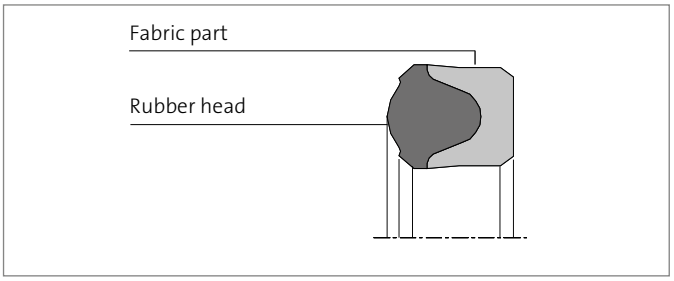
MERKEL COMPACT SEAL S 8

Merkel Compact Seal S 8 is a single-piece rod seal with a rubber head enclosed in the fabric part.



Application
Rod seal for light and medium duty hydraulic applications

Operating conditions

Material	85 NBR B247
Hydraulic oils, HL, HLP	–30 ... +100 °C
HFA fluids	+5 ... +60 °C
HFB fluids	+5 ... +60 °C
HFC fluids	–30 ... +60 °C
HFD fluids	–
Water	+5 ... +100 °C
HETG (rape-seed oil)	–30 ... +80 °C
HEES (synth. ester)	–30 ... +80 °C
HEPG (glycol)	–30 ... +60 °C
Mineral greases	–30 ... +100 °C
Pressure	25 MPa
Sliding speed	0,5 m/s

The figures given are maximum values and must not be applied simultaneously.

VALUE TO THE CUSTOMER

- Easy to assembly
- Excellent sealing action also in the low-pressure range
- Low friction due to fabric part

FEATURES AND BENEFITS

Material

Material	Designation	Color
Nitrile rubber	NBR	black

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 counterface. 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, the hitherto merely general description of the material content is significantly improved, not least in regard to the abrasiveness of the surface. Please 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 consult our Technical Manual.

Gap dimension

The maximum permissible extrusion gap with a one-sided position of the piston rod is significantly determined by the maximum operating pressure. In the case of larger gap dimensions than specified in the table full-surface back-up ring of plastic should be used behind the seal.

Profile dimension	Max. permissible gap dimension [mm]	
Profile [mm]	16 MPa	25 MPa
≤6	0,2	0,1
>6 ... 10	0,2	0,1
>10 ... 15	0,2	0,1

Tolerance recommendation and dimension D_2

The admissible gap width, tolerances, guide play and deflection of the guide under load are to be observed in rating D_2.

Nenn-Ø d [mm]	d	D
≤80	f8	H11
>80 ... 120	f8	H11
>120 ... 340	f7	H11

Fit example for metal guides

Nominal-Ø d [mm]	d	D
≤80	H9/f8	H11
>80 ... 120	H8/f8	H11
>120 ... 340	H8/f7	H11

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