



VM DN 15÷100
PVC-C

Diaphragm valve

VM

DN 15÷100

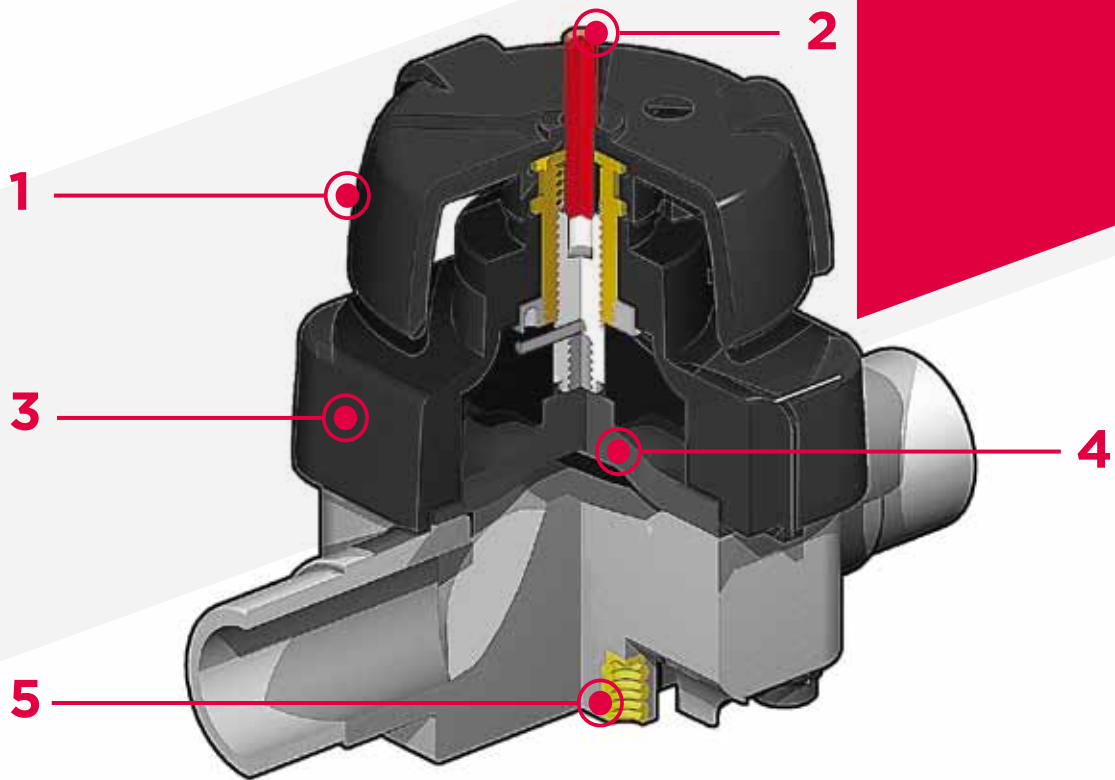
The VM is particularly suitable for shutting off and regulating abrasive or dirty fluids.

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 molded-in bushes preventing the deposit of dirt or impurities
- **Innovative CDSA** (Circular Diaphragm Sealing Angle) system used up to DN50, offering the following advantages:
 - uniform distribution of shutter pressure on the diaphragm seal
 - 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 ÷ 100 °C
Coupling standards	Solvent welding: EN ISO 15493, ASTM F 439. Can be coupled to pipes according to EN ISO 15493, ASTM F 441 Thread: ISO 228-1, DIN 2999 Flanging system: ISO 7005-1, EN ISO 15493, EN 558-1, DIN 2501, ANSI B16.5 Cl.150
Reference standards	Construction criteria: EN ISO 16138, EN ISO 15493 Test methods and requirements: ISO 9393 Installation criteria: DVS 2204, DVS 2221, UNI 11242
Valve material	Body: PVC-C 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

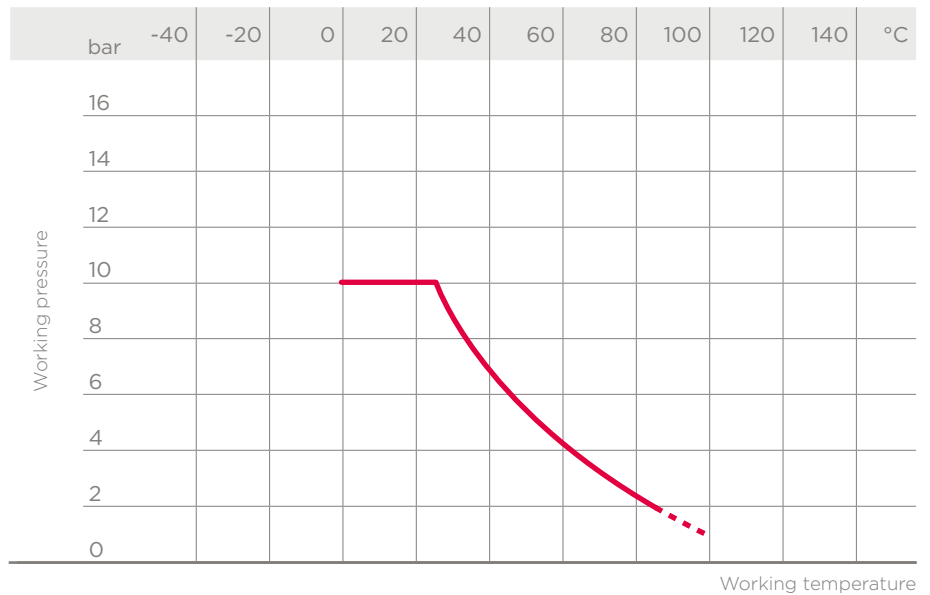
5 Threaded metal inserts for anchoring the valve

TECHNICAL DATA

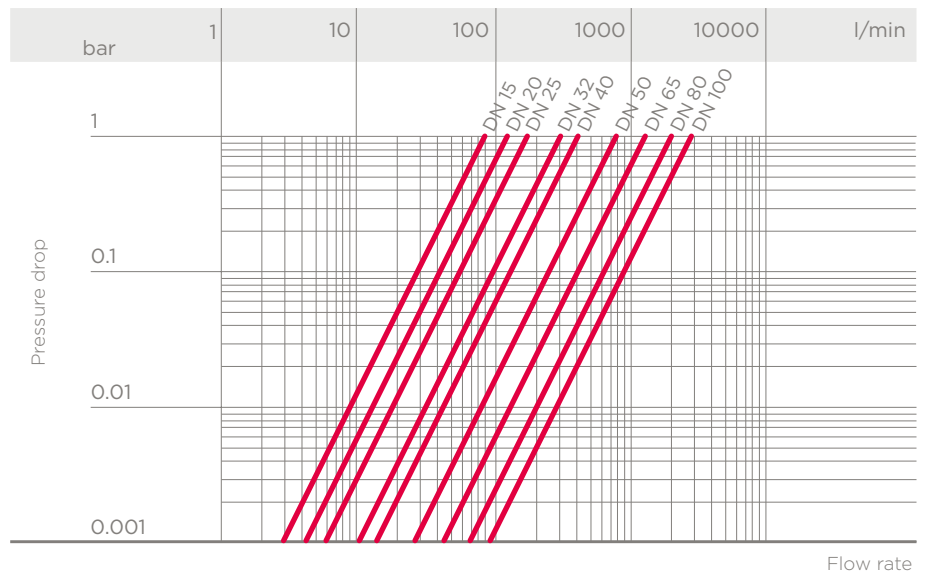
PRESSURE VARIATION ACCORDING TO TEMPERATURE

For water and non-hazardous fluids 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).

Note: When using PVC-C at working temperatures higher than 90°, it is advisable to first contact the service centre.



PRESSURE DROP GRAPH



K_v100 FLOW COEFFICIENT

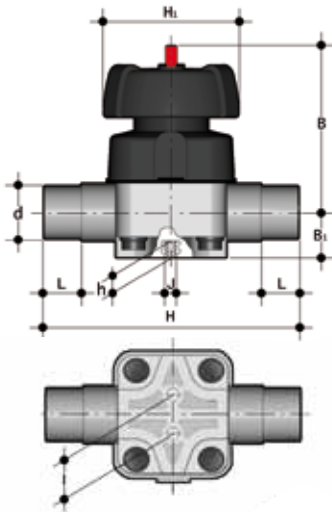
The K_v100 flow coefficient is the Q flow rate of litres per minute of water at a temperature of 20°C that will generate $\Delta p = 1$ bar pressure drop at a certain valve position.

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 _v 100 l/min	93	136	175	300	416	766	1300	2000	2700

The information in this leaflet is provided in good faith. No liability will be accepted concerning technical data that is not directly covered by recognised international standards. FIP reserves the right to carry out any modification. Products must be installed and maintained by qualified personnel.

DIMENSIONS

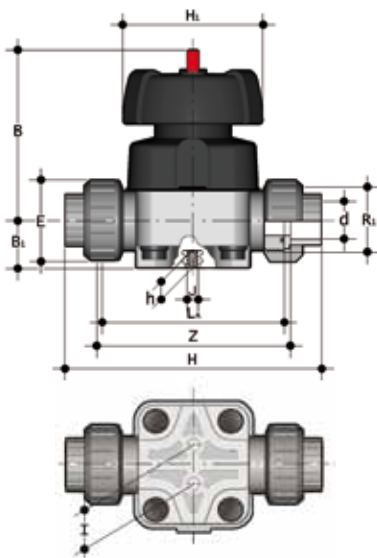


VMDC

Diaphragm valve with male ends for solvent welding, metric series

d	DN	PN	B	B ₁	H	h	H ₁	I	J	L	g	EPDM Code	FPM Code	PTFE Code
20	15	10	95	26	124	12	90	25	M6	16	720	VMDC020E	VMDC020F	VMDC020P
25	20	10	95	26	144	12	90	25	M6	19	720	VMDC025E	VMDC025F	VMDC025P
32	25	10	95	26	154	12	90	25	M6	22	720	VMDC032E	VMDC032F	VMDC032P
40	32	10	126	40	174	18	115	44.5	M8	26	1560	VMDC040E	VMDC040F	VMDC040P
50	40	10	126	40	194	18	115	44.5	M8	31	1560	VMDC050E	VMDC050F	VMDC050P
63	50	10	148	40	224	18	140	44.5	M8	38	2500	VMDC063E	VMDC063F	VMDC063P
75	65	*10	225	55	284	23	200	100	M12	44	7260	VMDC075E	VMDC075F	VMDC075P
90	80	*10	225	55	300	23	200	100	M12	51	7260	VMDC090E	VMDC090F	VMDC090P
110	100	*10	295	69	340	23	250	120	M12	61	10860	VMDC110E	VMDC110F	VMDC110P

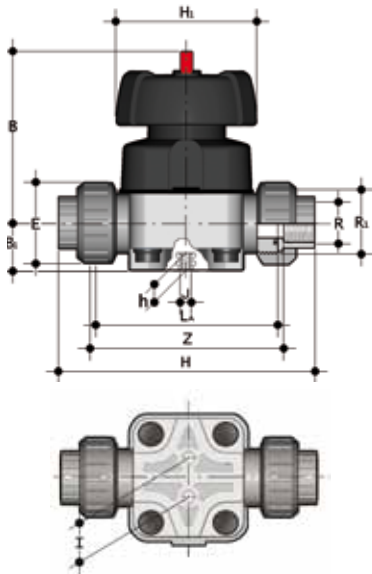
*PTFE PN6



VMUIC

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

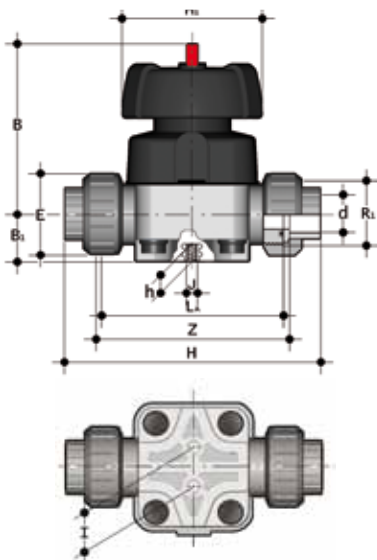
d	DN	PN	B	B ₁	E	H	h	H ₁	I	J	L _A	R ₁	Z	g	EPDM Code	FPM Code	PTFE Code
20	15	10	95	26	41	147	12	90	25	M6	108	1"	115	860	VMUIC020E	VMUIC020F	VMUIC020P
25	20	10	95	26	50	154	12	90	25	M6	108	1 1/4"	116	895	VMUIC025E	VMUIC025F	VMUIC025P
32	25	10	95	26	58	168	12	90	25	M6	116	1 1/2"	124	930	VMUIC032E	VMUIC032F	VMUIC032P
40	32	10	126	40	72	192	16	115	44.5	M8	134	2"	140	1720	VMUIC040E	VMUIC040F	VMUIC040P
50	40	10	126	40	79	222	16	115	44.5	M8	154	2 1/4"	160	1800	VMUIC050E	VMUIC050F	VMUIC050P
63	50	10	148	40	98	266	16	140	44.5	M8	184	2 3/4"	190	2915	VMUIC063E	VMUIC063F	VMUIC063P



VMUFC

Diaphragm valve with BSP threaded female union ends

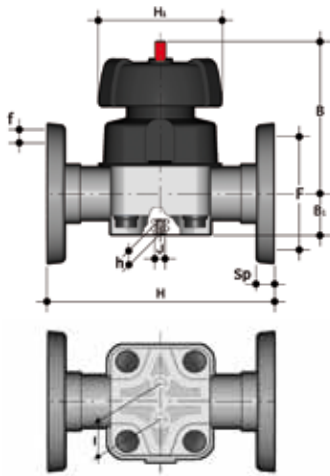
d	DN	PN	B	B ₁	E	H	h	H ₁	I	J	L _A	R ₁	Z	g	EPDM Code	FPM Code	PTFE Code
1/2"	15	10	95	26	41	148	12	90	25	M6	108	1"	118	860	VMUFC012E	VMUFC012F	VMUFC012P
3/4"	20	10	95	26	50	151	12	90	25	M6	108	1 1/4"	118	895	VMUFC034E	VMUFC034F	VMUFC034P
1"	25	10	95	26	58	165	12	90	25	M6	116	1 1/2"	127	930	VMUFC100E	VMUFC100F	VMUFC100P
1 1/4"	32	10	126	40	72	188	16	115	44.5	M8	134	2"	145	1720	VMUFC114E	VMUFC114F	VMUFC114P
1 1/2"	40	10	126	40	79	208	16	115	44.5	M8	154	2 1/4"	165	1800	VMUFC112E	VMUFC112F	VMUFC112P
2"	50	10	148	40	98	246	16	140	44.5	M8	184	2 3/4"	195	2915	VMUFC200E	VMUFC200F	VMUFC200P



VMUAC

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

d	DN	PN	B	B ₁	E	H	h	H ₁	I	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	860	VMUAC012E	VMUAC012F	VMUAC012P
3/4"	20	10	95	26	50	167	12	90	25	M6	108	1 1/4"	115	895	VMUAC034E	VMUAC034F	VMUAC034P
1"	25	10	95	26	58	180	12	90	25	M6	116	1 1/2"	122	930	VMUAC100E	VMUAC100F	VMUAC100P
1 1/4"	32	10	126	40	72	208	16	115	44.5	M8	134	2"	144	1720	VMUAC114E	VMUAC114F	VMUAC114P
1 1/2"	40	10	126	40	79	234	16	115	44.5	M8	154	2 1/4"	164	1800	VMUAC112E	VMUAC112F	VMUAC112P
2"	50	10	148	40	98	272	16	140	44.5	M8	184	2 3/4"	195	2915	VMUAC200E	VMUAC200F	VMUAC200P

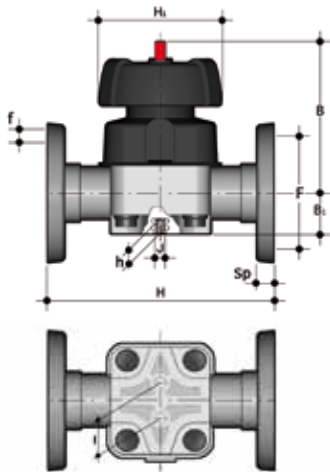


VMOC

Diaphragm valve with fixed flanges, drilled EN/ISO/DIN 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	910	VMOC020E	VMOC020F	VMOC020P
25	20	10	95	26	75	14	150	90	25	M6	13.5	4	970	VMOC025E	VMOC025F	VMOC025P
32	25	10	95	26	85	14	160	90	25	M6	14	4	1060	VMOC032E	VMOC032F	VMOC032P
40	32	10	126	40	100	18	180	115	44.5	M8	14	4	2120	VMOC040E	VMOC040F	VMOC040P
50	40	10	126	40	110	18	200	115	44.5	M8	16	4	2225	VMOC050E	VMOC050F	VMOC050P
63	50	10	148	40	125	18	230	140	44.5	M8	16	4	3320	VMOC063E	VMOC063F	VMOC063P
75	65	*10	225	55	145	18	290	200	100	M12	21	4	8500	VMOC075E	VMOC075F	VMOC075P
90	80	*10	225	55	160	18	310	200	100	M12	21.5	8	9150	VMOC090E	VMOC090F	VMOC090P
110	100	*10	295	69	180	18	350	250	120	M12	22.5	8	13200	VMOC110E	VMOC110F	VMOC110P

*PTFE PN6



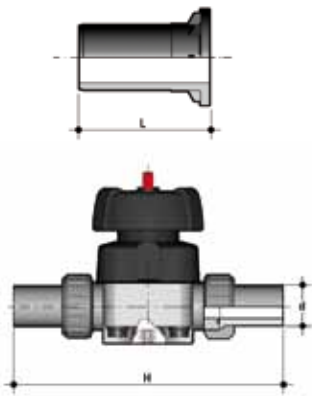
VMOAC

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

d	PN	B	B ₁	F	f	H	H ₁	l	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	910	VMOAC012E	VMOAC012F	VMOAC012P
3/4"	10	95	26	69.9	15.9	150	90	25	M6	13.5	4	970	VMOAC034E	VMOAC034F	VMOAC034P
1"	10	95	26	79.4	15.9	160	90	25	M6	14	4	1060	VMOAC100E	VMOAC100F	VMOAC100P
1 1/4"	10	126	40	88.9	15.9	180	115	44.5	M8	14	4	2120	VMOAC114E	VMOAC114F	VMOAC114P
1 1/2"	10	126	40	98.4	15.9	200	115	44.5	M8	16	4	2225	VMOAC112E	VMOAC112F	VMOAC112P
2"	10	148	40	120.7	19.1	230	140	44.5	M8	16	4	3320	VMOAC200E	VMOAC200F	VMOAC200P
2 1/2"	*10	225	55	139.7	19.1	290	200	100	M12	21	4	8500	VMOC075E	VMOC075F	VMOC075P
3"	*10	225	55	152.4	19.1	310	200	100	M12	21.5	4	9150	VMOAC300E	VMOAC300F	VMOAC300P
4"	*10	295	69	190.5	19.1	350	250	120	M12	22.5	8	13200	VMOC110E	VMOC110F	VMOC110P

*PTFE PN6

ACCESSORIES



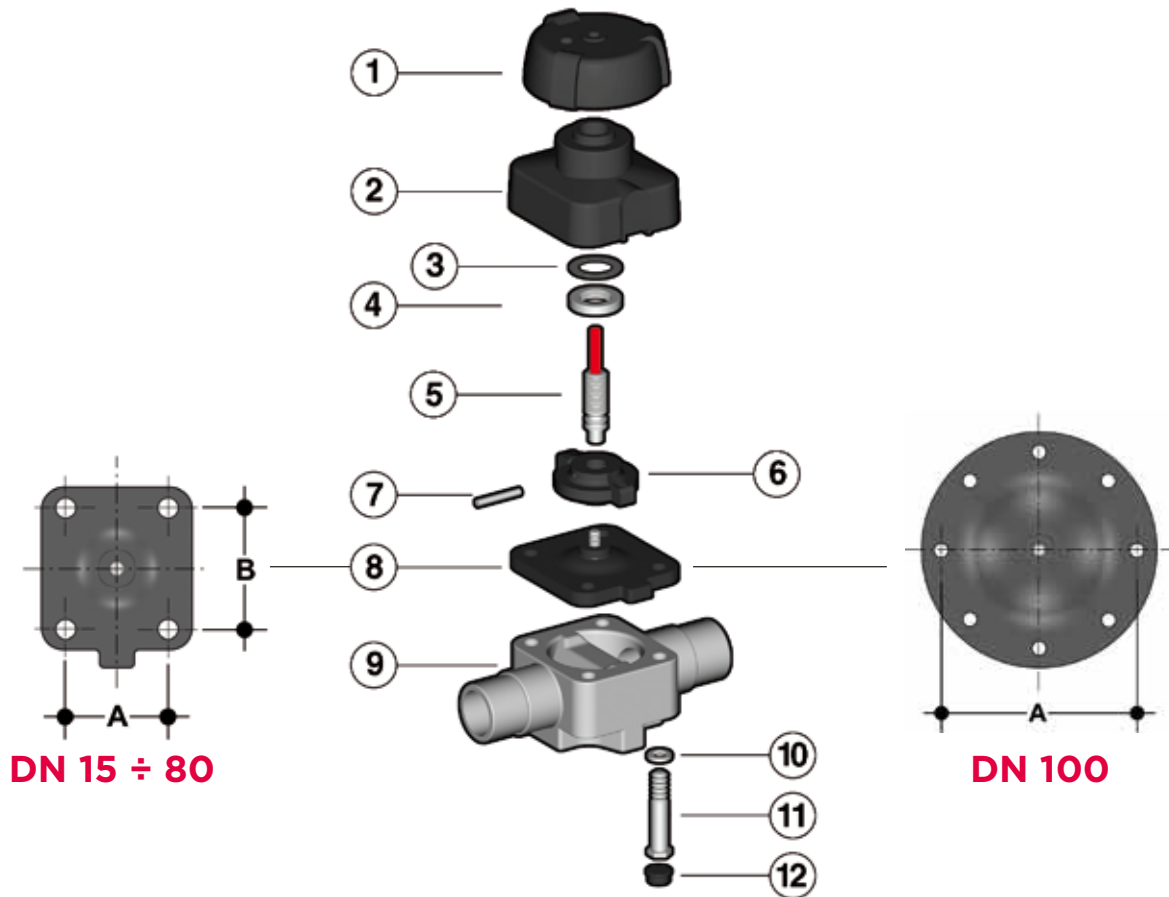
Q/BBE-L

Long spigot PE100 end connectors 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	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 seal
(EPDM, FPM, PTFE - 1)

9 · Body (PVC-C - 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

DISASSEMBLY

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).

ASSEMBLY

- 1) Insert the handwheel in the bonnet (2)
- 2) The anti-friction disk (3) must be positioned on the handwheel 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 handwheel 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 handwheel. Then, the diaphragm seal (8) must be screwed fully to the bonnet and then rotated in the opposite direction until the holes in the diaphragm coincide 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. Do not forget to insert the 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).

