

Merkel Rotomatic M 15

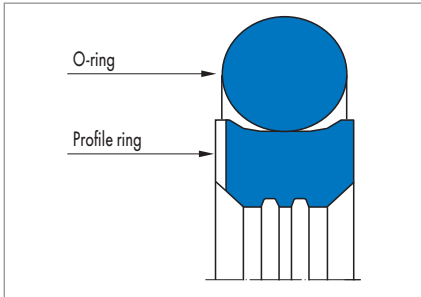


Fig. 1 Merkel Rotomatic M 15

Product description

Two-piece Merkel seal set for sealing piston rods, consisting of one PTFE profile ring and an O-ring as a pre-load component.

Product advantages

Double-acting rod seal for pivoting motions in hydraulic systems, preferably for usage in hydraulic joints and rotary joints.

- Short
- Highly resistant to hydraulic fluids
- Low friction, free of stick-slip.

Application

Excavators, grippers, rotary joints.

Material

PTFE profile ring

Material	Code
PTFE glass/MoS ₂ compound	GM201

O-ring

Material	Code	Hardness
Nitrile rubber NBR	NBR	70 Shore A
Fluoro rubber FKM	FKM	70 Shore A

Operating conditions

Material	80 NBR B241	80 FKM K670
	Temperature range in °C	
Hydraulic oils HL, HLP	-30 ... +100	-10 ... +150
HFA fluids	+5 ... +60	+5 ... +60
HFB fluids	+5 ... +60	+5 ... +60
HFC fluids	-30 ... +60	-10 ... +40
HFD fluids	-	-10 ... +150
Water	+5 ... +100	+5 ... +100
HETG (rapeseed oil)	-30 ... +80	-10 ... +80
HEES (synthetic esters)	-30 ... +80	-10 ... +100
HEPG (glycol)	-30 ... +60	-10 ... +80
Mineral greases	-30 ... +100	-10 ... +150
Pressure p in MPa	40	
Running speed v in m/s	0,5	

Surface quality

Surface roughness	R _a	R _{max}
Sliding surface	0,05 ... 0,3 µm	≤2,5 µm
Groove base	≤1,6 µm	≤6,3 µm
Groove flanks	≤3,0 µm	≤15,0 µm

The surface hardness must be approx. 45 to 60 HRC (depth of hardening min. 0,5 mm). Percentage contact area M_c >50% to max 90% at cutting depth c = Rz/2 and reference line C ref = 0%. Abrasive surfaces, ridges, scratches and blow-holes are to be avoided.

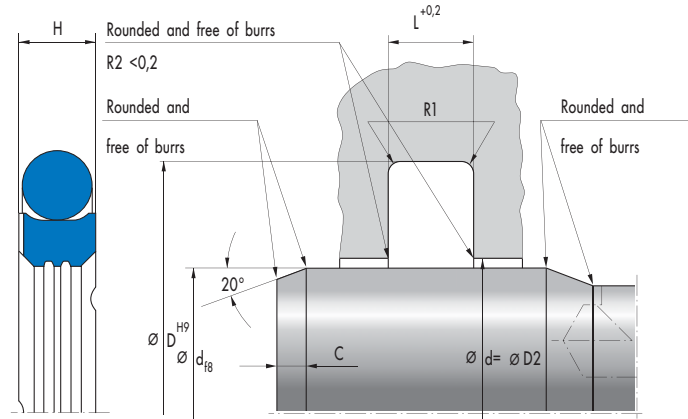
Design notes

Please observe our general design notes in → Technical Manual.

Tolerance recommendation and dimension d2

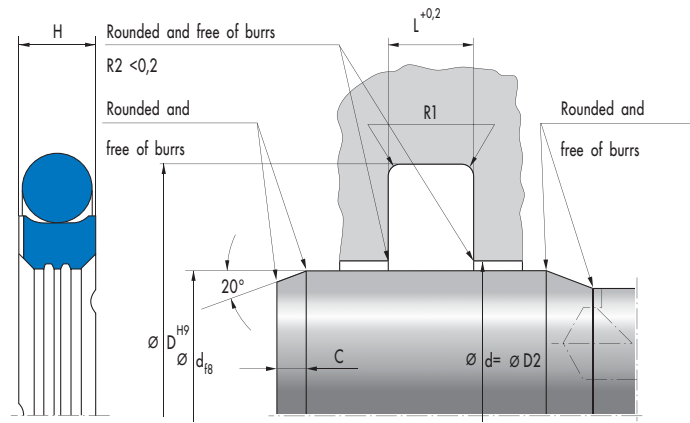
Nominal Ø d	Borehole	Shaft	Groove base
... 500	H9	f8	H9
>500	H8	f7	H8

Article list



d	D	R ₁	L	C	Profile	Material	Article No.	
20	27,5	0,5	3,2	3	3,75	PTFE GM201	24336291	●
25	32,5	0,5	3,2	3	3,75	PTFE GM201	24342634	○
28	35,5	0,5	3,2	3	3,75	PTFE GM201	24342635	○
30	37,5	0,5	3,2	3	3,75	PTFE GM201	24332459	○
30	41	0,5	4,2	3	5,5	PTFE GM201	24260303	○
30	41	0,5	4,2	3	5,5	PTFE GM201	24263153	○
32	39,5	0,5	3,2	3	3,75	PTFE GM201	24342636	○
35	46	0,5	4,2	3	5,5	PTFE GM201	24288862	○
36	47	0,8	4,2	3	5,5	PTFE GM201	24261511	○
40	51	0,8	4,2	3	5,5	PTFE GM201	24260912	○
40	55,5	0,8	6,3	5	7,75	PTFE GM201	24263148	○
45	56	0,8	4,2	3	5,5	PTFE GM201	24342638	●
50	61	0,8	4,2	3	5,5	PTFE GM201	24244043	●
50	61	0,8	4,2	3	5,5	PTFE GM201	24260913	○
50	65,5	0,8	6,3	5	7,75	PTFE GM201	24332753	○
55	66	0,8	4,2	4	5,5	PTFE GM201	24339230	○
56	67	0,8	4,2	4	5,5	PTFE GM201	24342640	○
60	71	0,8	4,2	4	5,5	PTFE GM201	24344647	○
63	74	0,8	4,2	4	5,5	PTFE GM201	24342641	○
65	76	0,8	4,2	4	5,5	PTFE GM201	24379352	○
65	80,5	0,8	6,3	5	7,75	PTFE GM201	24262462	○
70	81	0,8	4,2	4	5,5	PTFE GM201	24261512	●
75	86	0,8	4,2	4	5,5	PTFE GM201	24274587	○
75	90,5	0,8	6,3	6	7,75	PTFE GM201	24379083	○
80	91	0,8	4,2	6	5,5	PTFE GM201	24269431	●
80	95,5	0,8	6,3	6	7,75	PTFE GM201	24268439	○
80	95,5	0,8	6,3	6	7,75	PTFE GM201	24379084	○
85	100,5	0,8	6,3	6	7,75	PTFE GM201	24374977	○
90	101	0,8	4,2	4	5,5	PTFE GM201	24295714	○
90	105,5	0,8	6,3	6	7,75	PTFE GM201	24269461	●
100	111	0,8	4,2	4	5,5	PTFE GM201	24334450	●
100	115,5	0,8	6,3	6	7,75	PTFE GM201	24372600	○
100	115,5	0,8	6,3	6	7,75	PTFE GM201	24379085	○
110	121	0,8	4,2	4	5,5	PTFE GM201	24342642	○
110	125,5	0,8	6,3	6	7,75	PTFE GM201	24269828	○
115	126	0,8	4,2	4	5,5	PTFE GM201	24275310	○

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



d	D	R ₁	L	C	Profile	Material	Article No.	
120	131	0,8	4,2	4	5,5	PTFE GM201	24244324	●
125	136	0,8	4,2	4	5,5	PTFE GM201	24342643	○
125	140,5	0,8	6,3	6	7,75	PTFE GM201	24264533	○
140	151	0,8	4,2	4	5,5	PTFE GM201	24342644	○
140	155,5	0,8	6,3	6	7,75	PTFE GM201	24275177	○
150	161	0,8	4,2	4	5,5	PTFE GM201	24342645	○
150	165,5	0,8	6,3	6	7,75	PTFE GM201	24275214	○
160	171	0,8	4,2	4	5,5	PTFE GM201	24332460	○
160	175,5	0,8	6,3	6	7,75	PTFE GM201	24345425	○
180	191	0,8	4,2	4	5,5	PTFE GM201	24265195	○
180	191	0,8	4,2	4	5,5	PTFE GM201	24360171	○
180	195,5	0,8	6,3	6	7,75	PTFE GM201	24258164	○
190	201	0,8	4,2	4	5,5	PTFE GM201	531984	○
200	215,5	1,2	6,3	6	7,75	PTFE GM201	24342646	○
220	235,5	1,2	6,3	6	7,75	PTFE GM201	24342647	○
240	255,5	1,2	6,3	6	7,75	PTFE GM201	24300256	○
250	265,5	1,2	6,3	6	7,75	PTFE GM201	24258166	○
280	301	1,2	8,1	7	10,5	PTFE GM201	24361776	○
280	301	1,2	8,1	7	10,5	PTFE GM201	24362271	○
285	306	2	8,1	7,5	10,5	PTFE GM201	24360172	○
305	326	2	8,1	7,5	10,5	PTFE GM201	24360876	○
320	344,5	2	8,1	8	12,25	PTFE GM201	24348407	○
335	356	2	8,1	7,5	10,5	PTFE GM201	24269406	○
350	374,5	2	8,1	8	12,25	PTFE GM201	24352373	○
360	384,5	2	8,1	8	12,25	PTFE GM201	49006745	○
375	396	2	8,1	7,5	10,5	PTFE GM201	533623	○
380	401	2	8,1	7,5	10,5	PTFE GM201	49011805	○
380	404,5	2	8,1	7,5	12,25	PTFE GM201	24377578	○
400	424,5	2	8,1	8	12,25	PTFE GM201	24257070	○
460	484,5	2	8,1	8	12,25	PTFE GM201	24373000	○
475	499,5	2	8,1	8	12,25	PTFE GM201	24296663	○
530	551	2	8,1	7,5	10,5	PTFE GM201	24349316	○
680	708	2	9,5	11	14	PTFE GM201	24261907	○
1000	1028	2	9,5	11	14	PTFE GM201	24377339	○

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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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