

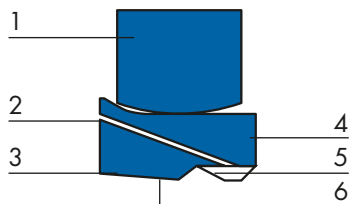


Merkel Omegat OMS-S PR
Primary Rod Seal for Heavy-Duty
Sealing Systems

simrit®

Higher Reliability and Resistance because of Targeted Pressure Relief

The Merkel Omegat OMS-S PR is a two part set of seals consisting of a PTFE profile ring and an elastomer ring acting as a pre-tensioning element. It is used as a primary seal within a sealing system.



- 1 Pre-tensioning element
- 2 Pressure-relief bore
- 3 Anti-extrusion radius
- 4 Profile ring
- 5 Effective support of sealing edge
- 6 Wedge-shaped profile

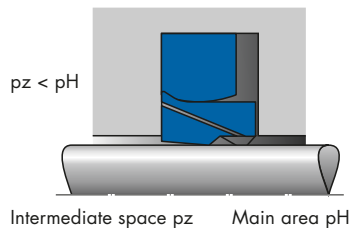
Materials available

PTFE-profile ring:
PTFE bronze compound PTFE B602 or
PTFE glass MoS2 compound
PTFE GM201

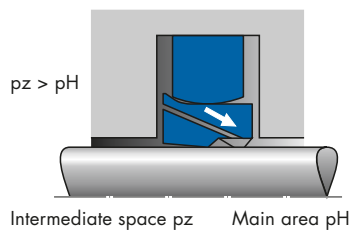
Profile ring made of elastomer:
Nitrile rubber NBR hardness:
70 Shore A H80

The Merkel Omegat OMS-S PR has a defined pressure-relief function. As soon as the pressure in the intermediate space p_z becomes greater than the pressure in the main area p_H (caused e.g. by disadvantageous speed conditions when moving in and out), the seal is reliably relieved of pressure. The sealing function of the Merkel Omegat OMS-S PR corresponds to that of our tried and tested Merkel Omegat seals.

Position in Design Space - Operation



Position in Design Space During Pressure Relief



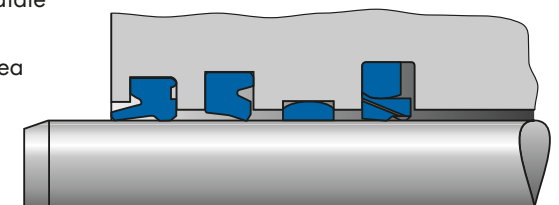
p_z = pressure in intermediate space
 p_H = pressure in main area

With Merkel Omegat OMS-S PR from Simrit you will benefit from a wide range of advantages

- no permanent pressure build-up in intermediate space
- stable long-term behaviour
- low friction, free of stick-slip
- good gap bridging
- high dimensional stability
- high security against twist
- high reliability
- patented product design (patent no.: DE 10117662 Cl)

The primary rod seal Merkel Omegat OMS-S PR from Simrit stands for reliable sealing solutions in:

- injection moulding machines
- rolling systems
- hydraulic steelwork
- presses
- heavy earth-moving machinery
- large cylinders



Optimum Physical Characteristics for Stable Long Term Behavior

Limits of Use

Medium/Temperature	PTFE B602/NBR (PTFE bronze/NBR)	PTFE GM201 (PTFE glass MoS2/NBR)
Hydraulic oils	-30 to +100°C	-30 to +100°C
HFA, HFB liquids	-	+5 to +60°C
HFC liquids	-	-30 to +60°C
HFD liquids	-	-
Water	-	+5 to +100°C
HETG (rape seed oil)	-30 to +80°C	-30 to +80°C
HEES (synth. ester)	-30 to +80°C	-30 to +80°C
HEPG (glycol)	-30 to +60°C	-30 to +60°C
Mineral greases	-30 to +100°C	-30 to +100°C
Pressure (MPa)	40	40
Running speed (m/s)	5	5

Surface Quality

Peak-to-valley heights	R _{max}	R _a
Running surface	2.5 µm	0.05 to 0.3 µm
Bottom of groove	< 6.3 µm	< 1.6 µm
Sides of grooves	< 15.0 µm	< 3.0 µm

Percentage contact area Mr >50% to max. 90%
with cutting depth c = Rz/2
and reference line C ref = 0%

Gap Size

Profile size		Max. permissible gap size			
L	Profile	16 MPa	26 MPa	32 MPa	40 MPa
10.0	10.0	0.75	0.50	0.40	0.40
12.5	12.5	0.75	0.65	0.55	0.50
15.0	15.0	0.75	0.65	0.55	0.50
17.5	17.5	0.75	0.65	0.55	0.50
20.0	20.0	0.80	0.70	0.60	0.55

Functioning of the seal depends on the largest gap dimension occurring in operation on the non-pressurised side of the seal (s. Simrit catalogue section 4, 2.3.3 Gap widths and fits, page 4.18). The permissible value is determined by the pressure and also the profile width and profile height.

Tolerance Recommendation and Dimension D2

16 MPa			26 MPa			32 MPa			40 MPa		
Nominal Ød	d	D	Nominal Ød	d	D	Nominal Ød	d	D	Nominal Ød	d	D
100 to 1150	f8	H8	100 to 1150	f8	H8	100 to 1150	f7	H8	100 to 1150	f7	H7

For the design of D2 it is necessary to take into account the permissible gap dimension, tolerances, guide play and deflection of the guide under load (s. Simrit catalogue section 4, 2.3.3 Gap widths and fits, page 4.18).

Design Information

Please take account of our general design information included in the Simrit catalogue Section Merkel Hydraulic Components – Technical fundamentals from page 4.0.

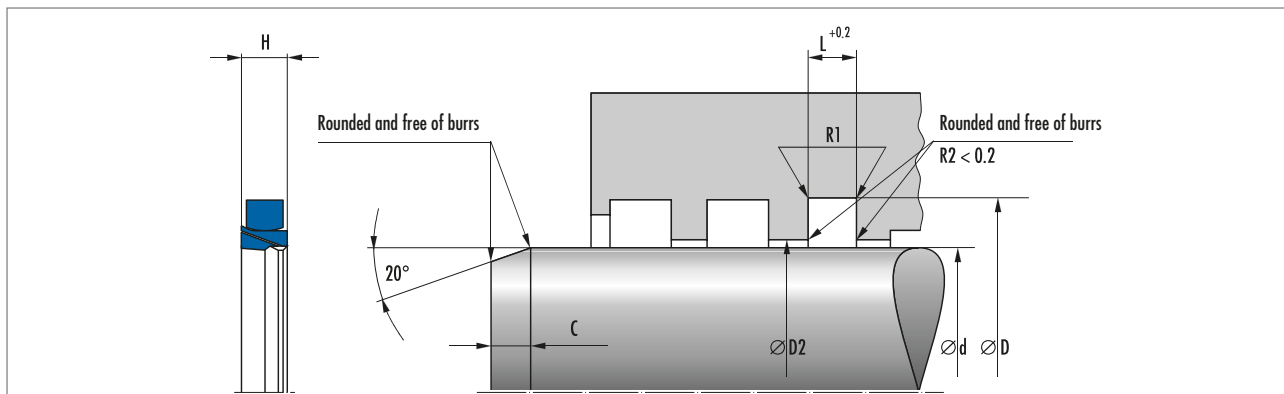
Assembly

It is a precondition for the perfect functioning of the seal that it has been carefully assembled (see Simrit catalogue, Section 4, 3. Installation of Hydraulic Seals, page 4.25).

Omegat OMS-S PR

Always the Right Decision

Article list



Dimensions								
d	D	H	L	Profile	C	R1	Material	Article no.
80	100	9.4	10.0	10.0	7.5	0.4	PTFE GM201	49016726
100	120	9.4	10.0	10.0	7.5	0.4	PTFE B602	531594
120	140	9.4	10.0	10.0	7.5	0.4	PTFE B602	49001459
125	145	9.4	10.0	10.0	7.5	0.4	PTFE GM201	49013193
140	160	9.4	10.0	10.0	7.5	0.4	PTFE B602	532876
150	170	9.4	10.0	10.0	7.5	0.4	PTFE B602	529349
153	173	9.4	10.0	10.0	7.5	0.4	PTFE B602	49018309
160	180	9.4	10.0	10.0	7.5	0.4	PTFE B602	24376115
180	200	9.4	10.0	10.0	7.5	0.4	PTFE B602	24376116
180	200	9.4	10.0	10.0	7.5	0.4	PTFE GM201	532693
190	210	9.4	10.0	10.0	7.5	0.4	PTFE GM201	49003726
200	220	9.4	10.0	10.0	7.5	0.4	PTFE GM201	49013967
200	220	9.4	10.0	10.0	7.5	0.4	PTFE B602	531597
240	265	11.7	12.5	12.5	10.0	0.4	PTFE GM201	533361
250	275	11.7	12.5	12.5	10.0	0.4	PTFE GM201	49004521
260	285	11.7	12.5	12.5	10.0	0.4	PTFE GM201	49016727
280	305	11.7	12.5	12.5	10.0	0.4	PTFE GM201	49017440
290	315	11.7	12.5	12.5	10.0	0.4	PTFE B602	24379493
300	325	11.7	12.5	12.5	10.0	0.4	PTFE B602	49018104
320	350	14.0	15.0	15.0	12.0	0.8	PTFE GM201	49003542
340	370	14.0	15.0	15.0	12.0	0.8	PTFE GM201	530525
360	390	14.0	15.0	15.0	12.0	0.8	PTFE B602	24379489
400	430	14.0	15.0	15.0	12.0	0.8	PTFE GM201	49017441
420	450	14.0	15.0	15.0	12.0	0.8	PTFE GM201	49010869
450	480	14.0	15.0	15.0	12.0	0.8	PTFE GM201	49017442
500	530	14.0	15.0	15.0	12.0	0.8	PTFE GM201	49008121
570	605	16.4	17.5	17.5	12.0	1.2	PTFE GM201	49017443
580	615	16.4	17.5	17.5	12.0	1.2	PTFE GM201	49015661
620	655	16.4	17.5	17.5	12.0	1.2	PTFE GM201	49014784
630	665	16.4	17.5	17.5	12.0	1.2	PTFE GM201	49017444
710	750	18.7	20.0	20.0	12.0	1.2	PTFE GM201	49017446
720	760	18.7	20.0	20.0	12.0	1.2	PTFE GM201	49004522
730	770	18.7	20.0	20.0	12.0	1.2	PTFE GM201	49015650
790	830	18.7	20.0	20.0	12.0	1.2	PTFE GM201	49015649
830	870	18.7	20.0	20.0	12.0	1.2	PTFE GM201	49003543
900	940	18.7	20.0	20.0	12.0	1.2	PTFE GM201	49006257
920	960	18.7	20.0	20.0	12.0	1.2	PTFE GM201	49011973
1000	1040	18.7	20.0	20.0	12.0	1.2	PTFE GM201	49017447
1250	1290	18.7	20.0	20.0	12.0	1.2	PTFE GM201	49010934

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- ▶ Constant innovations
- ▶ Uniquely wide range of products
- ▶ Strong product brands
- ▶ Unique materials expertise
- ▶ A wide range of value added services

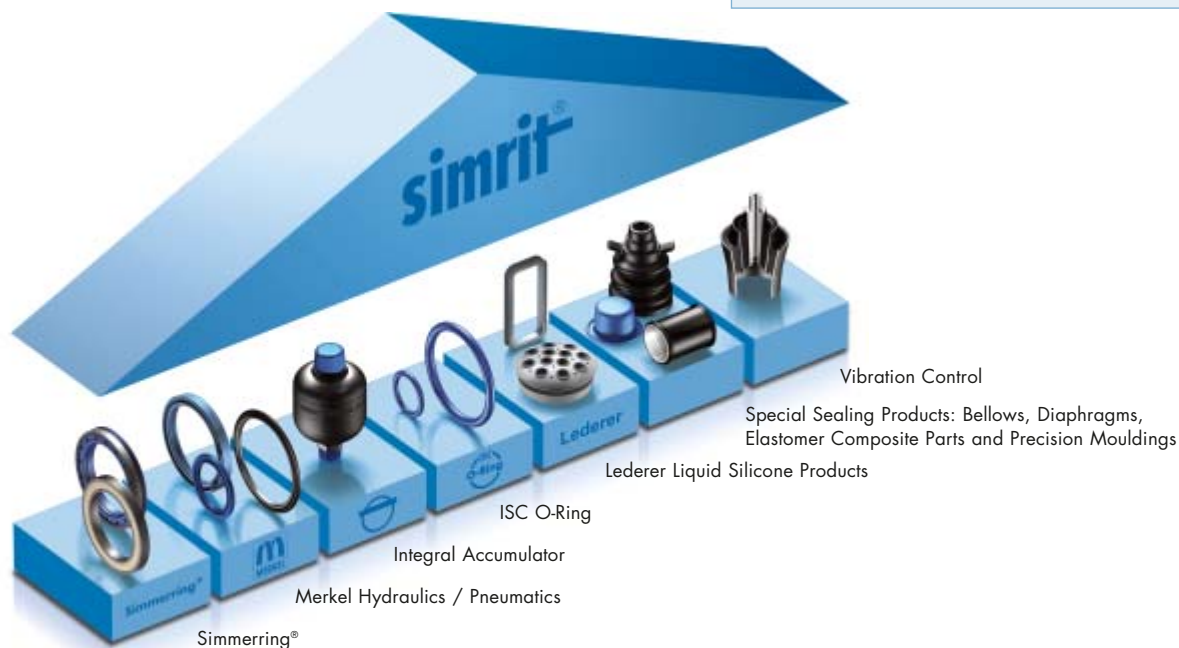
Your Benefits

- ▶ Technological edge
- ▶ All from one source
- ▶ Specialised technological expertise
- ▶ Longer unit service life
- ▶ Competitive advantages, efficiency and lower costs

e. g. Primary rod seal Merkel Omegat OMS-S PR

Your Benefits

- ▶ Stable long-term behaviour
- ▶ High dimensional stability
- ▶ High operational reliability



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