

# Merkel Rotomatic M 16

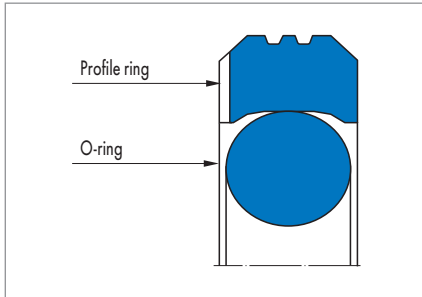


Fig. 1 Merkel Rotomatic M 16

## Product description

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

## Product advantages

Double-acting piston seal for pivoting motions in hydraulic systems; for standardised housing according to ISO 7425/1; 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 <sub>2</sub> compound	PTFE GM201

### O-ring

Material	Code	Hardness
Nitrile rubber	80 NBR B241	70 Shore A
Fluoro rubber	80 FKM K670	70 Shore A

## Operating conditions

Material	PTFE GM201	PTFE GM201
	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 <sub>a</sub>	R <sub>max</sub>
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<sub>1</sub> >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.

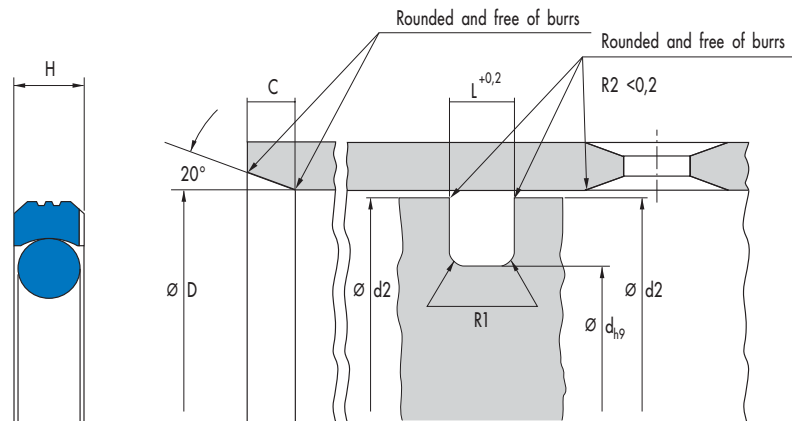
## Design notes

Please observe our general design notes in → Technical Manual.

## Tolerance recommendation

Nominal Ø d	Borehole	Shaft	Groove base
... 500	h9	H8	h9
>500	h8	H7	h8

Article list



d	D	R <sub>1</sub>	L	C	Profile	Material	Article No.	
35,1	40	0,2	2,2	6	2,45	PTFE GM201 / NBR	24344591	○
35,1	40	0,2	2,2	6	2,45	PTFE GM201 / NBR	24344600	○
37,5	45	0,5	3,2	6	3,75	PTFE GM201 / NBR	24344592	○
37,5	45	0,5	3,2	6	3,75	PTFE GM201 / NBR	24344601	○
42,5	50	0,5	3,2	6	3,75	PTFE GM201 / NBR	24344593	○
42,5	50	0,5	3,2	6	3,75	PTFE GM201 / NBR	24344602	○
47,5	55	0,5	3,2	6	3,75	PTFE GM201 / NBR	24344594	○
47,5	55	0,5	3,2	6	3,75	PTFE GM201 / NBR	24344603	○
52,5	60	0,5	3,2	6	3,75	PTFE GM201 / NBR	24344595	○
52,5	60	0,5	3,2	6	3,75	PTFE GM201 / NBR	24344604	○
54	65	0,8	4,2	8	5,5	PTFE GM201 / NBR	24351853	○
55,5	63	0,5	3,2	6	3,75	PTFE GM201 / NBR	24344596	○
55,5	63	0,5	3,2	6	3,75	PTFE GM201 / NBR	24344605	○
62,5	70	0,5	3,2	6	3,75	PTFE GM201 / NBR	24344597	○
62,5	70	0,5	3,2	6	3,75	PTFE GM201 / NBR	24344606	○
67,5	75	0,5	3,2	6	3,75	PTFE GM201 / NBR	24378533	○
69	80	0,8	4,2	8	5,5	PTFE GM201 / NBR	24275277	○
69	80	0,8	4,2	8	5,5	PTFE GM201 / NBR	24344607	○
79	90	0,8	4,2	8	5,5	PTFE GM201 / NBR	24344598	○
79	90	0,8	4,2	8	5,5	PTFE GM201 / NBR	24344608	○
84	95	0,8	4,2	8	5,5	PTFE GM201 / FKM	24376140	○
87	98	0,8	4,2	8	5,5	PTFE GM201 / FKM	24359814	○
89	100	0,8	4,2	8	5,5	PTFE GM201 / FKM	24344628	○
89	100	0,8	4,2	8	5,5	PTFE GM201 / FKM	24344633	○
94	105	0,8	4,2	8	5,5	PTFE GM201 / FKM	24360325	○
94	105	0,8	4,2	8	5,5	PTFE GM201 / FKM	24362662	○
99	110	0,8	4,2	8	5,5	PTFE GM201 / FKM	24344625	○
99	110	0,8	4,2	8	5,5	PTFE GM201 / FKM	24344629	○
114	125	0,8	4,2	8	5,5	PTFE GM201 / FKM	24261557	○
114	125	0,8	4,2	8	5,5	PTFE GM201 / FKM	24344630	○
124,5	140	1,2	6,3	10	7,75	PTFE GM201 / FKM	24265781	○
129,5	145	1,2	6,3	10	7,75	PTFE GM201 / FKM	24295612	○
134,5	150	1,2	6,3	10	7,75	PTFE GM201 / FKM	24344626	○
134,5	150	1,2	6,3	10	7,75	PTFE GM201 / NBR	24344655	○
144,5	160	1,2	6,3	10	7,75	PTFE GM201 / NBR	24344627	○

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

d	D	R <sub>1</sub>	L	C	Profile	Material	Article No.	
144,5	160	1,2	6,3	10	7,75	PTFE GM201 / NBR	24344632	○
154,5	170	1,2	6,3	10	7,75	PTFE GM201 / FKM	24362008	○
164,5	180	1,2	6,3	10	7,75	PTFE GM201 / FKM	24344599	○
164,5	180	1,2	6,3	10	7,75	PTFE GM201 / FKM	24344609	○
165	149,5	1,2	6,3	10	7,75	PTFE GM201 / FKM	24380085	○
184,5	200	1,2	6,3	10	7,75	PTFE GM201 / NBR	24333651	○
184,5	200	1,2	6,3	10	7,75	PTFE GM201 / FKM	24344610	○
204,5	220	1,2	6,3	10	7,75	PTFE GM201 / NBR	24330686	○
204,5	220	1,2	6,3	10	7,75	PTFE GM201 / NBR	24344611	○
224,5	240	1,2	6,3	10	7,75	PTFE GM201 / FKM	24331499	○
234,5	250	1,2	6,3	10	7,75	PTFE GM201 / NBR	24331860	○
234,5	250	1,2	6,3	10	7,75	PTFE GM201 / NBR	24344612	○
254,5	270	1,2	6,3	10	7,75	PTFE GM201 / FKM	24350021	○
264,5	280	1,2	6,3	10	7,75	PTFE GM201 / NBR	24377949	○
284,5	300	1,2	6,3	10	7,75	PTFE GM201 / NBR	24369438	○
289	310	1,2	8,1	10	10,5	PTFE GM201 / NBR	24341182	○
299	320	1,2	8,1	10	10,5	PTFE GM201 / FKM	49004641	○
314,5	330	1,2	6,3	10	7,75	PTFE GM201 / NBR	24331955	○
335,5	360	1,2	8,1	10	12,25	PTFE GM201 / NBR	24366844	○
339	360	1,2	8,1	10	10,5	PTFE GM201 / NBR	531983	○
364	385	2	8,1	10	10,5	PTFE GM201 / NBR	24334111	○
375,5	400	2	8,1	12	12,25	PTFE GM201 / NBR	24363097	○
475,5	500	2	8,1	12	12,25	PTFE GM201 / NBR	24363098	○
605,5	630	2	8,1	12	12,25	PTFE GM201 / NBR	24363099	○
652	680	2	9,5	13	14	PTFE GM201 / FKM	24357188	○
682	710	2	9,5	13	14	PTFE GM201 / NBR	24374718	○
752	780	2	9,5	13	14	PTFE GM201 / FKM	24361922	○
772	800	2	9,5	13	14	PTFE GM201 / FKM	24374719	○
792	820	2	9,5	13	14	PTFE GM201 / FKM	24356201	○
872	900	2	9,5	13	14	PTFE GM201 / FKM	24345423	○

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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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