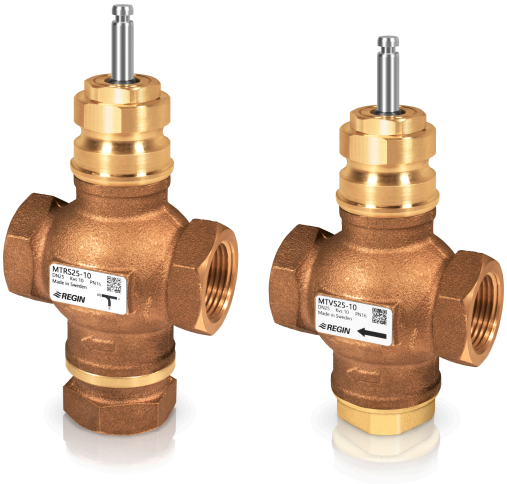
MTVS/MTRS

2– and 3–way control valves



The MTVS and MTRS range of valves are intended for use in heating and ventilation systems. They are also highly suitable for systems where dezincification resistant (DZR) materials is a requirement. The valves are intented for use with Regin's RVAN actuators.

- ✓ Size DN15–DN50
- ✓ Kvs value 0.63…39
- ✓ Rangeability 100:1
- ✓ Media temperature -5...+150°C
- ✓ For use in heating and ventilation systems
- ✓ Pressure class PN16

Function

2-way valve

The valve is open when the stem is in its lowest position and closed when the stem is in its top position.

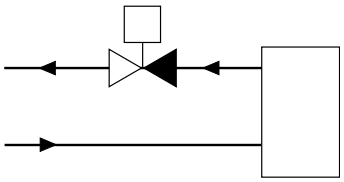


Fig. 1 2-way valve

3-way valve

The 3-way valve is closed between port A and port AB (the ports opposite to one another) when the stem is in its highest position. In this position, the valve is also open between the bottom port B and the common supply port AB. When the stem is in its lowest position, the 3-way valve is completely open between port A and port AB and consequently closed between the bottom port B and the common port AB.

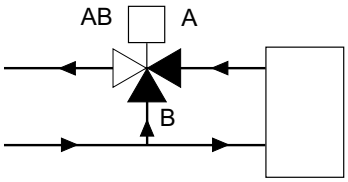


Fig. 2 3-way valve

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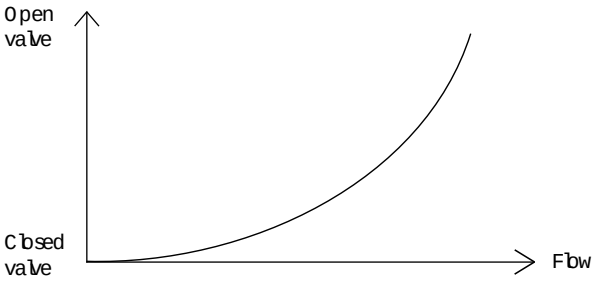
Flow characteristics

The flow characteristic of the valve is equal percentage, in accordance with the figure below.

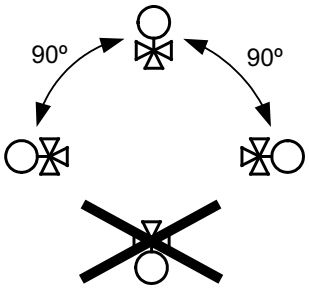


Installation

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 plug closes tightly and to prevent any noise when closing.

The 3-way valve is of a mixing type and must therefore be mounted in the mixing point.

- ✓ 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.
- ✓ For maximum efficiency and minimum wear, install the valve in a vertical position with the stem pointing upward. If the valve is mounted with the actuator on the side, more wear is caused to the valve stuffing box. 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, cooling, ventilation systems and systems requiring DZR*-materials
Nominal pressure rating	PN16
Connection	BSP female threading according to ISO 228/1
Flow characteristics	Equal percentage
Max. leakage	0.1 % of Kvs
Media	Hot, cold, or glycol-mixed water (max. 50 % glycol)
Media temperature	-5…+150 °C
Rangeability	100:1
Stroke	20 mm

* DZR = Dezincification resistant

Material

Body	Gunmetal 1400 LG2
Valve seat	Gunmetal 1400 LG2
Cone	Gunmetal 1400 LG2
Stem	Stainless steel 303S31
Packing box	Dezincification resistant brass CW511L
O-rings	EPDM

Models, 2-way valves

Article	Nominal diameter	Connection	Kvs
MTVS15-0.63	DN15	G½"	0.63
MTVS15-1.0	DN15	G½"	1.0
MTVS15-1.6	DN15	G½"	1.6
MTVS15-2.1	DN15	G½"	2.1
MTVS15-2.7	DN15	G½"	2.7
MTVS20-4.2	DN20	G¾"	4.2
MTVS20-5.6	DN20	G¾"	5.6
MTVS25-10	DN25	G1"	10
MTVS32-16	DN32	G1¼"	16
MTVS40-27	DN40	G1½"	27
MTVS50-39	DN50	G2"	39

Models, 3-way valves

Article	Nominal diameter	Connection	Kvs
MTRS15-0.63	DN15	G½"	0.63
MTRS15-1.0	DN15	G½"	1.0
MTRS15-1.6	DN15	G½"	1.6
MTRS15-2.1	DN15	G½"	2.1
MTRS15-2.7	DN15	G½"	2.7
MTRS20-4.2	DN20	G¾"	4.2
MTRS20-5.6	DN20	G¾"	5.6

Article	Nominal diameter	Connection	Kvs
MTRS25-10	DN25	G1"	10
MTRS32-16	DN32	G1¼"	16
MTRS40-27	DN40	G1½"	27
MTRS50-39	DN50	G2"	39

Combination options (valves and actuators) and differential pressure

Article	ΔPs (RVAN5...)	ΔPmax (RVAN5...)	ΔPs (RVAN10...)	ΔPmax (RVAN10...)
MT…S15-0.63	1600 kPa	700 kPa	1600 kPa	700 kPa
MT…S15-1.0	1600 kPa	700 kPa	1600 kPa	700 kPa
MT…S15-1.6	1600 kPa	700 kPa	1600 kPa	700 kPa
MT…S15-2.1	1600 kPa	700 kPa	1600 kPa	700 kPa
MT…S15-2.7	1600 kPa	700 kPa	1600 kPa	700 kPa
MT…S20-4.2	1000 kPa	600 kPa	1600 kPa	600 kPa
MT…S20-5.6	1000 kPa	600 kPa	1600 kPa	600 kPa
MT…S25-10	600 kPa	500 kPa	1400 kPa	500 kPa
MT…S32-16	400 kPa	400 kPa	800 kPa	450 kPa
MT…S40-27	300 kPa	300 kPa	600 kPa	400 kPa
MT…S50-39	200 kPa	200 kPa	400 kPa	400 kPa

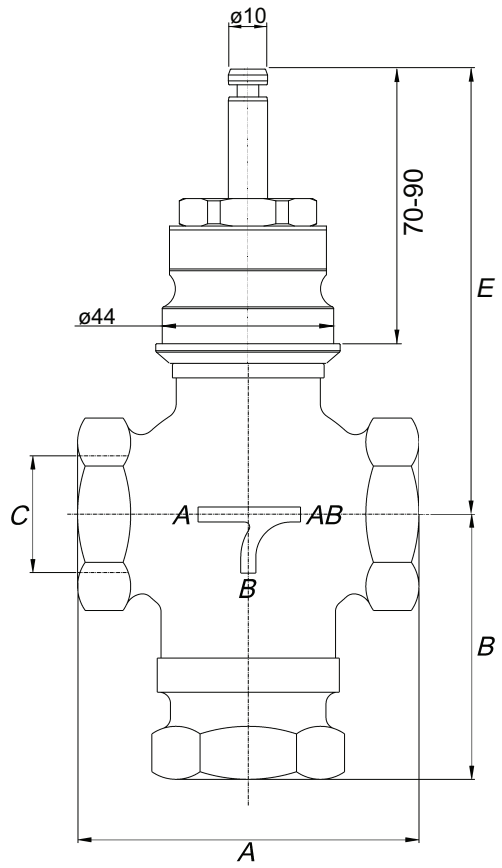
ΔPs constitutes the max. permitted differential pressure at which the valve actuator can safely close against the pressure.

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
S0603080300	Spare parts kit, packing box for MTVS/MTRS valves (until 2019-12)
S2921357901	Spare parts kit, packing box (from 2020-01)
STEMHEATER	Valve stem heater, 24V AC, 50W for RVAN

Dimensions

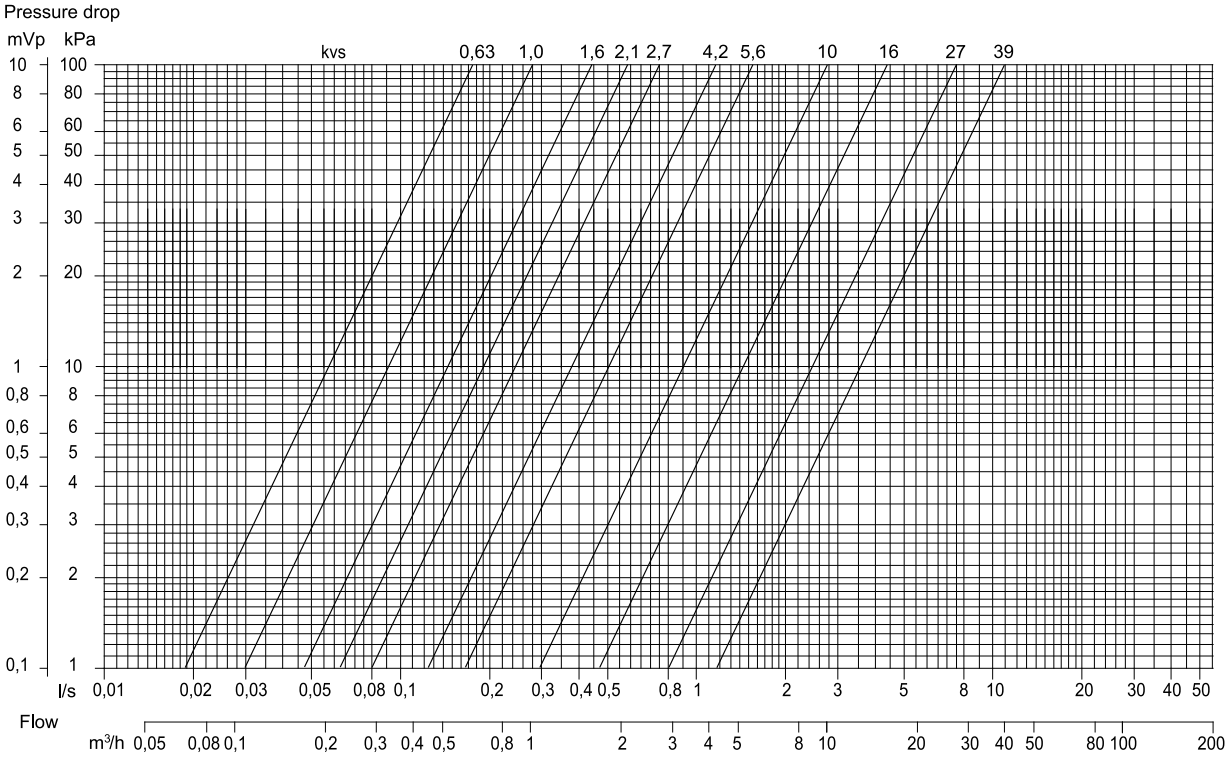


Article	A	B1*	B2**	C	E
MT…S15-0.63	70	51	70	G½"	110
MT…S15-1.0	70	51	70	G½"	110
MT…S15-1.6	70	51	70	G½"	110
MT…S15-2.1	70	51	70	G½"	110
MT…S15-2.7	70	51	70	G½"	110
MT…S20-4.2	80	53	70	G¾"	110
MT…S20-5.6	80	53	70	G¾"	110
MT…S25-10	90	54	70	G1"	115
MT…S32-16	115	56	80	G1¼"	119
MT…S40-27	130	69	80	G1½"	124
MT…S50-39	160	73	95	G2"	134

* The measurement B1 applies to MTVS.
** The measurement B2 applies to MTRS.

[mm], unless otherwise specified

Pressure drop diagram



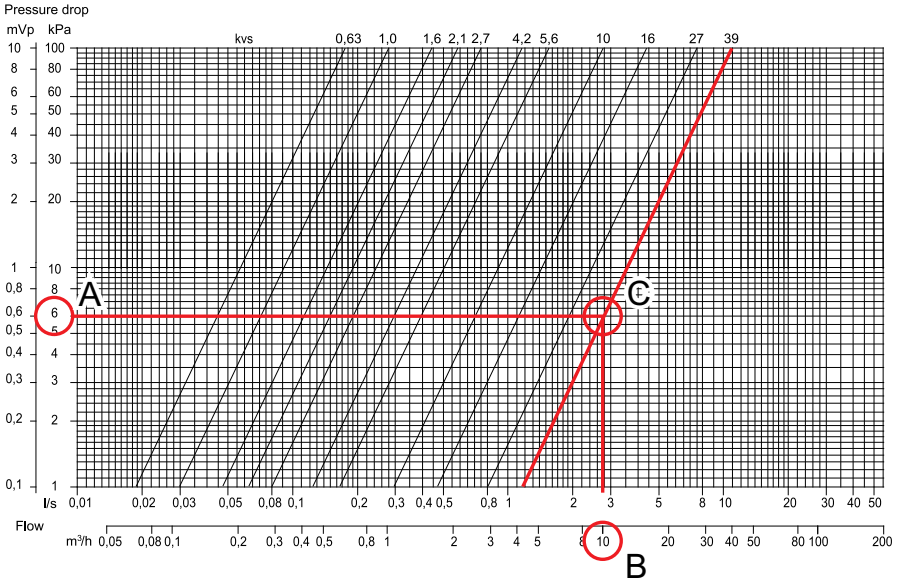


Fig. 3 Example, calculation of the Kv value: At a pressure drop of 6 kPa (A) and a flow of 10 m3 / h (B), the Kv value is 39 (C). See the markings in the picture above.

Documentation

All documentation can be downloaded from www.regincontrols.com.