

## PRESSURE CONTROL

# Back pressure regulators UV 4.5

Standard valve for medium to high flow rates



### Technical data

Connection DN	15 - 100
Nominal pressure PN	40
Inlet pressure	0.3 - 10 bar
$K_{vs}$ value	5 - 65 m <sup>3</sup> /h
Temperature	130 °C (steam 150 °C)
Medium	liquids, gases and steam
*RT	= -10 °C TO + 50 °C

### Description

Self-acting back pressure regulators are simple control valves offering accurate control while being easy to install and maintain. They control the pressure upstream of the valve without requiring pneumatic or electrical control elements.

The back pressure regulator UV 4.5 is a diaphragm-operated, spring-loaded and balanced proportional valve for high flow rates. The valve body is made of cast steel. Diaphragm housing, bonnet and internal parts are made of stainless steel. The valve cone is fitted with a soft seal.

The inlet pressure to be controlled is balanced across the valve seat by the force of the valve spring (set pressure). If the inlet pressure rises above the set pressure, the valve opens. With decreasing inlet pressure the valve control orifice reduces, when the pipeline is depressurised, the valve is closed. Rotating the adjusting screw clockwise increases the inlet pressure.

The valve requires a sense line (to be installed on-site).

These valves are no shut-off elements ensuring a tight closing of the valve. In accordance with DIN EN 60534-4 and/or ANSI FCI 70-2 they may feature a leakage rate in closed position in compliance with the leakage classes V optional IV.

### Standard

- » Body made of 1.0619 (GS-C25 / A216-WCB)
- » Diaphragm housing and closed bonnet made from stainless steel 316L (1.4404)
- » Internal parts made of stainless steel 316L / S31803 (1.4404 / 1.4462)
- » Leakage line connection and sealed adjusting screw
- » Balanced cone for soft opening and quick closing
- » Sense line connection
- » EPDM elastomers

### Options

- » Body made of stainless steel 1.4408 (CF8M)
- » Flange PN 16
- » FKM elastomers
- » PTFE protection foil for diaphragm

### Please specify on order

#### Please specify on order:

» Nominal diameter DN	» Flange PN
» $K_{vs}$ -Value	» Pressure range
» Body material	» Elastomeres

Example: UV 4.5, DN 50, PN 40,  $K_{vs}$  30 m<sup>3</sup>/h, 2 - 5 bar, GP240GH, EPDM

### Product



Picture similar

### Technical specification

#### $K_{vs}$ values [m<sup>3</sup>/h]

DN	15	20	25	32	40	50	65	80	100
0.3 - 5 bar	5	7	7	25	30	30	65	65	65
4.5 - 10 bar	5	7	7	25	30	30	50	50	50

#### Setting range [bar]

bar	0.3 - 1.1	0.8 - 2.5	2 - 5	4.5 - 10
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#### Max. Operating pressures PS with operating temperature TS

TS	setting range [bar]			
	0.3 - 1.1	0.8 - 2.5	2 - 5	4.5 - 10
-10 up to 150 °C	1.65 bar	3.75 bar	7.5 bar	15 bar

## Materials

Materials	
Body	GP240GH - 1.0619 (A216-WCB) optional stainless steel 1.4408 (CF8M)
Diaphragm housing	Stainless steel 1.4404 (316L)
Bonnet	Stainless steel 1.4404 (316L)
Internal parts	Stainless steel 1.4404 / 1.4462 (316L / S31803)
Valve seal	EPDM optionally made of FKM
Diaphragm	EPDM optionally made of FKM, PTFE protection foile
O-ring (release)	EPDM elastomeres optionally made of FKM

\*All materials equal or of higher quality

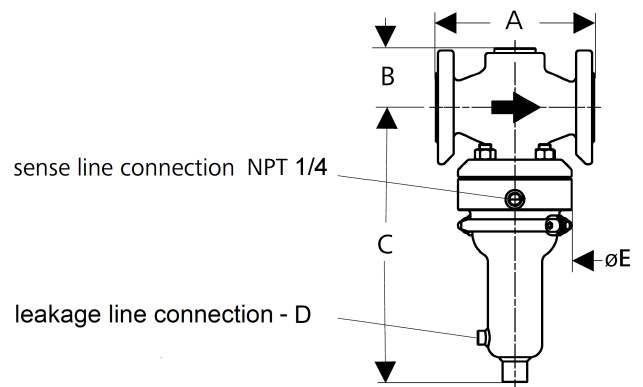
## Dimensions and weights

Dimensions [mm]										
size	nominal diameter DN									
	15	20	25	32	40	50	65	80	100	
A*	130	150	160	180	200	230	290	310	350	
B	60	60	60	75	75	75	112	112	112	
C	278	278	278	441	441	441	511	511	511	
D	G 1/8	G 1/8	G 1/8	G 1/4	G 1/4	G 1/4	G 1/4	G 1/4	G 1/4	
øE	115	115	115	208	208	208	220	220	220	

\*overall length tolerances in acc. with DIN EN 558

Weights [kg]										
nominal diameter DN										
15	20	25	32	40	50	65	80	100		
9.5	10.5	11	33.5	35.5	38	64.5	67.5	74.5		

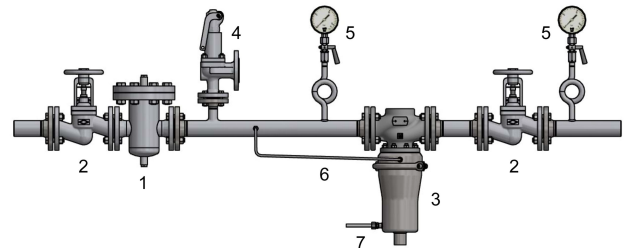
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## Recommended installation

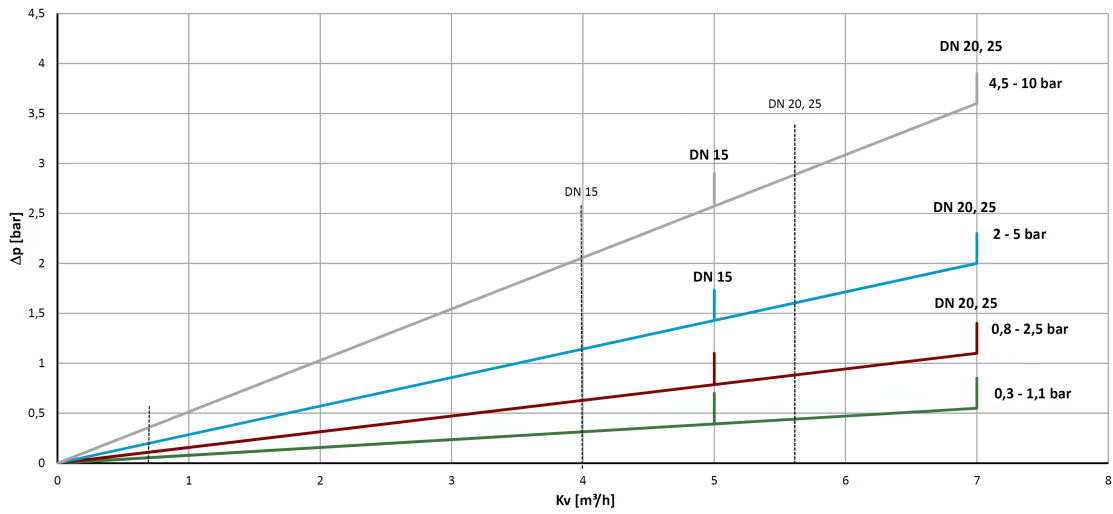
- |                           |                  |
|---------------------------|------------------|
| 1 Strainer                | 5 Pressure gauge |
| 2 Shut-off valves         | 6 Sense line     |
| 3 Back pressure regulator | 7 Leakage line   |
| 4 Safety valves           |                  |

Sense line connection 10 - 20 x DN before the valve

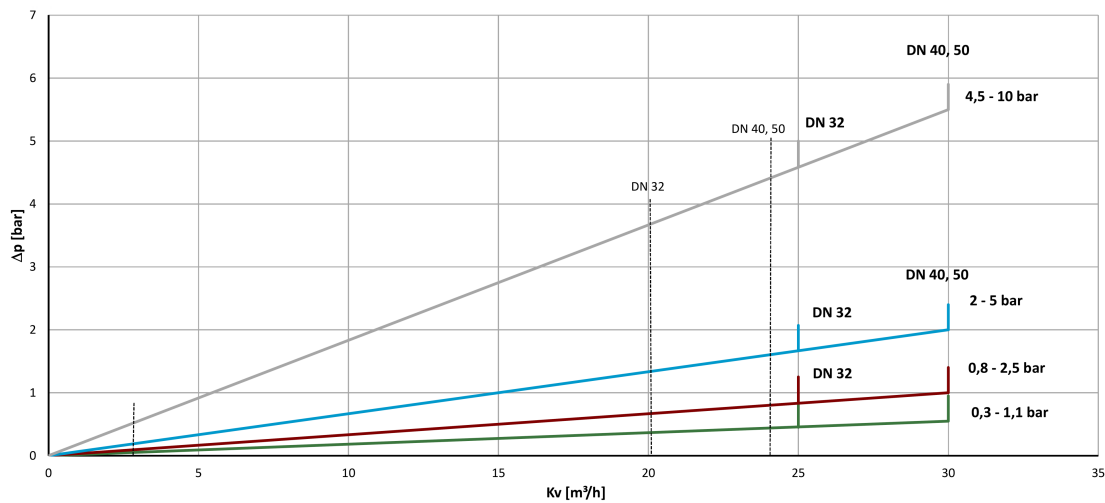


## Appendix

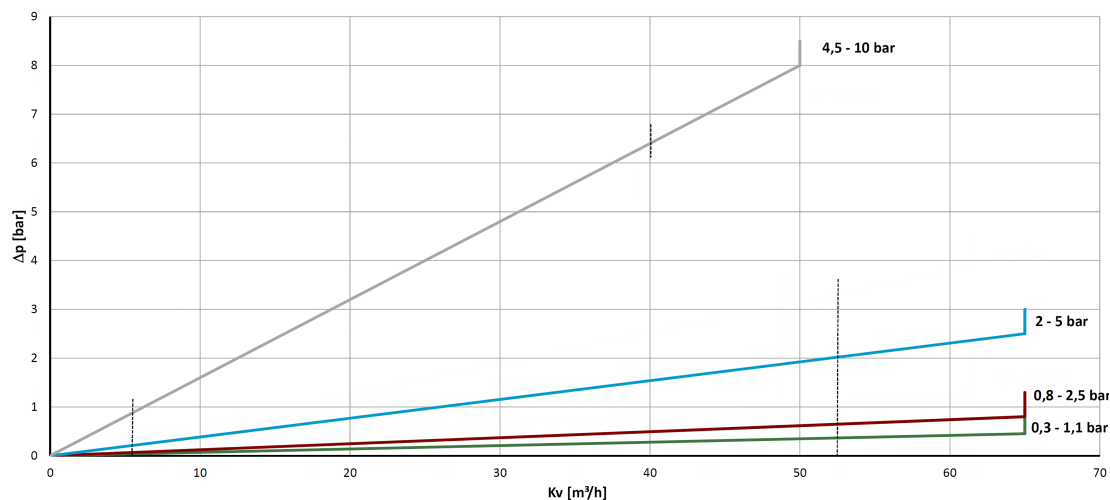
DN 15 - 25



DN 32 - 50



DN 65 - 100



Δp = pressure rise Kv = flow coefficient

Please send us your enquiry and allow us to advise you. Special designs on request.  
The pressure has always been indicated as overpressure. Mankenberg reserves the right to alter technical specifications without notice.

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