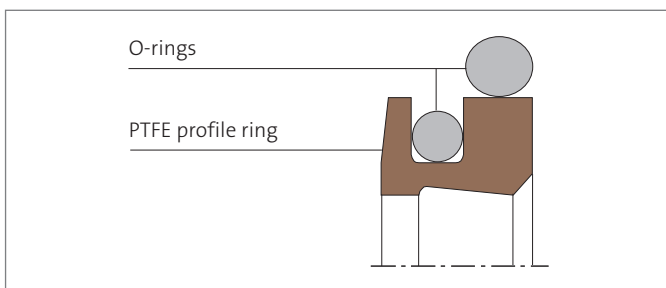


MERKEL DOUBLE WIPER PT 2



Merkel Double Wiper PT 2, consisting of one profile ring with one sealing edge and one wiper edge, plus two O-rings as prestress elements



Applications

Double wiper with optimum wiping effect due to the support of the two O-rings. No build up of dirt due to closed gap. The PT 2 double wiper is principally used in conjunction with our Merkel Omegat OMS-S rod seals. A pressure relief borehole must be provided between the seal and the wiper.

Material

PTFE profile ring

Material	Designation	Color
PTFE-bronze compound	PTFE B602	brown
PTFE-glass-fiber-MoS2-compound	PTFE GM201	light gray

O-ring

Material	Designation
Nitrile rubber	NBR
Fluoroelastomer	FKM

Other material combinations are available on request.

VALUE TO THE CUSTOMER

- Excellent controllability and positionability during operation
- Low friction, stick-slip-free
- Material variants for short stroke and high frequency; available on request
- Particularly well suited for large diameters



FEATURES AND BENEFITS

Operating conditions

Material	PTFE GM201/NBR	PTFE B602/NBR	PTFE B602/FKM
Hydraulic oils, HL, HLP	-30 ... +100 °C	-30 ... +100 °C	-10 ... +200 °C
HFA fluids	+ 5 ... +60 °C	–	–
HFB fluids	+ 5 ... +60 °C	–	–
HFC fluids	-30 ... +60 °C	–	–
HFD fluids	–	–	-10 ... +200 °C
Water	+ 5 ... +100 °C	–	–
HETG (rape-seed oil)	-30 ... +80 °C	-30 ... +80 °C	-10 ... +80 °C
HEES (synth. ester)	-30 ... +80 °C	-30 ... +80 °C	-10 ... +100 °C
HEPG (glycol)	-30 ... +60 °C	-30 ... +60 °C	-10 ... +80 °C
Mineral greases	-30 ... +100 °C	-30 ... +100 °C	-10 ... +200 °C
Sliding speed	5 m/s	5 m/s	5 m/s

The figures given are maximum values and must not be applied simultaneously.

Surface finish

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 sides	$\leq 3,0 \mu\text{m}$	$\leq 15,0 \mu\text{m}$

Material content M_i > 50% to max. 90%, with cut depth $c = R_i/2$ and reference line $C_{ref} = 0\%$

The long-time behavior of a sealing element and its dependability against early failures are crucially influenced by the quality of the counterface. A precise description and assessment of the surface is thus indispensable.

Based on recent findings, we recommend supplementing the above definition of surface finish for the sliding surface by the characteristics detailed in the table below. With these new characteristics derived from the material content, the hitherto merely general description of the material content is significantly improved, not least in regard to the abrasiveness of the surface. Please also consult our technical manual.

Surface finish of the sliding surfaces

Characteristic value	Limit	
R_a	>0,05 μm	<0,30 μm
R_{max}	<2,5 μm	
R_{pkx}	<0,5 μm	
R_{pk}	<0,5 μm	
R_k	>0,25 μm	<0,7 μm
R_{vk}	>0,2 μm	<0,65 μm
R_{vtx}	>0,2 μm	<2,0 μm

The limit values listed in the table do not currently apply for ceramic or semi-ceramic counterfaces.

Please also consult our technical manual.

Tolerances

Diameter D	Tolerance
D	H8
D_1	H8

The tolerance for the diameter d is specified in connection with the gap dimension calculation for the primary seal.

In typical hydraulic applications up to a nominal dimension of 1.000 mm, the tolerance fields f7 and f8 are usually chosen.

Design notes

We recommend a pressure-relief bore. In the case of upstream seals with a good return capability, a pressure-relief feature is not necessary. Please also consult our technical manual.

Installation & assembly

Reliable seal function is dependent on correct installation. Please also consult our technical manual.



FEATURES AND BENEFITS

Installation diagram

