

RELY ON EXCELLENCE

## eMG1

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

- **100 % compatible with MG1**
- 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
- Suitable for low-end sterile applications
- Dimension adaptations and additional seats available

### Operating range

Shaft diameter:

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

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

$(-4 \text{ °F} \dots +284 \text{ °F})$

Sliding velocity:  $v_g = 10 \text{ m/s} (33 \text{ ft/s})$

Admissible axial movement:  $\pm 2.0 \text{ mm} (\pm 0.08")$

### 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 eMG1 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
- Oil industry
- Petrochemical industry

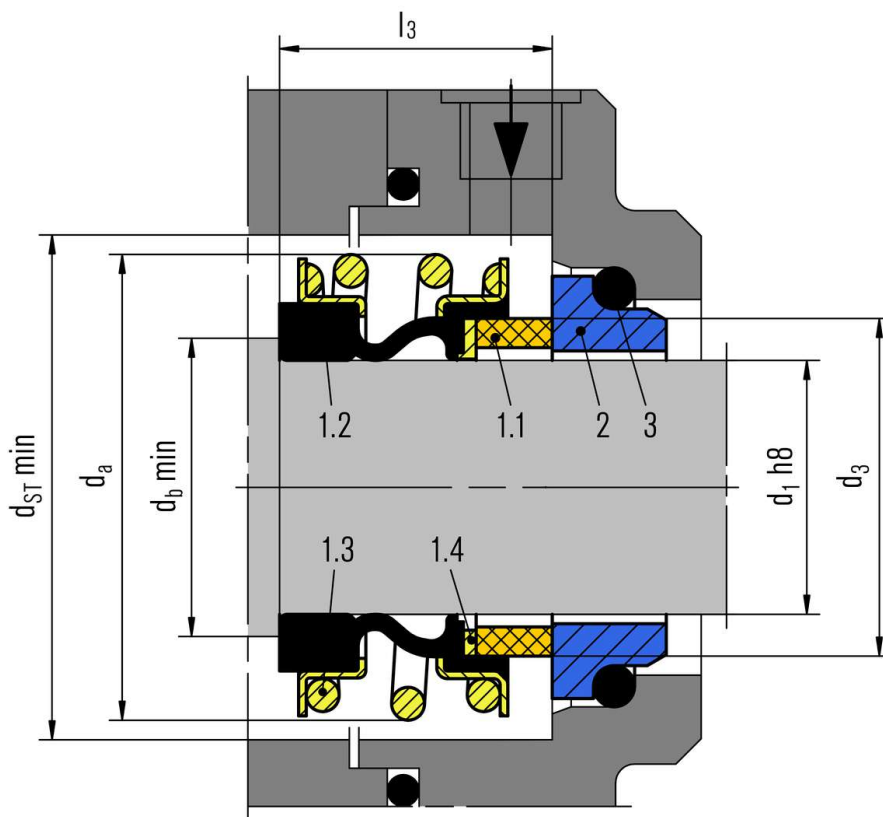
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- Chemical industry
- Water, waste water, slurries (solids up to 5 % by weight)
- Pulp (up to 4 % otro)
- Latex
- Dairies, beverages
- Sulfide slurries
- Chemicals
- Oils
- Chemical standard pumps
- Helical screw pumps
- Stock pumps
- Circulating pumps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

**eMG1**

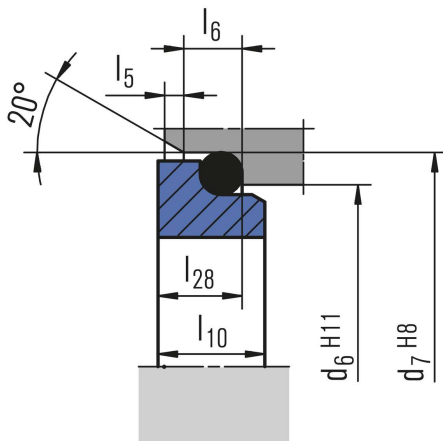
**Item Description**

- |     |                      |
|-----|----------------------|
| 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 |

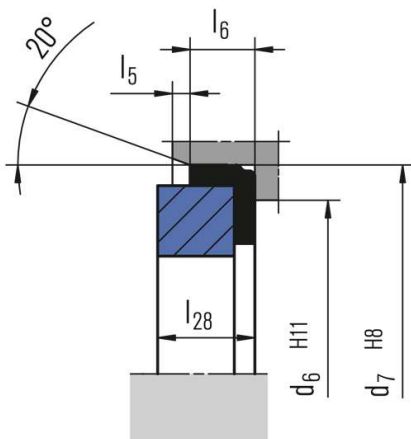


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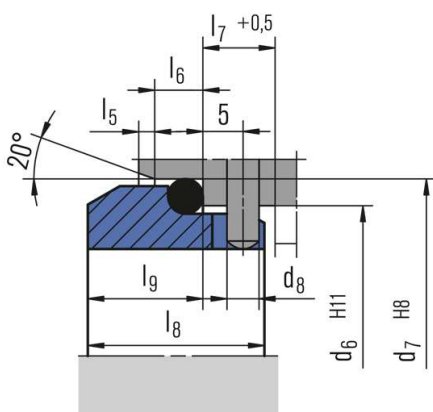
## Seat alternatives



**G6**  
EN 12756

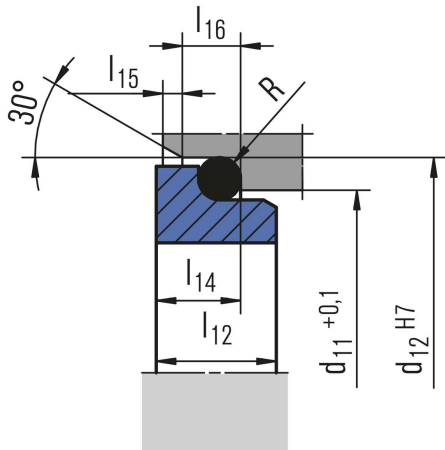


**G60**  
EN 12756

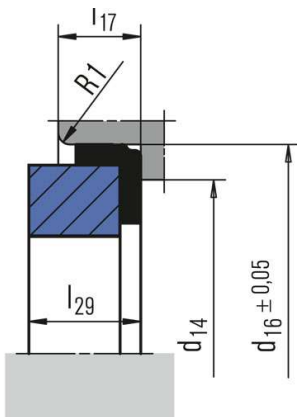


**G9**  
EN 12756

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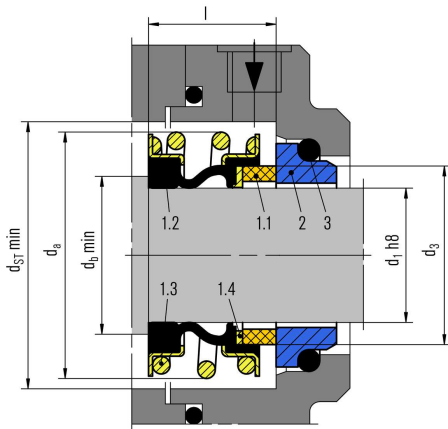
G4



G50  
Euro standard

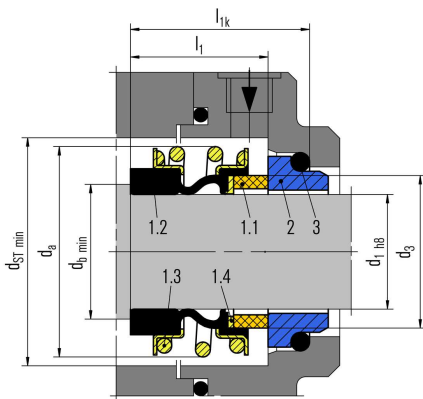
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## Product variants



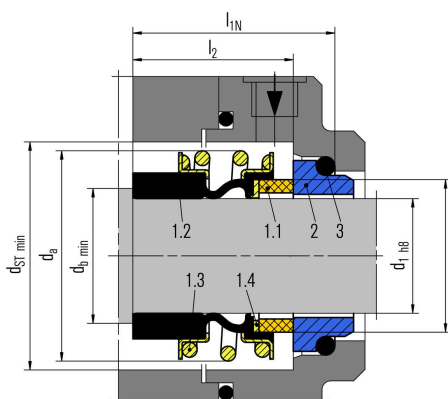
### eMG

Dimensions, items and designations same as for eMG1, but with an shortened bellows tail to achieve the fitting length  $l$ . Shortest fitting length.



### eMG12

Dimensions, items and designations same as for eMG1, but with an extended 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 eMG1, 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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### eRMG1

Identical to eMG1, 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)

## Dimensions

d1	d3	d6	d7	d8	d11	d12	d14	d18	da	db*)	dST	l	l1	l1K	l1N	l2	l3	l5	l6	l7	l8	l9	l10	l12	l14	l15	l16	l17	l28	l29	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	-	-	-	-	-	-	-	-	-	-	-	-	-	-

## RELY ON EXCELLENCE

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Dimensions in millimeter

Fitting length/axial movement tolerances:  $d_1 15 \dots 18 \text{ mm} \pm 1.0$ ;  $d_1 20 \dots 26 \text{ mm} \pm 1.5$ ;  $d_1 28 \dots 110 \text{ mm} \pm 2.0$

\* Minimum diameter of the mating collar