

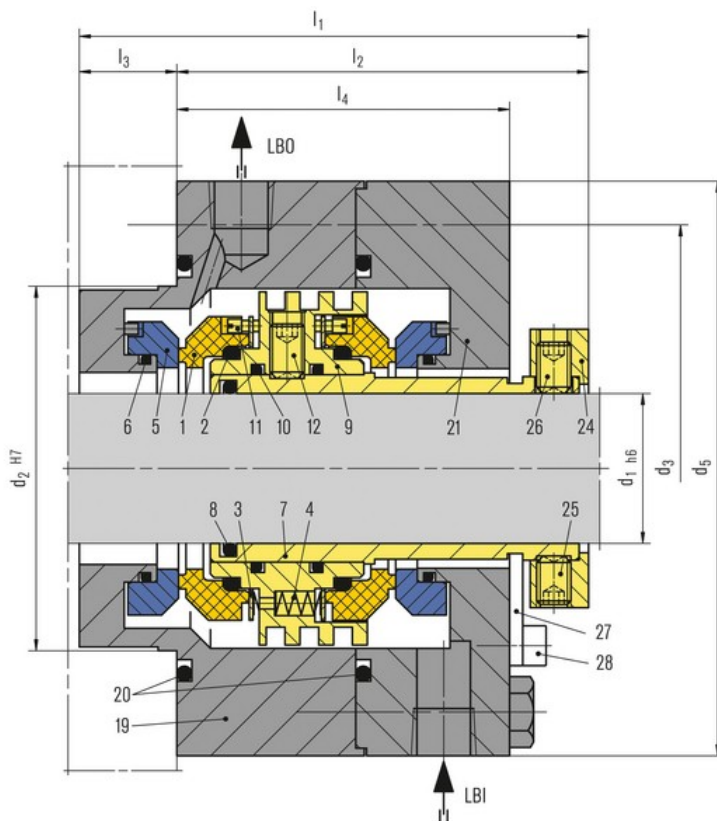
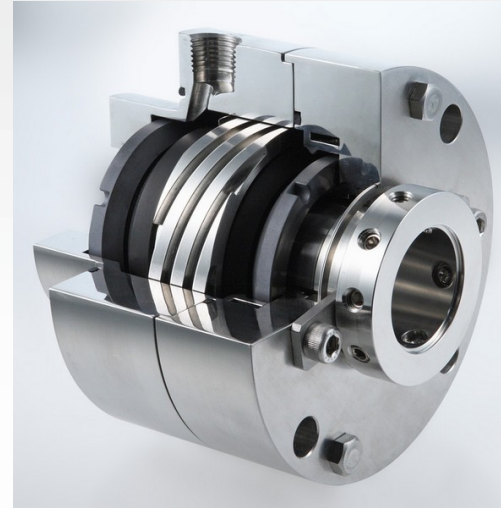
LL9DKUU

Features

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

Advantages

- 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



Item	Description
1	Seal ring
2, 6, 8, 10, 20	O-Ring
3	Thrust ring
4	Spring
5	Mating ring
7	Seal sleeve
9	Pumping ring
11	Drive screw
12, 25, 26	Set screw
19, 21	Gland plate
22	Flow distributor
23	Retaining ring
24	Drive collar
27	Setting device
28	HSH Cap screw

LL9DKUU (2)

Recommended applications

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

Operating range

Pressure: p = vacuum ... 42 bar (... 609 PSI)
Temperature: t = -40 °C ... 176 °C (-40 °F ... 349 °F)*
Sliding velocity: vg ... 23 m/s (... 75 ft/s)
Viscosity: ... 300 mPa·s
Solids content: ... 0.5 wt.%

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

Standards and approvals

- API 682 / ISO 21049

Materials

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

Recommended piping plans

Process side:
02, 11, 12, 13, 14, 21, 22, 31, 32, 41
Between seals:
53A, 53B, 53C, 54
Atmospheric side*:
61, 62, 65A, 65B

* Throttle bushing on request.

Dimensions

API/d ₁	API/d ₂	API/d ₃	d ₅	l ₁	l ₂	l ₃	l ₄
20	70	105	-	-	-	-	-
30	80	115	138	123	97	26	79
40	90	125	148	124	91	33	74
50	100	140	168	126	96	30	79
60	120	160	188	136	108	28	89
70	130	170	198	131	105	26	86
80	140	180	208	133	107	26	88
90	160	205	238	146	116	30	92
100	170	215	248	131	94	37	113
110	180	225	258	139.5	109.5	30	89

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