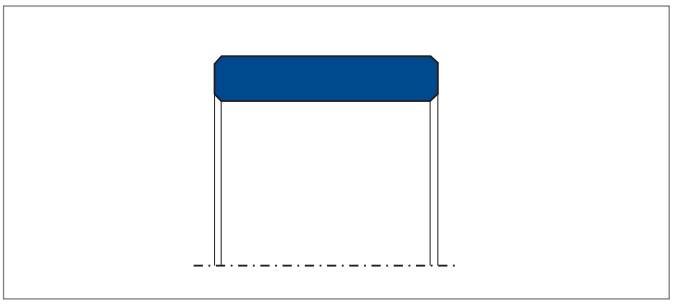
GUIDE BAND SF / KF FOR AEROSPACE

Guide Band SF (rod) resp. the version KF (piston) are non-metallic guide elements, either cut to size and ready for installation, or supplied as yard ware



VALUE TO THE CUSTOMER

- Low breakaway and running friction
- Compatible with most hydraulic fluids
- Suitable for standardized housings as per ISO 10766

Applications
Guide Bands SF / KF can be used in all hydraulic fluids normally found in hydraulic systems such as oils and greases based on mineral oils, fire-resistant hydraulic fluids (HFD) and biodegradable hydraulic fluids (HETG, HEES, HEPG). We do not recommend to used guide bands SF in water or water based fluids (HFA, HFB, HFC). The maximum permissible operating temperature is 120 °C (248 °F).

Material

Material	Designation	Color
Bronze filled PTFE	PTFE B500	brown

GLAND DESIGN

Surface finish

Peak-to-valley heights	R_a	R_{max}
Sliding surface	0.05 to 0.3 µm (2 to 12 µinch)	≤2.5 µm (≤99 µinch)
Groove base	≤1.6 µm (≤63 µinch)	≤6.3 µm (≤248 µinch)
Groove sides	≤3.0 µm (≤119 µinch)	≤15.0 µm (≤591 µinch)

Material content M_r > 50 % to max. 90 %, with cut depth c = R_z/2 and reference line C_{ref} = 0 %

Tolerances

Diameter D_1 / d_1	Profile thickness
H8 / h8	−0.05 mm (−0.002 Inch)

The tolerance for dimensions d and D_F (SF) respectively D and d_1 (KF)must be viewed in connection with the seal used. Diameter D_1 (SF) respectively d_1 (KF) stated in the table of dimensions must be considered exclusively in conjunction with the guide band. The corresponding diameter of the connected seal housing has to be adapted to the sealing element involved.

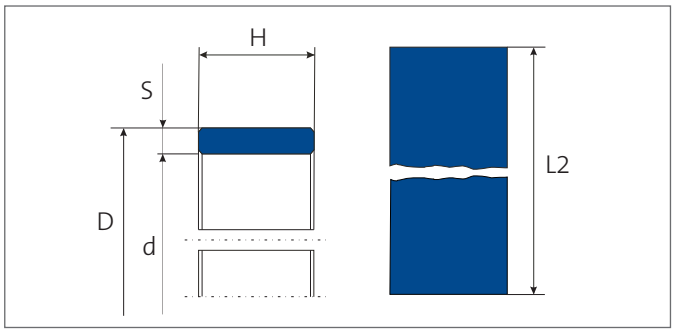
L2 [mm]	Manufacturing tolerance [mm]
>20 to 80 (>0.787 ... 3.150 Inch)	max. 0.5 (0.020 Inch)
>80 to 250 (>3.150 ... 9.845 Inch)	max. 1.0 (0.039 Inch)
>250 to 500 (>9.845 ... 19.685 Inch)	max. 1.5 (0.059 Inch)
>500 to 1,000 (>19.685 ... 39.370 Inch)	max. 2.0 (0.079 Inch)
>1,000 to 2,000 (>39.370 ... 78.740 Inch)	max. 3.0 (0.118 Inch)
>2.000 to 4.000 (>78.740 ... 157.480 Inch)	max. 4.0 (0.157 Inch)

Surface load	Operating temperature
p < 15 N/mm² (p < 2175 psi)	max. 20 °C (68 °F)
p < 7.5 N/mm² (p < 1088 psi)	max. 80 °C (176 °F)
p < 5 N/mm² (p < 725 psi)	... 120 °C (248 °F)

Sliding speed, see sealing system.

Cutting rolls to size

The dimensions indicated below are available as rolls ware from stock. Stretched length L2 of sections cut to size must be determined in line with the formula of calculation. Gap k arising after assembly is required for thermal expansion purposes. We recommend therefore that the guide bands are cut straight. Butt joint tips may be damaged by fissures. Our cutter (article No. 507228) makes it possible to cut sections to size in a time-saving and accurate manner.

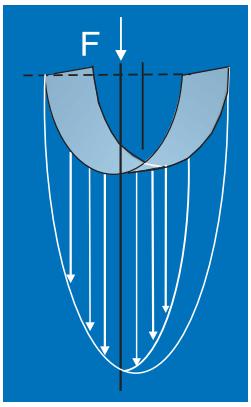


Calculating stretched length L2 for rods / pistons:
L2 = (D – S) x 3.11 – 0.5 / L2 = (d + S) x 3.11 – 0.5 [mm]
L2 = (D – S) x 0.122 – 0.020 / L2 = (d + S) x 0.122 – 0.020 [Inch]

Groove length L [mm]	Band thickness S [mm]
8 (0.315 Inch)	2,5 (0.098 Inch)
9,7 (0.382 Inch)	2,5 (0.098 Inch)
10 (0.394 Inch)	2,5 (0.098 Inch)
12 (0.472 Inch)	2,5 (0.098 Inch)
15 (0.591 Inch)	2,5 (0.098 Inch)
20 (0.787 Inch)	2,5 (0.098 Inch)
25 (0.984 Inch)	2,5 (0.098 Inch)
15 (0.591 Inch)	4 (0.157 Inch)
20 (0.787 Inch)	4 (0.157 Inch)
25 (0.984 Inch)	4 (0.157 Inch)

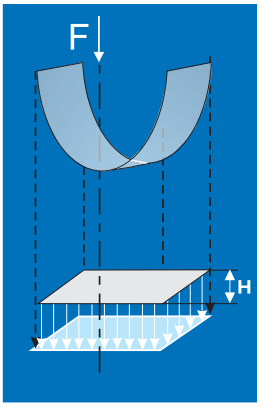
GLAND DESIGN

Surface force
Pressure within the contact area between the guide and the counter surface is not linear. The guiding width required can be calculated by applying the formulas mentioned below on the basis of the projected area. The non-linear progression of the contact pressure process is taken into account in the surface pressure value. It may be advisable to reduce the loads by selecting a broader guide in individual cases to obtain an extended service life.



F_{max} = P x A
A = d x H
H = F/(d x P)

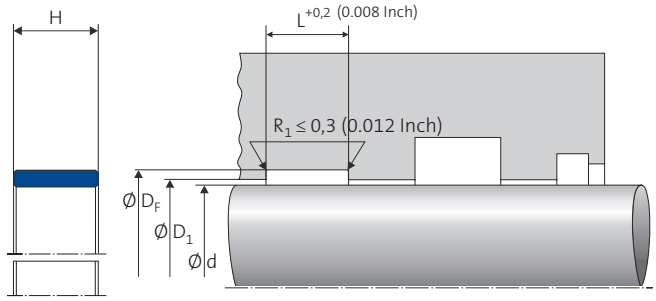
H = Width of guide band
F = Radial loads
A = Projected area



P = Permissible surface pressure
d = Rod diameter (rod guide) resp. piston diameter (piston guide)

Installation diagram

Type SF



Type KF