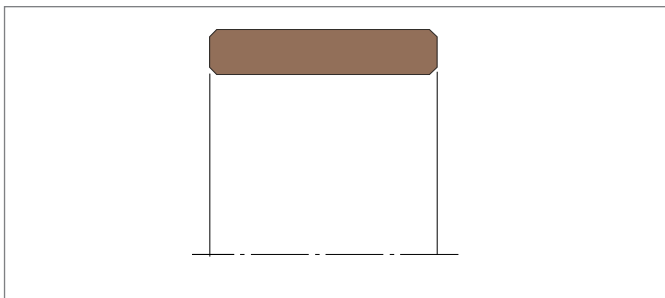


MERKEL GUIDE STRIP SF / KF



Merkel Guide Strip SF resp. KF are non-metallic guide elements, either cut to size and ready for installation, or supplied as yard ware.



Operating conditions

Merkel Guide Strip 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 Rings SF in water or water based fluids (HFA, HFB, HFC). The maximum permissible operating temperature is 120 °C.

Material

Material	Designation	Color
PTFE-bronze compound	PTFE B500	brown

VALUE TO THE CUSTOMER

- Low friction,
- Stick-slip-free operation
- Suitable for standardized housings as per ISO 10766



FEATURES AND BENEFITS

Surface finish

Peak-to-valley heights	R_a	R_{max}
Sliding surface	0,05 ... 0,3 μm	<2,5 μm
Groove base	<1,6 μm	<6,3 μm
Groove sides	<3,0 μm	<15,0 μm

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

Design notes

Please observe our general design notes in our technical manual.

Tolerances

L2 [mm]	Manufacturing tolerance [mm]
>20 ... 80	... 0,5
>80 ... 250	... 1,0
>250 ... 500	... 1,5
>500 ... 1.000	... 2,0
>1.000 ... 2.000	... 3,0
>2.000 ... 4.000	... 4,0

Diameter D_1	Profile thickness S [mm]
H8	-0,05

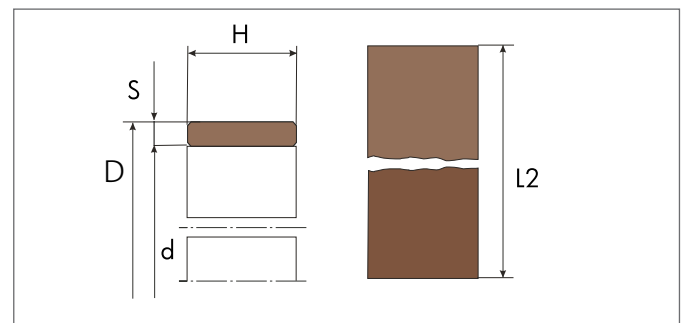
The tolerance for dimensions d and DF must be viewed in connection with the seal used. Diameter D_1 stated in the table of dimensions must be considered exclusively in conjunction with the guide ring. The corresponding diameter of the connected seal housing has to be adapted to the sealing element involved.

Surface load	Temperature
$p < 15 \text{ N/mm}^2$... 20 °C
$p < 7,5 \text{ N/mm}^2$... 80 °C
$p < 5 \text{ N/mm}^2$... 120 °C

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 strips be 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 pistons / rods:
 $L2 = (D - S) \times 3,11 - 0,5$ / $L2 = (d + S) \times 3,11 - 0,5$

Groove length L [mm]	Strip thickness S [mm]	Article No.
8	2,5	24226174
9,7	2,5	24102775
10	2,5	24102563
12	2,5	24099191
15	2,5	24102564
20	2,5	24076217
25	2,5	24107955
15	4	24160019
20	4	24238052
25	4	24148093

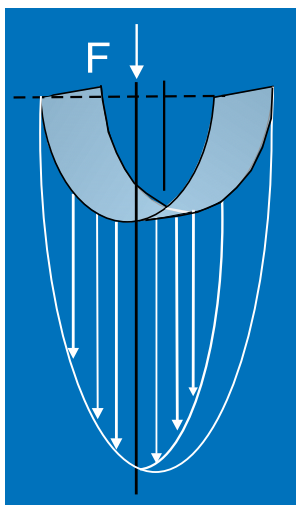


FEATURES AND BENEFITS

Surface force

Pressure within the contact area between the guide and the counterface 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.

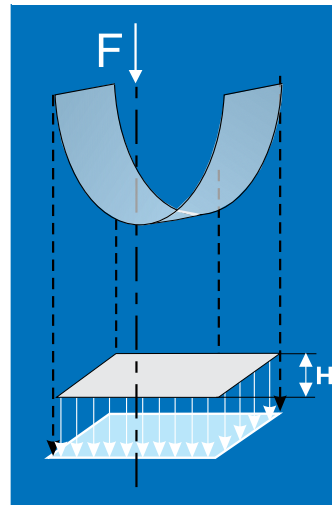


$$F = P \times A$$

$$A = d \times H$$

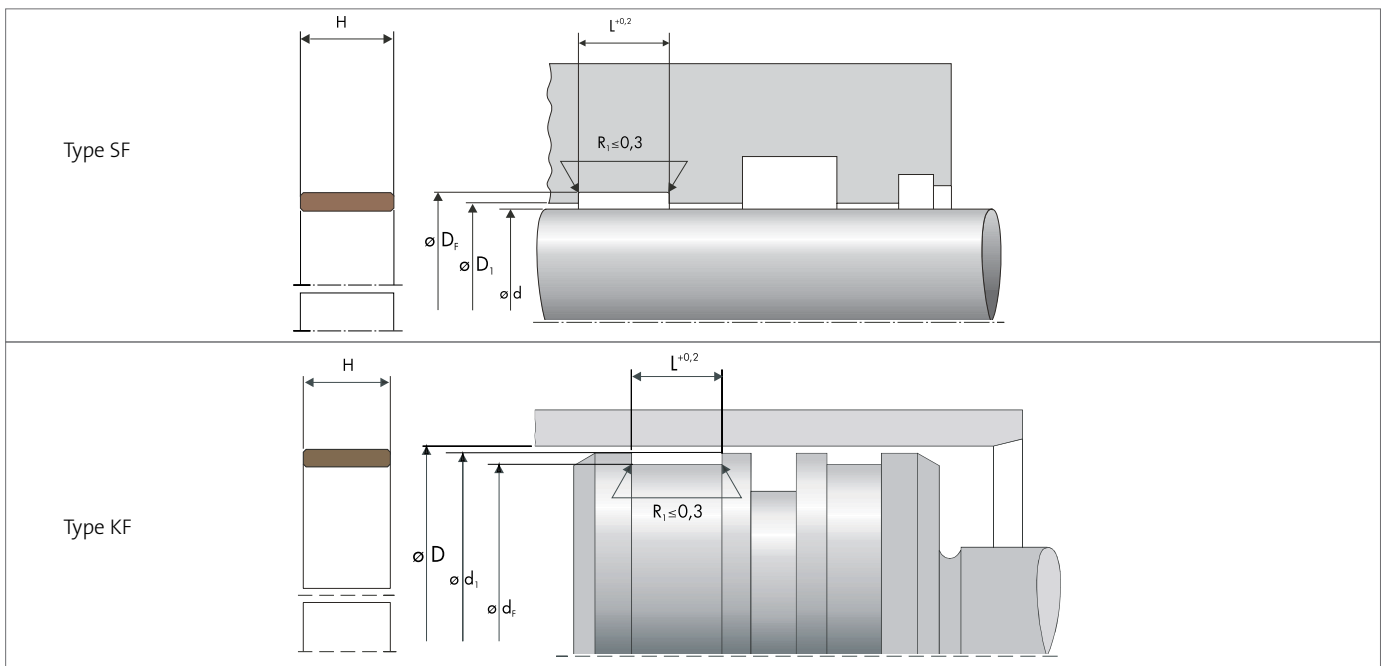
$$H = F / (d \times P)$$

H = Width of guide [mm]
 F = Radial loads [N]
 A = Projected area [mm²]



P = perm. surface pressure [N/mm²]
 d = Rod diameter with rod guide; Piston diameter with piston guide [mm]

Installation diagram



www.fst.com