

Reliable shaft seals for large pump series.
High quality made in Italy.

EagleBurgmann®
Rely on excellence

EagleBurgmann BT Mechanical seals



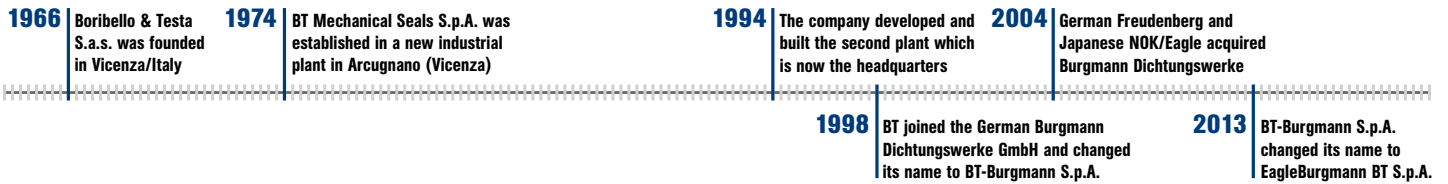
EagleBurgmann BT: The specialist for small shaft seals for large pump series.



EagleBurgmann BT S.p.A. was founded in 1966 to initially satisfy the mechanical seal requirements of Italian pump manufacturers. Today the most valuable customers of EagleBurgmann BT are major European water pump manufacturers, as well as many other well-known worldwide pump producers on the OEM market.

The company has grown continuously with around 70 employees now and produces more than 8 million mechanical seals a year.

Company milestones



Quality and certifications

EagleBurgmann BT is a certified company with highly qualified technical personnel and the most advanced equipment for research, production and control in accordance with the highest international standards.

Our certifications:

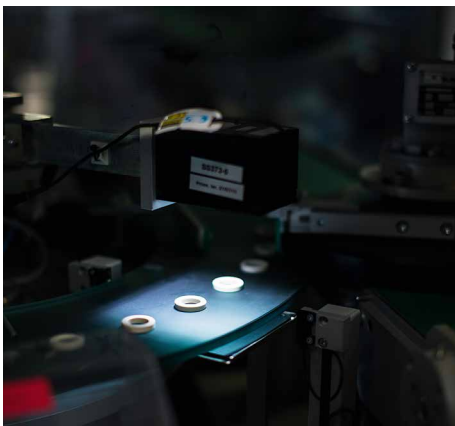
- UNI EN ISO 9001 Quality Management System
- UNI EN ISO 14001 Environment Management System
- OHSAS 18001 Health and Safety Management System
- SA 8000 Corporate Social Responsibility Certification

Production

Large investments in production processes and complete automation of many manufacturing phases allow us to achieve the combined target of reasonable prices and high quality products. EagleBurgmann BT offers automatic quality control for a 100 % production inspection.

Testing facilities

Different test rigs for life-tests and special equipment for pumps ensure quality control as well as continuous development of new products. EagleBurgmann BT can also provide specific tests in accordance with customer requirements.



When BT joined the Burgmann group in 1998, it was initially structured as a small family-owned company with a national market. Over the years, EagleBurgmann BT has developed into a modern company oriented towards a global market with export sales of more than 45 % of turnover, with two plant sites (total area 8.000 square meters) in the industrial area of Arcugnano (Vicenza).

EagleBurgmann BT is the market leader for mass production mechanical seals in clean water applications. Our seals are used regularly in many applications such as:

- Drinking water pumps
- Hot water and water pumps
- Swimming pool pumps
- Massage pumps in whirlpools
- Pumps for garden and ponds
- Submersible pumps
- Submersible well motors
- Waste water pumps
- Circulation pumps for heating systems
- Pumps for dishwashers
- Shower pumps
- Building service systems
- Coffee machine pumps

In addition, the EagleBurgmann BT range of products also includes seals for light chemicals and food industry applications, for abrasive media and for pressures up to 40 bar (580 PSI). Customized solutions can be also provided according to customer needs.



EagleBurgmann BT production site

Research and development

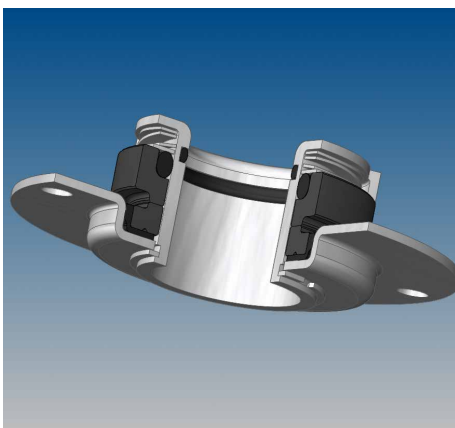
A staff of qualified technicians with in-depth knowledge of seal materials is permanently occupied with developing innovative solutions. Our R&D department works with excellent equipment and advanced technologies:

- Flatness analysis system
- Thermal analysis equipment
- Scanning electron microscope with EDX probe
- FT Infrared spectrometer
- Metallographic microscope
- FEM finite element modelling software
- 3-D CAD system

Seal material approvals

Drinking water approval is one of the requirements of the water market. EagleBurgmann BT continuously invests in qualified seal materials to fulfill the main regulations in the market:

- KTW
- W270
- ACS
- WRAS
- NSF
- DM 174/04
- FDA





Mechanical seal for large-series cold water pumps, produced in millions of units per year. The BT-AR owes its success to the wide range of application, the short axial length (this allows for more economic pump construction and saves material), and the best quality/price ratio. The elasticity of the bellows design enables a more robust operation.

The BT-AR can also be used as a multiple seal in tandem or back-to-back arrangement when the product media cannot ensure lubrication, or when sealing media with a higher solids content. Installation proposals can be provided upon request.

Features

- Rubber bellows mechanical seal
- Unbalanced
- Single spring
- Independent of direction of rotation
- Short axial installation length

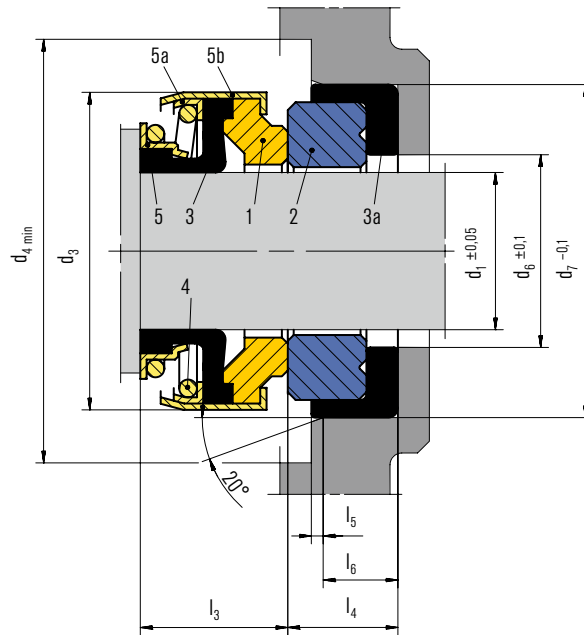
Operating range (see note on page 28)

Shaft diameter: $d_1 = 6 \dots 70 \text{ mm}$ (0.24" ... 2.76")
 Pressure: $p_1^* = 6 \text{ bar}$ (87 PSI),
 vacuum ... 0.5 bar (7.45 PSI)
 up to 1 bar (14.5 PSI) with seat locking
 Temperature: $t^* = -20 \text{ }^\circ\text{C} \dots +120 \text{ }^\circ\text{C}$ (-4 $^\circ\text{F} \dots +248 \text{ }^\circ\text{F}$)
 Sliding velocity: $v_g = 10 \text{ m/s}$ (33 ft/s)

* Dependent on medium, size and material

Materials (see fold-out page 28)

Seal face: Carbon graphite antimony impregnated (A), Carbon graphite resin impregnated (B), Carbon graphite, full carbon (B3), Silicon carbide (Q1, Q6), Tungsten carbide (U), PTFE glass fiber reinforced (Y)
 Seat: Steatite (X), Aluminium oxide (V, V1), Silicon carbide (Q1, Q6, Q7), Tungsten carbide (U), Cr steel (E), CrNi steel (F), CrNiMo steel (G)
 Elastomers: NBR (P), EPDM (E), FKM (V), HNBR (X4)
 Metal parts: CrNi steel 1.4301 (F), CrNiMo steel 1.4401 (G), CrNi steel 1.4057 (F1)



Item Description

- | | |
|----|-----------------|
| 1 | Seal face |
| 2 | Stationary seat |
| 3 | Bellows |
| 3a | Gasket |
| 4 | Spring |
| 5 | Ring |
| 5a | Locking ring |
| 5b | Collar |

Product variants

BT-AR3

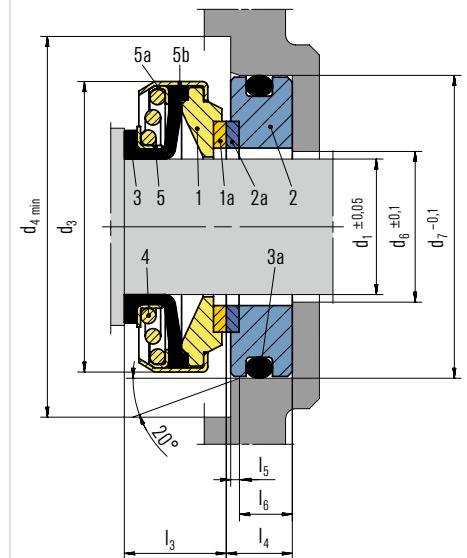
Seal faces with brazed tungsten carbide (U) for abrasive media. Elastomers and diameter range the same as BT-AR. The BT-AR3 is the right choice of seal for use in high duty applications or when abrasives (e.g. waste water) could damage the seal faces.

Recommended applications

- Water and waste water technology
- Pool and spa applications
- Household appliances
- Domestic and garden pumps
- Whirlpool and swimming pool pumps
- Dishwasher pumps
- Submersible motors / pumps
- Water pumps / waste water pumps

Certificates

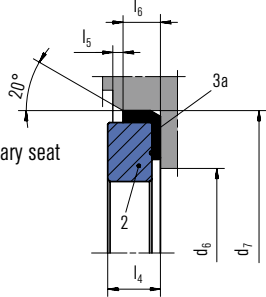
- KTW / UBA
- W270
- ACS
- WRAS
- NSF
- DM 174/04
- FDA



- | | |
|----|-------------------------|
| 1 | Seal face housing |
| 1a | Brazed seal face |
| 2 | Stationary seat housing |
| 2a | Brazed stationary seat |
| 3 | Bellows |
| 3a | O-Ring |
| 4 | Spring |
| 5 | Ring |
| 5a | Locking ring |
| 5b | Collar |

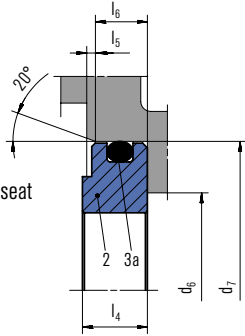
Seat alternatives

PF C



2
3a
Stationary seat
Gasket

PF A



2
3a
Stationary seat
O-Ring

Dimensions BT-AR in mm

Type	d ₁	d ₃	d ₄	d ₆	d ₇	l ₃	tol	l ₄	l ₅	l ₆	Note
6	6	18	23	8	22.0	8.0	+0.5/0	4.0	0.5	3.5	
8S	8	20	23	10	22.0	11.0	+0.5/0	4.0	0.5	3.5	*
8	8	24	27	10	26.0	11.0	+0.5/0	8.0	1.0	6.0	
10	10	24	27	12	26.0	11.0	+0.5/0	5.5	0.5	4.5	*
11	11	24	27	13	26.0	11.0	+0.5/0	8.0	1.0	6.0	
12C	12	24	27	14	26.0	11.0	+0.5/0	5.5	0.5	4.5	*
12	12	24	27	14	26.0	12.8	+0.7/0	8.0	1.0	6.0	
13	13	24	27	15	26.0	12.8	+0.7/0	5.5	0.5	4.0	*
14S	14	28	30	18	26.0	12.8	+0.7/0	8.0	1.0	6.0	*
14	14	32	35	16	28.5	12.8	+0.7/0	7.5	1.0	5.5	
15	15	32	35	17	29.5	12.8	+0.7/0	8.0	1.0	6.0	
16R	16	32	35	18	30.0	12.8	+0.7/0	6.0	1.0	4.0	*
16	16	39	43	18	38.0	12.8	+0.7/0	8.0	1.0	6.0	*
17	17	39	43	19	42.0	12.8	+0.7/0	8.0	1.0	6.0	
18	18	39	43	20	42.0	12.8	+0.7/0	8.0	1.0	6.0	
19	19	39	43	21	42.0	12.8	+0.7/0	8.0	1.0	6.0	
20R	20	35	39	22	42.0	17.8	±0.7	7.5	1.0	5.5	
20	20	39	43	22	42.0	12.8	+0.7/0	8.0	1.0	6.0	
20S	20	42	47	22	45.0	12.8	+0.7/0	10.0	1.0	8.0	
22	22	42	47	24	45.0	12.8	+0.7/0	10.0	1.0	8.0	
23	23	47	52	25	50.0	13.5	+1/0	10.0	1.0	8.0	
24	24	47	52	26	50.0	13.5	+1/0	10.0	1.0	8.0	
25R	25	42	52	27	50.0	13.5	+1/0	10.0	1.0	8.0	
25	25	47	52	27	45.0	13.5	+1/0	10.0	1.0	8.0	*
26	26	47	52	29	50.0	13.5	+1/0	10.0	1.0	8.0	
27	27	47	52	30	50.0	13.5	+1/0	10.0	1.0	8.0	
28	28	54	60	31	57.0	15.0	+1/0	10.0	1.0	8.0	
30	30	54	60	33	57.0	15.0	+1/0	10.0	1.0	8.0	
32	32	54	60	35	57.0	15.0	+1/0	10.0	1.0	8.0	
35	35	60	70	38	63.0	16.0	+1/0	10.0	1.0	8.0	
38	38	65	75	41	68.0	18.0	+1/0	12.0	2.0	9.0	
40	40	65	75	43	68.0	18.0	+1/0	12.0	2.0	9.0	
45	45	70	80	48	73.0	20.0	+1/0	12.0	2.0	9.0	
50	50	85	95	53	88.0	23.0	+1/0	15.0	2.0	12.0	
60	60	105	115	63	110.0	30.0	+1/0	15.0	2.0	12.0	
70	70	105	115	73	110.0	32.0	+1/0	15.0	2.0	12.0	

* Alternative seat dimensions

Dimensions BT-AR in inch/mm

d ₁	d ₁	d ₃	d ₄	d ₆	d ₇	l ₃	tol	l ₄	l ₅	l ₆	Note
0.375"	9.53	24	27	12	25.40	11.0	+0.5/0	5.5	0.5	4.5	*
0.500"	12.70	24	27	15	25.40	12.8	+0.7/0	7.5	1.0	5.5	
0.625"	15.88	32	36	18	31.75	12.8	+0.7/0	10.3	1.0	8.0	

* Alternative seat dimensions

BT-A2



Stationary mechanical seal in inch dimensions. Spread throughout the world, this type of mechanical seal has reached an unsurpassed quality level. The BT-A2 features all carbon or high quality resin impregnated carbon, aluminium oxide 96 %, is stationary and the rubber bellows are glued on collar. Static air pressure test to 100 % production. Excellent solution for swimming pool pumps.

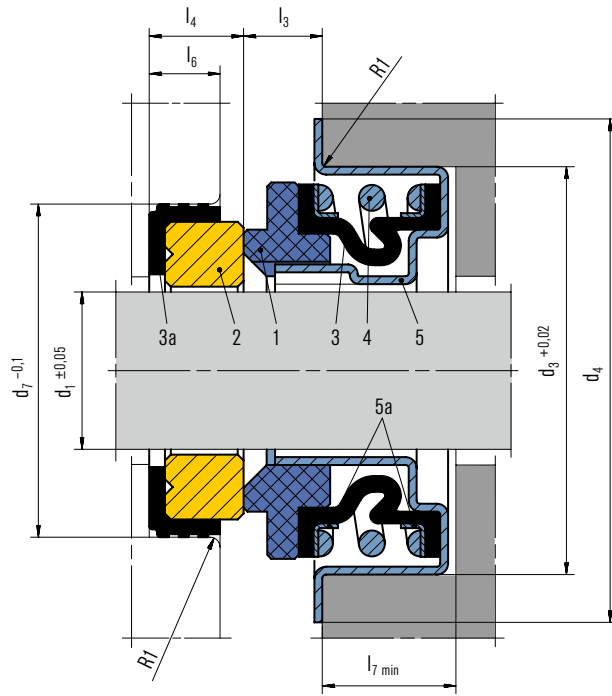
Features

- Rubber bellows mechanical seal
- Unbalanced
- Single spring
- Independent of direction of rotation
- Stationary design

Operating range (see note on page 28)

Shaft diameter: $d_1 = 1/2", 5/8", 3/4"$
 Pressure: $p_1^* = 4 \text{ bar (58 PSI)}$
 Temperature: $t^* = -20^\circ\text{C} \dots +90^\circ\text{C} (-4^\circ\text{F} \dots +194^\circ\text{F})$
 Sliding velocity: $v_g = 10 \text{ m/s (33 ft/s)}$

* Dependent on medium, size and material



Materials (see fold-out page 28)

Seal face: Carbon graphite resin impregnated (B),
 Carbon graphite, full carbon (B3)
 Seat: Aluminium oxide (V1), Silicon carbide (Q1)
 Elastomers: NBR (P), EPDM (E), FKM (V)
 Metal parts: CrNi steel (F), CrNiMo steel (G)

Item Description

Item	Description
1	Seal face
2	Seat
3	Bellows
3a	Gasket
4	Spring
5	Collar
5a	L-ring

Recommended applications

- Pool and spa applications
- Household appliances
- Domestic and garden pumps
- Clean water pumps
- Swimming pool pumps
- Whirlpool pumps

Dimensions BT-A2 in inch/mm

d_1	d_1	d_3	d_4	d_7	l_3	tol	l_4	l_6	l_7
0.500"	12.70	28.55	35.00	25.40	5.2	+0.5	8.0	6.0	10
0.625"	15.88	36.45	41.00	31.75	6.8	+0.5	10.3	8.5	10
0.750"	19.05	40.00	44.00	34.95	6.5	+0.5	10.3	8.0	11

BT-ARP



BT-ARP mechanical seals are the ideal solution for media which contain solids or are highly viscous. The spring is product-protected, thus preventing sticking or clogging. Reliable for rugged operation in all kind of applications such as waste water treatment. The dimensions can be adapted and additional seats are available. The bellows provides protection across the entire seal length.

Features

- Rubber bellows mechanical seal
- Independent of direction of rotation
- Single spring, product-protected
- Unbalanced

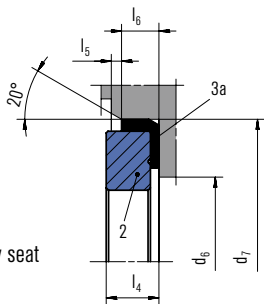
Operating range (see note on page 28)

Shaft diameter: $d_1^{**} = 20 \dots 50 \text{ mm}$ (0.79" ... 1.97")
 Pressure: $p_1^* = 6 \text{ bar}$ (87 PSI)
 Temperature: $t^* = -20 \text{ }^\circ\text{C} \dots +90 \text{ }^\circ\text{C}$ (-4 °F ... +194 °F)
 Sliding velocity: $v_g = 10 \text{ m/s}$ (33 ft/s)

* Dependent on medium, size and material
 ** Other diameters upon request

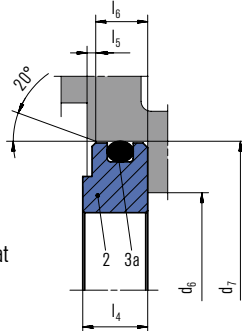
Seat alternatives

PF C

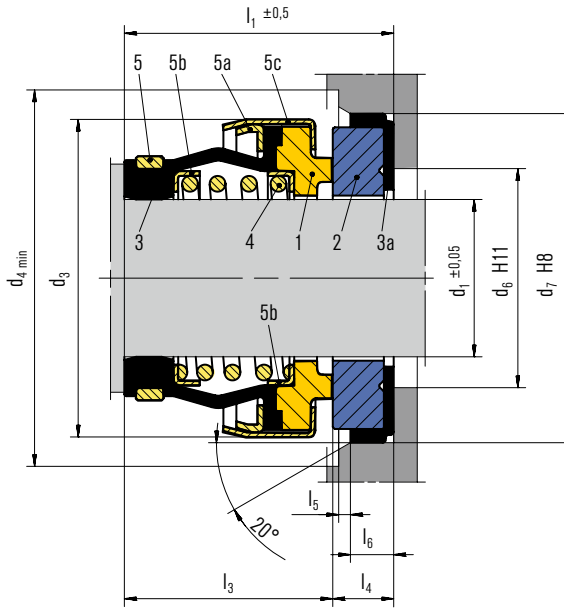


- 2 Stationary seat
 3a Gasket

PF A



- 2 Stationary seat
 3a O-Ring



Item Description

- 1 Seal face
 2 Stationary seat
 3 Bellows
 3a Gasket
 4 Spring
 5 Drive ring
 5a Locking ring
 5b L-ring
 5c Collar

Materials (see fold-out page 28)

Seal face*: Silicon carbide (Q1, Q6), Tungsten carbide (U)
 Seat: Silicon carbide (Q1, Q6, Q7), Tungsten carbide (U)
 Elastomers: NBR (P), FKM (V), HNBR (X4)
 Metal parts: CrNi steel 1.4301 (F), CrNiMo steel 1.4401 (G)

* Seal face available in solid or shrink fit/brazed version

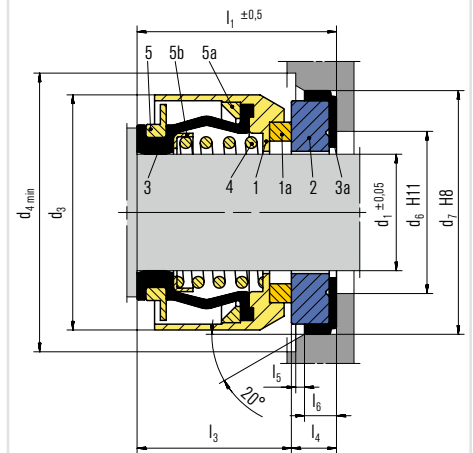
Recommended applications

- Water and waste water technology
- Slurry applications
- Submersible pumps

Product variants

BT-ARPs

Special design - super protected (upon request)



- 1 Seal face housing
 1a Shrink fitted seal face
 2 Stationary seat
 3 Bellows
 3a Gasket
 4 Spring
 5 Drive ring
 5a Locking ring
 5b L-ring

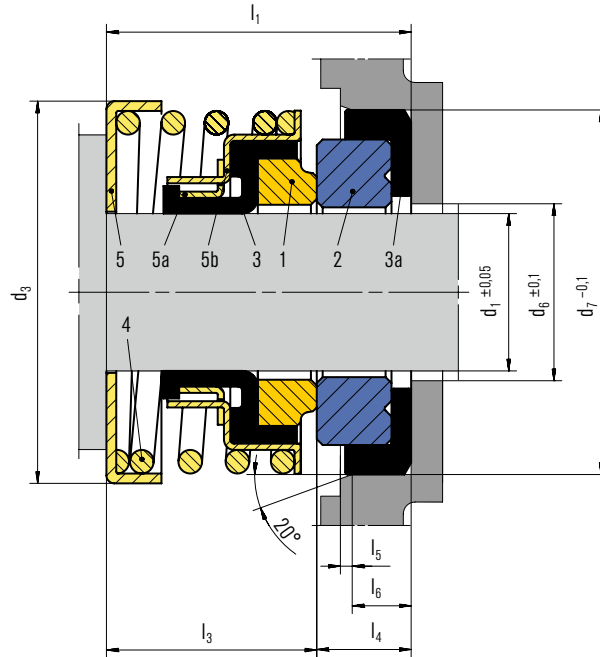
Dimensions BT-ARP in mm

d_1	d_3	d_4	d_6	d_7	l_1	l_3	l_4	l_5	l_6
20	39	43	29	35	29.0	21.5	7.5	2	5
22	42	47	31	37	29.0	21.5	7.5	2	5
25	44	49	34	40	30.5	23.0	7.5	2	5
30	54	60	39	45	34.0	26.5	7.5	2	5
35	57	63	44	50	36.0	28.5	7.5	2	5
40	60	70	51	58	39.0	30.0	9.0	2	6
35	57	63	44	50	36.0	28.5	7.5	2	5
40	60	70	51	58	39.0	30.0	9.0	2	6

BT-PN



The BT-PN is a large series mechanical seal with a simple yet effective design that is easy to assemble. The special spring arrangement allows a short axial installation length. This advantage is combined with an increased working pressure capability of up to 12 bar (174 PSI). The spring is free from torque transmission.



Features

- Rubber bellows mechanical seals
- Unbalanced
- Single spring
- Independent of direction of rotation

Operating range (see note on page 28)

Shaft diameter: $d_1^* = 8 \dots 40 \text{ mm}$ (0.31" ... 1.57")
 Pressure: $p_1^{**} = 12 \text{ bar}$ (174 PSI),
 vacuum ... 0.5 bar (7.45 PSI)
 Temperature: $t^{**} = -20 \text{ °C} \dots +120 \text{ °C}$ (-4 °F ... +248 °F)
 Sliding velocity: $v_g = 10 \text{ m/s}$ (33 ft/s)

Operating limits depend on $p \cdot v_g$ factor

- * Other diameters upon request
- ** Dependent on medium, size and material

Materials (see fold-out page 28)

Seal face: Carbon graphite antimony impregnated (A),
 Carbon graphite resin impregnated (B),
 Silicon carbide (Q1, Q6)
 Seat: Aluminium oxide (V), Steatite (X),
 Silicon carbide (Q1, Q6, Q7)
 Elastomers: NBR (P), FKM (V), EPDM (E)
 Metal parts: CrNi steel 1.4301 (F), CrNiMo steel 1.4401 (G)

Certificates

- KTW / UBA
- W270
- ACS
- WRAS
- NSF
- FDA
- DM 174/04

Recommended applications

- Pool and spa applications
- Household appliances
- Water and waste water technology
- Food and beverage industry
- Submersible oil filled motors (4" / 6")
- Submersible pumps, back-to-back installation
- Peripheral pumps for industrial applications
- Domestic and garden pumps
- Coffee machines
- Shower pumps

Item Description

- | | |
|----|-----------------|
| 1 | Seal face |
| 2 | Stationary seat |
| 3 | Bellows |
| 3a | Gasket |
| 4 | Spring |
| 5 | Ring |
| 5a | Drive ring |
| 5b | Collar |

Dimensions BT-PN in mm

d_1	d_3	d_6	d_7	l_1	l_3	tol	l_4	l_5	l_6
8.00	23	10	22.0	17.5	13.5	±1	4.0	0.5	3.5
8.00	23	10	25.4	19.0	13.5	±1	5.5	0.5	4.5
9.53	23	12	25.4	19.0	13.5	±1	5.5	0.5	4.5
10.00	23	12	25.4	19.0	13.5	±1	5.5	0.5	4.5
13.00	32	17	29.5	20.8	12.8	+0.7/0	8.0	1.0	6.0
14.00	32	17	29.5	20.8	12.8	+0.7/0	8.0	1.0	6.0
15.00	32	17	29.5	20.8	12.8	+0.7/0	8.0	1.0	6.0
16.00	32	17	29.5	20.8	12.8	+0.7/0	8.0	1.0	6.0
16.00*	32	17	29.5	24.3	16.3	+0.7/0	8.0	1.0	6.0
20.00	44	22	42.0	22.0	14.0	±1	8.0	1.0	6.0
25.00	50	27	45.0	27.0	17.0	±1	10.0	1.0	8.0
30.00	60	33	52.0	34.0	22.0	±1	12.0	1.5	8.5

* 4" submersible motor

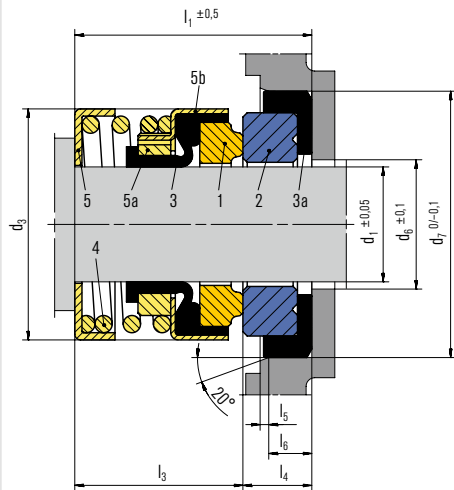
Product variants

BT-PNL

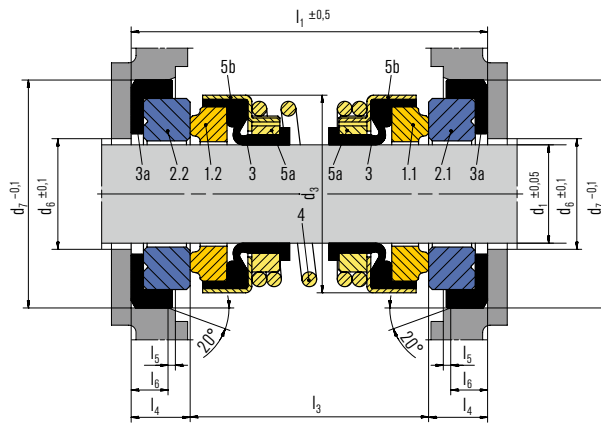
The small outer diameter of the BT-PNL allows installation in small seal compartments. Easy to assemble, the BT-PNL guarantees a long service life due to good product turbulence and the torque transmitted by the rubber bellows.

BT-PN and PNL, double seal (back-to-back arrangement)

Both types of seal can also be used as a multiple seal in back-to-back arrangement. This is advisable when the product media cannot ensure lubrication or the solids content is too high (oil chamber). Installation proposals can be supplied upon request. In this configuration, the operating pressure (product side seal) must be limited to max. 2 bar (29 PSI).



- 1 Seal face
- 2 Stationary seat
- 3 Bellows
- 3a Gasket
- 4 Spring
- 5 Ring
- 5a Drive ring
- 5b Collar



- 1.1 Seal face (product side)
- 1.2 Seal face (motor side)
- 2.1 Stationary seat (product side)
- 2.2 Stationary seat (motor side)
- 3 Bellows
- 3a Gasket
- 4 Spring
- 5a Drive ring
- 5b Collar

Dimensions BT-PNL in mm

d ₁	d ₃	d ₆	d ₇	l ₁	l ₃	l ₄	l ₅	l ₆
10.00	22	14	26.00	21.00	15.5	5.5	0.5	4.5
11.00	22	14	26.00	21.00	15.5	5.5	0.5	4.5
12.00	22	14	26.00	21.00	15.5	5.5	0.5	4.5
13.00	28	17	29.50	26.00	18.0	8.0	1.0	6.0
14.00	28	17	29.50	26.00	18.0	8.0	1.0	6.0
15.00	28	17	29.50	26.00	18.0	8.0	1.0	6.0
16.00	28	17	29.50	26.00	18.0	8.0	1.0	6.0
19.05	32	22	34.95	32.30	22.0	10.3	1.2	7.8
20.00	32	22	42.00	30.00	22.0	8.0	1.0	6.0
25.00	42	27	45.00	37.00	27.0	10.0	1.0	8.0
25.40*	42	29	41.25	38.20	27.0	11.0	1.5	8.5
30.00	52	33	52.00	40.00	28.0	12.0	1.5	8.5
31.75	52	34	47.60	60.20	49.2	11.0	1.5	8.5
40.00	63	45	68.00	47.00	35.0	12.0	1.5	8.5

* 6" submersible motor

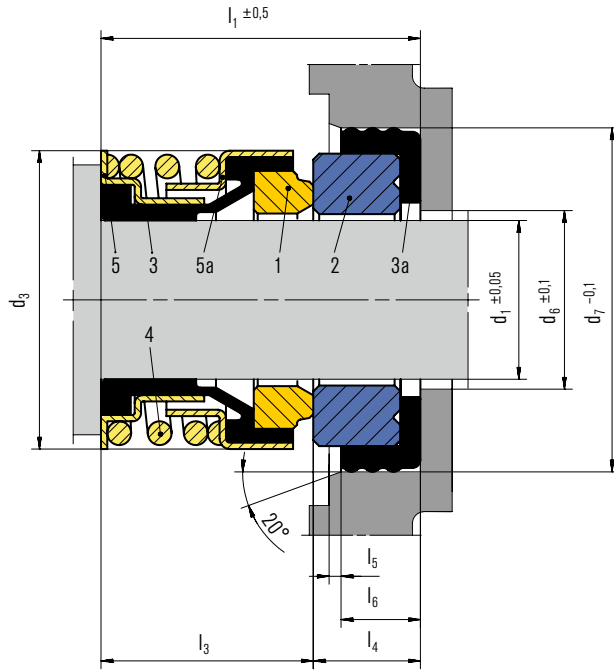
Dimensions BT-PNL double seal in mm

d ₁	d ₃	d ₆	d ₇	l ₁	l ₃	l ₄	l ₅	l ₆
12	22	14	26	39	28	5.5	0.5	4.5
14	24	16	26	34	24	5.0	0.5	4.0
15	28	17	28	38	26	6.0	1.0	4.5
16	28	18	28	38	26	6.0	1.0	4.5
18	32	20	33	45	30	7.5	2.0	5.0
20	32	22	35	45	30	7.5	2.0	5.0
22	39	24	37	46	31	7.5	2.0	5.0
25	42	27	40	47	32	7.5	2.0	5.0

BT-PNT



The main design features of the BT-PNT are the metal joint torque transmission together with the rubber bellows. This prevents torsional effects on the bellows. The shaft is protected across the entire seal length. Easy to assemble, the BT-PNT guarantees a long service life due to good product turbulence.



Features

- Rubber bellows mechanical seal
- Unbalanced
- Single spring
- Independent of direction of rotation

Operating range (see note on page 28)

Shaft diameter: $d_1 = 15 \text{ mm}, 5/8", 3/4", 1"$

Pressure: $p_1^* = 12 \text{ bar (174 PSI)}$

Temperature: $t^* = -20 \text{ °C} \dots +120 \text{ °C (-4 °F} \dots +248 \text{ °F)}$

Sliding velocity: $v_g = 10 \text{ m/s (33 ft/s)}$

* Dependent on medium, size and material

Materials (see fold-out page 28)

Seal face: Carbon graphite resin impregnated (B), Carbon graphite, full carbon (B3), Silicon carbide (Q1)

Seat: Aluminium oxide (V), Silicon carbide (Q1)

Elastomers: NBR (P), EPDM (E), FKM (V)

Metal parts: CrNi steel 1.4301 (F), CrNiMo steel 1.4401 (G)

Recommended applications

- Water and waste water technology
- Pool and spa applications
- Household appliances
- Swimming pool pumps
- Cold water pumps
- Pumps for home and garden

Certificates

- KTW / UBA
- W270
- ACS
- WRAS
- NSF
- FDA
- DM 174/04

Item Description

- | Item | Description |
|------|-----------------|
| 1 | Seal face |
| 2 | Stationary seat |
| 3 | Bellows |
| 3a | Gasket |
| 4 | Spring |
| 5 | Driver |
| 5a | Drive collar |

Dimensions BT-PNT in inch/mm

d_1	d_1	d_3	d_6	d_7	l_1	l_3	l_4	l_5	l_6
	15.00	27.0	17	29.50	25.0	17.0	8.0	1.0	6.0
0.625"	15.88	29.8	18	31.75	28.6	18.3	10.3	1.0	8.0
0.750"	19.05	32.0	21	35.00	29.3	19.0	10.3	1.0	8.0
1.000"	25.40	42.0	29	41.25	38.2	27.0	11.0	1.5	8.5

BT-RN



The BT-RN represents the traditionally designed robust pusher seal. This type of mechanical seal is easy to install and covers a wide range of applications; its reliability has been proven by millions of units in worldwide operation. It is a convenient solution for the widest range of applications: for clean water as well as chemical media.

Features

- Single pusher-type seal
- Unbalanced
- Conical spring
- Dependent on direction of rotation

Operating range (see note on page 28)

Shaft diameter:

RN, RN3, RN6: $d_1 = 6 \dots 110 \text{ mm} (0.24" \dots 4.33")$,
 RN.NU, RN3.NU: $d_1 = 10 \dots 100 \text{ mm} (0.39" \dots 3.94")$,
 RN4: upon request

Pressure: $p_1^* = 12 \text{ bar} (174 \text{ PSI})$

Temperature: $t^* = -35 \text{ °C} \dots +180 \text{ °C} (-31 \text{ °F} \dots +356 \text{ °F})$

Sliding velocity: $v_g = 15 \text{ m/s} (49 \text{ ft/s})$

* Dependent on medium, size and material

Materials (see fold-out page 28)

Seal face: CrNi steel (F, F1), CrNiMo steel (G),
 Tungsten carbide (U)

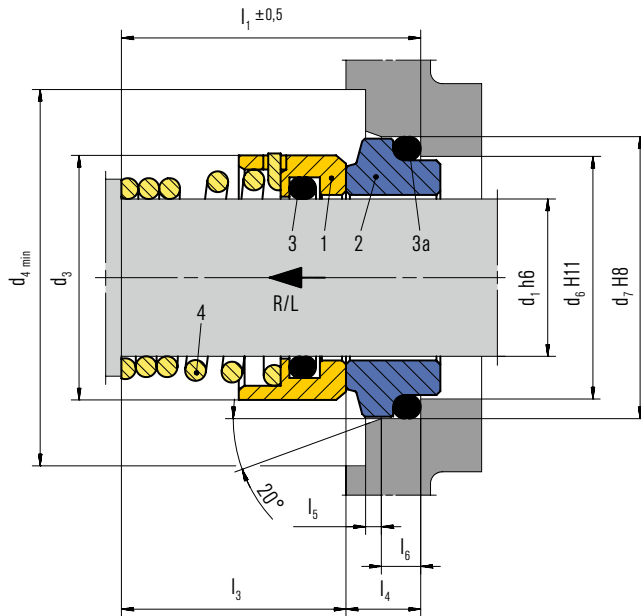
Seat: Carbon graphite antimony impregnated (A),
 Carbon graphite resin impregnated (B),
 Tungsten carbide (U)

Elastomers: NBR (P), EPDM (E), FKM (V), FFKM (K)

Metal parts: CrNi steel 1.4301 (F), CrNiMo steel 1.4401 (G)

Recommended applications

- Chemical industry
- Building services industry
- Centrifugal pumps
- Clean water pumps



Certificates

- KTW
- W270
- ACS
- WRAS
- NSF
- FDA
- DM 174/04

Item

Description

- | | |
|-------|-----------------|
| 1 | Seal face |
| 2 | Stationary seat |
| 3, 3a | O-Ring |
| 4 | Spring |

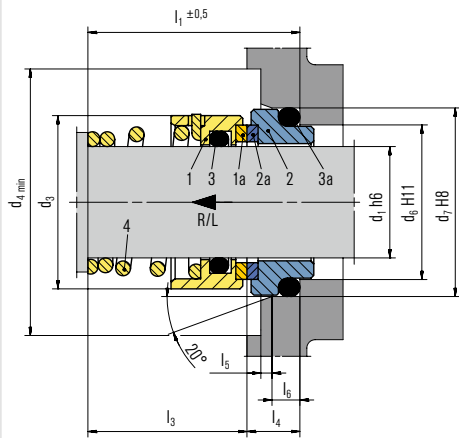
Dimensions BT-RN in mm

d_1	d_3	d_4	d_6	d_7	l_1	l_3	l_4	l_5	l_6
6	12	16	10.0	13.1	19.5	15	4.5	1.2	2
8	16	20	13.0	17.1	20.5	15	5.5	1.2	3
10	20	22	14.0	18.1	20.5	15	5.5	1.2	3
11	20	24	16.5	20.6	23.5	18	5.5	1.2	3
12	22	24	16.5	20.6	23.5	18	5.5	1.2	3
13	22	26	19.0	23.1	28.0	22	6.0	1.2	3
14	24	26	19.0	23.1	28.0	22	6.0	1.2	3
15	24	31	21.0	26.9	29.0	22	7.0	1.5	4
16	26	31	21.0	26.9	30.0	23	7.0	1.5	4
17	26	31	21.0	26.9	30.0	23	7.0	1.5	4
18	32	36	25.0	30.9	32.0	24	8.0	1.5	4
19	32	36	25.0	30.9	33.0	25	8.0	1.5	4
20	34	36	25.0	30.9	33.0	25	8.0	1.5	4
22	36	41	30.0	35.4	33.0	25	8.0	2.0	4
23	36	41	30.0	35.4	35.0	27	8.0	2.0	4
24	38	41	30.0	35.4	35.0	27	8.0	2.0	4
25	39	45	33.0	38.2	35.5	27	8.5	2.0	4
26	39	45	33.0	38.2	35.5	27	8.5	2.0	4
28	42	50	38.0	43.3	38.0	29	9.0	2.0	4
30	44	50	38.0	43.3	39.0	30	9.0	2.0	4
32	46	50	38.0	43.3	39.0	30	9.0	2.0	4
33	47	60	45.0	53.5	50.5	39	11.5	2.0	6
34	48	60	45.0	53.5	50.5	39	11.5	2.0	6
35	49	60	45.0	53.5	50.5	39	11.5	2.0	6
36	50	60	45.0	53.5	50.5	39	11.5	2.0	6
38	54	68	52.0	60.5	50.5	39	11.5	2.0	6
40	56	68	52.0	60.5	50.5	39	11.5	2.0	6
42	59	68	52.0	60.5	50.5	39	11.5	2.0	6
43	59	68	57.0	60.5	52.5	41	11.5	2.0	6
44	60	72	57.0	65.5	52.5	41	11.5	2.0	6
45	61	72	57.0	65.5	52.5	41	11.5	2.0	6
48	64	72	57.0	65.5	52.5	41	11.5	2.0	6
50	66	80	64.0	72.5	56.5	45	11.5	2.0	6
55	71	80	64.0	72.5	58.5	47	11.5	2.0	6
60	80	87	72.0	79.3	60.5	49	11.5	2.0	6
65	85	92	77.0	84.5	62.5	51	11.5	2.0	6
70	90	97	82.0	89.5	62.5	51	11.5	2.0	6
75	99	102	87.0	94.5	68.5	57	11.5	2.0	6
80	104	107	92.0	99.5	70.5	59	11.5	2.0	6
85	109	113	98.0	105.5	72.5	59	13.5	2.5	6
90	114	120	105.0	111.5	75.5	62	13.5	2.5	6
95	119	130	110.0	116.5	75.5	62	13.5	2.5	6
100	124	136	114.0	119.5	88.5	75	13.5	2.5	6
110	143	150	124.0	132.2	92.5	75	17.5	4.0	7

Product variants

BT-RN3

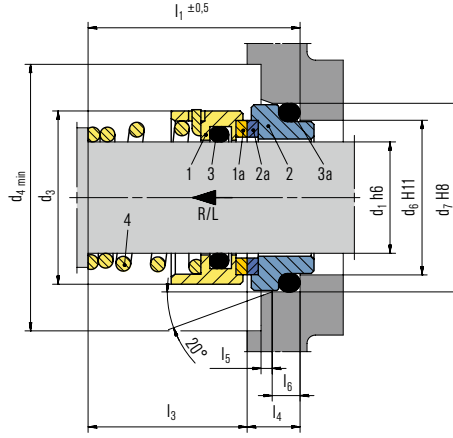
Product variant with seal faces made of brazed tungsten carbide which is suitable for media with medium corrosive and abrasive characteristics.



- 1 Seal face housing
- 1a Brazed seal face
- 2 Stationary seat housing
- 2a Brazed stationary seat
- 3, 3a O-Ring
- 4 Spring

BT-RN4

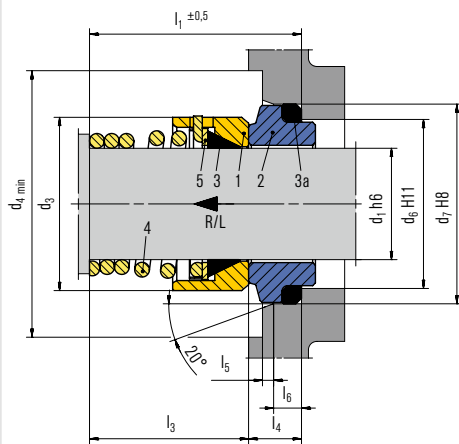
Product variant with SiC seal face shrink-fitted into the seal face carrier.



- 1 Seal face housing
- 1a Shrink fitted seal face
- 2 Stationary seat housing
- 2a Shrink fitted stationary seat
- 3, 3a O-Ring
- 4 Spring

BT-RN6

Product variant with PTFE secondary seal elements instead of elastomers. Mainly used in the chemical industry and for corrosive media.

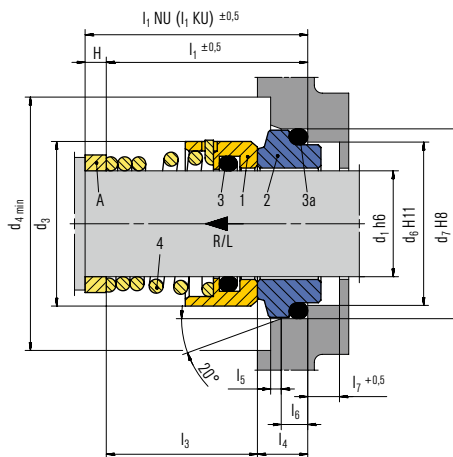


- 1 Seal face
- 2 Stationary seat
- 3 Wedge gasket (PTFE)
- 3a Gasket (PTFE)
- 4 Spring
- 5 Ring

BT-RN.NU / KU

Like the BT-RN/RN3/RN4, but with dimensions in accordance with EN 12756.

BT-RN.NU has an installation length l_{1N} and seat dimensions in accordance with EN 12756 (normal length).
BT-RN.KU has an installation length l_{1K} and seat dimensions in accordance with EN 12756 (short length).

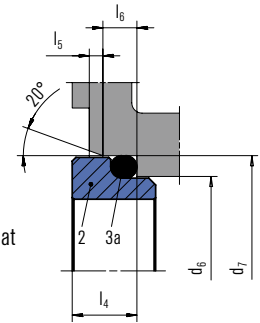


- 1 Seal face
- 2 Stationary seat
- 3, 3a O-Ring
- 4 Spring
- A Spacer (upon request)

Seat alternatives

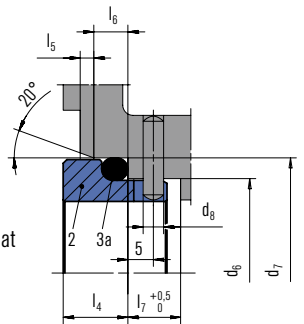
Seat ring can be supplied with short tail or with pin to block the seat and prevent seat rotation.

PF L



- 2 Stationary seat
- 3a O-Ring

PF L1



- 2 Stationary seat
- 3a O-Ring

Dimensions BT-RN.NU / KU in mm

BT-RN.NU													BT-RN.KU		
d ₁	d ₃	d ₄	d ₆	d ₇	d ₈	l _{1NU}	H	l ₁	l ₃	l ₄	l ₅	l ₆	l ₇	l _{1KU}	l ₃
10	20	22	17	21	3	40	18	22	15	7	1.5	4	8.5	32.5	25.5
12	22	24	19	23	3	40	15	25	18	7	1.5	4	8.5	32.5	25.5
14	24	26	21	25	3	40	11	29	22	7	1.5	4	8.5	35.0	28.0
16	26	30	23	27	3	40	10	30	23	7	1.5	4	8.5	35.0	28.0
18	32	36	27	33	3	45	11	34	24	10	2.0	5	9.0	37.5	27.5
20	34	38	29	35	3	45	10	35	25	10	2.0	5	9.0	37.5	27.5
22	36	38	31	37	3	45	10	35	25	10	2.0	5	9.0	37.5	27.5
24	38	40	33	39	3	50	13	37	27	10	2.0	5	9.0	40.0	30.0
25	39	41	34	40	3	50	13	37	27	10	2.0	5	9.0	40.0	30.0
28	42	44	37	43	3	50	11	39	29	10	2.0	5	9.0	42.5	32.5
30	44	46	39	45	3	50	10	40	30	10	2.0	5	9.0	42.5	32.5
32	46	48	42	48	3	55	15	40	30	10	2.0	5	9.0	42.5	32.5
33	47	49	42	48	3	55	6	49	39	10	2.0	5	9.0	42.5	32.5
35	49	51	44	50	3	55	6	49	39	10	2.0	5	9.0	42.5	32.5
38	54	58	49	56	4	55	-	55	42	13	2.0	6	9.0	45.0	32.0
40	56	60	51	58	4	55	-	55	42	13	2.0	6	9.0	45.0	32.0
43	59	63	54	61	4	60	-	60	47	13	2.0	6	9.0	45.0	32.0
45	61	65	56	63	4	60	-	60	47	13	2.0	6	9.0	45.0	32.0
48	64	68	59	66	4	60	-	60	47	13	2.0	6	9.0	45.0	32.0
50	66	70	62	70	4	60	-	60	46	14	2.5	6	9.0	47.5	33.5
53	69	73	65	73	4	70	-	70	56	14	2.5	6	9.0	47.5	33.5
55	71	75	67	75	4	70	-	70	56	14	2.5	6	9.0	47.5	33.5
58	78	83	70	78	4	70	-	70	56	14	2.5	6	9.0	52.5	38.5
60	80	85	72	80	4	70	-	70	56	14	2.5	6	9.0	52.5	38.5
63	83	88	75	83	4	70	-	70	56	14	2.5	6	9.0	52.5	38.5
65	85	90	77	85	4	80	-	80	66	14	2.5	6	9.0	52.5	38.5
68	88	93	81	90	4	80	-	80	64	16	2.5	7	9.0	52.5	36.5
70	90	95	83	92	4	80	-	80	64	16	2.5	7	9.0	60.0	44.0
75	99	104	88	97	4	80	-	80	64	16	2.5	7	9.0	60.0	44.0
80	104	109	95	105	4	90	-	90	72	18	3.0	7	9.0	60.0	42.0
85	109	114	100	110	4	90	-	90	72	18	3.0	7	9.0	60.0	42.0
90	114	119	105	115	4	90	-	90	72	18	3.0	7	9.0	65.0	47.0
95	119	124	110	120	4	90	-	90	72	18	3.0	7	9.0	65.0	47.0
100	124	129	115	125	4	90	-	90	72	18	3.0	7	9.0	65.0	47.0

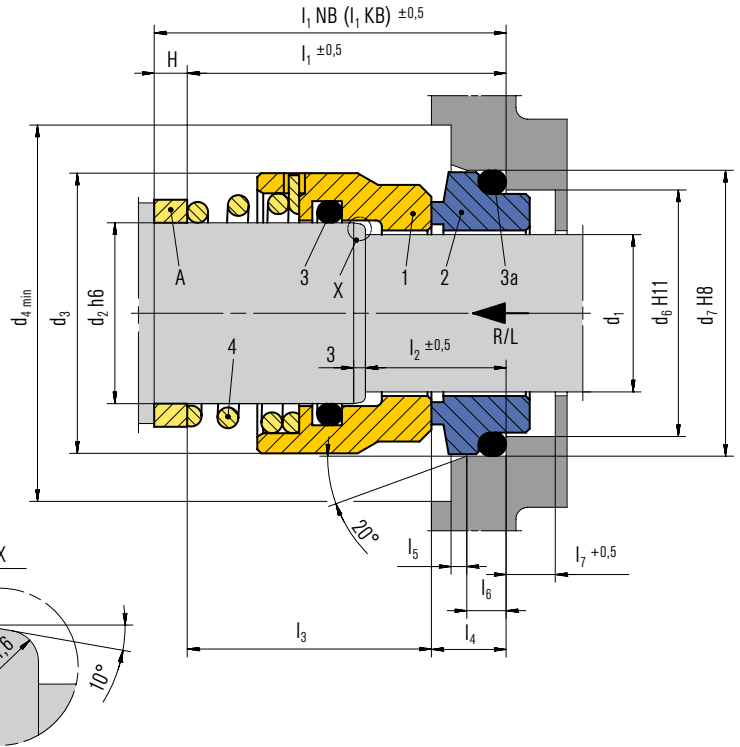
 l_{1NU} complies with EN 12756 (normal length, unbalanced)

 l_{1KU} complies with EN 12756 (short length, unbalanced)

BT-RN (Balanced version)



The BT-RN.NB/KB represents a traditional pusher seal and is the balanced version of a BT-RN. Designed for high pressure fluids, it is made from the same material range as the BT-RN. The main characteristic is a short design combined with an economical seal solution. Length and dimensions according to EN 12756 (RN.NB normal length, RN.KB short length).



Features

- Single pusher-type seal
- Balanced
- Conical spring
- Dependent on direction of rotation
- Short length (KB)
- Normal length (NB)

Operating range (see note on page 28)

Shaft diameter: $d_1 = 10 \dots 100 \text{ mm}$ (0.39" ... 3.94")
 Pressure: $p_1^* = 25$ (40) bar (363 (580) PSI)
 Temperature: $t^* = -35 \text{ }^\circ\text{C} \dots +180 \text{ }^\circ\text{C}$ (-31 $^\circ\text{F} \dots +292 \text{ }^\circ\text{F}$)
 Sliding velocity: $v_g = 15 \text{ m/s}$ (49 ft/s)

* Dependent on medium, size and material

Materials (see fold-out page 28)

Seal face: CrNi steel 1.4057 (F1), CrNiMo steel 1.4401 (G), Tungsten carbide (U)
 Seat: Carbon graphite antimony impregnated (A), Carbon graphite resin impregnated (B), Tungsten carbide (U)
 Elastomers: NBR (P), EPDM (E), FKM (V), FFKM (K)
 Metal parts: CrNiMo steel (G), CrNi steel (F, F1)

Recommended applications

- Chemical industry
- Building services industry
- Centrifugal pumps
- Clean water pumps

Item Description

- | | |
|-------|-----------------------|
| 1 | Seal face |
| 2 | Stationary seat |
| 3, 3a | O-Ring |
| 4 | Spring |
| A | Spacer (upon request) |

BT-RN.NB has an installation length I_{1N} in accordance with EN 12756 (normal length).
 BT-RN.KB has an installation length I_{1K} in accordance with EN 12756 (short length).

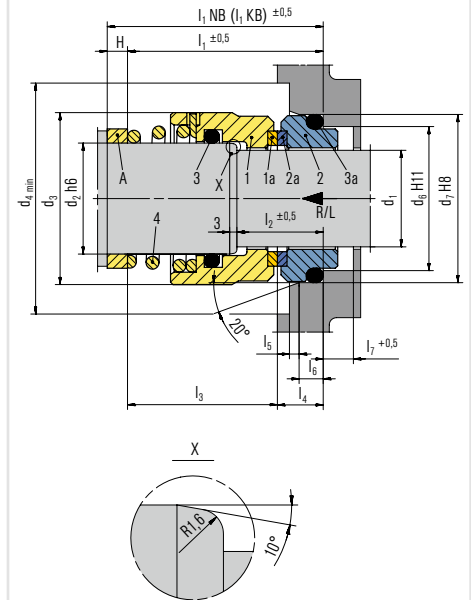
Certificates

- KTW / UBA
- W270
- ACS
- WRAS
- NSF
- FDA
- DM 174/04

Product variants

BT-RN3.NB / RN3.KB

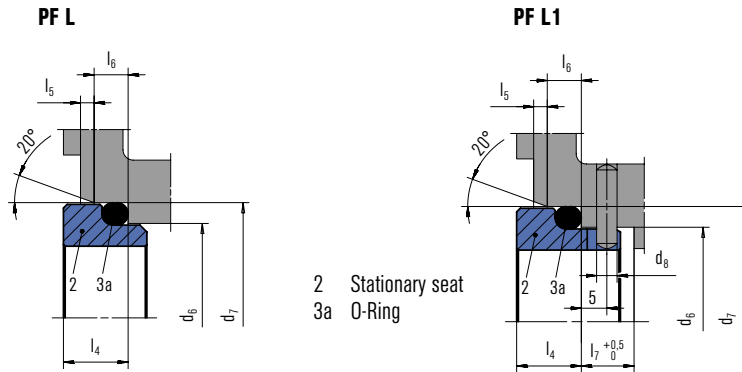
Seal faces made of brazed tungsten carbide which is suitable for media with medium corrosive and abrasive characteristics.



- | | |
|-------|-------------------------|
| 1 | Seal face housing |
| 1a | Brazed seal face |
| 2 | Stationary seat housing |
| 2a | Brazed stationary seat |
| 3, 3a | O-Ring |
| 4 | Spring |
| A | Spacer (upon request) |

Seat alternatives

Seat ring can be supplied with short tail or with pin to block the seat and prevent seat rotation.



2 Stationary seat
3a O-Ring

2 Stationary seat
3a O-Ring

Dimensions BT-RN.NB / KB in mm

BT-RN.NB																	BT-RN.KB	
d ₁	d ₂	d ₃	d ₄	d ₆	d ₇	d ₈	l _{1NB}	H	l ₁	l ₂	l ₃	l ₄	l ₅	l ₆	l ₇	l _{1KB}	l ₃	
10	14	24	26	17	21	3	50	-	50	18	43	7	1.5	4	8.5	40.0	33.0	
12	16	26	28	19	23	3	50	-	50	18	43	7	1.5	4	8.5	40.0	33.0	
14	18	32	34	21	25	3	55	9	46	18	39	7	1.5	4	8.5	42.5	35.5	
16	20	34	36	23	27	3	55	8	47	18	40	7	1.5	4	8.5	42.5	35.5	
18	22	36	38	27	33	3	55	4	51	20	41	10	2.0	5	9.0	45.0	35.0	
20	24	38	40	29	35	3	60	7	53	20	43	10	2.0	5	9.0	45.0	35.0	
22	26	40	42	31	37	3	60	7	53	20	43	10	2.0	5	9.0	45.0	35.0	
24	28	42	44	33	39	3	60	-	60	20	50	10	2.0	5	9.0	47.5	37.5	
25	30	44	46	34	40	3	60	-	60	20	50	10	2.0	5	9.0	47.5	37.5	
28	33	47	49	37	43	3	65	-	65	20	55	10	2.0	5	9.0	50.0	40.0	
30	35	49	51	39	45	3	65	-	65	20	55	10	2.0	5	9.0	50.0	40.0	
32	38	54	58	42	48	3	65	-	65	20	55	10	2.0	5	9.0	50.0	40.0	
33	38	54	58	42	48	3	65	-	65	20	55	10	2.0	5	9.0	50.0	40.0	
35	40	56	60	44	50	3	65	-	65	20	55	10	2.0	5	9.0	50.0	40.0	
38	43	59	63	49	56	4	75	-	75	23	62	13	2.0	6	9.0	52.5	39.5	
40	45	61	65	51	58	4	75	-	75	23	62	13	2.0	6	9.0	52.5	39.5	
43	48	64	68	54	61	4	75	-	75	23	62	13	2.0	6	9.0	52.5	39.5	
45	50	66	70	56	63	4	75	-	75	23	62	13	2.0	6	9.0	52.5	39.5	
48	53	69	73	59	66	4	85	-	85	23	72	13	2.0	6	9.0	52.5	39.5	
50	55	71	75	62	70	4	85	-	85	25	71	14	2.5	6	9.0	57.5	43.5	
53	58	78	83	65	73	4	85	-	85	25	71	14	2.5	6	9.0	57.5	43.5	
55	60	80	85	67	75	4	85	-	85	25	71	14	2.5	6	9.0	57.5	43.5	
58	63	83	88	70	78	4	85	-	85	25	71	14	2.5	6	9.0	62.5	48.5	
60	65	85	90	72	80	4	95	-	95	25	81	14	2.5	6	9.0	62.5	48.5	
63	68	88	93	75	83	4	95	-	95	25	81	14	2.5	6	9.0	62.5	48.5	
65	70	90	95	77	85	4	95	-	95	25	81	14	2.5	6	9.0	62.5	48.5	
70	75	99	104	83	92	4	95	-	95	28	79	16	2.5	7	9.0	70.0	54.0	
75	80	104	109	88	97	4	105	-	105	28	89	16	2.5	7	9.0	70.0	54.0	
80	85	109	114	95	105	4	105	-	105	28	87	18	3.0	7	9.0	70.0	52.0	
85	90	114	119	100	110	4	105	-	105	28	87	18	3.0	7	9.0	75.0	57.0	
90	95	119	124	105	115	4	105	-	105	28	87	18	3.0	7	9.0	75.0	57.0	
95	100	124	129	110	120	4	105	-	105	28	87	18	3.0	7	9.0	75.0	57.0	
100	105	129	134	115	125	4	105	-	105	28	87	18	3.0	7	9.0	75.0	57.0	

l_{1NB} complies with EN 12756 (normal length, balanced)

l_{1KB} complies with EN 12756 (short length, balanced)



The BT-FN combines a spring loaded ceramic seal face and the traditional pusher mechanical seals. The competitive price and the wide range of applications have made the BT-FN seal a success. The seal is produced with punched metal parts that allow an economical design.

BT-FN mechanical seals are also the ideal solution for light chemicals media applications. To ensure the best reliable performance, we recommend a material combination of hard material sliding faces and proper elastomer O-Rings.

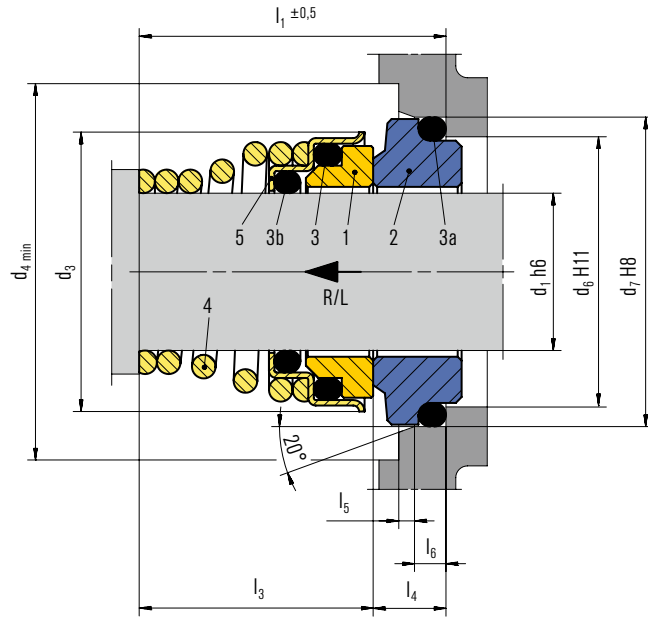
Features

- Single pusher-type seal
- Unbalanced
- Conical spring
- Dependent on direction of rotation

Operating range (see note on page 28)

Shaft diameter: $d_1 = 10 \dots 40 \text{ mm}$ (0.39" ... 1.57")
 Pressure: $p_1^* = 12$ (16) bar (174 (232) PSI)
 Temperature: $t^* = -35 \text{ °C} \dots +180 \text{ °C}$ (-31 °F ... +356 °F)
 Sliding velocity: $v_g = 15 \text{ m/s}$ (49 ft/s)

* Dependent on medium, size and material



Materials (see fold-out page 28)

Seal face: Steatite (X), Aluminium oxide (V), Silicon carbide (Q1, Q6), Tungsten carbide (U1)
 Seat: Carbon graphite antimony impregnated (A), Carbon graphite resin impregnated (B), Silicon carbide (Q1, Q6), Tungsten carbide (U1)
 Elastomers: NBR (P), EPDM (E), FKM (V), FFKM (K)
 Metal parts: CrNi steel 1.4301 (F), CrNiMo steel 1.4401 (G)

Item Description

Item	Description
1	Seal face
2	Stationary seat
3, 3a, 3b	O-Ring
4	Spring
5	Collar

Recommended applications

- Building services industry
- Household appliances
- Centrifugal pumps
- Clean water pumps
- Pumps for domestic applications and gardening

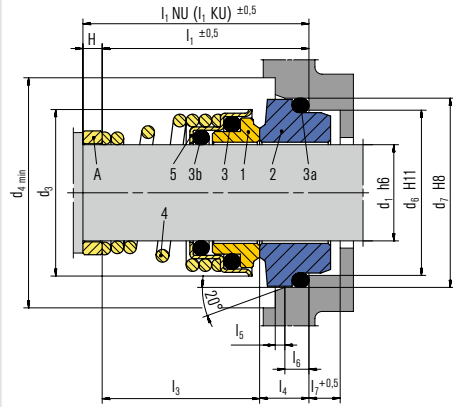
Certificates

- KTW / UBA
- W270
- ACS
- WRAS
- NSF
- DM 174/04
- FDA

Product variants

BT-FN.NU / KU

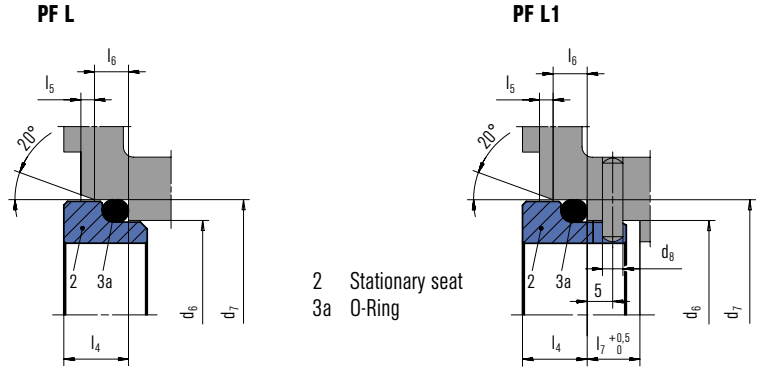
BT-FN.NU has an installation length l_{1N} and dimensions in accordance with EN 12756 (normal length, unbalanced).
BT-FN.KU has an installation length l_{1K} and dimensions in accordance with EN 12756 (short length, unbalanced).



- 1 Seal face
- 2 Stationary seat
- 3, 3a, 3b O-Ring
- 4 Spring
- 5 Collar
- A Spacer (upon request)

Seat alternatives

Seat ring can be supplied with short tail or with pin to block the seat and prevent seat rotation.



Dimensions BT-FN in mm

d_1	d_3	d_4	d_6	d_7	l_1	l_3	l_4	l_5	l_6
10	19.5	22	14.0	18.1	20.5	15	5.5	1.2	3
11	22.5	25	16.5	20.6	23.5	18	5.5	1.2	3
12	22.5	25	16.5	20.6	23.5	18	5.5	1.2	3
13	24.5	28	19.0	23.1	28.0	22	6.0	1.2	3
14	24.5	28	19.0	23.1	28.0	22	6.0	1.2	3
15	29.0	32	21.0	26.9	29.0	22	7.0	1.5	4
16	29.0	32	21.0	26.9	30.0	23	7.0	1.5	4
17	29.0	32	21.0	26.9	30.0	23	7.0	1.5	4
18	32.5	36	25.0	30.9	32.0	24	8.0	1.5	4
19	32.5	36	25.0	30.9	33.0	25	8.0	1.5	4
20	32.5	36	25.0	30.9	33.0	25	8.0	1.5	4
22	37.5	42	30.0	35.4	33.0	25	8.0	2.0	4
24	37.5	42	30.0	35.4	35.0	27	8.0	2.0	4
25	40.0	45	33.0	38.2	35.5	27	8.5	2.0	4
28	46.0	51	38.0	43.3	38.0	29	9.0	2.0	4
30	46.0	51	38.0	43.3	39.0	30	9.0	2.0	4
32	46.0	51	38.0	43.3	39.0	30	9.0	2.0	4
35	50.0	55	45.0	53.5	50.5	39	11.5	2.0	6
38	58.0	68	52.0	60.5	50.5	39	11.5	2.0	6
40	58.0	68	52.0	60.5	50.5	39	11.5	2.0	6

Dimensions BT-FN.NU / KU in mm

BT-FN.NU														BT-FN.KU	
d_1	d_3	d_4	d_6	d_7	d_8	l_{1N}	H	l_1	l_3	l_4	l_5	l_6	l_7	l_{1KU}	l_3
10	20.0	22	17	21	3	40	18	22.0	15	7	1.5	4	8.5	32.5	25.5
12	22.5	26	19	23	3	40	15	25.0	18	7	1.5	4	8.5	32.5	25.5
14	24.5	28	21	25	3	40	11	29.0	22	7	1.5	4	8.5	35.0	28.0
16	29.0	32	23	27	3	40	10	30.0	23	7	1.5	4	8.5	35.0	28.0
18	32.5	36	27	33	3	45	11	34.0	24	10	2.0	5	9.0	37.5	27.5
20	32.5	36	29	35	3	45	10	35.0	25	10	2.0	5	9.0	37.5	27.5
22	37.5	40	31	37	3	45	10	35.0	25	10	2.0	5	9.0	37.5	27.5
24	37.5	40	33	39	3	50	13	37.0	27	10	2.0	5	9.0	40.0	30.0
25	40.0	42	34	40	3	50	13	37.0	27	10	2.0	5	9.0	40.0	30.0
28	46.0	48	37	43	3	50	11	39.0	29	10	2.0	5	9.0	42.5	32.5
30	46.0	48	39	45	3	50	10	40.0	30	10	2.0	5	9.0	42.5	32.5
32	46.0	48	42	48	3	55	15	40.0	30	10	2.0	5	9.0	42.5	32.5
35	50.0	53	44	50	3	55	6	49.0	39	10	2.0	5	9.0	42.5	32.5
38	58.0	68	49	56	4	55	3	52.0	39	13	2.0	6	9.0	45.0	32.0
40	58.0	68	51	58	4	55	3	52.0	39	13	2.0	6	9.0	45.0	32.0

d_3, d_4 dimensions not always in accordance with EN 12756

l_{1NU} complies with EN 12756 (normal length, unbalanced)

l_{1KU} complies with EN 12756 (short length, unbalanced)

BT-FH



The BT-FH is a seal for demanding applications where operating conditions in the pump require machined metal parts for the mechanical seal. The seals are available in a full range of diameters from 10 to 100 mm and in the standard diameters specifically for chemical applications.

Features

- Single pusher-type seal
- Unbalanced
- Conical spring
- Dependent on direction of rotation

Operating range (see note on page 28)

Shaft diameter: $d_1 = 10 \dots 100 \text{ mm}$ (0.39" ... 3.94")
 Pressure: $p_1^* = 12 \text{ (16) bar}$ (174 (232) PSI)
 Temperature: $t^* = -35 \text{ }^\circ\text{C} \dots +200 \text{ }^\circ\text{C}$ (-31 °F ... +392 °F)
 Sliding velocity: $v_g = 15 \text{ m/s}$ (49 ft/s)

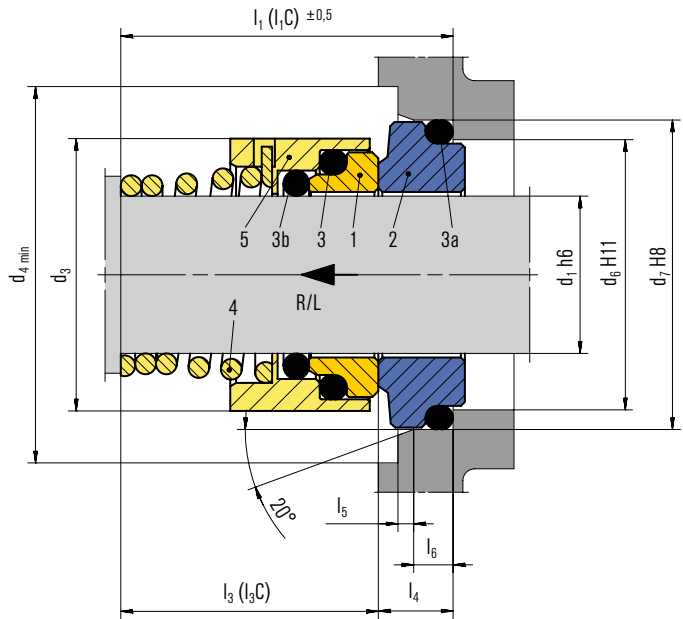
* Dependent on medium, size and material

Materials (see fold-out page 28)

Seal face: Aluminium oxide (V), Silicon carbide (Q1), Tungsten carbide (U1)
 Seat: Carbon graphite antimony impregnated (A), Carbon graphite resin impregnated (B), Silicon carbide (Q1), Tungsten carbide (U1)
 Elastomers: NBR (P), EPDM (E), FKM (V), FFKM (K)
 Metal parts: CrNiMo steel 1.4401 (G)

Recommended applications

- Chemical industry
- Building services industry
- Centrifugal pumps
- Clean water pumps



Certificates

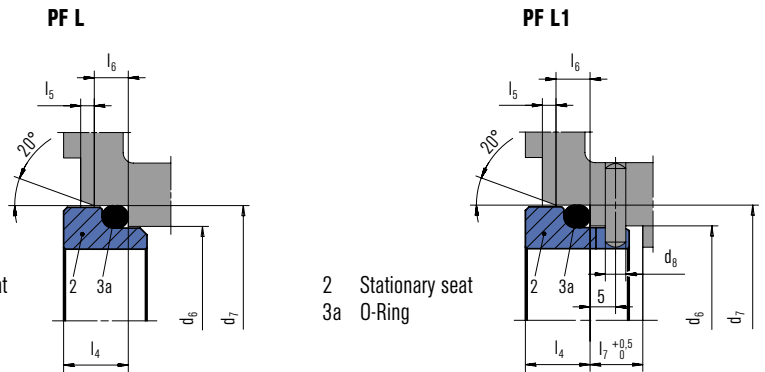
- KTW / UBA
- W270
- ACS
- WRAS
- NSF
- DM 174/04
- FDA

Item Description

- | Item | Description |
|-----------|-----------------|
| 1 | Seal face |
| 2 | Stationary seat |
| 3, 3a, 3b | O-Ring |
| 4 | Spring |
| 5 | Collar |

Seat alternatives

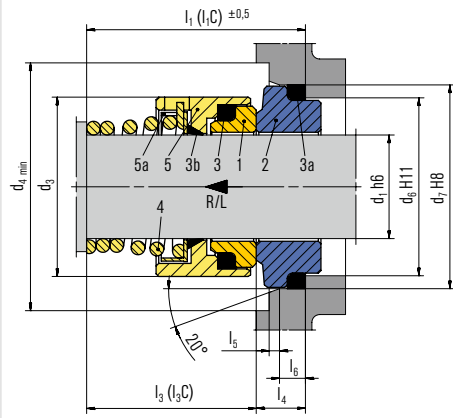
Seat ring can be supplied with short tail or with pin to block the seat and prevent seat rotation.



Product variants

BT-FH6

Like BT-FH but with PTFE secondary seal elements instead of elastomers. Mainly used in the chemical industry and for corrosive media.



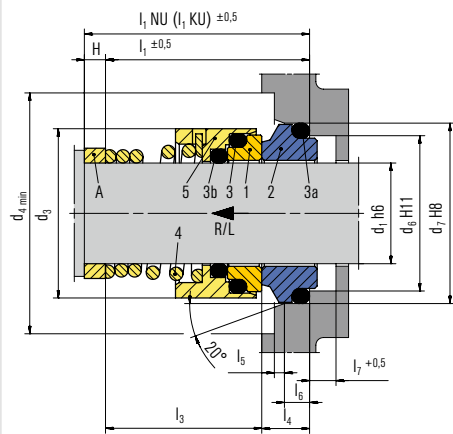
- 1 Seal face
- 2 Stationary seat
- 3, 3a Gasket (PTFE)
- 3b Wedge gasket (PTFE)
- 4 Spring
- 5 Collar
- 5a Ring

BT-FHC

Like BT-FH but with shorter installation length (see I_{3C} in the dimension table). The model BT-FHC has the same installation length as the BT-RN.

BT-FH.NU / KU

BT-FH.NU has an installation length I_{1N} and seat dimensions in accordance with EN 12756 (normal length). BT-FH.KU has an installation length I_{1K} and seat dimensions in accordance with EN 12756 (short length).



- 1 Seal face
- 2 Stationary seat
- 3, 3a, 3b O-Ring
- 4 Spring
- 5 Collar
- A Spacer (upon request)

Dimensions BT-FH / FHC in mm

BT-FH										BT-FHC	
d_1	d_3	d_4	d_6	d_7	I_1	I_3	I_4	I_5	I_6	I_{1C}	I_{3C}
10	20	22	14.0	18.1	25.5	20	5.5	1.2	3	20.5	15
12	22	25	16.5	20.6	27.5	22	5.5	1.2	3	23.5	18
14	25	28	19.0	23.1	33.0	27	6.0	1.2	3	28.0	22
15	29	32	21.0	26.9	34.0	27	7.0	1.5	4	28.0	22
16	29	32	21.0	26.9	35.0	28	7.0	1.5	4	30.0	23
18	33	36	25.0	30.9	38.0	30	8.0	1.5	4	32.0	24
20	33	36	25.0	30.9	38.0	30	8.0	1.5	4	33.0	25
22	38	41	30.0	35.4	38.0	30	8.0	2.0	4	33.0	25
24	38	41	30.0	35.4	40.0	32	8.0	2.0	4	35.0	27
25	40	45	33.0	38.2	41.5	33	8.5	2.0	4	35.5	27
26	40	45	33.0	38.2	41.5	33	8.5	2.0	4	35.5	27
28	46	50	38.0	43.3	45.0	36	9.0	2.0	4	38.0	29
30	46	50	38.0	43.3	46.0	37	9.0	2.0	4	39.0	30
32	46	50	38.0	43.3	46.0	37	9.0	2.0	4	39.0	30
34	56	62	45.0	53.3	59.5	48	11.5	2.0	6	50.5	39
35	56	62	45.0	53.5	59.5	48	11.5	2.0	6	50.5	39
36	56	62	45.0	53.5	59.5	48	11.5	2.0	6	50.5	39
38	63	70	52.0	60.5	59.5	48	11.5	2.0	6	50.5	39
40	63	70	52.0	60.5	59.5	48	11.5	2.0	6	50.5	39
42	63	70	52.0	60.5	59.5	48	11.5	2.0	6	50.5	39
43	63	70	52.0	60.5	59.5	48	11.5	2.0	6	52.5	41
45	69	75	57.0	65.5	62.5	51	11.5	2.0	6	52.5	41
48	69	75	57.0	65.5	62.5	51	11.5	2.0	6	52.5	41
50	76	83	64.0	72.5	66.5	55	11.5	2.0	6	56.5	45
55	76	83	64.0	72.5	68.5	57	11.5	2.0	6	58.5	47
60	84	90	72.0	79.3	72.5	61	11.5	2.0	6	60.5	49
65	89	96	77.0	84.5	74.5	63	11.5	2.0	6	62.5	51
70	94	101	82.0	89.5	74.5	63	11.5	2.0	6	62.5	51
75	100	106	87.0	94.5	79.5	68	11.5	2.0	6	68.5	57
80	105	111	92.0	99.5	81.5	70	11.5	2.0	6	70.5	59
85	115	125	98.0	105.5	85.5	72	13.5	2.5	6	72.5	59
90	120	132	105.0	111.5	88.5	75	13.5	2.5	6	75.5	62
95	126	137	110.0	116.5	88.5	75	13.5	2.5	6	75.5	62
100	130	143	114.0	119.5	98.5	85	13.5	2.5	6	88.5	75

Dimensions BT-FH.NU / KU in mm

BT-FH.NU													BT-FH.KU		
d_1	d_3	d_4	d_6	d_7	d_8	I_{1NU}	H	I_1	I_3	I_4	I_5	I_6	I_7	I_{1KU}	I_3
10	20	22	17	21	3	40	18	22	15	7	1.5	4	8.5	32.5	25.5
12	22	25	19	23	3	40	15	25	18	7	1.5	4	8.5	32.5	25.5
14	25	28	21	25	3	40	11	29	22	7	1.5	4	8.5	35.0	28.0
16	29	32	23	27	3	40	10	30	23	7	1.5	4	8.5	35.0	28.0
18	33	36	27	33	3	45	11	34	24	10	2.0	5	9.0	37.5	27.5
20	33	36	29	35	3	45	10	35	25	10	2.0	5	9.0	37.5	27.5
22	38	41	31	37	3	45	10	35	25	10	2.0	5	9.0	37.5	27.5
24	38	41	33	39	3	50	13	37	27	10	2.0	5	9.0	40.0	30.0
25	40	45	34	40	3	50	13	37	27	10	2.0	5	9.0	40.0	30.0
28	46	50	37	43	3	50	11	39	27	10	2.0	5	9.0	42.5	32.5
30	46	50	39	45	3	50	10	40	29	10	2.0	5	9.0	42.5	32.5
32	46	50	42	48	3	55	15	40	30	10	2.0	5	9.0	42.5	32.5
33	52	56	42	48	3	55	6	49	39	10	2.0	5	9.0	42.5	32.5
35	56	62	44	50	3	55	6	49	39	10	2.0	5	9.0	42.5	32.5
38	63	70	49	56	4	55	-	55	42	13	2.0	6	9.0	45.0	32.0
40	63	70	51	58	4	55	-	55	42	13	2.0	6	9.0	45.0	32.0
43	63	70	54	61	4	60	-	60	47	13	2.0	6	9.0	45.0	32.0
45	69	75	56	63	4	60	-	60	47	13	2.0	6	9.0	45.0	32.0
48	69	75	59	66	4	60	-	60	47	13	2.0	6	9.0	45.0	32.0
50	76	83	62	70	4	60	-	60	46	14	2.5	6	9.0	47.5	33.5
53	76	83	65	73	4	70	-	70	56	14	2.5	6	9.0	47.5	33.5
55	76	83	67	75	4	70	-	70	56	14	2.5	6	9.0	47.5	33.5
58	82	88	70	78	4	70	-	70	56	14	2.5	6	9.0	52.5	38.5
60	84	90	72	80	4	70	-	70	56	14	2.5	6	9.0	52.5	38.5
63	86	93	75	83	4	70	-	70	56	14	2.5	6	9.0	52.5	38.5
65	89	96	77	85	4	80	-	80	66	14	2.5	6	9.0	52.5	38.5
68	92	99	81	90	4	80	-	80	64	16	2.5	7	9.0	52.5	36.5
70	94	101	83	92	4	80	-	80	64	16	2.5	7	9.0	60.0	44.0
75	100	106	88	97	4	80	-	80	64	16	2.5	7	9.0	60.0	44.0
80	105	111	95	105	4	90	-	90	72	18	3.0	7	9.0	60.0	42.0
85	115	125	100	110	4	90	-	90	72	18	3.0	7	9.0	60.0	42.0
90	120	132	105	115	4	90	-	90	72	18	3.0	7	9.0	65.0	47.0
95	126	137	110	120	4	90	-	90	72	18	3.0	7	9.0	65.0	47.0
100	130	143	115	125	4	90	-	90	72	18	3.0	7	9.0	65.0	47.0

d_3, d_4 dimensions not always in accordance with EN 12756

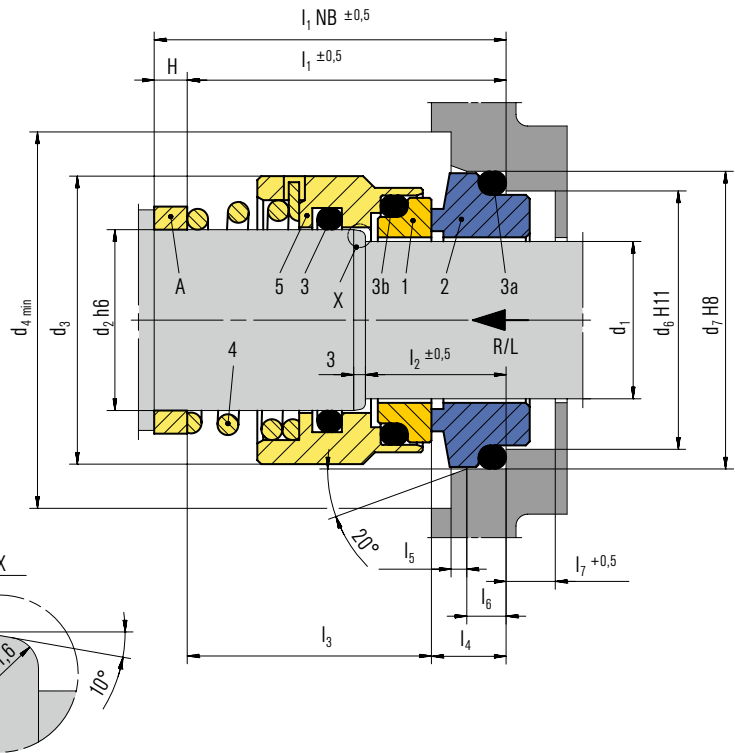
I_{1NU} complies with EN 12756 (normal length, unbalanced)

I_{1KU} complies with EN 12756 (short length, unbalanced)

BT-FH.NB (Balanced version)



The BT-FH mechanical seal range has been designed for universal application and is ideally suited for standardization. It is a cost-effective version of a balanced seal with the added advantage of only having to replace the wearing faces during overhauls. Installation length in accordance with EN 12756 (L_{1NB}).



Features

- Single pusher-type seal
- Balanced
- Dependent on direction of rotation
- Conical spring
- Length according to EN 12756
- Version NB (normal length, balanced L_{1NB})

Operating range (see note on page 28)

Shaft diameter: $d_1 = 16 \dots 70 \text{ mm}$ (0.63" ... 2.76")
 Pressure: $p_1^* = 25 \text{ bar}$ (363 PSI)
 Temperature: $t^* = -35 \text{ °C} \dots +180 \text{ °C}$ (-31 °F ... +356 °F)
 Sliding velocity: $v_g = 15 \text{ m/s}$ (49 ft/s)

* Dependent on medium, size and material

Recommended applications

- Chemical industry
- Building services industry
- Centrifugal pumps
- Clean water pumps

Dimensions BT-FH.NB in mm

d_1	d_2	d_3	d_4	d_5	d_6	d_7	d_8	L_{1NB}	H	l_1	l_2	l_3	l_4	l_5	l_6	l_7
16	20	34	36	23	27	3	55	8	47.0	18.0	40.0	7.0	1.5	4.0	8.5	
18	22	36	38	27	33	3	55	4	51.0	20.0	41.0	10.0	2.0	5.0	9.0	
20	24	38	40	29	35	3	60	7	53.0	20.0	43.0	10.0	2.0	5.0	9.0	
22	26	40	42	31	37	3	60	7	53.0	20.0	43.0	10.0	2.0	5.0	9.0	
24	28	42	44	33	39	3	60	-	60.0	20.0	50.0	10.0	2.0	5.0	9.0	
25	30	44	46	34	40	3	60	-	60.0	20.0	50.0	10.0	2.0	5.0	9.0	
28	33	47	49	37	43	3	65	-	65.0	20.0	55.0	10.0	2.0	5.0	9.0	
30	35	49	51	39	45	3	65	-	65.0	20.0	55.0	10.0	2.0	5.0	9.0	
32	38	54	58	42	48	3	65	-	65.0	20.0	55.0	10.0	2.0	5.0	9.0	
33	38	54	58	42	48	3	65	-	65.0	20.0	55.0	10.0	2.0	5.0	9.0	
35	40	56	60	44	50	3	65	-	65.0	20.0	55.0	10.0	2.0	5.0	9.0	
38	43	59	63	49	56	4	75	-	75.0	23.0	62.0	13.0	2.0	6.0	9.0	
40	45	61	65	51	58	4	75	-	75.0	23.0	62.0	13.0	2.0	6.0	9.0	
43	48	64	68	54	61	4	75	-	75.0	23.0	63.0	13.0	2.0	6.0	9.0	
45	50	66	70	56	63	4	75	-	75.0	23.0	62.0	13.0	2.0	6.0	9.0	
48	53	69	73	59	66	4	85	-	85.0	23.0	72.0	13.0	2.0	6.0	9.0	
50	55	71	75	62	70	4	85	-	85.0	25.0	71.0	14.0	2.5	6.0	9.0	
53	58	78	83	65	73	4	85	-	85.0	25.0	71.0	14.0	2.5	6.0	9.0	
55	60	80	85	67	75	4	85	-	85.0	25.0	71.0	14.0	2.5	6.0	9.0	
58	63	83	88	70	78	4	85	-	85.0	25.0	71.0	14.0	2.5	6.0	9.0	
60	65	85	90	72	80	4	95	-	95.0	25.0	81.0	14.0	2.5	6.0	9.0	
63	68	88	93	75	83	4	95	-	95.0	25.0	81.0	14.0	2.5	6.0	9.0	
65	70	90	95	77	85	4	95	-	95.0	25.0	81.0	14.0	2.5	6.0	9.0	
70	75	99	104	83	92	4	95	-	95.0	28.0	79.0	16.0	2.5	7.0	9.0	

L_{1NB} complies with EN 12756 (normal length, balanced)

Item Description

- 1 Seal face
- 2 Stationary seat
- 3, 3a, 3b O-Ring
- 4 Spring
- 5 Collar
- A Spacer (upon request)

Materials (see fold-out page 28)

Seal face: Silicon carbide (Q1)
 Seat: Carbon graphite resin impregnated (B),
 Carbon graphite, full carbon (B3),
 Carbon graphite antimony impregnated (A),
 Silicon carbide (Q1)
 Elastomers: NBR (P), EPDM (E), FKM (V), FFKM (K)
 Metal parts: CrNiMo steel (G)

Certificates

• KTW / UBA, W270, ACS, WRAS, NSF, DM 174/04, FDA

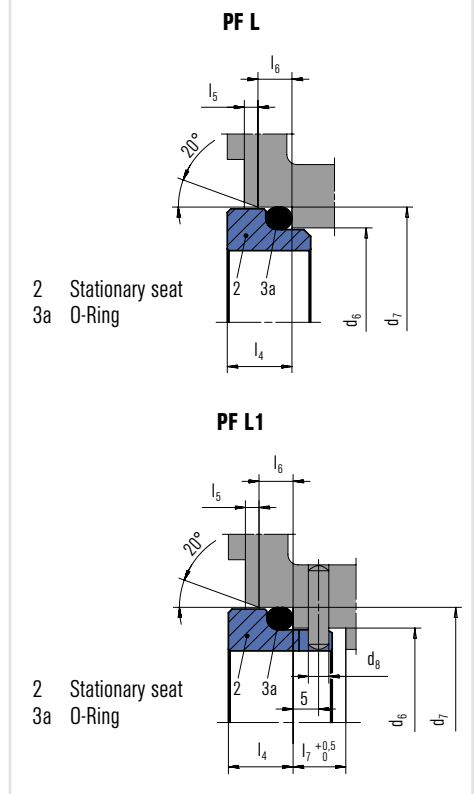
Product variants

BT-FH.NB DV

The BT-FH.NB DV is a variant of the BT-FH.NB with a vertical pin for torque transmission in the conical spring. Same installation length as BT-FH.NB, in accordance with EN 12756 (L_{1NB}).

Seat alternatives

Seat ring can be supplied with short tail or with pin to block the seat and prevent seat rotation.



BT-C5E



The BT-C5E is designed for external mounting and is characterized by a short installation length. The advantage of a seal mounted on the outside is that all metal parts, including springs, are not in contact with the media. Torque transmission via robust axial notches on the metal collar. The collar is fixed on the shaft with set screws. Typical applications are volumetric lobe pumps for food, cosmetics and pharmaceuticals and for sticky and highly viscous media (e.g. paste, paints).

Features

- Single pusher-type seal
- Multiple springs
- Independent of direction of rotation
- External mounting
- For high viscosity media

Operating range (see note on page 28)

Shaft diameter: $d_1 = 20 \dots 80 \text{ mm}$ (0.79" ... 3.15")
 Pressure: $p_1^* = 12 \text{ bar}$ (174 PSI)
 Temperature: $t^* = -35 \text{ °C} \dots +180 \text{ °C}$ (-31 °F ... +356 °F)
 Sliding velocity: $v_g = 15 \text{ m/s}$ (49 ft/s)

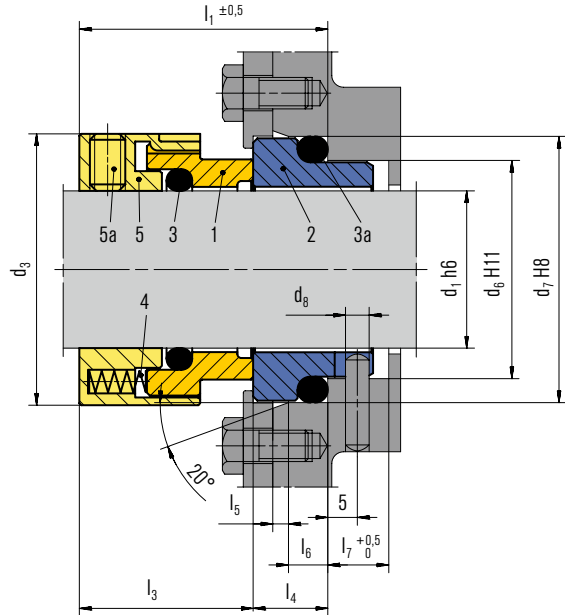
* Dependent on medium, size and material

Materials (see fold-out page 28)

Seal face: Carbon graphite antimony impregnated (A), Carbon graphite resin impregnated (B), Tungsten carbide (U), PTFE reinforced (Y1)
 Seat: Aluminium oxide (V), Silicon carbide (Q1), CrNiMo steel (G), Tungsten carbide (U)
 Elastomers: NBR (P), EPDM (E), FKM (V), FFKM (K)
 Metal parts: CrNiMo steel 1.4401 (G)

Dimensions BT-C5E in mm

d_1	d_3	d_6	d_7	d_8	l_1	l_3	l_4	l_5	l_6	l_7
20	36	29	35	3	29.0	19.0	10.0	2.0	5	9
25	41	34	40	3	29.0	19.0	10.0	2.0	5	9
30	46	39	45	3	29.0	19.0	10.0	2.0	5	9
35	51	44	50	3	29.0	19.0	10.0	2.0	5	9
40	59	51	58	4	34.0	23.0	11.0	2.0	6	9
45	60	56	63	4	34.0	23.0	11.0	2.0	6	9
50	66	62	70	4	35.0	22.0	13.0	2.5	6	9
60	80	72	80	4	39.5	26.5	13.0	2.5	6	9
65	86	77	85	4	39.5	26.5	13.0	2.5	6	9
70	92	83	92	4	41.5	26.5	15.0	2.5	7	9
80	105	95	105	4	42.5	26.5	16.0	3.0	7	9



Item Description

1	Seal face
2	Stationary seat
3, 3a	O-Ring
4	Spring
5	Collar
5a	Set screw

Recommended applications

- Chemical industry
- Pharmaceutical industry
- Food and beverage industry
- Centrifugal pumps
- Industrial pumps

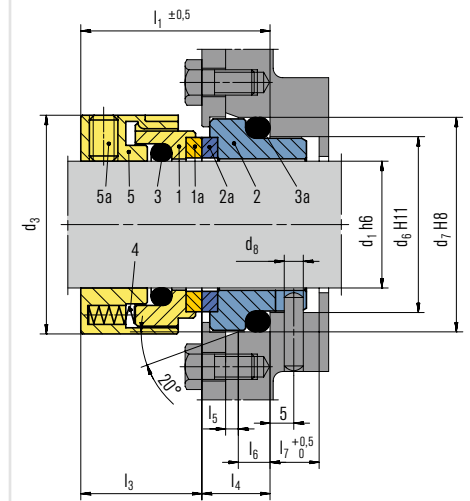
Certificates

- KTW / UBA
- W270
- ACS
- WRAS
- NSF
- DM 174/04
- FDA

Product variants

BT-C53E

Seal faces made of brazed tungsten carbide. This version is suitable for media with abrasive characteristics. Installation dimensions same as BT-C5E.



1	Seal face housing
1a	Brazed seal face
2	Stationary seat housing
2a	Brazed stationary seat
3, 3a	O-Ring
4	Spring
5	Collar
5a	Set screw

BT-C5



The BT-C5 is available in many material combinations with various application opportunities, especially in chemical applications. Torque transmission through set screws. Dimensions according to EN 12756, short length l_{1K} .

BT-C5.KB is the balanced version of the BT-C5.KU. Suitable for a higher pressure range. Dimensions according to EN 12756, short length l_{1KB} .

Features

- Single pusher-type seal
- Unbalanced, short length (KU)
- Balanced, short length (KB)
- Multiple springs
- Independent of direction of rotation

Operating range (see note on page 28)

Shaft diameter: $d_1 = 18 \dots 100 \text{ mm}$ (0.71" ... 3.94")

Pressure:

unbalanced type BT-C5.KU

$p_1^* = 12$ (16) bar (174 (232) PSI)

balanced type BT-C5.KB

$p_1^* = 25$ (40) bar (360 (580) PSI)

Temperature: $t^* = -35 \text{ }^\circ\text{C} \dots +180 \text{ }^\circ\text{C}$ (-31 $^\circ\text{F} \dots +356 \text{ }^\circ\text{F}$)

Sliding velocity: $v_g = 20 \text{ m/s}$ (66 ft/s)

* Dependent on medium, size and material

Materials (see fold-out page 28)

Seal face: Carbon graphite antimony impregnated (A),

Carbon graphite resin impregnated (B)

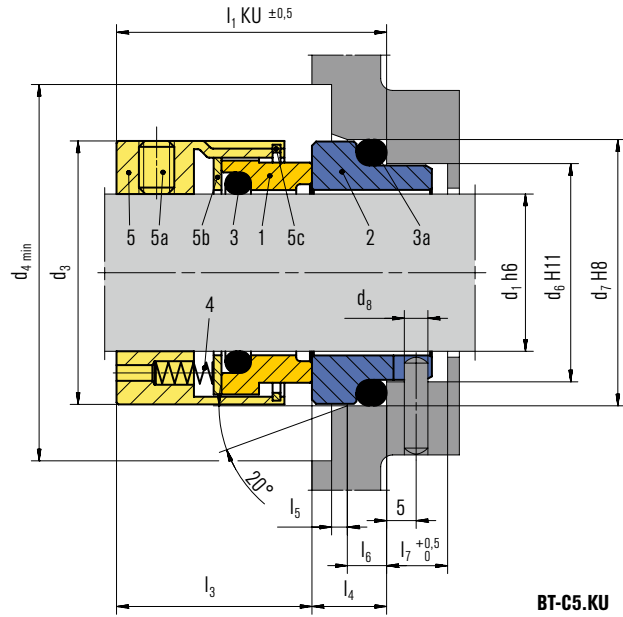
Seat: Aluminium oxide (V), Silicon carbide (Q1)

Elastomers: NBR (P), EPDM (E), FKM (V), FFKM (K)

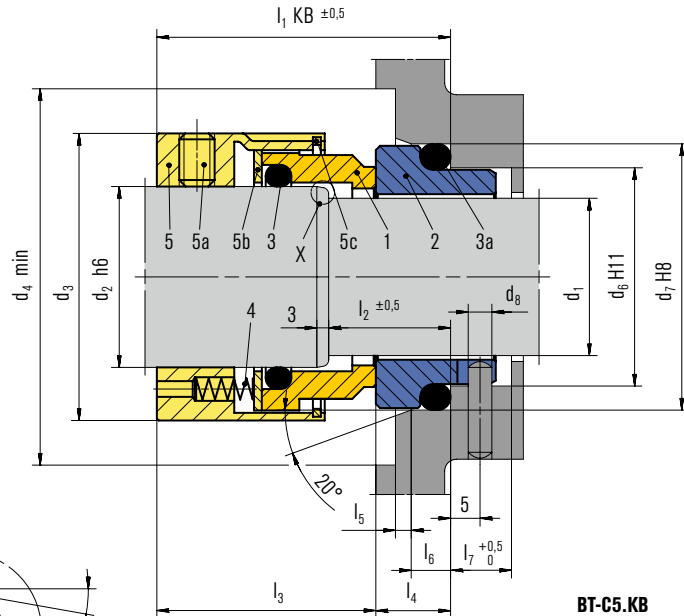
Metal parts: CrNiMo steel (G)

Recommended applications

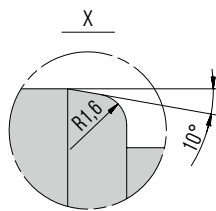
- Chemical industry
- Pharmaceutical industry
- Building services industry
- Centrifugal pumps
- Clean water pumps



BT-C5.KU



BT-C5.KB



Certificates

- KTW / UBA
- W270
- ACS
- WRAS
- NSF
- DM 174/04
- FDA

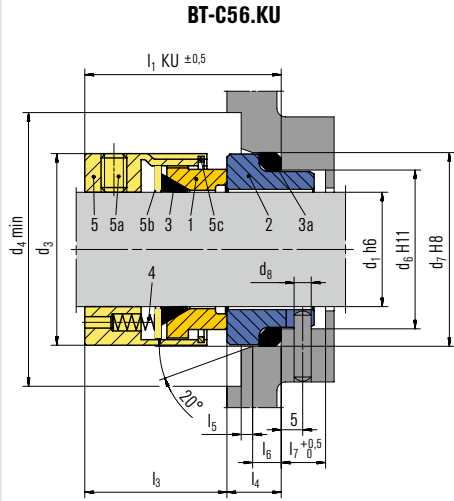
Item Description

- | Item | Description |
|-------|-----------------|
| 1 | Seal face |
| 2 | Stationary seat |
| 3, 3a | O-Ring |
| 4 | Spring |
| 5 | Collar |
| 5a | Set screw |
| 5b | Ring |
| 5c | Locking ring |

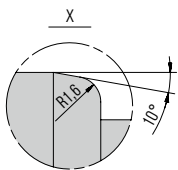
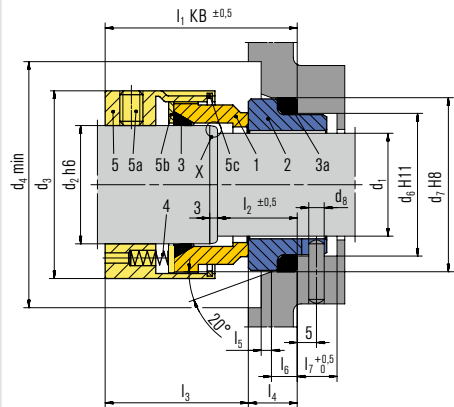
Product variants

BT-C56.KB/KU

Product variant with PTFE secondary seal elements instead of elastomers. Mainly used in the chemical industry and for corrosive media.



BT-C56.KB

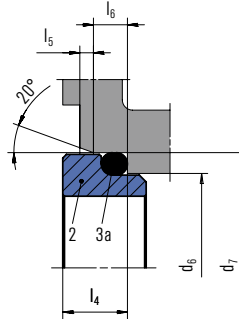


- 1 Seal face
- 2 Stationary seat
- 3 Wedge gasket (PTFE)
- 3a Gasket (PTFE)
- 4 Spring
- 5 Collar
- 5a Set screw
- 5b Ring
- 5c Locking ring

Seat alternatives

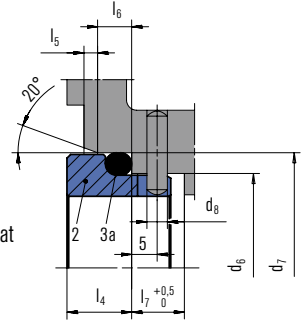
Seat ring can be supplied with short tail or with pin to block the seat and prevent seat rotation.

PF L



- 2 Stationary seat
- 3a O-Ring

PF L1



- 2 Stationary seat
- 3a O-Ring

Dimensions BT-C5.KU in mm

d1	d3	d4	d6	d7	d8	l1KU	l1	l3	l4	l5	l6	l7
20	34	36	29	35	3	37.5	34.0	24.0	10.0	2.0	5	9
22	36	38	31	37	3	37.5	34.0	24.0	10.0	2.0	5	9
24	38	40	33	39	3	40.0	37.0	27.0	10.0	2.0	5	9
25	39	41	34	40	3	40.0	37.0	27.0	10.0	2.0	5	9
28	42	44	37	43	3	42.5	40.0	30.0	10.0	2.0	5	9
30	44	46	39	45	3	42.5	40.0	30.0	10.0	2.0	5	9
32	46	48	42	48	3	42.5	40.0	30.0	10.0	2.0	5	9
33	47	49	42	48	3	42.5	40.0	30.0	10.0	2.0	5	9
35	49	51	44	50	3	42.5	40.0	30.0	10.0	2.0	5	9
38	54	58	49	56	4	45.0	43.0	32.0	11.0	2.0	6	9
40	56	60	51	58	4	45.0	43.0	32.0	11.0	2.0	6	9
43	59	63	54	61	4	45.0	43.0	32.0	11.0	2.0	6	9
45	61	65	56	63	4	45.0	43.0	32.0	11.0	2.0	6	9
48	64	68	59	66	4	45.0	43.0	32.0	11.0	2.0	6	9
50	66	72	62	70	4	47.5	47.5	34.5	13.0	2.5	6	9
53	69	75	65	73	4	47.5	47.5	34.5	13.0	2.5	6	9
55	71	77	67	75	4	47.5	47.5	34.5	13.0	2.5	6	9
58	78	83	70	78	4	52.5	52.5	39.5	13.0	2.5	6	9
60	80	85	72	80	4	52.5	52.5	39.5	13.0	2.5	6	9
63	83	88	75	83	4	52.5	52.5	39.5	13.0	2.5	6	9
65	85	90	77	85	4	52.5	52.5	39.5	13.0	2.5	6	9
68	88	93	81	90	4	52.5	52.5	37.5	15.0	2.5	7	9
70	90	95	83	92	4	60.0	60.0	45.0	15.0	2.5	7	9
75	99	104	88	97	4	60.0	60.0	45.0	15.0	2.5	7	9
80	104	109	95	105	4	60.0	60.0	44.5	15.5	3.0	7	9
85	109	114	100	110	4	60.0	60.0	44.5	15.5	3.0	7	9
90	114	119	105	115	4	65.0	65.0	49.5	15.5	3.0	7	9
95	119	124	110	120	4	65.0	65.0	49.5	15.5	3.0	7	9
100	124	129	115	125	4	65.0	65.0	49.5	15.5	3.0	7	9

l1KU complies with EN 12756 (short length, unbalanced)

Dimensions BT-C5.KB in mm

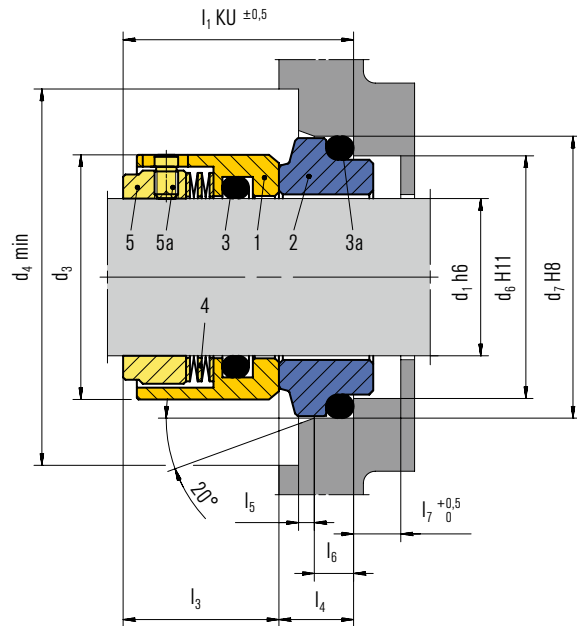
d1	d2	d3	d4	d6	d7	d8	l1KB	l2	l3	l4	l5	l6	l7
18	22	36	38	27	33	3	45.0	20	35.0	10.0	2.0	5	9
20	24	38	40	29	35	3	45.0	20	35.0	10.0	2.0	5	9
22	26	40	42	31	37	3	45.0	20	35.0	10.0	2.0	5	9
24	28	42	44	33	39	3	47.5	20	37.5	10.0	2.0	5	9
25	30	44	46	34	40	3	47.5	20	37.5	10.0	2.0	5	9
28	33	47	49	37	43	3	50.0	20	40.0	10.0	2.0	5	9
30	35	49	51	39	45	3	50.0	20	40.0	10.0	2.0	5	9
32	38	54	58	42	48	3	50.0	20	40.0	10.0	2.0	5	9
33	38	54	58	42	48	3	50.0	20	40.0	10.0	2.0	5	9
35	40	56	60	44	50	3	50.0	20	40.0	10.0	2.0	5	9
38	43	59	63	49	56	4	52.5	23	41.5	11.0	2.0	6	9
40	45	61	65	51	58	4	52.5	23	41.5	11.0	2.0	6	9
43	48	64	68	54	61	4	52.5	23	41.5	11.0	2.0	6	9
45	50	66	70	56	63	4	52.5	23	41.5	11.0	2.0	6	9
48	53	69	73	59	66	4	52.5	23	41.5	11.0	2.0	6	9
50	55	71	75	62	70	4	57.5	25	44.5	13.0	2.5	6	9
53	58	78	83	65	73	4	57.5	25	44.5	13.0	2.5	6	9
55	60	80	85	67	75	4	57.5	25	44.5	13.0	2.5	6	9
58	63	83	88	70	78	4	62.5	25	49.5	13.0	2.5	6	9
60	65	85	90	72	80	4	62.5	25	49.5	13.0	2.5	6	9
63	68	88	93	75	83	4	62.5	25	49.5	13.0	2.5	6	9
65	70	90	95	77	85	4	62.5	25	49.5	13.0	2.5	6	9
70	75	99	104	83	92	4	70.0	28	55.0	15.0	2.5	7	9
75	80	104	109	88	97	4	70.0	28	55.0	15.0	2.5	7	9
80	85	109	114	95	105	4	70.0	28	54.5	15.5	3.0	7	9
85	90	114	119	100	110	4	75.0	28	59.5	15.5	3.0	7	9
90	95	119	124	105	115	4	75.0	28	59.5	15.5	3.0	7	9
95	100	124	129	110	120	4	75.0	28	59.5	15.5	3.0	7	9
100	105	129	134	115	125	4	75.0	28	59.5	15.5	3.0	7	9

l1KB complies with EN 12756 (short length, balanced)

BT-C7



The BT-C7 mechanical seal range has a robust design for universal application. The seal is bi-directional, unaffected by the direction of shaft rotation and is positively driven by set screws. With super-sinus spring.



Features

- Single pusher-type seal
- Unbalanced
- Super-sinus spring
- Independent of direction of rotation
- Short length, according EN 12756 (L_{1KU}).

Operating range (see note on page 28)

Shaft diameter: $d_1 = 16 \dots 100 \text{ mm}$ (0.63" ... 3.94")
 Pressure: $p_1^* = 12$ (16) bar (174 (232) PSI)
 Temperature: $t^* = -35 \text{ }^\circ\text{C} \dots +180 \text{ }^\circ\text{C}$ (-4 °F ... +356 °F)
 Sliding velocity: $v_g = 20 \text{ m/s}$ (66 ft/s)

* Dependent on medium, size and material

Materials (see fold-out page 28)

Seal face: CrNiMo steel (G), Tungsten carbide (U)
 Seat: Carbon graphite resin impregnated (B),
 Carbon graphite antimony impregnated (A),
 Tungsten carbide (U)
 Elastomers: NBR (P), EPDM (E), FKM (V), FFKM (K)
 Metal parts: CrNiMo steel 1.4401 (G)

Recommended applications

- Chemical industry
- Pharmaceutical industry
- Building services industry
- Centrifugal pumps
- Clean water pumps

Certificates

- KTW / UBA
- W270
- ACS
- WRAS
- NSF
- DM 174/04
- FDA

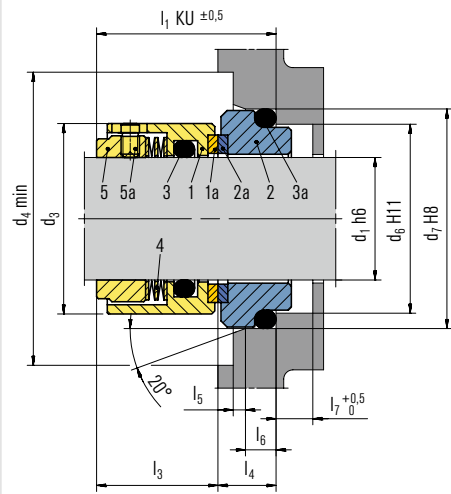
Item Description

- | Item | Description |
|-------|-----------------|
| 1 | Seal face |
| 2 | Stationary seat |
| 3, 3a | O-Ring |
| 4 | Spring |
| 5 | Driver |
| 5a | Set screw |

Product variants

BT-C73

Like the BT-C7, but seal face and seat made of brazen tungsten carbide (U). This version is suitable for media with abrasive characteristics.

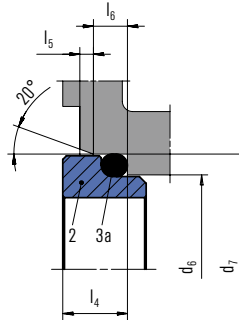


- 1 Seal face housing
- 1a Brazen seal face
- 2 Stationary seat housing
- 2a Brazen stationary seat
- 3, 3a O-Ring
- 4 Spring
- 5 Driver
- 5a Set screw

Seat alternatives

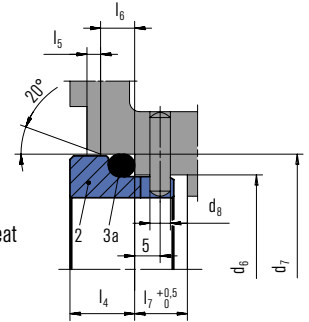
Seat ring can be supplied with short tail or with pin to block the seat and prevent seat rotation.

PF L



- 2 Stationary seat
- 3a O-Ring

PF L1



- 2 Stationary seat
- 3a O-Ring

Dimensions BT-C7.KU in mm

d ₁	d ₃	d ₄	d ₆	d ₇	d ₈	l _{1KU}	l ₃	l ₄	l ₅	l ₆	l ₇
16	26	29	23	27	3	35.0	28.0	7	1.5	4	8.5
18	32	35	27	33	3	37.5	27.5	10	2.0	5	9.0
20	34	37	29	35	3	37.5	27.5	10	2.0	5	9.0
22	36	39	31	37	3	37.5	27.5	10	2.0	5	9.0
24	38	41	33	39	3	40.0	30.0	10	2.0	5	9.0
25	39	43	34	40	3	40.0	30.0	10	2.0	5	9.0
28	42	46	37	43	3	42.5	32.5	10	2.0	5	9.0
30	44	48	39	45	3	42.5	32.5	10	2.0	5	9.0
32	46	50	42	48	3	42.5	32.5	10	2.0	5	9.0
33	47	51	42	48	3	42.5	32.5	10	2.0	5	9.0
35	49	53	44	50	3	42.5	32.5	10	2.0	5	9.0
38	54	58	49	56	4	45.0	32.0	13	2.0	6	9.0
40	56	60	51	58	4	45.0	32.0	13	2.0	6	9.0
43	59	63	54	61	4	45.0	32.0	13	2.0	6	9.0
45	61	65	56	63	4	45.0	32.0	13	2.0	6	9.0
48	64	68	59	66	4	45.0	32.0	13	2.0	6	9.0
50	66	72	62	70	4	47.5	33.5	14	2.5	6	9.0
53	69	75	65	73	4	47.5	33.5	14	2.5	6	9.0
55	71	77	67	75	4	47.5	33.5	14	2.5	6	9.0
58	78	83	70	78	4	52.5	38.5	14	2.5	6	9.0
60	80	85	72	80	4	52.5	38.5	14	2.5	6	9.0
63	83	88	75	83	4	52.5	38.5	14	2.5	6	9.0
65	85	90	77	85	4	52.5	38.5	14	2.5	6	9.0
68	88	93	81	90	4	52.5	36.5	16	2.5	7	9.0
70	90	95	83	92	4	60.0	44.0	16	2.5	7	9.0
75	99	104	88	97	4	60.0	44.0	16	2.5	7	9.0
80	104	109	95	105	4	60.0	42.0	18	3.0	7	9.0
85	109	114	100	110	4	60.0	42.0	18	3.0	7	9.0
90	114	119	105	115	4	65.0	47.0	18	3.0	7	9.0
95	119	124	110	120	4	65.0	47.0	18	3.0	7	9.0
100	124	129	115	125	4	65.0	47.0	18	3.0	7	9.0

l_{1KU} complies with EN 12756 (short length, unbalanced)

BT-C8



The BT-C8 mechanical seal range is designed for universal application and is ideally suited for standardization. The seal is bi-directional, unaffected by the direction of shaft rotation and is positively driven by set screws. With super-sinus spring. The advantages of this mechanical seal are the easily interchangeable seal faces which permit all material combinations.

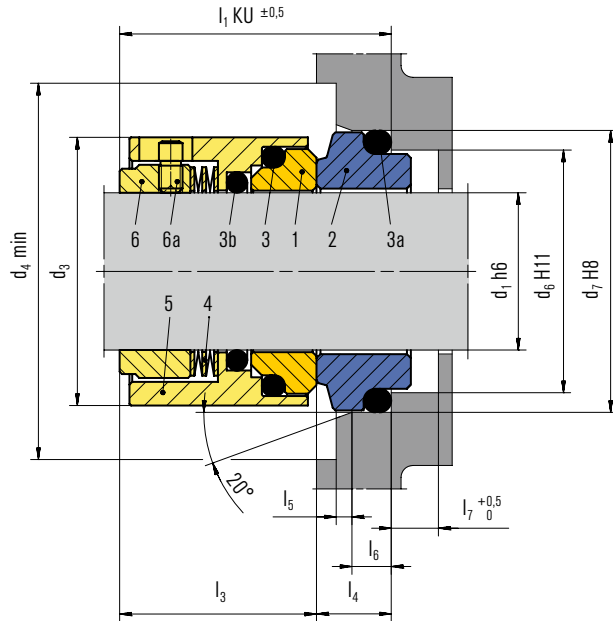
Features

- Single pusher-type seal
- Unbalanced
- Independent of direction of rotation
- Super-sinus spring
- Short installation length, according EN 12756 (L_{1KU}).

Operating range (see note on page 28)

Shaft diameter: $d_1 = 12 \dots 100 \text{ mm}$ (0.47" ... 3.94")
 Pressure: $p_1^* = 12 \text{ (16) bar}$ (174 (232) PSI)
 Temperature: $t^* = -35 \text{ }^\circ\text{C} \dots +180 \text{ }^\circ\text{C}$ (-4 °F ... +356 °F)
 Sliding velocity: $v_g = 20 \text{ m/s}$ (66 ft/s)

* Dependent on medium, size and material



Materials (see fold-out page 28)

Seal face: Silicon carbide (Q1), Aluminium oxide (V)
 Seat: Carbon graphite resin impregnated (B), Carbon graphite antimony impregnated (A), Silicon carbide (Q1)
 Elastomers: NBR (P), EPDM (E), FKM (V), FFKM (K)
 Metal parts: CrNiMo steel 1.4401 (G)

Recommended applications

- Chemical industry
- Pharmaceutical industry
- Building services industry
- Centrifugal pumps
- Clean water pumps

Certificates

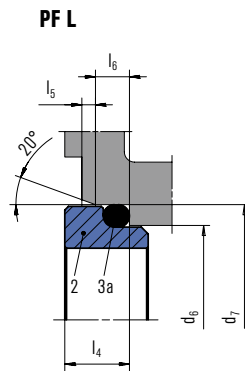
- KTW / UBA
- W270
- ACS
- WRAS
- NSF
- DM 174/04
- FDA

Item Description

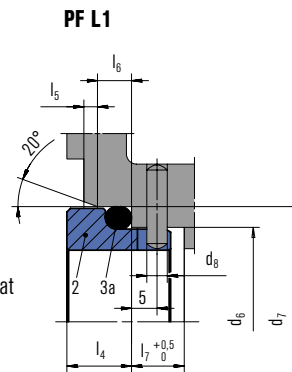
Item	Description
1	Seal face
2	Stationary seat
3, 3a, 3b	O-Ring
4	Spring
5	Collar
6	Driver
6a	Set screw

Seat alternatives

Seat ring can be supplied with short tail or with pin to block the seat and prevent seat rotation.



2 Stationary seat
3a O-Ring



2 Stationary seat
3a O-Ring

Dimensions BT-C8.KU in mm

d ₁	d ₃	d ₄	d ₆	d ₇	d ₈	l _{1KU}	l ₃	l ₄	l ₅	l ₆	l ₇
12	23	26	19	23	3	32.5	25.5	7	1.5	4	8.5
14	25	28	21	25	3	35.0	28.0	7	1.5	4	8.5
16	29	32	23	27	3	35.0	28.0	7	1.5	4	8.5
18	33	36	27	33	3	37.5	27.5	10	2.0	5	9.0
20	33	36	29	35	3	37.5	27.5	10	2.0	5	9.0
22	38	41	31	37	3	37.5	27.5	10	2.0	5	9.0
24	38	41	33	39	3	40.0	30.0	10	2.0	5	9.0
25	40	45	34	40	3	40.0	30.0	10	2.0	5	9.0
28	46	50	37	43	3	42.5	32.5	10	2.0	5	9.0
30	46	50	39	45	3	42.5	32.5	10	2.0	5	9.0
32	46	50	42	48	3	42.5	32.5	10	2.0	5	9.0
33	52	56	42	48	3	42.5	32.5	10	2.0	5	9.0
35	56	62	44	50	3	42.5	32.5	10	2.0	5	9.0
38	63	70	49	56	4	45.0	32.0	13	2.0	6	9.0
40	63	70	51	58	4	45.0	32.0	13	2.0	6	9.0
43	63	70	54	61	4	45.0	32.0	13	2.0	6	9.0
45	69	75	56	63	4	45.0	32.0	13	2.0	6	9.0
48	69	75	59	66	4	45.0	32.0	13	2.0	6	9.0
50	76	83	62	70	4	47.5	33.5	14	2.5	6	9.0
53	76	83	65	73	4	47.5	33.5	14	2.5	6	9.0
55	76	83	67	75	4	47.5	33.5	14	2.5	6	9.0
58	82	88	70	78	4	52.5	38.5	14	2.5	6	9.0
60	84	90	72	80	4	52.5	38.5	14	2.5	6	9.0
63	86	93	75	83	4	52.5	38.5	14	2.5	6	9.0
65	89	96	77	85	4	52.5	38.5	14	2.5	6	9.0
68	95	99	81	90	4	52.5	36.5	16	2.5	7	9.0
70	94	101	83	92	4	60.0	44.0	16	2.5	7	9.0
75	100	106	88	97	4	60.0	44.0	16	2.5	7	9.0
80	105	111	95	105	4	60.0	42.0	18	3.0	7	9.0
85	115	125	100	110	4	60.0	42.0	18	3.0	7	9.0
90	120	132	105	115	4	65.0	47.0	18	3.0	7	9.0
95	126	137	110	120	4	65.0	47.0	18	3.0	7	9.0
100	130	143	115	125	4	65.0	47.0	18	3.0	7	9.0

d₃, d₄ dimensions not always in accordance with EN 12756
l_{1KU} complies with EN 12756 (short length, unbalanced)

Table of materials

Material code in accordance with EN 12756

Description

Face materials

Synthetic carbons

"Soft" standard face material with best possible running properties, but only suitable for media without solids content.

A	Carbon graphite, antimony impregnated
B	Carbon graphite, resin impregnated
B3	Carbon graphite without impregnation (full carbon)

Metals

Combined with carbon as a hard/soft combination: good running properties for sealing clean media, including food industry applications

E	Cr steel AISI 420 (1.4021; 1.4028)
F1	CrNi steel AISI 431 (1.4057)
F	CrNi steel AISI 304L (1.4301, 1.4307)
G	CrNiMo steel AISI 316L (1.4401, 1.4404)
S	Special cast CrMo steel (1.4138)

Carbides

Highly wear-resistant materials for chemically aggressive and abrasive media, including high temperatures.

U	Tungsten carbide, Ni-binder, brazed
U1	Tungsten carbide, Ni-binder, solid
Q1	Silicon carbide, sintered pressureless (SiC)
Q6	Silicon carbide, sintered pressureless with carbon (SiC-C)
Q7	Silicon carbide sintered pressureless, controlled porosity (SiC)

Material code in accordance with EN 12756

Description

Metal oxides (Ceramics)

Materials with good chemical resistance, but limited to temperature and thermal shock, typically combined with carbon face material as a "hard/soft" combination.

X	Steatite (Magnesium silicate Mg_2SiO_4)
V	Ceramic (Al-Oxide 99 % Al_2O_3)
V1	Ceramic (Al-Oxide 95 % Al_2O_3)

Plastics

Soft face material, used mainly in chemical pumps. The medium must not contain any solid particles. PTFE is a typical face material for low friction and low duty applications.

Y1	PTFE glass fiber reinforced
Y2	PTFE carbon reinforced

Secondary seal components, Elastomers

P	Nitrile-butadiene-rubber NBR, e.g. Perbunan®
P2	Nitrile-butadiene-rubber NBR (drinking water approved)
X4	Hydrogenated Nitrile-rubber (HNBR), e.g. Therban®
P5	Nitrile-butadiene-rubber NBR (indicated for ozone applications)
V	Fluorocarbon rubber FKM, e.g. Viton®
E	Ethylene-propylene-rubber EPDM, e.g. Nordel®
E2	Ethylene-propylene-rubber EPDM (drinking water approved)
T	Polytetrafluoroethylene PTFE, e.g. Teflon®
K	Perfluorocarbon rubber FFKM, e.g. Kalrez®, Chemraz®
N	Polychloroprene rubber CR, e.g. Neopren®

Material code in accordance with EN 12756

Description

Spring materials

D	C steel
F	CrNi steel AISI 304 (1.4310)
G	CrNiMo steel AISI 316 (1.4401, 1.4571)
M	Ni-base alloy, Hastelloy®

Construction materials

E	Cr steel AISI 420 (1.4021; 1.4028)
F1	CrNi steel AISI 431 (1.4057)
F	CrNi steel AISI 304L (1.4301, 1.4307)
G	CrNiMo steel AISI 316L (1.4401, 1.4404)
G1	CrNiMo steel - Duplex (1.4462)

Please ask for possible drinking water approvals (WRAS, KTW, W270, ACS, NSF, DM 174). Certificates available upon request, not as a standard.

Temperature ranges for application of conventional secondary seal components

Materials		Temperature range	Remarks
Nitrile rubber	P	-20 °C ... +90 °C (-4 °F ... +194 °F)	
Chloroprene	N	-30 °C ... +120 °C (-22 °F ... +284 °F)	
EPDM rubber	E	-40 °C ... +140 °C (-40 °F ... +284 °F)	Not resistant to mineral greases and oils
Fluorocarbon rubber (e.g. Viton®)	V	-20 °C ... +200 °C (-4 °F ... +392 °F)	With hot water only up to a maximum of +90 °C (+194 °F)
Perfluorocarbon rubber (e.g. Kalrez®)	K	-5 ... +270 (+23 °F ... +518 °F)	Fluorine containing solvents may result in swelling
PTFE (e.g. Teflon®)	Y	-200 ... +250 (-328 °F ... +482 °F)	

Color code

	Shaft		Stationary seal parts		Rotary seal parts
	Housing, installation chamber		Stationary seal faces		Rotating seal faces
	Elastomers				

Important note

All the technical specifications are based on extensive tests and our many years of experience. However, the diversity of possible applications means that they can serve as guide values only.

It should be noted that the extremal values of each operating parameter cannot be applied at the same time because of their interaction. Furthermore, the operating range of each specific product depends on the respective shaft diameter, materials used, mode of operation and on the medium to be sealed.

A guarantee can only be given in the individual case if the exact conditions of application are known and these are confirmed in a special agreement. When critical conditions of operation are involved, we recommend consulting with our specialist engineers.

Subject to change.

Certificates

The most recent EagleBurgmann BT certificates can be found on our website: eagleburgmannbt.com/download/certificates



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Arcugnano (VI) - ITALY

Bureau Veritas Certification certifies that the Management System of the above organisation has been assessed and found to be in accordance with the requirements of the standards detailed below.

Standard

ISO 14001:2015

Scope

Design and production of mechanical seals for rotating shafts obtained by the processes of stamping, turning, grinding, induction welding, tumbling, lapping, polishing, washing and assembling.

Subject to the continual satisfactory operation of the organisation's Management System, this certificate is valid from:

Date of certification: **11.10.2016** Valid until: **10.10.2019**

To check this certificate validity you may contact Bureau Veritas Certification. Further clarifications regarding the scope of this certificate and the applicability of the Management System requirements may be obtained by consulting the organisation.


 Local Technical Manager
 Date: **15.01.2018**
 Certificate number: **DE007742-1**
 Page: 1 of 2


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 Vertikalstr. 1 21079 Hamburg



BUREAU VERITAS
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Standard

ISO 9001:2015

Scope

Design and production of mechanical seals for rotating shafts obtained by the processes of stamping, turning, grinding, induction welding, tumbling, lapping, polishing, washing and assembling.

Subject to the continual satisfactory operation of the organisation's Management System, this certificate is valid from:

Date of certification: **07.10.2016** Valid until: **06.10.2019**

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 Local Technical Manager
 Date: **15.01.2018**
 Certificate number: **DE007740-1**
 Page: 1 of 2


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BUREAU VERITAS
Certification

EagleBurgmann BT S.P.A

Head Office:
Via Antonio Meucci, 56-58 - 36057 ARCUGNANO (VI) - ITALY

This is a multi-site certificate, additional site are listed in the attachment to this certificate.
Bureau Veritas Italia S.p.A certify that the Management System of the above organisation has been audited and found to be in accordance with the requirements of the management system standards detailed below

Standard

OHSAS 18001:2007

Scope of certification

Design and production of mechanical seals for rotating shafts obtained by the processes of stamping, turning, grinding, induction welding, tumbling, lapping, polishing, washing and assembling.

Certification awarded in conformity with the requirements of ACCREDIA RT-12

EA Sector(s): **17**

Certification cycle start date: **17 December 2016**

Subject to the continued satisfactory operation of the organisation's Management System, this certificate expires on: **18 December 2019**

Original certification date: **19 December 2013**

Certificate No. **IT271495** Version N. 1 Revision date: **17 December 2016**


CARMELA DE FEO - Technical Committee Coordinator

Certification body address:
Bureau Veritas Italia spa, Via Miramare, 15, 20126 Milano, Italia



SGS N° 0074 SOE N° 0098
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Network Lavoro Etico

Certificato n. 405

certifica che il Sistema di Responsabilità Sociale di

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con sede legale in

Via A. Meucci 58 - 36057 Arcugnano (VI)

è conforme ai requisiti della norma SA8000®:2014

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Data 1° rilascio: 13 luglio 2011
Data rinnovo: 16 giugno 2017
Data di scadenza: 13 luglio 2020


 Dr. Alberto Zambianchi - Presidente CISE
 per il Network Lavoro Etico

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