Aliaxis
UTILITIES & INDUSTRY

FIP

VM DN 15÷100
PVC-U

Diaphragm valve

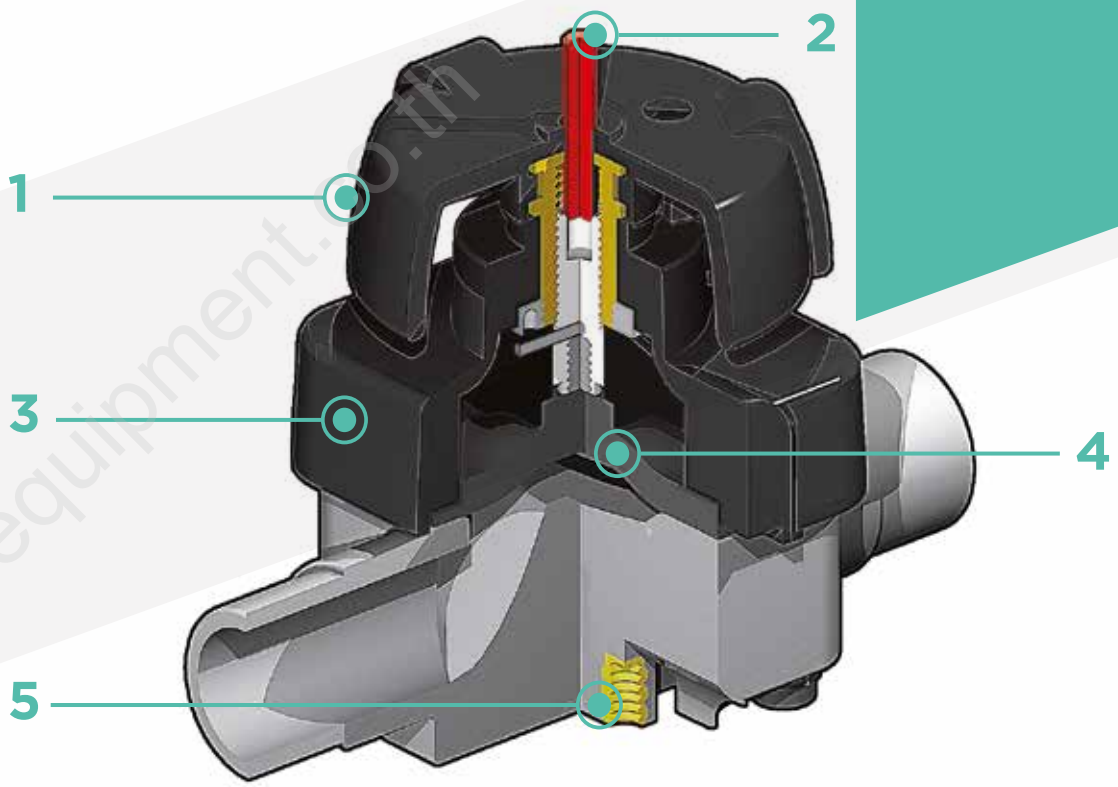
VM
DN 15÷100

The VM is particularly suitable for shutting off and regulating abrasive or dirty fluids. The handwheel control and diaphragm seal provide precise and effective control, while reducing the risk of water hammer to a minimum.

DIAPHRAGM VALVE

- Connection system for solvent weld, threaded and flanged joints
- Compact and lightweight construction
- High flow coefficient and minimum pressure drop
- **Internal components in metal totally isolated from the conveyed fluid**, with anti-friction disk to reduce friction to a minimum
- **Modularity of the range:** only 5 diaphragm and bonnet sizes for 9 different valve sizes
- Handwheel that stays at the same height during rotation
- Bonnet fastening screws that screw into the built-in bush preventing the deposit of dirt or impurities
- **Innovative CDSA system** (Circular Diaphragm Sealing Angle) used up to DN50, offering the following advantages:
  - uniform distribution of shutter pressure on the diaphragm
  - reduction in the tightening torque of the screws fixing the actuator to the valve body
  - reduced mechanical stress on all valve components (actuator, body and diaphragm)
  - easy to clean valve interior
  - low risk of the accumulation of deposits, contamination or damage to the diaphragm due to crystallisation
  - operating torque reduction

Technical specifications	
Construction	Single wear diaphragm valve
Size range	DN 15 ÷ 100
Nominal pressure	PN 10 with water at 20 °C
Temperature range	0 °C ÷ 60 °C
Coupling standards	**Solvent welding:** EN ISO 1452, EN ISO 15493, BS 4346-1, DIN 8063, NF T54-028, ASTM D 2467, JIS K 6743. Can be coupled to pipes according to EN ISO 1452, EN ISO 15493, DIN 8062, NF T54-016, ASTM D 1785, JIS K 6741
	Thread: ISO 228-1, DIN 2999, ASTM D 2464, JIS B 0203
	Flanging system: ISO 7005-1, EN ISO 1452, EN ISO 15493, EN 558-1, DIN 2501, ANSI B16.5 Cl.150, JIS B2220
Reference standards	**Construction criteria:** EN ISO 16138, EN ISO 1452, EN ISO 15493
	Test methods and requirements: ISO 9393
	Installation criteria: DVS 2204, DVS 2221, UNI 11242
Valve material	**Body:** PVC-U **Bonnet and handwheel:** PP-GR
Diaphragm material	EPDM, FPM, PTFE (on request NBR)
Control options	Manual control; pneumatic actuator



1 **Handwheel** in (PP-GR) with high mechanical strength and **ergonomic grip for optimum manageability**

2 **Optical position indicator** supplied as standard

3 **Full protection bonnet in PP-GR**, no protruding bolts , no areas where impurities can accumulate.

Internal circular and symmetrical diaphragm sealing area

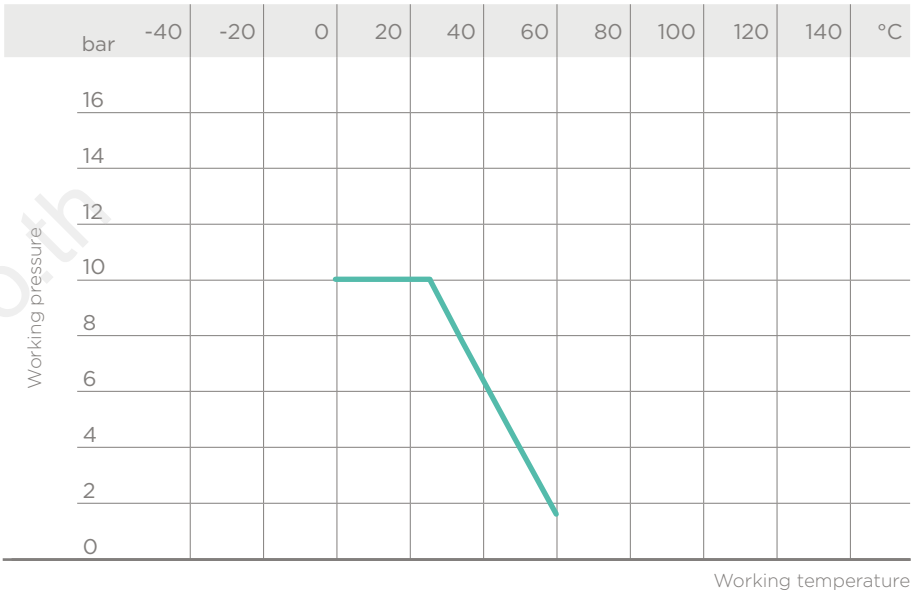
4 Diaphragm available in EPDM, FPM, PTFE (NBR on request) and easy to replace

5 **Threaded metal inserts** for anchoring the valve

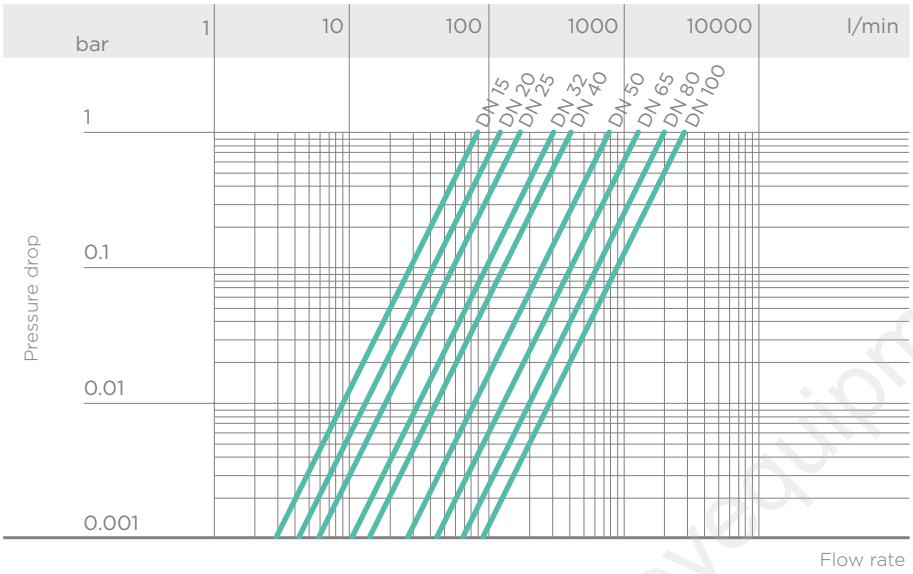
TECHNICAL DATA

PRESSURE VARIATION ACCORDING TO TEMPERATURE

For water and non-hazardous fluids with regard to which the material is classified as CHEMICALLY RESISTANT. In other cases, a reduction of the nominal pressure PN is required
(25 years with safety factor).



PRESSURE DROP GRAPH



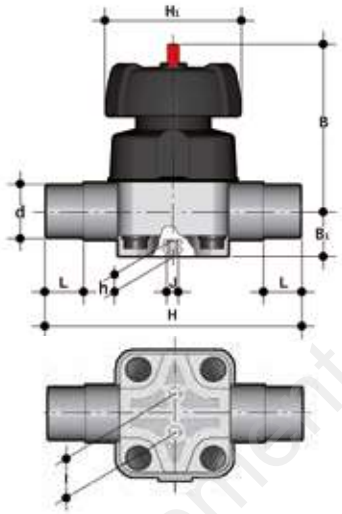
K_v100 FLOW COEFFICIENT

The K_v100 flow coefficient is the Q flow rate of litres per minute of water at a temperature of 20°C that will generate Δp= 1 bar pressure drop at a certain valve position.

The K_v100 values shown in the table are calculated with the valve completely open.

DN	15	20	25	32	40	50	65	80	100
K_v100 l/min	93	136	175	300	416	766	1300	2000	2700

DIMENSIONS

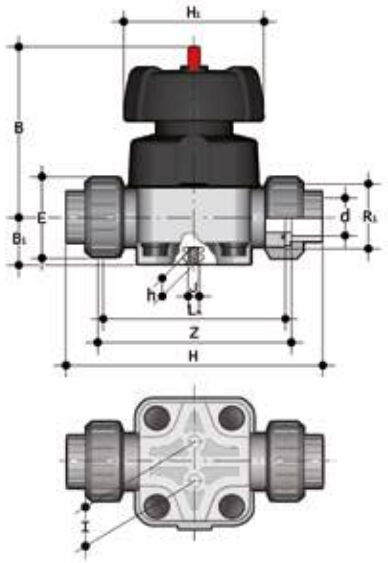


VMDV

Diaphragm valve with male ends for solvent welding, metric series

d	DN	PN	B	B_1	H	h	H_1	l	J	L	g	EPDM Code	FPM Code	PTFE Code
20	15	10	95	26	124	12	90	25	M6	16	700	VMDV020E	VMDV020F	VMDV020P
25	20	10	95	26	144	12	90	25	M6	19	700	VMDV025E	VMDV025F	VMDV025P
32	25	10	95	26	154	12	90	25	M6	22	700	VMDV032E	VMDV032F	VMDV032P
40	32	10	126	40	174	18	115	44.5	M8	26	1500	VMDV040E	VMDV040F	VMDV040P
50	40	10	126	40	194	18	115	44.5	M8	31	1500	VMDV050E	VMDV050F	VMDV050P
63	50	10	148	40	224	18	140	44.5	M8	38	2400	VMDV063E	VMDV063F	VMDV063P
75	65	*10	225	55	284	23	200	100	M12	44	7000	VMDV075E	VMDV075F	VMDV075P
90	80	*10	225	55	300	23	200	100	M12	51	7000	VMDV090E	VMDV090F	VMDV090P
110	100	*10	295	69	340	23	250	120	M12	61	10500	VMDV110E	VMDV110F	VMDV110P

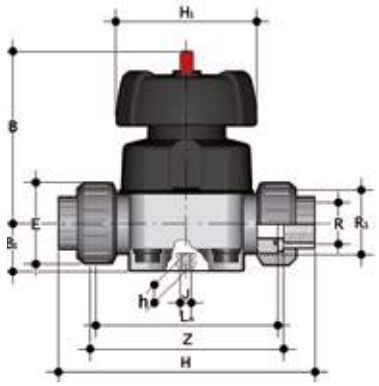
*PTFE PN6

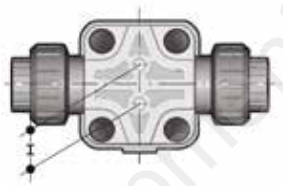


VMUIV

Diaphragm valve with female union ends for solvent welding, metric series

d	DN	PN	B	B_1	E	H	h	H_1	l	J	L_A	R_1	Z	g	EPDM Code	FPM Code	PTFE Code
20	15	10	95	26	41	147	12	90	25	M6	108	1"	115	830	VMUIV020E	VMUIV020F	VMUIV020P
25	20	10	95	26	50	154	12	90	25	M6	108	1" 1/4	116	860	VMUIV025E	VMUIV025F	VMUIV025P
32	25	10	95	26	58	168	12	90	25	M6	116	1" 1/2	124	895	VMUIV032E	VMUIV032F	VMUIV032P
40	32	10	126	40	72	192	16	115	44,5	M8	134	2"	140	1650	VMUIV040E	VMUIV040F	VMUIV040P
50	40	10	126	40	79	222	16	115	44,5	M8	154	2" 1/4	160	1730	VMUIV050E	VMUIV050F	VMUIV050P
63	50	10	148	40	98	266	16	140	44,5	M8	184	2" 3/4	190	2800	VMUIV063E	VMUIV063F	VMUIV063P

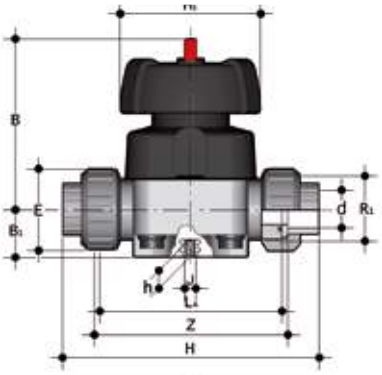


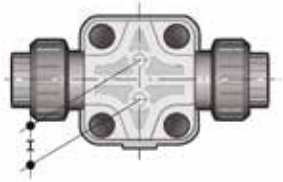


VMUFV

Diaphragm valve with BSP threaded female union ends

R	DN	PN	B	B_1	E	H	h	H_1	l	J	L_A	R_1	Z	g	EPDM Code	FPM Code	PTFE Code
1/2”	15	10	95	26	41	148	12	90	25	M6	108	1”	118	830	VMUFV012E	VMUFV012F	VMUFV012P
3/4”	20	10	95	26	50	151	12	90	25	M6	108	1” 1/4	118	860	VMUFV034E	VMUFV034F	VMUFV034P
1”	25	10	95	26	58	165	12	90	25	M6	116	1” 1/2	127	895	VMUFV100E	VMUFV100F	VMUFV100P
1” 1/4	32	10	126	40	72	188	16	115	44,5	M8	134	2”	145	1650	VMUFV114E	VMUFV114F	VMUFV114P
1” 1/2	40	10	126	40	79	208	16	115	44,5	M8	154	2” 1/4	165	1730	VMUFV112E	VMUFV112F	VMUFV112P
2”	50	10	148	40	98	246	16	140	44,5	M8	184	2” 3/4	195	2800	VMUFV200E	VMUFV200F	VMUFV200P

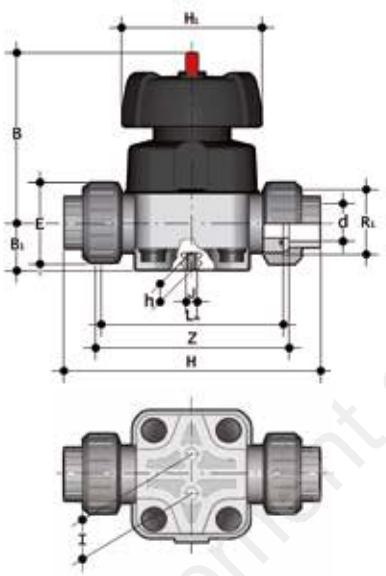




VMUAV

Diaphragm valve with female union ends for solvent welding, ASTM series

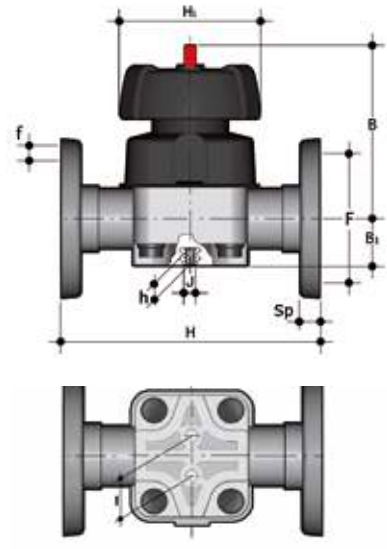
d	DN	PN	B	B_1	E	H	h	H_1	l	J	L_A	R_1	Z	g	EPDM Code	FPM Code	PTFE Code
1/2”	15	10	95	26	41	160	12	90	25	M6	108	1”	115	830	VMUAV012E	VMUAV012F	VMUAV012P
3/4”	20	10	95	26	50	167	12	90	25	M6	108	1” 1/4	115	860	VMUAV034E	VMUAV034F	VMUAV034P
1”	25	10	95	26	58	180	12	90	25	M6	116	1” 1/2	122	895	VMUAV100E	VMUAV100F	VMUAV100P
1” 1/4	32	10	126	40	72	208	16	115	44,5	M8	134	2	144	1650	VMUAV114E	VMUAV114F	VMUAV114P
1” 1/2	40	10	126	40	79	234	16	115	44,5	M8	154	2” 1/4	164	1730	VMUAV112E	VMUAV112F	VMUAV112P
2”	50	10	148	40	98	272	16	140	44,5	M8	184	2” 3/4	195	2800	VMUAV200E	VMUAV200F	VMUAV200P



VMULV

Diaphragm valve with female union ends for solvent welding, BS series

d	DN	PN	B	B_1	E	H	h	H_1	l	J	L_A	R_1	Z	g	EPDM Code	FPM Code	PTFE Code
1/2"	15	10	95	26	41	147	12	90	25	M6	108	1"	114	830	VMULV012E	VMULV012F	VMULV012P
3/4"	20	10	95	26	50	154	12	90	25	M6	108	1" 1/4	116	860	VMULV034E	VMULV034F	VMULV034P
1"	25	10	95	26	58	166	12	90	25	M6	116	1" 1/2	121	895	VMULV100E	VMULV100F	VMULV100P
1" 1/4	32	10	126	40	72	194	16	115	44,5	M8	134	2"	142	1650	VMULV114E	VMULV114F	VMULV114P
1" 1/2	40	10	126	40	79	222	16	115	44,5	M8	154	2" 1/4	162	1730	VMULV112E	VMULV112F	VMULV112P
2"	50	10	148	40	98	266	16	140	44,5	M8	184	2" 3/4	194	2800	VMULV200E	VMULV200F	VMULV200P

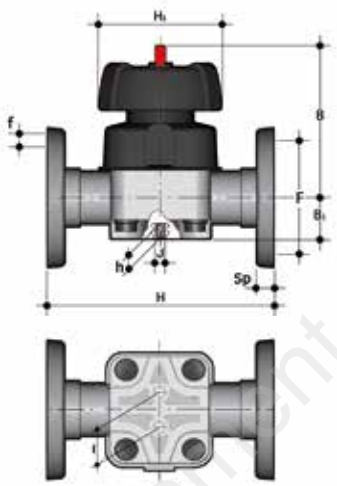


VMOV

Diaphragm valve with fixed flanges, drilled PN10/16. Face to face according to EN 558-1

d	DN	PN	B	B_1	F	f	H	H_1	l	J	Sp	U	g	EPDM Code	FPM Code	PTFE Code
20	15	10	95	26	65	14	130	90	25	M6	11	4	840	VMOV020E	VMOV020F	VMOV020P
25	20	10	95	26	75	14	150	90	25	M6	13,5	4	900	VMOV025E	VMOV025F	VMOV025P
32	25	10	95	26	85	14	160	90	25	M6	14	4	990	VMOV032E	VMOV032F	VMOV032P
40	32	10	126	40	100	18	180	115	44,5	M8	14	4	1960	VMOV040E	VMOV040F	VMOV040P
50	40	10	126	40	110	18	200	115	44,5	M8	16	4	2075	VMOV050E	VMOV050F	VMOV050P
63	50	10	148	40	125	18	230	140	44,5	M8	16	4	3170	VMOV063E	VMOV063F	VMOV063P
75	65	*10	225	55	145	18	290	200	100	M12	21	4	8100	VMOV075E	VMOV075F	VMOV075P
90	80	*10	225	55	160	18	310	200	100	M12	21,5	8	8500	VMOV090E	VMOV090F	VMOV090P
110	100	*10	295	69	180	18	350	250	120	M12	22,5	8	12400	VMOV110E	VMOV110F	VMOV110P

*PTFE PN6



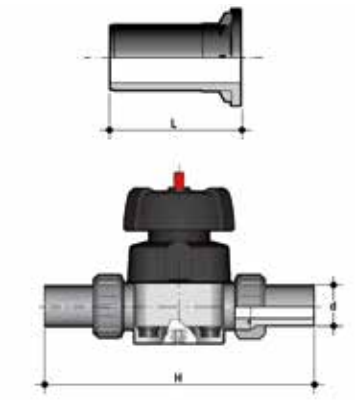
VMOAV

Diaphragm valve with fixed flanges, drilled ANSI B16.5 cl. 150 #FF

Size	PN	B	B_1	F	f	H	H_1	I	J	Sp	U	g	EPDM Code	FPM Code	PTFE Code
1/2”	10	95	26	60,3	15,9	130	90	25	M6	11	4	840	VMOAV012E	VMOAV012F	VMOAV012P
3/4”	10	95	26	69,9	15,9	150	90	25	M6	13,5	4	900	VMOAV034E	VMOAV034F	VMOAV034P
1”	10	95	26	79,4	15,9	160	90	25	M6	14	4	990	VMOAV100E	VMOAV100F	VMOAV100P
1” 1/4	10	126	40	88,9	15,9	180	115	44,5	M8	14	4	1960	VMOAV114E	VMOAV114F	VMOAV114P
1” 1/2	10	126	40	98,4	15,9	200	115	44,5	M8	16	4	2075	VMOAV112E	VMOAV112F	VMOAV112P
2”	10	148	40	120,7	19,1	230	140	44,5	M8	16	4	3170	VMOAV200E	VMOAV200F	VMOAV200P
2” 1/2	*10	225	55	139,7	19,1	290	200	100	M12	21	4	8100	VMOV075E	VMOV075F	VMOV075P
3”	*10	225	55	152,4	19,1	310	200	100	M12	21,5	4	8500	VMOAV300E	VMOAV300F	VMOAV300P
4”	*10	295	69	190,5	19,1	350	250	120	M12	22,5	8	12400	VMOV110E	VMOV110F	VMOV110P

*PTFE PN6

ACCESSORIES



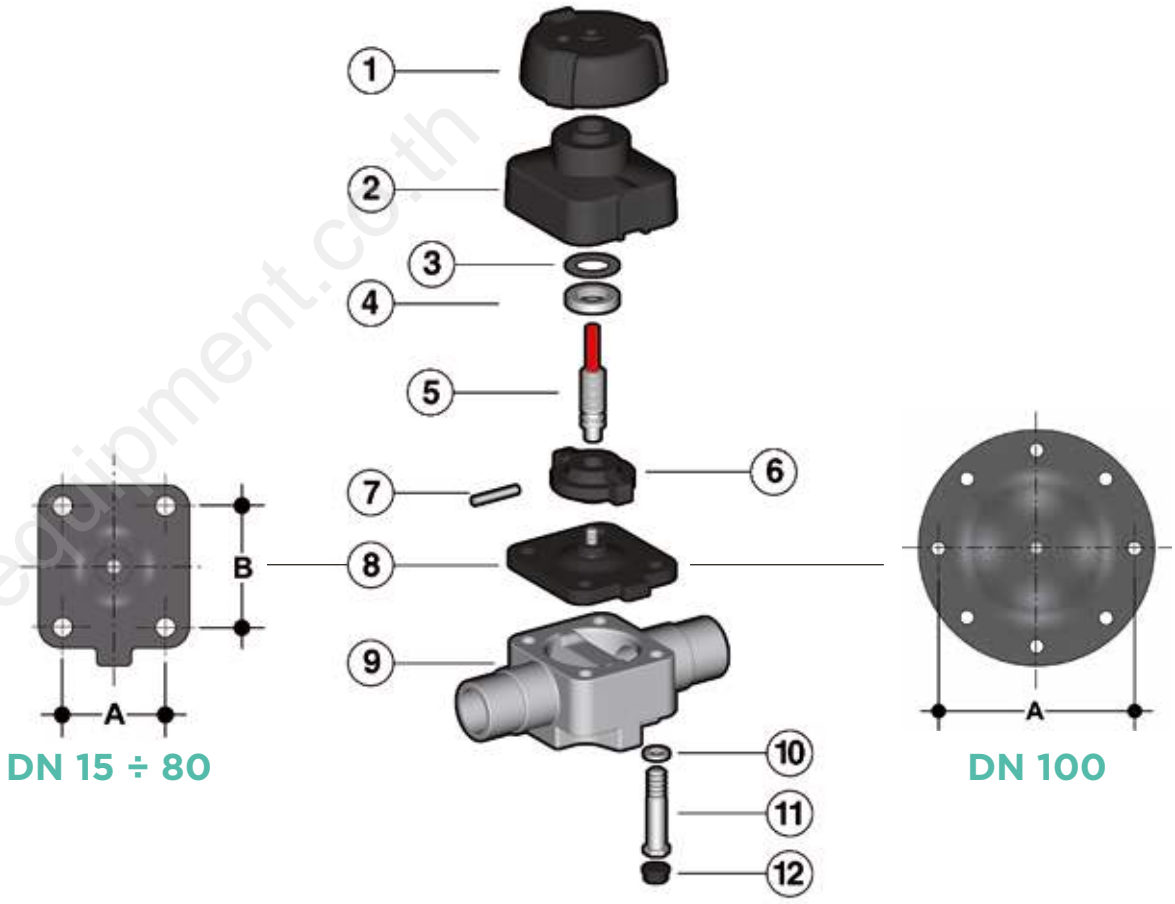
Q/BBE-L

End connectors IN PE100, long spigot, for joints with electrofusion fittings or for butt welding

d	DN	PN	L	H	SDR	Code
20	15	16	95	298	11	QBBEL11020
25	20	16	95	298	11	QBBEL11025
32	25	16	95	314	11	QBBEL11032
40	32	16	95	330	11	QBBEL11040
50	40	16	95	350	11	QBBEL11050
63	50	16	95	380	11	QBBEL11063

COMPONENTS

EXPLODED VIEW DN 15-100



DN 15 ÷ 80

DN 100

DN	15	20	25	32	40	50	65	80	100
A	46	46	46	65	65	78	114	114	193
B	54	54	54	70	70	82	127	127	-

1 · Handwheel (PP-GR - 1)
2 · Bonnet (PP-GR - 1)
3 · Anti-friction disk (POM - 1)
4 · Lock nut (Brass - 1)
5 · Indicator - stem (STAINLESS steel - 1)
6 · Shutter (PBT - 1)
7 · Pin (STAINLESS steel - 1)
8 · Diaphragm (EPDM, FPM, PTFE - 1)
9 · Body (PVC-U - 1)
10 · Washer (Zinc plated steel - 4)
11 · Hexagonal screw (Zinc plated steel - 4)
12 · Protection plug (PE - 4)

The material of the component and the quantity supplied are indicated between brackets

DISMOUNTING

If the valve is already installed on the line, shut-off the fluid flow upstream and make sure that there is no pressure. If necessary, fully drain the system downstream. If there are hazardous fluids present, drain and ventilate the valve.
The diaphragm constitutes the part of the valve more subject to mechanical and chemical stress from the fluid. Consequently, the condition of the diaphragm must be checked at regular intervals in accordance with the service conditions. To do this, it must be disconnected from the handwheel and from the valve body

1) Unscrew the four screws (11) and separate the body (9) from the internal components.
2) Unscrew the diaphragm (8) from the shutter (6). Rotate the handwheel clockwise to free the stem-shutter unit.
3) If necessary, clean or replace the diaphragm (8).
4) If necessary, lubricate the stem (5).

MOUNTING

1) Insert the handwheel in the bonnet (2)
2) The anti-friction disk (3) must be positioned on the sleeve over the bonnet. Fully tighten the lock nut (4). To ensure a perfect seal, use a liquid sealing compound such as Loctite.
3) Subsequently, the shutter (6) must be removed from the stem (5) and fixed using the pin. Warning: the pin must be well secured in the seating hole in the stem.
4) The stem (5) must now be screwed to the threaded sleeve. Warning: left-hand thread. The shutter (6) must be oriented such that the guide pins correspond with the grooves in the bonnet.
5) The shutter (5) must be fully tightened on the bonnet by rotating the handhweel. Then, the diaphragm (8) must be screwed fully into the bonnet and then rotated in the opposite direction until the holes in the diaphragm coincides with the holes in the bonnet.
6) Place the bonnet with the diaphragm in the correct position in the body (9). Fix the protection plugs (12) using the hexagonal screws and washers (10). Tighten evenly (cross-like).

INSTALLATION

The valve can be installed in any position and in any direction.
When starting up the plant, make sure that there are no leaks from between the diaphragm and the valve body. If necessary, tighten the fastening screws (11).