

RELY ON EXCELLENCE

MA290 / MA291

Mechanical Seals | Mechanical seals for pumps | Standard Cartridge seals



Features

- Cartridge
- Balanced
- Independent of direction of rotation
- Stationary multiple springs
- Springs and pin located on the atmospheric side

Advantages

- Extremely short length design – the total length including the seal cover is less than 50 mm
- Easy installing on the pumps without modifying the stuffing box
- Excellent followability due to no influence from run-out, squareness or vibration of the shaft
- Mounted outside the stuffing box for providing excellent air cooling performance
- Un-wetted springs and knock pins for protecting from lockout by liquid

Operating range

MA290:

Pressure: $p = \dots 20 \text{ bar (290 PSI)}$

Temperature:

$t = -20 \text{ }^\circ\text{C} \dots 160 \text{ }^\circ\text{C} (-4 \text{ }^\circ\text{F} \dots 320 \text{ }^\circ\text{F})$ (oil),

$0 \text{ }^\circ\text{C} \dots 60 \text{ }^\circ\text{C} (32 \text{ }^\circ\text{F} \dots 140 \text{ }^\circ\text{F})$ (water)

Sliding velocity:

$vg = \text{max. } 20 \text{ m/s (66 ft/s)}$

Viscosity: $0.5 \text{ Pa}\cdot\text{s}$

Solids content: 0.3%

MA291:

Pressure: $p = \dots 16 \text{ bar (232 PSI)}$

Temperature:

$t = -20 \text{ }^\circ\text{C} \dots 160 \text{ }^\circ\text{C} (-4 \text{ }^\circ\text{F} \dots 320 \text{ }^\circ\text{F})$ (oil),

$0 \text{ }^\circ\text{C} \dots 60 \text{ }^\circ\text{C} (32 \text{ }^\circ\text{F} \dots 140 \text{ }^\circ\text{F})$ (water)

Sliding velocity: $vg = \text{max. } 20 \text{ m/s (66 ft/s)}$

Viscosity: $3 \text{ Pa}\cdot\text{s}$

Solids content: 10%

Materials

Seal face (MA290): High density carbon graphite

Seal face (MA291): Silicon carbide (O1)

Seat (MA290/291): Silicon carbide (O1)

Metal parts: CrNiMo steel (G)

Secondary seals: FKM (V)

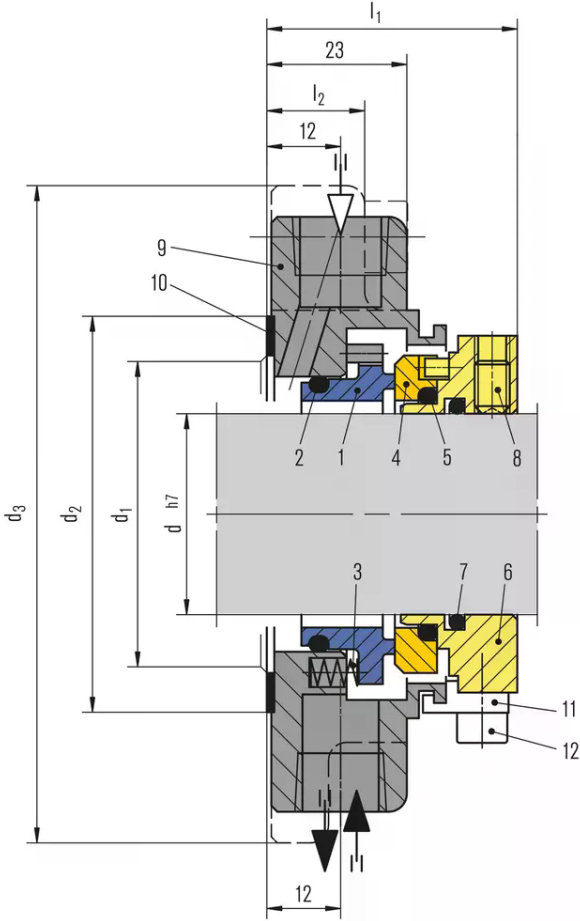
Standards and approvals

- EN 12756
- ISO 3096

Recommended applications

- Universally applicable
- Petrochemical industry
- Chemical industry
- Pharmaceutical industry
- Pulp and paper industry
- Water and waste water technology
- Food and beverage industry
- Centrifugal pumps
- Eccentric screw pumps
- Process pumps

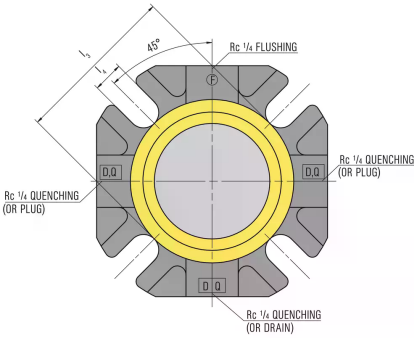
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| Item | Description |
|---------|------------------|
| 1 | Seal face |
| 2, 5, 7 | O-Ring |
| 3 | Spring |
| 4 | Seat |
| 6 | Drive collar |
| 8 | Set screw |
| 9 | Seal cover |
| 10 | Gasket |
| 11 | Assembly fixture |
| 12 | HSH cap screw |

Installation, details, options

Seal cover



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Dimensions

| d | d ₁ min. | d ₁ max. | d ₂ | d ₃ | l ₁ | l ₂ | l ₃ | l ₄ |
|-----|---------------------|---------------------|----------------|----------------|----------------|----------------|----------------|----------------|
| 20 | 30 | 51 | 58 | 104 | 42 | 18 | 60 | 12 |
| 25 | 35 | 51 | 58 | 104 | 42 | 18 | 60 | 12 |
| 30 | 40 | 56 | 63 | 108 | 42 | 18 | 65 | 12 |
| 35 | 45 | 66 | 73 | 118 | 42 | 16 | 75 | 14 |
| 40 | 50 | 66 | 73 | 118 | 42 | 16 | 75 | 14 |
| 45 | 55 | 71 | 78 | 128 | 42 | 16 | 80 | 14 |
| 50 | 60 | 81 | 88 | 138 | 44 | 16 | 90 | 14 |
| 55 | 65 | 81 | 88 | 138 | 44 | 16 | 90 | 14 |
| 60 | 70 | 96 | 103 | 164 | 46 | 14 | 105 | 18 |
| 65 | 75 | 96 | 103 | 164 | 46 | 14 | 105 | 18 |
| 70 | 80 | 102 | 109 | 178 | 46 | 14 | 111 | 18 |
| 75 | 85 | 114 | 121 | 193 | 49 | 14 | 123 | 18 |
| 80 | 90 | 114 | 121 | 193 | 49 | 14 | 123 | 18 |
| 85 | 95 | 124 | 131 | 208 | 49 | 13 | 133 | 20 |
| 90 | 100 | 124 | 131 | 208 | 49 | 13 | 133 | 20 |
| 95 | 105 | 134 | 141 | 218 | 49 | 13 | 143 | 20 |
| 100 | 110 | 134 | 141 | 218 | 49 | 13 | 143 | 20 |

Dimensions in millimeter