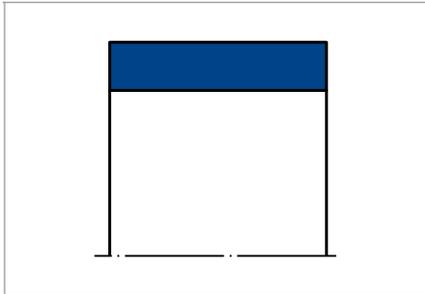


MERKEL GUIDE STRIP KF



PRODUCT DESCRIPTION

Non-metallic Merkel Guide Strip KF, available ready to fit cut to size or by the metre.

PRODUCT ADVANTAGES

Non-metallic guide element for pistons, also for standardised housings as per ISO 10766.

- Low friction, free of stick-slip

APPLICATION

- Handling equipment
- Injection moulding machines
- Control and regulation equipment

MATERIAL

| Material | Code |
|----------------------|-----------|
| PTFE bronze compound | PTFE B500 |

OPERATING CONDITIONS

| Medium/ Temperature | PTFE B500 |
|------------------------|--------------------|
| Hydraulic oils HL, HLP | -40 °C ... +200 °C |
| HFA fluids | - |
| HFB fluids | - |
| HFC fluids | - |
| HFD fluids | -40 °C ... +200 °C |
| Water | - |
| HETG (rapeseed oil) | -40 °C ... +80 °C |
| HEES (synthetic ester) | -40 °C ... +100 °C |
| HEPG (glycol) | -40 °C ... +80 °C |
| Mineral greases | -40 °C ... +200 °C |

DESIGN NOTES

Please observe our general design notes in → Technical Manual.

Surface quality

| Peak-to-valley heights | R_a | R_{max} |
|------------------------|----------------------------|-------------------------|
| Sliding surface | 0,05 ... 0,3 μm | $\leq 2,5 \mu\text{m}$ |
| Groove base | $\leq 2 \mu\text{m}$ | $\leq 10,0 \mu\text{m}$ |
| Groove flanks | $\leq 3 \mu\text{m}$ | $\leq 15,0 \mu\text{m}$ |

Percentage contact area $M_p > 50\%$ to max. 90% at cutting depth $c = R_z/2$ and reference line $C_{ref} = 0\%$.

Tolerances

| d_1 |
|-------|
| H8 |

The tolerance definition for the dimensions D and dF must be viewed in connection with the seal used. The diameter D1 specified in the table of dimensions is to be viewed exclusively in relation to the guide ring. The corresponding diameter of an adjoining seal housing should be tailored to the sealing component.

SPECIALITIES

Manufacturing tolerance

| Production tolerance profile thickness S |
|--|
| -0,05 mm |

Surface load

$p < 15 \text{ N/mm}^2$ up to 20 °C
 $p < 7,5 \text{ N/mm}^2$ up to 80 °C
 $p < 5 \text{ N/mm}^2$ up to 120 °C

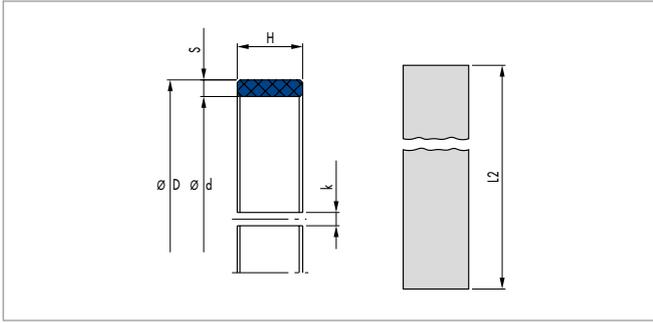
For running speed, see sealing system.

Cutting rolls to size

The following dimensions are available from stock by the metre. The straight length L2 of blanks is to be determined using the formula. The gap k produced after fitting is necessary due to thermal expansion. We recommend a straight cut on the strips. On impact at an angle the tips may be damaged and break-off. Our cutter (Article No. 507228) facilitates time-saving and accurate cutting to size.

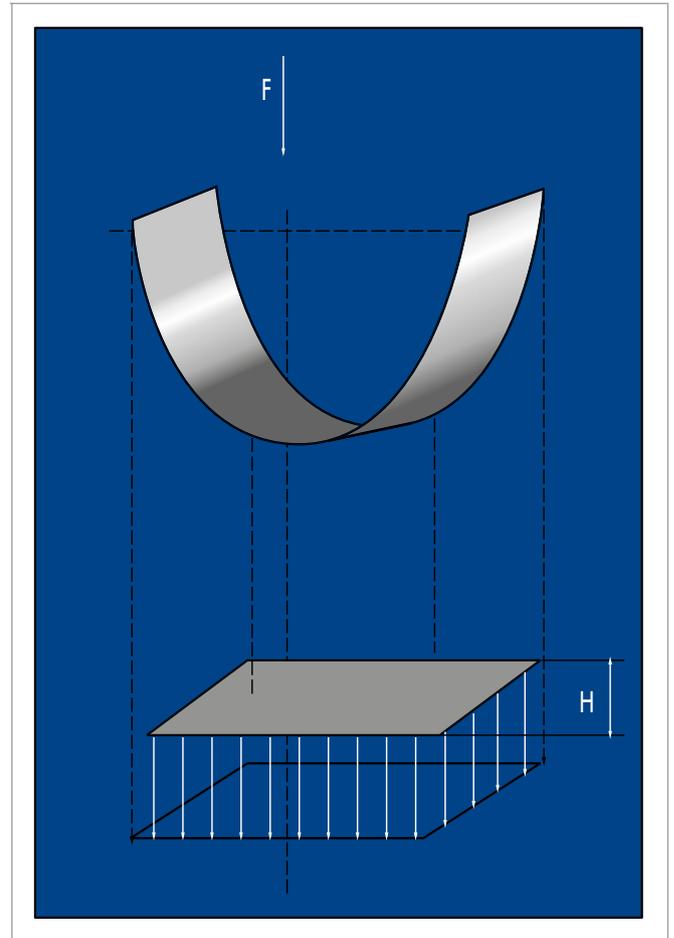
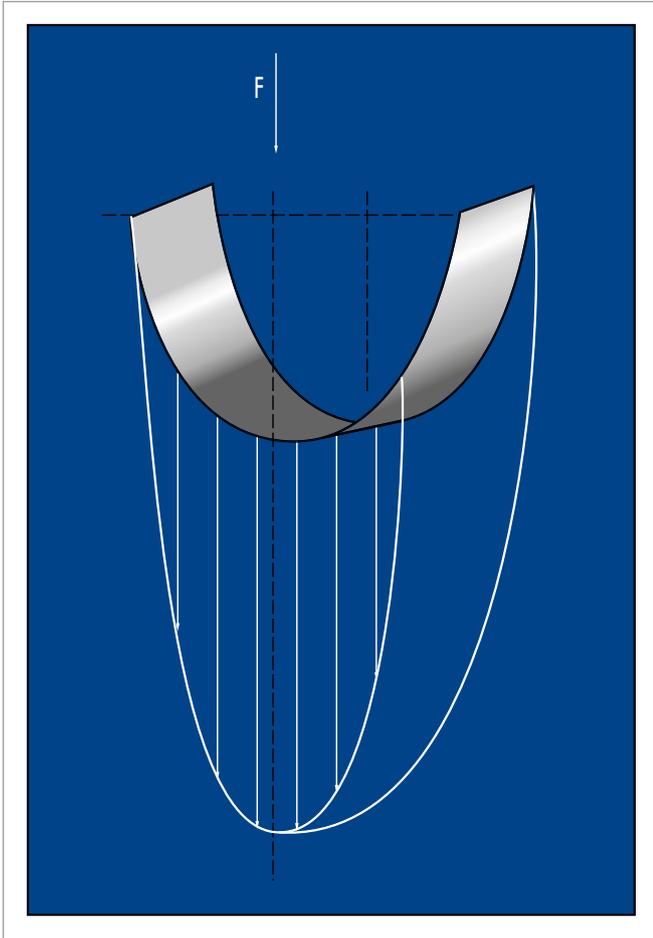
Calculating stretched length L2 for rods:

$$L2 = (d + S) \times 3,11 - 0,5$$



| Groove length L | Profile thickness S | Article No. |
|-----------------|---------------------|-------------|
| 8,0 mm | 2,5 mm | 24226174 |
| 9,7 mm | 2,5 mm | 24102775 |
| 10,0 mm | 2,5 mm | 24102563 |
| 12,0 mm | 2,5 mm | 24099191 |
| 15,0 mm | 2,5 mm | 24102564 |
| 20,0 mm | 2,5 mm | 24076217 |
| 25,0 mm | 2,5 mm | 24107955 |
| 15,0 mm | 4,0 mm | 24160019 |
| 20,0 mm | 4,0 mm | 24238052 |
| 25,0 mm | 4,0 mm | 24148093 |

Surface force



$$F = P \times A$$

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

H = guide strip width [mm]

F = radial loading [N]

A = projected area [mm²]

P = perm. compression per unit area [N/mm²]

d = rod diameter with rod guidance; piston diameter with piston guidance [mm].

The pressure distribution on the guide rings is non-linear. The non-linear pressure curve over the contact range was taken into account when calculating the permissible specific surface pressure. The permissible load on the guide strip is calculated by multiplying the projected area with the permissible specific surface pressure. However, the figure for the permissible specific surface pressure takes into account the possible angular offset of the piston when the recommended guide elements are used.