

Diaphragm Valve, Metal

Construction

The GEMÜ 650 piston actuated 2/2-way diaphragm valve is designed for use in sterile areas of application.

All metallic actuator components are made of stainless steel. The compression springs of diaphragm sizes 80 and 100 are made of epoxy coated spring steel. Normally closed, Normally open and Double acting control functions are available. The valve has an optical position indicator as standard.

Features

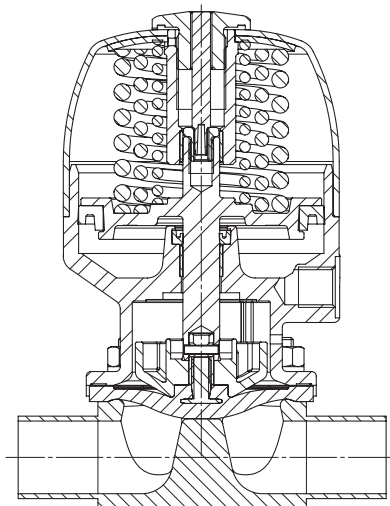
- Suitable for inert and corrosive* liquid and gaseous media
- Valve body and diaphragm available in various materials and designs
- Compact design (ideal when space is at a premium)
- Various connections available
- CIP/SIP and sterilizing capabilities
- Autoclave capability, dependent on version
- Surface finishes down to $Ra \leq 10 \mu\text{inch}$, electropolished
- Versions according to ATEX on request

Advantages

- Hermetic separation between medium and actuator
- Optional flow direction
- Installation for an optimized draining is possible
- Control air connectors positioned in-line with piping (option: 90° offset)
- Expelled air from spring chamber can optionally be piped to other locations
- Extensive range of accessories, easily retrofitted

* see information on working medium on page 2

Sectional view



Actuator version "T"



Actuator version "D"



DN 100 „T“

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 14 to 212 °F

Sterilisation temperature ⁽¹⁾

EPDM (code 13/3A)	max. 302 °F ⁽²⁾ , max. 60 min per cycle
EPDM (code 17)	max. 302 °F ⁽²⁾ , max. 180 min per cycle
EPDM (code 19)	max. 302 °F ⁽²⁾ , max. 180 min per cycle
PTFE/EPDM (code 54)	max. 302 °F ⁽²⁾ , no time limit per cycle
PTFE/EPDM (code 5M, 5Q)	max. 302 °F ⁽²⁾ , no time limit per cycle
PTFE/PVDF/EPDM (code 71)	not applicable

¹ The sterilisation temperature is valid for steam (saturated steam) or superheated water.

² 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.

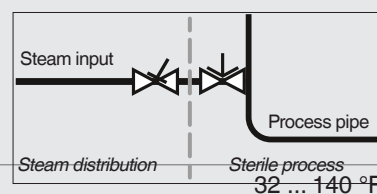
PTFE diaphragms can also be used as steam barriers; however, this will reduce their service life.

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

Control medium

Inert gases

Max. permissible temperature of control medium 140 °F

Filling volume

Diaphragm size	DN	Actuator size	Actuator version	Spring set	Control function 1	Control function 2
8	4 to 15	0	T/R	1	0.61 cu in	0.61 cu in
			T/R	A	1.22 cu in	0.61 cu in
10	10 to 20	1	T/R/D/B	1	1.83 cu in	4.27 cu in
25	15 to 25	2	T/R/D/B	1	7.93 cu in	13.43 cu in
40	32 to 40	3	T/R/D/B	1	14.04 cu in	30.51 cu in
			T/R	A	30.51 cu in	-
50	50 to 65	4	T/R/D/B	1	30.51 cu in	73.23 cu in
80	65 to 80	5	T/R	1	163.54 cu in	195.28 cu in
			T/R	A	129.98 cu in	-
100	100	6	T/R	1	169.65 cu in	207.48 cu in
			T/R	A	131.2 cu in	-
150	150	8	T	A	323.43 cu in	-

C.f. 3 = for filling volume in open position see c.f. 1;

for filling volume in closed position see c.f. 2

Technical data

Cv values [gpm]									
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	DIN ISO 228
Connection code		0	16	17	18	37	59	60	1
MG	DN								
8	4	0.6	-	-	-	-	-	-	-
	6	-	-	1.3	-	-	-	1.4	-
	8	-	-	1.5	-	-	0.7	2.6	1.6
	10	-	2.5	2.5	2.5	-	1.5	-	-
	15	-	-	-	-	-	2.3	-	-
10	10	-	2.8	2.8	2.8	-	2.6	3.9	-
	12	-	-	-	-	-	-	-	3.7
	15	3.9	4.4	4.4	4.4	-	2.6	4.7	4.0
	20	-	-	-	-	-	4.4	-	-
25	15	4.8	5.5	5.5	5.5	-	-	8.7	7.6
	20	7.4	8.2	8.2	8.2	-	5.1	15.4	11.7
	25	16.3	17.5	17.5	17.5	14.7	14.3	19.0	16.4
40	32	29.6	31.6	31.6	31.6	30.7	-	35.1	30.4
	40	34.3	36.2	36.2	36.2	35.3	34.5	38.4	38.6
50	50	54.4	56.6	56.6	56.6	60.5	59.2	64.6	70.2
	65	-	-	-	-	72.8	72.3	-	-
80	65	-	-	90.1	-	80.1	80.1	112.3	-
	80	-	-	129.9	-	93.6	101.8	129.9	-
100	100	-	-	227.0	-	202.4	220.0	250.4	-
150	150	-	-	-	-	-	666.9	-	-

MG = diaphragm size

Cv values determined acc. to inlet pressure 75 psi, Δp 1 psi, stainless steel valve body (forged body) and soft elastomer diaphragm.

The Cv 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 Cv values may exceed the tolerance limits of the standard.

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

Autoclavability

Actuator size 0	Standard version with autoclave capability
Actuator size 1	Standard version with autoclave capability
Actuator size 2	Standard version with autoclave capability
Actuator size 3	with special version
Actuator size 4	with special version
Actuator size 5	not possible
Actuator size 6	not possible
Actuator size 8	not possible

Technical data

Operating pressure [psi]								
MG	DN	Control function	Actuator version	EPDM		PTFE		
				Diaphragm material	All valve body materials	Diaphragm material	Forged and block material bodies	Investment cast body
8	4 to 15	1	0T1, 0R1	3A, 17, 19	0 to 120	54	0 to 90	0 to 90
			0TA, 0RA		0 to 150		0 to 150	0 to 90
		2 + 3	0T1, 0R1, 0TA, 0RA		0 to 150		0 to 150	0 to 90
							0 to 150	0 to 90
10	10 to 20	1	1T1, 1R1	3A, 17, 19	0 to 150	54, 5M	0 to 150	0 to 90
			1D1, 1B1		0 to 150		0 to 90	0 to 90
		2 + 3	1T1, 1R1		0 to 150		0 to 150	0 to 90
			1D1, 1B1		0 to 150		0 to 90	0 to 90
25	15 to 25	1	2T1, 2R1	3A, 17, 19	0 to 150	54, 5M	0 to 150	0 to 90
			2D1, 2B1		0 to 150		0 to 90	0 to 90
		2 + 3	2T1, 2R1		0 to 150		0 to 150	0 to 90
			2D1, 2B1		0 to 150		0 to 90	0 to 90
40	32 to 40	1	3T1, 3R1, 3D1, 3B1	3A, 17, 19	0 to 150	54, 5M	0 to 90	0 to 90
			3TA, 3RA		-		0 to 150	0 to 90
		2 + 3	3T1, 3R1		0 to 150		0 to 150	0 to 90
			3D1, 3B1		0 to 150		0 to 90	0 to 90
50	50 to 65	1	4T1, 4R1	3A, 17, 19	0 to 150	54, 5M	0 to 150	0 to 90
			4D1, 4B1		0 to 150		0 to 90	0 to 90
		2 + 3	4T1, 4R1		0 to 150		0 to 150	0 to 90
			4D1, 4B1		0 to 150		0 to 90	0 to 90
80	65 to 80	1	5T1, 5R1	3A, 17, 19	0 to 120	54, 5M	0 to 75	-
			5TA, 5RA		-		0 to 150	-
		2 + 3	5T1, 5R1		0 to 120		0 to 75	-
100	100	1	6T1, 6R1	3A, 17, 19	0 to 90	54, 5M	0 to 60	-
			6TA, 6RA		-		0 to 150	-
		2 + 3	6T1, 6R1		0 to 90		0 to 60	-
150	150	1	8TA, 8RA	-	-	5Q	0 to 150	-

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

Technical data

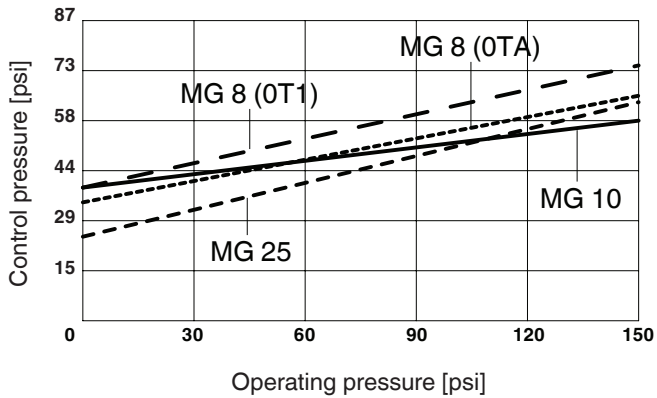
Control pressure [psi]				
MG	DN	Control function	Actuator version	Control pressure
8	4 to 15	1	0T1, 0R1	75 to 105
			0TA, 0RA	51 to 105
		2 + 3	0T1, 0R1	max. 80
			0TA, 0RA	max. 65
10	10 to 20	1	1T1, 1R1, 1D1, 1B1	65 to 105
		2 + 3	1T1, 1R1, 1D1, 1B1	max. 65
25	15 to 25	1	2T1, 2R1, 2D1, 2B1	75 to 105
		2 + 3	2T1, 2R1, 2D1, 2B1	max. 65
40	32 to 40	1	3T1, 3R1, 3D1, 3B1	65 to 105
			3TA, 3RA	51 to 105
		2 + 3	3T1, 3R1, 3D1, 3B1	max. 65
50	50 to 65	1	4T1, 4R1, 4D1, 4B1	65 to 105
		2 + 3	4T1, 4R1, 4D1, 4B1	max. 65
80	65 to 80	1	5T1, 5R1	51 to 105
			5TA, 5RA	65 to 105
		2 + 3	5T1, 5R1	max. 51
100	100	1	6T1, 6R1	51 to 105
			6TA, 6RA	73 to 105
		2 + 3	6T1, 6R1	max. 51
150	150	1	8TA, 8RA	105 to 116

MG = diaphragm size

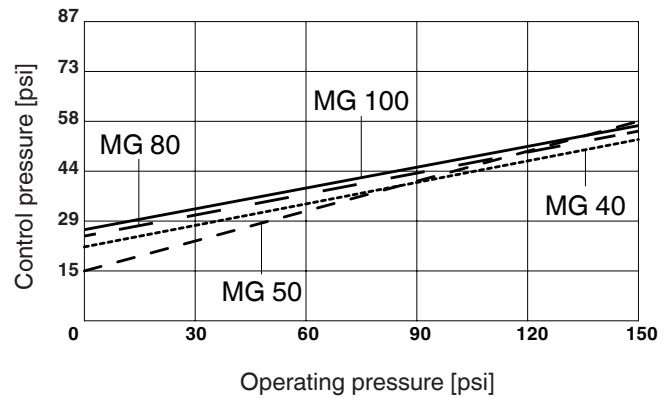
Technical data

Control pressure / operating pressure diagram

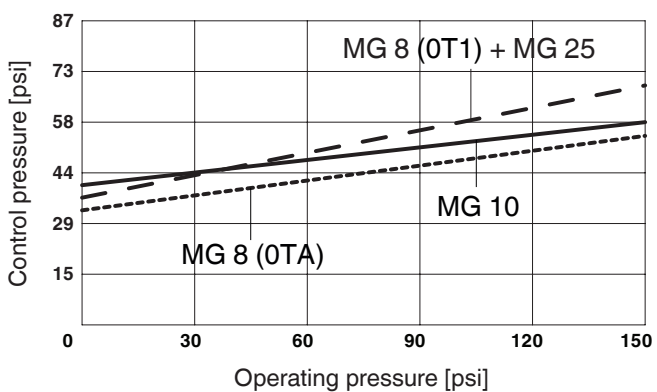
Control function 2 + 3
with elastomer diaphragm
Diaphragm size 8 - 25



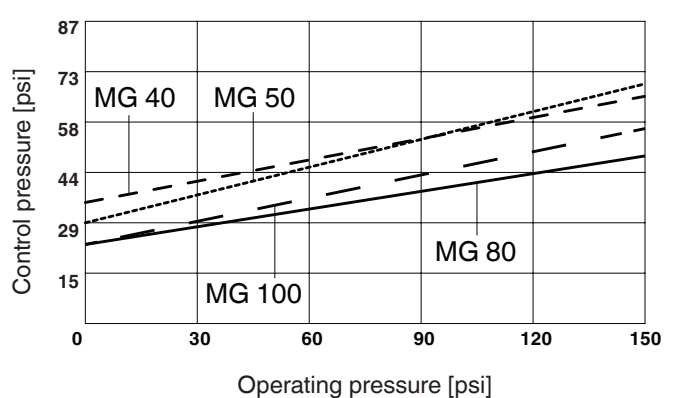
Control function 2 + 3
with elastomer diaphragm
Diaphragm size 40 - 100



Control function 2 + 3
with PTFE diaphragm
Diaphragm size 8 - 25



Control function 2 + 3
with PTFE diaphragm
Diaphragm size 40 - 100



The control pressure depending on the prevailing operating pressure, as shown in the diagram, is intended as a guide for operating the system with low wear on the diaphragm.

Order data (2/2-way valves)

Nominal size	Code
DN 4	4
DN 6 NPS 1/8"	6
DN 8 NPS 1/4"	8
DN 10 NPS 3/8"	10
DN 12 G 3/8"	12
DN 15 NPS 1/2"	15
DN 20 NPS 3/4"	20
DN 25 NPS 1"	25
DN 32 NPS 1 1/4"	32
DN 40 NPS 1 1/2"	40
DN 50 NPS 2"	50
DN 65 NPS 2 1/2"	65
DN 80 NPS 3"	80
DN 100 NPS 4"	100

Body configuration	Code
Tank bottom valve body (actuator version T)	B**
2/2-way body (actuator version D and T)	D
T body (actuator version T)	T*
* For dimensions see T Valves brochure	
** Dimensions and versions on request	

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 5s	64
Spigots ANSI/ASME B36.19M Schedule 40s	65
Threaded connections	
Threaded sockets DIN ISO 228	1
Threaded spigots DIN 11851	6
Cone spigot and union nut DIN 11851	6K
Aseptic unions on request	
Flanges	
Flanges EN 1092 / PN16 / form B, length EN 558, series 1, ISO 5752, basic series 1	8*
Flanges ANSI Class 150 RF, length MSS SP-88	38*
Flanges ANSI Class 125/150 RF, length EN 558, series 1, ISO 5752, basic series 1	39*
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
Clamps DIN 32676 series C, length FTF ASME BPE	8P
Clamps DIN 32676 series C, length FTF EN 558 series 7	8T
Aseptic clamps on request	
* Connection code 8, 38, 39 only possible in conjunction with actuator version code B / R	
For overview of available valve bodies see page 15/16	

Order data (2/2-way valves)

Valve body material	Code
1.4435, investment casting	C3
1.4408, investment casting	37
1.4408, PFA lined	39
1.4435 (316L), forged body	40
1.4435 (316L), block material	41
1.4435 (BN2), forged body Δ Fe<0.5%	42
1.4435 (BN2), block material, Δ Fe<0,5 %	43
1.4539, forged body	F4

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 size 3 (diaphragm size 40)	3
Actuator size 4 (diaphragm size 50)	4
Actuator size 5 (diaphragm size 80)	5
Actuator size 6 (diaphragm size 100)	6
Actuator size 8 (diaphragm size 150)	8

Diaphragm material	Code
EPDM	13 3A*
EPDM	17
EPDM	19
PTFE/EPDM, one-piece	54
PTFE/EPDM, two-piece	5M**
PTFE/EPDM, two-piece	5Q
PTFE/PVDF/EPDM, three-piece	71***
* for diaphragm size 8	
** Code 5M available from diaphragm size 10	
*** Code 71 only available for bodies with PFA lining (Code 39)	
Material complies with FDA requirements	

Actuator version	Code
Only for body configuration D (diaphragm size 10 - 50)	D
For body config. D (diaphragm size 10 - 50) Control air connector 90° offset to flow direction	B
For body config. B, D, M and T (diaphragm size 8 - 100)	T
For body config. B, D, M and T (diaphragm size 8 - 100) Control air connector 90° offset to flow direction	R

Spring set	Code
Standard	1
For higher operating pressure	A
For higher operating pressure	B

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

Order data (2/2-way valves)

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 1/4" (DN 8) BS 4825 Part 1 and ASME BPE is 15 µinch.

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

Special function

Code

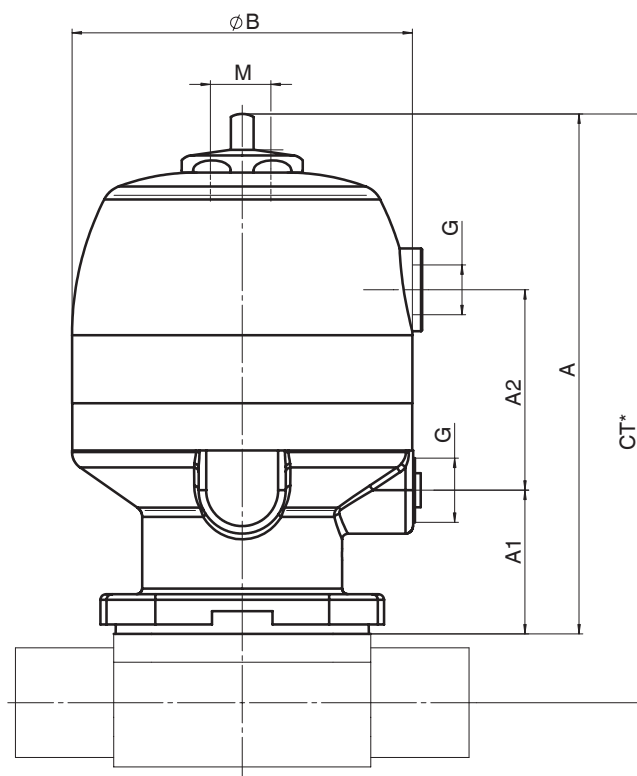
3-A compliant design

M

Order example	650	50	D	60	40	54	1	4	T	1	1503	M
Type	650											
Nominal size		50										
Body configuration (code)			D									
Connection (code)				60								
Valve body material (code)					40							
Diaphragm material (code)						54						
Control function (code)							1					
Actuator size (code)								4				
Actuator version (code)									T			
Spring set (code)										1		
Surface finish (code)											1503	
Special function (Code)												M

Dimensions [inch]

Actuator dimensions									
Actuator size	Diaphragm size	A	A1	A2	ø B	G	M	Weight [lbs]	
								Version D	Version T
0T1	8	3.17	1.10	1.49	1.65	G 1/8	M12x1	-	1.1
0TA	8	3.52	1.10	1.54	1.85	G 1/8	M12x1	-	1.1
1T1	10	4.57	1.46	1.67	2.40	G 1/4	M16x1	5.36	2.0
2T1	25	5.41	1.50	2.09	3.54	G 1/4	M16x1	5.51	4.2
3T1	40	6.81	2.09	2.22	4.49	G 1/4	M16x1	11.02	6.6
3TA	40	8.78	2.05	-	5.67	G 1/4	M16x1	-	16.1
4T1	50	8.78	2.05	2.78	5.67	G 1/4	M16x1	20.94	17.0
5T1	80	11.14	3.07	-	9.45	G 1/4	M26x1.5	-	40.8
5TA	80	11.69	3.15	-	9.45	G 1/4	M26x1.5	-	52.2
6T1	100	11.73	3.43	-	9.45	G 1/4	M26x1.5	-	44.1
6TA	100	13.98	5.24	-	9.45	G 1/4	M26x1.5	-	61.7
8TA	150	20.20	6.54	-	12.13	G 1/4	M26x1.5	-	209.4



* CT = A + H1 (see body dimensions)

Body dimensions [inch]

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

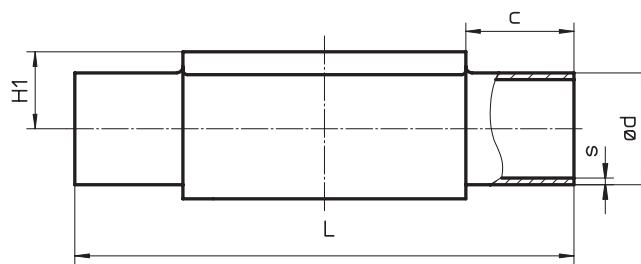
Pipe standard							DIN		EN 10357 series B (formerly DIN 11850 series 1)		EN 10357 series A (formerly DIN 11850 series 2) / DIN 11866 series A		DIN 11850 Series 3		Weight [lbs]
Connection code							0		16		17		18		
MG	DN	NPS	L	C (min)	H1*	H1**	ød	s	ød	s	ød	s	ød	s	
8	4	-	2.83	0.79	0.33		0.236	0.039	-	-	-	-	-	-	0.2
	6	-	2.83	0.79	0.33		-	-	-	-	0.315	0.039	-	-	0.2
	8	1/4"	2.83	0.79	0.33		-	-	-	-	0.394	0.039	-	-	0.2
	10	3/8"	2.83	0.79	0.33		-	-	0.472	0.039	0.512	0.059	0.551	0.079	0.2
10	10	3/8"	4.25	0.98	0.49		-	-	0.472	0.039	0.512	0.059	0.551	0.079	0.7
	15	1/2"	4.25	0.98	0.49		0.709	0.059	0.709	0.039	0.748	0.059	0.787	0.079	0.7
25	15	1/2"	4.72	0.98	0.51	0.75	0.709	0.059	0.709	0.039	0.748	0.059	0.787	0.079	1.4
	20	3/4"	4.72	0.98	0.63	0.75	0.866	0.059	0.866	0.039	0.906	0.059	0.945	0.079	1.3
	25	1"	4.72	0.98	0.75	0.75	1.102	0.059	1.102	0.039	1.142	0.059	1.181	0.079	1.2
40	32	1 1/4"	6.02	0.98	0.94	1.02	1.339	0.059	1.339	0.039	1.378	0.059	1.417	0.079	3.2
	40	1 1/2"	6.02	0.98	1.02	1.02	1.575	0.059	1.575	0.039	1.614	0.059	1.654	0.079	2.9
50	50	2"	6.81	1.18	1.26	1.26	2.047	0.059	2.047	0.039	2.087	0.059	2.126	0.079	5.0
80	65	2 1/2"	8.50	1.18	-	2.44	-	-	-	-	2.756	0.079	-	-	19.0
	80	3"	10.00	1.18	-	2.44	-	-	-	-	3.346	0.079	-	-	17.6
100	100	4"	12.01	1.18	-	2.99	-	-	-	-	4.094	0.079	-	-	53.1

* only for investment cast design

** only for forged design

MG = diaphragm size

For materials see overview on page 19



Body dimensions [inch]

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

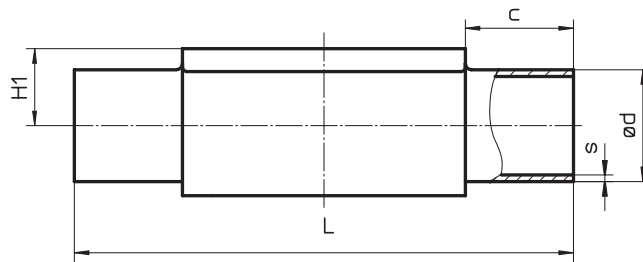
Pipe standard							ISO 1127 / EN 10357 series C / DIN 11866 series B		Weight [lbs]
Connection code							60		
MG	DN	NPS	L	c (min)	H1*	H1**	ød	s	
8	6	-	2.83	0.79	-	0.33	0.402	0.063	0.2
	8	1/4"	2.83	0.79	0.33	0.33	0.531	0.063	0.2
	10	3/8"	2.83	0.79	-	0.33	-	-	0.2
10	10	3/8"	4.25	0.98	0.49	0.49	0.677	0.063	0.7
	15	1/2"	4.25	0.98	0.49	0.49	0.839	0.063	0.7
25	15	1/2"	4.72	0.98	0.51	0.75	0.839	0.063	1.4
	20	3/4"	4.72	0.98	0.63	0.75	1.059	0.063	1.3
	25	1"	4.72	0.98	0.75	0.75	1.327	0.079	1.2
40	32	1 1/4"	6.02	0.98	0.94	1.02	1.669	0.079	3.2
	40	1 1/2"	6.02	0.98	1.02	1.02	1.902	0.079	2.9
50	50	2"	6.81	1.18	1.26	1.26	2.374	0.079	5.0
80	65	2 1/2"	8.50	1.18	-	2.44	2.996	0.079	19.0
	80	3"	10.00	1.18	-	2.44	3.500	0.091	17.6
100	100	4"	12.01	1.18	-	2.99	4.500	0.091	53.1

* only for investment cast design

** only for forged design

MG = diaphragm size

For materials see overview on page 19



Body dimensions [inch]

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

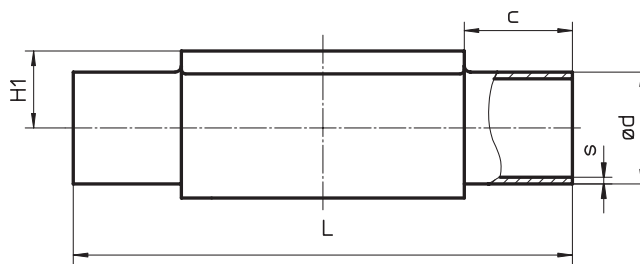
Pipe standard							JIS-G 3447		JIS-G 3459		SMS 3008		Weight [lbs]
Connection code							35		36		37		
MG	DN	NPS	L	c (min)	H1*	H1**	ød	s	ød	s	ød	s	
8	6	-	2.83	0.79	-	0.33	-	-	0.413	0.047	-	-	0.2
	8	1/4"	2.83	0.79	-	0.33	-	-	0.543	0.065	-	-	0.2
10	10	3/8"	4.25	0.98	-	0.49	-	-	0.681	0.065	-	-	0.7
	15	1/2"	4.25	0.98	-	0.49	-	-	0.854	0.083	-	-	0.7
25	15	1/2"	4.72	0.98	-	0.75	-	-	0.854	0.083	-	-	1.4
	20	3/4"	4.72	0.98	-	0.75	-	-	1.071	0.083	-	-	1.3
	25	1"	4.72	0.98	0.75	0.75	1.000	0.047	1.339	0.110	0.984	0.047	1.2
40	32	1 1/4"	6.02	0.98	-	1.02	1.252	0.047	1.681	0.110	1.327	0.047	3.2
	40	1 1/2"	6.02	0.98	1.02	1.02	1.500	0.047	1.913	0.110	1.496	0.047	2.9
50	50	2"	6.81	1.18	1.26	1.26	2.000	0.059	2.382	0.110	2.008	0.047	5.0
	65	2 1/2"	6.81	1.18	-	1.34	2.500	0.079	-	-	2.500	0.063	4.8
80	65	2 1/2"	8.50	1.18	-	2.44	2.500	0.079	3.004	0.118	2.500	0.063	19.0
	80	3"	10.00	1.18	-	2.44	3.004	0.079	3.508	0.118	2.996	0.063	17.6
100	100	4"	12.01	1.18	-	2.99	4.000	0.079	4.500	0.118	4.000	0.079	53.1

* only for investment cast design

** only for forged design

MG = diaphragm size

For materials see overview on page 19



Body dimensions [inch]

Butt weld spigots, connection code 55, 59, 63, 64, 65
Valve body material: Investment casting (code C3), forged body (code 40, F4),
block material (code 41)

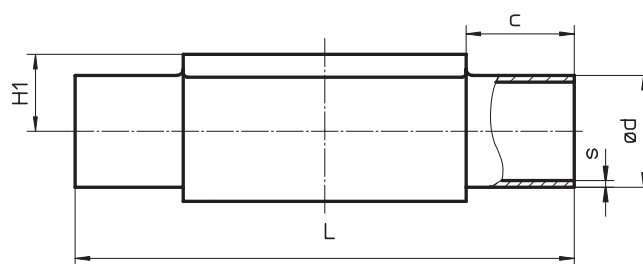
Pipe standard							BS 4825 Part 1		ASME BPE / DIN 11866 series C		ANSI/ASME B36.19M Schedule 10s		ANSI/ASME B36.19M Schedule 5s		ANSI/ASME B36.19M Schedule 40s		Weight [kg]
Connection code							55		59		63		64		65		
MG	DN	NPS	L	C (min)	H1*	H1**	ød	s	ød	s	ød	s	ød	s	ød	s	
8	6	-	2.83	0.79	-	0.33	-	-	-	-	0.406	0.049	-	-	0.406	0.068	0.2
	8	1/4"	2.83	0.79	0.33	0.33	0.250	0.047	0.250	0.035	0.539	0.065	-	-	0.539	0.088	0.2
	10	3/8"	2.83	0.79	0.33	0.33	0.375	0.047	0.375	0.035	-	-	-	-	-	-	0.2
	15	1/2"	2.83	0.79	0.33	0.33	0.500	0.047	0.500	0.065	-	-	-	-	-	-	0.2
10	10	3/8"	4.25	0.98	-	0.49	0.375	0.047	0.375	0.035	0.673	0.065	-	-	0.673	0.091	0.7
	15	1/2"	4.25	0.98	-	0.49	0.500	0.047	0.500	0.065	0.839	0.083	0.839	0.065	0.839	0.109	0.7
	20	3/4"	4.25	0.98	0.49	0.49	0.750	0.047	0.750	0.065	-	-	-	-	-	-	0.7
25	15	1/2"	4.72	0.98	-	0.75	-	-	-	-	0.839	0.083	0.839	0.065	0.839	0.109	1.4
	20	3/4"	4.72	0.98	0.63	0.75	0.750	0.047	0.750	0.065	1.051	0.083	1.051	0.065	1.051	0.113	1.3
	25	1"	4.72	0.98	0.75	0.75	-	-	1.000	0.065	1.315	0.109	1.315	0.065	1.315	0.133	1.2
40	32	1 1/4"	6.02	0.98	-	1.02	-	-	-	-	1.661	0.109	1.661	0.065	1.661	0.140	3.2
	40	1 1/2"	6.02	0.98	1.02	1.02	-	-	1.500	0.065	1.902	0.109	1.902	0.065	1.902	0.145	2.9
50	50	2"	6.81	1.18	1.26	1.26	-	-	2.000	0.065	2.374	0.109	2.374	0.065	2.374	0.154	5
	65	2 1/2"	6.81	1.18	-	1.34	-	-	2.500	0.065	-	-	-	-	-	-	4.6
80	65	2 1/2"	8.50	1.18	-	2.44	-	-	2.500	0.065	2.874	0.120	2.874	0.083	2.874	0.203	19
	80	3"	10.00	1.18	-	2.44	-	-	3.000	0.065	3.500	0.120	3.500	0.083	3.500	0.216	17.6
100	100	4"	12.01	1.18	-	2.99	-	-	4.000	0.083	4.500	0.120	4.500	0.083	4.500	0.237	53.1
150	150	6"	15.98	1.89	-	3.98	-	-	6.000	0.109	-	-	6.626	0.109	-	-	92.6

* only for investment cast design

** only for forged design

MG = diaphragm size

For materials see overview on page 19

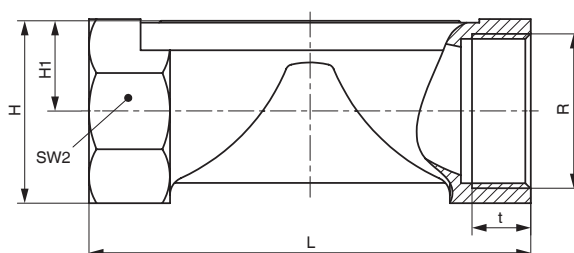


Body dimensions [inch]

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

MG	DN	R	H	H1	t	L	SW2	Number of flats	Weight [lbs]
8	8	G 1/4	0.75	0.35	0.43	2.83	18	6	0.2
10	12	G 3/8	0.98	0.51	0.47	2.17	22	2	0.37
	15	G 1/2	1.18	0.59	0.59	2.68	27	2	0.57
25	15	G 1/2	1.11	0.58	0.59	3.35	27	6	0.71
	20	G 3/4	1.31	0.68	0.63	3.35	32	6	0.75
	25	G 1	1.67	0.86	0.51	4.33	41	6	0.86
40	32	G 1 1/4	2.02	1.04	0.79	4.72	50	8	1.94
	40	G 1 1/2	2.22	1.13	0.71	5.51	55	8	2.05
50	50	G 2	2.81	1.43	1.02	6.50	70	8	3.44

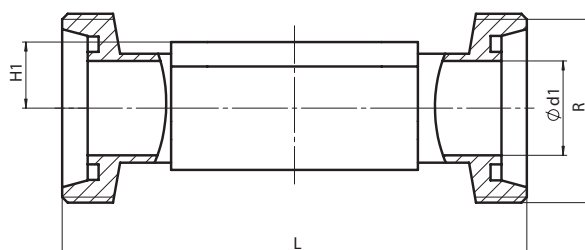
MG = diaphragm size



Threaded connections, connection code 6 Valve body material: Forged body (code 40)

MG	DN	H1	ød1	Thread to DIN 405 R	L	Weight [lbs]
8	10	0.33	0.394	RD 28 x 1/8	3.62	0.5
10	10	0.49	0.394	RD 28 x 1/8	4.65	0.7
	15	0.49	0.630	RD 34 x 1/8	4.65	0.8
25	15	0.75	0.630	RD 34 x 1/8	4.65	1.6
	20	0.75	0.787	RD 44 x 1/6	4.65	1.7
	25	0.75	1.024	RD 52 x 1/6	5.04	1.7
40	32	1.02	1.260	RD 58 x 1/6	5.79	3.7
	40	1.02	1.496	RD 65 x 1/6	6.30	3.6
50	50	1.26	1.969	RD 78 x 1/6	7.52	6.0
80	65	2.44	2.598	RD 95 x 1/6	9.69	20.3
	80	2.44	3.189	RD 110 x 1/4	10.08	20.3

MG = diaphragm size

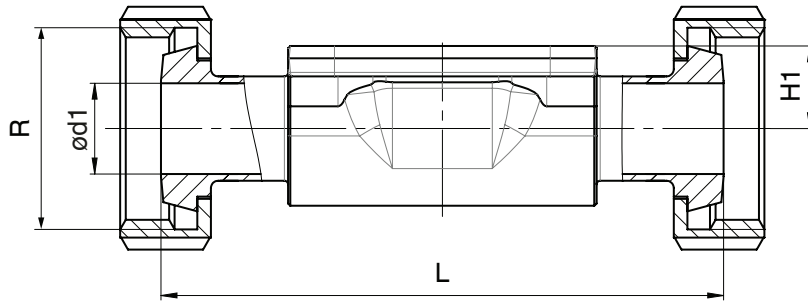


Body dimensions [inch]

Cone spigot, connection code 6K Valve body material: Forged body (code 40)

MG	DN	H1	ød1	Thread to DIN 405 R	L	Weight [lbs]
8	10	0.33	0.394	RD 28 x 1/8	3.54	0.5
10	10	0.49	0.394	RD 28 x 1/8	4.57	0.7
	15	0.49	0.630	RD 34 x 1/8	4.57	0.8
25	15	0.75	0.630	RD 34 x 1/8	4.57	1.6
	20	0.75	0.787	RD 44 x 1/6	4.49	1.7
	25	0.75	1.024	RD 52 x 1/6	5.00	1.7
40	32	1.02	1.260	RD 58 x 1/6	5.79	3.7
	40	1.02	1.496	RD 65 x 1/6	6.30	3.6
50	50	1.26	1.969	RD 78 x 1/6	7.52	6,0
80	65	2.44	2.598	RD 95 x 1/6	9.69	20.3
	80	2.44	3.189	RD 110 x 1/4	10.08	20.3

MG = diaphragm size



Body dimensions [inch]

Flanges - DIN EN 1092, connection code 8 Valve body material investment casting (code C3), forged body (code 40), investment casting PFA lined (code 39)

MG	DN	øD	øk	øL	Number of bolts	H1			FTF	Weight [lbs]
						Material code C3	Material code 39	Material code 40		
25	15	3.74	2.56	0.55	4	0.51	0.71	0.75	130*	4.1
	20	4.13	2.95	0.55	4	0.63	0.81	0.75	5.91	5.2
	25	4.53	3.35	0.55	4	0.75	0.91	0.75	6.30	6.3
40	32	5.51	3.94	0.75	4	0.94	1.13	1.02	7.09	10.8
	40	5.91	4.33	0.75	4	1.02	1.30	1.02	7.87	12.5
50	50	6.50	4.92	0.75	4	1.26	1.54	1.26	9.06	16.4
80	65	7.28	5.71	0.75	4	-	2.01	2.44	11.42	22.5
	80	7.87	6.30	0.75	8	-	2.34	2.44	12.20	31.3
100	100	8.66	7.09	0.75	8	-	2.87	2.99	13.78	46.3

* Material code C3, 40 FTF = 150 (no DIN length)

MG = diaphragm size

For materials see overview on page 20

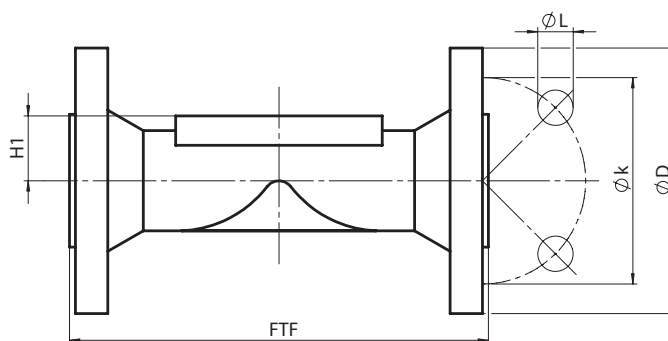
Flanges - ANSI Class 125/150 RF, connection code 38, 39 Valve body material investment casting (code C3), forged body (code 40), investment casting PFA lined (code 39)

MG	DN	øD	øk	øL	Number of bolts	H1			FTF		Weight [lbs]
						Material code C3	Material code 39	Material code 40	Connection code 38	Connection code 39	
25	15	3.54	2.37	0.63	4	0.51	0.71	0.75	-	130*	4.1
	20	3.94	2.75	0.63	4	0.63	0.81	0.75	5.75	5.91	5.2
	25	4.33	3.13	0.63	4	0.75	0.91	0.75	5.75	6.30	6.3
40	32	4.53	3.50	0.63	4	0.94	1.13	1.02	-	7.09	10.8
	40	4.92	3.87	0.63	4	1.02	1.30	1.02	6.89	7.87	12.5
50	50	5.91	4.75	0.75	4	1.26	1.54	1.26	7.87	9.06	16.4
80	65	7.09	5.50	0.75	4	-	2.01	2.44	8.90	11.42	22.5
	80	7.48	6.00	0.75	4	-	2.34	2.44	10.24	12.20	31.3
100	100	9.06	7.50	0.75	8	-	2.87	2.99	12.87	13.78	46.3

* Material code C3, 40 FTF = 150 (no DIN length)

MG = diaphragm size

For materials see overview on page 20

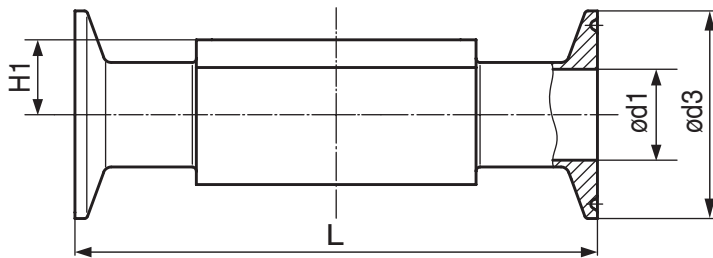


Body dimensions [inch]

Clamp connections, connection code 80, 82, 88, 8A, 8E, 8P, 8T
Valve body material: Forged body (code 40, F4),
block material (code 41)

Pipe connection for clamp				ASME BPE						ISO 1127 / EN 10357 series C / DIN 11866 series B			EN 10357 series A (formerly DIN 11850 series 2) / DIN 11866 series A			SMS 3008			Weight [lbs]
Clamp connection				Code 80, 88 - ASME BPE Code 8P, 8T - DIN 32676 series C						DIN 32676 series B			DIN 32676 series A			ISO 2852 / SMS 3017			
Clamp connection code				80, 8P			88, 8T			82			8A			8E			
MG	DN	NPS	H1	ød1	ød3	L	ød1	ød3	L	ød1	ød3	L	ød1	ød3	L	ød1	ød3	L	
8	6	1/8"	0.33	-	-	-	-	-	-	0.276	0.984	2.50	0.236	0.984	2.50	-	-	-	-
	8	1/4"	0.33	0.180	0.984	2.50	-	-	-	0.406	0.984	2.50	0.315	0.984	2.50	-	-	-	0.3
	10	3/8"	0.33	0.305	0.984	2.50	-	-	-	-	-	-	0.394	1.339	3.50	-	-	-	0.4
	15	1/2"	0.33	0.370	0.984	2.50	0.370	0.984	4.25	-	-	-	-	-	-	-	-	-	0.4
10	10	3/8"	0.49	-	-	-	-	-	-	0.551	0.984	4.25	0.394	1.339	4.25	-	-	-	0.7
	15	1/2"	0.49	0.370	0.984	3.50	0.370	0.984	4.25	0.713	1.988	4.25	0.63	1.339	4.25	-	-	-	0.9
	20	3/4"	0.49	0.620	0.984	4.00	0.620	0.984	4.61	-	-	-	-	-	-	-	-	-	0.9
25	15	1/2"	0.75	-	-	-	-	-	-	0.713	1.988	4.25	0.630	1.339	4.25	-	-	-	1.6
	20	3/4"	0.75	0.620	0.984	4.00	0.620	0.984	4.61	0.933	1.988	4.61	0.787	1.339	4.61	-	-	-	1.6
	25	1"	0.75	0.870	1.988	4.50	0.870	1.988	5.00	1.169	1.988	5.00	1.024	1.988	5.00	0.890	1.988	5.00	1.4
40	32	1 1/4"	1.02	-	-	-	-	-	-	1.512	2.52	5.75	1.260	1.988	5.75	1.232	1.988	5.75	3.6
	40	1 1/2"	1.02	1.370	1.988	5.50	1.370	1.988	6.26	1.744	2.52	6.26	1.496	1.988	6.26	1.402	1.988	6.26	3.3
50	50	2"	1.26	1.870	2.520	6.25	1.870	2.520	7.48	2.217	3.051	7.48	1.969	2.520	7.48	1.913	2.520	7.48	5.5
	65	2 1/2"	1.34	2.370	3.051	7.63	2.370	3.051	8.50	-	-	-	-	-	-	2.374	3.051	8.50	5.1
80	65	2 1/2"	2.44	2.370	3.051	7.63	2.370	3.051	8.50	2.839	3.583	8.50	2.598	3.583	8.50	2.374	3.051	8.50	19.6
	80	3"	2.44	2.870	3.583	8.75	2.870	3.583	10.00	3.319	4.173	10.00	3.189	4.173	10.00	2.870	3.583	10.00	18.7
100	100	4"	2.99	3.834	4.685	11.50	3.834	4.685	12.01	4.319	5.118	12.01	3.937	4.685	12.01	3.843	4.685	12.01	54.7
150	150	6"	3.98	-	-	-	5.782	6.575	15.98	-	-	-	-	-	-	-	-	-	95.0

MG = diaphragm size



Overview of valve bodies for GEMÜ 650																				
		Spigots																		
Connection code		0		16	17		18	35	36	37		55	59			60		63	64	65
Material code		C3	40	40	C3	40	40	40	40	C3	40	40	C3	40	41	C3	40	40	40	40
MG	DN																			
8	4	X	X	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	6	-	-	-	X	X	-	-	X	-	-	-	-	-	-	-	X	X	-	X
	8	-	-	-	X	X	-	-	X	-	-	X	X	X	-	X	X	X	-	X
	10	-	-	X	X	X	X	-	-	-	-	X	X	X	-	-	-	-	-	-
	15	-	-	-	-	-	-	-	-	-	-	X	X	X	-	-	-	-	-	-
10	10	-	-	X	X	X	X	-	X	-	-	X	-	X	-	X	X	X	-	X
	15	-	X	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	X
	20	-	X	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	X
40	32	-	X	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	X
50	50	-	X	X	X	X	X	X	X	X	X	-	X	X	-	X	X	X	X	X
	65	-	-	-	-	-	-	X	-	-	X	-	-	X	-	-	-	-	-	-
80	65	-	-	-	-	X	-	X	X	-	X	-	-	X	-	-	X	X	X	X
	80	-	-	-	-	X	-	X	X	-	X	-	-	X	-	-	X	X	X	X
100	100	-	-	-	-	X	-	X	X	-	X	-	-	X	-	-	X	X	X	X
150	150	-	-	-	-	-	-	-	-	-	-	-	-	-	X	-	-	-	X	-
Availability of material code 42, F4: same as code 40 MG = diaphragm size																				

Overview of valve bodies for GEMÜ 650																	
		Threaded connections			Clamps						Flanges						
Connection code		1	6	6K	80, 8P	82	88, 8T		8A	8E	8			38	39		
Material code		37	40	40	40	40	40	41	40	40	C3	39	40	39	C3	39	40
MG	DN																
8	6	-	-	-	-	K	-	-	K	-	-	-	-	-	-	-	-
	8	X	-	-	K	K	-	-	K	-	-	-	-	-	-	-	-
	10	-	W	W	K	-	-	-	W	-	-	-	-	-	-	-	-
	15	-	-	-	K	-	W	-	-	-	-	-	-	-	-	-	-
10	10	-	W	W	-	K	-	-	K	-	-	-	-	-	-	-	-
	12	X	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	15	X	W	W	K	W	K	-	K	-	-	-	-	-	-	-	-
	20	-	-	-	K	-	K	-	-	-	-	-	-	-	-	-	-
25	15	X	W	W	-	W	-	-	K	-	W	X	W	-	W	X	W
	20	X	W	W	K	K	K	-	K	-	W	X	W	X	W	X	W
	25	X	W	W	K	K	K	-	K	K	W	X	W	X	W	X	W
40	32	X	W	W	-	W	-	-	K	K	W	X	W	-	W	X	W
	40	X	W	W	K	W	K	-	K	K	W	X	W	X	W	X	W
50	50	X	W	W	K	W	K	-	K	K	W	X	W	X	W	X	W
	65	-	-	-	W	-	W	-	-	W	-	-	-	-	-	-	-
80	65	-	W	W	K	K	K	-	K	K	-	-	W	-	-	-	W
	80	-	W	W	K	W	K	-	W	K	-	X	W	X	-	X	W
100	100	-	-	-	W	W	W	-	W	W	-	X	W	X	-	X	W
150	150	-	-	-	-	-	-	W	-	-	-	-	-	-	-	-	-

X = Standard

K = Connections completely machined (not welded)

W = Welded construction

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

