GEMÜ®

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

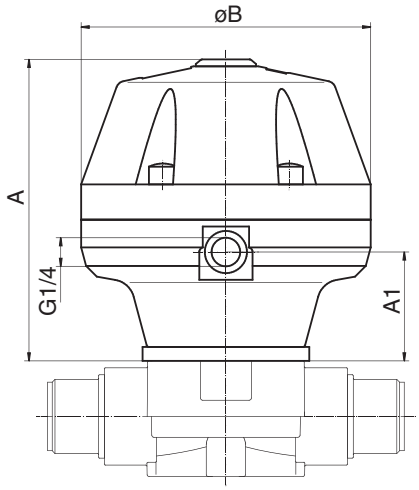
Advantages

- 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.

Working medium temperature

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

The permissible operating pressure depends on the working medium temperature.

Ambient temperature

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

Control medium

Inert gases

Max. permissible temperature of control medium	40°C

Filling volume (Control function 1)

DN 15-25	0.15 Nl
DN 32-40	0.35 Nl
DN 50	1.10 Nl
DN 65-100	2.50 Nl

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	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	7.1	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.

		Control function 1			Control functions 2 + 3			K_v value
MG**	DN	Operating pressure EPDM / FPM	Operating pressure PTFE	Control pressure	Operating pressure EPDM / FPM	Operating pressure PTFE	Control pressure*	(m^3/h)
25	15	0 - 10 bar	0 - 6 bar	5.5 - 7.0 bar	0 - 10 bar	0 - 6 bar	max. 5.5 bar	5.6
	20							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 - 8 bar	0 - 6 bar	5.0 - 7.0 bar	0 - 8 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

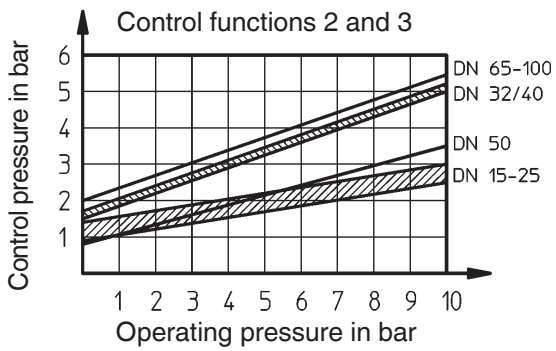
All pressures are given as gauge pressures, working pressure applied upstream only. Given Kv values with diaphragm material EPDM.
*For required control pressure depending on operating pressure see diagram below ** Diaphragm size

O-ring material for valve bodies with union ends

Diaphragm material	O-ring material
CSM	EPDM
NBR	EPDM
FPM	FPM
EPDM	EPDM
PTFE	FPM

Other combinations upon request

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



Order data

Body configuration	Code
Straight through	D

Connection	Code
Spigots DIN for socket 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
Spigots for IR butt welding	20
Spigots for IR butt welding, BCF	28
Spigots - inch	30
Union ends with inch insert (socket)	33
Flanges ANSI class 125/150 RF length EN 558, series 1 ISO 5752, basic series 1	39
Union ends with DIN insert (IR butt welding)	78

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

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	(NC)	1
Normally open	(NO)	2
Double acting	(DA)	3

Actuator size	Code
Diaphragm size 25	1/N
Diaphragm size 40	2/N
Diaphragm size 50	3/N
Diaphragm size 80	4/N
Diaphragm size 100	5/N

Order example	690	25	D	7	1	14	1	1/N
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	
Actuator size (code)								1/N

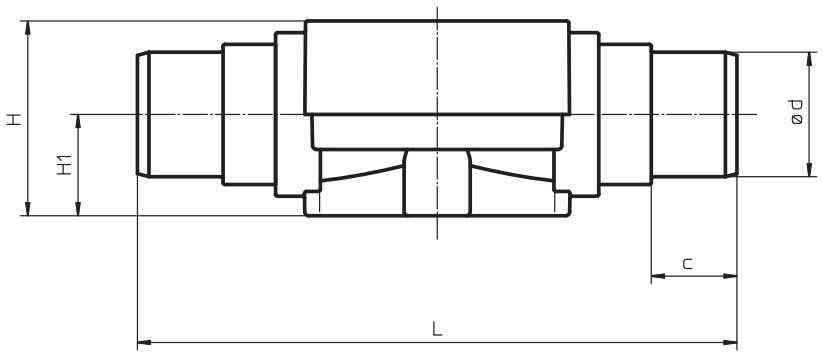
Body dimensions

Spigots DIN, connection code 0 [mm] Valve body material PVC-U (code 1), PP (code 5), PVDF (code 20), Lining PPH (code 71)										
MG	DN	L	H			H1	ød	c		
			Material code 1	Material code 5	Material code 20, 71			Material code 1	Material code 5	Material code 20, 71
25	15	124	45	-	50	26	20	16	-	18
	20	144	45	-	50	26	25	19	-	19
	25	154	45	-	50	26	32	22	-	22
40	32	174	74	-	74	40	40	26	-	24
	40	194	74	-	74	40	50	31	-	26
50	50	224	78	-	82	40	63	39	-	29
80	65	284	117	117	117	55	75	44	44	44
	80	300	117	117	117	55	90	51	51	51
100	100	340	140	140	140	65	110	61	61	61

For materials see overview on last page. MG = diaphragm size

Spigots INCH, connection code 30 [mm] Valve body material PVC-U (code 1), ABS (code 4)							
MG	DN		L	H	H1	ød	c
25	15	1/2”	141	45	26	21.4	24
	20	3/4”	145	45	26	26.7	27
	25	1”	154	45	26	33.6	30
40	32	11/4”	174	68	40	42.2	33
	40	11/2”	194	68	40	48.3	39
50	50	2”	224	75	40	60.3	40
80	65	21/2”	284	117	55	73.1	44
	80	3”	300	117	55	88.9	51
100	100	4”	340	140	65	114.3	61

For materials see overview on last page. MG = diaphragm size

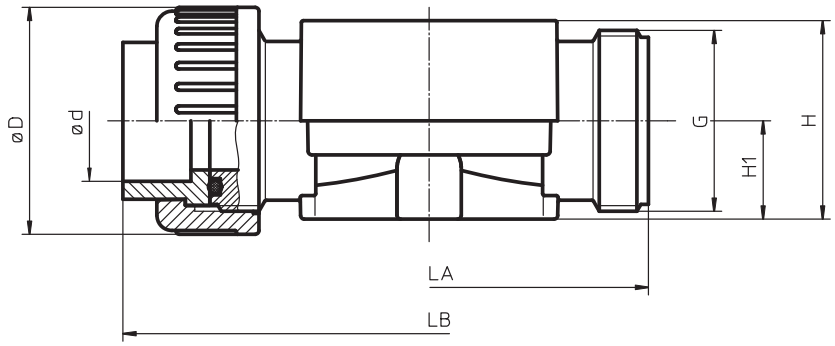


Union ends with insert (socket) connection code 7, 33 [mm]

Valve body material PVC-U (code 1), PVDF (code 20), Lining PPH (code 71)

								Connection code 7				Connection code 33	
MG	DN	NPS	G	øD	LA	H	H1	LB Material code 1	LB Material code 20	LB Material code 71	ød	LB	ød
25	15	1/2”	G1	43	108	50	26	146	146	143	20	146	21.4
	20	3/4”	G11/4	53	108	50	26	152	150	146	25	152	26.7
	25	1”	G11/2	60	116	50	26	166	162	158	32	166	33.6
40	32	11/4”	G2	74	134	74	40	192	184	181	40	192	42.2
	40	11/2”	G21/4	83	154	74	40	222	210	207	50	222	48.3
50	50	2”	G23/4	103	182	82	40	264	246	243	63	264	60.3

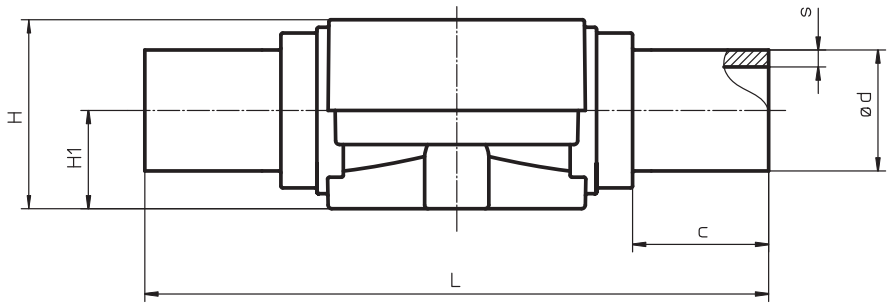
For materials see overview on last page. MG = diaphragm size



Spigots for IR butt welding, connection code 20 [mm]
Valve body material PVDF (code 20), Lining PPH (code 71)

MG	DN	L	H	H1	ød	s		c
						Material code 20	Material code 71	
25	15	154	50	26	20	-	1.9	33
	20	154	50	26	25	-	2.3	33
	25	154	50	26	32	-	2.9	33
40	32	194	74	40	40	-	3.7	33
	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	300	117	55	90	4.3	-	51
100	100	340	140	65	110	5.3	-	51

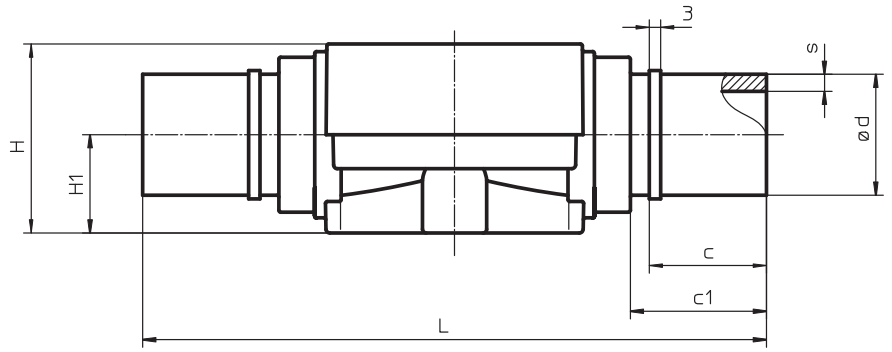
For materials see overview on last page. MG = diaphragm size



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

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

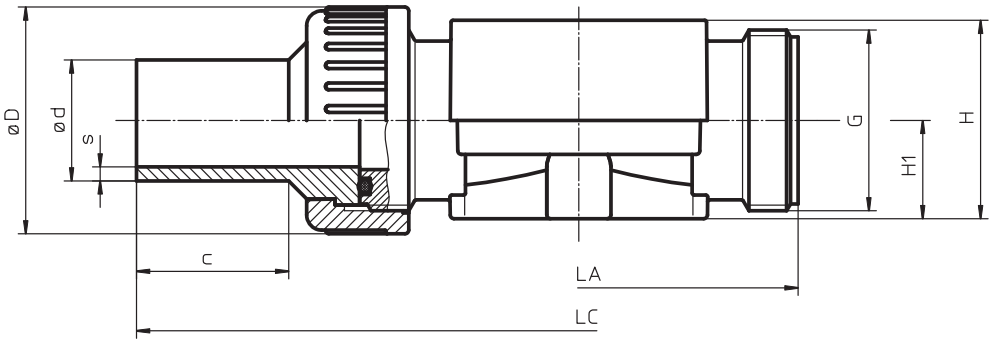
For materials see overview on last page. MG = diaphragm size



Union ends with insert, connection code 78 [mm]
Valve body material PVDF (code 20), Lining PPH (code 71)

MG	DN	LA	LC	H	H1	øD	ød	G	s		c
									Material code 20	Material code 71	
25	15	108	214	50	26	43	20	G 1	1.9	1.9	36
	20	108	220	50	26	53	25	G 1 1/4	1.9	2.3	37
	25	116	234	50	26	60	32	G 1 1/2	2.4	2.9	39
40	32	134	258	74	40	74	40	G 2	2.4	3.7	39
	40	154	284	74	40	83	50	G 2 1/4	3.0	4.6	43
50	50	182	318	82	40	103	63	G 2 3/4	3.0	5.8	43

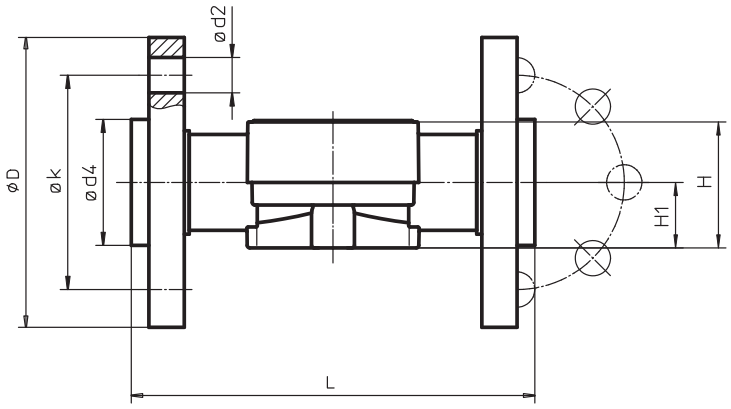
For materials see overview on last page. MG = diaphragm size



Flanges, connection code 4, 39 [mm]
Valve body material PP (code 5), PVDF (code 20), Lining PPH (code 71)

					Connection code 4						Connection code 39					
MG	DN	L	H	H1	ø D	ø d2	ø d4		ø k	Number of bolt holes	ø D	ø d2	ø d4		ø k	Number of bolt holes
Material code							5, 71	20					5, 71	20		
25	15	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	45	65	4	95	16	45	45	60	4
	20	150			105	14	58	58	75	4	105	16	54	58	70	4
	25	160			115	14	68	68	85	4	115	16	63	68	79	4
40	32	180			140	18	78	78	100	4	140	16	73	78	89	4
	40	200			150	18	88	88	110	4	150	16	82	88	98	4
50	50	230			165	18	102	102	125	4	165	19	102	102	121	4
80	65	290			185	18	122	120	145	4	185	19	122	120	140	4
	80	310			200	18	138	125	160	8	200	19	133	125	152	4
100	100	350			220	18	158	150	180	8	229	19	158	150	190	8

For materials see overview on last page. MG = diaphragm size * Length is not according to EN 558-1 series 1



Overview of valve bodies for GEMÜ 690

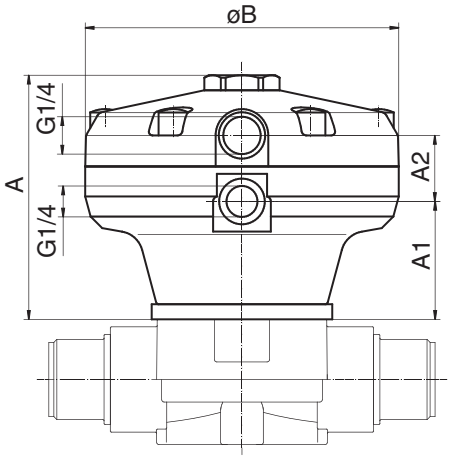
Connectio code		0				4			7			20		28	30		33	39			78	
Material code		1	5	20	71	5	20	71	1	20	71	20	71	20	1	4	1	5	20	71	20	71
MG	DN																					
25	15	X	-	X	X	-	X	X	X	X	X	-	X	X	X	X	X	-	X	X	X	X
	20	X	-	X	X	-	X	X	X	X	X	-	X	X	X	X	X	-	X	X	X	X
	25	X	-	X	X	-	X	X	X	X	X	-	X	X	X	X	X	-	X	X	X	X
40	32	X	-	X	X	-	X	X	X	X	X	-	X	X	X	X	X	-	X	X	X	X
	40	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
80	65	X*	X*	X*	-	X*	X*	-	-	-	-	X*	-	-	X*	X*	-	X*	X*	-	-	-
	80	X*	X*	X*	-	X*	X*	-	-	-	-	X*	-	-	X*	X*	-	X*	X*	-	-	-
100	100	X*	X*	X*	-	X*	X*	-	-	-	-	X*	-	-	X*	X*	-	X*	X*	-	-	-

*Valve bodies are not suitable for use with diaphragms code 5E and 5F.

MG = diaphragm size

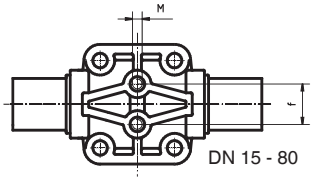
Actuator dimensions control functions 2 and 3 (mm)

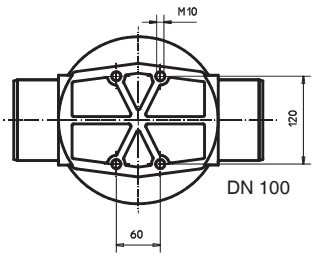
Diaphragm size	ø B	A	A1	A2
25	125	98	47	27
40	155	135	75	27
50	210	164	90	29
80	260	226	127	41
100	260	263	149	46



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.

TÜV CERT DIN EN ISO 9001 Zertifikat: 09 100 4136

GEMÜ® VALVES, MEASUREMENT AND CONTROL SYSTEMS

GEMÜ Gebr. Müller · Apparatebau GmbH & Co. KG · Fritz-Müller-Str. 6-8 · D-74653 Ingelfingen-Criesbach · Tel. +49 (0) 7940/123-0 · Telefax +49 (0) 7940/123-224
info@gemue.de · www.gemue.de

Subject to alteration · 05/2009 · 88048766