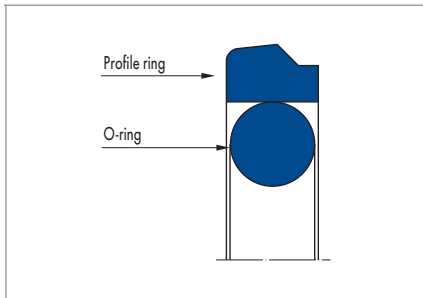


MERKEL OMEGAT OMK-E



PRODUCT DESCRIPTION

Two-piece Merkel seal set for sealing pistons, consisting of one PTFE profile ring and an O-ring as a pre-load component

PRODUCT ADVANTAGES

Merkel Omegat OMK-E can be used where a sealing piston has pressure on one side, amongst others, in standardised housings according to ISO 7425/1. Rod diameters in agreement with ISO 3320.

- Very high resistance to pressure and hardness
- Good thermal conductivity
- Very good protection against extrusion
- High resistance to abrasion
- Low friction, free of stick-slip

APPLICATION

- Industrial vehicles
- Handling equipment
- Agricultural machinery
- Cranes
- Presses
- Marine hydraulics
- Injection moulding machines
- Control and regulation equipment
- Rolling mills

MATERIAL

PTFE profile ring

Material	Code	Hardness
PTFE-bronze compound	PTFE B602	-
PTFE glass MoS2 compound	PTFE GM201	-

O-Ring

Material	Code	Hardness
NBR	70 NBR B276	70 Shore A
FKM	70 FKM K655	70 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/ 70 FKM K655	PTFE B602/ 70 NBR B276	PTFE GM201/ 70 NBR B276
Hydraulic oils HL, HLP	-10 °C ... +200 °C	-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	-10 °C ... +200 °C	-	-
Water	-	-	+5 °C ... +100 °C
HETG (rapeseed oil)	-10 °C ... +80 °C	-30 °C ... +80 °C	-30 °C ... +80 °C
HEES (synthetic ester)	-10 °C ... +100 °C	-30 °C ... +80 °C	-30 °C ... +80 °C
HEPG (glycol)	-10 °C ... +80 °C	-30 °C ... +60 °C	-30 °C ... +60 °C
Mineral greases	-10 °C ... +200 °C	-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	$\leq 2,5 \mu\text{m}$
Groove base	$\leq 1,6 \mu\text{m}$	$\leq 6,3 \mu\text{m}$
Groove flanks	$\leq 3,0 \mu\text{m}$	$\leq 15,0 \mu\text{m}$

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

Admissible gap dimension

The largest gap dimension occurring on the non-pressurised side of the seal in operation is of vital importance for the function of the seal. → Technical Manual.

Profile dimension	16 MPa	26 MPa	32 MPa	40 MPa
2,45 mm	0,35 mm	0,30 mm	-	-
3,65 mm	0,40 mm	0,35 mm	-	-
5,35 mm	0,50 mm	0,40 mm	0,30 mm	-
7,55 mm	0,55 mm	0,45 mm	0,35 mm	0,30 mm
10,25 mm	0,60 mm	0,50 mm	0,40 mm	0,40 mm
12,00 mm	0,70 mm	0,60 mm	0,55 mm	0,50 mm
13,65 mm	0,75 mm	0,65 mm	0,60 mm	0,55 mm

Tolerances

The admissible gap width, tolerances, guide play and deflection of the guide under load are to be taken into account when designing d2. → Technical Manual.

Nominal Ø D	D	d
≤500 mm	H8	h8
>500 mm	H8	h7

Regard must be paid to the dimensions d1 and dF in connection with the guide element used.

FITTING & INSTALLATION

Careful fitting is a prerequisite for the correct function of the seal. → Technical Manual. When mounting the Merkel Omegat OMK-E, ensure correct placement of the sealing edge to the pressure direction. A fitting jig facilitates the installation of small Omegat rings.

SPECIALITIES

Material selection table

Criterion	PTFE GM201/ 70 NBR B276 (PTFE-glass- MoS2/NBR)	PTFE B602/ 70 NBR B276 (PTFE-Bronze/ NBR)	PTFE B602/ 70 FKM K655 (PTFE-Bronze/ FKM)
Oil hydraulics -30 ... +100 °C	{●}	{●}	{○}
Oil hydraulics -10 ... +200 °C	{○}	{D}	{B}
Short stroke, high frequency	{●}	{○}	{○}
Water hydraulics	{●}	{○}	{○}
Soft counterface	{●}	{○}	{○}

● = suitable; ◐ = possible; ○ = not suitable.