

### Construction

The GEMÜ 605 pneumatically operated 2/2-way diaphragm valve has a low maintenance piston actuator which can be controlled by inert gases. The valve has an integrated optical position indicator. Normally Closed, Normally Open and Double Acting control functions are available.

### Features

- Suitable for inert and corrosive\* liquid and gaseous media
- Insensitive to particulate media
- Valve body and diaphragm available in various materials and designs
- Compact design (ideal when space is at a premium)
- CIP/SIP cleaning and sterilizing capabilities
- Versions according to ATEX on request

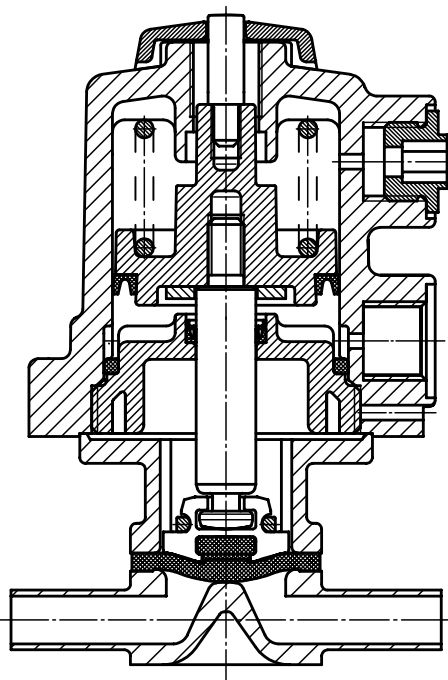
### Advantages

- Hermetic separation between medium and actuator
- For sterile applications
- Optional flow direction
- Installation for an optimized draining is possible
- Optional accessories
  - Stroke limiter
  - Electrical position indicators with microswitches or proximity switches

\*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.

### Temperatures

#### Media temperature

FPM (Code 4A)	-10 ... 90 °C
EPDM (Code 3A)	-10 ... 100 °C
EPDM (Code 17)	-10 ... 100 °C
PTFE (Code 5A)	-10 ... 100 °C

#### Sterilisation temperature <sup>(1)</sup>

FPM (Code 4A)	not applicable
EPDM (Code 3A)	max. 150 °C <sup>(2)</sup> , max. 60 min per cycle
EPDM (Code 17)	max. 150 °C <sup>(2)</sup> , max. 180 min per cycle
PTFE (Code 5A)	max. 150 °C <sup>(2)</sup> , no time limit per cycle

<sup>1</sup> The sterilisation temperature is valid for steam (saturated steam) or superheated water.

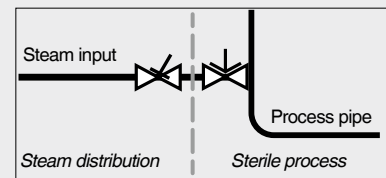
<sup>2</sup> If the sterilisation temperatures listed above are applied to the EPDM diaphragms for longer periods of time, the service life of the diaphragms will be reduced. In these cases, maintenance cycles must be adapted accordingly. This also applies to PTFE diaphragms exposed to high temperature fluctuations.

PTFE diaphragms can also be used as moisture barriers; however, this will reduce their service life. The maintenance cycles must be adapted accordingly.

GEMÜ 555 and 505 globe valves are particularly suitable for use in the area of steam generation and distribution.

The following valve arrangement for interfaces between steam pipes and process pipes has proven itself over time:

A globe valve for shutting off steam pipes and a diaphragm valve as an interface to the process pipes.



#### Ambient temperature

0 ... 60 °C

### Control medium

#### Inert gases

#### Max. perm. temperature of control medium

40 °C

#### Filling volume

0.02 dm<sup>3</sup>

Diaphragm size	Operating pressure [bar]		Control pressure [bar]	
	EPDM / FPM	PTFE	C.f. 1	C.f. 2 + 3
8	0 - 8	0 - 6	4 - 7	max. 4 bar (see diagram)

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 [m<sup>3</sup>/h]

MG	DN	DIN	EN 10357 Series B	EN 10357 Series A	DIN 11850 Series 3	ASME BPE	ISO 1127 / EN 10357 Series C
		Code 0	Code 16	Code 17	Code 18	Code 59	Code 60
8	4	0.5	-	-	-	-	-
	6	1.1	-	-	-	-	1.2
	8	1.3	-	-	-	0.6	2.2
	10	-	2.1	2.1	2.1	1.3	-
	15	-	-	-	-	2.0	-

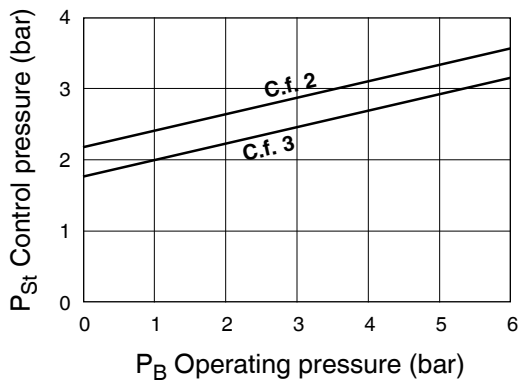
Kv values determined acc. to DIN EN 60534, inlet pressure 5 bar, Δp 1 bar, stainless steel valve body and soft elastomer diaphragm.

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.

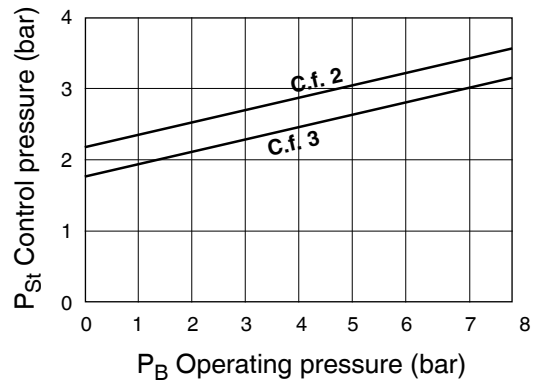
MG = diaphragm size

## Control pressure / operating pressure diagram

**Diaphragm material PTFE**



**Diaphragm material EPDM /FPM**



### Order data

Body configuration	Code
Tank valve body	B**
2/2-way body	D
Multi-port design	M**
T body	T*
* For dimensions see T Valves brochure	
** Dimensions and versions on request	

Valve body material	Code
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

Connection	Code
<b>Butt weld spigots</b>	
Spigots DIN	0
Spigots EN 10357 series B	16
Spigots EN 10357 series A	17
Spigots DIN 11850 series 3	18
Spigots DIN 11866 series A	1A
Spigots DIN 11866 series B	1B
Spigots JIS-G 3459	36
Spigots BS 4825 Part 1 (O.D. Tubing)	55
Spigots ASME BPE	59
Spigots ISO 1127 / EN 10357 series C	60
Spigots ANSI/ASME B36.19M Schedule 10s	63
Spigots ANSI/ASME B36.19M Schedule 40s	65
<b>Threaded connections</b>	
Threaded sockets DIN ISO 228	1
Threaded spigots DIN 11851	6
One side threaded spigot, other side cone spigot and union nut, DIN 11851	62
Aseptic unions on request	
<b>Clamp connections</b>	
Clamps ASME BPE for pipe ASME BPE, length ASME BPE	80
Clamp DIN 32676 series B for pipe EN ISO 1127, length EN 558, series 7	82
Clamps ASME BPE for pipe ASME BPE, length EN 558, series 7	88
Clamps DIN 32676 series A for pipe DIN 11850, length EN 558, series 7	8A

Diaphragm material	Code
FPM	4A
EPDM	3A
EPDM	17
PTFE/EPDM PTFE laminated	5A
Material complies with FDA requirements, except codes 4A	

Control function	Code
Normally closed (NC)	1
Normally open (NO)	2
Double acting (DA)	3

Actuator size	Code
Diaphragm size 8	0/N

Surface finish	Code
See top of page 4	

## 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 ≤ 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.

## Order data

Special function	Code
3-A compliant design	M

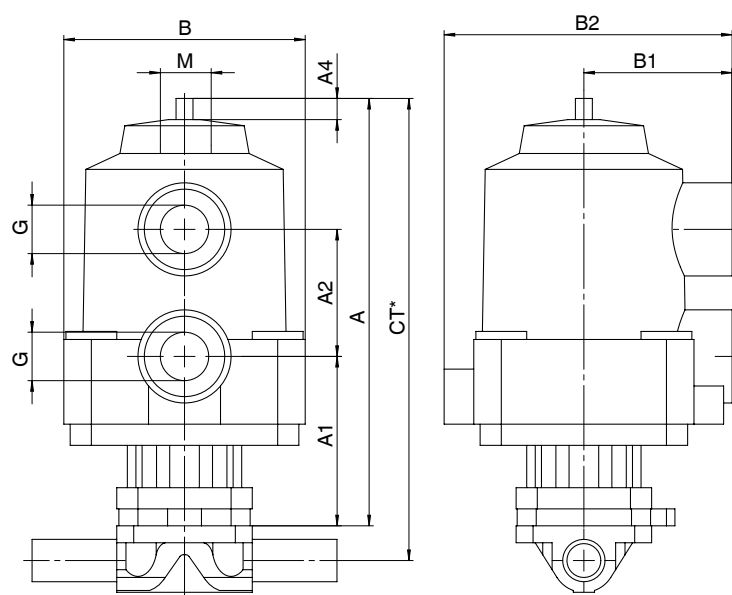
Order example	605	8	D	60	34	5A	1	0/N	1500	M
Type	605									
Nominal size		8								
Body configuration (code)			D							
Connection (code)				60						
Valve body material (code)					34					
Diaphragm material (code)						5A				
Control function (code)							1			
Actuator size (code)								0/N		
Surface finish (code)									1500	
Special function (code)										M

## Dimensions [mm]

### Actuator dimensions

MG	A	A1	A2	B	B1	B2	A4	G	M	Weight [kg]
8	100	39	30	57	35	68	4	G 1/4	M12x1	0.30

MG = diaphragm size



\* CT = A + H1 (see body dimensions)

## 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)

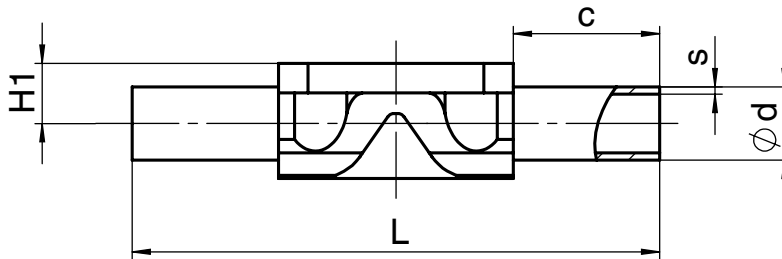
						DIN Series 0 Code 0		EN 10357 Series B Code 16		EN 10357 Series A Code 17		DIN 11850 Series 3 Code 18		DIN 11866 Series A Code 1A		DIN 11866 Series B Code 1B		ISO 1127 / EN 10357 Series C Code 60		Weight [kg]
MG	DN	NPS	L	C	H1	ød	s	ød	s	ød	s	ød	s	ød	s	ød	s	ød	s	
8	4	-	72	20	8.5	6	1.0	-	-	-	-	-	-	-	-	-	-	-	-	0.09
	6	-	72	20	8.5	8	1.0	-	-	-	-	-	-	8	1.0	10.2	1.6	10.2	1.6	0.09
	8	1/4"	72	20	8.5	10	1.0	-	-	-	-	-	-	10	1.0	13.5	1.6	13.5	1.6	0.09
	10	3/8"	72	20	8.5	-	-	12	1.0	13	1.5	14	2.0	13	1.5	-	-	-	-	0.09

MG = diaphragm size      For materials see overview on page 8

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

						JIS-G 3459 Code 36		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	L	C	H1	ød	s	ød	s	ød	s	ød	s	ød	s	
8	4	-	72	20	8.5	-	-	-	-	-	-	-	-	-	-	0.09
	6	-	72	20	8.5	10.5	1.20	-	-	-	-	10.3	1.24	10.3	1.73	0.09
	8	1/4"	72	20	8.5	13.8	1.65	6.35	1.2	6.35	0.89	13.7	1.65	13.7	2.24	0.09
	10	3/8"	72	20	8.5	-	-	9.53	1.2	9.53	0.89	-	-	-	-	0.09
	15	1/2"	72	20	8.5	-	-	12.70	1.2	12.70	1.65	-	-	-	-	0.09

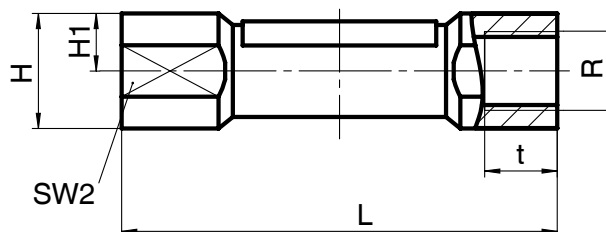
MG = diaphragm size      For materials see overview on page 8



### 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]
8	8	G1/4	19	9	11	72	18	6	0.09

MG = diaphragm size

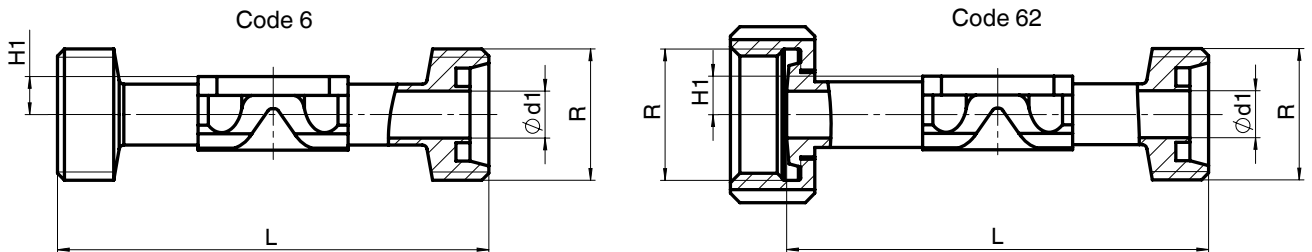


## Body dimensions [mm]

### Threaded connections, connection code 6, 62 Valve body material: investment casting (code 34), forged body (code 40)

MG	DN	H1	ød1	Thread to DIN 405 R	Code 6 L	Code 62 L	Weight [kg]
8	10	8.5	10	Rd 28 x 1/8	92	90	0.21

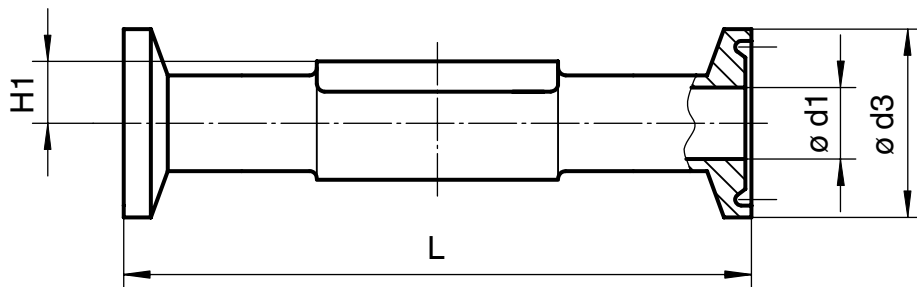
MG = diaphragm size      For materials see overview on page 8



### Clamp connections, connection code 80, 82, 88, 8A Valve body material: forged body (code 40, F4)

MG	DN	NPS	H1	für pipe ASME BPE Code 80			für pipe EN ISO 1127 Code 82			für pipe ASME BPE Code 88			für pipe DIN 11850 Code 8A			Weight [kg]
				ød1	ød3	L	ød1	ød3	L	ød1	ød3	L	ød1	ød3	L	
8	6	1/8"	8.5	-	-	-	7.0	25.0	63.5	-	-	-	6	25.0	63.5	-
	8	1/4"	8.5	4.57	25	63.5	10.3	25.0	63.5	-	-	-	8	25.0	63.5	0.15
	10	3/8"	8.5	7.75	25	63.5	-	-	-	-	-	-	10	34.0	88.9	0.18
	15	1/2"	8.5	9.40	25	63.5	-	-	-	9.40	25.0	108	-	-	-	0.18

MG = diaphragm size



## Overview of valve bodies for GEMÜ 605

Overview of valve bodies for GEMÜ 605																														
		Threaded connections					Spigots															Clamps								
Connection code		1	6		62		0		16		17		18		1A	1B	36	55		59		60		63	65	80	82	88	8A	
Material code		37	34	40	34	40	34	40	34	40	34	40	34	40	40	40	40	34	40	34	40	34	40	40	40	40	40	40	40	40
MG	DN																													
8	4	-	-	-	-	-	X	X	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	6	-	-	-	-	-	X	X	-	-	-	-	-	-	X	X	X	-	-	-	-	-	X	X	X	-	K	-	K	
	8	X	-	-	-	-	X	X	-	-	-	-	-	-	X	X	X	X	X	X	X	X	X	X	X	X	K	K	-	K
	10	-	W	W	W	W	-	-	X	X	X	X	X	X	X	-	X	X	X	X	-	-	-	-	-	K	-	-	W	
	15	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	X	X	X	X	-	-	-	-	K	-	W	-	
X	Standard																													
K	Connections completely machined (not welded)																													
W	Welded construction																													

MG = diaphragm size

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

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Should there be any doubts or misunderstandings, the German version of this data sheet is the authoritative document!

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

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