Pressure Reducing Valve DMV 750

set range: 1.0 - 6.0 bar



Advantage
- pressure setting possible at any time, also during operation
- hermetically sealed by valve diaphragm
- high level of operating safety and long service life
- reliable diaphragm fastening with standard stainless steel screws
- pressure reduction by throttling at the valve seat
- as standard with two lateral threaded connections for pressure gauges or diaphragm pressure gauge guards

Application
- chemical plants
- industrial plants
- water treatment

Utilisation
- for reduction of system pressures to virtually constant working pressures

Valve Function
- The opened valve is in equilibrium between the inlet pressure (primary side) and the lower working pressure (secondary side). If the working pressure goes above or below the desired value, the large area membrane is lifted against the spring force or pressed down by the spring force. The valve starts closing or opening until the equilibrium condition is reached again, i.e. the working pressure remains constant independent of an increasing or decreasing inlet pressure (as long as the inlet pressure › working pressure).
- The valve piston is designed to match the plastic characteristics and is generously dimensioned for reliably withstanding high closing forces at the valve seat. The diaphragm separates the medium in the valve body from the bonnet and the atmosphere. The principle ensures that the secondary pressure acting on the diaphragm is compensated by the spring force which is held in equilibrium by the pressure setting.

Flow Media
- Technically pure, neutral and aggressive fluids, provided that the selected valve materials coming into contact with the media are resistant at the operating temperature according to the ASV resistance guide.
- For nitric acid or sulfuric acid please specify the precise operating conditions of the application.

Valve Setting
- Set or adjust the working pressure to be kept constant at the adjustment screw with the aid of pressure gauges (ASV diaphragm pressure gauge guard with pressure gauge, type MDM 902) in the pipe system after removing the protection cap. The adjustment screw is secured by a counter nut and can be sealed against unauthorized adjustment, if necessary.
- There are two types of application:
  · secondary pressure - system closed or
  · secondary pressure - system dynamically flowing

Fluid Temperature
- see pressure/temperature diagram

Operating Pressure
- see pressure/temperature diagram

Set Range
- 1.0 - 6.0 bar

Nominal Pressure (H_2O, 20°C)
- PN 10

Working Pressure
- set pressure minus flow dependent pressure reduction:
- 1,0 - 6,0 bar

Constant Working Pressure
- approx. ± 0.2 bar

Hysteresis
- Difference between opening and closing pressure
- approx. 0.1 - 0.4 bar

Valve Body
- PVC-U
- PP
- PVDF

Bonnet
- PVC-U
- PP
- PVDF

Diaphragm
- PTFE (EPDM diaphragm with PTFE coating on the surfaces coming into contact with the medium)

Sealing
- EPDM

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Screws
- stainless steel (1.4301)

Actuation
- medium controlled

Connection
- spigot end for solvent welding DIN ISO (PVC-U)
- fusion spigot end DIN ISO (PP)
- fusion spigot end DIN ISO (PVDF)
- backing flange DIN 2501, PN 10/16, on request

Flow Direction
- always in the direction of the arrow

Mounting
- as required

Colour
- PVC-U: grey, RAL 7011
- PP: grey, RAL 7032
- PVDF: opaque, yellowish-white

Pressure Gauge Connection
- The pressure reducing valves can be factory fitted with a pressure gauge for neutral media. The resistance of the pressure gauge material has to be taken into consideration for other media.

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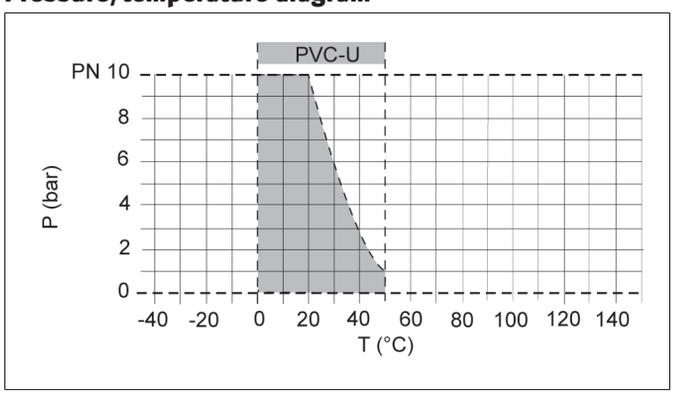
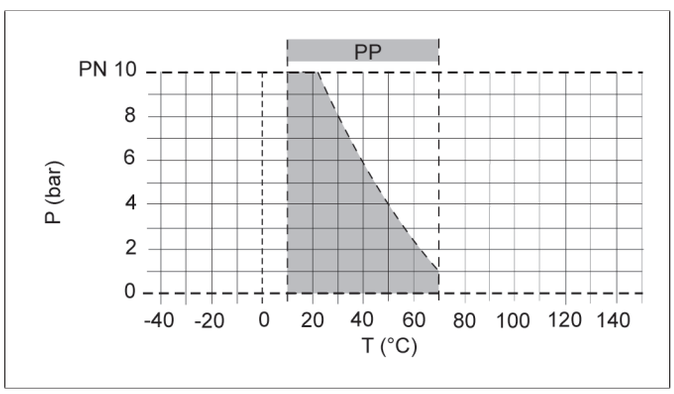
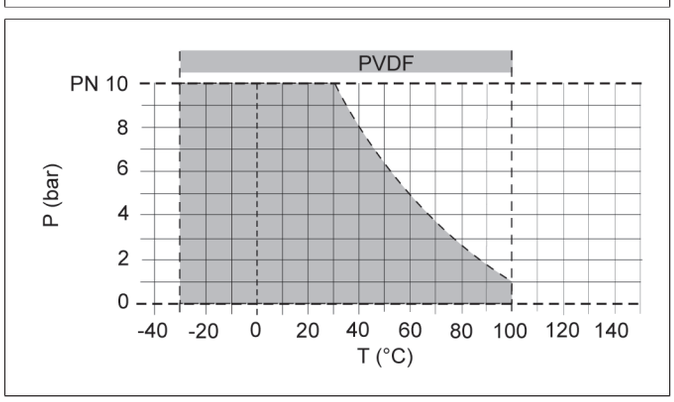
Pressure/temperature diagram



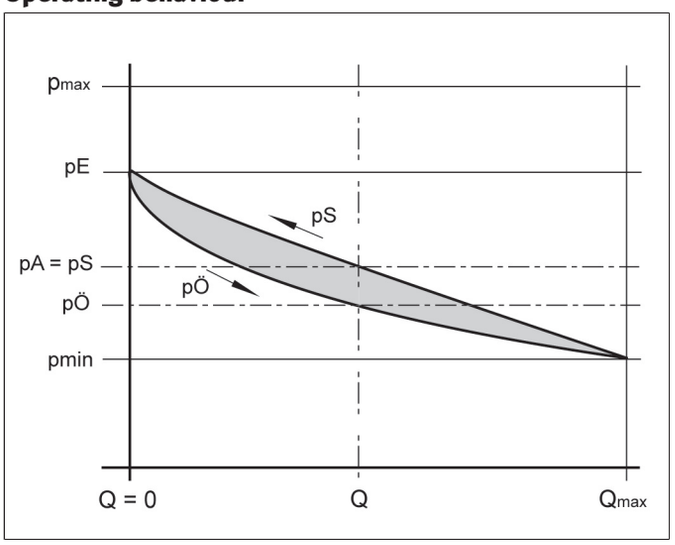




P = operating pressure
T = temperature

The pressure/temperature limits are applicable for the stated nominal pressures and a computed operating life factor of 25 years. These are standard values for harmless media (DIN 2403), to which the valve material is resistant.
For other media please refer to the ASV resistance guide.
The durability of wear parts depends on the operating conditions of the application.
For temperatures below 0°C (PP < +10°C) please specify the precise operating conditions of the application.
The rated pressure depends on the valve size and material. For the corresponding rated pressure value of the valve, please refer to the »Order table«.

Operating behaviour



pE = set pressure
pA = working pressure
pÖ = opening pressure
pS = closing pressure
pÖ - pS = hysteresis
pA - pE = flow dependent pressure reduction
Q = flow

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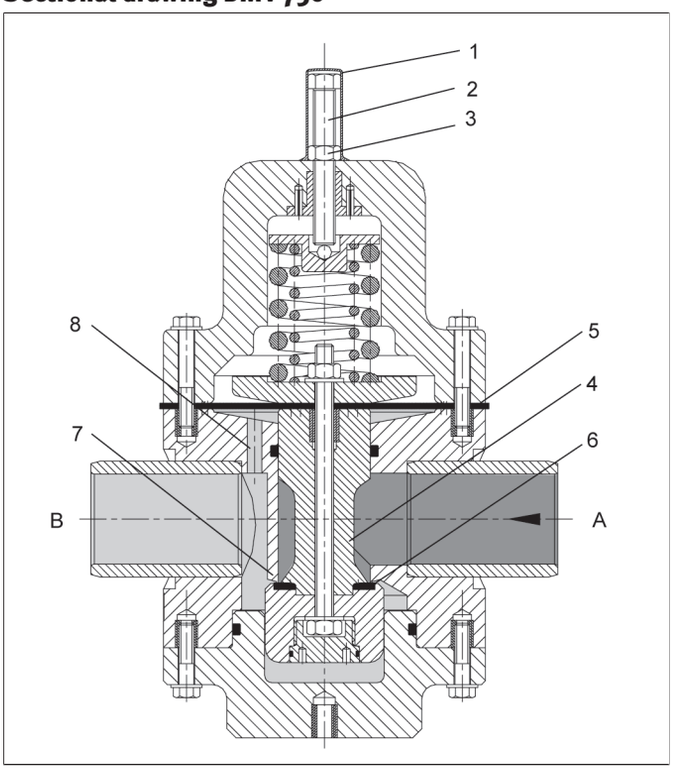
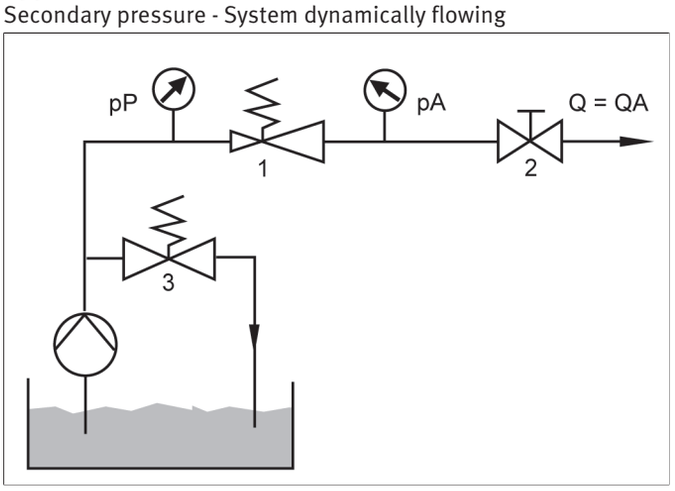
Sectional drawing DMV 750



A = primary side
B = secondary side
1 = protection cap
2 = adjustment screw
3 = counter nut
4 = piston
5= diaphragm
6 = flat sealing ring
7 = valve seat
8 = control bore hole

Applications

Secondary pressure - System dynamically flowing

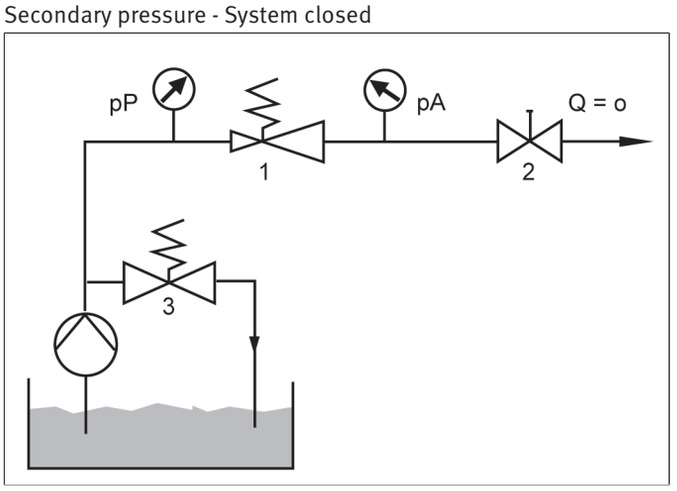


pP = pump pressure
pA = working pressure
1 = Pressure Reducing Valve
2 = stop valve
3 = Pressure Relief Valve

If the stop valve is closed, the working pressure pA rises by the amount of the closing pressure pS.

Applications

Secondary pressure - System closed



pP = pump pressure
pA = working pressure
1 = Pressure Reducing Valve
2 = stop valve
3 = Pressure Relief Valve

If the stop valve is opened, the working pressure pA drops by the amount of the opening pressure pÖ.

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Malfunctions, possible causes, rectification

Malfunction:	Cause:	Rectification:
Valve leaking at the diaphragm.	Insufficient contact pressure (membrane fastening).	Tighten the connecting screws.
Pressure exceeds the set value.	Valve seat/seat seal defective. Diaphragm defective. O-ring defective (17). Control bore hole soiled or blocked.	Check piston and/or seat seal, replace, if necessary. Diaphragm defective. O-ring defective. Dismantle piston and clean bore hole.
Valve closed (does not open).	Valve fitted the wrong way round.	Turn the valve around, observe the arrow for the direction of flow.
Leakage at the plug/flange.	O-ring defective.	Dismantle plug/flange (15) and renew O-ring.
Medium leakage at the adjustment screw.	Insufficient tightening torque between spring plate, diaphragm and piston. Diaphragm defective.	Increase the tightening torque at the nut (13). Replace diaphragm.

Maintenance note

Screw tightening torque (Nm)

d (mm)	75	90
Md (Nm)	20	20

The specified values apply to lubricated screws.

Check the tightening torque of the body screws at certain intervals in case of setting of the diaphragms and/or temperature fluctuations.

Operating note

Safe operation of the valve can only be ensured if it is properly installed, operated, serviced or repaired by qualified personnel according to its intended use while observing the accident prevention regulations, safety regulations, relevant standards, directives/technical regulations or codes of practice such as e.g. DIN, DIN EN, DIN ISO and DVS*. *DVS = German Welding Society

The intended use includes adhering to specified limit values for pressure and temperature, as well as checking the resistance. This requires all components coming into contact with the medium to be "resistant" in accordance with the ASV resistance guide.

Pressure gauge version

If the valve body is equipped with a pressure gauge, do not tighten the pressure gauge with more than max. 3 Nm.

If the secondary pressure is additionally increased by the counterpressure, the pressure reducing valve DMV acts as a non-return valve. This force can lead to destruction of the valve piston.

Please take into account that the material PTFE is classified as resistant against many media, however, PTFE is not diffusion tight when used as a film, e.g. for the ASV membranes. Please contact us for limit cases (nitric acid or sulfuric acid).

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body PVC-U

size	d(mm)		75	90
pressure range	DN(mm)		65	80
	DN(inch)		2 1/2	3
	PN(bar)		10	10
	setting range (bar)		1-6	1-6
Connection	*sealing*	*ident No.*		
PVC-U spigot end DIN ISO	EPDM		111173	111174
	weight		*12.50 kg*	*15.00 kg*

body PP

size	d(mm)		75	90
pressure range	DN(mm)		65	80
	DN(inch)		2 1/2	3
	PN(bar)		10	10
	setting range (bar)		1-6	1-6
Connection	*sealing*	*ident No.*		
PP spigot end DIN ISO	EPDM		111176	111177
	weight		*11.90 kg*	*13.50 kg*

body PVDF

size	d(mm)		75	90
pressure range	DN(mm)		65	80
	DN(inch)		2 1/2	3
	PN(bar)		10	10
	setting range (bar)		1-6	1-6
Connection	*sealing*	*ident No.*		
PVDF spigot end DIN ISO	EPDM		111179	111180
	weight		*14.10 kg*	*17.20 kg*

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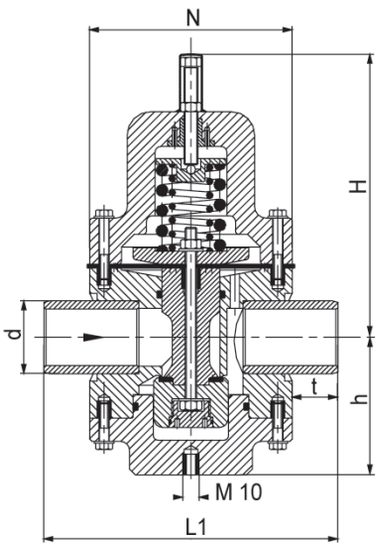

dimensions

d(mm)	75	90
DN(mm)	65	80
DN(inch)	2 1/2	3
dimensions(mm)		
d	75	90
h	121	143
L1	284	360
t	44	55
H	265	340
N	195	250

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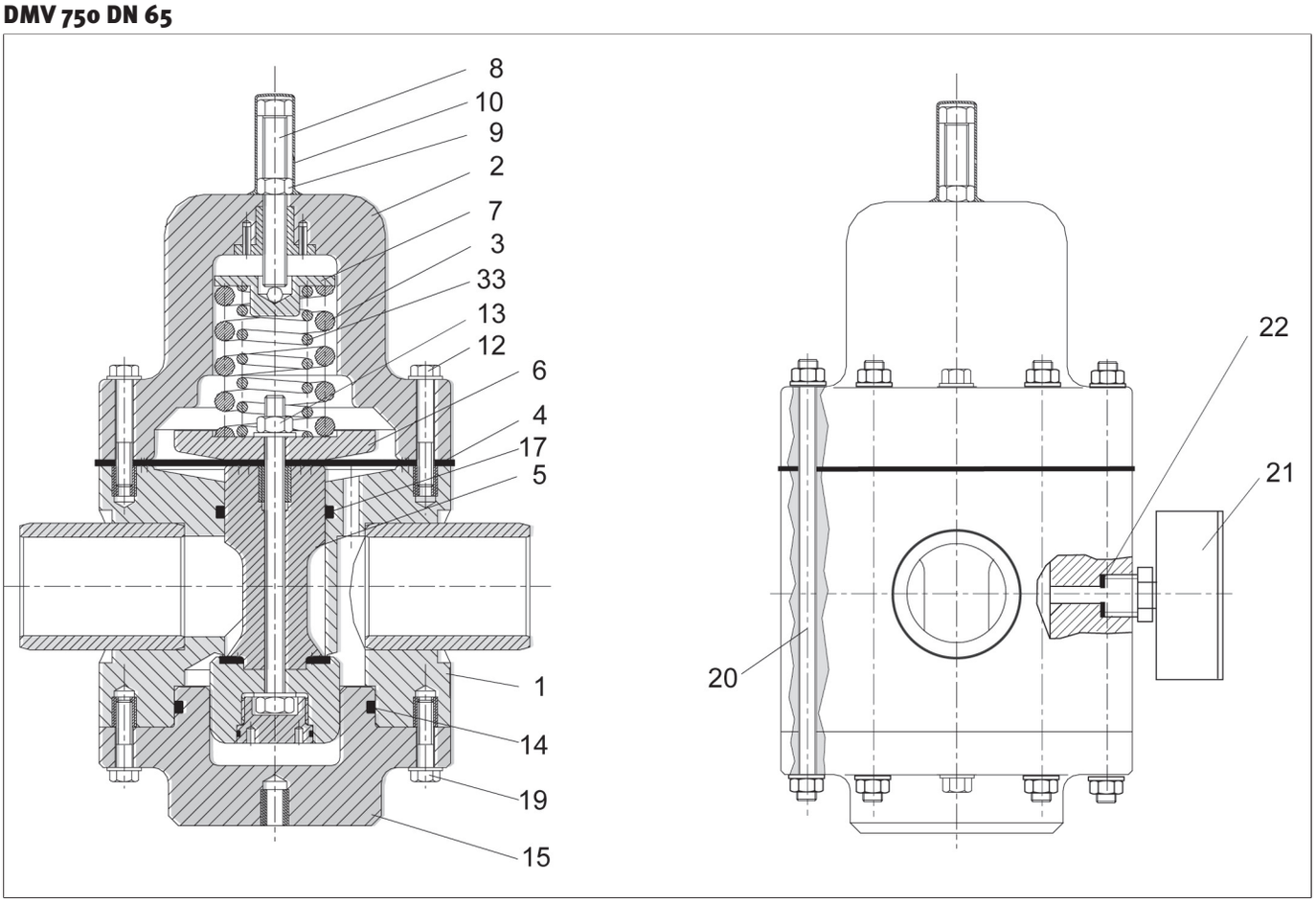
Exploded view

DMV 750 DN 65



position	quantity	designation
1	1	valve body
2	1	bonnet
3	1	pressure spring
4	1	diaphragm
5	1	piston, complete
6	1	spring plate
7	1	pressure plate
8	1	adjustment screw
9	1	counter nut
10	1	cap
12	2	screw
13	1	hexagon nut
14	1	O-ring
15	1	Flange
17	1	O-ring
19	2	screw
20	8	threaded bolt
21	1	pressure gauge
22	1	flat sealing ring
33	1	pressure spring

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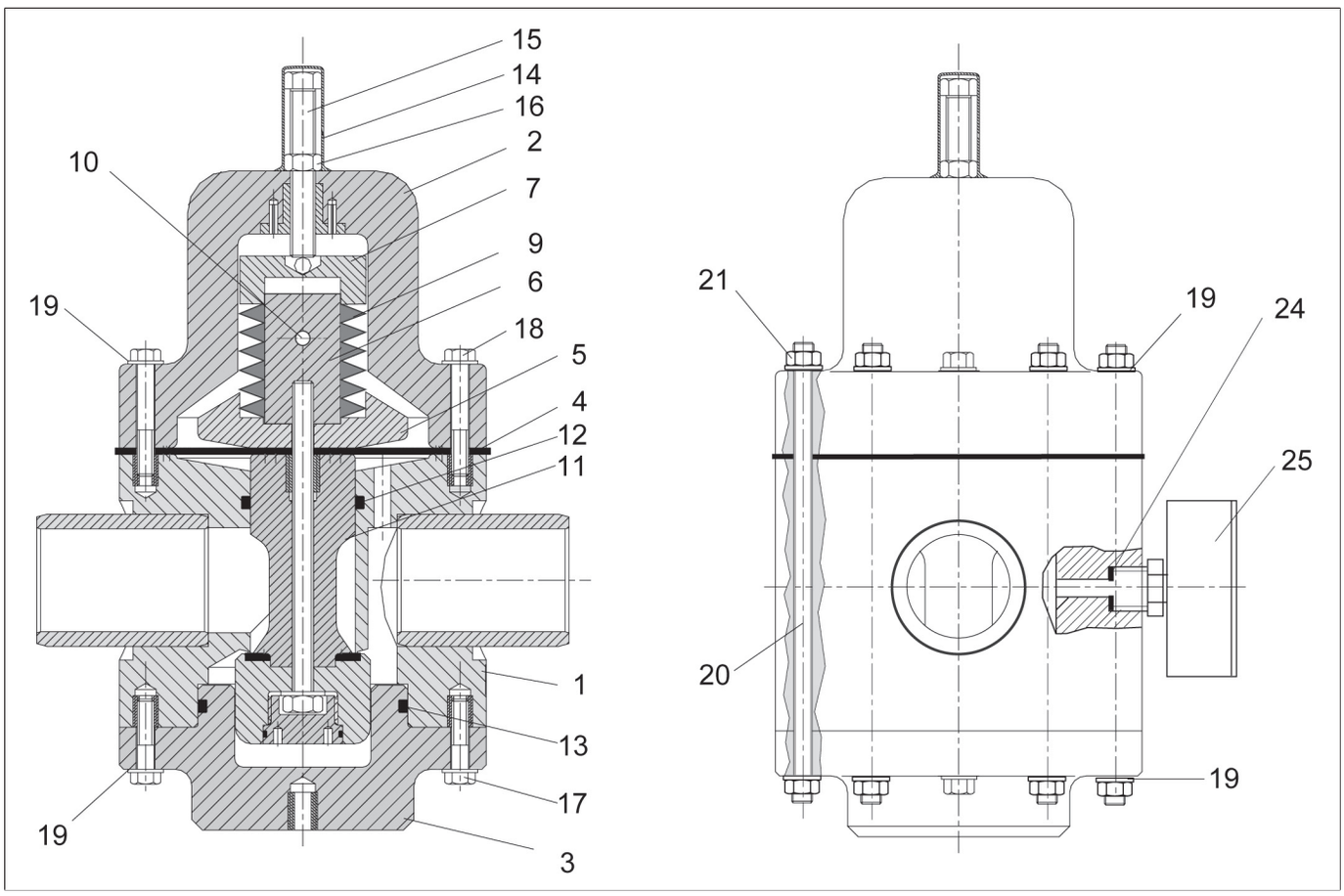

position	quantity	designation
1	1	valve body
2	1	bonnet
3	1	
4	1	diaphragm
5	1	spring plate
6	1	
7	1	pressure piece
9	1	
10	1	steel ball
11	1	piston, complete
12	1	O-ring
13	1	O-ring
14	1	protection cap
15	1	adjustment screw
16	1	counter nut
17	2	screw
18	2	screw
19	20	disc
20	8	threaded bolt
21	16	hexagon nut
24	2	Plug
25	1	pressure gauge

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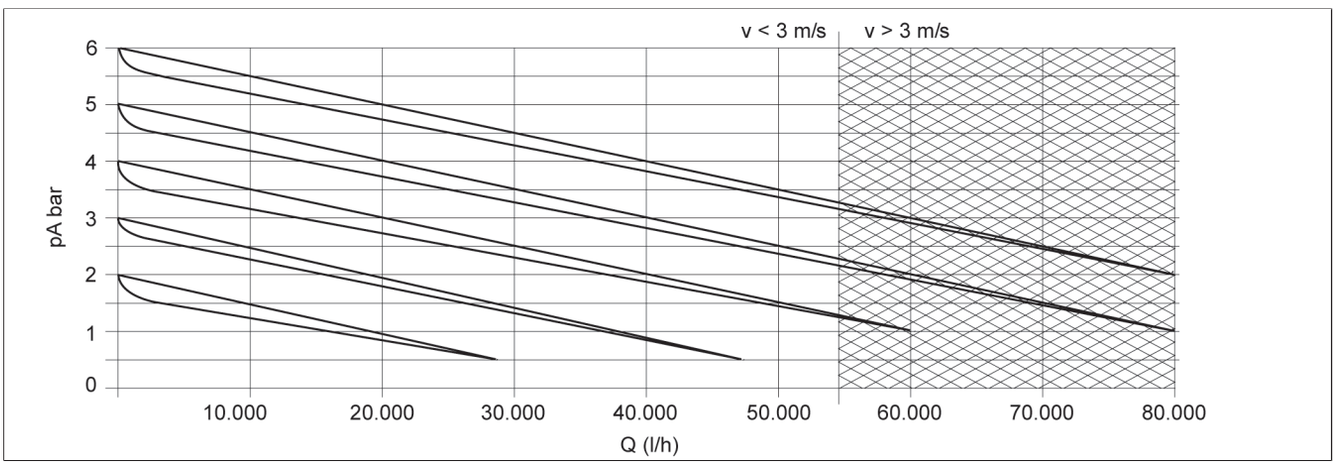
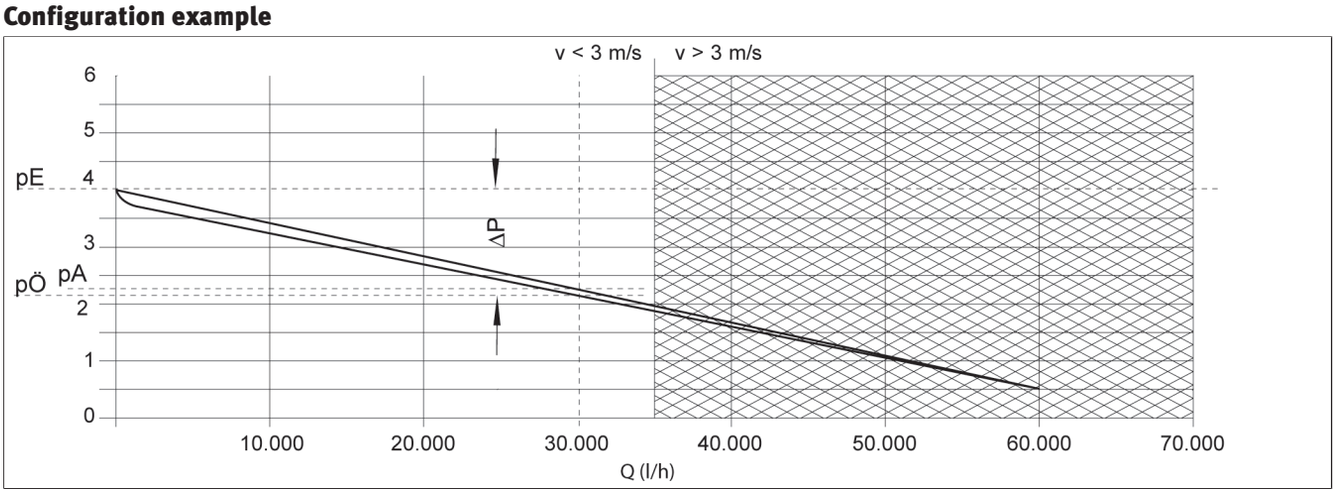
Characteristic curves

DN 80



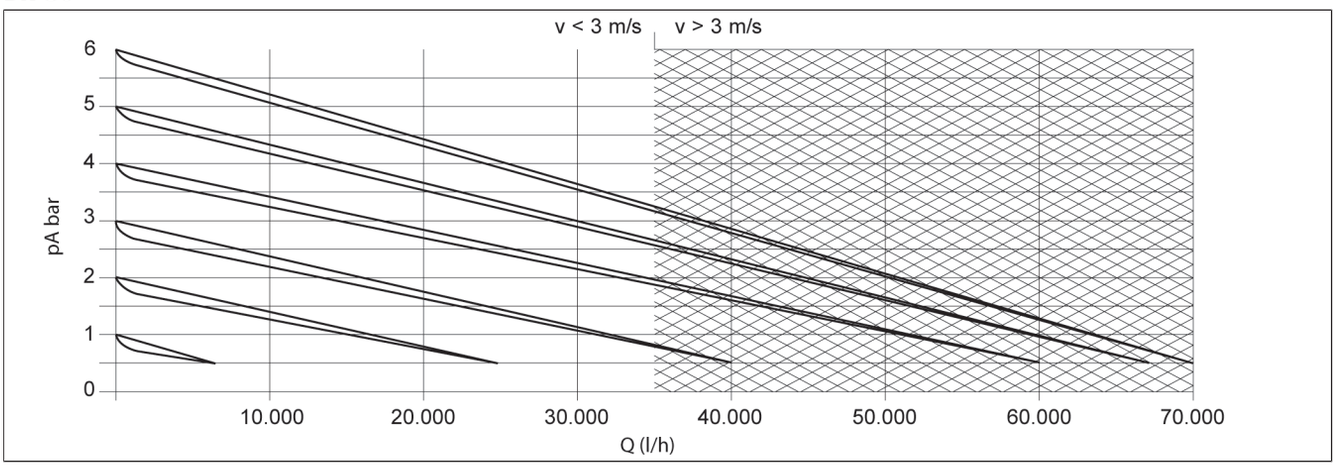
pA = working pressure
Q = flow

Configuration example



The valve is set tight at 4 bar.
Desired flow rate 30000 l/h, Medium H^2O
According to the curve, this results in the following values:
set pressure pE: 4 bar; Pressure reduction: p = 1,8 bar; Working pressure pA = ca. 2,2 bar

DN 80



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