

PRESSURE CONTROL

Pressure reducing valve DM 618 ASME

Standard valve for medium to high flow rates

MANKENBERG

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 - 116.5 US gal/min.
K _{vs} value	3.6 - 100 m ³ /h
Temperature	266 °F 130 °C
Medium	liquids and gases
*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 618 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 1.4404 (316L). The valve cone is fitted with a soft 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 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 controlling the outlet pressure independently from the inlet pressure
- » Sense line connection
- » EPDM elastomers

Options

- » FKM elastomers
- » PTFE protective foil for diaphragm

Product



Picture similar

Technical specification

For more information see the attachment.

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Materials

Materials*		
1	Body	1.0619 (GS-C25 / A216-WCB)
2	Diaphragm housing	stainless steel 1.4404 / 316L
3	Bonnet	stainless steel 1.4404 / 316L
	Internals	stainless steel 1.4404 / 1.4462 (316L / Duplex)
4	Valve seal	EPDM optional FKM
5	Diaphragm	EPDM optional FKM, PTFE protection foil
6	O-ring	EPDM optional FKM

Dimensions and weights

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		11	11	11	17.4	17.4	21.7	21.7	21.7
D		NPT 1/8				NPT 1/4			
øE		4.5	4.5	4.5	8.2	8.2	8.7	8.7	8.7

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		278	278	278	441	441	511	511	511
D		NPT 1/8				NPT 1/4			
øE		115	115	115	208	208	220	220	220

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

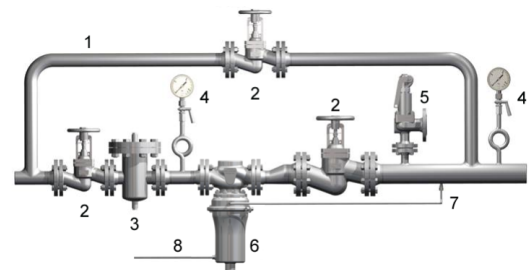
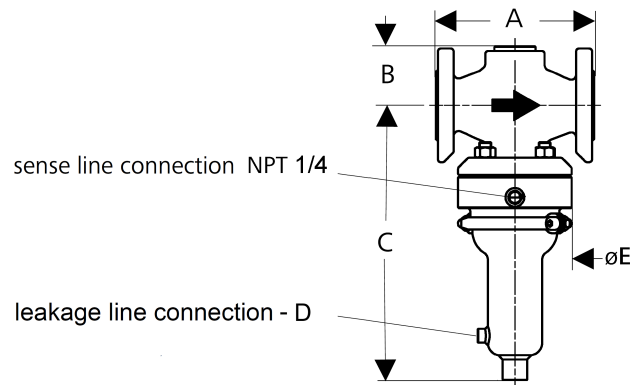
Weights [lbs/kg]									
class	NPS	1/2	3/4	1	1 1/2	2	2 1/2	3	4
150	lbs	21	22	24	76	82	148	151	168
	kg	9.5	10	11	34.5	37	67	68.5	76
300	lbs	22	24	27	80	85	150	161	185
	kg	10	11	12	36	39	68	73	84

Customs tariff number	
84811019	

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 _{v5} values [US gal/min]								
NPS	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

K _{v5} values m³/h								
NPS	1/2	3/4	1	1 1/2	2	2 1/2	3	4
min.	0.8	0.8	0.8	1	1	1	1	1
0.3 - 1.1 bar	3.6	6	6	27	35	45	50	55
0.8 - 10 bar	4.5	8	8	27	35	80	90	100

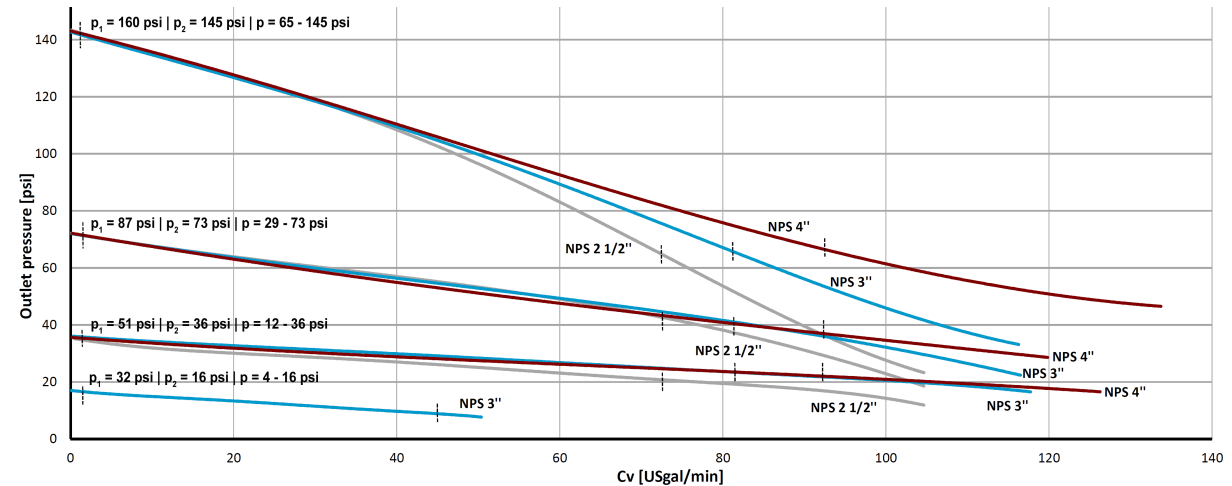
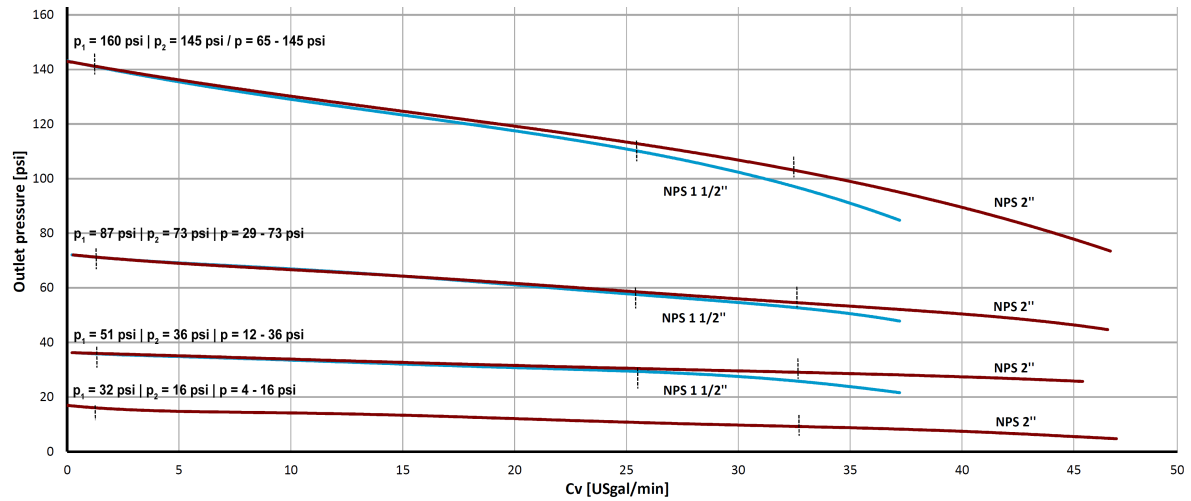
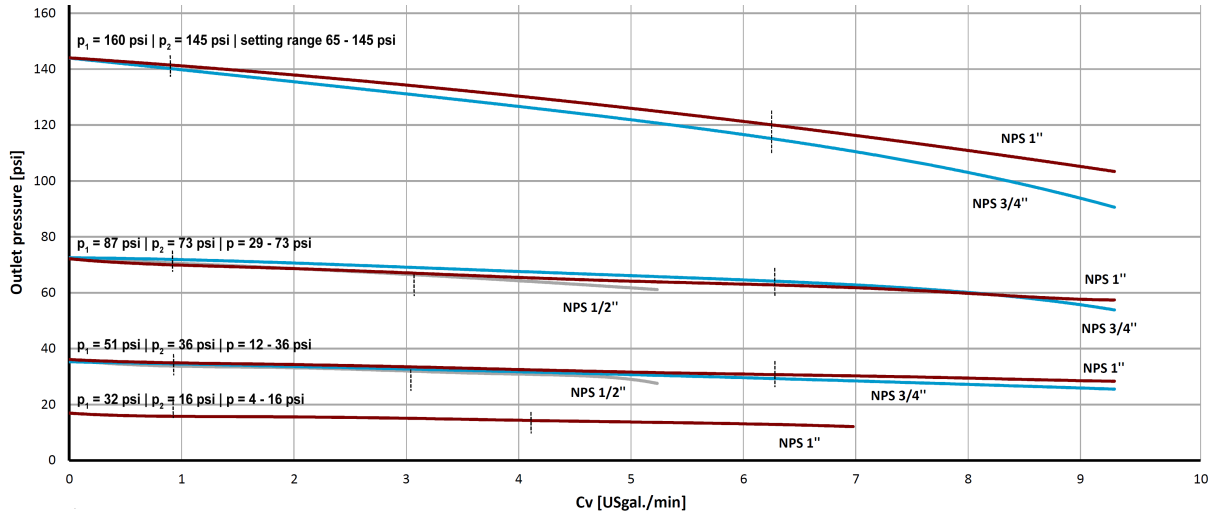
Settingranges [psi/bar]				
psi	4 - 16	10 - 35	30 - 75	65 - 145
bar	0.3 - 1.1	0.8 - 2.5	2 - 5	4.5 - 10

Max. Operating pressures PS [psi/bar] for operating temperature TS [°F/°C]				
class	TS	NPS		
		1/2 - 1	1 1/2 - 2	2 1/2 - 4
150	-20 - 100 °F -29 - 38 °C	285 psi 19.6 bar	285 psi 19.6 bar	285 psi 19.6 bar
	266°F 130°C	240 psi 16.6 bar	240 psi 16.6 bar	240 psi 16.6 bar
300	-20 - 100 °F -29 - 38 °C	740 psi 51.1 bar	475 psi 33 bar	345 psi 24 bar
	266°F (130°C)	660 psi 45.7 bar	475 psi 33 bar	345 psi 24 bar

Permissible Reduction Ratio (max. p ₁ /p ₂)			
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. inpressure 300 psi (30 x 10) / 24 bar (30 x 0.8). Attention: The max. allowable operating pressure must be observed!

Flow characteristics



P = pressure range P₁ = inlet pressure P₂ = adjusted outlet pressure | = recommended working range

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

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Mankenberg GmbH | Spenglerstrasse 99 | D-23556 Luebeck | Germany