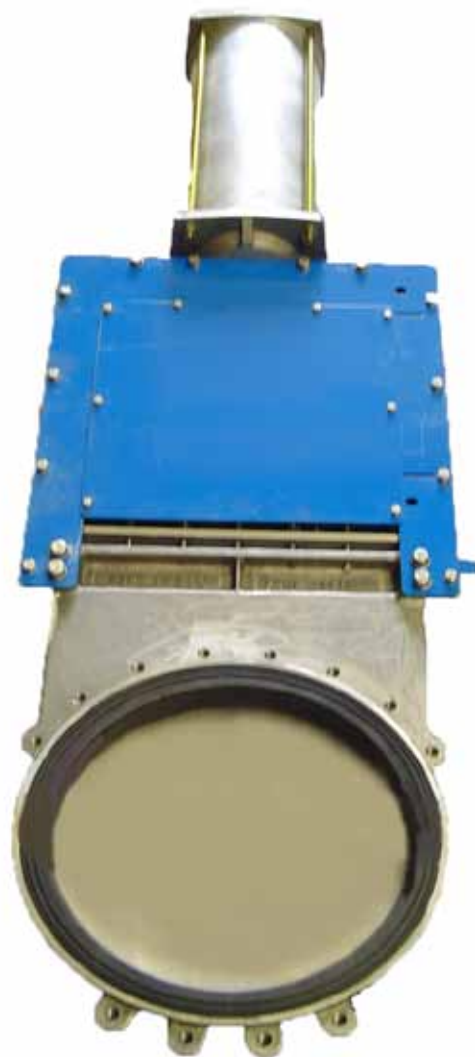


VTB Knife gate valves

Vapco

own the flow



 Herbe

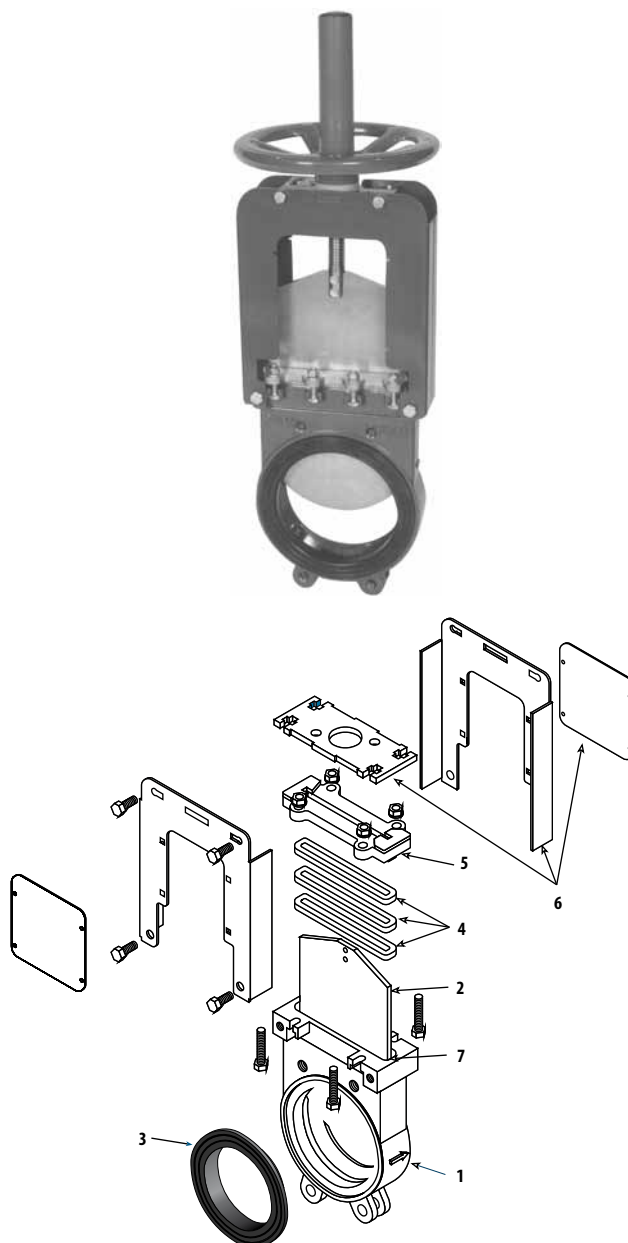
RBR-HC

Description

- DN-50 up to DN-1000
- 1-piece body
- For flanges PN-10
- Uni-directional or Bi-directional available
- Manual, pneumatic, hydraulic or electric operated

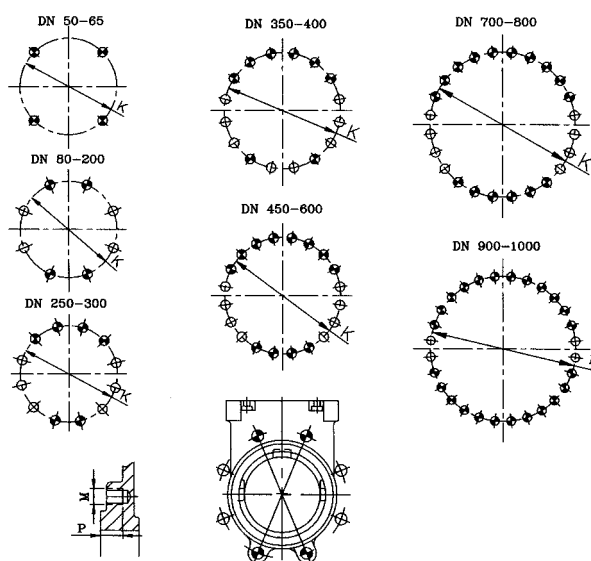
Materials

Item	Descr.	Body GGG40	Body CF8M
1	body	GGG-40 + Epoxy	SS316
2	gate	SS316	SS316
3	seat	Metal, Butyl, NBR, EPDM, PTFE etc.	Metal, Butyl, NBR, EPDM, PTFE etc.
4	packing	Cotton with Teflon	Cotton with Teflon
5	packing-gland	DN50-300: Aluminium DN350-600: Steel St.52	SS316
6	support	Steel St.52 + Epoxy	Steel St.52 + Epoxy
7	bearing	PTFE	PTFE



Materials	Use	
Butyl	-15 up to 130°C	Standard seat suitable for lots of media.
NBR	-20 up to 100°C	Media with grease or oil
EPDM	-25 up to 100°C	Water
Viton	-5 up to 220°C	Suitable for high temperatures
Silicone	-40 up to 250°C	Food, pharma
PTFE	-25 up to 200°	Food, abrasives

Dimensions flange connection [mm]



BTH: Blind tapped holes
 TB: Through going bolts
 Z: Number of holes, flange PN-10

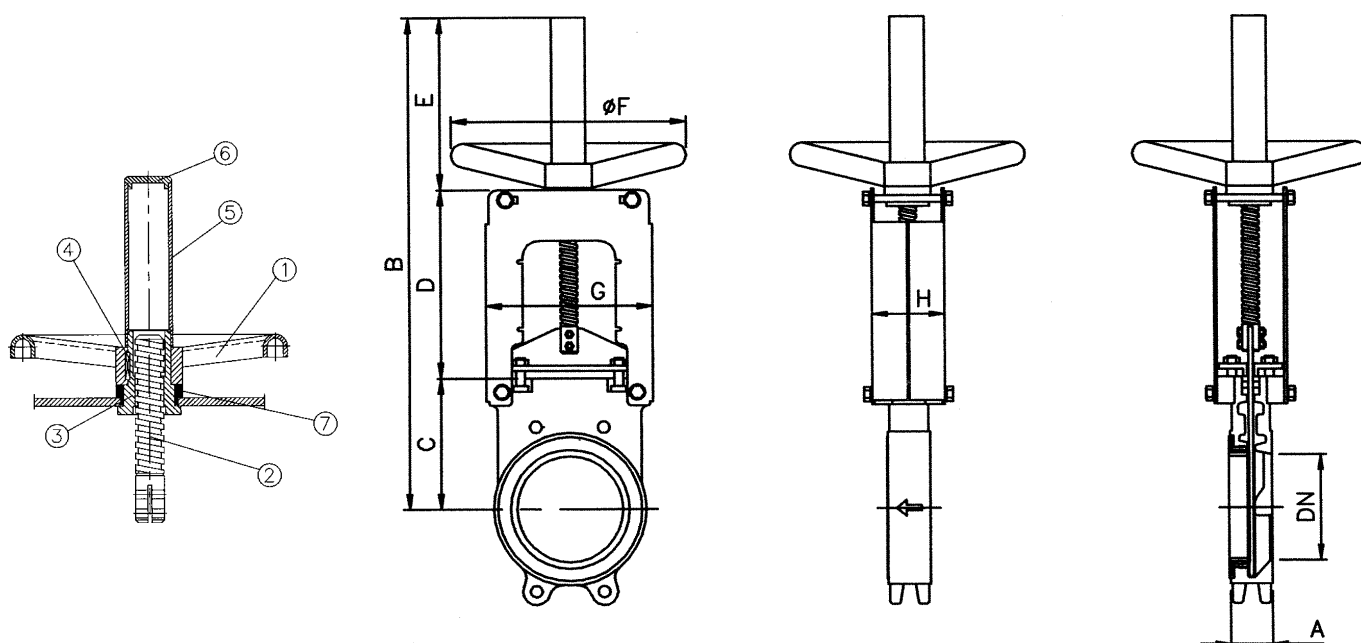
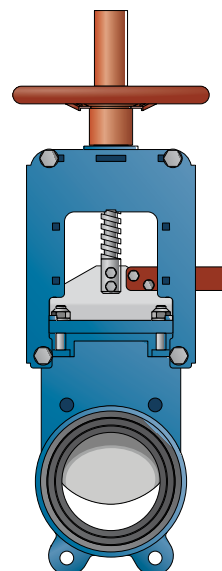
DN	K	Z	BTH	TB	M	P
50	125	4	4	-	M-16	8
65	145	4	4	-	M-16	8
80	160	8	4	4	M-16	9
100	180	8	4	4	M-16	9
125	210	8	4	4	M-16	9
150	240	8	4	4	M-20	10
200	295	8	4	4	M-20	10
250	350	12	6	6	M-20	12
300	400	12	6	6	M-20	12
350	460	16	8	8	M-20	21
400	515	16	8	8	M-24	21
450	565	20	12	8	M-24	22
500	620	20	12	8	M-24	22
600	725	20	12	8	M-27	20
700	840	24	16	8	M-27	20
800	950	24	16	8	M-30	20
900	1050	28	24	4	M-30	18
1000	1160	28	24	4	M-33	18

RBR-HC-VA with handwheel

Materials

Item	Description	Materials
1	handwheel	Steel
2	stem	SS303 / SS316
3	stem nut	Bronze
4	key	Steel
5	protective tube	Steel
6	cap	Plastic
7	bearing	Nylon

Assembling between flanges PN-10



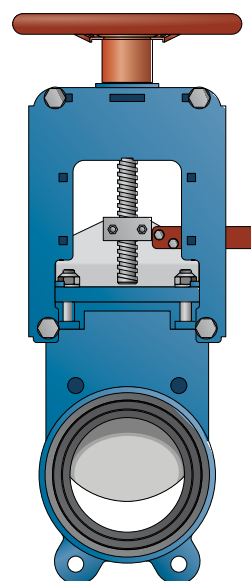
Dimensions [mm]

DN	A	B	C	D	E	ØF	G	H	[kg]	PN
50	50	350	115	140	95	200	117	68	7	10
65	50	385	120	155	110	200	132	68	8	10
80	50	415	130	170	115	200	150	72	9	10
100	50	472	145	196	131	200	170	72	10	10
125	50	542	155	223	164	250	197	80	15	8
150	60	610	176	254	180	250	224	80	19	8
200	60	765	204	318	243	300	291	90	25	8
250	65	902	255	364	283	300	333	92	39	6
300	70	1057	305	424	328	350	395	95	53	6
350	90	1221	345	478	398	350	440	94	77	5
400	100	1422	400	554	468	500	543	101	119	5
500	110	1748	505	675	568	500	652	126	185	4
600	110	2073	620	795	658	500	752	120	253	3

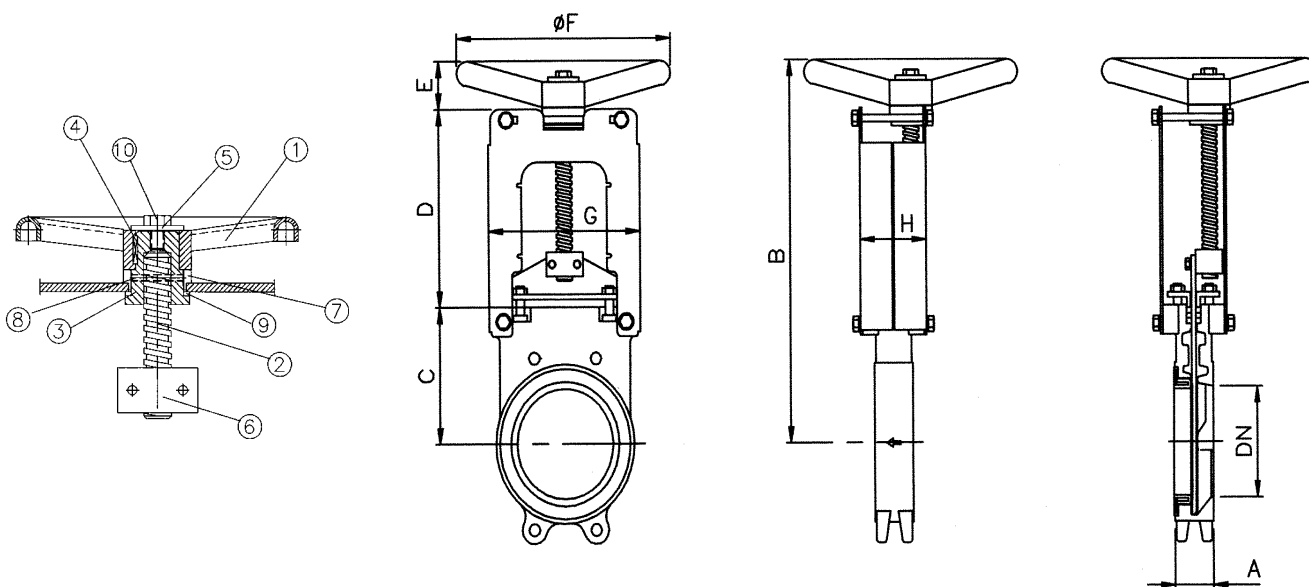
RBR-HC-VF with handwheel non rising stem

Materials

Item	Description	Materials
1	handwheel	Steel
2	stem	SS303 / SS316
3	stem nut	Bronze
4	key	Steel
5	washer	Steel
6	nut	Bronze
7	bearing	Nylon
8	pin	Steel
9	washer	Nylon
10	nut	Steel



Assembling between flanges PN-10



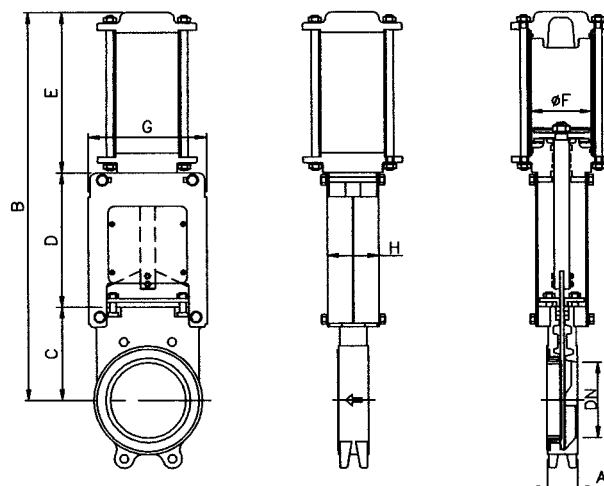
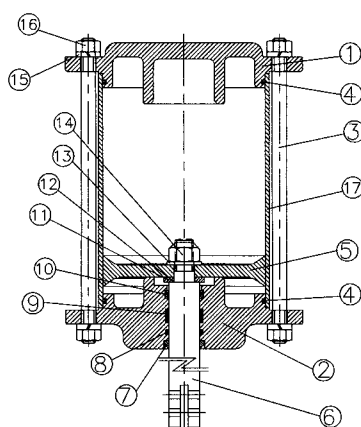
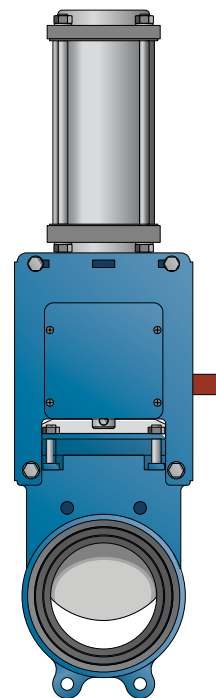
Dimensions [mm]

DN	A	B	C	D	E	ØF	G	H	[kg]	PN
50	50	310	115	140	55	200	117	68	7	10
65	50	330	120	155	55	200	132	68	8	10
80	50	349	130	170	49	200	150	72	9	10
100	50	390	145	196	49	200	170	72	10	10
125	50	430	155	223	52	250	197	80	15	8
150	60	482	176	254	52	250	224	80	19	8
200	60	593	204	318	71	300	291	90	24	8
250	65	690	255	364	71	300	333	92	36	6
300	70	791	305	424	62	350	395	95	52	6
350	90	885	345	478	62	350	440	94	76	5
400	100	1064	400	554	110	500	543	101	113	5
500	110	1285	505	675	105	500	652	126	174	4
600	110	1520	620	795	105	500	752	120	243	3

RBR-HC-NDE with pneumatic double acting actuator

Dimensions

Item	Description	Materials
1	top cover	Aluminium
2	bottom cover	Aluminium
3	stud	SS
4	O-rings	Rubber
5	piston	Aluminium + Rubber
6	stem	SS303 / SS316
7	scraper	Rubber
8	O-ring	Rubber
9	bearing	Plastic
10	O-ring	Rubber
11	washer	Staal
12	O-ring	Rubber
13	washer	DIN 125
14	self-locking nut	DIN 985
15	washer	DIN 127
16	nut	DIN 934
17	cylinder	Aluminium



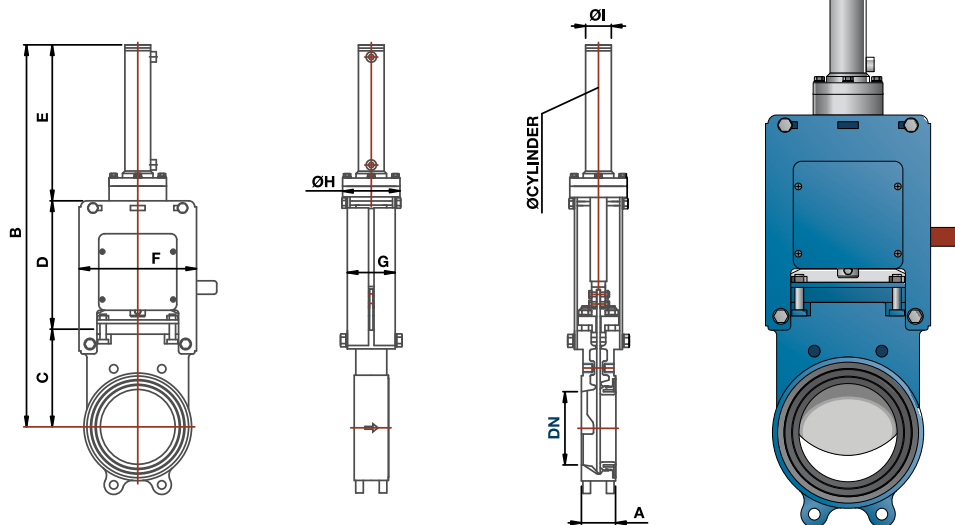
Dimensions [mm]

Assembling between flanges PN-10

DN	A	B	C	D	E	ØF	G	H	Conn. bsp	Stroke	[kg]	PN
50	50	462	115	140	207	80	117	68	1/4"	67	10	10
65	50	497	120	166	216	80	155	68	1/4"	82	11	10
80	50	549	130	175	244	100	152	70	3/8"	102	13	10
100	50	592	143	195	254	100	172	70	3/8"	121.5	15	10
125	50	663	155	223	285	125	199	78	3/8"	142	20	8
150	60	732	176	254	302	125	226	79	3/8"	167	24	8
200	60	889	204	318	367	160	293	88	3/8"	219.5	36	8
250	65	1028	253	364	411	160	335	90	3/8"	270.5	52	6
300	70	1201	303	424	474	200	395	95	1/2"	317	69	6
350	90	1347	343	470	534	200	440	94	1/2"	368	93	5
400	100	1551	400	549	602	250	543	110	1/2"	417	153	5
450	100	1698	452	599	647	250	597	126	1/2"	475	192	4
500	110	1880	505	675	700	250	652	126	1/2"	517	216	4
600	110	2183	620	836	727	300	752	120	3/4"	617	320	3

RBR-HC-HY with hydraulic actuator

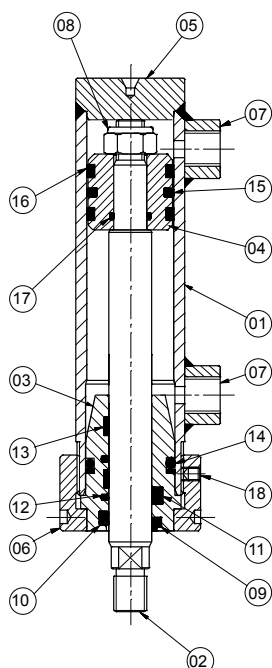
Afmetingen



Dimensions [mm]

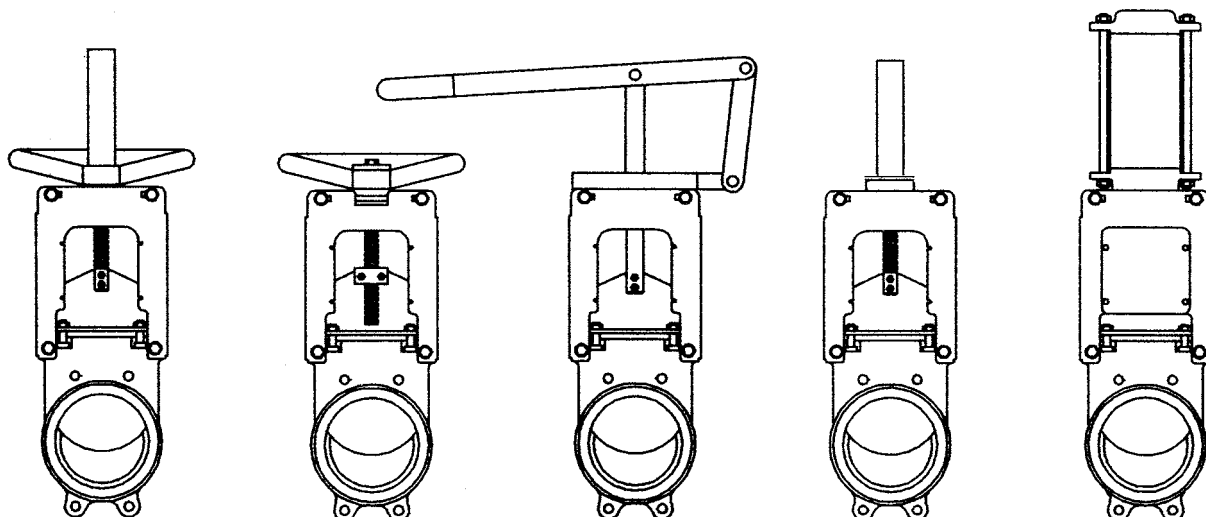
Assembling between flanges PN-10

DN	A	B	C	D	E	F	G	ØH	ØI	Conn. bsp	[kg]	PN
50	50	471	115	140	216	117	68	100	50	3/8"	10	10
65	50	502	120	166	221	155	68	100	50	3/8"	11	10
80	50	560	130	175	255	152	70	100	50	3/8"	13	10
100	50	612	145	195	274	172	70	100	50	3/8"	15	10
125	50	689	155	223	311	199	78	125	60	3/8"	20	8
150	60	766	176	254	336	226	79	125	60	3/8"	24	8
200	60	929	204	318	407	293	88	145	75	1/2"	36	8
250	65	1072	253	364	455	335	90	145	75	1/2"	52	6
300	70	1232	303	424	505	395	95	145	75	1/2"	69	6
350	90	1376	343	470	563	440	94	145	75	1/2"	76	5

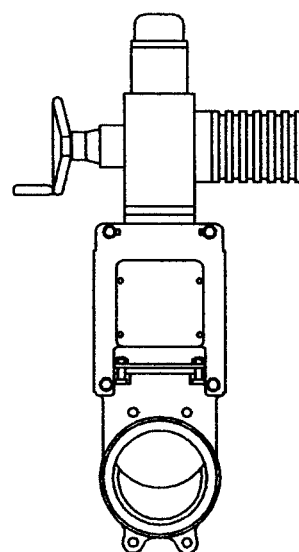
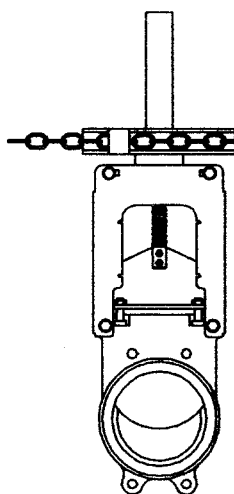
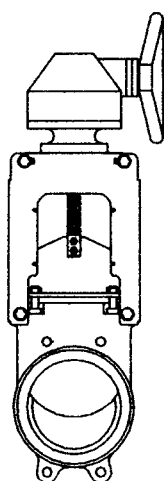


Item	Description
1	Body
2	Stem
3	Bushing
4	Piston
5	Cover
6	Nut
7	Connection
8	Nut
9	washer ISO 6195/A
10	washer ISO 6195/C
11	stem seal
12	stem seal
13	seal
14	seal
15	piston seal
16	seal
17	O-Ring
18	washer grower

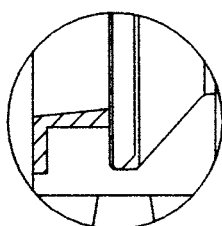
Overview



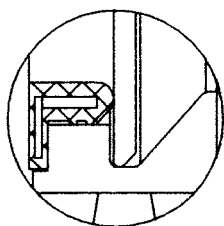
RBR-HC-VA	RBR-HC-VF	RBR-HC-P	RBR-HC-HY	RBR-HC-NDE
manual rising stem	manual non rising stem	manual with lever	hydraulic operated	pneumatic operated



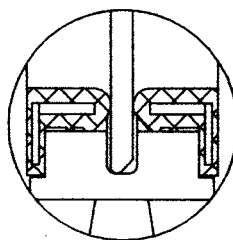
RBR-HC-R	RBR-HC-C	RBR-HC-E
manual with gearbox	manual with chain transmission	electric operated



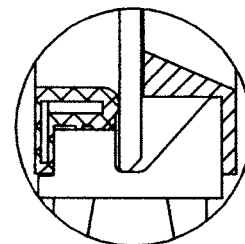
metal- metal



unidirectional



bidirectional



scraper

Options and accessories:

Cleaning by blowing air, Holes in the body in which you can blow compressed air to clean cavities in the body.

Flowcontrol, with diaphragm pentagonal or triangular.

Locking, With which you can lock the valve in one position, so it will not be possible to operate the valve.

Emergency manual operation, (Handwheel, lever), with which you will have the possibility to operate the valve manually when air pressure is lost.

Columns and extensions, for better control outside the difficult positions.

Brackets for switches and positioners.

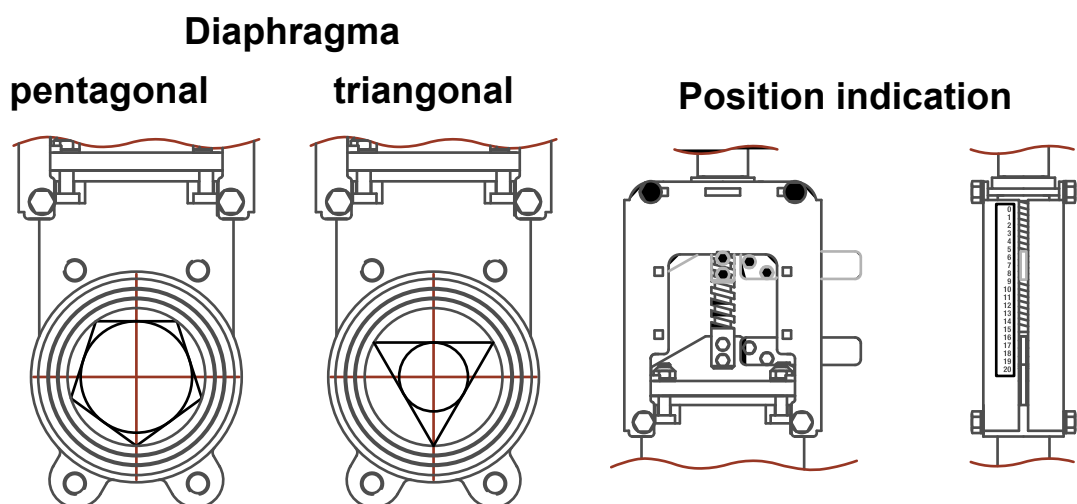
Mechanical endswitches, inductive sensors and positioners, to control or to receive the correct position.

Solenoid valves, to control the air pressure to the pneumatic actuator.

High polished gate, a specialty in the food industry recommended and for general purposes where solids have to slip off the gate and may not stick.

Hard chromed gate, for an increased hardness and better resistance against high abrasive media.

Cover, makes a complete sealing from outside possible, with this the wear of the gland will be less. (A special valve must be made, contact your supplier.)



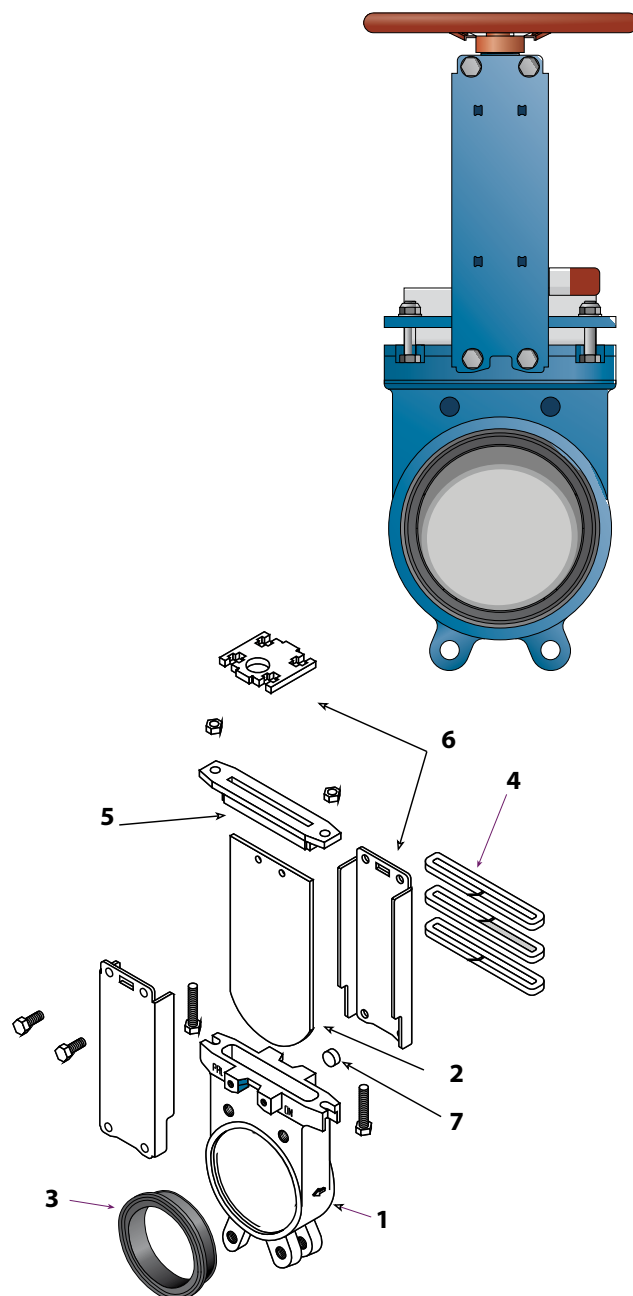
RBR-PAL with handwheel

Description

- DN-50 up to DN-500
- 1-piece body
- For flanges PN-10 or ANSI 150
- Unidirectional or bidirectional sealing available
- Control: Manual with handwheel or lever, pneumatic, hydraulic or electric operated

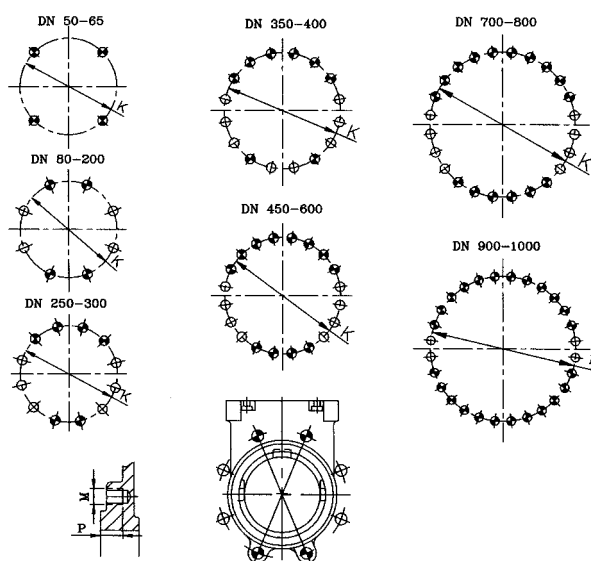
Materials

Item	Descr.	Body cast iron	Body SS316
1	body	Cast iron EN-GJL-250 + Epoxy	SS316
2	gate	SS304	SS316
3	seat	Metal, Butyl, NBR, EPDM, PTFE etc.	
4	packing	cotton with grease	
5	packing-gland	Steel St.52 + Epoxy	SS316
6	support	Steel St.52 galvanised+ Epoxy	
7	inner bearing	Delrin	



Materials	Use	
Butyl	-15 up to 130°C	standard seat suitable for many media.
NBR	-20 up to 100°C	media with grease or oil
EPDM	-25 up to 100°C	water
Viton	-5 up to 220°C	suitable for high temperatures
Silicone	-40 up to 250°C	Food, Pharma
PTFE	-25 up to 200°	Food, Abrasives

Dimensions flange connection [mm]



BTH: Blind tapped holes
 TB: Through going bolts
 Z: Number of holes, flange PN-10

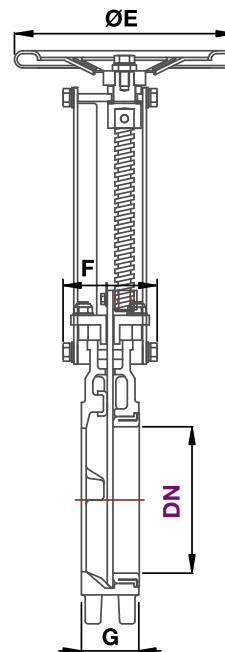
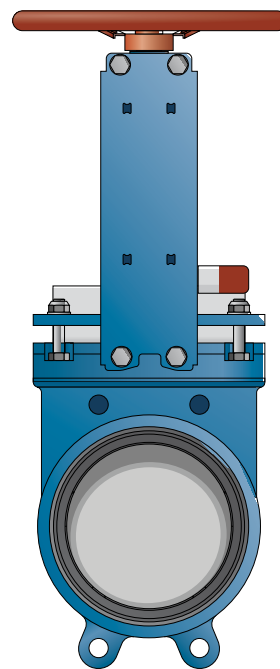
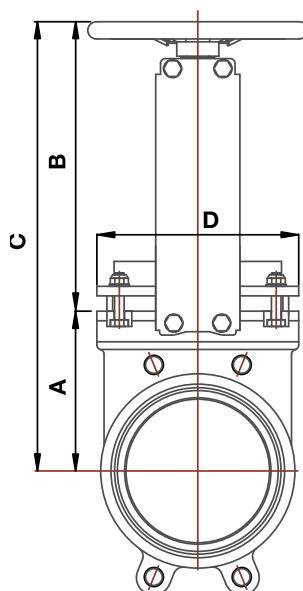
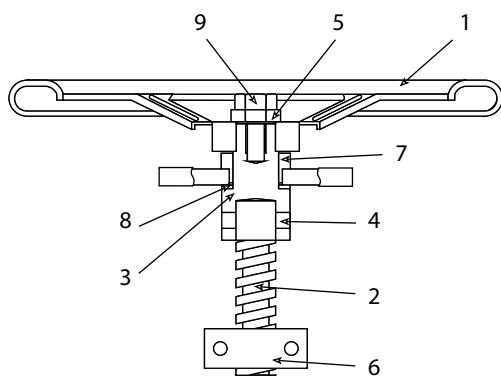
DN	K	Z	BTH	TB	M	P
50	125	4	4	-	M-16	8
65	145	4	4	-	M-16	8
80	160	8	4	4	M-16	9
100	180	8	4	4	M-16	9
125	210	8	4	4	M-16	9
150	240	8	4	4	M-20	10
200	295	8	4	4	M-20	10
250	350	12	6	6	M-20	12
300	400	12	6	6	M-20	12
350	460	16	8	8	M-20	21
400	515	16	8	8	M-24	21
500	620	20	12	8	M-24	22

RBR-PAL-VF with handwheel non rising stem

Materials

Item	Description	Materials
1	handwheel	Steel
2	stem	SS304
3	stem nut	Bronze F114
4	pin	Steel
5	gate	Steel
6	nut	Plastic
7	bearing	Delrin
8	washer	Plastic
9	Bolt	Steel

Assembling between flanges PN-10



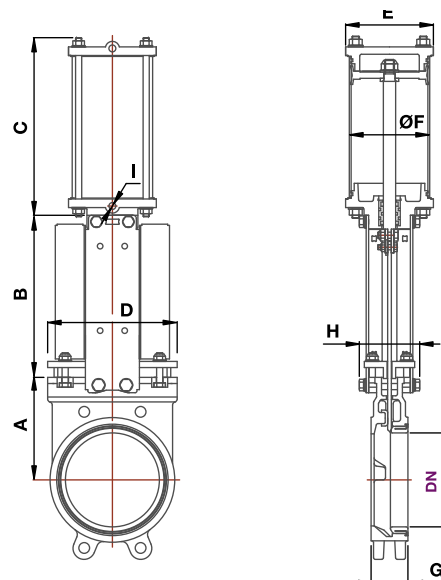
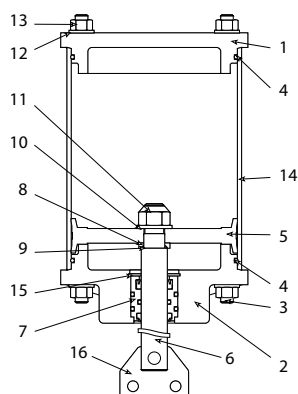
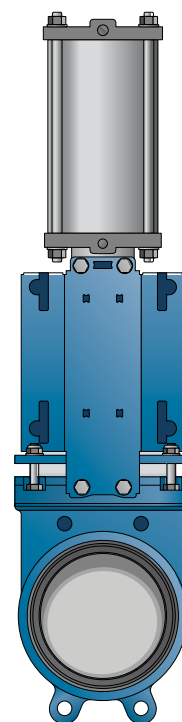
Dimensions [mm]

DN	A	B	C	D	ØE	F	G	[kg]	PN
50	113	239	352	131	200	96	40	7	10
65	113	248	361	155	200	96	40	7,5	10
80	117,5	262	379,5	168	200	98,5	50	8	10
100	132,5	284	416,5	189	200	98,5	50	10	10
125	151	274	425	182,5	250	98,5	50	13	10
150	167	302,5	469,5	211	250	98,5	60	16	10
200	196	382,5	578,5	262	300	124	60	25	10
250	228	434,5	662,5	316	300	124	70	30	10
300	274	495	769	375	300	136	70	45	6
350	308	535,5	843,5	423	400	136	96	66	5
400	362	621	983	476	500	175	100	105	5
500	473	732,5	1.205,5	590	500	189	110	179	4

RBR-PAL-NDE with pneumatic double acting actuator

Dimensions

Item	Description	Materials
1	top cover	Aluminium
2	bottom coves	Aluminium
3	stud	SS
4	O-rings	Rubber
5	piston	Aluminium + Rubber
6	stem	SS304 / SS316
7	sraper	Rubber
8	O-ring	Rubber
9	bearing	Plastic
10	O-ring	Rubber
11	washer	Steel
12	O-ring	Rubber
13	washer	DIN 125
14	self-locking nut	DIN 985
15	washer	DIN 127
16	nut	DIN 934
17	cilinder	Aluminium

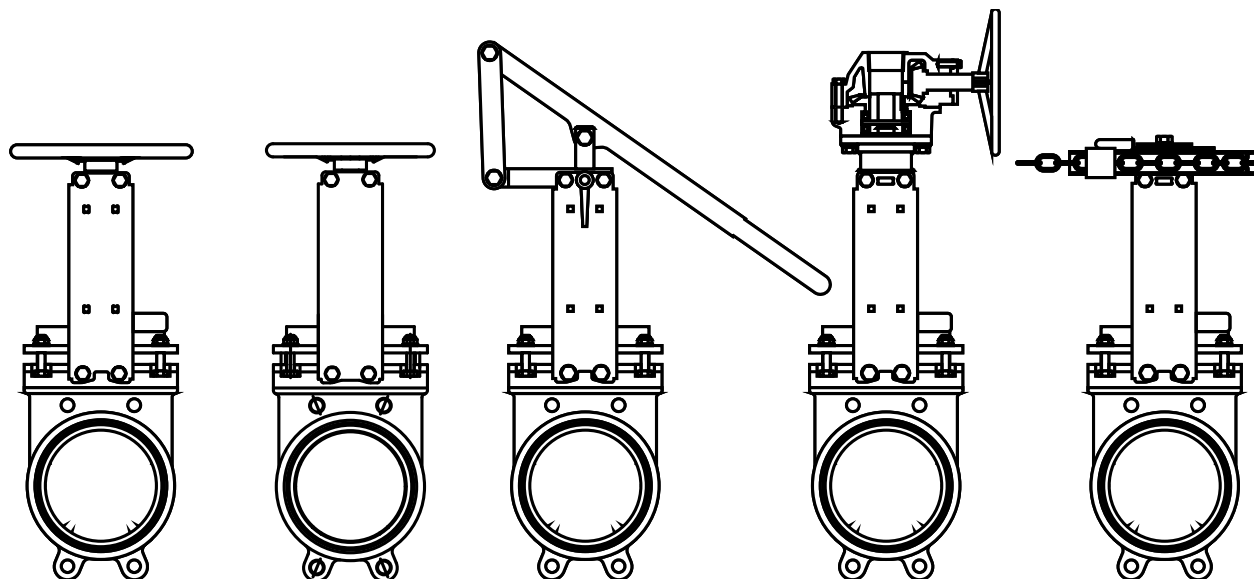


Dimensions [mm]

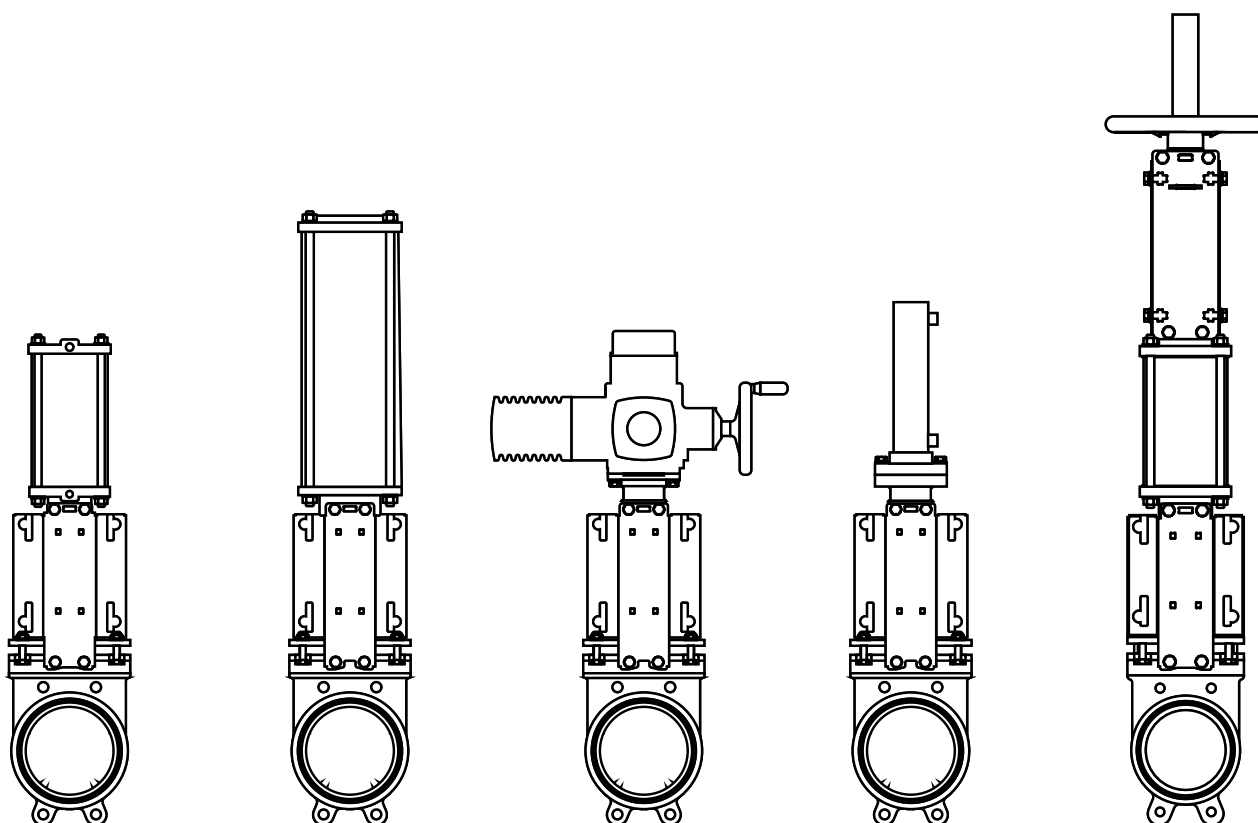
Assembling between flanges PN-10

DN	A	B	C	D	E	ØF	G	H	Conn. bsp	Stroke	[kg]	PN
50	113	159,5	183	131	100	80	40	96	1/4"	67	8	10
65	113	168,5	198	155	100	80	40	96	1/4"	75	10	10
80	117,5	184,5	214,5	168	118	100	50	98,5	3/8"	97	11	10
100	132,5	204,5	235	189	118	100	50	98,5	3/8"	117	14	10
125	151	235,5	263	182,5	144	125	50	98,5	3/8"	141	17,5	10
150	167	264	302	211	144	125	60	98,5	3/8"	171	20	10
200	196	322,5	340,5	262	180	160	60	124	3/8"	216	32	10
250	228	374,5	394	316	180	160	70	124	3/8"	270	41	10
300	274	430	460	375	215	200	70	136	1/2"	322	61	6
350	308	480	510	423	215	200	96	136	1/2"	370	80	5
400	362	556	578	476	280	250	100	175	1/2"	421	135	5
500	473	666,5	675	590	280	250	100	189	1/2"	520	214	4

Overview RBR PAL

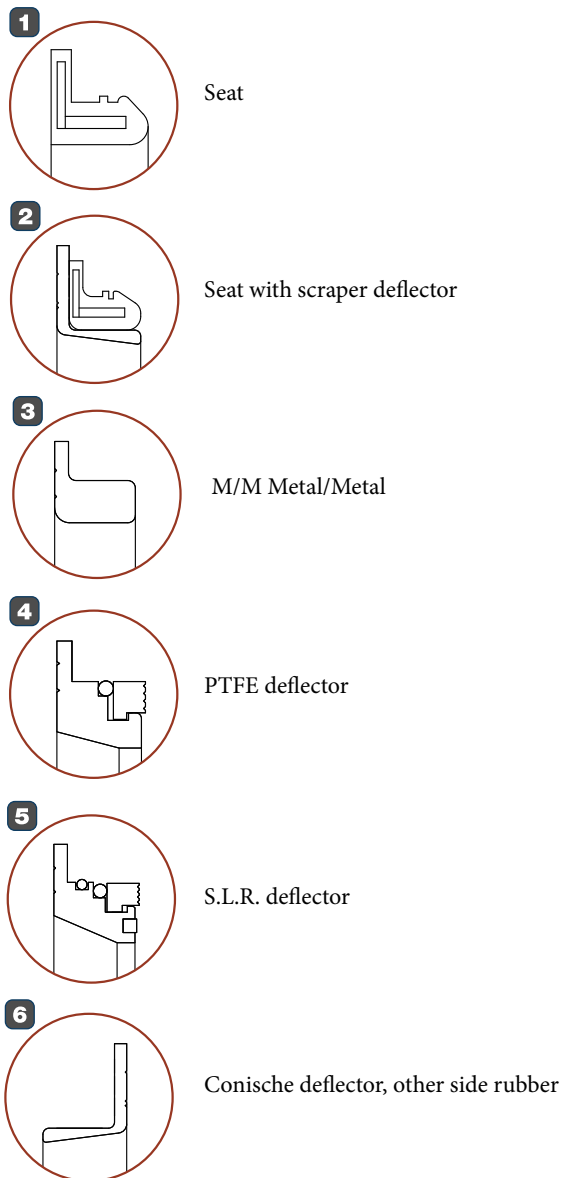


RBR-PAL-VA	RBR-PAL-VF	RBR-PAL-P	RBR-PAL-R	RBR-PAL-C
manual rising stem	manual non-rising stem	manual with lever	manual with gear box	manual with chain transmission



RBR-PAL-NDE	RBR-PAL-NSE	RBR-PAL-E	RBR-PAL-H	RBR-PAL-NDE-VA
pneumatic operated	pneumatic operated single acting	electric operated	hydraulic operated	pneumatic operated with hand-wheel

Different seat rings



Options: both side sealing is possible with all!

EC-Directives

Pressure Equipment Directive (PED): DIR 97/23/EC.

The RBR-HC and RBR-PAL knife gate valves are suitable for fluids from group 1 (dangerous) and group 2 fluids (non dangerous) in accordance with the tables right meet the requirements of the EUROPEAN DIRECTIVE 97/23/EC regarding pressure equipment to Module A.

DIR 94/9/EG: Directive concerning Equipment and Protective Systems intended to use in potentially explosive atmospheres (ATEX).

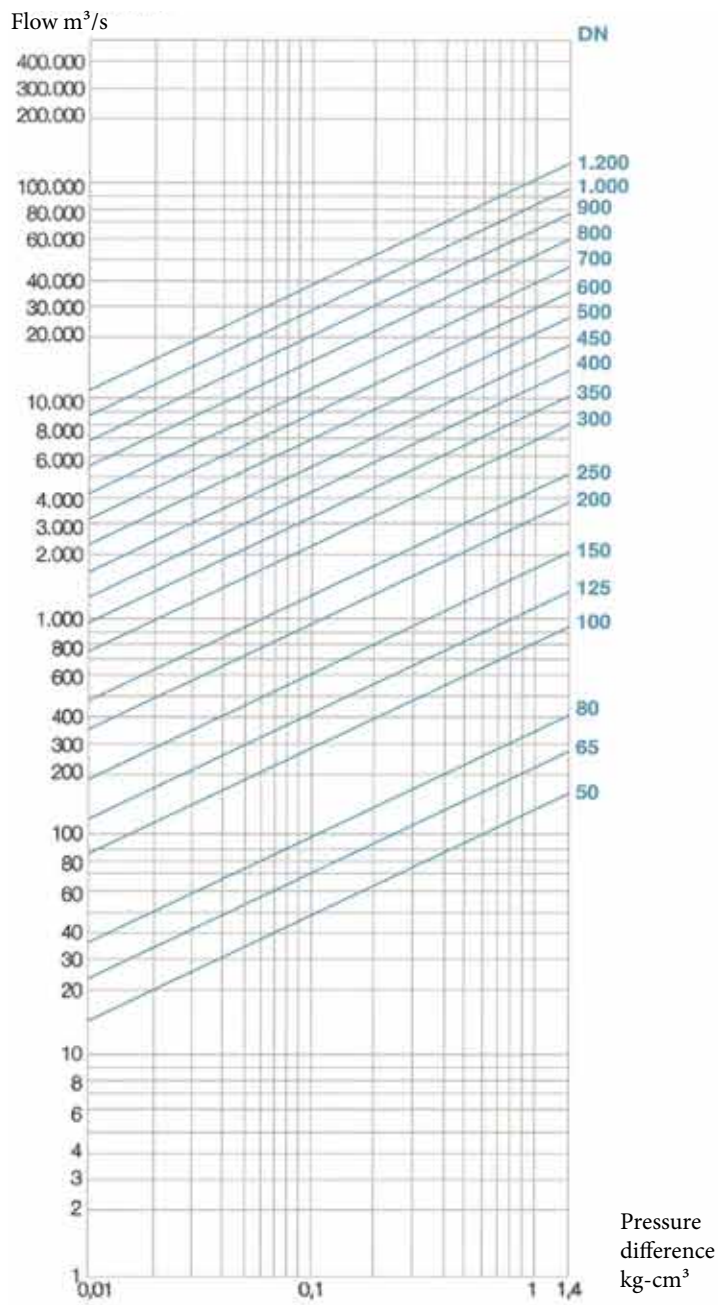
The RBR-HC and RBR-PAL Knife gate valves with pneumatic and hydraulic drives meet the requirements of the ATEX-Directive 94/9/EG on the equipment and protective systems intended for use in potentially explosive atmospheres, in accordance with group II, Category 3, Zone 2 and 22.

Group 1			Group 2		
DN	MWP	CAT	DN	MWP	CAT
50	10	I	100	10	I
65	10	I	125	8	I
80	10	I	150	8	I
			200	8	I
			250	6	I
			300	6	I
			350	5	I
			400	5	I
			500	4	I
			600	3	I
MWP= Maximum working pressure					

Head loss

Kv is the metric flow value for a valve off water in cubic meter an hour through a valve with a differential pressure of 1 bar with a temperature between 5° and 40° Celsius. In the Angelsaksen system is the Cv-value of the flow value in US Gallons water a minute with an differential pressure of 1 psi by an temperature off 60° F. The formula between Kv and Cv: $Kv = 0.865 Cv$.

DN	Kv	Cv
50	167	160
65	290	275
80	380	365
100	650	620
125	1165	1115
150	1520	1450
200	2835	2710
250	4485	4285
300	5675	5420
350	7130	6810
400	9220	8805
450	11465	10950
500	14940	14270
600	21875	20895



$$Kv = Q \sqrt{\frac{SG}{\Delta P}}$$

$$\Delta P = \left(\frac{Q}{Kv} \right)^2 P$$

The following formula applies to liquids without evaporation.

Where:

- Q = flow in m3/hour.
 SG = specific gravity of the liquid in kg/dm3 at operating temperature (water=1.0 at 15°C).
 ΔP = pressure difference in kg/cm2.

Correction factors to be applied to calculate Kv-value for viscous liquids

- | | | | |
|-----|-----------------|------|-----------------|
| 2° | E = Factor 1.06 | 30° | E = Factor 1.38 |
| 5° | E = Factor 1.18 | 50° | E = Factor 1.47 |
| 10° | E = Factor 1.28 | 100° | E = Factor 1.60 |
| 15° | E = Factor 1.32 | 150° | E = Factor 1.68 |

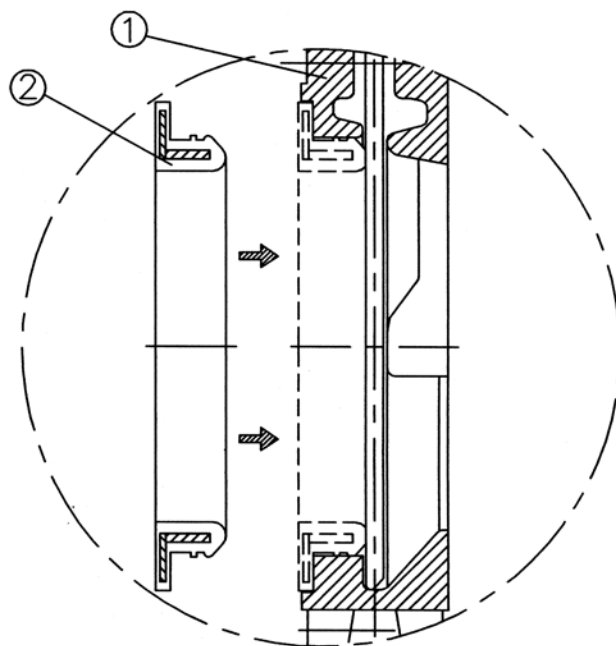
Maintenance instructions

List of parts

1. Body
2. Body seat ring

Replacement of body seat ring

1. Remove old seat ring (2) with a screwdriver
2. Clean the body and seat groove
3. Assemble new seat ring. If needed press with a plastic hammer.



List of parts

1. Nut
2. Washer
3. Bolt
4. Gland
5. Packing
6. Packing
7. Packing

Replacement of packing

1. Remove bolts, nuts and washers (1, 2 and 3)
2. Slide the gland (4) upward
3. Remove the packings (5, 6 and 7)
4. Place new packing (7)
5. Press it with the gland (4)
6. Place new packing (6)
7. Place new packing (5)
8. Slide gland (4) in additional position
9. Place the bolts, nuts and washers (1, 2 and 3) and tighten these

