

GEMÜ 650/687 Special function J *Pneumatically operated diaphragm valve*



Description

The GEMÜ 650 and 687 2/2-way diaphragm valve with special function J is suitable for operating pressures of up to 16 bar. It is available with a "Normally Closed (NC)" control function. The diaphragm is made of PTFE/EPDM (code 5M).

GEMÜ 650

Diaphragm size: 10, 40

GEMÜ 687

Diaphragm size: 25, 40, 50

GEMÜ 650 BioStar, special function J version

Pneumatically operated diaphragm valve



Features

- Compact design (ideal when space is at a premium)
- CIP/SIP capable
- Autoclave capability, depending on version
- Controlled exhaust air duct available as an option
- Wide range of adaptation options for add-on components and accessories
- ATEX version available as an option

Description

The GEMÜ 650 BioStar 2/2-way diaphragm valve has a stainless steel piston actuator and is pneumatically operated. The valve is designed for use in a sterile environment. All actuator parts are made from stainless steel (except seals). It is available with a "Normally Closed (NC)" control function. An integrated optical position indicator is standard.

Technical specifications

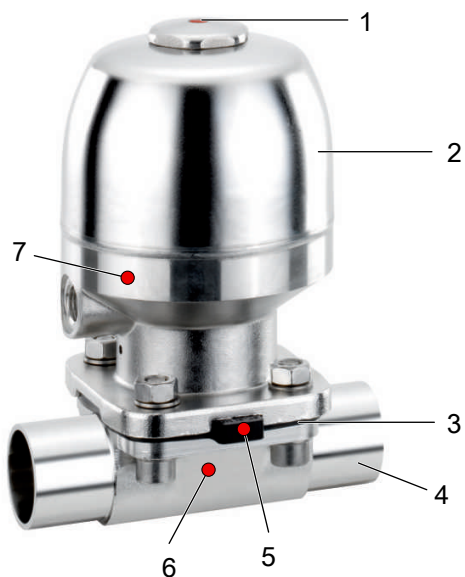
- **Media temperature:** -10 to 100 °C
- **Sterilization temperature:** max. 150 °C
- **Ambient temperature:** 0 to 60 °C
- **Operating pressure:** 0 to 16 bar
- **Nominal sizes:** DN 10 to 40
- **Body configurations:** 2/2-way body
- **Connection types:** Clamp | Flange | Spigot | Threaded connection
- **Connection standards:** ANSI | ASME | BS | DIN | EN | ISO | JIS | SMS
- **Body materials:** 1.4435 (316L), block material | 1.4435 (316L), forged material | 1.4435 (BN2), block material | 1.4435 (BN2), forged material | 1.4539 (904L), forged material
- **Diaphragm materials:** PTFE/EPDM
- **Conformities:** 3A | BSE/TSE | CRN | EAC | EHEDG | FDA | Functional safety | Reg. (EU) No. 10/2011 | Regulation (EC) No. 1935/2004 | Regulation (EC) No. 2023/2006 | TA Luft (German Clean Air Act) | USP

Technical data depends on the respective configuration

Product description

Construction

GEMÜ 650



Item	Name	Materials
1	Optical position indicator	
2	Membrane actuator	Stainless steel
3	Diaphragm	PTFE/EPDM (two-piece)
4	Valve body	1.4435 (F316L), forged body 1.4435 (F316L), block material 1.4435 (BN2), forged body, Δ Fe < 0.5% 1.4435 (BN2), block material, Δ Fe < 0.5% 1.4539, forged body
5	CONEXO diaphragm RFID chip (see Conexo information)	
6	CONEXO body RFID chip (see Conexo information)	
7	CONEXO actuator RFID chip (see Conexo information)	

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".

Availabilities

Availability of grades of surface finish

Internal surface finishes for forged and block material bodies ¹⁾

Media wetted internal surface finishes	Mechanically polished ²⁾		Electropolished	
	Hygiene class DIN 11866	Code	Hygiene class DIN 11866	Code
Ra ≤ 0.40 µm	H4	1536	HE4	1537
Ra ≤ 0.25 µm ³⁾	H5	1527	HE5	1516

Media wetted internal surface finishes in accordance with ASME BPE 2016 ⁴⁾	Mechanically polished ²⁾		Electropolished	
	ASME BPE surface designation	Code	ASME BPE surface designation	Code
Ra max. = 0.38 µm (15 µinch)	-	-	SF4	SF4

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.

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														
10	10	-	X	X	X	-	X	-	X	X	X	X	-	X
	15	X	X	X	X	-	X	-	X	X	X	X	X	X
	20	-	-	-	-	-	-	-	X	X	-	-	-	-
40	32	X	X	X	X	X	X	X	-	-	X	X	X	X
	40	X	X	X	X	X	X	X	-	X	X	X	X	X

MG = diaphragm size

X = Standard

1) Connection type

Code 0: Spigot DIN

Code 16: Spigot DIN EN 10357 series B (2014 edition; 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 EN 10357 series C (from 2022 edition)/DIN 11866 series C

Code 60: Spigot ISO 1127/DIN EN 10357 series C (2014 edition)/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 F4: 1.4539, forged body

Threaded connection

MG	DN	Connection type code ¹⁾
		6, 6K
		Material code ²⁾
40, 42		
10	10	W
	15	W
40	32	W
	40	W

MG = diaphragm size

W = welded assembly

1) Connection type

Code 6: Threaded spigot DIN 11851

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

MG	DN	Connection type code ¹⁾	
		8	39
		Material code ²⁾	
		40, 42	
40	32	W	W
	40	W	W

MG = diaphragm size

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

Code 39: Flange ANSI Class 125/150 RF, 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%

Clamp

MG	DN	Connection type code ¹⁾						
		80	82	88	8A	8E	8P	8T
		Material code ²⁾						
		40, 42, F4						
10	10	-	K	-	K	-	-	-
	15	K	W	K	K	-	K	K
	20	K	-	K	-	-	K	K
40	32	-	W	-	K	K	-	-
	40	K	W	K	K	K	K	K

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 piston actuator electropolished, optical position indicator	650
2 DN	Code
DN 10	10
DN 15	15
DN 20	20
DN 32	32
DN 40	40
3 Body configuration	Code
2/2-way body	D
T body	T
Body configuration code T: Dimensions on request	
4 Connection type	Code
Spigot	
Spigot DIN	0
Spigot DIN EN 10357 series B (2014 edition; 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 EN 10357 series C (from 2022 edition)/DIN 11866 series C	59
Spigot ISO 1127/DIN EN 10357 series C (2014 edition)/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 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
Flange ANSI Class 125/150 RF, face-to-face dimension FTF EN 558 series 1, ISO 5752, basic series 1, length only for body configuration D	39

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
Note: Connection code 8, 39 only possible in conjunction with actuator version (R)	
5 Valve body material	Code
1.4435 (F316L), forged body	40
1.4435 (BN2), forged body, Δ Fe < 0.5%	42
1.4539, forged body	F4
1.4435 (316L), block material	41
1.4435 (BN2), block material, Δ Fe < 0.5%	43
6 Diaphragm material	Code
PTFE/EPDM two-piece	5M
7 Control function	Code
Normally closed (NC)	1
8 Actuator version	Code
Actuator size 1R6 control air connector 90° offset to flow direction	1R6
Actuator size 1T6	1T6
Actuator size 3 control air connector 90° offset to flow direction	3RA
Actuator size 3TA	3TA

9 Surface	Code
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

9 Surface	Code
Ra max. 0.38 µm (15 µin.) for media wetted surfaces, in accordance with ASME BPE SF4, electropolished internal/external	SF4
10 Special version	Code
Special version for higher operating pressures of up to 16 bar Only for types 650 and 687 Only for diaphragm sizes 10 to 50 Only for forged bodies and block material bodies Only for seal code 5M Only with special actuator	J
11 CONEXO	Code
Without	
Integrated RFID chip for electronic identification and traceability	C

Order example

Ordering option	Code	Description
1 Type	650	Diaphragm valve, pneumatically operated, stainless steel piston actuator electropolished, optical position indicator
2 DN	40	DN 40
3 Body configuration	D	2/2-way body
4 Connection type	60	Spigot ISO 1127/DIN EN 10357 series C (2014 edition)/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	3TA	Actuator size 3TA
9 Surface	1536	Ra ≤ 0.4 µm (15 µin.) for media wetted surfaces, in accordance with DIN 11866 H4, mechanically polished internal
10 Special version	J	Special version for higher operating pressures of up to 16 bar Only for types 650 and 687 Only for diaphragm sizes 10 to 50 Only for forged bodies and block material bodies Only for seal code 5M Only with special actuator
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).

Control medium: Inert gases

Temperature

Media temperature:

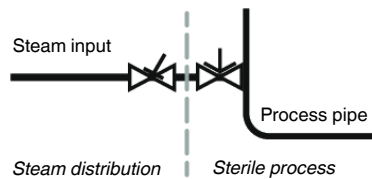
Diaphragm material	Standard
PTFE/EPDM (code 5M)	-10 – 100 °C

Sterilization temperature: 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 steam 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: 0 – 70 °C

Storage temperature: 0 – 40 °C

Autoclavability:

MG	Actuator version	Autoclavability
10	1T6, 1R6	autoclavable
40	3TA, 3RA	with special version

Pressure

Operating pressure: 0 – 16 bar
 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.
 Since the high operating pressure may reduce the service life of the diaphragm, please adapt the maintenance intervals accordingly.

Pressure rating: PN 16

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

Control pressure: MG 10: 6.0 - 7.0 bar
 MG 40: 3.5 - 7.0 bar

MG	Actuator size (code)	
	1T6, 1R6	3TA, 3RA
10	0.03	-
40	-	0.5

Filling volume in dm³
 MG = diaphragm size

MG	DN	Connection types (code)						
		0	16	17	18	37	59	60
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	-
40	32	25.3	27.0	27.0	27.0	26.2	-	30.0
	40	29.3	30.9	30.9	30.9	30.2	29.5	32.8

MG = diaphragm size
 Kv values in m³/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 compliance

Pressure Equipment Directive:	2014/68/EU	
Machinery Directive:	2006/42/EC	
Food:	FDA Regulation (EC) No. 1935/2004 Regulation (EC) No. 10/2011 USP Class VI	
TA Luft (German Clean Air Act):	DIN EN ISO 15848-1, section 2	
SIL:	Product description:	GEMÜ diaphragm valve 650_687
	Device type:	A
	Fail safe function:	Due to the fail safe function, the diaphragm valve is placed in the closed position (with control function 1).
	HFT (Hardware Fault Tolerance):	0
	MTTR (Mean Time To Restoration):	24 hours
	Product description:	GEMÜ diaphragm valve 650_687with GEMÜ 032x pilot solenoid valve
	Device type:	A
	Fail safe function:	Due to the fail safe function, the diaphragm valve is placed in the closed position (with control function 1).
	HFT (Hardware Fault Tolerance):	0
	MTTR (Mean Time To Restoration):	24 hours
EAC:	The product is certified according to EAC.	

Mechanical data

Weight:

Actuator

MG	Actuator size (code)	Weight
10	1T6, 1R6	1.2
40	3TA, 3RA	7.3

Weights in kg

Weight:

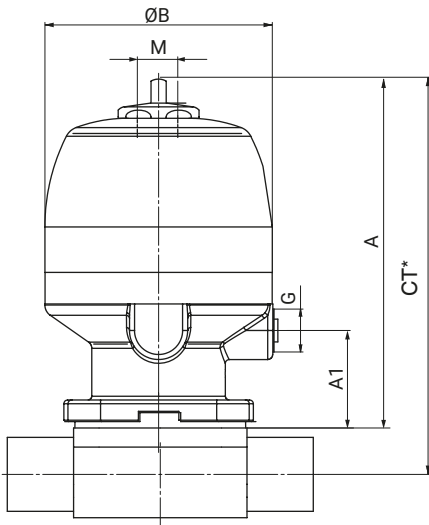
Body

MG	DN	Spigot	Threaded spigot, cone spigot	Flange	Clamp
		Connection type code			
		0, 16, 17, 18, 35, 36, 37, 55, 59, 60, 63, 64, 65	6, 6K	8, 39	80, 82, 88, 8A, 8E, 8P, 8T
10	10	0.30	0.33	-	0.30
	15	0.30	0.35	-	0.43
	20	-	-	-	0.43
40	32	1.45	1.66	3.40	1.62
	40	1.32	1.62	4.50	1.50

Weights in kg
 MG = diaphragm size

Dimensions

Actuator dimensions



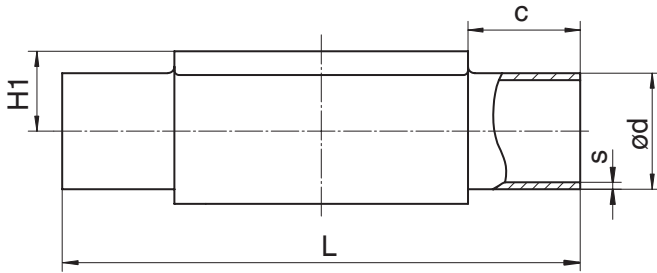
MG	DN	Actuator size (code)	A	A1	ø B	G	M
10	10 - 20	1T6, 1R6	116.0	37.0	61.0	G 1/4	M16x1
40	32, 40	3TA, 3RA	223.0	52.0	144.0	G 1/4	M16x1

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
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"	30.5	40.0	40.0	41.0	42.0	48.3	26.0	153.0	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 DIN EN 10357 series B (2014 edition; 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/DIN EN 10357 series C (2014 edition)/DIN 11866 series B

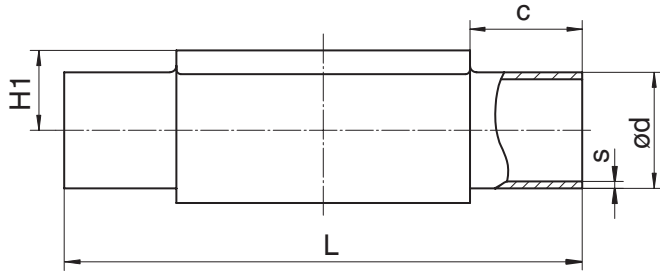
2) Valve body material

Code 40: 1.4435 (F316L), forged body

Code 42: 1.4435 (BN2), forged body, Δ Fe < 0.5%

Code F4: 1.4539, forged body

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	-	-	-
40	32	1 1/4"	25.0	-	-	42.2	42.2	42.2	26.0	153.0	-	-	2.77	1.65	3.56
	40	1 1/2"	30.5	-	38.10	48.3	48.3	48.3	26.0	153.0	-	1.65	2.77	1.65	3.68

Dimensions in mm

MG = diaphragm size

1) **Connection type**

Code 55: Spigot BS 4825, Part 1

Code 59: Spigot ASME BPE/DIN EN 10357 series C (from 2022 edition)/DIN 11866 series C

Code 63: Spigot ANSI/ASME B36.19M schedule 10s

Code 64: Spigot ANSI/ASME B36.19M schedule 5s

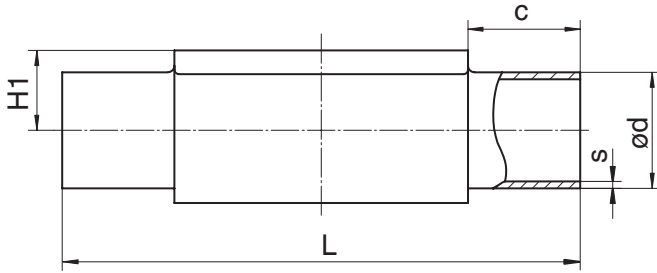
Code 65: Spigot ANSI/ASME B36.19M schedule 40s

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

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	-
40	32	1¼"	25.0	31.8	42.7	33.7	26.0	153.0	1.2	2.80	1.2
	40	1½"	30.5	38.1	48.6	38.0	26.0	153.0	1.2	2.80	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

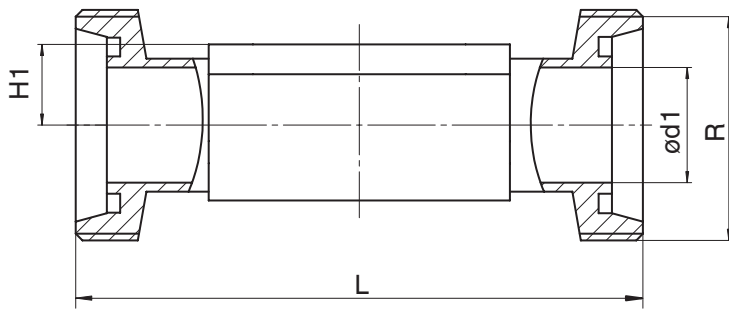
2) Valve body material

Code 40: 1.4435 (F316L), forged body

Code 42: 1.4435 (BN2), forged body, Δ Fe < 0.5%

Code F4: 1.4539, forged body

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
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

Dimensions in mm

MG = diaphragm size

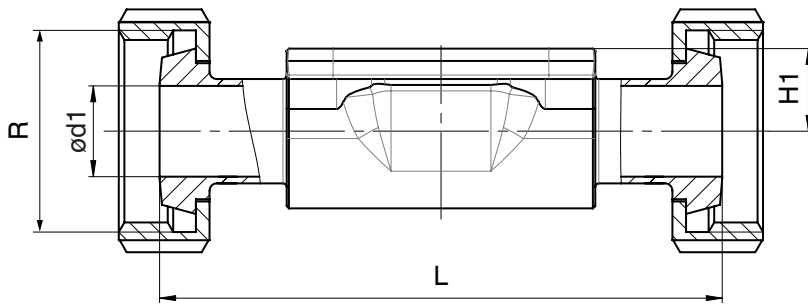
1) Connection type

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
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

Dimensions in mm

MG = diaphragm size

1) Connection type

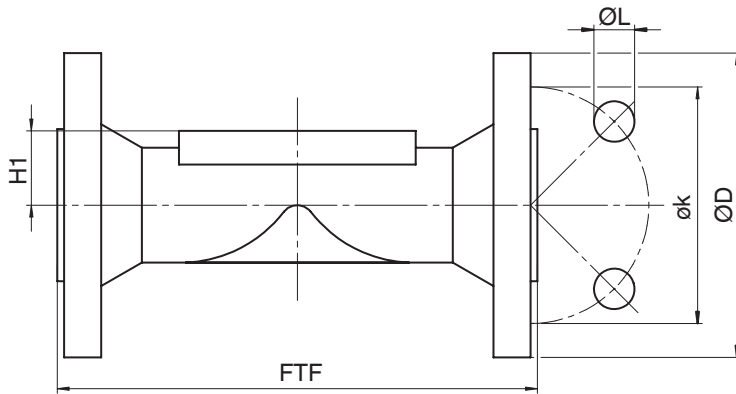
Code 6K: Cone spigot and union nut DIN 11851

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⁾, forged material (code 40, 42)²⁾

MG	DN	NPS	øD	FTF	H1	øk	øL	n
40	32	1¼"	140.0	180.0	26.0	100.0	19.0	4
	40	1½"	150.0	200.0	26.0	110.0	19.0	4

Dimensions in mm

MG = diaphragm size

n = number of bolts

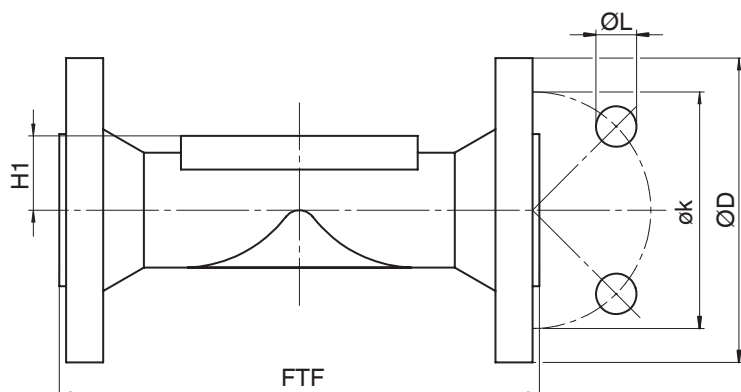
1) Connection type

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%

Flange ANSI Class (code 39)**Connection type flange, length EN 558 (code 39), ¹⁾ forged material (code 40, 42) ²⁾**

MG	DN	NPS	øD	FTF	H1	øk	øL	n
40	32	1¼"	115.0	180.0	26.0	88.9	15.9	4
	40	1½"	125.0	200.0	26.0	98.4	15.9	4

Dimensions in mm

MG = diaphragm size

n = number of bolts

1) Connection type

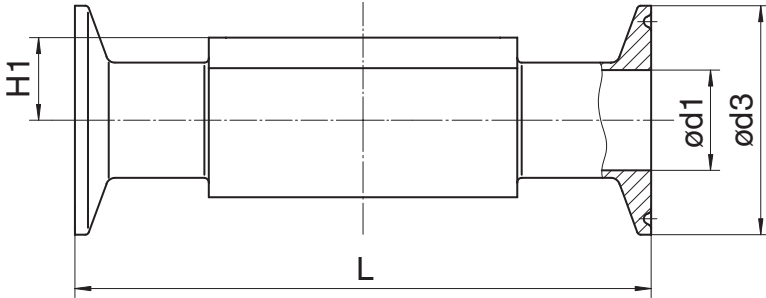
Code 39: Flange ANSI Class 125/150 RF, face-to-face dimension FTF EN 558 series 1, ISO 5752, basic series 1, length only for body configuration D

2) Valve body material

Code 40: 1.4435 (F316L), forged body

Code 42: 1.4435 (BN2), forged body, Δ Fe < 0.5%

Clamp DIN/ISO/ASME (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	9.40	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
40	40	1½"	34.80	34.80	50.5	50.5	26.0	139.7	159.0

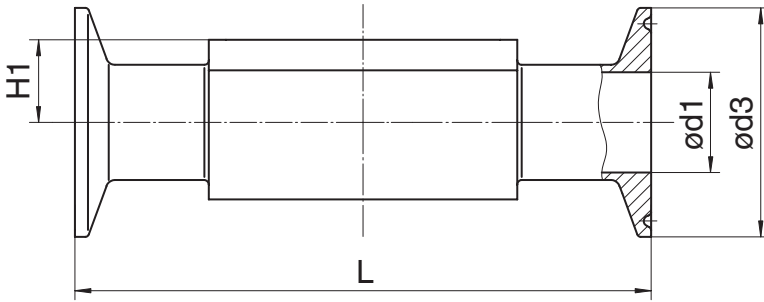
Dimensions in mm
MG = diaphragm size

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	-
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

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

GEMÜ 687 special function J version

Pneumatically operated diaphragm valve



Features

- Hermetic separation between medium and actuator
- CIP/SIP capable
- Wide range of adaptation options for add-on components and accessories

Description

The GEMÜ 687 2/2-way diaphragm valve has a low-maintenance plastic membrane actuator and is pneumatically operated. The valve has a metal distance piece. It is available with a "Normally Closed (NC)" control function.

Technical specifications

- **Media temperature:** -10 to 100 °C
- **Sterilization temperature:** Max. 150 °C
- **Ambient temperature:** 0 to 60 °C
- **Operating pressure:** 0 to 16 bar
- **Nominal sizes:** DN 15 to 65
- **Body configurations:** 2/2-way body | T body
- **Connection types:** Clamp | Flange | Spigot | Threaded connection
- **Connection standards:** ANSI | ASME | BS | DIN | EN | ISO | JIS | NPT | SMS
- **Body materials:** 1.4435 (316L), block material | 1.4435 (316L), forged material | 1.4435 (BN2), block material | 1.4435 (BN2), forged material | 1.4539 (904L), forged material
- **Diaphragm materials:** PTFE/EPDM
- **Conformities:** 3A | CRN | EAC | FDA | Functional safety | Reg. (EU) No. 10/2011 | Regulation (EC) No. 1935/2004 | TA Luft (German Clean Air Act) | USP

Technical data depends on the respective configuration

Product description

Construction



Item	Name	Materials
1	Position indicator	
2	Membrane actuator	PP, glass fibre reinforced
3	Control air connector	
4	Diaphragm	PTFE/EPDM (two-piece)
5	Valve body	1.4435 (F316L), forged body 1.4435 (F316L), block material 1.4435 (BN2), forged body, Δ Fe < 0.5% 1.4435 (BN2), block material, Δ Fe < 0.5% 1.4539, forged body
6	CONEXO diaphragm RFID chip (see Conexo information)	
7	CONEXO body RFID chip (see Conexo information)	
8	CONEXO actuator RFID chip (see Conexo information)	

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".

Availabilities

Availability of grades of surface finish

Internal surface finishes for forged and block material bodies ¹⁾

Media wetted internal surface finishes	Mechanically polished ²⁾		Electropolished	
	Hygiene class DIN 11866	Code	Hygiene class DIN 11866	Code
Ra ≤ 0.40 µm	H4	1536	HE4	1537
Ra ≤ 0.25 µm ³⁾	H5	1527	HE5	1516

Media wetted internal surface finishes in accordance with ASME BPE 2016 ⁴⁾	Mechanically polished ²⁾		Electropolished	
	ASME BPE surface designation	Code	ASME BPE surface designation	Code
Ra max. = 0.38 µm (15 µinch)	-	-	SF4	SF4

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.

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												
25	15	X	X	X	X	-	X	-	-	-	X	X	X	X
	20	X	X	X	X	-	X	-	X	X	X	X	X	X
	25	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
	40	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
	65	-	-	-	-	X	-	X	-	X	-	-	-	-

MG = diaphragm size, X = standard

1) Connection type

- Code 0: Spigot DIN
- Code 16: Spigot DIN EN 10357 series B (2014 edition; 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 EN 10357 series C (from 2022 edition)/DIN 11866 series C
- Code 60: Spigot ISO 1127/DIN EN 10357 series C (2014 edition)/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, $\Delta Fe < 0.5\%$
- Code F4: 1.4539, forged body

Threaded connection

MG	DN	Connection type code ¹⁾
		6, 6K
		Material code ²⁾
		40, 42
25	15	W
	20	W
	25	W
40	32	W
	40	W
50	50	W

MG = diaphragm size, X = standard

W = welded assembly

1) Connection type

- Code 6: Threaded spigot DIN 11851
- 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, $\Delta Fe < 0.5\%$

Flange

MG	DN	Connection type code ¹⁾	
		8	39
		Material code ²⁾	
		40, 42	
25	15	W	W
	20	W	W
	25	W	W
40	32	W	W
	40	W	W
50	50	W	W

W = welded assembly

MG = diaphragm size

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

Code 39: Flange ANSI Class 125/150 RF, 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%

Clamp

MG	DN	Connection type code ¹⁾				
		80, 8P	82	88, 8T	8A	8E
		Material code ²⁾				
		40, 42, F4				
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, plastic actuator, stainless steel distance piece	687

2 DN	Code
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
2/2-way body	D
T body	T
Body configuration code T: Dimensions on request	

4 Connection type	Code
Spigot	
Spigot DIN	0
Spigot DIN EN 10357 series B (2014 edition; 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 EN 10357 series C (from 2022 edition)/DIN 11866 series C	59
Spigot ISO 1127/DIN EN 10357 series C (2014 edition)/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 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
Flange ANSI Class 125/150 RF, face-to-face dimension FTF EN 558 series 1, ISO 5752, basic series 1, length only for body configuration D	39

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
1.4435 (F316L), forged body	40
1.4435 (BN2), forged body, Δ Fe < 0.5%	42
1.4539, forged body	F4
1.4435 (316L), block material	41
1.4435 (BN2), block material, Δ Fe < 0.5%	43

6 Diaphragm material	Code
PTFE/EPDM two-piece	5M

7 Control function	Code
Normally closed (NC)	1

8 Actuator version	Code
Actuator size F/8	F/8
Actuator size H/N	H/N
Actuator size J/N	J/N

9 Surface	Code
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

Order data

9 Surface	Code	10 Special version	Code
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	Special version for higher operating pressures of up to 16 bar Only for types 650 and 687 Only for diaphragm sizes 10 to 50 Only for forged bodies and block material bodies Only for seal code 5M Only with special actuator	J
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. 0.38 µm (15 µin.) for media wetted surfaces, in accordance with ASME BPE SF4, electropolished internal/external	SF4		
11 CONEXO		Code	
Without			
Integrated RFID chip for electronic identification and traceability		C	

Order example

Ordering option	Code	Description
1 Type	687	Diaphragm valve, pneumatically operated, plastic actuator, stainless steel distance piece
2 DN	25	DN 25
3 Body configuration	D	2/2-way body
4 Connection type	60	Spigot ISO 1127/DIN EN 10357 series C (2014 edition)/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	F/8	Actuator size F/8
9 Surface	1536	Ra ≤ 0.4 µm (15 µin.) for media wetted surfaces, in accordance with DIN 11866 H4, mechanically polished internal
10 Special version	J	Special version for higher operating pressures of up to 16 bar Only for types 650 and 687 Only for diaphragm sizes 10 to 50 Only for forged bodies and block material bodies Only for seal code 5M Only with special actuator
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.

Control medium: Inert gases

Temperature

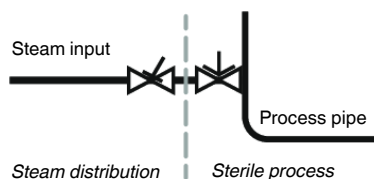
Media temperature:

Diaphragm material	Standard
PTFE/EPDM (code 5M)	-10 – 100 °C

Sterilization temperature: 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 steam 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: 0 – 40 °C

Storage temperature: 0 – 40 °C

Pressure

Operating pressure: 0 – 16 bar

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.

Since the high operating pressure may reduce the service life of the diaphragm, please adapt the maintenance intervals accordingly.

Pressure rating: PN 16

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

Control pressure:
 MG25: PS 6.5–7.0 bar
 MG40: PS 5.5–7.0 bar
 MG50: PS 5.5–7.0 bar

Technical data

Filling volume:

MG	Actuator version (code)	Control function 1
25	F/8	0.20
40	H/N, HRN	0.42
50	J/N, JRN	0.79

Filling volume in dm³

Kv values:

MG	DN	Connection type code						
		0	16	17	18	37	59	60
25	15	4.1	4.7	4.7	4.7	-	-	7.4
	20	6.3	7.0	7.0	7.0	-	4.4	13.2
	25	13.9	15.0	15.0	15.0	12.6	12.2	16.2
40	32	25.3	27.0	27.0	27.0	26.2	-	30.0
	40	29.3	30.9	30.9	30.9	30.2	29.5	32.8
50	50	46.5	48.4	48.4	48.4	51.7	50.6	55.2
	65	-	-	-	-	62.2	61.8	-

MG = diaphragm size

Kv values in m³/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: Regulation (EC) No. 1935/2006
 Regulation (EC) No. 10/2011*
 FDA*
 USP* Class VI

* depending on version and / or operating parameters

SIL:

Product description: GEMÜ diaphragm valve 650_687
Device type: A
Fail safe function: Due to the fail safe function, the diaphragm valve is placed in the closed position (with control function 1).
HFT (Hardware Fault Tolerance): 0
MTTR (Mean Time To Restoration): 24 hours

Product description: GEMÜ diaphragm valve 650_687with GEMÜ 032x pilot solenoid valve
Device type: A
Fail safe function: Due to the fail safe function, the diaphragm valve is placed in the closed position (with control function 1).
HFT (Hardware Fault Tolerance): 0
MTTR (Mean Time To Restoration): 24 hours

Mechanical data

Weight:

Actuator

MG	DN	Actuator version (code)	Control function 1
25	15, 20, 25	F/8	2.2
40	32, 40	H/N	4.7
50	50, 65	J/N	6.9

Weights in kg
 MG = diaphragm size

Body

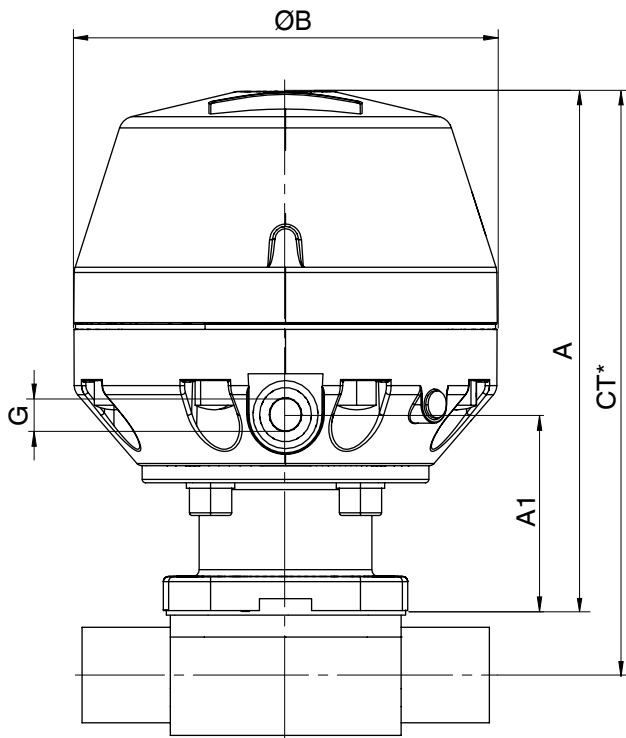
MG	DN	Spigot	Threaded spigot, cone spigot	Flange	Clamp
		Connection type code			
		0, 16, 17, 18, 35, 36, 37, 55, 59, 60, 63, 64, 65	6, 6K	8, 38, 39, 51, 56	80, 82, 88, 8A, 8E, 8P, 8T
25	15	0.62	0.71	1.50	0.75
	20	0.58	0.78	2.20	0.71
	25	0.55	0.79	2.80	0.63
40	32	1.45	1.66	3.40	1.62
	40	1.32	1.62	4.50	1.50
50	50	2.25	2.70	6.30	2.50
	65	2.20	-	10.30	2.30

Weights in kg
 MG = diaphragm size

Dimensions

Actuator dimensions

Actuator - Control function 1



MG	Actuator size	$\varnothing B$	A	A1	G
25	F/8	130.0	170.0	59.0	G 1/4
40	H/N	171.0	208.0	75.0	G 1/4
50	J/N	211.0	244.0	90.0	G 1/4

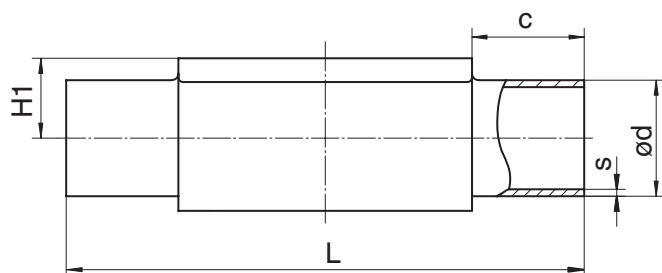
Dimensions in mm

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
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"	30.5	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 DIN EN 10357 series B (2014 edition; 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/DIN EN 10357 series C (2014 edition)/DIN 11866 series B

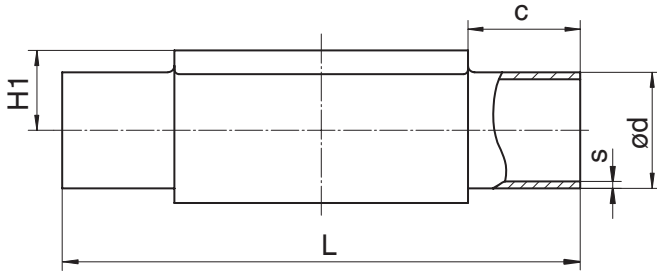
2) Valve body material

Code 40: 1.4435 (F316L), forged body

Code 42: 1.4435 (BN2), forged body, Δ Fe < 0.5%

Code F4: 1.4539, forged body

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
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"	30.5	-	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 EN 10357 series C (from 2022 edition)/DIN 11866 series C

Code 63: Spigot ANSI/ASME B36.19M schedule 10s

Code 64: Spigot ANSI/ASME B36.19M schedule 5s

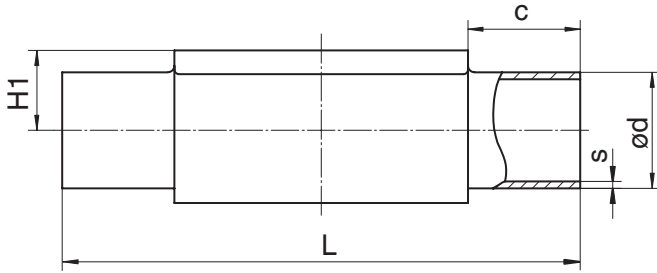
Code 65: Spigot ANSI/ASME B36.19M schedule 40s

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

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
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"	30.5	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

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

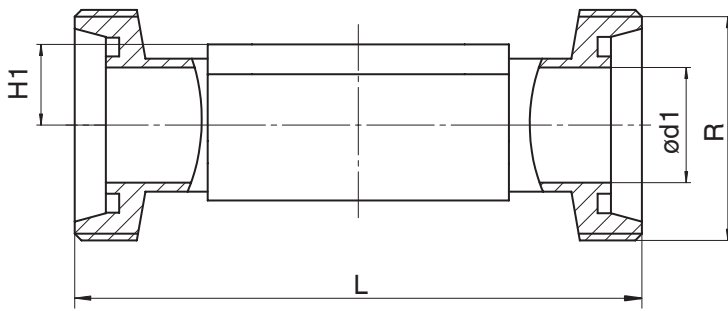
2) Valve body material

Code 40: 1.4435 (F316L), forged body

Code 42: 1.4435 (BN2), forged body, Δ Fe < 0.5%

Code F4: 1.4539, forged body

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
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

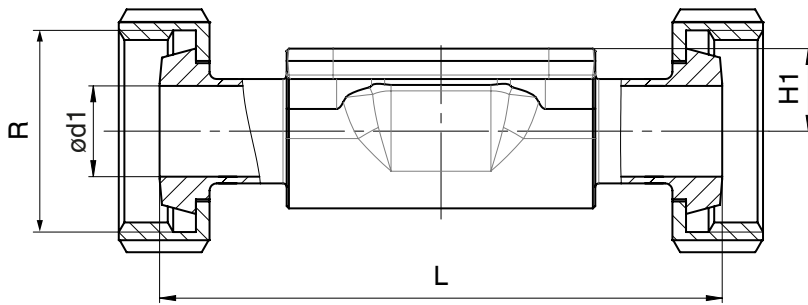
1) Connection type

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
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

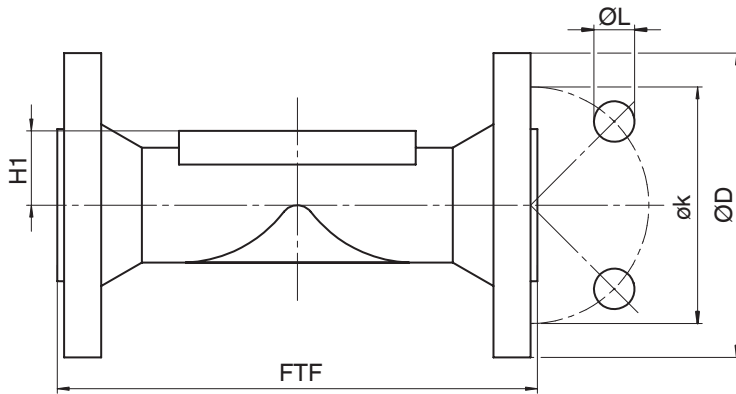
Code 6K: Cone spigot and union nut DIN 11851

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⁾, forged material (code 40, 42)²⁾

MG	DN	NPS	øD	FTF	H1	øk	øL	n
40	32	1¼"	140.0	180.0	26.0	100.0	19.0	4
	40	1½"	150.0	200.0	26.0	110.0	19.0	4

Dimensions in mm

MG = diaphragm size

n = number of bolts

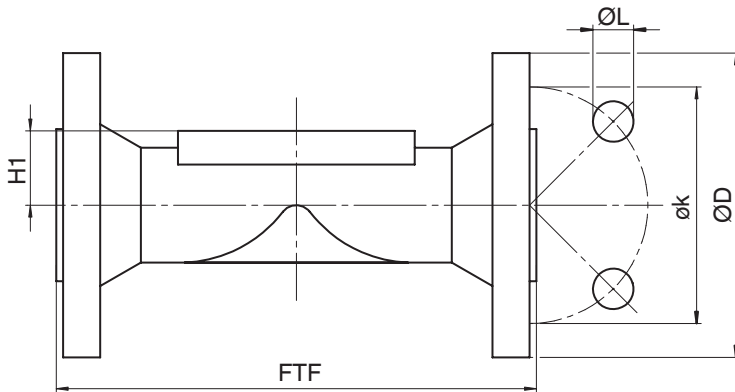
1) Connection type

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%

Flange ANSI Class (code 39)**Connection type flange, length EN 558 (code 39), ¹⁾ forged material (code 40, 42) ²⁾**

MG	DN	NPS	øD	FTF	H1	øk	øL	n
25	15	1/2"	90.0	130.0	19.0	60.3	15.9	4
	20	3/4"	100.0	150.0	19.0	69.9	15.9	4
	25	1"	110.0	160.0	19.0	79.4	15.9	4
40	32	1¼"	115.0	180.0	26.0	88.9	15.9	4
	40	1½"	125.0	200.0	26.0	98.4	15.9	4
50	50	2"	150.0	230.0	32.0	120.7	19.0	4

Dimensions in mm

MG = diaphragm size

n = number of bolts

1) Connection type

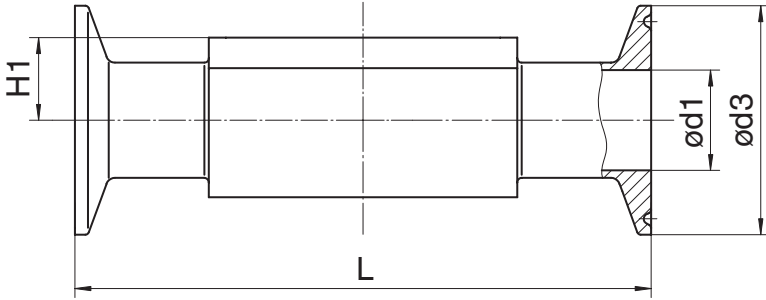
Code 39: Flange ANSI Class 125/150 RF, face-to-face dimension FTF EN 558 series 1, ISO 5752, basic series 1, length only for body configuration D

2) Valve body material

Code 40: 1.4435 (F316L), forged body

Code 42: 1.4435 (BN2), forged body, Δ Fe < 0.5%

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
25	20	3/4"	15.75	15.75	25.0	25.0	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

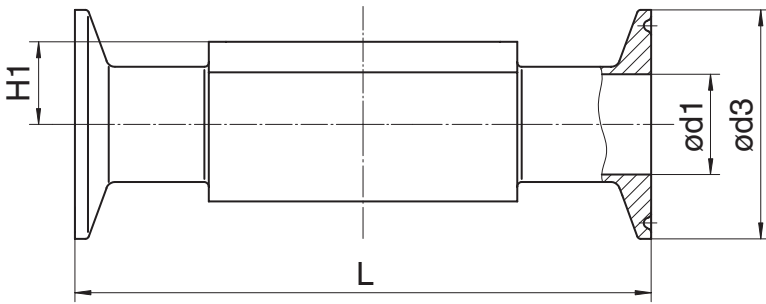
Dimensions in mm
MG = diaphragm size

1) Connection type

- Code 80: Clamp ASME BPE, face-to-face dimension FTF ASME BPE, length only for body configuration D
- Code 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



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
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	127.0	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 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



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