Fundamentals for special valves

Pressure retaining valve V186/V86

Technical data V186/V86

Available materials

Valve housing:	PVC-U, PP, PVDF
Diaphragm:	EPDM, EPDM-PTFE-coated
Pressure ranges:	DN 10-50: 0.5-10 bar Series V186 DN 65-80: 1.0-6 bar Series V86 DN 100: 1.0-4 bar Series V86

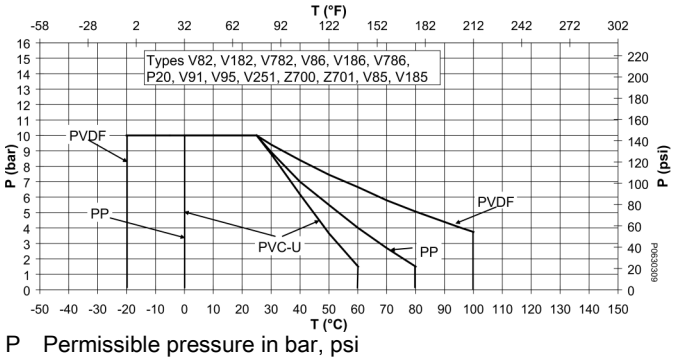
Connections

Cement or fusion spigot according to ISO/DIN. Available with union or flange on request.

Allowable working temperature

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

Working pressure



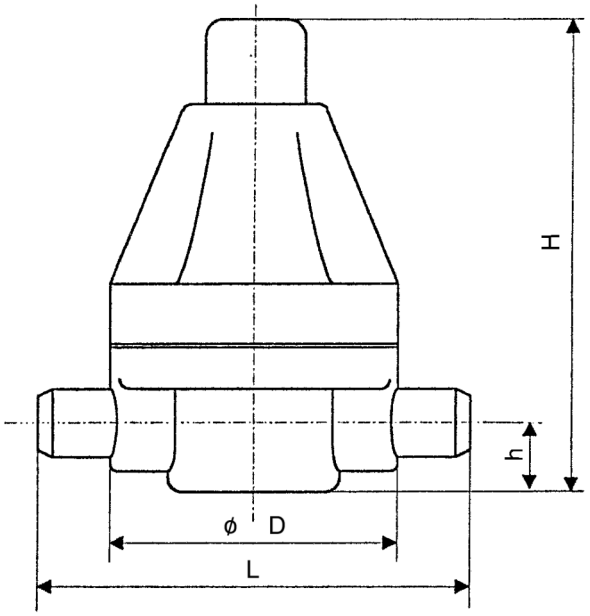
P Permissible pressure in bar, psi
T Temperature in °C, °F

Dimensions and weight V186/V86

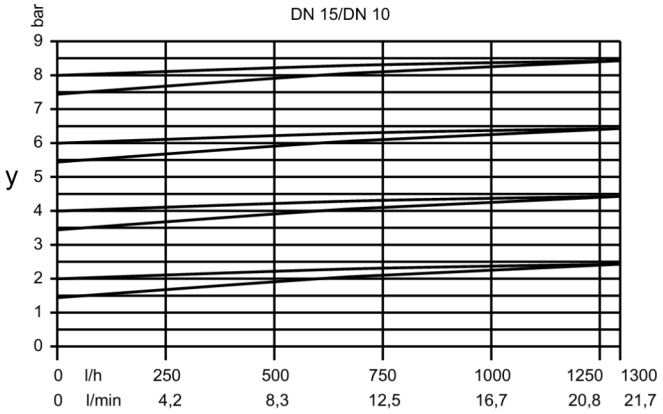
DN	L: PVC-U cement spigots PP/ PVDF fusion spigots	L: PVDF-HP/PP Butt fusion spigots BC F/IR	L1	L2	D	h
10	134	-	140	154	83	20
15/20	134	158	140	154	83	20
25	174	198	180	185	112	27
32	174	202	230	248	165	43
40	224	256	230	248	165	43
50	244	256	250	252	165	43
65	284	284	290	280	180	230
80	360	360	310	-	250	320
100	380	380	390	-	250	415

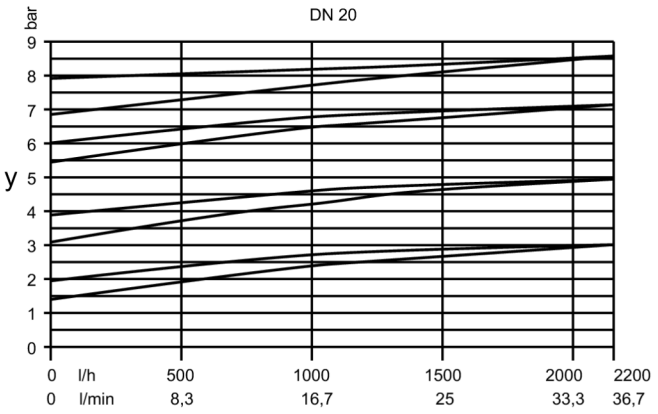
L1 = with flange
L2 = union

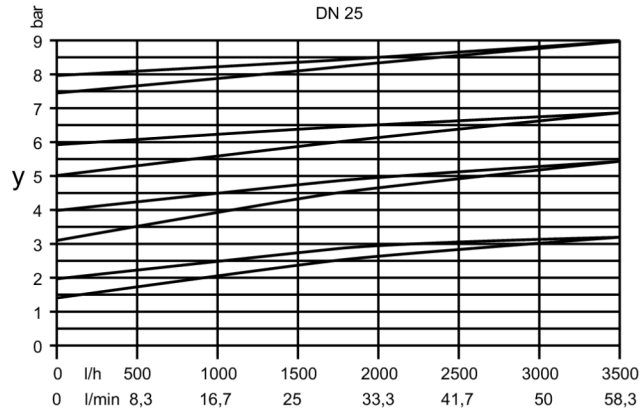
DN	H	Weight (kg) PVC-U	Weight (kg) PP	Weight (kg) PVDF
10	137	0.4	0.3	0.6
15/20	137	0.4	0.3	0.6
25	199	1.2	1.9	1.6
32	199	1.2	1.9	1.6
40	290	6.4	4.4	8.0
50	290	6.5	4.5	8.2
65	275	7.7	5.9	8.6
80	410	17.7	12.9	22.3
100	485	19.6	14.5	24.6

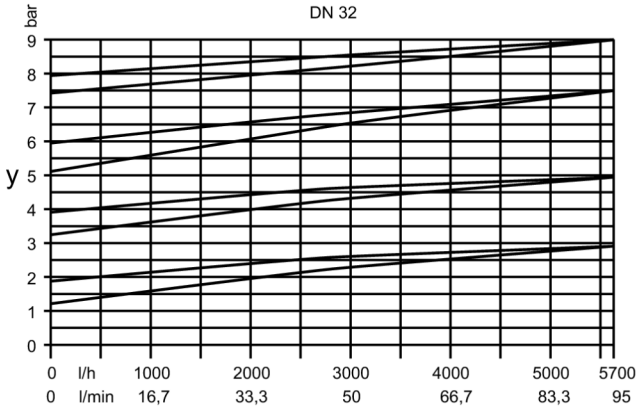


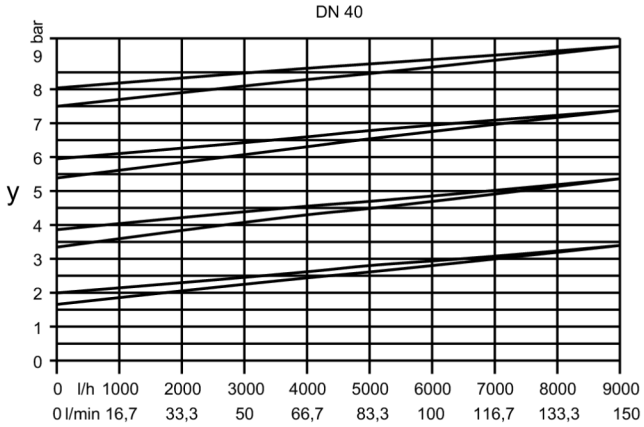
Characteristics V186

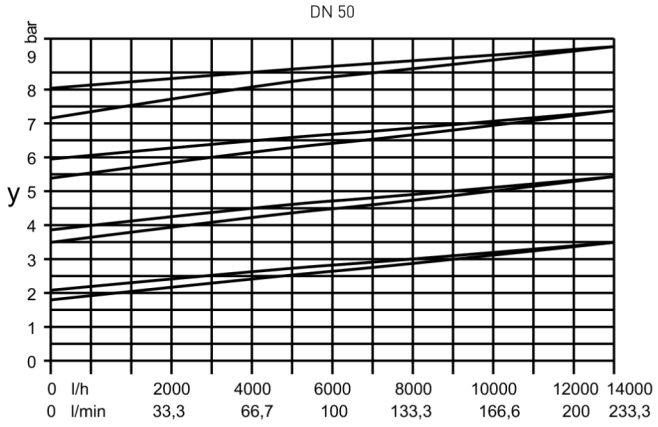








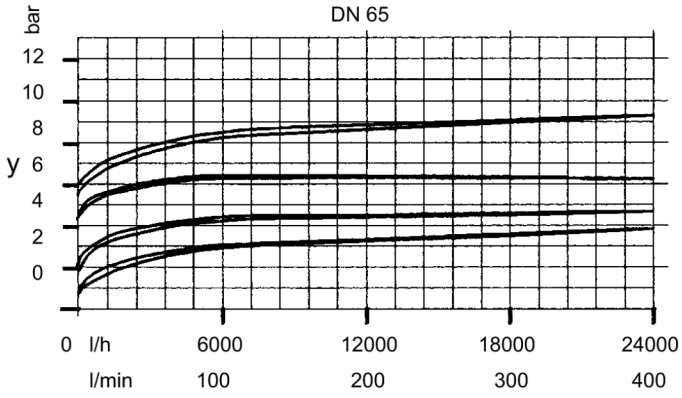


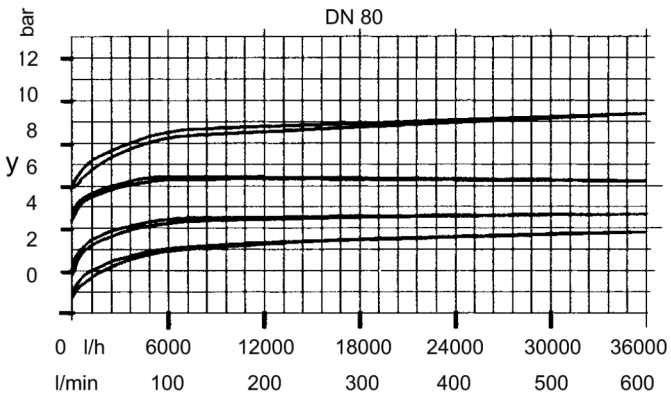


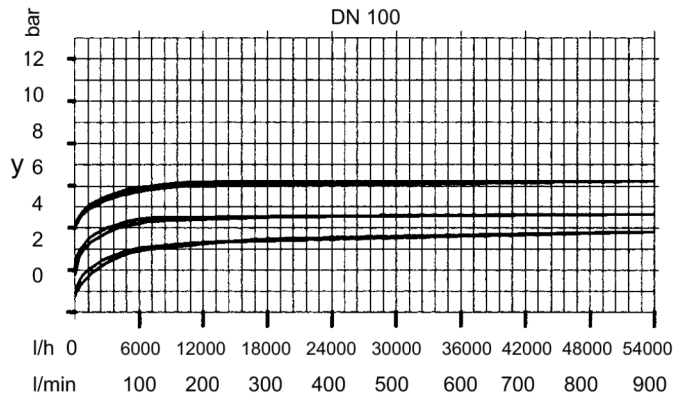
l/h, l/min	flow volume water
y	working pressure (bar)

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

Characteristics V86







l/h, l/min flow volume water

y working pressure

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

Order number

DN	d	Adj. range	PVC-U	
		in bar	EPDM	PTFE
10	16	0.5 - 9.0	199 041 379	199 041 309
15	20	0.5 - 9.0	199 041 380	199 041 310
20	25	0.5 - 9.0	199 041 381	199 041 311
25	32	0.5 - 9.0	199 041 382	199 041 312
32	40	0.5 - 9.0	199 041 383	199 041 313
40	50	0.5 - 9.0	199 041 384	199 041 314
50	63	0.5 - 9.0	199 041 385	199 041 315
65	75	0.5 - 4.0	199 041 922	199 041 989
65	75	1.0 - 6.0	199 041 950	199 041 990
80	90	0.5 - 4.0	199 041 987	199 041 944
80	90	1.0 - 6.0	199 041 988	199 041 991
100	110	1.0 - 4.0	199 041 953	199 041 945

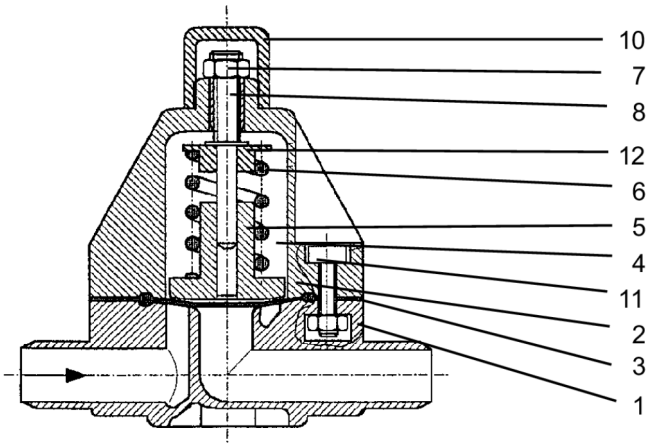
DN	d	Adj. range	PP	
		in bar	EPDM	PTFE
10	16	0.5 - 9.0	199 041 386	199 041 316
15	20	0.5 - 9.0	199 041 387	199 041 317
20	25	0.5 - 9.0	199 041 388	199 041 318
25	32	0.5 - 9.0	199 041 389	199 041 319
32	40	0.5 - 9.0	199 041 390	199 041 320
40	50	0.5 - 9.0	199 041 391	199 041 321
50	63	0.5 - 9.0	199 041 392	199 041 322
65	75	0.5 - 4.0	199 041 882	199 041 887
65	75	1.0 - 6.0	199 041 883	199 041 888
80	90	0.5 - 4.0	199 041 884	199 041 889
80	90	1.0 - 6.0	199 041 885	199 041 890
100	110	1.0 - 4.0	199 041 886	199 041 891

DN	d	Adj. range in bar	PP/IR spigots EPDM	PTFE
10	16	0.5 - 9.0	-	-
15	20	0.5 - 9.0	199 041 446	199 041 453
20	25	0.5 - 9.0	199 041 447	199 041 454
25	32	0.5 - 9.0	199 041 448	199 041 455
32	40	0.5 - 9.0	199 041 449	199 041 456
40	50	0.5 - 9.0	199 041 450	199 041 457
50	63	0.5 - 9.0	199 041 451	199 041 458
65	75	0.5 - 4.0	199 041 470	199 041 475
65	75	1.0 - 6.0	199 041 471	199 041 476
80	90	0.5 - 4.0	199 041 472	199 041 477
80	90	1.0 - 6.0	199 041 473	199 041 478
100	110	1.0 - 4.0	199 041 474	199 041 479

DN	d	Adj. range in bar	PVDF-PTFE Standard	HP-Version* BCF/IR spigots
10	16	0.5 - 9.0	199 041 323	-
15	20	0.5 - 9.0	199 041 324	199 041 395
20	25	0.5 - 9.0	199 041 325	199 041 396
25	32	0.5 - 9.0	199 041 326	199 041 397
32	40	0.5 - 9.0	199 041 327	199 041 398
40	50	0.5 - 9.0	199 041 328	199 041 399
50	63	0.5 - 9.0	199 041 329	199 041 400
65	75	0.5 - 4.0	-	-
65	75	1.0 - 6.0	199 041 892	199 041 481
80	90	0.5 - 4.0	-	-
80	90	1.0 - 6.0	-	-
100	110	1.0 - 4.0	-	-

* BCF fusion only possible up to DN 50
PVDF-PTFE Standard with IR spigots on request
Flange and union versions on request

Sectional drawing V186 DN 10-50

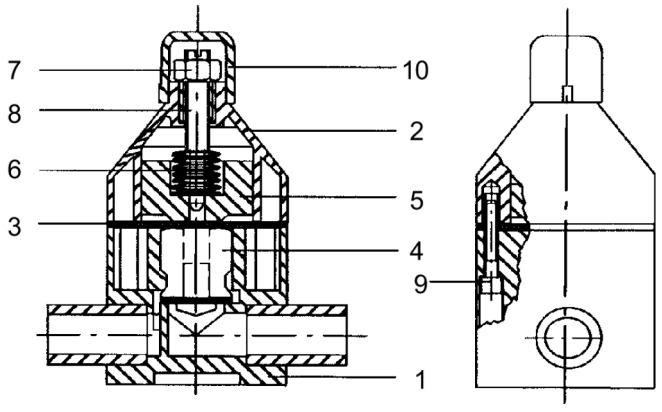


shown offset

1 valve body
2 upper valve body
3* diaphragm
4* piston
5 compressor
6* compressor spring
7 locknut
8 adjusting screw
9 cylinder screw
10 cap
11 hexagonal socket-head bolt with nut and covering cup
12 spring plate

* Parts subject to wear or recommended spare parts

Pressure retaining valve V86 DN 65-100



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 (7) on the adjusting screw (8) and undo the adjusting screw until the compression spring (6) is fully released.
1.4 Remove the covering caps on the screws (11) of the upper body and undo the screws.
1.5 Lift the upper body (2) upwards and remove the spring plate (12) and the spring (6).

Assembly is done in the reverse order!

Operating faults and possible causes

Fault	Cause	Correction
Valve not sealed at the diaphragm	Diaphragm not pressed on hard enough	Tighten screws (10)
Pressure falls below the set value	Piston base (2) not sealed	Check piston and piston base seal and replace if indicated. Dismantle lower body 1.1 - 1.4
	Diaphragm (3) not sealed	Replace diaphragm, dismantle lower valve body 1.1 - 1.4
Medium leaks out at the adjusting screw	Diaphragm is faulty	Replace diaphragm, dismantle lower valve body 1.1 - 1.4

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