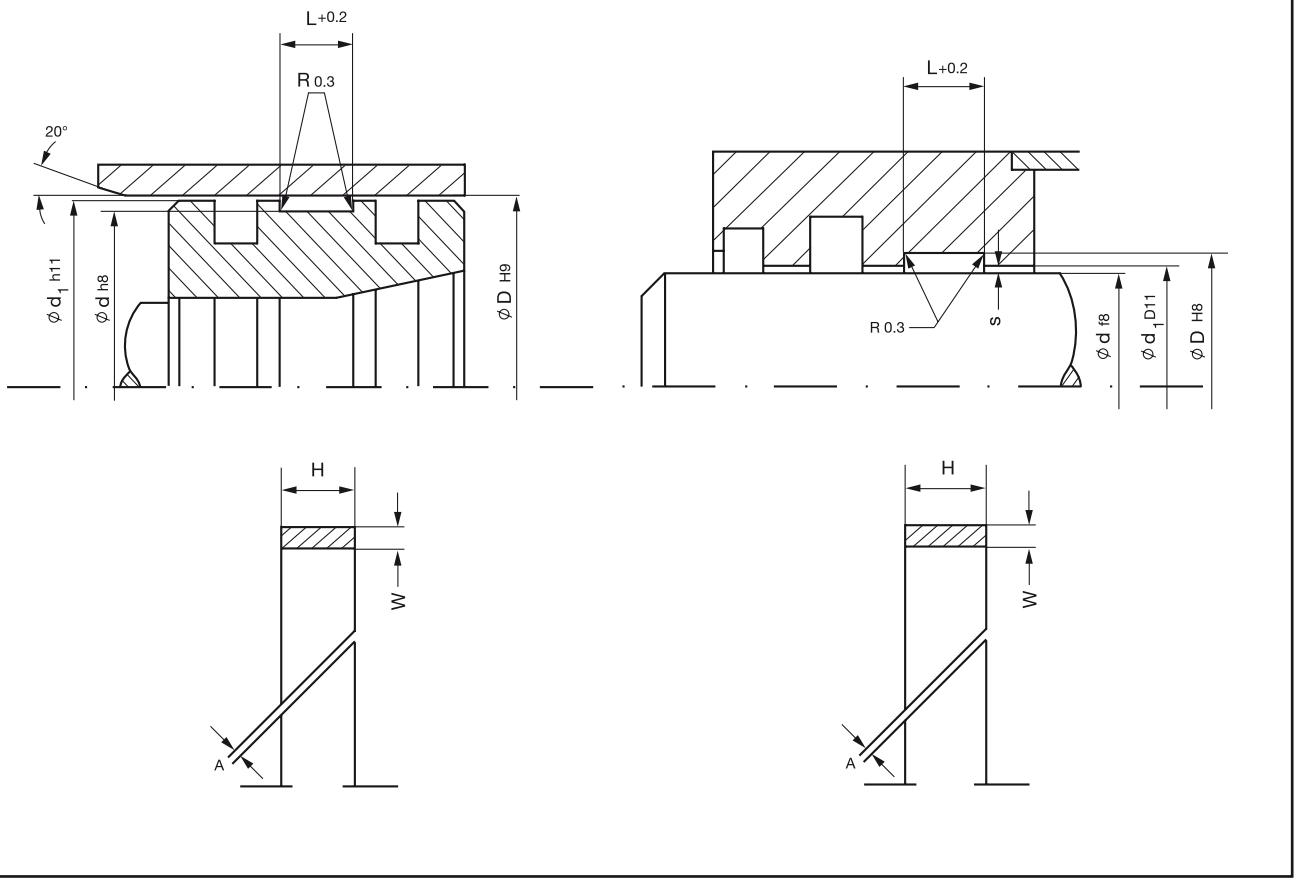
FHG / FHM / FHO

Guide Rings



Max. Operating Conditions

Compression resistance normal to lamination	depending on chosen material (see table)
Temperature (°C)	- 40 / + 130
Media: Hydraulic fluids upon oil-basis, hardly inflaming hydraulic fluids, HFA-, HFB-Liquids	

Recommended Surface Finish

Surface roughness	R_a	R_t
Groove bottom	≤ 1,6 µm	≤ 16 µm
Groove flanks	≤ 1,6 µm	≤ 16 µm
Running surface	≤ 0,3 µm	≤ 3 µm

Range of production and tolerances

Inside diameters (mm)	15 - 600
Wall thicknesses W (mm)	1,5 - 25
Widths (mm)	> 3
Tolerances (mm)	0,03 - 0,08

Technical Description

The guide rings type **FHG / FHM / FHO** are to guide the piston and the rod of a hydraulic cylinder as well as take the occurring lateral forces.
Yet, no metallic contact of the sliding components must occur between the piston and the cylinder wall, or the rod and the cylinder head.
The guide rings stand out for a gentle running behaviour towards the sliding surfaces and a high binding strength for smaller dirt particles.

Other characteristics:

- high bearing capacity
- wear-resistant, therefore long operating life
- impact pressures are cushioned
- easy assembly

Besides the standardmaterial phenolic cotton of the type **FHG** we also provide further modified hard fabric-compounds, e.g. type **FHM**. For your choice of material for your specific application please ask for our advise or according data-sheets.

Our **guide rings** are delivered as preformed rings, ready-to-install.

FHG / FHM / FHO

Guide Rings

Choice of materials	Compression resistance normal to lamination	Coefficient of friction towards steel	Temperature stability
FHG (standard) Phenolic resin cotton composite according to DIN 7735 Hgw 2085 consisting of a cotton fabric impregnated with phenolic resin.	310 N/mm² tested acc. DIN 53454	0,25 µ tested acc. ASTM D1498	- 40 °C to + 130 °C
FHM (modified) Phenolic resin synthetic fiber composite consisting of a synthetic fiber fabric impregnated with phenolic resin. Particular sliding characteristics due to integrated PTFE, and extremely high restoring force.	345 N/mm² tested acc. DIN 53454	0,05 µ tested acc. ASTM D1498	- 40 °C to + 130 °C
FHO Combination of polyester fabric and polyester resin. This material stands out for its high bearing capacity, high wear-resistance and good elastic properties.	345 N/mm² tested acc. DIN 53454	0,25 µ tested acc. ASTM D1498	- 40 °C to + 130 °C
*All kinds of machined parts, bushings and guide elements can be manufactured in the above materials. IIndividual guide elements for special applications are also manufactured according to given dimensions. The type **FHO** is also available under the appellation **FHOB/FHCB** as yard goods.*			

Recommended Gap Dimensions (s), (A) in mm

Diameter ∅ D	Gap A	Diameter ∅ d	Gap A	Nutbreite L	Gap s	Ringdicke W
16 - 200	1 - 3	16 - 200	1 - 3	9,70	0,20 - 0,50	2,0
16 - 140	3 - 6	16 - 140	3 - 6	5,60	0,25 - 0,50	2,5
60 - 220	4 - 10	20 - 220	3 - 10	9,70	0,25 - 0,70	2,5
130 - 400	6 - 20	80 - 400	4 - 20	15,00	0,25 - 0,90	2,5
320 - 1000	15 - 40	200 - 1000	8 - 40	25,00	0,25 - 1,00	2,5

Ordering example: **e.g. FHM-Guide Rings**

for piston	**∅ D 80 mm**
wall thicknesses W	**2,5 mm**
and width L	**15 mm**

	Guide Ring	Dimension	Width
Order designation:	**FHM -**	**80 x 75**	**/ 15**