

Merkel Compact Seal S 8

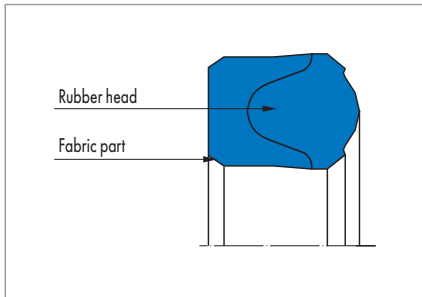


Fig. 1 Merkel Compact Seal S 8

Product description

Single-piece rod seal with a rubber head set in the fabric part.

Product advantages

Compact rod seal, also for standardised housings according to ISO 5597

- Easy to fit
- Excellent sealing effect also in the lower pressure range
- Low friction due to the fabric part.

Application

Standard cylinders, telescopic cylinders, machine tools, spindle seals.

Material

Material	Code	Hardness
Nitrile rubber NBR	70 NBR B209	70 Shore A

Operating conditions

Material	70 NBR B209
	Temperature range in °C
Hydraulic oils HL, HLP	-30 ... +100
HFA fluids	+5 ... +60
HFB fluids	+5 ... +60
HFC fluids	-30 ... +60
HFD fluids	-
Water	+5 ... +100
HETG (rapeseed oil)	-30 ... +80
HEES (synthetic esters)	-30 ... +80
HEPG (glycol)	-30 ... +60
Mineral greases	-30 ... +100
Pressure p in MPa	25
Running speed v in m/s	0,5

Surface quality

Surface roughness	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 flanks	$\leq 3,0 \mu\text{m}$	$\leq 15,0 \mu\text{m}$

Percentage contact area M_v >50% to max. 90% at cutting depth $c = R_z/2$ and reference line $C_{ref} = 0\%$.

Design notes

Please observe our general design notes in → Technical Manual.

Gap dimension

The decisive factor for the function of the seal is the largest gap dimension occurring during operation on the non-pressurised side of the seal. → Technical Manual. 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	Max. permissible gap dimension	
	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 d2

The admissible gap width, tolerances, guide play and deflection of the guide under load are to be taken into account when designing D2. → Technical Manual.

Nominal Ø d	d	D
≤80	f8	H11
>80 ... 120	f8	H11
>120 ... 340	f7	H11

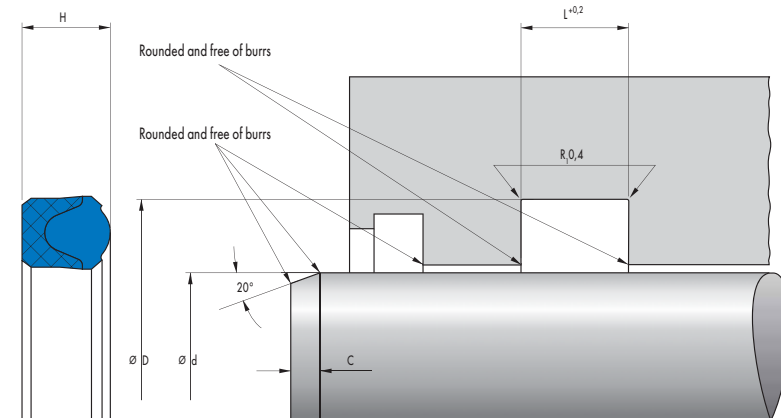
Fit example for metal guides

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

Fitting & installation

Careful fitting is a prerequisite for the correct function of the seal.
→ Technical Manual.

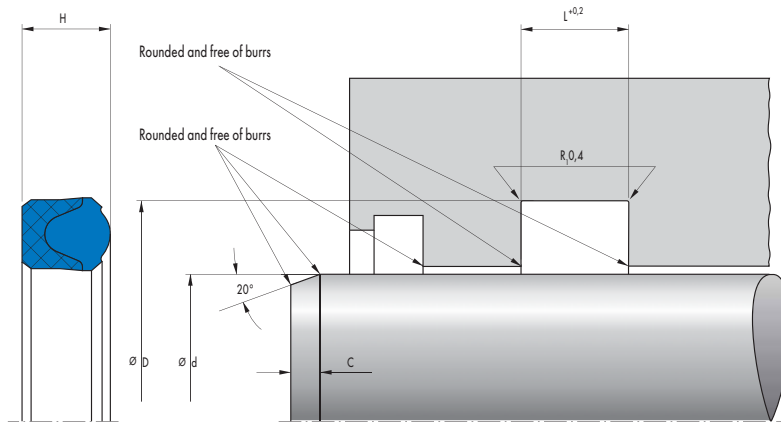
Article list



d	D	H	L	Profile	C	Housing	Fitting	Material	Article No.	
5	12	6	6,3	3,5	2,5		H	70 NBR B209	24030115	●
6	13	6	6,3	3,5	2,5			70 NBR B209	24027634	●
8	15	6	6,3	3,5	2,5			70 NBR B209	24007352	●
10	17	6	6,3	3,5	2,5			70 NBR B209	24007358	●
12	19	6	6,3	3,5	2,5			70 NBR B209	24007364	●
14	22	6	6,3	4	2,5	ISO	H	70 NBR B209	24027629	●
15	23	6	6,3	4	2,5			70 NBR B209	24007372	●
16	24	6	6,3	4	2,5	ISO	H	70 NBR B209	24027652	●
18	25	6	6,3	4	2,5		H	70 NBR B209	24030522	●
18	26	6	6,3	4	2,5	ISO		70 NBR B209	24007379	●
20	28	6	6,3	4	2,5	ISO		70 NBR B209	24007388	●
22	30	6	6,3	4	2,5	ISO		70 NBR B209	24007397	●
24	32	6	6,3	4	2,5		H	70 NBR B209	24027651	●
25	32	6	6,3	3,5	2,5			70 NBR B209	24060408	●
25	33	6	6,3	4	2,5	ISO		70 NBR B209	24007407	●
25	35	7	7,5	5	3		H	70 NBR B209	24055606	●
28	36	6	6,3	4	2,5		W	70 NBR B209	24007413	●
30	38	6	6,3	4	2,5			70 NBR B209	24027648	●
30	38	8	8,5	4	2,5			70 NBR B209	24027626	●
32	40	6	6,3	4	2,5		H	70 NBR B209	24023604	●
35	43	6	6,3	4	2,5		H	70 NBR B209	24027649	●
35	45	7,5	8	5	3		W	70 NBR B209	24007446	●
36	44	6	6,3	4	2,5		W	70 NBR B209	24007448	●
40	48	6	6,3	4	2,5		W	70 NBR B209	24007461	●
40	48	8	8,5	4	2,5		W	70 NBR B209	24073042	●
40	48	11	11,7	4	2,5		W	70 NBR B209	24007465	○
40	50	7,5	8	5	3	ISO	W	70 NBR B209	24007467	●
40	52	9	9,5	6	3		W	70 NBR B209	24030126	●
42	50	6	6,3	4	2,5		H	70 NBR B209	24007475	●
44	55	10	10,6	5,5	3		W	70 NBR B209	24094781	●
45	53	8	8,5	4	2,5		H	70 NBR B209	24060410	●
45	55	7,5	8	5	3	ISO	W	70 NBR B209	24007485	●
48	60	10	10,6	6	3		H	70 NBR B209	24055751	○
50	58	8	8,5	4	2,5		H	70 NBR B209	24117303	●
50	60	7,5	8	5	3	ISO	H	70 NBR B209	24007494	●

● Available from stock ○ On request: Tool is available, delivery at short notice

Fitting: H = by hand; W = with fitting tool; blank = axially accessible housing



d	D	H	L	Profile	C	Housing	Fitting	Material	Article No.	
50	60	10	10,6	5	3		H	70 NBR B209	24135436	●
50	62	9	9,5	6	3		W	70 NBR B209	24091914	●
55	65	7,5	8	5	3		H	70 NBR B209	24027658	●
55	67	10	10,6	6	3		W	70 NBR B209	24007510	●
56	66	7,5	8	5	3	ISO	H	70 NBR B209	24007513	●
60	70	7,5	8	5	3		H	70 NBR B209	24007520	●
63	75	9	9,5	6	3		H	70 NBR B209	24007539	●
65	75	7,5	8	5	3		H	70 NBR B209	24142200	●
65	77	9	9,5	6	3		H	70 NBR B209	24007545	●
70	80	7	7,5	5	3		H	70 NBR B209	24084356	●
70	82	9	9,5	6	3		H	70 NBR B209	24007555	●
70	85	11,5	12,2	7,5	5	ISO	W	70 NBR B209	24007558	●
75	87	9	9,5	6	3		H	70 NBR B209	24007567	●
78	90	12	12,5	6	3		H	70 NBR B209	24068016	●
80	92	9	9,5	6	3		H	70 NBR B209	24027655	●
80	95	12	12,5	7,5	5	ISO	H	70 NBR B209	24143115	○
85	97	9	9,5	6	3		H	70 NBR B209	24007587	●
85	100	11,3	12	7,5	5		H	70 NBR B209	24007590	●
90	102	9	9,5	6	3		H	70 NBR B209	24007602	●
90	105	11,3	12	7,5	5	ISO	H	70 NBR B209	24007605	●
95	107	12	12,5	6	3		H	70 NBR B209	24070580	●
100	110	7,5	8	5	3		H	70 NBR B209	24176851	●
100	115	11,3	12	7,5	5		H	70 NBR B209	24027657	●
105	120	11,5	12,2	7,5	5		H	70 NBR B209	24007629	●
110	125	11,3	12	7,5	5		H	70 NBR B209	24027631	●
115	130	11,3	12	7,5	5		W	70 NBR B209	24007645	●
120	135	11,3	12	7,5	5		H	70 NBR B209	24084364	●
125	140	11,3	12	7,5	5		H	70 NBR B209	24027653	●
130	142	9	9,5	6	3		H	70 NBR B209	24007661	●
130	145	10,2	11	7,5	5		H	70 NBR B209	24031801	●
135	150	10	11	7,5	5		H	70 NBR B209	24027636	●
140	155	13	14	7,5	5		H	70 NBR B209	24057871	○
140	160	15	16	10	5	ISO	H	70 NBR B209	24007671	●
150	170	15	16	10	5		H	70 NBR B209	24007682	●
155	175	15	16	10	5		H	70 NBR B209	24007685	●
160	180	15	16	10	5		H	70 NBR B209	24027656	●

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d	D	H	L	Profile	C	Housing	Fitting	Material	Article No.	
165	185	15	16	10	5		H	70 NBR B209	24007694	●
170	190	15	16	10	5		H	70 NBR B209	24091141	●
180	200	15	16	10	5		H	70 NBR B209	24007703	●
180	205	18,8	20	12,5	5	ISO	H	70 NBR B209	24120564	○
200	220	15	16	10	5		H	70 NBR B209	24007710	●
210	230	16	17	10	5		H	70 NBR B209	24065708	●
220	240	15	16	10	5		H	70 NBR B209	24139773	●
225	240	15	16	7,5	5		H	70 NBR B209	24100164	○
240	260	15	16	10	5			70 NBR B209	24091143	●

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The catalog details are based on the experience of many years of research in the development and production of seals in the Freudenberg Group and correspond to our current level of know-how.

The sealing action of many catalog products is, however, not only created by the component itself. In many cases – depending on the specific application – it depends significantly on the other parameters, such as installation point, counter surface, pressure, operating temperature, media to be sealed, lubrication, effects of vibration and any ingress of dirt from outside. These and other unknown factors in

practical use may noticeably influence the functioning of the seals. Against this background generalised statements on the function of the catalog products are not possible. Details in this catalog merely represent general and non-binding reference values which make no claim to be valid for every application. We therefore recommend you to always discuss specific applications with our consultancy service. In the event of very high and special loads, for example due to aggressive media, the seal should be selected in co-operation with us; trials to check the functional reliability are often indispensable.



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