



### Product Description

1. Single and Dual seal configuration
2. Balanced design
3. For stepped shafts
4. Rotary unit with multiple springs
5. Designed to remain in closed position in the event of buffer pressure failure
6. Can accommodate reverse pressure
7. Gas-lubricated design
8. Gas grooves design is available in V-grooves and U-grooves (independent of direction of rotation)

### Technical Features

1. Seal faces are designed to be non-contacting during operation
2. Designed for environmental protection with high efficiency
3. Due to non-contacting design there is no friction on the seal faces and there is no heat generated at the seal or in the medium
4. Trouble free operations as complex components are not required to dissipate frictional heat
5. Differential pressure not required with hard / soft material combination
6. Conforms to containment seal in accordance with API 682

### Typical Industrial Applications

Chemical industry	Gases not harmful to the environment (single seal)
Refining technology	Fans
Gases and liquids (single seals only gas)	Small steam turbines
Gases and liquids which must not get into the atmosphere (dual seal)	Blowers
	Roots compressors
	Pumps

### Performance Capabilities

Shaft diameter:  $d_1 = 28 \dots 125 \text{ mm}$  (1.10" ... 4.92")  
 Pressure:  $p_1 = 25 \text{ bar}$  (363 PSI)  
 Temperature:  $t^* = -20 \text{ }^\circ\text{C} \dots +170 \text{ }^\circ\text{C}$  (-4°F...+338 °F)  
 Sliding velocity:  $v_g = 4 \dots 25 \text{ m/s}$  (13 ... 82 ft/s)  
 \*zDepending on resistance of O-rings

### Materials

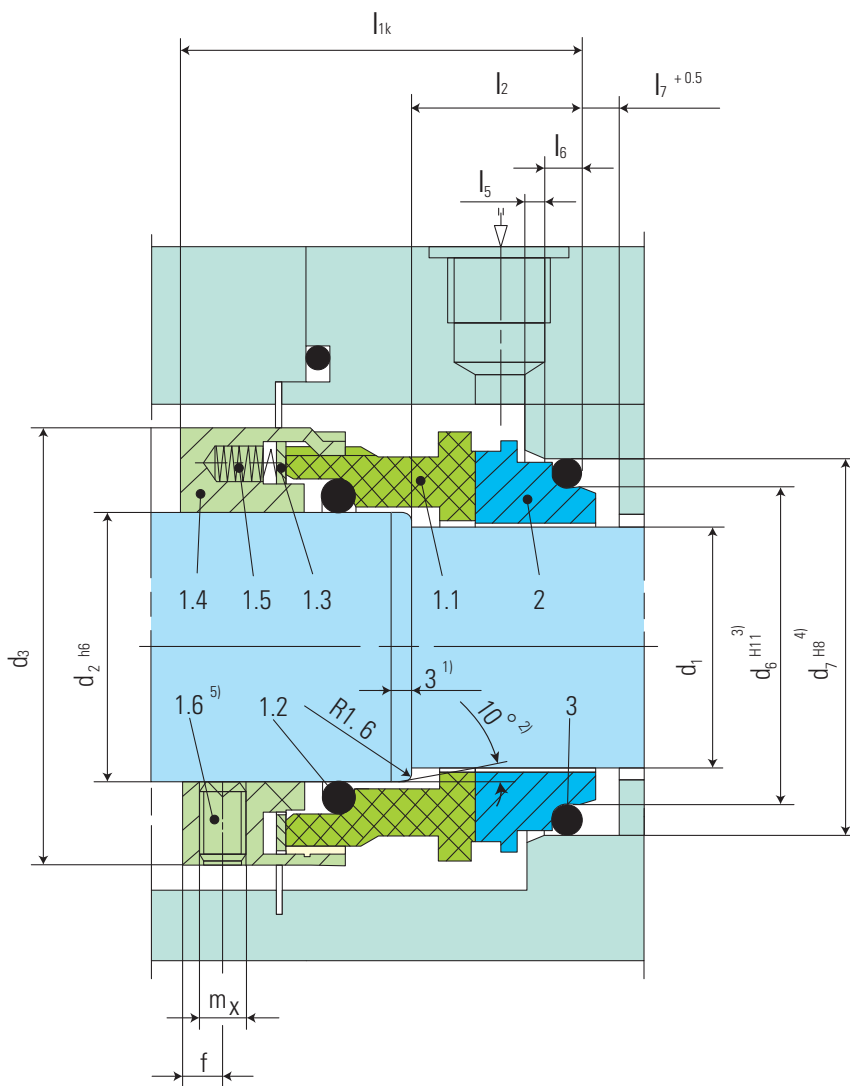
Seal face: Carbon graphite antimony impregnated (A), Silicon carbide (Q2), alternatively: Carbon graphite resin impregnated (B), Silicon carbide (Q1)  
 Seat: Silicon carbide (Q1, Q2), Silicon carbide (Q19, Q29)  
 with seal face in Q1 resp. Q2  
 Metal parts: CrNiMo steel (G)

### Standards

EN 12756  
 API 682 / ISO 21049

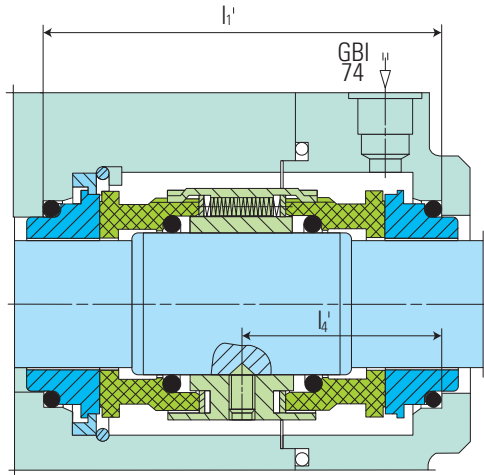
Item	Part no.	Description
1.1	472	Sliding face
1.2	412.1	O-ring
1.3	474	Thrust ring
1.4	485	Drive collar
1.5	477	Spring
1.6	904	Set screw
2	475.1	Seat
3	412.3	O-ring
<b>DIN 24250</b>		

1) $d_1 > 105$ : 2 mm x 30°
2) $d_1 > 105$ : 30°
3) $d_1 > 105$ : +0.1
4) $d_1 > 105$ : H7
5) 3 x 120°



**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.

## Design Variations



### GSPH-KD

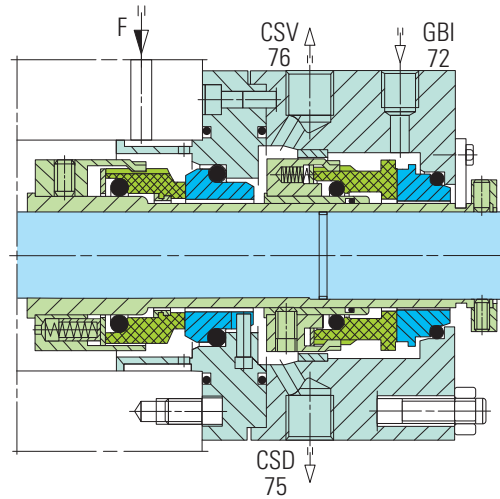
Double seal back-to-back, buffered with gas, according to API 682 configuration 3NC-BB, Plan 74. Items, descriptions and unspecified dimensions as for GSPH-K.

Pressure:  $p_1 = \dots 22$  bar (319 PSI),  $p_3 = \dots 25$  bar (363 PSI)

(over the whole nominal diameter range, higher values on request).

Differential pressure  $\Delta p = \text{min. } 3$  bar (44 PSI)

Other operating limits as GSPH-K.



### GSPH Tandem arrangement

According to API 682

Configuration: 2CW-CS, Plan 72, 75, 76.

For media with a gaseous leakage. B750VN on the product side. In case of a failure, the GSPH on the atmosphere side works as a liquid seal.

## Dimensional Data

### Dimensions in millimeter

d <sub>1</sub>	d <sub>2</sub>	d <sub>3</sub>	d <sub>6</sub>	d <sub>7</sub>	h <sub>K</sub>	l <sub>1</sub> '	l <sub>2</sub>	l <sub>4</sub> '	l <sub>5</sub>	l <sub>6</sub>	l <sub>7</sub>	f	m <sub>x</sub>
28*	33	53	37.0	43.0	50.0	89	20	44.5	2.0	5	9	5	M6
30*	35	55	39.0	45.0	50.0	89	20	44.5	2.0	5	9	5	M6
32*	38	60	42.0	48.0	50.0	89	20	44.5	2.0	5	9	5	M6
33*	38	60	42.0	48.0	50.0	89	20	44.5	2.0	5	9	5	M6
35*	40	62	44.0	50.0	50.0	89	20	44.5	2.0	5	9	5	M6
38*	43	65	49.0	56.0	52.5	95	23	47.5	2.0	6	9	5	M6
40*	45	67	51.0	58.0	52.5	95	23	47.5	2.0	6	9	5	M6
43*	48	70	54.0	61.0	52.5	95	23	47.5	2.0	6	9	5	M6
45*	50	72	56.0	63.0	52.5	95	23	47.5	2.0	6	9	5	M6
48*	53	75	59.0	66.0	52.5	95	23	47.5	2.0	6	9	5	M6
50*	55	77	62.0	70.0	57.5	104	25	52.0	2.5	6	9	5	M6
53*	58	84	65.0	73.0	57.5	104	25	52.0	2.5	6	9	5	M6
55*	60	86	67.0	75.0	57.5	106	25	53.0	2.5	6	9	5	M6
58*	63	89	70.0	78.0	62.5	112	25	56.0	2.5	6	9	7	M8
60*	65	91	72.0	80.0	62.5	112	25	56.0	2.5	6	9	7	M8
63*	68	94	75.0	83.0	62.5	112	25	56.0	2.5	6	9	7	M8
65*	70	97	77.0	85.0	62.5	112	25	56.0	2.5	6	9	7	M8
70*	75	104	83.0	92.0	70.0	126	28	63.0	2.5	7	9	7	M8
75*	80	109	88.0	97.0	70.0	126	28	63.0	2.5	7	9	7	M8
80*	85	114	95.0	105.0	70.0	126	28	63.0	3.0	7	9	7	M8
85*	90	119	100.0	110.0	75.0	126	28	63.0	3.0	7	9	7	M8
90*	95	124	105.0	115.0	75.0	126	28	63.0	3.0	7	9	7	M8
95*	100	129	110.0	120.0	75.0	126	28	63.0	3.0	7	9	7	M8
100*	105	132	115.0	125.0	75.0	126	28	63.0	3.0	7	9	7	M8
105*	115	153	122.2	134.3	73.0	136	32	68.0	2.0	10	—	7	M8
110*	120	158	128.2	140.3	73.0	136	32	68.0	2.0	10	—	7	M8
115*	125	163	136.2	148.3	73.0	136	32	68.0	2.0	10	—	7	M8
120*	130	168	138.2	150.3	73.0	136	32	68.0	2.0	10	—	7	M8
125*	135	173	142.2	154.3	73.0	136	32	68.0	2.0	10	—	7	M8

\*EN 12756

inch size available from size 1.125" to 5.000"

Note: Additional technical & dimensional information will be provided on request.