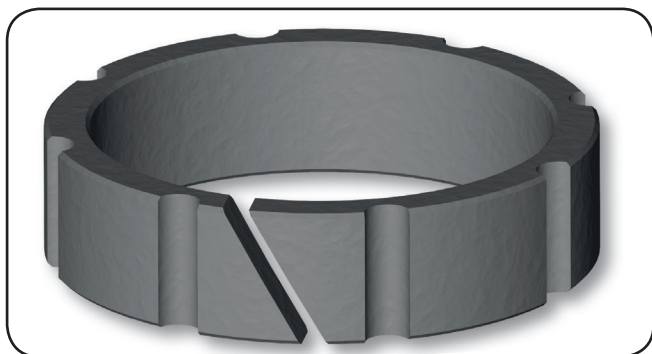
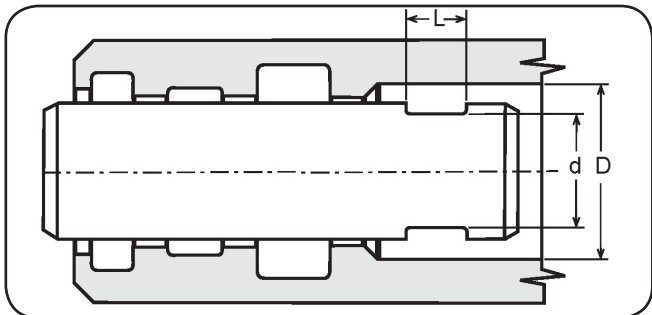




PLUNGER CYLINDER GUIDE RING

**MAIN FEATURES**

The FSP-type guide ring is developed to replace the traditional bronze guide on the hydraulic cylinder. Thanks to its grooving on its external diameter, the plunger piston guide ensures the passage of fluid, perfectly activating the sealing system.

The material used for this guide is a medium viscosity acetal resin loaded with glass fibre, characterised by its high strength, stiffness, hardness, impact resistance and resistance to high and low temperature.

- ° Excellent wear resistance
- ° Simple coupling in the housing design
- ° High load resistance
- ° High mechanical stability at high or low temperatures
- ° Easy installation

FSP

DESCRIPTION

Guide ring for plunger cylinder.

DYNAMIC SURFACE MATERIAL

Acetal resin with glass fibre.

OPERATING CONDITIONS

Speed: < 0.8 m/seg.

Temperature: - 40 a + 110°C

Permissible Loads: < 40 N/mm² a 20 °C

< 30 N/mm² a 100 °C

Fluid: Hydraulic oil

(mineral based)

Hydraulic oil HL, HLP

Pressure fluids

HFA, HBF, HFC, HFD

•Radial load: Under normal lubrication conditions and speed is up to 30 m/min.

The maximum radial load can be calculated by the formula: $P = D \times E \times PS$

P (Kg) maximum radial load

D (cm) diameter of the guide subject to motion

E (cm) guide width

PS (Bar) 370 Bar (ASTM D.695)

maximum permissible load for the material

SURFACE ROUGHNESS

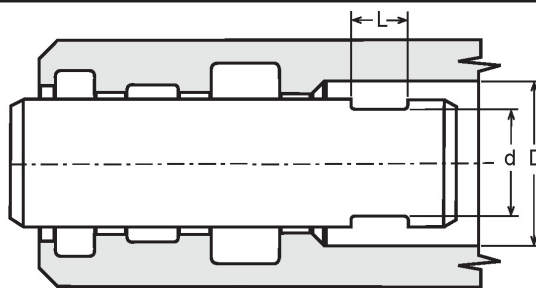
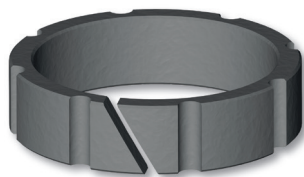
Dynamic surface $R_a < 0.3 \mu m$ $R_t < 2.5 \mu m$

Static surface $R_a < 2 \mu m$ $R_t < 10 \mu m$

RECOMMENDED TOLERANCES

D	d	L
h8	-0.05	0.5+

FSP



	Measure			D H 8	d - 0.05	L + 0.5
FSP	25.00	16.00	12.00	25.00	16.00	13.00
FSP	30.00	20.00	12.00	30.00	20.00	13.00
FSP	35.00	25.00	12.00	35.00	25.00	13.00
FSP	40.00	30.00	12.00	40.00	30.00	13.00
FSP	45.00	35.00	12.00	45.00	35.00	13.00
FSP	50.00	40.00	15.00	50.00	40.00	16.00
FSP	54.50	45.00	19.00	54.50	45.00	20.00
FSP	55.00	45.00	15.00	55.00	45.00	16.00
FSP	60.00	45.00	15.00	60.00	45.00	16.00
FSP	60.00	50.00	15.00	60.00	50.00	16.00
FSP	65.00	55.00	15.00	65.00	55.00	16.00
FSP	75.00	65.00	15.00	75.00	65.00	16.00
FSP	85.00	75.00	15.00	85.00	75.00	16.00

The guide width can be calculated using the following formula:

Where:

hmm	• Guide width in mm
FN	• Radial load in N
K	• Safety factor (usually 2)
dmm	• External diameter in mm.
PN/mm ²	• Surface pressure N/mm
	40 to 20°C
	30 to 70°C

$$h_{mm} \geq \frac{F_N \times K}{P_N / mm^2 \times d_{mm}}$$