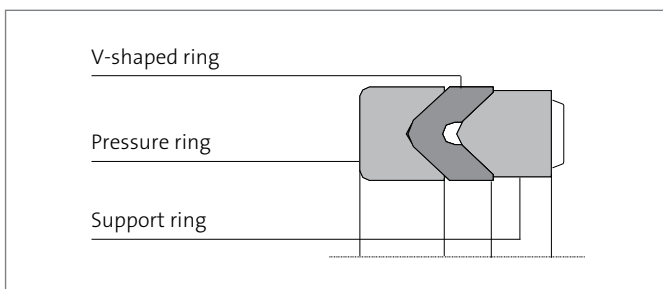


MERKEL V-PACKING SET EK/EKV



Merkel V-Packing Set EK/EKV is a multi-part piston seal set comprising one pressure ring, one or two V-shaped rings and one support ring.



Application

Seal set for tough applications, predominantly for spares supply at old installations. EK/EKV V-packing sets can be used for one-sided applications or back-to-back for pistons. The leakage or friction behavior may alter, depending on the application or design involved.

VALUE TO THE CUSTOMER

- Field-proven under ultra-tough conditions long useful lifetime
- Can be optimally matched to the application concerned
- Functions for a certain period even on poor surfaces
- Not susceptible to soiling



FEATURES AND BENEFITS

Material

Pressure ring

| Type | Material | Designation |
|------|-------------------|-------------|
| EK | Cotton fabric/NBR | BI-NBR |
| EKV | Cotton fabric/FKM | BI-FKM |

Roof shaped ring

| Type | Material | Designation |
|------|-------------------|-------------|
| EK | Cotton fabric/NBR | BI-NBR |
| EKV | Cotton fabric/FKM | BI-FKM |

or

| Type | Material | Designation |
|------|----------|-------------|
| EK | NBR | 85 NBR |
| EKV | FKM | 85 FKM |

Support ring

| Type | Material | Bezeichnung |
|------|--------------------------|---------------|
| EK | Cotton fabric/NBR or POM | BI-NBR or POM |
| EKV | Cotton fabric/FKM | BI-FKM |

Operating conditions

| Material | BI-NBR/85 NBR | BI-FKM/85 FKM |
|-------------------------|-----------------|-----------------|
| Hydraulic oils, HL, HLP | -30 ... +100 °C | -15 ... +140 °C |
| HFA fluids | +5 ... +60 °C | +5 ... +60 °C |
| HFB fluids | +5 ... +60 °C | +5 ... +60 °C |
| HFC fluids | -30 ... +60 °C | +5 ... +60 °C |
| HFD fluids | - | -15 ... +140 °C |
| Water | +5 ... +100 °C | +5 ... +80 °C |
| HETG (rape-seed oil) | -30 ... +80 °C | -15 ... +80 °C |
| HEES (synth. ester) | -30 ... +80 °C | -15 ... +100 °C |
| HEPG (glycol) | -30 ... +60 °C | -15 ... +80 °C |
| Mineral greases | -30 ... +100 °C | -15 ... +140 °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_i , >50 % to max. 90 %, with cut depth $c = R_i/2$ and reference line $C_{ref} = 0\%$

The long-time behavior of a sealing element and its dependability against early failures are crucially influenced by the quality of the counterface. 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 | $>0,05 \mu\text{m}$ | $<0,30 \mu\text{m}$ |
| 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 counterfaces. Please also consult our technical manual.



FEATURES AND BENEFITS

Design notes

| Nominal- \varnothing d [mm] | d |
|-------------------------------|-------------------|
| ≤ 80 | H9/f8 |
| $> 80 \dots 120$ | H8/f8 |
| $> 120 \dots 500$ | H8/f7 |
| $> 500 \dots 630$ | 350 μm |
| $> 630 \dots 800$ | 400 μm |
| $> 800 \dots 1.000$ | 650 μm |
| $> 1.000 \dots 1.250$ | 600 μm |

Please note our general design remarks in our technical manual.

Tolerances

| Diameter D [mm] | Tolerance | d_1 |
|-----------------|-----------|-------|
| < 500 | H11 | -0,3 |
| > 500 | H10 | -0,3 |

Installation & assembly

Careful fitting is a prerequisite for the correct function of the seal. Please also consult our technical manual.

Installation diagram

