

RELY ON EXCELLENCE

eMG

Mechanical seals | Mechanical seals for pumps | Elastomer bellows seals



Features

- For plain shafts
- Single and dual seal
- Elastomer bellows rotating
- Unbalanced
- Independent of direction of rotation

Advantages

- **Identical with eMG1 but with approx. 20 % shorter installation length**
- Small outer diameter of bellows support (d_{bmin}) enables direct retaining ring support, or smaller spacer rings
- Optimal alignment characteristic through self-cleaning of disk/shaft
- Improved centering across entire pressure operating range
- No torsion on bellows
- Shaft protection over entire seal length
- Protection of seal face during installation due to special bellows design
- Insensitive to shaft deflections due to large axial movement ability
- Dimension adaptations and additional seats available

Operating range

Shaft diameter:

$d_1 = 15 \dots 110 \text{ mm} (0.59 \dots 4.33\text{'})$

Pressure: $p_1 = 18 \text{ bar} (261 \text{ PSI})$,

vacuum ... $0.5 \text{ bar} (7.25 \text{ PSI})$,

up to $1 \text{ bar} (14.5 \text{ PSI})$ with seat locking

Temperature:

$t = -20 \text{ °C} \dots +140 \text{ °C}$

Materials

Seal face: Carbon graphite antimony impregnated (A), Carbon graphite resin impregnated (B), Silicon carbide (eSiC-Q7, Q1)

Seat: Silicon carbide (eSiC-Q7, Q1), Tungsten carbide (U3)

Elastomer: NBR (P), EPDM (E), FKM (V), HNBR (X4)

Metal parts: CrNiMo steel (G), Hastelloy® (M)

Further materials upon request.

Standards and approvals

Various material approvals available (depending on type and material combinations).

Please inquire!

- FDA
- WRAS
- UBA (KTW)
- ACS
- W270

Notes

The eMG can also be used as a multiple seal in tandem or in a back-to-back arrangement, please inquire. Dimension adaptations for specific conditions, e.g. shaft in inches or special seat dimensions are available upon request.

Recommended applications

- Fresh water supply
- Building services engineering
- Waste water technology
- Food technology
- Sugar production
- Pulp and paper industry

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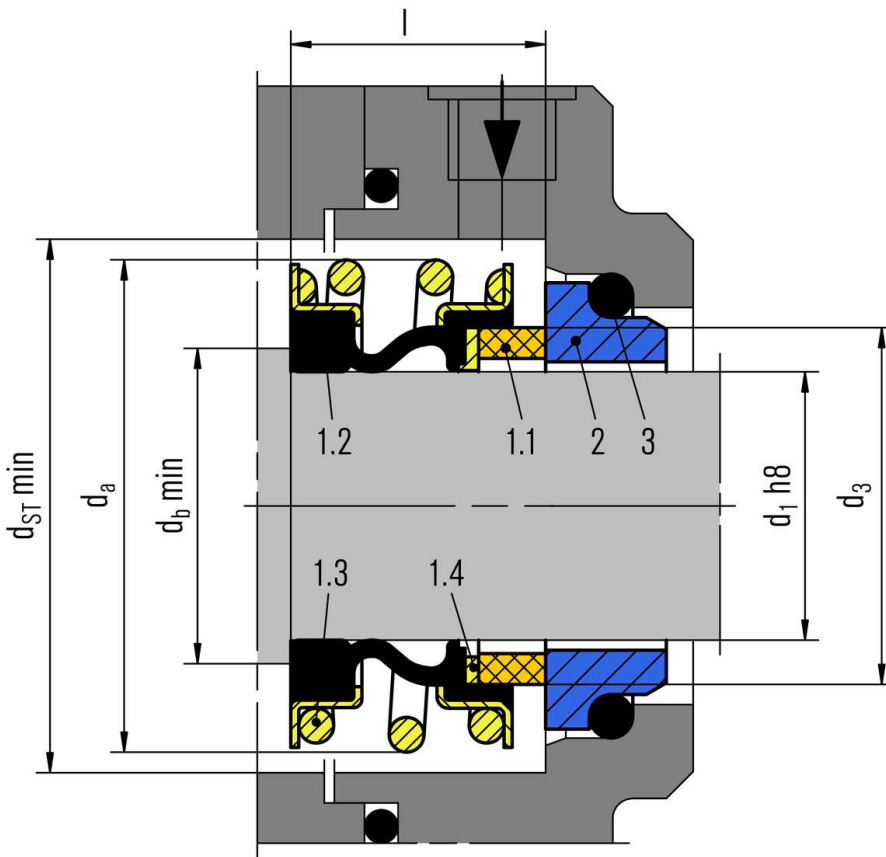
(-4 °F ... +284 °F)
 Sliding velocity: $v_g = 10 \text{ m/s}$ (33 ft/s)
 Admissible axial movement: $\pm 2.0 \text{ mm}$
 ($\pm 0.08''$)

- Oil industry
- Petrochemical industry
- Chemical industry
- Water, waste water, slurries
(up to 5 % by weight)
- Pulp (up to 4 % otro)
- Latex
- Dairies, beverages
- Sulfide slurries
- Chemicals
- Oils
- Chemical standard pumps
- Helical screw pumps
- Stock pumps
- Circulating pumps
- Submersible pumps
- Water and waste water pumps

eMG

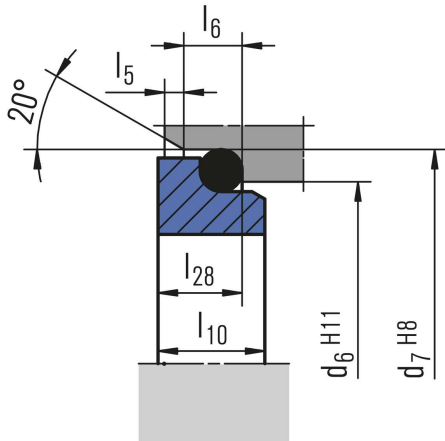
Item Description

- | | |
|-----|----------------------|
| 1.1 | Seal face |
| 1.2 | Bellows |
| 1.3 | Set of springs |
| 1.4 | PEEK-PTFE disk |
| 2 | Seat (G6) |
| 3 | O-Ring or cup rubber |

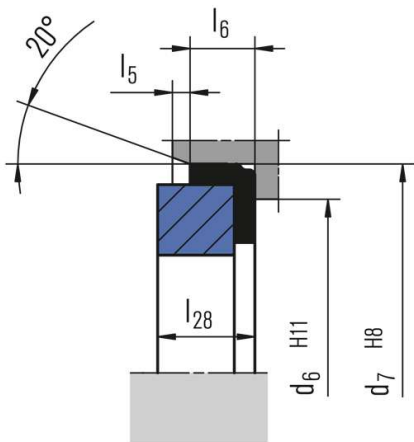


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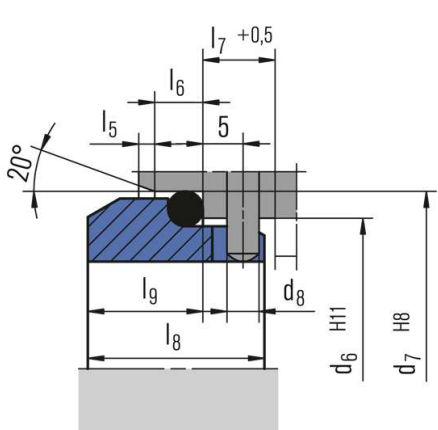
Seat alternatives



G6
EN 12756

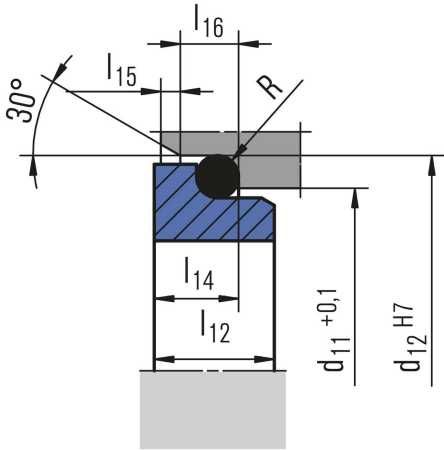


G60
EN 12756

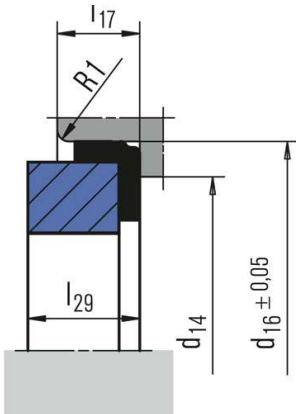


G9
EN 12756

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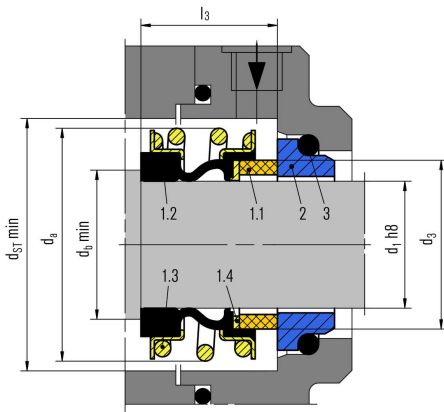
G4



G50
Euro standard

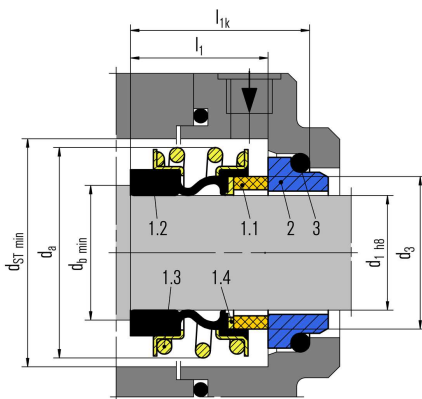
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Product variants



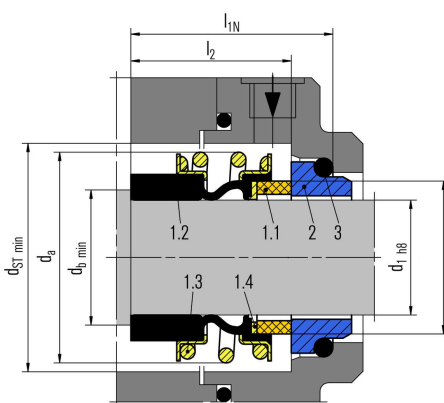
eMG1

Dimensions, items and designations same as for eMG, but with an extended bellows tail to achieve the fitting length l_3 .



eMG12

Dimensions, items and designations same as for eMG, but with a shortened bellows tail to achieve the fitting length l_{1k} according to EN 12756 in combination with seat G6 or G60 (d_a exceeds EN 12756).



eMG13

Dimensions, items and designations same as for eMG, but with an extended bellows tail to achieve the fitting length l_{1N} according to EN 12756 in combination with seat G6 or G60 (d_a exceeds EN 12756).

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eRMG

Identical to eMG, but with a special bellows surface on the shaft side. For use in hot water pumps.

d1 = 12 ... 38 mm (0.47" ... 1.50")

Seat G6: Silicon carbide (eSiC-Q7)

A/eSiC-Q7:

120 °C (248 °F) and 25 bar (363 PSI) 140

°C (284 °F) and 16 bar (232 PSI)

B/eSiC-Q7:

120 °C (248 °F) and 18 bar (161 PSI)

eSiC-Q7/eSiC-Q7:

120 °C (248 °F) and 18 bar (161 PSI)

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Dimensions

d ₁	d ₃	d ₆	d ₇	d ₈	d ₁₁	d ₁₂	d ₁₄	d ₁₆	d _a	d _{b*)}	d _{ST}	l	l ₁	l _{1K}	l _{1N}	l ₂	l ₃	l ₅	l ₆	l ₇	l ₈	l ₉	l ₁₀	l ₁₂	l ₁₄	l ₁₅	l ₁₆	l ₁₇	l ₂₈	l ₂₉	R	
15	20.8	-	-	-	20.5	24.6	17.0	30.95	28.5	18.5	30	15.0	-	-	-	-	17.0	-	-	-	-	-	-	7.5	6.6	1.2	3.8	9.0	-	10.5	1.2	
16	21.0	23	27	3	22.0	28.0	17.0	30.95	28.5	19.5	30	15.0	28.4	35.0	40	33.4	17.0	1.5	4	8.5	17.5	10.0	7.5	8.5	7.5	1.5	5.0	9.0	6.6	10.5	1.5	
18	23.7	27	33	3	24.0	30.0	20.0	34.15	32.0	21.5	33	17.0	30.0	37.5	-	-	19.5	2.0	5	9	19.5	11.5	8.5	9.0	8.0	1.5	5.0	9.0	7.5	10.5	1.5	
20	26.7	29	35	3	29.5	35.0	21.5	35.70	37.0	24.0	38	19.0	30.0	37.5	-	-	21.5	2.0	5	9	19.5	11.5	8.5	8.5	7.5	1.5	5.0	9.0	7.5	10.5	1.5	
22	27.7	31	37	3	29.5	35.0	23.0	37.30	37.0	26.0	38	19.0	30.0	37.5	-	-	21.5	2.0	5	9	19.5	11.5	8.5	8.5	7.5	1.5	5.0	9.0	7.5	10.5	1.5	
24	31.2	33	39	3	32.0	38.0	26.5	40.50	42.5	28.0	44	19.0	32.5	40.0	-	-	22.5	2.0	5	9	19.5	11.5	8.5	8.5	7.5	1.5	5.0	9.0	7.5	10.5	1.5	
25	31.2	34	40	3	32.0	38.0	26.5	40.50	42.5	29.0	44	19.0	32.5	40.0	-	-	23.0	2.0	5	9	19.5	11.5	8.5	8.5	7.5	1.5	5.0	9.0	7.5	10.5	1.5	
28	35.0	37	43	3	36.0	42.0	29.5	47.65	49.0	32.0	50	23.0	35.0	42.5	50	42.5	26.5	2.0	5	9	19.5	11.5	8.5	10.0	9.0	1.5	5.0	10.5	7.5	12.0	1.5	
30	37.0	39	45	3	39.2	45.0	32.5	50.80	49.0	34.0	50	23.0	35.0	42.5	-	-	26.5	2.0	5	9	19.5	11.5	8.5	11.5	10.5	1.5	5.0	10.5	7.5	12.0	1.5	
32	40.2	42	48	3	42.2	48.0	32.5	50.80	53.5	36.0	55	23.5	35.0	42.5	-	-	27.5	2.0	5	9	19.5	11.5	8.5	11.5	10.5	1.5	5.0	10.5	7.5	12.0	1.5	
33	40.2	42	48	3	44.2	50.0	36.5	54.00	53.5	37.0	55	23.5	35.0	42.5	-	-	27.5	2.0	5	9	19.5	11.5	8.5	12.0	11.0	1.5	5.0	10.5	7.5	12.0	1.5	
35	43.2	44	50	3	46.2	52.0	36.5	54.00	57.0	40.0	59	24.5	35.0	42.5	-	-	28.5	2.0	5	9	19.5	11.5	8.5	12.0	11.0	1.5	5.0	10.5	7.5	12.0	1.5	
38	46.2	49	56	4	49.2	55.0	39.5	57.15	59.0	43.0	61	25.0	36.0	45.0	55	46.0	30.0	2.0	6	9	22.0	14.0	10.0	11.3	10.3	1.5	5.0	10.5	9.0	12.0	1.5	
40	48.8	51	58	4	52.2	58.0	42.5	60.35	62.0	45.0	64	25.5	36.0	45.0	-	-	30.0	2.0	6	9	22.0	14.0	10.0	11.8	10.8	1.5	5.0	10.5	9.0	12.0	1.5	
43	51.8	54	61	4	53.3	62.0	46.0	63.50	65.5	48.0	67	25.5	36.0	45.0	-	-	30.0	2.0	6	9	22.0	14.0	10.0	13.2	12.0	2.0	6.0	10.5	9.0	12.0	2.5	
45	53.8	56	63	4	55.3	64.0	46.0	63.50	68.0	50.0	70	25.5	36.0	45.0	-	-	30.0	2.0	6	9	22.0	14.0	10.0	12.8	11.6	2.0	6.0	10.5	9.0	12.0	2.5	
48	56.8	59	66	4	59.7	68.4	49.0	66.70	70.5	53.0	74	26.0	36.0	45.0	60	51.0	30.5	2.0	6	9	22.0	14.0	10.0	12.8	11.6	2.0	6.0	10.5	9.0	12.0	2.5	
50	58.8	62	70	4	60.8	69.3	52.0	69.85	74.0	55.0	77	26.0	38.0	-	-	-	30.5	2.5	6	9	23.0	15.0	10.5	12.8	11.6	2.0	6.0	12.0	9.5	13.5	2.5	
55	64.2	67	75	4	66.5	75.4	58.5	76.20	81.0	60.0	83	30.0	36.5	47.5	70	59.0	35.0	2.5	6	9	23.0	15.0	12.0	14.5	13.3	2.0	6.0	12.0	11.0	13.5	2.5	
58	67.2	70	78	4	69.5	78.4	61.5	79.40	85.5	64.0	88	31.0	-	-	-	-	37.0	2.5	6	9	23.0	15.0	12.0	14.5	13.3	2.0	6.0	12.0	11.0	13.5	2.5	
60	70.0	72	80	4	71.5	80.4	61.5	79.40	88.5	66.0	91	32.0	41.5	52.5	70	59.0	38.0	2.5	6	9	23.0	15.0	12.0	14.5	13.3	2.0	6.0	12.0	11.0	13.5	2.5	
65	75.0	77	85	4	76.5	85.4	68.0	92.10	93.5	71.0	96	34.0	41.5	52.5	-	-	40.0	2.5	6	9	23.0	15.0	12.0	14.2	13.0	2.0	6.0	14.5	11.0	16.0	2.5	
68	78.0	81	90	4	82.7	91.5	71.0	95.25	96.5	74.0	100	34.0	-	-	-	-	40.0	2.5	7	9	26.0	18.0	12.5	14.9	13.7	2.0	6.0	14.5	11.3	16.0	2.5	
70	80.0	83	92	4	83.0	92.0	71.0	95.25	99.5	76.0	103	34.0	48.7	60.0	-	-	40.0	2.5	7	9	26.0	18.0	12.5	14.2	13.0	2.0	6.0	14.5	11.3	16.0	2.5	
75	85.5	88	97	4	90.2	99.0	77.5	101.60	107.0	81.0	110	34.0	48.7	60.0	-	-	40.0	2.5	7	9	26.0	18.0	12.5	15.2	14.0	2.0	6.0	14.5	11.3	16.0	2.5	
80	90.5	95	105	4	95.2	104.0	84.0	114.30	112.0	86.0	116	34.0	-	-	-	-	40.0	3.0	7	9	26.2	18.2	13.0	16.2	15.0	2.0	6.0	18.5	12.0	20.0	2.5	
85	96.0	100	110	4	100.2	109.0	87.0	117.50	120.0	92.0	124	35.0	-	-	-	-	41.0	3.0	7	9	26.2	18.2	15.0	16.0	14.8	2.0	6.0	18.5	14.0	20.0	2.5	
90	102.0	105	115	4	105.2	114.0	93.5	123.85	127.0	97.0	131	38.0	-	-	-	-	45.0	3.0	7	9	26.2	18.2	15.0	16.0	14.8	2.0	6.0	18.5	14.0	20.0	2.5	
95	107.0	110	120	4	111.6	120.3	96.5	127.00	132.0	102.0	136	39.0	-	-	-	-	46.0	3.0	7	9	25.2	17.2	15.0	17.0	15.8	2.0	6.0	18.5	14.0	20.0	2.5	
100	112.0	115	125	4	114.5	123.3	103.0	133.35	137.0	107.0	140	40.0	-	-	-	-	47.0	3.0	7	9	25.2	17.2	15.0	17.0	15.8	2.0	6.0	18.5	14.0	20.0	2.5	
110	123.0	-	-	-	-	-	-	-	150.0	118.0	154	43.0	-	-	-	-	49.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Dimensions in millimeter

Fitting length/axial movement tolerances: d₁ 15 ... 18 mm ±1.0; d₁ 20 ... 26 mm ±1.5; d₁ 28 ... 110 mm ±2.0

* Minimum diameter of the mating collar

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