

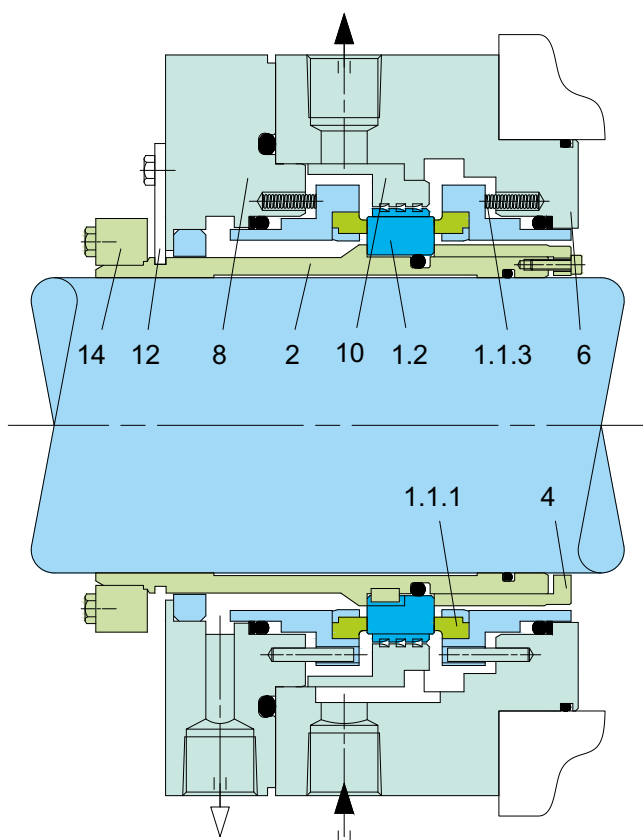


## Product Description

1. Dual seal configuration
2. Balanced design
3. Independent of direction of rotation
4. Cartridge construction
5. Stationary design with multiple springs
6. Designed with integrated pumping device for increased efficiency in circulation
7. Robust construction with shrink-fitted seal face
8. Heavy duty design of solid stationary seat

## Technical Features

1. Accommodates shaft deflections due to stationary design
2. Can be designed for individual pump application with corresponding connection parts to be adopted to the pump seal chamber
3. Optimum heat dissipation due to integrated pumping device available for increased efficiency in circulation and optimized seat design
4. Cartridge unit factory assembled for easy installation, which reduces down-time
5. Trouble-free long-term operation due to heavy duty single seat design with bandage
6. Can operate under high sliding velocities and high pressures
7. Can be adopted for use in compliance with API 682, type ES
8. Versatile application for various kinds of heavy duty applications



**Note:** The item numbers as depicted above are based on our technical experience and knowledge and are placed in the chronological order of their assembly procedure.

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

## Typical Industrial Applications

Amines	Multi-phase pumps
Caustic soda	Oil & gas
Chemical	Process water
Crude oil	Refining technology
Crystallizing media	Sour water
Feed pumps	Volatile & non-volatile hydrocarbons
Hot water	
Injection pumps	

## Standards

API 682 / ISO 21049

## Performance Capabilities

Sizes	$d_1^* = \text{Upto } 250 \text{ mm}$ (Upto 10.000")
Pressure	$p_1 = 150 \text{ bar}$ (2,175 PSI)
Temperature	$t = 200 \text{ }^\circ\text{C}$ (392 °F)
Speed	60 m/s (197 ft/s)
* Other sizes on request	

## Materials

Seal face	CrNiMo steel (G), Duplex (G1), Super Duplex (G4), Pure Titanium (T2), Hastelloy® C-4 (M)
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)

## Design Variations

### SBF(V)1-D / SBP(V)1-D

Same design as SBF(V)-D / SBP(V)-D but with loosely inserted seal face for extreme applications.

Pressure:  $p_1 = 200 \text{ bar}$  (2900 PSI)