

**FAG**



## **E1 Spherical Roller Bearings**

**Higher cost-effectiveness and operational reliability  
with X-life**

## Higher cost-effectiveness and operational reliability with X-life

FAG E1 spherical roller bearings are used in all kinds of applications where heavy loads have to be accommodated or where shaft deflections or misalignments of bearing seats must be compensated for. They operate reliably in the harshest environmental conditions, for example in gearboxes, paper machines, construction machinery and vibrating machinery.

The operational reliability and cost-effectiveness was increased further due to the improved bearing kinematics and higher quality rollers and raceways.

- **High performance bearing supports**
- **High overall equipment efficiency**
- **More economical bearing supports due to downsizing**
- **Lower operating costs**



Up to 70% longer operating life under the same loads



Equal operating life under significantly higher loads



High static safety



Lubricant is subjected to less strain due to less friction and lower bearing temperatures



# Range

The FAG E1 spherical roller bearing range consists of eight series. The smallest bore diameter is 20 mm and the largest outside diameter is 320 mm.

Narrow bearings with a low cross-section, e.g. series 230 are suitable for high speeds and require little mounting space.

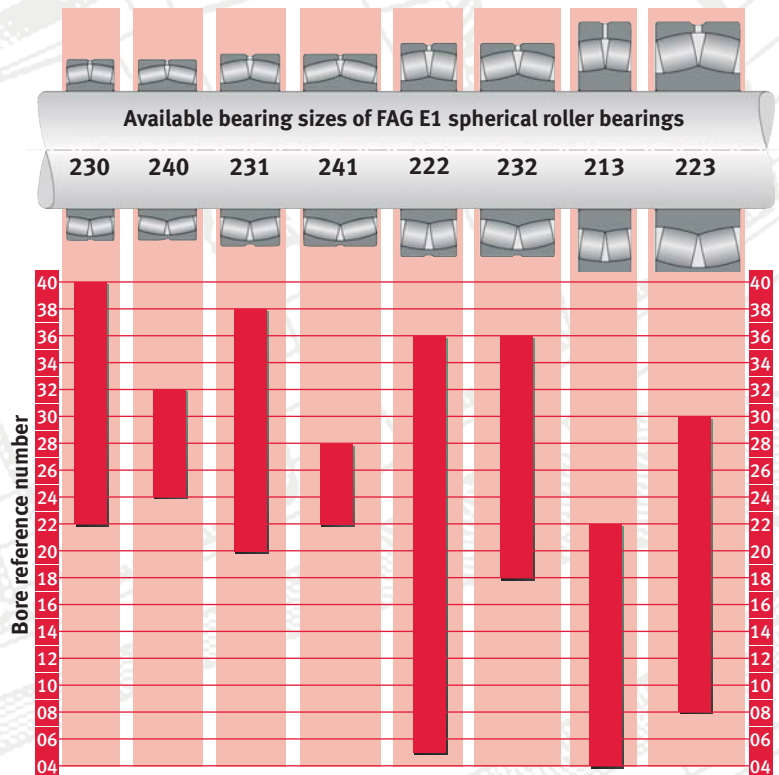
By contrast, wide bearings with a high cross-section, e.g. series 223, offer a very high load carrying capacity.

E1 spherical roller bearings are available with both cylindrical and tapered bores. Consequently, the bearings can be mounted on the shaft in several ways.

We offer special designs of E1 spherical roller bearings for particularly punishing operating conditions.

For example, where vibratory stresses have to be accommodated, special spherical roller bearings in the 223...-E1 series with narrow dimensional tolerances and an increased radial clearance are used. These bearings have a T41A suffix.

Bearings 22317-E1-T41D through 22322-E1-T41D come with a thin-layer chromium plated bore as standard. Ordering example: **22320-E1-T41D**



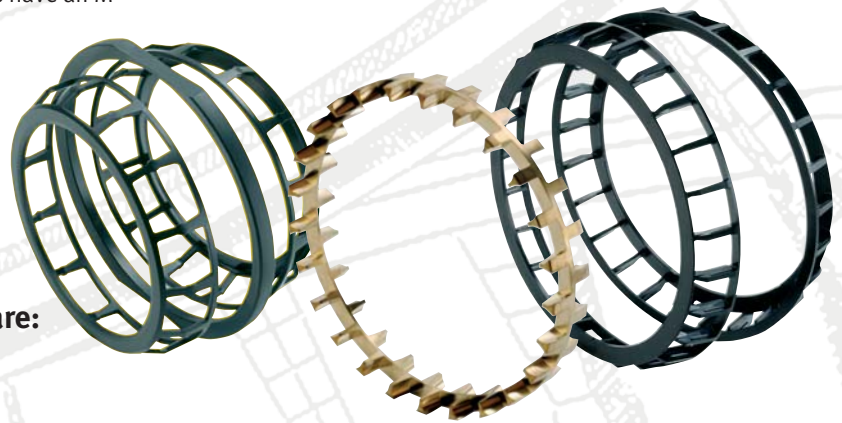
## Sheet steel, brass and glass-fiber reinforced polyamide

Spherical roller bearing series 213...-E1, 222...-E1, and 223...-E1 without a cage suffix are fitted with sheet steel cages. A guiding ring in the outer ring retains the two cage halves.

All parts of the cages for the basic bearing designs of series 223...-E1 and for bearings with the T41A specification are surface-hardened; in some bearings the guiding rings are nickel-coated.

E1 spherical roller bearings with solid brass cages have an M suffix.

Spherical roller bearings with solid cages of glass-fiber reinforced polyamide have a TVPB suffix. These cages are suitable for applications with stable temperatures of up to 120°C. If the bearings are lubricated with oil, any additives contained in the oil may reduce the cage operating life. Also, aged oil can reduce the cage life at higher temperatures; therefore, the oil change intervals must be observed.



### The particular features of the cages are:

#### Sheet steel cages

The advantages include:

- Free space for lubricants
- Good grease/oil compatibility
- Extreme operating temperatures
- High stability
- Low mass

#### Solid brass cages

The advantages include:

- High rigidity
- Effective sliding contact surface
- Operating temperature > 120 °C

#### Solid polyamide cages

The advantages include:

- Low mass
- Effective sliding contact surface
- Low noise behavior

### Standard cages for FAG E1 spherical roller bearings

	Sheet steel cages Outer ring guided	Solid polyamide cages Inner ring guided	Solid brass cages Roller-guided
<b>Cage suffixes</b>	–	TVPB	M
<b>Series (design)</b>	<b>Bore reference number</b>		
213...-E1	08 to 18	04 to 07, 19 to 22	
222...-E1	to 36		
223...-E1	to 30		
223...-E1(T41A)	to 30		
230...-E1		to 40	
230...-E1A			to 40
231...-E1		to 38	
231...-E1A			to 38
232...-E1		to 36	
232...-E1A			to 36
240...-E1		to 32	
241...-E1		to 28	

## Welcome to the Future! Unmatched Engineering Excellence from INA & FAG



X-life – this is the premium grade from INA and FAG, offering you new opportunities for success.

Benefit from the combined expertise of two brands with a worldwide reputation – in every area of application covering automotive, machine building and precision engineering. INA and FAG have combined their strengths to give a new dimension in quality:

***X-life.***  
***Higher cost-effectiveness.***  
***Higher operational reliability.***

### What X-life offers:

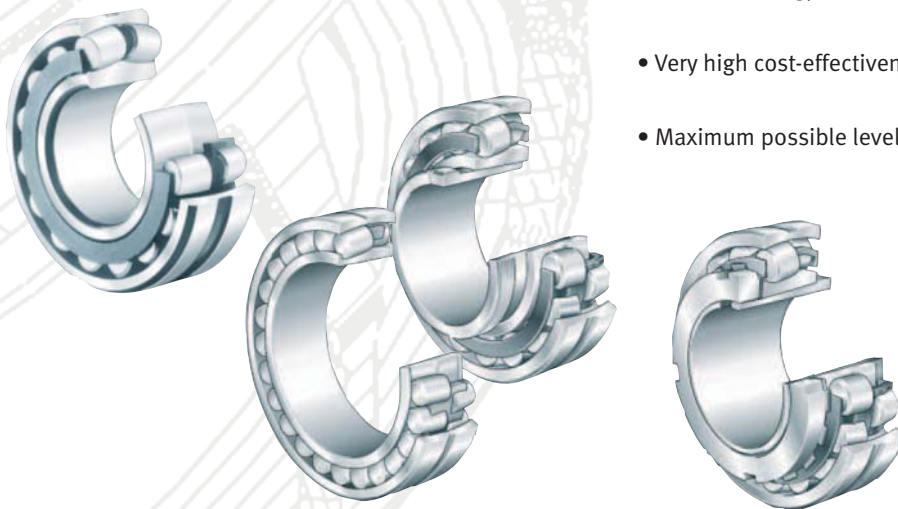
X-life offers excellent product quality that far exceeds previous standards.

Furthermore, X-life optimizes all the parameters that are decisive for a problem-free production cycle. This includes correct mounting and dismantling, maintenance intervals matched to the specific application and the selection of lubricants matched to operating conditions.

A further convincing advantage of X-life is product characteristics that fulfill your specific requirements and offer additional benefits: for example, particularly low-noise, maintenance-friendly or high load capacity system solutions.

### Your X-life advantages at a glance

- Product characteristics far above the norm
- Lasting quality assurance and control
- Extremely high reliability
- Even greater security in planning and systems
- Optimum availability
- Smooth-running work processes
- Reduced energy consumption
- Very high cost-effectiveness
- Maximum possible level of service and support



**Schaeffler KG**

Georg-Schäfer-Strasse 30  
97421 Schweinfurt (Germany)  
Internet [www.fag.com](http://www.fag.com)  
E-Mail [FAGinfo@schaeffler.com](mailto:FAGinfo@schaeffler.com)

In Germany:

Phone 0180 5003872  
Fax 0180 5003873

From Other Countries:

Phone +49 9721 91-0  
Fax +49 9721 91-3435

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