

RELY ON EXCELLENCE

## MG9

Mechanical seals | Mechanical seals for pumps | Elastomer bellows seals



### Features

- For plain shafts
- Single and dual seal
- Elastomer bellows rotating
- Balanced
- Independent of direction of rotation
- No torsion on bellows and spring
- Conical or cylindrical spring
- Metric and inch sizes available
- Special seat dimensions available
- US Patent No. 6.220.601

### Advantages

- Fits into any installation space due to smallest outer seal diameter
- Important material approvals available
- Individual installation length can be achieved
- High flexibility due to extended selection of materials
- Universal application (standardization)

### Operating range

Shaft diameter:

$d_1 = 10 \dots 100 \text{ mm (0.375" } \dots \text{ 4")}$

Pressure:  $p_1 = 12 \text{ bar (174 PSI)}$ ,

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

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

Temperature:

$t = -20 \text{ }^\circ\text{C } \dots \text{ } +140 \text{ }^\circ\text{C (-4 } \text{ }^\circ\text{F } \dots \text{ } +284 \text{ }^\circ\text{F)}$

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

Axial movement:  $\pm 0.5 \text{ mm}$

### Materials

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

Seat: Silicon carbide (Q1, Q2), Aluminium oxide (V)

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

Metal parts: CrNiMo steel (G)

### Standards and approvals

- EN 12756

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

Please inquire!

- FDA
- WRAS
- KTW
- ACS
- W270
- NSF

### Notes

A modular principle comprising a bellows unit for each shaft diameter and a correspondingly long spring (tapered or cylindrical spring) for individual length compensation regarding I1K, I1N and other installation lengths.

The MG9 can also be used as a multiple seal in tandem or in a back-to-back arrangement. Installation proposals can be supplied on request.

The entire MG9 series is available in metric and inch sizes.

### Recommended applications

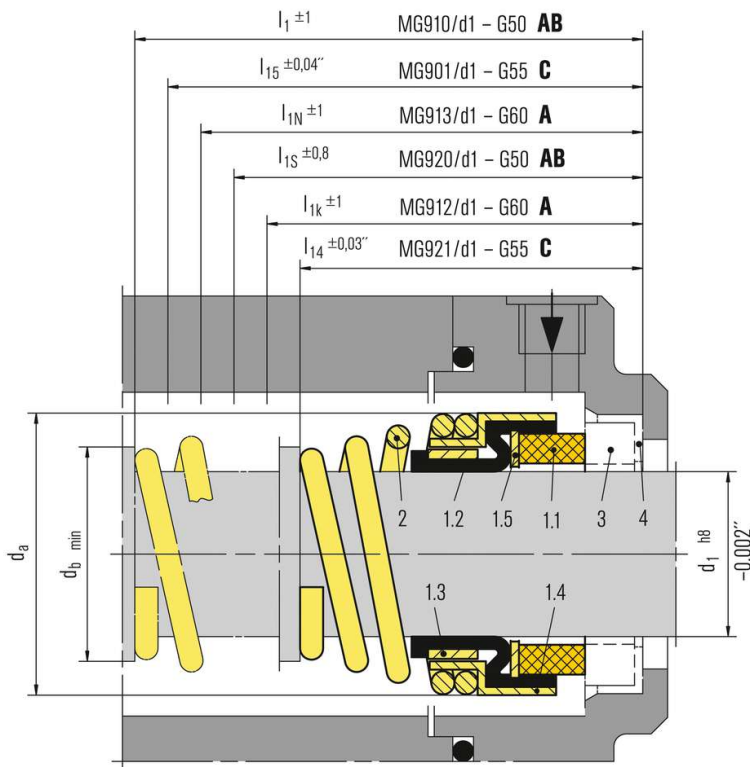
- Water and waste water technology
- Pulp and paper industry

All technical specifications are based on extensive tests and our many years of experience. The diversity of possible applications, however, means that they can serve only as guide values.

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- Chemical industry
- Cooling fluids
- Media with low solids content
- Pressure oils for bio diesel fuels
- Circulating pumps
- Submersible pumps
- Multi-stage pumps (non-drive side)
- Water and waste water pumps
- Oil applications



### Item Part no. to Description DIN 24250

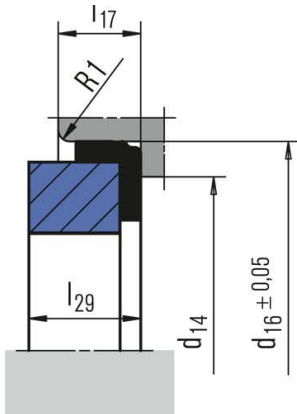
1.1	472	Seal face
1.2	481	Bellows
1.3	485	Driver collar
1.4	484.1	"L" ring (spring collar)
1.5	474	Washer
2	477	Spring
3	475	Seat
4	412	Rubber cup

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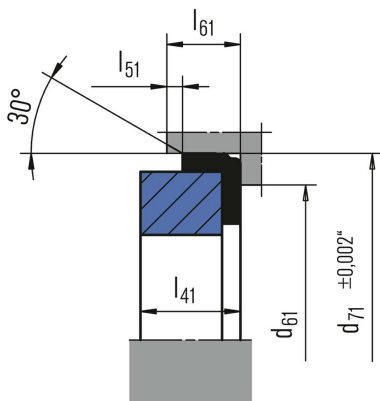
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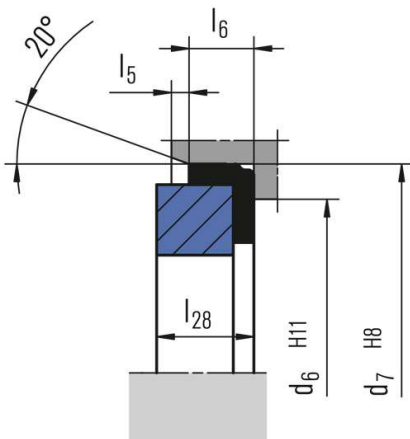
### Seat alternatives



**G50**  
Euro standard



**G55**  
US standard



**G60**  
EN 12756

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### Dimensions

EagleBurgmann*	Crane*	Sealol*	Dimensions	Table
MG910/d1-G50	1A	43 CE long	Inch/mm	B
	1A	43 CE long	mm	A
MG920/d1-G50	2	43 CE short	Inch/mm	B
	2	43 CE short	mm	A
MG901/d1-G55	1	43 CU long	Inch (USA only)	C
MG921/d1-G55	2	43 CU short	Inch (USA only)	C
	21	43 CU short	Inch (USA only)	C
MG912/d1-G60	502	43 DIN	mm	A
	521	43 DIN	mm	A
	2100-I <sub>1k</sub>	43 DIN	mm	A
MG913/d1-G60	2100-I <sub>1N</sub>		mm	A

MG9 ... the alternative \* Connection dimensions identical

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## RELY ON EXCELLENCE

### Dimensions

d <sub>1</sub>	d <sub>6</sub>	d <sub>7</sub>	d <sub>14</sub>	d <sub>16</sub>	d <sub>a</sub>	d <sub>b</sub>	l <sub>1</sub>	l <sub>1k</sub>	l <sub>1N</sub>	l <sub>1S</sub>	l <sub>5</sub>	l <sub>6</sub>	l <sub>17</sub>	l <sub>28</sub>	l <sub>29</sub>
10	17	21	11.0	24.60	19.6	13.0	53.0	32.5	40	34.0	1.5	4	7.5	6.6	9.0
12	19	23	13.5	27.80	21.6	15.0	53.0	32.5	40	34.0	1.5	4	7.5	6.6	9.0
14	21	25	17.0	30.95	24.0	18.0	54.5	35.0	40	35.5	1.5	4	9.0	6.6	10.5
15	-	-	17.0	30.95	25.0	19.0	54.5	-	-	35.5	-	-	9.0	-	10.5
16	23	27	17.0	30.95	26.5	20.0	54.5	35.0	40	35.5	1.5	4	9.0	6.6	10.5
18	27	33	20.0	34.15	29.0	22.0	54.5	37.5	45	35.5	2.0	5	9.0	7.5	10.5
20	29	35	21.5	35.70	31.5	24.5	54.5	37.5	45	35.5	2.0	5	9.0	7.5	10.5
22	31	37	23.0	37.30	33.0	27.0	54.5	37.5	45	35.5	2.0	5	9.0	7.5	10.5
24	33	39	26.5	40.50	37.0	29.0	54.5	40.0	50	35.5	2.0	5	9.0	7.5	10.5
25	34	40	26.5	40.50	38.0	30.0	54.5	40.0	50	35.5	2.0	5	9.0	7.5	10.5
28	37	43	29.5	47.65	41.0	34.0	72.0	42.5	50	45.0	2.0	5	10.5	7.5	12.0
30	39	45	32.5	50.80	43.0	36.0	72.0	42.5	50	45.0	2.0	5	10.5	7.5	12.0
32	42	48	32.5	50.80	45.0	38.0	72.0	42.5	55	45.0	2.0	5	10.5	7.5	12.0
33	42	48	36.5	54.00	46.0	39.0	72.0	42.5	55	45.0	2.0	5	10.5	7.5	12.0
35	44	50	36.5	54.00	48.0	41.0	72.0	42.5	55	45.0	2.0	5	10.5	7.5	12.0
38	49	56	39.5	57.15	52.5	44.5	72.0	45.0	55	45.0	2.0	6	10.5	9.0	12.0
40	51	58	42.5	60.35	55.5	47.5	72.0	45.0	55	45.0	2.0	6	10.5	9.0	12.0
43	54	61	46.0	63.50	58.5	50.5	83.0	45.0	60	53.0	2.0	6	10.5	9.0	12.0
45	56	63	46.0	63.50	60.5	52.5	83.0	45.0	60	53.0	2.0	6	10.5	9.0	12.0
48	59	66	49.0	66.70	64.0	56.0	83.0	45.0	60	53.0	2.0	6	10.5	9.0	12.0
50	62	70	52.0	69.85	66.0	58.0	84.5	47.5	60	54.5	2.5	6	12.0	9.5	13.5
53	65	73	55.5	73.05	69.0	61.0	84.5	47.5	70	54.5	2.5	6	12.0	11.0	13.5
55	67	75	58.5	76.20	71.0	63.0	84.5	47.5	70	54.5	2.5	6	12.0	11.0	13.5
58	70	78	61.5	79.40	76.0	66.0	84.5	52.5	70	54.5	2.5	6	12.0	11.0	13.5
60	72	80	61.5	79.40	78.0	68.0	84.5	52.5	70	54.5	2.5	6	12.0	11.0	13.5
63	75	83	65.0	82.55	82.0	71.5	84.5	52.5	70	54.5	2.5	6	12.0	11.0	13.5
65	77	85	68.0	92.10	84.0	73.5	86.0	52.5	80	65.0	2.5	6	14.5	11.0	16.0
68	81	90	71.0	95.25	87.0	76.5	86.0	52.5	80	65.0	2.5	7	14.5	11.3	16.0
70	83	92	71.0	95.25	89.0	79.0	86.0	60.0	80	65.0	2.5	7	14.5	11.3	16.0
75	88	97	77.5	101.60	95.0	85.0	89.0	60.0	80	68.0	2.5	7	14.5	11.3	16.0
80	95	105	84.0	114.30	101.5	91.5	99.0	60.0	90	76.0	3.0	7	18.5	12.0	20.0
85	100	110	87.0	117.50	107.0	97.0	99.0	60.0	90	76.0	3.0	7	18.5	14.0	20.0
90	105	115	93.5	123.85	111.5	103.0	103.0	65.0	90	79.0	3.0	7	18.5	14.0	20.0
95	110	120	96.5	127.00	117.5	108.0	103.0	65.0	90	79.0	3.0	7	18.5	14.0	20.0
100	115	125	103.0	133.35	122.5	114.0	106.0	65.0	90	82.0	3.0	7	18.5	14.0	20.0

Table A - Dimensions in Millimeter

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## RELY ON EXCELLENCE

### Dimensions

d <sub>1</sub>	d <sub>1</sub>	d <sub>14</sub>	d <sub>16</sub>	d <sub>a</sub>	d <sub>b</sub>	l <sub>1</sub>	l <sub>S</sub>	l <sub>17</sub>	l <sub>29</sub>			
0.375"	9.53	11.0	24.60	18.8	12.5	53.0	34.0	7.5	9.0			
0.500"	12.70	13.5	27.80	22.3	16.0	53.0	34.0	7.5	9.0			
0.625"	15.88	17.0	30.95	26.5	20.0	54.5	35.5	9.0	10.5			
0.750"	19.05	20.0	34.15	29.5	23.0	54.5	35.5	9.0	10.5			
0.875"	22.23	23.0	37.30	33.0	27.0	54.5	35.5	9.0	10.5			
1.000"	25.40	26.5	40.50	38.0	30.5	54.5	35.5	9.0	10.5			
1.125"	28.58	29.5	47.65	41.5	34.5	72.0	45.0	10.5	12.0			
1.250"	31.75	32.5	50.80	45.0	38.0	72.0	45.0	10.5	12.0			
1.375"	34.93	36.5	54.00	48.0	41.0	72.0	45.0	10.5	12.0			
1.500"	38.10	39.5	57.15	52.5	44.5	72.0	45.0	10.5	12.0			
1.625"	41.28	42.5	60.35	57.0	48.5	72.0	45.0	10.5	12.0			
1.750"	44.45	46.0	63.50	60.5	51.5	83.0	53.0	10.5	12.0			
1.875"	47.63	49.0	66.70	64.0	55.0	83.0	53.0	10.5	12.0			
2.000"	50.80	52.0	69.85	66.0	58.0	84.5	54.5	12.0	13.5			
2.125"	53.98	55.5	73.05	71.0	61.5	84.5	54.5	12.0	13.5			
2.250"	57.15	58.5	76.20	76.5	65.0	84.5	54.5	12.0	13.5			
2.375"	60.33	61.5	79.40	78.5	68.5	84.5	54.5	12.0	13.5			
2.500"	63.50	65.0	82.55	82.0	72.0	84.5	54.5	12.0	13.5			
2.625"	66.68	68.0	92.10	84.0	75.0	86.0	65.0	14.5	16.0			
2.750"	69.85	71.0	95.25	89.0	79.0	86.0	65.0	14.5	16.0			
2.875"	73.03	74.5	98.45	92.5	82.0	89.0	68.0	14.5	16.0			
3.000"	76.20	77.5	101.60	95.5	85.5	89.0	68.0	14.5	16.0			
3.125"	79.38	80.5	111.15	101.5	91.0	99.0	76.0	18.5	20.0			
3.250"	82.55	84.0	114.30	104.7	94.0	99.0	76.0	18.5	20.0			
3.375"	85.73	87.0	117.50	107.0	98.0	99.0	76.0	18.5	20.0			
3.500"	88.90	90.5	120.65	111.5	100.0	99.0	76.0	18.5	20.0			
3.625"	92.08	93.5	123.85	114.5	104.0	103.0	79.0	18.5	20.0			
3.750"	95.25	96.5	127.00	118.0	108.0	103.0	79.0	18.5	20.0			
3.875"	98.43	100.0	130.20	121.0	112.0	106.0	82.0	18.5	20.0			
4.000"	101.60	103.0	133.35	125.0	116.0	106.0	82.0	18.5	20.0			

Table B - Dimensions in inch / millimeter

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### Dimensions

d <sub>1</sub>	d <sub>61</sub>	d <sub>71</sub>	d <sub>a</sub>	d <sub>b</sub>	h <sub>4</sub>	h <sub>5</sub>	l <sub>41</sub>	l <sub>51</sub>	l <sub>61</sub>
0.375	0.625	0.875	0.740	0.492	1.125	1.500	0.313	0.050	0.250
0.500	0.750	1.000	0.878	0.630	1.125	1.500	0.313	0.050	0.250
0.625	0.937	1.250	1.043	0.787	1.281	1.718	0.406	0.050	0.344
0.750	1.062	1.375	1.161	0.905	1.281	1.718	0.406	0.050	0.344
0.875	1.187	1.500	1.299	1.063	1.343	1.781	0.406	0.050	0.344
1.000	1.312	1.625	1.496	1.200	1.437	2.000	0.437	0.050	0.375
1.125	1.437	1.750	1.634	1.358	1.500	2.062	0.437	0.050	0.375
1.250	1.563	1.875	1.772	1.496	1.500	2.062	0.437	0.050	0.375
1.375	1.687	2.000	1.890	1.614	1.562	2.124	0.437	0.050	0.375
1.500	1.813	2.125	2.067	1.752	1.562	2.124	0.437	0.050	0.375
1.625	2.000	2.375	2.244	1.909	1.875	2.500	0.500	0.050	0.437
1.750	2.125	2.500	2.382	2.028	1.875	2.500	0.500	0.050	0.437
1.875	2.250	2.625	2.520	2.165	2.000	2.625	0.500	0.050	0.437
2.000	2.375	2.750	2.598	2.283	2.000	2.625	0.500	0.050	0.437
2.125	2.375	3.000	2.795	2.421	2.249	2.937	0.562	0.050	0.500
2.250	2.437	3.125	2.992	2.559	2.249	2.937	0.562	0.050	0.500
2.375	2.563	3.250	3.071	2.697	2.375	3.062	0.562	0.050	0.500
2.500	2.687	3.375	3.228	2.834	2.375	3.062	0.562	0.050	0.500
2.625	2.812	3.375	3.307	2.953	2.562	3.375	0.625	0.100	0.562
2.750	2.937	3.500	3.504	3.110	2.562	3.375	0.625	0.100	0.562
2.875	3.062	3.750	3.642	3.228	2.687	3.500	0.625	0.100	0.562
3.000	3.187	3.875	3.760	3.366	2.687	3.500	0.625	0.100	0.562
3.125	3.312	4.000	4.000	3.583	2.968	3.906	0.781	0.100	0.656
3.250	3.437	4.125	4.122	3.700	2.968	3.906	0.781	0.100	0.656
3.375	3.562	4.250	4.213	3.858	2.968	3.906	0.781	0.100	0.656
3.500	3.687	4.375	4.390	3.937	2.968	3.906	0.781	0.100	0.656
3.625	3.812	4.500	4.508	4.095	3.093	4.031	0.781	0.100	0.656
3.750	3.937	4.625	4.646	4.252	3.093	4.031	0.781	0.100	0.656
3.875	4.062	4.750	4.764	4.409	3.218	4.156	0.781	0.100	0.656
4.000	4.187	4.875	4.921	4.567	3.218	4.156	0.781	0.100	0.656

Table C - Dimensions in inch

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