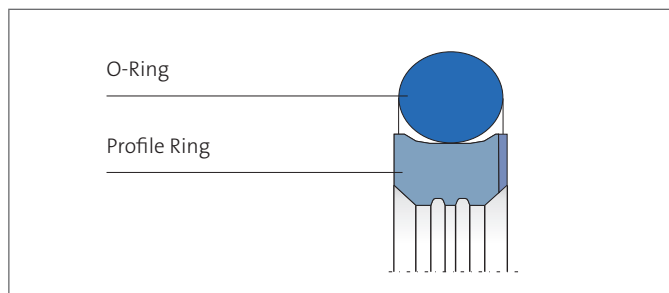


MERKEL ROTOMATIC M 15



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.



VALUES FOR THE CUSTOMER

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

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.



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 | $\leq 2,5 \mu\text{m}$ |
| 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 $M_r > 50\%$ 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.

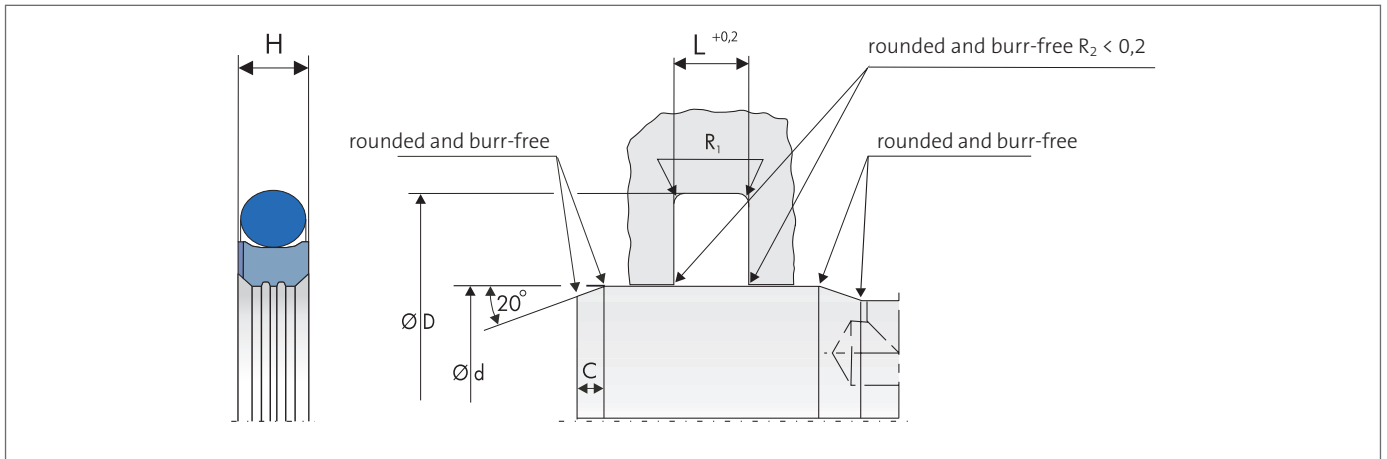
Installation & Assembly

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



FEATURES AND BENEFITS

Installation Diagram



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