

High Purity diaphragm valve, plastic

Construction

The GEMÜ 677 HP 2/2-way valve has a low maintenance manual operator. It is equipped with an ergonomically designed handwheel and an integral optical position indicator. The medium wetted parts are made of PFA or PVDF (body) and PTFE (shut off diaphragm).

Features

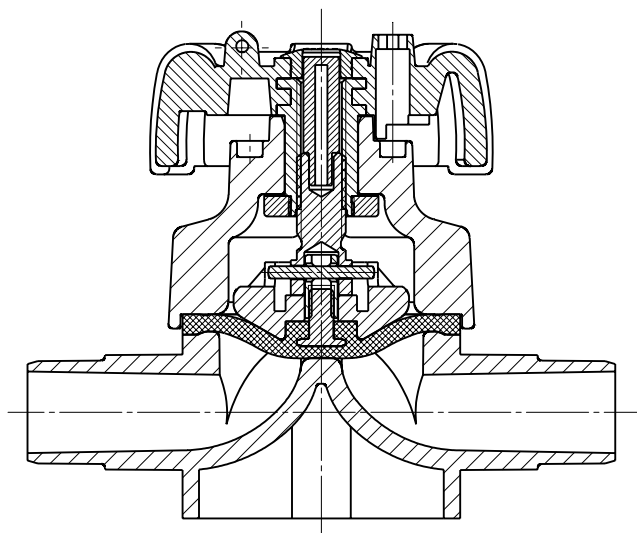
- Suitable for inert and corrosive* liquid and gaseous media, particularly high purity media
- All medium wetted parts and the housing are made of high-grade plastic.
- Operator: Glass fibre reinforced PP
- Nominal sizes DN 15 - DN 100 / NPS 1/2" - NPS 4"
- Standard optical position indicator
- Assembled, tested and packaged under class 100 cleanroom conditions

Advantages

- High K_v value
- Minimal deadleg
- Optional flow direction, will seal in either flow direction up to full operating pressure
- Due to its design (diaphragm valve, i. e. soft flow deviation) particularly suitable for polishing agents and slurries
- Optional installation position
 - Electrical position indicator
 - Locking device

* see information on working medium on page 2

Sectional view



Technical data

Working medium

Corrosive, inert, gaseous and liquid media which have no negative impact on the physical and chemical properties of the body and diaphragm material.

Working medium temperature

Valve body PVDF -20 to 120 °C

Valve body PFA -10 to 90 °C

The permissible operating pressure depends on the working medium temperature

Ambient temperature

Valve body PVDF, PFA -10 to 60 °C

Operating pressure

Valve body PVDF max. 10 bar applied upstream

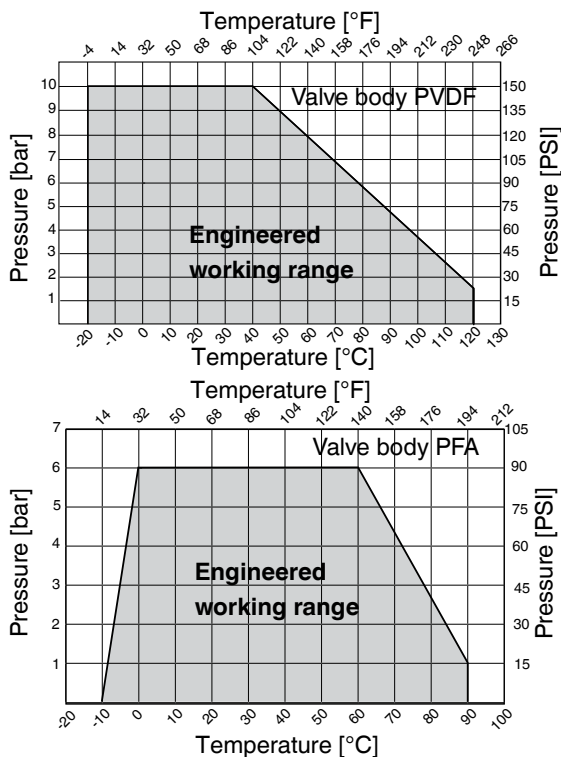
Valve body PFA max. 6 bar applied upstream

Kv values / Weight - 2/2-way valves

DN	Kv value [l/min]	Cv value [USgal/min]	Weight [kg]
15	93	6.51	0.7
20	137	9.59	0.7
25	175	12.25	0.7
32	300	21.00	1.4
40	417	29.19	1.4
50	767	53.69	2.4
65	1300	91.00	7.3
80	2000	140.00	7.3
100	3150	220.50	9.0

The above values are valid for both flow directions. All pressures are gauge pressures. Operating pressure values were determined with static operating pressure applied on one side of a closed valve. Sealing at the valve seat and atmospheric sealing is ensured for the given values. Information on operating pressures applied on both sides and for high purity media on request. Kv values determined acc.to IEC 534 standard. inlet pressure 6 bar. Δp 1 bar. PVC-U valve body and soft elastomer diaphragm.

Temperature / pressure diagram



Information on the use of diagram

The temperature / pressure diagram is only an orientation aid. The data refer to water as a working medium. A change of operating conditions or other media may result in deviations. In case of doubt it is advisable to test the behavior of the material under the definitive operating conditions by means of a test installation.

Kv values - T valves

DN2 Pipe	DN1 Spigot	Kv value [l/min]	Cv value [USgal/min]
15	15	80	5.60
20	15	82	5.74
20	20	114	7.98
25	15	83	5.81
25	20	117	8.19
25	25	148	10.36
32	15	85	5.95
32	25	153	10.71
32	32	385	26.95
40	15	87	6.09
40	20	122	8.54
40	25	150	10.50
40	40	500	35.00
50	15	93	6.51
50	20	133	9.31
50	25	157	10.99
50	32	397	27.79
50	40	505	35.35
50	50	540	37.80
65	32	340	23.80
65	50	550	38.50
80	15	87	6.09
80	20	132	9.24
80	25	145	10.15
80	32	327	22.89
80	40	441	30.87
80	50	552	38.64
100	32	327	22.89
100	40	441	30.87
100	50	552	38.64

Pressure / temperature correlation

Temperature [°C]	-30	-20	-10	0	5	10	20	25	30	40	50	60	70	80	90	100	110	120
Valve body material	Permissible operating pressure [bar]																	
PVDF Code 20	-	10	10	10	10	10	10	10	10	10	8.9	7.9	6.8	5.9	4.5	3.1	2.1	1.5
PFA Code 23	-	-	-	6	6	6	6	6	6	6	6	6	4.5	2.8	1	-	-	-

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.

Order data

Body configuration	Code
2/2-way	D
T body (only valve body material PVDF)	T

Connection	Code
Spigots for IR butt welding	20
Spigots for IR butt welding, BCF	28
Imperial butt weld spigots	30

Valve body material	Code
PVDF	20
Inliner PFA / outliner PVDF, carbon-filled	23

Diaphragm material	Code
PTFE / EPDM	54
PTFE / EPDM	5M
PTFE/EPDM (available until 01.12.2020)	52
PTFE/EPDM (available until 01.06.2020)	5E

Control function	Code
Manually operated	0
Manually operated with lockable handwheel	L

Operator version	Code
Thread for mounting of electrical position indicator GEMÜ 1215	Z

Additional order data for T valves

DN 2 (main)	Code
DN 15	15
DN 20	20
DN 25	25
DN 32	32
DN 40	40
DN 50	50
DN 65	65*
DN 80	80*
DN 100	100*
* only connection 2 code 20	

Connection 2	Code
Spigots for IR butt welding	20
Spigots for IR butt welding, BCF	28

High Purity version	Code
High Purity	HP

Order example	677	50	D	30	23	5M	0	Z	-	-	HP
Type	677										
Nominal size		50									
Body configuration (code)			D								
Connection (code)				30							
Valve body material (code)					23						
Diaphragm material (code)						5M					
Control function (code)							0				
Operator version (code)								Z			
T body: DN 2 (main) (code)									-		
T body: Connection 2 (code)										-	
High Purity version (code)											HP

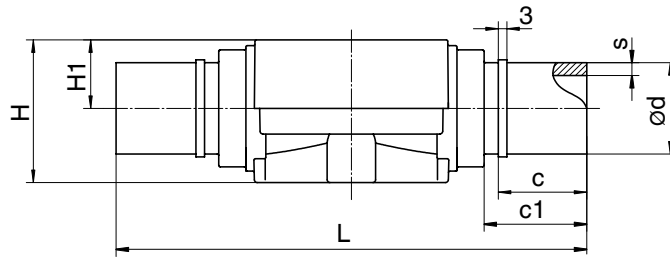
Overview of valve bodies for GEMÜ 677 HP

Body configuration	2/2-way			T body
Connection code	20	28*	30	28
Material code	20	20	23	20
Nominal size	65 - 100	15 - 50	40, 50	15 - 50
Diaphragm material (code)	52 / 5E**	5E	5E	5E
High Purity version (code)	HP	HP	HP	HP

* without thread for mounting of electrical position indicator **DN 15 - 50

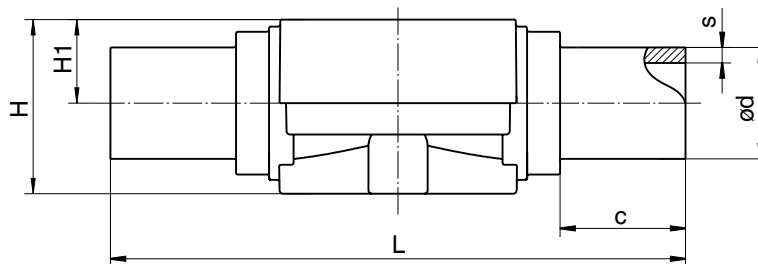
Body dimensions - 2/2-way valves [mm]

Spigots for IR butt welding, BCF, connection code 28
Valve body material: PVDF (code 20)



DN	L	H	H1	ød	c	c1	s	Weight [kg]
15	154 / 6.06	50 / 1.97	24 / 0.94	20 / 0.79	31 / 1.22	37 / 1.46	1.9 / 0.75	0.24
20	154 / 6.06	50 / 1.97	24 / 0.94	25 / 0.98	31 / 1.22	37 / 1.46	1.9 / 0.75	0.25
25	154 / 6.06	50 / 1.97	24 / 0.94	32 / 1.26	31 / 1.22	37 / 1.46	2.4 / 0.94	0.26
32	194 / 7.64	74 / 2.91	34 / 1.34	40 / 1.57	40 / 1.57	46 / 1.81	2.4 / 0.94	0.65
40	194 / 7.64	74 / 2.91	34 / 1.34	50 / 1.97	40 / 1.57	46 / 1.81	3.0 / 1.18	0.66
50	224 / 8.82	82 / 3.23	42 / 1.65	63 / 2.48	40 / 1.57	46 / 1.81	3.0 / 1.18	1.10

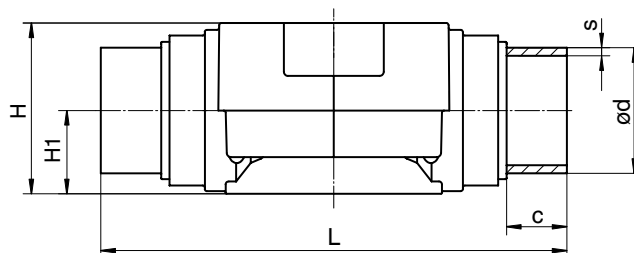
Spigots for IR butt welding, connection code 20
Valve body material: PVDF (code 20)



DN	L	H	H1	ød	s	c	Weight [kg]
65	284 / 11.18	117.0 / 46.06	62.0 / 24.41	75 / 2.95	3.6 / 1.42	43 / 1.69	3.57
80	300 / 11.81	117.0 / 46.06	62.0 / 24.41	90 / 3.54	4.3 / 1.69	51 / 2.01	3.30
100	340 / 13.39	140.0 / 55.12	75.0 / 29.53	110 / 4.33	5.3 / 2.09	59 / 2.32	4.00

Body dimensions - 2/2-way valves [mm]

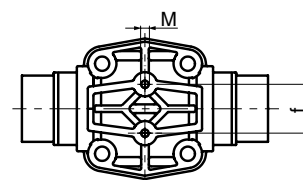
Imperial butt weld spigots , connection code 30
Valve body material: Inliner PFA / outlier PVDF, carbon-filled (code 23)



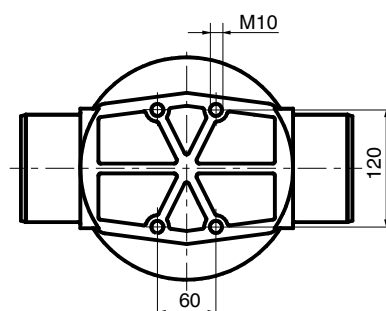
DN	NPS	H1	L	H	ød	c	s	Weight [kg]
40	1 1/2"	23.2 / 9.13	194 / 7.64	63.2 / 24.88	48.3 / 19.02	35 / 1.38	3.7 / 1.46	0.50
50	2"	23.2 / 9.13	224 / 8.82	63.2 / 24.88	60.3 / 23.74	40 / 1.57	3.9 / 1.54	0.57

Valve body mounting dimensions [mm]

DN	M	f
15 - 25	M6	25 / 0.98
32	M6	25 / 0.98
40 - 50	M8	44.5 / 1.75
65	M8	44.5 / 1.75
80	M12	100 / 3.94
100	see drawing	



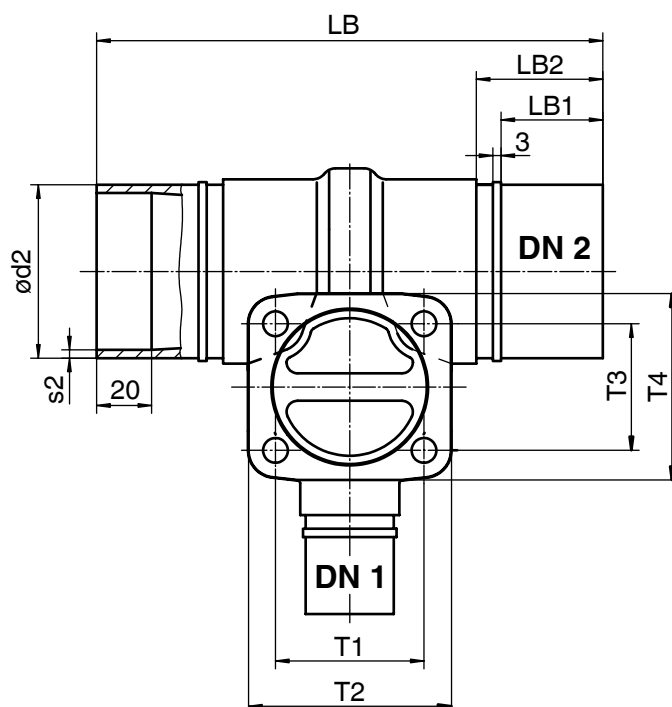
DN 15 - 80



DN 100

Body dimensions - T valves [mm]

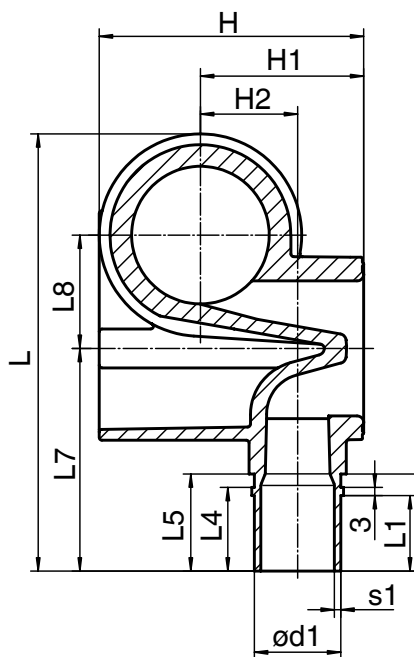
Spigots for IR butt welding, BCF, connection code 28
Valve body material: PVDF (code 20)



DN2	DN1	ø d2	s2	LB	LB1	Lb2	T1	T2	T3	T4
Pipe	Spigot									
15	15	20/0.79	1.9/0.75	166/6.54	28/1.1	36/1.42	54/2.13	74/2.91	46/1.81	68/2.68
20	15	25/0.98	1.9/0.75	166/6.54	28/1.1	36/1.42	54/2.13	74/2.91	46/1.81	68/2.68
25	15	32/1.26	2.4/0.94	166/6.54	28/1.1	36/1.42	54/2.13	74/2.91	46/1.81	68/2.68
32	15	40/1.57	2.4/0.94	184/7.24	37/1.46	46/1.81	54/2.13	74/2.91	46/1.81	68/2.68
40	15	50/1.97	3.0/1.18	184/7.24	37/1.46	46/1.81	54/2.13	74/2.91	46/1.81	68/2.68
50	15	63/2.48	3.0/1.18	184/7.24	37/1.46	46/1.81	54/2.13	74/2.91	46/1.81	68/2.68
80	15	90/3.54	4.3/1.69	196/7.72	-	51/2.01	54/2.13	74/2.91	46/1.81	68/2.68
20	20	25/0.98	1.9/0.75	166/6.54	28/1.1	36/1.42	54/2.13	74/2.91	46/1.81	68/2.68
25	20	32/1.26	2.4/0.94	166/6.54	28/1.1	36/1.42	54/2.13	74/2.91	46/1.81	68/2.68
40	20	50/1.97	3.0/1.18	184/7.24	37/1.46	46/1.81	54/2.13	74/2.91	46/1.81	68/2.68
50	20	63/2.48	3.0/1.18	184/7.24	37/1.46	46/1.81	54/2.13	74/2.91	46/1.81	68/2.68
80	20	90/3.54	4.3/1.69	196/7.72	-	51/2.01	54/2.13	74/2.91	46/1.81	68/2.68
25	25	32/1.26	2.4/0.94	166/6.54	28/1.1	36/1.42	54/2.13	74/2.91	46/1.81	68/2.68
32	25	40/1.57	2.4/0.94	194/7.64	37/1.46	46/1.81	54/2.13	74/2.91	46/1.81	68/2.68
40	25	50/1.97	3.0/1.18	194/7.64	37/1.46	46/1.81	54/2.13	74/2.91	46/1.81	68/2.68
50	25	63/2.48	3.0/1.18	194/7.64	37/1.46	46/1.81	54/2.13	74/2.91	46/1.81	68/2.68
65	25	75/2.95	3.6/1.42	196/7.72	-	46/1.81	54/2.13	74/2.91	46/1.81	68/2.68
80	25	90/3.54	4.3/1.69	196/7.72	-	51/2.01	54/2.13	74/2.91	46/1.81	68/2.68
32	32	40/1.57	2.4/0.94	194/7.64	37/1.46	46/1.81	54/2.13	74/2.91	46/1.81	68/2.68
50	32	63/2.48	3.0/1.18	235/9.25	37/1.46	46/1.81	82/3.23	128/5.04	78/3.07	110/4.33
80	32	90/3.54	4.3/1.69	254/10	-	51/2.01	82/3.23	128/5.04	78/3.07	110/4.33
40	40	50/1.97	3.0/1.18	194/7.64	37/1.46	46/1.81	82/3.23	74/2.91	78/3.07	68/2.68
50	40	63/2.48	3.0/1.18	235/9.25	37/1.46	46/1.81	82/3.23	128/5.04	78/3.07	110/4.33
80	40	90/3.54	4.3/1.69	254/10	-	51/2.01	82/3.23	128/5.04	78/3.07	110/4.33
50	50	63/2.48	3.0/1.18	235/9.25	37/1.46	46/1.81	82/3.23	128/5.04	78/3.07	110/4.33
65	50	75/2.95	3.6/1.42	254/10	-	46/1.81	82/3.23	128/5.04	78/3.07	110/4.33
80	50	90/3.54	4.3/1.69	254/10	-	51/2.01	82/3.23	128/5.04	78/3.07	110/4.33
100	32	110/4.33	5.3/2.09	274/10.79	-	62/2.44	82/3.23	128/5.04	78/3.07	110/4.33
100	40	110/4.33	5.3/2.09	274/10.79	-	62/2.44	82/3.23	128/5.04	78/3.07	110/4.33
100	50	110/4.33	5.3/2.09	274/10.79	-	62/2.44	82/3.23	128/5.04	78/3.07	110/4.33

Body dimensions - T valves [mm]

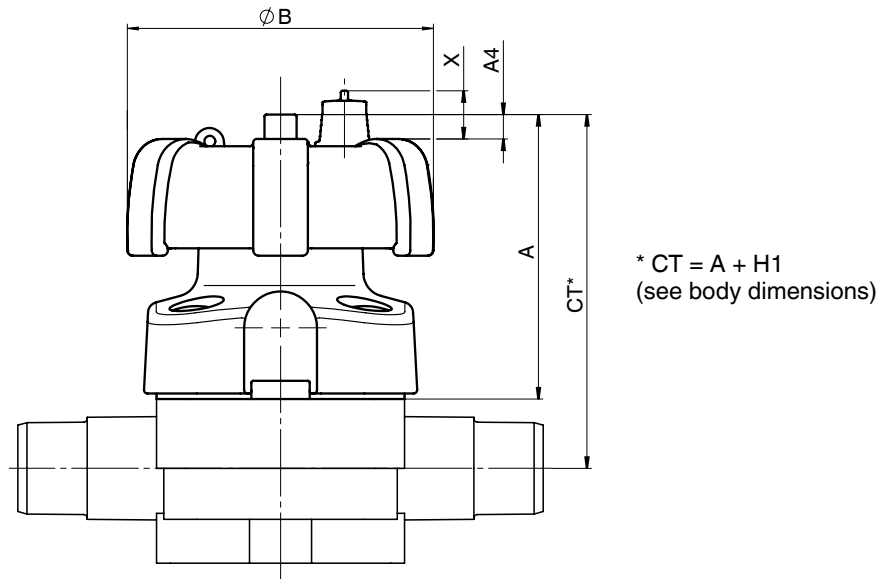
Spigots for IR butt welding. BCF, connection code 28
Valve body material: PVDF (code 20)



DN2 Pipe	DN1 Spigot	ø d1	s1	L	L1	L2	L4	L5	L7	L8	H	H1	H2
15	15	20/0.79	1.9/0.75	130/5.12	28/1.1	36/1.42	32/1.26	36/1.42	83/3.27	25/0.98	63/2.48	42/1.65	17/0.67
20	15	20/0.79	1.9/0.75	130/5.12	28/1.1	36/1.42	32/1.26	36/1.42	83/3.27	25/0.98	63/2.48	42/1.65	17/0.67
25	15	20/0.79	1.9/0.75	130/5.12	28/1.1	36/1.42	32/1.26	36/1.42	83/3.27	25/0.98	63/2.48	42/1.65	17/0.67
32	15	20/0.79	1.9/0.75	140/5.51	28/1.1	36/1.42	32/1.26	36/1.42	83/3.27	30/1.18	75/2.95	42/1.65	24/0.94
40	15	20/0.79	1.9/0.75	163/6.42	28/1.1	36/1.42	32/1.26	36/1.42	83/3.27	42/1.65	98/3.86	60/2.36	36/1.42
50	15	20/0.79	1.9/0.75	163/6.42	28/1.1	36/1.42	32/1.26	36/1.42	83/3.27	42/1.65	98/3.86	60/2.36	36/1.42
80	15	20/0.79	1.9/0.75	186/7.32	28/1.1	36/1.42	32/1.26	36/1.42	83/3.27	51/2.01	127/5	75/2.95	50/1.97
20	20	25/0.98	1.9/0.75	130/5.12	28/1.1	36/1.42	32/1.26	36/1.42	83/3.27	25/0.98	63/2.48	42/1.65	17/0.67
25	20	25/0.98	1.9/0.75	130/5.12	28/1.1	36/1.42	32/1.26	36/1.42	83/3.27	25/0.98	63/2.48	42/1.65	17/0.67
40	20	25/0.98	1.9/0.75	163/6.42	28/1.1	36/1.42	32/1.26	36/1.42	83/3.27	42/1.65	98/3.86	60/2.36	36/1.42
50	20	25/0.98	2.4/0.94	163/6.42	28/1.1	36/1.42	32/1.26	36/1.42	83/3.27	42/1.65	98/3.86	60/2.36	36/1.42
80	20	25/0.98	2.4/0.94	186/7.32	28/1.1	36/1.42	32/1.26	36/1.42	83/3.27	51/2.01	127/5	75/2.95	50/1.97
25	25	32/1.26	2.4/0.94	130/5.12	28/1.1	36/1.42	32/1.26	36/1.42	83/3.27	25/0.98	63/2.48	42/1.65	17/0.67
32	25	32/1.26	2.4/0.94	140/5.51	28/1.1	36/1.42	32/1.26	36/1.42	83/3.27	30/1.18	75/2.95	49/1.93	24/0.94
40	25	32/1.26	2.4/0.94	163/6.42	28/1.1	36/1.42	32/1.26	36/1.42	83/3.27	42/1.65	98/3.86	60/2.36	36/1.42
50	25	32/1.26	2.4/0.94	163/6.42	28/1.1	36/1.42	32/1.26	36/1.42	83/3.27	42/1.65	98/3.86	60/2.36	36/1.42
65	25	32/1.26	2.4/0.94	186/7.32	28/1.1	36/1.42	32/1.26	36/1.42	83/3.27	51/2.01	127/5	75/2.95	50/1.97
80	25	32/1.26	2.4/0.94	186/7.32	28/1.1	36/1.42	32/1.26	36/1.42	83/3.27	51/2.01	127/5	75/2.95	50/1.97
32	32	40/1.57	2.4/0.94	205/8.07	37/1.46	46/1.81	35/1.38	46/1.81	118/4.65	47/1.85	107/4.21	67/2.64	30/1.18
50	32	40/1.57	2.4/0.94	205/8.07	37/1.46	46/1.81	35/1.38	40/1.57	118/4.65	47/1.85	107/4.21	67/2.64	30/1.18
80	32	40/1.57	2.4/0.94	226/8.9	37/1.46	46/1.81	35/1.38	40/1.57	118/4.65	56/2.2	140/5.51	88/3.46	50/1.97
40	40	50/1.97	3.0/1.18	205/8.07	37/1.46	46/1.81	35/1.38	46/1.81	118/4.65	47/1.85	107/4.21	67/2.64	30/1.18
50	40	50/1.97	3.0/1.18	205/8.07	37/1.46	46/1.81	35/1.38	40/1.57	118/4.65	47/1.85	107/4.21	67/2.64	30/1.18
80	40	50/1.97	3.0/1.18	226/8.9	37/1.46	46/1.81	35/1.38	40/1.57	118/4.65	56/2.2	140/5.51	88/3.46	50/1.97
50	50	63/2.48	3.0/1.18	205/8.07	37/1.46	46/1.81	40/1.57	46/1.81	118/4.65	47/1.85	107/4.21	67/2.64	30/1.18
65	50	63/2.48	3.0/1.18	226/8.9	37/1.46	46/1.81	33/1.3	40/1.57	118/4.65	56/2.2	140/5.51	88/3.46	50/1.97
80	50	63/2.48	3.0/1.18	226/8.9	37/1.46	46/1.81	33/1.3	40/1.57	118/4.65	56/2.2	140/5.51	88/3.46	50/1.97
100	32	40/1.57	2.3/0.91	238/9.37	37/1.46	46/1.81	40/1.57	46/1.81	137/5.39	45/1.77	133/5.24	77/3.03	39/1.54
100	40	50/1.97	3.0/1.18	238/9.37	37/1.46	46/1.81	40/1.57	46/1.81	137/5.39	45/1.77	133/5.24	77/3.03	39/1.54
100	50	63/2.48	3.0/1.18	238/9.37	37/1.46	46/1.81	40/1.57	46/1.81	137/5.39	45/1.77	133/5.24	77/3.03	39/1.54

Dimensions [mm]

Operator dimensions



DN	ø B	A	A4 approx.	X*	Weight [kg]
15 - 25	90 / 3.54	79 / 3.11	8 / 0.31	14 / 0.55	0.4
32 - 40	114 / 4.49	99 / 3.9	10 / 0.39	8 / 0.31	0.6
50	140 / 5.51	119 / 4.69	12 / 0.47	9 / 0.35	1.0
65 - 80	214 / 8.43	167 / 6.57	26 / 1.02	27 / 1.06	3.8
100	214 / 8.43	219 / 8.62	34 / 1.34	27 / 1.06	5.1

* only for control function code L

Instrumentation



GEMÜ 1215
electrical
position indicator
ATEX

For further plastic diaphragm valves, accessories and other products, please see our Product Range catalogue and Price List.
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