Pressure Reducing Valve V782

General

Function

The V782 Pressure Reducing Valve reduces the pressure within the system to a pre-set value. By using the differential pressure, the pressure reducing valve adjusts itself to the set working pressure. The outlet pressure (working pressure) is not directly related to the inlet pressure. If the outlet pressure increases or decreases above/below the desired value, the diaphragm is lifted against the spring force or pressed down by the spring force, as the case may be, by the outlet pressure. The pressure reducing valve begins to close/open until a state of equilibrium is re-established; in other words, the outlet pressure remains constant irrespective of an increasing or decreasing inlet pressure.

The wide range of materials available for the housings (PVC-U, PP, PVDF) and the diaphragms (EPDM, EPDM-PTFE-coated) cover many areas of application for technically pure, neutral and aggressive fluids as well as ultrapure water applications. For more information, please refer to the Georg Fischer Piping Systems List of Resistance. We recommend installing a strainer upstream to avoid any breakdowns.

Special features

- All parts in contact with the medium are made of highly resistant plastics.
- The actuator is separated and hermetically sealed off from the flow section by the control diaphragm.
- The working pressure is set with an adjusting screw and locked with a locknut.
- The streamlined design of the housing makes for good flow rates.
- The large control surface and the spiral spring keep standard tolerances small.
- No auxiliary energy is required to operate the valve.
- The valve is largely maintenance-free and can be installed in any position.
- Valve can also be adjusted under working pressure.

Technical data V782

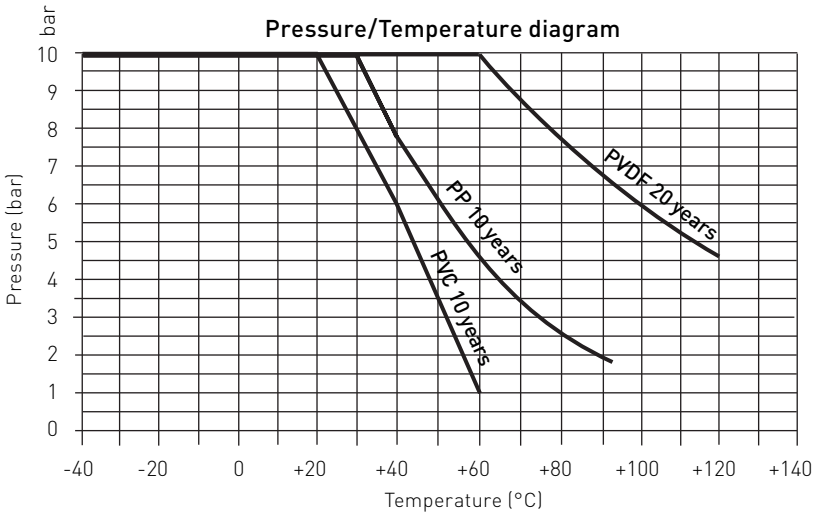
Available materials

Valve housing:	PVC-U, PP, PVDF	
Diaphragm:	EPDM, EPDM-PTFE-coated	
Pressure range:	DN 10–40	0.5–10 bar

Allowable working temperature

PVC-U	0 to + 60 °C
PP	–10 to + 80 °C
PVDF	–20 to + 100 °C

Working pressure

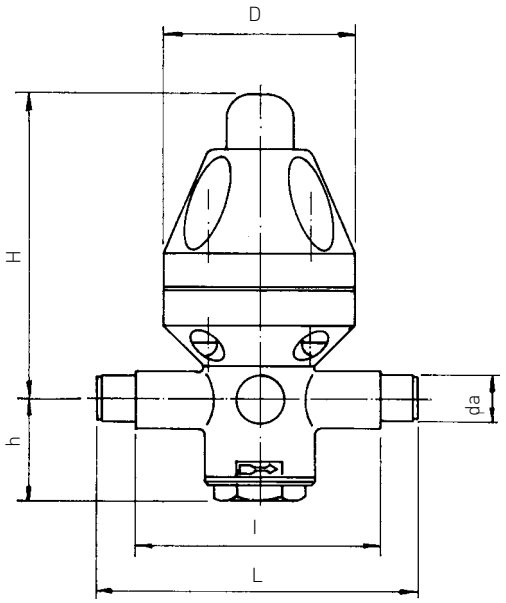


- **Hysteresis**
  approx. 0.1 to 0.4 bar

- **Pressure difference between inlet and outlet**
  min. 1 bar

Attention: If the secondary pressure is increased additionally by back pressure, the pressure regulating valve will act as a check valve. This back pressure can under certain circumstances lead to the destruction of the valve piston.

Adjustment range on outlet with an inlet pressure of 10 bar
0.5 to 9.0 bar



Dimensions and weight V782

da	DN	L: PVC-U cement spigots PP/PVDF fusion spigots	L: PVDF-HP/PP Butt fusion spigots BC F/IR	l	H	h	D
16	10	134	–	102	138	48	83
20	15	134	172	102	138	48	83
25	20	154	190	110	205	65	112
32	25	154	190	110	205	65	112
40	32	224	262	162	248	95	165
50	40	224	262	162	248	95	165

da	DN	Weight (kg) PVC-U	PP	PVDF
16	10	0.62	0.45	0.67
20	15	0.62	0.46	0.68
25	20	1.70	1.24	1.84
32	25	1.70	1.25	1.84
40	32	4.84	3.91	6.31
50	40	4.84	3.93	6.24

Cement and fusion spigots according to DIN/ISO

p_A = formulated operating pressure

$p_{ö}$ = opening pressure

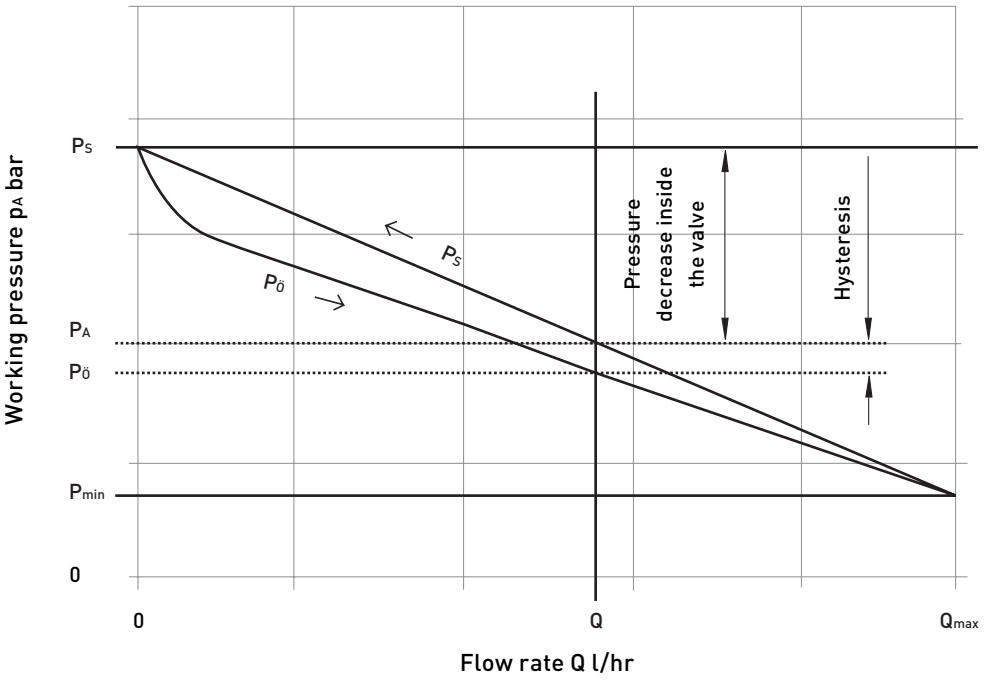
p_S = closing pressure

p_S-$p_{ö}$ = hysteresis

p_S-p_A = flow-related pressure drop in valve

p_S-p_{min} = max. pressure reduction in relation to flow rate

Operational characteristics for a pressure reducing valve (representation not full scale)



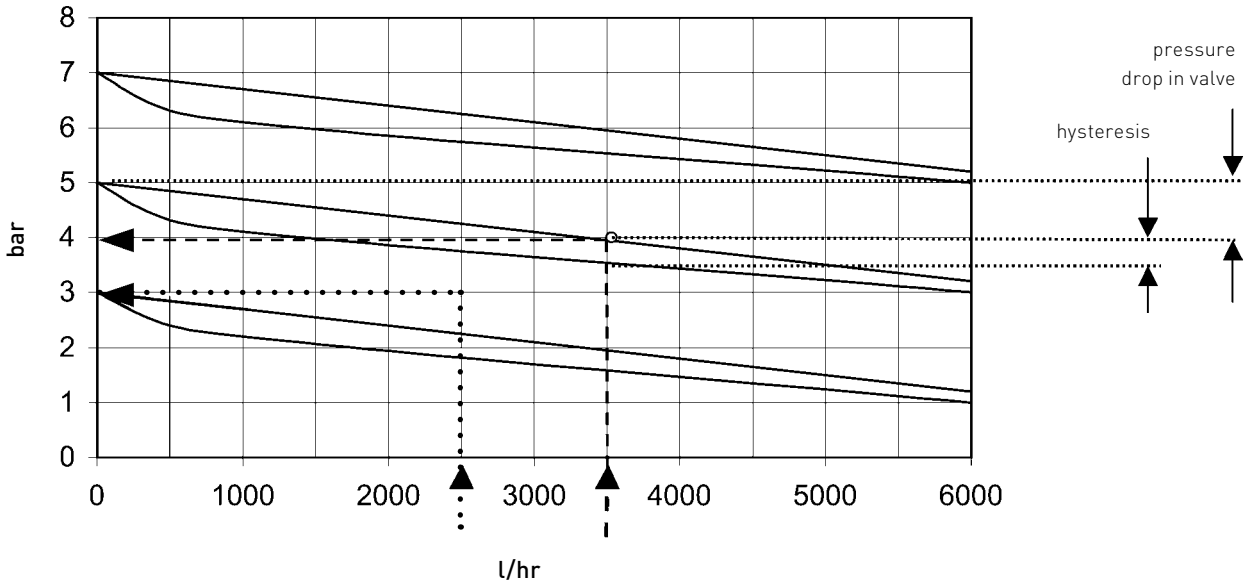
Example 1: _ _ _ _ _ _ _ _ _ _

For a flow rate of approx. 3500 l/hr, an outlet pressure (working pressure) of 4 bar is required. Inlet pressure min. 5 bar or greater.

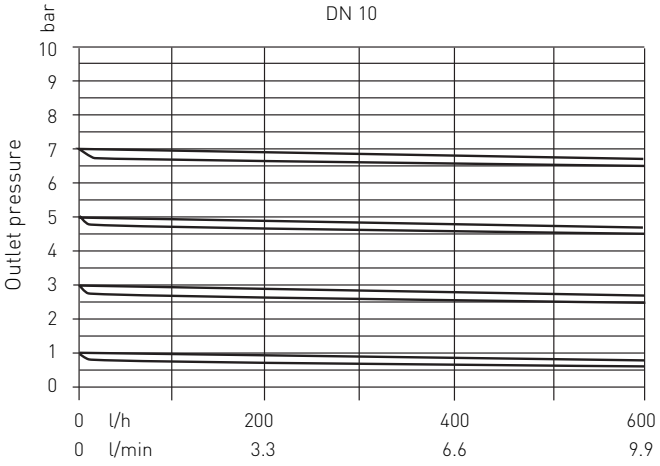
Look for the given flow rate on the x axis of the respective nominal diameter curve. When the appropriate curve has been found, check if the valve is in the desired pressure range (here 4 bar). In this example, the hysteresis would be 0.5 bar and the pressure drop 1 bar.

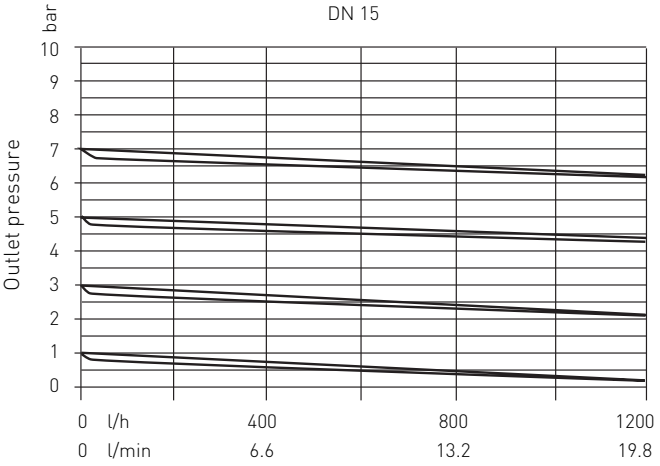
Example 2: . . . . . .

The valve is adjusted at a desired pressure of 3 bar at 0 conveyance. If we take a flow rate of 2500 l/hr, the pressure drop in the valve would be approx. 0.8 bar.

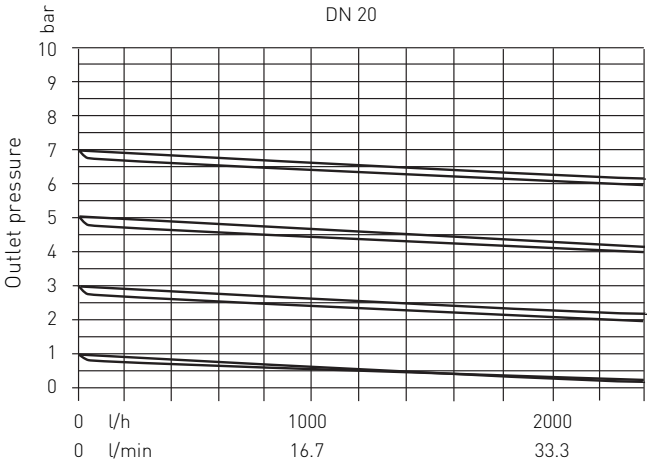


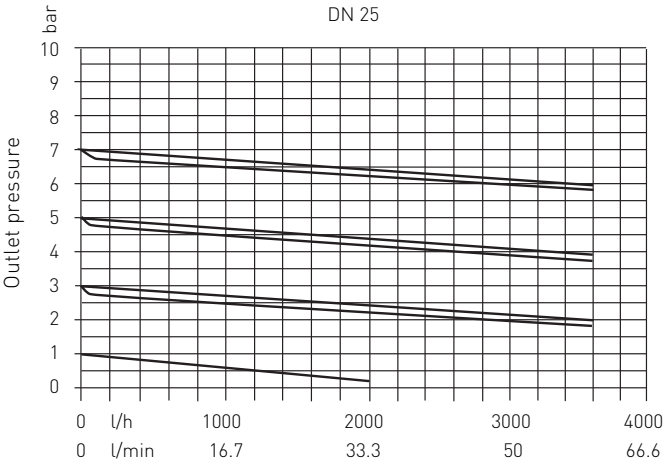
Characteristics V782

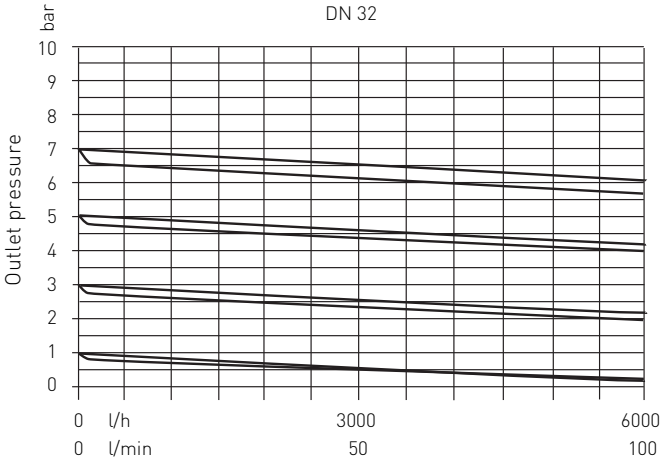


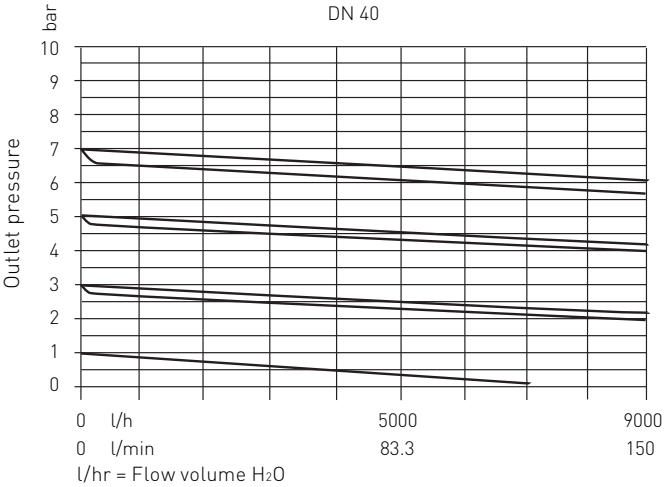


Characteristics are valid for a flow rate of 2 m/s









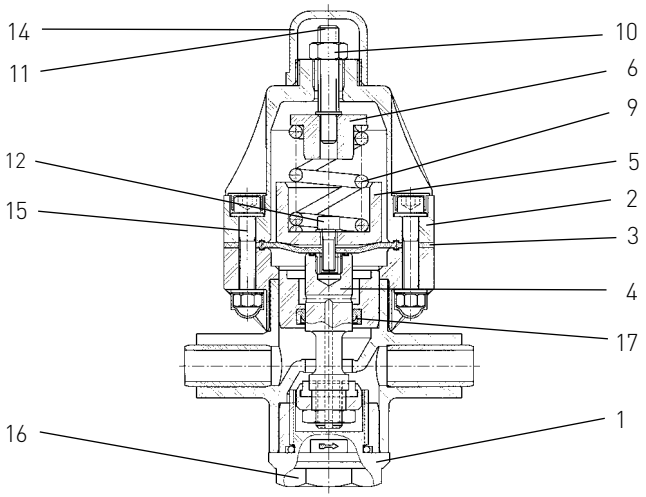
l/hr = Flow volume H_2O

Order number

DN	d	Adj. range in bar	PVC-U EPDM	PVC-U PTFE	PP Standard EPDM	PP Standard PTFE	PP/IR spigots EPDM	PP/IR spigots PTFE	PVDF-PTFE Standard	HP-Version* BCF/IR spigots
10	16	0.5 – 9.0	199 041 060	199 041 066	199 041 072	199 041 078	–	–	199 041 084	–
15	20	0.5 – 9.0	199 041 061	199 041 067	199 041 073	199 041 079	199 041 299	199 041 404	199 041 085	199 041 192
20	25	0.5 – 9.0	199 041 062	199 041 068	199 041 074	199 041 080	199 041 300	199 041 405	199 041 086	199 041 193
25	32	0.5 – 9.0	199 041 063	199 041 069	199 041 075	199 041 081	199 041 301	199 041 406	199 041 087	199 041 194
32	40	0.5 – 9.0	199 041 064	199 041 070	199 041 076	199 041 082	199 041 302	199 041 407	199 041 088	199 041 195
40	50	0.5 – 9.0	199 041 065	199 041 071	199 041 077	199 041 083	199 041 303	199 041 408	199 041 089	199 041 196

* PVDF – PTFE Standard with IR spigots on request
Flange and union versions on request

Sectional drawing V782



Parts

No.	Description
1.	Valve body
2.	Uppervalve body
3.*	Diaphragm
4.*	Piston
5.	V782: Compressor
6.	V782: Spring plate
9.*	Compression spring
10.	Lock nut
11.	Adjusting screw
12.	Hexagonal socket-head bolt
14.	Cap
15.	Hexagonal socket-head bolt with nut and covering cup
16.	Valve bottom with O-ring
17.*	Ring seal

* Parts subject to wear or recommended spare parts

Dismantling instructions

1. Dismantle the upper valve body:

1.1 Put the valve in an upright position
1.2 Unscrew the cap (14)
1.3 Undo the locknut on the adjusting screw (11) and undo the adjusting screw until the compression spring (9) is fully released
1.4 Remove the covering caps on the screws (15) of the upper body and undo the screws
1.5 Lift the upper body (2) upwards and remove the spring plate (6) and the spring (9)

2. Dismantle the lower valve body and the diaphragm:

2.1 Carry out steps 1.1 to 1.5
2.2 Unscrew the vent plug (16)
2.3 Lay the valve on its side
2.4 With a screwdriver on the underside of the piston (vent plug opening), prevent the piston from turning and at the same time use a hexagon socket screw key to unscrew the screw (12) in the pressure plate (5)
2.5 Remove the screw (12), pressure plate (5) and diaphragm (3)
2.6 Remove the piston (4) downwards
2.7 Remove the ring seal (17) in the housing (1)

These steps are carried out in reverse order to reassemble!

Operating faults and possible causes

Fault	Cause	Correction
Valve not sealed at the diaphragm	Diaphragm not pressed on hard enough	Tighten screws (15)
Pressure rises above the set value	Piston (4) not sealed	Check piston and piston position and possibly replace
	Diaphragm (3) not sealed	Replace diaphragm, dismantle upper valve body 1.1-2.5
	Ring seal (17) not sealed	Replace seal, dismantle lower valve body 1.1-2.7
	Control holes in piston are blocked	Dismantle piston 1.1-2.6 and clean holes
Valve closed – will not open	Installed wrong way round	Turn valve round, check arrow indicating flow direction
Lower valve body not sealed at vent plug	O-ring not sealed	Dismantle vent plug, 2.2 and replace O-ring
Medium leaks out at the adjusting screw	Diaphragm is faulty	Replace diaphragm, dismantle lower valve body 1.1-2.5

Installation advice:
We recommend installing the fittings between 2 detachable pipe connections.

Pressure Reducing Valve V82

General

Function

The V82 Pressure Reducing Valve reduces the pressure within the system to a pre-set value. By using the differential pressure, the pressure reducing valve adjusts itself to the set working pressure. The outlet pressure (working pressure) is not directly related to the inlet pressure. If the outlet pressure increases or decreases above/below the desired value, the diaphragm is lifted against the spring force or pressed down by the spring force, as the case may be, by the outlet pressure. The pressure reducing valve begins to close/open until a state of equilibrium is re-established, in other words, the outlet pressure remains constant irrespective of an increasing or decreasing inlet pressure.

The wide range of materials available for the housings (PVC-U, PP, PVDF) and the diaphragms (EPDM, EPDM-PTFE-coated) cover many areas of application for technically pure, neutral and aggressive fluids as well as ultrapure water applications. For more information, please refer to the Georg Fischer Piping Systems List of Resistance. We recommend installing a strainer upstream to avoid any breakdowns.

Special features

- All parts in contact with the medium are made of highly resistant plastics.
- The actuator is separated and hermetically sealed off from the flow section by the control diaphragm.
- The working pressure is set with an adjusting screw and locked with a locknut.
- The large control surface and the disc spring keep standard tolerances small.
- No auxiliary energy is required to operate the valve.
- The valve is largely maintenance-free and can be installed in any position.
- Valve can also be adjusted under working pressure.
- Standard version with manometer.

Technical data V82

Available materials

Valve housing:	PVC-U, PP, PVDF	
Diaphragm:	EPDM,	
	EPDM-PTFE-coated	
Pressure ranges:	DN 10–50	0.5–10 bar
	DN 65–80	0.5–6 bar
	DN 100	0.5–4 bar

Allowable working temperatures

PVC-U	0 to + 60 °C
PP	–10 to + 80 °C
PVDF	–20 to + 100 °C

- **Hysteresis**
  approx. 0.4 to 1.0 bar

- **Pressure difference between inlet and outlet**
  1 bar

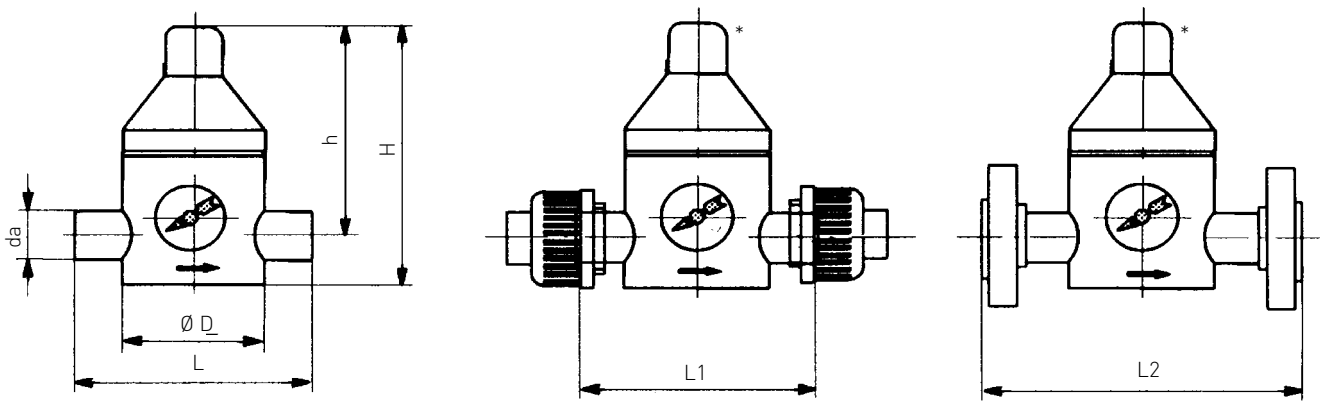
Adjustment range on outlet with an inlet pressure of 10 bar
0.5 to 9.0 bar

Dimensions and weight V82

da	DN	Ø D	h	H	L: PVC-U cement spigots PP/PVDF fusion spigots	L: PVDF-HP/PP butt fusion spigots BCF/IR
16	10	70	100	130	134	–
20	15	70	100	130	134	150
25	20	100	134	180	174	190
32	25	100	134	180	174	190
40	32	130	175	230	224	240
50	40	130	175	230	224	240
63	50	150	210	285	244	260
75	65	200	250	350	300	300
90	80	250	305	425	360	360
110	100	300	345	495	420	420

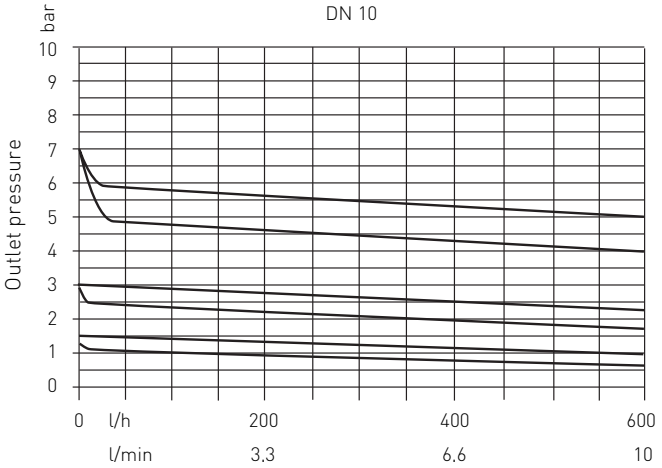
da	DN	PVC-U, PP/PVDF L1	PVC-U, PP/PVDF L2	Weight (kg) - PVC-U L	L1	L2	PP L	PVDF L
16	10	154	140	0.68	0.73	0.84	0.55	0.79
20	15	154	140	0.68	0.76	0.88	0.51	0.78
25	20	185	180	1.35	1.49	1.64	1.03	1.62
32	25	185	180	1.63	1.56	1.75	1.02	1.59
40	32	248	230	2.96	3.32	3.62	2.24	5.32
50	40	252	230	2.96	3.38	3.74	2.24	5.32
63	50	280	250	5.18	5.90	6.175	3.96	9.33
75	65	–	306	10.43	–	11.77	7.91	13.76
90	80	–	370	19.63	–	21.25	12.91	–
110	100	–	430	31.64	–	33.76	23.30	–

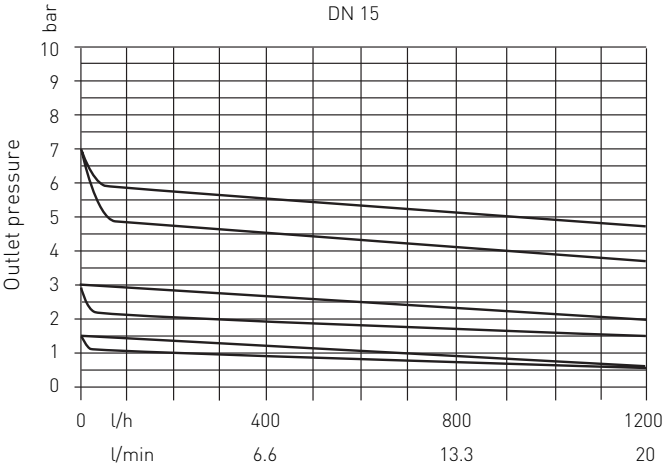
Cement and fusion spigots according to DIN/ISO



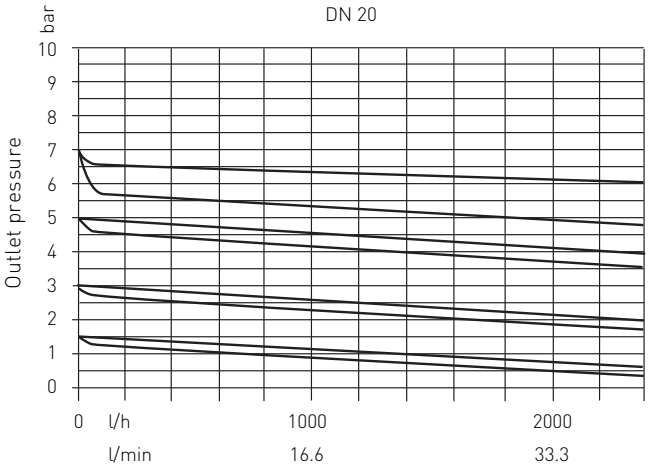
* special versions on request

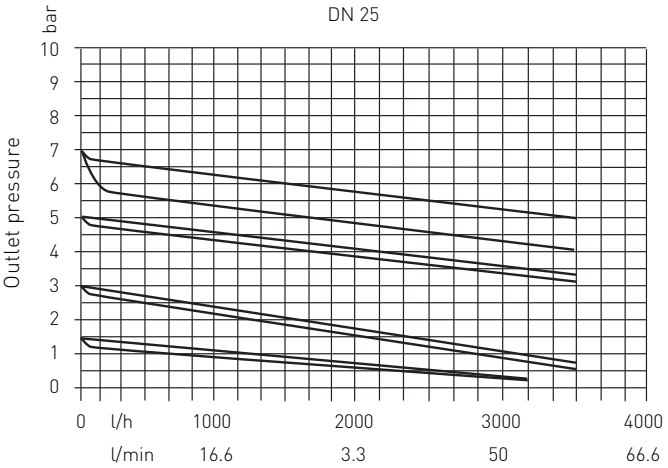
Characteristics V82

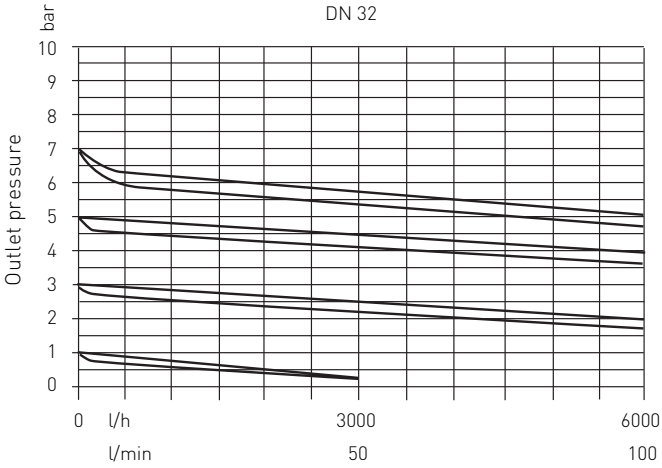


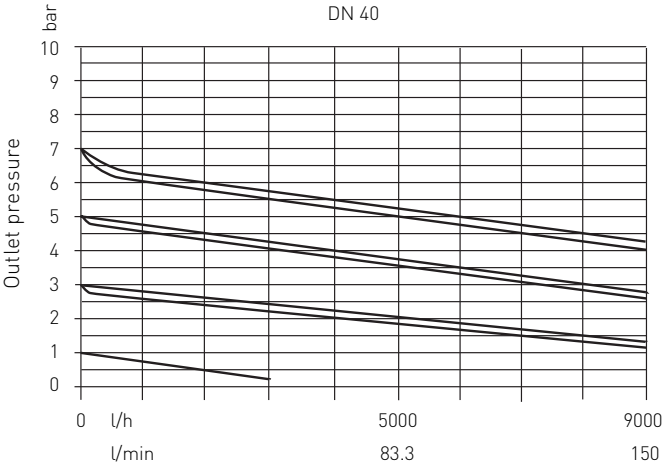


Characteristics are valid for a flow rate of 2 m/s



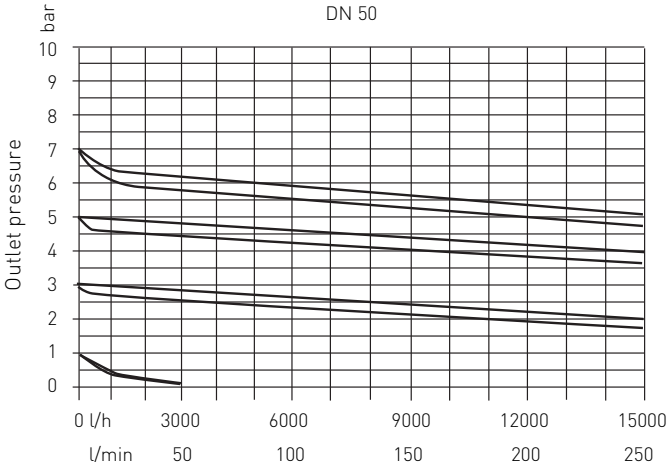


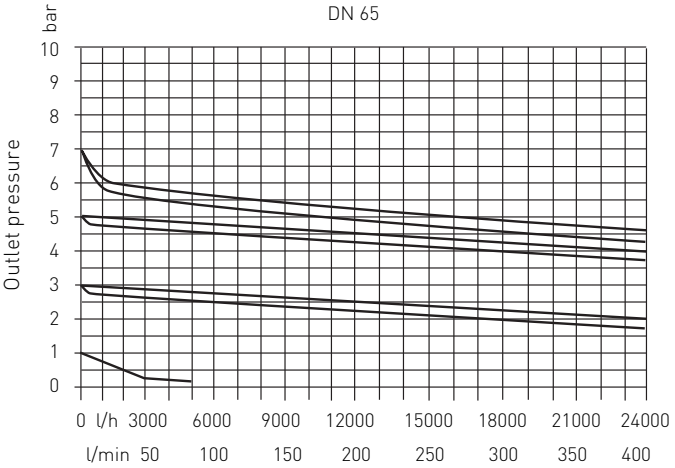


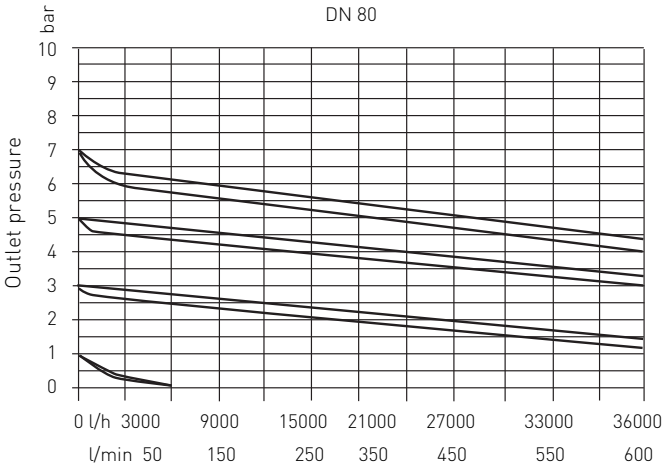


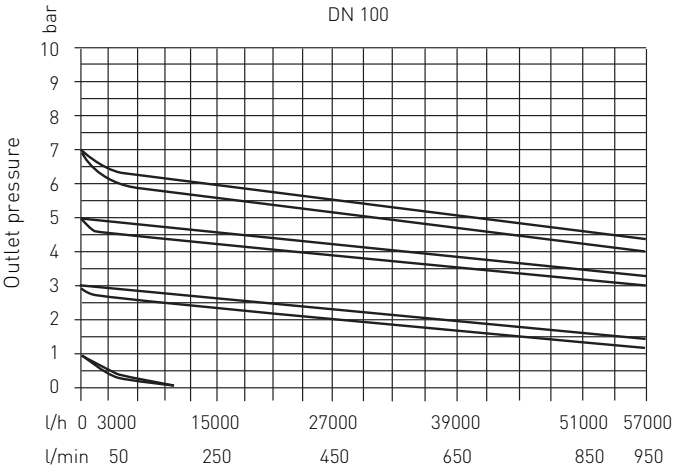
l/hr, l/min = Flow volume H_2O

Characteristics V82









Order number

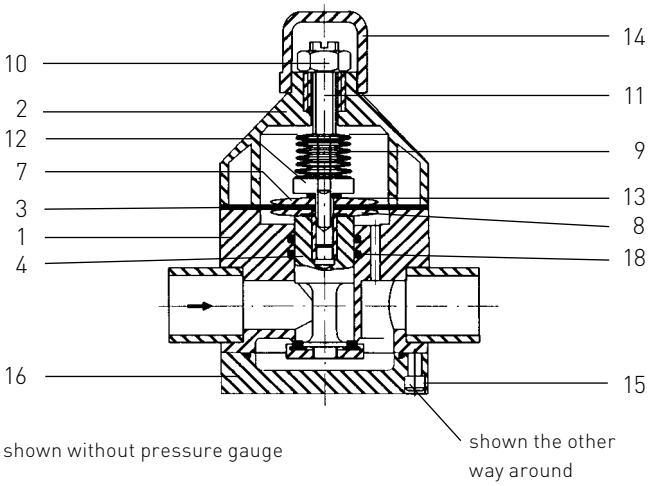
DN	d	Adj. range in bar	PVC-U EPDM	PVC-U PTFE	PP EPDM	PP PTFE	PP/IR spigots EPDM	PP/IR spigots PTFE	PVDF-PTFE Standard	HP Version* BCF/IR spigots
10	16	0.5 – 9.0	199 041 012	199 041 022	199 041 032	199 041 042	–	–	199 041 052	–
15	20	0.5 – 9.0	199 041 013	199 041 023	199 041 033	199 041 043	199 041 411	199 041 421	199 041 053	199 041 184
20	25	0.5 – 9.0	199 041 014	199 041 024	199 041 034	199 041 044	199 041 412	199 041 422	199 041 054	199 041 185
25	32	0.5 – 9.0	199 041 015	199 041 025	199 041 035	199 041 045	199 041 413	199 041 423	199 041 055	199 041 186
32	40	0.5 – 9.0	199 041 016	199 041 026	199 041 036	199 041 046	199 041 414	199 041 424	199 041 056	199 041 187
40	50	0.5 – 9.0	199 041 017	199 041 027	199 041 037	199 041 047	199 041 415	199 041 425	199 041 057	199 041 188
50	63	0.5 – 9.0	199 041 018	199 041 028	199 041 038	199 041 048	199 041 416	199 041 426	199 041 058	199 041 189
65	75	0.5 – 6.0	199 041 019	199 041 029	199 041 039	199 041 049	199 041 417	199 041 427	199 041 059	–
80	90	0.5 – 6.0	199 041 020	199 041 030	199 041 040	199 041 050	199 041 418	199 041 428	–	–
100	110	0.5 – 4.0	199 041 021	199 041 031	199 041 041	199 041 051	199 041 419	199 041 429	–	–

* BCF fusion only possible up to DN 50

PVDF – PTFE Standard with IR spigots on request

Flange and union versions on request

Sectional drawing V82



shown without pressure gauge

shown the other way around

Parts

No.	Description
1.	Valve body
2.	Upper valve body
3.*	Diaphragm
4.*	Piston
7.	V82: Pressure plate (top)
8.	V82: Pressure plate (bottom)
9.*	Compression spring
10.	Lock nut
11.	Adjusting screw
12.	Hexagonal socket-head bolt
13.	Washer
14.	Cap
15.	Hexagonal socket-head bolt
16.	Valve bottom with O-ring
18.*	O-ring

* Parts subject to wear or recommended spare parts

Installation and operating advice

- Note the direction of flow! Indicated by the arrow on the valve.
- We recommend fitting the valve between 2 detachable pipe connections (flanges or screw fastenings).
- Can be installed in any position with no effect on functioning.
- Where the medium is dirty or particle-laden, we recommend installing a strainer to avoid any breakdowns.

Dismantling instructions

1. Dismantle the upper valve body:

1.1 Put the valve in an upright position
1.2 Unscrew the cap (14)
1.3 Undo the locknut on the adjusting screw (11) and undo the adjusting screw until the compression spring (9) is fully released
1.4 Undo the screws (15)
1.5 Lift the upper body (2) upwards and remove the spring plate (6) and the spring (9)

2. Dismantle the lower valve body and the diaphragm:

2.1 Carry out steps 1.1 to 1.5
2.2 Unscrew the vent plug (16)
2.3 Lay the valve on its side
2.4 With a screwdriver on the underside of the piston (vent plug opening), prevent the piston from turning and at the same time use a hexagon socket screw key to unscrew the screw (12) in the pressure plate (5)
2.5 Remove the screw (12), pressure plate (5) and diaphragm (3)
2.6 Remove the piston (4) downwards

These steps are carried out in reverse order to reassemble!

Operating faults and possible causes

Fault	Cause	Correction
Valve not sealed at the diaphragm	Diaphragm not pressed on hard enough	Tighten screws (15)
Pressure rises above the set value	Piston (4) not sealed	Check piston and piston position and possibly replace
	Diaphragm (3) not sealed	Replace diaphragm, dismantle upper valve body 1.1-2.5
	Control bores in housing soiled	Dismantle piston 1.1-2.6 and clean holes
Valve closed – will not open	Installed wrong way round	Turn valve round, check arrow indicating flow direction
Lower valve body not sealed at vent plug	O-ring not sealed	Dismantle vent plug, 2.2 and replace O-ring
Medium leaks out at the adjusting screw	Diaphragm is faulty	Replace diaphragm, dismantle lower valve body 1.1-2.5

Installation advice:
We recommend installing the fittings between 2 detachable pipe connections.

Pressure Reducing Valve V182

General

Function

The V182 Pressure Reducing Valve reduces the pressure within the system to a pre-set value. By using the differential pressure, the pressure reducing valve adjusts itself to the set working pressure. The outlet pressure (working pressure) is not directly related to the inlet pressure. If the outlet pressure increases or decreases above/below the desired value, the piston is lifted against the spring force or pressed down by the spring force, as the case may be, by the outlet pressure. The pressure reducing valve begins to close/open until a state of equilibrium is re-established, in other words, the outlet pressure remains constant irrespective of an increasing or decreasing inlet pressure.

The wide range of materials available for the housings (PVC-U, PP, PVDF) and the diaphragms (EPDM, EPDM-PTFE-coated) cover many areas of application for technically pure, neutral and aggressive fluids. For more information, please refer to the Georg Fischer Piping Systems List of Resistance. We recommend installing a strainer upstream to avoid any breakdowns.

Special features

- All parts in contact with the medium are made of highly resistant plastics.
- The control unit is hermetically sealed off from the flow element by the piston and the seal.
- The working pressure is set with an adjusting screw and locked with a locknut.
- Improved flow values are archieved by the flow-optimized design of the piston.
- The large control surface and the spiral spring keep standard tolerances small.
- No auxiliary energy is required to operate the valve.
- The valve is largely maintenance-free and can be installed in any position.
- Valve can also be adjusted under working pressure.
- Standard version with diaphragm-protected manometer.

Technical data V182

Available materials

Valve housing:	PVC-U, PP, PVDF	
Piston-seal:	EPDM, FPM	
Pressure ranges:	DN 10–40	0.5–10 bar

Allowable working temperatures

PVC-U	0 to + 60 °C
PP	–10 to + 80 °C
PVDF	–20 to + 100 °C

- **Hysteresis**
  approx. 0.3 to 0.5 bar

- **Pressure difference between inlet and outlet**
  min. 1 bar

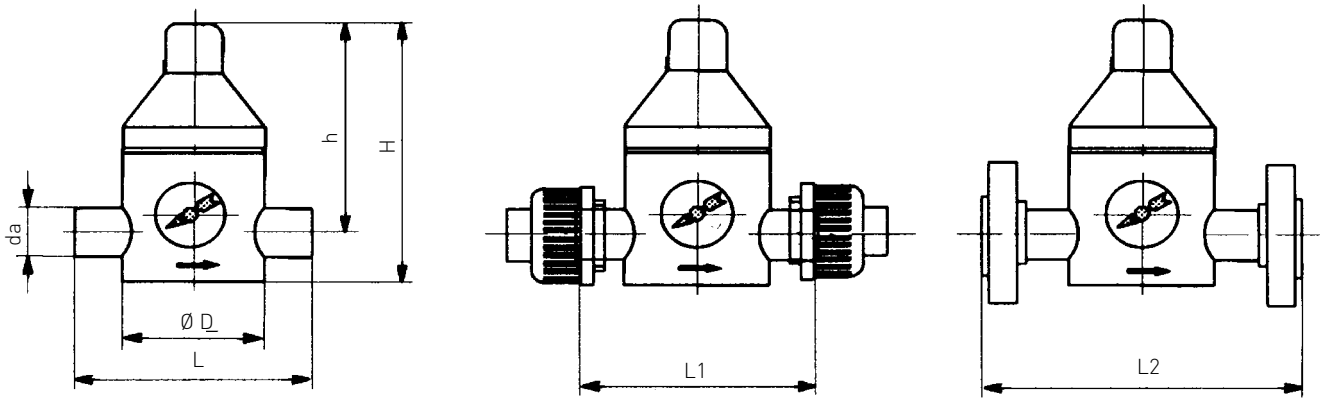
Adjustment range on outlet with an inlet pressure of 10 bar
0.5 to 9.0 bar

Dimensions and weight V182

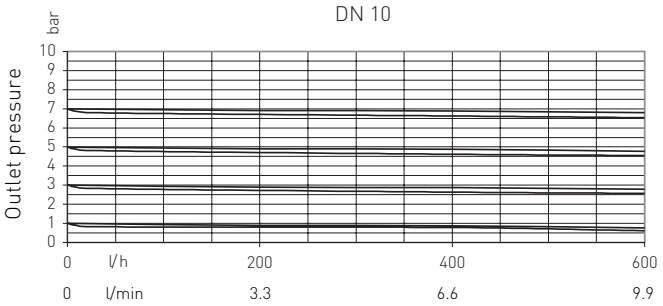
da	DN	Ø D	h	H	L: PVC-U cement spigots PP/PVDF fusion spigots	L: PVDF-HP/PP butt fusion spigots BCF/IR
16	10	70	100	130	134	–
20	15	70	100	130	134	150
25	20	100	134	180	174	190
32	25	100	134	180	174	190
40	32	130	175	230	224	240
50	40	130	175	230	224	240

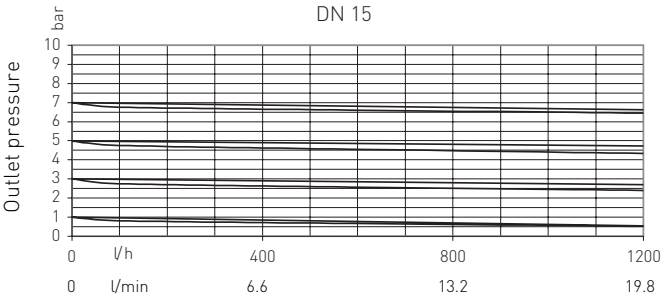
da	DN	PVC-U, PP/PVDF L1	PVC-U, PP/PVDF L2	Weight (kg) - PVC-U L	L1	L2	PP L	PVDF L
16	10	154	140	0.68	0.73	0.84	0.55	0.79
20	15	154	140	0.68	0.76	0.88	0.51	0.78
25	20	185	180	1.35	1.49	1.64	1.03	1.62
32	25	185	180	1.63	1.56	1.75	1.02	1.59
40	32	248	230	2.96	3.32	3.62	2.24	5.32
50	40	252	230	2.96	3.38	3.74	2.24	5.32

Cement and fusion spigots according to DIN/ISO

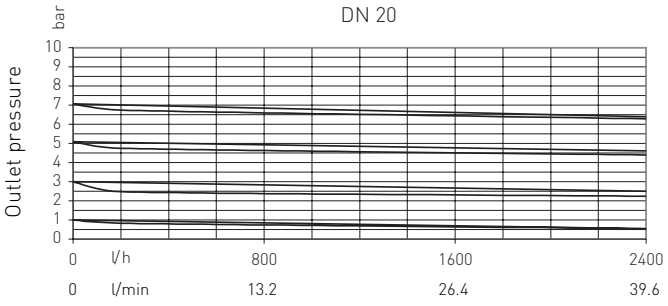


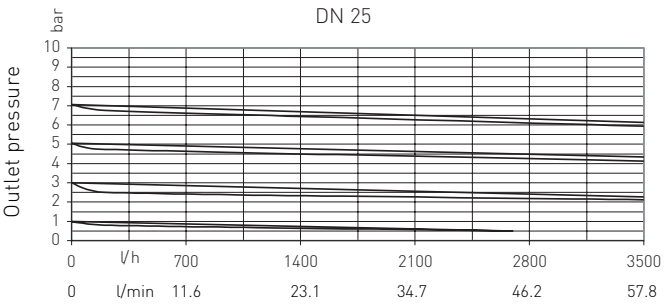
Characteristics V182

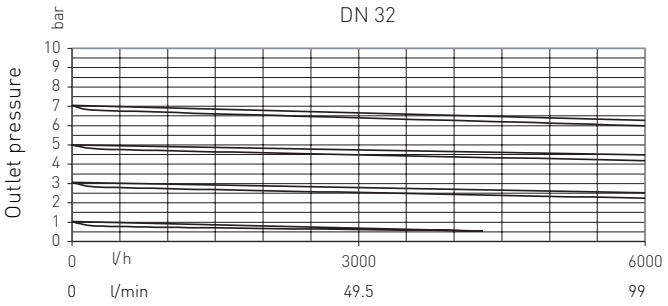


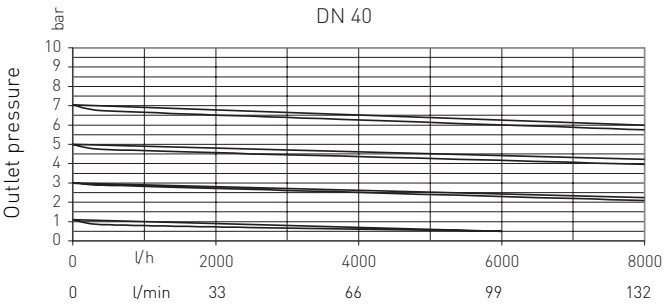


Characteristics valid for 2 m/s









Order number

DN	d	Adj. range in bar	PVC-U		PP		PP/IR-spigots		PVDF-FPM	HP-Version*
			EPDM	FPM	EPDM	FPM	EPDM	FPM	Standard	BCF/IR spigots
10	16	0.5 - 9.0	199 041 600	199 041 611	199 041 621	199 041 631	199 041 641	199 041 651	199 041 661	199 041 671
15	20	0.5 - 9.0	199 041 601	199 041 612	199 041 622	199 041 632	199 041 642	199 041 652	199 041 662	199 041 672
20	25	0.5 - 9.0	199 041 602	199 041 613	199 041 623	199 041 633	199 041 643	199 041 653	199 041 663	199 041 673
25	32	0.5 - 9.0	199 041 603	199 041 614	199 041 624	199 041 634	199 041 644	199 041 654	199 041 664	199 041 674
32	40	0.5 - 9.0	199 041 604	199 041 615	199 041 625	199 041 635	199 041 645	199 041 655	199 041 665	199 041 675
40	50	0.5 - 9.0	199 041 605	199 041 616	199 041 626	199 041 636	199 041 646	199 041 656	199 041 666	199 041 676

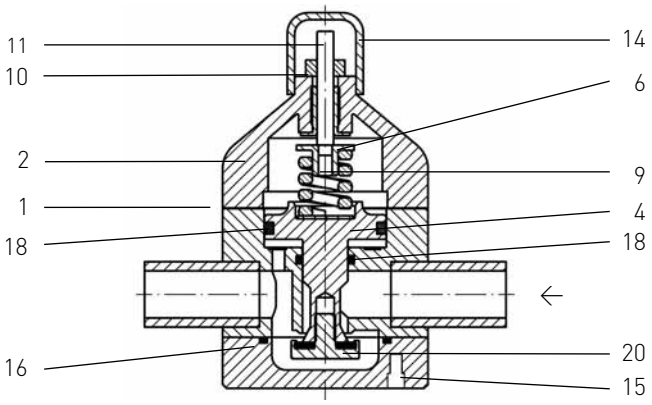
* BCF fusion only possible up to DN 50

PVDF – PTFE Standard with IR spigots on request

– in preparation

Flange and union versions on request

Sectional drawing V182



shown without pressure gauge

Parts

No.	Description
1.	Valve body
2.	Upper valve body
4.*	Piston
6.	Spring plate
9.*	Compression spring
10.	Lock nut
11.	Adjusting screw
14.	Cap
15.	Hexagonal socket-head bolt
16.	Valve bottom with O-ring
18.*	O-ring
20.	Piston base

* Parts subject to wear or recommended spare parts

Installation and operating advice

- Note the direction of flow! Indicated by the arrow on the valve.
- We recommend fitting the valve between 2 detachable pipe connections (flanges or screw fastenings).
- Can be installed in any position with no effect on functioning.
- Where the medium is dirty or particle-laden, we recommend installing a strainer to avoid any breakdowns.

Dismantling instructions

1. Dismantling the valve upper/lower body:

1.1 Put the valve in an upright position
1.2 Unscrew the cap (14)
1.3 Undo the locknut on the adjusting screw (11) and undo the adjusting screw until the compression spring (9) is fully released
1.4 Undo the screws (15)
1.5 Lift the upper body (2) upwards and remove the spring plate (6) and the spring (9)

These steps are carried out in reverse order to reassemble!

Operating faults and possible causes

Fault	Cause	Correction
Medium leaks from adjusting screw	Defective O-ring (17)	Replace O-ring (17)
Pressure exceeds set value	Leaky O-ring (18)	Replace O-ring (18)
	Control bores in housing soiled	Unscrew bottom part of piston, clean holes, if necessary dismount piston
Valve closed – does not open	Installed wrong way around	Turn valve around, see arrow for flow direction
Leakage between valve body and base	Leaky O-ring (16)	Dismantle valve base and replace O-ring

Installation tip:
We recommend fitting the valve between 2 detachable pipe connections.