



KNIFE GATE  
VALVES. RBR

**PAL**



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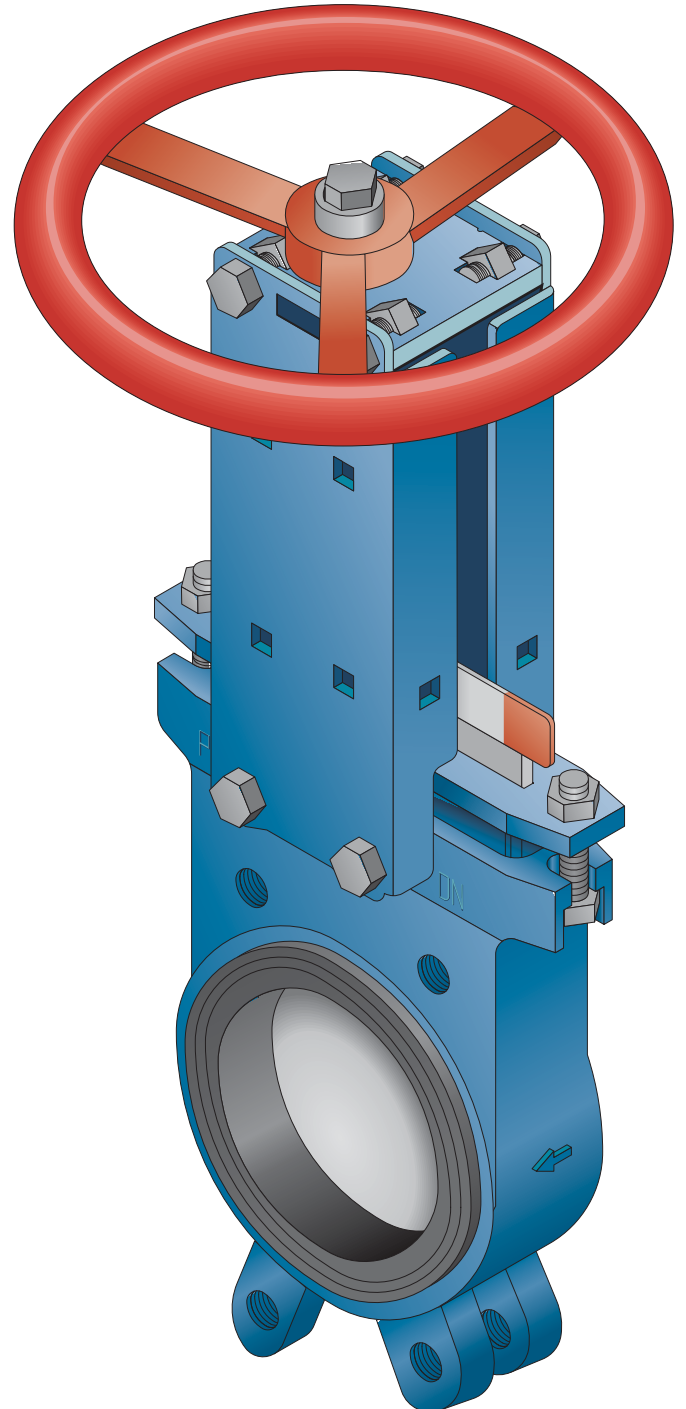
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# 1. General features

The RBR-PAL model is a wafer-style valve. It is generally used for fluids, although it is also suitable for use in piping carrying liquids that contain suspended solids.

Some of the main areas of application are:

- Paper/cellulose industry (pulp, mechanical pulp, etc.).
- Environment (waste water, mud, ash, ventilation circuits, etc.).
- Chemical industry (viscous pulps, powder, granules, etc.).
- Food industry (washing facilities, silos, etc.).
- Metal/glass/cement/mining industries (silos, abrasive products, etc.).

## 1.1. Installation and service instructions

### 1.1.1. Handling

Do not pick up the valve by the protection or operation drive or actuator. They have not been designed to deal with weight and can easily be damaged.

Do not pick up the valve by the opening. This can damage the seat's surface and the seals or seats.

Use lifting eye bolts screwed into the threaded bore holes on the body of the valve. You are also advised to use slings to lift the valve during installation. These slings must be placed on the upper part of the body of the valve.

### 1.1.2. Flow direction and position

The standard valve is unidirectional, they may also be manufactured to be bidirectional. In any case, the direction of the fluid is shown on the body.

The unidirectional valve must be installed so that the highest pressure is exerted on the seat. It is important to remember that the flow direction is not necessarily the same as the pressure direction.

The valve must preferably be set up in a vertical position in a horizontal pipe, providing this is possible in the given facilities. Avoid installing the valve with the operation drive at the bottom. However, the valve can be assembled in any position around the pipe (please check with our technical department first).

### 1.1.3. Assembly

During the assembly process, it is important to avoid resting the weight of the pipe and any mechanical stress directly onto the valve.

#### Preparation

Before fixing the valve to the pipe, check to make sure that it has not suffered any damage during transport or storage. Also make sure that the interior of the body is clean, particularly in the seat area.

Check that flanges and flange seals are the most suitable in each case, paying special attention to keeping the correct distance between flanges, and ensuring they are aligned and parallel with the pipe.

Incorrect positioning can cause deformations on the body of the valve, making it difficult to work properly or even preventing their functionality.

#### Fixing to the pipe

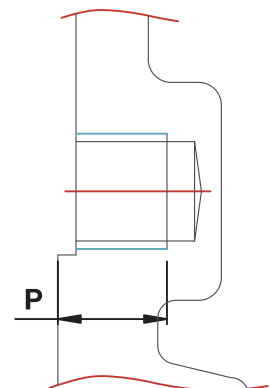
Make sure the parts attached to the valve (flanges, seals, pipe...) are all clean and check the fluid flow direction.

We recommend you fix threaded rods and nuts, instead of screws, on the threaded blind holes fixing the body to the flange, to prevent their thread from deteriorating when tightened (in the event that the screws are too long). The connection will be made with the most suitable screws in diagonal and without over-tightening.

The table below shows the required tightening torques as well as the maximum distance to insert in the blind bore holes.

DN	50	65	80	100	125	150	200	250	300	350	400	500
<b>P</b>	8	8	9	9	9	10	10	12	12	21	21	22
<b>t</b>	6	6	6	6	7	7	7	11	11	15	15	19

DN Nominal Diameter / P Maximum insertion distance in mm. / t Tightening torque in Kg.m.



The manufacturer reserves the right to make changes without prior notification.



### 1.1.4. Warnings



#### Pneumatic

The valve is supplied with a standard double acting cylinder, with the option of supplying single acting cylinders on request. In both cases, the supply pressure may vary between 3.5 and 10 bar, with the cylinder size having been designed for a supply pressure of 6 bar.

You are advised to use dried, filtered and lubricated pilot air at 6 nominal bar (maximum 10 bar) to get the best out of both the valve and the cylinder, as regards operation and duration.

#### Electric

Motorisation by servomotor with a declutchable safety handwheel. The motor's opening and closing run limits, as well as the torque limiters, will be regulated on our premises and must not be manipulated thereafter.

The torque limiters' electrical connection is absolutely necessary to be able to offer all our guarantees.

Before any connection, verify the motor's supply voltage.

The instructions sheet and the connection diagram are inside the servomotor's connection box.

**NOTE: In all cases, the pneumatic or electric connection must be carried out after all assembly operations have been completed, and after ensuring that there is no risk involved.**

### 1.1.5. Before and during start-up

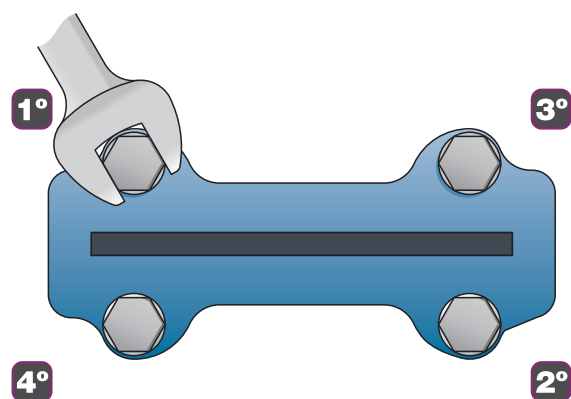
Before pressurising the pipe, you must progressively retighten the screws on the cable gland, in diagonal, as shown in the figure, being careful not to overtighten, as the packing seat may cause minor leakage during the valve transport/storage process.

If you overtighten the packing gland, the necessary force to activate the valve is increased, which makes it difficult to operate and reduces the useful life of the packing.

In any case, the following table shows the maximum tightening torque permitted for each DN.

DN	50-100	125-200	250-500
t	20	30	35

DN Nominal Diameter / t Tightening torque in Kg.m.

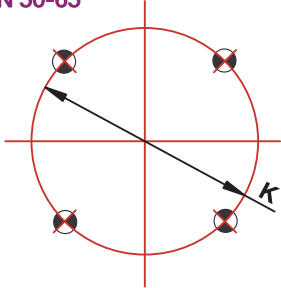


In the event of a leak in the packing gland during start-up, progressively tighten each of the screws in a diagonal and alternate way, as shown in the picture, and wait 30 minutes. Repeat if necessary until the leak has disappeared, at which point you should stop tightening.

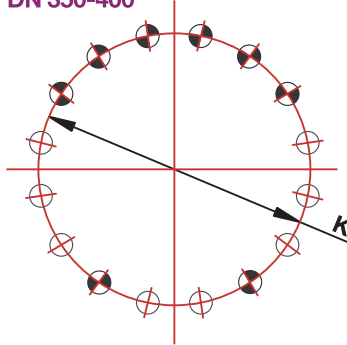
The manufacturer reserves the right to make changes without prior notification.

### 1.1.6. DIN PN10 flange dimensions

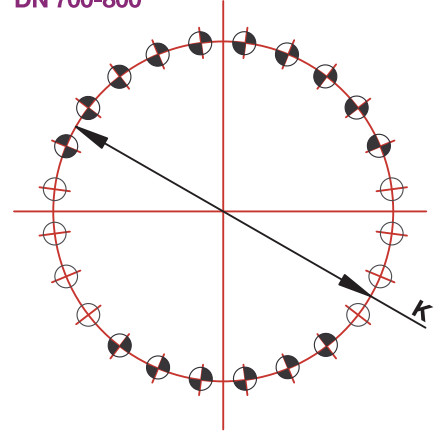
DN 50-65



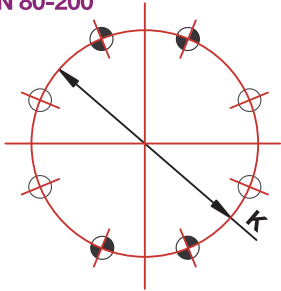
DN 350-400



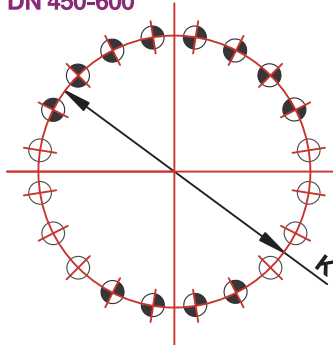
DN 700-800



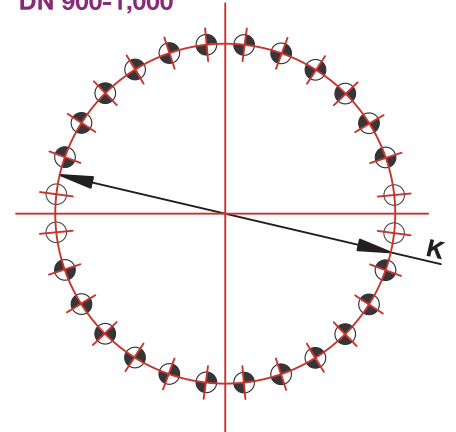
DN 80-200



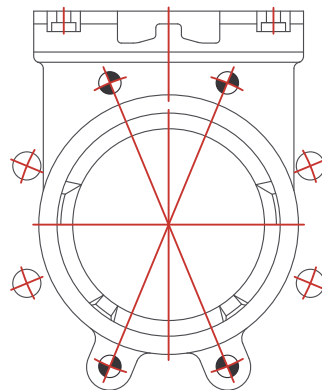
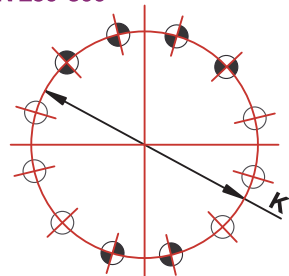
DN 450-600



DN 900-1,000



DN 250-300



**Z** No. of bore holes, flange PN10

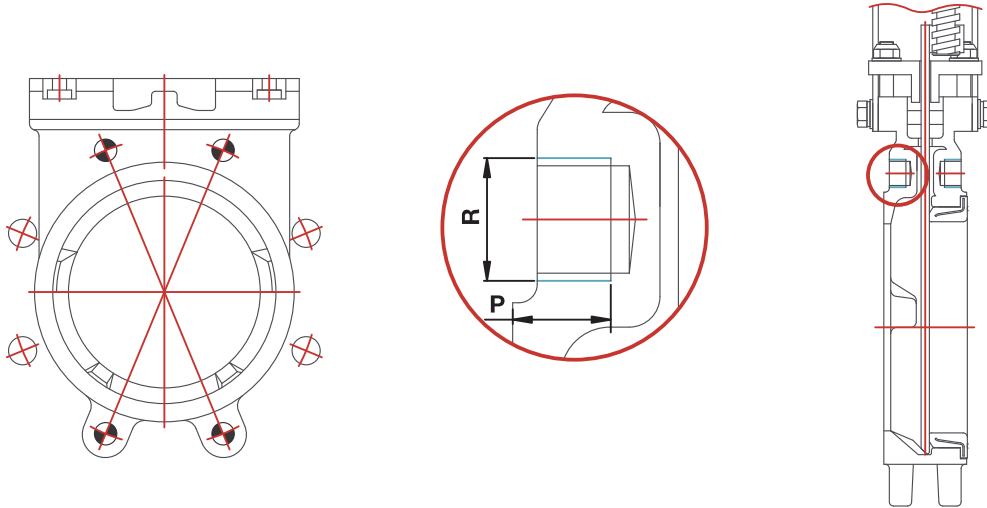
 Threaded blind bore holes

 Through bolts

**K** Diameter

The manufacturer reserves the right to make changes without prior notification.

### 1.1.6. DIN PN10 flange dimensions

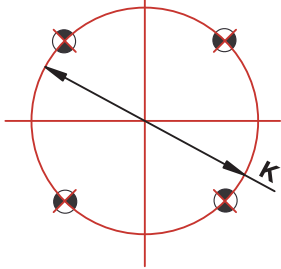


DN	K	Z	⊕	○	T	D
50	125	4	4	-	M-16	8
65	145	4	4	-	M-16	8
80	160	8	4	4	M-16	9
100	180	8	4	4	M-16	9
125	210	8	4	4	M-16	9
150	240	8	4	4	M-20	10
200	295	8	4	4	M-20	10
250	350	12	6	6	M-20	12
300	400	12	6	6	M-20	12
350	460	16	8	8	M-20	21
400	515	16	8	8	M-24	21
500	620	20	12	8	M-24	22

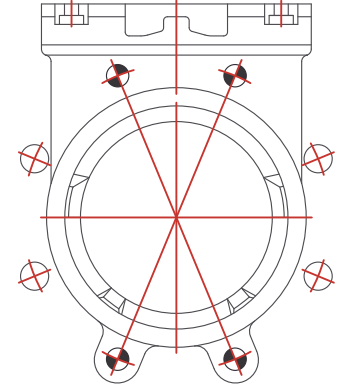
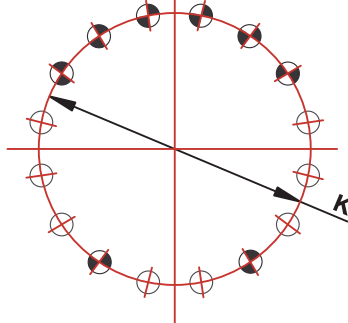
DN Nominal Diameter / K Diameter / Z No. of bore holes /  
 ⊕ Threaded blind bore holes / ○ Through bolts / T Thread /  
 D Depth

### 1.1.7. ANSI 150lbs flange dimensions

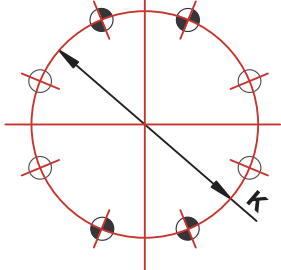
DN 50-65-80



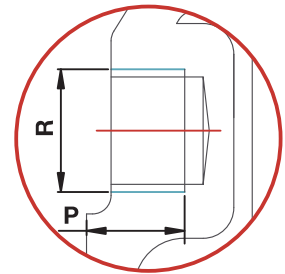
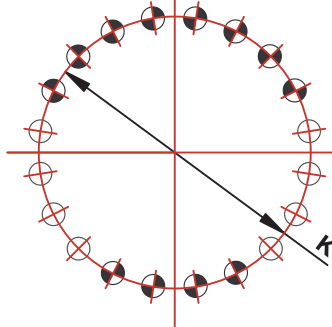
DN 400-450



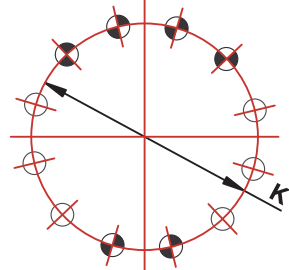
DN 100-200



DN 500-600



DN 250-350



DN	K	Z	⊕	○	T	D
50	120.6	4	4	-	5/8"	8
65	139.7	4	4	-	5/8"	8
80	152.4	4	4	-	5/8"	9
100	190.5	8	4	4	5/8"	9
125	215.9	8	4	4	3/4"	9
150	241.3	8	4	4	3/4"	10
200	298.4	8	4	4	3/4"	10
250	361.9	12	6	6	7/8"	12
300	431.8	12	6	6	7/8"	12
350	476.2	12	6	6	1"	21
400	539.7	16	8	8	1"	21
500	635	20	12	8	1 1/8"	22

**Z** No. of bore holes, flange ANSI 150lbs

⊕ Threaded blind bore holes

○ Through bolts

**K** Diameter

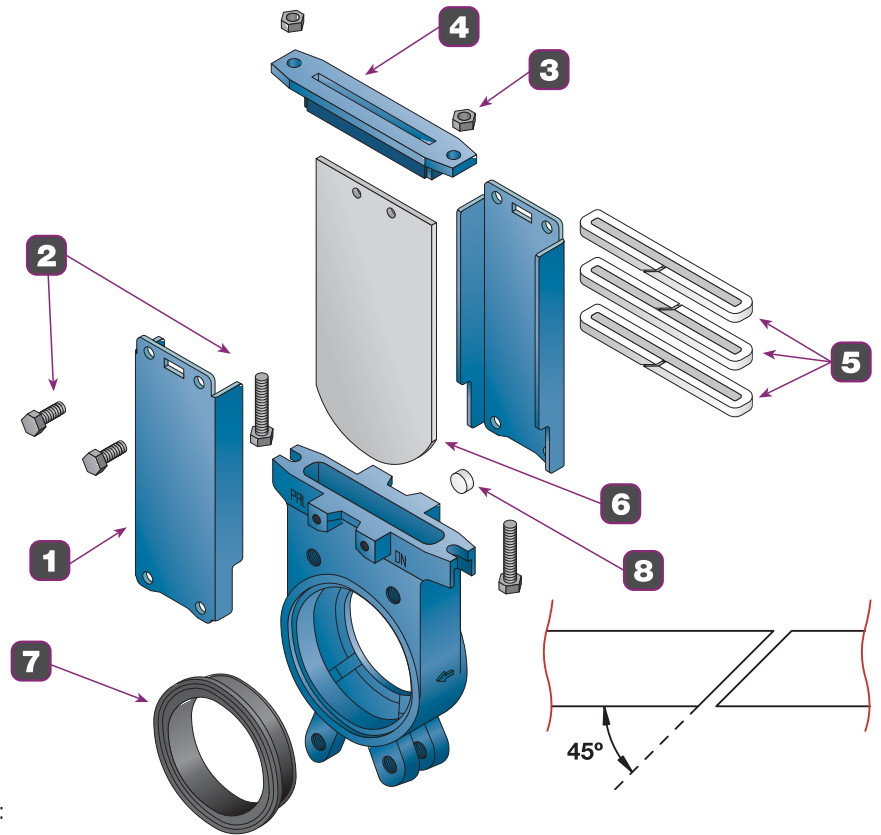
**DN** Nominal Diameter / **K** Diameter / **Z** No. of bore holes /  
 ⊕ Threaded blind bore holes / ○ Through bolts / **T** Thread /  
**D** Depth

The manufacturer reserves the right to make changes without prior notification.

## 1.2. Maintenance

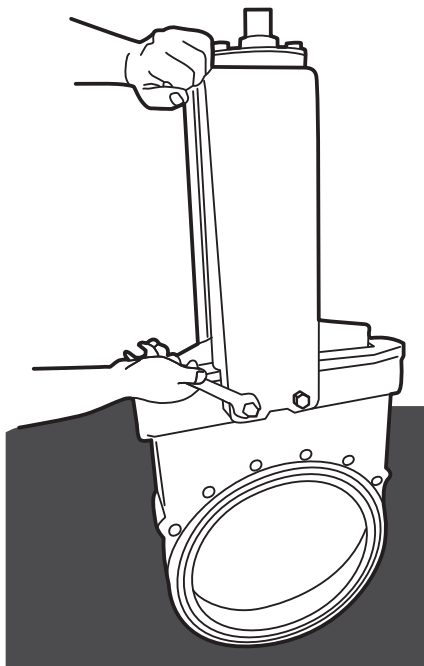
### 1.2.1. Changing the packing

- 1** Support case
- 2** Screws
- 3** Nuts and Bearings
- 4** Packing gland
- 5** Packing
- 6** Gate
- 7** Seat
- 8** Guide

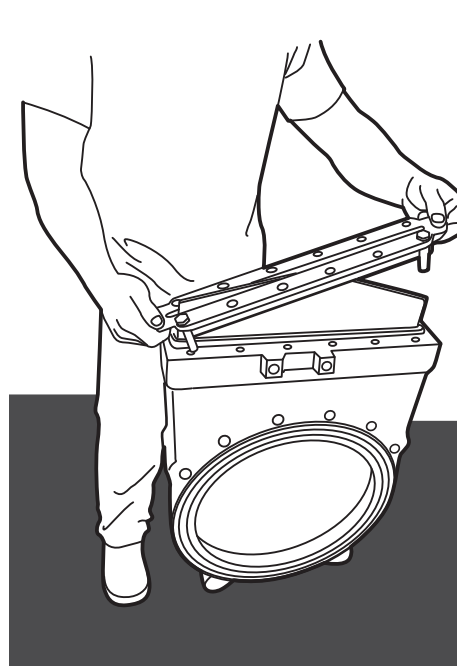


To change the packing, please follow the steps below:

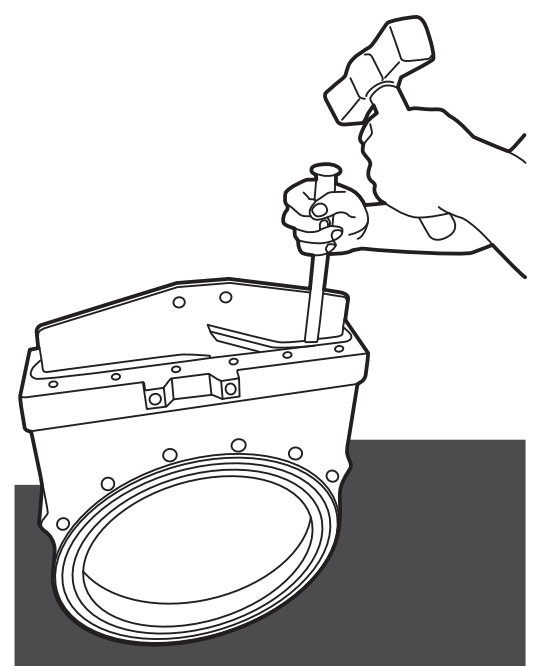
**A**  
Dismantle and remove the support case set (1) releasing the screws (2) that fasten it to the body and releasing the screws that keep the gate (6) fastened to the shaft.



**B**  
Lift the packing gland (4) and remove the packing (5) to be replaced.



**C**  
Insert the new packing and adjust. Put back the packing gland (4) and insert the screws (2), nuts and bearings (3).



The manufacturer reserves the right to make changes without prior notification.



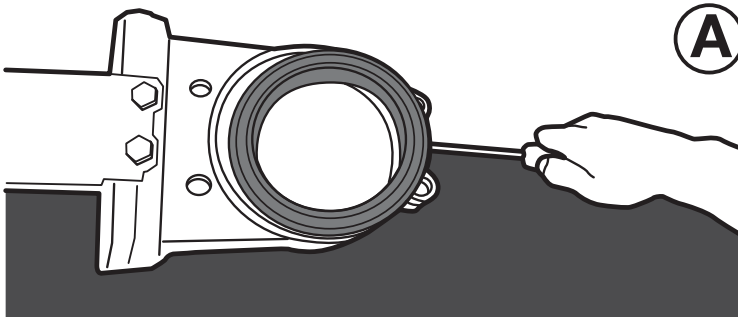
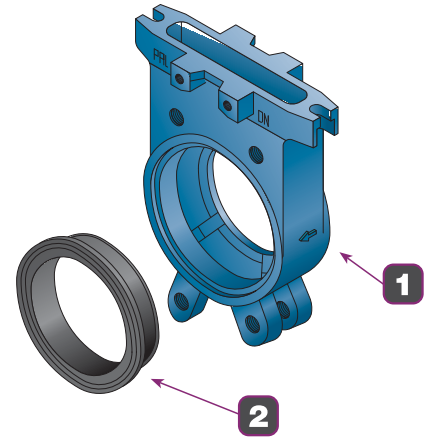
## 1.2. Maintenance

### 1.2.2. Changing the seat

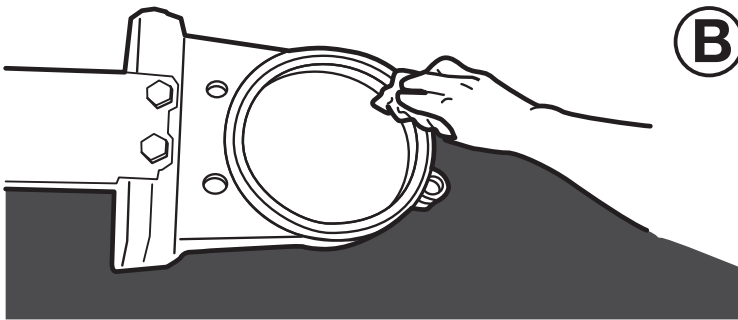
**1** Body

**2** Seat

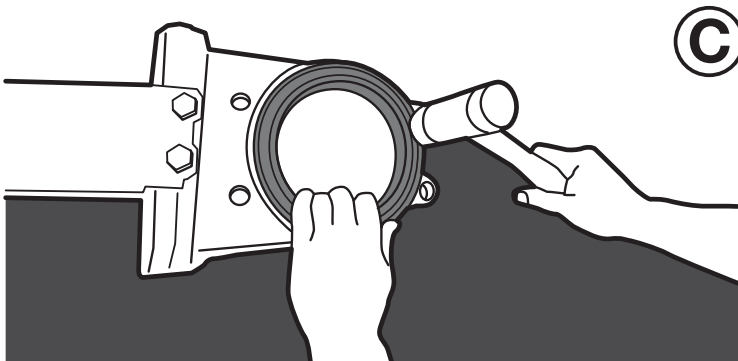
To change the gasket, please follow the steps below:



**A** Dismantle the seat with a screwdriver.



**B** Clean the base of the body where the new seat will be placed.

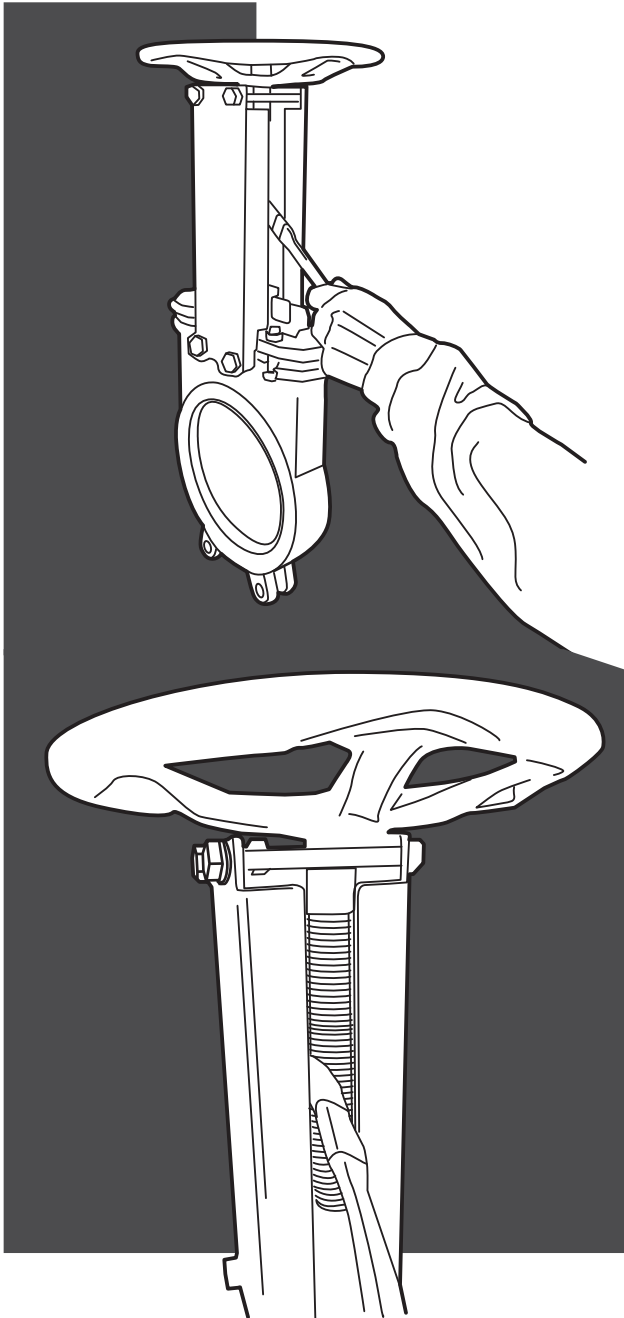


**C** Assemble the new seat, pressing down with a plastic hammer.

The manufacturer reserves the right to make changes without prior notification.

**1.2. Maintenance**  
**1.2.3. Lubrication**

In manual drive valves, you should grease the stem at least once a year.





## 1.3. EC Directives.

### 1. Machines Directive: DIR 98/37/EC

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

The RBR-PAL knife gate valves for Group 1 fluids (dangerous) and Group 2 fluids (not dangerous) in accordance with the tables below meet the requirements of EUROPEAN DIRECTIVE 97/23/EC regarding pressure equipment according to Module A.

#### GROUP 1

DN	PN	CAT
50	10	I
65	10	I
80	10	I

#### GROUP 2

DN	MWP	CAT
100	10	I
125	8	I
150	8	I
200	8	I
250	6	I
300	6	I
350	5	I
400	5	I
500	4	I

**DN** Nominal Diameter in mm.

**MWP** Maximum working pressure in bar.

**CAT** Category

### 3. Directive concerning Equipment and Protective Systems intended for Use in Potentially Explosive Atmospheres (ATEX): DIR 94/9/EC

The RBR-PAL knife gate valves with pneumatic and hydraulic drives meet the requirements of the ATEX Directive 94/9/EC on the equipment and protective systems intended for use in potentially explosive atmospheres, in accordance with GROUP II, CATEGORY 3, ZONES 2 and 22.

## 2. Technical features

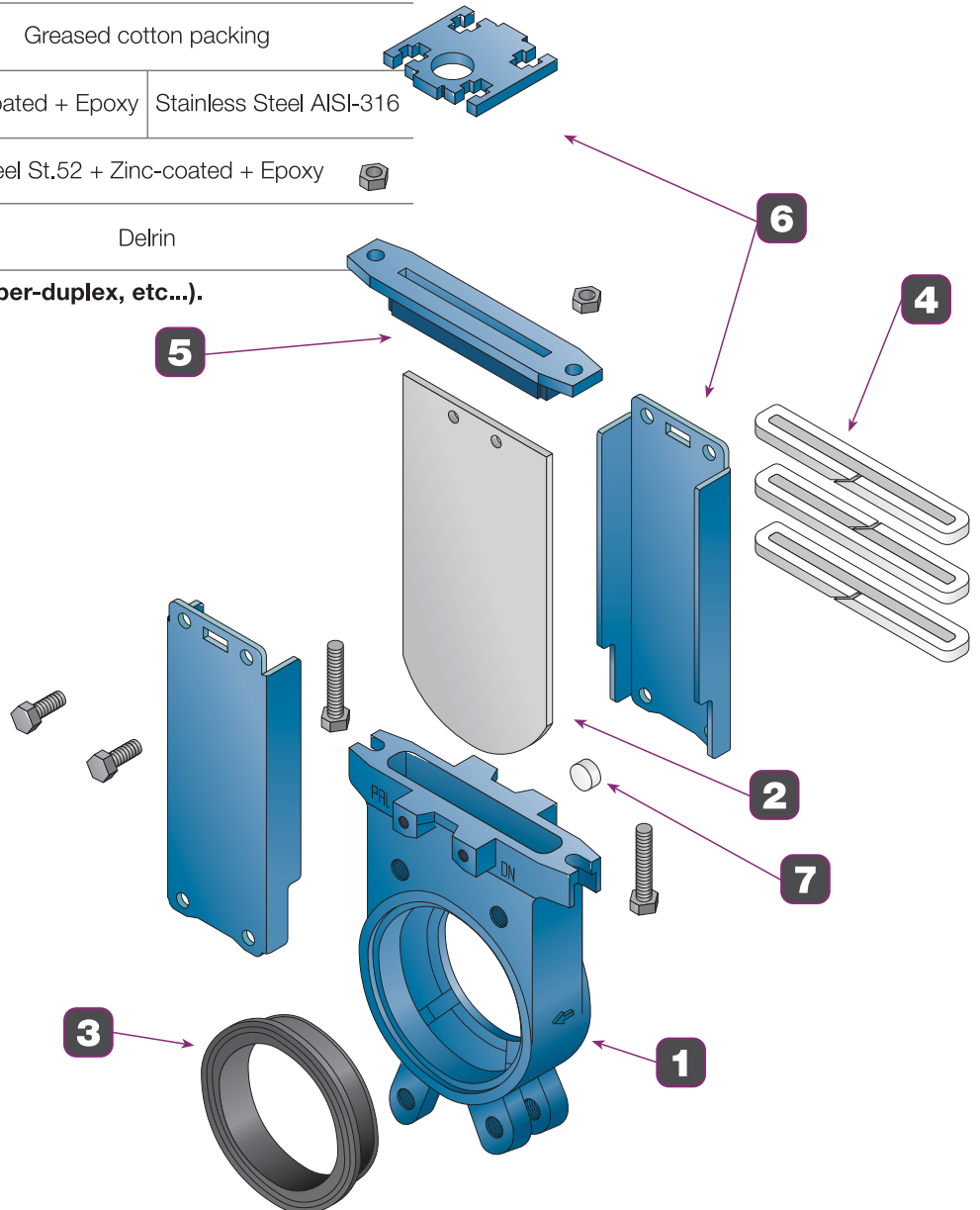
### 2.1. Construction and Terminology

#### 2.1.1. Description and Materials

The PAL-type knife gate valve is a one-way valve with a wafer-style design.

DESCRIPTION	EN-GJL-250	CF8M
<b>1</b> Body	Cast iron EN-GJL-250 + Epoxy	CF8M Stainless Steel
<b>2</b> Gate	Acero Inox. AISI-304	Stainless Steel AISI-316
<b>3</b> Seat	Metal, Butyl, NBR, EPDM, PTFE, etc	
<b>4</b> Packing	Greased cotton packing	
<b>5</b> Packing gland	Steel St.52 + Zinc-coated + Epoxy	Stainless Steel AISI-316
<b>6</b> Support case	Steel St.52 + Zinc-coated + Epoxy	
<b>7</b> Guide	Delrin	

\* Other materials on request. (904L, Super-duplex, etc...).



The manufacturer reserves the right to make changes without prior notification.



### 1 Body

The body is made of cast iron EN-GJL-250 (painted with epoxy protection in RAL 5015) or in CF8M.

It comes with the sides highlighted to be placed between flanges. It has inner guides to ensure closure between the gate and the sealing gasket.

It can be supplied in other materials on request.

### 2 Gate

The standard manufacturing materials are stainless steel AISI304 in valves with the body in cast iron (EN-GJL-250) and stainless steel AISI316 in valves with the body in CF8M. For other materials or combinations, please check.

The gate is polished on both sides to provide a smooth, even contact surface with the sealing gasket.

There are different degrees of polishing available, as well as a range of anti-abrasion treatments and modifications to adapt to the specific requirements of special facilities.

### 3 Seat

This part ensures the valve is 100% sealed.

The standard seal is made using a metal ring that is vulcanised with different types of elastomers, depending on its application.

#### BUTYL

This is the standard seat. It can be used in a wide range of applications.

#### NBR

Suitable for fluids containing grease or oil at temperatures no higher than 100°C.

#### EPDM

Generally used for water and water-diluted products at temperatures no higher than 100°C. It can also be used with abrasive products.

#### VITON

Suitable for corrosive applications and for high temperatures up to 190°C continually and for peaks up to 220°C.

#### SILICONE

Mainly used in the food industry and for pharmaceutical products with temperatures no higher than 250°C.

#### PTFE

It is not constructed with the inner metal ring. Suitable for corrosive applications and also for the food industry.

#### OTHER

The seat can be supplied in different types of elastomers on request.

#### COMPARISON TABLE OF RUBBER TEMPERATURES:

Elastomers	Min. temp.	Max. temp.
<b>Butyl</b>	-15	130
<b>NBR</b>	-20	100
<b>EPDM</b>	-25	100
<b>Viton</b>	-5	220
<b>Silicone</b>	-40	250

T. Temperatures en °C.

### 4 Packing

Braided packing with cotton threads, the mass of which has been impregnated with treated grease to prevent a loss of properties.

- pH range: 6-8
- Temperature range in °C: -20 +120

### 5 Packing gland

The valve with the body in cast iron (EN-GJL-250) is supplied with a packing gland in highly resistant machine-welded carbon steel.

For the valve with the body in CF8M, the packing gland is supplied in machine-welded stainless steel.

### 6 Support case

Is made of carbon steel with a zinc plated treatment and painted finished Epoxy of 85 microns in Ral 5015.

The support case can also be supplied entirely manufactured in stainless steel on request.

### 7 Inner guide

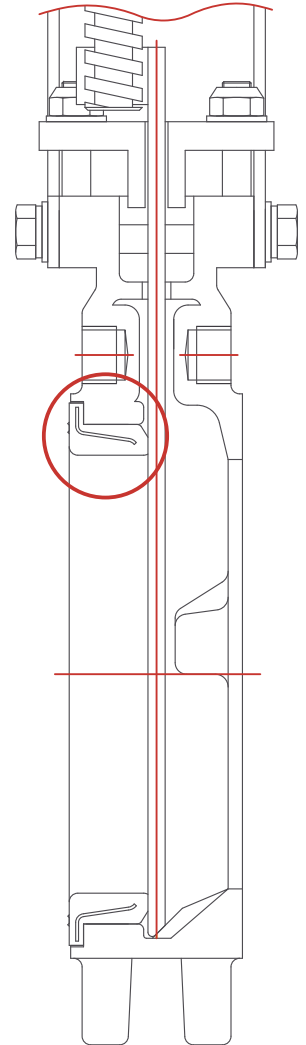
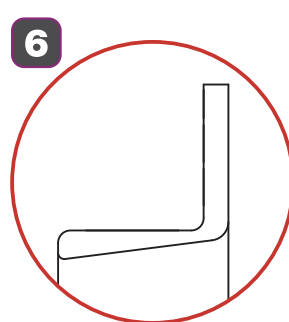
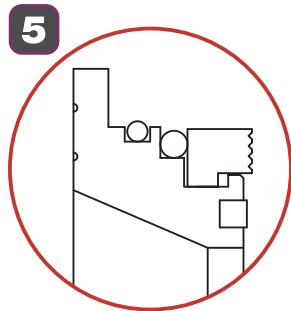
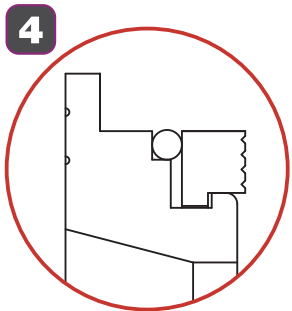
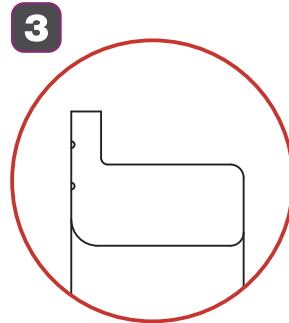
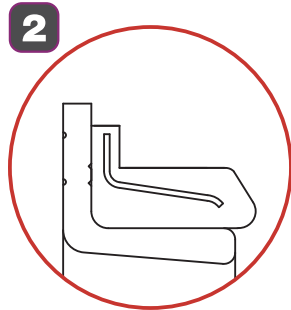
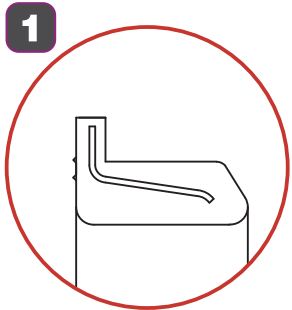
The gate slides inside by means of Delrin guides that protect the gate and help to keep it sealed, as it provides a greater contact

between the gate and the seat.

The manufacturer reserves the right to make changes without prior notification.

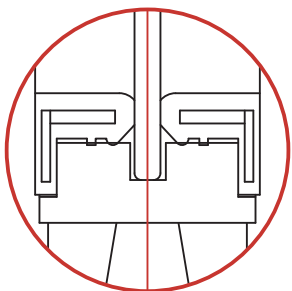
## 2.1.2. Types of closure

- 1** Seat
- 2** Seat + Scraper Deflector / Ref. 3310
- 3** M/M Metal-Metal Deflector / Ref. 3313
- 4** PTFE Deflector / Ref. 3317
- 5** S.L.R. Deflector / Ref. 3316
- 6** Cone Deflector. Opposite rubber side



### Important

Valve can be bidirectional with any type of seat.



Sample of bidirectional tightness with two seats.

## 2.1.3. Options and accessories

### Flushing holes

### Locking devices

They lock the valve to prevent it from being unduly operated.

### Manual emergency drives (handwheel, lever)

They enable the pneumatic valves to be manually handled in the event of failure or loss of pressure in the air system.

### Columns and extensions

They make it easier to operate the valve in situations with complicated access.

### Mechanical travel stops

Allow mechanical regulation of pneumatic cylinder.

### Travel stop supports

They enable different types of detectors and positioners to be put into place.

### Mechanical limit switches, inductive sensors and positioners

To indicate the precise or continual position of the valve.

### Pneumatic distributors or electro-distributors

To distribute air to the pneumatic drives.

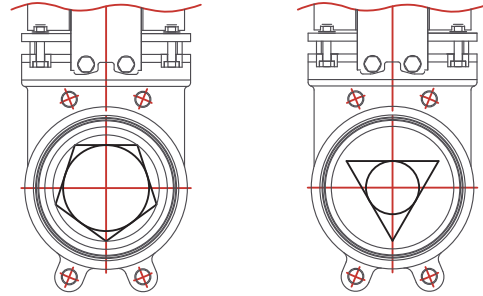
### Mirror-polished gate

Particularly recommended for the food industry and, in general, for applications where the solids need to slide off and not get stuck to the gate.

### Hard chrome gate

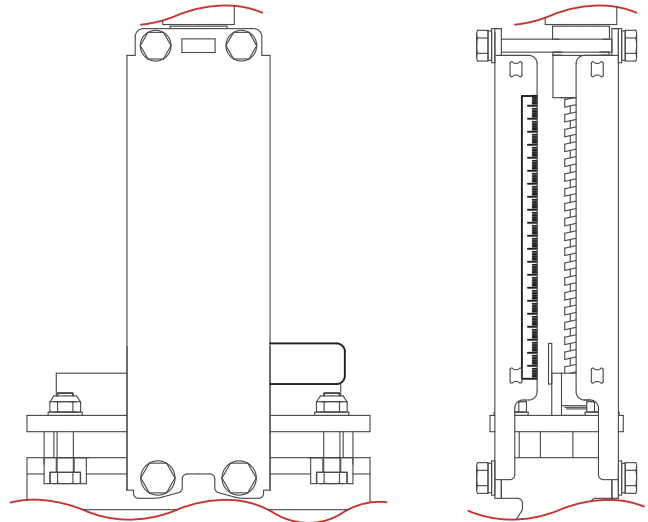
Provides increased hardness and greater resistance to abrasion.

### Flow controllers



**Pentagonal Diaphragm**

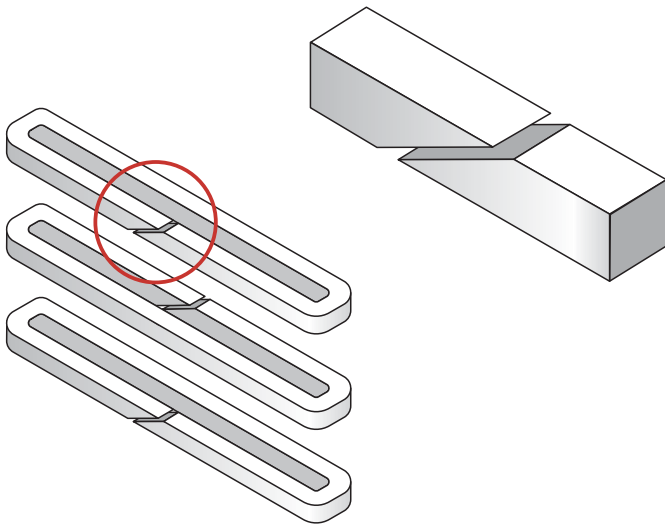
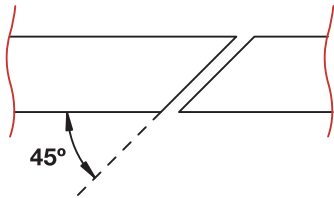
**Triangular Diaphragm**



**Graduated position indicator**

## 2.1.3. Options and accessories

### Packing types



#### STANDARD

##### **Greased cotton packing**

Braided packing with cotton threads, the mass of which has been impregnated with treated grease to prevent a loss of properties.

- pH range: 6-8
- Temperature range in °C: -20 +120

#### OPTIONS

##### **Graphite cotton packing**

Braided packing with interwoven system based on high quality acrylic threads that have been impregnated with high-performance grease and graphite.

- pH range: 4-10
- Temperature range in °C: -50 +250

##### **Teflon-coated cotton packing**

Braided packing with interwoven system based on high quality acrylic threads that have been impregnated with PTFE and a silicone-free running-in lubricant.

- pH range: 5-11
- Temperature range in °C: -100 +250

##### **Teflon-coated cotton packing (food sector)**

Braided packing with interwoven system based on expanded PTFE filaments that have been impregnated with PTFE diffusion, 100% Gore-Tex® fibre. This packing meets the standards for working in oxygen as well as in the food industry (FDA).

- pH range: 0-14
- Temperature range in °C: -100 +280

##### **Carbon packing for high temperatures**

Braided packing with interwoven system based on high quality carbon and finished with locking lubricants.

- pH range: 0-14
- Temperature range in °C: -100 +650

\*Others on request





### 2.1.4. Maximum working pressures

DN	50	65	80	100	125	150	200	250	300	350	400	500
MWP	10	10	10	10	10	10	10	10	6	5	5	4

**DN** Nominal diameter in mm./ **MWP** Maximum working pressure in bar.

### 2.1.5. Weight

The table below shows the weights of the HC valve with VA and NDE drives at their different diameters.

DN	VF	NDE
50	7	8
65	7.5	10
80	8	11
100	10	14
125	13	17.5
150	16	20
200	25	32
250	30	41
300	45	61
350	66	80
400	105	135
500	179	214

**DN** Nominal Diameter in mm.

**VF** Weight in kg. of the PAL valve with VF drive.

**NDE** Weight in kg. of the PAL valve with NDE drive.



### 2.1.6. Pressure drops

DN	Kv	Cv
50	167	160
65	290	275
80	380	365
100	650	620
125	1,165	1,115
150	1,520	1,450
200	2,835	2,710
250	4,485	4,285
300	5,675	5,420
350	7,130	6,810
400	9,220	8,805
500	14,940	14,270

DN Nominal Diameter in mm.

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

**Kv** Flow coefficient. Flow of water in m<sup>3</sup>/h. passing through the valve and generating a pressure drop of 1 bar.

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

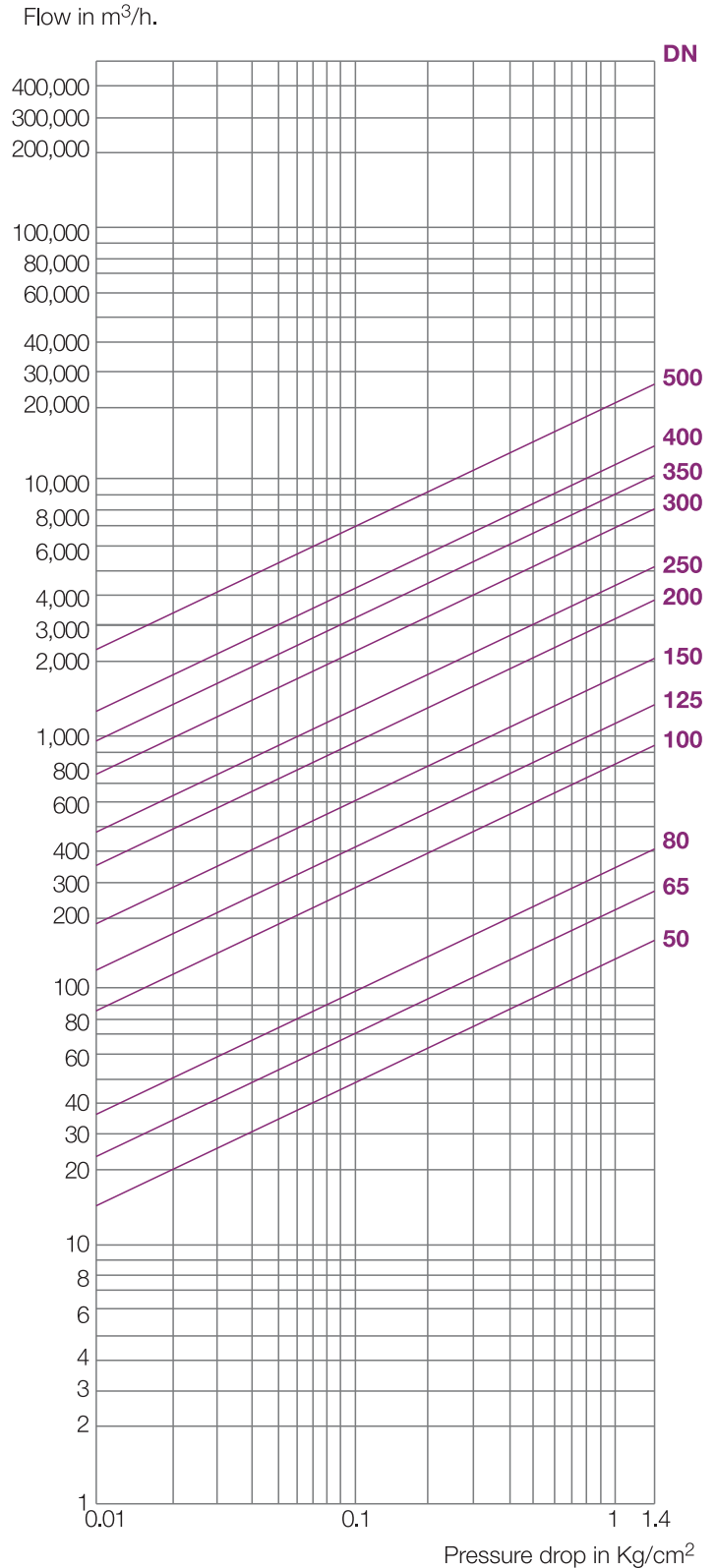
**Q** Flow in m<sup>3</sup>/h.  
**ΔP** Pressure drop in bar.  
**d** Relative density of the fluid (1 in the case of water at 4°C).

$$Cv = Q \sqrt{\frac{d}{\Delta P}}$$

**Cv** Gallons per minute that pass through the valve for the pressure drop to be 1 psi.

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

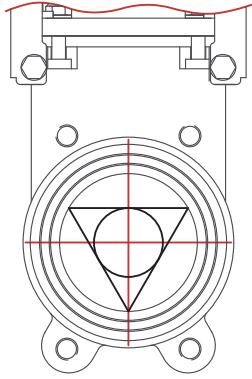
**Q** Flow in gallons/min.  
**ΔP** Pressure drop in psi.  
**d** Relative density of the fluid (1 in the case of water at 60°F).



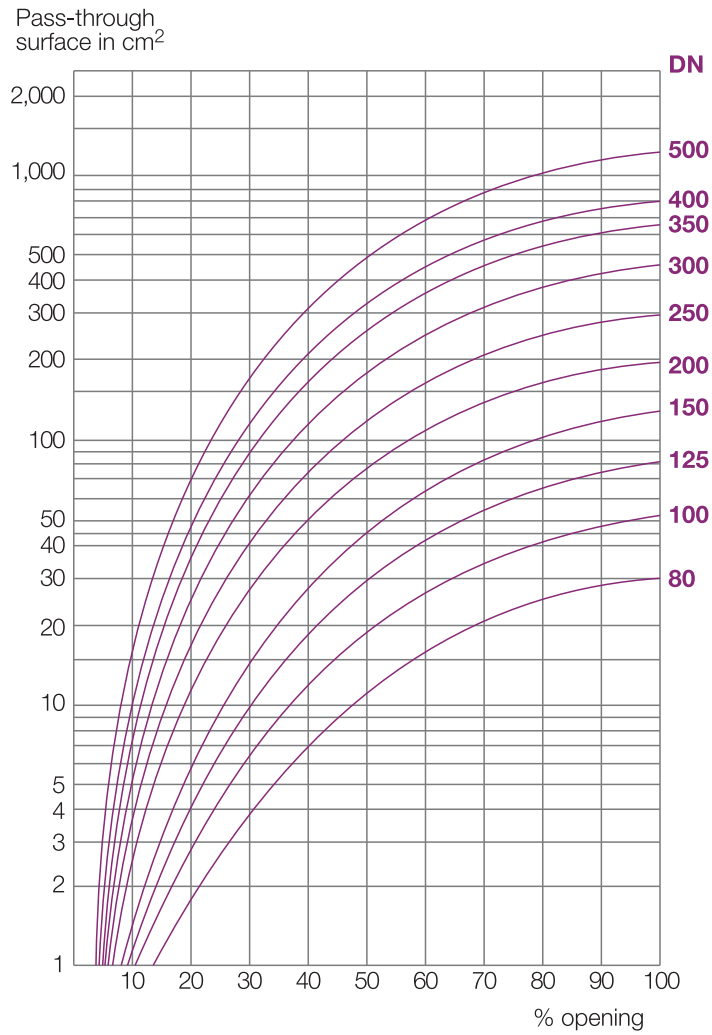
The manufacturer reserves the right to make changes without prior notification.

### 2.1.6. Pressure drops

For valves with a triangular diaphragm



Triangular Diaphragm



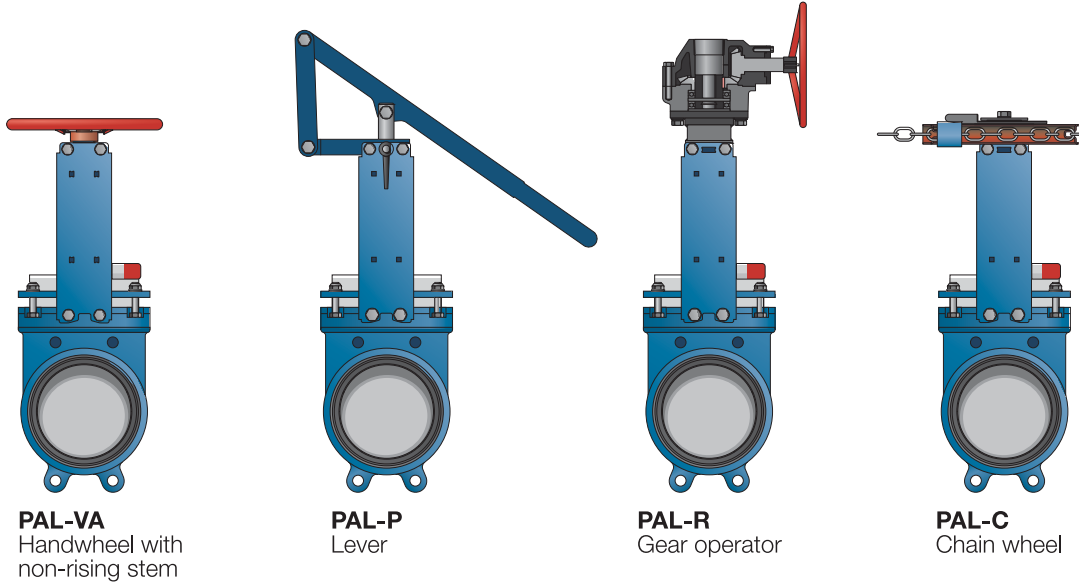
The manufacturer reserves the right to make changes without prior notification.

## 2.2. Drives

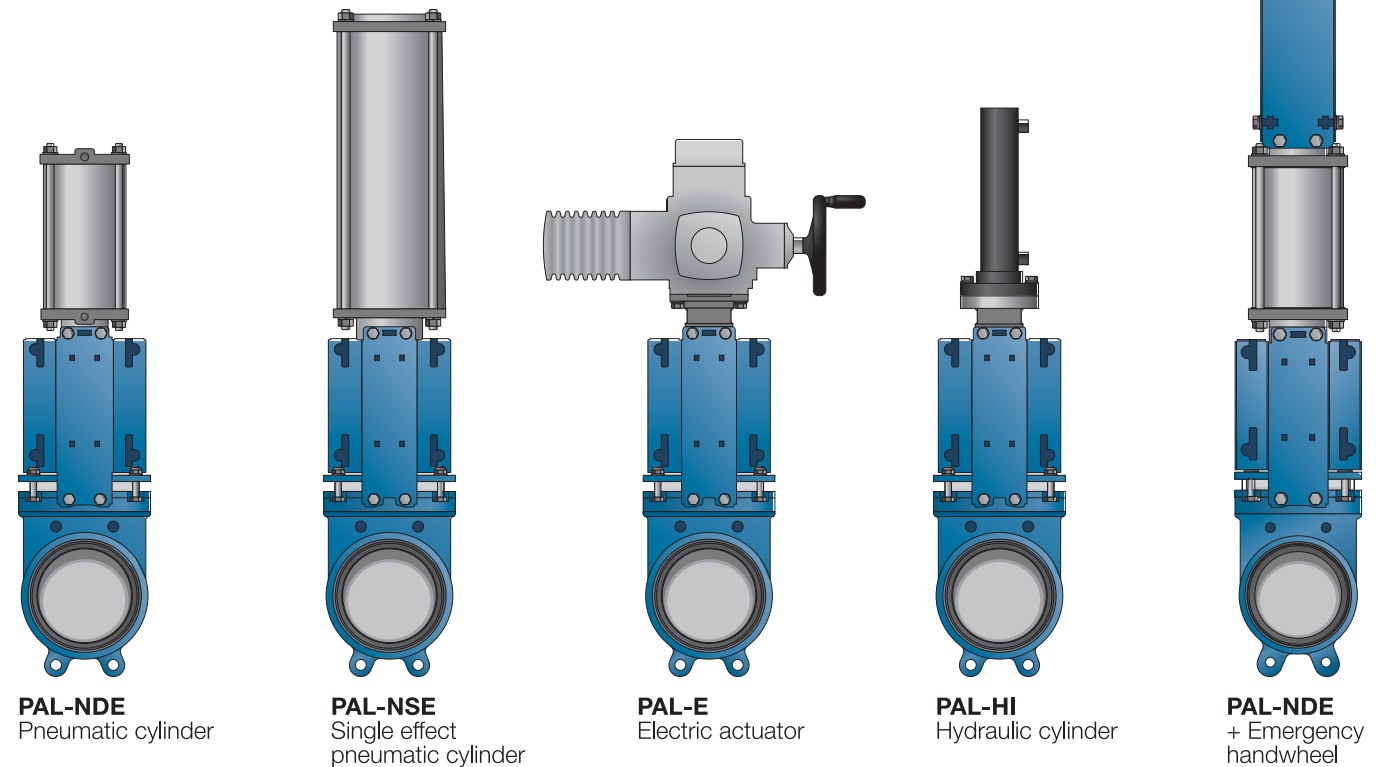
HERBE's RBR-PAL knife gate valves can be activated with different types of drives, both manual and automatic. A correct choice of the type of drive will enable a more efficient use of the valve.

Please check with our Technical Department to select the most appropriate drive for your needs.

### MANUAL



### AUTOMATIC

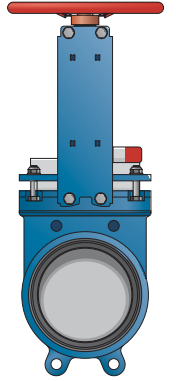
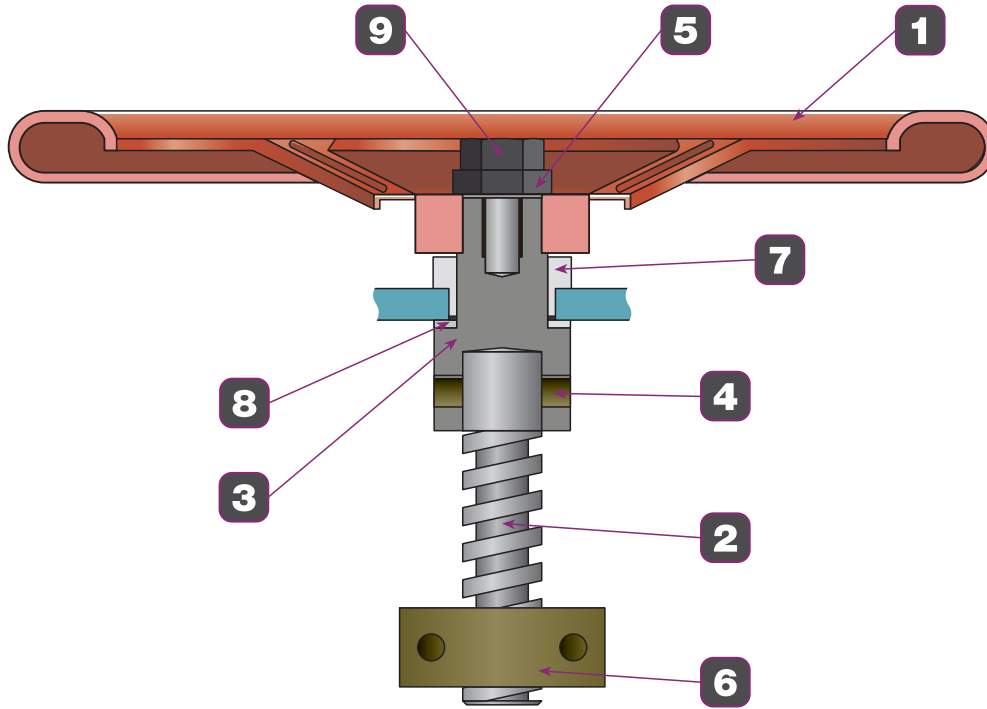


The manufacturer reserves the right to make changes without prior notification.

### 2.2.1. VF

#### VF. Handwheel with non-rising stem

Manufactured from DN 50 up to DN 500, for any other sizes, please check with our Technical Department.



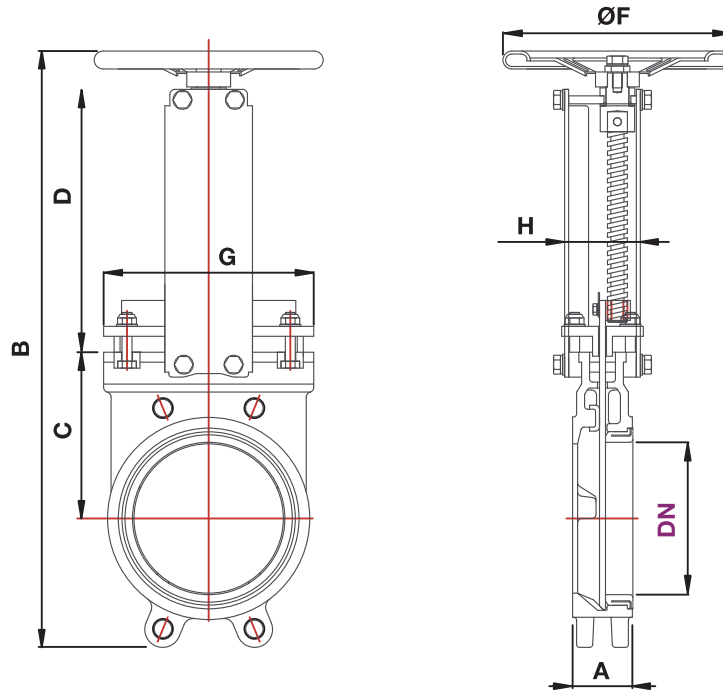
	DESCRIPTION	MATERIAL	U.(units)
<b>1</b>	Handwheel	Steel	1
<b>2</b>	Stem	AISI-303	1
<b>3</b>	Bushing	F-114	1
<b>4</b>	Spring pin	Steel	1
<b>5</b>	Bearing	Steel	1
<b>6</b>	Nut	Bass	1
<b>7</b>	Bearing	Delrin	1
<b>8</b>	Washer	Delrin	1
<b>9</b>	Screw	Steel	1

\* Other materials available on request.

The manufacturer reserves the right to make changes without prior notification.

### 2.2.1. VF

Measurements.



DN	A	B	C	D	E	ØF	G	H	WEIGHT	PN
50	40	412	113	174	65	200	131	76	7	10
65	40	426	113	183	65	200	155	76	7	10
80	50	469	117	197	65	200	168	76	8	10
100	50	519	132	219	65	200	189	76	10	10
125	50	543	151	236	38	250	182	76	13	10
150	60	599	167	264	38	250	211	76	16	10
200	60	736	196	322	60	300	262	96	25	10
250	70	857	228	374	60	300	316	96	30	10
300	70	1,000	274	430	65	300	375	108	45	6
350	96	1,063	308	470	65	400	423	108	66	5
400	100	1,236	362	556	65	500	476	146	105	5
500	110	1,551	473	666	66	500	590	156	179	4

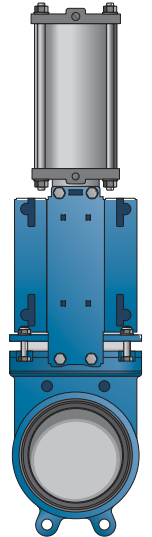
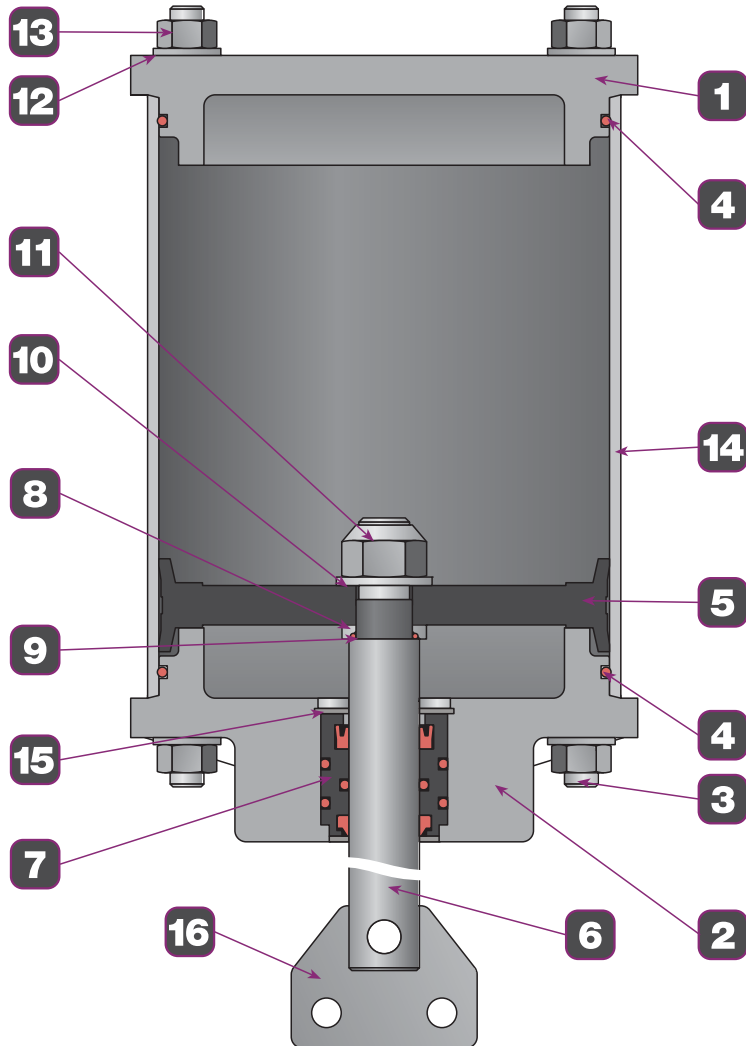
**Assembly between Flanges PN10 / DN** Nominal diameter / **ØF** Handwheel diameter / **Weight** in Kg.  
**PN** Nominal pressure in bar. / **Measurements** in mm.

The manufacturer reserves the right to make changes without prior notification.

### 2.2.2. NDE

#### NDE. Double acting pneumatic cylinder.

Manufactured from DN 50 up to DN 500, for any other sizes, please check with our Technical Department.



DESCRIPTION	MATERIAL	U.
<b>1</b> Top cover	Aluminium	1
<b>2</b> Bottom cover	Aluminium	1
<b>3</b> Tie-rods	Bichromate steel	4
<b>4</b> O-ring	NBR	2
<b>5</b> Piston	Steel + NBR	1
<b>6</b> Shaft	Chromate steel	1
<b>7</b> Bushing	Delrin	1
Collar	NBR	1
Inner ring	NBR	1
Outer ring	NBR	2
Scraper	Polyurethane	1

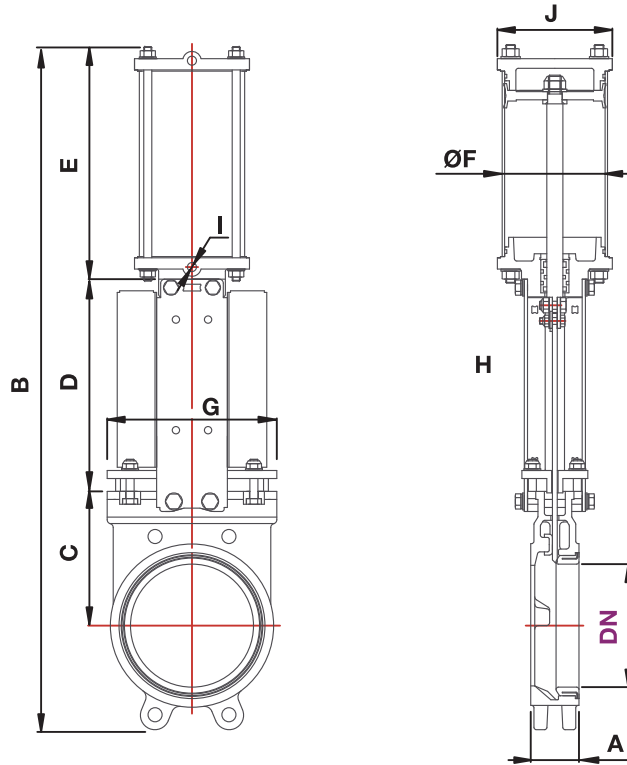
DESCRIPTION	MATERIAL	U.
<b>8</b> Bearing	Bichromate steel	1
<b>9</b> O-ring	NBR	1
<b>10</b> Bearing DIN125	Bichromate steel	1
<b>11</b> Self-locking nut DIN985	Bichromate steel	1
<b>12</b> Grower bearing DIN127	Bichromate steel	8
<b>13</b> Nut DIN934	Bichromate steel	8
<b>14</b> Jacket	Aluminium	1
<b>15</b> Safety ring	Bichromate steel	1
<b>16</b> Fixing sheet	Bichromate steel	2

\* Other materials available on request.

The manufacturer reserves the right to make changes without prior notification.

### 2.2.2. NDE

Measurements.



DN	A	B	C	D	E	ØF	G	H	I	J	STROKE	WEIGHT	PN
<b>50</b>	40	515	113	159	183	80	131	76	1/4"GAS	100	67	8	10
<b>65</b>	40	544	113	168	198	80	155	76	1/4"GAS	100	75	10	10
<b>80</b>	50	606	117	184	214	100	168	76	3/8"GAS	118	97	11	10
<b>100</b>	50	675	132	204	235	100	189	76	3/8"GAS	118	117	14	10
<b>125</b>	50	767	151	235	263	125	182	76	3/8"GAS	144	141	17	10
<b>150</b>	60	862	167	264	302	125	211	76	3/8"GAS	144	171	20	10
<b>200</b>	60	1,017	196	322	340	160	262	96	3/8"GAS	180	216	32	10
<b>250</b>	70	1,191	228	374	394	160	316	96	3/8"GAS	180	270	41	10
<b>300</b>	70	1,395	274	430	460	200	375	108	1/2"GAS	215	322	61	6
<b>350</b>	96	1,508	308	480	510	200	423	108	1/2"GAS	215	370	80	5
<b>400</b>	100	1,749	362	556	578	250	476	146	1/2"GAS	280	421	135	5
<b>500</b>	110	2,160	473	666	675	250	590	156	1/2"GAS	280	520	214	4

Assembly between Flanges PN10 / DN Nominal diameter / ØF Cylinder diameter / I Inlets / Weight in Kg.  
PN Nominal pressure in bar. / Measurements in mm.

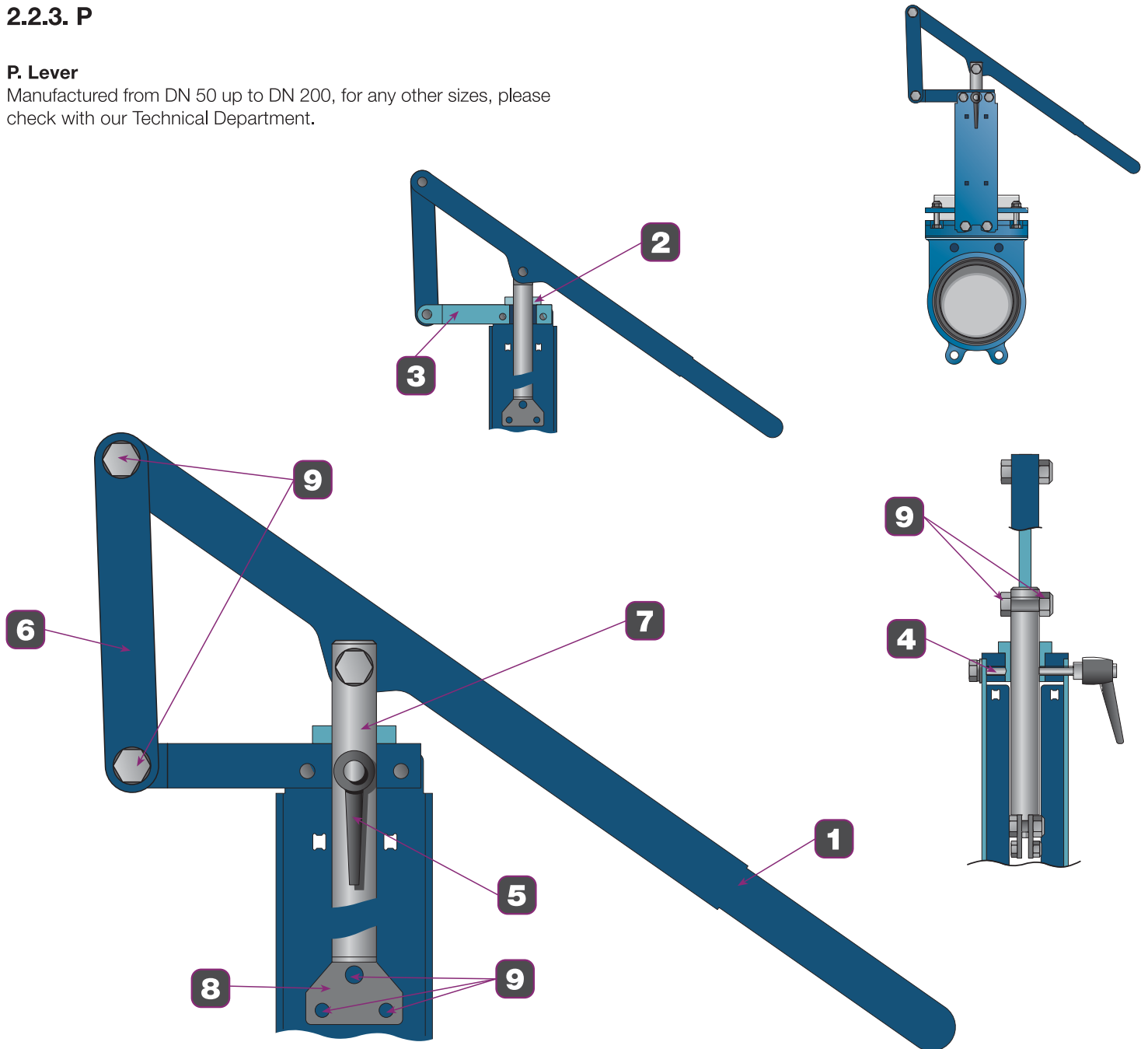
The manufacturer reserves the right to make changes without prior notification.



**2.2.3. P**

**P. Lever**

Manufactured from DN 50 up to DN 200, for any other sizes, please check with our Technical Department.



	DESCRIPTION	MATERIAL	U.
<b>1</b>	Lever	Steel	1
<b>2</b>	Bushing	Bronze	1
<b>3</b>	Support	Steel	1
<b>4</b>	Grub screw	Bichromate steel	1
<b>5</b>	Brake	Standard	1

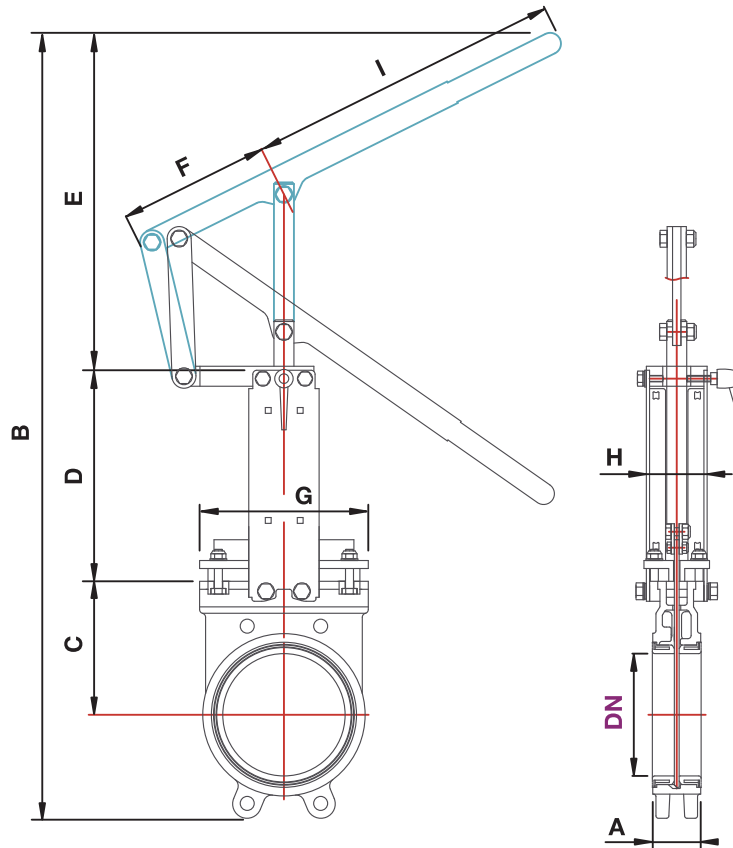
	DESCRIPTION	MATERIAL	U.
<b>6</b>	Lever	Steel	2
<b>7</b>	Shaft	Inox. 304	1
<b>8</b>	Fixing sheet	Bichromate steel	2
<b>9</b>	Set screws	Bichromate steel	1

\* Other materials available on request.

The manufacturer reserves the right to make changes without prior notification.

**2.2.3. P**

Measurements.



DN	A	B	C	D	E	F	G	H	I
50	40	508	113	159	176	190	131	76	300
65	40	519	113	168	172	190	155	76	300
80	50	586	117	184	194	190	168	76	300
100	50	703	132	204	263	190	189	76	396
125	50	844	151	235	339	190	182	76	396
150	60	983	167	264	423	190	211	76	396
200	60	1,332	196	322	655	268	262	96	630

**Assembly between Flanges PN10 / DN** Nominal diameter.  
**Measurements** in mm.

The manufacturer reserves the right to make changes without prior notification.



# Herbe

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