

Pressure reducer, Plastic

Construction

The GEMÜ N082, N182 and N782 pressure reducers ensure that a constant outlet pressure is maintained in process plant utilizing the pressure differential. If the pressure rises on the outlet side, the spring force is lower and the valve closes as the spring is raised. The pressure is reduced until the spring force and the outlet pressure are the same. If the pressure falls, the valve opens as the spring force presses against the diaphragm surface via the control aperture. The outlet pressure can be read off a diaphragm-protected pressure gauge (not available for N782) and the spring force adjusted using a set screw as required.

Technical specifications*

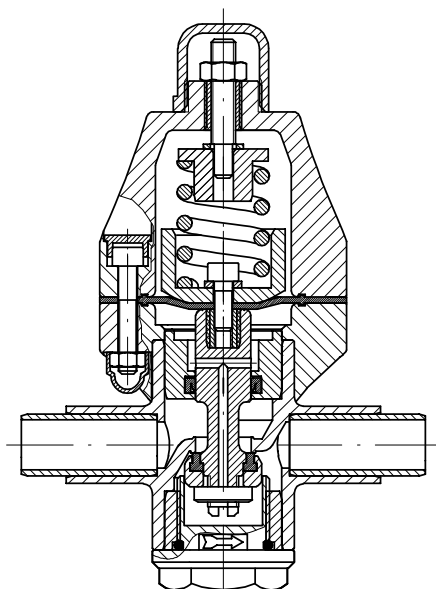
- Nominal sizes: DN 10 to DN 100
- Connections: Spigots, flanges, union ends with insert
- Body materials: PVC-U, PP-B, PVDF
- Seal materials: EPDM, FPM, PTFE
- Media temperature: -20 °C to +100 °C
- Setting range: 0.5 to 9 bar

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



N082, N182, N782

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
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Technical data

Type	Nominal size	PN	Setting range [bar]
GEMÜ N182	DN 10 - 50	10	0.5 - 9
GEMÜ N082	DN 65 - 80	6	0.5 - 5
	DN 100	4	1.0 - 3
GEMÜ N782	DN 10 - 40	10	0.5 - 9

Pressure / temperature correlation for N182 (DN 10 - DN 50), N782 (DN 10 - 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	-	-	-	-	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 N082 (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

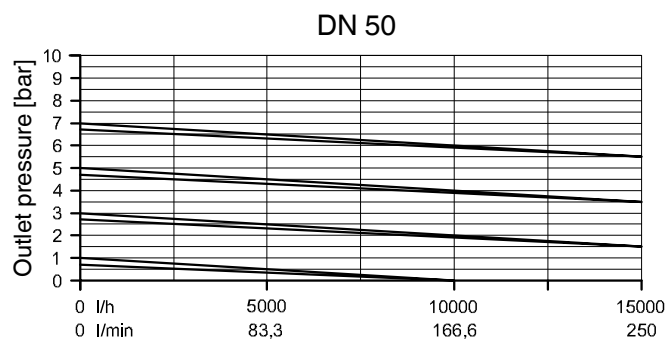
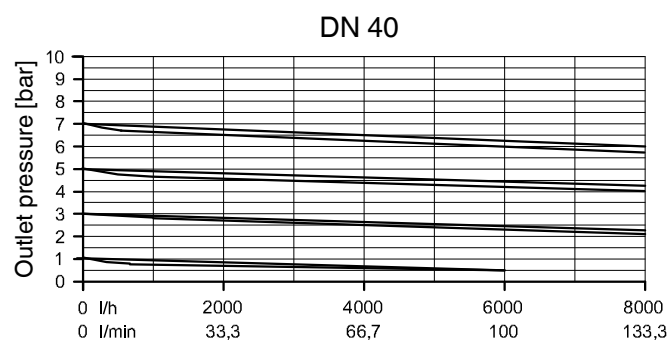
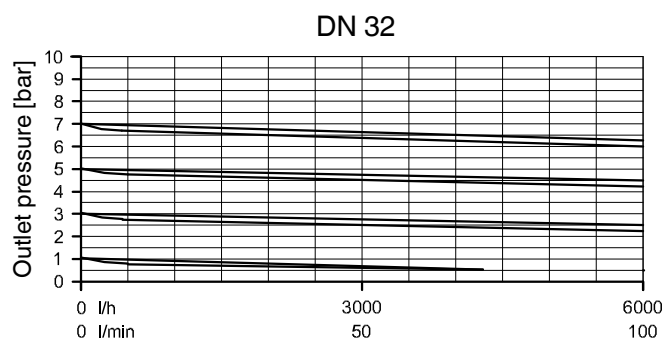
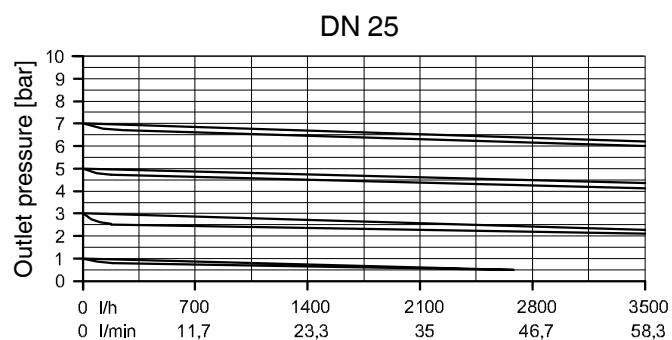
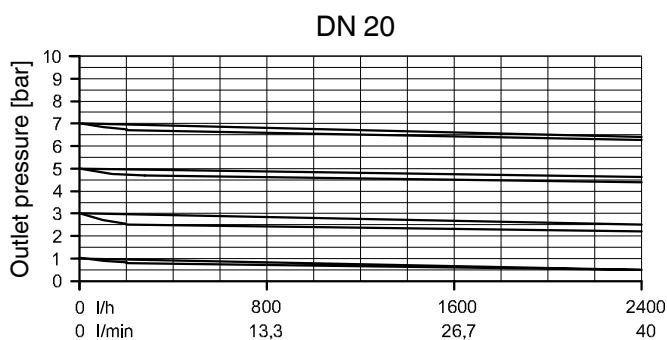
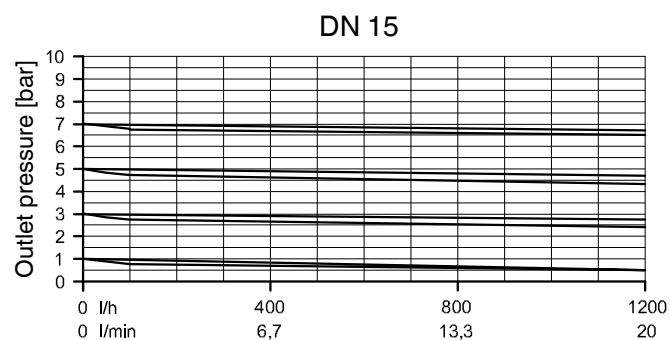
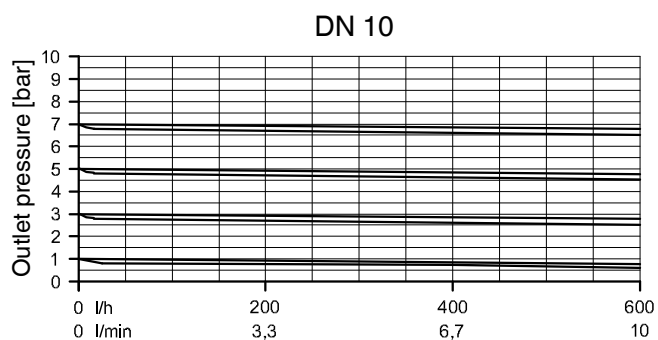
Data for extended temperature ranges on request. Please note that the ambient temperature and medium temperature generate a combined temperature at the valve body which must not exceed the above values.

Pressure / temperature correlation for N082 (DN 100)

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

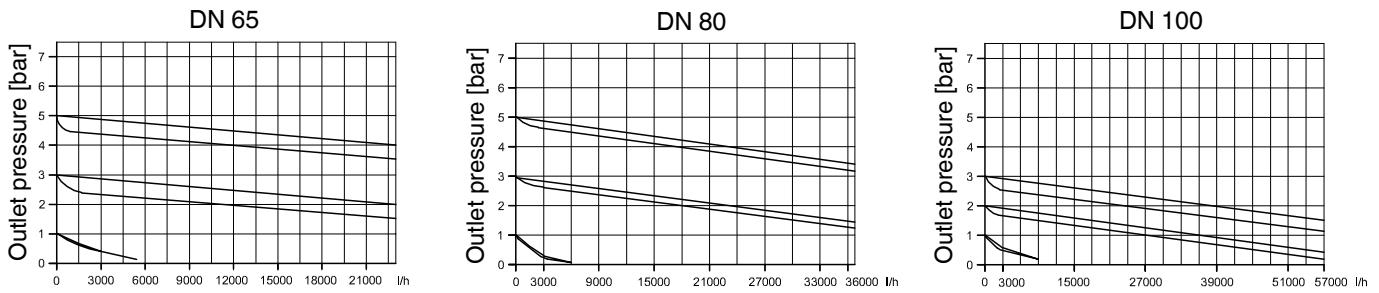
Data for extended temperature ranges on request. Please note that the ambient temperature and medium temperature generate a combined temperature at the valve body which must not exceed the above values.

Diagrams - N182

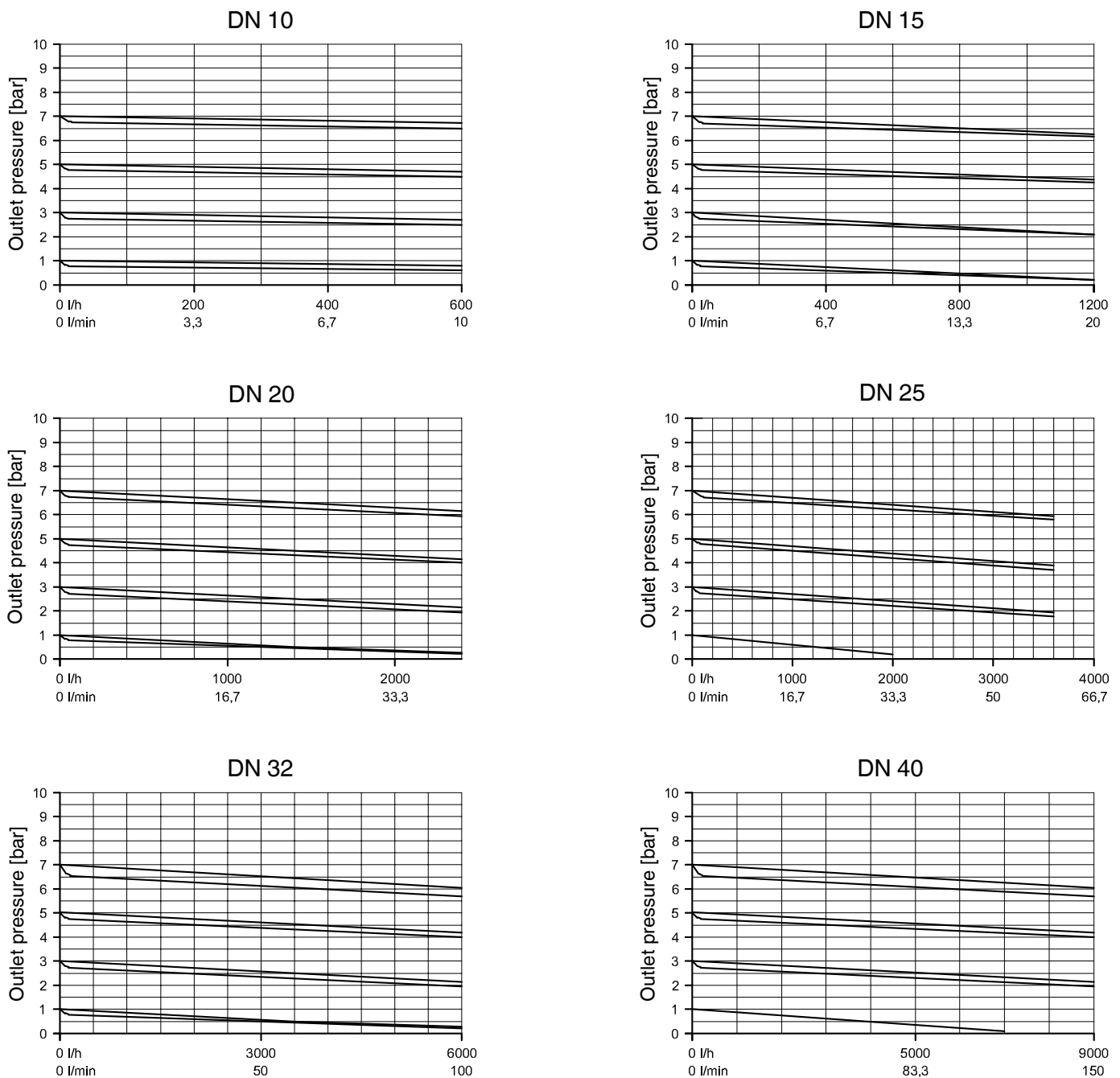


The characteristics in the diagrams show the pressure drop of the set outlet pressure from 0 to max. permissible flow.
The upper line shows the progression of the opening pressure, the lower line shows the progression of the closing pressure.
All characteristics relate to water at 20 °C.

Diagrams - N082



Diagrams - N782



The characteristics in the diagrams show the pressure drop of the set outlet 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 reducer	DN 65 - DN 100	N082
Pressure reducer	DN 10 - DN 50	N182
Pressure reducer	DN 10 - DN 40	N782

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

Body configuration	Code
2/2-way body	D

Diaphragm material	Code
FPM	4
EPDM	14
PTFE/EPDM, PTFE laminated	52
For overview of available combinations see page 8	

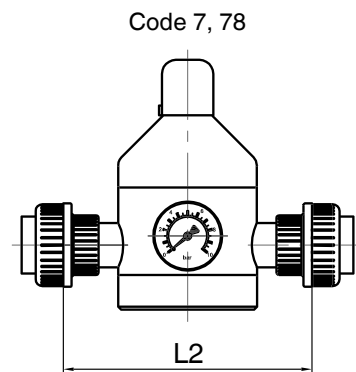
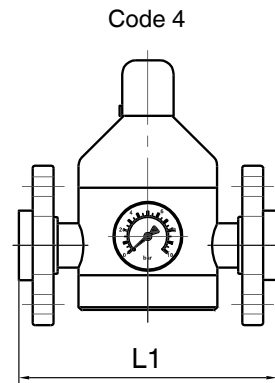
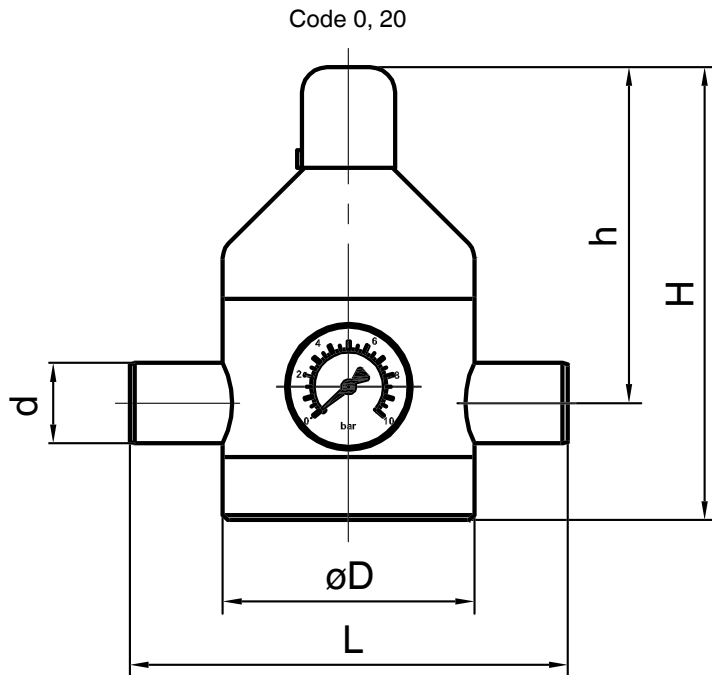
Connection	Code
Spigots DIN	0
Flanges EN 1092 / PN10 / form B, length EN 558, series 1, ISO 5752, basic series 1	4
Union ends with DIN insert (socket)	7
Spigots for IR butt welding	20
Union ends with DIN insert (for IR butt welding)	78
Overview of available valve bodies see page 8	

Order example	N182	25	D	0	1	14
Type	N182					
Nominal size		25				
Body configuration (code)			D			
Connection (code)				0		
Valve body material (code)					1	
Diaphragm material (code)						14

Dimensions [mm]

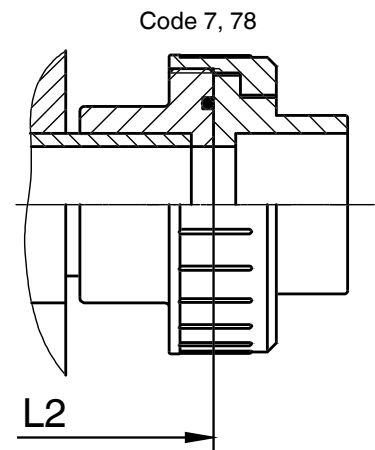
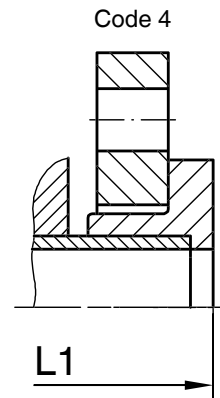
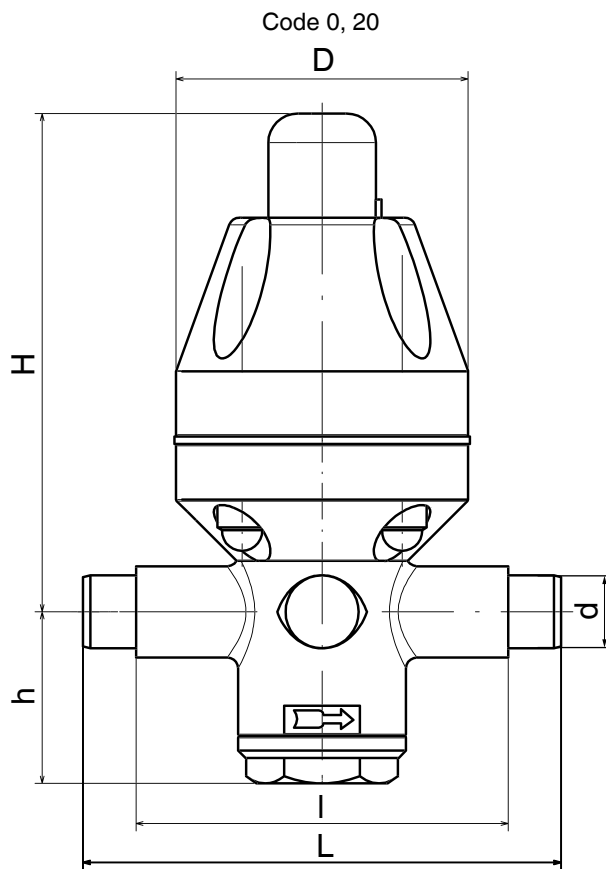
GEMÜ N082, N182

DN	d	ø D	H	h	L		L1		L2	
					Connection code 0	Connection code 20	Connection code 4		Connection code 7, 78	
					Material code 1, 20, B5	Material code 20, B5	Material code 1	Material code 20, B5	Material code 1	Material code 20, B5
10	16	70	147	112	134	-	140	-	154	156
15	20	70	147	112	134	150	140	144	154	156
20	25	100	180	130	174	190	180	184	184	198
25	32	100	180	130	174	190	180	184	184	198
32	40	130	230	175	224	240	230	234	248	252
40	50	130	230	175	224	240	230	234	252	256
50	63	150	273	203	244	260	250	254	280	288
65	75	200	350	250	300	300	306	310	-	336
80	90	250	425	305	360	360	370	374	-	396
100	110	300	495	345	420	420	430	434	-	464



Dimensions [mm]

GEMÜ N782									
DN	d	L		L1	L2	I	H	h	D
		Code 0	Code 20	Code 4	Code 7, 78				
10	16	134	-	140	154	102	138	48	83
15	20	134	172	140	154	102	138	48	83
20	25	154	190	160	174	110	205	65	112
25	32	154	190	160	174	110	205	65	112
32	40	224	262	230	248	162	248	95	165
40	50	224	262	230	252	162	248	95	165



Overview of valve bodies for GEMÜ N182, N782						
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	X
20	X	X	X	X	X	X
25	X	X	X	X	X	X
32	X	X	X	X	X	X
40	X	X	X	X	X	X
50*	X	X	X	X	X	X

* DN 50 not for GEMÜ N782

Overview of valve bodies for GEMÜ N082						
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	-

Overview of Diaphragm materials			
Diaphragm material	FPM Code 4	EPDM Code 14	PTFE/EPDM, PTFE laminated Code 52
GEMÜ N082	-	X	X
GEMÜ N182	X	X	-
GEMÜ N782	-	X	X