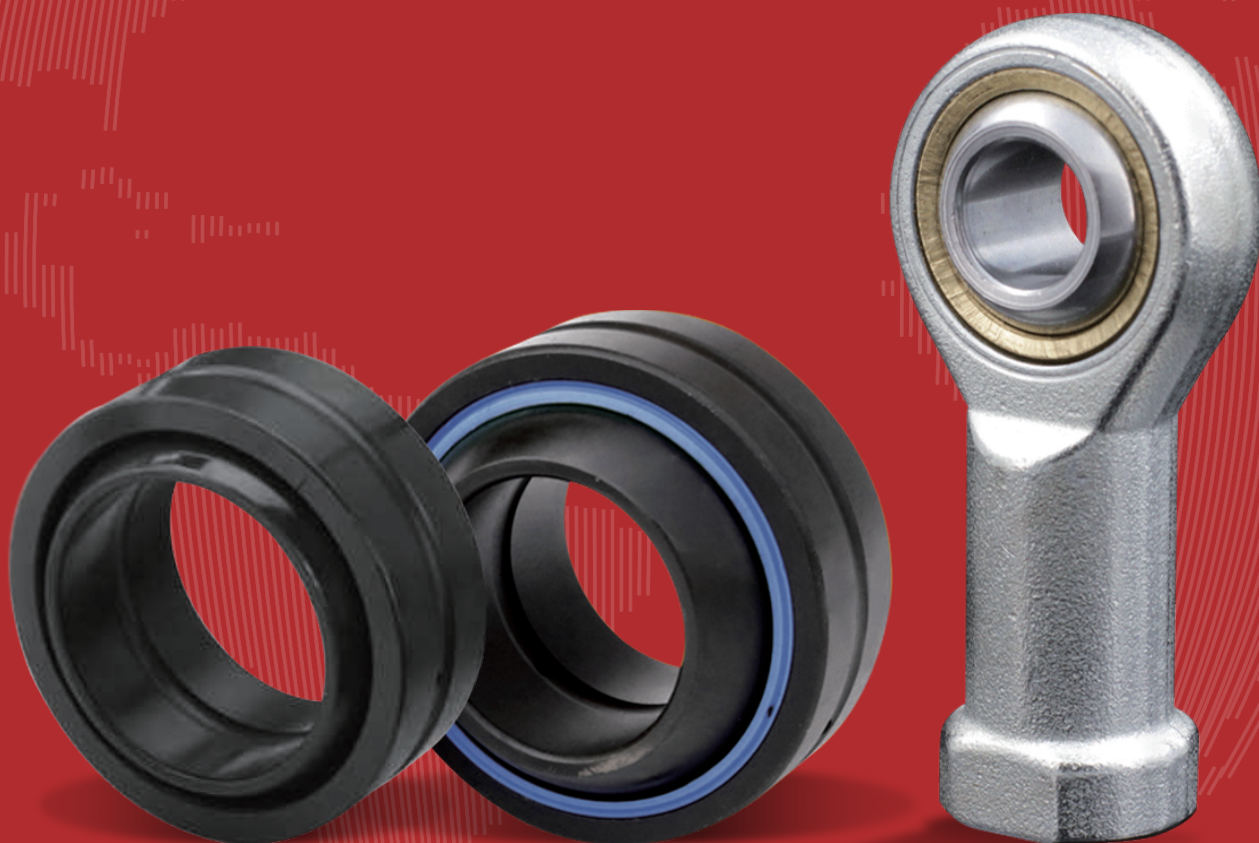


# SPHERICAL PLAIN BEARINGS AND ROD ENDS

QUALITY ROTATING WORLD

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HIGH BEARING CAPACITY  
HIGH ABRASION RESISTANCE



Shangdong KMR Bearing S&T Co.,Ltd

No. 001 KMR Road, Tangyuan Town, Linqing, Liaocheng, Shandong province,China



## COMPANY PROFILE

Shangdong KMR Bearing S&T Co.,Ltd., Founded in 1988, it focuses on manufacturing KMR brand quality bearings and related products, and is the main production base for bearings in China.

The company is committed to becoming a benchmark for Chinese bearing enterprises, providing cost-effective solutions for users.

KMR brand positioning focuses on the production and development of high-end bearing products, mainly including deep groove ball bearings, self-aligning ball bearings, angular contact ball bearings, outer spherical bearings, thrust ball bearings, tapered roller bearings, self-aligning roller bearings, thrust roller bearings, cylindrical roller bearings, needle roller bearings, etc.

Shangdong KMR Bearing S&T Co.,Ltd., is based in the industrial park of Tangyuan Town, Linqing City, Shandong Province. Its sales office and dealer network cover the country and are exported to more than ten countries and regions, including Europe, America, and East Asia.

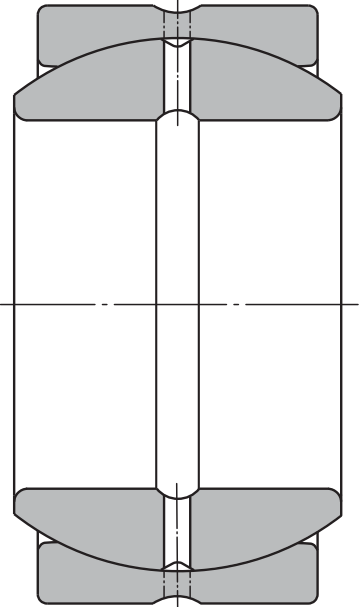
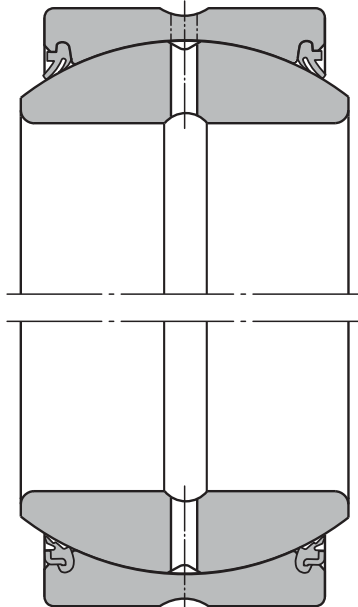
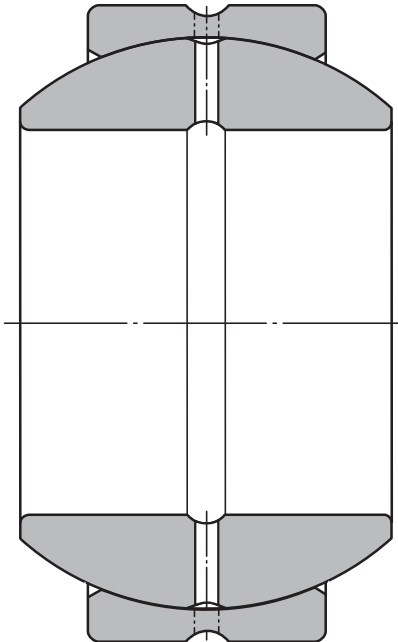
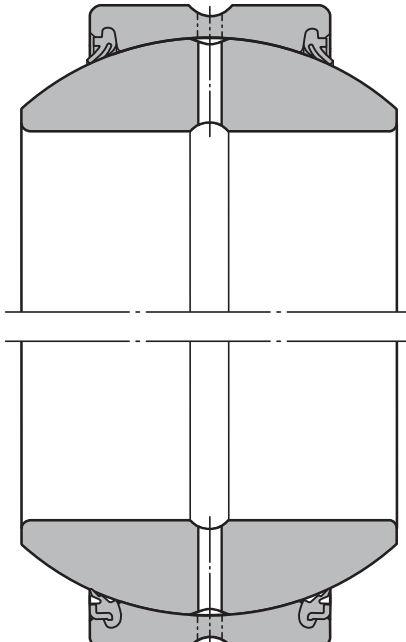
# 1. Radial spherical plain bearings requiring maintenance

A characteristic feature of KMR steel/steel radial spherical plain bearings is the outer ring, which is intentionally fractured so that it can be sprung apart to enable the inner ring to be inserted. The bearings are therefore nonseparable and easy to handle. The bearings are manganese phosphated and the sliding contact surface is then treated with a running-in lubricant. This reduces friction and wear during the running-in period. To facilitate lubrication, all bearings, with the exception of some small sizes, have an annular groove and two lubrication holes in both the inner and outer rings. Metric bearings with an outside diameter  $D \geq 150$  mm also have the KMR multigroove system in the outerring sliding contact surface as standard. Upon request, KMR can also supply smaller metric and inch size bearings with the multigroove system.

## 1.1 Radial spherical plain bearings, steel/steel

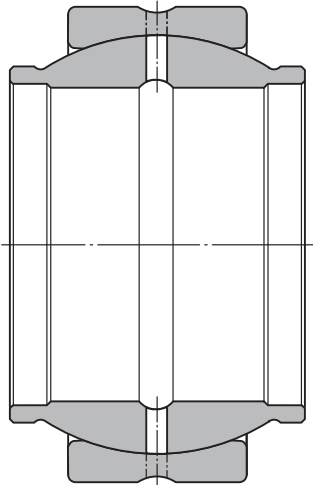
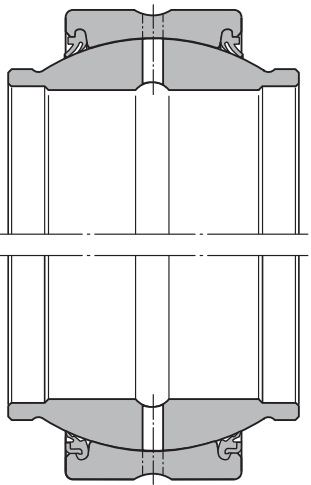
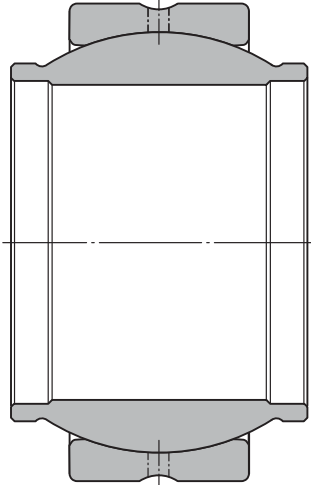
<p>GE 4 E to GE 12 E</p>	<p>GE 15 ES to GE 200 ES</p>
<p>GEH 20 ES-2RS to GEH 120 ES-2RS GEH 20 ES-2LS to GEH 120 ES-2LS</p>	<p>GE 15 ES-2RS to GE 300 ES-2RS GE 20 ES-2LS to GE 300 ES-2LS</p>

## 1.2 Radial spherical plain bearings, steel/steel

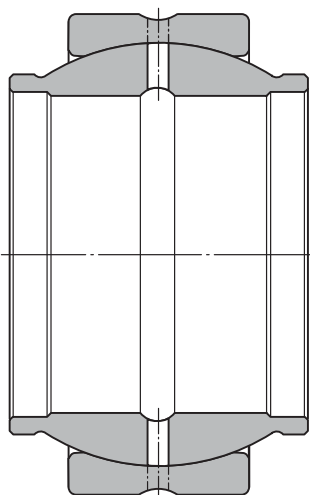
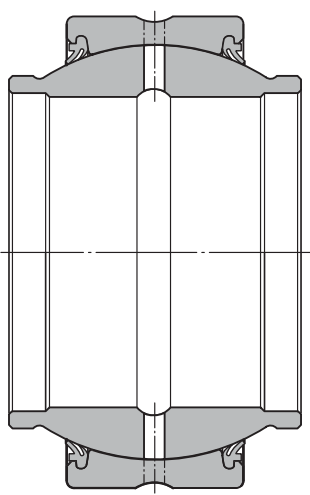
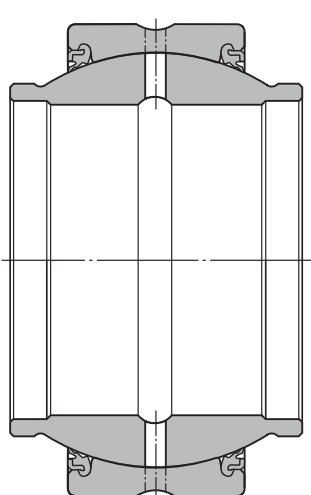
	
<p>GEZ 008 ES GEZ 010 ES GEZ 014 ES</p>	<p>GEZ 012 ES-2RS            GEZ 100 ES-2LS to GEZ 600 ES -2RS            GEZ 100 ES-2LS to GEZ 600 ES -2LS</p>
	
<p>GEZH ..... ES</p>	<p>GEZH 104 ES-2RS to GEZH 408 ES-2RS            GEZH 104 ES-2LS to GEZH 408 ES-2LS</p>



### 1.3 Radial spherical plain bearings with an extended inner ring, steel/steel

		
<p>GEG 16 ES to GEG 200 ES</p>	<p>GEM 20 ES-2RS to GEM 80 ES-2RS GEM 20 ES-2LS to GEM 80 ES-2LS</p>	<p>GEG 12 ESA</p>

### 1.4 Radial spherical plain bearings with an extended inner ring, steel/steel

		
<p>GEZM 008 ES GEZM 010 ES GEZM 014 ES</p>	<p>GEZM 012 ES-2RS GEZM 100 ES-2RS to GEZM 600 ES -2RS</p>	<p>GEZM 100 ES-2LS to GEZM 600 ES -2LS</p>

## 2. Maintenance-free radial spherical plain bearings

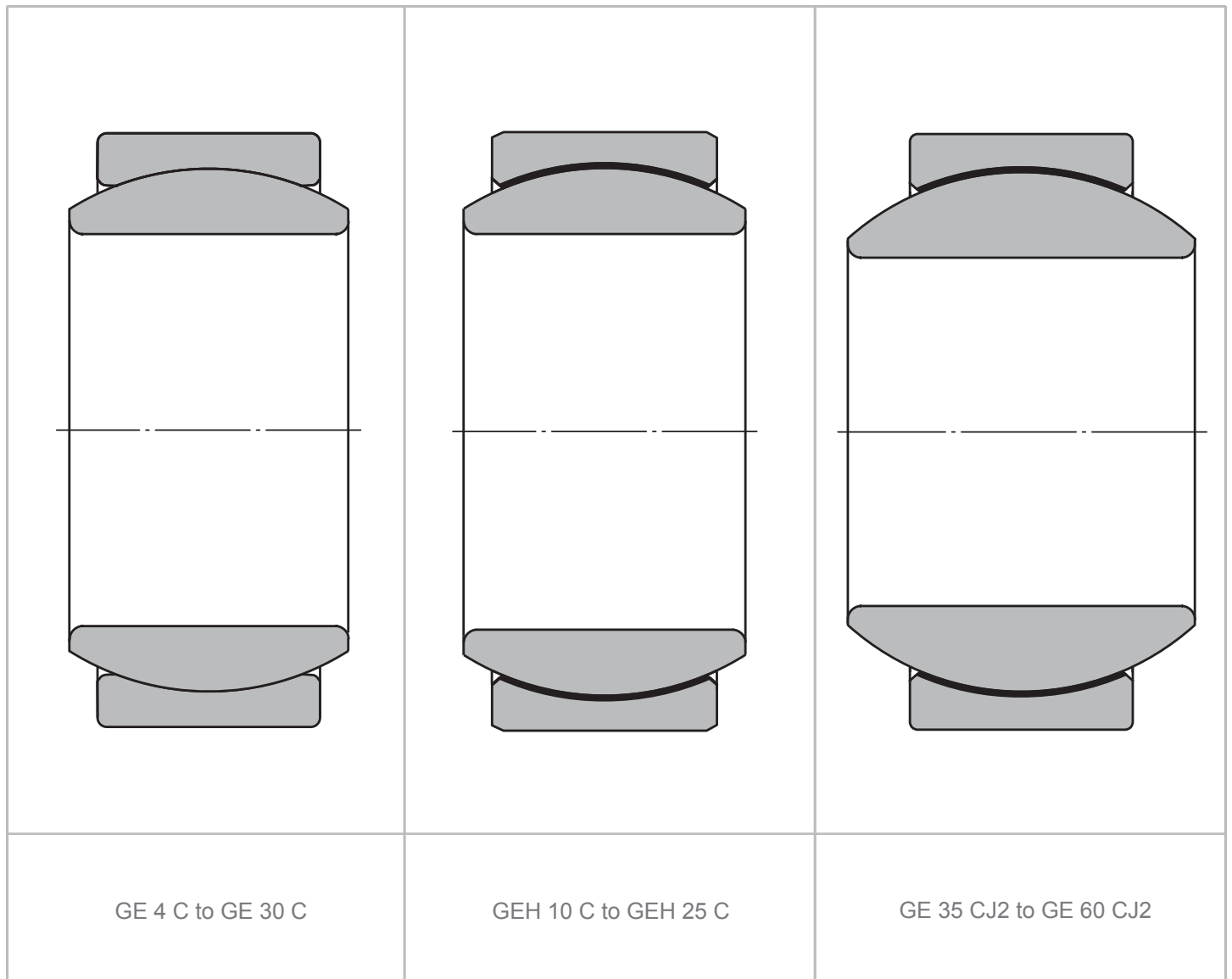
KMR manufactures maintenance-free radial spherical plain bearings in a variety of designs and a wide range of sizes.

Three sliding contact surface combinations are available:

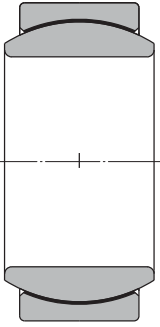
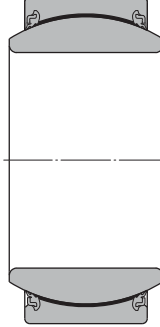

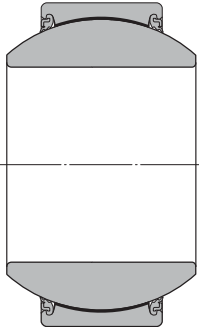
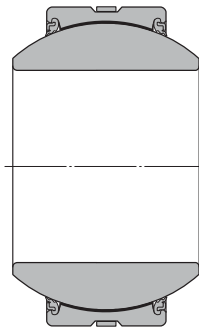
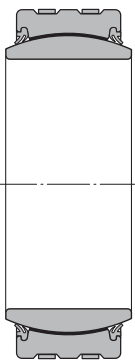

- Steel/PTFE sintered bronze, designation suffix C
- Steel/PTFE fabric, designation suffix TX
- Steel/PTFE FRP, designation suffix F

All three sliding contact surface combinations are self-lubricating. Bearings with a steel/PTFE sintered bronze or steel/PTFE fabric sliding contact surface combinations must not be lubricated. Bearings with a steel/PTFE FRP (fibre reinforced polymer) sliding contact surface combination are also maintenance-free; however, occasional relubrication is beneficial to help maximize bearing service life. To facilitate relubrication, steel/PTFE FRP bearings are equipped with lubrication facilities.

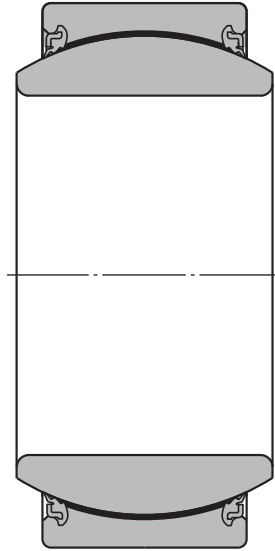
### 2.1 Maintenance-free radial spherical plain bearings, steel/PTFE sintered bronze



## 2.2 Maintenance-free radial spherical plain bearings, steel/PTFE fabric

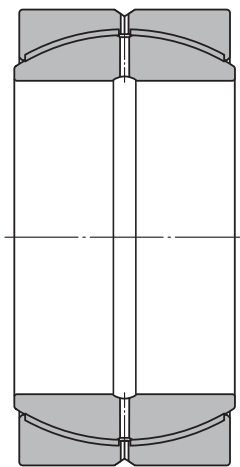
		
<p>GE 12 TXGR GE 15 TXGR GE 17 TXGR</p>	<p>GE 20 TXE-2LS to GE 90 TXE-2LS GE 20 TXG3E-2LS to GE 60 TXG3E-2LS</p>	<p>GE 100 TXA-2LS to GE 300 TXA-2LS GE 70 TXG3A-2LS to GE 200 TXG3A-2LS</p>
		
<p>GEH 20 TXE-2LS to GEH 80 TXE-2LS GEH 20 TXG3E-2LS to GEH 50 TXG3E-2LS</p>	<p>GEH 90 TXA-2LS to GEH 120 TXA-2LS GEH 60 TXG3A-2LS to GEH 120 TXG3A-2LS</p>	
		
<p><math>d \leq 400</math> mm GEC 320 TXA-2RS to GEC 800 TXA-2RS</p>	<p><math>d \geq 420</math> mm GEC 320 TXA-2RS to GEC 800 TXA-2RS</p>	

### 2.3 Maintenance-free radial spherical plain bearings, steel/PTFE fabric

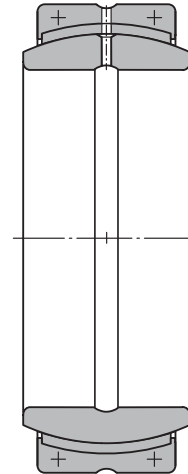


GEZ 100 TXE-2LS to GEZ 312 TXE-2LS  
 GEZ 400 TXA-2LS to GEZ 600 TXA-2LS

### 2.4 Maintenance-free radial spherical plain bearings, steel/PTFE FRP



GEP 100 FS to GEP 1000 FS

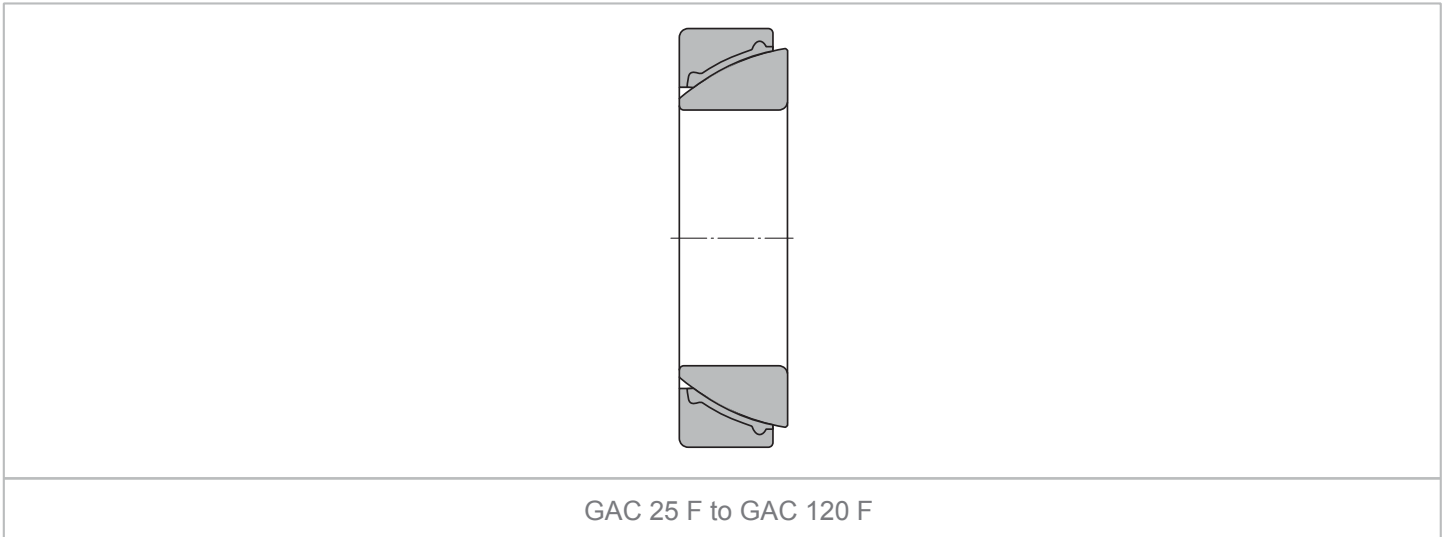


GEC 320 FBAS to GEC 1000 FBAS

### 3. Angular contact spherical plain bearings

As their name implies, the sliding contact surfaces of angular contact spherical plain bearings are spherical in shape and inclined at an angle to the bearing axis. Consequently, these bearings are well suited for accommodating combined (radial and axial) loads. Single angular contact spherical plain bearings can only accommodate axial loads acting in one direction. These bearings can be separated, enabling the rings to be mounted separately.

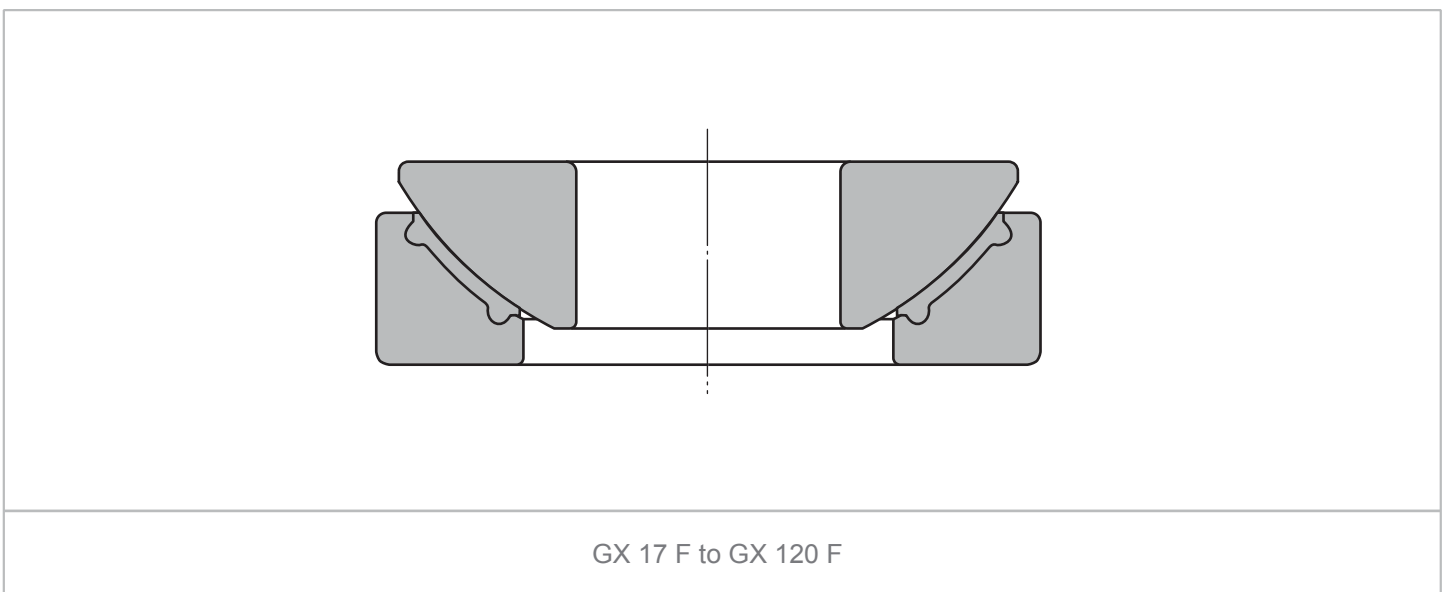
#### 3.1 Maintenance-free angular contact spherical plain bearings, steel/PTFE FRP



### 4. Thrust spherical plain bearings

Thrust spherical plain bearings have a convex spherical surface on the shaft washer and a corresponding concave spherical surface in the housing washer. They are intended to accommodate primarily axial loads but can also accommodate combined (radial and axial) loads. The radial load component of a combined load should not exceed 50% of the axial load component. When radial loads are larger, it is advisable to combine thrust bearings with radial bearings in the GE dimension series. Thrust spherical plain bearings are separable, e.g. shaft and housing washers can be mounted separately.

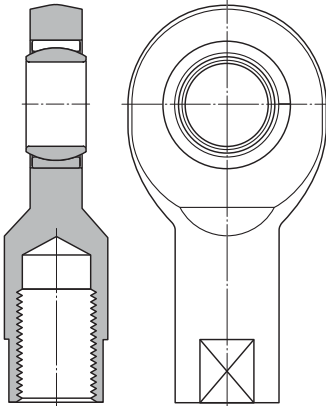
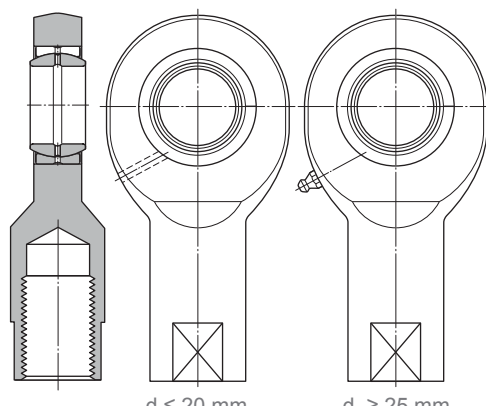
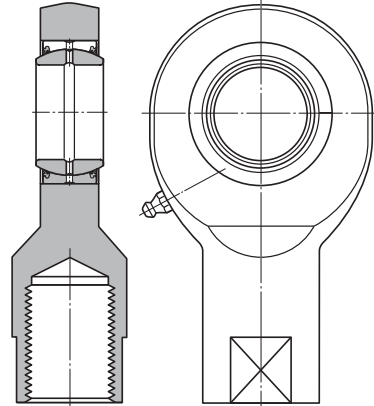
#### 4.1 Maintenance-free thrust spherical plain bearings, steel/PTFE FRP



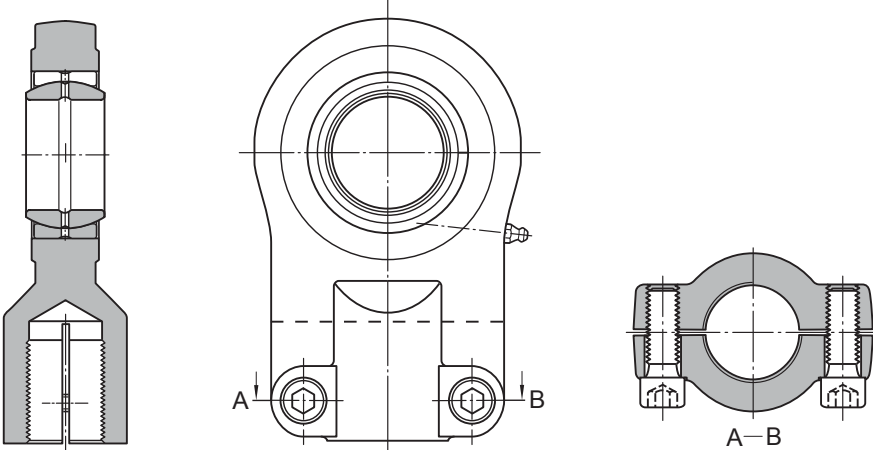
## 5. Rod ends requiring maintenance

Steel/steel rod ends consist of a rod end housing and a steel/steel radial spherical plain bearing from the standard assortment, where the outer ring is secured in the housing. These rod ends are available with a female thread, male thread or a welding shank. Steel/bronze rod ends consist of a rod end housing and a steel/bronze spherical plain bearing. These bearings have an inner ring made of steel and an outer ring made of bronze. The bearing is held in position by staking the housing on both sides of the outer ring. These rod ends are available with a male or female thread.

### 5.1 Rod ends with a female thread, steel/steel

	 <p style="text-align: center;"><math>d \leq 20 \text{ mm}</math>      <math>d \geq 25 \text{ mm}</math></p>	
<p style="text-align: center;">SI 6 E to SI 12 E SIL 6 E to SIL 12 E</p>	<p style="text-align: center;">SI 15 ES to SI 30 ES SIL 15 ES to SIL 30 ES</p>	<p style="text-align: center;">SI 35 ES-2RS to SI 80 ES-2RS SIL 35 ES-2RS to SIL 80 ES-2RS SIA 40 ES-2RS to SIA 80 ES-2RS SILA 40 ES-2RS to SILA 80 ES-2RS</p>

### 5.2 Rod ends with a female thread, for hydraulic cylinders, steel/steel


<p style="text-align: center;">SIJ 12 E to SIJ 100 ES SILJ 12 E to SILJ 100 ES</p>

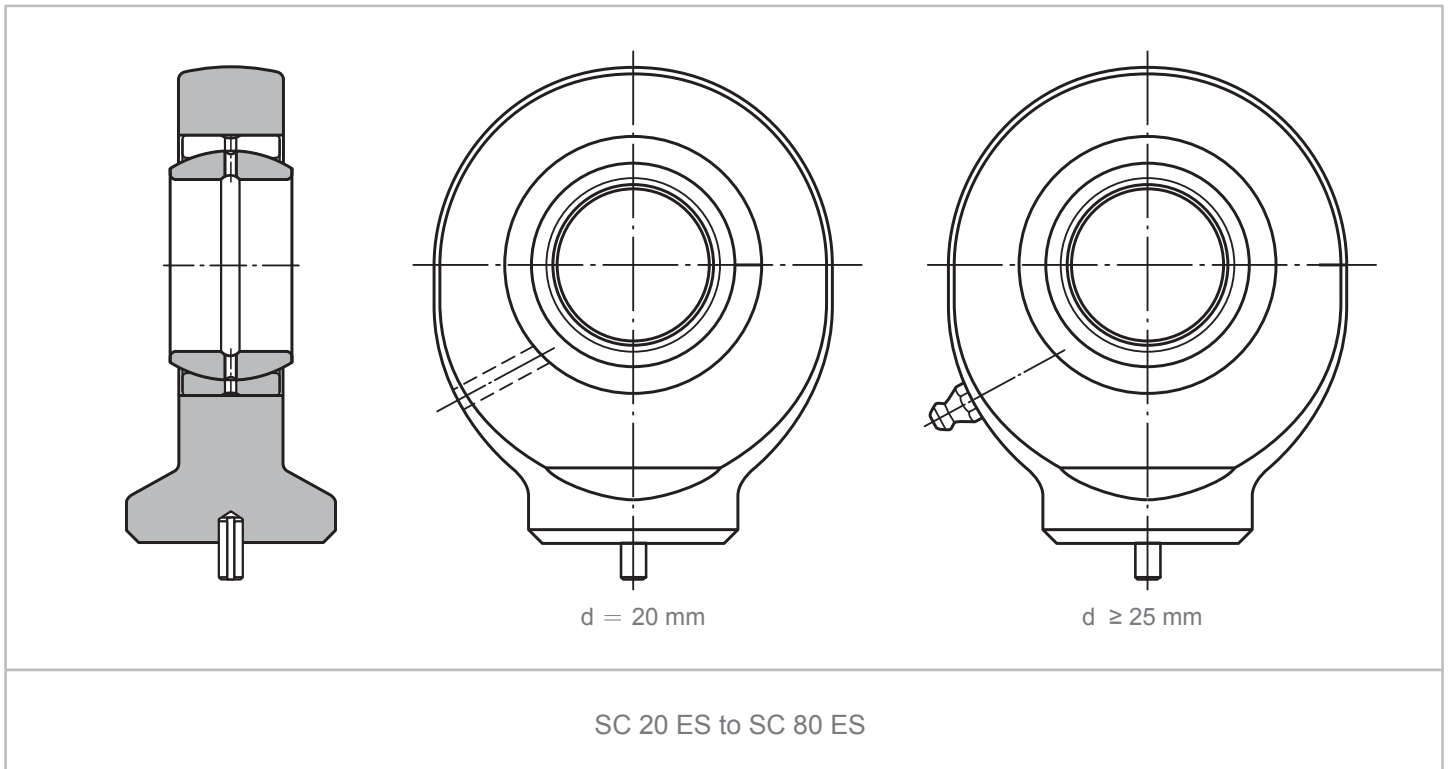
<p>SIQG 12 ESA SILQG 12 ESA SILQG 16 ES to SILQG 200 ES</p>	<p>SIR 25 ES to SIR 120 ES SILR 25 ES to SILR 120 ES</p>

### 5.3 Rod ends with a male thread, steel/steel

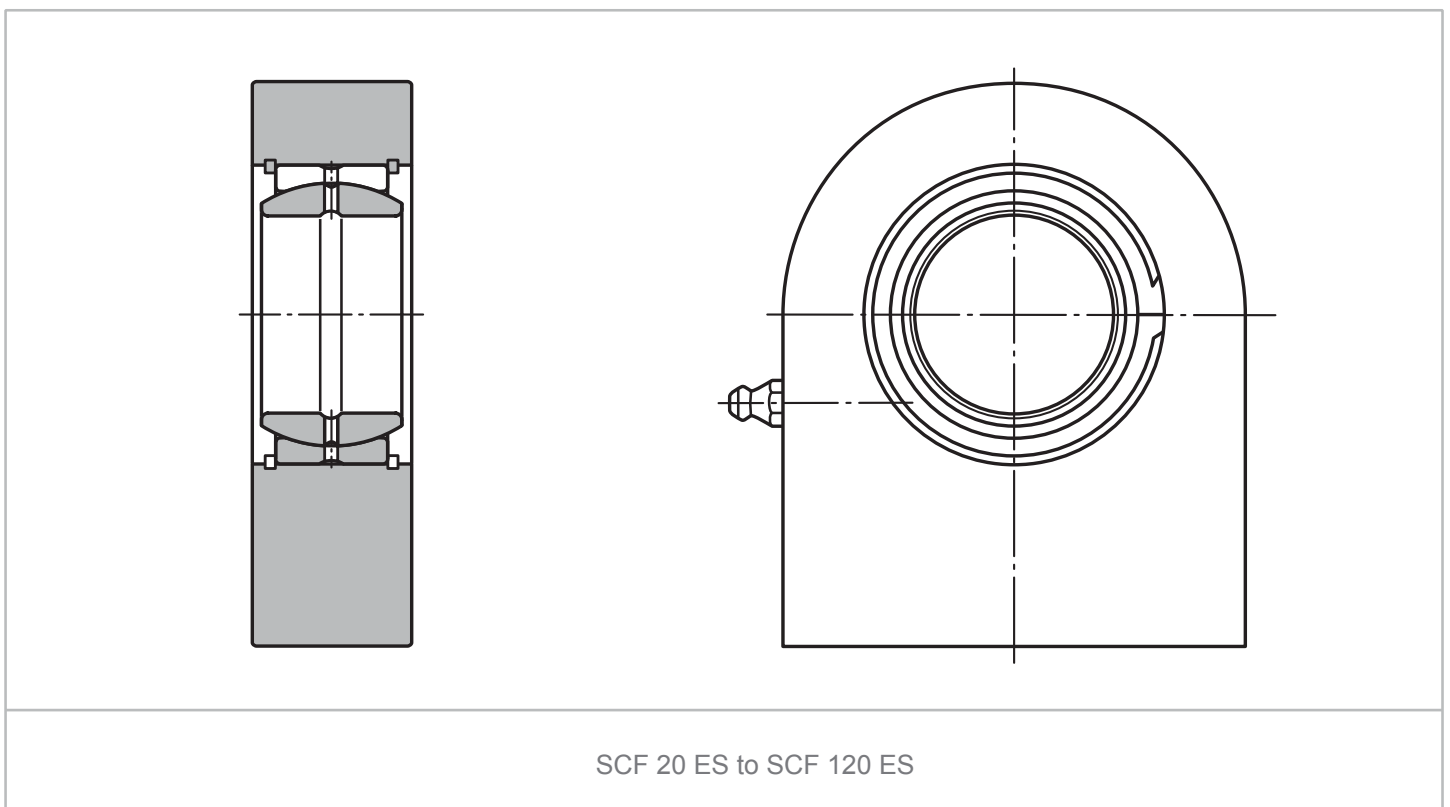
	<p><math>d \leq 20 \text{ mm}</math>      <math>d \geq 25 \text{ mm}</math></p>	
<p>SA 6 E to SA 12 E SAL 6 E to SAL 12 E</p>	<p>SA 15 ES to SA 30 ES SAL 15 ES to SAL 30 ES</p>	<p>SA 35 ES-2RS to SA 80 ES-2RS SAA 40 ES-2RS to SAA 80 ES-2RS SAL 35 ES-2RS to SAL 80 ES-2RS SALA 40 ES-2RS to SALA 80 ES-2RS</p>



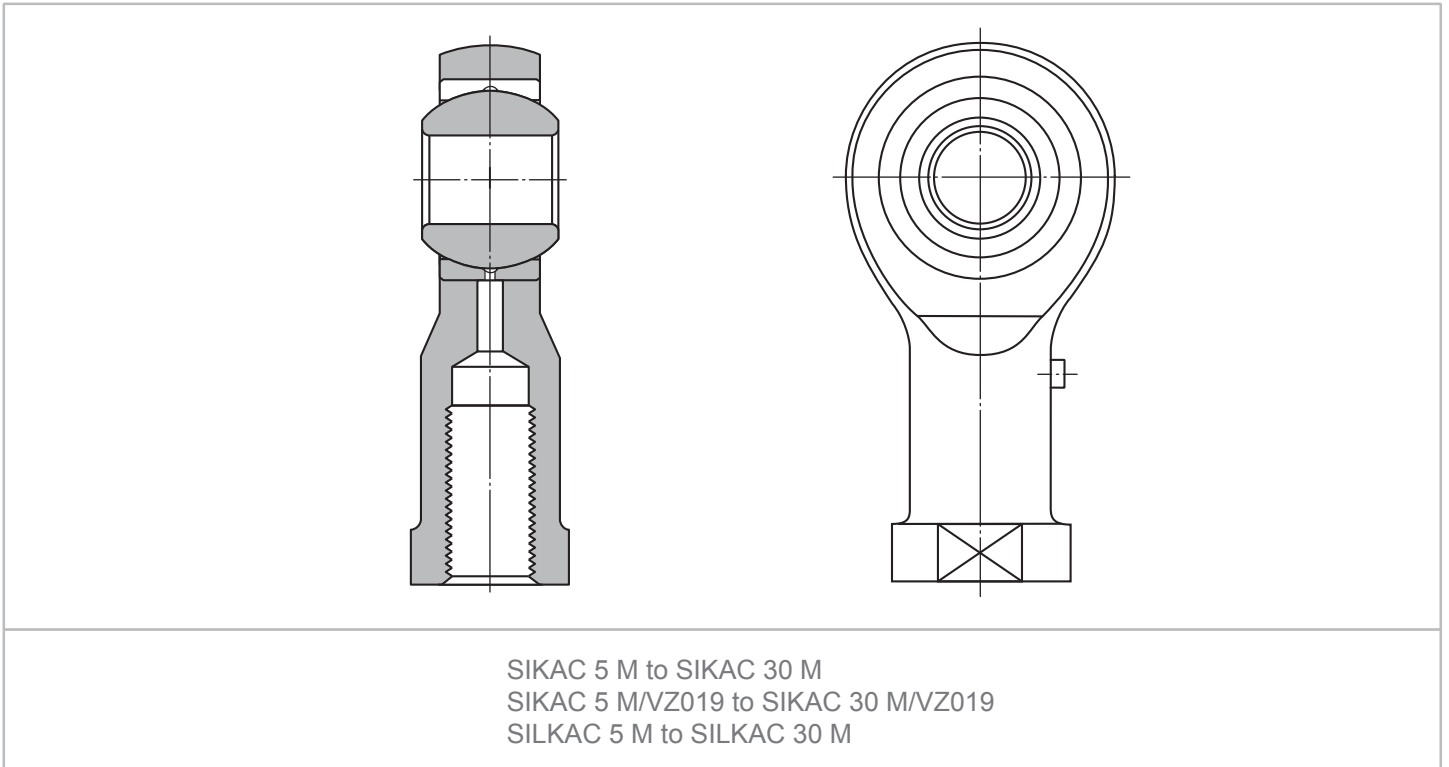
#### 5.4 Rod ends with a cylindrical section welding shank, steel/steel



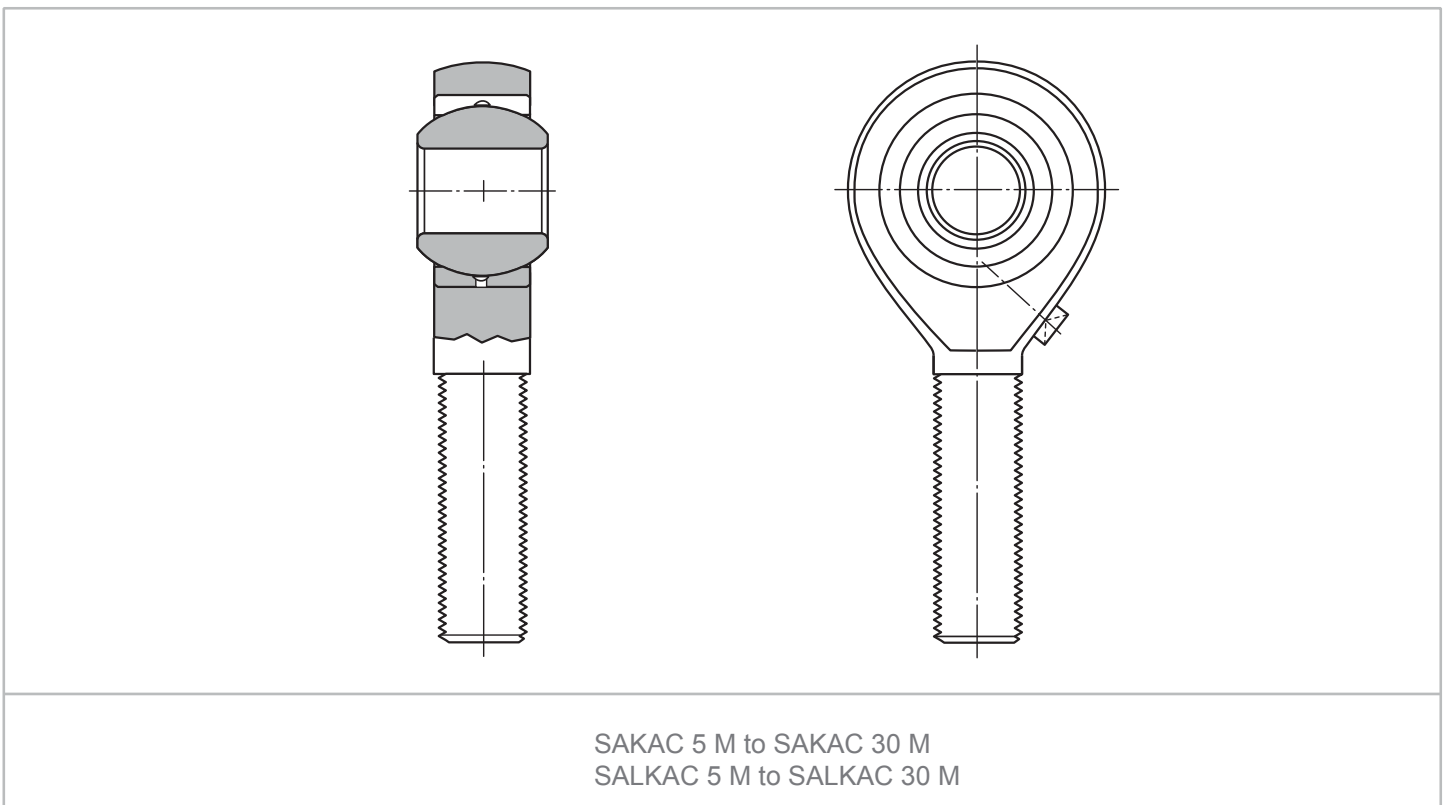
#### 5.5 Rod ends with a rectangular section welding shank, steel/steel



### 5.6 Rod ends with a female thread, steel/bronze



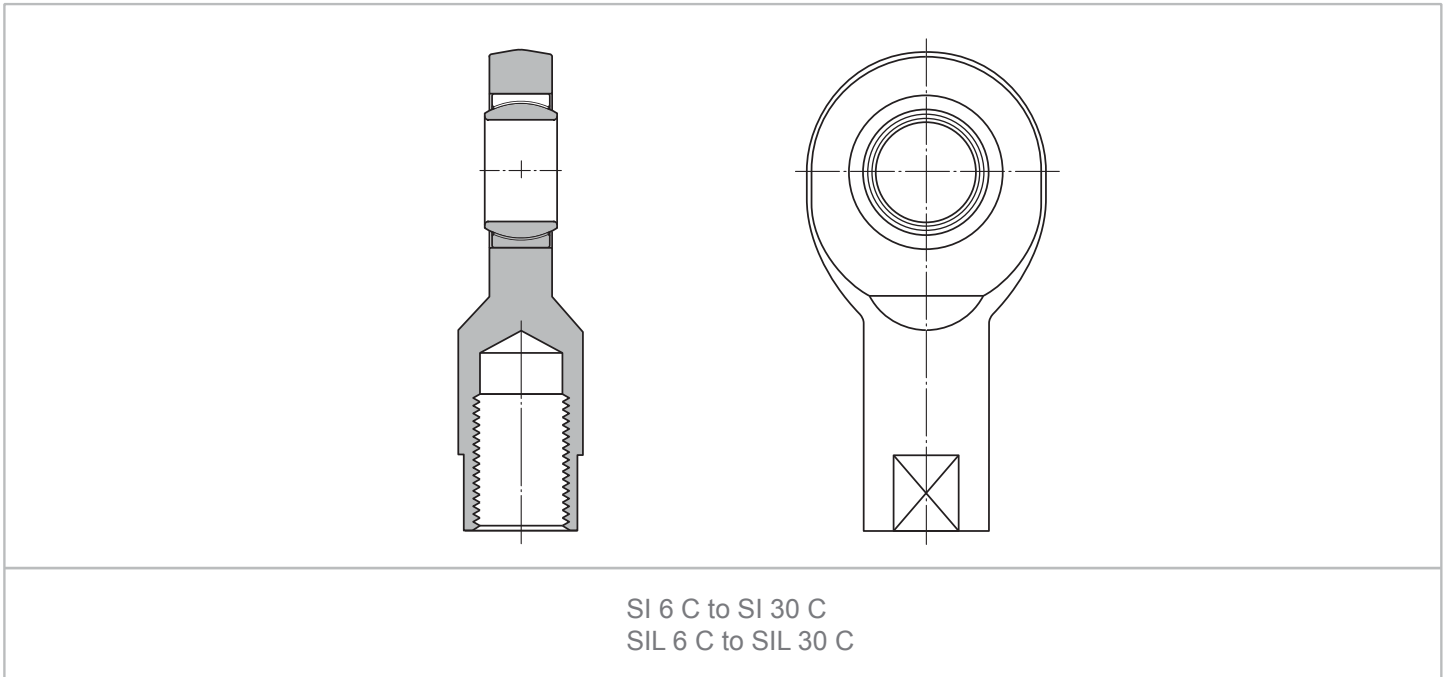
### 5.7 Rod ends with a male thread, steel/bronze



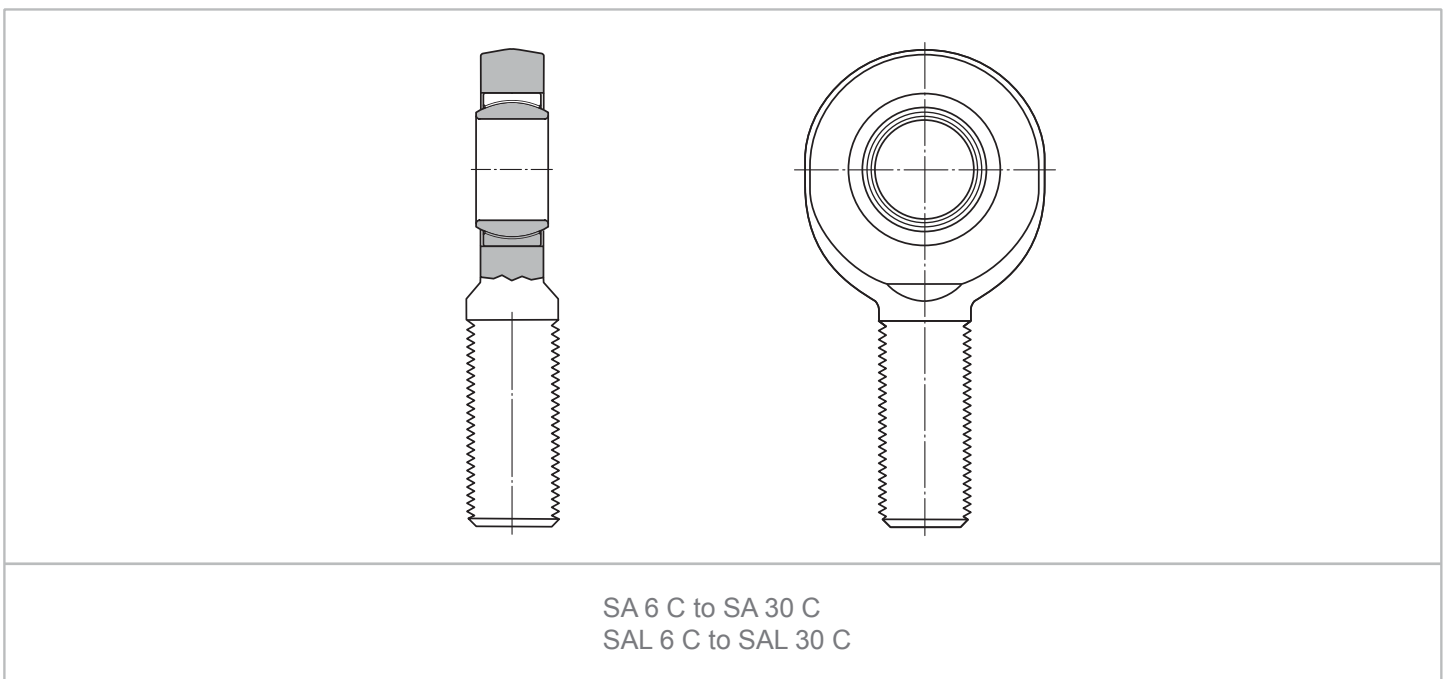
## 6. Maintenance-free rod ends

Rod ends with either a steel/PTFE sintered bronze or steel/PTFE fabric sliding contact surface combination contain a bearing from the standard assortment. The outer ring is staked in place in the housing. Rod ends with a steel/PTFE FRP sliding contact surface combination consist of a rod end housing and a spherical plain bearing inner ring. Between the housing and the inner ring, a sliding layer of fibre reinforced polymer, containing PTFE, is moulded to the housing.

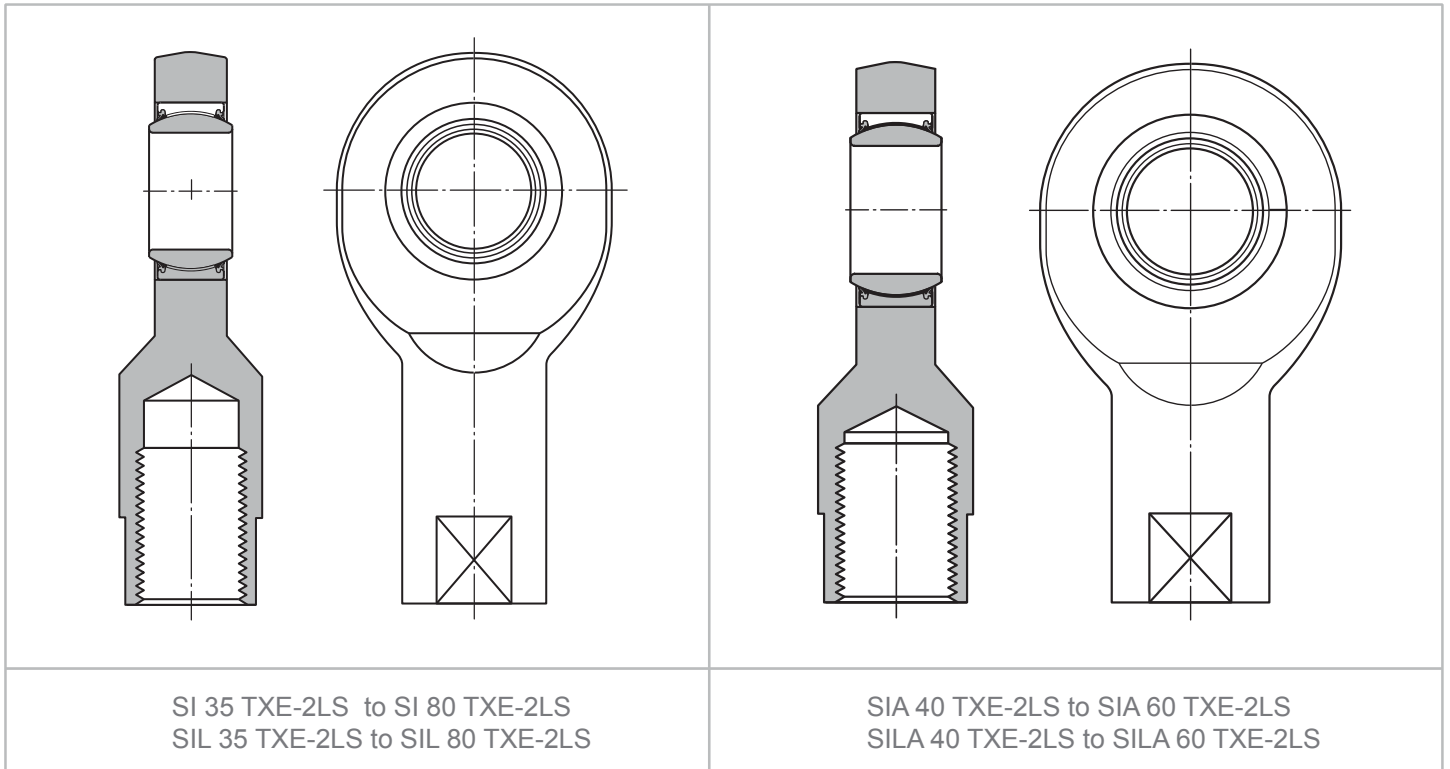
### 6.1 Maintenance-free rod ends with a female thread, steel/PTFE sintered bronze



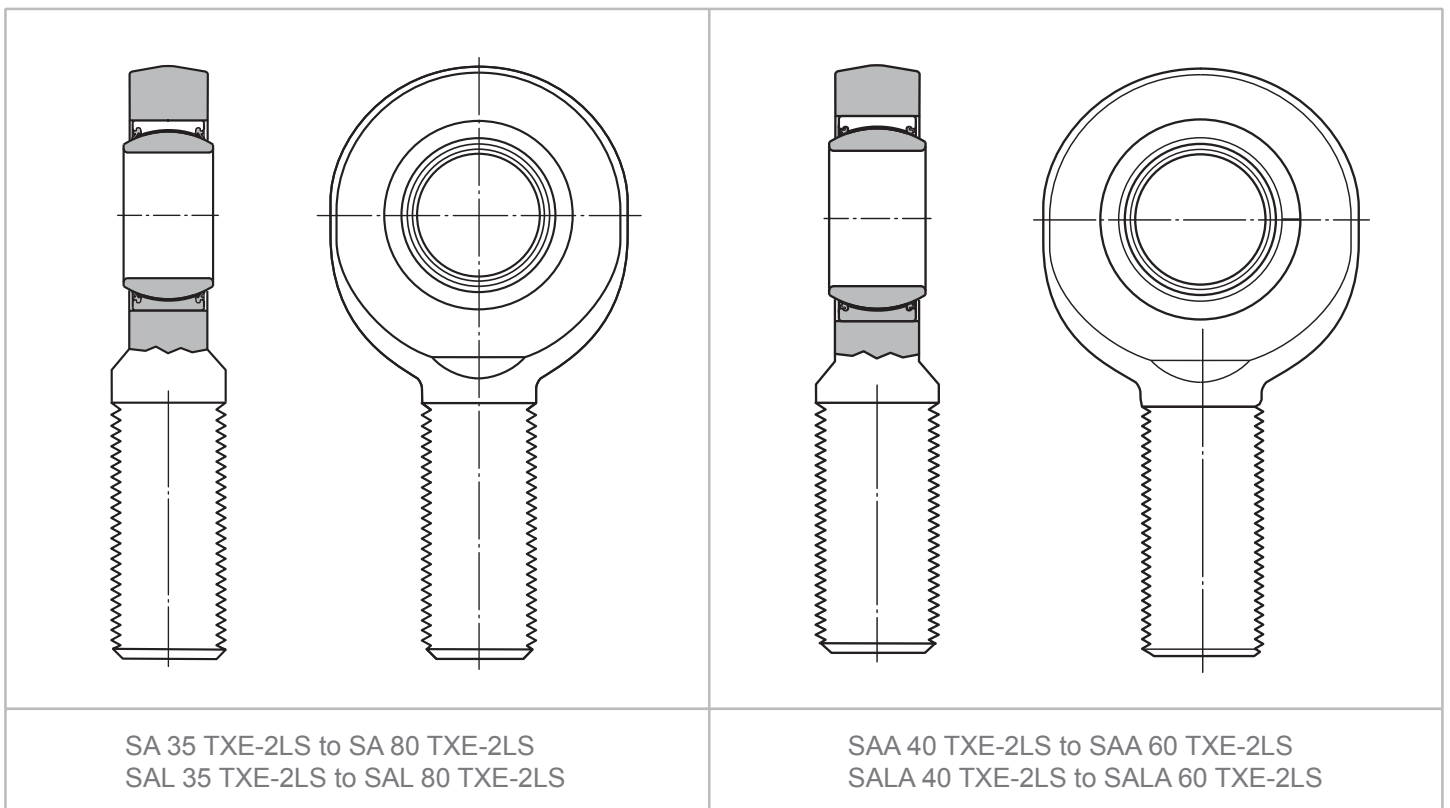
### 6.2 Maintenance-free rod ends with a male thread, steel/PTFE sintered bronze



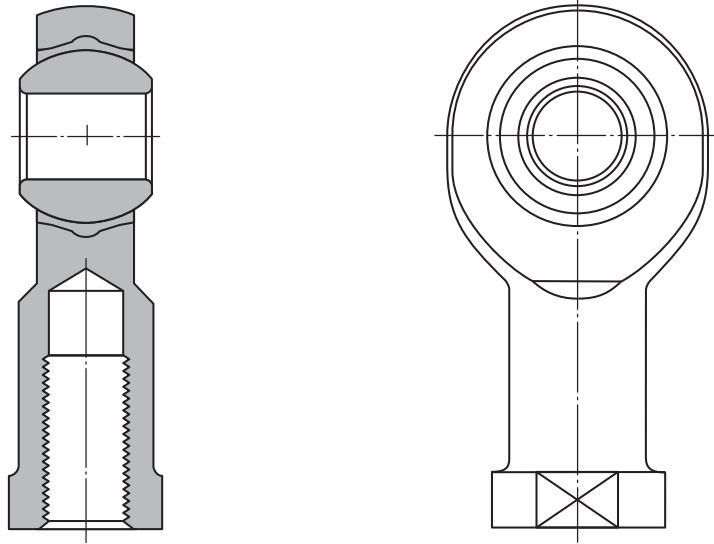
### 6.3 Maintenance-free rod ends with a female thread, steel/PTFE fabric



### 6.4 Maintenance-free rod ends with a male thread, steel/PTFE fabric

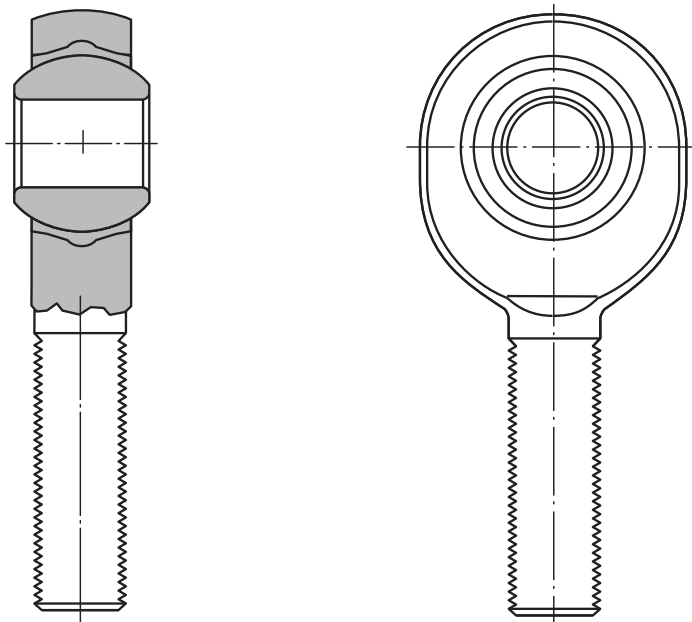


### 6.5 Maintenance-free rod ends with a female thread, steel/PTFE FRP



SIKB 5 F to SIKB 22 F  
SIKB 10 F/VZ019 to SIKB 16 F/VZ019  
SILKB 5 F to SILKB 22 F

### 6.6 Maintenance-free rod ends with a male thread, steel/PTFE FRP



SAKB 5 F to SAKB 22 F  
SALKB 5 F to SALKB 22 F



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