

Diaphragm Valve, Plastic

Construction

The GEMÜ 693 motorized 2/2-way diaphragm valve has a low maintenance electric actuator with a toothed belt drive and a reversible synchronous motor. A manual override and an optical position indicator are standard.

Features

- Suitable for inert and corrosive* liquid and gaseous media
- Chemical resistance of actuator
- Valve body and diaphragm available in various materials and designs
- Insensitive to particulate media
- The valve stroke can be limited by means of adjustable limit switches
- Suitable for use as a control valve (with GEMÜ 1283)
- Optional flow direction and mounting position

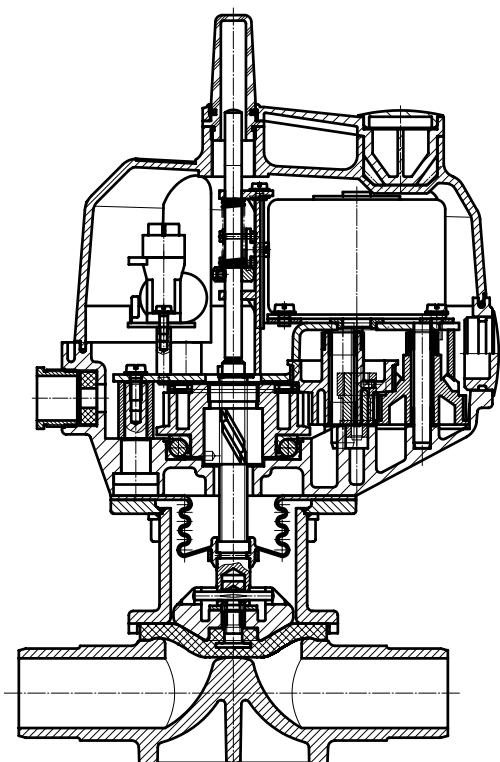
Advantages

- Hermetic separation between medium and actuator
- Consistent control system and reliable opening and closing action
- Direct 0/4 - 20 mA signal processing using the additional module GEMÜ 1283
- Electrical position feedback by means of a potentiometer available as an option

*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.

Working medium temperature

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

Optional position feedback

Actual value potentiometer (functional module AP) 10 kΩ

Permissible temperatures

Storage temperature -15 to +55 °C

Power consumption

10 VA

Rating

Continuously rated

Operating time

Standard version approx. 20 sec.

Protection class

IP 65 acc. to DIN 40050

Cable gland

2 x PG 13.5

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-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.

Diaphragm size	DN	Operating pressure		Kv value [m³/h]
		EPDM / FPM	PTFE	
25	15	0 - 10 bar	0 - 6 bar	5.6
	20			8.2
	25			10.5
40	32	0 - 6 bar	0 - 6 bar	18.0
	40			25.0
50	50	0 - 6 bar	0 - 4 bar	46.0

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.

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	

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
Spigots for IR butt welding	20
Spigots for IR butt welding, BCF	28
Spigots - inch	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 DIN insert (for IR butt welding)	78
For overview of available valve bodies for GEMÜ 693 see page 8	

Diaphragm material	Code
NBR	2
FPM	4
EPDM	14
PTFE/EPDM, PTFE laminated	52

Voltage/Frequency	Code
24V 50/60 Hz ± 10%	C4
120V 50/60 Hz ± 10%	G4
230V 50/60 Hz ± 10%	L4

Functional module	Code
OPEN / CLOSE control with additional end position feedback	AE
OPEN / CLOSE control with potentiometer output	AP

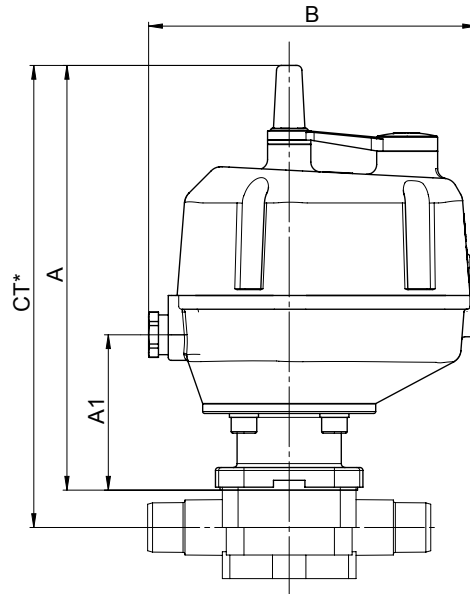
Valve body material	Code
PVC-U, grey	1
ABS	4
PVDF	20
Inliner PP-H grey / outliner PP reinforced	71

Order example	693	15	D	0	1	14	L4	AE
Type	693							
Nominal size		15						
Body configuration (code)			D					
Connection (code)				0				
Valve body material (code)					1			
Diaphragm material (code)						14		
Voltage/Frequency (code)							L4	
Functional module (code)								AE

Dimensions [mm]

Actuator dimensions

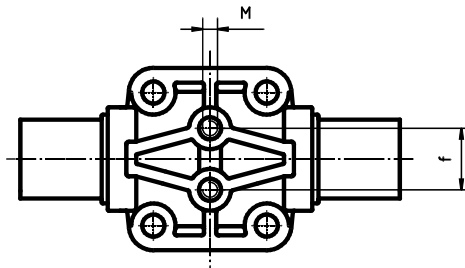
Diaphragm size	DN	B	A	A1	Weight [kg]
25	15 - 25	169 x 135	222	82	2.35
40	32 - 40	169 x 135	271	131	2.90
50	50	169 x 135	278	138	3.30



* CT = A + H1 (see body dimensions)

Valve body mounting dimensions [mm]

Diaphragm size	M	f	Depth of thread
25	M 6	25.0	14
40	M 8	44.5	17
50	M 8	44.5	17



Body dimensions [mm]

Spigots - DIN, connection code 0

Valve body material: PVC-U (code 1), PP (code 5), PVDF (code 20), inliner PP-H (code 71)

MG	DN	NPS	L	H		H1		ød	c		Weight [kg]
				Material code 1	Material code 20, 71	Material code 1	Material code 20, 71		Material code 1	Material code 20, 71	
25	15	1/2"	124	45	50	19	24	20	16	18	0.24
	20	3/4"	144	45	50	19	24	25	19	19	0.24
	25	1"	154	45	50	19	24	32	22	22	0.34
40	32	1 1/4"	174	74	74	34	34	40	26	24	0.65
	40	1 1/2"	194	74	74	34	34	50	31	26	0.70
50	50	2"	224	78	82	38	42	63	39	29	1.10

For materials see overview on page 8

MG = diaphragm size

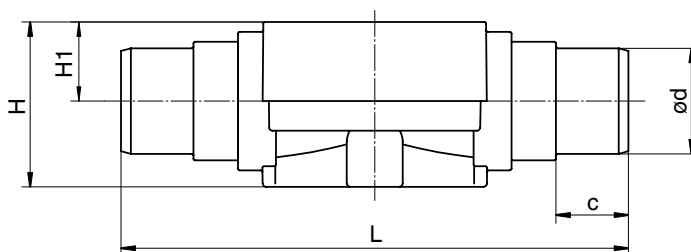
Spigots - inch, connection code 30

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

MG	DN	NPS	L	H	H1	ød	c	Weight [kg]
25	15	1/2"	141	45	19	21.4	24	0.24
	20	3/4"	145	45	19	26.7	27	0.24
	25	1"	154	45	19	33.6	30	0.34
40	32	1 1/4"	174	74	34	42.2	33	0.65
	40	1 1/2"	194	74	34	48.3	39	0.70
50	50	2"	224	75	35	60.3	40	1.10

For materials see overview on page 8

MG = diaphragm size

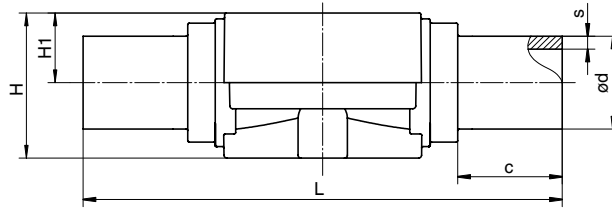


Body dimensions [mm]

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

MG	DN	L	H	H1	ød	s	c	Weight [kg]
25	15	154	50	24	20	1.9	33	0.18
	20	154	50	24	25	2.3	33	0.18
	25	154	50	24	32	2.9	33	0.18
40	32	194	74	34	40	3.7	33	0.43
	40	194	74	34	50	4.6	33	0.64
50	50	224	82	42	63	5.8	33	0.69

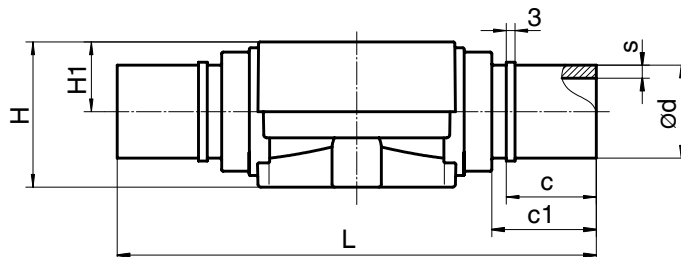
MG = diaphragm size



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

MG	DN	L	H	H1	ød	c	c1	s	Weight [kg]
25	15	154	50	24	20	31	37	1.9	0.24
	20	154	50	24	25	31	37	1.9	0.25
	25	154	50	24	32	31	37	2.4	0.26
40	32	194	74	34	40	40	46	2.4	0.65
	40	194	74	34	50	40	46	3.0	0.66
50	50	224	82	42	63	40	46	3.0	1.10

MG = diaphragm size



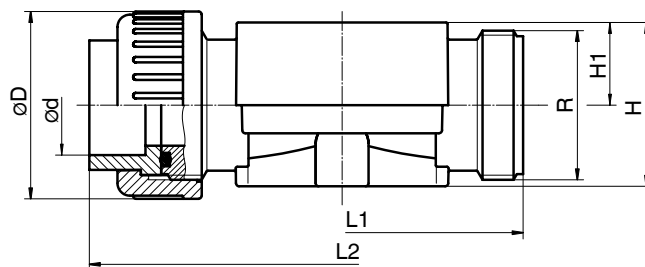
Body dimensions [mm]

Union ends with insert, connection code 7, 33 Valve body material: PVC-U (code 1), PVDF (code 20), inliner PP-H (code 71)

MG	DN	NPS	R	øD	L1	H	H1	Connection code 7			Connection code 33		Weight [kg]	
								L2			ød	L2		ød
								Material code 1	Material code 20	Material code 71				
25	15	1/2"	G 1	43	108	50	24	146	146	143	20	146	21.4	0.32
	20	3/4"	G 1 1/4	53	108	50	24	152	150	146	25	152	26.7	0.38
	25	1"	G 1 1/2	60	116	50	24	166	162	158	32	166	33.6	0.42
40	32	1 1/4"	G 2	74	134	74	34	192	184	181	40	192	42.2	0.88
	40	1 1/2"	G 2 1/4	83	154	74	34	222	210	207	50	222	48.3	0.97
50	50	2"	G 2 3/4	103	182	82	42	264	246	243	63	264	60.3	1.60

For materials see overview on page 8

MG = diaphragm size

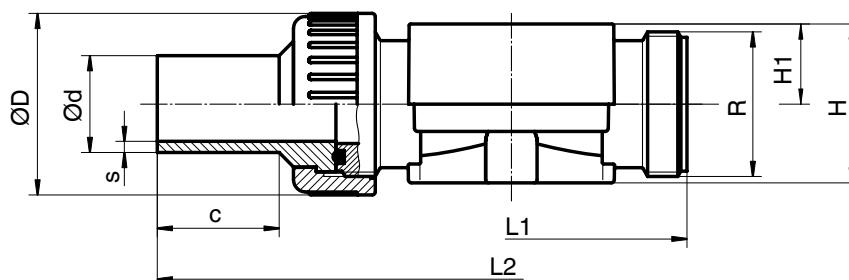


Union ends with insert, connection code 78 Valve body material: PVDF (code 20), inliner PP-H (code 71)

MG	DN	L1	L2	H	H1	øD	ød	R	S		c	Weight [kg]
									Material code 20	Material code 71		
25	15	108	214	50	24	43	20	G 1	1.9	1.9	36	0.34
	20	108	220	50	24	53	25	G 1 1/4	1.9	2.3	37	0.39
	25	116	234	50	24	60	32	G 1 1/2	2.4	2.9	39	0.45
40	32	134	258	74	34	74	40	G 2	2.4	3.7	39	0.88
	40	154	284	74	34	83	50	G 2 1/4	3.0	4.6	43	1.10
50	50	182	318	82	42	103	63	G 2 3/4	3.0	5.8	43	1.70

For materials see overview on page 8

MG = diaphragm size



Body dimensions [mm]

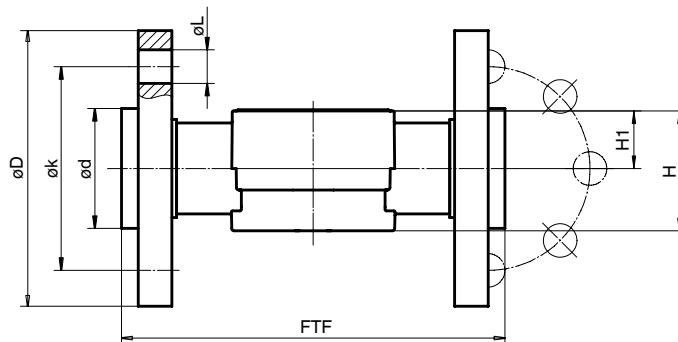
Flanges, connection code 4, 39 Valve body material: PVDF (code 20), inliner PP-H (code 71)

					Connection code 4					Connection code 39							
MG	DN	FTF	H	H1	øD	øL	ød		øk	Number of bolts	øD	øL	ød		øk	Number of bolts	Weight [kg]
Material code							71	20					71	20			
25	15	150*	depending on material code see body dimensions page 5 connection code 0	depending on material code see body dimensions page 5 connection code 0	95	14	45	45	65	4	95	16	45	45	60	4	0.73
	20	150			105	14	58	58	75	4	105	16	54	54	70	4	0.89
	25	160			115	14	68	68	85	4	115	16	63	63	79	4	1.30
40	32	180			140	18	78	78	100	4	140	16	73	73	89	4	2.10
	40	200			150	18	88	88	110	4	150	16	82	82	98	4	2.50
50	50	230			165	18	102	102	125	4	165	19	102	102	121	4	3.20

For materials see overview below

MG = diaphragm size

* Length is not according to EN 558 series 1



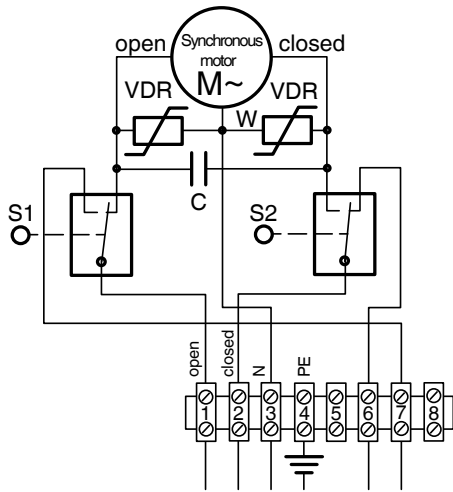
Overview of valve bodies for GEMÜ 693

Connection code		0		4		7			20	28	30		33	39		78		
Material code		1	20	71	20	71	1	20	71	71	20	1	4	1	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

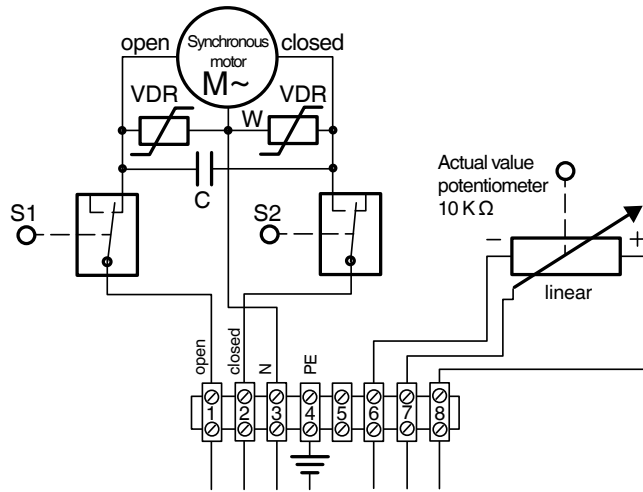
MG = diaphragm size

Connection diagram GEMÜ 693

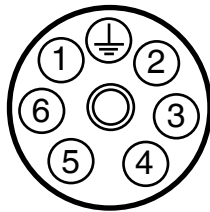
Functional module AE



Functional module AP

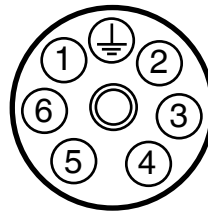


Functional module AE OPEN / CLOSE control with 2 additional end position feedback signals and Hirschmann plug N 6 R AM2 (design: 6027)



Pin	Designation
1	L1, motor voltage for direction of travel OPEN
2	L1, motor voltage for direction of travel CLOSED
3	N, reference voltage
4	L1, S1/S2 (23) limit switch
5	Us, S2 (24) CLOSED end position [Us=Ub]
6	Us, S1 (24) OPEN end position [Us=Ub]
7	⊥, PE

Functional module AP OPEN / CLOSE control with potentiometer output and Hirschmann plug N 6 R AM2 (design: 6027)



Pin	Designation
1	L1, motor voltage for direction of travel OPEN
2	L1, motor voltage for direction of travel CLOSED
3	N, reference voltage
4	Us +, actual value potentiometer, signal voltage
5	Us -, actual value potentiometer, signal output
6	Us ⊥, actual value potentiometer, signal voltage
7	⊥, PE

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