

# Pressure Control Valves

## Back Pressure Regulators UV 4.5

Standard Cast Valve



### Technical Data

Connection DN	15 - 100
Flange PN	40
Inlet Pressure	0.3 - 10 bar
K <sub>vs</sub> -Value	5 - 65 m <sup>3</sup> /h
Temperature	130 °C (steam 150 °C)
Medium	liquids, gases, steam

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, spring cap 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 valves 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.

### Standard

- » Body made of cast steel GP240GH - 1.0619 (A216-WCB)
- » Diaphragm housing and spring cap made of stainless steel 1.4404 (316L)
- » Internal parts made of stainless steel 1.4404 / 1.4462 (316L / S31803)
- » Leakage line connection and sealed adjusting screw
- » Balanced cone for soft opening and quick closing
- » Sense line connection
- » EPDM elastomeres

### Options

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

Operating instructions, know how and safety instructions must be observed. The pressure has always been indicated as overpressure. We reserve the right to alter technical specifications without notice.



### K<sub>vs</sub> 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 Ranges [ 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

temperature TS	operating pressure [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

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### Materials

Body	GP240GH - 1.0619 (A216-WCB)*
Diaphragm Housing	stainless steel 1.4404 (316L)
Spring Cap	stainless steel 1.4404 (316L)
Internal Parts	stainless steel 1.4404 / 1.4462 (316L / S31803)
Valve Seal	EPDM**
Diaphragm	EPDM**
O-ring (release)	EPDM**

\* body optionally made of stainless steel 1.4408 (CF8M)

\*\* elastomeres optionally made of FKM, PTFE protection foile

### 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	

### Customs Tariff Number

84814010

### Please specify on order:

- » Nominal diameter
- » K<sub>vs</sub> value
- » Body material
- » Flange PN
- » Pressure range
- » Elastomeres

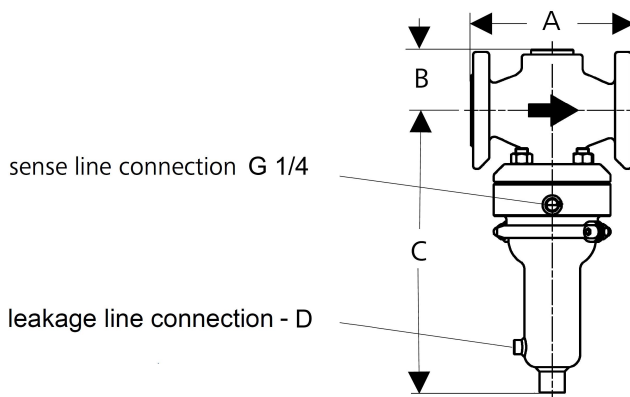
Bsp.: UV 4.5, DN 50, PN 40, K<sub>vs</sub> 30 m<sup>3</sup>/h, 2 - 5 bar, GP240GH, EPDM

Special designs on request.

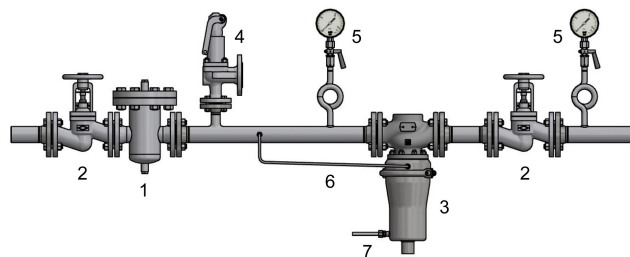
The pressure has always been indicated as overpressure.

Mankenberg reserves the right to alter or improve the designs or specifications of the products described herein without notice.

### Dimensional Drawing



### Recommended Installation



- 1 Strainer\*
- 2 Shut-off Valves
- 3 Back Pressure Regulator \*
- 4 Safety Valve\*
- 5 Manometer
- 6 Sense Line
- 7 Leakage Line

Sense line connection 10 - 20 x DN before the valve

\*use MANKENBERG-products

# Pressure Control Valves

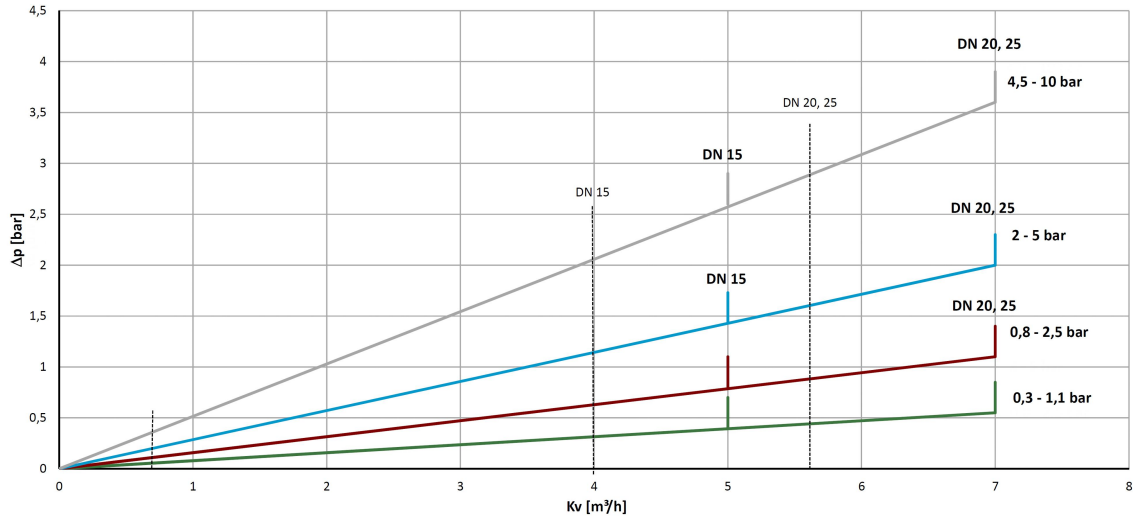
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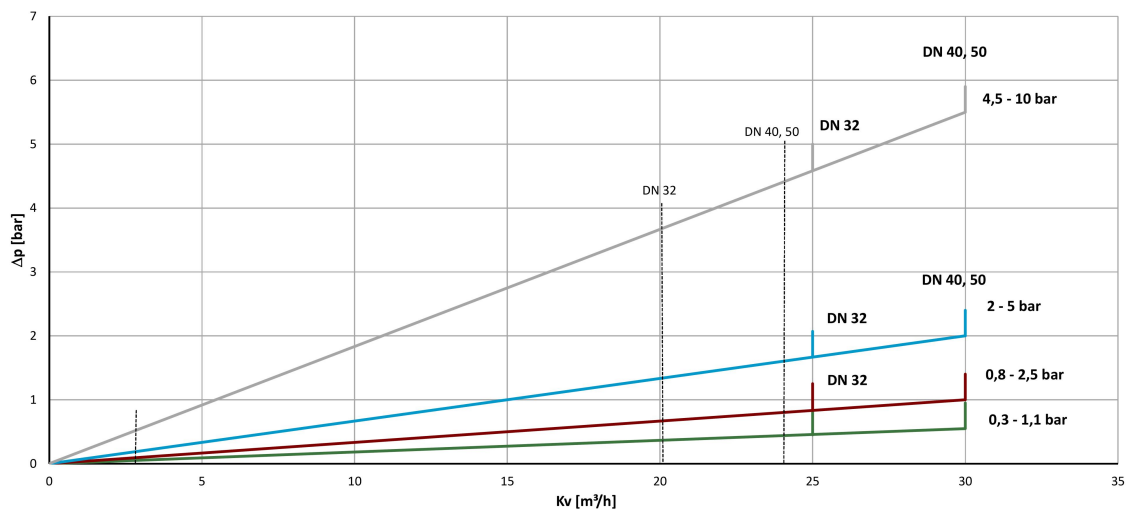


### Pressure Rise (starting from set value)

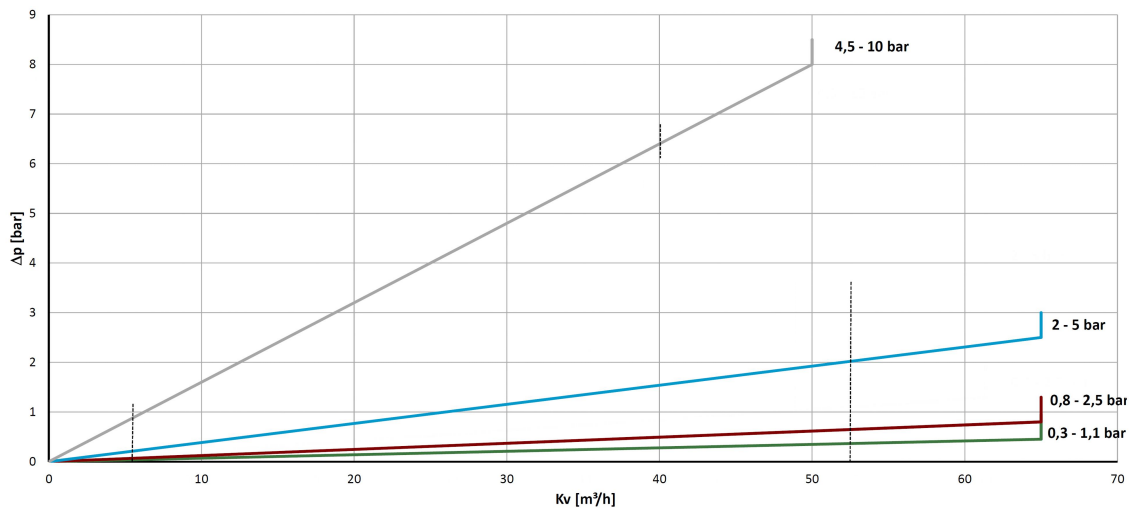
#### DN 15 - 25



#### DN 32 - 50



#### DN 65 - 100



$\Delta p$  = pressure rise       $K_v$  = flow coefficient

Special designs on request.  
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