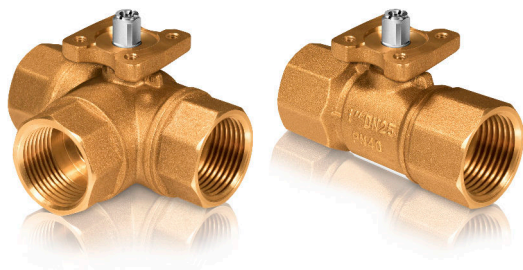




# BV2/BV3

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.

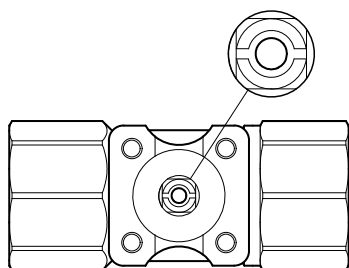


Fig. 1 2-way valve 100% open between port A and port AB

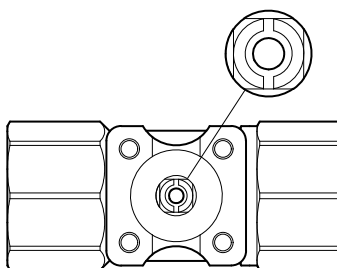


Fig. 2 2-way valve closed completely

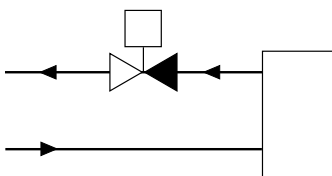


Fig. 3 2-way valve

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Web: [www.regincontrols.com](http://www.regincontrols.com)  
E-mail: [info@regincontrols.com](mailto:info@regincontrols.com)

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### 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.

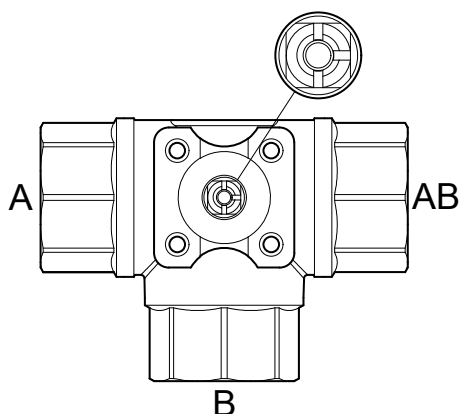


Fig. 4 3-way valve 100% open between port B and port AB

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.

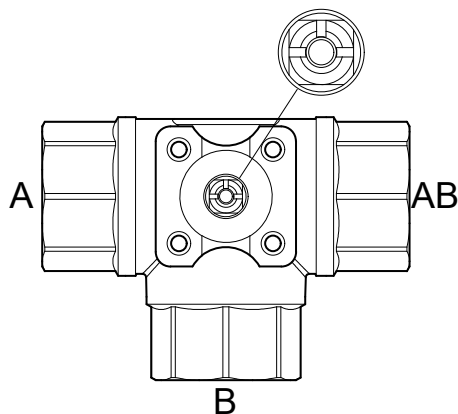


Fig. 5 3-way valve 100% open between port A and port AB

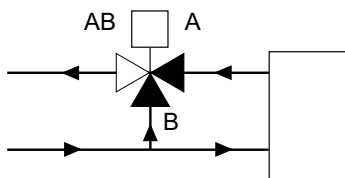
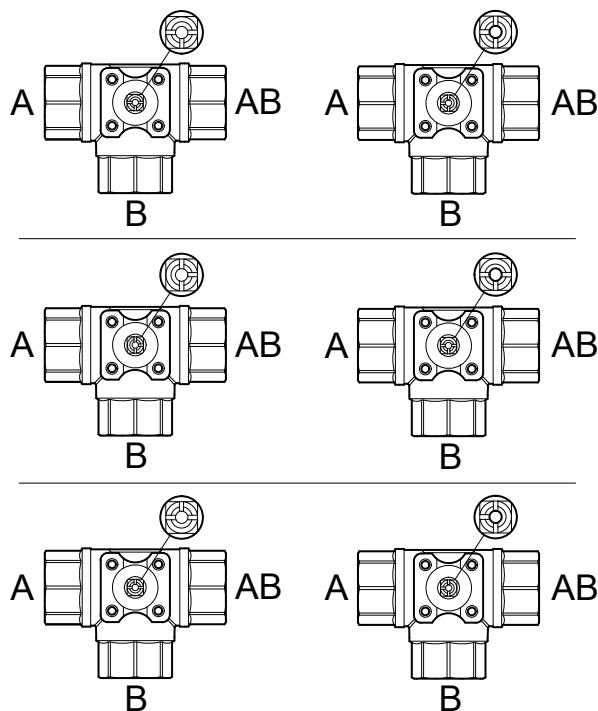


Fig. 6 3-way valve

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.

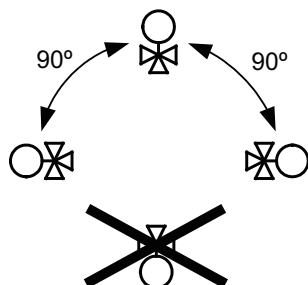
The 3-way valve is of a mixing type when using the flow plates on port A and must therefore be mounted in the mixing point. When using without flow plate it can also be used as diverting valve with inlet on port A or AB.

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

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



The valves of sizes DN32, DN40 and DN 50 carries the CE-mark. More information is available at [www.regincontrols.com](http://www.regincontrols.com).

## Material

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

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Web: [www.regincontrols.com](http://www.regincontrols.com)

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

Article	$\Delta P_{s1}$ (RVAB4..., 4 Nm) [kPa]	$\Delta P_{max2}$ (RVAB4..., 4 Nm) [kPa]	$\Delta P_{s1}$ (RVAB5..., 5 Nm) [kPa]	$\Delta P_{max2}$ (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

$\Delta P_s$  constitutes the max. permitted differential pressure at which the valve actuator can safely close against the pressure.

$\Delta P_{max}$  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
BV-HL1	Hand lever for manual operation of BV valves.

## Dimensions

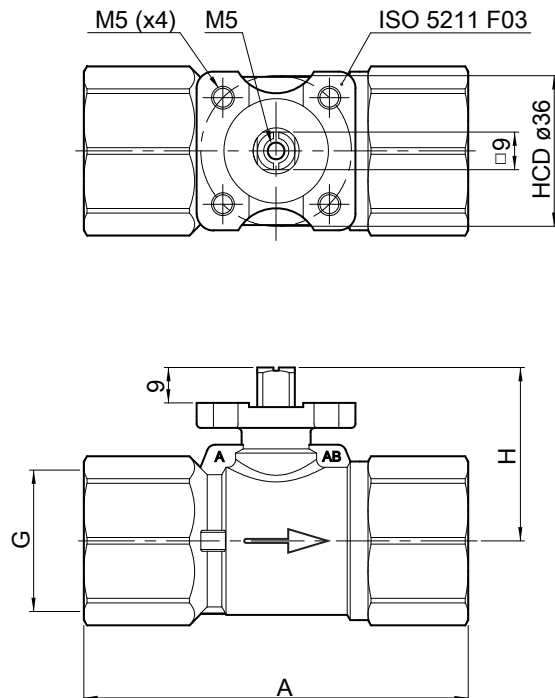


Fig. 7 2-way valves

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 E-mail: [info@regincontrols.com](mailto:info@regincontrols.com)

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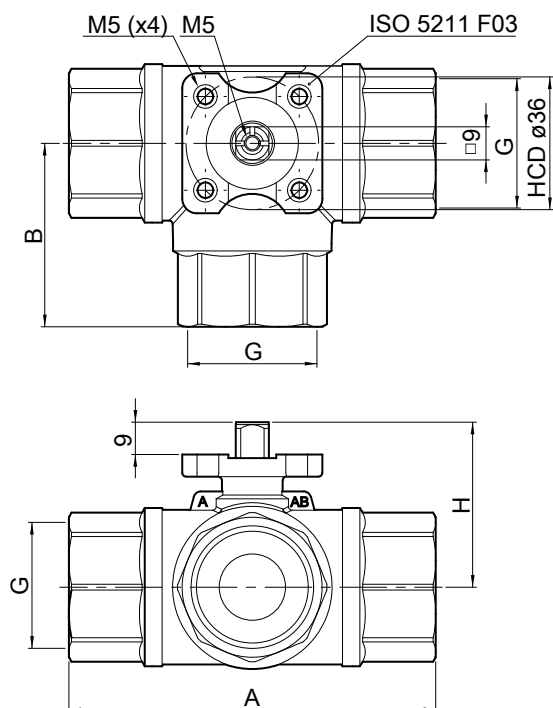
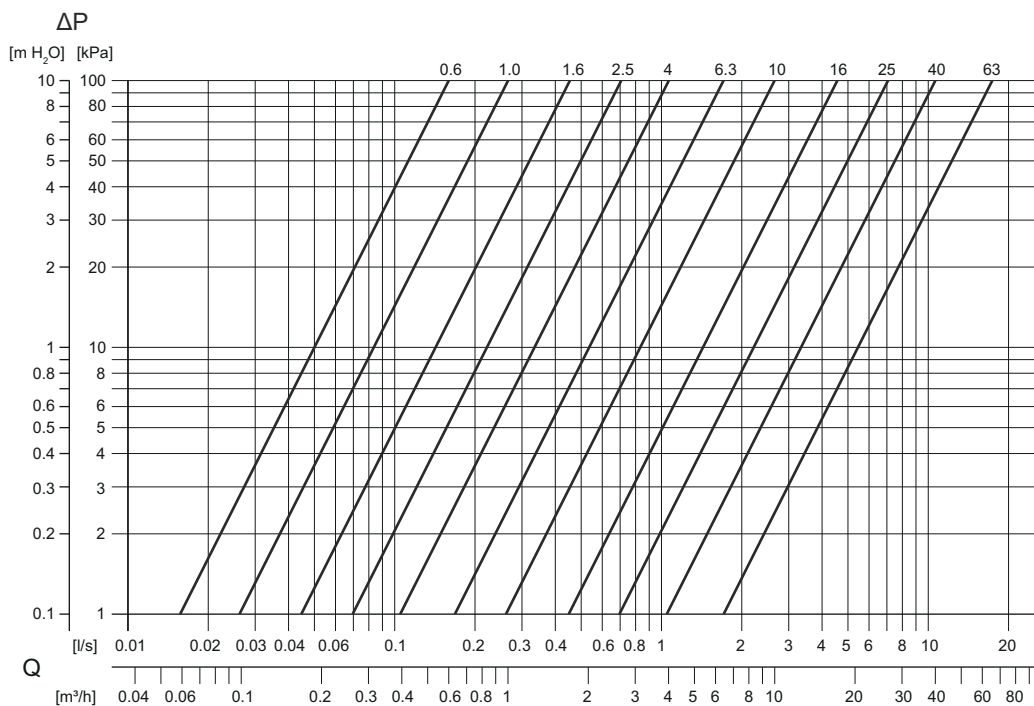


Fig. 8 3-way valves

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

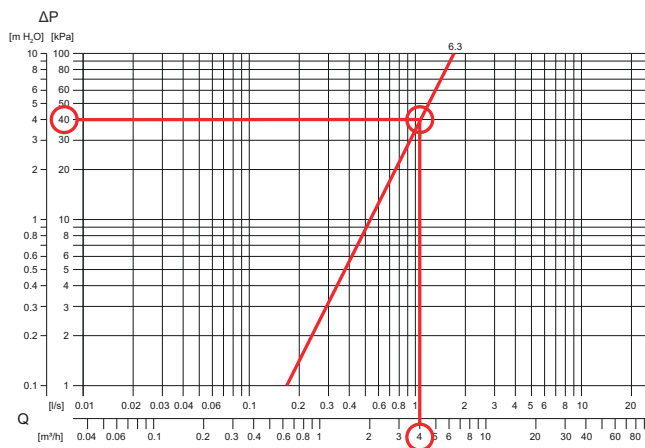


$\Delta P$  = Pressure drop

Q = Flow

### Example, pressure drop curves

If the pressure drop is 40 kPa (A) and the flow is 4 m<sup>3</sup>/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](http://www.regincontrols.com).