

Pressure Control Valves

Pressure Reducing Valves DM 618 ASME

ASME Valve for Liquids and Gases



Technical Data

Connection NPS	1/2 - 4
Class	150 - 300
Inlet Pressure	up to 51.1 / 40 bar up to 740 / 580 psi
Outlet Pressure	0.3 - 10 bar 10 - 145 psi
K _{vs} -Value	3.6 - 115 m ³ /h
C _{vs} -Value	4.2 - 133 US gal/min.
Temperature	130 °C 266 °F
Medium	liquids and gases

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, spring cap and internal parts are made of stainless steel 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 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 FC1 70-2 they may feature a leakage rate in closed position in compliance with the leakage classes V.

Standard

- » Body made of A216WCB (1.0619) according to ASME
- » Diaphragm housing and closed spring cap made of 316 L (1.4404)
- » Internal parts made of 316 L / 531803 (1.4404/1.4462)
- » Leakage line connection and sealed adjusting screw
- » Balanced cone for controlling the outlet pressure independently from the initial pressure
- » Sense line connection
- » EPDM elastomers

Options

- » elastomers optionally made of FKM
- » PTFE protection foil

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



K_{vs} 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 - 11.1 bar	3.6	6	6	20	40	50	55	65
0.8 - 10 bar	4.5	8	8	32	40	90	100	115

C_{vs} 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	23	46	58	64	76
10 - 145 psi	5.2	9	9	37	46	104	116	133

Setting Ranges [bar/psi]

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

max. Operating Pressures [bar/psi] with Operating Temperature [°C/°F]

Class	T	NPS		
		1/2 - 1	1 1/2 - 2	2 1/2 - 4
150	-29 - 38 °C -20 - 100 °F	19.6 / 285	19.6 / 285	19.6 / 285
	130°C 266°F	16.6 / 240	16.6 / 240	16.6 / 240
300	-29 - 38 °C -20 - 100 °F	51.1 / 740	33 / 475	24 / 345
	130°C 266°F	45.7 / 660	33 / 475	24 / 345

Reduction Ratio (max. p₁/p₂)

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

Example:

set pressure 0.8 bar

= max. inlet pressure 24 bar (30 x 0.8) / 300 psi (30 x 10)

Attention: The max. allowable operating pressure must be observed!

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Materials

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

* elastomeres optionally made of FKM, PTFE protection foil

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			

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			

* Overall length tolerances in acc. with ANSI/ISA-75.08.01-2016

Weights

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

Customs Tariff Number

84811019

Please specify on order:

- » nominal diameter
 - » K_{vs} value
 - » body material
 - » PT Rating
 - » pressure range
 - » elastomeres
- example: DM 618 ASME, NPS 1, Class 300, K_{vs} 8 m³/h, 2 - 5 bar, A216-WCB, EPDM

Typical Applications

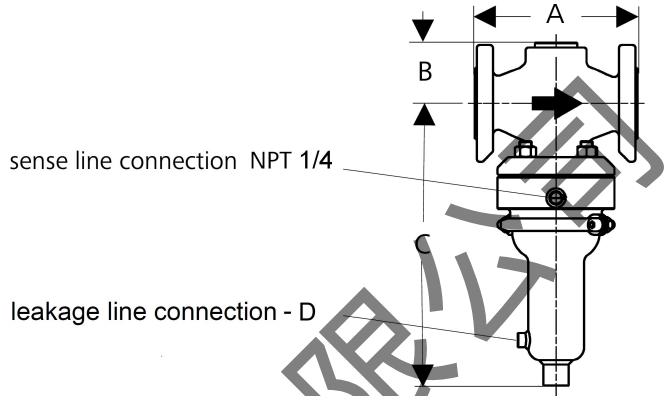
- » Conventional fuel supply and residues disposal (e.g. KKS Code: EKG, ENX)
- » Water supply and disposal – distribution system (e.g. KKS Code: GHC, GQA)
- » Drying of solid matter (e.g. KKS Code: HTN)
- » Conventional heat generation (e.g. KKS Code: HTQ)
- » Steam, water, gas cycle condensate system (e.g. KKS Code: LCA, LCW)
- » Water treatment and distribution (e.g. KKS Code: PCB)
- » Cooling water systems (e.g. KKS Code: PCC)
- » Generation of working air (e.g. KKS Code: SCA)

Special designs on request.

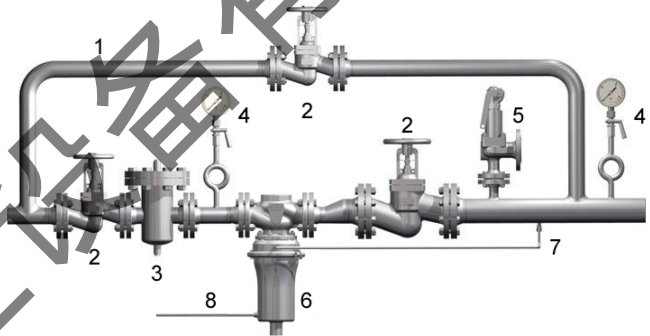
The pressure has always been indicated as overpressure.

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

Dimensional Drawing



Recommended Installation



- 1 Bypass for Maintenance
- 2 Shut-off Valves
- 3 Strainer*
- 4 Pressure Gauge
- 5 Safety Valves*
- 6 Pressure Reducer*
- 7 Sense Line
- 8 Leakage Line

*Sense line connection 10 - 20 x nominal diameter behind the valve
Use MANKENBERG-Products

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.

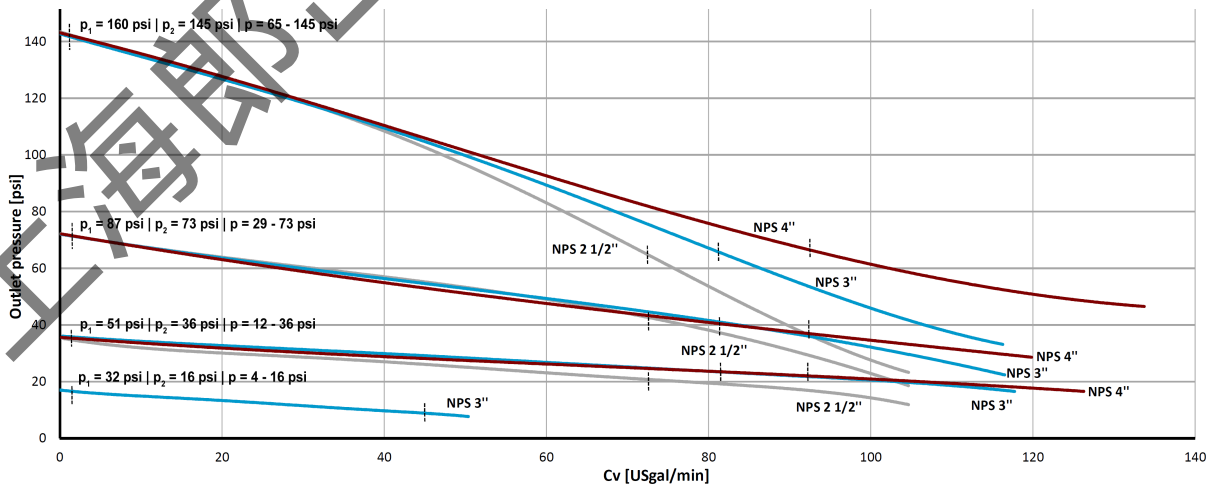
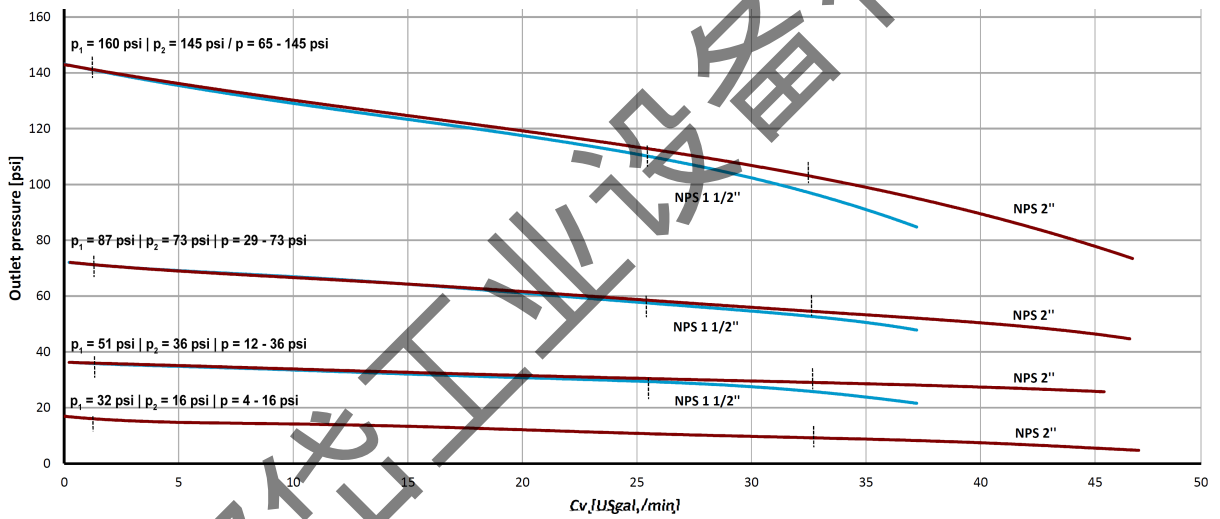
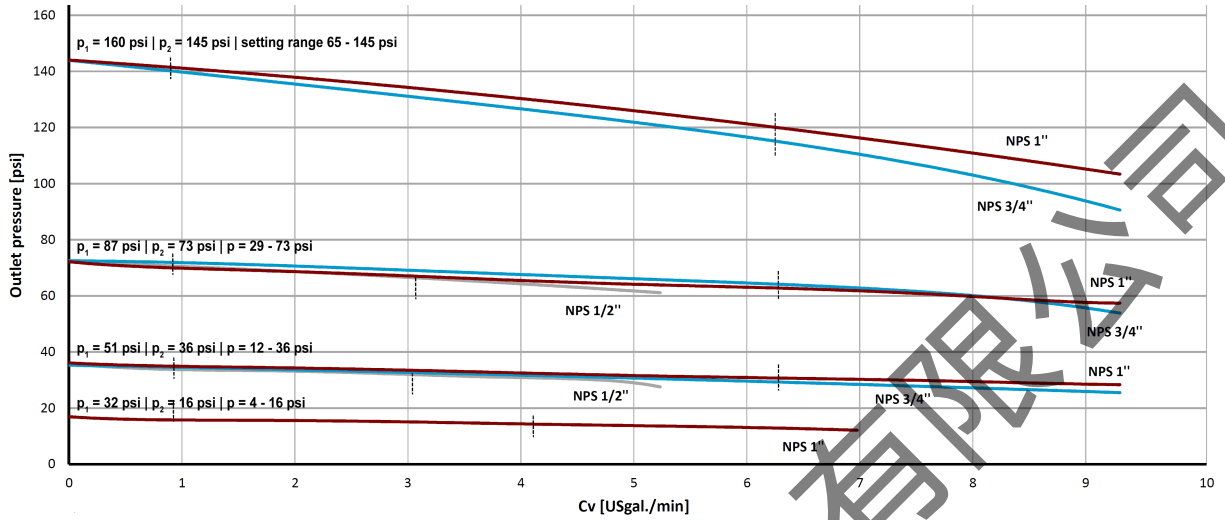
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Flow Charts



p = pressure range p_1 = inlet pressure p_2 = adjusted outlet pressure \vdash = recommended working range

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