

## VUE: 2-way flanged valve, PN 16/10 (pn.)

### How energy efficiency is improved

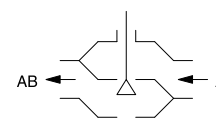
Efficient use in continuous control systems

### Features

- Continuous control of cold and hot water and low-pressure steam up to 115 °C in closed circuits<sup>1)</sup>
- Water quality as per VDI 2035
- In combination with AVP 242 valve actuators as a control unit
- Not suitable for drinking water
- Valve with flange connection as per EN 1092-2, seal form B, for PN 16 and PN 10
- Regulating valve, free of silicone grease, painted black
- The valve is closed when the spindle is moved out
- Closing procedure against the pressure
- Valve body and seat made of grey cast iron
- Stainless-steel spindle
- Plug made of brass with glass-fibre reinforced PTFE sealing ring
- Stuffing box made of brass with wiper ring and double O-ring seal made of EPDM



VUE032F300



### Technical data

Parameters		
Nominal pressure		PN 16/10
Connection		Flange as per EN 1092-2, form B
Valve characteristic, control passage F200		Linear
Valve characteristic, control passage F300		Equal-percentage
Control ratio of valve		> 50:1
Stuffing box		2 EPDM O-rings
Leakage rate		< 0.05% of $K_{VS}$ value
Valve stroke		8 mm

Ambient conditions		
Operating temperature <sup>2)</sup>		-10...150 °C
Operating pressure		PN 16: Up to 120 °C, 16 bar At 150 °C, 14.4 bar PN 10: Up to 120 °C, 10 bar At 150 °C, 9 bar Between 120 °C and 150 °C, a linear interpolation can be performed

Standards, directives		
Pressure and temperature data		EN 764, EN 1333
Flow parameters		EN 60534 (page 3)
Pressure Equipment Directive		97/23/EC (fluid group II) No CE label Article 3.3

Overview of types			
Type	Nominal diameter	$K_{VS}$ value	Weight
VUE015F350	DN 15	0.4 m <sup>3</sup> /h	3.2 kg
VUE015F340	DN 15	0.63 m <sup>3</sup> /h	3.2 kg
VUE015F330	DN 15	1 m <sup>3</sup> /h	3.2 kg
VUE015F320	DN 15	1.6 m <sup>3</sup> /h	3.2 kg
VUE015F310	DN 15	2.5 m <sup>3</sup> /h	3.2 kg
VUE015F300	DN 15	4 m <sup>3</sup> /h	3.2 kg
VUE020F300	DN 20	6.3 m <sup>3</sup> /h	4.1 kg

<sup>1)</sup> Humidity must not exceed 75%

<sup>2)</sup> At temperatures below 0 °C, use a stuffing box heater. Use adapter (accessory) at temperatures above 100 °C



ValveDim app



Type	Nominal diameter	K <sub>vs</sub> value	Weight
VUE025F300	DN 25	10 m <sup>3</sup> /h	4.7 kg
VUE032F300	DN 32	16 m <sup>3</sup> /h	7.3 kg
VUE040F300	DN 40	22 m <sup>3</sup> /h	8.6 kg
VUE050F300	DN 50	28 m <sup>3</sup> /h	11.2 kg
VUE050F200	DN 50	40 m <sup>3</sup> /h	11.2 kg

#### Accessories

Type	Description
0372240001	Manual adjustment for valves with 8 mm stroke
0372249001	Adapter required when temperature of the medium is 100...130 °C (recommended for temperatures <10 °C)
0372249002	Adapter required when temperature of the medium is 130...150 °C
0378284100	Stuffing box heater 230 V~, 15 W for medium below 0 °C
0378284102	Stuffing box heater 24 V~, 15 W for medium below 0 °C
0378368001	Complete replacement stuffing box for DN 15...50

#### Combination of VUE with pneumatic actuator

- i** *Warranty: The technical data and pressure differences indicated here are applicable only in combination with SAUTER valve actuators. The warranty does not apply if used with valve actuators from other manufacturers.*
- i** **Definition of  $\Delta p_s$ :** *Maximum admissible pressure drop in the event of a malfunction (pipe break after the valve) at which the actuator reliably closes the valve by means of a return spring.*
- i** **Definition of  $\Delta p_{max}$ :** *Maximum admissible pressure drop in control mode at which the actuator reliably opens and closes the valve.*
- i** *The running time is based on the centair air flow rate (400 l<sub>r</sub>/h) and on a supply line with a length of 20 m and a diameter of 4 mm.*

#### Combination of VUE with pneumatic actuator AVP 242

<b>Actuator</b>	<b>AVP242F001</b>
Admissible pressure p <sub>stat</sub>	≤ 6 bar
Running time	8 s
Stroke	8 mm

$\Delta p$  [bar]

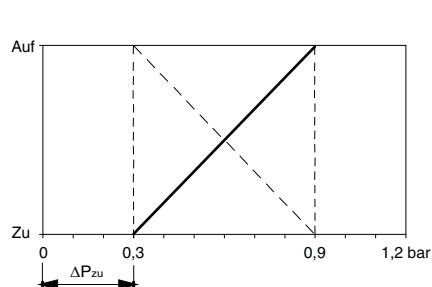
Closes against the pressure	$\Delta p_{max}$	$\Delta p_s$
VUE015F350	10.0	16.0
VUE015F340		
VUE015F330		
VUE015F320		
VUE015F310		
VUE015F300		
VUE020F300		
VUE025F300	10.0	12.0
VUE032F300	6.5	6.5
VUE040F300	4.0	4.0
VUE050F300	2.5	2.5
VUE050F200		

Cannot be used to close with the pressure

 At temperatures above 100 °C, accessories are required

**Pressure-stroke characteristic (with valve attached), characteristic not adjustable:**

AVP242

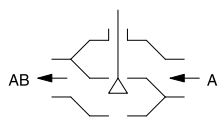


———— = normally closed (function E)  
 - - - - - = normally open (function A)

Sequences with positioner XSP 31 possible.

**Description of operation**

The valve can be moved to any intermediate position with a pneumatic actuator. When the spindle is moved out, the control passage of the valve is closed. The valves may only be used closing against pressure. The flow direction marked on the valve must be observed. Closing with pressure is not permitted with pneumatic actuators, because this would cause pressure surges. The flow parameters correspond to EN 60534.

**Closing procedure against the pressure**

These control valves are characterised by their reliability and precision and make an important contribution towards environmentally friendly regulation. They meet challenges such as emergency functions, overcoming differential pressures, controlling medium temperatures and performing the shut-off function, all in a low-noise form.

The valve spindle is automatically and firmly connected to the actuator spindle. The brass plug controls the equal-percentage flow rate in the control passage. The tightness of the valve is ensured by the seat incorporated in the body.

The stuffing box is maintenance-free. This consists of a brass body, two O-rings, a wiper ring and a grease reserve. This is free of silicone grease, and silicone oil may not be used for the spindle. The grease reserve stops particles that may be present in the medium from penetrating to the upper O-ring.

**Intended use**

This product is only suitable for the purpose intended by the manufacturer, as described in the "Description of operation" section.

All related product regulations must also be adhered to. Changing or converting the product is not admissible.

**Engineering and fitting notes**

The actuator is mounted directly on the valve and fastened with screws. The actuator is connected with the valve spindle automatically. The closing point must be adjusted as described in the fitting instructions (MV 506012, AVP242F021).

**Using with steam**

The valves can be used for low-pressure steam up to 115 °C with the same  $\Delta p_{\max}$  values. When used as a regulating valve, make sure that the valve does not operate mainly on the lower third of its stroke range. This leads to an extremely high flow speed, which greatly reduces the serviceable life of the valve.

**Using with water**

To ensure that impurities are retained in the water (weld beads, rust particles, etc.) and the spindle seal is not damaged, we recommend installing collecting filters, for example one for each floor or pipe run. Water requirements according to VDI 2035.

When using an additive in the water, the compatibility of the materials must be checked with the

manufacturer of the medium. The materials table shown below may be used. When glycol is used, we recommend using a concentration of between 20% and 55%.

### Other information regarding hydraulics and noise in systems

The valves can be used in a low-noise environment. To prevent noise, the pressure differences  $\Delta p_{\max}$  listed below should not be exceeded.

The pressure difference  $\Delta p_v$  is the maximum pressure that may act on the valve regardless of the stroke position, in order that the risk of cavitation and erosion is limited. These values are irrespective of the actuator force. The cavitation accelerates wear on the plug and seat in the valve and causes noises. To prevent cavitation, the differential pressure should not exceed the  $\Delta p_{\text{crit}}$  value:

$$\Delta p_{\text{crit}} = (p_1 - p_v) \times 0.5$$

$p_1$  = upstream pressure in front of the valve (bar)

$p_v$  = steam pressure at operating temperature (bar)

It is calculated using absolute pressure.

Note that when the pressure difference  $\Delta p_{\max}$  is exceeded, the valve can be damaged by cavitation and erosion. For the spring return, the stated  $\Delta p_s$  values are also the permissible differential pressure up to which the actuator can guarantee that the valve is closed in the event of an incident. Because this is an emergency function with a fast stroke movement (using a spring), this value can exceed  $\Delta p_{\max}$ .

### Fitting position

The control unit can be fitted in any position, but the hanging position is not recommended. Condensate, drops of water, etc. must be prevented from entering the actuator. When installed horizontally, without any structural support for the actuator, the maximum admissible weight on the valve is 25 kg.

When the actuator is mounted on the valve, make sure that the plug is not twisted on the seat (this may damage the sealing surface). When insulating the valve, it may only be insulated up to the connecting clip of the actuator.

### Slide rule and supplementary technical documents

Technical information	
SAUTER slide rule for valve sizing	P100013496
Pressure and temperature data	EN 764, EN 1333
Flow parameters	VDI/VDE 2173
Parameters, fitting notes, control, general information	Applicable EN, DIN, AD, TRD and accident prevention regulations
Fitting instructions:	
VUD, VUE, BUD, BUE DN 15...50	MV 506008
AVP242F001	MV 506041
AVP242F021	MV 506012
Declaration on materials and the environment	MD 76.111



#### Valve design

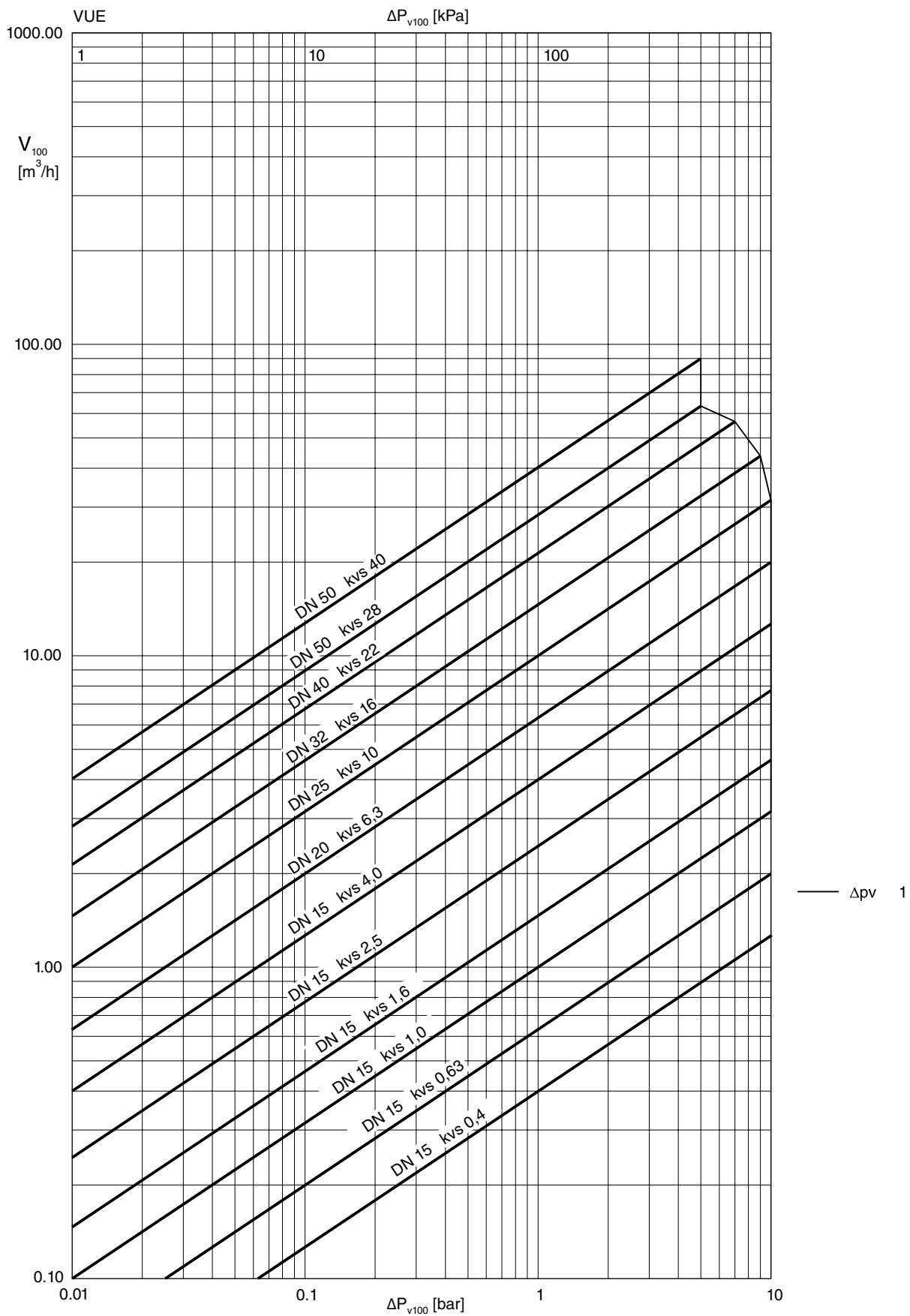
SAUTER provides various tools for valve design and engineering:

- ValveDim smartphone app
- ValveDim PC program
- ValveDim slide rule

You can find the tools under the link [www.sauter-controls.com/en/performance/valve-calculation/](http://www.sauter-controls.com/en/performance/valve-calculation/) or scan the QR code



Flow-rate chart



1: Against the pressure

Type	$\Delta p_v$
	<b>Against the pressure</b>
VUE015	10
VUE020	10
VUE025	10
VUE032	9
VUE040	7
VUE050	5

### Design and materials

Valve body made of grey cast iron as per EN 1561, code EN-GJL-250, material number EN-JL 1040 with smooth drilled flanges as per EN 1092-2, seal form B. Valve body protected by matt paint RAL 9005 jet black. Recommended for the welding flange as per EN 1092-1. Valve fitting length as per EN 558-1, basic series 1. Flat seal on valve body made of asbestos-free material.

### Material numbers as per DIN

	DIN material no.	DIN designation
Valve body	EN-JL 1040	EN-GJL-250 (GG25)
Valve seat	EN-JL 1040	EN-GJL-250
Spindle	1.4305	X8CrNiS18-9
Plug	CW617W	CuZn40Pb2
Plug seal	PTFE	
Stuffing box	CW617W	CuZn40Pb2

### Definition of pressure differences

- $\Delta p_v$ :** Maximum admissible pressure difference over the valve at every stroke position, limited by noise level and erosion. With this parameter, the valve is characterised as a flow element with specific hydraulic behaviour. Monitoring the cavitation and erosion along with the associated noise increases both the service life and the operational capacity.
- $\Delta p_{max}$ :** Maximum admissible pressure difference over the valve at which the actuator can reliably open and close the valve. The following are considered: Static pressure and flow effects. This value ensures trouble-free stroke movement and tightness. The value  $\Delta p_v$  of the valve is never exceeded.
- $\Delta p_s$ :** Maximum admissible pressure difference over the valve in the event of a malfunction (e.g. power failure, excessive temperature or pressure, pipe break) at which the actuator can close the valve tightly and, if necessary, maintain the entire operating pressure against atmospheric pressure. Because this is a safety function with a rapid stroke movement,  $\Delta p_s$  can be greater than  $\Delta p_{max}$  or  $\Delta p_v$ . The flow disturbing effects that arise here are quickly passed through. They are of secondary importance with this method of operation. For 3-way valves, the values only apply to the control passage.
- $\Delta p_{stat}$ :** Line pressure behind the valve. This essentially corresponds to the idle pressure when the pump is switched off, caused for example by the fluid level in the system, increased pressure due to pressure tanks or steam pressure. For valves that close with pressure, the static pressure plus the pump pressure are used.

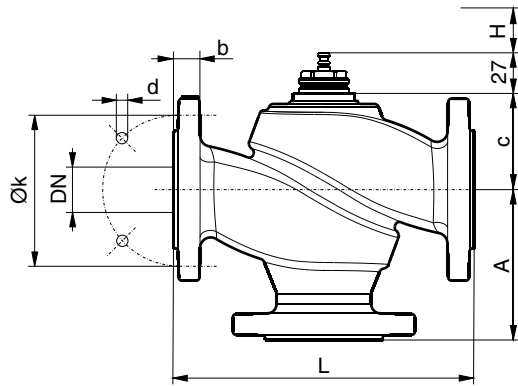
### Disposal

When disposing of the product, observe the currently applicable local laws.

More information on materials can be found in the Declaration on materials and the environment for this product.

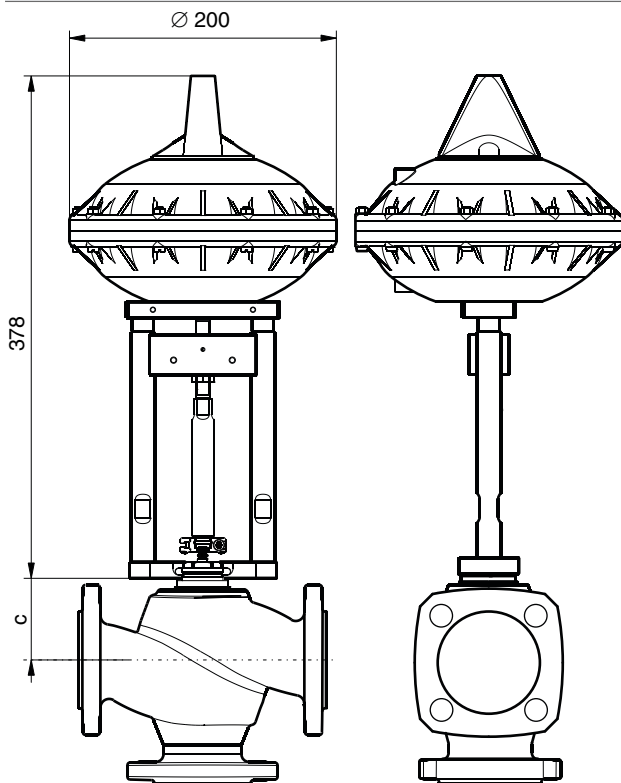
## Dimension drawings

## DN15...50



VUE, BUE	DN	A	c	L	H	k	d	b
015	15	70	41,5	130	8	65	14 x 4	14
020	20	75	48	150	8	75	14 x 4	16
025	25	80	54,5	160	8	85	14 x 4	16
032	32	95	60,5	180	8	100	19 x 4	18
040	40	100	70,5	200	8	110	19 x 4	18
050	50	115	71	230	8	125	19 x 4	20

## AVP242F001



**Accessories**

