GEMÜ®

Pressure retaining valve, Plastic

Construction

The GEMÜ N086, N186 and N786 pressure retaining valves are used to provide a constant back pressure in process plant. If the inlet pressure rises above a preset value, the diaphragm is raised against the spring force. The valve opens and the excess pressure can escape into the outlet line. If the pressure on the inlet side is reduced, the valve closes as the spring force pushes the diaphragm against the seal seat. The spring force can be adjusted as required using a set screw and secured with the lock nut.

Technical specifications*

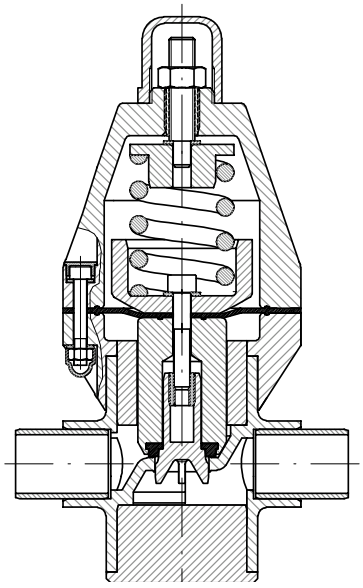
- Nominal sizes: DN 10 to DN 100
- Connections: Spigots, flanges, union ends with insert
- Body materials: PVC-U, PP-B, PVDF
- Seal materials: EPDM, PTFE
- Media temperature: -20 °C to +100 °C
- Setting range: 0.5 to 10 bar

Advantages

- The working pressure can be very easily adjusted using a set screw and secured with the integrated lock nut. If required, the setting that has been made can be lead sealed.
- The flow-efficient design of the valve body ensures good flow rate values.
- Control errors are kept to a minimum due to the large control face and the spiral spring.
- The actuator is hermetically separated from the medium.

*Dependent on version and/or operating parameters

Sectional view



GEMÜ®

N086, N186, N786

Technical data

Working medium

Corrosive, inert, liquid media which have no negative impact on the physical and chemical properties of the body and seal material.Approved for fluids of Group 1 in accordance with directive 97/23/EC Article 9 whose steam pressure at the permissible maximum temperature is a maximum of 0.5 bar above the normal atmospheric pressure (1013 mbar).

Working medium temperature

Valve body PVC-U	10 to 60 °C
Valve body PP-B	5 to 80 °C
Valve body PVDF	-20 to 100 °C

The permissible operating pressure depends on the working medium temperature.

Ambient conditions

Ambient temperature	max. 60 °C

Technical data

Type	Nominal size	PN	Setting range [bar]
GEMÜ N186	DN 10 - 50	10	0.5 - 10
GEMÜ N086	DN 65 - 80	6	1 - 6
	DN 100	4	1 - 4
GEMÜ N786	DN 10 - 25	10	0.5 - 10
	DN 32 - 40	4	0.5 - 4

Pressure / temperature correlation for N186 (DN 10 - DN 50), N786 (DN 10 - DN 25)

Temperature in °C (plastic body)		-20	-10	±0	5	10	20	25	30	40	50	60	70	80	90	100
Valve body material		Permissible operating pressure in bar														
PVC-U	Code 1	-	-	-	-	10.0	10.0	10.0	8.0	6.0	3.5	1.5	-	-	-	-
PP-B	Code 5	-	-	-	10.0	10.0	10.0	10.0	8.5	7.0	5.5	4.0	2.7	1.5	-	-
PVDF	Code 20	10.0	10.0	10.0	10.0	10.0	10.0	10.0	9.0	8.0	7.0	6.3	5.4	4.7	3.6	2.5

Data for extended temperature ranges on request. Please note that the ambient temperature and medium temperature generate a combined temperature at the valve body which must not exceed the above values.

Pressure / temperature correlation for N086 (DN 65 - DN 80)

Temperature in °C (plastic body)		-20	-10	±0	5	10	20	25	30	40	50	60	70	80	90	100
Valve body material		Permissible operating pressure in bar														
PVC-U	Code 1	-	-	-	-	6.0	6.0	6.0	4.8	3.6	2.10	0.90	-	-	-	-
PP-B	Code 5	-	-	-	6.0	6.0	6.0	6.0	5.1	4.2	3.30	2.40	1.62	0.90	-	-
PVDF	Code 20	6.0	6.0	6.0	6.0	6.0	6.0	6.0	5.4	4.8	4.26	3.78	3.24	2.82	2.16	1.50

Data for extended temperature ranges on request. Please note that the ambient temperature and medium temperature generate a combined temperature at the valve body which must not exceed the above values.

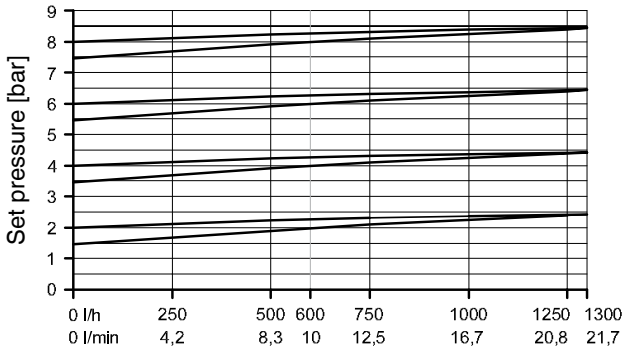
Pressure / temperature correlation for N086 (DN 100), N786 (DN 32 - DN 40)

Temperature in °C (plastic body)		-20	-10	±0	5	10	20	25	30	40	50	60	70	80	90	100
Valve body material		Permissible operating pressure in bar														
PVC-U	Code 1	-	-	-	-	4.0	4.0	4.0	3.2	2.4	1.40	0.60	-	-	-	-
PP-B	Code 5	-	-	-	4.0	4.0	4.0	4.0	3.4	2.8	2.20	1.60	1.08	0.60	-	-
PVDF	Code 20	4.0	4.0	4.0	4.0	4.0	4.0	4.0	3.6	3.2	2.84	2.52	2.16	1.88	1.44	1.0

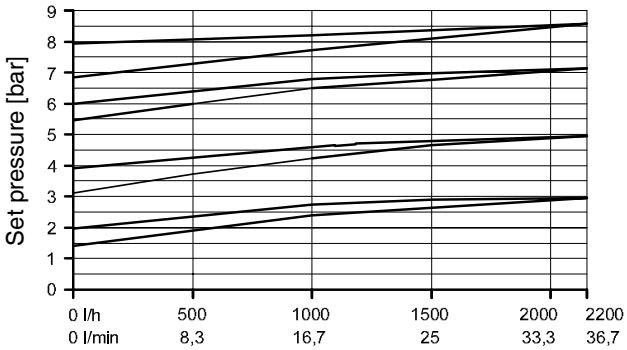
Data for extended temperature ranges on request. Please note that the ambient temperature and medium temperature generate a combined temperature at the valve body which must not exceed the above values.

Diagrams - N186

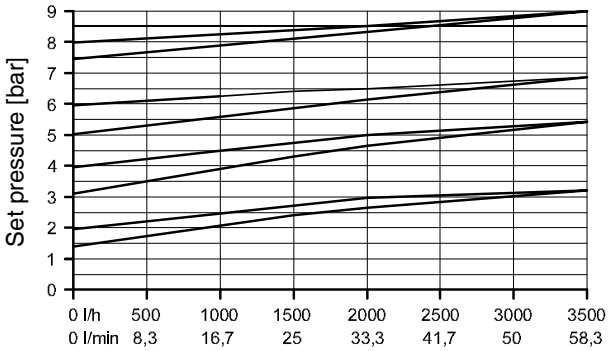
DN 10 - 15



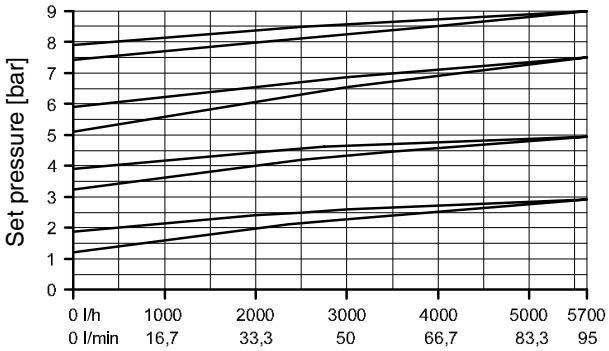
DN 20



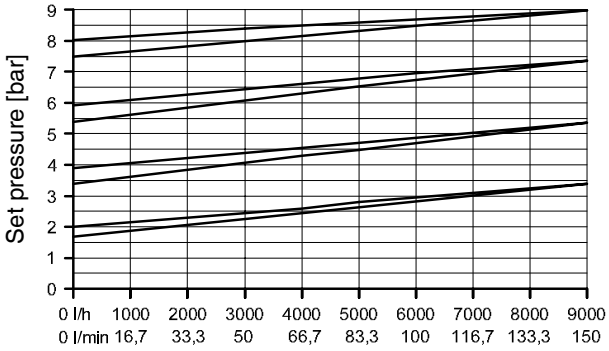
DN 25



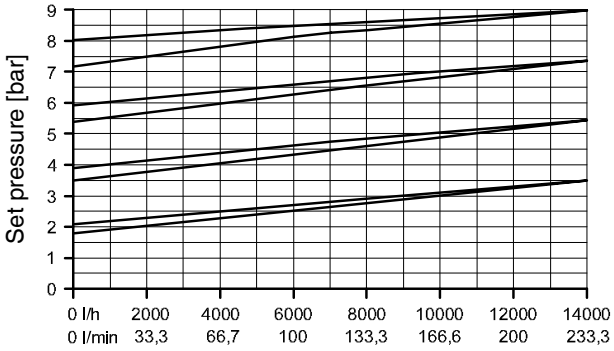
DN 32



DN 40



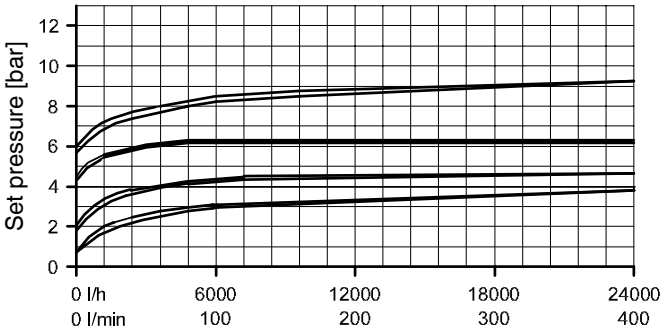
DN 50



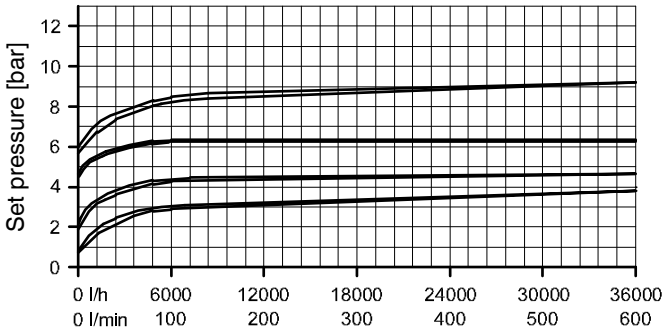
The characteristics in the diagrams show the pressure drop of the set pressure from 0 to max. permissible flow.
The upper line shows the progression of the opening pressure, the lower line shows the progression of the closing pressure.
All characteristics relate to water at 20 °C.

Diagrams - N086

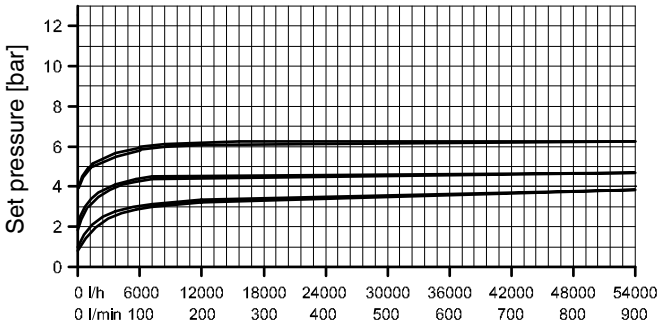
DN 65



DN 80



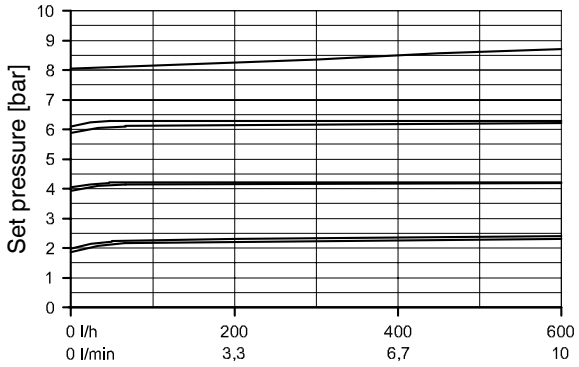
DN 100



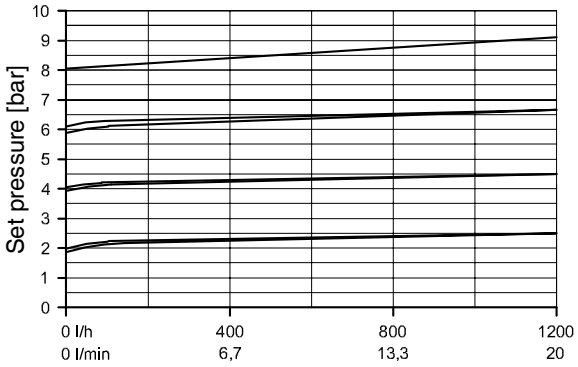
The characteristics in the diagrams show the pressure drop of the set pressure from 0 to max. permissible flow.
The upper line shows the progression of the opening pressure, the lower line shows the progression of the closing pressure.
All characteristics relate to water at 20 °C.

Diagrams - N786

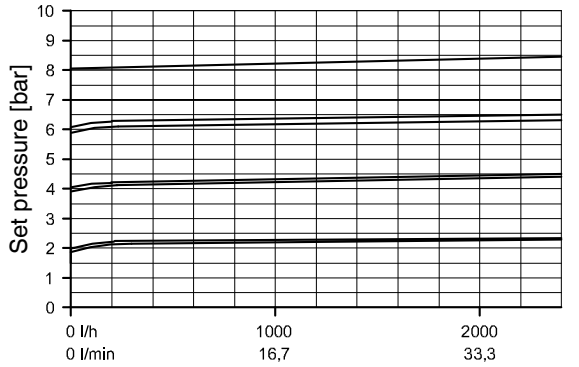
DN 10



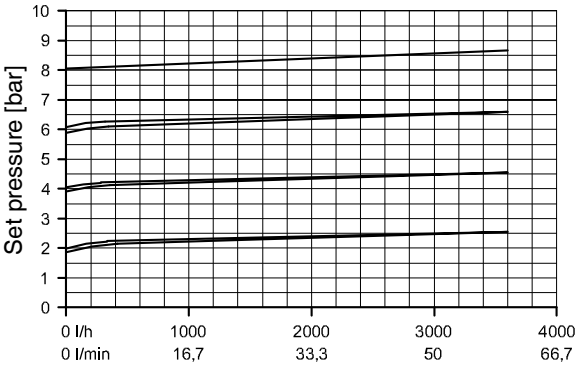
DN 15



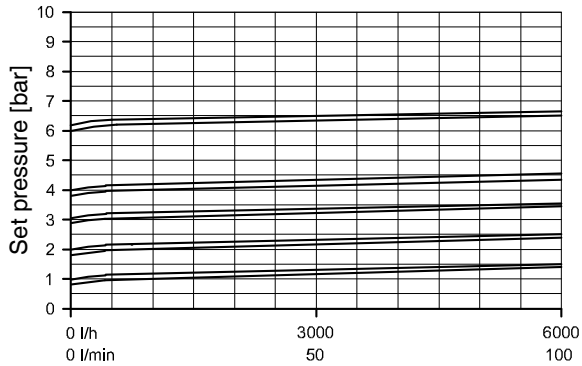
DN 20



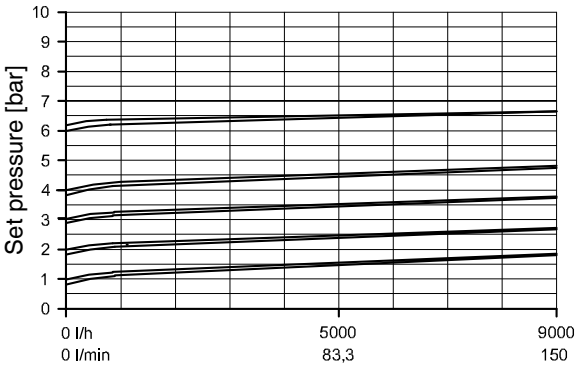
DN 25



DN 32



DN 40



The characteristics in the diagrams show the pressure drop of the set pressure from 0 to max. permissible flow.
The upper line shows the progression of the opening pressure, the lower line shows the progression of the closing pressure.
All characteristics relate to water at 20 °C.

Order data

Valve type		Code
Pressure retaining valve	DN 65 - DN 100	N086
Pressure retaining valve	DN 10 - DN 50	N186
Pressure retaining valve	DN 10 - DN 40	N786

Valve body material	Code
PVC-U, grey	1
PVDF	20
PP-B	B5

Body configuration	Code
2/2-way body	D

Diaphragm material	Code
EPDM	14
PTFE/EPDM, PTFE laminated	52

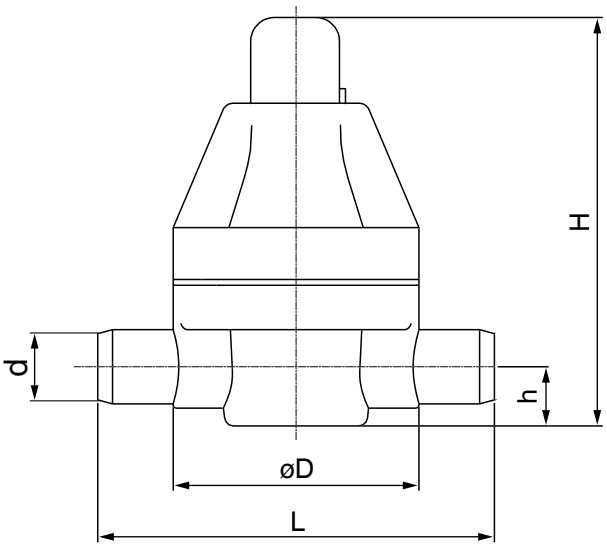
Connection	Code
Spigots DIN	0
Flanges EN 1092 / PN10 / form B, length EN 558, series 1, ISO 5752, basic series 1	4
Union ends with DIN insert (socket)	7
Spigots for IR butt welding	20
Union ends with DIN insert (for IR butt welding)	78
For overview of available valve bodies see page 9	

Order example	N186	25	D	0	1	14
Type	N186					
Nominal size		25				
Body configuration (code)			D			
Connection (code)				0		
Valve body material (code)					1	
Diaphragm material (code)						14

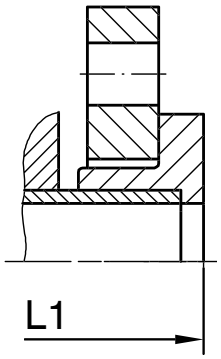
Dimensions [mm]

N086, N186								
DN	d	L		L1	L2	ø D	h	H
		Code 0	Code 20	Code 4	Code 7, 78			
10	16	134	-	140	154	83	20	137
15	20	134	158	140	154	83	20	137
20	25	134	158	140	154	83	20	137
25	32	174	198	180	185	112	27	199
32	40	174	202	180	248	165	27	199
40	50	224	256	230	248	165	43	290
50	63	244	256	250	252	165	43	290
65	75	284	284	290	280	180	-	275
80	90	360	360	370	-	250	-	410
100	110	380	380	390	-	250	-	485

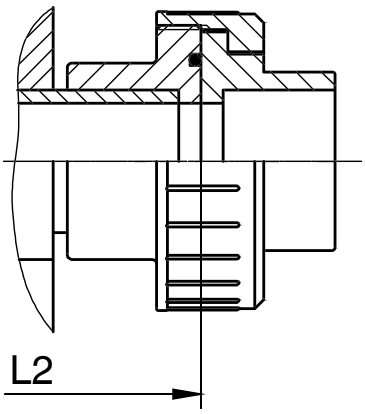
Code 0, 20



Code 4



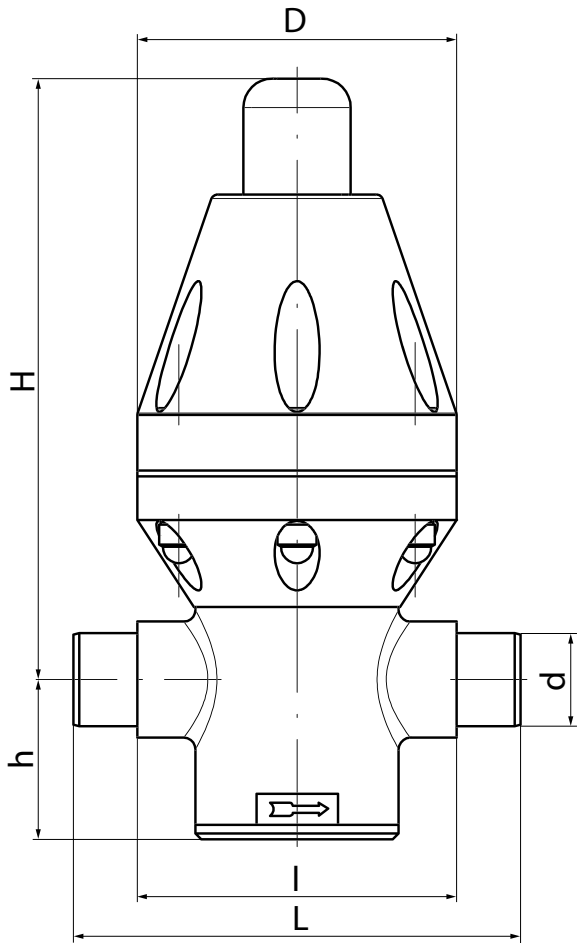
Code 7, 78



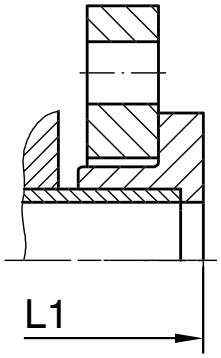
Dimensions [mm]

N786									
DN	d	L		L1	L2	l	H	h	D
		Code 0	Code 20	Code 4	Code 7, 78				
10	16	134	-	140	154	102	138	38	83
15	20	134	172	140	154	102	138	38	83
20	25	154	190	160	174	110	200	55	112
25	32	154	190	160	174	110	200	55	112
32	40	224	262	230	248	162	248	85	165
40	50	224	262	230	252	162	248	85	165

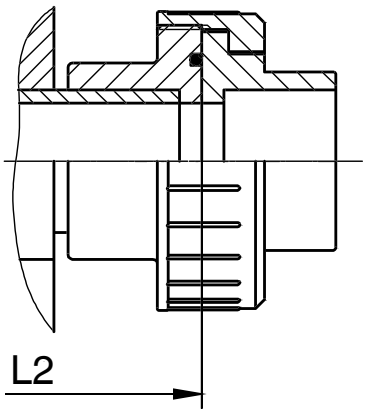
Code 0, 20



Code 4



Code 7, 78



Overview of valve bodies for GEMÜ N186, N786					
Connection code	**0**	**4**	**7**	**20**	**78**
Material code	**1, 20, B5**	**1, 20, B5**	**1, 20, B5**	**20, B5**	**20, B5**
DN					
10	X	X	X	-	-
15	X	X	X	X	X
20	X	X	X	X	X
25	X	X	X	X	X
32	X	X	X	X	X
40	X	X	X	X	X
50*	X	X	X	X	X

* DN 50 not for GEMÜ N786

Overview of valve bodies for GEMÜ N086						
Connection code	**0**		**4**		**20**	
Material code	**1, B5**	**20**	**1, B5**	**20**	**B5**	**20**
DN						
65	X	X	X	X	X	X
80	X	-	X	-	X	-
100	X	-	X	-	X	-

Should there be any doubts or misunderstandings, the German version of this data sheet is the authoritative document!

Subject to alteration · 02/2015 · 88449276

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