GEMÜ 658

Pneumatically operated diaphragm valve

Features

- An adjusting screw in the actuator enables the setting of the opening and closing function and also the setting of a partial stroke (for reduced flow)
- Both fast on/off operation and precision dosing of the working medium possible
- Suitable for inert, corrosive, liquid and gaseous media
- CIP/SIP capable
- Compact design (ideal when space is at a premium)
- Version according to ATEX on request
- Mounting of proximity switches for OPEN and CLOSED position feedback possible

Description

The GEMÜ 658 2/2-way diaphragm valve has a two-stage actuator. In addition to full stroke, a partial stroke can be set via two pistons working independently of each other.
All actuator parts including closing springs (except seals) are made from stainless steel. The valve is available with a Normally Closed control function. An opening stroke limiter for setting the partial stroke is integrated as standard.

Technical specifications

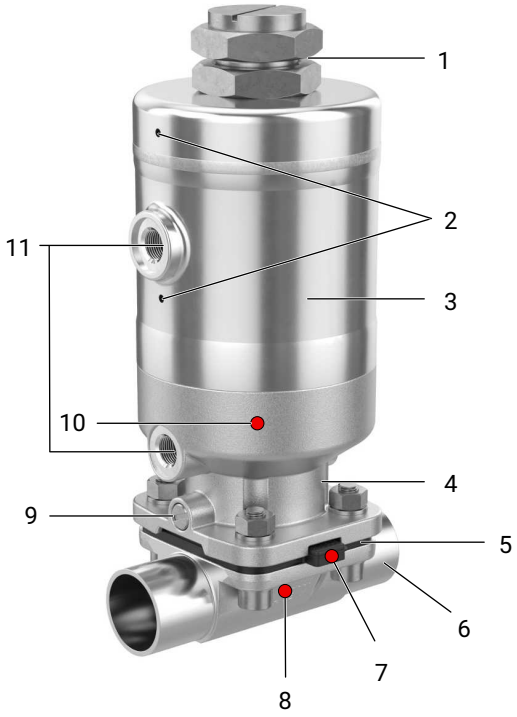
- **Media temperature :** -10 to 100 °C
- **Sterilization temperature:** Max. 150 °C
- **Ambient temperature:** 0 to 60 °C
- **Operating pressure :** 0 to 10 bar
- **Nominal sizes:** DN 10 to 65
- **Body configurations:** 2/2-way body I i-body I Multi-port body I T body I Tank valve body I Welding configuration
- **Connection types:** Clamp I Flange I Spigot I Threaded connection
- **Connection standards:** ANSI I ASME I BS I DIN I EN I ISO I JIS I SMS
- **Body materials:** 1.4408, investment casting material I 1.4435 (316L), forged material I 1.4435 (BN2), forged material I 1.4435, investment casting material I 1.4539 (904L), forged material
- **Diaphragm materials:** EPDM I PTFE/EPDM
- **Conformities:** 3A I BSE/TSE I CRN I EAC I FDA I Oxygen I Reg. (EU) No. 10/2011 I Regulation (EC) No. 1935/2004 I Regulation (EC) No. 2023/2006 I TA Luft (German Clean Air Act) I USP

Technical data depends on the respective configuration

further information
webcode: GW-658

Product description

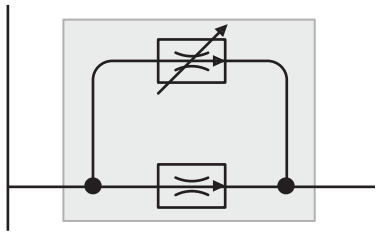
Construction



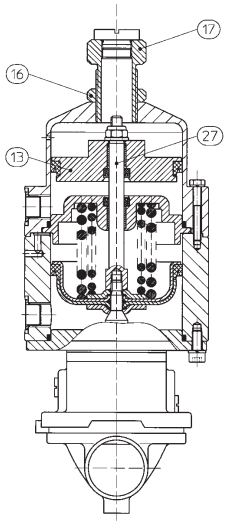
Item	Name	Materials
1	Opening stroke limiter	
2	Vent hole	
3	Two-stage actuator	1.4404 / 1.4408
4	Distance piece with leak detection hole	1.4408
5	Diaphragm	EPDM, FKM, PTFE/EPDM
6	Valve body	1.4408, investment casting 1.4435, investment casting 1.4435 (F316L), forged body 1.4435 (BN2), forged body, Δ Fe < 0.5 % 1.4539, forged body
7	CONEXO diaphragm RFID chip (see Conexo information)	
8	CONEXO body RFID chip* (see Conexo information)	
9	Mounting for OPEN and CLOSED proximity switches	
10	CONEXO actuator RFID chip (see Conexo information)	
11	Pneumatic connections	

* Body material 1.4408, investment casting – without chip

Application example



Functional description



When control pressure is applied, the lower actuator piston strokes 100%. The stroke of the upper part of the actuator, however, can be steplessly limited from 0% to 100% by means of the opening stroke limiter (item 17) and secured by the lock nut (item 16). When an opening stroke limiter is used, the piston (item 13) moves against the opening stroke limiter (item 17) and flow restriction is possible. If the lower part of the actuator is under control pressure, the valve fully opens, pushing the spindle (item 27) upwards through the upper piston.

GEMÜ CONEXO

The interaction of valve components that are equipped with RFID chips and an associated IT infrastructure actively increase process reliability.

Thanks to serialization, every valve and every relevant valve component such as the body, actuator or diaphragm, and even automation components, can be clearly traced and read using the CONEXO pen RFID reader. The CONEXO app, which can be installed on mobile devices, not only facilitates and improves the "installation qualification" process, but also makes the maintenance process much more transparent and easier to document. The app actively guides the maintenance technician through the maintenance schedule and directly provides him with all the information assigned to the valve, such as test reports, testing documentation and maintenance histories. The CONEXO portal acts as a central element, helping to collect, manage and process all data.

For further information on GEMÜ CONEXO please visit:
www.gemu-group.com/conexo

Ordering

GEMÜ Conexo must be ordered separately with the ordering option "CONEXO".

Availability

Availability of grades of surface finish

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 according 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

Ra acc. to DIN EN ISO 4288 and ASME B46.1

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 pipe connections with an internal pipe diameter < 6 mm is 0.38 µm.

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.

Actuator assignment

MG	Actuator version	Control air connector
10	**1T1**	in-line with flow direction
25	**2T1**	in-line with flow direction
40	**3TA**	in-line with flow direction
50	**4T1**	in-line with flow direction

MG = diaphragm size

Availability of valve bodies

Spigot

MG	DN	Connection type code [1]															
		0	16	17		18	35	36	37		55	59		60		63	64	65
		Material code [2]																
		40, 42, F4	40, 42, F4	C3	40, 42, F4	40, 42, F4	40, 42, F4	40, 42, F4	C3	40, 42, F4	40, 42, F4	C3	40, 42, F4	C3	40, 42, F4	40, 42, F4	40, 42, F4	40, 42, F4
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	-	-	-	-	-

MG = diaphragm size, X = standard

1) **Connection type**
Code 0: Spigot DIN
Code 16: Spigot EN 10357 series B, formerly DIN 11850 series 1
Code 17: Spigot EN 10357 series A / DIN 11866 series A formerly DIN 11850 series 2
Code 18: Spigot DIN 11850 series 3
Code 35: Spigot JIS-G 3447
Code 36: Spigot JIS-G 3459 schedule 10s
Code 37: Spigot SMS 3008
Code 55: Spigot BS 4825, part 1
Code 59: Spigot ASME BPE/DIN 11866 series C
Code 60: Spigot ISO 1127/EN 10357 series C/DIN 11866 series B
Code 63: Spigot ANSI/ASME B36.19M schedule 10s
Code 64: Spigot ANSI/ASME B36.19M schedule 5s
Code 65: Spigot ANSI/ASME B36.19M schedule 40s

2) **Valve body material**
Code 40: 1.4435 (F316L), forged body
Code 42: 1.4435 (BN2), forged body, Δ Fe < 0.5%
Code C3: 1.4435, investment casting
Code F4: 1.4539, forged body

Threaded connection

MG	DN	Connection type code [1]	
		1	6, 6K
		Material code [2]	
		37	40, 42
10	10	-	W
	12	X	-
	15	X	W
25	15	X	W
	20	X	W
	25	X	W
40	32	X	W
	40	X	W
50	50	X	W

MG = diaphragm size, X = standard
W = welded assembly

1) **Connection type**
Code 1: Threaded socket DIN ISO 228
Code 6: Threaded spigot DIN 11851
Code 6K: Cone spigot and union nut DIN 11851

2) **Valve body material**
Code 37: 1.4408, investment casting
Code 40: 1.4435 (F316L), forged body
Code 42: 1.4435 (BN2), forged body, Δ Fe < 0.5%

Flange

MG	DN	Connection type code [1]	
		8	
		Material code [2]	
		C3	40, 42
25	15	W	W
	20	W	W
	25	W	W
40	32	W	W
	40	W	W
50	50	W	W

MG = diaphragm size, X = standard
W = welded assembly

1) **Connection type**
Code 8: Flange EN 1092, PN 16, form B, face-to-face dimension FTF EN 558 series 1, ISO 5752, basic series 1, length only for body configuration D

2) **Valve body material**
Code 40: 1.4435 (F316L), forged body
Code 42: 1.4435 (BN2), forged body, Δ Fe < 0.5%
Code C3: 1.4435, investment casting

Clamp

MG	DN	Connection type code [1]				
		80, 8P	82	88, 8T	8A	8E
		Material code [2]				
		40, 42, F4				
10	**10**	-	K	-	K	-
	15	K	W	K	K	-
	20	K	-	K	-	-
25	**15**	-	W	-	K	-
	20	K	K	K	K	-
	25	K	K	K	K	K
40	**32**	-	W	-	K	K
	40	K	W	K	K	K
50	**50**	K	W	K	K	K
	65	W	-	W	-	W

MG = diaphragm size
K = connections completely machined (not welded)
W = welded assembly

1) **Connection type**
Code 80: Clamp ASME BPE, face-to-face dimension FTF ASME BPE, length only for body configuration D
Code 82: Clamp DIN 32676 series B, face-to-face dimension FTF EN 558 series 7, length only for body configuration D
Code 88: Clamp ASME BPE, for pipe ASME BPE, face-to-face dimension FTF EN 558 series 7, length only for body configuration D
Code 8A: Clamp DIN 32676 series A, face-to-face dimension FTF acc. to EN 558 series 7, length only for body configuration D
Code 8E: Clamp ISO 2852 for pipe ISO 2037, clamp SMS 3017 for pipe SMS 3008 face-to-face dimension FTF EN 558 series 7, length only for body configuration D
Code 8P: Clamp DIN 32676 series C, face-to-face dimension FTF ASME BPE, length only for body configuration D
Code 8T: Clamp DIN 32676 series C, face-to-face dimension FTF EN 558 series 7, length only for body configuration D

2) **Valve body material**
Code 40: 1.4435 (F316L), forged body
Code 42: 1.4435 (BN2), forged body, Δ Fe < 0.5%
Code F4: 1.4539, forged body

Order data

The order data provide an overview of standard configurations.

Please check the availability before ordering. Other configurations available on request.

Order codes

1 Type	Code
Diaphragm valve, pneumatically operated, stainless steel two-stage actuator	658

2 DN	Code
DN 10	10
DN 12	12
DN 15	15
DN 20	20
DN 25	25
DN 32	32
DN 40	40
DN 50	50
DN 65	65

3 Body configuration	Code
Tank bottom valve body	B
Body configuration code B: Dimensions and designs on request	
2/2-way body	D
T body	T
Body configuration code T: Dimensions on request	

4 Connection type	Code
Spigot	
Spigot DIN	0
Spigot EN 10357 series B, formerly DIN 11850 series 1	16
Spigot EN 10357 series A / DIN 11866 series A formerly DIN 11850 series 2	17
Spigot DIN 11850 series 3	18
Spigot JIS-G 3447	35
Spigot JIS-G 3459 schedule 10s	36
Spigot SMS 3008	37
Spigot 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
Spigot ANSI/ASME B36.19M schedule 10s	63
Spigot ANSI/ASME B36.19M schedule 5s	64
Spigot ANSI/ASME B36.19M schedule 40s	65
Threaded connection	
Threaded socket DIN ISO 228	1
Threaded spigot DIN 11851	6
Cone spigot and union nut DIN 11851	6K
Flange	
Flange EN 1092, PN 16, form B, face-to-face dimension FTF EN 558 series 1, ISO 5752, basic series 1, length only for body configuration D	8

4 Connection type	Code
Clamp	
Clamp ASME BPE, face-to-face dimension FTF ASME BPE, length only for body configuration D	80
Clamp DIN 32676 series B, face-to-face dimension FTF EN 558 series 7, length only for body configuration D	82
Clamp ASME BPE, for pipe ASME BPE, face-to-face dimension FTF EN 558 series 7, length only for body configuration D	88
Clamp DIN 32676 series A, face-to-face dimension FTF acc. to EN 558 series 7, length only for body configuration D	8A
Clamp ISO 2852 for pipe ISO 2037, clamp SMS 3017 for pipe SMS 3008 face-to-face dimension FTF EN 558 series 7, length only for body configuration D	8E
Clamp DIN 32676 series C, face-to-face dimension FTF ASME BPE, length only for body configuration D	8P
Clamp DIN 32676 series C, face-to-face dimension FTF EN 558 series 7, length only for body configuration D	8T

5 Valve body material	Code
Investment casting material	
1.4408, investment casting	37
1.4435, investment casting	C3
Forged material	
1.4435 (F316L), forged body	40
1.4435 (BN2), forged body, Δ Fe < 0.5%	42
1.4539, forged body	F4

6 Diaphragm material	Code
Elastomer	
FKM	4
EPDM	13
EPDM	17
EPDM	19
EPDM	36
PTFE	
PTFE/EPDM one-piece	54
PTFE/EPDM two-piece	5M

7 Control function	Code
Normally closed (NC)	1

8 Actuator version	Code
Actuator size 1T1	1T1
Actuator size 2T1	2T1

8 Actuator version	Code
Actuator size 3TA	3TA
Actuator size 4T1	4T1

9 Surface	Code
Ra ≤ 6.3 µm (250 µin.) for media wetted surfaces, mechanically polished internal	1500
Ra ≤ 0.8 µm (30 µin.) for media wetted surfaces, in accordance with DIN 11866 H3, mechanically polished internal	1502
Ra ≤ 0.8 µm (30 µin.) for media wetted surfaces, in accordance with DIN 11866 HE3, electropolished internal/external	1503
Ra ≤ 0.6 µm (25 µin.) for media wetted surfaces, mechanically polished internal	1507
Ra ≤ 0.6 µm (25 µin.) for media wetted surfaces, electropolished internal/external	1508
Ra ≤ 0.25 µm (10 µin.) for media wetted surfaces *), in accordance with DIN 11866 HE5, electropolished internal/external, *) for inner pipe diameters < 6 mm, in the spigot Ra ≤ 0.38 µm	1516
Ra ≤ 0.25 µm (10 µin.) for media wetted surfaces *), in accordance with DIN 11866 H5, mechanically polished internal, *) for inner pipe diameters < 6 mm, in the spigot Ra ≤ 0.38 µm	1527
Ra ≤ 0.4 µm (15 µin.) for media wetted surfaces, in accordance with DIN 11866 H4, mechanically polished internal	1536
Ra ≤ 0.4 µm (15 µin.) for media wetted surfaces, in accordance with DIN 11866 HE4, electropolished internal/external	1537
Ra max. 0.51 µm (20 µin.) for media wetted surfaces, in accordance with ASME BPE SF1, mechanically polished internal	SF1
Ra max. 0.64 µm (25 µin.) for media wetted surfaces, in accordance with ASME BPE SF2, mechanically polished internal	SF2
Ra max. 0.76 µm (30 µin.) for media wetted surfaces, in accordance with ASME BPE SF3, mechanically polished internal	SF3
Ra max. 0.38 µm (15 µin.) for media wetted surfaces, in accordance with ASME BPE SF4, electropolished internal/external	SF4
Ra max. 0.51 µm (20 µin.) for media wetted surfaces, in accordance with ASME BPE SF5, electropolished internal/external	SF5
Ra max. 0.64 µm (25 µin.) for media wetted surfaces, in accordance with ASME BPE SF6, electropolished internal/external	SF6

10 Special version	Code
Without	
Special version for 3A	M
Special version for oxygen, maximum medium temperature: 60 °C	S

11 CONEXO	Code
Integrated RFID chip for electronic identification and traceability	C

11 CONEXO	Code
Without	

Order example

Ordering option	Code	Description
1 Type	658	Diaphragm valve, pneumatically operated, stainless steel two-stage actuator
2 DN	25	DN 25
3 Body configuration	D	2/2-way body
4 Connection type	60	Spigot ISO 1127/EN 10357 series C/DIN 11866 series B
5 Valve body material	40	1.4435 (F316L), forged body
6 Diaphragm material	5M	PTFE/EPDM two-piece
7 Control function	1	Normally closed (NC)
8 Actuator version	2T1	Actuator size 2T1
9 Surface	1503	Ra ≤ 0.8 µm (30 µin.) for media wetted surfaces, in accordance with DIN 11866 HE3, electropolished internal/external
10 Special version		Without
11 CONEXO		Without

Technical data

Medium

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).

For special oxygen version (code S):only gaseous oxygen

Control medium:

Inert gases

Temperature

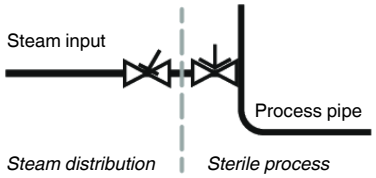
Media temperature:

Diaphragm material	Standard	Special version for oxygen
FKM (Code 4)	-10 — 90 °C	-
EPDM (Code 13)	-10 — 100 °C	0 — 60 °C
EPDM (Code 17)	-10 — 100 °C	-
EPDM (Code 19)	-10 — 100 °C	0 — 60 °C
EPDM (Code 36)	-10 — 100 °C	-
PTFE/EPDM (Code 54)	-10 — 100 °C	0 — 60 °C
PTFE/EPDM (Code 5M)	-10 — 100 °C	0 — 60 °C

Sterilization temperature:

FKM (Code 4)	not applicable
EPDM (Code 13)	max. 150 °C, max. 60 min per cycle
EPDM (Code 17)	max. 150 °C, max. 180 min per cycle
EPDM (Code 19)	max. 150 °C, max. 180 min per cycle
EPDM (Code 36)	max. 150 °C, max. 60 min per cycle
PTFE/EPDM (Code 54)	max. 150 °C, permanent temperature per cycle
PTFE/EPDM (Code 5M)	max. 150 °C, permanent temperature per cycle

The sterilization temperature is only valid for steam (saturated steam) or superheated water.
If the sterilization 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.
PTFE diaphragms can also be used as moisture barriers; however, this will reduce their service life. This also applies to PTFE diaphragms exposed to high temperature fluctuations. 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 temperature:

max. 60 °C

Storage temperature:

0 — 40 °C

Pressure

Operating pressure:

MG	Diaphragm material		
	EPDM/FKM	PTFE (code 5M)	PTFE (code 54)
10	0 - 10.0	0 - 10.0	0 - 8.0
25	0 - 10.0	0 - 10.0	0 - 8.0
40	0 - 10.0	0 - 10.0	0 - 8.0
50	0 - 10.0	0 - 10.0	0 - 8.0

MG = diaphragm size
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.

Pressure rating: PN 16

Leakage rate: Leakage rate A to P11/P12 EN 12266-1

Control pressure:

MG	Control pressure
10	4.5 - 6.0
25	5.5 - 7.0
40	3.5 - 7.0
50	5.5 - 7.0

MG = diaphragm size
All pressures are gauge pressures.

Filling volume:

MG	lower piston	upper piston
10	0.04	0.03
25	0.11	0.04
40	0.52	0.42
50	0.54	0.42

Actuator volume in dm^3

Kv values:

MG	DN	Connection types (code)							
		0	16	17	18	37	59	60	1
10	**10**	-	2.4	2.4	2.4	-	2.2	3.3	-
	12	-	-	-	-	-	-	-	3.2
	15	3.3	3.8	3.8	3.8	-	2.2	4.0	3.4
	20	-	-	-	-	-	3.8	-	-
25	**15**	4.1	4.7	4.7	4.7	-	-	7.4	6.5
	20	6.3	7.0	7.0	7.0	-	4.4	13.2	10.0
	25	13.9	15.0	15.0	15.0	12.6	12.2	16.2	14.0
40	**32**	25.3	27.0	27.0	27.0	26.2	-	30.0	26.0
	40	29.3	30.9	30.9	30.9	30.2	29.5	32.8	33.0
50	**50**	46.5	48.4	48.4	48.4	51.7	50.6	55.2	60.0
	65	-	-	-	-	62.2	61.8	-	-

MG = diaphragm size
Kv values in m^3/h
Kv values determined in accordance with DIN EN 60534 standard, 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.
The Kv value curve (Kv value dependent on valve stroke) can vary depending on the diaphragm material and duration of use.

Product conformity

Machinery Directive: 2006/42/EC

Pressure Equipment Directive: 2014/68/EU

Food:
FDA*
Regulation (EC) No. 1935/2004*
Regulation (EC) No. 10/2011*
Regulation (EC) No. 2023/2006*
FDA 21 CFR 177.2600*
USP* Class VI Titel 87
USP* Class VI Title 88 (50 °C and 121 °C)
3A*

TA Luft (German Clean Air Act):
The product meets the following requirements under the max. permissible operating conditions:
-Tightness or compliance with the specific leak rate within the sense of TA-Luft as well as VDI 2440 and VDI 2290
-Compliance with the requirements in accordance with DIN EN ISO 15848-1, Table C.2, Class BH

BSE/TSE: The product conforms to EMA/410/01 revision 3 and is free of animal substances*

* depending on version and/or operating parameters

Mechanical data

Weight:

Actuator

MG	Actuator version	Weight
10	**1T1**	1.75
25	**2T1**	4.20
40	**3TA**	14.50
50	**4T1**	16.20

Weights in kg
MG = diaphragm size

Weight:

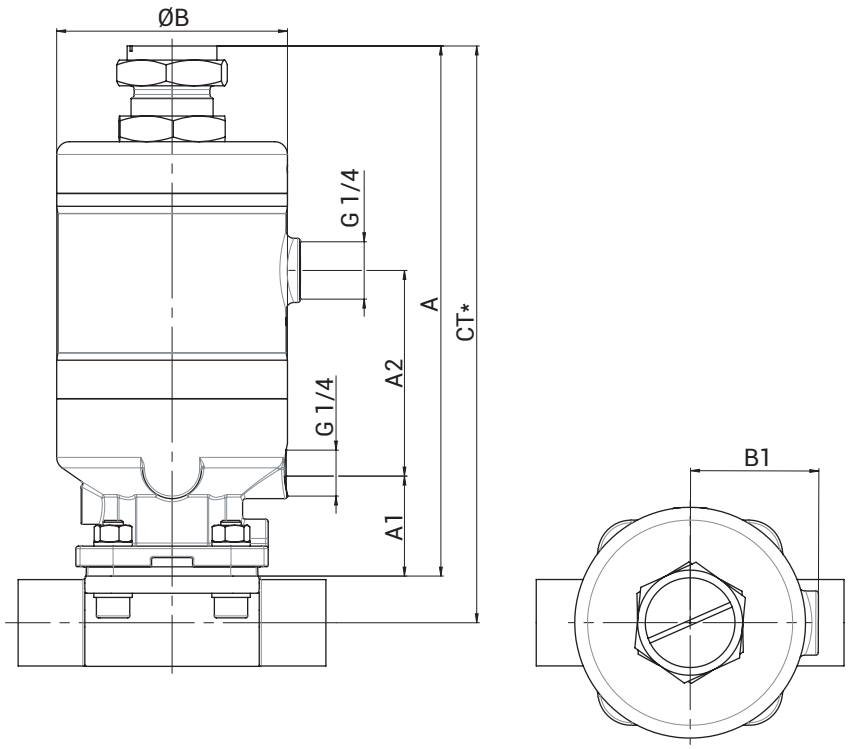
Body

MG	DN	Spigot	Threaded socket	Threaded spigot, cone spigot	Flange	Clamp
		Connection type code				
		0, 16, 17, 18, 35, 36, 37, 55, 59, 60, 63, 64, 65	1	6, 6K	8	80, 82, 88, 8A , 8E, 8P, 8T
10	**10**	0.30	-	0.33	-	0.30
	12	-	0.17	-	-	-
	15	0.30	0.26	0.35	-	0.43
	20	0.30	-	-	-	0.43
25	**15**	0.62	0.32	0.71	1.50	0.75
	20	0.58	0.34	0.78	2.20	0.71
	25	0.55	0.39	0.79	2.80	0.63
40	**32**	1.45	0.88	1.66	3.40	1.62
	40	1.32	0.93	1.62	4.50	1.50
50	**50**	2.25	1.56	2.70	7.45	2.50
	65	2.20	-	-	-	2.30

Weights in kg
MG = diaphragm size

Dimensions

Actuator dimensions

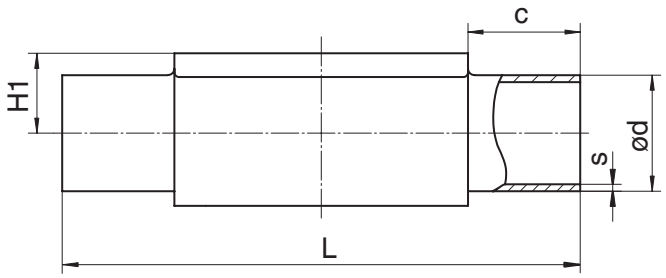


MG	Actuator version	A	A1	A2	ØB	B1
10	**1T1**	169.0	35.0	63.0	61.0	35.5
25	**2T1**	208.0	42.0	77.5	90.0	50.0
40	**3TA**	331.0	52.0	149.5	144.0	77.0
50	**4T1**	331.0	54.0	148.0	144.0	77.0

Dimensions in mm
MG = diaphragm size
* CT = A + H1 (see body dimensions)

Body dimensions

Spigot DIN/EN/ISO (code 0, 16, 17, 18, 60)



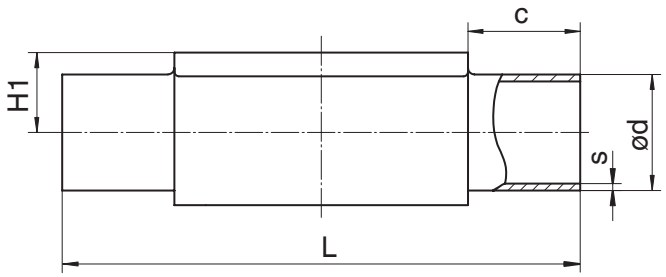
Connection type spigot DIN/EN/ISO (code 0, 16, 17, 18, 60) [1], forged material (code 40, 42, F4) [2]

MG	DN	NPS	c (min)	ød					H1	L	s				
				Connection type							Connection type				
				0	16	17	18	60			0	16	17	18	60
10	**10**	**3/8"**	25.0	-	12.0	13.0	14.0	17.2	12.5	108.0	-	1.0	1.5	2.0	1.6
	15	**1/2"**	25.0	18.0	18.0	19.0	20.0	21.3	12.5	108.0	1.5	1.0	1.5	2.0	1.6
25	**15**	**1/2"**	25.0	18.0	18.0	19.0	20.0	21.3	19.0	120.0	1.5	1.0	1.5	2.0	1.6
	20	**3/4"**	25.0	22.0	22.0	23.0	24.0	26.9	19.0	120.0	1.5	1.0	1.5	2.0	1.6
	25	**1"**	25.0	28.0	28.0	29.0	30.0	33.7	19.0	120.0	1.5	1.0	1.5	2.0	2.0
40	**32**	**1¼"**	25.0	34.0	34.0	35.0	36.0	42.4	26.0	153.0	1.5	1.0	1.5	2.0	2.0
	40	**1½"**	25.0	40.0	40.0	41.0	42.0	48.3	26.0	153.0	1.5	1.0	1.5	2.0	2.0
50	**50**	**2"**	30.0	52.0	52.0	53.0	54.0	60.3	32.0	173.0	1.5	1.0	1.5	2.0	2.0

Dimensions in mm
MG = diaphragm size

1) **Connection type**
Code 0: Spigot DIN
Code 16: Spigot EN 10357 series B, formerly DIN 11850 series 1
Code 17: Spigot EN 10357 series A / DIN 11866 series A formerly DIN 11850 series 2
Code 18: Spigot DIN 11850 series 3
Code 60: Spigot ISO 1127/EN 10357 series C/DIN 11866 series B

2) **Valve body material**
Code 40: 1.4435 (F316L), forged body
Code 42: 1.4435 (BN2), forged body, Δ Fe < 0.5%
Code F4: 1.4539, forged body



Connection type spigot DIN/EN/ISO (code 17, 60) [1], investment casting material (code C3) [2]

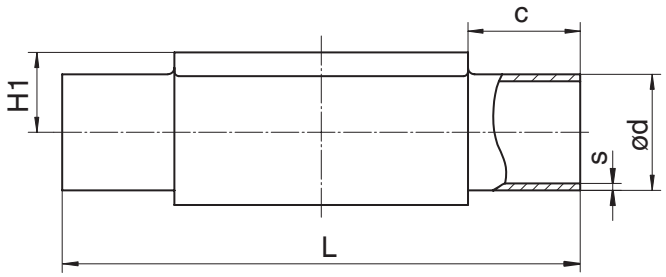
MG	DN	NPS	c (min)	ød		H1	L	s	
				Connection type				Connection type	
				17	60			17	60
10	**10**	**3/8"**	25.0	13.0	17.2	12.5	108.0	1.5	1.6
	15	**1/2"**	25.0	19.0	21.3	12.5	108.0	1.5	1.6
25	**15**	**1/2"**	25.0	19.0	21.3	13.0	120.0	1.5	1.6
	20	**3/4"**	25.0	23.0	26.9	16.0	120.0	1.5	1.6
	25	**1"**	25.0	29.0	33.7	19.0	120.0	1.5	2.0
40	**32**	**1¼"**	25.0	35.0	42.4	24.0	153.0	1.5	2.0
	40	**1½"**	25.0	41.0	48.3	26.0	153.0	1.5	2.0
50	**50**	**2"**	30.0	53.0	60.3	32.0	173.0	1.5	2.0

Dimensions in mm
MG = diaphragm size

1) **Connection type**
Code 17: Spigot EN 10357 series A / DIN 11866 series A formerly DIN 11850 series 2
Code 60: Spigot ISO 1127/EN 10357 series C/DIN 11866 series B

2) **Valve body material**
Code C3: 1.4435, investment casting

Spigot ASME/BS (code 55, 59, 63, 64, 65)



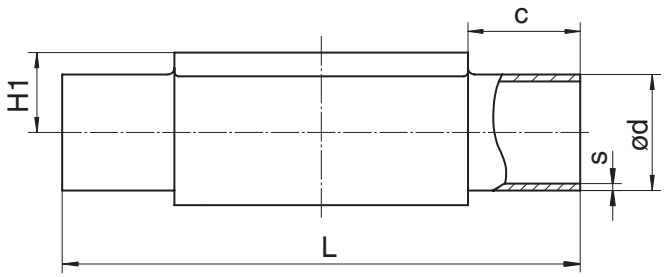
Connection type spigot ASME/BS (code 55, 59, 63, 64, 65) [1], forged material (code 40, 42, F4) [2]

MG	DN	NPS	c (min)	ød					H1	L	s				
				Connection type							Connection type				
				55	59	63	64	65			55	59	63	64	65
10	**10**	**3/8"**	25.0	9.53	9.53	17.1	-	17.1	12.5	108.0	1.2	0.89	1.65	-	2.31
	15	**1/2"**	25.0	12.70	12.70	21.3	21.3	21.3	12.5	108.0	1.2	1.65	2.11	1.65	2.77
	20	**3/4"**	25.0	19.05	19.05	-	-	-	12.5	108.0	1.2	1.65	-	-	-
25	**15**	**1/2"**	25.0	-	-	21.3	21.3	21.3	19.0	120.0	-	-	2.11	1.65	2.77
	20	**3/4"**	25.0	19.05	19.05	26.7	26.7	26.7	19.0	120.0	1.2	1.65	2.11	1.65	2.87
	25	**1"**	25.0	-	25.40	33.4	33.4	33.4	19.0	120.0	-	1.65	2.77	1.65	3.38
40	**32**	**1¼"**	25.0	-	-	42.2	42.2	42.2	26.0	153.0	-	-	2.77	1.65	3.56
	40	**1½"**	25.0	-	38.10	48.3	48.3	48.3	26.0	153.0	-	1.65	2.77	1.65	3.68
50	**50**	**2"**	30.0	-	50.80	60.3	60.3	60.3	32.0	173.0	-	1.65	2.77	1.65	3.91
	65	**2½"**	30.0	-	63.50	-	-	-	34.0	173.0	-	1.65	-	-	-

Dimensions in mm
MG = diaphragm size

1) **Connection type**
Code 55: Spigot BS 4825, part 1
Code 59: Spigot ASME BPE/DIN 11866 series C
Code 63: Spigot ANSI/ASME B36.19M schedule 10s
Code 64: Spigot ANSI/ASME B36.19M schedule 5s
Code 65: Spigot ANSI/ASME B36.19M schedule 40s

2) **Valve body material**
Code 40: 1.4435 (F316L), forged body
Code 42: 1.4435 (BN2), forged body, Δ Fe < 0.5%
Code F4: 1.4539, forged body



Connection type spigot ASME BPE (code 59) [1], investment casting material (code C3) [2]

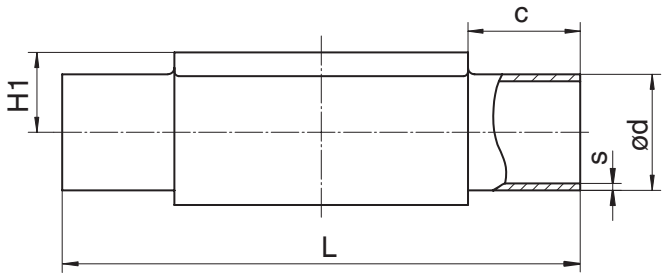
MG	DN	NPS	c (min)	ød	H1	L	s
10	**20**	**3/4"**	25.0	19.05	12.5	108.0	1.65
25	**20**	**3/4"**	25.0	19.05	16.0	120.0	1.65
	25	**1"**	25.0	25.40	19.0	120.0	1.65
40	**40**	**1½"**	25.0	38.10	26.0	153.0	1.65
50	**50**	**2"**	30.0	50.80	32.0	173.0	1.65

Dimensions in mm
MG = diaphragm size

1) **Connection type**
Code 59: Spigot ASME BPE/DIN 11866 series C

2) **Valve body material**
Code C3: 1.4435, investment casting

Spigot JIS/SMS (code 35, 36, 37)



Connection type spigot JIS/SMS (code 35, 36, 37) [1], forged material (code 40, 42, F4) [2]

MG	DN	NPS	c (min)	ød			H1	L	s		
				Connection type					Connection type		
				35	36	37			35	36	37
10	**10**	**3/8"**	25.0	-	17.3	-	12.5	108.0	-	1.65	-
	15	**1/2"**	25.0	-	21.7	-	12.5	108.0	-	2.10	-
25	**15**	**1/2"**	25.0	-	21.7	-	19.0	120.0	-	2.10	-
	20	**3/4"**	25.0	-	27.2	-	19.0	120.0	-	2.10	-
	25	**1"**	25.0	25.4	34.0	25.0	19.0	120.0	1.2	2.80	1.2
40	**32**	**1¼"**	25.0	31.8	42.7	33.7	26.0	153.0	1.2	2.80	1.2
	40	**1½"**	25.0	38.1	48.6	38.0	26.0	153.0	1.2	2.80	1.2
50	**50**	**2"**	30.0	50.8	60.5	51.0	32.0	173.0	1.5	2.80	1.2
	65	**2½"**	30.0	63.5	-	63.5	34.0	173.0	2.0	-	1.6

Connection type spigot SMS (code 37), investment casting material (code C3) [2]

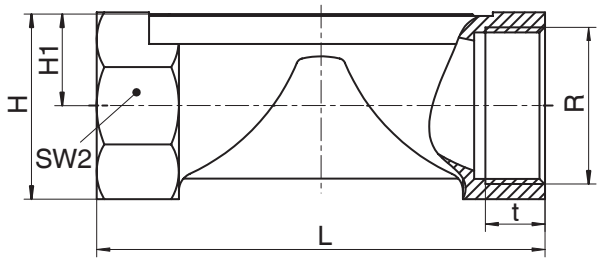
MG	DN	NPS	c (min)	ød	H1	L	s
25	**25**	**1"**	25.0	25.0	19.0	120.0	1.2
40	**40**	**1½"**	25.0	38.0	26.0	153.0	1.2
50	**50**	**2"**	30.0	51.0	32.0	173.0	1.2

Dimensions in mm
MG = diaphragm size

1) **Connection type**
Code 35: Spigot JIS-G 3447
Code 36: Spigot JIS-G 3459 schedule 10s
Code 37: Spigot SMS 3008

2) **Valve body material**
Code 40: 1.4435 (F316L), forged body
Code 42: 1.4435 (BN2), forged body, Δ Fe < 0.5%
Code C3: 1.4435, investment casting
Code F4: 1.4539, forged body

Threaded socket DIN (code 1)



Connection type threaded socket (code 1) [1], investment casting material (code 37) [2]

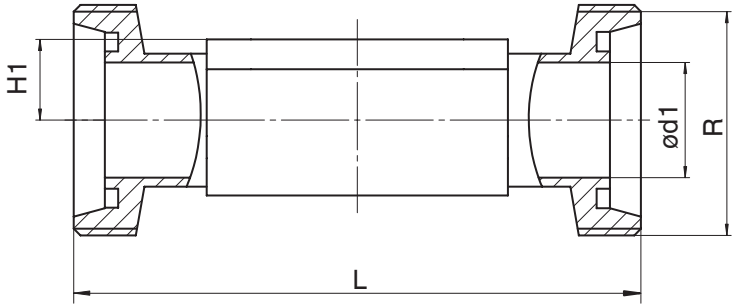
MG	DN	NPS	H	H1	L	n	R	SW 2	t
10	**12**	**3/8"**	25.0	13.0	55.0	2	G 3/8	22.0	12.0
	15	**1/2"**	30.0	15.0	68.0	2	G 1/2	27.0	15.0
25	**15**	**1/2"**	28.3	14.8	85.0	6	G 1/2	27.0	15.0
	20	**3/4"**	33.3	17.3	85.0	6	G 3/4	32.0	16.0
	25	**1"**	42.3	21.8	110.0	6	G 1	41.0	13.0
40	**32**	**1¼"**	51.3	26.3	120.0	8	G 1¼	50.0	20.0
	40	**1½"**	56.3	28.8	140.0	8	G 1½	55.0	18.0
50	**50**	**2"**	71.3	36.0	165.0	8	G 2	70.0	26.0

Dimensions in mm
MG = diaphragm size
n = number of flats

1) **Connection type**
Code 1: Threaded socket DIN ISO 228

2) **Valve body material**
Code 37: 1.4408, investment casting

Threaded spigot DIN (code 6)



Connection type threaded spigot DIN (code 6) [1], forged material (code 40, 42) [2]

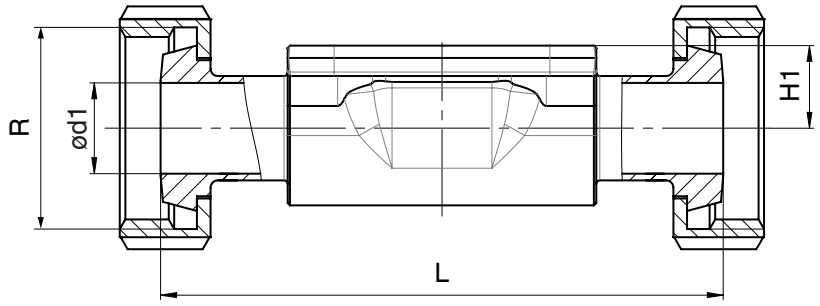
MG	DN	NPS	ød1	H1	L	R
10	**10**	**3/8"**	10.0	12.5	118.0	Rd 28 x 1/8
	15	**1/2"**	16.0	12.5	118.0	Rd 34 x 1/8
25	**15**	**1/2"**	16.0	19.0	118.0	Rd 34 x 1/8
	20	**3/4"**	20.0	19.0	118.0	Rd 44 x 1/6
	25	**1"**	26.0	19.0	128.0	Rd 52 x 1/6
40	**32**	**1¼"**	32.0	26.0	147.0	Rd 58 x 1/6
	40	**1½"**	38.0	26.0	160.0	Rd 65 x 1/6
50	**50**	**2"**	50.0	32.0	191.0	Rd 78 x 1/6

Dimensions in mm
MG = diaphragm size

1) **Connection type**
Code 6: Threaded spigot DIN 11851

2) **Valve body material**
Code 40: 1.4435 (F316L), forged body
Code 42: 1.4435 (BN2), forged body, Δ Fe < 0.5%

Cone spigot DIN (code 6K)



Connection type cone spigot DIN (code 6K) [1], forged material (code 40, 42) [2]

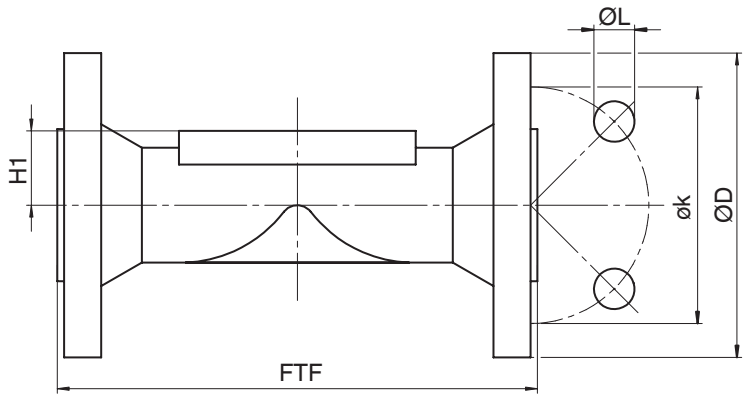
MG	DN	NPS	ød1	H1	L	R
10	**10**	**3/8"**	10.0	12.5	116.0	Rd 28 x 1/8
	15	**1/2"**	16.0	12.5	116.0	Rd 34 x 1/8
25	**15**	**1/2"**	16.0	19.0	116.0	Rd 34 x 1/8
	20	**3/4"**	20.0	19.0	114.0	Rd 44 x 1/6
	25	**1"**	26.0	19.0	127.0	Rd 52 x 1/6
40	**32**	**1¼"**	32.0	26.0	147.0	Rd 58 x 1/6
	40	**1½"**	38.0	26.0	160.0	Rd 65 x 1/6
50	**50**	**2"**	50.0	32.0	191.0	Rd 78 x 1/6

Dimensions in mm
MG = diaphragm size

1) **Connection type**
Code 6K: Cone spigot and union nut DIN 11851

2) **Valve body material**
Code 40: 1.4435 (F316L), forged body
Code 42: 1.4435 (BN2), forged body, Δ Fe < 0.5%

Flange EN (code 8)



Connection type flange, length EN 558 (code 8) [1], investment casting material (code C3), forged material (code 40, 42) [2]

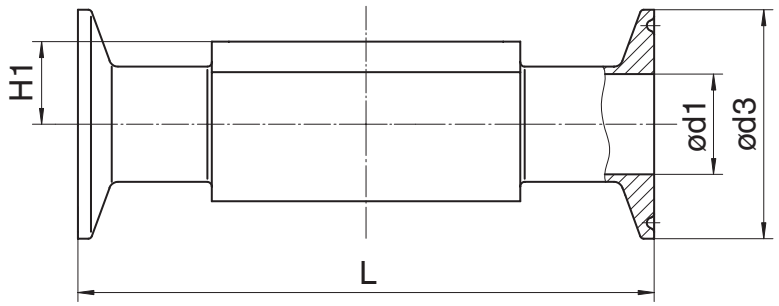
MG	DN	NPS	øD	FTF		H1		øk	øL	n
				Material						
				40, 42	C3	40, 42	C3			
25	**15**	**1/2"**	95.0	130.0	150.0	19.0	13.0	65.0	14.0	4
	20	**3/4"**	105.0	150.0	150.0	19.0	16.0	75.0	14.0	4
	25	**1"**	115.0	160.0	160.0	19.0	19.0	85.0	14.0	4
40	**32**	**1¼"**	140.0	180.0	180.0	26.0	24.0	100.0	19.0	4
	40	**1½"**	150.0	200.0	200.0	26.0	26.0	110.0	19.0	4
50	**50**	**2"**	165.0	230.0	230.0	32.0	32.0	125.0	19.0	4

Dimensions in mm
MG = diaphragm size
n = number of bolts

1) **Connection type**
Code 8: Flange EN 1092, PN 16, form B, face-to-face dimension FTF EN 558 series 1, ISO 5752, basic series 1, length only for body configuration D

2) **Valve body material**
Code 40: 1.4435 (F316L), forged body
Code 42: 1.4435 (BN2), forged body, Δ Fe < 0.5%
Code C3: 1.4435, investment casting

Clamp (code 80, 82, 88, 8A, 8E, 8P, 8T)



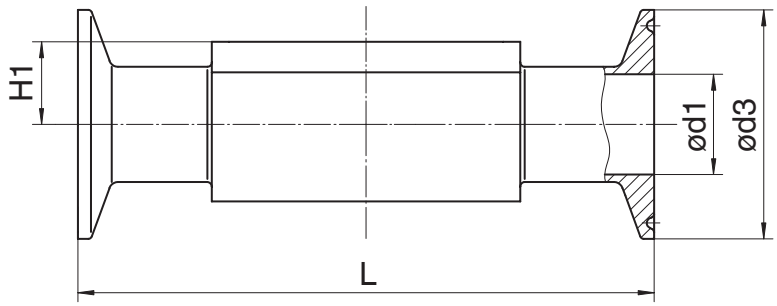
Connection type clamp DIN/ASME (code 80, 88, 8P, 8T) [1], forged material (code 40, 42, F4) [2]

MG	DN	NPS	ød1		ød3		H1	L	
			Connection type		Connection type			Connection type	
			80, 8P	88, 8T	80, 8P	88, 8T		80, 8P	88, 8T
10	**15**	**1/2"**	9.40	940	25.0	25.0	12.5	88.9	108.0
	20	**3/4"**	15.75	15.75	25.0	25.0	12.5	101.6	117.0
25	**20**	**3/4"**	15.75	15.75	25.0	250	19.0	101.6	117.0
	25	**1"**	22.10	22.10	50.5	50.5	19.0	114.3	127.0
40	**40**	**1½"**	34.80	34.80	50.5	50.5	26.0	139.7	159.0
50	**50**	**2"**	47.50	47.50	64.0	64.0	32.0	158.8	190.0
	65	**2½"**	60.20	60.20	77.5	77.5	34.0	193.8	216.0

Dimensions in mm
MG = diaphragm size

1) **Connection type**
Code 80: Clamp ASME BPE, face-to-face dimension FTF ASME BPE, length only for body configuration D
Code 88: Clamp ASME BPE, for pipe ASME BPE, face-to-face dimension FTF EN 558 series 7, length only for body configuration D
Code 8P: Clamp DIN 32676 series C, face-to-face dimension FTF ASME BPE, length only for body configuration D
Code 8T: Clamp DIN 32676 series C, face-to-face dimension FTF EN 558 series 7, length only for body configuration D

2) **Valve body material**
Code 40: 1.4435 (F316L), forged body
Code 42: 1.4435 (BN2), forged body, Δ Fe < 0.5%
Code F4: 1.4539, forged body



Connection type clamp DIN/ISO (code 82, 8A, 8E)[1], forged material (code 40, 42, F4)[2]

MG	DN	NPS	ød1			ød3			H1	L		
			Connection type			Connection type				Connection type		
			82	8A	8E	82	8A	8E		82	8A	8E
10	**10**	**3/8"**	14.0	10.0	-	25.0	34.0	-	12.5	108.0	108.0	-
	15	**1/2"**	18.1	16.0	-	50.5	34.0	-	12.5	108.0	108.0	-
25	**15**	**1/2"**	18.1	16.0	-	50.5	34.0	-	19.0	108.0	108.0	-
	20	**3/4"**	23.7	20.0	-	50.5	34.0	-	19.0	117.0	117.0	-
	25	**1"**	29.7	26.0	22.6	50.5	50.5	50.5	19.0	1270	127.0	127.0
40	**32**	**1¼"**	38.4	32.0	31.3	64.0	50.5	50.5	26.0	146.0	146.0	146.0
	40	**1½"**	44.3	38.0	35.6	64.0	50.5	50.5	26.0	159.0	159.0	159.0
50	**50**	**2"**	56.3	50.0	48.6	77.5	64.0	64.0	32.0	190.0	190.0	190.0
	65	**2½"**	-	-	60.3	-	-	77.5	34.0	-	-	216.0

Dimensions in mm
MG = diaphragm size

1) **Connection type**
Code 82: Clamp DIN 32676 series B, face-to-face dimension FTF EN 558 series 7, length only for body configuration D
Code 8A: Clamp DIN 32676 series A, face-to-face dimension FTF acc. to EN 558 series 7, length only for body configuration D
Code 8E: Clamp ISO 2852 for pipe ISO 2037, clamp SMS 3017 for pipe SMS 3008 face-to-face dimension FTF EN 558 series 7, length only for body configuration D

2) **Valve body material**
Code 40: 1.4435 (F316L), forged body
Code 42: 1.4435 (BN2), forged body, Δ Fe < 0.5%
Code F4: 1.4539, forged body

Accessories

GEMÜ 1101

Opening stroke limiter

Pneumatic linear actuators of GEMÜ butterfly valves, ball valves, diaphragm valves and globe valves are not fully opened by opening stroke limiters. This limits the maximum flow through a valve. The opening stroke limiter is available either with handwheel, transparent cap, position indicator or manual override.

GEMÜ 1151

Opening stroke limiter

GEMÜ 1151 is a mechanical opening stroke limiter for pneumatically operated linear actuators. An integrated optical position indicator is standard.

Add-on components

GEMÜ 0324

Electrically operated pilot solenoid valve

The GEMÜ 0324 directly controlled 3/2-way pilot solenoid valve is designed for direct mounting to pneumatically operated valves. The body is made of plastic. The coil is plastic encapsulated.

GEMÜ 1230

Electrical position indicator

The GEMÜ 1230 electrical position indicator is suitable for mounting to pneumatically operated linear actuators. The position of the valve spindle is reliably detected and fed back electronically via microswitches through play-free and non-positive mounting. The GEMÜ 1230 has been specially designed for valves with a stroke of 2 to 20 mm.

GEMÜ 4222

Combi switchbox with integrated 3/2-way pilot valve

The GEMÜ 4222 combi switchbox with integrated 3/2-way pilot valve for pneumatically operated linear actuators uses a microprocessor controlled intelligent position sensor and an analogue travel sensor system. The optical position feedback is via LEDs. Electrical activation and position feedback is provided via 24 V DC signals or via fieldbus (AS-Interface, DeviceNet).

GEMÜ 1215

Electrical position indicator

The GEMÜ 1215 electrical position indicator is suitable for mounting to pneumatically operated linear actuators. The position (end position open) of the valve spindle is reliably detected and fed back electronically by the operating bush with a microswitch.

GEMÜ 1216

Mount for proximity switches

GEMÜ 1216 is an open proximity switch mount for two proximity switches M8 x 1 for pneumatically operated linear actuators. It has two adjustable trip cams and can be ordered either with or without stroke limiter. The switching interval is dependent on the proximity switches used. The basic version does not contain any proximity switches.

GEMÜ 1200

Proximity switch

The GEMÜ 1200 proximity switch is a sensor that detects the valve position contactlessly and displays it via an electrical signal.

GEMÜ 1232

Electrical position indicator

The GEMÜ 1232 electrical position indicator is suitable for mounting to pneumatically operated linear actuators. The position of the valve spindle is reliably detected and fed back electronically via one or two inductive proximity switches, using play-free and non-positive mounting. The GEMÜ 1232 has been specially designed for valves with a stroke of 2 to 20 mm.

GEMÜ 1235

Electrical position indicator

The GEMÜ 1235 electrical position indicator is suitable for installation on pneumatically operated linear actuators and, with specific mounting parts, likewise suitable for pneumatically operated quarter turn actuators as well as further selected actuator versions. The position of the valve spindle is reliably electronically detected and evaluated using play-free and non-positive mounting. Intelligent microprocessor-controlled functions facilitate commissioning and support during operation. The current position of the valve is displayed via high-visibility LEDs and fed back via electrical signals.

GEMÜ 1236

Electrical position indicator

The GEMÜ 1236 electrical position indicator is suitable for installation on pneumatically operated linear actuators. The position of the valve spindle is reliably electronically detected and evaluated using play-free and non-positive mounting. Intelligent microprocessor-controlled functions facilitate commissioning and support during operation. The current position of the valve is displayed via high-visibility LEDs and fed back via electrical signals.

GEMÜ 1242

Electrical position indicator

The GEMÜ 1242 electrical position indicator is suitable for installation on pneumatically operated linear actuators. The position of the valve spindle is reliably electronically detected and evaluated using play-free and non-positive mounting. Intelligent microprocessor-controlled functions facilitate commissioning and support during operation. The current position of the valve is displayed via high-visibility LEDs and fed back via electrical signals. The GEMÜ 1242 has been specially designed for valves with a stroke of 2 to 46 mm.

GEMÜ 1211

Electrical position indicator ATEX

The GEMÜ 1211 electrical position indicator is suitable for linear actuators with up to 70 mm actuating travel. It has either one or two inductive proximity switches to NAMUR.

GEMÜ 1201

Electrical position indicator

The GEMÜ 1201 electrical position indicator has either one or two mechanical microswitches. They are individually continuously adjustable via a threaded spindle.

GEMÜ 1231

Electrical position indicator

The GEMÜ 1231 electrical position indicator is suitable for mounting to pneumatically operated linear actuators. The position of the valve spindle is reliably detected electronically and fed back via proximity switches through play-free and non-positive mounting. GEMÜ 1231 has been designed specially for valves with a stroke of 2 to 20 mm .

GEMÜ 2023

Pneumatic fitting

We offer various pneumatic fittings under the GEMÜ 2023 type. Various connection sizes are available with female thread, male thread, connector, plug-in nipple or quick connectors.

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