

Rotary and reciprocating units

CHOOSING A MECHANICAL SEAL

A mechanical seal is a set consisting of two sub-assemblies that provides sealing efficiency between the rotary part and the stationary part and is generally used to seal shafts in pumps, agitators, etc.

The basic principle is common to all mechanical seals: provide sealing efficiency between two moving faces, lubricated by a liquid film, the so-called primary sealing.

- The film maintained by the rotation comes from the medium conveyed by the machine or is an auxiliary fluid.
- An insignificant part of the film may flow out of the friction faces: this flow is called the consumption of the seal.
- The friction, at the level of the film, produces calories that heat the friction faces, the film itself and the surrounding fluid.
- To ensure optimum seal face service life, the film must be stable and liquid.
- To prevent it from vaporising, the fluid to be sealed should have a sufficient pressure at the level of the seal faces.

Depending on the service conditions and nature of the fluid, there are three types of seals:

- Mechanical seals lubricated by a liquid
- Non-lubricated mechanical seals (contact seals) or "dry" seals
- Contactless mechanical seals, gas type

Depending on the applications, component or cartridge seals will be used. They can be either unbalanced (U) or balanced (B).





Secondary sealing is ensured by O-rings, elastomer bellows, welded or hydroformed metal bellows that provide leakproof connection between the friction faces and holders.

Depending on the design, other adaptation elements may be associated to the sub-assemblies (sleeves, flange, cover, drive ring, etc.)

Parameters to be considered when choosing a mechanical seal:

FLUID TO BE SEALED: be aware of the characteristics (abrasive, corrosive, volatile, etc.) and have additional information about the fluid such as its chemical formula, concentration, density, composition when mixed, crystals and solids, toxicity, corrosivity (pH), volatility (vaporising pressure), viscosity.

PRESSURE: required to select a balanced seal (B) > 10 bar or an unbalanced seal (U) < 10 bar.

SPEED: a mechanical seal should be dynamically stable at its rotation speed. Geometric imperfections of the machine (for example stator coaxial misalignment to rotor) generate an unstable interface film at high speed. Over 20 m/s, the choice should be stationary mechanical seals that allow for more geometric imperfections as they are not subjected to centrifugal forces. To avoid excessive heat generation and to promote a stable fluid film within the interface, the choice of the materials will depend on the speed.

TEMPERATURE: all mechanical seal components should retain their physical integrity over the whole service temperature range.

None of the above parameters may be considered independently from each other. Their combination will actually change the service characteristics of the mechanical seal.

The materials used for the friction faces are selected based on their intrinsic properties (chemical resistance, mechanical and thermal characteristics) and their pairing suitability (lubrication).

APPROVALS



EXAMPLE

LATTYseal B 24610 U6 U6 V4 = mechanical seal type 24610 balanced (B) with friction face made of pure silicon carbide (U6) / pure silicon carbide (U6) and FKM FDA-approved O-ring (V4)

Functional diagram of a mechanical seal, See page 220-222

Table of friction torques de frictions, See page 223



Single-seal

LATTYSEAL U 1000

Dynamic sealing through complete, unbalanced mechanical seal

IT'S CONICAL SPRING CONCEPT MAKES IT DEPENDENT ON DIRECTION OF ROTATION

- FULLY RELIABLE SEAL
- EASY TO INSTALL
- COMPACT-SIZE SEAL



OPERATING PARAMETERS (NOT ASSOCIATED)

Pressure : 0 to 10 bar
Temperature : -20 °C to 180°C
Speed : 10 m/s

COMPOSITION

FKM O-ring, right (R) or left (L) winding spring (R G2 B V or L G2 B V).
Friction faces stainless steel 1.4571 (G2) , resin-impregnated hard carbon (B)

TYPES OF INDUSTRIES



FLUIDS

All slightly corrosive, non-abrasive and non-clogging fluids.

GUIDELINES, STANDARDS AND APPROVALS (ON REQUEST)



d1 nominal h6	d3	d4 mini	d6 H 11	d6* ± 0,1	d7* H7	d7 H8	d9 mini	L1 ± 0,5	L3	L4	L5 ± 0,1	L6
10	19	22	17	15.5	19.2	21	12	25	18	7	1.5	4
12	21	24	19	17.5	21.6	23	14	25.5	18	7.5	1.5	4
14	23	26	21	20.5	24.6	25	17	25.5	18	7.5	1.5	4
16	26	28	23	22	28	27	19	26.5	18.5	8	1.5	4
18	29	34	27	24	30	33	21	28.5	19	9.5	2	5
20	31	36	29	29.5	35	35	24	29.5	20	9.5	2	5
22	33	38	31	29.5	35	37	26	31	21.5	9.5	2	5
24	35	40	33	32	38	39	28	32.5	23	9.5	2	5
25	36	41	34	32	38	40	29	34	24.5	9.5	2	5
28	40	44	37	36	42	43	33	35.5	24.5	11	2	5
30	43	46	39	39.2	45	45	35	35.5	24.5	11	2	5
32	45	48	42	42.2	48	48	37	39	28	11	2	5
33	47	49	42			48	38	39.5	28	11.5	2	5
35	49	51	44	46.2	52	50	40	39.5	28	11.5	2	5
38	53	58	49	49.2	55	56	44	42.5	30	12.5	2	6
40	56	60	51	52.2	58	58	47	45.5	33	12.5	2	6
43	59	63	54			61	50	49.5	36	13.5	2	6
45	61	65	56	55.3	64	63	52	51	37.5	13.5	2	6
48	64	68	59	59.7	68.4	66	56	56.5	43	13.5	2	6
50	66	70	62	60.8	69.3	70	58	57.5	43.5	14	2.5	6
53	70	73	65			73	61	59.5	45.5	14	2.5	6
55	71	75	67	66.5	75.4	75	64	62.5	47.5	15	2.5	6
58	76	83	70	69.5	78.4	78	67	65.5	50.5	15	2.5	6
60	78	85	72	71.5	80.4	80	69	66.5	51.5	15	2.5	6
63	83	88	75			83	72	67.5	52.5	15	2.5	6
65	84	90	77	76.5	85.4	85	74	67.5	52.5	15	2.5	6
68	88	93	81	82.7	91.5	90	78	69	53.7	15.3	2.5	7
70	90	95	83	83	92	92	80	69.5	54.2	15.3	2.5	7
75	97	104	88	90.2	99	97	85	70.5	55.2	15.3	2.5	7
80	100	109	95	95.2	104	105	91	74.5	57.5	17	3	7

Complies with NF EN 12756 r : 1,2 mm for d1 10 to 16 - 1,6 mm for d1 18 to 35 - 2,5 mm for d1 38 to 80. * These special stationaries, used on many pumps, can be delivered on request

The maximum temperature, pressure and speed given in this document cannot be associated in any case.



Single-seal

LATTYSEAL B 1000

Dynamic sealing through complete, balanced mechanical seal

IT'S CONICAL SPRING CONCEPT MAKES IT DEPENDENT ON DIRECTION OF ROTATION

- FULLY RELIABLE SEAL
- EASY TO INSTALL
- COMPACT-SIZE SEAL



OPERATING PARAMETERS (NOT ASSOCIATED)

Pressure : 0 to 25 bar
Temperature : -20 °C to 180°C
Speed : 20 m/s

COMPOSITION

FKM O-ring, right (R) or left (L) winding spring (R G2 B V or L G2 B V). Friction faces stainless steel 1.4571 (G2) , resin-impregnated hard carbon (B)

TYPES OF INDUSTRIES



FLUIDS

All slightly corrosive, non-abrasive and non-clogging fluids.

GUIDELINES, STANDARDS AND APPROVALS (ON REQUEST)



d1 nominal h6	d2 h6	d3 maxi	d4 mini	d6 H 11	d7 H8	d9 mini	L1 ±0,5	L2	L3	L4	L5 ± 0,1	L6 ± 0,1
10	14	24	26	17	21	17	37	18	26.5	10.5	1.5	4
12	16	26	28	19	23	19	39	18	28.5	10.5	1.5	4
14	18	32	34	21	25	21	40	18	29.5	10.5	1.5	4
16	20	34	36	23	27	24	42.5	18	32	10.5	1.5	4
18	22	36	38	27	33	26	45	20	32.5	12.5	2	5
20	24	38	40	29	35	28	45	20	32.5	12.5	2	5
22	26	40	42	31	37	30	47	20	34.5	12.5	2	5
24	28	42	44	33	39	33	47.5	20	35.5	12	2	5
25	30	44	46	34	40	35	47.5	20	35.5	12	2	5
28	33	47	49	37	43	37	50	20	38	12	2	5
30	35	49	51	39	45	40	50	20	38	12	2	5
32	38	54	58	42	48	44	53	20	41.5	11.5	2	5
33	38	54	58	42	48	44	54	20	42.5	11.5	2	5
35	40	56	60	44	50	47	55	20	43.5	11.5	2	5
38	43	59	63	49	56	50	60	23	46.5	13.5	2	6
40	45	61	65	51	58	52	63	23	49.5	13.5	2	6
43	48	64	68	54	61	56	68	23	54.5	13.5	2	6
45	50	66	70	56	63	58	69	23	55.5	13.5	2	6
48	53	69	73	59	66	61	70	23	56.5	13.5	2	6
50	55	71	75	62	70	64	73	25	58	15	2.5	6
53	58	78	83	65	73	67	75	25	60.5	14.5	2.5	6
55	60	80	85	67	75	69	76	25	61.5	14.5	2.5	6
58	63	83	88	70	78	72	76	25	61	15	2.5	6
60	65	85	90	72	80	74	77	25	62	15	2.5	6
63	68	88	93	75	83	78	80	25	65	15	2.5	6
65	70	90	95	77	85	80	80	25	65	15	2.5	6
70	75	99	104	83	92	86	82	28	65.5	16.5	2.5	7
75	80	104	109	88	97	91	85	28	68.5	16.5	2.5	7
80	85	109	114	95	105	96	87	28	70	17	3	7

*Complies with NF EN 12756 r : 1,2 mm for d1 10 to 16 - 1,6 mm for d1 18 to 35 - 2,5 mm for d1 38 to 80. *These special stationaries, used on many pumps, can be delivered on request"

The maximum temperature, pressure and speed given in this document cannot be associated in any case.

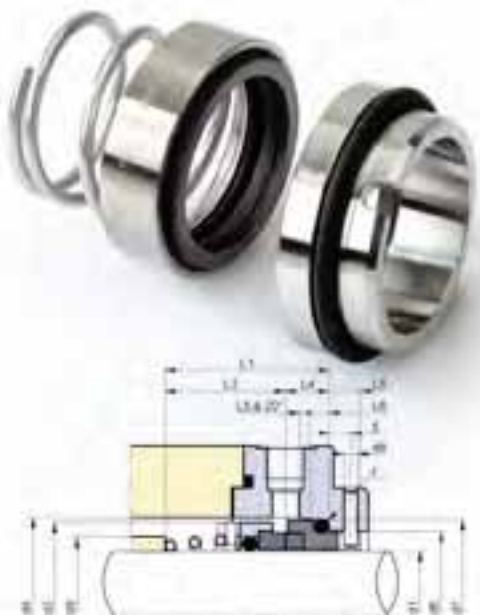
Single-seal

LATTYSEAL U 1112

Dynamic sealing through complete, unbalanced mechanical seal

IT'S CONICAL SPRING CONCEPT MAKES IT DEPENDENT ON DIRECTION OF ROTATION

- UNBALANCED MECHANICAL SEAL
- RUGGED DESIGN, IN PARTICULAR WITH ITS SHRUNK STATIONARY FIT AND STAINLESS STEEL HOLDER



OPERATING PARAMETERS (NOT ASSOCIATED)

Pressure : 0 to 10 bar
Temperature : -20 °C to 180°C
Speed : 10 m/s

COMPOSITION

Supplied with FKM O-ring and a kit of ethylene-propylene (E) O-rings Resin-impregnated hard carbon (B), pure silicon carbide (U6)

TYPES OF INDUSTRIES



FLUIDS

All slightly corrosive, non-abrasive and non-clogging fluids.

GUIDELINES, STANDARDS AND APPROVALS (ON REQUEST)



d1 nominal h6	d3	d4 mini	d6 H 11	d7 H 8	d9 mini	L1 ±0,5	L3	L4	L5 ± 0,1	L6 ± 0,1	L8
10	20	22	17	21	12	25	17.5	7.5	1.5	4	7.5
12	22	24	19	23	14	25.5	18	7.5	1.5	4	7.5
14	24	26	21	25	17	25.5	17.5	8	1.5	4	7.5
16	26	28	23	27	19	26.5	18.5	8	1.5	4	7.5
18	32	34	27	33	21	28.5	19.5	9	2	5	7.5
20	34	36	29	35	24	29.5	19.5	10	2	5	7.5
22	36	38	31	37	26	31	21	10	2	5	7.5
24	38	40	33	39	28	32.5	22	10.5	2	5	7.5
25	39	41	34	40	29	34	23.5	10.5	2	5	7.5
28	42	44	37	43	33	35.5	25	10.5	2	5	7
30	44	46	39	45	35	35.5	24	11.5	2	5	7.5
32	46	48	42	48	37	39	27.5	11.5	2	5	7.5
33	47	49	42	48	38	39.5	28.5	11	2	5	7.5
35	49	51	44	50	40	39.5	28.5	11	2	5	7.5
38	54	58	49	56	44	42.5	30.5	12	2	6	8.5
40	56	60	51	58	47	45.5	33	12.5	2	6	8.5
43	59	63	54	61	50	49.5	37	12.5	2	6	8.5
45	61	65	56	63	52	51	38.5	12.5	2	6	8.5
48	64	68	59	66	56	56.5	44	12.5	2	6	8.5
50	66	70	62	70	58	57.5	44	13.5	2.5	6	8
53	69	73	65	73	61	59.5	46	13.5	2.5	6	8
55	71	75	67	75	64	62.5	49	13.5	2.5	6	8
58	78	83	70	78	67	65.5	51	14.5	2.5	6	8
60	80	85	72	80	69	66.5	52	14.5	2.5	6	8
63	83	88	75	83	72	67.5	52	15.5	2.5	6	8
65	85	90	77	85	74	67.5	52	15.5	2.5	6	8
68	88	93	81	90	78	69	53.5	15.5	2.5	7	8
70	90	95	83	92	80	69.5	54	15.5	2.5	7	8
75	99	104	88	97	85	70.5	55	15.5	2.5	7	8
80	104	109	95	105	91	74.5	58.5	16	3	7	8

Complies with NF EN 12756 d8 (tight to sleeve) : 3 mm for d1 18 to 35, 4 mm for d1 38 to 100, r : 1,2 mm for d1 10 to 16 -1.6 mm for d1 18 to 35, 2,5 mm for d1 38 to 100

The maximum temperature, pressure and speed given in this document cannot be associated in any case.



Single-seal

LATTYSEAL U 1212

Dynamic sealing through complete, unbalanced mechanical seal

IT'S CONICAL SPRING CONCEPT MAKES IT DEPENDENT ON DIRECTION OF ROTATION

- WITHSTANDS EXTREME CONDITIONS
- OPTIONAL TUNGSTEN CARBIDE POSSIBLE FOR INSTALLATION IN MORE SEVERE OPERATING CONDITIONS.



OPERATING PARAMETERS (NOT ASSOCIATED)

Pressure : 0 to 10 bar
Temperature : -20 °C to 180°C
Speed : 10 m/s

COMPOSITION

FKM O-ring, right (R) or left (L) winding spring (R U6U6 V or L U6U6 V). Supplied with friction faces made of pure silicon carbide (U6) and a kit of ethylene-propylene (E) O-rings

TYPES OF INDUSTRIES



FLUIDS

All slightly corrosive, abrasive and non-clogging fluids.

GUIDELINES, STANDARDS AND APPROVALS (ON REQUEST)



d1 nominal h6	d3	d4 mini	d6 H 11	d7 H8	d9 mini	L1 ± 0,5	L3	L4	L5 ± 0,1	L6 ± 0,1	L8
10	20	22	17	21	12	25	17.5	7.5	1.5	4	7.5
12	22	24	19	23	14	25.5	18	7.5	1.5	4	7.5
14	24	26	21	25	17	25.5	17.5	8	1.5	4	7.5
16	26	28	23	27	19	26.5	18.5	8	1.5	4	7.5
18	32	34	27	33	21	28.5	19.5	9	2	5	7.5
20	34	36	29	35	24	29.5	19.5	10	2	5	7.5
22	36	38	31	37	26	31	21	10	2	5	7.5
24	38	40	33	39	28	32.5	22	10.5	2	5	7.5
25	39	41	34	40	29	34	23.5	10.5	2	5	7.5
28	42	44	37	43	33	35.5	25	10.5	2	5	7
30	44	46	39	45	35	35.5	24.5	11	2	5	7.5
32	46	48	42	48	37	39	28	11	2	5	7.5
33	47	49	42	48	38	39.5	28.5	11	2	5	7.5
35	49	51	44	50	40	39.5	28.5	11	2	5	7.5
38	54	58	49	56	44	42.5	30.5	12	2	6	8.5
40	56	60	51	58	47	45.5	33	12.5	2	6	8.5
43	59	63	54	61	50	49.5	37	12.5	2	6	8.5
45	61	65	56	63	52	51	38.5	12.5	2	6	8.5
48	64	68	59	66	56	56.5	44	12.5	2	6	8.5
50	66	70	62	70	58	57.5	44	13.5	2.5	6	8
53	69	73	65	73	61	59.5	46	13.5	2.5	6	8
55	71	75	67	75	64	62.5	49	13.5	2.5	6	8
58	78	83	70	78	67	65.5	51	14.5	2.5	6	8
60	80	85	72	80	69	66.5	52	14.5	2.5	6	8
63	83	88	75	83	72	67.5	52	15.5	2.5	6	8
65	85	90	77	85	74	67.5	52	15.5	2.5	6	8
70	88	93	81	90	78	69	53.5	15.5	2.5	7	8
75	90	95	83	92	80	69.5	54	15.5	2.5	7	8
80	99	104	88	97	85	70.5	55	15.5	2.5	7	8
80	104	109	95	105	91	74.5	58.5	16	3	7	8

Complies with NF EN 12756 and DIN 24960 d8 (tigh to sleeve) : 3 mm for d1 18 to 35, 4 mm for d1 38 to 80 r ; 1,2 mm for d1 10 to 16 -1.6 mm for d1 18 to 35, 2,5 mm for d1 38 to 80

The maximum temperature, pressure and speed given in this document cannot be associated in any case.

Single-seal

LATTYSEAL U 6812

Dynamic sealing through complete, unbalanced mechanical seal

REMOVABLE FRICTION FACE - FDA-APPROVED STANDARD VERSION

- UNBALANCED VERSION
- COMPACT SIZE
- MULTIPURPOSE



OPERATING PARAMETERS (NOT ASSOCIATED)

Pressure : 0 to 10 bar
Temperature : -20 °C to 220°C
Speed : 15 m/s

COMPOSITION

Supplied with FKM O-ring and a kit of ethylene-propylene (E) O-rings
Friction faces made of resin-impregnated carbon (B)/ pure silicon carbide (U6) or pure silicon carbide (U6) / pure silicon carbide(U6)

TYPES OF INDUSTRIES



FLUIDS

All slightly corrosive, non-abrasive and non-clogging fluids.

GUIDELINES, STANDARDS AND APPROVALS

CE (ON REQUEST) **FDA** (ON REQUEST)

d1 nominal h6	d3 (U) maxi	d4 (U) mini	d6 H 11	d7 H 8	L	L3	L4	LS ± 0,1	L6 ± 0,1	L8
16	26	28	23	27	28	20	8	2	5	7.5
18	32	34	27	33	30.5	21.5	9	2	5	7.5
20	34	36	29	35	31.5	21.5	10	2	5	7.5
22	36	38	31	37	31.5	21.5	10	2	5	7.5
24	38	40	33	39	33.5	23	10.5	2	5	7.5
25	39	41	34	40	34.5	24	10.5	2	5	7.5
28	42	44	37	43	33.5	23	10.5	2	5	7
30	44	46	39	45	35.5	24	11.5	2	5	7.5
32	46	48	42	48	35.5	24	11.5	2	5	7.5
33	47	49	42	48	35	24	11	2	5	7.5
35	49	51	44	50	35	24	11	2	5	7.5
38	54	58	49	56	38.5	26.5	12	2	6	8.5
40	56	60	51	58	40	27.5	12.5	2	6	8.5
43	59	63	54	61	40	27.5	12.5	2	6	8.5
45	61	65	56	63	40	27.5	12.5	2	6	8.5
48	64	68	59	66	40	27.5	12.5	2	6	8.5
50	66	70	62	70	40.5	27	13.5	2.5	6	8
53	69	73	65	73	40.5	27	13.5	2.5	6	8
55	71	75	67	75	40.5	27	13.5	2.5	6	8
58	78	83	70	78	43	28.5	14.5	2.5	6	8
60	80	85	72	80	43	28.5	14.5	2.5	6	8
63	83	88	75	83	47	31.5	15.5	2.5	6	8
65	85	90	77	85	47	31.5	15.5	2.5	6	8
68	88	93	81	90	49	33.5	15.5	2.5	7	8
70	90	95	83	92	47.5	32	15.5	2.5	7	8
75	99	104	88	97	47.5	32	15.5	2.5	7	8.2
80	104	109	95	105	49	33	16	3	7	8
85	109	114	100	110	48	32	16	3	7	8
90	114	119	105	115	55	38	17	3	8	8
95	119	124	110	120	56	38	18	3	8	8
100	124	129	115	125	56	38	18	3	8	8

Complies with NFE 29991 and DIN 24960 except for L* which is less than the L1K in the standards. Adaptor rings can be supplied if required. d8 (tigh to sleeve) : 3 mm for d1 16 to 35, 4 mm for d1 38 to 100. r : 1,6 mm for d1 16 to 55, 2,5 mm for d1 58 to 100

The maximum temperature, pressure and speed given in this document cannot be associated in any case.



Single-seal

LATTYSEAL B 6812

Dynamic sealing through complete, balanced mechanical seal

REMOVABLE FRICTION FACE

- BALANCED VERSION
- COMPACT SIZE
- MULTIPURPOSE USE



OPERATING PARAMETERS (NOT ASSOCIATED)

Pressure : 10 to 25 bar
Temperature : -20 °C to 220°C
Speed : 25 m/s

COMPOSITION

Supplied with FKM O-ring and a kit of ethylene-propylene (E) O-rings
Friction faces made of resin-impregnated carbon (B)/ pure silicon carbide (U6) or pure silicon carbide (U6) / pure silicon carbide (U6)

TYPES OF INDUSTRIES



FLUIDS

All slightly corrosive, non-abrasive and non-clogging fluids.

GUIDELINES, STANDARDS AND APPROVALS (ON REQUEST)



d1 nominal h6	d2 h6	d3 (B) maxi	d4 (B) mini	d6 H11	d7 H8	L*	L2 ± 0,5	L3	L4	L5 ± 0,1	L6 ± 0,1	L8
18	22	36	38	27	33	30.5	20	29.5	9	2	5	7.5
20	24	38	40	29	35	31.5	20	32.5	10	2	5	7.5
22	26	40	42	31	37	31.5	20	33.5	10	2	5	7.5
24	28	42	44	33	39	33.5	20	33	10.5	2	5	7.5
25	30	44	46	34	40	34.5	20	34	10.5	2	5	7.5
28	33	47	49	37	43	33.5	20	33	10.5	2	5	7
30	35	49	51	39	45	35.5	20	33	11.5	2	5	7.5
32	38	54	58	42	48	35.5	20	34	11.5	2	5	7.5
33	38	54	58	42	48	35	20	34	11	2	5	7.5
35	40	56	60	44	50	35	20	35	11	2	5	7.5
38	43	59	63	49	56	38.5	23	37.5	12	2	6	8.5
40	45	61	65	51	58	40	23	37.5	12.5	2	6	8.5
43	48	64	68	54	61	40	23	37.5	12.5	2	6	8.5
45	50	66	70	56	63	40	23	37.5	12.5	2	6	8.5
48	53	69	73	59	66	40	23	37.5	12.5	2	6	8.5
50	55	71	75	62	70	40.5	25	38	13.5	2.5	6	8
53	58	78	83	65	73	40.5	25	39	13.5	2.5	6	8
55	60	80	85	67	75	40.5	25	39	13.5	2.5	6	8
58	63	83	88	70	78	43	25	41.5	14.5	2.5	6	8
60	65	85	90	72	80	43	25	41.5	14.5	2.5	6	8
63	68	88	93	75	83	47	25	41.5	15.5	2.5	6	8
65	70	90	95	77	85	47	25	41.5	15.5	2.5	6	8
70	75	99	104	83	92	47.5	28	43	15.5	2.5	7	8
75	80	104	109	88	97	47.5	28	44	15.5	2.5	7	8.2
80	85	109	114	95	105	49	28	44	16	3	7	8
85	90	114	119	100	110	48	28	50	16	3	7	8
90	95	119	124	105	115	55	28	50	17	3	7	8
95	100	124	129	110	120	56	28	50	18	3	7	8
100	105	129	134	115	125	56	28	50	18	3	7	7.8

Complies with NFE 29991 and DIN 24960 except for L* which is less than the LIK in the standards. Adaptor rings can be supplied if required. d8 (tight to sleeve): 3 mm for d1 18 to 35, 4 mm for d1 38 to 100. r: 1.6 mm for d1 18 to 55, 2.5 mm for d1 58 to 100

The maximum temperature, pressure and speed given in this document cannot be associated in any case.

Single-seal

LATTYSEAL B 17110 B

Dynamic sealing through complete, balanced mechanical seal

METRIC VERSION

d1 nominal h6	d3	d4 mini	d6 H11	d7 H8	L1	L3	L4	L5 ± 0,1	L6 ± 0,1	L8
25	37	41	34	40	40	30.5	9.5	2	5	7.5
28	42.8	44	37	43	42.5	32	10.5	2	5	7
30	43	46	39	45	42.5	32	10.5	2	5	7.5
32	43	48	42	48	42.5	32	10.5	2	5	7.5
33	46	49	42	48	42.5	32	10.5	2	5	7.5
35	49.2	51	44	50	42.5	32	10.5	2	5	7.5
38	49.4	58	49	56	45	33.5	11.5	2	6	8.5
40	55.5	60	51	58	45	33.5	11.5	2	6	8.5
43	58.7	63	54	61	45	33.5	11.5	2	6	8.5
45	58.7	65	56	63	45	33.5	11.5	2	6	8.5
48	61.9	68	59	66	45	33.5	11.5	2	6	8.5
50	65.1	70	62	70	47.5	34.5	13	2.5	6	8
53	68.2	73	65	73	47.5	34.5	13	2.5	6	8
55	71.4	75	67	75	47.5	34.5	13	2.5	6	8
58	74.6	83	70	78	52.5	39	13.5	2.5	6	8
60	74.6	85	72	80	52.5	39	13.5	2.5	6	8
63	80.9	88	75	83	52.5	39	13.5	2.5	6	8
65	84.1	90	77	85	52.5	39	13.5	2.5	6	8
68	87.3	93	81	90	52.5	39	13.5	2.5	7	8
70	87.3	95	83	92	60	45	15	2.5	7	8
75	95.2	104	88	97	60	45	15	2.5	7	8
80	98.4	109	95	105	60	45	15	3	7	8
85	104.8	114	100	110	60	44	16	3	7	8
90	108	119	105	115	65	49	16	3	7	8
95	114.3	124	110	120	65	49	16	3	7	8
100	120.7	129	115	125	65	49	16	3	7	8

Complies with NF E 29991 and DIN 24960 d8 (tight to sleeve) : 3 mm for d1 25 to 35 - 4 mm for d1 38 to 100 r : 1.5 mm for d1 25 to 55 - 2.5 mm for d1 58 to 100.

IMPERIAL VERSION

d1 nominal in	d1 nominal inches	d3	d4 mini	d6 H 11	d7 H8	L1	L3	L4	L5 ± 0,1	L6 ± 0,1	L8
1"	1.000	37	39	34	40	41.3	31.8	9.5	2	5	7.5
1 1/8"	1.125	42.8	44.8	39	45	42.3	31.8	10.5	2	5	7.5
1 1/4"	1.250	46	50	42	48	43.8	33.3	10.5	2	5	7.5
1 3/8"	1.375	49.2	53.2	44	50	47	36.5	10.5	2	5	7.5
1 1/2"	1.500	52.4	56.4	49	56	48	36.5	11.5	2	6	8.5
1 5/8"	1.625	55.5	59.5	54	61	48	36.5	11.5	2	6	8.5
1 3/4"	1.750	58.7	62.7	56	63	48	36.5	11.5	2	6	8.5
1 7/8"	1.875	61.9	65.9	59	66	49.6	38.1	11.5	2	6	8.5
2"	2.000	65.1	70.1	65	73	51.1	38.1	13	2.5	6	8
2 1/8"	2.125	68.2	73.2	67	75	51.1	38.1	13	2.5	6	8
2 1/4"	2.250	71.4	76.4	70	78	53.2	39.7	13.5	2.5	6	8
2 3/8"	2.375	74.6	79.6	72	80	53.2	39.7	13.5	2.5	6	8
2 1/2"	2.500	80.9	85.9	77	85	53.2	39.7	13.5	2.5	6	8
2 5/8"	2.625	84.1	89.1	81	90	54.8	41.3	13.5	2.5	7	8
2 3/4"	2.750	87.3	92.3	83	92	56.3	41.3	15	2.5	7	8
2 7/8"	2.875	92.1	97.1	88	97	57.8	42.8	15	2.5	7	8
3"	3.000	95.3	100.3	88	97	57.8	42.8	15	2.5	7	8
3 1/8"	3.125	98.4	103.4	95	105	59.5	44.5	15	3	7	8
3 1/4"	3.250	101.6	106.6	100	110	60.5	44.5	16	3	7	8
3 3/8"	3.375	104.8	109.8	100	110	60.5	44.5	16	3	7	8
3 1/2"	3.500	108	113	105	115	63.6	47.6	16	3	7	8
3 5/8"	3.625	111.1	116.1	110	120	63.6	47.6	16	3	7	8
3 3/4"	3.750	114.3	119.3	110	120	63.6	47.6	16	3	7	8
3 7/8"	3.875	117.5	122.5	115	125	63.6	47.6	16	3	7	8
4"	4.000	120.7	125.7	115	125	63.6	47.6	16	3	7	8

Complies with NF E 29991 and DIN 24960 d8 (tight to sleeve) : 3 mm for d1 1.000 to 1.375 - 4 mm for d1 1.500 to 4.000 r : 1.5 mm for d1 1.000 to 2.125 - 2.5 mm for d1 2.250 to 4.000

Single-seal

LATTYSEAL B 17210 B

Dynamic sealing through complete, balanced mechanical seal

BELLOWS MECHANICAL SEAL FOR HIGH-TEMPERATURE APPLICATIONS

- SELF-CLEANING MECHANICAL SEAL
- BELLOWS MECHANICAL SEAL



OPERATING PARAMETERS (NOT ASSOCIATED)

Pressure : 0 to 20 bar
Temperature : -20 °C to 200°C
Speed : 20 m/s

COMPOSITION

Supplied with FKM O-ring Pure silicon carbide (U6)

TYPES OF INDUSTRIES



FLUIDS

All corrosive, abrasive and slightly clogging fluids.

GUIDELINES, STANDARDS AND APPROVALS (ON REQUEST)



d1 nominal h6	d3	d4 mini	d6 H 11	d7 H8	L1	L3	L4	L5 ± 0,1	L6 ± 0,1	L8
25	37	41	34	40	40	30.5	9.5	2	5	7.5
28	42.8	44	37	43	42.5	32	10.5	2	5	7
30	43	46	39	45	42.5	32	10.5	2	5	7.5
32	43	48	42	48	42.5	32	10.5	2	5	7.5
33	46	49	42	48	42.5	32	10.5	2	5	7.5
35	49.2	51	44	50	42.5	32	10.5	2	5	7.5
38	49.4	58	49	56	45	33.5	11.5	2	6	8.5
40	55.5	60	51	58	45	33.5	11.5	2	6	8.5
43	58.7	63	54	61	45	33.5	11.5	2	6	8.5
45	58.7	65	56	63	45	33.5	11.5	2	6	8.5
48	61.9	68	59	66	45	33.5	11.5	2	6	8.5
50	65.1	70	62	70	47.5	34.5	13	2.5	6	8
53	68.2	73	65	73	47.5	34.5	13	2.5	6	8
55	71.4	75	67	75	47.5	34.5	13	2.5	6	8
58	74.6	83	70	78	52.5	39	13.5	2.5	6	8
60	74.6	85	72	80	52.5	39	13.5	2.5	6	8
63	80.9	88	75	83	52.5	39	13.5	2.5	6	8
65	84.1	90	77	85	52.5	39	13.5	2.5	6	8
68	87.3	93	81	90	52.5	39	13.5	2.5	7	8
70	87.3	95	83	92	60	45	15	2.5	7	8
75	95.2	104	88	97	60	45	15	2.5	7	8
80	98.4	109	95	105	60	45	15	3	7	8
85	104.8	114	100	110	60	44	16	3	7	8
90	108	119	105	115	65	49	16	3	7	8
95	114.3	124	110	120	65	49	16	3	7	8
100	120.7	129	115	125	65	49	16	3	7	8

Complies with NFE 29991 and DIN 24960 d8 (tight to sleeve) : 3 mm for d1 25 to 35 - 4 mm for d1 38 to 100 r : 1,5 mm for d1 25 to 55 - 2,5 mm for d1 58 to 100.

The maximum temperature, pressure and speed given in this document cannot be associated in any case.



Single-seal

LATTYSEAL B 17210 HT

Dynamic sealing through complete, balanced mechanical seal

VERY HIGH TEMPERATURES AND HIGH-ROTATION SPEEDS POSSIBLE

- SELF-CLEANING MECHANICAL SEAL
- BELLOWS MECHANICAL SEAL
- FITTED WITH GRAPHITE GASKET



OPERATING PARAMETERS (NOT ASSOCIATED)

Pressure : 0 to 20 bar
Temperature : -20 °C to 400°C
Speed : 25 m/s

COMPOSITION

Supplied with graphite gasket for the rotary part. If $T^{\circ} < 270^{\circ}\text{C}$, supplied for the friction face with FFKM O-ring. If $T^{\circ} > 270^{\circ}\text{C}$, supplied with specific friction face and graphite gasket.

TYPES OF INDUSTRIES



d1 nominal h6	d3	d4 mini	d6* H11	d7* H 8	L1	L3	L4	L5* ±0,1	L6* ± 0,1	L8	L9
25	39.7	41.7	34	40	52.3	42.8	9.5	2	5	7.5	3.2
28	42.8	44.8	37	43	50.2	39.7	10.5	2	5	7	3.2
30	46	48	39	45	50.2	39.7	10.5	2	5	7.5	3.2
32	46	50	42	48	50.2	39.7	10.5	2	5	7.5	3.2
33	46	50	42	48	50.2	39.7	10.5	2	5	7.5	3.2
35	49.2	53.2	44	50	55	44.5	10.5	2	5	7.5	3.2
38	55.1	59.1	49	56	56	44.5	11.5	2	6	8.5	4.2
40	58.3	62.3	51	58	56	44.5	11.5	2	6	8.5	4.2
43	61.5	65.5	54	61	56	44.5	11.5	2	6	8.5	4.2
45	61.5	65.5	56	63	56	44.5	11.5	2	6	8.5	4.2
48	64.6	68.6	59	66	56	44.5	11.5	2	6	8.5	4.2
50	67.8	71.8	62	70	57.5	44.5	13	2.5	6	8	4.2
53	71	76	65	73	57.5	44.5	13	2.5	6	8	4.2
55	74.2	79.2	67	75	60.6	47.6	13	2.5	6	8	4.2
58	77.3	82.3	70	78	61.1	47.6	13.5	2.5	6	8	4.2
60	77.3	82.3	72	80	61.1	47.6	13.5	2.5	6	8	4.2
63	80.9	85.9	75	83	61.1	47.6	13.5	2.5	6	8	4.2
65	84.1	89.1	77	85	61.1	47.6	13.5	2.5	6	8	4.2
68	87.3	92.3	81	90	61.1	47.6	13.5	2.5	7	8	4.2
70	87.3	92.3	83	92	62.6	47.6	15	2.5	7	8	4.2
75	95.3	100.3	88	97	62.6	47.6	15	2.5	7	8	4.8
80	98.4	103.4	95	105	62.6	47.6	15	3	7	8	4.8
85	104.8	109.8	100	110	63.6	47.6	16	3	7	8	4.8
90	108	113	105	115	63.6	47.6	16	3	7	8	4.8
95	114.3	119.3	110	120	63.6	47.6	16	3	7	8	4.8
100	120.7	125.7	115	125	63.6	47.6	16	3	7	8	4.8

Complies with NFE 29991 and DIN 24960 d8 (tight to sleeve) : 3 mm for d1 25 to 35 - 4 mm for d1 38 to 100 r : 1.5 mm for d1 25 to 55 - 2.5 mm for d1 58 to 100.

The maximum temperature, pressure and speed given in this document cannot be associated in any case.

Single-seal

LATTYSEAL B 17110 HT

Dynamic sealing through complete, balanced mechanical seal

FOR HIGH-TEMPERATURE APPLICATIONS

- SELF-CLEANING MECHANICAL SEAL
- POTENTIALLY USABLE FOR HIGH-ROTATION SPEEDS
- INSTALLED WITH GRAPHITE GASKET



OPERATING PARAMETERS (NOT ASSOCIATED)

Pressure : 0 to 20 bar
Temperature : -20 °C to 400°C
Speed : 25 m/s

COMPOSITION

Supplied with graphite gasket for the rotary part. If $T^{\circ} < 270^{\circ}\text{C}$, supplied for the friction face with FFKM O-ring. If $T^{\circ} > 270^{\circ}\text{C}$, supplied with specific friction face and graphite gasket. Metal-impregnated carbon (A), pure silicon carbide (U6)

TYPES OF INDUSTRIES



FLUIDS

All corrosive, abrasive and clogging fluids.

Single-seal

LATTYSEAL B 17110 HT

Dynamic sealing through complete, balanced mechanical seal

METRIC VERSION

d1 nominal h6	d3	d4 mini	d6 H11	d7 H8	L1	L3	L4	L5 ± 0,1	L6 ± 0,1	L8	L9
25	39,7	41,7	34	40	52,3	42,8	9,5	2	5	7,5	3,2
28	42,8	44,8	37	43	50,2	39,7	10,5	2	5	7	3,2
30	46	48	39	45	50,2	39,7	10,5	2	5	7,5	3,2
32	46	50	42	48	50,2	39,7	10,5	2	5	7,5	3,2
33	46	50	42	48	50,2	39,7	10,5	2	5	7,5	3,2
35	49,2	53,2	44	50	55	44,5	10,5	2	5	7,5	3,2
38	55,1	59,1	49	56	56	44,5	11,5	2	6	8,5	4,2
40	58,3	62,3	51	58	56	44,5	11,5	2	6	8,5	4,2
43	61,5	65,5	54	61	56	44,5	11,5	2	6	8,5	4,2
45	61,5	65,5	56	63	56	44,5	11,5	2	6	8,5	4,2
48	64,6	68,6	59	66	56	44,5	11,5	2	6	8,5	4,2
50	67,8	71,8	62	70	57,5	44,5	13	2,5	6	8	4,2
53	71	76	65	73	57,5	44,5	13	2,5	6	8	4,2
55	74,2	79,2	67	75	60,6	47,6	13	2,5	6	8	4,2
58	77,3	82,3	70	78	61,1	47,6	13,5	2,5	6	8	4,2
60	77,3	82,3	72	80	61,1	47,6	13,5	2,5	6	8	4,2
63	80,9	85,9	75	83	61,1	47,6	13,5	2,5	6	8	4,2
65	84,1	89,1	77	85	61,1	47,6	13,5	2,5	6	8	4,2
68	87,3	92,3	81	90	61,1	47,6	13,5	2,5	7	8	4,2
70	87,3	92,3	83	92	62,6	47,6	15	2,5	7	8	4,2
75	95,3	100,3	88	97	62,6	47,6	15	2,5	7	8	4,8
80	98,4	103,4	95	105	62,6	47,6	15	3	7	8	4,8
85	104,8	109,8	100	110	63,6	47,6	16	3	7	8	4,8
90	108	113	105	115	63,6	47,6	16	3	7	8	4,8
95	114,3	119,3	110	120	63,6	47,6	16	3	7	8	4,8
100	120,7	125,7	115	125	63,6	47,6	16	3	7	8	4,8

Complies with NF E 29991 and DIN 24960 d8 (tight to sleeve): 3 mm for d1 25 to 35 - 4 mm for d1 38 to 100 r: 1,5 mm for d1 25 to 55 - 2,5 mm for d1 58 to 100.

IMPERIAL VERSION

d1 nominal in	d1 nominal inches	d3	d4 mini	d6 H 11	d7 H8	L1	L3	L4	L5 ± 0,1	L6 ± 0,1	L8	L9
1"	1.000	39,7	41,7	34	40	52,3	42,8	9,5	2	5	7,5	3,2
1 1/8"	1.125	42,8	44,8	39	45	50,2	39,7	10,5	2	5	7,5	3,2
1 1/4"	1.250	46	50	42	48	50,2	39,7	10,5	2	5	7,5	3,2
1 3/8"	1.375	49,2	53,2	44	50	55	44,5	10,5	2	5	7,5	3,2
1 1/2"	1.500	55,1	59,1	49	56	56	44,5	11,5	2	6	8,5	4,2
1 5/8"	1.625	58,3	62,3	54	61	56	44,5	11,5	2	6	8,5	4,2
1 3/4"	1.750	61,5	65,5	56	63	56	44,5	11,5	2	6	8,5	4,2
1 7/8"	1.875	64,6	68,6	59	66	56	44,5	11,5	2	6	8,5	4,2
2"	2.000	67,8	72,8	65	73	57,5	44,5	13	2,5	6	8	4,2
2 1/8"	2.125	71	76	67	75	57,5	44,5	13	2,5	6	8	4,2
2 1/4"	2.250	74,2	79,2	70	78	61,1	47,6	13,5	2,5	6	8	4,2
2 3/8"	2.375	77,3	82,3	72	80	61,1	47,6	13,5	2,5	6	8	4,2
2 1/2"	2.500	80,9	85,9	77	85	61,1	47,6	13,5	2,5	6	8	4,2
2 5/8"	2.625	84,1	89,1	81	90	61,1	47,6	13,5	2,5	7	8	4,2
2 3/4"	2.750	87,3	92,3	83	92	62,6	47,6	15	2,5	7	8	4,2
2 7/8"	2.875	92,1	97,1	88	97	62,6	47,6	15	2,5	7	8	4,8
3"	3.000	95,3	100,3	88	97	62,6	47,6	15	2,5	7	8	4,8
3 1/8"	3.125	98,4	103,4	95	105	62,6	47,6	15	3	7	8	4,8
3 1/4"	3.250	101,6	106,6	100	110	63,6	47,6	16	3	7	8	4,8
3 3/8"	3.375	104,8	109,8	100	110	63,6	47,6	16	3	7	8	4,8
3 1/2"	3.500	108	113	105	115	63,6	47,6	16	3	7	8	4,8
3 5/8"	3.625	111,1	116,1	110	120	63,6	47,6	16	3	7	8	4,8
3 3/4"	3.750	114,3	119,3	110	120	63,6	47,6	16	3	7	8	4,8
3 7/8"	3.875	117,5	122,5	115	125	63,6	47,6	16	3	7	8	4,8
4"	4.000	120,7	125,7	115	125	63,6	47,6	16	3	7	8	4,8

Complies with NF E 29991 and DIN 24960 d8 (tight to sleeve): 3 mm for d1 1.000 to 1.375 - 4 mm for d1 1.500 to 4.000 r: 1,5 mm for d1 1.000 to 2.125 - 2,5 mm for d1 2.250 to 4.000

Single-seal

LATTYSEAL B 10712 REV/REP - RIV/RIP

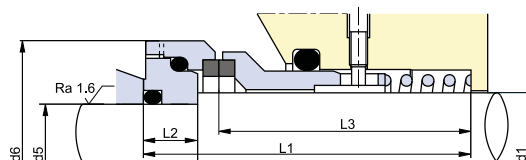
Dynamic sealing through complete, balanced mechanical seal

FOR HIGHLY ABRASIVE OR VISCOUS FLUIDS

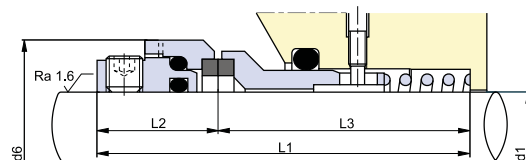
- STATIONARY MECHANICAL SEAL WITH SINGLE PROTECTED SPRING
- SURFACE TREATMENT IS POSSIBLE TO INCREASES SEAL LIFE EXPECTANCY
- AVAILABLE WITH EXTERNAL SCREWED SPRING (REV) OR EXTERNAL PINCHED SPRING (REP), INTERNAL SCREWED SPRING (RIV) OR INTERNAL PINCHED SPRING (RIP)



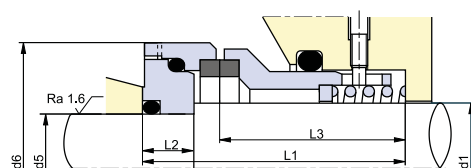
▼ LATTYSEAL B 10712 REP



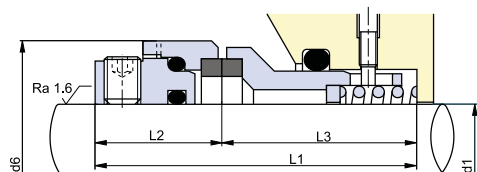
▼ LATTYSEAL B 10712 REV



▼ LATTYSEAL B 10712 RIP



▼ LATTYSEAL B 10712 RIV



OPERATING PARAMETERS (NOT ASSOCIATED)

Pressure : 0 to 25 bar
Temperature : -20 °C to 180 °C
Speed : 10 m/s

COMPOSITION

Supplied with FKM O-ring Nickel-impregnated tungsten carbide (U2)

TYPES OF INDUSTRIES



FLUIDS

All corrosive, abrasive and highly clogging fluids.

GUIDELINES, STANDARDS AND APPROVALS (ON REQUEST)



Single-seal

LATTYSEAL B 10712 REV/REP

d1 nominal h11	d5 h8	d6 ±0,2	d7 H11	d8 ±0,1	d9 ±0,1	d10 + 0,4 + 0	d11 + 0,5 + 0	d12 ±0,1	d13 ±0,1	REP		REV		L3	L4 ±0,1	L5 ±0,1	L6 -0 -0,5	L7 ±0,1	L8 ±0,1
										L1 ±1	L2 ±0,1	L1 ±1	L2 ±0,1						
20	15	42	36,2	32	30,4	23,4	21	30	3	66	10	76	24,5	51,5	36,8	22,8	14	4	4
25	20	48	41,2	37	35,4	28,4	26	34	3	68,5	10	78,5	24,5	54	39,3	25,3	14	4	4
30	25	53	49,2	43	40,4	33,4	31	40	3	72	12	82	26,5	55,5	40,8	24,8	13	4	6
35	30	58	54,2	48	45,4	38,4	36	45	3	76	12	86	28	58	41,8	25,8	15	4	6
40	35	68	64,2	58	55,6	46,6	41	54	3	89	15	99	31	68	51,3	34,3	20	5	6
45	40	73	69,2	63	60,6	51,6	46	59	3	90	15	100	31	69	52,3	35,3	23	5	6
50	45	78	74,2	68	65,6	56,6	51	64	4	96	15	106	31,5	74,5	57,3	39,7	26	5	6
55	50	83	79,2	73	70,6	61,6	56	69	4	98	15	108	31,5	76,5	59,3	41,7	29	5	6
60	55	88	84,2	78	75,6	66,6	61	74	4	100	15	112	33,5	78,5	61,3	43,7	29	5	6
65	57	93	89,2	83	80,6	69,6	66	79	4	99,5	16	110,5	33,5	77	57,8	39,2	25	6	6
70	62	98	94,2	88	85,8	74,6	71	84	4	103,5	16	114,5	34	80,5	60,8	42,2	27	6	6
75	67	103	99,2	93	90,8	79,6	76	89	4	111,5	16	122,5	34	88,5	68,8	50,2	37	6	6
80	72	108	104,2	98	95,8	84,6	81	94	4	115,5	18	124,5	34	90,5	70,8	52,2	37	6	6
85	75	118	114,2	108	105,8	90,8	86,5	103	4	118	20	128	37	91	70,8	50,2	34	8	6
90	80	127	119,2	113	110,8	98,8	91,5	109	5	136,5	23	146,5	44	102,5	77,3	56	40	6,5	6
95	85	132	127,3	119	115,8	102,8	96,5	113	5	142	26	153	48	105	74,3	51	35	7	8
100	90	138	132,3	124	120,8	107,8	101,5	120	5	153	27	163	48	115	84,3	61	45	7	8
105	95	144	137,3	129	125,8	112	106,5	125	5	159	32	164	48	116	82	58	42	7,5	8
110	100	154	147,3	139	135,8	117	111,5	130	5	158	32	163	48	115	79	54,5	33	10	8
115	105	159	152,3	144	140,8	122	116,5	136,5	5	172	35	177,5	53,5	124	85	61	43	10	8
120	110	164	157,3	149	145,8	128	121,5	143,5	5	165	35	170,5	53,5	117	77	53	35	9,5	8
125	115	169	162,3	154	150,8	133	126,5	147,5	5	166	35	171,5	53,5	118	79	55	35	9,5	8
130	120	174	167,3	159	155,8	140	131,5	154,5	5	173	35	178	53,5	125	85	61	44	8,5	8

LATTYseal B10712 REP: The spring cavity must be kept filled with grease and regularly checked. Only silicon grease should be used due to the presence of ethylene propylene O-ring.

LATTYSEAL B 10712 RIV/RIP

d1 nominal h11	d5 h8	d6 ±0,2	d7 H11	d8 ±0,1	d9 ±0,1	d10 + 0,4 + 0	d11 + 0,5 + 0	d13 ±0,1	RIV		RIP		L3	L4 ±0,1	L5 ±0,1	L7 ±0,1	L8 ±0,1
									L1 ±1	L2 ±0,1	L1 ±1	L2 ±0,1					
15	10	42	36,2	32	30,4	23,4	16	3	62,5	24,5	52,5	10	38	23,3	9,3	4	4
20	15	48	41,2	37	35,4	28,4	21	3	64	24,5	54	10	39,5	24,8	10,8	4	4
25	20	53	49,2	43	40,4	33,4	26	3	68	26,5	58	12	41,5	26,8	10,8	4	6
30	25	58	54,2	48	45,4	38,4	31	3	71	28	61	12	43	26,8	10,8	4	6
35	30	68	64,2	58	55,6	46,6	36	3	76,5	31	66,5	15	45,5	28,8	11,8	5	6
40	35	73	69,2	63	60,6	51,6	41	3	76,5	31	66,5	15	45,5	28,8	11,8	5	6
45	40	78	74,2	68	65,6	56,6	46	4	78,5	31,5	68,5	15	47	29,8	12,2	5	6
50	45	83	79,2	73	70,6	61,6	51	4	78,5	31,5	68,5	15	47	29,8	12,2	5	6
55	50	88	84,2	78	75,6	66,6	56	4	82,5	33,5	70,5	15	49	31,8	14,2	5	6
58	52	93	89,2	83	80,6	69,6	59	4	84,5	33,5	73,5	16	51	31,8	13,2	6	6
60	52	98	94,2	88	85,8	74,6	61	4	88	34	77	16	54	34,3	15,7	6	6
65	57	103	99,2	93	90,8	79,6	66	4	85,5	34	76,5	18	51,5	31,8	13,2	6	6
70	62	108	104,2	98	95,8	84,6	71	4	88,5	34	81,5	20	54,5	34,8	16,2	6	6
75	65	118	114,2	108	105,8	90,8	76	4	96	37	88	22	59	40,3	18,2	8	6
80	70	127	119,2	113	110,8	98,8	81	5	109,5	44	101,5	25	65,5	42,3	19	6,5	6
85	75	132	127,3	119	115,8	102,8	86,5	5	121	48	110	26	73	39	19	7	8
90	80	138	132,3	124	120,8	107,8	91,5	5	118	48	108	27	70	3	16	7	8
95	85	144	137,3	129	125,8	112	96,5	5	128	48	123	32	80	46	22	7,5	8
100	90	154	147,3	139	135,8	117	101,5	5	133	48	128	32	85	48,5	24	10	8
105	95	159	152,3	144	140,8	122	106,5	5	136,5	53,5	131	35	83	44	20	10	8
110	100	164	157,3	149	145,8	128	111,5	5	143,5	53,5	138	35	90	50	26	9,5	8
115	105	169	162,3	154	150,8	133	116,5	5	143,5	53,5	138	35	90	51	27	9,5	8
120	110	174	167,3	159	155,8	140	121,5	5	145,5	53,5	140	35	92	52	28	8,5	8

LATTYseal B10712 RIP: The spring cavity must be kept filled with grease and regularly checked. Only silicon grease should be used due to the presence of ethylene propylene O-ring.

Single-seal

LATTYSEAL B 18212

Dynamic sealing through complete, balanced mechanical seal

FOR PARTICULARLY SEVERE ENVIRONMENTS

- DESIGN WITH SINGLE SPRING ALLOWING WIDER INSTALLATION TOLERANCES
- ALLOWS FOR GREATER AXIAL CLEARANCES



OPERATING PARAMETERS (NOT ASSOCIATED)

Pressure : 0 to 25 bar
Temperature : -20 °C to 180°C
Speed : 20 m/s

COMPOSITION

Supplied with FKM O-ring Pure silicon carbide (U6U6 V)

TYPES OF INDUSTRIES



FLUIDS

All corrosive, abrasive and clogging fluids.

GUIDELINES, STANDARDS AND APPROVALS (ON REQUEST)



d1 nominal h6	d3	d4 mini	d6 H11	d7 H8	L1	L3	L4	L5 ± 0,1	L6 ± 0,1	L8
35	49	51	44	50	73	62.5	10.5	2	5	7.5
38	54	58	49	56	84.5	73	11.5	2	6	8.5
40	56	60	51	58	84.5	73	11.5	2	6	8.5
43	60	64	54	61	86	74.5	11.5	2	6	8.5
45	61	65	56	63	86	74.5	11.5	2	6	8.5
48	65	69	59	66	89.5	78	11.5	2	6	8.5
50	66	70	62	70	89.5	76.5	13	2.5	6	8
53	71	75	65	73	92	79	13	2.5	6	8
55	71	75	67	75	93	80	13	2.5	6	8
58	78	83	70	78	99	85.5	13.5	2.5	6	8
60	81	86	72	80	96	82.5	13.5	2.5	6	8
63	87	92	75	83	106.5	93	13.5	2.5	6	8
65	87	92	77	85	106.5	93	13.5	2.5	6	8
68	88	93	81	90	103.5	90	13.5	2.5	7	8
70	93	98	83	92	106	91	15	2.5	7	8
75	99	104	88	97	108	93	15	2.5	7	8
80	105	110	95	105	109	94	15	3	7	8
85	109	114	100	110	111	95	16	3	7	8
90	114	119	105	115	113	97	16	3	7	8
95	122	127	110	120	119	103	16	3	7	8
100	128	133	115	125	119.5	103.5	16	3	7	8

Complies with NF EN 12756 d8 (tigh to sleeve) : 3 mm for d1 35 - 4 mm for d1 38 to 100. r : 1,6 mm for d1 35- 2,5 mm for d1 38 to 100

The maximum temperature, pressure and speed given in this document cannot be associated in any case.



TRAINING (See page 202)

AIM: Understand the different leak occurrences in:

- Seals for rotary units:
- mechanical seals and packings
 - for the dynamic sealing
 - of pumps or stirring processes.



202

ON-SITE TRAINING (See page 203)

AIM: ensure and check the quality of the equipment and sealing assemblies.

- the assessment of the equipment with a replacement recommendation if necessary
- the maintenance (preventive or corrective)
- the training during installation
- the service contracts
- the project monitoring



203

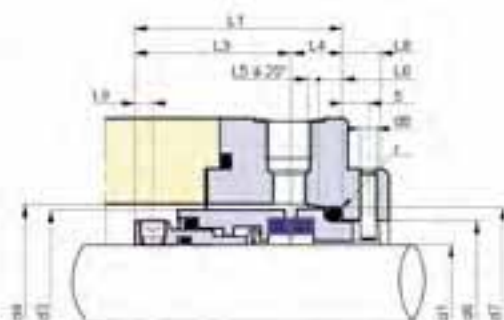
Single-seal

LATTYSEAL B23112 / B23212

Dynamic sealing through complete, balanced mechanical seal

INDEPENDENT OF ROTATION DIRECTION, FDA-APPROVED STANDARD VERSION

- PROTECTED SPRING PREVENTING CLOGGING THROUGH THE MEDIUM
- PENTAGONAL DRIVE FOR FREQUENT STOPS/STARTS AND IMPROVED TORQUE TRANSMISSION
- MULTIPRODUCT, HIGHLY VERSATILE



OPERATING PARAMETERS (NOT ASSOCIATED)

Pressure : 0 to 25 bar
Temperature : -20 °C to 160 °C
Speed : 20 m/s

COMPOSITION

LATTYseal B 23112: Friction faces Carbon impregnated resin (B1) Silicon carbide (U6). LATTYseal B 23212: Friction faces Silicon carbide (U6) Silicon carbide (U6). For the most difficult cases use friction faces made of nickel-tungsten carbide (U2). Supplied with FKM seals..

TYPES OF INDUSTRIES



FLUIDS

All corrosive, abrasive and clogging fluids.

GUIDELINES, STANDARDS AND APPROVALS

CE (ON REQUEST) FDA (ON REQUEST)

Single-seal

LATTYSEAL B23112 / B23212

Dynamic sealing through complete, balanced mechanical seal

METRIC VERSION

d1 nominal h6	d3	d4	d6 H 11	d7 H 8	d8 d8	L1 ±0.5	L3	L4	L5	L6	L8	L9
18	32	34	27	33	3	37.5	28.5	9	2	5	7.5	3.5
20	34	36	29	35	3	37.5	28.5	9	2	5	7.5	3.5
22	36	38	31	37	3	37.5	28.5	9	2	5	7.5	3.5
24	38	40	33	39	3	40	30.5	9.5	2	5	7.5	3.5
25	39	41	34	40	3	40	30.5	9.5	2	5	7.5	3.5
28	42	44	37	43	3	42.5	32	10.5	2	5	7.5	3.5
30	44	46	39	45	3	42.5	32	10.5	2	5	7.5	3.5
32	46	48	42	48	3	42.5	32	10.5	2	5	7.5	3.5
33	47	49	42	48	3	42.5	32	10.5	2	5	7.5	3.5
35	49	51	44	50	3	42.5	32	10.5	2	5	7.5	3.5
38	54	58	49	56	4	45	33.5	11.5	2	6	8.5	4
40	56	60	51	58	4	45	33.5	11.5	2	6	8.5	4
43	59	63	54	61	4	45	33.5	11.5	2	6	8.5	4
45	61	65	56	63	4	45	33.5	11.5	2	6	8.5	4
48	64	68	59	66	4	45	33.5	11.5	2	6	8.8	4
50	66	70	62	70	4	47.5	34.5	13	2.5	6	8	4
53	69	73	65	73	4	47.5	34.5	13	2.5	6	8	4
55	71	75	67	75	4	47.5	34.5	13	2.5	6	8	4
58	78	83	70	78	4	52.5	39	13.5	2.5	6	8	5
60	80	85	72	80	4	52.5	39	13.5	2.5	6	8	5
63	83	88	75	83	4	52.5	39	13.5	2.5	6	8	5
65	85	90	77	85	4	52.5	39	13.5	2.5	6	8	5
68	88	93	81	90	4	52.5	39	13.5	2.5	7	8.2	5
70	90	95	83	92	4	60	45	15	2.5	7	8.2	5
75	99	104	88	97	4	60	45	15	2.5	7	8.2	5
80	104	109	95	105	4	60	45	15	3	7	8	5
85	109	114	100	110	4	60	44	16	3	7	8	5
90	114	119	105	115	4	65	49	16	3	7	8	5
95	119	124	110	120	4	65	49	16	3	7	8	5
100	124	129	115	125	4	65	49	16	3	7	7.8	5

IMPERIAL VERSION

d1 nominal in	d1 nominal inches	d3	d6 H 11	d7 H 8	d8	L1 ±0.5	L3	L4	L5	L6	L8	L9
0.75	3/4"	34	29	35	3	37.5	28.5	9	2	5	7.5	3.5
0.875	7/8"	36	31	37	3	37.5	28.5	9	2	5	7.5	3.5
1	1"	39	34	40	3	40	30.5	9.5	2	5	7.5	3.5
1.125	1 1/8"	44	39	45	3	42.5	32	10.5	2	5	7.5	3.5
1.25	1 1/4"	46	42	48	3	42.5	32	10.5	2	5	7.5	3.5
1.375	1 3/8"	49	44	50	3	42.5	32	10.5	2	5	7.5	3.5
1.5	1 1/2"	54	49	56	4	45	33.5	11.5	2	6	8.5	4
1.625	1 5/8"	59	54	61	4	45	33.5	11.5	2	6	8.5	4
1.75	1 3/4"	61	56	63	4	45	33.5	11.5	2	6	8.5	4
1.875	1 7/8"	64	59	66	4	45	33.5	11.5	2	6	8.8	4
2	2"	69	65	73	4	47.5	34.5	13	2.5	6	8	4
2.125	2 1/8"	71	67	75	4	47.5	34.5	13	2.5	6	8	4
2.25	2 1/4"	78	70	78	4	52.5	39	13.5	2.5	6	8	5
2.375	2 3/8"	80	72	80	4	52.5	39	13.5	2.5	6	8	5
2.5	2 1/2"	85	77	85	4	52.5	39	13.5	2.5	6	8	5
2.625	2 5/8"	88	81	90	4	52.5	39	13.5	2.5	7	8.2	5
2.75	2 3/4"	90	83	92	4	60	45	15	2.5	7	8.2	5
2.875	2 7/8"	99	88	97	4	60	45	15	2.5	7	8.2	5
3	3"	100	88	97	4	60	45	15	2.5	7	8.2	5
3.125	3 1/8"	104	95	105	4	60	45	15	3	7	8	5
3.25	3 1/4"	109	100	110	4	60	44	16	3	7	8	5
3.375	3 3/8"	110	100	110	4	60	44	16	3	7	8	5
3.5	3 1/2"	114	105	115	4	65	49	16	3	7	8	5
3.625	3 5/8"	119	110	120	4	65	49	16	3	7	8	5
3.75	3 3/4"	119	110	120	4	65	49	16	3	7	8	5
3.875	3 7/8"	124	115	125	4	65	49	16	3	7	7.8	5
4	4"	126	115	125	4	65	49	16	3	7	7.8	5

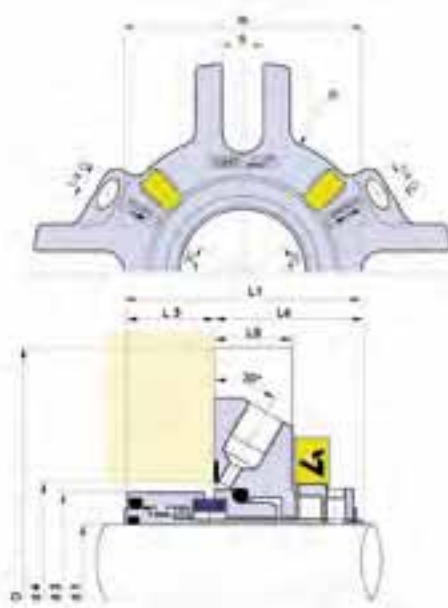
Cartridge version

CARTSEAL B 23612

Dynamic sealing through single cartridge seal

BALANCED MECHANICAL SEAL WITH PROTECTED SPRING

- PROTECTED SPRING AND PENTAGONAL DRIVE
- PENTAGONAL DRIVE FOR FREQUENT STOPS/STARTS
- OPTIMISED FOR SLURRY DUTIES
- FLUSH ON REQUEST



OPERATING PARAMETERS (NOT ASSOCIATED)

Pressure : 0 to 25 bar
Temperature : -20 °C to 200°C
Speed : 20 m/s

COMPOSITION

Friction faces: Silicon carbide / silicon carbide (U6/U6) or silicon carbide / resin-impregnated carbon (U6/B1)

TYPES OF INDUSTRIES



FLUIDS

All corrosive, abrasive and slightly clogging fluids.

GUIDELINES, STANDARDS AND APPROVALS (ON REQUEST)



Cartridge version

CARTSEAL B 23612

Dynamic sealing through single cartridge seal

METRIC VERSION

d1 nominal h6	d3	d4 mini	d4 maxi	L1	L3	L4	L5	D	D'	S	W
25	42	46	56	68	24	44	23	105	83	12.5	63
28	46	49	57	67	23	44	23	110	86	12.5	64
30	47	51	61	68	24	44	23	115	85	12.5	68
32	49	58	66	68	24	44	23	125	90	12.5	73
33	54	58	66	70	26	44	23	125	90	12.5	73
35	54	58	66	70	26	44	23	125	90	12.5	73
38	59	63	70	71	27	44	23	133	95	14.7	77
40	59	65	73	70	26	44	23	141	97	14.7	80
43	64	68	75	71	27	44	23	141	100	14.7	82
45	64	70	78	70,5	26,5	44	23	150	102	14.7	85
48	69	75	83	72,5	28,5	44	23	150	107	18	90
50	69	75	83	72,5	28,5	44	23	150	107	18	90
53	78	85	91	75	31	44	23	157	123	18	98
55	78	85	91	75	31	44	23	157	123	18	98
60	83	90	98	74	30	44	23	165	128	18	105
65	88	95	108	74	30	44	23	180	132	18	115
70	99	104	118	83.5	34.5	49	28	190	143	18	129

IMPERIAL VERSION

d1 nominal in	d1 nominal inches	d3	d4 mini	d4 maxi	L1	L3	L4	L5	D	D'	S	W
1	1"	42	46	56	68	24	44	23	105	83	12.5	63
1.125	1 1/8"	47	51	61	68	24	44	23	115	85	12.5	68
1.25	1 1/4"	49	58	66	68	24	44	23	125	90	12.5	73
1.375	1 3/8"	54	58	66	70	26	44	23	125	90	12.5	73
1.5	1 1/2"	59	63	70	71	27	44	23	133	95	14.7	77
1.625	1 5/8"	64	68	75	71	27	44	23	141	100	14.7	82
1.75	1 3/4"	64	70	78	70,5	26,5	44	23	150	102	14.7	85
1.875	1 7/8"	69	75	83	72,5	28,5	44	23	150	107	18	90
2	2"	78	85	91	75	31	44	23	157	123	18	98
2.125	2 1/8"	78	85	91	75	31	44	23	157	123	18	98
2.25	2 1/4"	83	90	98	74	30	44	23	165	128	18	105
2.375	2 3/8"	83	90	98	74	30	44	23	165	128	18	105
2.5	2 1/2"	88	95	108	74	30	44	23	180	132	18	115
2.625	2 5/8"	99	104	118	83,5	34,5	49	28	190	143	18	129
2.75	2 3/4"	99	104	118	83,5	34,5	49	28	190	143	18	129

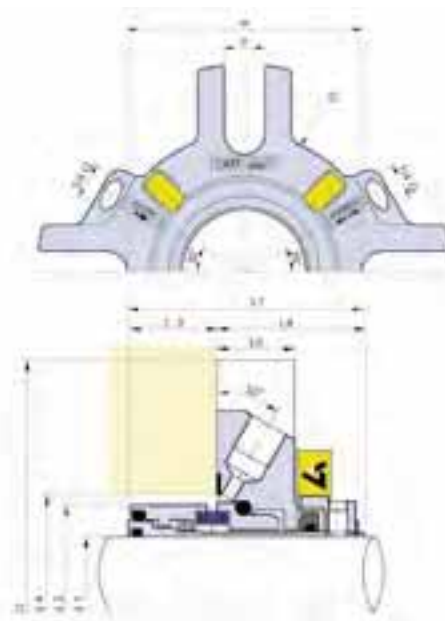
Cartridge version

CARTSEAL B 23612 Q

Dynamic sealing through single cartridge seal with Quench

FOR CRYSTALLISING, SOLIDIFYING OR VAPORIZING PRODUCTS

- MECHANICAL SEAL, BALANCED WITH QUENCH
- THE QUENCH (Q) OPTION INCREASES SEAL LIFE EXPECTANCY
- BALANCED MECHANICAL SEAL



OPERATING PARAMETERS (NOT ASSOCIATED)

Pressure : 0 to 25 bar
Temperature : -20 °C to 200°C
Speed : 20 m/s

COMPOSITION

Friction faces: Silicon carbide / silicon carbide (U6/U6) or silicon carbide / resin-impregnated carbon (U6/B1)

TYPES OF INDUSTRIES



FLUIDS

All corrosive, abrasive and slightly clogging fluids.

GUIDELINES, STANDARDS AND APPROVALS (ON REQUEST)



Cartridge version

CARTSEAL B 23612 Q

Dynamic sealing through single cartridge seal with Quench

METRIC VERSION

d1 nominal h6	d3	d4 mini	d4 maxi	L1	L3	L4	L5	D	D'	S	W
25	42	46	56	68	24	44	23	105	83	12.5	63
28	46	49	57	67	23	44	23	110	86	12.5	64
30	47	51	61	68	24	44	23	115	85	12.5	68
32	49	58	66	68	24	44	23	125	90	12.5	73
33	54	58	66	70	26	44	23	125	90	12.5	73
35	54	58	66	70	26	44	23	125	90	12.5	73
38	59	63	70	71	27	44	23	133	95	14.7	77
40	59	65	73	70	26	44	23	141	97	14.7	80
43	64	68	75	71	27	44	23	141	100	14.7	82
45	64	70	78	70,5	26,5	44	23	150	102	14.7	85
48	69	75	83	72,5	28,5	44	23	150	107	18	90
50	69	75	83	72,5	28,5	44	23	150	107	18	90
53	78	85	91	75	31	44	23	157	123	18	98
55	78	85	91	75	31	44	23	157	123	18	98
60	83	90	98	74	30	44	23	165	128	18	105
65	88	95	108	74	30	44	23	180	132	18	115
70	99	104	118	83,5	34,5	49	28	190	143	18	129

IMPERIAL VERSION

d1 nominal in	d1 nominal inches	d3	d4 mini	d4 maxi	L1	L3	L4	L5	D	D'	S	W
1	1"	42	46	56	68	24	44	23	105	83	12.5	63
1.125	1 1/8"	47	51	61	68	24	44	23	115	85	12.5	68
1.25	1 1/4"	49	58	66	68	24	44	23	125	90	12.5	73
1.375	1 3/8"	54	58	66	70	26	44	23	125	90	12.5	73
1.5	1 1/2"	59	63	70	71	27	44	23	133	95	14.7	77
1.625	1 5/8"	64	68	75	71	27	44	23	141	100	14.7	82
1.75	1 3/4"	64	70	78	70,5	26,5	44	23	150	102	14.7	85
1.875	1 7/8"	69	75	83	72,5	28,5	44	23	150	107	18	90
2	2"	78	85	91	75	31	44	23	157	123	18	98
2.125	2 1/8"	78	85	91	75	31	44	23	157	123	18	98
2.25	2 1/4"	83	90	98	74	30	44	23	165	128	18	105
2.375	2 3/8"	83	90	98	74	30	44	23	165	128	18	105
2.5	2 1/2"	88	95	108	74	30	44	23	180	132	18	115
2.625	2 5/8"	99	104	118	83,5	34,5	49	28	190	143	18	129
2.75	2 3/4"	99	104	118	83,5	34,5	49	28	190	143	18	129

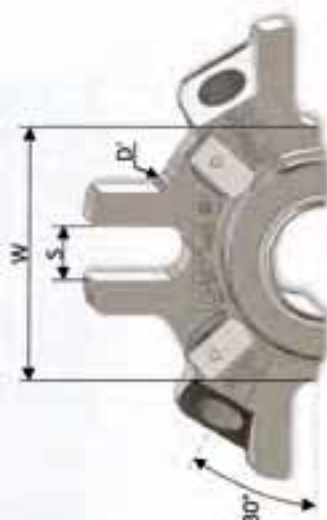
Cartridge version

CARTSEAL B 24610

Dynamic sealing through single cartridge seal

CONNECTION WITH FLUSHING AS STANDARD VERSION

- ACS, ATEX (IIGD IIA-IIB T6 À T3), EC 1935/2004 AND FDA AS STANDARD
- COMPLETE, BALANCED STATIONARY MECHANICAL SEAL FOR HIGH-ROTATION SPEEDS, ALLOWS FOR ANGULAR SHAFT MISALIGNMENT
- SPRINGS ENCAPSULATED IN THE CARTRIDGE BOX, NO LOSS OR IMPROPER HANDLING DURING INSTALLATION
- SELF-TURNING SETTING CLAMPS



OPERATING PARAMETERS (NOT ASSOCIATED)

Pressure : 0 to 25 bar
Temperature : -20 °C to 200 °C
Speed : 20 m/s

COMPOSITION

Friction faces: Silicon carbide / silicon carbide (U6/U6) or silicon carbide / resin-impregnated carbon (U6/B1). High-performance surface drive system: prevents breakage when starting with clogging products and ensures even effort distribution. FLUSHING : ¼ Gaz - L6 : Flushing ports position

TYPES OF INDUSTRIES



FLUIDS

All corrosive, abrasive and slightly clogging fluids.

GUIDELINES, STANDARDS AND APPROVALS (ON REQUEST)



Cartridge version

CARTSEAL B 24610

Dynamic sealing through single cartridge seal

METRIC VERSION

d1 nominal h6	d3	d4 mini	d4 maxi	L1	L3	L4	L5	D	D'	S	W
25	40	41	51	61	17	44	23	105	75	12.5	58
28	43	44	52	61	17	44	23	105	83	12.5	59
30	45	46	56	61	17	44	23	105	83	12.5	63
32	47	48	57	61	17	44	23	110	85	12.5	64
33	48	49	57	61	17	44	23	110	86	12.5	64
35	50	51	61	61	17	44	23	115	85	12.5	68
38	55	58	66	61	17	44	23	125	90	12.5	73
40	57	60	68	61	17	44	23	125	92	14.7	75
43	60	63	70	61	17	44	23	133	95	14.7	77
45	62	65	73	61	17	44	23	141	97	14.7	80
48	65	68	75	61	17	44	23	141	100	14.7	82
50	67	70	78	61	17	44	23	150	102	14.7	85
53	70	73	81	61	17	44	23	150	105	14.7	88
55	72	75	83	61	17	44	23	150	107	18	90
60	80	85	91	61	17	44	23	157	123	18	98
65	85	90	98	61	17	44	23	165	128	18	105
70	90	95	108	61	17	44	23	180	132	18	115

IMPERIAL VERSION

d1 nominal	d1 nominal inches	d3	d4 mini	d4 maxi	L1	L3	L4	L5	D	D'	S	W
1	1"	40	41	51	61	17	44	23	105	75	12.5	58
1.125	1 1/8"	45	46	56	61	17	44	23	105	83	12.5	63
1.25	1 1/4"	47	48	57	61	17	44	23	110	85	12.5	64
1.375	1 3/8"	50	51	61	61	17	44	23	115	85	12.5	68
1.5	1 1/2"	55	58	66	61	17	44	23	125	90	12.6	73
1.625	1 5/8"	60	63	70	61	17	44	23	133	95	14.7	77
1.75	1 3/4"	62	65	73	61	17	44	23	141	97	14.7	80
1.875	1 7/8"	65	68	75	61	17	44	23	141	100	14.7	82
2	2"	70	73	81	61	17	44	23	150	105	14.7	88
2.125	2 1/8"	72	75	83	61	17	44	23	150	107	18	90
2.25	2 1/4"	78	83	90	61	17	44	23	157	114	18	97
2.375	2 3/8"	80	85	91	61	17	44	23	157	123	18	98
2.5	2 1/2"	85	90	98	61	17	44	23	165	128	18	105
2.625	2 5/8"	88	93	100	61	17	44	23	165	131	18	107
2.75	2 3/4"	90	95	108	61	17	44	23	180	132	18	115

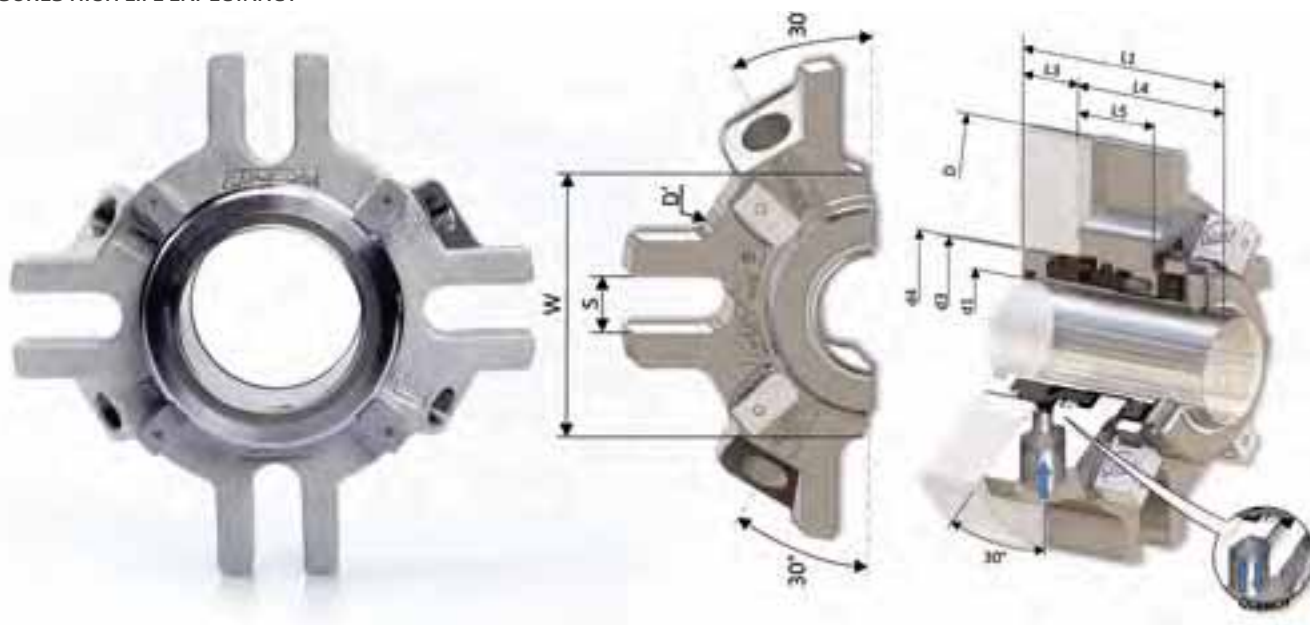
Cartridge version

CARTSEAL B 24610 Q

Dynamic sealing through single cartridge seal

VERSION WITH FLUSH AND QUENCH, BALANCED

- ACS, ATEX (IIGD IIA-IIB T6 À T3), EC 1935/2004 AND FDA AS STANDARD
- PRESSURELESS FLUID FEED. WITHSTANDS TEMPORARY WATER CUTS
- INCREASES SEAL LIFE EXPECTANCY WITH CRYSTALLISING, SOLIDIFYING OR VAPORIZING PRODUCTS
- THE HYDROPHILIC PROPERTIES OF THE QUENCH RING MATERIAL MAINTAIN A THICK AND PERMANENT LUBRICATION FILM WHICH ENSURES HIGH LIFE EXPECTANCY



OPERATING PARAMETERS (NOT ASSOCIATED)

Pressure : 0 to 25 bar
Temperature : -20 °C to 200°C
Speed : 20 m/s

COMPOSITION

Friction faces: Silicon carbide / silicon carbide (U6/U6) or silicon carbide / resin-impregnated carbon (U6/B1). FLUSHING : ¼ Gaz
QUENCH : ¼ Gaz

TYPES OF INDUSTRIES



FLUIDS

All corrosive, abrasive and slightly clogging fluids.

GUIDELINES, STANDARDS AND APPROVALS (ON REQUEST)



Cartridge version

CARTSEAL B 24610 Q

Dynamic sealing through single cartridge seal

METRIC VERSION

d1 nominal h6	d3	d4 mini	d4 maxi	L1	L3	L4	L5	D	D'	S	W
25	40	41	51	61	17	44	23	105	75	12.5	58
28	43	44	52	61	17	44	23	105	83	12.5	59
30	45	46	56	61	17	44	23	105	83	12.5	63
32	47	48	57	61	17	44	23	110	85	12.5	64
33	48	49	57	61	17	44	23	110	86	12.5	64
35	50	51	61	61	17	44	23	115	85	12.5	68
38	55	58	66	61	17	44	23	125	90	12.5	73
40	57	60	68	61	17	44	23	125	92	14.7	75
43	60	63	70	61	17	44	23	133	95	14.7	77
45	62	65	73	61	17	44	23	141	97	14.7	80
48	65	68	75	61	17	44	23	141	100	14.7	82
50	67	70	78	61	17	44	23	150	102	14.7	85
53	70	73	81	61	17	44	23	150	105	14.7	88
55	72	75	83	61	17	44	23	150	107	18	90
60	80	85	91	61	17	44	23	157	123	18	98
65	85	90	98	61	17	44	23	165	128	18	105
70	90	95	108	61	17	44	23	180	132	18	115

IMPERIAL VERSION

d1 nominal in	d1 nominal inches	d3	d4 mini	d4 maxi	L1	L3	L4	L5	D	D'	S	W
1	1"	40	41	51	61	17	44	23	105	75	12.5	58
1.125	1 1/8"	45	46	56	61	17	44	23	105	83	12.5	63
1.25	1 1/4"	47	48	57	61	17	44	23	110	85	12.5	64
1.375	1 3/8"	50	51	61	61	17	44	23	115	85	12.5	68
1.5	1 1/2"	55	58	66	61	17	44	23	125	90	12.5	73
1.625	1 5/8"	60	63	70	61	17	44	23	133	95	14.7	77
1.75	1 3/4"	62	65	73	61	17	44	23	141	97	14.7	80
1.875	1 7/8"	65	68	75	61	17	44	23	141	100	14.7	82
2	2"	70	73	81	61	17	44	23	150	105	14.7	88
2.125	2 1/8"	72	75	83	61	17	44	23	150	107	18	90
2.25	2 1/4"	78	83	90	61	17	44	23	157	114	18	97
2.375	2 3/8"	80	85	91	61	17	44	23	157	123	18	98
2.5	2 1/2"	85	90	98	61	17	44	23	165	128	18	105
2.625	2 5/8"	88	93	100	61	17	44	23	165	131	18	107
2.75	2 3/4"	90	95	108	61	17	44	23	180	132	18	115

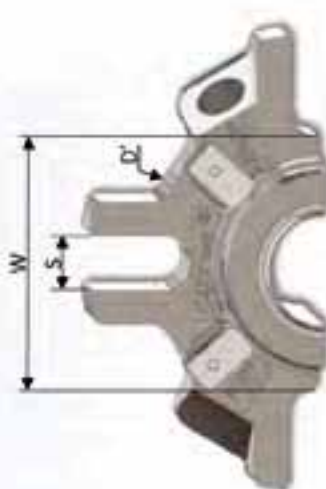
Cartridge version

CARTSEAL B 24610 PP

Dynamic sealing through single cartridge seal

VERSION BALANCED WITHOUT FLUID CIRCULATION, WITHOUT FLUSH

- ACS, ATEX (IIGD IIA-IIB T6 à T3), EC 1935/2004 AND FDA AS STANDARD
- SPECIALLY DESIGNED FOR APPLICATIONS WHERE FLUSH CIRCULATION IS PROHIBITIVE OR NOT REQUIRED
- THINNER GLAND PLATE FOR IMPROVED LUBRICATION OF FRICTION FACES
- DEDICATED TO PAPER INDUSTRIES



OPERATING PARAMETERS (NOT ASSOCIATED)

Pressure : 0 to 25 bar
Temperature : -20 °C to 200 °C
Speed : 20 m/s

COMPOSITION

Friction faces: Silicon carbide / silicon carbide (U6/U6) or silicon carbide / resin-impregnated carbon (U6/B1)
High-performance surface drive system: prevents breakage when starting with clogging products and ensures even effort distribution.

TYPES OF INDUSTRIES



FLUIDS

All corrosive, abrasive and slightly clogging fluids.

GUIDELINES, STANDARDS AND APPROVALS (ON REQUEST)



Cartridge version

CARTSEAL B 24610 PP

Dynamic sealing through single cartridge seal

METRIC VERSION

d1 nominal h6	d3	d4 mini	d4 maxi	L1	L3	L4	L5	D	D'	S	W
25	40	41	51	61	17	44	23	105	75	12.5	58
28	43	44	52	61	17	44	23	105	83	12.5	59
30	45	46	56	61	17	44	23	105	83	12.5	63
32	47	48	57	61	17	44	23	110	85	12.5	64
33	48	49	57	61	17	44	23	110	86	12.5	64
35	50	51	61	61	17	44	23	115	85	12.5	68
38	55	58	66	61	17	44	23	125	90	12.5	73
40	57	60	68	61	17	44	23	125	92	14.7	75
43	60	63	70	61	17	44	23	133	95	14.7	77
45	62	65	73	61	17	44	23	141	97	14.7	80
48	65	68	75	61	17	44	23	141	100	14.7	82
50	67	70	78	61	17	44	23	150	102	14.7	85
53	70	73	81	61	17	44	23	150	105	14.7	88
55	72	75	83	61	17	44	23	150	107	18	90
60	80	85	91	61	17	44	23	157	123	18	98
65	85	90	98	61	17	44	23	165	128	18	105
70	90	95	108	61	17	44	23	180	132	18	115

IMPERIAL VERSION

d1 nominal in	d1 nominal inches	d3	d4 mini	d4 maxi	L1	L3	L4	L5	D	D'	S	W
1	1"	40	41	51	61	17	44	23	105	75	12.5	58
1.125	1 ¹ / ₈	45	46	56	61	17	44	23	105	83	12.5	63
1.25	1 ¹ / ₄	47	48	57	61	17	44	23	110	85	12.5	64
1.375	1 ³ / ₈	50	51	61	61	17	44	23	115	85	12.5	68
1.5	1 ¹ / ₂	55	58	66	61	17	44	23	125	90	12.5	73
1.625	1 ⁵ / ₈	60	63	70	61	17	44	23	133	95	14.7	77
1.75	1 ³ / ₄	62	65	73	61	17	44	23	141	97	14.7	80
1.875	1 ⁷ / ₈	65	68	75	61	17	44	23	141	100	14.7	82
2	2"	70	73	81	61	17	44	23	150	105	14.7	88
2.125	2 ¹ / ₈	72	75	83	61	17	44	23	150	107	18	90
2.25	2 ¹ / ₄	78	83	90	61	17	44	23	157	114	18	97
2.375	2 ³ / ₈	80	85	91	61	17	44	23	157	123	18	98
2.5	2 ¹ / ₂	85	90	98	61	17	44	23	165	128	18	105
2.625	2 ⁵ / ₈	88	93	100	61	17	44	23	165	131	18	107
2.75	2 ³ / ₄	90	95	108	61	17	44	23	180	132	18	115

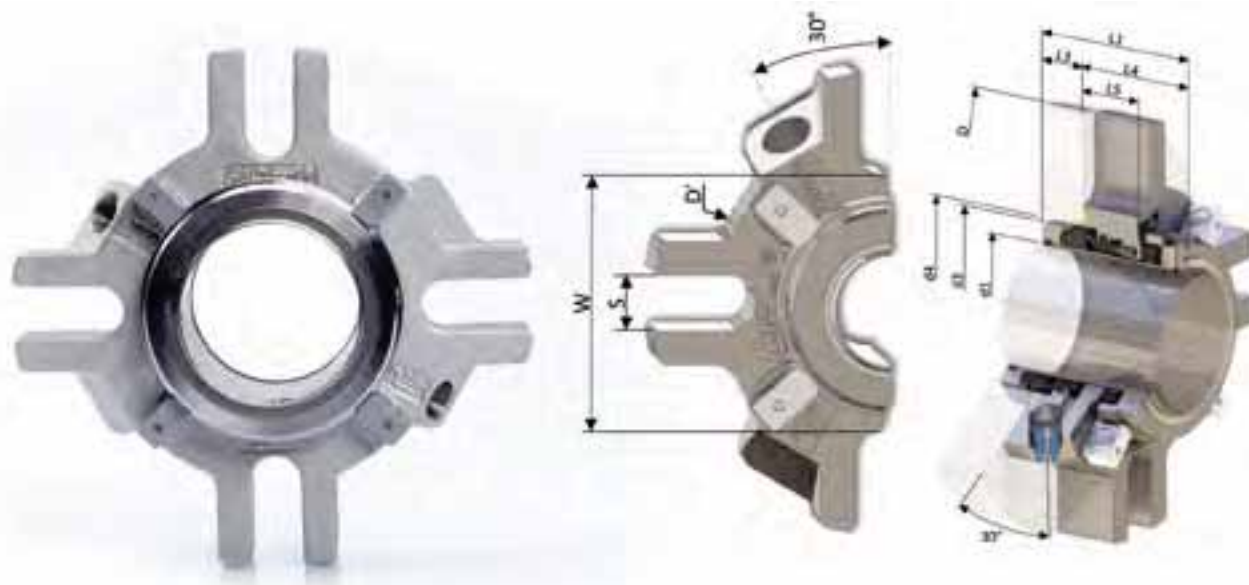
Cartridge version

CARTSEAL B 24610 PPQ

Dynamic sealing through single cartridge seal

VERSION WITHOUT FLUID CIRCULATION, WITHOUT FLUSH AND WITH QUENCH

- ACS, ATEX (IIGD IIA-IIB T6 À T3), EC 1935/2004 AND FDA AS STANDARD
- BUILT-IN AUXILIARY SEAL ACTING AS A QUENCH
- SPECIALLY DESIGNED FOR APPLICATIONS WHERE PRODUCT CIRCULATION IS USELESS OR PROHIBITED
- THINNER GLAND PLATE FOR IMPROVED LUBRICATION OF FRICTION FACES



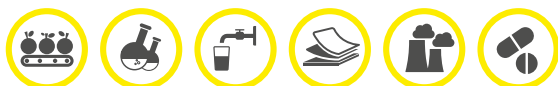
OPERATING PARAMETERS (NOT ASSOCIATED)

Pressure : 0 to 25 bar
Temperature : -20 °C to 200°C
Speed : 20 m/s

COMPOSITION

Friction faces: Silicon carbide / silicon carbide (U6/U6) or silicon carbide / resin-impregnated carbon (U6/B1). High-performance surface drive system: prevents breakage when starting with clogging products and ensures even effort distribution. Gaz QUENCH : ¼ Gaz

TYPES OF INDUSTRIES



FLUIDS

All corrosive, abrasive and slightly clogging fluids.

GUIDELINES, STANDARDS AND APPROVALS (ON REQUEST)



Cartridge version

CARTSEAL B 24610 PPQ

Dynamic sealing through single cartridge seal

METRIC VERSION

d1 nominal h6	d3	d4 mini	d4 maxi	L1	L3	L4	L5	D	D'	S	W
25	40	41	51	61	17	44	23	105	75	12.5	58
28	43	44	52	61	17	44	23	105	83	12.5	59
30	45	46	56	61	17	44	23	105	83	12.5	63
32	47	48	57	61	17	44	23	110	85	12.5	64
33	48	49	57	61	17	44	23	110	86	12.5	64
35	50	51	61	61	17	44	23	115	85	12.5	68
38	55	58	66	61	17	44	23	125	90	12.5	73
40	57	60	68	61	17	44	23	125	92	14.7	75
43	60	63	70	61	17	44	23	133	95	14.7	77
45	62	65	73	61	17	44	23	141	97	14.7	80
48	65	68	75	61	17	44	23	141	100	14.7	82
50	67	70	78	61	17	44	23	150	102	14.7	85
53	70	73	81	61	17	44	23	150	105	14.7	88
55	72	75	83	61	17	44	23	150	107	18	90
60	80	85	91	61	17	44	23	157	123	18	98
65	85	90	98	61	17	44	23	165	128	18	105
70	90	95	108	61	17	44	23	180	132	18	115

IMPERIAL VERSION

d1 nominal in	d1 nominal inches	d3	d4 mini	d4 maxi	L1	L3	L4	L5	D	D'	S	W
1	1"	40	41	51	61	17	44	23	105	75	12.5	58
1.125	1 1/8"	45	46	56	61	17	44	23	105	83	12.5	63
1.25	1 1/4"	47	48	57	61	17	44	23	110	85	12.5	64
1.375	1 3/8"	50	51	61	61	17	44	23	115	85	12.5	68
1.5	1 1/2"	55	58	66	61	17	44	23	125	90	12.5	73
1.625	1 5/8"	60	63	70	61	17	44	23	133	95	14.7	77
1.75	1 3/4"	62	65	73	61	17	44	23	141	97	14.7	80
1.875	1 7/8"	65	68	75	61	17	44	23	141	100	14.7	82
2	2"	70	73	81	61	17	44	23	150	105	14.7	88
2.125	2 1/8"	72	75	83	61	17	44	23	150	107	18	90
2.25	2 1/4"	78	83	90	61	17	44	23	157	114	18	97
2.375	2 3/8"	80	85	91	61	17	44	23	157	123	18	98
2.5	2 1/2"	85	90	98	61	17	44	23	165	128	18	105
2.625	2 5/8"	88	93	100	61	17	44	23	165	131	18	107
2.75	2 3/4"	90	95	108	61	17	44	23	180	132	18	115

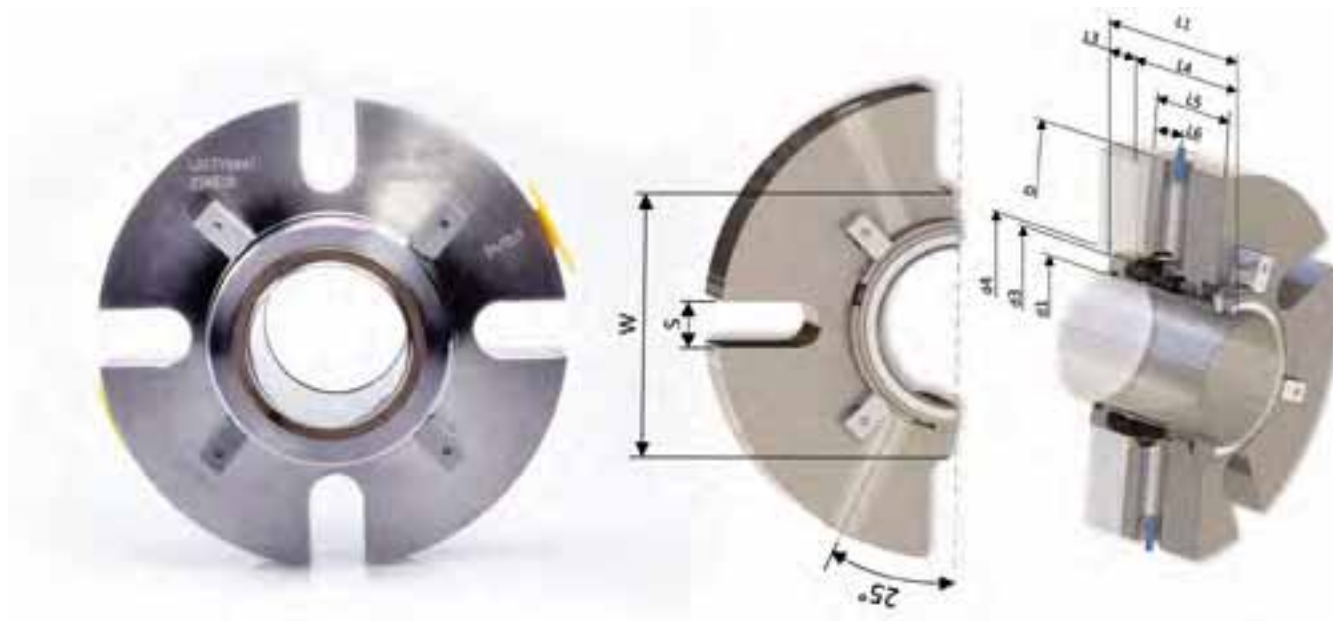
Cartridge version

CARTSEAL B 24810

Dynamic sealing through single cartridge seal

CONNECTION WITH FLUSHING AS STANDARD VERSION

- ACS, ATEX (IIGD IIA-IIB T6 À T3), EC 1935/2004 AND FDA AS STANDARD
- COMPLETE, BALANCED STATIONARY MECHANICAL SEAL FOR HIGH-ROTATION SPEEDS, ALLOWS FOR ANGULAR SHAFT OFFSET
- SPRINGS ENCAPSULATED IN THE CARTRIDGE BOX, NO LOSS OR IMPROPER HANDLING DURING INSTALLATION
- SELF-TURNING SETTING CLAMPS



OPERATING PARAMETERS (NOT ASSOCIATED)

Pressure : 0 to 25 bar
Temperature : -20 °C to 200 °C
Speed : 20 m/s

COMPOSITION

Friction faces: Silicon carbide / silicon carbide (U6/U6) or silicon carbide / resin-impregnated carbon (U6/B1). FLUSHING : 3/8 Gaz

TYPES OF INDUSTRIES



FLUIDS

All corrosive, abrasive and slightly clogging fluids.

GUIDELINES, STANDARDS AND APPROVALS



Cartridge version

CARTSEAL B 24810

Dynamic sealing through single cartridge seal

METRIC VERSION

d1 nominal h6	d3	d4 mini	d4 maxi	L1	L3	L4	L5	L6	D	S	W
75	100	104	118	73	18	55	40	14	190	18	129
80	105	109	124	73	18	55	40	14	195	18	135
85	110	114	128	73	18	55	40	14	200	20	139
90	115	119	135	73	18	55	40	14	205	20	146
95	120	124	138	73	18	55	40	14	210	20	149
100	126	129	144	73	18	55	40	14	215	20	155

IMPERIAL VERSION

d1 nominal in	d1 nominal inches	d3	d4 mini	d4 maxi	L1	L3	L4	L5	L6	D	S	W
2.875	2"7/8	100	104	118	73	18	55	40	14	190	18	129
3.000	3"	100	104	118	73	18	55	40	14	190	18	129
3.125	3"1/8	105	109	124	73	18	55	40	14	195	18	135
3.250	3"1/4	110	114	128	73	18	55	40	14	200	20	139
3.375	3"3/8	110	114	128	73	18	55	40	14	200	20	139
3.500	3"1/2	115	119	135	73	18	55	40	14	205	20	146
3.625	3"5/8	120	124	138	73	18	55	40	14	210	20	149
3.750	3"3/4	120	124	138	73	18	55	40	14	210	20	149
4.000	4"	126	129	144	73	18	55	40	14	215	20	155

L6: Flushing ports position

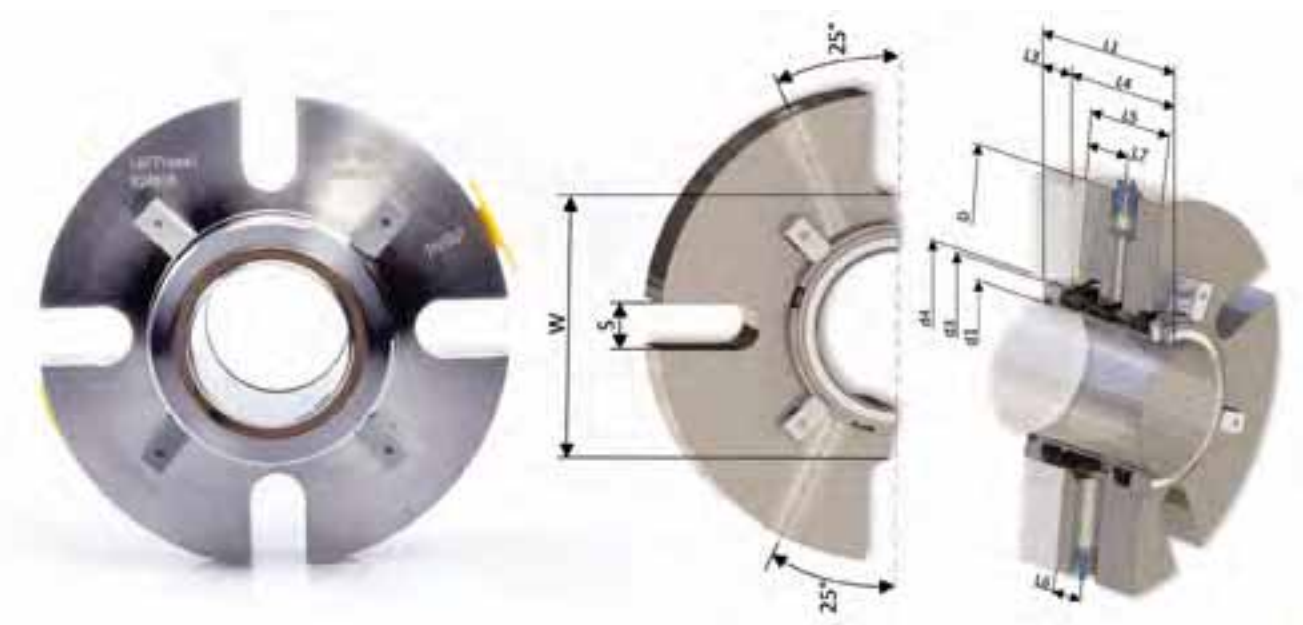
Cartridge version

CARTSEAL B 24810 Q

Dynamic sealing through single cartridge seal

VERSION WITH FLUSH AND QUENCH

- ACS, ATEX (IIGD IIA-IIB T6 À T3), EC 1935/2004 AND FDA AS STANDARD
- PRESSURELESS FLUID FEEDING WITHSTANDS TEMPORARY WATER CUTS
- INCREASES SEAL LIFE EXPECTANCY WITH CRYSTALLISING, SOLIDIFYING OR VAPORIZING PRODUCTS
- THE HYDROPHILIC PROPERTIES OF THE QUENCH RING MATERIAL MAINTAIN A THICK AND PERMANENT LUBRICATION FILM WHICH ENSURES HIGH LIFE EXPECTANCY



OPERATING PARAMETERS (NOT ASSOCIATED)

Pressure : 0 to 25 bar
Temperature : -20 °C to 200 °C
Speed : 20 m/s

COMPOSITION

Friction faces: Silicon carbide / silicon carbide (U6/U6) or silicon carbide / resin-impregnated carbon (U6/B1). FLUSHING : 3/8 Gaz
QUENCH : 3/8 Gaz. L6 : Flushing port position. L7 : Quench port position

TYPES OF INDUSTRIES



FLUIDS

All corrosive, abrasive and slightly clogging fluids.

GUIDELINES, STANDARDS AND APPROVALS (ON REQUEST)



Cartridge version

CARTSEAL B 24810 Q

Dynamic sealing through single cartridge seal

METRIC VERSION

d1 nominal h6	d3	d4 mini	d4 maxi	L1	L3	L4	L5	L6	L7	D	S	W
75	100	104	118	73	18	55	40	14	20	190	18	129
80	105	109	124	73	18	55	40	14	20	195	18	135
85	110	114	128	73	18	55	40	14	20	200	20	139
90	115	119	135	73	18	55	40	14	20	205	20	146
95	120	124	138	73	18	55	40	14	20	210	20	149
100	126	129	144	73	18	55	40	14	20	215	20	155

IMPERIAL VERSION

d1 nominal in	d1 nominal inches	d3	d4 mini	d4 maxi	L1	L3	L4	L5	L6	L7	D	S	W
2.875	2 ⁷ / ₈	100	104	118	73	18	55	40	14	20	190	18	129
3	3"	100	104	118	73	18	55	40	14	20	190	18	129
3.125	3 ¹ / ₈	105	109	124	73	18	55	40	14	20	195	18	135
3.25	3 ¹ / ₄	110	114	128	73	18	55	40	14	20	200	20	139
3.375	3 ³ / ₈	110	114	128	73	18	55	40	14	20	200	20	139
3.5	3 ¹ / ₂	115	119	135	73	18	55	40	14	20	205	20	146
3.625	3 ⁵ / ₈	120	124	138	73	18	55	40	14	20	210	20	149
3.75	3 ³ / ₄	120	124	138	73	18	55	40	14	20	210	20	149
4	4"	126	129	144	73	18	55	40	14	20	215	20	155

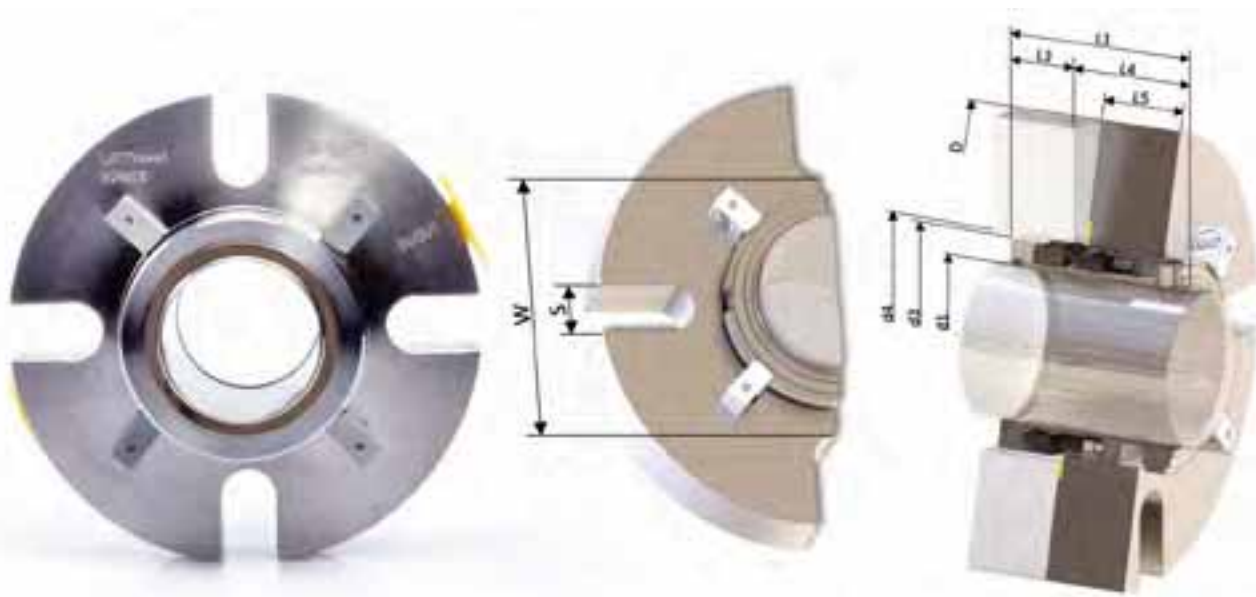
Cartridge version

CARTSEAL B 24810 PP

Dynamic sealing through single cartridge seal

BALANCED VERSION WITHOUT FLUID CIRCULATION, WITHOUT FLUSH

- ACS, ATEX (IIGD IIA-IIB T6 à T3), EC 1935/2004 AND FDA AS STANDARD
- SPECIALLY DESIGNED FOR APPLICATIONS WHERE FLUSH CIRCULATION IS USELESS OR PROHIBITED
- THINNER GLAND PLATE FOR IMPROVED LUBRICATION OF FRICTION FACES



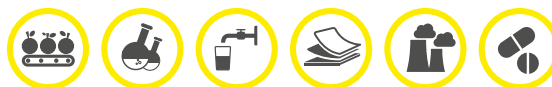
OPERATING PARAMETERS (NOT ASSOCIATED)

Pressure : 0 to 25 bar
Temperature : -20 °C to 200 °C
Speed : 20 m/s

COMPOSITION

Friction faces: Silicon carbide / silicon carbide (U6/U6) or silicon carbide / resin-impregnated carbon (U6/B1)

TYPES OF INDUSTRIES



FLUIDS

All corrosive, abrasive and slightly clogging fluids.

GUIDELINES, STANDARDS AND APPROVALS (ON REQUEST)



Cartridge version

CARTSEAL B 24810 PP

Dynamic sealing through single cartridge seal

METRIC VERSION

d1 nominal h6	d3	d4 mini	d4 maxi	L1	L3	L4	L5	D	S	W
75	100	104	118	73	27	46	31	190	18	129
80	105	109	124	73	27	46	31	195	18	135
85	110	114	128	73	27	46	31	200	20	139
90	115	119	135	73	27	46	31	205	20	146
95	120	124	138	73	27	46	31	210	20	149
100	126	129	144	73	27	46	31	215	20	155

IMPERIAL VERSION

d1 nominal in	d1 nominal inches	d3	d4 mini	d4 maxi	L1	L3	L4	L5	D	S	W
2.875	2 ⁷ / ₈	100	104	118	73	27	46	31	190	18	129
3	3"	100	104	118	73	27	46	31	190	18	129
3.125	3 ¹ / ₈	105	109	124	73	27	46	31	195	18	135
3.25	3 ¹ / ₄	110	114	128	73	27	46	31	200	20	139
3.375	3 ³ / ₈	110	114	128	73	27	46	31	200	20	139
3.5	3 ¹ / ₂	115	119	135	73	27	46	31	205	20	146
3.625	3 ⁵ / ₈	120	124	138	73	27	46	31	210	20	149
3.75	3 ³ / ₄	120	124	138	73	27	46	31	210	20	149
3.875	3 ⁷ / ₈	126	129	144	73	27	46	31	215	20	155
4	4"	126	129	144	73	27	46	31	215	20	155

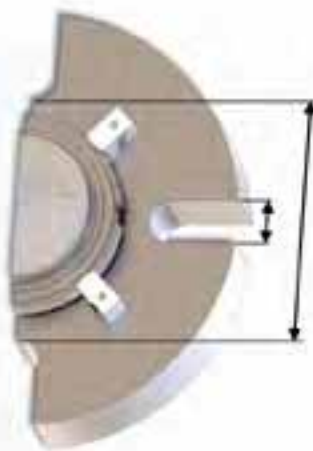
Cartridge version

CARTSEAL B 24810 PPQ

Dynamic sealing through single cartridge seal

BUILT-IN AUXILIARY SEAL ACTING AS A QUENCH

- ACS, ATEX (IIGD IIA-IIB T6 à T3), EC 1935/2004 AND FDA AS STANDARD
- SPECIALLY DESIGNED FOR APPLICATIONS WHERE PRODUCT CIRCULATION IS USELESS OR PROHIBITED
- THINNER GLAND PLATE FOR IMPROVED LUBRICATION OF FRICTION FACES



OPERATING PARAMETERS (NOT ASSOCIATED)

Pressure : 0 to 25 bar
Temperature : -20 °C to 200°C
Speed : 20 m/s

COMPOSITION

Friction faces: Silicon carbide / silicon carbide (U6/U6) or silicon carbide / resin-impregnated carbon (U6/B1). QUENCH 3/8 Gaz - L7 : Quench ports position

TYPES OF INDUSTRIES



FLUIDS

All corrosive, abrasive and slightly clogging fluids.

GUIDELINES, STANDARDS AND APPROVALS (ON REQUEST)



Cartridge version

CARTSEAL B 24810 PPQ

Dynamic sealing through single cartridge seal

METRIC VERSION

d1 nominal h6	d4 mini	d4 maxi	L1	L3	L4	L5	L7	D	S	W
70	95	108	63	23.5	39.5	26.5	9.5	180	18	115
75	104	118	73	27	46	31	11	190	18	129
80	109	124	73	27	46	31	11	195	18	135
85	114	128	73	27	46	31	11	200	20	139
90	119	135	73	27	46	31	11	205	20	146
95	124	138	73	27	46	31	11	210	20	149
100	129	144	73	27	46	31	11	215	20	155

IMPERIAL VERSION

d1 nominal in	d1 nominal inches	d3	d4 mini	d4 maxi	L1	L3	L4	L5	L7	D	S	W
2.875	2"7/8	100	104	118	73	27	46	31	11	190	18	129
3	3"	100	104	118	73	27	46	31	11	190	18	129
3.125	3"1/8	105	109	124	73	27	46	31	11	195	18	135
3.25	3"1/4	110	114	128	73	27	46	31	11	200	20	139
3.375	3"3/8	110	114	128	73	27	46	31	11	200	20	139
3.5	3"1/2	115	119	135	73	27	46	31	11	205	20	146
3.625	3"5/8	120	124	138	73	27	46	31	11	210	20	149
3.75	3"3/4	120	124	138	73	27	46	31	11	210	20	149
4	4"	126	129	144	73	27	46	31	11	215	20	155

Cartridge version

CARTSEAL B 24810 DB

Dynamic sealing through double cartridge seal

DOUBLE BALANCED CARTRIDGE SEAL VERSION

- ACS, ATEX (IIGD IIA-IIB T6 À T3), EC 1935/2004 AND FDA AS STANDARD
- CAPABLE OF OPERATING AS A DOUBLE PRESSURISED MECHANICAL SEAL OR AS A TANDEM SEAL WITHOUT BARRIER PRESSURE
- FULLY SUITABLE FOR ANY TYPE OF ENVIRONMENT
- SELF-TURNING SETTING CLAMPS



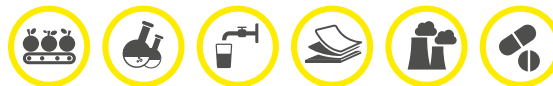
OPERATING PARAMETERS (NOT ASSOCIATED)

Pressure : 0 to 25 bar
Temperature : -20 °C to 200°C
Speed : 20 m/s

COMPOSITION

Friction faces: Silicon carbide / silicon carbide (U6/U6) or silicon carbide / resin-impregnated carbon (U6/B1). BUFFER FLUID d1<75 : ¼ Gaz d1≥75 : ½ Gaz- L8 : Inlet buffer fluid - L9 : Outlet buffer fluid

TYPES OF INDUSTRIES



FLUIDS

All corrosive, abrasive and slightly clogging fluids.

GUIDELINES, STANDARDS AND APPROVALS (ON REQUEST)



d1 nominal h6	d3	d4 mini	d4 maxi	L1	L3	L4	L5	L8	L9	D	S	W
25	40	41	51	83.5	23.5	60	28.5	9.5	20	105	12.5	58
28	43	44	52	83.5	23.5	60	28.5	9.5	20	105	12.5	59
30	45	46	56	83.5	23.5	60	28.5	9.5	20	105	12.5	63
32	47	48	57	83.5	23.5	60	28.5	9.5	20	110	12.5	64
33	48	49	57	83.5	23.5	60	28.5	9.5	20	110	12.5	64
35	50	51	61	83.5	23.5	60	28.5	9.5	20	115	12.5	68
38	55	58	66	83.5	23.5	60	28.5	9.5	20	125	12.5	73
40	57	60	68	83.5	23.5	60	28.5	9.5	20	125	14.7	75
43	60	63	70	83.5	23.5	60	28.5	9.5	20	133	14.7	77
45	62	65	73	83.5	23.5	60	28.5	9.5	20	141	14.7	80
48	65	68	75	83.5	23.5	60	28.5	9.5	20	141	14.7	82
50	67	70	78	83.5	23.5	60	28.5	9.5	20	150	14.7	85
53	70	73	81	83.5	23.5	60	28.5	9.5	20	150	14.7	88
55	72	75	83	83.5	23.5	60	28.5	9.5	20	150	18	90
60	80	85	91	83.5	23.5	60	28.5	9.5	20	157	18	98
65	85	90	98	83.5	23.5	60	28.5	9.5	20	165	18	105
70	90	95	108	83.5	23.5	60	28.5	9.5	20	180	18	115
75	100	104	118	97	27	70	33	11	23	190	18	129
80	105	109	124	97	27	70	33	11	23	195	18	135
85	110	114	128	97	27	70	33	11	23	200	20	139
90	115	119	135	97	27	70	33	11	23	205	20	146
95	120	124	138	97	27	70	33	11	23	210	20	149
100	126	129	144	97	27	70	33	11	23	215	20	155

The maximum temperature, pressure and speed given in this document cannot be associated in any case.



Spares kit

KIT CARTSEAL B 24

Spares kit for mechanical seal

KIT FOR CARTRIDGE SEAL

- INCLUDES ALL WEAR PARTS



COMPOSITION

Spares kit includes friction faces, O-rings, springs, etc. for a complete renewal of your mechanical seals.

TYPES OF INDUSTRIES



GUIDELINES, STANDARDS AND APPROVALS (ON REQUEST)



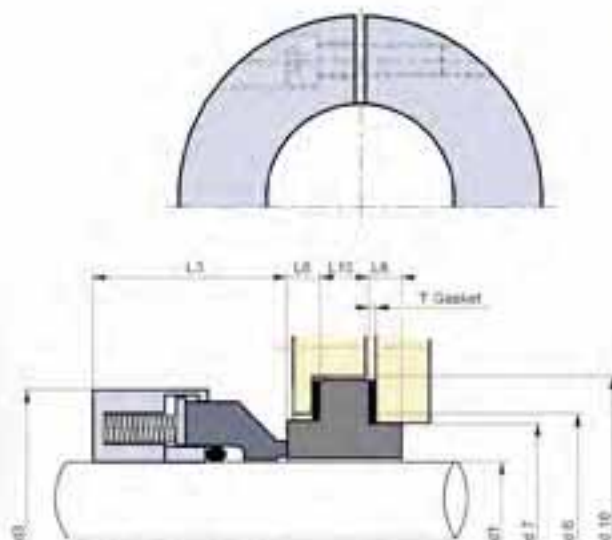
Single-seal

LATTYSEAL B 16660 A3

Dynamic sealing through complete, external balanced mechanical seal

EXTERNAL MECHANICAL SEAL LIMITING THE CONTACT WITH THE PRODUCT

- OPTION POSSIBLE FOR AGITATORS WITH AXIAL CLEARANCES
- SIMPLE AND FAST INSTALLATION
- FOR HIGHLY CORROSIVE FLUIDS



OPERATING PARAMETERS (NOT ASSOCIATED)

Pressure : 0 to 10 bar
Temperature : -20 °C to 220 °C
Speed : 15 m/s

COMPOSITION

Pure silicon carbide (U6) or resin-impregnated carbon (B1)

TYPES OF INDUSTRIES



FLUIDS

All highly corrosive, abrasive and slightly clogging fluids.

GUIDELINES, STANDARDS AND APPROVALS (ON REQUEST)



Single-seal

LATTYSEAL B 16660 A3

Dynamic sealing through complete, external balanced mechanical seal

METRIC VERSION

d1 nominal h6	d3	d6 -0 + 0.2	d7 ± 0.5	d10 -0 + 0.2	L3	L6	L10	T
18	44	37.5	36.51	48	38	4.8	8	0.8
20	46	40.5	39.69	51	38	4.8	8	0.8
22	48	40.5	39.69	51	38	4.8	8	0.8
24	50	43.5	42.86	54	38	4.8	8	0.8
25	52	43.5	42.86	54	38	4.8	8	0.8
28	55	51.5	50.8	65	38	8	11	1.6
30	58	55	53.98	68	38	8	11	1.6
32	60	55	53.98	68	38	8	11	1.6
33	60	58	57.15	71	38	8	11	1.6
35	62	58	57.15	71	38	8	11	1.6
38	65	64.5	63.5	78	38	8	11	1.6
40	68	67.5	66.68	81	38	8	11	1.6
43	70	71	69.85	84	38	8	11	1.6
45	72	71	69.85	84	42	8	11	1.6
48	75	80	79.38	97	42	9.5	14.3	1.6
50	78	80	79.38	97	42	9.5	14.3	1.6
53	80	83.5	82.55	100	42	9.5	14.3	1.6
55	80	86.5	85.73	103	42	9.5	14.3	1.6
58	83	89.5	88.9	106	42	9.5	14.3	1.6
60	86	89.5	88.9	106	42	9.5	14.3	1.6
63	90	93	92.08	110	42	9.5	14.3	1.6
65	93	96	95.25	113	42	9.5	14.3	1.6
68	98	99	98.43	116	42	9.5	14.3	1.6
70	98	99	98.43	116	42	9.5	14.3	1.6
75	105	104	103.19	121	42	9.5	14.3	1.6
80	109	115	114.3	132	42	9.5	14.3	1.6
85	114	121.5	120.65	138	42	9.5	14.3	1.6
90	120	128	127	144	42	9.5	14.3	1.6
95	125	128	127	144	42	9.5	14.3	1.6
100	130	134	133.35	151	42	9.5	14.3	1.6

IMPERIAL VERSION

d1 nominal in	d1 nominal inches	d3	d6 -0 + 0.2	d7 ± 0.5	d10	L3	L6	L10	T
0.750	3/4	44	37.5	36.51	48	38	4.8	8	0.8
0.875	7/8	48	40.5	39.69	51	38	4.8	8	0.8
1.000	1"	52	43.5	42.86	54	38	4.8	8	0.8
1.125	1 1/8	55	51.5	50.8	65	38	8	11	1.6
1.250	1 1/4	60	55	53.98	68	38	8	11	1.6
1.375	1 3/8	62	58	57.15	71	38	8	11	1.6
1.500	1 1/2	65	64.5	63.50	78	38	8	11	1.6
1.625	1 5/8	68	67.5	66.68	81	38	8	11	1.6
1.750	1 3/4	72	71	69.85	84	38	8	11	1.6
1.875	1 7/8	75	74	73.03	87	42	8	11	1.6
2.000	2"	78	80	79.38	97	42	9.5	14.3	1.6
2.125	2 1/8	80	83.5	82.55	100	42	9.5	14.3	1.6
2.250	2 1/4	83	86.5	85.73	103	42	9.5	14.3	1.6
2.375	2 3/8	86	89.5	88.9	106	42	9.5	14.3	1.6
2.500	2 1/2	90	93	92.08	110	42	9.5	14.3	1.6
2.625	2 5/8	98	96	95.25	113	42	9.5	14.3	1.6
2.750	2 3/4	98	99	98.43	116	42	9.5	14.3	1.6
2.875	2 7/8	105	101	100	117	42	9.5	14.3	1.6
3.000	3"	105	104	103.19	121	42	9.5	14.3	1.6
3.250	3 1/4	109	115	114.3	132	42	9.5	14.3	1.6
3.500	3 1/2	120	121.5	120.65	138	42	9.5	14.3	1.6
3.750	3 3/4	125	128	127	144	42	9.5	14.3	1.6
4.000	4"	130	134	133.35	151	42	9.5	14.3	1.6

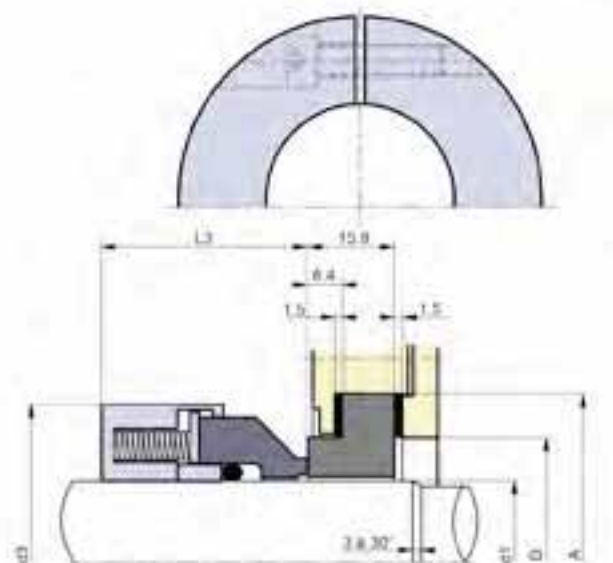
Single-seal

LATTYSEAL B 16670 A3

Dynamic sealing through complete, external balanced mechanical seal

EXTERNAL MECHANICAL SEAL LIMITING THE CONTACT WITH THE PRODUCT

- OPTION POSSIBLE FOR AGITATORS WITH AXIAL CLEARANCES
- SIMPLE AND FAST INSTALLATION
- FOR HIGHLY CORROSIVE FLUIDS



OPERATING PARAMETERS (NOT ASSOCIATED)

Pressure : 0 to 10 bar
Temperature : -20 °C to 220 °C
Speed : 15 m/s

COMPOSITION

Supplied with FKM O-ring Pure silicon carbide (U6) or resin-impregnated carbon (B1) ceramic-impregnated carbon (V)

TYPES OF INDUSTRIES



FLUIDS

All highly corrosive, abrasive and slightly clogging fluids.

GUIDELINES, STANDARDS AND APPROVALS (ON REQUEST)



Single-seal

LATTYSEAL B 16670 A3

Dynamic sealing through complete, external balanced mechanical seal

METRIC VERSION

d1 nominal h6	d3	L3	A -0 +1	D -0 +0,2
18	44	38	46.5	34
20	46	38	49.5	38.1
22	48	38	50.5	38
24	50	38	54.5	40
25	52	38	54.5	41.5
28	55	38	57.5	45
30	58	38	63	46.5
32	60	38	60.5	48
33	60	38	60.3	49.3
35	62	38	62.5	51
38	65	38	69.9	58.2
40	68	38	73.5	60.5
43	70	38	80	64
45	72	42	83	67
48	75	42	82.6	70.4
50	78	42	89.5	70
53	80	42	88.9	73.2
55	80	42	99	76.5
58	83	42	99.2	85.3
60	86	42	99.5	78
63	90	42	105	83
65	93	42	108.5	86
68	98	42	115	88
70	98	42	115	88
75	105	42	122.5	94
80	109	42	122.5	100.5
85	114	42	122.5	103.5
90	120	42	133.5	110
95	125	42	132	113.5
100	130	42	157.5	120

IMPERIAL VERSION

d1 nominal in	d1 nominal inches	d3	L3	A -0 +1	D -0 +0,2
0.938	15/16	50	38	50.5	40
1.000	1"	52	38	54.5	41.5
1.125	1 1/8	55	38	57.5	45
1.250	1 1/4	60	38	60.5	48
1.375	1 3/8	62	38	62.5	51
1.500	1 1/2	65	38	70.5	57.5
1.625	1 5/8	68	38	73.5	60.5
1.750	1 3/4	72	38	80	64
1.875	1 7/8	75	42	83	67
2.000	2"	78	42	89.5	70
2.125	2 1/8	80	42	96	73.5
2.250	2 1/4	83	42	99	76.5
2.375	2 3/8	86	42	99.5	78
2.500	2 1/2	90	42	105	83
2.625	2 5/8	98	42	108.5	86
2.750	2 3/4	98	42	115	88
2.875	2 7/8	105	42	118	91
3.000	3"	105	42	122.5	94
3.125	3 1/8	109	42	132	97.5
3.250	3 1/4	109	42	122.5	100.5
3.375	3 3/8	114	42	122.5	103.5
3.500	3 1/2	120	42	125.5	107
3.625	3 5/8	120	42	133.5	110
3.750	3 3/4	125	42	132	113.5
4.000	4"	130	42	157.5	120

The maximum temperature, pressure and speed given in this document cannot be associated in any case.

Cartridge version

CARTSEAL B 25

Dynamic sealing through split seal

SPLIT SEAL

- ONLY TWO SUB-ASSEMBLIES TO BE HANDLED
- FACTORY PRESET, NO SETTING NECESSARY WHEN INSTALLING IT
REDUCED PRODUCTION DOWNTIME
- NO ELASTOMER BONDING REQUIRED
- IMPERIAL VERSION ON REQUEST



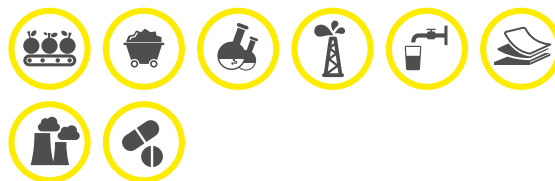
OPERATING PARAMETERS (NOT ASSOCIATED)

Pressure : 0 to 17 bar
Temperature : -20 °C to 170 °C
Speed : 15 m/s

COMPOSITION

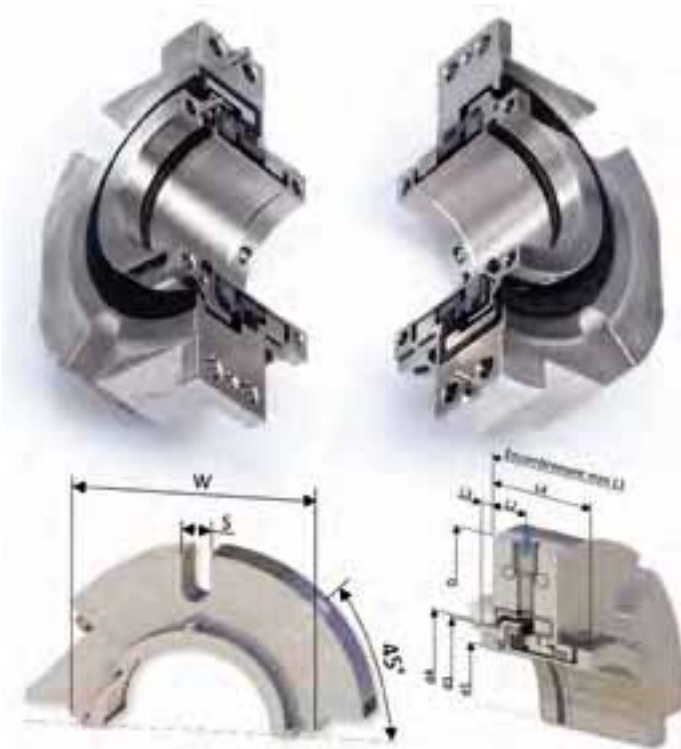
Flange, sleeve, screw: stainless steel 316 (1.4401)
Spring: hastelloy C
O-ring : FKM
Face of stationary fit: carbon or silicon carbide
Face of rotary fit: silicon carbide

TYPES OF INDUSTRIES



FLUIDS

All corrosive, abrasive and slightly clogging fluids.



d1 +0/-0.05	d3	d4 mini	d4 maxi	L1	L2	L3	L4	D	S	W
45	65.1	66.68	76.20	64	16.7	6.35	54	140	14.3	84.9
48 - 50	68.2	68.85	79.38	64	16.7	6.35	54	140	14.3	90.5
55	77.8	79.4	88.9	64	16.7	6.35	54	159	17.4	100
60 - 62	81	85.73	95.25	64	16.7	6.35	54	165	17.4	104.8
65	85	88.9	98.4	64	16.7	6.35	54	165	17.4	112.8
68	90.5	92.08	104.78	64	16.7	6.35	54	169	17.4	112.8
70	90.5	92.08	104.77	64	16.7	6.35	54	197	17.4	112.8
71	93.6	96.8	107.9	64	16.7	6.35	54	198	17.4	122.2
75	96.8	100	111.1	64	16.7	6.35	54	203	17.4	125.4
80	106.4	108	120.65	72	20.6	7.14	62	210	20.6	131.8
87	112.7	114.3	127	72	20.6	7.14	62	216	20.6	138.1
90	115.9	117.5	130.2	72	20.6	7.14	62	219	20.6	141.3
95	117.5	119.05	130.18	72	20.6	7.14	62	222	20.6	144.5
100	125.4	127	136.52	72	20.6	7.14	62	224	20.6	147.6
110	135	136.5	149.2	72	20.6	7.14	62	235	20.6	163.5
115	140.5	142.9	155.6	72	20.6	7.14	62	248	20.6	173
120	143.7	146.05	158.75	72	20.6	7.14	62	248	20.6	176.2
125	157.2	160.3	171.4	96.8	23.4	9.5	77.8	273**	23.8	185.7
140	169.9	173	184.1	97	23.4	9.5	78	292	23.8	198.4
145	176.2	179.4	193.7	96.8	23.4	9.5	77.8	305**	23.8	207.2
150	182.6	185.7	200	96.8	23.4	9.5	77.8	311**	23.8	214.3
160	195.3	198.4	212.7	96.8	23.4	9.5	77.8	311**	23.8	223.8
180	214.3	217.5	231.8	101.6	23.4	9.5	82.6	343**	23.8	247.6
219	250.8	254	269.9	101.6	23.4	9.5	82.6	432**	31.7	285.8

*Non-associated parameters

**Dimensional using an extension

The maximum temperature, pressure and speed given in this document cannot be associated in any case.



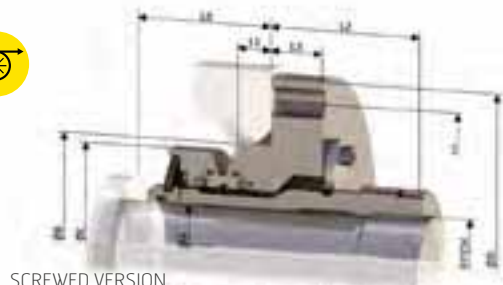
Cartridge version

LATTY SEALIS

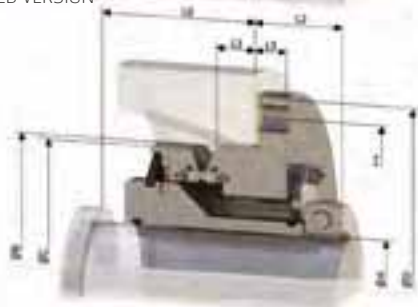
Dynamic sealing through cartridge seal

MECHANICAL SEALS FOR DIFFICULT ENVIRONMENTS

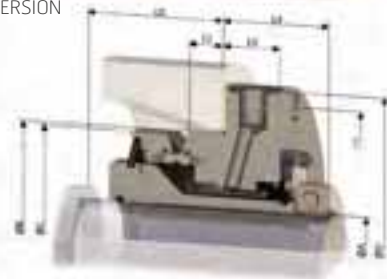
- DOES NOT REQUIRE RINSING OR EXTERNAL LUBRICATION EASY TO INSTALL
- INDEPENDENT OF ROTATION DIRECTION READY-TO-INSTALL QUENCH VERSION
- NO FACE BLOCKING THANKS TO THE CLOGGING OF THE SEMI-DYNAMIC O RING.



SCREWED VERSION



TIGHT VERSION



QUENCH VERSION

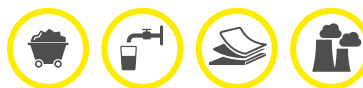
OPERATING PARAMETERS (NOT ASSOCIATED)

Pressure : 0 to 20 bar
Temperature : -30 °C to 200°C
Speed : 20 m/s

COMPOSITION

Friction faces: Nickel-impregnated tungsten carbide (U2), nickel-impregnated tungsten carbide (U2) - option possible silicon carbide (U6)
Secondary sealing: HNBR/ FKM / EPDM / FFKM
Optional: deposition of chromium carbide on metal parts in contact with the product to protect them against abrasion or erosion

TYPES OF INDUSTRIES



FLUIDS

All highly corrosive, abrasive and slightly clogging fluids.

A	B	C	D	E	F	L0	L1	L2	L3	L4	L5
20 → 32	76	72	124	11	106	48.5	13	32	12	61.5	30
33 → 51	108	99	168	13	148	61	15	38	18	70	35
52 → 78	140	135	199	13	180	61	15	39	19	81	40
79 → 108	185	170	240	13	220	62	16	40	20	85	40
109 → 137	210	208	290	13	260	72	22	40	20	90	40
138 → 180	280	264	370	17	330	93	25	42	20	93	42

The maximum temperature, pressure and speed given in this document cannot be associated in any case.

PRESENTATION

SOLUTION

Designer for industrial sealing solutions

MECHANICAL SEAL FOR

Process pumps	79
Rotary union	80
Cartridge boxes	82
PECODY	88
Auxiliary systems	90
Braided packings for dynamic sealing	92



Rotary and reciprocating units

OEM MECHANICAL SEALS FOR PROCESS PUMPS

OEM mechanical seals for process pumps

We offer a new range of mechanical seals for the rapid repair of process pumps.

This comprehensive range of OEM mechanical seals has been specifically designed to meet maintenance requirements in the following sectors:


- Food processing
- Chemicals
- Environment
- Extraction and processing of ores,
- Paper
- Pharmaceuticals
- Water treatment

Specifically trained in different production environments, our technicians advise our customers on how to improve their standard or specific mechanical seal systems, cartridge boxes or process pumps.

Our technicians intervene to improve the reliability of sealing solutions and upgrade equipment to take account of technological and environmental changes.

A specific catalogue is available on request.

APPROVALS

 (on request)



Rotary unions

ROTARY UNIONS

Rotary unions are used to create a tight connection between fixed and rotary piping. There are many applications within the sectors of bottling, filling, machine tools, automobile, mining or heating and cooling systems.

Based on the specific specification drafted together with the customer, innovative technical assemblies are proposed, with special economic focus on design and maintenance.

ADVANTAGES

- Conveys one or several fluids simultaneously from fixed and rotating pipework.
- Withstands a wide range of working pressures/temperatures/speeds
- Takes into account the different output values with the definition of the chambers via calculations
- Reduces friction torques (friction seals)
- Used when a heating system is available at the shaft end or for through shafts (filters, dryers, etc.)
- Seal performance test benches to guarantee our customers the validity of the products prior to delivery.

SERVICES

- Repair and reconditioning of rotary unions
- On large series, standard exchange programme possible
- Training of personnel on product maintenance
- Works on customer's site: maintenance, assembly, disassembly

PRODUCTION

Manufactured and assembled on our production site in Brou (France), each rotary union is unique due to its design and production even when manufactured in series in compliance with specific procedures and with our ISO 9001 qualification. Endurance tests are carried out on each rotary union in order to validate the design and materials. As a result, we can steadily improve our products and commit ourselves to guaranteeing compliance with the requirements of equipment manufacturers. These tests ensure our customers the supply of rotary unions will be up to their expectations.

EQUIPMENT

- Agitator
- Filter-drier
- Crusher
- Blower filler
- Centrifuge
- Cooker
- Washing equipment
- CIP/SIP-cleaning
- Others

TYPES OF INDUSTRIES

- | | |
|-----------------|----------------|
| Food processing | Medical |
| Automobile | Mining |
| Chemicals | Petrochemicals |
| Cosmetics | Paper |
| Machine-tools | Steel |

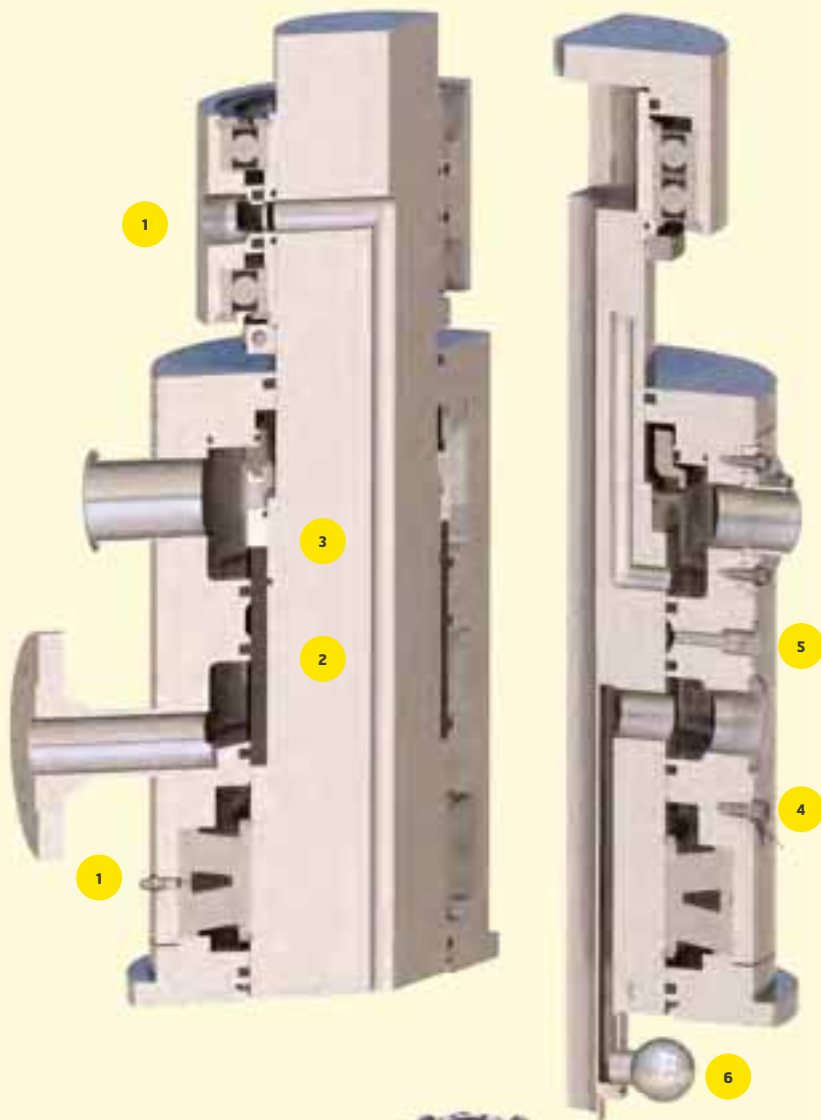
APPROVALS (on request)



SERVICE PARAMETERS (NOT ASSOCIATED)

- Pressure: 0 to 100 bar (10 MPa)
- Temperature: from -196°C to 250°C (from -320.8°F to 482°F)
- Speed: 6,000 rpm

THE DIFFERENT TECHNOLOGIES: depending on the fluids to be sealed, there are different types of rotary union technologies with friction seal or with mechanical seal.



OPTIONS

- 1** **Ball bearings or roller bearings** (to be lubricated or greased for life): Choice depending on the type of assembly and loads applied. Ensures good concentricity and coaxiality of assembly, which offers the guarantee of long life and performance. Materials available: stainless steel, ceramics, thermoplastic materials, etc.
 - 2** **Friction seal with support sleeve or with coating:** solution recommended for clear fluids and with speeds below 2 m/sec. The addition of a bush makes maintenance operations easier. No or very few coated areas. Possible approved: FDA, EC 1935/2004, ATEX, EHEDG.
 - 3** **Mechanical seal**
 - 4** **Measurement sensor:** For the remote control and monitoring of the temperature, pressure, etc. of the rotary union. Required for sensitive applications such as ATEX Environments.
 - 5** **Steam barrier or leak detector:** A barrier fluid (or steam) is injected through openings to create an asepsitisation effect. The steam barrier may be added as hygienic protection between two circuits or to perform sterilization procedures.
 - 6** **Washing ball:** Provides optimised washing
- Limited retention areas:** To comply with the different standards and guidelines; in particular in food environments.



FRICION SEAL

Friction seal technologies are used for gas applications (nitrogen dioxide, air, steam, helium, etc.) or clear liquids (solvents, oil, detergents, nitrogen, etc.) and/or associated with slow speed.

MECHANICAL SEAL

Mechanical seal technologies are used for slurries (chocolate, cream, ice, fuel oil, etc.), transitional pressures/temperatures and/or associated with high speed.

Cartridge box

SEALING SOLUTION FOR CARTRIDGE BOX

SEALING and AGITATION



Agitation is a major operation in many areas such as pharmaceuticals, chemicals, food processing, petrochemicals, etc. Agitation reduces the time for the heat transfer to products, contributes to the reduction of process times, speeds up reactions, promotes product homogenisation, filtration, smoothing and drying.

Agitation equipment may be based on different designs (filters, dryers, reactors, etc.) depending on the industries, products and specifications.

The equipment is made up of a drive, a bearing, one or several seals, a shaft associated to one or several propellers and a vessel.

Dimensional characteristics, motor power, pressure ranges and temperatures vary from process to process.

All the criteria and parameters mentioned above are necessary to determine the solution and position of the seal.

Our experience in the solutions proposed guarantee the durability of your installations and optimisation of maintenance operations.

TYPES OF INDUSTRIES AND EQUIPMENT

- **Industries:** Pharmaceuticals, chemicals, food processing, cosmetics
- **Equipment:** agitator, reactor, filter-drier, polymeriser, mixer, crusher
- **Medium:** powder, gas, steam, toxic fluid, non-toxic fluid

APPROVALS AND CONSTRUCTION CODES (ON REQUEST)

Materials compliant with:   1935/ 2004 

DIN 28138 for mechanical seals

DIN 28154 and 28159 for shafts

DIN 28137 for flange connections

DIN 28136 for vessels

SERVICES AND ASSISTANCE

We provide support throughout your project, from assessment of the equipment to be replaced or designed through to recommendation of improvement actions, dimensional and geometrical statements for the equipment to be fitted with seals, right up to our presence on start-up of equipment.

Our service and repair centres de services, our on-site technical assistance complement our expert mission.



POSITION OF THE SEALING SYSTEM DEPENDING ON THE AGITATION

In order to best determine the most appropriate seal, the positioning of the seal in the vessel will precisely help define the best-adapted seal type and technology for optimum performance. The service and environmental parameters are also accounted for in the specification.

AGITATION at vessel top



Vertical shaft for reactors, driers or crushers

- Single cartridge seal
- Single, dry mechanical seal, with or without friction seal
- Double mechanical seal with friction seal
- Double lubricated mechanical seal

AGITATION at vessel bottom



Vertical shaft for driers or mixers

- Recommendations of sealing assemblies more limited due to permanent operation in direct contact with the products.
- Double lubricated mechanical seal
- Stationary mechanical seal
- PECODY system

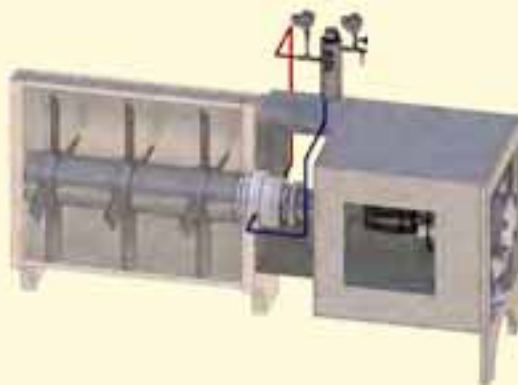
AGITATION at vessel bottom of filter-drier



Vertical shaft, axial motion of the shaft, stroke from 200 mm to 1000 mm

- Double mechanical seal, dry or lubricated, stationary

AGITATION drier-mixer or lateral



Horizontal shaft

- Single cartridge seal
- Double lubricated mechanical seal
- Double mechanical seal with friction seal

Cartridge box

TYPES OF MECHANICAL SEALS for cartridge box

AGITATION AT VESSEL TOP



Single, dry mechanical seal without friction seal

Series LATTYseal B 16 A3 and LATTYseal B 16 A4

Mechanical seal installed outside the vessel, thus making access and setting easier. It allows dry operation, with negative pressures < 6 bar (87PSI). May be supplied as cartridge with or without ball bearing. The A4 version is recommended for radial motions (0.2 mm)



Single, dry mechanical seal, with friction seal

Series LATTYseal RB 4000 and friction seal

Double cartridge assembly with gas cooling. The design is based on a mechanical seal (negative pressure possible) for process side. The secondary sealing is provided with friction seal combined with a coated bearing surface. Lower height requirement. Large number of options possible. The assembly is simplified with a single mechanical seal and less control.



Double mechanical seal with friction seal

LATTYseal Cartridge with FRICTION SEAL

Despite its restriction in linear speed < 2m/s, this cartridge runs under nitrogen flush and can be included in different process phases.

Its operation is constant whatever the variations in pressure, temperature or speed.



Double lubricated mechanical seal

LATTYseal RU 4000/RU 68 (dynamic mechanical seal) and LATTYseal RU 10000 (stationary mechanical seal – as in illustration below)

The choice is determined by the types of equipment, the speed conditions, the process and applies to sterile applications with reduced retention areas. These mechanical seals run with a process-compatible barrier fluid. A pressure above 1.5 to 2 bar should be maintained at all times. Pressure and temperature monitoring is secured by auxiliary systems.

Cartridge box

AGITATION at vessel top of filter-drier

The filter-drier performs several operations including filtration. During filtration, the shaft slides through the sleeve of the mechanical seal. The sleeve will be defined based on axial motions whilst keeping a double stationary mechanical seal design (Series LATTYseal RUC 1000) or dynamic (Series LATTYseal RUC 4000). Sealing between the shaft and the sleeve will be secured by scrapers and profile gaskets or hydroformed bellows.

**HORIZONTAL or lateral agitation****Double lubricated mechanical seal**

Series LATTYseal RU or RB.

This mechanical seal is particularly recommended for horizontal or lateral agitation subjected to regular mechanical or thermal constraints. These indications must be taken into consideration when drafting the specification.

Options such as hydroformed bellows that allow for significant deformations are recommended depending on shaft deflections as well as radial and axial motions.

The double-type technology ranges LATTYseal RU, RB 10000 or RB 24810 with friction seal are recommended when the speed is < 2m/s or where there is a secondary seal.

**AGITATION at vessel bottom****Double, stationary, lubricated mechanical seal:**

Series LATTYseal RU 10000.

Cooling and lubrication will be secured in a permanent manner to guarantee the reliability and lifespan of the equipment.

Options are proposed based on the industry and its specific requirements :

- Electropolishing, polishing, reduction of retention areas. (sterile environments)
- The installation of a probe (ATEX)
- Integration of geometric imperfections (axial, radial)
- Cooling or heating flange, etc.
- For intensive use, an alternative solution to a mechanical seal is possible with the implementation of the PECODY system (See page 86-87)



Cartridge box

OPTIONS POSSIBLE on cartridge boxes

Many adaptation possibilities can meet other pressure, fluid and speed conditions. Our engineers will check and recommend these options in order to provide the products that perfectly meet the technical and economic requirements.

ADDITIONAL OPTIONS

- Cooling or heating flange.
- Electropolishing, polishing for sterile applications
- Mechanical seals allowing for negative pressures
- Specific marking on request
- With or without ball bearing

SERVICE PARAMETERS

(not associated) for all these ranges:

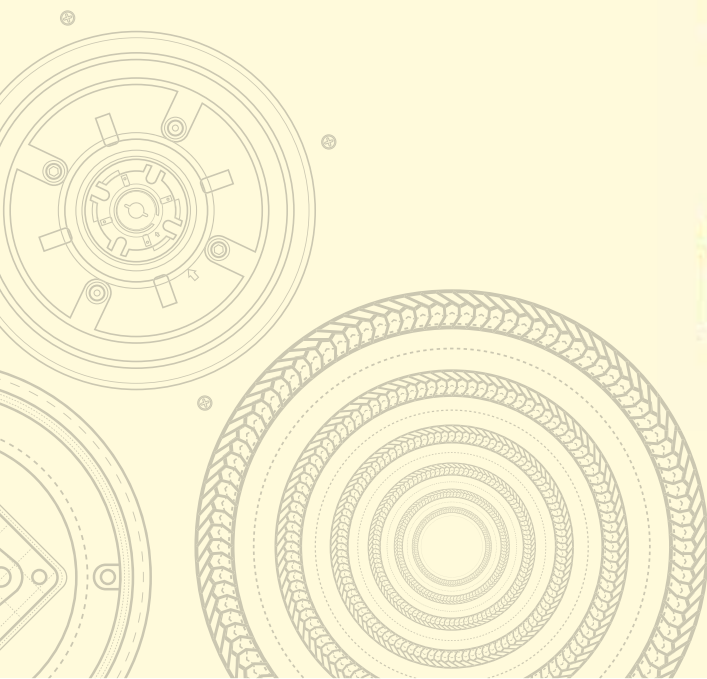
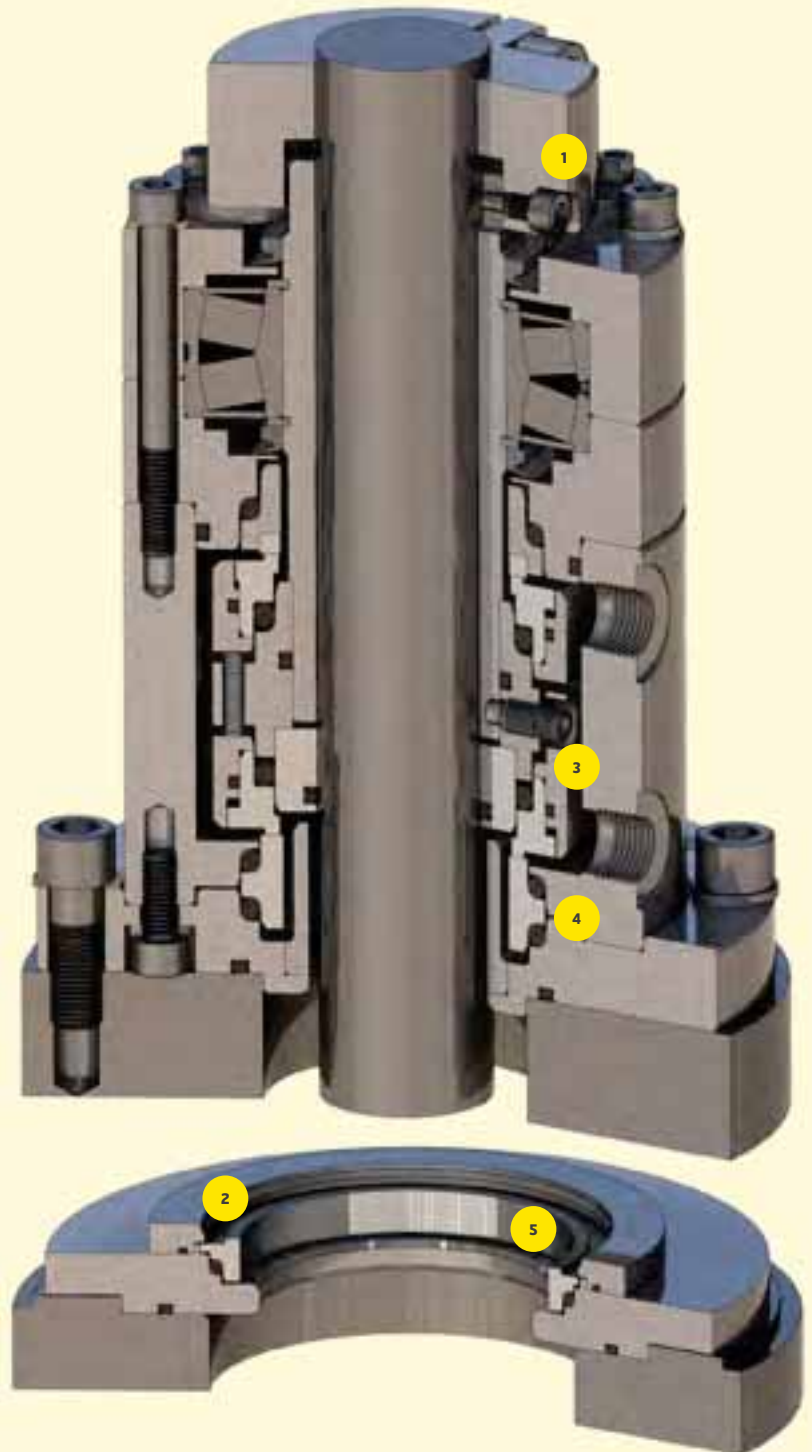
Temperature = 250 °c (482 °F) – with cooling flange

Pressure: vacuum to 30 bar (435 PSI)

Speed = 0 to 20 m/s (66 ft/s)

Diameter from 20 mm to 200 mm (0.79" to 7.87")

Other parameters on request.



Cartridge box



1



2

Drive systems

- By key(s), on large-dimension assemblies
- By shrink disc (elastic deformation and no marking on the shaft)
- By drive rings: split (no marks), split (easy disassembly and no marks), ring and screw (standard version)
- By special screws and clamping ring, example according to illustration, allowing for axial motions.

Removable floating faces

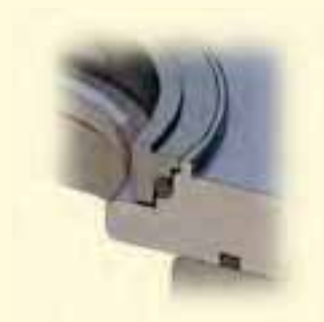
- Reduces deformations
- Surface drive
- Possible for all materials
- Easier maintenance



3



4



5

Sleeve end

- On enamelled reactors, SSiC insert
- Reliability and interchangeability

Deflector beneath the faces

- Recovery of leakage
- Injection for the cleaning
- Execution in exotic materials

Anti-rotation

- Efficient flat machined surfaces on stationary fits
- Prevents breakage at the level of notches, by means of anti-rotation pins
- Compact size

Cartridge box

PACKING PECODY CARTRIDGE BOX

ABSOLUTE SEALING EFFICIENCY,
IN PARTICULAR IN HOSTILE ENVIRONMENTS.



The **PECODY** (Presse Etoupe à COmpression DYnamique) operates according to the dynamic compression principle (calibration of the clamping force) and optimises sealing in very demanding applications and under hostile conditions in which other sealing systems have reached their limits. It meets constraints, environmental standards and directives such as ATEX, FDA, EHEDG, EC 1935/2004, etc.

This technology has been developed for companies requiring for their process equipment:

- an optimisation of productivity,
- an optimisation of maintenance,
- improved individual protection in hazardous industries such as nuclear power and powdery materials or chemicals.

ADVANTAGES

- **Coating:** chromium carbide, special for rotary machinery, suitable for abrasion, flaking and corrosion risks.
- **Limited frictions:** prevents overheating and premature wear
- **Total interchangeability:** packings, springs, sleeves, etc.
- **Rapidity:** reduces production downtime
- **Security:** no time-consuming handling in hazardous, radioactive and dusty areas.

Repair and renovation: programmable, rapid maintenance, without disconnecting the machine

Ergonomic models to facilitate access for assembly, disassembly and reconditioning operations

Compact for areas where access is difficult

Remotely controlled for hostile (thermal, contaminated, radioactive) environments.

THE PECODY IS PROVING TO BE VERY EFFICIENT ON

- Abrasive medium
- Slurries
- Clogging medium
- Powdery medium
- Toxic medium
- Flammable or explosive

It is custom-mounted as a cartridge on machinery being designed, refurbished or to improve existing installations such as:

- Mixers
- Stirrers
- Horizontal dryers
- Cookers
- Sterilizers
- Reactors
etc.

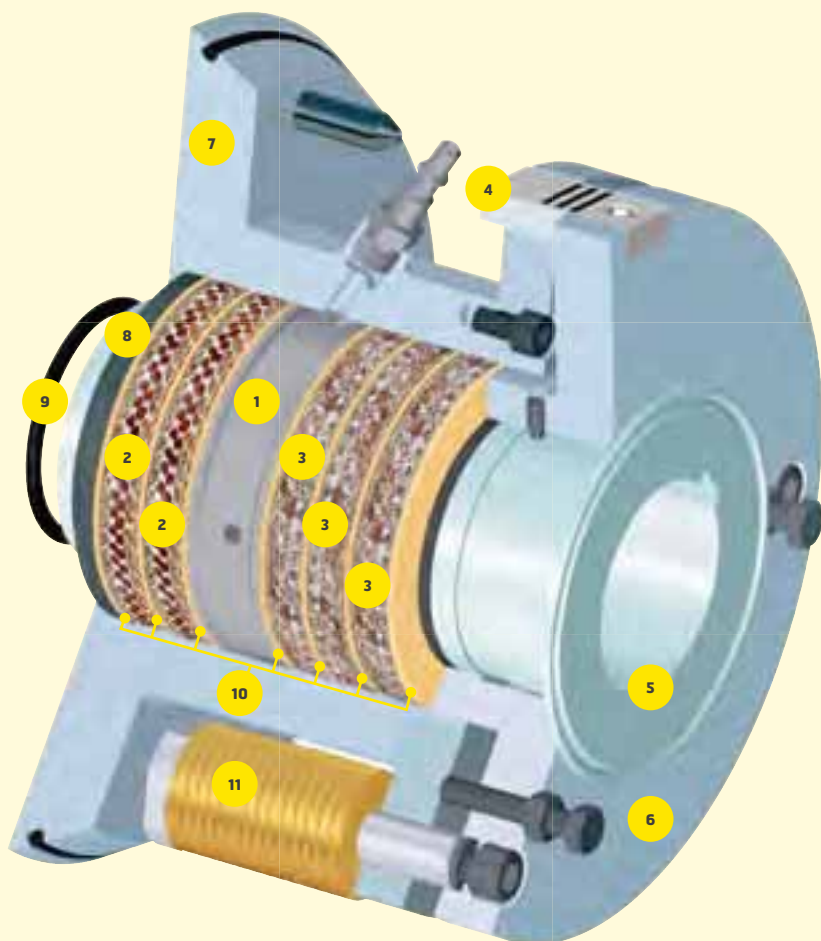
PECODY is both ergonomic and compact, which facilitates access for assembly, disassembly and maintenance operations, including in areas where access is difficult.

APPROVALS (on request)



Cartridge box

- 1 Lantern ring
- 2 Braided packing 1
- 3 Braided packing 2
- 4 Gauge
- 5 Sleeve
- 6 Gland
- 7 Casing
- 8 Packing ring
- 9 O ring
- 10 Separators
- 11 Live loading system (LLS)



EXAMPLES



ATEX drier: Sealing powder



Two-part PECODY box installed in a mixer: Sealing abrasive product



PECODY drier: Sealing nitrogen with ATEX probe with explosion-proof head

Auxiliary systems

AUXILIARY SYSTEMS FOR MECHANICAL SEALS

Auxiliary feed systems simultaneously secure mechanical seal pressurisation, cooling and barrier fluid thermoregulation.

We offer you a comprehensive range with various options depending on the types mechanical seal assemblies in compliance with applicable standards.

Lubricated mechanical seals installed on process pumps, reactors or filter-driers are the main areas of use. Our technical teams can install and maintain the equipment on your sites.

The equipment is tested and validated at the factory beforehand, thus securing reliable commissioning.

ADVANTAGES

- Suitable for harsh environments
- Maintains the fluid level and pressure in the barrier circuit
- Allows rapid visual check of barrier fluid level in the event of pressure loss
- Optimises maintenance time between interventions
- Increases mechanical seal life
- Ensures environmental and individual protections

DIRECTIVES, STANDARDS AND APPROVALS

- DESP 97/23/EC
- Electromagnetic compatibility 2004/108/EC
- Electrical equipment 2006/95/EC
- API Plan 52 and 53 A
- Safety and construction of machinery 2006 /42 /EC
- ATEX 94/9/EC

SERVICE PARAMETERS*:

- Weight empty: 15 kg
- Pressure: 1 to 10 bar
- Temperature: 30°C to 80°C
- Inlet/Outlet/pressurisation connections: 1/2 gas

VESSEL CHARACTERISTICS*:

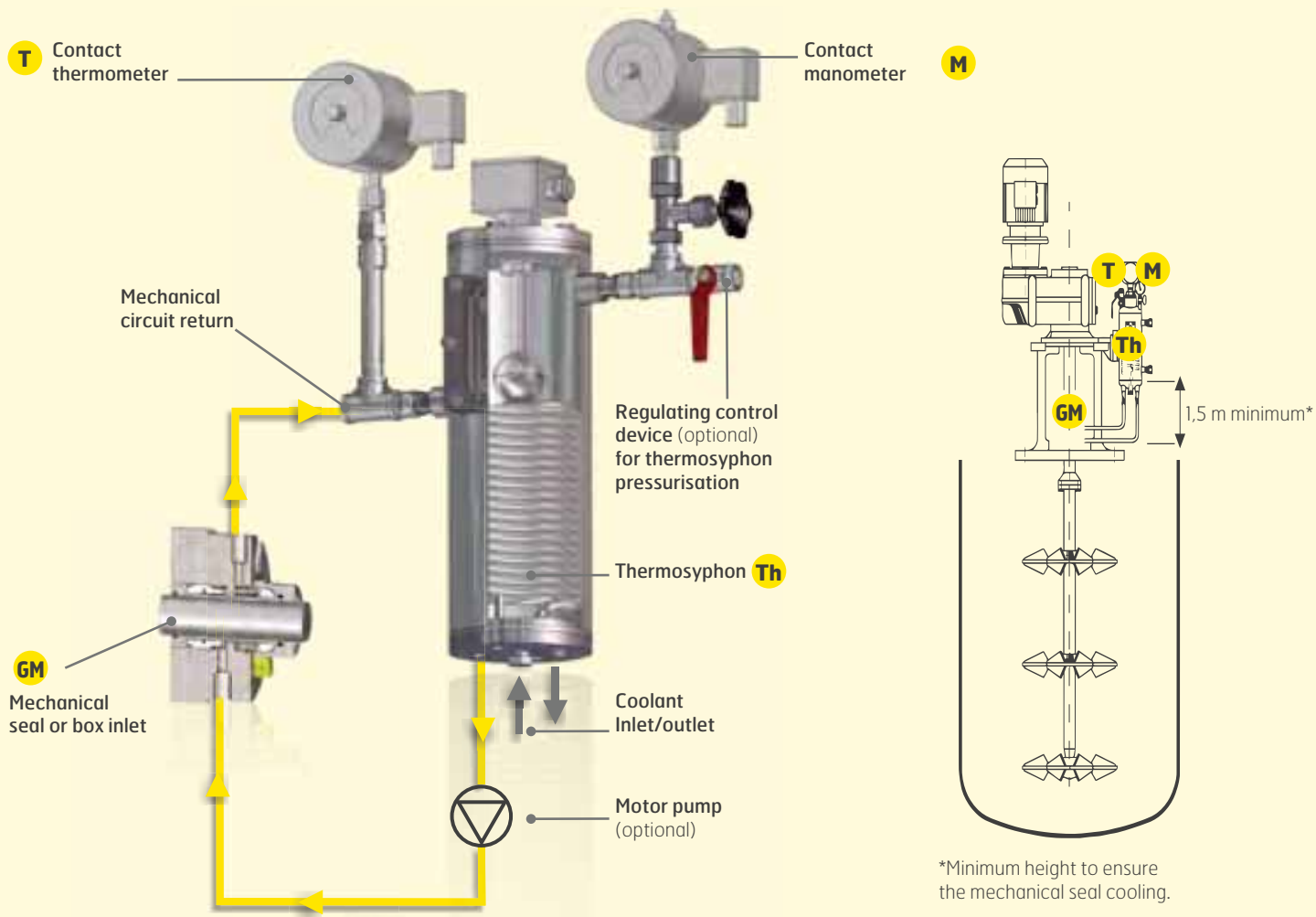
- Materials: 316 and 316 L
- Capacity: 5 litres
- Cooling coil (secondary circuit)

COMPONENT CHARACTERISTICS*:

- Option ATEX EExia II CT6
- Two-threshold indicator (high and low)
- Contact manometer (lower threshold)
- Contact manometer (higher threshold)
- Motor pump: Motor: 275/480 V 60Hz 0.18Kw 2720 rpm (option ATEX EExdIICT4) or pump: 200l/hr < flow < 250 l/hr

* Other configurations on request

Auxiliary systems



Thermosyphon alone



- Without instruments
- With or without a cooling coil (secondary circuit)

Lubrication kit



Combination possible without motor pump:

- Thermosyphon
- Contact thermometer
- Contact manometer
- Pressure sensor
- Two-threshold indicator
- Manual filling pump

Lubrication unit



If installation <1.5 m from the floor

- Lubrication kit with motor pump.
- Adding components possible.
- The whole of it is installed and tested on a connection-ready stainless steel plate.

Pressure and flow (nitrogen or air) control system



System ensuring the nitrogen or air flushing at constant pressure and flow level in the barrier circuit of our mechanical seals (closed circuit)

Gas Control Panel (GCP)



Assembly for the regulation of the air or nitrogen in the boxes that are cooled by these gases

TYPES OF MECHANICAL SEALS

Design alternatives

For all models

Type U = Unbalanced

Type B = Balanced

CARTseal B 24810 : single mechanical seal cartridge.

The single cartridge mechanical seal allows for quick and simple installation as the seal is factory set. A number of variants allow for either plain glands or flush, quench and drain connections.



This makes the installation procedure easier, faster, more reliable and less expensive.

CARTseal B 24810 DB : double mechanical seal cartridge

Cartridge assemblies are also available as double and tandem versions. This assembly provides for these two types of operation. This adaptation is particularly recommended to seal products for which no leakage is allowed. These assemblies may also be used in vacuum applications.



Same installation as for CARTseal B24810

LATTYseal U 1000 : mechanical seal with conical spring, dependent on direction of rotation

The use of a conical spring drives the rotary part in rotation through the tightening of the spring coil in contact with the shaft.



*There are consequently two types of springs:
'R' for clockwise rotation, as seen from the motor side
'L' for anti-clockwise rotation, as seen from the motor side*

LATTYseal 6812 : mechanical seal with spring washers, independent of the direction of rotation

The spring washer allows us to design more compact seals. The drive in rotation is secured by cup point set screw emcombrent.



LATTYseal B 18212 : mechanical seal with cylindrical spring, independent of the direction of rotation

The cylindrical spring is non-clogging in fibrous or viscous products. Assembly tolerance for the compression value of + and - 2 mm possible.



LATTYseal B 23212 : mechanical seal with protected spring washers, independent of the direction of rotation

The spring washer is protected from the product by the dynamic seal. The mechanical seal may be used with viscous or clogging products.



LATTYseal B 17 B : mechanical seal with edge welded metal bellows, independent of the direction of rotation

Alone, it ensures the following three functions: the load required for the permanent contact of the 2 faces, the drive of the face of the rotary part, sealing between the drive ring and the rotary part.



It is used mainly with viscous products that are conveyed at high temperature, up to 220°C and above, with graphite-based gaskets.

LATTYseal B 166 A3 : external mechanical seal, independent of the direction of rotation

This design is chosen mainly for aggressive fluid applications. It uses exotic materials that are compatible with the fluids to be sealed. However, these mechanical seals are limited in inverted pressure.

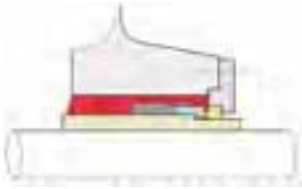


TYPES OF MECHANICAL SEAL ASSEMBLIES

The figures below show rotary (dynamic) mechanical seals but they are also available as stationary seals.

For all models
 Type U = Unbalanced
 Type B = Balanced

“Dead end” single assembly API plan 2



Principle:

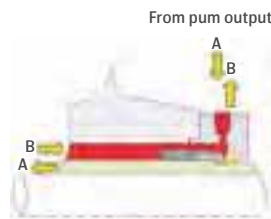
- The seal is immersed in the fluid to be sealed without circulation.
- Pressure < 1 MPa (< to 10 bar)
- Speed: 1,500 to 3,000 tr/min.

Properties of the fluid to be sealed

- where there are no vaporising pressure problems;
- where there is no hazard and no emission to the atmosphere.

This is the most widespread type of assembly.

Single assembly with flush (circulation) – API plan 11



Principle:

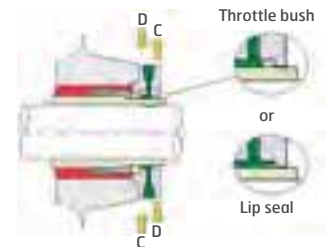
This type of assembly enables the circulation of the fluid to be sealed with three possible flow directions:

- 1- from the pump discharge to the mechanical seal and return to the back of the impeller (circulation A); the fluid may be filtered and/or cooled beforehand;
- 2 - from the back of the impeller to the mechanical seal and return to the pump suction (circulation B);
- 3 -from an external source to the back of the impeller (circulation A).

Properties of the fluid to be sealed

- where there is a vaporising pressure problem (circulation A ensures the stuffing box pressurisation);
- where there is no hazard and without emission to the atmosphere

Single assembly with quench (rinsing) API plan 62



Principle:

• Quenching consists in the circulation of another pressureless fluid from an external source (steam, water, etc.); it ensures the cleaning and the evacuation of deposits to the atmospheric side.

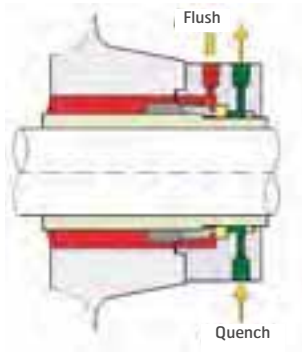
• When using a liquid (circulation C), the circulation will preferably be from bottom to top in order to ensure the filling of the cavity.

• However, in the case of a gas (circulation D) that may become liquid (water vapour), circulation from top to bottom is advisable in order to collect condensates.

Properties of the fluid to be sealed:

- The same as for a “dead end” single assembly, yet with a fluid to be sealed that can form deposits on the atmospheric side and/or represent a polluting hazard (for example, coking-sensitive petroleum products and crystallising products).

Assembly with flush and quench
API plan 11, 52, 62



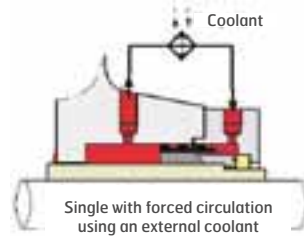
Principle:

- This type of assembly combines the two types of operation above: flushing and quench.

Properties of the fluid to be sealed:

- where there is a vaporising pressure problem;
- that can form deposits on the atmospheric side

Single assembly with forced circulation through external coolant
API plan 23



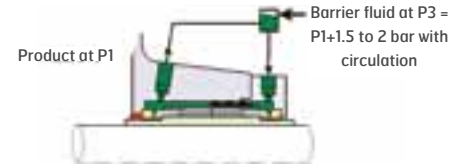
Principle:

This assembly allows for circulation, using an axial or radial pumping device incorporated to the seal, of the fluid to be sealed by an external coolant.

Properties of the fluid to be sealed:

- Liquids that are pumped close to their vaporising temperature (for example boiler feed water water).

Double assembly (back-to-back)
API 53 A and 53 B



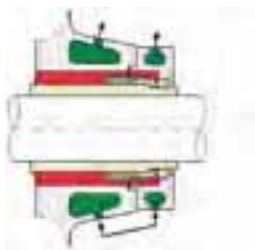
Principle:

This assembly enables the isolation of the fluid to be sealed from the atmosphere by means of a compatible auxiliary fluid with superior pressure (generally 2 to 5 bar). This barrier fluid should be clean, clear, compatible with the fluid to be sealed and harmless. Pressurisation is secured by an external device (accumulator, compressed gas). The circulation is adapted to the operating conditions (natural circulation by thermosyphon, external pumps, built-in device, etc.).

Properties of the fluid to be sealed:

- Hazardous in contact with atmosphere (corrosive, toxic or explosive)
- close to its vaporising pressure or gaseous
- heavily loaded

Single seal with cooled or heated seal chamber and/or gland plate



Principle:

- The temperature of a thermostatically-controlled auxiliary liquid in the chamber of the stuffing box and/or of the bonnet enables the control of the temperature of the fluid to be sealed near the mechanical seal.

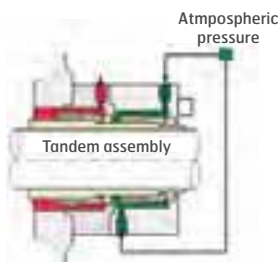
Properties of the fluid to be sealed:

Same as the ones above (with or without flushing and/or quench) which require:

- either cooling for the resistance of O-rings at high temperatures or to prevent the fluid to be sealed from vaporising
- or reheating to prevent the fluid to be sealed from massing.

This may require either flushing or the quench, or both.

Tandem assembly
API plan 52 and 62

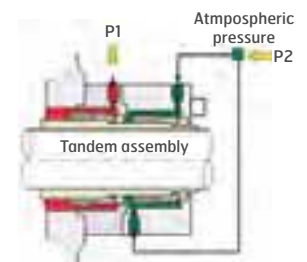


Principle:

- the isolation of the fluid to be sealed from the atmosphere by means of an auxiliary fluid with inferior pressure (generally to the atmospheric pressure)
- to have a clear, clean liquid, compatible with the fluid to be sealed and harmless.

The circulation is adapted to the operating conditions (thermosyphon or built-in pumping device).

Tandem Pressurised tandem assembly
API plan 53



Principle:

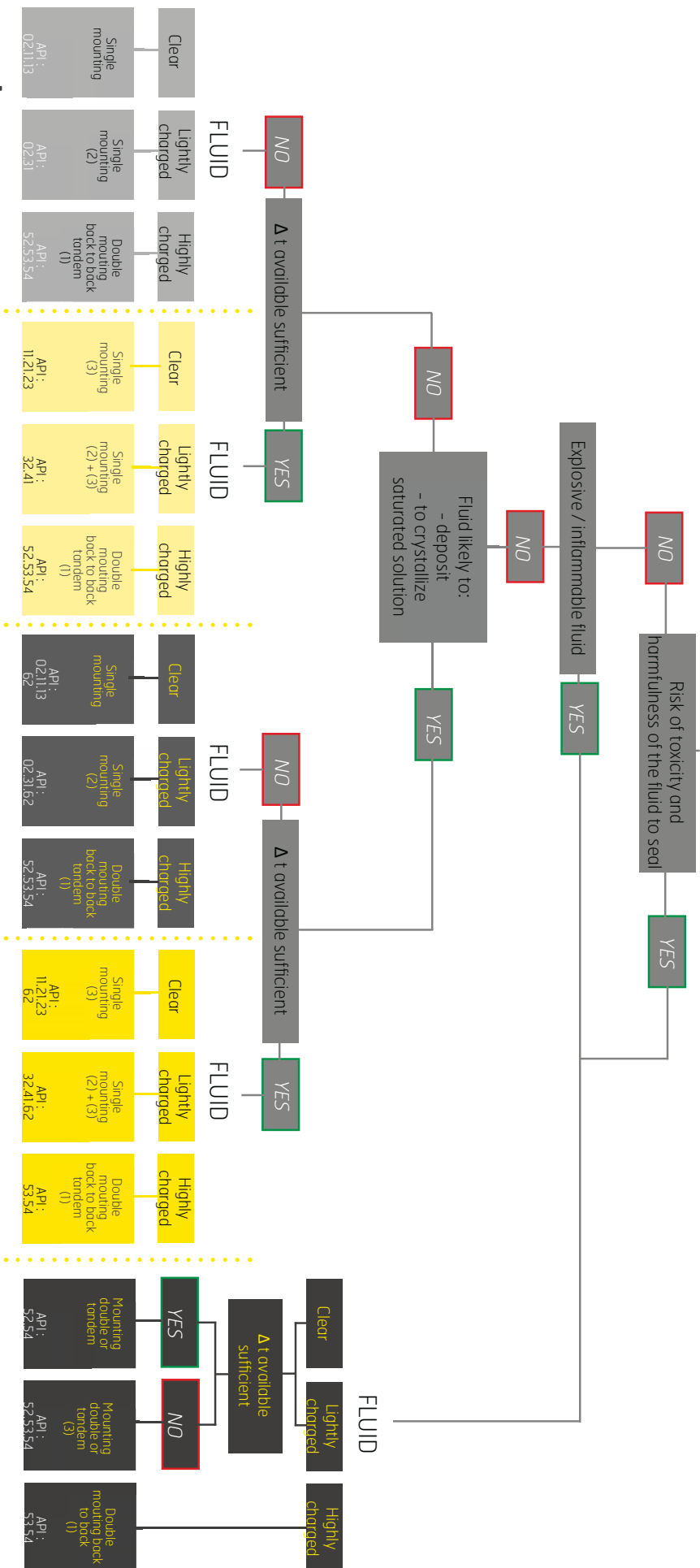
This type of assembly is the same as the tandem assembly above, yet pressurised at a pressure P2 superior to pressure P1 of the fluid to be sealed. The mechanical seal on product side is provided with double balancing.

Properties of the fluid to be sealed:

- hazardous in contact with atmosphere (corrosive, toxic or explosive)
- close to its vaporising pressure or gaseous
- very heavily loaded

SELECTION OF MECHANICAL SEAL

Selection of the seal type



(1) friction sides resistant to abrasion product side
 (2) friction sides resistant to abrasion
 (3) with device used to move away from vaporization point

SELECTION OF SEAL FACES DEPENDING ON THE TYPES OF FLUIDS TO BE SEALED

For clean or slightly abrasive product

Resin-impregnated hard carbon (B) / silicon carbide (U6)

For highly abrasive products

Silicon carbide (U6) / silicon carbide (U6)
Silicon carbide (U6) / tungsten carbide (U2)
Tungsten carbide (U2) / tungsten carbide (U2)

SELECTION	B / G2	B / U6	A / U6	U2 / U2	U6 / U2	U6 / U6
Wear resistance	●	●	●	●	●	●
Shock resistance	●	●	●	●	●	●
Chemical resistance	●	●	●	●	●	●
Thermal conductivity	●	●	●	●	●	●
Dry-friction behaviour	●	●	●	●	●	●
Resistance to thermal shocks	●	●	●	●	●	●
Non-corrosive clear fluid	●	●	●	●	●	●
Corrosive clear fluid	●	●	●	●	●	●
Overheated water	●	●	●	●	●	●
Little corrosive loaded fluid	●	●	●	●	●	●
Corrosive loaded fluid	●	●	●	●	●	●

SOLUTION

- Recommended
- Technically possible
- Acceptable
- Not to be recommended

FRICTION MATERIALS

- Stainless steel 1.4571
 - Resin-impregnated carbon
 - Metal-impregnated carbon
 - Silicon carbide SiC produced by sintering
 - Nickel-impregnated tungsten carbide
- G2
 - B
 - A
 - U6
 - U2