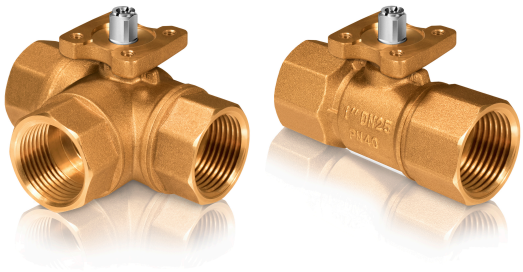
BV2/BV3

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 Regin's RVAB4/RVAB5 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.

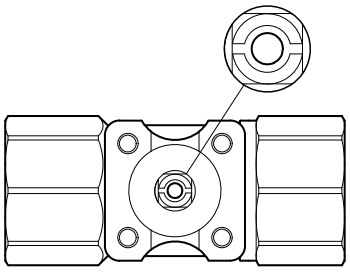


Fig. 1 2-way valve 100% open between port A and port AB

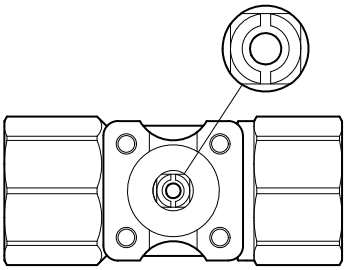


Fig. 2 2-way valve closed completely

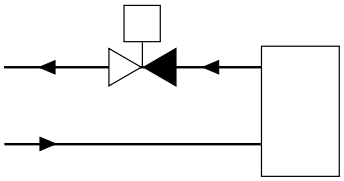


Fig. 3 2-way valve

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REGIN THE CHALLENGER

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.

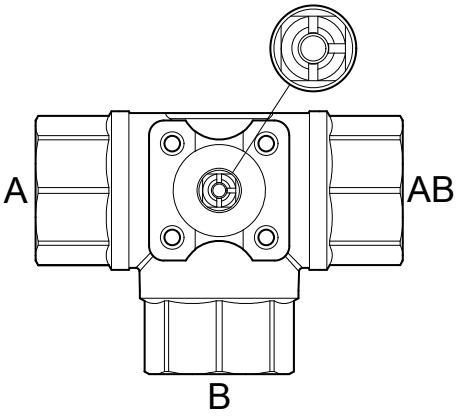


Fig. 4 3-way valve 100% open between port B and port AB

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.

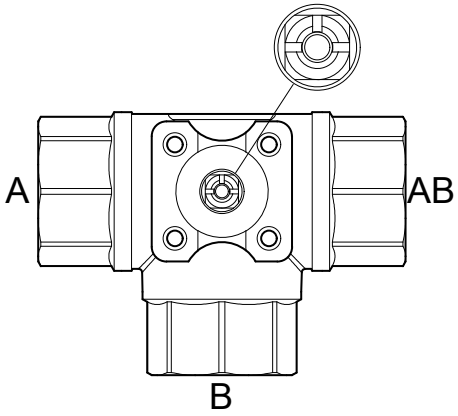


Fig. 5 3-way valve 100% open between port A and port AB

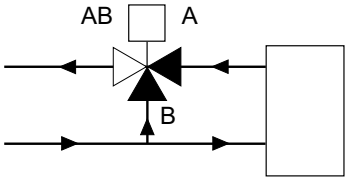
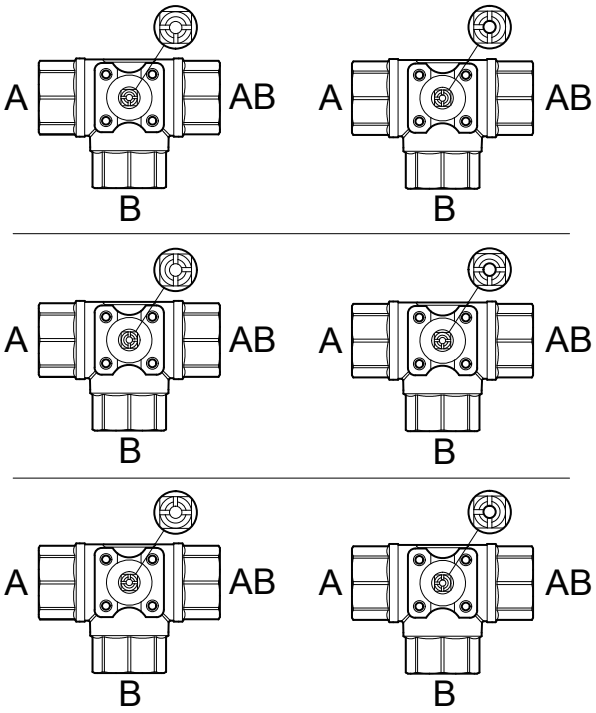


Fig. 6 3-way valve

When no flow plate is installed, you can also use the 3-way valves as diverting valves with functions as seen in the 3 scenarios below. The left and right pictures correspond to the 90° opening angle of the actuator.



Top row: In the left picture the flow path is opened in all directions. In the right picture the flow path between port A and port B is open, while it is closed in port AB.

Middle row: In the left picture the flow path between port B and port AB is open while closed in port A. In the right picture the flow path is open in all directions.

Lower row: In the left picture there is an open flow path between port A and port AB while port B is closed. In the right picture the flow path between port A and port B is open, while it is closed in port AB.

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.

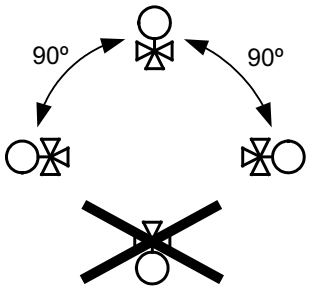
The 3-way valve is of a mixing type when using the flow plates on port A and must therefore be mounted in the mixing point. When using without flow plate it can also be used as diverting valve with inlet on port A or AB.

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°

CE

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

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 with no flow plate installed in port A
BV215	DN15	0.6 - 1.0 - 1.6 - 2.5 - 4.0	6.3
BV220	DN20	6.3	10
BV225	DN25	10	16
BV232	DN32	16	25
BV240	DN40	25	40
BV250	DN50	40	63

3-way valves

Article	Nominal diameter	Kvs with flow plate installed in port A, (and port B on DN15)	Kvs with no flow plate installed in port A	Kvs (B→AB)
BV315	DN15	0.6/1.0/1.6/2.5/4.0	6.3	4
BV320	DN20	6.3	10	6.3
BV325	DN25	10	16	10
BV332	DN32	16	25	16
BV340	DN40	25	40	25
BV350	DN50	40	63	40

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

Article	ΔPs[1] (RVAB4…, 4 Nm) [kPa]	ΔPmax[2] (RVAB4…, 4 Nm) [kPa]	ΔPs[1] (RVAB5…, 5 Nm) [kPa]	ΔPmax[2] (RVAB5…, 5 Nm) [kPa]
BV215	2500	350	N/A	N/A
BV220	2500	350	N/A	N/A
BV225	2500	350	N/A	N/A
BV232	N/A	N/A	1600	350
BV240	N/A	N/A	1600	350
BV250	N/A	N/A	1600	350
BV315	2500	350	N/A	N/A
BV320	2500	350	N/A	N/A
BV325	2500	350	N/A	N/A
BV332	N/A	N/A	1600	350
BV340	N/A	N/A	1600	350
BV350	N/A	N/A	1600	350

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

ΔPmax 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
BV-HL1	Hand lever for manual operation of BV valves.

Dimensions

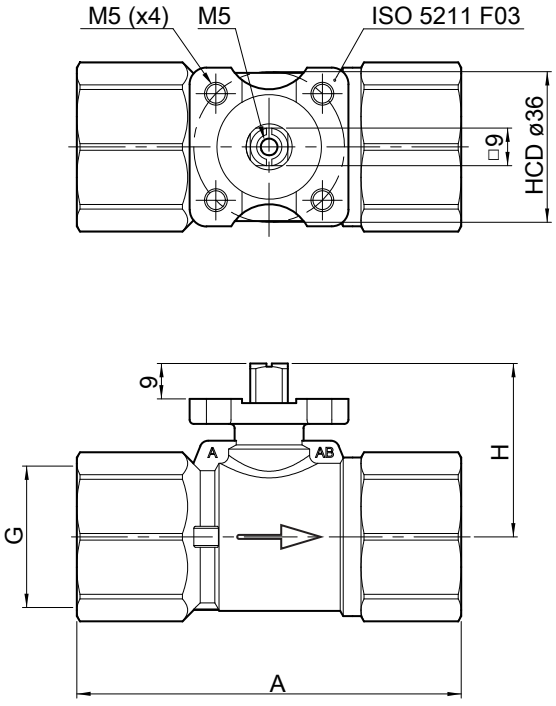


Fig. 7 2-way valves

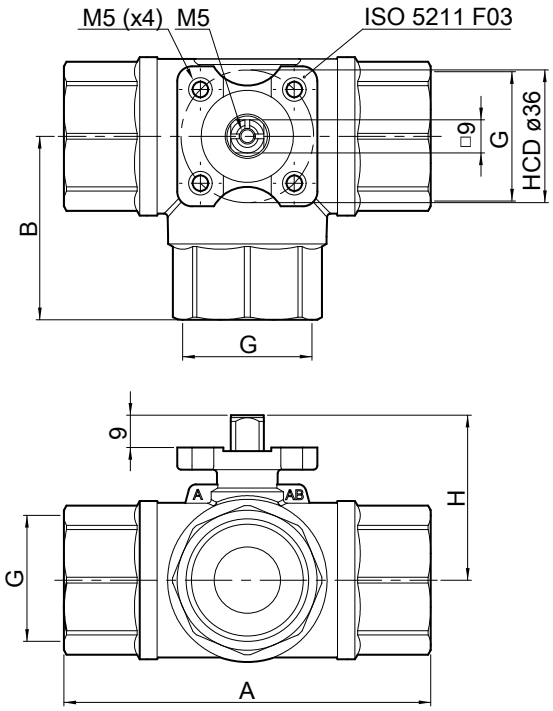
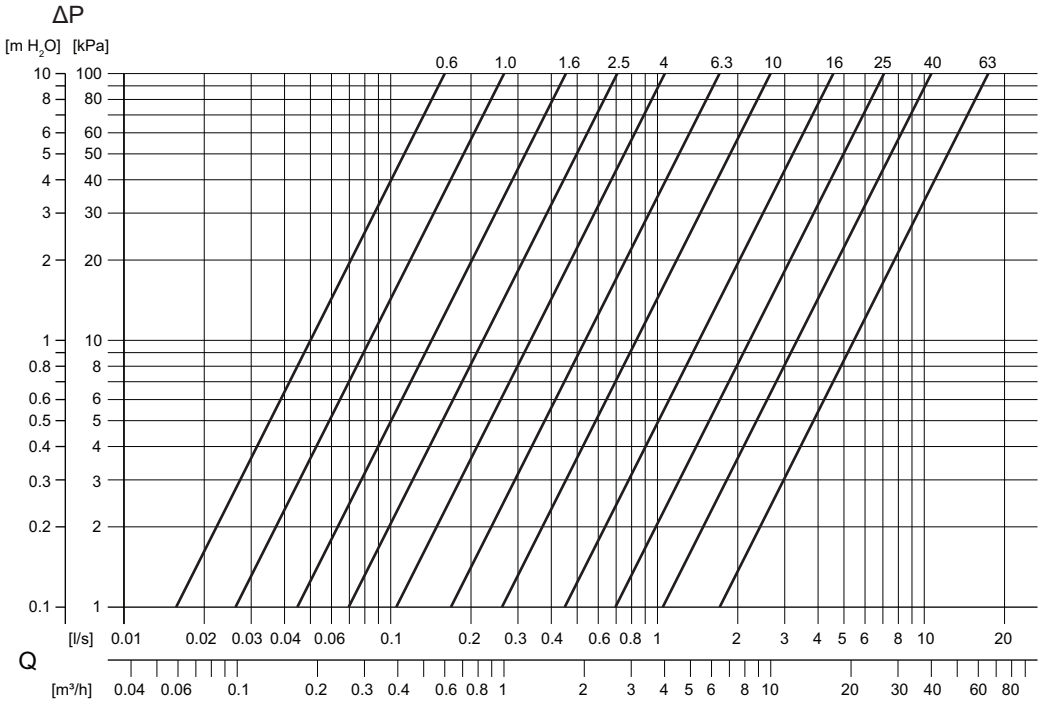


Fig. 8 3-way valves

Article	A	B	H	G
BV215	67	N/A	33	Rp 1/2"
BV220	75	N/A	40	Rp 3/4"
BV225	92	N/A	42	Rp 1"
BV232	109	N/A	53	Rp 1 1/4"
BV240	119	N/A	57	Rp 1 1/2"
BV250	139	N/A	62	Rp 2"
BV315	72	36	40.5	Rp 1/2"
BV320	81	41	43	Rp 3/4"
BV325	93	50	45	Rp 1"
BV332	109	58	56	Rp 1 1/4"
BV340	119	65	61	Rp 1 1/2"
BV350	143	75	66	Rp 2"

[mm], unless otherwise specified

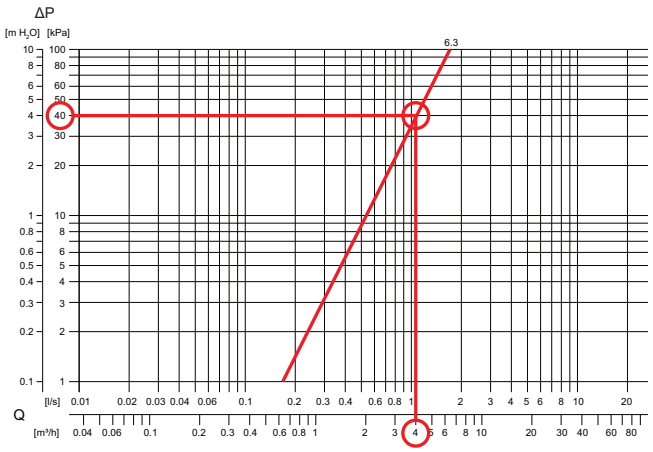
Pressure drop curves



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.regincontrols.com.