Plain Bearings

For Everything That Moves

SCHAEFFLER

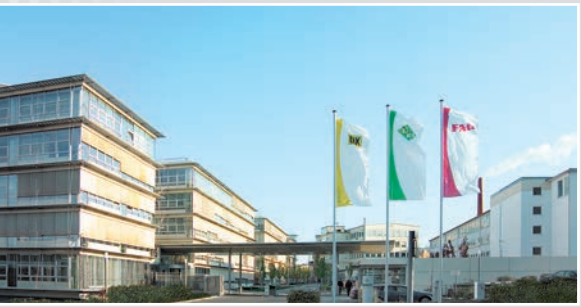
INA metal-polymer composite (MPC) plain bearings,
maintenance free or low maintenance

INA plain bearings with ELGOTEX,
also available as segmented bearings

INA spherical plain bearings and rod ends,
maintenance free & maintenance required

The Schaeffler Group produces and distributes a wide range of high-quality plain bearings under the INA brand. These include bushings with ELGOTEX and ELGOGLIDE as well as metal-polymer composite plain bearings. Also available, of course, is our proven line of spherical plain bearings and rod ends. This expansive product portfolio enables us to provide you with the right plain bearing for virtually any application.

The Right Plain Bearing for Every Application



Schaeffler Corporate Headquarters, Herzogenaurach, Germany

Schaeffler Plant for Friction and Sliding Materials, Hamm/Sieg, Germany

Schaeffler Plant, Steinhagen, Germany

MPC Plain Bearings

INA brand metal-polymer composite (MPC) plain bearings make it possible to develop efficient solutions in many industrial and automotive applications. Many years of practical experience and our competitive edge in technology ensure reliability and safety in the application of our products.

Production of our plain bearings throughout the world is according to the Schaeffler Group's uniform high standards of quality. Each of our locations is certified to international standards. INA plain bearings stand for quality and expert application support – all from a single source.

Plain Bearings with ELGOTEX

The Schaeffler Competence Center for friction and sliding materials in industrial applications is located in Hamm, Germany. Millions of parts roll off the assembly line each year, incorporating more than 40 different compositions of friction and sliding materials. ELGOTEX is one of our latest innovations.

Our many years of experience in the automotive industry have equipped us with comprehensive testing facilities that enable us to demonstrate the durability of our products before they are used in the field.

INA Spherical Plain Bearings

We are the market leader for spherical plain bearings and rod ends.
The Schaeffler plant in Steinhagen, Germany, has always been the production facility and development center for these types of products. Here, more than 60 years of plain bearing expertise is joined with the vast body of knowledge gleaned from the Schaeffler Group's extensive international resources. Accordingly, we offer a comprehensive and sophisticated portfolio of products. The expert support provided by our application- and sales engineers enables our customers find the perfect solution for their particular application.

INA Spherical Plain Bearings

INA spherical plain bearings products – at home in nearly all industries for over 60 years

INA brand spherical plain bearings improve the performance of machines and equipment, vehicles and devices. Durable and capable of supporting heavy loads, they ensure reliable operation – even under harsh environmental conditions. At the same time, our product line is geared toward maintenance-free operation.

Maintenance-Free Spherical Plain Bearings

INA offers a comprehensive range of maintenance-free spherical plain bearings in accordance with DIN ISO 12240. A variety of available bearing surfaces allows us to offer you the right bearing for your applications and operating conditions.

Spherical plain bearings with ELGOGLIDE: Our ELGOGLIDE brand uses high-performance, maintenance-free sliding materials that based on Teflon fabric. Suitable for dynamic loads at contact pressures ranging from 1 to 300 MPa, they are particularly appropriate for applications that require minimal friction.

Large spherical plain bearings with ELGOGLIDE (Ø 320 – 1 000 mm): Premium quality with extremely long life

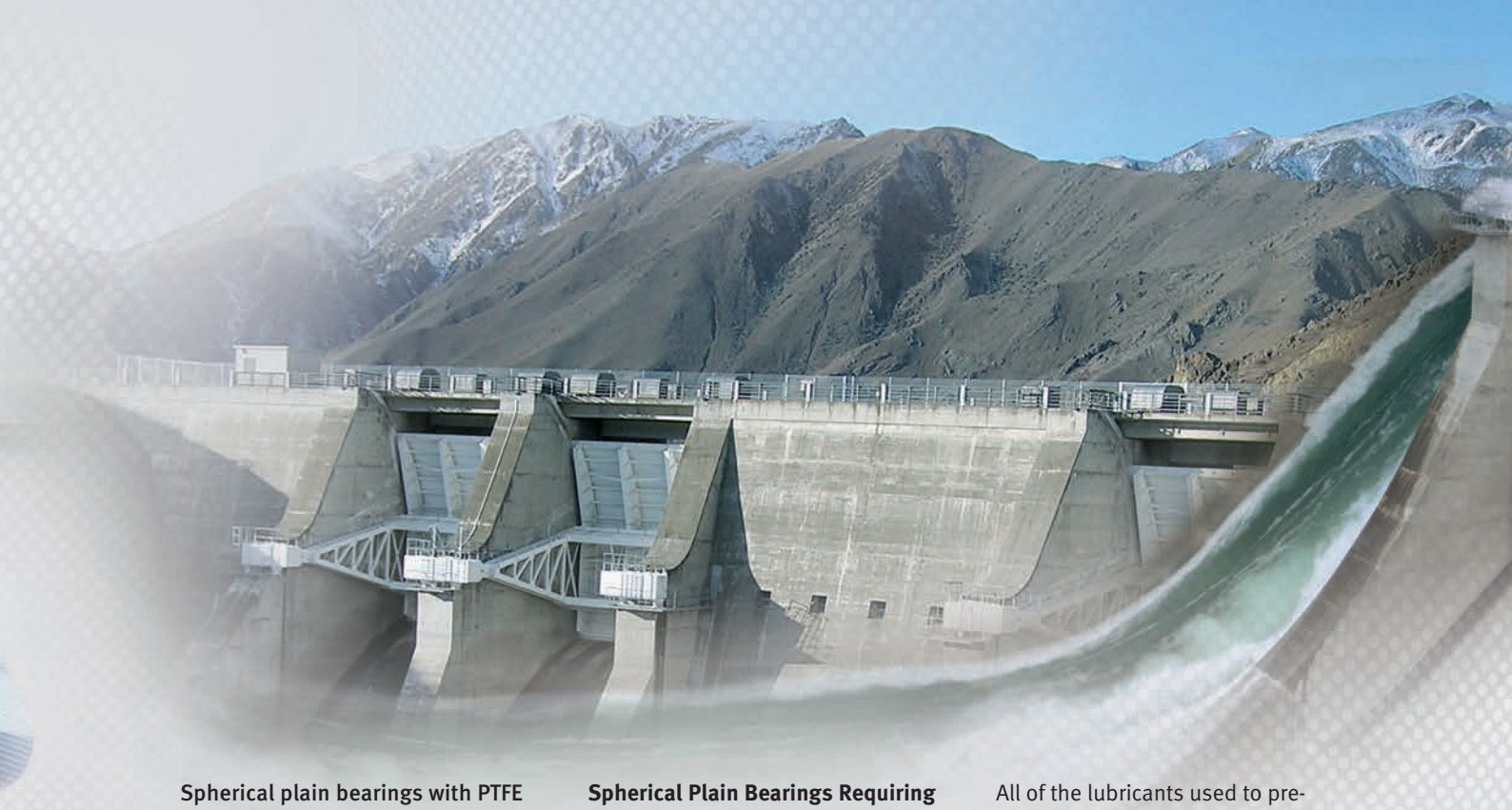
Radial spherical plain bearings with ELGOGLIDE (Ø 17 – 300 mm): Ideal bearing weight and load capacity ratio

Axial spherical plain bearings with ELGOGLIDE (Ø 10 – 360 mm): Can be combined with radial bearings

Angular-contact spherical plain bearings with ELGOGLIDE (Ø 25 – 200 mm): Special design for combined loads

Radial spherical plain bearings with PTFE composite material (Ø 6 – 30 mm)

Radial spherical plain bearings with PTFE foil (Ø 6 – 30 mm)



Spherical plain bearings with PTFE sliding surfaces: We offer various PTFE-based sliding materials for specific applications, especially for small diameters.

- PTFE composite material for compact radial spherical plain bearings for small envelopes with bore diameters as small as 6 mm, for contact pressures up to 100 MPa
- PTFE foil for compact spherical plain bearings with K-series dimensions

Spherical Plain Bearings Requiring Maintenance

Our products set global stand-ards for spherical plain bearings – including bearings that require maintenance. The Schaeffler Group offers a complete line of products in this segment with a unique variety of bearing designs. State-of-the-art manufacturing technologies and quality-control measures that are fully integrated into the manufacturing process ensure consistently high product quality.

All of the lubricants used to pre-grease the bearings at the factory are thoroughly tested by us to ensure the highest levels of performance.

Rod Ends

We offer a wide range of rod end designs:

- Maintenance-free and maintenance required versions
- With internal and external threads
- Corrosion protected
- Can be clamped or welded

Wide range of steel-steel radial spherical plain bearings requiring maintenance (Ø 6 – 1 000 mm)

Steel-steel angular contact and axial spherical plain bearings, maintenance required (Ø 10 – 200 mm)

Steel-bronze radial spherical plain bearings, maintenance required (Ø 5 – 30 mm)

Rod ends to DIN ISO 12240-4, maintenance-free and maintenance required (Ø 5 – 80 mm)

Rod ends for hydraulic cylinders, maintenance-free and maintenance required (Ø 12 – 200 mm)

Rod ends with welding face, optional locating pin (Ø 10 – 120 mm)

INA Plain Bearings

INA plain bearings: an extensive line of products for industrial and automotive applications

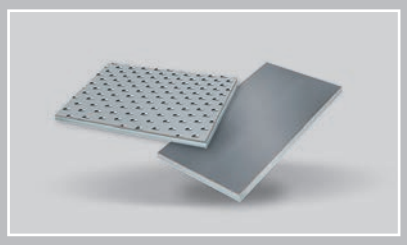
Cost-effective and durable: the hallmarks of INA plain bearings. Here, too, our focus is on maintenance-free and low-maintenance products.

MPC Plain Bearings

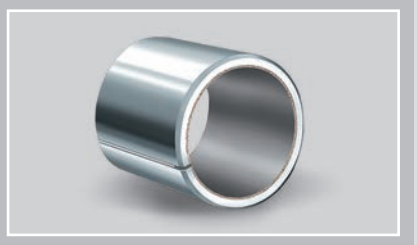
INA brand metal-polymer composite (MPC) plain bearings are a cost-effective alternative for many industrial and automotive applications. All bearings are lead-free and, therefore, environmentally friendly. We combine a variety of innovative materials to produce a wide range of maintenance-free or low-maintenance materials. The structure of the sliding layers used in these bearings is generally the same: porous bronze applied to a steel or bronze backing is impregnated with a special plastic mixture. The solid lubricants generate a lubricating film between the sliding partners that ensures low-noise operation with constantly low friction values throughout the bearing's entire service life.

Technical features:

- For contact pressures up to 140 MPa
- Suitable for use in hydrodynamic applications
- High moisture resistance, can also be used in water
- Small envelope requirements
- Sliding velocity up to 2.5 m/s



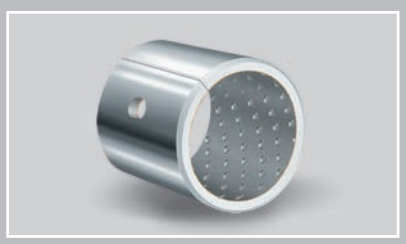
Strips of sliding material – for use in linear plain bearing guides, for example



Maintenance-free bushings

Low-maintenance thrust washers

Maintenance-free flanged bushings with bronze backing



Low-maintenance bushings

Bushings with Elgotex

These plain bearings are particularly suitable for dry-running applications that are subjected to high loads and vibrations. The combination of materials used results in bearings that are maintenance-free for their entire service life. The bushings consist of two layers, one wound on top of the other. Synthetic fibers and PTFE fibers in epoxy resin form the internal Elgotex sliding layer, while continuous glass fibers (glass filaments) in epoxy resin create the outer layer. The glass fibers are wound at a specific angle that serves to stabilize the sliding layer; this, in turn, significantly increases the strength of the bushing.

Technical features:

- For contact pressures up to 200 MPa static
- Extremely robust, yet lightweight
- Available in a variety of wall thicknesses
- Easy to mount
- Environmentally friendly thanks to its dry-running design
- Resistant to corrosive media
- Cost-effective, thanks to its maintenance-free design
- Minimal wear with a constant coefficient of friction

Bushings with Elgoglide

These maintenance-free dry plain bearings are available as a machined design. Their high-performance Elgoglide sliding surface makes them extremely durable and especially well-suited for small swiveling motions. Significant applications include wind turbines, industrial trucks and material-handling devices, as well as rail vehicles.

Technical features:

- For contact pressures up to 300 MPa
- Dry lubrication, maintenance-free
- Very high load capacity with minimal space requirements
- Good damping behavior
- Steel backing with additional corrosion protection available
- Also offered with integrated seals

Maintenance-free bushings with Elgotex (outside diameter 24 – 1 400 mm, width 15 – 2 000 mm)

Maintenance-free high-performance bushings with Elgoglide (Ø 30 – 1 000 mm)

Special and System Solutions

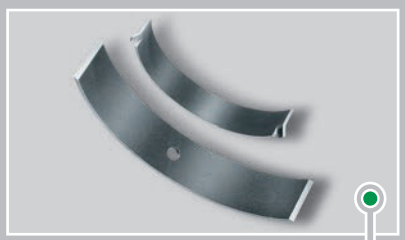
Segmented bearings with ELGOTEX: innovative sliding material – not just for cranes and hoists

Systems Expertise: The Schaeffler Group as Your Development Partner

The Schaeffler Group is committed to developing cost-effective systems solutions that are tailored to the customer's requirements. Our engineers specialize in applying creative engineering approaches to produce often unconventional results. In doing so, they utilize cutting-edge simulation processes as well as in-house testing facilities and laboratories to perform physical and chemical analyses. Their ability to draw upon the technical resources and expertise of a global group of companies yields significant benefits to our customers.

Externally coated bushings with a special gap joint for...

Ball cups for bearing supports in...



Cradle bearings for...

...hydraulic cylinders used in shock absorbers for motocross cycles

...tractor axles and clutch levers for commercial vehicles

...pumps used in industrial plants

Custom Solutions for Demanding Technical Requirements

We work closely with our customers in more than 60 industrial sectors to develop new solutions that are then added to our list of catalog products. These are often ready-to-install components or complete assemblies. In order to avoid costly changes in the mating structure and to ensure that the entire solution is as cost-effective as possible for our customers, we always pay particular attention to the surrounding structure during the development phase. Developing custom solutions involves a wide range of the Schaeffler Group's engineering expertise, such as:

- **Materials and Surfaces**

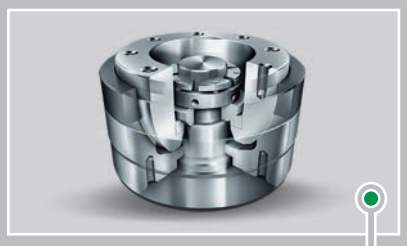
  For plain bearings that will be used in corrosive media, we utilize special materials and proprietary coatings, such as Corrotect.

- **Seal Designs**

  For heavily contaminated environments, we offer RS/TS seals to complement our plain bearings.

- **Condition Monitoring**

  Condition monitoring is a reliable method for the early detection of machine damage and prevention of unplanned downtimes. We can help you find the best monitoring solution for your machine, including remote monitoring options offered through our certified Teleservice Center.



Ready-to-mount special spherical plain bearing as …

Spherical plain bearings with bellows for …

… a center joint in streetcars

… stabilizing rail-car bodies (tilting technology)

Schaeffler Group:
Providing Products and Service for Your Success

Superior Quality: Satisfied Customers Are Our Top Priority

Customer satisfaction is our No. 1 priority, and we work toward this goal on a number of different levels:

- At the goal level: “zero defects” is our top priority.
- At the systems level: we continuously optimize our quality-management system according to TS/ISO 16949 standards.
- At the employee level: our company-wide “Fit for Quality” initiative sensitizes each Schaeffler employee on the need to prevent defects from the start.
- At the process level: preventing defects by regularly analyzing our manufacturing methods produces stable processes.

Support Is Our Strength: In Person and Online

Expert customer support forms the foundation for how we do business. As such, personal contact is most important to us. Our application engineers and sales engineers will work with you to find cost-effective solutions, even for complex tasks.

We provide online support through state-of-the-art engineering tools for bearing design. Our ***medias*** product selection and support system, for example, is a simple yet ingenious tool for selecting maintenance-free plain bearings, performing BEARINX-based calculations and downloading the relevant CAD data.

We Do Even More: Our Support Services

The Schaeffler Group’s Industrial Aftermarket division is in charge of the replacement parts and service business with end-customers and distribution partners in all major industrial sectors. Our No. 1 priority is to be a reliable partner in supplying our customers with high-quality products and services.

In addition to application-specific special designs and complementary products, our product portfolio also encompasses products, services and training courses that focus on mounting, lubricating, condition monitoring and reconditioning of plain bearings.

The World of Schaeffler Plain Bearings

Agricultural equipment
Automobiles
Bridges
Buildings
Commercial vehicles
Construction machinery
Electromagnets
Fluid technology
Forestry equipment
Garden tools
Hardware industry
Hydraulic steel structures
Industrial gearboxes
Machine tools
Materials handling technology
Motorcycles
Packaging machines
Power tools
Powered industrial trucks
Printing machines
Pumps
Solar energy systems
Sports equipment
Stadiums
Storage technology
Textile machinery
Trains
Trams
Transport equipment
Wind energy

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