

Pressure Control Valves

Pressure Reducing Valves DM 618Z ASME

Standard Cast Valve for Steam



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 4 - 145 psi
K _{vs} -Value	3,6 - 115 m ³ /h
C _{vs} -Value	4.2 - 133 US gal/min.
Temperature	250 °C 482 °F
Medium	steam

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, spring cap 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 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 III.

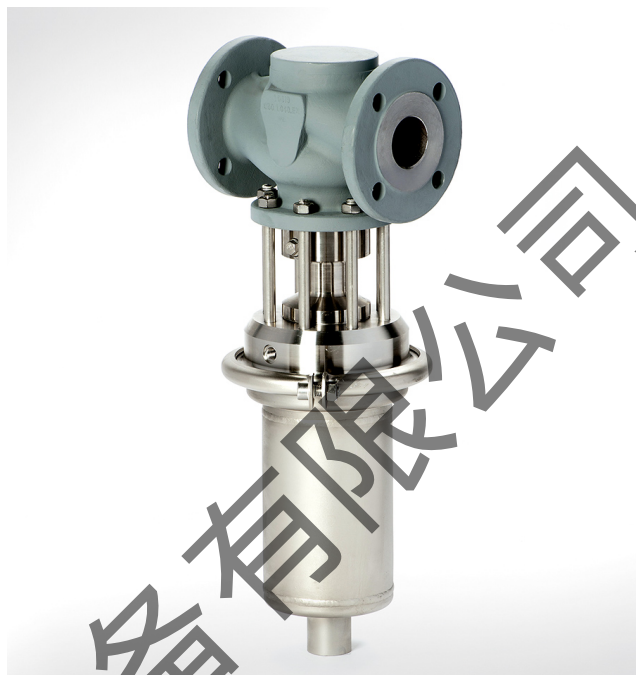
Standard

- » Body made of GS-C 25 1.0619 (A216-WCB)
- » Diaphragm housing, spring cap and internal parts made of stainless steel 1.4404 (316L)
- » Closed spring cap with leakage line connection and sealed adjusting screw
- » Balanced cone for controlling the outlet pressure independently from the initial pressure
- » Sense line connection

Options

- » FKM elastomers
- » PTFE protection foil for diaphragm

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 [m ³ /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	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 Temp. [°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
	100°C / 212°F	17,7 / 255	17,7 / 255	17,7 / 255
	150°C / 302°F	15,8 / 225	15,8 / 225	15,8 / 225
	200°C / 392°F	13,8 / 200	13,8 / 200	13,8 / 200
	250°C / 482°F	12,1 / 175	12,1 / 175	12,1 / 175
300	-29 - 38°C -20 - 100°F	51,1 / 740	33 / 475	24 / 345
	100°C / 212°F	46,6 / 675	33 / 475	24 / 345
	150°C / 302°F	45,1 / 655	33 / 475	24 / 345
	200°C / 392°F	43,8 / 635	33 / 475	24 / 345
	250°C / 482°F	41,9 / 605	33 / 475	24 / 345

Reduction Ratio (max. p ₁ /p ₂)			
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	316 L (1.4404)
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		377	377	377	540	540	610	610	610
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		14.8	14.8	14.8	21.3	21.3	24	24	24
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	11.5	12	13	38.5	41	74	75	82.5
	lbs	25	26	29	85	90	163	165	182
300	kg	12	13	14	41	41.5	75	80	91
	lbs	27	29	31	90	92	165	176	201

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

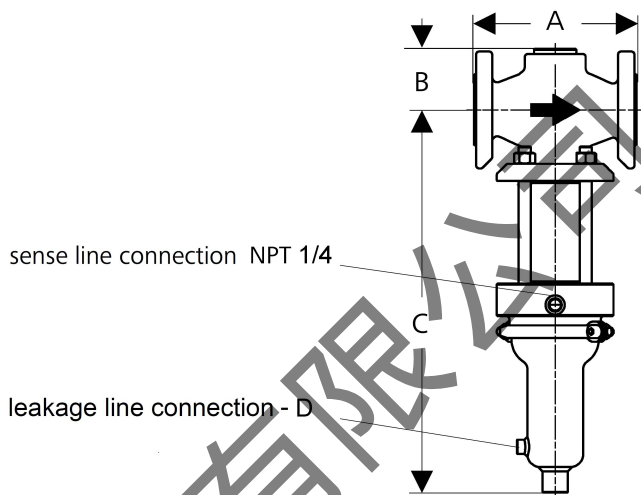
- » Conventional fuel supply and residues disposal (int.al. KKS Code: EKG, ENX)
- » Water supply and disposal – distribution system (int.al. KKS Code: GHC, GQA)
- » Drying of solid matter (int.al. KKS Code: HTN)
- » Conventional heat generation (int.al. KKS Code: HTQ)
- » Steam, water, gas cycle condensate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

Special designs on request.

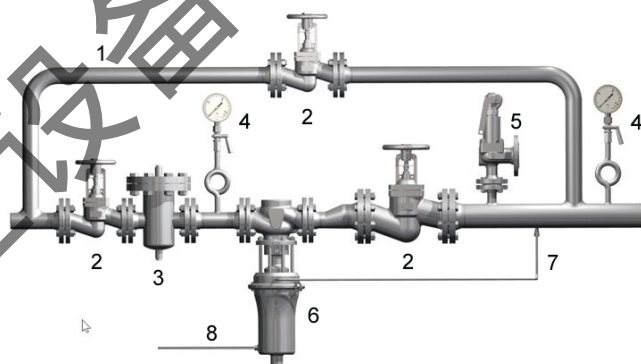
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Mankenberg reserves the right to alter or improve the designs or specifications of the products described herein without notice.

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 DN behind the valve
*Use MANKENBERG-Products

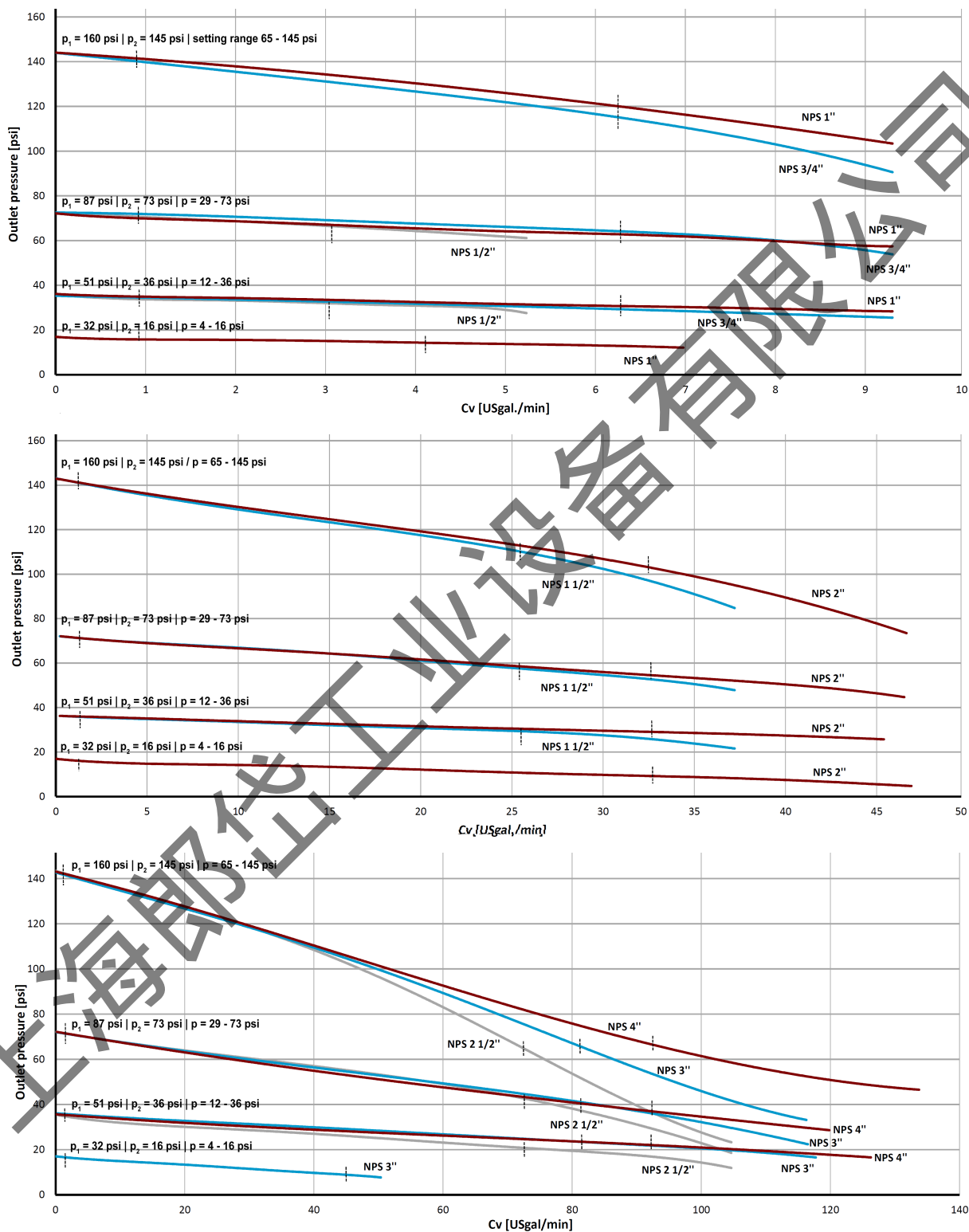
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Flow Charts



p = pressure range p_1 = inlet pressure p_2 = outlet pressure $\vdots$ = recommended working range

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