

Product parameters

Parameter	Typical value / notes
Primary function	Guide and support piston or rod; absorb radial/transverse loads; prevent metal-to-metal contact and reduce wear on sealing elements.
Common constructions	Split rings, axially-split rings, metal-cased press-in rings, solid polymer rings, guide strips/tapes and composite bushings. Can be used dynamically (outside or inside surface) or statically as bearing bush.
Typical materials	Engineering polymers (PA — polyamide, PK/polyketone, PTFE-filled polymers, polyurethane), composite materials, and metal/plated steel with low-friction coatings. Material selection depends on lubrication, load and fluid compatibility.
Permissible specific load / mechanical strength	Manufacturer data show wide variation by material; e. g., Parker Prädifa FK series lists compression strength $\approx 340 \text{ N/mm}^2$ for certain hard polymer guide rings. Use vendor data for exact allowable loads.
Operating temperature	Dependent on polymer grade—typical polymer guide rings operate from roughly -40° C up to $+120^\circ \text{ C}$ (specific grades or PTFE variants extend beyond this). Verify on the selected material datasheet.
Typical service environment	Hydraulics with fluid lubrication (oil), occasional dry running if designed for it (PTFE-coated/low-friction variants), abrasive or contaminated environments require more wear-resistant materials or sacrificial guide designs.
Standards / sizing reference	Many guide rings are manufactured to metric catalogue tables (ISO/industry series). SKF PGR metric tables list rings for D (piston OD) 16 - 400 mm in documented steps; Parker catalogues reference ISO gland standards and provide dimension/gland tables.
Failure modes / selection cautions	Excessive radial load, improper housing/shaft tolerances, incorrect material for fluid/temperature, surface damage to rod/piston, insufficient lubrication—use manufacturer groove/clearance guidance and anti-extrusion design where needed.