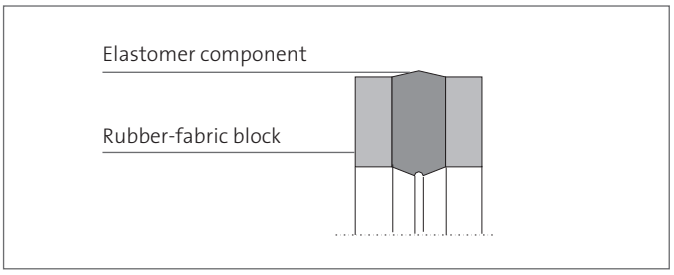
# MERKEL ROTOMATIC M 17

**Merkel Rotomatic M 17** is a single-piece, two component seal made of rubber-fabric in combination with a pure elastomer sealing element, featuring an oil groove on the running surface.




## VALUE TO THE CUSTOMER

- Good wear-resistance
- High functional reliability

**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 | 80 NBR/BI-NBR |

Other materials are available on request.

# 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 | 20 MPa |
| Sliding speed | 0,1 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

| Nominal-Ø d [mm] | d | D |
|---|---|---|
| <60 | f8/H8 | H9 |
| >60 | f7/H7 | H9 |

Recommended fit for pressures up to 20 MPa.

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**