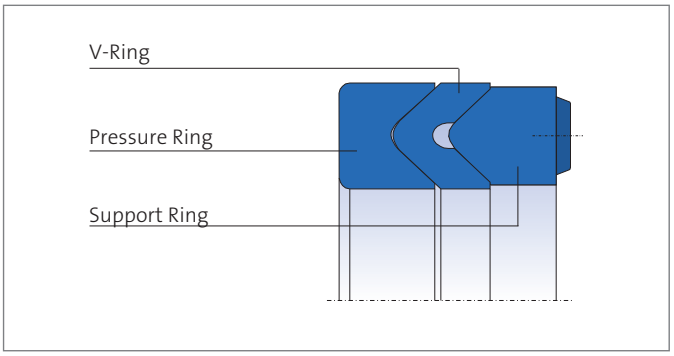
MERKEL
V-PACKING SET EK/EKV

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

TECHNICAL PROPERTIES

Material

Pressure Ring

Type	Material	Designation
EK	Cotton Fabric/NBR	BI-NBR
EKV	Cotton Fabric/FKM	BI-FKM

V-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	Designation
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 Dpeed	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	≤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-time behavior of a sealing element and its dependability against early failures are crucially influenced by the quality of the counter surface. 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.

GLAND DESIGN

Recommended fit of metallic guide

Nominal-Ø D [mm]	Tolerance
≤80	H9/f8
>80 ... 120	H8/f8
>120 ... 500	H8/f7
>500 ... 630	350 µm
>630 ... 800	400 µm
>800 ... 1.000	650 µm
>1.000 ... 1.250	600 µm

Please note our general design remarks in our technical manual.

Tolerances Groove Diameter

Diameter d [mm]	Tolerance	Tolerance $d_{1\,[mm]}$
<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