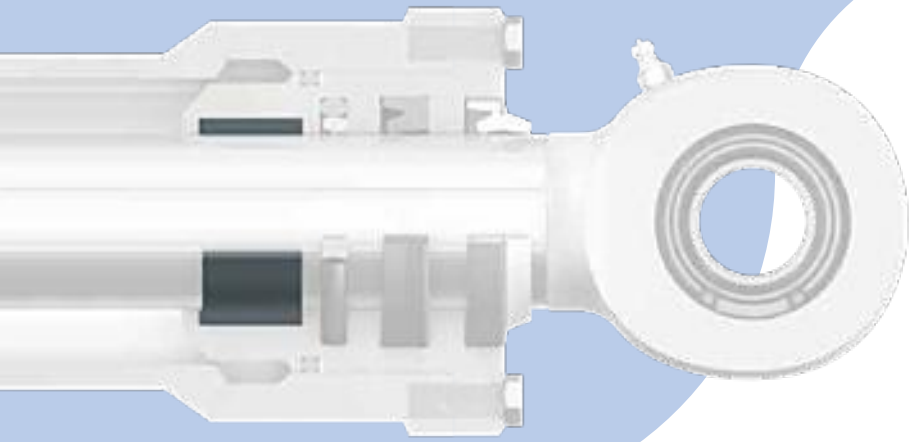
Why SKF? Guide rings



Guide rings and guide strips accommodate radial loads of forces acting on the cylinder assembly and guide the rod in the cylinder head as well as the piston in the cylinder bore. Guides are made of polymer materials and, therefore, avoid metal-to-metal contact between moving parts in a working hydraulic cylinder.

The demands on reliability are continuously increasing. At the same time, the service conditions are getting tougher to achieve higher effectiveness of the hydraulic systems. Guide rings play an important role in the effectiveness of hydraulic cylinders and off-highway suspension struts by providing an effective sliding surface for smooth operation and to help ensure accurate concentricity of components for optimal seal performance.

Common applications:

- Hydraulic cylinders used in off-highway equipment for:
  - Construction
  - Mining (mobile and stationary applications)
  - Agriculture
  - Forestry
- Industrial stationary cylinders and presses
- Off-highway truck suspension struts

Product features

- Machined precision radial tolerance and elastic deformation distributes the load for larger contact and reduces stress to counter-surface
- Work smoothly against the cylinder tube and the sealing surfaces to avoid wear of cylinder surfaces.
- High resistance to insufficient lubrication at low speeds

User benefits

- Improved sealing performance
- Extended system service life
- Increased productivity
- Reduced maintenance costs
- Increased mean time between failures (MTBF)
- Optimized design and development of fluid sealing systems for custom applications

Precision machined guide rings

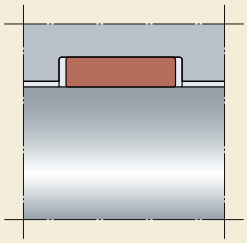
SKF provides precision, fully machined guide rings in a wide range of materials, customized for your system performance. For example:

- Glass fibre reinforced polyamide (high dynamic load rating)
- Glass fibre reinforced polyamide internally lubricated with PTFE
- Phenolic and fabric composites (high ultimate compression strength and minimal thermal expansion)
- Polyester thermosetting resin and fabric composite (for water-lubricated applications)
- Machined engineering plastic guides (e.g. filled PTFE, UHMWPE, PEEK, POM)

Compared to the non-precision moulded guides, SKF precision machined guide rings provide the best contact area, stress distribution and minimal radial deformation under load (→ **fig. 1**).

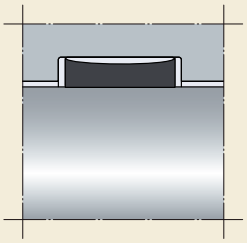
Machined guides also have the advantage of wide size range and availability without the need of tooling different sizes (→ **fig. 2.1** and **2.2**).

Fig. 1



SKF precision guide – machined

- flat surfaces inside and outside
- consistent thickness providing the best contact area
- stress distribution and minimal radial deformation under load



Non-precision guide – moulded

- concave surfaces
- looser tolerances
- high radial deformation under load due to less initial contact area

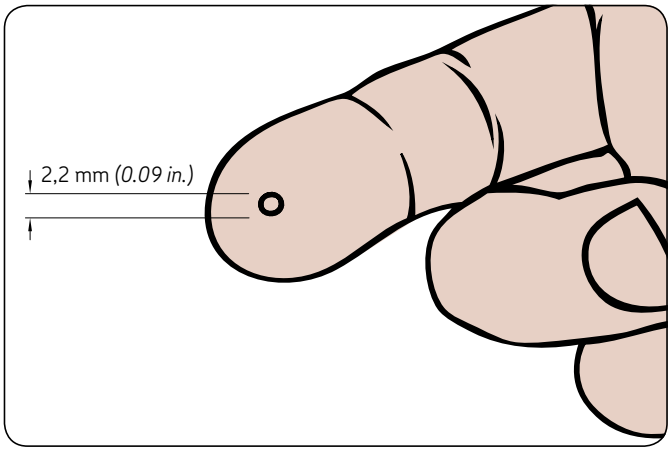


Fig. 2.1 - Precision PEEK rings

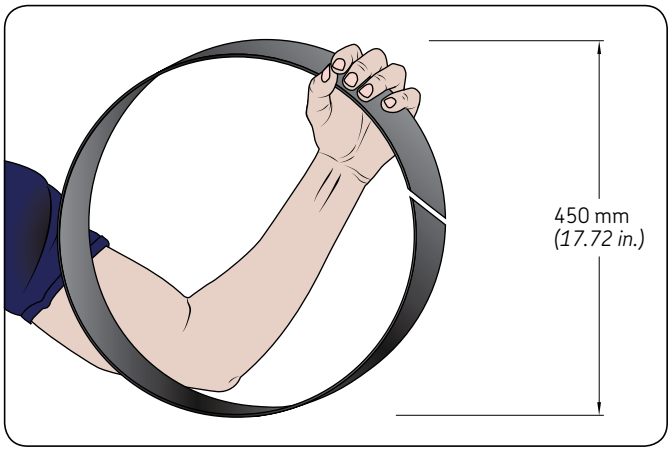


Fig. 2.2 - Precision tolerance polyamide guide rings

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