

RELY ON EXCELLENCE

BT-RN

Mechanical seals | Mechanical seals for pumps | Pusher seals



Features

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

Advantages

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.

Operating range

Shaft diameter:
RN, RN3, RN6:
d1 = 6 ... 110 mm (0.24" ... 4.33"),
RN.NU, RN3.NU:
d1 = 10 ... 100 mm (0.39" ... 3.94"),
RN4: upon request
Pressure: p1* = 12 bar (174 PSI)
Temperature:
t* = -35 °C ... +180 °C (-31 °F ... +356 °F)
Sliding velocity: vg = 15 m/s (49 ft/s)

* Dependent on medium, size and material

Materials

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)

Standards and approvals

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

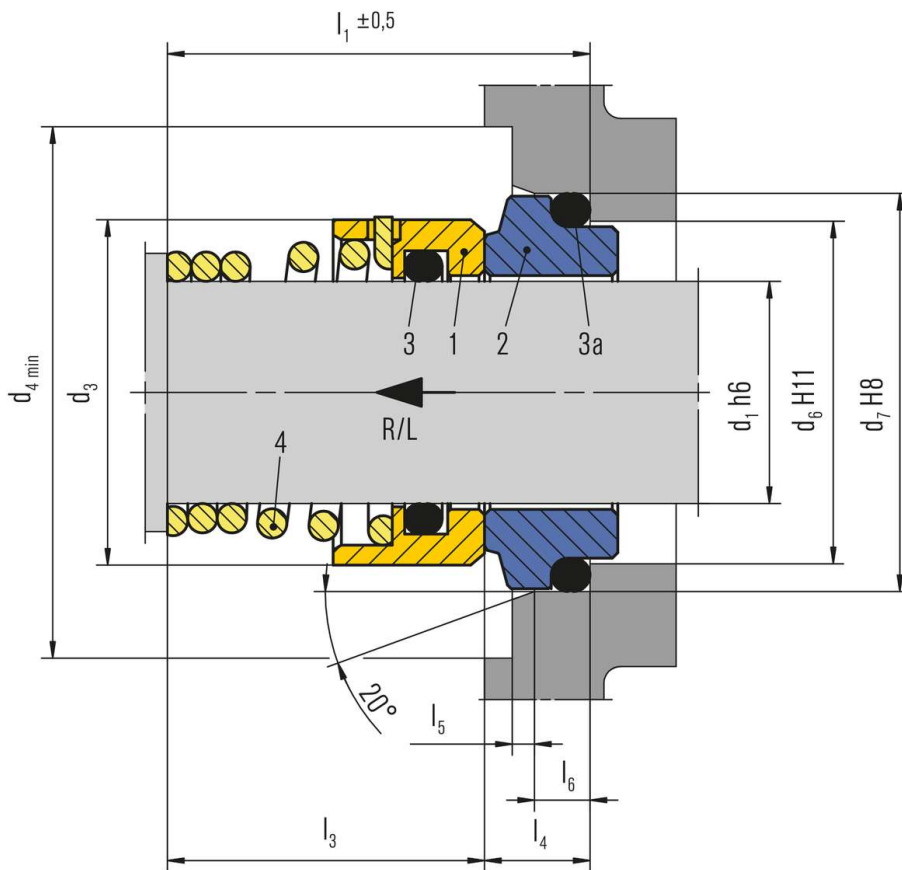
Notes

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

Recommended applications

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

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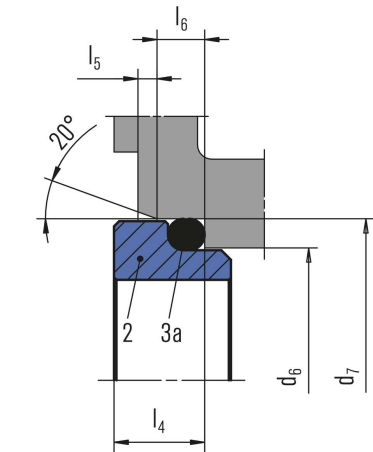


Item Description

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

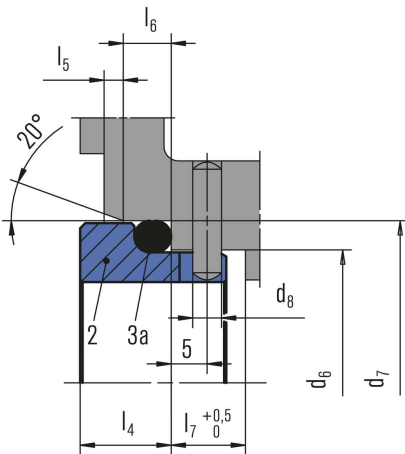
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Seat alternatives



PF L

- Item Description**
- 2 Stationary seat
 - 3a O-Ring



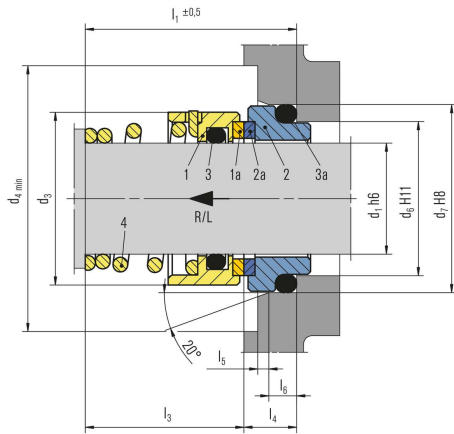
PF L1

- Item Description**
- 2 Stationary seat
 - 3a O-Ring

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Product variants

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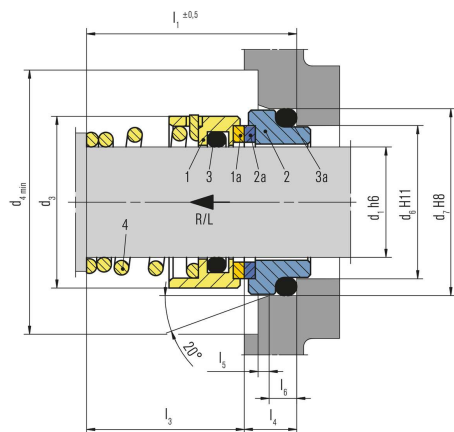


BT-RN3

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

Item Description

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

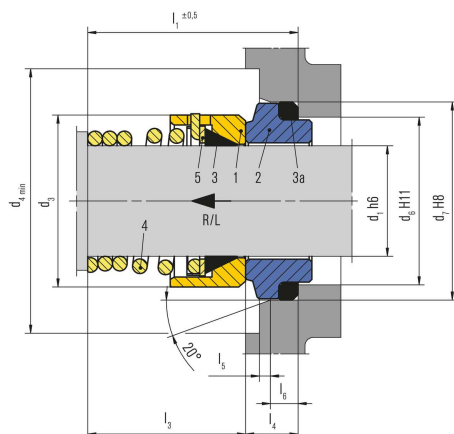


BT-RN4

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

Item Description

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



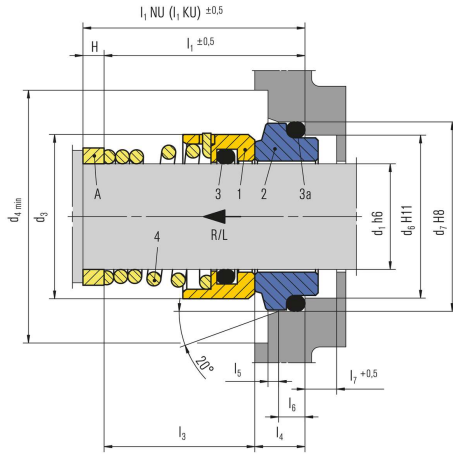
BT-RN6

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

Item Description

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

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BT-RN.NU / KU

Like the BT-RN/-RN3, 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).

Item Description

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

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Dimensions

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

BT-RN - Dimensions in millimeter

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Dimensions

BT-RN.NU 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	BT-RN.KU 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	28	23	27	3	40	10	30	23	7	1.5	4	8.5	35.0	28.0
18	32	34	27	33	3	45	11	34	24	10	2.0	5	9.0	37.5	27.5
20	34	36	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.NU / KU - Dimensions in millimeter