

Special version „TL“

GEMÜ®

Diaphragm Valve, Metal

Construction

GEMÜ 650 TL is a manual tapping valve with automatic closing function. The piston actuated diaphragm valve is designed for use in sterile applications. The valve can only be operated if a control medium is applied to the actuator. As soon as the actuator is pressurized, the valve can be opened or closed normally via the handwheel. When the control medium supply is switched off, the valve closes and can no longer be operated manually.

Example: If the flow velocity in a piping loop is reduced (e.g. if too many tapping points are open), flow may drop below a critical level. This special GEMÜ 650TL valve can be used to specifically close tapping points automatically via the central control system in order to reduce the tapping quantity and thus to increase the piping loop flow velocity.

Features

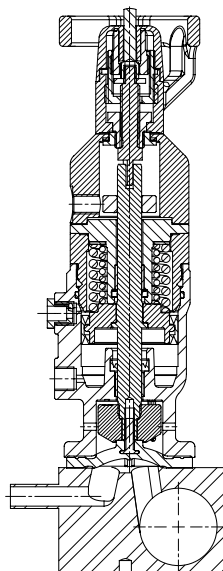
- Suitable for inert and corrosive* liquid and gaseous media
- Valve body and diaphragm available in various materials and designs
- Compact design (ideal when space is at a premium)
- Various connections available
- CIP/SIP cleaning and sterilizing capabilities
- Versions according to ATEX on request

Advantages

- Hermetic separation between medium and actuator
- Optional flow direction
- Optional mounting position
- Control air connectors positioned in-line with piping (option: 90° offset)
- CLOSED position feedback possible via a proximity switch which can be flush mounted (M8 x 1)

*see information on working medium on page 2

Sectional drawing



GEMÜ® 650TL

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).

Max. operating temperature 150 °C
(dependent on medium wetted materials)

Control medium

Inert gases

Max. perm. temperature of control medium 60 °C

Filling volume:

Actuator size	Piston diameter	
0TL	32 mm	0.01 dm ³
1TL	50 mm	0.02 dm ³
2TL	63 mm	0.06 dm ³

Ambient conditions

Ambient temperature max. 60 °C

Actuator		Operating pressure [bar]		Control pressure [bar]
Code	MG	EPDM	PTFE	Stf. 1
0TL	8	0 - 8	0 - 6	5 - 7
1TL	10	0 - 5	0 - 5	5 - 7
2TL	25	0 - 5	0 - 5	4 - 7

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

Diaphragm temperature range [°C]

Diaphragm	Liquid Media		Steam (Sterilisation)	Code
	Min.	Max.		
EPDM	-10	90	150 °C, max. 60 min	13/3A
EPDM	-10	90	150 °C, max. 60 min	16/6A
EPDM	-10	90	150 °C, max. 180 min	17
PTFE	-10	90	Constant temperature* 150 °C	52/5A
PTFE	-10	90	Constant temperature* 150 °C	5E
PTFE	-10	90	150 °C, max. 40 min	5F

* The valves concerned must be serviced regularly if steam is applied continuously

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	

Anschlussart	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 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 EN ISO 1127	60
Spigots ANSI/ASME B36.19M, Schedule 10s	63
Spigots ANSI/ASME B36.19M, Schedule 40s	65
Threaded connections	
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, length ASME BPE	80
Clamps 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
Clamps SMS 3017 for pipe SMS 3008, length EN 558, series 7	8E
Aseptic clamps on request	
For overview of available valve bodies for GEMÜ 650TL see Datasheet Gemü 650 Standard.	

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
1.4435 (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

Diaphragm material	Code
EPDM	13 3A*
EPDM	16 6A*
EPDM	17
PTFE/EPDM convex PTFE loose	5E
PTFE/FPM convex PTFE loose	5F
PTFE/EPDM PTFE lamin.	52** 5A*
* for diaphragm size 8 ** for diaphragm size 10	
Material complies with FDA requirements	

Control function	Code
Normally closed (NC)	1

Actuator size	Code
Actuator size 0 (diaphragm size 8)	0
Actuator size 1 (diaphragm size 10)	1
Actuator size 2 (diaphragm size 25)	2

Actuator version	Code
Control air connectors in flow direction	T
Control air connectors 90° offset to flow direction	R

Actuator function	Code
Pneumatically operated with "keep-closed" override of manual operation	L

Order example	650	25	T	60	41	17	1	2	T	L	25	60	1503
Type	650												
Nominal size		25											
Body configuration (code)			T										
Connection (code)				60									
Valve body material (code)					41								
Diaphragm material (code)						17							
Control function (code)							1						
Actuator size (code)								2					
Actuator version (code)									T				
Actuator function (code)										L			
Nominal size (mm)*											25		
Connection (code)*												60	
Special version (code see bottom of page 4)													1503

* only in T-valve version

Valve body surface finish, internal contour

		Forged body Code 40, 42	Block material Code 41, 43	Investment casting Code 32, 34	Code
Ra ≤ 6.3 µm	blasted internal/external	-	-	X	1500
--	electropolished	-	-	X	1509
Ra ≤ 0.8 µm	mechanically polished internal, blasted external	X	X	X	1502
Ra ≤ 0.8 µm	electropolished internal/external	X	X	-	1503
Ra ≤ 0.6 µm	mechanically polished internal, blasted external	X	X	X	1507
Ra ≤ 0.6 µm	electropolished internal/external	X	X	-	1508
Ra ≤ 0.4 µm	mechanically polished internal, blasted external	X	X	-	1536
Ra ≤ 0.4 µm	electropolished internal/external	X	X	-	1537
Ra ≤ 0.25 µm	mechanically polished internal, blasted external	X	X	-	1527
Ra ≤ 0.25 µm	electropolished internal/external	X	X	-	1516

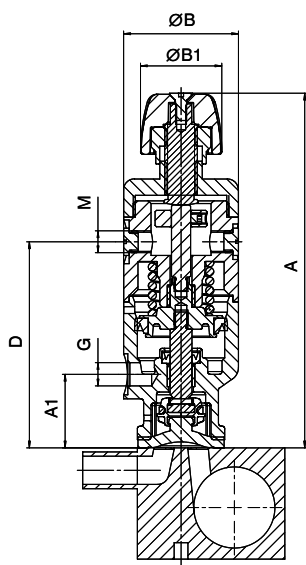
Ra acc. to DIN 4768; at defined reference points
Surface finish data refer to medium wetted surfaces

Dimensions [mm]

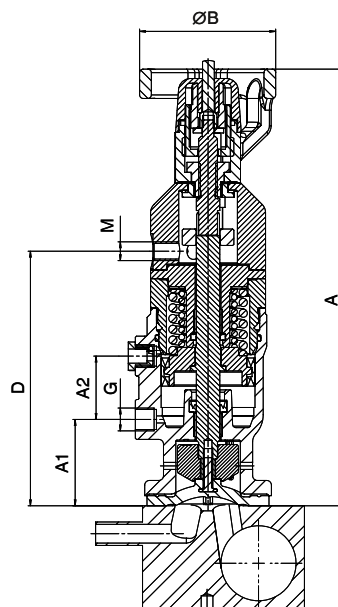
Actuator dimensions

Actuator size	Diaphragm size	A	A1	A2	øB	øB1	D	G	M
0TL	8	127	26.5	-	42	32	95	G 1/8	M8x1
1TL	10	186	37.0	27	60	-	109	G 1/8	M8x1
2TL	25	255	51.0	24	85	-	155	G 1/4	M8x1

GEMÜ 650 0TL



GEMÜ 650 1TL / GEMÜ 650 2TL



Information: For T body dimensions see our brochure "T Valves for Sterile Applications" (diaphragm sizes 8 - 25).

Note: 2/2-way bodies are also available for GEMÜ 650TL, "see datasheet 650" (diaphragms size 8 - 25).

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

