

RELY ON EXCELLENCE

SHF(V)-D / SHP(V)-D

Mechanical seals | Mechanical seals for pumps | Engineered seals



Features

- Cartridge design
- Dual seal
- Balanced
- Integrated pumping device
- Stationary spring loaded unit
- Multiple springs arrangement
- Shrink-fitted seal face
- One rugged seat

Advantages

- Deformation-optimized seal for high pressures and high sliding velocities (static up to 500 bar (7,250 PSI) and dynamic up to 150 bar (2,175 PSI))
- Economical due to standardized inner components
- High flexibility due to adaptation of the connection parts to the pump seal chamber
- Optimum heat dissipation due to integrated pumping device
- Insensitive to shaft deflections due to stationary design
- Dual seal does not open even in the event of barrier fluid pressure failure
- Reliable operation due to one rugged seat with bandage
- Version with loose-fitted seal face available, for extreme applications
- Only small number of components

Operating range

Shaft diameter:
 $d1^* = 40 \dots 250 \text{ mm (1.57" ... 9.84")}$
 Pressure: $p_3 = 150 \text{ bar (2,175 PSI)}$
 Temperature: $t = +200 \text{ °C (+392 °F)}$
 Sliding velocity: $v_g = 60 \text{ m/s (197 ft/s)}$

* Other sizes on request

Materials

Seal face:
 SiC-C-Si, silicon impregnated carbon (Q3), Carbon graphite antimony impregnated (A)
 Seat: Silicon carbide (Q)
 Secondary seals:
 FKM (V), EPDM (E), FFKM (K)
 Springs: Hastelloy® C-4 (M)
 Metal parts: CrNiMo steel (G), Duplex (G1), Super Duplex (G4), Pure Titanium (T2), Hastelloy® C-4 (M)

Standards and approvals

- API 682 / ISO 21049

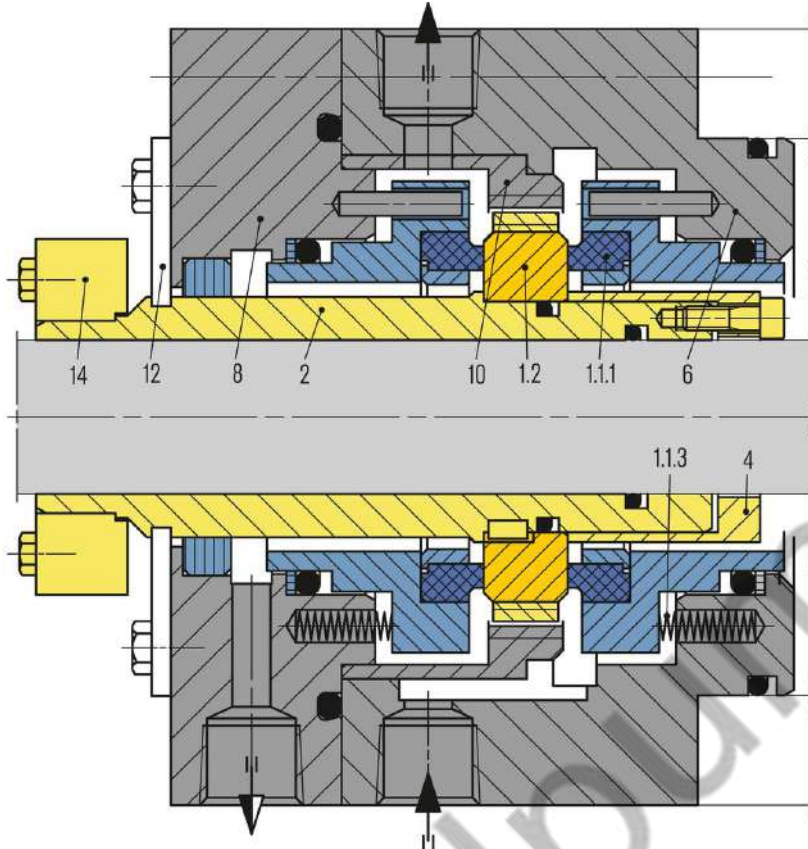
Recommended applications

- Oil and gas industry
- Refining technology
- Petrochemical industry
- Chemical industry
- Power plant technology
- Volatile and non-volatile hydrocarbons
- Crude oil
- Process water
- Crude oil feed pumps
- Injection pumps
- Multiphase pumps

Recommended piping plans

[API Plan 53A](#)
[API Plan 53B](#)
[API Plan 53C](#)
[API Plan 54](#)

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Item Description

- 1.1.1 Seal face
- 1.1.3 Spring
- 1.2 Seat
- 2 Shaft sleeve
- 4 Clamping sleeve
- 6 Housing
- 8 Cover
- 10 Pumping sleeve
- 12 Assembly fixture
- 14 Shrink disk

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Product variants



SHV-D
Variant without pumping ring.

SHF(V)I-D / SHP(V)I-D

Same design as SHF(V)-D / SHP(V)-D but with loosely inserted seal face for extreme applications. Pressure: $p_1 = 200 \text{ bar (2,900 PSI)}$