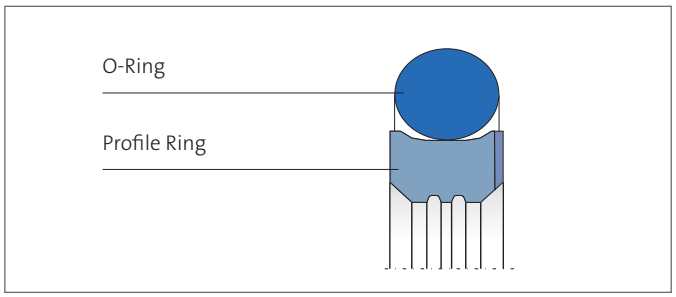
MERKEL ROTOMATIC M 15

Merkel Rotomatic M 15 is a two-piece seal set for sealing piston rods, consisting of a PTFE profile ring and an O-ring as a pre-stress element.



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

Material

Profile ring

Material	Designation	Color
PTFE-glass-fiber-MoS2 compound	PTFE GM 201	light gray

O-ring

Material	Designation	Color
Nitrile rubber	NBR	black
Fluoroelastomer	FKM	black

Other material combinations available on request.

VALUES FOR THE CUSTOMER

- Quick assembly
- Highly resistant to hydraulic fluids
- Low friction, stick-slip free

FEATURES AND BENEFITS

Operating Conditions

Material	PTFE GM201/ 70 NBR B276	PTFE GM201/ 70 FKM K655
Hydraulic oils, HL, HLP	−30 ... +100 °C	−10 ... +150 °C
HFA fluids	+5 ... +60 °C	+5 ... +60 °C
HFB fluids	+5 ... +60 °C	+5 ... +60 °C
HFC fluids	−30 ... +60 °C	−10 ... +40 °C
HFD fluids	–	–
Water	+5 ... +100 °C	+5 ... +100 °C
HETG (rape-seed oil)	−30 ... +80 °C	−10 ... +80 °C
HEES (synth. ester)	−30 ... +80 °C	−10 ... +100 °C
HEPG (glycol)	−30 ... +60 °C	−10 ... +80 °C
Mineral greases	−30 ... +100 °C	−10 ... +150 °C
Pressure	40 MPa	40 MPa
Sliding speed	0,5 m/s	0,5 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	≤2,5 µm
Groove base	≤1,6 µm	≤6,3 µm
Groove sides	≤3,0 µm	≤15,0 µm

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, previous more general descriptions of the material content are significantly improved, especially in regard to surface roughness.
Please also consult our Technical Manual.

Tolerance Recommendation

Diameter d [mm]	Borehole	Shaft	Groove base
<500	H9	f8	H9
>500	H8	f7	H8

Design Notes
Please note the general design remarks in our Technical Manual.

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

Seal for pivoting motion

FEATURES AND BENEFITS

Installation Diagram