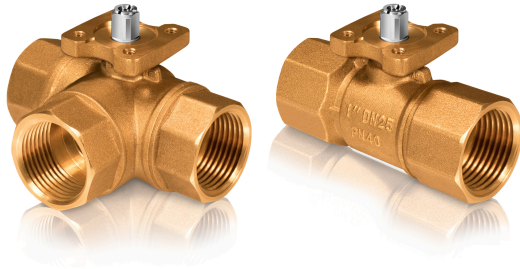


VFBV2/VFBV3

Internally threaded 2- and 3-way ball valves



Valves designed for control of hot, cold or glycol-mixed water in heating and ventilation systems. The valves are intended for use together with Industrietechnik's SEB4/SEB5 actuators.

- Size DN15...DN50
- Kvs value 0.6...63
- Media temperature -5...+140°C
- Pressure rating PN40
- Rangeability 100:1
- High close-off pressures

Function

2-way valve

On top of the valve stem, there is a groove to indicate closing direction.

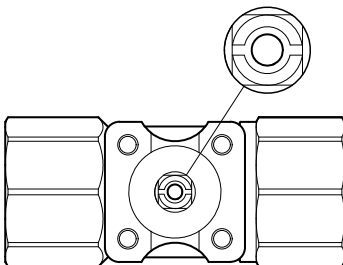


Fig. 1 2-way valve 100% open between port A and port AB

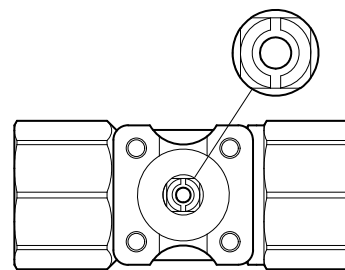


Fig. 2 2-way valve closed completely

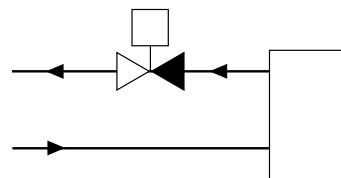


Fig. 3 2-way valve

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VFBV2/VFBV3

3-way valve

On top of the valve stem, there is a T-shaped groove to indicate closing and opening direction. The T-shape corresponds to the hole in the valve ball. Normal function for a characterized (flow plate installed on port A) mixing valve is that the 3-way valve is closed between port A and port AB (the ports opposite each other) when the stem is in this position.

In this position, the valve is also 100% open between port B and the common supply port AB.

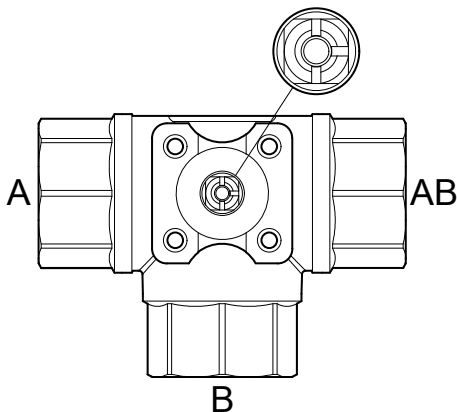


Fig. 4 3-way valve 100% open between port B and port AB

When the stem is in the below seen position, the 3-way valve is 100% open between port A and port AB and consequently completely closed between the bottom port B and the common port AB.

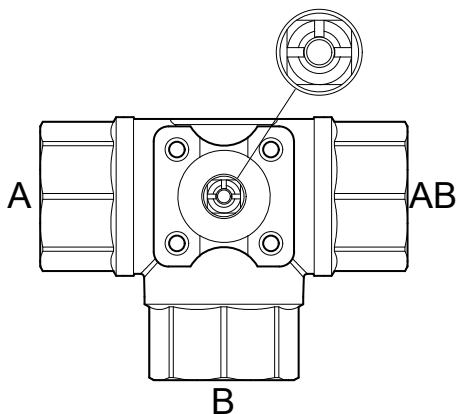


Fig. 5 3-way valve 100% open between port A and port AB

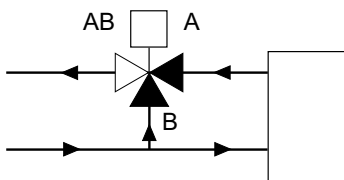
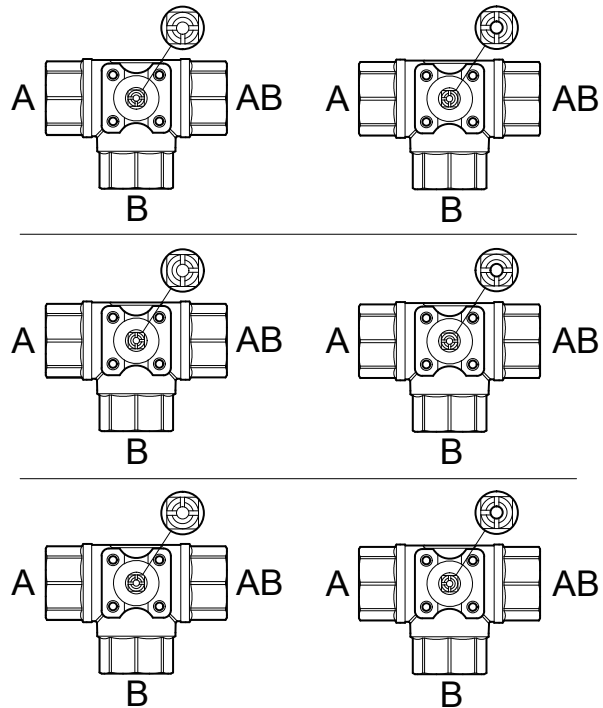


Fig. 6 3-way valve

When no flow plate is installed, you can also use the 3-way valves as diverting valves with functions as seen below.



Installation

The 2-way valve should be mounted with port A on the inlet and port AB on the return (flow direction A in, AB out) to ensure that the ball closes tightly and to prevent any noise when closing.

The 3-way valve is of a mixing type when using the flow plates on port A and must therefore be mounted in the mixing point. When using without flow plate it can also be used as diverting valve with inlet on port A or AB.

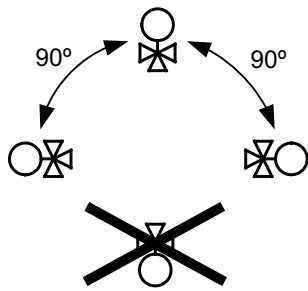
There are several flow plates (Kvs 0.6/1.0/1.6/2.5/4.0) included in the DN15 valves to make it more flexible.

For the 3-way DN15 valve, there are also additional flow plates (Kvs 0.6/1.0/1.6/2.5/4.0) to be used on port B to correspond with the chosen Kvs on port A.

All flow plates are easy to add or remove with circlip pliers.

- Before installation of the control valve, ensure that the pipe is clean. Make sure that pipe scale, metal chips, welding slag and other foreign materials are removed.

- The valve should never be mounted at an angle of more than 90°.



- Install the valve according to the fluid direction arrow shown on the valve.
- Make sure there is ample space above the valve to facilitate easy removal of the valve actuator.

Fit a strainer/filter upstream of the valve to prolong the equipment's life span.

A water quality according to VDI 2035 is recommended.

Technical data

Application	Heating systems, cooling systems, ventilation systems
Pressure rating	PN40
Connection	BSP internally threaded according to ISO 228/1
Flow characteristics	A - AB = equal percentage (with flow plate), B - AB = linear (without flow plate)
Max. leakage	0% of Kvs
Media	Hot water, cold water, glycol-mixed water (max. 50% glycol)
Media temperature	-5...140°C
Rangeability	100:1
Stroke	90°



The valves of sizes DN32, DN40 and DN 50 carries the CE-mark. More information is available at www.industrietechnik.it

Material

Body	Brass CW617N
Ball	Chromed brass CW614N
Flow plate	POM
Circlips	Stainless steel 1.4310
Stem	Stainless steel 1.4305
Seat	PTFE
O-rings	EPDM

2-way valves

Article	Nominal diameter	Kvs with flow plate installed in port A	Kvs (On/off, A→AB)
VFBV215	DN15	0.6 - 1.0 - 1.6 - 2.5 - 4.0	6.3
VFBV220	DN20	6.3	10
VFBV225	DN25	10	16
VFBV232	DN32	16	25
VFBV240	DN40	25	40
VFBV250	DN50	40	63

3-way valves

Article	Nominal diameter	Kvs with flow plate installed in port A, (and port B on DN15)	Kvs (on/off, A→AB)	Kvs (on/off, B→AB)
VFBV315	DN15	0.6/1.0/1.6/2.5/4.0	6.3	4
VFBV320	DN20	6.3	10	6.3
VFBV325	DN25	10	16	10
VFBV332	DN32	16	25	16
VFBV340	DN40	25	40	25
VFBV350	DN50	40	63	40

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VFBV2/VFBV3

Combination options (valves and actuators) and max diff. pressure

Article	ΔP_{s1} (SEB4..., 4 Nm) [kPa]	ΔP_{max^2} (SEB4..., 4 Nm) [kPa]	ΔP_{s1} (SEB5..., 5 Nm) [kPa]	ΔP_{max^2} (SEB5..., 5 Nm) [kPa]
VFBV215	2500	350	N/A	N/A
VFBV220	2500	350	N/A	N/A
VFBV225	2500	350	N/A	N/A
VFBV232	N/A	N/A	1600	350
VFBV240	N/A	N/A	1600	350
VFBV250	N/A	N/A	1600	350
VFBV315	2500	350	N/A	N/A
VFBV320	2500	350	N/A	N/A
VFBV325	2500	350	N/A	N/A
VFBV332	N/A	N/A	1600	350
VFBV340	N/A	N/A	1600	350
VFBV350	N/A	N/A	1600	350

ΔP_s constitutes the max. permitted differential pressure at which the valve actuator can safely close against the pressure.

ΔP_{max} constitutes the max. permitted differential pressure over the flow path of the valve for the entire actuating range of the actuator (i.e. open valve).

Accessories

Article	Description
VF-HL1	Hand lever for manual operation of VFBV valves.

Dimensions

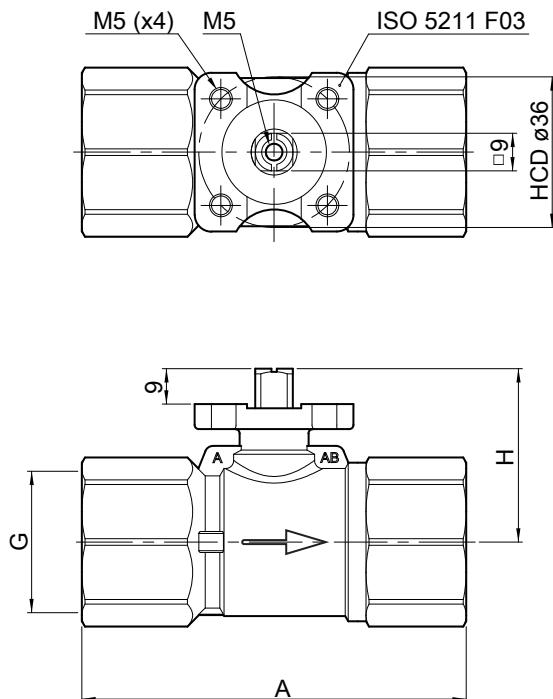


Fig. 7 2-way valves

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VFBV2/VFBV3

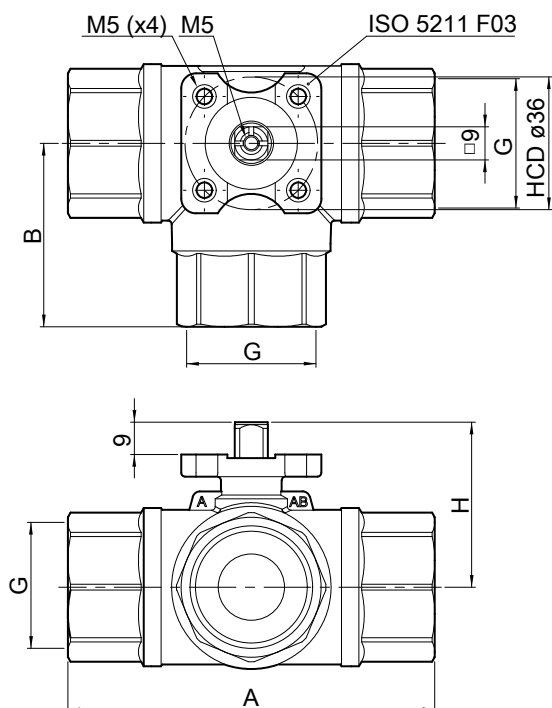
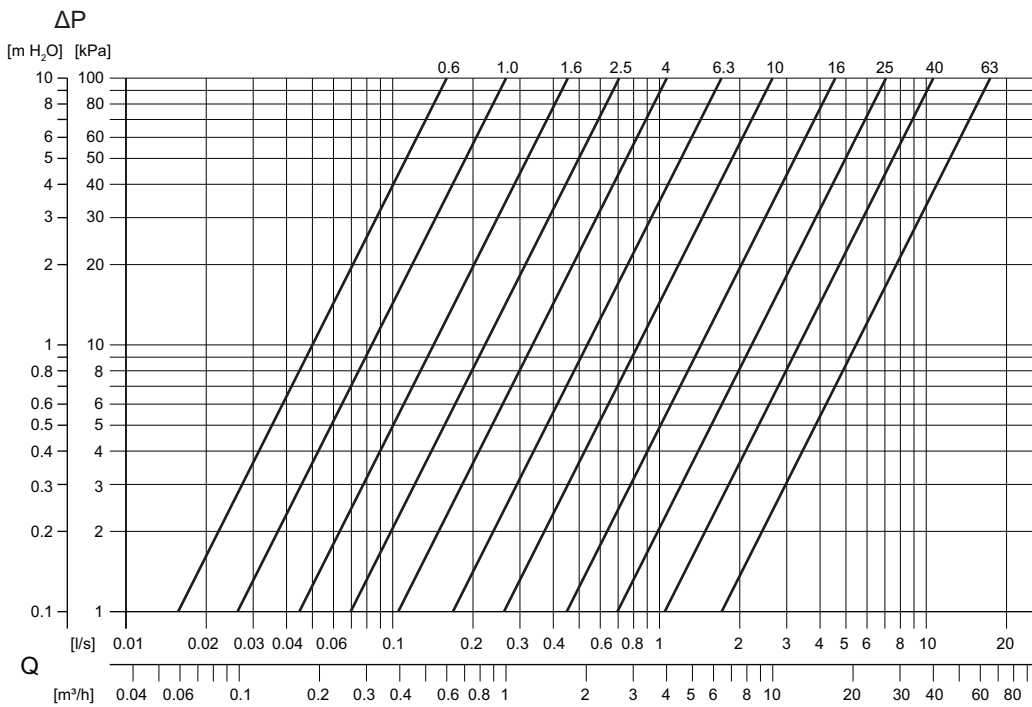


Fig. 8 3-way valves

Article	A	B	H	G
VFBV215	67	N/A	33	Rp 1/2"
VFBV220	75	N/A	40	Rp 3/4"
VFBV225	92	N/A	42	Rp 1"
VFBV232	109	N/A	53	Rp 1 1/4"
VFBV240	119	N/A	57	Rp 1 1/2"
VFBV250	139	N/A	62	Rp 2"
VFBV315	72	36	40.5	Rp 1/2"
VFBV320	82	41	43	Rp 3/4"
VFBV325	100	50	45	Rp 1"
VFBV332	116	58	56	Rp 1 1/4"
VFBV340	130	65	61	Rp 1 1/2"
VFBV350	150	75	66	Rp 2"

[mm], unless otherwise specified

Pressure drop curves

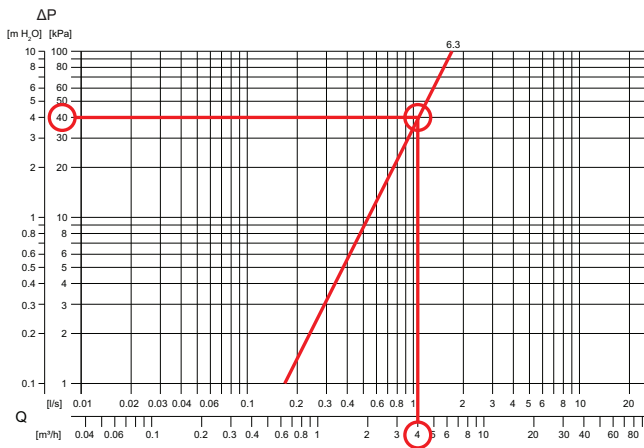


ΔP = Pressure drop

Q = Flow

Example, pressure drop curves

If the pressure drop is 40 kPa (A) and the flow is 4 m³/h (B), a valve with the kvs value 6.3 (C) is preferably selected. See the markings in the picture below.



Documentation

All documentation can be downloaded from www.industrietechnik.it

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VFBV2/VFBV3