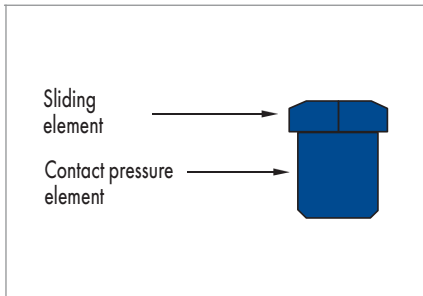


MERKEL COMPACT SEAL HDP 330



PRODUCT DESCRIPTION

Two-part seal set for sealing pistons, consisting of a PA slide ring with a stepped cut and an elastomer contact pressure element for producing pre-load.

PRODUCT ADVANTAGES

- Extreme strength against gap extrusion thanks to the PA sliding component
- Extremely high abrasion resistance
- Stepped cut for easy fitting in a closed housing
- Greater surface roughness partly permissible in comparison to conventional seals
- Rectangular contact pressure element produces consistently high pre-loading force and offers high protection against twisting in the housing
- Housings should preferably comply with ISO 7425-1
- Dynamic and static tightness comparable to PTFE piston seals

APPLICATION

- Earth moving equipment
- Industrial vehicles
- Loading platforms
- Agricultural machinery

MATERIAL

Slide ring

Material	Code	Hardness
Fibreglass filled modified polyamide	PA 4112	–

Contact pressure element

Material	Code	Hardness
Nitrile rubber NBR	70 NBR 177605	70 Shore A

OPERATING CONDITIONS

Pressure p	60 MPa
-------------------	--------

* Pressure max. static p = 80 MPa at T = 100 °C

Running speed v	0,8 m/s
------------------------	---------

Medium/ Temperature	PA 4112/70 NBR 177605
Hydraulic oils HL, HLP	–30 °C ... +100 °C
HFA fluids	+5 °C ... +55 °C
HFB fluids	+5 °C ... +60 °C
HFC fluids	–30 °C ... +60 °C
HFD fluids	–
Water	–
HETG (rapeseed oil)	–30 °C ... +60 °C
HEES (synthetic ester)	–30 °C ... +80 °C
HEPG (glycol)	–30 °C ... +80 °C
Mineral greases	–30 °C ... +100 °C

DESIGN NOTES

Please observe our general design notes in → Technical Manual.

Surface quality

Peak-to-valley heights	Pressure range	R _a	R _{max}
Sliding surface	≤26 MPa	0,05 ... 0,5 μm	≤5 μm
Sliding surface	≤60 MPa	0,05 ... 0,3 μm	≤2,5 μm
Groove base		≤1,6 μm	≤6,3 μm
Groove flanks		≤3 μm	≤15 μm

Percentage contact area $M_r > 50\%$ to max 90% at a depth of cut $c = R_z/2$ and reference line $R_{ref} = 0\%$. Rougher surfaces, in combination with higher stroke frequencies, can lead to oil depletion in the lubricating gap.

Admissible gap dimension

The maximum gap to appear results from the tolerances, guide play, compressive deflection of the guide under load, and the cylinder divergence. → Technical Manual.

Profile dimension	16 MPa	26 MPa	32 MPa	40 MPa	50 MPa	60 MPa
3,75 mm	0,50 mm	0,50 mm	0,50 mm	0,45 mm	0,35 mm	0,30 mm
5,50 mm	0,55 mm	0,55 mm	0,55 mm	0,50 mm	0,40 mm	0,35 mm
7,75 mm	0,75 mm	0,75 mm	0,75 mm	0,70 mm	0,55 mm	0,50 mm
10,50 mm	1,00 mm	1,00 mm	1,00 mm	0,95 mm	0,75 mm	0,65 mm

These gap dimensions apply to: the upper operating temperatures of $T_{max} = 100$ °C, the tolerance recommendations for cylinders, groove base and guide. → Technical Manual.

Tolerances

When dimensioning the d_2 for the admissible gap width, the permissible tolerances, the guide play and the deflection of the guide should be accounted for. → Technical Manual

FITTING & INSTALLATION

Careful fitting is a prerequisite for the correct function of the seal. → Technical Manual.