

Diaphragm Valve, Metal

Construction

The GEMÜ 618 motorized metal diaphragm valve has a low maintenance electric actuator and a reversible synchronous motor. It is operated via a reduction gear and cam. The valve has an integrated optical position indicator as standard. GEMÜ 618 is also available without a stainless steel distance piece for applications with lower operating temperatures.

Features

- Suitable for inert and corrosive* liquid and gaseous media
- The motor will withstand being stalled under full voltage
- Valve body and diaphragm available in various materials and designs
- Suitable for use as a control valve (with integrated control module)
- Insensitive to particulate media

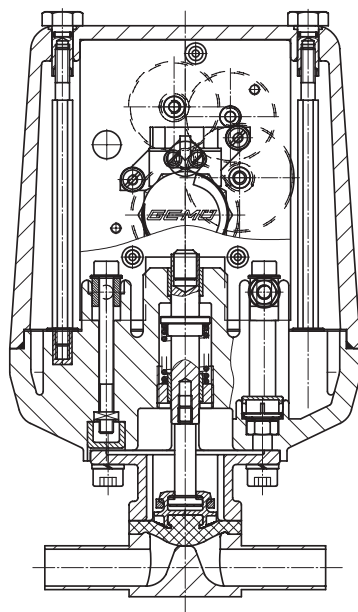
Advantages

- Direct 0/4 - 20 mA signal processing (with integrated control module)
- Opening and closing behaviour is independent of the operating pressure
- Hermetic separation between medium and actuator
- Optional flow direction, will seal in either flow direction up to full operating pressure
- Optional mounting position

*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.

Medium temperature

Direct mount (actuator design 2) + 60°C
With distance piece (actuator design 1+3) + 130°C

Load resistor

32 Ω (with reverse diode)

Operating time

See design (page 3) approx. 17 or 45 s

Ambient conditions

Ambient temperature -15 to +55°C

Protection class

IP 65 acc. to DIN 40050

Power consumption

3.5 VA

Electrical connection

2 x PG 13.5
(design without integrated control module)
2 x circular connector
(design with integrated control module)
(Binder series 717)

Rating

Continuously rated

Diaphragm size	Operating pressure [bar]	Weight [g]
8	0 - 6	1100
10	0 - 6	1330

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 [m³/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
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	-
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	-

Kv values determined acc. to IEC 534 standard, inlet pressure 6 bar, Δ p 1 bar, stainless steel valve body and soft elastomer diaphragm.
MG = diaphragm size

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 or according to customer requirements	

Valve body material	Code
MS, brass	12
1.4435 - BN2 (CF3M), investment casting Fe<0.5%	32
1.4435 (ASTM A 351 CF3M Δ 316L), investment casting	34
1.4435 (316L), forged body	40
1.4435 (BN2), forged body Fe<0.5%	42
1.4435 (316L), block material	41*
1.4435 (BN2), block material Fe<0.5%	43*
* only for body configurations B, M and T	

Connection	Code
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 JIS-G 3459	36
Spigots BS 4825, Part 1	55
Spigots ASME BPE	59
Spigots EN ISO 1127	60
Threaded connections	
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	
Clamp connections	
Clamps ASME BPE for pipe ASME BPE, short design	80
Clamps following ASME BPE 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 for pipe DIN 11850, length EN 558, series 7	8A
For overview of available valve bodies for GEMÜ 618 see page 8	

Diaphragm material	Code
FPM	4 4A**
EPDM	max. 130°C* 12 -
EPDM	max. 150°C* 13 3A**
EPDM	max. 150°C* 16 6A**
EPDM	max. 150°C* 17 17**
PTFE/EPDM, PTFE laminated	max. 150°C* 52 5A**
* Steam sterilisation temperature (valid for actuator sizes 1 + 3 - see page 5)	
** for diaphragm size 8	
Material complies with FDA requirements, except codes 4, 4A	

Supply voltage/mains frequency	Code
24 V 50/60 Hz \pm 10%	C4
120 V 50/60 Hz \pm 10%	G4
230 V 50/60 Hz \pm 10%	L4

Integrated control modules (with connectors)	Code
Without	-
Analogue signal processing	
Control of valve position. Actual value control inside the actuator by potentiometer (design code 6025/6026); set value external, 0/4-20 mA	E2
Control of process variables. Actual value external, 0/4-20 mA, set value external, 0/4-20 mA (design code 6023/6024)	E3
Field bus connection for LonWorks	
Control of process variables. Actual value, set value external by Lonworks FTT 10A transceiver (design code 6023/6024)	L3
Control of valve position. Actual value control inside the actuator by potentiometer (design code 6025/6026); set value external by Lonworks FTT 10A transceiver, free topology	L4

Design	Code
Standard: approx. 17 sec. operating time, 2 switching contacts	6023
Operating time approx. 45 sec., 2 switching contacts	6024
Operating time approx. 17 sec., with 10 k Ω potentiometer	6025
Operating time approx. 45 sec., with 10 k Ω potentiometer	6026

Valve body surface finish, internal contour		Code
Ra ≤ 6.3 µm	blasted internal/external	1500*
Ra ≤ 6.3 µm	electropolished internal/external	1509*
Ra ≤ 0.8 µm	mechanically polished internal, blasted external	1502
Ra ≤ 0.8 µm	electropolished internal/external	1503
Ra ≤ 0.6 µm	mechanically polished internal, blasted external	1507
Ra ≤ 0.6 µm	electropolished internal/external	1508
Ra ≤ 0.4 µm	mechanically polished internal, blasted external	1536
Ra ≤ 0.4 µm	electropolished internal/external	1537
Ra ≤ 0.25 µm	mechanically polished internal, blasted external	1527
Ra ≤ 0.25 µm	electropolished internal/external	1516

Ra acc. to DIN 4768; at defined reference points

* only investment cast design

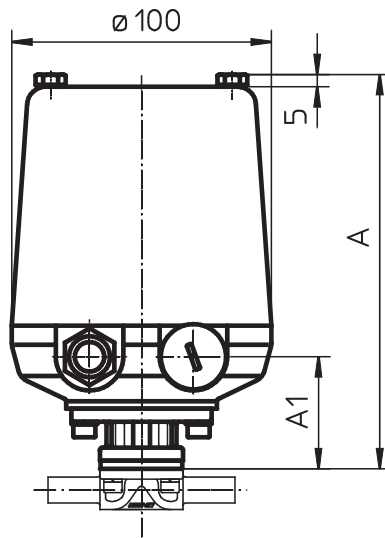
The available internal surface finishes are dependent on the inside diameter and the body production procedure.

Actuator	K number
Without metal distance piece	-
With metal distance piece (see actuator design 3, page 5) with diaphragm size 10	6164
With metal distance piece (see actuator design 1, page 5) with diaphragm size 8	-

Order example	618	10	D	60	34	13	L4	-	6023	1516	6164
Type	618										
Nominal size		10									
Body configuration (code)			D								
Connection (code)				60							
Valve body material (code)					34						
Diaphragm material (code)						13					
Supply voltage/mains frequency (code)							L4				
Integrated control modules (code)								-			
Design (code)									6023		
Surface finish (code)										1516	
Actuator (K number)											6164

Dimensions - Actuator design 1 [mm]					
MG	DN	Actuator design	Actuator K-no.	A	A1
8	004 - 015	1	-	152	44

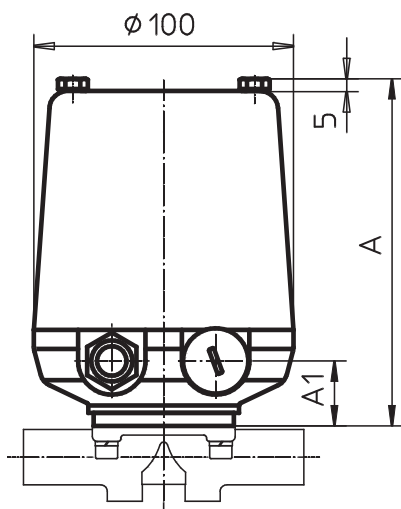
MG = diaphragm size



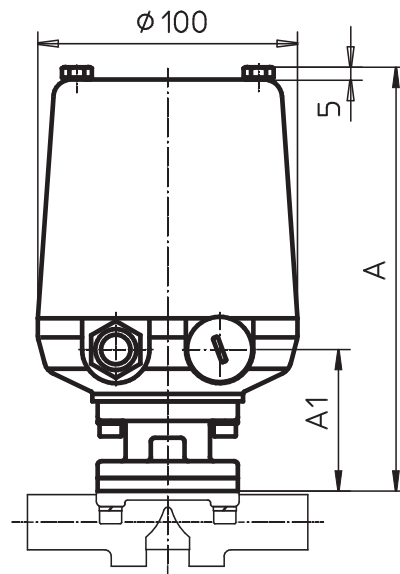
Valve body DN 004 - 015

Dimensions - Actuator designs 2 and 3 [mm]					
MG	DN	Actuator design	Actuator K-no.	A	A1
10	10 - 20	2	-	134	25
	10 - 20	3	6164	164	55

MG = diaphragm size



Valve body DN 10 - 20



Valve body DN 10 - 20
with metal distance piece
(actuator K-no. 6164)

Body dimensions [mm]

Butt weld spigots, connection code 0, 16, 17, 18, 1A, 36, 55, 59, 60 Valve body material: investment casting (code 34), forged body (code 40)

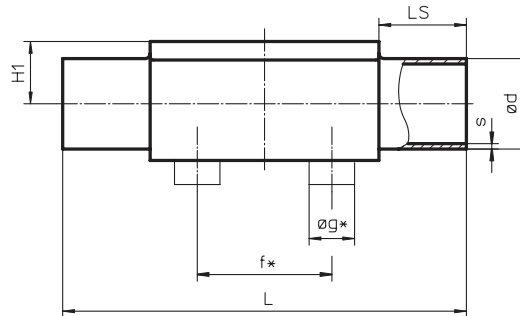
MG	DN	NPS	f*	g*	L	LS	H1*	H1**	DIN Series 0 Code 0		DIN 11850 Series 1 Code 16		DIN 11850 Series 2 Code 17		DIN 11850 Series 3 Code 18		DIN 11866 Series A Code 1A		JIS-G 3459 Code 36		BS 4825 Code 55		ASME BPE Code 59		EN ISO 1127 Code 60		
									ød	s	ød	s	ød	s	ød	s	ød	s	ød	s	ød	s	ød	s	ød	s	ød
8	004	-	-	-	72	20	8.5	6	1.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	006	-	-	-	72	20	8.5	8	1.0	-	-	-	-	-	-	8	1.0	10.5	1.20	-	-	-	-	-	-	10.2	1.6
	008	1/4"	-	-	72	20	8.5	10	1.0	-	-	-	-	-	-	10	1.0	13.8	1.65	6.35	1.2	6.35	0.89	13.5	1.6	-	-
	010	3/8"	-	-	72	20	8.5	-	-	12	1.0	13	1.5	14	2.0	13	1.5	-	-	9.53	1.2	9.53	0.89	-	-	-	-
	015	1/2"	-	-	72	20	8.5	-	-	-	-	-	-	-	-	-	-	-	-	12.70	1.2	12.70	1.65	-	-	-	-
10	10	3/8"	30	13.5	108	25	12.5	-	-	12	1.0	13	1.5	14	2.0	13	1.5	17.3	1.65	9.53	1.2	9.53	0.89	17.2	1.6	-	-
	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	21.7	2.10	12.70	1.2	12.70	1.65	21.3	1.6	-	-
	20	3/4"	30	13.5	108	25	12.5	-	-	-	-	-	-	-	-	-	-	-	-	19.05	1.2	19.05	1.65	-	-	-	-

* only for investment cast design

** only for forged design

MG = diaphragm size

For materials see overview on last page

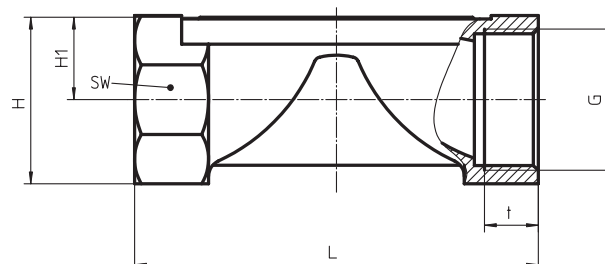


Threaded sockets, connection code 1 Valve body material: brass (code 12), investment casting (code 34)

MG	DN	G	H	H1	t	L		SW		Number of flats
						Material code 12	Material code 34	Material code 12	Material code 34	
8	008	G1/4	19	8.5	12	-	72	-	17	2
10	12	G3/8	23	10.5	13	55	55	22	22	2
	15	G1/2	29	13.5	15	75	68	25	24	2

For materials see overview on last page

MG = diaphragm size



Body dimensions [mm]

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

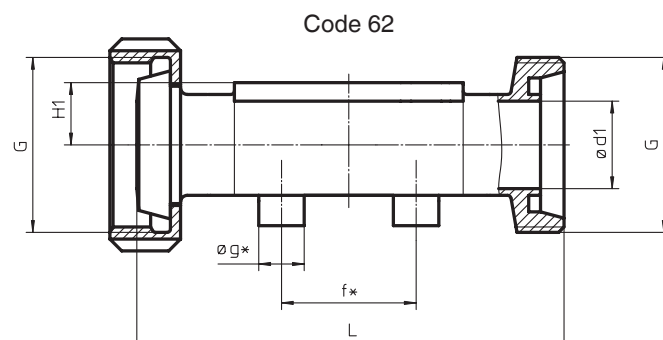
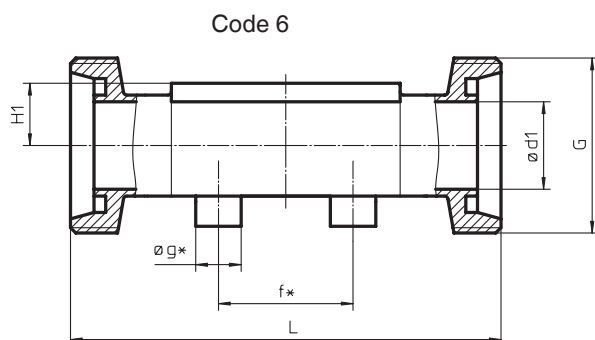
MG	DN	H1*	f*	øg*	ød1*	Thread to DIN 405 G	Code 6 L	Code 62 L
8	010	8.5	-	-	10.0	Rd 28 x 1/8	92	90
10	10	12.5	30.0	13.5	10.0	Rd 28 x 1/8	118	116
	15	12.5	30.0	13.5	16.0	Rd 34 x 1/8	118	116

* only for investment cast design

** only for forged design

MG = diaphragm size

For materials see overview on last page

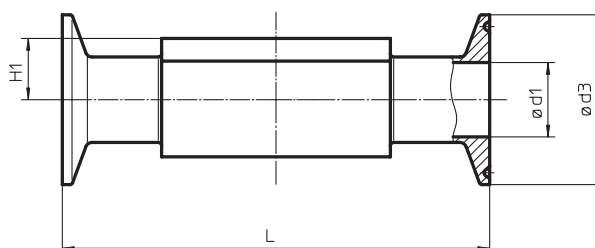


Clamp connections, connection code 80, 82, 88, 8A Valve body material: forged body (code 40), block material (code 41)

				for pipe ASME BPE Code 80			for pipe EN ISO 1127 Code 82			for pipe ASME BPE Code 88			for pipe DIN 11850 Code 8A		
MG	DN	NPS	H1	ød1	ød3	L	ød1	ød3	L	ød1	ød3	L	ød1	ød3	L
8	008	1/4"	8.5	4.57	25	63.5	10.30	25.4	63.5	-	-	-	-	-	-
	010	3/8"	8.5	7.75	25	63.5	-	-	-	-	-	-	10	34.0	88.9
	015	1/2"	8.5	9.40	25	63.5	-	-	-	9.40	25.0	108	-	-	-
10	10	3/8"	12.5	-	-	-	14.00	25.4	108.0	-	-	-	10	34.0	108.0
	15	1/2"	12.5	9.40	25	88.9	18.10	50.5	108.0	9.40	25.0	108	16	34.0	108.0
	20	3/4"	12.5	15.75	25	101.6	-	-	-	15.75	25.0	117	-	-	-

MG = diaphragm size

For materials see overview on last page



Overview of valve bodies for GEMÜ 618

Overview of valve bodies for GEMÜ 618																																	
		Threaded connections						Spigots														Clamps											
Connection code		1		6		62		0		16		17		18		1A		36		55		59		60		80		82		88		8A	
Material code		12	34	34	40	34	40	34	40	34	40	34	40	34	40	40	40	34	40	34	40	34	40	34	40	40	41	40	41	40	40		
MG	DN																																
8	004	-	-	-	-	-	-	X	X	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
	006	-	-	-	-	-	-	X	X	-	-	-	-	-	-	X	X	-	-	-	-	-	-	X	X	-	-	-	-	-	-		
	008	-	X	-	-	-	-	X	X	-	-	-	-	-	-	X	X	X	X	X	X	X	X	X	X	-	V	-	V	-	-		
	010	-	-	W	W	W	W	-	-	X	X	X	X	X	X	X	X	-	X	X	X	X	-	-	-	V	-	-	-	-	W		
	015	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	X	X	X	X	-	-	-	-	V	-	-	-	W	-		
10	10	-	-	W	W	W	W	-	-	X	X	X	X	X	X	X	-	X	-	X	X	X	-	-	-	-	K	-	-	K			
	12	X	X	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-			
	15	X	X	W	W	W	W	X	X	X	X	X	X	X	X	X	X	X	-	X	X	X	K	-	W	-	K	K	-	-			
	20	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	X	X	X	X	-	-	K	-	-	-	-	K	-	-			

- X Standard
- K Connections completely machined (not welded) in material code 40
- V Block material
- W Welded construction

MG = diaphragm size

Availability of material code 32 same as code 34; code 42 same as code 40; code 43 same as code 41

Technical data sheet

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

Subject to alteration · 03/2009 · 88048756

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



GEMÜ® VALVES, MEASUREMENT AND CONTROL SYSTEMS