

## Diaphragm Valve, Plastic

### Construction

The GEMÜ 690 2/2 way valve has a low maintenance membrane actuator which can be controlled by inert gases. Normally Closed, Normally Open and Double Acting control functions are available. All medium wetted parts and the actuator housing are made of plastic.

### Features

- Suitable for inert and corrosive\* liquid and gaseous media
- Valve body and diaphragm available in various materials and designs
- Insensitive to particulate media
- Various connections available

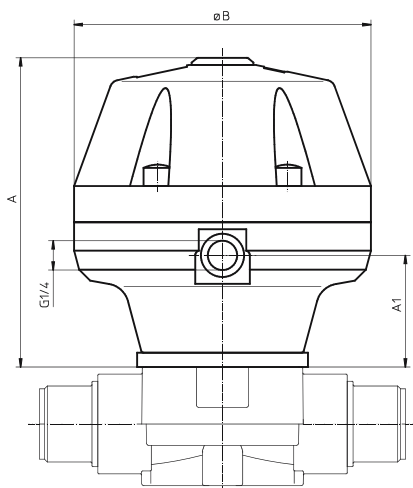
### Advantages

- Optional flow direction, will seal in either flow direction up to full working pressure
- Optional mounting position
- Body and diaphragm sizes have coordinated diameters hence the fitting time is reduced because the pipe and fixing centres remain the same. Spares inventory is also reduced.
- Optional accessories
  - Electrical position indicator
  - Electrical position indicator with microswitches or proximity switches
  - Mounting bracket according to NAMUR
  - Pneumatic or electro-pneumatic positioner
  - Stroke limiter (DN 65-100: observe marking on actuator cover)

\* see information on working medium on page 2

### Actuator dimensions - Control function 1 (mm)

Diaphragm size	ø B	A	A1
25	125	131	47
40	155	177	75
50	210	215	90
80	260	280	127
100	260	307	149



## 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 materials.

Max. perm. temperature of working medium:  
See datasheet "Technical Information on Plastic Materials"

### Control medium

Inert gases

Max. permissible temperature of control medium 40°C

MG**	DN	Control function 1			Control functions 2 + 3			K <sub>v</sub> value (m <sup>3</sup> /h)
		Working pressure EPDM / FPM	Working pressure PTFE	Control pressure	Working pressure EPDM / FPM	Working pressure PTFE	Control pressure*	
25	15							5.6
	20	0 - 10 bar	0 - 6 bar	5.5 - 7.0 bar	0 - 10 bar	0 - 6 bar	max. 5.5 bar	8.2
	25							10.5
40	32	0 - 10 bar	0 - 6 bar	5.5 - 7.0 bar	0 - 10 bar	0 - 6 bar	max. 5.5 bar	18.0
	40							25.0
50	50	0 - 10 bar	0 - 6 bar	5.5 - 7.0 bar	0 - 10 bar	0 - 6 bar	max. 5 bar	46.0
80	65	0 - 6 bar	0 - 6 bar	5.0 - 7.0 bar	0 - 6 bar	0 - 6 bar	max. 5.5 bar	78.0
	80							120.0
100	100	0 - 6 bar	0 - 4 bar	5.5 - 7.0 bar	0 - 6 bar	0 - 4 bar	max. 5.5 bar	189.0

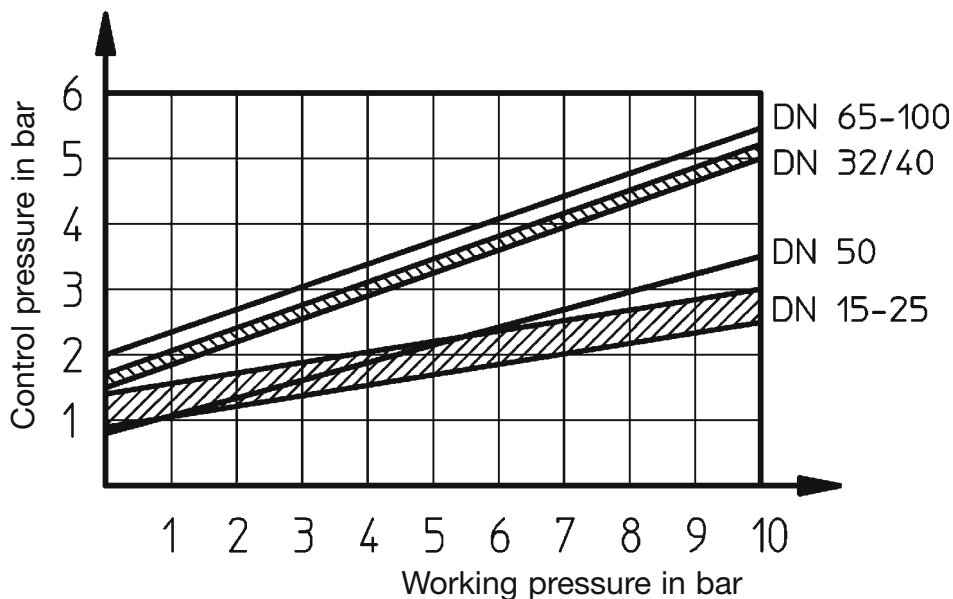
All pressures are given as gauge pressures, working pressure applied upstream only. Given Kv values with diaphragm material EPDM.

\*For required control pressure depending on working pressure see diagram below

\*\* Diaphragm size

### Control pressure characteristic DN 15-100 (EPDM, FPM)

#### Control functions 2 and 3



## Order data

Body configuration	Code
Straight through	D

Valve body material	Code
PVC-U	1
ABS	4
PP	5
PVDF	20
Lining PP-H, natural/Outliner PP, reinforced	70
Lining PP-H RAL 7032, coloured/Outliner PP, reinforced	71

Connection	Code
Spigots DIN	0
Flanges DIN 2501, Form C, Face-to-face EN 558-1, series 1	4
Union ends with DIN insert (socket)	7
Spigots for infrared butt welding (IR)	20
Spigots for infrared butt welding, BCF	28
Spigots - inch	30
Union ends with inch insert (socket)	33
Flanges ANSI B 16.5, class 150 RF Face-to-face EN 558-1, series 1	39
Union ends with DIN insert (IR butt welding)	78

Diaphragm material	Code
CSM	1
NBR	2
FPM	4
EPDM	14
PTFE/EPDM PTFE loose MG 25 - 50	5E*
PTFE/FPM PTFE loose MG 25 - 50	5F*
PTFE/EPDM PTFE laminated MG 25 -100	52
PTFE/FPM PTFE laminated MG 25 -100	56

\*Usability see table on last page of data sheet  
MG = diaphragm size

Control function	Code
Normally closed	1
Normally open	2
Double acting	3

Order example	690	25	D	7	1	14	1
Type	690						
Nominal size		25					
Body configuration (code)			D				
Connection (code)				7			
Valve body material (code)					1		
Diaphragm material (code)						14	
Control function (code)							1

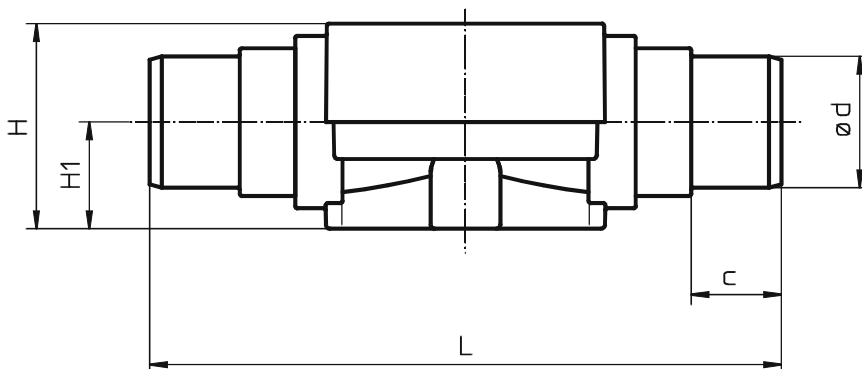
### Body dimensions - Butt weld spigots DIN, connection code 0 (mm)

MG*	DN	Material code 1					Material code 5					Material code 20					Material code 70, 71				
		L	H	H1	ød	c	L	H	H1	ød	c	L	H	H1	ød	c	L	H	H1	ød	c
25	15	124	45	26	20	16	124	45	26	20	16	124	50	26	20	18	124	50	26	20	18
25	20	144	45	26	25	19	144	45	26	25	19	144	50	26	25	19	144	50	26	25	19
25	25	154	45	26	32	22	154	45	26	32	22	154	50	26	32	22	154	50	26	32	22
40	32	174	74	40	40	26	174	68	40	40	24	174	74	40	40	24	174	74	40	40	24
40	40	194	74	40	50	31	194	68	40	50	27	194	74	40	50	26	194	74	40	50	26
50	50	224	78	40	63	39	224	75	40	63	40	224	82	40	63	29	224	82	40	63	29
80	65	284	117	55	75	44	284	117	55	75	44	284	117	55	75	44	-	-	-	-	-
80	80	300	117	55	90	51	300	117	55	90	51	300	117	55	90	51	-	-	-	-	-
100	100	340	140	65	110	61	340	140	65	110	61	340	140	65	110	61	-	-	-	-	-

\* MG = diaphragm size

### Body dimensions - Butt weld spigots INCH, connection code 30, material code 1, 4 (mm)

Diaphragm size	DN	L	H	H1	ød	c
25	15	141	45	26	21.4	24
25	20	145	45	26	26.7	27
25	25	154	45	26	33.6	30
40	32	174	68	40	42.2	33
40	40	194	68	40	48.3	39
50	50	224	75	40	60.3	40
80	65	284	117	55	75.2	44
80	80	300	117	55	88.9	51
100	100	340	140	65	114.3	61

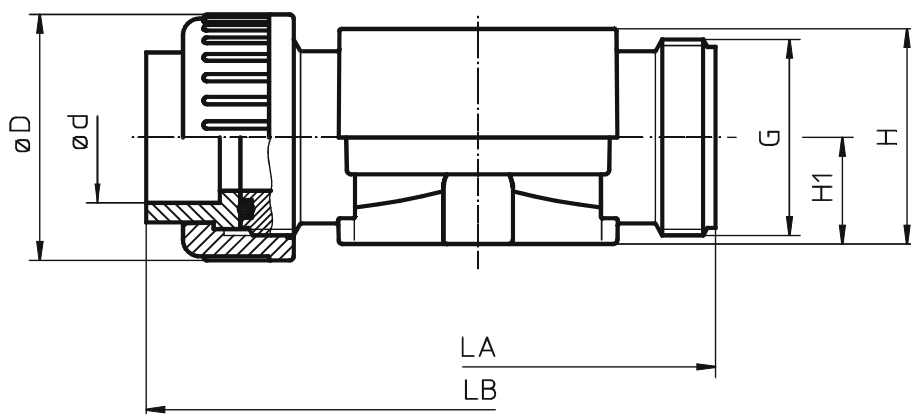


**Body dimensions - Union ends with inserts for socket welding DIN**  
Connection code 7 (mm)

Diaphragm size	Material code 1								Material code 20, 70, 71						
	DN	LA	LB	H	H1	øD	ød	G	LA	LB	H	H1	øD	ød	G
25	15	108	146	50	26	43	20	1	108	144	50	26	43	20	1
25	20	108	152	50	26	53	25	1¼	108	146	50	26	53	25	1¼
25	25	116	166	50	26	60	32	1½	116	162	50	26	60	32	1½
40	32	134	192	74	40	74	40	2	134	186	74	40	74	40	2
40	40	154	222	74	40	83	50	2¼	154	210	74	40	83	50	2¼
50	50	182	264	82	40	103	63	2¾	182	248	82	40	103	63	2¾

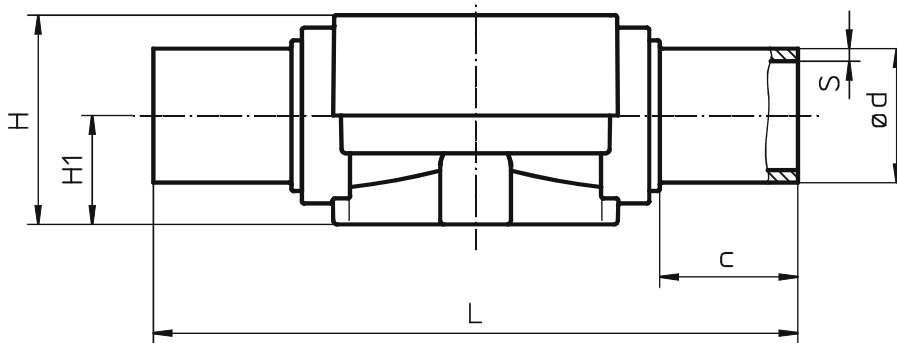
**Body dimensions**  
**Union ends with inserts for socket welding INCH**  
Connection code 33, material code 1 (mm)

Diaphragm size	DN	LA	LB	H	H1	øD	ød	G
25	15	108	150	51	26	43	21.4	1
25	20	108	156	51	26	53	26.7	1¼
25	25	116	170	51	26	60	33.6	1½
40	32	134	198	74	40	74	42.2	2
40	40	154	220	74	40	83	48.3	2¼
50	50	182	262	82	40	103	60.3	2¾



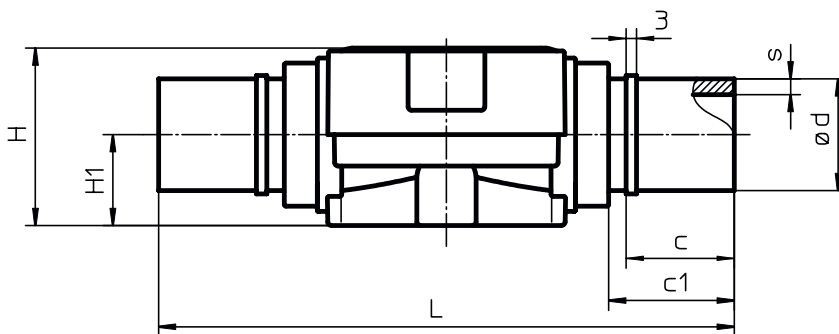
### Body dimensions - Spigots for infrared butt welding (IR), connection code 20 (mm)

Diaphragm size	DN	Material code 20						Material code 70 and 71					
		L	H	H1	ød	S	c	L	H	H1	ød	s	c
25	15	-	-	-	-	-	-	154	50	26	20	1.9	33
25	20	-	-	-	-	-	-	154	50	26	25	2.3	33
25	25	-	-	-	-	-	-	154	50	26	32	3.0	33
40	32	-	-	-	-	-	-	194	74	40	40	3.7	33
40	40	-	-	-	-	-	-	194	74	40	50	4.6	33
50	50	-	-	-	-	-	-	224	82	40	63	5.8	33
80	65	284	117	55	75	3.6	43	-	-	-	-	-	-
80	80	300	117	55	90	4.3	51	-	-	-	-	-	-
100	100	340	140	65	110	5.3	59	-	-	-	-	-	-



### Body dimensions - Spigots for PVDF butt welding Connection code 28, material code 20 (mm)

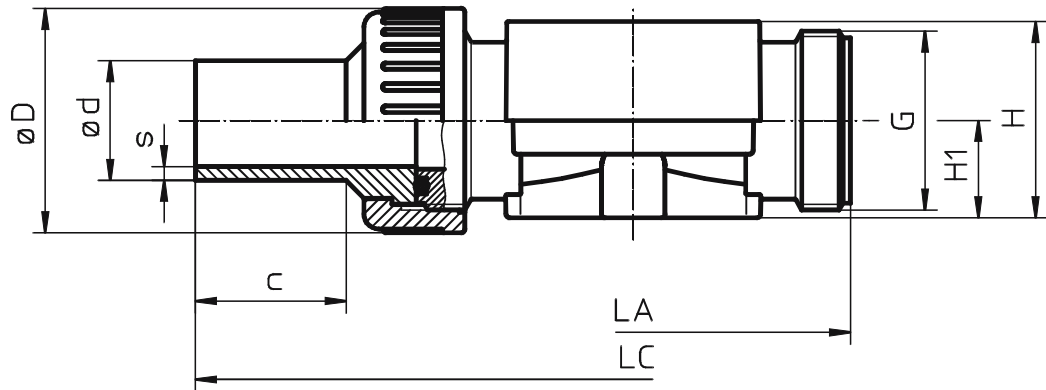
Diaphragm size	DN	L	H	H1	ød	c	c1	s
25	15	154	50	26	20	31	37	1.9
25	20	154	50	26	25	31	37	1.9
25	25	154	50	26	32	31	37	2.4
40	32	194	74	40	40	40	46	2.4
40	40	194	74	40	50	40	46	3.0
50	50	224	82	40	63	40	46	3.0



## Body dimensions - Union ends with inserts for butt welding

Connection code 78, material code 20, 70, 71 (mm)

Diaphragm size	DN	LA	LC	H	H1	øD	ød	G	20 <sup>s</sup>	70, 71	C
25	15	108	214	50	26	43	20	1	1.9	1.9	37
25	20	108	220	50	26	53	25	1¼	1.9	2.3	39
25	25	116	234	50	26	60	32	1½	2.4	3.0	40
40	32	134	258	74	40	74	40	2	2.4	3.7	41
40	40	154	284	74	40	83	50	2¼	3.0	4.6	43
50	50	182	318	82	40	103	63	2¾	3.0	5.8	43

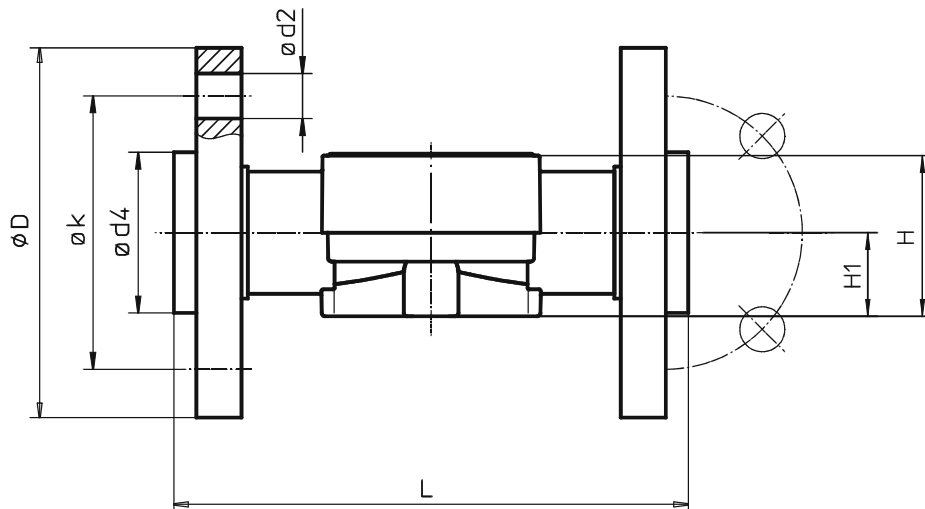


## Body dimensions - Flanges Connection code 4, 39 material code 5, 20, 70\*\*, 71\*\* (mm)

Diaphragm size	DN	L	H	H1	Connection code 4					Connection code 39					
					ø D	ø d2	ø d4	ø k	Number of bolt holes	ø D	ø d2	ø d4	ø k	Number of bolt holes	
25	15	1/2"	150*	depending on material code see body dimensions page 4 connection 0	depending on material code see body dimensions page 4 connection 0	95	14	45	65	4	95	16	45	60	4
25	20	3/4"	150			105	14	58	75	4	105	16	54	70	4
25	25	1"	160			115	14	68	85	4	115	16	63	79	4
40	32	1 1/4"	180			140	18	78	100	4	140	16	73	89	4
40	40	1 1/2"	200			150	18	88	110	4	150	16	82	98	4
50	50	2"	230			165	18	102	125	4	165	19	102	121	4
80	65	2 1/2"	290			185	18	122	145	4	185	19	122	140	4
80	80	3"	310			200	18	138	160	8	200	19	133	152	4
100	100	4"	350			220	18	158	180	8	229	19	158	190	8

\* no DIN length

\*\* Material code 70, 71 only DN 15-50



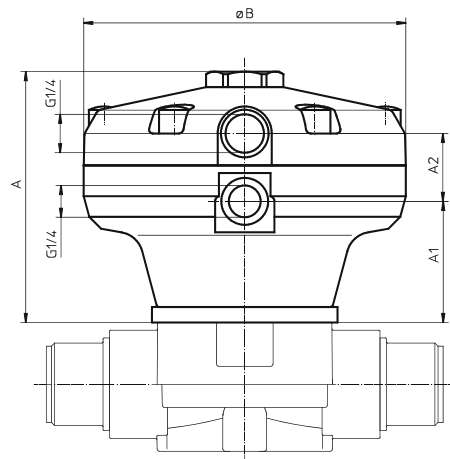
## Overview of valve bodies for GEMÜ 690

Material code	PVC (Code 1)				PP (Code 5)	PP (Code 70, Code 71)*						PVDF (Code 20)*						ABS (Code 4)		
	0	7	30	33	0	0	4	7	20	39	78	0	4	7	20	28	39	78	30	
Connection code																				
MG	DN																			
25	15	X	X	X	X	X	X*	X*	X*	X*	X*	X*	X*	X*	X*	-	X*	X*	X*	X
25	20	X	X	X	X	X	X*	X*	X*	X*	X*	X*	X*	X*	X*	-	X*	X*	X*	X
25	25	X	X	X	X	X	X*	X*	X*	X*	X*	X*	X*	X*	X*	-	X*	X*	X*	X
40	32	X	X	X	X	X	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*	X*	-	X*	X*	X*	X
50	50	X	X	X	X	X	X*	X*	X*	X*	X*	X*	X*	X*	X*	-	X*	X*	X*	X
80	65	X	-	X	-	X	-	-	-	-	-	-	X	X	-	X	-	X	-	X
80	80	X	-	X	-	X	-	-	-	-	-	-	X	X	-	X	-	X	-	X
100	100	X	-	X	-	X	-	-	-	-	-	-	X	X	-	X	-	X	-	X

\* Valve bodies are suitable for use with diaphragms code 5E and 5F.  
MG = diaphragm size

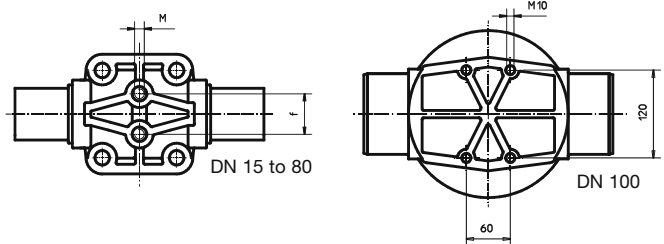
### Actuator dimensions control functions 2 and 3 (mm)

Diaphragm size	ø B	A	A1	A2
25	125	98	47	27
40	155	135	75	27
50	210	164	90	29
80	260	226	127	41
100	260	263	149	46



### Mounting dimensions (mm)

Diaphragm size	M	f
25	M6	25.0
40	M8	44.5
50	M8	44.5
80	M12	100.0
100	see drawing	



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



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