

MD291

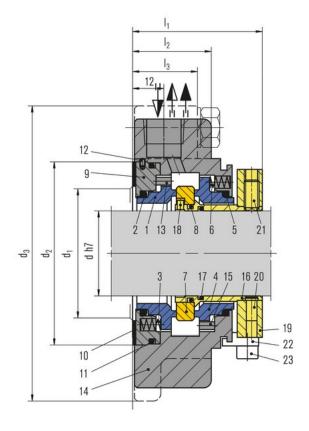
Features

- Cartridge design
- Balanced
- Ultra compact design
- Double seal
- Independent of direction of rotation
- Inboard seal can withstand both forward and back pressures
- Stationary, inside mounted typeSprings do not contact the liquid

Advantages

- Equipped with flushing, quenching, and drainports as standard
- The cooling system where the water is directly injected onto the seal faces provides the highest cooling efficiency





Item 1, 4	Description Seal face
2, 5, 8, 11, 17	7 O-Ring
3, 6	Spring
7	Seat
9	Collar
10	Gasket
12, 21	Set screw
13, 15, 18, 20) Pin
14	Seal cover
16	Shaft sleeve
19	Drive collar
22	Assembly fixture
23	HSH cap screw

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Recommended applications

- Process industry
- Refining technology
- Petrochemical industry
- Chemical industry
- Pharmaceutical industry
- Pulp and paper industry
- Water and waste water technology
- Food and beverage industry
- Metal production and processing
- Acids
- Alkaline solutions
- Salt solutions
- Low viscosity oils
- Monomers
- Hydrocarbons
- Water
- Seawater

- Chemical pumps
- Process pumps
- Universally applicable

Materials

Seal face (inboard side): Silicon carbide (Q1)
Seal face (atmosphere side): High density
carbon graphite
Seat: Silicon carbide (Q1)
Metal parts: CrNiMo steel (G)
Secondary seals: FKM (V)

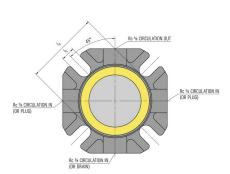
Operating range

Pressure: p = vacuum ... 10 bar (145 PSI) Temperature: t = -20 °C ... 160 °C (-4 °F ... 320 °F) (oil), 0 °C ... 60 °C (32 °F ... 140 °F) (water) Sliding velocity: vg = 20 m/s (66 ft/s)

Viscosity: ... 1 Pa·s Solids content: ... 10 %

Installation, Details, Options

Seal cover



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sions								
d1 min	d1 may	da	d ₃	lı	la	l ₂	l ₄	l ₅
					=		•	12
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50	66	73	118	42	23.9	16.9	75	14
55	66	73	118	42	23.9	16.9	75	14
60	71	78	128	42	23.9	16.9	80	14
65	81	88	138	44	23.5	16.5	90	14
70	81	88	138	44	23.5	16.5	90	14
77	96	103	164	46	23.0	14.0	105	18
82	96	103	164	46	23.0	14.0	105	18
87	102	109	178	46	23.0	14.0	111	18
94	114	121	193	49	23.0	14.0	123	18
99	114	121	193	49	23.0	14.0	123	18
104	124	131	208	49	23.0	13.0	133	20
109	124	131	208	49	23.0	13.0		20
								20
119	134	141	218	49	23.0	13.0	143	20
	d1 min. 35 40 45 50 55 60 65 70 77 82 87 94 99 104 109 114	d1 min. d1 max 35 51 40 51 45 56 50 66 55 66 60 71 65 81 70 81 77 96 82 96 87 102 94 114 99 114 104 124 109 124 114 134	d1 min. d1 max d2 35 51 58 40 51 58 45 56 63 50 66 73 55 66 73 60 71 78 65 81 88 70 81 88 77 96 103 82 96 103 87 102 109 94 114 121 99 114 121 104 124 131 109 124 131 114 134 141	d1 min. d1 max d2 d3 35 51 58 104 40 51 58 104 45 56 63 108 50 66 73 118 55 66 73 118 60 71 78 128 65 81 88 138 70 81 88 138 77 96 103 164 82 96 103 164 87 102 109 178 94 114 121 193 99 114 121 193 104 124 131 208 109 124 131 208 114 134 141 218	d1 min. d1 max d2 d3 I1 35 51 58 104 42 40 51 58 104 42 45 56 63 108 42 50 66 73 118 42 55 66 73 118 42 60 71 78 128 42 65 81 88 138 44 70 81 88 138 44 77 96 103 164 46 82 96 103 164 46 87 102 109 178 46 94 114 121 193 49 99 114 121 193 49 104 124 131 208 49 109 124 131 208 49 114 134 141 218 <	d1 min. d1 max d2 d3 I1 I2 35 51 58 104 42 23.5 40 51 58 104 42 23.5 45 56 63 108 42 23.9 50 66 73 118 42 23.9 55 66 73 118 42 23.9 60 71 78 128 42 23.9 65 81 88 138 44 23.5 70 81 88 138 44 23.5 77 96 103 164 46 23.0 82 96 103 164 46 23.0 87 102 109 178 46 23.0 94 114 121 193 49 23.0 199 114 121 193 49 23.0 104 <td< td=""><td>d1 min. d1 max d2 d3 l1 l2 l3 35 51 58 104 42 23.5 18.5 40 51 58 104 42 23.5 18.5 45 56 63 108 42 23.9 18.9 50 66 73 118 42 23.9 16.9 55 66 73 118 42 23.9 16.9 60 71 78 128 42 23.9 16.9 65 81 88 138 44 23.5 16.5 70 81 88 138 44 23.5 16.5 77 96 103 164 46 23.0 14.0 82 96 103 164 46 23.0 14.0 87 102 109 178 46 23.0 14.0 94 114 121<td>d1 min. d1 max d2 d3 I₁ I2 I3 I4 35 51 58 104 42 23.5 18.5 60 40 51 58 104 42 23.5 18.5 60 45 56 63 108 42 23.9 18.9 65 50 66 73 118 42 23.9 16.9 75 55 66 73 118 42 23.9 16.9 80 60 71 78 128 42 23.9 16.9 80 65 81 88 138 44 23.5 16.5 90 70 81 88 138 44 23.5 16.5 90 77 96 103 164 46 23.0 14.0 105 82 96 103 164 46 23.0 14.0 111</td></td></td<>	d1 min. d1 max d2 d3 l1 l2 l3 35 51 58 104 42 23.5 18.5 40 51 58 104 42 23.5 18.5 45 56 63 108 42 23.9 18.9 50 66 73 118 42 23.9 16.9 55 66 73 118 42 23.9 16.9 60 71 78 128 42 23.9 16.9 65 81 88 138 44 23.5 16.5 70 81 88 138 44 23.5 16.5 77 96 103 164 46 23.0 14.0 82 96 103 164 46 23.0 14.0 87 102 109 178 46 23.0 14.0 94 114 121 <td>d1 min. d1 max d2 d3 I₁ I2 I3 I4 35 51 58 104 42 23.5 18.5 60 40 51 58 104 42 23.5 18.5 60 45 56 63 108 42 23.9 18.9 65 50 66 73 118 42 23.9 16.9 75 55 66 73 118 42 23.9 16.9 80 60 71 78 128 42 23.9 16.9 80 65 81 88 138 44 23.5 16.5 90 70 81 88 138 44 23.5 16.5 90 77 96 103 164 46 23.0 14.0 105 82 96 103 164 46 23.0 14.0 111</td>	d1 min. d1 max d2 d3 I₁ I2 I3 I4 35 51 58 104 42 23.5 18.5 60 40 51 58 104 42 23.5 18.5 60 45 56 63 108 42 23.9 18.9 65 50 66 73 118 42 23.9 16.9 75 55 66 73 118 42 23.9 16.9 80 60 71 78 128 42 23.9 16.9 80 65 81 88 138 44 23.5 16.5 90 70 81 88 138 44 23.5 16.5 90 77 96 103 164 46 23.0 14.0 105 82 96 103 164 46 23.0 14.0 111

Dimensions in Millimeter