

# 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

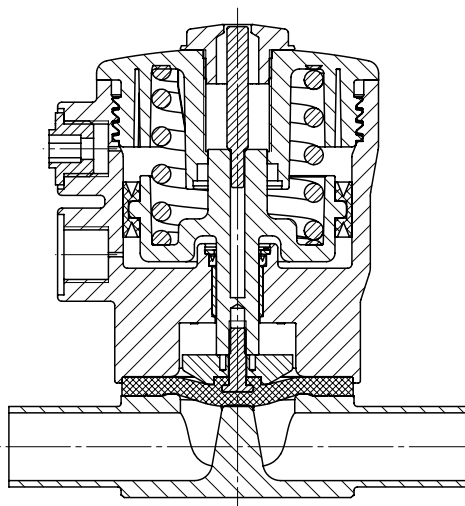


Diaphragm size 10  
DN 10 - 20



Diaphragm size 25 - 50  
DN 15 - 50

## 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.

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

### 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 dm<sup>3</sup>

Actuator size 2/N 0.25 dm<sup>3</sup>

Actuator size 3/N 0.50 dm<sup>3</sup>

Actuator size 4/N 0.80 dm<sup>3</sup>

### Temperatures

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

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. 6
2/N		20						
2/N		25						
3/N	40	32	0 - 10	0 - 6	4.0 - 6	0 - 10	0 - 6	max. 6
3/N		40						
4/N	50	50	0 - 10	0 - 6	5.0 - 6	0 - 10	0 - 6	max. 6

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<sup>3</sup>/h]

MG	DN	DIN Code 0	DIN 11850 Series 1 Code 16	DIN 11850 Series 2 Code 17	DIN 11850 Series 3 Code 18	SMS 3008 Code 37	ASME BPE Code 59	EN ISO 1127 Code 60
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

Kv values determined acc. to DIN EN 60534, inlet pressure 6 bar, Δ p 1 bar, stainless steel valve body and soft elastomer diaphragm.

## Order data

Body configuration	Code
2/2-way body	D

Connection	Code
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### Butt weld spigots

Spigots DIN	0
Spigots DIN 11850, series 1	16
Spigots DIN 11850, series 2	17
Spigots DIN 11850, series 3	18
Spigots DIN 11866, series A	1A
Spigots DIN 11866, series B	1B
Spigots JIS-G 3447	35
Spigots JIS-G 3459	36
Spigots SMS 3008	37
Spigots BS 4825 Part 1	55
Spigots ASME BPE	59
Spigots to EN ISO 1127	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
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Valve body material	Code
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1.4435 - BN2 (CF3M), investment casting Fe<0.5%	32
1.4435 (ASTM A 351 CF3M $\triangle$ 316L), investment casting	34
1.4408, investment casting	37
1.4435 (316 L), forged body	40
1.4435 (BN2), forged body Fe<0.5%	42
1.4539, forged body	F4

Diaphragm material	Code	
FPM	4	
EPDM	13	
EPDM	17	
PTFE / EPDM, PTFE laminated	MG 10	52
PTFE / EPDM convex, PTFE loose	MG 25 - 50	5E

MG = diaphragm size

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

MG = diaphragm size

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

Surface finish	Code
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Code see page 4

Order example	635	15	D	60	34	13	1	2/N	1500
Type	635								
Nominal size		15							
Body configuration (code)			D						
Connection (code)				60					
Valve body material (code)					34				
Diaphragm material (code)						13			
Control function (code)							1		
Actuator size (code)								2/N	
Surface finish (code see page 4)									1500

## Order data

### Valve body surface finish, internal contour

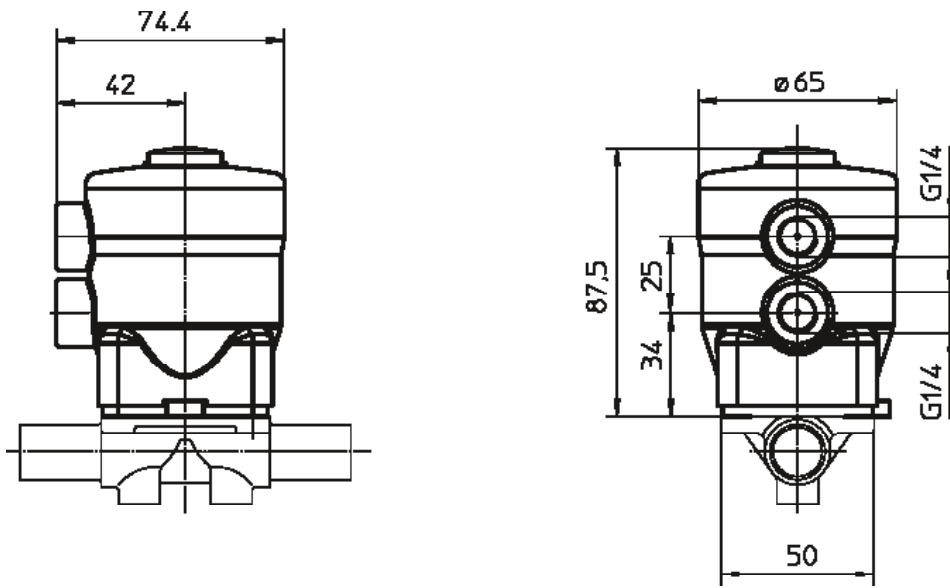
	Hygienic class DIN 11866	Designation ASME BPE (2014)	Forged body Code 40, 42, F4	Investment casting Code 32, 34	Code
Ra ≤ 6,3 µm (250 µinch) for media wetted surfaces, blasted internal/external	-	-	-	X	1500
Ra ≤ 6,3 µm (250 µinch) for media wetted surfaces, electropolished internal/external	-	-	-	X	1509
Ra ≤ 0,8 µm (30 µinch) for media wetted surfaces, mechanically polished internal	H3	SF3	X	X	1502
Ra ≤ 0,8 µm (30 µinch) for media wetted surfaces, electropolished internal/external	HE3	-	X	-	1503
Ra ≤ 0,6 µm (25 µinch) for media wetted surfaces, mechanically polished internal	-	SF2	X*	X*	1507
Ra ≤ 0,6 µm (25 µinch) for media wetted surfaces, electropolished internal/external	-	SF6	X*	-	1508
Ra ≤ 0,5 µm (20 µinch) for media wetted surfaces, mechanically polished internal	-	SF1	X*	-	1927
Ra ≤ 0,5 µm (20 µinch) for media wetted surfaces, electropolished internal/external	-	SF5	X*	-	1928
Ra ≤ 0,4 µm (15 µinch) for media wetted surfaces, mechanically polished internal	H4	-	X*	-	1536
Ra ≤ 0,4 µm (15 µinch) for media wetted surfaces, electropolished internal/external	HE4	-	X*	-	1537
Ra ≤ 0,4 µm (15 µinch) for media wetted surfaces, electropolished internal/external	-	SF4	X*	-	1929
Ra ≤ 0,25 µm (10 µinch) for media wetted surfaces, electropolished internal/external	HE5	-	X*	-	1516
Ra ≤ 0,25 µm (10 µinch) for media wetted surfaces, mechanically polished internal	H5	-	X*	-	1527

Ra acc. to DIN 4768; at defined reference points.

\* For pipe inside diameter < 6 mm, the surface inside the spigot is Ra ≤ 0.8 µm.

**Dimensions [mm]**

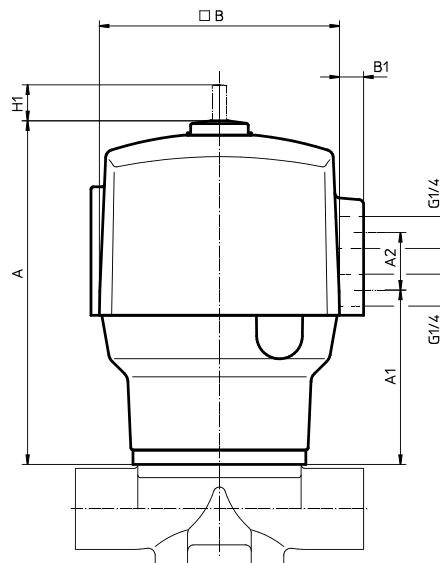
**Actuator dimensions 1/N**



**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, 1A, 1B, 60 Valve body material: Investment casting (code 34), forged body (code 40, F4)

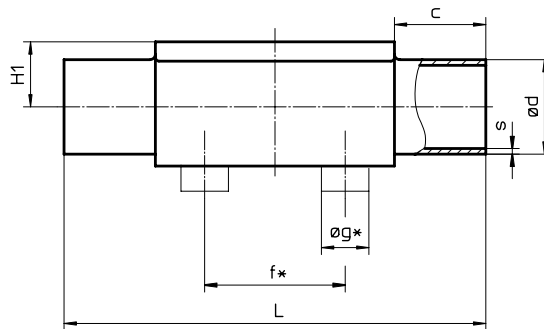
		DIN Series 0 Code 0		DIN 11850 Series 1 Code 16		DIN 11850 Series 2 Code 17		DIN 11850 Series 3 Code 18		DIN 11866 Series A Code 1A		DIN 11866 Series B Code 1B		EN ISO 1127 Code 60		Weight [kg]							
MG	DN	NPS	f*	øg*	L	c	H1*	H1**	ød	s	ød	s	ød	s	ød		s	ød	s	ød	s		
10	10	3/8"	30	13.5	108	25	12.5		-	-	12	1.0	13	1.5	14	2.0	13	1.5	17.2	1.6	17.2	1.6	0.30
	15	1/2"	30	13.5	108	25	12.5		18	1.5	18	1.0	19	1.5	20	2.0	19	1.5	21.3	1.6	21.3	1.6	0.30
	20	3/4"	30	13.5	108	25	12.5		-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.30
25	15	1/2"	40	13.5	120	25	13.0	19.0	18	1.5	18	1.0	19	1.5	20	2.0	19	1.5	21.3	1.6	21.3	1.6	0.62
	20	3/4"	40	13.5	120	25	16.0	19.0	22	1.5	22	1.0	23	1.5	24	2.0	23	1.5	26.9	1.6	26.9	1.6	0.58
	25	1"	40	13.5	120	25	19.0	19.0	28	1.5	28	1.0	29	1.5	30	2.0	29	1.5	33.7	2.0	33.7	2.0	0.55
40	32	1 1/4"	68	13.5	153	25	24.0	26.0	34	1.5	34	1.0	35	1.5	36	2.0	35	1.5	42.4	2.0	42.4	2.0	1.45
	40	1 1/2"	75	13.5	153	25	26.0	26.0	40	1.5	40	1.0	41	1.5	42	2.0	41	1.5	48.3	2.0	48.3	2.0	1.32
50	50	2"	90	13.5	173	30	32.0	32.0	52	1.5	52	1.0	53	1.5	54	2.0	53	1.5	60.3	2.0	60.3	2.0	2.25

\* only for investment cast design      \*\* only for forged design      MG = diaphragm size  
For materials see overview on last page

### Butt weld spigots, connection code 35, 36, 37, 55, 59, 63, 65 Valve body material: Investment casting (code 34), forged body (code 40, F4)

		JIS-G 3447 Code 35		JIS-G 3459 Code 36		SMS 3008 Code 37		BS 4825 Code 55		ASME BPE Code 59		ANSI/ASME B36.19M 10s Code 63		ANSI/ASME B36.19M 40s Code 65		Weight [kg]							
MG	DN	NPS	f*	øg*	L	c	H1*	H1**	ød	s	ød	s	ød	s	ød		s	ød	s	ød	s		
10	10	3/8"	30	13.5	108	25	12.5		-	-	17.3	1.65	-	-	9.53	1.2	9.53	0.89	17.1	1.65	17.1	2.31	0.30
	15	1/2"	30	13.5	108	25	12.5		-	-	21.7	2.10	-	-	12.70	1.2	12.70	1.65	21.3	2.11	21.3	2.77	0.30
	20	3/4"	30	13.5	108	25	12.5		-	-	-	-	-	-	19.05	1.2	19.05	1.65	-	-	-	-	0.30
25	15	1/2"	40	13.5	120	25	13.0	19.0	-	-	21.7	2.10	-	-	-	-	-	-	21.3	2.11	21.3	2.77	0.62
	20	3/4"	40	13.5	120	25	16.0	19.0	-	-	27.2	2.10	-	-	19.05	1.2	19.05	1.65	26.7	2.11	26.7	2.87	0.58
	25	1"	40	13.5	120	25	19.0	19.0	25.4	1.2	34.0	2.80	25.0	1.2	-	-	25.40	1.65	33.4	2.77	33.4	3.38	0.55
40	32	1 1/4"	68	13.5	153	25	24.0	26.0	31.8	1.2	42.7	2.80	33.7	1.2	-	-	-	-	42.2	2.77	42.2	3.56	1.45
	40	1 1/2"	75	13.5	153	25	26.0	26.0	38.1	1.2	48.6	2.80	38.0	1.2	-	-	38.10	1.65	48.3	2.77	48.3	3.68	1.32
50	50	2"	90	13.5	173	30	32.0	32.0	50.8	1.5	60.5	2.80	51.0	1.2	-	-	50.80	1.65	60.3	2.77	60.3	3.91	2.25

\* only for investment cast design      \*\* only for forged design      MG = diaphragm size  
For materials see overview on last page



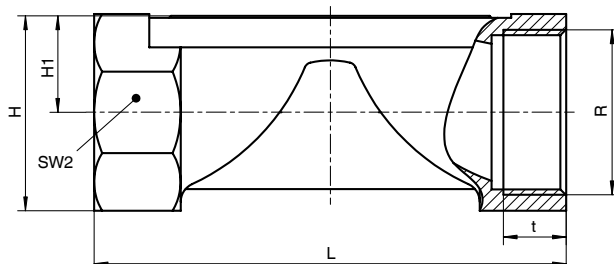
## Body dimensions [mm]

### 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

For materials see overview below



### Overview of valve bodies for GEMÜ 635

		Threaded connections		Spigots																						
Connection code		1	0		16		17		18		1A	1B	35		36	37		55		59		60		63	65	
Material code		37	34	40	34	40	34	40	34	40	40	40	34	40	40	34	40	34	40	34	40	34	40	40	40	
MG	DN																									
10	10	-	-	-	X	X	X	X	X	X	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	-	-	X	X	-	X	X	X	X	X	X
25	20	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	X	X	X	X	-	-	-	-	-	
	15	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	X	X	
40	25	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	-	-	X	X	X	X	X	X	X	
	32	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	-	-	-	-	X	X	X	X	X	
50	40	X	X	X	X	X	X	X	X	X	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	X	X	-	-	X	X	X	X	X	X	X	

X = Standard

MG = diaphragm size

Availability of material code 32: same as code 34, availability of material code 42, F4: same as code 40

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

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