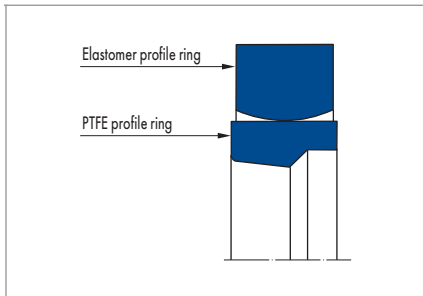


MERKEL OMEGAT OMS-S



PRODUCT DESCRIPTION

Two-piece Merkel seal set for sealing piston rods, consisting of a profile ring with an elastomer profile ring as a pre-load component.

PRODUCT ADVANTAGES

Merkel Omegat OMS-S is designed especially for larger diameters and heavy duty hydraulic applications.

- Very high resistance to pressure
- Very good extrusion resistance
- Design prevents twisting
- High contact pressure due to elastomer profile ring
- High resistance to abrasion
- Low friction, free of stick-slip

APPLICATION

- Large cylinders
- Manipulators
- Presses
- Marine hydraulics
- Injection moulding machines
- Steel hydraulics engineering
- Rolling mills

MATERIAL

PTFE profile ring

Material	Code	Hardness
PTFE glass MoS ₂ compound	PTFE GM201	–
PTFE bronze compound	PTFE B602	–

Elastomer profile ring

Material	Code	Hardness
Nitrile rubber NBR	80 NBR B246	80 Shore A

OPERATING CONDITIONS

Pressure p	40 MPa
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Running speed v	5 m/s
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Medium/ Temperature	PTFE B602/NBR	PTFE GM201/NBR
Hydraulic oils HL, HLP	–30 °C ... +100 °C	–30 °C ... +100 °C
HFA fluids	–	+5 °C ... +60 °C
HFB fluids	–	+5 °C ... +60 °C
HFC fluids	–	–30 °C ... +60 °C
HFD fluids	–	–
Water	–	+5 °C ... +100 °C
HETG (rapeseed oil)	–30 °C ... +80 °C	–30 °C ... +80 °C
HEES (synthetic ester)	–30 °C ... +80 °C	–30 °C ... +60 °C
HEPG (glycol)	–30 °C ... +60 °C	–30 °C ... +60 °C
Mineral greases	–30 °C ... +100 °C	–30 °C ... +100 °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	≤2,5 μm
Groove base	≤1,6 μm	≤6,3 μm
Groove flanks	≤3,0 μm	≤15,0 μm

Percentage contact area M_r >50% up to max. 90% at cutting depth c = Rz/2 and reference line C ref = 0%.

Admissible gap dimension

The decisive factor for the function of the seal is the largest gap dimension occurring during operation on the non-pressurised side of the seal → Technical Manual. The permissible value is determined by the pressure as well as the profile width and profile height.

Profile dimension	16 MPa	26 MPa	32 MPa	40 MPa
10 mm	0,75 mm	0,50 mm	0,40 mm	0,40 mm
12,5 mm	0,75 mm	0,65 mm	0,55 mm	0,50 mm
15 mm	0,75 mm	0,65 mm	0,55 mm	0,50 mm
17,5 mm	0,75 mm	0,65 mm	0,55 mm	0,50 mm
20 mm	0,80 mm	0,70 mm	0,60 mm	0,55 mm

Tolerances

The admissible gap width, tolerances, guide play and compressive deflection of the guide under load must be considered in the design of D2. → Technical Manual.

FITTING & INSTALLATION

When fitting the Omegat OMS-S the elastomer profile ring is first placed in the housing groove, then the profile ring is deformed to a kidney shape and sprung into place. During this process it is to be ensured no sharp kinks are produced in the PTFE profile ring and that the sealing edge is correctly arranged in relation to the direction of the pressure. The entire fitting operation is only allowed to be performed over rounded edges.