

PRESSURE CONTROL

Pressure reducing valve DM 618 Z ASME

Standard valve for steam application and medium to high flow rates



Technical data

Connection NPS	1/2 - 4
Flange class	150 - 300
Inlet pressure	up to 740 / 580 psi up to 51.1 / 40 bar
Outlet pressure	4 - 145 psi 0.3 - 10 bar
C _{vs} value	4.2 - 116 US gal/min.
K _{vs} value	3.6 - 100 m³/h
Temperature	482 °F 250 °C
Medium	steam
*RT = -10 °C TO + 50 °C	

Description

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

The pressure reducing valve DM 618Z ASME 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 316L. The valve cone is fitted with a metallic seal.

The outlet pressure to be controlled is balanced across the control unit by the force of the valve spring (set pressure). As the outlet pressure rises above the pressure set using the adjusting screw, the valve cone moves towards the seat and the volume of medium is reduced. As the outlet pressure drops, the valve control orifice increases; when the pipeline is depressurised, the valve is open. Rotating the adjusting screw clockwise increases the outlet 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 III or V.

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 controlling the outlet pressure independently from the inlet pressure
- » Sense line connection
- » EPDM elastomers

Options

- » FKM elastomers
- » PTFE protective foil for diaphragm

Please specify on order

Please specify on order:

» Nominal diameter DN	PT rating
C _{vs} / K _{vs} value	» Pressure range
Body material	» Elastomers

Example: DM 618Z ASME, NPS 1, Class 300, Cvs 9.3 US gal/min, 30 - 75 psi, A216-WCB, EPDM

Product



Picture similar

Technical specification

For more information see the attachment.

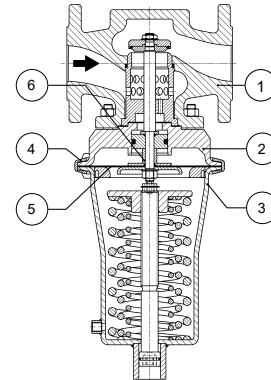
Pressure reducing valve DM 618 Z ASME

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Materials

Materials*		
1	Body	GS-C 25 1.0619 (A216-WCB)
2	Diaphragm housing	stainless steel 1.4404 / 316L
3	Bonnet	stainless steel 1.4404 / 316L
	Internals	stainless steel 1.4404 / 316L
4	Valve seal	stainless steel 1.4404 / 316L
5	Diaphragm	EPDM optional FKM, Teflon protective film
6	O-ring	FEPM optional FKM

*All materials equal or of higher quality



Dimensions and weights

Dimensions [mm]										
size	class	nominal diameter NPS								
		1/2	3/4	1	1 1/2	2	2 1/2	3	4	
A*	150	184	184	184	222	254	276	298	352	
	300	190	194	197	235	267	292	318	368	
B		60	60	60	75	75	112	112	112	
C		377	377	377	540	540	610	610	610	
D		NPT 1/8					NPT 1/4			
øE		115	115	115	208	208	220	220	220	

Dimensions [inch]										
size	class	nominal diameter NPS								
		1/2	3/4	1	1 1/2	2	2 1/2	3	4	
A*	150	7.25	7.25	7.25	8.75	10	10.88	11.75	13.88	
	300	7.5	7.62	7.75	9.25	10.5	11.5	12.5	14.5	
B		2.36	2.36	2.36	2.95	2.95	4.41	4.41	4.41	
C		14.8	14.8	14.8	21.3	21.3	24	24	24	
D		NPT 1/8					NPT 1/4			
øE		4.5	4.5	4.5	8.2	8.2	8.7	8.7	8.7	

*Length tolerances according to ANSI/ISA-75.08.01-2016

Weights [lbs / kg]									
class	NPS	1/2	3/4	1	1 1/2	2	2 1/2	3	4
150	lbs	25	26	29	85	90	163	165	182
	kg	11.5	12	13	38.5	41	74	75	82.5
300	lbs	27	29	31	90	92	165	176	201
	kg	12	13	14	41	41.5	75	80	91

Customs tariff number

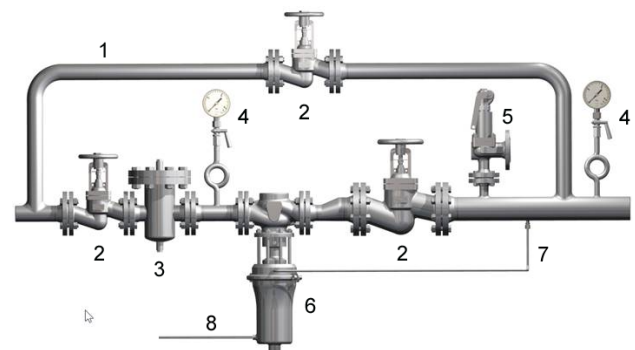
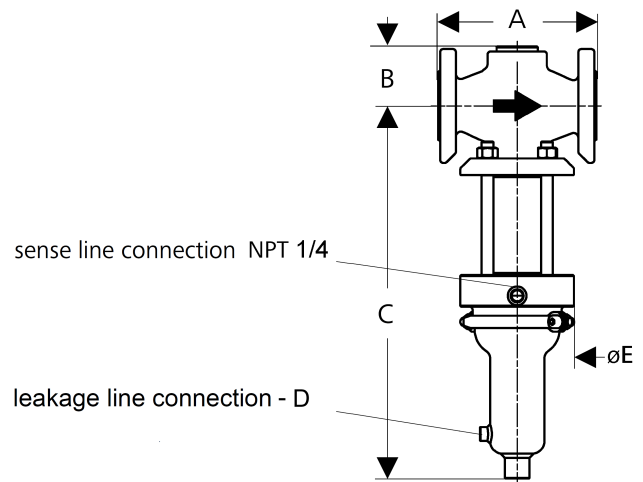
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Recommended installation

- | | | | |
|---|------------------------|---|--------------------------|
| 1 | Bypass for maintenance | 5 | Safety valve |
| 2 | Shut-off valves | 6 | Pressure reducing valve* |
| 3 | Strainer | 7 | Sense line* |
| 4 | Pressure gauge | 8 | Leakage line |

*Sense line connection 10 - 20 x DN behind the valve

Installation in a horizontal line without strain with the spring cap pointing vertically downwards in such a way that the arrow on the body points in the direction of flow. For gases, the installation can take place with the spring cap pointing either downwards or upwards. For use with liquids the valve must be installed with the spring cap pointing downwards.



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.

Appendix

C_{vs} values [US gal/min]

DN	1/2	3/4	1	1 1/2	2	2 1/2	3	4
min.	0.9	0.9	0.9	1.2	1.2	1.2	1.2	1.2
4 - 16 psi	4.2	7	7	31.5	40.8	52.4	58.3	64.1
10 - 145 psi	5.2	9.3	9.3	31.5	40.8	93.2	104.9	116.5

Setting ranges [psi/bar]

psi	4 - 16	10 - 35	30 - 75	65 - 145
bar	0.3 - 1.1	0.8 - 2.5	2 - 5	4.5 - 10

Reduction ratio (max p1/p2)

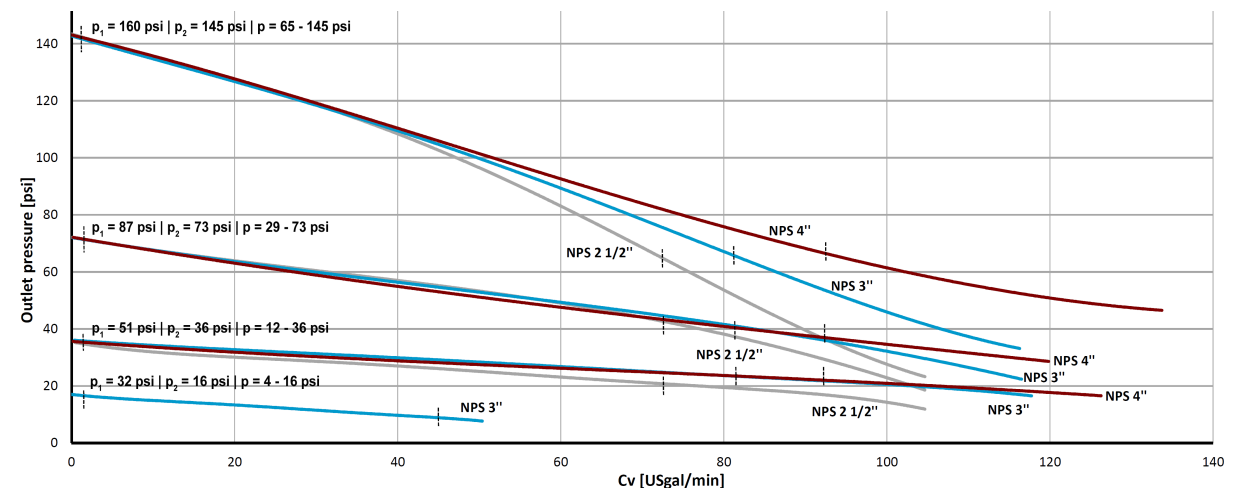
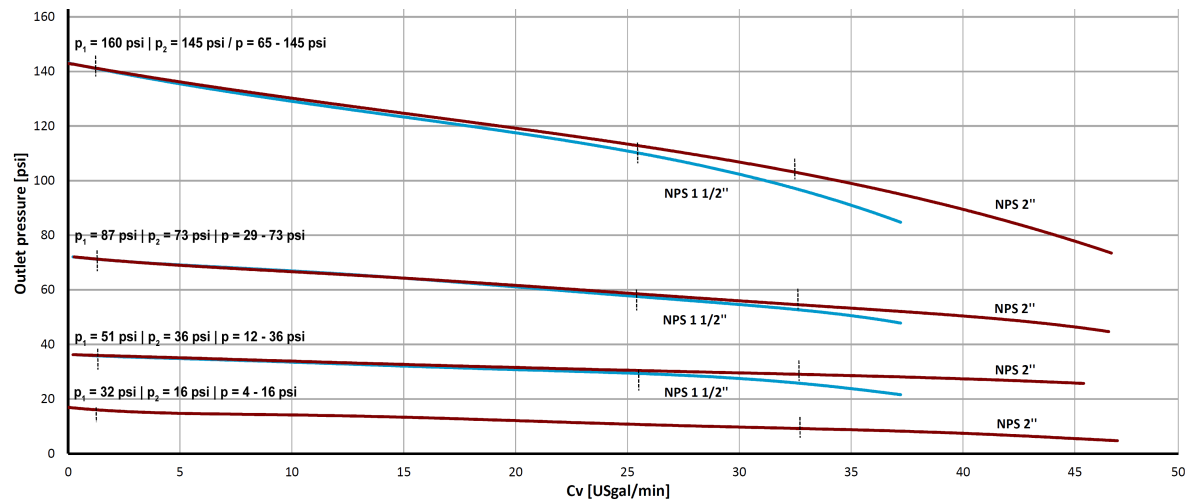
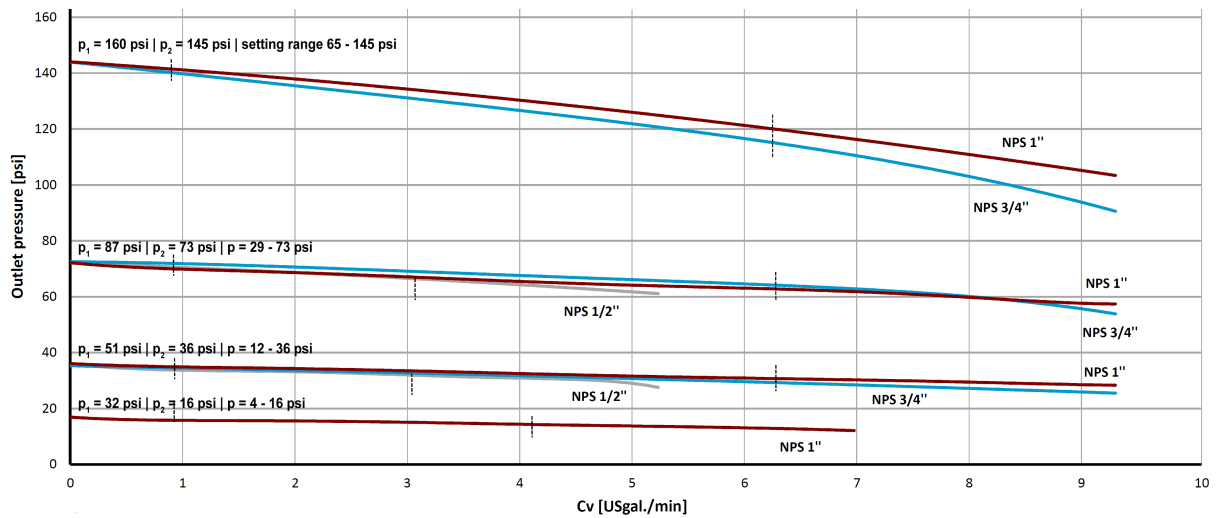
Setting range [psi/ bar]	NPS		
	1/2 - 1	1 1/2 - 2	2 1/2 - 4
65 - 145 / 4.5 - 10	10 : 1	8 : 1	5 : 1
30 - 75 / 2 - 5	20 : 1	15 : 1	10 : 1
10 - 35 / 0.8 - 2.5	30 : 1	20 : 1	12 : 1
4 - 16 / 0.3 - 1.1	15 : 1	11 : 1	6 : 1

Example: set pressure 10 psi / 0.8 bar = max. inlet pressure 300 psi (30 x 10) / 24 bar (30 x 0.8). Attention: The max. allowable operating pressure must be observed!

Max. operating pressures PS [bar] with operating temp. TS [°C]

class	TS	NPS		
		1/2 - 1	1 1/2 - 2	2 1/2 - 4
150	-20 - 100 °F	285 psi	285 psi	285 psi
	-29 - 38 °C	19.6 bar	19.6 bar	19.6 bar
	212 °F	255 psi	255 psi	255 psi
	100 °C	17.7 bar	17.7 bar	17.7 bar
	302 °F	225 psi	225 psi	225 psi
	150 °C	15.8 bar	15.8 bar	15.8 bar
	392 °F	200 psi	200 psi	200 psi
	200 °C	13.8 bar	13.8 bar	13.8 bar
	482 °F	175 psi	175 psi	175 psi
	250 °C	12.1 bar	12.1 bar	12.1 bar
300	-20 - 100 °F	740 psi	175 psi	345 psi
	-29 - 38 °C	51.1 bar	12.1 bar	24 bar
	212 °F	675 psi	475 psi	345 psi
	100 °C	46.6 bar	33 bar	24 bar
	302 °F	655 psi	475 psi	345 psi
	150 °C	5.1 bar	33 bar	24 bar
	392 °F	635 psi	475 psi	345 psi
	200 °C	43.8 bar	33 bar	24 bar
	482 °F	605 psi	475 psi	345 psi
	250 °C	41.9 bar	33 bar	24 bar

Flow characteristics



P = pressure range

 P_1 = inlet pressure P_2 = adjusted outlet pressure

| = recommended working range

Please also consider the pertinent article [How to read flow characteristics.](#)

Please send us your enquiry and allow us to advise you. Special designs on request.

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