

Diaphragm Valve, Plastic

Construction

All medium wetted parts, the bonnet and handwheel of the GEMÜ R677 2/2-way diaphragm valve are made of plastic. The low maintenance plastic bonnet has an ergonomically designed handwheel with integral optical position indicator.

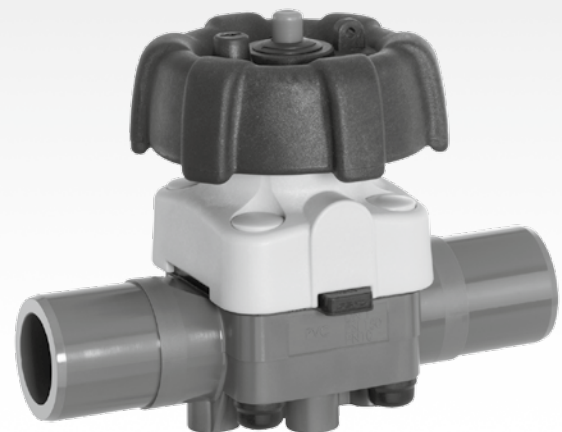
Features

- Suitable for inert and corrosive* liquid and gaseous media
- Insensitive to particulate media
- Optional flow direction and mounting position
- Nominal pressure PN 10 / 150 PSI
- Nominal size DN 15 - DN 100 / NPS 1/2" - NPS 4"
- Optical position indicator as standard
- Bonnet housing in glass fibre reinforced PP
- Valve body and diaphragm available in various materials and designs
- Various connections available

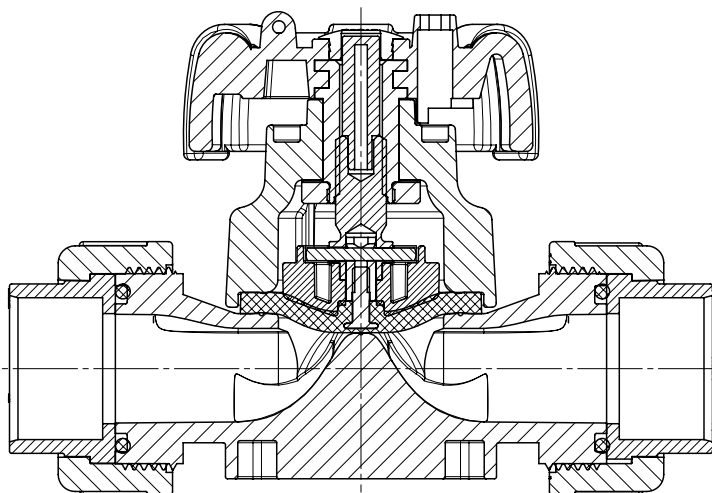
Advantages

- Compact, lightweight construction and high performance
- Good flow characteristics due to flow optimized valve body
- Adjusted instrumentation
- Good specific flow capability
- Optional accessories
 - Electrical remote indication that the valve is in the open position
 - Lock out device

*see information on working medium on page 2



Sectional drawing



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.

Ambient temperature

Valve body PVC-U	10 to 50 °C
Valve body ABS	-10 to 50 °C
Valve body PP-H	5 to 50 °C
Valve body PVDF	-5 to 50 °C

Working medium temperature

Valve body PVC-U	10 to 60 °C
Valve body ABS	-20 to 60 °C
Valve body PP-H	5 to 80 °C
Valve body PVDF	-10 to 80 °C

The permissible operating pressure depends on the working medium temperature.

O-ring material for valve bodies with union ends

Diaphragm material	O-ring material
NBR	EPDM
FPM	FPM
EPDM	EPDM
PTFE	FPM
Other combinations on request	

Pressure / temperature correlation for plastic

Temperature in °C (plastic body)		-20	-10	±0	5	10	20	25	30	40	50	60	70	80
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	-	-
ABS	Code 4	10.0	10.0	10.0	10.0	10.0	10.0	10.0	8.0	6.0	4.0	2.0	-	-
PP	Code 5	-	-	-	10.0	10.0	10.0	10.0	8.5	7.0	5.5	4.0	2.7	1.5
PP-H	Code 71	-	-	-	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
PVDF	Code 75	-	10.0	10.0	10.0	10.0	10.0	10.0	9.0	8.0	7.1	6.3	5.4	4.7

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.

Diaphragm size	DN	Operating pressure [bar]		Kv Value [m³/h]
		EPDM/FPM	PTFE	
20	15	0 - 10	0 - 6	6
	20			10
	25			12
25	32	0 - 10	0 - 6	20
	40			42
40	50	0 - 10	0 - 6	46
	65			70
50	80	0 - 10	0 - 6	120
	100			189

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.

Order data

Body configuration	Code
2/2-way body	D

Connection	Code
Spigots DIN for socket solvent cementing/welding	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
Union ends with Rp threaded socket inserts	7R
Spigots for IR butt welding	20
Spigots - inch for socket solvent cementing/welding	30
Union ends with inch insert - BS (socket)	33
Flanges ANSI CLASS 125/150 RF, length EN 558, series 1, ISO 5752, basic series 1	39
Union ends with inch ASTM insert (socket)	3M
Union ends with JIS insert (socket)	3T
Union ends with DIN insert (for IR butt welding)	78

Valve body material	Code
PVC-U, grey	1
ABS	4
PP, reinforced (DN 65 - 100)	5
PVDF (DN 65 - 100)	20
Inliner PP-H grey / outliner PP reinforced (DN 15 - 50)	71
Inliner PVDF / outliner PP reinforced (DN 15 - 50)	75

Diaphragm material	Code
NBR	2
FPM	4
EPDM	14
PTFE/EPDM, PTFE laminated	52
other diaphragm material on request	

Control function	Code
Manually operated	0
Manually operated (lockable handwheel)	L

Bonnet version	Code
Diaphragm size 20 (DN 15, 20, 25)	ED
Diaphragm size 25 (DN 32)	FD
Diaphragm size 40 (DN 40, 50)	HD
Diaphragm size 50 (DN 65)	KD
Diaphragm size 80 (DN 80)	MD
Diaphragm size 100 (DN 100)	ND

Options	Code
Threaded connection for position indicator	Z

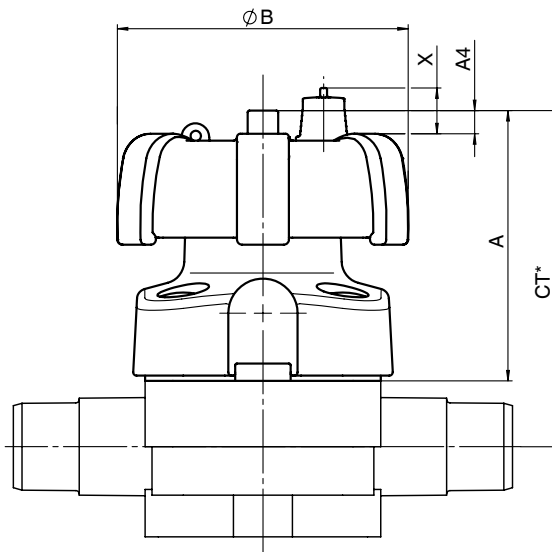
Order example	R677	15	D	7	1	14	0	ED	Z
Type	R677								
Nominal size		15							
Body configuration (code)			D						
Connection (code)				7					
Valve body material (code)					1				
Diaphragm material (code)						14			
Control function (code)							0		
Bonnet version (code)								ED	
Options (code)									Z

Dimensions [mm]

Bonnet dimensions

Diaphragm size	DN	ø B	A	A4 ca.	X*	Weight [kg]
20	15 - 25	90	75	8	14	0.4
25	32	90	79	8	14	0.6
40	40 - 50	114	99	10	8	0.8
50	65	140	119	12	9	1.2
80	80	214	167	26	27	2.5
100	100	214	219	34	27	3.9

* X only with control function code L

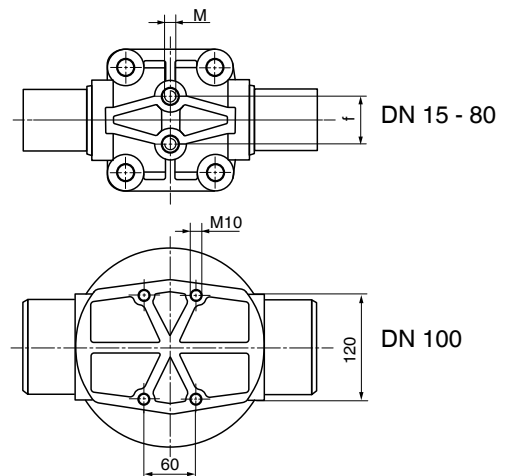


* CT = A + H1 (see body dimensions)

Valve body mounting [mm]

Diaphragm size	DN	M	f
20	15 - 25	M6	25.0
25	32	M6	25.0
40	40 - 50	M8	44.5
50	65	M8	44.5
80	80	M12	100.0
100	100	see drawing	

For valves with body material ABS (code 4) and inch spigots (code 30) mounting bushes with inch thread can be supplied on request.



Body dimensions [mm]

Spigots, connection code 0
**Valve body material: PVC-U (code 1), PP (code 5), PVDF (code 20),
 Inliner PP-H (code 71), Inliner PVDF (code 75)**

MG	DN	NPS	H1	L	H			ød	c			Weight [kg]
					Material code 1	Material code 5, 20	Material code 71, 75		Material code 1	Material code 5, 20	Material code 71, 75	
20	15	1/2"	10.0	124	36.0	-	36.0	20	16	-	18	0.12
	20	3/4"	12.0	144	38.0	-	38.0	25	19	-	19	0.13
	25	1"	13.0	154	39.0	-	39.0	32	22	-	22	0.16
25	32	1 1/4"	15.0	174	41.0	-	41.0	40	32	-	32	0.22
40	40	1 1/2"	23.2	194	63.2	-	63.2	50	35	-	26	0.50
	50	2"	23.2	224	63.2	-	63.2	63	38	-	33	0.57
50	65	2 1/2"	38.8	284	78.8	78.8	-	75	46	46	-	0.92
80	80	3"	62.0	300	117.0	117.0	-	90	51	51	-	4.00
100	100	4"	75.0	340	140.0	140.0	-	110	61	61	-	4.40

MG = diaphragm size

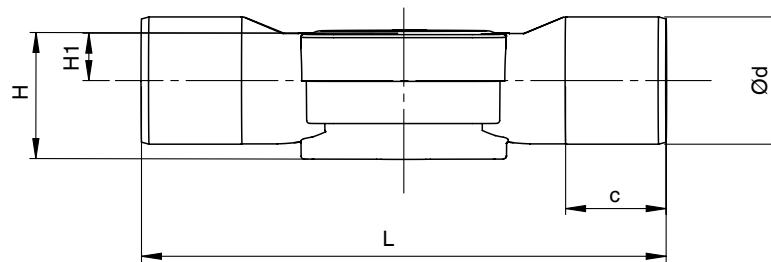
For materials see overview on page 10

Spigots, connection code 30
Valve body material: PVC-U (code 1), ABS (code 4)

MG	DN	NPS	H1	L	H	ød	c	Weight [kg]
20	15	1/2"	10.0	141	36.0	21.4	24	0.12
	20	3/4"	12.0	144	38.0	26.7	27	0.13
	25	1"	13.0	154	39.0	33.6	30	0.16
25	32	1 1/4"	15.0	174	41.0	42.2	33	0.22
40	40	1 1/2"	23.2	194	63.2	48.3	35	0.50
	50	2"	23.2	224	63.2	60.3	40	0.57
50	65	2 1/2"	38.8	284	78.8	73.0	46	0.92
80	80	3"	62.0	300	117.0	88.9	51	4.00
100	100	4"	75.0	340	140.0	114.3	61	4.40

MG = diaphragm size

For materials see overview on page 10



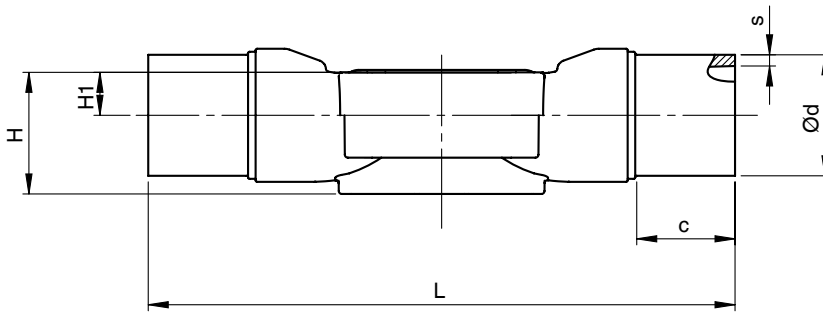
Body dimensions [mm]

Spigots for IR butt welding, connection code 20 Valve body material: PVDF (code 20), inliner PP-H (code 71), inliner PVDF (code 75)

MG	DN	L	H	H1	ød	s		c	Weight [kg]
						Material code 71	Material code 20, 75		
20	15	154	36.0	10.0	20	1.9	1.9	33	0.10
	20	154	38.0	12.0	25	2.3	1.9	33	0.12
	25	154	39.0	13.0	32	2.9	2.4	33	0.14
25	32	174	41.0	15.0	40	3.7	2.4	33	0.18
40	40	194	63.2	23.2	50	4.6	3.0	33	0.40
	50	224	63.2	23.2	63	5.8	3.0	33	0.47
50	65	284	78.8	38.8	75	-	3.6	43	3.57
80	80	300	117.0	62.0	90	-	4.3	51	3.30
100	100	340	140.0	75.0	110	-	5.3	59	4.00

MG = diaphragm size

For materials see overview on page 10

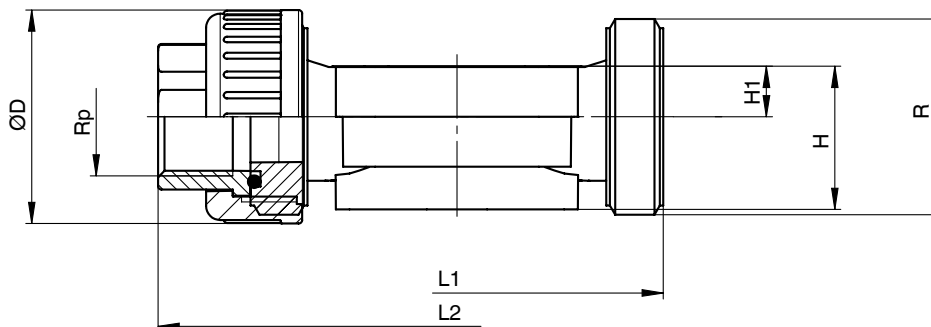


Union ends with insert, connection code 7R Valve body material: PVC-U (code 1)

MG	DN	R	øD	L1	H	H1	L2	Rp	Weight [kg]
20	15	G 1	43	108	36.0	10.0	146	1/2	0.17
	20	G 1 1/4	53	108	38.0	12.0	152	3/4	0.21
	25	G 1 1/2	60	116	39.0	13.0	166	1	0.26
25	32	G 2	74	134	41.0	15.0	192	1 1/4	0.40
40	40	G 2 1/4	83	154	63.2	23.2	222	1 1/2	0.73
	50	G 2 3/4	103	184	63.2	23.2	266	2	1.00

MG = diaphragm size

For materials see overview on page 10



Body dimensions [mm]

Union ends with insert, connection code 7

Valve body material: PVC-U (code 1), ABS (code 4), inliner PP-H (code 71), inliner PVDF (code 75)

MG	DN	R	øD	L1	H	H1	L2			ød	Weight [kg]
							Material code 1	Material code 4	Material code 71, 75		
20	15	G 1	43	108	36.0	10.0	146	150	143	20	0.17
	20	G 1 1/4	53	108	38.0	12.0	152	156	146	25	0.21
	25	G 1 1/2	60	116	116	39.0	13.0	166	170	158	32
25	32	G 2	74	134	41.0	15.0	192	196	181	40	0.40
40	40	G 2 1/4	83	154	63.2	23.2	222	222	207	50	0.73
	50	G 2 3/4	103	184	63.2	23.2	264	264	243	63	1.00

MG = diaphragm size

For materials see overview on page 10

Union ends with insert, connection code 33, 3M

Valve body material: PVC-U (code 1), ABS (code 4)

MG	DN	NPS	R	øD	L1	H	H1	Connection code 33			Connection code 3M				
								L2		ød	Weight [kg]	L2		ød	Weight [kg]
								Material code 1	Material code 4			Material code 1			
20	15	1/2"	G 1	43	108	36.0	10.0	146	149	21.4	0.24	158	21.4	0.26	
	20	3/4"	G 1 1/4	53	108	38.0	12.0	152	155	26.8	0.28	164	26.7	0.30	
	25	1"	G 1 1/2	60	116	39.0	13.0	166	169	33.6	0.33	180	33.5	0.38	
25	32	1 1/4"	G 2	74	134	41.0	15.0	192	195	42.3	0.70	204	42.2	0.73	
40	40	1 1/2"	G 2 1/4	83	154	63.2	23.2	222	222	48.3	0.83	230	48.3	0.93	
	50	2"	G 2 3/4	103	184	63.2	23.2	264	263	60.4	1.40	264	60.4	1.50	

MG = diaphragm size

For materials see overview on page 10

Union ends with insert, connection code 3T

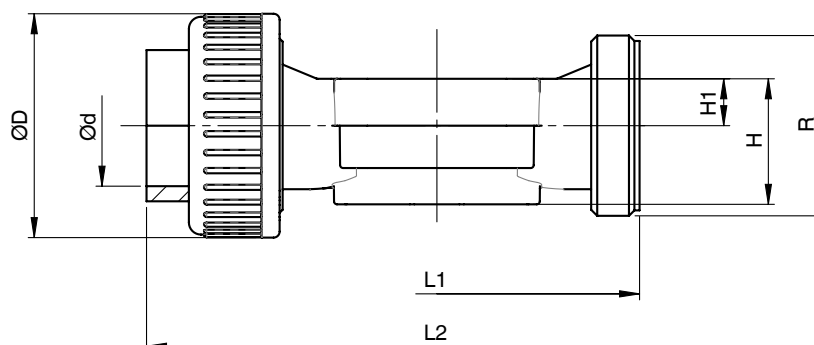
Valve body material: PVC-U (code 1)

MG	DN	R	øD	L1	H	H1	L2	ød	Weight [kg]
20	15	G 1 1/4*	53*	108	36.0	10.0	152	22	0.26
	20	G 1 1/4	53	108	38.0	12.0	152	26	0.30
	25	G 1 1/2	60	116	39.0	13.0	166	32	0.38
25	32	G 2	74	134	41.0	15.0	192	38	0.73
40	40	G 2 1/4	83	154	63.2	23.2	222	48	0.93
	50	G 2 3/4	103	184	63.2	23.2	264	60	1.50

* Insert requires valve body DN 20

MG = diaphragm size

For materials see overview on page 10



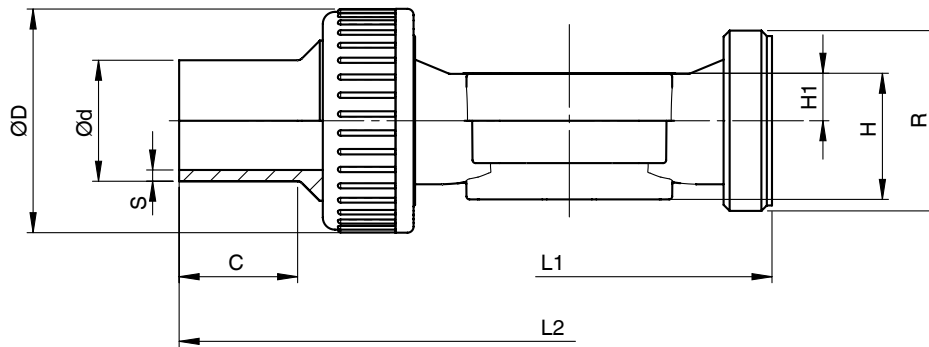
Body dimensions [mm]

Union ends with insert, connection code 78
Valve body material: inliner PP-H (code 71), inliner PVDF (code 75)

MG	DN	L1	L2	H	H1	øD	ød	G	s	c	Weight [kg]
20	15	108	214	36.0	10.0	43	20	G 1	1.9	36	0.27
	20	108	220	38.0	12.0	53	25	G 1 1/4	2.3	37	0.36
	25	116	234	39.0	13.0	60	32	G 1 1/2	2.9	39	0.37
25	32	134	258	41.0	15.0	74	40	G 2	3.7	39	0.63
40	40	154	284	63.2	23.2	83	50	G 2 1/4	4.6	43	1.13
	50	182	318	63.2	23.2	103	63	G 2 3/4	5.8	43	1.60

MG = diaphragm size

For materials see overview on page 10



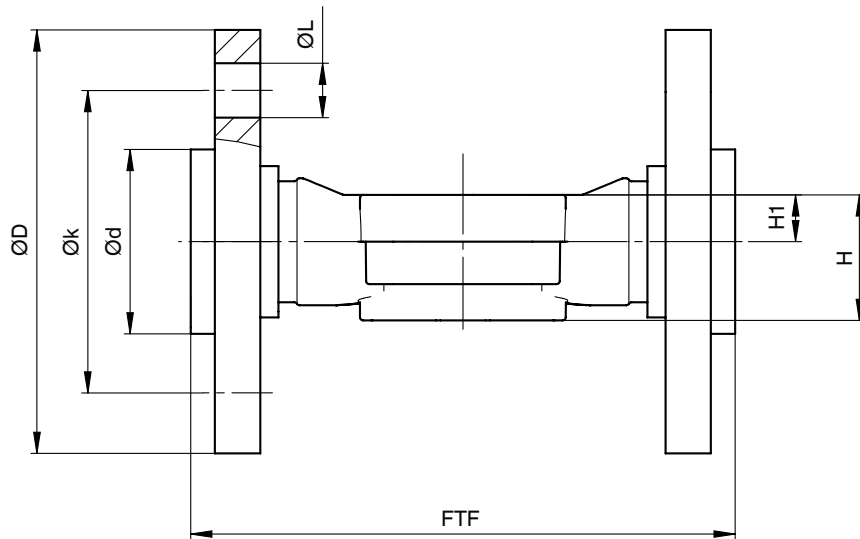
Body dimensions [mm]

Flanges, connection code 4, 39
 Valve body material: PVC-U (code 1), PP (code 5), PVDF (code 20),
 inliner PP-H (code 71), inliner PVDF (code 75)

MG	DN	FTF	H	H1	Connection code 4					Connection code 39					Weight [kg]
					øD	øL	ød	øk	Number of bolts	øD	øL	ød	øk	Number of bolts	
	15	130	36.0	10.0	95	14	45	65	4	95	16	45	60	4	0.67
20	20	150	38.0	12.0	105	14	58	75	4	105	16	54	70	4	0.84
	25	160	39.0	13.0	115	14	68	85	4	115	16	63	79	4	1.28
25	32	180	41.0	15.0	140	18	78	100	4	140	16	73	89	4	1.89
40	40	200	63.2	23.2	150	18	88	110	4	150	16	82	98	4	2.36
	50	230	63.2	23.2	165	18	102	125	4	165	19	102	121	4	3.08
50	65	290	78.8	38.8	185	18	122	145	4	185	19	122	140	4	3.20
80	80	310	117.0	62.0	200	18	138	160	8	200	19	133	152	4	6.70
100	100	350	140.0	75.0	220	18	158	180	8	229	19	158	190	8	8.20

MG = diaphragm size

For materials see overview on page 10



Overview of valve bodies for GEMÜ R677																				
Connection code		0					4					7				7R	20			
Material code		1	5	20	71	75	1	5	20	71	75	1	4	71	75	1	20	71	75	
Diaphragm size	DN																			
20	15	X	-	-	X	X	X	-	-	X	X	X	X	X	X	X	-	X	X	
	20	X	-	-	X	X	X	-	-	X	X	X	X	X	X	X	-	X	X	
	25	X	-	-	X	X	X	-	-	X	X	X	X	X	X	X	-	X	X	
25	32	X	-	-	X	X	X	-	-	X	X	X	X	X	X	X	-	X	X	
40	40	X	-	-	X	X	X	-	-	X	X	X	X	X	X	X	-	X	X	
	50	X	-	-	X	X	X	-	-	X	X	X	X	X	X	X	-	X	X	
50	65	X	X	X	-	-	X	X	X	-	-	-	-	-	-	-	X	-	-	
80	80	X	X	X	-	-	X	X	X	-	-	-	-	-	-	-	X	-	-	
100	100	X	X	X	-	-	X	X	X	-	-	-	-	-	-	-	X	-	-	

Overview of valve bodies for GEMÜ R677															
Connection code		30		33		39					3M	3T	78		
Material code		1	4	1	4	1	5	20	71	75	1	1	71	75	
Diaphragm size	DN														
20	15	X	X	X	X	X	-	-	X	X	X	-	X	X	
	20	X	X	X	X	X	-	-	X	X	X	X	X	X	
	25	X	X	X	X	X	-	-	X	X	X	X	X	X	
25	32	X	X	X	X	X	-	-	X	X	X	X	X	X	
40	40	X	X	X	X	X	-	-	X	X	X	X	X	X	
	50	X	X	X	X	X	-	-	X	X	X	X	X	X	
50	65	X	X	-	-	X	X	X	-	-	-	-	-	-	
80	80	X	X	-	-	X	X	X	-	-	-	-	-	-	
100	100	X	X	-	-	X	X	X	-	-	-	-	-	-	

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

