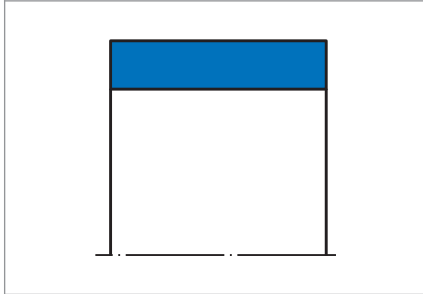


Merkel Guide Ring KB



Product description

Non-metallic Merkel Guide Ring KB.

Product advantages

Non-metallic guide element for pistons, also for standardised housings according to ISO 10766.

- Metal/fabric-base laminate materials combination prevents "seizing"
- High load-bearing capacity, elastic (not plastic) behaviour up to break point
- Chamfered profile edges prevent pressing of edge into the corner radii of the housing groove
- Simple snap-in fitting ($d \leq 300$)

Application

- Earth moving equipment
- Industrial vehicles
- Loading platforms
- Agricultural machinery
- Cranes
- Presses
- Injection moulding machines
- Steel hydraulics engineering
- Support cylinders

Material

Slotted Ring
 ≤ 300 mm

Material	Code
Fabric-base laminate	HGW HG517

Ready to fit strip cut to size
 > 300 mm

Material	Code
Fabric-base laminate	HGW HG600

Operating conditions

Medium/ Temperature	HGW HG517	HGW HG600
Hydraulic oils HL, HLP	-40 °C ... +120 °C	-40 °C ... +120 °C
HFA fluids	+5 °C ... +60 °C	+5 °C ... +60 °C
HFB fluids	+5 °C ... +60 °C	+5 °C ... +60 °C
HFC fluids	-40 °C ... +60 °C	-40 °C ... +60 °C
HFD fluids	-40 °C ... +120 °C	-40 °C ... +120 °C
Water	+5 °C ... +60 °C	+5 °C ... +60 °C
HETG (rapeseed oil)	-40 °C ... +80 °C	-40 °C ... +80 °C
HEES (synthetic ester)	-40 °C ... +100 °C	-40 °C ... +100 °C
HEPG (glycol)	-40 °C ... +80 °C	-40 °C ... +80 °C
Mineral greases	-40 °C ... +120 °C	-40 °C ... +120 °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 μ m	$\leq 2,5$ μ m
Groove base	≤ 2 μ m	$\leq 10,0$ μ m
Groove flanks	≤ 3 μ m	$\leq 15,0$ μ m

Percentage contact area $M_r > 50\%$ up 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 d_1 must be viewed in relation to the seal used. The diameter D_1 specified in the table of dimensions is to be viewed exclusively in connection with the guide ring. The corresponding diameter of an adjacent seal housing should match the sealing component.

Specialities

Manufacturing tolerance

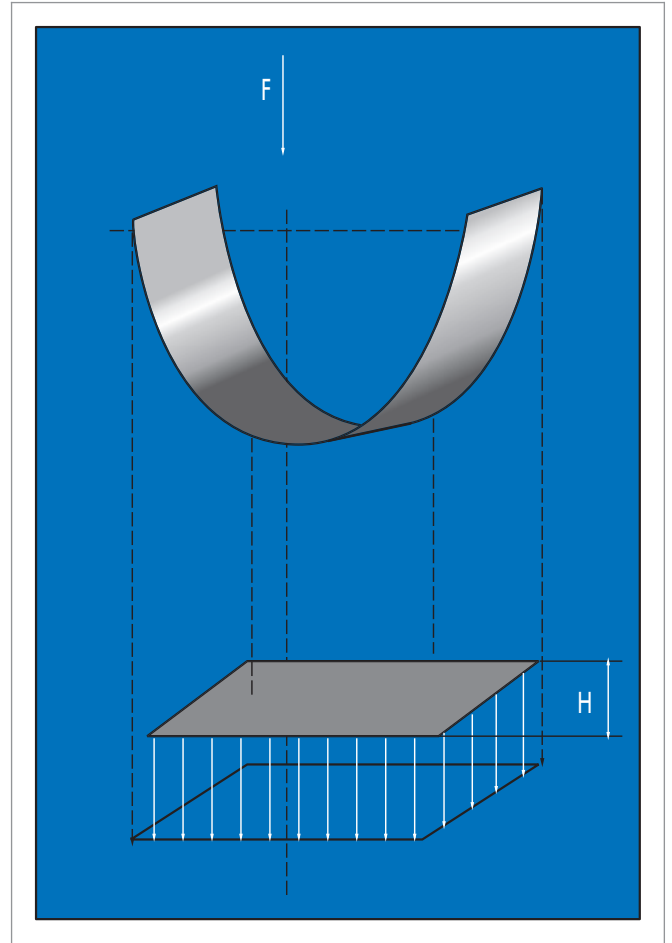
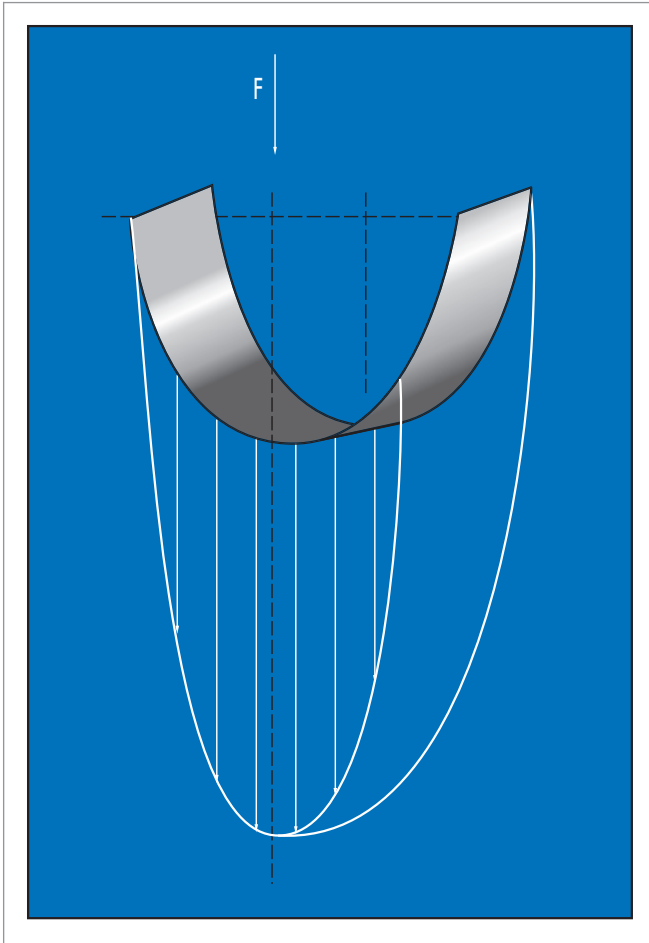
Profile thickness S
-0,02 ... -0,08

Surface load

$p < 50$ N/mm² up to 60 °C
 $p < 25$ N/mm² up to 100 °C

For running speed, see sealing system.

Surface force



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

- H = guide strip width [mm]
- F = radial load [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 using the recommended guide elements.