

Diaphragm Valve, Metal

Construction

The GEMÜ 635 pneumatically operated 2/2-way diaphragm valve has a low maintenance piston actuator which can be controlled by inert gaseous media. An optical position indicator is integrated as standard. Normally Closed, Normally Open and Double Acting control functions are available.

Features

- Suitable for inert and corrosive* liquid and gaseous media
- Valve body and diaphragm available in various materials and designs
- Connection for pilot valves to NAMUR (except actuator size 1/N)
- Control connection positioned in-line with flow direction as standard, thus installable in extremely restricted spaces
- Versions according to ATEX on request

Advantages

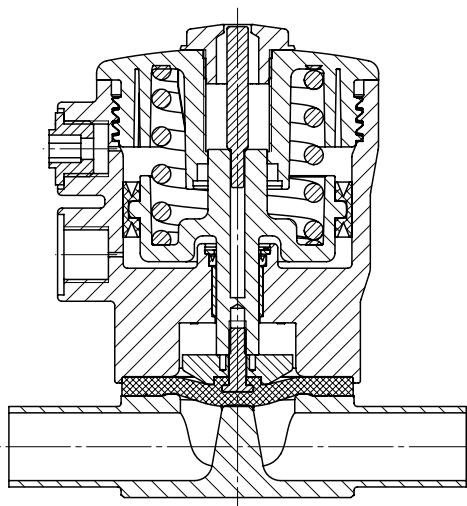
- Compact design
- Optional accessories:
 - Electrical position indicator
 - Electrical position indicator with microswitches or proximity switches
 - Pneumatic or electro-pneumatic positioner

*see information on working medium on page 2



Diaphragm size 10
DN 10 - 20

Sectional drawing



Diaphragm size 25 - 50
DN 15 - 50

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.

The valve will seal in both flow directions up to full operating pressure (gauge pressure).

Temperatures

Medium temperature -10 ... 80 °C
(dependent on medium wetted materials)

Control medium

Min. required control pressure see table below

Max. permiss. control pressure 6 bar

Max. permissible temperature of control medium 40 °C

Filling volume:

Actuator size 1/N 0.02 dm³

Actuator size 2/N 0.25 dm³

Actuator size 3/N 0.50 dm³

Actuator size 4/N 0.80 dm³

Actuator Code	MG	DN	Control function 1			Control function 2 and 3		
			Operating pressure [bar]		Control pressure [bar]	Operating pressure [bar]		Control pressure [bar]
			EPDM/FPM	PTFE		EPDM/FPM	PTFE	
1/N	10	10	0 - 10	0 - 6	3.2 - 6	-	-	-
1/N		12						
1/N		15						
1/N		20						
2/N	25	15	0 - 10	0 - 6	4.0 - 6	0 - 10	0 - 6	max. 3,8
2/N		20						
2/N		25						
3/N	40	32	0 - 10	0 - 6	4.0 - 6	0 - 10	0 - 6	max. 4,5
3/N		40						
4/N	50	50	0 - 10	0 - 6	5.0 - 6	0 - 10	0 - 6	max. 4,5

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. MG = diaphragm size

Kv values [m ³ /h]								
Pipe standard	DIN	EN 10357 series B (formerly DIN 11850 series 1)	EN 10357 series A (formerly DIN 11850 series 2) / DIN 11866 series A	DIN 11850 Series 3	SMS 3008	ASME BPE / DIN 11866 series C	ISO 1127 / EN 10357 series C / DIN 11866 series B	
Connection code	0	16	17	18	37	59	60	
MG	DN							
10	10	-	2.4	2.4	2.4	-	2.2	3.3
	15	3.3	3.8	3.8	3.8	-	2.2	4.0
	20	-	-	-	-	-	3.8	-
25	15	4.1	4.7	4.7	4.7	-	-	7.4
	20	6.3	7.0	7.0	7.0	-	4.4	13.2
	25	13.9	15.0	15.0	15.0	12.6	12.2	16.2
40	32	25.3	27.0	27.0	27.0	26.2	-	30.0
	40	29.3	30.9	30.9	30.9	30.2	29.5	32.8
50	50	46.5	48.4	48.4	48.4	51.7	50.6	55.2
	65	-	-	-	-	62.2	61.8	-

MG = diaphragm size

Kv values determined acc. to DIN EN 60534, inlet pressure 5 bar, Δp 1 bar, stainless steel valve body (forged body) and soft elastomer diaphragm. The Kv values for other product configurations (e.g. other diaphragm or body materials) may differ. In general, all diaphragms are subject to the influences of pressure, temperature, the process and their tightening torques. Therefore the Kv values may exceed the tolerance limits of the standard.

The Kv value curve (Kv value dependent on valve stroke) can vary depending on the diaphragm material and duration of use.

Order data

Body configuration	Code
2/2-way body	D

Connection	Code
Butt weld spigots	
Spigots DIN	0
Spigots EN 10357 series B (formerly DIN 11850 series 1)	16
Spigot EN 10357 series A (formerly DIN 11850 series 2) / DIN 11866 series A	17
Spigots DIN 11850 series 3	18
Spigots JIS-G 3447	35
Spigots JIS-G 3459	36
Spigots SMS 3008	37
Spigots BS 4825 Part 1	55
Spigot ASME BPE / DIN 11866 series C	59
Spigot ISO 1127 / EN 10357 series C / DIN 11866 series B	60
Spigots ANSI/ASME B36.19M Schedule 10s	63
Spigots ANSI/ASME B36.19M Schedule 40s	65
Threaded connections	
Threaded sockets DIN ISO 228	1
For overview of available valve bodies see page 8	

Valve body material	Code
1.4435, investment casting	C3
1.4408, investment casting	37
1.4435 (316 L), forged body	40
1.4435 (BN2), forged body Δ Fe<0,5%	42
1.4539, forged body	F4

Diaphragm material	Code
FPM	4
EPDM	13
EPDM	17
EPDM	19
EPDM	36
PTFE / EPDM, one-piece	54
PTFE / EPDM, two-piece	5M

Control function	Code
Normally closed (NC) MG 10 - 50	1
Normally open (NO) MG 25 - 50 (actuator size 2/N, 3/N, 4/N)	2
Double acting (DA) MG 50 (actuator size code 4/N)	3
MG = diaphragm size	

Actuator size	Code
Piston ø 54 diaphragm size 10	1/N
Piston ø 85 diaphragm size 25	2/N
Piston ø 105 diaphragm size 40	3/N
Piston ø 125 diaphragm size 50	4/N

Surface finish	Code
Code see page 4	

Order example	635	15	D	60	C3	13	1	2/N	1500
Type	635								
Nominal size		15							
Body configuration (code)			D						
Connection (code)				60					
Valve body material (code)					C3				
Diaphragm material (code)						13			
Control function (code)							1		
Actuator size (code)								2/N	
Surface finish (code see page 4)									1500

Order data

Internal surface finishes for forged and block material bodies ¹

Readings for Process Contact Surfaces	Mechanically polished ²		Electropolished	
	Hygienic class DIN 11866	Code	Hygienic class DIN 11866	Code
Ra ≤ 0.80 µm	H3	1502	HE3	1503
Ra ≤ 0.60 µm	-	1507	-	1508
Ra ≤ 0.40 µm	H4	1536	HE4	1537
Ra ≤ 0.25 µm ³	H5	1527	HE5	1516

Readings for Process Contact Surfaces acc. to ASME BPE 2016 ⁴	Mechanically polished ²		Electropolished	
	ASME BPE Surface Designation	Code	ASME BPE Surface Designation	Code
Ra Max. = 0.76 µm (30 µinch)	SF3	SF3	-	-
Ra Max. = 0.64 µm (25 µinch)	SF2	SF2	SF6	SF6
Ra Max. = 0.51 µm (20 µinch)	SF1	SF1	SF5	SF5
Ra Max. = 0.38 µm (15 µinch)	-	-	SF4	SF4

Internal surface finishes for investment cast bodies

Readings for Process Contact Surfaces	Mechanically polished ²	
	Hygienic class DIN 11866	Code
Ra ≤ 6.30 µm	-	1500
Ra ≤ 0.80 µm	H3	1502
Ra ≤ 0.60 µm ⁵	-	1507

¹ Surface finishes of customized valve bodies may be limited in special cases.

² Or any other finishing method that meets the Ra value (acc. to ASME BPE).

³ The smallest possible Ra finish for pipe connections with an internal pipe diameter < 6 mm is 0.38 µm.

⁴ When using these surfaces, the bodies are marked according to the specifications of ASME BPE.

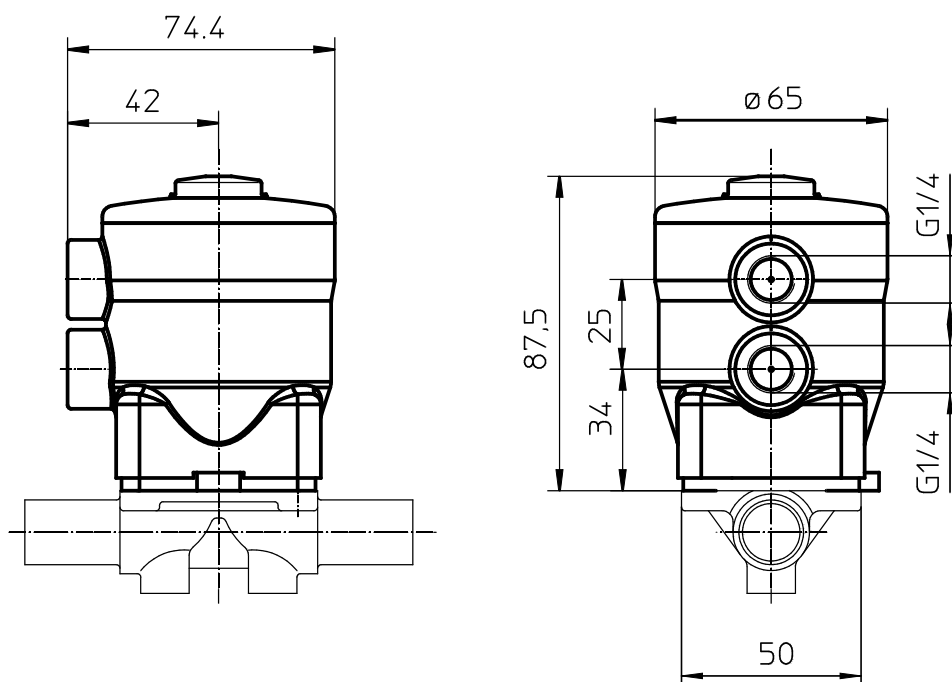
The surfaces are only available for valve bodies which are made of materials (e.g. GEMÜ material codes 40, 41, F4, 44) and use connections (e.g. GEMÜ connection codes 59, 80, 88) according to ASME BPE.

⁵ Not possible for GEMÜ connection code 59, DN 8 and GEMÜ connection code 0, DN 4.

Ra acc. to DIN EN ISO 4288 and ASME B46.1

Dimensions [mm]

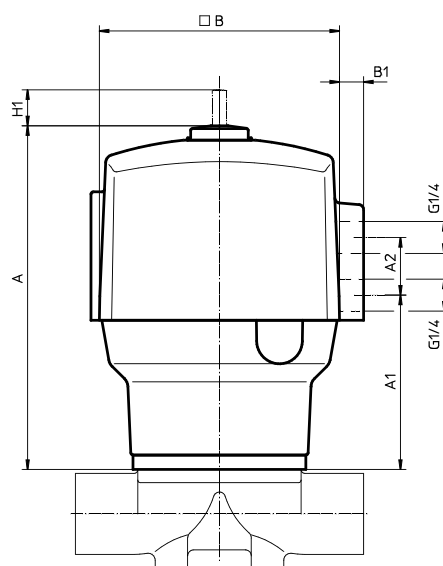
Actuator dimensions 1/N



Actuator dimensions 2/N, 3/N, 4/N

Actuator size	MG	□ B	B1	A	A1	A2	H1
2/N	25	100	11	122	73	24	9
3/N	40	125	9	173	93	65	13
4/N	50	150	8	211	110	65	18

MG = diaphragm size



Body dimensions [mm]

Butt weld spigots, connection code 0, 16, 17, 18 Valve body material: Investment casting (code C3), forged body (code 40, F4)

Pipe standard							DIN		EN 10357 series B (formerly DIN 11850 series 1)		EN 10357 series A (formerly DIN 11850 series 2) / DIN 11866 series A		DIN 11850 Series 3		Weight [kg]
Connection code							0		16		17		18		
MG	DN	NPS	L	c	H1*	H1**	ød	s	ød	s	ød	s	ød	s	
10	10	3/8"	108	25	12.5		-	-	12	1.0	13	1.5	14	2.0	0.30
	15	1/2"	108	25	12.5		18	1.5	18	1.0	19	1.5	20	2.0	0.30
25	15	1/2"	120	25	13.0	19.0	18	1.5	18	1.0	19	1.5	20	2.0	0.62
	20	3/4"	120	25	16.0	19.0	22	1.5	22	1.0	23	1.5	24	2.0	0.58
	25	1"	120	25	19.0	19.0	28	1.5	28	1.0	29	1.5	30	2.0	0.55
40	32	1 1/4"	153	25	24.0	26.0	34	1.5	34	1.0	35	1.5	36	2.0	1.45
	40	1 1/2"	153	25	26.0	26.0	40	1.5	40	1.0	41	1.5	42	2.0	1.32
50	50	2"	173	30	32.0	32.0	52	1.5	52	1.0	53	1.5	54	2.0	2.25

* only for investment cast design

** only for forged design

MG = diaphragm size

For materials see overview on page 8

Butt weld spigots, connection code 60 Valve body material: Investment casting (code C3), forged body (code 40, F4)

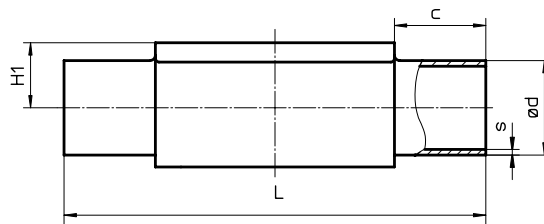
Pipe standard							ISO 1127 / EN 10357 series C / DIN 11866 series B		Weight [kg]
Connection code							60		
MG	DN	NPS	L	c	H1*	H1**	ød	s	
10	10	3/8"	108	25	12.5	12.5	17.2	1.6	0.30
	15	1/2"	108	25	12.5	12.5	21.3	1.6	0.30
25	15	1/2"	120	25	13.0	19.0	21.3	1.6	0.62
	20	3/4"	120	25	16.0	19.0	26.9	1.6	0.58
	25	1"	120	25	19.0	19.0	33.7	2.0	0.55
40	32	1 1/4"	153	25	24.0	26.0	42.4	2.0	1.45
	40	1 1/2"	153	25	26.0	26.0	48.3	2.0	1.32
50	50	2"	173	30	32.0	32.0	60.3	2.0	2.25

* only for investment cast design

** only for forged design

MG = diaphragm size

For materials see overview on page 8



Body dimensions [mm]

Butt weld spigots, connection code 35, 36, 37 Valve body material: Investment casting (code C3), forged body (code 40, F4)

Pipe standard							JIS-G 3447		JIS-G 3459		SMS 3008		Weight [kg]
Connection code							35		36		37		
MG	DN	NPS	L	c	H1*	H1**	ød	s	ød	s	ød	s	
10	10	3/8"	108	25	-	12.5	-	-	17.3	1.65	-	-	0.30
	15	1/2"	108	25	-	12.5	-	-	21.7	2.10	-	-	0.30
25	15	1/2"	120	25	-	19.0	-	-	21.7	2.10	-	-	0.62
	20	3/4"	120	25	-	19.0	-	-	27.2	2.10	-	-	0.58
	25	1"	120	25	19.0	19.0	25.4	1.2	34.0	2.80	25.0	1.2	0.55
40	32	1 1/4"	153	25	-	26.0	31.8	1.2	42.7	2.80	33.7	1.2	1.45
	40	1 1/2"	153	25	26.0	26.0	38.1	1.2	48.6	2.80	38.0	1.2	1.32
50	50	2"	173	30	32.0	32.0	50.8	1.5	60.5	2.80	51.0	1.2	2.25
	65	2 1/2"	173	30	-	34.0	63.5	2.0	-	-	63.5	1.6	2.20

* only for investment cast design

** only for forged design

MG = diaphragm size

For materials see overview on page 8

Butt weld spigots, connection code 55, 59, 63, 65 Valve body material: Investment casting (code C3), forged body (code 40, F4)

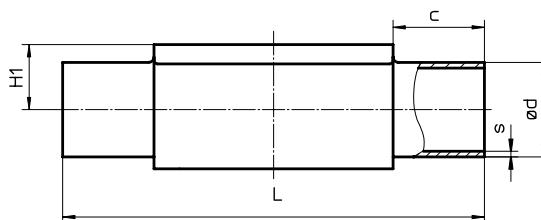
Pipe standard							BS 4825 Part 1		ASME BPE / DIN 11866 series C		ANSI/ASME B36.19M Schedule 10s		ANSI/ASME B36.19M Schedule 40s		Weight [kg]
Connection code							55		59		63		65		
MG	DN	NPS	L	c	H1*	H1**	ød	s	ød	s	ød	s	ød	s	
10	10	3/8"	108	25	-	12.5	9.53	1.2	9.53	0.89	17.1	1.65	17.1	2.31	0.30
	15	1/2"	108	25	-	12.5	12.70	1.2	12.70	1.65	21.3	2.11	21.3	2.77	0.30
	20	3/4"	108	25	12.5	12.5	19.05	1.2	19.05	1.65	-	-	-	-	0.30
25	15	1/2"	120	25	-	19.0	-	-	-	-	21.3	2.11	21.3	2.77	0.62
	20	3/4"	120	25	16.0	19.0	19.05	1.2	19.05	1.65	26.7	2.11	26.7	2.87	0.58
	25	1"	120	25	19.0	19.0	-	-	25.40	1.65	33.4	2.77	33.4	3.38	0.55
40	32	1 1/4"	153	25	-	26.0	-	-	-	-	42.2	2.77	42.2	3.56	1.45
	40	1 1/2"	153	25	26.0	26.0	-	-	38.10	1.65	48.3	2.77	48.3	3.68	1.32
50	50	2"	173	30	32.0	32.0	-	-	50.80	1.65	60.3	2.77	60.3	3.91	2.25
	65	2 1/2"	173	30	-	34.0	-	-	63.50	1.65	-	-	-	-	2.10

* only for investment cast design

** only for forged design

MG = diaphragm size

For materials see overview on page 8

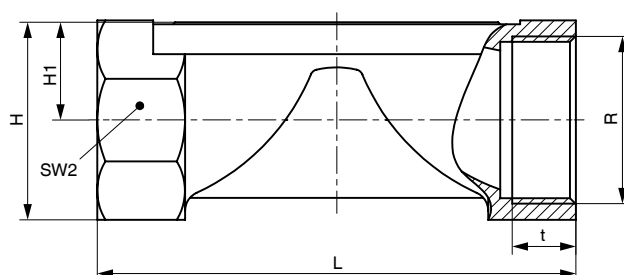


Body dimensions [mm]

Threaded sockets, connection code 1 Valve body material: investment casting (code 37)

MG	DN	R	H	H1	t	L	SW2	Number of flats	Weight [kg]
10	12	G 3/8	25	13	12	55	22	6	0.17
	15	G 1/2	30	15	15	68	27	2	0.26
25	15	G 1/2	29	16	15	85	27	6	0.32
	20	G 3/4	32	16	16	85	32	6	0.34
	25	G 1	37	16	13	110	41	6	0.39
40	32	G 1 1/4	49	24	20	120	50	8	0.88
	40	G 1 1/2	52	24	18	140	55	8	0.93
50	50	G 2	68	33	26	165	70	8	1.56

MG = Diaphragm size



Overview of valve bodies for GEMÜ 635

		Threaded connections	Spigots														
Connection code		1	0	16	17	18	35	36	37	55	59	60	63	65			
Material code		37	40	40	C3	40	40	40	C3	40	40	C3	40	C3	40	40	40
MG	DN																
10	10	-	-	X	X	X	X	-	X	-	-	X	-	X	X	X	X
	12	X	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	15	X	X	X	X	X	X	-	X	-	-	X	-	X	X	X	X
	20	-	-	-	-	-	-	-	-	-	-	X	X	X	-	-	-
25	15	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	X	X
40	32	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
50	50	X	X	X	X	X	X	X	X	X	X	-	X	X	X	X	X
	65	-	-	-	-	-	-	X	-	-	X	-	-	X	-	-	-

Availability of material code 42, F4: same as code 40

MG = diaphragm size

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

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AND CONTROL SYSTEMS

