

Pressure reducing valve type V 82 and type V 182



Body material	PVC-U	PP	PVDF
Material of diaphragm	• EPDM	• PTFE with EPDM cushion	
Working temperatur	0 °C up to 60 °C	- 10 °C up to 80 °C	- 20 °C up to 100 °C
Nominal size / pressure class	DN 10 up to DN 50 / PN 10 (adjustment range: 0,5 – 9 bar) DN 65 up to DN 80 / PN 6 (adjustment range: 0,5 – 5 bar) DN 100 / PN 4 (adjustment range: 1 – 3 bar)		
Connection with pipe	<ul style="list-style-type: none"> • Cement- / Welding spigot • Flange connection acc. to DIN EN 1092-1 (replaces DIN 2501) - PN 10 (16)^{*)} • True union with cement- / welding socket (DN 10 – DN 50) • True union with spigot (DN 10 – DN 50) 		
Length	Company standard		

^{*)} also acc. to ANSI available

Example for an invitation to tender text:

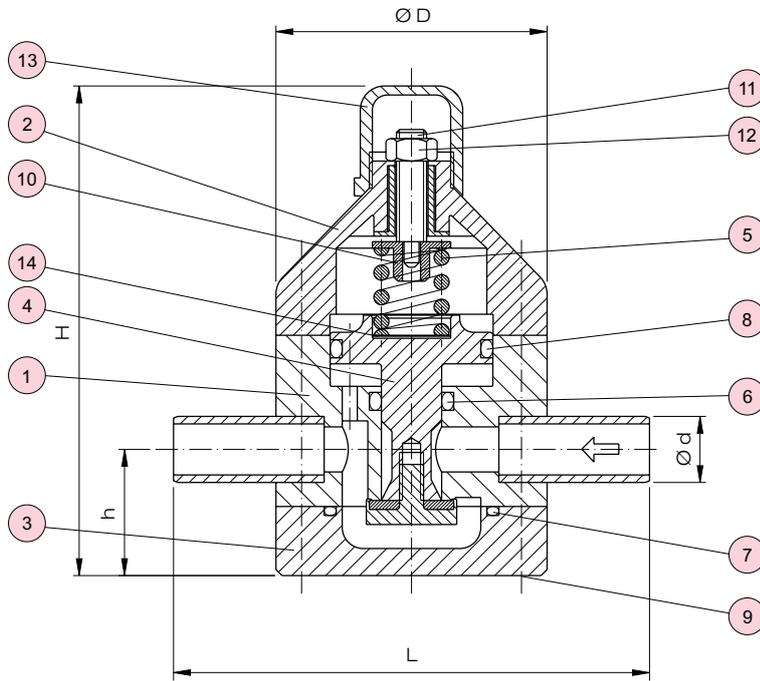
Pressure reducing valve type V 82, DN 50, PN 10, PVC-U / EPDM, unions with PE 100-spigot d 63, SDR 11, adjustment range 0,5 bar to 9 bar

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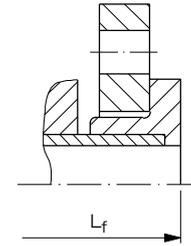
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Cement- / welding spigot

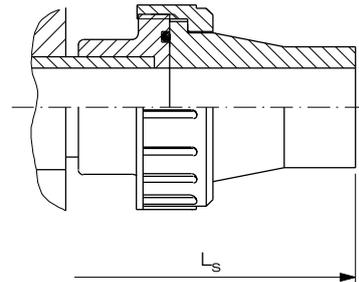
V 182 (DN 10 – DN 50)



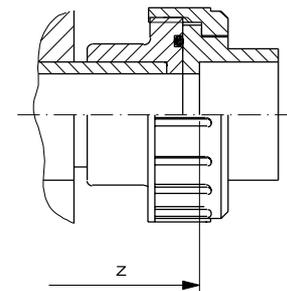
Flange



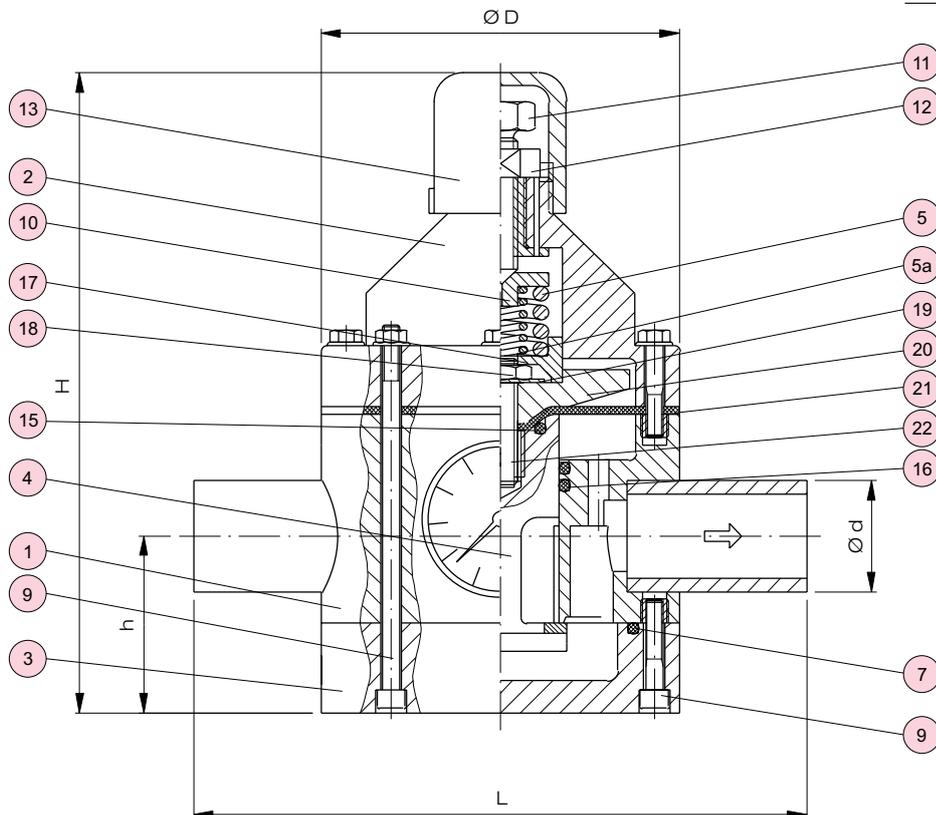
True union with spigot



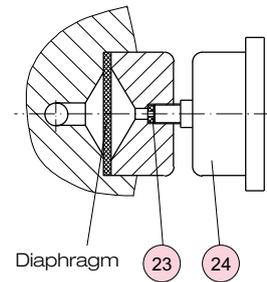
True union with cement- / welding socket



V 82 (DN 65 – DN 100)



Manometer connection



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No.	Description	Number	Material
1	Body	1	PVC-U, PP, PVDF
2	Bonnet	1	PVC-U, PP, PVDF
3	Base plate	1	PVC-U, PP, PVDF
4	Piston complete ⁷⁾	1	PVC-U, PP, PVDF ⁷⁾
5	Spring 1	1	Spring steel
5a	Spring 2 ^{2,3,4)}	1	Spring steel
6	O-ring ¹⁾	1	EPDM, FKM
7	O-ring	1	EPDM, FKM
8	O-ring ¹⁾	1	EPDM, FKM
9	Screw set	1	A2 - 1.4301 (SUS 304)
10	Spring plate	1	Aluminum alloy
11	Adjusting screw	1	A2 - 1.4301 (SUS 304)
12	Lock nut	1	PA

No.	Description	Number	Material
13	Cap	1	PVC-U, PP
14	Spring seat ¹⁾	1	
15	O-ring ²⁾	1	EPDM, FKM
16	O-ring	2 ⁵⁾	EPDM, FKM ⁶⁾
17	Thrust piece	1	PP
18	Lock nut ^{3,4)}	1	A2 - 1.4301 (SUS 304)
19	Washer	1	Spring steel
20	Pressure plate ^{2,3,4)}	1	PP
21	Diaphragm ^{*)}	1	EPDM, PTFE ^{**)}
22	Allen screw ^{3,4)}	1	A2 - 1.4301 (SUS 304)
23	Gasket	1	EPDM
24	Manometer	1	Brass

¹⁾ DN 10 – DN 40

²⁾ DN 50

³⁾ DN 65

⁴⁾ DN 80 – DN 100

⁵⁾ for DN 50: 1 piece lip ring

^{*)} Wearing parts / recommended spare parts

^{**)} with EPDM cushion

⁶⁾ Standard for PTFE-diaphragm

⁷⁾ Seat with EPDM or FKM

Description

- Pressure reducing valves reduce the pressure behind the valve to the adjusted pressure. The flow direction is marked with an arrow on the housing.
- By using the difference pressure the valves adjust to the required pressure. The outlet pressure is not directly related to the inlet pressure.
- The pressure reducers V82 / V182 are as standard equipped with a pressure gauge to show the outlet pressure. The pressure gauge is via diaphragm hermetically departed from the media.

- To protect against possible malfunctions due to particles, etc. in the piping system it is recommended to install a strainer before the valve.

Special features

- All parts in contact with the media are made from plastic
- Diaphragm protected pressure gauge to show the outlet pressure as standard
- Largely maintenance free
- Any mounting position
- For liquid media

Working pressure p_B in bar

Body material	T_B [°C]	p_B [bar]		
		DN 10 – 50	DN 65 – 80	DN 100
PVC-U	0 up to 25	10	6	4
	40	6	6	4
	60	1	1	1
PP	- 10 up to 30	10	6	4
	40	7	6	4
	60	4,3	3,5	2,4
	80	1,7	1,3	1
PVDF	- 20 up to 40	10	6	4
	60	7,5	4,6	3
	80	5,3	3,3	2
	120	2	1	0,5

Tightening torque Md

for body and piston connection in Nm

DN	10	15	20	25	32	40	50	65	80	100
Md ¹⁾	9	9	12	12	15	15	29	29	29	29
Md ²⁾							15	25	25	25

¹⁾ Body (V 82 and V 182)

²⁾ Piston (V 82)

Dimensions and weights

DN	Dimensions in mm								Weight in kg / pc.		
	d	D	h	H	L ⁷⁾	z ⁸⁾	L _s ⁹⁾	L _f ¹⁰⁾	PVC-U	PP	PVDF
10	16	70	30	130	134	154	–	140	0,68	0,55	0,79
15	20	70	35	144	134	160	248	140	0,68	0,51	0,78
20	25	100	46	180	174	203	297	180	1,35	1,03	1,62
25	32	100	46	180	174	203	303	180	1,35	1,02	1,59
32	40	130	65	230	224	256	358	230	2,96	2,24	5,32
40	50	130	65	230	224	259	365	230	2,96	2,24	5,32
50	63	150	75	285	244	286	385	250	5,18	3,96	9,33
65	75	200	100	350	300	–	–	306	10,43	7,91	13,76
80	90	250	120	425	360	–	–	370	19,63	12,91	
100	110	300	150	495	420	–	–	430	31,64	23,30	

Dimensions and weights for other connections see L7 – 44

⁷⁾ Cement- / welding spigot

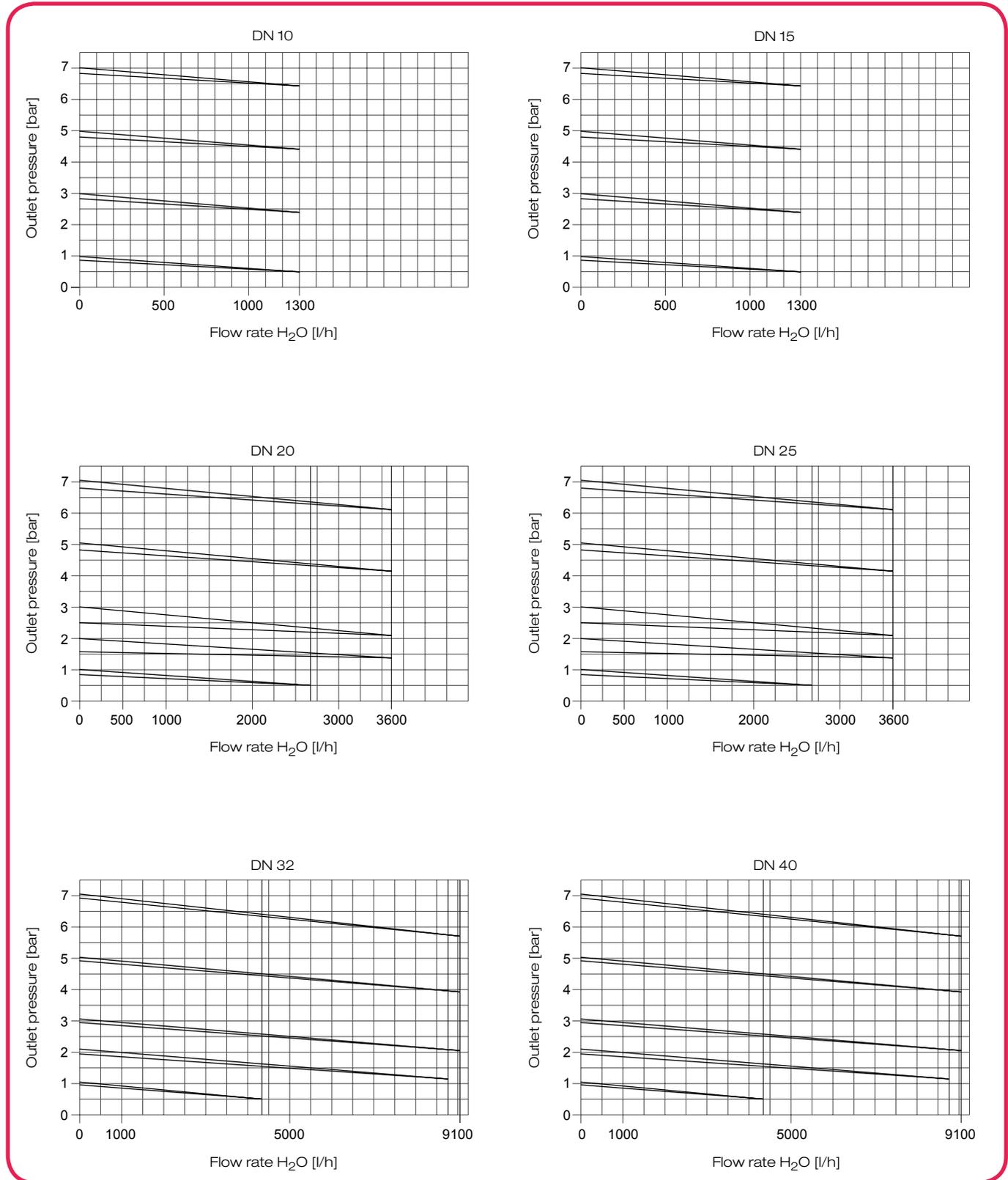
⁸⁾ True union with cement- / welding socket

⁹⁾ True union with spigot

¹⁰⁾ Flange (Dimensions PVC-U)

Pressure reducing valve type V 82 and type V 182

Characteristic graphs



Example DN 25:

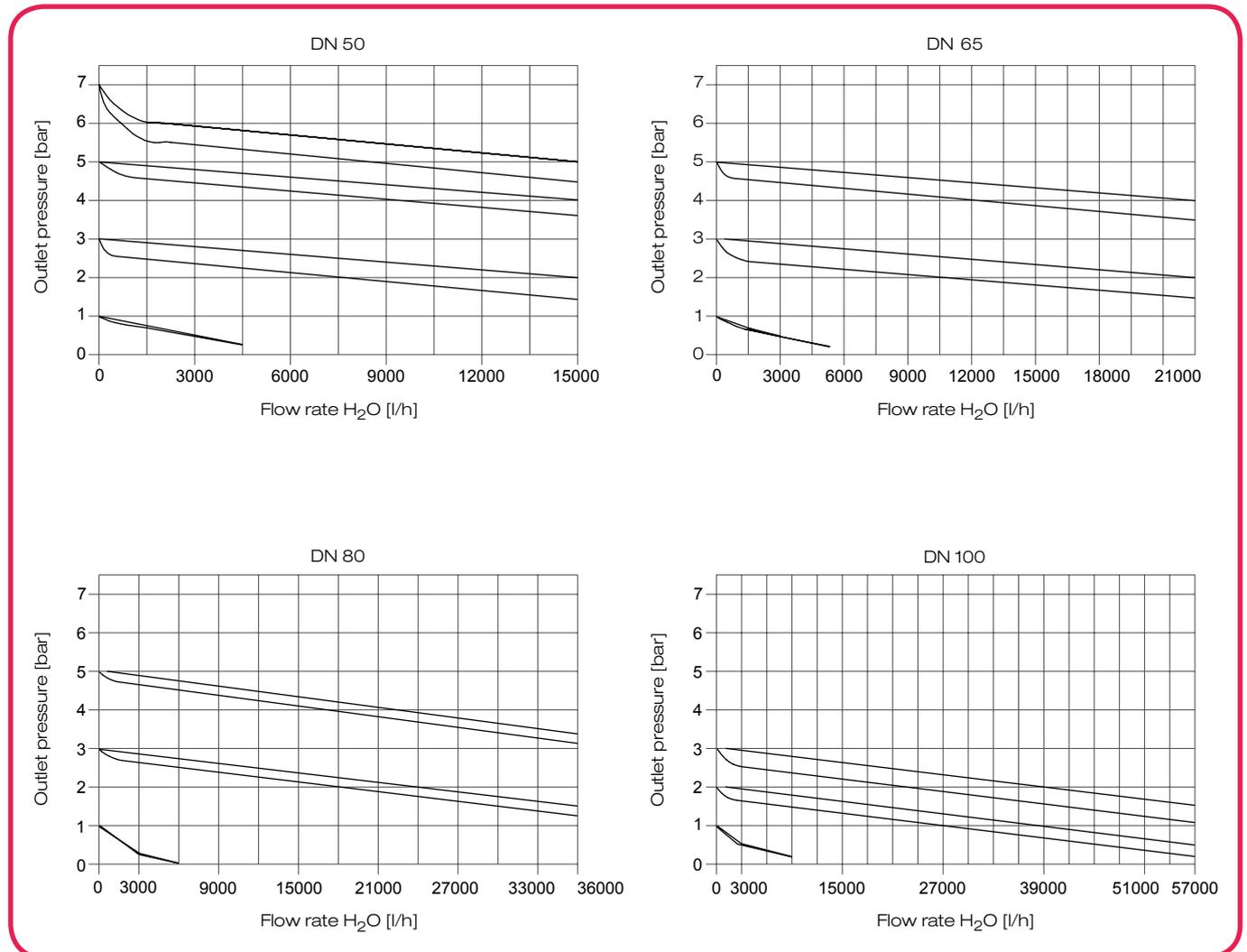
Flow: 2000 l/h

Working pressure: 2,7 bar

The valve DN 25 has for the given parameter a pressure drop of 0,3 bar and a hysteresis of 0,4 bar.

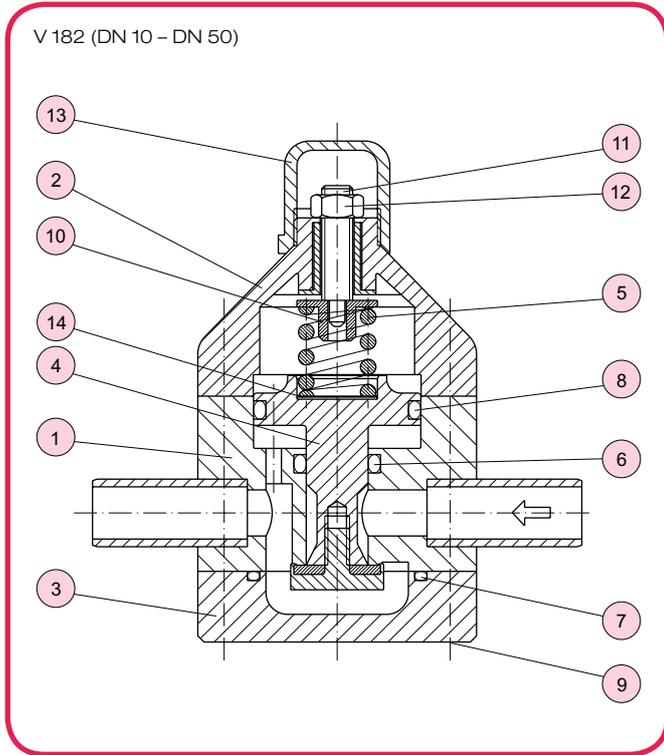
Pressure reducing valve type V 82 and type V 182

Characteristic graphs



Pressure reducing valve type V 82 and type V 182

Maintenance manual and mounting instructions



- Remove valve bonnet 2, spring 5a (DN 50 - 100) and 5.
- Remove spring plate 10 and thrust piece 17 (DN 50 - 100) (see L7 - 2).

Disassembling the valve lower part and diaphragm

- Refer to disassembly valve bonnet.
- Remove base plate 3 and O-ring 7 from the base plate.
- Position the valve to the side.
- DN 50 - 100: loosen lock nut 18 and allen screw 22 from the piston.
- Remove pressure plate 20 and diaphragm 21.
- Remove O-ring 15 (only DN 50, see L7 - 2).
- Piston 4 can be pushed out downwards.
- DN 10 - 40: piston 4 can be pushed out upwards.
- O-rings and lip rings:
Are only to be handled with the right tools.

(V 182) DN 10 - 40: O-rings 8 und 6
 (V 82) DN 50: lip ring 16
 DN 65 - 100: 2 x O-rings 16

Assembling of the valve

- The valve assembly is to be performed in reverse order to the disassembly.
- Before the assembly all parts have to be checked for damages.
- All parts have to be clean.
- Screws 9 have to be mounted evenly and crosswise according to the torques from page (L7 - 3).
- After assembly carry out a pressure test acc. to DIN EN 12266-1.

Adjusting the outlet pressure

- Remove cap 13, loosen lock nut 12.
- Increase outlet pressure:
Turn adjusting screw 11 clockwise.
- Decrease outlet pressure:
Turn adjusting screw 11 counterclockwise.
- Lock adjusting screw 11 with lock nut 12 and mount cap 13.

Disassembling the valve

Attention: Never dismantle the valve when the pipe is under pressure.

Disassembling the bonnet

- Remove cap 13.
- Loosen lock not 12 from adjusting screw 11 and turn the adjusting screw counter clockwise until all tension is taken away from spring 5.
- open body connection screws 9.

Notes for correct installation

- The valve must be installed stress-free in the pipe (plane parallelism, axial, overall length).
- Flange connection:
Tighten the connecting screws evenly and crosswise (observe tightening torques). In general, use washers for the nuts and bolts in plastic flanges.
- Socket and spigot type:
Gluing and welding have to be carried out according to the relevant standards (e.g. DVS).

Trouble shooting

Disorder	Cause	Elimination
Leakage between diaphragm and body (V 82)	Diaphragm not compressed enough	Retighten screws (9) see L7 - 3
Pressure increased above the adjusted setting	Piston seat leaking	Check piston and seat Clean or replace if necessary
	Diaphragm is leaking (V 82)	Dismantle bonnet, replace diaphragm
	O-ring / lip ring leaking	Dismantle lower part, replace O-rings/lip rings
Valve is closed, doesn't open	Wrong mounting direction	Change the mounting direction
Leakage between body and base plate	O-ring (7) leaking	Dismantle lower part, replace O-ring
Leakage at the adjusting screw	Diaphragm (21) broken (V 82)	Dismantle bonnet, replace diaphragm
	O-ring (8) broken (V 182)	Dismantle lower part, replace O-ring