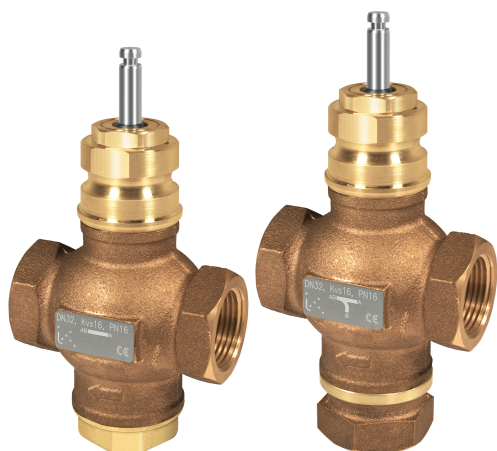


VFG2...N/VFG3

2- and 3-way control valves



The VFG2...N and VFG3 range of valves are intended for use in heating and ventilation systems. They are also highly suitable for systems where dezincification resistant materials is a requirement. The valves are intended for use with Industrietechnik's SE 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.

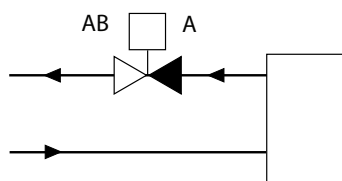


Fig. 1 . 2-way valve

3-way valve

Stem in the lower position, the valve is open between the A - AB and closed between the ports B - AB. Stem in the upper position, the valve is closed between the ports A - AB and open between B - AB.

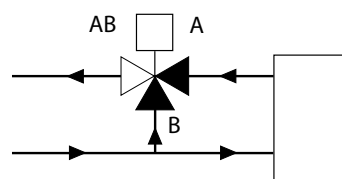


Fig. 2 . 3-way valve

Flow characteristics

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

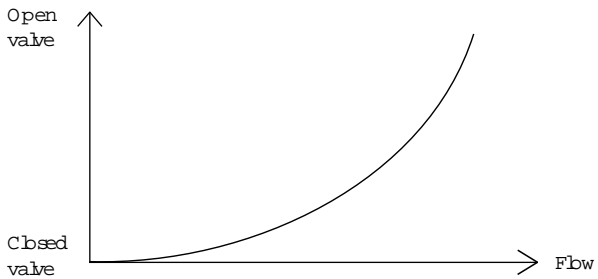


Fig. 3. Flow characteristics

- 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.

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°.

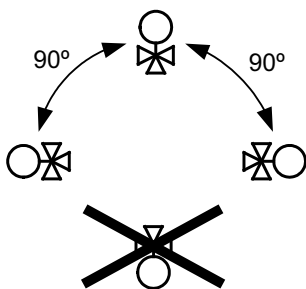


Fig. 4. Installation angle

- Install the valve according to the fluid direction arrow shown on the valve.

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VFG2...N/VFG3

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

Material

Body	Gunmetal 1400 LG2
Valve seat	Gunmetal 1400 LG2
Cone	Gunmetal 1400 LG2
Stem	Stainless steel 303S31
Packing box	Dezincification resistant brass CW 602N
O-rings	EPDM

2-way valves

Article	Nominal diameter	Connection	Kvs
VFG215N-0,63	DN15	G $\frac{1}{2}$ "	0.63 m ³ /h
VFG215N-1,0	DN15	G $\frac{1}{2}$ "	1.0 m ³ /h
VFG215N-1,6	DN15	G $\frac{1}{2}$ "	1.6 m ³ /h
VFG215N-2,1	DN15	G $\frac{1}{2}$ "	2.1 m ³ /h
VFG215N-2,7	DN15	G $\frac{1}{2}$ "	2.7 m ³ /h
VFG220N-4,2	DN20	G $\frac{3}{4}$ "	4.2 m ³ /h
VFG220N-5,6	DN20	G $\frac{3}{4}$ "	5.6 m ³ /h
VFG225N-10	DN25	G1"	10 m ³ /h
VFG232N-16	DN32	G1 $\frac{1}{4}$ "	16 m ³ /h
VFG240N-27	DN40	G1 $\frac{1}{2}$ "	27 m ³ /h
VFG250N-39	DN50	G2"	39 m ³ /h

3-way valves

Article	Nominal diameter	Connection	Kvs
VFG35-0,63	DN15	G½"	0.63 m³/h
VFG315-1,0	DN15	G½"	1.0 m³/h
VFG315-1,6	DN15	G½"	1.6 m³/h
VFG315-2,1	DN15	G½"	2.1 m³/h
VFG315-2,7	DN15	G½"	2.7 m³/h
VFG320-4,2	DN20	G¾"	4.2 m³/h
VFG320-5,6	DN20	G¾"	5.6 m³/h
VFG325-10	DN25	G1"	10 m³/h
VFG332-16	DN32	G1¼"	16 m³/h
VFG340-27	DN40	G1½"	27 m³/h
VFG350-39	DN50	G2"	39 m³/h

Combination options (valves and actuators) and differential pressure

Article	ΔPs (SE5)	ΔPmax (SE5)	ΔPs (SE10)	ΔPmax (SE10)
VFG215N-0,63	1600 kPa	700 kPa	1600 kPa	700 kPa
VFG215N-1,0	1600 kPa	700 kPa	1600 kPa	700 kPa
VFG215N-1,6	1600 kPa	700 kPa	1600 kPa	700 kPa
VFG215N-2,1	1600 kPa	700 kPa	1600 kPa	700 kPa
VFG215N-2,7	1600 kPa	700 kPa	1600 kPa	700 kPa
VFG220N-4,2	1000 kPa	600 kPa	1600 kPa	600 kPa
VFG220N-5,6	1000 kPa	600 kPa	1600 kPa	600 kPa
VFG225N-10	600 kPa	500 kPa	1400 kPa	500 kPa
VFG232N-16	400 kPa	400 kPa	800 kPa	450 kPa
VFG240N-27	300 kPa	300 kPa	600 kPa	400 kPa
VFG250N-39	200 kPa	200 kPa	400 kPa	300 kPa
VFG35-0,63	1600 kPa	700 kPa	1600 kPa	700 kPa
VFG315-1,0	1600 kPa	700 kPa	1600 kPa	700 kPa
VFG315-1,6	1600 kPa	700 kPa	1600 kPa	700 kPa
VFG315-2,1	1600 kPa	700 kPa	1600 kPa	700 kPa
VFG315-2,7	1600 kPa	700 kPa	1600 kPa	700 kPa
VFG320-4,2	1000 kPa	600 kPa	1600 kPa	600 kPa
VFG320-5,6	1000 kPa	600 kPa	1600 kPa	600 kPa
VFG325-10	600 kPa	500 kPa	1400 kPa	500 kPa
VFG332-16	400 kPa	400 kPa	800 kPa	450 kPa
VFG340-27	300 kPa	300 kPa	600 kPa	400 kPa
VFG350-39	200 kPa	200 kPa	400 kPa	300 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).

Dimensions

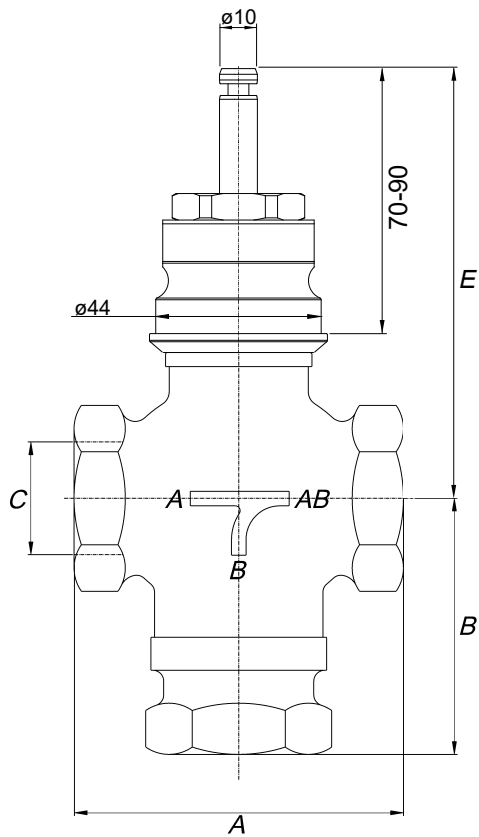


Fig. 5 . Dimensions

Model	A	B1	B2	C	E
VFG...15-0,63	70	51	70	G $\frac{1}{2}$ "	110
VFG...15-1,0	70	51	70	G $\frac{1}{2}$ "	110
VFG...15-1,6	70	51	70	G $\frac{1}{2}$ "	110
VFG...15-2,1	70	51	70	G $\frac{1}{2}$ "	110
VFG...15-2,7	70	51	70	G $\frac{1}{2}$ "	110
VFG...20-4,2	80	53	70	G $\frac{3}{4}$ "	110
VFG...20-5,6	80	53	70	G $\frac{3}{4}$ "	110
VFG...25-10	90	54	70	G1"	115
VFG...32-16	115	56	80	G1 $\frac{1}{4}$ "	119
VFG...40-27	130	69	80	G1 $\frac{1}{2}$ "	124
VFG...50-39	160	73	95	G2"	124

[mm], unless otherwise specified

The measurement B1 applies to VFG2..N

The measurement B2 applies to VFG3

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VFG2...N/VFG3

Pressure drop diagram

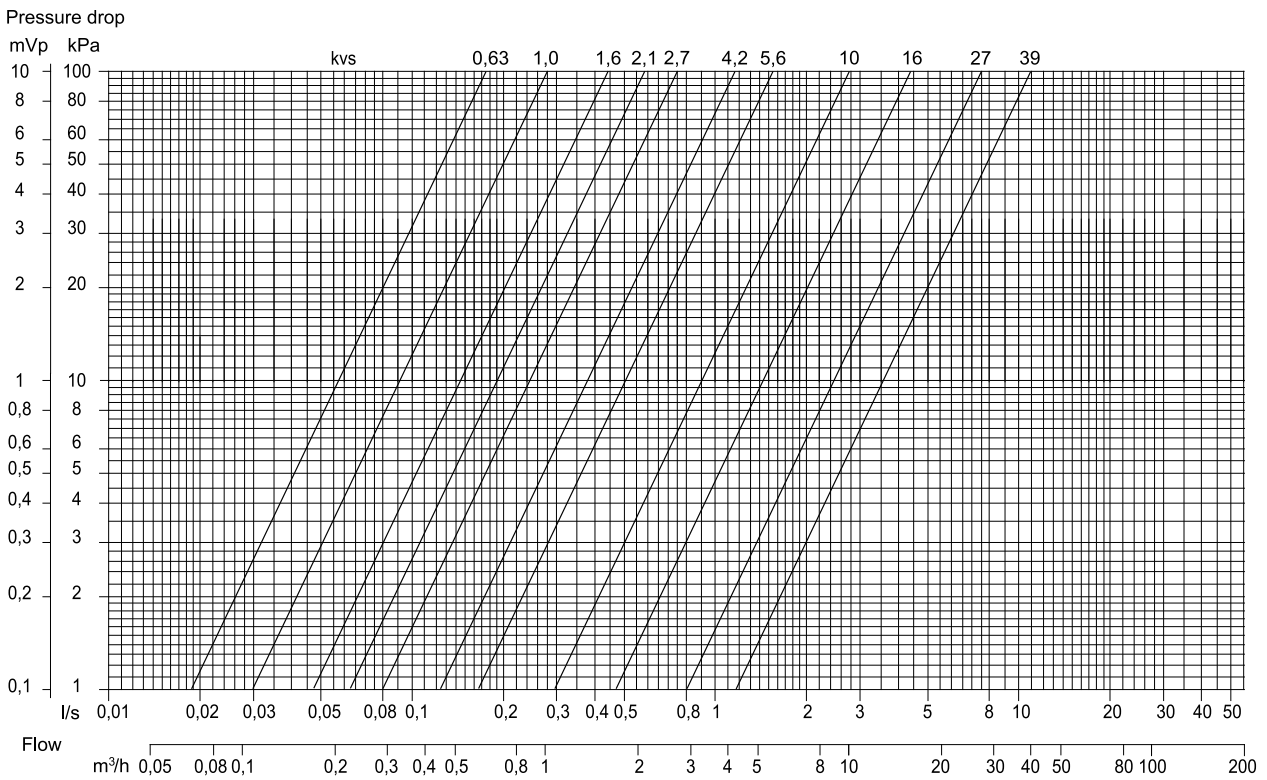


Fig. 6. Pressure drop diagram

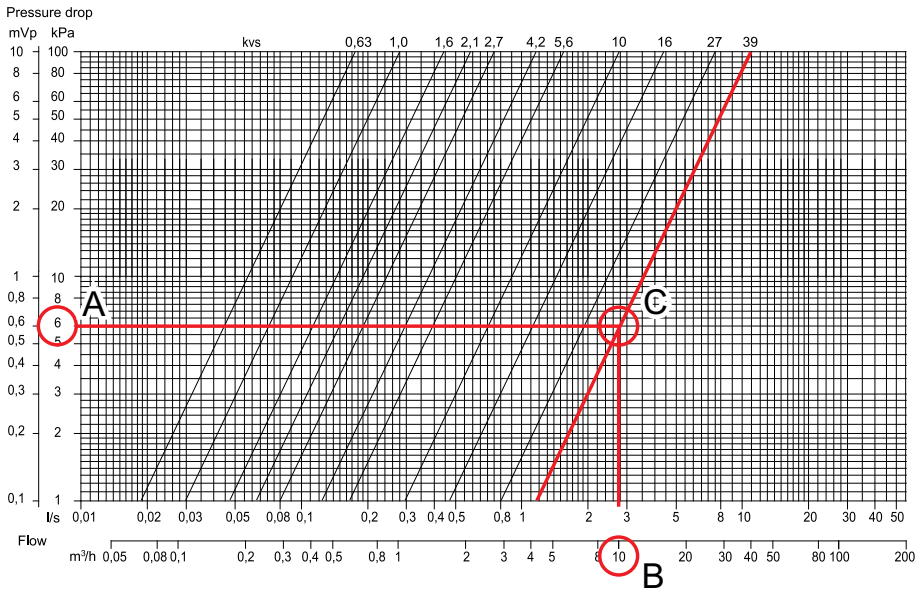


Fig. 7. Example: Calculation of the Kv value

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 figure 7.

Documentation

All documentation can be downloaded from www.industrietechnik.it.