RELY ON EXCELLENCE

LL9DJUU

API 682 4th edition | Mechanical seals | Balanced pusher seals

Features

- API 682 Category 2 and 3, Type A, Arrangement 2 and 3 seal
- Dual seal in face-to-back arrangement
- Same size of inboard and outboard seal
- Balanced
- Cartridge unit
- Stationary multiple springs
- Solid seal faces

Advantages

- Suitable for higher speeds
- Good followability due to no influence from run-out, squareness or vibration of the shaft
- Compact design
- Low heat generation and power consumption due to narrow seal face width
- Longer seal life
- Pressure-balanced design prevents mating ring being forced out under reverse pressure
- No damage to shaft sleeve as dynamic O-Ring is not in direct contact with the sleeve

Operating range

Shaft diameter: d1 = 20 ... 110 mm (0.79" ... 4.33")
Pressure: p = 60 bar (870 PSI)
Temperature: -40 °C ... +176 °C (-40 °F ... +349 °F)*
Sliding velocity: vg = 50 m/s (164 ft/s)

* Engineered up to 260 °C (500 °F) with FFKM (K) secondary seals.

Materials

Seal rings: Blister resistant carbon, Silicon carbide SSiC (Q1), RBSiC (Q2)
Mating rings:
Silicon carbide SSiC (Q1), RBSiC (Q2)
Secondary seals:
EPDM (E), NBR (P), FKM (V), FFKM (K)
Springs: Hastelloy® C-276 (M5)
Metal parts: CrNiMo steel 316 (G)

Standards and approvals

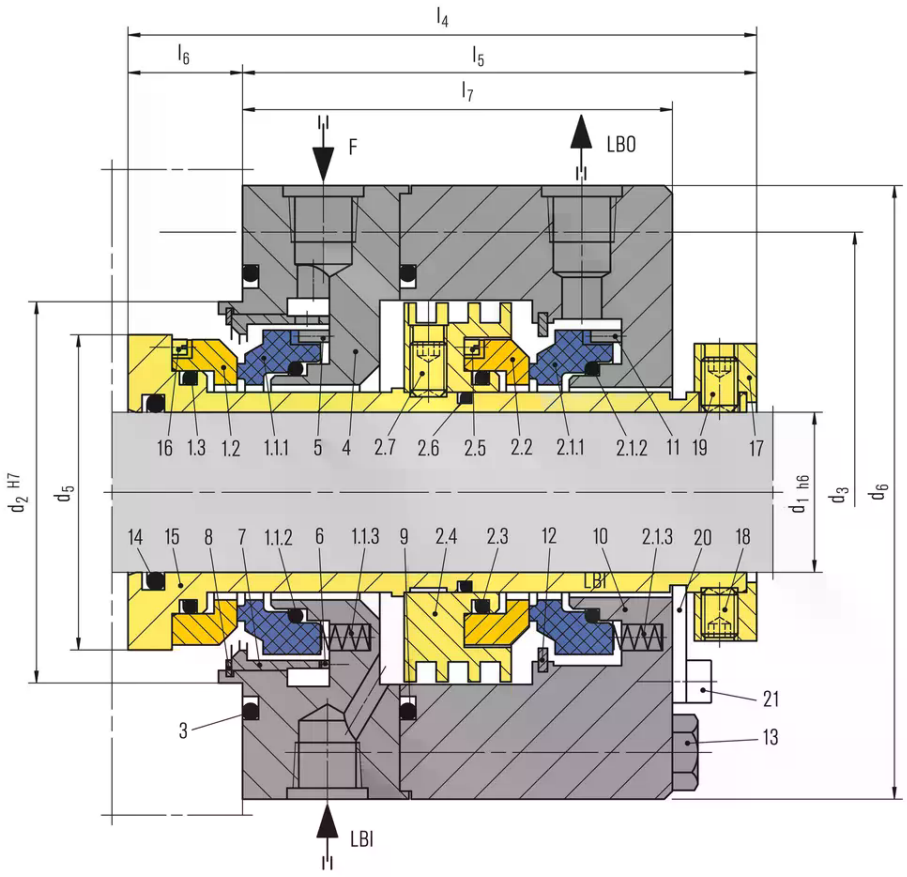
- API 682 / ISO 21049
- API 682 4th ed. Cat. 2/3 - 2CW-CW
- API 682 4th ed. Cat. 2/3 - 3CW-FB

Recommended applications

- Light volatile hydrocarbons
- Refining technology
- Oil and gas industry
- Petrochemical industry
- Chemical industry
- Power plant technology
- CCUS
- Alternative fuels production
- LPG plants
- API 610 / ISO 13709 pumps
- Process pumps

Recommended piping plans

Process side:
API Plan 01
API Plan 02
API Plan 03
API Plan 11
API Plan 12
API Plan 13
API Plan 14
API Plan 21
API Plan 22
API Plan 23
API Plan 31
API Plan 32
API Plan 41



Between seals:
API Plan 52
API Plan 53A
API Plan 53B
API Plan 53C
API Plan 54
API Plan 55

Atmospheric side*:
API Plan 61
API Plan 62
API Plan 65A
API Plan 65B

* Throttle bushing on request

Item	Description
1.1.1, 2.1.1	Seal ring
1.1.2, 1.3, 2.1.2, 2.3,	
2.6, 3, 9, 14	O-Ring
1.1.3, 2.1.3	Spring
1.2, 2.2	Mating ring
2.4	Collar
2.5, 16	Drive screw
2.7, 18, 19	Set Screw
4, 10	Gland plate
5, 6, 11	Pin
7	Flow distributor
8, 12	Retaining ring
13	Hexagon bolt
15	Seal sleeve
17	Drive collar
20	Setting device
21	HSH Cap screw

F Flush
LBO Liquid barrier/buffer OUT
LBI Liquid barrier/buffer IN

Dimensions

API/d_1	API/d_2	API/d_3	d_5	d_6	l_4	l_5	l_6	l_7
20	70	105	51	128	128	98	30	80
30	80	115	63	138	130	98	32	80
40	90	125	74	148	133	98	35	80
50	100	140	84	168	142	107	35	87
60	120	160	99	188	142	107	35	87
70	130	170	108	198	142	107	35	87
80	140	180	120	208	142	107	35	87
90	160	205	138	248	150	115	35	93
100	170	215	148	258	150	115	35	93
110	180	225	157	268	155	115	40	93

Dimensions in millimeter