CPVC Full Bore Ball Valve

Model : FIP-VKD-CPVC

MANUAL BALL VALVES

Overview

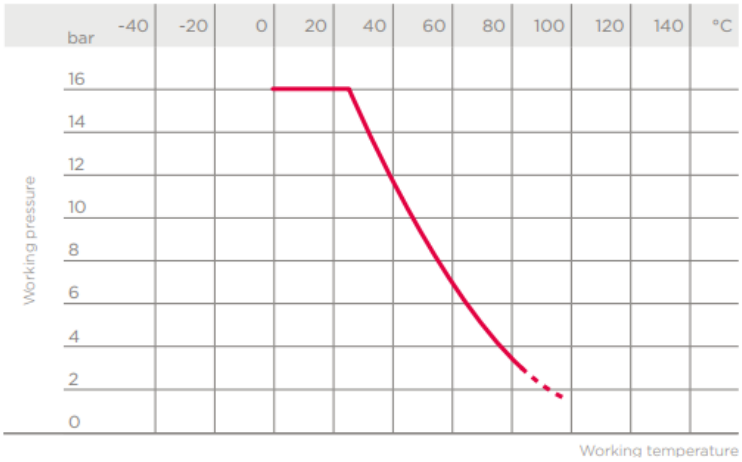
Full bore 2 way ball valve, double union safe-bloc style with blow-out proof stem and end plug. Manufactured to highest quality standards in Europe. Globally recognised brand FIP/ IPEX, available in sizes 3/8" to 4".
Turning the ball through 90° fully opens the valve, turning back through 90° fully closes the valve and isolates the flow.

CPVC ball valves are extensively used in a wide range of industries and applications because their materials of construction make them good at higher temperatures and compatible with so many flowing medias. Typically they are used on water, food, drinks and many chemicals.

Features

- Max working pressure 16Bar (at +20C)
- Temperature range 0C to +100C.
- CPVC body, ball & stem
- PTFE Ball seats and EPDM seals
- Solvent weld or screwed end connection options
- ISO5211 Drilling to mount actuators (needs mounting kit)

P X T Chart

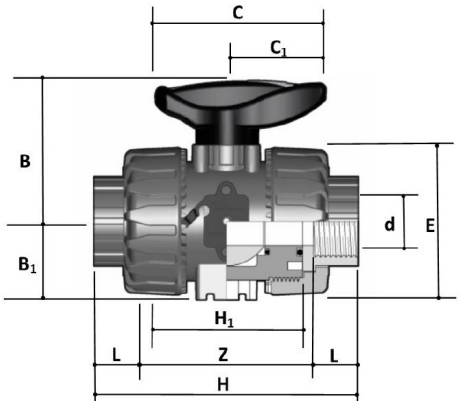


Flow Kv100

Size	3/8" DN10	1/2" DN15	3/4" DN20	1" DN25	11/4" DN32	11/2" DN40	2" DN50
Kv100	80	200	385	770	1100	1750	3400

Flow rate of water in litres per minute that will generate a 1 bar pressure drop across the valve.

Dimensions



VKDIV

DUAL BLOCK® 2-way ball valve with female ends for solvent welding, metric series

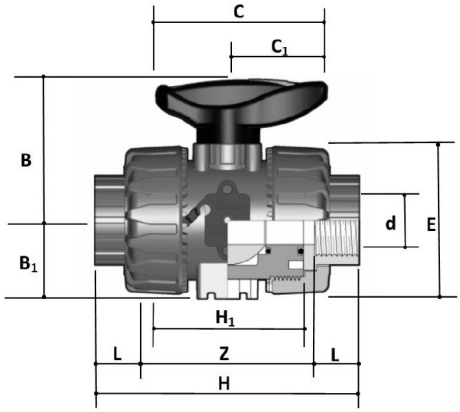
d	DN	PN	B	B_1	C	C_1	E	H	H_1	L	Z	g
16	10	16	54	29	67	40	54	103	65	14	75	215
20	15	16	54	29	67	40	54	103	65	16	71	205
25	20	16	65	34.5	85	49	65	115	70	19	77	330
32	25	16	69.5	39	85	49	73	128	78	22	84	438
40	32	16	82.5	46	108	64	86	146	88	26	94	693
50	40	16	89	52	108	64	98	164	93	31	102	925
63	50	16	108	62	134	76	122	199	111	38	123	1577
d	DN	PN	B	B_1	C	C_1	E	H	H_1	L	Z	g
75	65	16	164	87	225	175	164	235	133	44	147	4380
90	80	16	177	105	327	272	203	270	149	51	168	7200
110	100	16	195	129	385	330	238	308	167	61	186	11141

VKDLV

DUAL BLOCK® 2-way ball valve with female ends for solvent welding, BS series

d	DN	PN	B	B_1	C	C_1	E	H	H_1	L	Z	g
3/8"	10	16	54	29	67	40	54	103	65	14.5	74	210
1/2"	15	16	54	29	67	40	54	103	65	16.5	70	205
3/4"	20	16	65	34.5	85	49	65	115	70	19	77	335
1"	25	16	69.5	39	85	49	73	128	78	22.5	83	433
1" 1/4	32	16	82.5	46	108	64	86	146	88	26	94	703
1" 1/2	40	16	89	52	108	64	98	164	93	30	104	925
2"	50	16	108	62	134	76	122	199	111	36	127	1647
d	DN	PN	B	B_1	C	C_1	E	H	H_1	L	Z	g
2" 1/2	65	16	164	87	225	175	164	235	133	44	147	4380
3"	80	16	177	105	327	272	203	270	149	51	168	7250
4"	100	16	195	129	385	330	238	308	167	63	182	10995

Dimensions



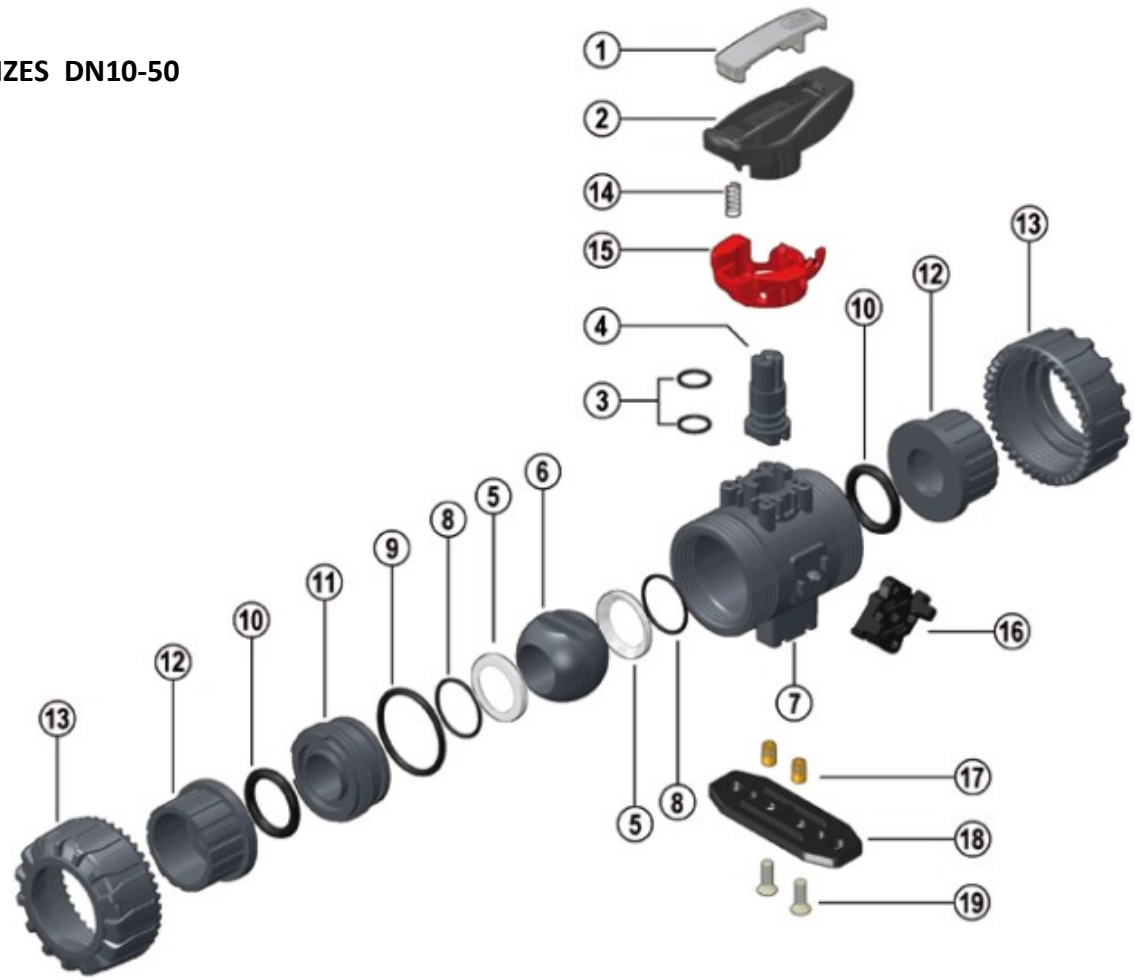
VKDFV

DUAL BLOCK® 2-way ball valve with BSP threaded female ends

R	DN	PN	B	B_1	C	C_1	E	H	H_1	L	Z	g
3/8"	10	16	54	29	67	40	54	103	65	12**	80	215
1/2"	15	16	54	29	67	40	54	110	65	15	80	210
3/4"	20	16	65	34.5	85	49	65	116	70	16	83	335
1"	25	16	69.5	39	85	49	73	134	78	19	96	448
1" 1/4	32	16	82.5	46	108	64	86	153	88	21	110	678
1" 1/2	40	16	89	52	108	64	98	156	93	21	113	955
2"	50	16	108	62	134	76	122	186	111	26	135	1667
R	DN	PN	B	B_1	C	C_1	E	H	H_1	L	Z	g
2" 1/2	65	16	164	87	225	175	164	235	133	30	175	4395
3"	80	16	177	105	327	272	203	270	149	34	203	7260
4"	100	16	195	129	385	330	238	308	167	40	229	11100

Exploded View

SIZES DN10-50

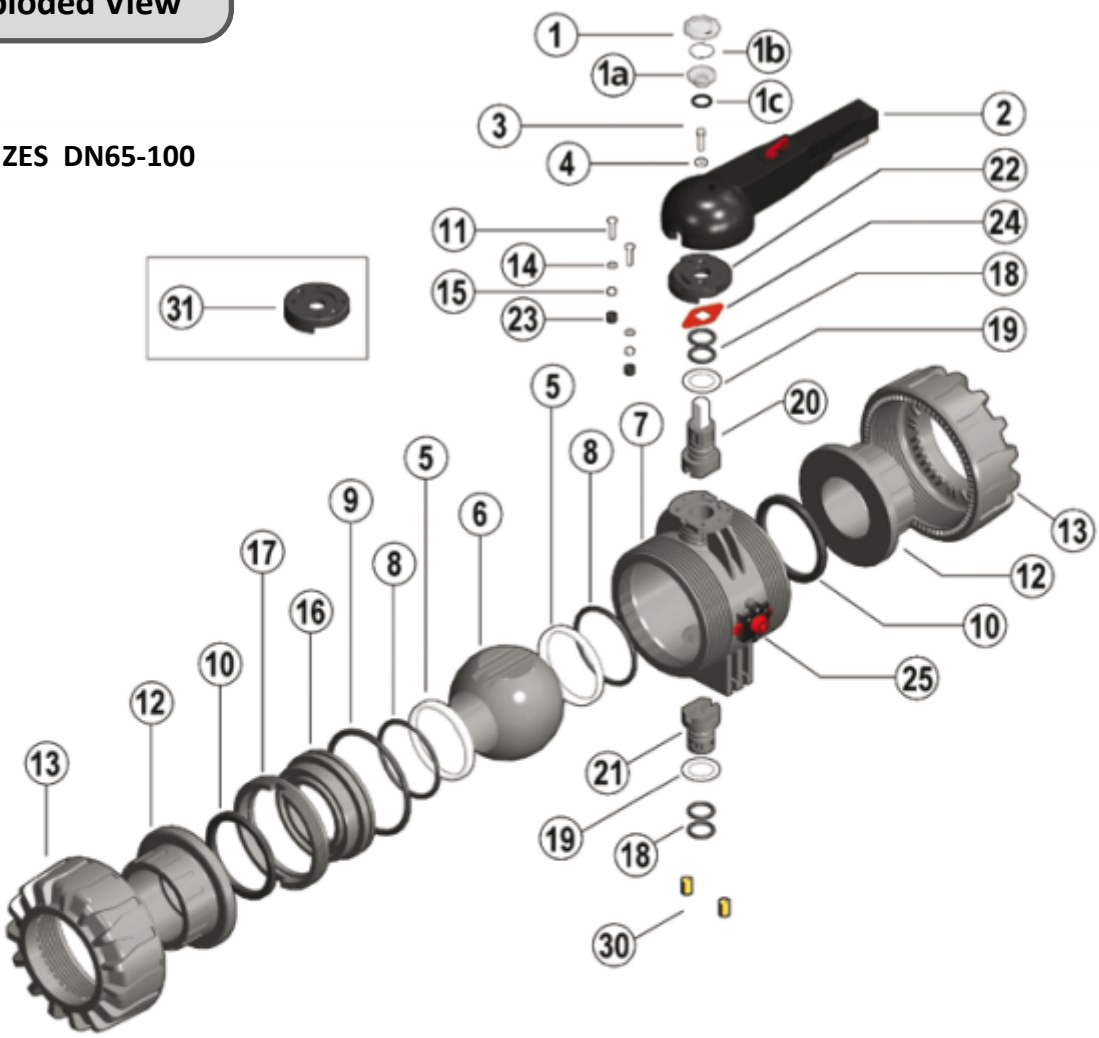


1 · Handle insert (PVC-U - 1)
2 · Handle (HIPVC - 1)
3 · Stem O-ring (EPDM o FPM - 2)*
4 · Stem (PVC-C - 1)
5 · Ball seat (PTFE - 2)*
6 · Ball (PVC-C - 1)
7 · Body (PVC-C - 1)
8 · Ball seat O-Ring (EPDM or FPM - 2)*
9 · Radial seal O-Ring (EPDM or FPM - 1)*
10 · Socket seal O-Ring (EPDM or FPM - 2)*
11 · Ball seat carrier (PVC-C - 1)
12 · End connector (PVC-C - 2)*
13 · Union nut(PVC-C - 2)
14 · Spring (STAINLESS steel - 1)**
15 · Handle safety block (PP-GR - 1)**
16 · DUAL BLOCK® (POM - 1)
17 · Threaded inserts (STAINLESS steel or Brass - 2)**
18 · Distance plate (PP-GR - 1)**
19 · Screw (STAINLESS steel - 2)**

* Spare parts
** Accessories
The material of the component and the quantity supplied are indicated between brackets

Exploded View

SIZES DN65-100



1-1a · Transparent protection plug (PVC - 1)
1b · Tag holder (PVC - 1)
1c · O-Ring (NBR - 1)
2 · Handle (HIPVC - 1)
3 · Screw (STAINLESS steel - 1)
4 · Washer (STAINLESS steel - 1)
5 · Ball seat (PTFE - 2)*
6 · Ball (PVC-C - 1)
7 · Body (PVC-C - 1)
8 · Ball seat carrier O-ring (EPDM or FPM - 2)*
9 · Radial seal O-Ring (EPDM or FPM - 1)*
10 · socket seal O-ring (EPDM or FPM - 2)*
11 · Screw (STAINLESS steell - 2)
12 · End connector (PVC-C - 2)
13 · Union nut(PVC-C - 2)
14 · Washer (Acciaio INOX - 2)
15 · Nut (STAINLESS steel - 2)
16 · Ball seat carrier (PVC-C - 1)
17 · Threaded ring (PVC-C - 1)
18 · stem O-ring (EPDM or FPM - 4)*
19 · Anti-friction disk (PTFE - 2)*
20 · Upper stem (PVC-C/STAINLESS STEEL - 1)
21 · Lower stem (PVC-C - 1)
22 · Plate (PP-GR - 1)
23 · Protection plug (PE - 2)
24 · Position indicator (PA - 1)
25 · DUAL BLOCK® (PP-GR + various - 1)
30 · Threaded inserts (Brass- 2)**
31 · Actuation plate (PP-GR - 1)**

Installing

SIZES DN10-50

DISMOUNTING

1) Isolate the valve from the line (release the pressure and empty the pipeline).
2) Unlock the union nuts by pressing the lever on the DUAL BLOCK® (16) along the axis and separate it from the union nut (fig. 1-2). It is also possible to completely remove the block device from the body of the valve.
3) Fully unscrew the union nuts (13) and extract the body sideways.
4) Before dismounting, hold the valve in a vertical position and open it 45° to drain any liquid that might remain.
5) After closing the valve, remove the special insert (1) from the handle (2) and push the two projecting ends into the corresponding recesses on the ball seat carrier (11). Rotate the stop ring anti-clockwise to extract it (fig. 3-4).
6) Pull the handle (2) upwards to remove it from the valve stem (4).
7) Press on the ball from the side opposite the "REGULAR - ADJUST" label, being sure not to scratch it, until the ball seat carrier exits (11), then extract the ball (6).
8) Press the stem (4) inwards until it exits the body.
9) Remove the O-Ring (3, 8, 9, 10) and PTFE ball seats (5) extracting them from their grooves, as illustrated in the exploded view.

ASSEMBLY

1) All the O-rings (3, 8, 9, 10) must be inserted in their grooves as shown in the exploded view.
2) Insert the stem (4) from inside the valve body (7).
3) Place the PTFE ball seats (5) in the housings in the body (7) and in the ball seat ball seat carrier (11).
4) Insert the ball (6) rotating it to the closed position.
5) Screw the carrier (11) into the body and tighten up in the clockwise direction using the handle (2) to limit stop.
6) Insert the valve between the end connectors (12) and tighten the union nuts (13) making sure that the socket seal O-rings (10) do not exit their seats.
7) The handle (2) should be placed on the valve stem (4).

⚠ **Note:** during assembly operations, it is advisable to lubricate the rubber seals. Mineral oils are not recommended for this task as they react aggressively with EPDM rubber.

Fig. 1

Fig. 2

Fig. 3

Fig. 4

INSTALLATION

Before proceeding with installation. please follow these instructions carefully:

1) Check that the pipes to be connected to the valve are aligned in order to avoid mechanical stress on the threaded joints.
2) Check that the DUAL BLOCK® union nut locking device (16) is fitted to the valve body.
3) To release the union nuts, axially press the release lever to separate the lock and then unscrew it in the counter-clockwise direction.
4) Unscrew the union nuts (13) and insert them on the pipe segments.
5) Solvent weld or screw the end connectors (12) onto the pipe ends.
6) Position the valve body between the end connectors and fully tighten the union nuts (13) manually by rotating clockwise without using wrenches or other tools that could damage the union nut surface.
7) Lock the union nuts by returning the DUAL BLOCK® to its housing, pressing on it until the hinges lock on the union nuts.

Installing

SIZES DN10-50

8) If necessary, support the pipework with FIP pipe clips or by means of the carrier built into the valve itself (see paragraph "fastening and carriers").

The VKD valve can be equipped with a handle lock to prevent ball rotation (supplied separately).

When the handle safety block (14, 15) is installed, lift the lever (15) and rotate the handle (fig. 6-7).

A lock can also be installed on the handle to protect the system against tampering (fig. 8).

Seal can be adjusted using the extractable insert on the handle (fig. 3-4).

The seals can be adjusted later with the valve installed on the pipe by simply tightening the union nuts. This "micro adjustment", only possible with FIP valves thanks to the patented "Seat stop system", allows the seal to be recovered where PTFE ball seats are worn due to a high number of operations.

The Easytorque kit can also be used for micro adjustments (fig. 5).

⚠ WARNINGS

- If volatile liquid such as Hydrogen Peroxide (H2O2) or Sodium Hypochlorite (NaClO) are used, for safety reasons we recommend you contact the service centre. These liquids, upon vaporising, could create hazardous over pressures in the area between the body and ball.
- Always avoid sudden closing operations and protect the valve from accidental operations.

Fig. 6

Fig. 7

Fig. 8

Installing

SIZES DN65-100

DISASSEMBLY

1) Isolate the valve from the line (release the pressure and empty the pipeline).
2) Release the union nuts by rotating the button (25) to the left, pointing the arrow on the open lock (fig. 1).
3) Unscrew the union nuts (13) and extract the body (7) (fig. 2).
4) Before disassembling, hold the valve in a vertical position and open it 45° to drain any liquid that might remain.
5) Open the valve.
6) Remove the protection plug on the handle (2) and unscrew the screw (3) with the washer (4).
7) Remove the handle (2).
8) Remove the screws (11) and plate (22) from the body (7).
9) Insert the two supplied wrench protrusions in the corresponding apertures on the threaded ring (17), extracting it by rotating counter-clockwise with the ball seat carrier (16) (fig. 3).
10) Press on the ball (6), being careful not to scratch it, and remove it from the body.
11) Press the upper stem (20) inwards and extract it from the body and remove the lower stem (21). Remove the anti-friction disks (19).
12) Remove the O-Rings (8, 9, 10, 18) and PTFE ball seats (5) extracting them from their grooves, as illustrated in the exploded view.

ASSEMBLY

1) All the O-rings (8, 9, 10, 18) must be inserted in their grooves as shown in the exploded view.
2) Place the anti-friction disks (19) on the stems (20-21) and insert the stems in their housings in the body.
3) Place the PTFE ball seats (5) in the housings in the body (7) and in the carrier (16).
4) Insert the ball (6) rotating it to the closed position.
5) Insert the carrier with threaded ring (17) into the body and tighten up in the clockwise direction using the supplied tool, to limit stop.
6) Position the plate (22) with rack on the body, and screw in the screws (11) washers (14) and nuts (15).
7) The handle (2) with protection plug (1, 1a, 1b, 1c) should be placed on the stem (20) (fig. 4).
8) Screw in the screw (3) with the washer (4) and position the protection plug (1, 1a, 1b, 1c).
9) Insert the valve between the end connectors (12) and tighten the union nuts (13), making sure that the socket seal O-rings (10) do not exit their seats.
10) Release the union nuts by rotating the button (25) to the right, pointing the arrow on the closed lock (fig. 1).

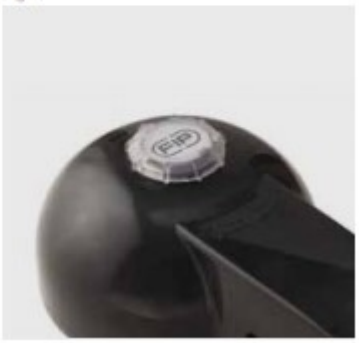
⚠ **Note:** during assembly, it is advisable to lubricate the rubber seals. Mineral oils are not recommended for this task as they react aggressively with EPDM rubber.

Fig. 1

Fig. 2

Fig. 3

Fig. 4



INSTALLATION

Before proceeding with installation. please follow these instructions carefully:

1) Check that the pipes to be connected to the valve are aligned in order to avoid mechanical stress on the threaded joints.
2) Make sure the DUAL BLOCK® union nut lock system (25) is in the FREE position.
3) Unscrew the union nuts (13) and insert them on the pipe segments.
4) Solvent weld or screw the end connectors (12) onto the pipe ends.
5) Position the valve body between the end connectors and fully tighten the union nuts (13) clockwise with an appropriate wrench.
6) Lock the union nuts rotating the button (25) clockwise (see paragraph "union nut lock").
7) If necessary, support the pipework with FIP pipe clips or by means of the carrier built into the valve itself (see paragraph "fastening and supporting").

Adjust the ball seat carriers using the supplied tool (fig. 3).

The seals can be adjusted later with the valve installed on the pipe by simply tightening the union nuts. This "micro adjustment", only possible with FIP valves thanks to the patented "Seat stop system", allows the seal to be recovered where PTFE ball seats are worn due to a high number of manoeuvres.

Installing

SIZES DN65-100

UNION NUT LOCK

Rotate the button to the left, pointing the arrow on the open lock to unlock DUAL BLOCK® : the valve union nuts are free to rotate clockwise and counter-clockwise. Rotate the button to the right and point the arrow on the closed lock to lock DUAL BLOCK® : the valve union nuts are blocked in the desired position.

HANDLE BLOCK

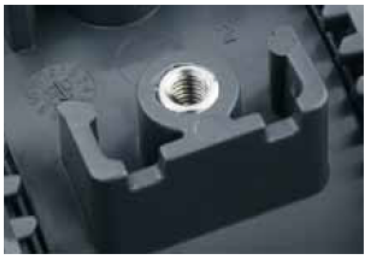
Thanks to the multifunctional handle and the red manoeuvre button on the lever, you can perform a 0°-90° operation and a graduated operation by means of the 10 intermediate positions and a stop lock: the handle can be locked in each of the 10 positions by simply pressing the Free-lock button. A lock can also be installed on the handle to protect the system against tampering.

The valve is two-way and can be installed in any position. It can also be installed at end line or tank.

⚠ WARNINGS

- If volatile liquid such as Hydrogen Peroxide (H2O2) or Sodium Hypochlorite (NaClO) are used, for safety reasons we recommend you contact the service centre. These liquids, upon vaporising, could create hazardous over pressures in the area between the body and ball.
- Always avoid sudden closing operations and protect the valve from accidental operations.

Fastening & Supporting

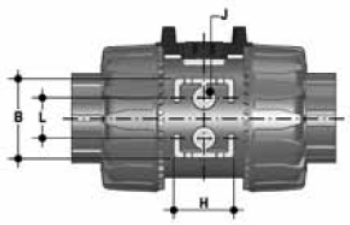


All valves, whether manual or driven, must be adequately supported in many applications.

The VKD valve series is therefore provided with an integrated bracket that permits direct anchoring of the valve body without the need of other components.

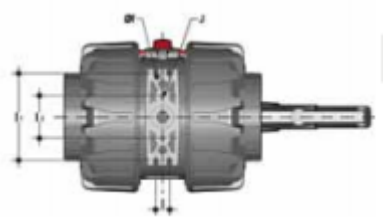
For wall installation, dedicated PMKD mounting plates which are available as accessories can be used. These plates should be fastened to the valve before wall installation.

PMKD plates also allow VKD valve alignment with FIP ZIKM pipe clips as well as allowing different sizes of valves to be aligned.

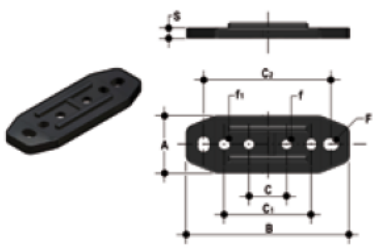


d	DN	B	H	L	J*
16	10	31.5	27	20	M4 x 6
20	15	31.5	27	20	M4 x 6
25	20	40	30	20	M4 x 6
32	25	40	30	20	M4 x 6
40	32	50	35	20	M6 x 10
50	40	50	35	20	M6 x 10
63	50	60	40	20	M6 x 10

* With threaded inserts



d	DN	J	f	l	l_1	l_2
75	65	M6	6.3	17.4	90	51.8
90	80	M6	8.4	21.2	112.6	63
110	100	M8	8.4	21.2	137	67



PMKD

Wall mounting plate

d	DN	A	B	C	C_1	C_2	F	f	f_1	S
16	10	30	86	20	46	67.5	6.5	5.3	5.5	5
20	15	30	86	20	46	67.5	6.5	5.3	5.5	5
25	20	30	86	20	46	67.5	6.5	5.3	5.5	5
32	25	30	86	20	46	67.5	6.5	5.3	5.5	5
40	32	40	122	30	72	102	6.5	6.3	6.5	6
50	40	40	122	30	72	102	6.5	6.3	6.5	6
63	50	40	122	30	72	102	6.5	6.3	6.5	6