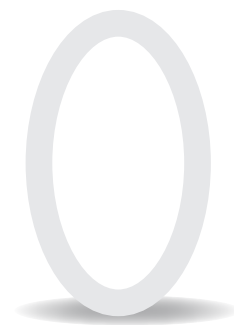
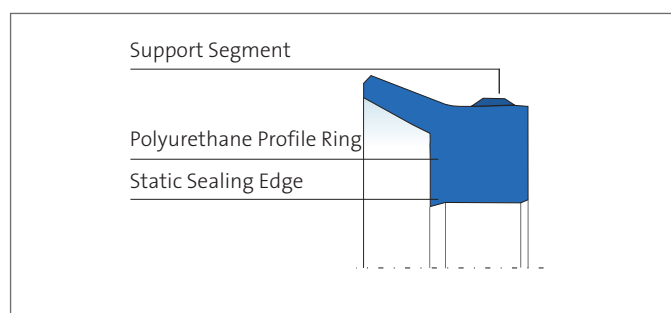


MERKEL WIPER PU12



Merkel Wiper PU12 is a single-acting dirt wiper towards the outside diameter, made of polyurethane with support segments, and a static sealing edge facing the groove.



VALUE TO THE CUSTOMER

- Very good wiping action due to inherently stable and wear & tear resistant wiper lip made of polyurethane
- Secure collection of the remaining drag oil at the return stroke due to rounded wiper lip
- Additional static sealing lip prevents ingress of dirt via the groove
- Support segments offer stable positioning in the housing and assure high functional safety

Applications

Single acting dirt wiper for outer diameter sealing applications.

Material

Material	Designation	Color
Polyurethane	95 AU V142	dark blue
Polyurethane	94 AU 925	light blue
Polyurethane	95 AU V149	dark blue

The material is determined by the nominal diameter and the production process involved.



TECHNICAL PROPERTIES

Operating Conditions

Material	95 AU V142, 94 AU 925, 95 AU V149
Hydraulic Oils, HL, HLP	−30 ... +110 °C
HFA Fluids	+5 ... +50 °C
HFB Fluids	+5 ... +50 °C
HFC Fluids	−30 ... +40 °C
HFD Fluids	—
Water	+5 ... +50 °C
HETG (rape-seed oil)	−30 ... +60 °C
HEES (synth. ester)	−30 ... +80 °C
HEPG (glycol)	−30 ... +50 °C
Mineral Greases	−30 ... +110 °C
Sliding Speed	2,0 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	$\leq 1,6 \mu\text{m}$	$\leq 6,3 \mu\text{m}$
Groove Sides	$\leq 3,0 \mu\text{m}$	$\leq 15,0 \mu\text{m}$

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

The long term behavior of a sealing element and its dependability against early failures are crucially influenced by the quality of the counter surface. Therefore a precise description and assessment of the surface is critical.

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	$>0,05 \mu\text{m}$	$<0,30 \mu\text{m}$
R_{max}	$<2,5 \mu\text{m}$	
R_{pkx}	$<0,5 \mu\text{m}$	
R_{pk}	$<0,5 \mu\text{m}$	
R_k	$>0,25 \mu\text{m}$	$<0,7 \mu\text{m}$
R_{vk}	$>0,2 \mu\text{m}$	$<0,65 \mu\text{m}$
R_{vtx}	$>0,2 \mu\text{m}$	$<2,0 \mu\text{m}$

The limit values listed in the table do not currently apply for ceramic or semi-ceramic counter surfaces. Please also consult our Technical Manual.

Tolerances

Diameter [mm]	Tolerance
$d \leq 400$	h10
$d > 400$	−0,4 mm
d1	h10

The tolerance for the diameters d and D_2 is specified in connection with the gap dimension calculation. In typical hydraulic applications up to a nominal dimension of 1.000 mm, the tolerance fields f7 and f8 or H7 and H8 are usually chosen.

Design Notes

Please note the general design-related remarks in our Technical Manual.

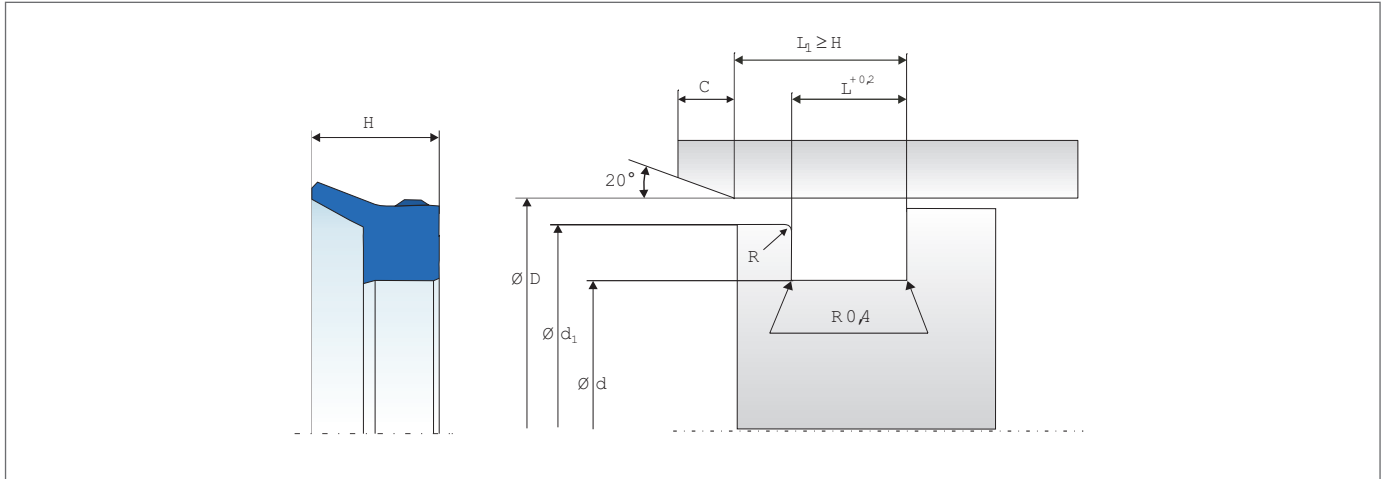
Installation & Assembly

Please note the general remarks on hydraulic seal assembly in our Technical Manual.



GLAND DESIGN

Installation Diagram



The information contained herein is believed to be reliable, but no representation, guarantees or warranties of any kind are made to its accuracy or suitability for any purpose. The information presented herein is based on laboratory testing and does not necessarily indicate end product performance. Full scale testing and end product performance are the responsibility of the user.

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