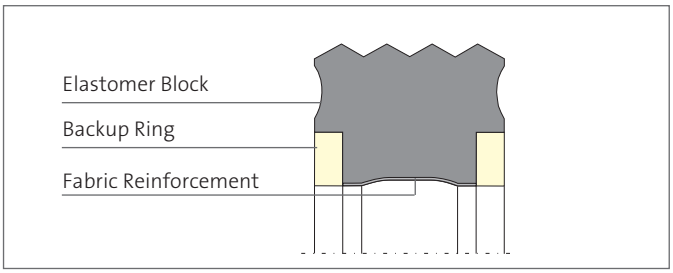
MERKEL ROTOMATIC M 19

Merkel Rotomatic M 19 is a three-piece seal set consisting of an elastomer sealing component and two backup rings. with fabric reinforcement on The concavely shaped running surface with the two sealing edges is reinforced with fabric, and offers an lubrication depot. Via the elastomer block both backup rings are activated by the system pressure.



VALUE TO THE CUSTOMER

- Extrusion-secured via an activated back-up ring
- Highly wear-resistant

Applications
Double-action rod seal for pivoting motion in hydraulic plant, preferably for use in hydraulic joints and rotary transmissions.

Material

Material	Designation
Nitrile elastomer/POM	80 NBR/BI-NBR/POM

FEATURES AND BENEFITS

Operating Conditions

Material	80 NBR/BI-NBR
Hydraulic oils, HL, HLP	–30 ... +80 °C
HFA fluids	+5 ... +60 °C
HFB fluids	+5 ... +60 °C
HFC fluids	–30 ... +60 °C
HFD fluids	–
Water	+5 ... +80 °C
HETG (rape-seed oil)	–30 ... +80 °C
HEES (synth. ester)	–30 ... +80 °C
HEPG (glycol)	–30 ... +60 °C
Mineral greases	–30 ... +80 °C
Pressure	40 MPa
Sliding speed	0,2 m/s

If the seal is supposed to be used in applications, being exposed to permanent movement, please consult us prior installation.

Surface Finish

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 sides	≤3,0 µm	≤15,0 µm

Bearing length ratio M_r >50 % to a max. of 90 % at cut depth c = R_z/2 and reference line C_{ref} = 0 %. Abrasive surface, scores, scratches and cavities should be avoided. The surface hardness should be 45–60 HRC (hardness depth at least 0.5 mm).

Tolerance Recommendation

Recommended fit for pressures up to 40 MPa

Profile [mm]	D2	Tolerance D2	d	D
7,5	d+0,2* d+0,3	H8	f8	H9
10	d+0,3* d+0,5	H8	f8	H9
12,5	d+0,5* d+0,7	H8	f8	H9

* Recommended diameter D2 depending on dimension H of the back-up ring.

The long-time behavior of a sealing element and its dependability against early failures are crucially influenced by the quality of the counter-face. 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_{vkx}	>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.

Design notes

Please observe the general design notes in our technical manual.

FEATURES AND BENEFITS

Installation Diagram